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Annex for BT

Test Report No.: CTL2407122041-WF

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FCC ID: 2APOQ-T316R

1. Bandwidth

1.1 Test Result

1.1.1 OBW

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	99% Occupied Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	0.850	/	Pass
		2441	DH5	1	0.847	/	Pass
		2480	DH5	1	0.847	/	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.174	/	Pass
		2441	2DH5	1	1.177	/	Pass
		2480	2DH5	1	1.170	/	Pass
8DPSK	SISO	2402	3DH5	1	1.181	/	Pass
		2441	3DH5	1	1.182	/	Pass
		2480	3DH5	1	1.180	/	Pass

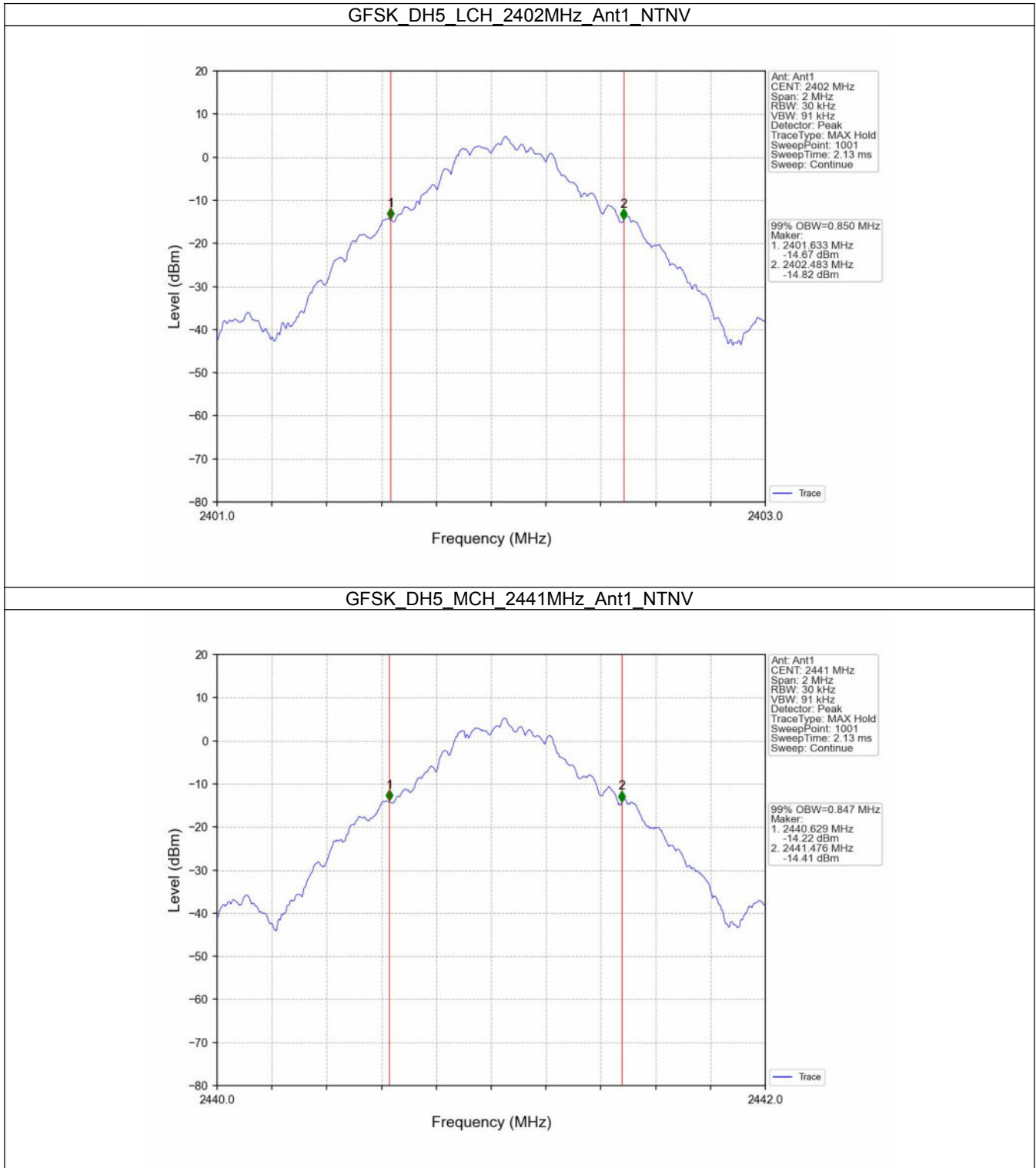
1.1.2 20dB BW

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	20dB Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	0.926	/	Pass
		2441	DH5	1	0.933	/	Pass
		2480	DH5	1	0.926	/	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.297	/	Pass
		2441	2DH5	1	1.294	/	Pass
		2480	2DH5	1	1.295	/	Pass
8DPSK	SISO	2402	3DH5	1	1.312	/	Pass
		2441	3DH5	1	1.311	/	Pass
		2480	3DH5	1	1.311	/	Pass

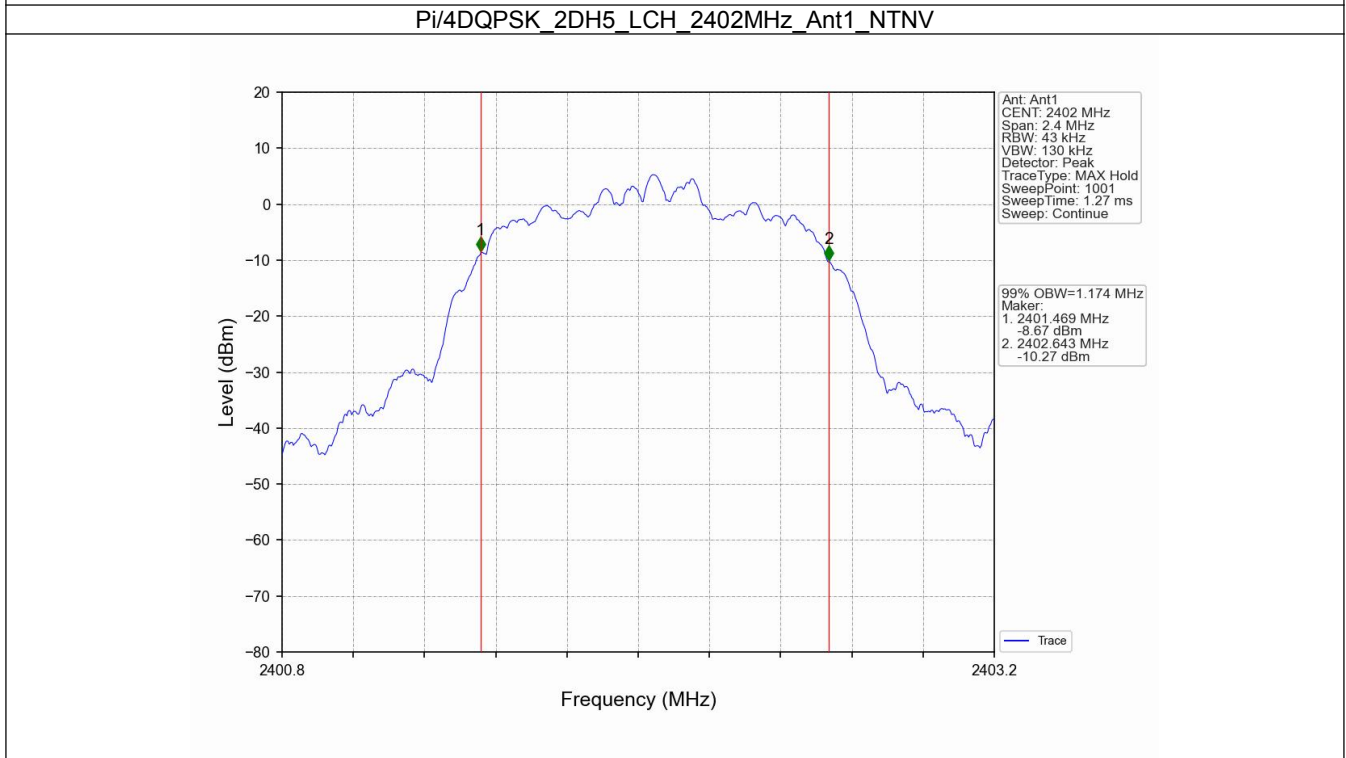
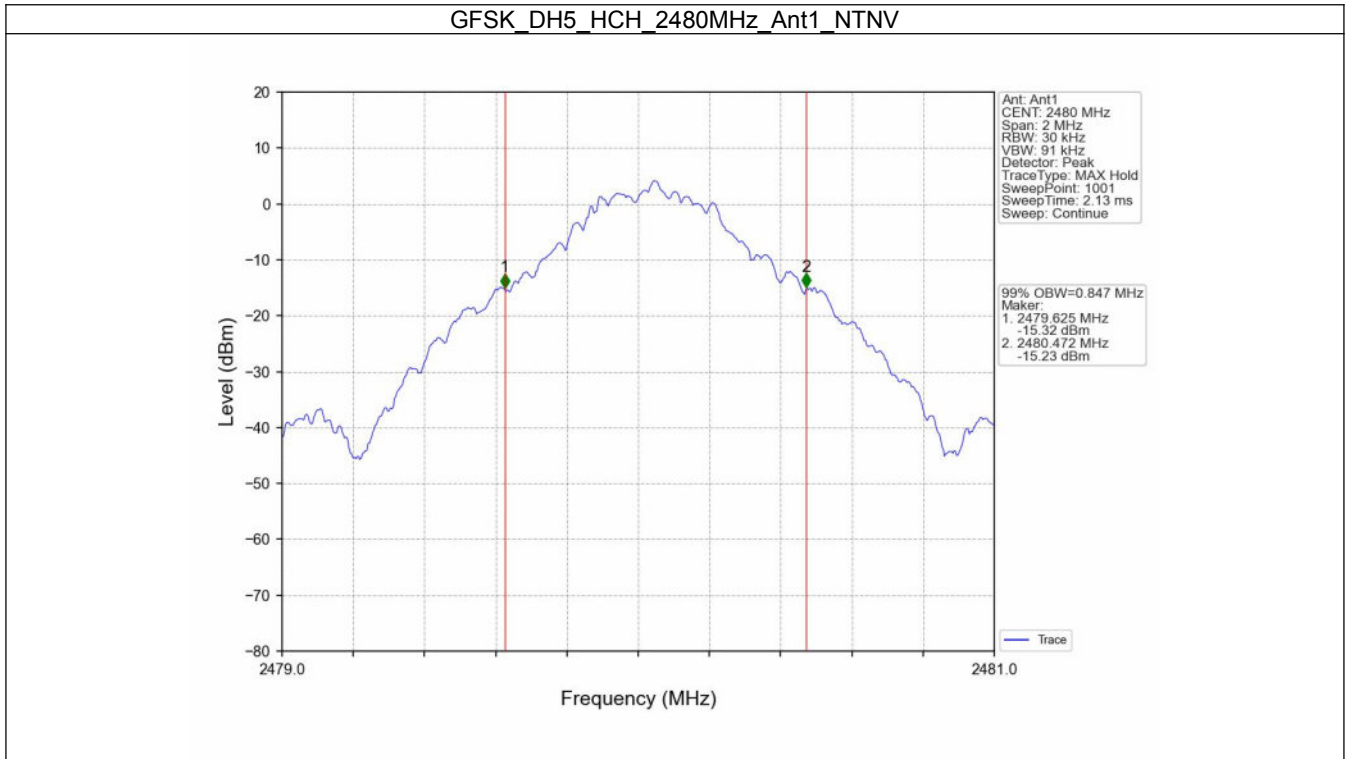
FCC ID: 2APOQ-T316R

1.2 Test Graph

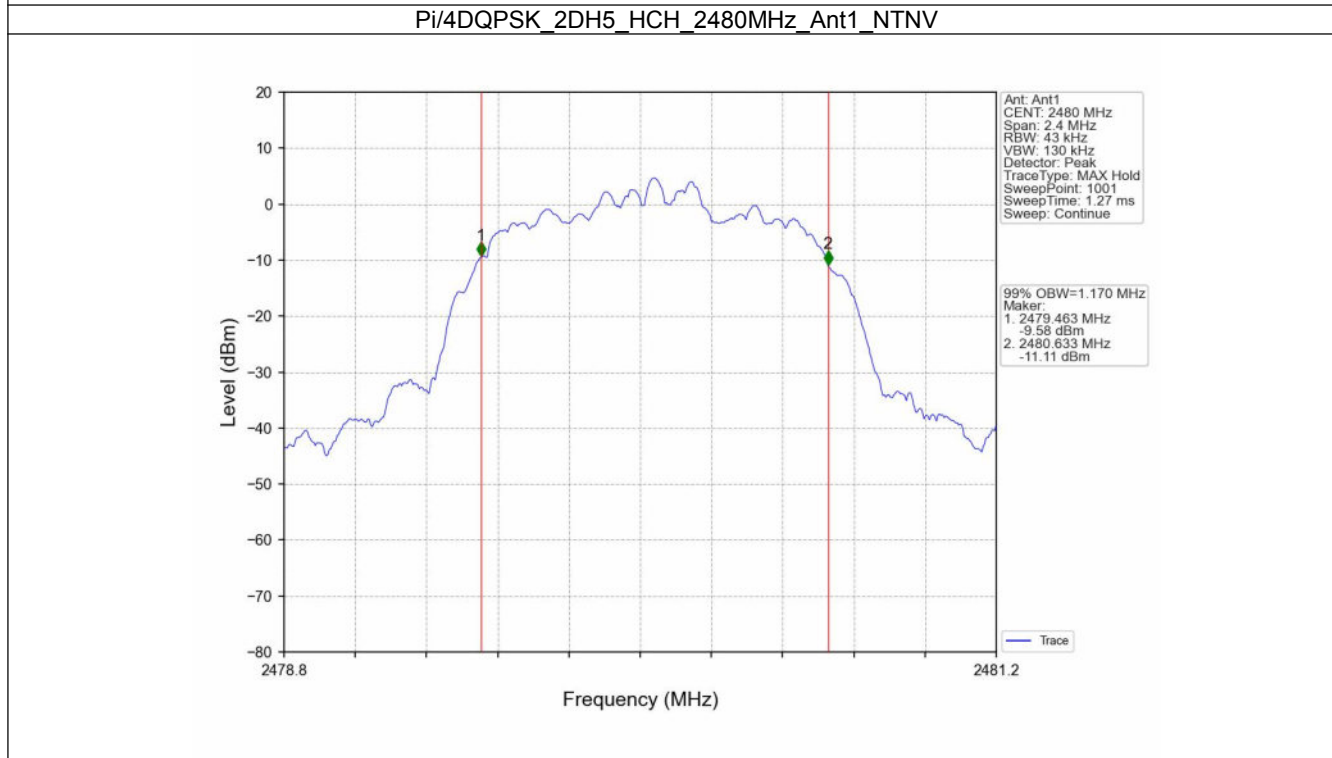
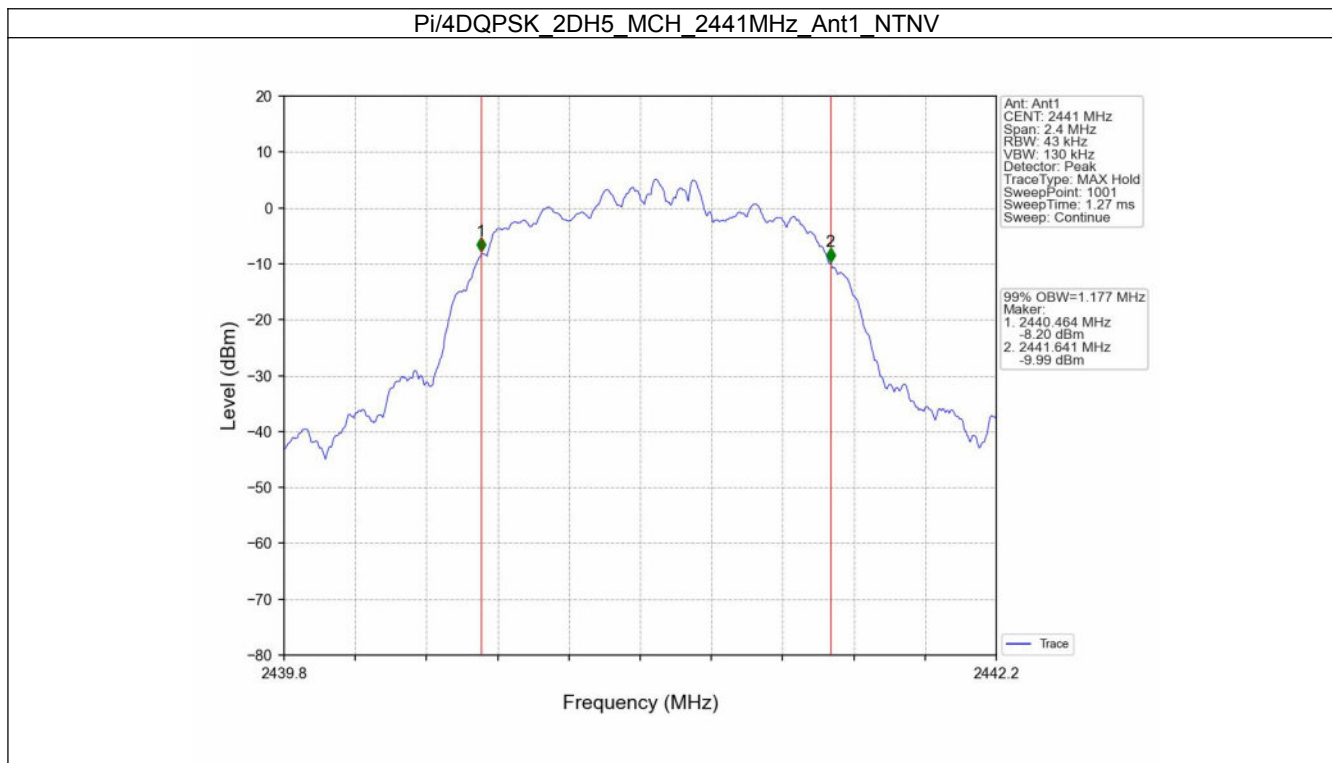
1.2.1 OBW



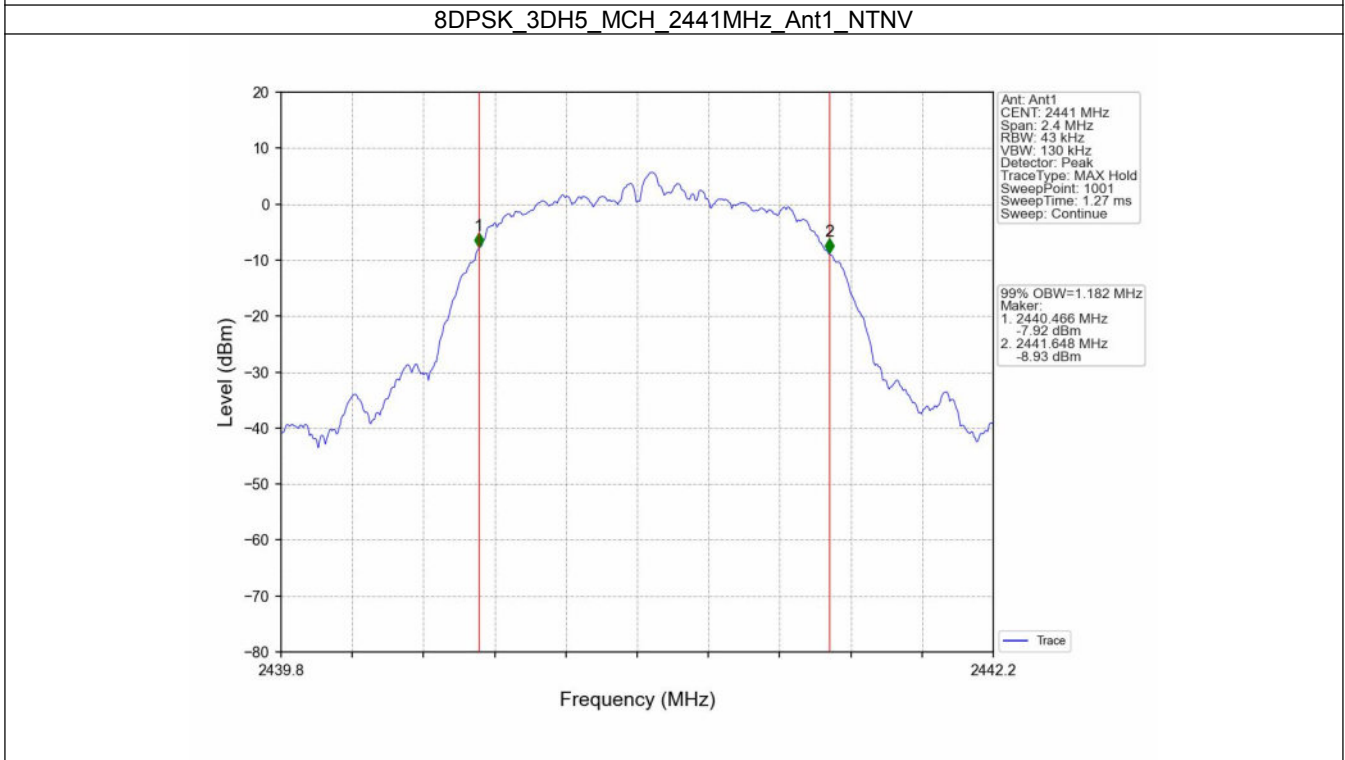
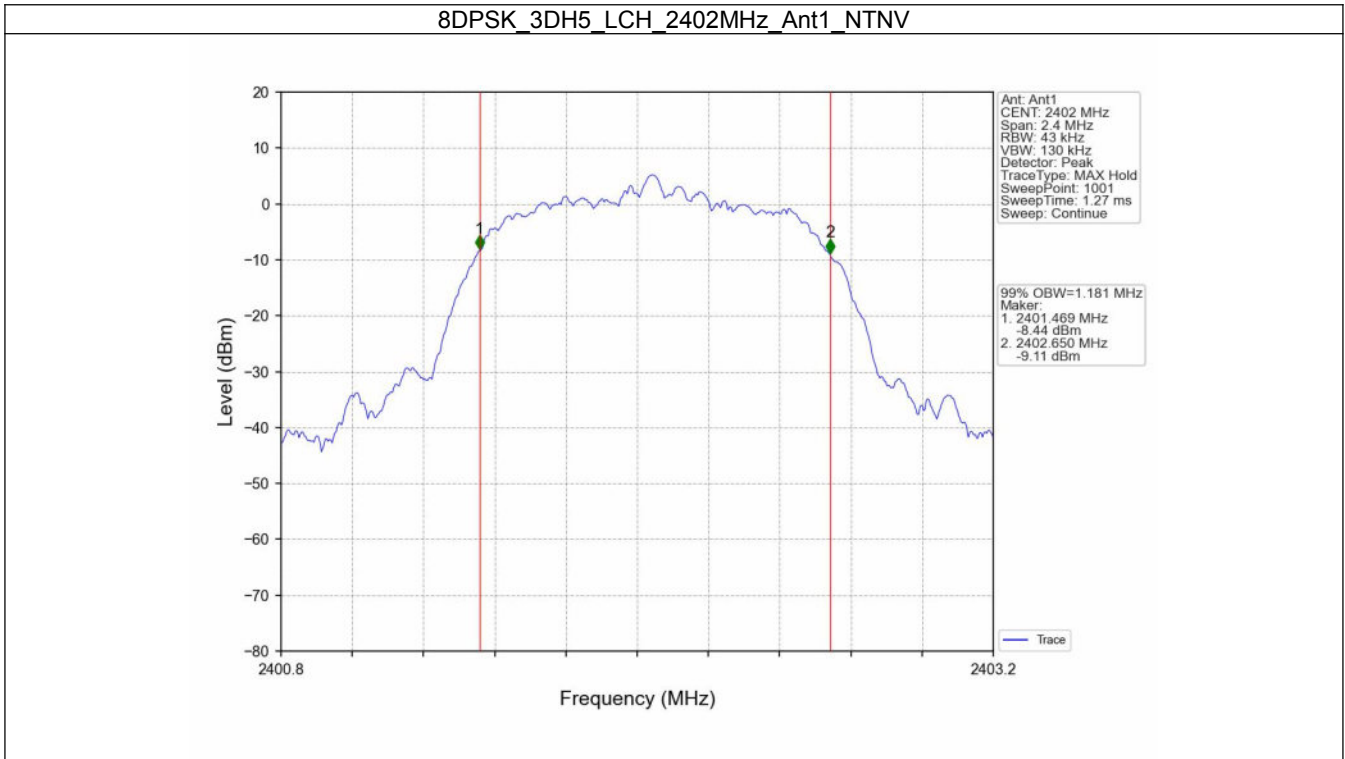
FCC ID: 2APOQ-T316R



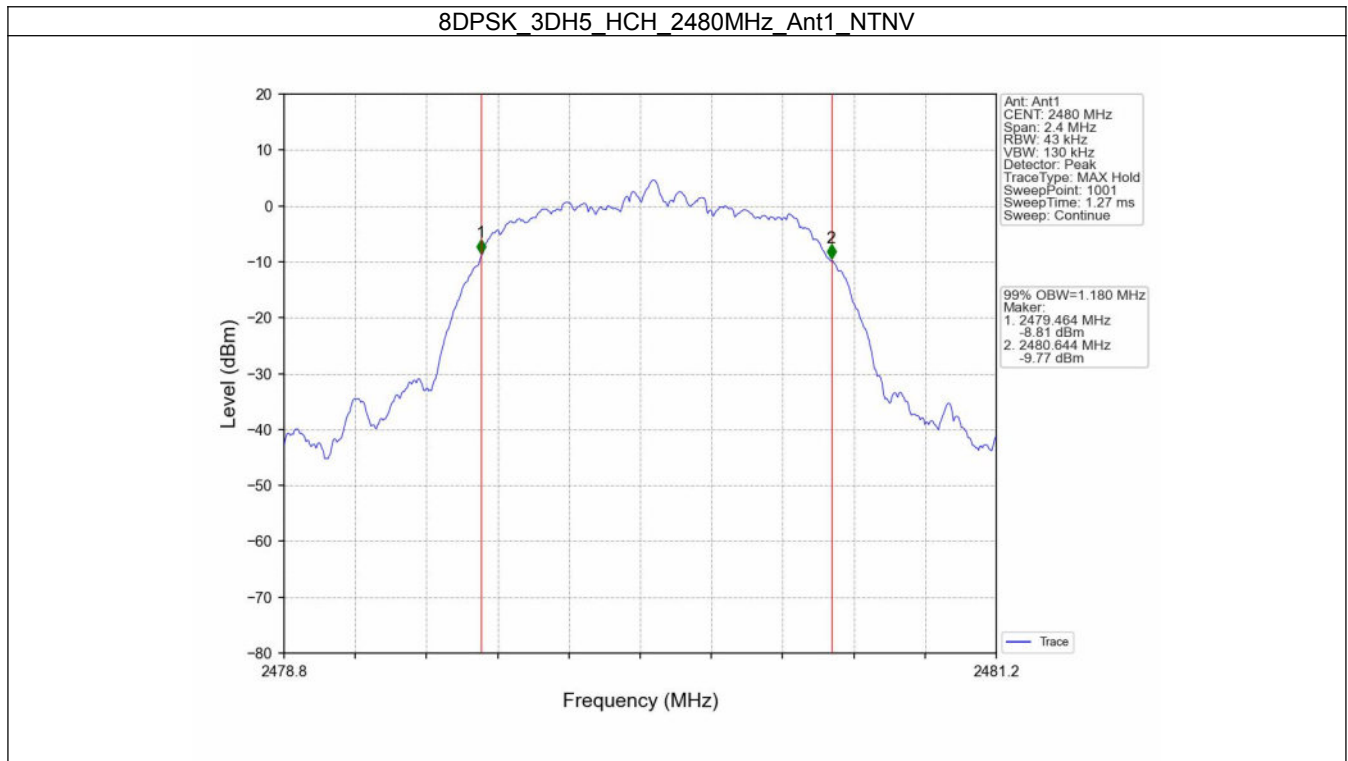
FCC ID: 2APOQ-T316R



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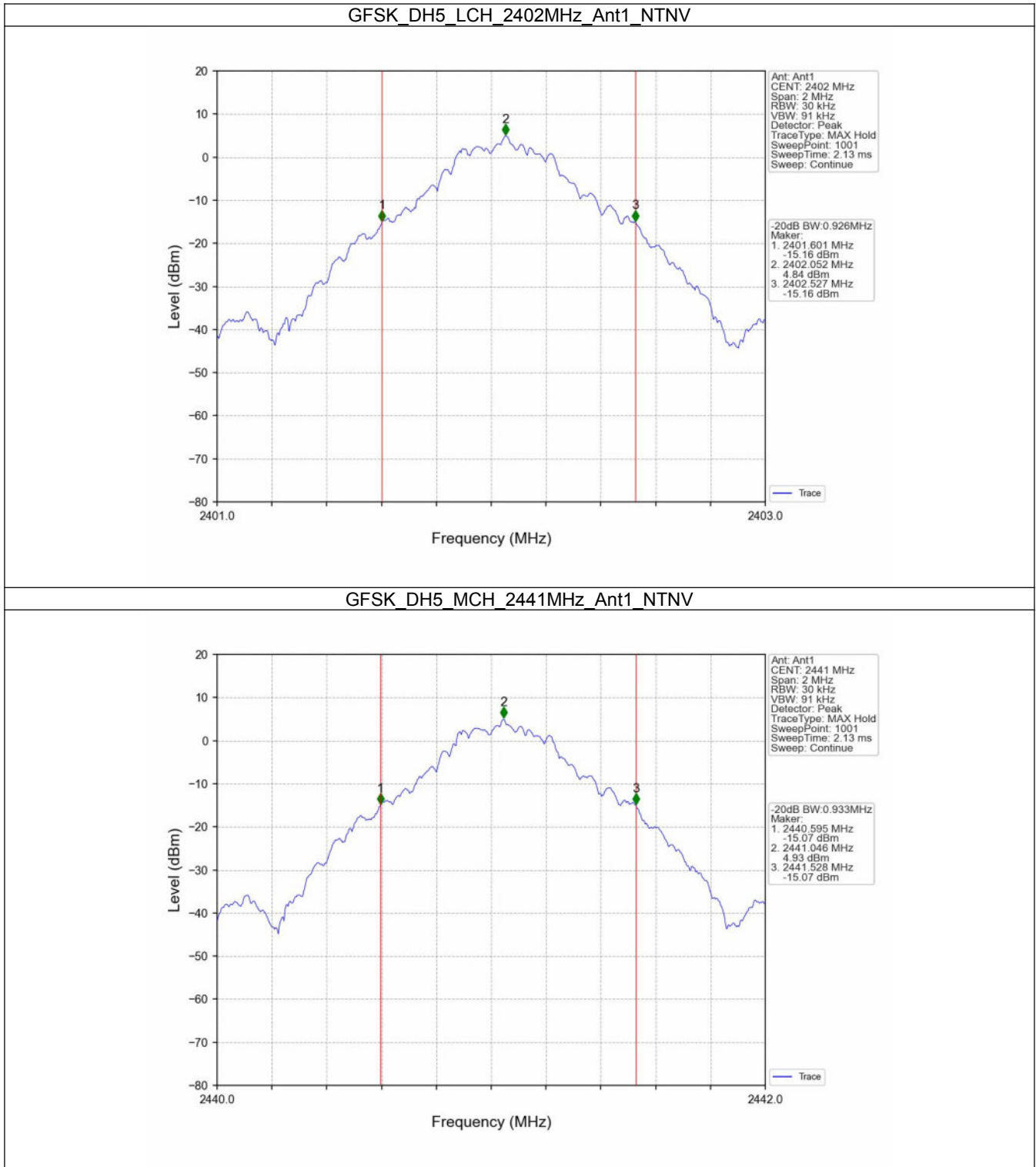


FCC ID: 2APOQ-T316R

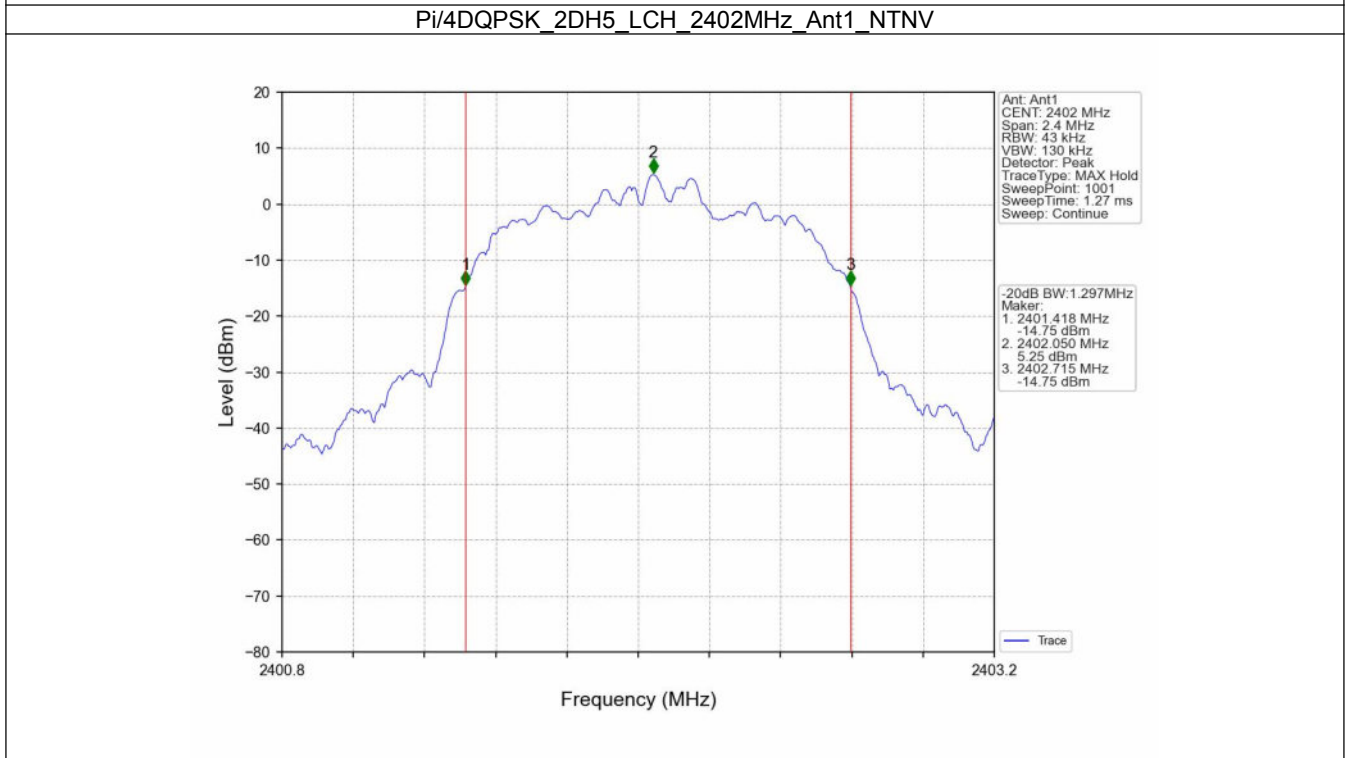
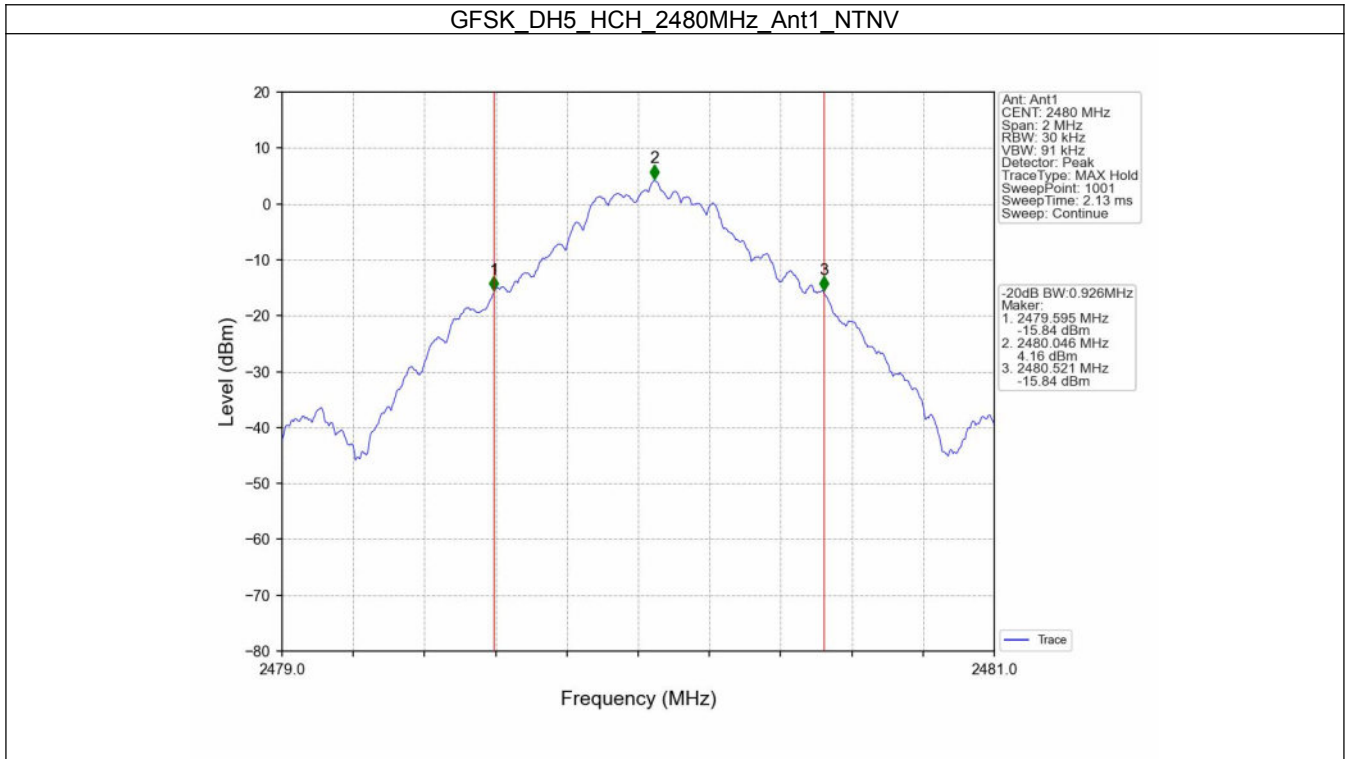


FCC ID: 2APOQ-T316R

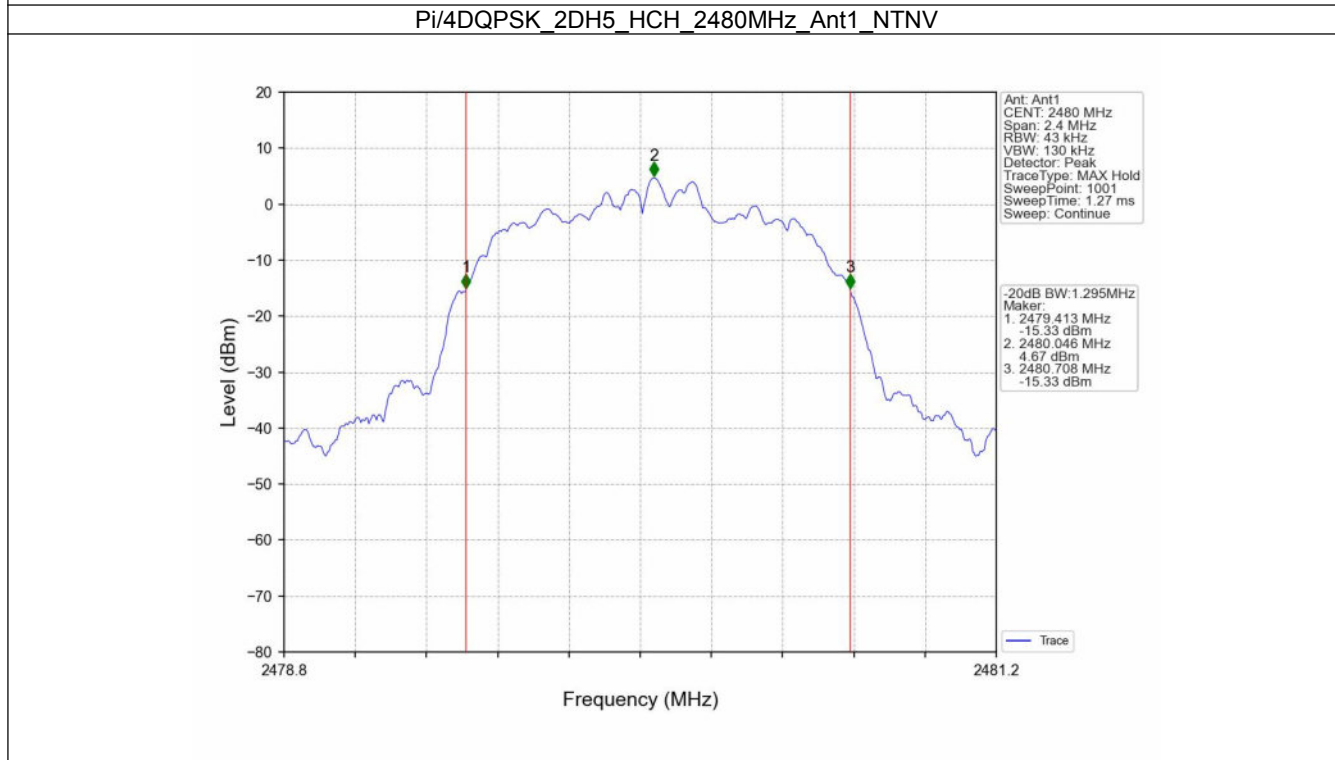
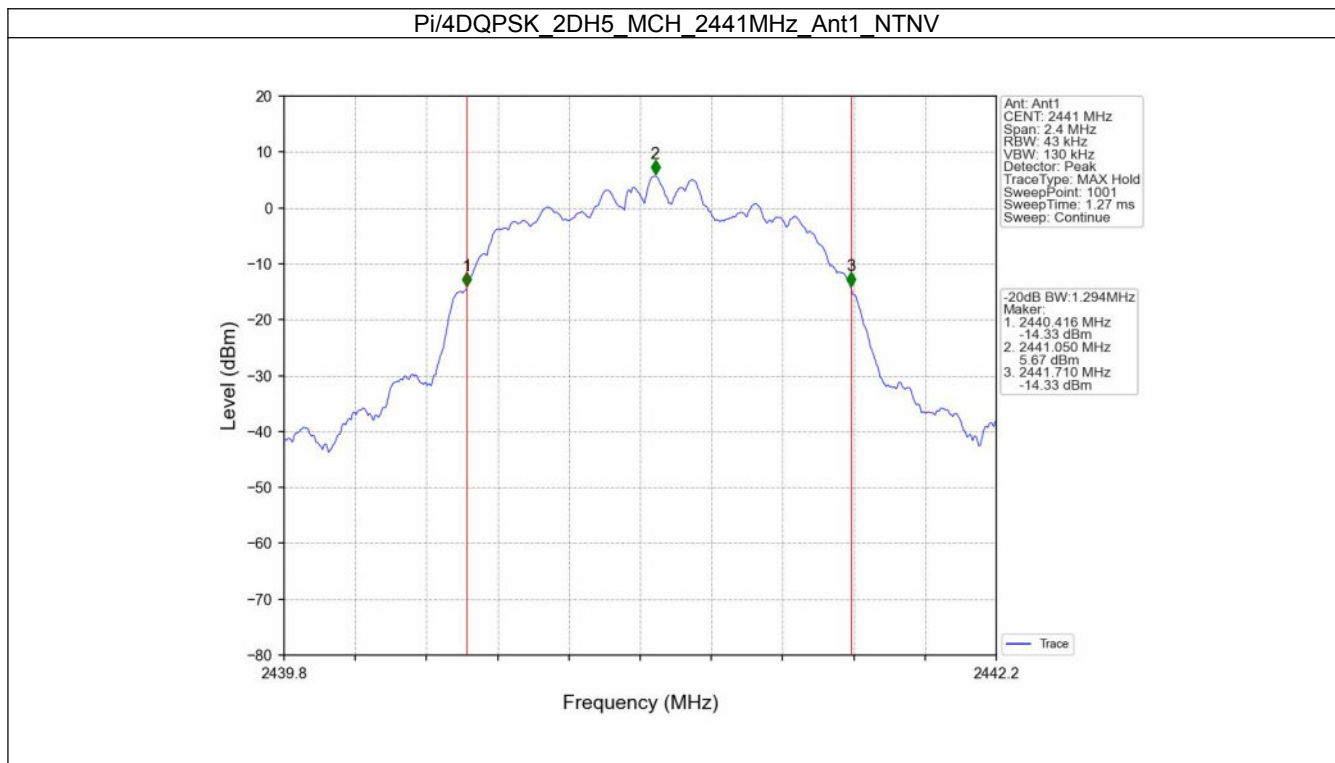
1.2.2 20dB BW



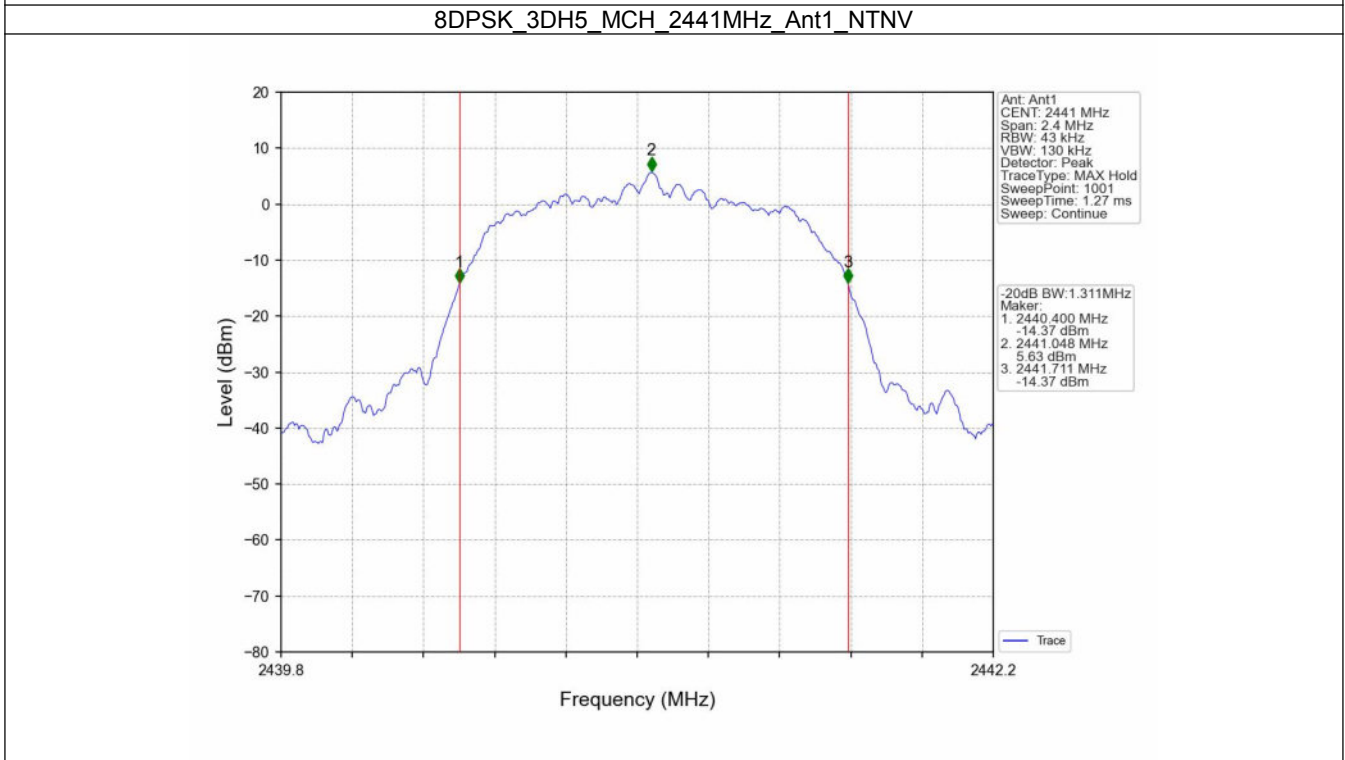
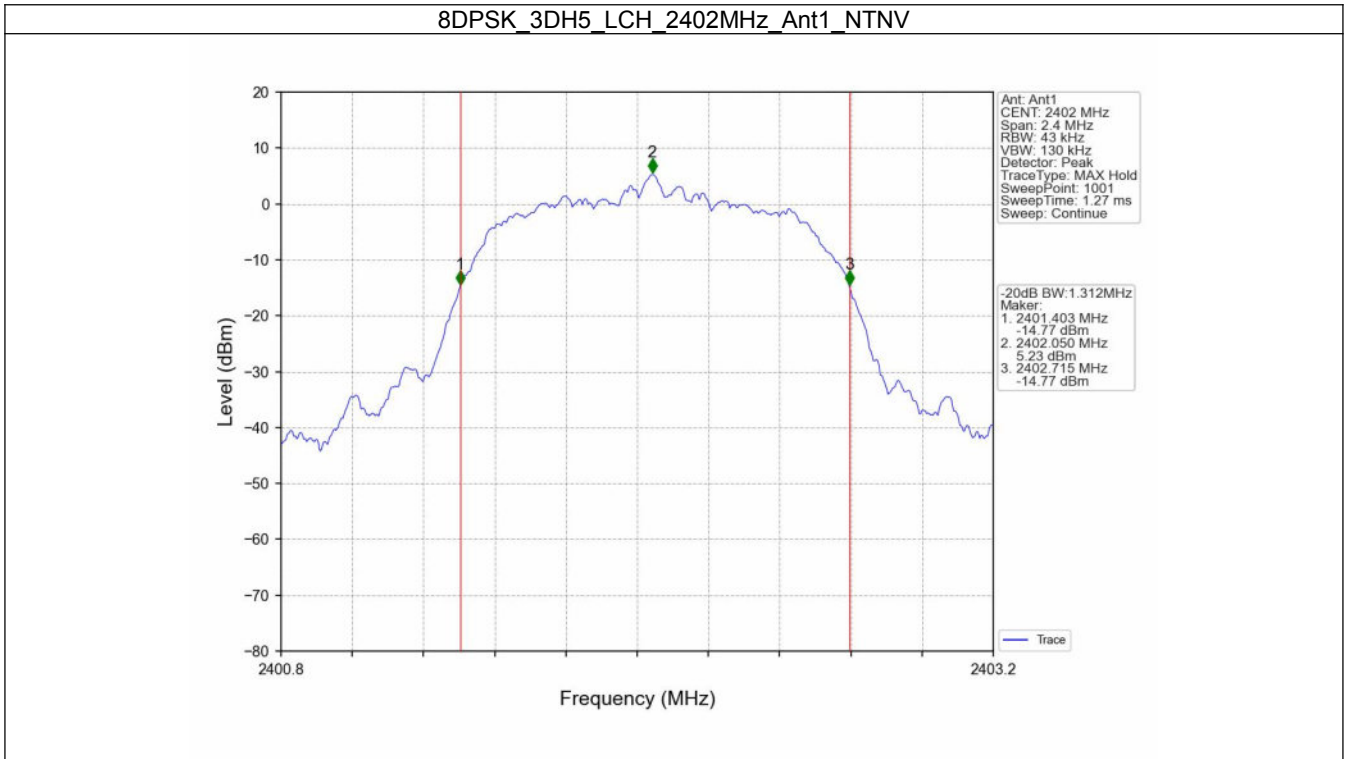
FCC ID: 2APOQ-T316R



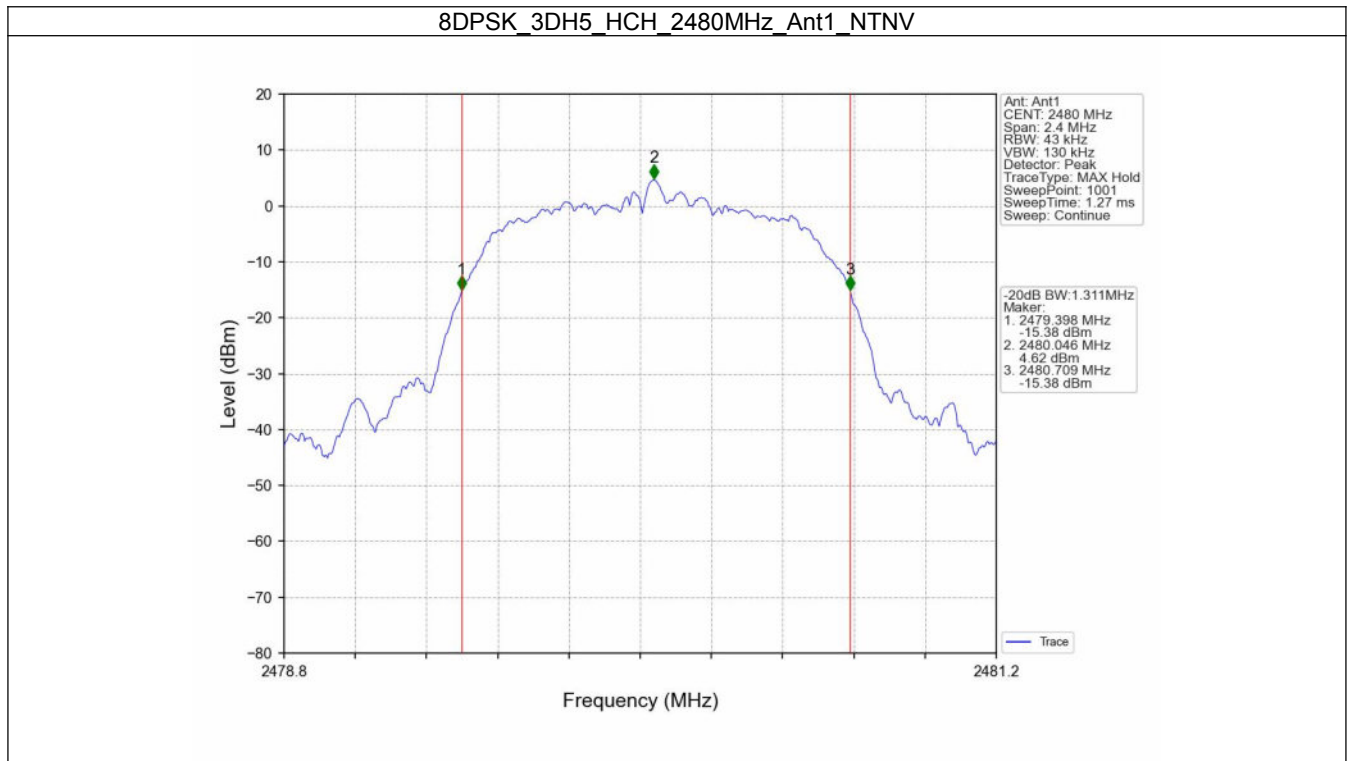
FCC ID: 2APOQ-T316R



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FCC ID: 2APOQ-T316R

2. Maximum Conducted Output Power

2.1 Test Result

2.1.1 Power

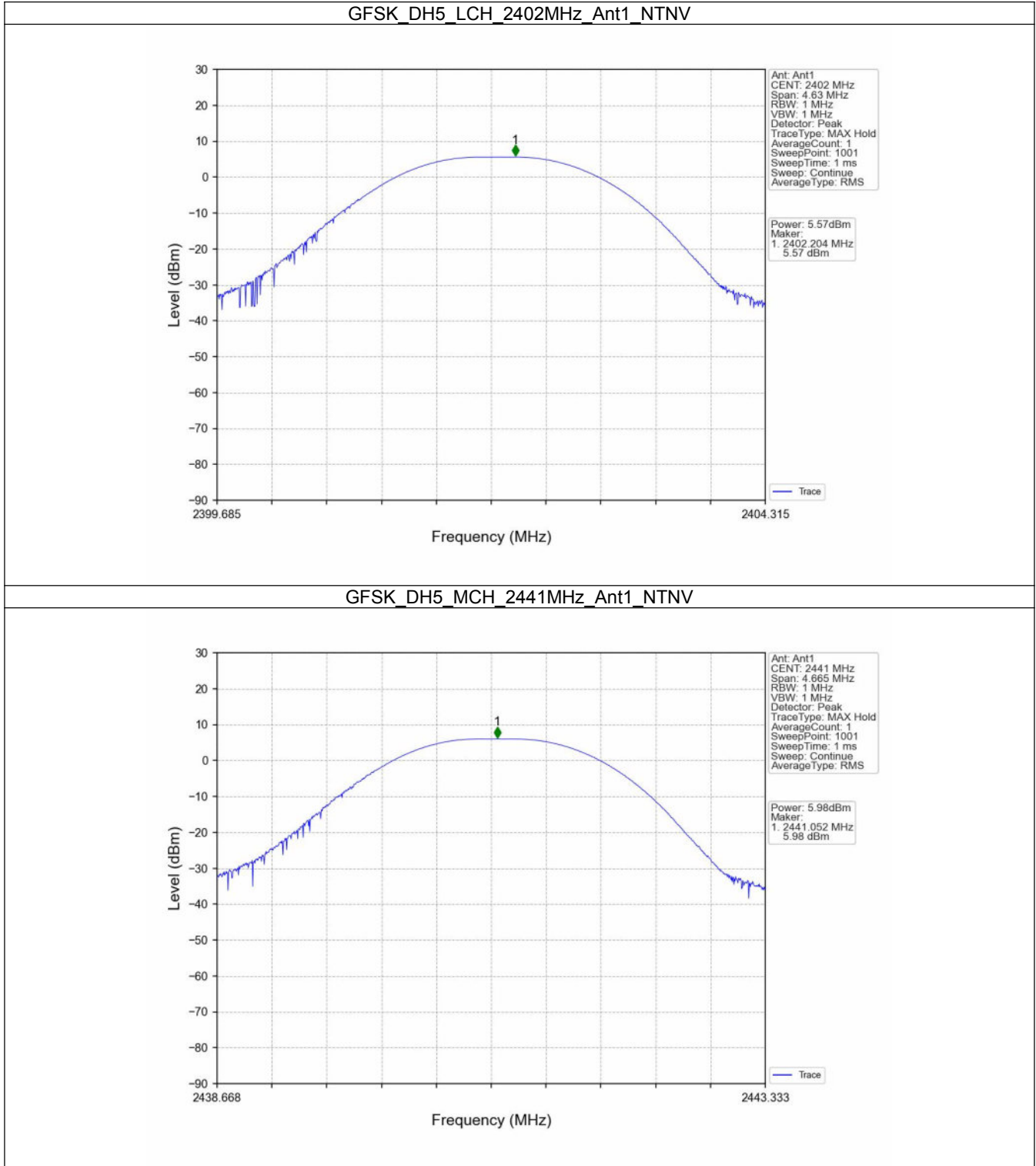
Mode	TX Type	Frequency (MHz)	Packet Type	Maximum Peak Conducted Output Power (dBm)		Verdict
				ANT1	Limit	
GFSK	SISO	2402	DH5	5.57	<=30	Pass
		2441	DH5	5.98	<=30	Pass
		2480	DH5	4.94	<=30	Pass
Pi/4DQPSK	SISO	2402	2DH5	7.74	<=20.97	Pass
		2441	2DH5	8.14	<=20.97	Pass
		2480	2DH5	7.14	<=20.97	Pass
8DPSK	SISO	2402	3DH5	8.19	<=20.97	Pass
		2441	3DH5	8.55	<=20.97	Pass
		2480	3DH5	7.58	<=20.97	Pass

Note1: Antenna Gain: Ant1: 0.07dBi;

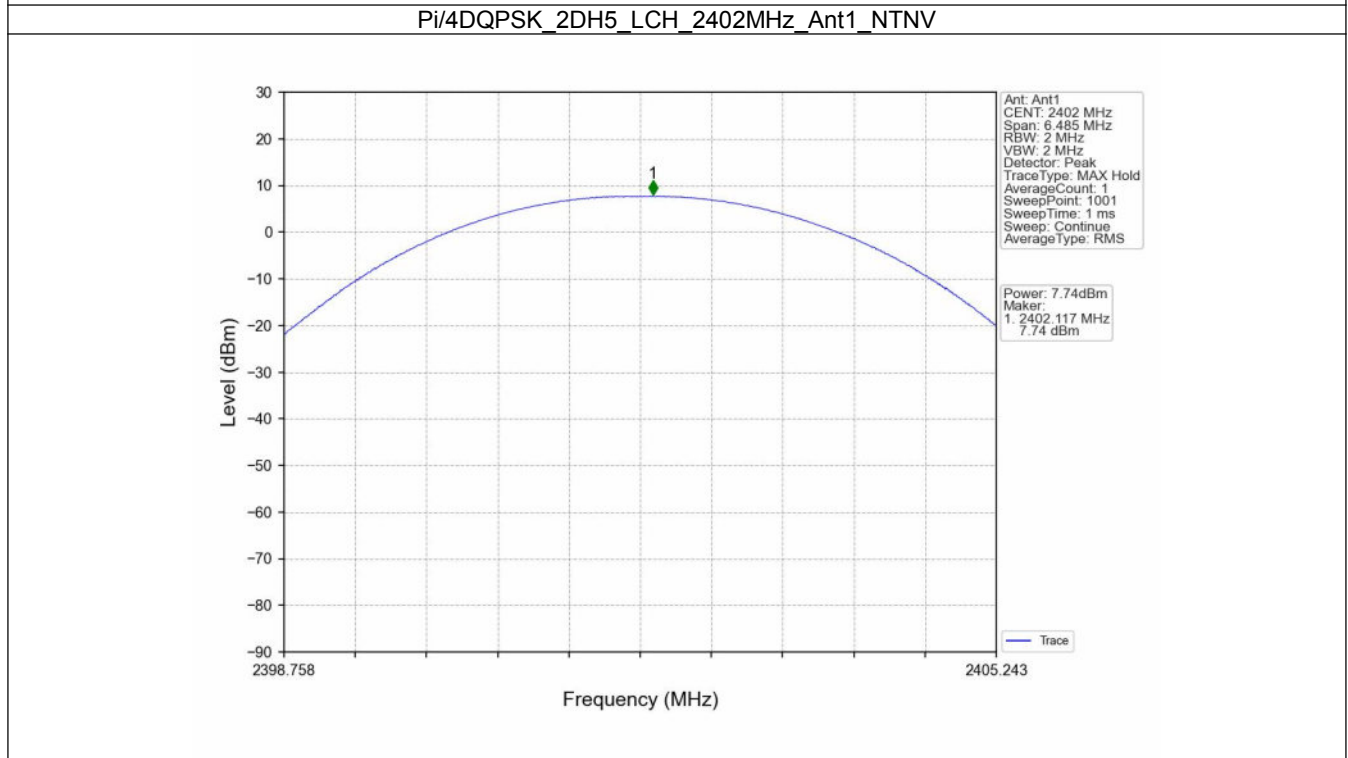
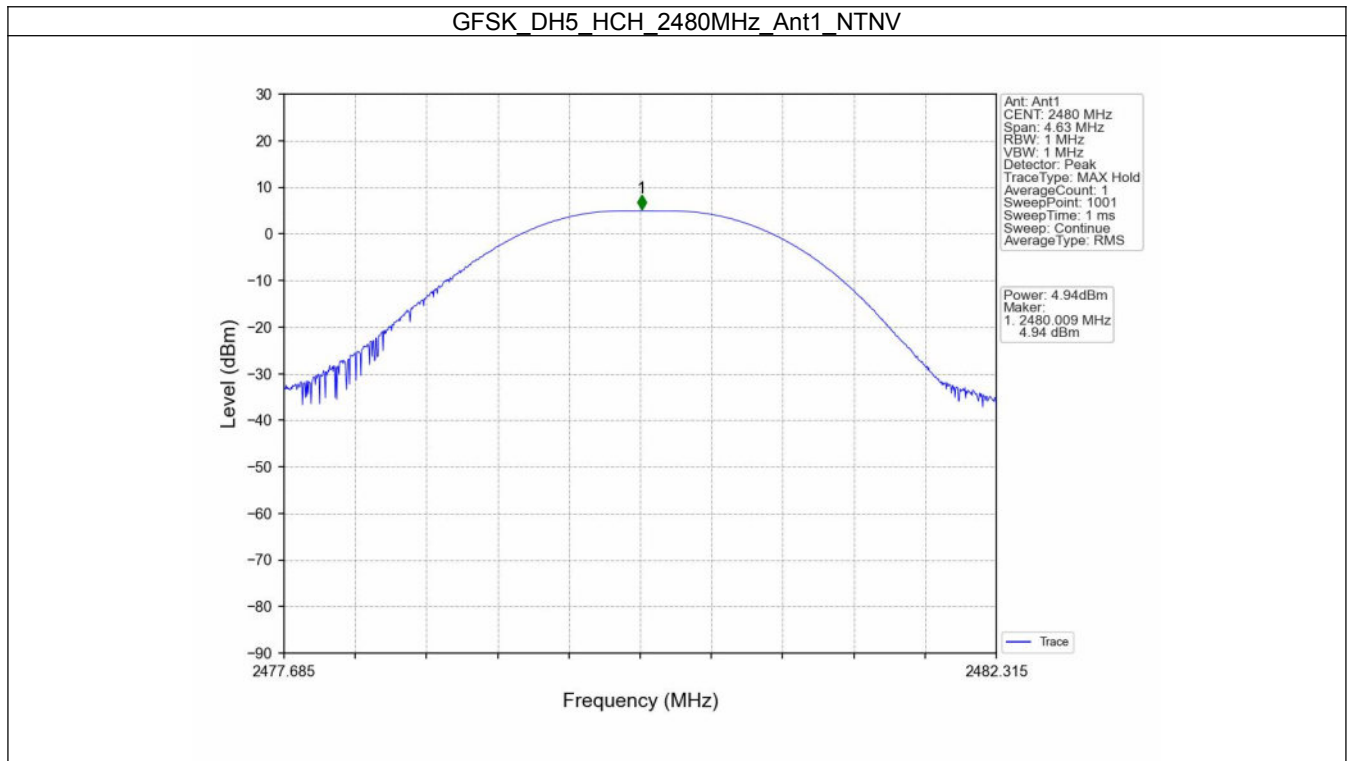
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2.2 Test Graph

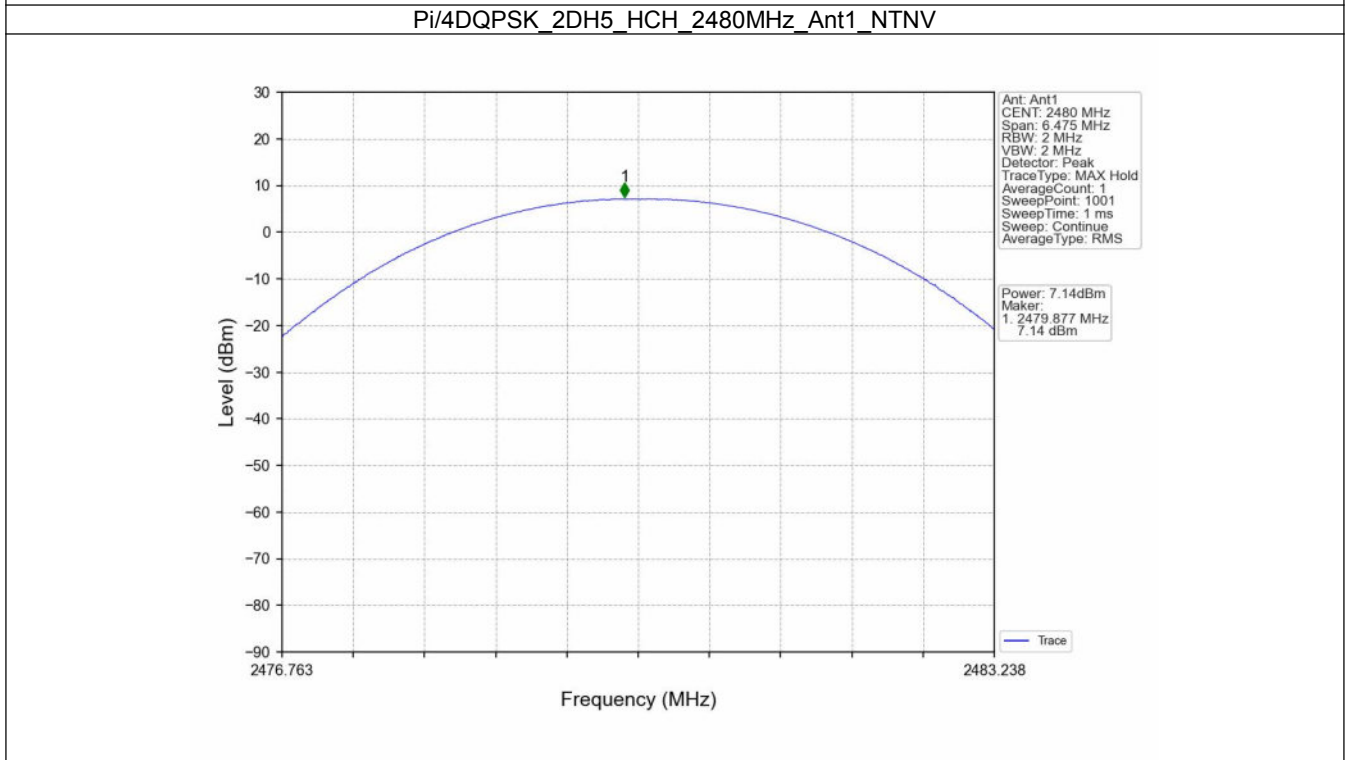
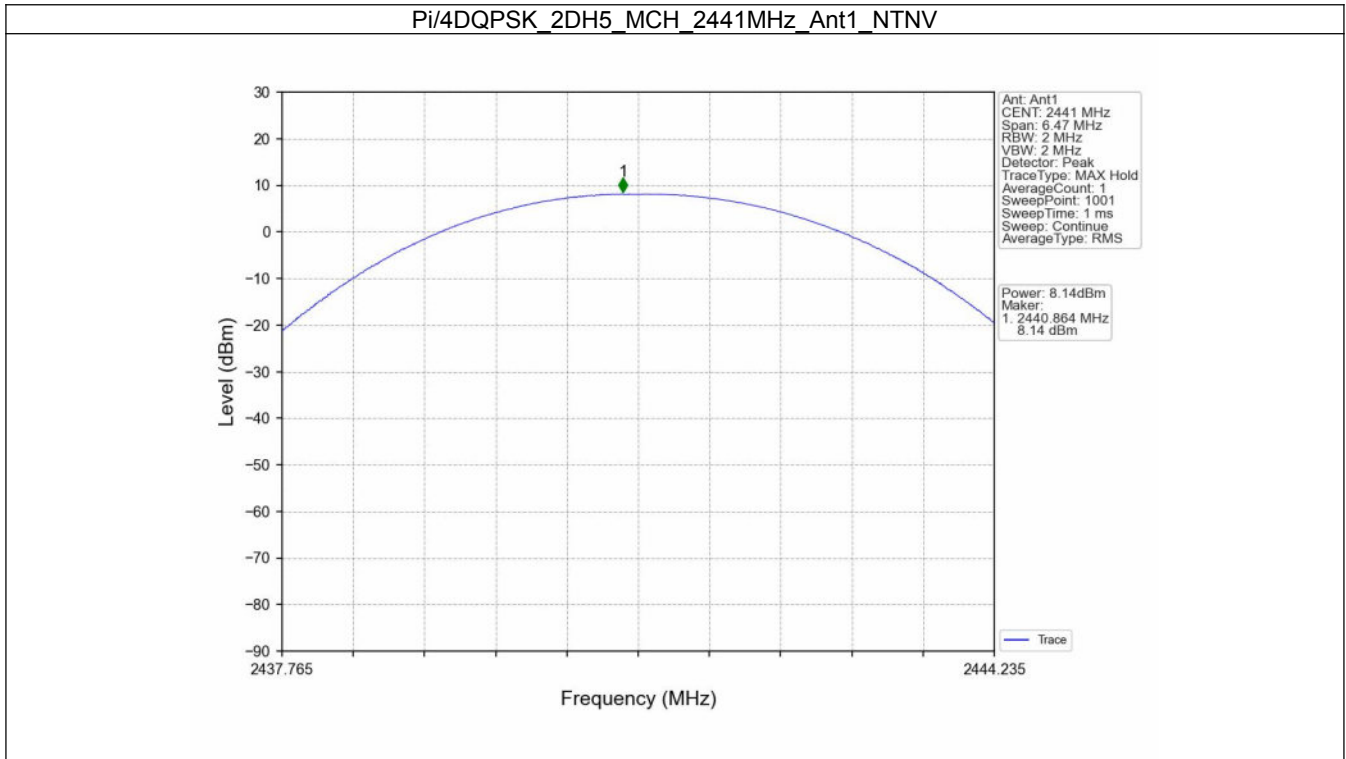
2.2.1 Power



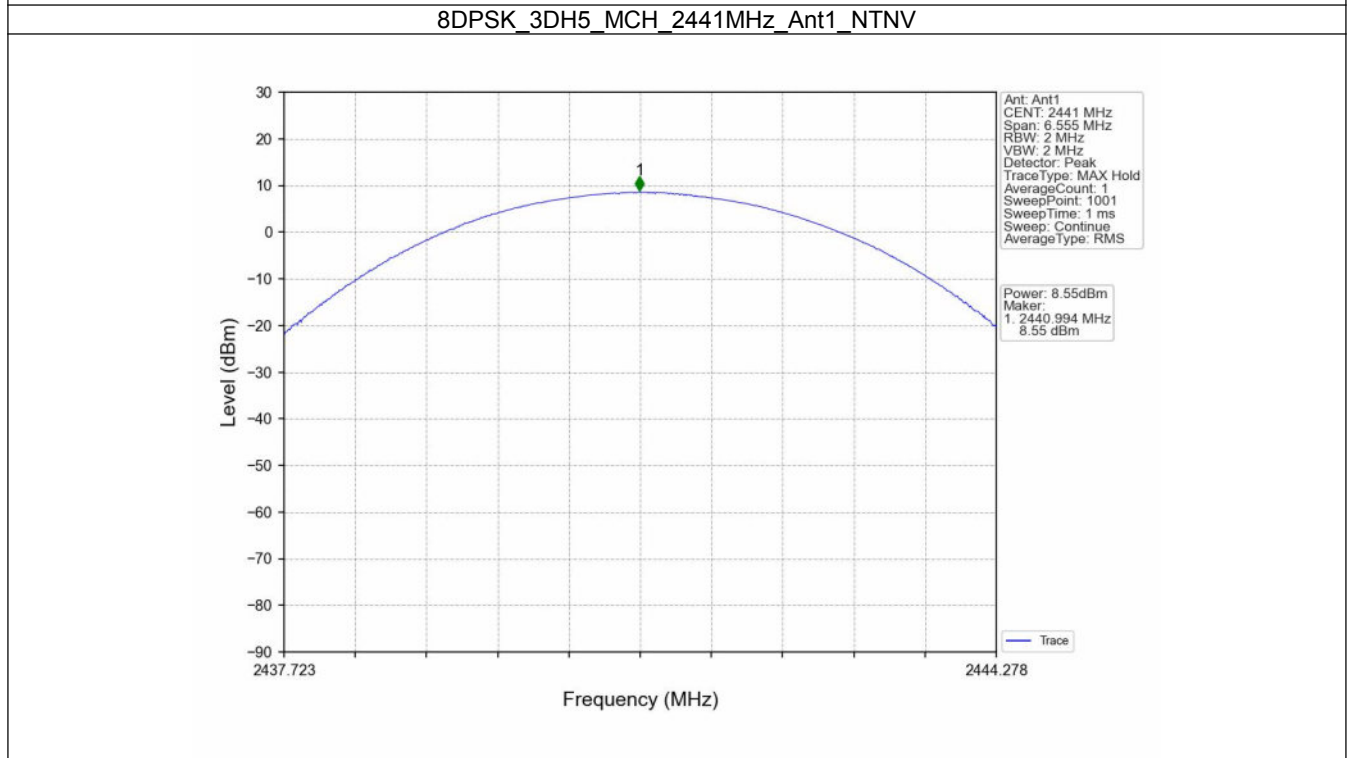
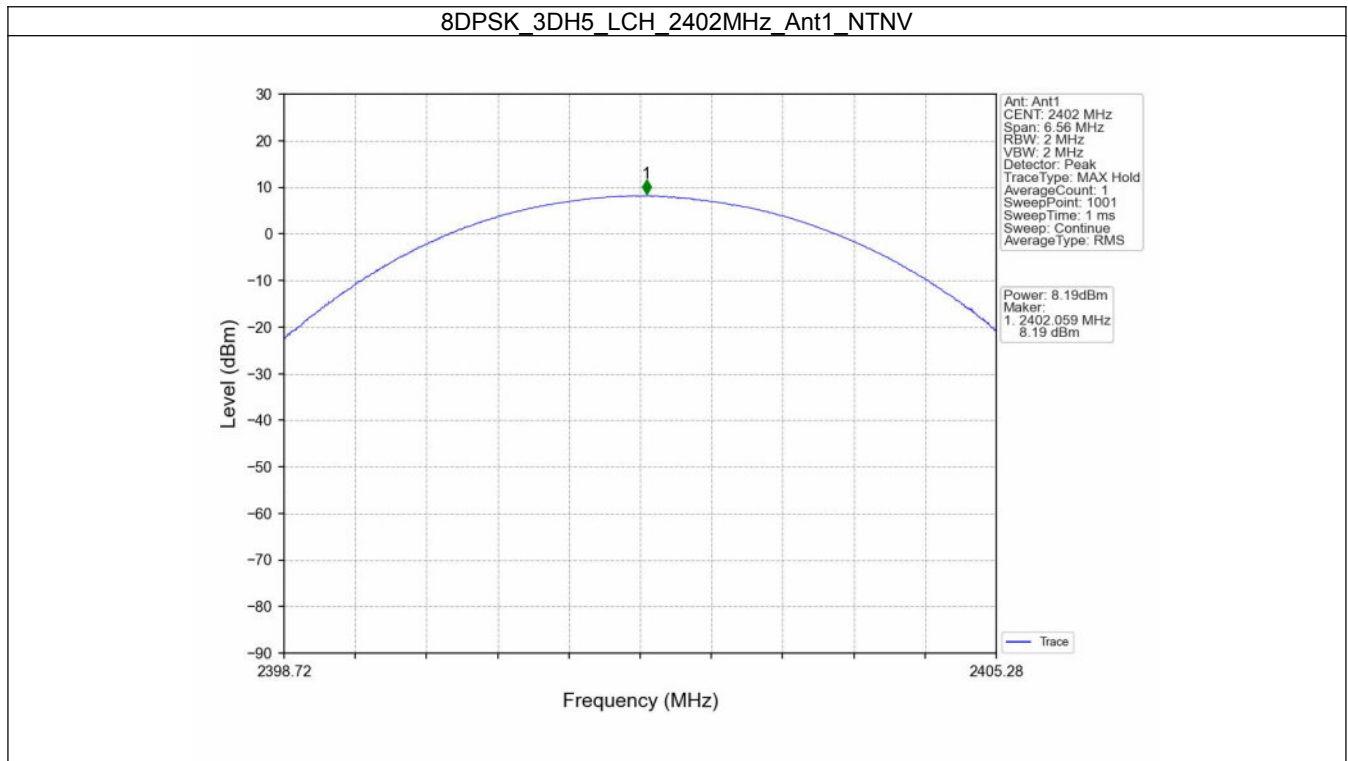
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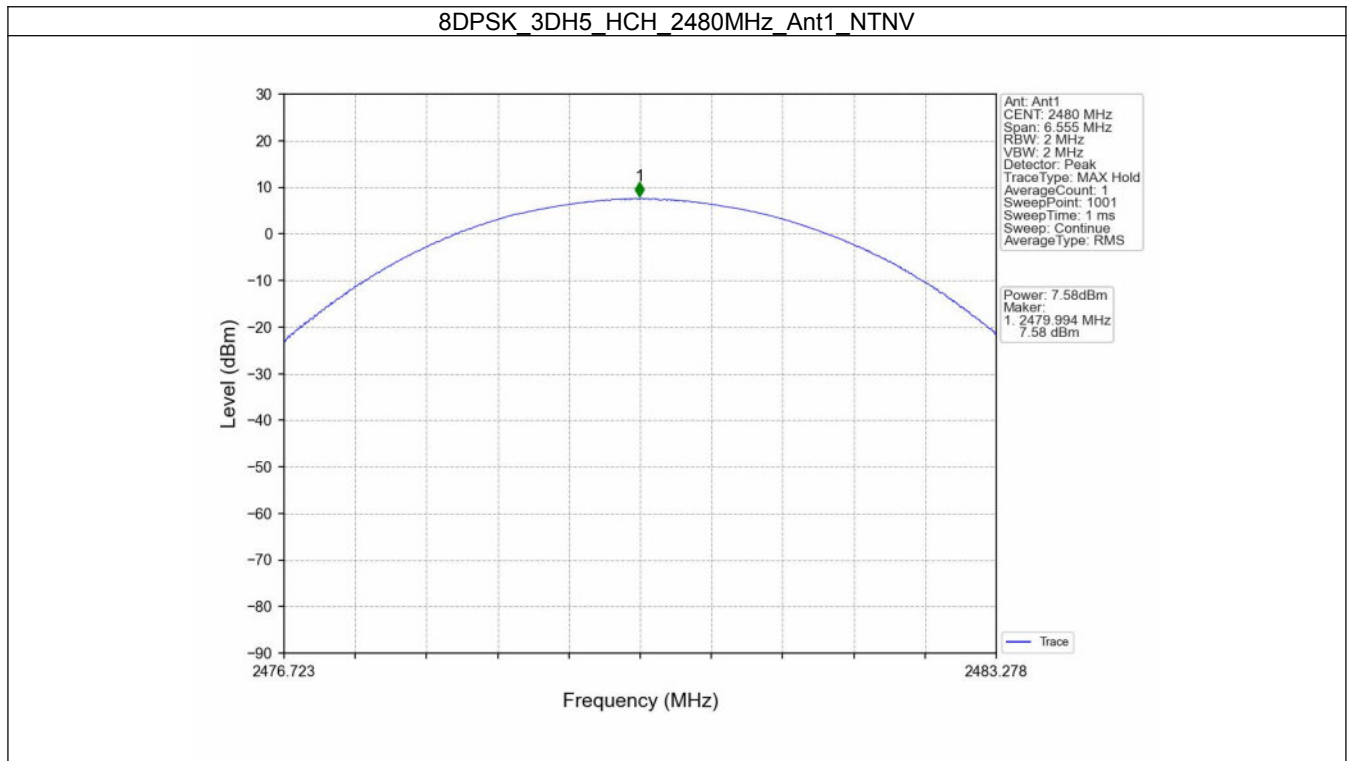
FCC ID: 2APOQ-T316R



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FCC ID: 2APOQ-T316R

3. Carrier Frequency Separation

3.1 Test Result

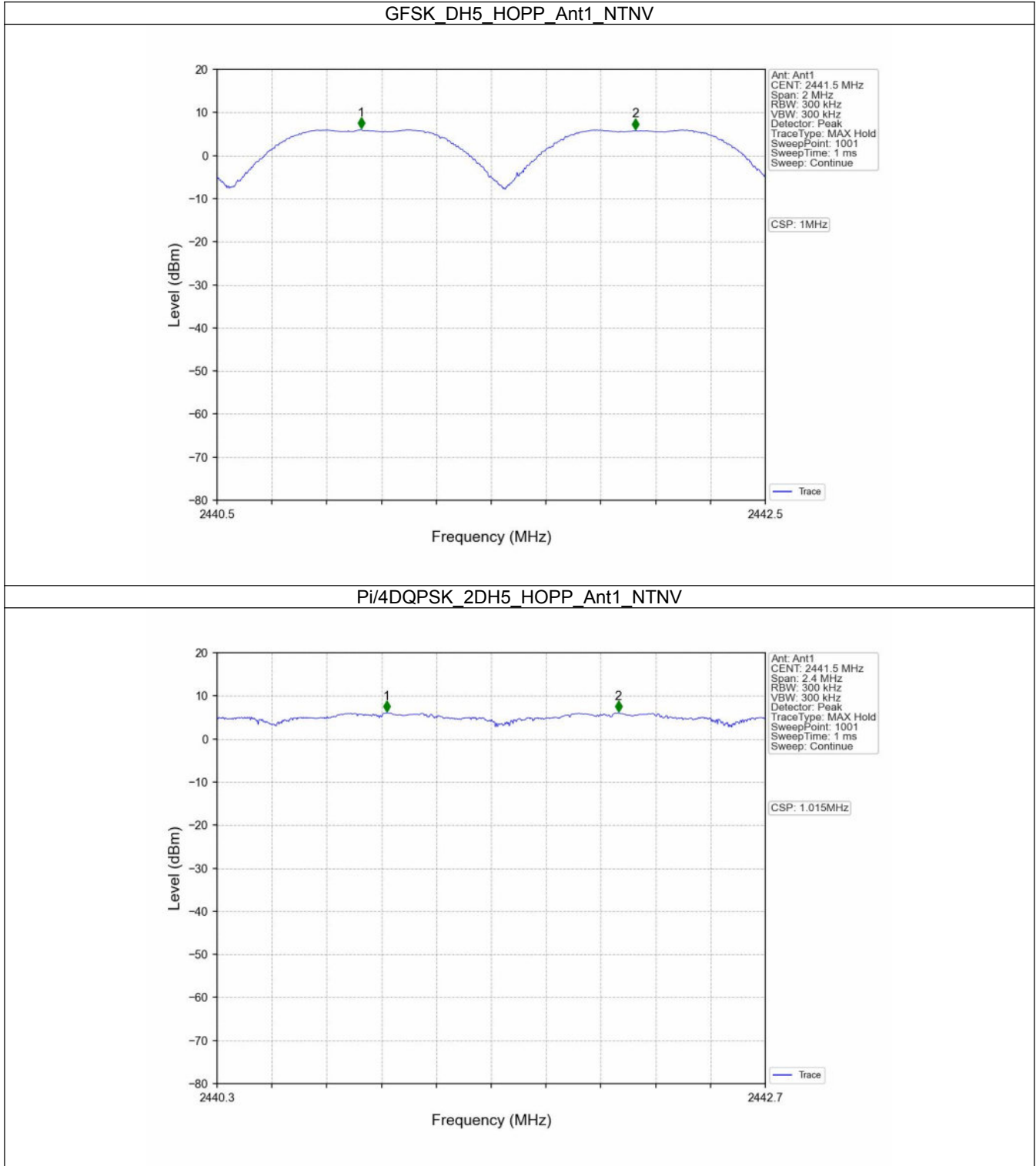
3.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	Packet Type	Channel Separation (MHz)	20dB Bandwidth (MHz)	Limit (MHz)	Verdict
GFSK	SISO	HOPP	DH5	1.000	0.933	≥ 0.933	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	1.015	1.297	≥ 0.865	Pass
8DPSK	SISO	HOPP	3DH5	1.001	1.312	≥ 0.875	Pass

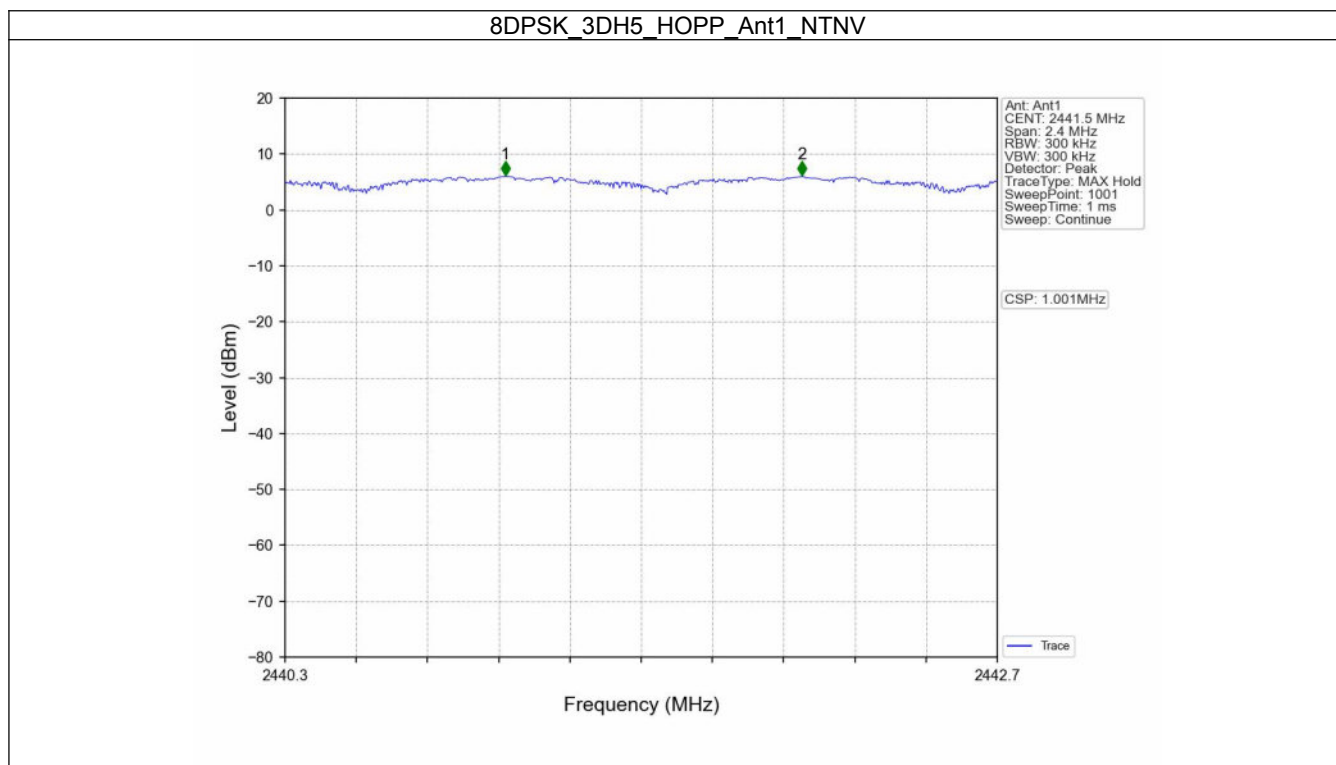
FCC ID: 2APOQ-T316R

3.2 Test Graph

3.2.1 Ant1



FCC ID: 2APOQ-T316R



FCC ID: 2APOQ-T316R

4. Number of Hopping Frequencies

4.1 Test Result

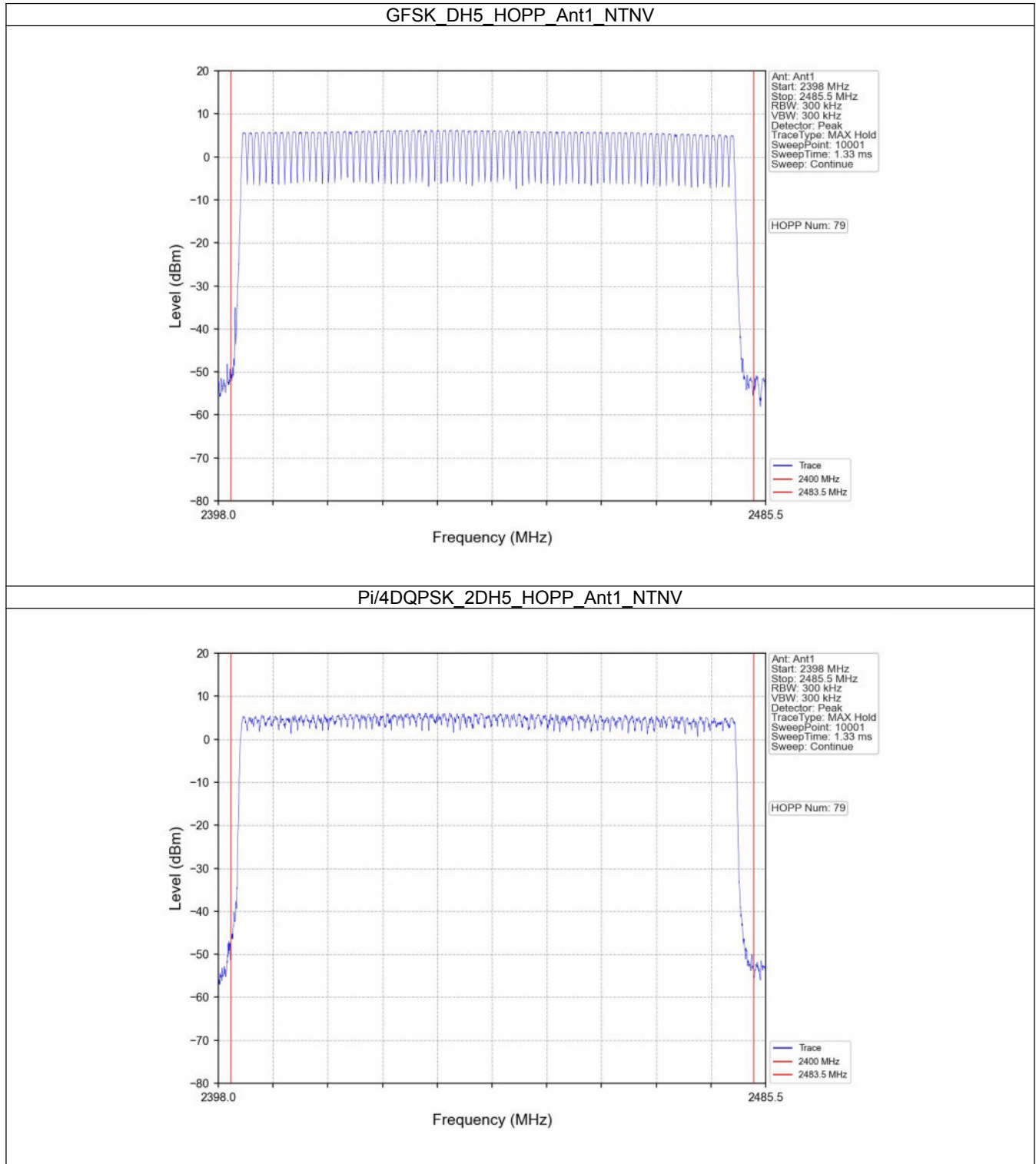
4.1.1 HoppNum

Mode	TX Type	Frequency (MHz)	Packet Type	Num of Hopping Frequencies		Verdict
				ANT1	Limit	
GFSK	SISO	HOPP	DH5	79	>=15	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	79	>=15	Pass
8DPSK	SISO	HOPP	3DH5	79	>=15	Pass

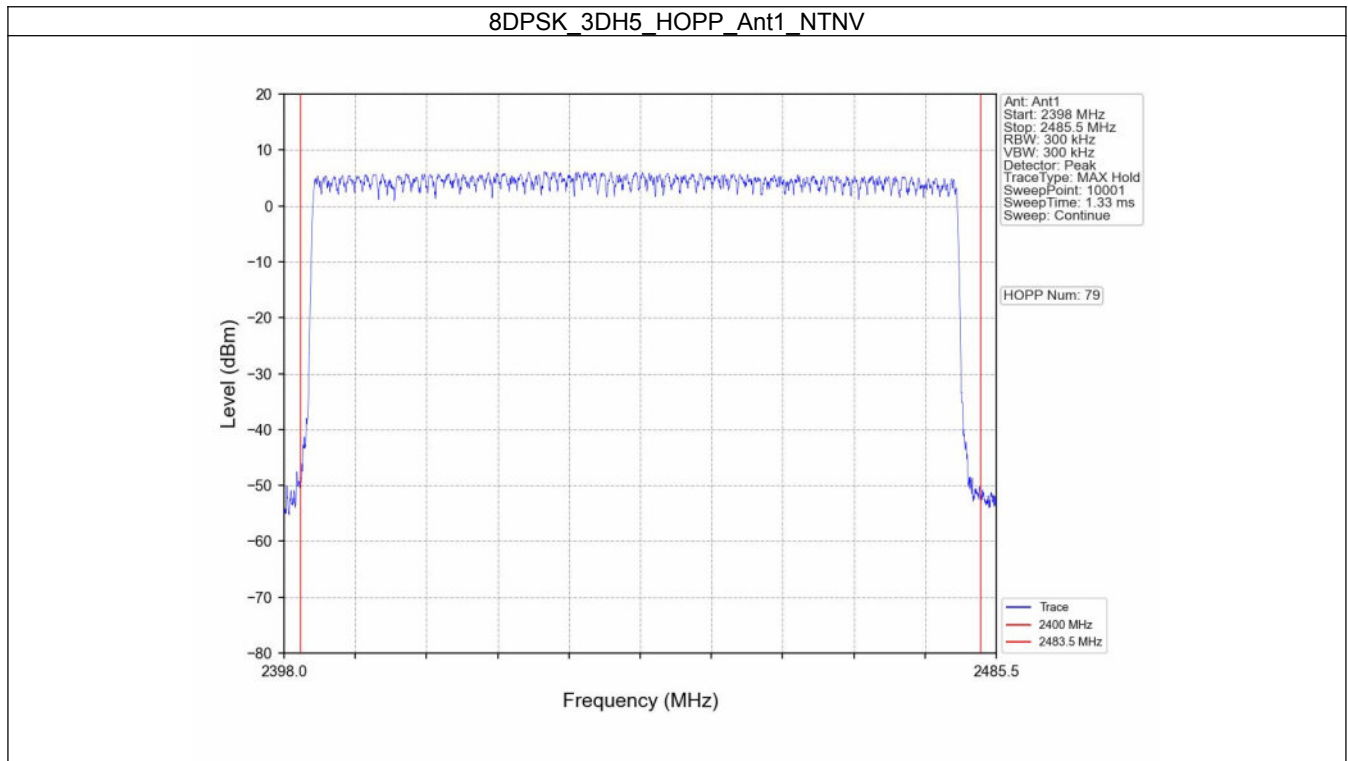
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4.2 Test Graph

4.2.1 HoppNum



FCC ID: 2APOQ-T316R



FCC ID: 2APOQ-T316R

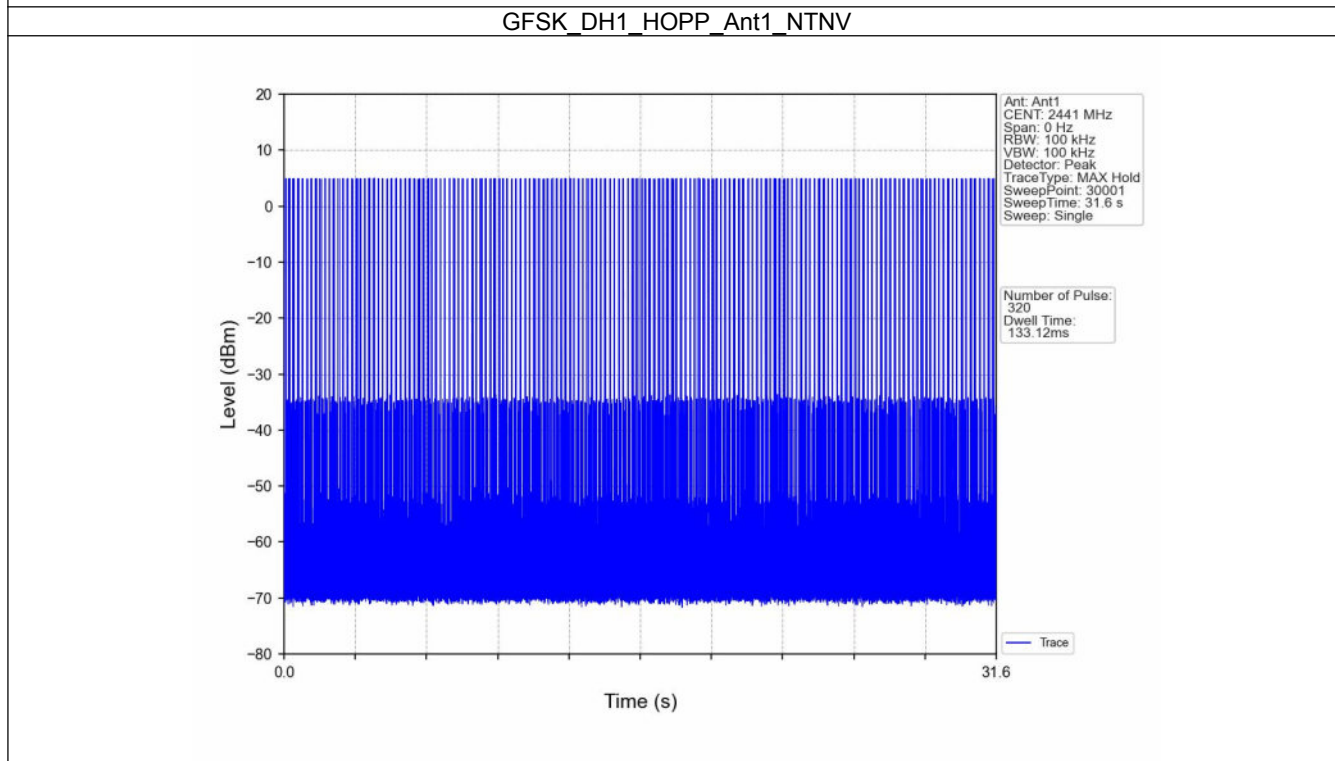
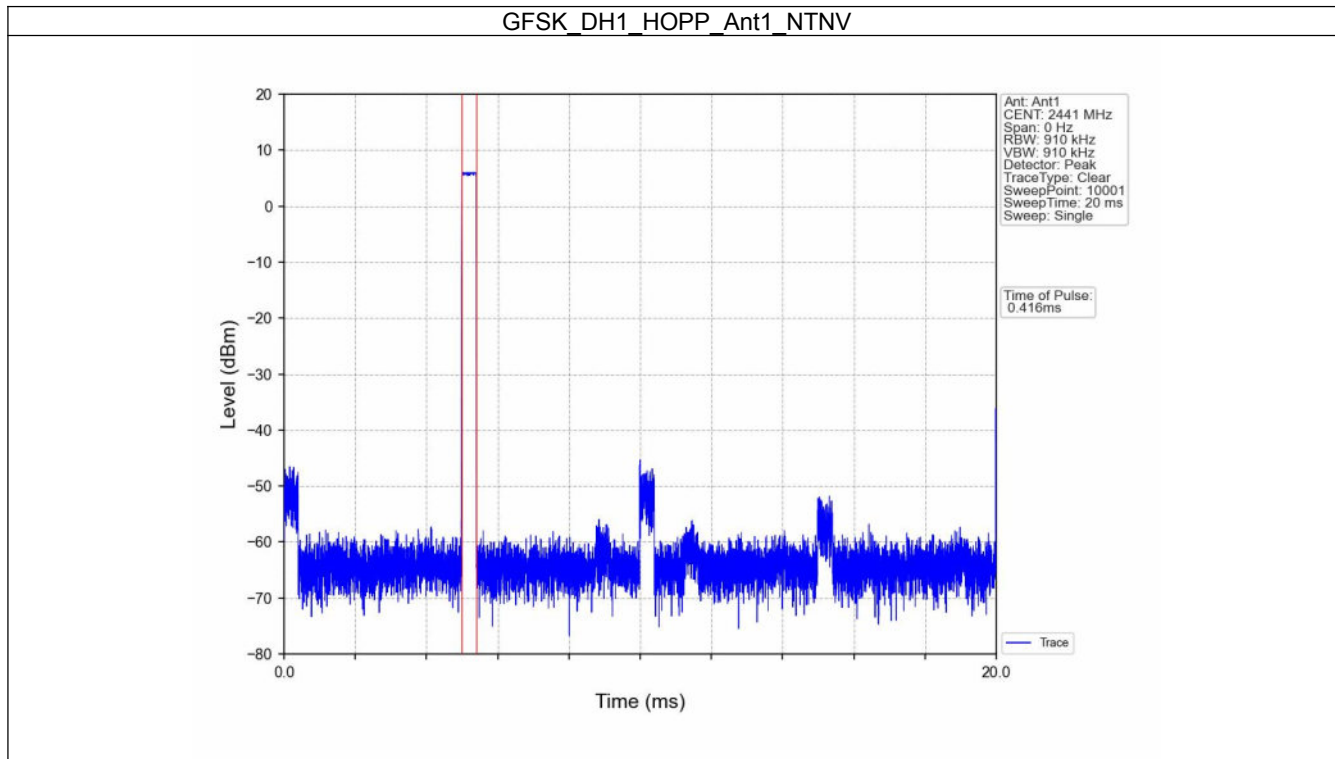
5. Time of Occupancy (Dwell Time)**5.1 Test Result****5.1.1 Ant1**

Ant1									
Mode	TX Type	Frequency (MHz)	Packet Type	Duration of Single Pulse (ms)	Observation Period (s)	Num of Pulse in Observation Period	Dwell Time (ms)	Limit (ms)	Verdict
GFSK	SISO	HOPP	DH1	0.416	31.600	320	133.120	<=400	Pass
			DH3	1.676	31.600	165	276.540	<=400	Pass
			DH5	2.924	31.600	113	330.412	<=400	Pass
Pi/4DQPSK	SISO	HOPP	2DH1	0.426	31.600	320	136.320	<=400	Pass
			2DH3	1.682	31.600	154	259.028	<=400	Pass
			2DH5	2.924	31.600	120	350.880	<=400	Pass
8DPSK	SISO	HOPP	3DH1	0.428	31.600	320	136.960	<=400	Pass
			3DH3	1.678	31.600	160	268.480	<=400	Pass
			3DH5	2.932	31.600	114	334.248	<=400	Pass

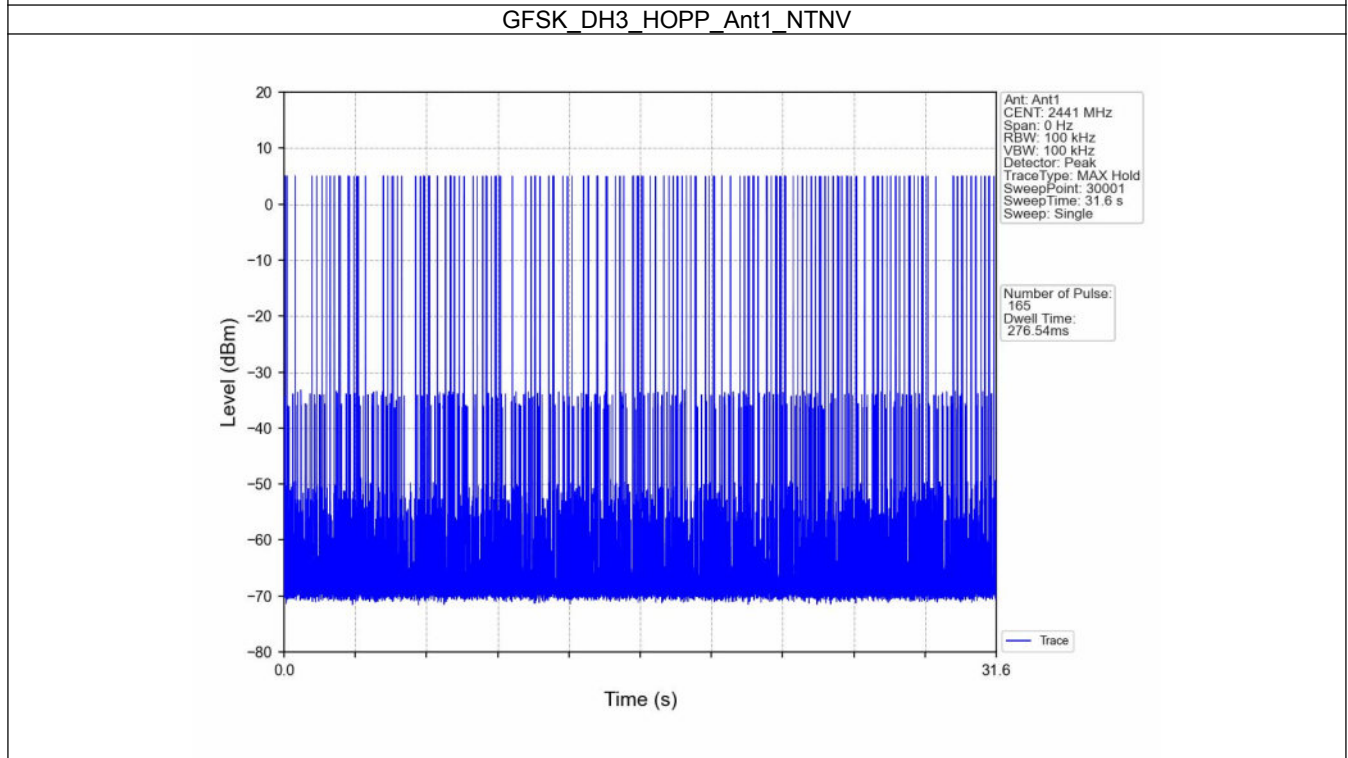
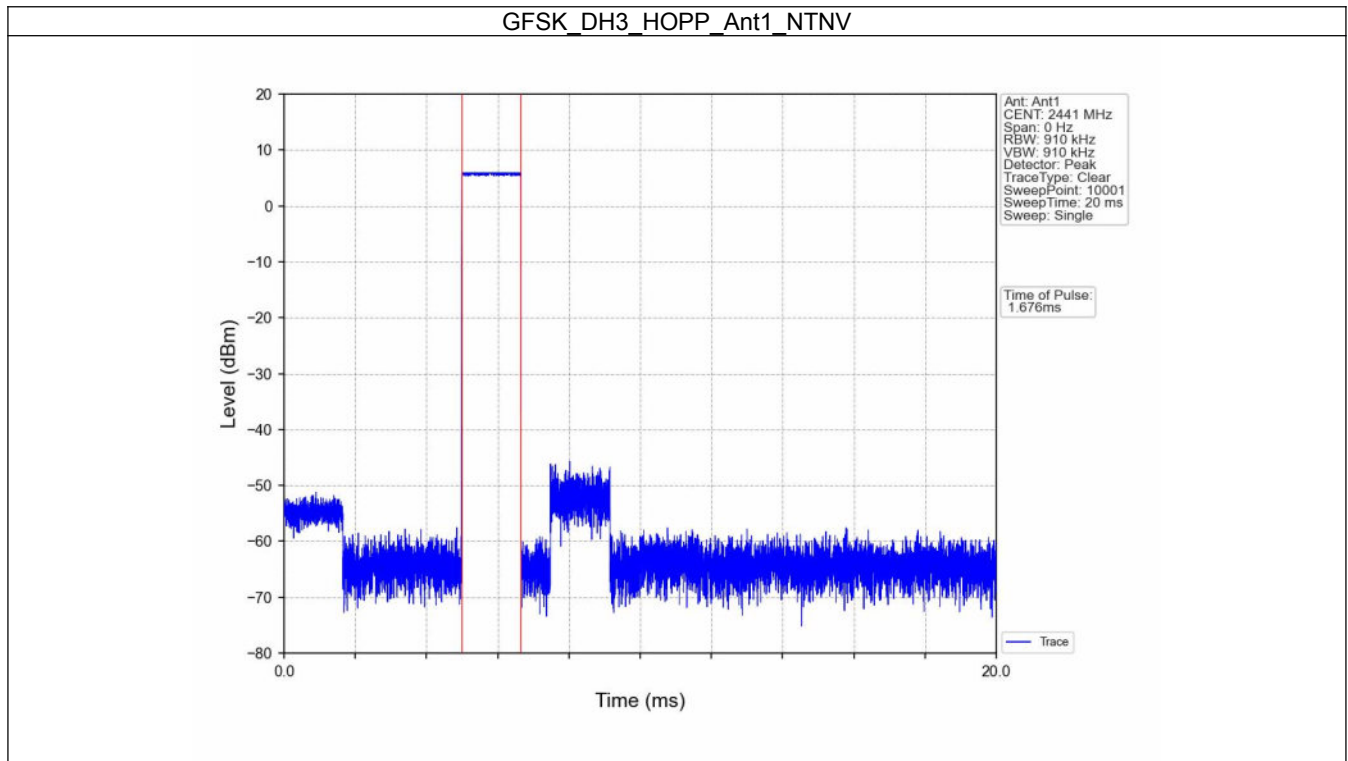
FCC ID: 2APOQ-T316R

5.2 Test Graph

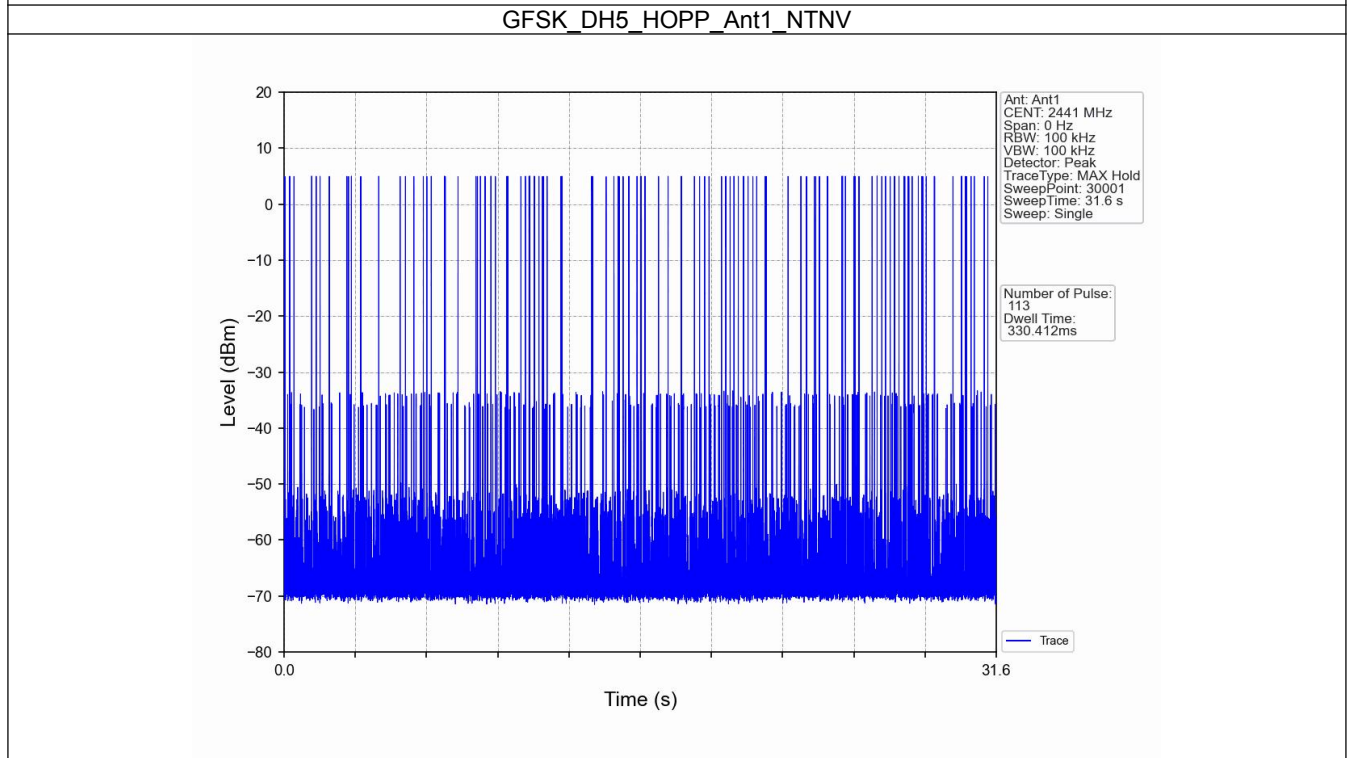
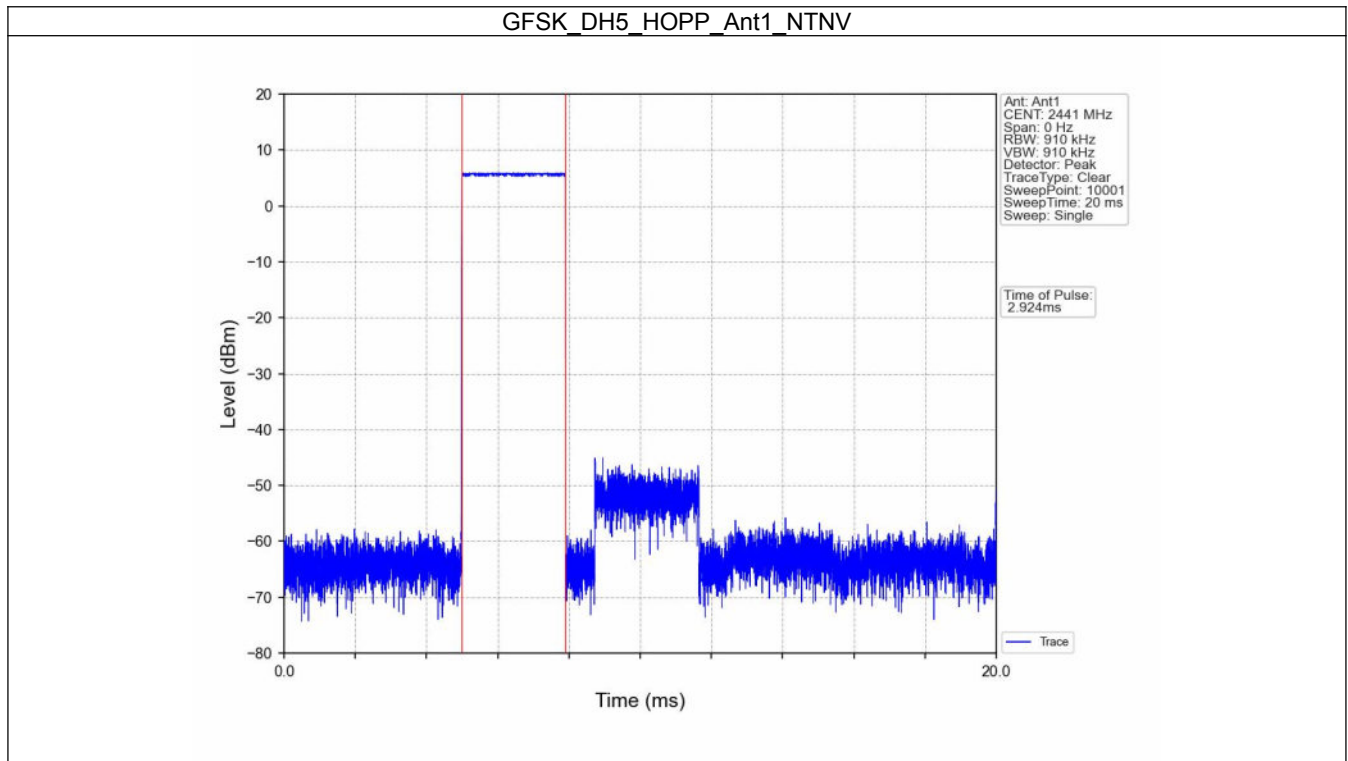
5.2.1 Ant1



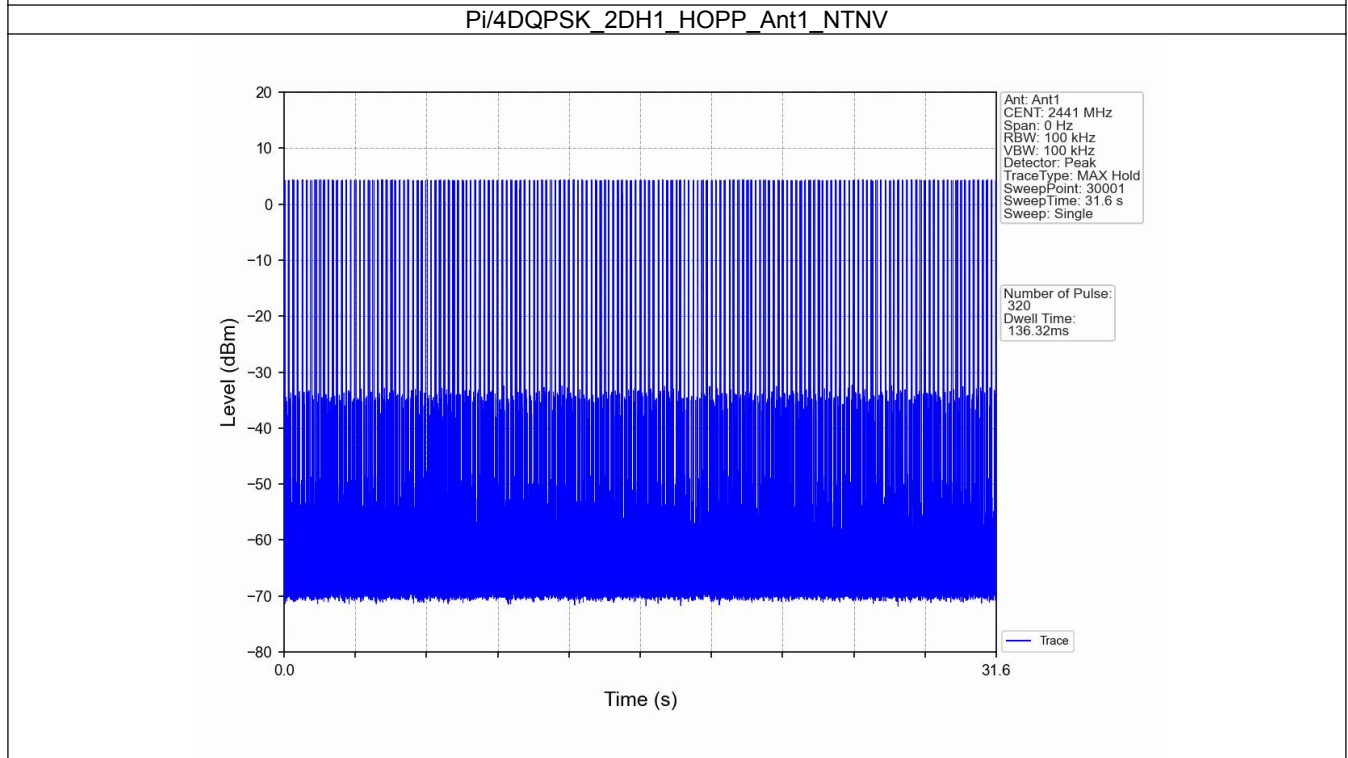
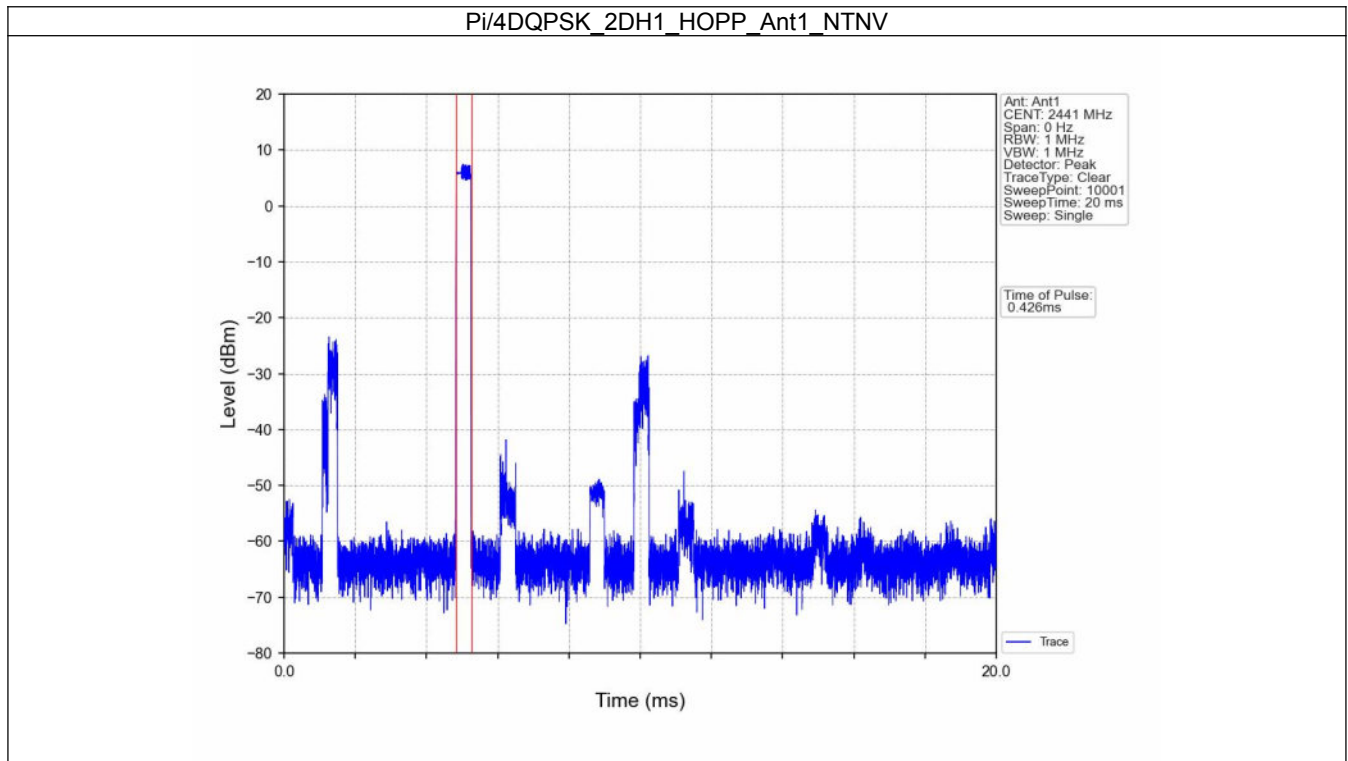
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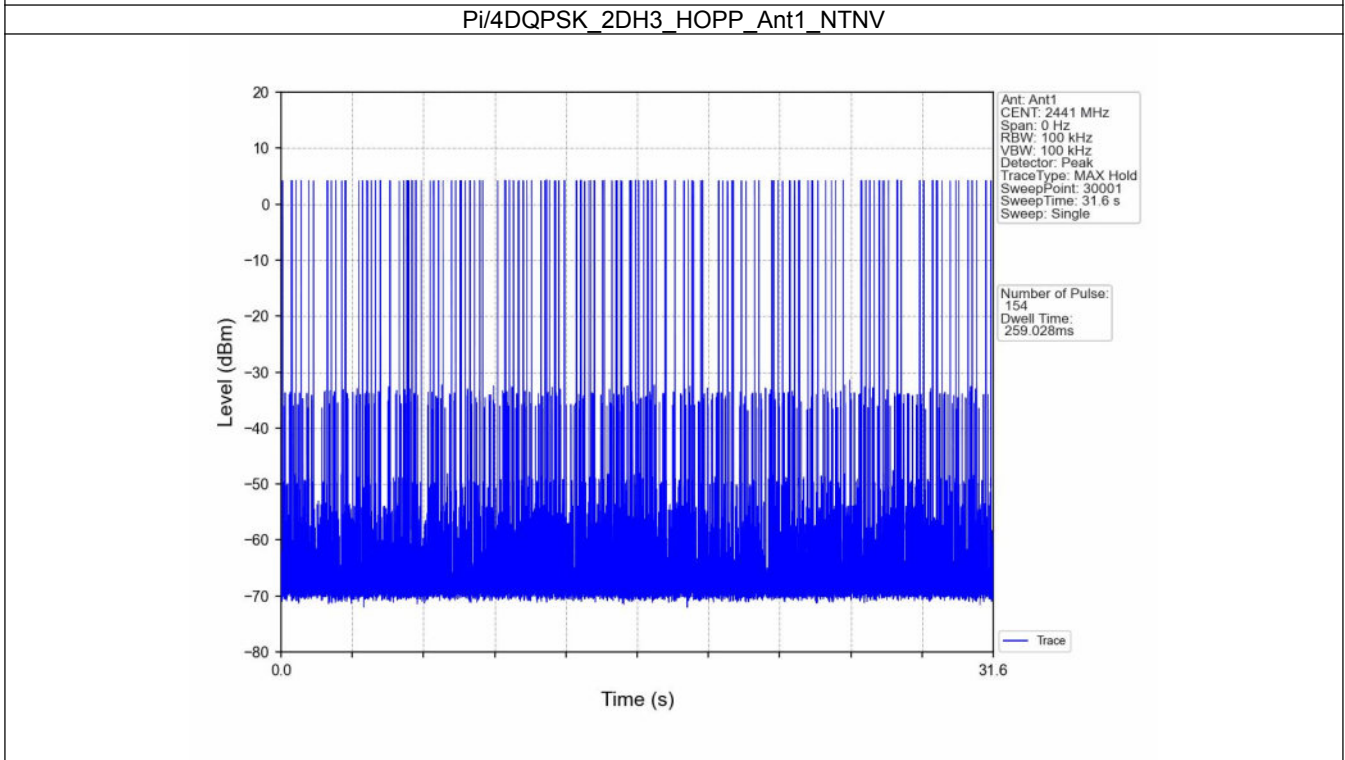
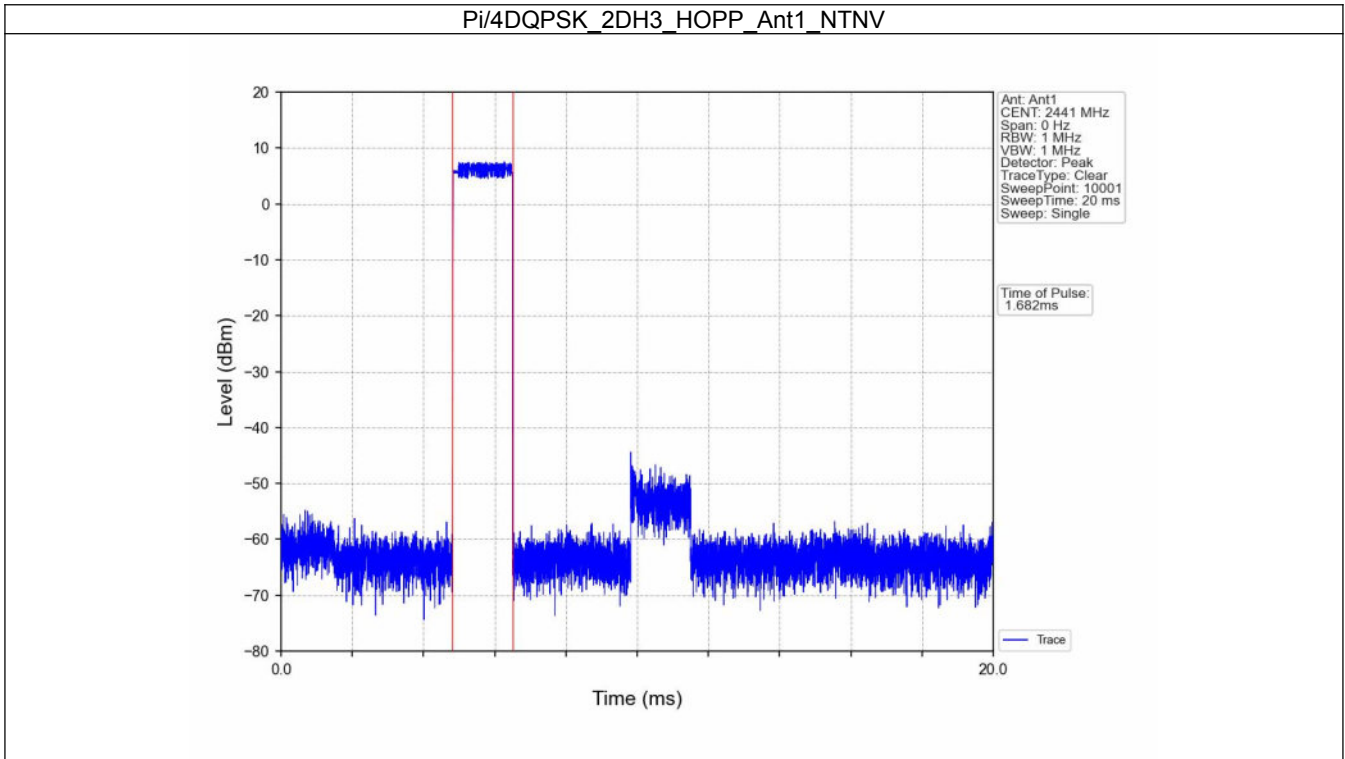
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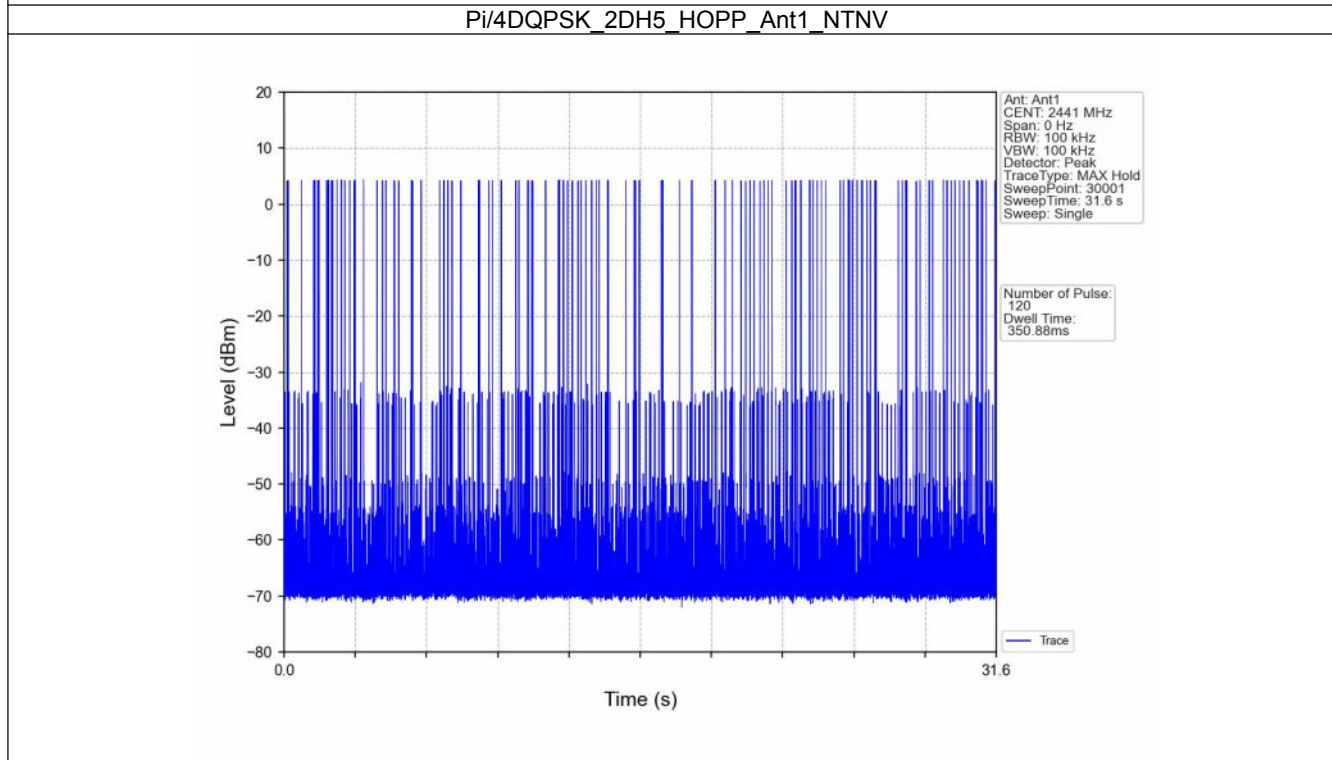
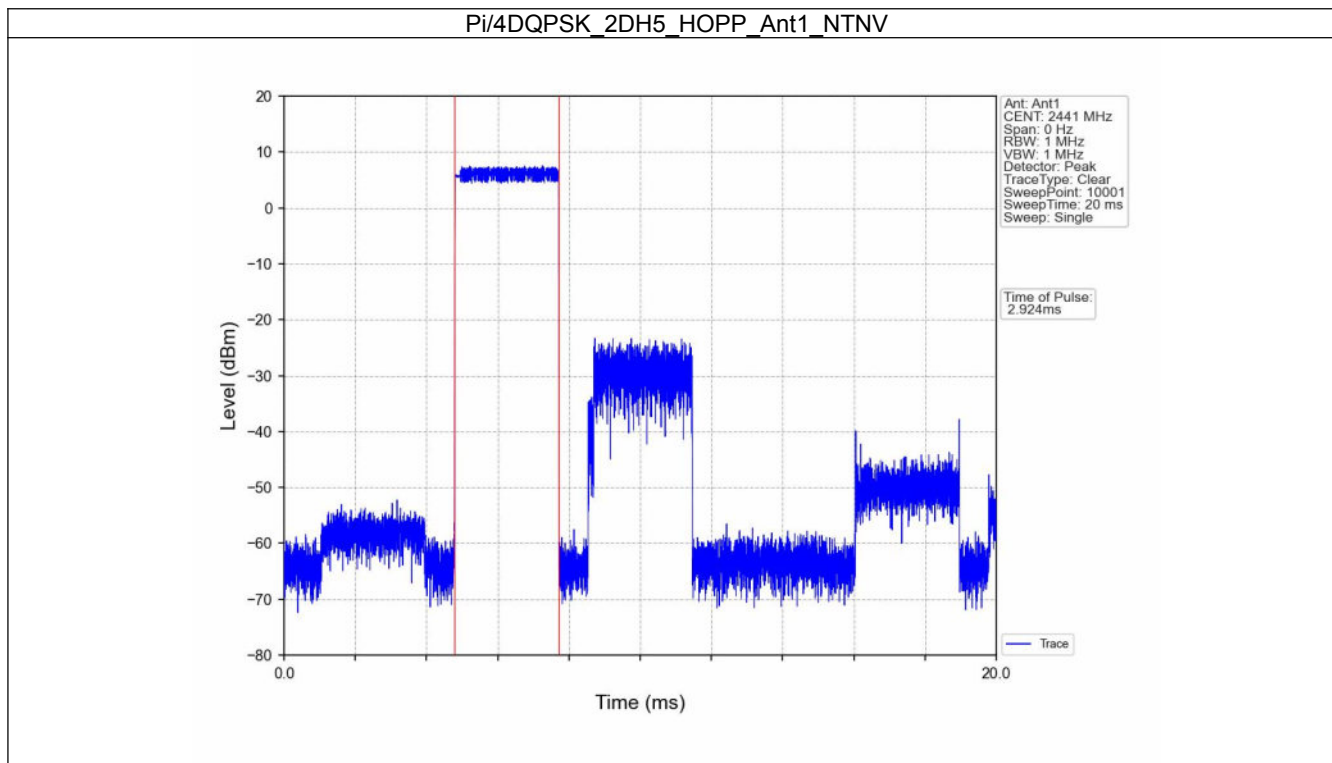
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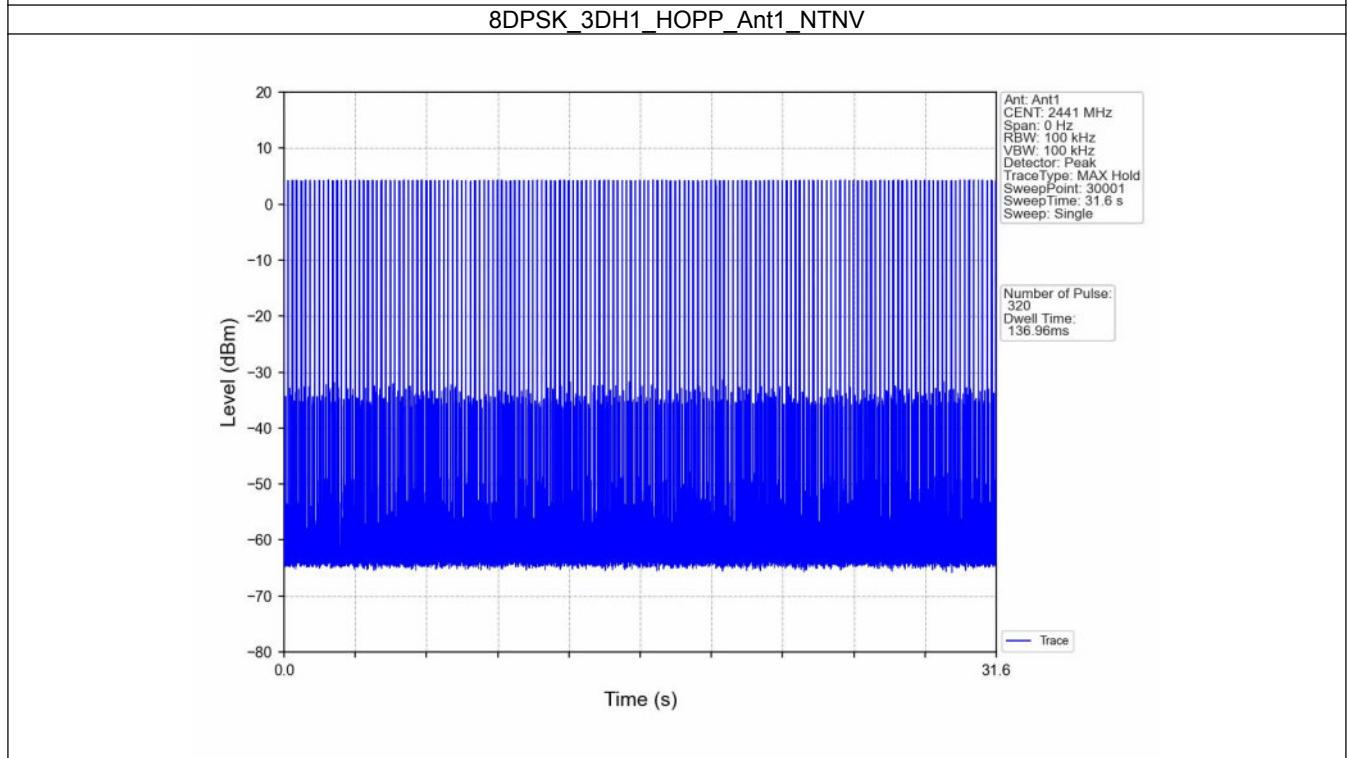
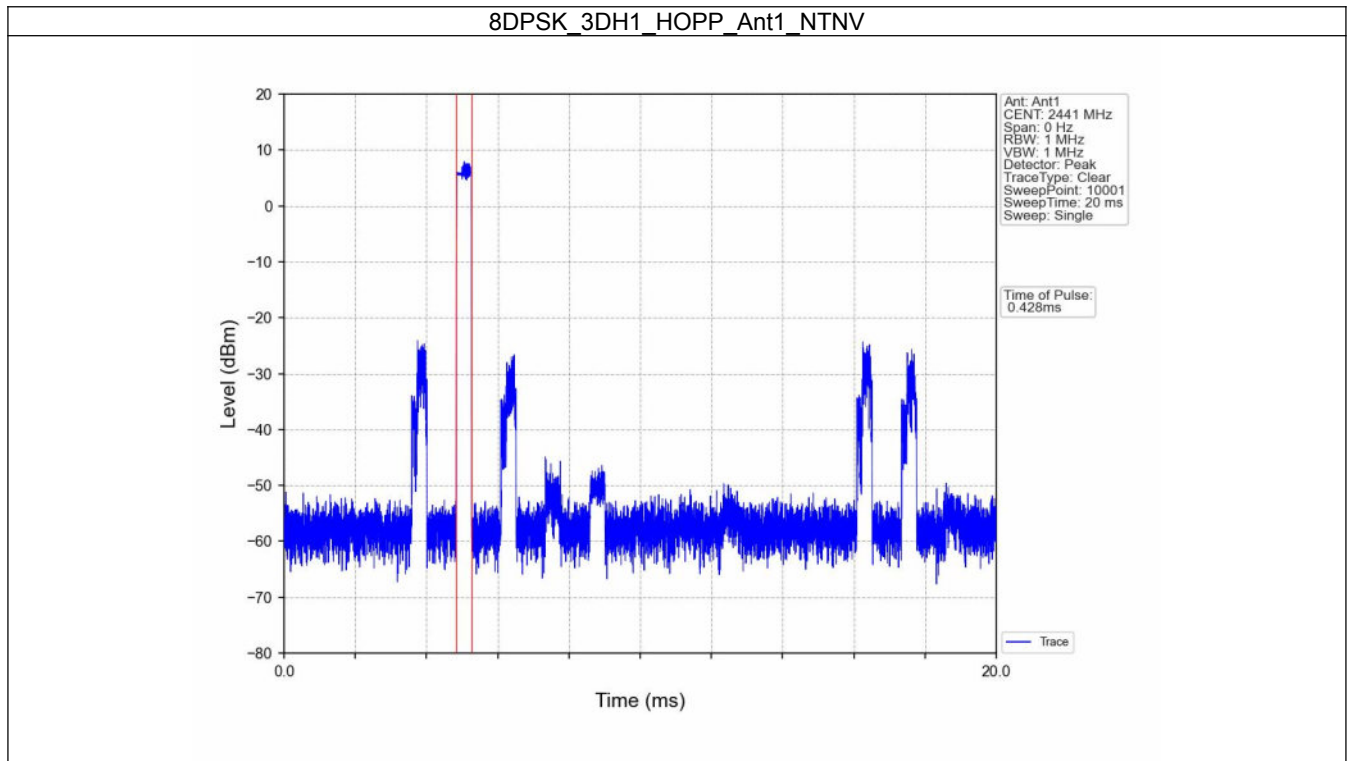
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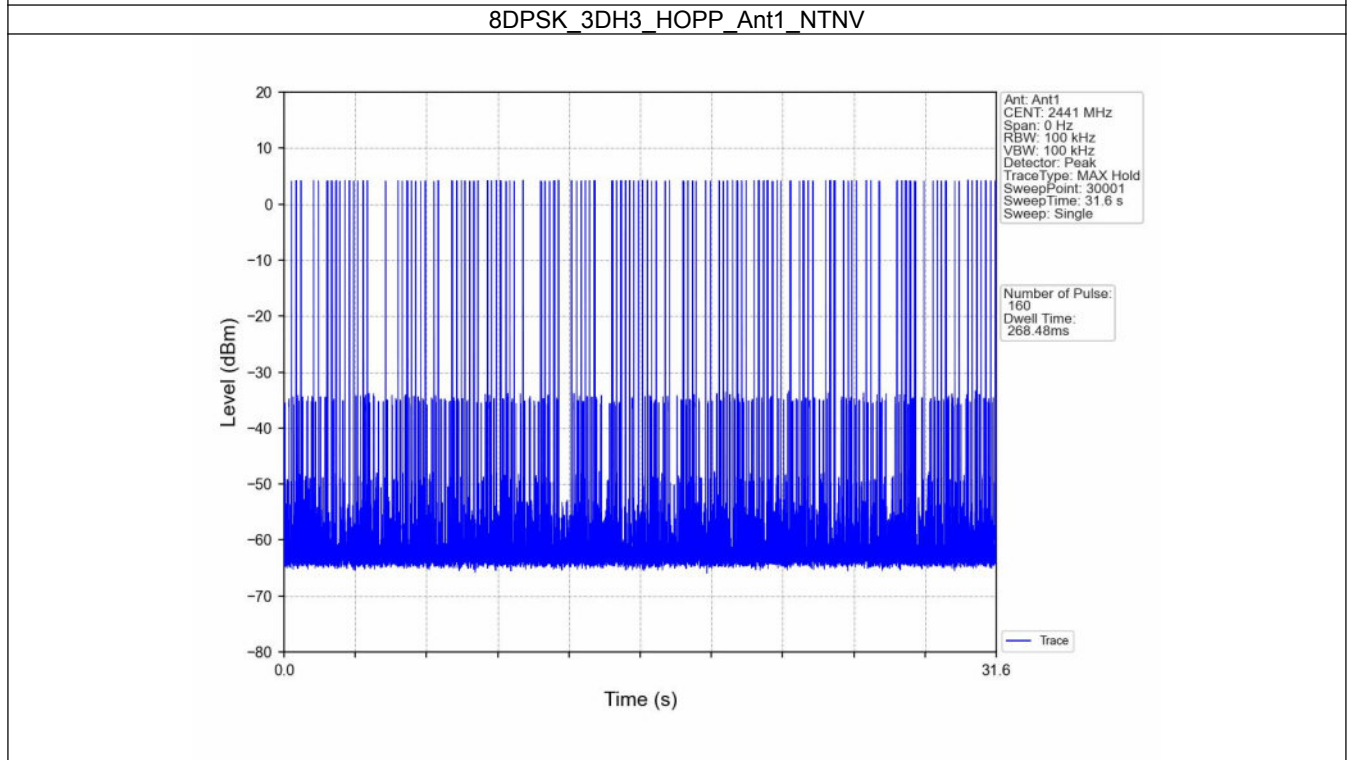
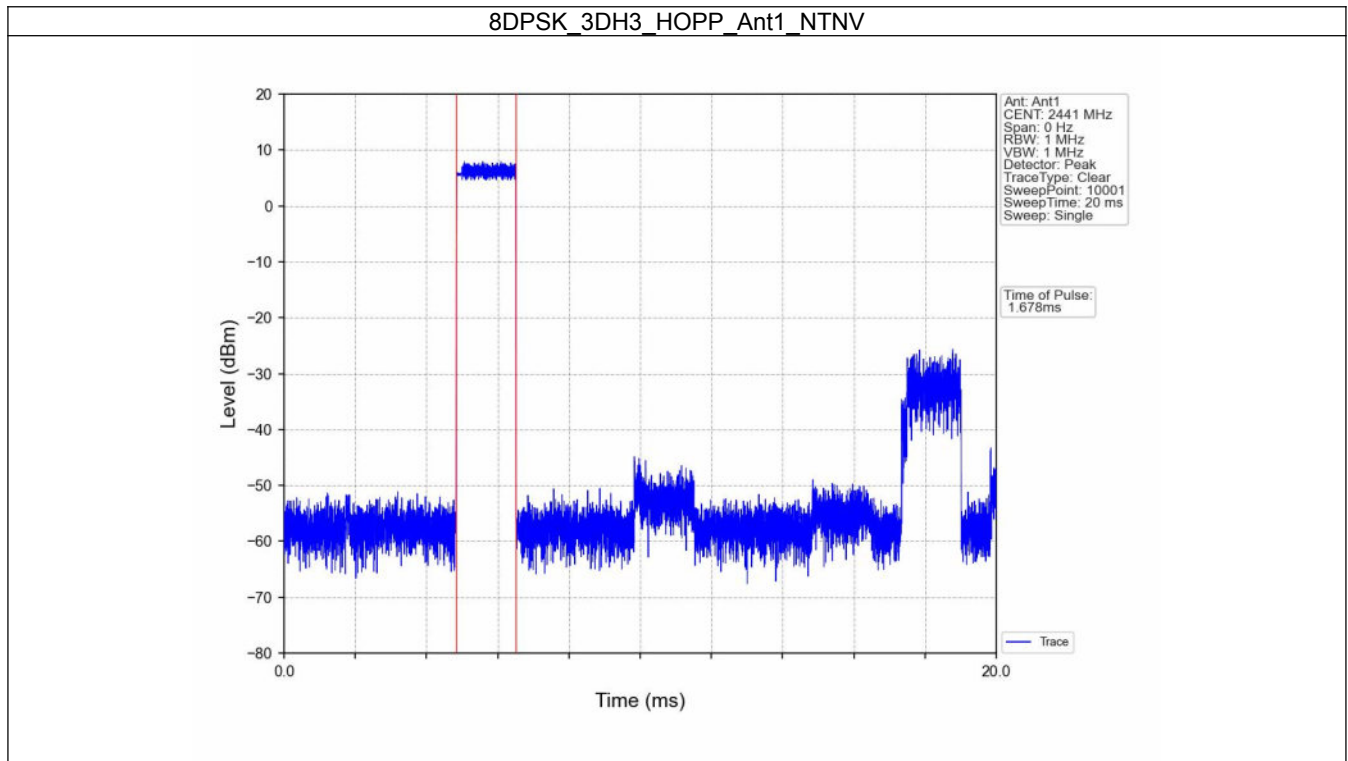
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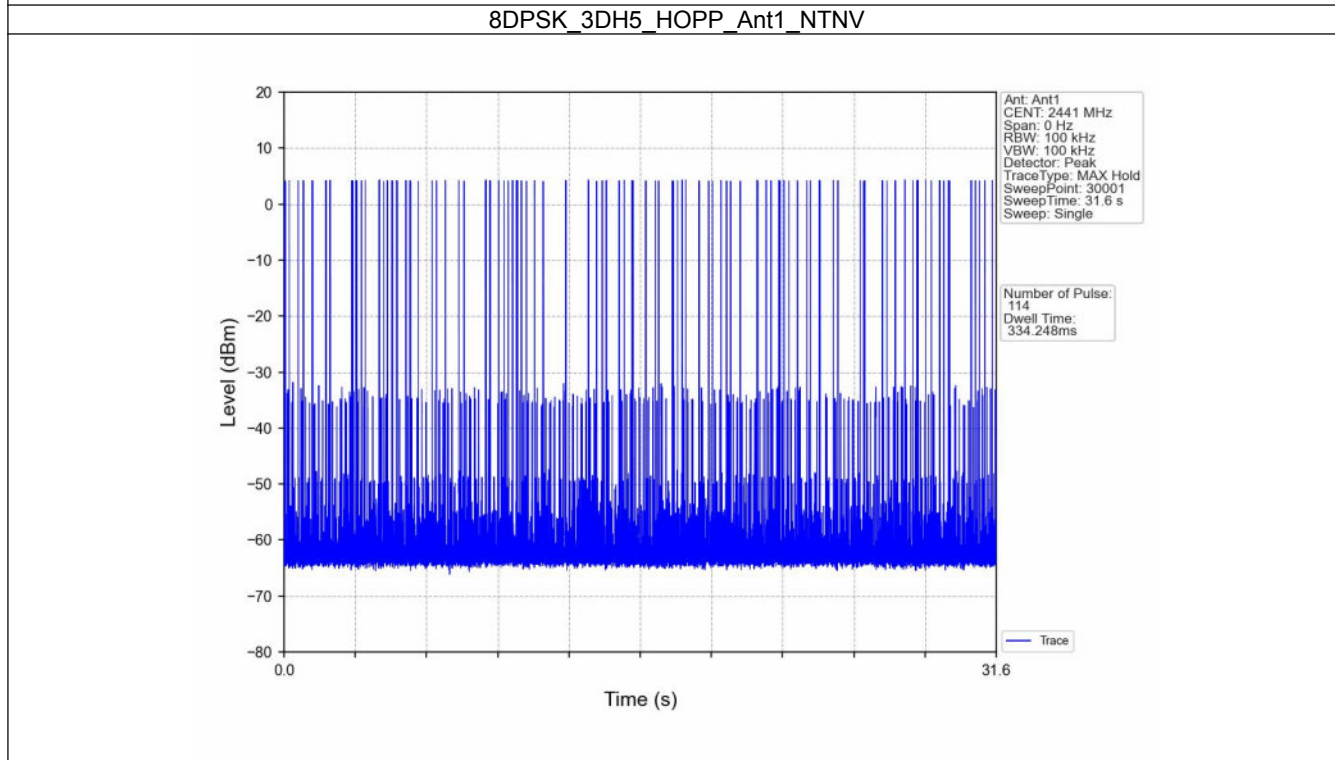
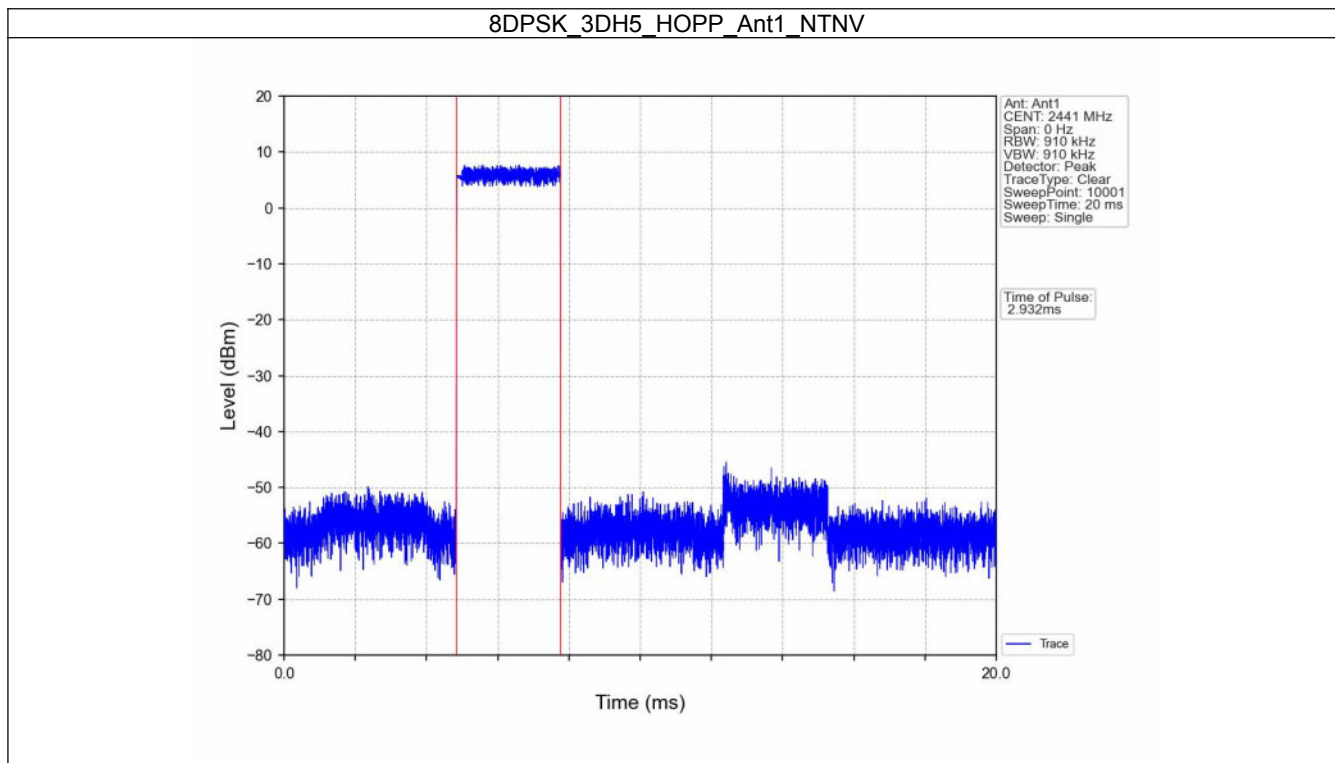
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FCC ID: 2APOQ-T316R

6. Unwanted Emissions In Non-restricted Frequency Bands

6.1 Test Result

6.1.1 Ref

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)
GFSK	SISO	2402	DH5	1	5.53
		2441	DH5	1	5.96
		2480	DH5	1	4.94
Pi/4DQPSK	SISO	2402	2DH5	1	5.44
		2441	2DH5	1	5.78
		2480	2DH5	1	4.87
8DPSK	SISO	2402	3DH5	1	5.28
		2441	3DH5	1	5.87
		2480	3DH5	1	4.71

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

6.1.2 CSE

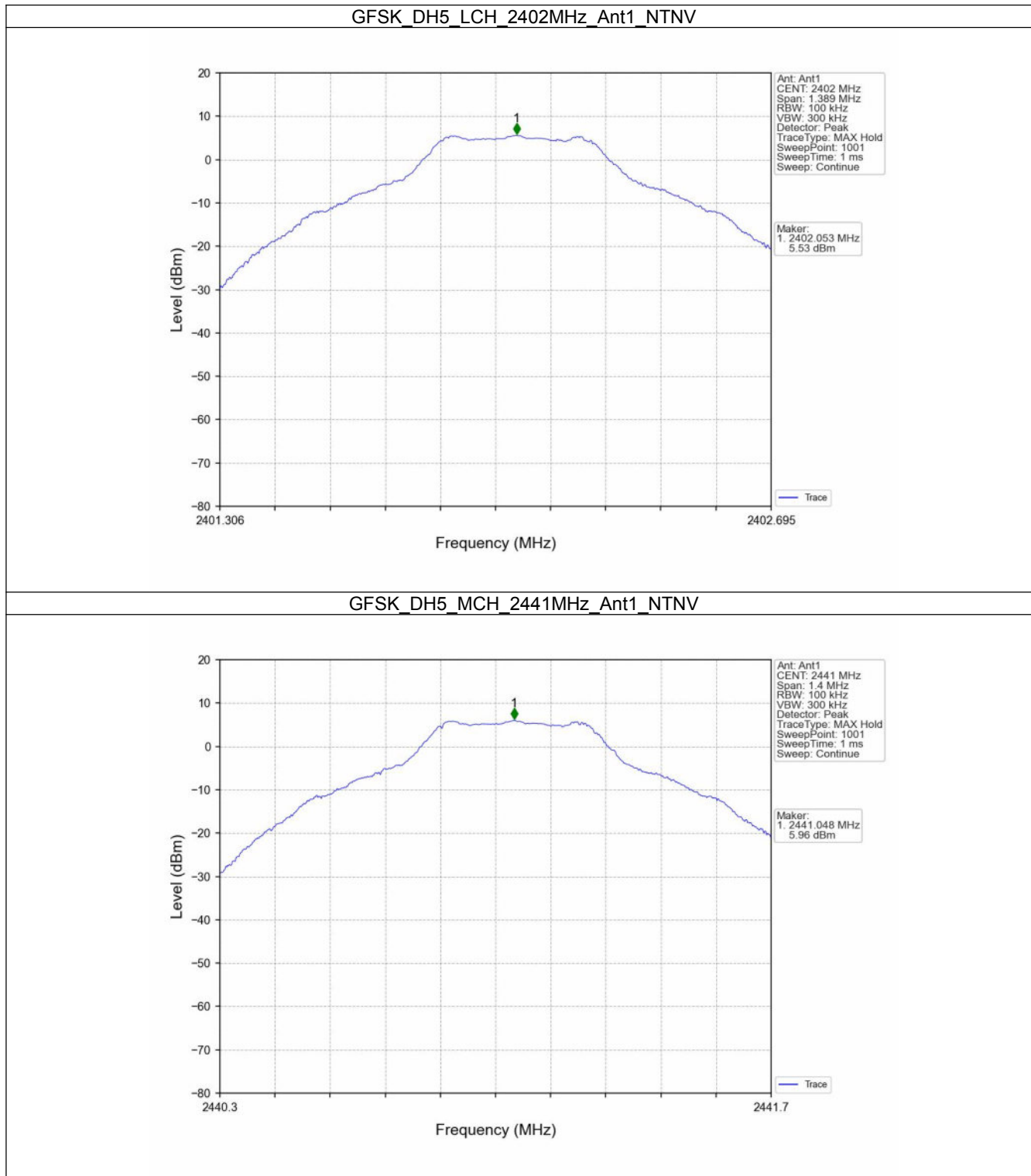
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
GFSK	SISO	2402	DH5	1	5.96	-14.04	Pass
		2441	DH5	1	5.96	-14.04	Pass
		2480	DH5	1	5.96	-14.04	Pass
		HOPP	DH5	1	5.96	-14.04	Pass
					5.96	-14.04	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	5.78	-14.22	Pass
		2441	2DH5	1	5.78	-14.22	Pass
		2480	2DH5	1	5.78	-14.22	Pass
		HOPP	2DH5	1	5.78	-14.22	Pass
					5.78	-14.22	Pass
8DPSK	SISO	2402	3DH5	1	5.87	-14.13	Pass
		2441	3DH5	1	5.87	-14.13	Pass
		2480	3DH5	1	5.87	-14.13	Pass
		HOPP	3DH5	1	5.87	-14.13	Pass
					5.87	-14.13	Pass

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

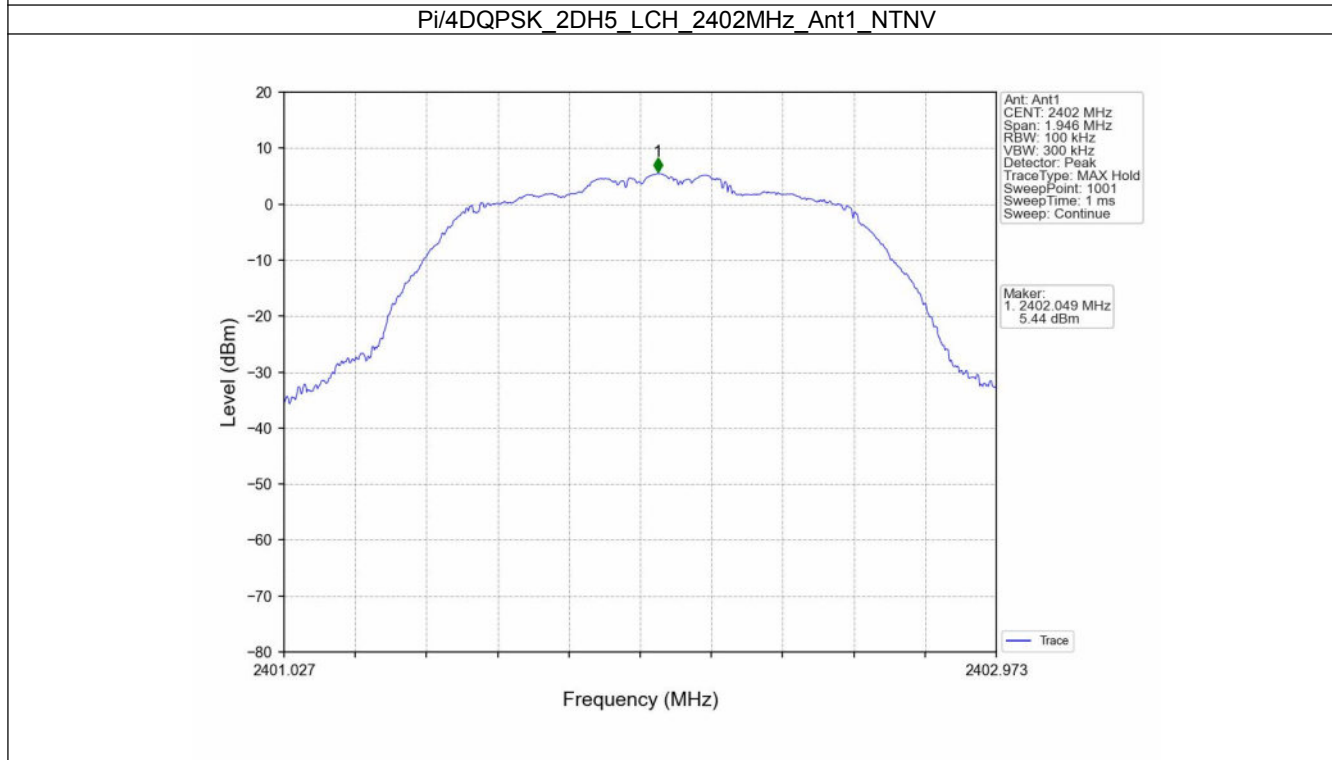
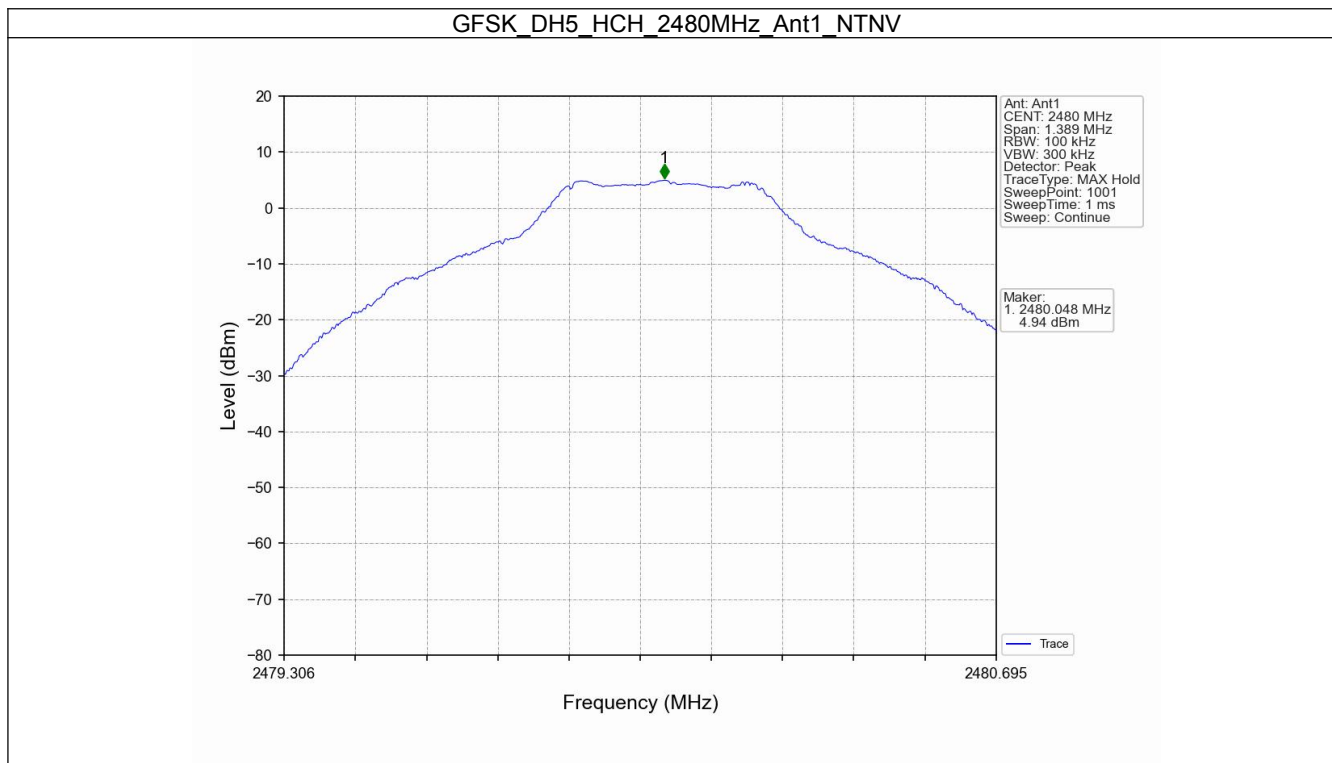
FCC ID: 2APOQ-T316R

6.2 Test Graph

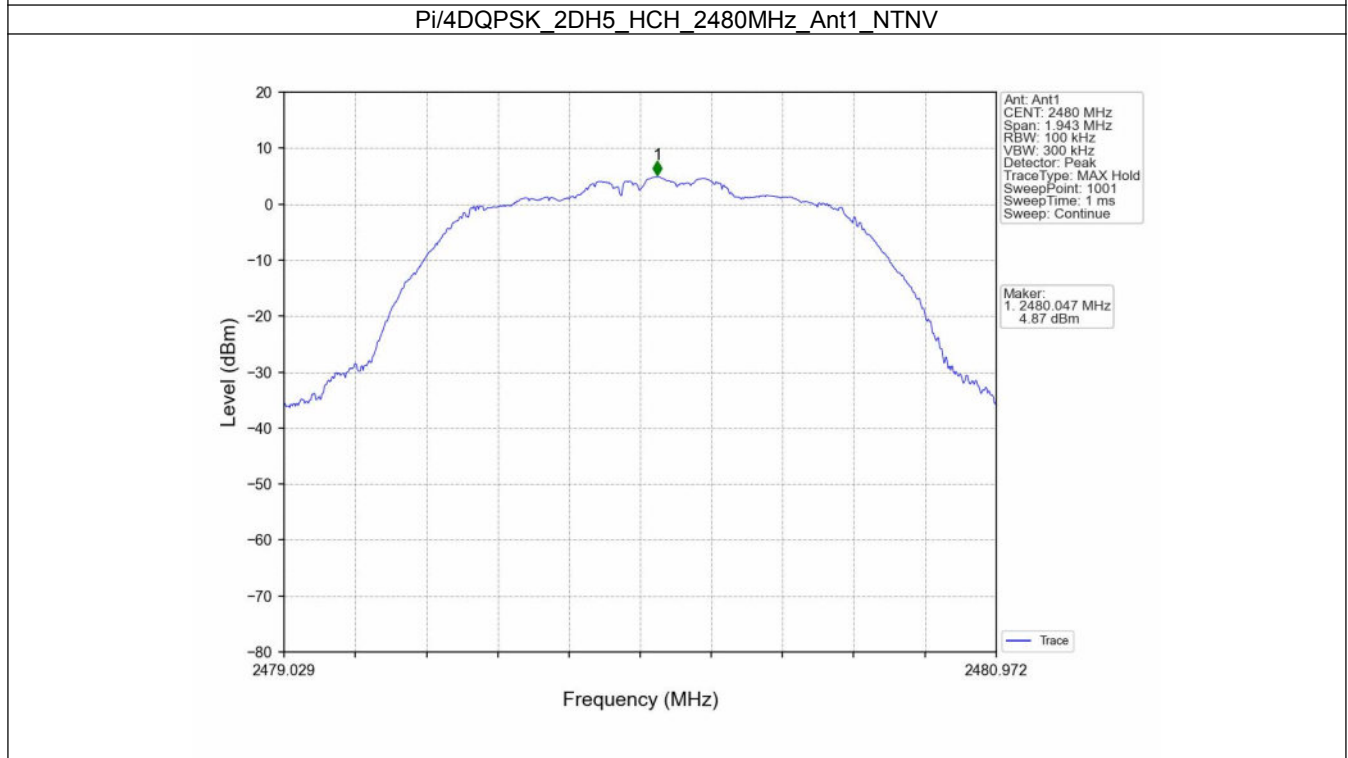
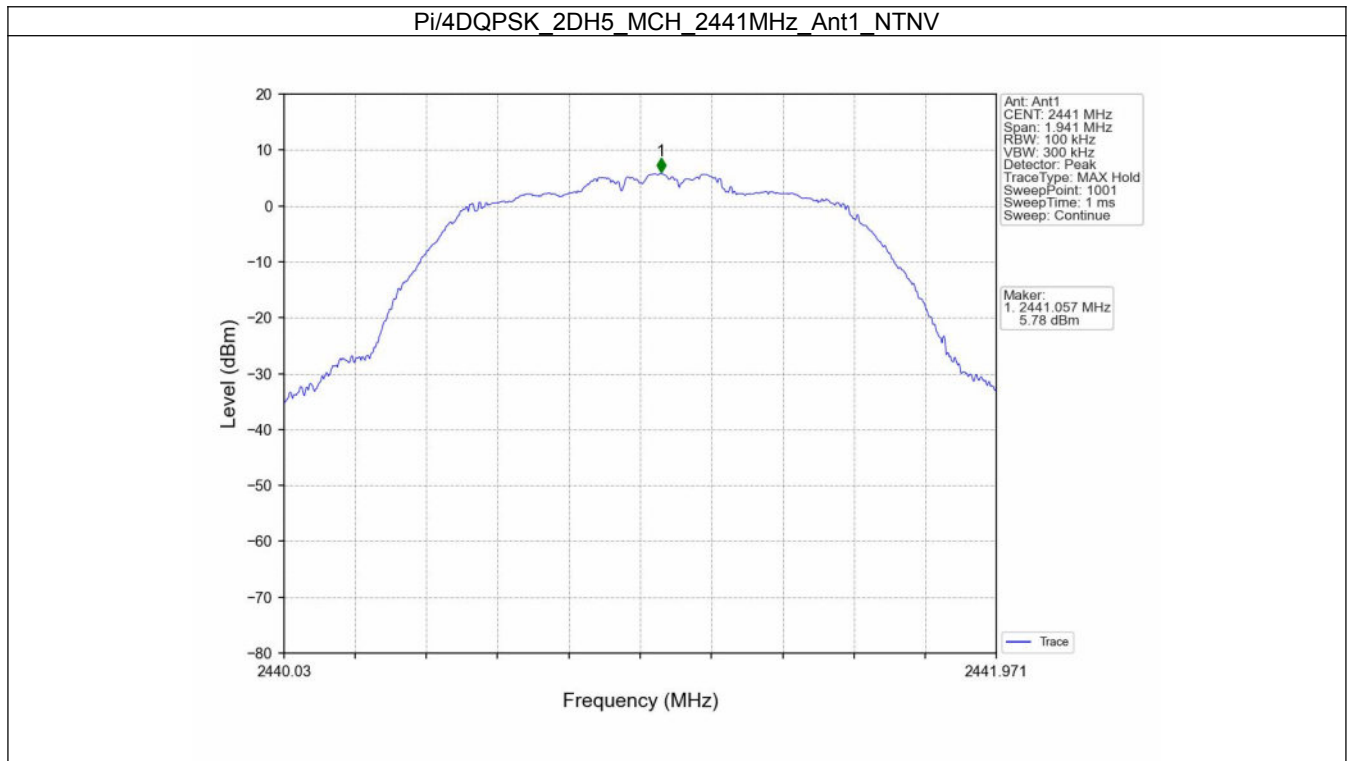
6.2.1 Ref



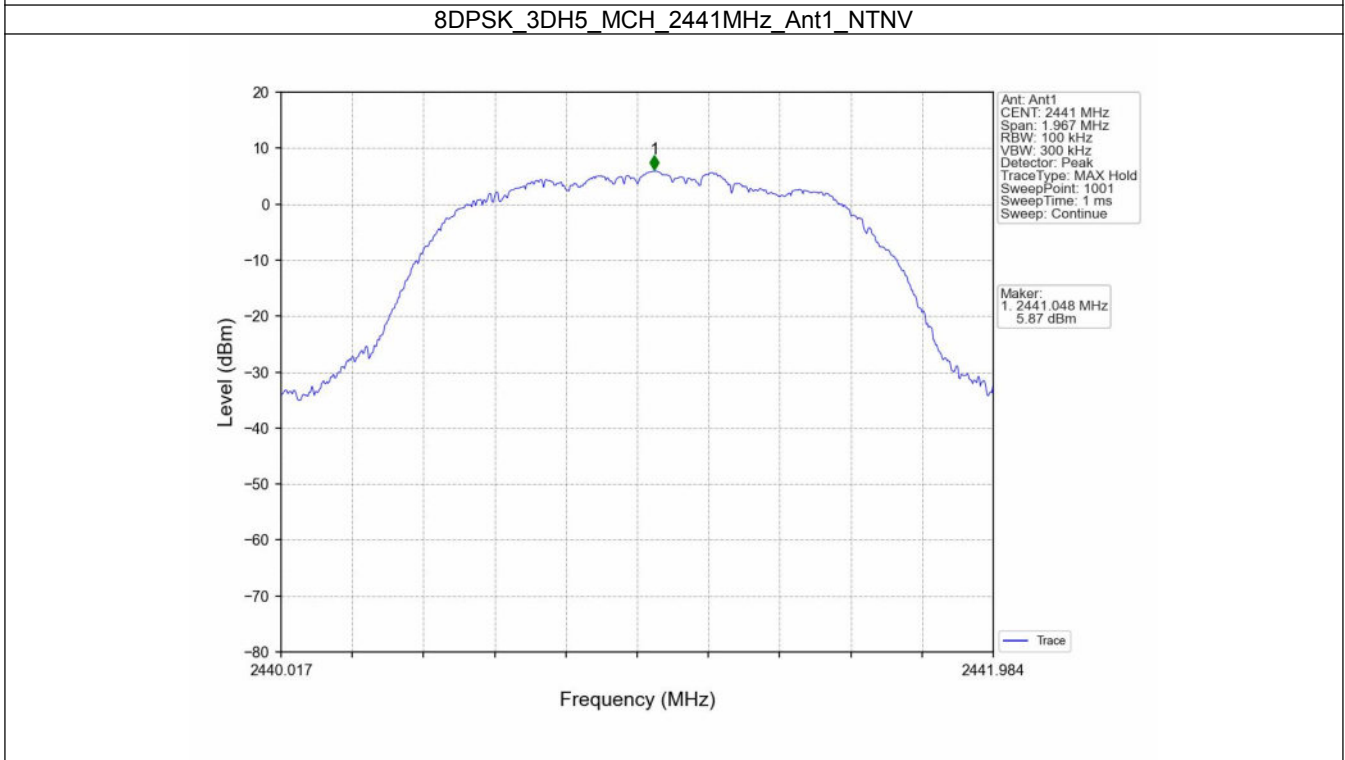
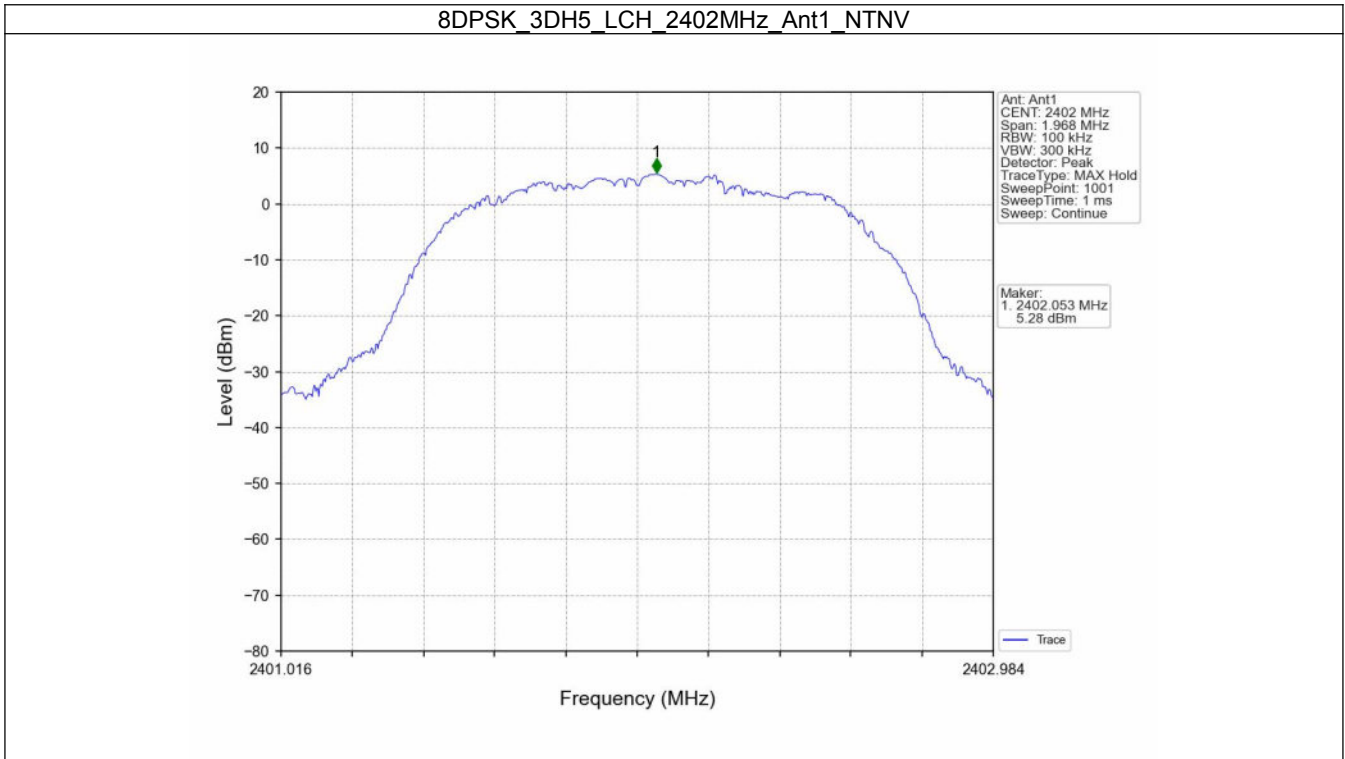
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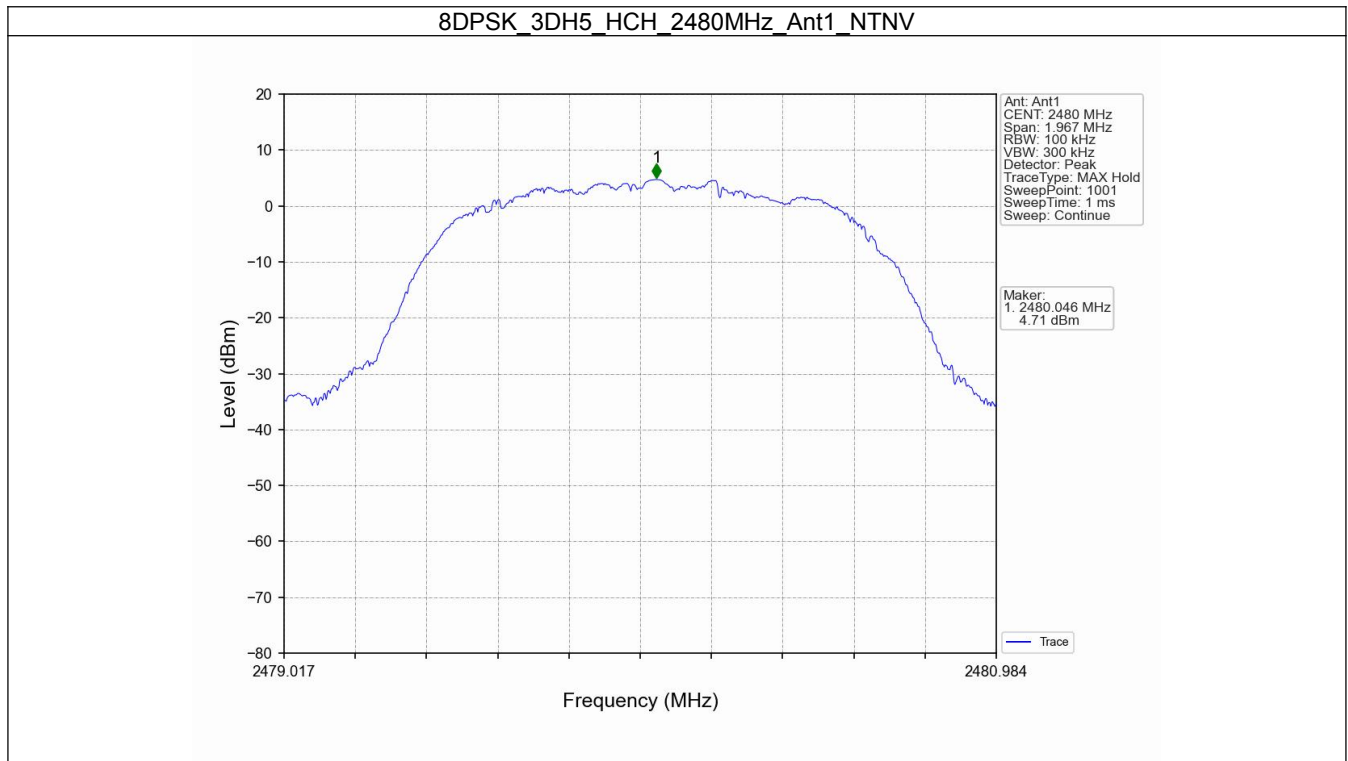
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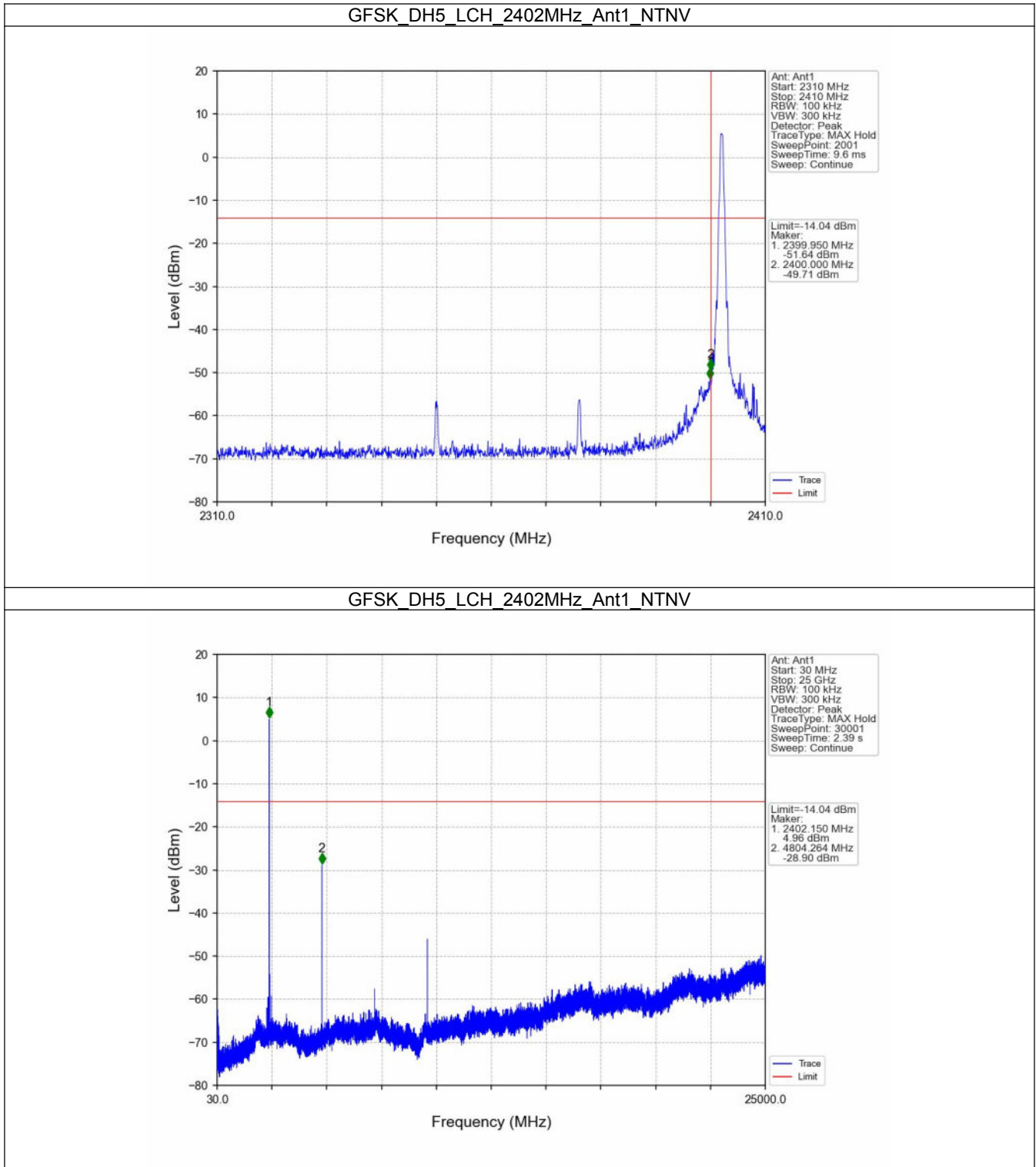


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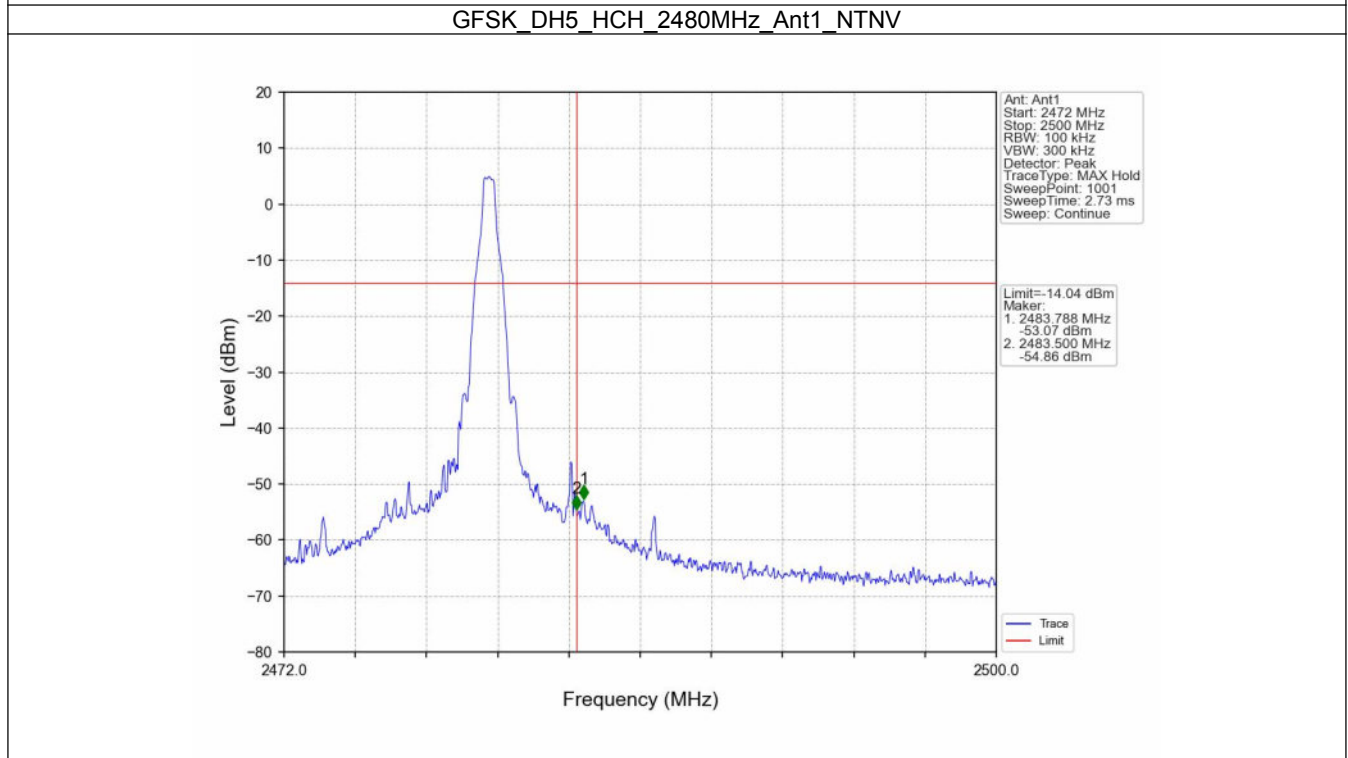
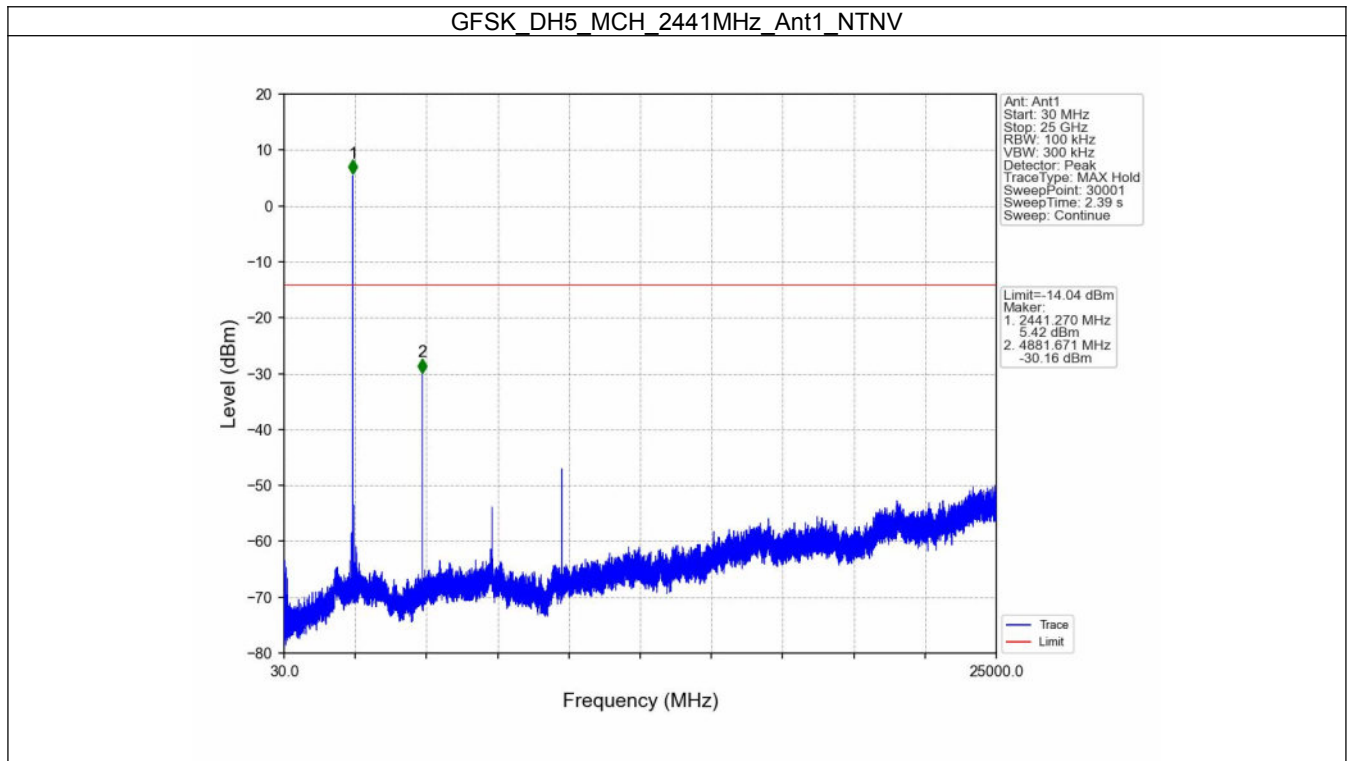


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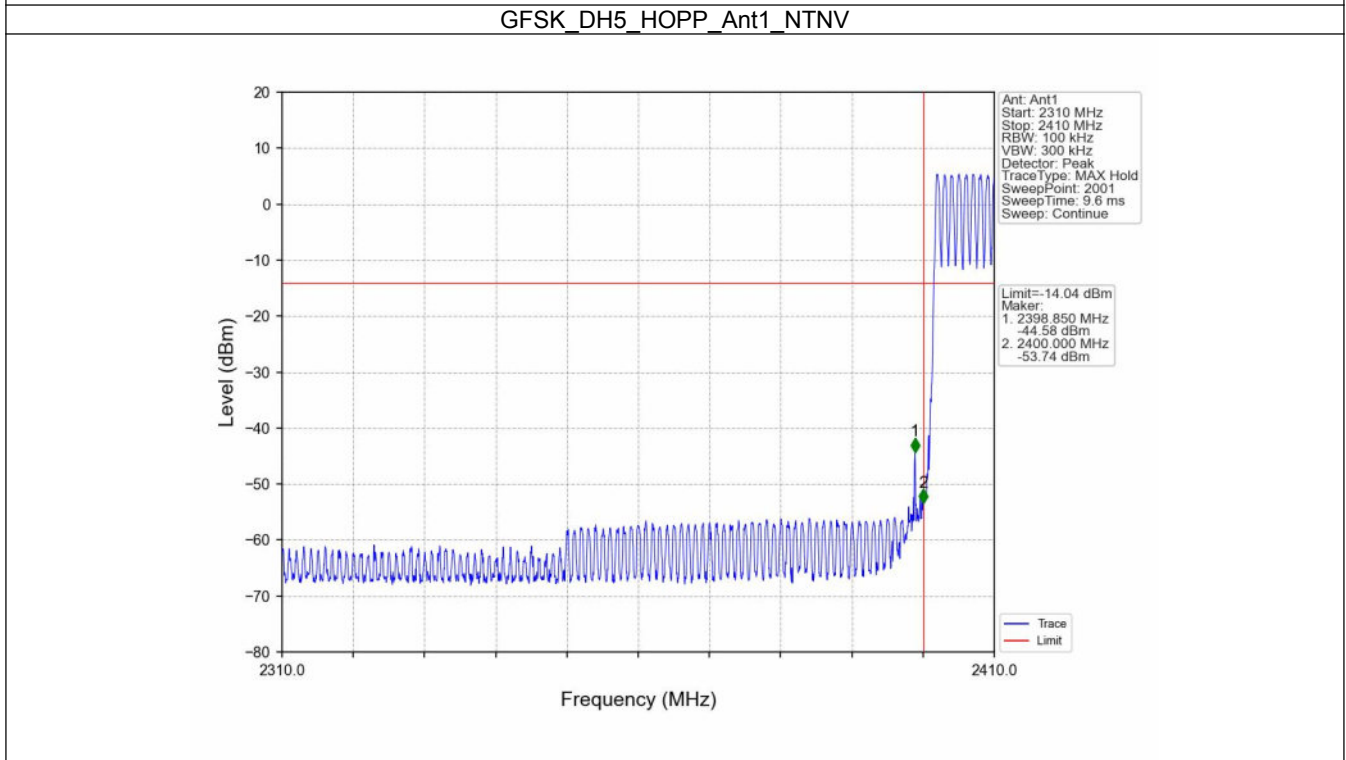
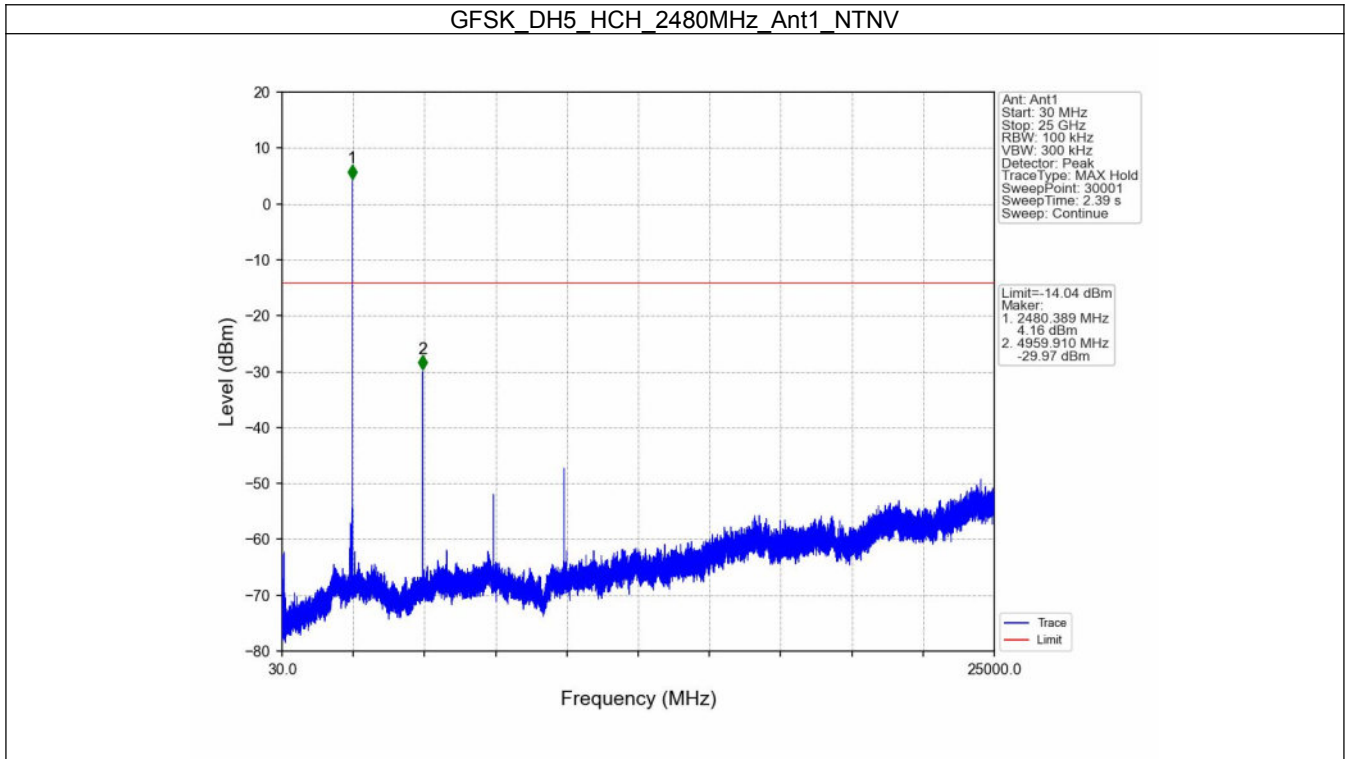
6.2.2 CSE



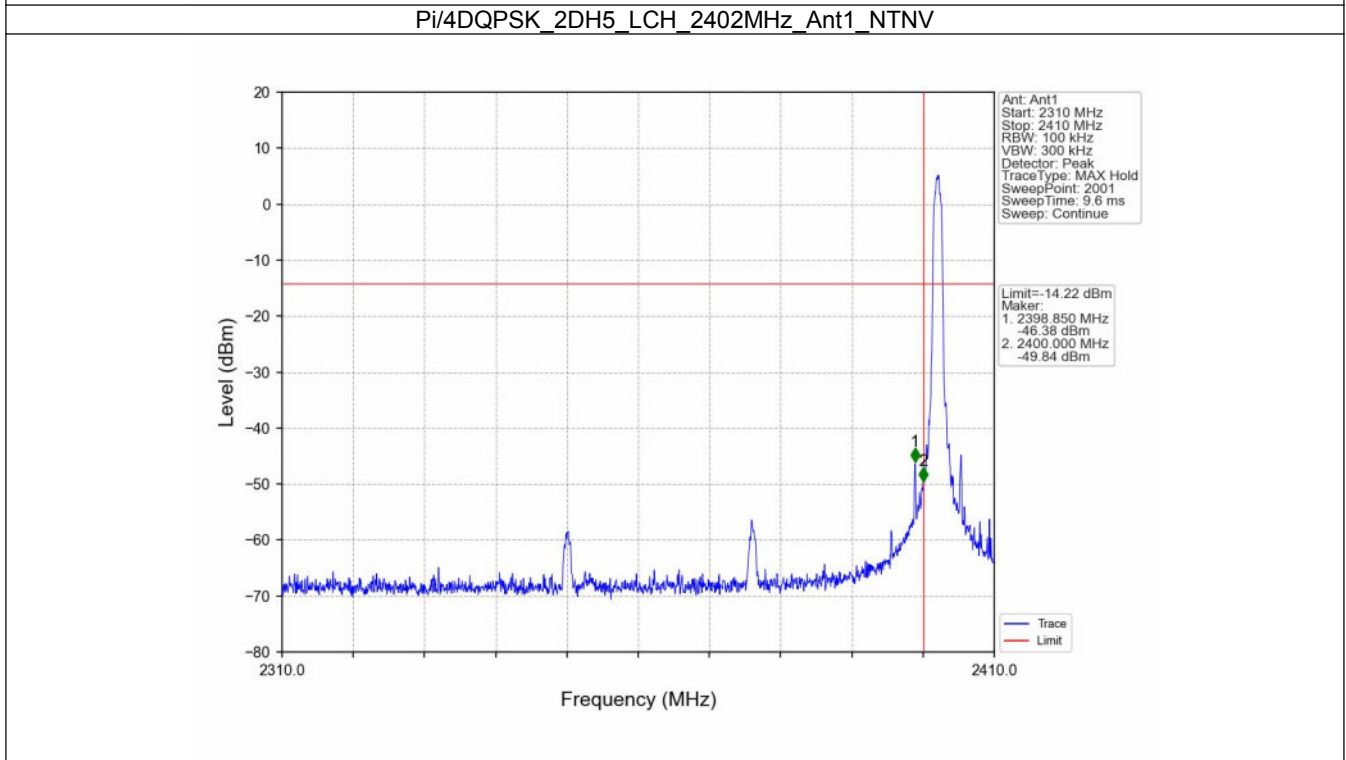
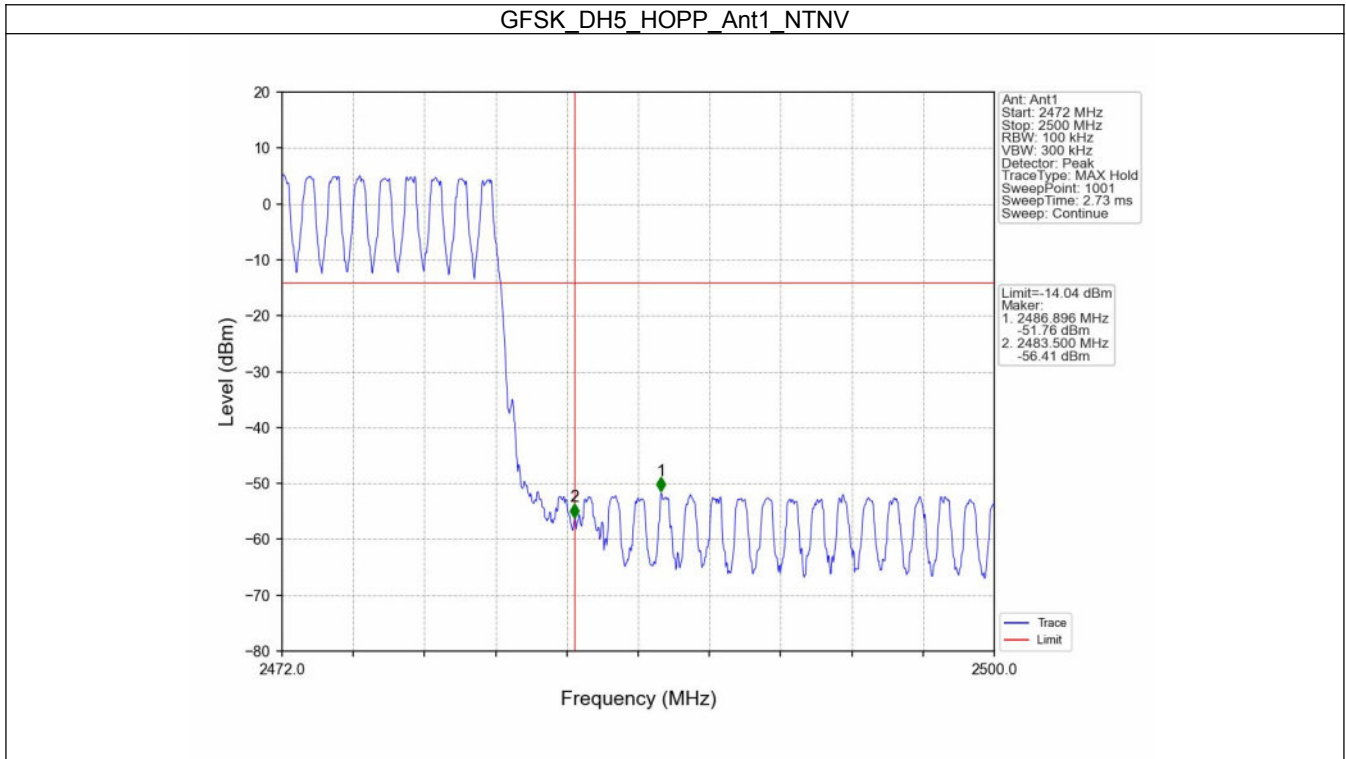
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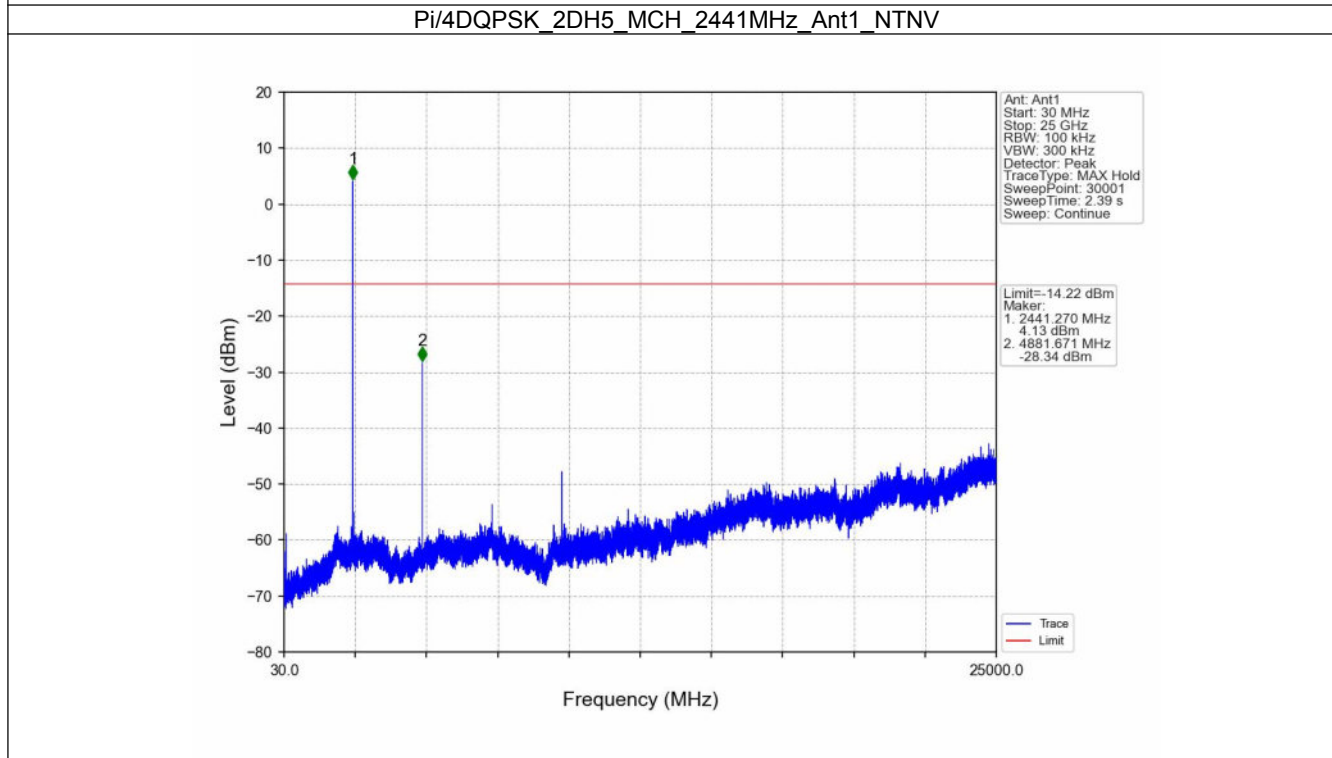
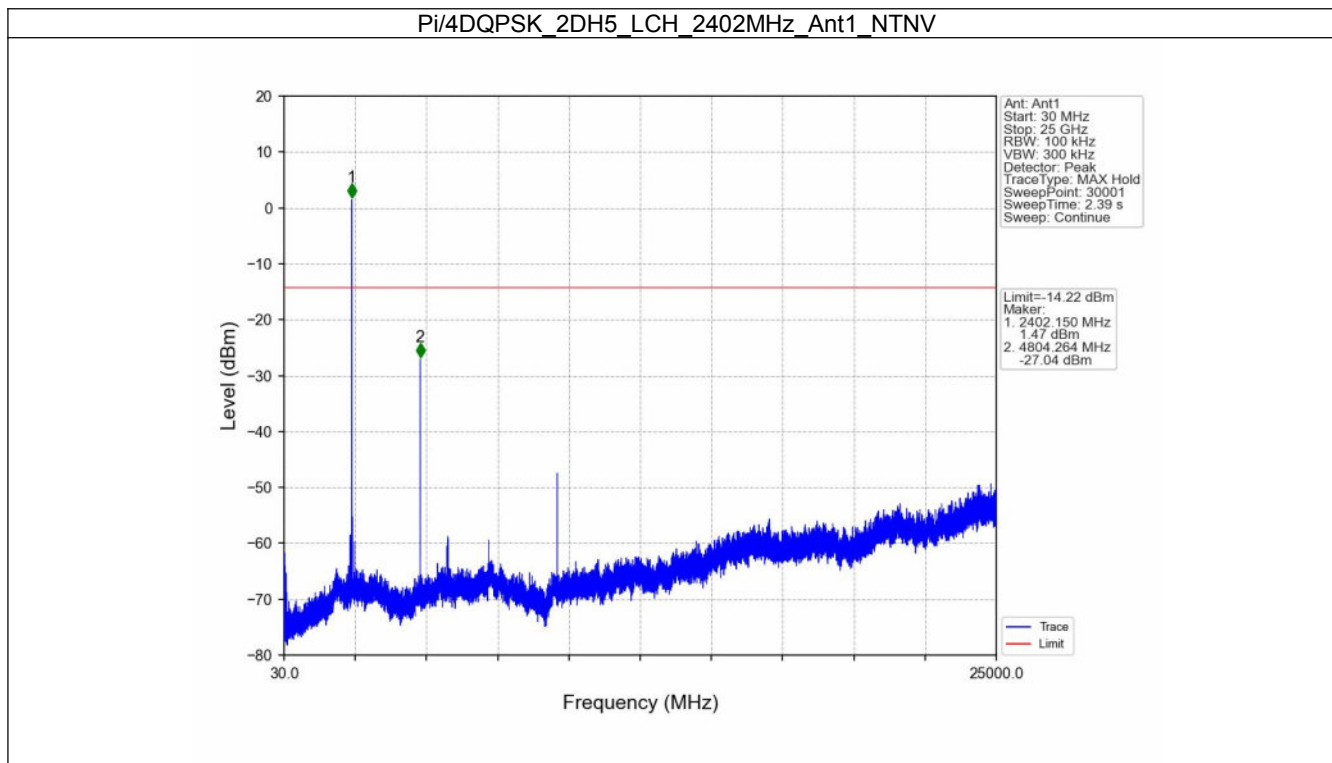
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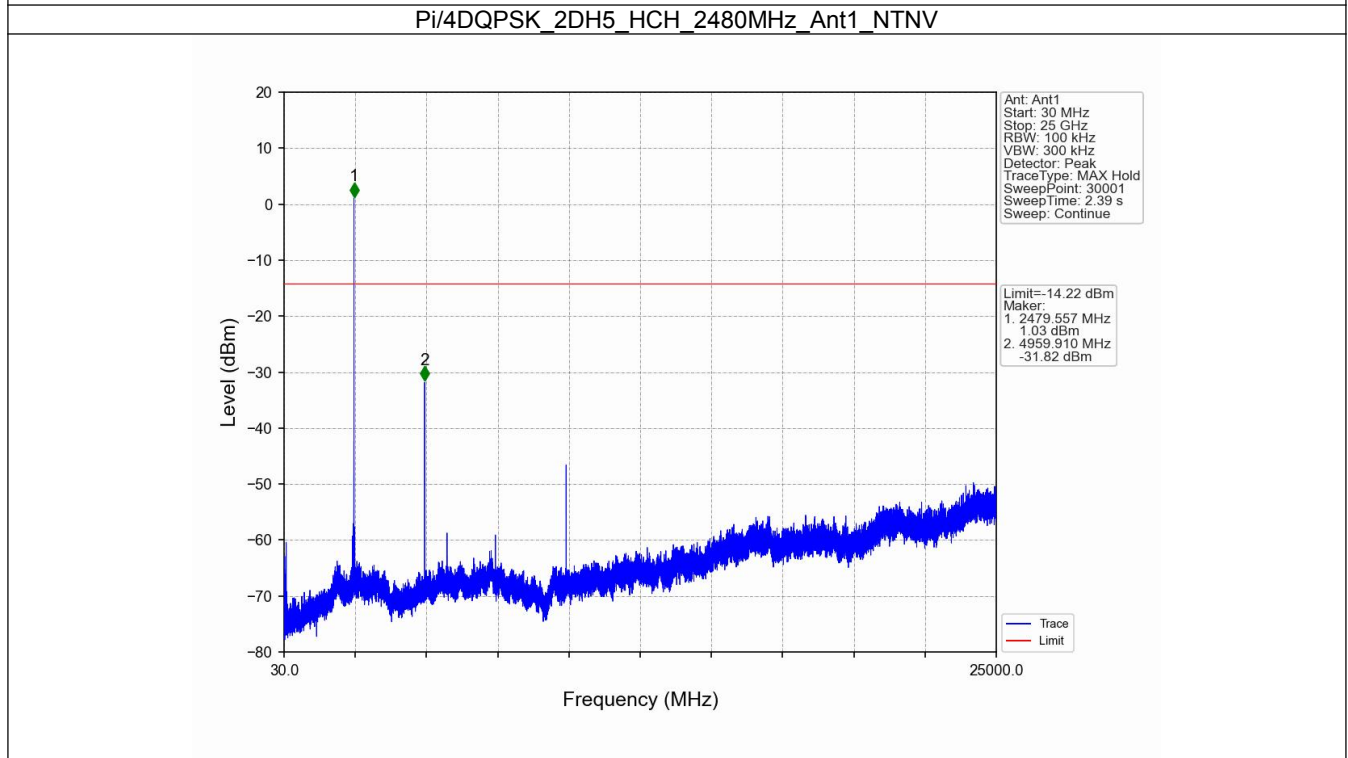
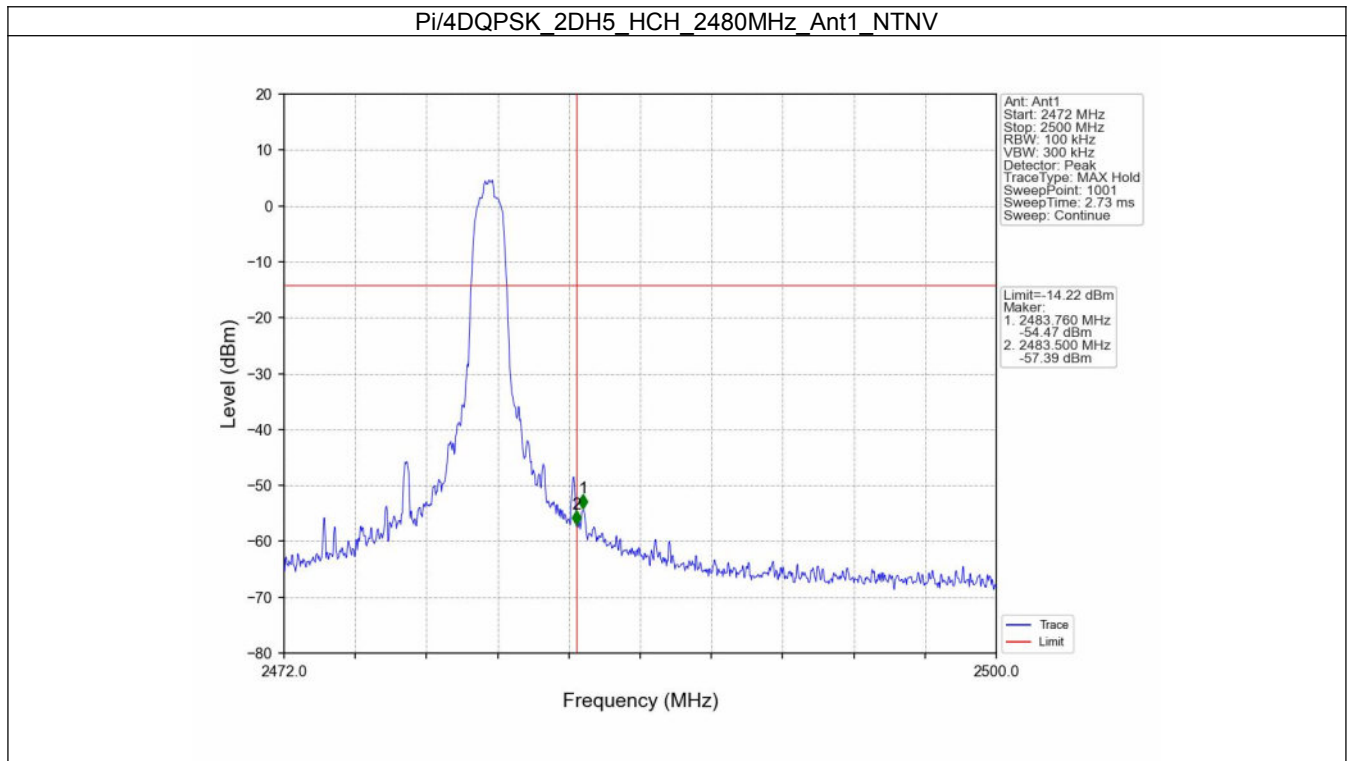
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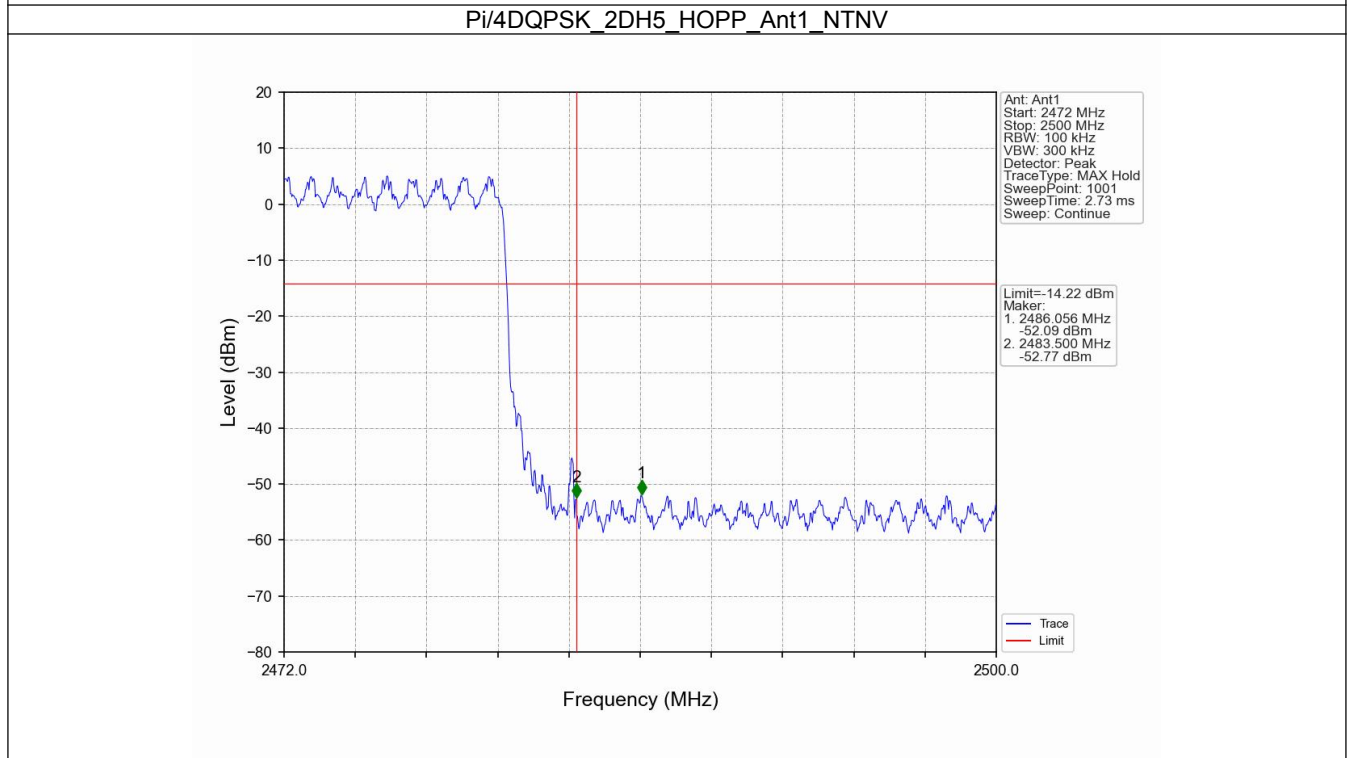
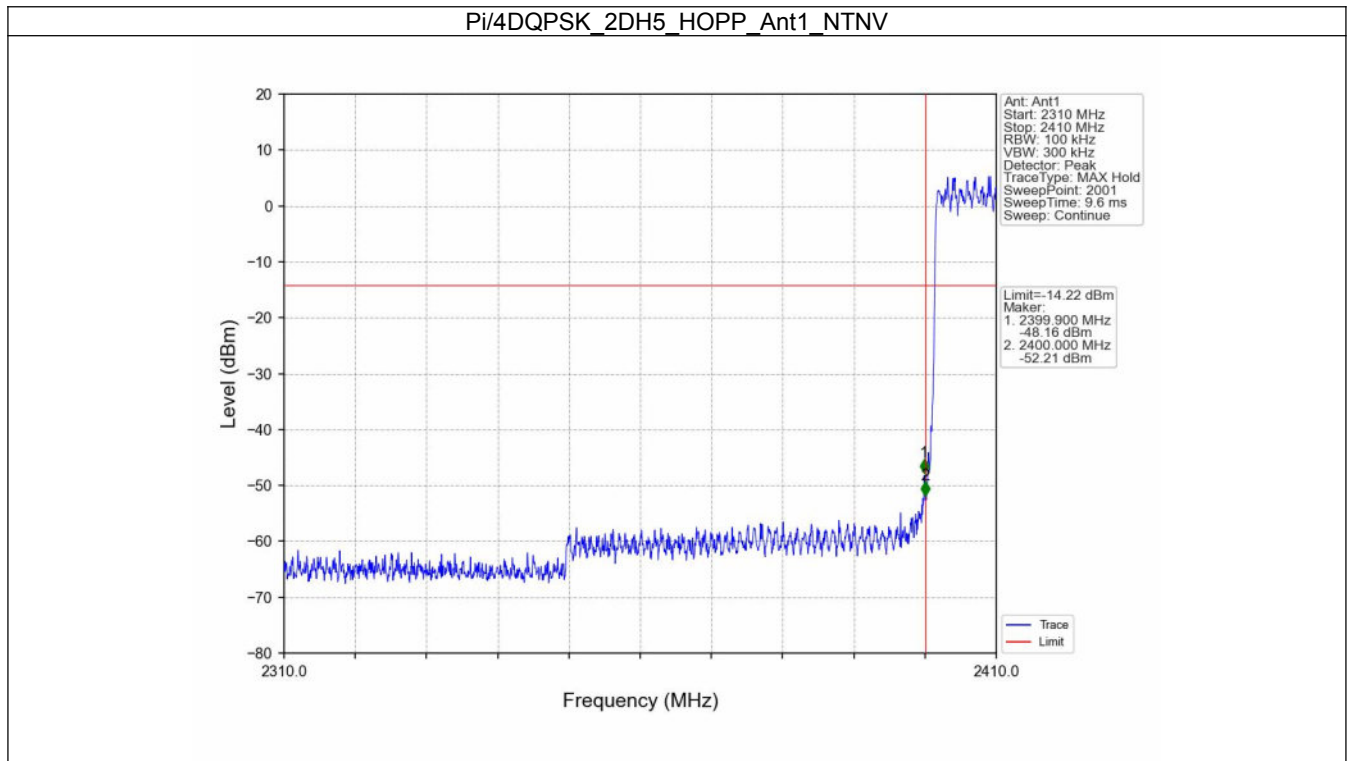
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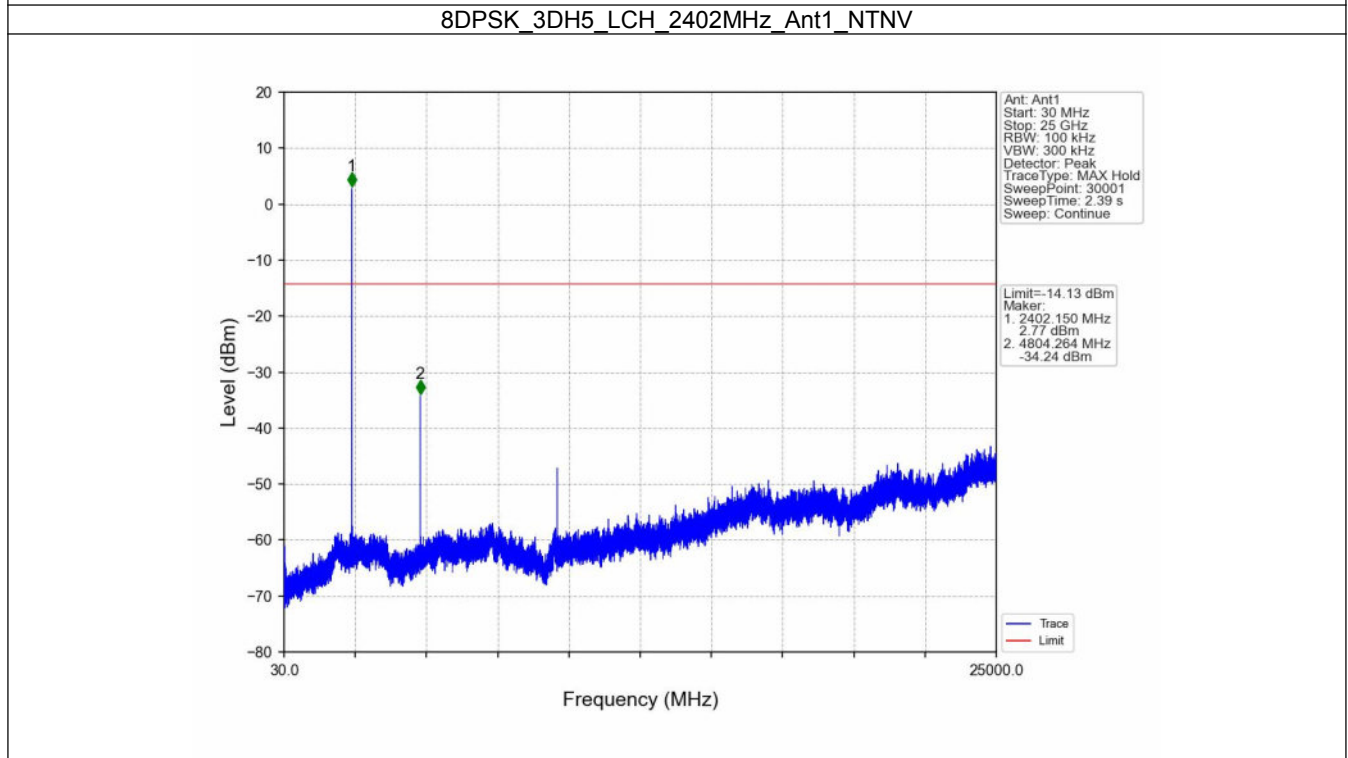
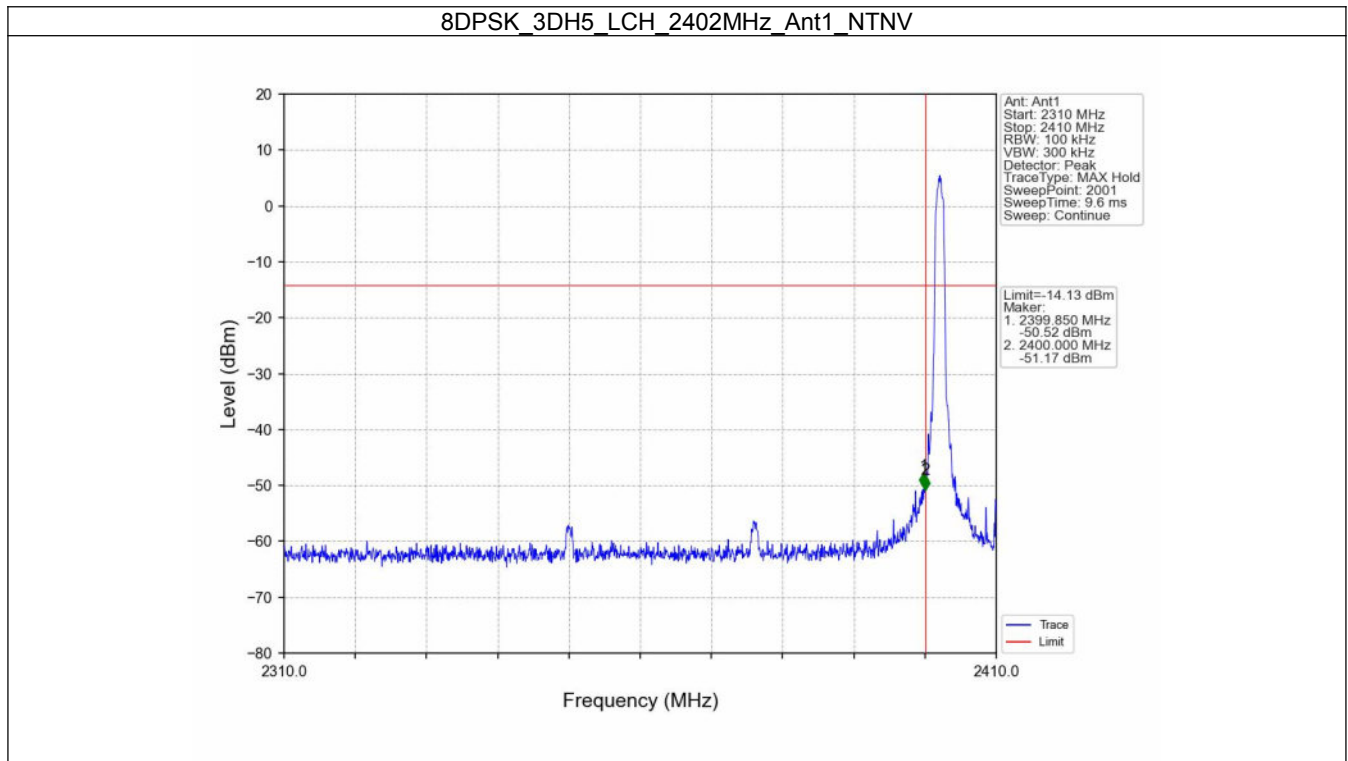
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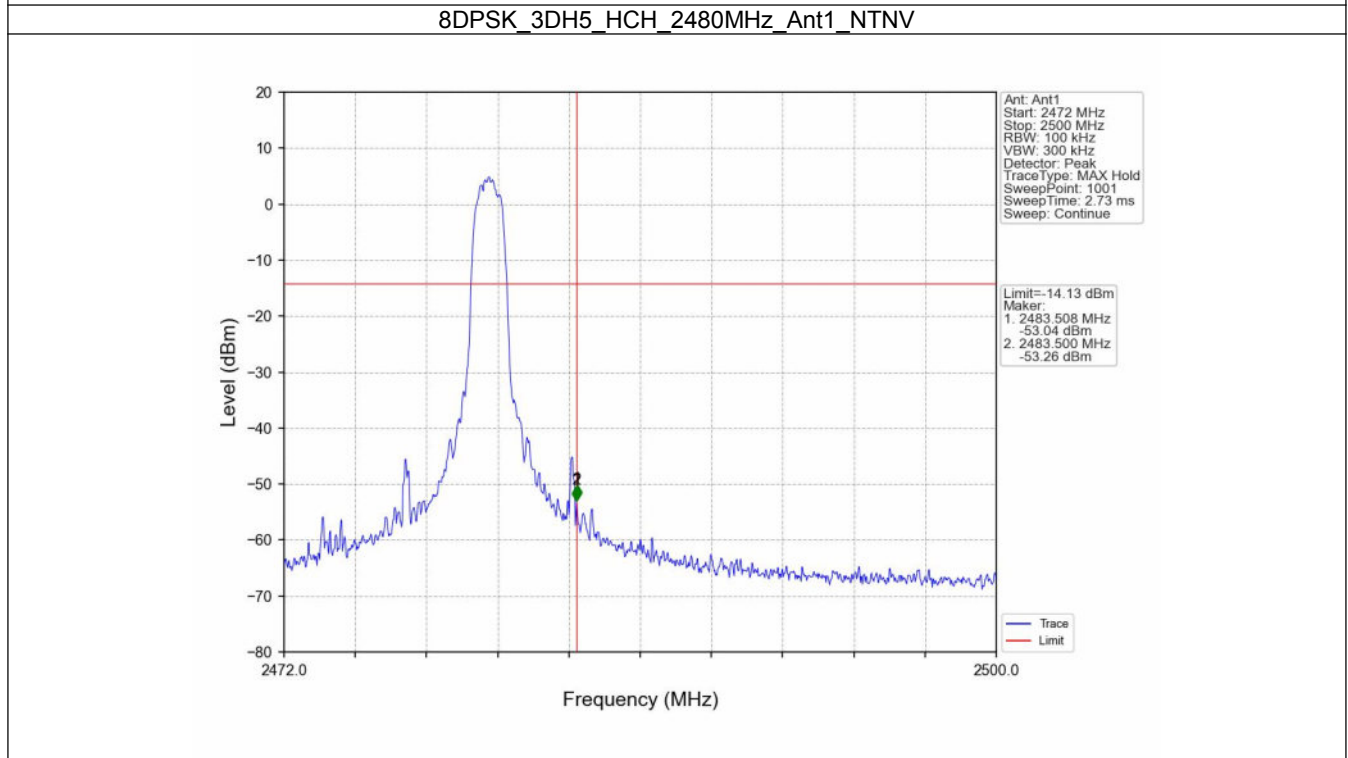
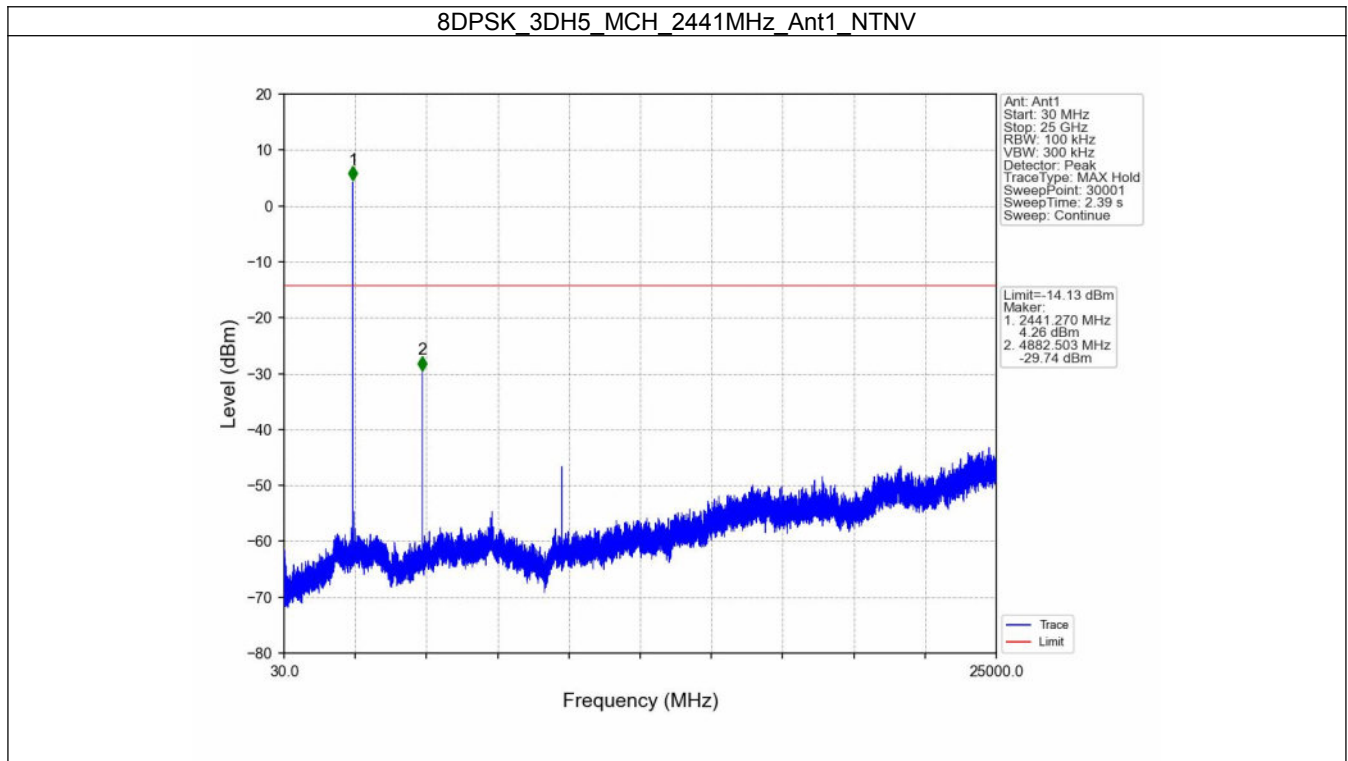
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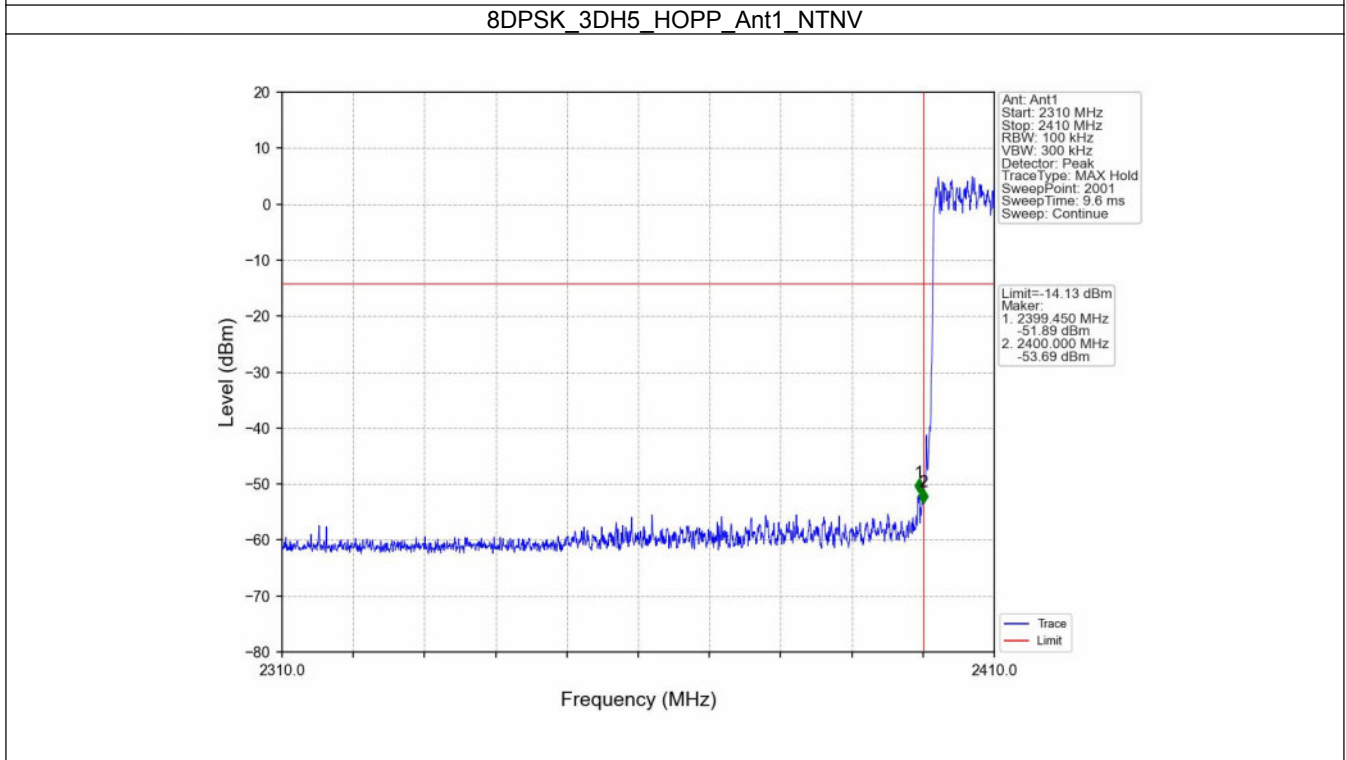
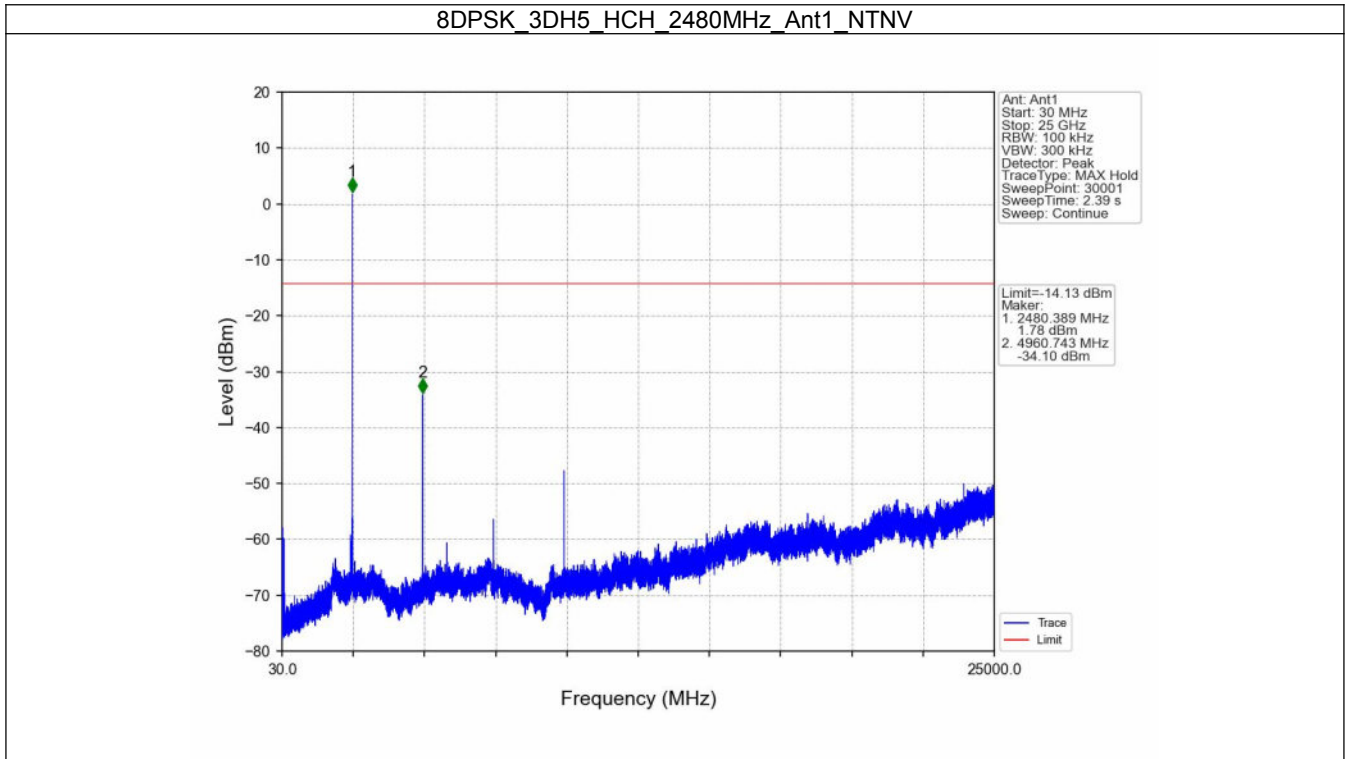
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