



Shenzhen CTL Testing Technology Co., Ltd.

Floor 1-A, Baisha Technology Park, No.3011, Shahexi Road, Nanshan District, Shenzhen, China 518055

Tel: +86-755-89486194 E-mail: ctl@ctl-lab.com

Annex for Bluetooth

Test Report No.: CTL2508148031-WF

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FCC ID: 2BRR7-BEATORB

1. Duty Cycle

1.1 Test Result

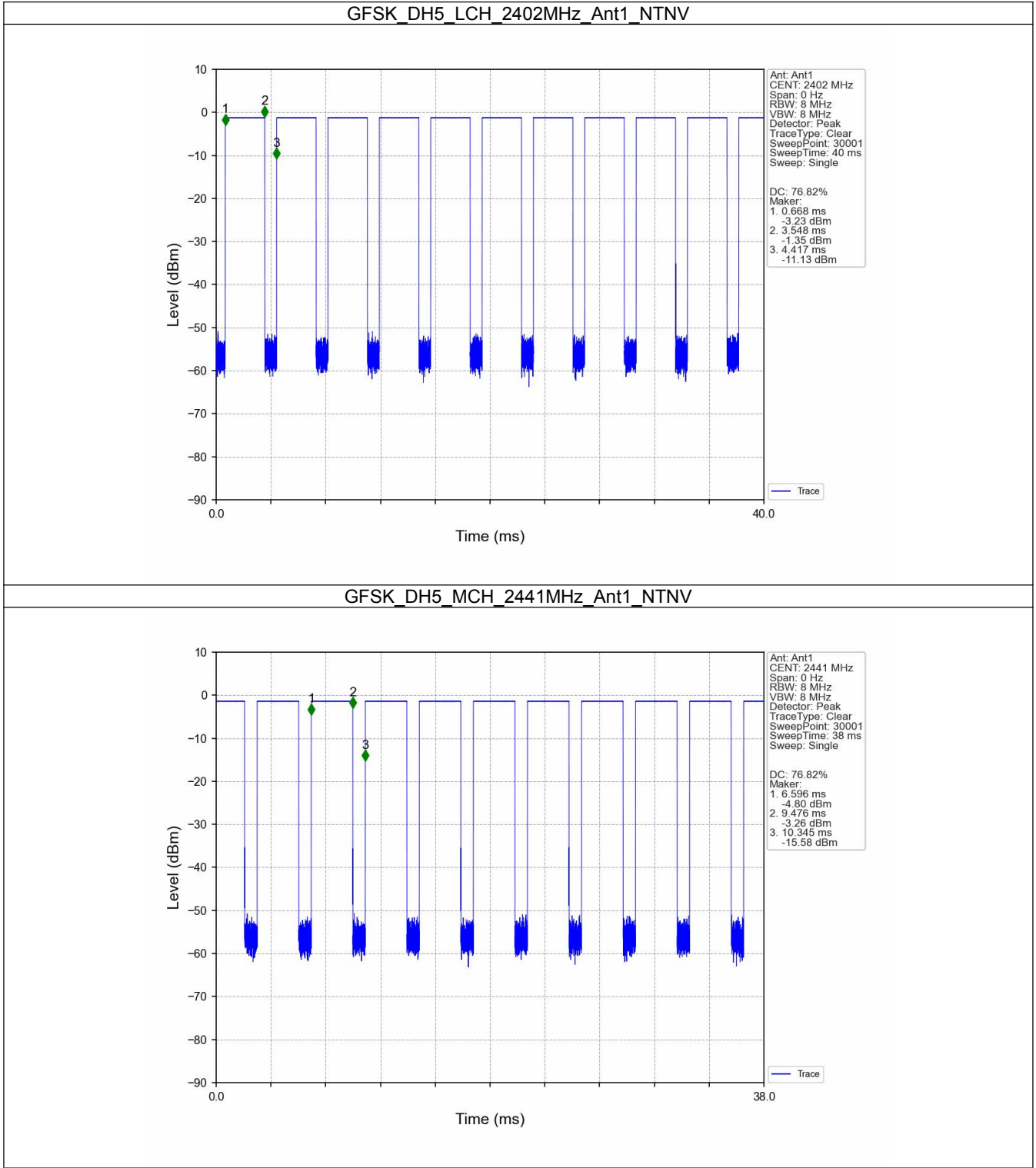
1.1.1 Ant1

Ant1								
Mode	TX Type	Frequency (MHz)	Packet Type	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
GFSK	SISO	2402	DH5	2.880	3.749	76.82	1.15	0.01
		2441	DH5	2.880	3.749	76.82	1.15	0.01
		2480	DH5	2.888	3.751	76.99	1.14	0.03
Pi/4DQPSK	SISO	2402	2DH5	2.887	3.750	76.99	1.14	0.03
		2441	2DH5	2.887	3.751	76.97	1.14	0.03
		2480	2DH5	2.893	3.749	77.17	1.13	0.03
8DPSK	SISO	2402	3DH5	2.888	3.749	77.03	1.13	0.01
		2441	3DH5	2.888	3.749	77.03	1.13	0.01
		2480	3DH5	2.888	3.750	77.01	1.13	0.04

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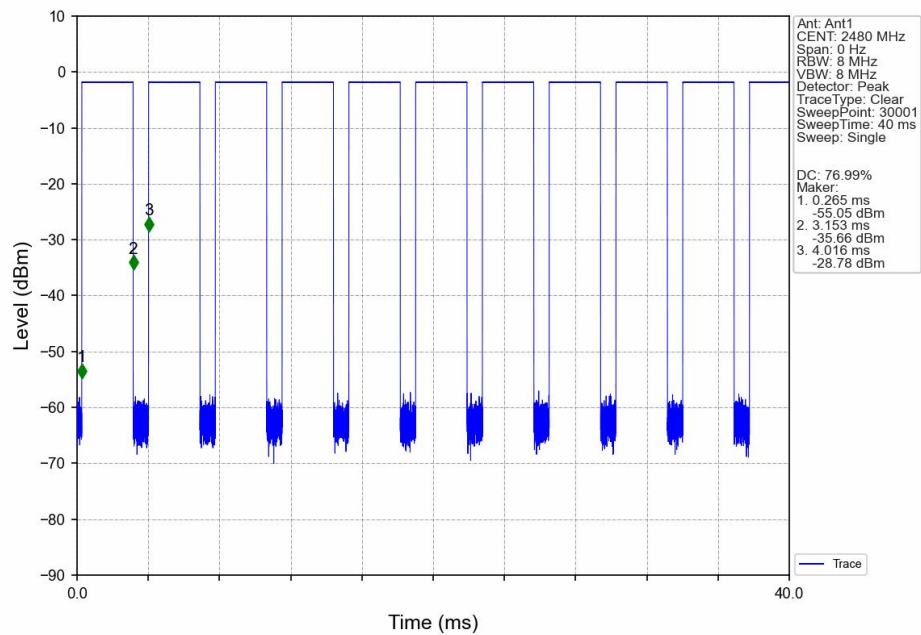
1.2 Test Graph

1.2.1 Ant1

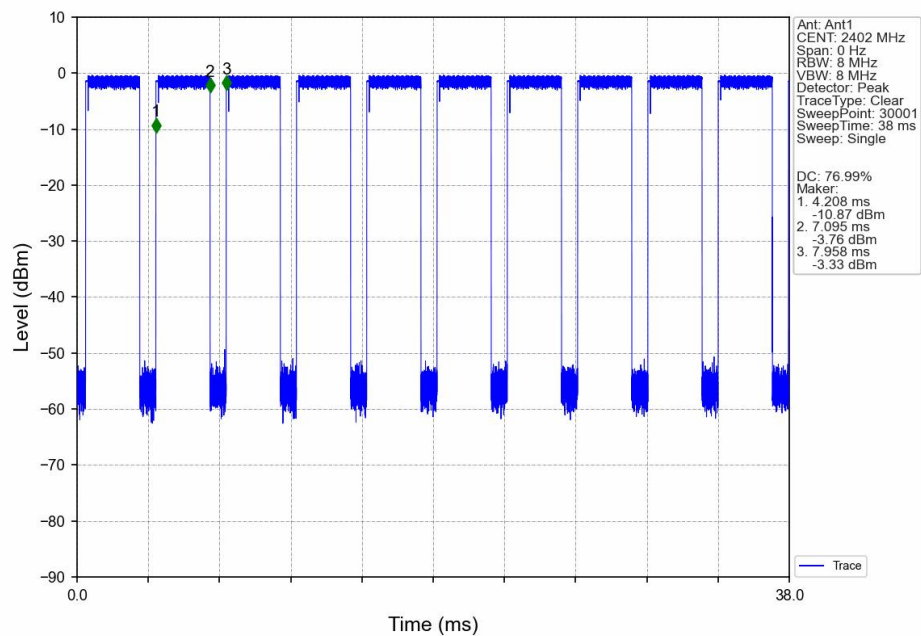


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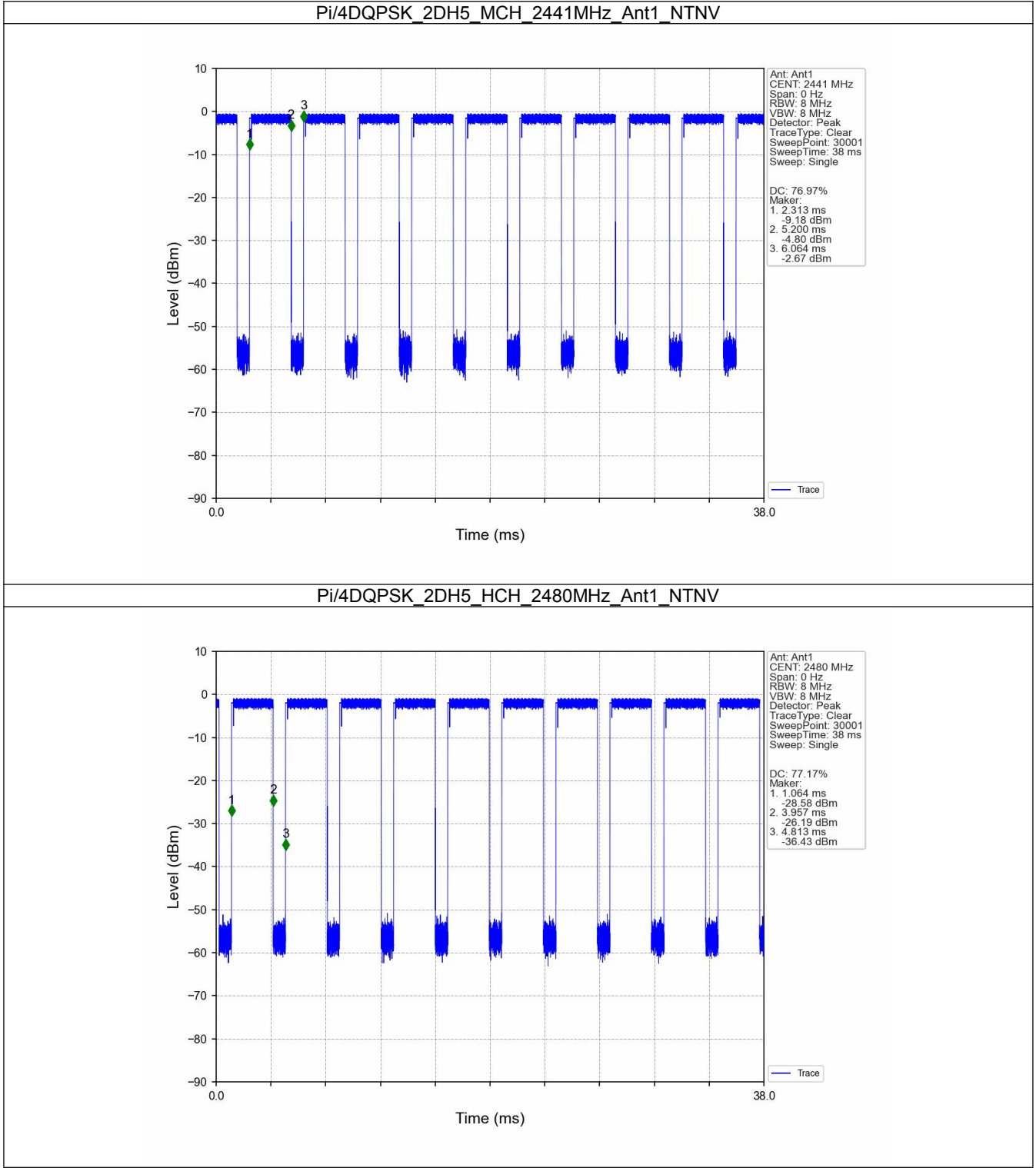
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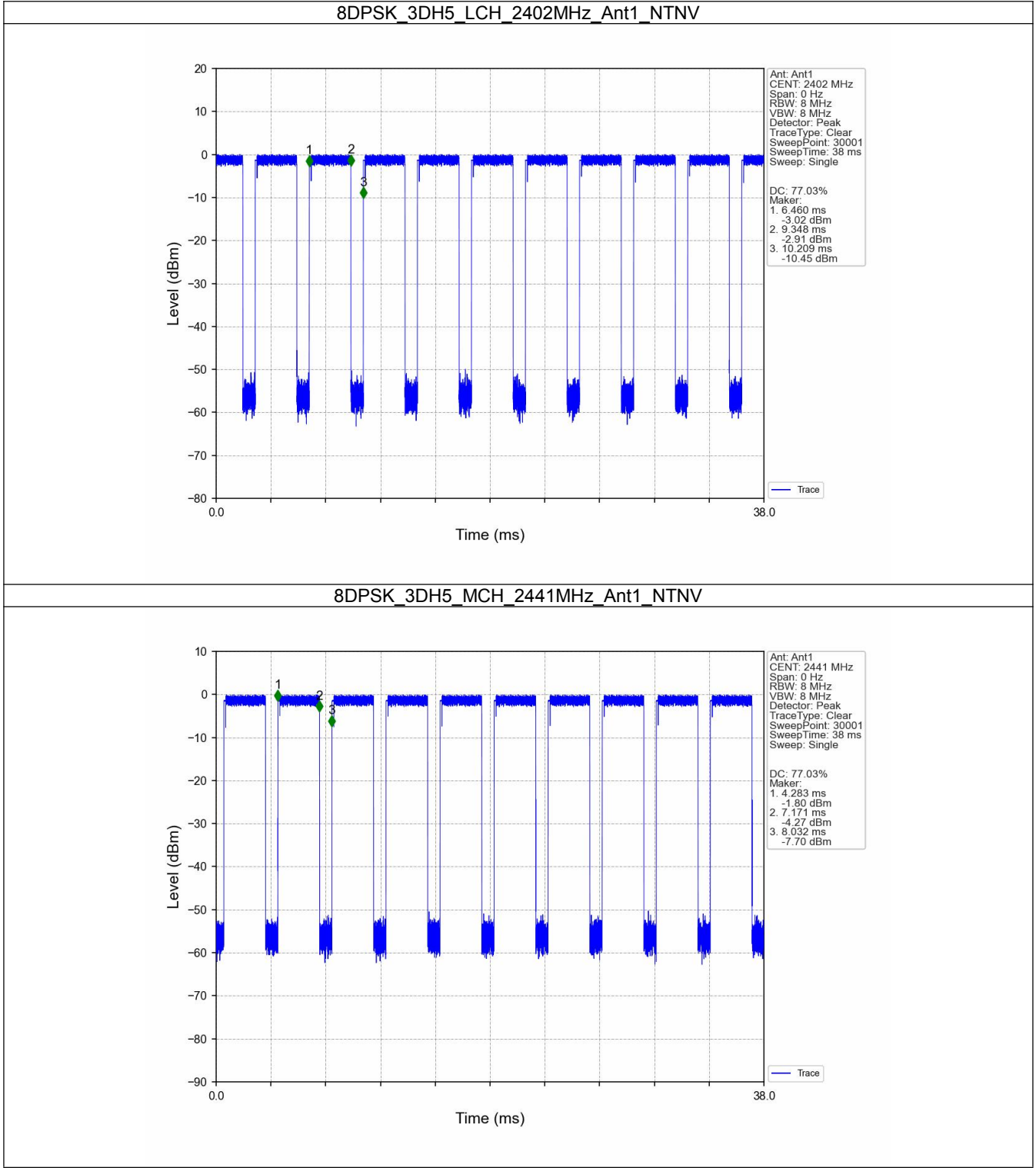
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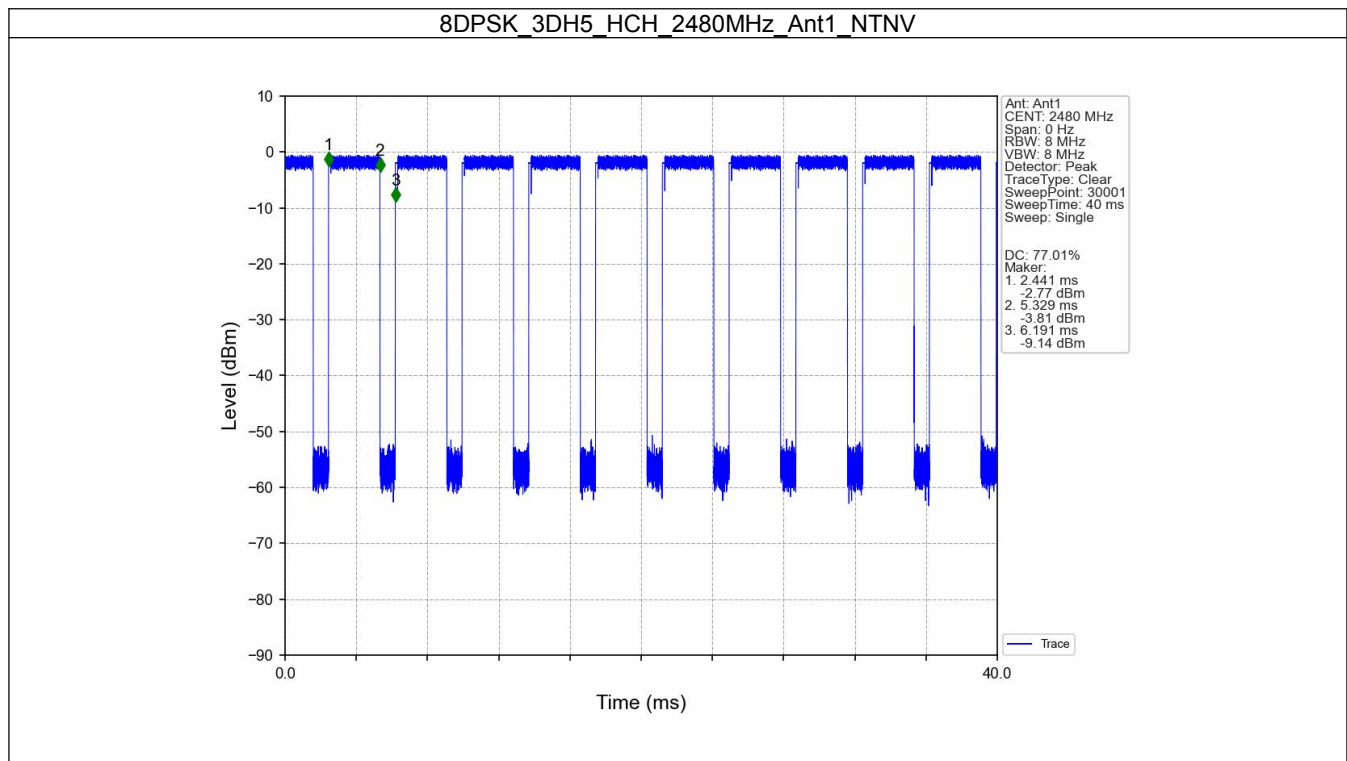
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2. Bandwidth

2.1 Test Result

2.1.1 OBW

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	99% Occupied Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	0.926	/	Pass
		2441	DH5	1	0.939	/	Pass
		2480	DH5	1	0.938	/	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.201	/	Pass
		2441	2DH5	1	1.208	/	Pass
		2480	2DH5	1	1.209	/	Pass
8DPSK	SISO	2402	3DH5	1	1.198	/	Pass
		2441	3DH5	1	1.200	/	Pass
		2480	3DH5	1	1.195	/	Pass

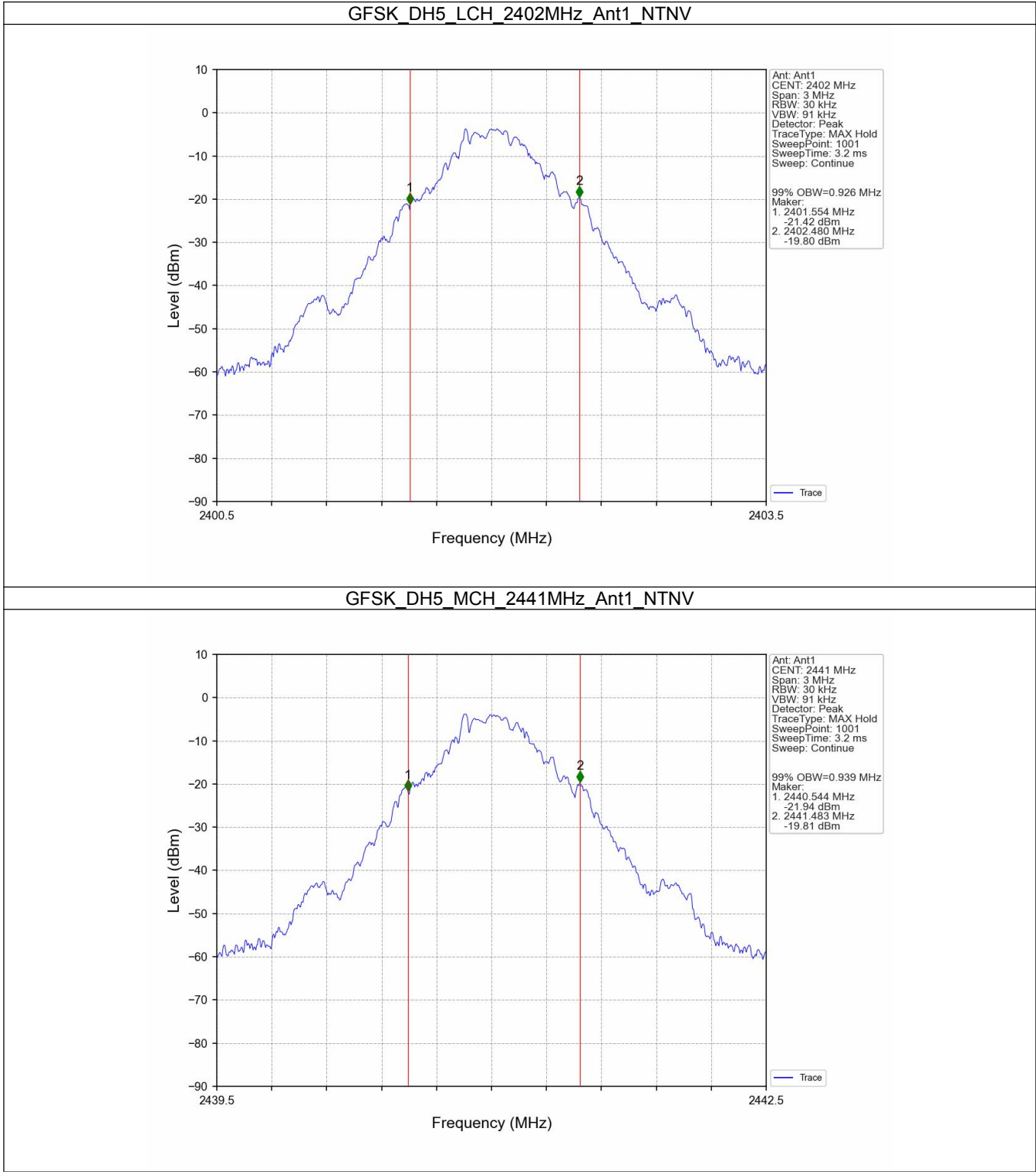
2.1.2 20dB BW

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	20dB Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	1.037	/	Pass
		2441	DH5	1	1.045	/	Pass
		2480	DH5	1	1.042	/	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.347	/	Pass
		2441	2DH5	1	1.332	/	Pass
		2480	2DH5	1	1.329	/	Pass
8DPSK	SISO	2402	3DH5	1	1.310	/	Pass
		2441	3DH5	1	1.300	/	Pass
		2480	3DH5	1	1.301	/	Pass

FCC ID: 2BRR7-BEATORB

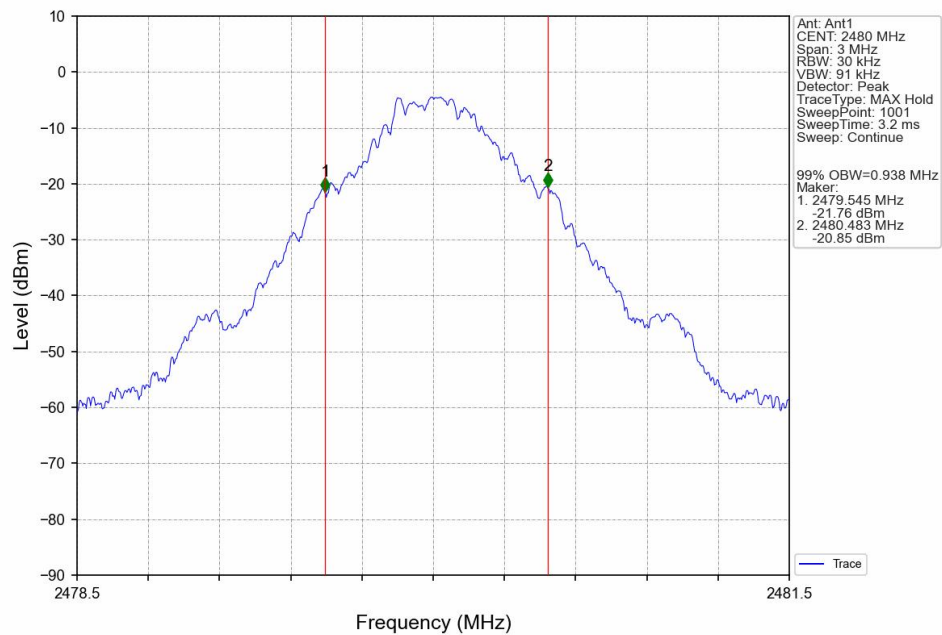
2.2 Test Graph

2.2.1 OBW

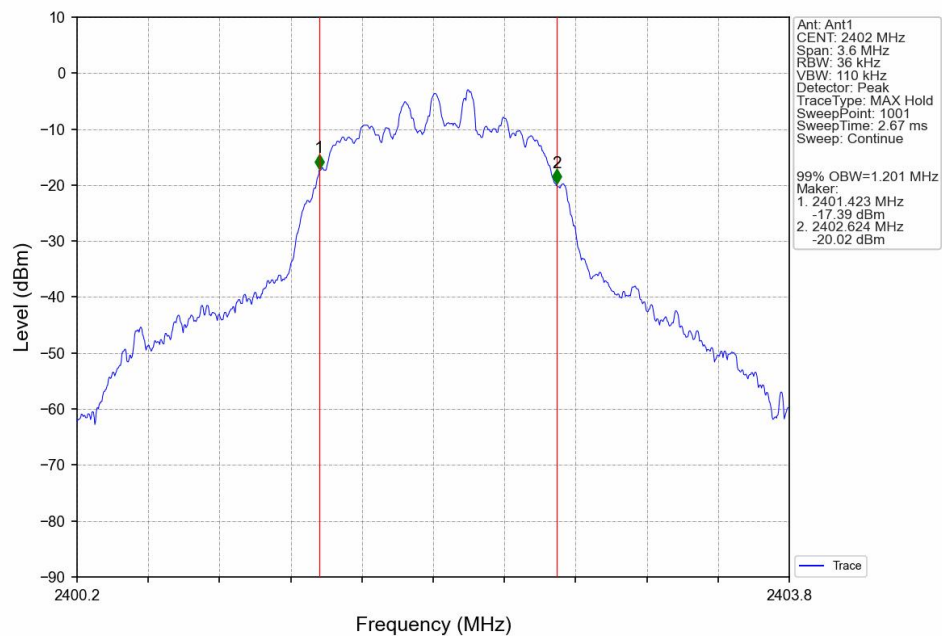


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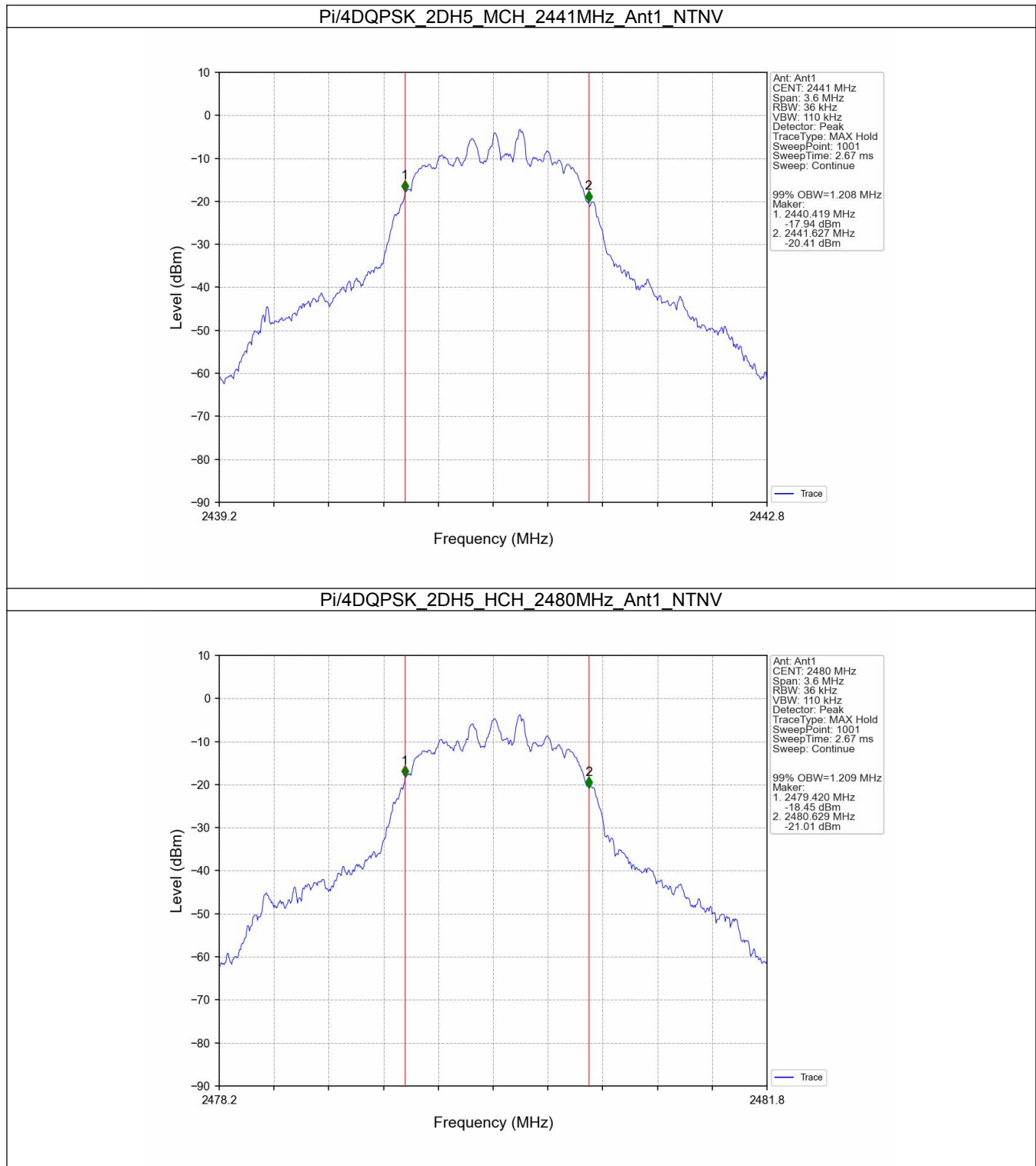
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



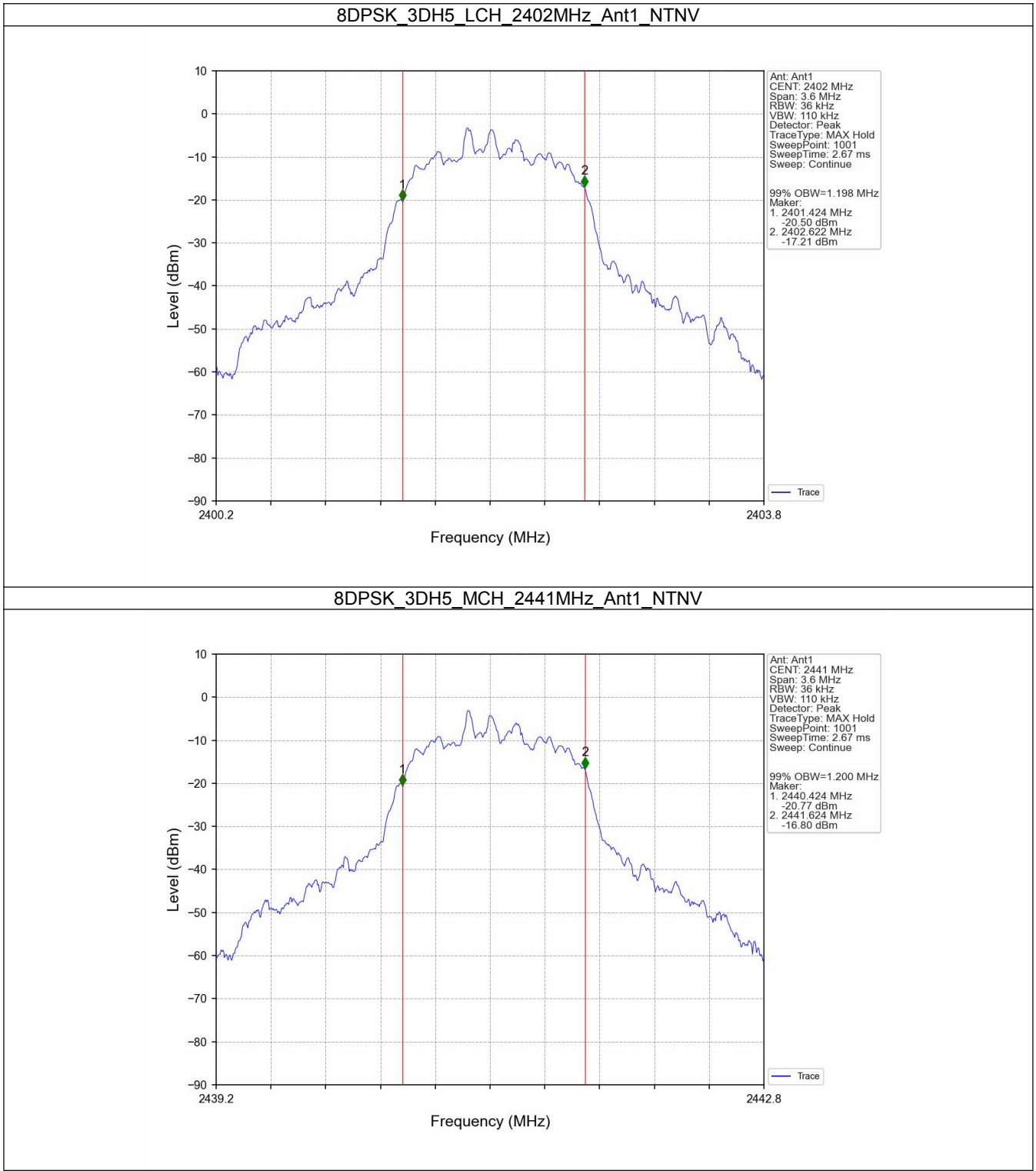
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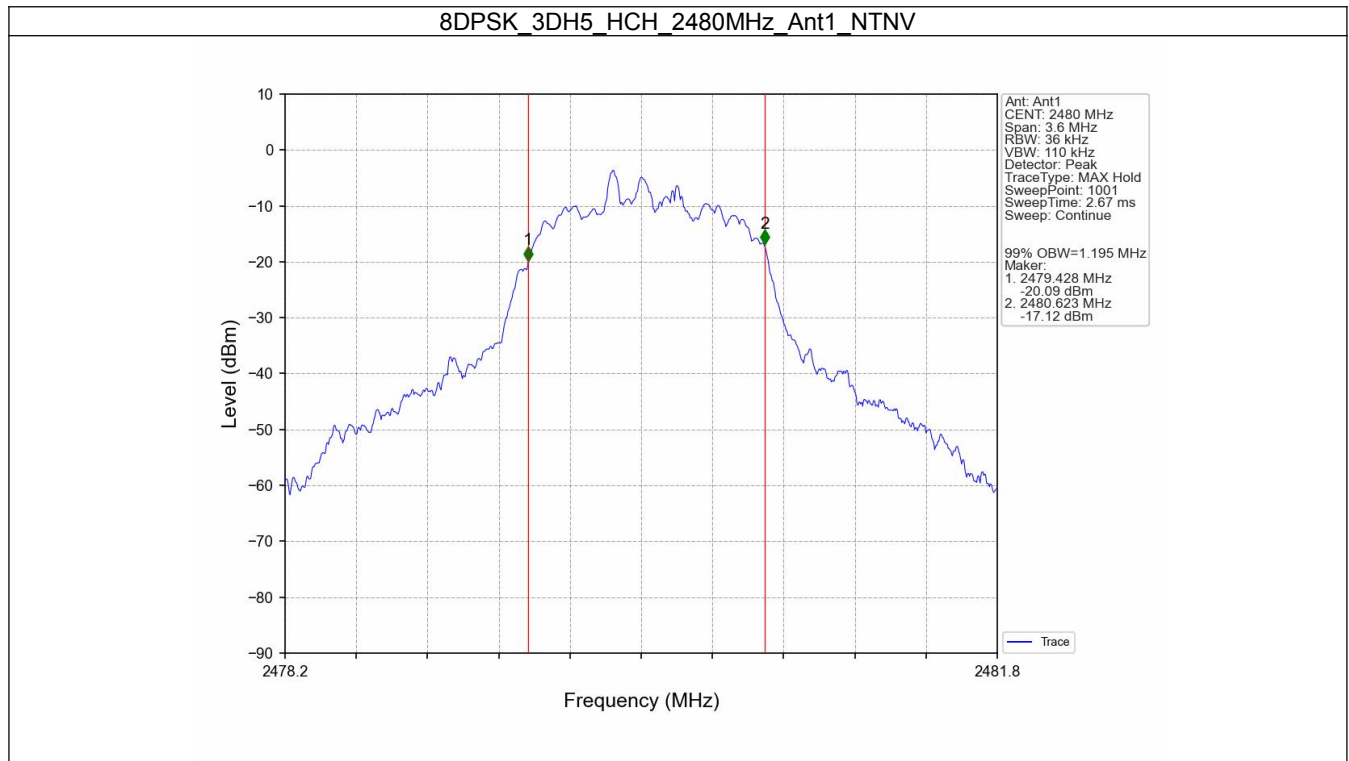
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FCC ID: 2BRR7-BEATORB

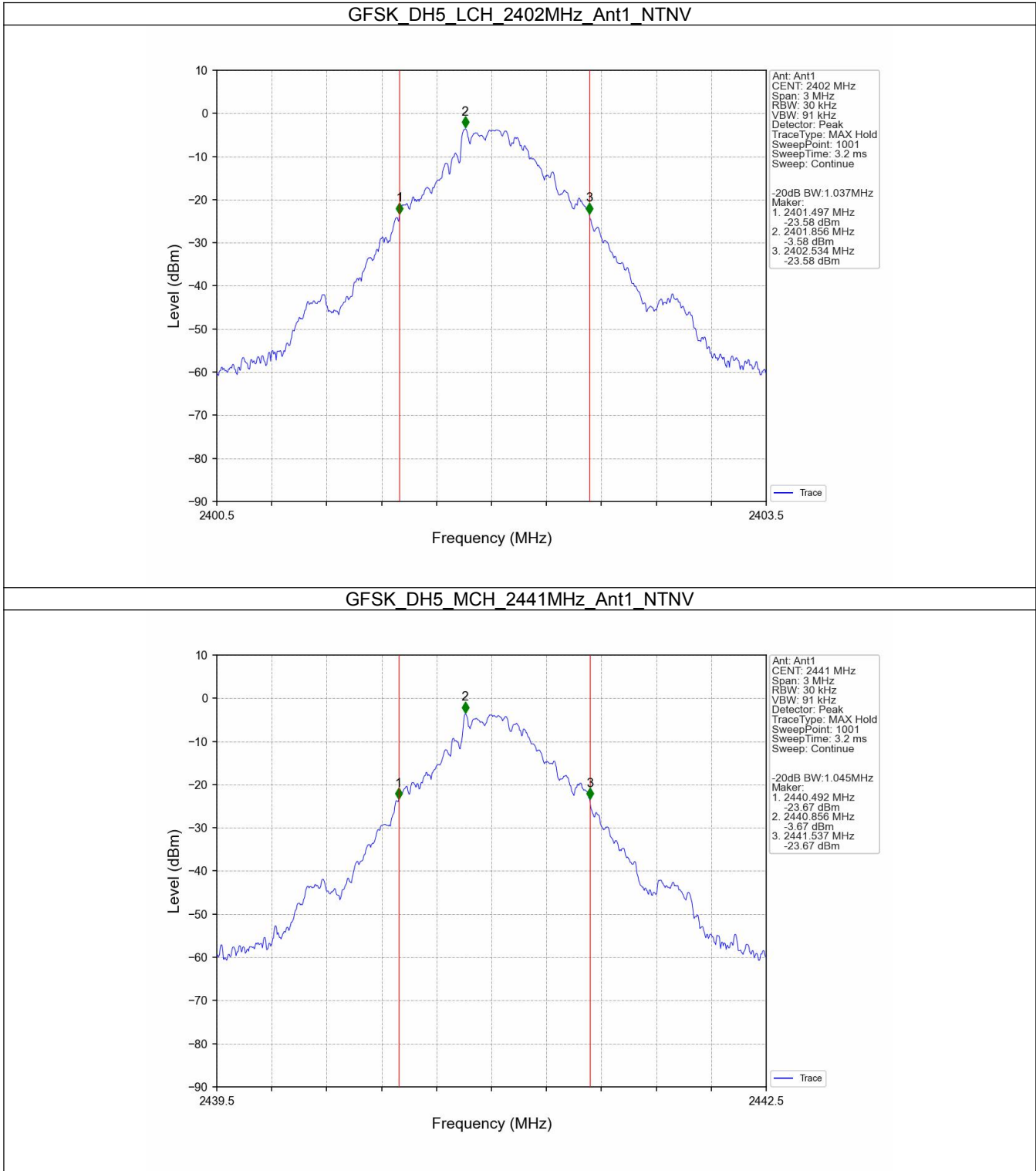


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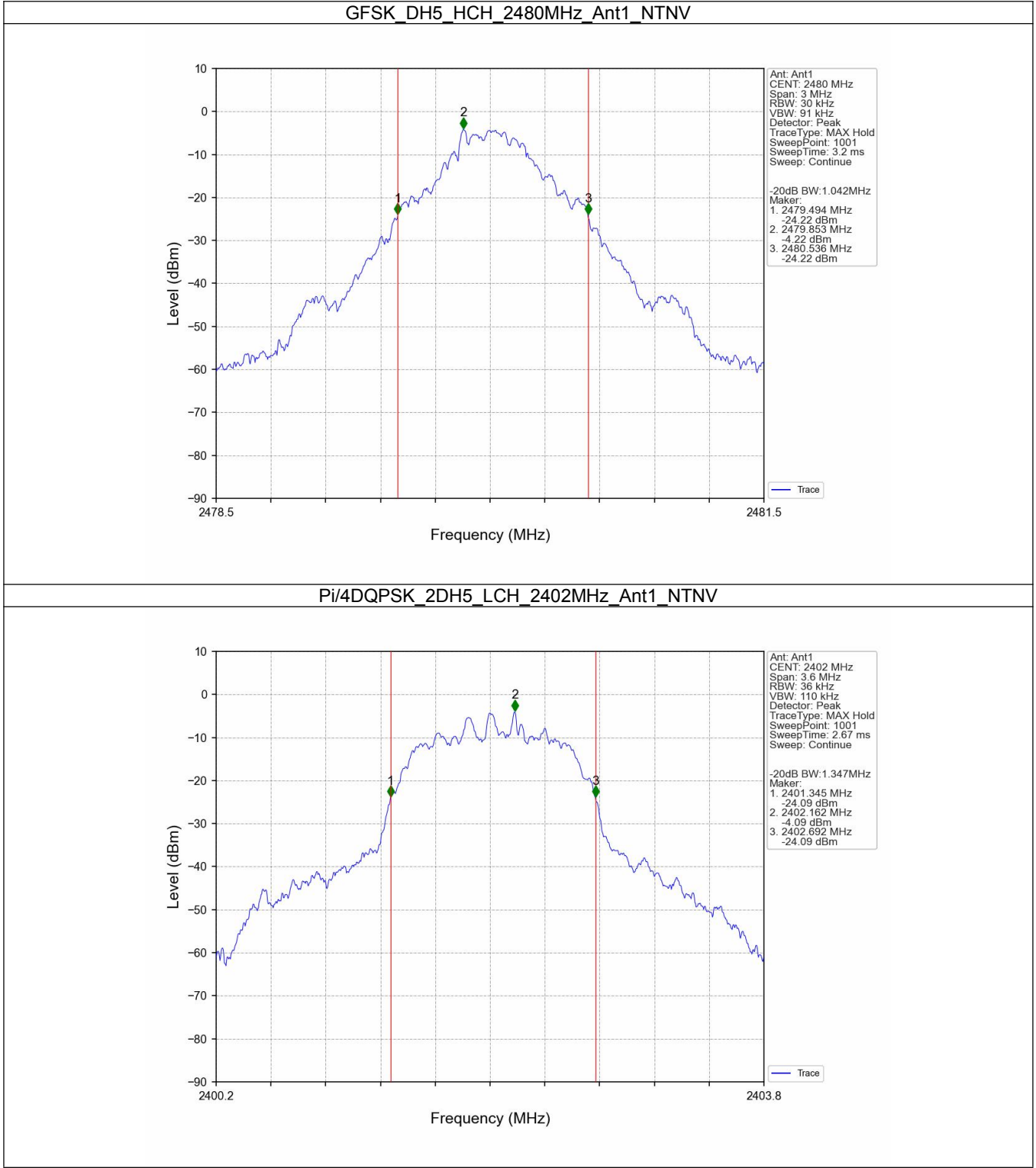


FCC ID: 2BRR7-BEATORB

2.2.2 20dB BW

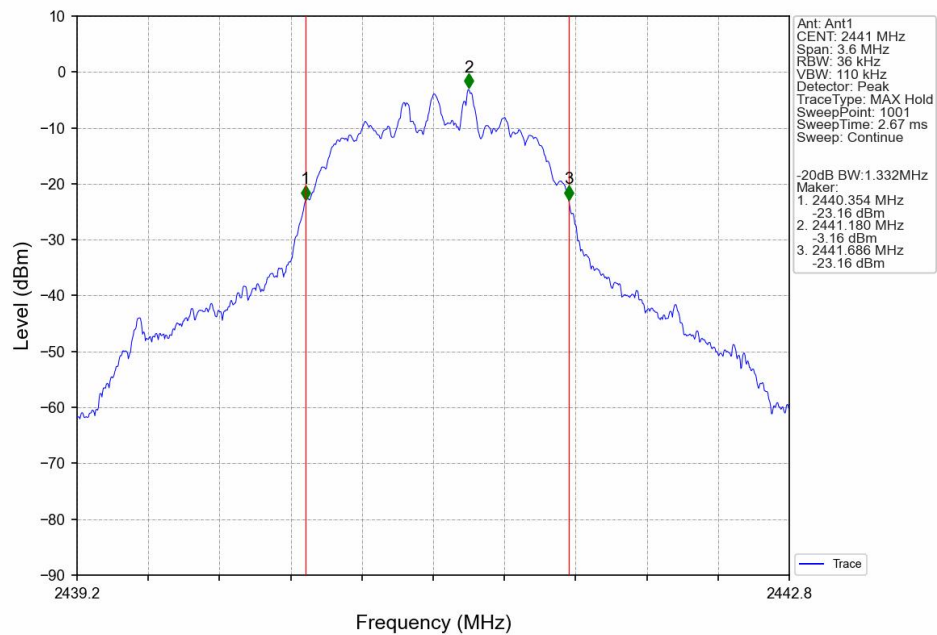


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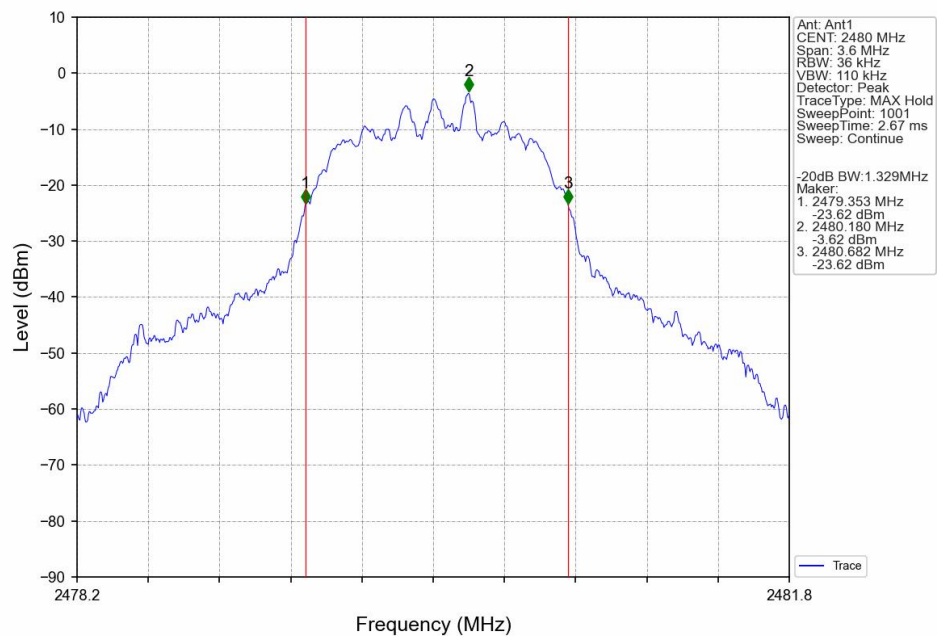


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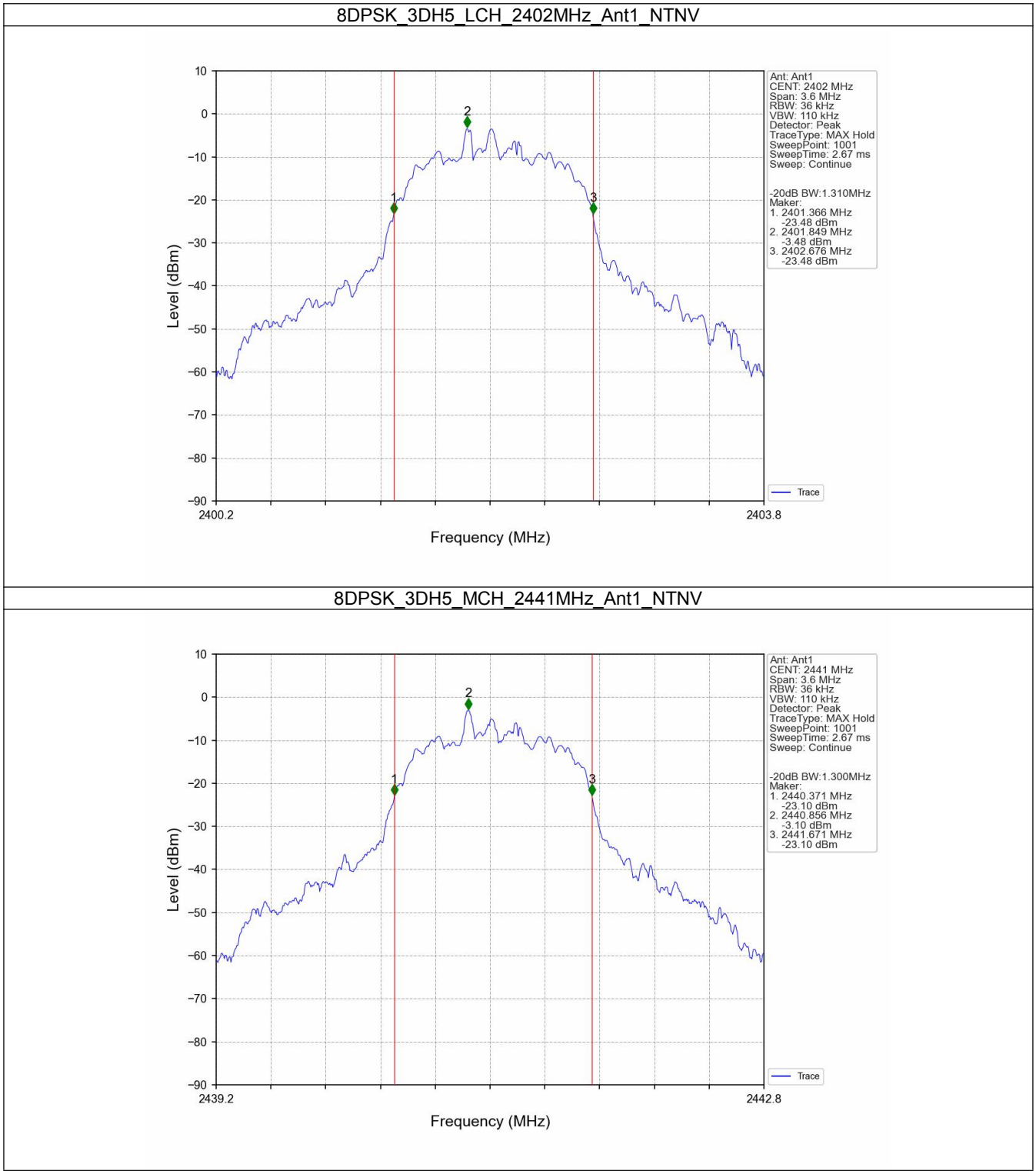
Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



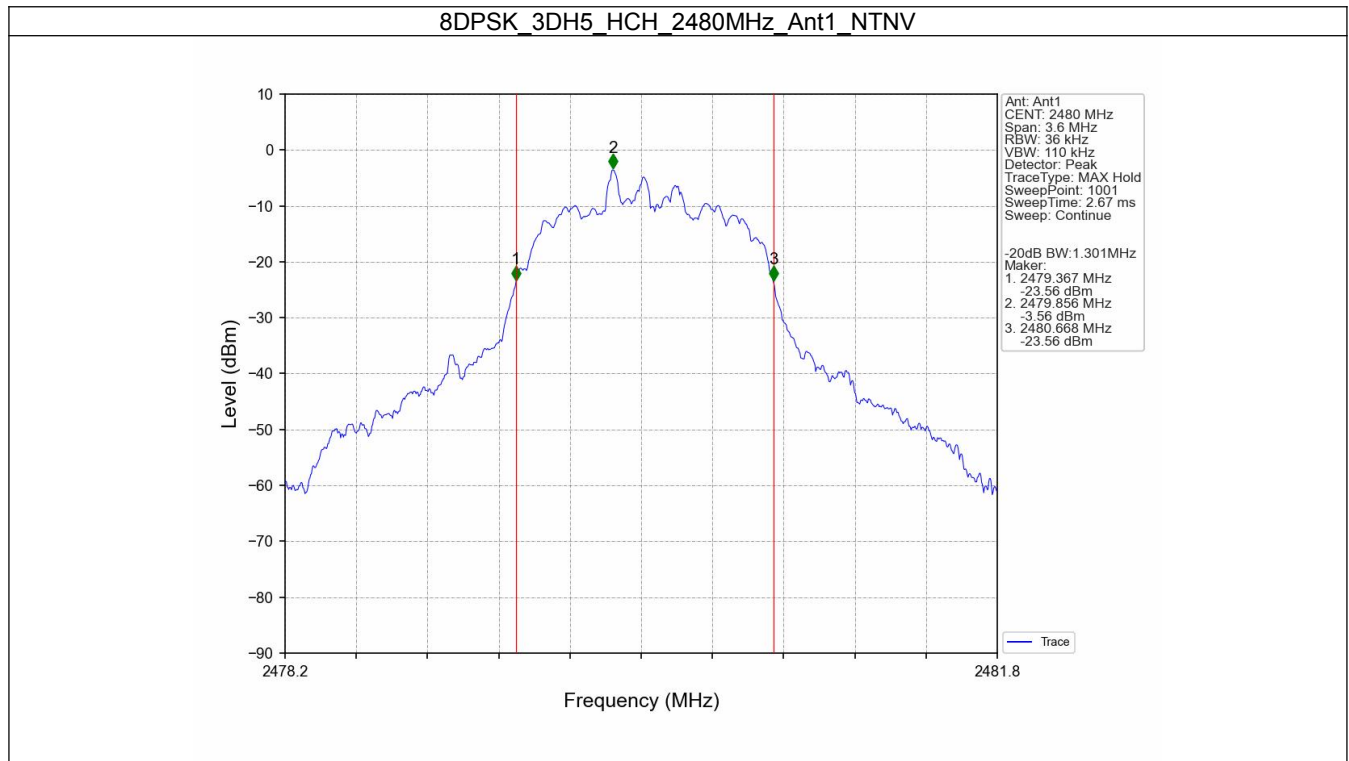
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



FCC ID: 2BRR7-BEATORB



FCC ID: 2BRR7-BEATORB



FCC ID: 2BRR7-BEATORB

3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

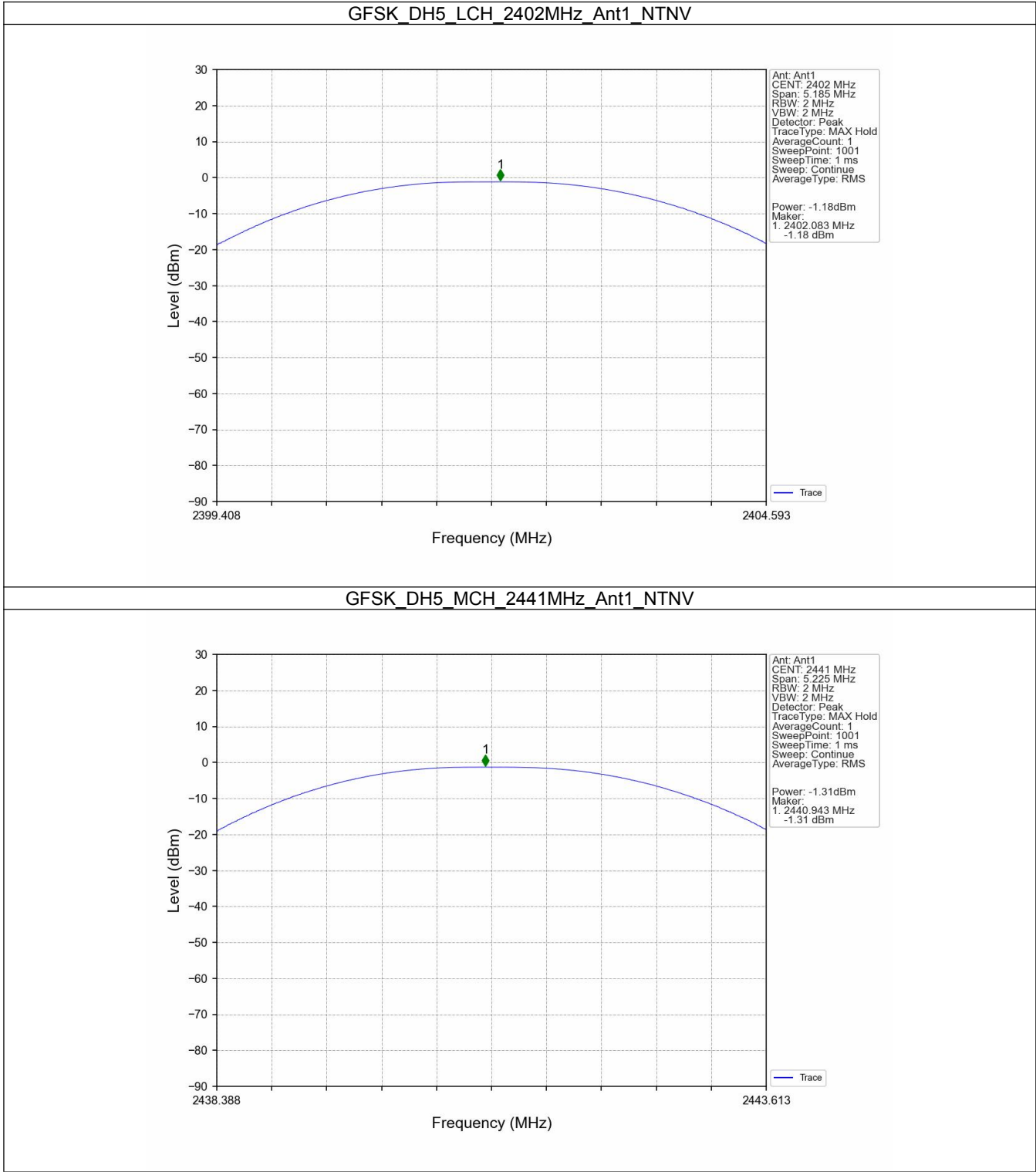
Mode	TX Type	Frequency (MHz)	Packet Type	Maximum Peak Conducted Output Power (dBm)		Verdict
				ANT1	Limit	
GFSK	SISO	2402	DH5	-1.18	<=20.97	Pass
		2441	DH5	-1.31	<=20.97	Pass
		2480	DH5	-1.84	<=20.97	Pass
Pi/4DQPSK	SISO	2402	2DH5	-0.37	<=20.97	Pass
		2441	2DH5	-0.55	<=20.97	Pass
		2480	2DH5	-1.01	<=20.97	Pass
8DPSK	SISO	2402	3DH5	-0.01	<=20.97	Pass
		2441	3DH5	-0.10	<=20.97	Pass
		2480	3DH5	-0.61	<=20.97	Pass

Note1: Antenna Gain: Ant1: -0.58dBi;

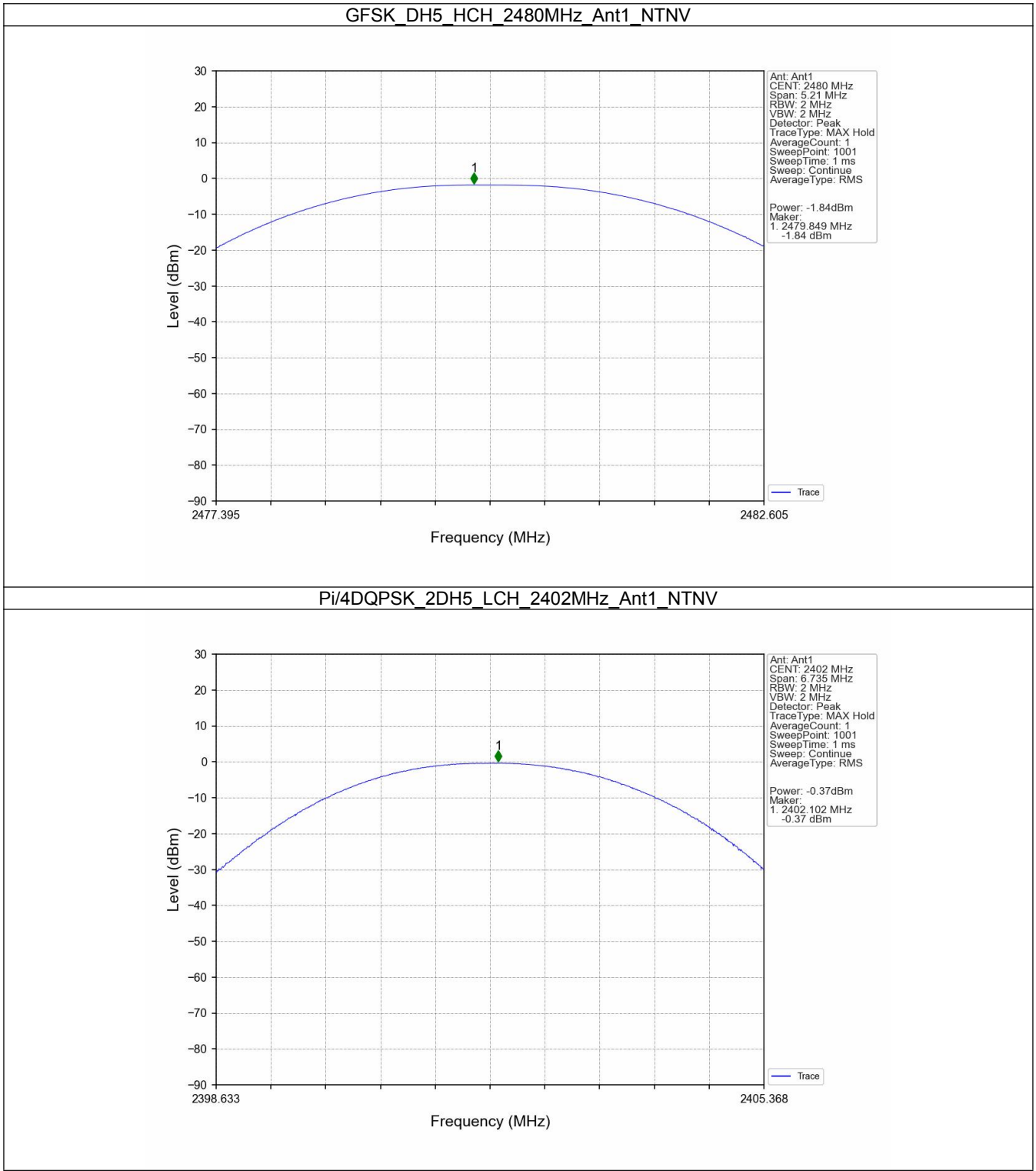
FCC ID: 2BRR7-BEATORB

3.2 Test Graph

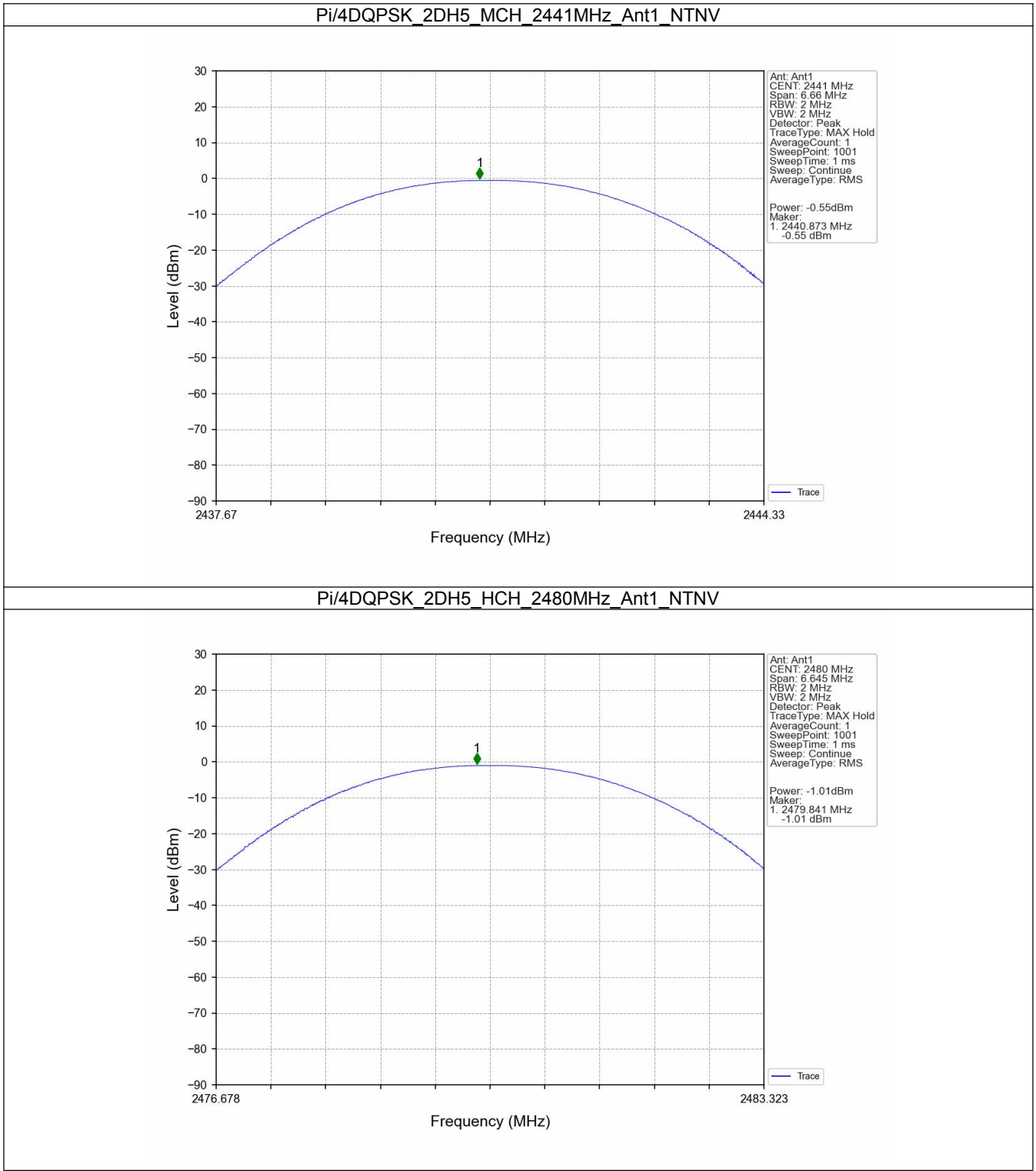
3.2.1 Power



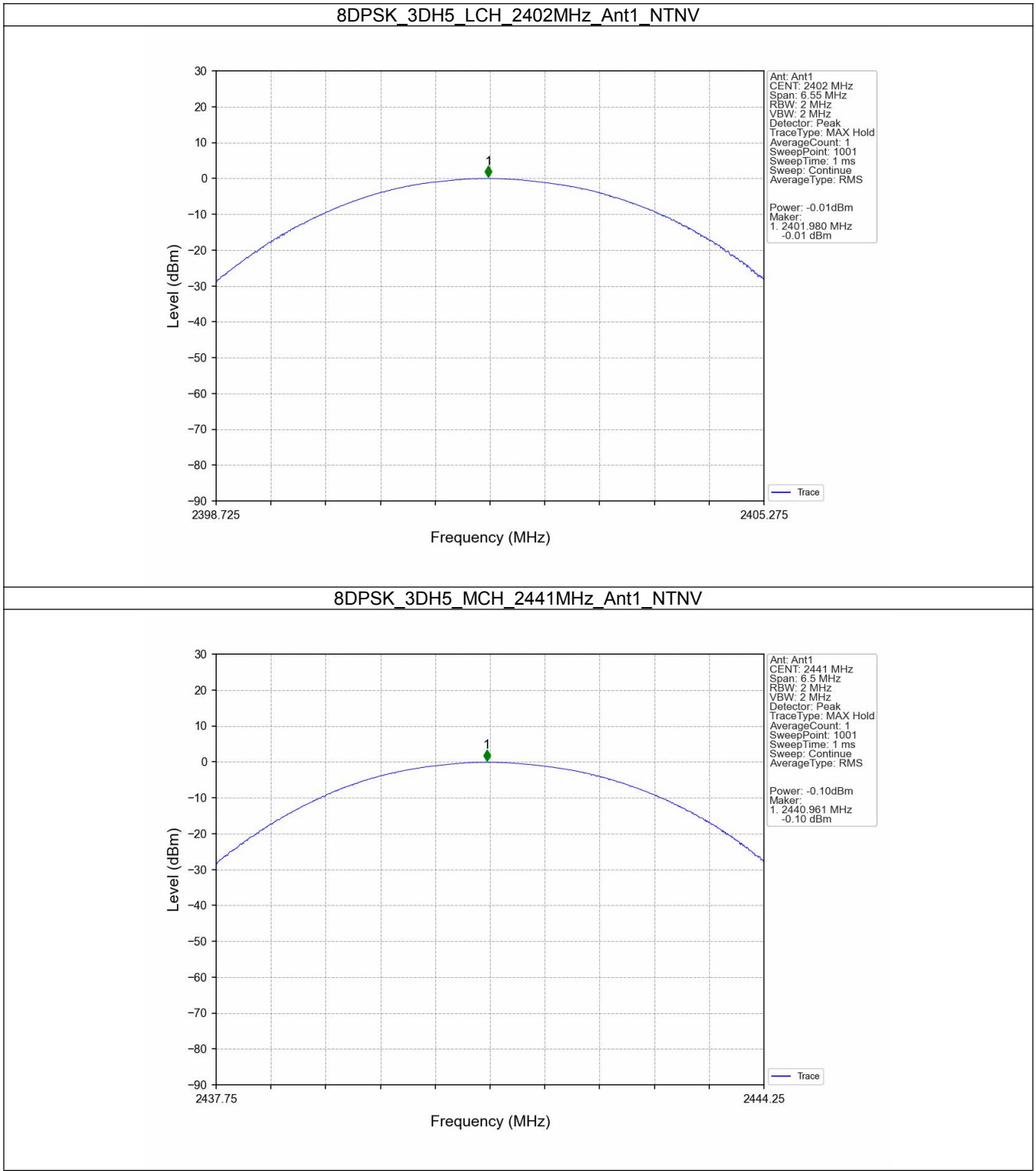
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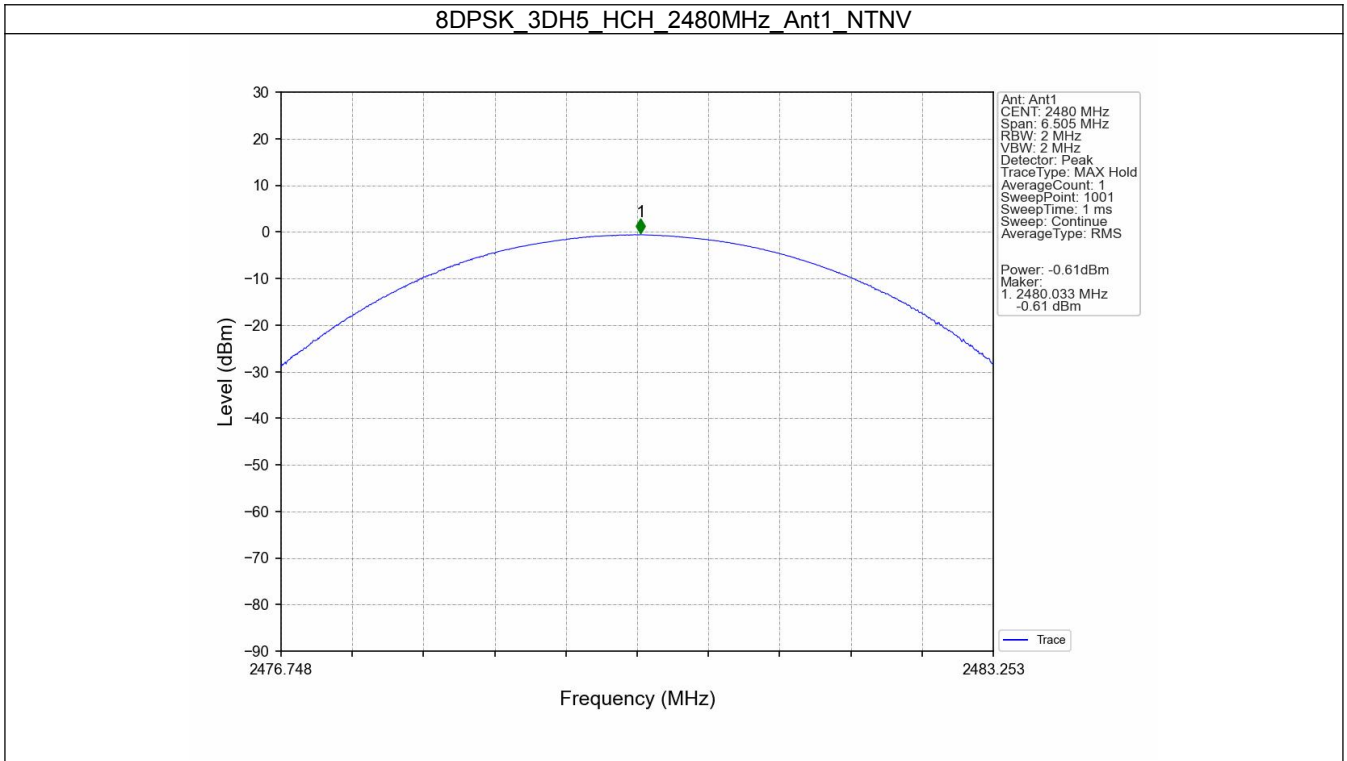
FCC ID: 2BRR7-BEATORB



FCC ID: 2BRR7-BEATORB



FCC ID: 2BRR7-BEATORB



FCC ID: 2BRR7-BEATORB

4. Carrier Frequency Separation

4.1 Test Result

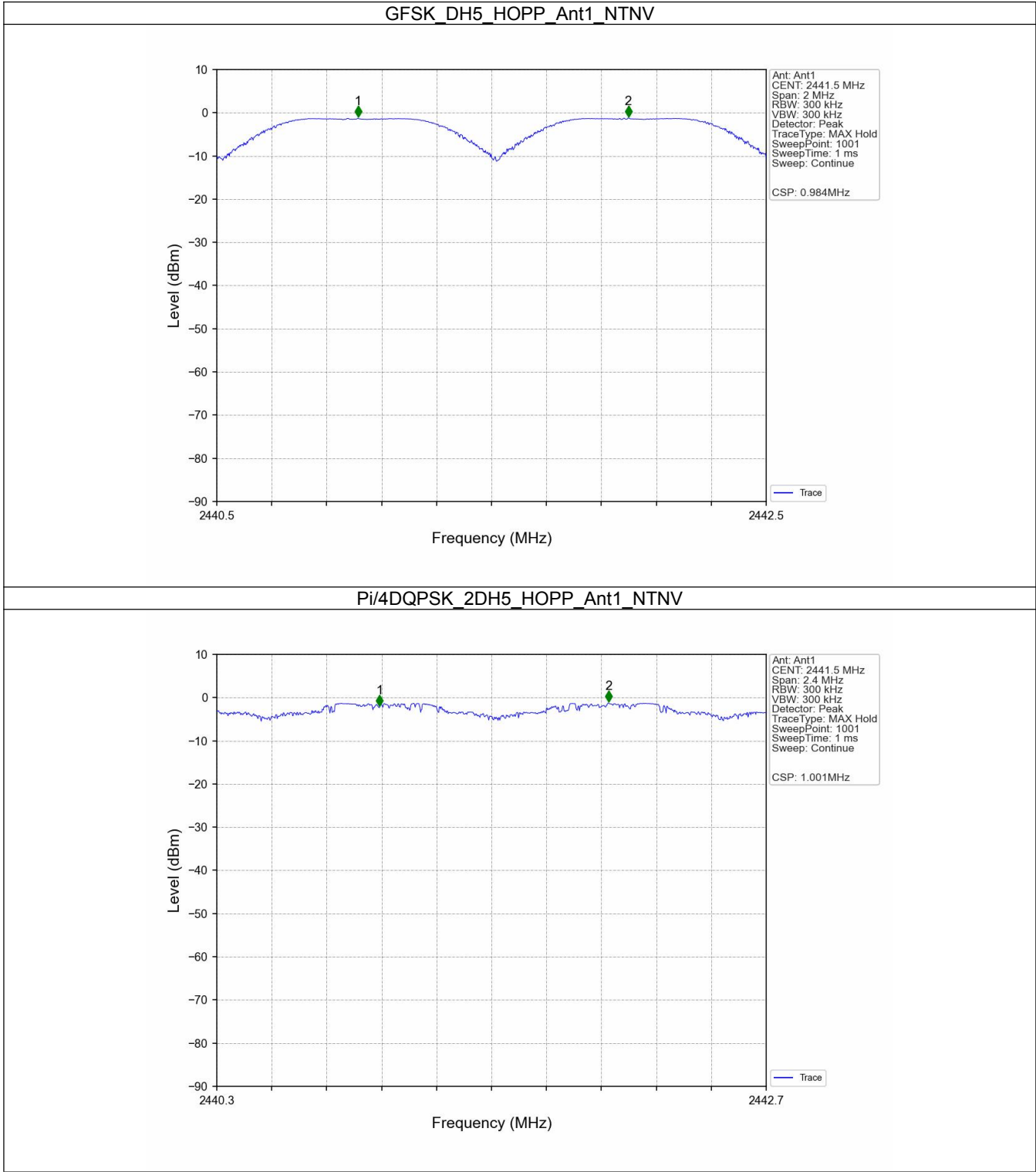
4.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	Packet Type	Channel Separation (MHz)	20dB Bandwidth (MHz)	Limit (MHz)	Verdict
GFSK	SISO	HOPP	DH5	0.984	1.045	≥ 0.697	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	1.001	1.347	≥ 0.898	Pass
8DPSK	SISO	HOPP	3DH5	1.022	1.310	≥ 0.873	Pass

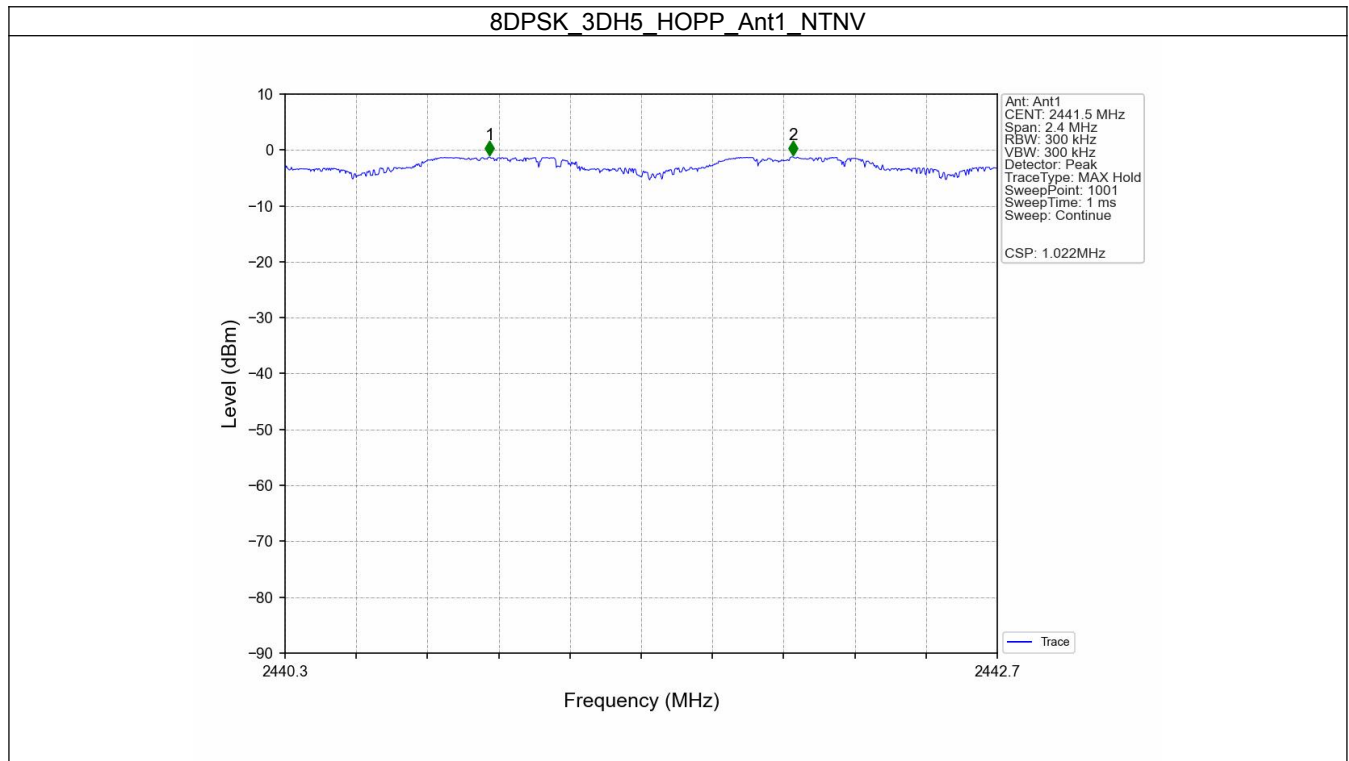
FCC ID: 2BRR7-BEATORB

4.2 Test Graph

4.2.1 Ant1



FCC ID: 2BRR7-BEATORB



FCC ID: 2BRR7-BEATORB

5. Number of Hopping Frequencies

5.1 Test Result

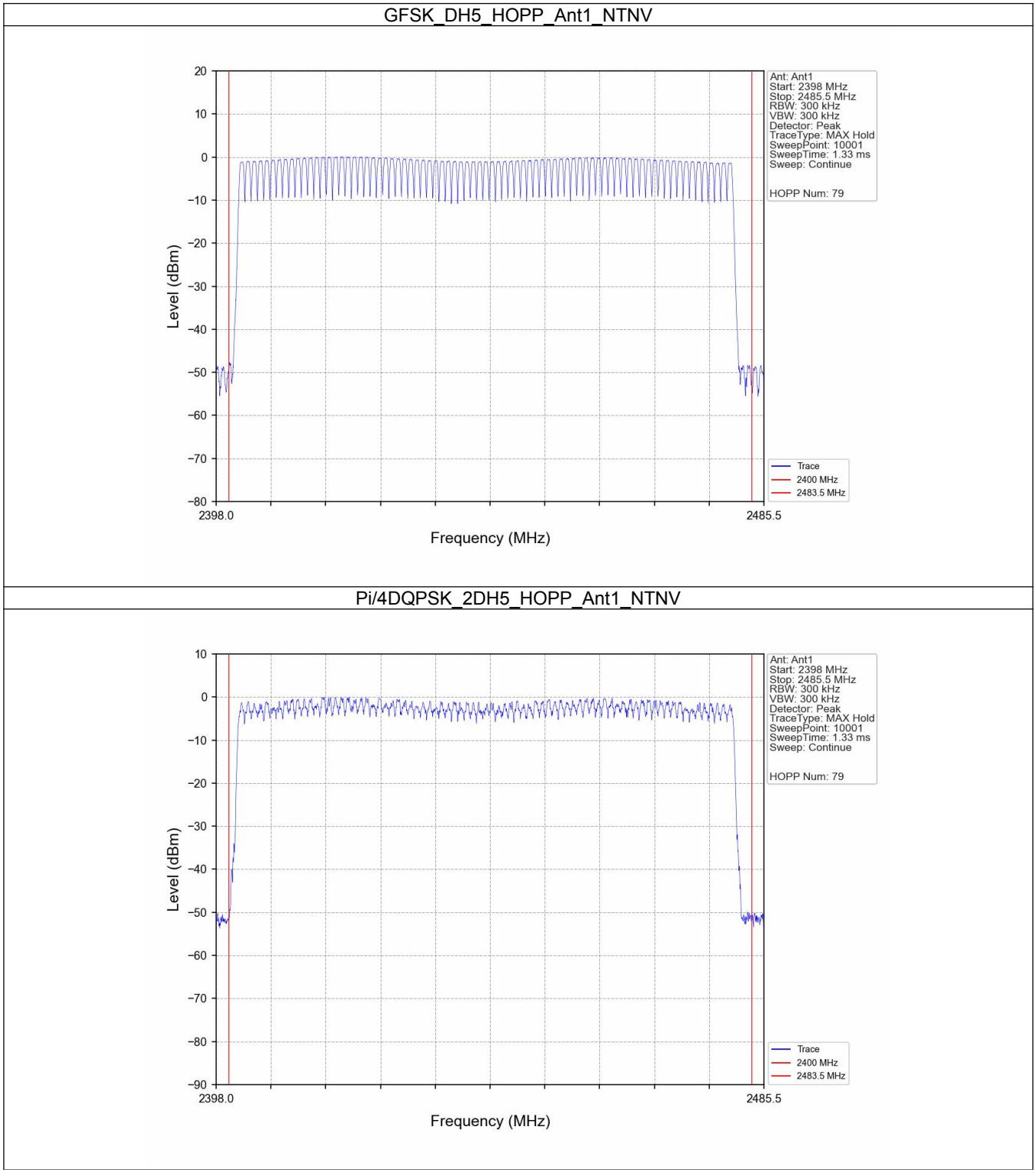
5.1.1 HoppNum

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

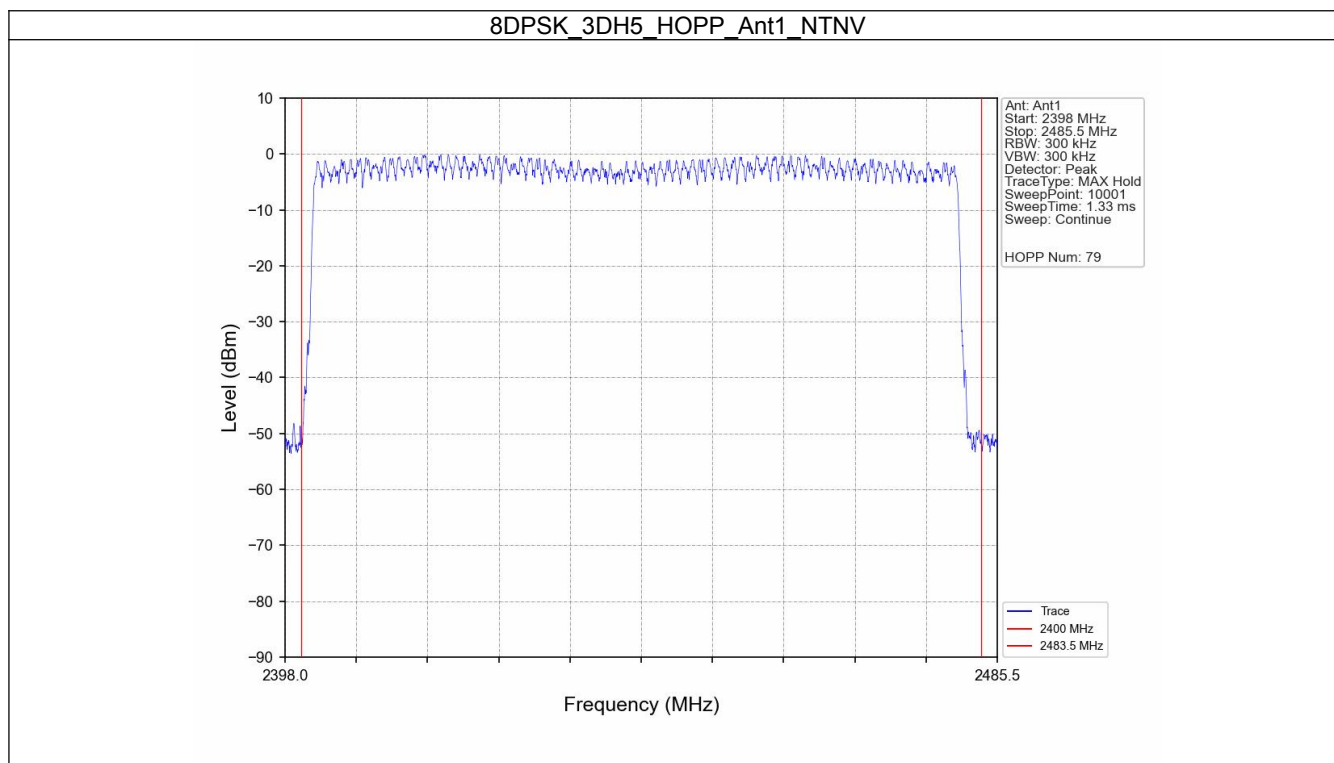
FCC ID: 2BRR7-BEATORB

5.2 Test Graph

5.2.1 HoppNum



FCC ID: 2BRR7-BEATORB



FCC ID: 2BRR7-BEATORB

6. Time of Occupancy (Dwell Time)

6.1 Test Result

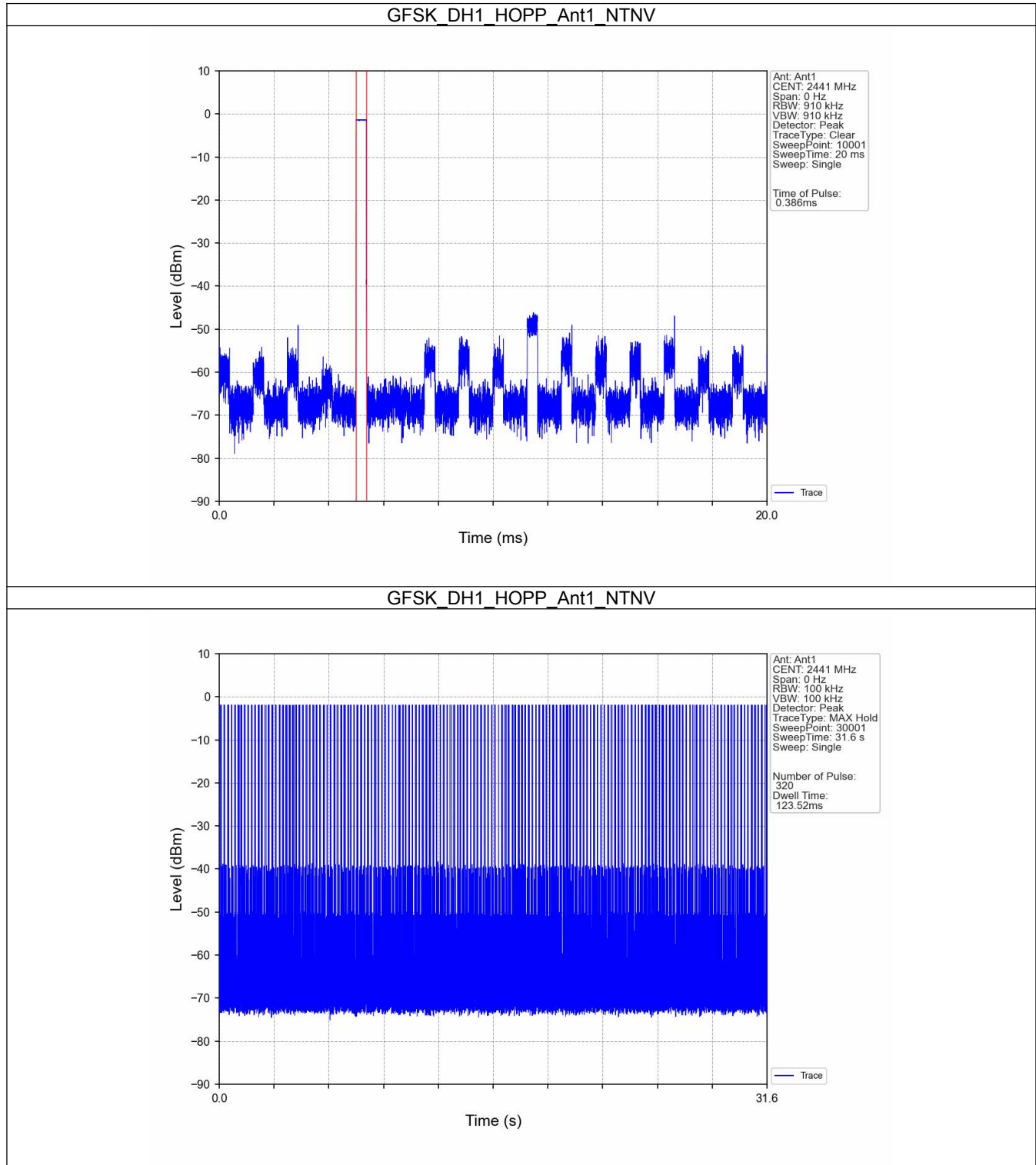
6.1.1 Ant1

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	0.386	31.600	320	123.520	<=400	Pass
			DH3	1.638	31.600	154	252.252	<=400	Pass
			DH5	2.886	31.600	109	314.574	<=400	Pass
Pi/4DQPSK	SISO	HOPP	2DH1	0.388	31.600	320	124.160	<=400	Pass
			2DH3	1.640	31.600	165	270.600	<=400	Pass
			2DH5	2.898	31.600	109	315.882	<=400	Pass
8DPSK	SISO	HOPP	3DH1	0.392	31.600	319	125.048	<=400	Pass
			3DH3	1.648	31.600	162	266.976	<=400	Pass
			3DH5	2.898	31.600	95	275.310	<=400	Pass

FCC ID: 2BRR7-BEATORB

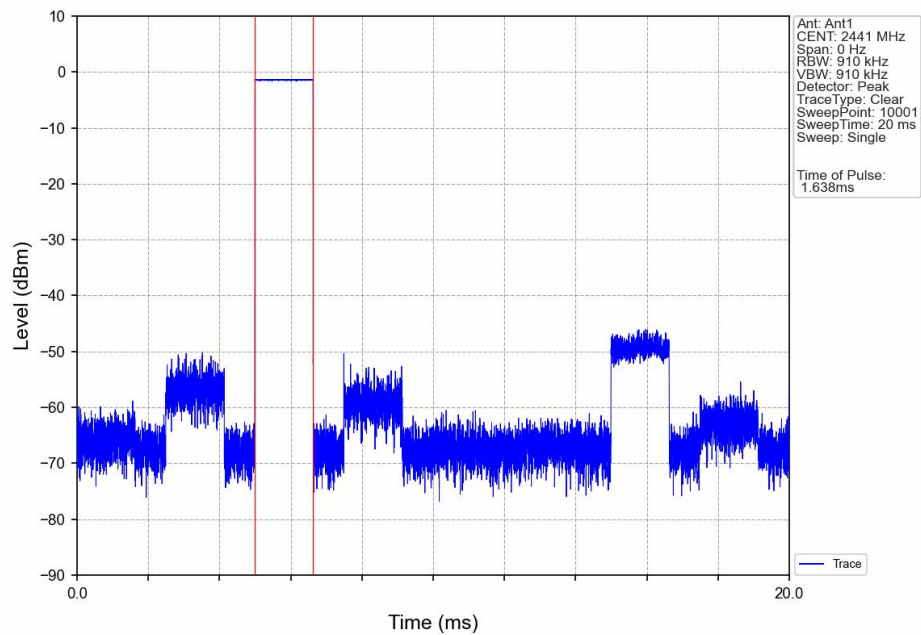
6.2 Test Graph

6.2.1 Ant1

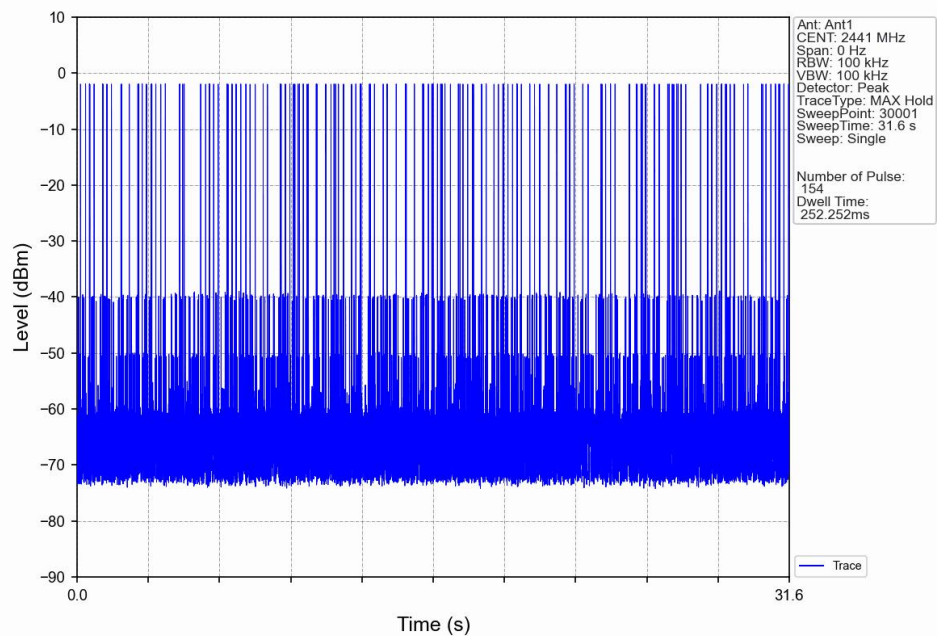


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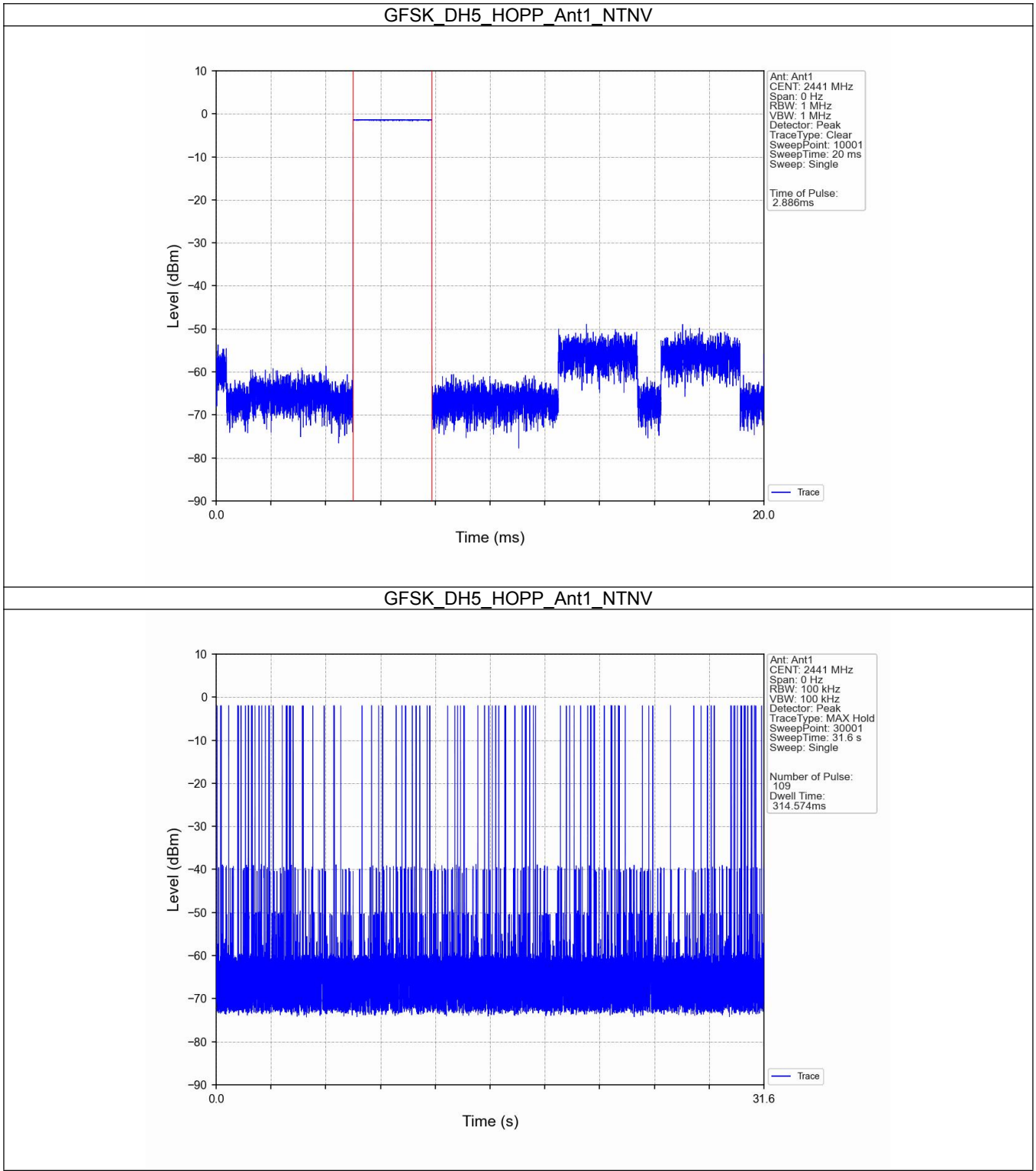
GFSK_DH3_HOPP_Ant1_NTNV



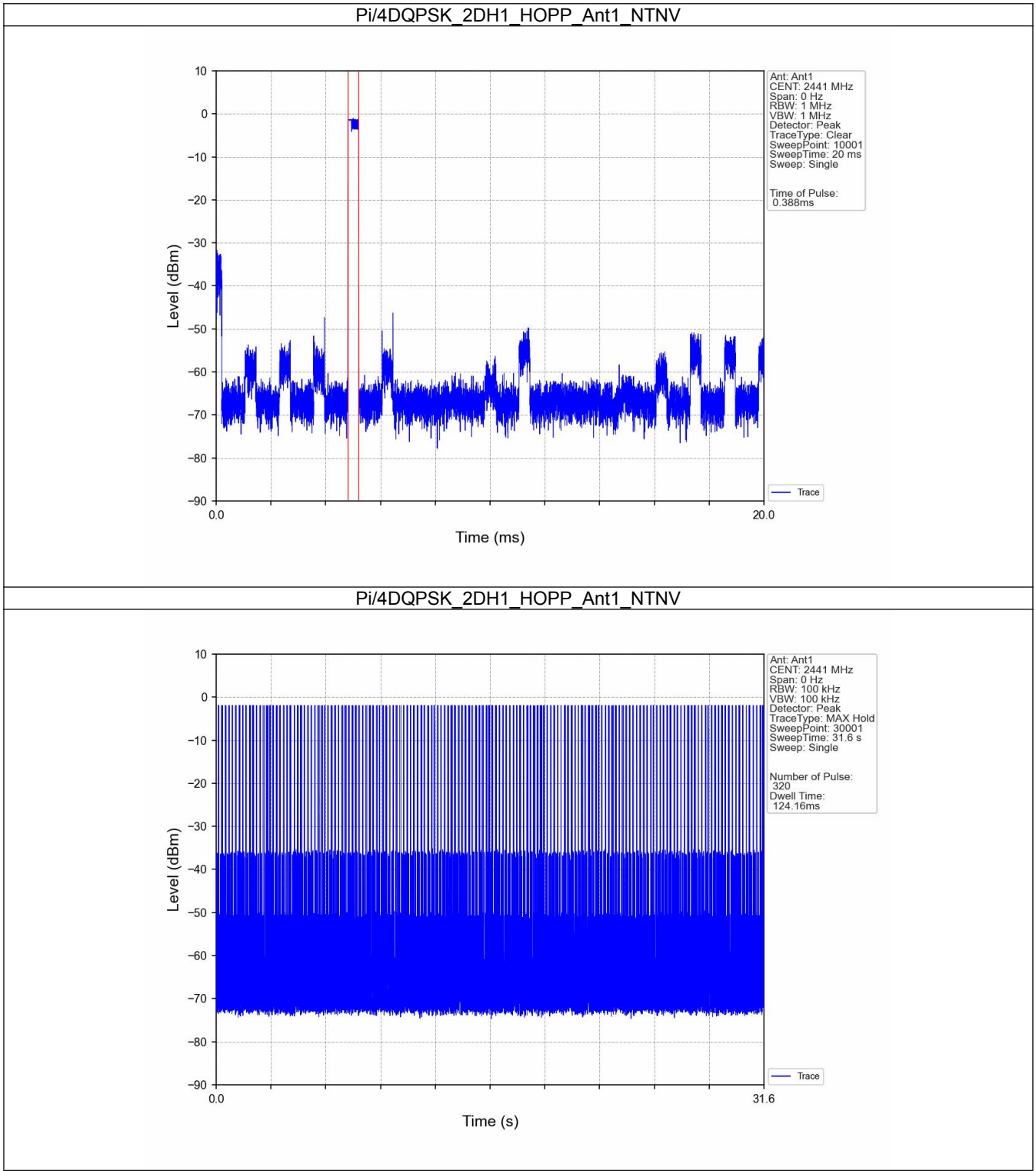
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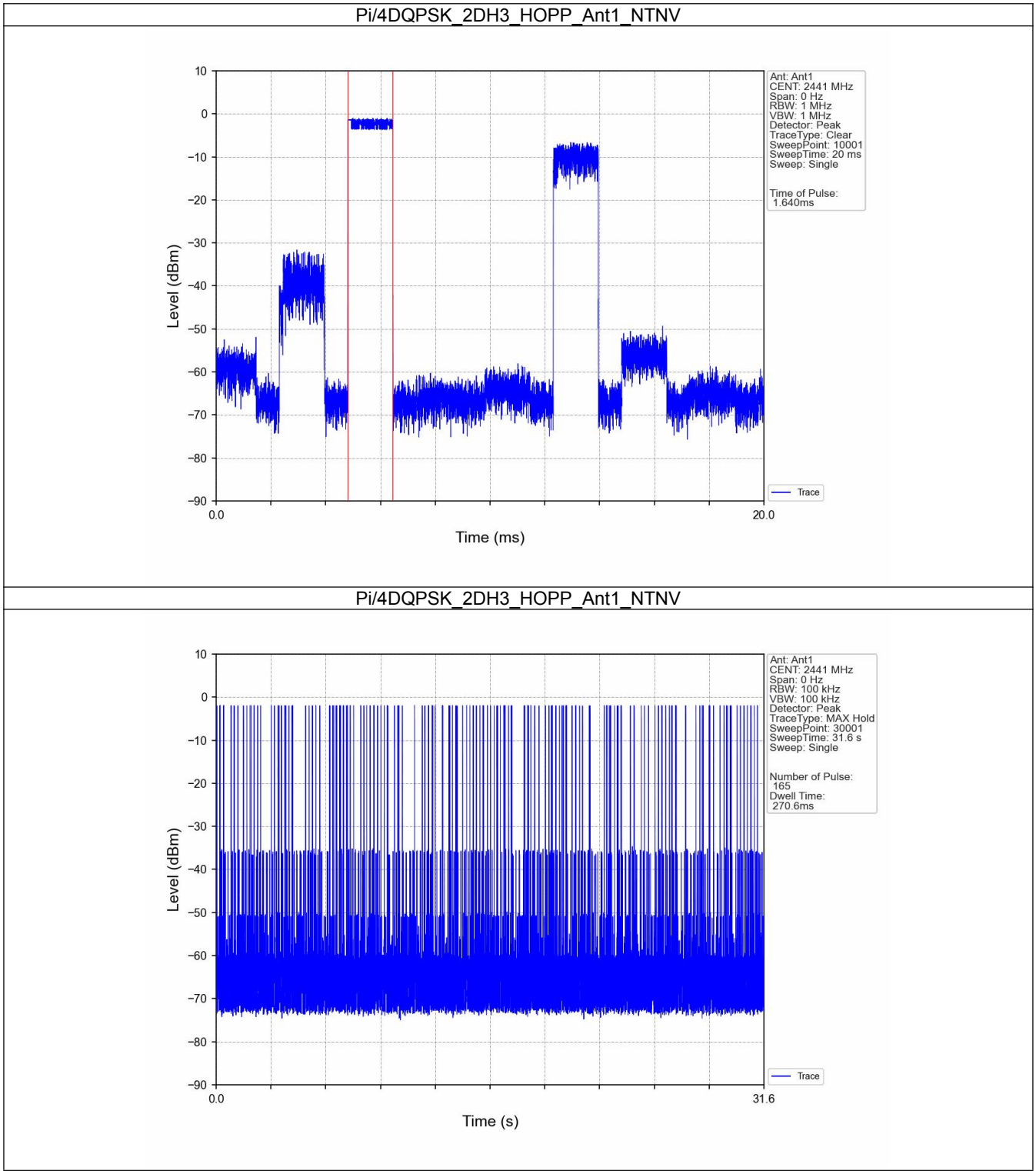
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