

Appendix Test Data for BT(BDR/EDR) (Conducted Measurement)

Product Name: CRUISIN PORTABLE SPEAKER

Trade Mark: Zero Statik

Test Model: CRUISIN-BLACK

FCC ID: 2BKTL-CRUN01

Environmental Conditions

Temperature:	22.5
Relative Humidity:	56%
ATM Pressure:	100.0 kPa
Test Engineer:	Tony lu
Supervised by:	Max zhang
NOTE	N/A

1. Bandwidth

1.1 Test Result

1.1.1 OBW

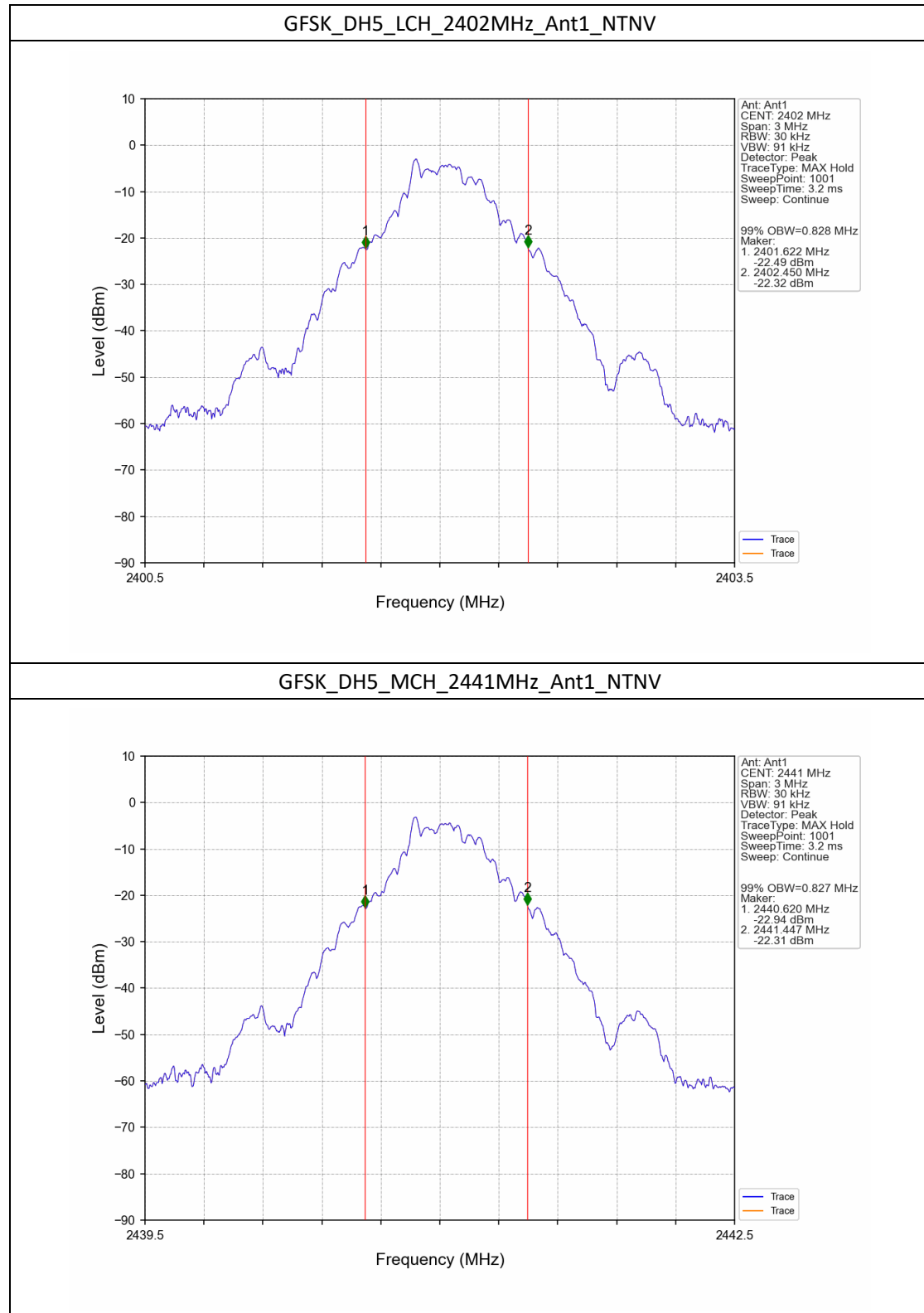
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	99% Occupied Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	0.828	/	Pass
		2441	DH5	1	0.827	/	Pass
		2480	DH5	1	0.826	/	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.170	/	Pass
		2441	2DH5	1	1.174	/	Pass
		2480	2DH5	1	1.171	/	Pass
8DPSK	SISO	2402	3DH5	1	1.175	/	Pass
		2441	3DH5	1	1.177	/	Pass
		2480	3DH5	1	1.174	/	Pass

1.1.2 20dB BW

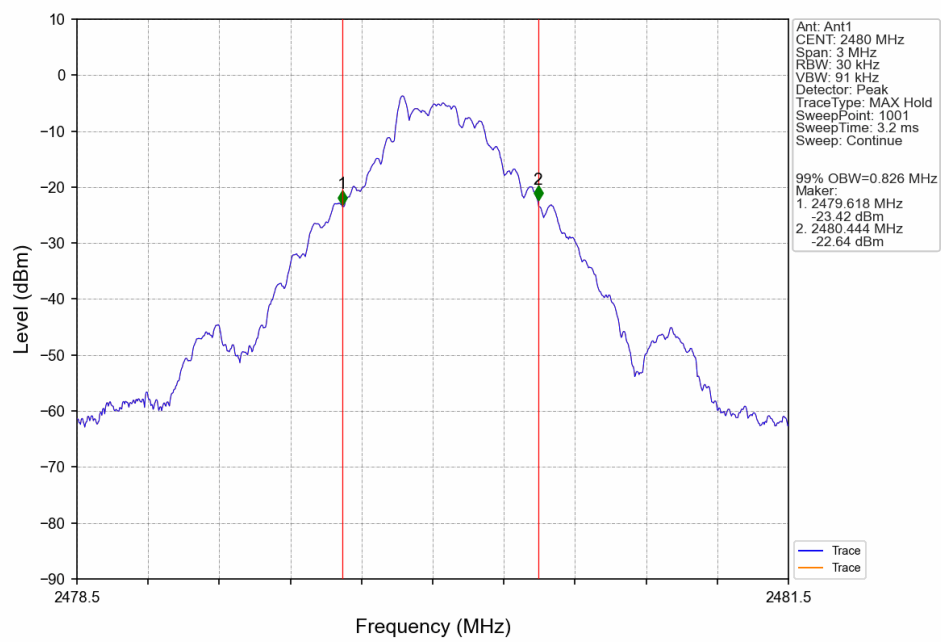
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	20dB Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	0.929	/	Pass
		2441	DH5	1	0.932	/	Pass
		2480	DH5	1	0.932	/	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.290	/	Pass
		2441	2DH5	1	1.290	/	Pass
		2480	2DH5	1	1.289	/	Pass
8DPSK	SISO	2402	3DH5	1	1.306	/	Pass
		2441	3DH5	1	1.304	/	Pass
		2480	3DH5	1	1.303	/	Pass

1.2 Test Graph

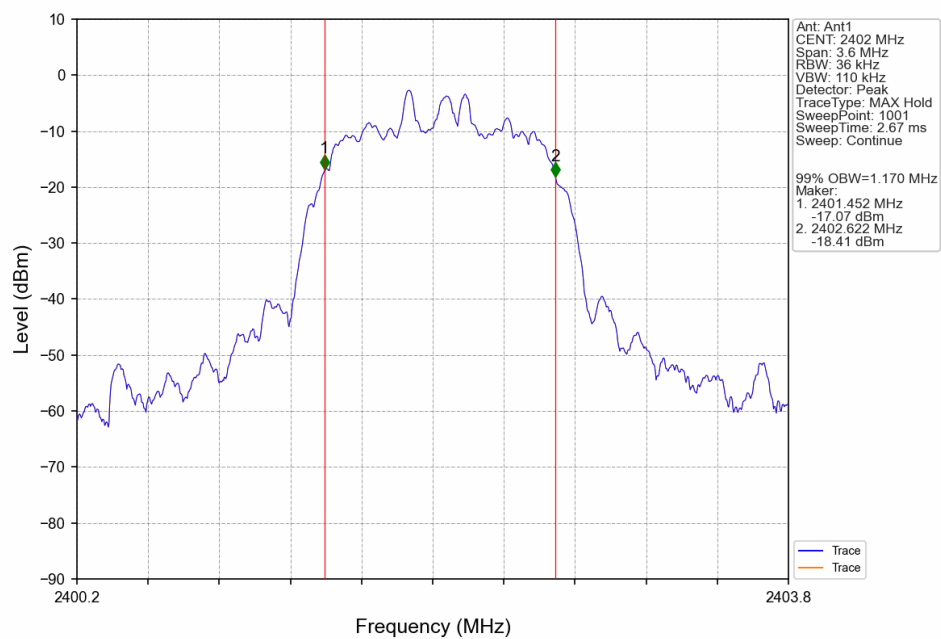
1.2.1 OBW



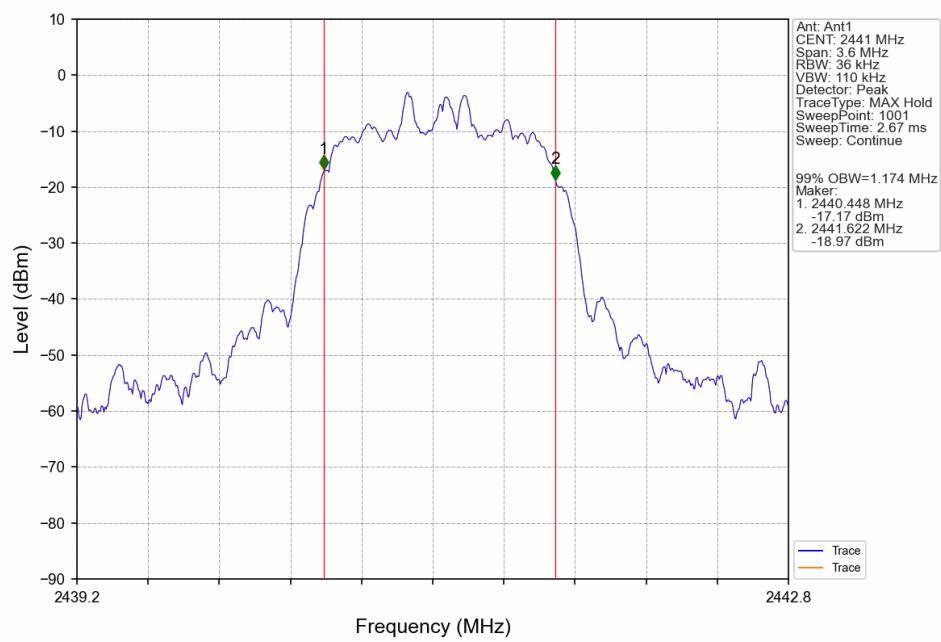
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



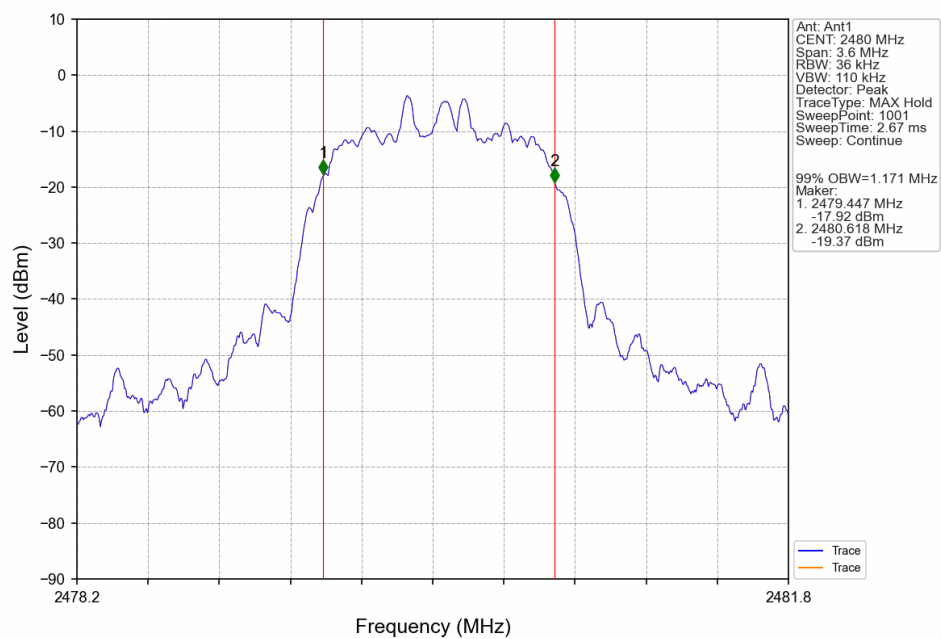
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



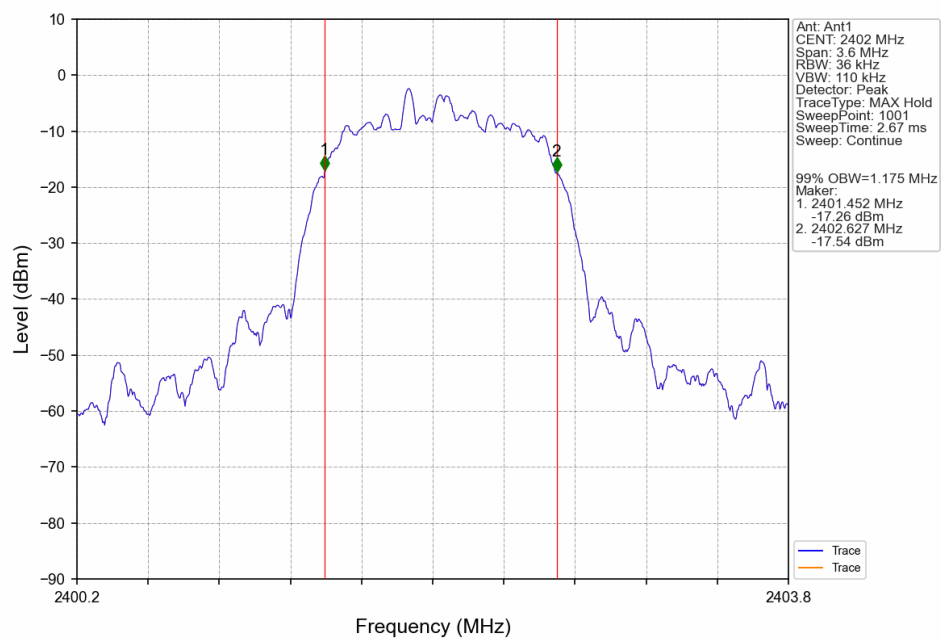
Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



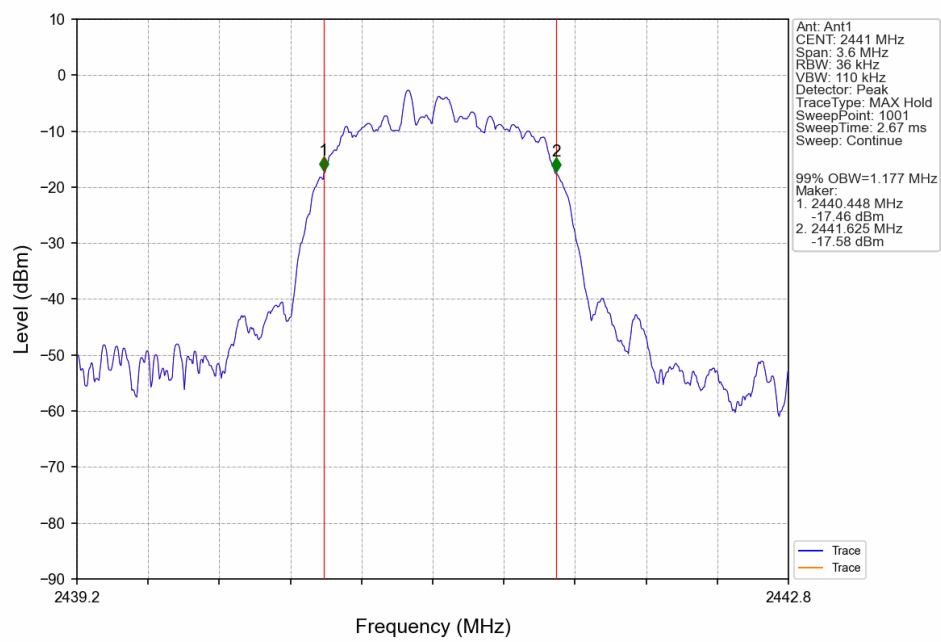
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

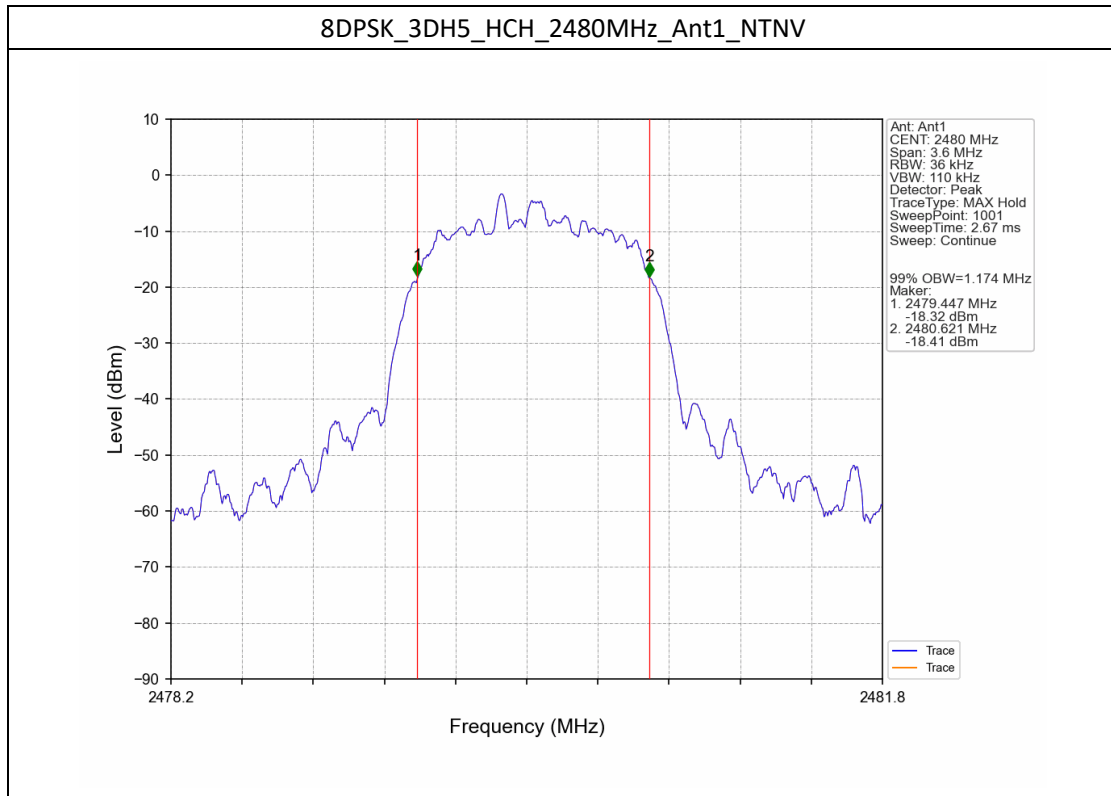


8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV

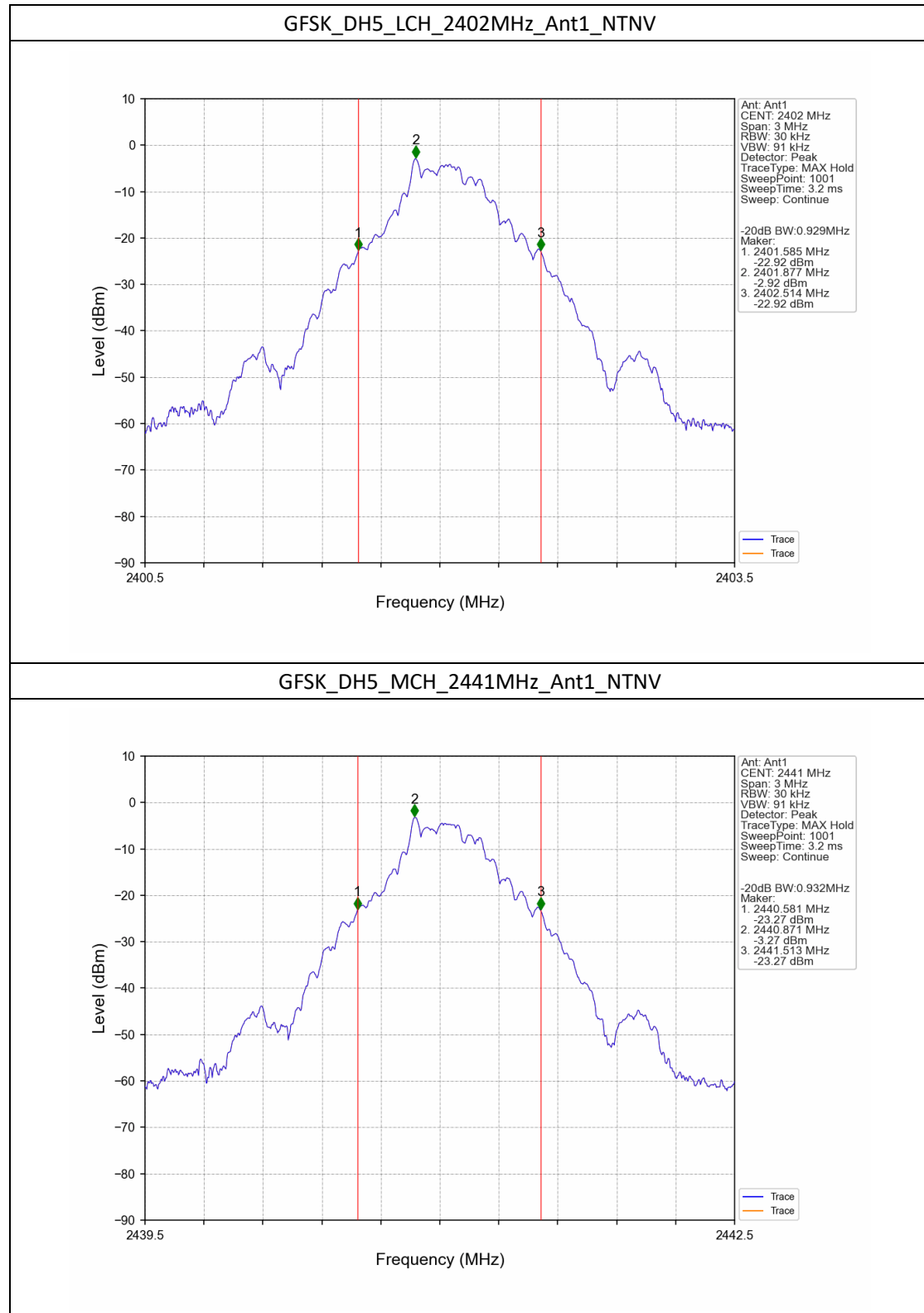


8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV

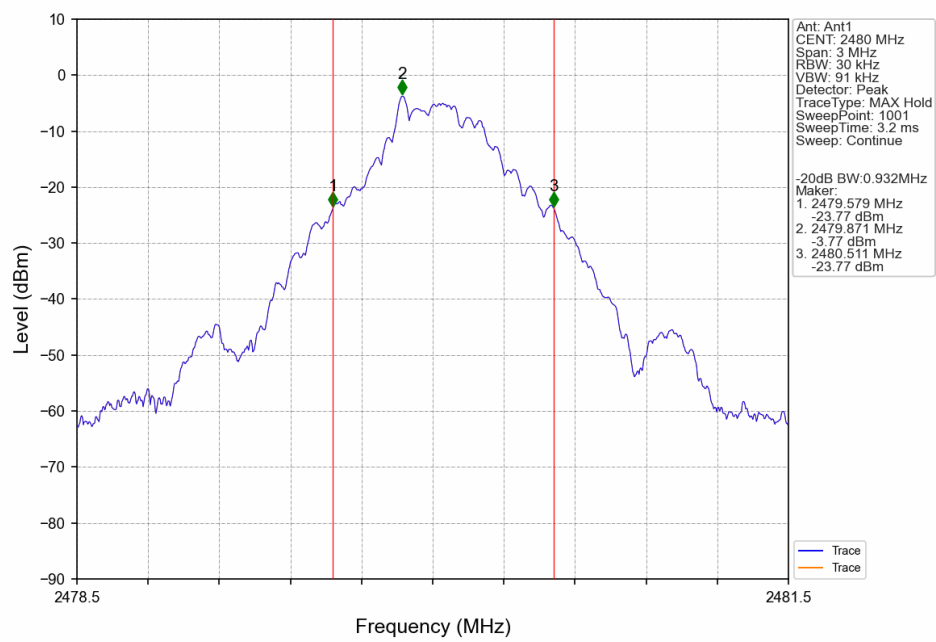




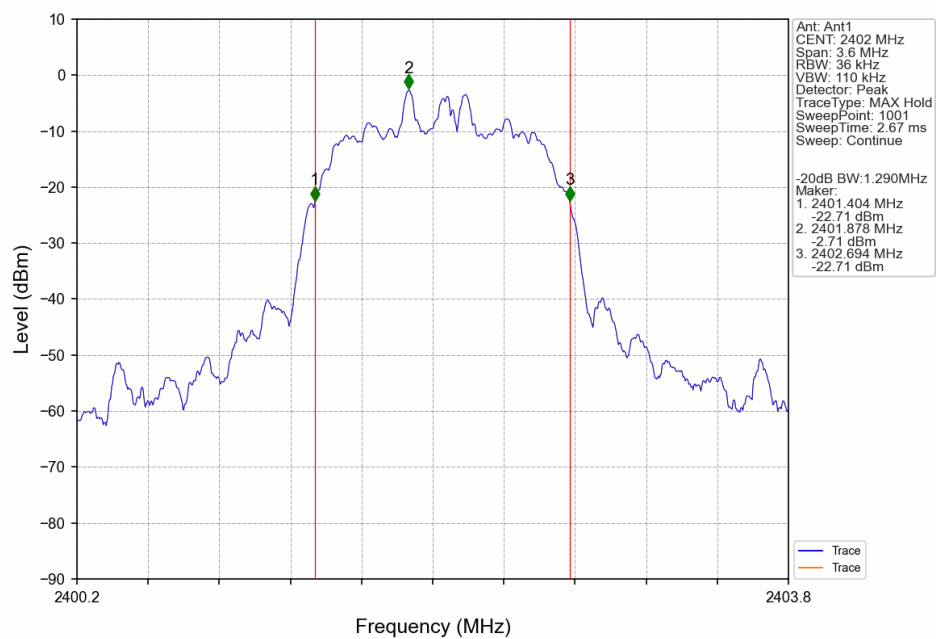
1.2.2 20dB BW



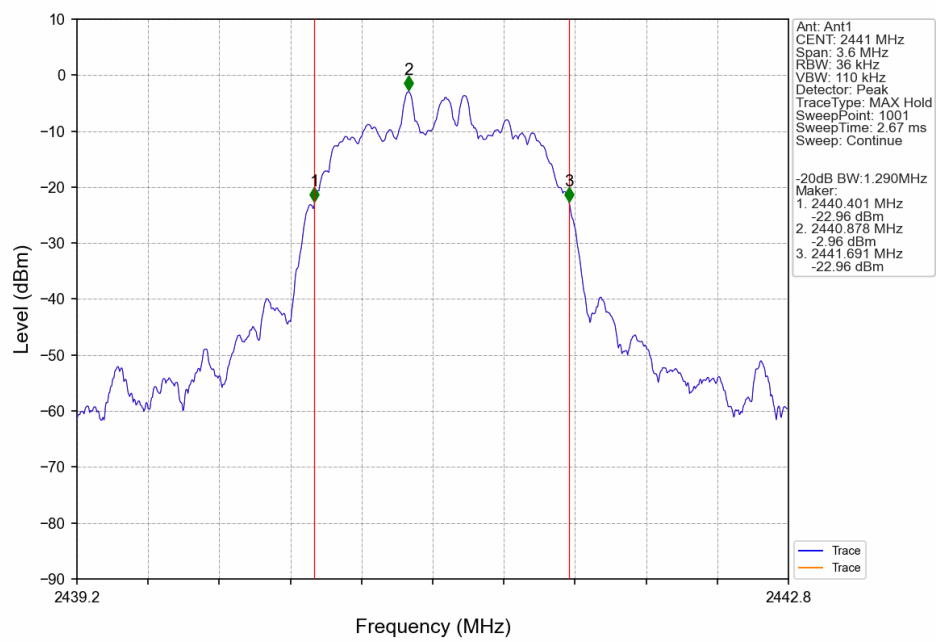
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



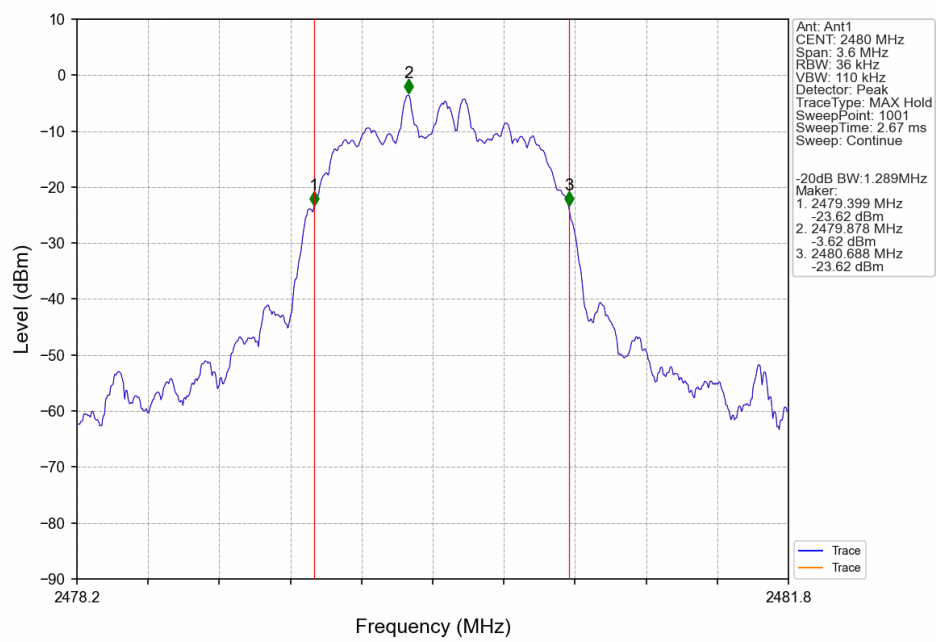
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



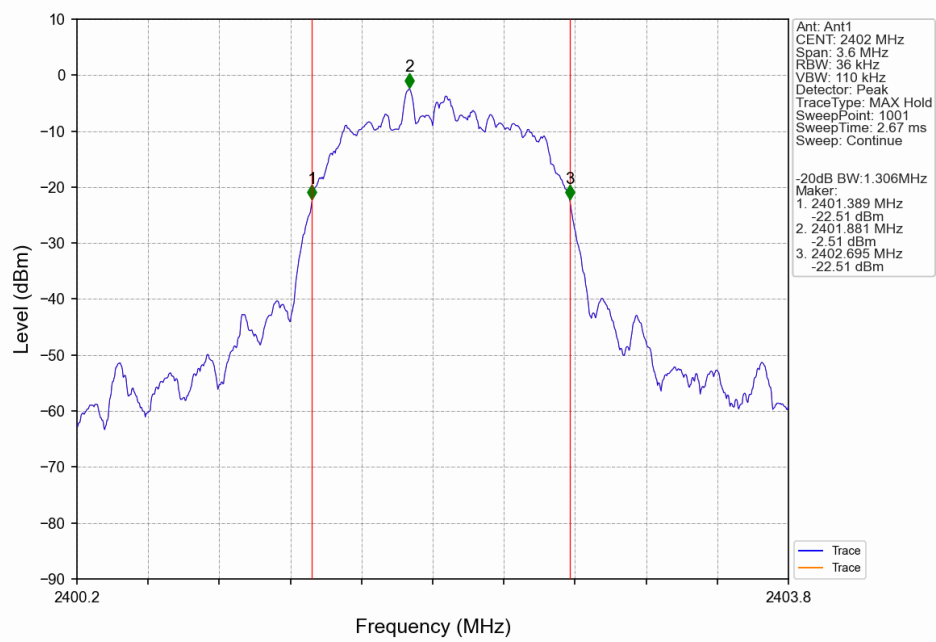
Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



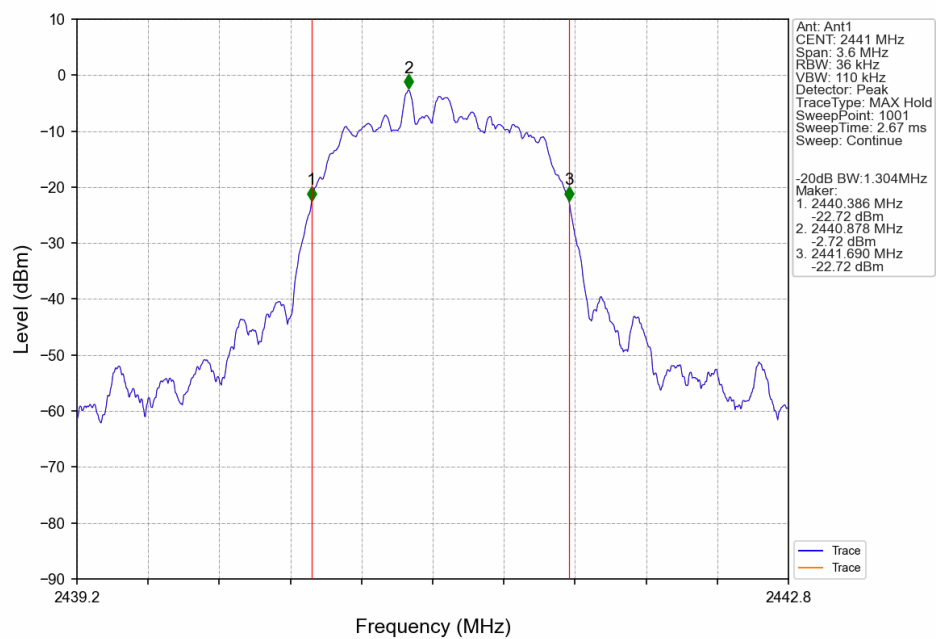
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

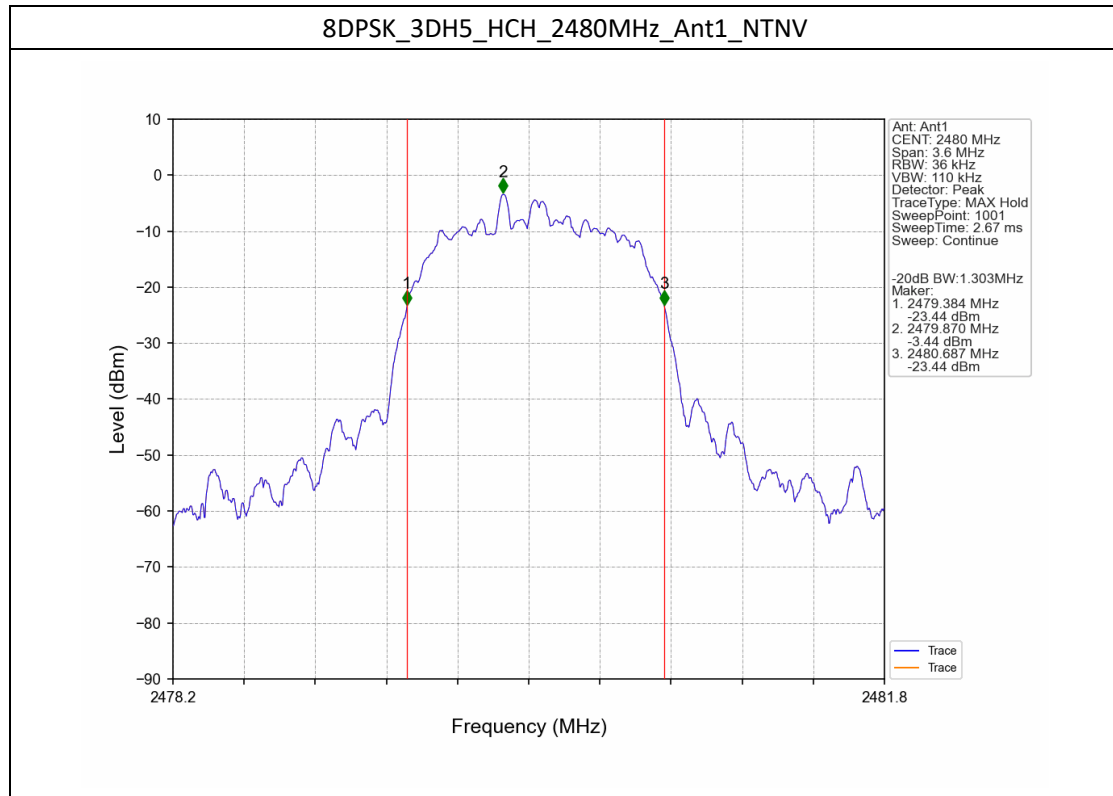


8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV





2. Maximum Conducted Output Power

2.1 Test Result

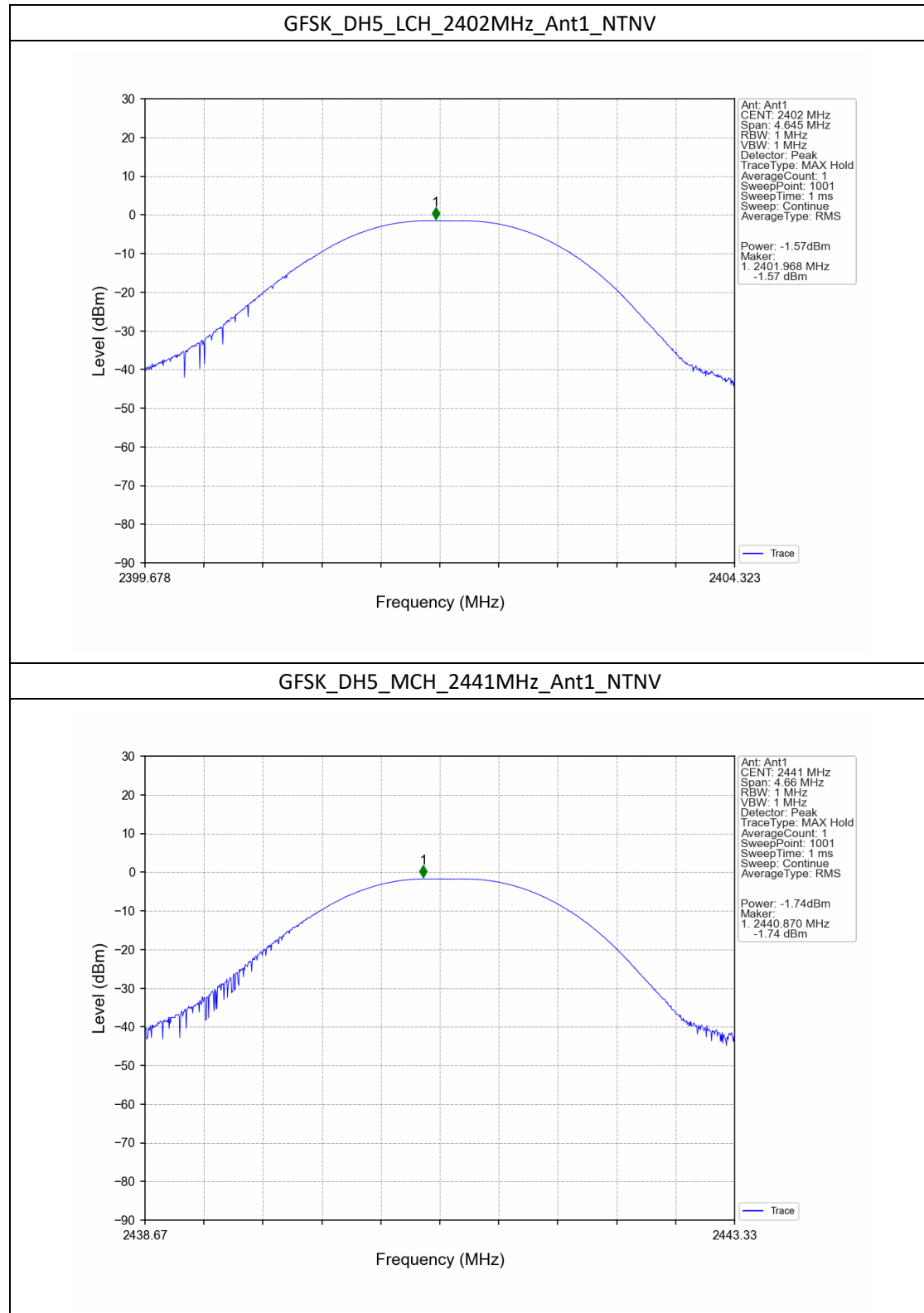
2.1.1 Power

Mode	TX Type	Frequency (MHz)	Packet Type	Maximum Peak Conducted Output Power (dBm)		Verdict
				ANT1	Limit	
GFSK	SISO	2402	DH5	-1.57	<=30	Pass
		2441	DH5	-1.74	<=30	Pass
		2480	DH5	-2.39	<=30	Pass
Pi/4DQPSK	SISO	2402	2DH5	0.68	<=20.97	Pass
		2441	2DH5	0.46	<=20.97	Pass
		2480	2DH5	-0.16	<=20.97	Pass
8DPSK	SISO	2402	3DH5	0.88	<=20.97	Pass
		2441	3DH5	0.65	<=20.97	Pass
		2480	3DH5	0.00	<=20.97	Pass

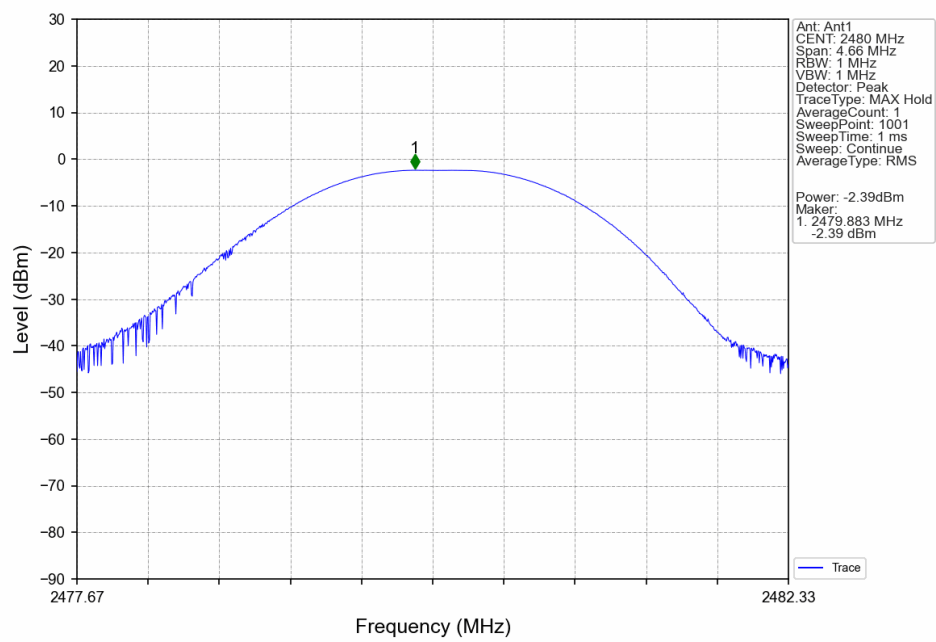
Note1: Antenna Gain: Ant1: 1.90dBi;

2.2 Test Graph

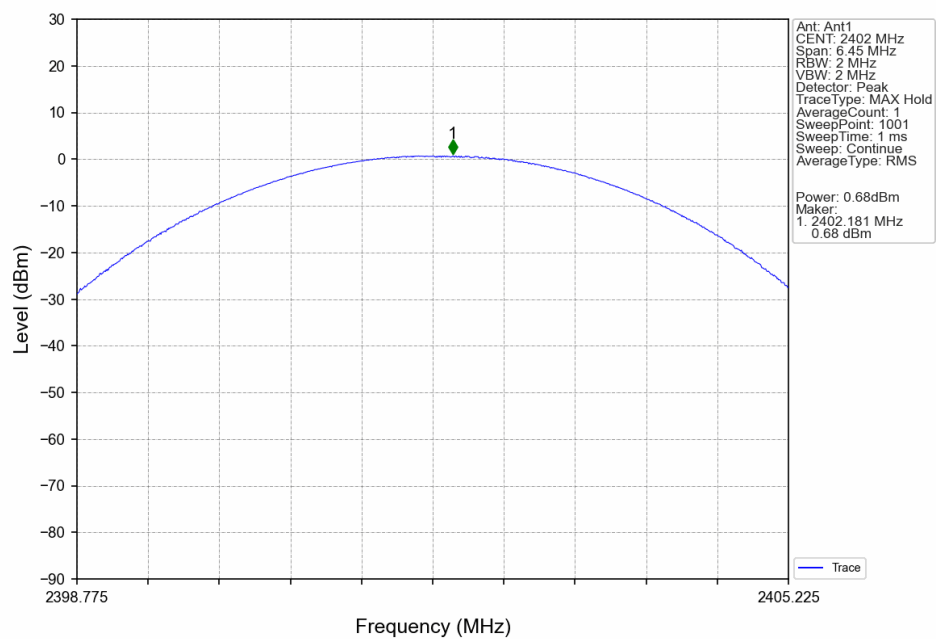
2.2.1 Power



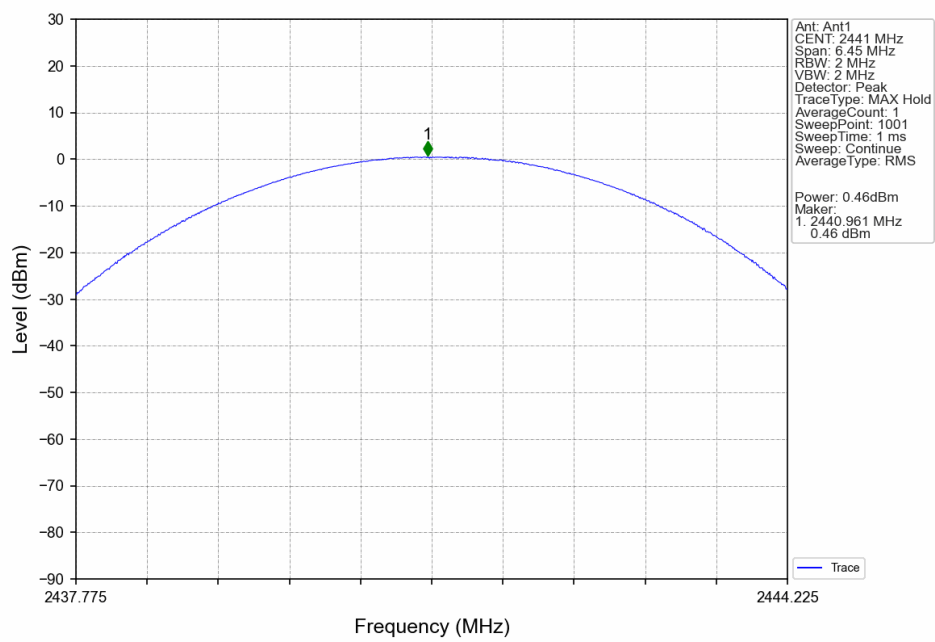
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



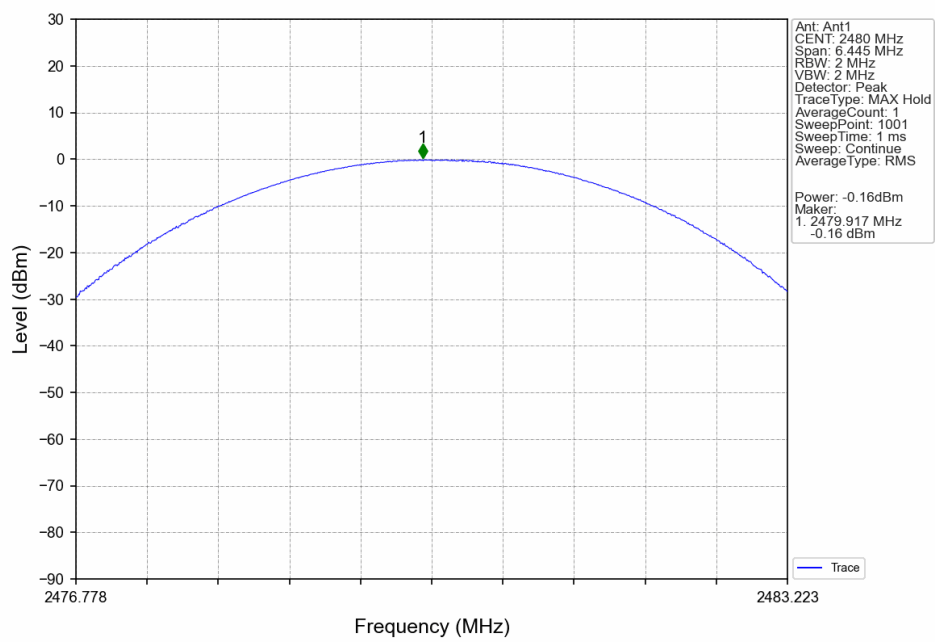
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



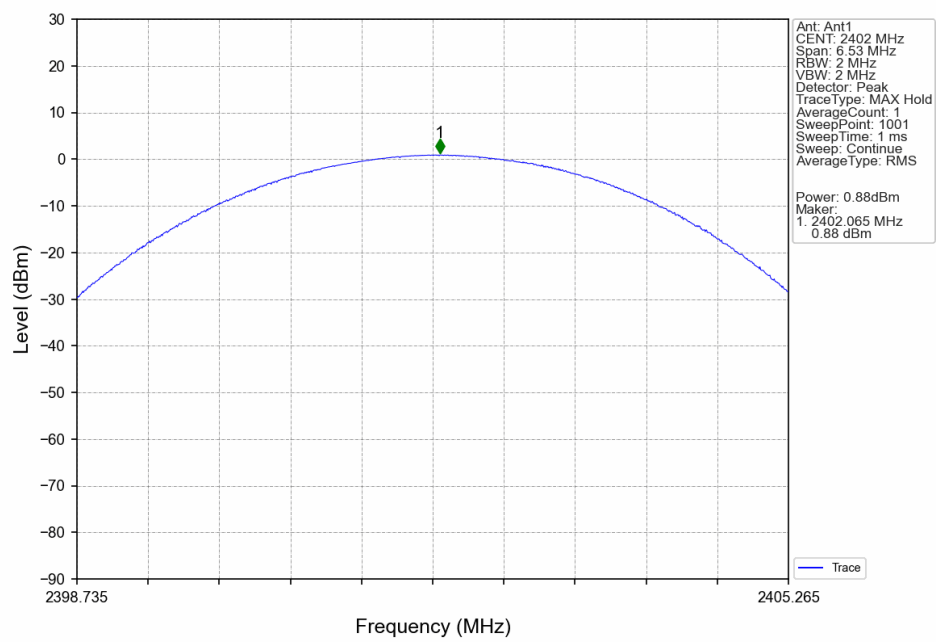
Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



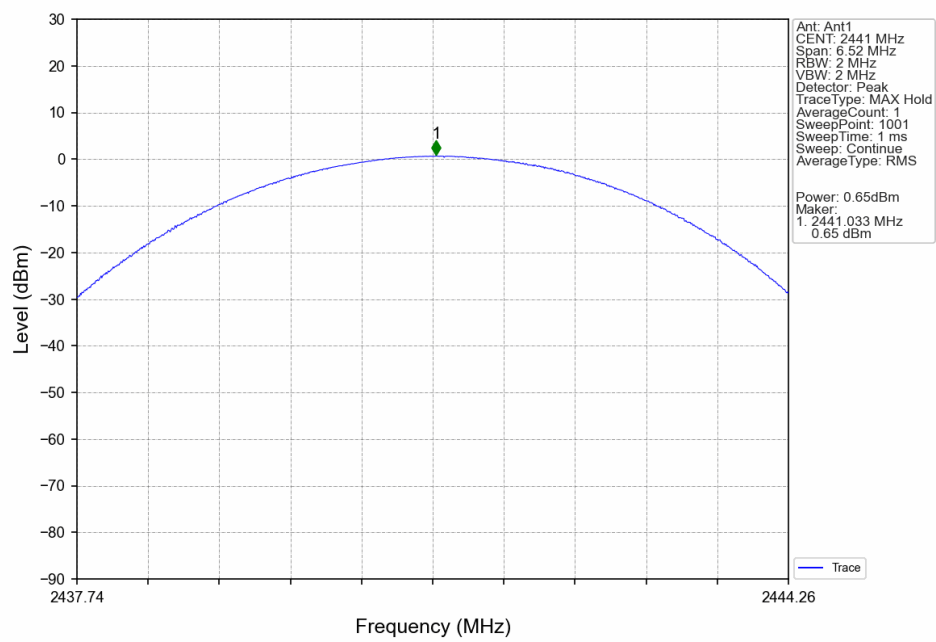
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

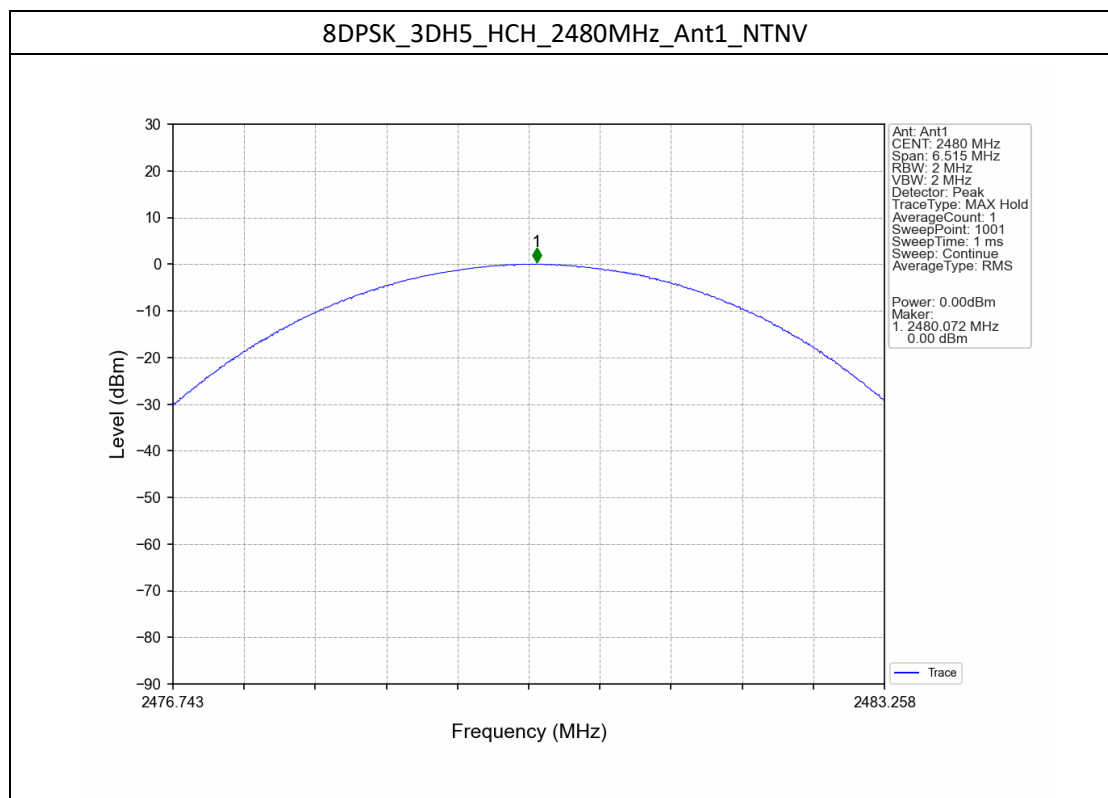


8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV





3. Carrier Frequency Separation

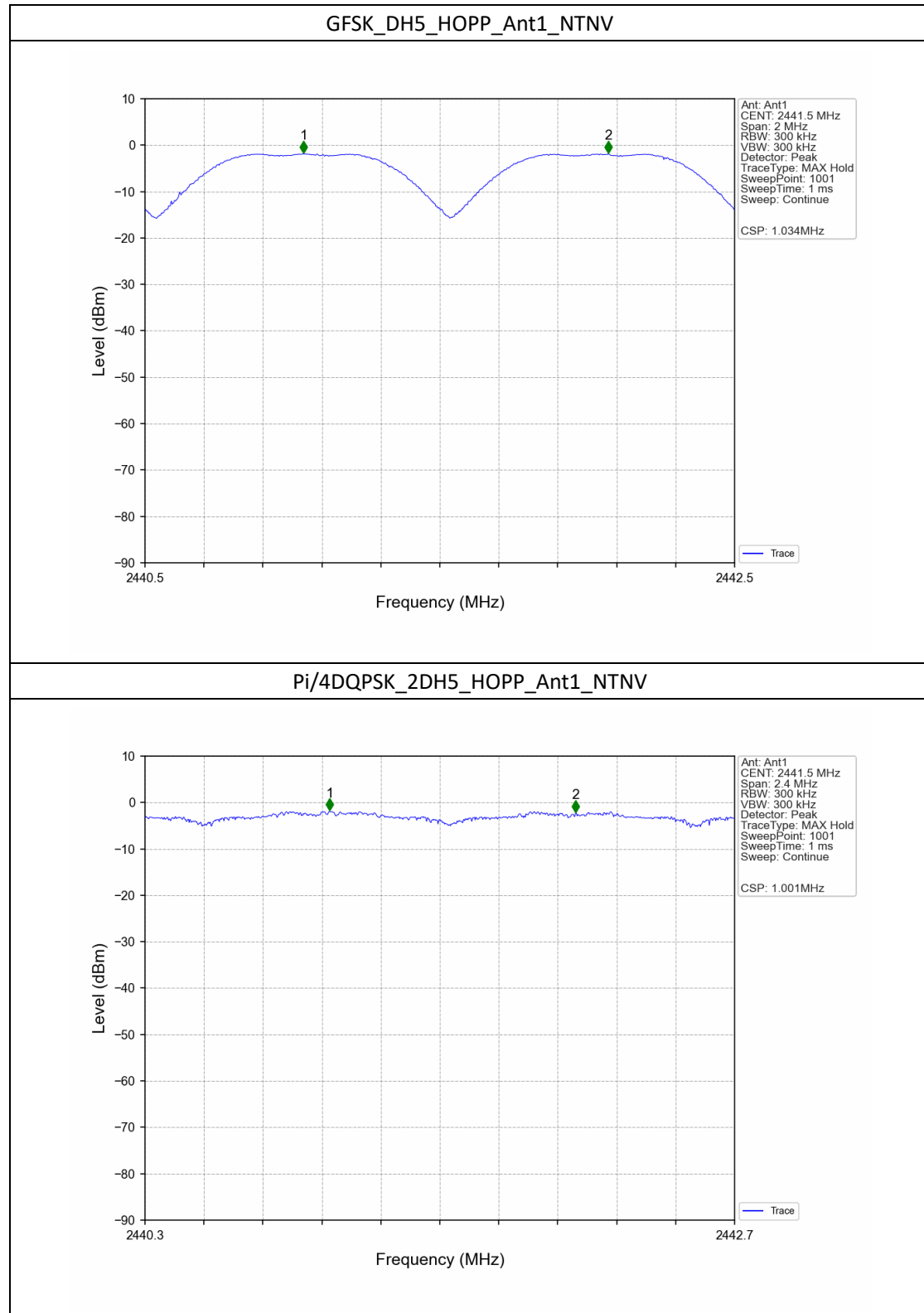
3.1 Test Result

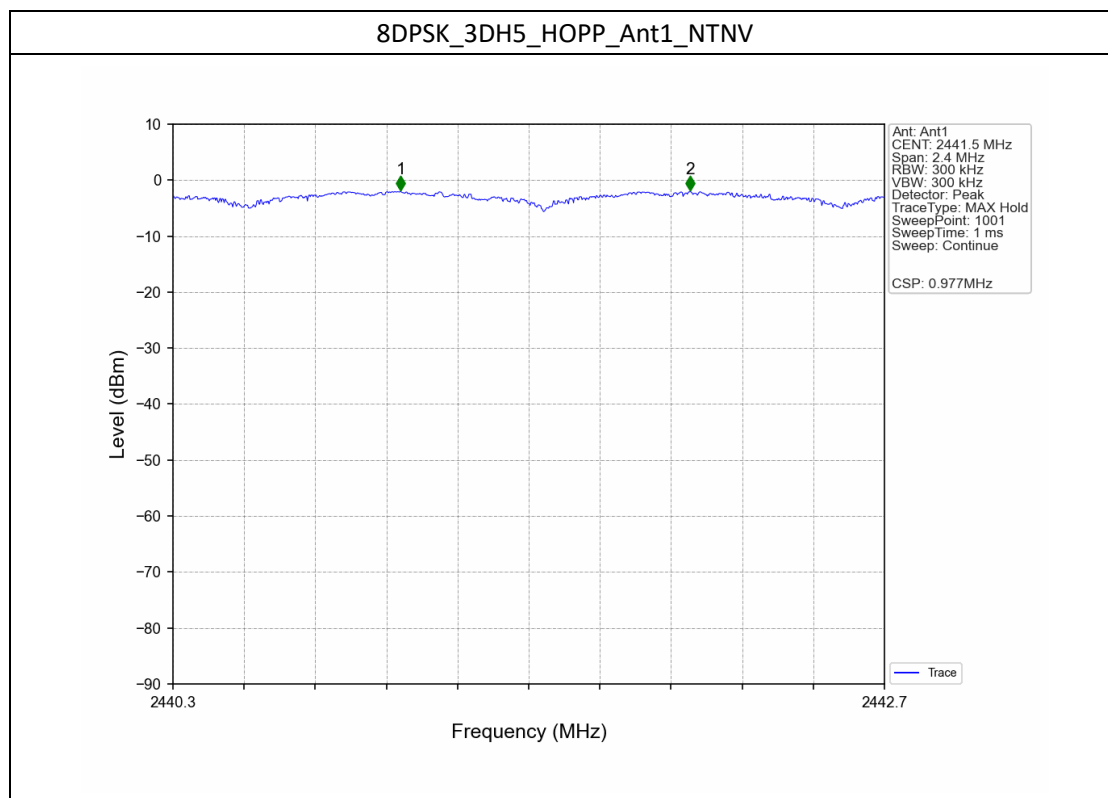
3.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	Packet Type	Channel Separation (MHz)	20dB Bandwidth (MHz)	Limit (MHz)	Verdict
GFSK	SISO	HOPP	DH5	1.034	0.932	≥ 0.932	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	1.001	1.290	≥ 0.86	Pass
8DPSK	SISO	HOPP	3DH5	0.977	1.306	≥ 0.871	Pass

3.2 Test Graph

3.2.1 Ant1





4. Number of Hopping Frequencies

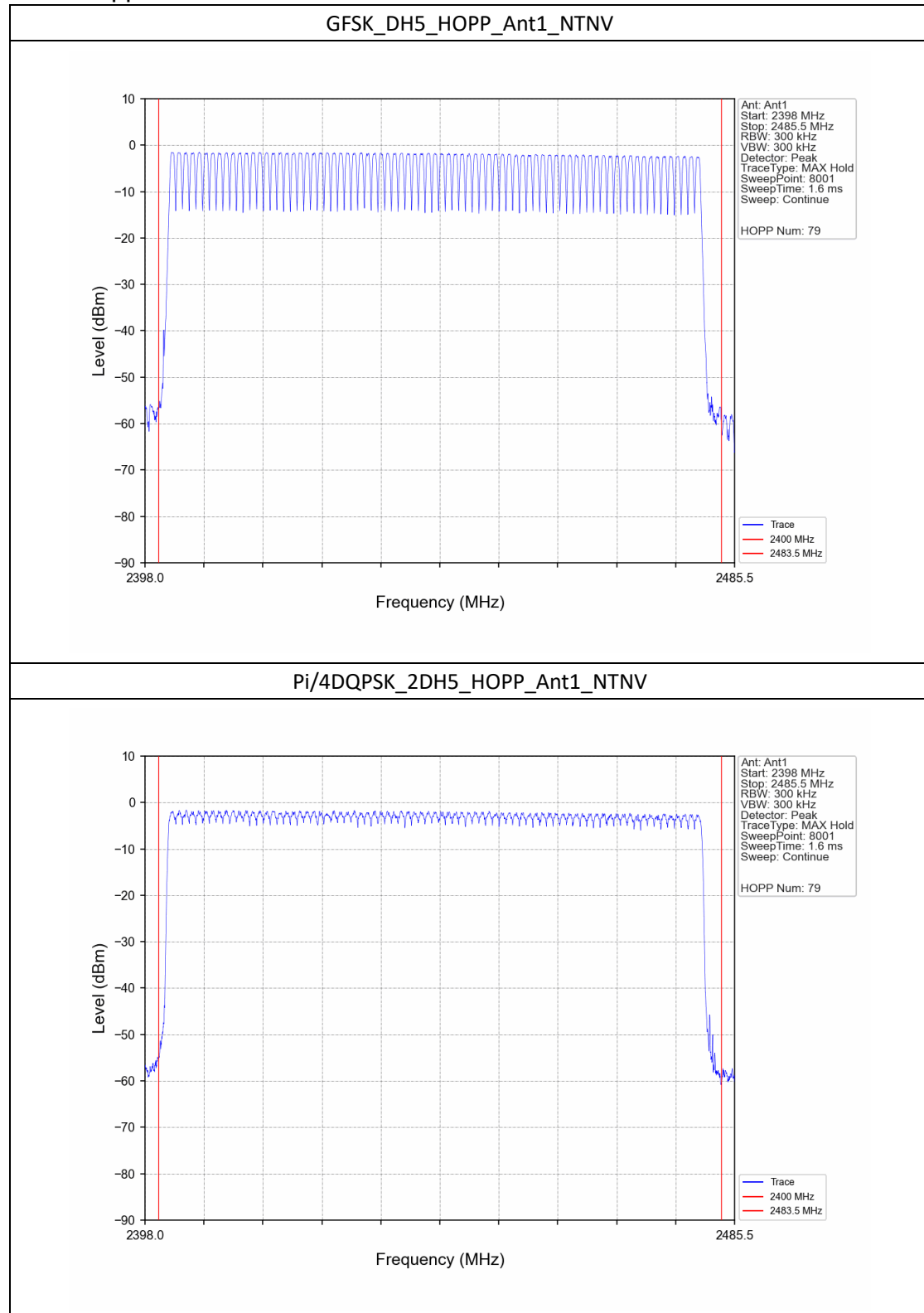
4.1 Test Result

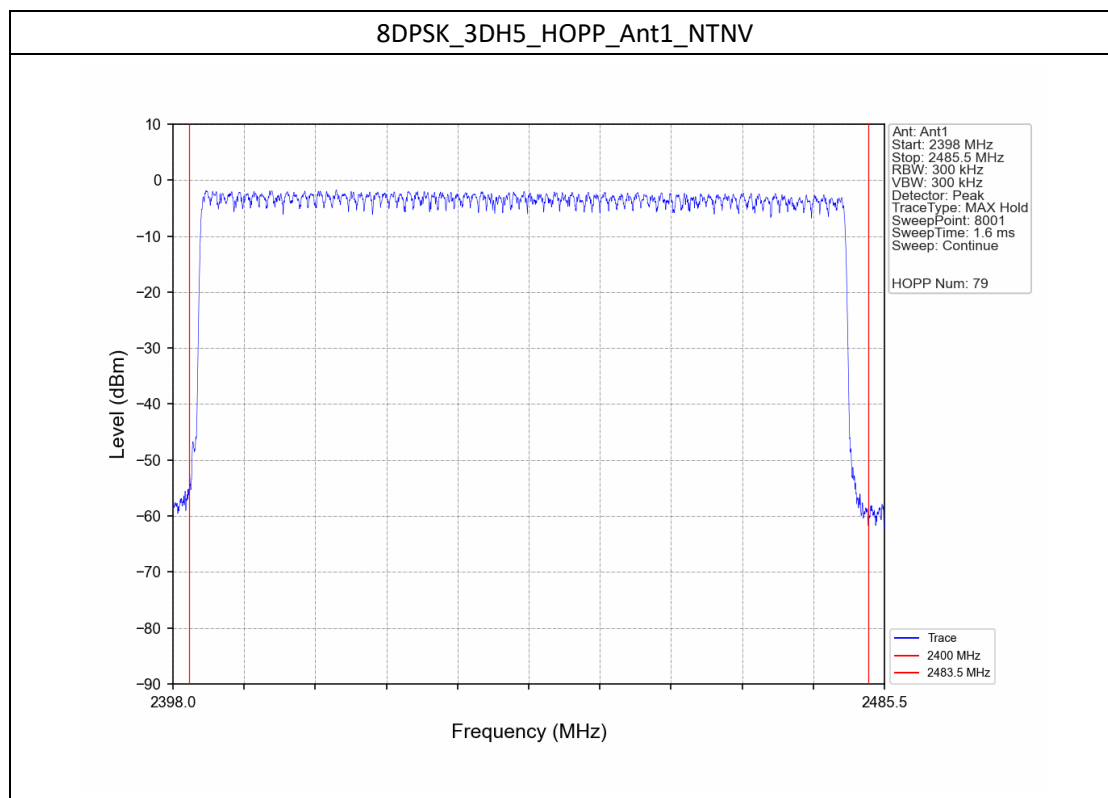
4.1.1 HoppNum

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

4.2 Test Graph

4.2.1 HoppNum





5. Time of Occupancy (Dwell Time)

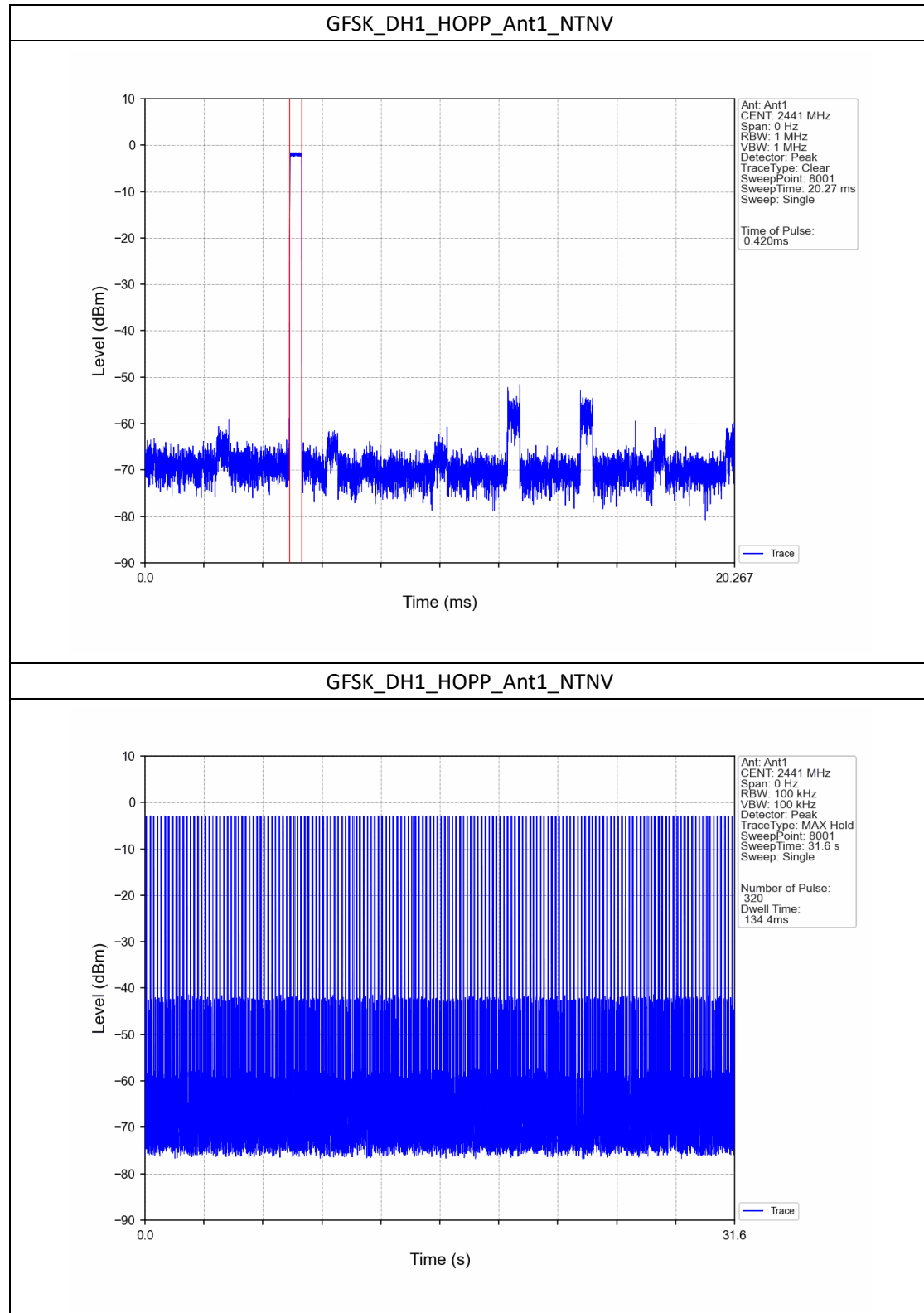
5.1 Test Result

5.1.1 Ant1

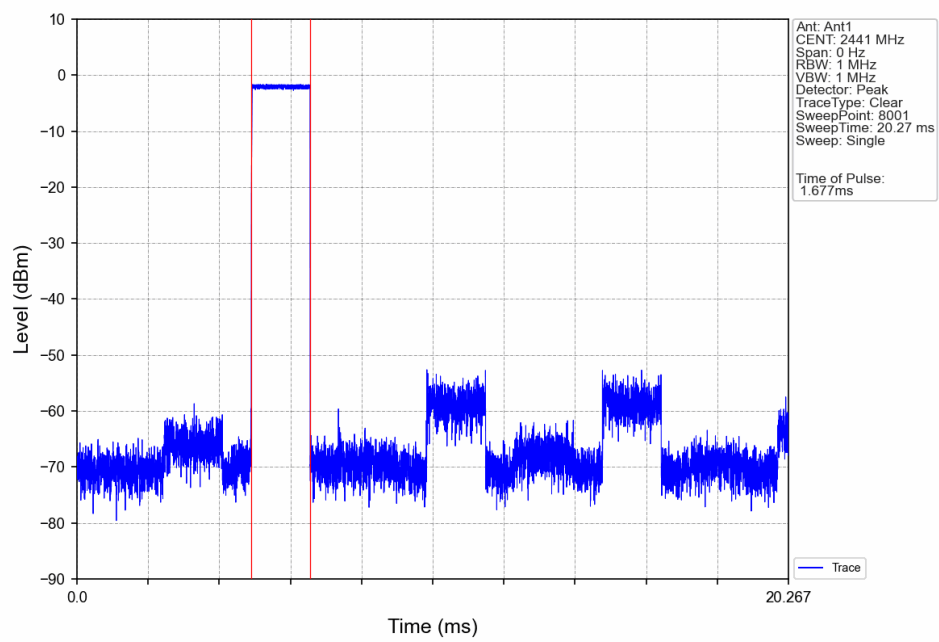
Ant1									
Mode	Tx Type	Frequency (MHz)	Packet Type	Duration of Single Pulse (ms)	Observation Period (s)	Num of Pulse in Observation Period	Dwell Time (ms)	Limit (ms)	Verdict
GFSK	SISO	HOPP	DH1	0.420	31.600	320	134.400	<=400	Pass
			DH3	1.677	31.600	161	269.997	<=400	Pass
			DH5	2.926	31.600	116	339.416	<=400	Pass
Pi/4DQPSK	SISO	HOPP	2DH1	0.431	31.600	319	137.489	<=400	Pass
			2DH3	1.682	31.600	167	280.894	<=400	Pass
			2DH5	2.928	31.600	119	348.432	<=400	Pass
8DPSK	SISO	HOPP	3DH1	0.433	31.600	317	137.261	<=400	Pass
			3DH3	1.679	31.600	164	275.356	<=400	Pass
			3DH5	2.933	31.600	110	322.630	<=400	Pass

5.2 Test Graph

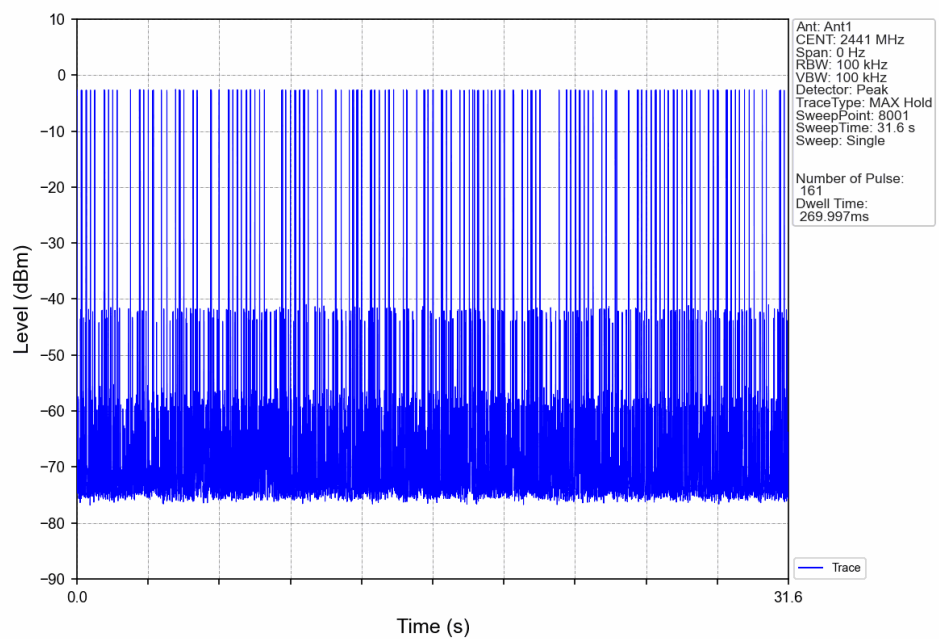
5.2.1 Ant1

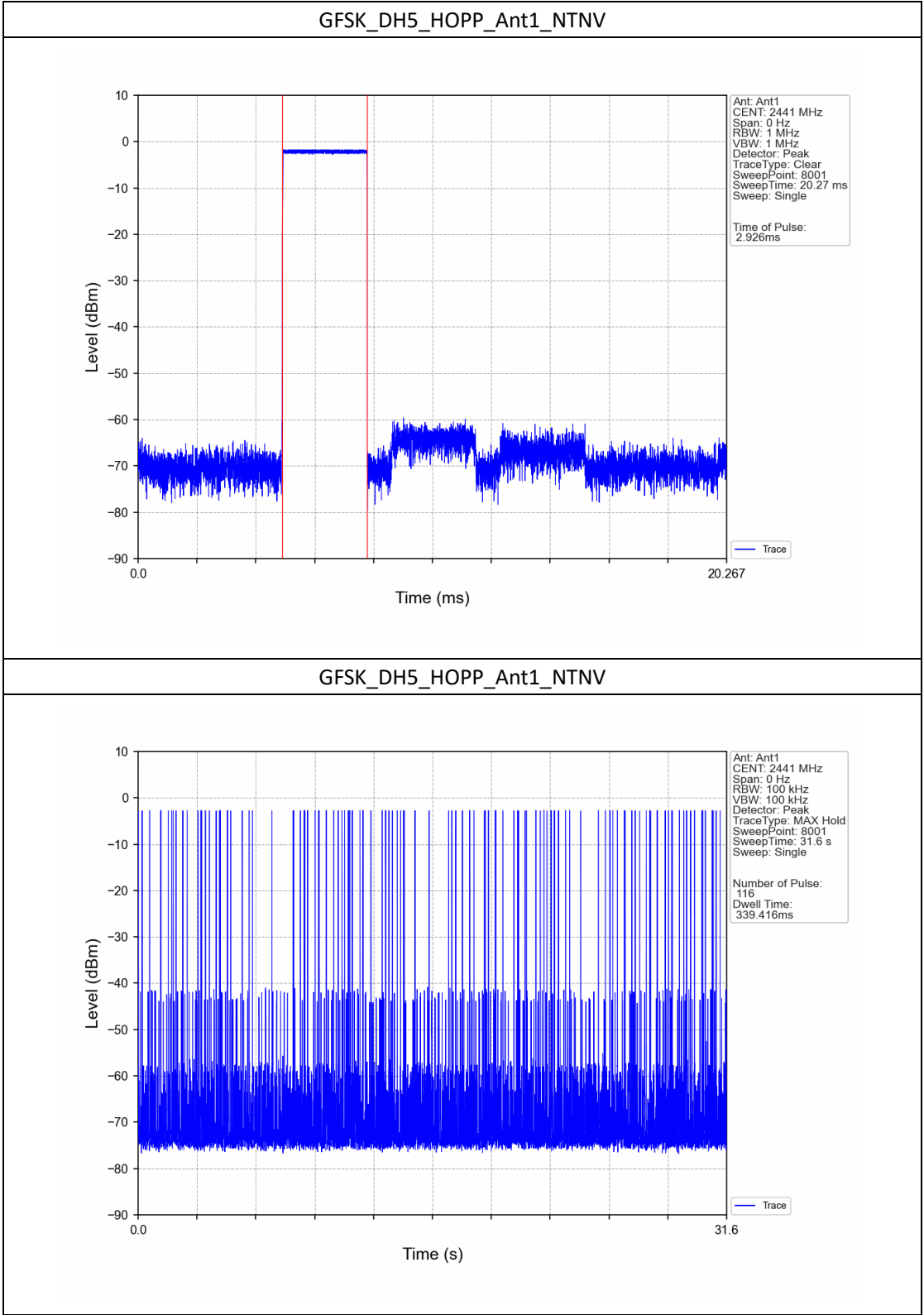


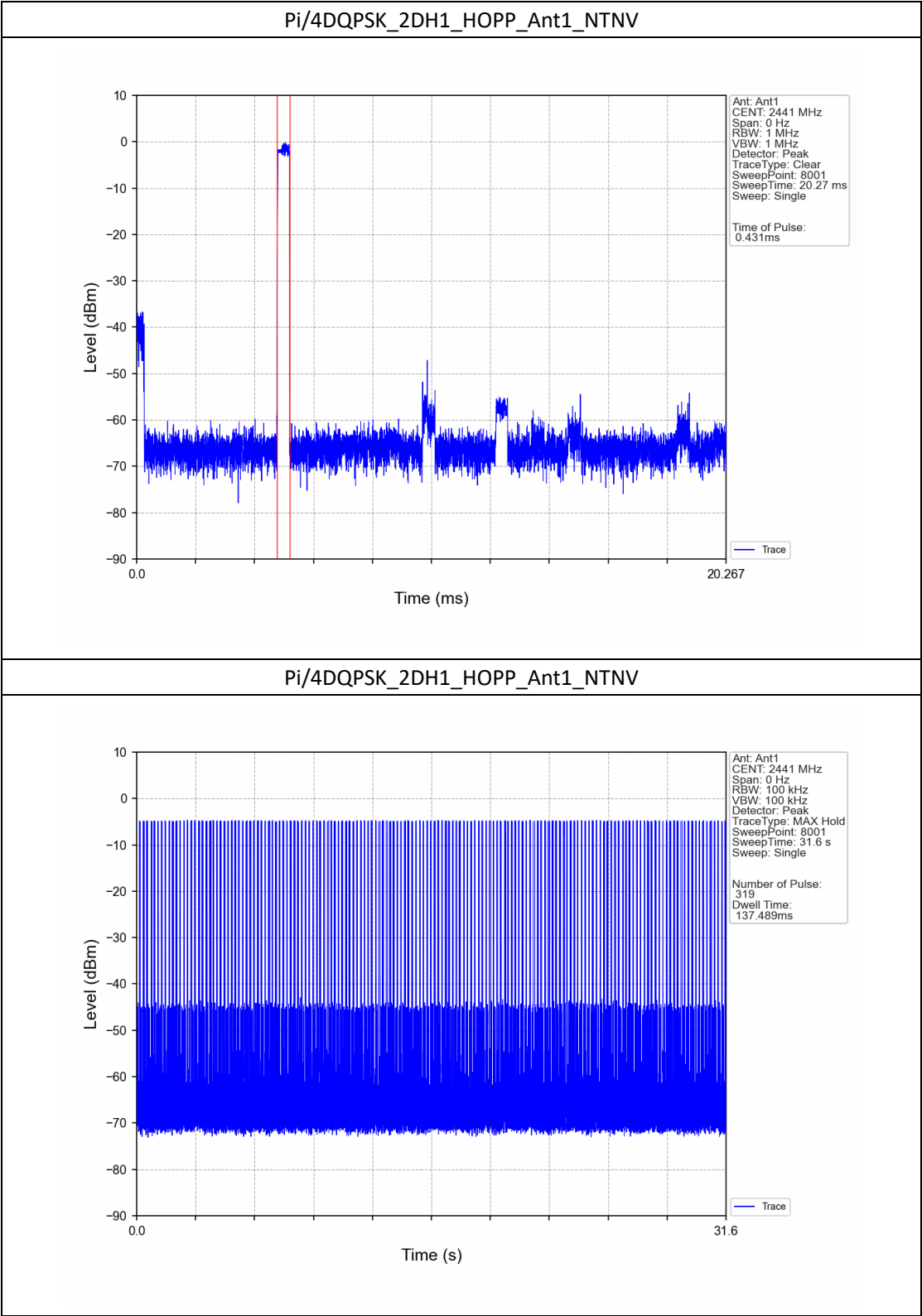
GFSK_DH3_HOPP_Ant1_NTNV



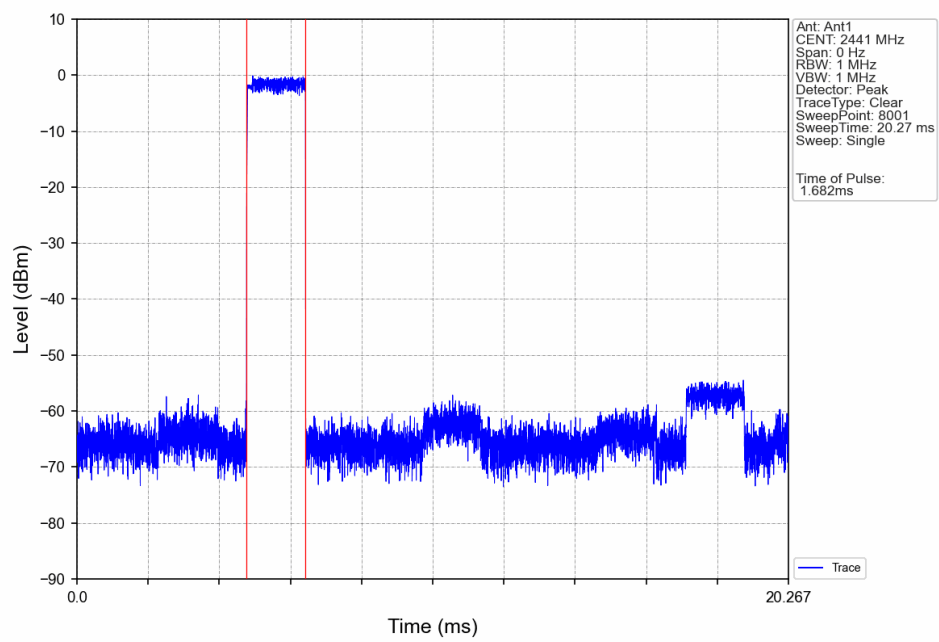
GFSK_DH3_HOPP_Ant1_NTNV



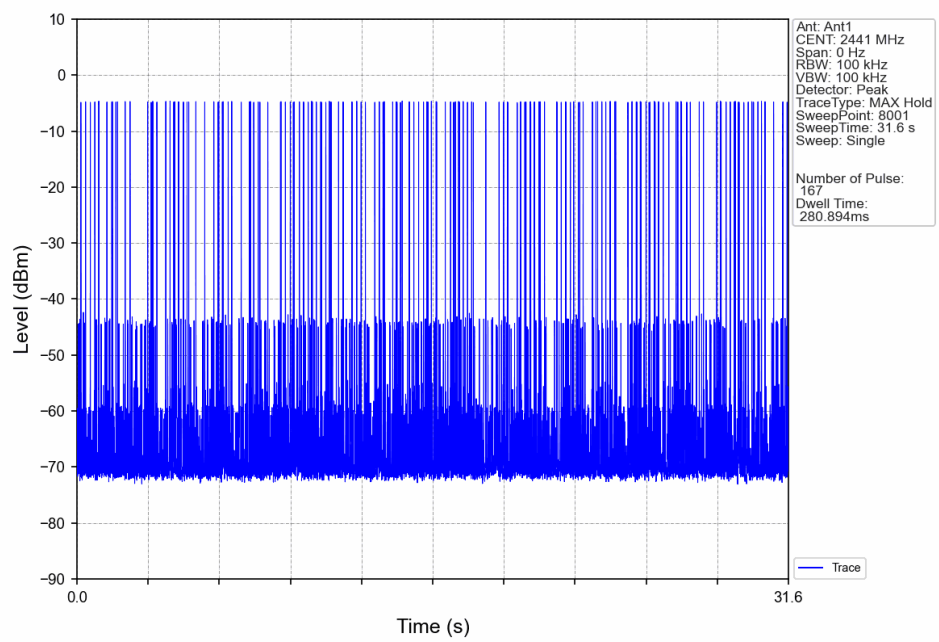


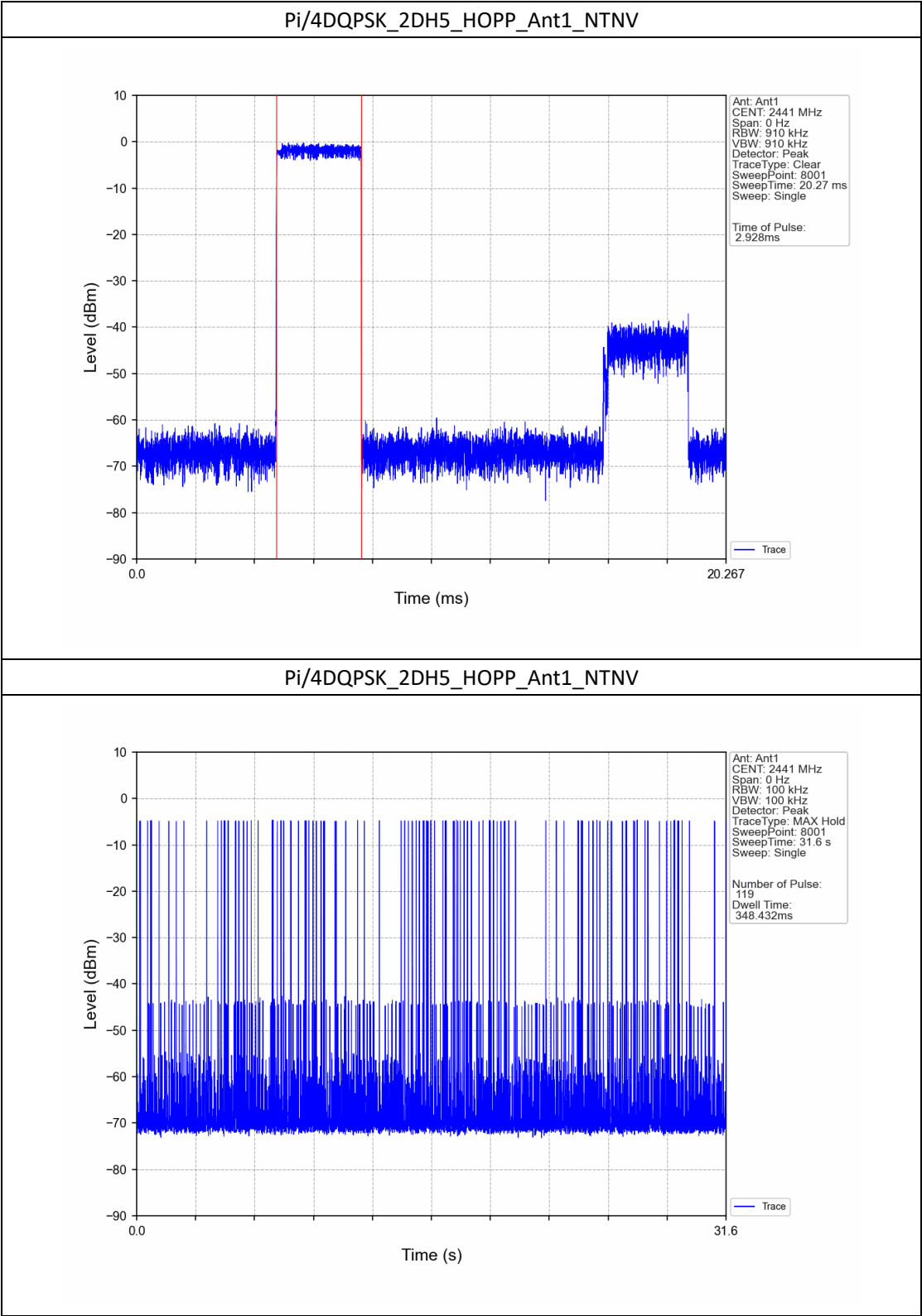


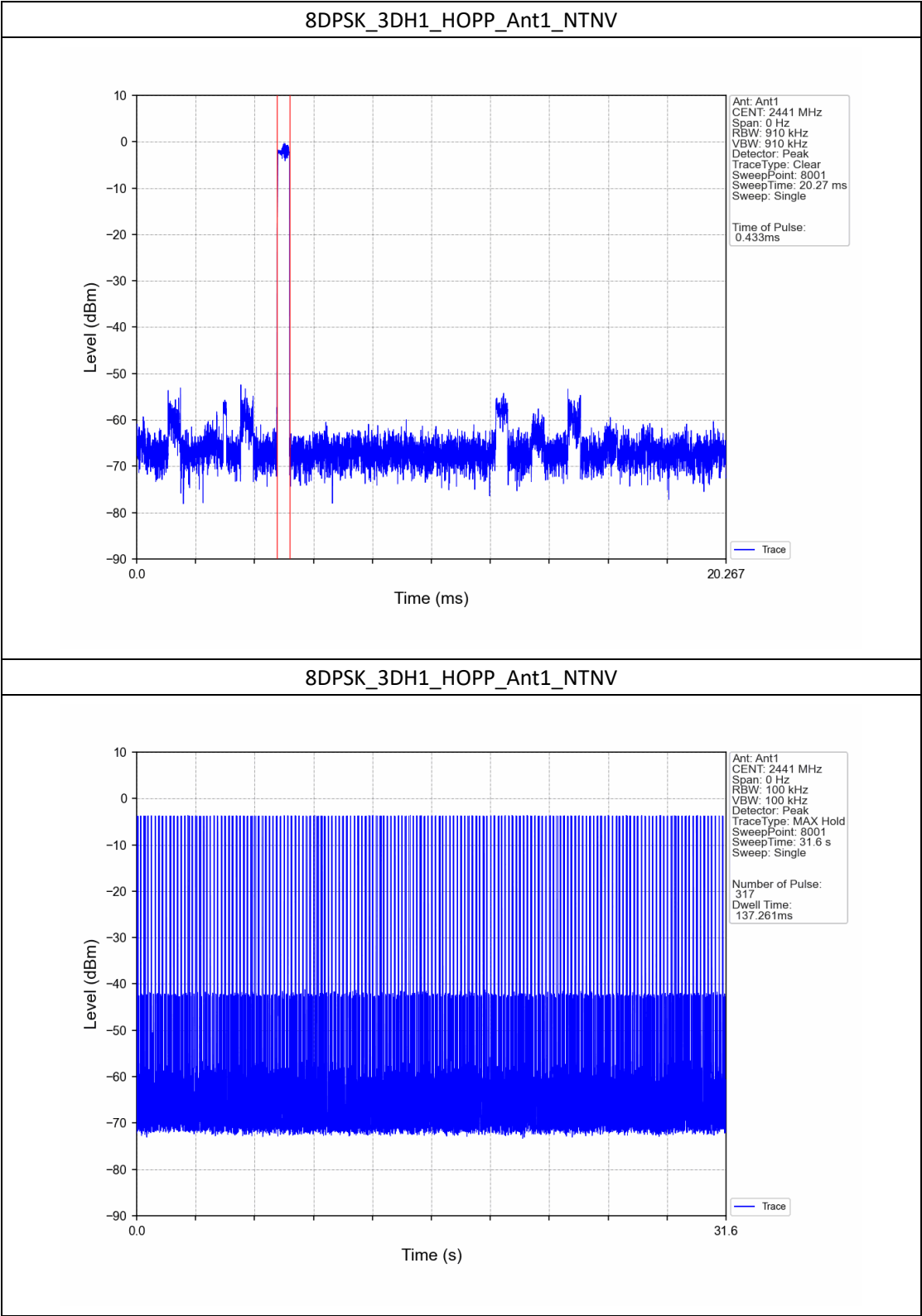
Pi/4DQPSK_2DH3_HOPP_Ant1_NTNV



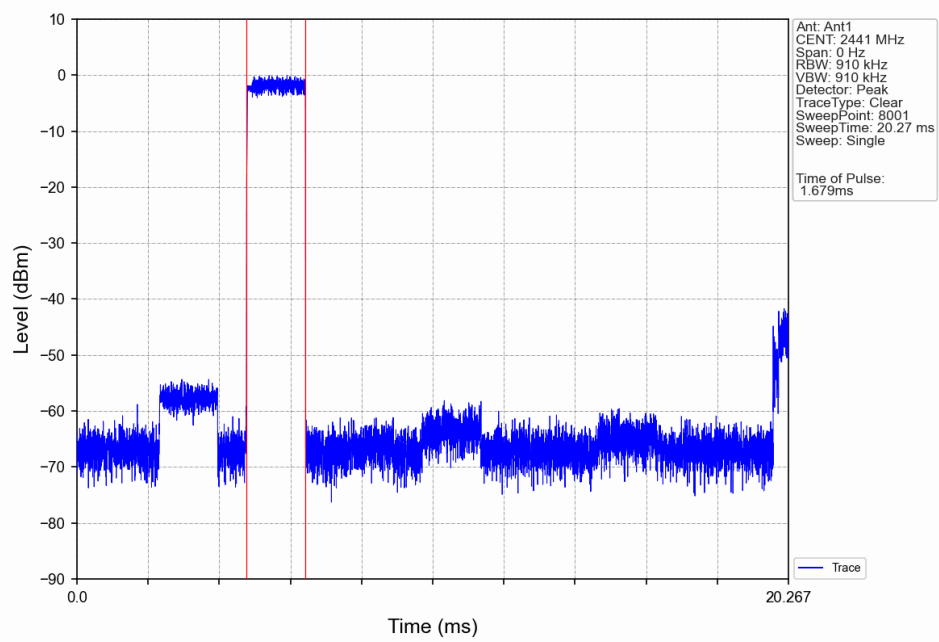
Pi/4DQPSK_2DH3_HOPP_Ant1_NTNV



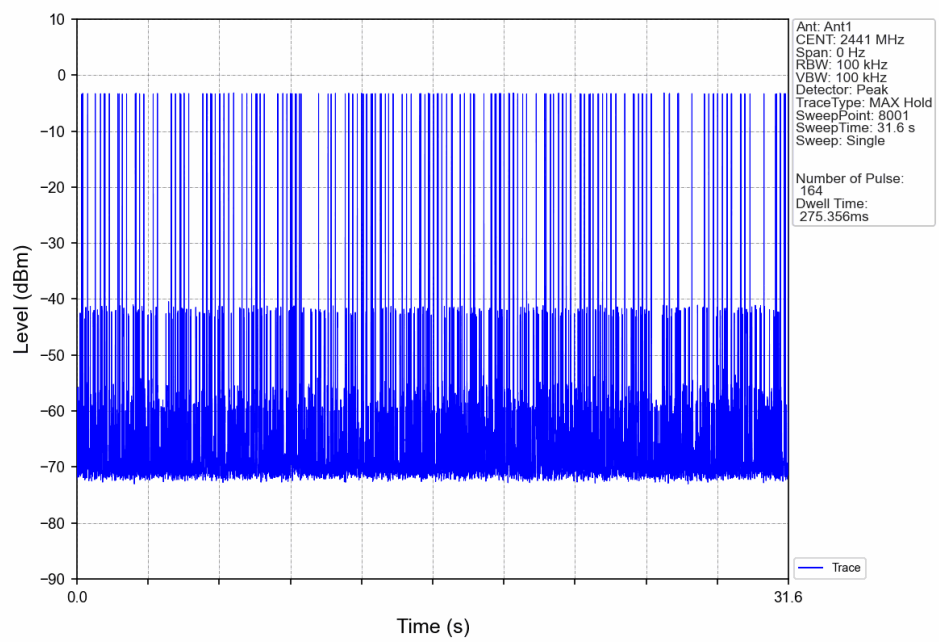




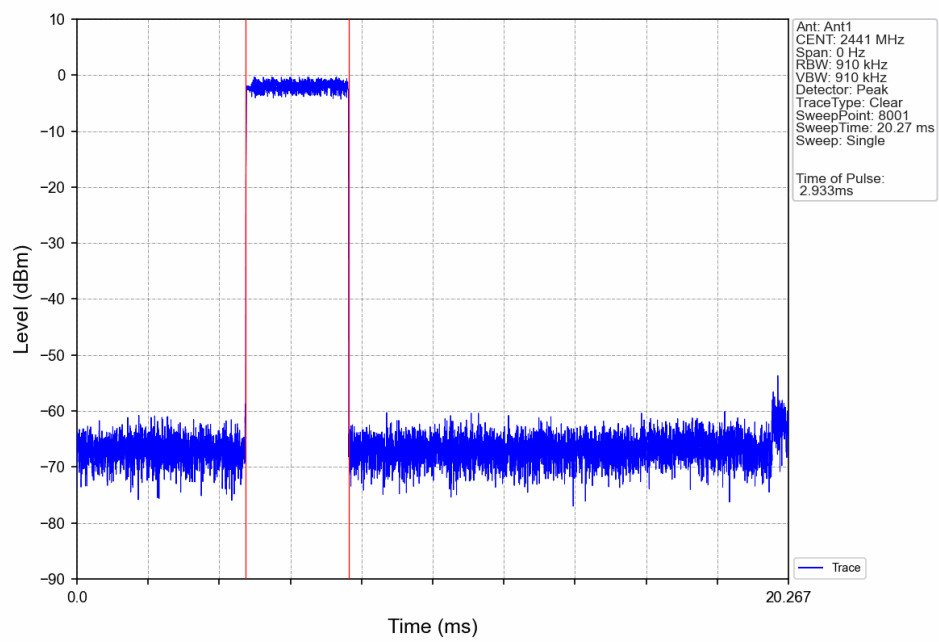
8DPSK_3DH3_HOPP_Ant1_NTNV



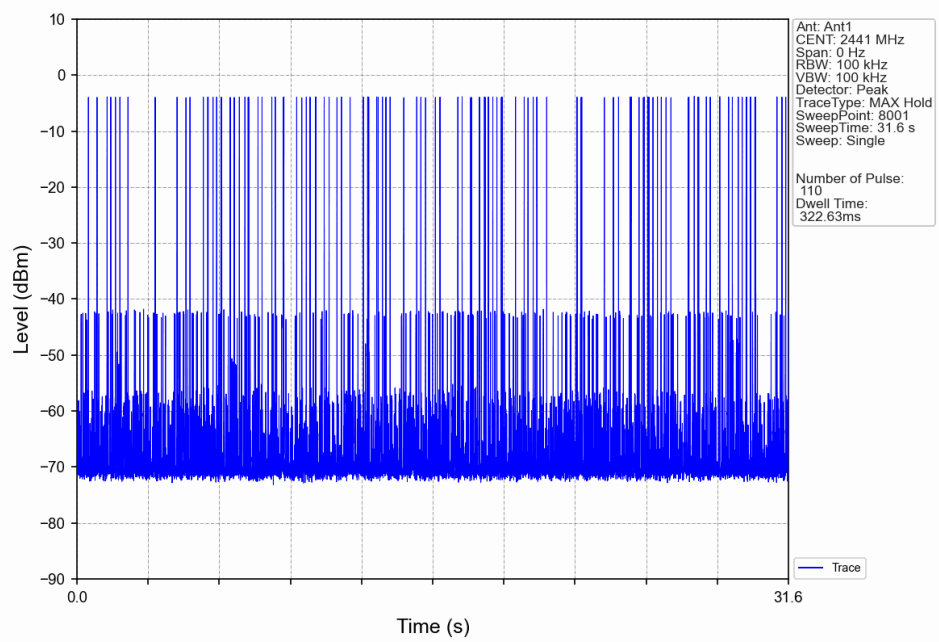
8DPSK_3DH3_HOPP_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV



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	-2.11
		2441	DH5	1	-2.29
		2480	DH5	1	-2.92
Pi/4DQPSK	SISO	2402	2DH5	1	-2.07
		2441	2DH5	1	-2.29
		2480	2DH5	1	-2.90
8DPSK	SISO	2402	3DH5	1	-2.05
		2441	3DH5	1	-2.29
		2480	3DH5	1	-2.94

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

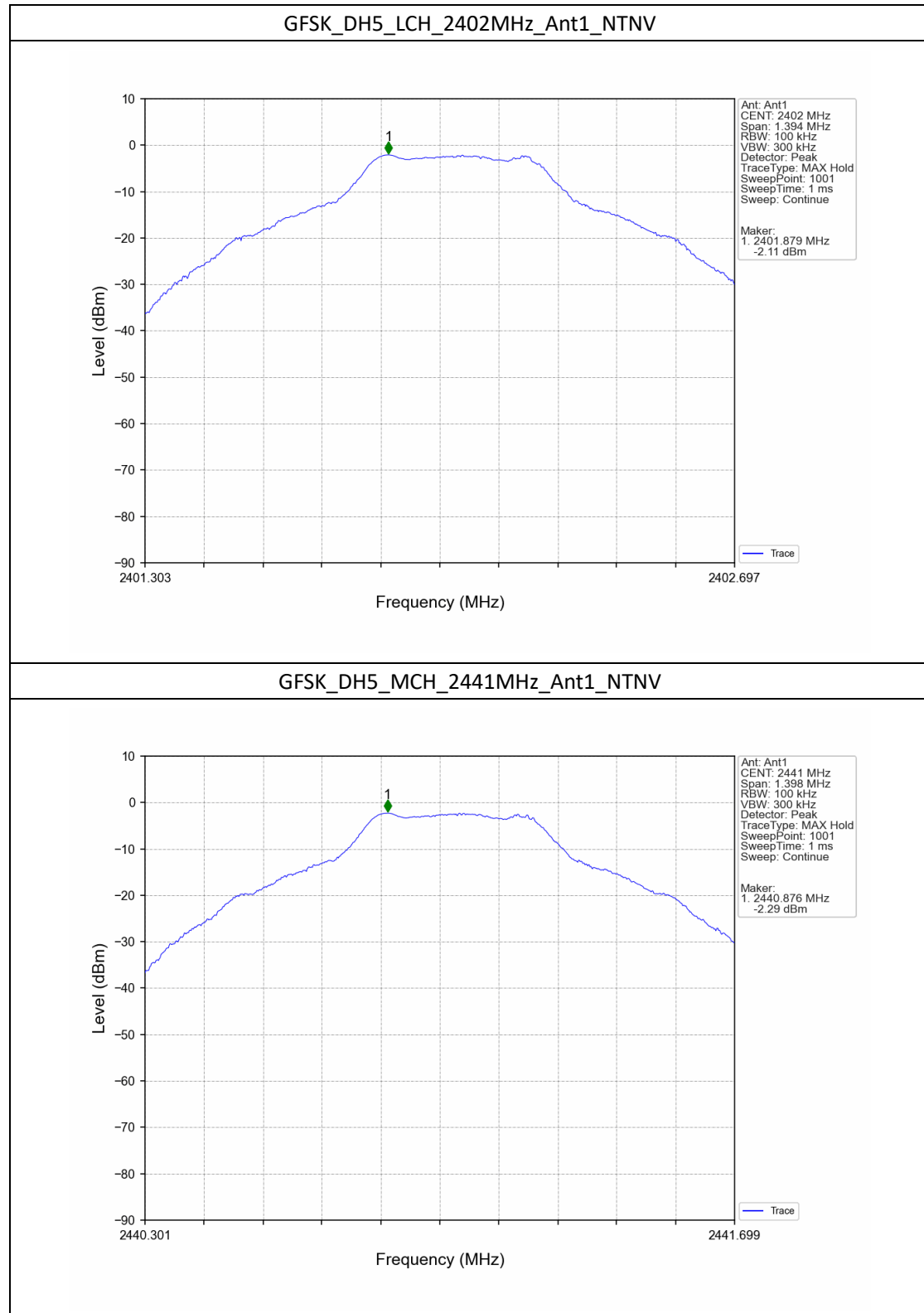
6.1.2 CSE

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
GFSK	SISO	2402	DH5	1	-2.11	-22.11	Pass
		2441	DH5	1	-2.11	-22.11	Pass
		2480	DH5	1	-2.11	-22.11	Pass
		HOPP	DH5	1	-2.11	-22.11	Pass
					-2.11	-22.11	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	-2.07	-22.07	Pass
		2441	2DH5	1	-2.07	-22.07	Pass
		2480	2DH5	1	-2.07	-22.07	Pass
		HOPP	2DH5	1	-2.07	-22.07	Pass
					-2.07	-22.07	Pass
8DPSK	SISO	2402	3DH5	1	-2.05	-22.05	Pass
		2441	3DH5	1	-2.05	-22.05	Pass
		2480	3DH5	1	-2.05	-22.05	Pass
		HOPP	3DH5	1	-2.05	-22.05	Pass
					-2.05	-22.05	Pass

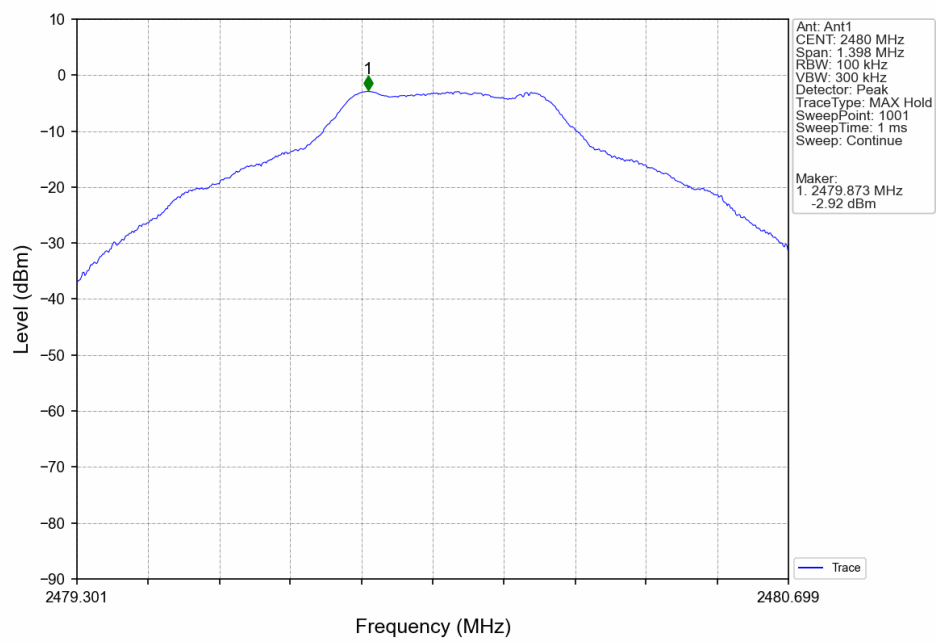
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

6.2 Test Graph

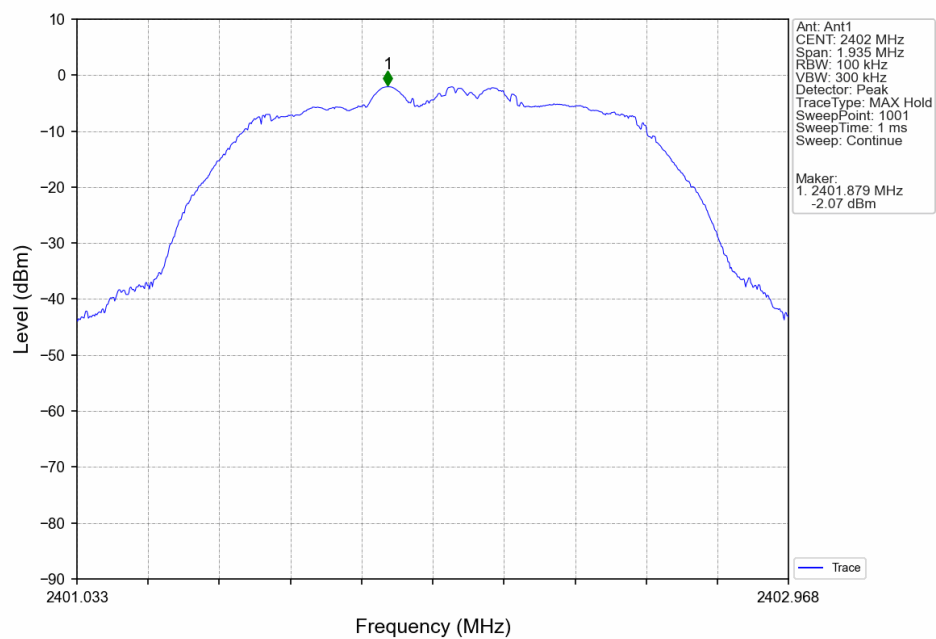
6.2.1 Ref



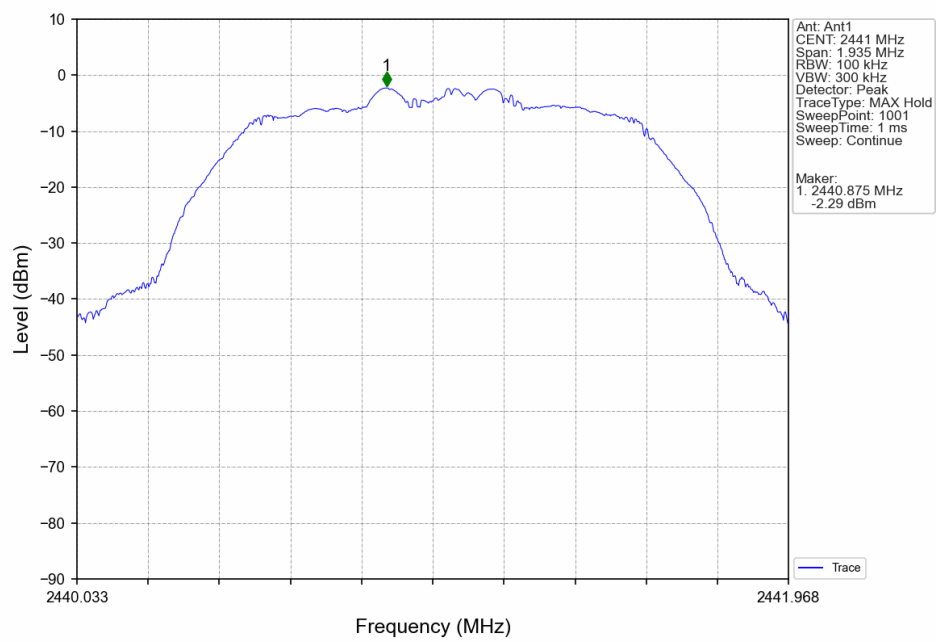
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



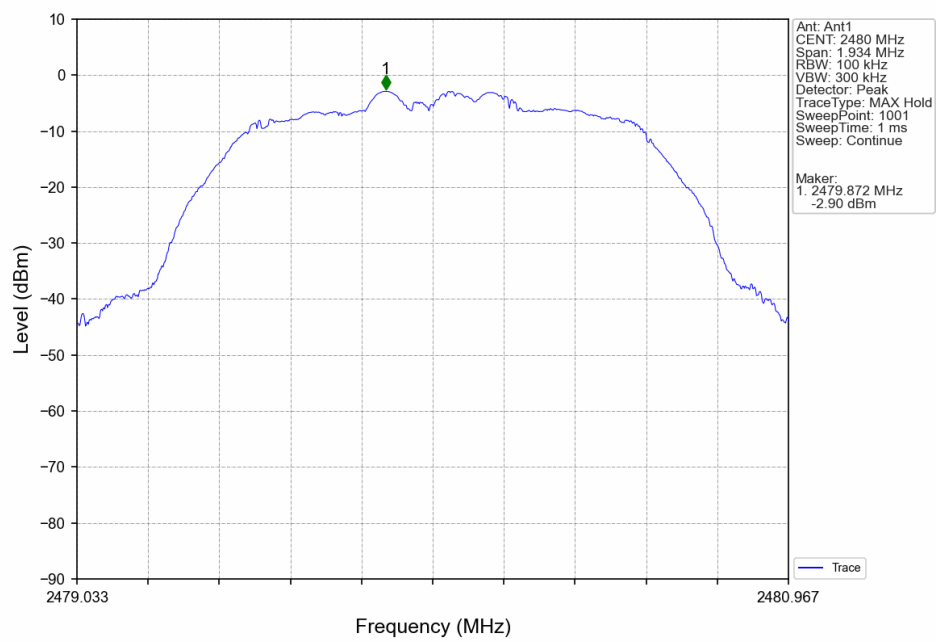
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



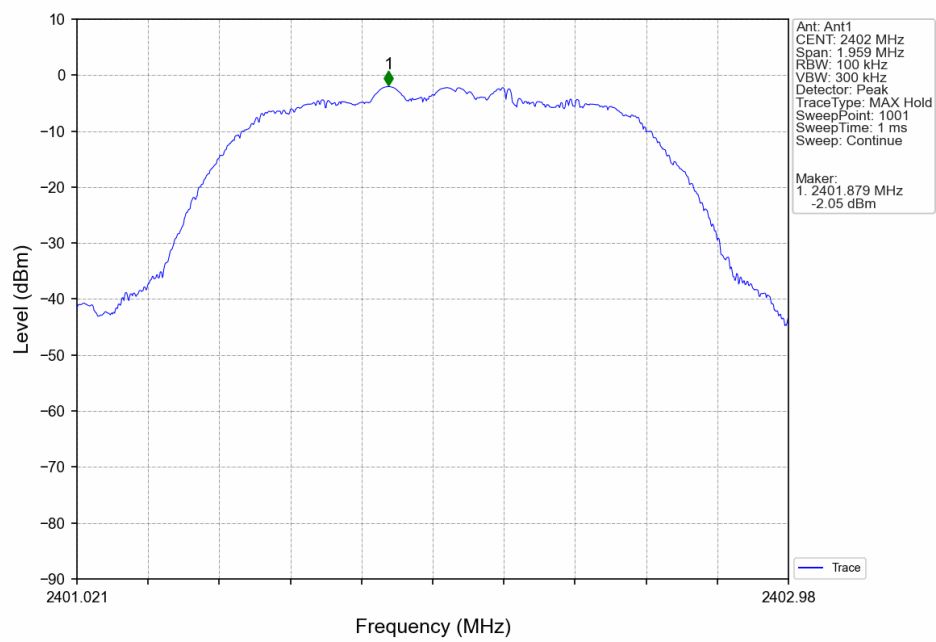
Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



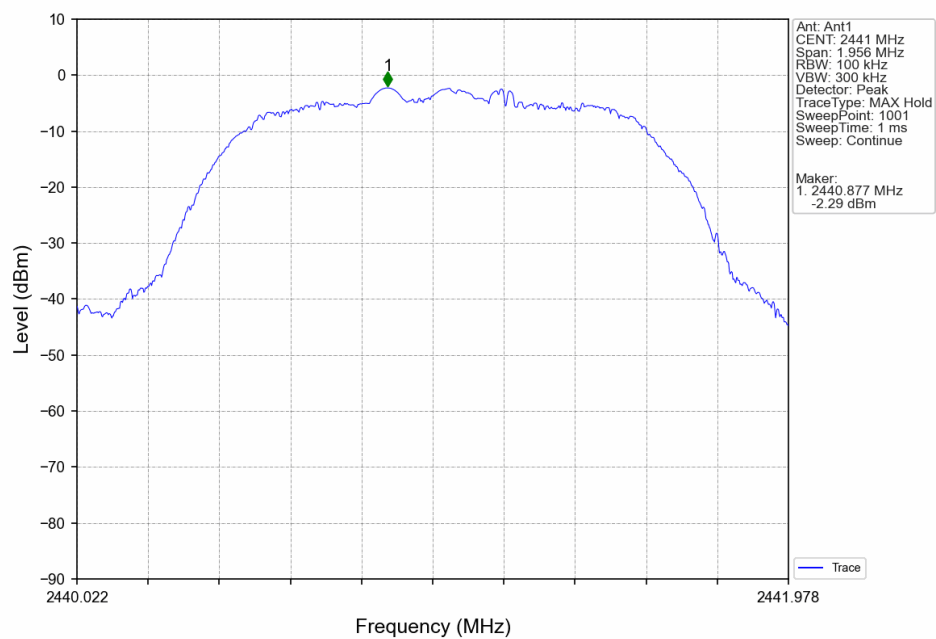
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

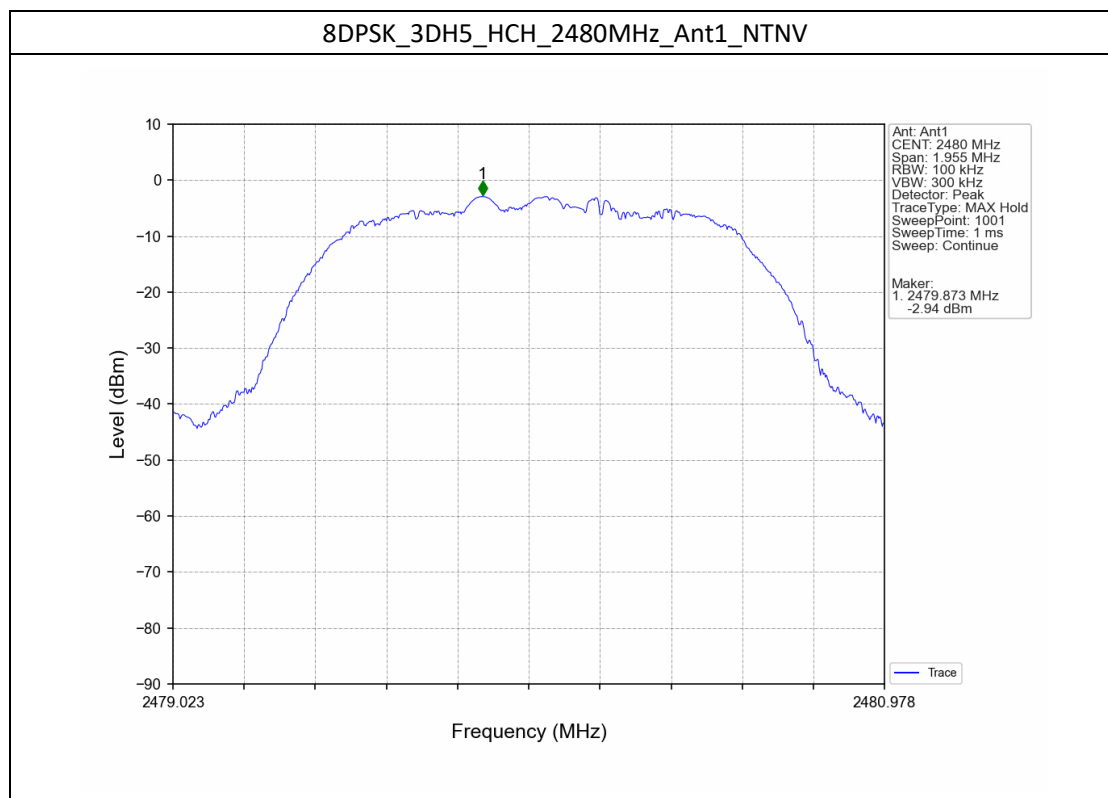


8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV

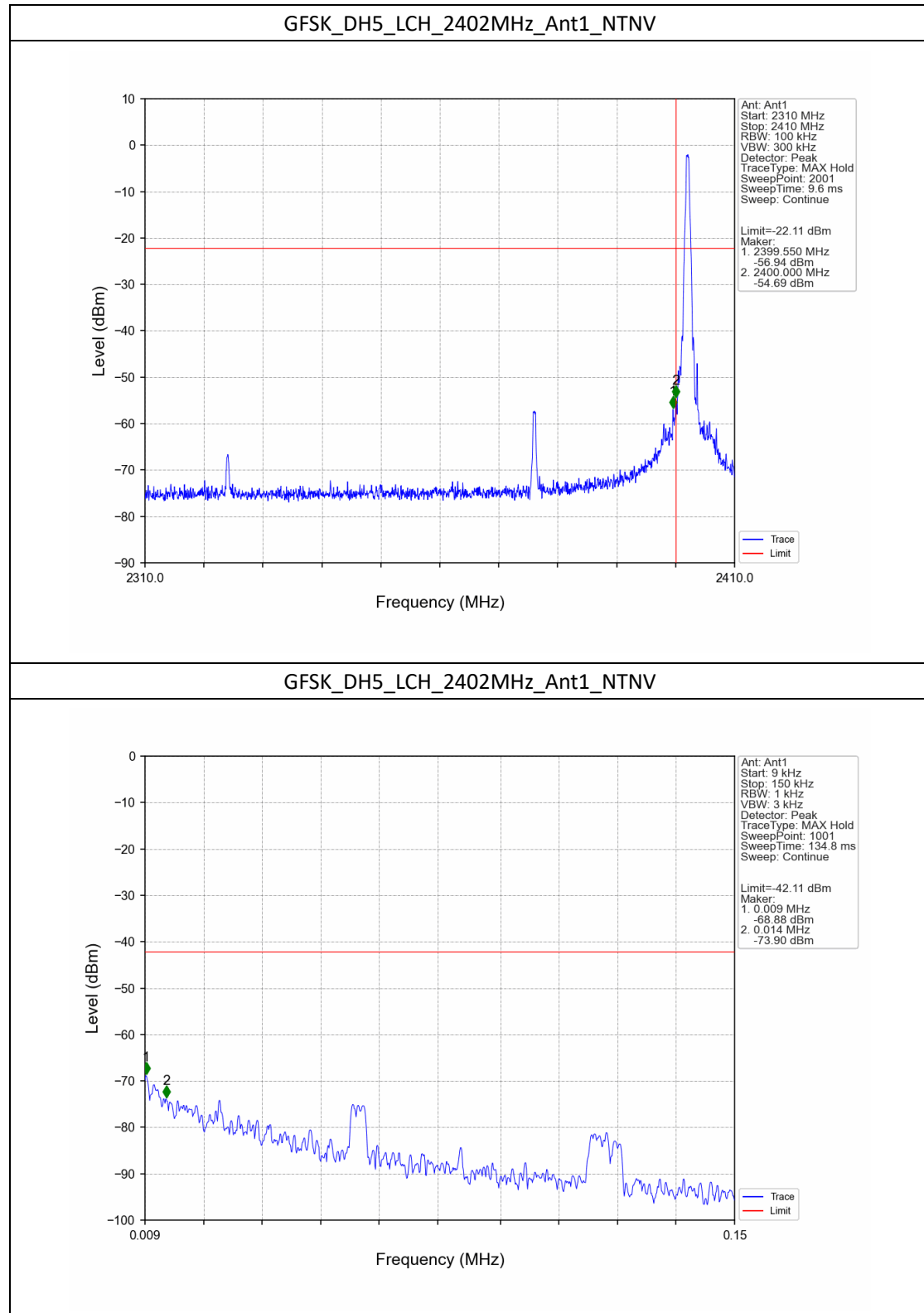


8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV

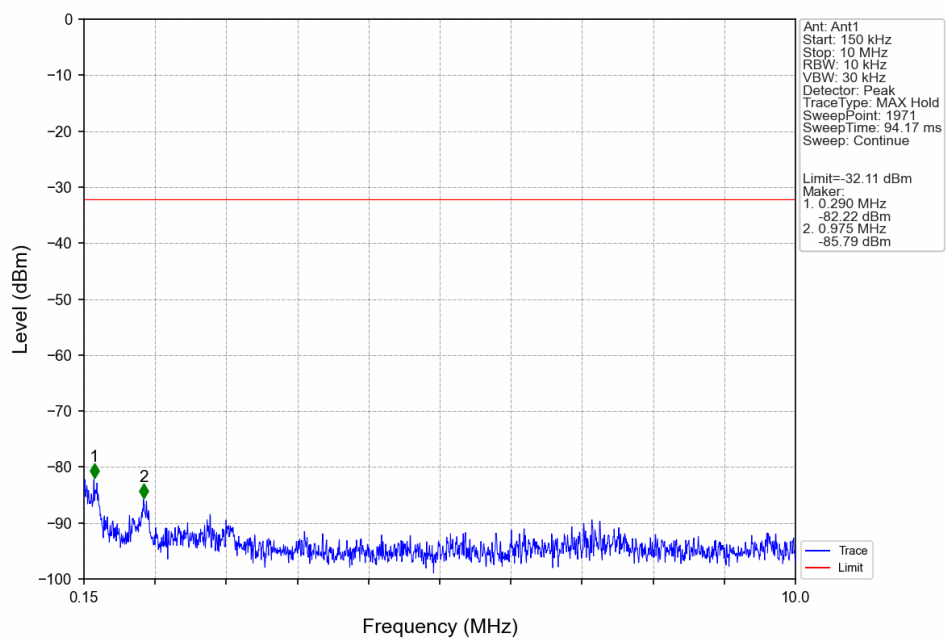




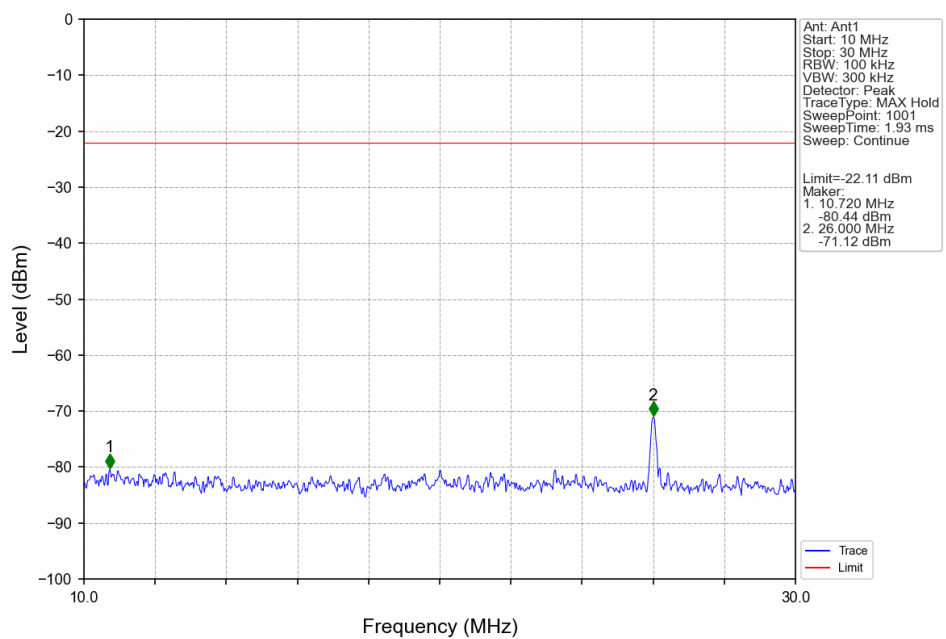
6.2.2 CSE



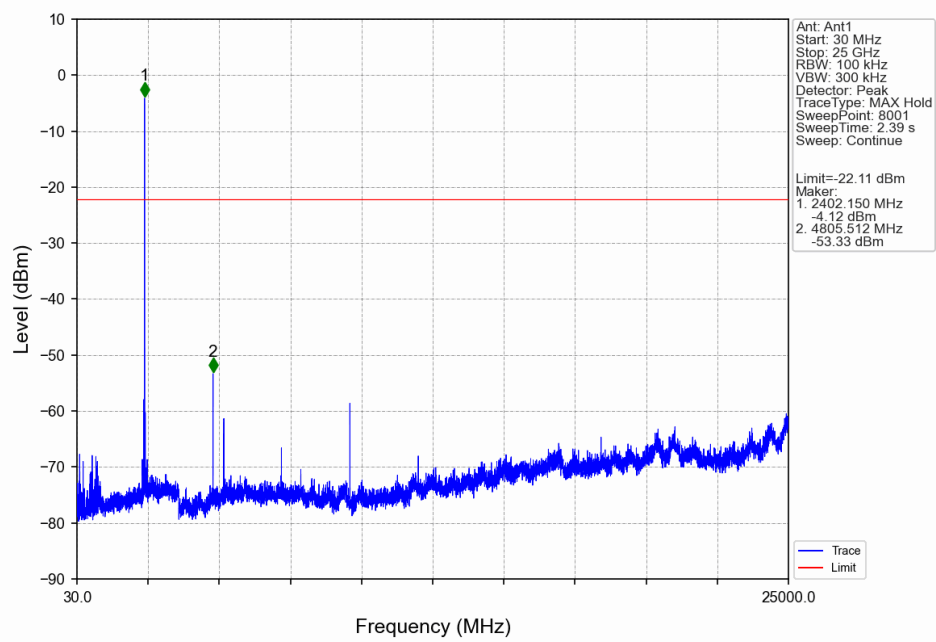
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



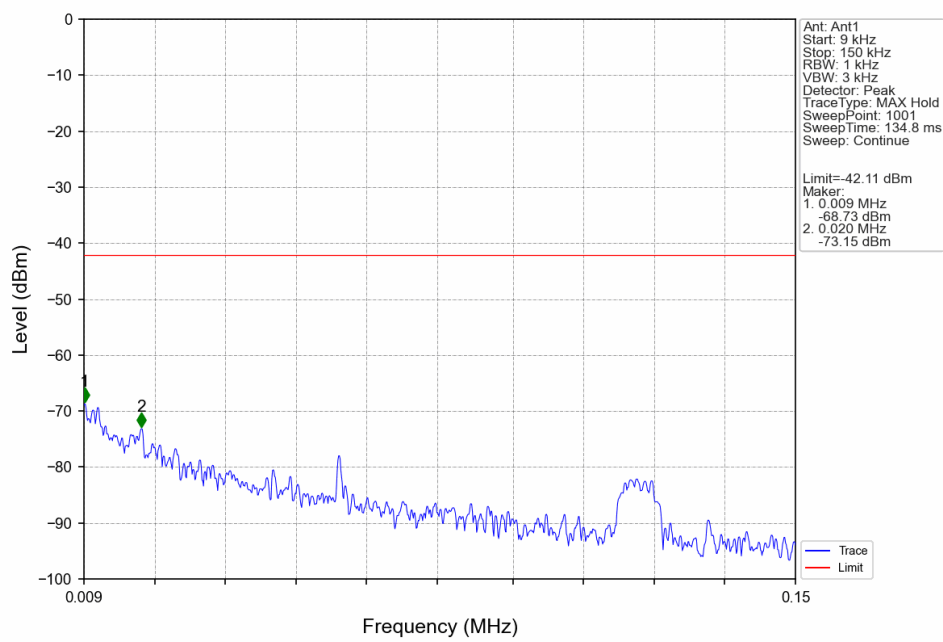
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



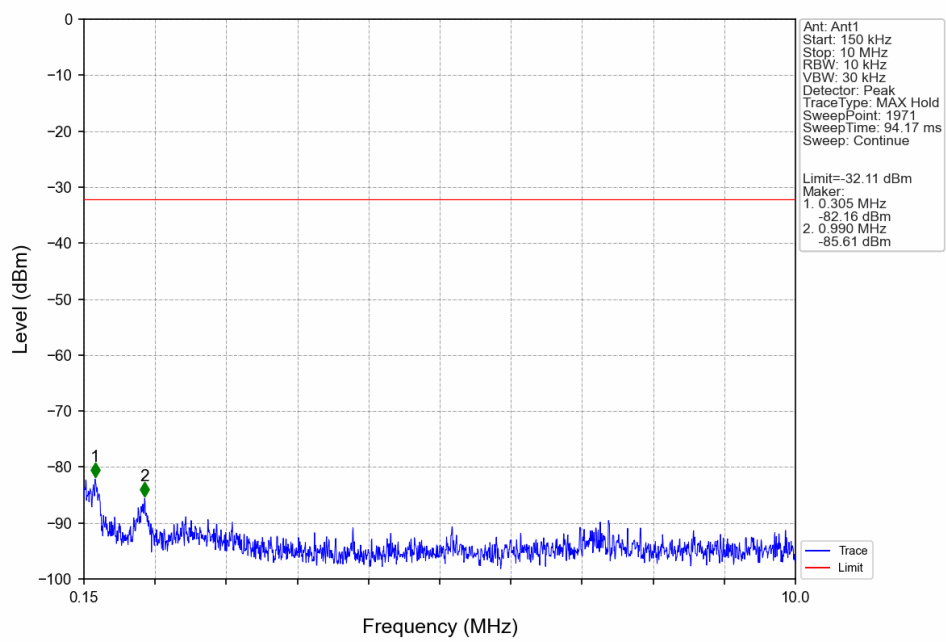
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



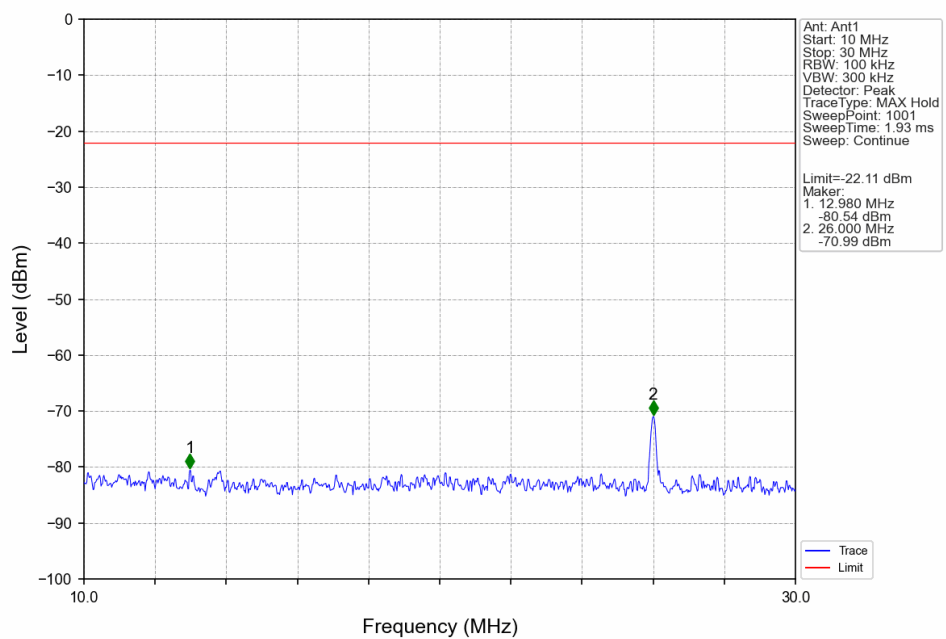
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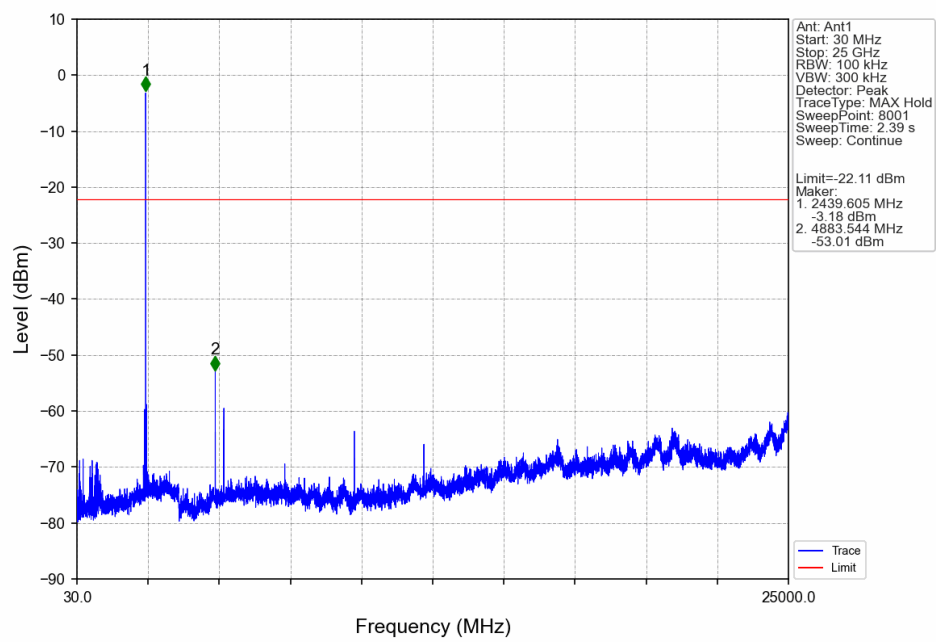
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



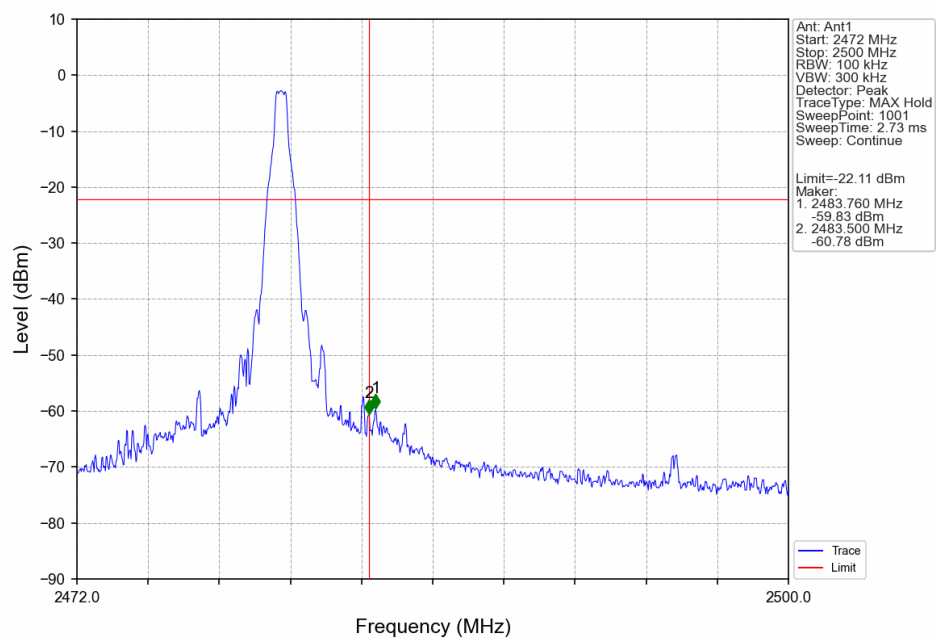
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



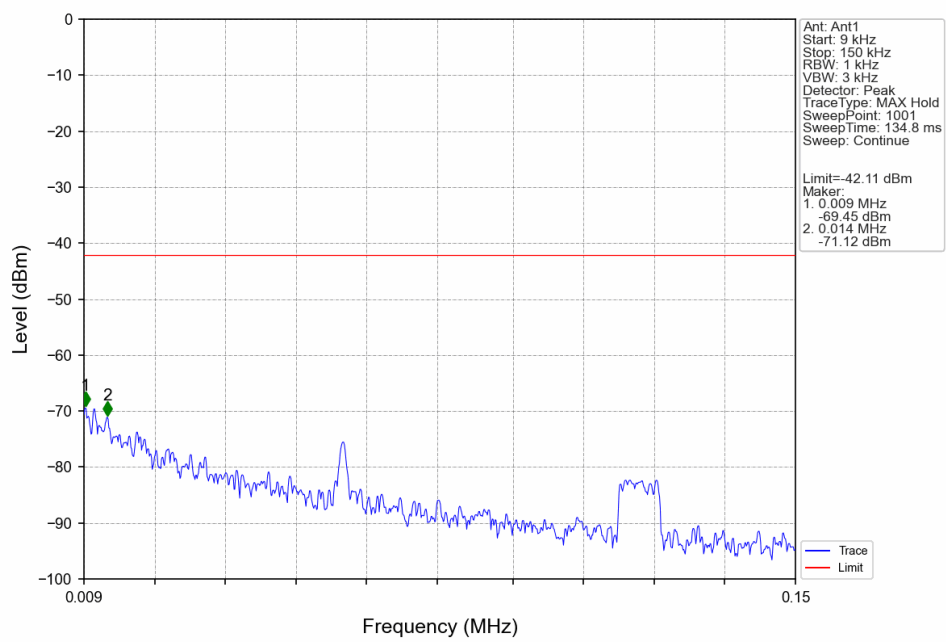
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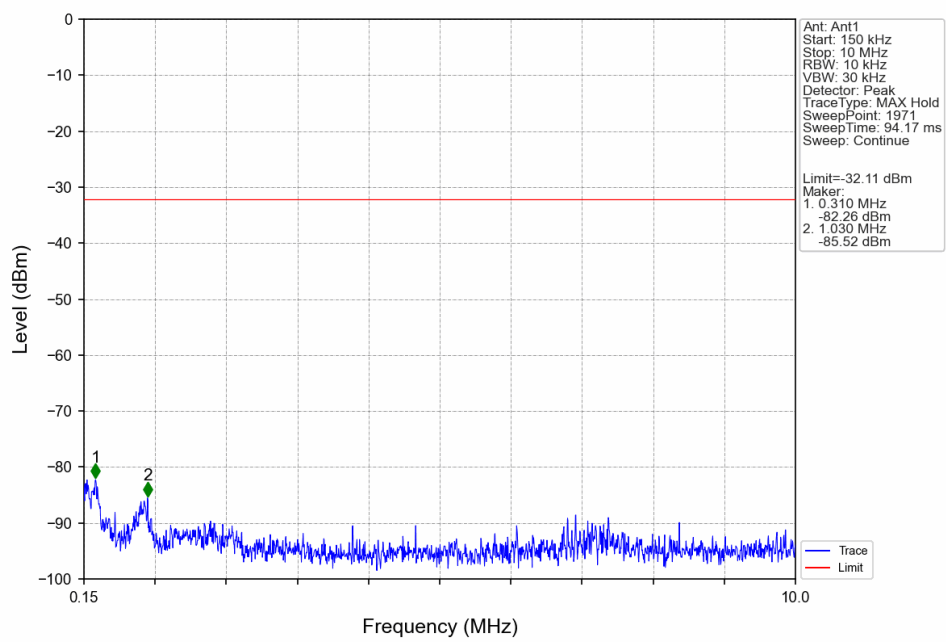
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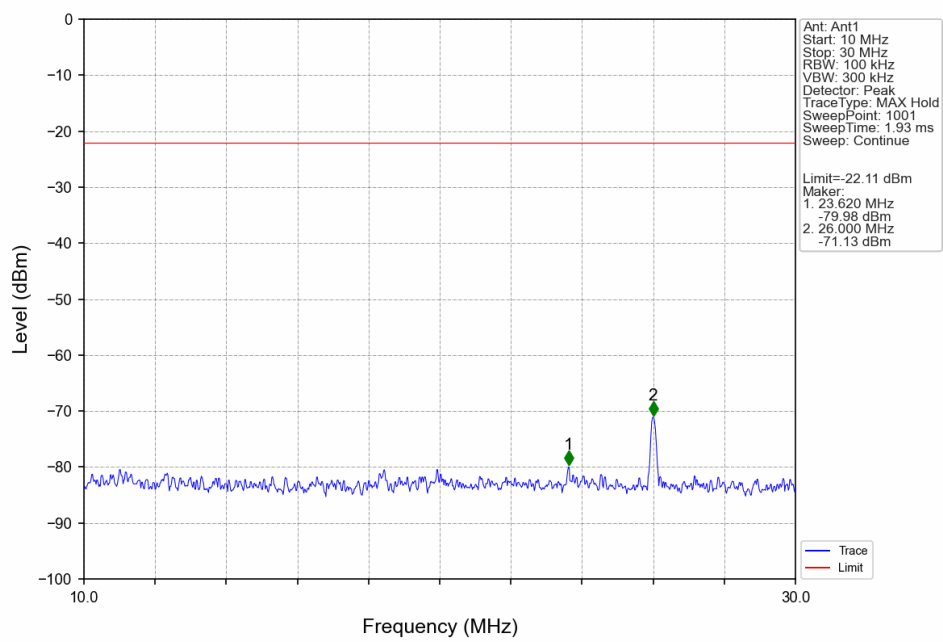
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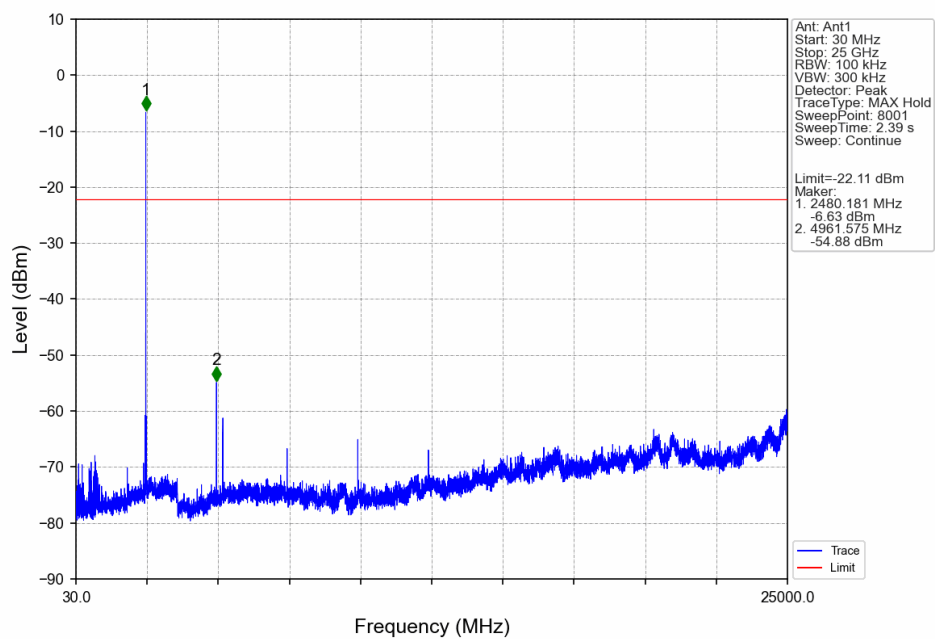
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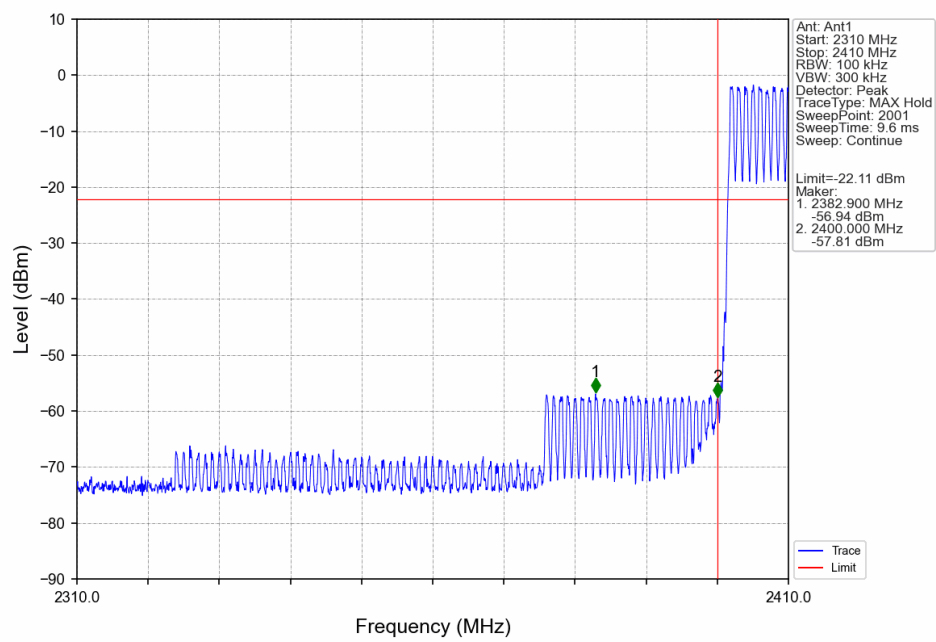
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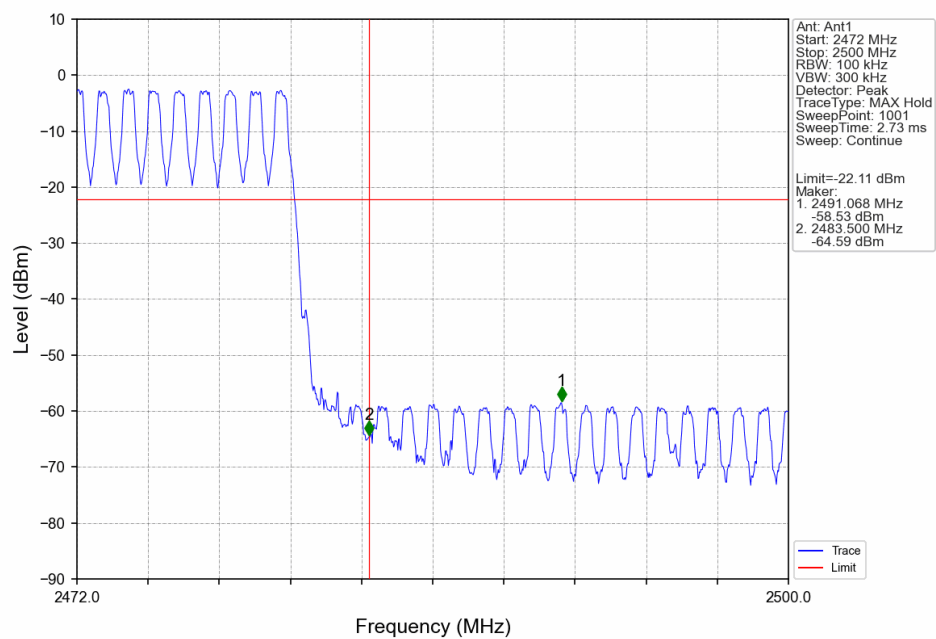
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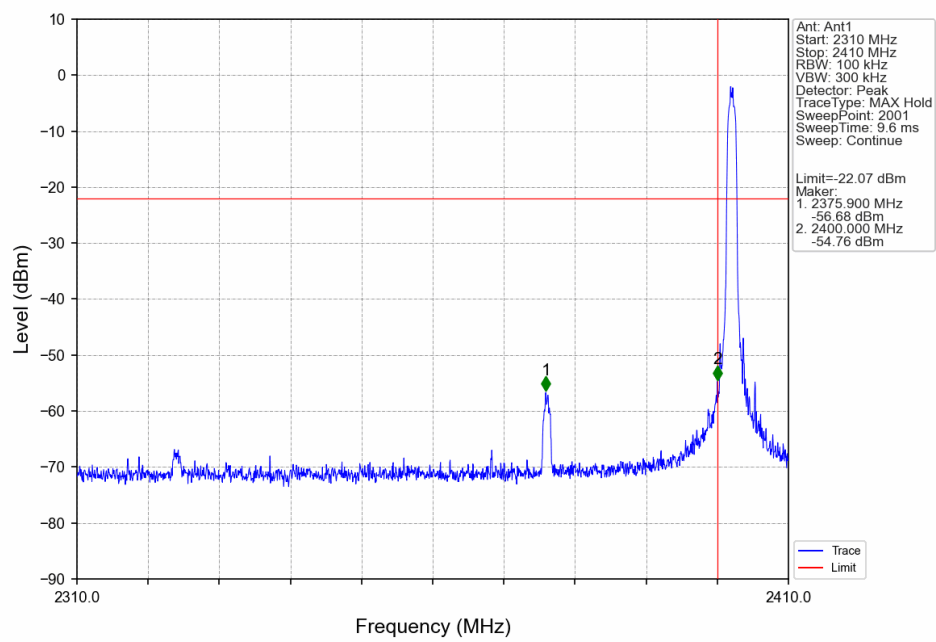
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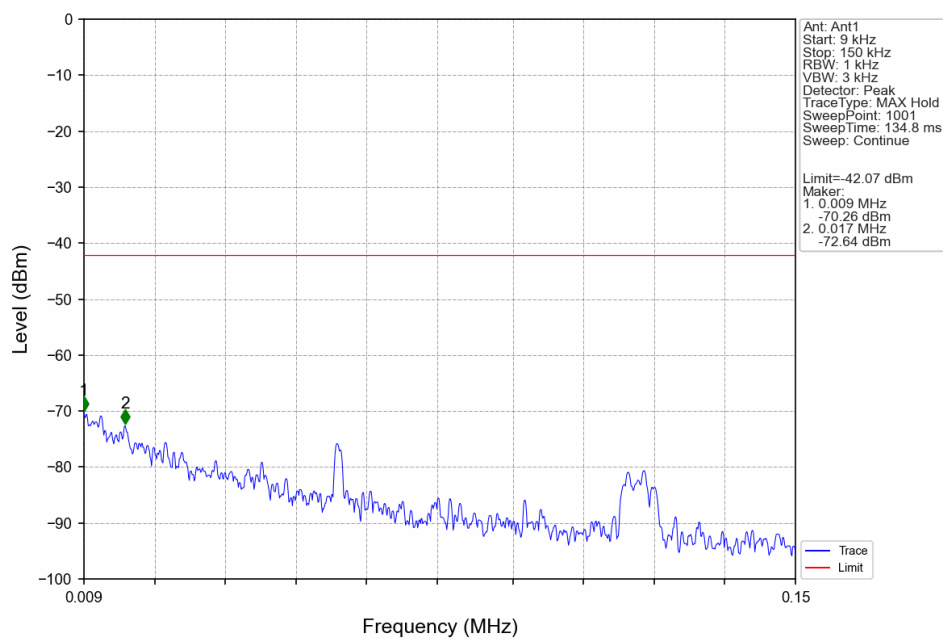
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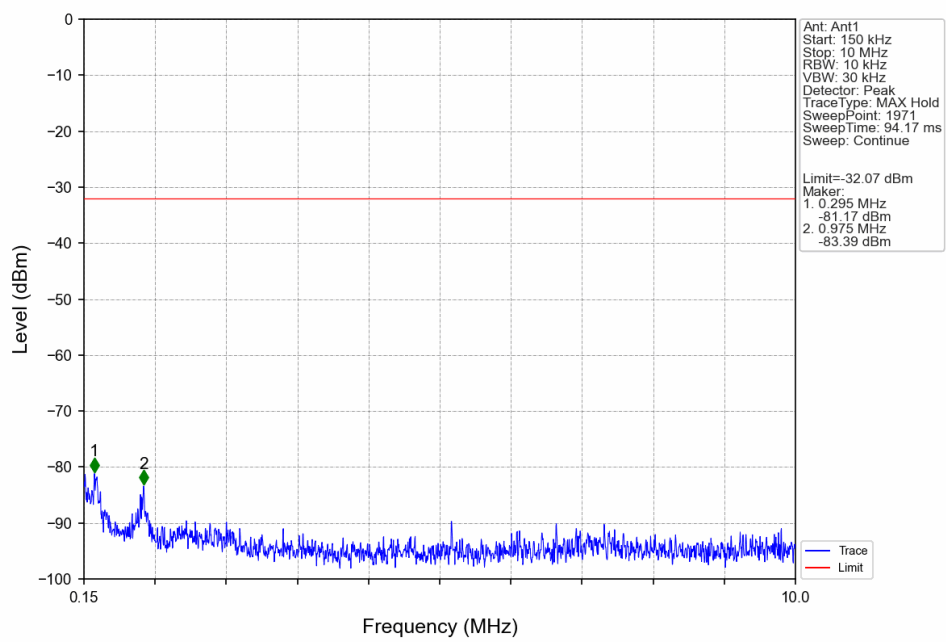
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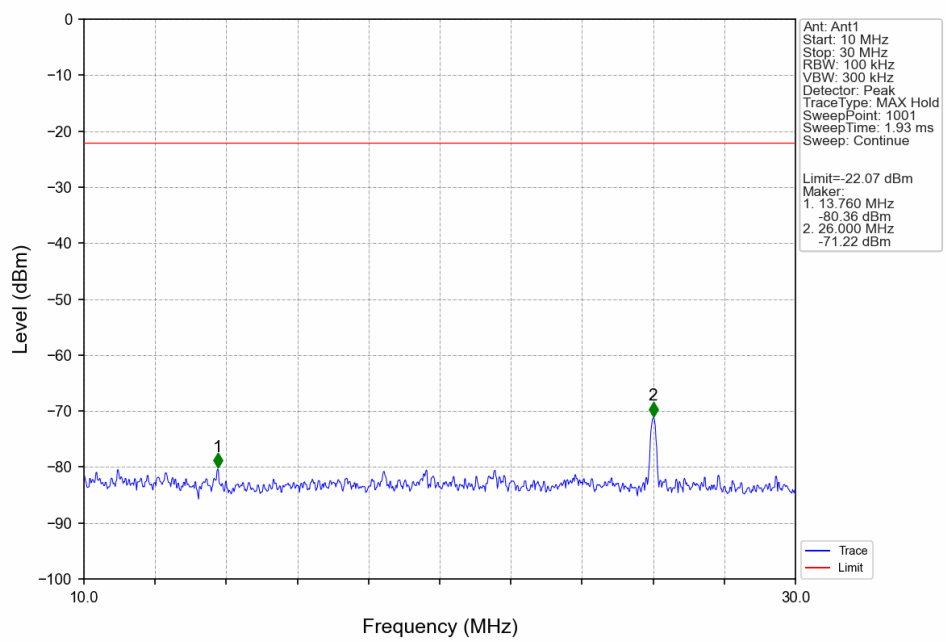
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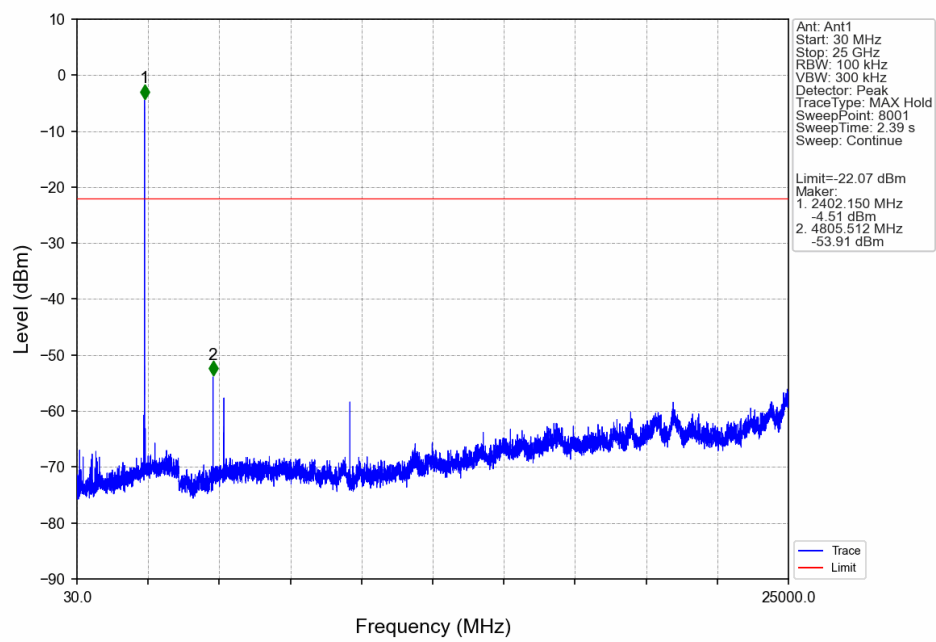
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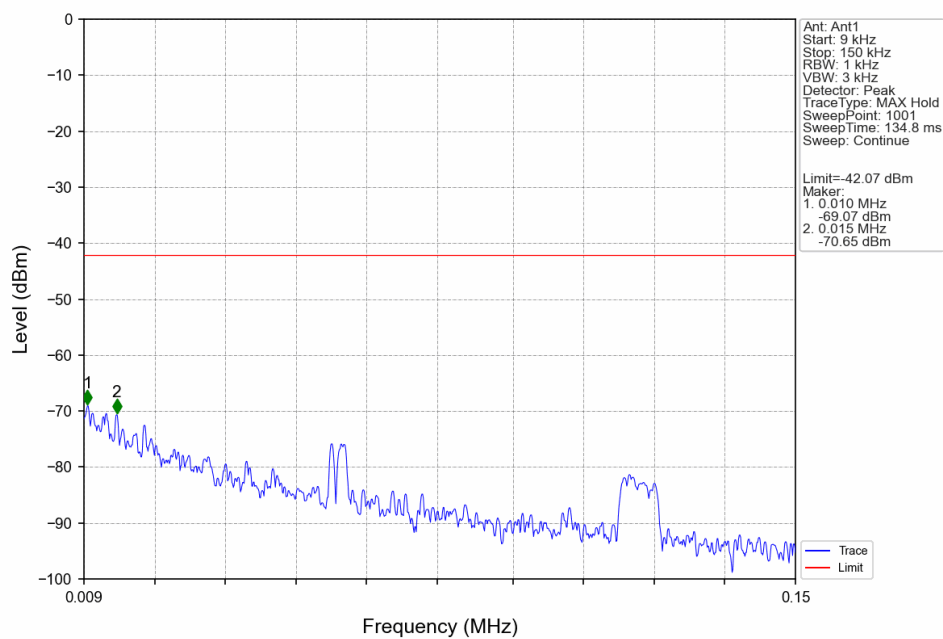
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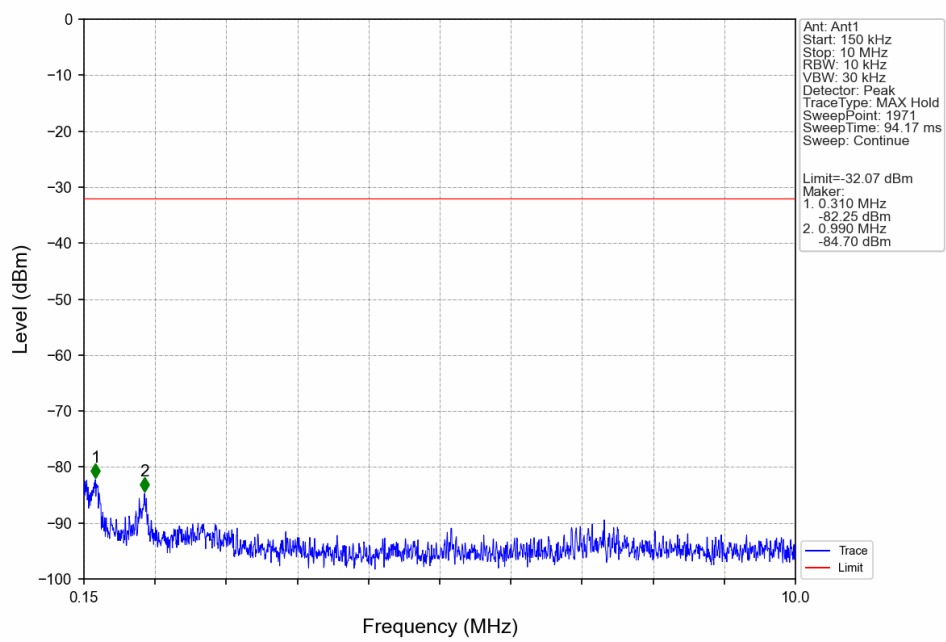
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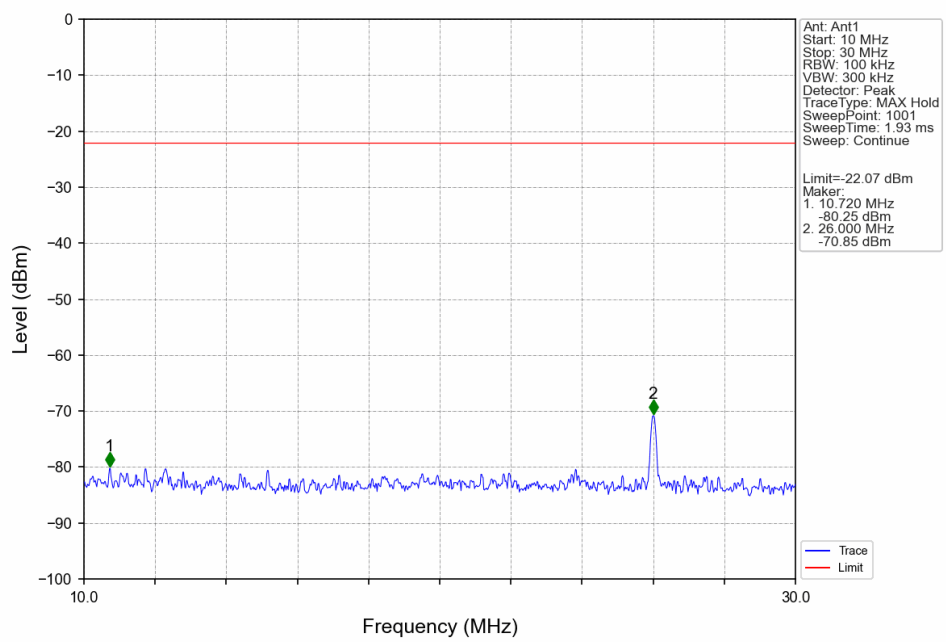
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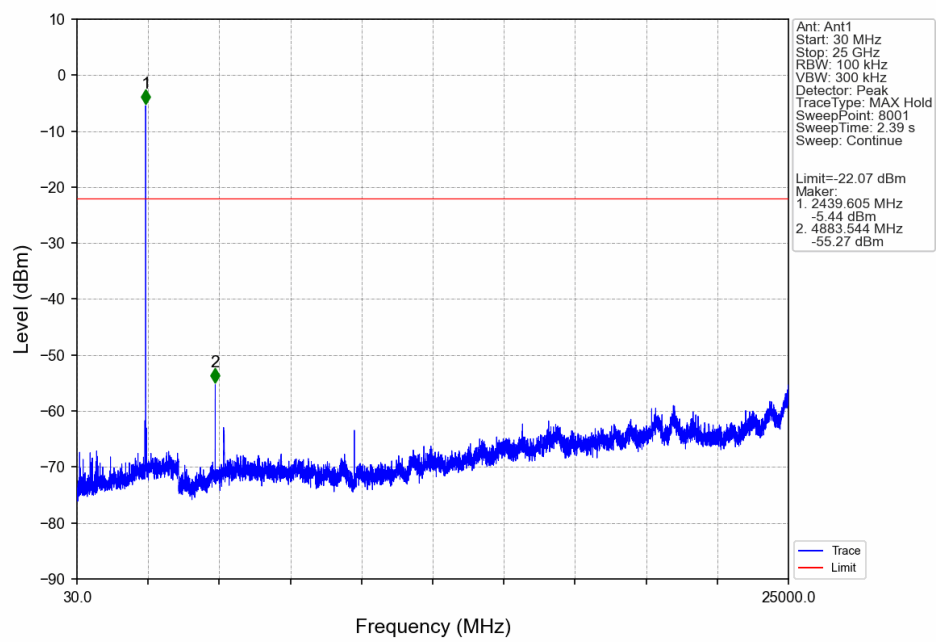
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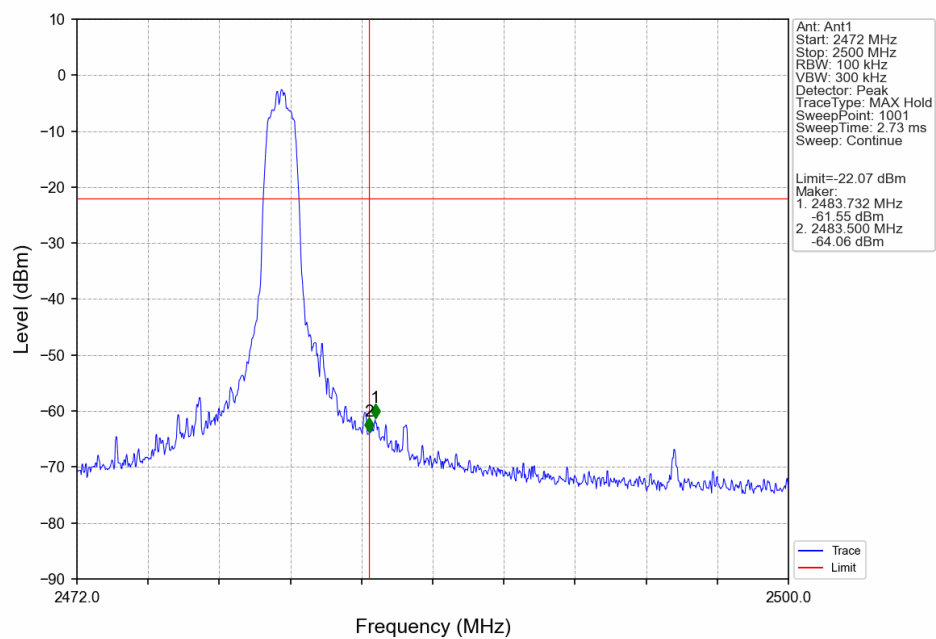
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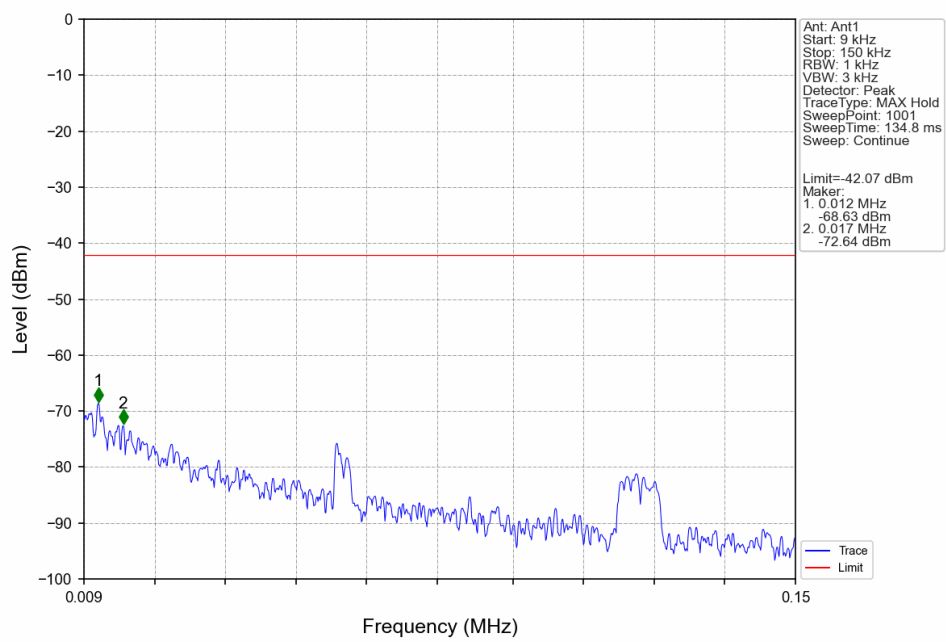
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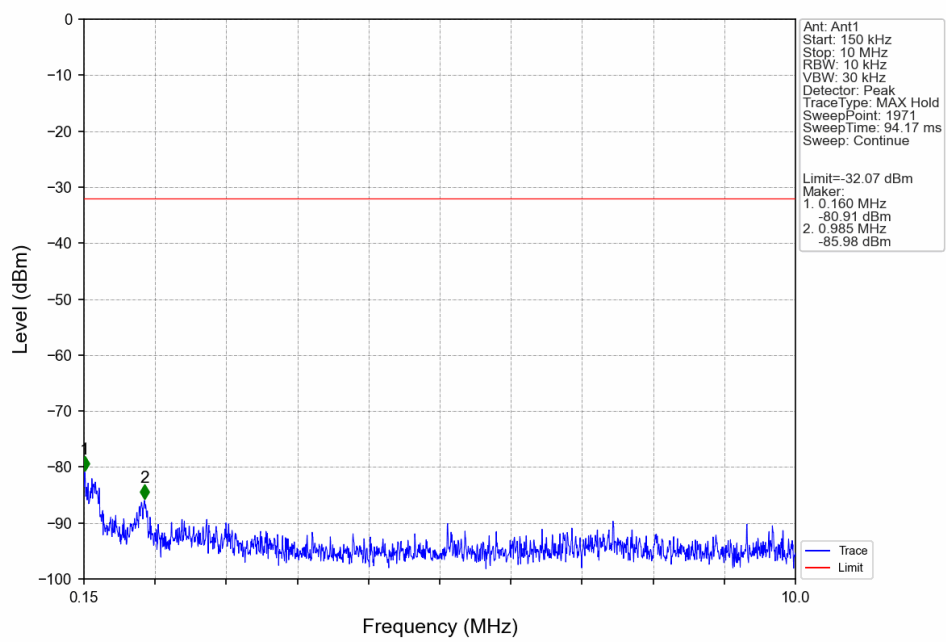
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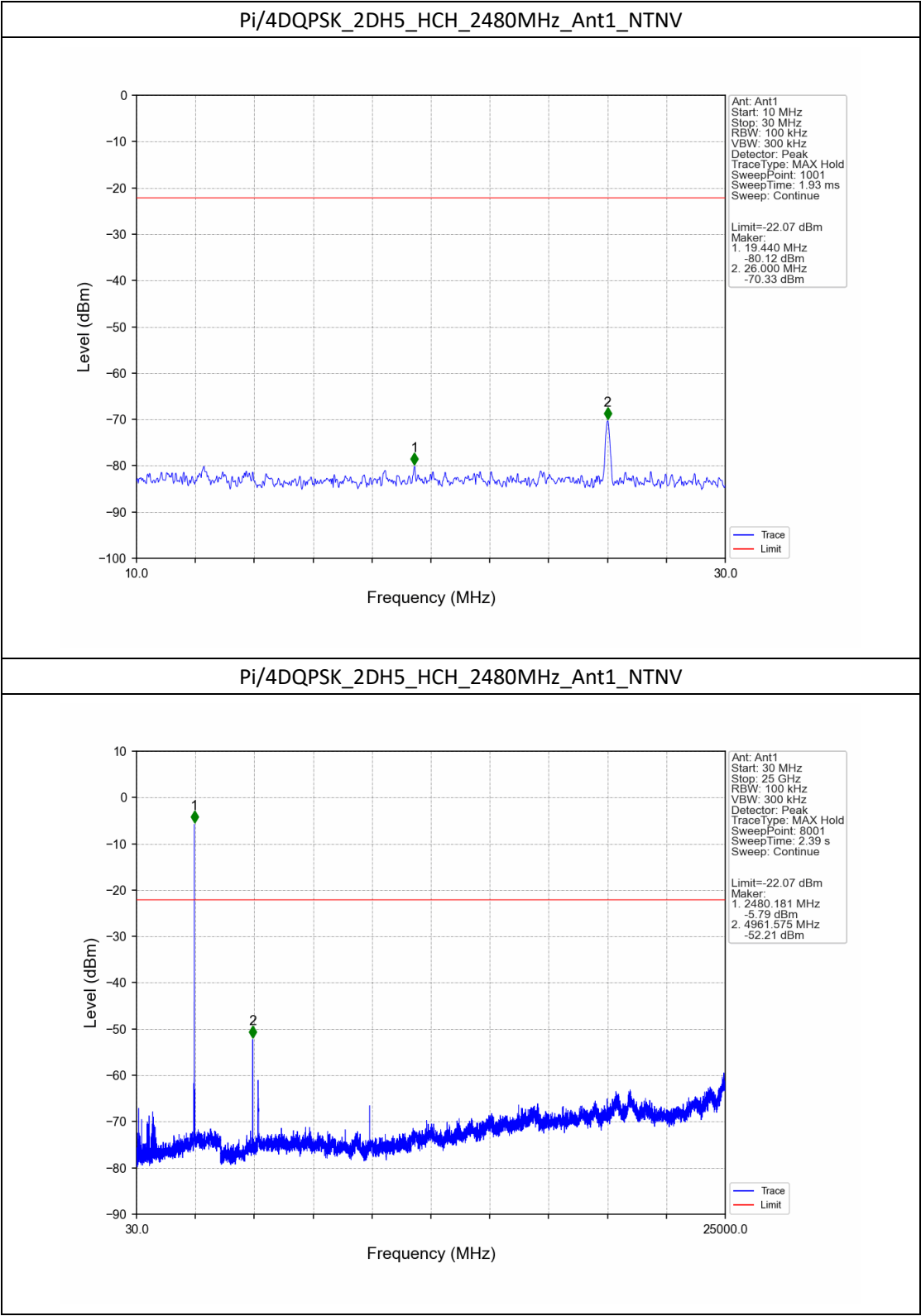


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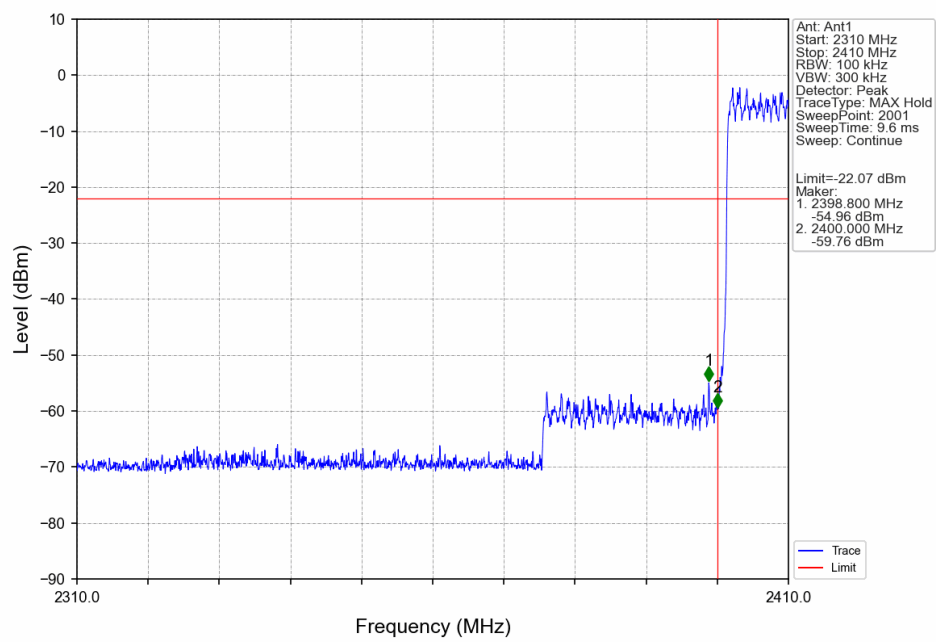


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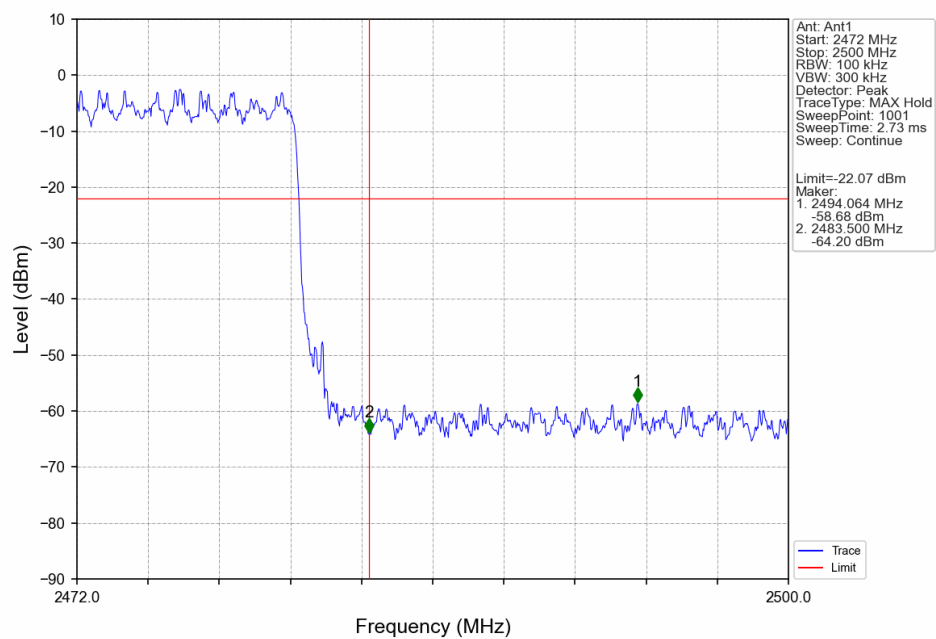




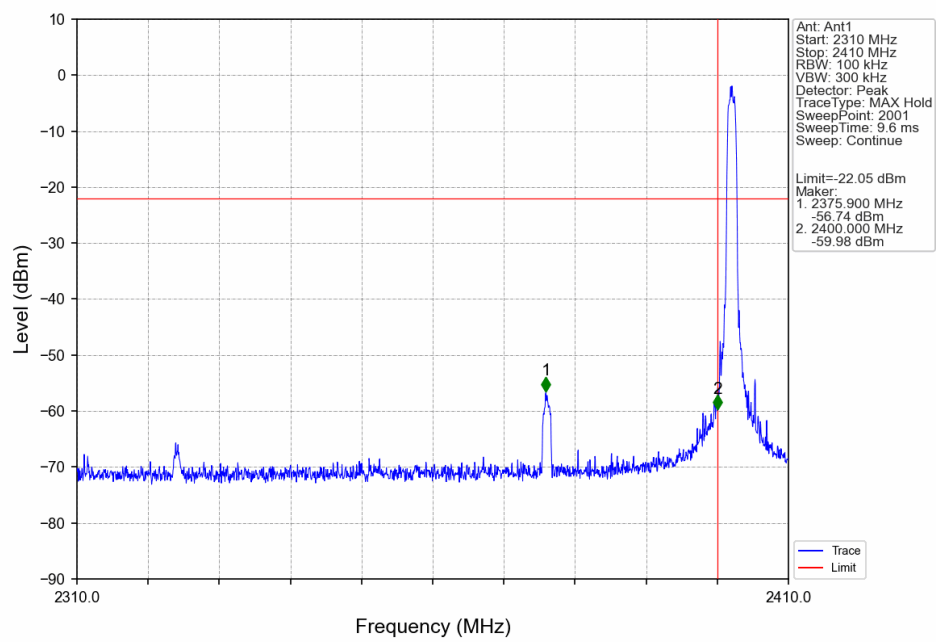
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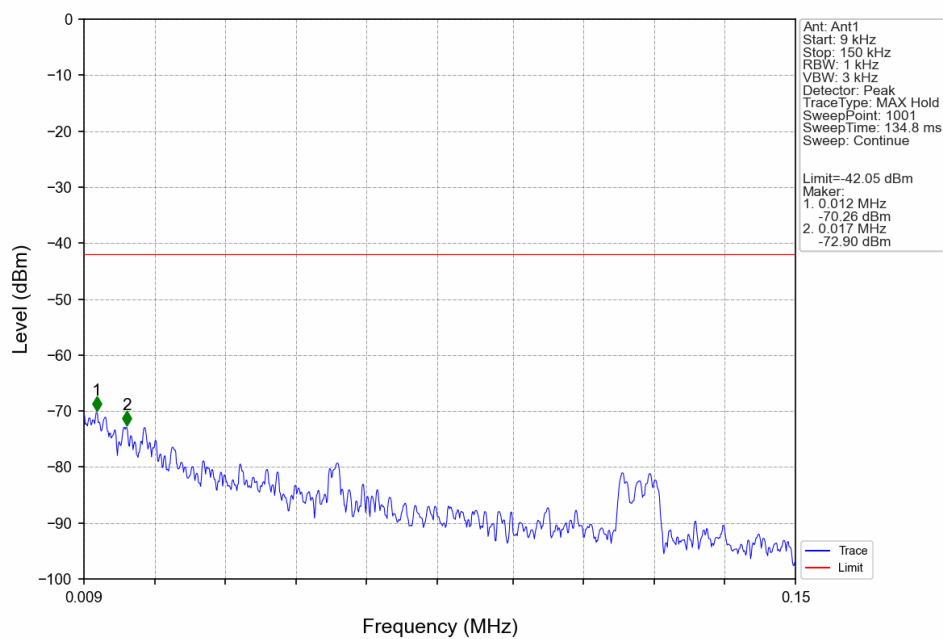
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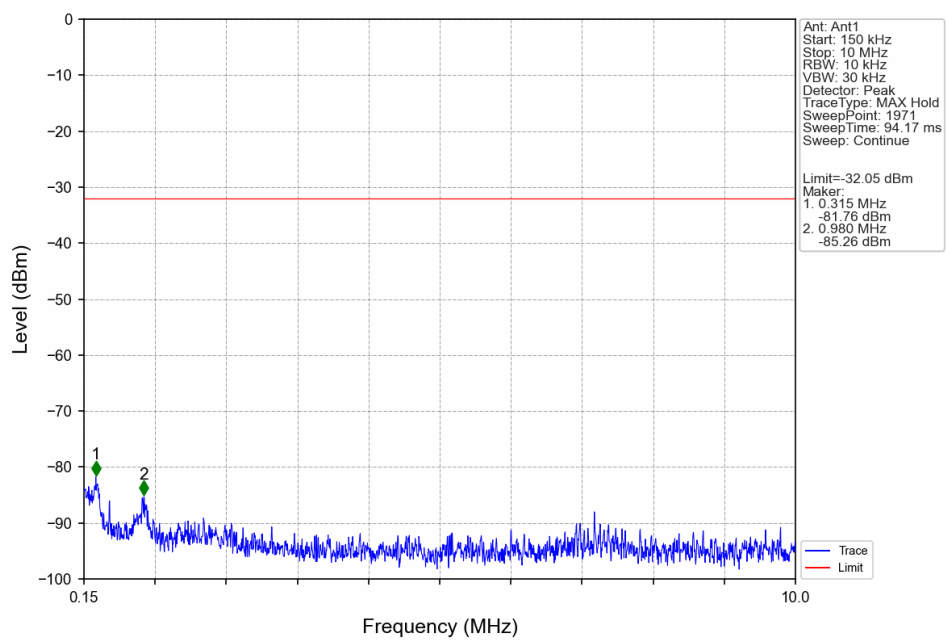
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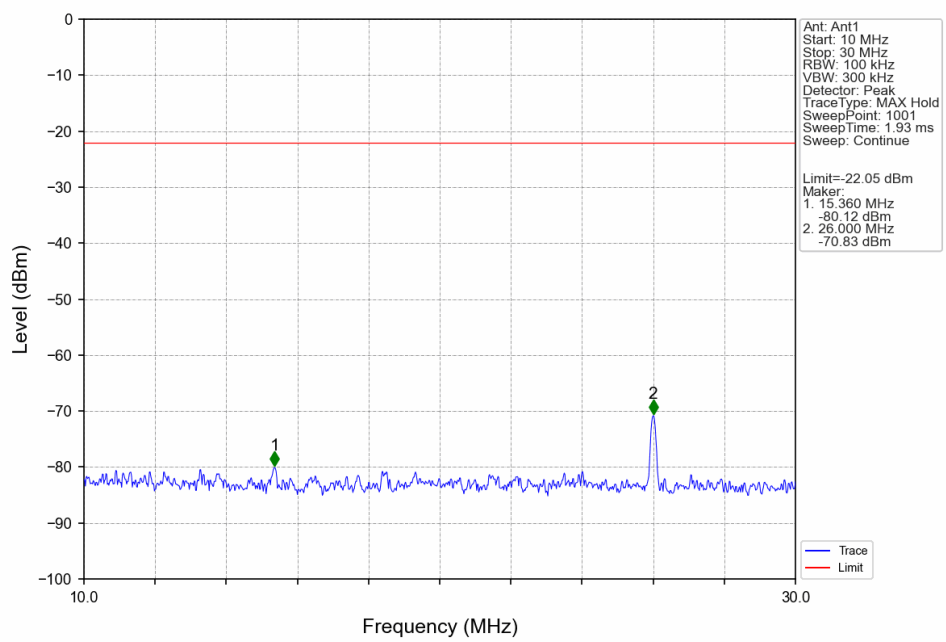
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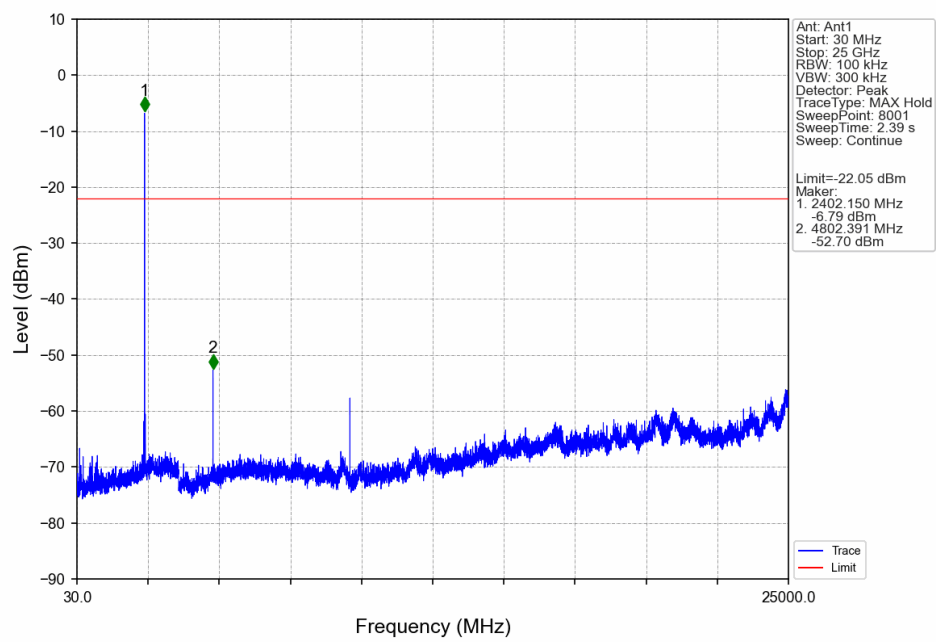
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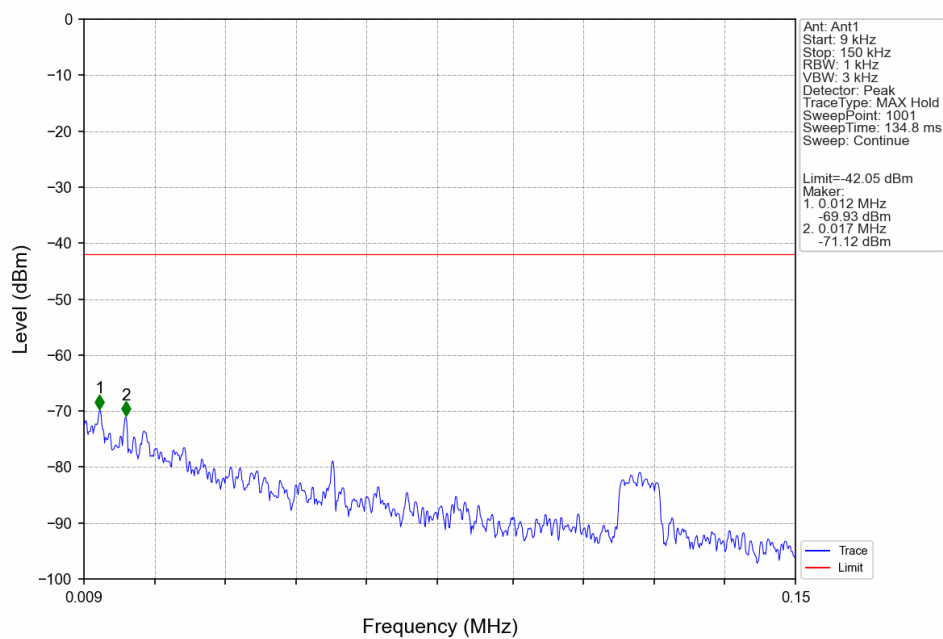
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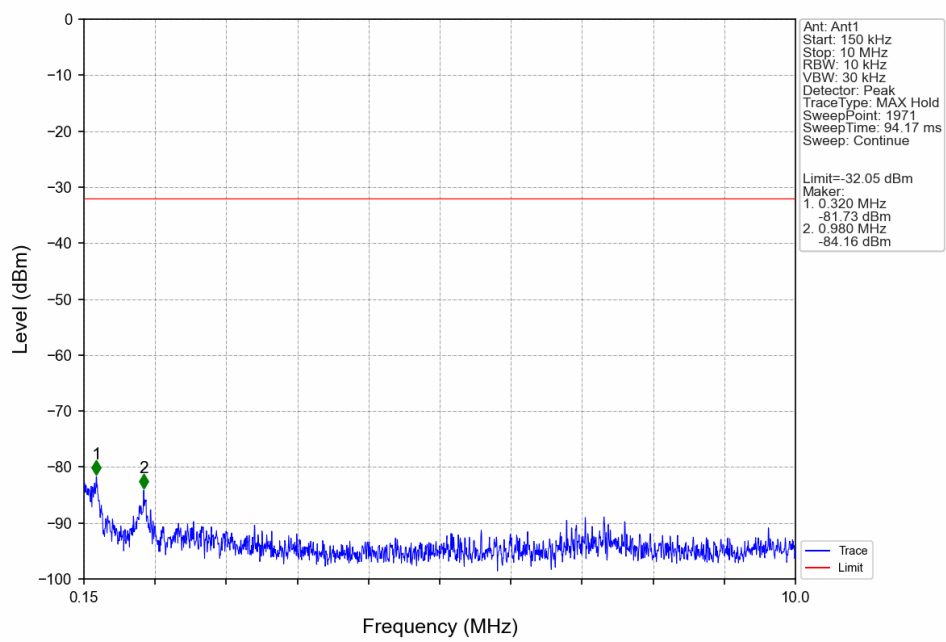
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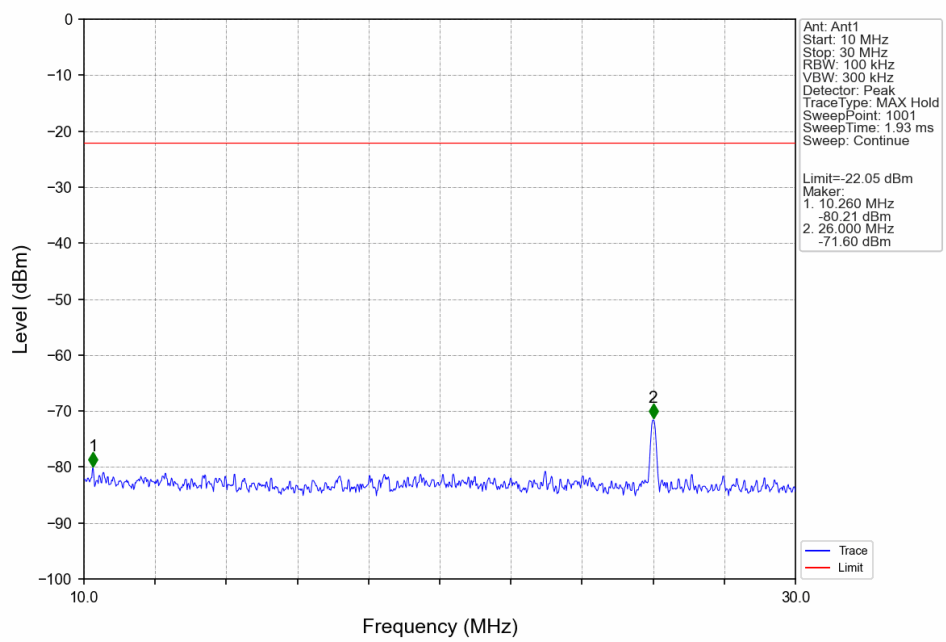
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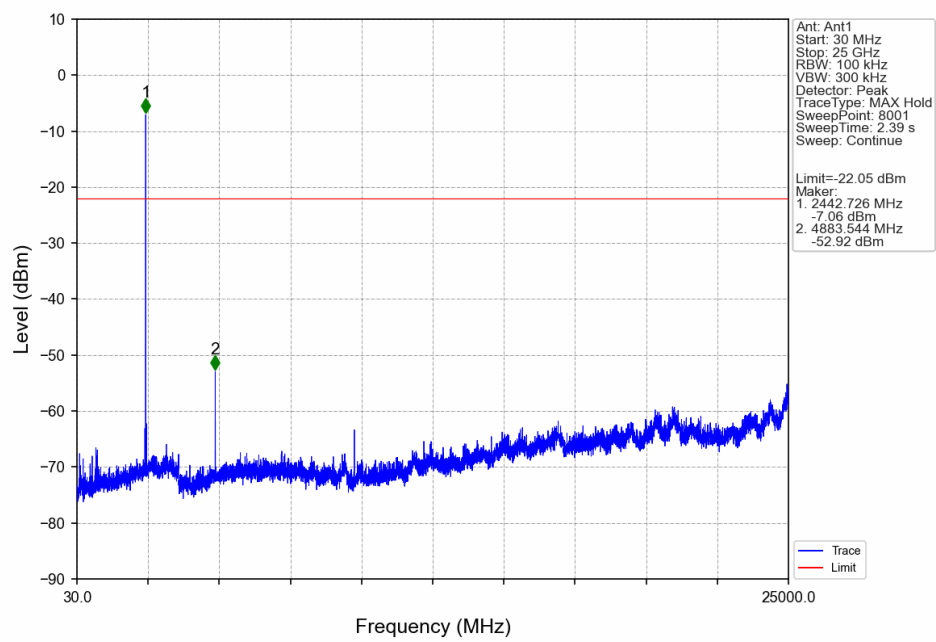
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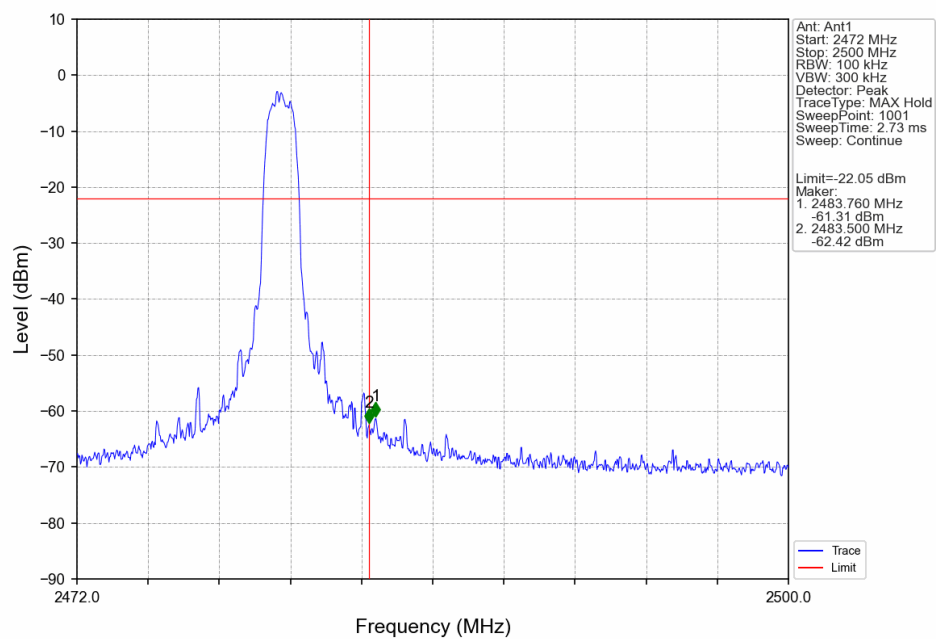
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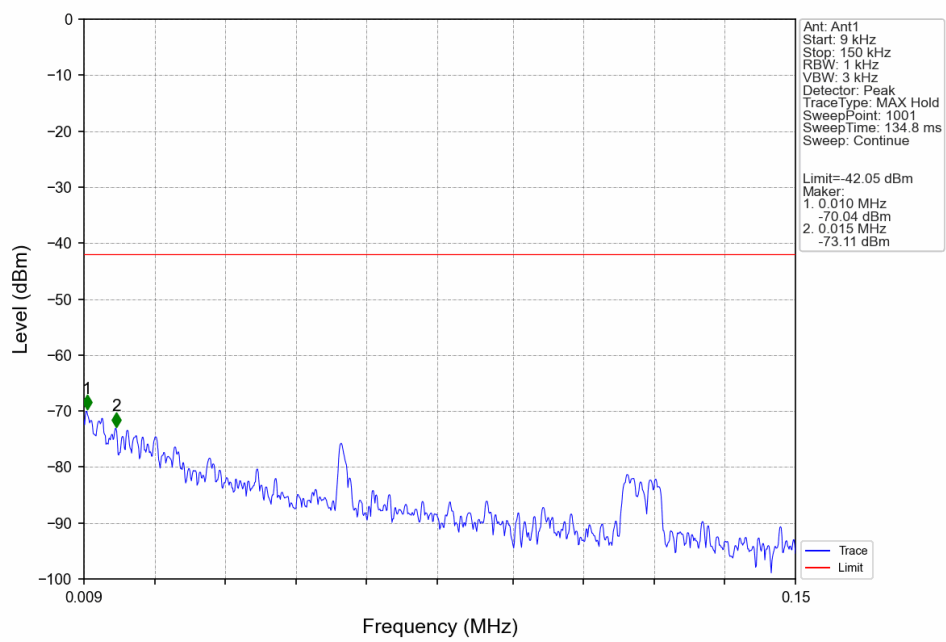
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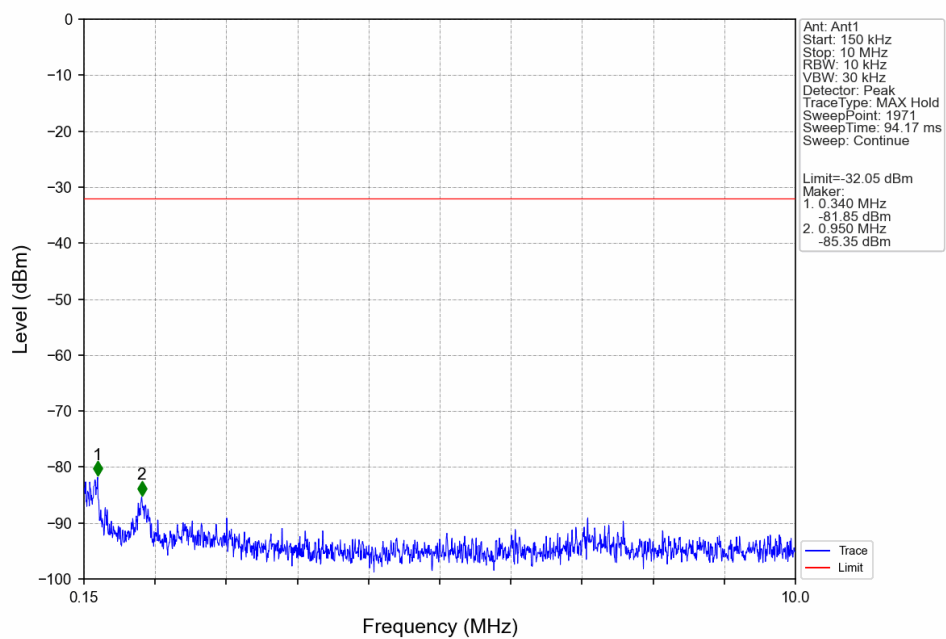
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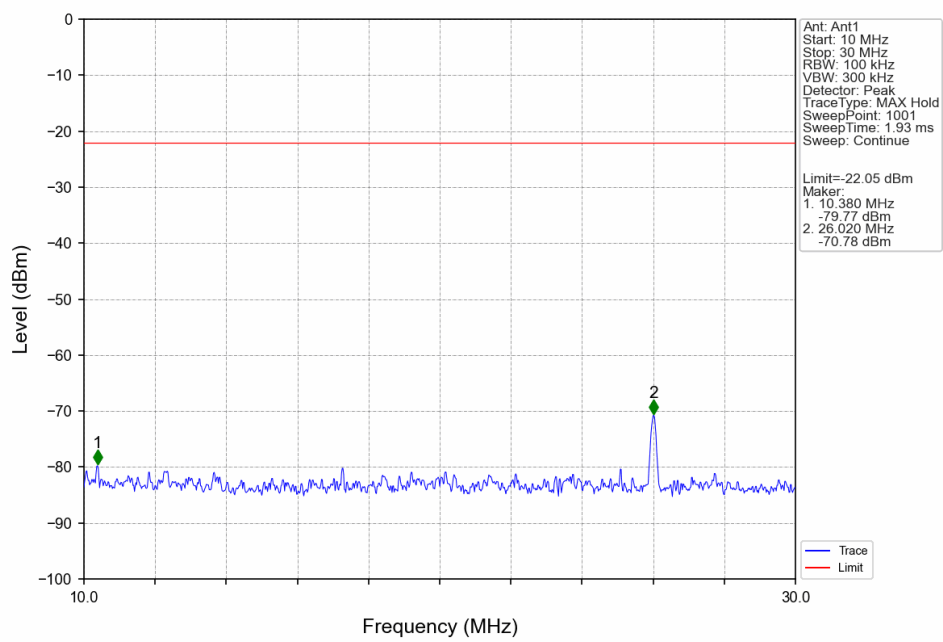
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8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV

