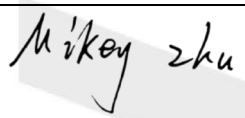
ANNEX D TEST DATA

For

Project No.:	8226EU012207W
Client:	Guangzhou Boju Information Technology Co.,Ltd
Product Name:	car refrigerator
Model No.:	CR06501
FCC ID:	2BBH5-CR06501
Technology:	Bluetooth BDR&EDR
Test Engineer:	
Test Date:	2024-04-01

Test Summary

Item	Result
Duty Cycle	Pass
Bandwidth	Pass
Maximum Conducted Output Power	Pass
Carrier Frequency Separation	Pass
Number of Hopping Frequencies	Pass
Time of Occupancy (Dwell Time)	Pass
Unwanted Emissions In Non-restricted Frequency Bands	Pass

1. Bandwidth

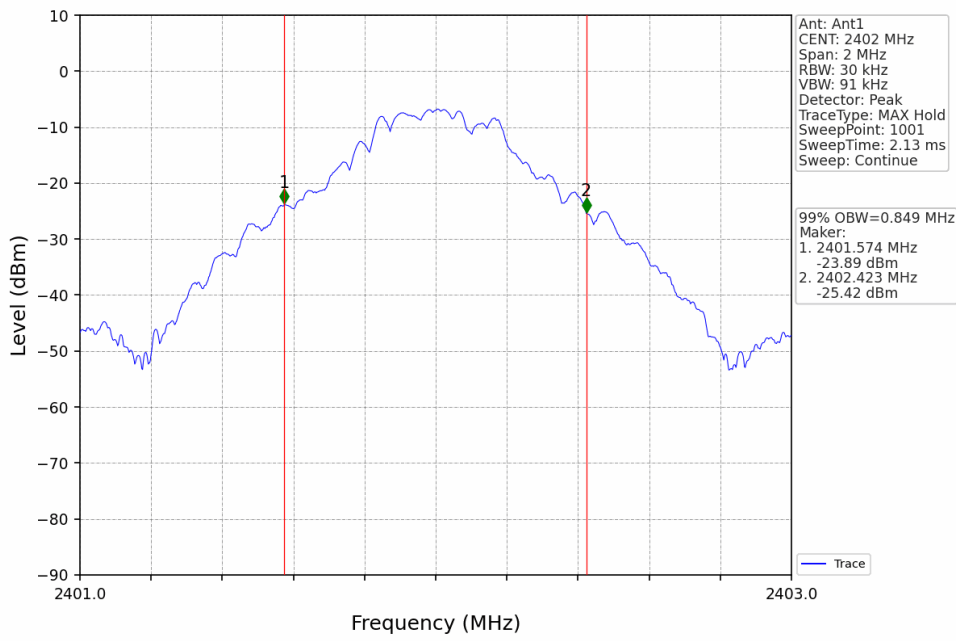
1.1 OBW

1.1.1 Test Result

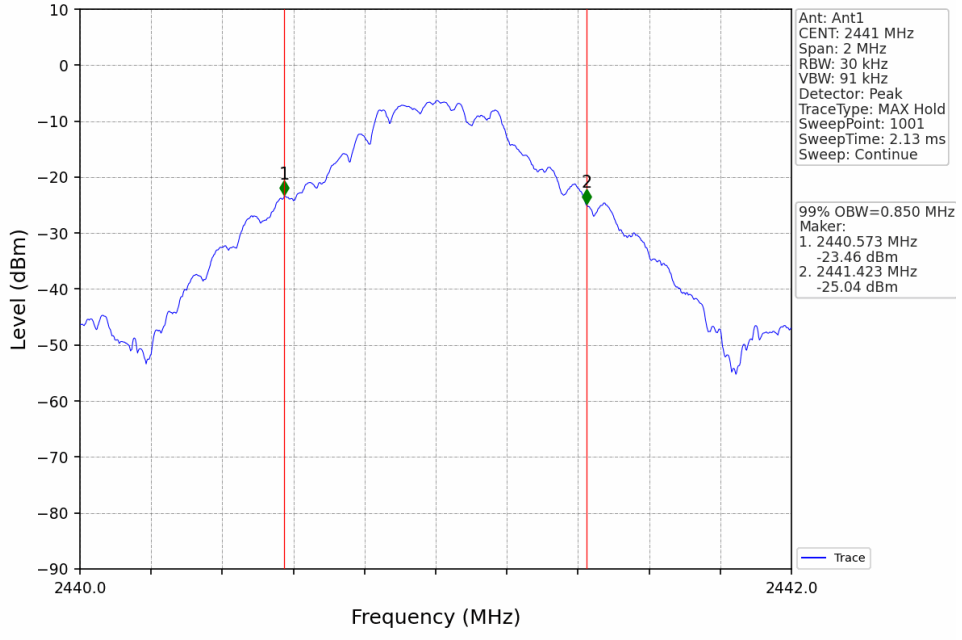
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	99% Occupied Bandwidth (MHz) Result	Verdict
GFSK	SISO	2402	DH5	1	0.849	Pass
		2441	DH5	1	0.850	Pass
		2480	DH5	1	0.851	Pass
π/4DQPSK	SISO	2402	2DH5	1	1.168	Pass
		2441	2DH5	1	1.170	Pass
		2480	2DH5	1	1.169	Pass
8DPSK	SISO	2402	3DH5	1	1.165	Pass
		2441	3DH5	1	1.165	Pass
		2480	3DH5	1	1.166	Pass

1.1.2 Test Graph

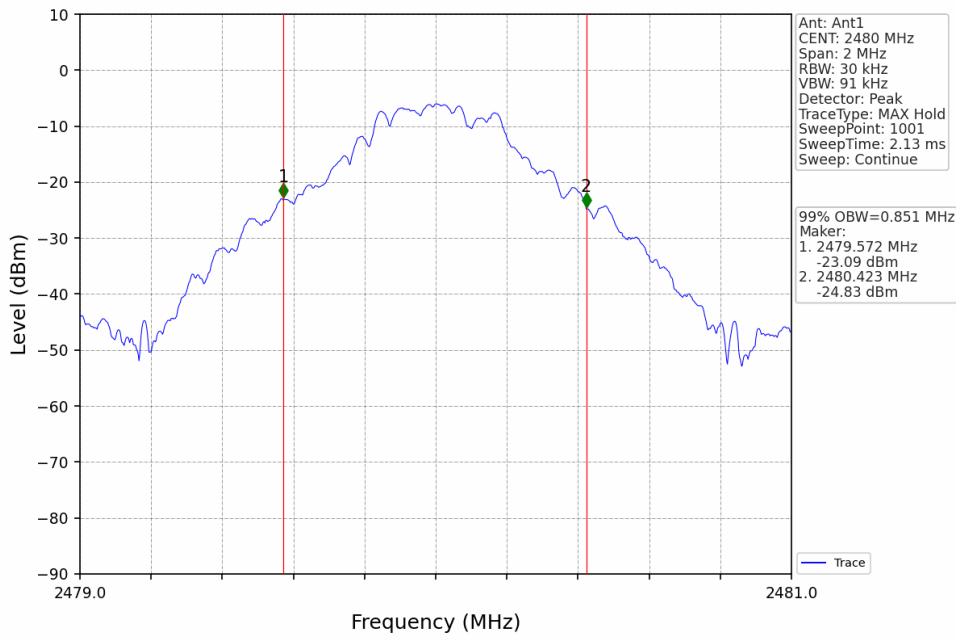
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



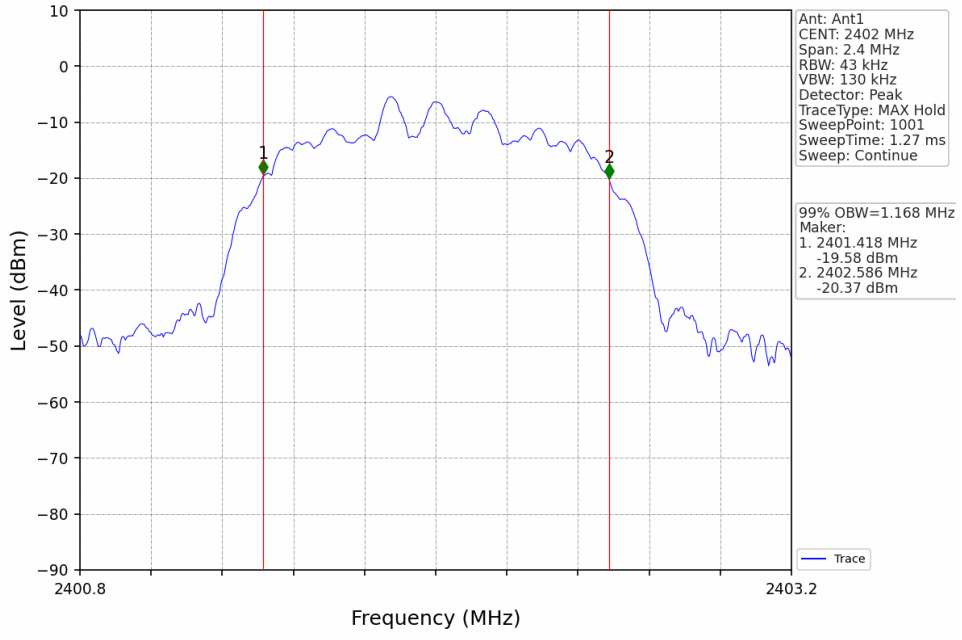
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



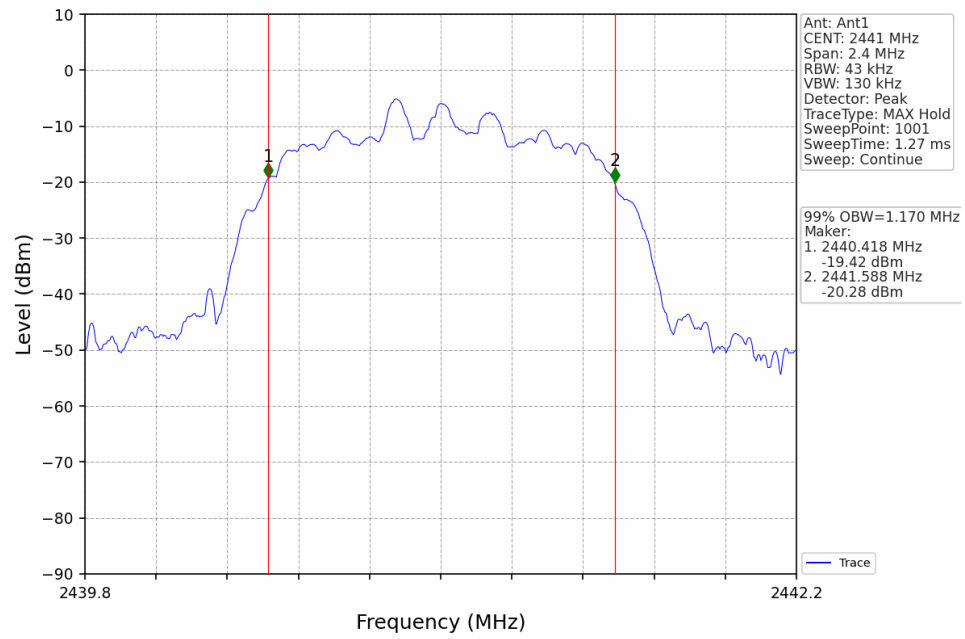
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



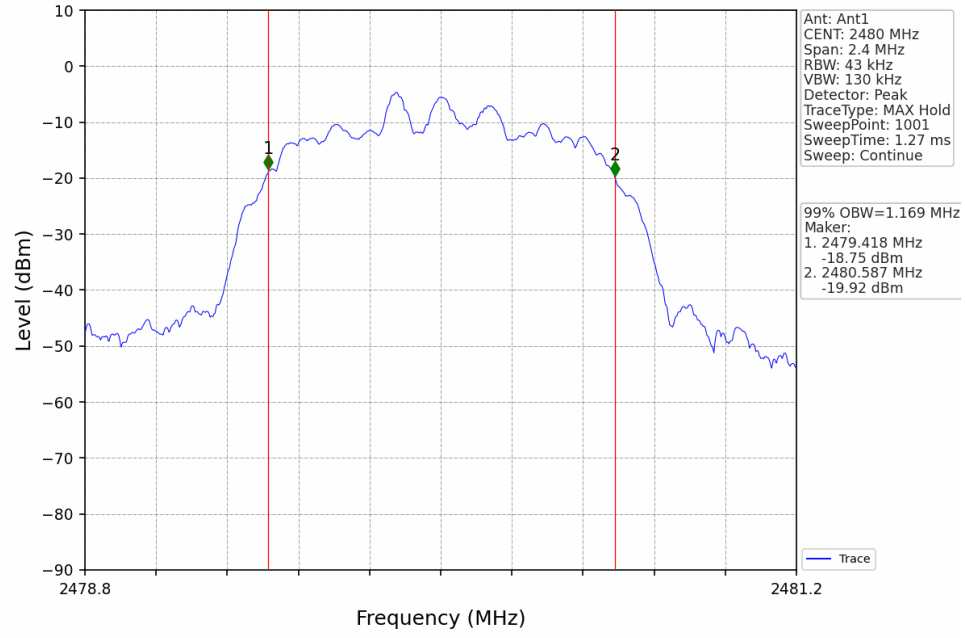
π/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



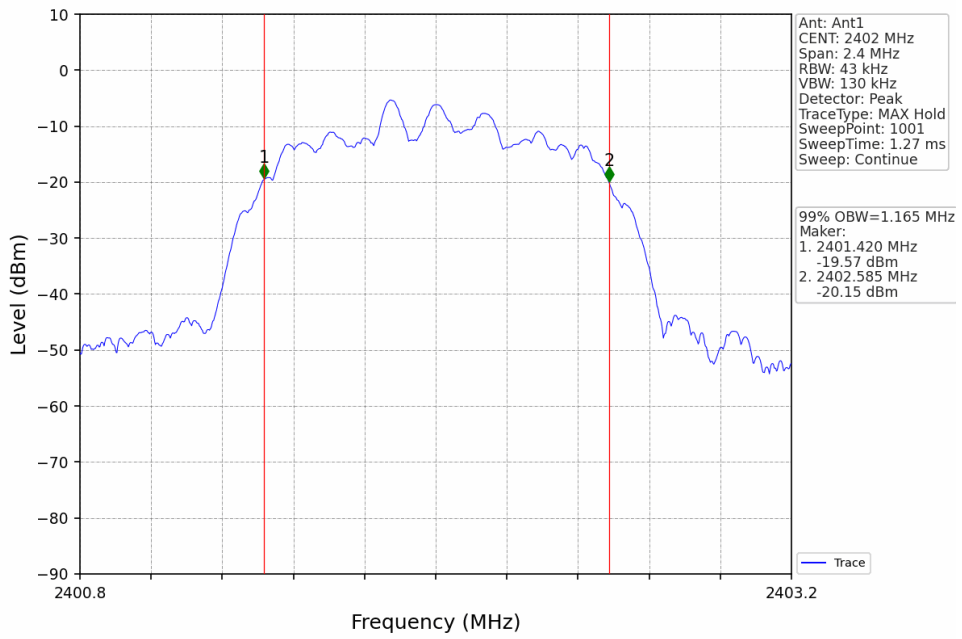
π/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



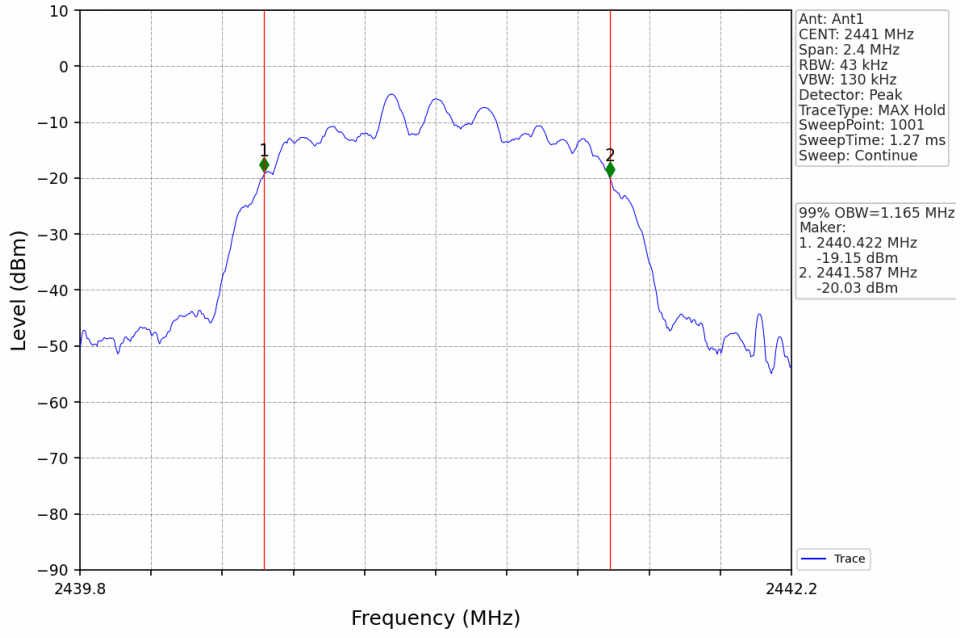
π/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



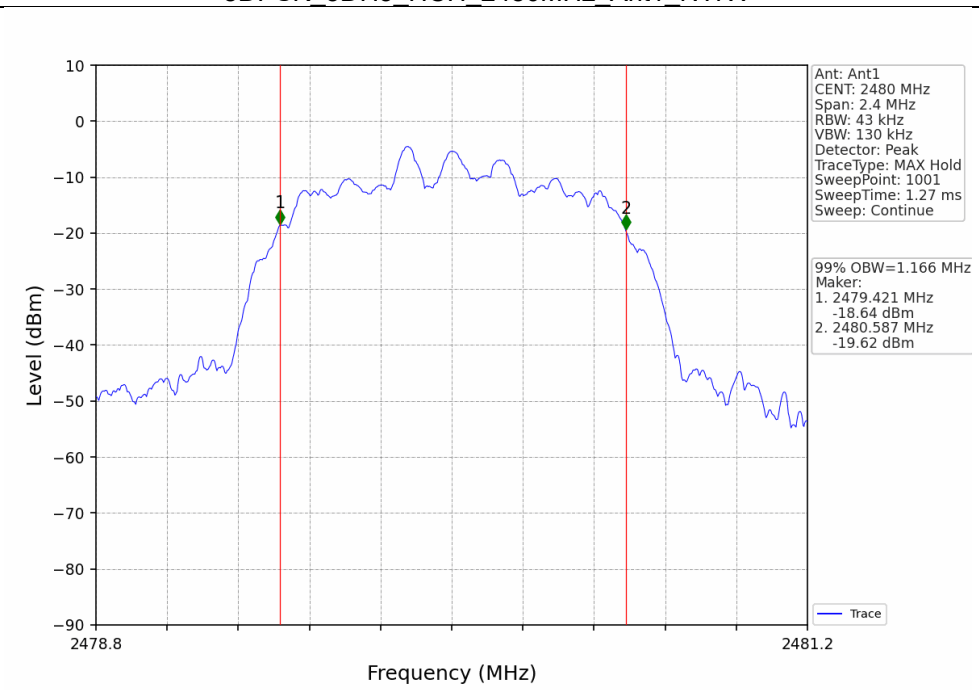
8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV



8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



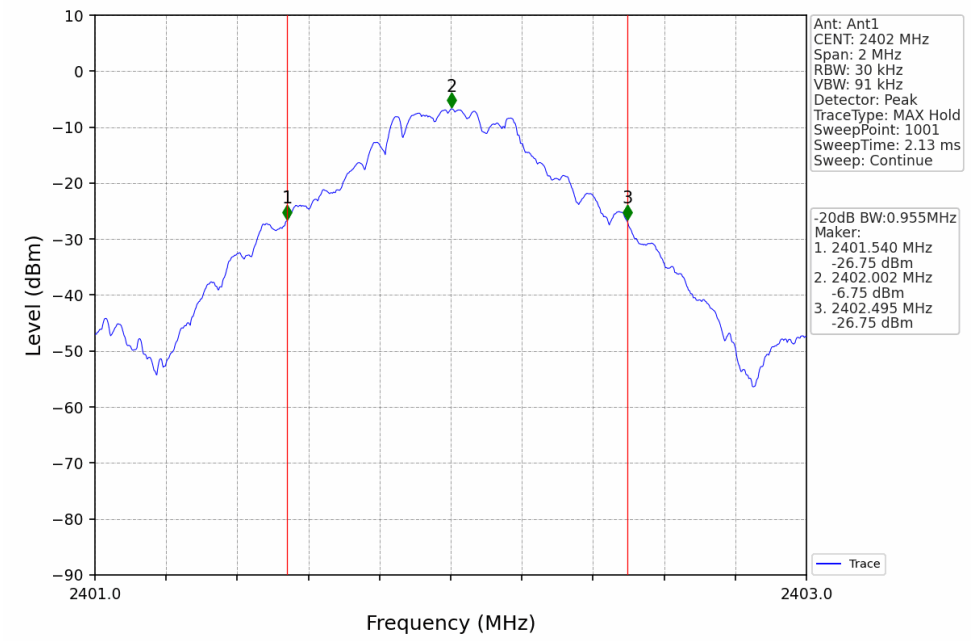
1.2 20dB BW

1.2.1 Test Result

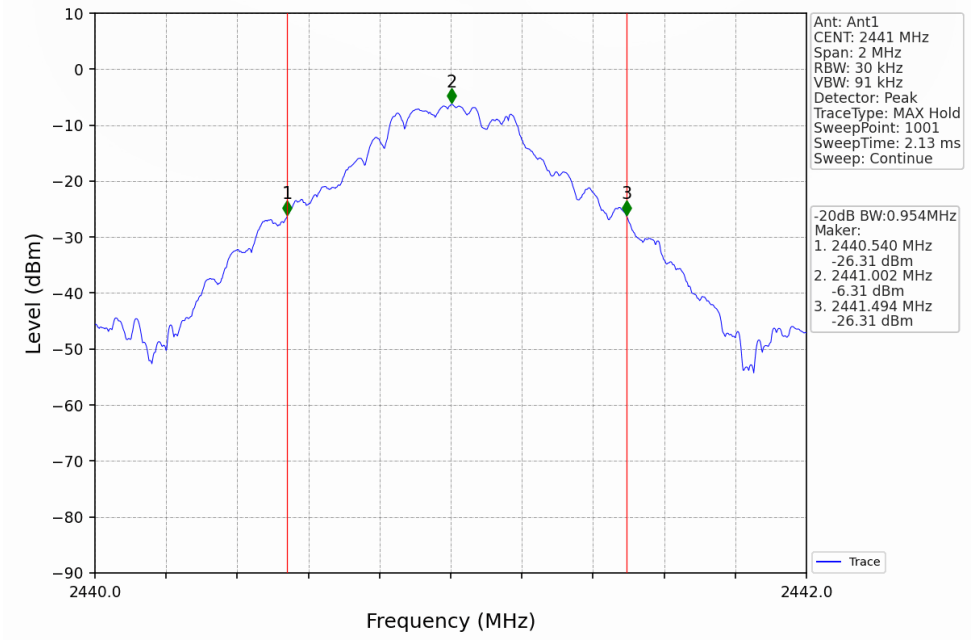
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	20dB Bandwidth (MHz) Result	Verdict
GFSK	SISO	2402	DH5	1	0.955	Pass
		2441	DH5	1	0.954	Pass
		2480	DH5	1	0.955	Pass
π/4DQPSK	SISO	2402	2DH5	1	1.313	Pass
		2441	2DH5	1	1.314	Pass
		2480	2DH5	1	1.316	Pass
8DPSK	SISO	2402	3DH5	1	1.312	Pass
		2441	3DH5	1	1.293	Pass
		2480	3DH5	1	1.317	Pass

1.2.2 Test Graph

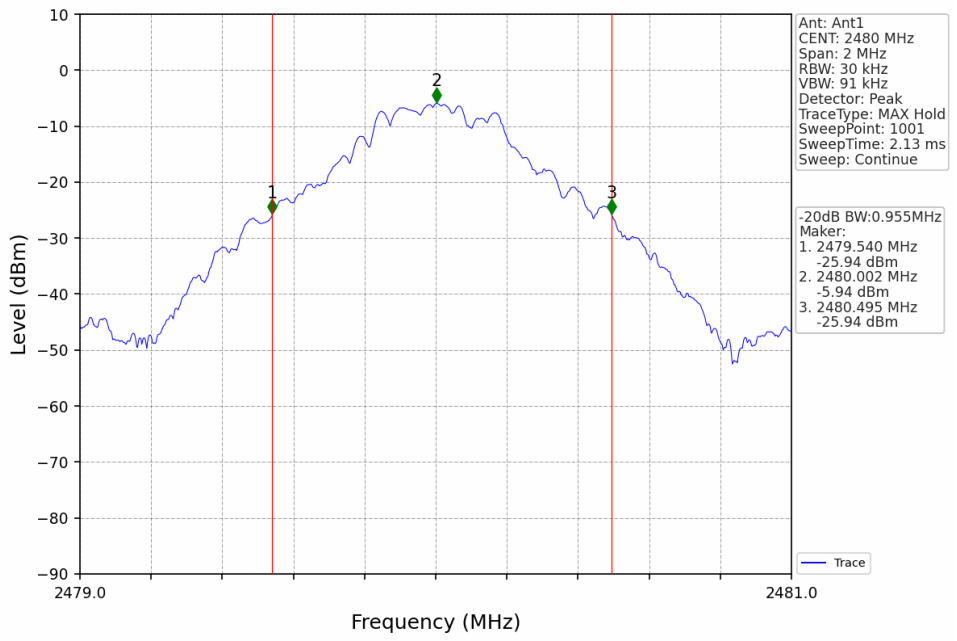
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



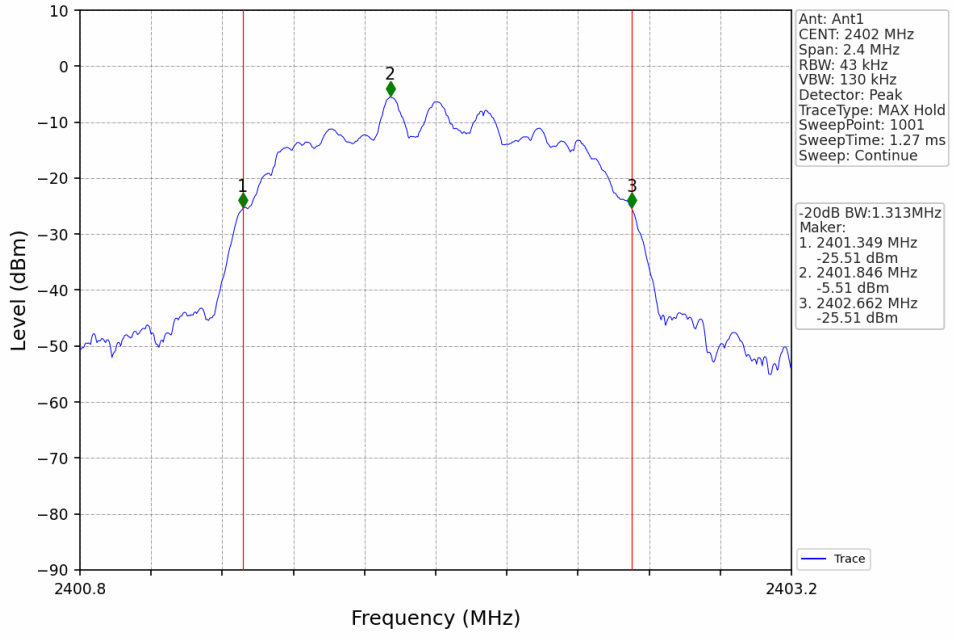
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



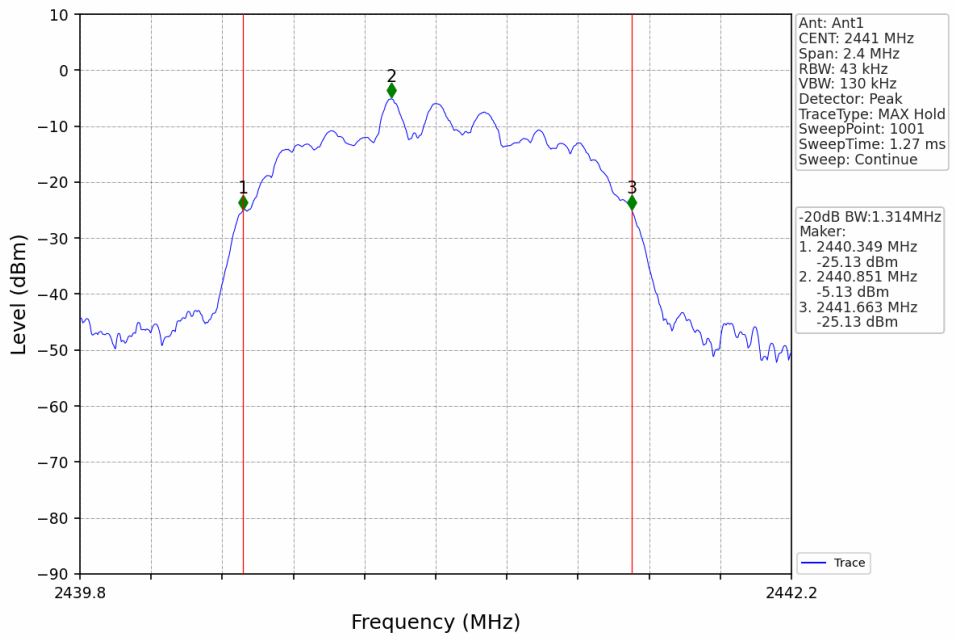
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



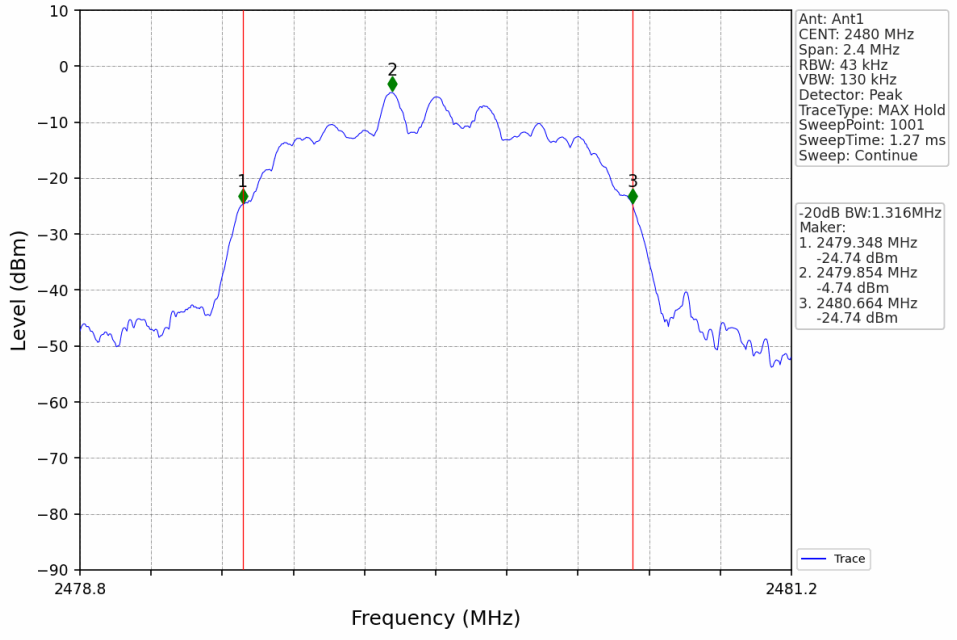
π/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



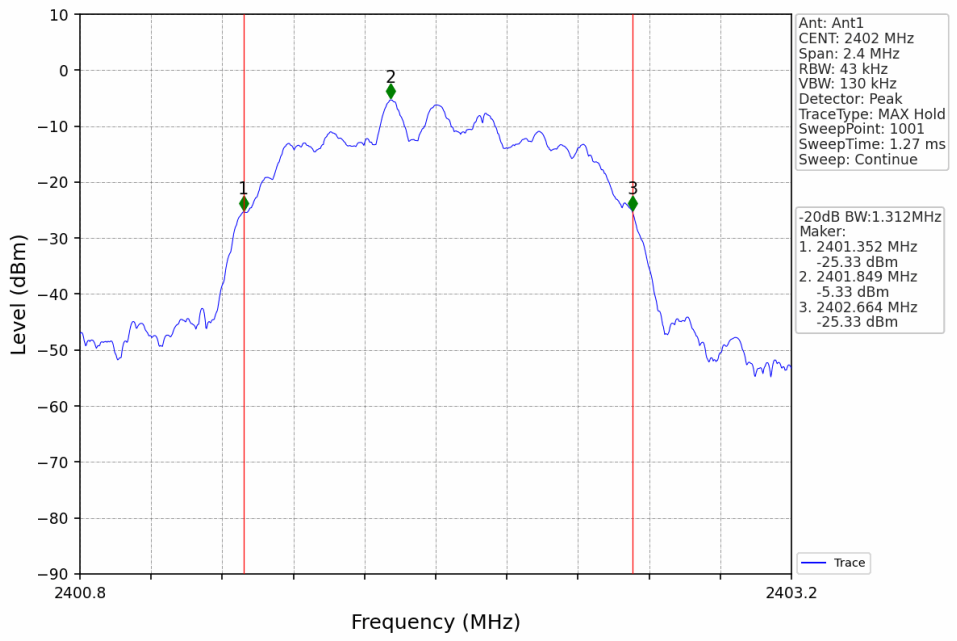
π/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



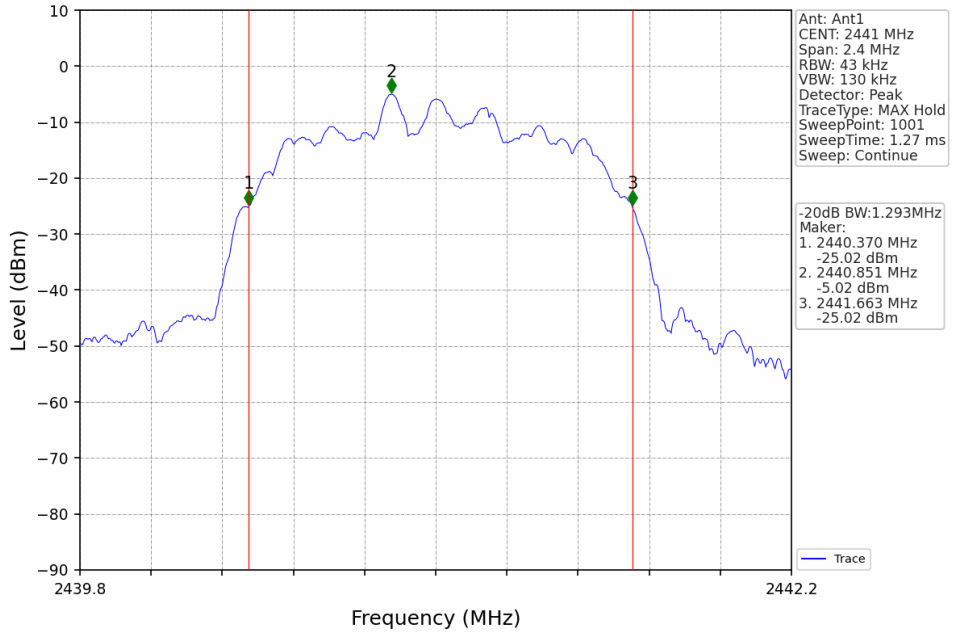
π/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



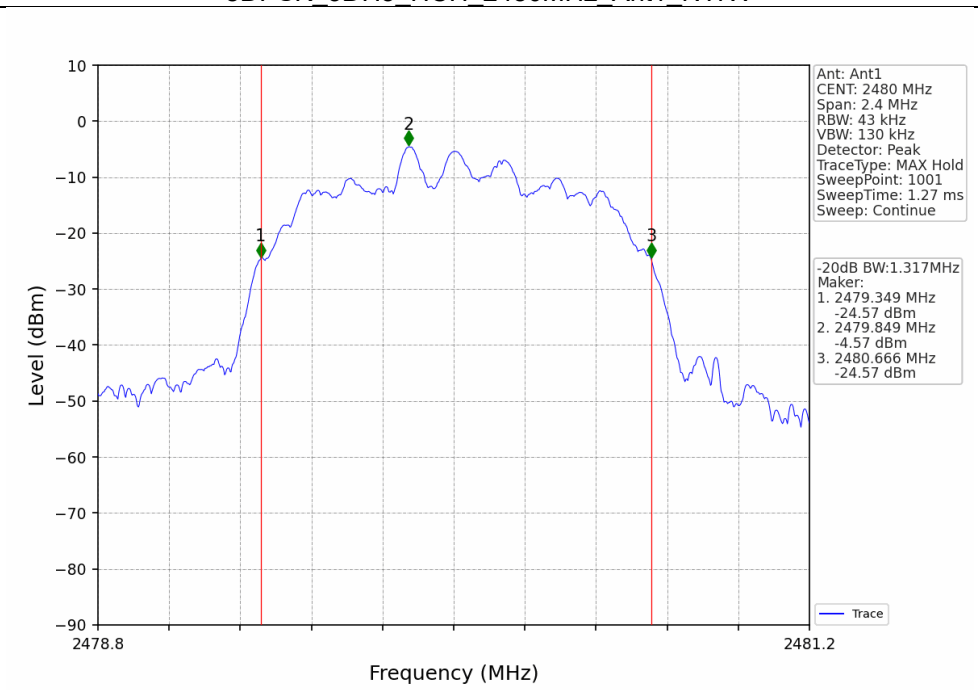
8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV



8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



2. Maximum Conducted Output Power

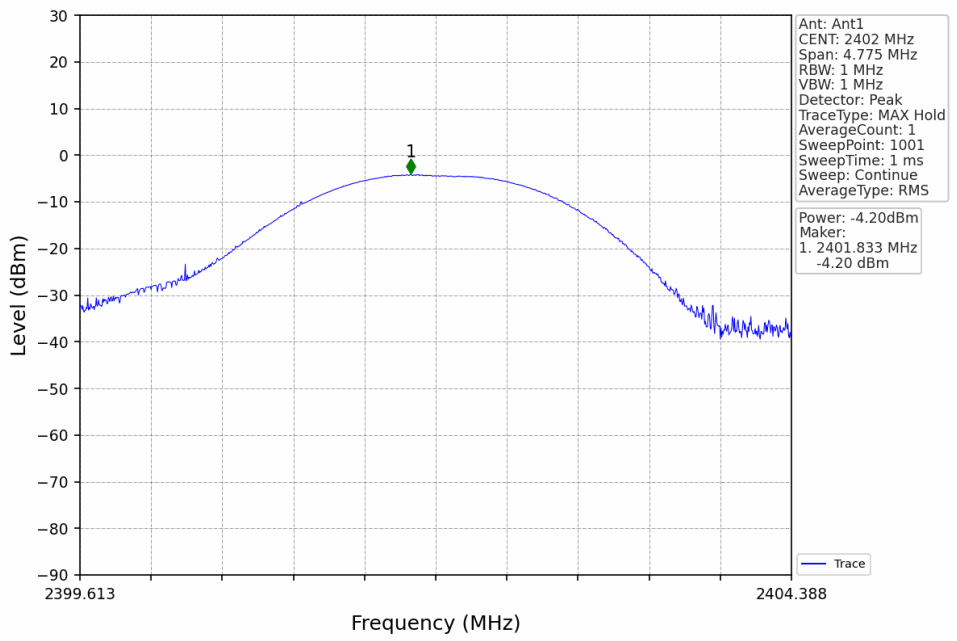
2.1 Power

2.1.1 Test Result

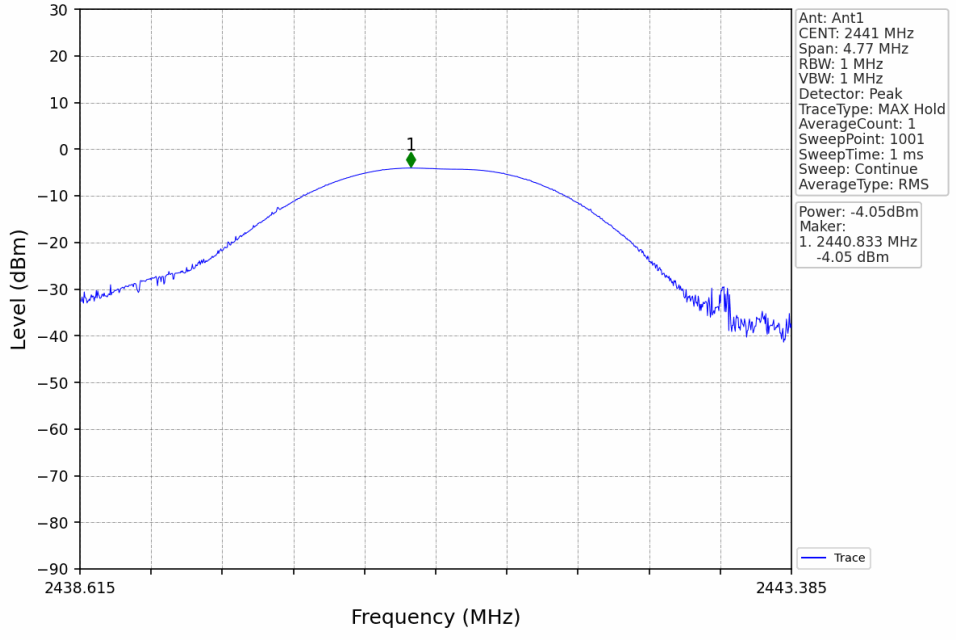
Mode	TX Type	Frequency (MHz)	Packet Type	Maximum Peak Conducted Output Power (dBm)		Verdict
				ANT1	Limit	
GFSK	SISO	2402	DH5	-4.20	<=30	Pass
		2441	DH5	-4.05	<=30	Pass
		2480	DH5	-3.57	<=30	Pass
π/4DQPSK	SISO	2402	2DH5	-3.39	<=20.97	Pass
		2441	2DH5	-3.07	<=20.97	Pass
		2480	2DH5	-2.61	<=20.97	Pass
8DPSK	SISO	2402	3DH5	-3.31	<=20.97	Pass
		2441	3DH5	-3.01	<=20.97	Pass
		2480	3DH5	-2.51	<=20.97	Pass

2.1.2 Test Graph

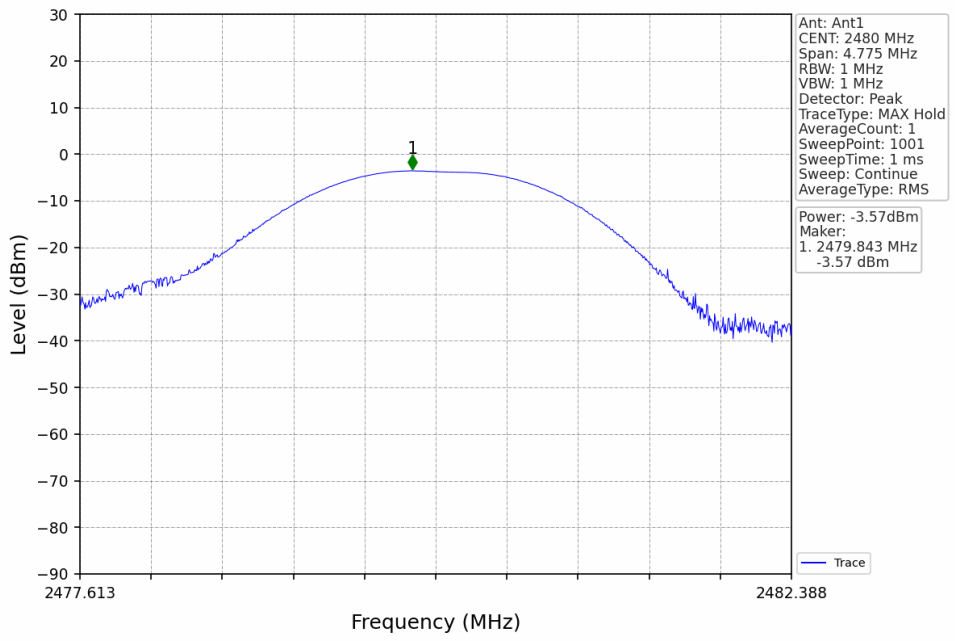
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



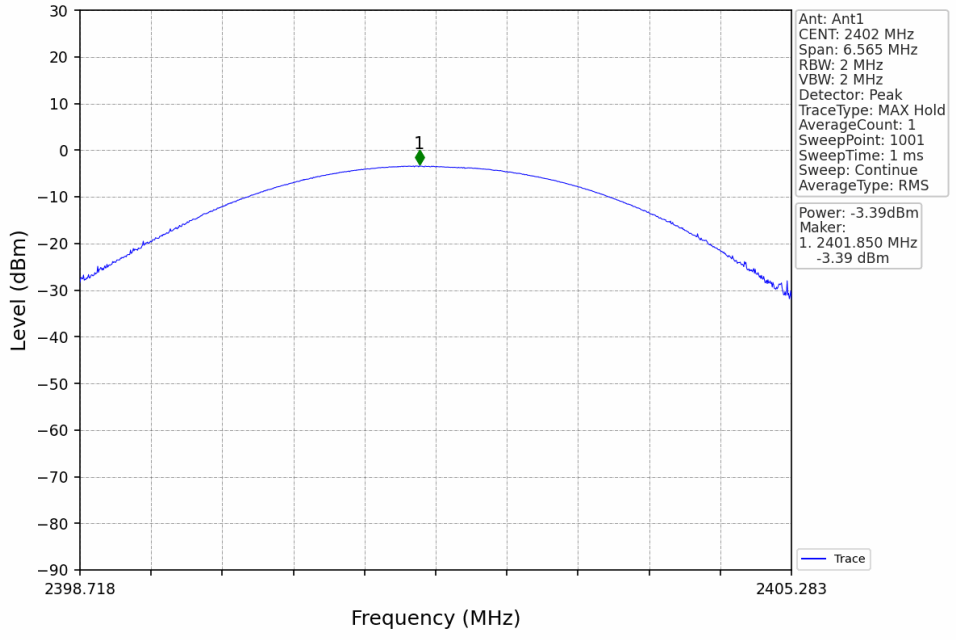
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



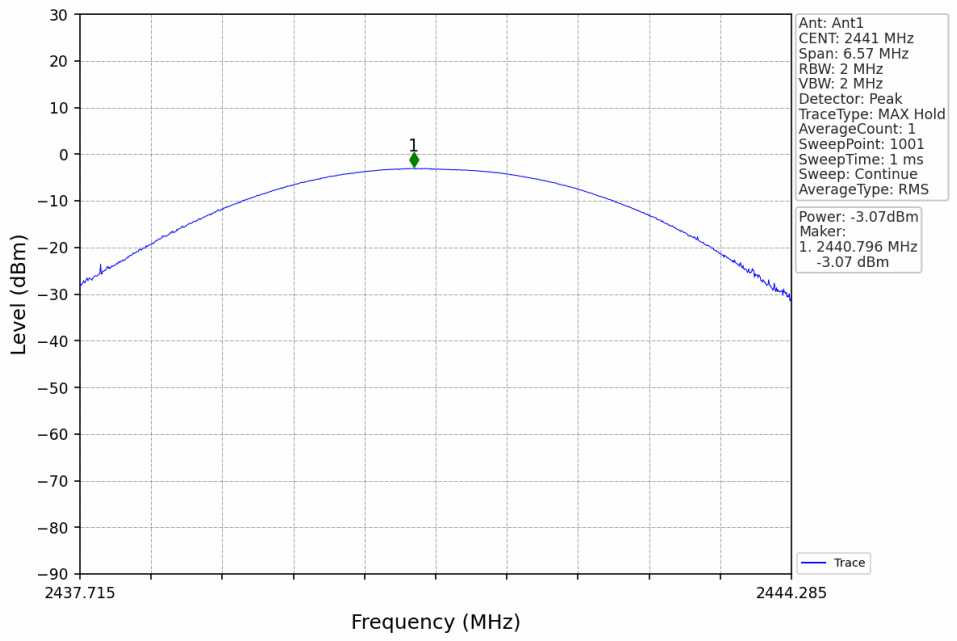
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



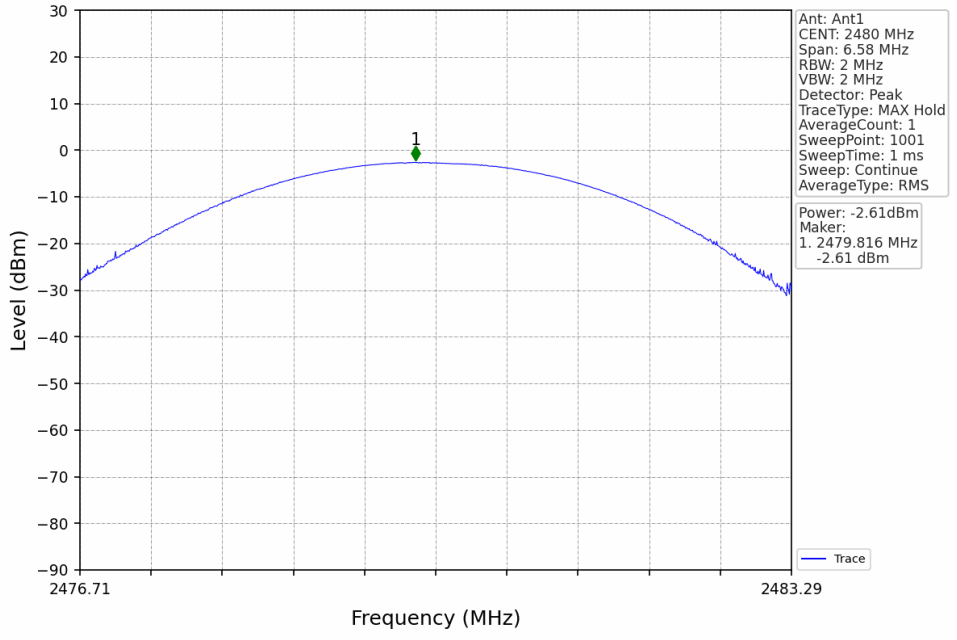
π/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



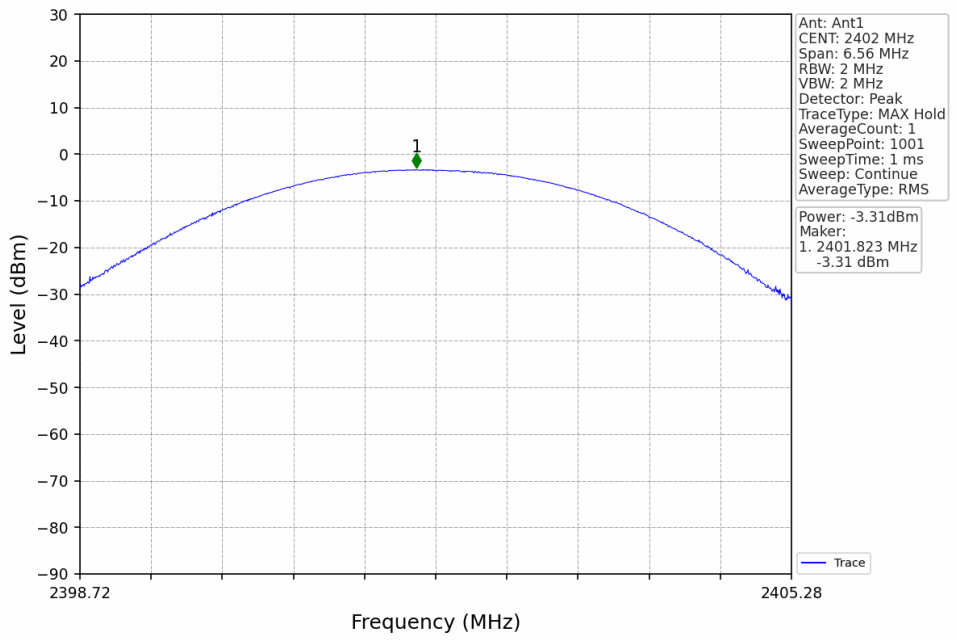
π/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



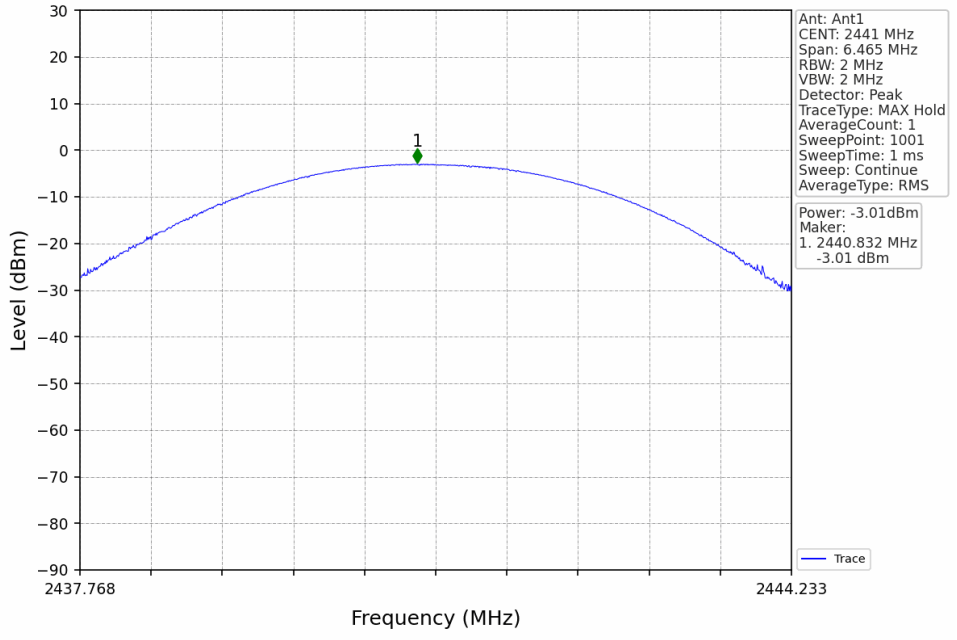
π/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



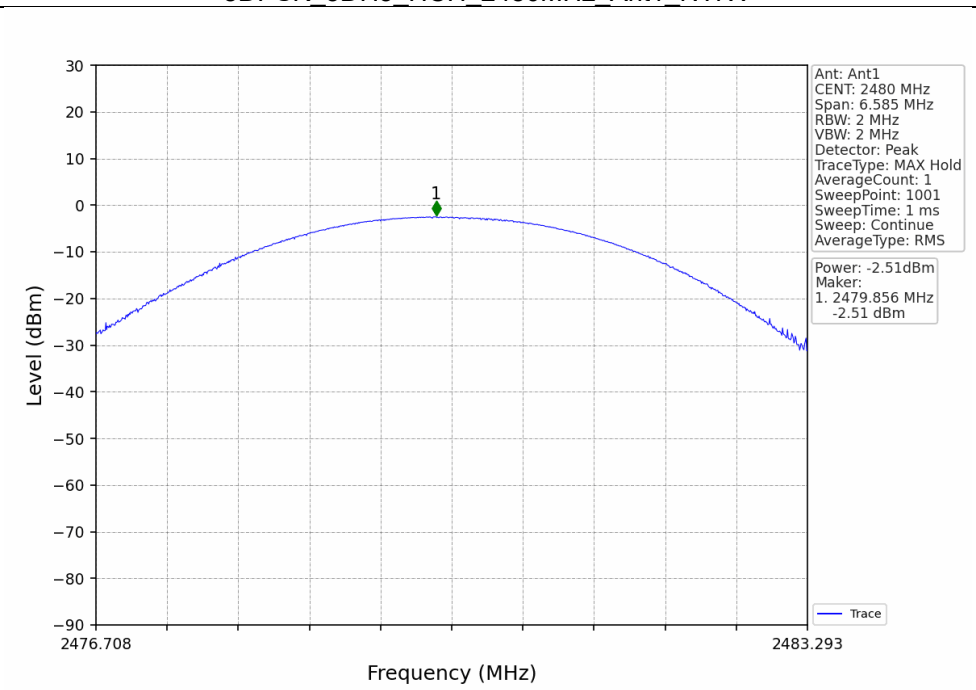
8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV



8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



3. Carrier Frequency Separation

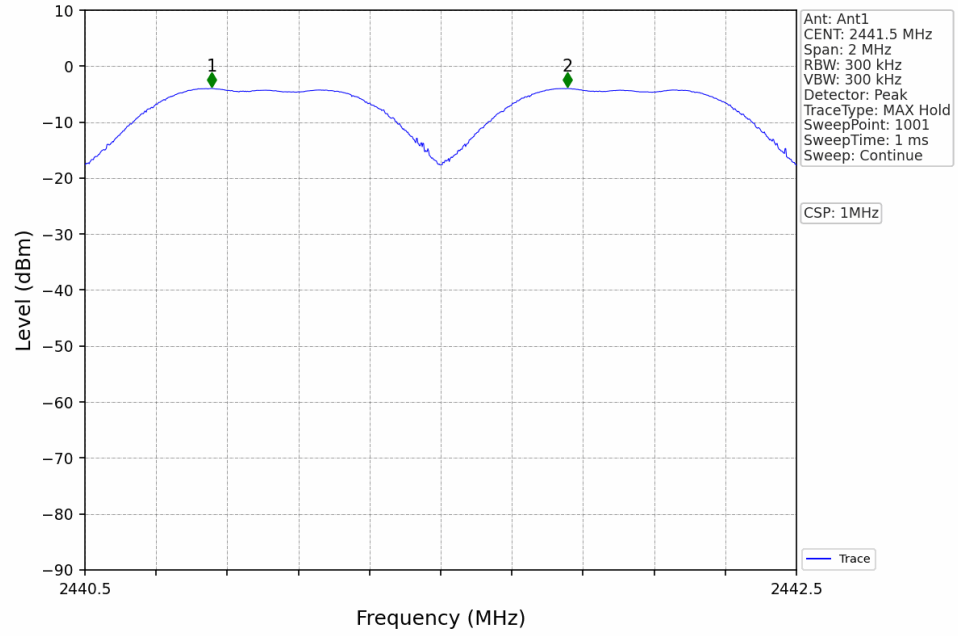
3.1 Ant1

3.1.1 Test Result

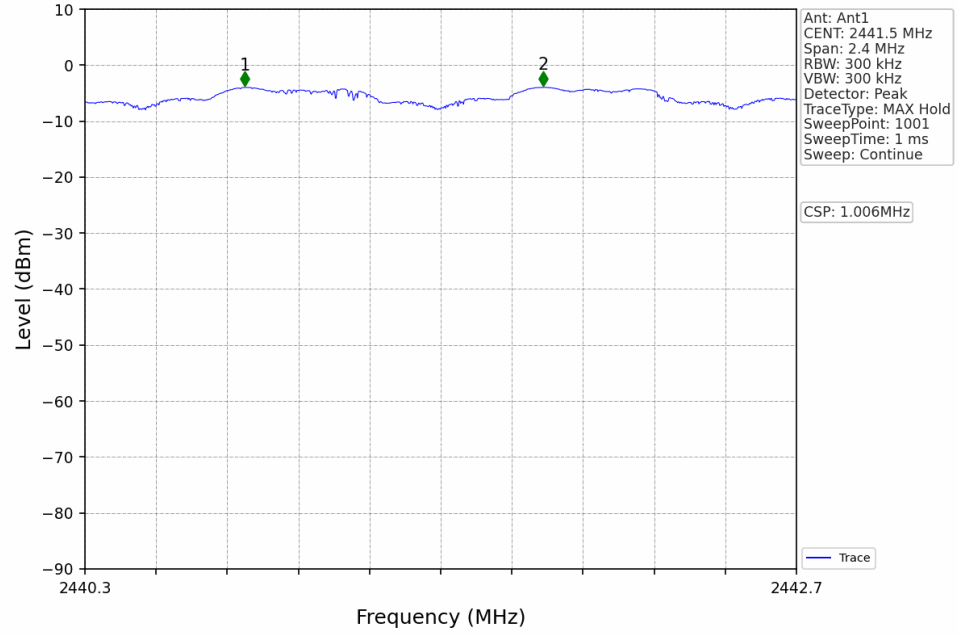
Ant1							
Mode	TX Type	Frequency (MHz)	Packet Type	Channel Separation (MHz)	20dB Bandwidth (MHz)	Limit (MHz)	Verdict
GFSK	SISO	HOPP	DH5	1.000	0.955	>=0.955	Pass
π/4DQPSK	SISO	HOPP	2DH5	1.006	1.316	>=0.877	Pass
8DPSK	SISO	HOPP	3DH5	0.994	1.317	>=0.878	Pass

3.1.2 Test Graph

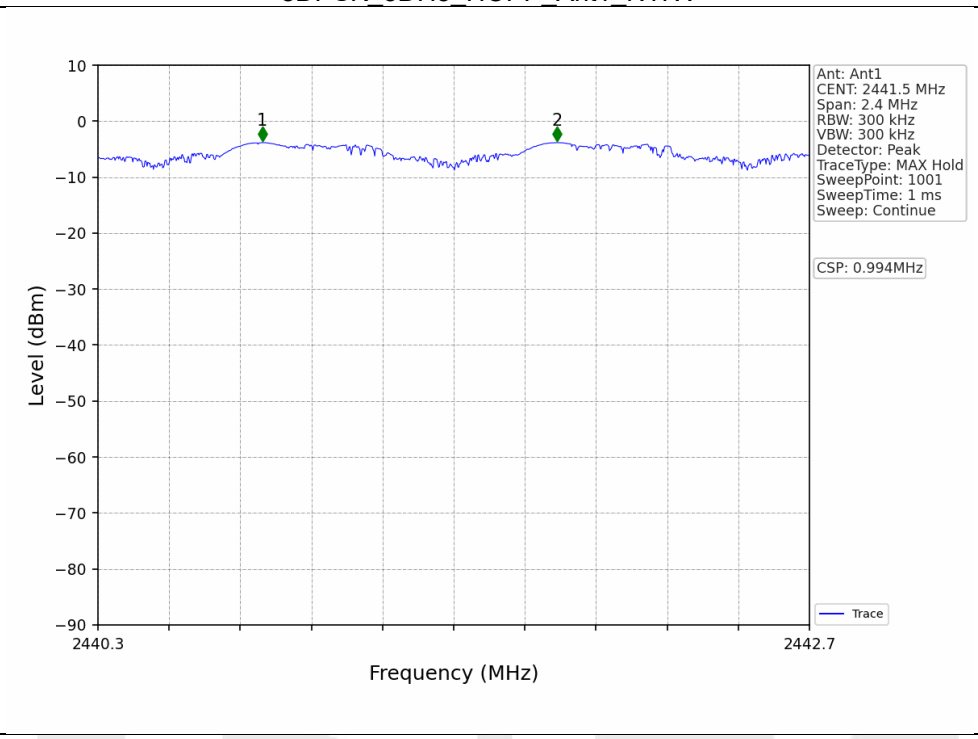
GFSK_DH5_HOPP_Ant1_NTNV



π/4DQPSK_2DH5_HOPP_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV



4. Number of Hopping Frequencies

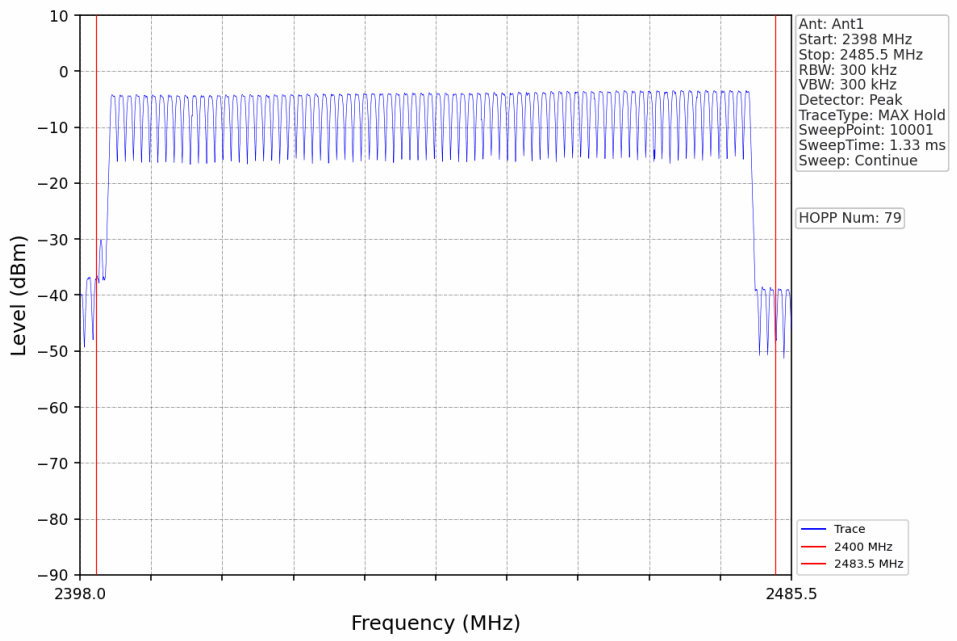
4.1 HoppNum

4.1.1 Test Result

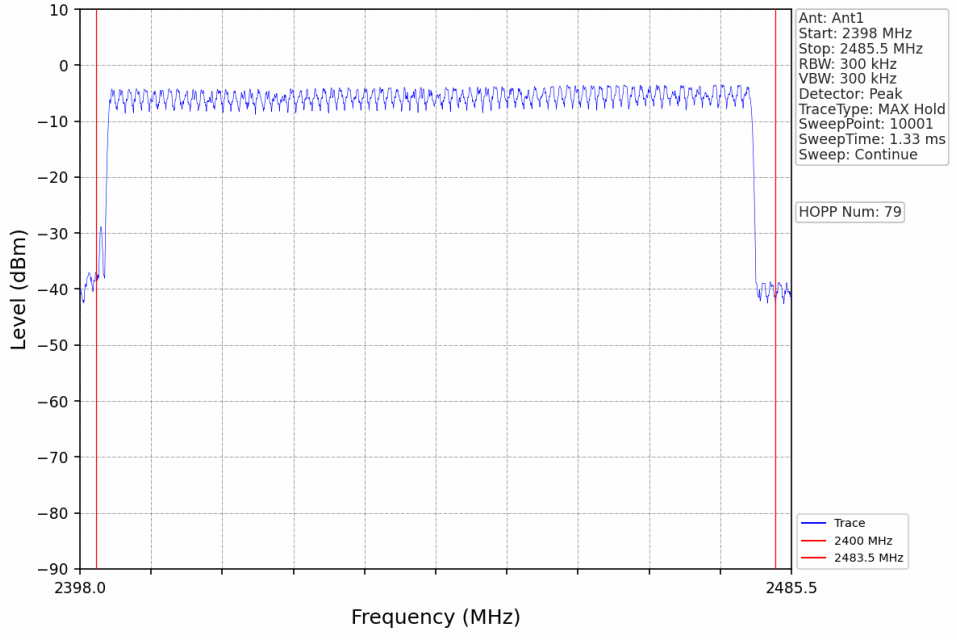
Mode	TX Type	Frequency (MHz)	Packet Type	Num of Hopping Frequencies		Verdict
				ANT1	Limit	
GFSK	SISO	HOPP	DH5	79	>=15	Pass
π/4DQPSK	SISO	HOPP	2DH5	79	>=15	Pass
8DPSK	SISO	HOPP	3DH5	79	>=15	Pass

4.1.2 Test Graph

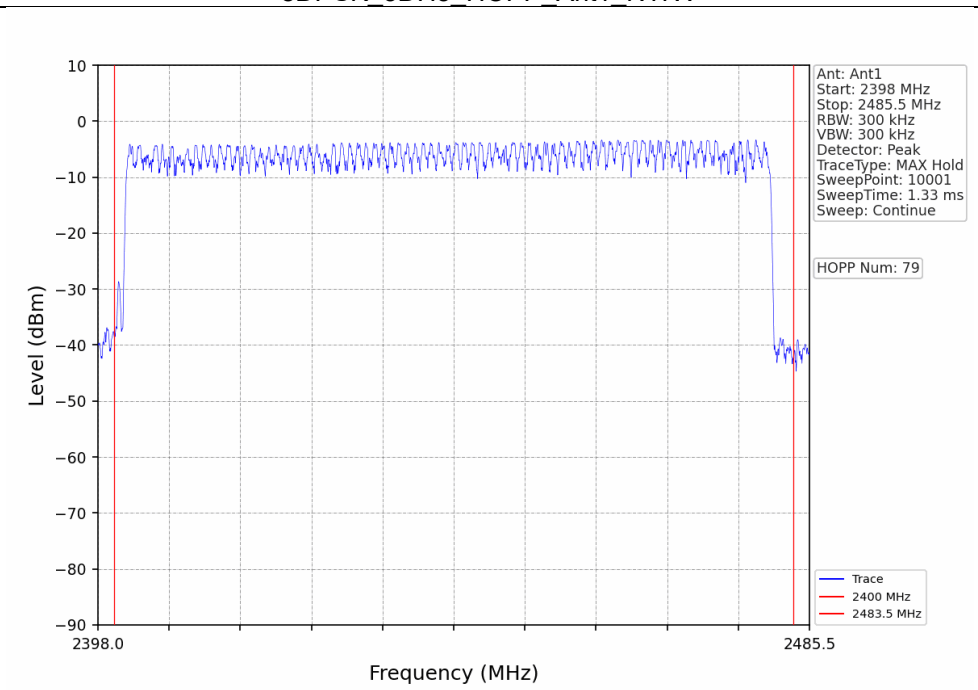
GFSK_DH5_HOPP_Ant1_NTNV



π/4DQPSK_2DH5_HOPP_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV



5. Time of Occupancy (Dwell Time)

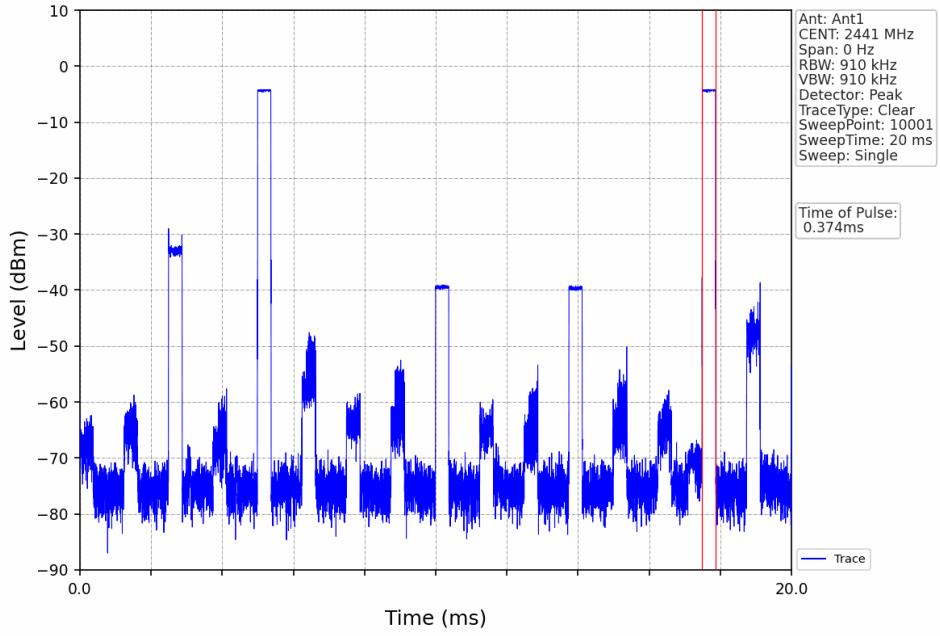
5.1 Ant1

5.1.1 Test Result

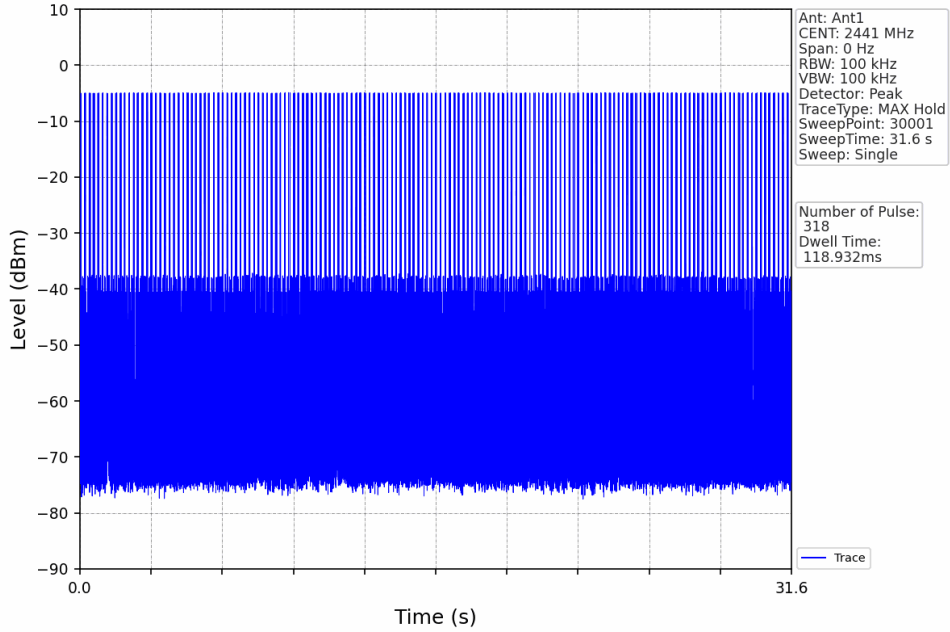
Ant1									
Mode	TX Type	Frequency (MHz)	Packet Type	Duration of Single Pulse (ms)	Observation Period (s)	Num of Pulse in Observation Period	Dwell Time (ms)	Limit (ms)	Verdict
GFSK	SISO	HOPP	DH1	0.374	31.600	318	118.932	<=400	Pass
			DH3	1.632	31.600	148	241.536	<=400	Pass
			DH5	2.882	31.600	110	317.020	<=400	Pass
π/4DQPSK	SISO	HOPP	2DH1	0.384	31.600	318	122.112	<=400	Pass
			2DH3	1.636	31.600	166	271.576	<=400	Pass
			2DH5	2.884	31.600	120	346.080	<=400	Pass
8DPSK	SISO	HOPP	3DH1	6.658	31.600	52	346.216	<=400	Pass
			3DH3	0.644	31.600	170	109.480	<=400	Pass
			3DH5	0.888	31.600	102	90.576	<=400	Pass

5.1.2 Test Graph

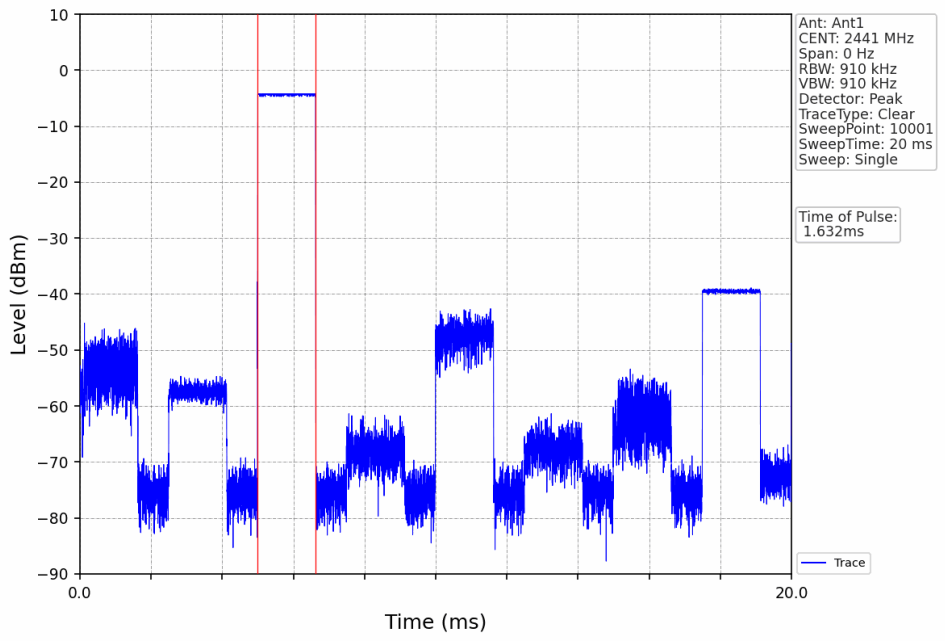
GFSK_DH1_HOPP_Ant1_NTNV



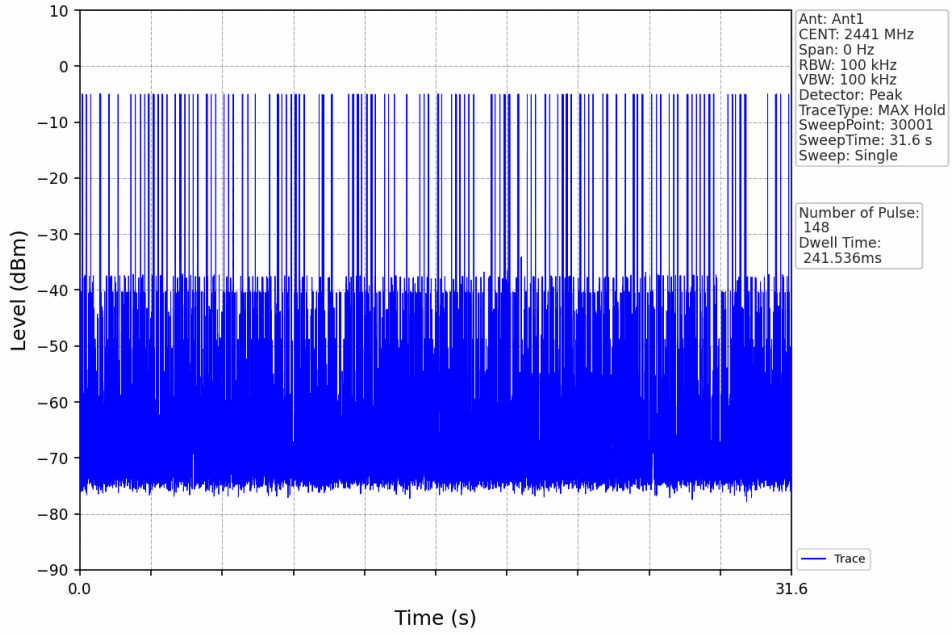
GFSK_DH1_HOPP_Ant1_NTNV



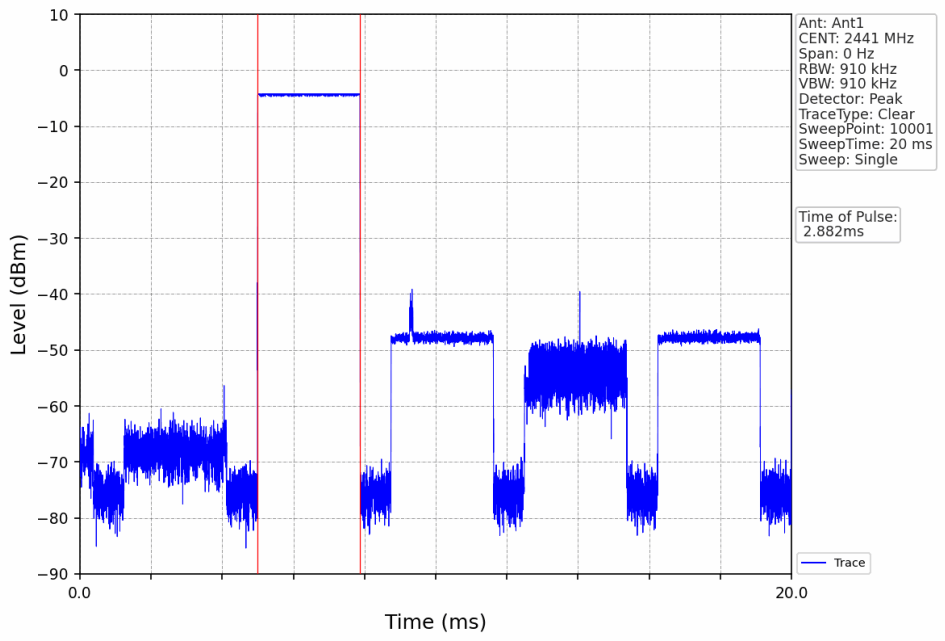
GFSK_DH3_HOPP_Ant1_NTNV



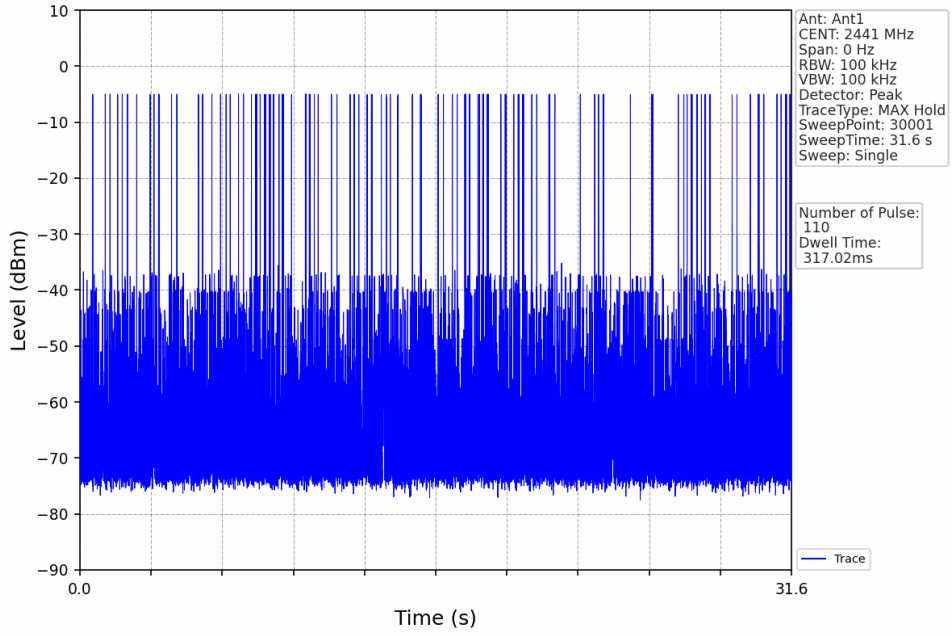
GFSK_DH3_HOPP_Ant1_NTNV



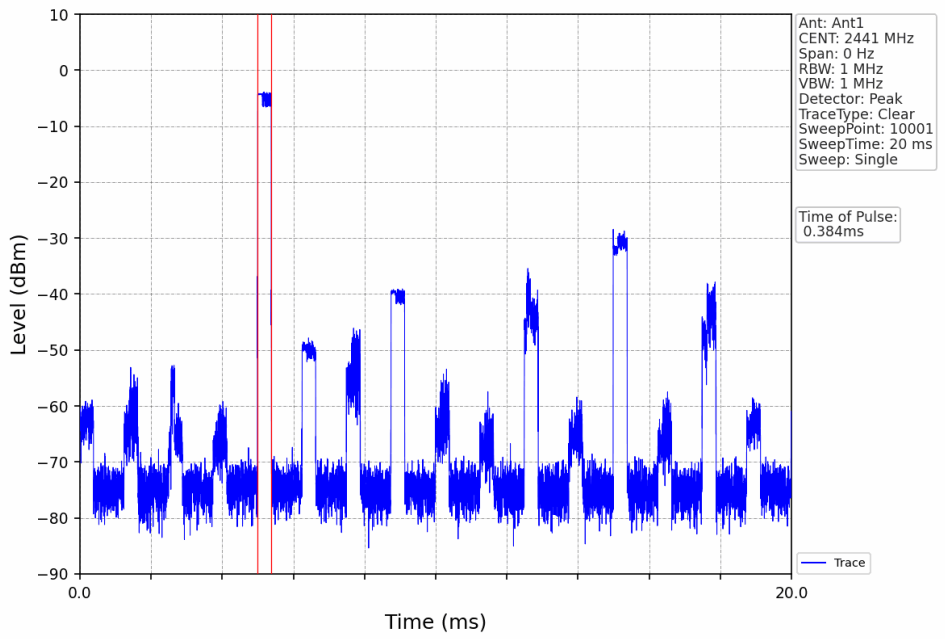
GFSK_DH5_HOPP_Ant1_NTNV



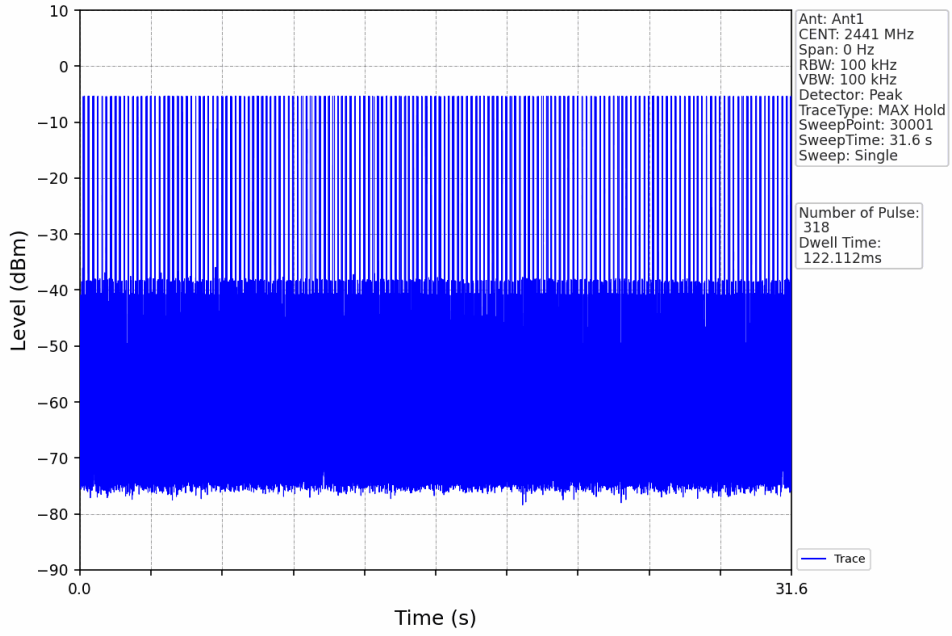
GFSK_DH5_HOPP_Ant1_NTNV



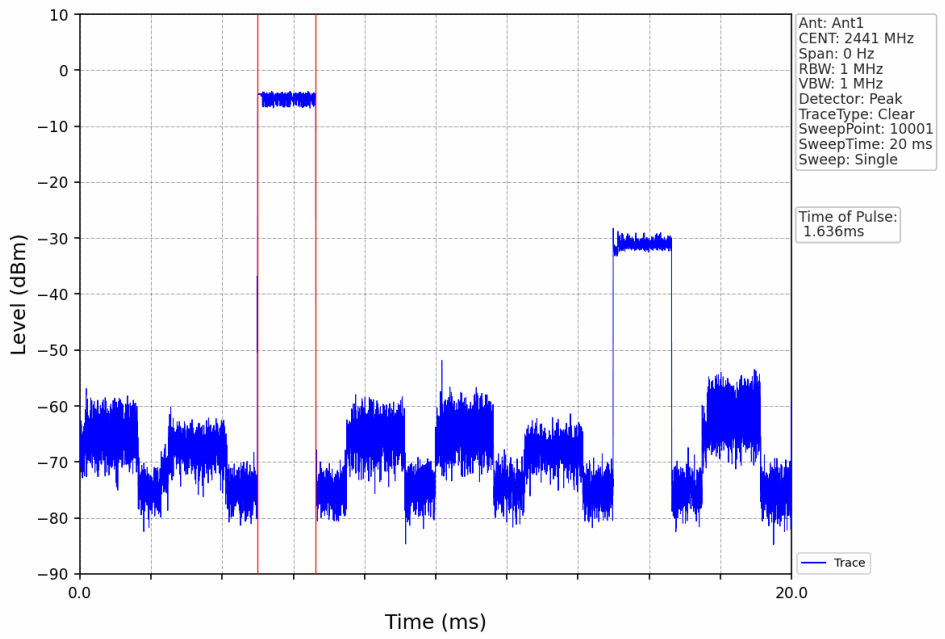
π/4DQPSK_2DH1_HOPP_Ant1_NTNV



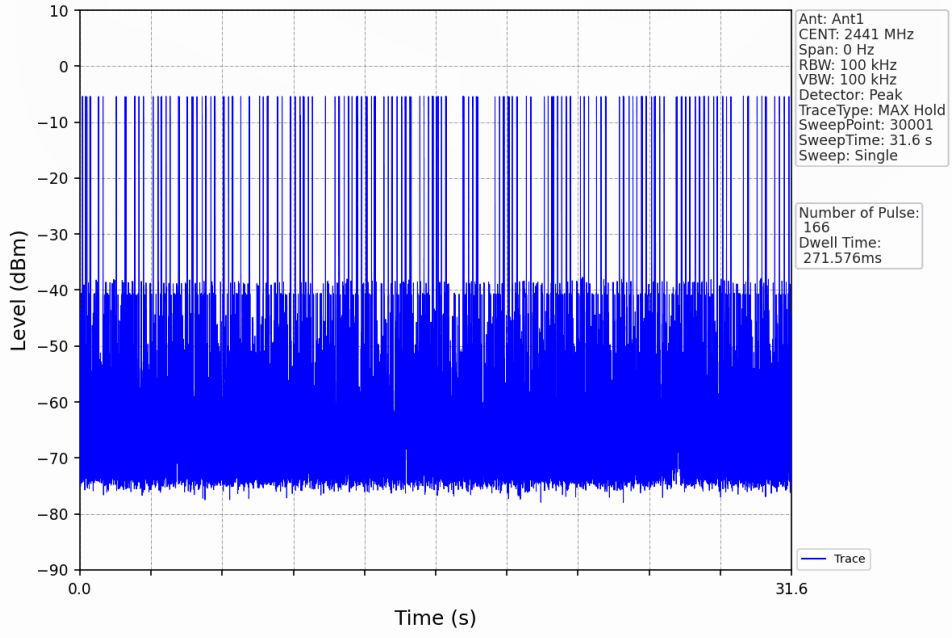
π/4DQPSK_2DH1_HOPP_Ant1_NTNV



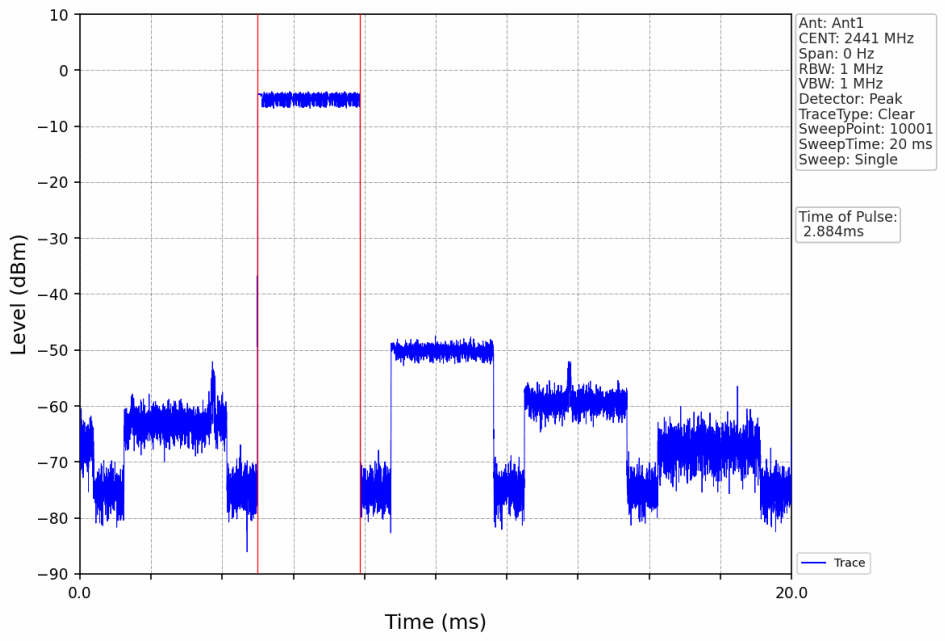
π/4DQPSK_2DH3_HOPP_Ant1_NTNV



π/4DQPSK_2DH3_HOPP_Ant1_NTNV



π/4DQPSK_2DH5_HOPP_Ant1_NTNV



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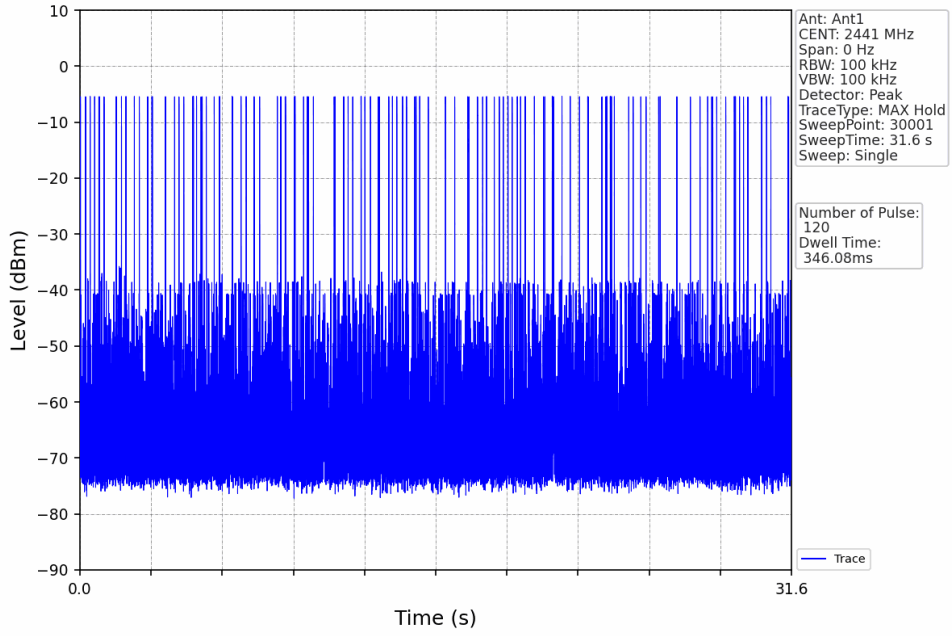
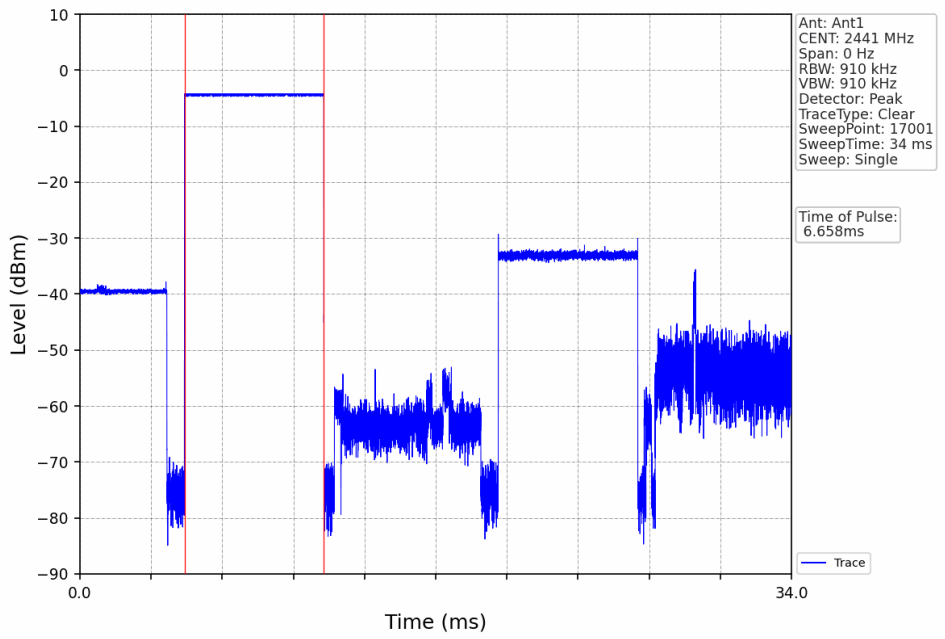


8DPSK_3DH1_HOPP_Ant1_NTNV



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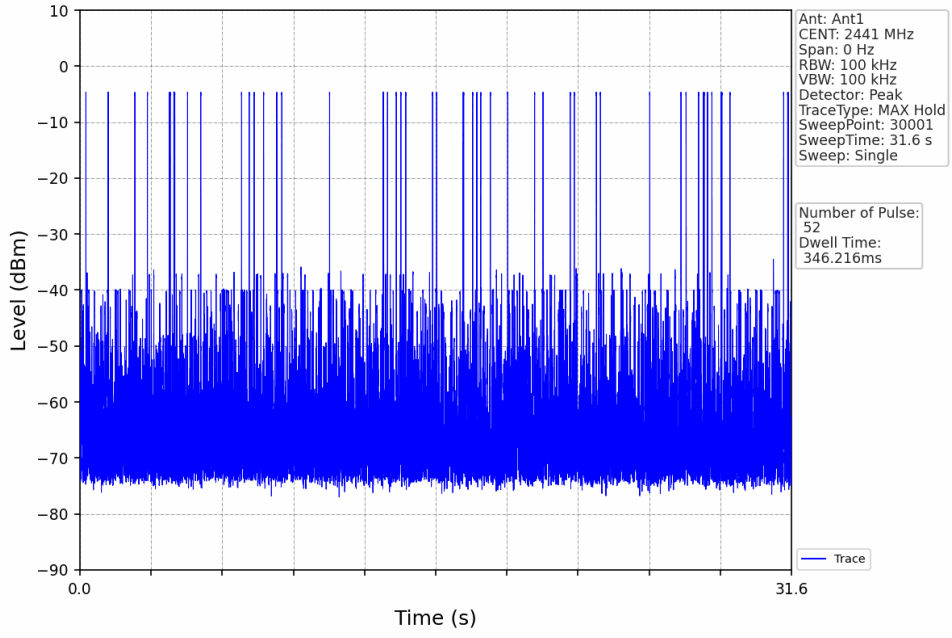

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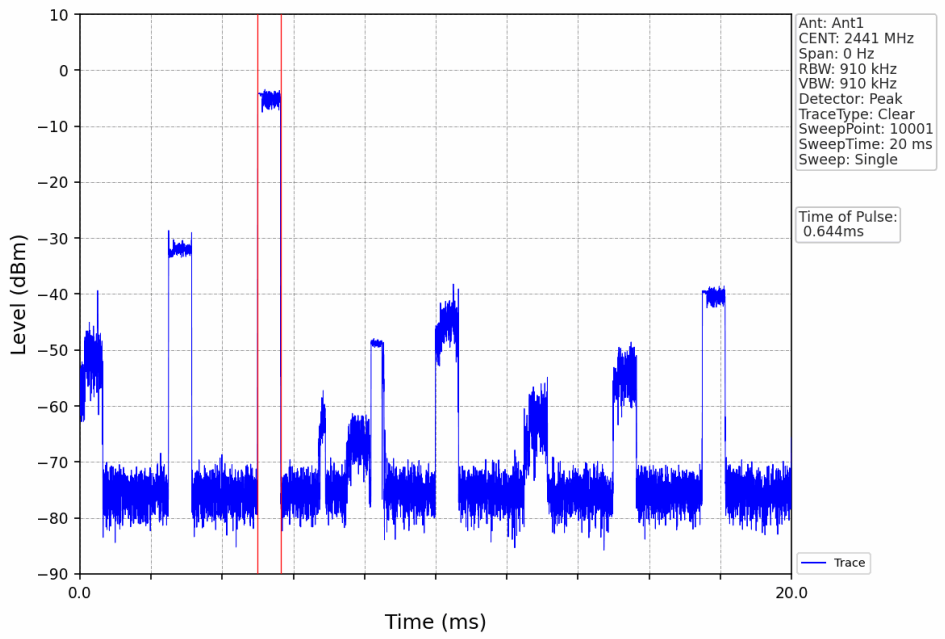
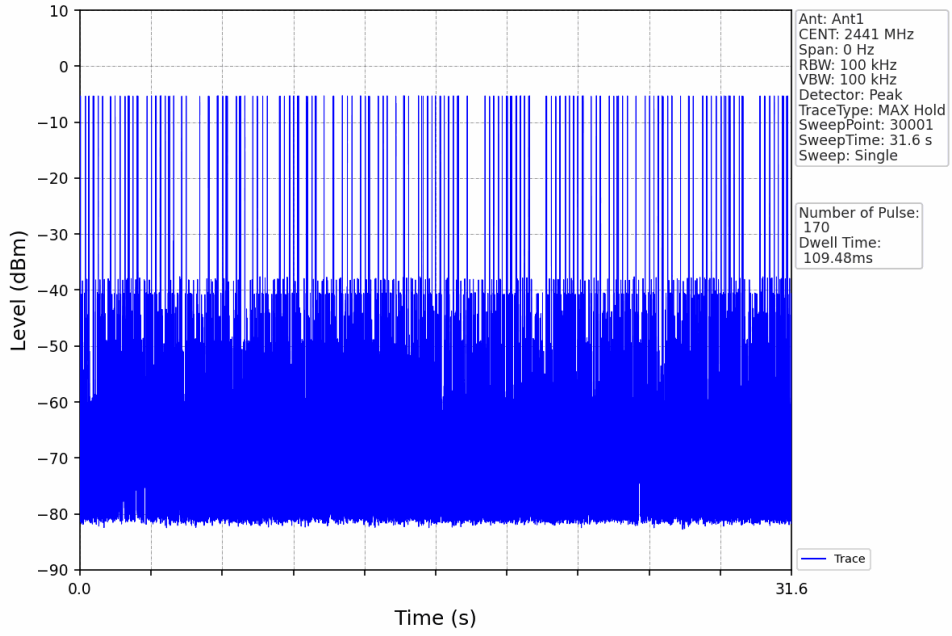
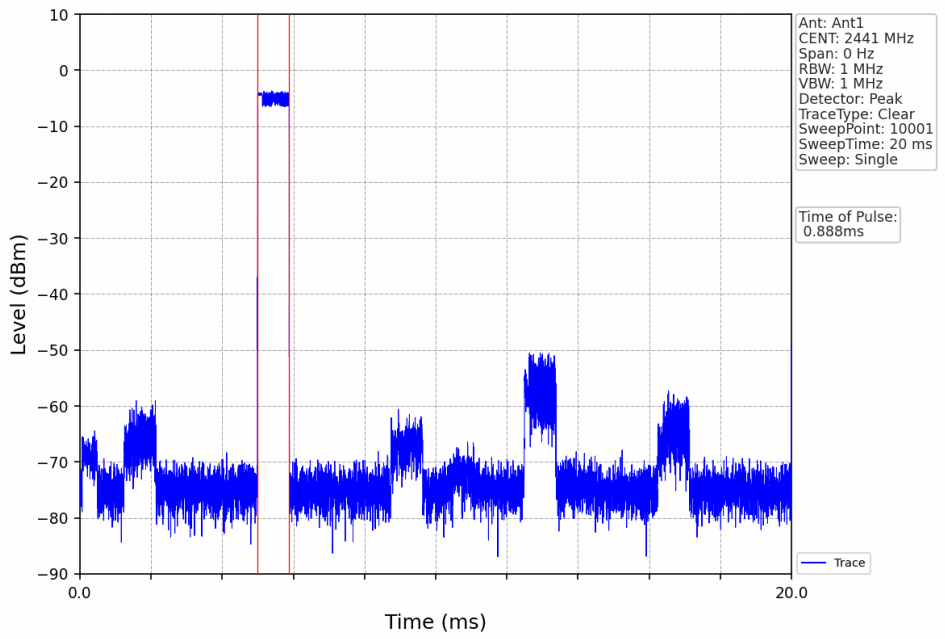


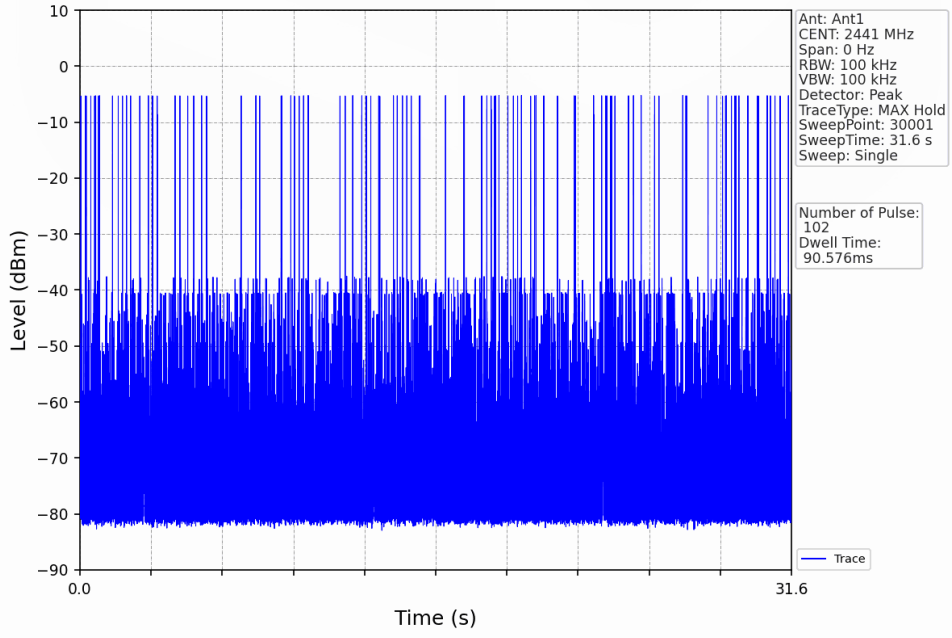
8DPSK_3DH3_HOPP_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV



6. Unwanted Emissions In Non-restricted Frequency Bands

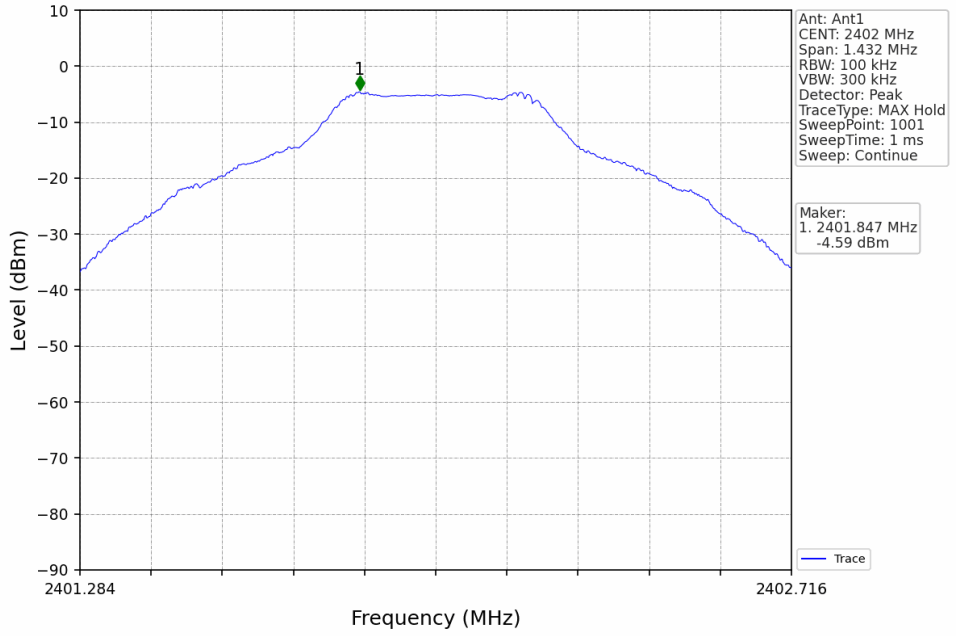
6.1 Ref

6.1.1 Test Result

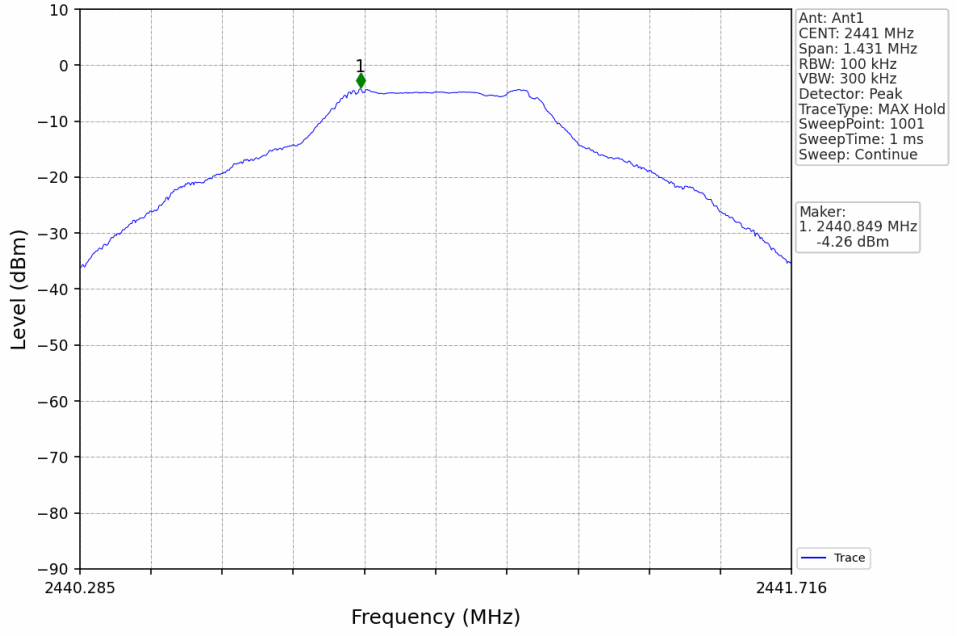
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)
GFSK	SISO	2402	DH5	1	-4.59
		2441	DH5	1	-4.26
		2480	DH5	1	-3.82
π/4DQPSK	SISO	2402	2DH5	1	-4.44
		2441	2DH5	1	-4.08
		2480	2DH5	1	-3.64
8DPSK	SISO	2402	3DH5	1	-4.30
		2441	3DH5	1	-3.96
		2480	3DH5	1	-3.47
Note1: Refer to FCC Part 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 Test Graph

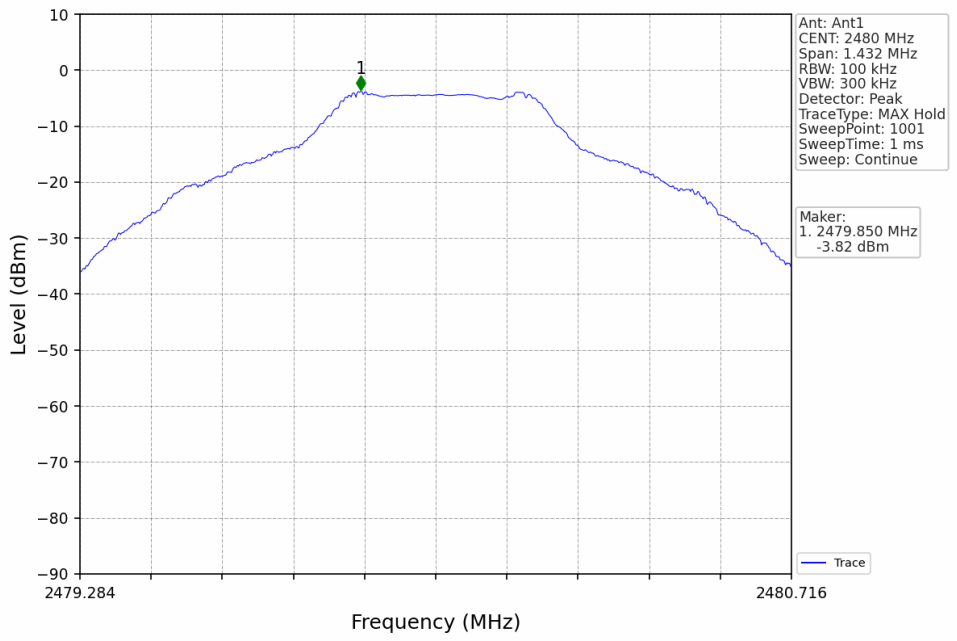
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



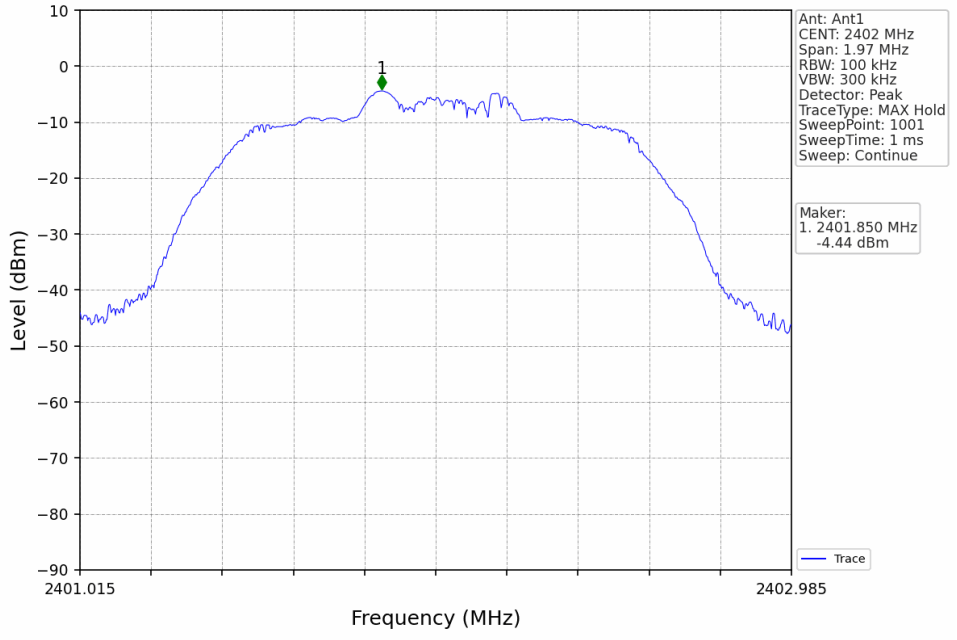
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



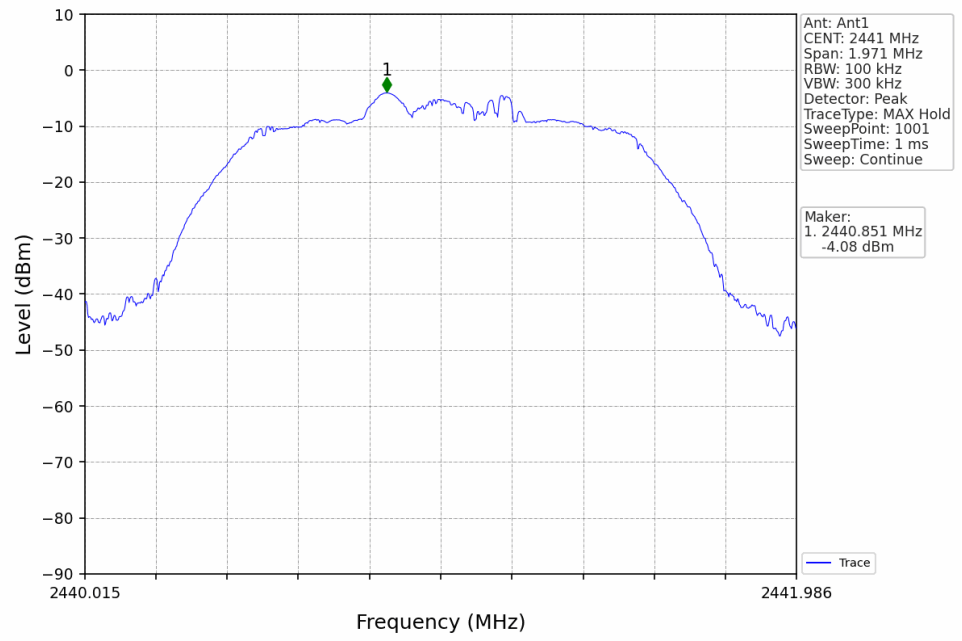
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



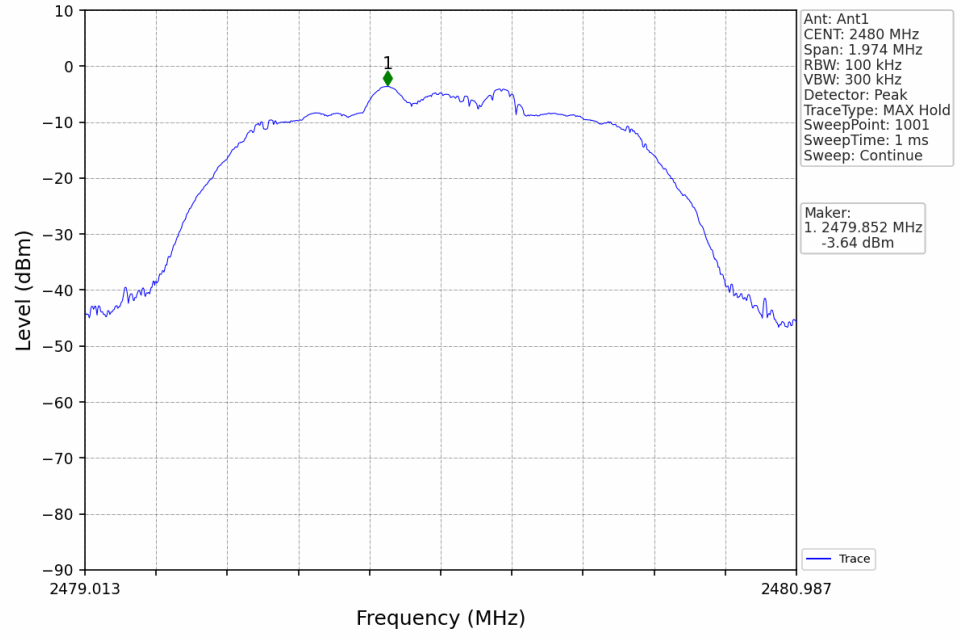
π/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



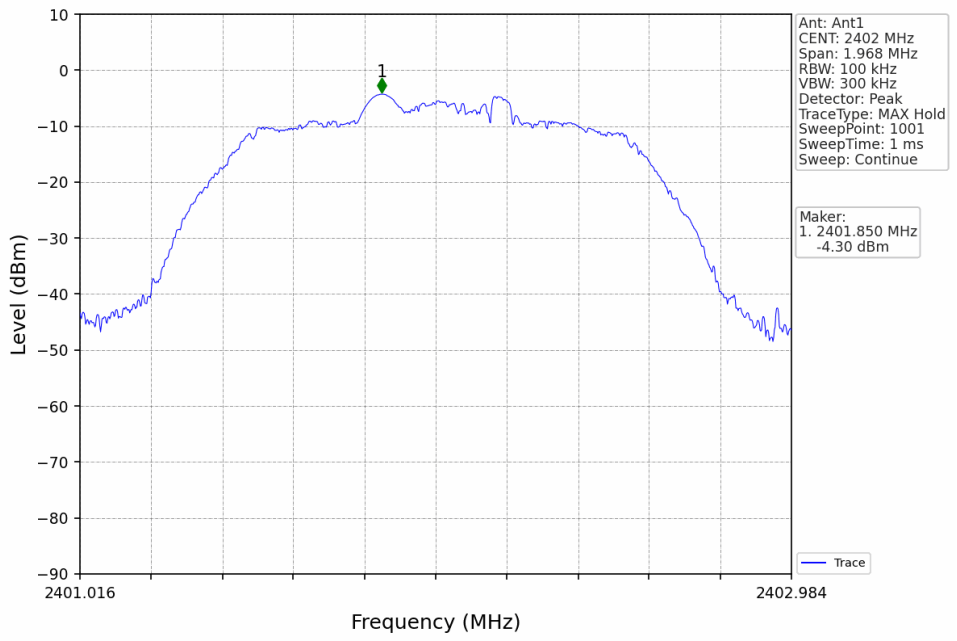
π/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



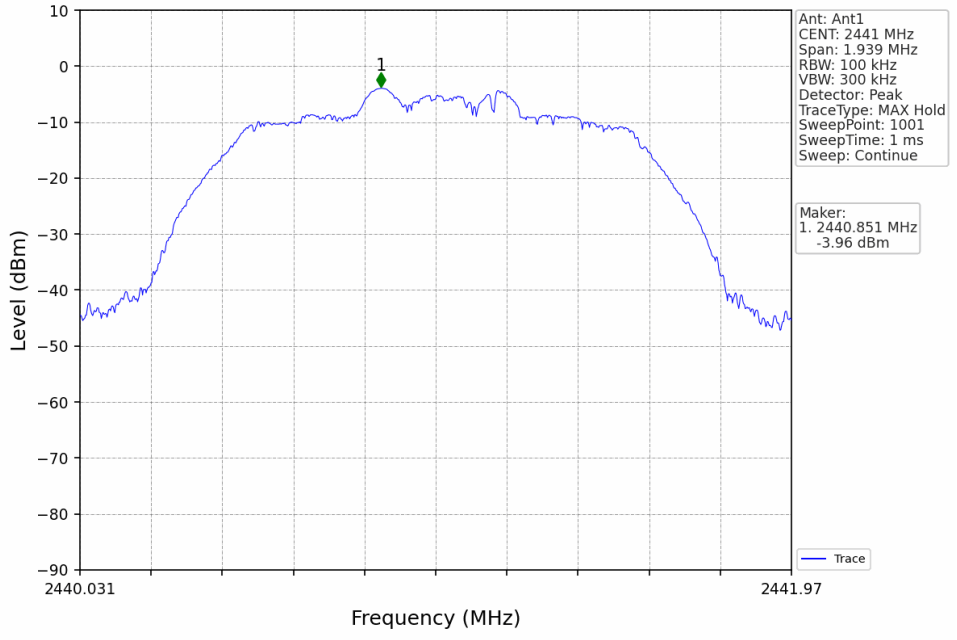
π/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



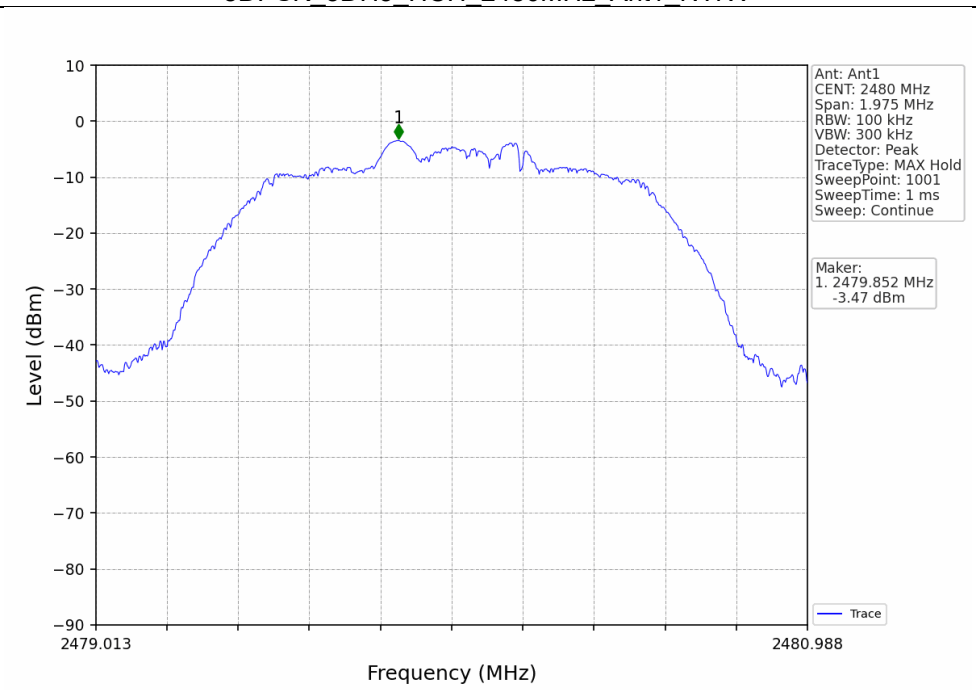
8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV



8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



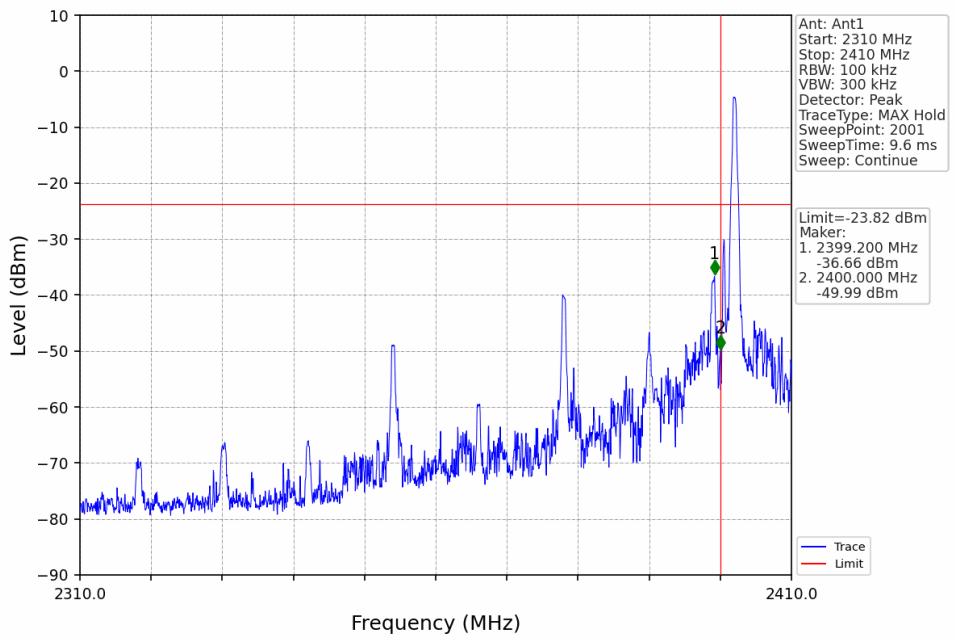
6.2 CSE

6.2.1 Test Result

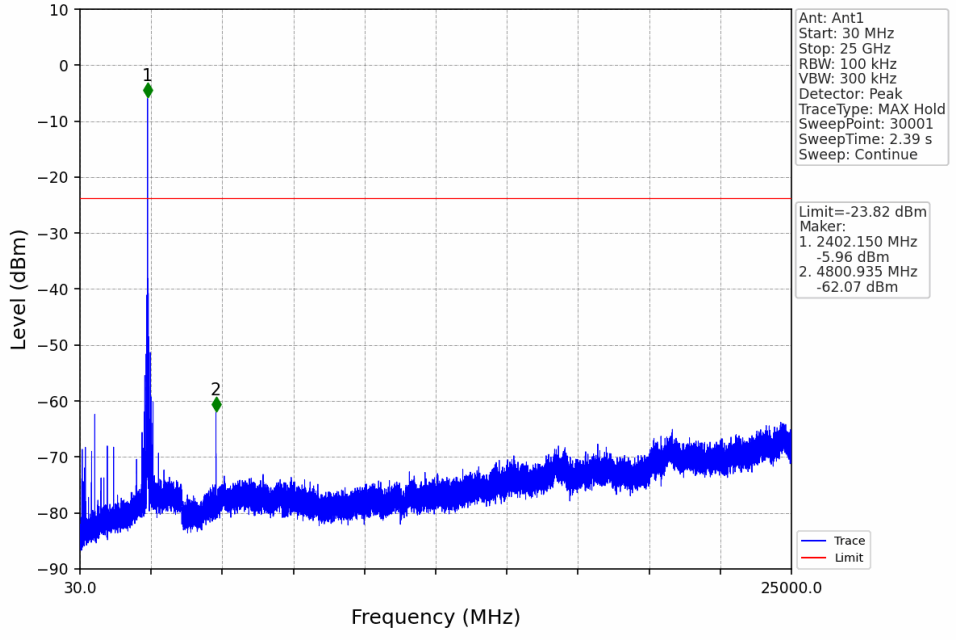
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
GFSK	SISO	2402	DH5	1	-3.82	-23.82	Pass
		2441	DH5	1	-3.82	-23.82	Pass
		2480	DH5	1	-3.82	-23.82	Pass
		HOPP	DH5	1	-3.82	-23.82	Pass
π/4DQPSK	SISO	2402	2DH5	1	-3.64	-23.64	Pass
		2441	2DH5	1	-3.64	-23.64	Pass
		2480	2DH5	1	-3.64	-23.64	Pass
		HOPP	2DH5	1	-3.64	-23.64	Pass
8DPSK	SISO	2402	3DH5	1	-3.47	-23.47	Pass
		2441	3DH5	1	-3.47	-23.47	Pass
		2480	3DH5	1	-3.47	-23.47	Pass
		HOPP	3DH5	1	-3.47	-23.47	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.							

6.2.2 Test Graph

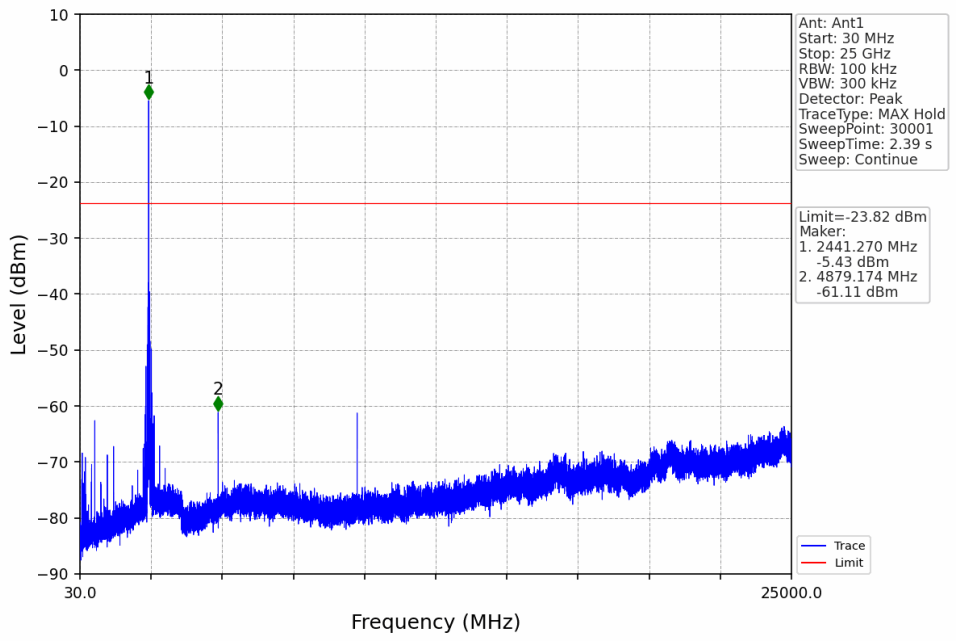
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



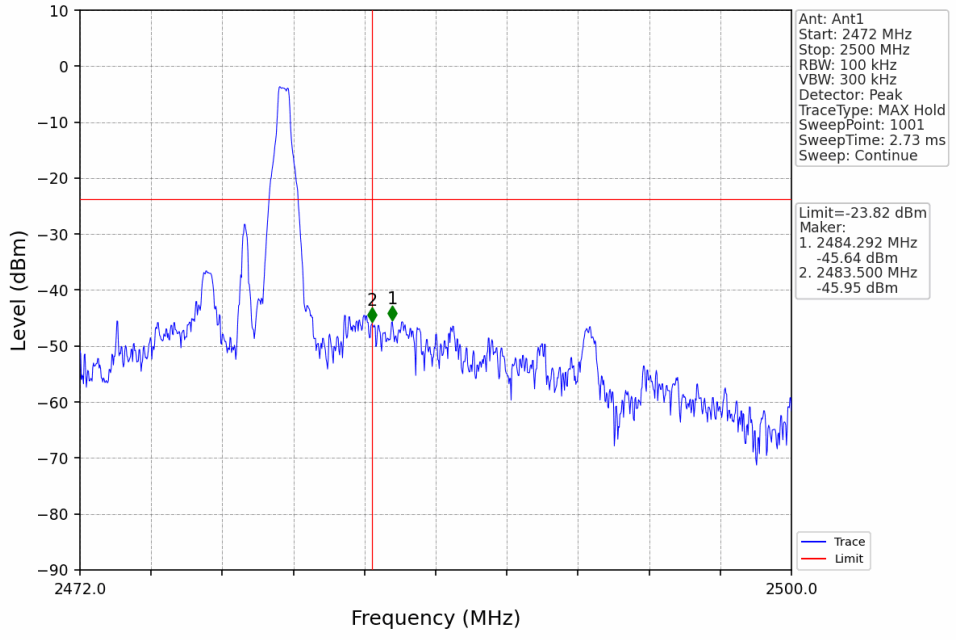
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



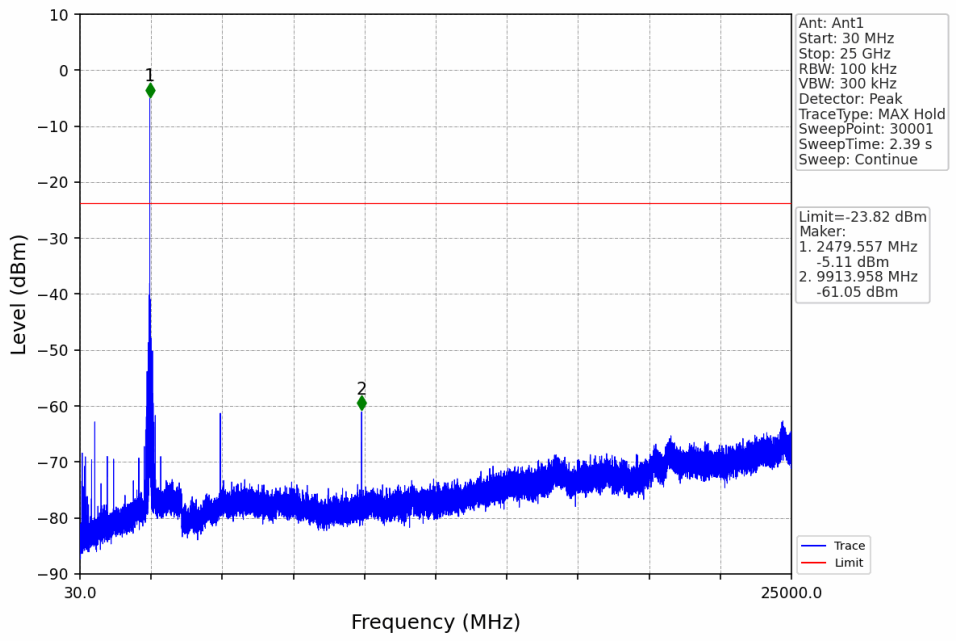
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



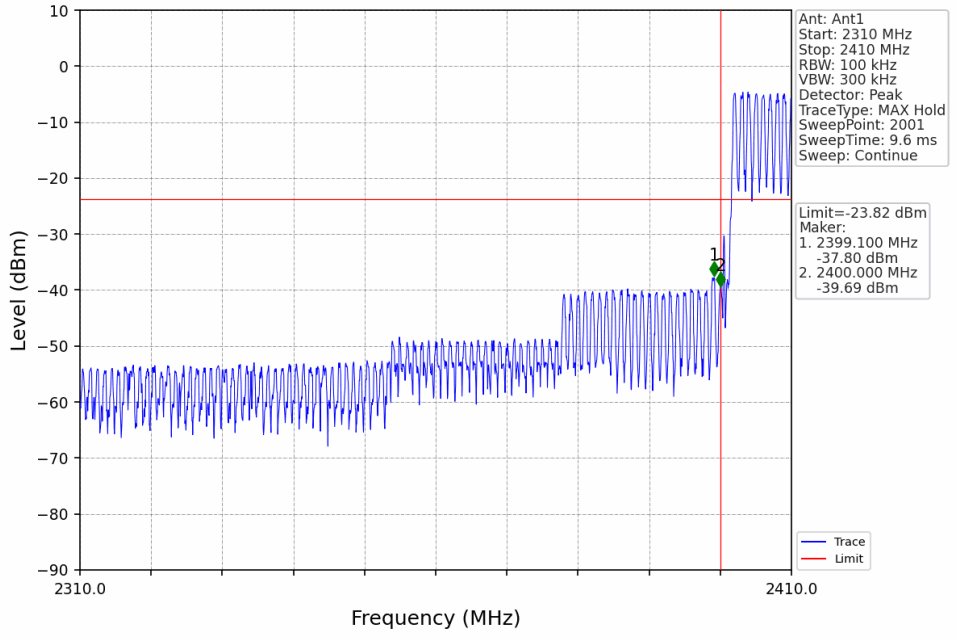
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



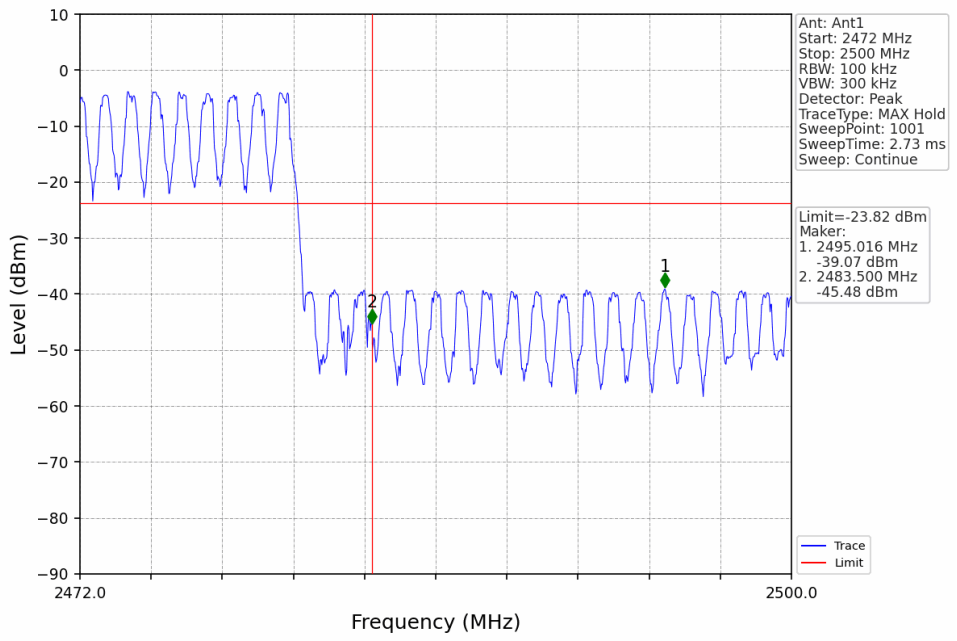
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



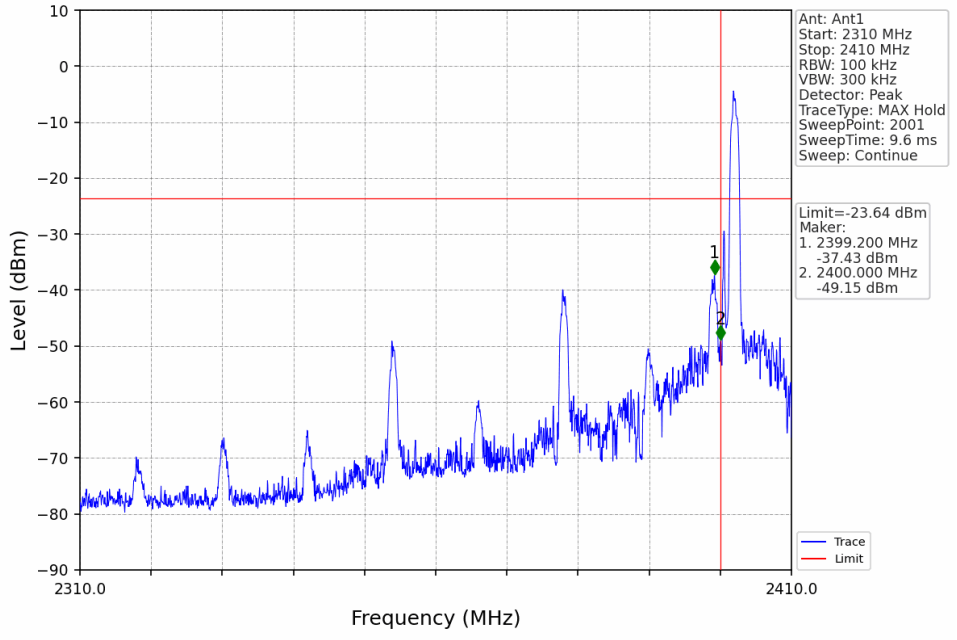
GFSK_DH5_HOPP_Ant1_NTNV



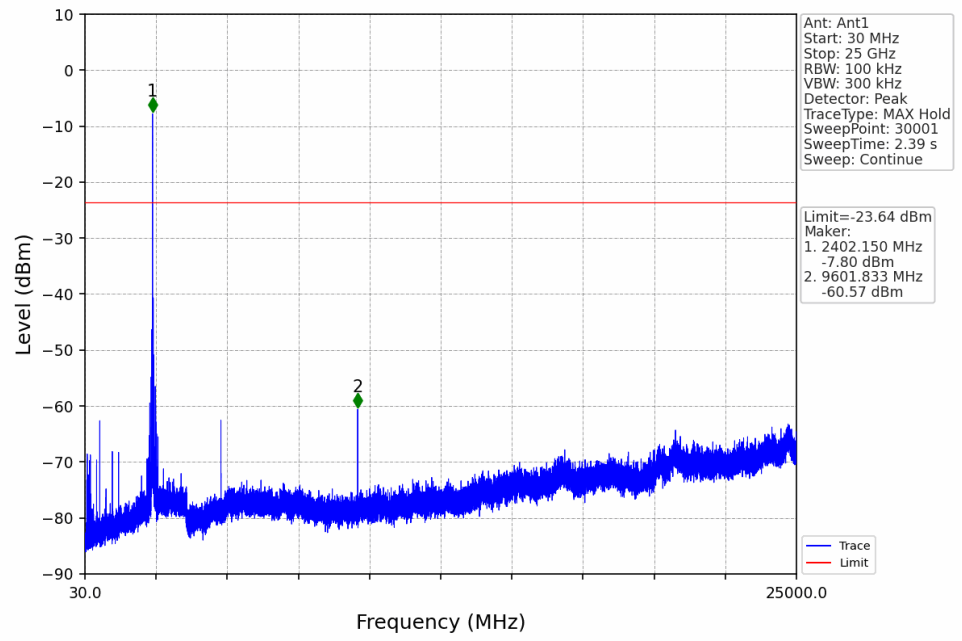
GFSK_DH5_HOPP_Ant1_NTNV



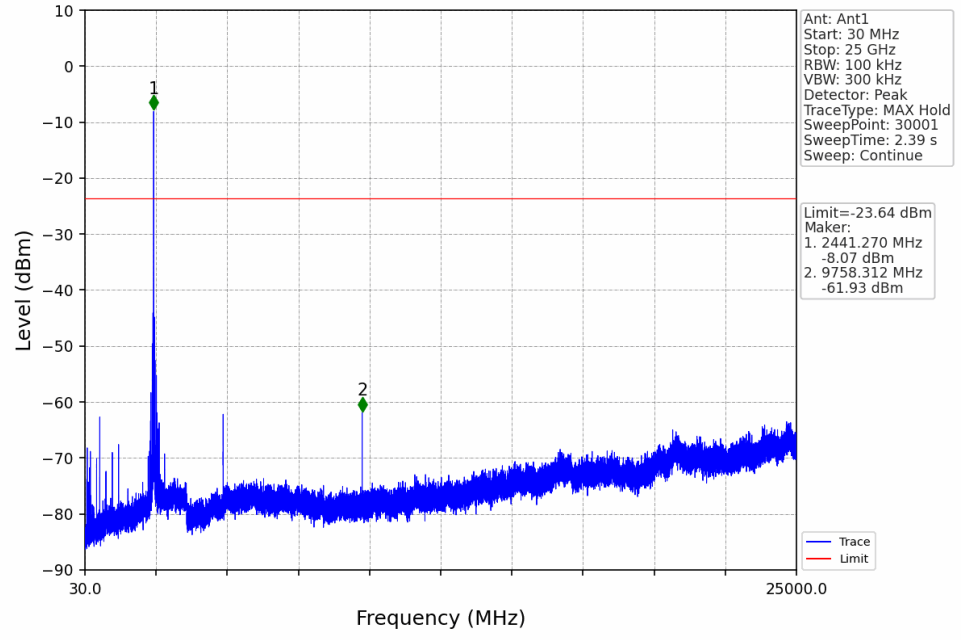
π/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



π/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



π/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



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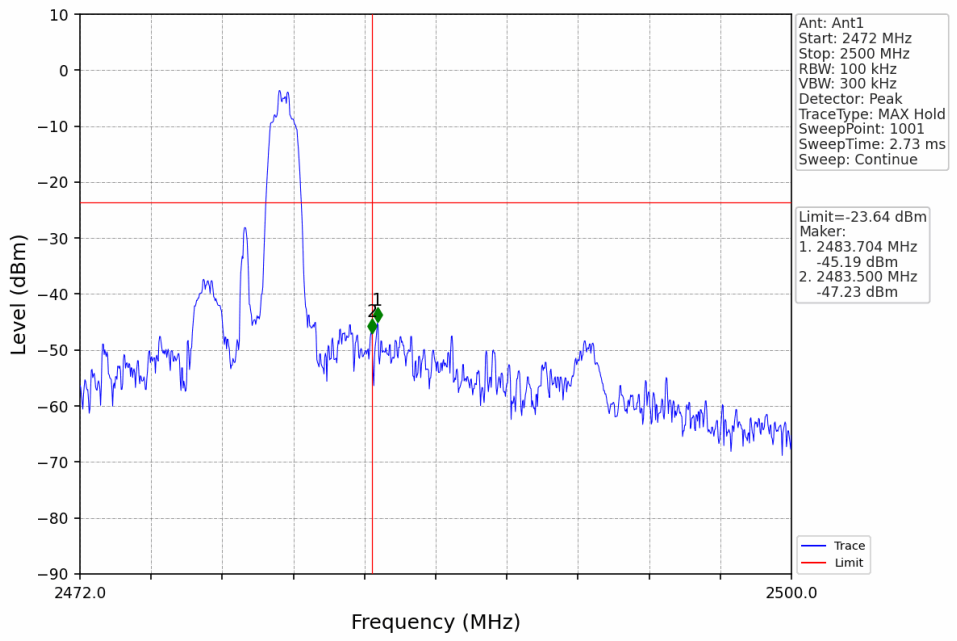
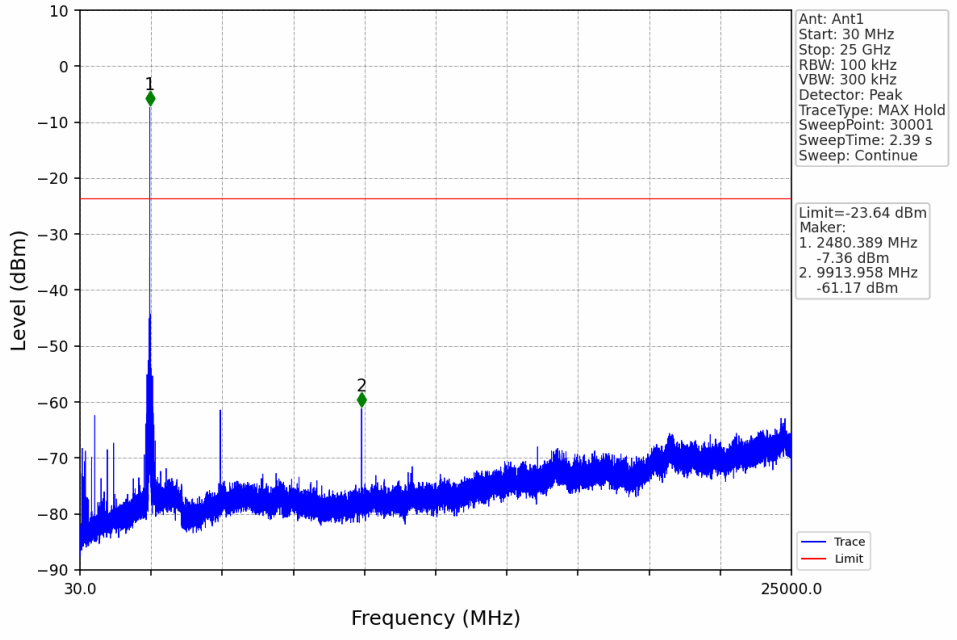
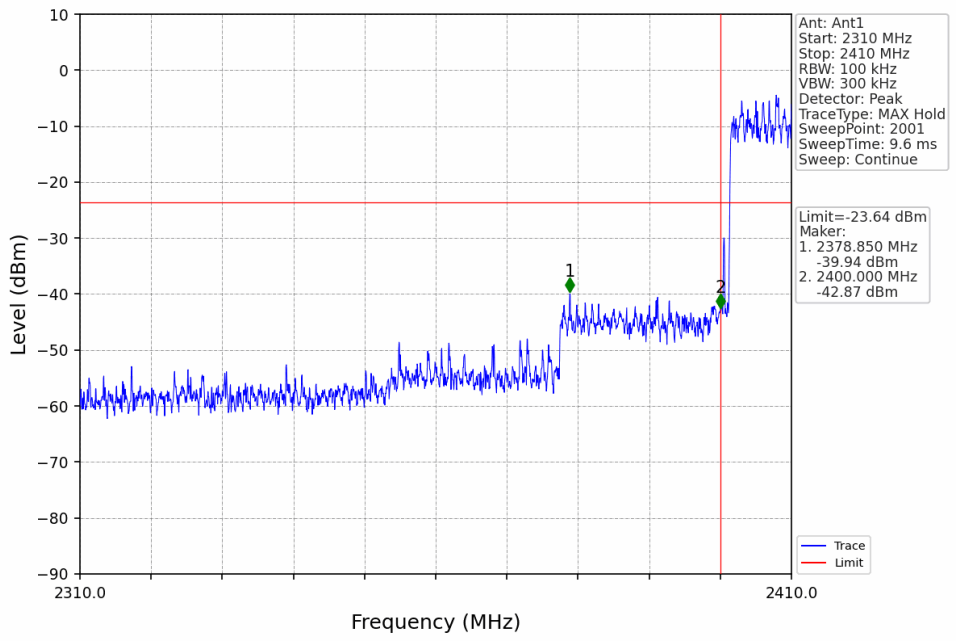


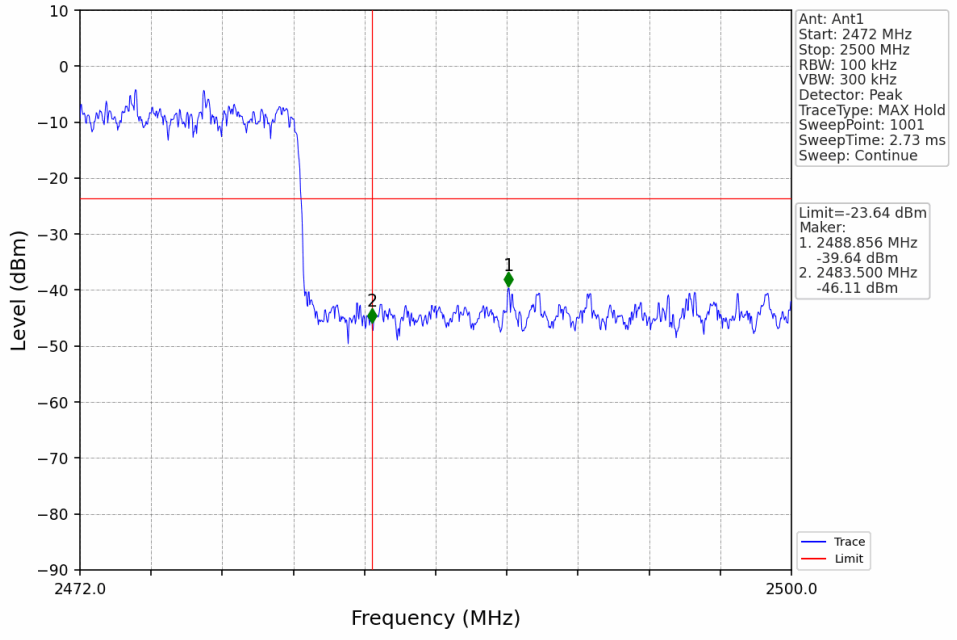
π/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



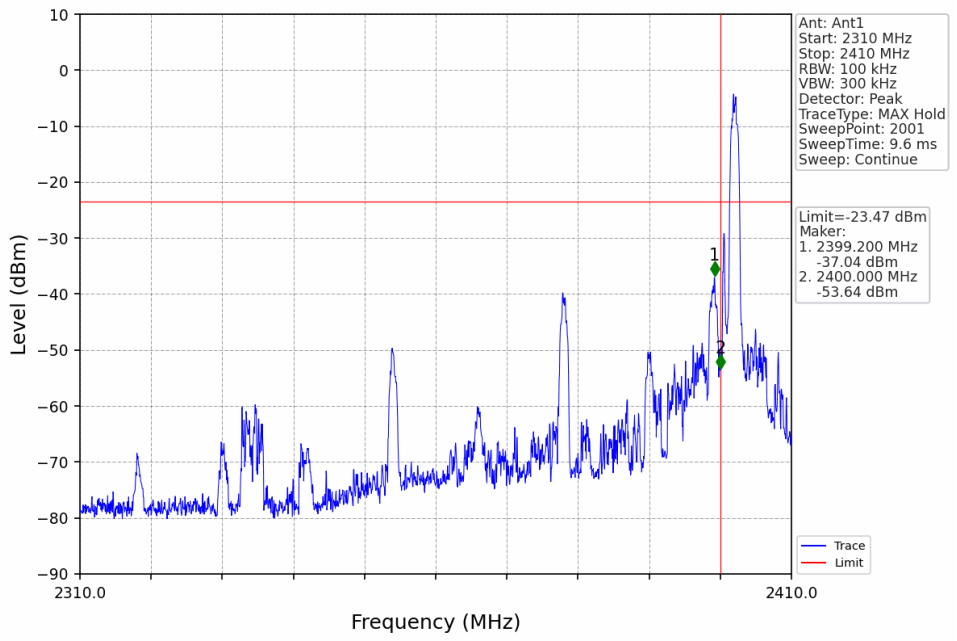
π/4DQPSK_2DH5_HOPP_Ant1_NTNV



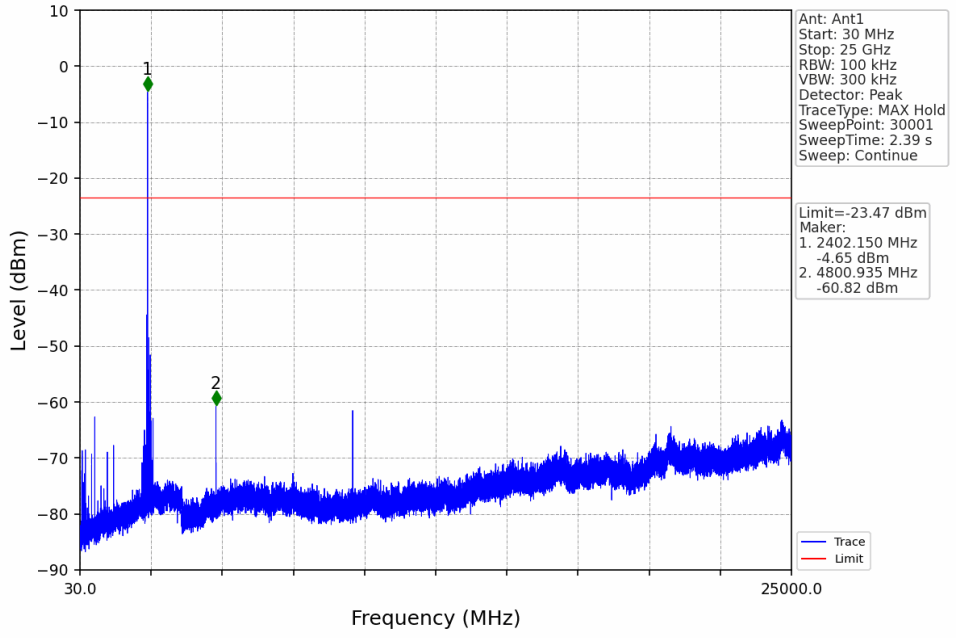
π/4DQPSK_2DH5_HOPP_Ant1_NTNV



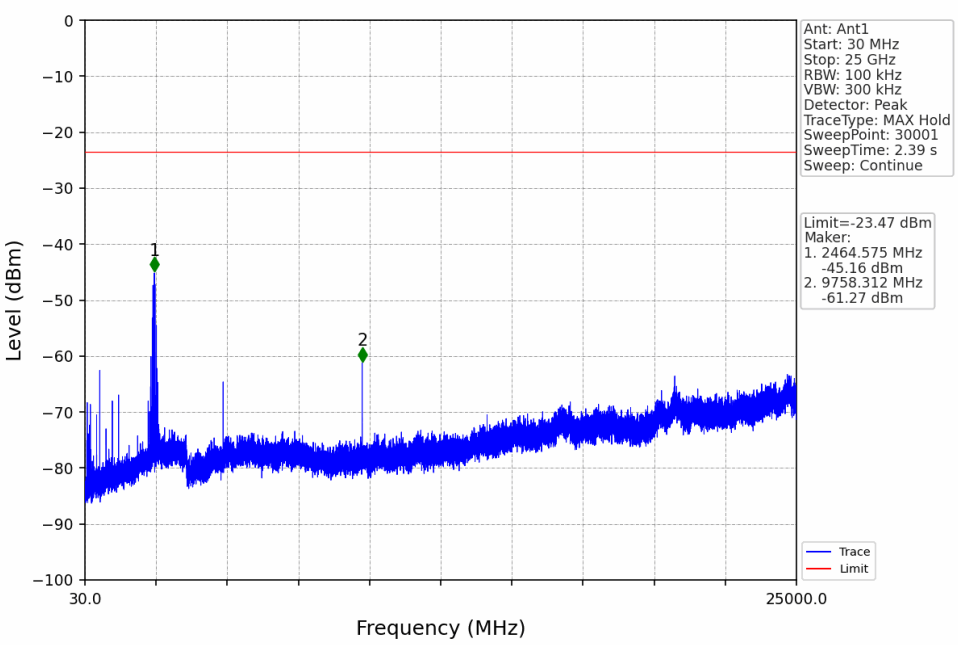
8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



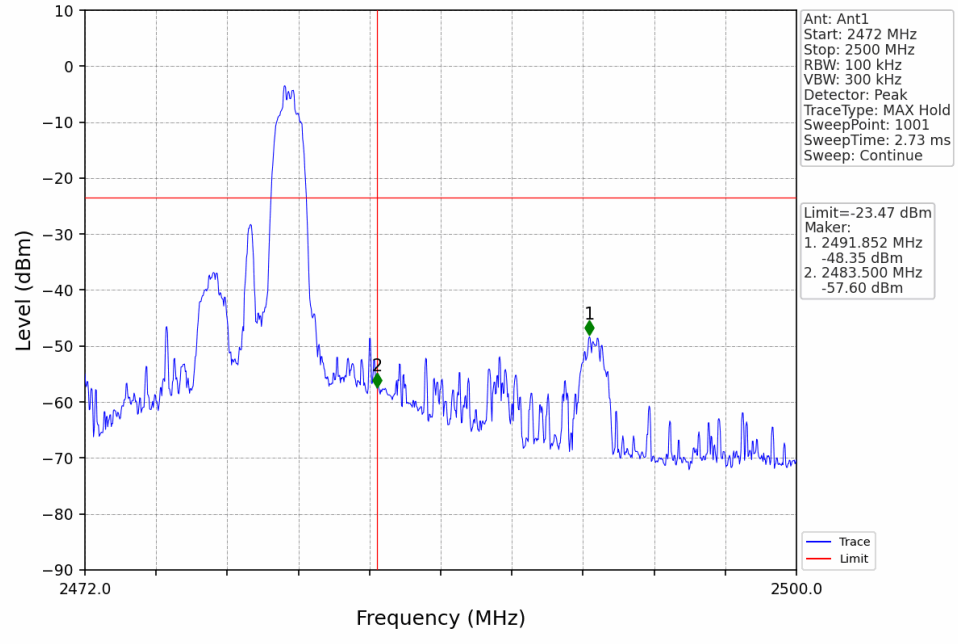
8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



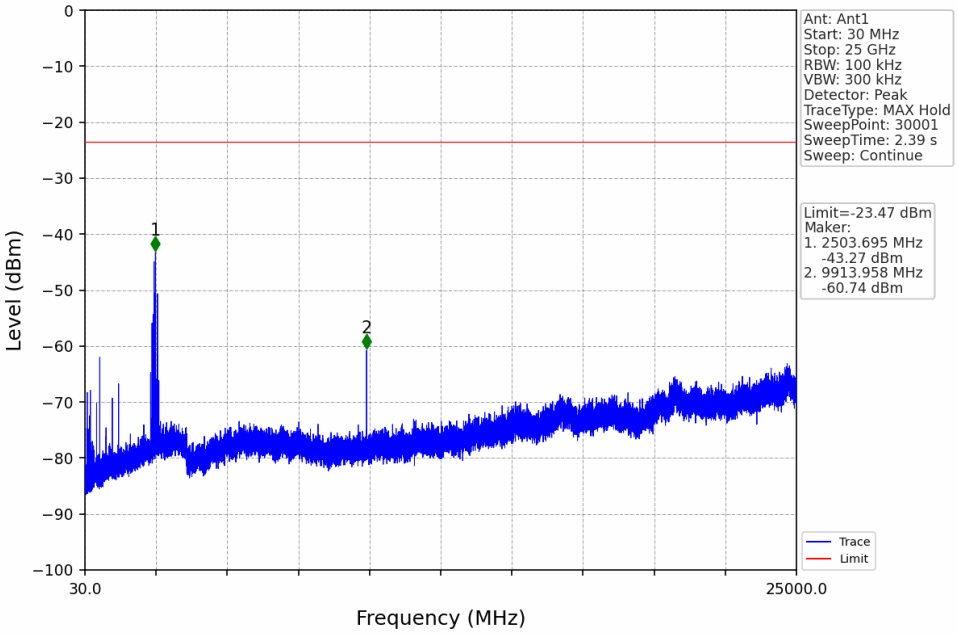
8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV



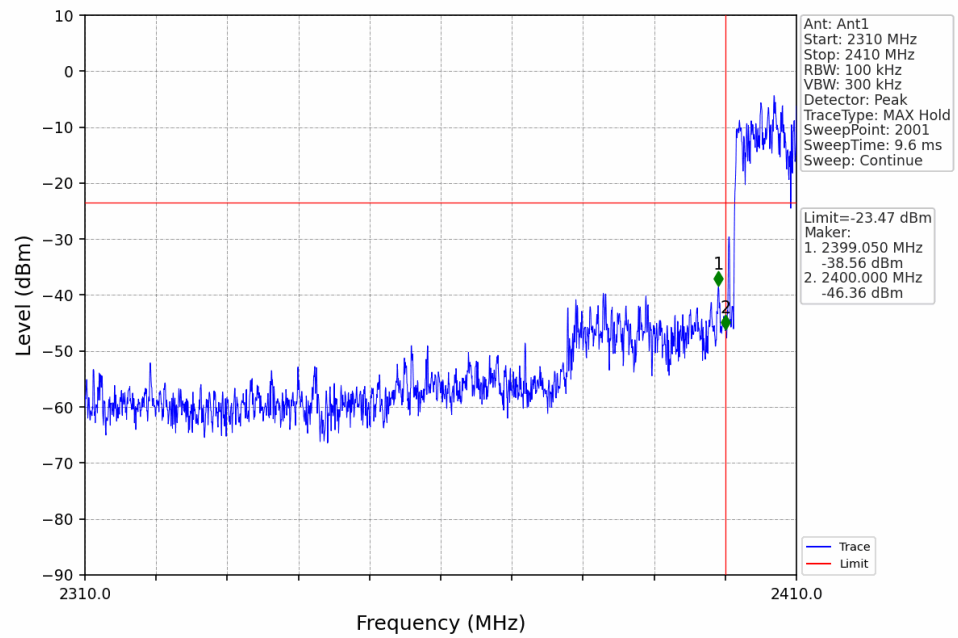
8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



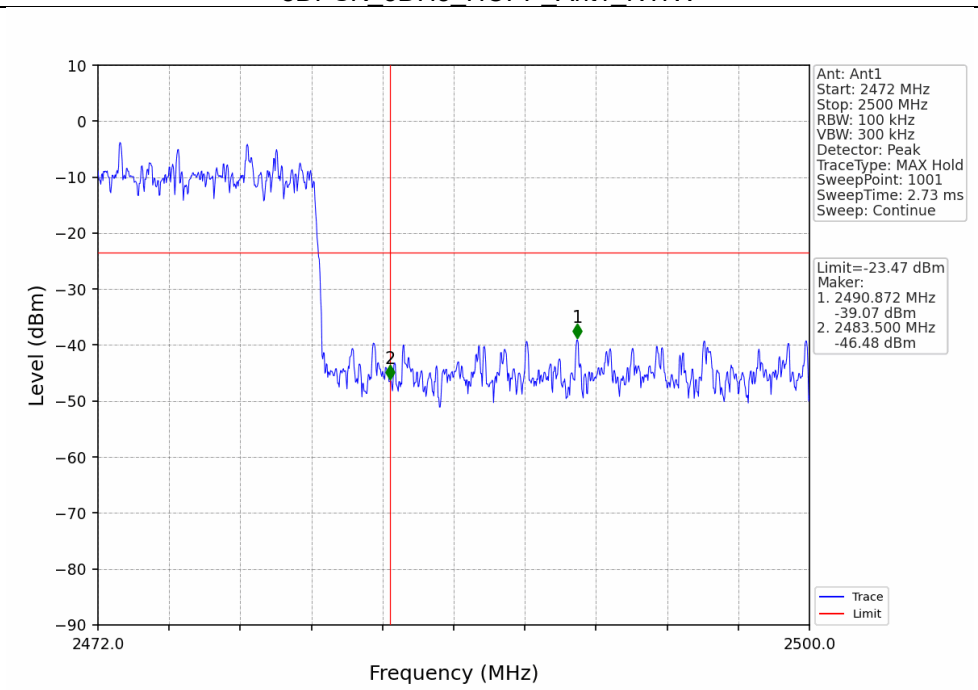
8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV



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