



Appendix A

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

Product Name: Bluetooth Speaker

Trade Mark: N/A

Test Model: BTX5

Environmental Conditions

Temperature:	25.2℃
Relative Humidity:	51.2%
ATM Pressure:	101Kpa
Test Engineer:	Simba Huang
Supervised by:	Seal Chen



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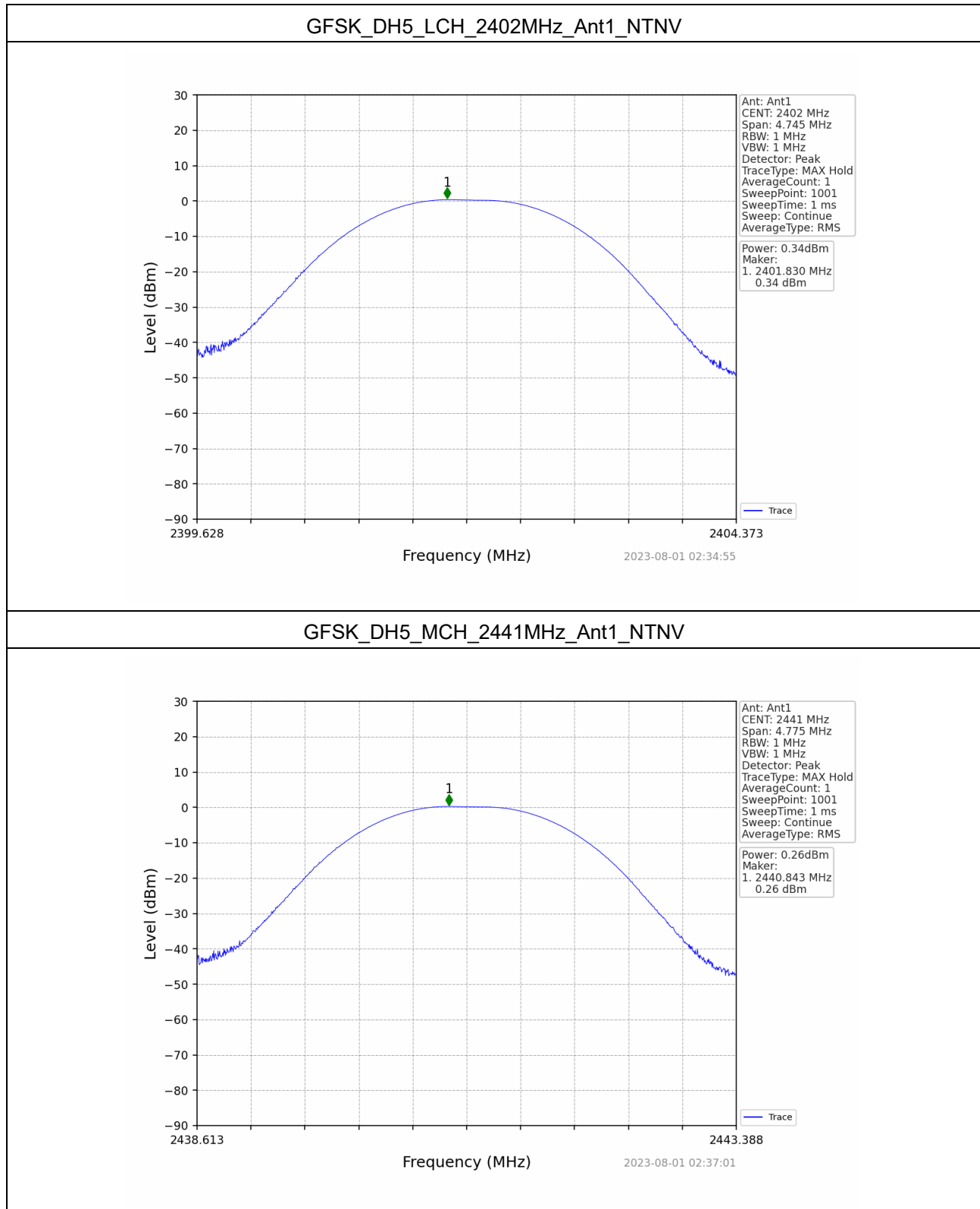
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1 Maximum Conducted Peak Output Power

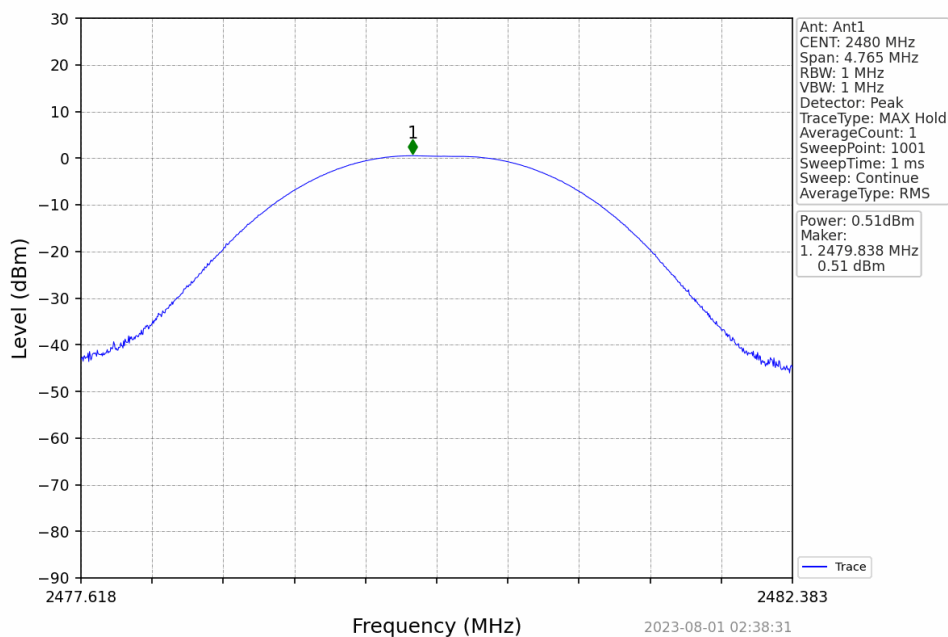
1.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.34	21	Pass
	MCH	0.26	21	Pass
	HCH	0.51	21	Pass
$\pi/4$ -DQPSK	LCH	1.13	21	Pass
	MCH	1.04	21	Pass
	HCH	1.28	21	Pass

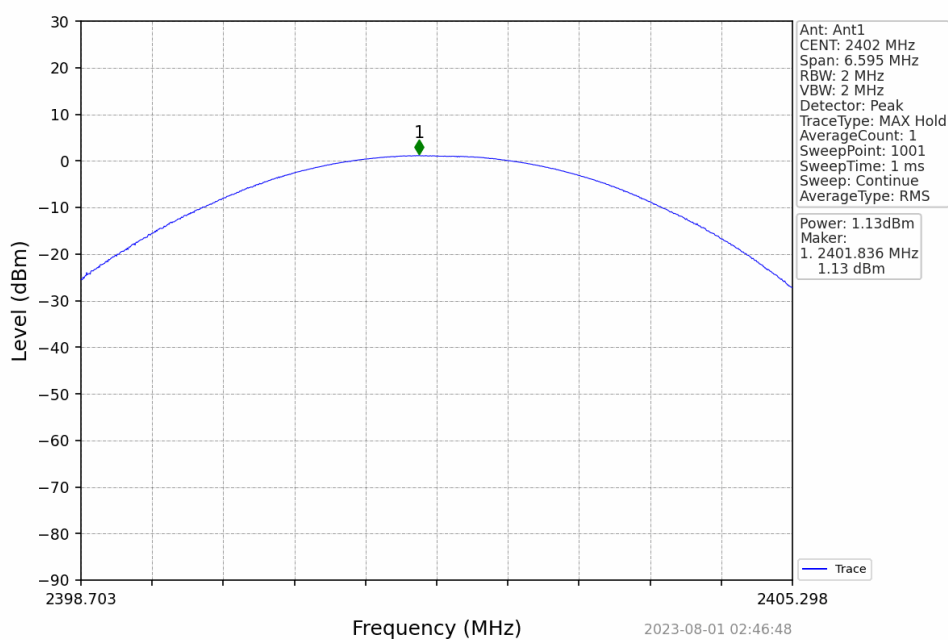
1.2 Test Graphs



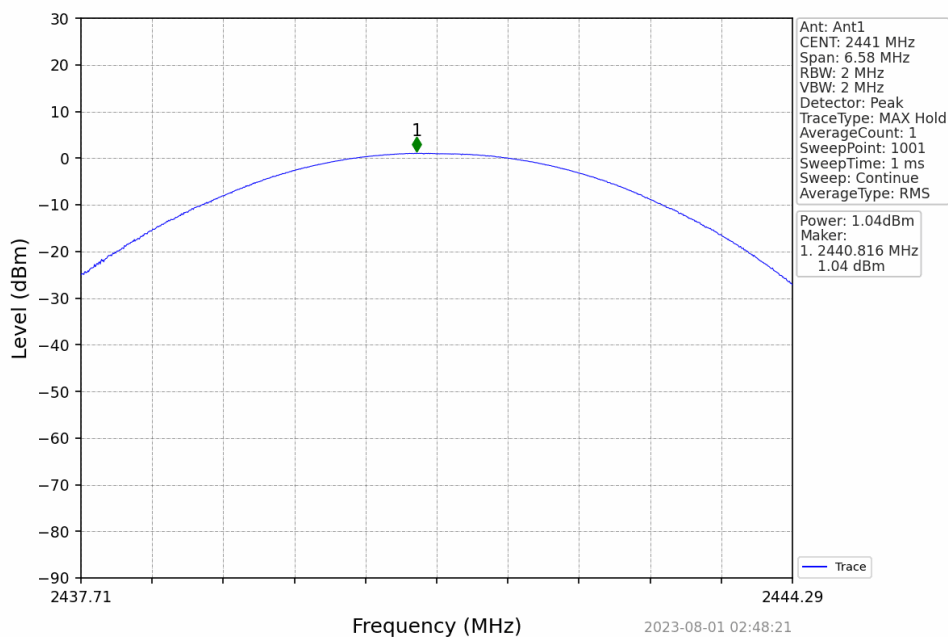
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



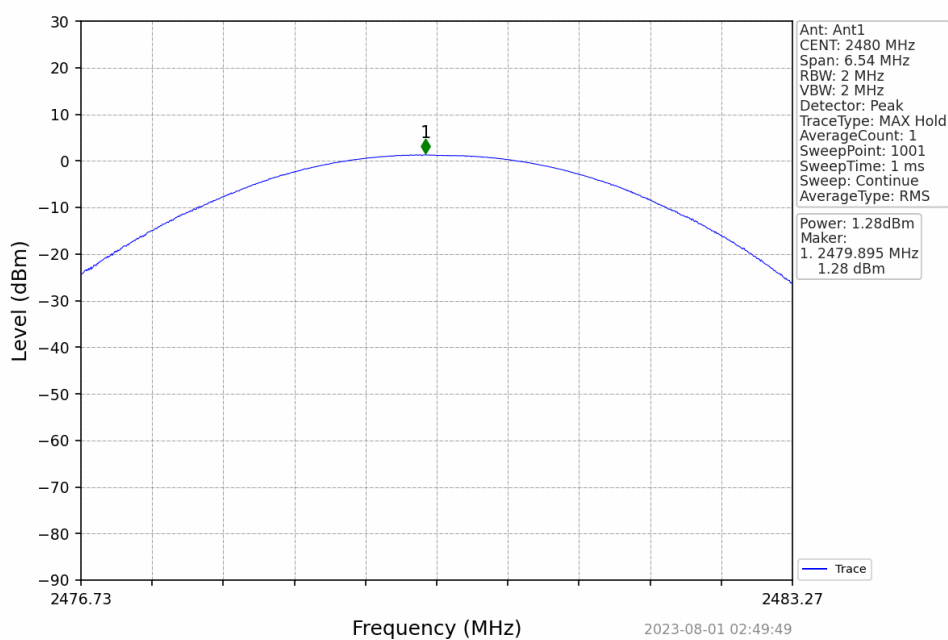
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Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

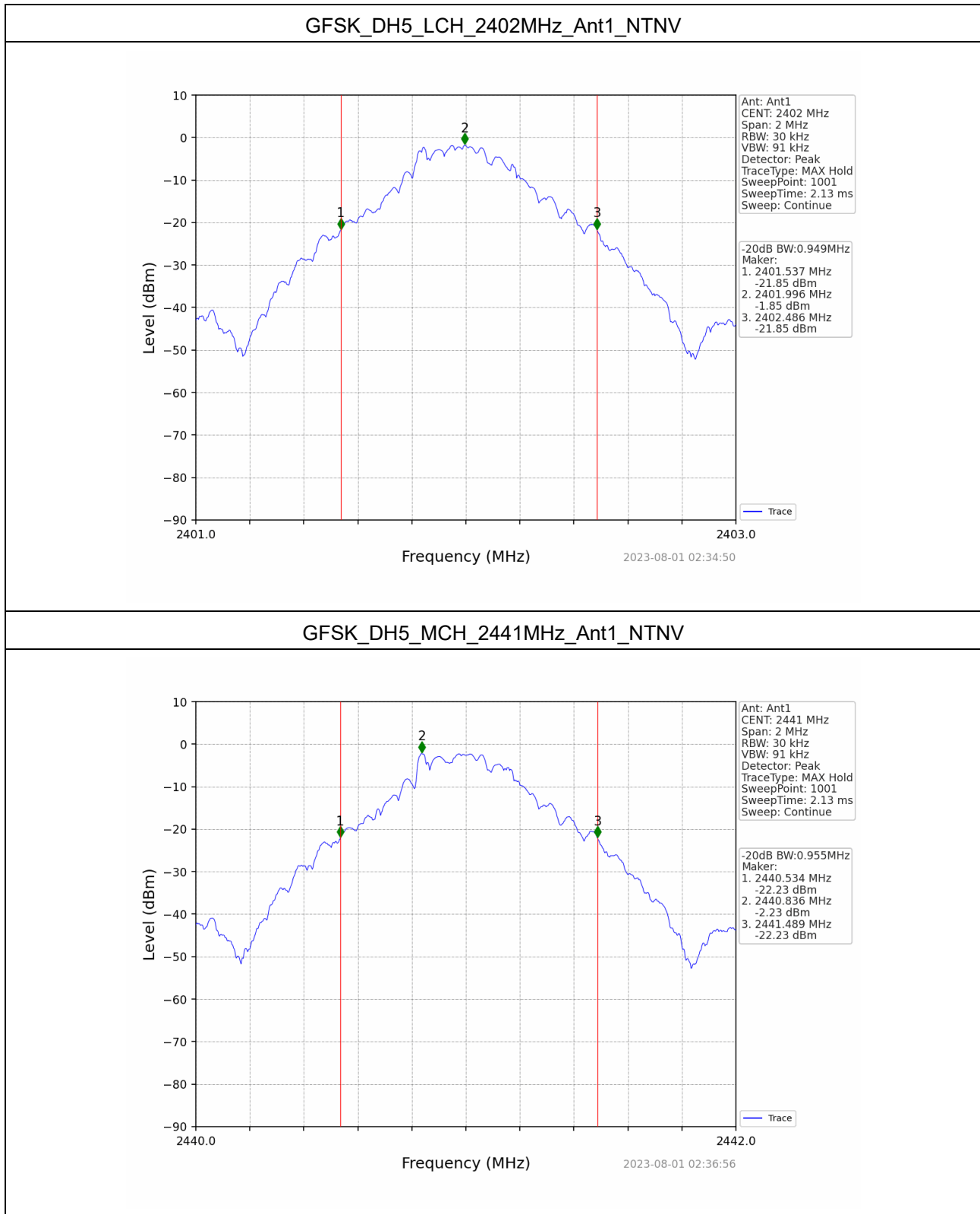


2 20dB Bandwidth

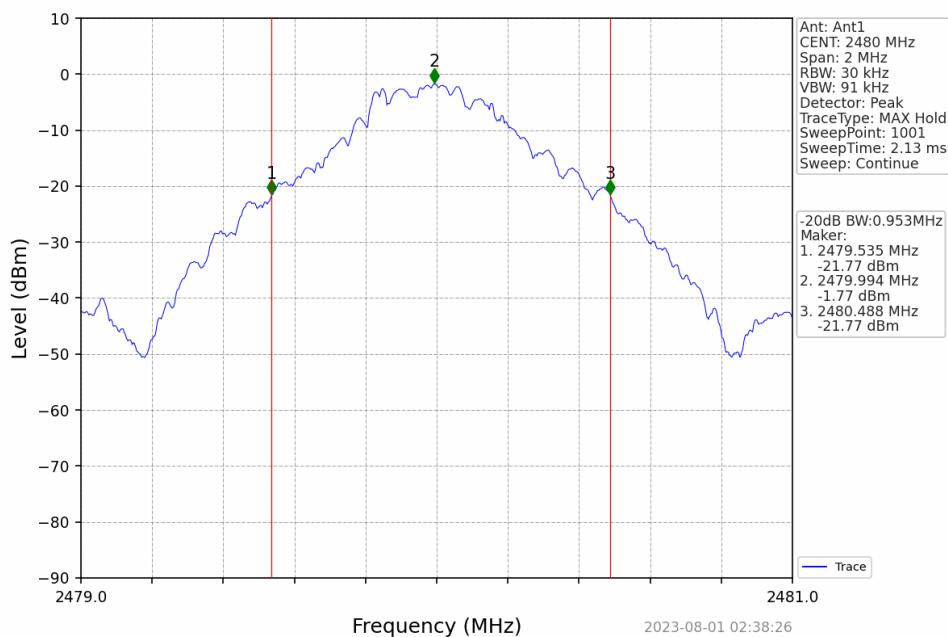
2.1 Test Result

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.949	Not Specified	Pass
	MCH	0.955	Not Specified	Pass
	HCH	0.953	Not Specified	Pass
$\pi/4$ -DQPSK	LCH	1.319	Not Specified	Pass
	MCH	1.316	Not Specified	Pass
	HCH	1.308	Not Specified	Pass

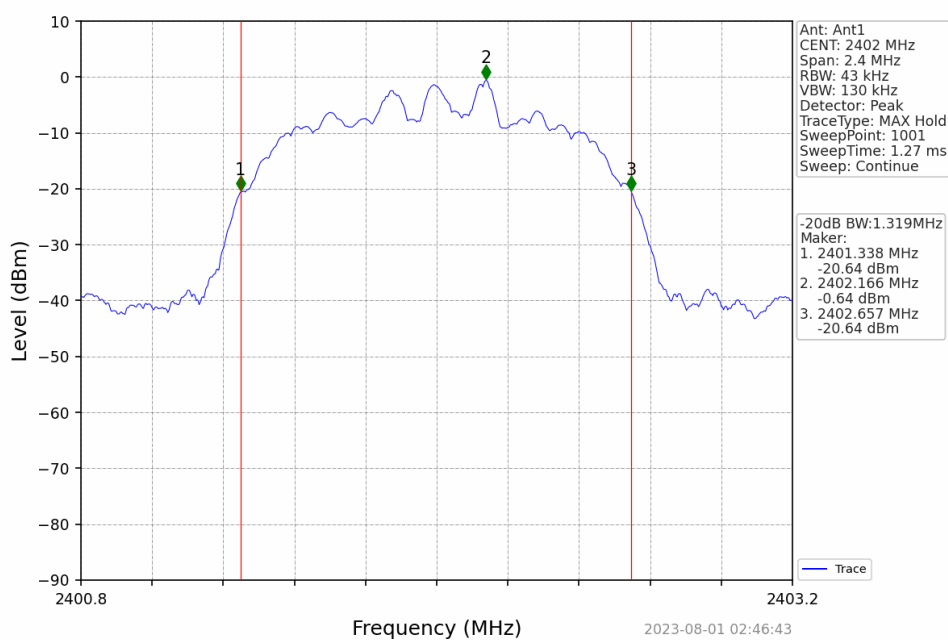
2.2 Test Graphs



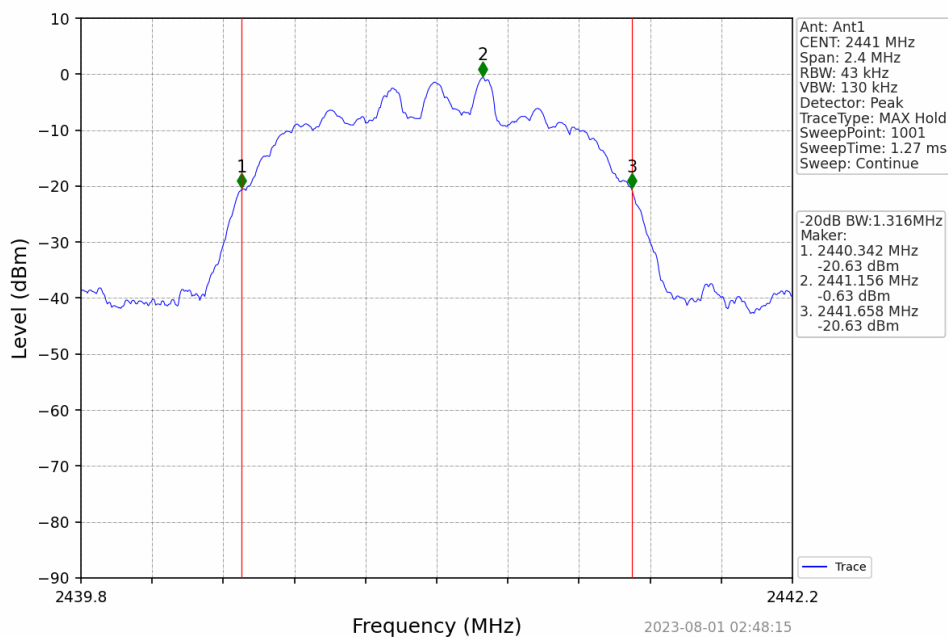
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



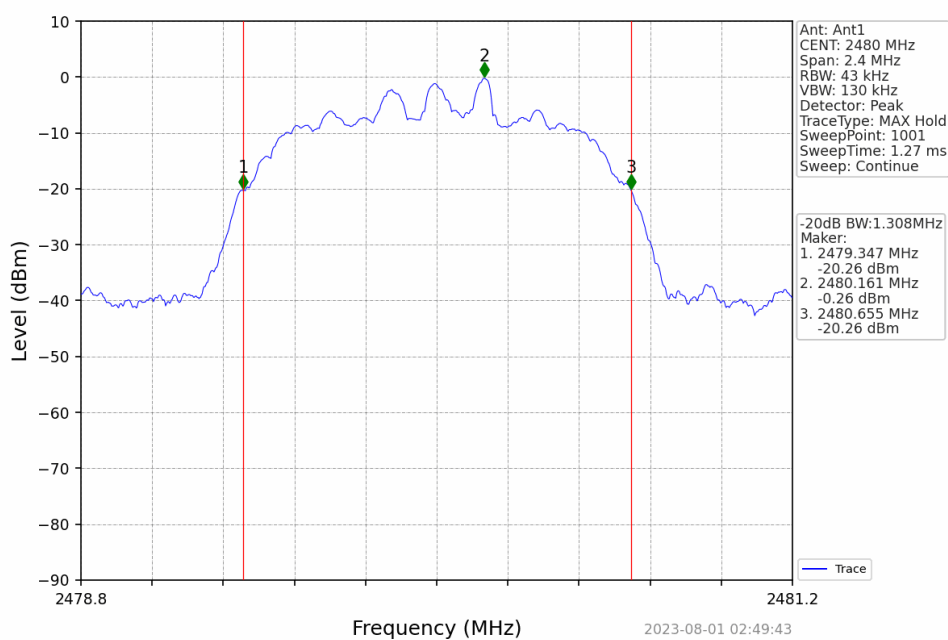
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

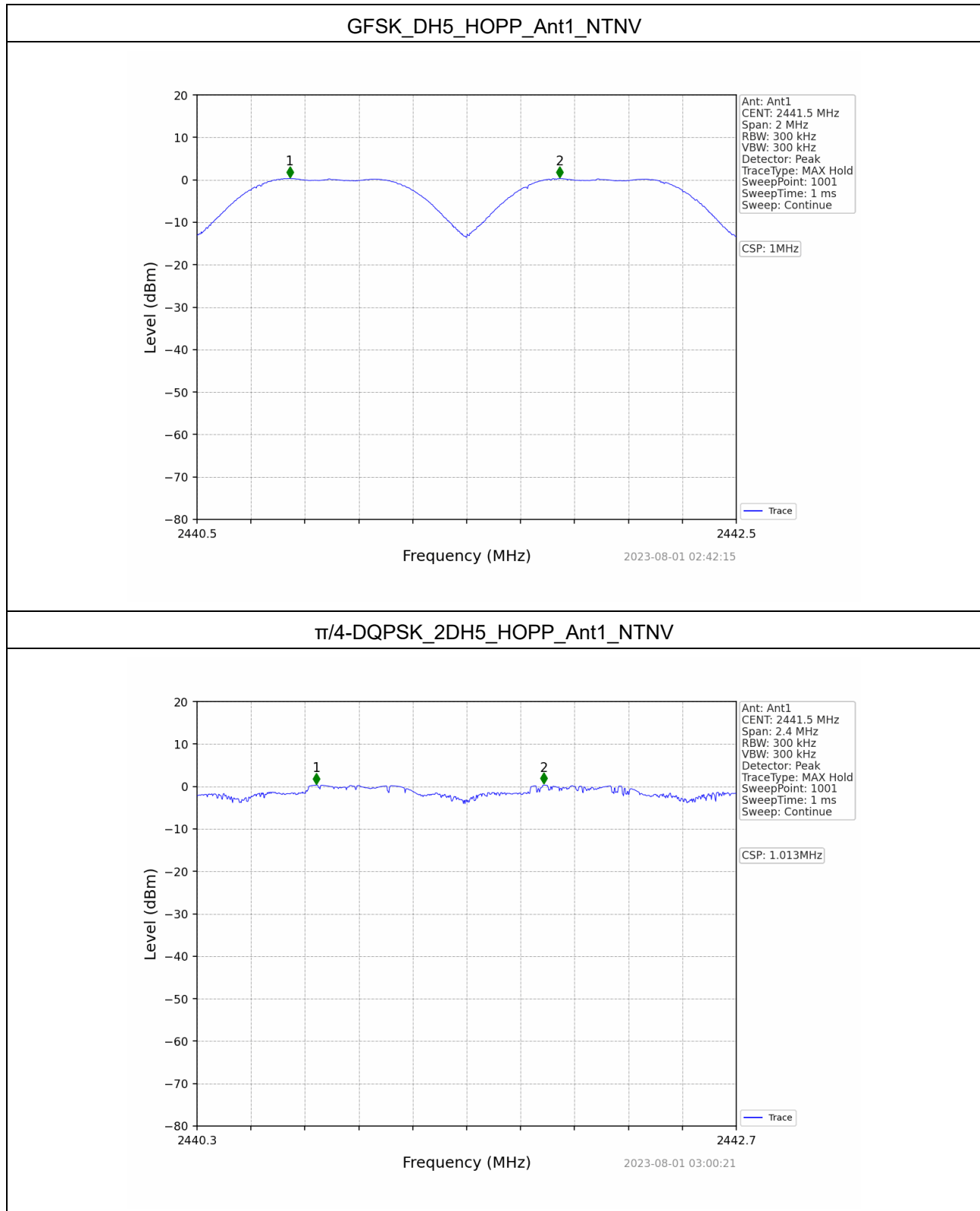


3 Carrier Frequency Separation

3.1 Test Result

Mode	Channel.	Carrier Frequency Separation [MHz]	20dB Bandwidth (MHz)	Limit [MHz]	Verdict
GFSK	MCH	1.000	0.955	≥ 0.955	Pass
$\pi/4$ -DQPSK	MCH	1.013	1.319	≥ 0.879	Pass

3.2 Test Graphs



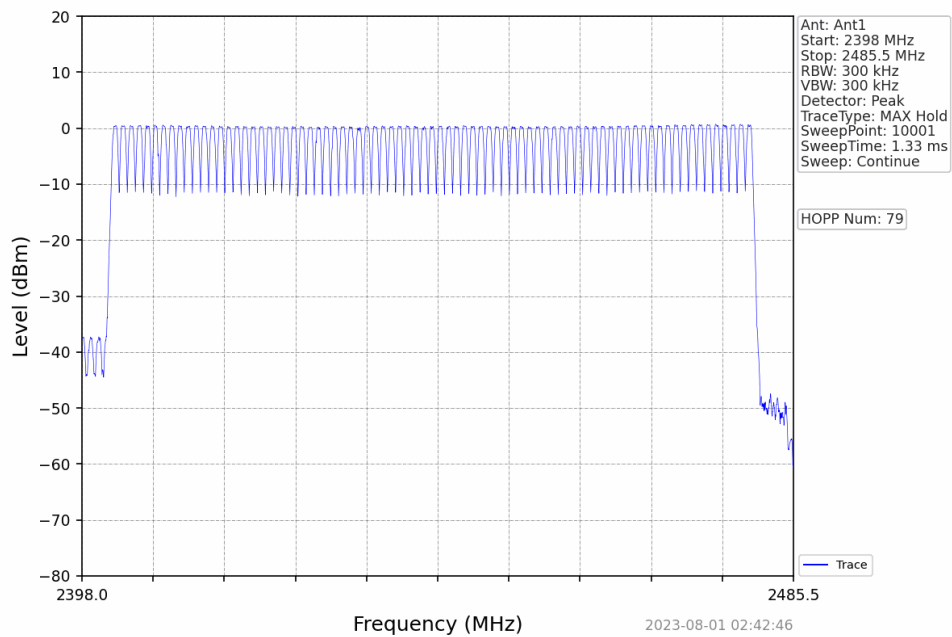
4 Hopping Channel Number

4.1 Test Result

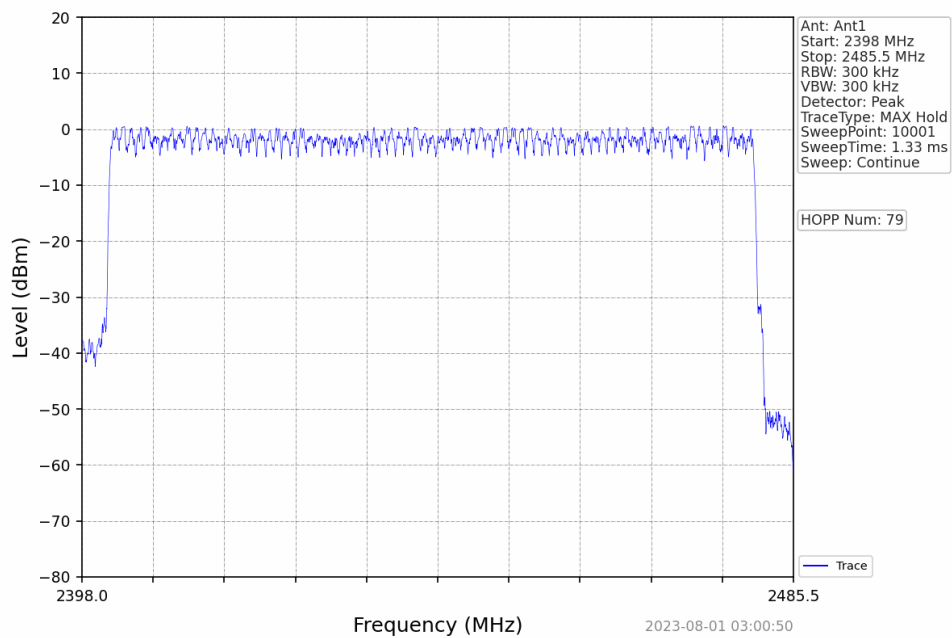
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	≥ 15	PASS
$\pi/4$ -DQPSK	Hop	79	≥ 15	PASS

4.2 Test Graphs

GFSK_DH5_HOPP_Ant1_NTNV



$\pi/4$ -DQPSK_2DH5_HOPP_Ant1_NTNV

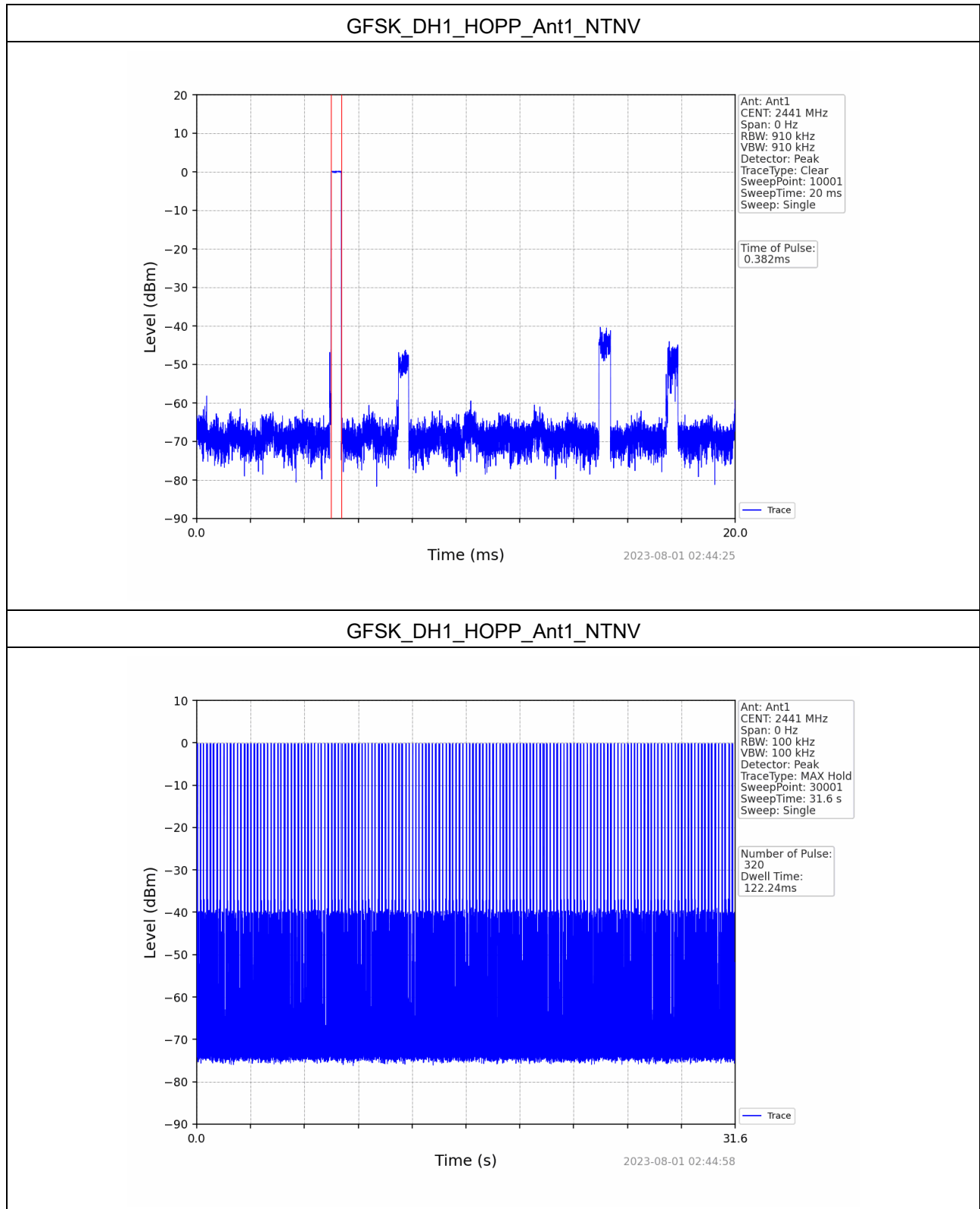


5 Dwell Time

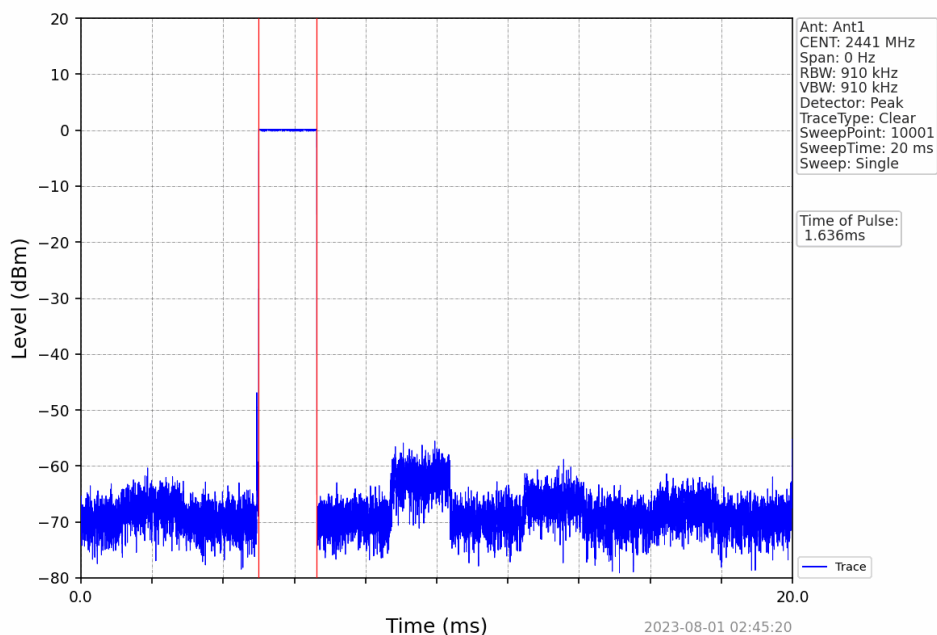
5.1 Test Result

Mode	Packet	Channel	Duration of Single Pulse (ms)	Observation Period (s)	Num of Pulse in Observation Period	Dwell Time (ms)	Limit (ms)	Verdict
GFSK	DH5	LCH	0.382	31.600	320	122.240	<=400	Pass
		MCH	1.636	31.600	96	157.056	<=400	Pass
		HCH	2.884	31.600	73	210.532	<=400	Pass
$\pi/4$ -DQPSK	2DH5	LCH	0.390	31.600	318	124.020	<=400	Pass
		MCH	1.642	31.600	105	172.410	<=400	Pass
		HCH	2.890	31.600	59	170.510	<=400	Pass

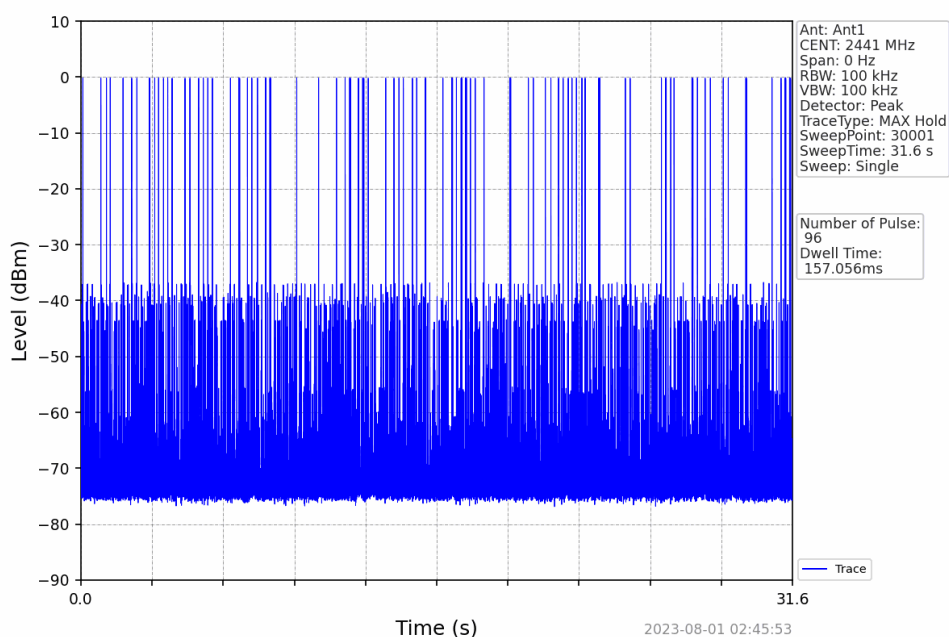
5.2 Test Graphs



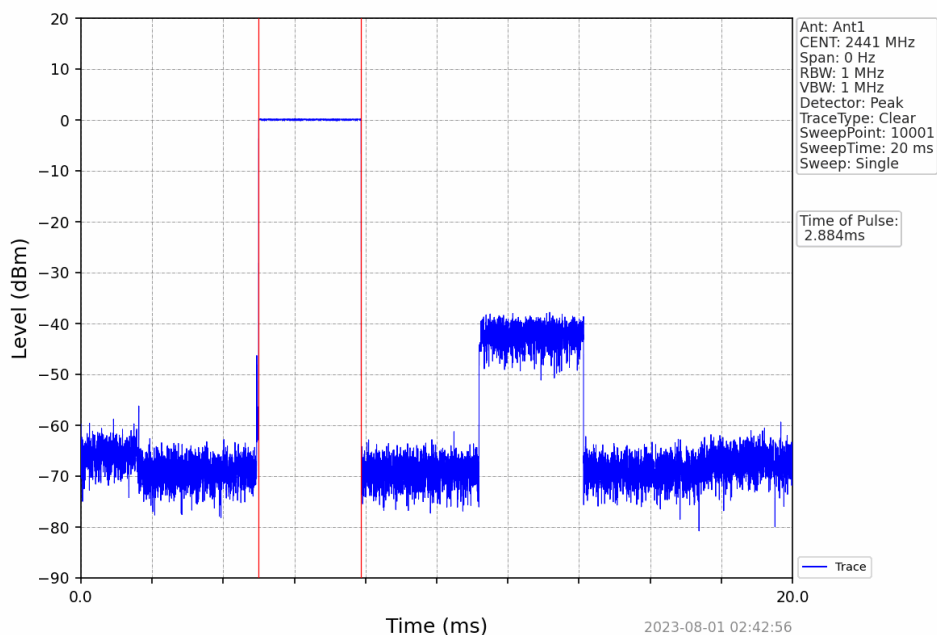
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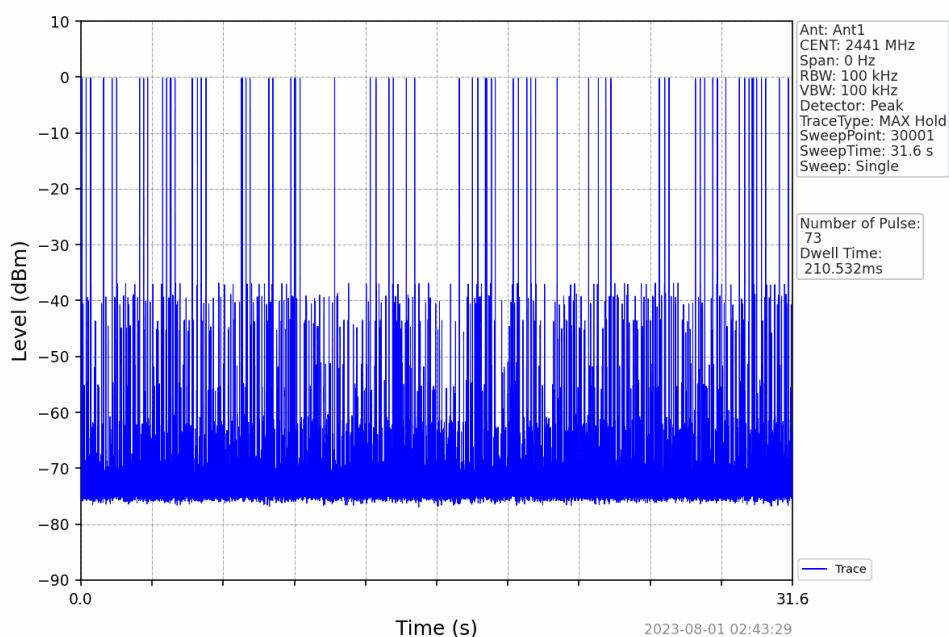
GFSK_DH3_HOPP_Ant1_NTNV



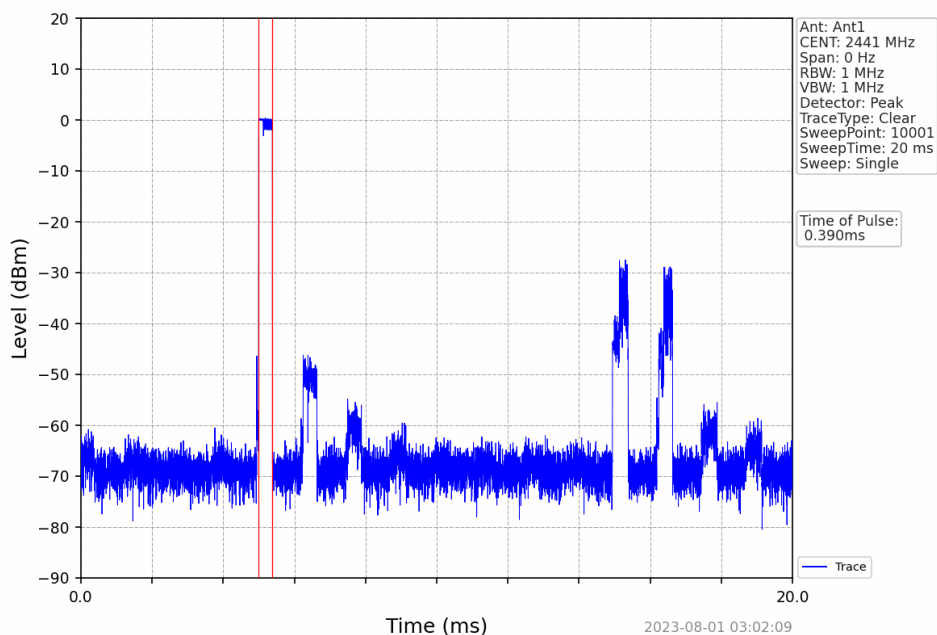
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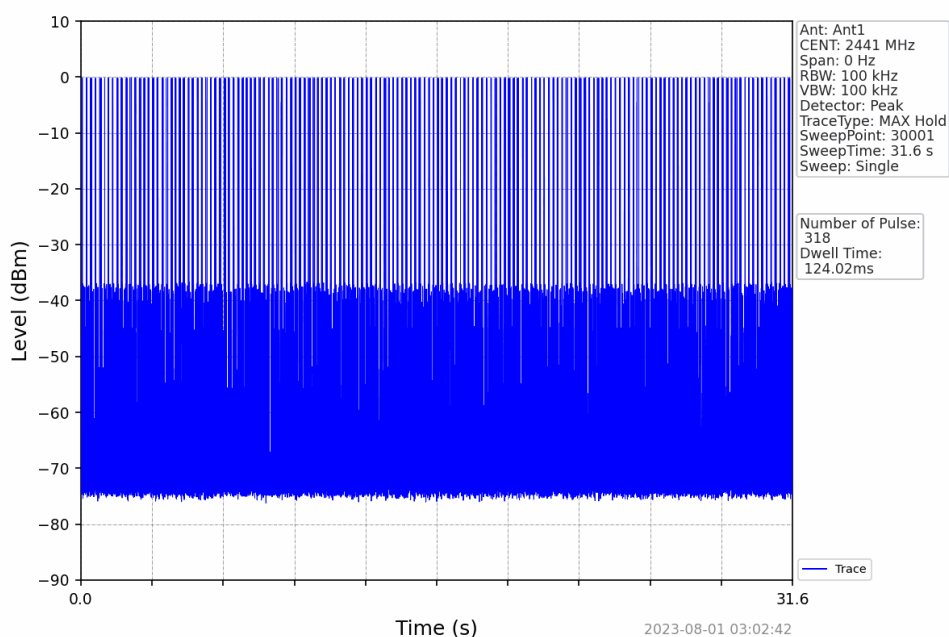
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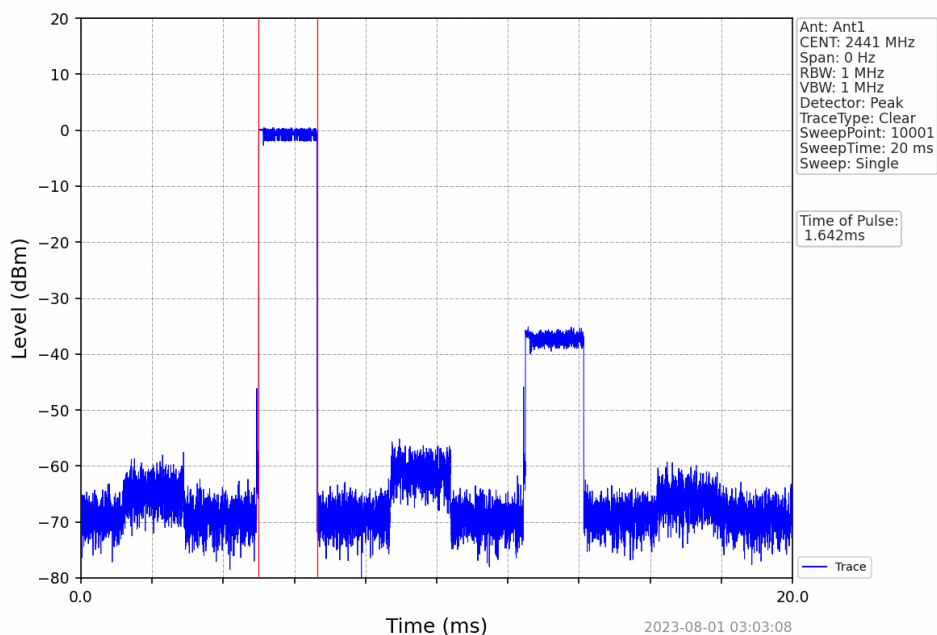
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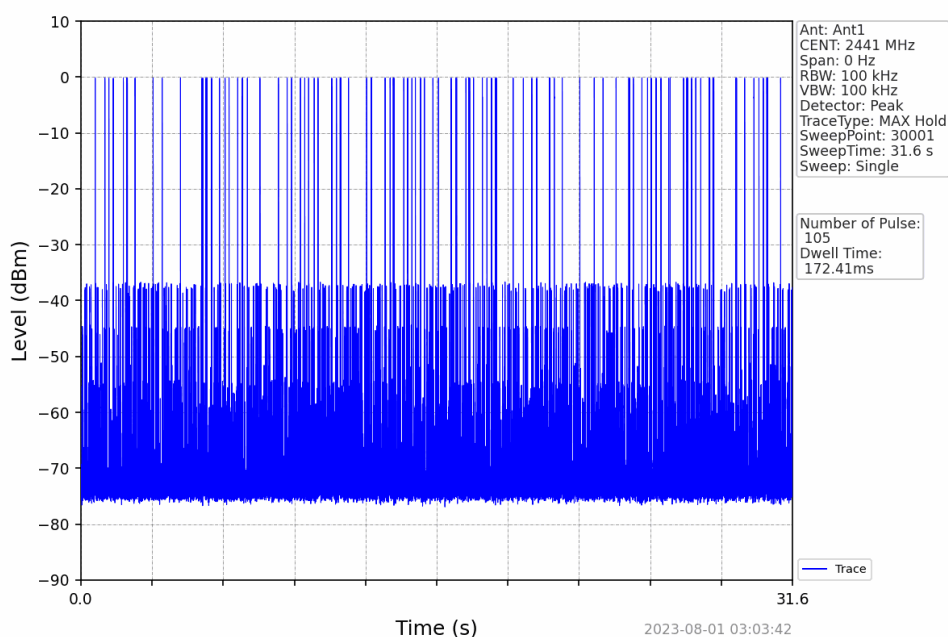
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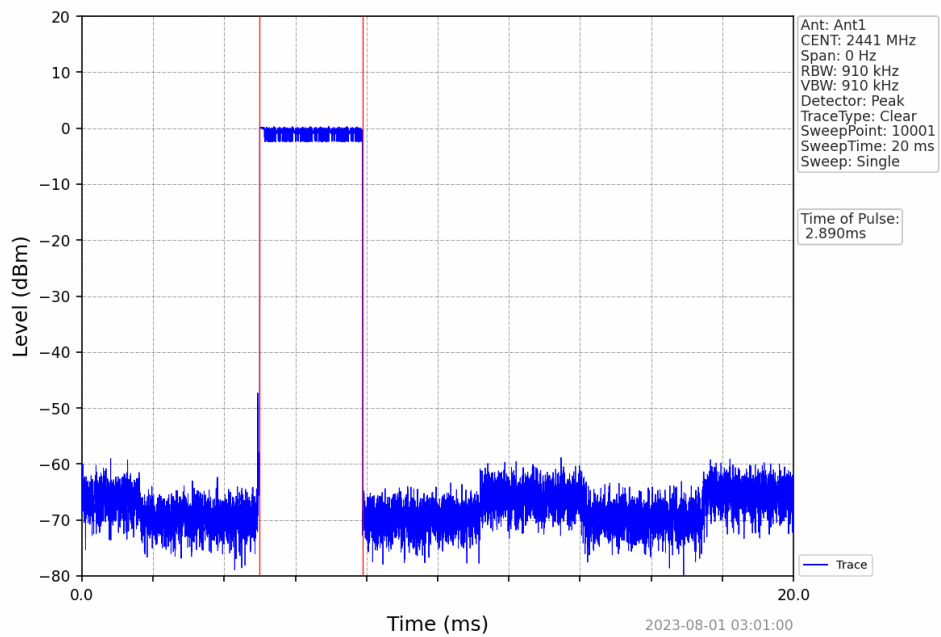
Pi/4DQPSK_2DH3_HOPP_Ant1_NTNV



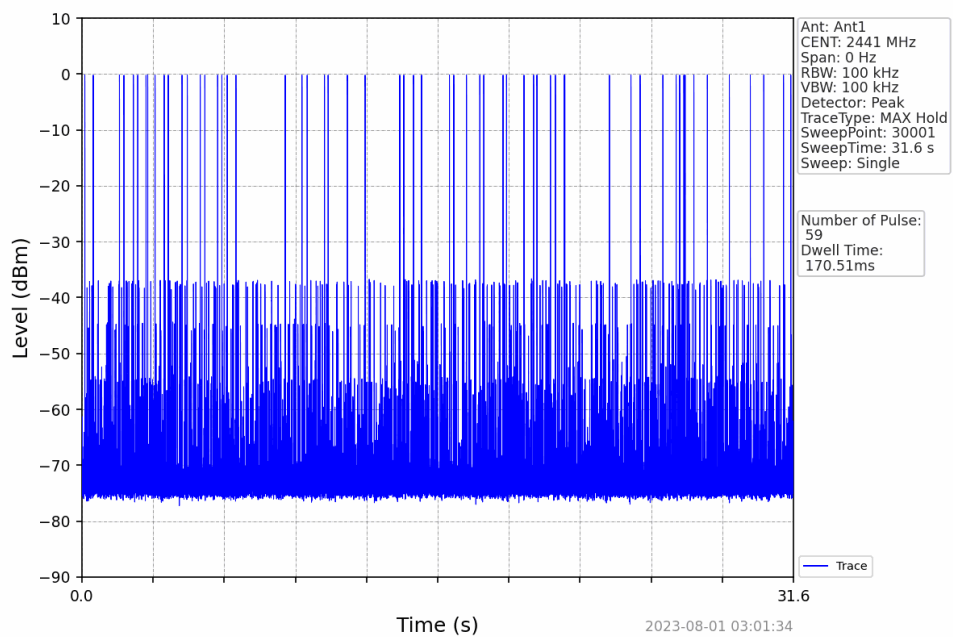
Pi/4DQPSK_2DH3_HOPP_Ant1_NTNV



Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV



Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV



6 Conducted Spurious Emissions and Band Edges Test

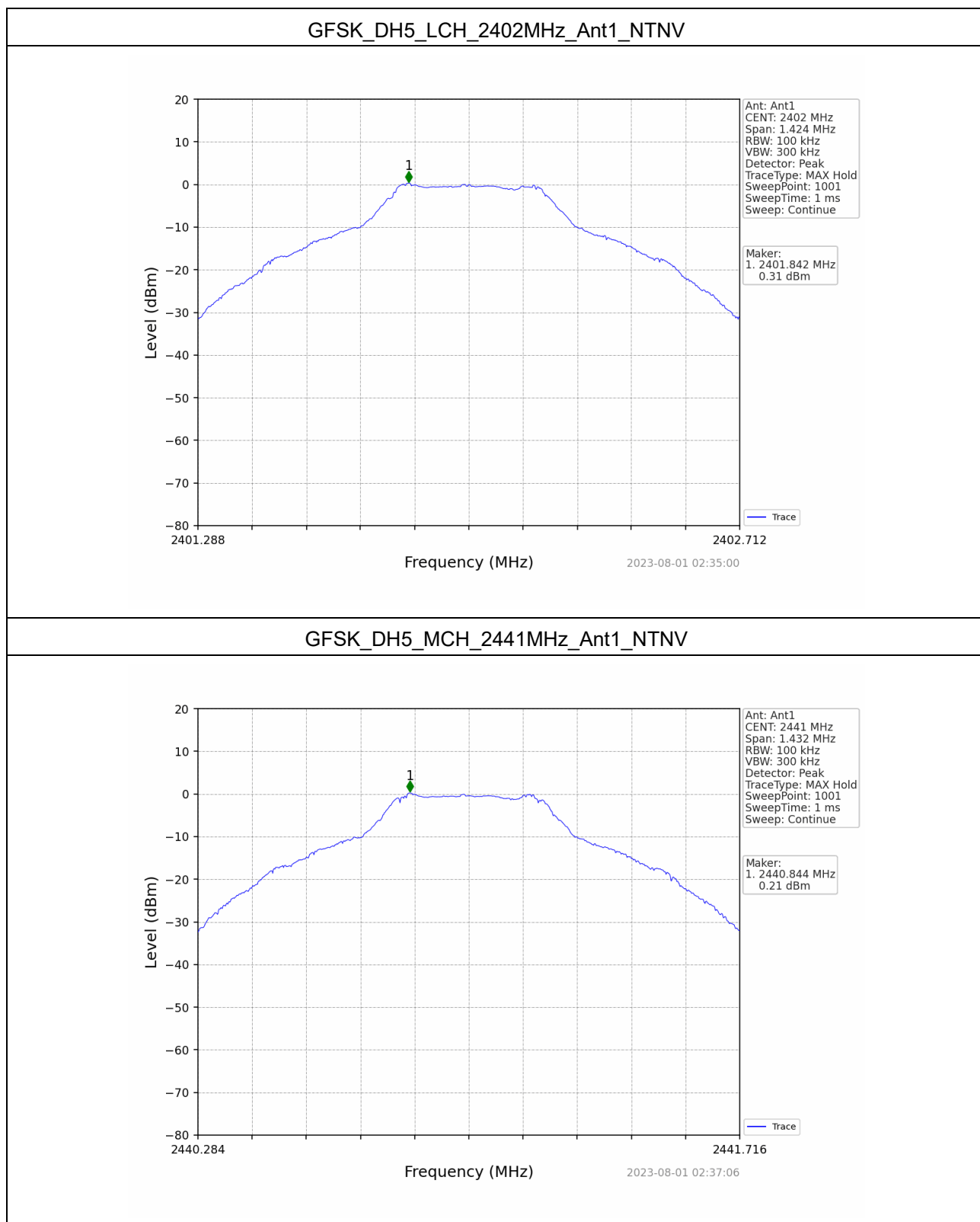
6.1 Test Result

Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	0.31	-20	Pass
	MCH	0.21	-20	Pass
	HCH	0.44	-20	Pass
$\pi/4$ -DQPSK	LCH	0.20	-20	Pass
	MCH	0.16	-20	Pass
	HCH	0.40	-20	Pass

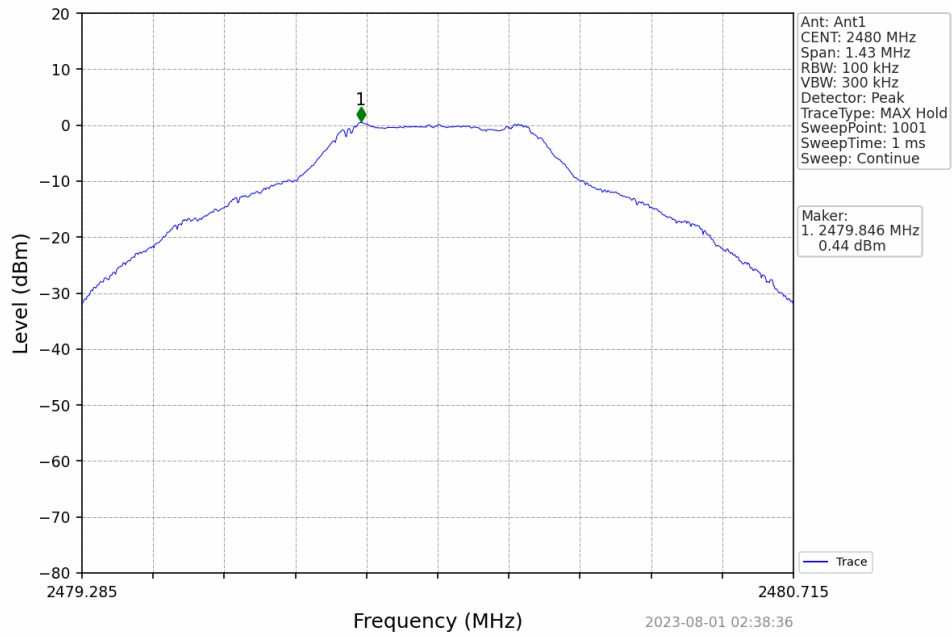
Mode	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
GFSK	2402	DH5	1	0.44	-19.56	Pass
	2441	DH5	1	0.44	-19.56	Pass
	2480	DH5	1	0.44	-19.56	Pass
	HOPP	DH5	1	0.44	-19.56	Pass
$\pi/4$ -DQPSK	2402	2DH5	1	0.40	-19.60	Pass
	2441	2DH5	1	0.40	-19.60	Pass
	2480	2DH5	1	0.40	-19.60	Pass
	HOPP	2DH5	1	0.40	-19.60	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.

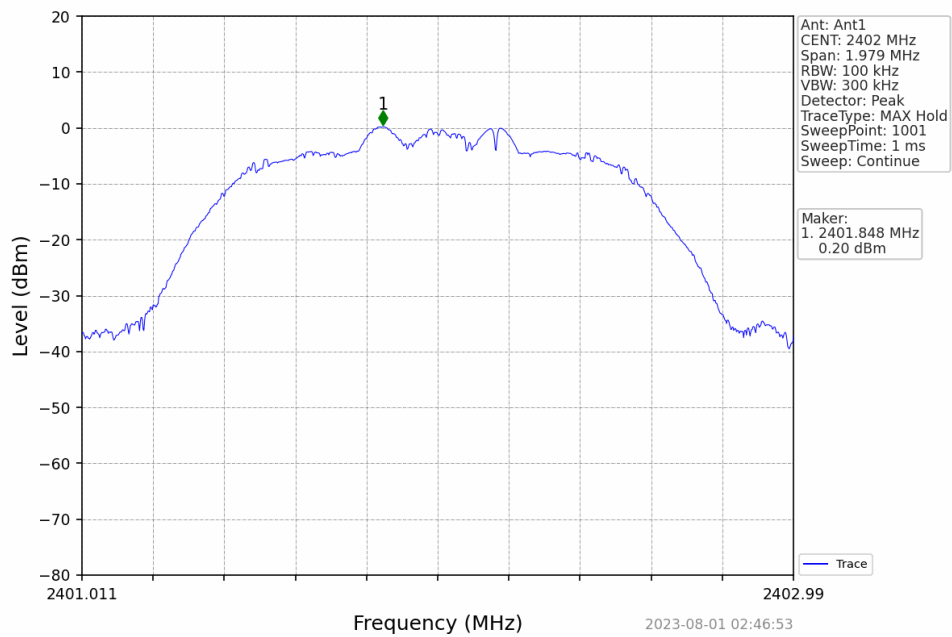
6.2 Test Graphs



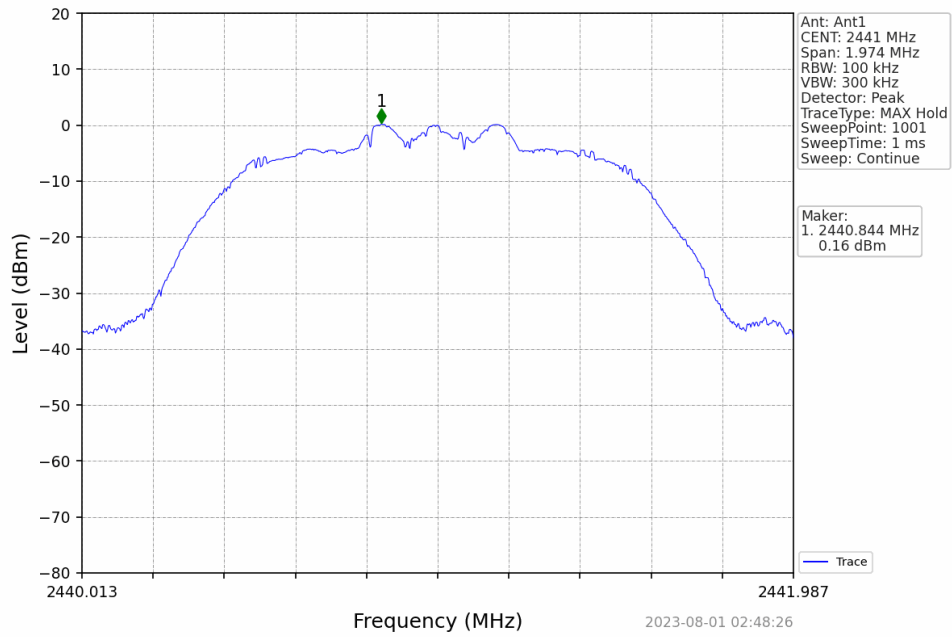
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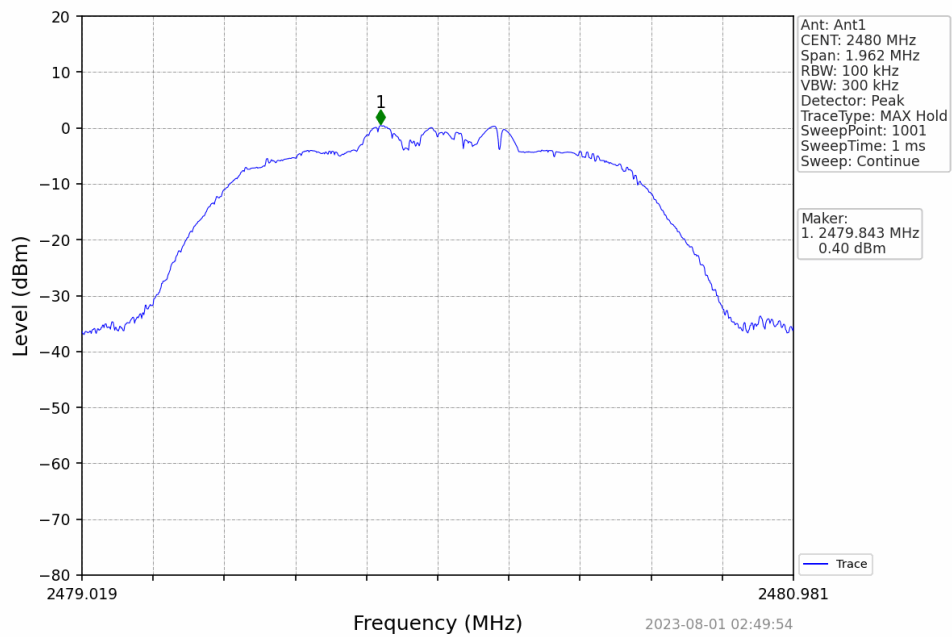
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV

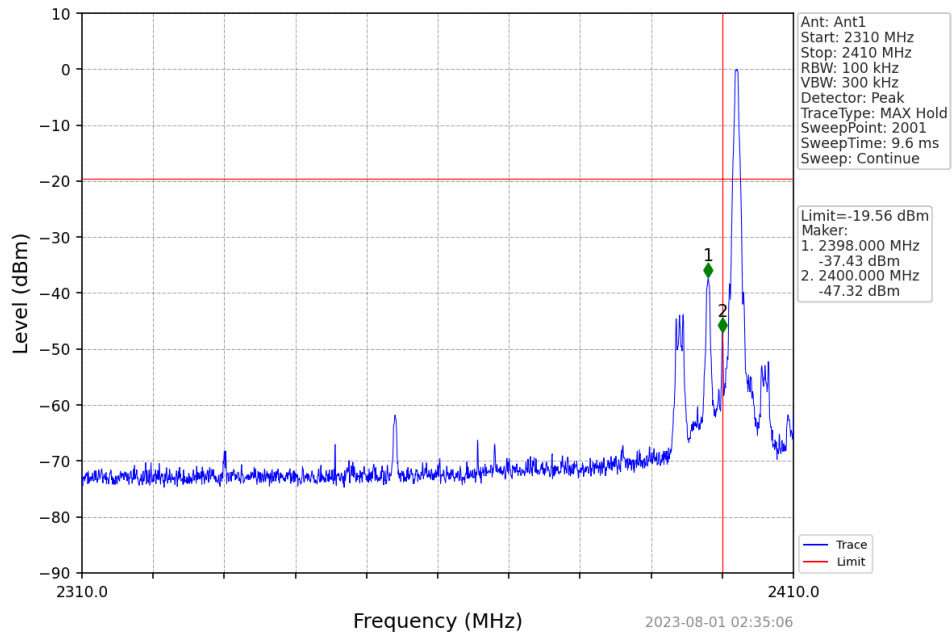


Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

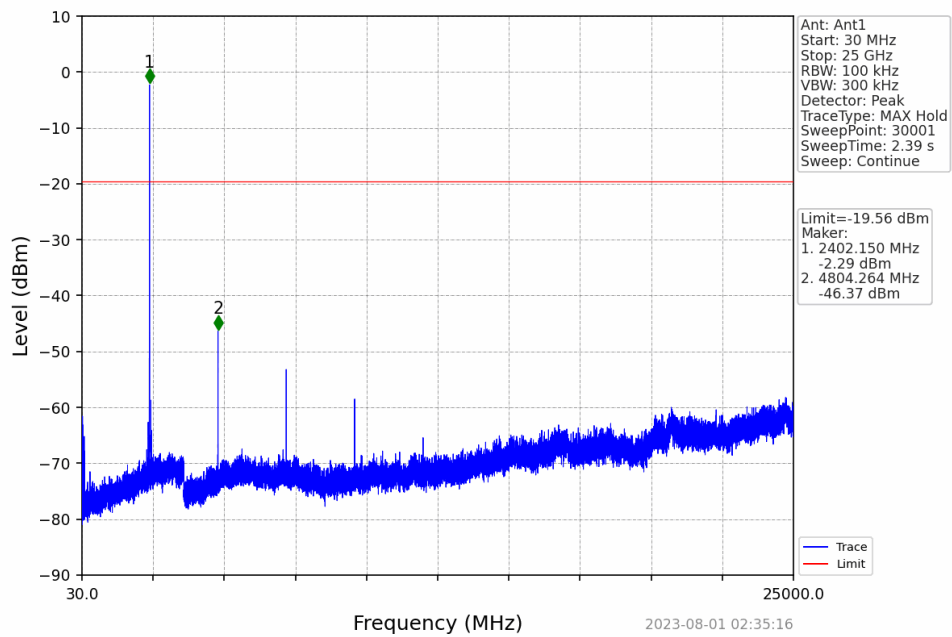


CSE

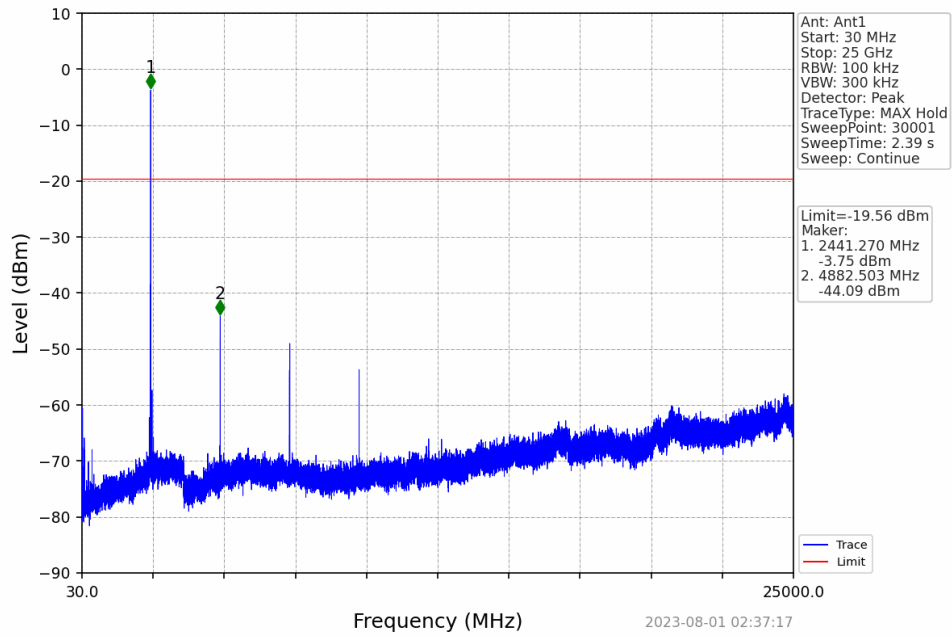
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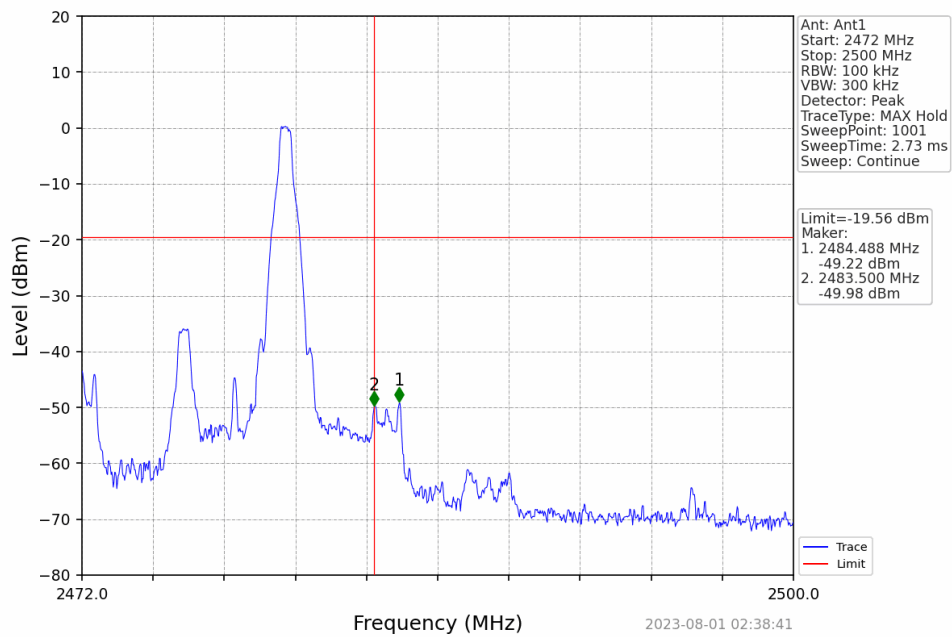
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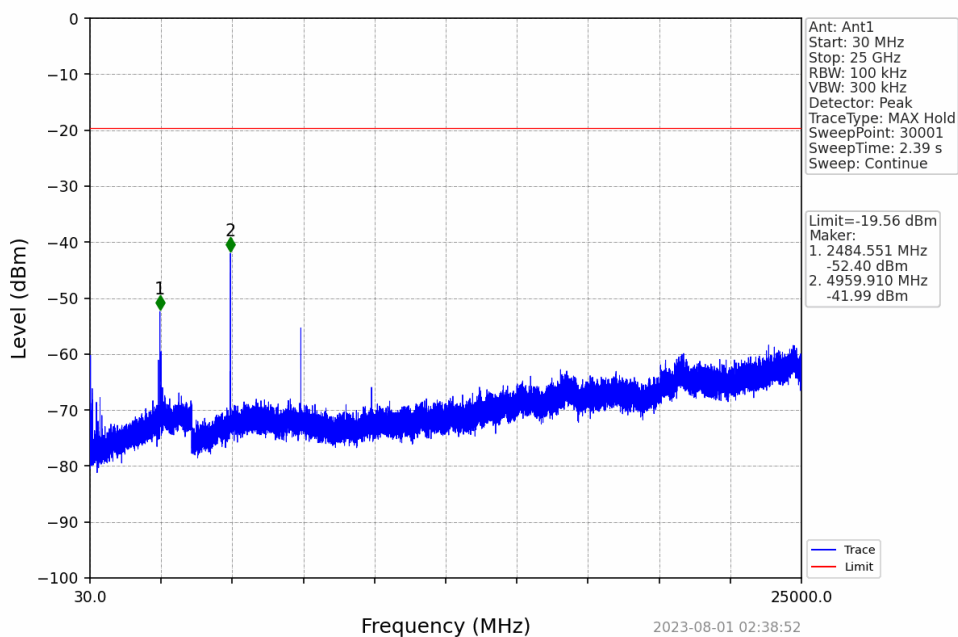
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



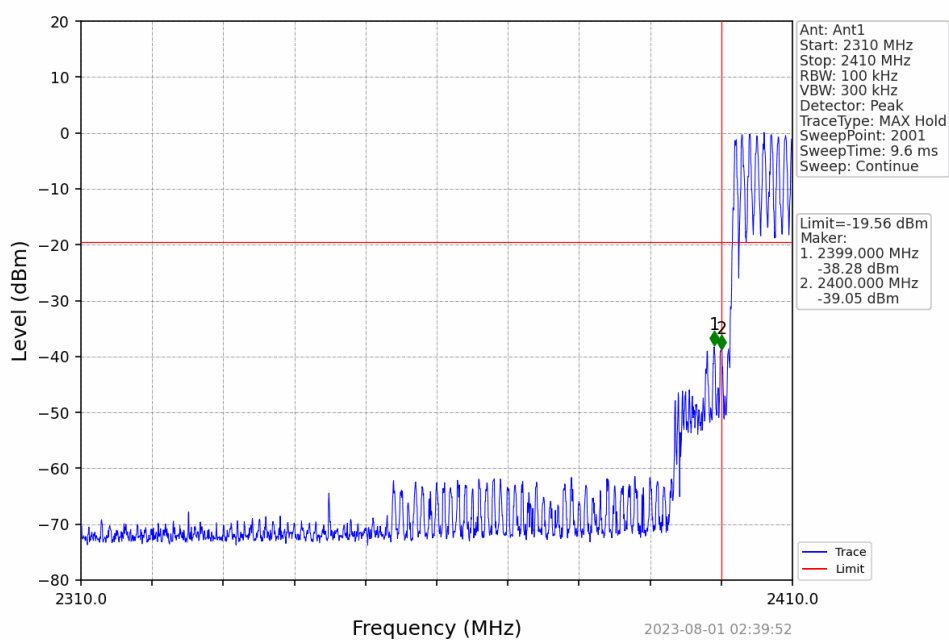
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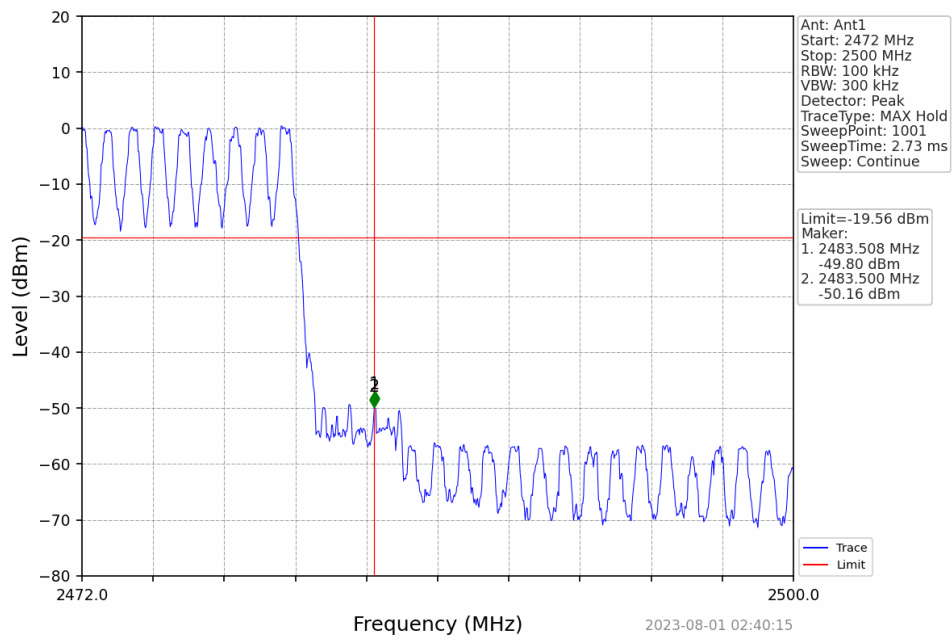
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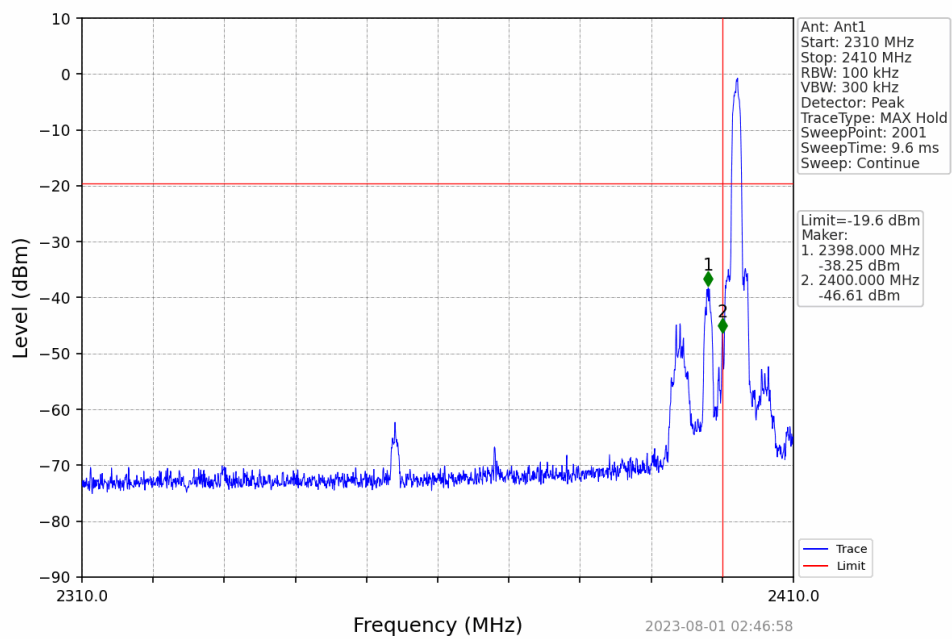
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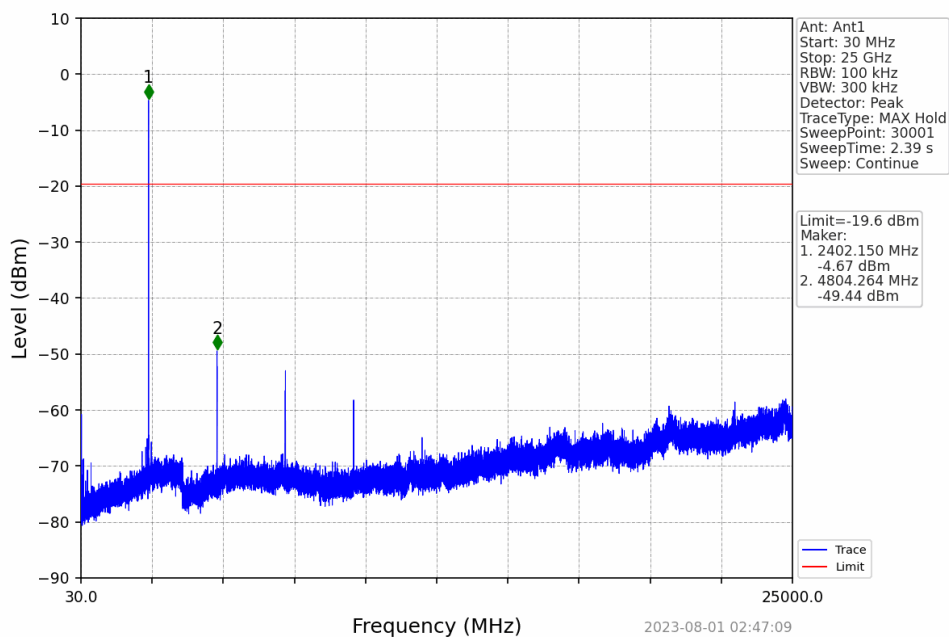
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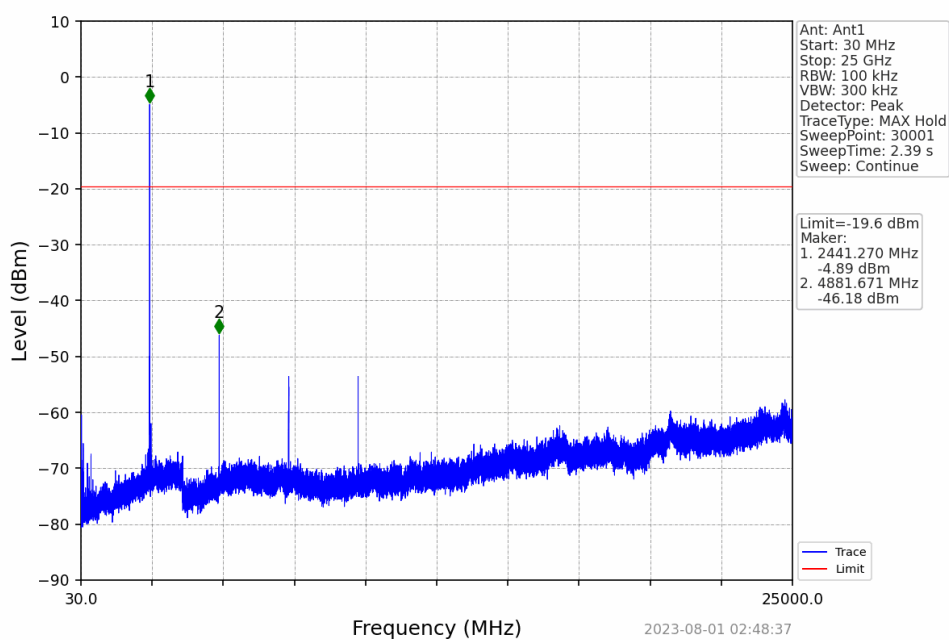
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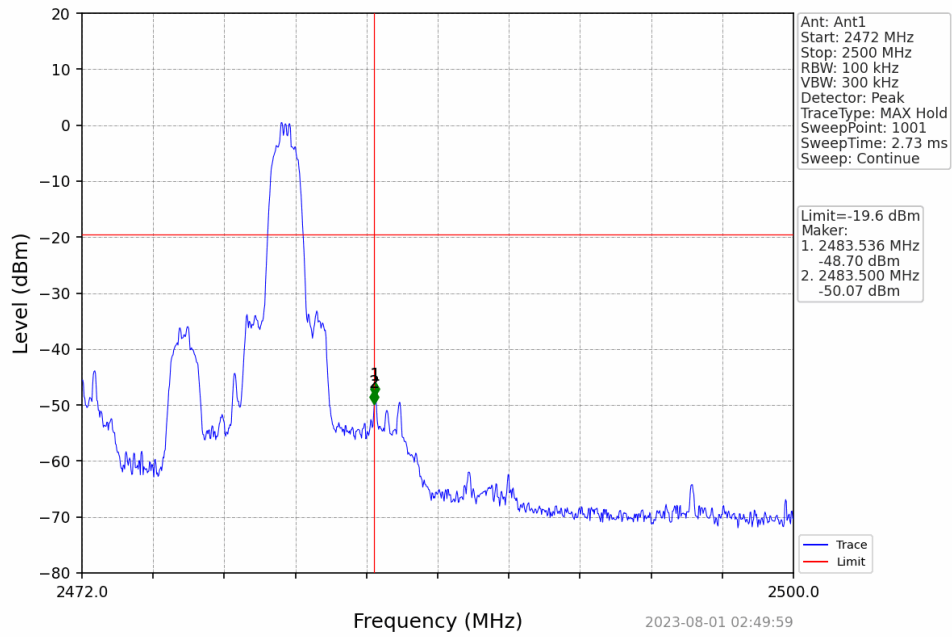
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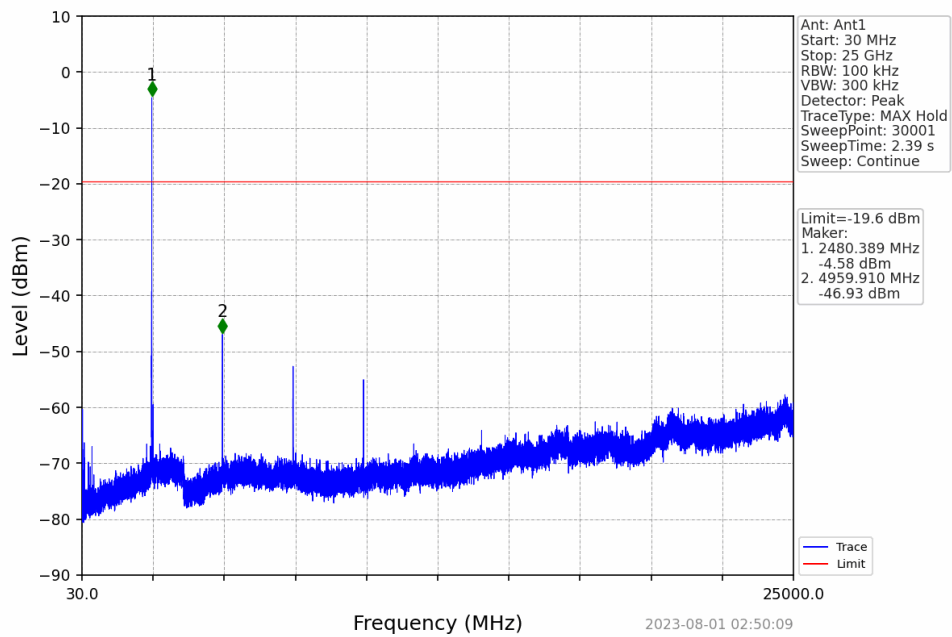
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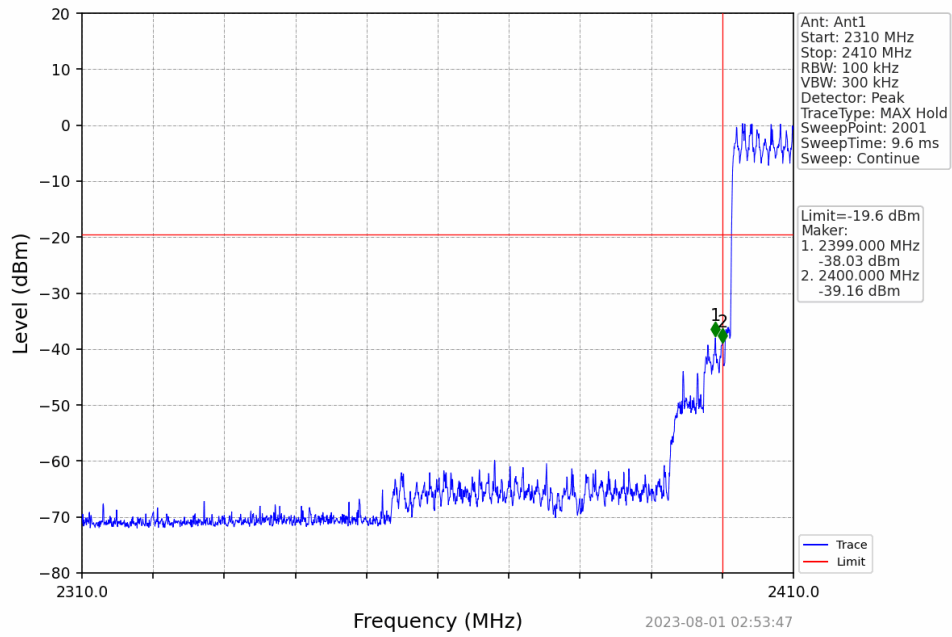
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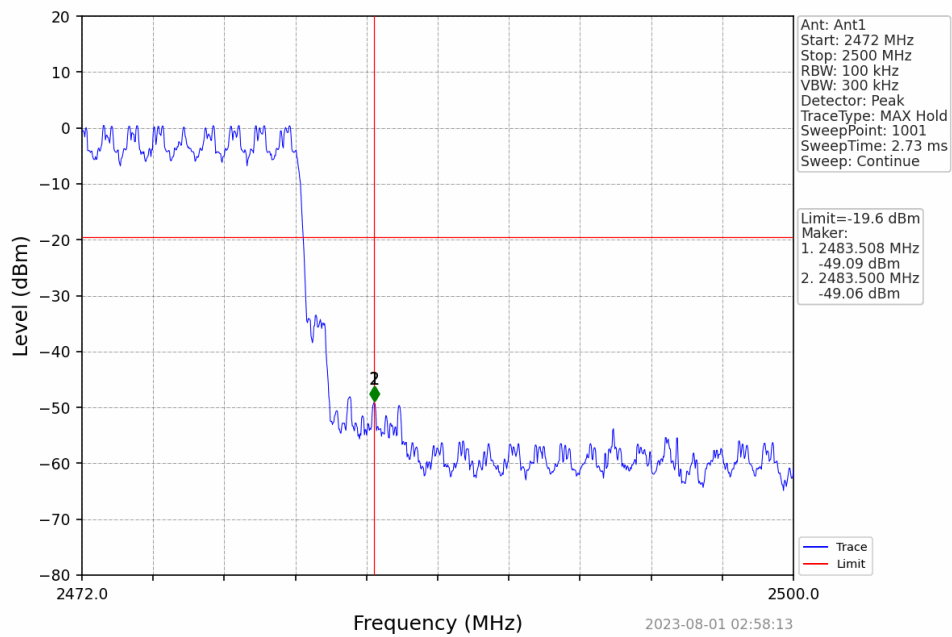
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV



Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV



7 Band-edge for RF Conducted Emissions

7.1 Test Result

Test Mode: GFKS										
Pol.	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detect or Type	Result
Low Channel: 2402MHz										
H	2390.00	46.93	29.15	3.41	34.01	45.48	74.00	-28.52	PK	PASS
H	2400.00	64.30	29.16	3.43	34.01	62.88	74.00	-11.12	PK	PASS
V	2390.00	47.87	29.15	3.41	34.01	46.42	74.00	-27.58	PK	PASS
V	2400.00	66.77	29.16	3.43	34.01	65.35	74.00	-8.65	PK	PASS
H	2390.00	36.56	29.15	3.41	34.01	35.11	54.00	-18.89	AV	PASS
H	2400.00	48.04	29.16	3.43	34.01	46.62	54.00	-7.38	AV	PASS
V	2390.00	36.80	29.15	3.41	34.01	35.35	54.00	-18.65	AV	PASS
V	2400.00	50.08	29.16	3.43	34.01	48.66	54.00	-5.34	AV	PASS
High Channel: 2480MHz										
H	2483.50	49.52	29.28	3.53	34.03	48.30	74.00	-25.70	PK	PASS
H	2500.00	47.92	29.30	3.56	34.03	46.75	74.00	-27.25	PK	PASS
V	2483.50	51.03	29.28	3.53	34.03	49.81	74.00	-24.19	PK	PASS
V	2500.00	49.30	29.30	3.56	34.03	48.13	74.00	-25.87	PK	PASS
H	2483.50	39.44	29.28	3.53	34.03	38.22	54.00	-15.78	AV	PASS
H	2500.00	36.86	29.30	3.56	34.03	35.69	54.00	-18.31	AV	PASS
V	2483.50	40.99	29.28	3.53	34.03	39.77	54.00	-14.23	AV	PASS
V	2500.00	37.12	29.30	3.56	34.03	35.95	54.00	-18.05	AV	PASS



Test Mode: $\pi/4$ -DQPSK										
Pol.	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detect or Type	Result
Low Channel: 2402MHz										
H	2390.00	46.80	29.15	3.41	34.01	45.35	74.00	-28.65	PK	PASS
H	2400.00	64.15	29.16	3.43	34.01	62.73	74.00	-11.27	PK	PASS
V	2390.00	47.73	29.15	3.41	34.01	46.28	74.00	-27.72	PK	PASS
V	2400.00	66.61	29.16	3.43	34.01	65.19	74.00	-8.81	PK	PASS
H	2390.00	36.47	29.15	3.41	34.01	35.02	54.00	-18.98	AV	PASS
H	2400.00	47.94	29.16	3.43	34.01	46.52	54.00	-7.48	AV	PASS
V	2390.00	36.69	29.15	3.41	34.01	35.24	54.00	-18.76	AV	PASS
V	2400.00	49.96	29.16	3.43	34.01	48.54	54.00	-5.46	AV	PASS
High Channel: 2480MHz										
H	2483.50	49.38	29.28	3.53	34.03	48.16	74.00	-25.84	PK	PASS
H	2500.00	47.80	29.30	3.56	34.03	46.63	74.00	-27.37	PK	PASS
V	2483.50	50.87	29.28	3.53	34.03	49.65	74.00	-24.35	PK	PASS
V	2500.00	49.17	29.30	3.56	34.03	48.00	74.00	-26.00	PK	PASS
H	2483.50	39.34	29.28	3.53	34.03	38.12	54.00	-15.88	AV	PASS
H	2500.00	36.78	29.30	3.56	34.03	35.61	54.00	-18.39	AV	PASS
V	2483.50	40.88	29.28	3.53	34.03	39.66	54.00	-14.34	AV	PASS
V	2500.00	37.03	29.30	3.56	34.03	35.86	54.00	-18.14	AV	PASS

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit

-----End-----