Appendix A

RF Test Data for BR_EDR(Conducted Measurement)

Product Name: Bluetooth headset for smartphone-Black
Trade Mark: ETECH
Test Model: EBP-E-C78, 02362

Environmental Conditions

Temperature:	24.6℃
Relative Humidity:	51.4%
ATM Pressure:	101Kpa
Test Engineer:	Simba Huang
Supervised by:	Seal Chen

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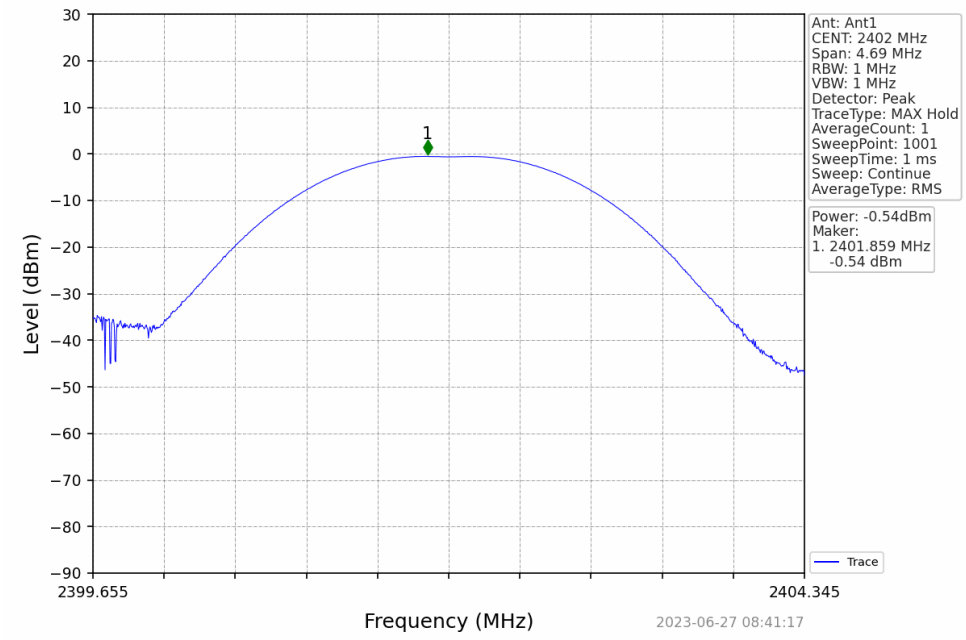
1 Maximum Conducted Peak Output Power

1.1 Test Result

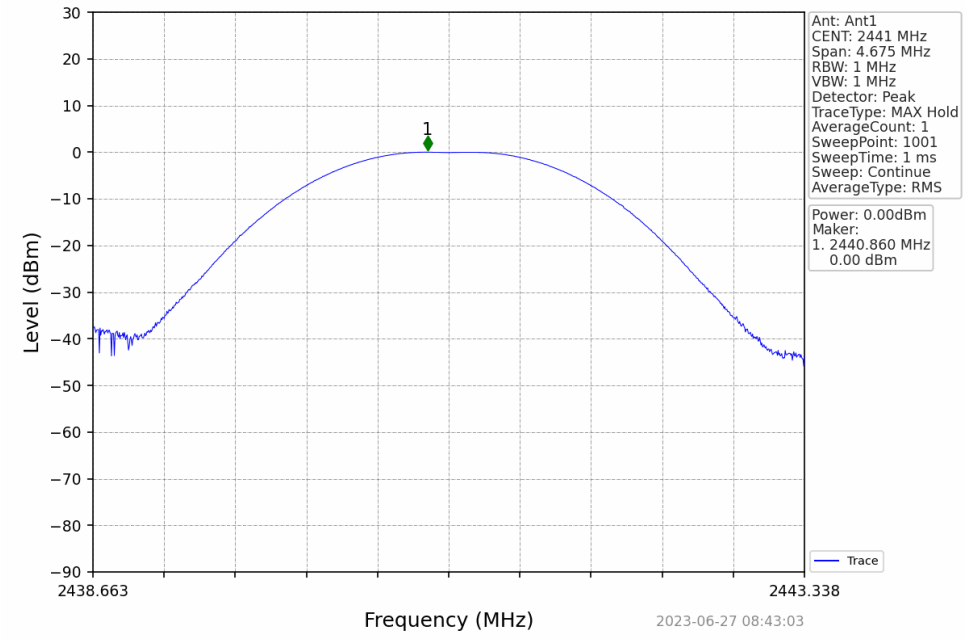
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.54	<=30	Pass
	MCH	0.00	<=30	Pass
	HCH	1.10	<=30	Pass
π/4-DQPSK	LCH	1.96	<=20.97	Pass
	MCH	2.60	<=20.97	Pass
	HCH	3.92	<=20.97	Pass

1.2 Test Graphs

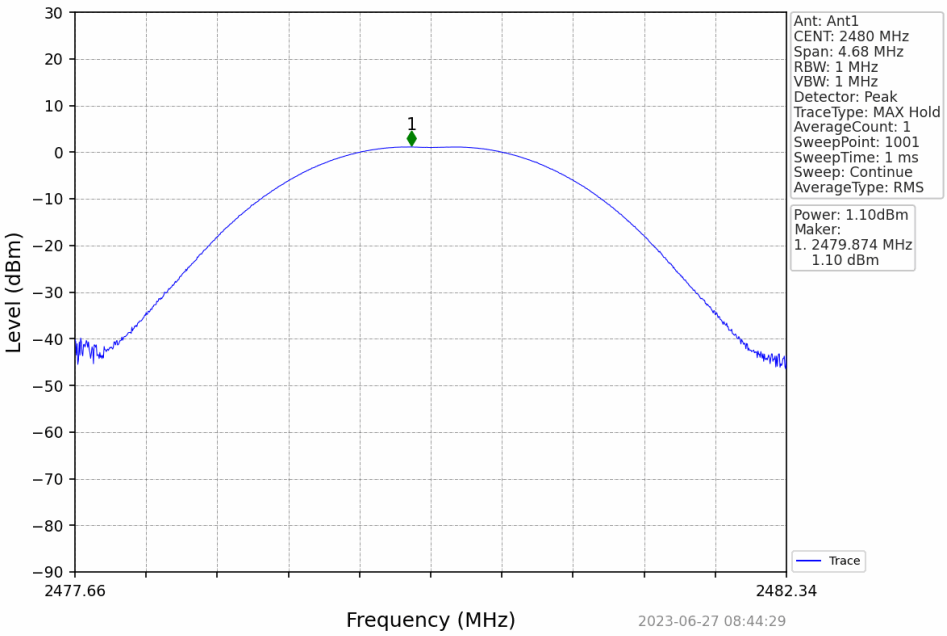
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



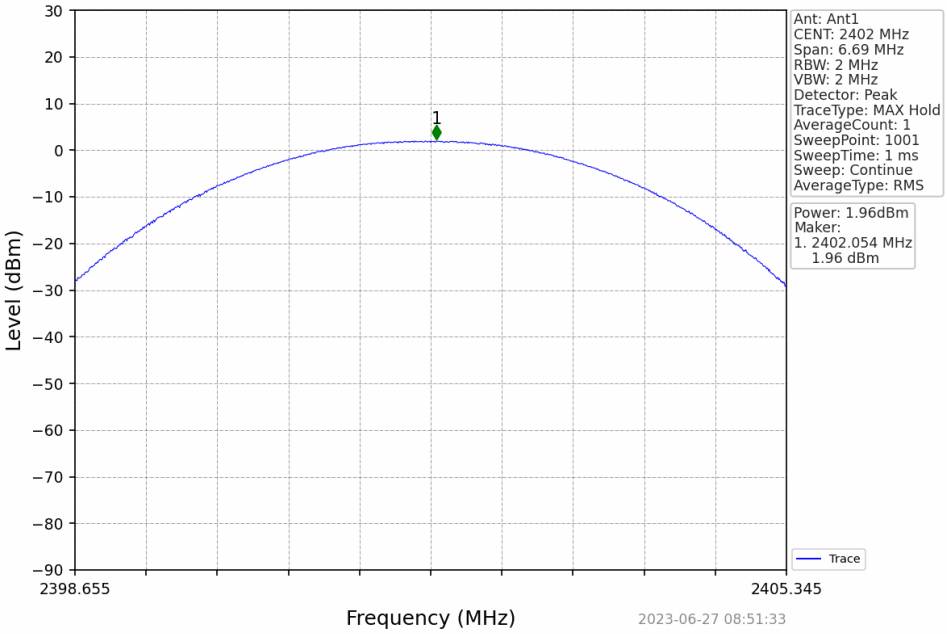
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



GFSK_DH5_HCH_2480MHz_Ant1_NTNV



π/4-DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



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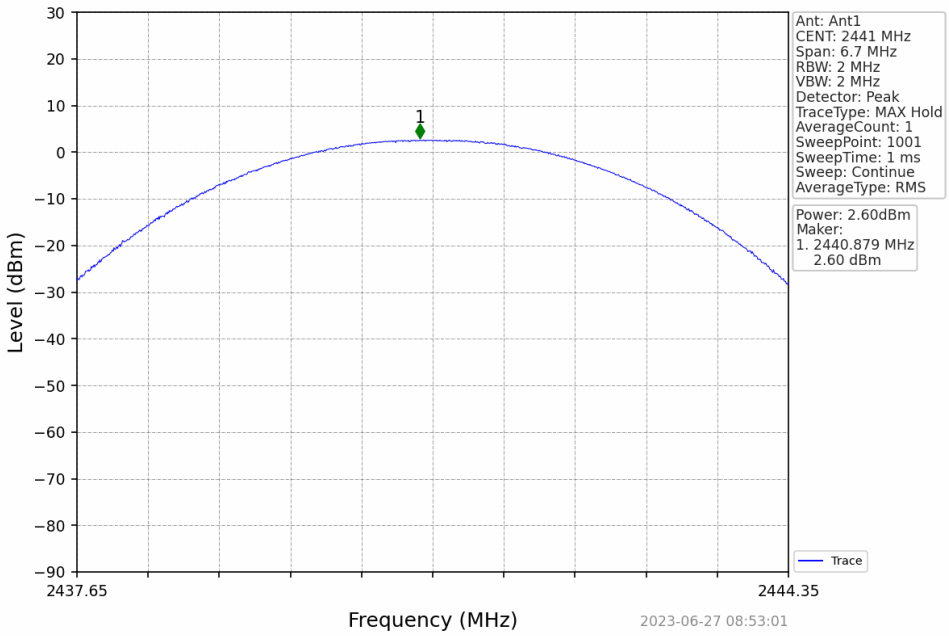
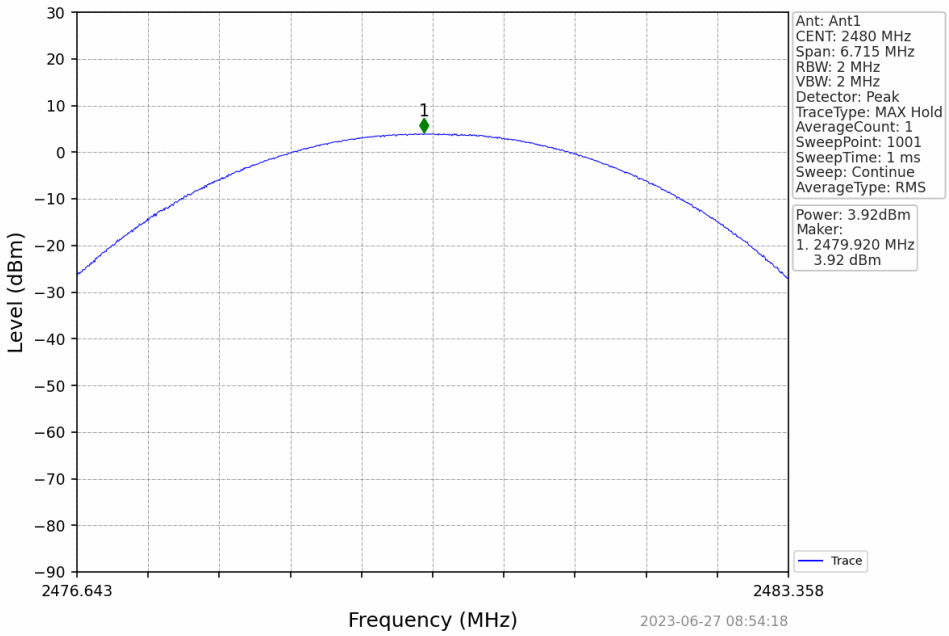


π/4-DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



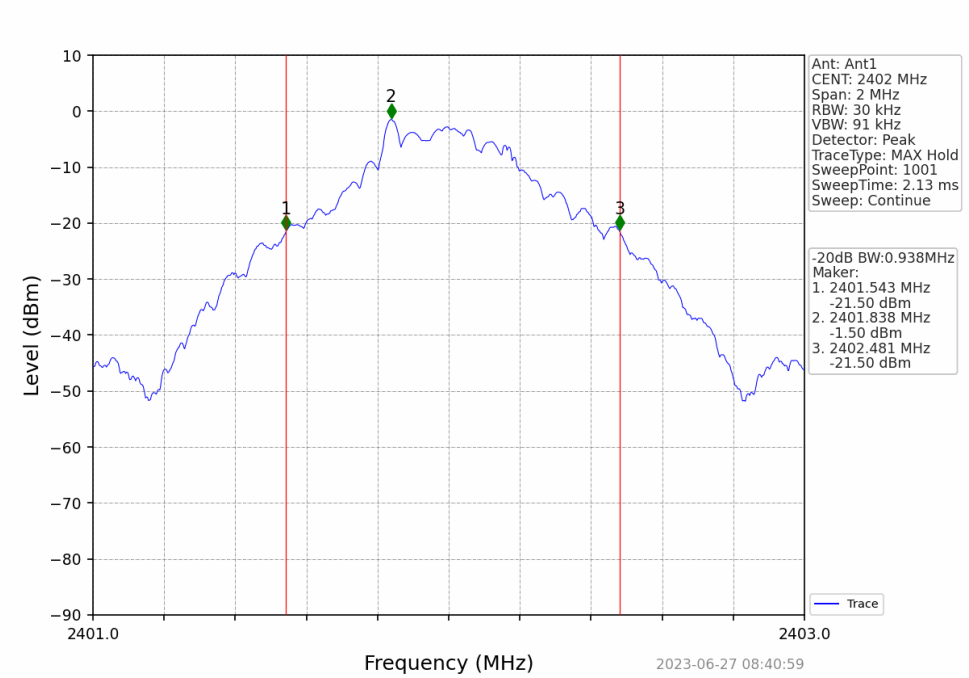
2 20dB Bandwidth

2.1 Test Result

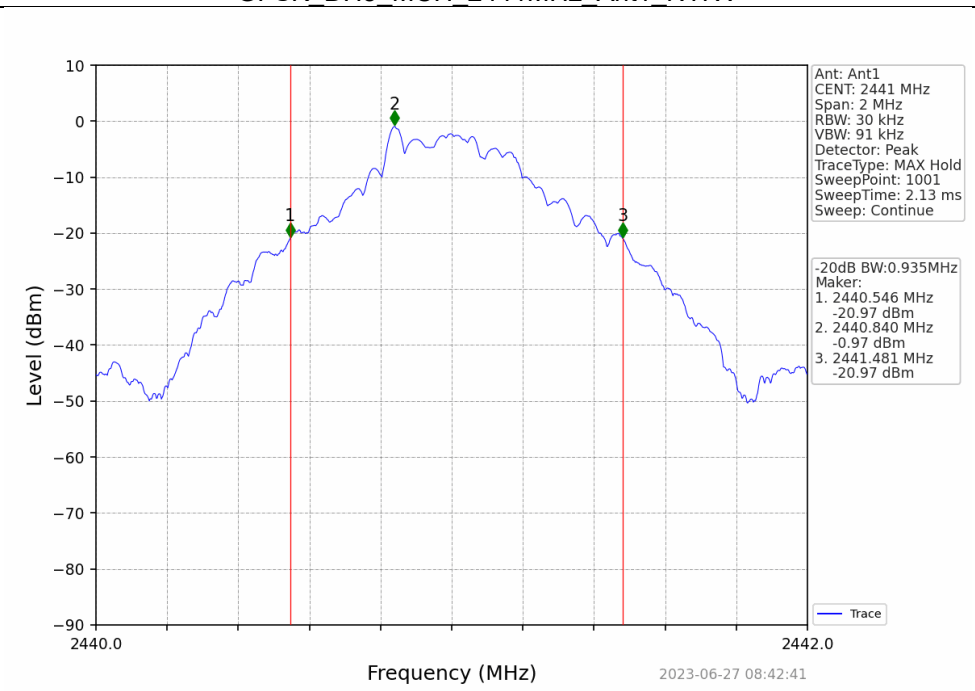
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.938	Not Specified	Pass
	MCH	0.935	Not Specified	Pass
	HCH	0.936	Not Specified	Pass
π/4-DQPSK	LCH	1.338	Not Specified	Pass
	MCH	1.340	Not Specified	Pass
	HCH	1.343	Not Specified	Pass

2.2 Test Graphs

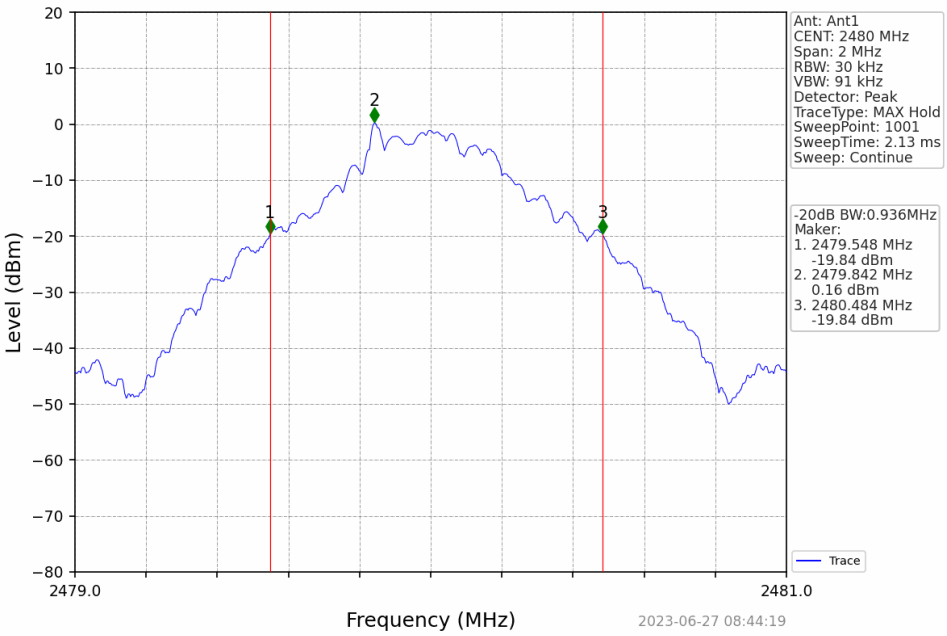
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



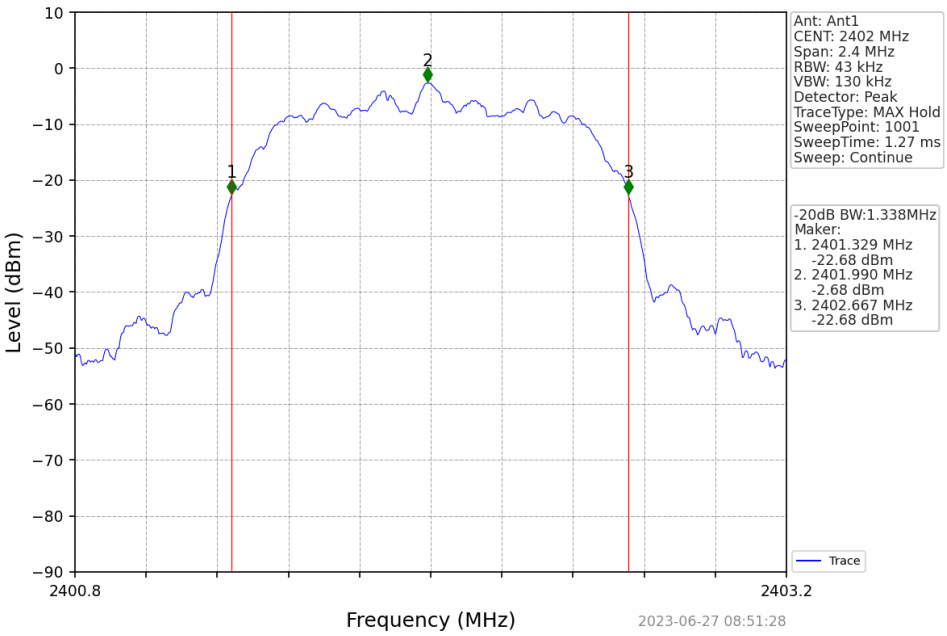
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



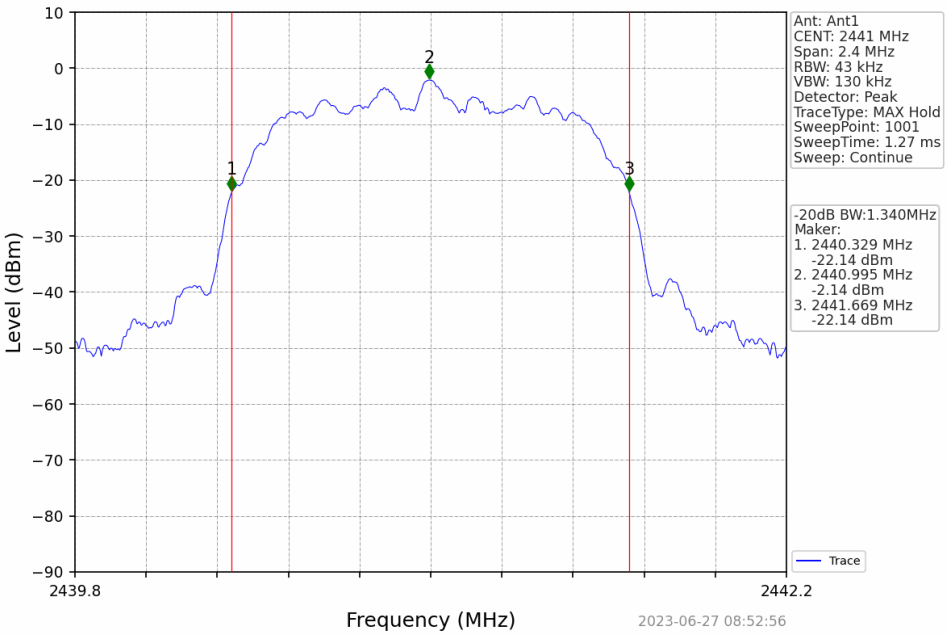
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



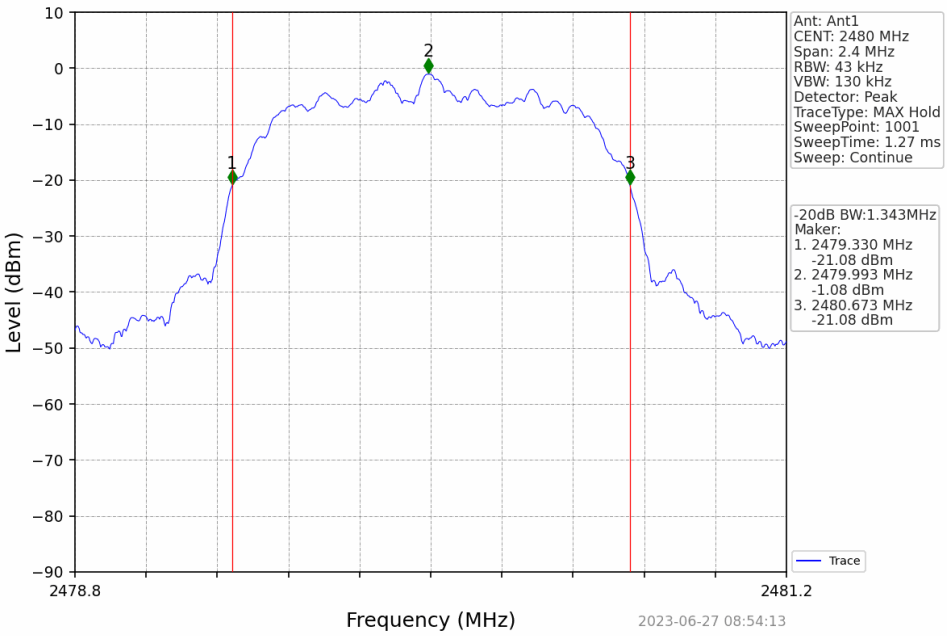
π/4-DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



π/4-DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



π/4-DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



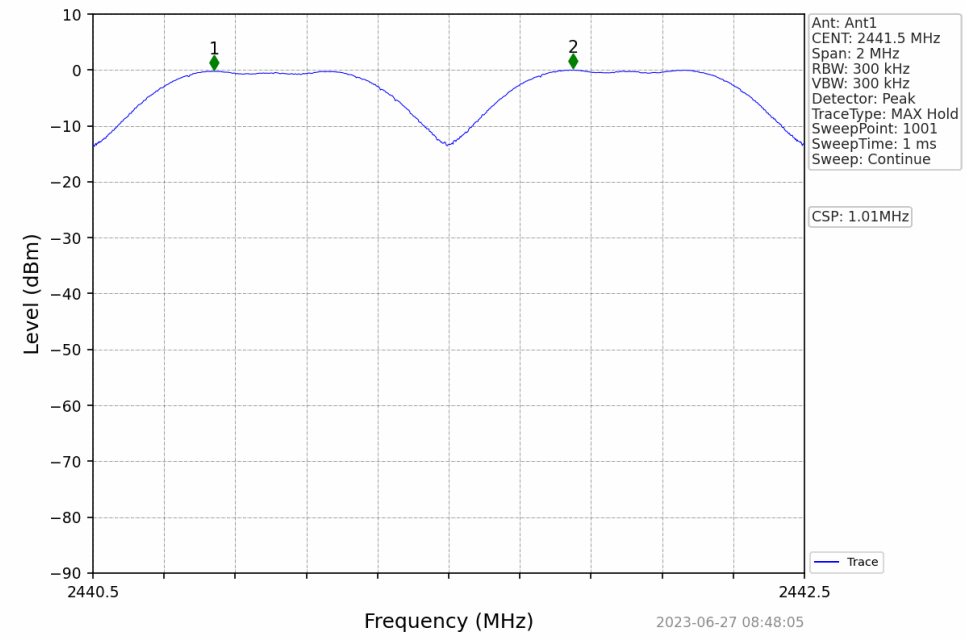
3 Carrier Frequency Separation

3.1 Test Result

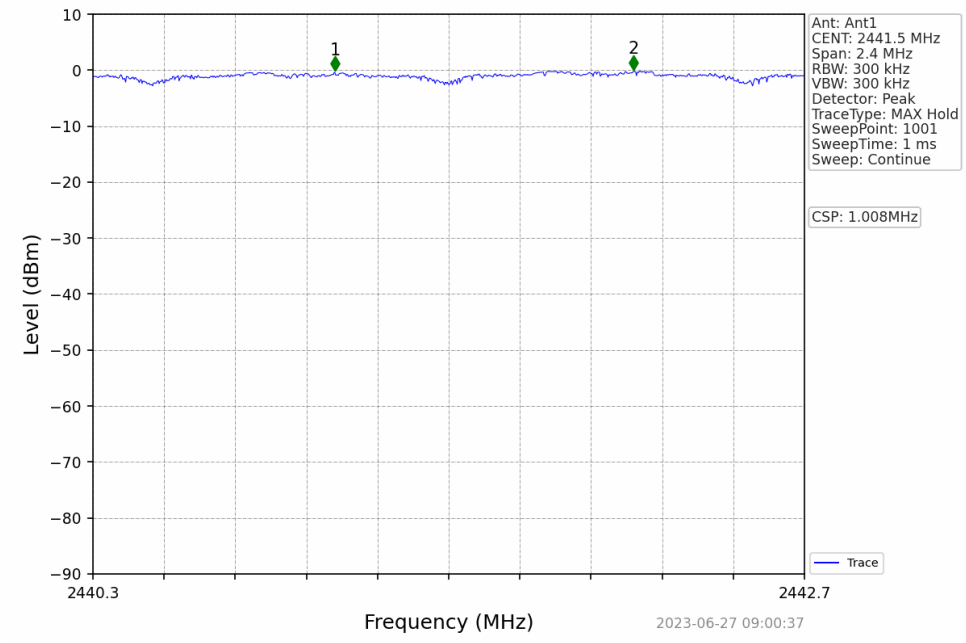
Mode	Channel.	Carrier Frequency Separation [MHz]	20dB Bandwidth (MHz)	Limit [MHz]	Verdict
GFSK	MCH	1.010	0.938	>=0.938	Pass
π/4-DQPSK	MCH	1.008	1.343	>=0.895	Pass

3.2 Test Graphs

GFSK_DH5_HOPP_Ant1_NTNV



π/4-DQPSK_2DH5_HOPP_Ant1_NTNV



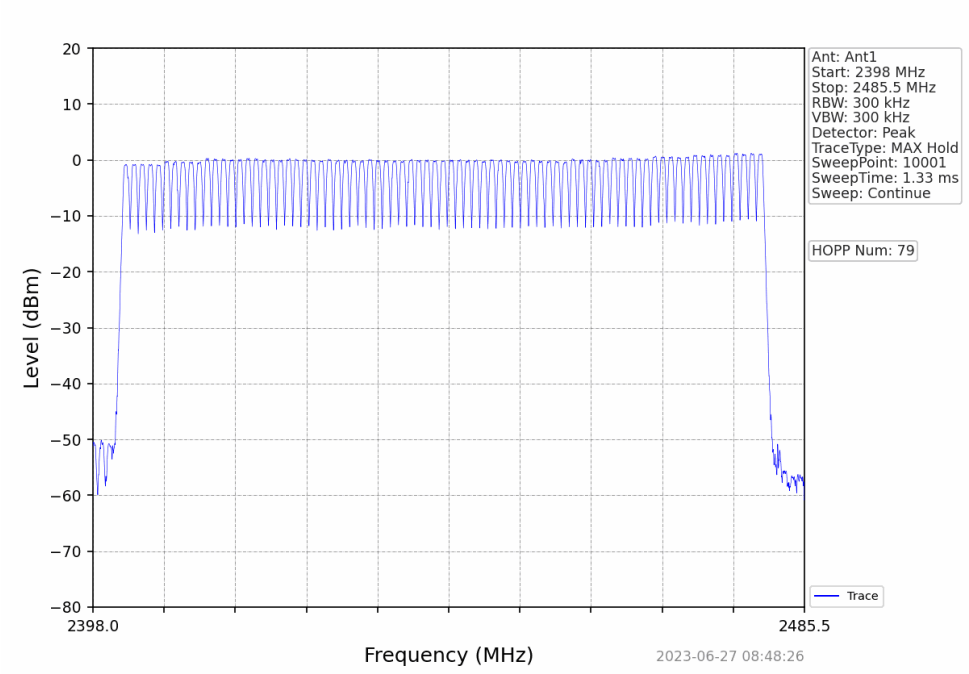
4 Hopping Channel Number

4.1 Test Result

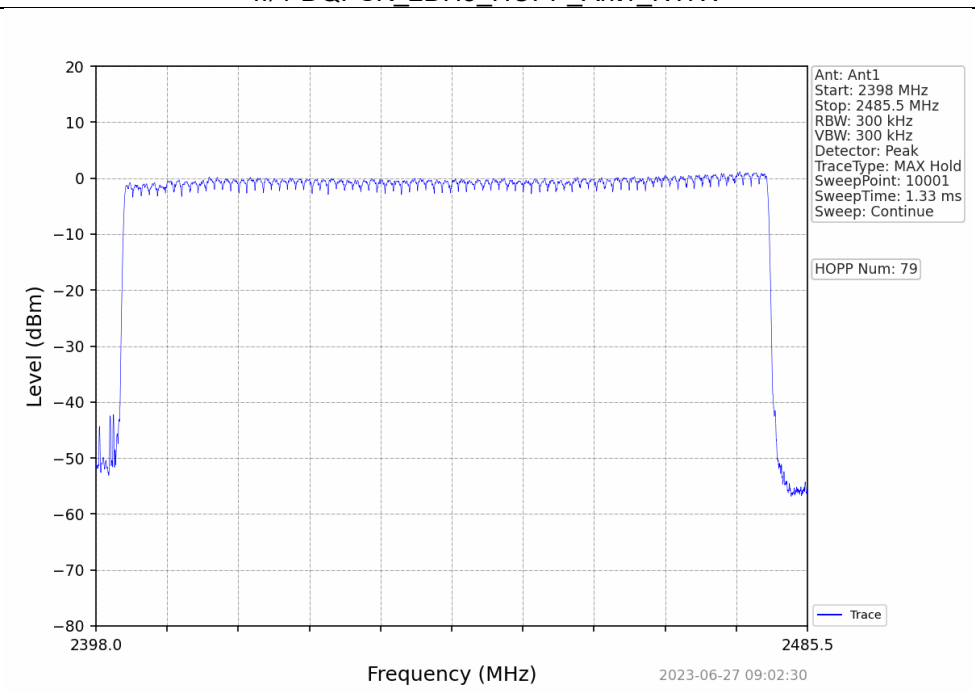
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
π/4-DQPSK	Hop	79	>=15	PASS

4.2 Test Graphs

GFSK_DH5_HOPP_Ant1_NTNV



π/4-DQPSK_2DH5_HOPP_Ant1_NTNV



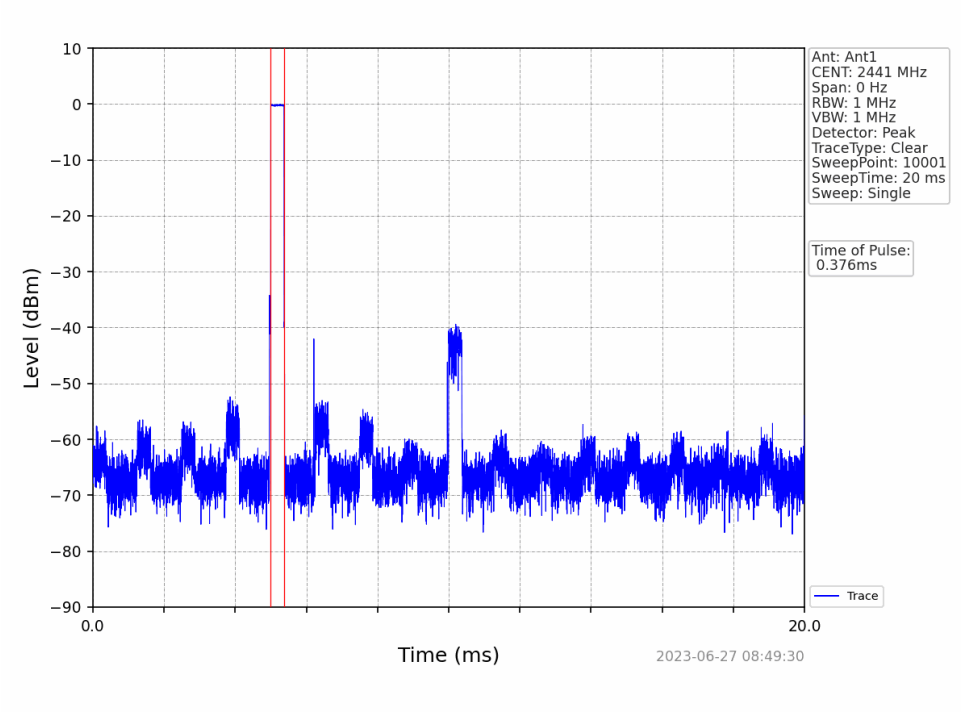
5 Dwell Time

5.1 Test Result

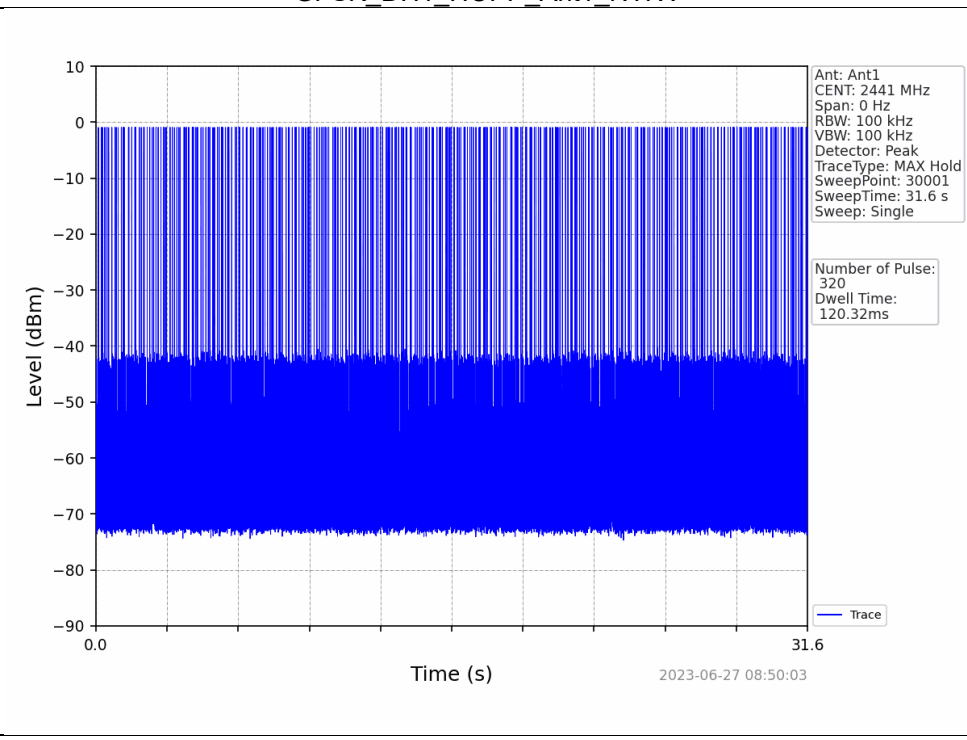
Mode	Packet	Channel	Duration of Single Pulse (ms)	Observation Period (s)	Num of Pulse in Observation Period	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	LCH	0.376	31.600	320	120.320	0.4	Pass
		MCH	1.684	31.600	161	271.124	0.4	Pass
		HCH	2.932	31.600	106	310.792	0.4	Pass
π/4-DQPSK	2DH5	LCH	0.386	31.600	320	123.520	0.4	Pass
		MCH	1.638	31.600	160	262.080	0.4	Pass
		HCH	2.886	31.600	106	305.916	0.4	Pass

5.2 Test Graphs

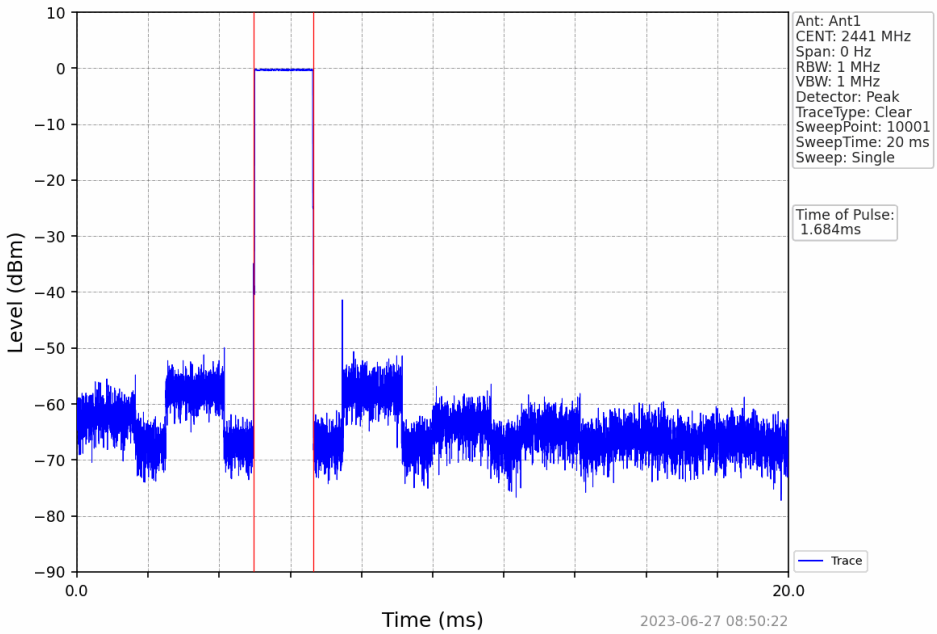
GFSK_DH1_HOPP_Ant1_NTNV



GFSK_DH1_HOPP_Ant1_NTNV



GFSK_DH3_HOPP_Ant1_NTNV



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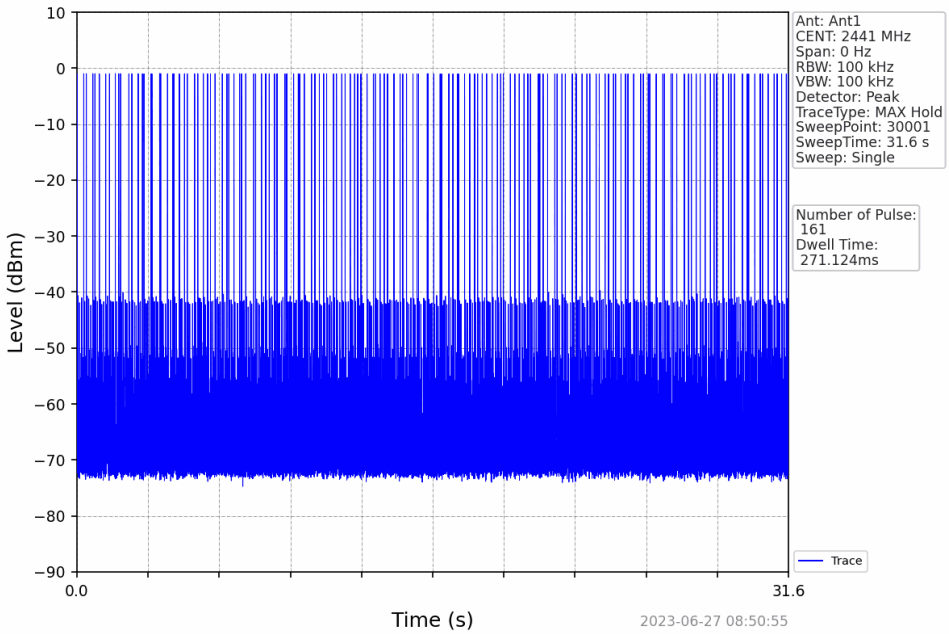
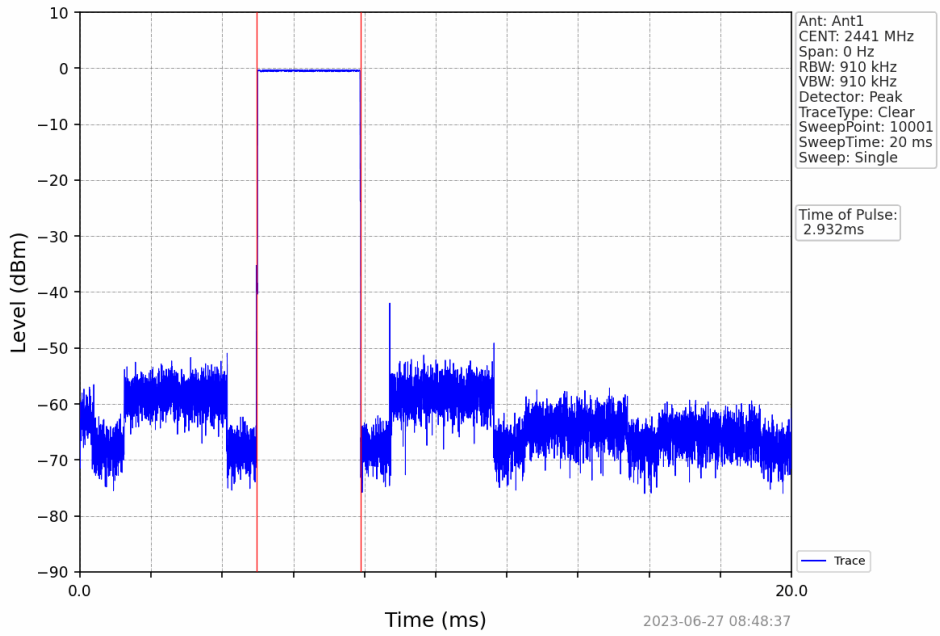
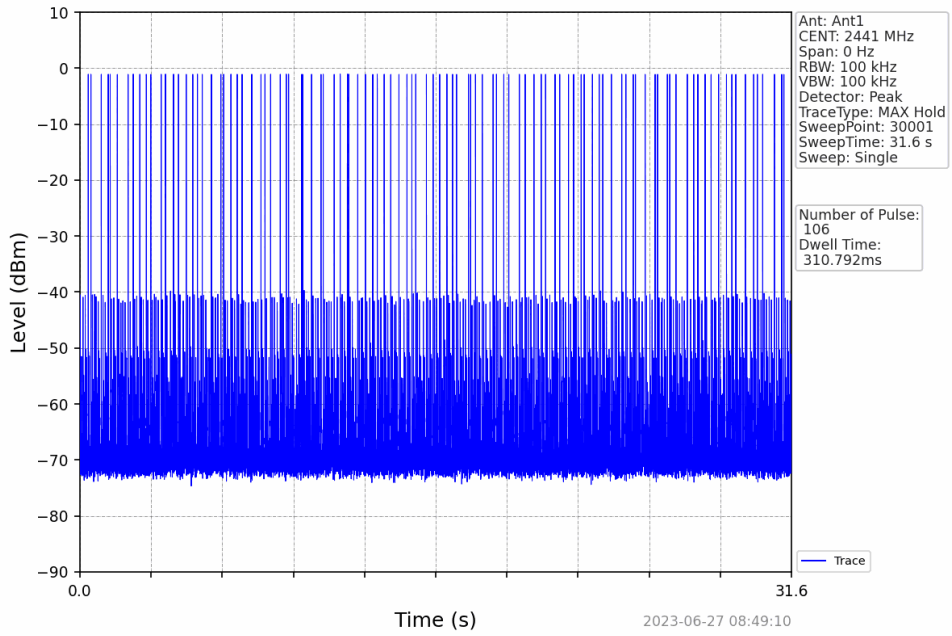


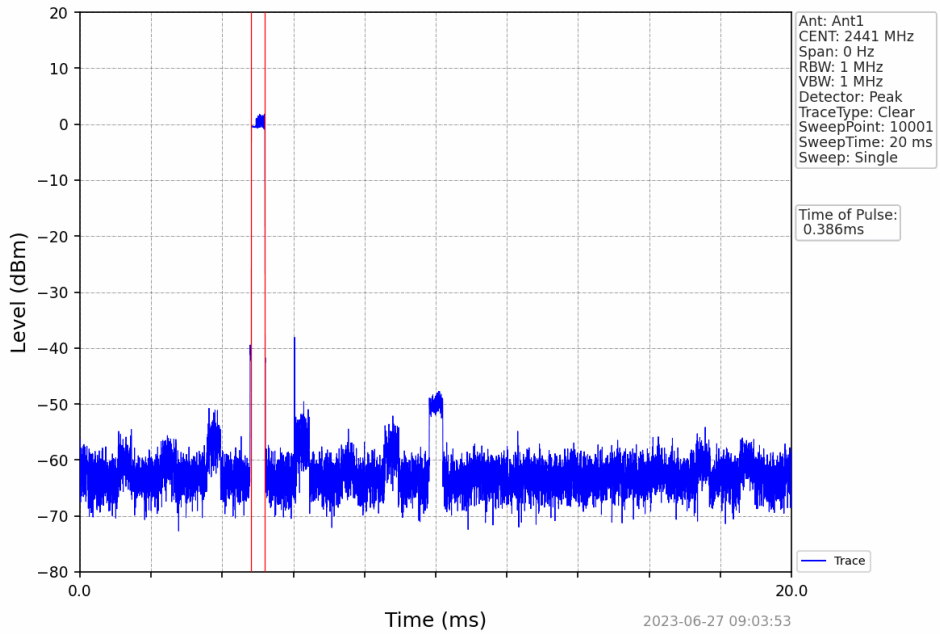
GFSK_DH5_HOPP_Ant1_NTNV



GFSK_DH5_HOPP_Ant1_NTNV



π/4-DQPSK_2DH1_HOPP_Ant1_NTNV



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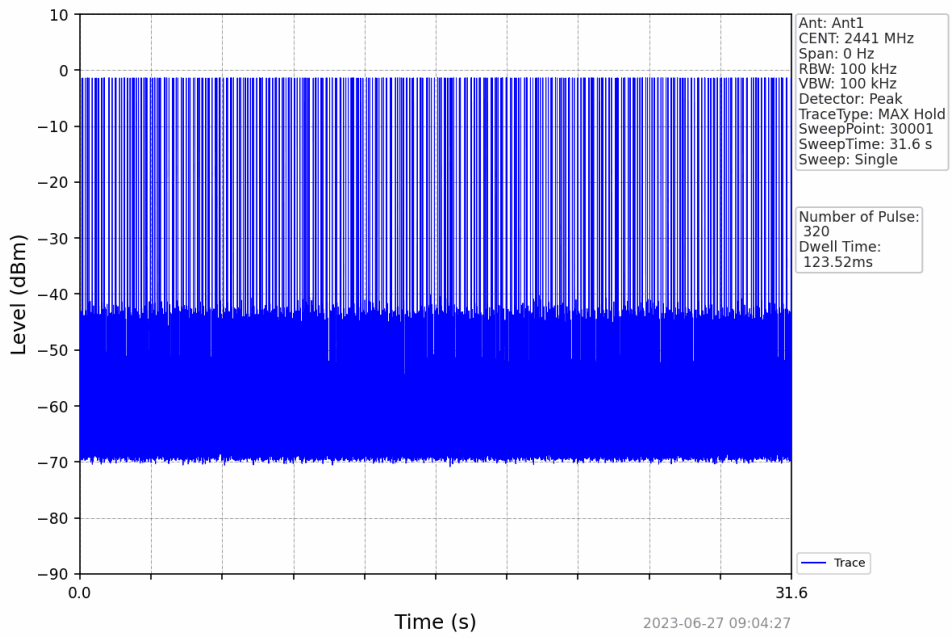

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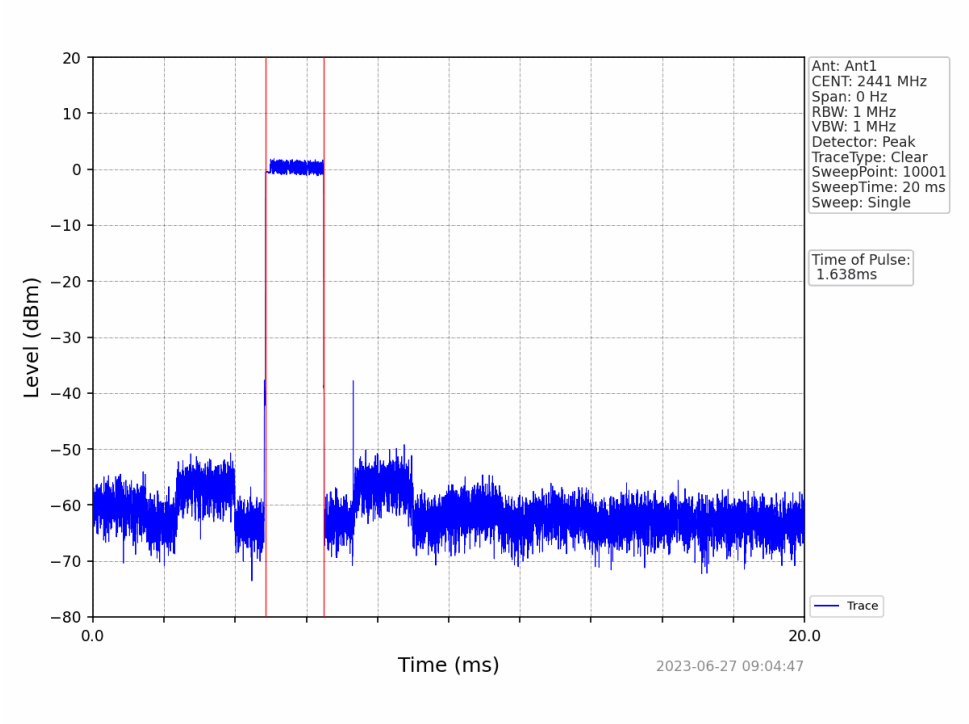

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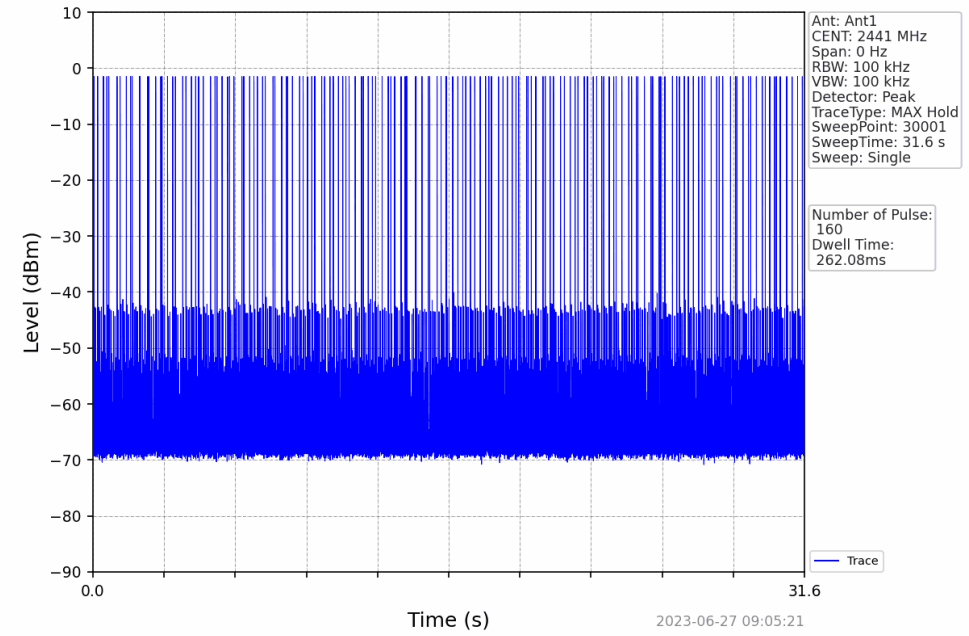

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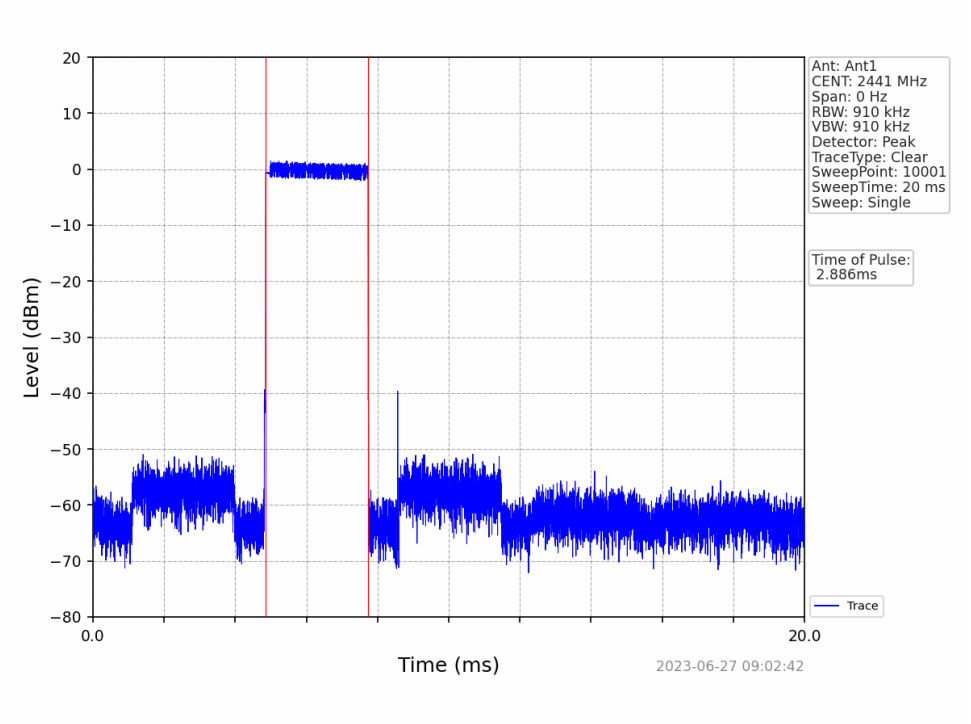

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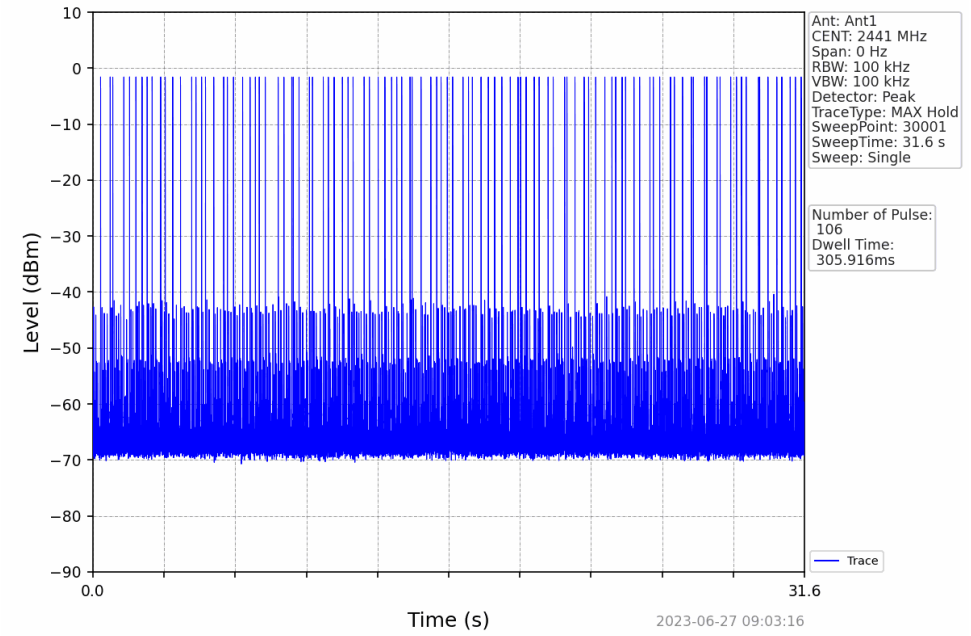


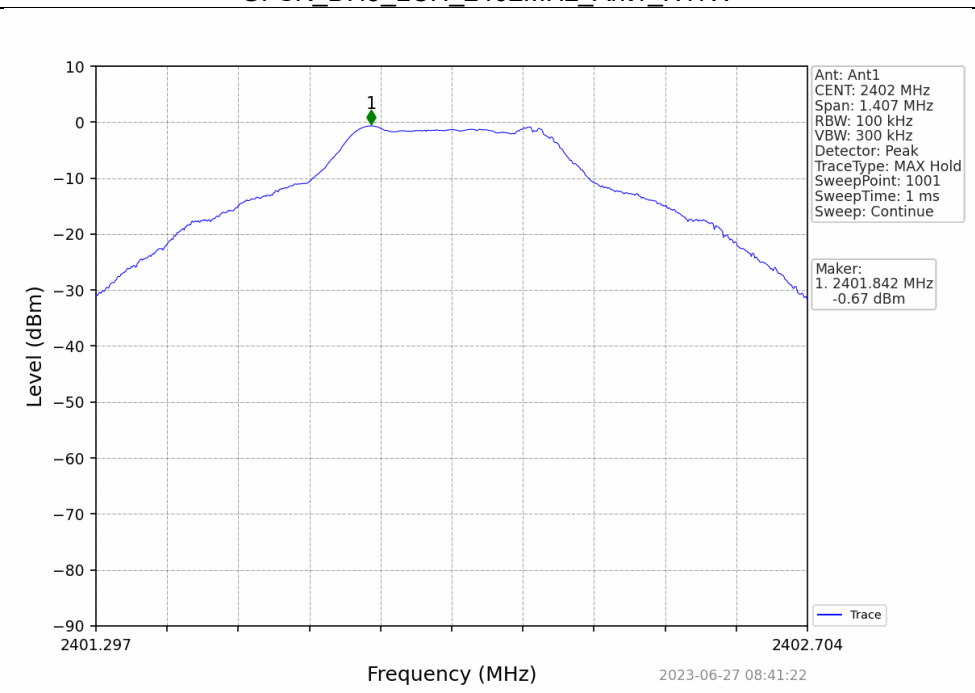
6 Conducted Spurious Emissions and Band Edges Test

6.1 Test Result

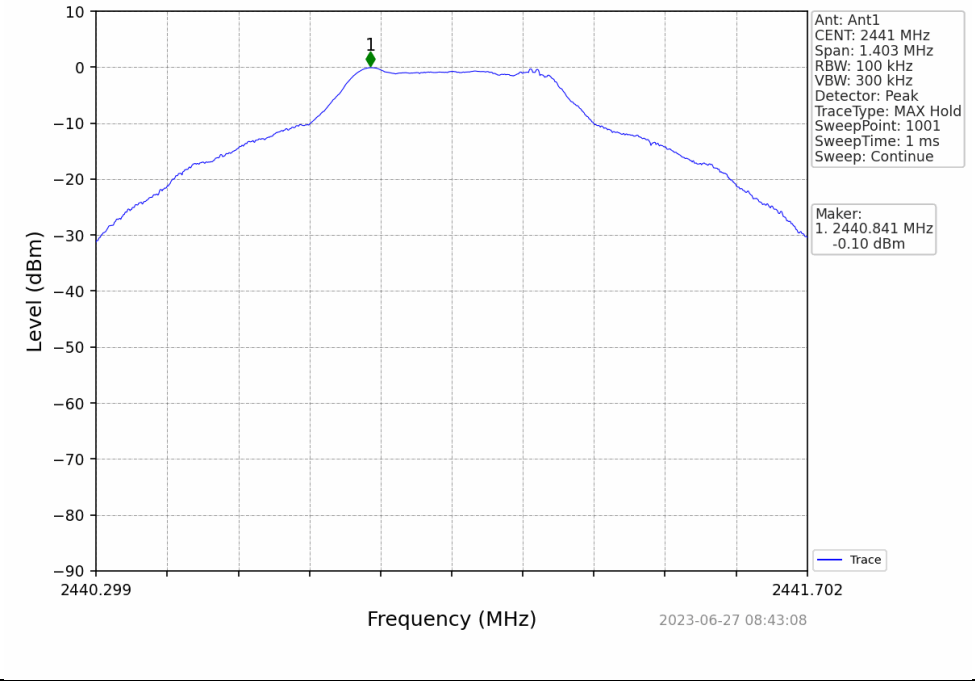
Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-0.67	-20	Pass
	MCH	-0.10	-20	Pass
	HCH	0.98	-20	Pass
π/4-DQPSK	LCH	-1.10	-20	Pass
	MCH	-0.45	-20	Pass
	HCH	0.80	-20	Pass

6.2 Test Graphs

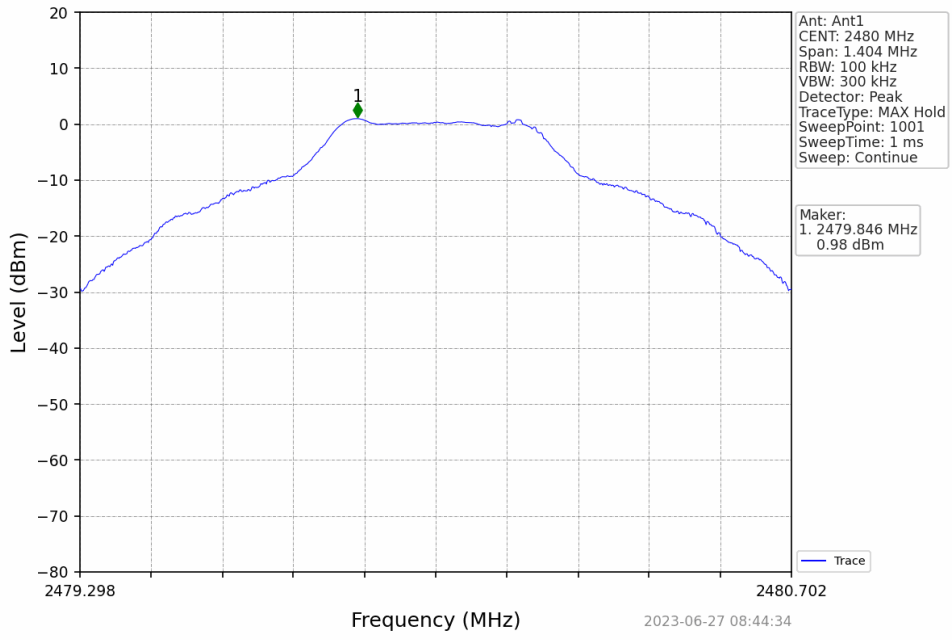
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



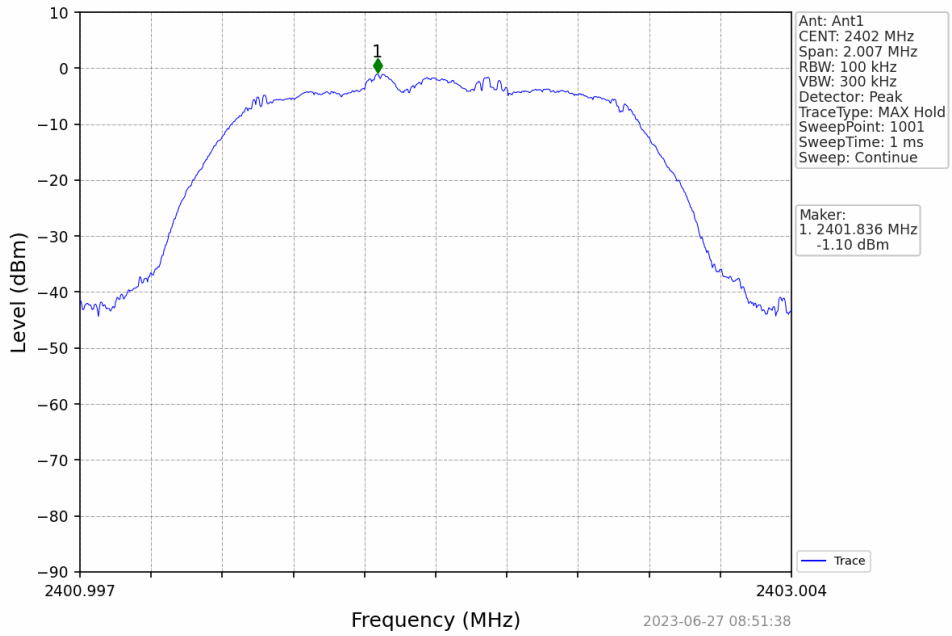
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



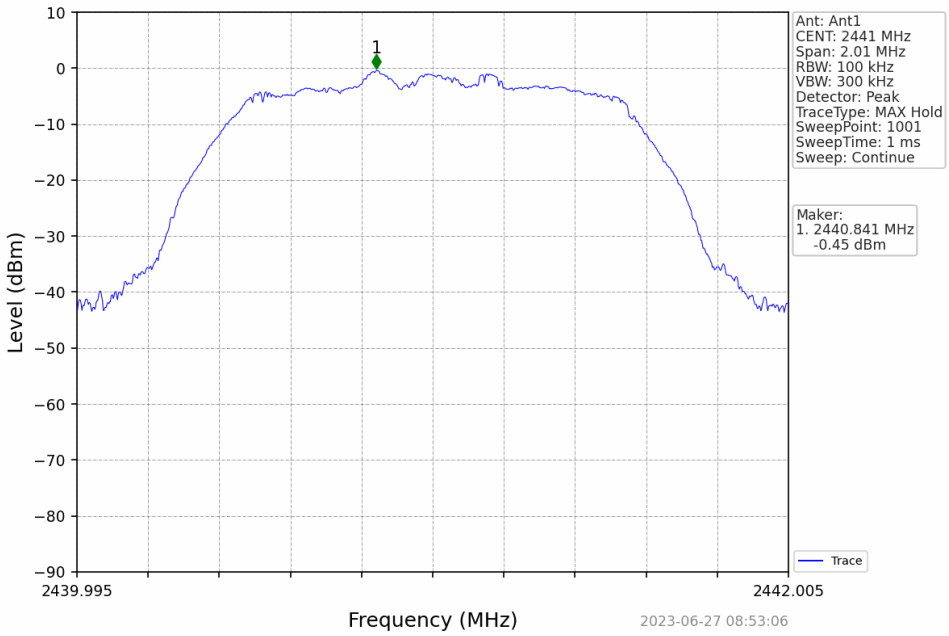
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



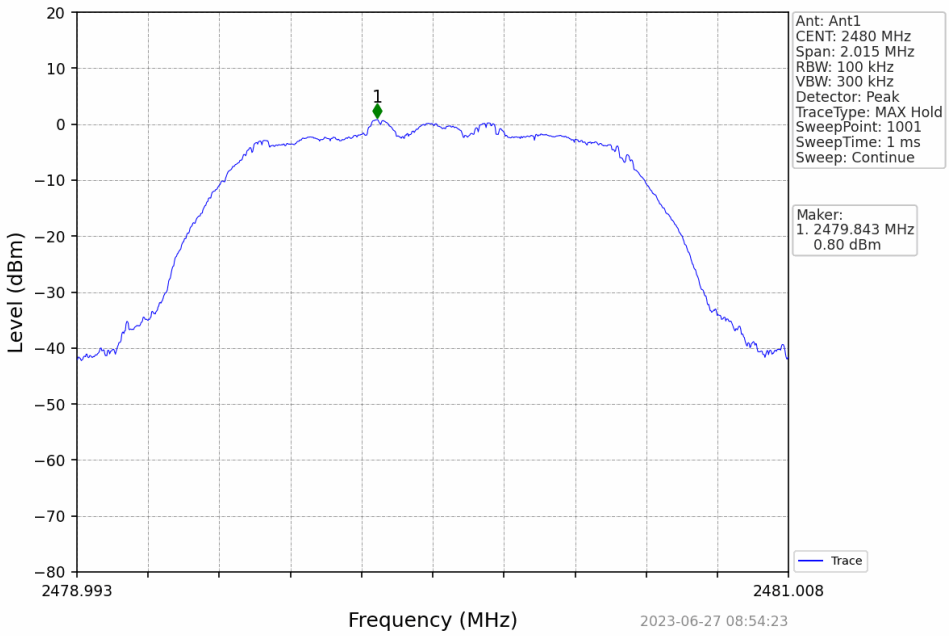
π/4-DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



π/4-DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



π/4-DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

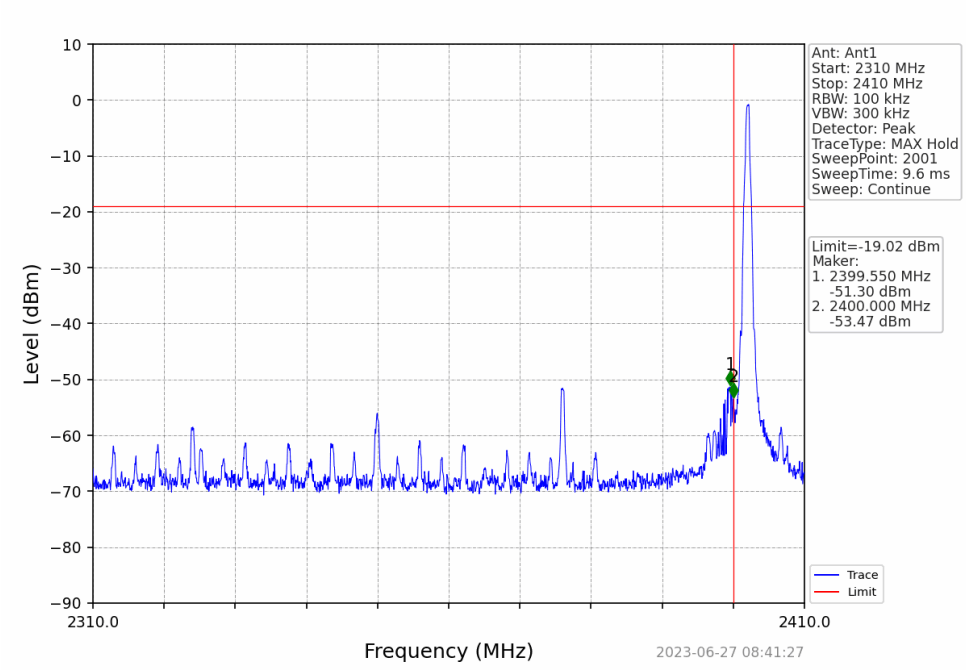


6.3 Conducted Spurious Emission

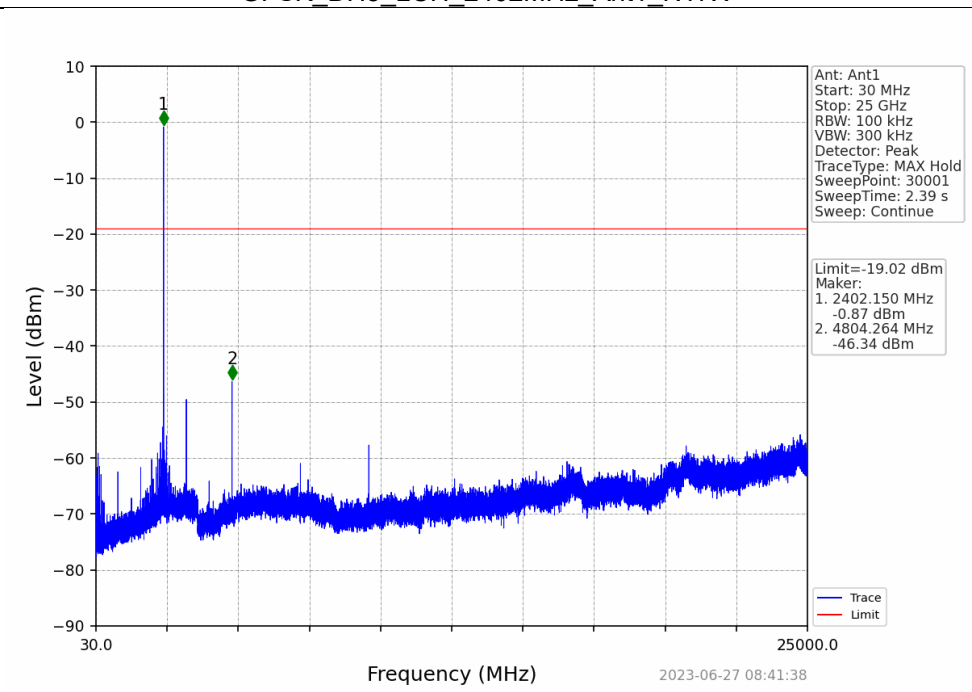
Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	0.98	-19.02	Pass
	MCH	22440	On	0.98	-19.02	Pass
	HCH	2480	Off	0.98	-19.02	Pass
	HCH	HOPP	On	0.98	-19.02	Pass
π/4-DQPSK	LCH	2402	Off	0.80	-19.20	Pass
	MCH	22440	On	0.80	-19.20	Pass
	HCH	2480	Off	0.80	-19.20	Pass
	HCH	HOPP	On	0.80	-19.20	Pass

6.4 Test Graphs

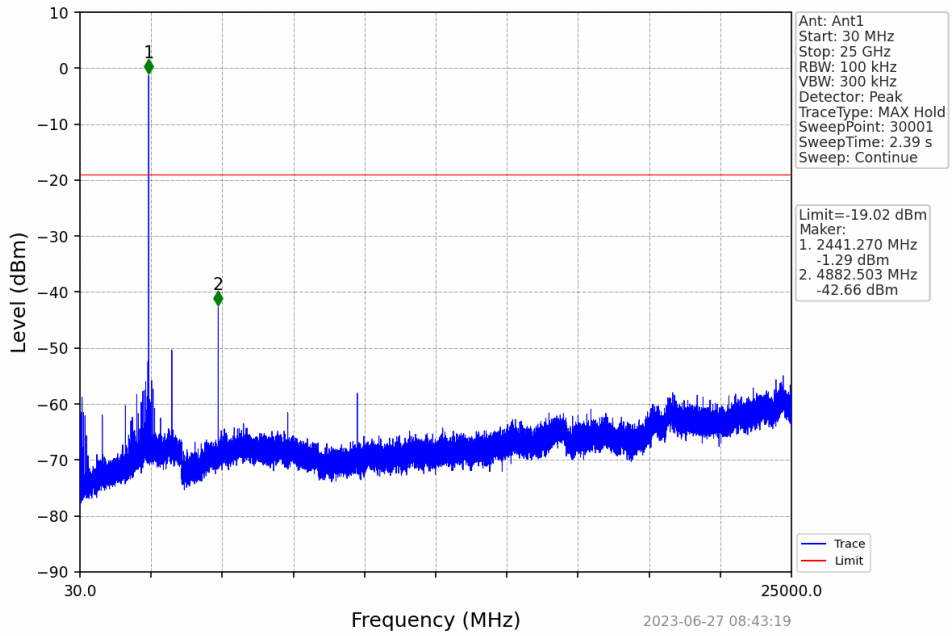
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



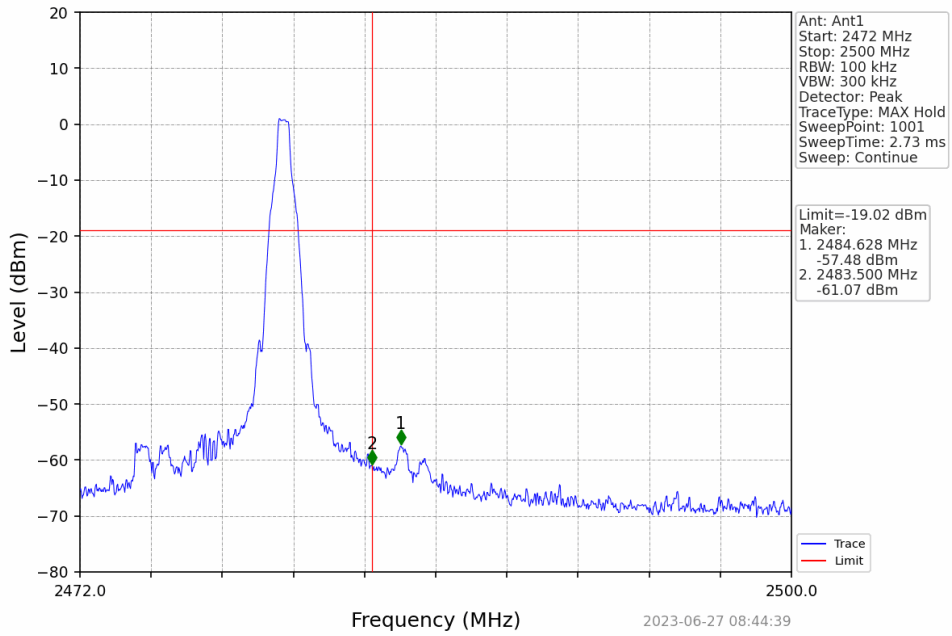
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



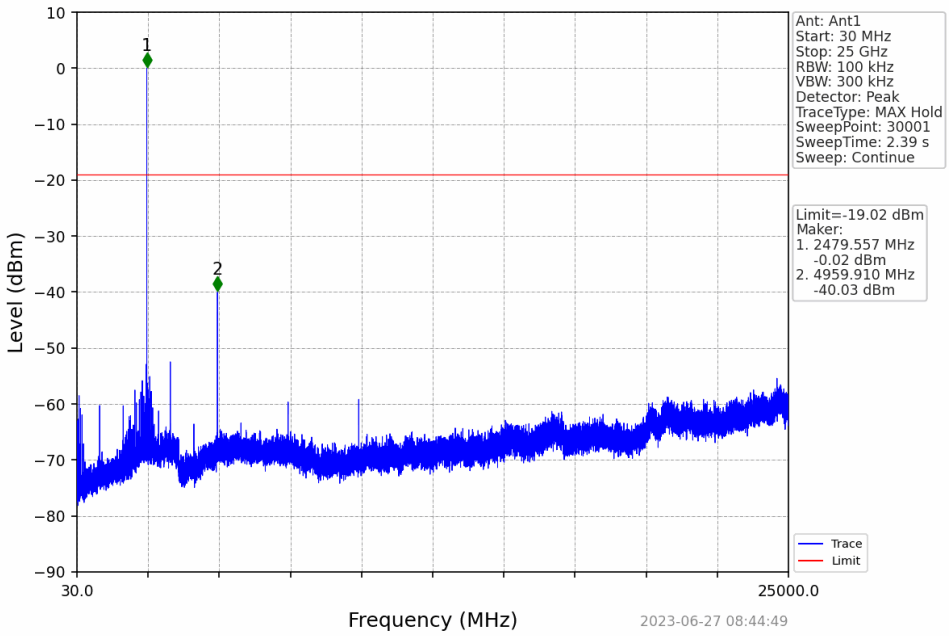
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



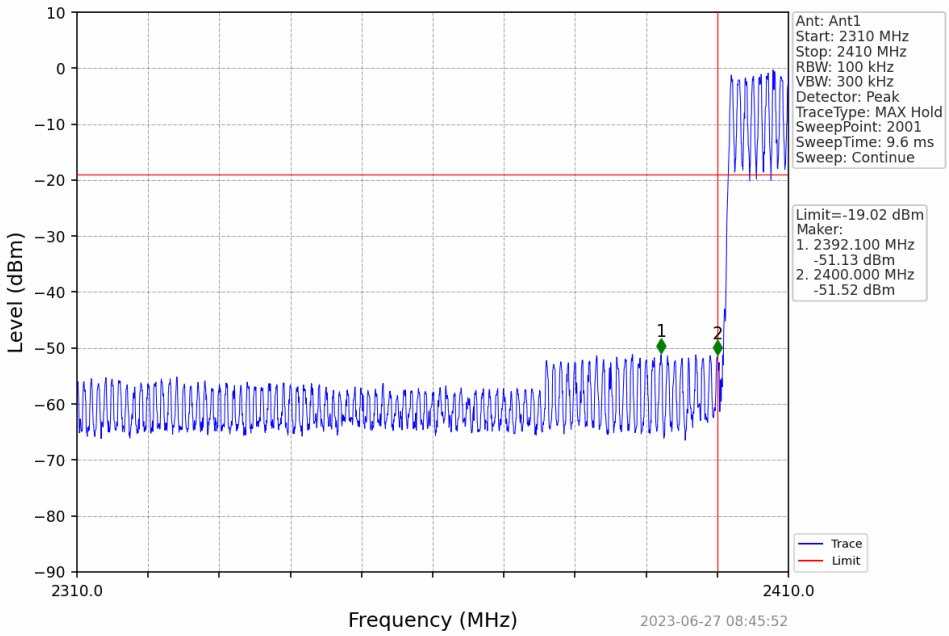
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



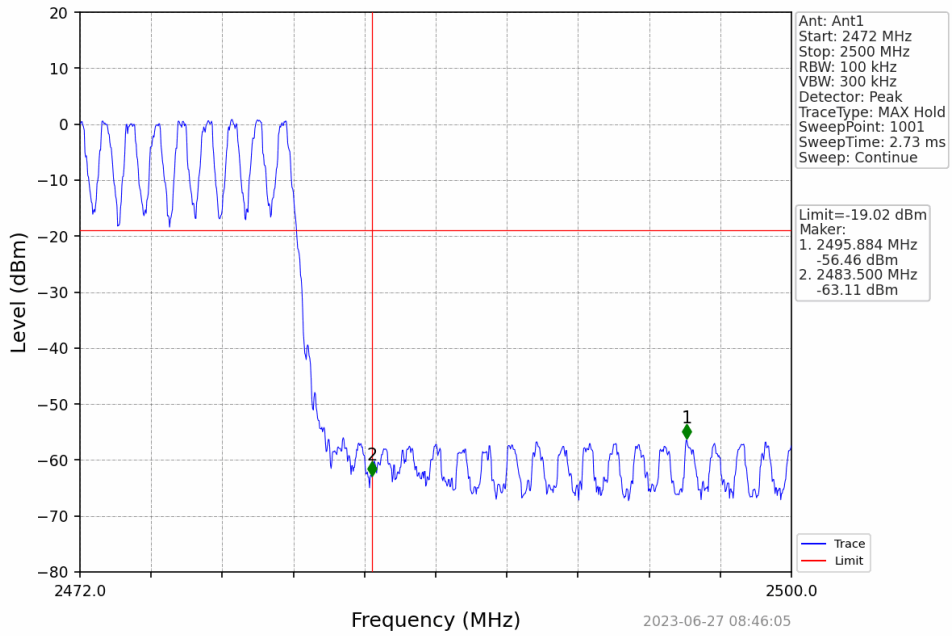
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



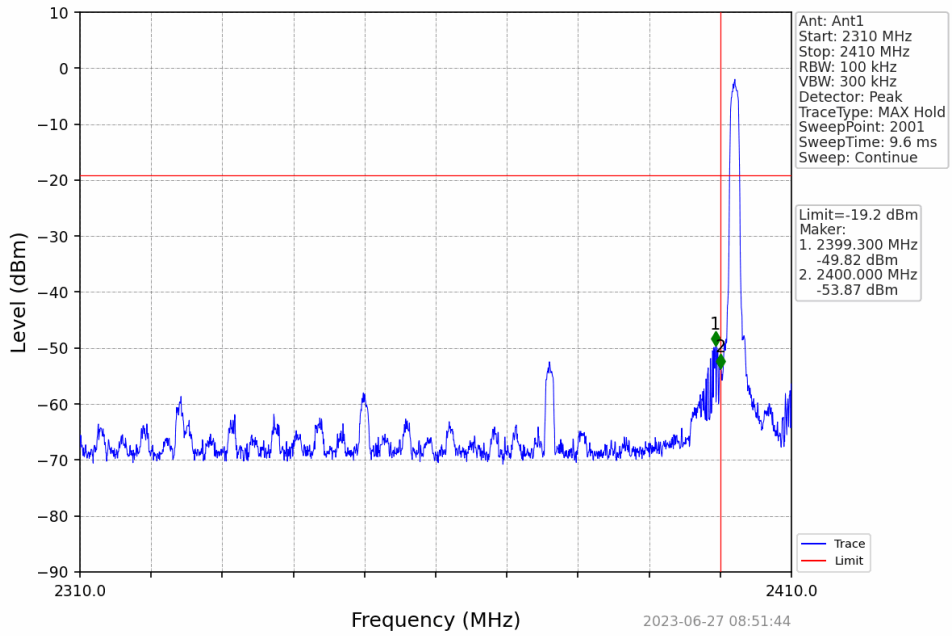
GFSK_DH5_HOPP_Ant1_NTNV



GFSK_DH5_HOPP_Ant1_NTNV



π/4-DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



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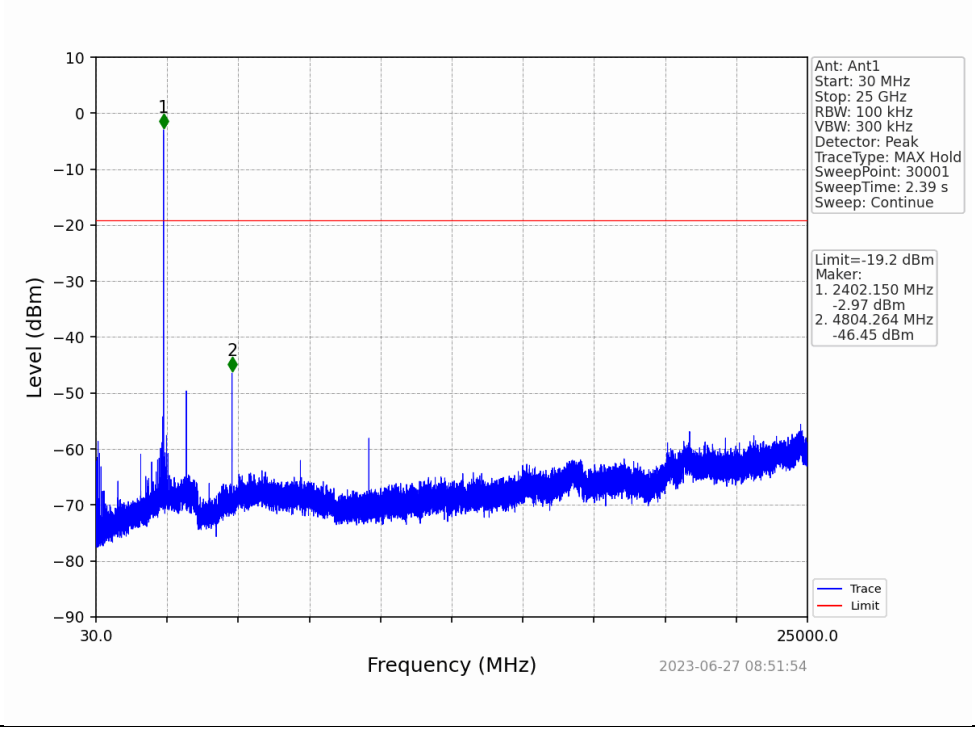

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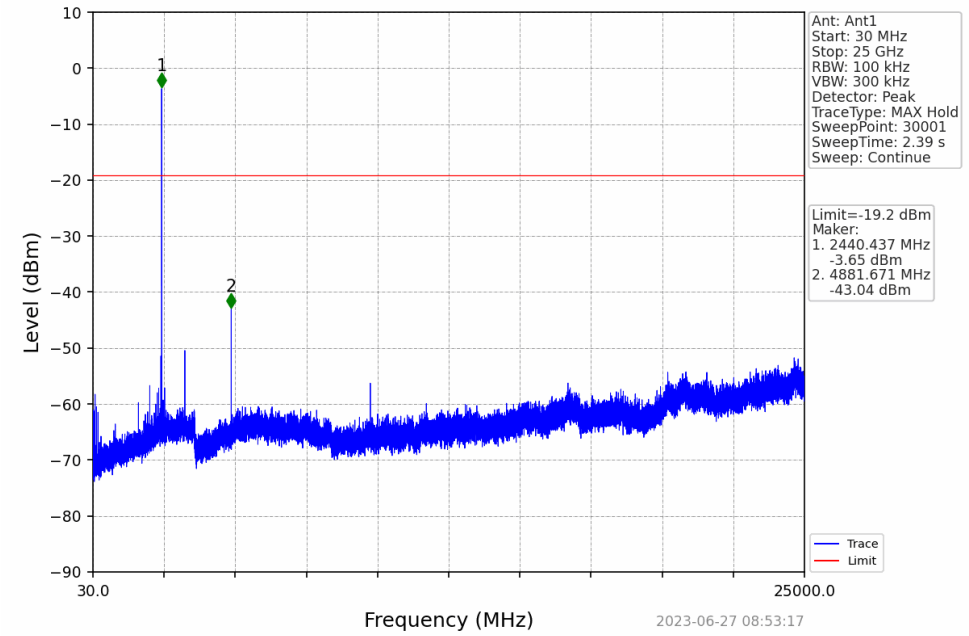

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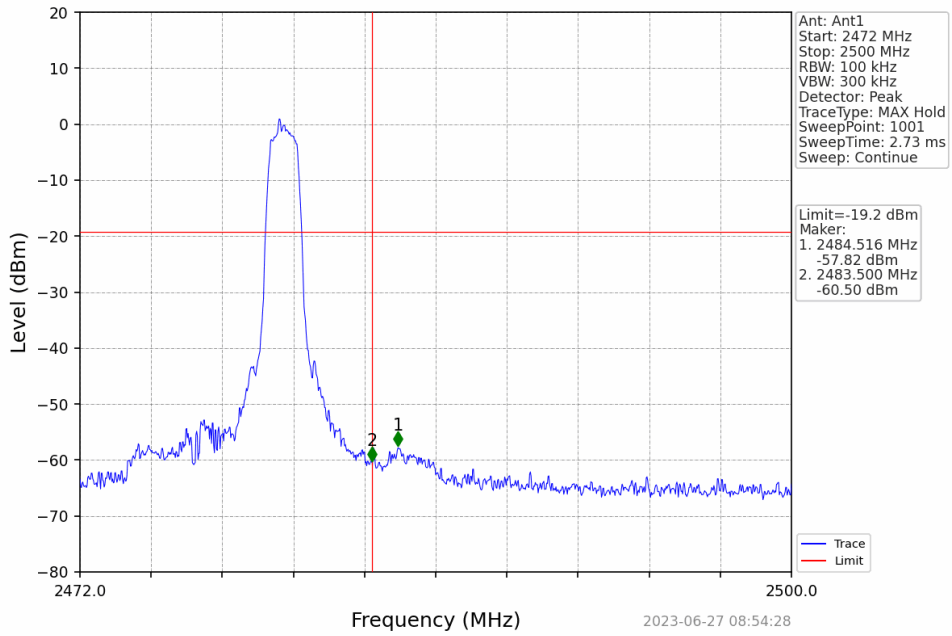

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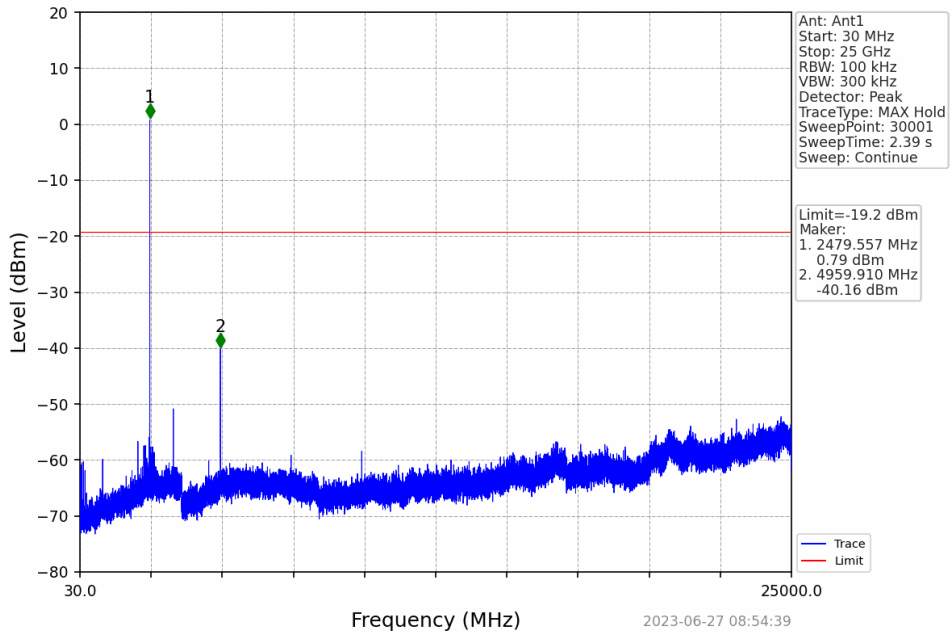

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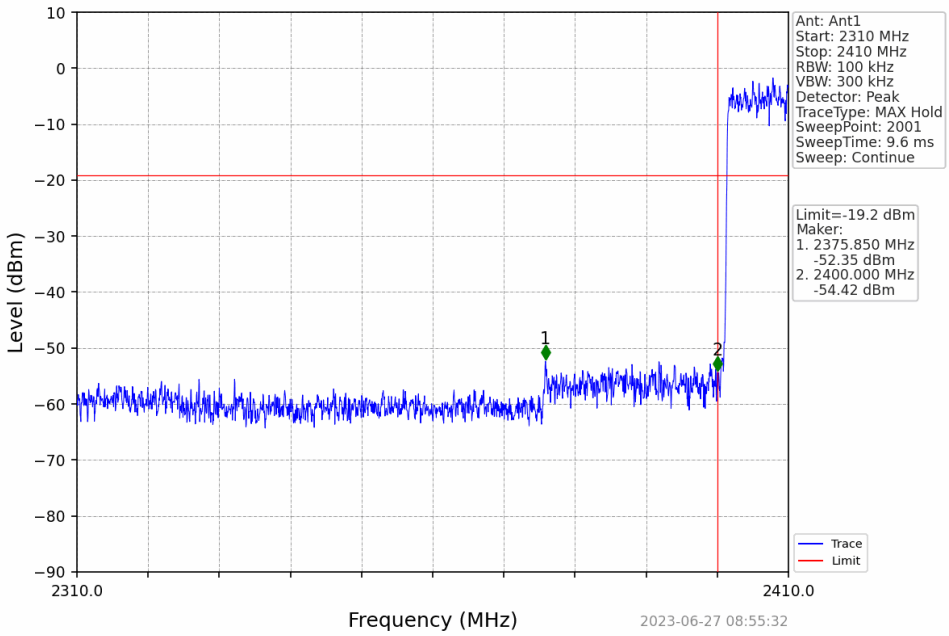

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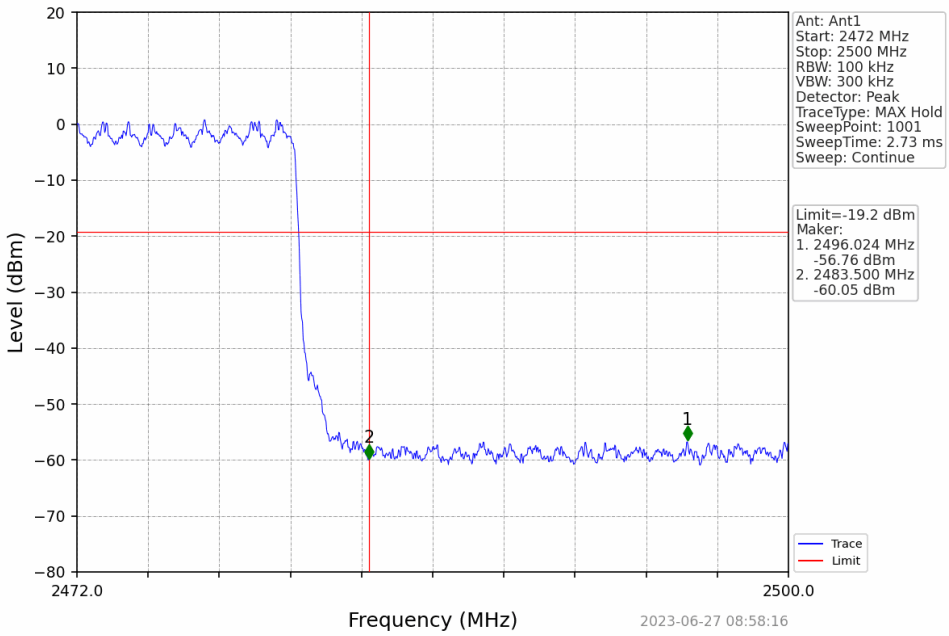

7 Restrict-band Band-edge Test

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)	Detector Type	Result
Low Channel: 2402MHz										
H	2390.00	46.01	29.15	3.41	34.01	44.56	74.00	-29.44	PK	PASS
H	2400.00	63.25	29.16	3.43	34.01	61.83	74.00	-12.17	PK	PASS
V	2390.00	46.86	29.15	3.41	34.01	45.41	74.00	-28.59	PK	PASS
V	2400.00	65.62	29.16	3.43	34.01	64.20	74.00	-9.80	PK	PASS
H	2390.00	35.86	29.15	3.41	34.01	34.41	54.00	-19.59	AV	PASS
H	2400.00	47.28	29.16	3.43	34.01	45.86	54.00	-8.14	AV	PASS
V	2390.00	36.02	29.15	3.41	34.01	34.57	54.00	-19.43	AV	PASS
V	2400.00	49.23	29.16	3.43	34.01	47.81	54.00	-6.19	AV	PASS
High Channel: 2480MHz										
H	2483.50	48.49	29.28	3.53	34.03	47.27	74.00	-26.73	PK	PASS
H	2500.00	47.07	29.30	3.56	34.03	45.90	74.00	-28.10	PK	PASS
V	2483.50	49.86	29.28	3.53	34.03	48.64	74.00	-25.36	PK	PASS
V	2500.00	48.36	29.30	3.56	34.03	47.19	74.00	-26.81	PK	PASS
H	2483.50	38.72	29.28	3.53	34.03	37.50	54.00	-16.50	AV	PASS
H	2500.00	36.27	29.30	3.56	34.03	35.10	54.00	-18.90	AV	PASS
V	2483.50	40.19	29.28	3.53	34.03	38.97	54.00	-15.03	AV	PASS
V	2500.00	36.46	29.30	3.56	34.03	35.29	54.00	-18.71	AV	PASS

Test Mode: π/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)	Detector Type	Result
Low Channel: 2402MHz										
H	2390.00	46.14	29.15	3.41	34.01	44.69	74.00	-29.31	PK	PASS
H	2400.00	63.40	29.16	3.43	34.01	61.98	74.00	-12.02	PK	PASS
V	2390.00	47.00	29.15	3.41	34.01	45.55	74.00	-28.45	PK	PASS
V	2400.00	65.78	29.16	3.43	34.01	64.36	74.00	-9.64	PK	PASS
H	2390.00	35.95	29.15	3.41	34.01	34.50	54.00	-19.50	AV	PASS
H	2400.00	47.38	29.16	3.43	34.01	45.96	54.00	-8.04	AV	PASS
V	2390.00	36.13	29.15	3.41	34.01	34.68	54.00	-19.32	AV	PASS
V	2400.00	49.34	29.16	3.43	34.01	47.92	54.00	-6.08	AV	PASS
High Channel: 2480MHz										
H	2483.50	48.63	29.28	3.53	34.03	47.41	74.00	-26.59	PK	PASS
H	2500.00	47.18	29.30	3.56	34.03	46.01	74.00	-27.99	PK	PASS
V	2483.50	50.02	29.28	3.53	34.03	48.80	74.00	-25.20	PK	PASS
V	2500.00	48.49	29.30	3.56	34.03	47.32	74.00	-26.68	PK	PASS
H	2483.50	38.82	29.28	3.53	34.03	37.60	54.00	-16.40	AV	PASS
H	2500.00	36.35	29.30	3.56	34.03	35.18	54.00	-18.82	AV	PASS
V	2483.50	40.30	29.28	3.53	34.03	39.08	54.00	-14.92	AV	PASS
V	2500.00	36.55	29.30	3.56	34.03	35.38	54.00	-18.62	AV	PASS

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

.....End.....