



Appendix for 15.247

Product Name: Bluetooth Speaker

Test Model: Pyle PCLSB1BK

1. Bandwidth

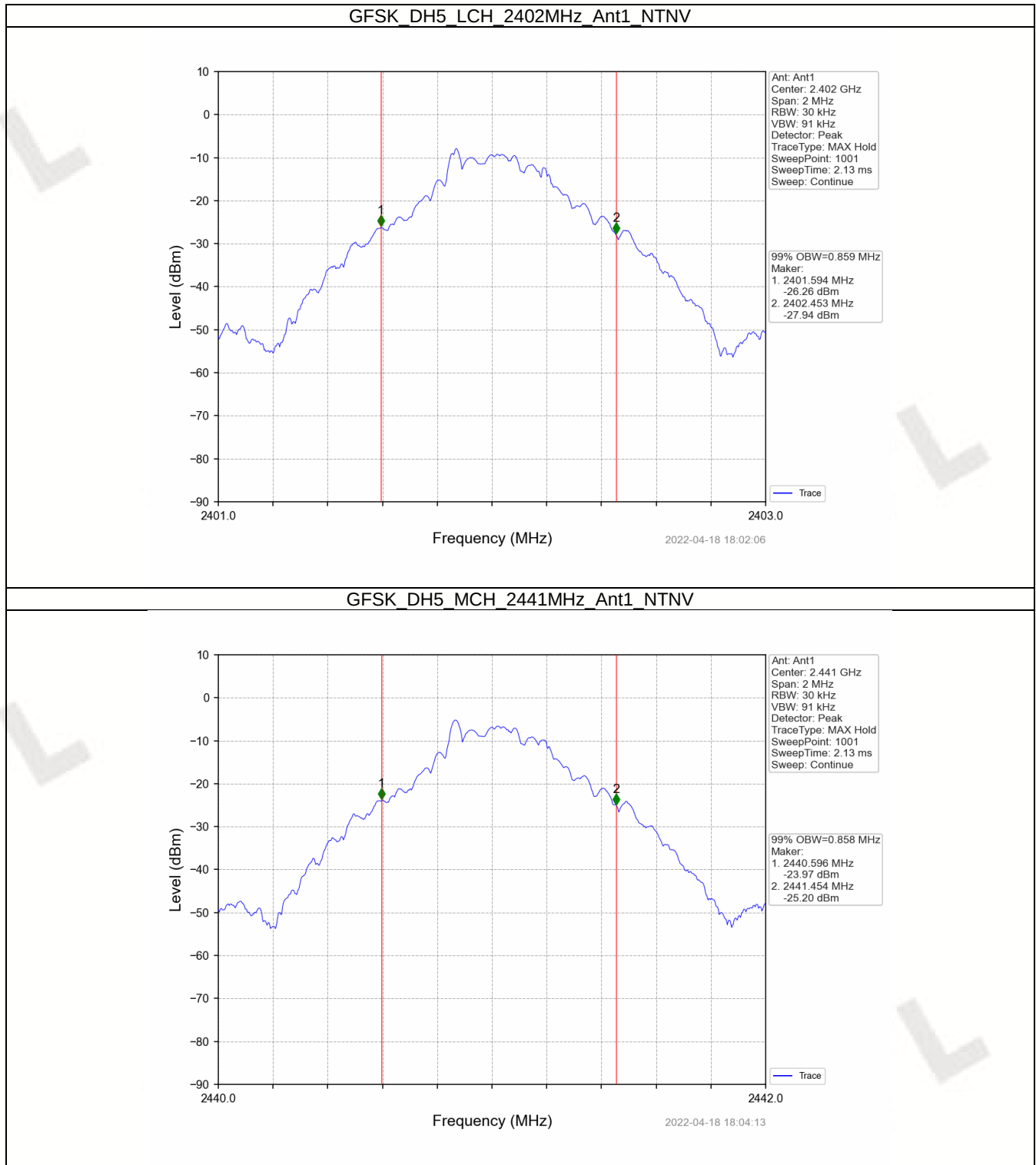
1.1 OBW

1.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	99% Occupied Bandwidth (MHz)	Verdict
					Result	
GFSK	SISO	2402	DH5	1	0.859	Pass
		2441	DH5	1	0.858	Pass
		2480	DH5	1	0.857	Pass
PI/4DQPSK	SISO	2402	2DH5	1	1.188	Pass
		2441	2DH5	1	1.186	Pass
		2480	2DH5	1	1.186	Pass
8DPSK	SISO	2402	3DH5	1	1.183	Pass
		2441	3DH5	1	1.182	Pass
		2480	3DH5	1	1.183	Pass

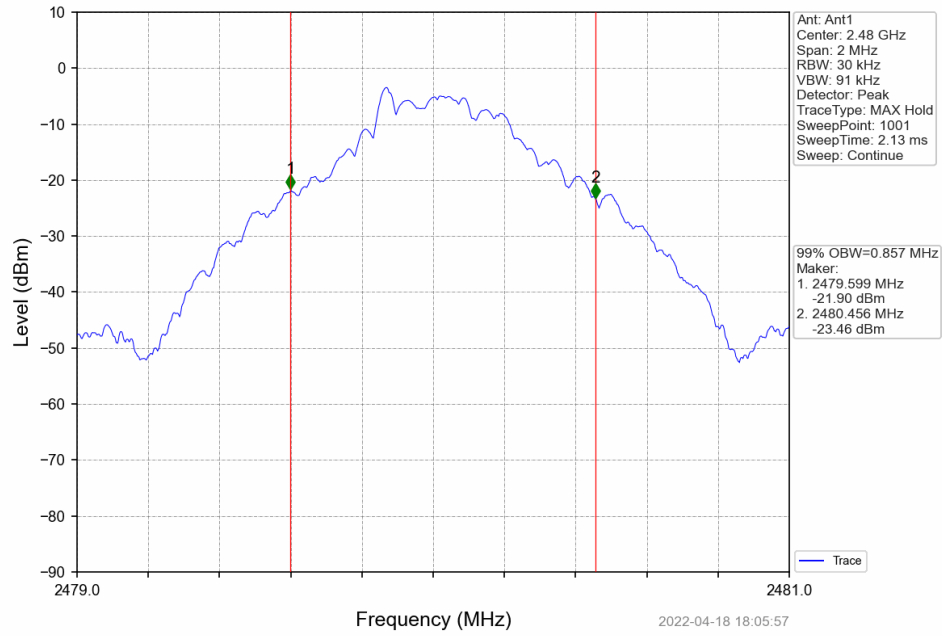


1.1.2 Test Graph

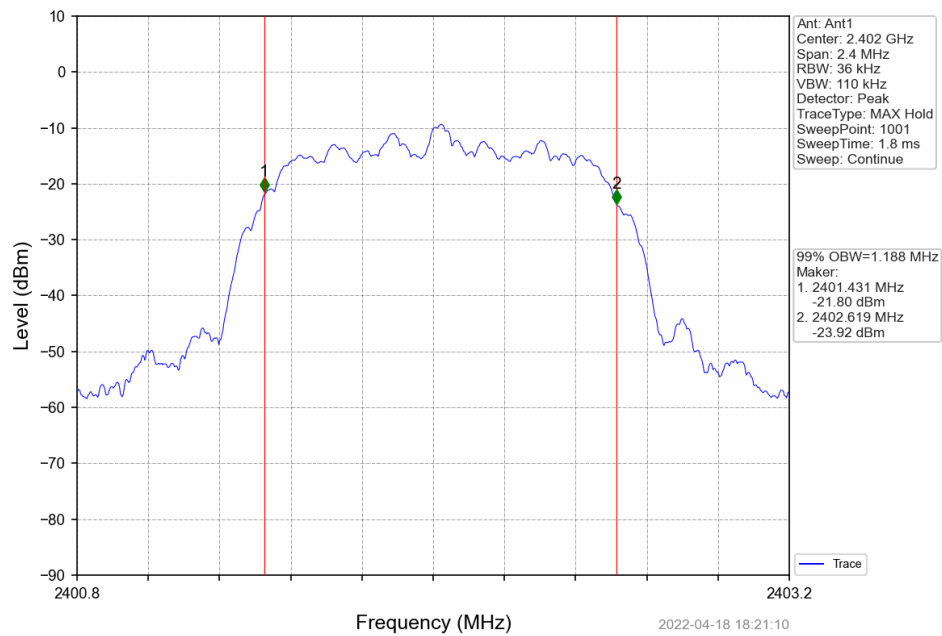




GFSK DH5 HCH 2480MHz Ant1 NTN

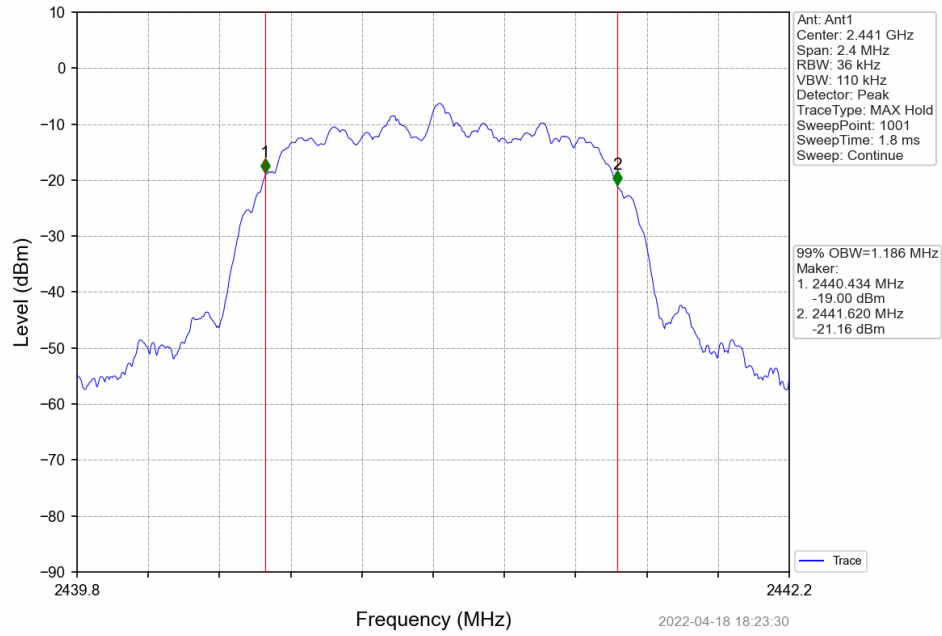


Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1 NTN

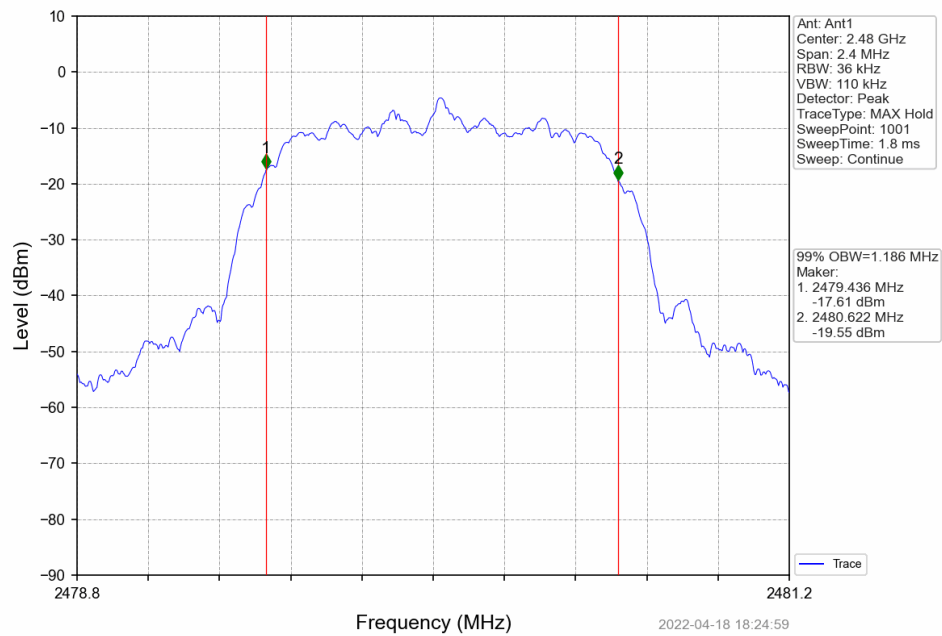




Pi/4DQPSK 2DH5 MCH 2441MHz Ant1 NTN

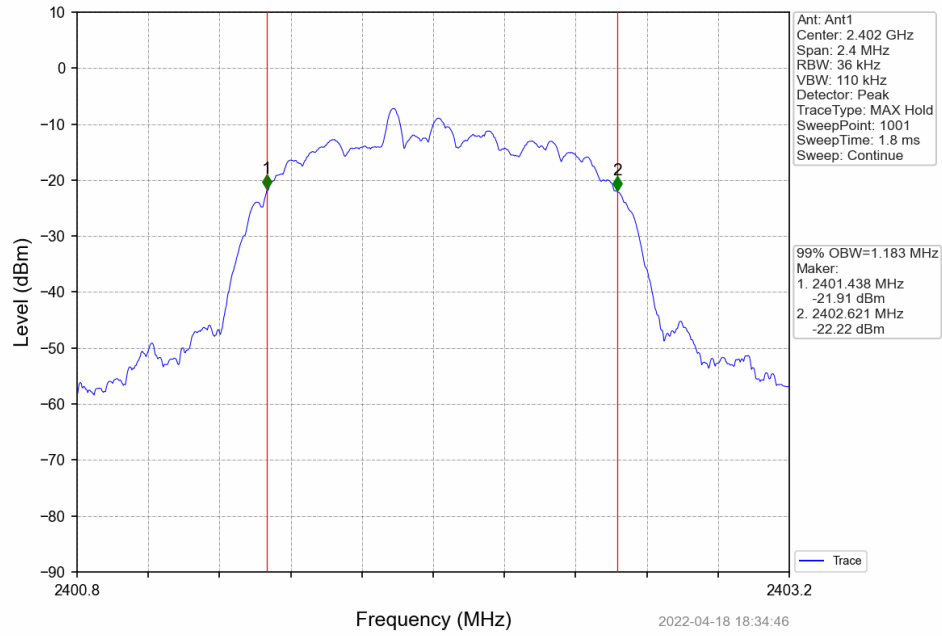


Pi/4DQPSK 2DH5 HCH 2480MHz Ant1 NTN

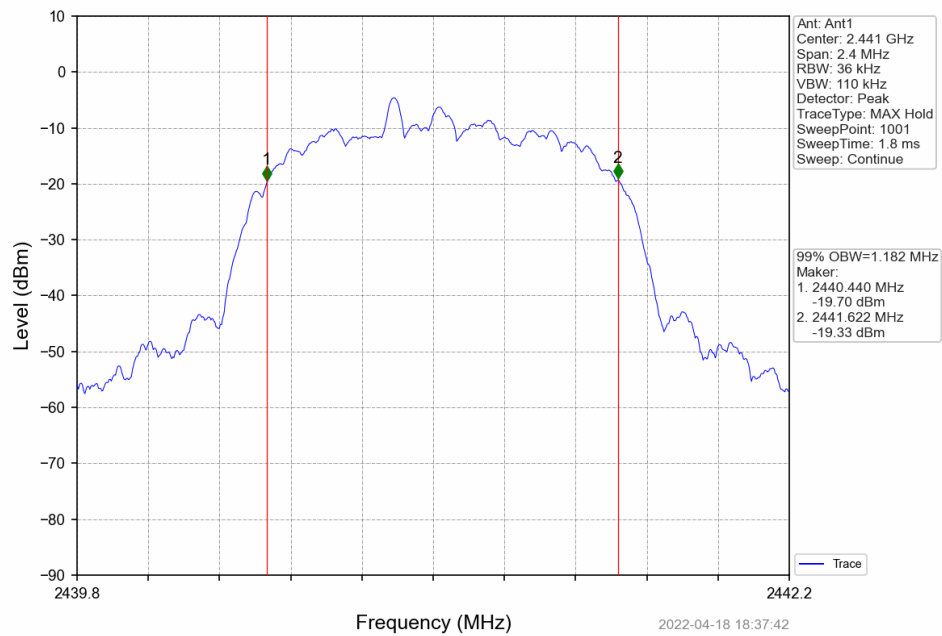


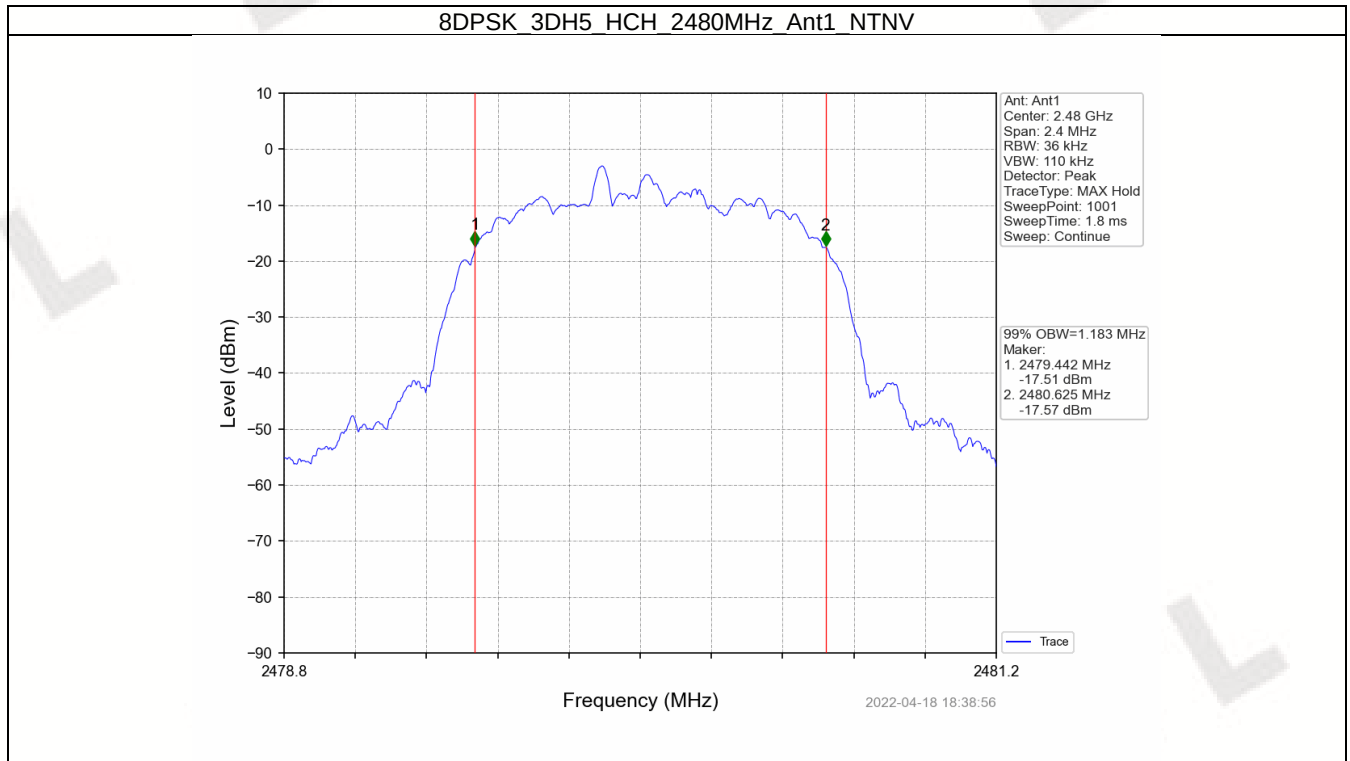


8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV







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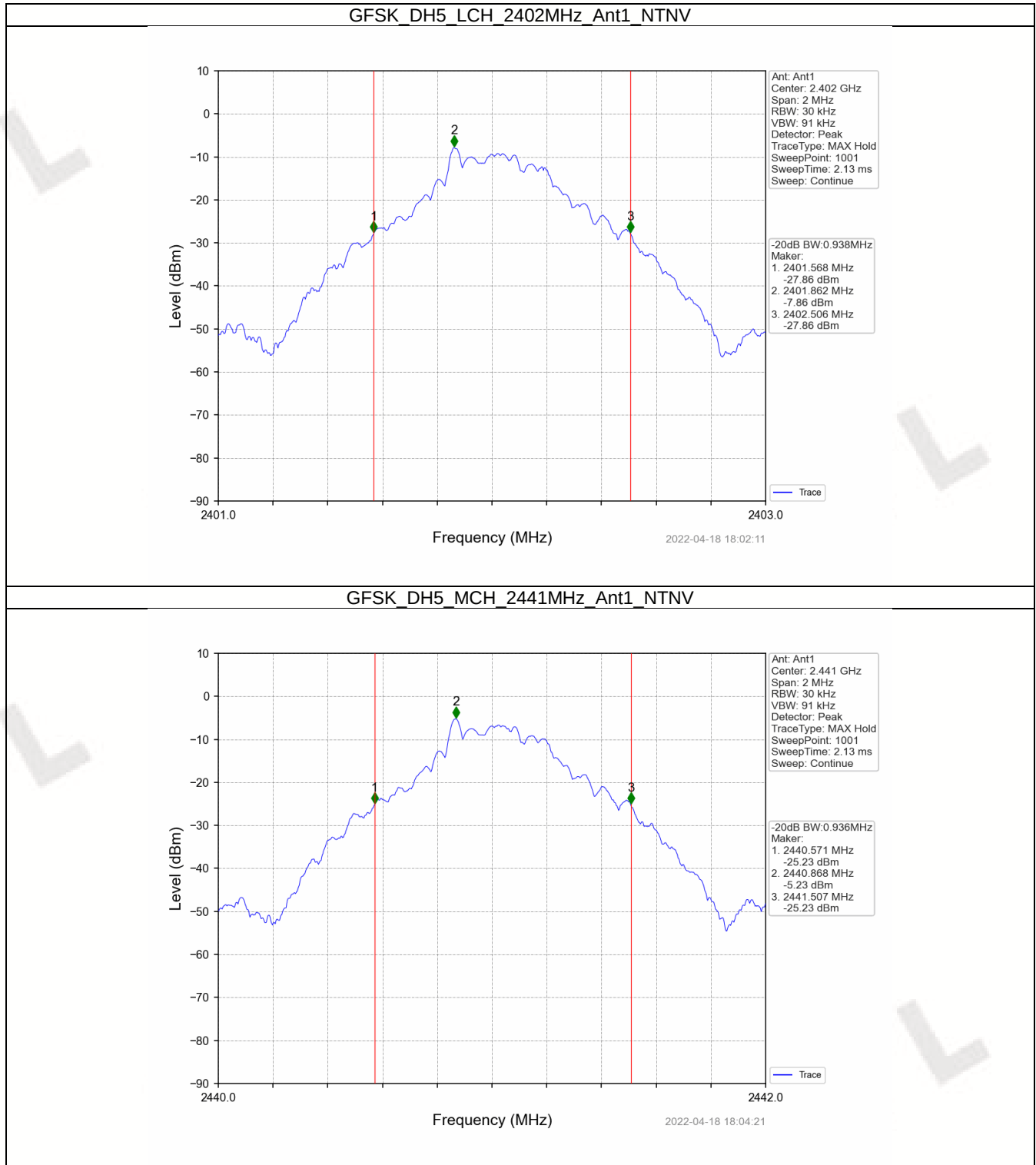
1.2 20dB BW

1.2.1 Test Result

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	20dB Bandwidth (MHz)	Verdict
					Result	
GFSK	SISO	2402	DH5	1	0.938	Pass
		2441	DH5	1	0.936	Pass
		2480	DH5	1	0.936	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.329	Pass
		2441	2DH5	1	1.329	Pass
		2480	2DH5	1	1.329	Pass
8DPSK	SISO	2402	3DH5	1	1.304	Pass
		2441	3DH5	1	1.304	Pass
		2480	3DH5	1	1.301	Pass

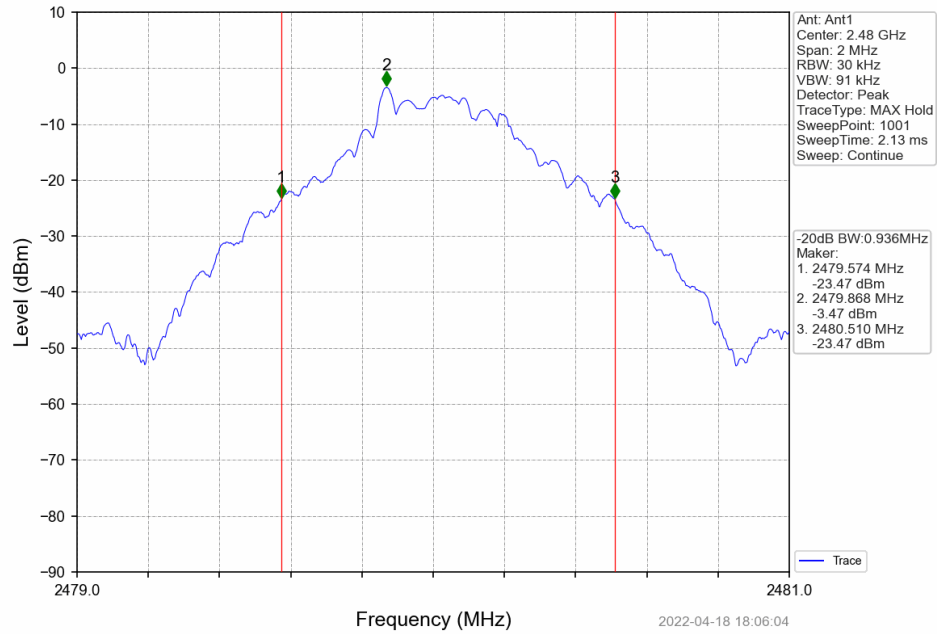


1.2.2 Test Graph

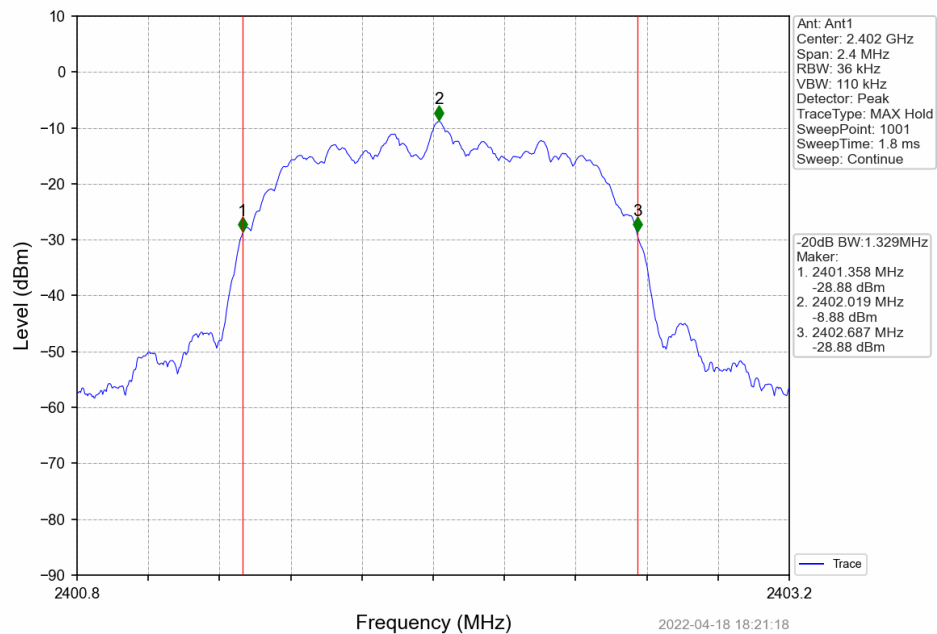




GFSK DH5 HCH 2480MHz Ant1 NTN

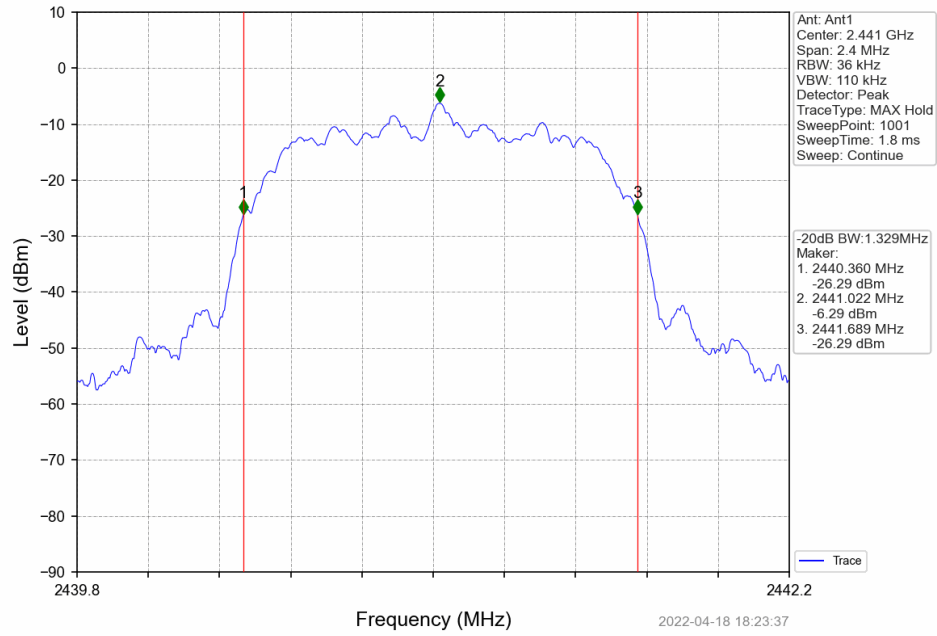


Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1 NTN

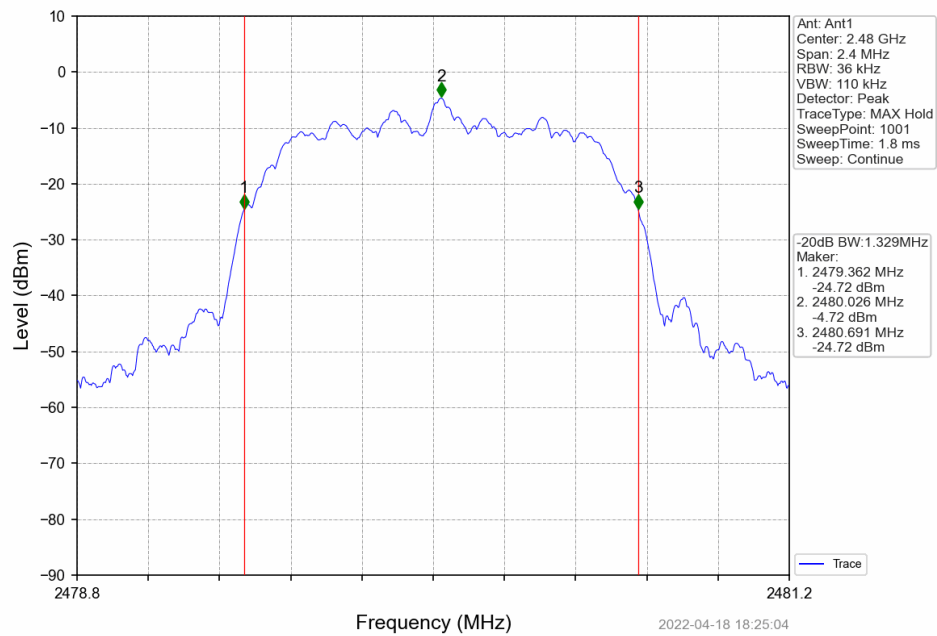




Pi/4DQPSK 2DH5 MCH 2441MHz Ant1 NTV

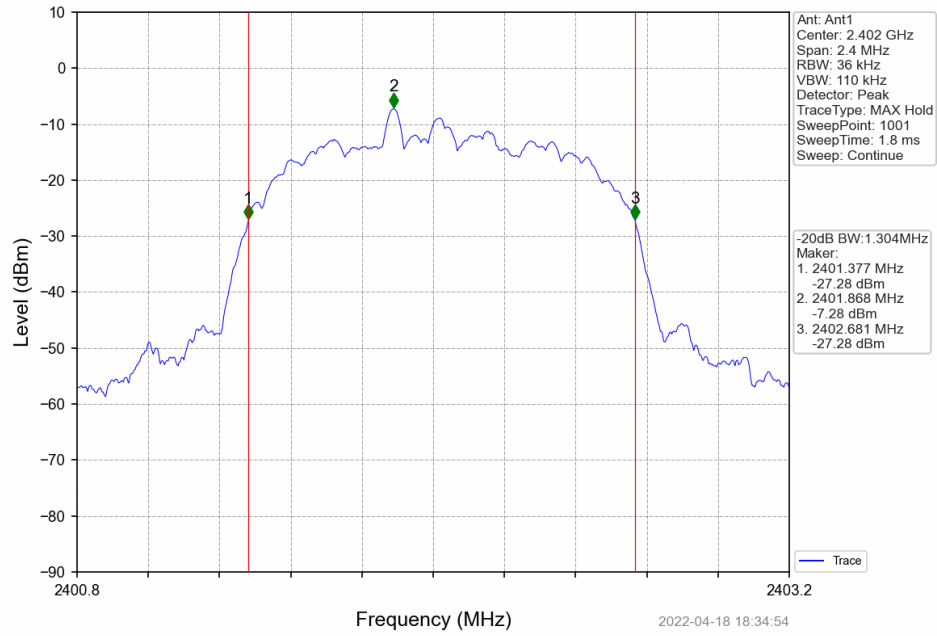


Pi/4DQPSK 2DH5 HCH 2480MHz Ant1 NTV

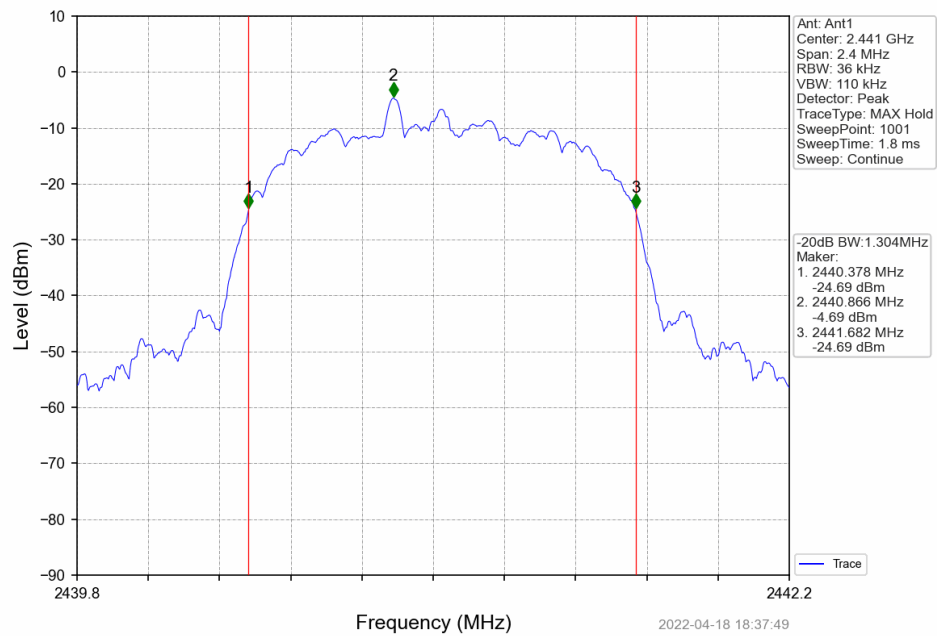


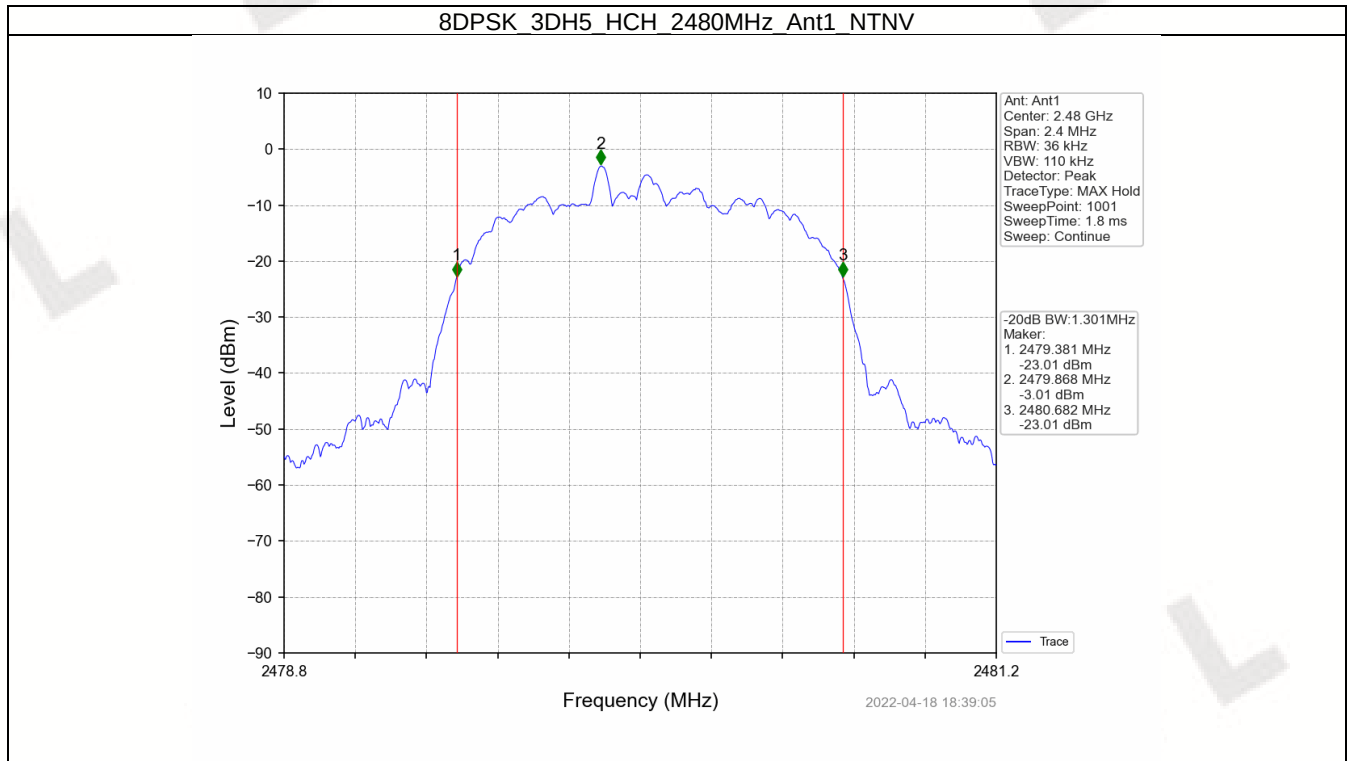


8DPSK 3DH5 LCH 2402MHz Ant1 NTN



8DPSK 3DH5_MCH 2441MHz Ant1 NTN







2. Maximum Conducted Output Power

2.1 Power

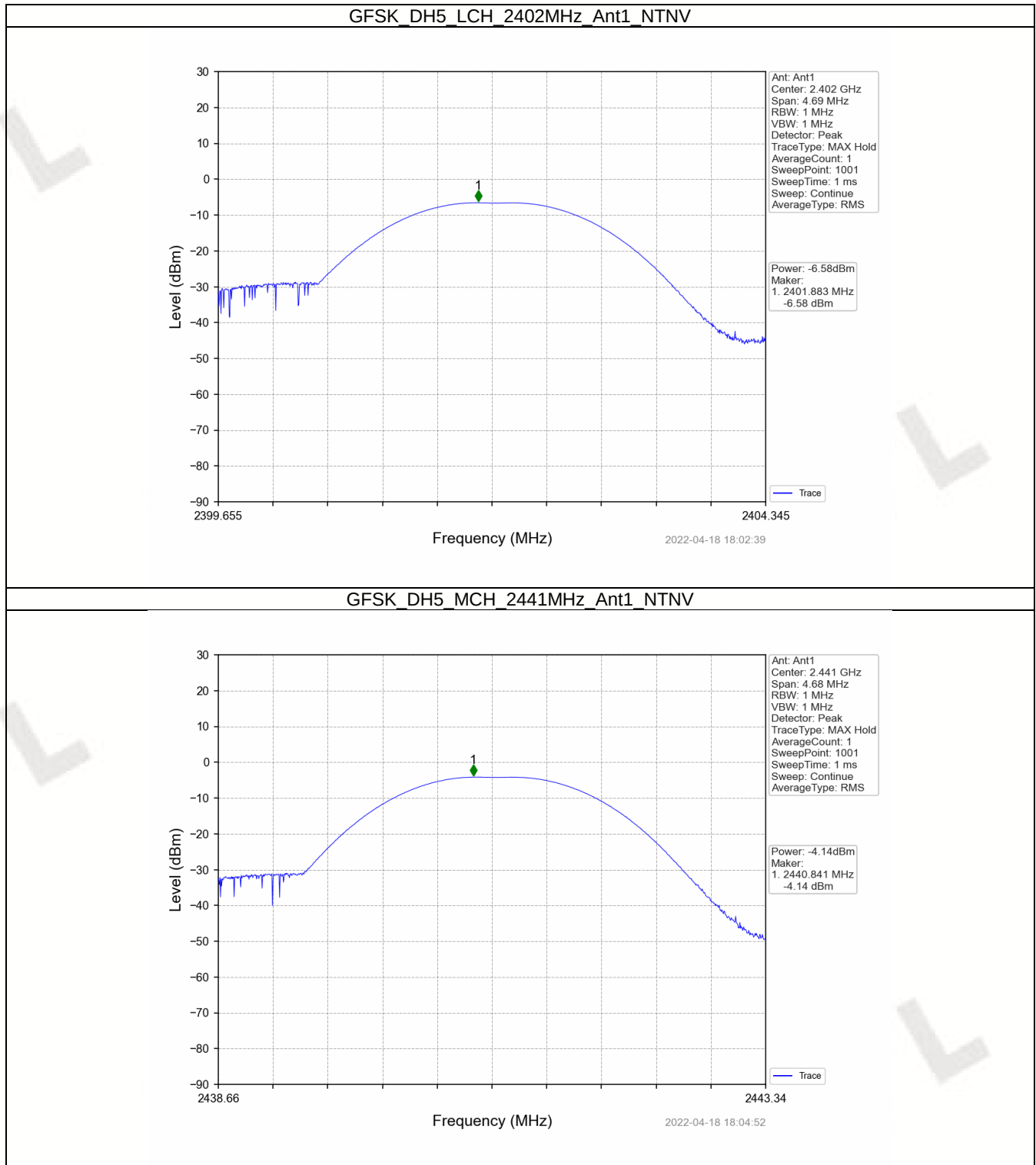
2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Packet Type	Maximum Peak Conducted Output Power (dBm)		Verdict
				ANT1	Limit	
GFSK	SISO	2402	DH5	-6.58	≤ 30	Pass
		2441	DH5	-4.14	≤ 30	Pass
		2480	DH5	-2.41	≤ 30	Pass
Pi/4DQPSK	SISO	2402	2DH5	-3.92	≤ 20.97	Pass
		2441	2DH5	-1.47	≤ 20.97	Pass
		2480	2DH5	0.16	≤ 20.97	Pass
8DPSK	SISO	2402	3DH5	-3.44	≤ 20.97	Pass
		2441	3DH5	-0.79	≤ 20.97	Pass
		2480	3DH5	0.88	≤ 20.97	Pass

Note1: Antenna Gain: Ant1: 0.00dBi;

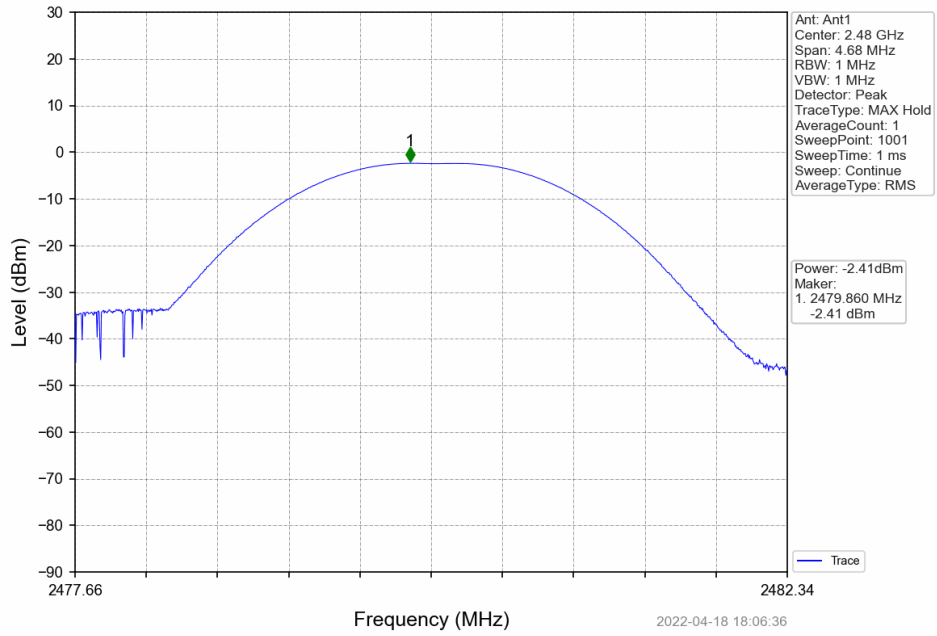


2.1.2 Test Graph

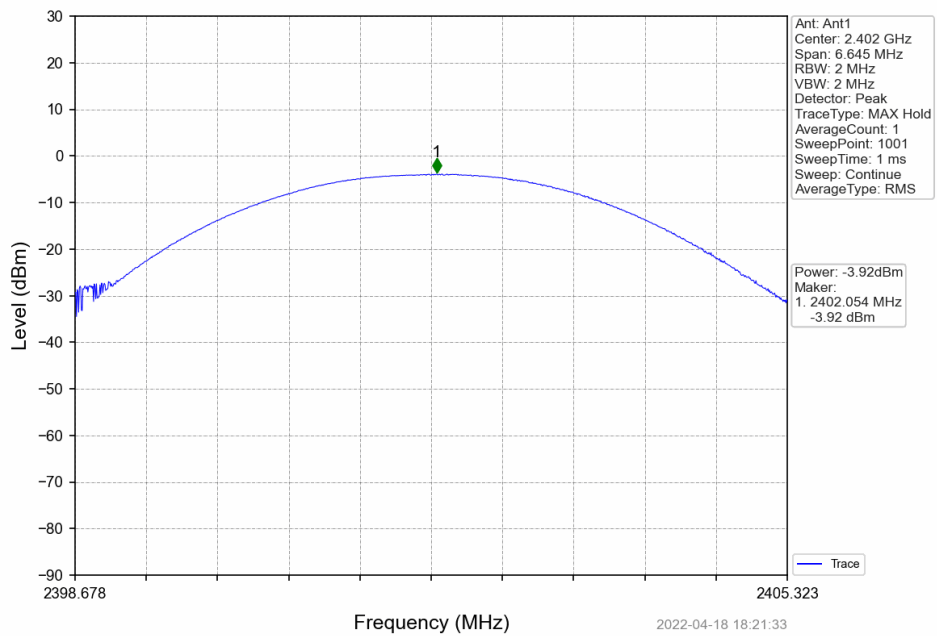




GFSK DH5 HCH 2480MHz Ant1 NTN

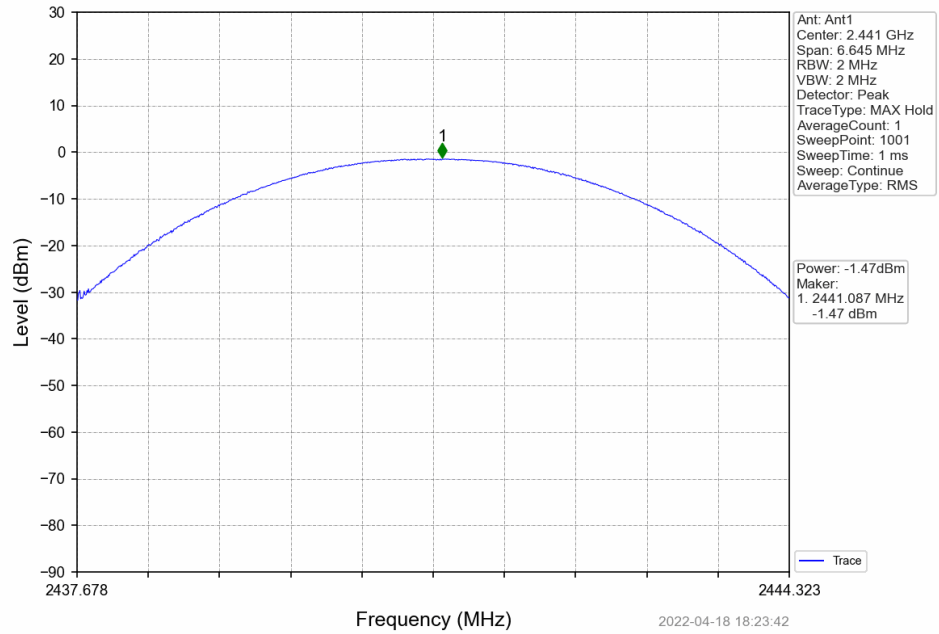


Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1 NTN

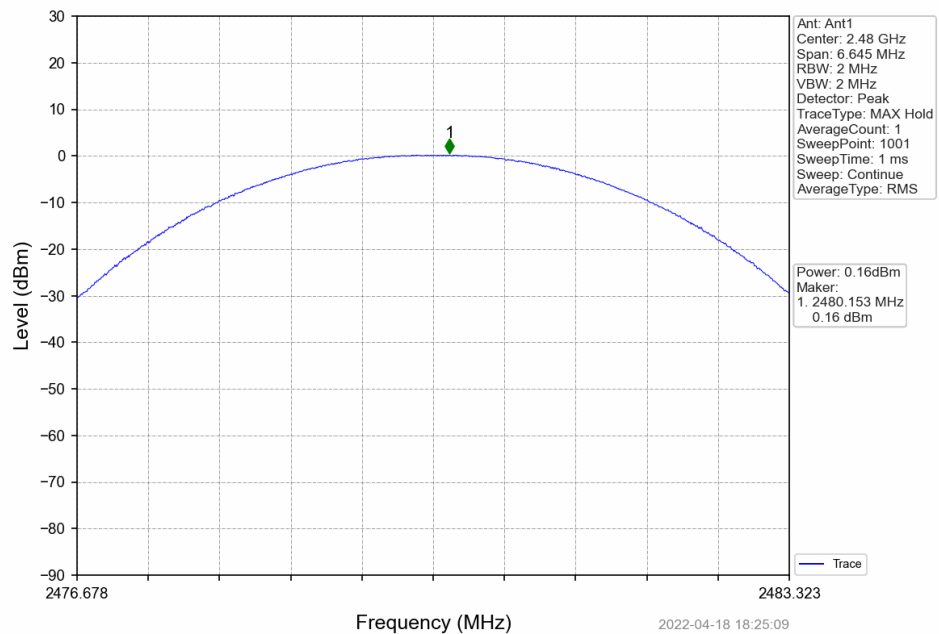




Pi/4DQPSK 2DH5 MCH 2441MHz Ant1 NTNV

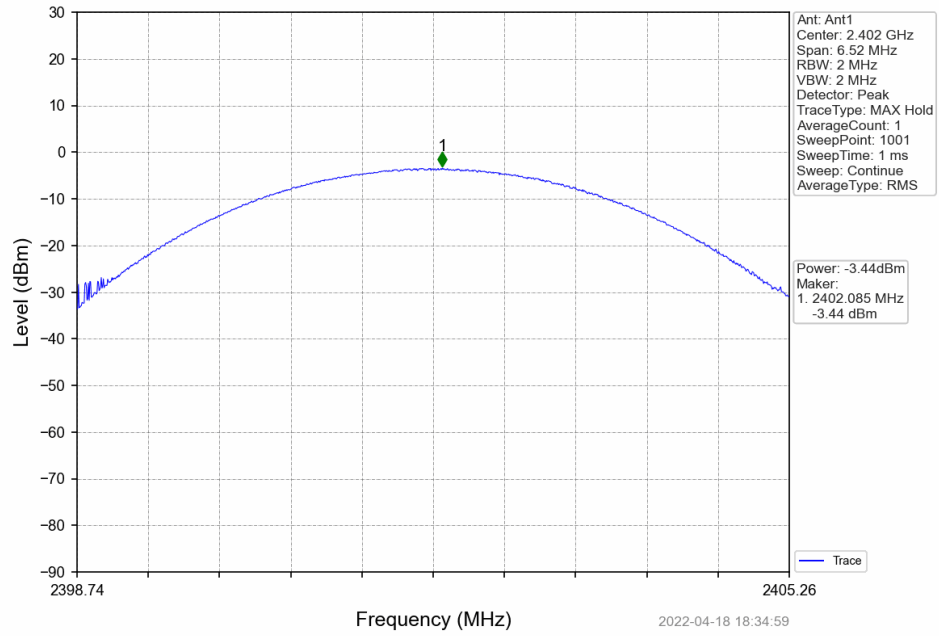


Pi/4DQPSK 2DH5 HCH 2480MHz Ant1 NTNV

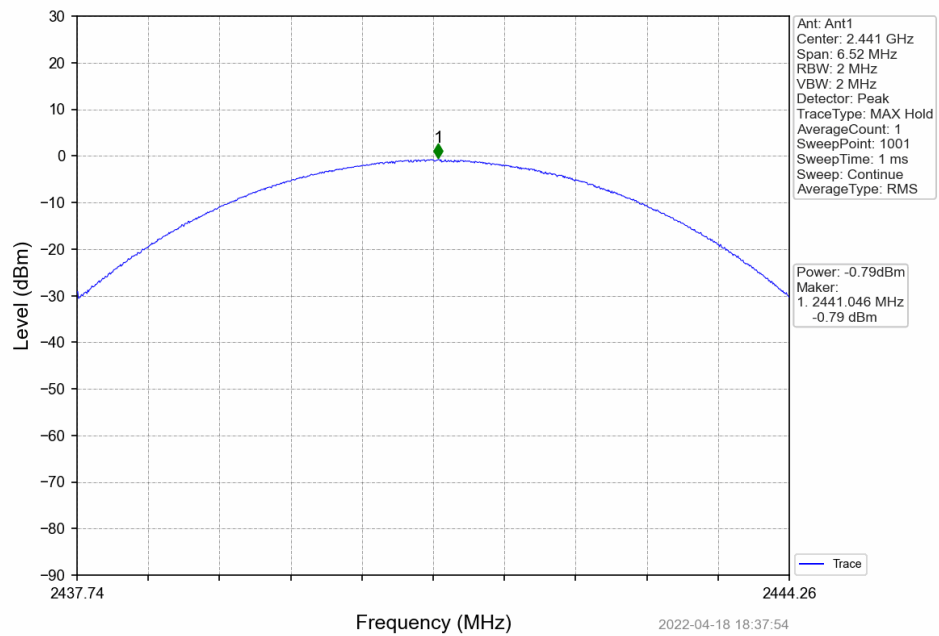


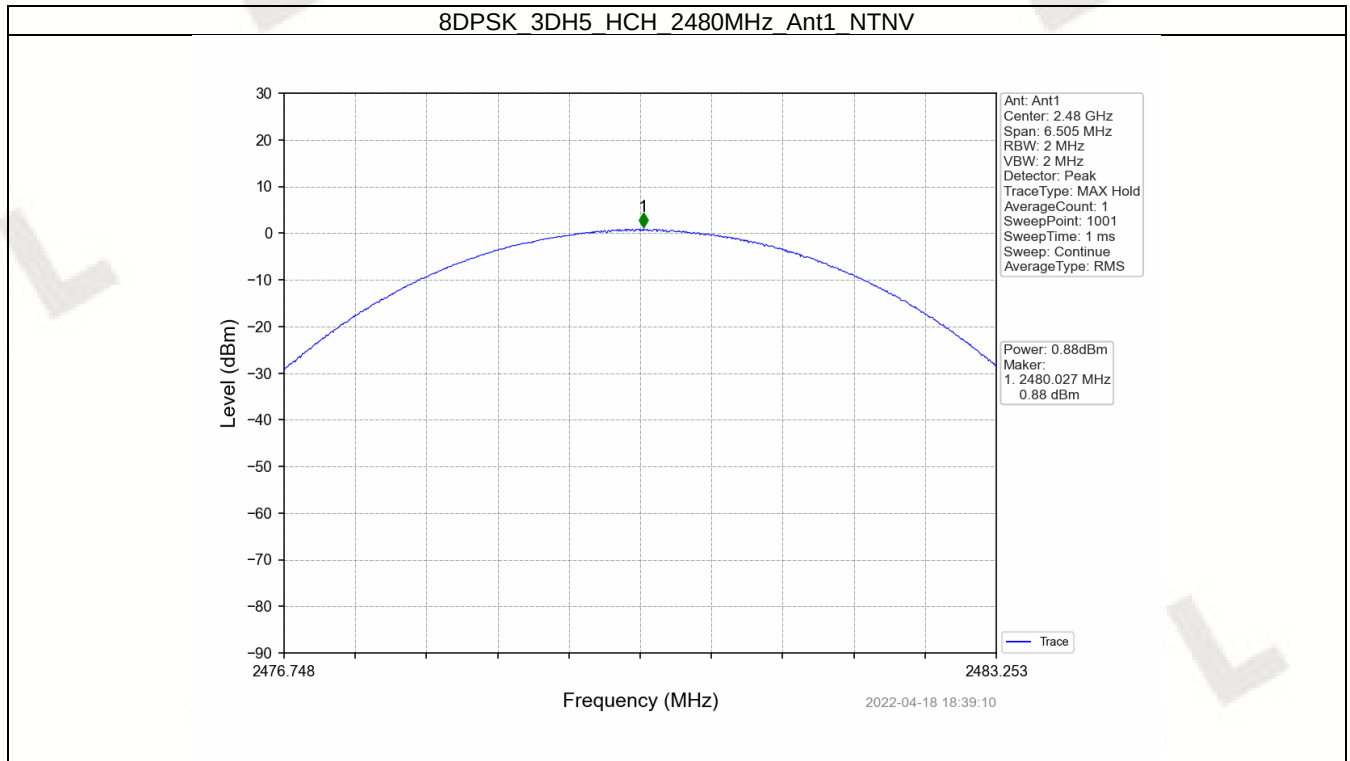


8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV







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3. Carrier Frequency Separation

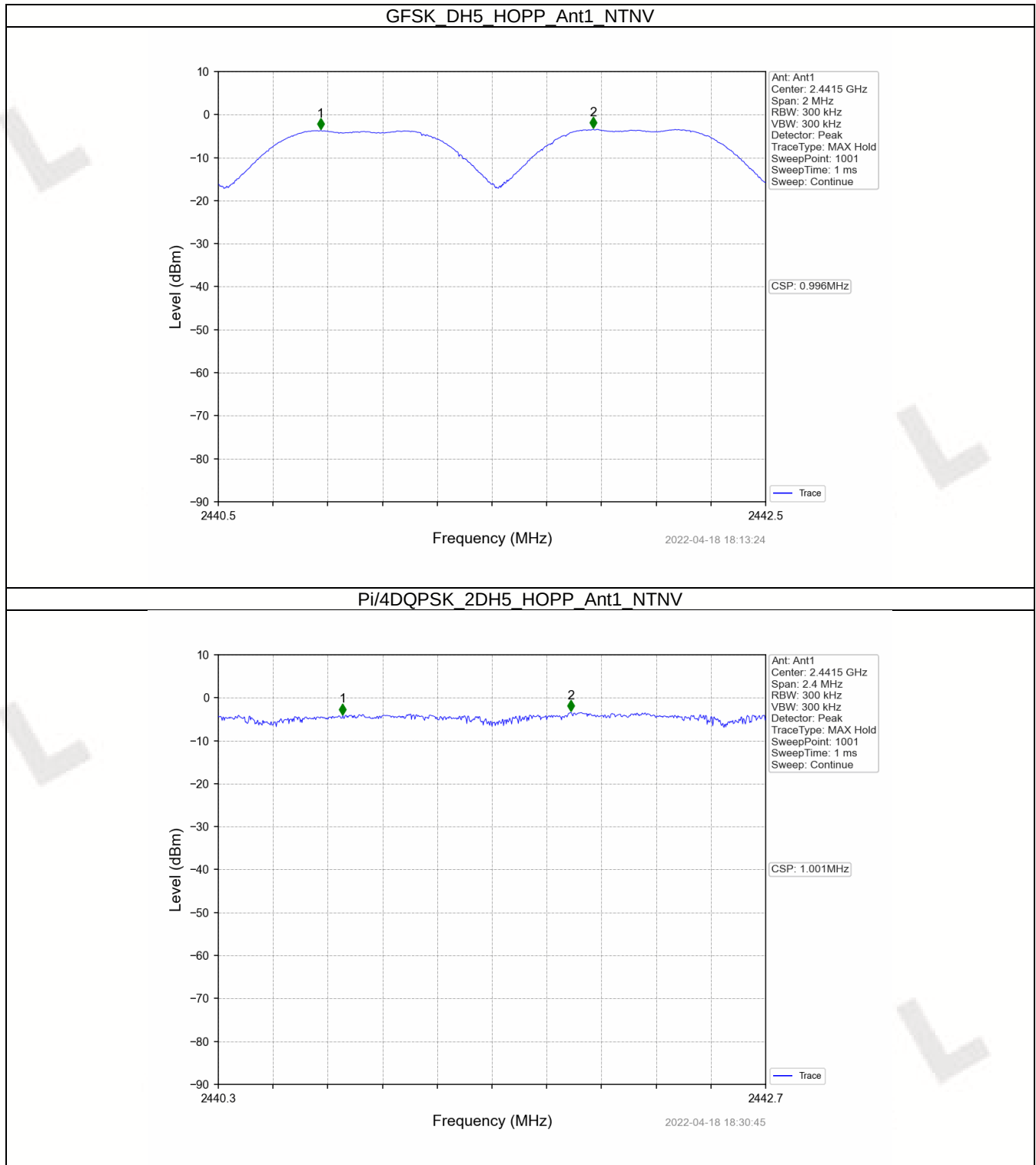
3.1 Ant1

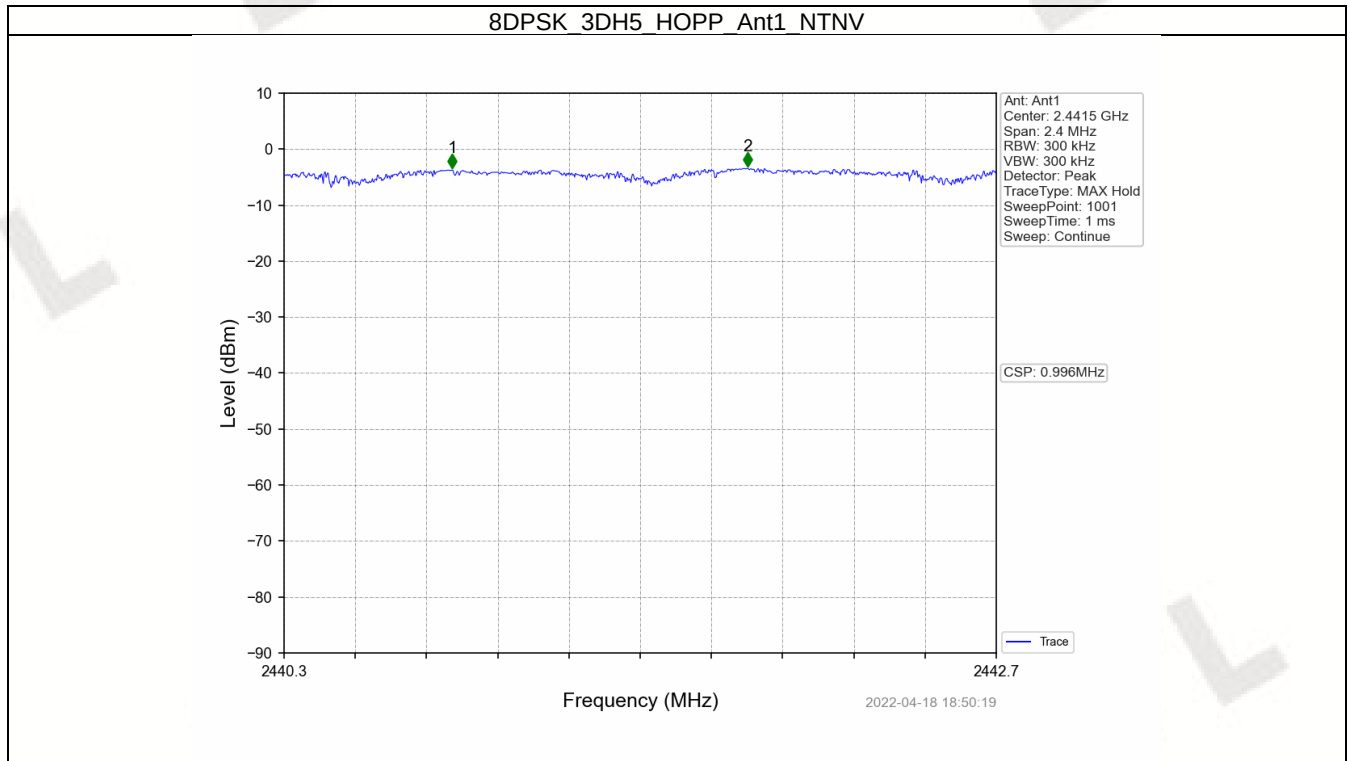
3.1.1 Test Result

Ant1							
Mode	TX Type	Frequency (MHz)	Packet Type	Channel Separation (MHz)	20dB Bandwidth (MHz)	Limit (MHz)	Verdict
GFSK	SISO	HOPP	DH5	0.996	0.938	≥ 0.938	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	1.001	1.329	≥ 0.886	Pass
8DPSK	SISO	HOPP	3DH5	0.996	1.304	≥ 0.869	Pass



3.1.2 Test Graph







4. Number of Hopping Frequencies

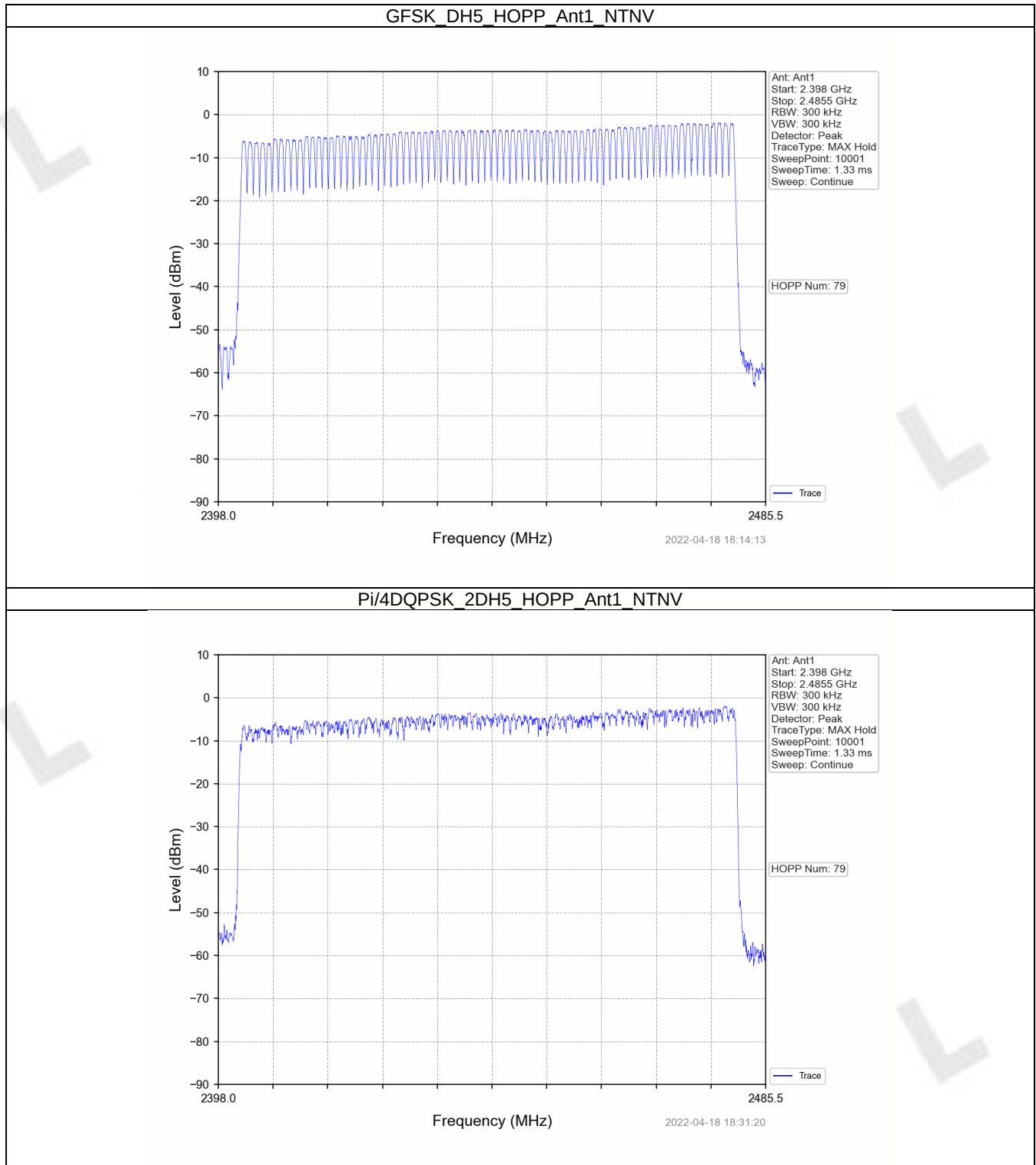
4.1 HoppNum

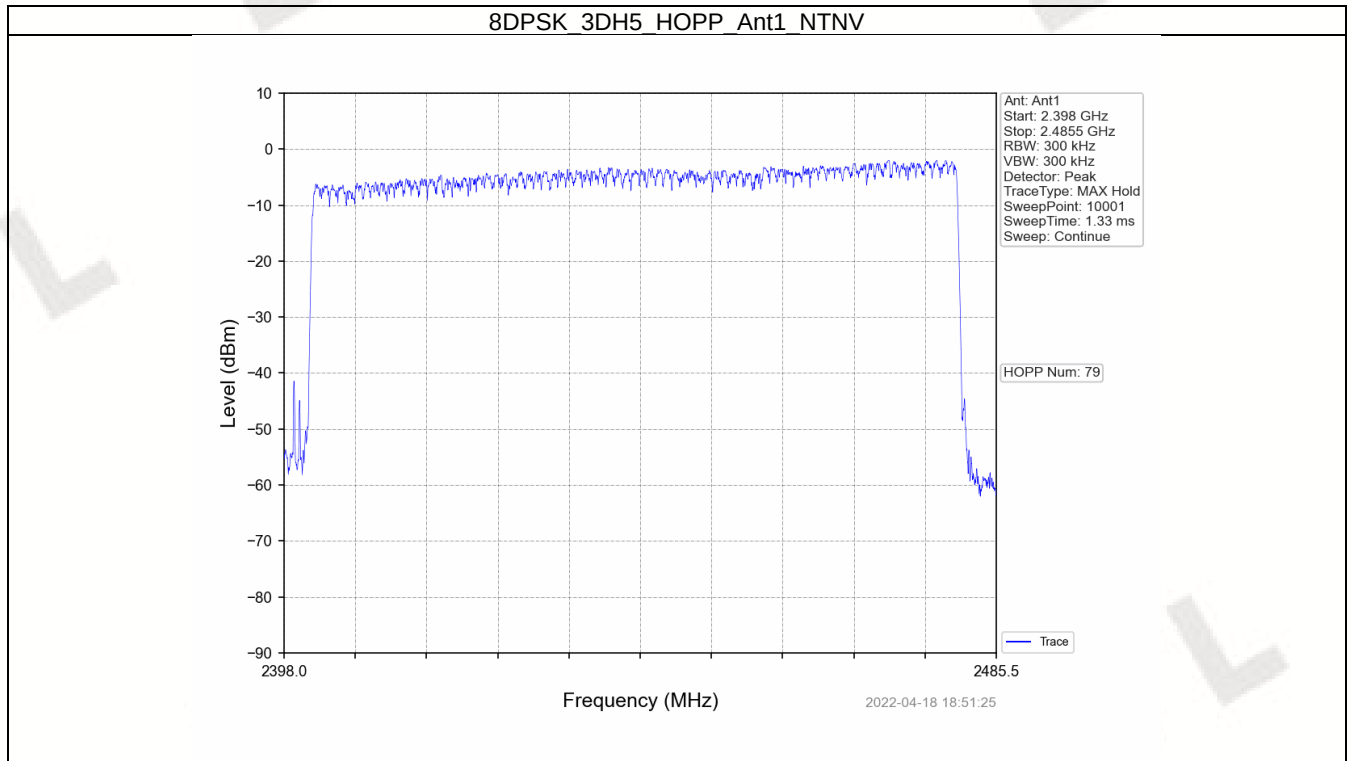
4.1.1 Test Result

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



4.1.2 Test Graph







5. Time of Occupancy (Dwell Time)

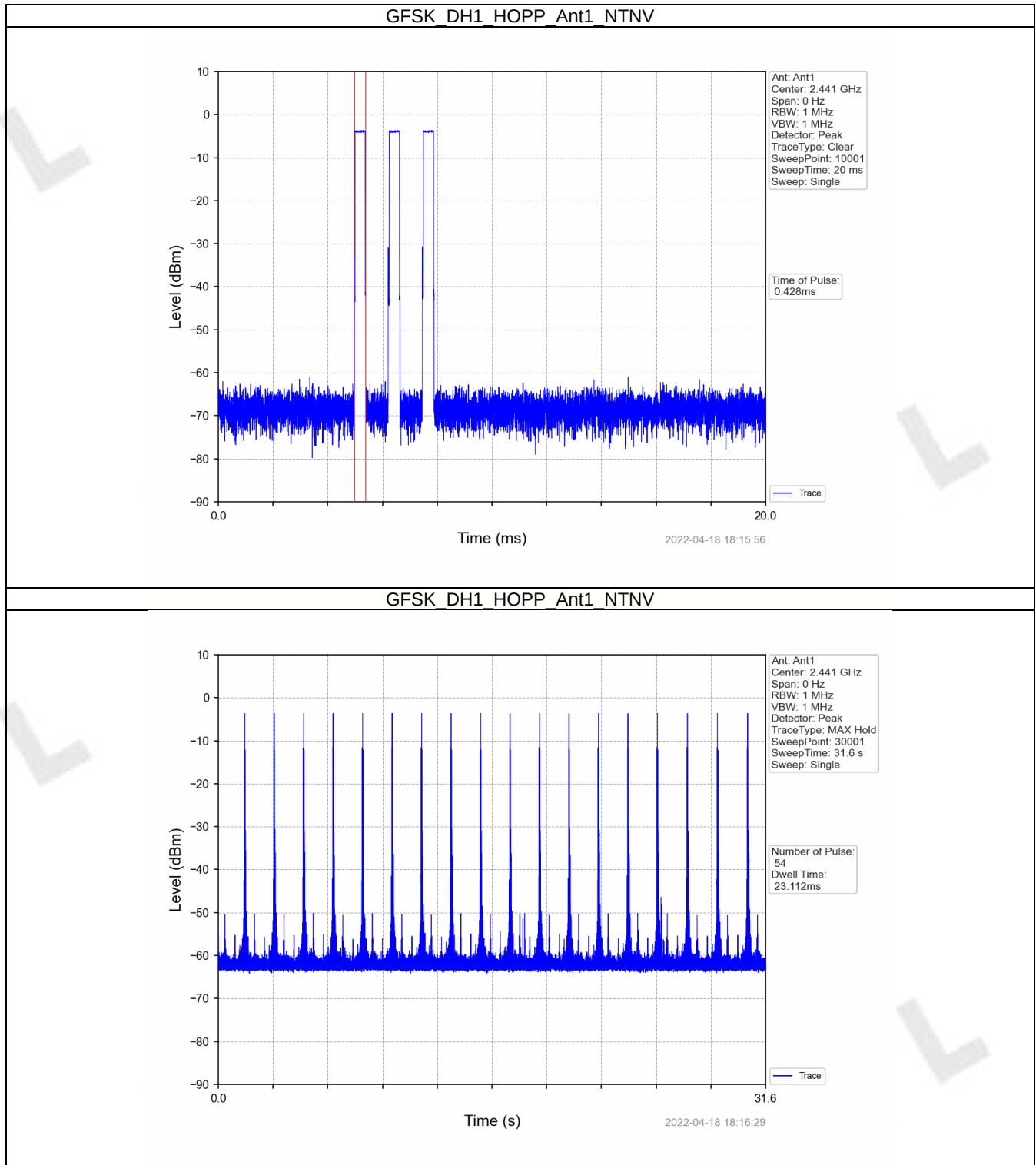
5.1 Ant1

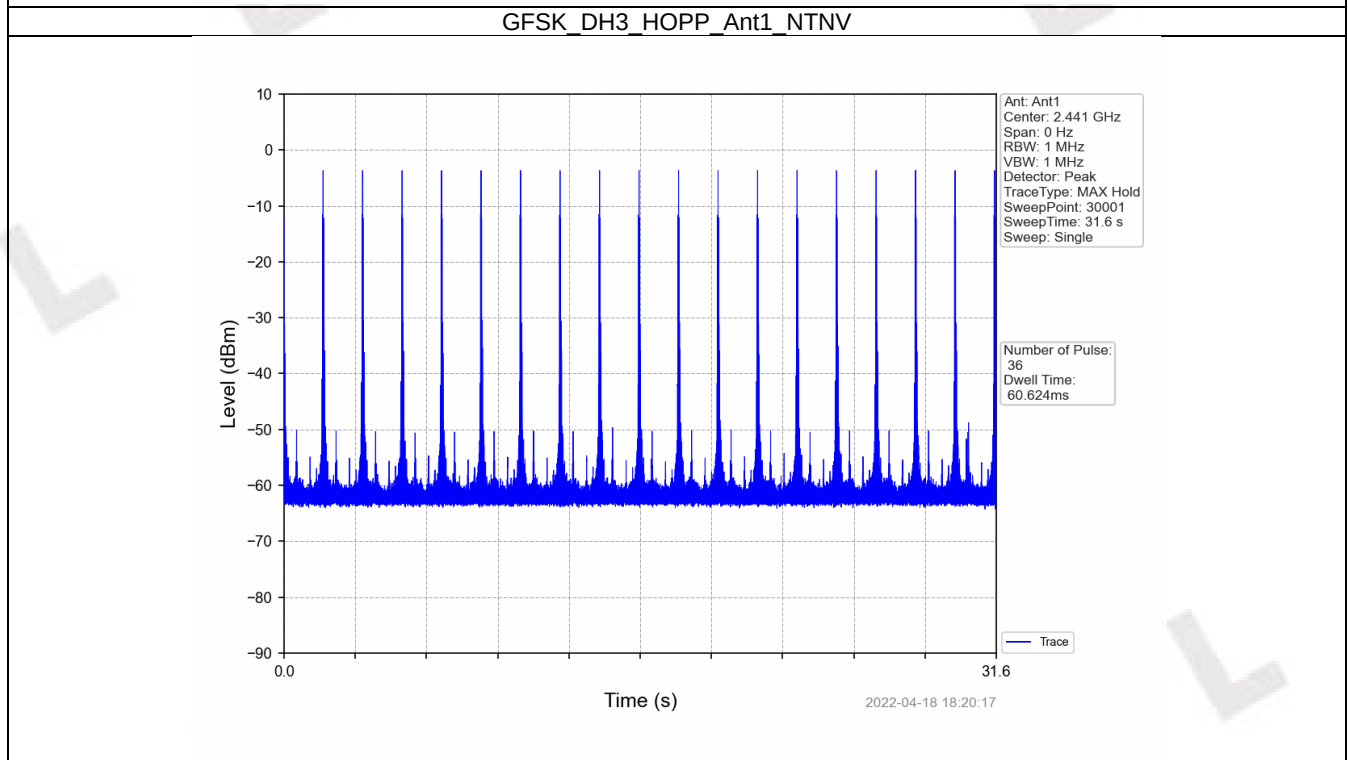
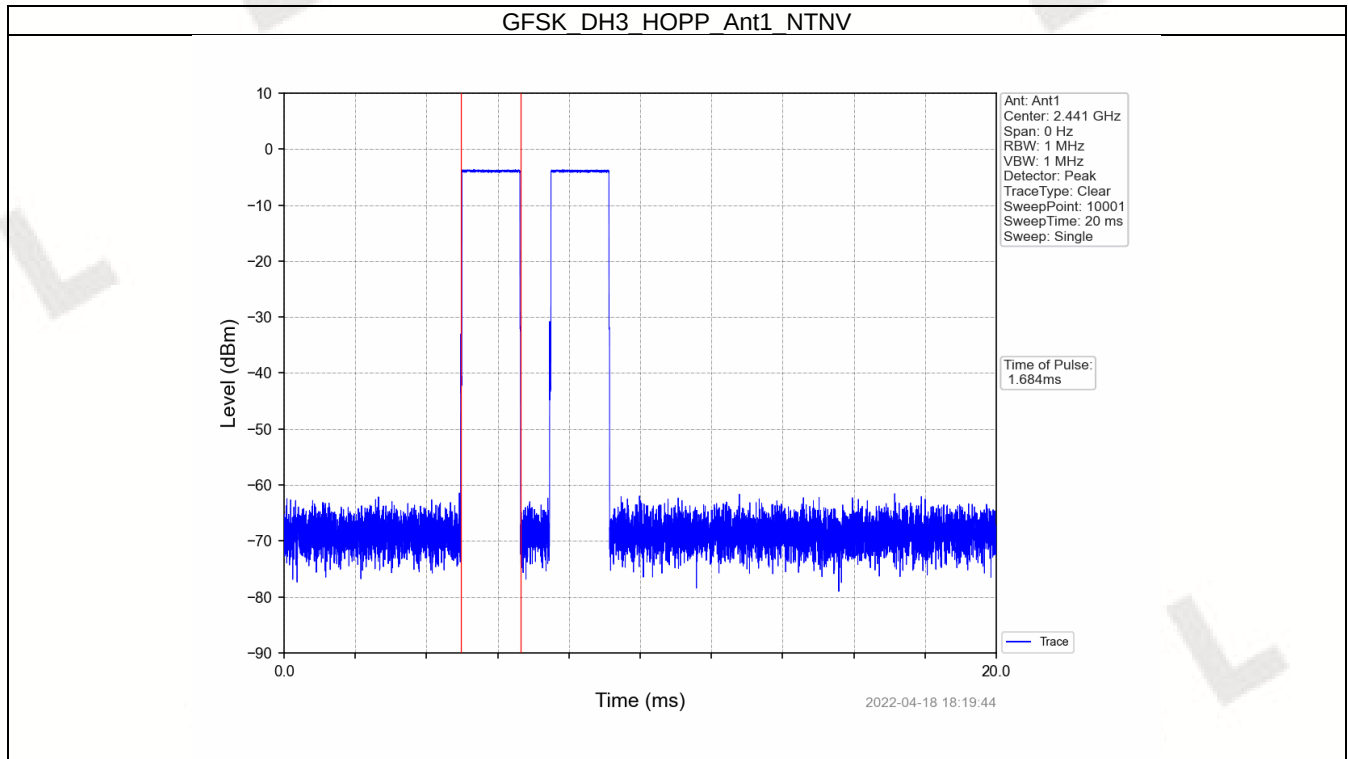
5.1.1 Test Result

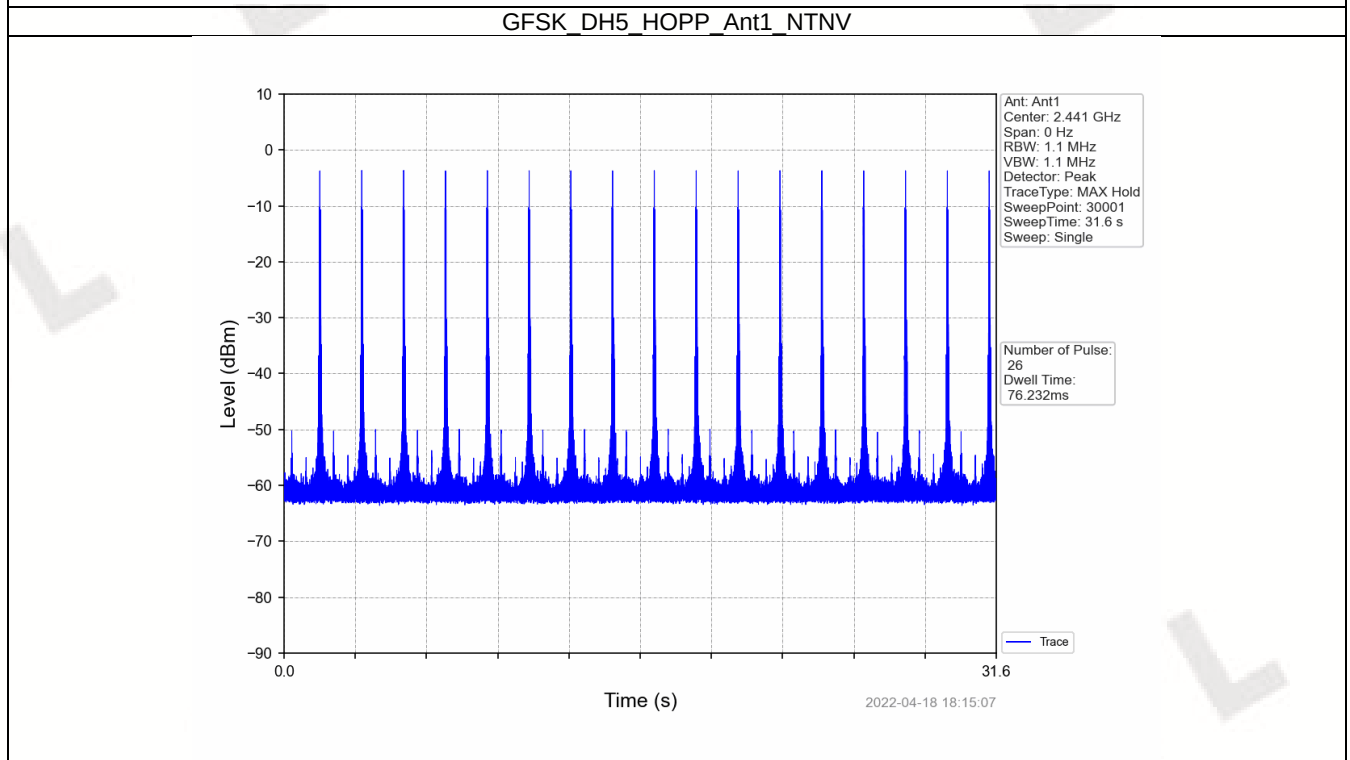
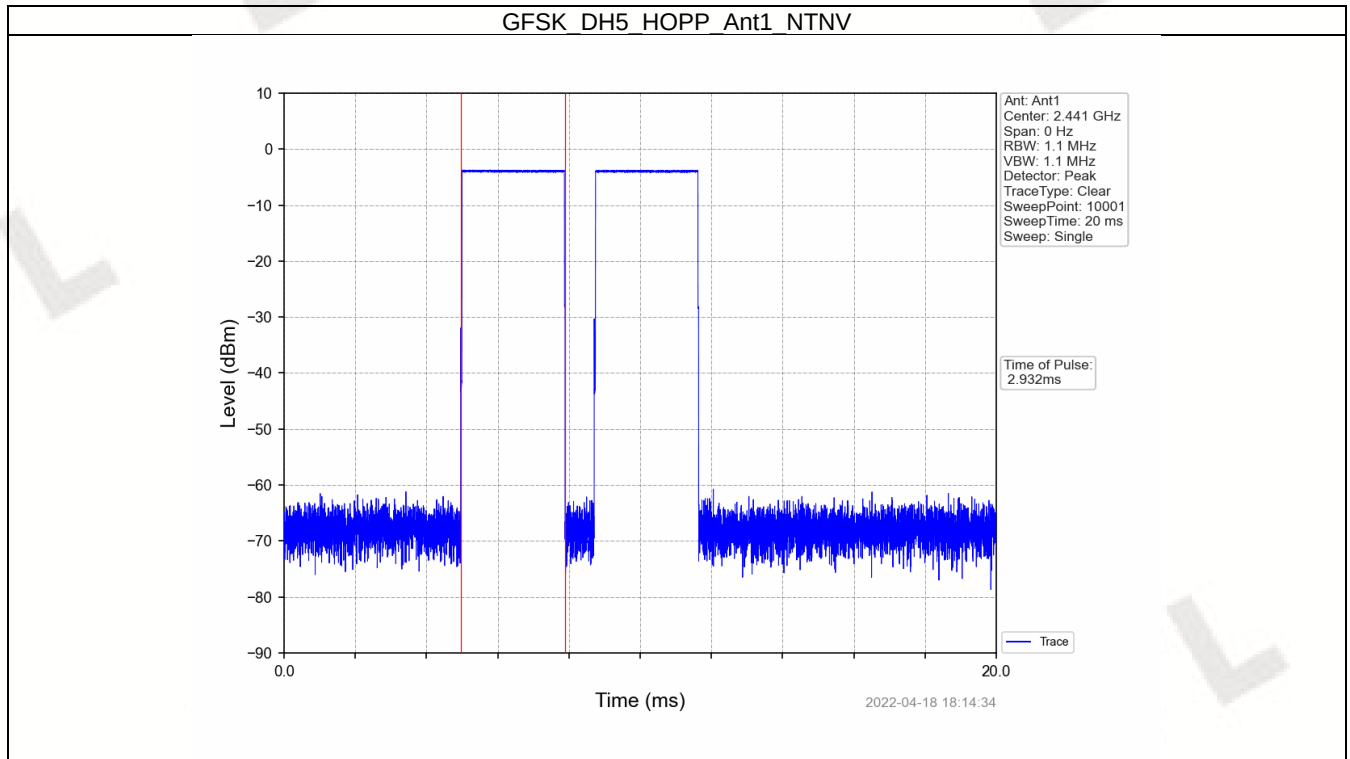
Ant1									
Mode	TX Type	Frequency (MHz)	Packet Type	Duration of Single Pulse (ms)	Observation Period (s)	Num of Pulse in Observation Period	Dwell Time (ms)	Limit (ms)	Verdict
GFSK	SISO	HOPP	DH1	0.428	31.600	54	23.112	<=400	Pass
			DH3	1.684	31.600	36	60.624	<=400	Pass
			DH5	2.932	31.600	26	76.232	<=400	Pass
Pi/4DQPSK	SISO	HOPP	2DH1	0.434	31.600	54	23.436	<=400	Pass
			2DH3	1.686	31.600	36	60.696	<=400	Pass
			2DH5	2.934	31.600	34	99.756	<=400	Pass
8DPSK	SISO	HOPP	3DH1	0.432	31.600	63	27.216	<=400	Pass
			3DH3	1.684	31.600	36	60.624	<=400	Pass
			3DH5	2.934	31.600	32	93.888	<=400	Pass

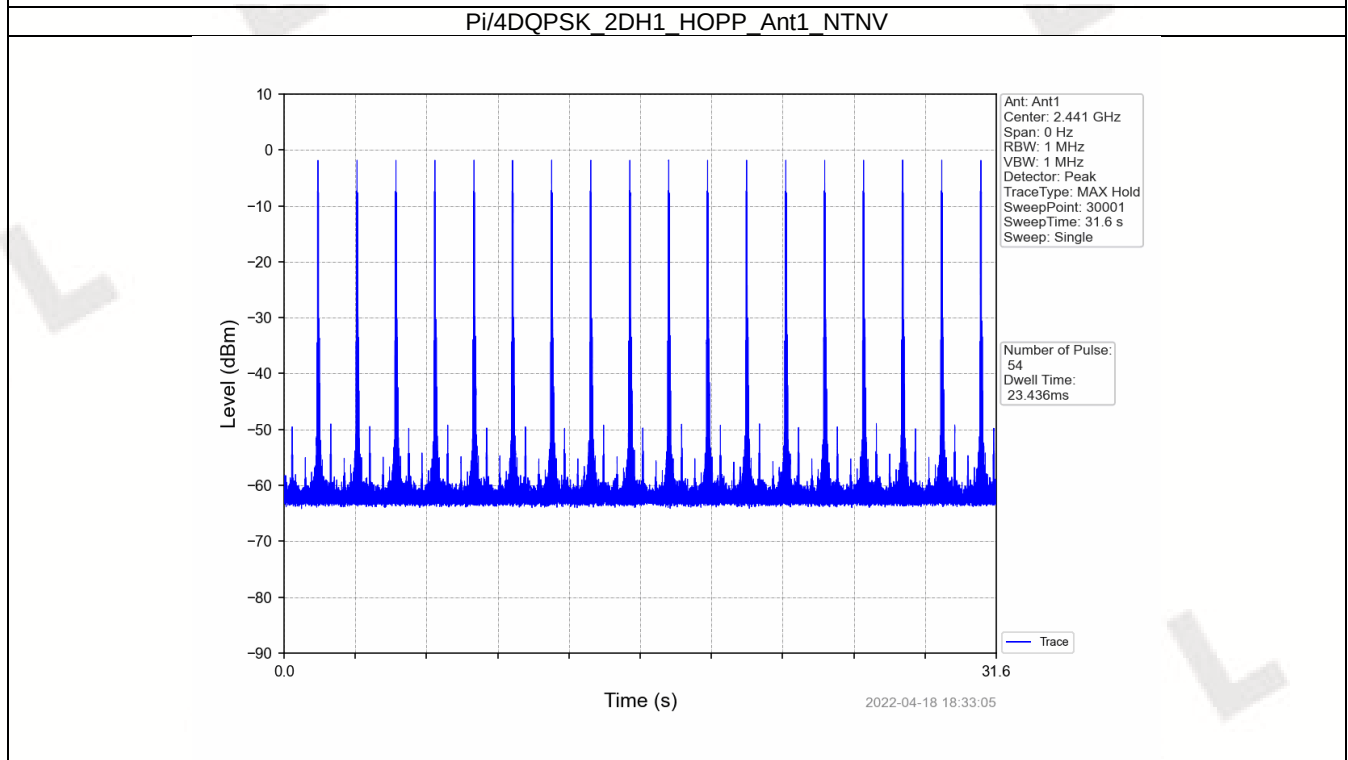
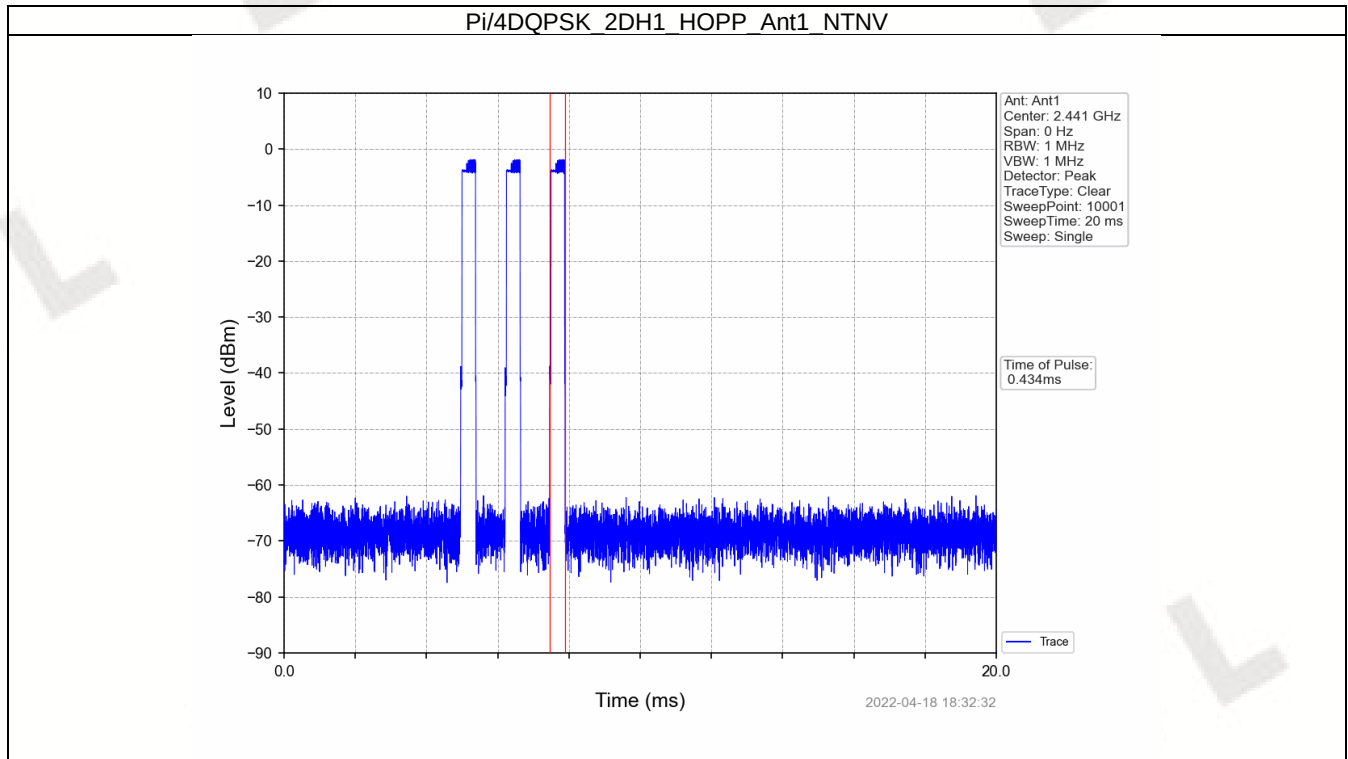


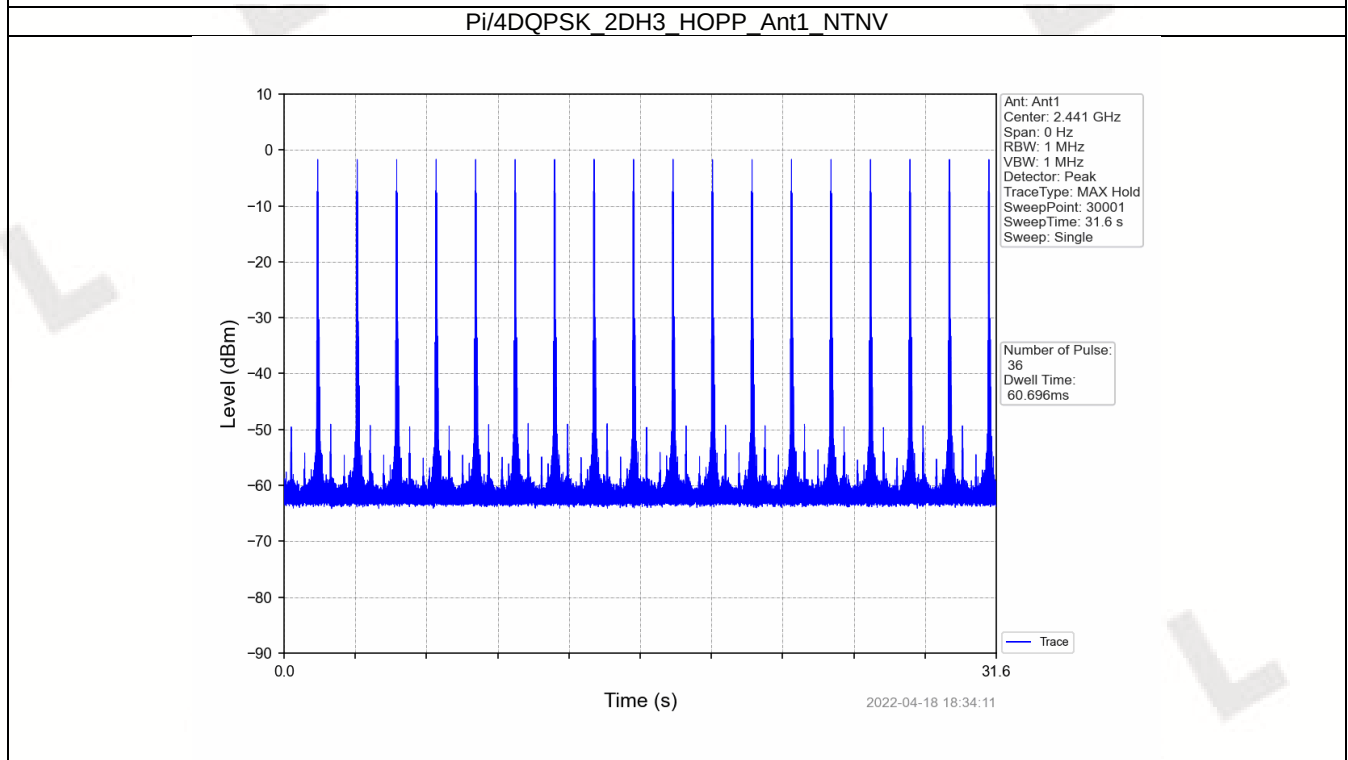
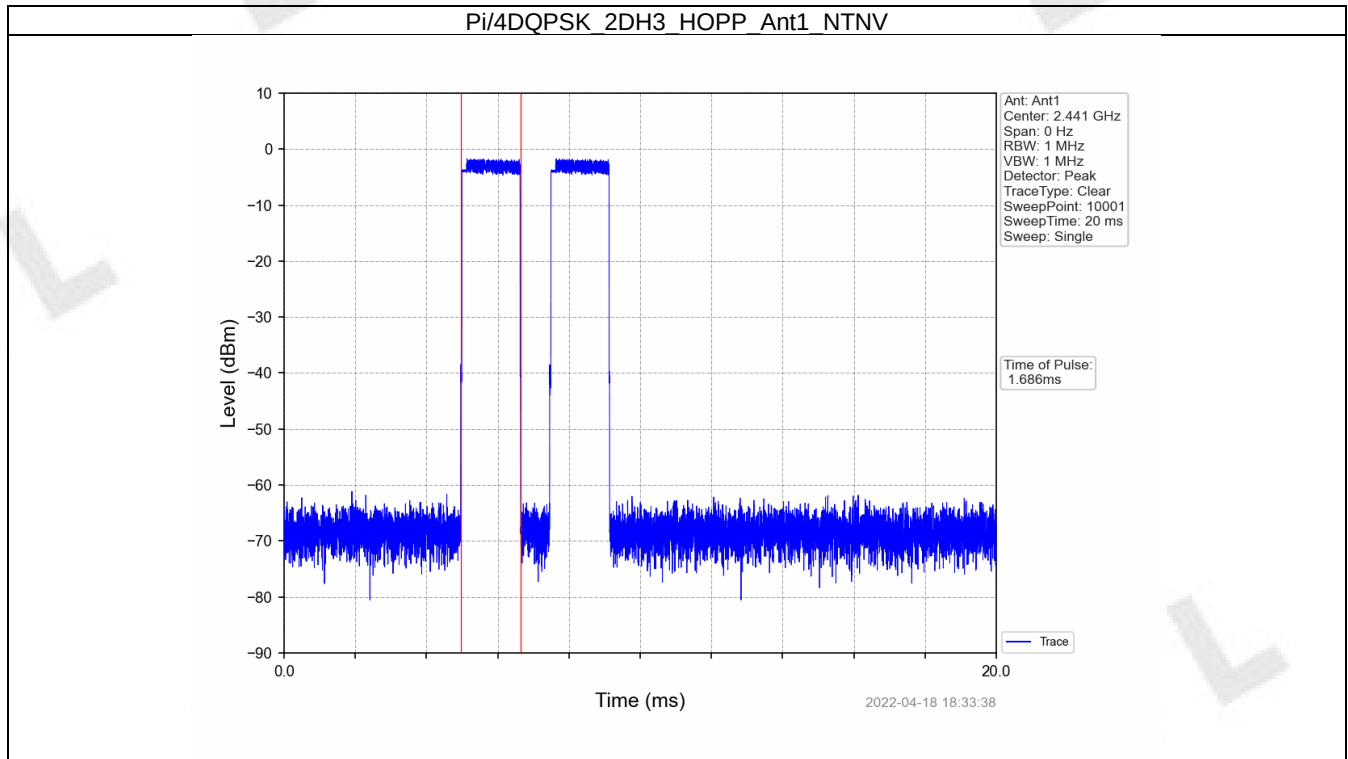
5.1.2 Test Graph

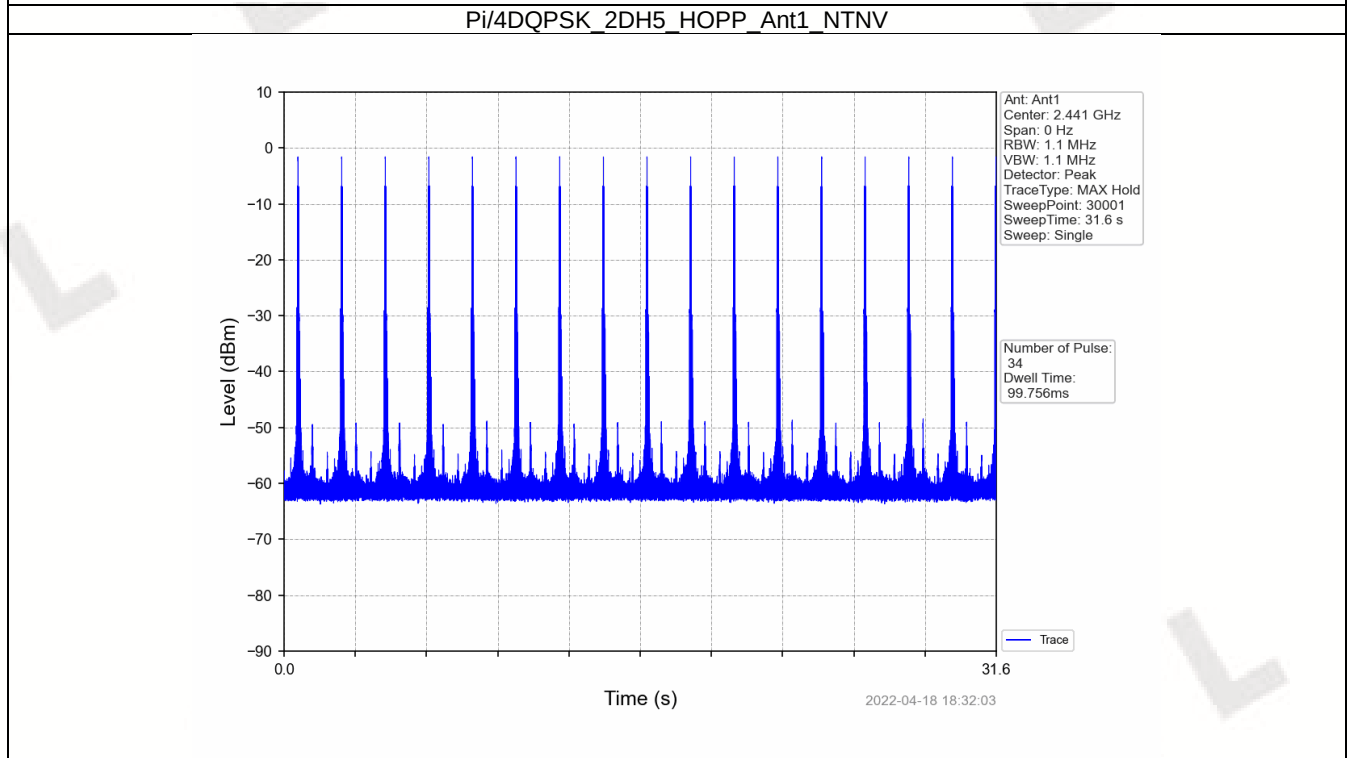
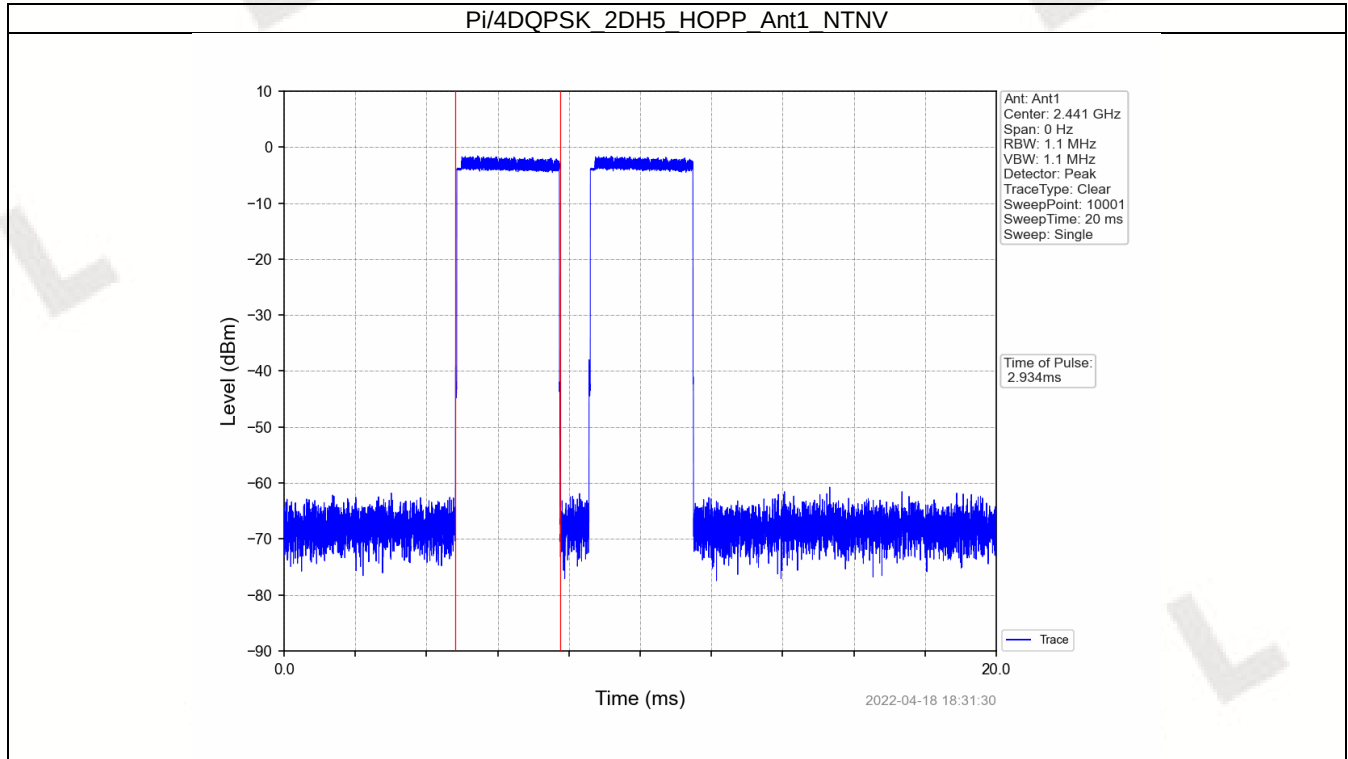


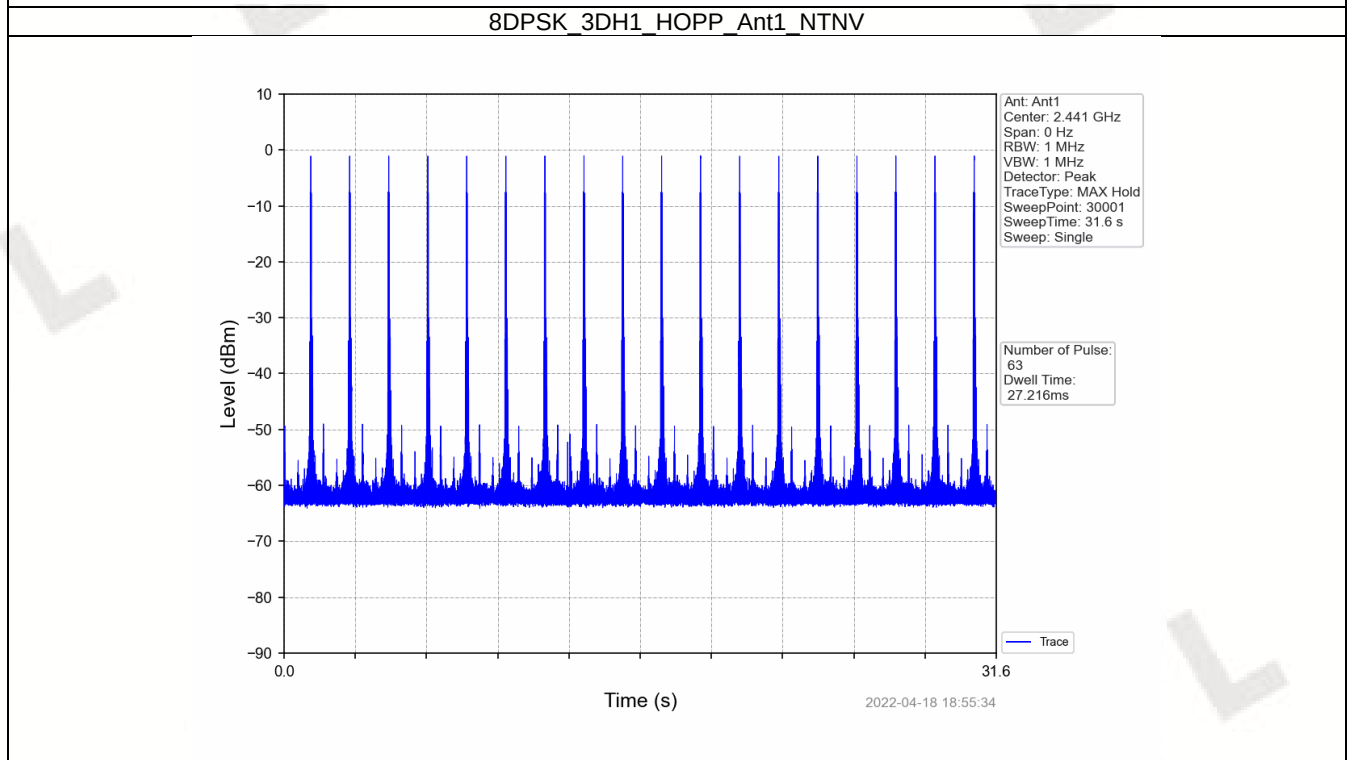
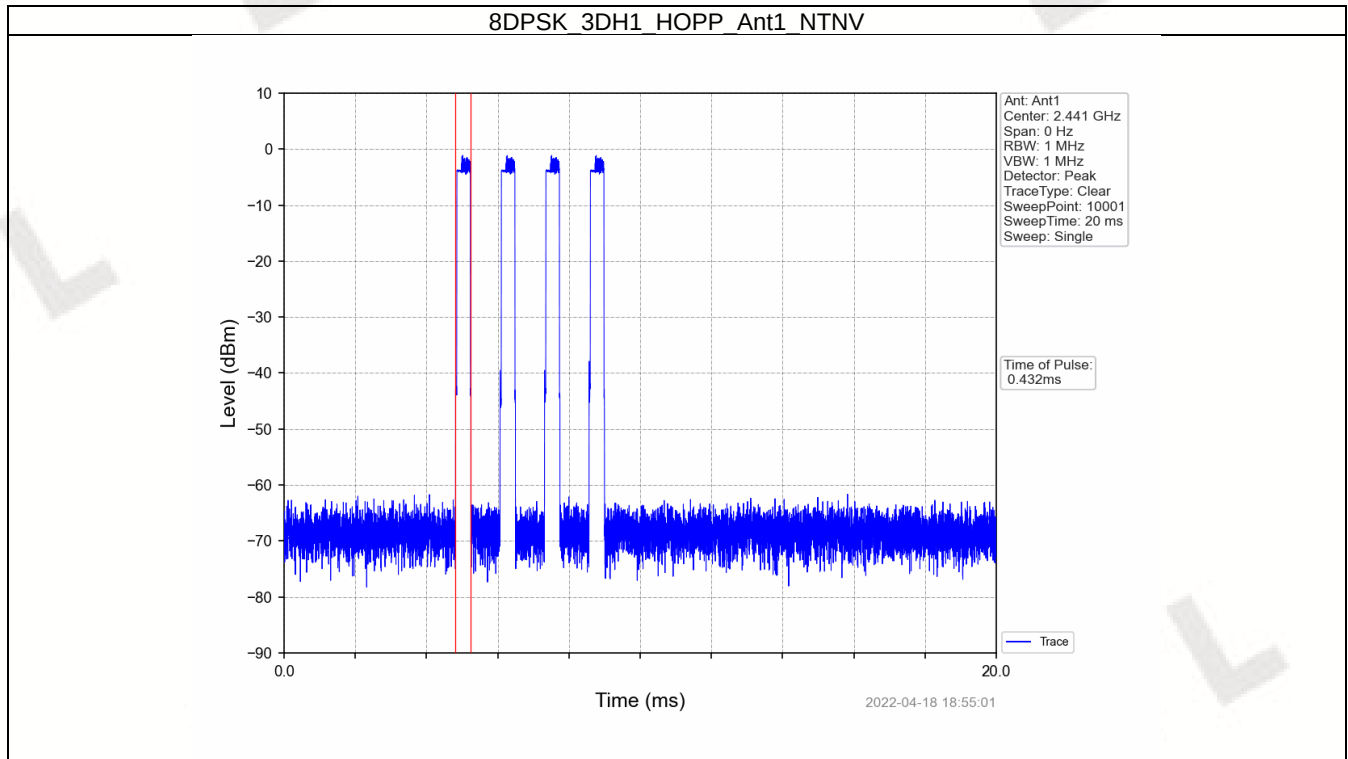


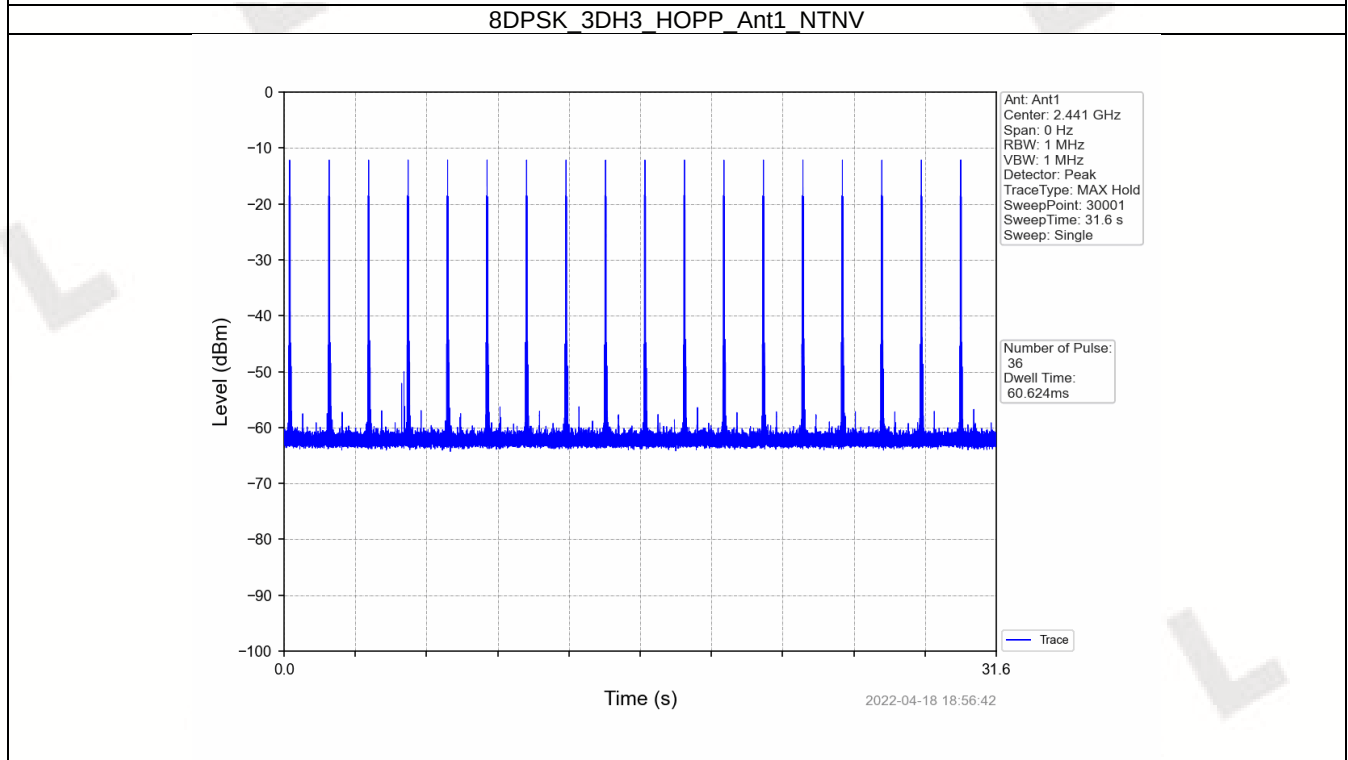
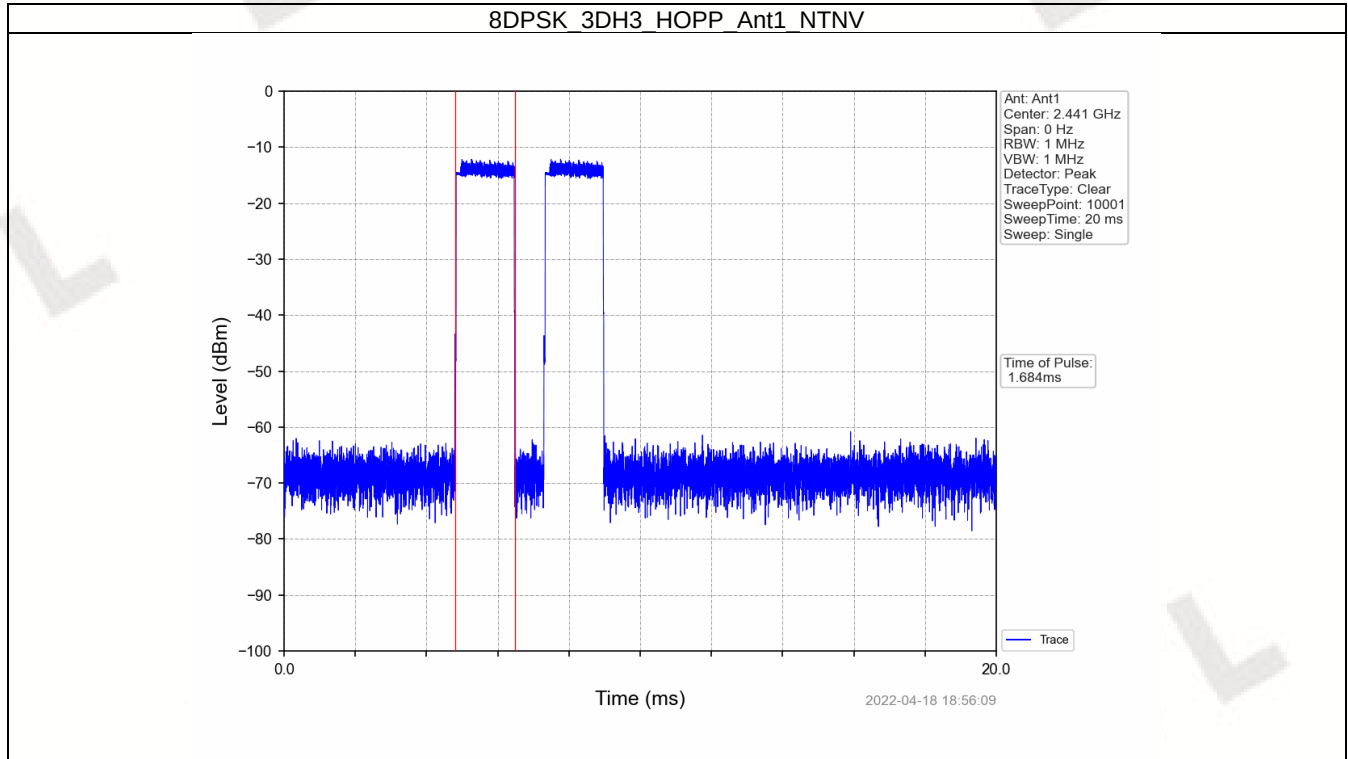


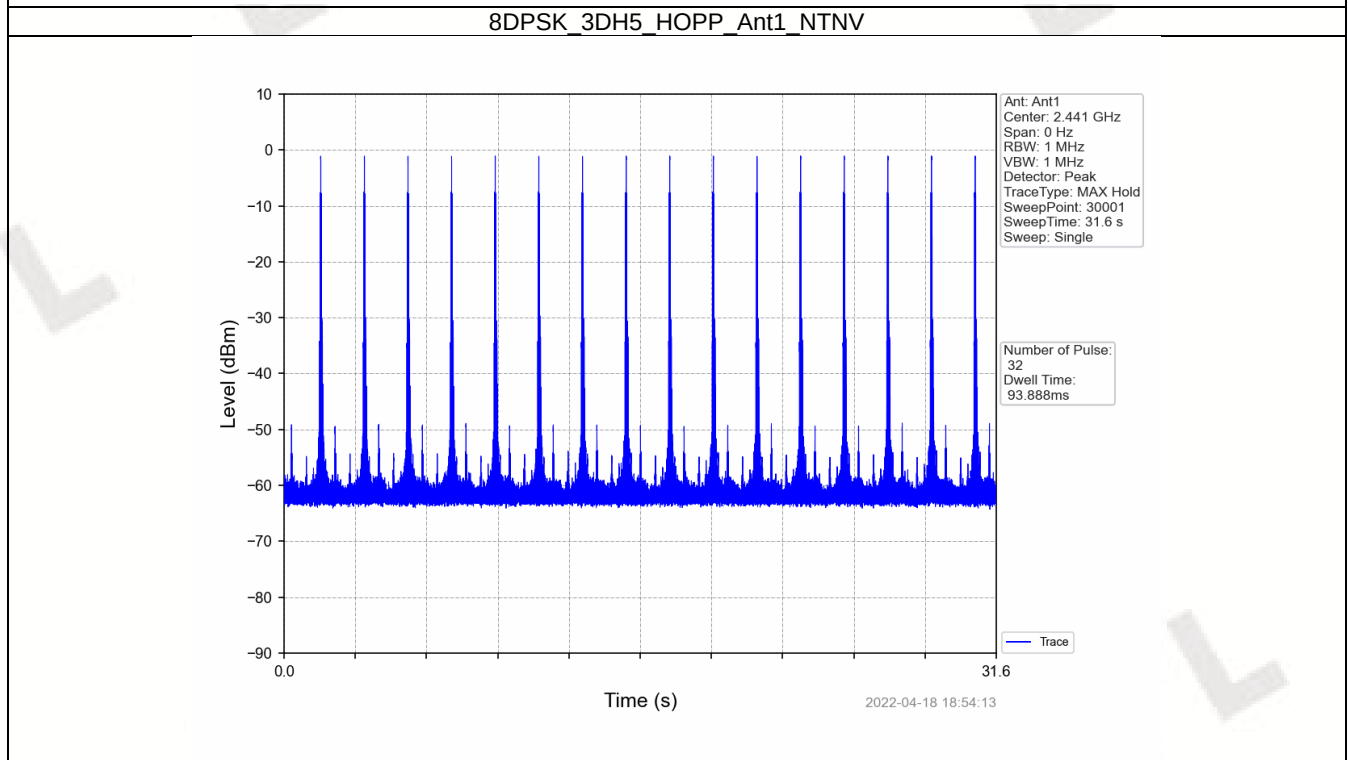
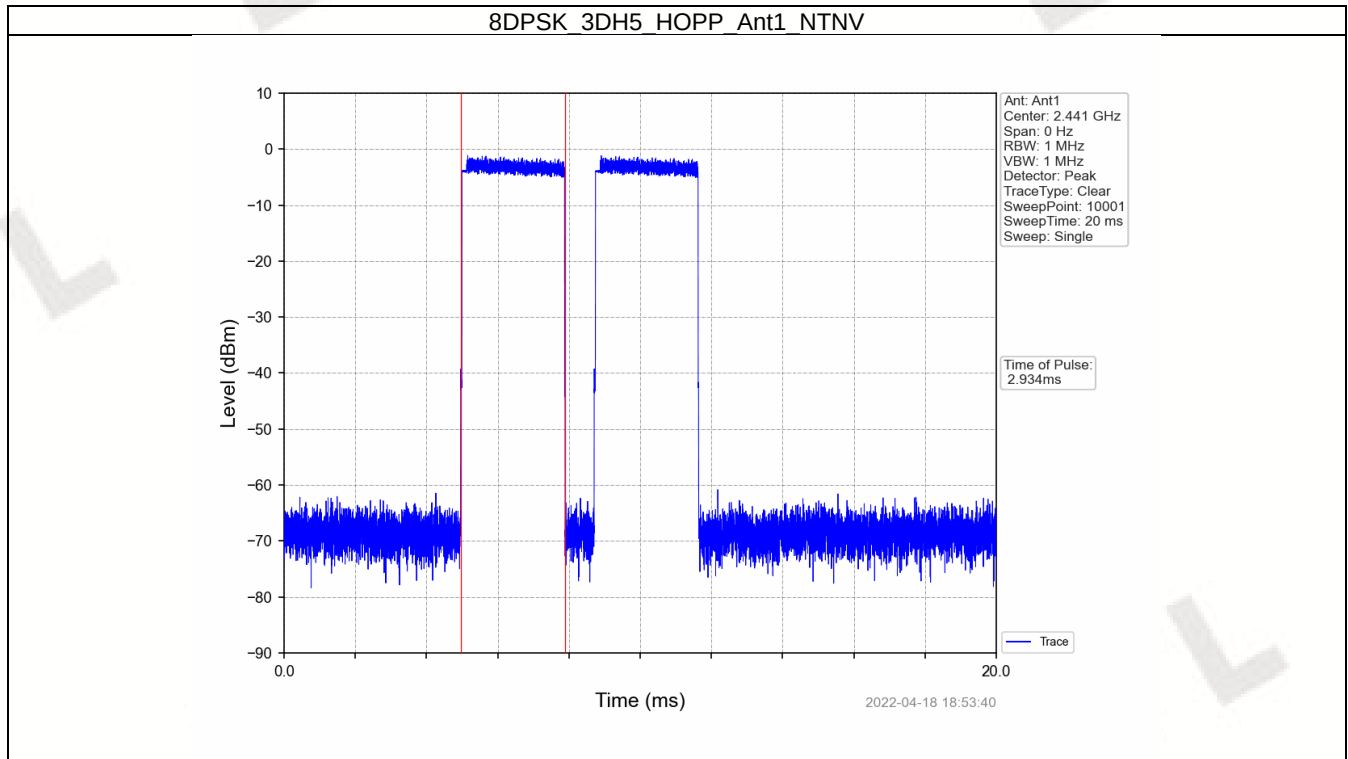














6. Unwanted Emissions In Non-restricted Frequency Bands

6.1 Ref

6.1.1 Test Result

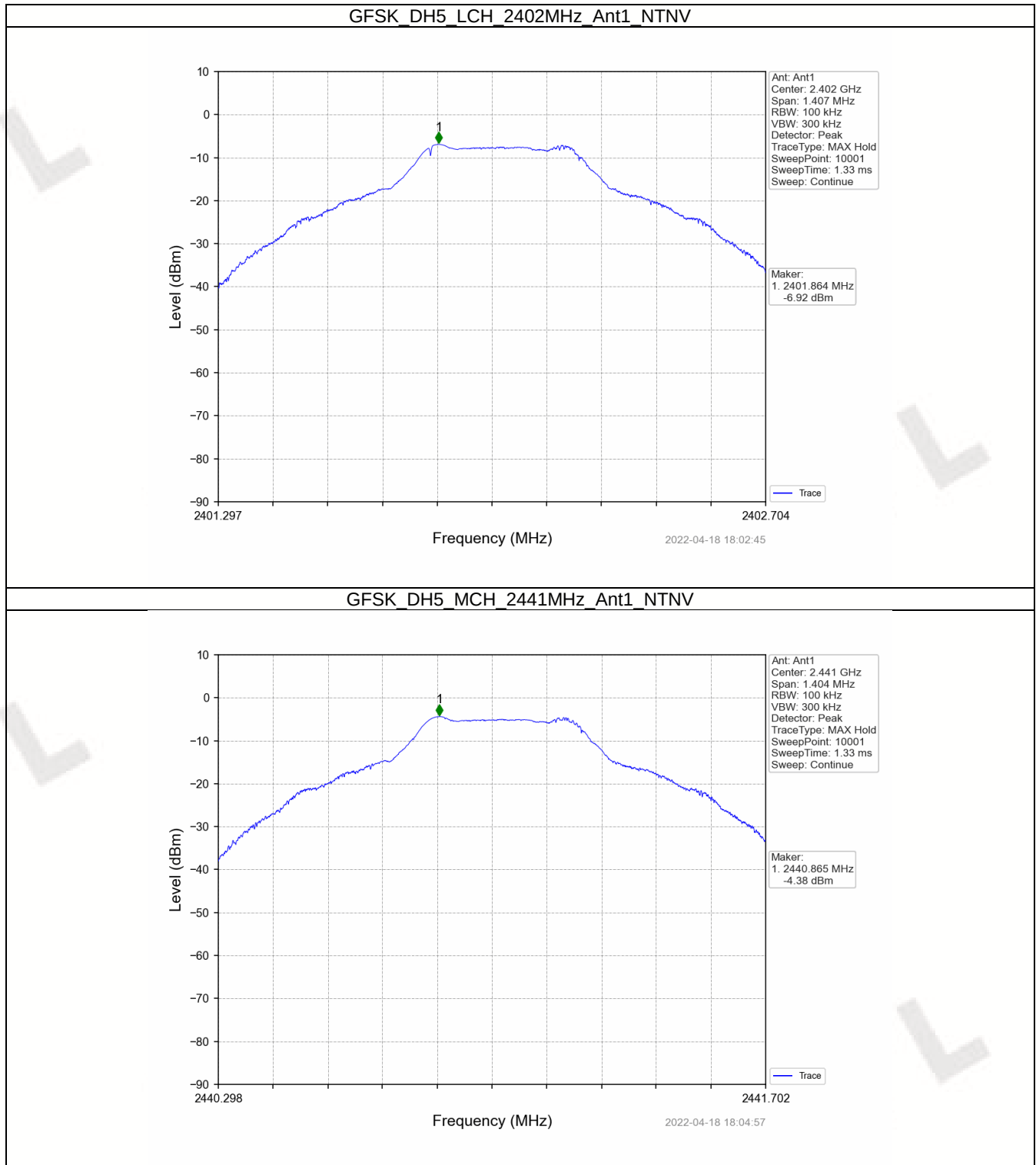
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)
GFSK	SISO	2402	DH5	1	-6.92
		2441	DH5	1	-4.38
		2480	DH5	1	-2.63
Pi/4DQPSK	SISO	2402	2DH5	1	-7.07
		2441	2DH5	1	-4.46
		2480	2DH5	1	-2.81
8DPSK	SISO	2402	3DH5	1	-6.86
		2441	3DH5	1	-4.23
		2480	3DH5	1	-2.58

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.

Note2: RBW = 1MHz was used during the pre-test. The final test will be performed at RBW=100kHz while the margin is less than 3dB.

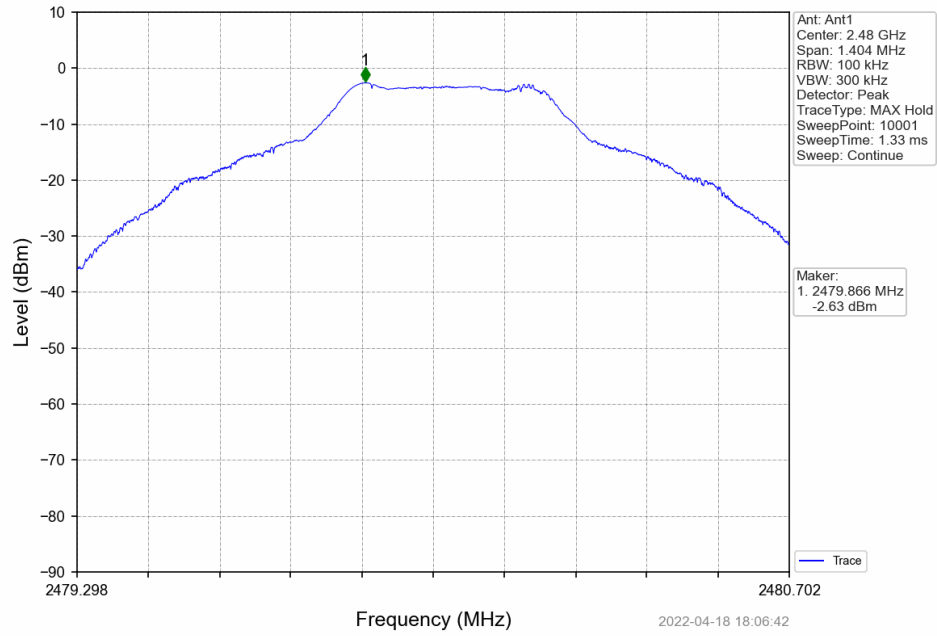


6.1.2 Test Graph

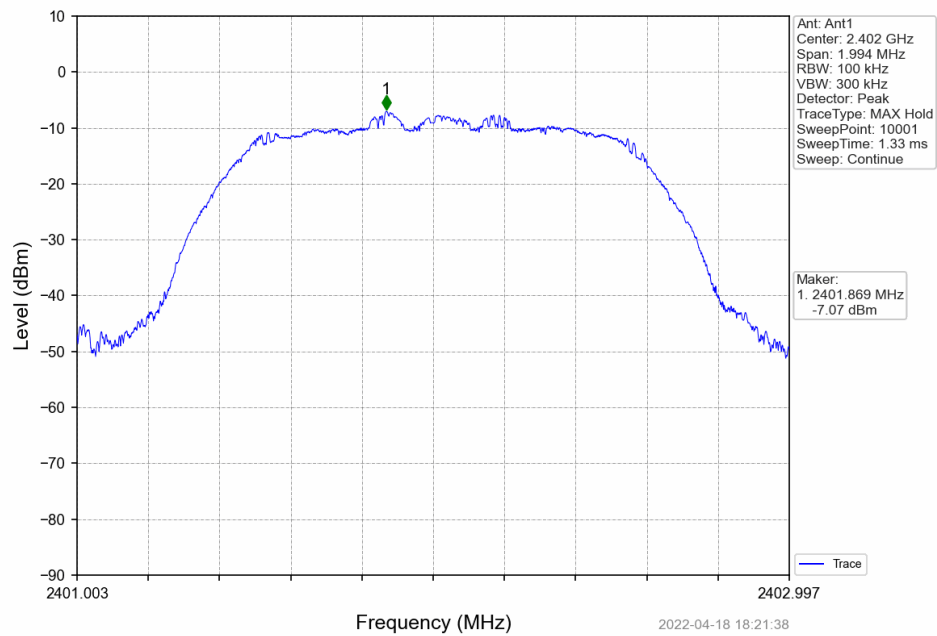




GFSK DH5 HCH 2480MHz Ant1 NTN

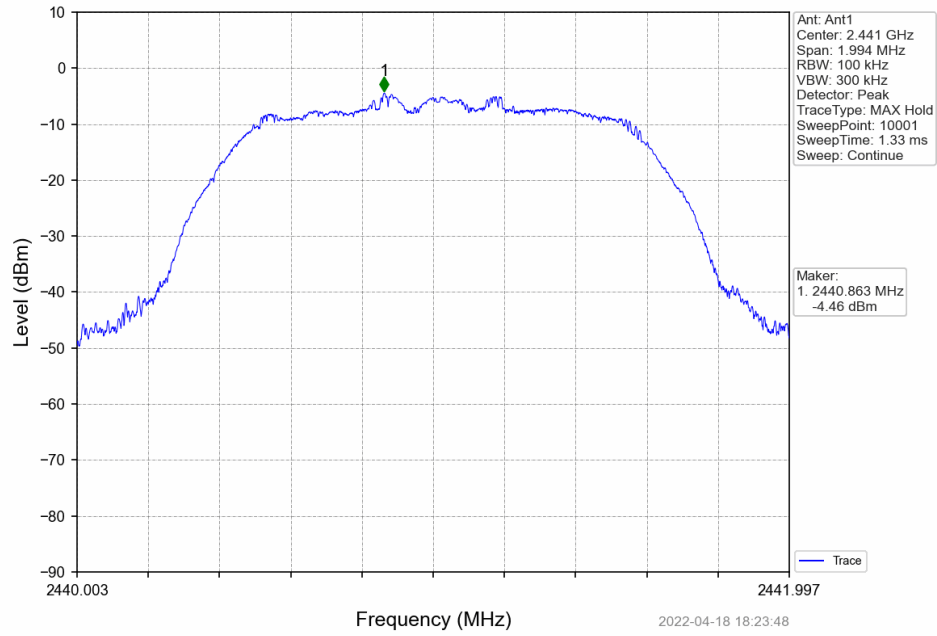


Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1 NTN

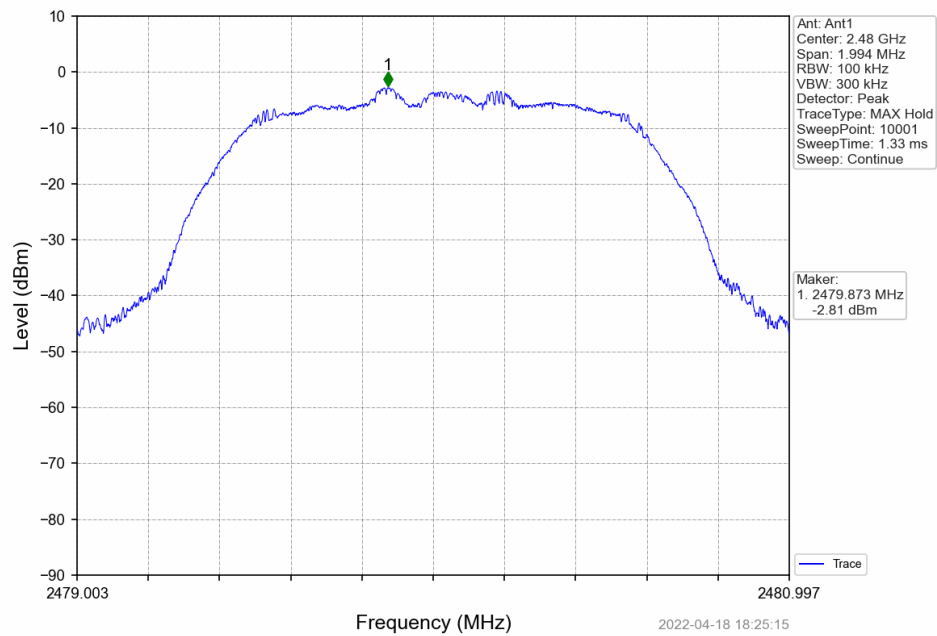




Pi/4DQPSK 2DH5 MCH 2441MHz Ant1 NTN

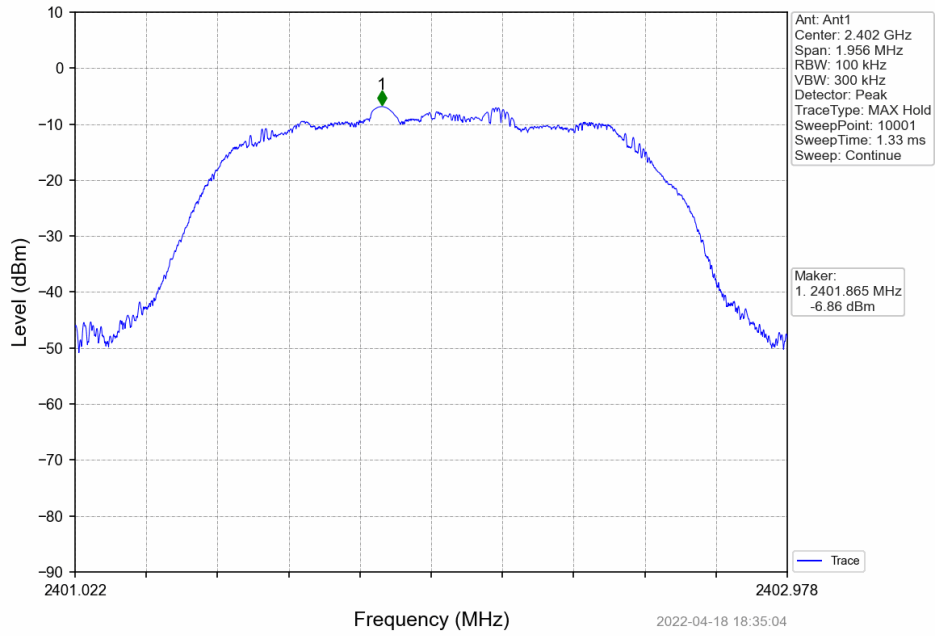


Pi/4DQPSK 2DH5 HCH 2480MHz Ant1 NTN

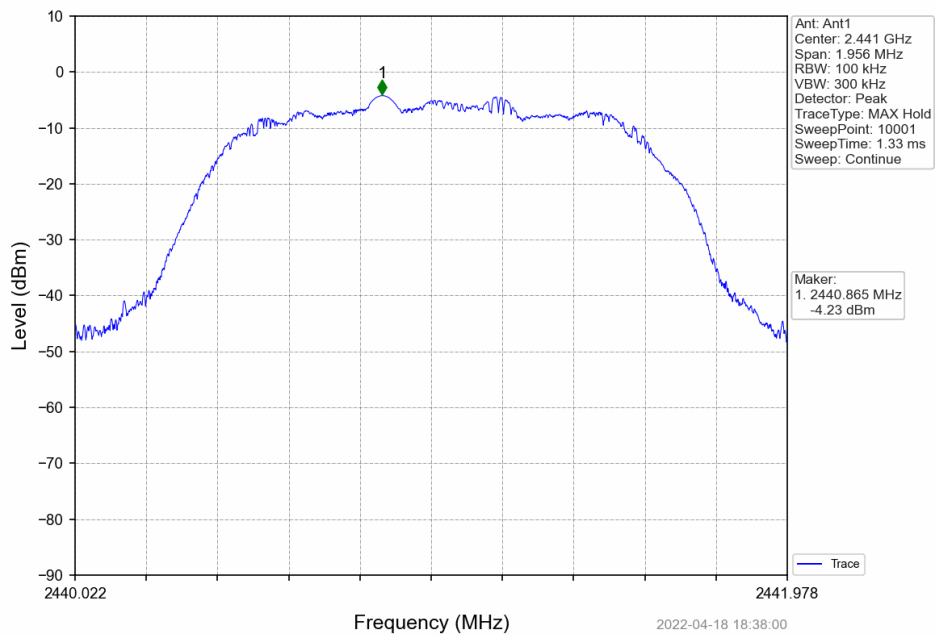


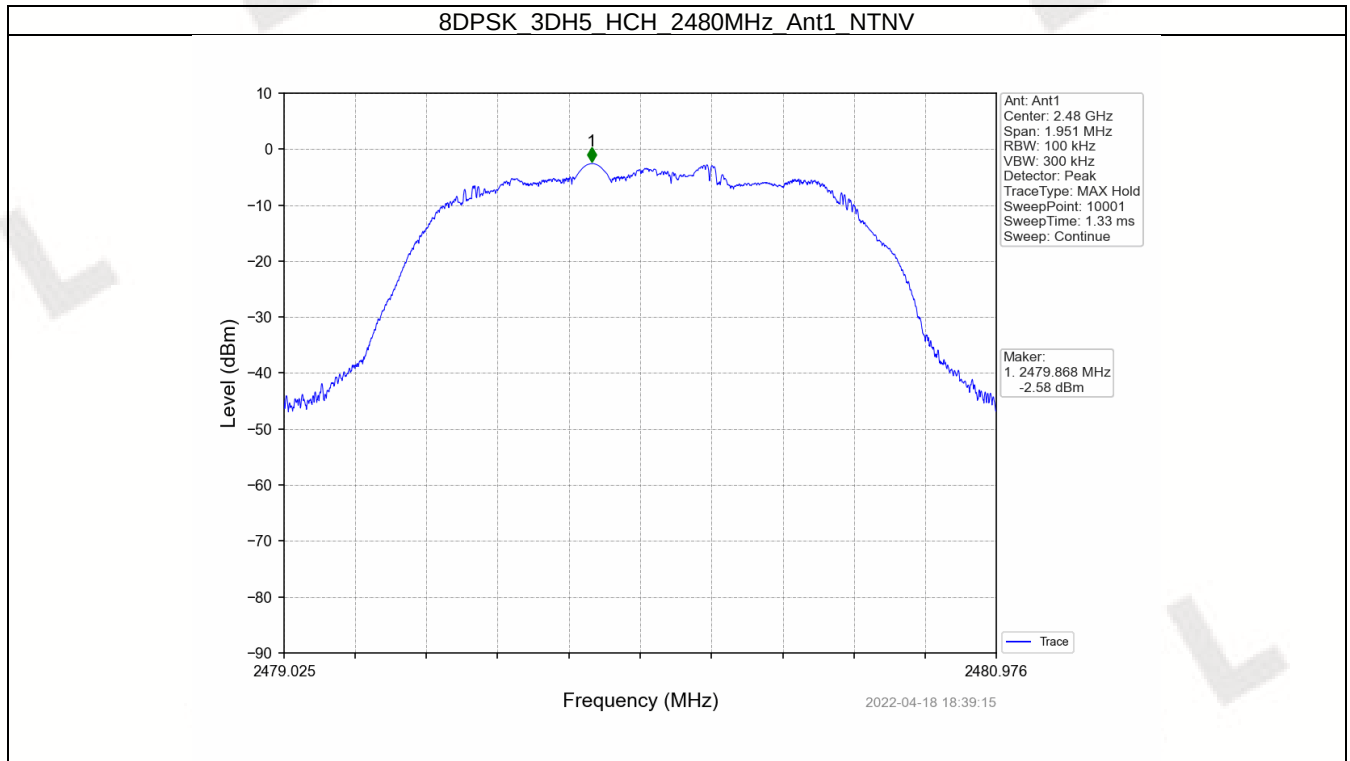


8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV







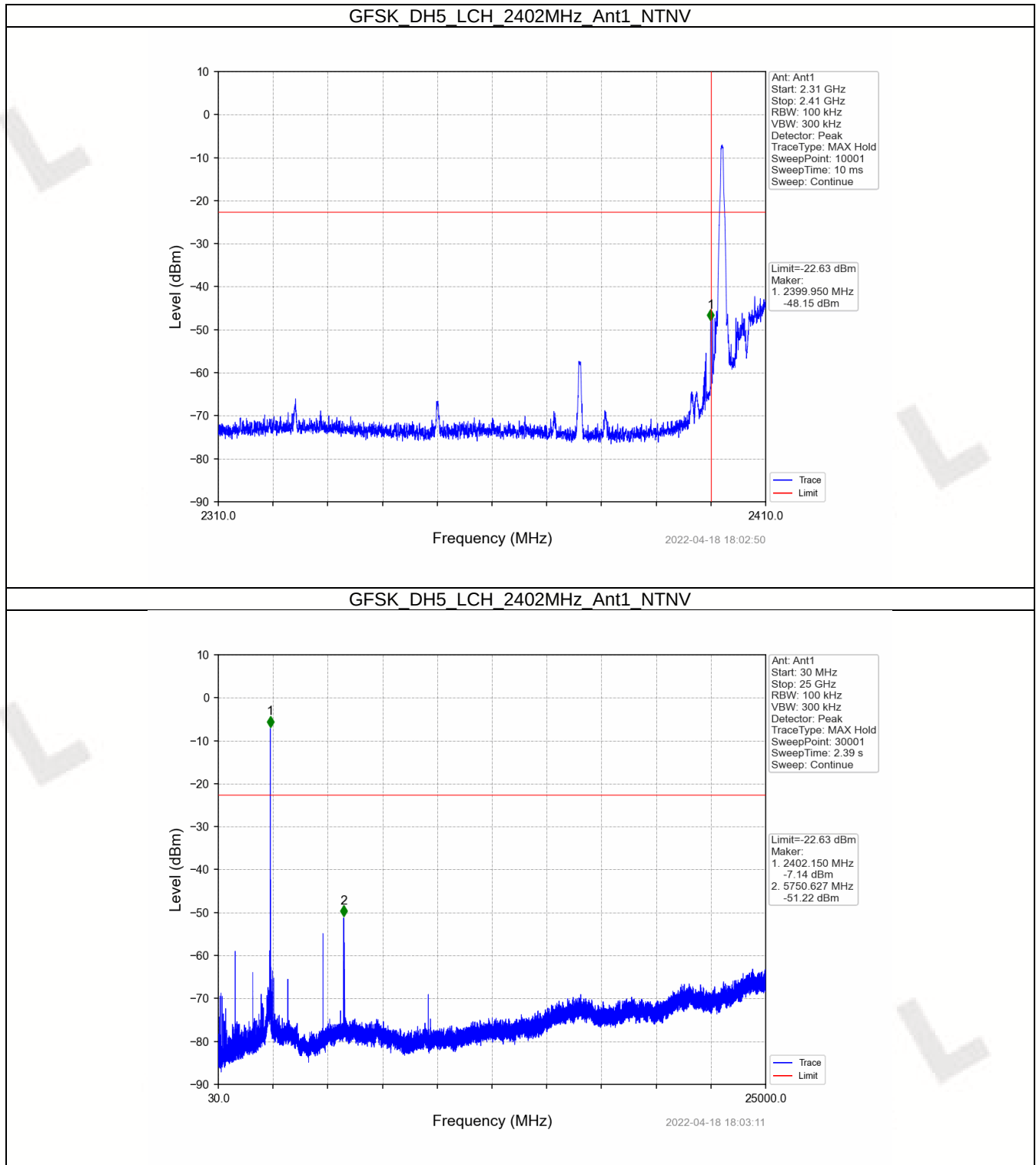
6.2 CSE

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	-2.63	-22.63	Pass
		2441	DH5	1	-2.63	-22.63	Pass
		2480	DH5	1	-2.63	-22.63	Pass
		HOPP	DH5	1	-2.63	-22.63	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	-2.81	-22.81	Pass
		2441	2DH5	1	-2.81	-22.81	Pass
		2480	2DH5	1	-2.81	-22.81	Pass
		HOPP	2DH5	1	-2.81	-22.81	Pass
8DPSK	SISO	2402	3DH5	1	-2.58	-22.58	Pass
		2441	3DH5	1	-2.58	-22.58	Pass
		2480	3DH5	1	-2.58	-22.58	Pass
		HOPP	3DH5	1	-2.58	-22.58	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. Note2: RBW = 1MHz was used during the pre-test. The final test will be performed at RBW=100kHz while the margin is less than 3dB.							

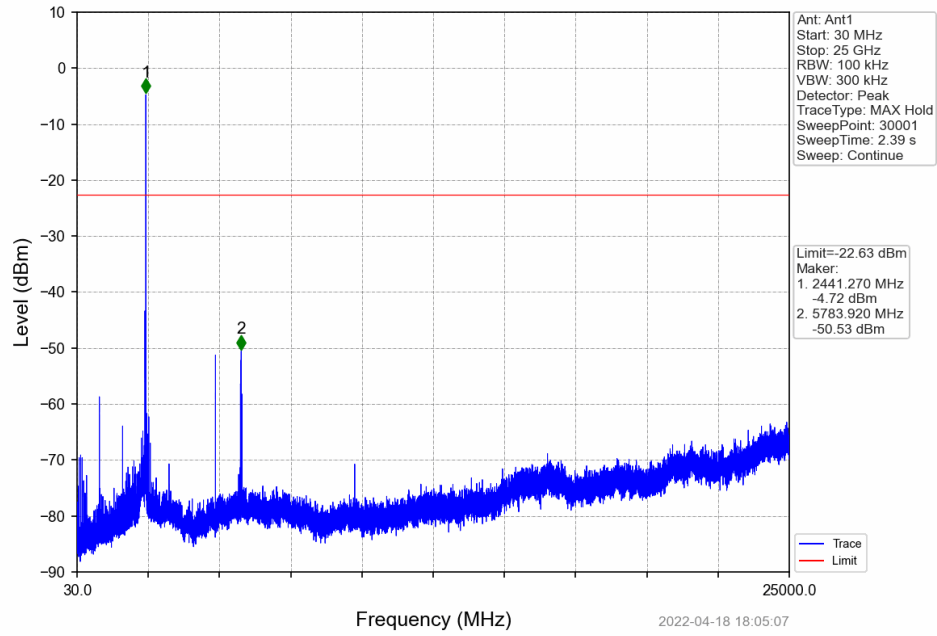


6.2.2 Test Graph

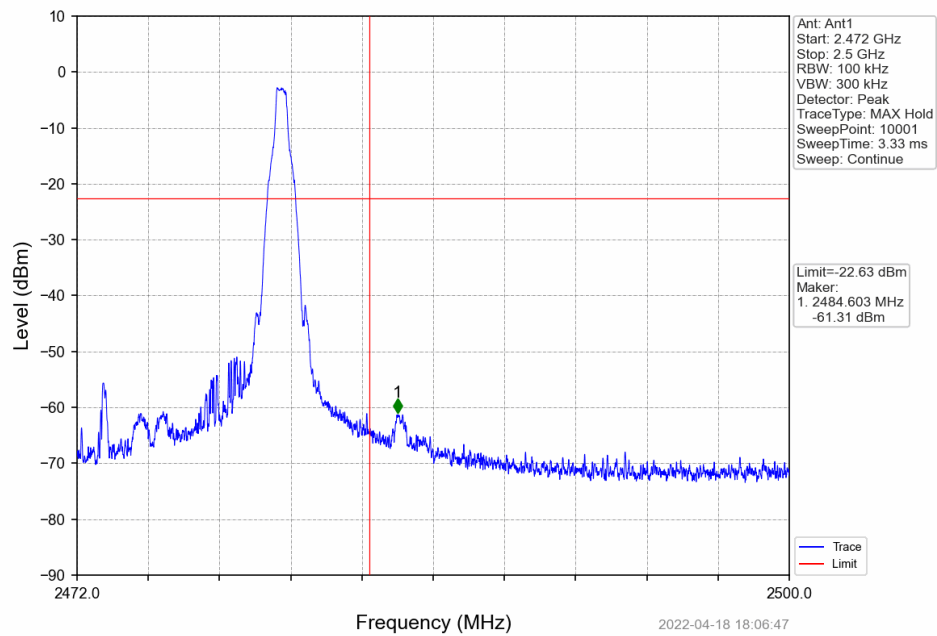




GFSK DH5 MCH 2441MHz Ant1 NTN

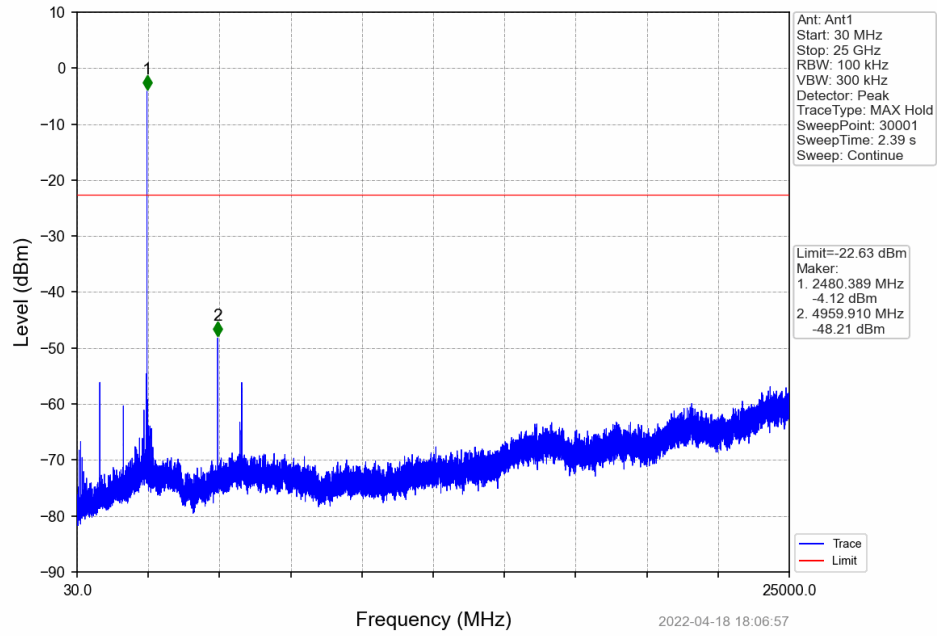


GFSK DH5 HCH 2480MHz Ant1 NTN

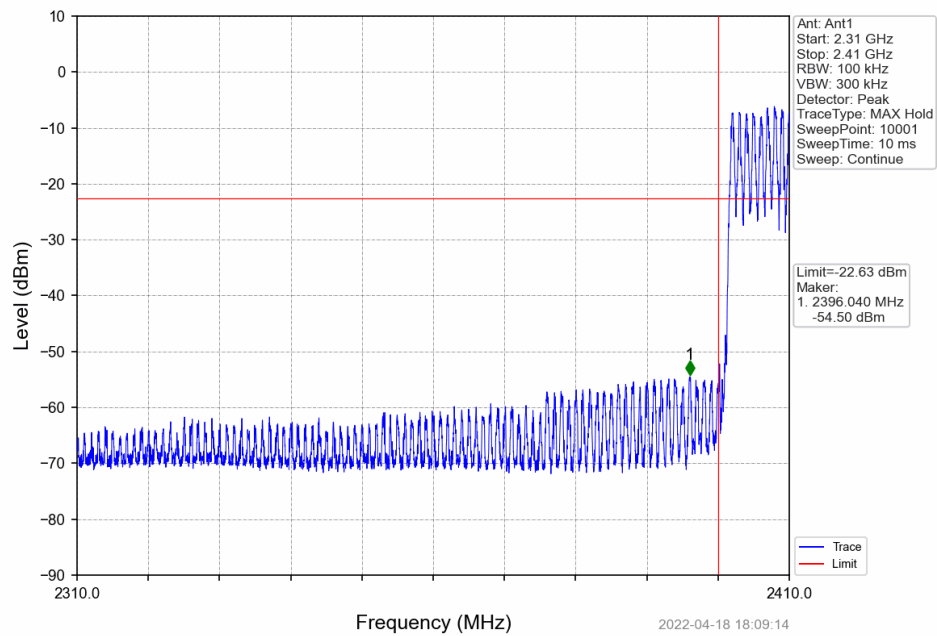


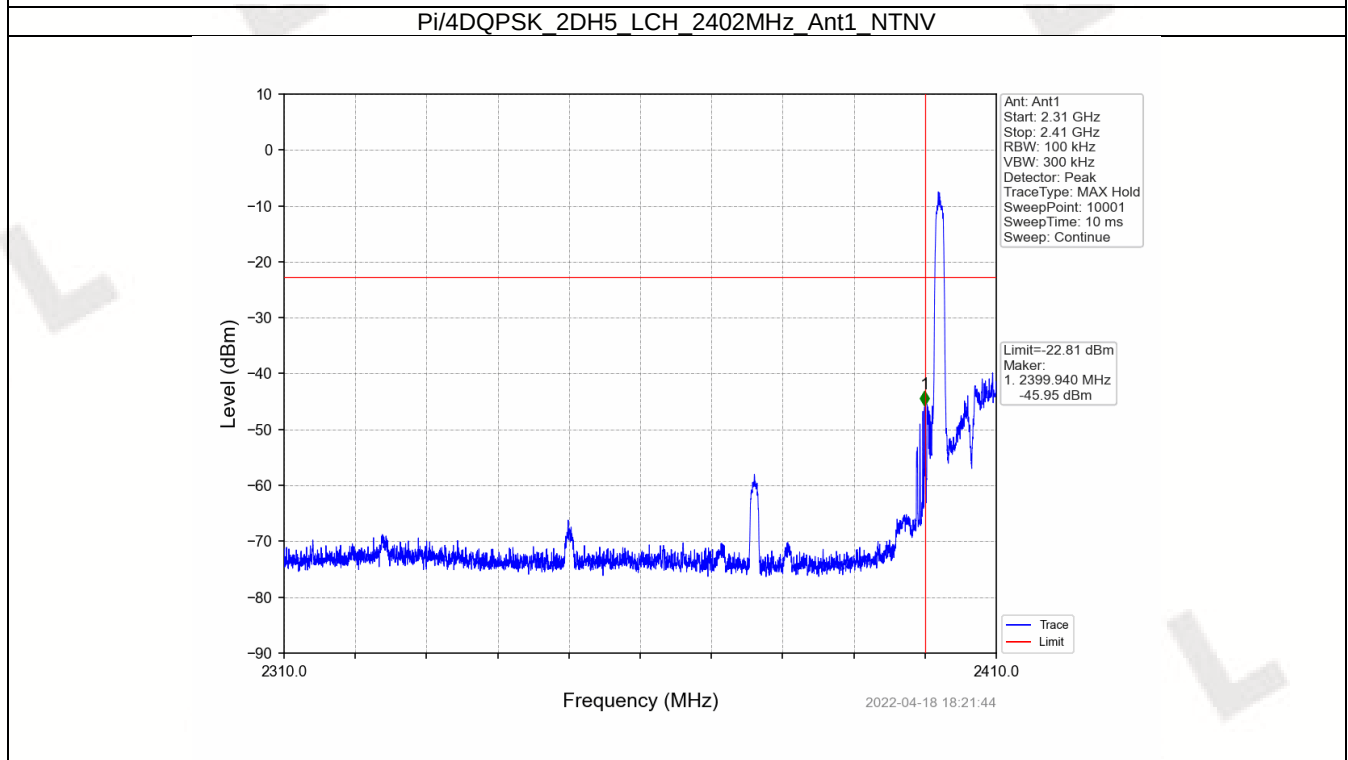
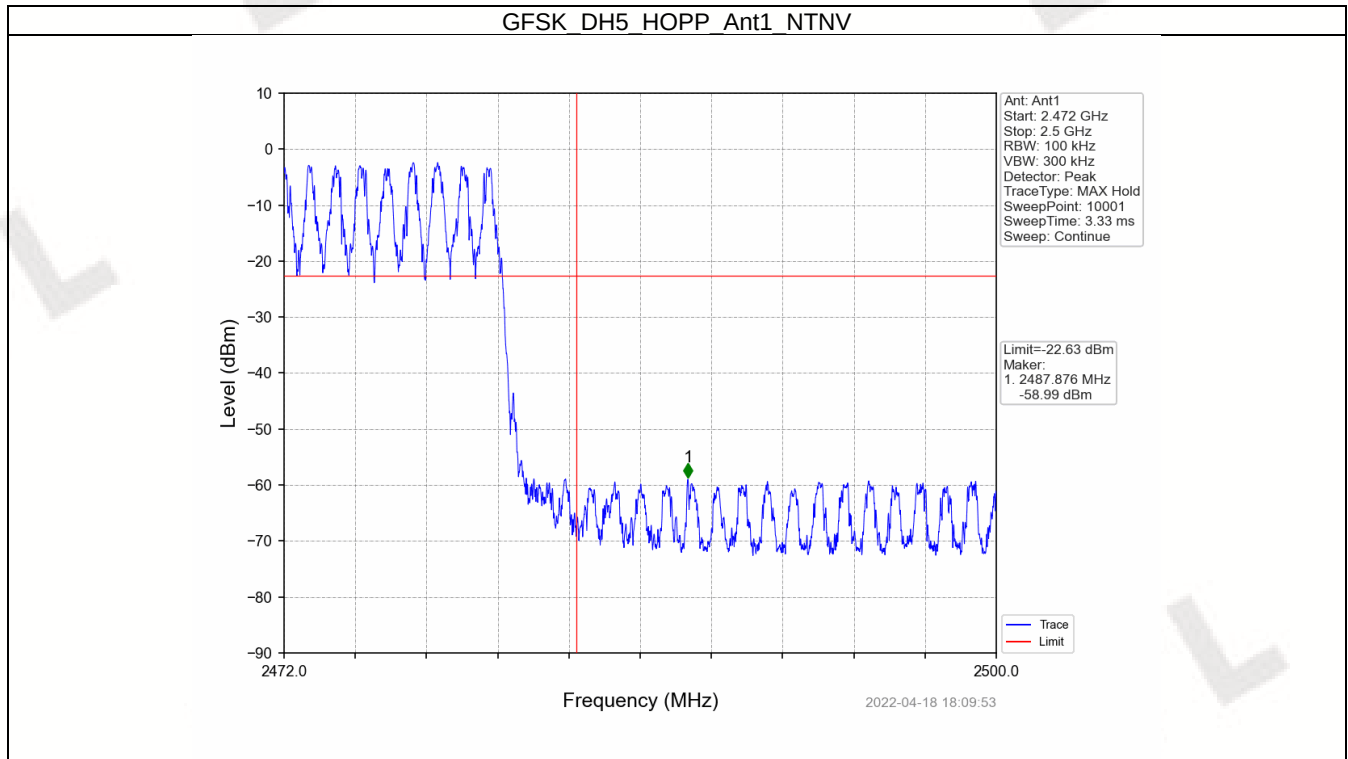


GFSK DH5 HCH 2480MHz Ant1 NTN



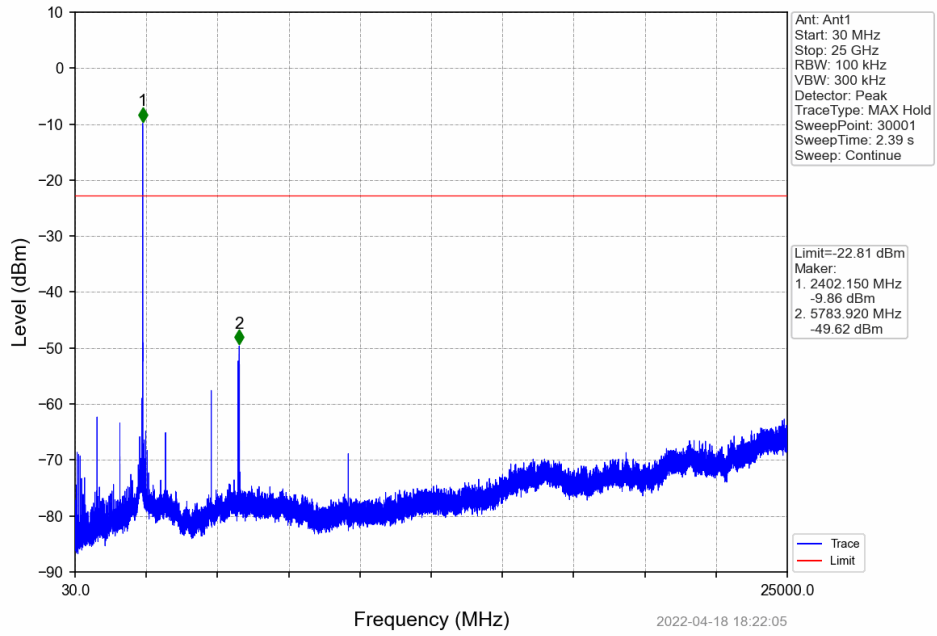
GFSK_DH5_HOPP_Ant1 NTN



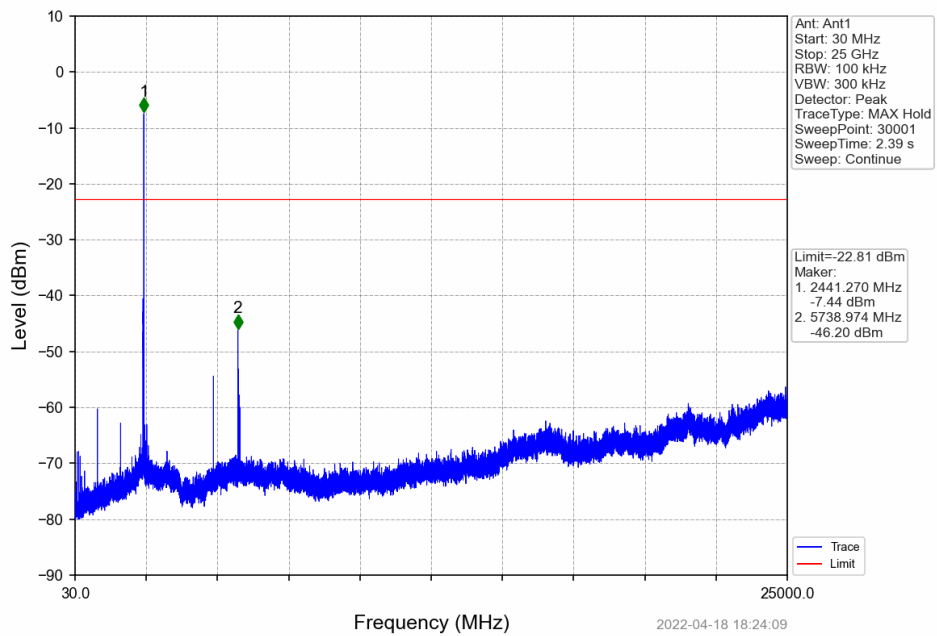


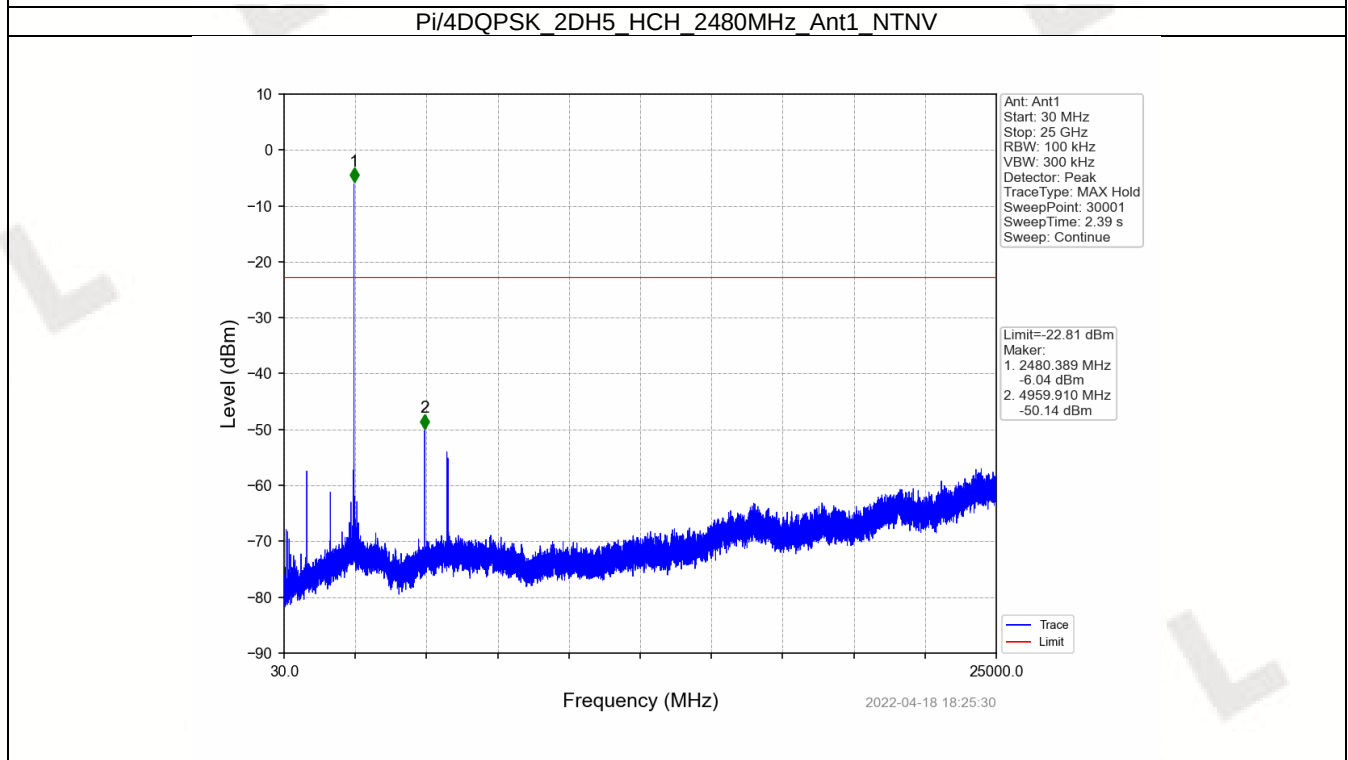
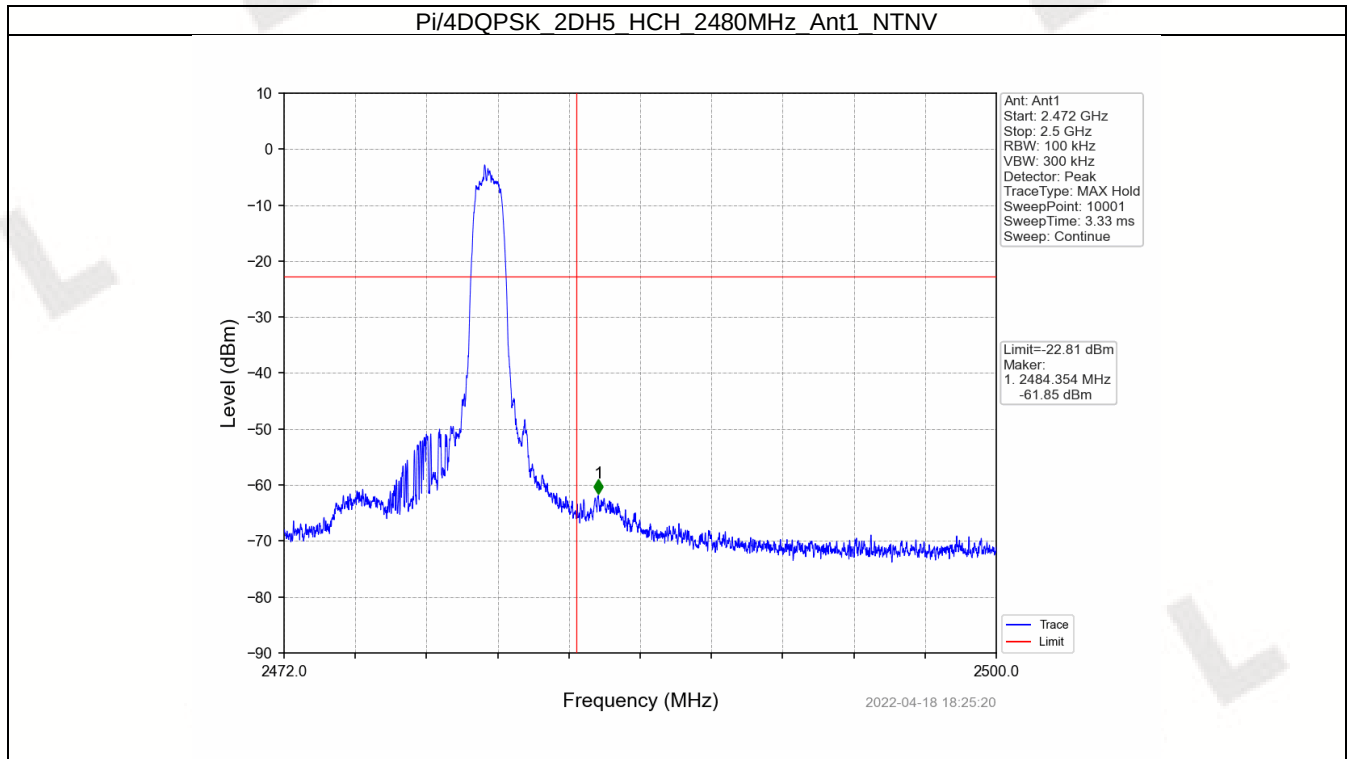


Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



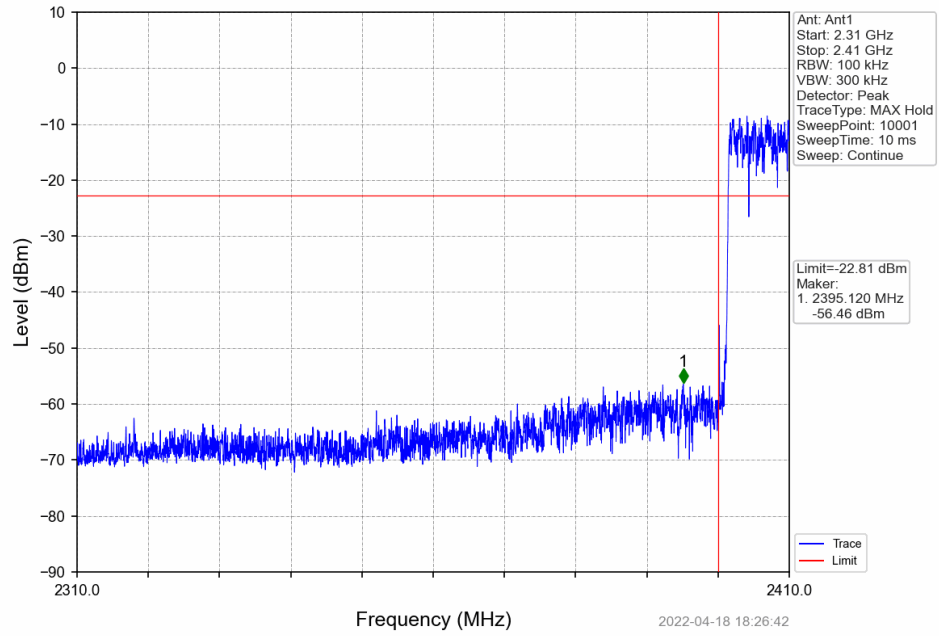
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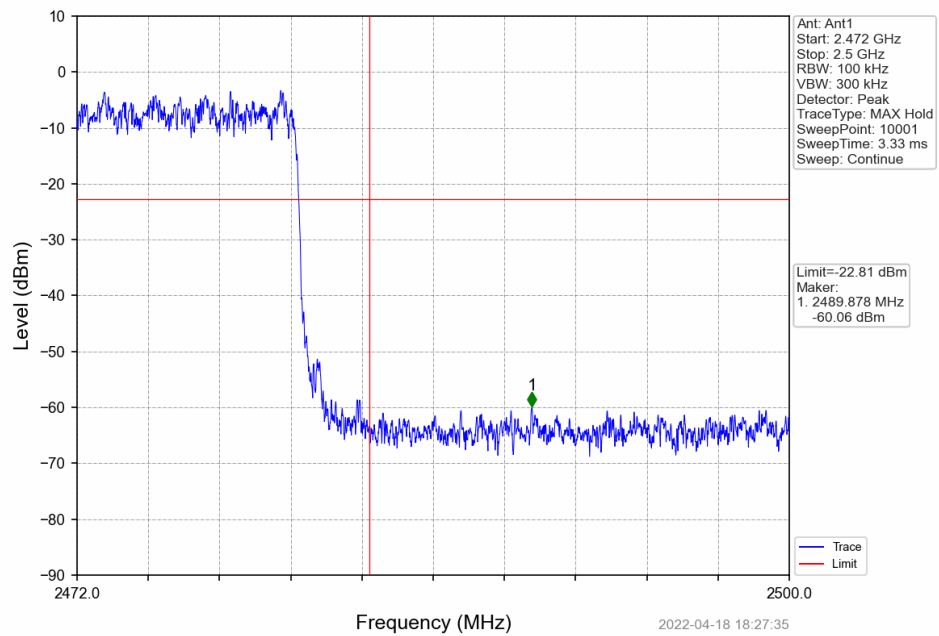




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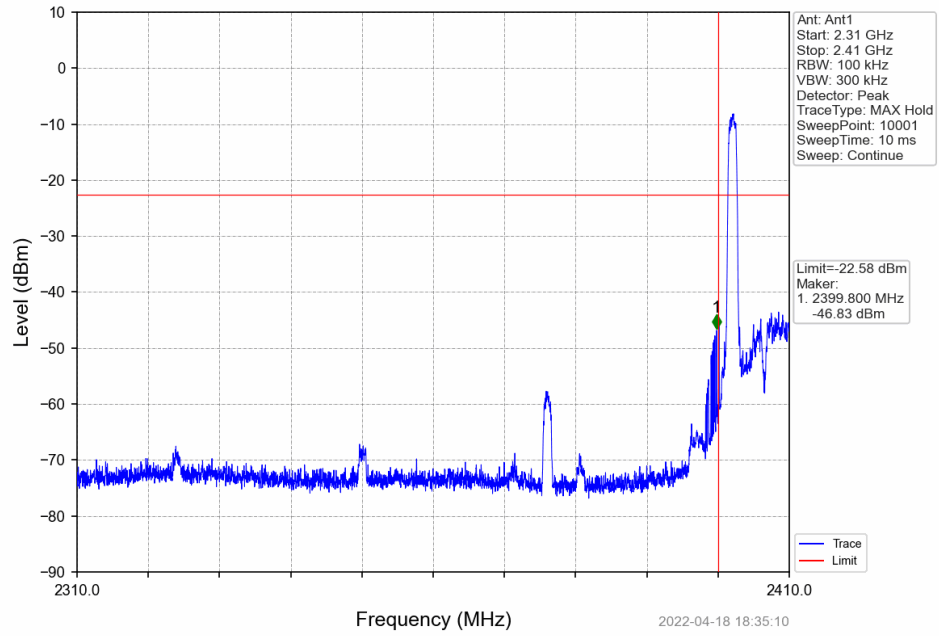


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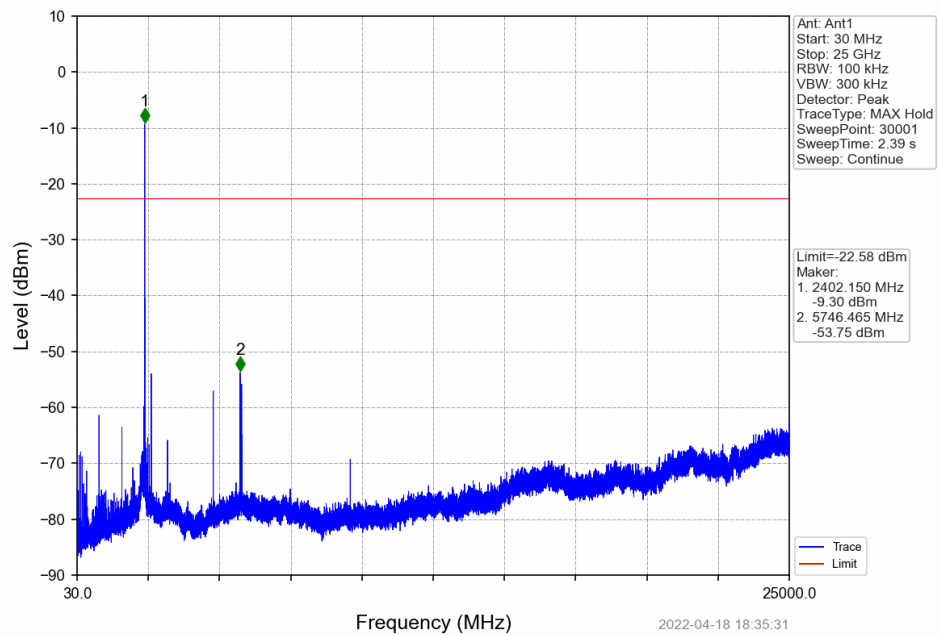




8DPSK 3DH5 LCH 2402MHz Ant1 NTV

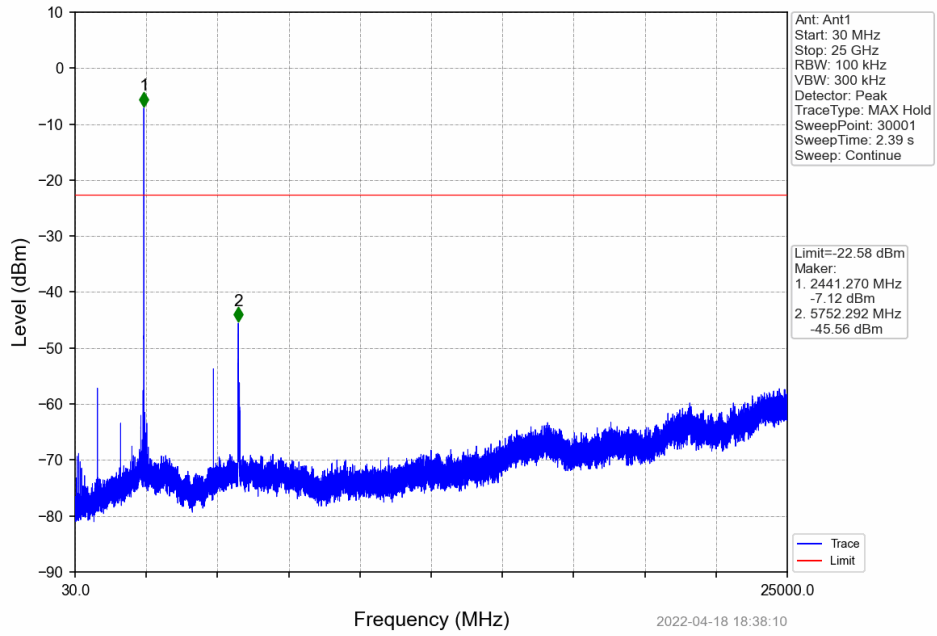


8DPSK 3DH5 LCH 2402MHz Ant1 NTV

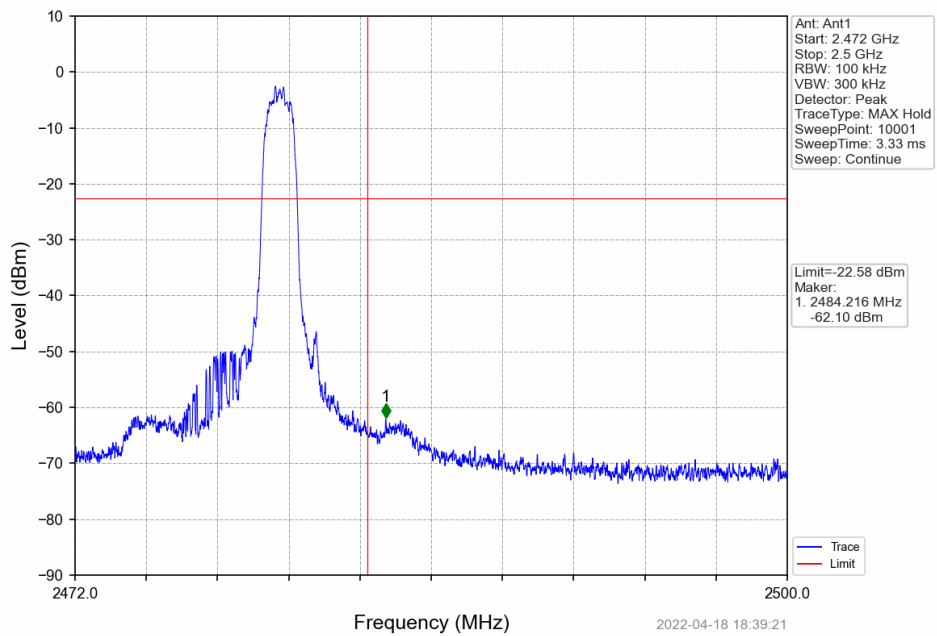




8DPSK 3DH5 MCH 2441MHz Ant1 NTN

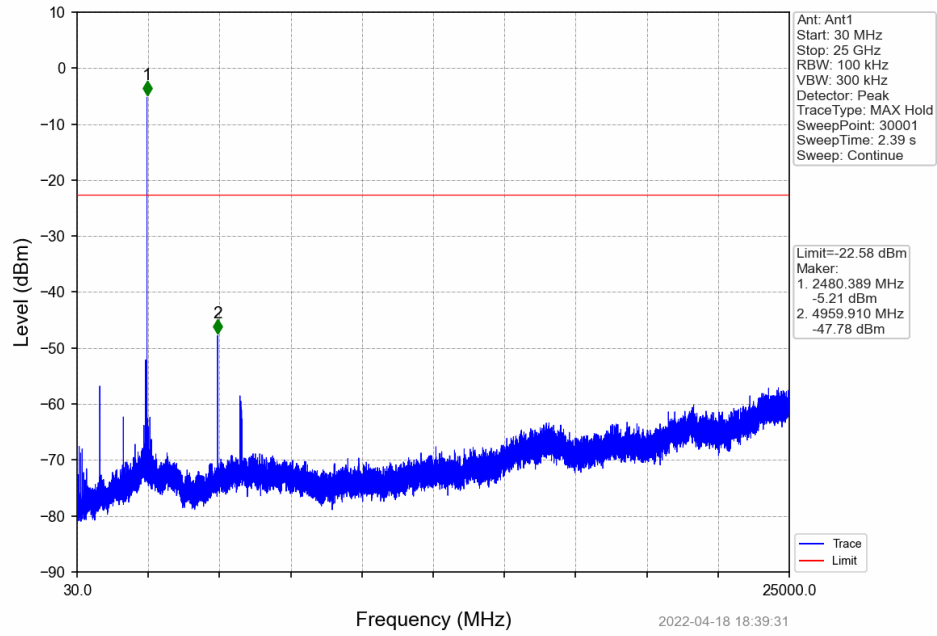


8DPSK 3DH5 HCH 2480MHz Ant1 NTN





8DPSK 3DH5 HCH 2480MHz Ant1 NTN



8DPSK 3DH5 HOPP Ant1 NTN

