



EUT Test Data

Product Name:	wireless earphone
Model No.:	I12

SUMMARY

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C			
Standard Section	Test Item	Result	Remark
15.203/15.247 (c)	Antenna Requirement	PASS	
15.207	AC Power Line Conducted Emission	PASS	
15.247 (b)(1)	Conducted Peak Output Power	PASS	
15.247 (a)(1)	20dB Occupied Bandwidth 99% OCB	PASS	
15.247 (a)(1)	Carrier Frequencies Separation	PASS	
15.247 (a)(1)(iii)	Hopping Channel Number	PASS	
15.247 (a)(1)(iii)	Dwell Time	PASS	
15.205/15.209	Radiated Emission and Restricted Band	PASS	
15.247(d)	Conducted Unwanted emissions and Band Edge	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report



1. Bandwidth

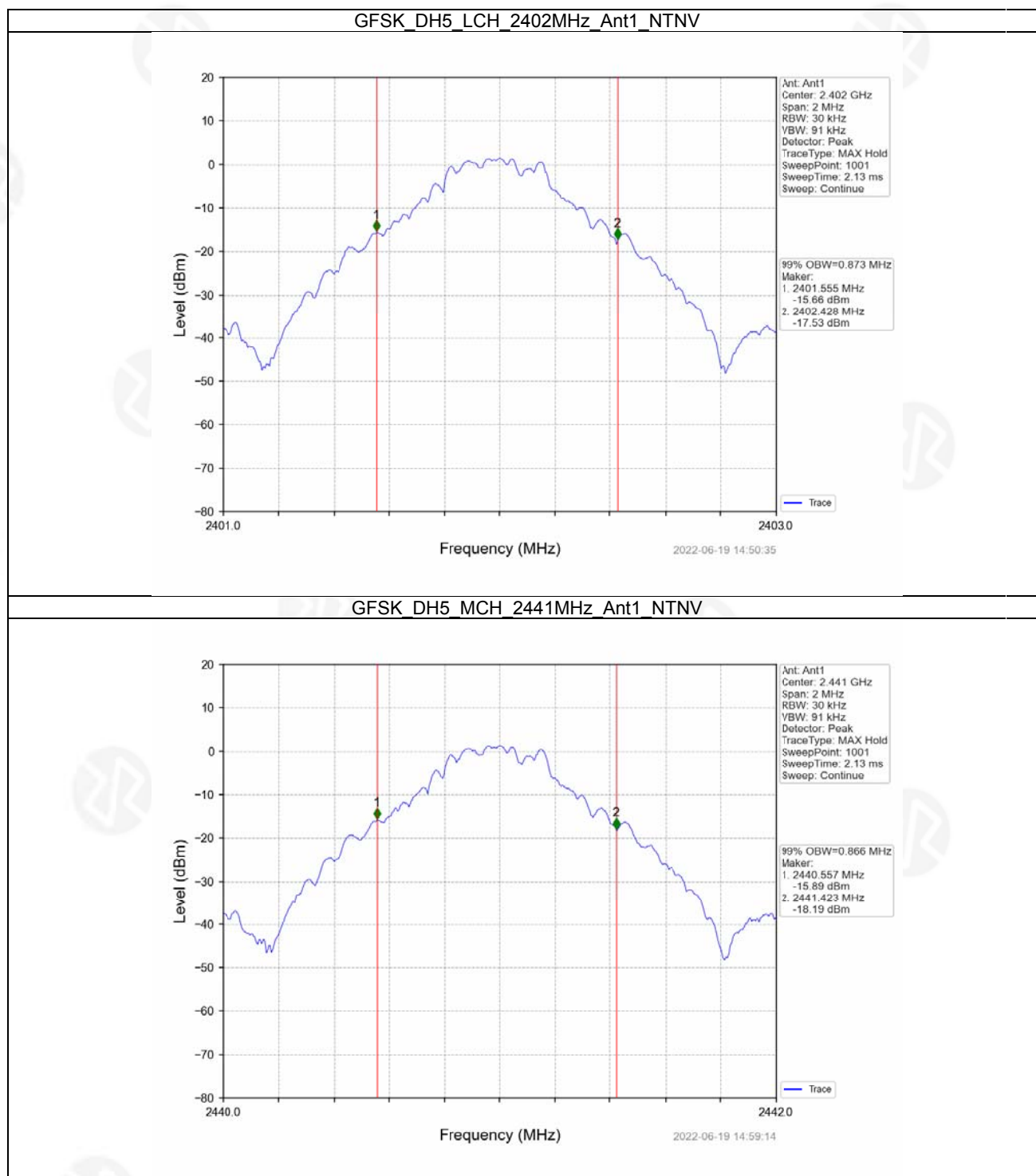
1.1 OBW

1.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	99% Occupied Bandwidth (MHz)	Verdict
					Result	
GFSK	SISO	2402	DH5	1	0.873	Pass
		2441	DH5	1	0.866	Pass
		2480	DH5	1	0.874	Pass
Π/4-DQPSK	SISO	2402	2DH5	1	1.356	Pass
		2441	2DH5	1	1.356	Pass
		2480	2DH5	1	1.354	Pass
8DPSK	SISO	2402	3DH5	1	1.355	Pass
		2441	3DH5	1	1.356	Pass
		2480	3DH5	1	1.355	Pass

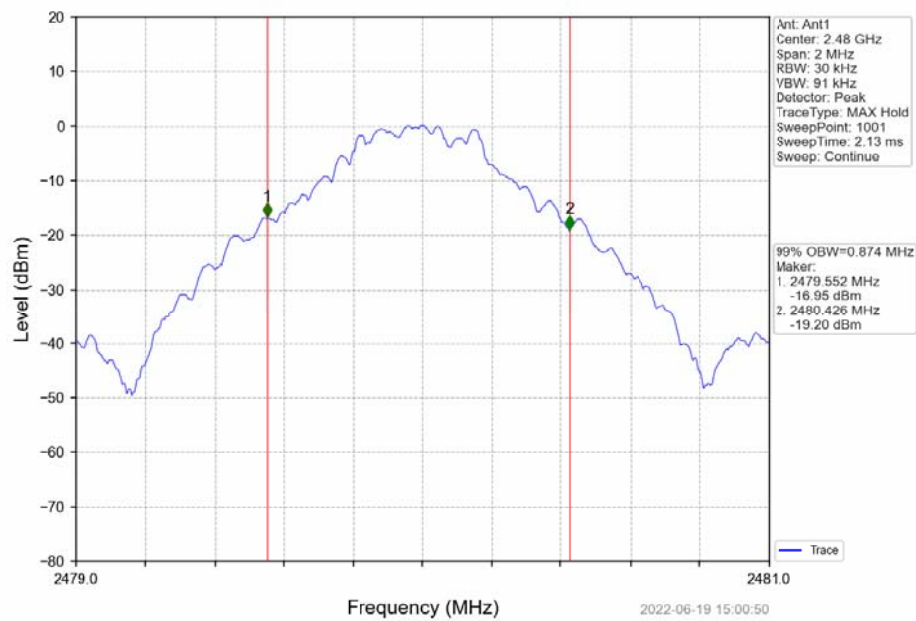
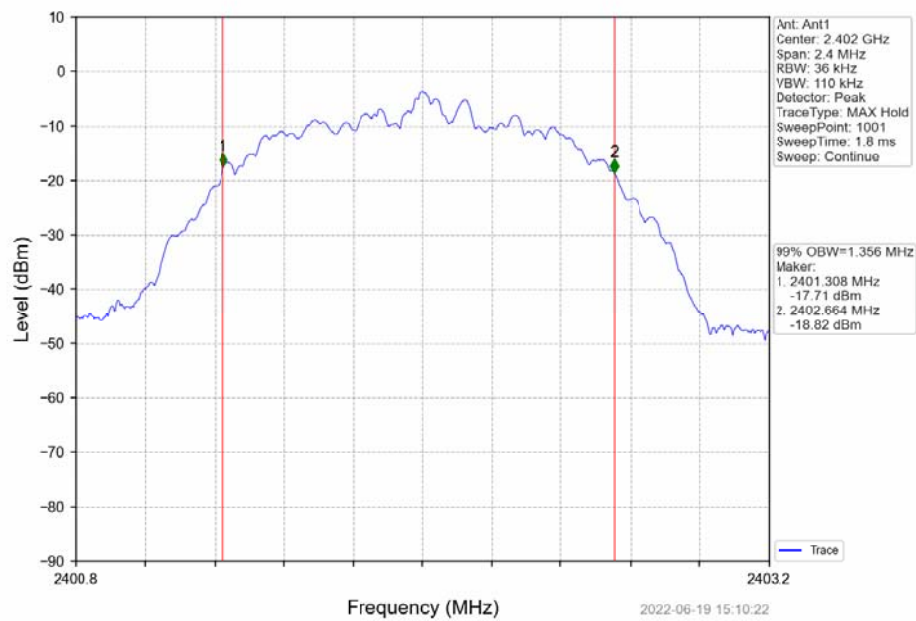


1.1.2 Test Graph



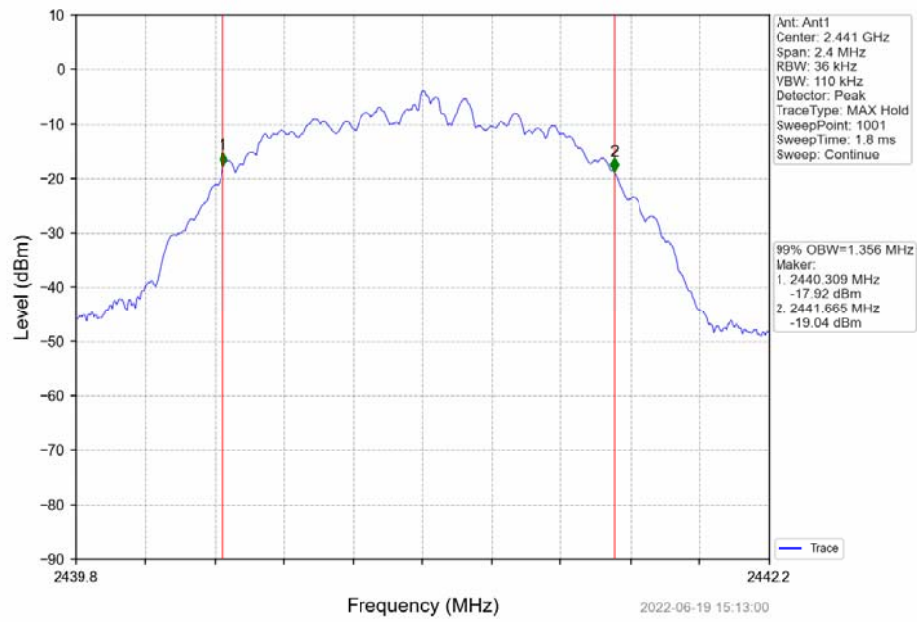


GFSK_DH5_HCH_2480MHz_Ant1_NTNV

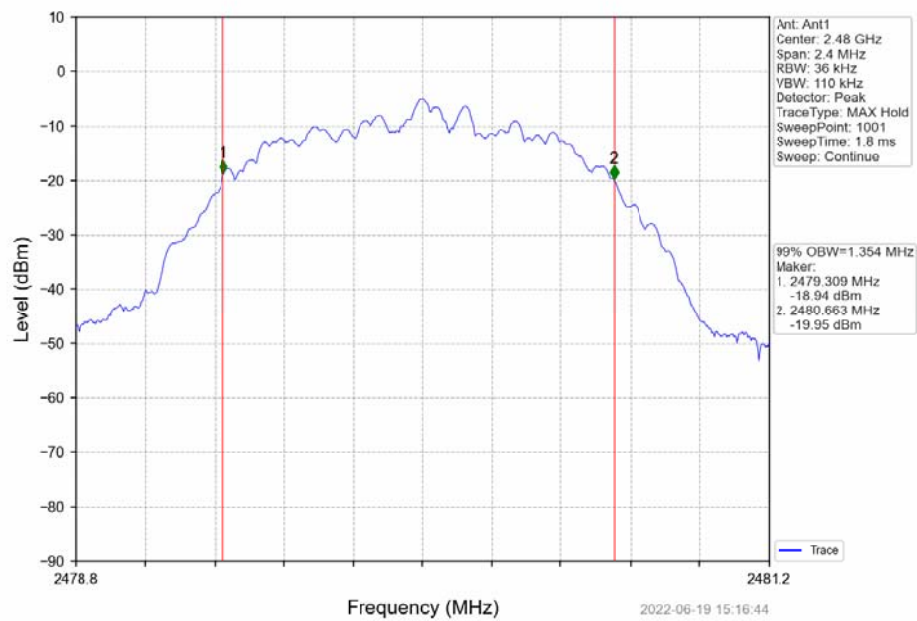
 $\pi/4$ -DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



П/4-DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV

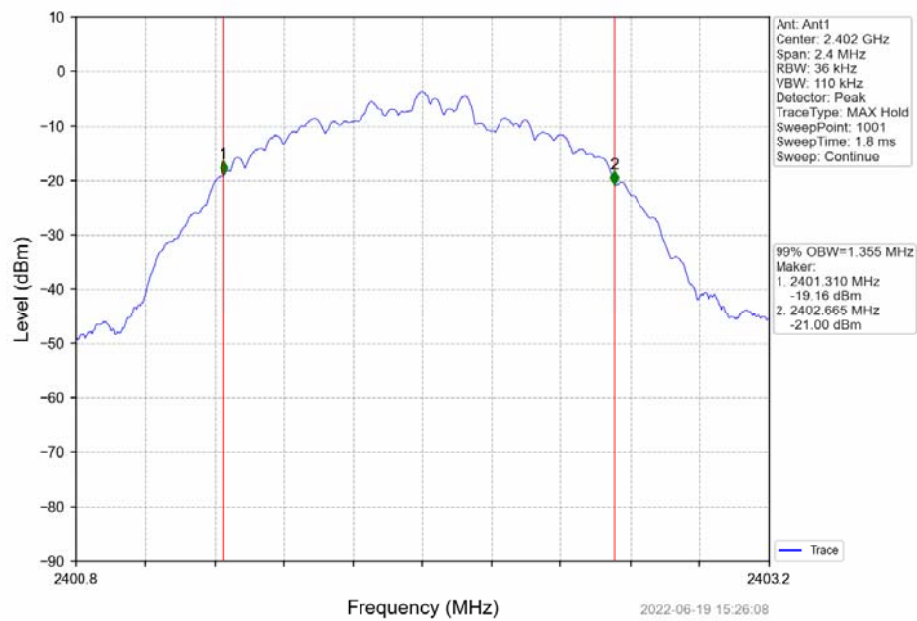


П/4-DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

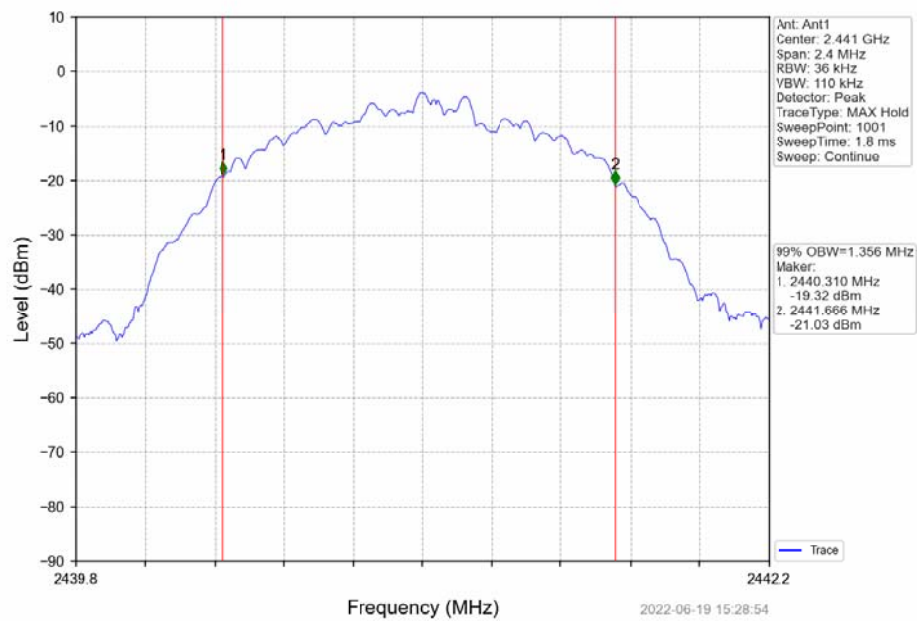


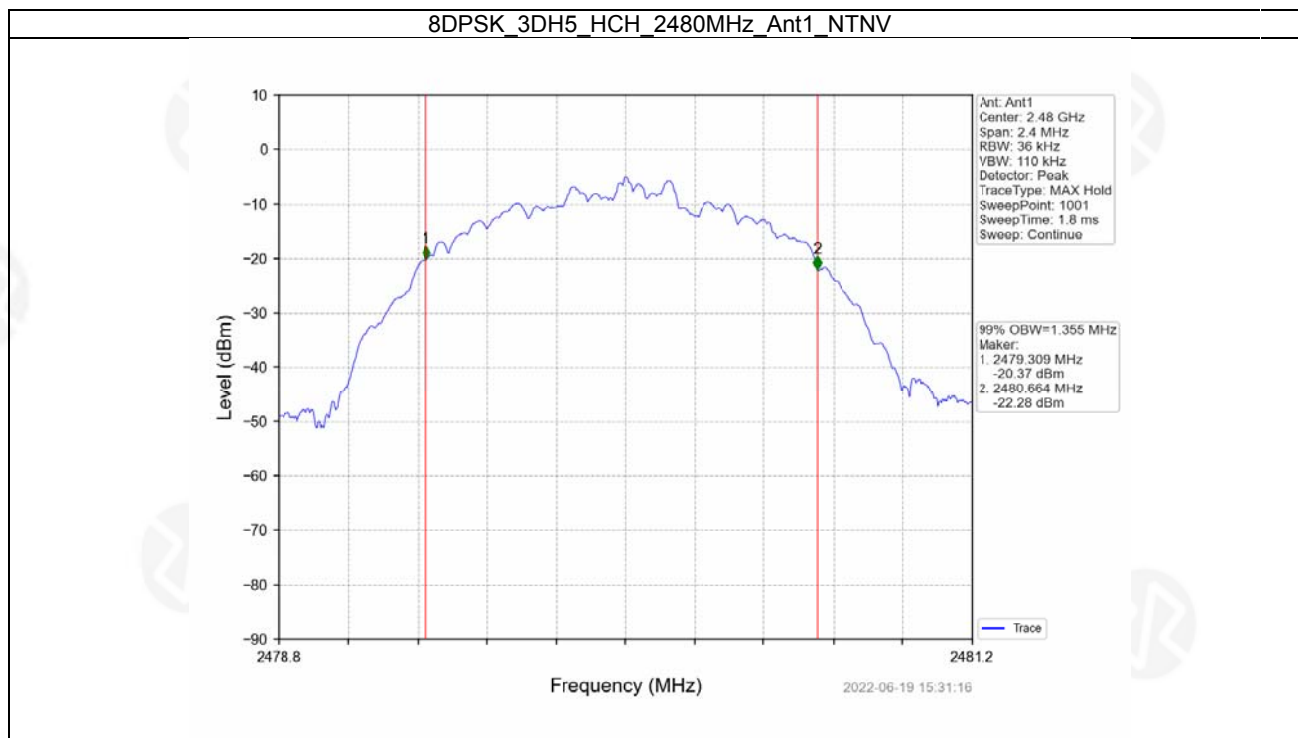


8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV







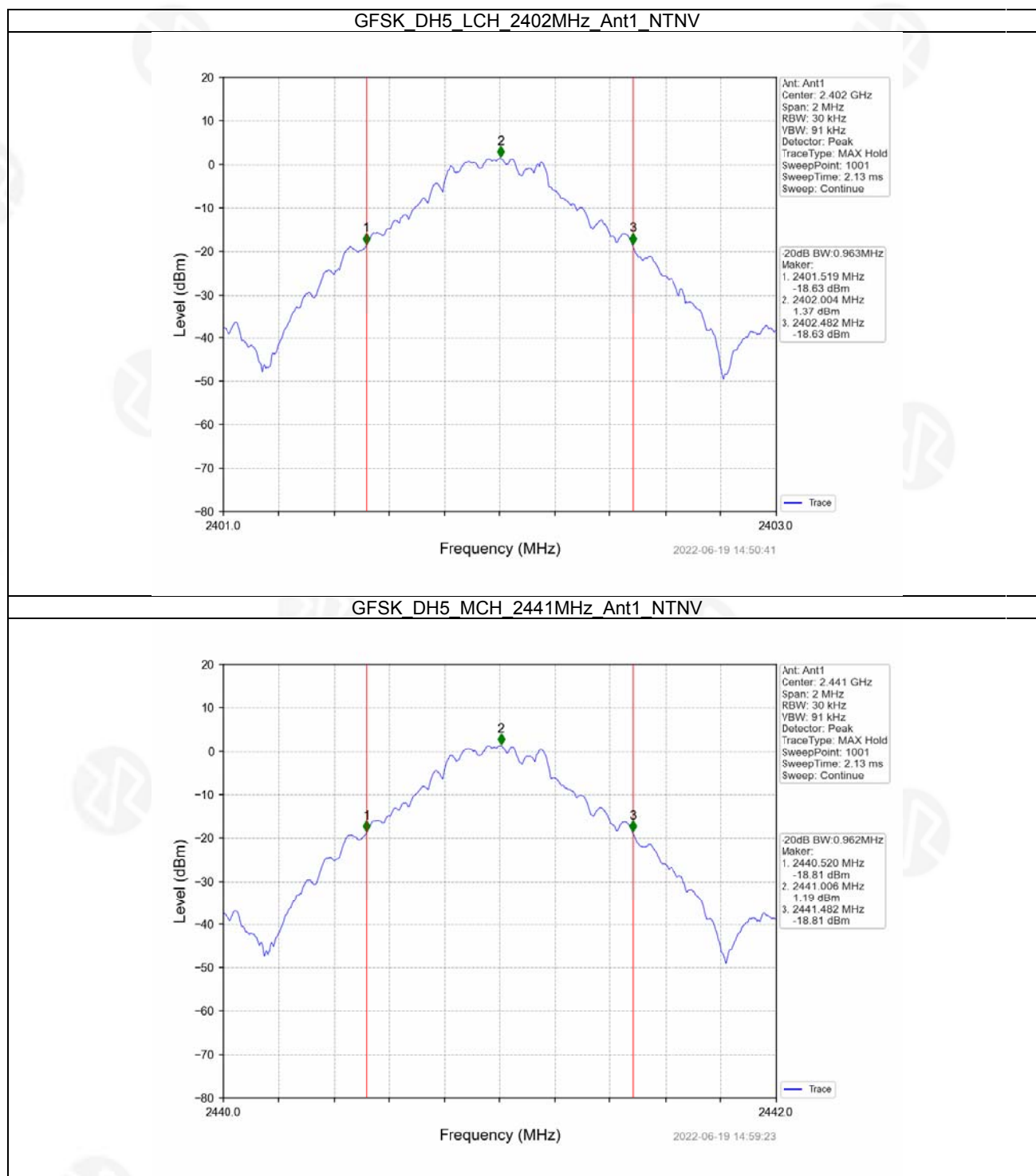
1.2 20dB BW

1.2.1 Test Result

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	20dB Bandwidth (MHz)	Verdict
					Result	
GFSK	SISO	2402	DH5	1	0.963	Pass
		2441	DH5	1	0.962	Pass
		2480	DH5	1	0.965	Pass
Π/4-DQPSK	SISO	2402	2DH5	1	1.493	Pass
		2441	2DH5	1	1.492	Pass
		2480	2DH5	1	1.493	Pass
8DPSK	SISO	2402	3DH5	1	1.491	Pass
		2441	3DH5	1	1.494	Pass
		2480	3DH5	1	1.493	Pass

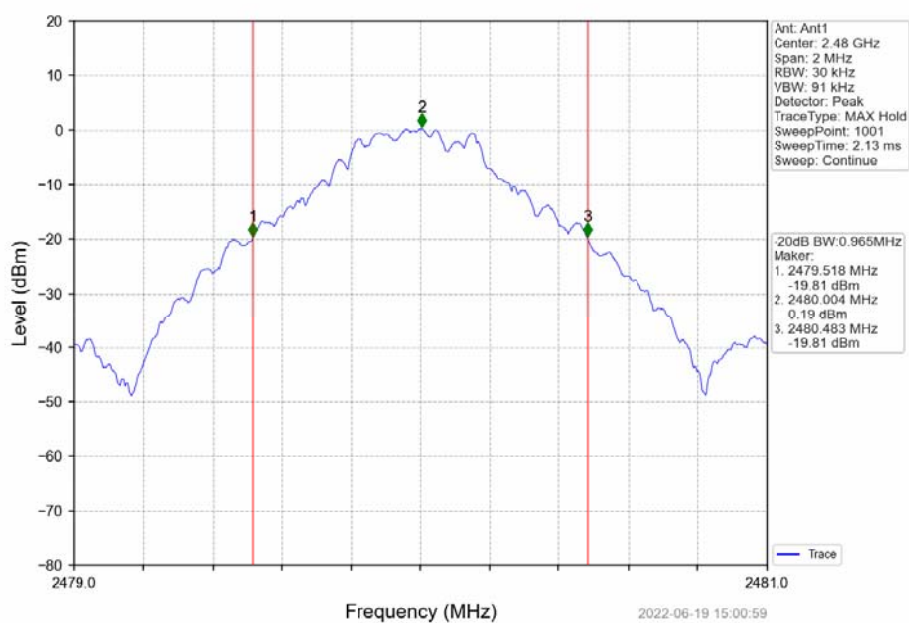


1.2.2 Test Graph

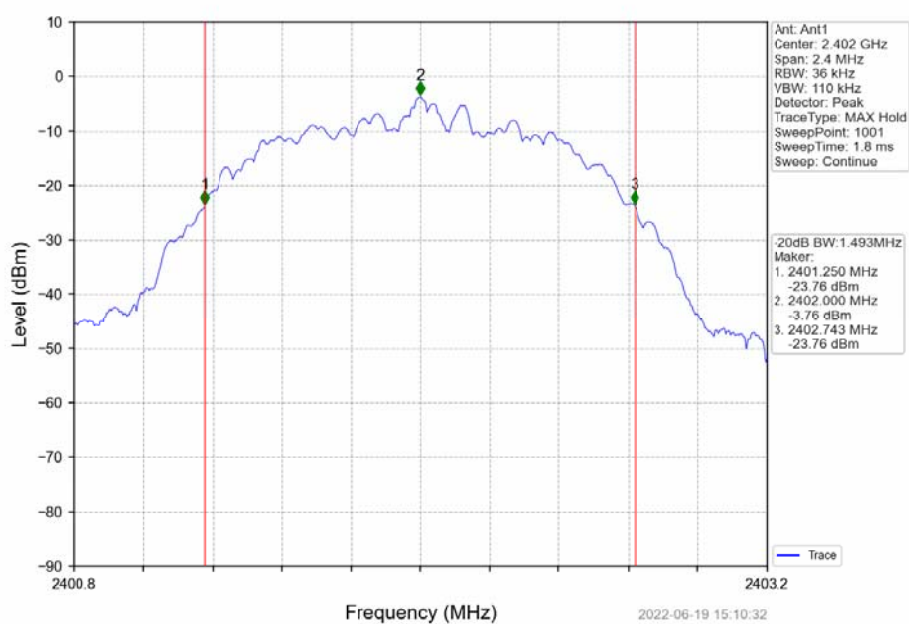




GFSK_DH5_HCH_2480MHz_Ant1_NTNV

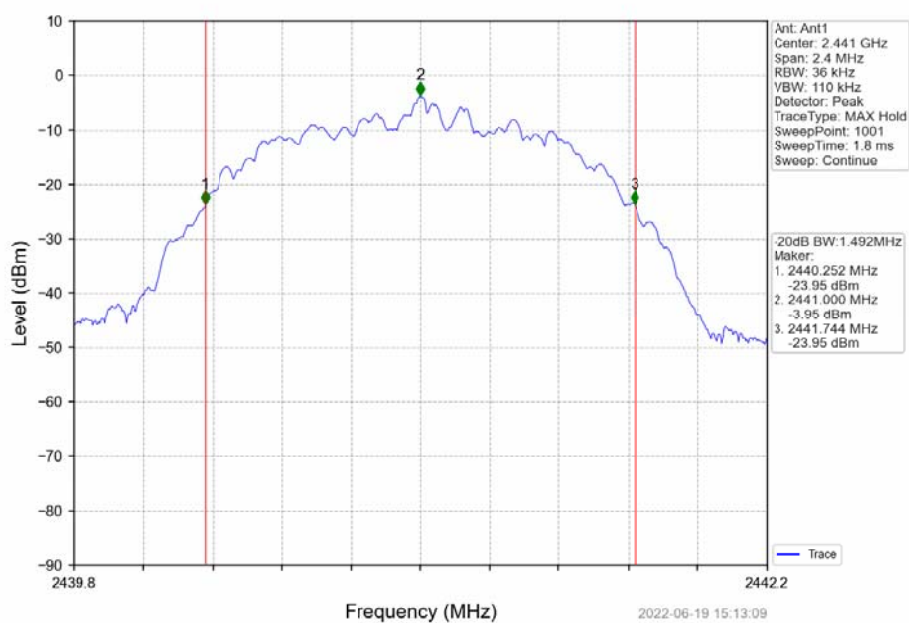


Π/4-DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV

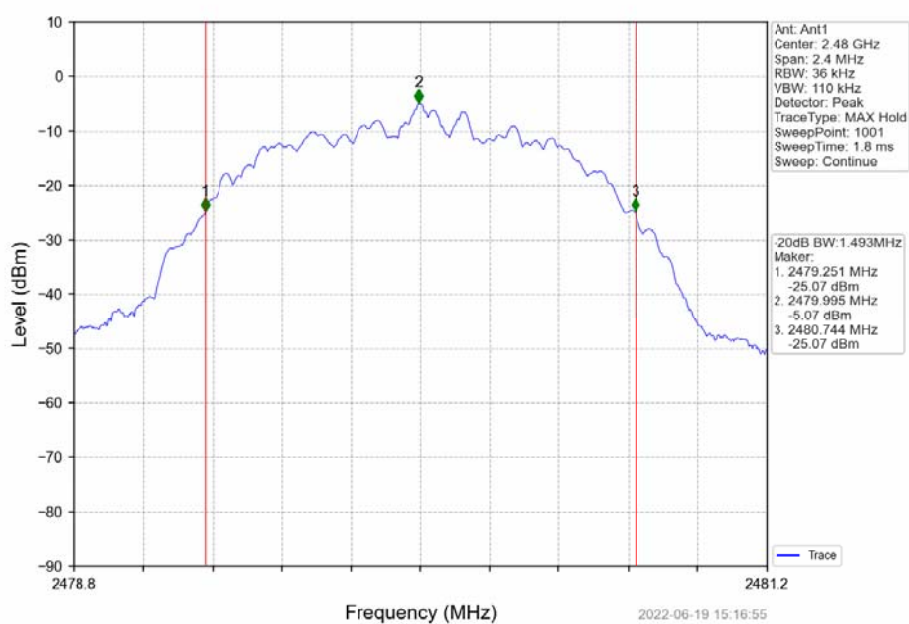




П/4-DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV

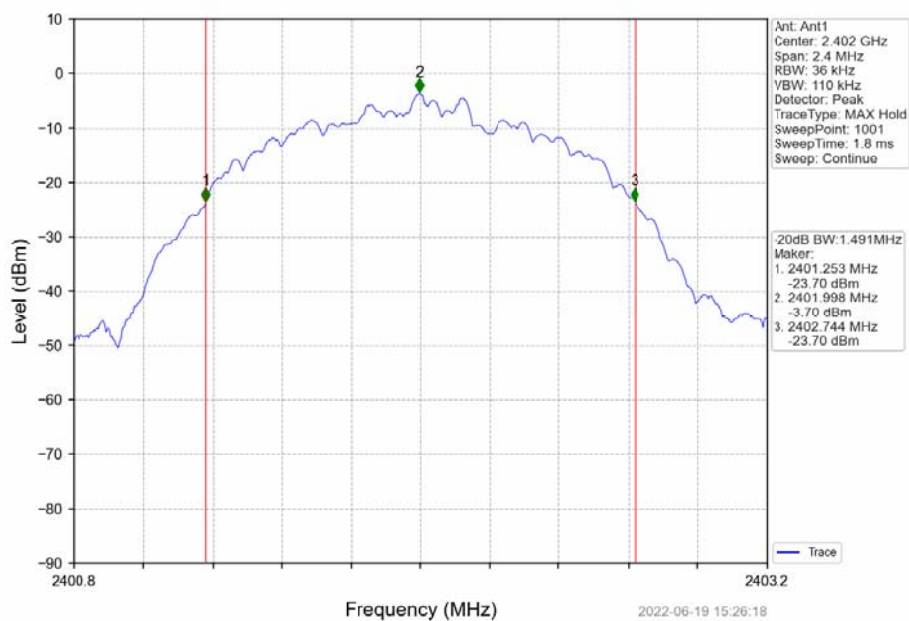


П/4-DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

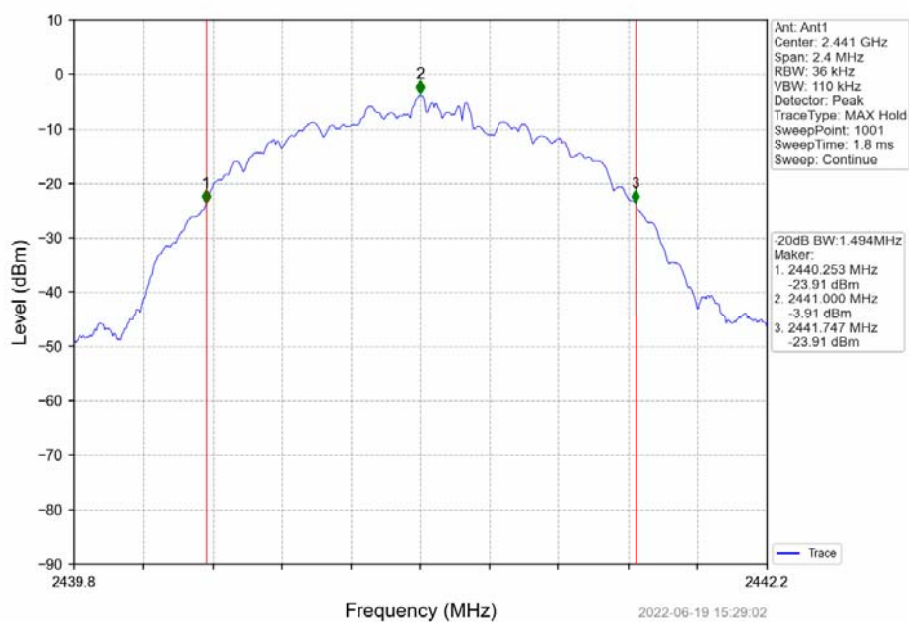


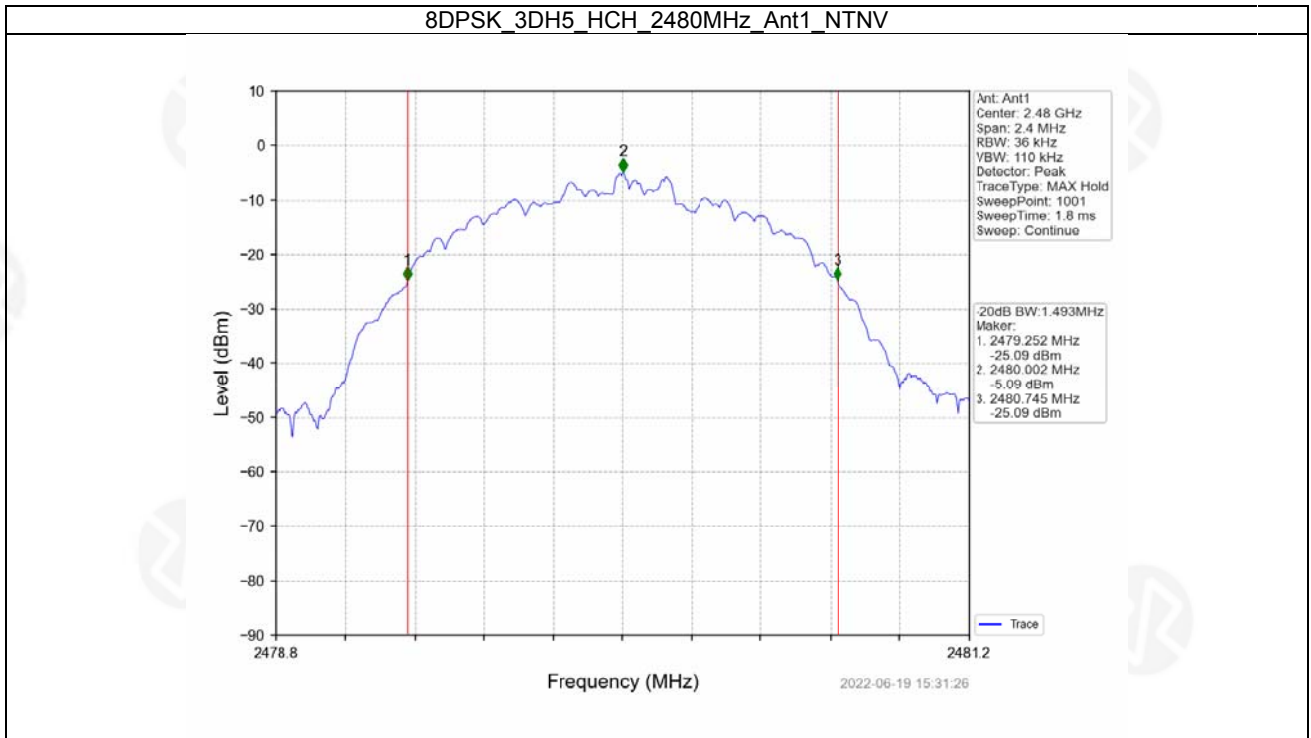


8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV







2. Maximum Conducted Output Power

2.1 Power

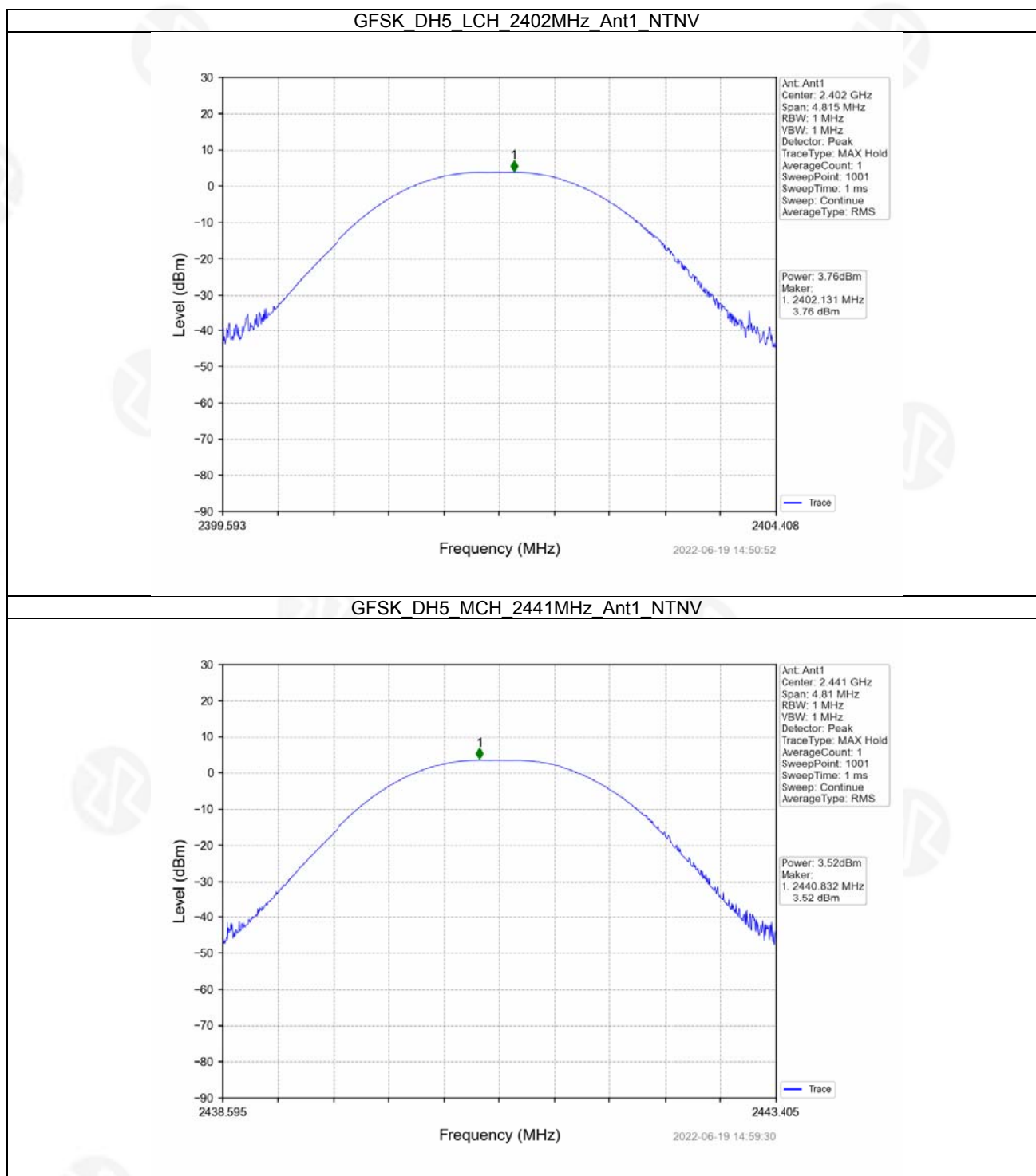
2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Packet Type	Maximum Peak Conducted Output Power (dBm)		Verdict
				ANT1	Limit	
GFSK	SISO	2402	DH5	3.76	<=30	Pass
		2441	DH5	3.52	<=30	Pass
		2480	DH5	2.50	<=30	Pass
Π/4-DQPSK	SISO	2402	2DH5	-0.30	<=20.97	Pass
		2441	2DH5	-0.49	<=20.97	Pass
		2480	2DH5	-1.60	<=20.97	Pass
8DPSK	SISO	2402	3DH5	-0.12	<=20.97	Pass
		2441	3DH5	-0.30	<=20.97	Pass
		2480	3DH5	-1.42	<=20.97	Pass

Note1: Antenna Gain: Ant1: 0.00dBi;

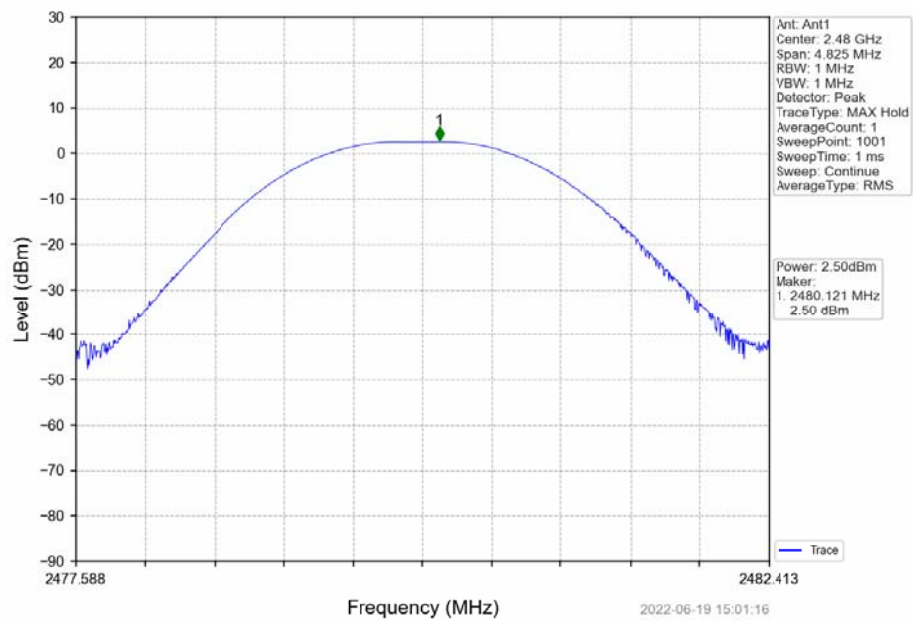


2.1.2 Test Graph

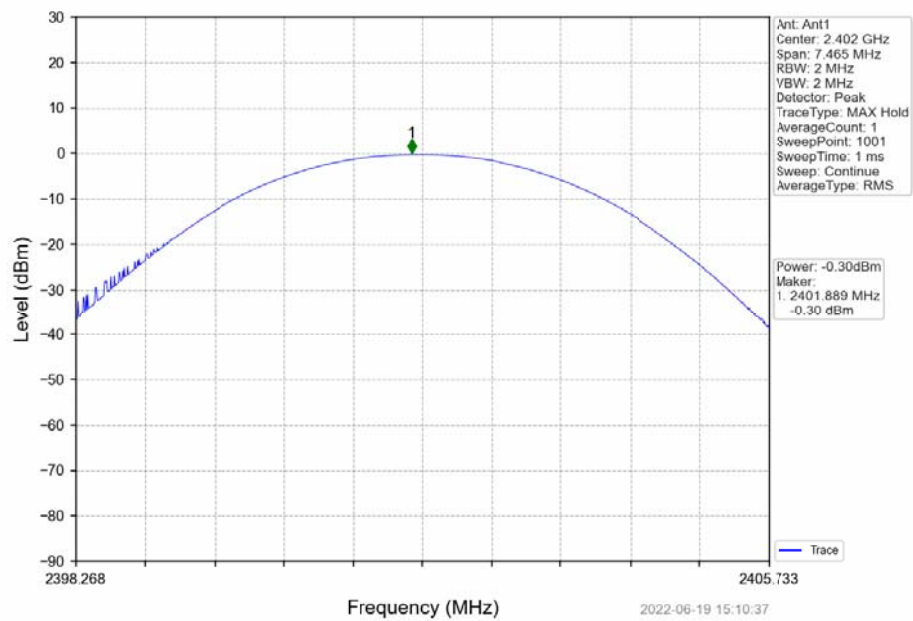




GFSK_DH5_HCH_2480MHz_Ant1_NTNV

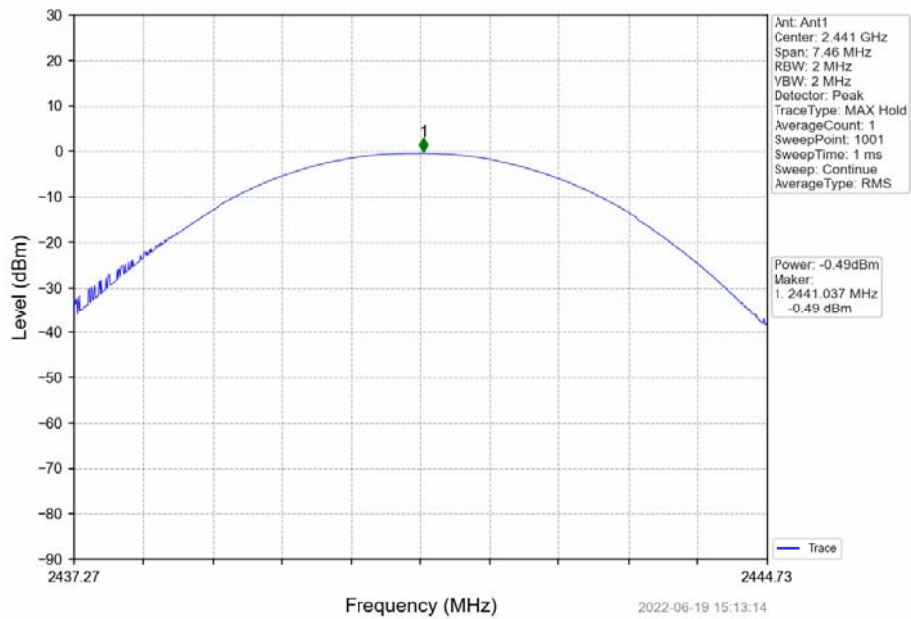


$\pi/4$ -DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV

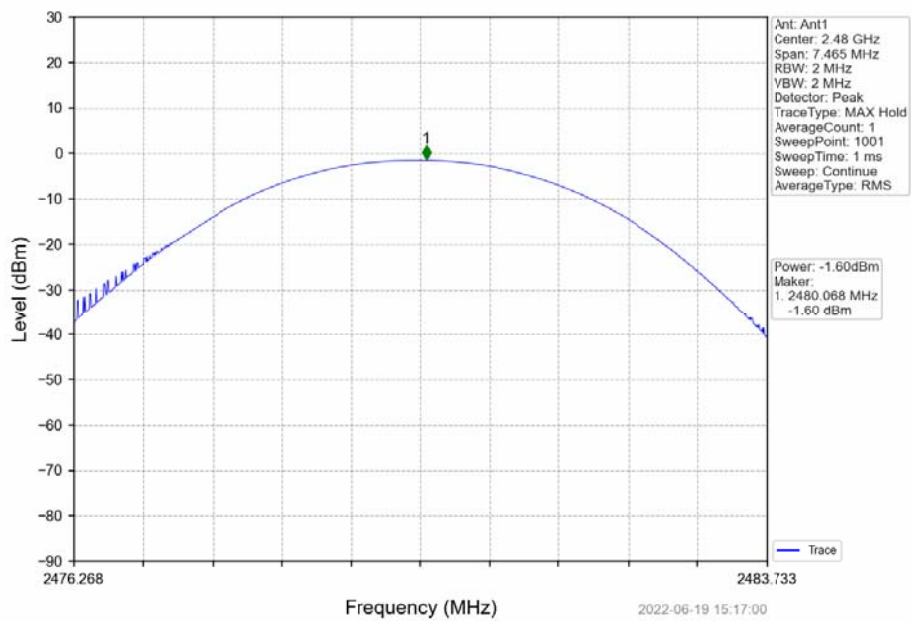




П/4-DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV

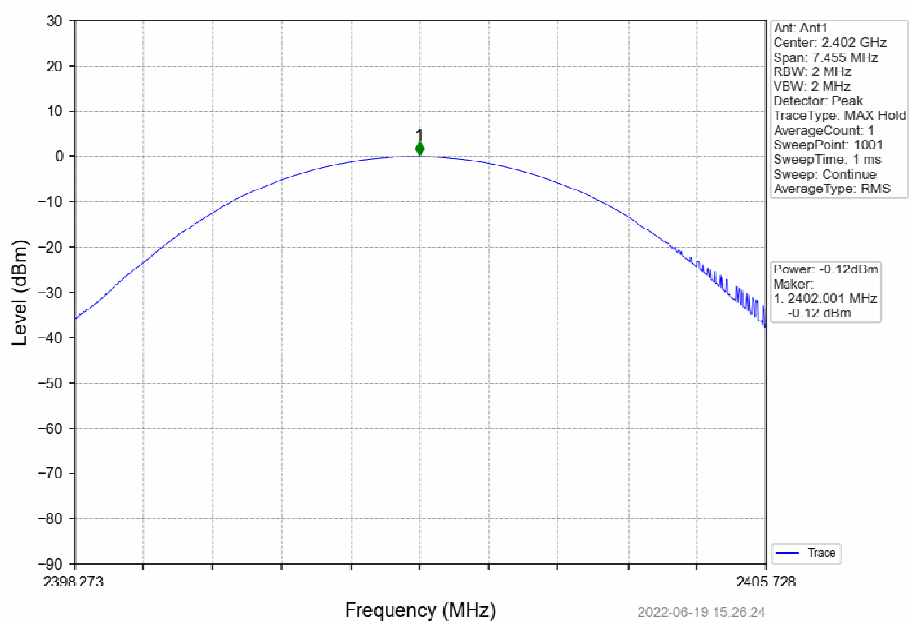


П/4-DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

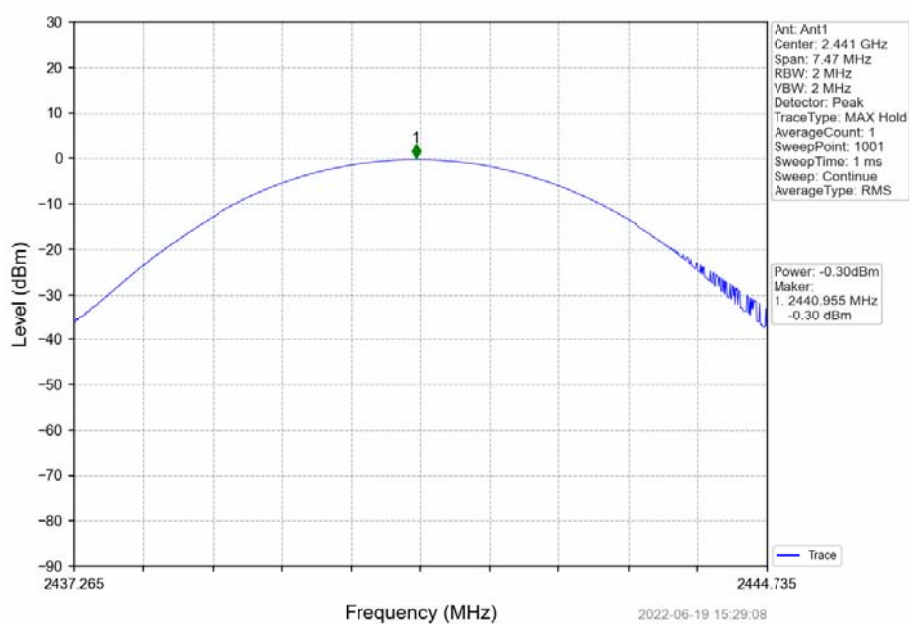


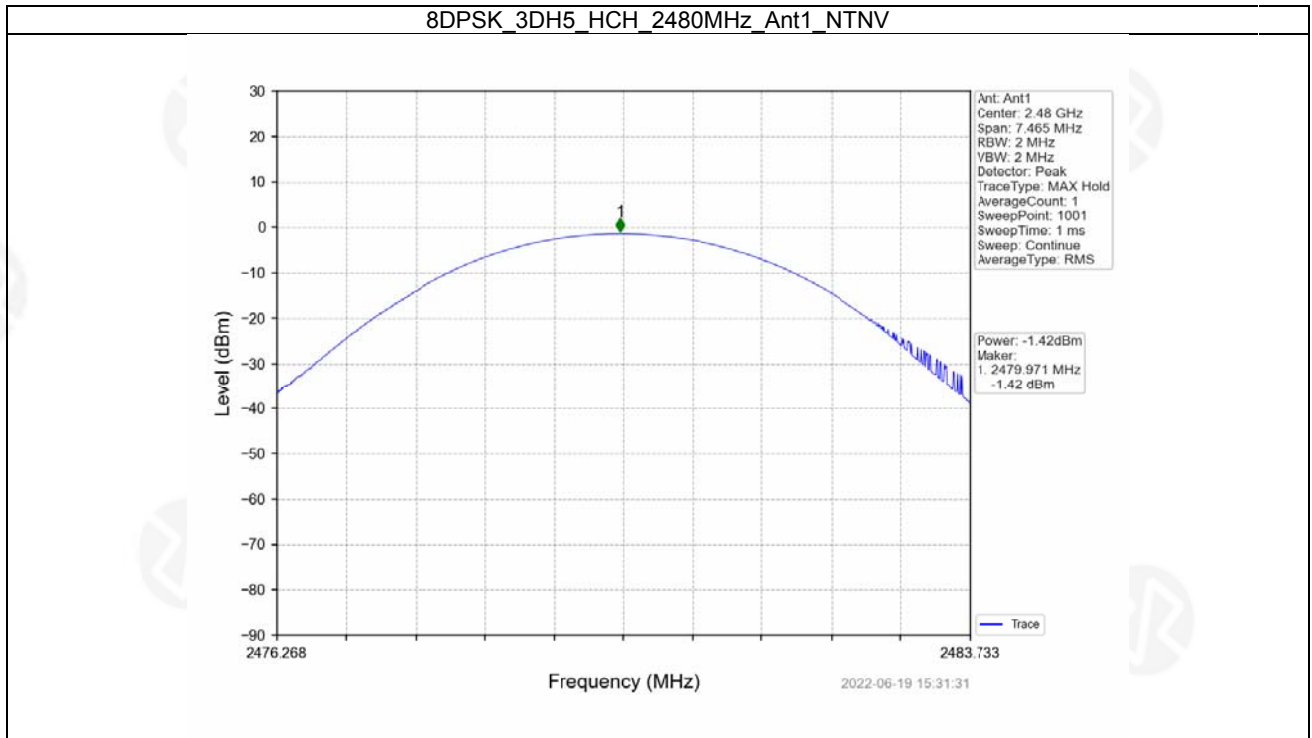


8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV







3. Carrier Frequency Separation

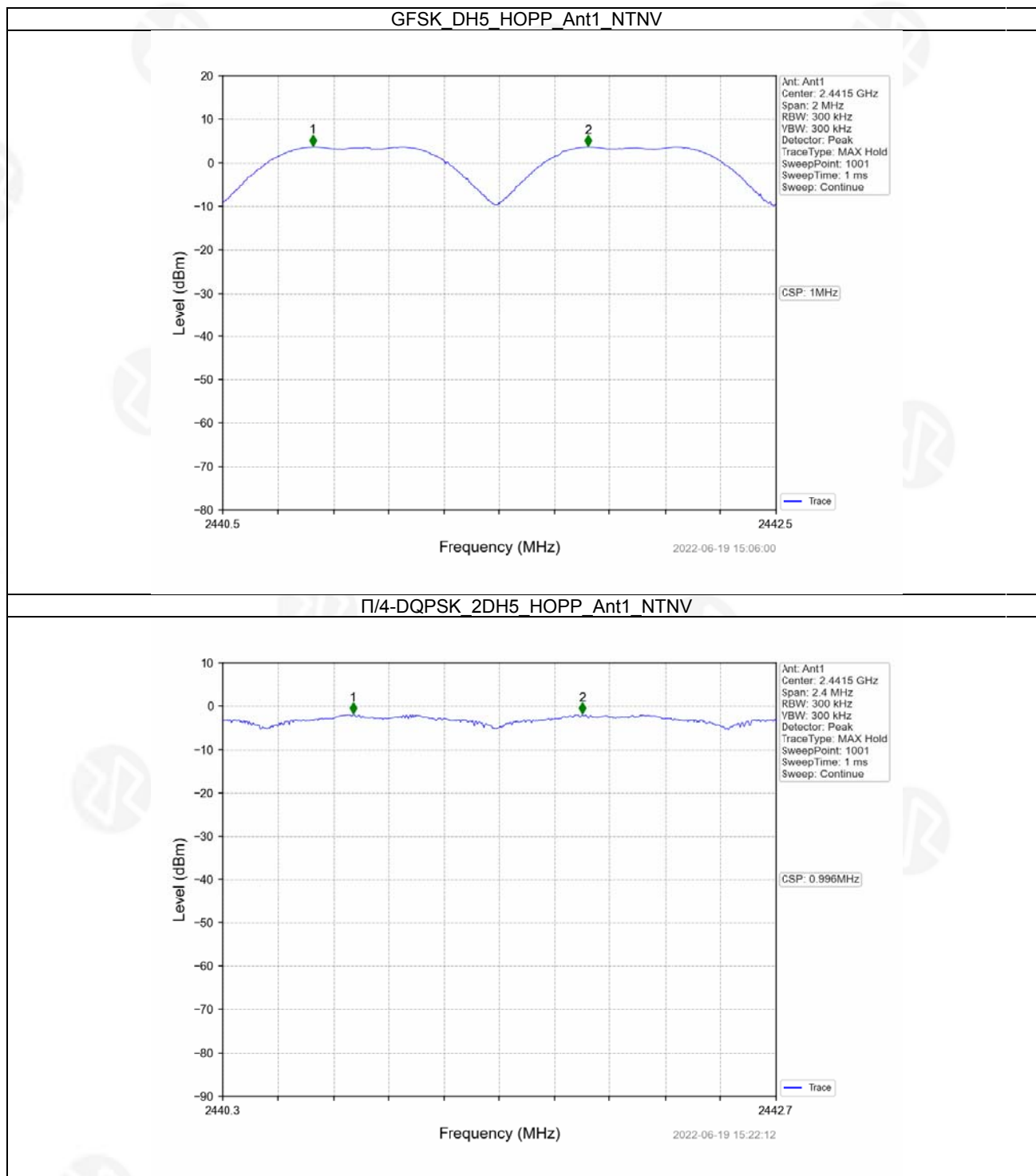
3.1 Ant1

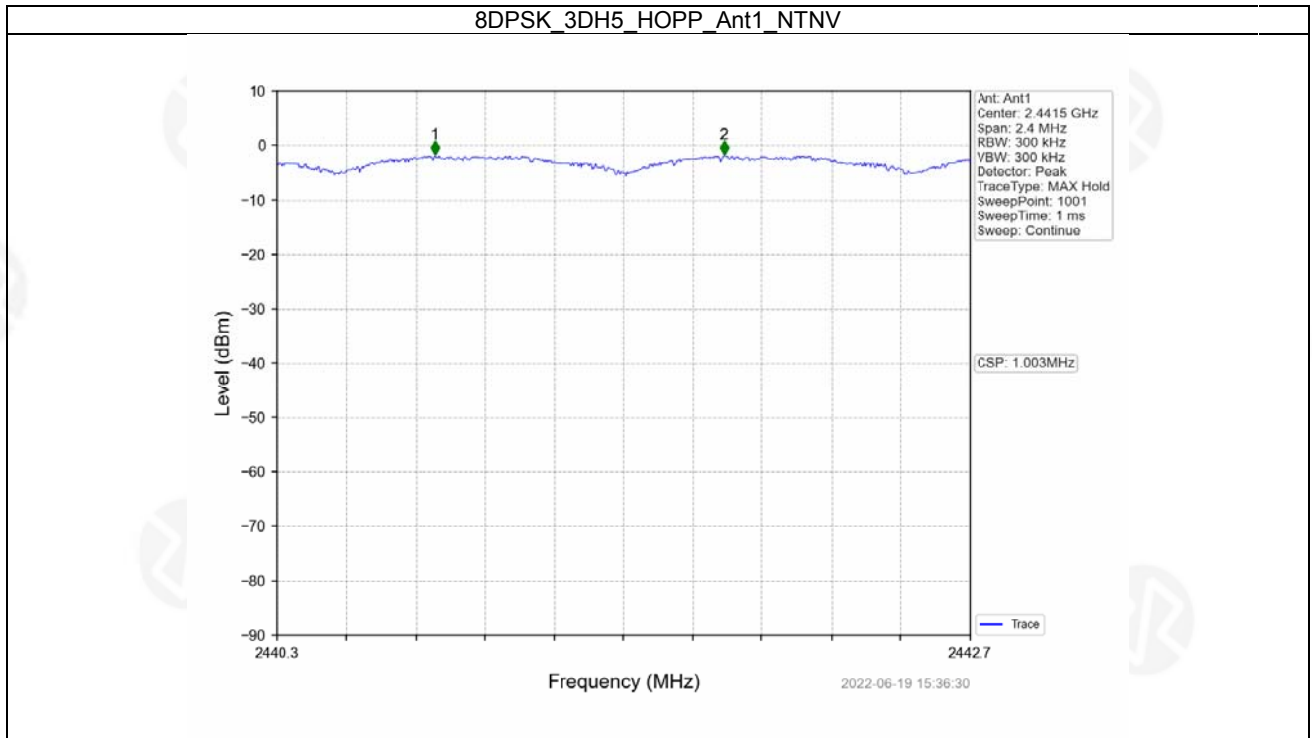
3.1.1 Test Result

Ant1							
Mode	TX Type	Frequency (MHz)	Packet Type	Channel Separation (MHz)	20dB Bandwidth (MHz)	Limit (MHz)	Verdict
GFSK	SISO	HOPP	DH5	1.000	0.965	≥ 0.965	Pass
$\pi/4$ -DQPSK	SISO	HOPP	2DH5	0.996	1.493	≥ 0.995	Pass
8DPSK	SISO	HOPP	3DH5	1.003	1.494	≥ 0.996	Pass



3.1.2 Test Graph







4. Number of Hopping Frequencies

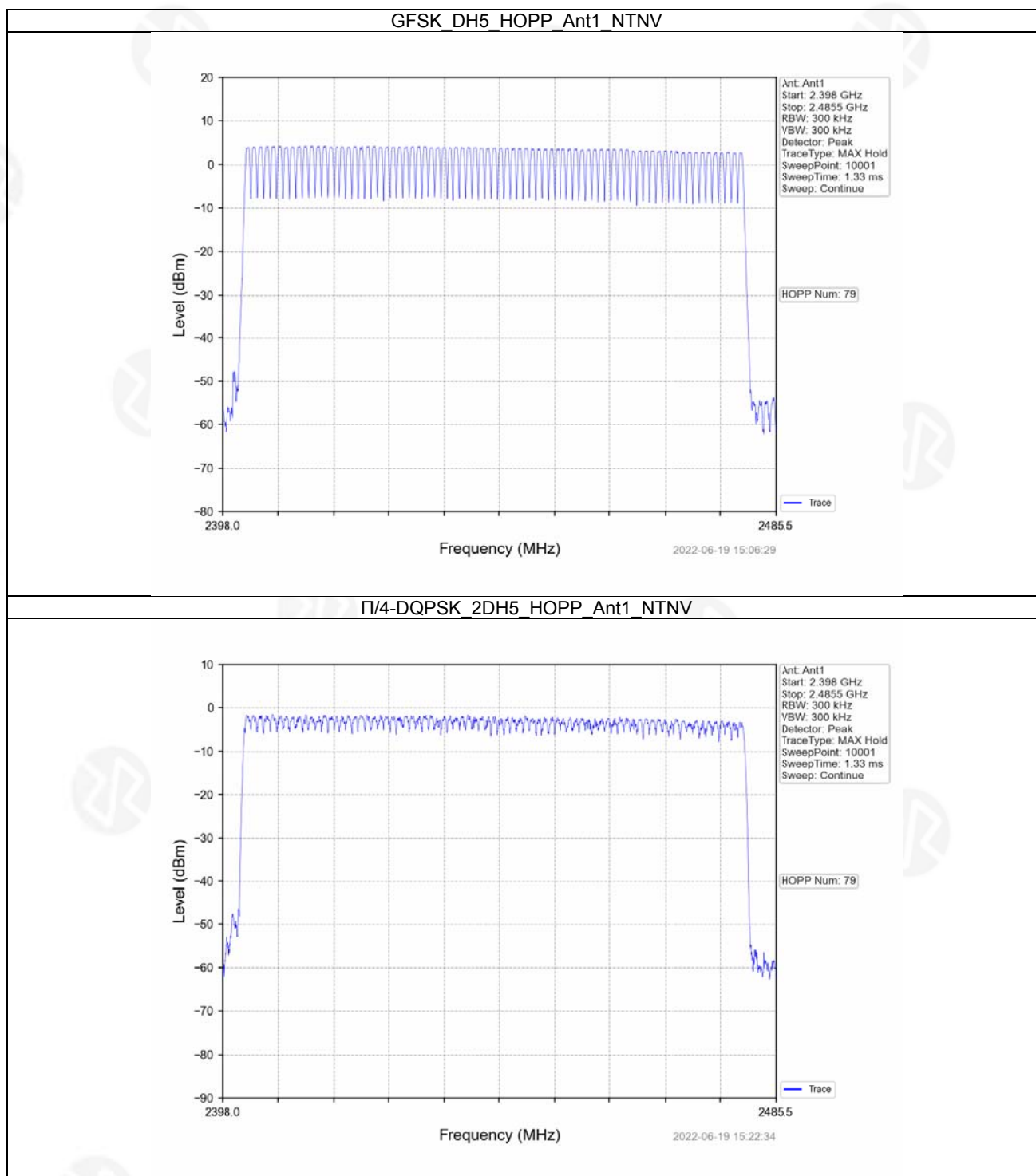
4.1 HoppNum

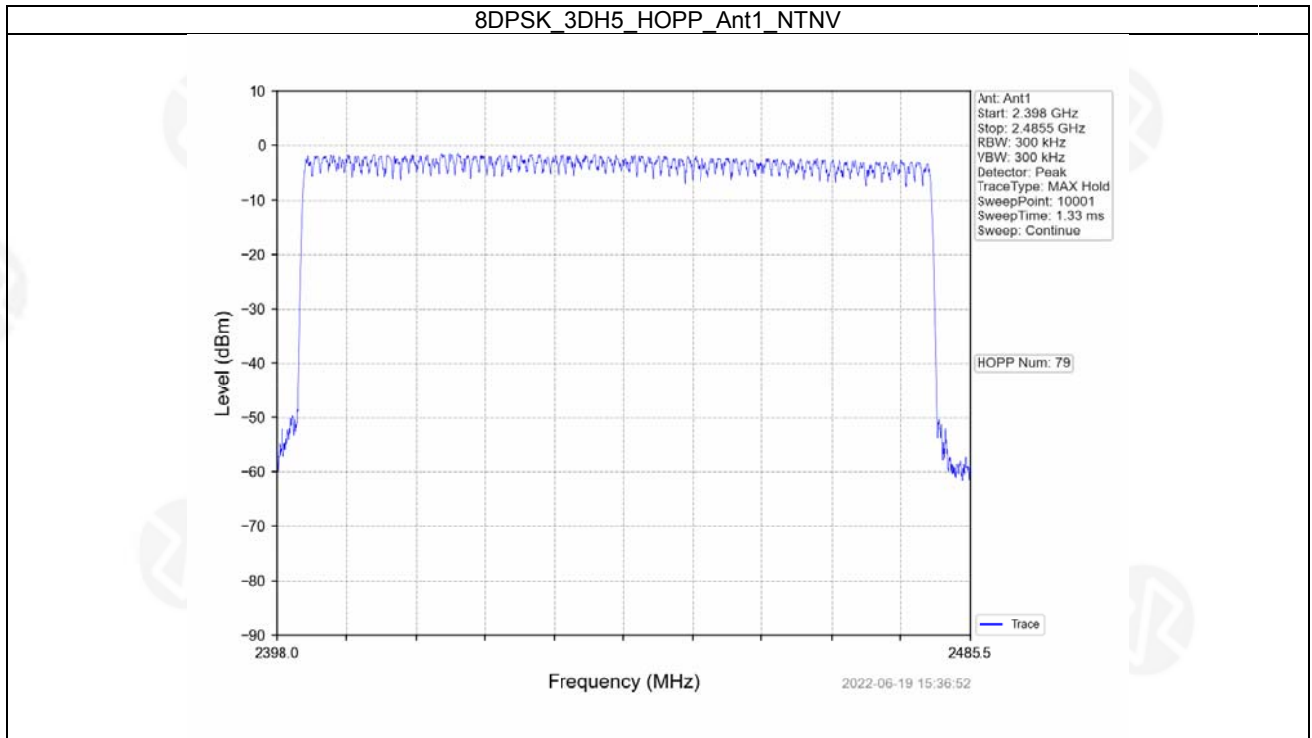
4.1.1 Test Result

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



4.1.2 Test Graph







5. Time of Occupancy (Dwell Time)

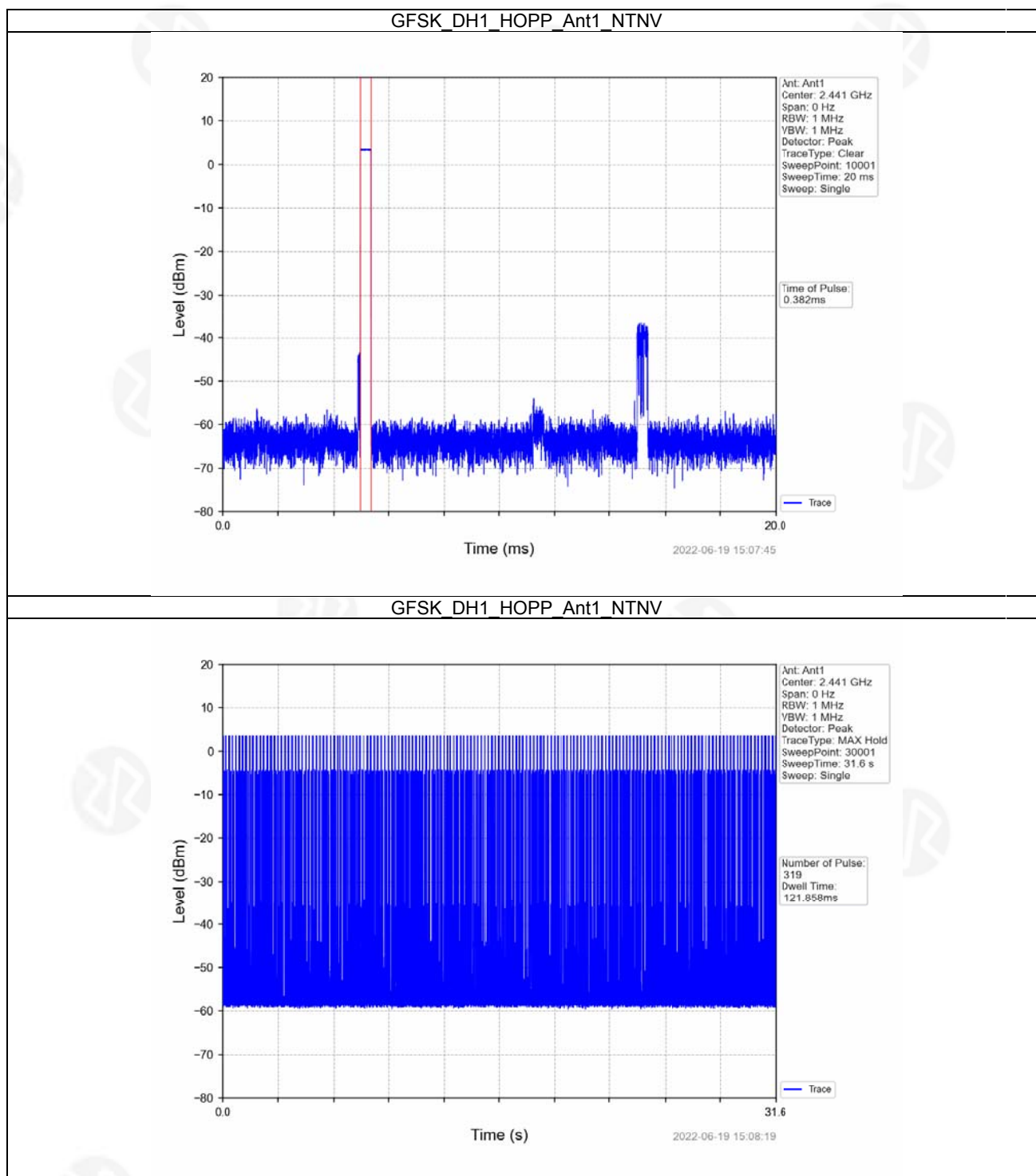
5.1 Ant1

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	0.382	31.600	319	121.858	<=400	Pass
			DH3	1.640	31.600	154	252.560	<=400	Pass
			DH5	2.886	31.600	110	317.460	<=400	Pass
Π/4-DQPSK	SISO	HOPP	2DH1	0.392	31.600	319	125.048	<=400	Pass
			2DH3	1.644	31.600	166	272.904	<=400	Pass
			2DH5	2.894	31.600	113	327.022	<=400	Pass
8DPSK	SISO	HOPP	3DH1	0.392	31.600	318	124.656	<=400	Pass
			3DH3	1.644	31.600	166	272.904	<=400	Pass
			3DH5	2.894	31.600	113	327.022	<=400	Pass

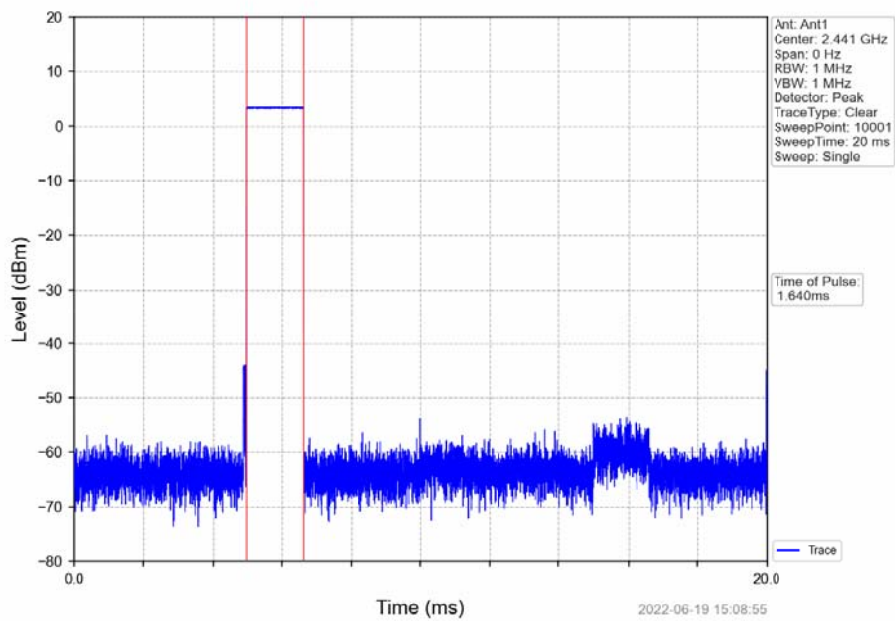


5.1.2 Test Graph

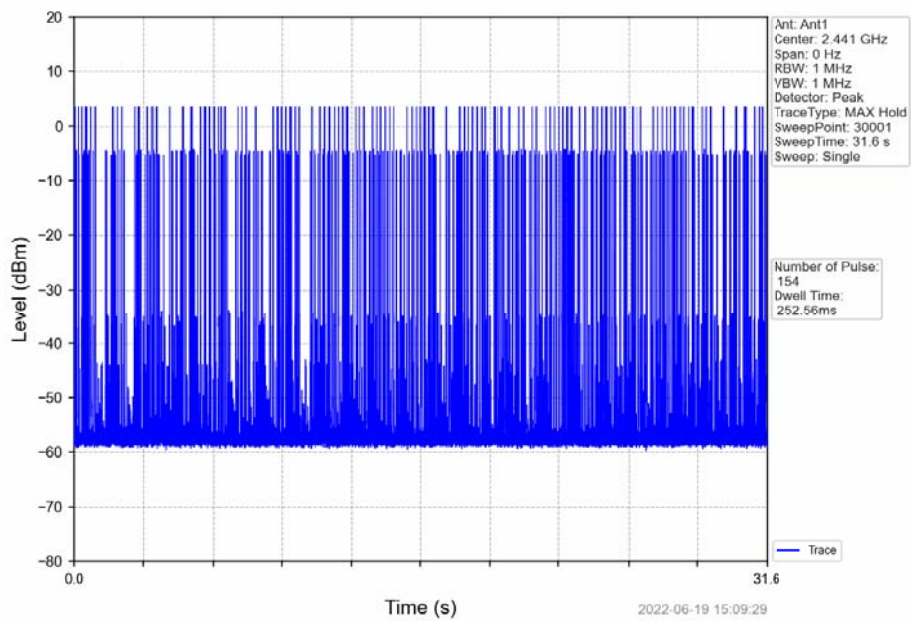




GFSK_DH3_HOPP_Ant1_NTNV

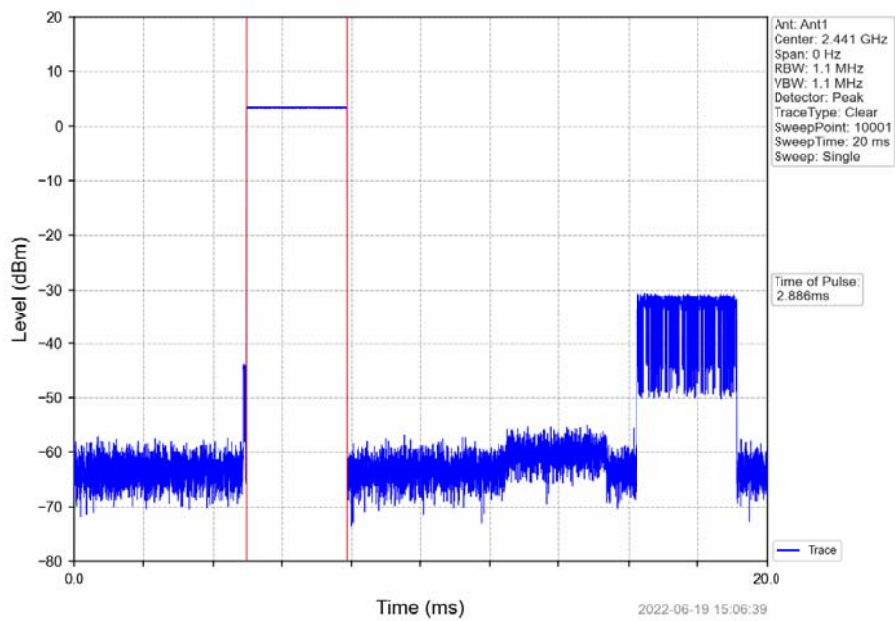


GFSK_DH3_HOPP_Ant1_NTNV

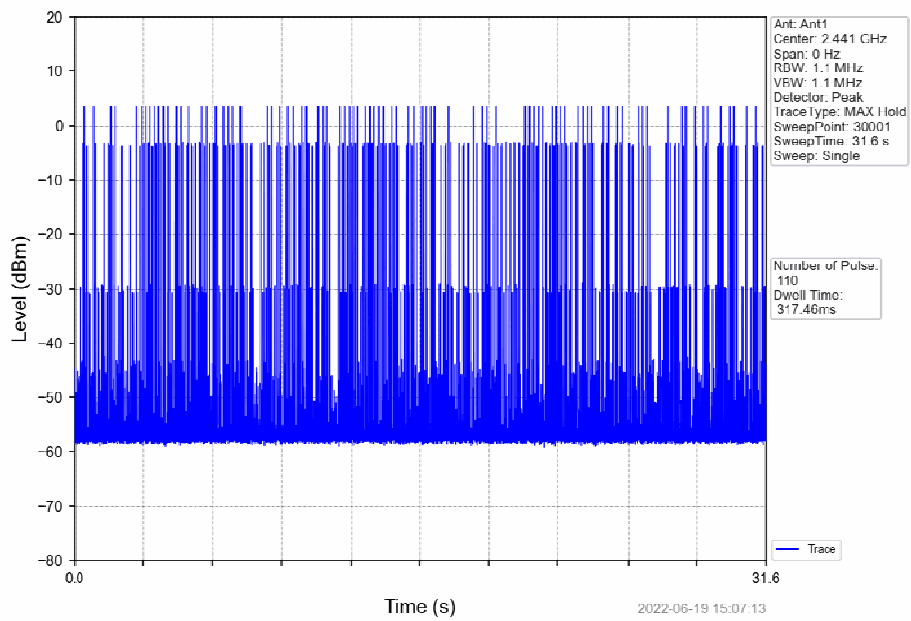




GFSK_DH5_HOPP_Ant1_NTNV

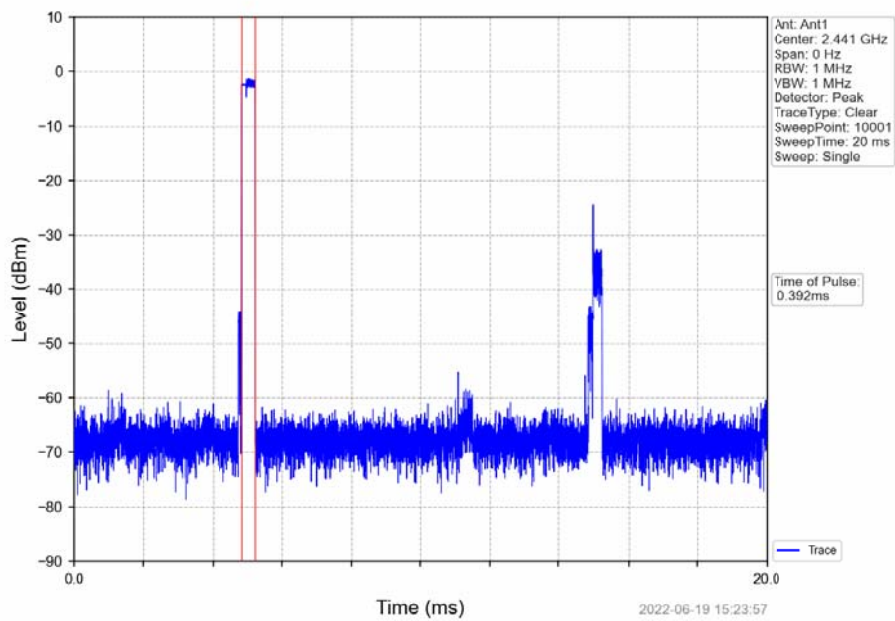


GFSK_DH5_HOPP_Ant1_NTNV

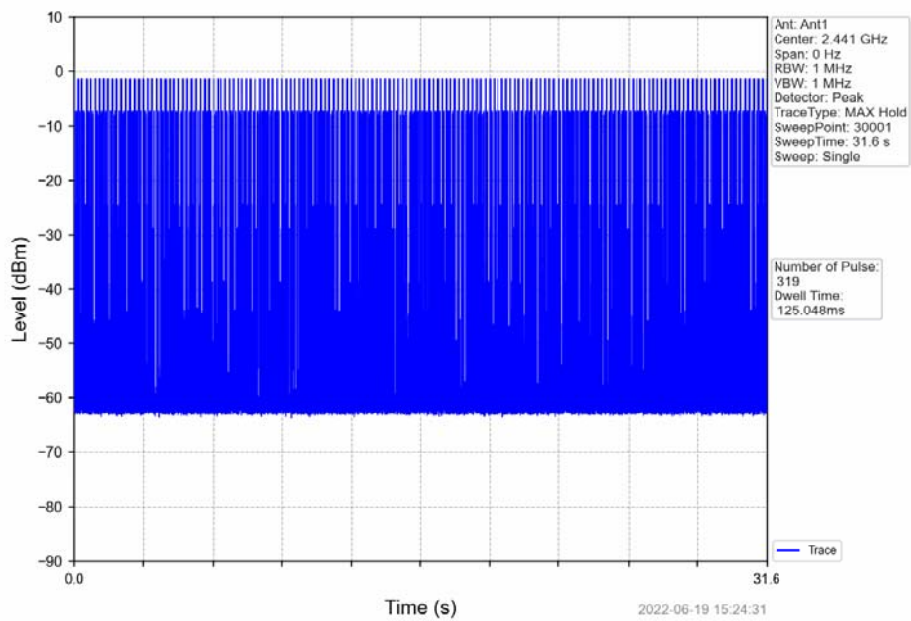




П/4-DQPSK_2DH1_HOPP_Ant1_NTNV

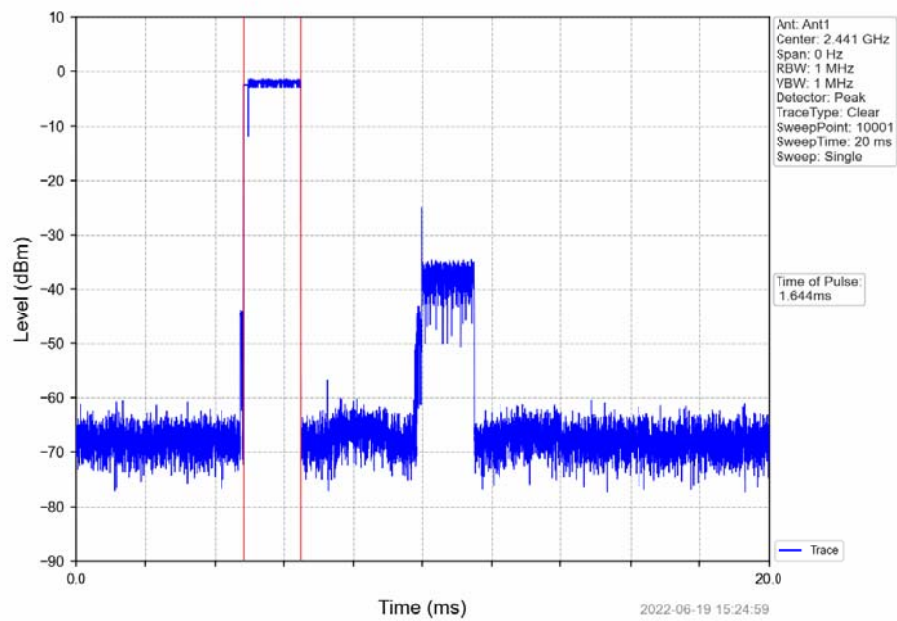


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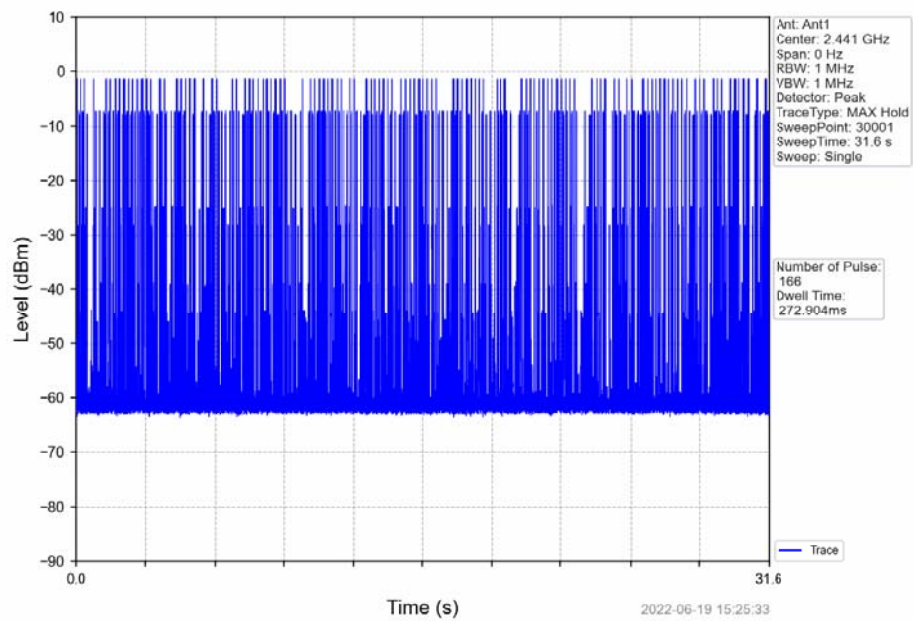




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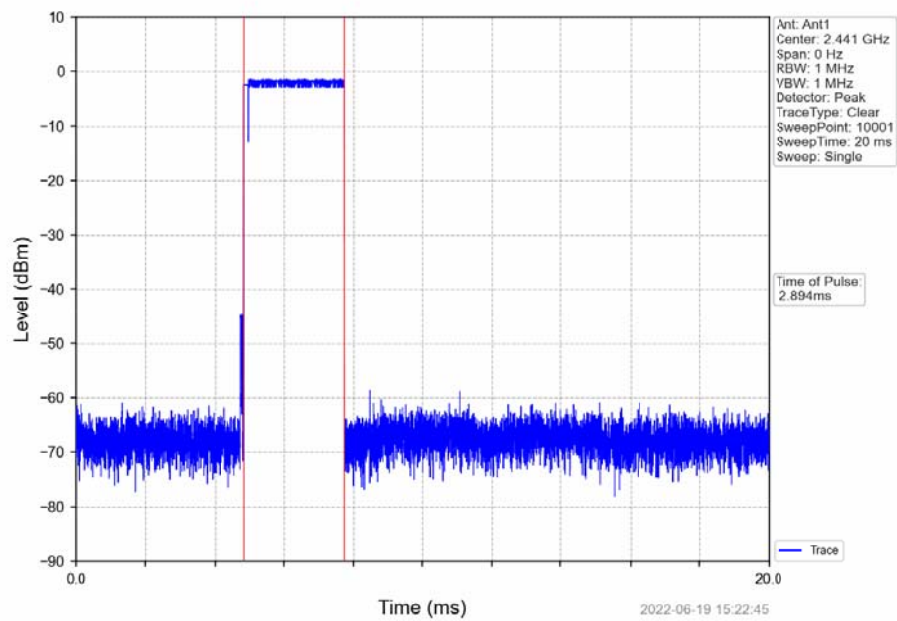


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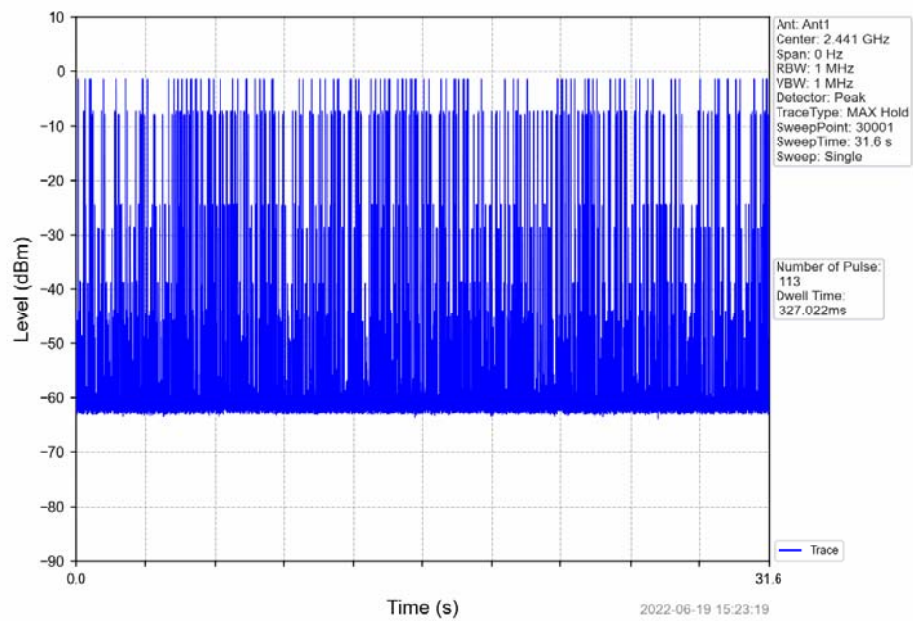




Π/4-DQPSK_2DH5_HOPP_Ant1_NTNV

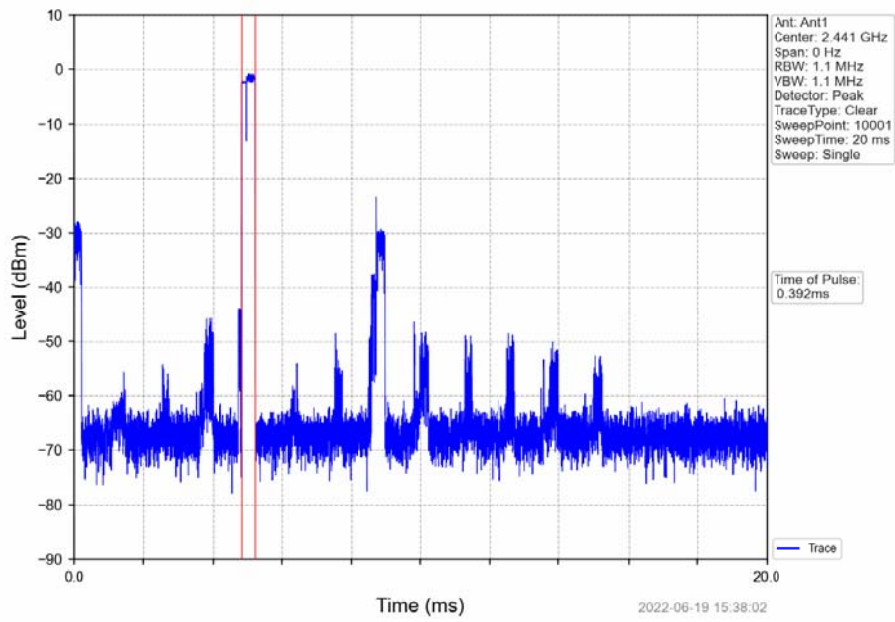


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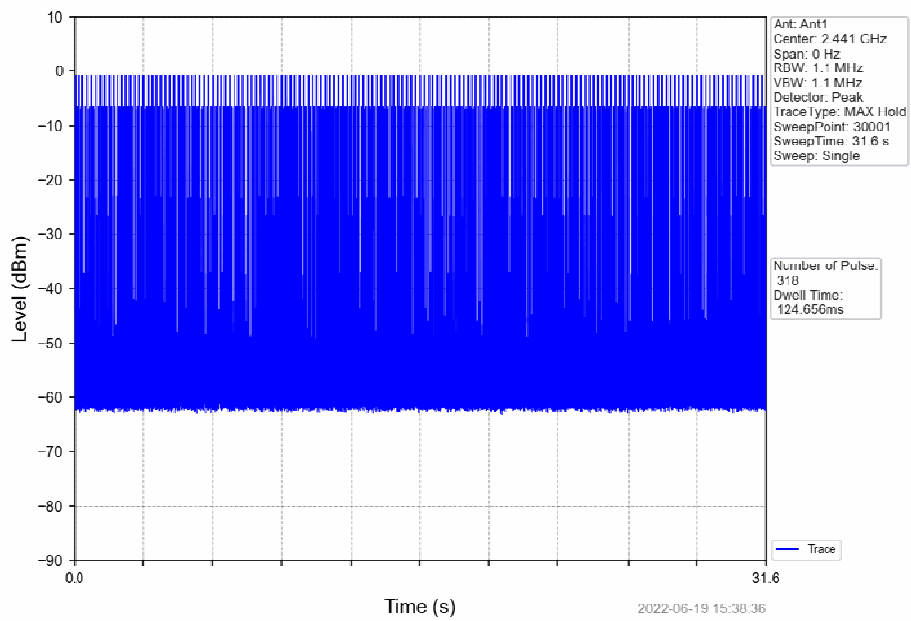




8DPSK_3DH1_HOPP_Ant1_NTNV

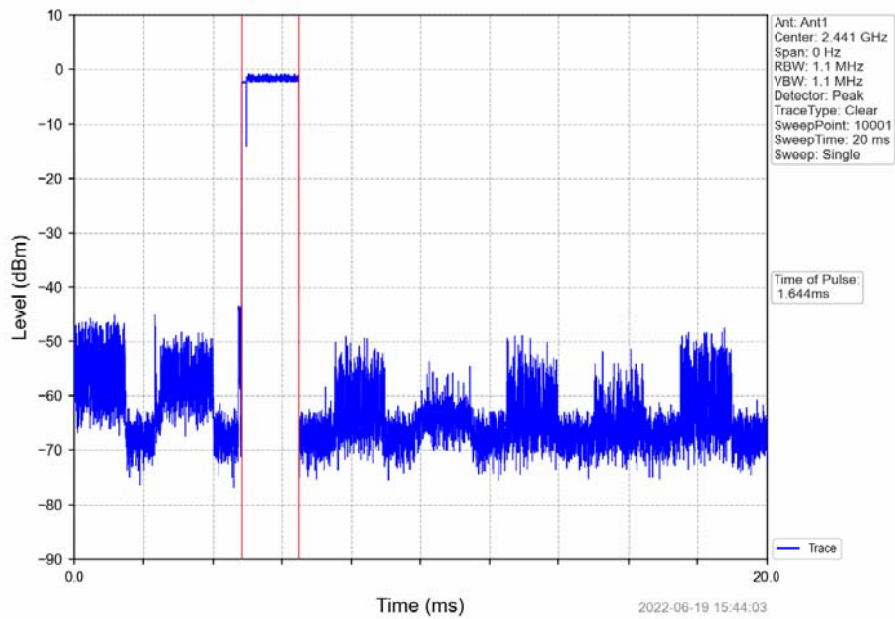


8DPSK_3DH1_HOPP_Ant1_NTNV

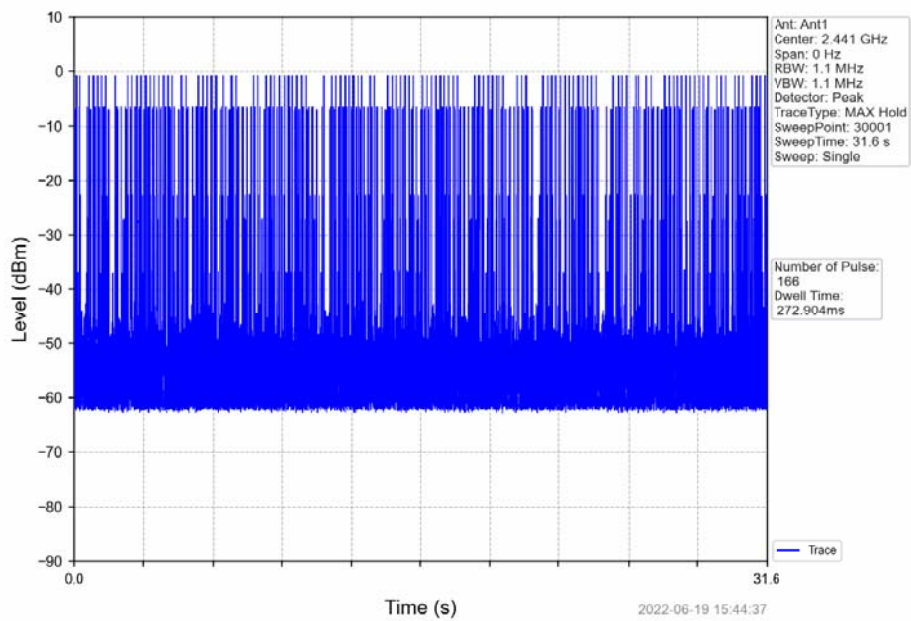




8DPSK_3DH3_HOPP_Ant1_NTNV

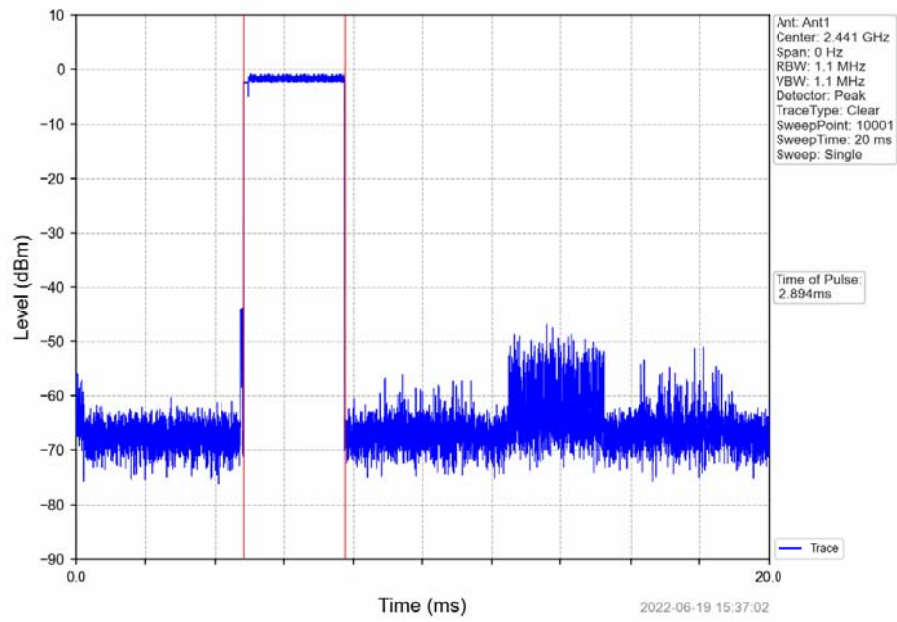


8DPSK_3DH3_HOPP_Ant1_NTNV

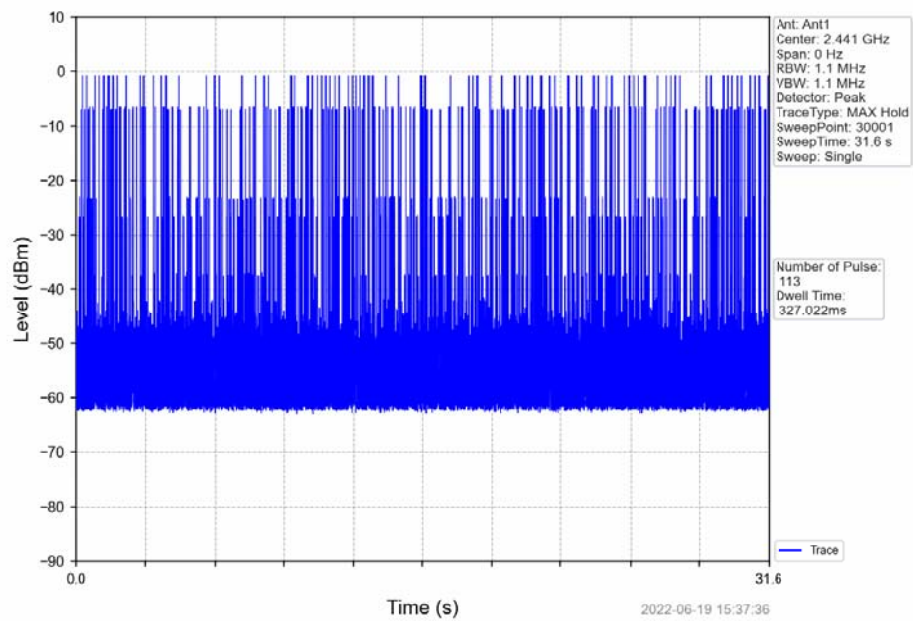




8DPSK_3DH5_HOPP_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV





6. Unwanted Emissions In Non-restricted Frequency Bands

6.1 Ref

6.1.1 Test Result

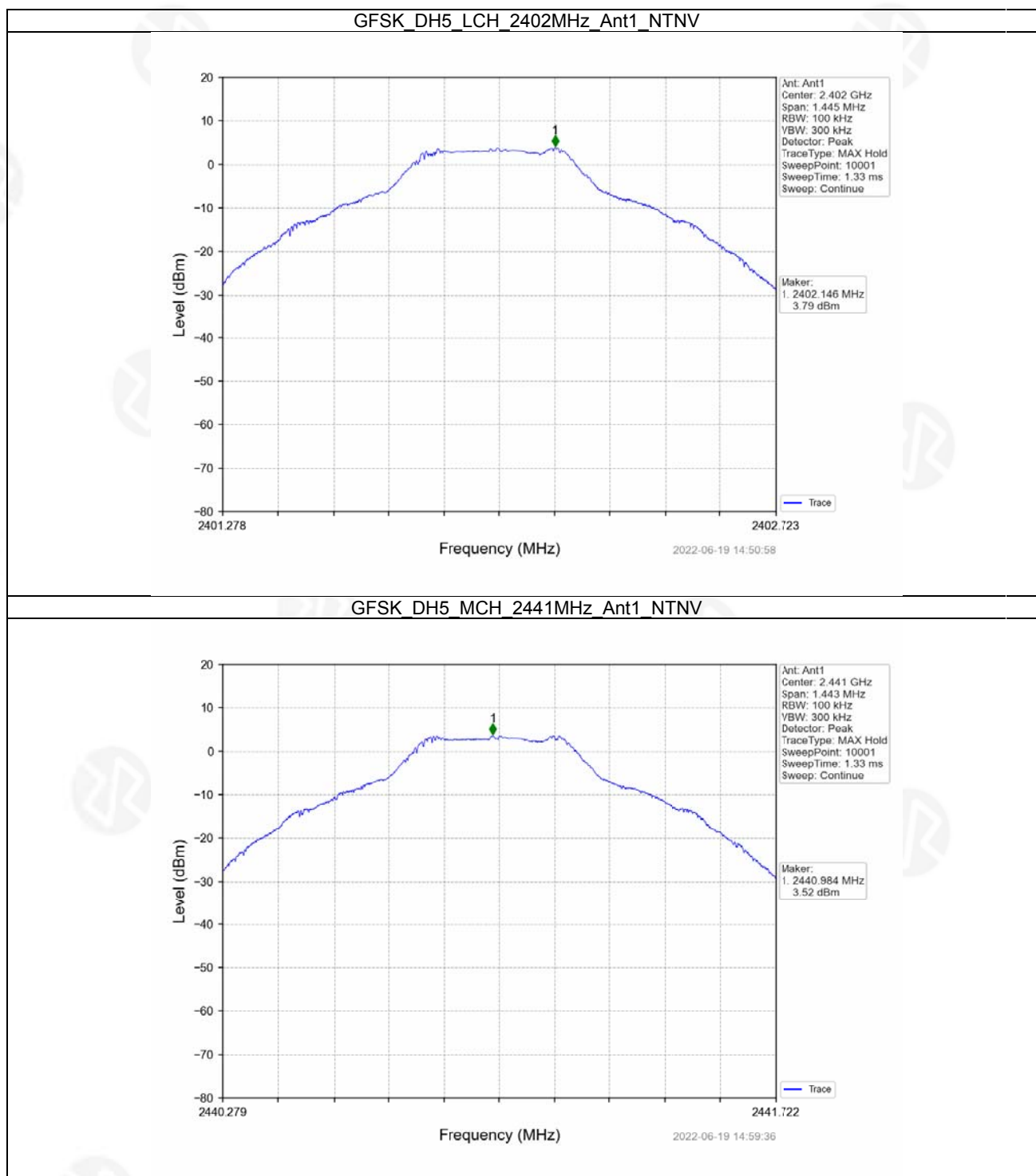
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)
GFSK	SISO	2402	DH5	1	3.79
		2441	DH5	1	3.52
		2480	DH5	1	2.52
Π/4-DQPSK	SISO	2402	2DH5	1	-2.15
		2441	2DH5	1	-2.31
		2480	2DH5	1	-3.46
8DPSK	SISO	2402	3DH5	1	-2.07
		2441	3DH5	1	-2.22
		2480	3DH5	1	-3.34

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.

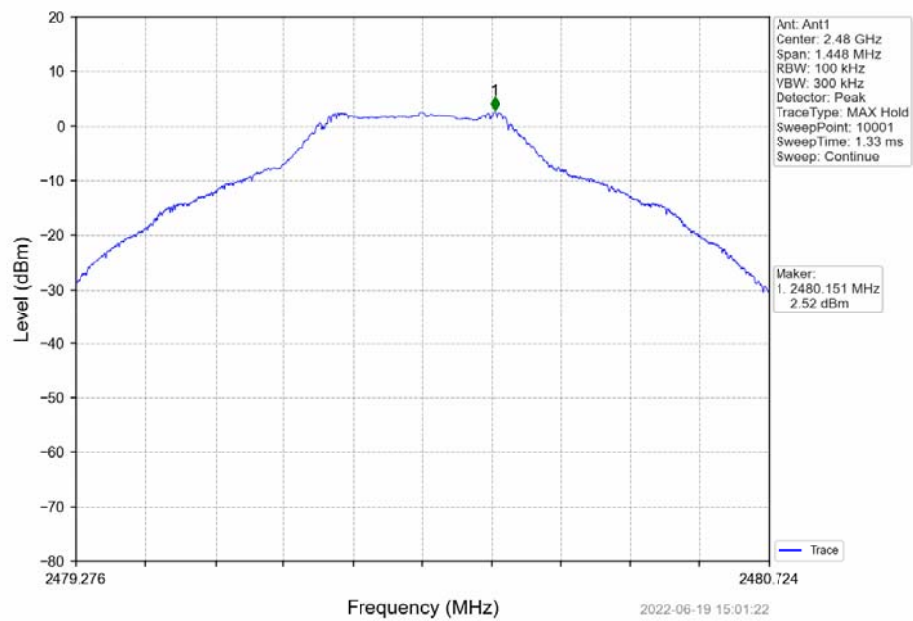


6.1.2 Test Graph

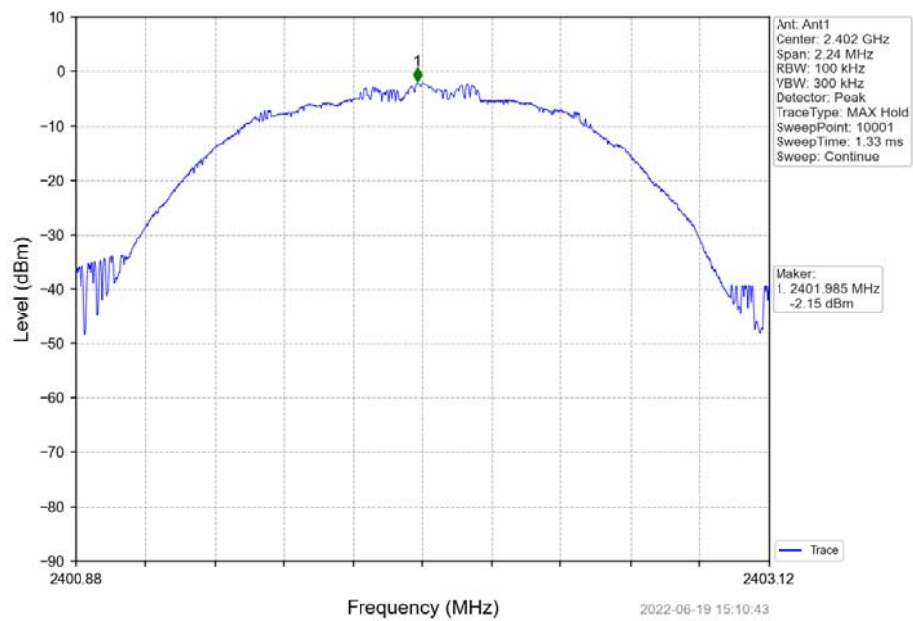




GFSK_DH5_HCH_2480MHz_Ant1_NTNV

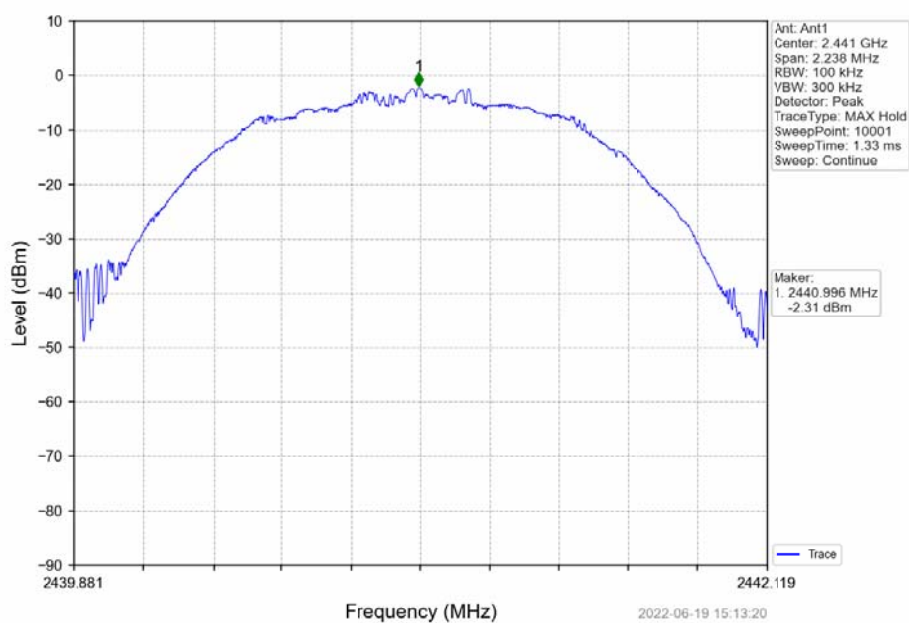


$\pi/4$ -DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV

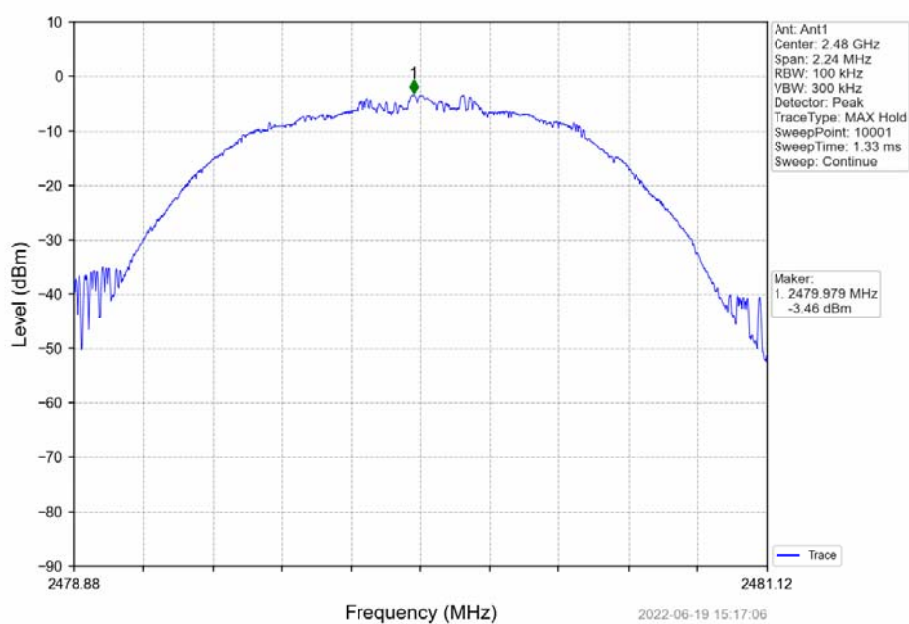




П/4-DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV

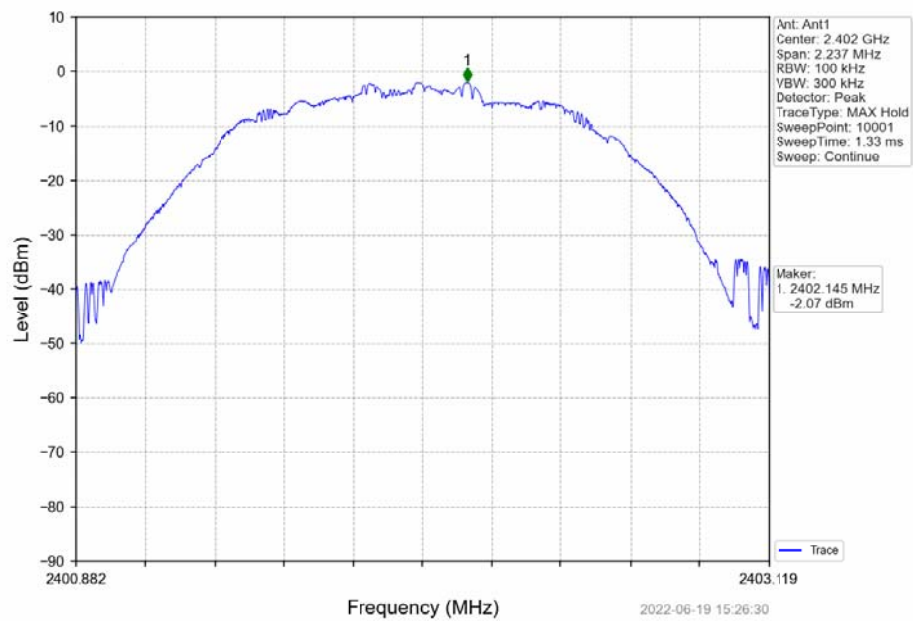


П/4-DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

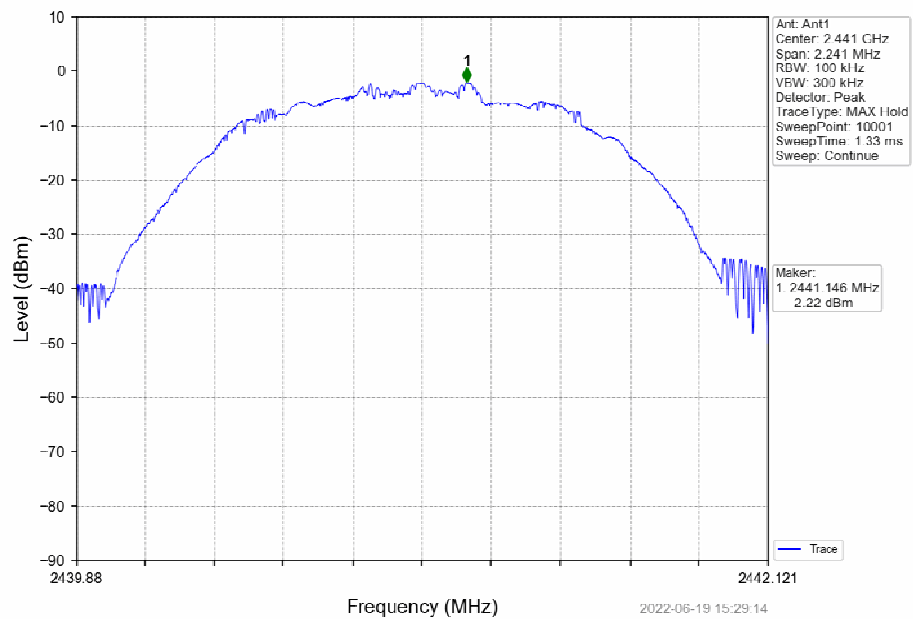


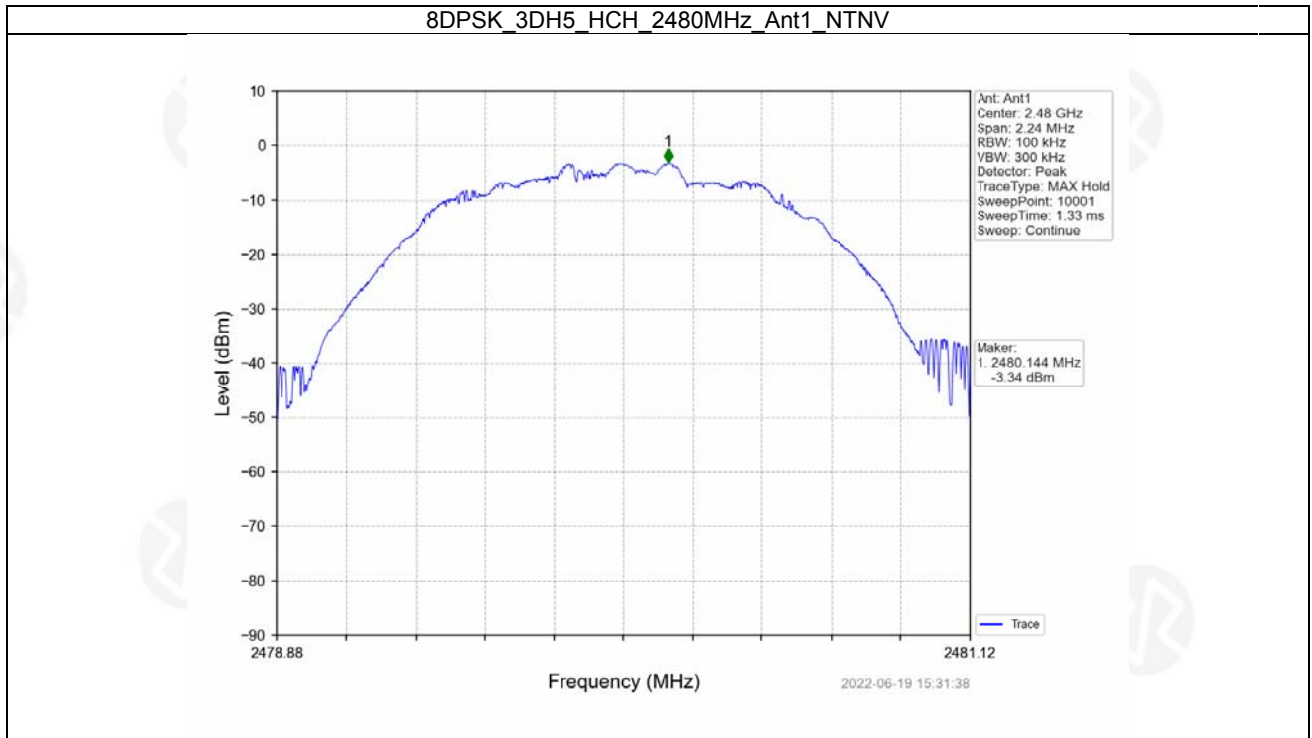


8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV







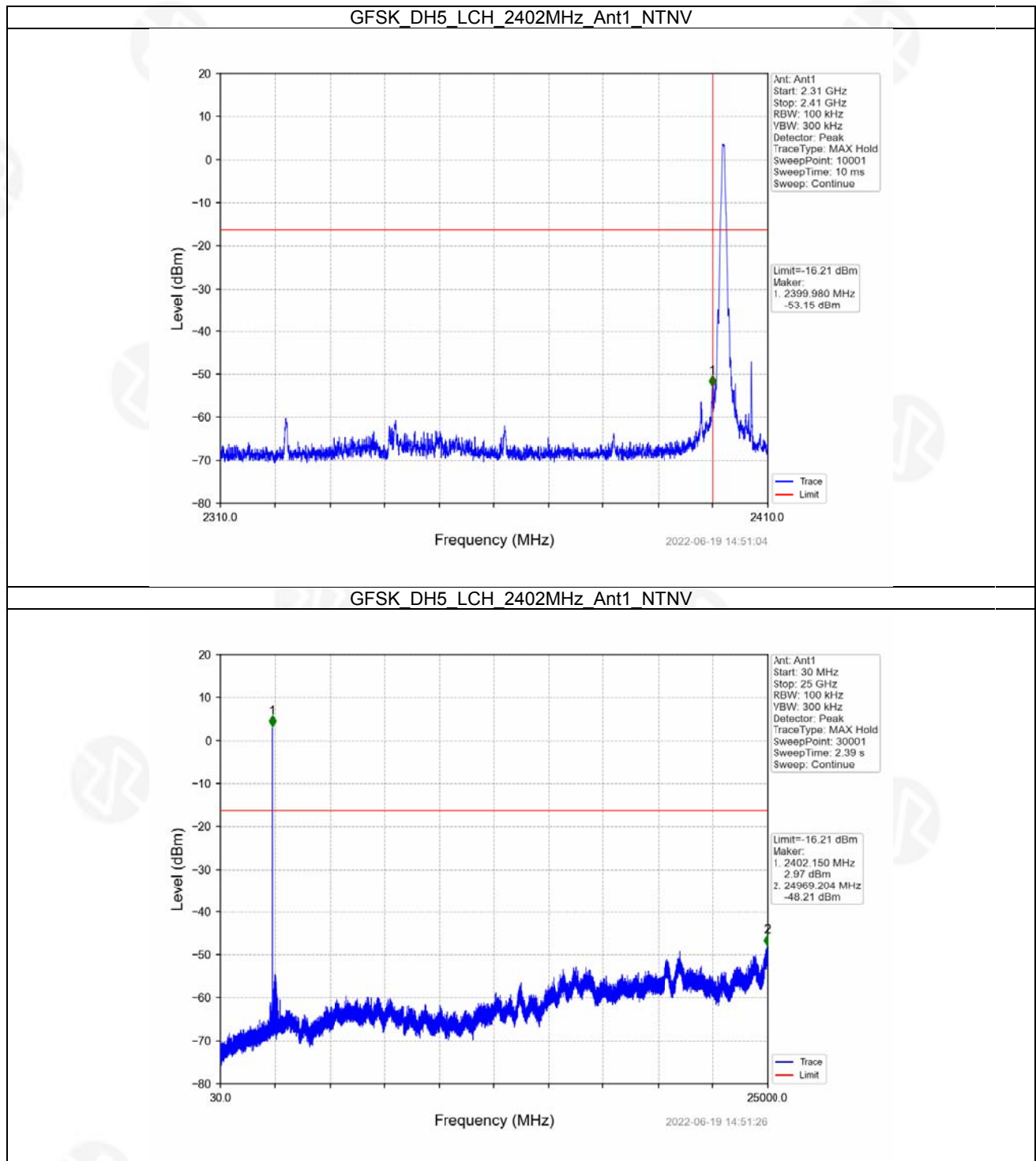
6.2 CSE

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	3.79	-16.21	Pass
		2441	DH5	1	3.79	-16.21	Pass
		2480	DH5	1	3.79	-16.21	Pass
		HOPP	DH5	1	3.79	-16.21	Pass
Π/4-DQPSK	SISO	2402	2DH5	1	-2.15	-22.15	Pass
		2441	2DH5	1	-2.15	-22.15	Pass
		2480	2DH5	1	-2.15	-22.15	Pass
		HOPP	2DH5	1	-2.15	-22.15	Pass
8DPSK	SISO	2402	3DH5	1	-2.07	-22.07	Pass
		2441	3DH5	1	-2.07	-22.07	Pass
		2480	3DH5	1	-2.07	-22.07	Pass
		HOPP	3DH5	1	-2.07	-22.07	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.							

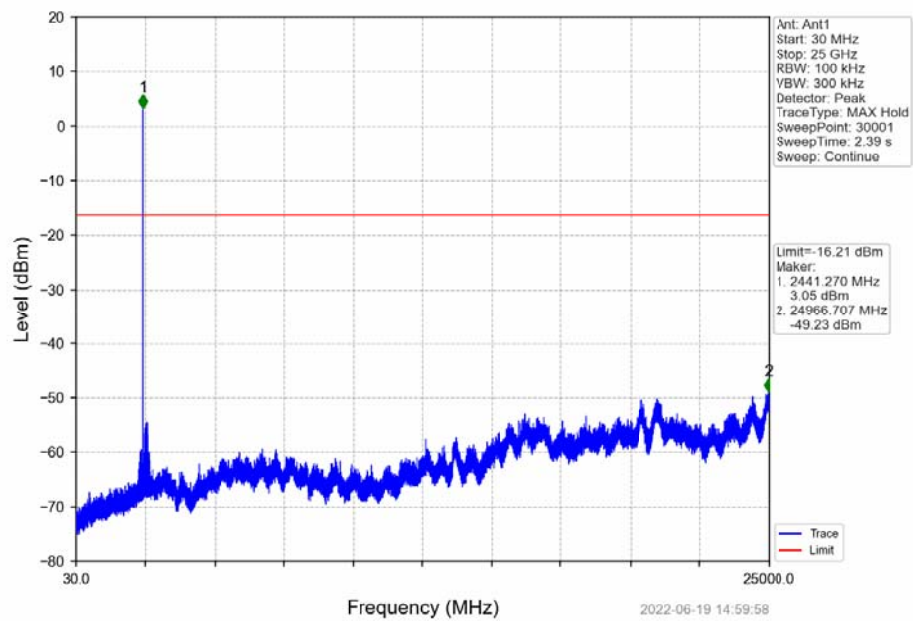


6.2.2 Test Graph

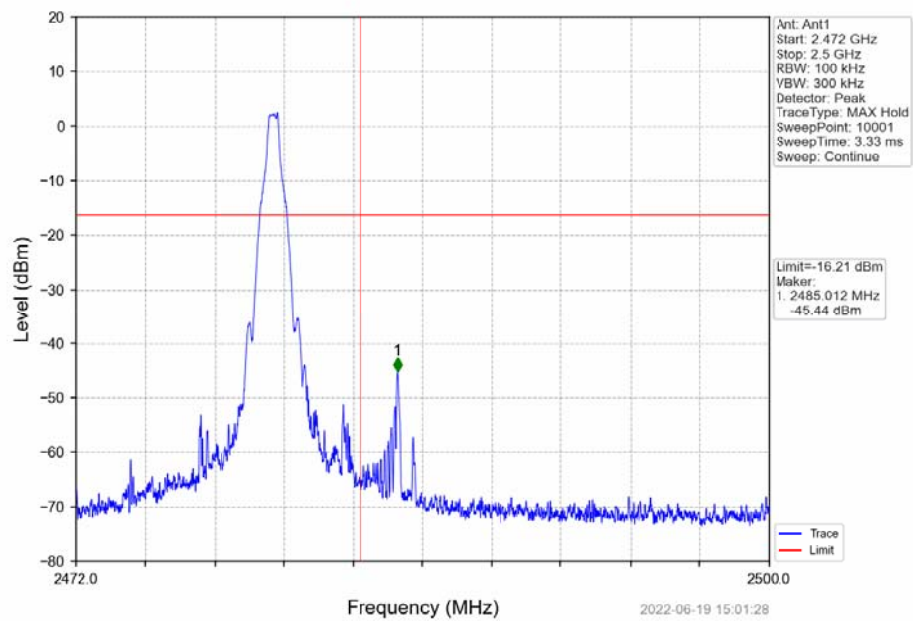




GFSK_DH5_MCH_2441MHz_Ant1_NTNV

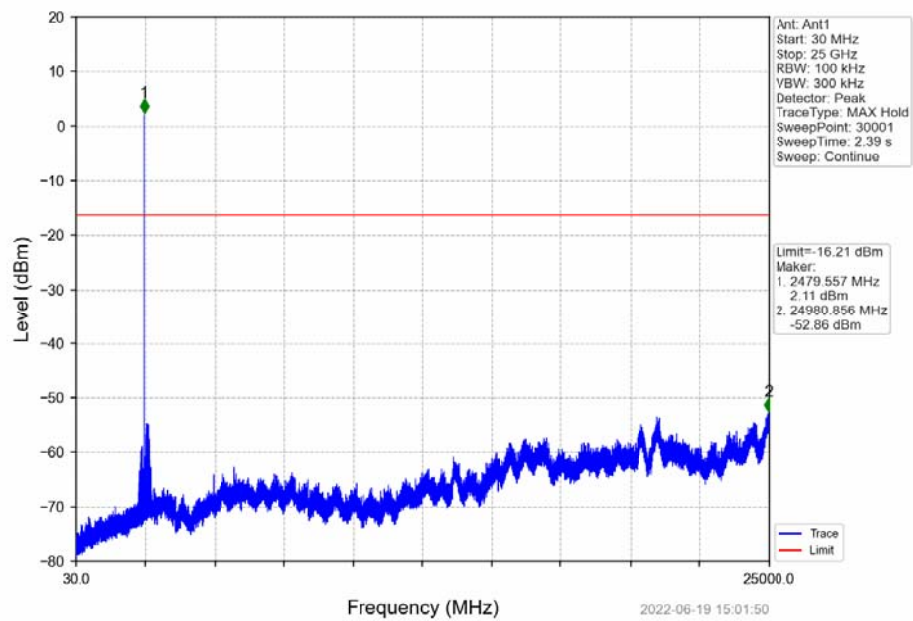


GFSK_DH5_HCH_2480MHz_Ant1_NTNV

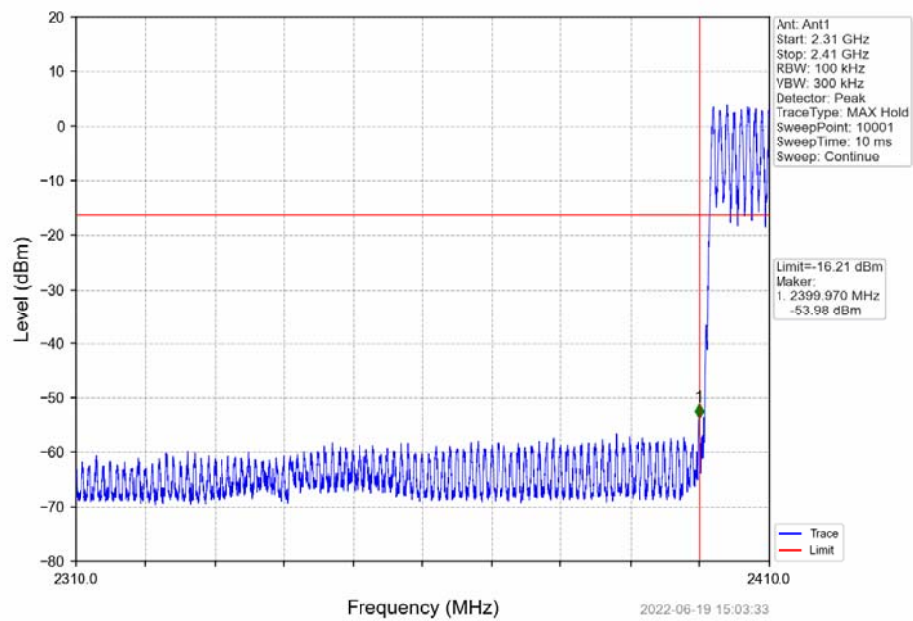




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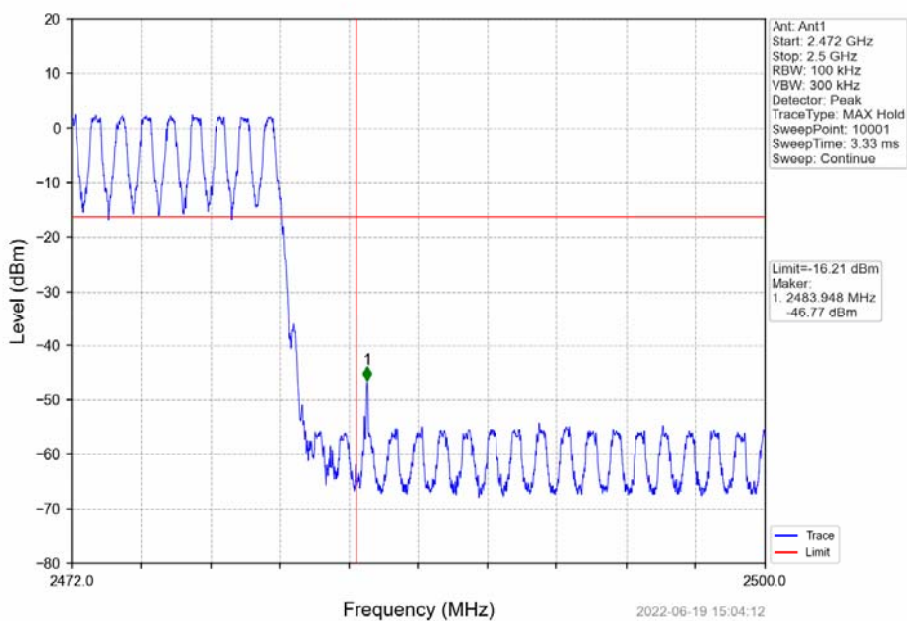


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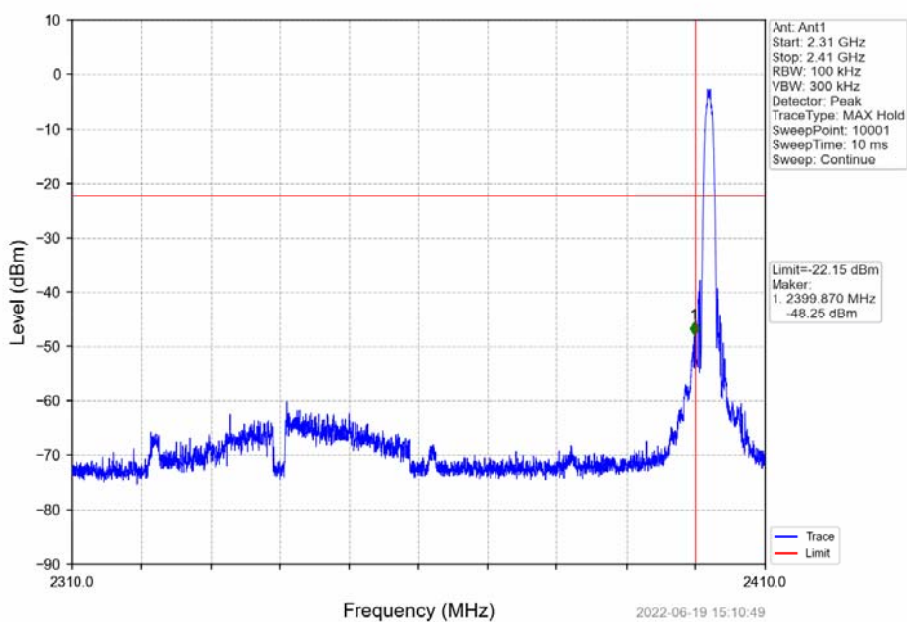




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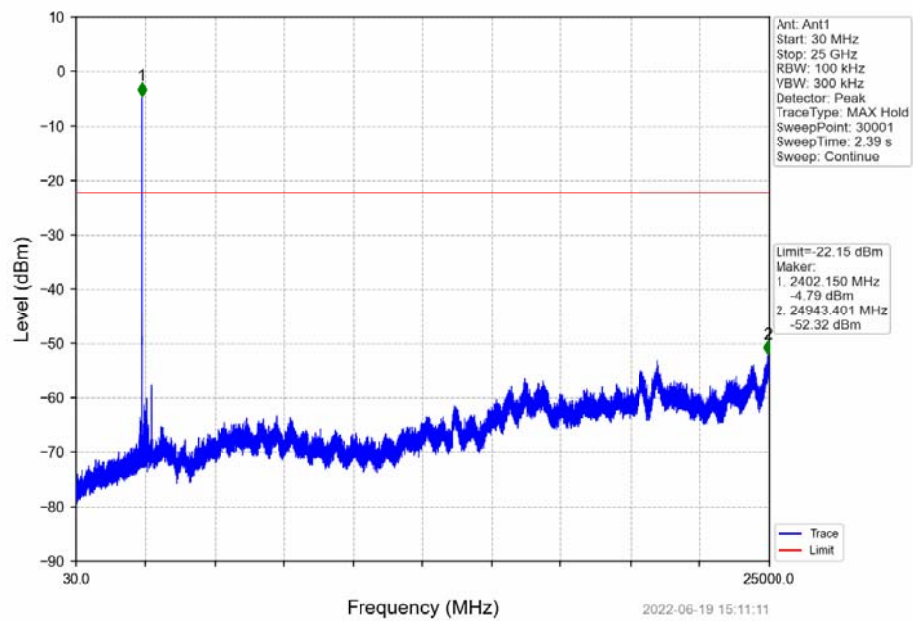


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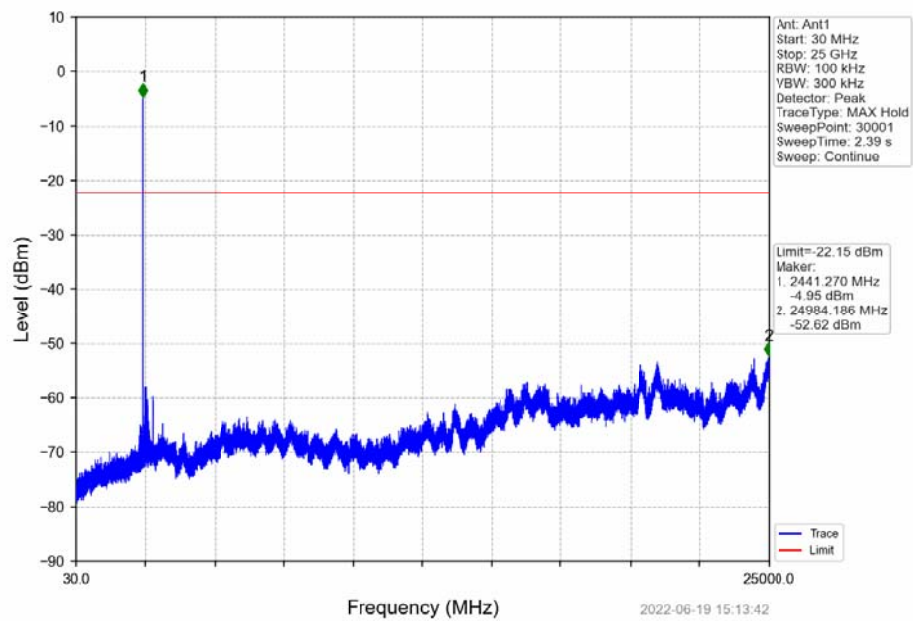




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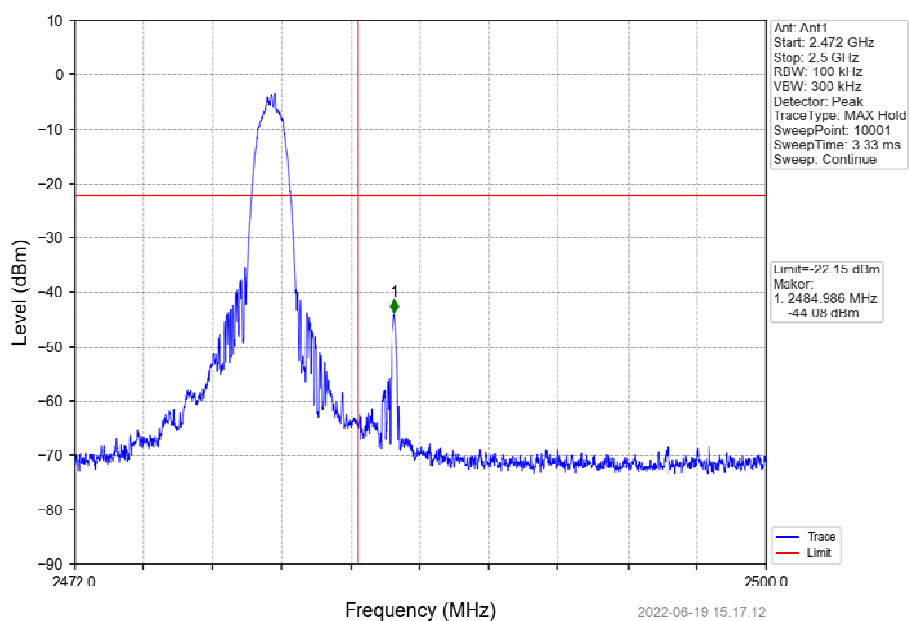


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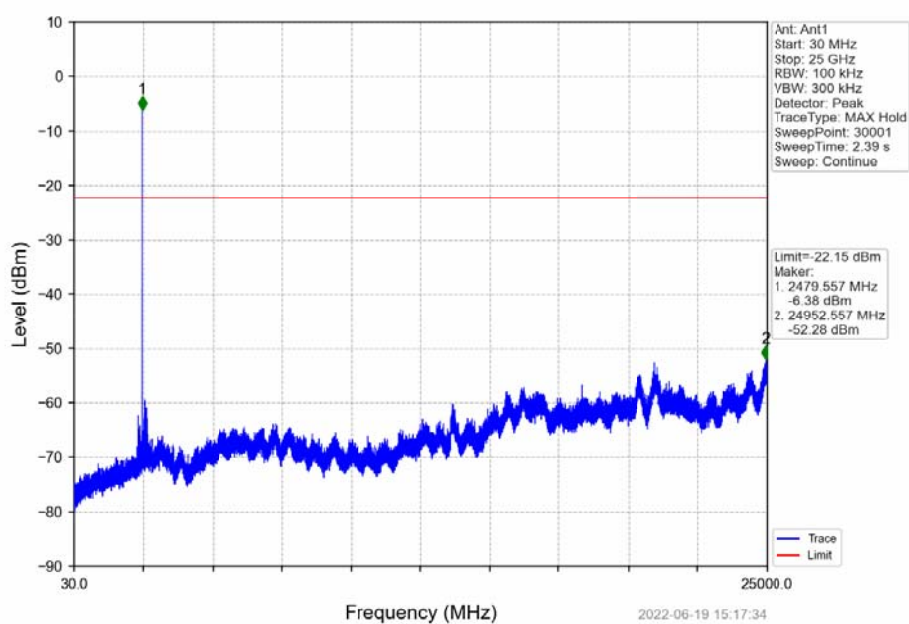




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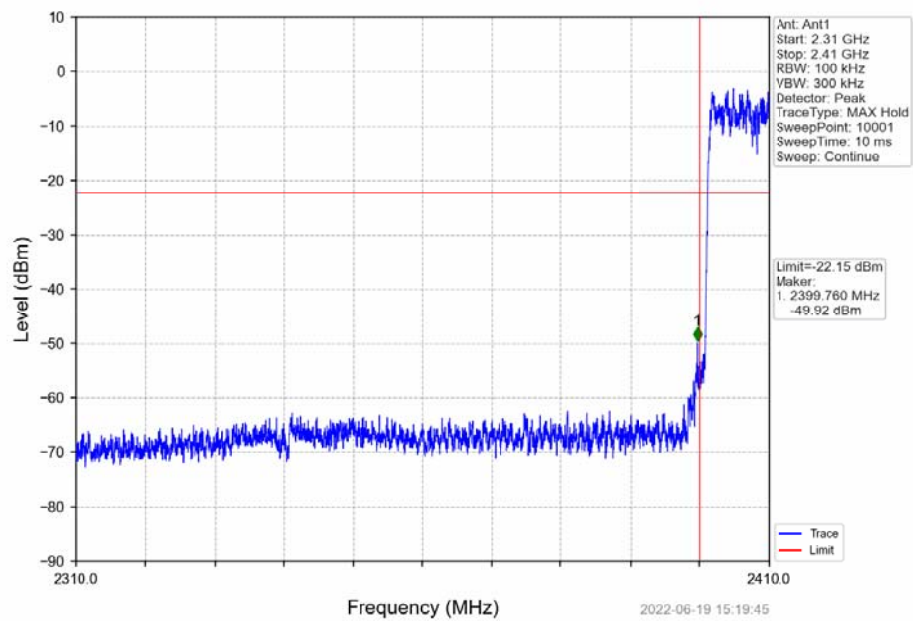


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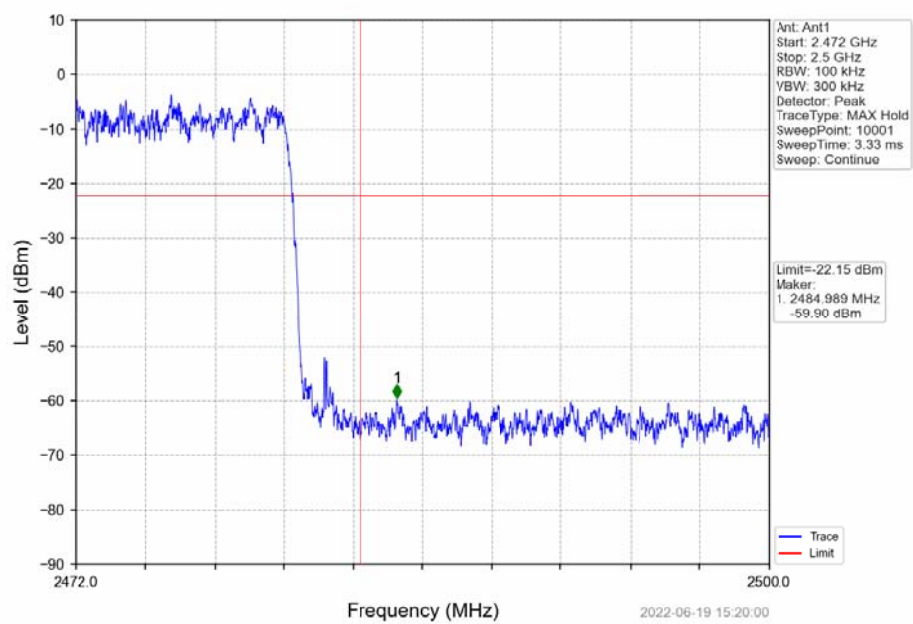




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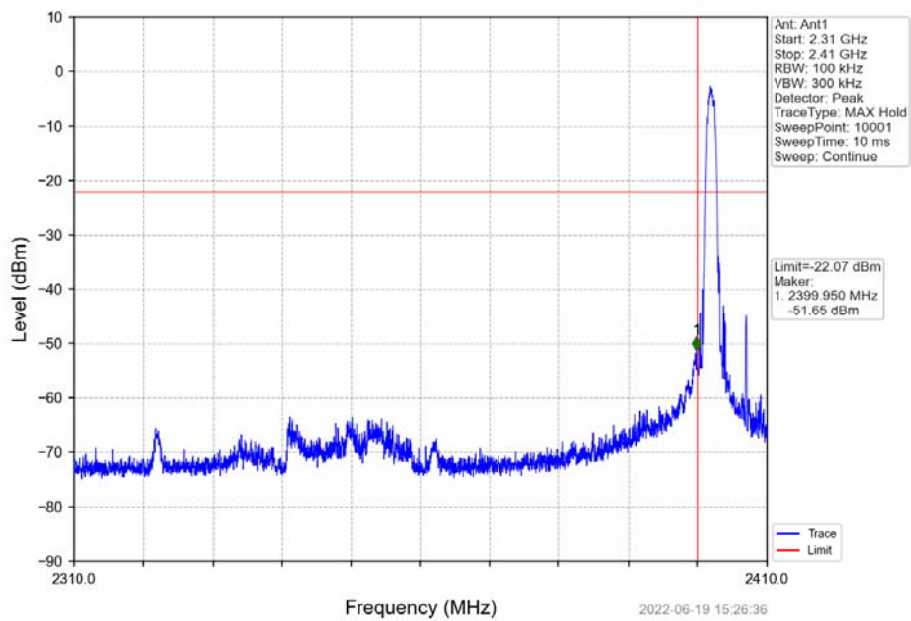


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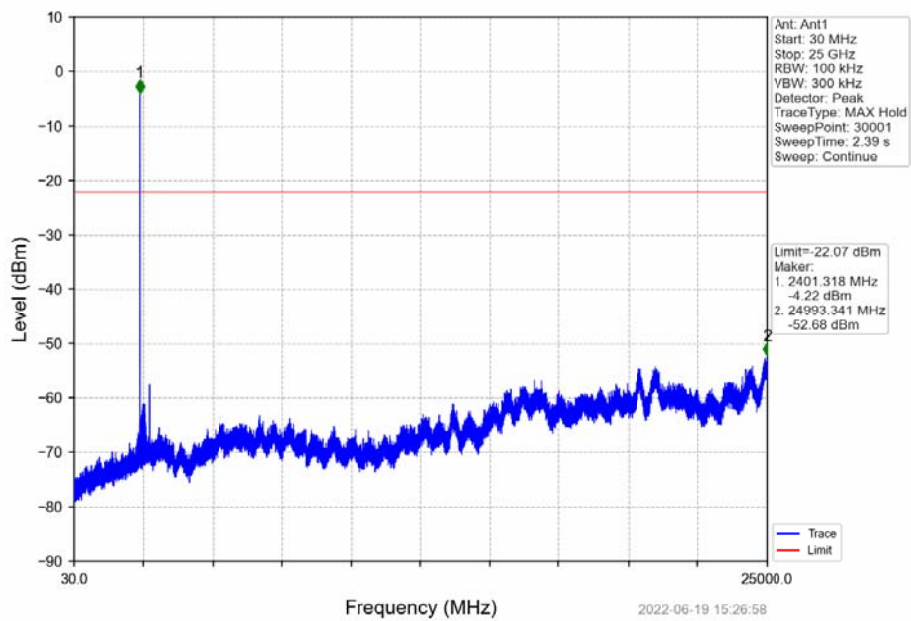




8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV

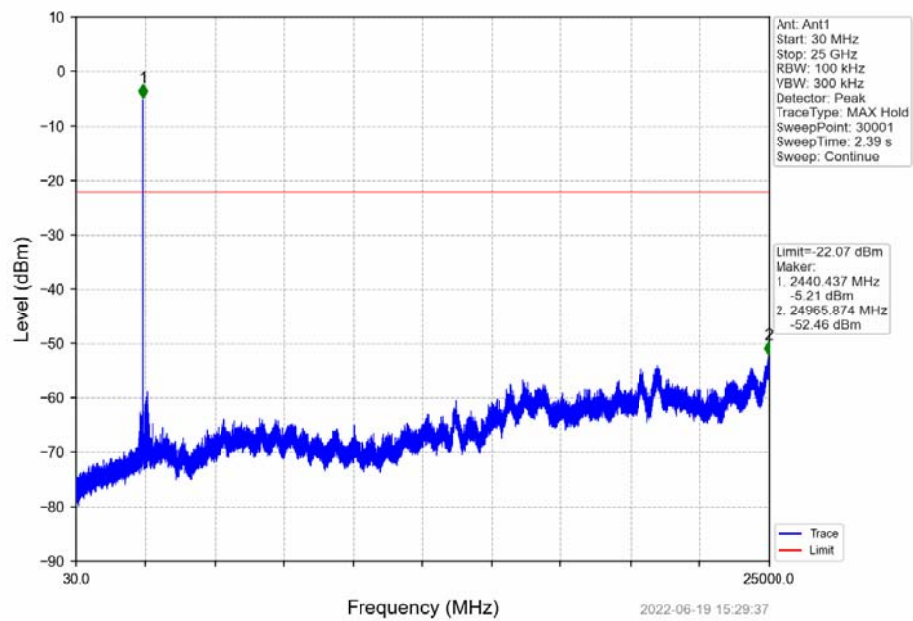


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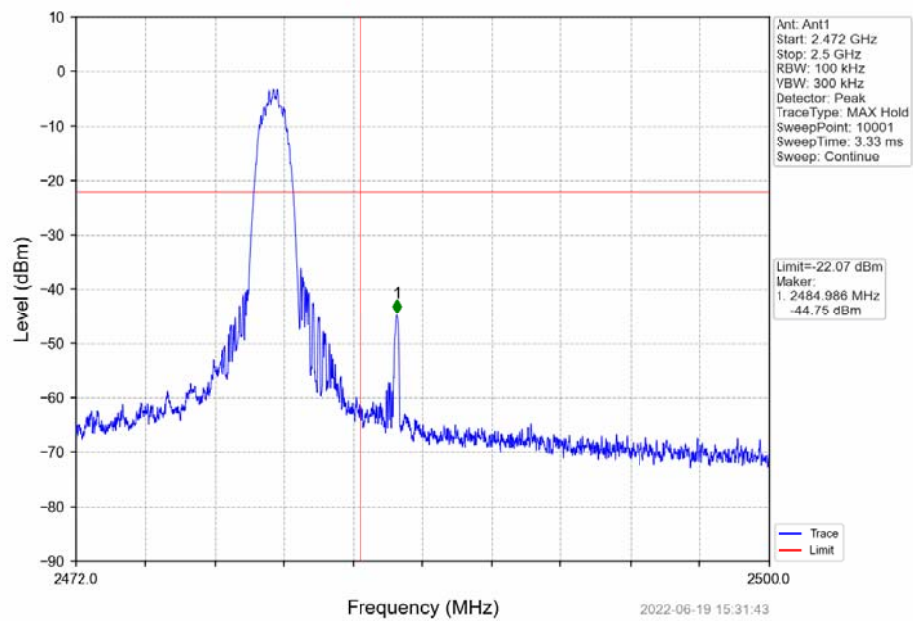




8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV

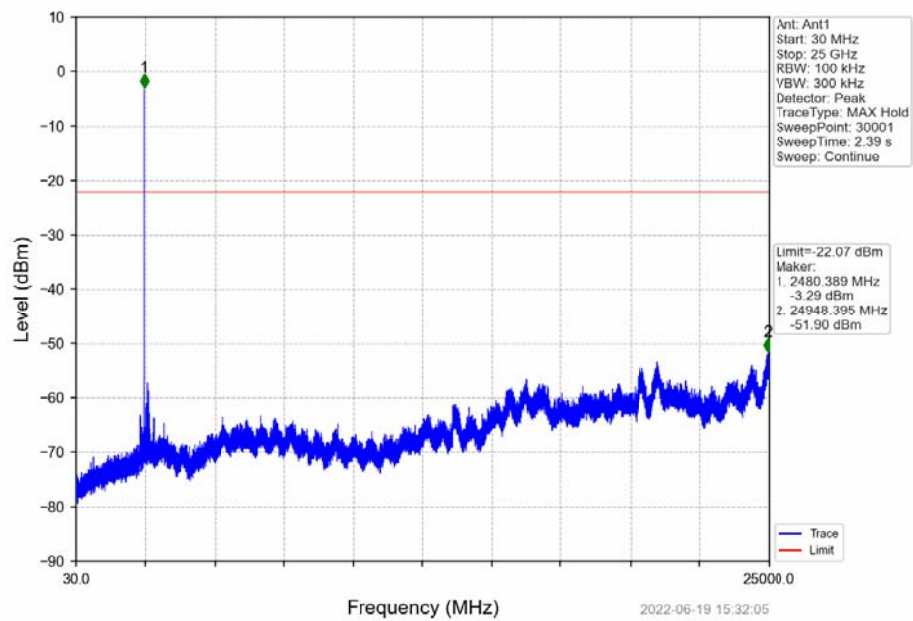


8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV





8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV

