

ANNEX D TEST DATA

For

Project No.:	8133EU011901W
Client:	Autel Intelligent Technology Corp., Ltd.
Product Description:	MaxiFlash VCMI
Model No.:	MaxiFlash VCMI
FCC ID:	WQ8VCMI2121
Technology:	Bluetooth BDR+EDR
Test Engineer:	<i>Mikoy zhu</i>
Test Date:	2023-10-26

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

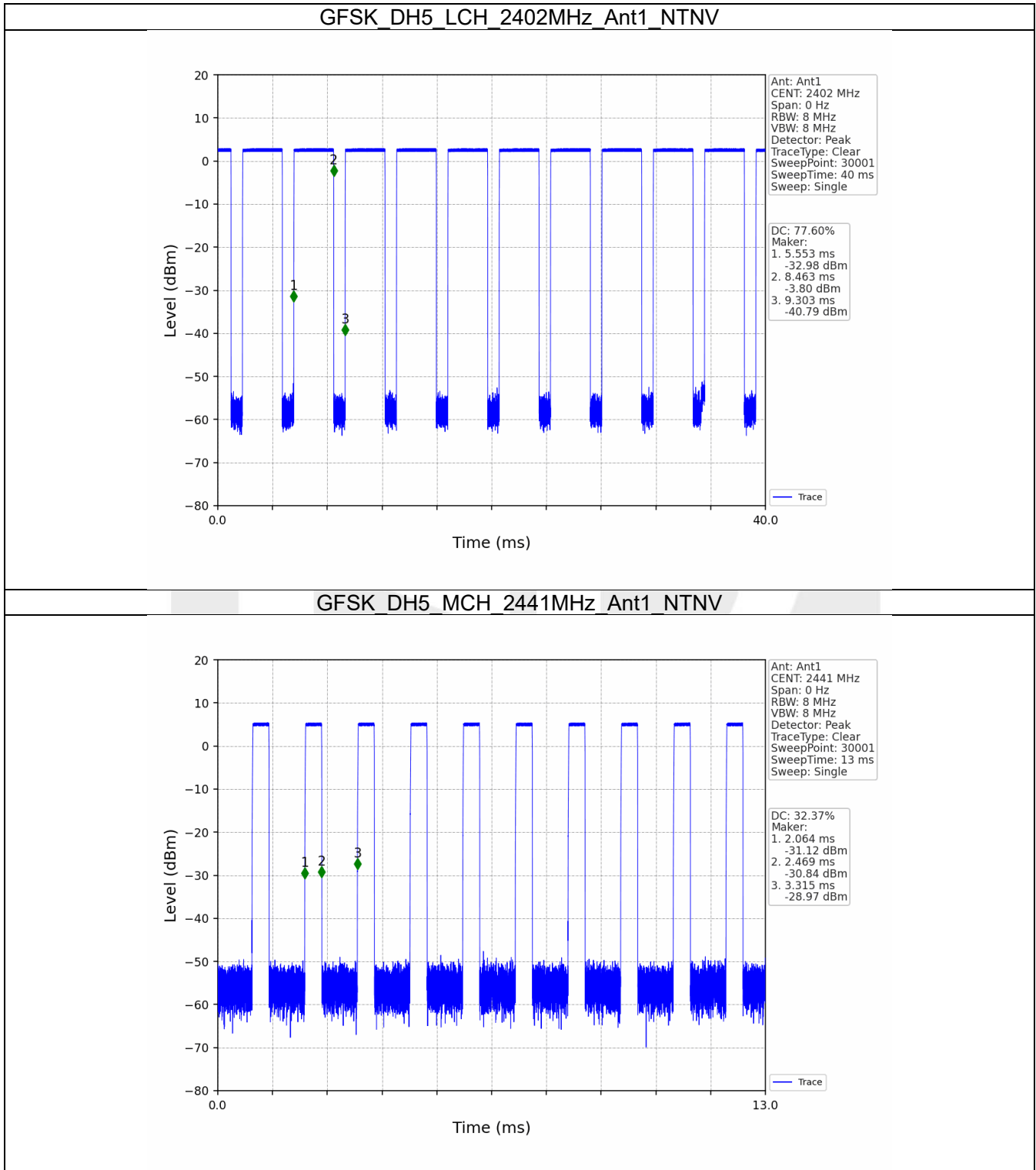
1. Duty Cycle

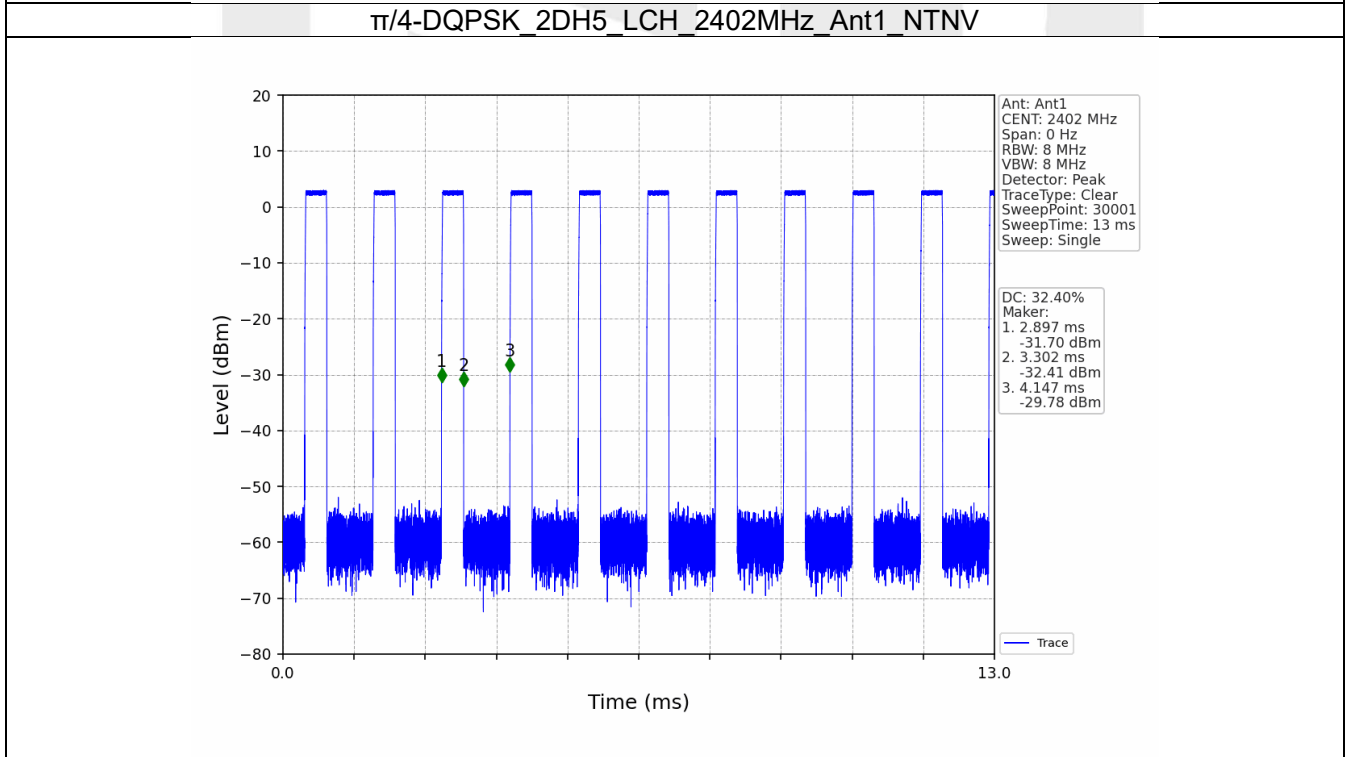
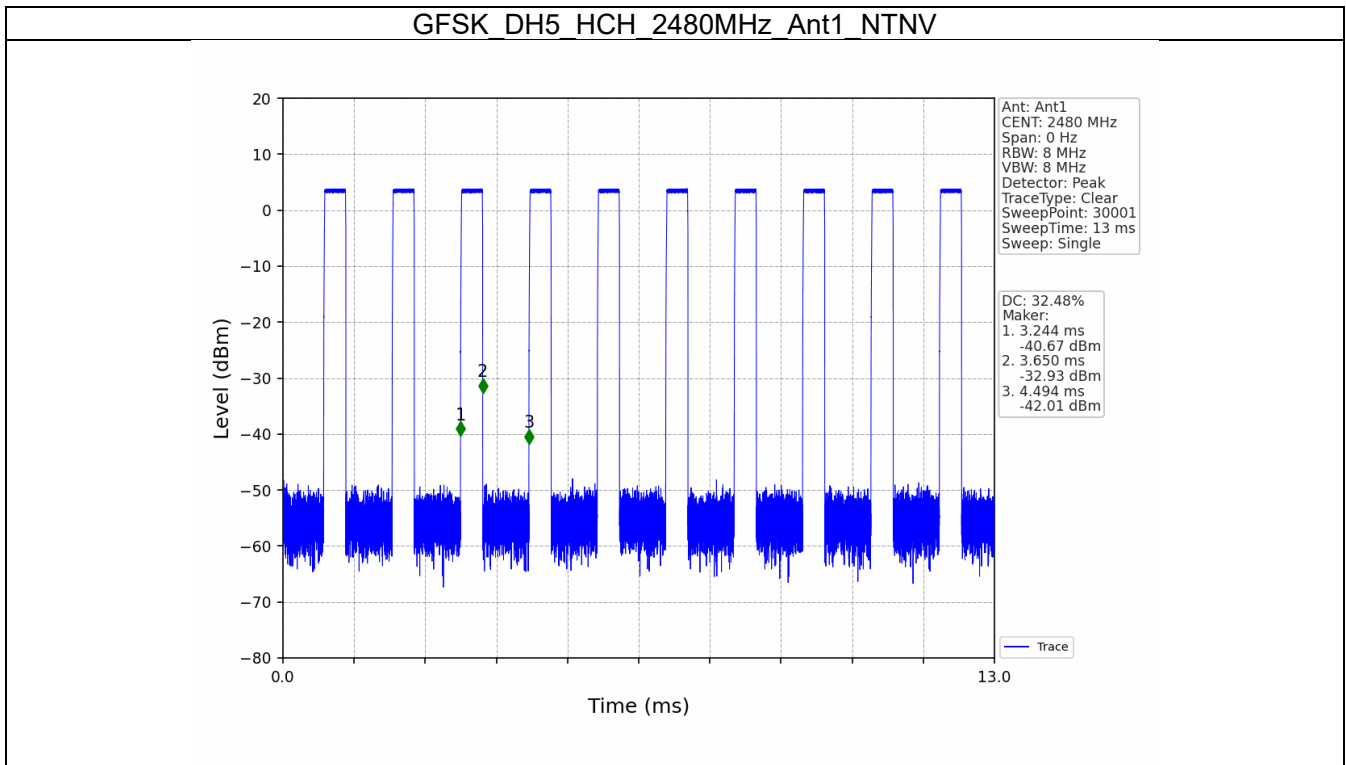
1.1 Ant1

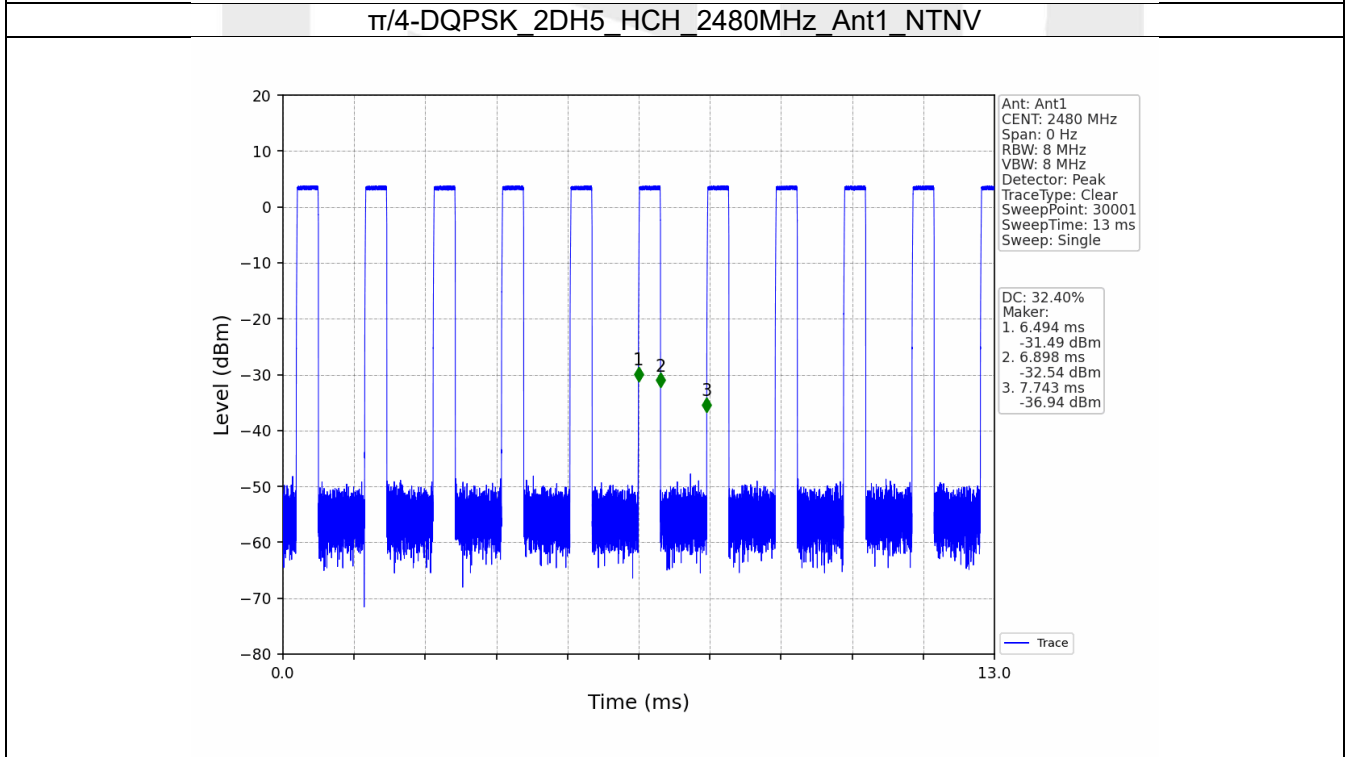
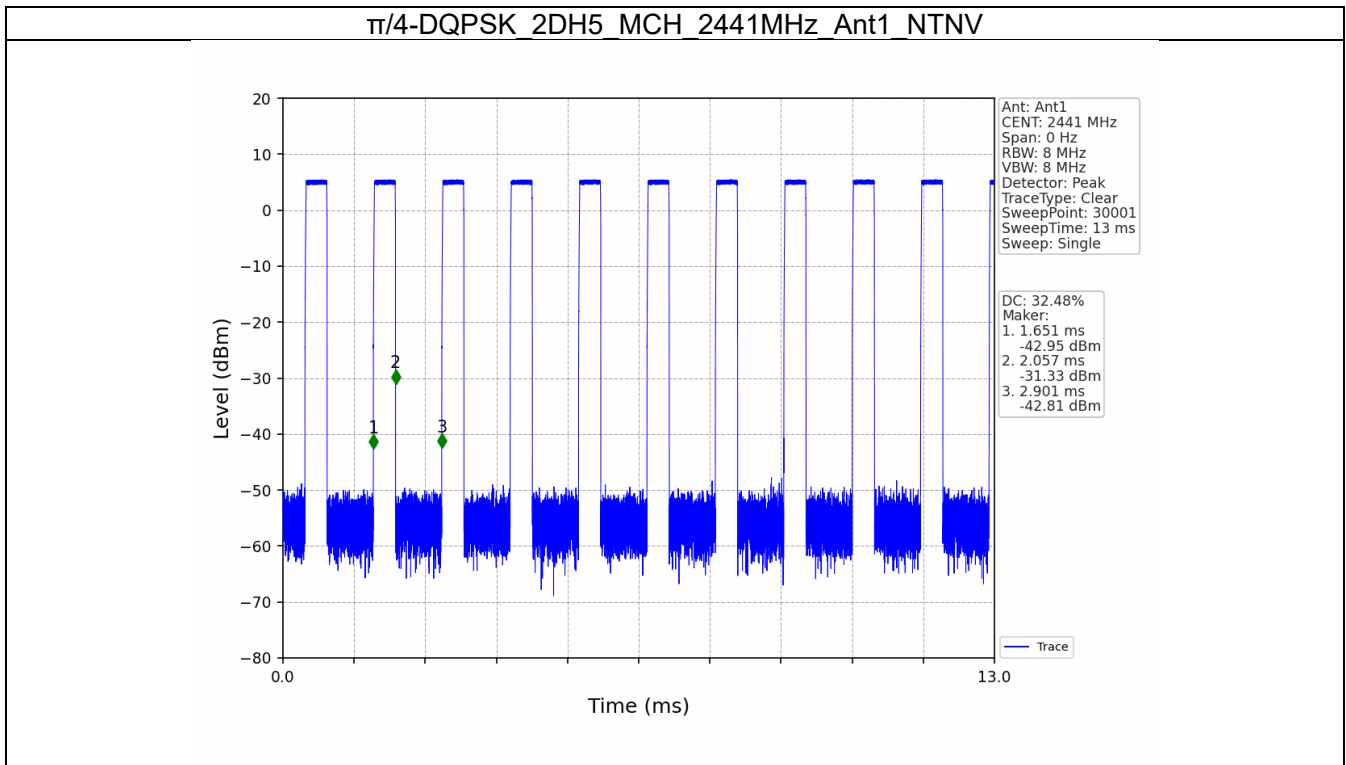
1.1.1 Test Result

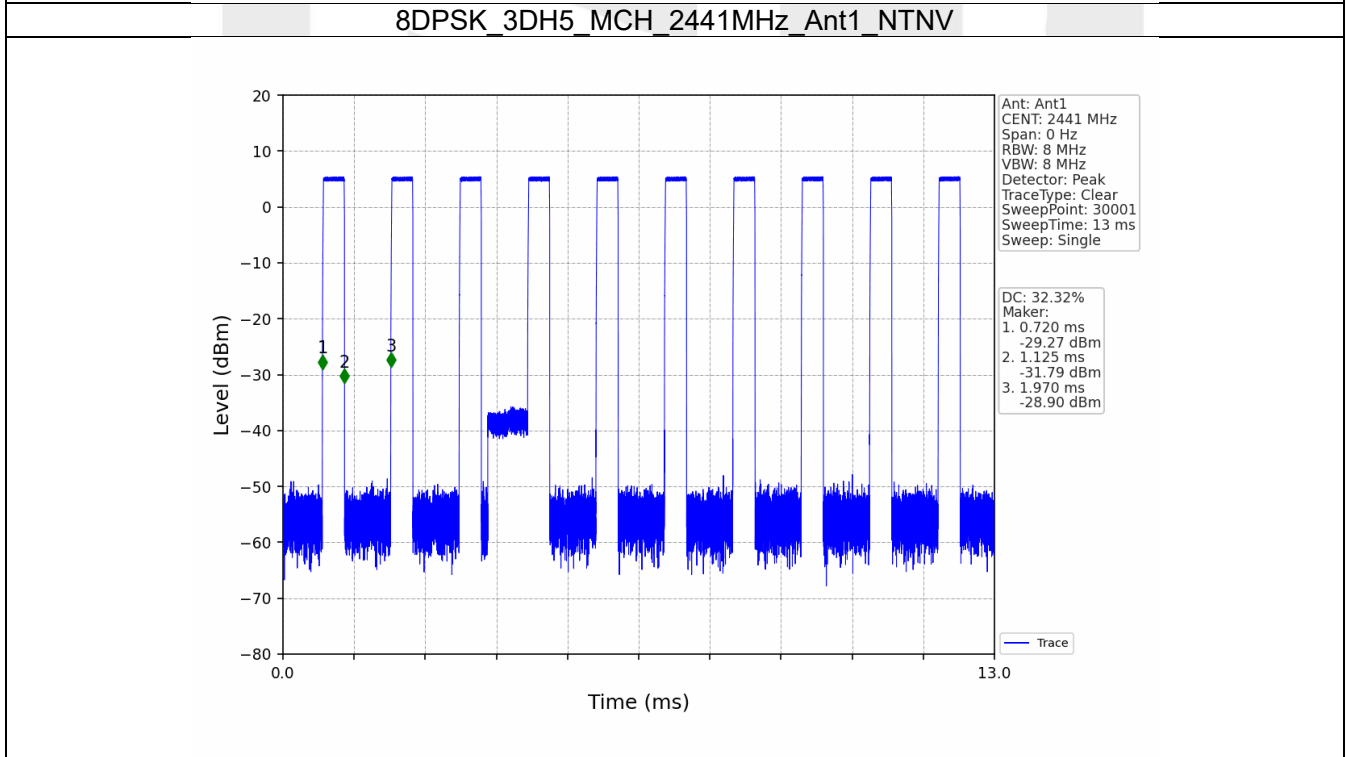
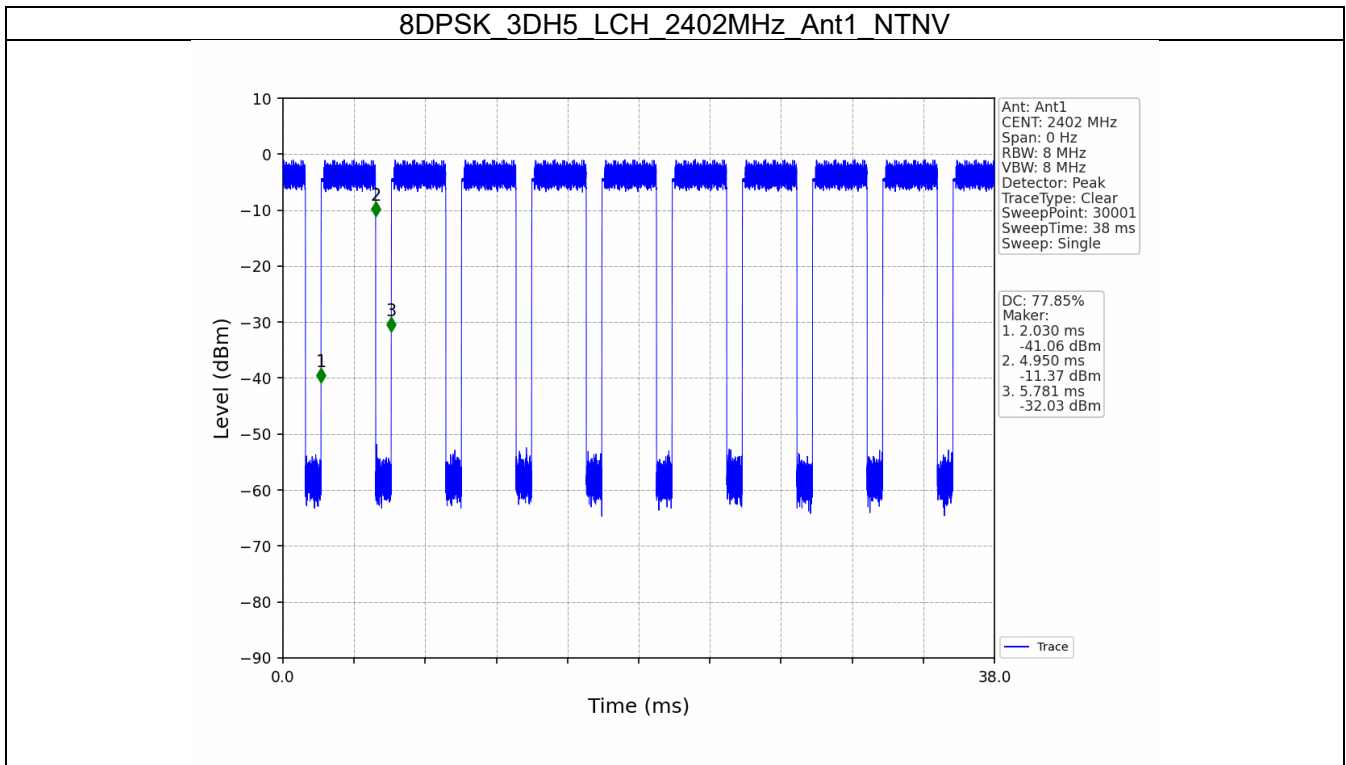
Ant1								
Mode	TX Type	Frequency (MHz)	Packet Type	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
GFSK	SISO	2402	DH5	2.910	3.750	77.60	1.10	0.01
		2441	DH5	0.405	1.251	32.37	4.90	0.03
		2480	DH5	0.406	1.250	32.48	4.88	0.03
$\pi/4$ -DQPSK	SISO	2402	2DH5	0.405	1.250	32.40	4.89	0.03
		2441	2DH5	0.406	1.250	32.48	4.88	0.03
		2480	2DH5	0.405	1.250	32.40	4.89	0.03
8DPSK	SISO	2402	3DH5	2.920	3.751	77.85	1.09	0.03
		2441	3DH5	0.404	1.250	32.32	4.91	0.01
		2480	3DH5	0.405	1.250	32.40	4.89	0.03

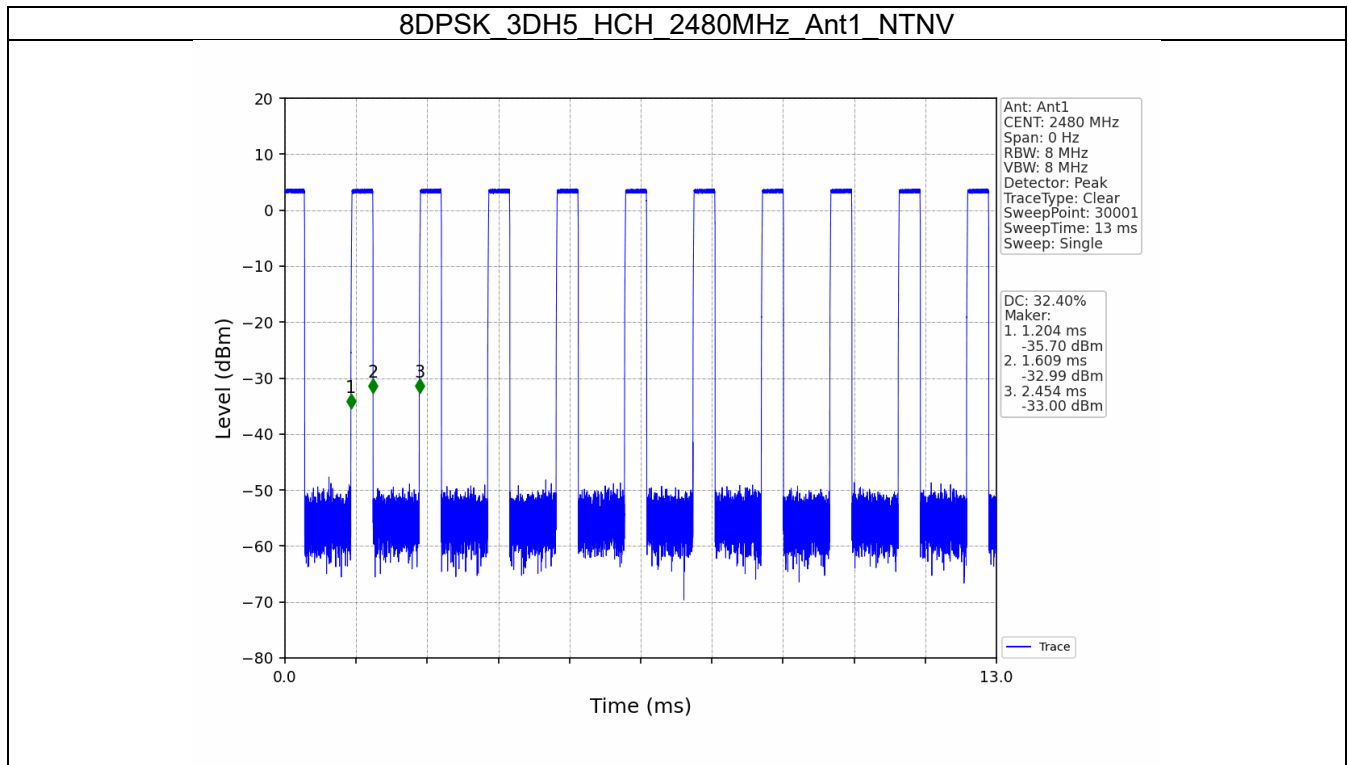
1.1.2 Test Graph











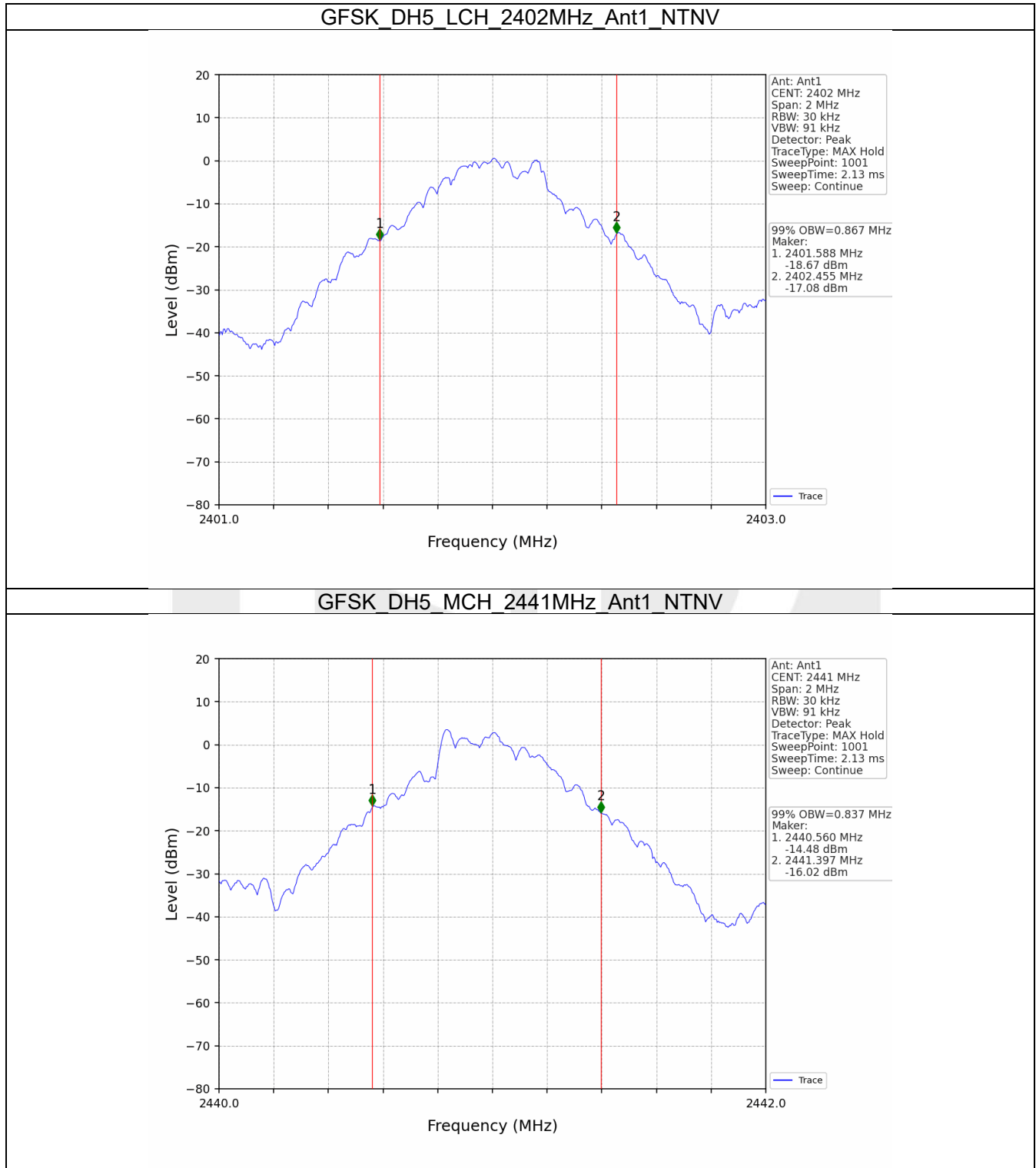
2. Bandwidth

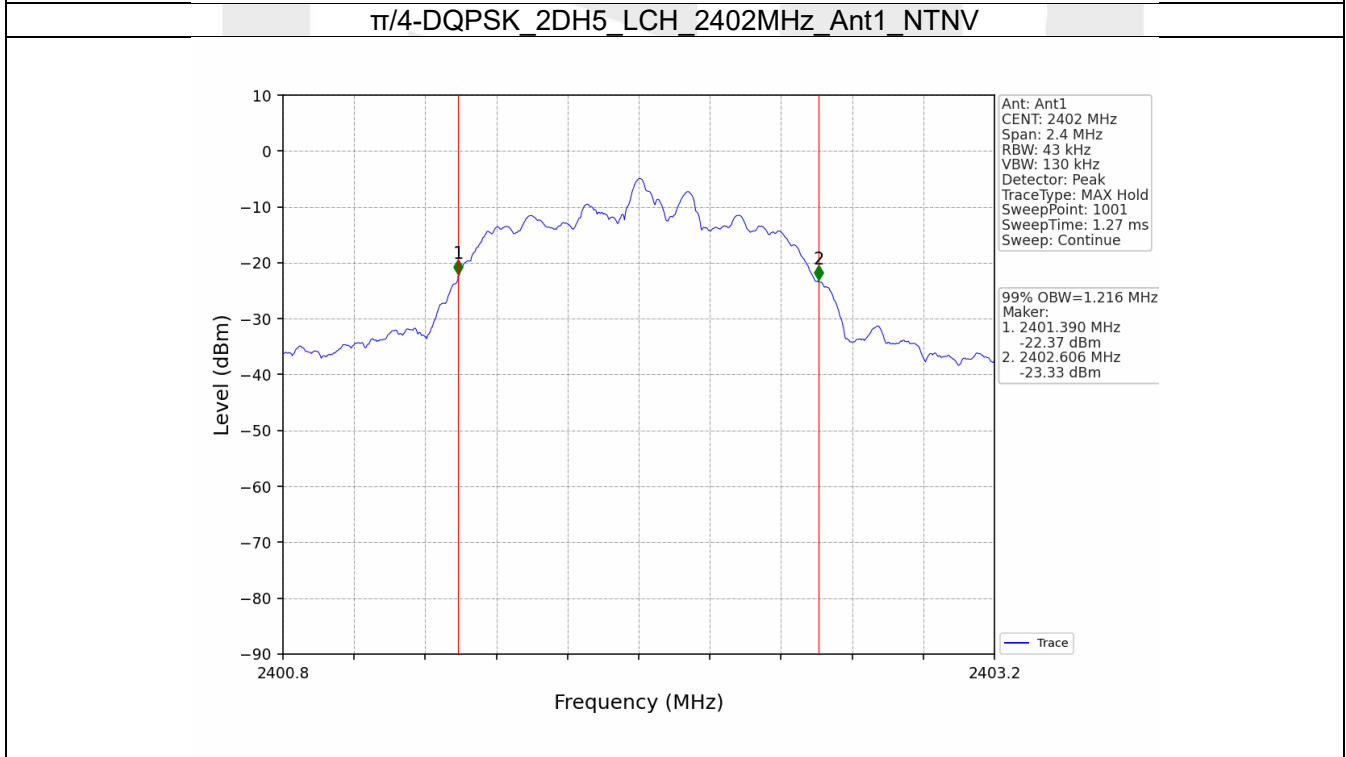
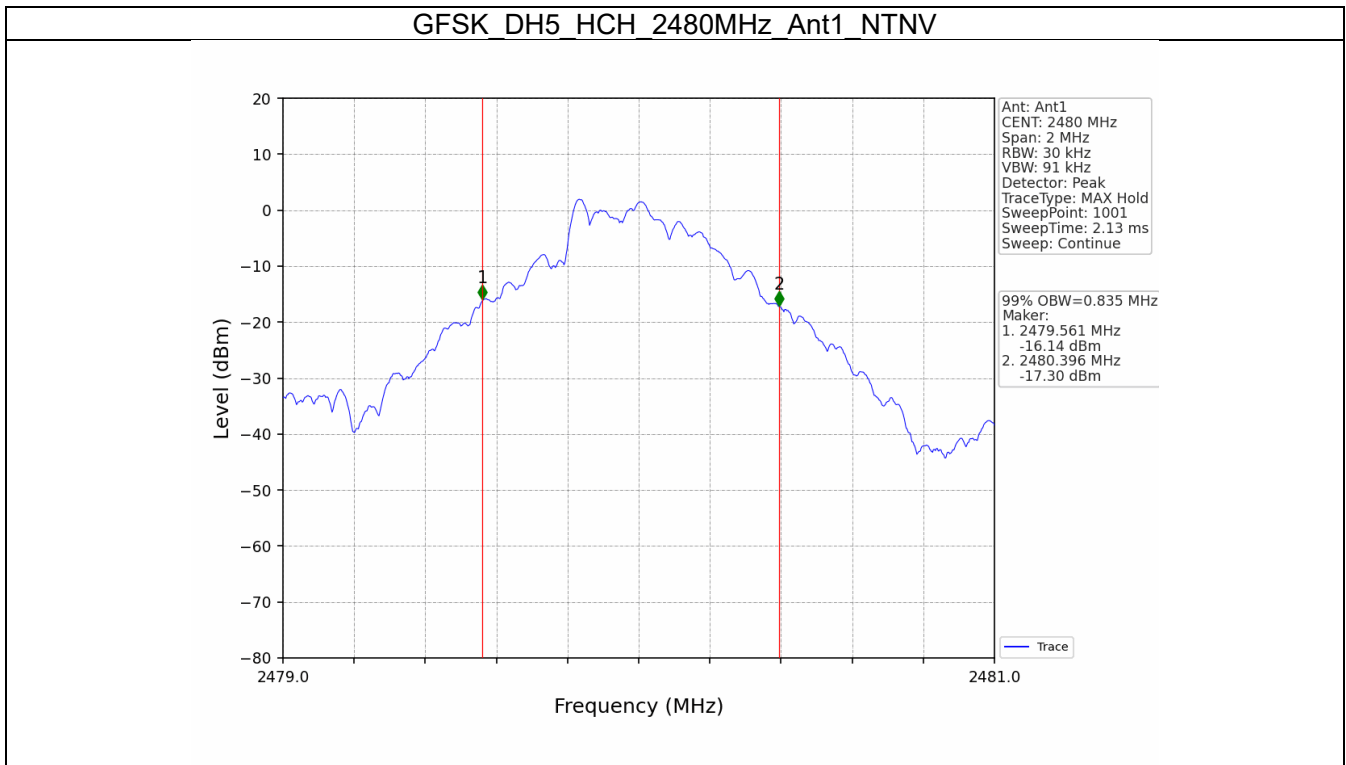
2.1 OBW

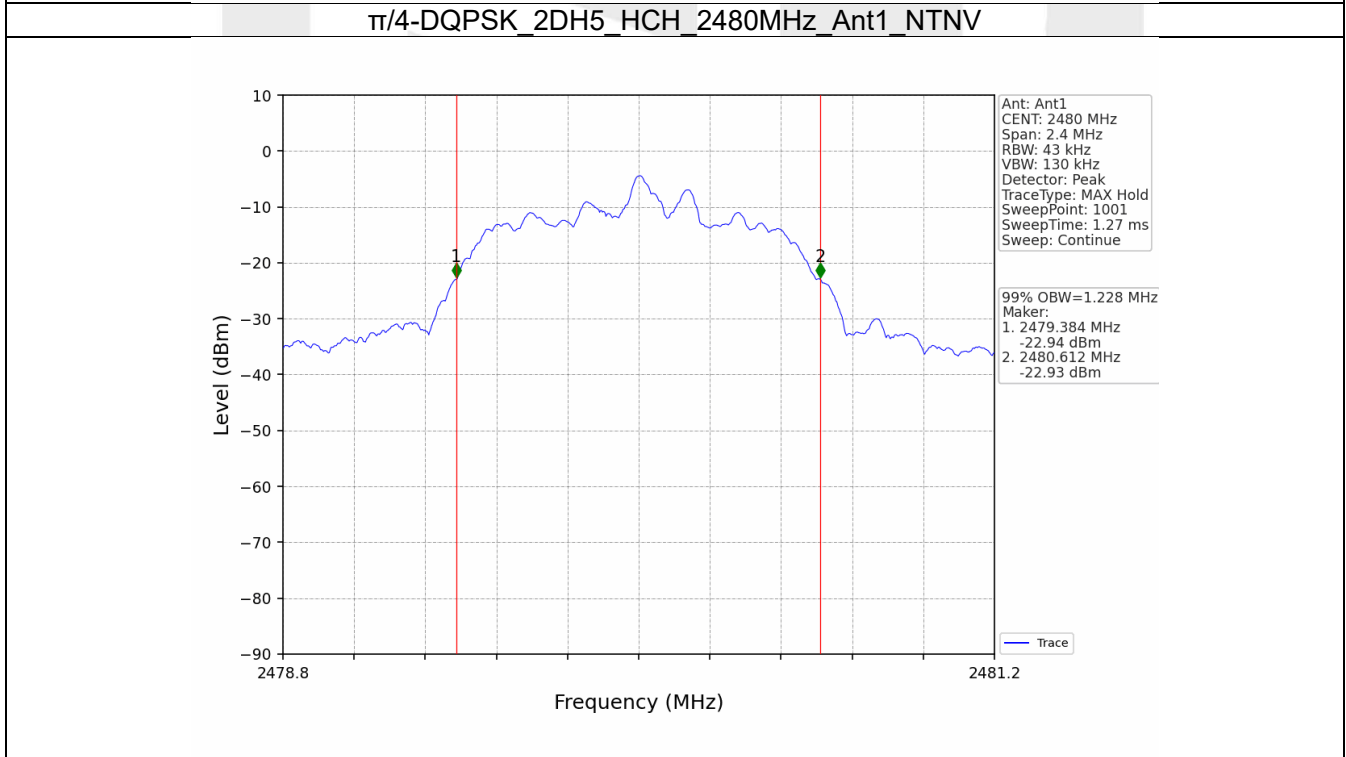
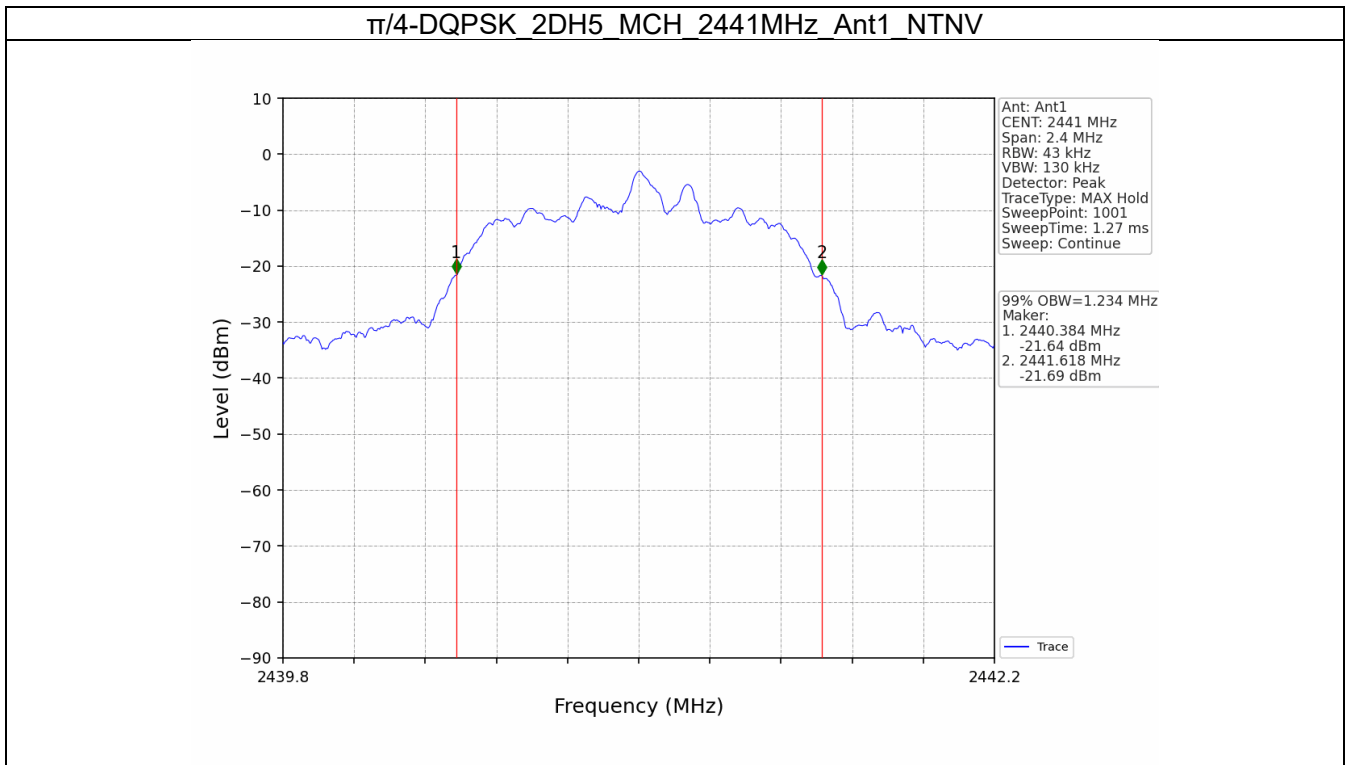
2.1.1 Test Result

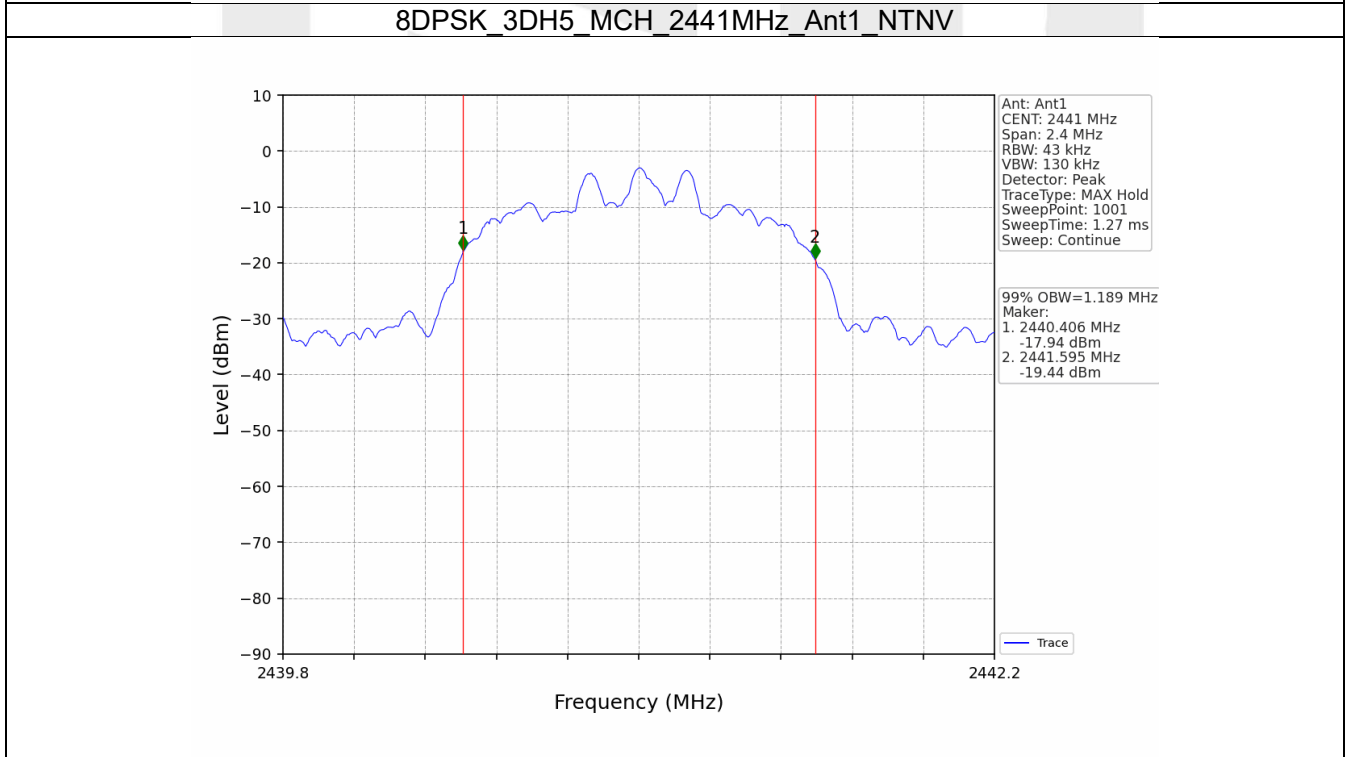
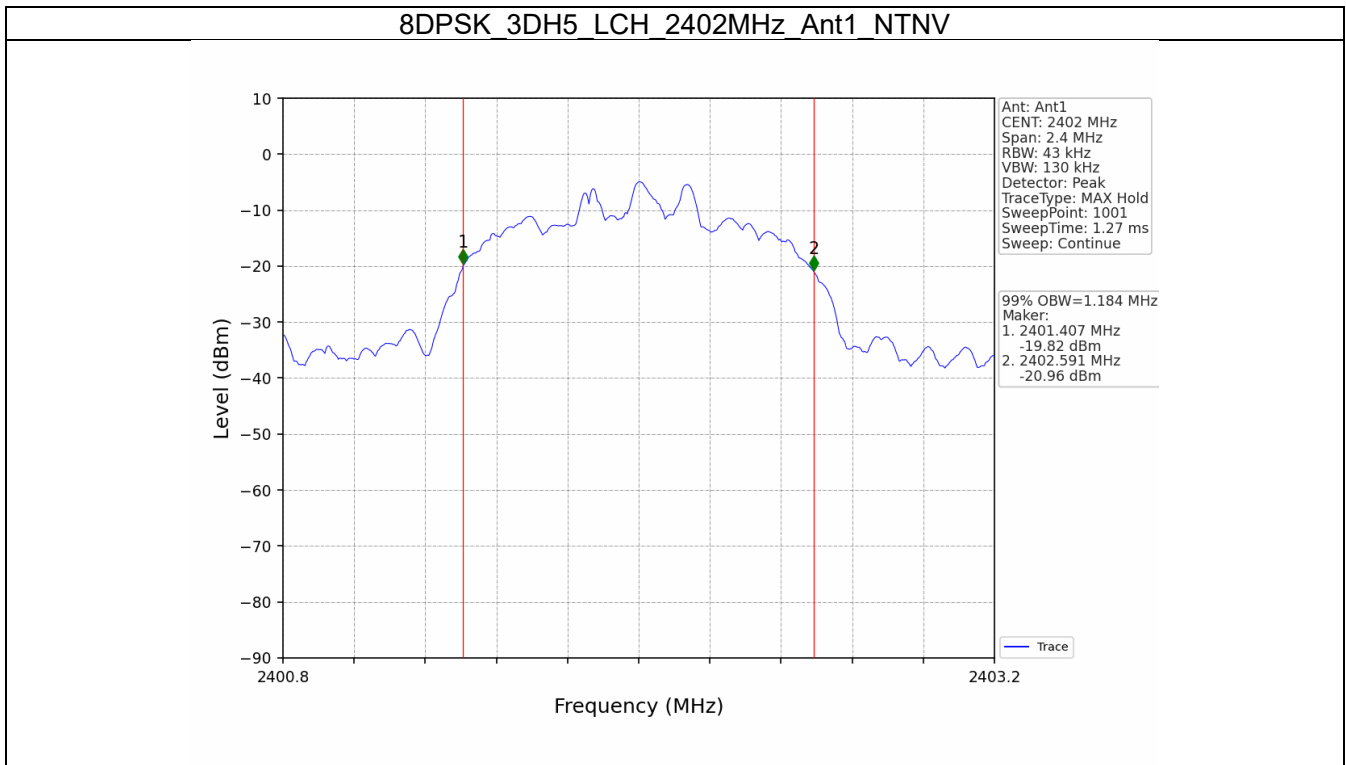
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	99% Occupied Bandwidth (MHz)	Verdict
					Result	
GFSK	SISO	2402	DH5	1	0.867	Pass
		2441	DH5	1	0.837	Pass
		2480	DH5	1	0.835	Pass
$\pi/4$ -DQPSK	SISO	2402	2DH5	1	1.216	Pass
		2441	2DH5	1	1.234	Pass
		2480	2DH5	1	1.228	Pass
8DPSK	SISO	2402	3DH5	1	1.184	Pass
		2441	3DH5	1	1.189	Pass
		2480	3DH5	1	1.186	Pass

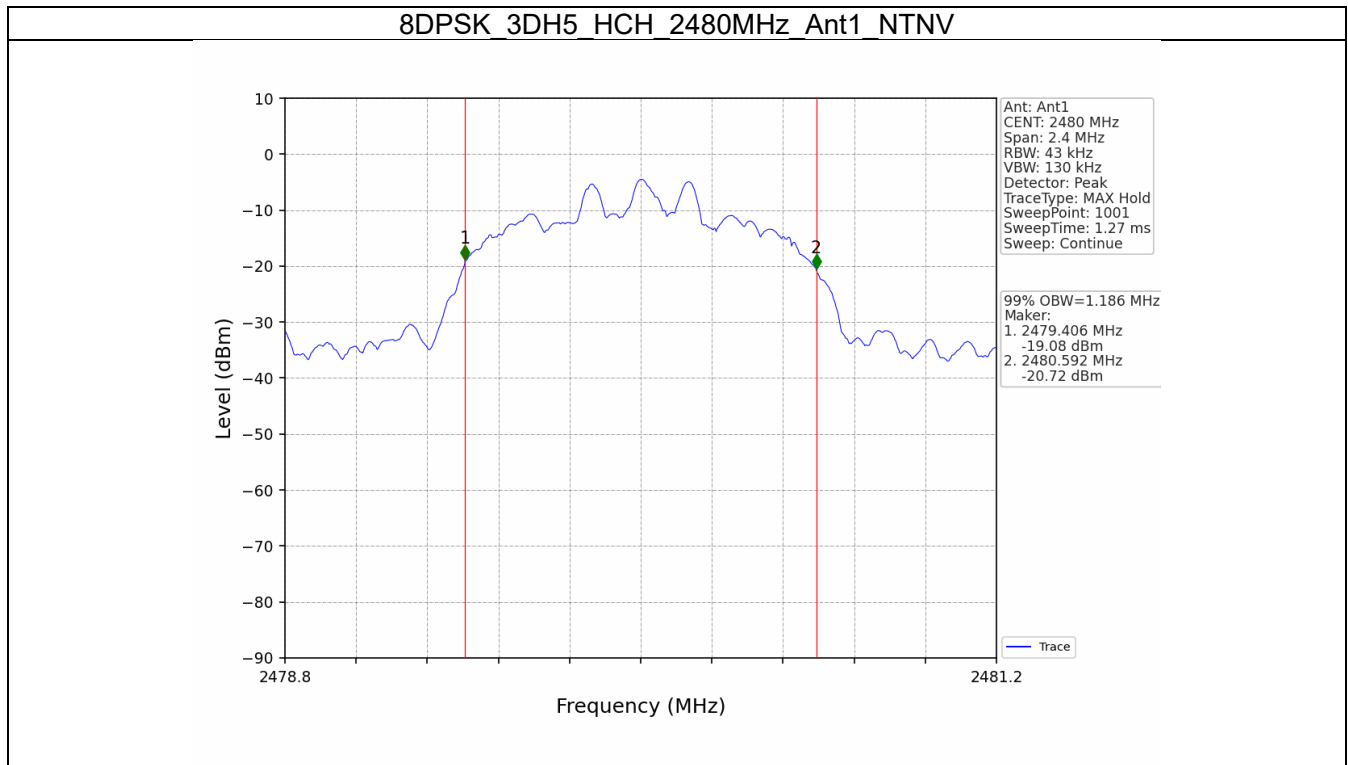
2.1.2 Test Graph









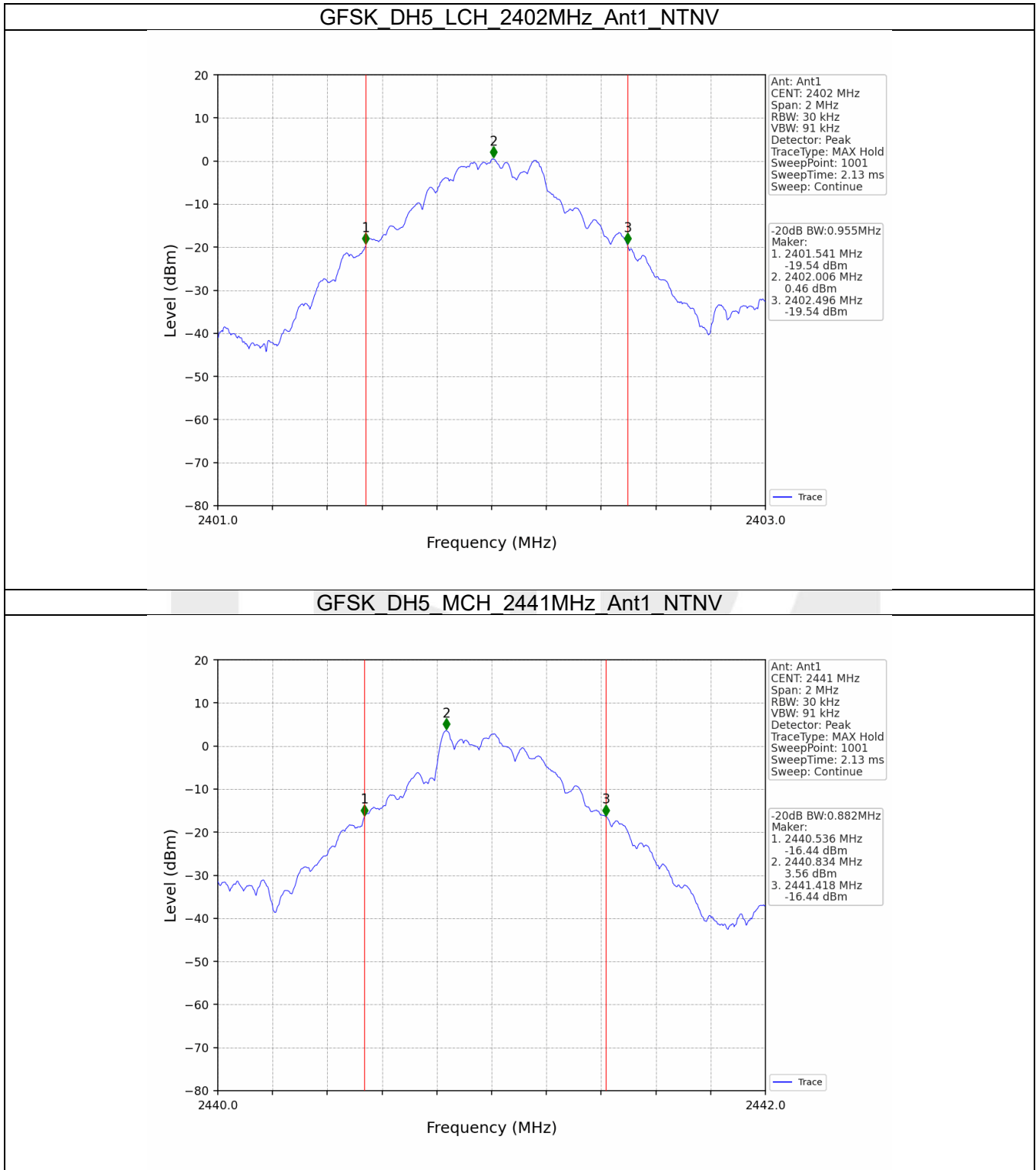


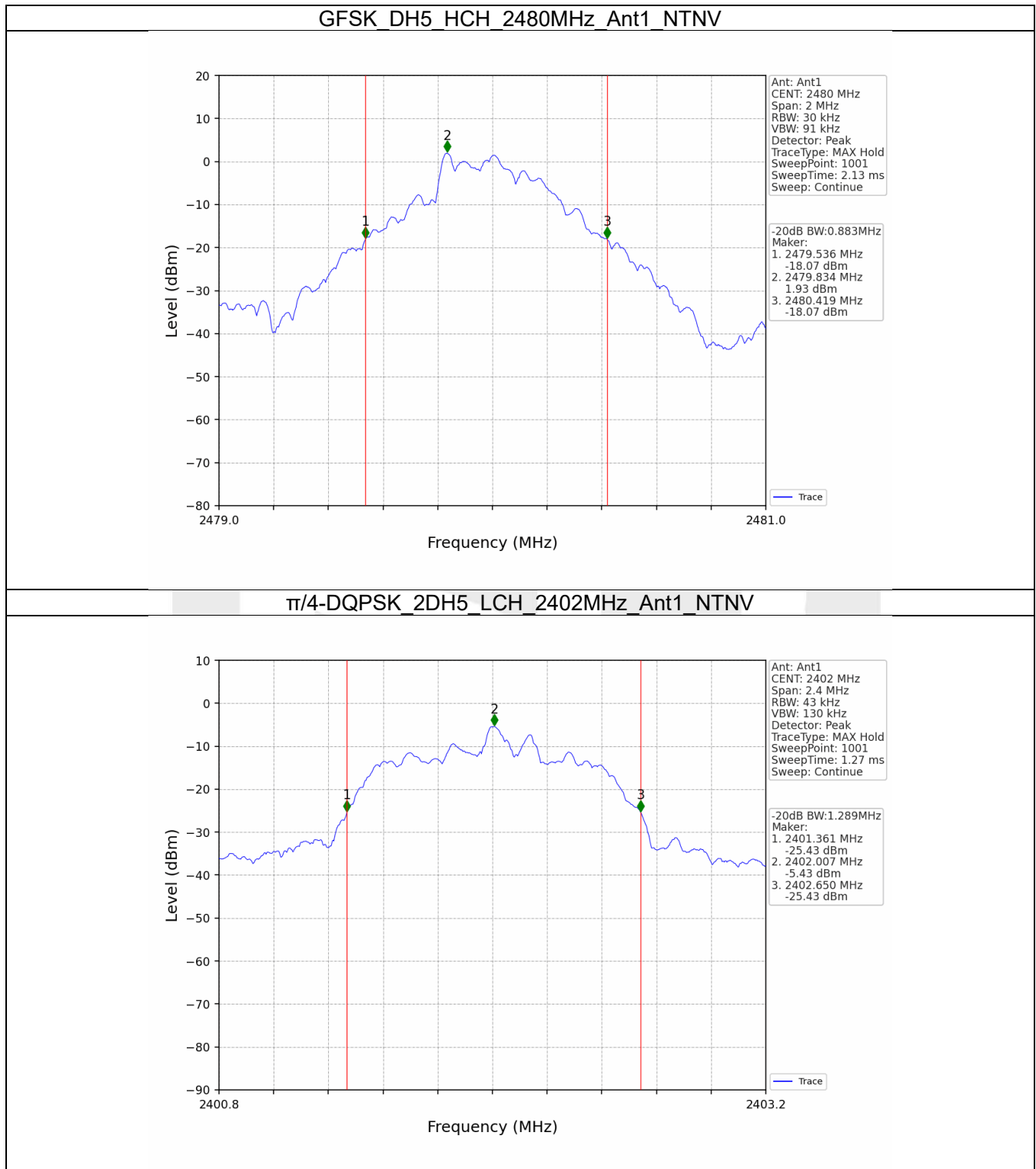
2.2 20dB BW

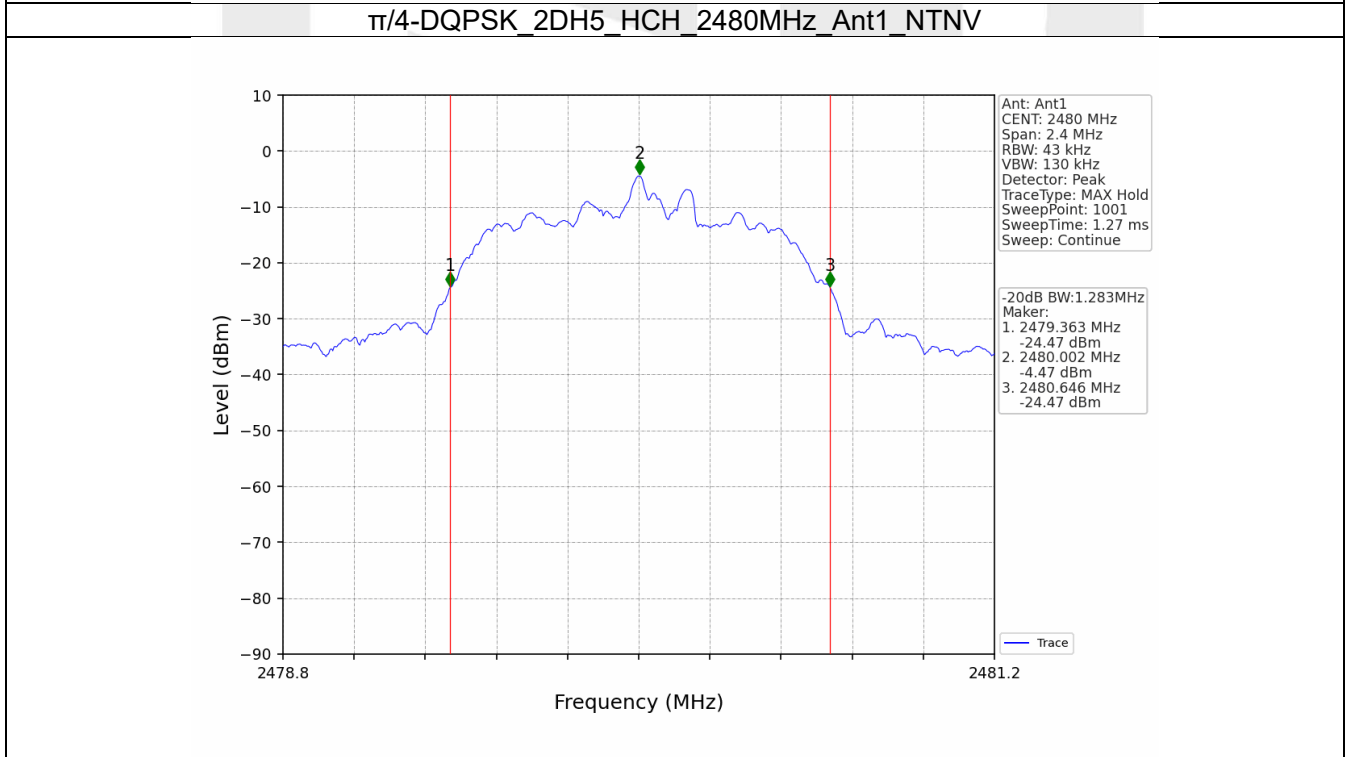
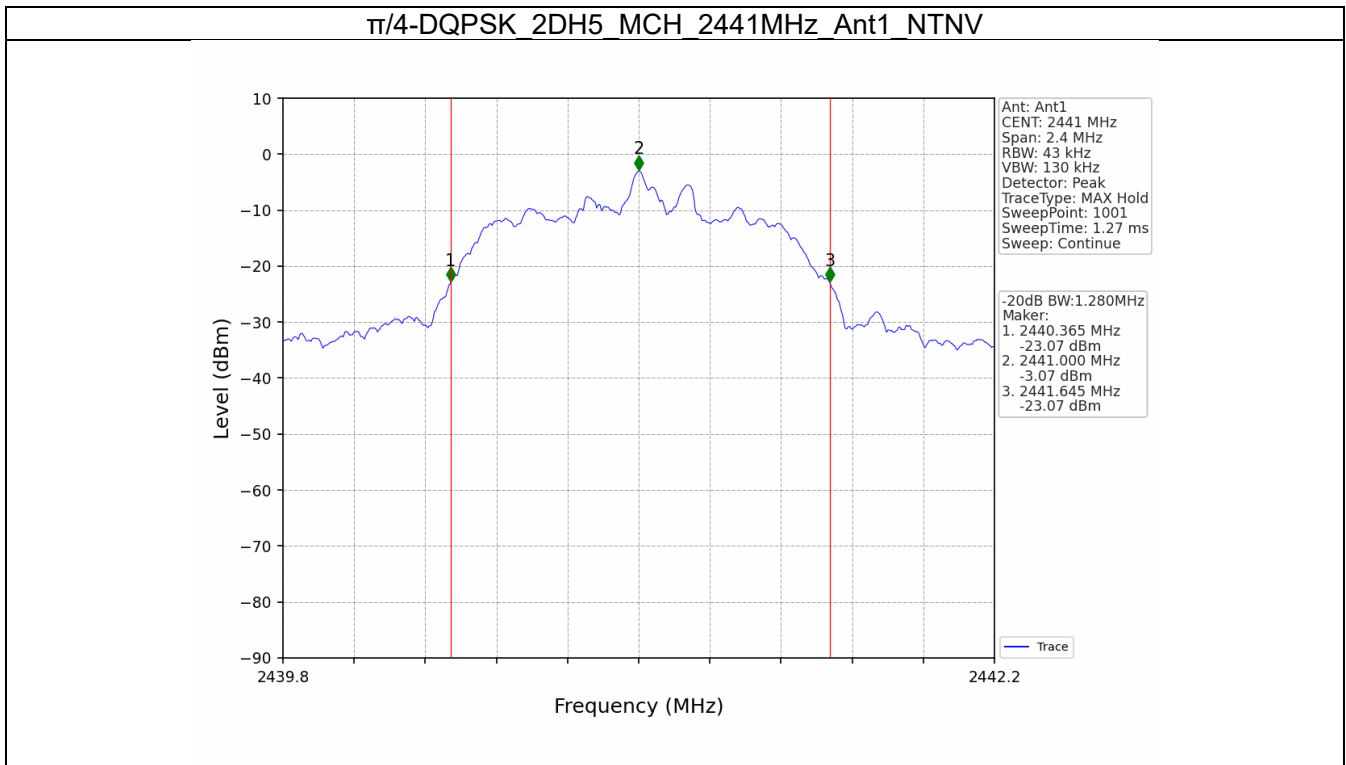
2.2.1 Test Result

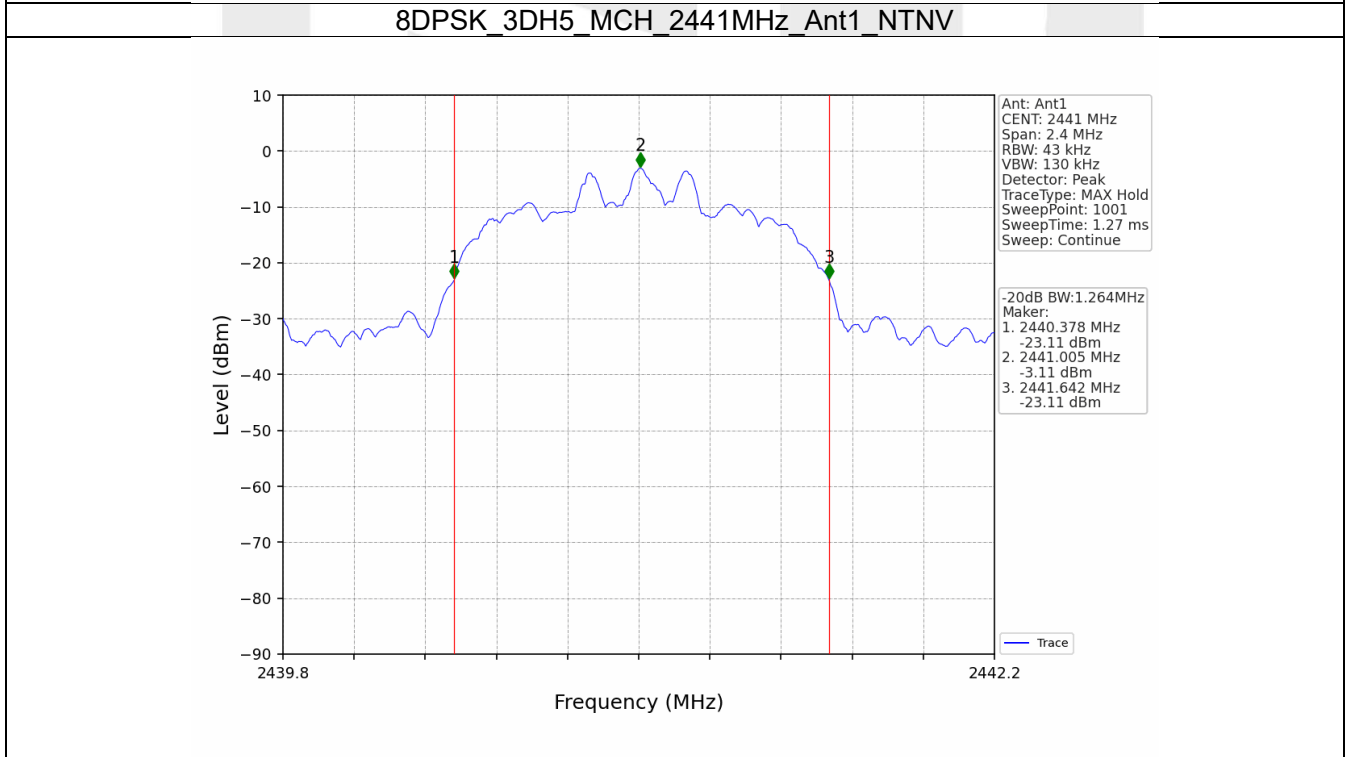
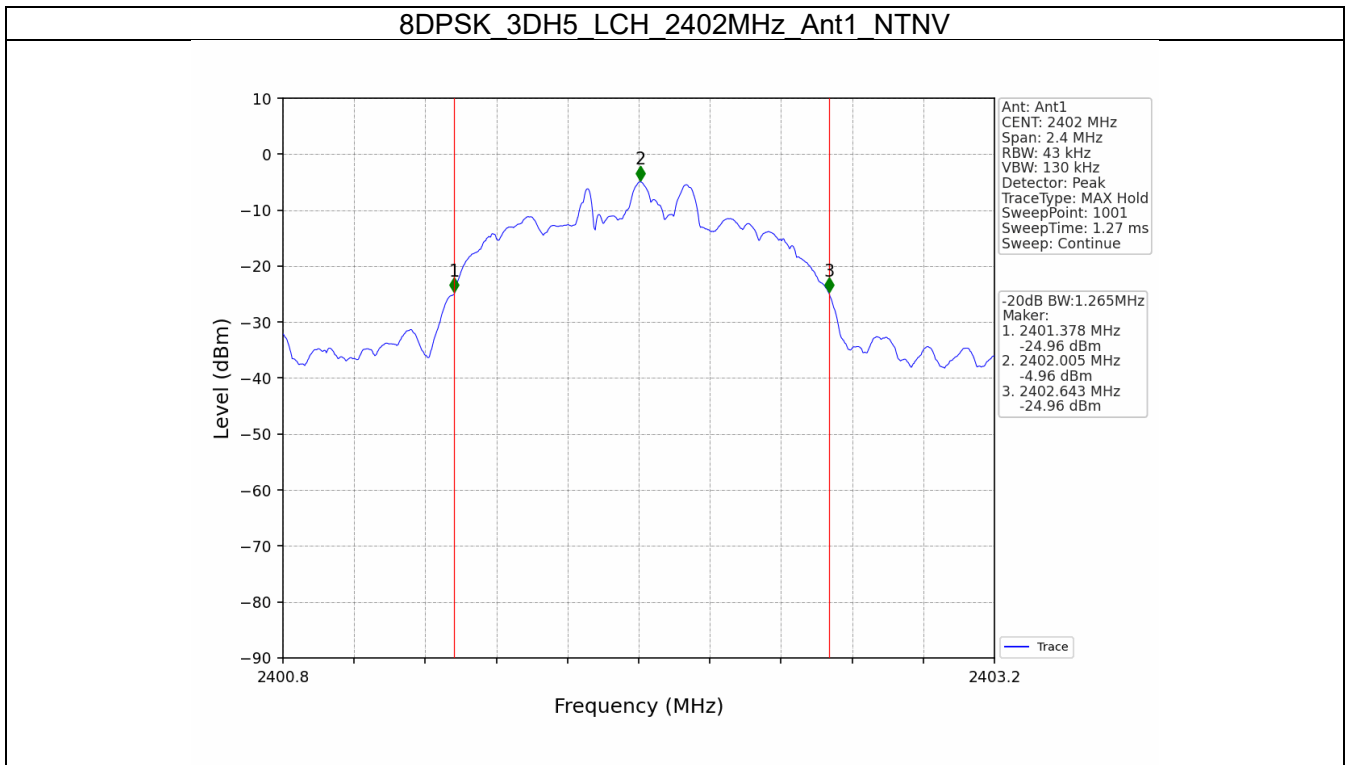
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	20dB Bandwidth (MHz)	Verdict
					Result	
GFSK	SISO	2402	DH5	1	0.955	Pass
		2441	DH5	1	0.882	Pass
		2480	DH5	1	0.883	Pass
$\pi/4$ -DQPSK	SISO	2402	2DH5	1	1.289	Pass
		2441	2DH5	1	1.280	Pass
		2480	2DH5	1	1.283	Pass
8DPSK	SISO	2402	3DH5	1	1.265	Pass
		2441	3DH5	1	1.264	Pass
		2480	3DH5	1	1.265	Pass

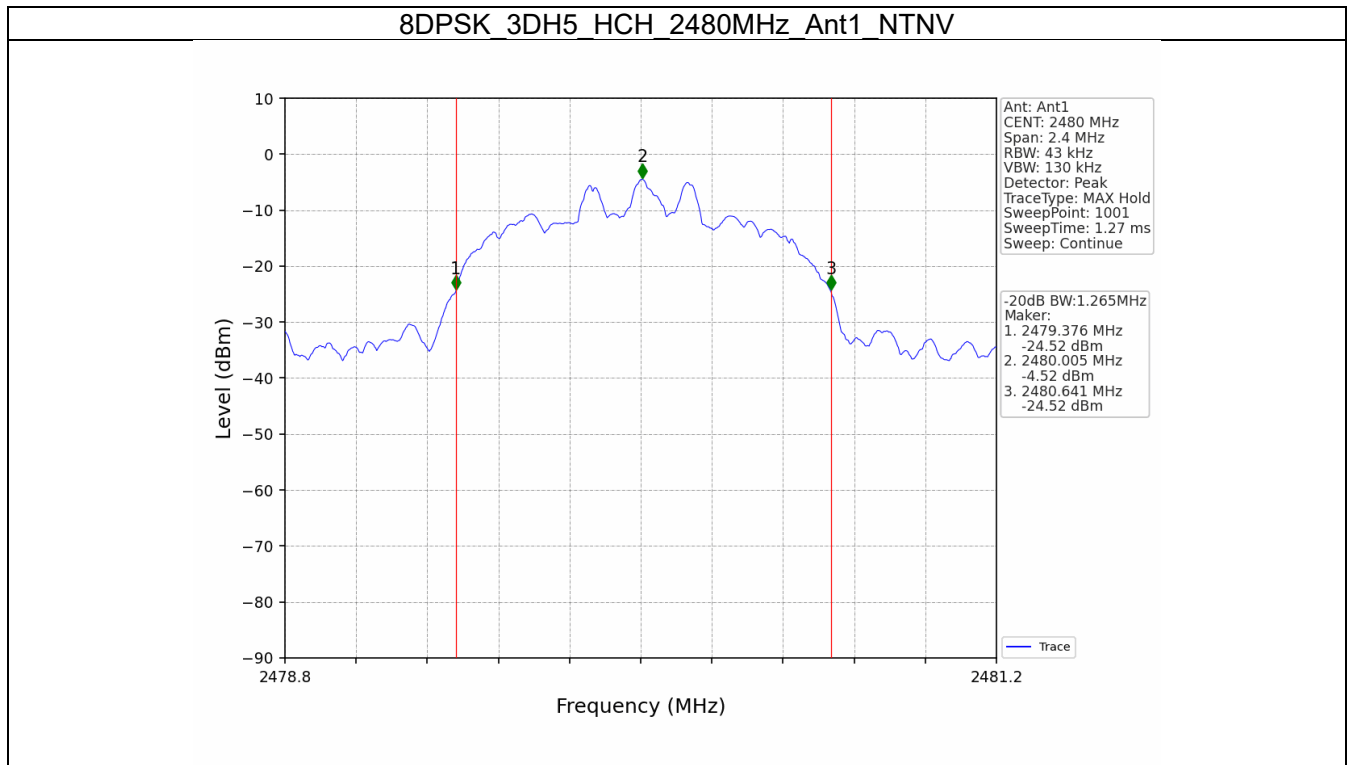
2.2.2 Test Graph











3. Maximum Conducted Output Power

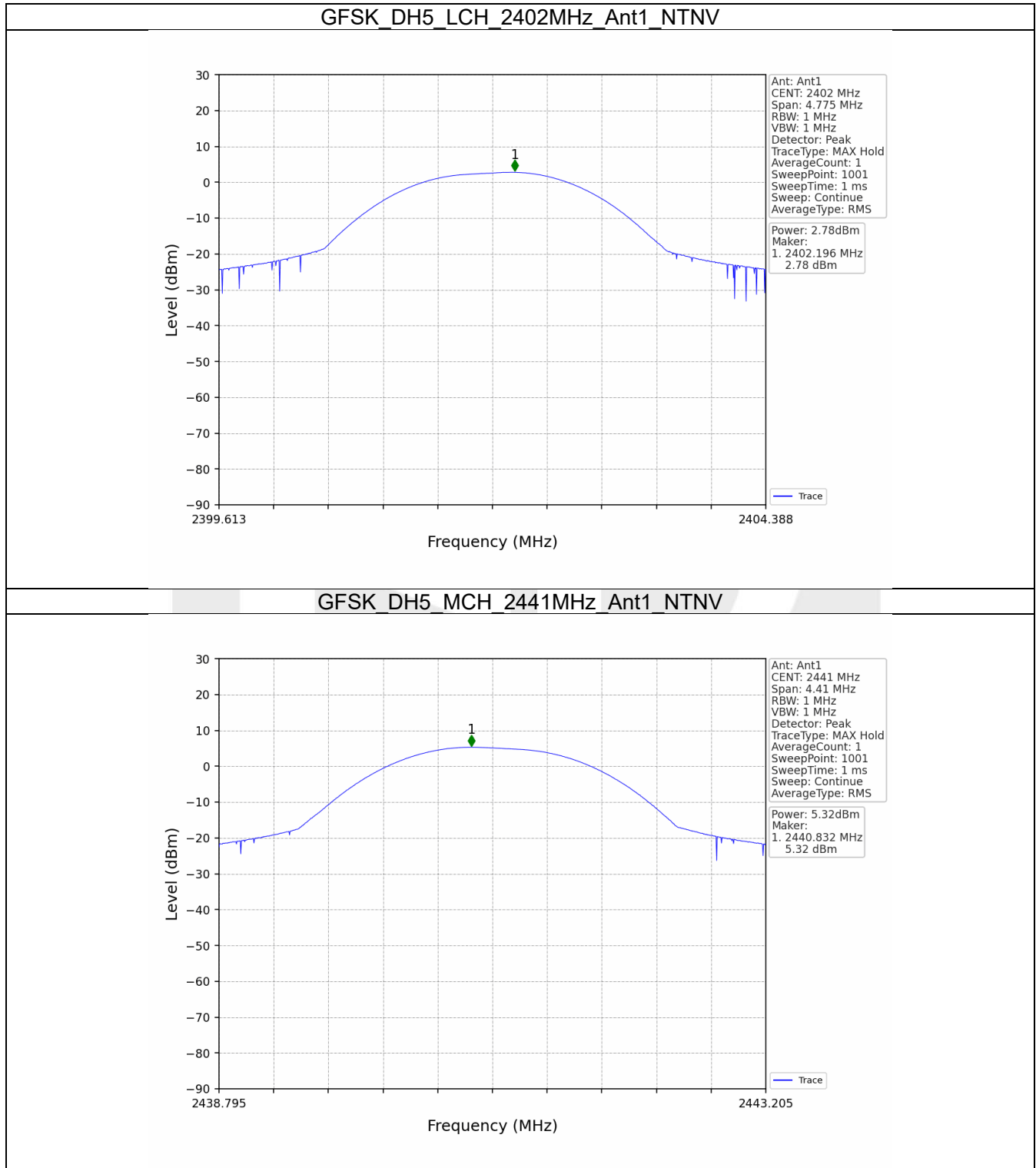
3.1 Power

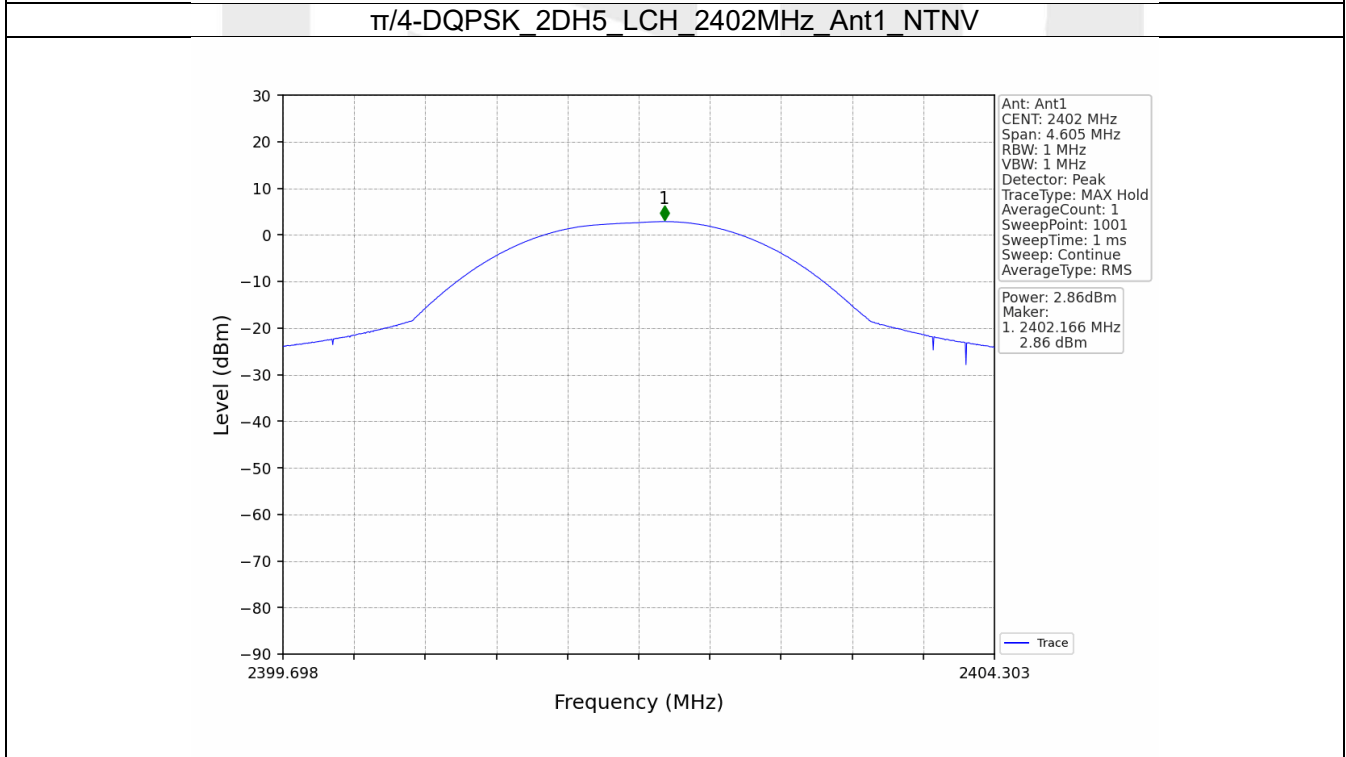
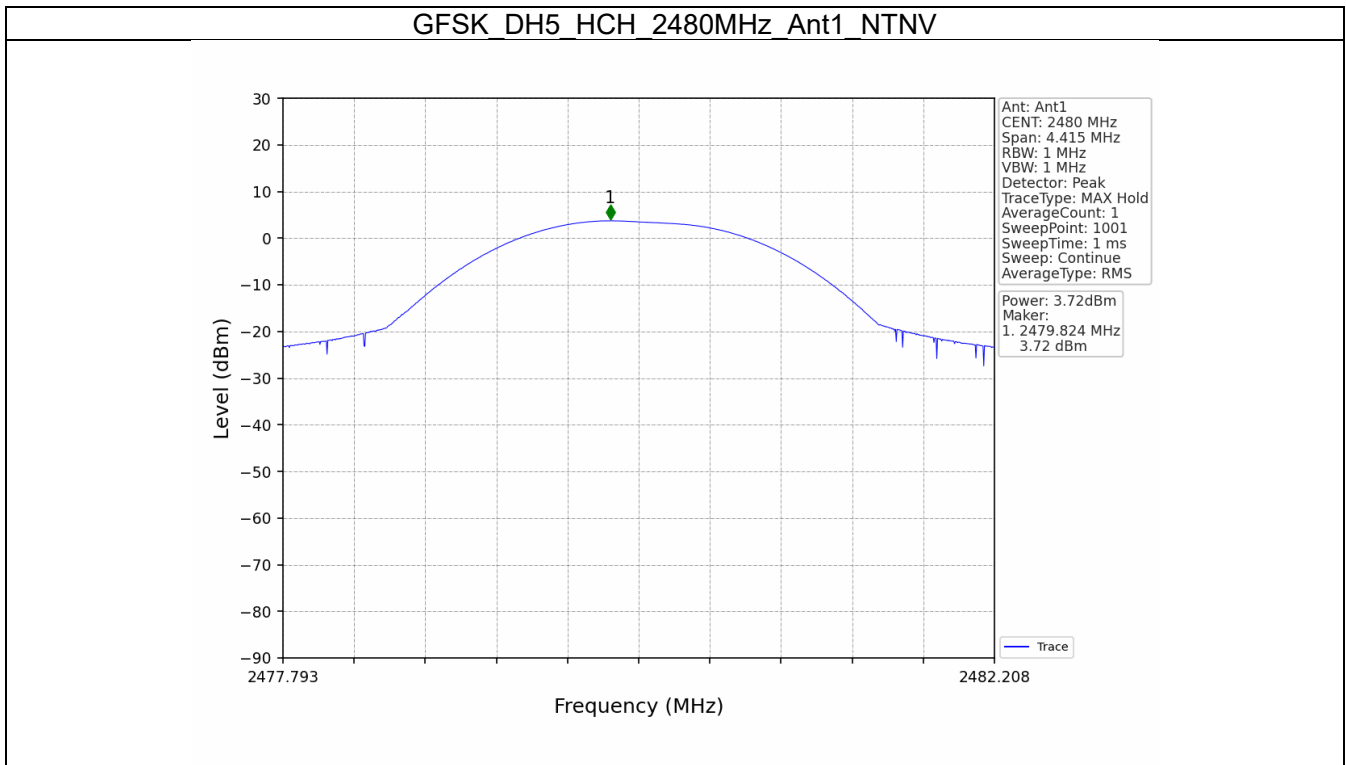
3.1.1 Test Result

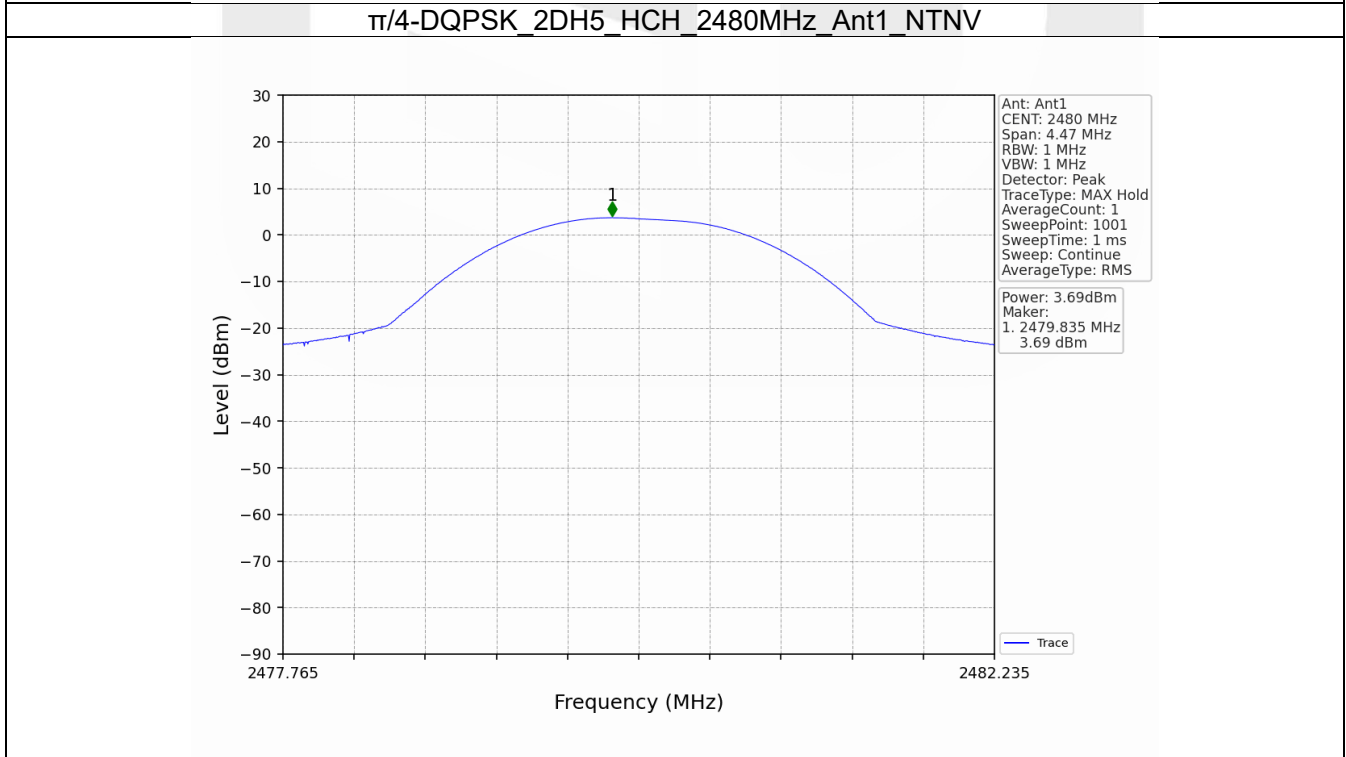
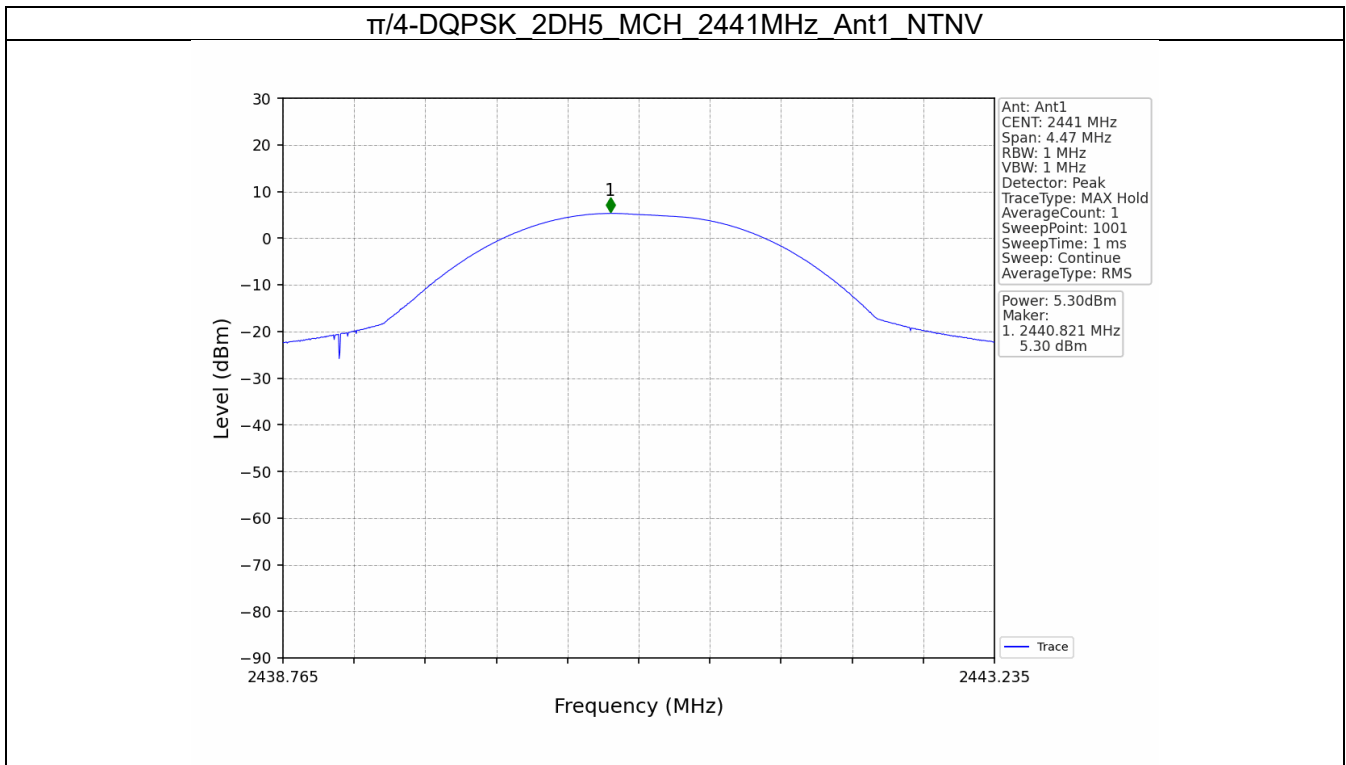
Mode	TX Type	Frequency (MHz)	Packet Type	Maximum Peak Conducted Output Power (dBm)		Verdict
				ANT1	Limit	
GFSK	SISO	2402	DH5	2.78	<=30	Pass
		2441	DH5	5.32	<=30	Pass
		2480	DH5	3.72	<=30	Pass
$\pi/4$ -DQPSK	SISO	2402	2DH5	2.86	<=20.97	Pass
		2441	2DH5	5.30	<=20.97	Pass
		2480	2DH5	3.69	<=20.97	Pass
8DPSK	SISO	2402	3DH5	-1.29	<=20.97	Pass
		2441	3DH5	5.28	<=20.97	Pass
		2480	3DH5	3.68	<=20.97	Pass

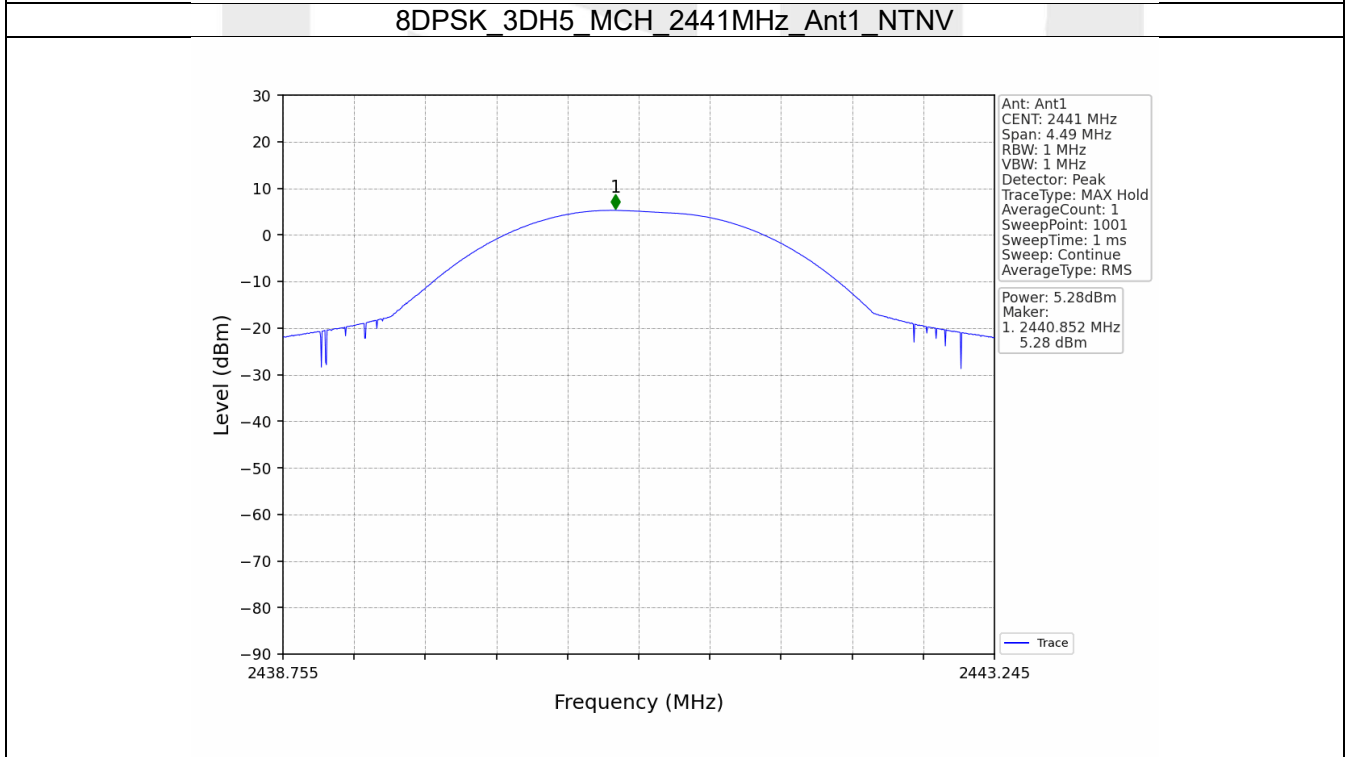
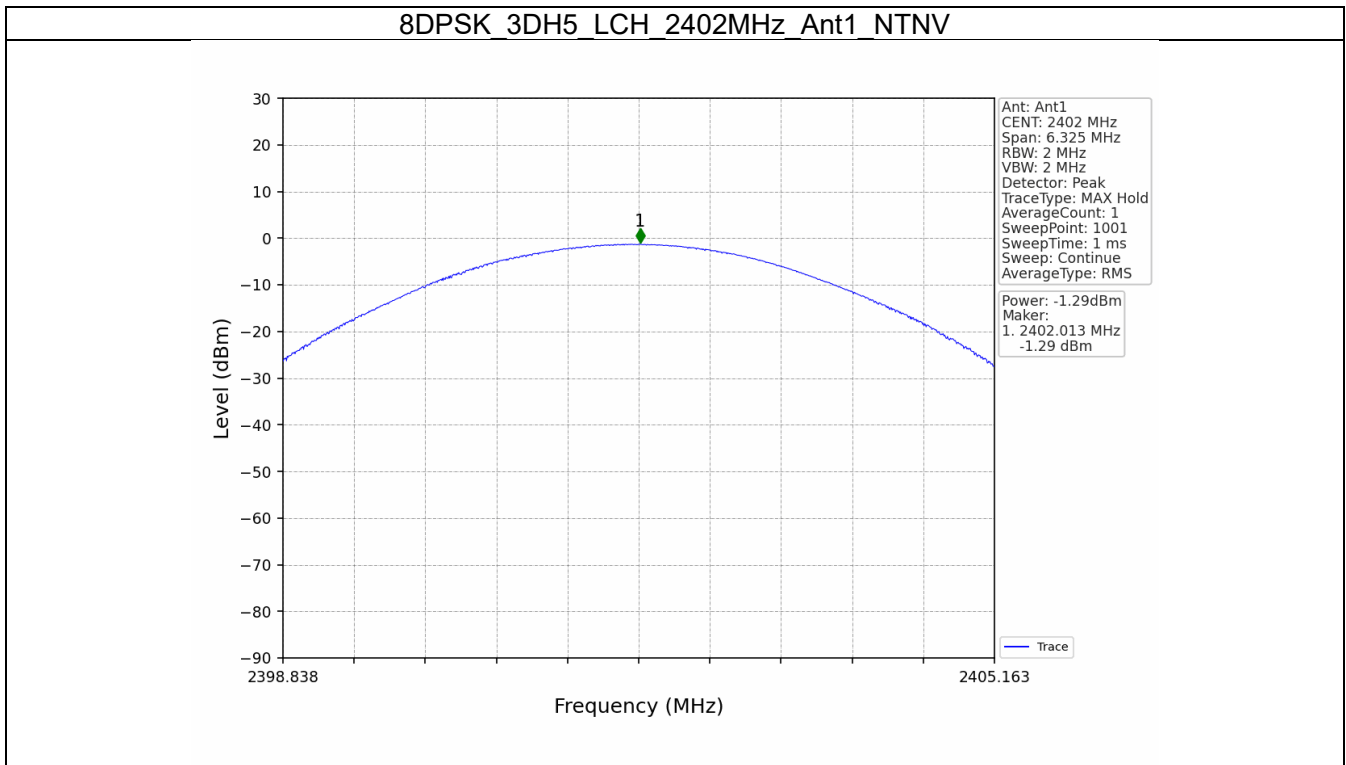
Note1: Antenna Gain: Ant1: 0.50dBi;

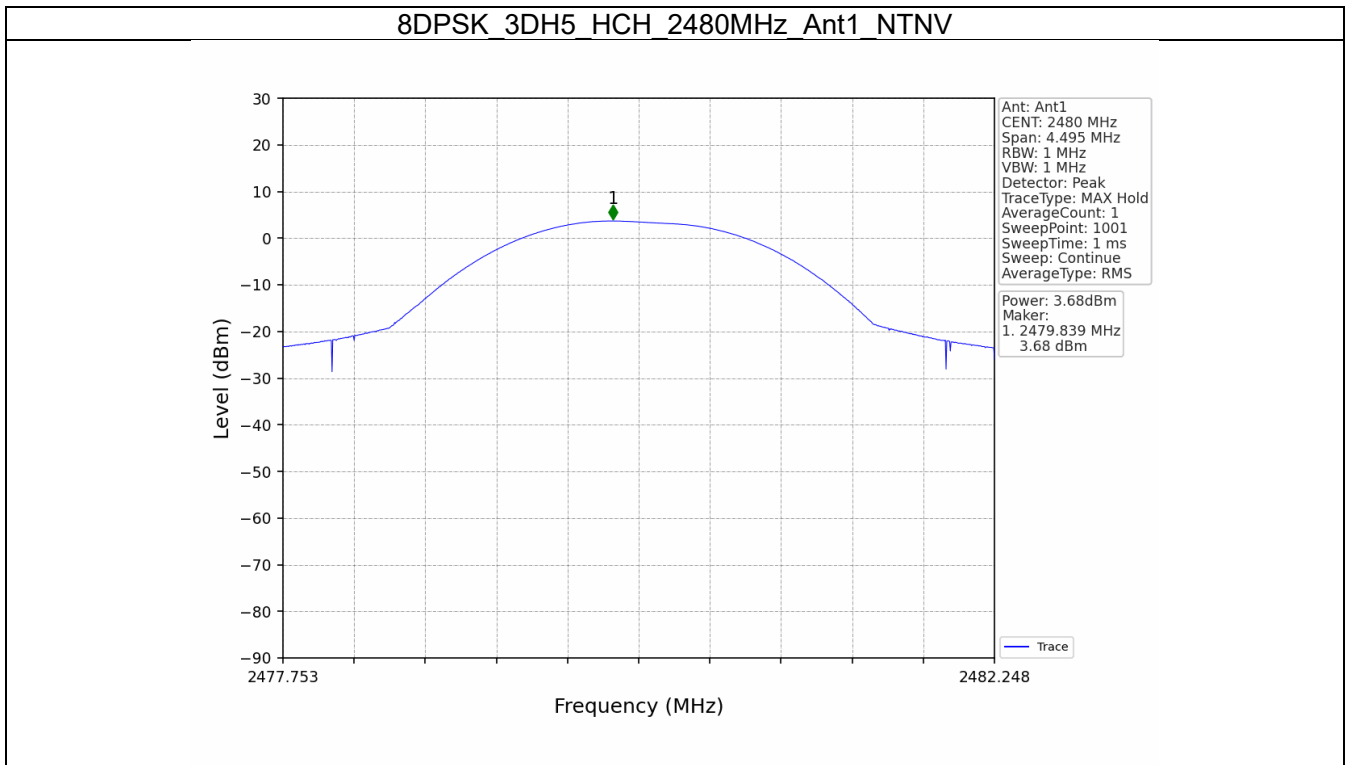
3.1.2 Test Graph











4. Carrier Frequency Separation

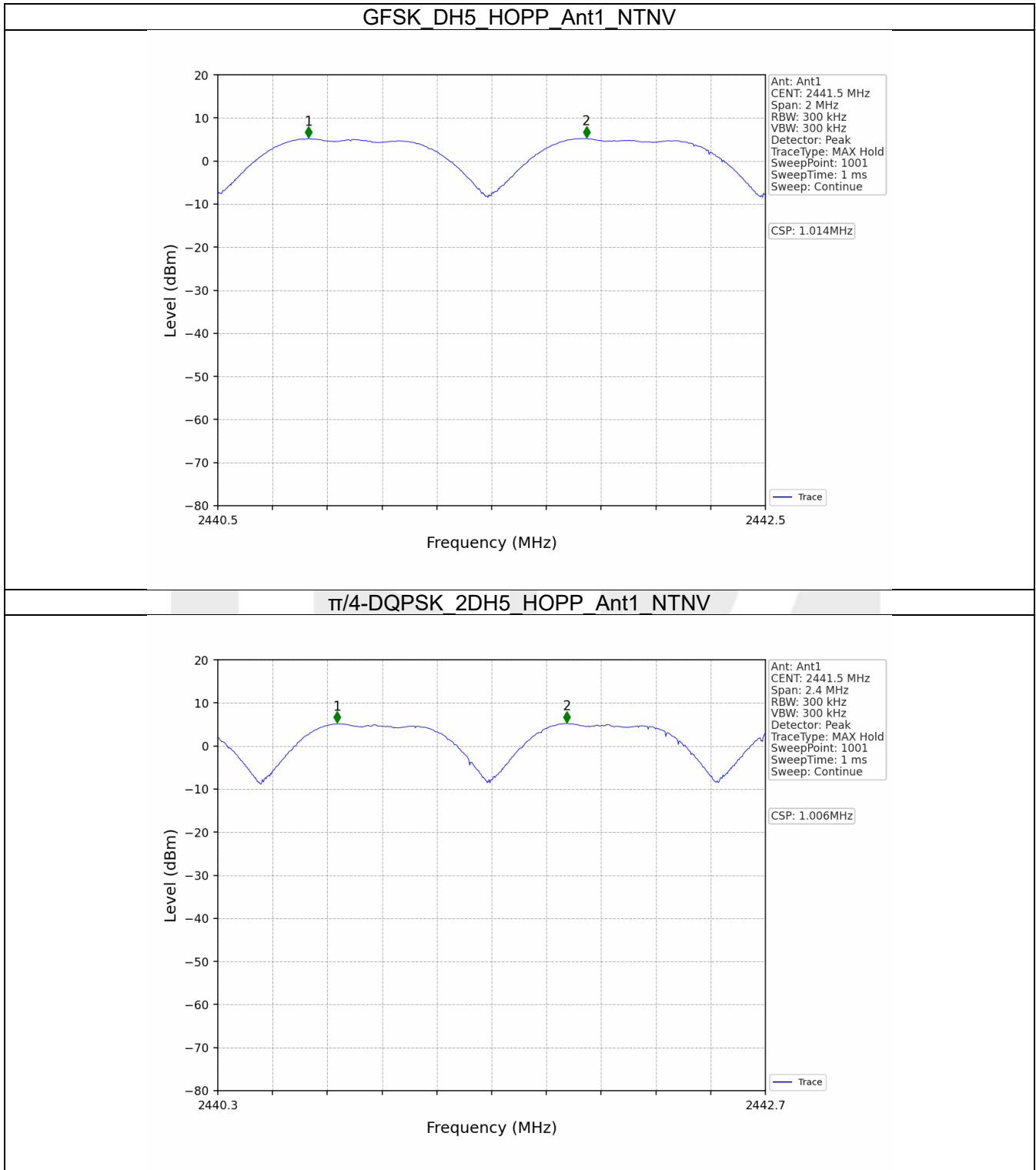
4.1 Ant1

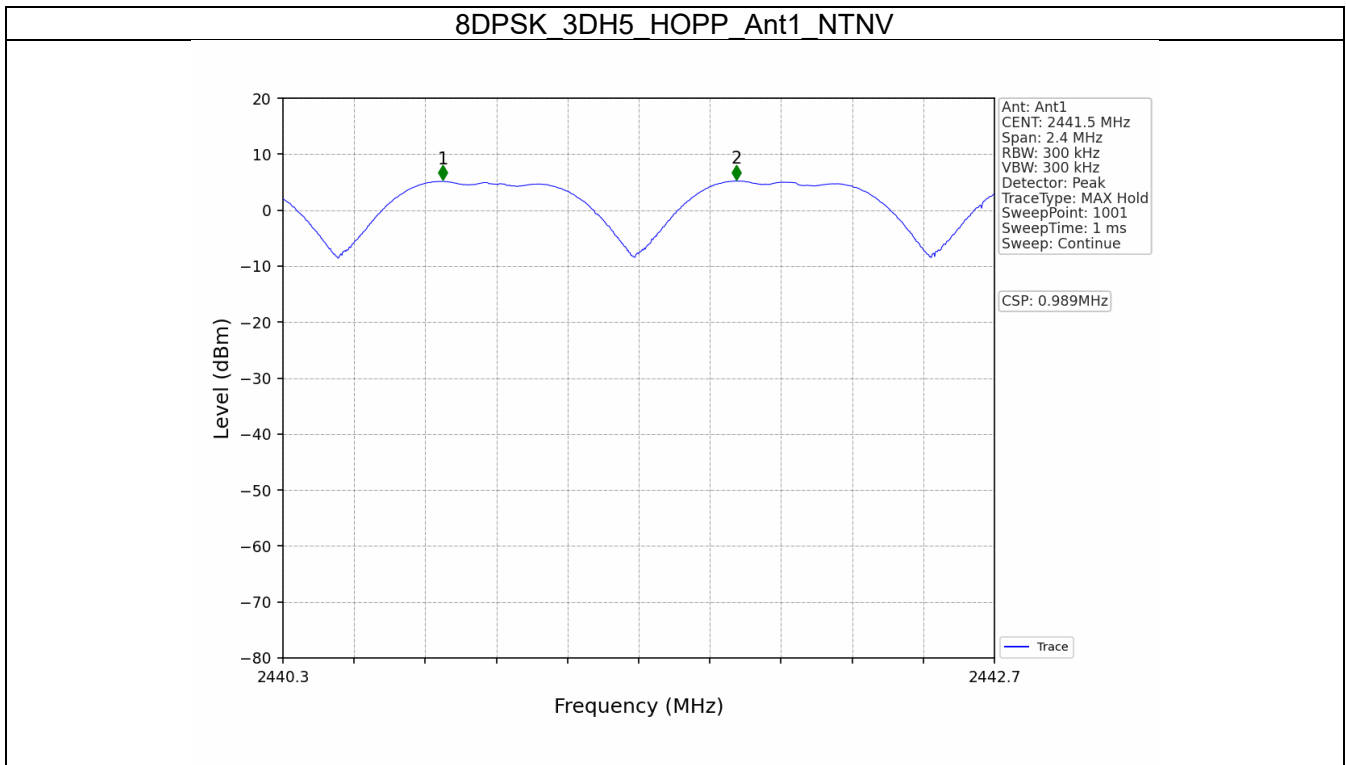
4.1.1 Test Result

Ant1							
Mode	TX Type	Frequency (MHz)	Packet Type	Channel Separation (MHz)	20dB Bandwidth (MHz)	Limit (MHz)	Verdict
GFSK	SISO	HOPP	DH5	1.014	0.955	≥ 0.955	Pass
$\pi/4$ -DQPSK	SISO	HOPP	2DH5	1.006	1.289	≥ 0.859	Pass
8DPSK	SISO	HOPP	3DH5	0.989	1.265	≥ 0.843	Pass



4.1.2 Test Graph





5. Number of Hopping Frequencies

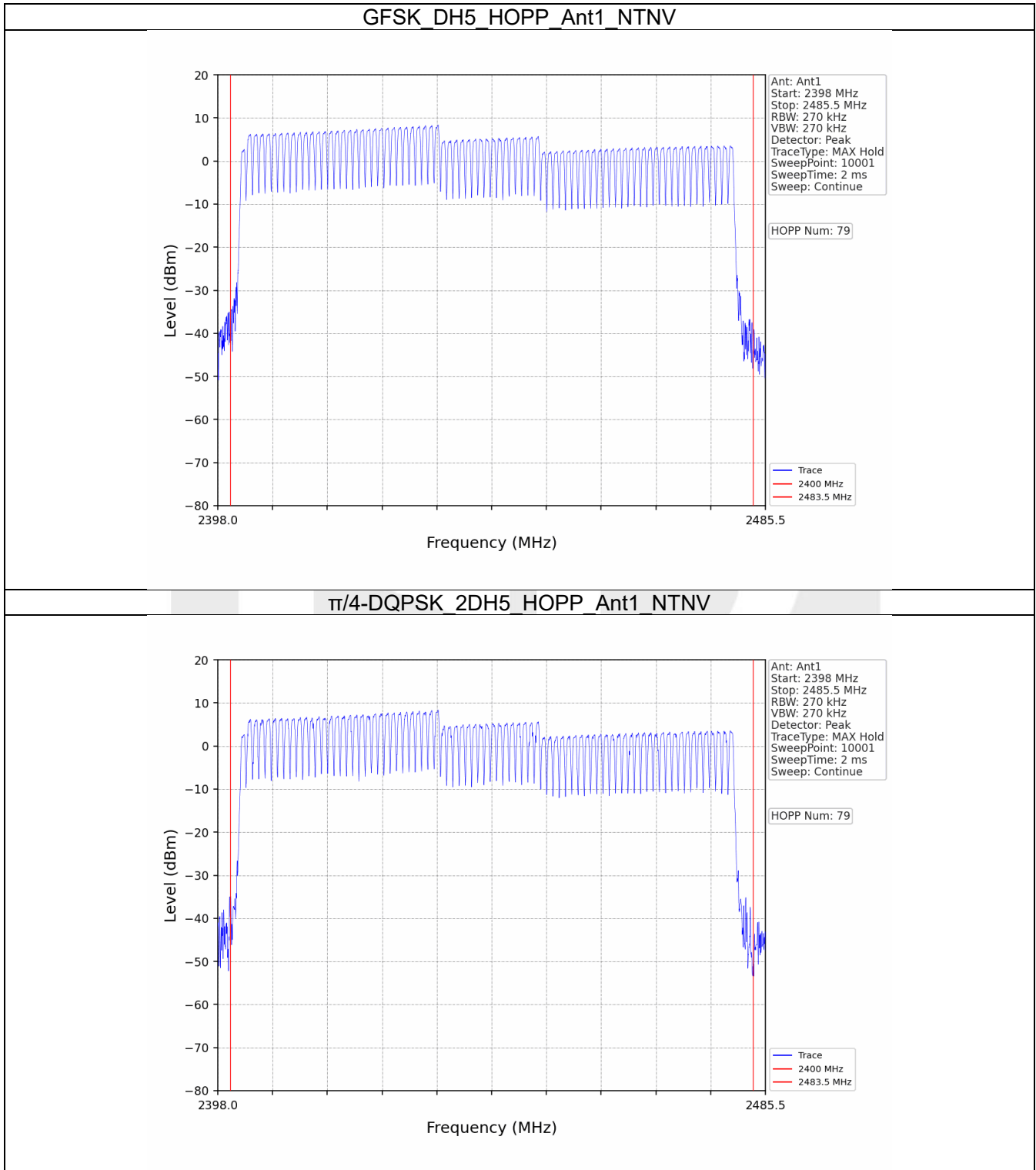
5.1 HoppNum

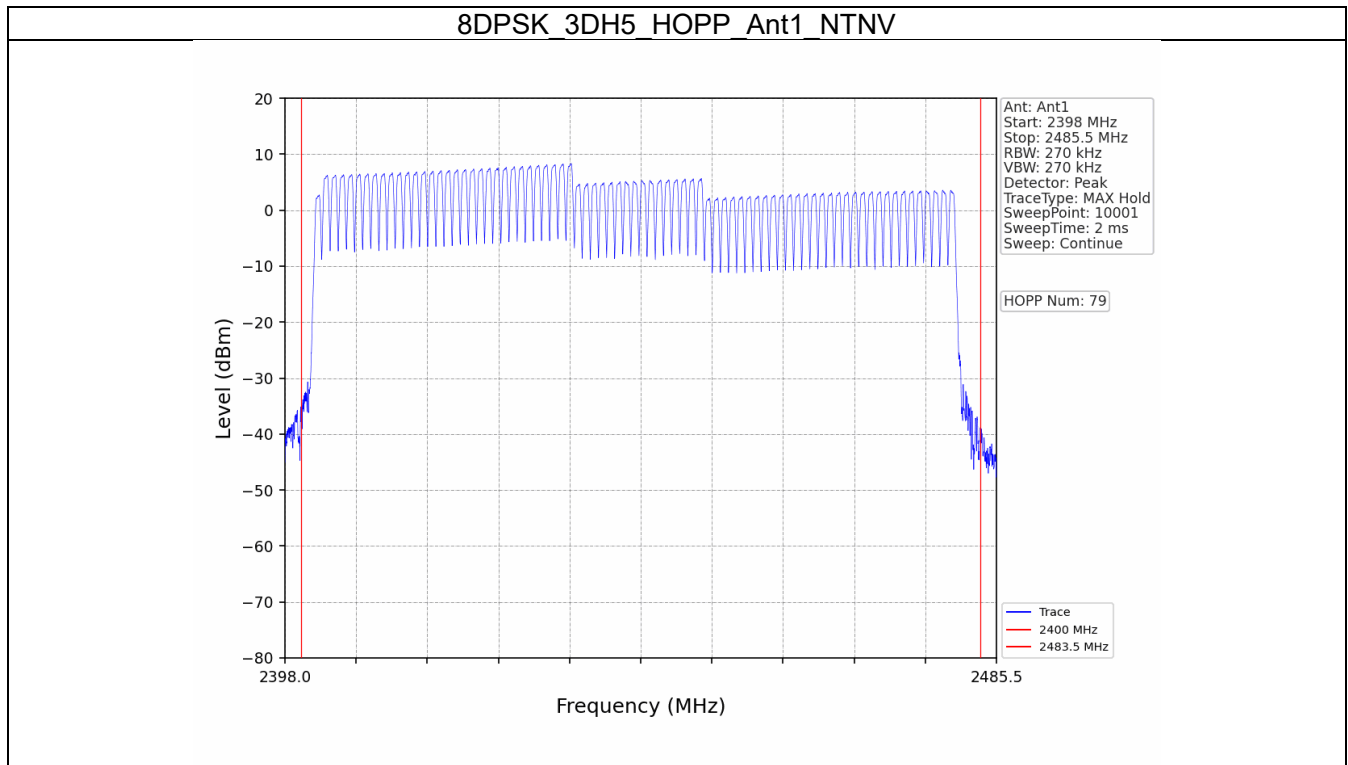
5.1.1 Test Result

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



5.1.2 Test Graph





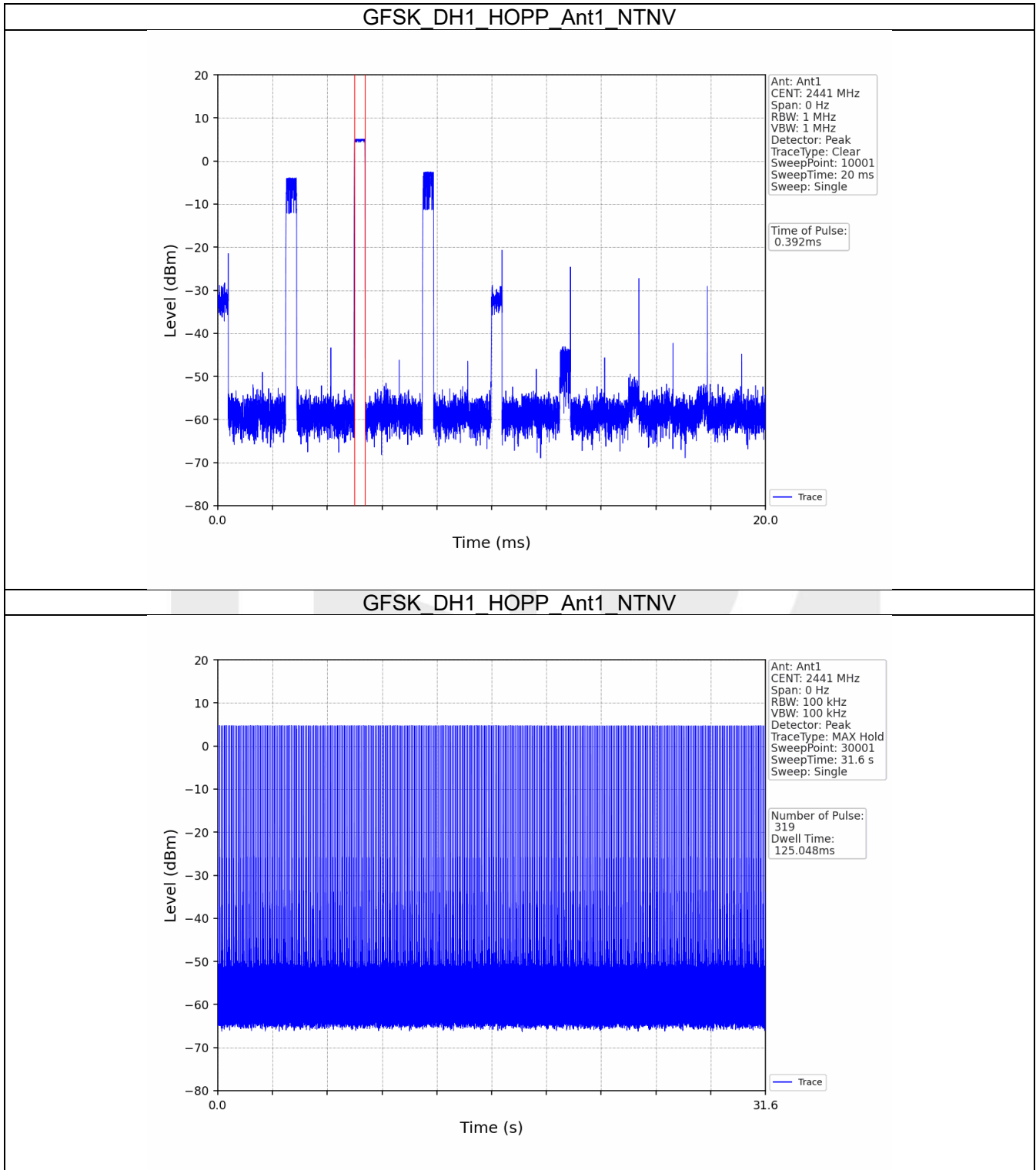
6. Time of Occupancy (Dwell Time)

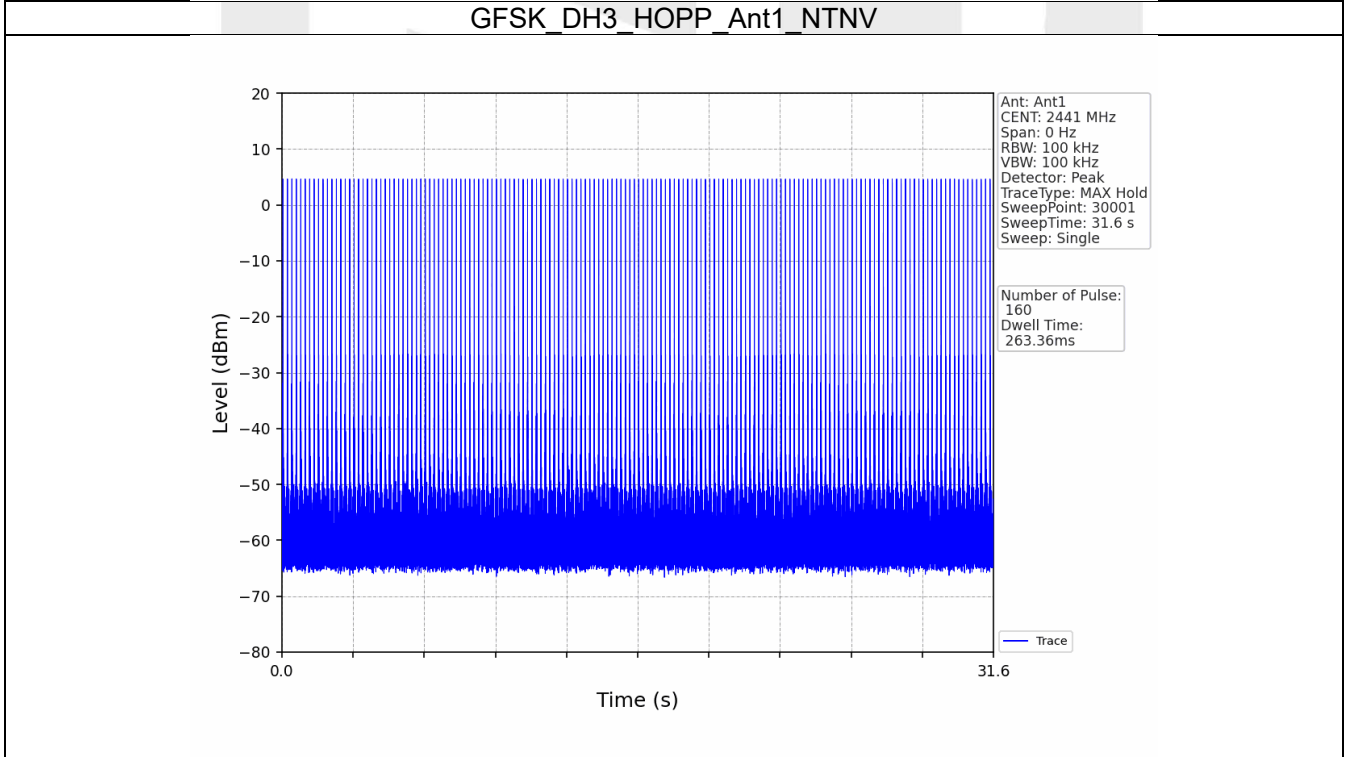
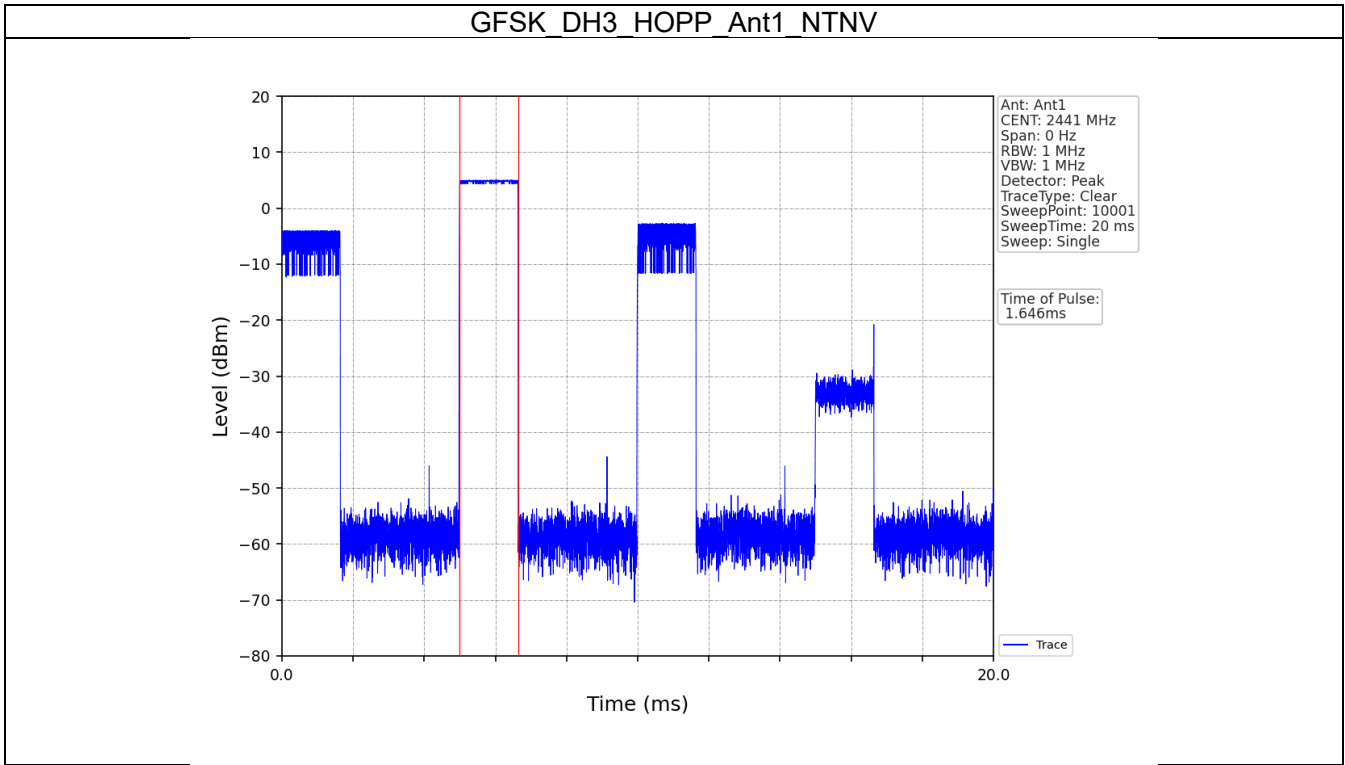
6.1 Ant1

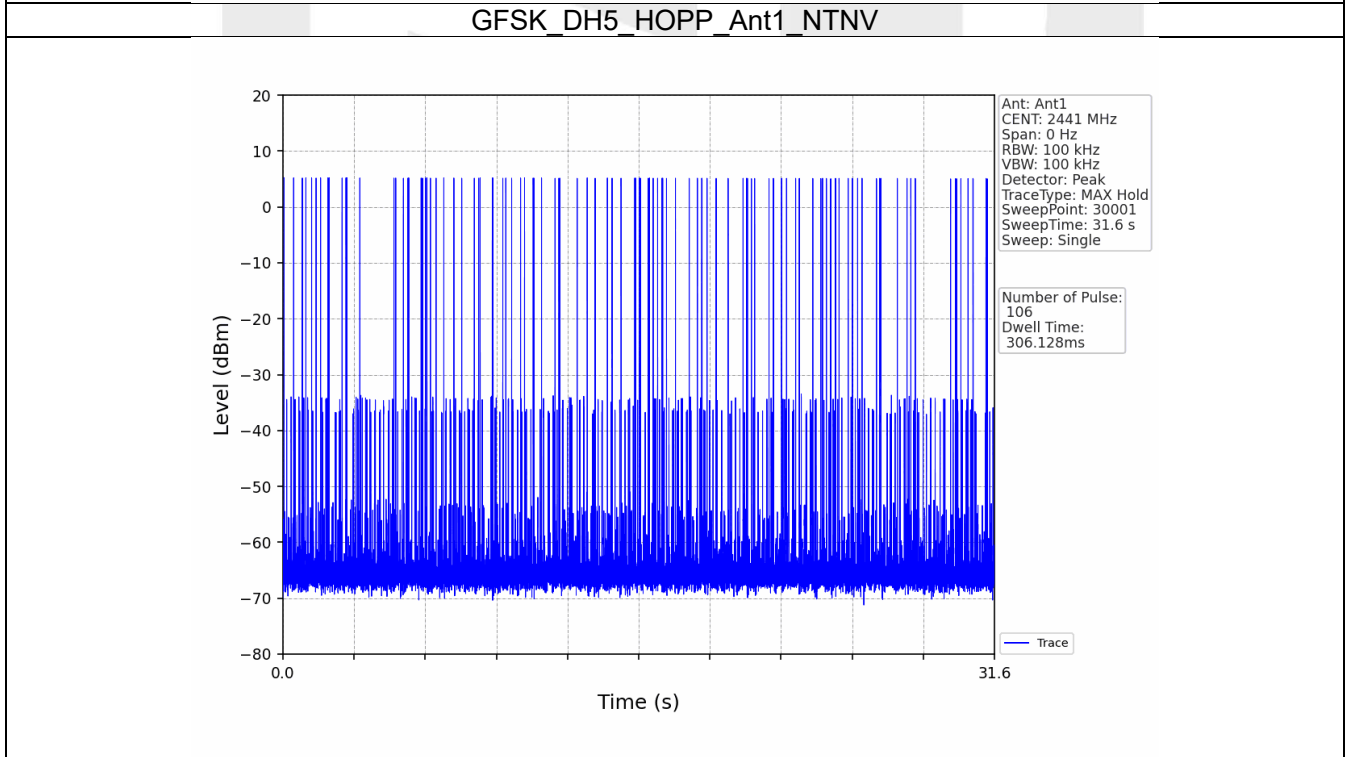
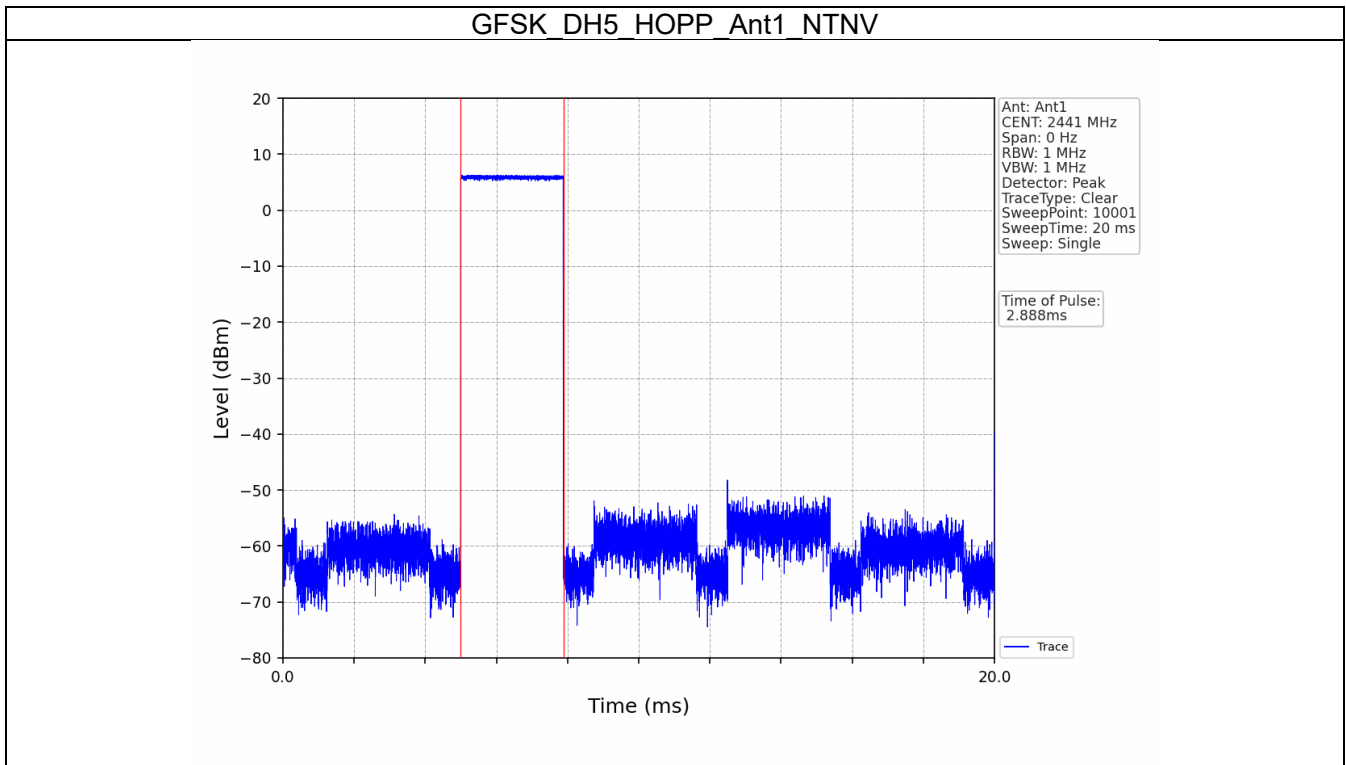
6.1.1 Test Result

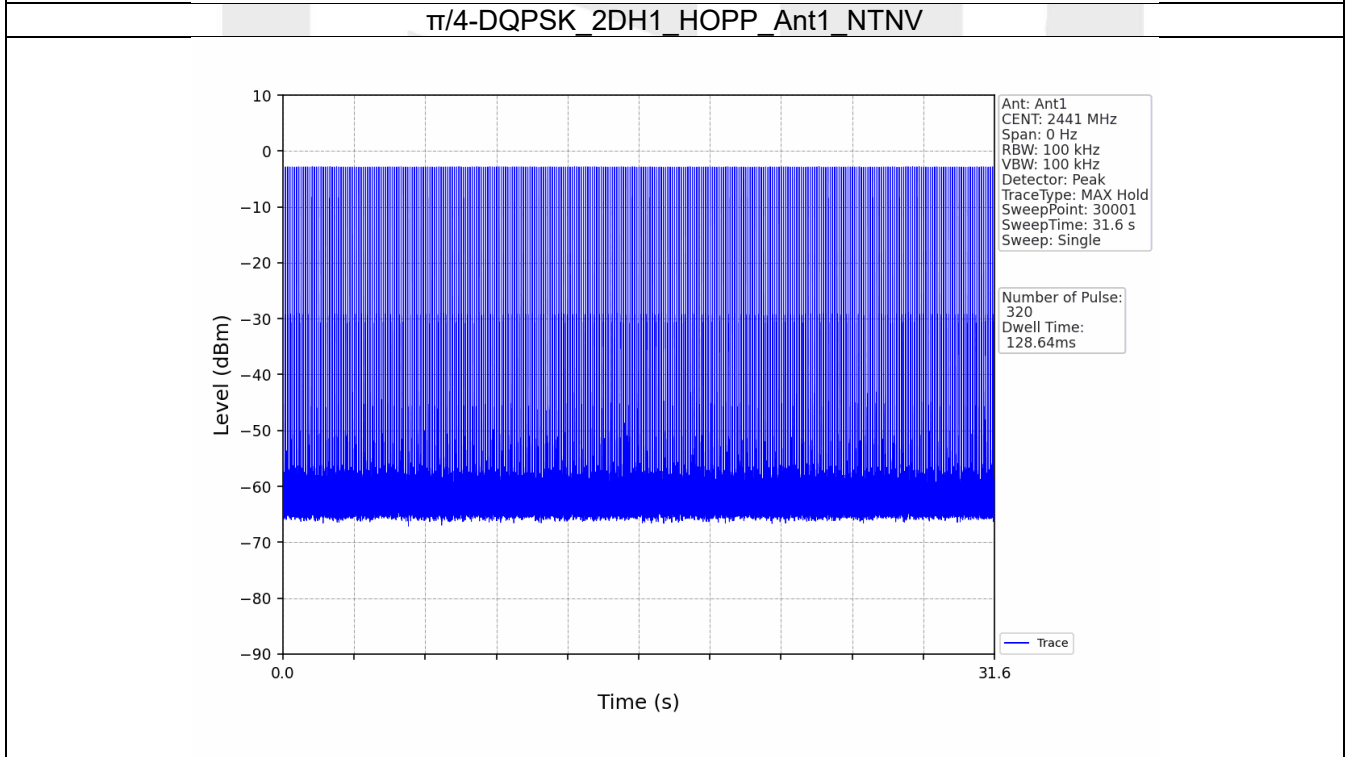
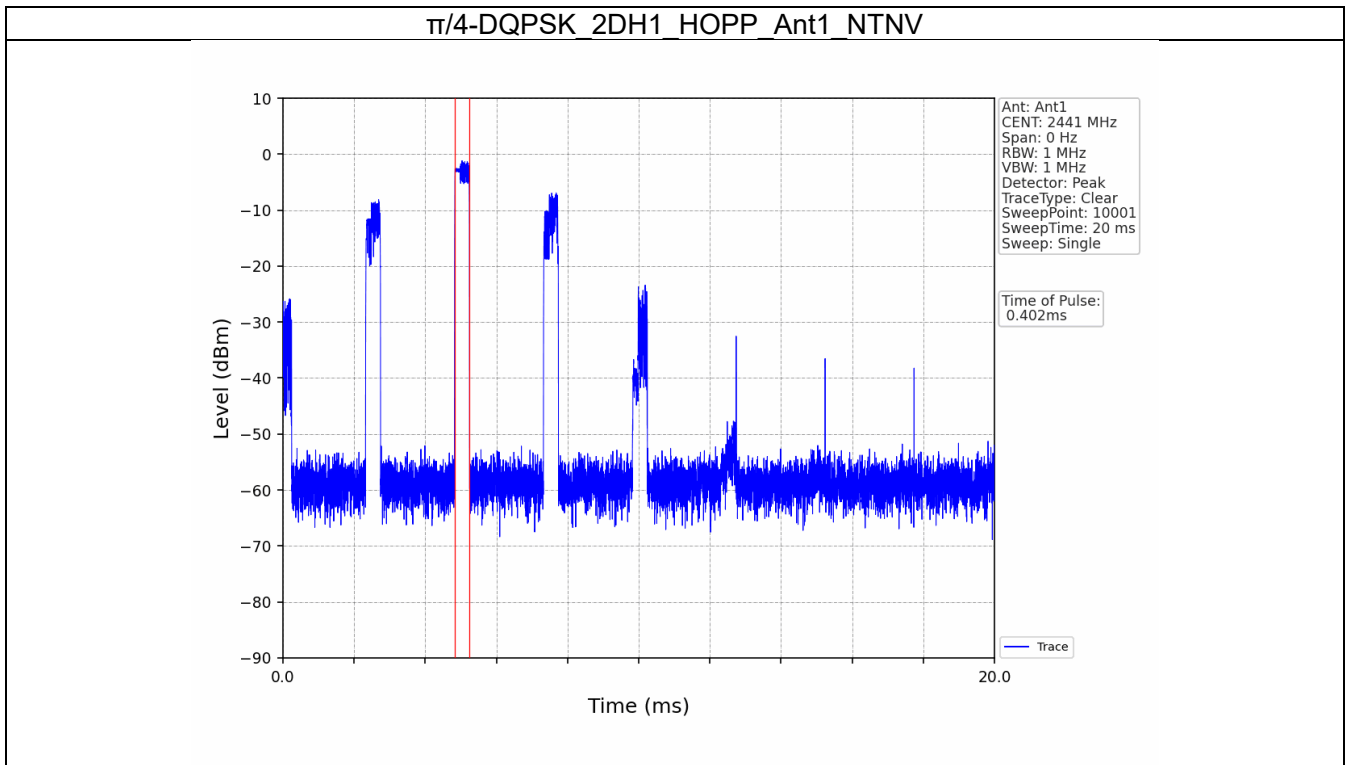
Ant1									
Mode	TX Type	Frequency (MHz)	Packet Type	Duration of Single Pulse (ms)	Observation Period (s)	Num of Pulse in Observation Period	Dwell Time (ms)	Limit (ms)	Verdict
GFSK	SISO	HOPP	DH1	0.392	31.600	319	125.048	<=400	Pass
			DH3	1.646	31.600	160	263.360	<=400	Pass
			DH5	2.888	31.600	106	306.128	<=400	Pass
$\pi/4$ -DQPSK	SISO	HOPP	2DH1	0.402	31.600	320	128.640	<=400	Pass
			2DH3	1.670	31.600	160	267.200	<=400	Pass
			2DH5	2.896	31.600	109	315.664	<=400	Pass
8DPSK	SISO	HOPP	3DH1	0.406	31.600	320	129.920	<=400	Pass
			3DH3	1.656	31.600	160	264.960	<=400	Pass
			3DH5	2.900	31.600	98	284.200	<=400	Pass

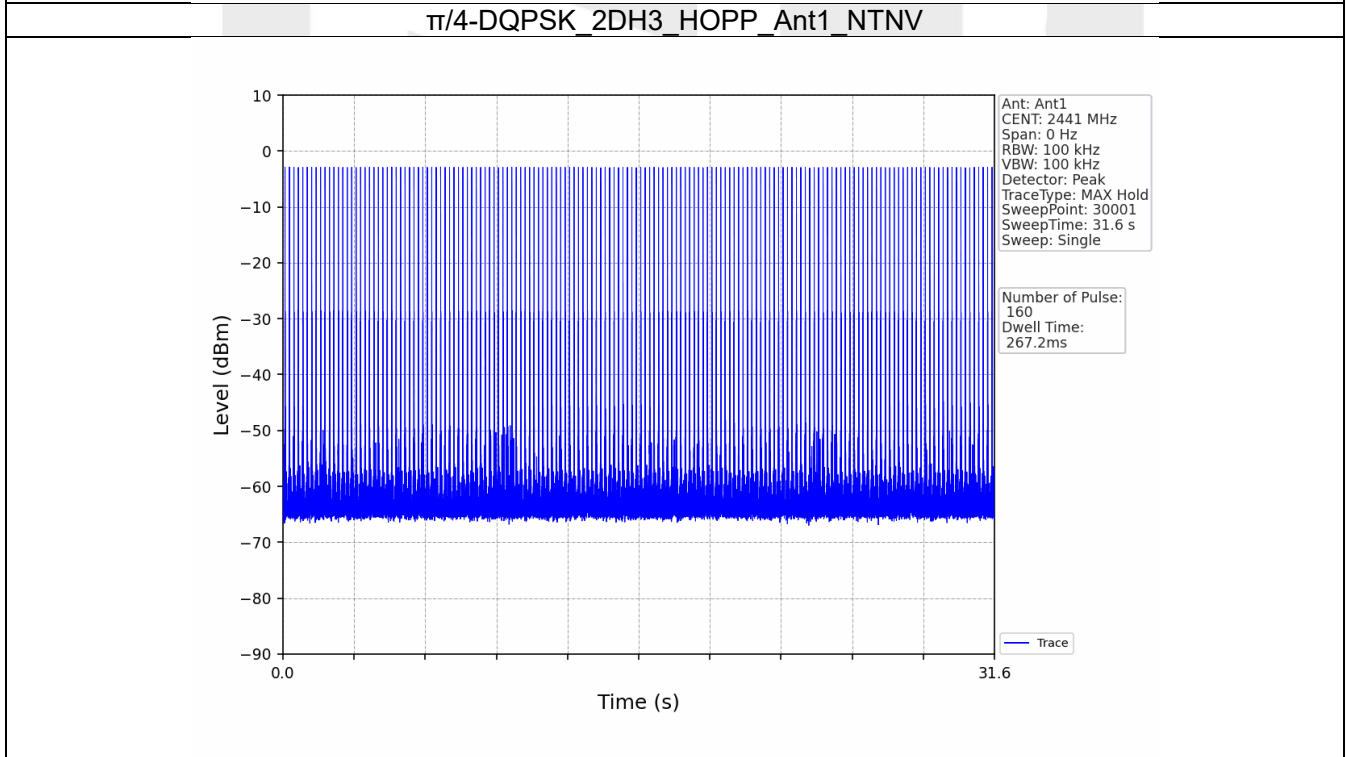
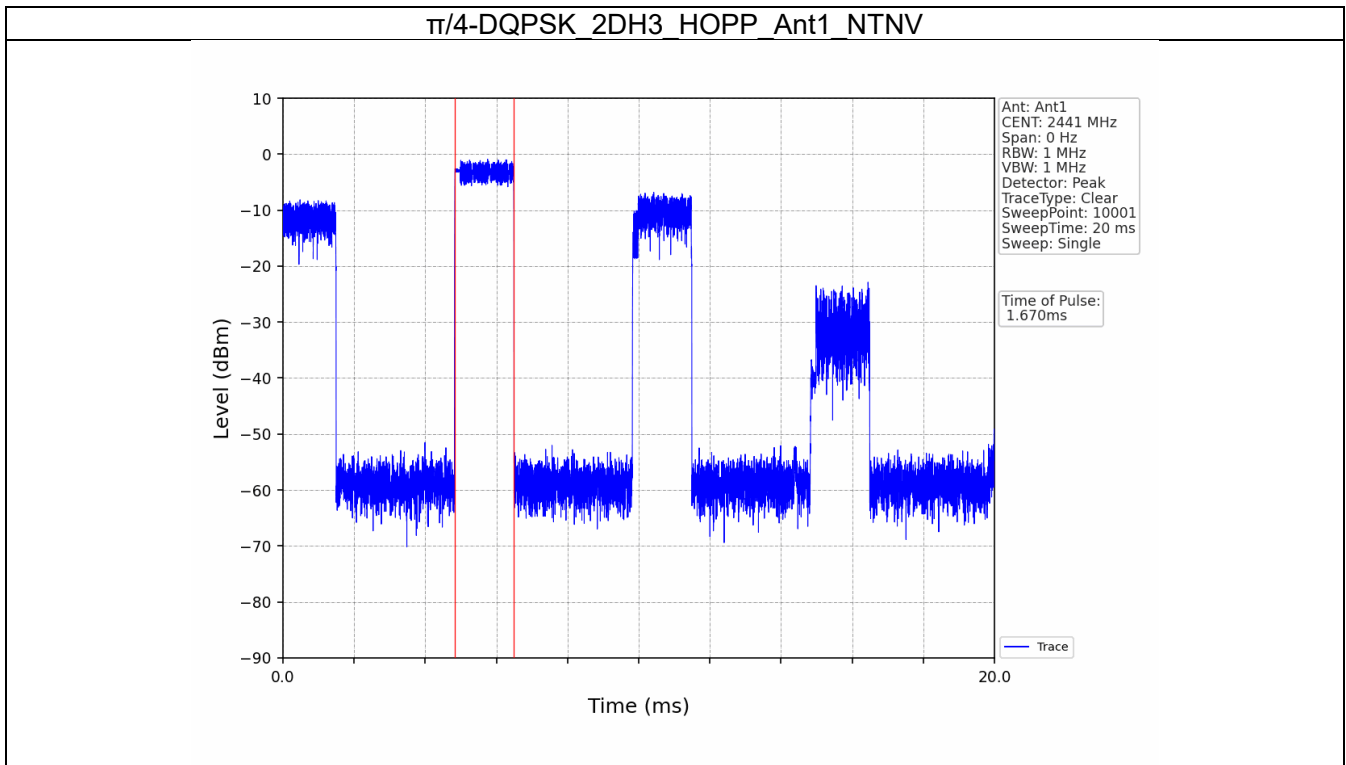
6.1.2 Test Graph

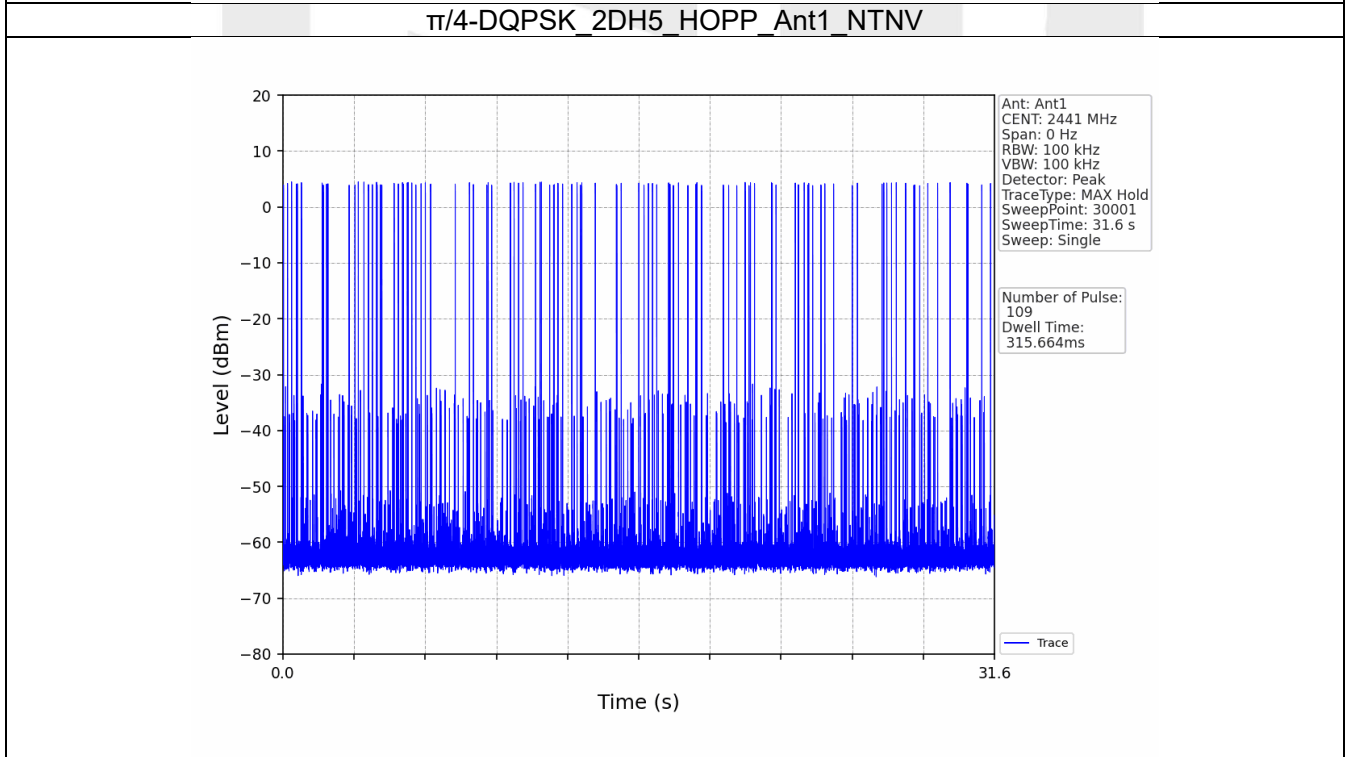
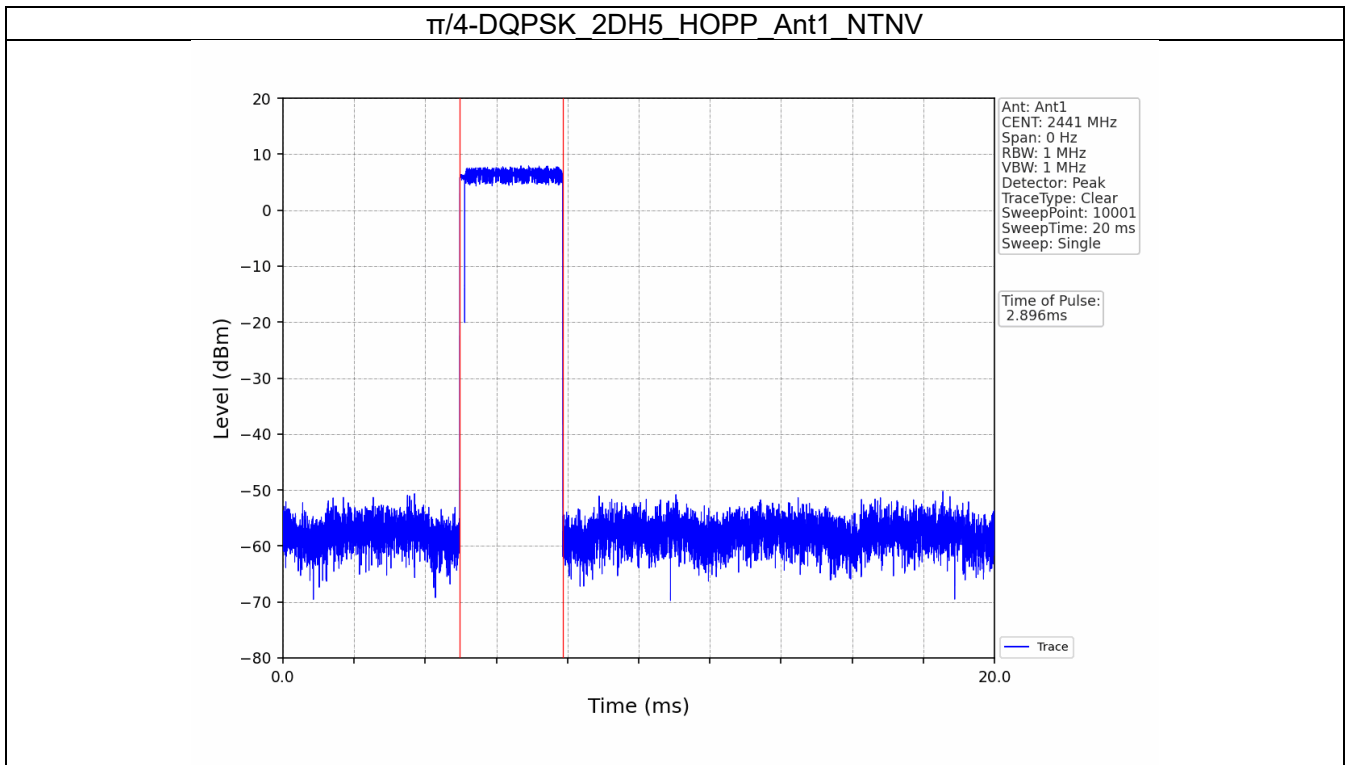


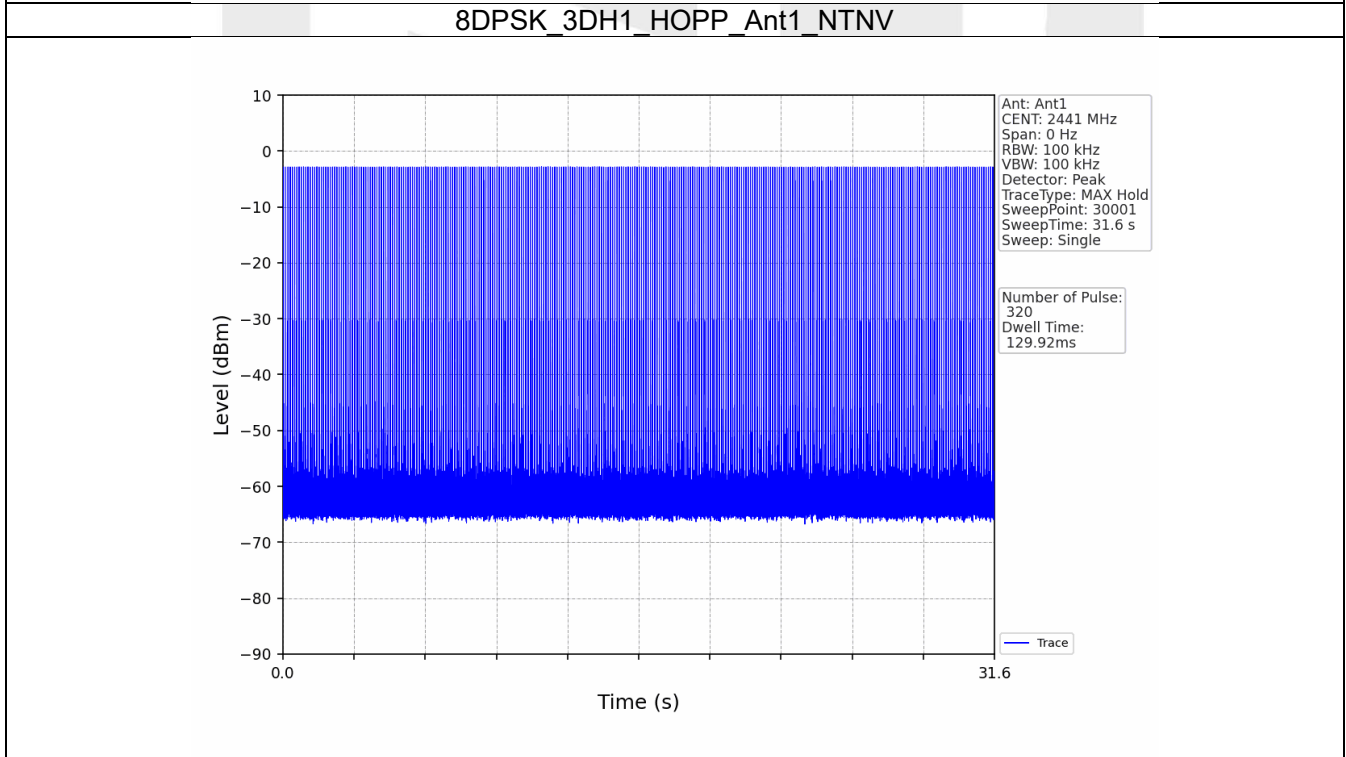
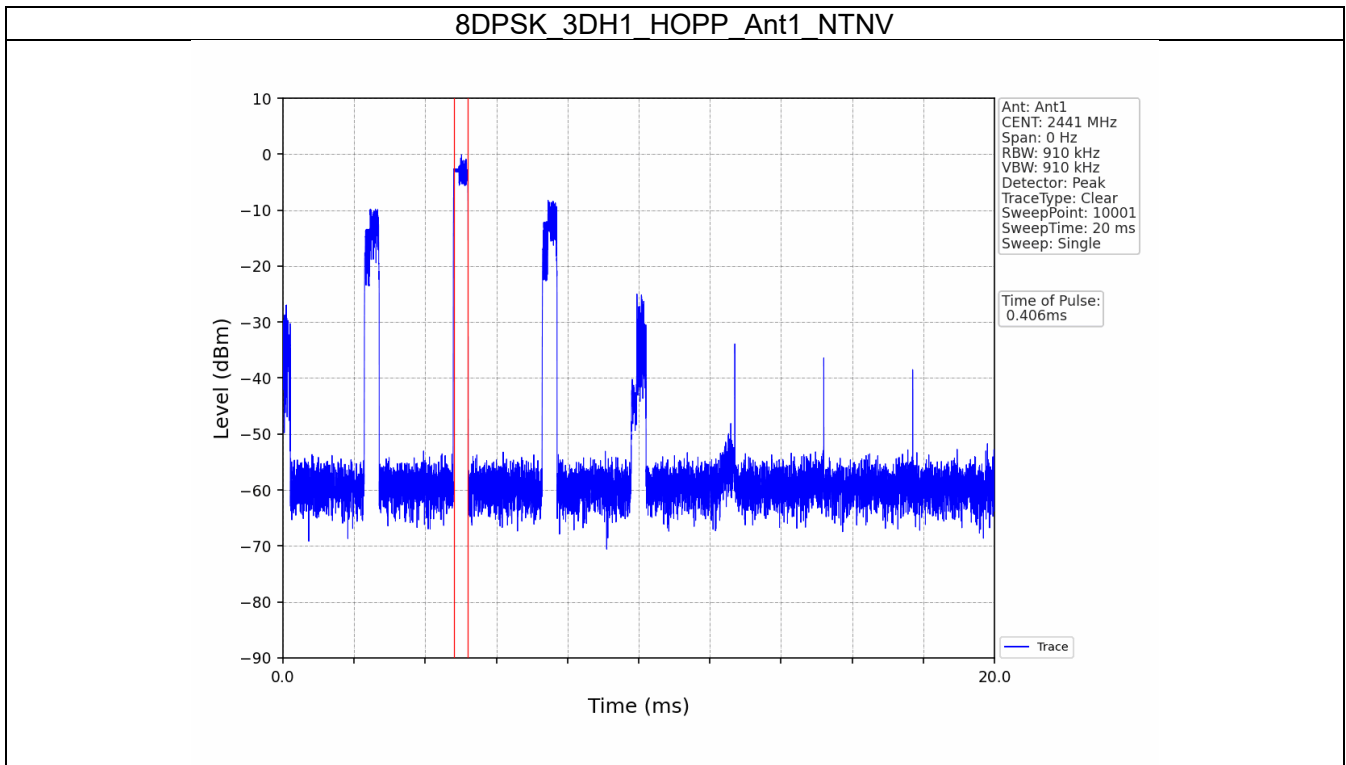


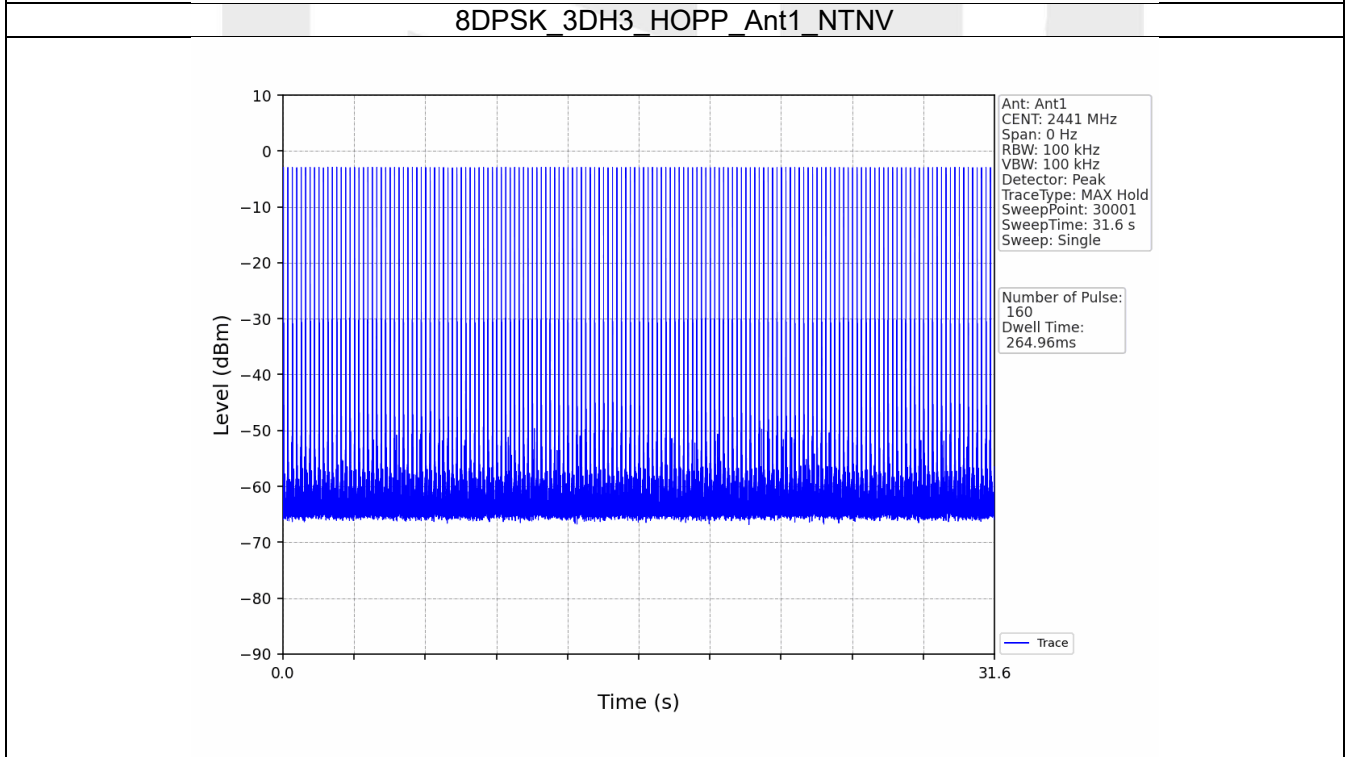
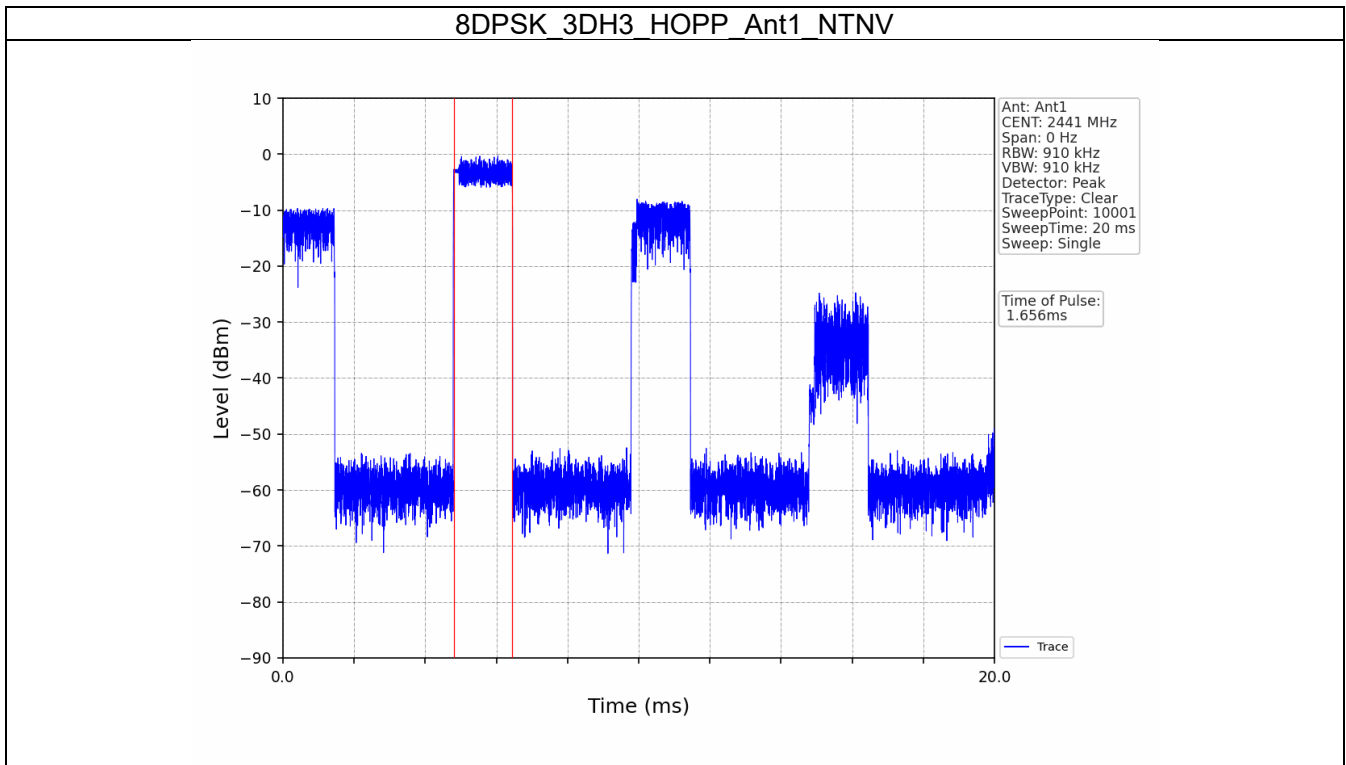


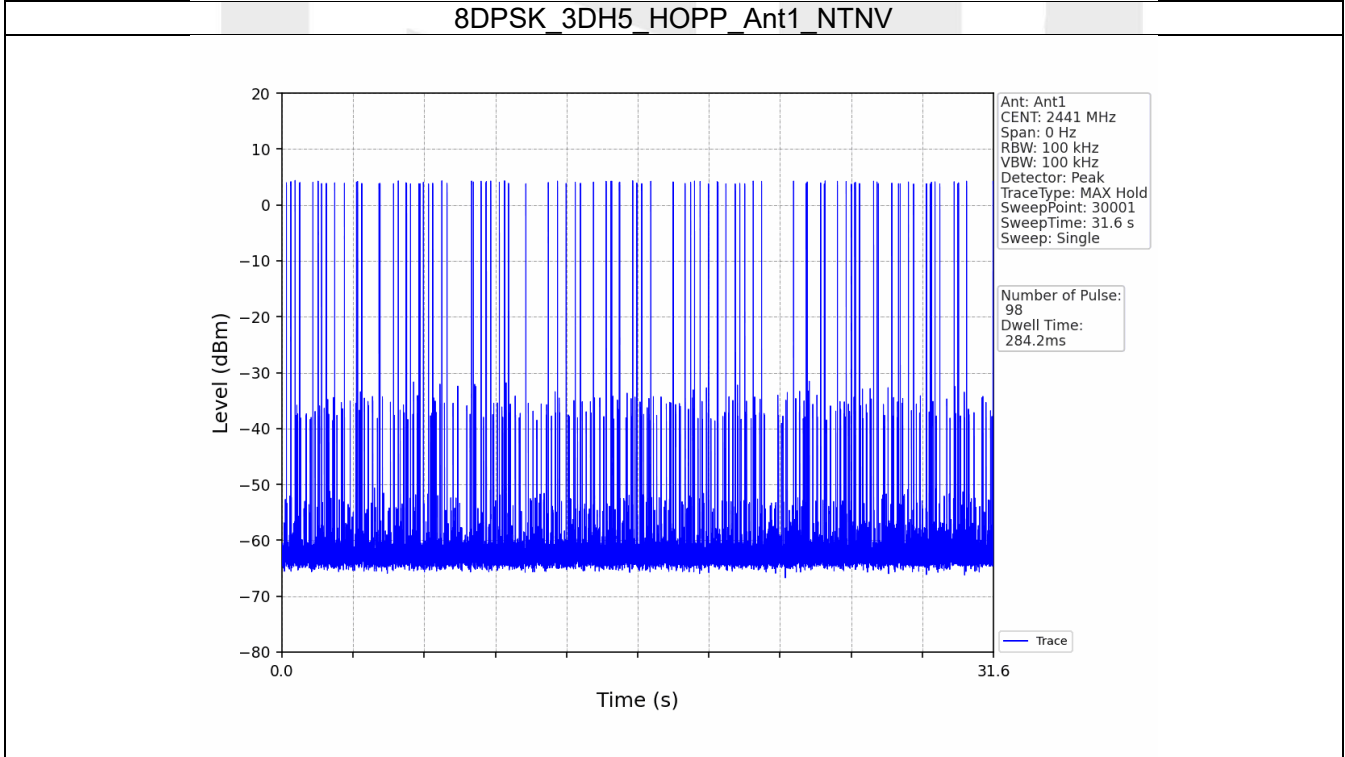
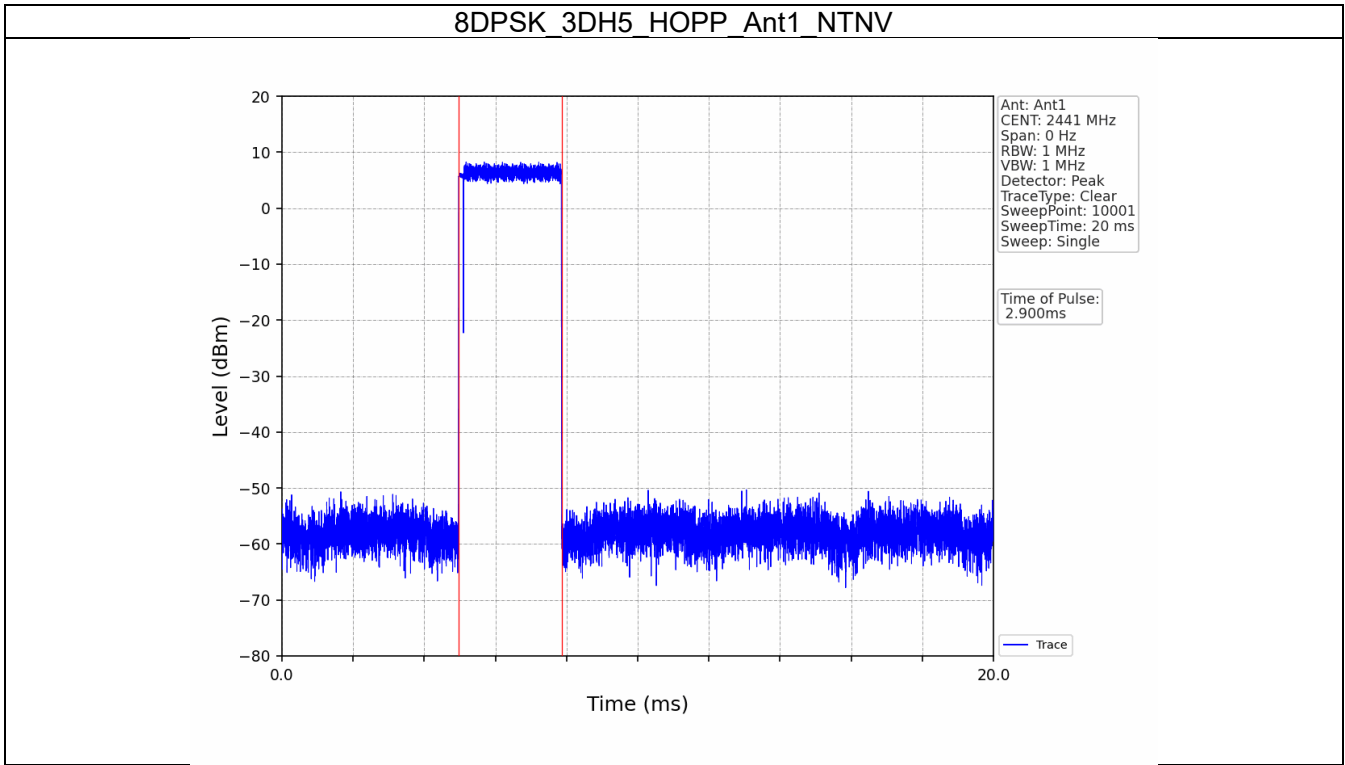












7. Unwanted Emissions In Non-restricted Frequency Bands

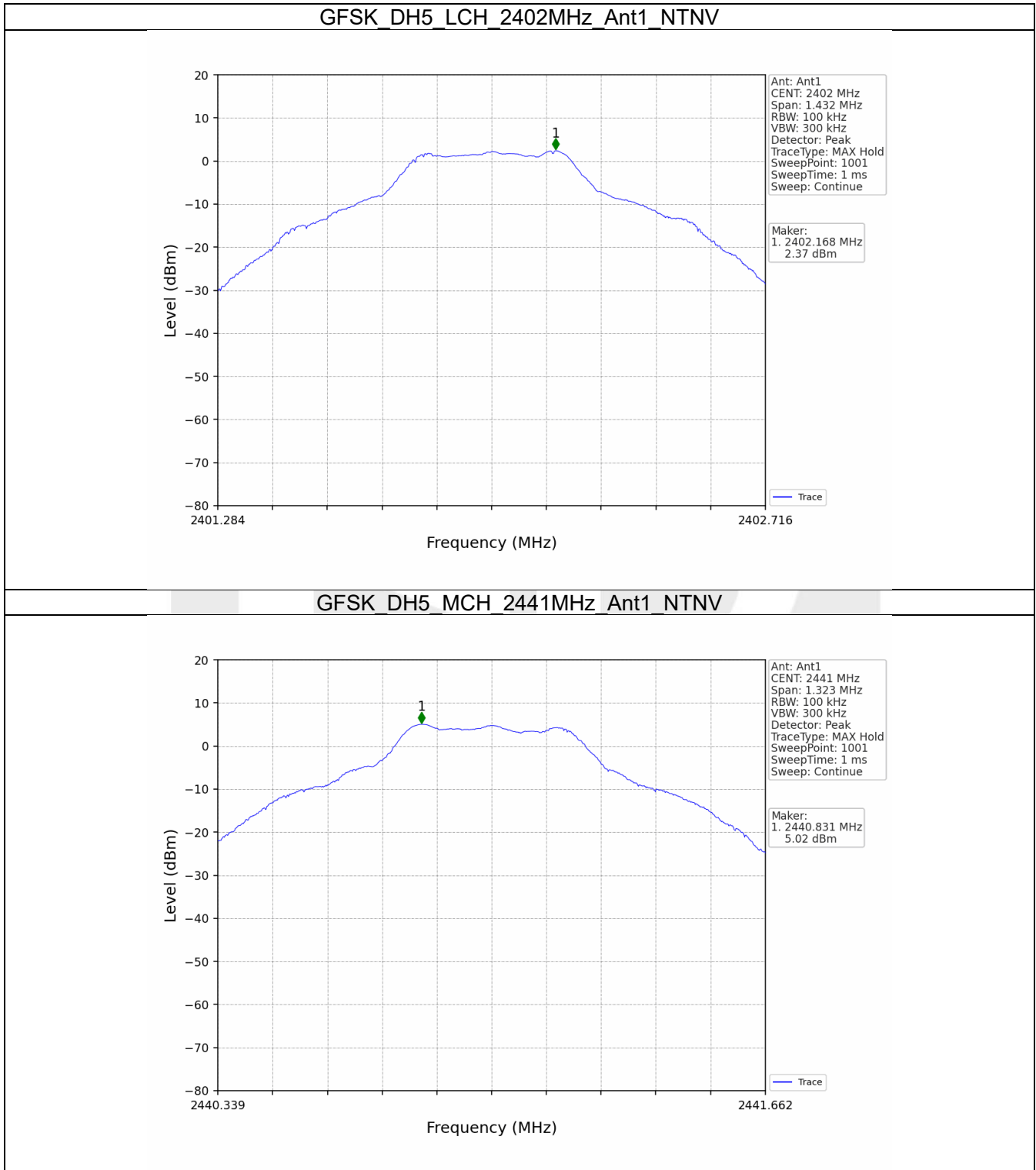
7.1 Ref

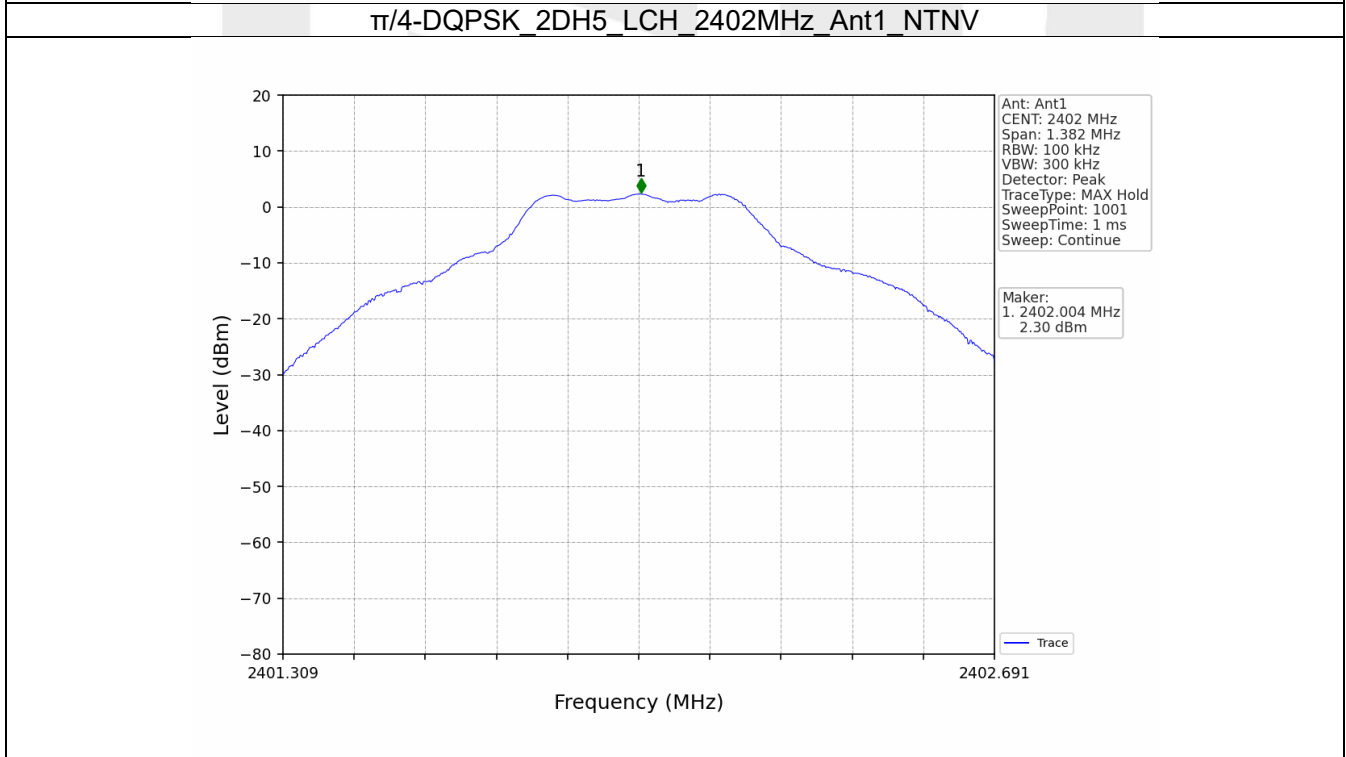
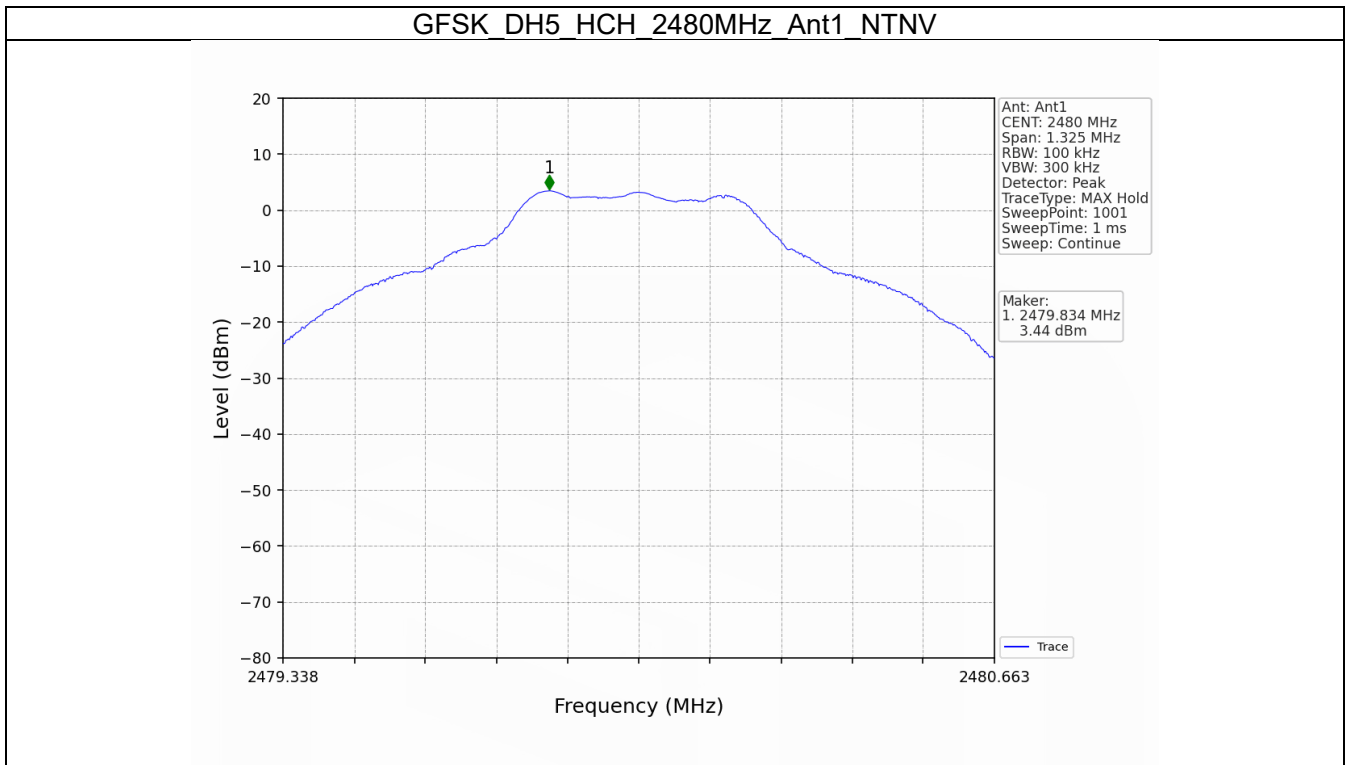
7.1.1 Test Result

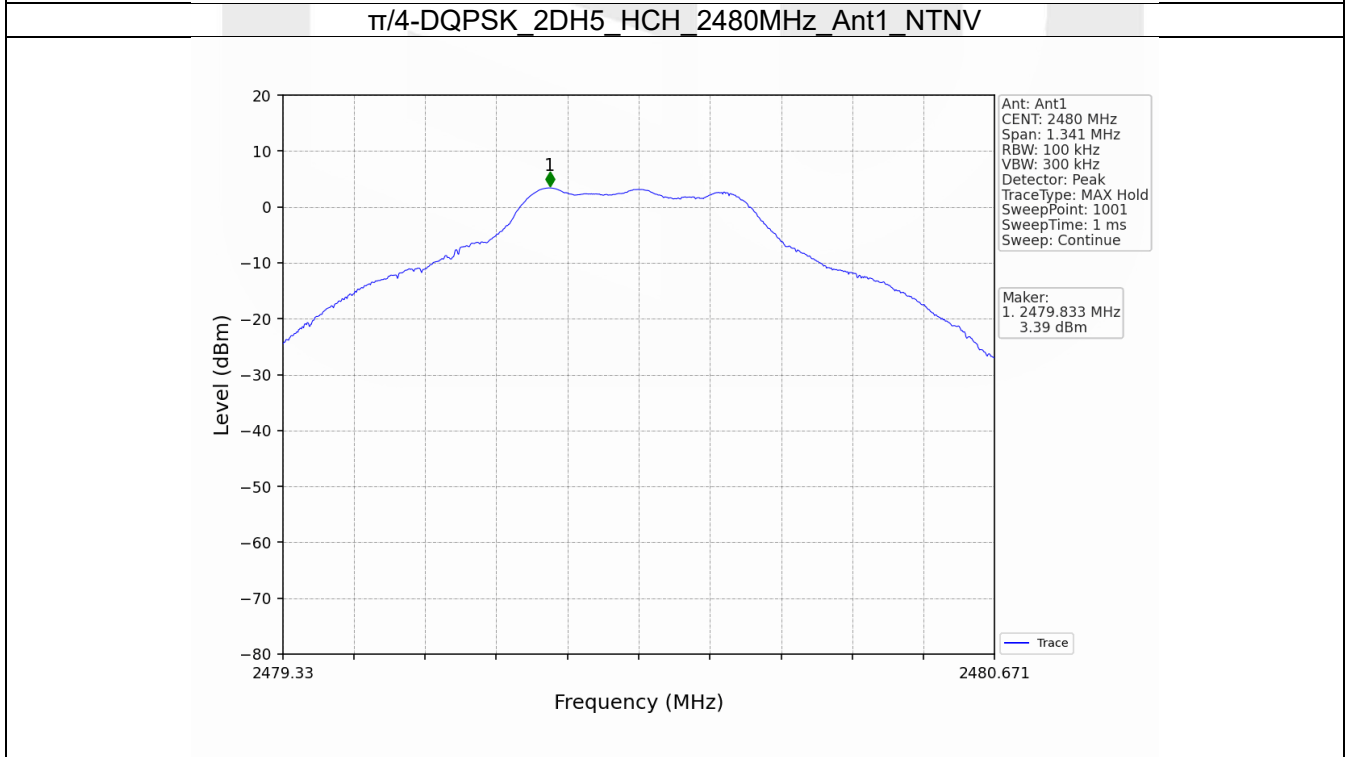
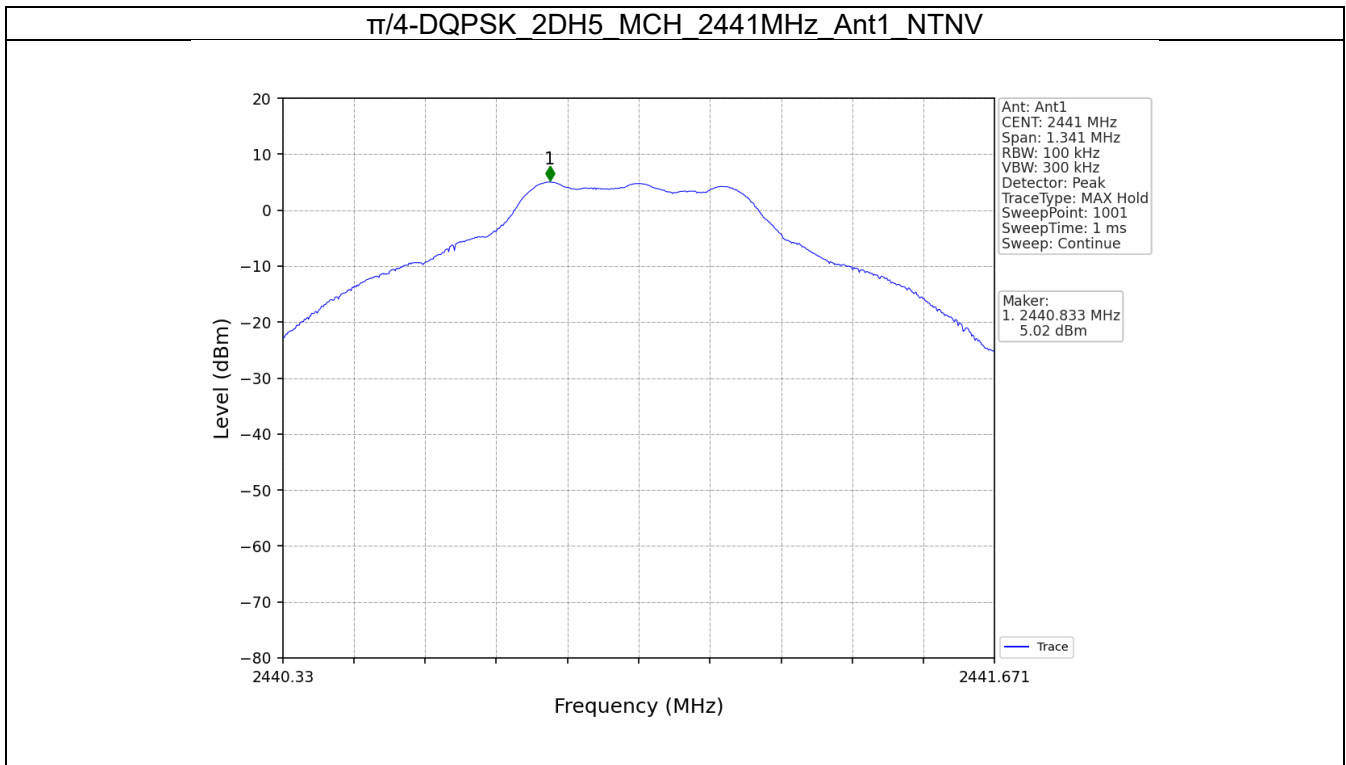
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)
GFSK	SISO	2402	DH5	1	2.37
		2441	DH5	1	5.02
		2480	DH5	1	3.44
$\pi/4$ -DQPSK	SISO	2402	2DH5	1	2.30
		2441	2DH5	1	5.02
		2480	2DH5	1	3.39
8DPSK	SISO	2402	3DH5	1	-4.80
		2441	3DH5	1	4.99
		2480	3DH5	1	3.42

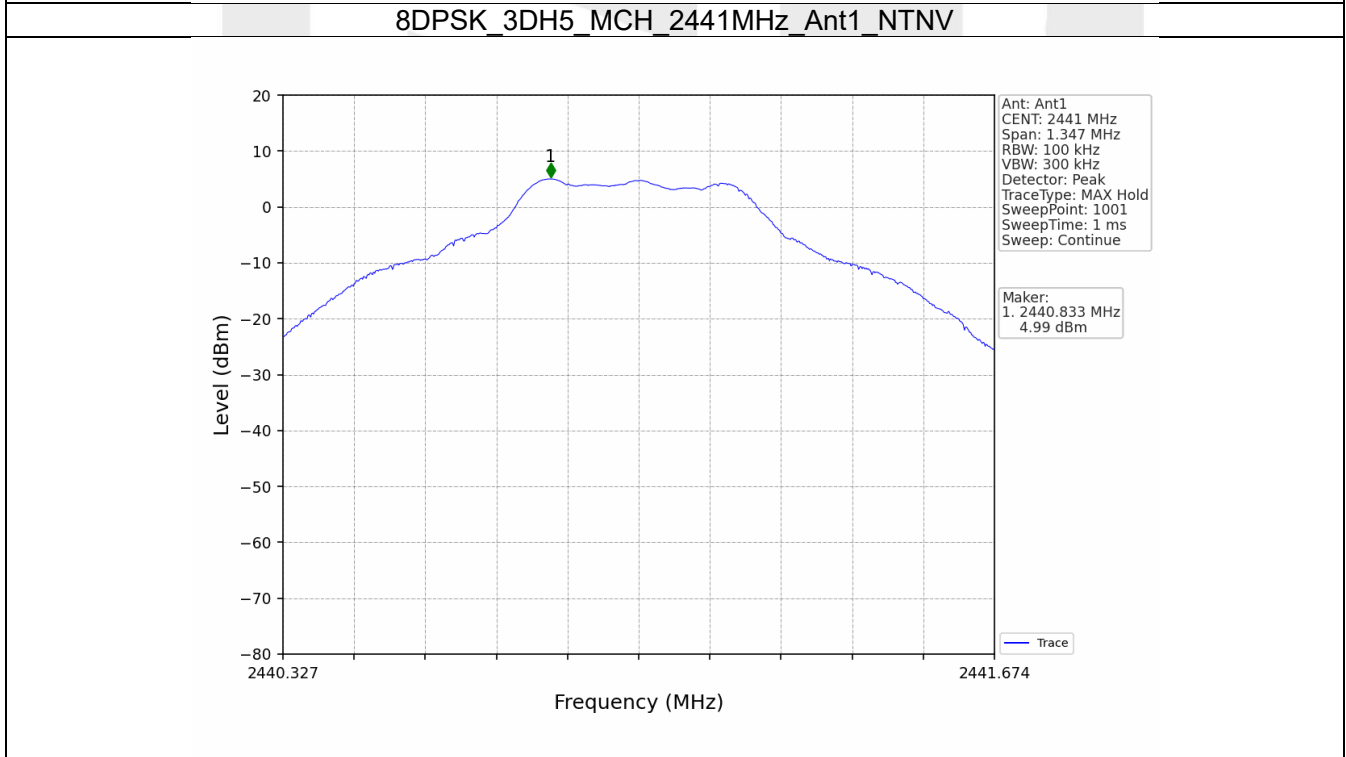
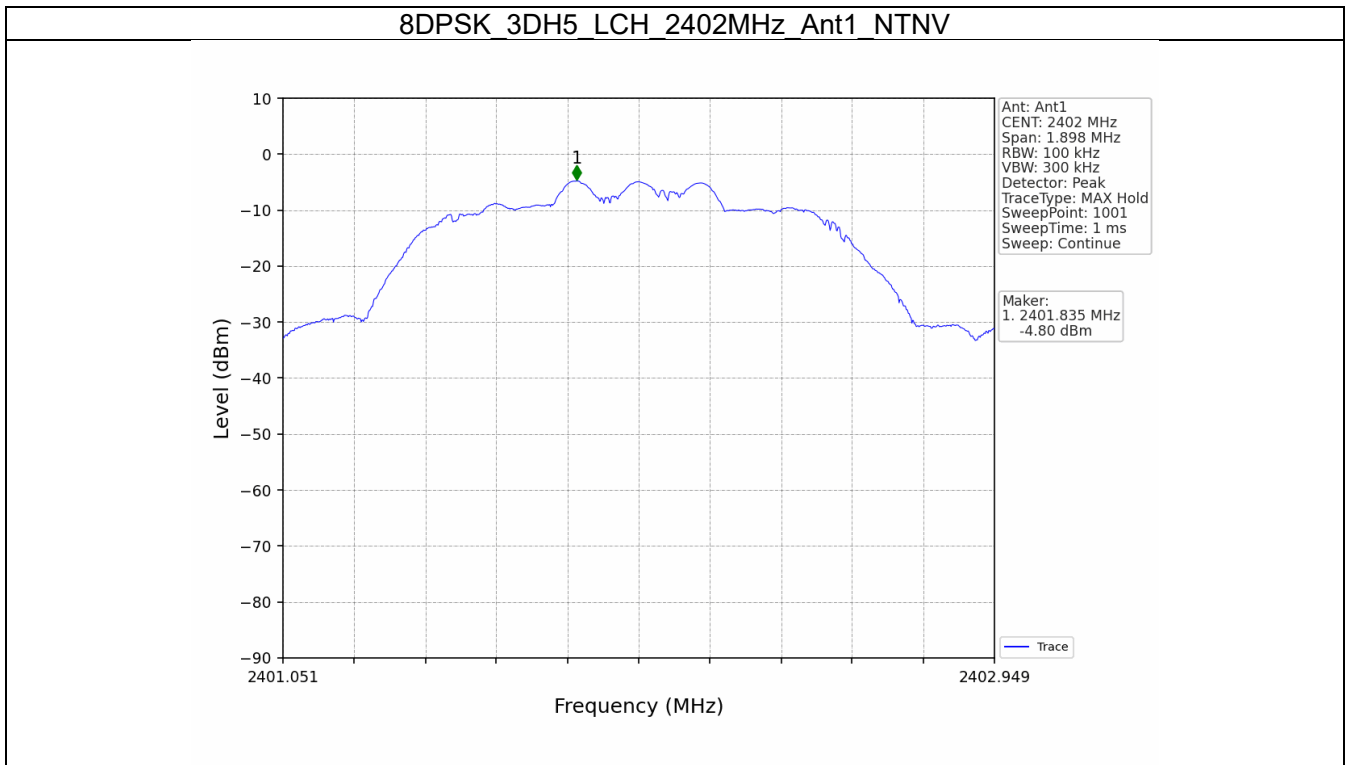
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

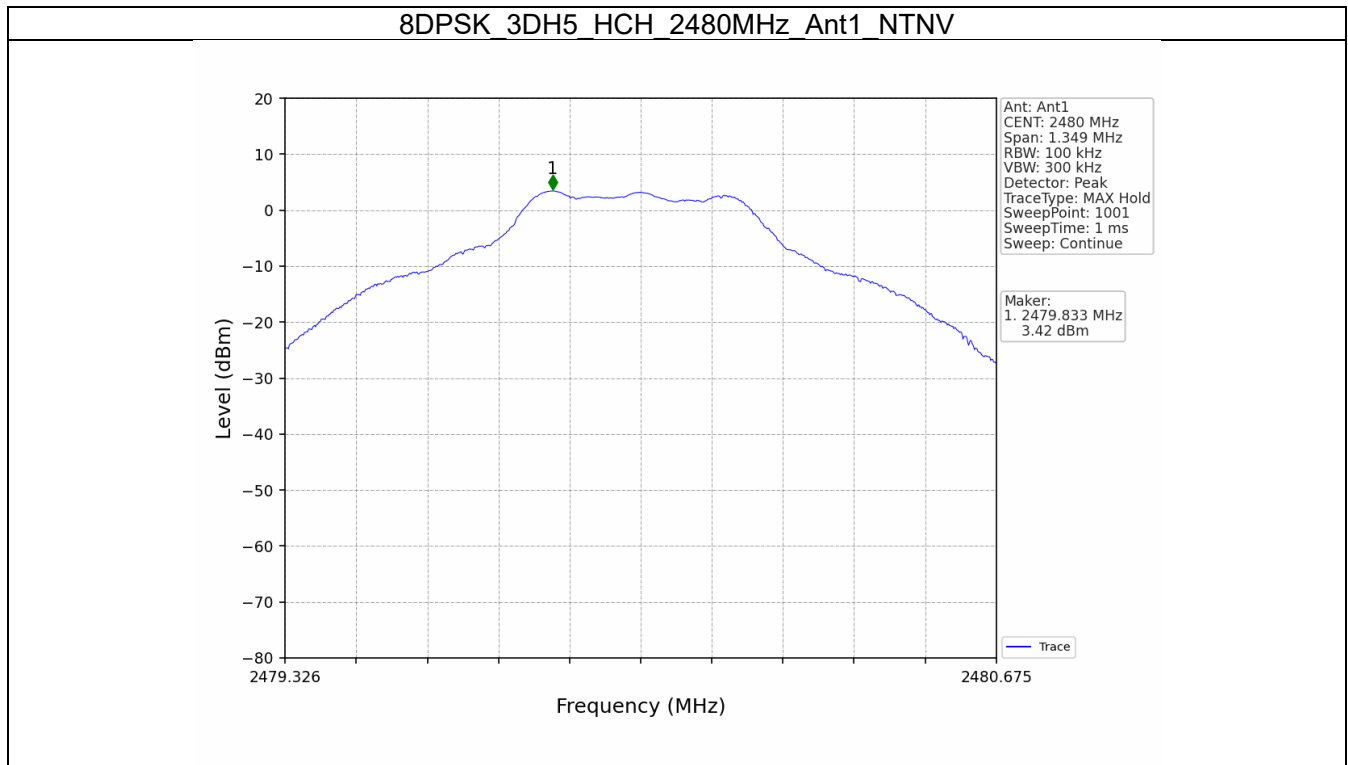
7.1.2 Test Graph









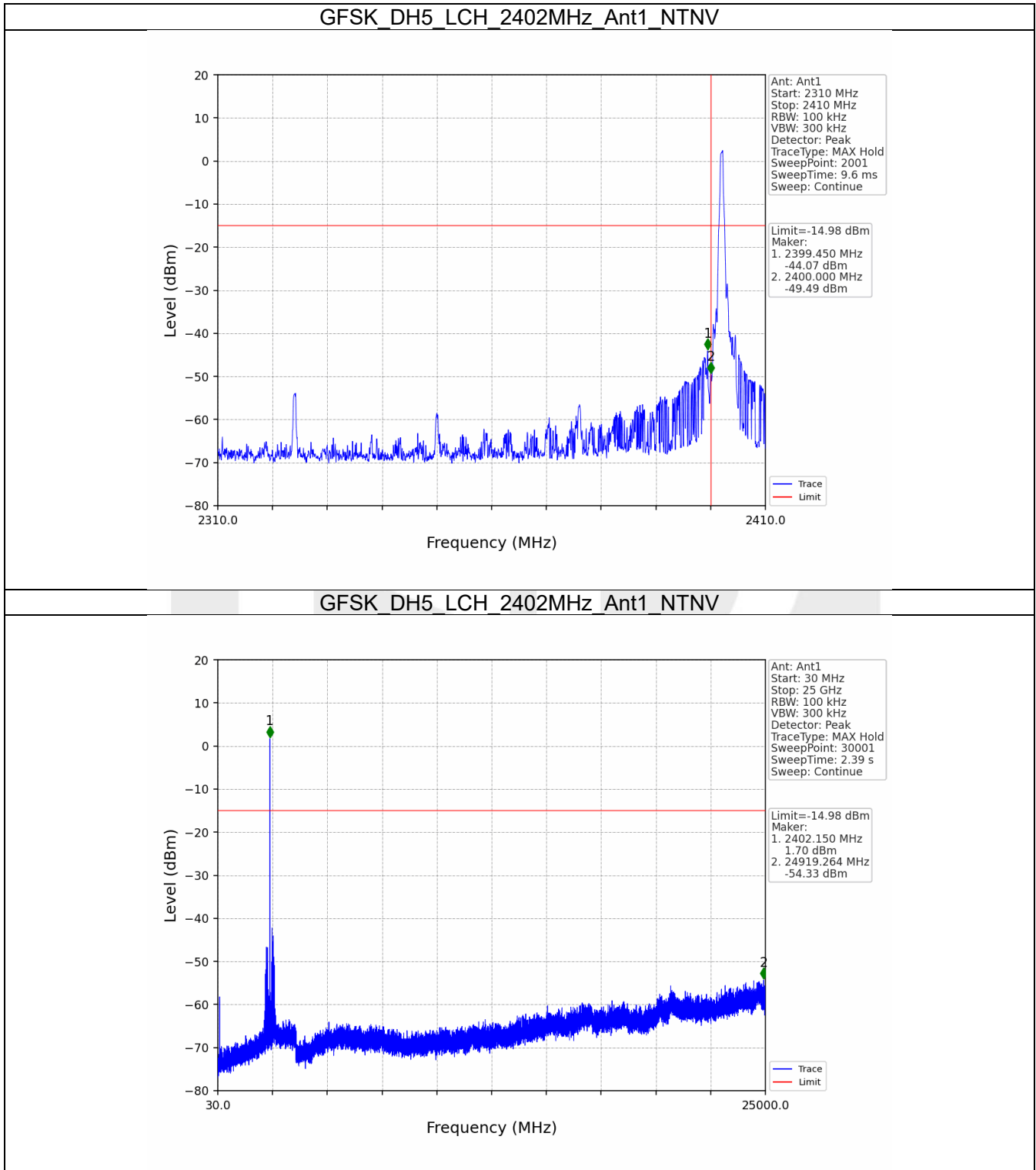


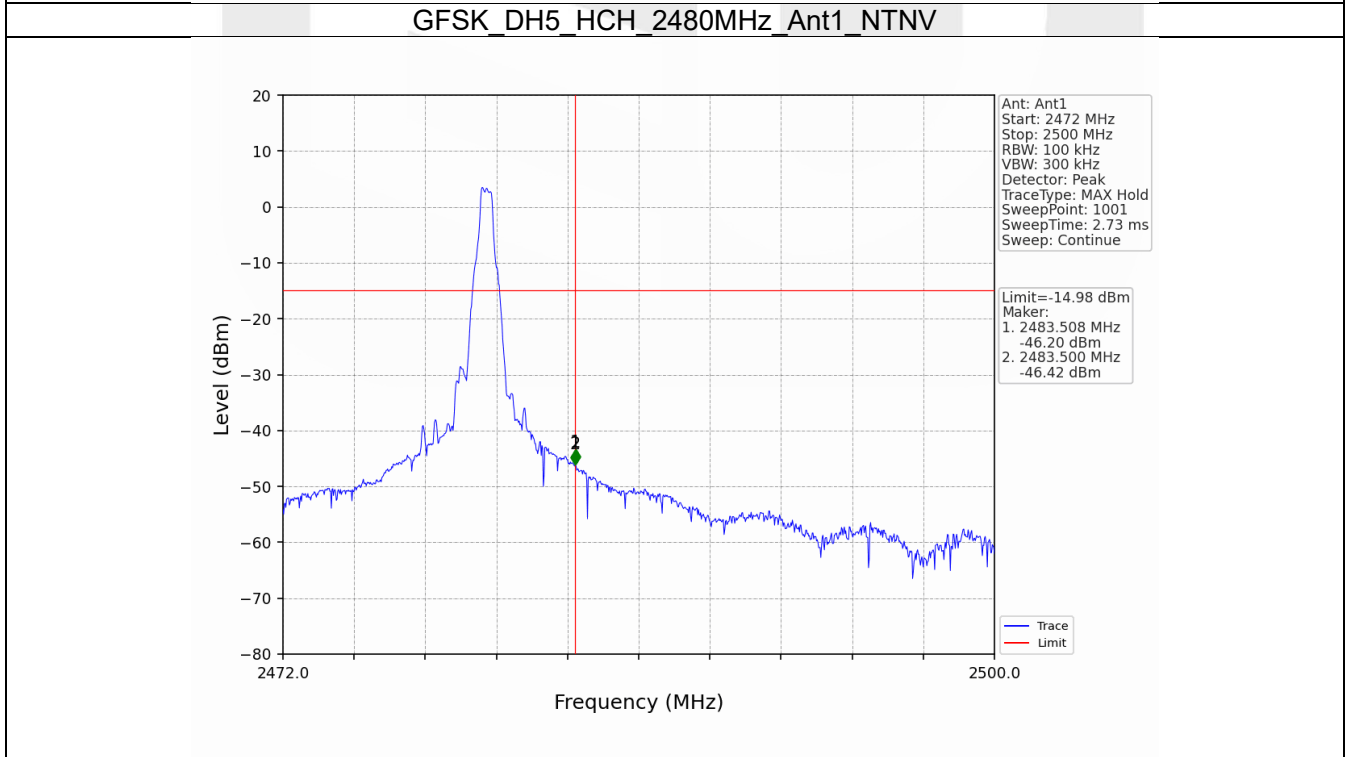
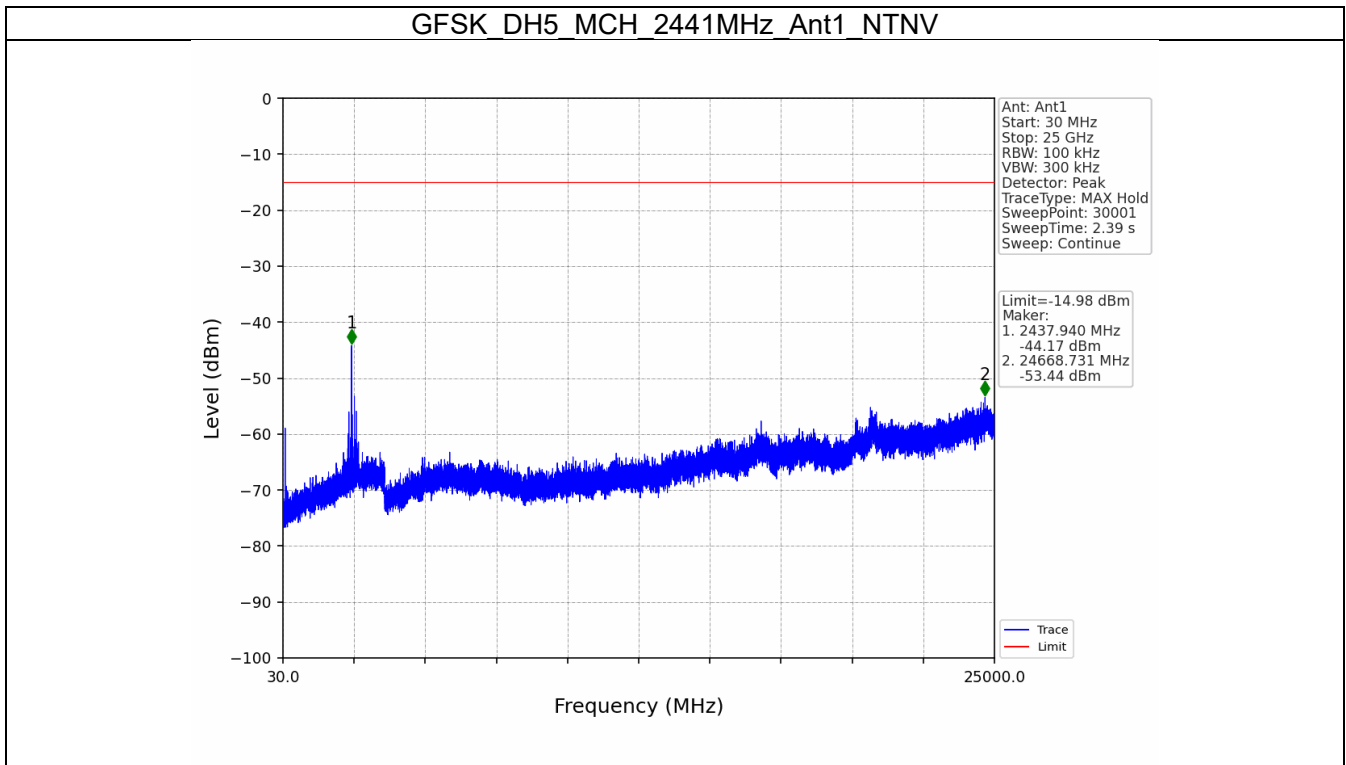
7.2 CSE
7.2.1 Test Result

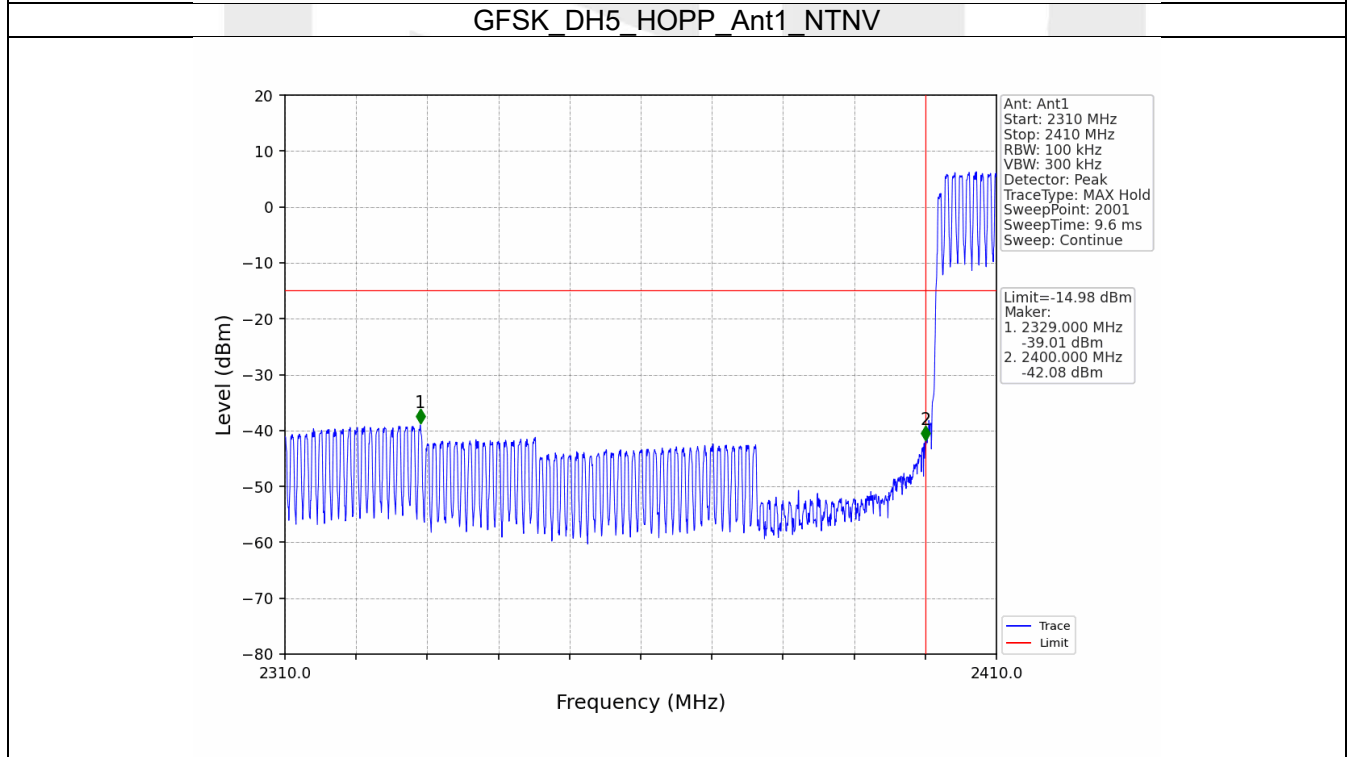
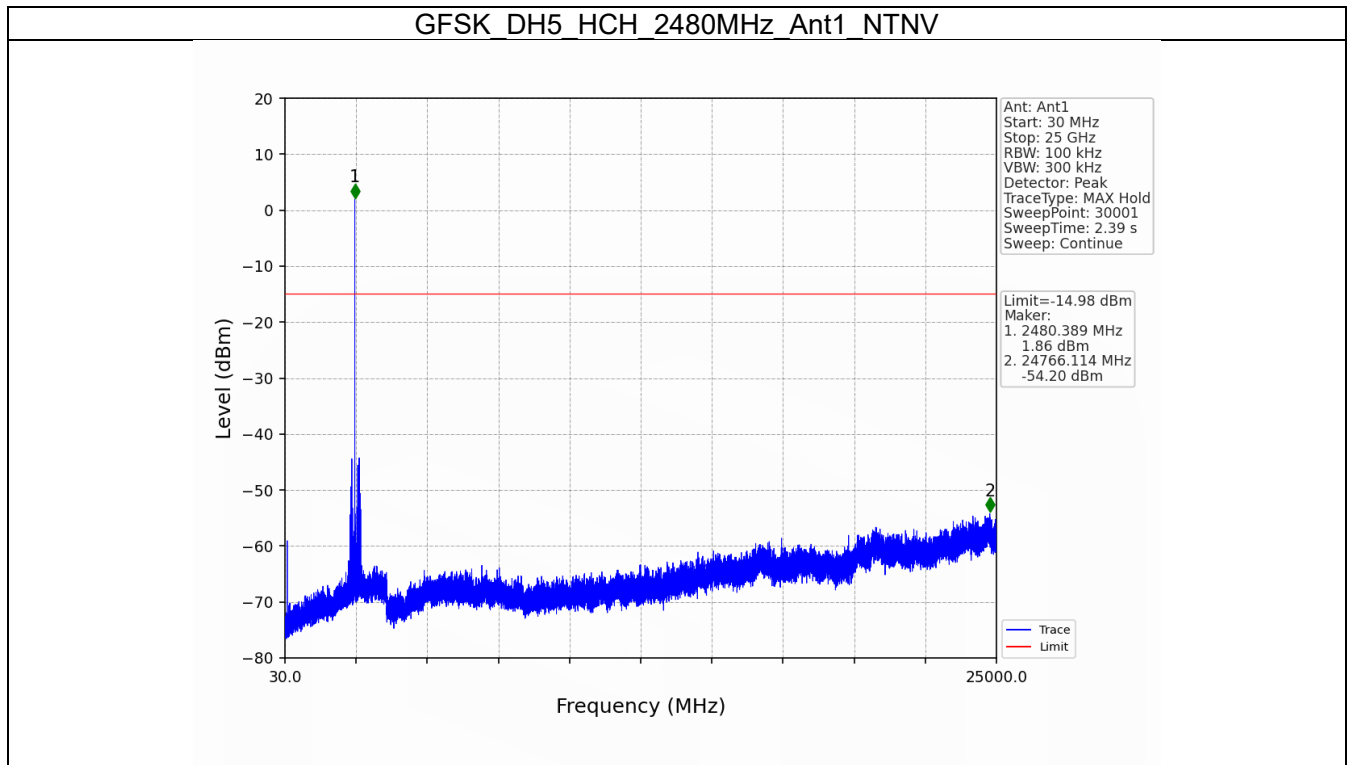
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
GFSK	SISO	2402	DH5	1	5.02	-14.98	Pass
		2441	DH5	1	5.02	-14.98	Pass
		2480	DH5	1	5.02	-14.98	Pass
		HOPP	DH5	1	5.02	-14.98	Pass
$\pi/4$ -DQPSK	SISO	2402	2DH5	1	5.02	-14.98	Pass
		2441	2DH5	1	5.02	-14.98	Pass
		2480	2DH5	1	5.02	-14.98	Pass
		HOPP	2DH5	1	5.02	-14.98	Pass
8DPSK	SISO	2402	3DH5	1	4.99	-15.01	Pass
		2441	3DH5	1	4.99	-15.01	Pass
		2480	3DH5	1	4.99	-15.01	Pass
		HOPP	3DH5	1	4.99	-15.01	Pass

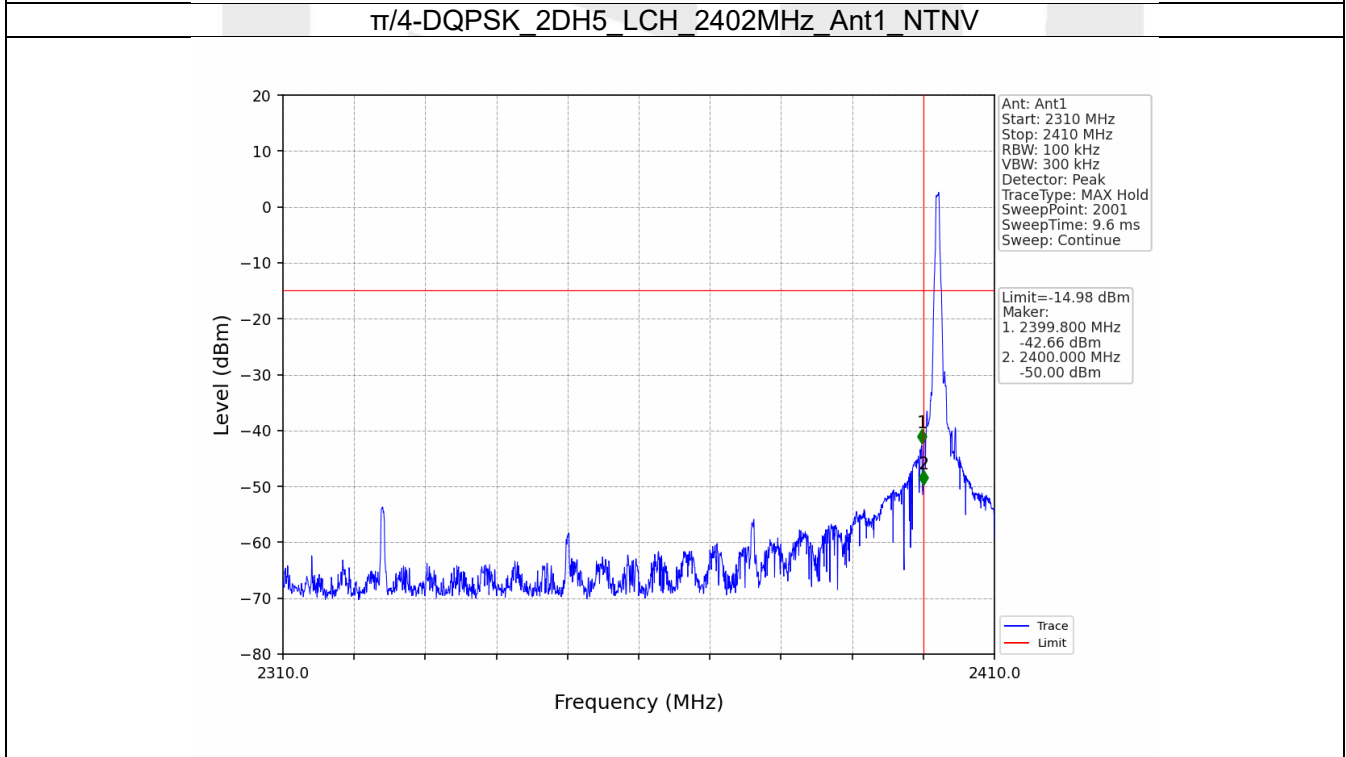
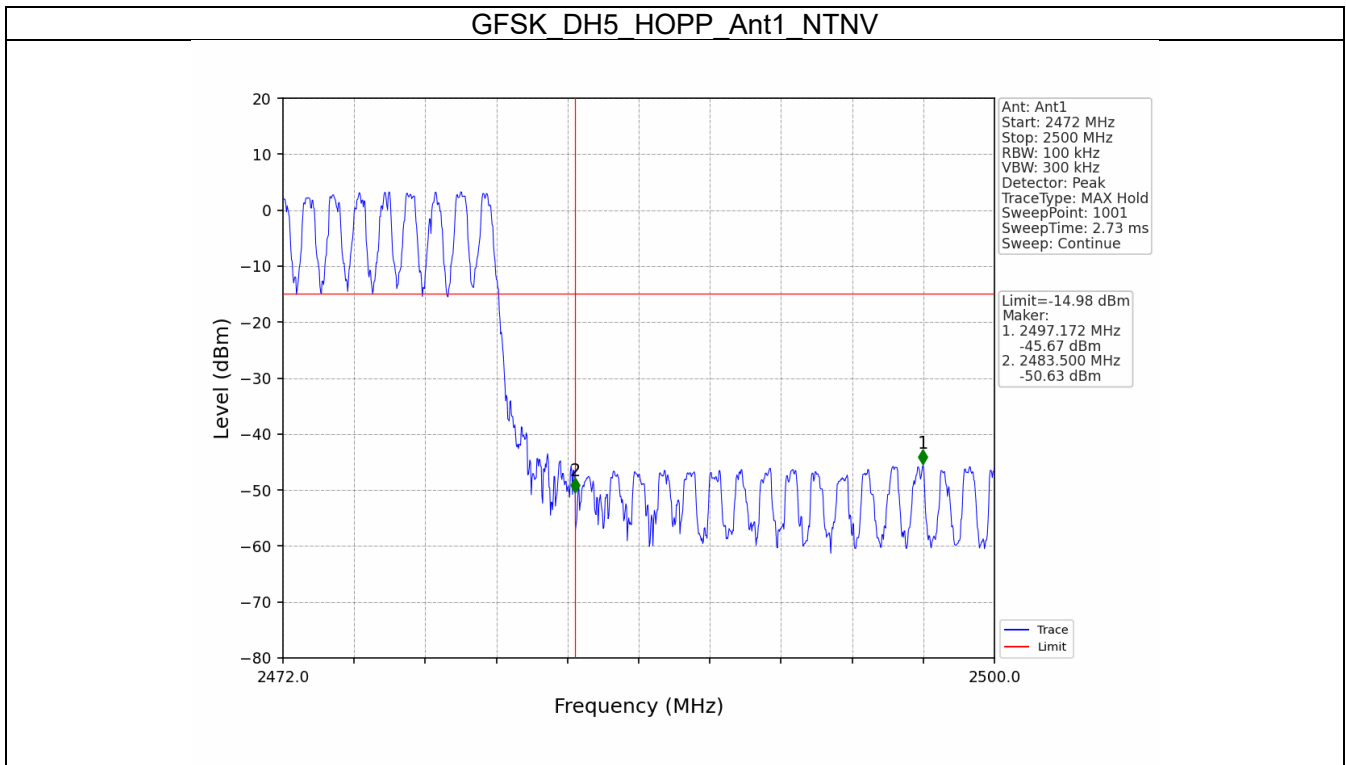
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

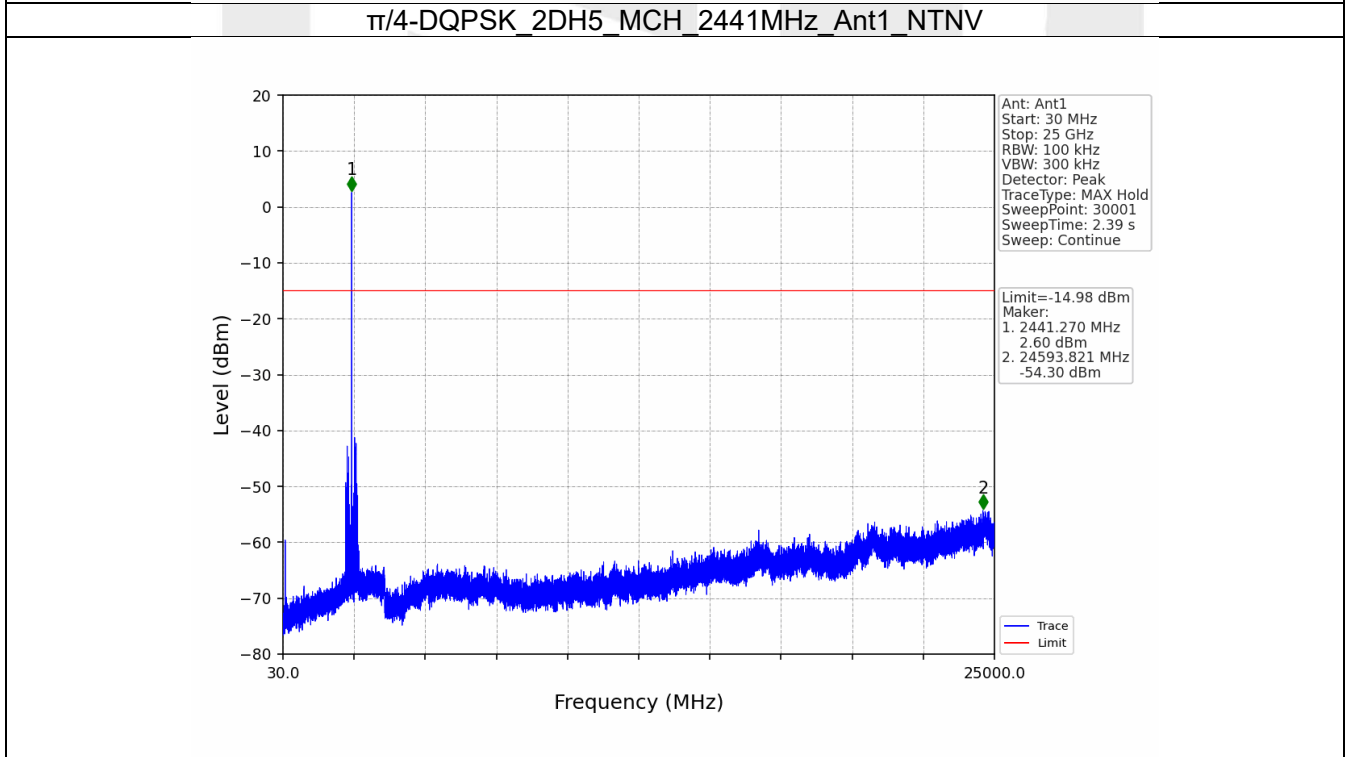
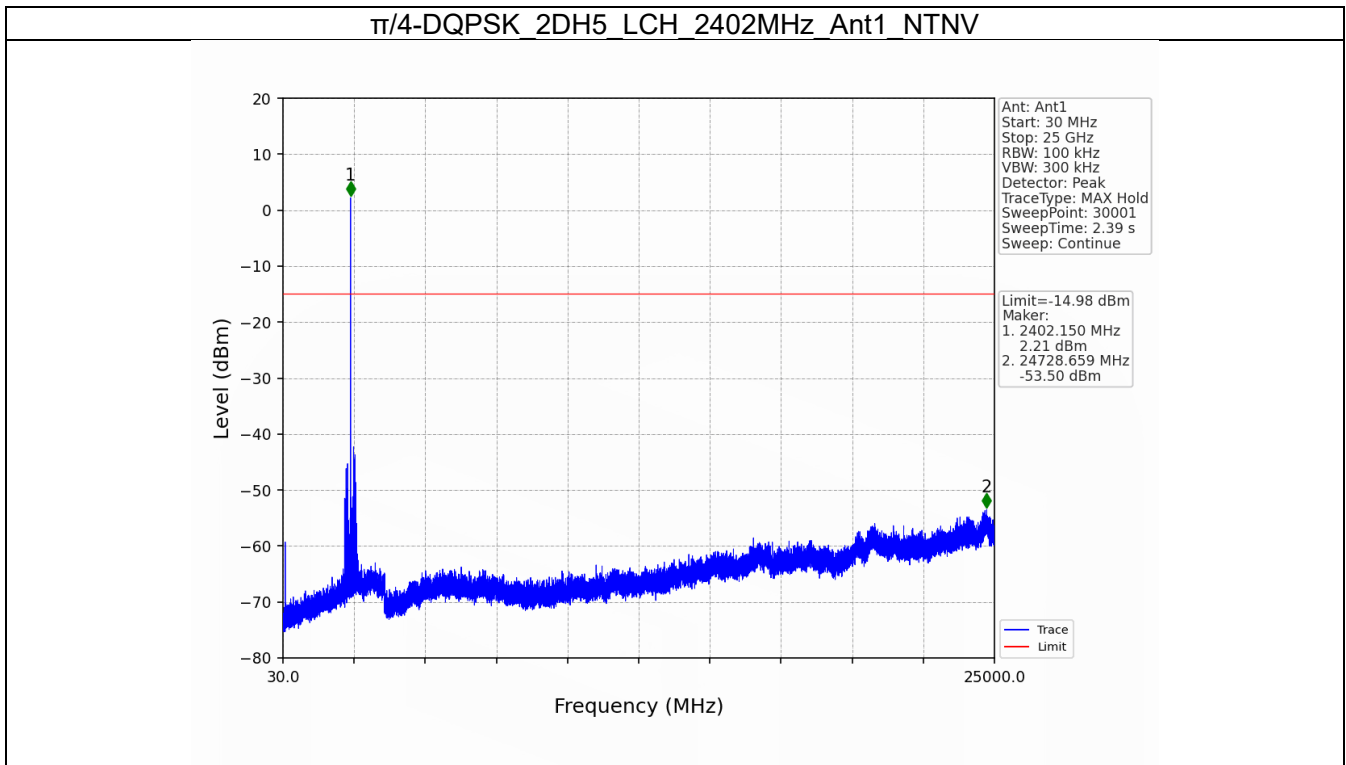
7.2.2 Test Graph

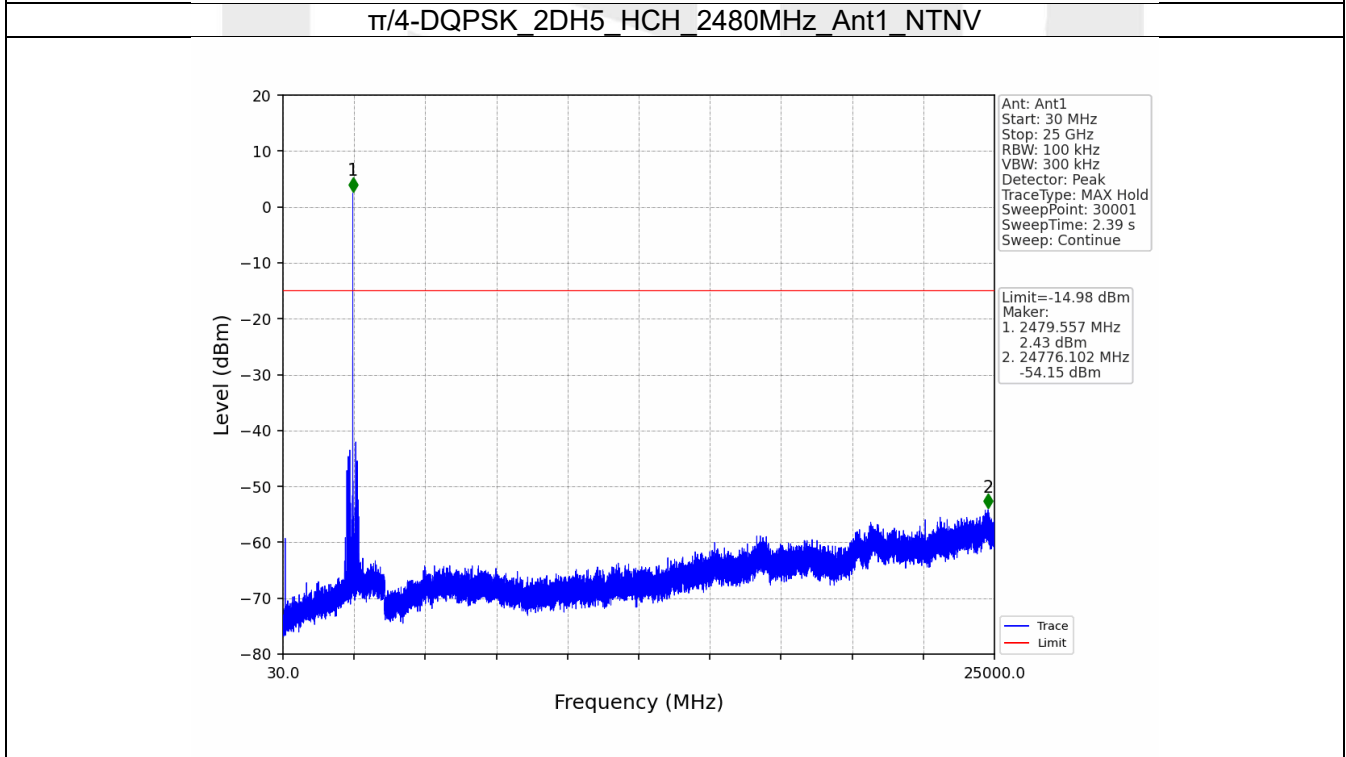
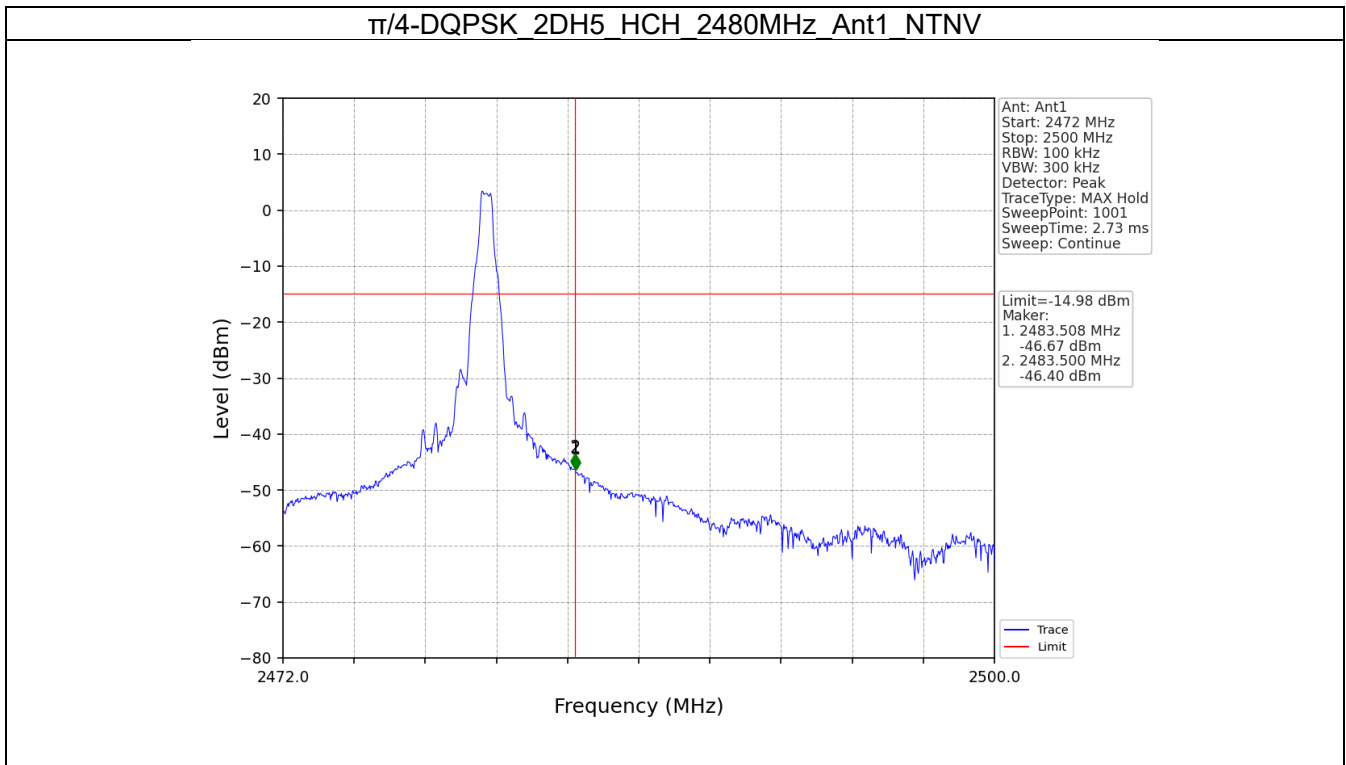


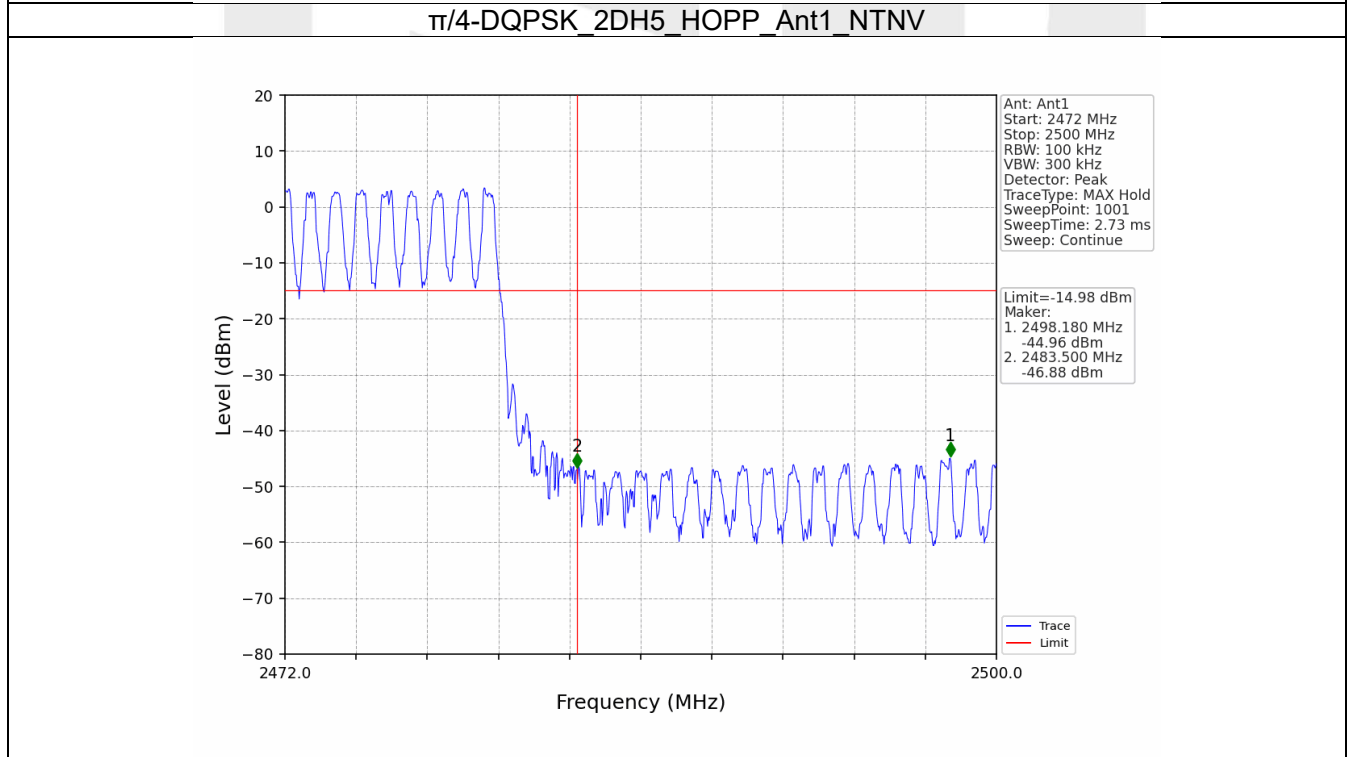
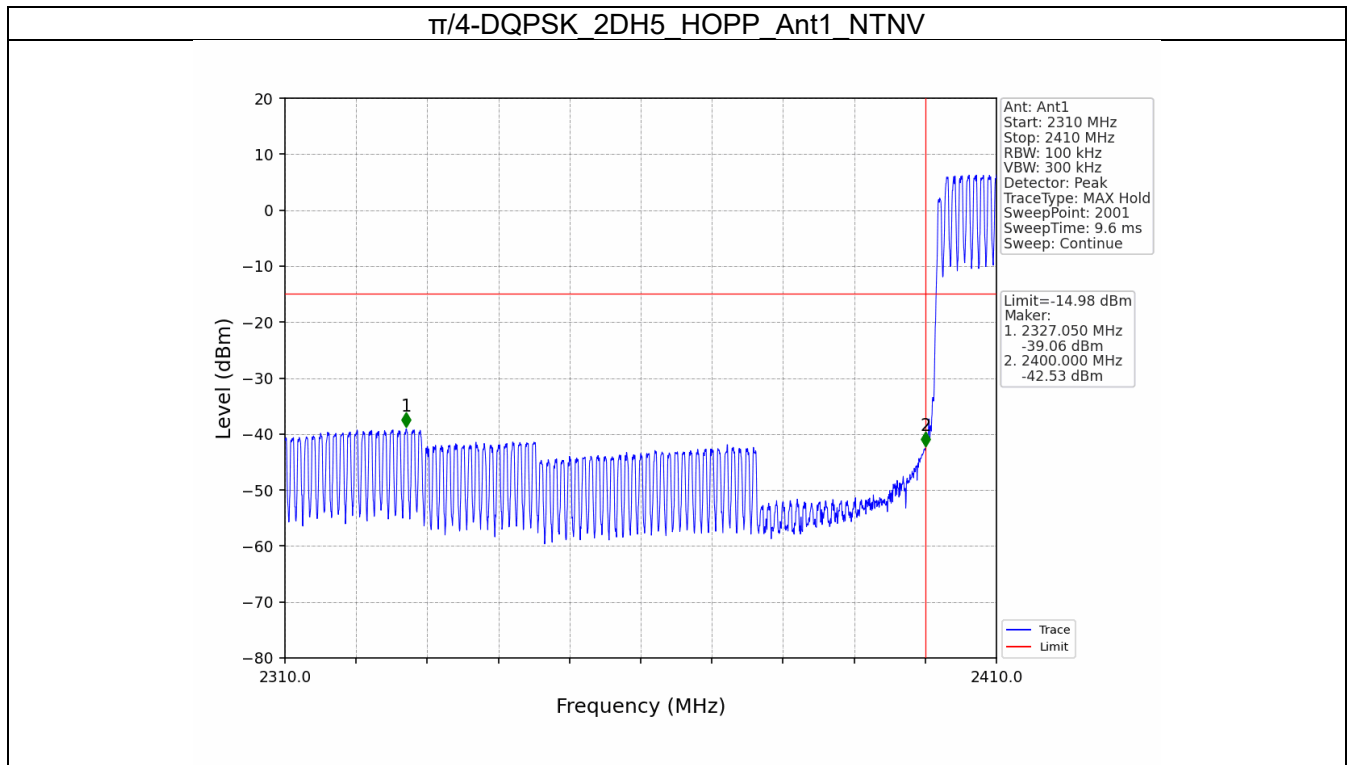


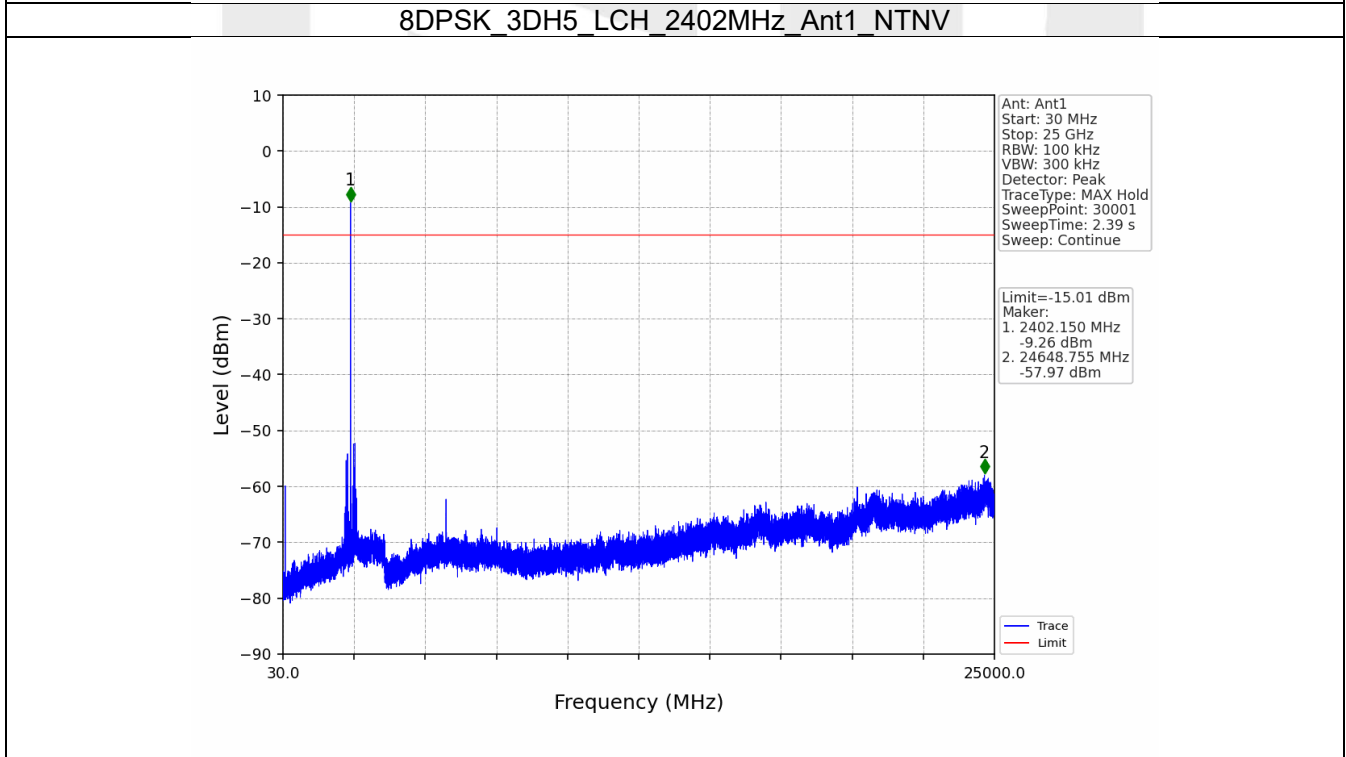
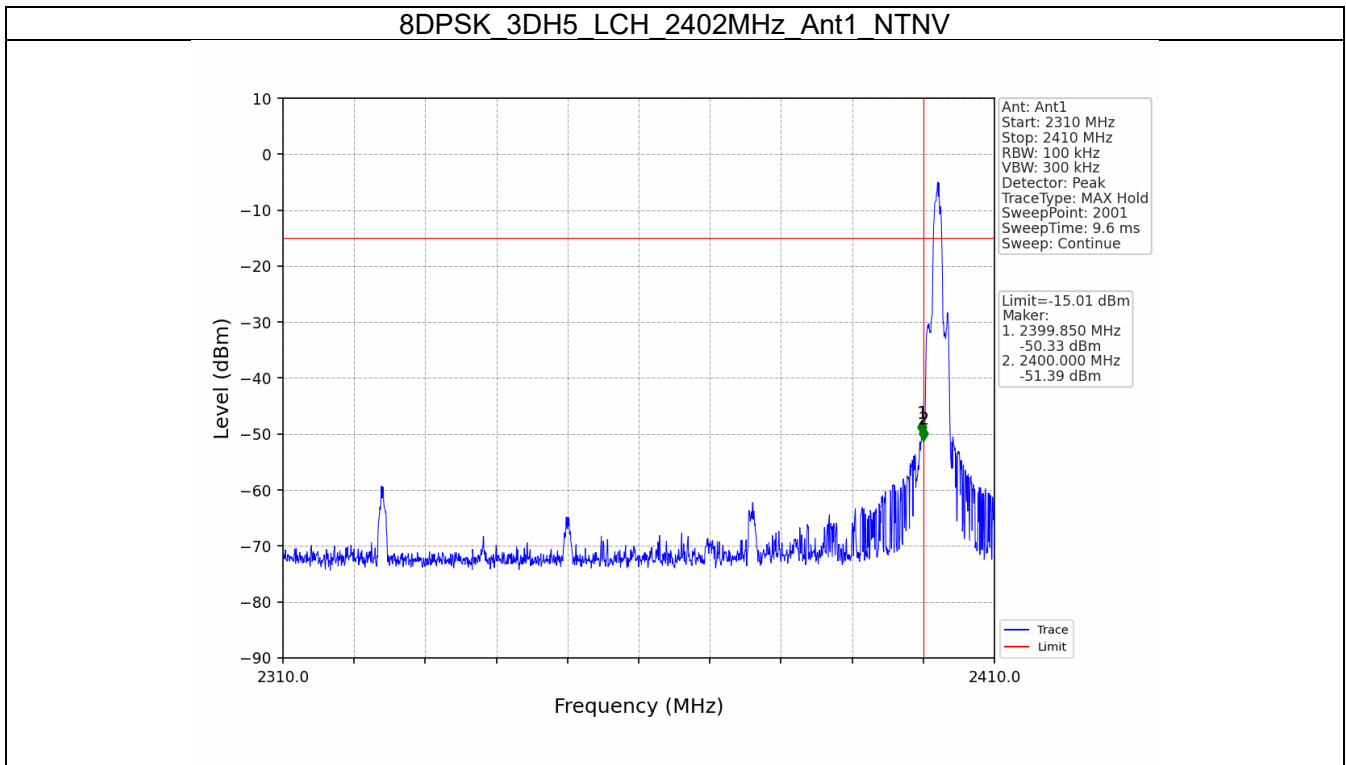


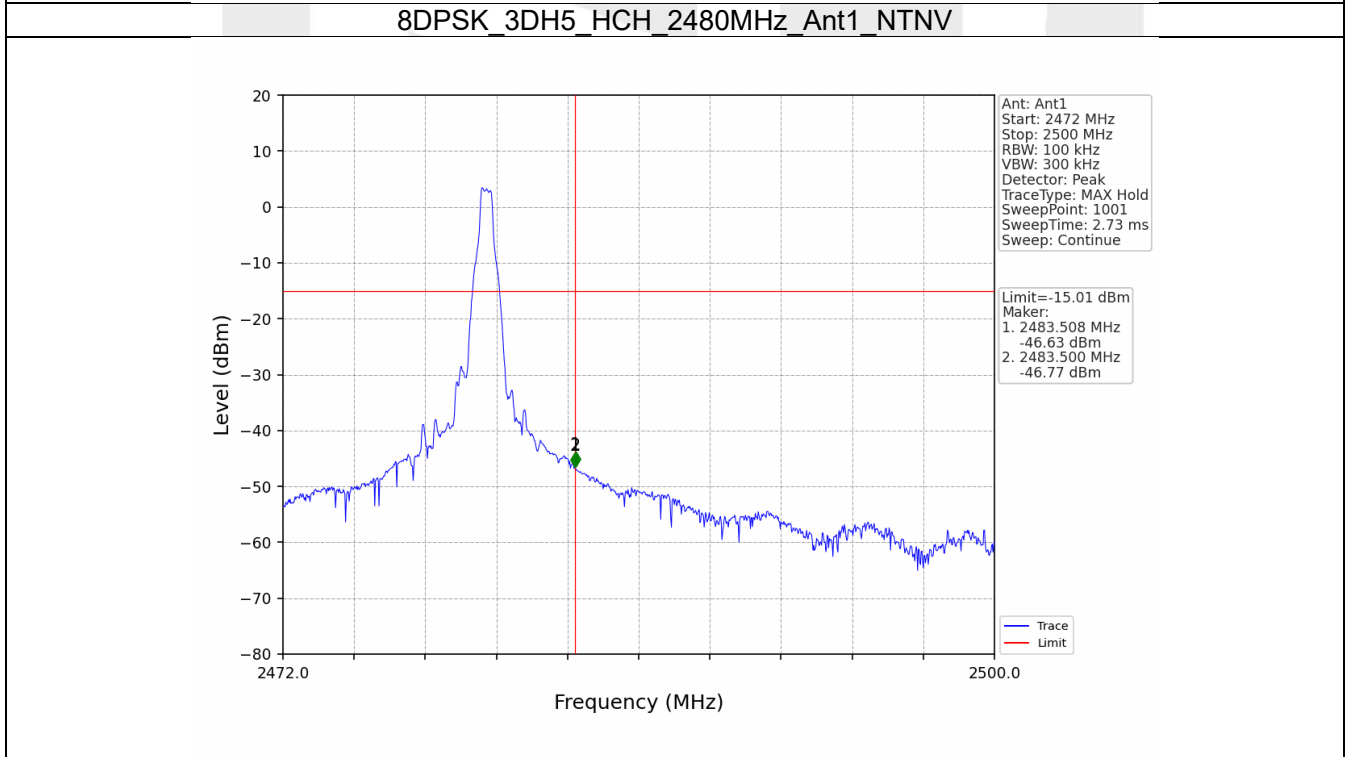
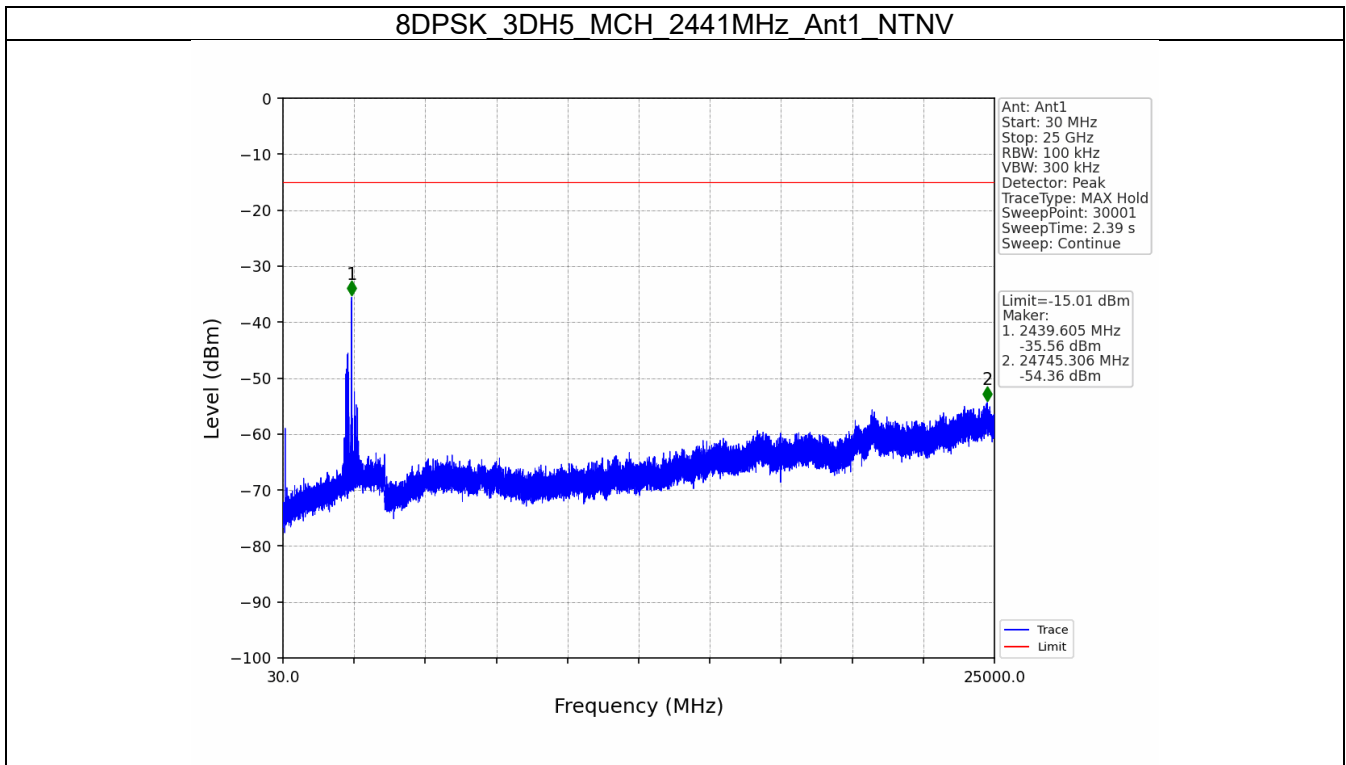


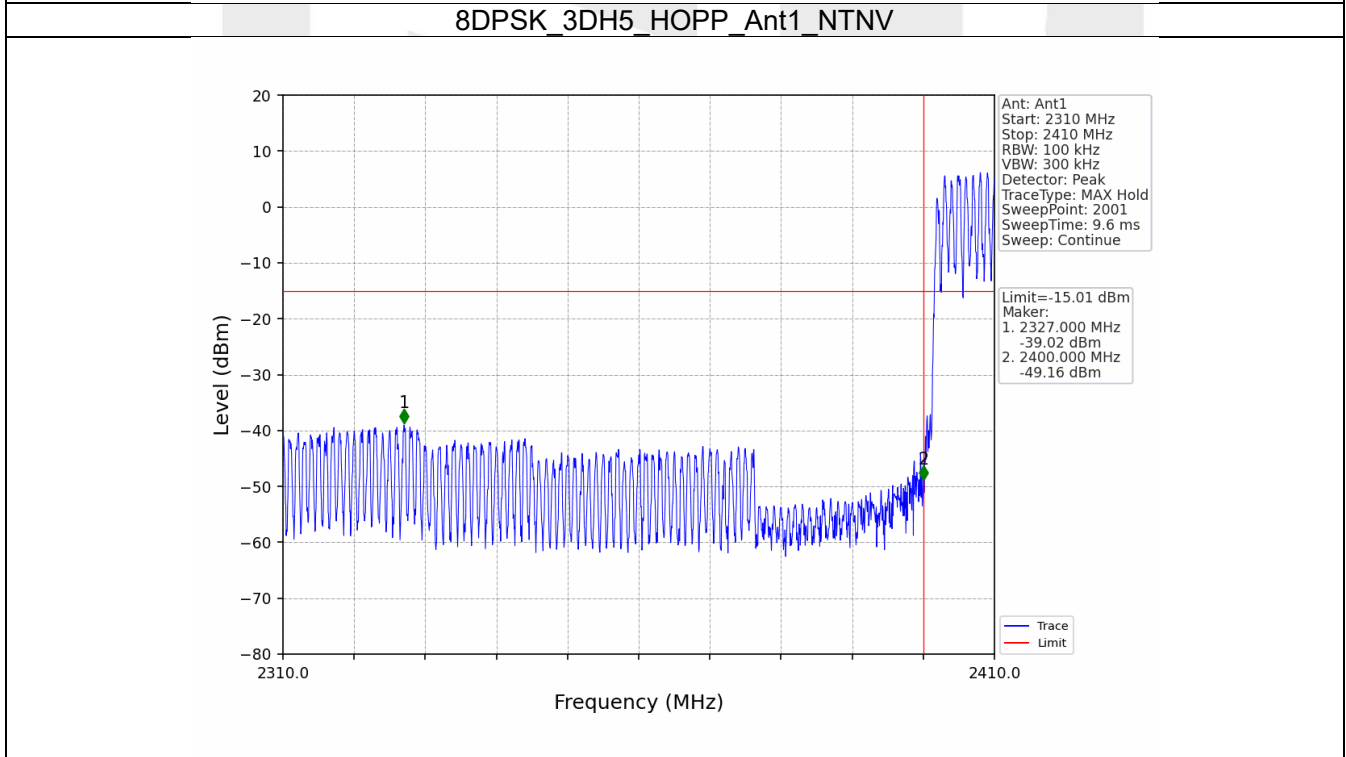
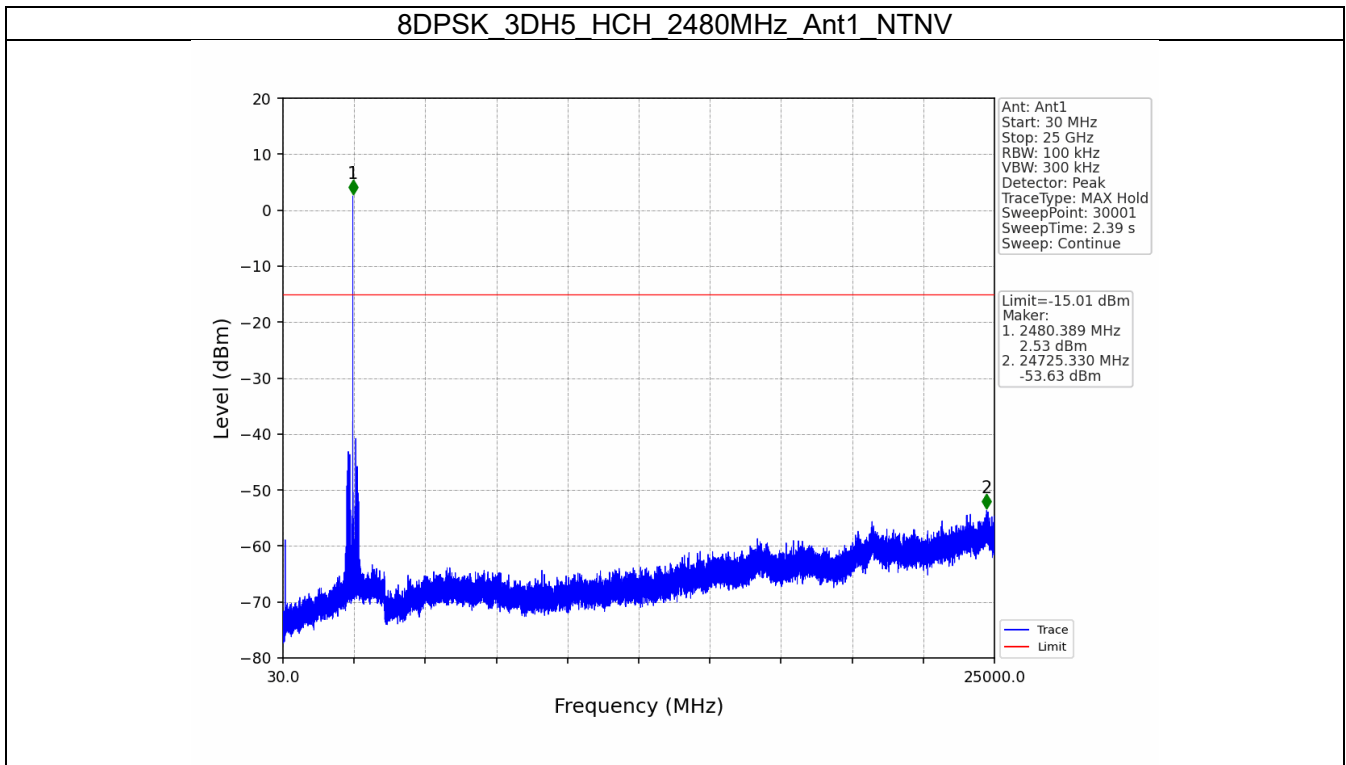


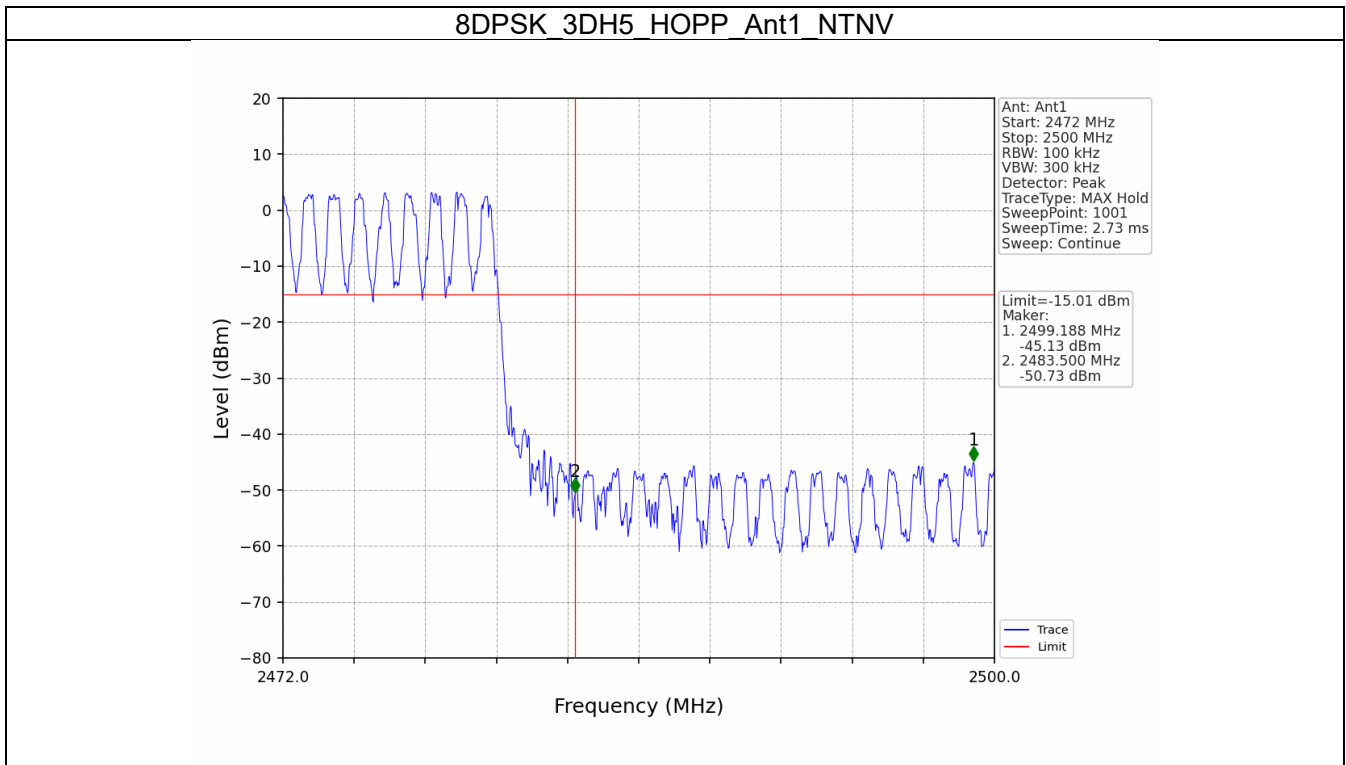












----- End of Report -----