

ANNEX D TEST DATA

For

Project No.:	8227EU010605W
Client:	Shenzhen Divoom Technology Co., Ltd.
Product Description:	Bluetooth Speaker
Model No.:	SongBird-SE
FCC ID:	A8ISONGBIRD-SE
Technology:	Bluetooth BDR&EDR
Test Engineer:	<i>Mikoy zhu</i>
Test Date:	2024-03-25

Test Summary

Item	Result
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

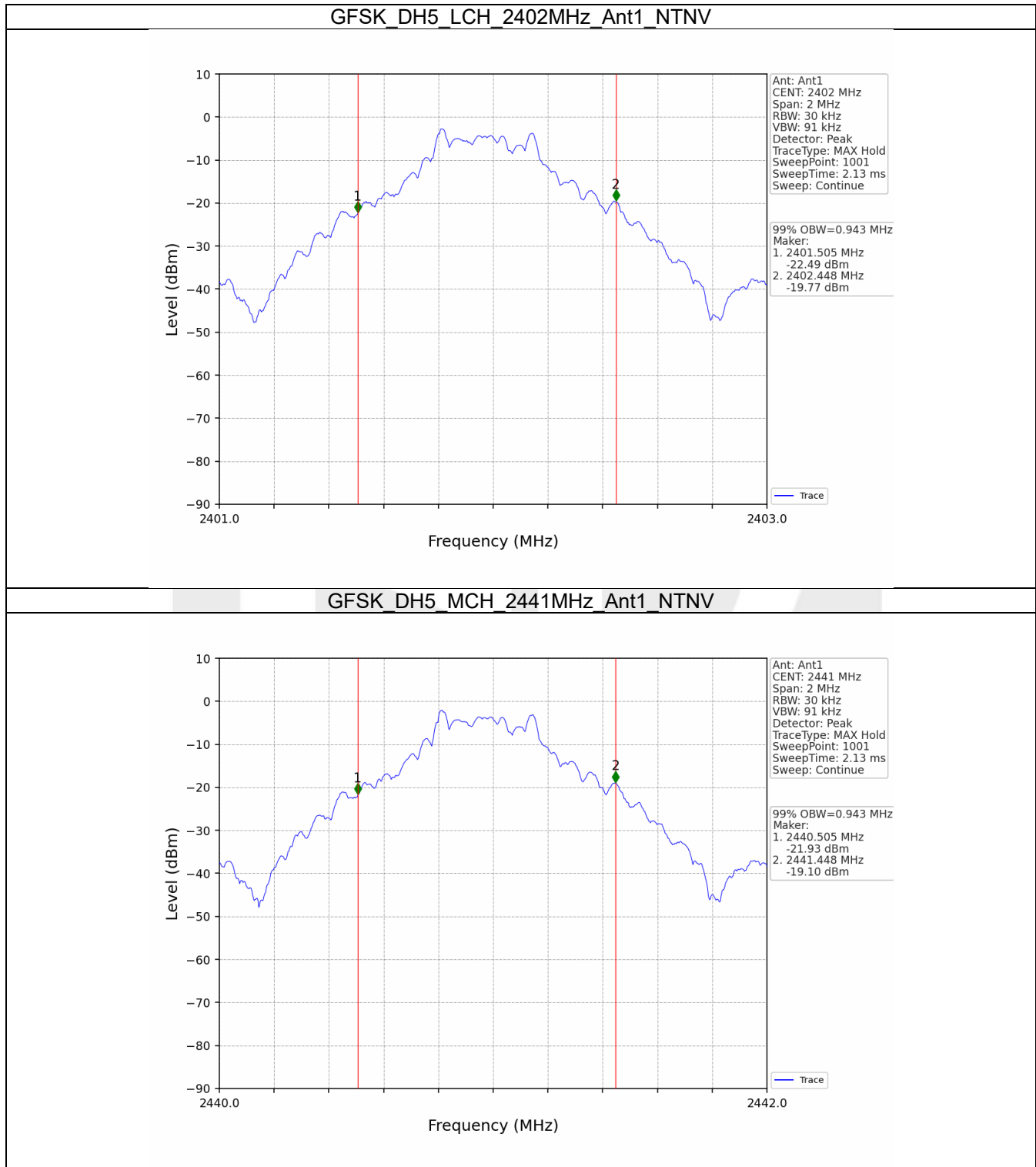
1. Bandwidth

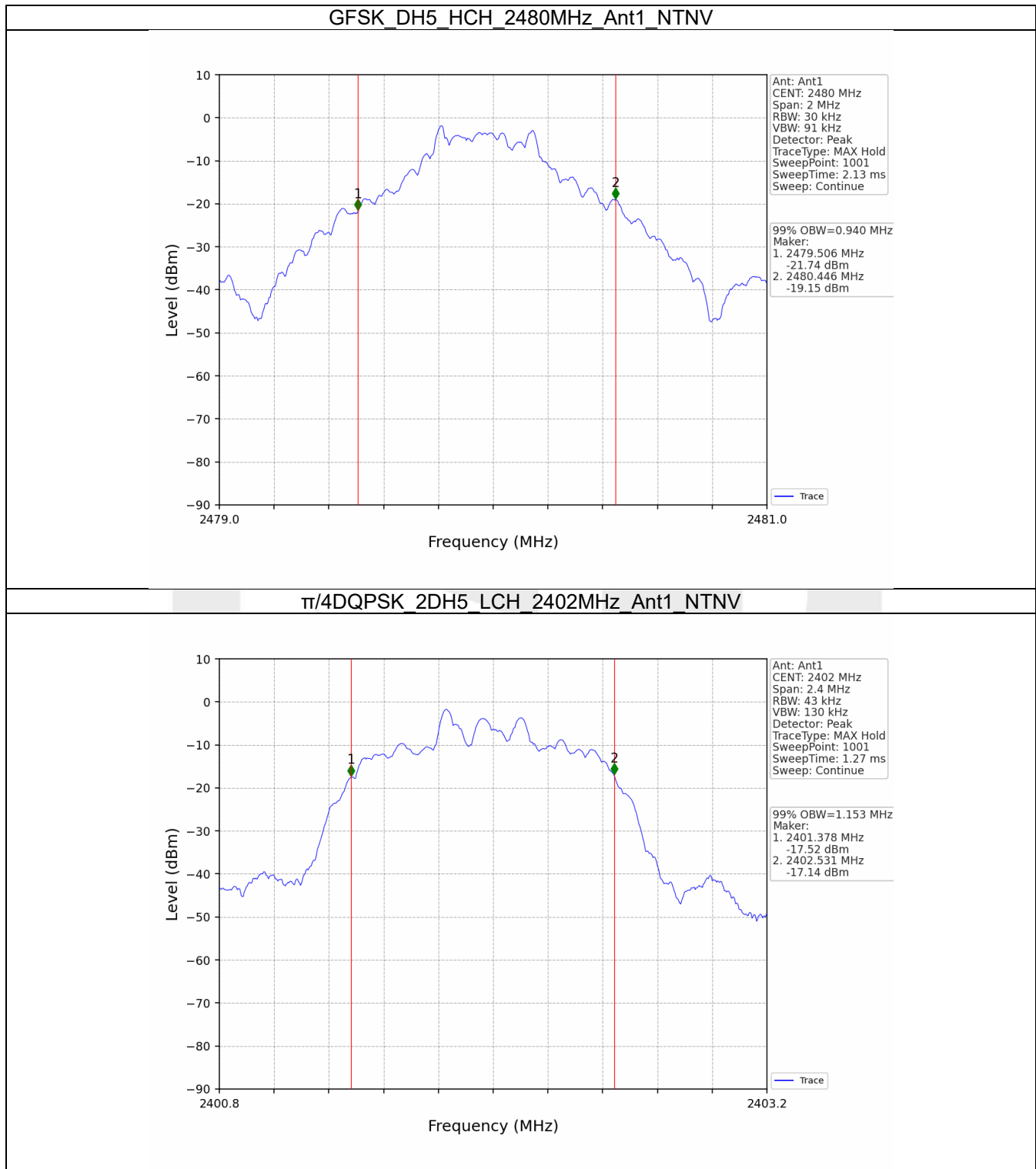
1.1 OBW

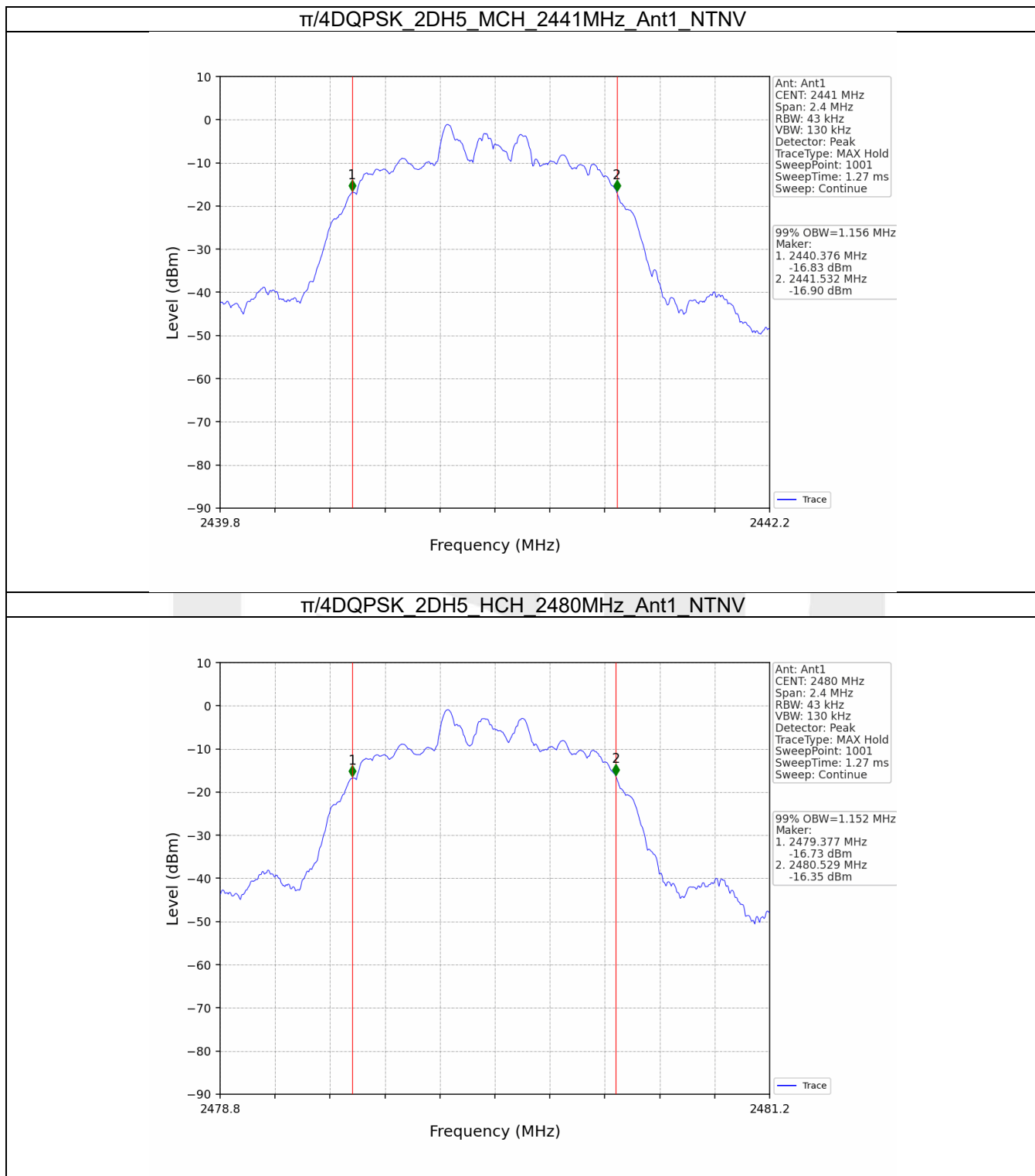
1.1.1 Test Result

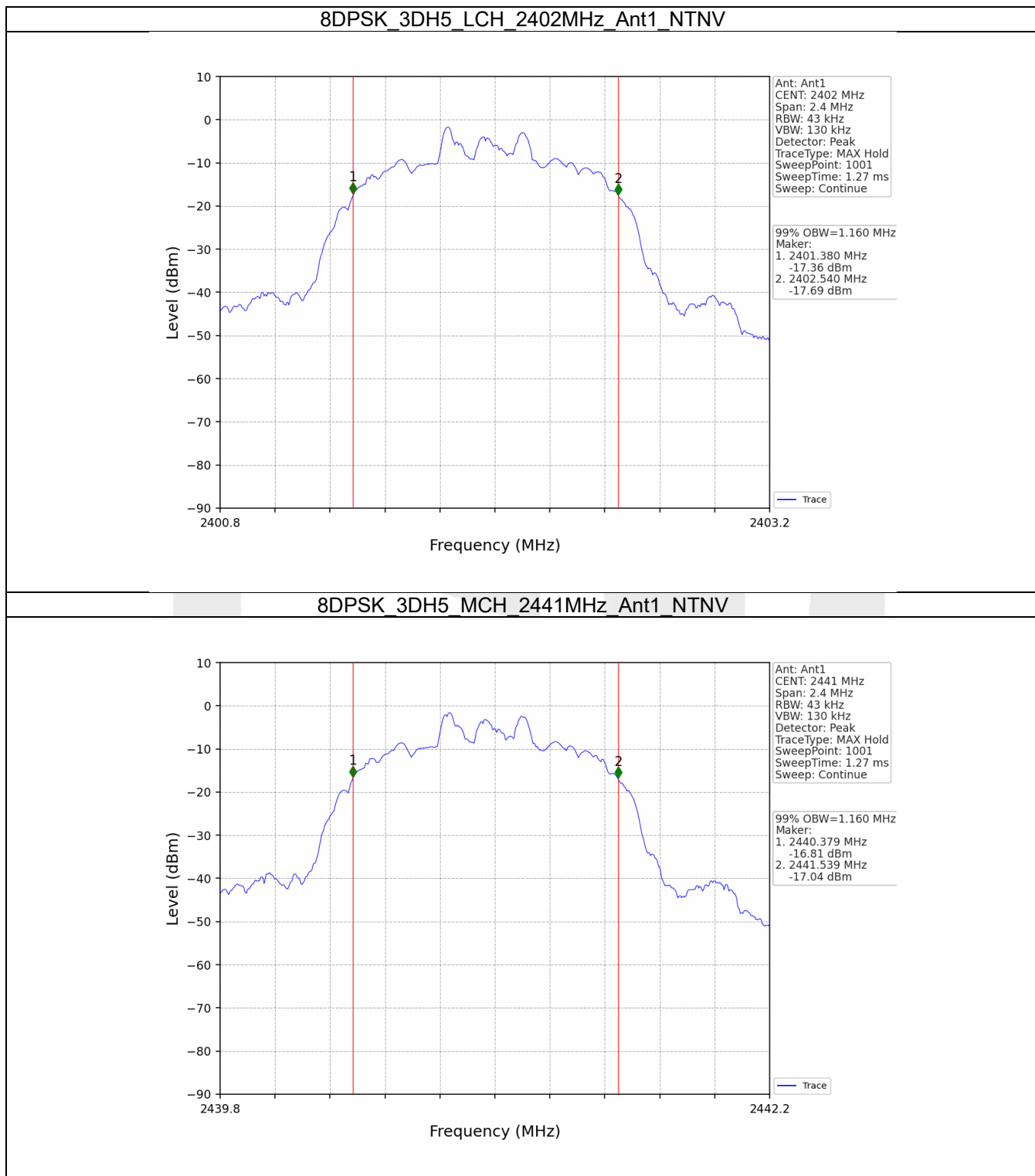
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	99% Occupied Bandwidth (MHz)	Verdict
					Result	
GFSK	SISO	2402	DH5	1	0.943	Pass
		2441	DH5	1	0.943	Pass
		2480	DH5	1	0.940	Pass
$\pi/4$ DQPSK	SISO	2402	2DH5	1	1.153	Pass
		2441	2DH5	1	1.156	Pass
		2480	2DH5	1	1.152	Pass
8DPSK	SISO	2402	3DH5	1	1.160	Pass
		2441	3DH5	1	1.160	Pass
		2480	3DH5	1	1.156	Pass

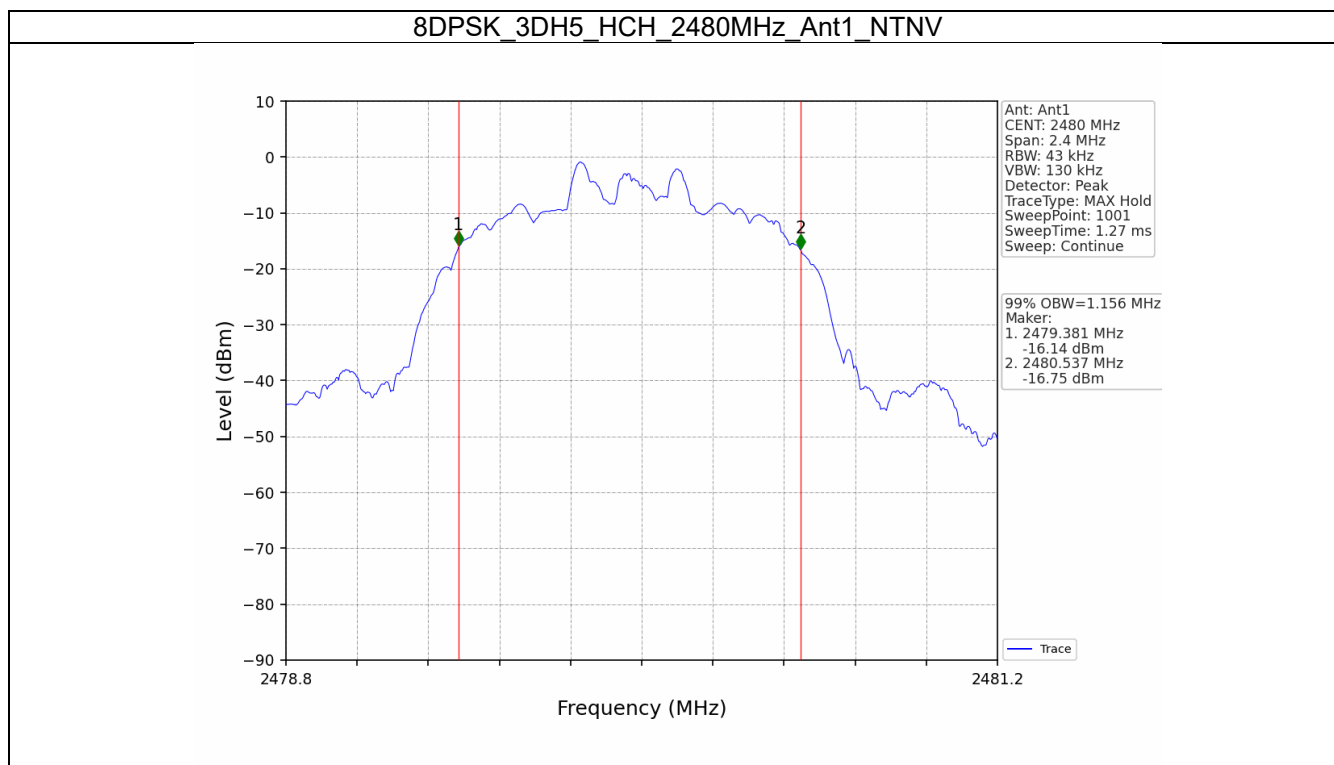
1.1.2 Test Graph









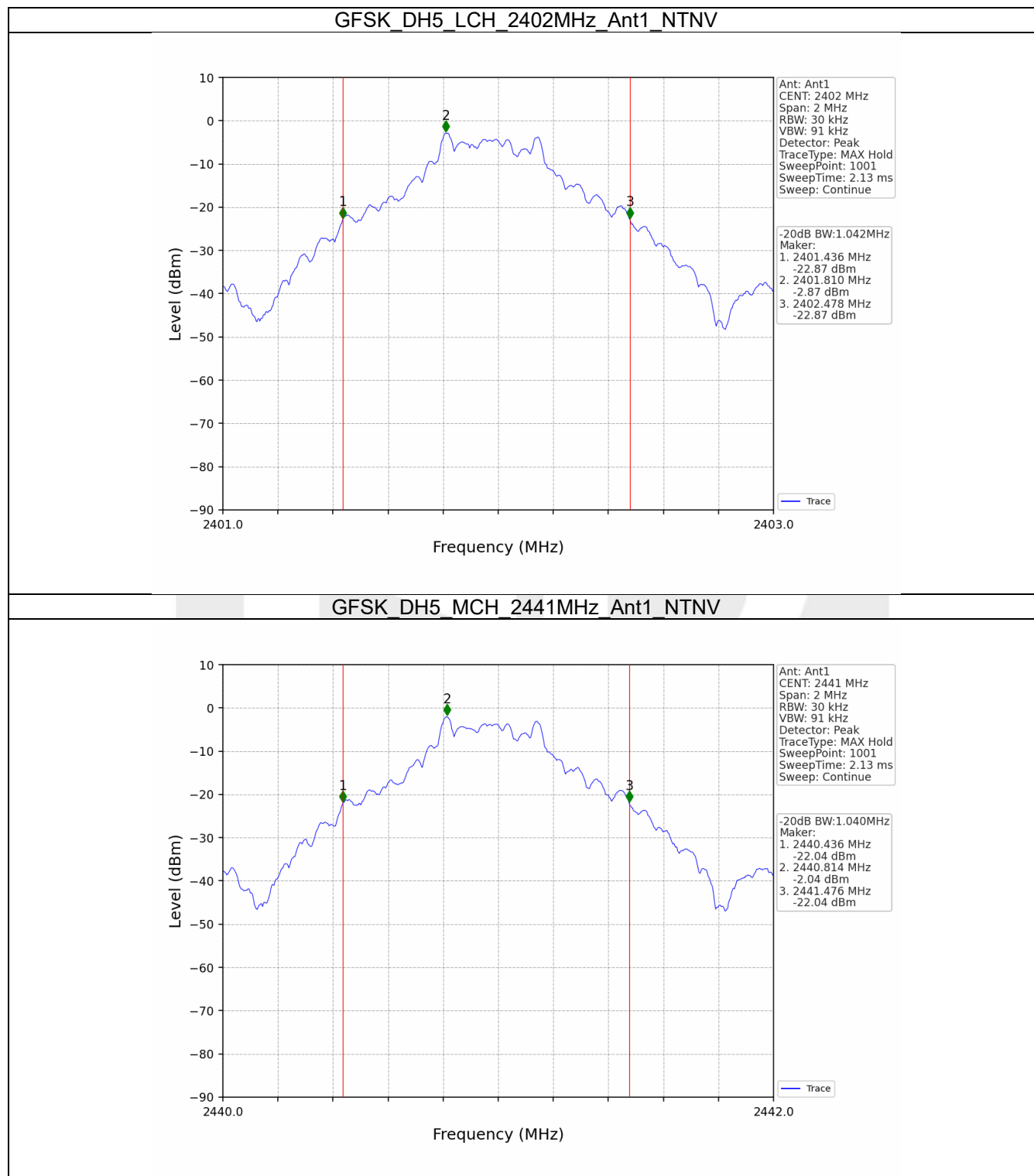


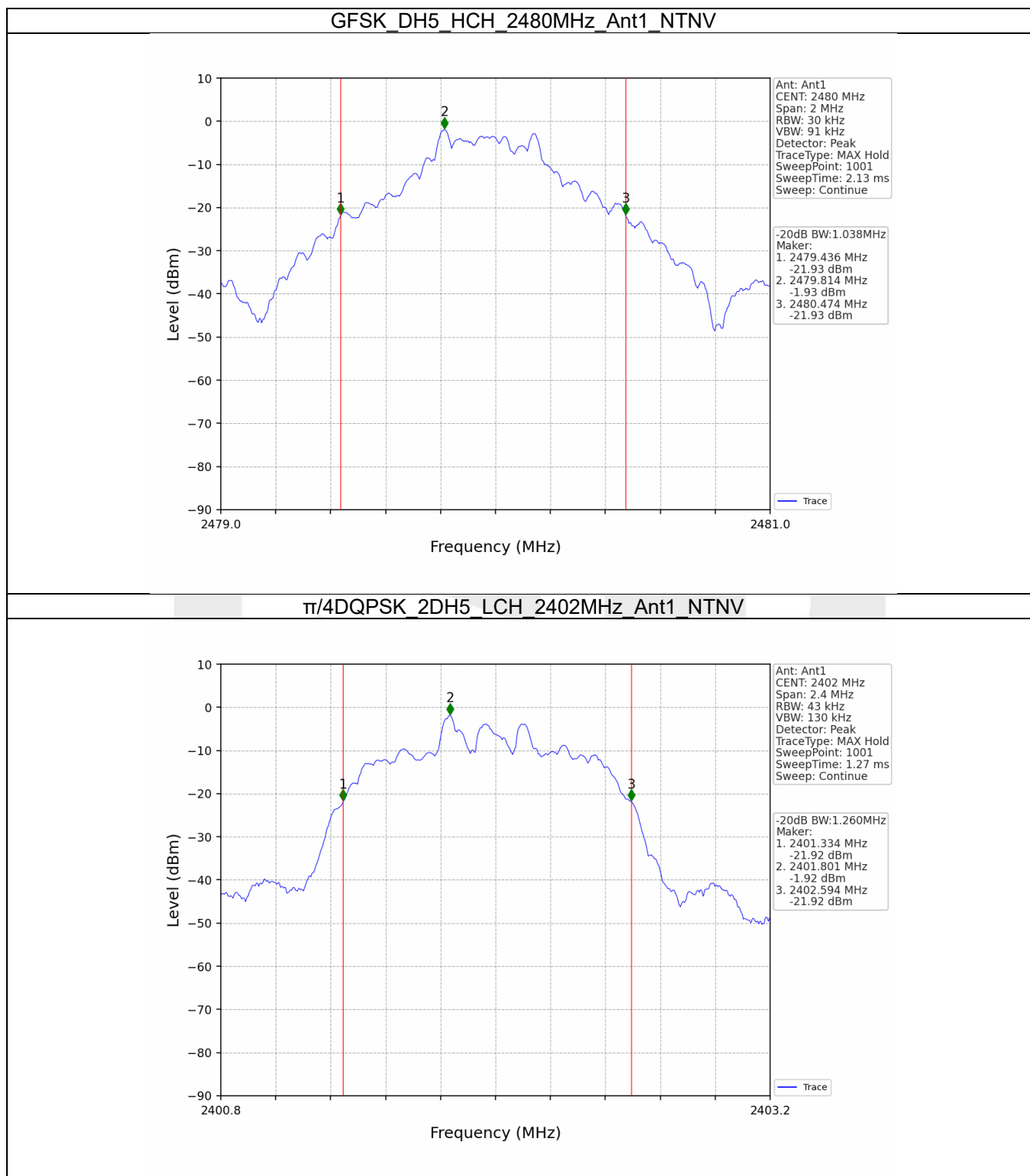
1.2 20dB BW

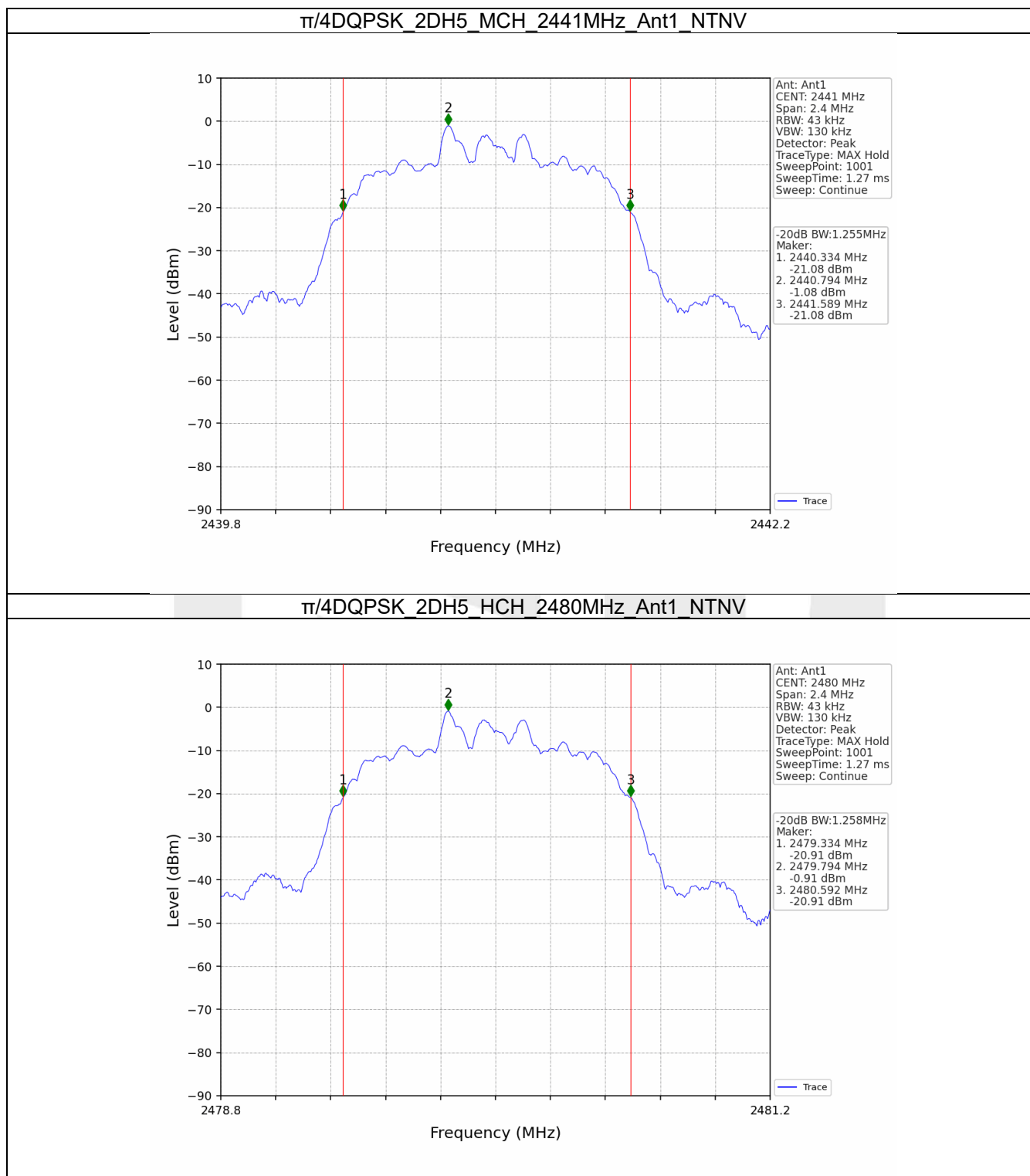
1.2.1 Test Result

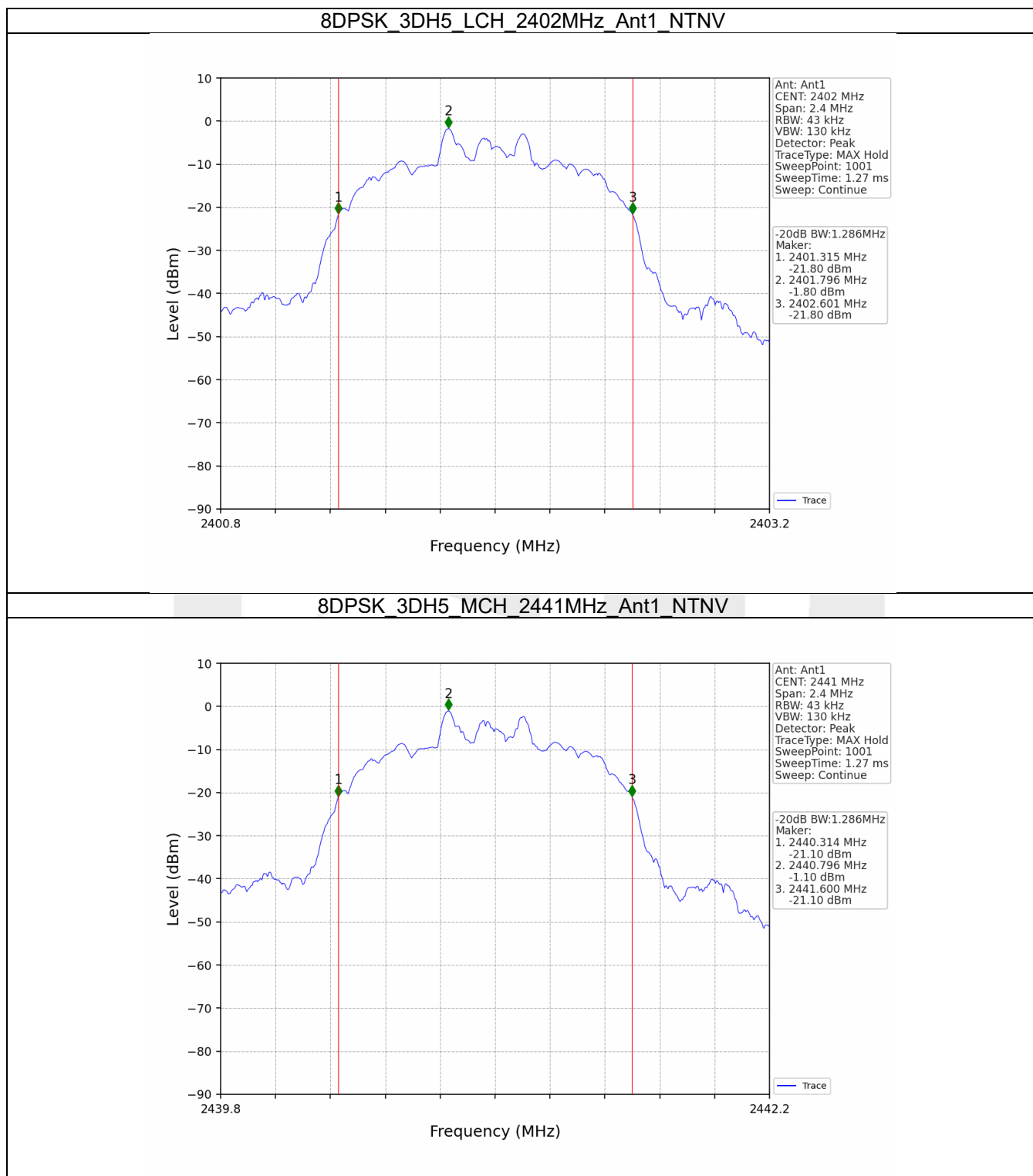
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	20dB Bandwidth (MHz)	Verdict
					Result	
GFSK	SISO	2402	DH5	1	1.042	Pass
		2441	DH5	1	1.040	Pass
		2480	DH5	1	1.038	Pass
$\pi/4$ DQPSK	SISO	2402	2DH5	1	1.260	Pass
		2441	2DH5	1	1.255	Pass
		2480	2DH5	1	1.258	Pass
8DPSK	SISO	2402	3DH5	1	1.286	Pass
		2441	3DH5	1	1.286	Pass
		2480	3DH5	1	1.286	Pass

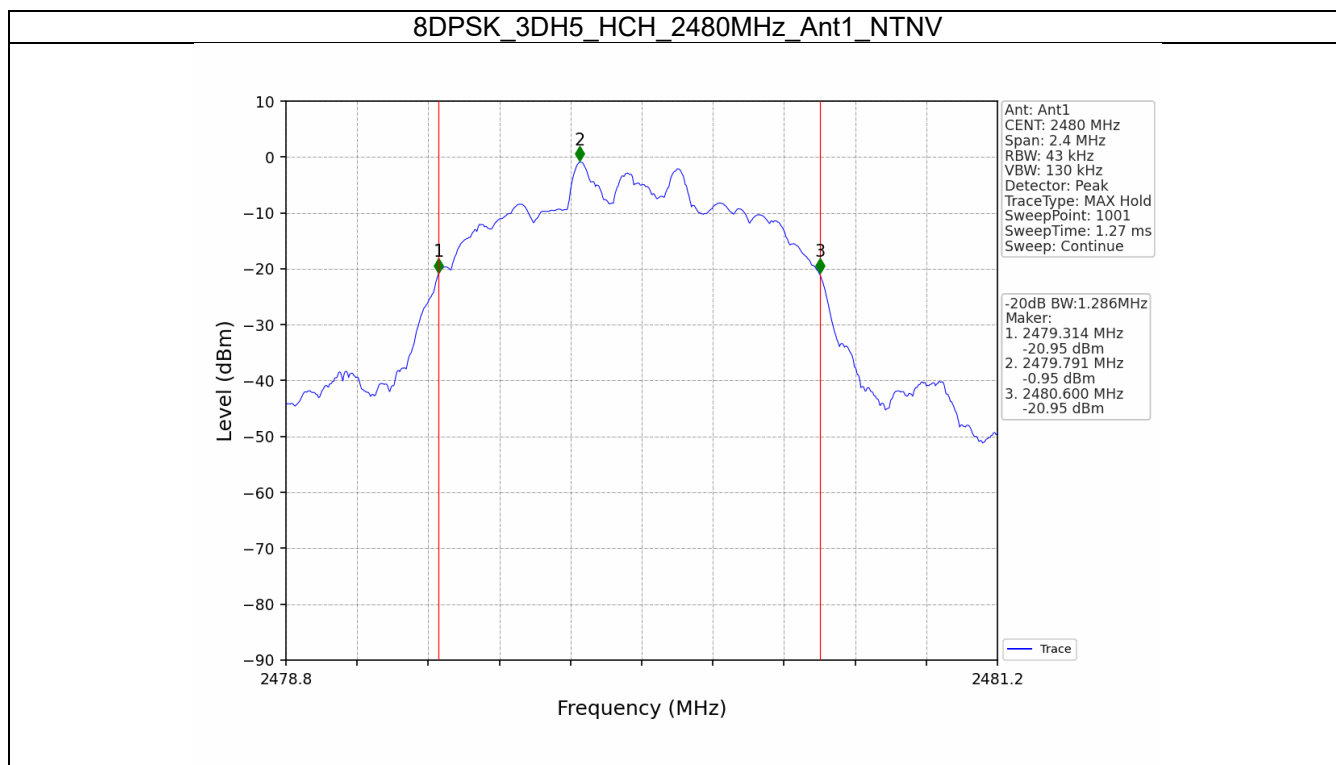
1.2.2 Test Graph











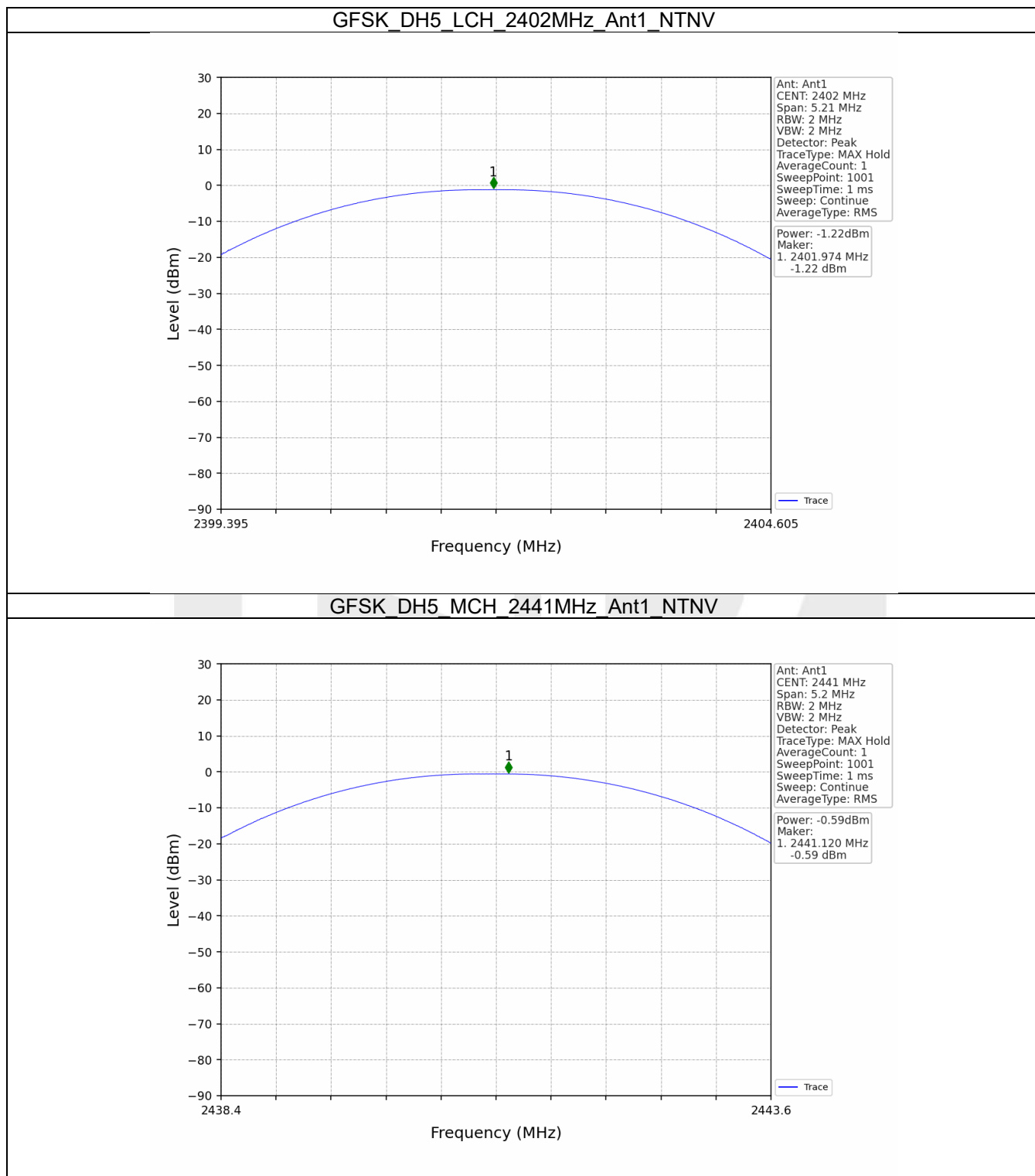
2. Maximum Conducted Output Power

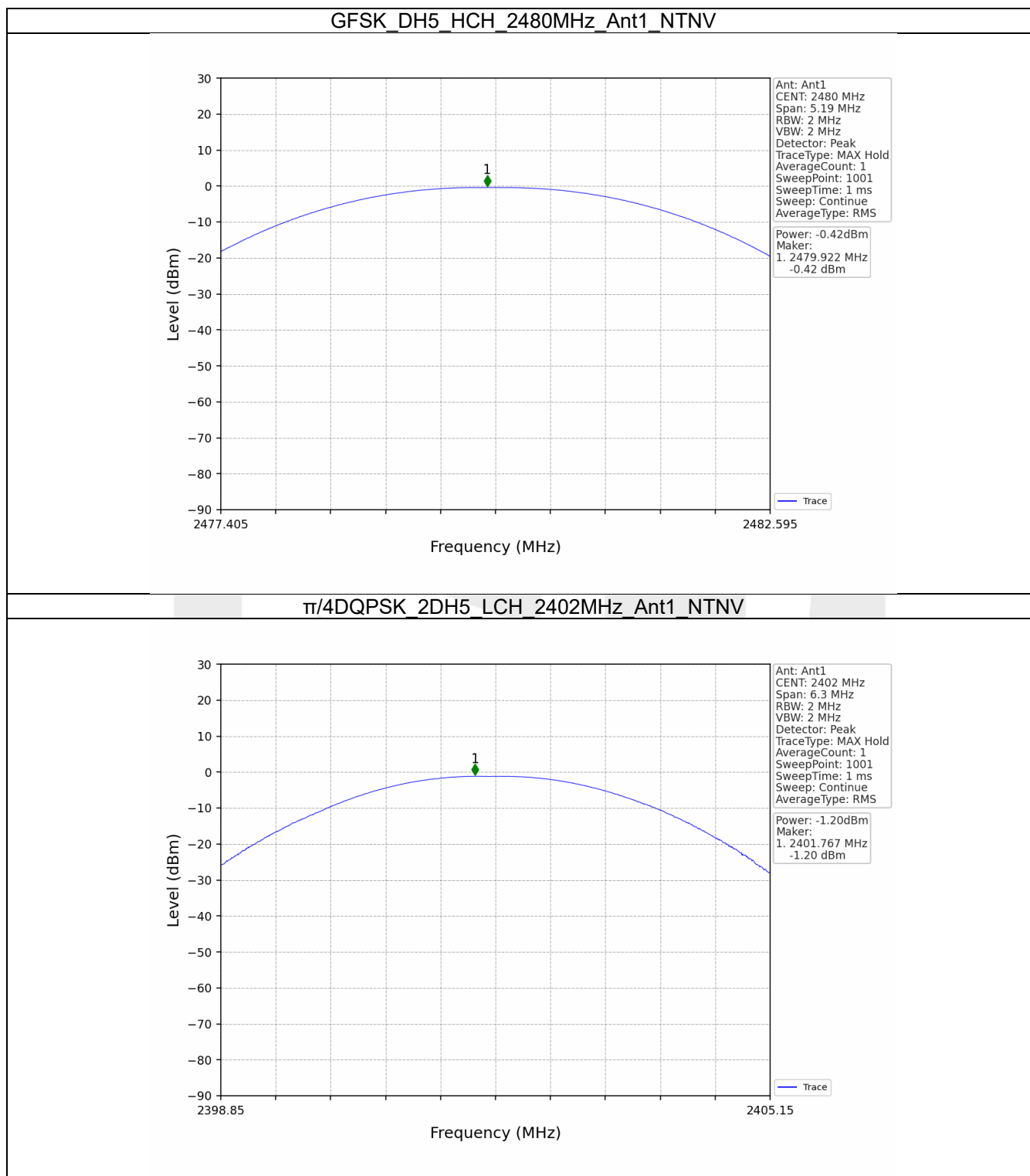
2.1 Power

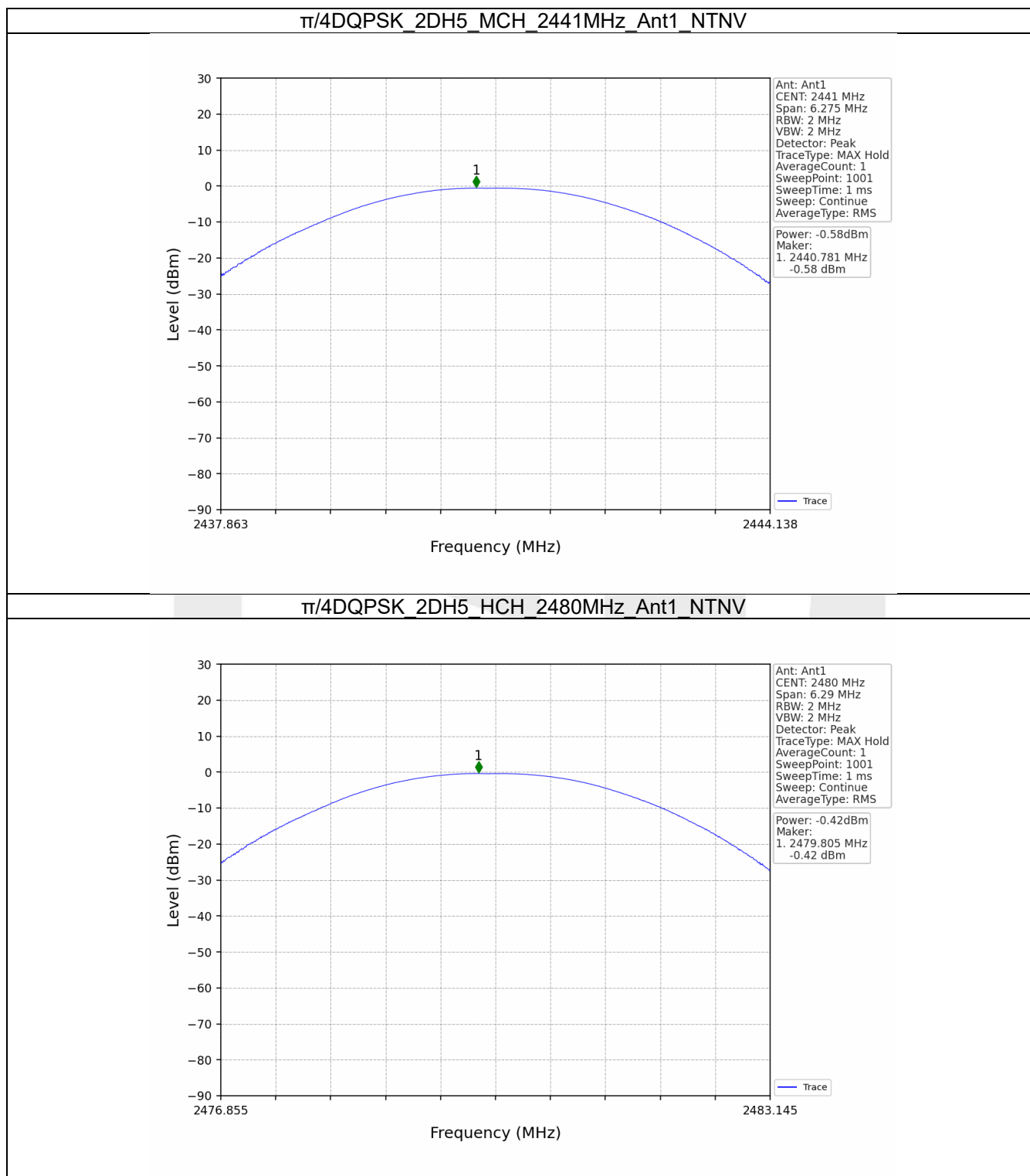
2.1.1 Test Result

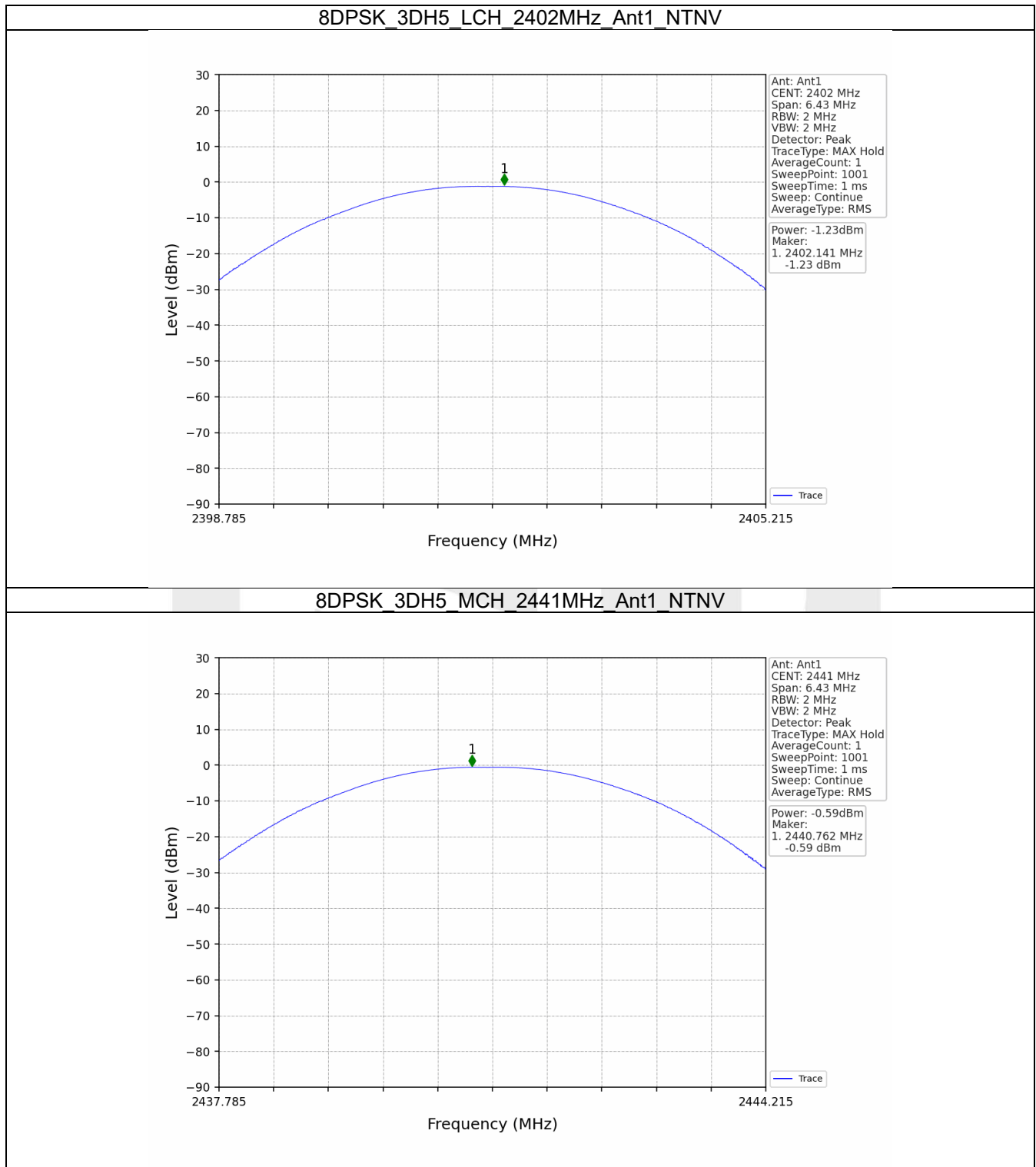
Mode	TX Type	Frequency (MHz)	Packet Type	Maximum Peak Conducted Output Power (dBm)		Verdict
				ANT1	Limit	
GFSK	SISO	2402	DH5	-1.22	≤ 20.97	Pass
		2441	DH5	-0.59	≤ 20.97	Pass
		2480	DH5	-0.42	≤ 20.97	Pass
$\pi/4$ DQPSK	SISO	2402	2DH5	-1.20	≤ 20.97	Pass
		2441	2DH5	-0.58	≤ 20.97	Pass
		2480	2DH5	-0.42	≤ 20.97	Pass
8DPSK	SISO	2402	3DH5	-1.23	≤ 20.97	Pass
		2441	3DH5	-0.59	≤ 20.97	Pass
		2480	3DH5	-0.41	≤ 20.97	Pass

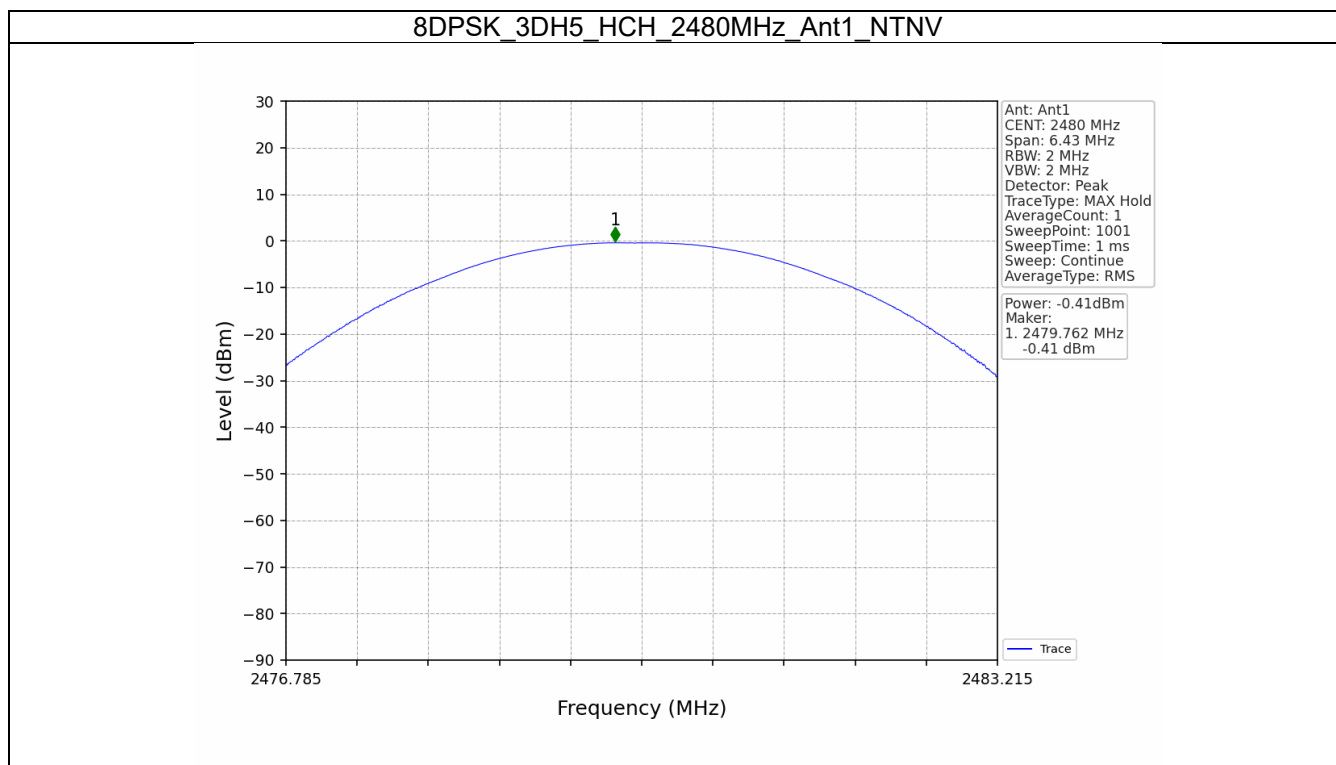
2.1.2 Test Graph











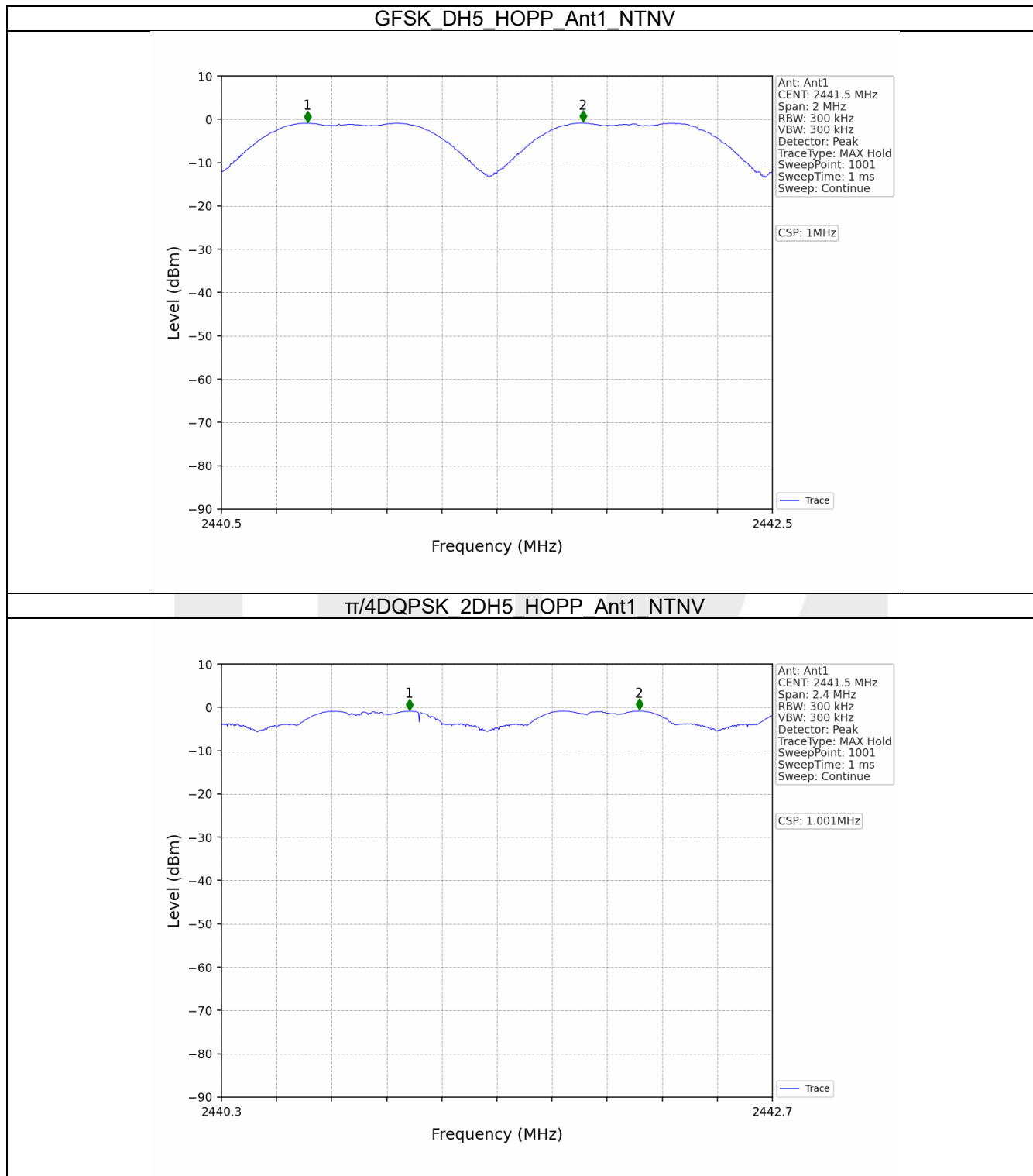
3. Carrier Frequency Separation

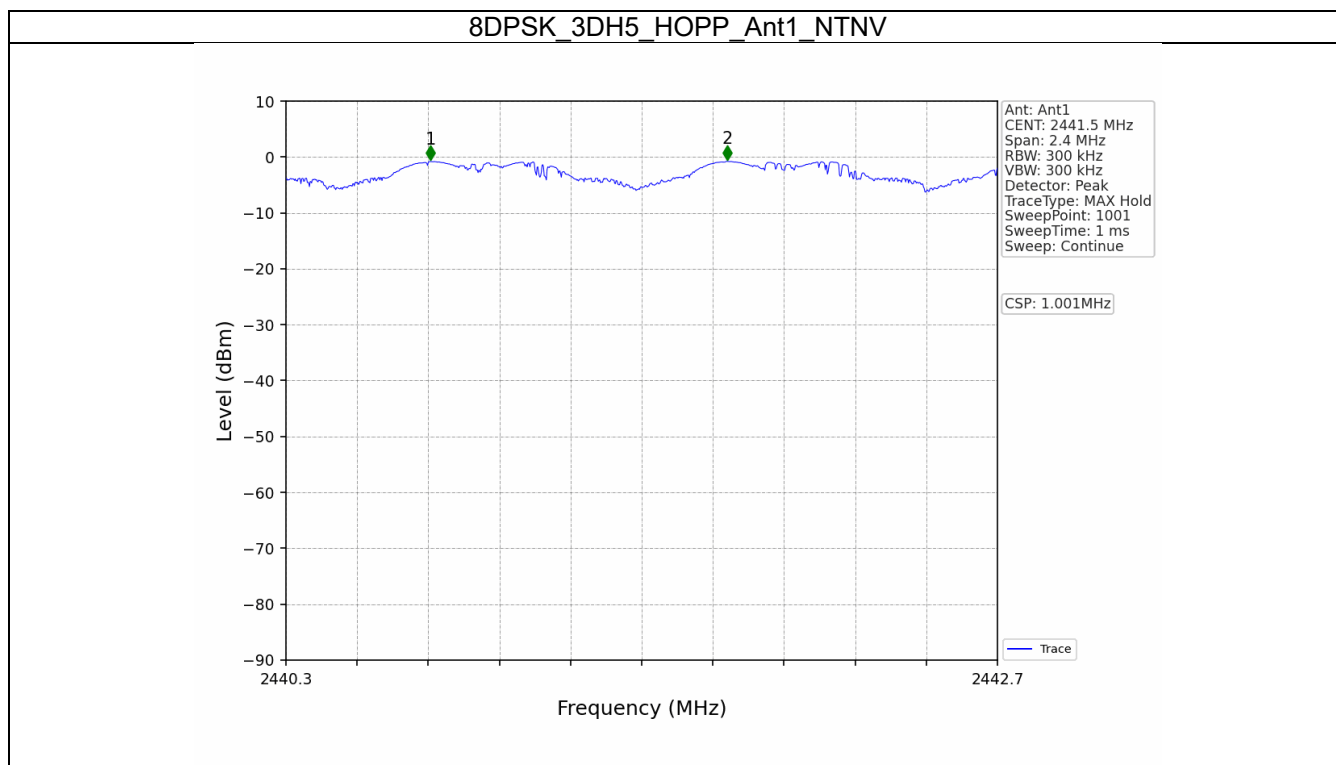
3.1 Ant1

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	1.042	≥ 0.695	Pass
$\pi/4$ DQPSK	SISO	HOPP	2DH5	1.001	1.260	≥ 0.84	Pass
8DPSK	SISO	HOPP	3DH5	1.001	1.286	≥ 0.857	Pass

3.1.2 Test Graph





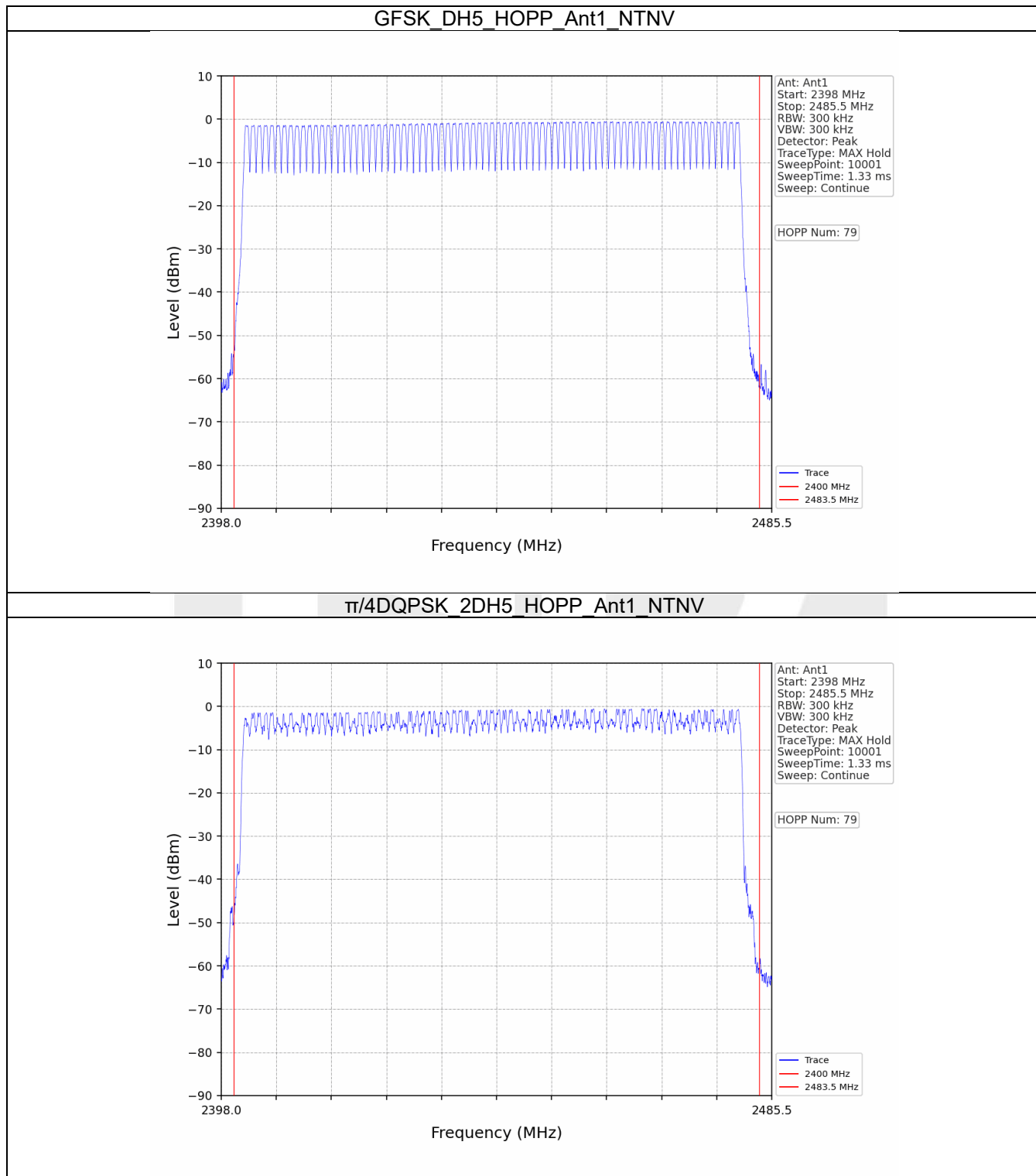
4. Number of Hopping Frequencies

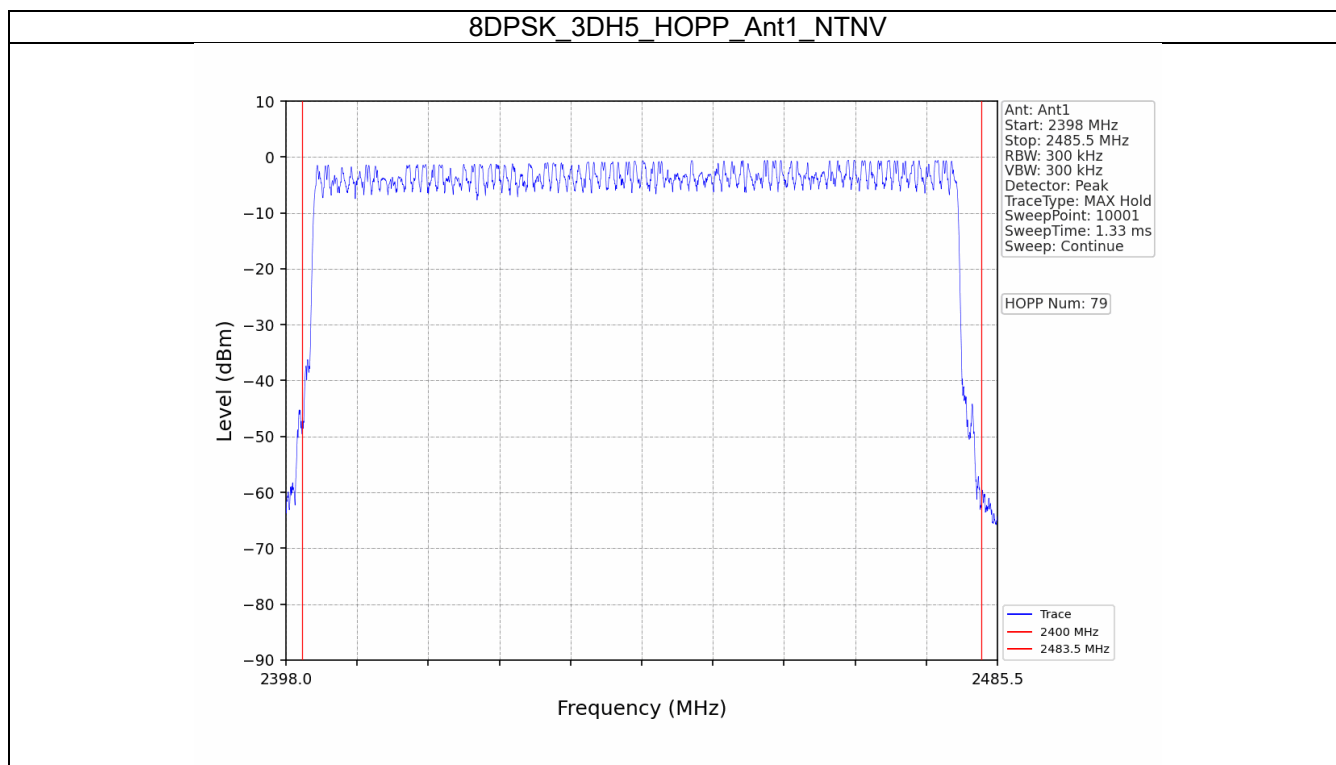
4.1 HoppNum

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





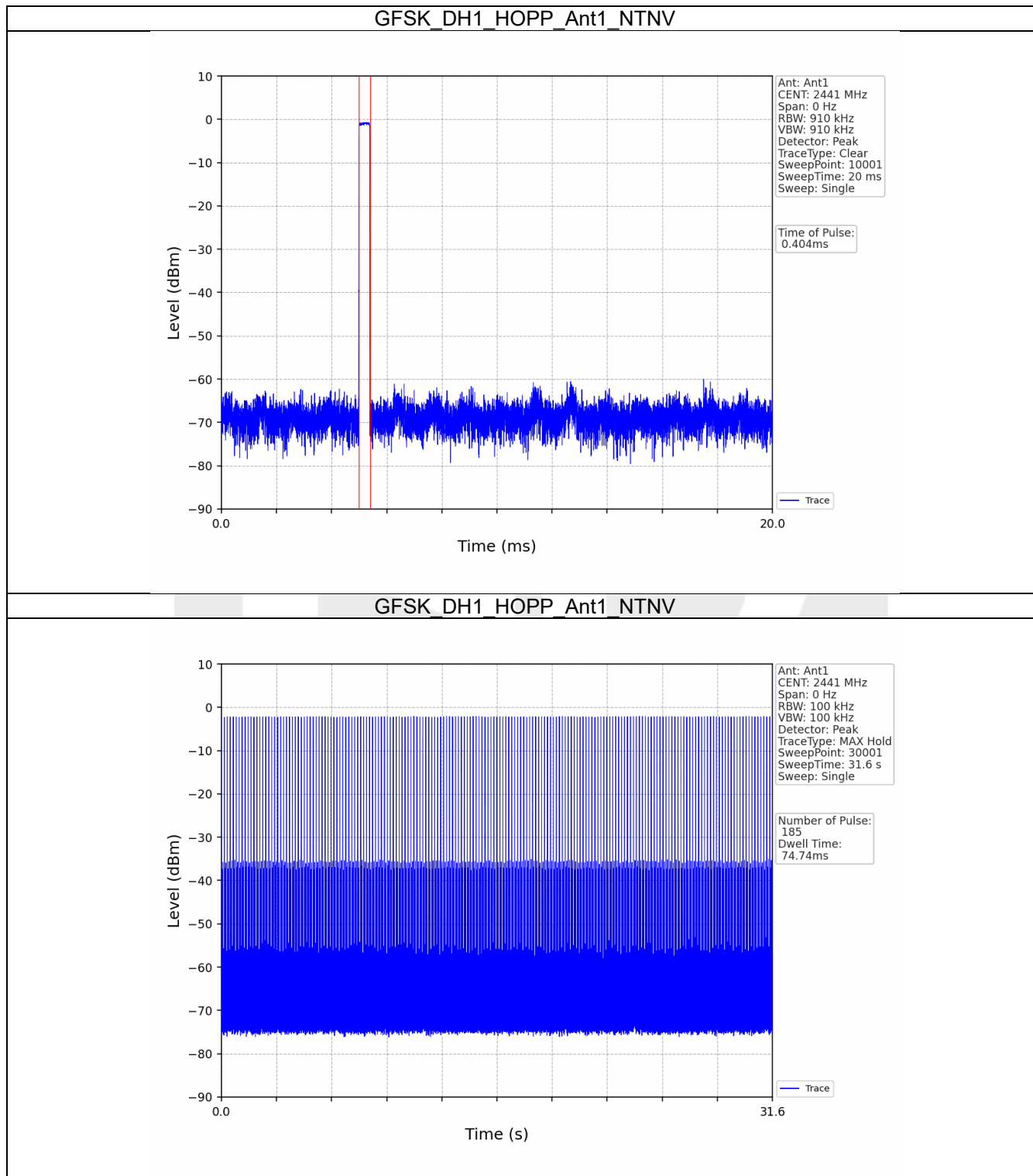
5. Time of Occupancy (Dwell Time)

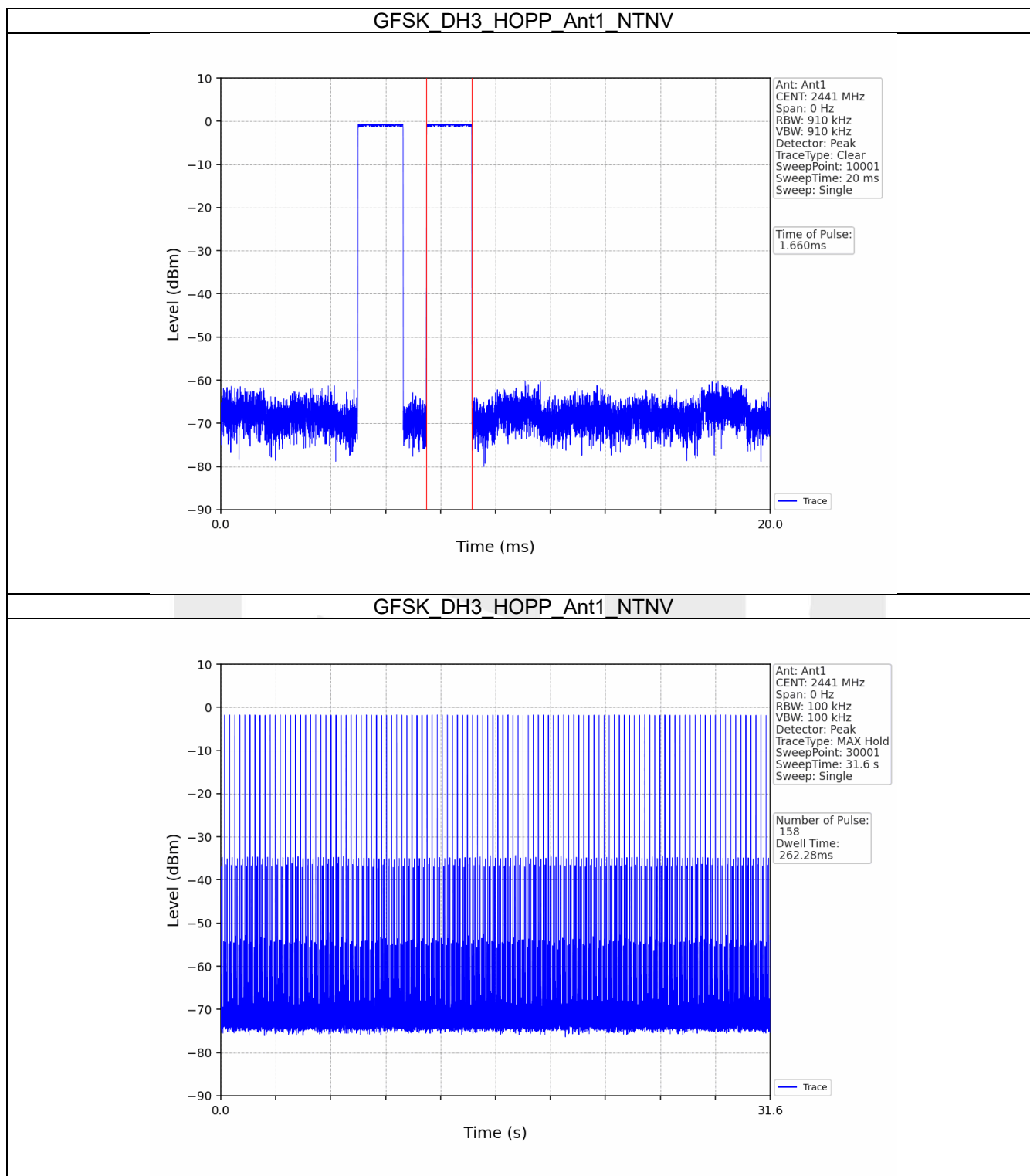
5.1 Ant1

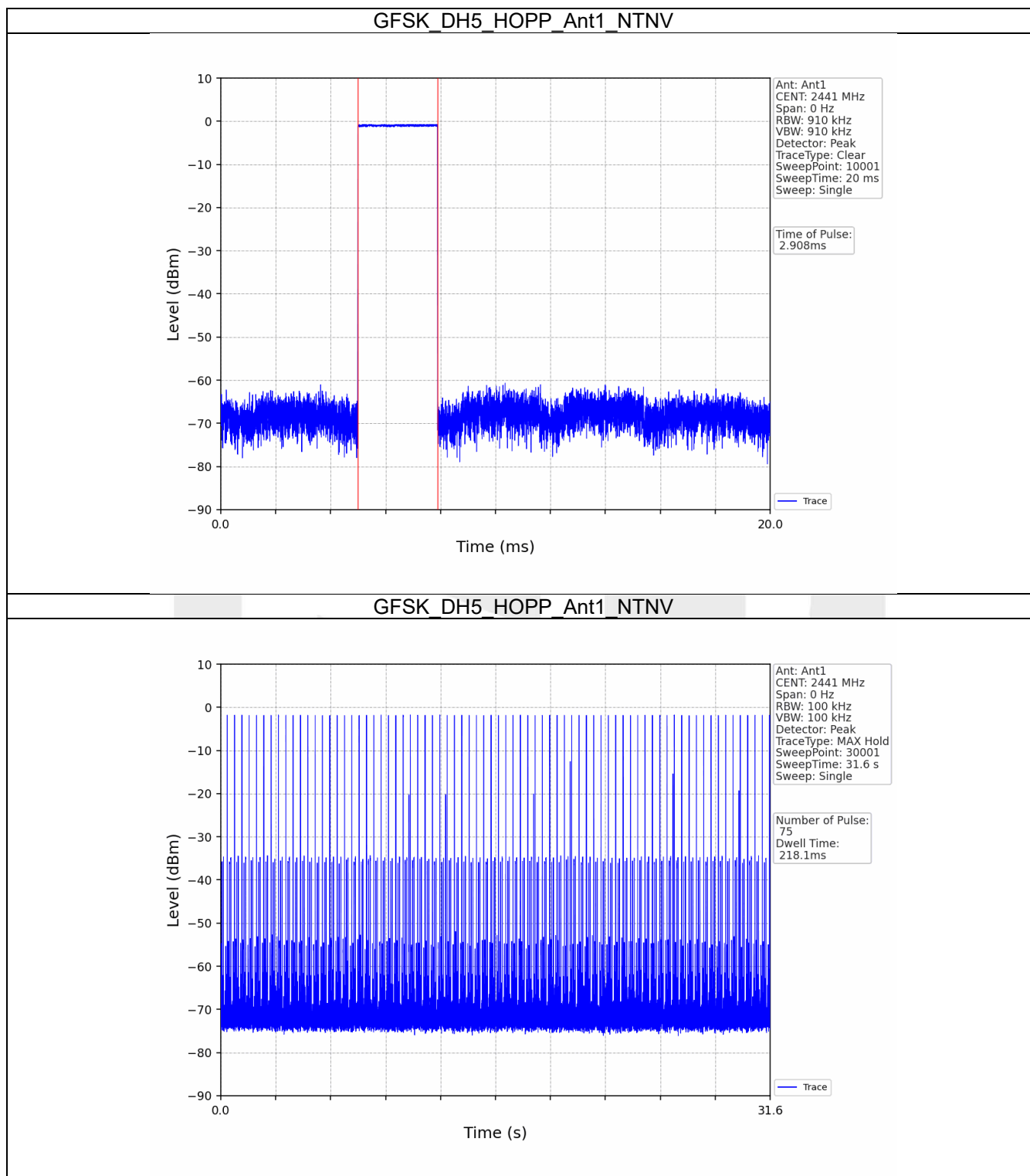
5.1.1 Test Result

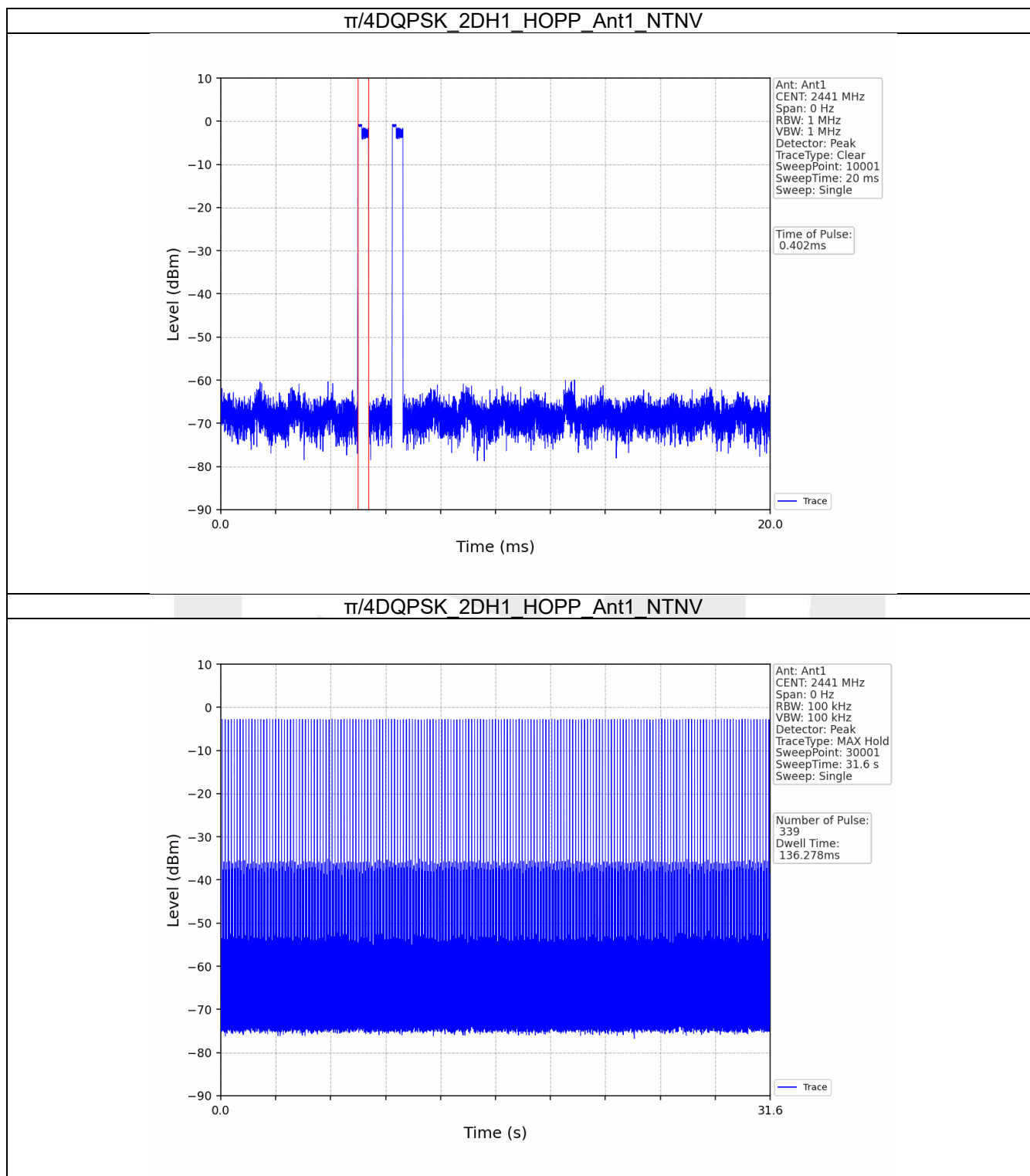
Ant1									
Mode	TX Type	Frequency (MHz)	Packet Type	Duration of Single Pulse (ms)	Observation Period (s)	Num of Pulse in Observation Period	Dwell Time (ms)	Limit (ms)	Verdict
GFSK	SISO	HOPP	DH1	0.404	31.600	185	74.740	<=400	Pass
			DH3	1.660	31.600	158	262.280	<=400	Pass
			DH5	2.908	31.600	75	218.100	<=400	Pass
$\pi/4$ DQPSK	SISO	HOPP	2DH1	0.402	31.600	339	136.278	<=400	Pass
			2DH3	1.654	31.600	164	271.256	<=400	Pass
			2DH5	2.902	31.600	105	304.710	<=400	Pass
8DPSK	SISO	HOPP	3DH1	0.400	31.600	332	132.800	<=400	Pass
			3DH3	1.652	31.600	161	265.972	<=400	Pass
			3DH5	2.902	31.600	78	226.356	<=400	Pass

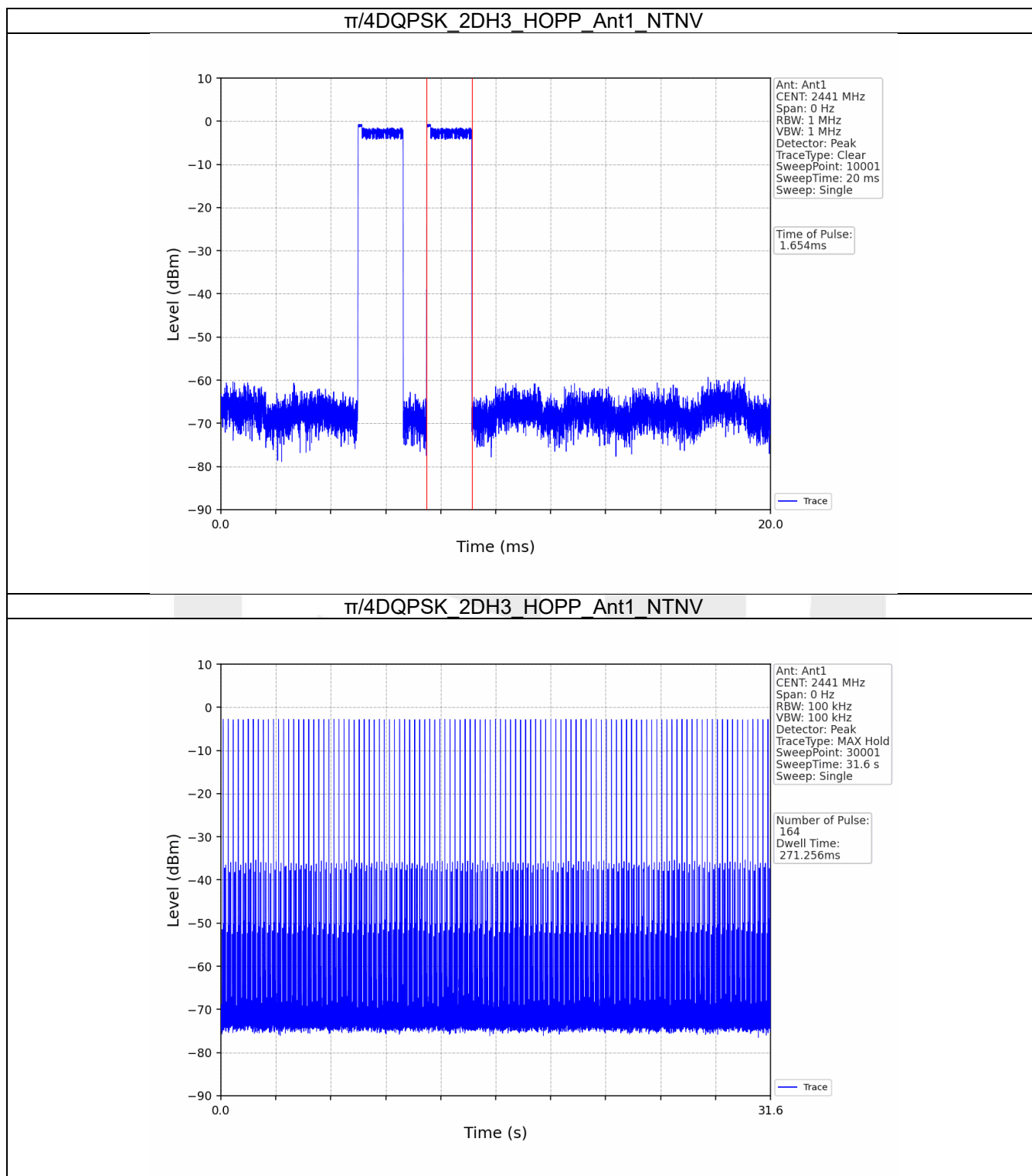
5.1.2 Test Graph

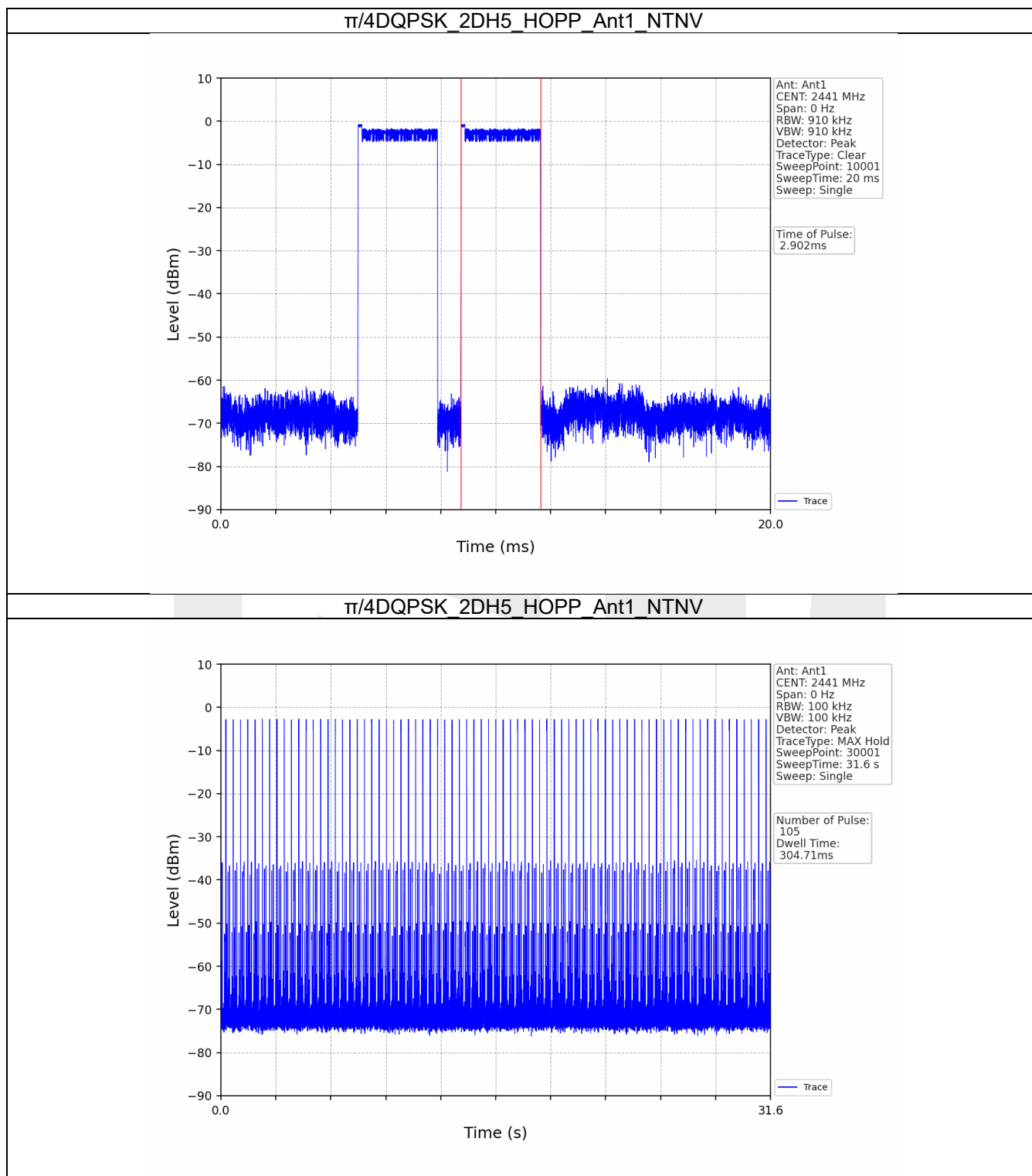


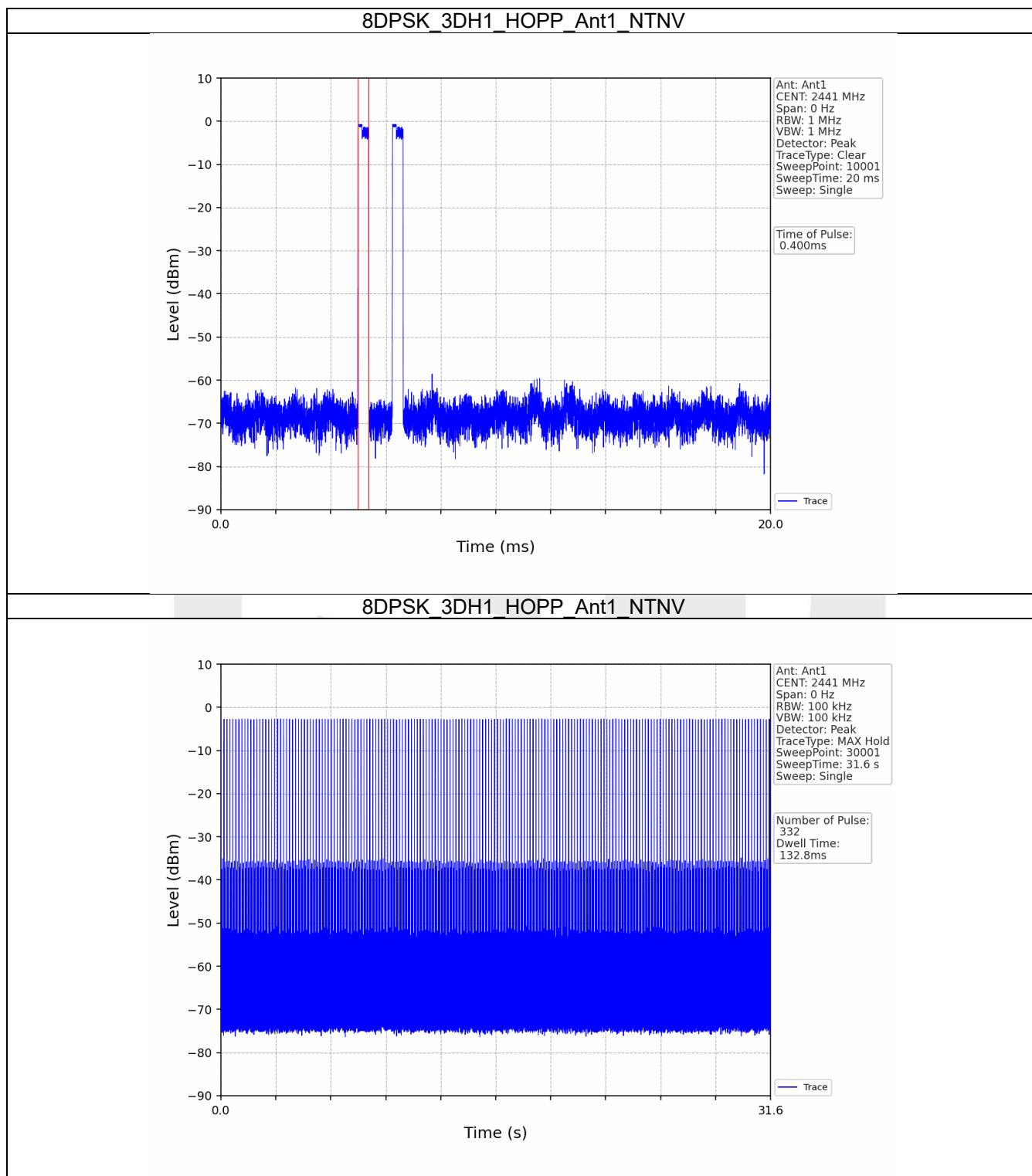


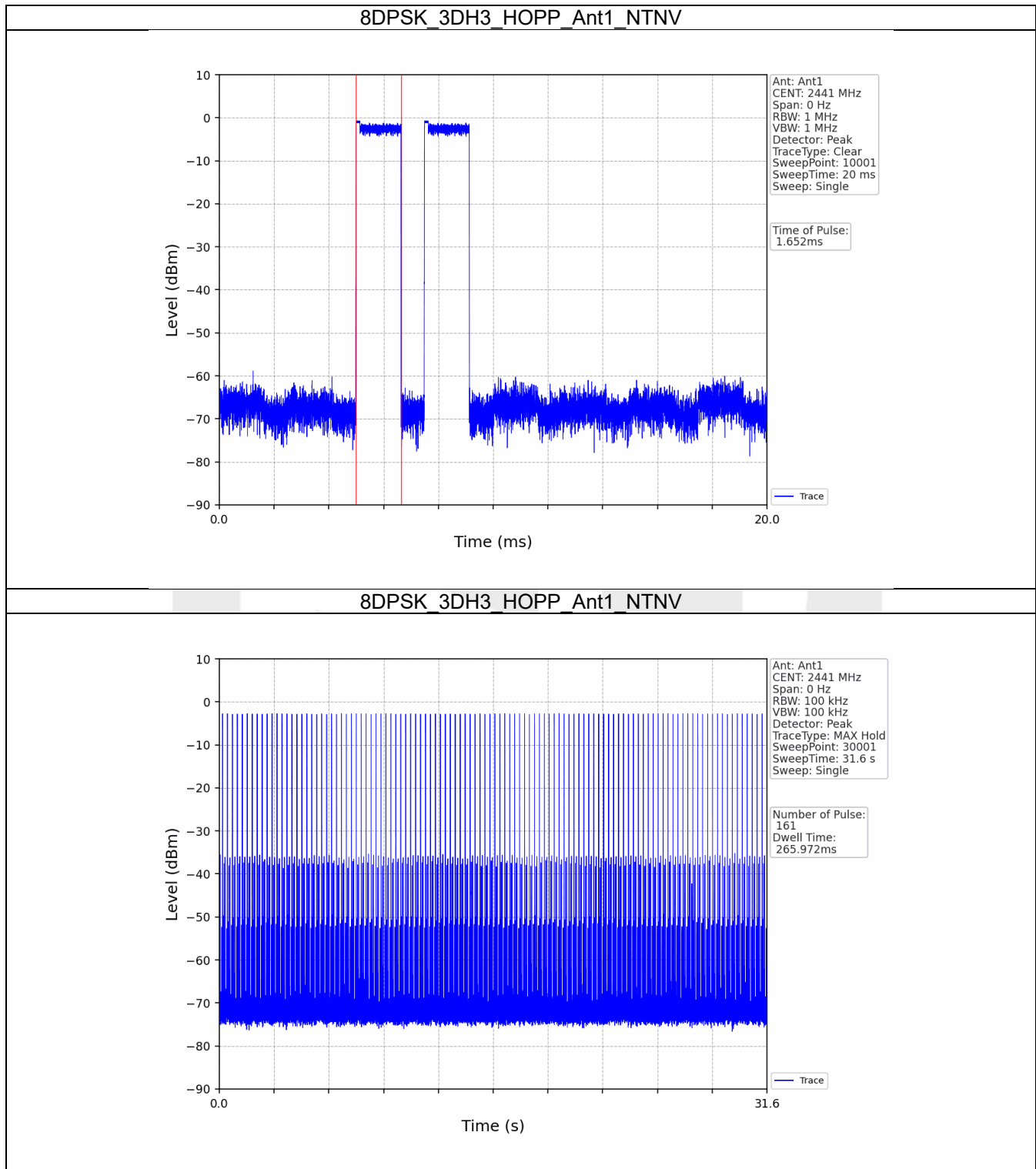


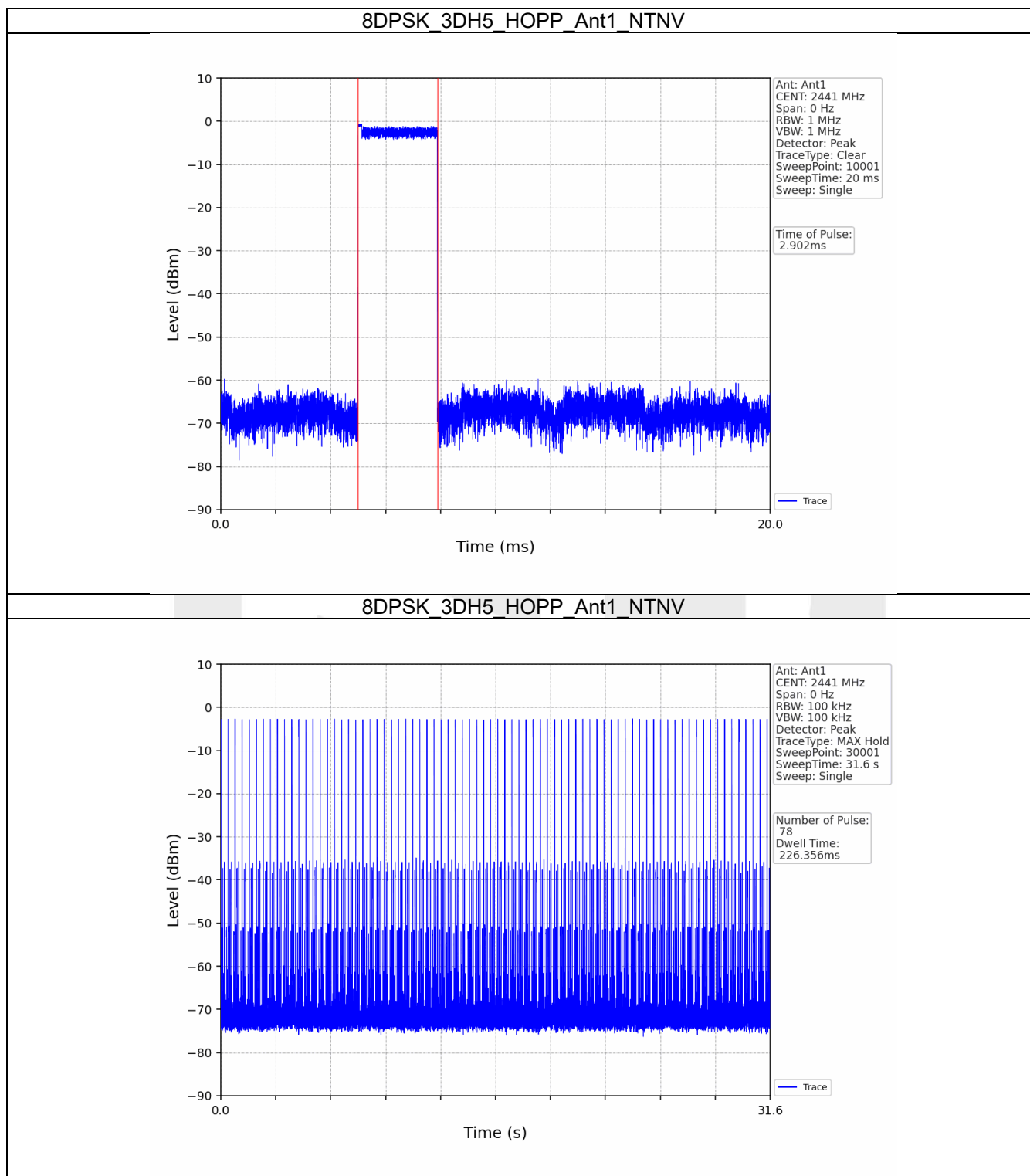












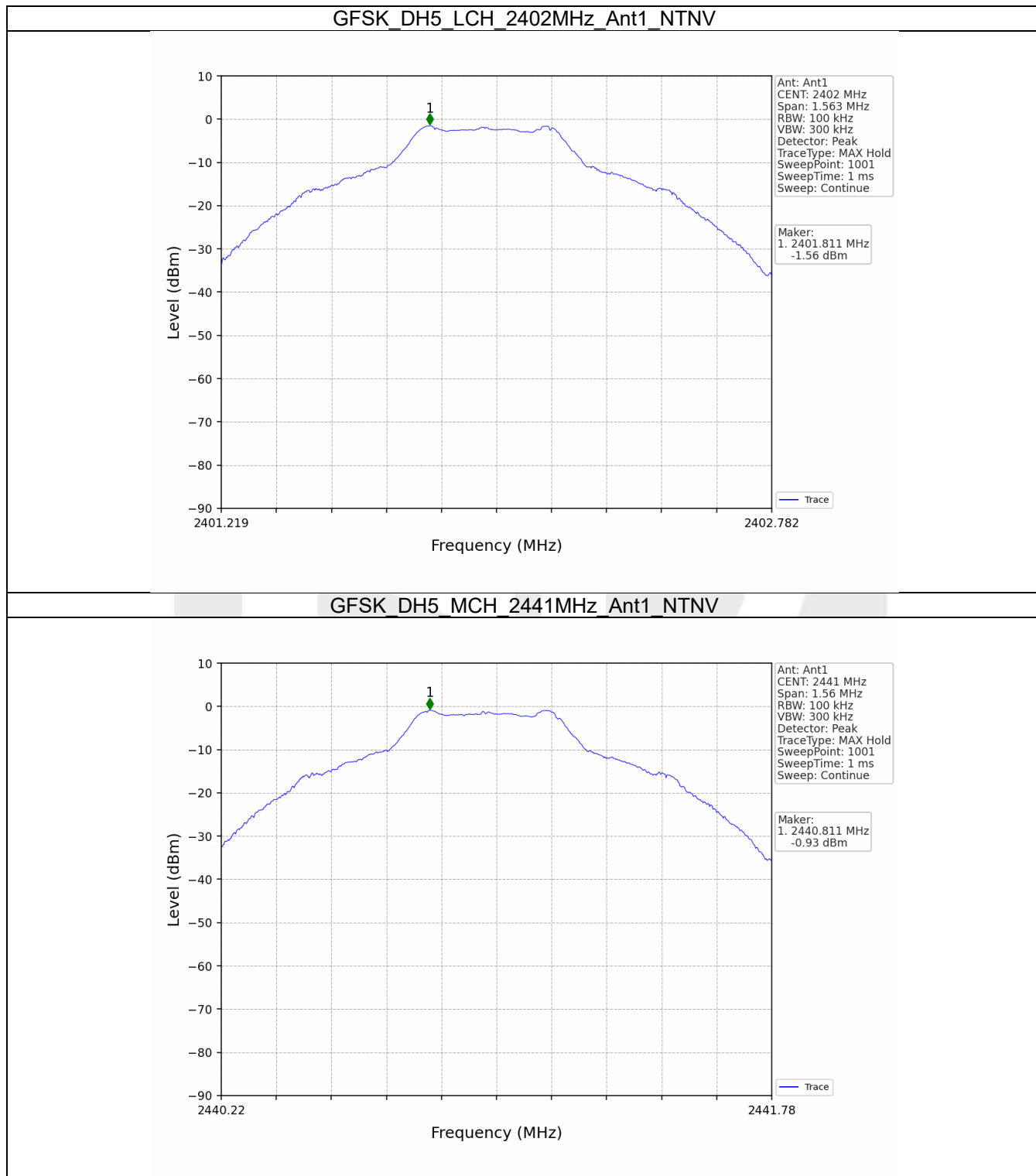
6. Unwanted Emissions In Non-restricted Frequency Bands

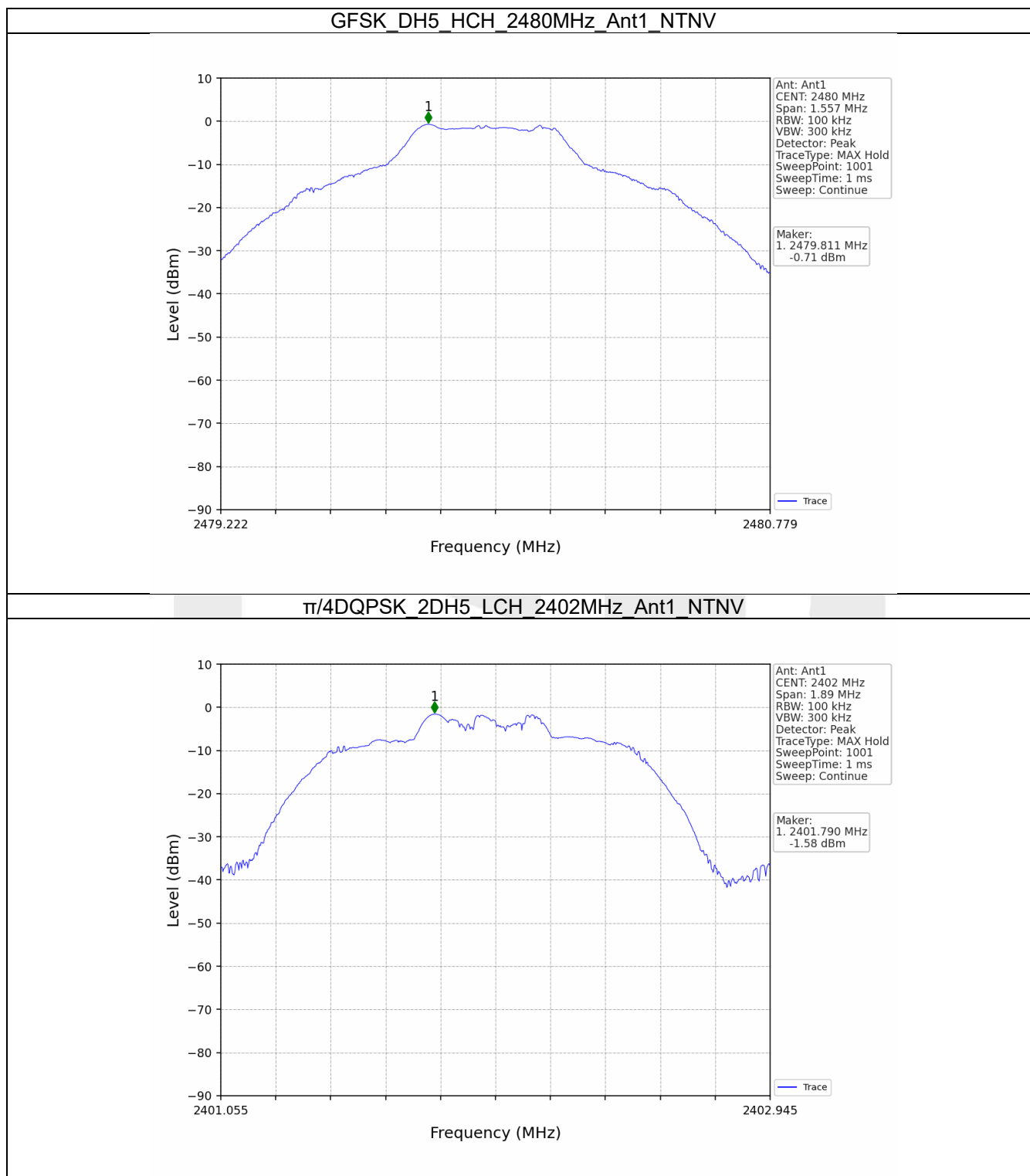
6.1 Ref

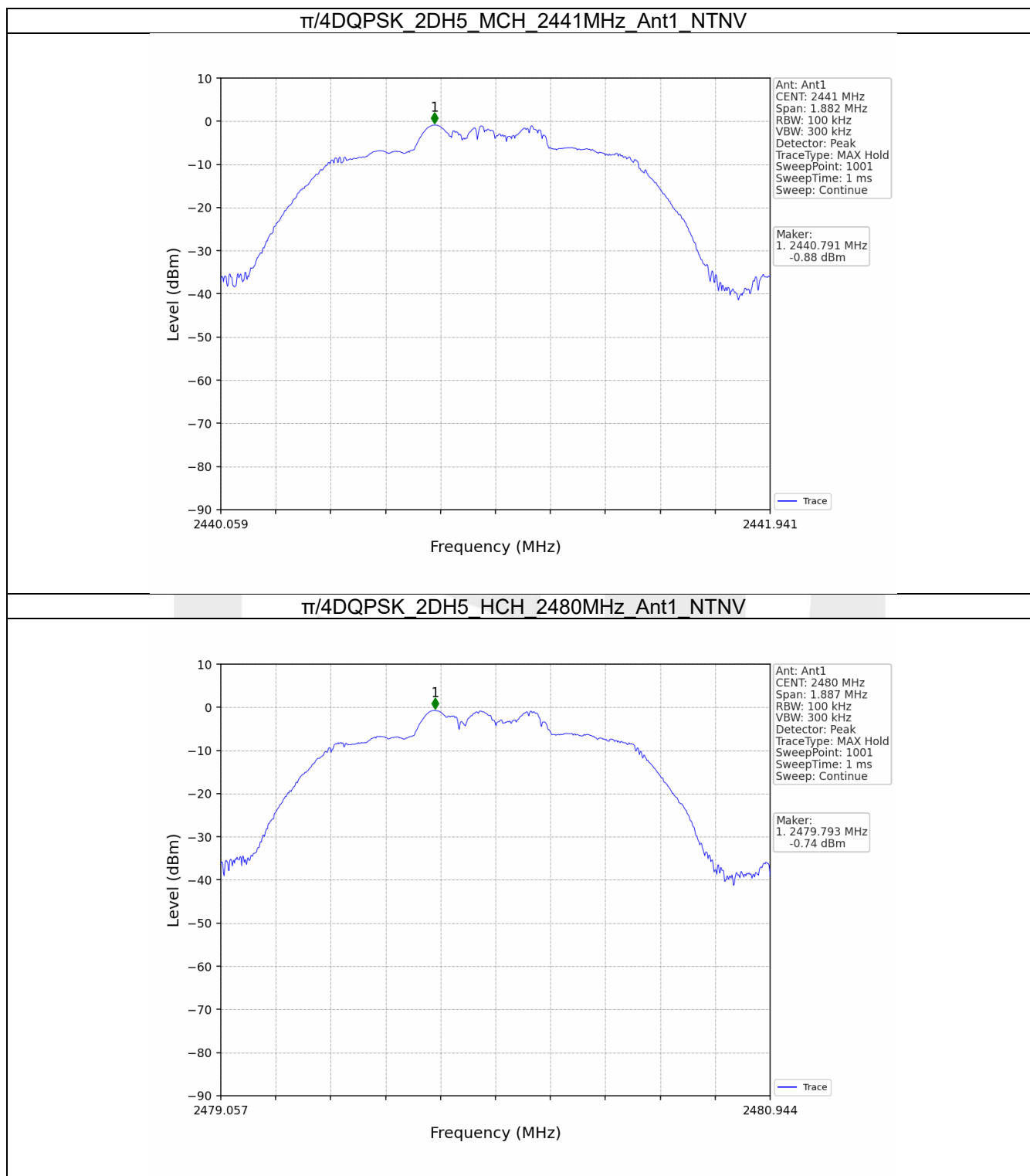
6.1.1 Test Result

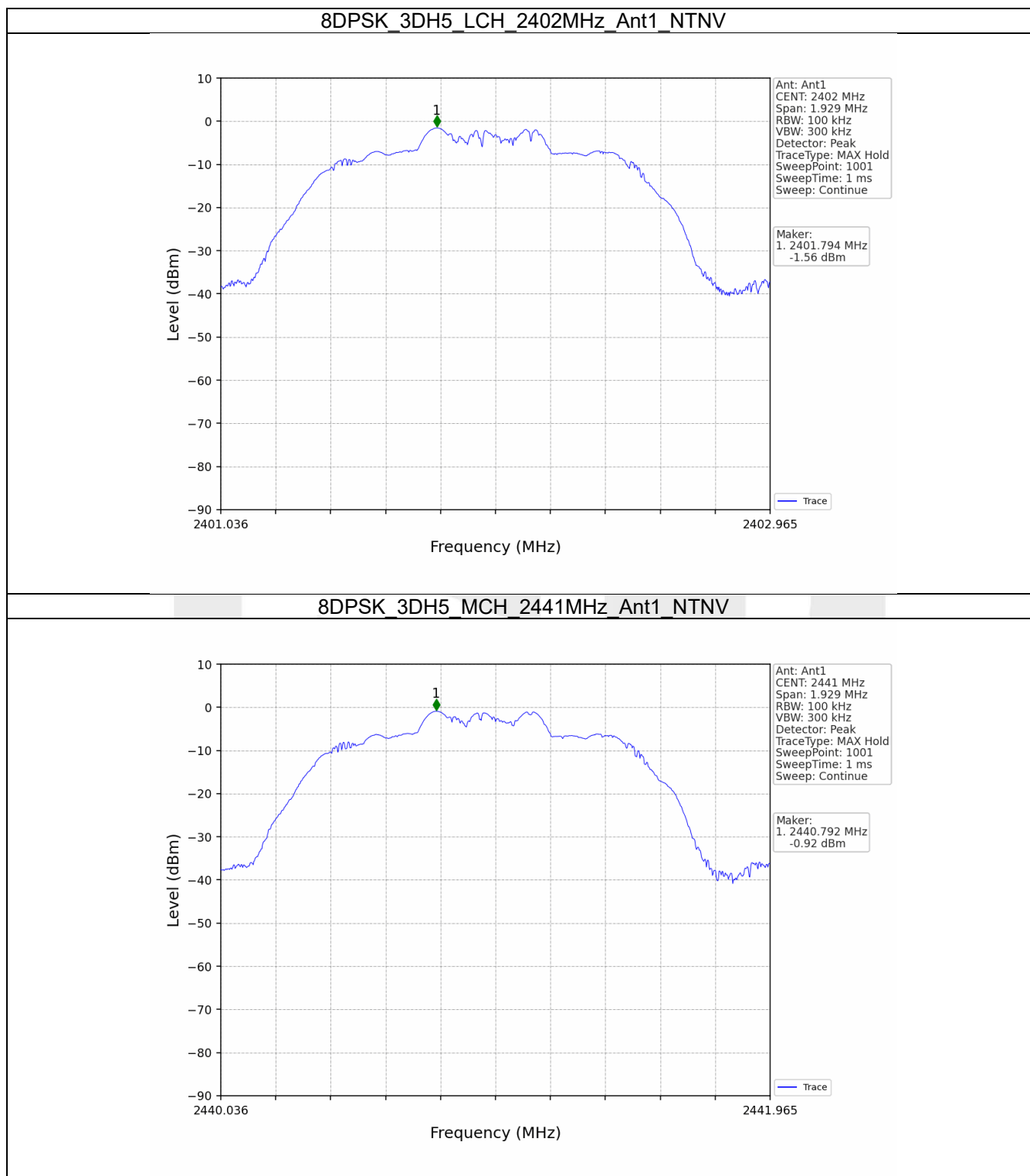
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)
GFSK	SISO	2402	DH5	1	-1.56
		2441	DH5	1	-0.93
		2480	DH5	1	-0.71
$\pi/4$ DQPSK	SISO	2402	2DH5	1	-1.58
		2441	2DH5	1	-0.88
		2480	2DH5	1	-0.74
8DPSK	SISO	2402	3DH5	1	-1.56
		2441	3DH5	1	-0.92
		2480	3DH5	1	-0.69
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.					

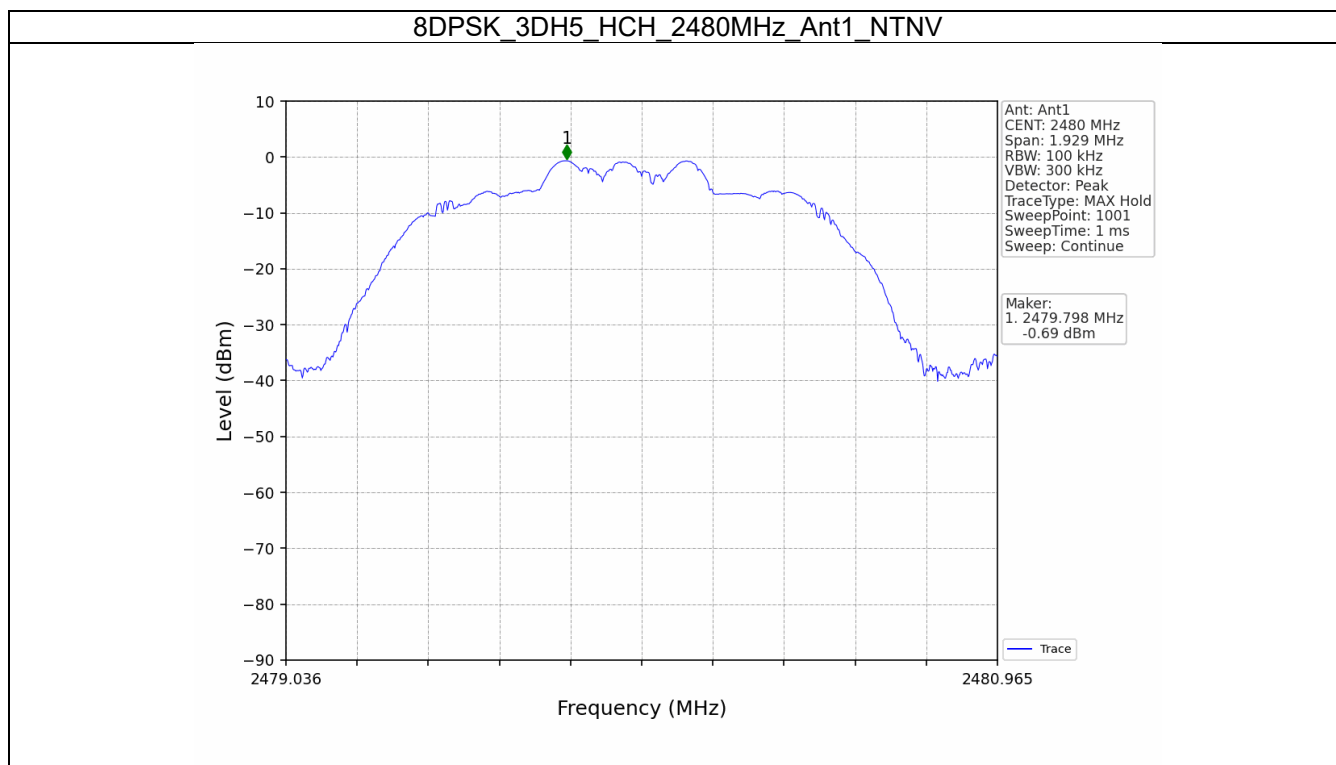
6.1.2 Test Graph











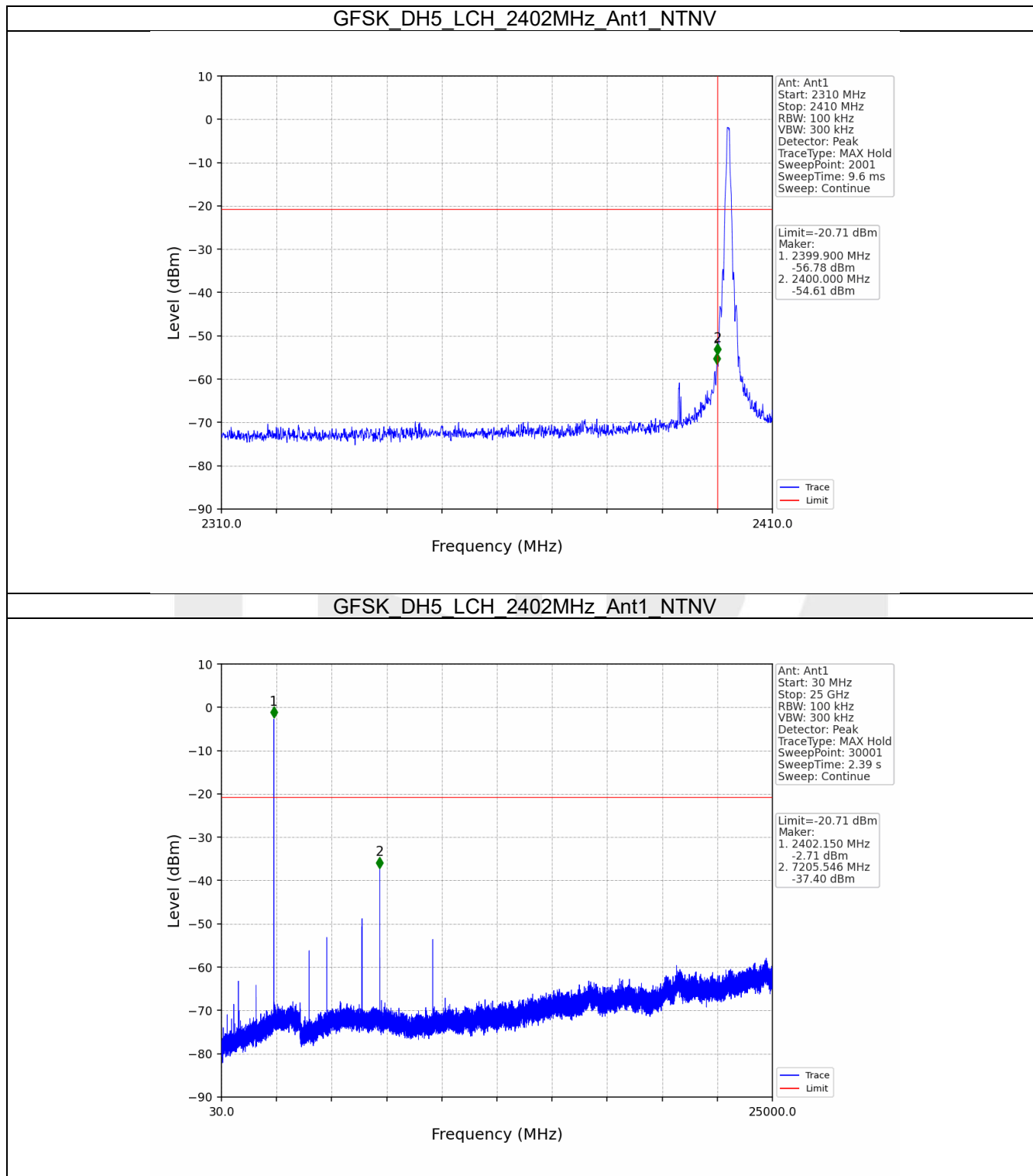
6.2 CSE

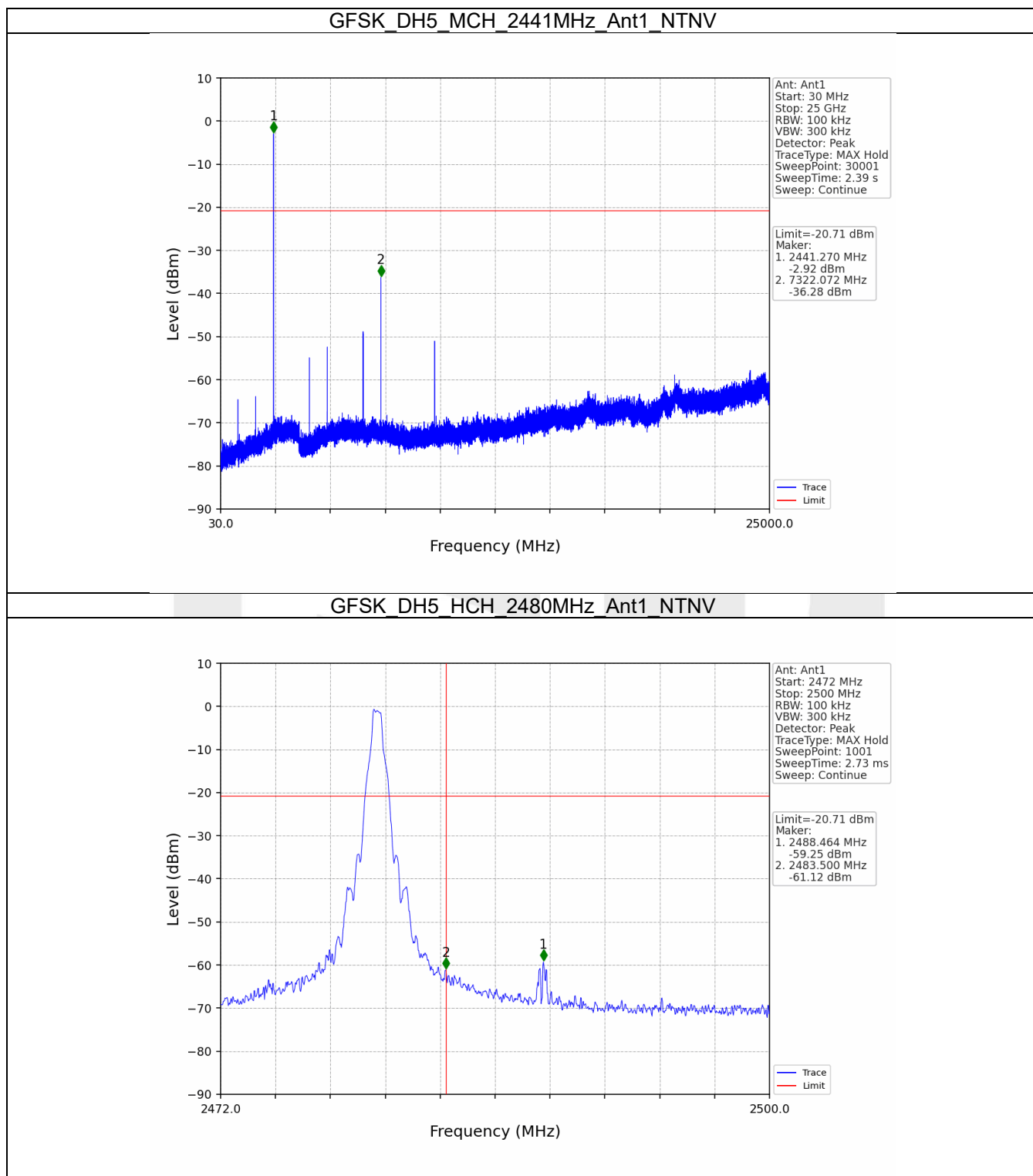
6.2.1 Test Result

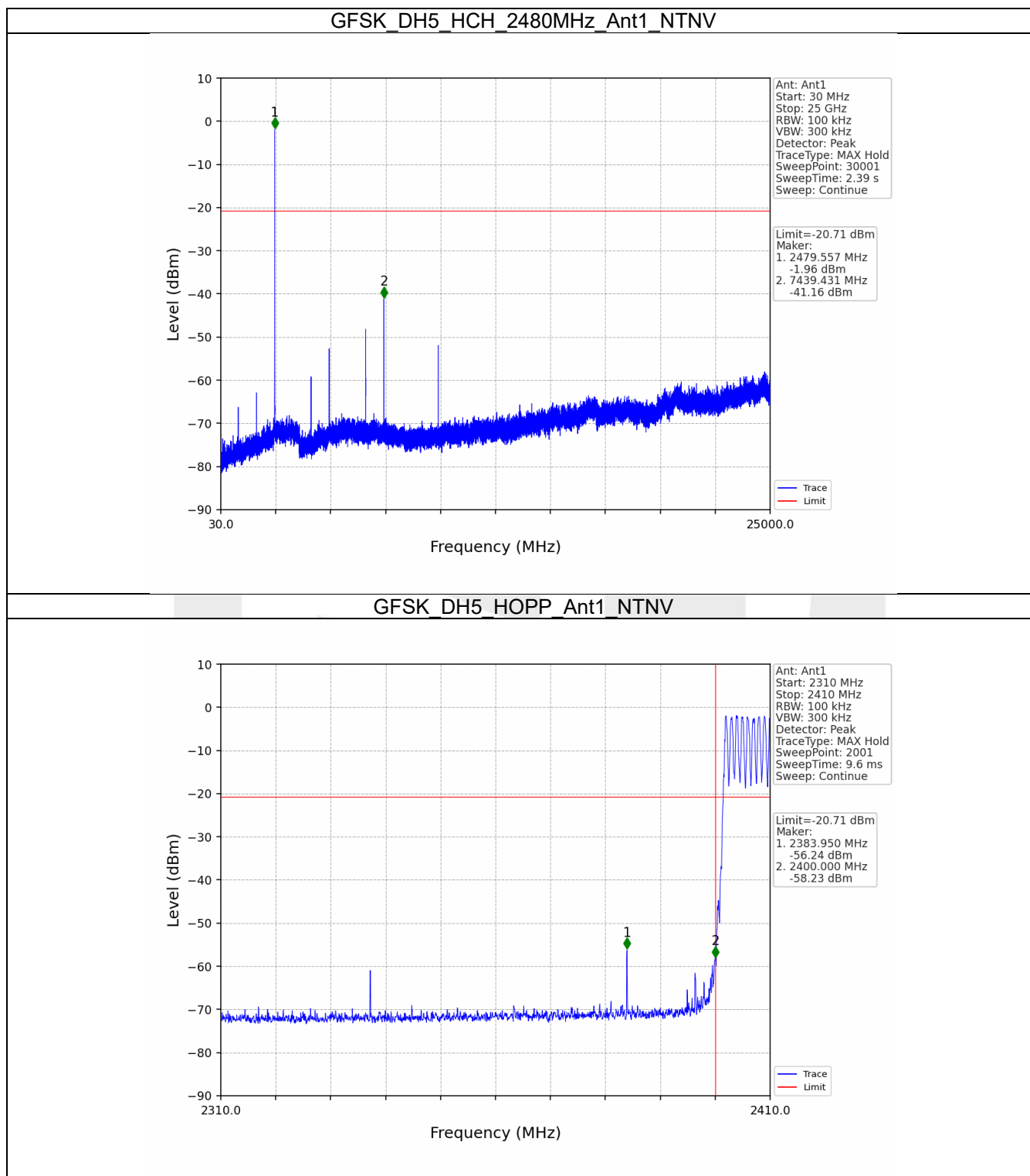
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
GFSK	SISO	2402	DH5	1	-0.71	-20.71	Pass
		2441	DH5	1	-0.71	-20.71	Pass
		2480	DH5	1	-0.71	-20.71	Pass
		HOPP	DH5	1	-0.71	-20.71	Pass
$\pi/4$ DQPSK	SISO	2402	2DH5	1	-0.74	-20.74	Pass
		2441	2DH5	1	-0.74	-20.74	Pass
		2480	2DH5	1	-0.74	-20.74	Pass
		HOPP	2DH5	1	-0.74	-20.74	Pass
8DPSK	SISO	2402	3DH5	1	-0.69	-20.69	Pass
		2441	3DH5	1	-0.69	-20.69	Pass
		2480	3DH5	1	-0.69	-20.69	Pass
		HOPP	3DH5	1	-0.69	-20.69	Pass

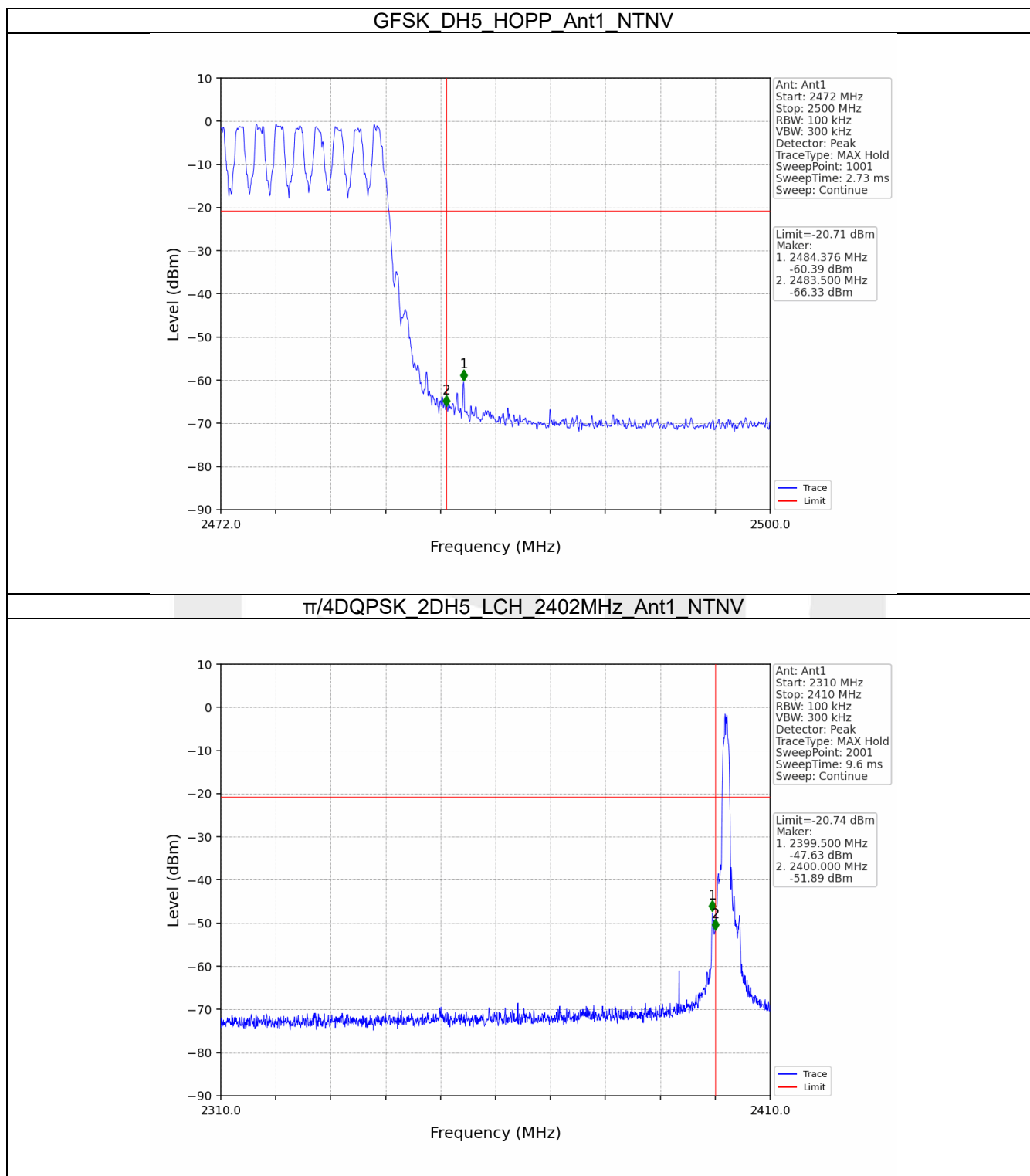
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

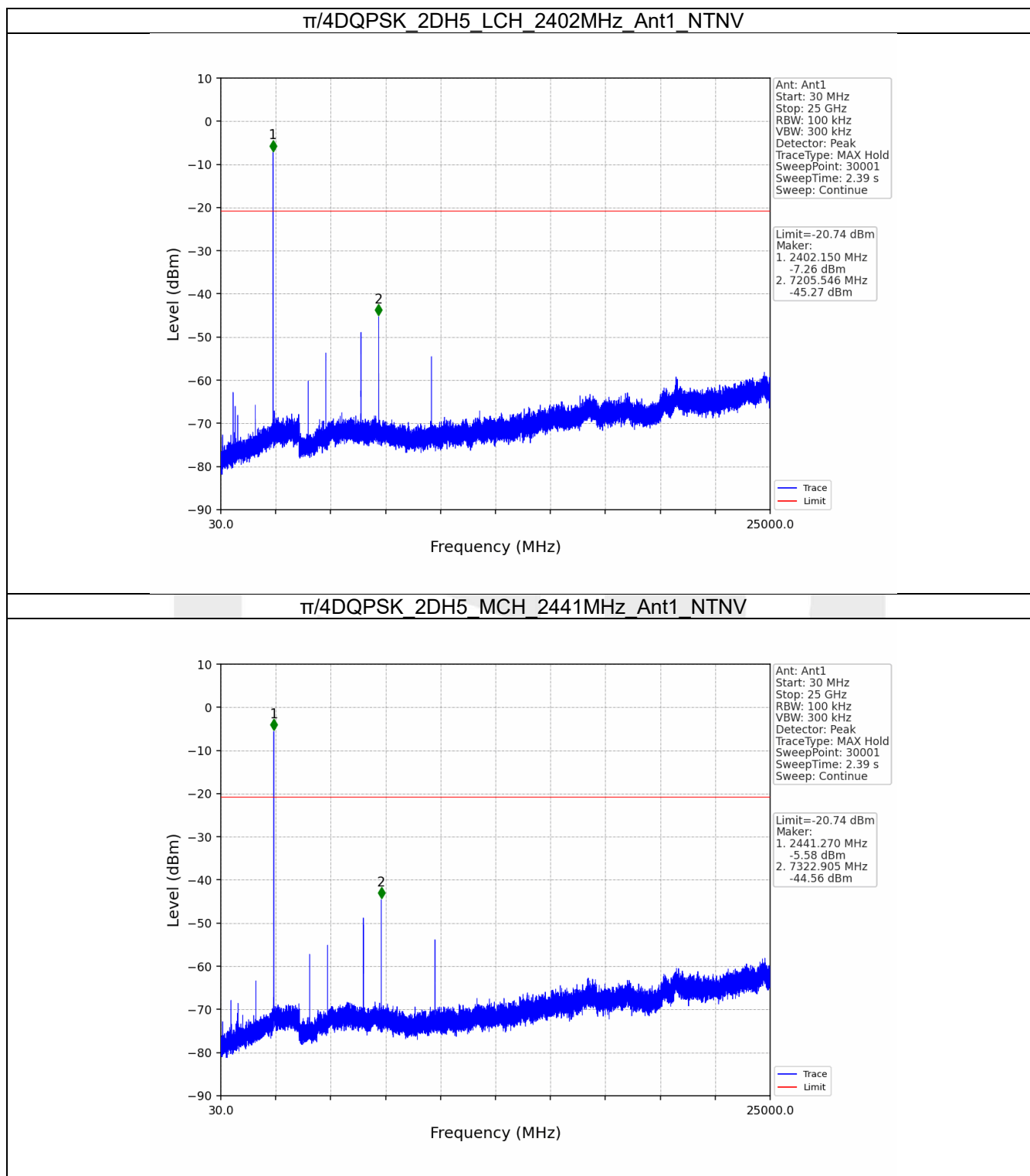
6.2.2 Test Graph

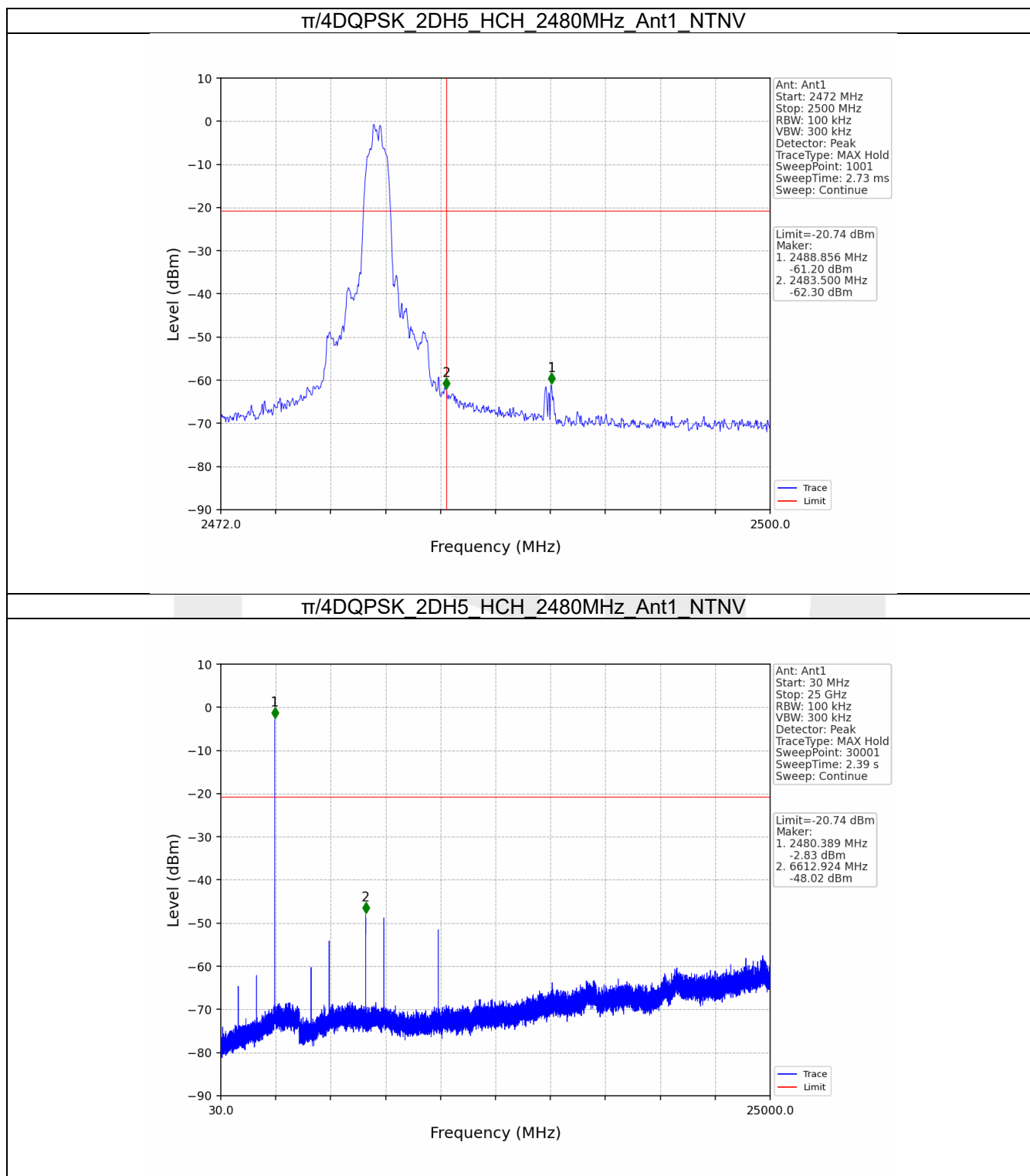


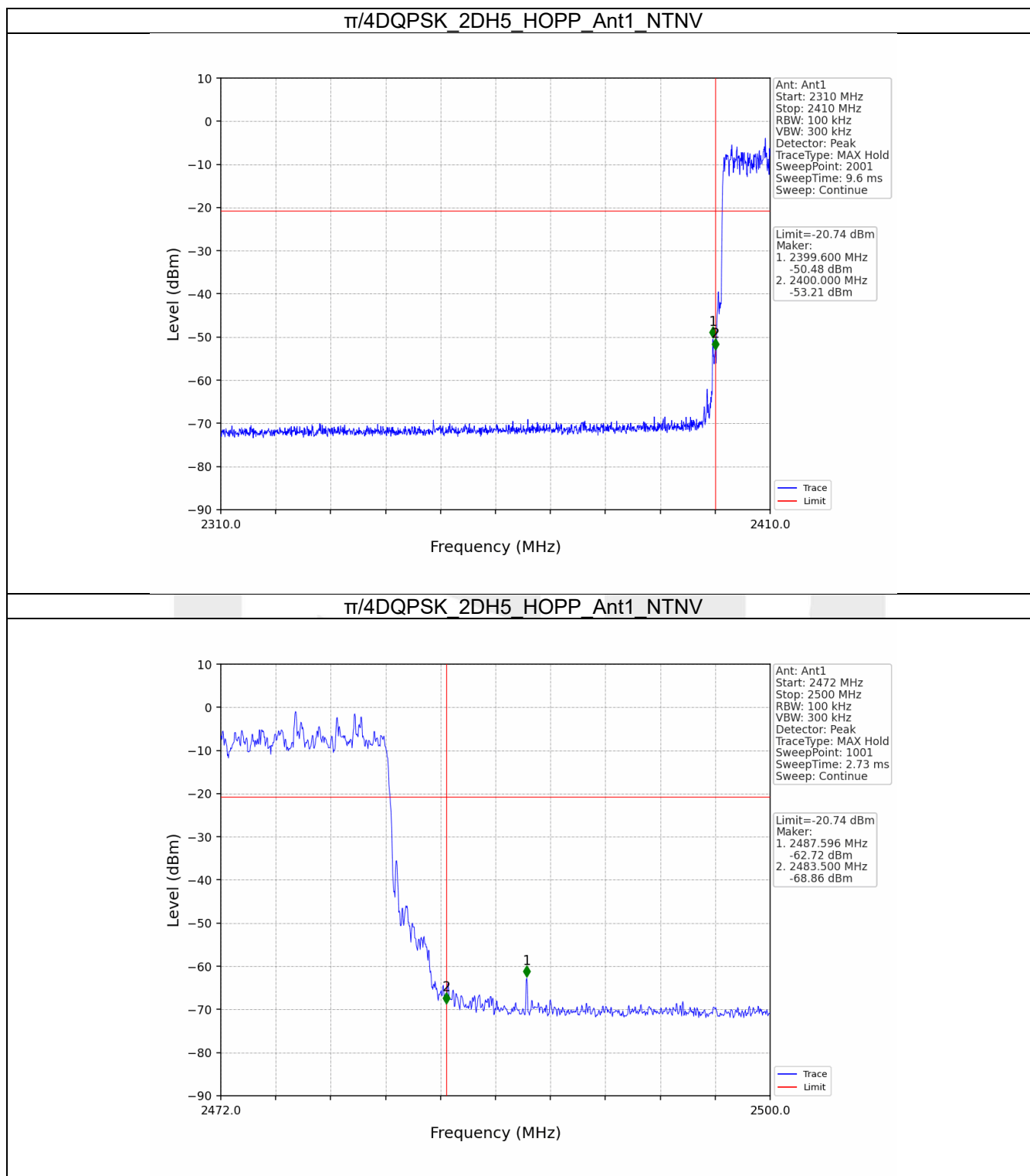


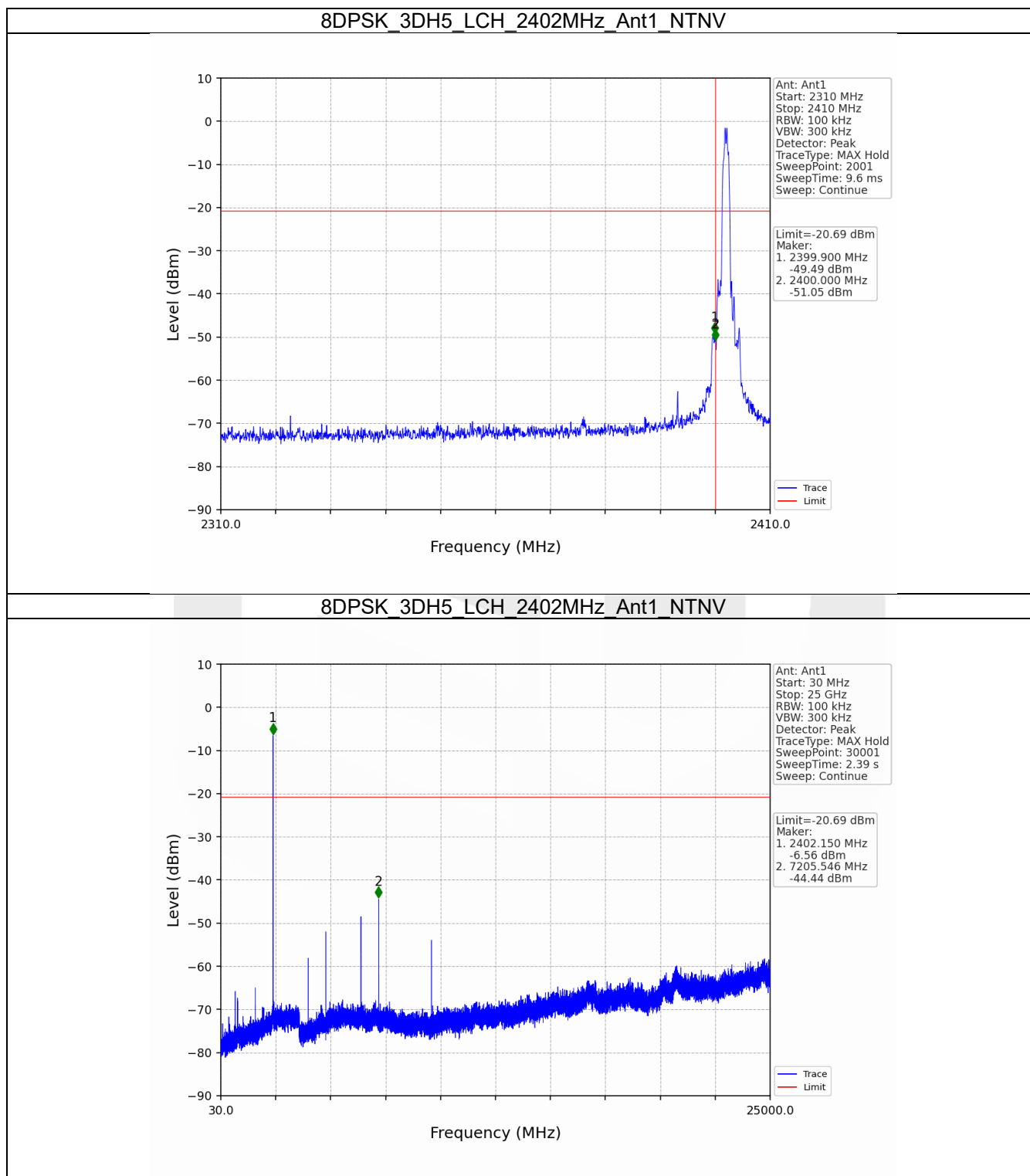


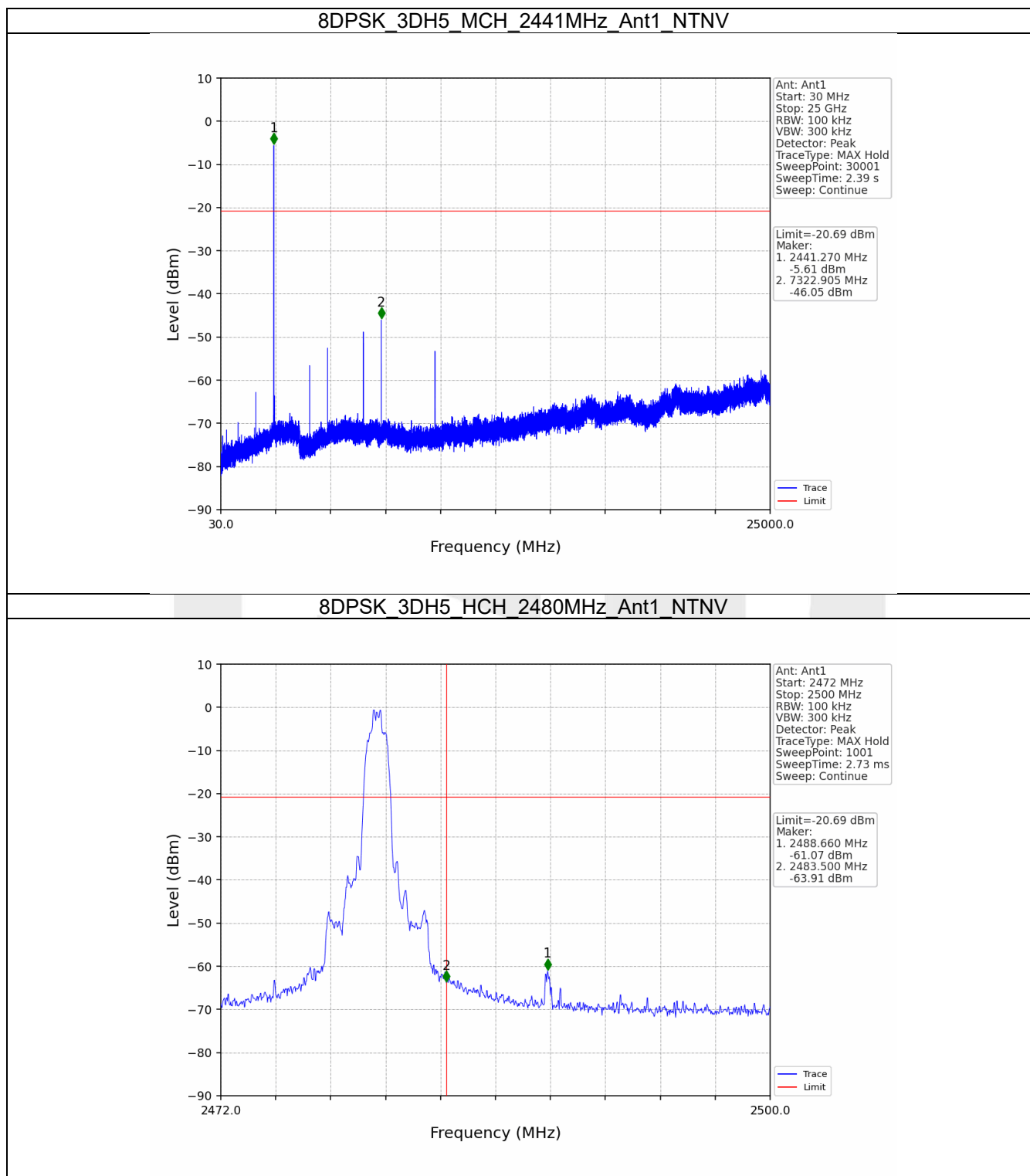


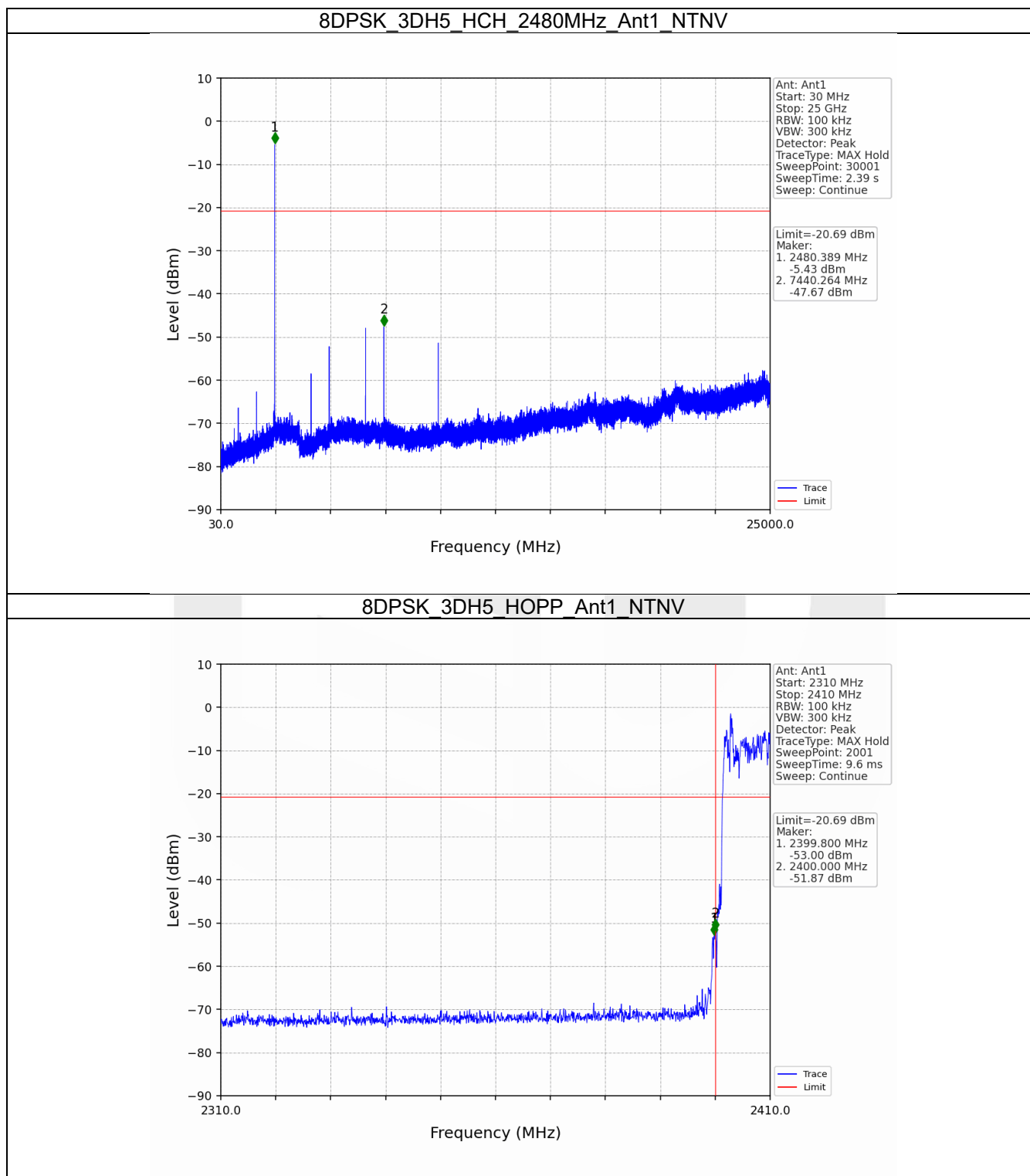


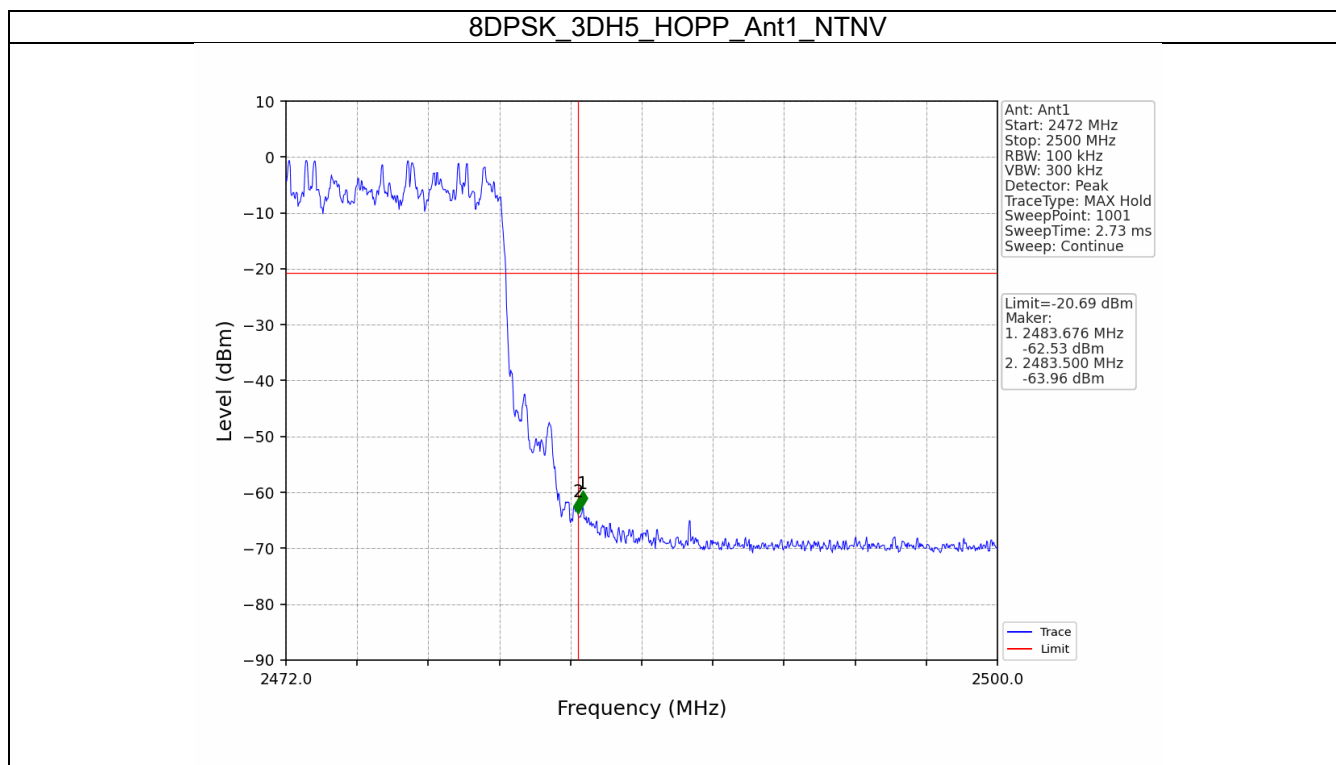












----- End of Report -----