



Annex for BT

Test Report No.: CTL2403012072-WF01

TABLE OF CONTENTS

1. Bandwidth..... 3

 1.1 OBW..... 3

 1.1.1 Test Result 3

 1.2 20dB BW 9

 1.2.1 Test Result 9

2. Maximum Conducted Output Power 15

 2.1 Power 15

 2.1.1 Test Result 15

3. Carrier Frequency Separation..... 21

 3.1 Ant1 21

 3.1.1 Test Result 21

4. Number of Hopping Frequencies 24

 4.1 HoppNum 24

 4.1.1 Test Result 24

5. Time of Occupancy (Dwell Time) 27

 5.1 Ant1 27

 5.1.1 Test Result 27

6. Unwanted Emissions In Non-restricted Frequency Bands..... 37

 6.1 Ref..... 37

 6.1.1 Test Result 37



6.2 CSE 43

6.2.1 Test Result 43

FCCID: 2AU4P-BTS163

1. Bandwidth

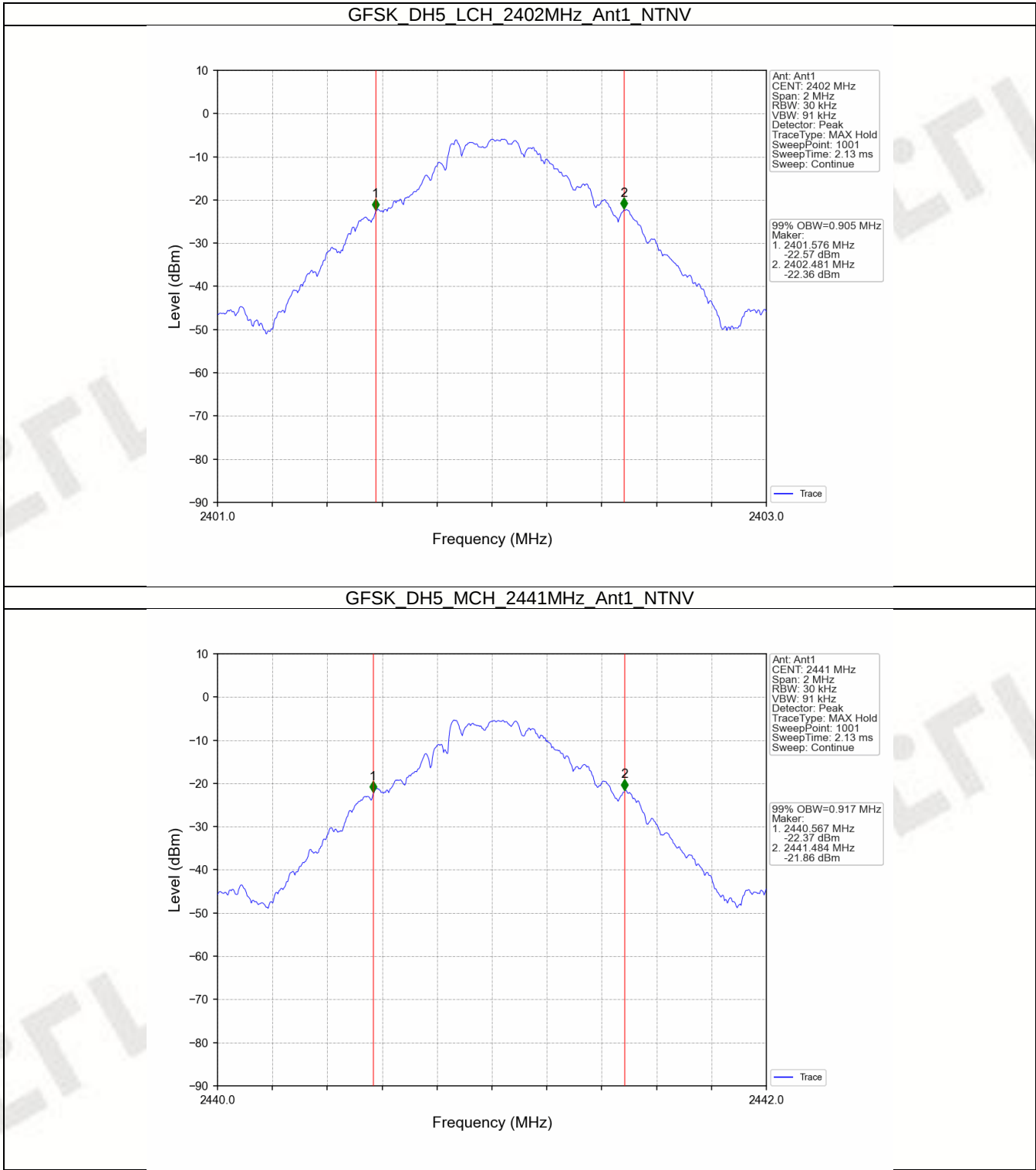
1.1 OBW

1.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	99% Occupied Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	0.905	/	Pass
		2441	DH5	1	0.917	/	Pass
		2480	DH5	1	0.932	/	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.186	/	Pass
		2441	2DH5	1	1.197	/	Pass
		2480	2DH5	1	1.202	/	Pass
8DPSK	SISO	2402	3DH5	1	1.193	/	Pass
		2441	3DH5	1	1.195	/	Pass
		2480	3DH5	1	1.198	/	Pass

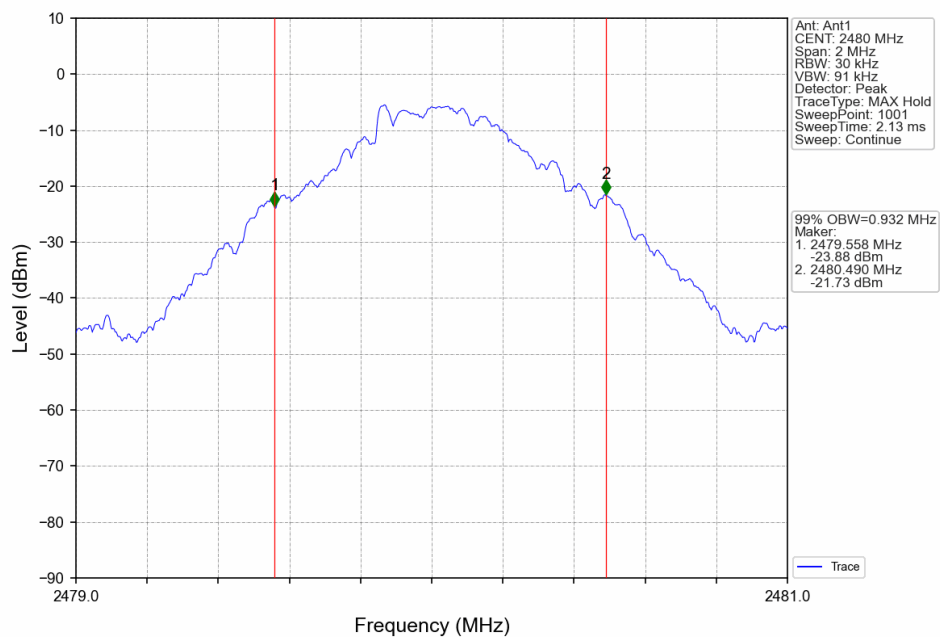
FCCID: 2AU4P-BTS163

1.1.2 Test Graph

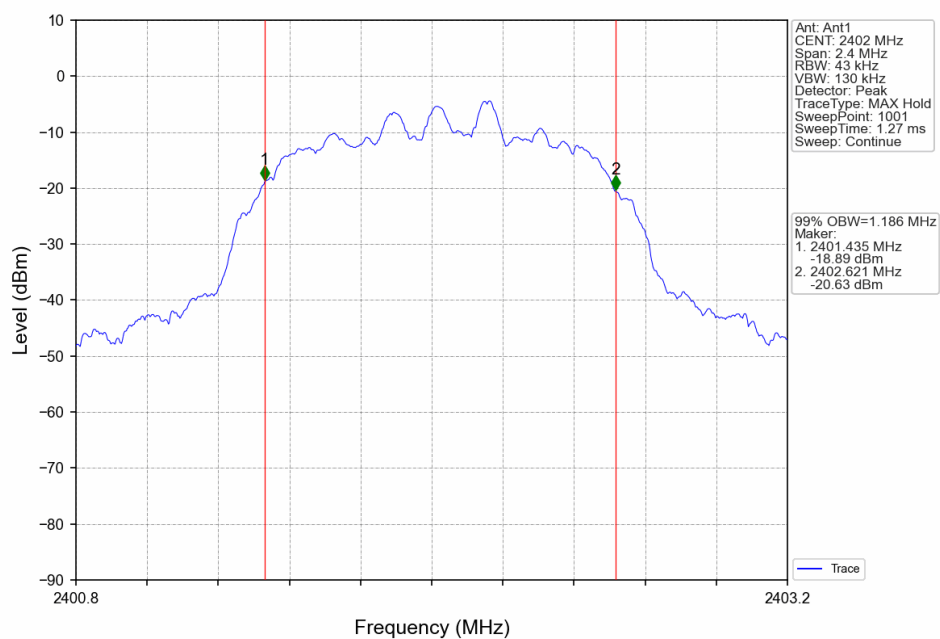


FCCID: 2AU4P-BTS163

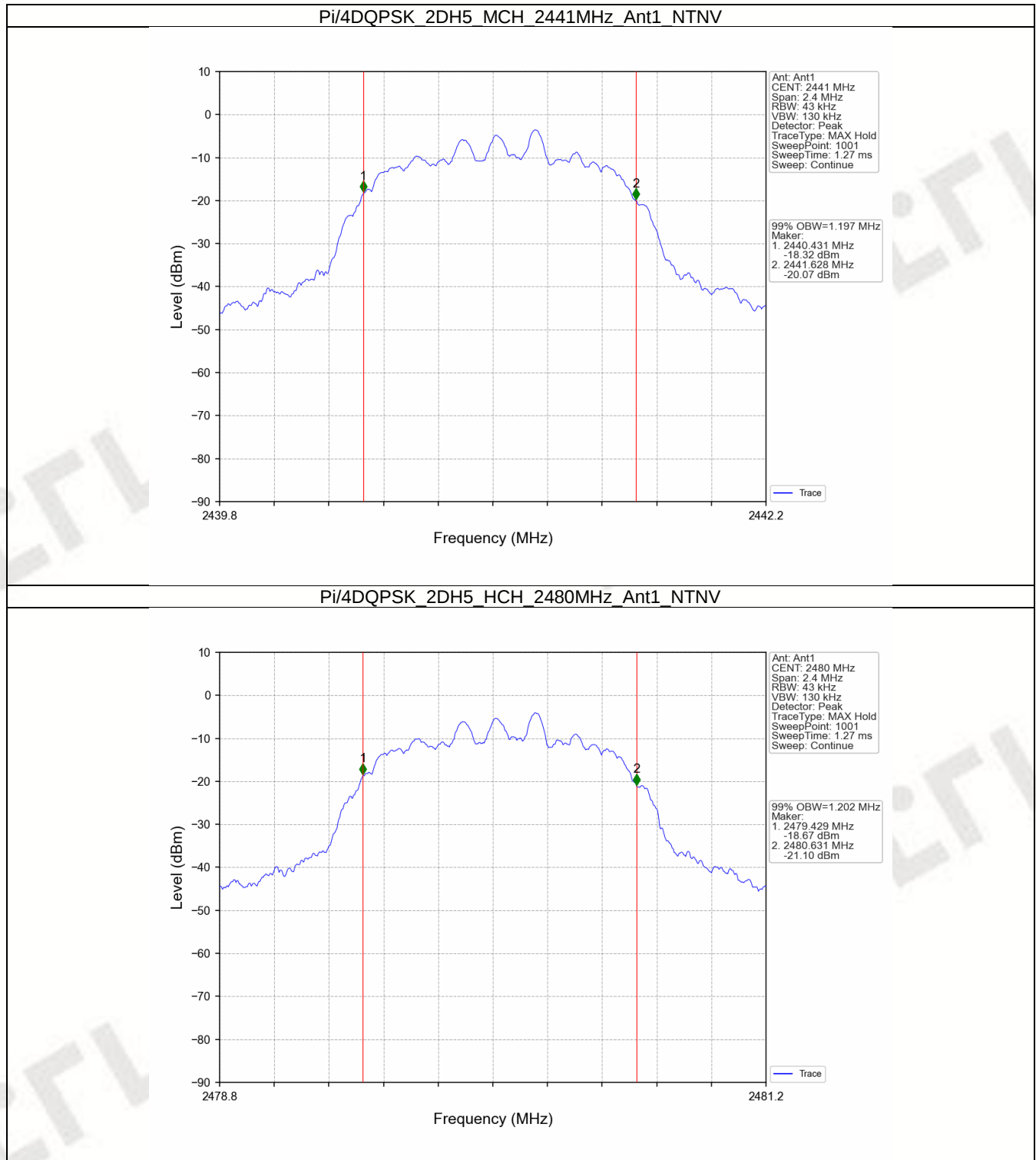
GFSK DH5 HCH 2480MHz Ant1 NTN



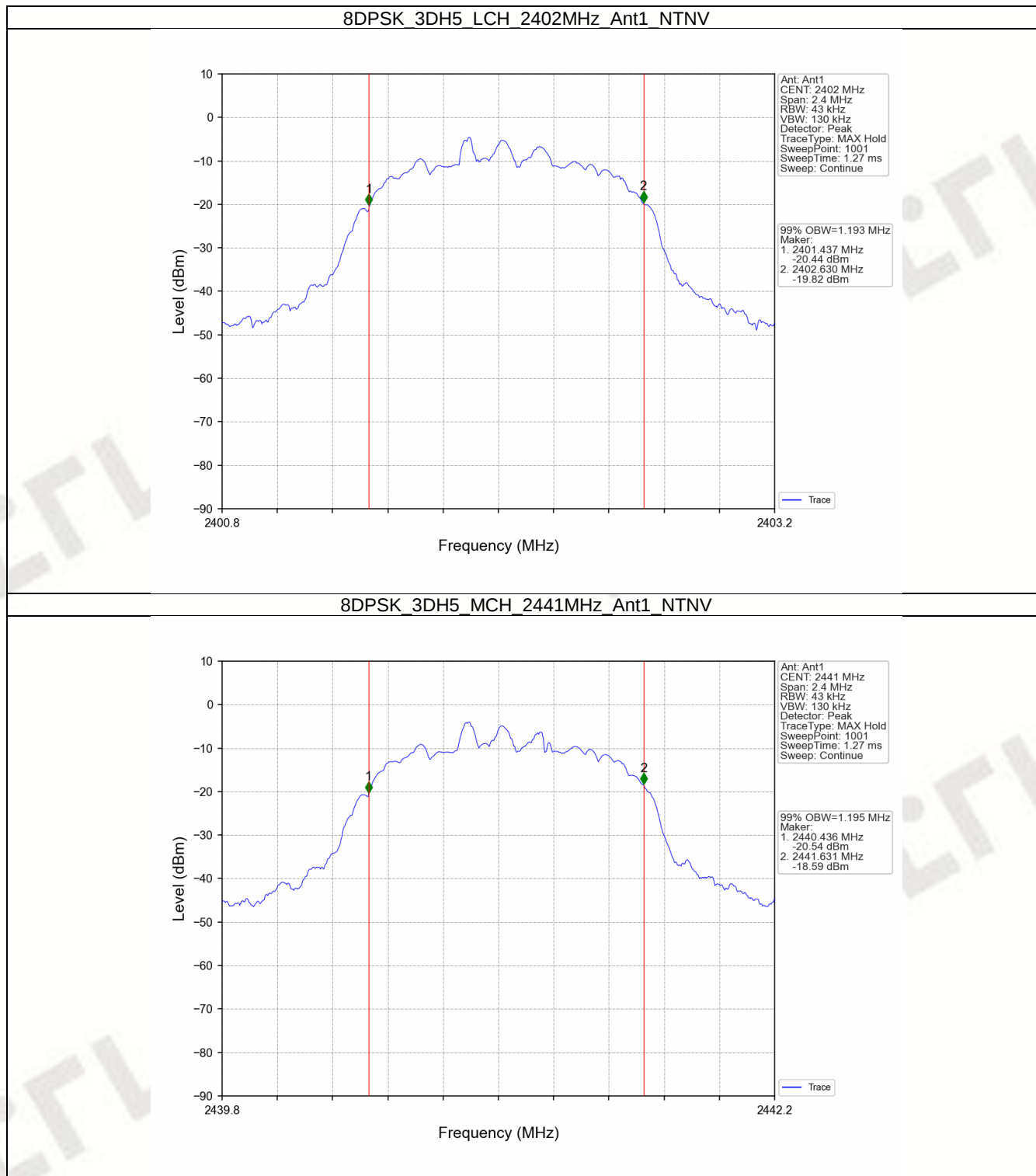
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTN



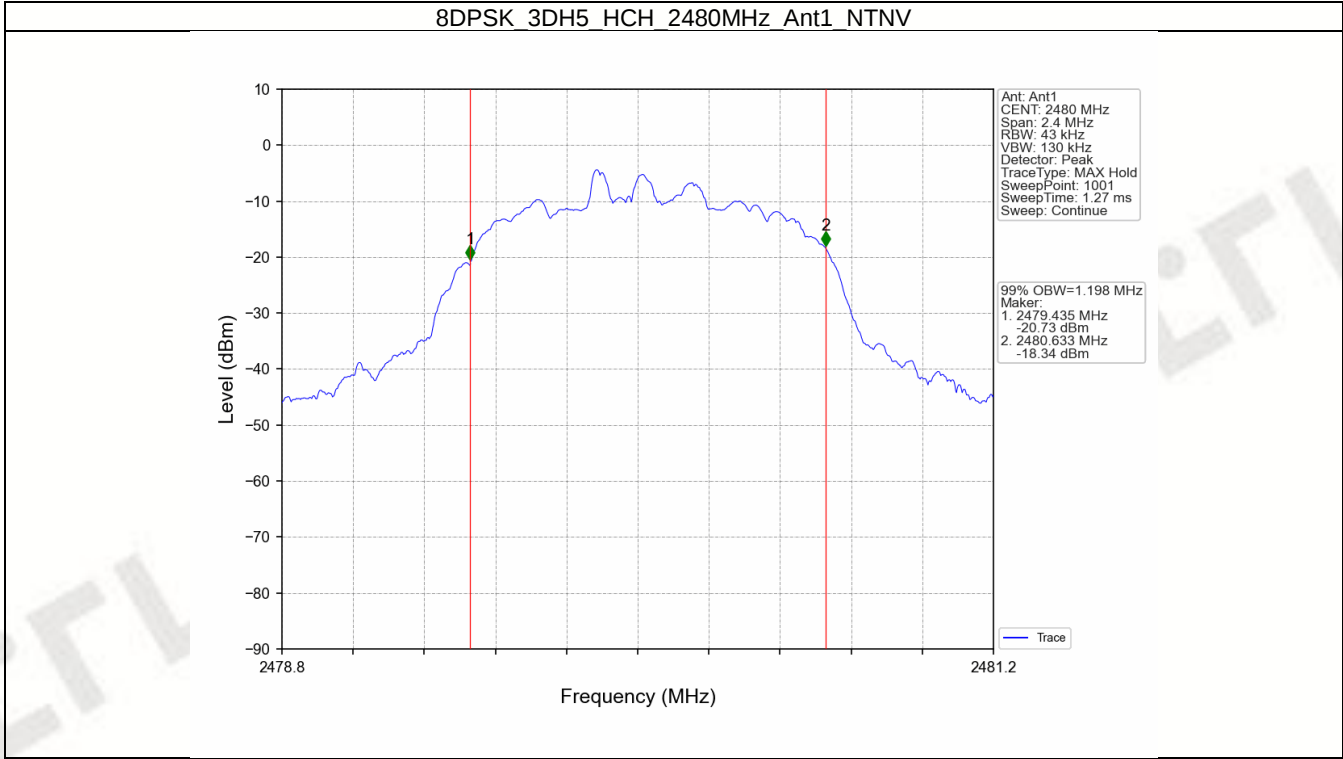
FCCID: 2AU4P-BTS163



FCCID: 2AU4P-BTS163



FCCID: 2AU4P-BTS163



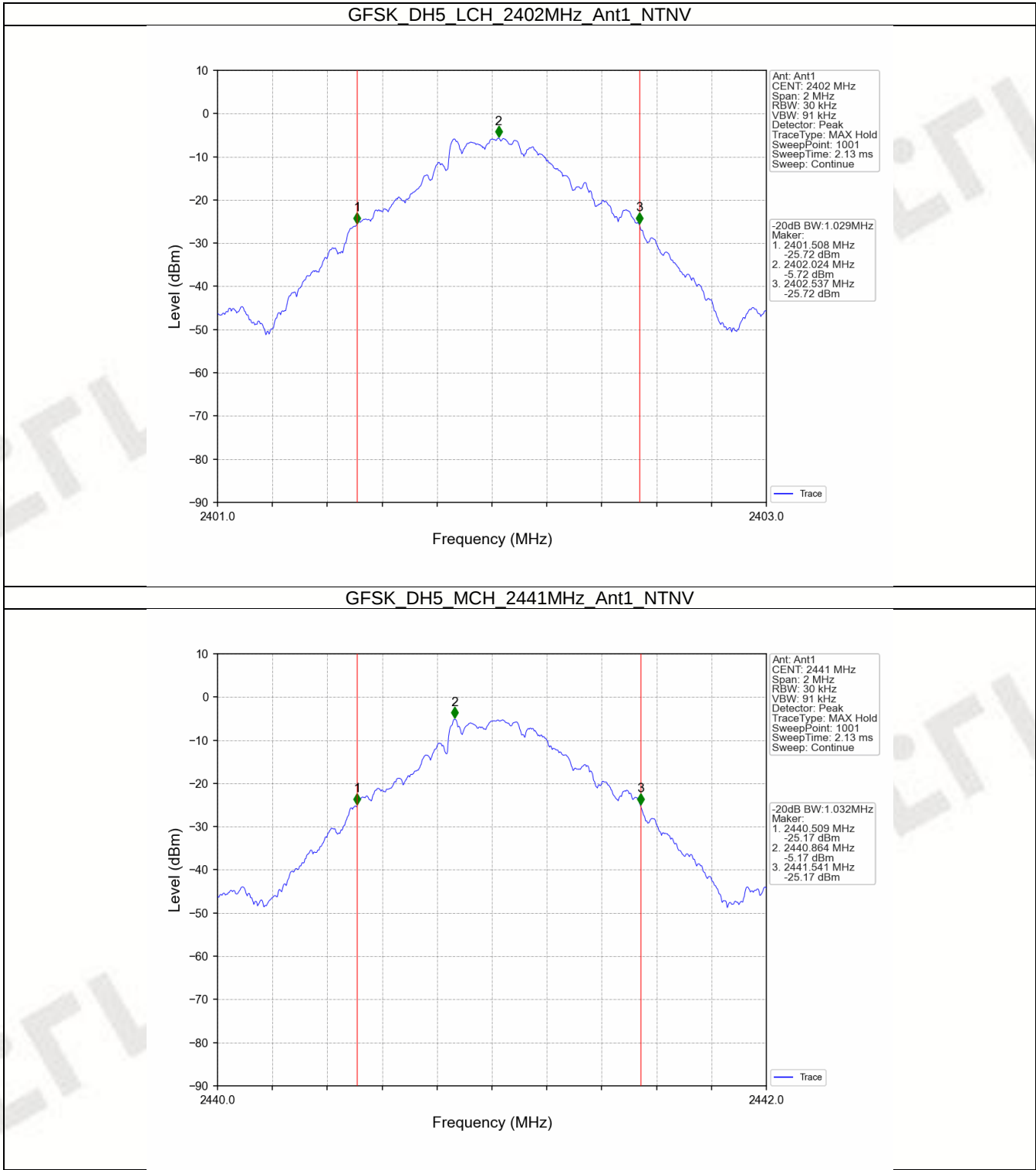
FCCID: 2AU4P-BTS163

1.2 20dB BW**1.2.1 Test Result**

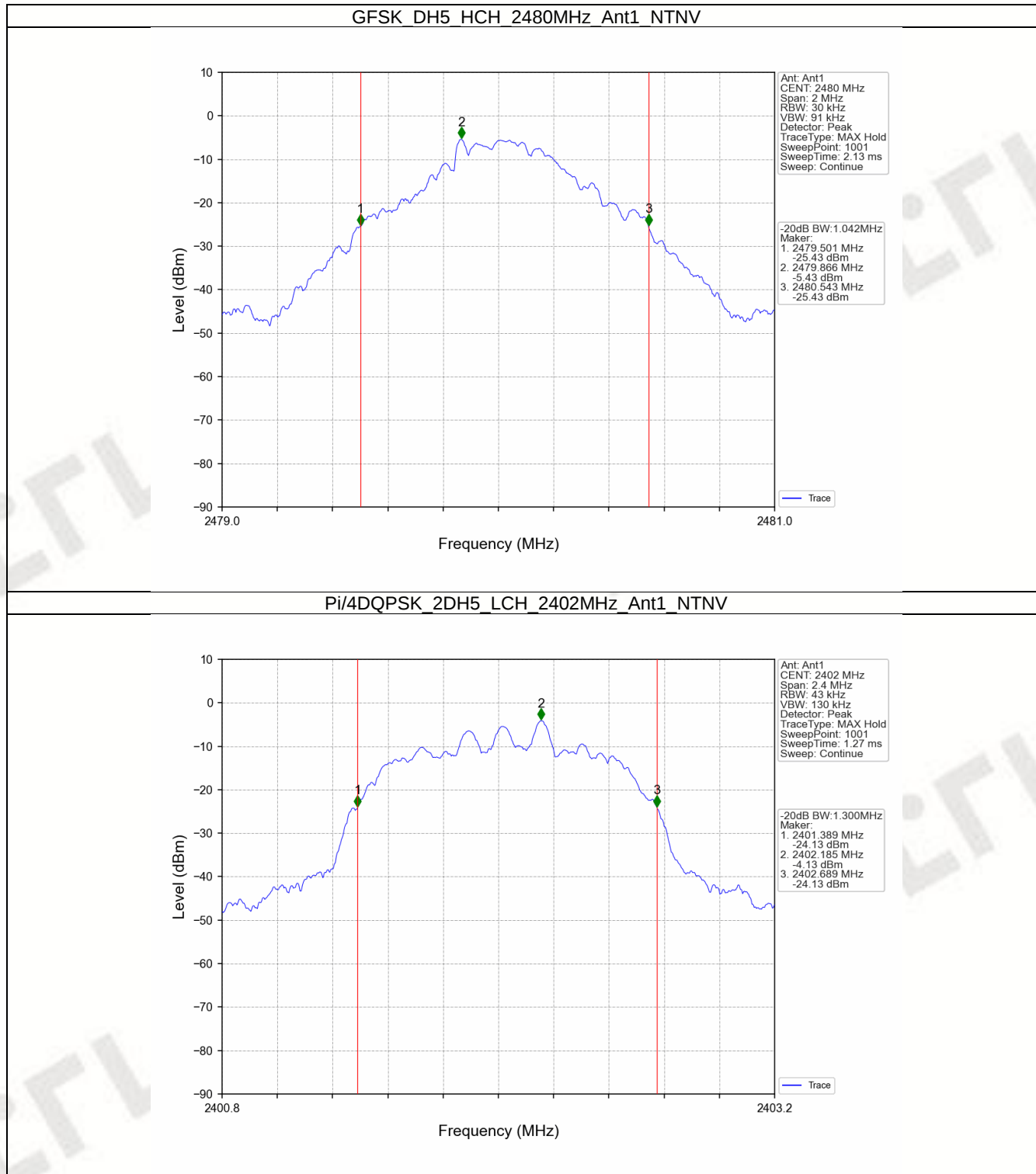
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	20dB Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	1.029	/	Pass
		2441	DH5	1	1.032	/	Pass
		2480	DH5	1	1.042	/	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.300	/	Pass
		2441	2DH5	1	1.320	/	Pass
		2480	2DH5	1	1.335	/	Pass
8DPSK	SISO	2402	3DH5	1	1.319	/	Pass
		2441	3DH5	1	1.318	/	Pass
		2480	3DH5	1	1.313	/	Pass

FCCID: 2AU4P-BTS163

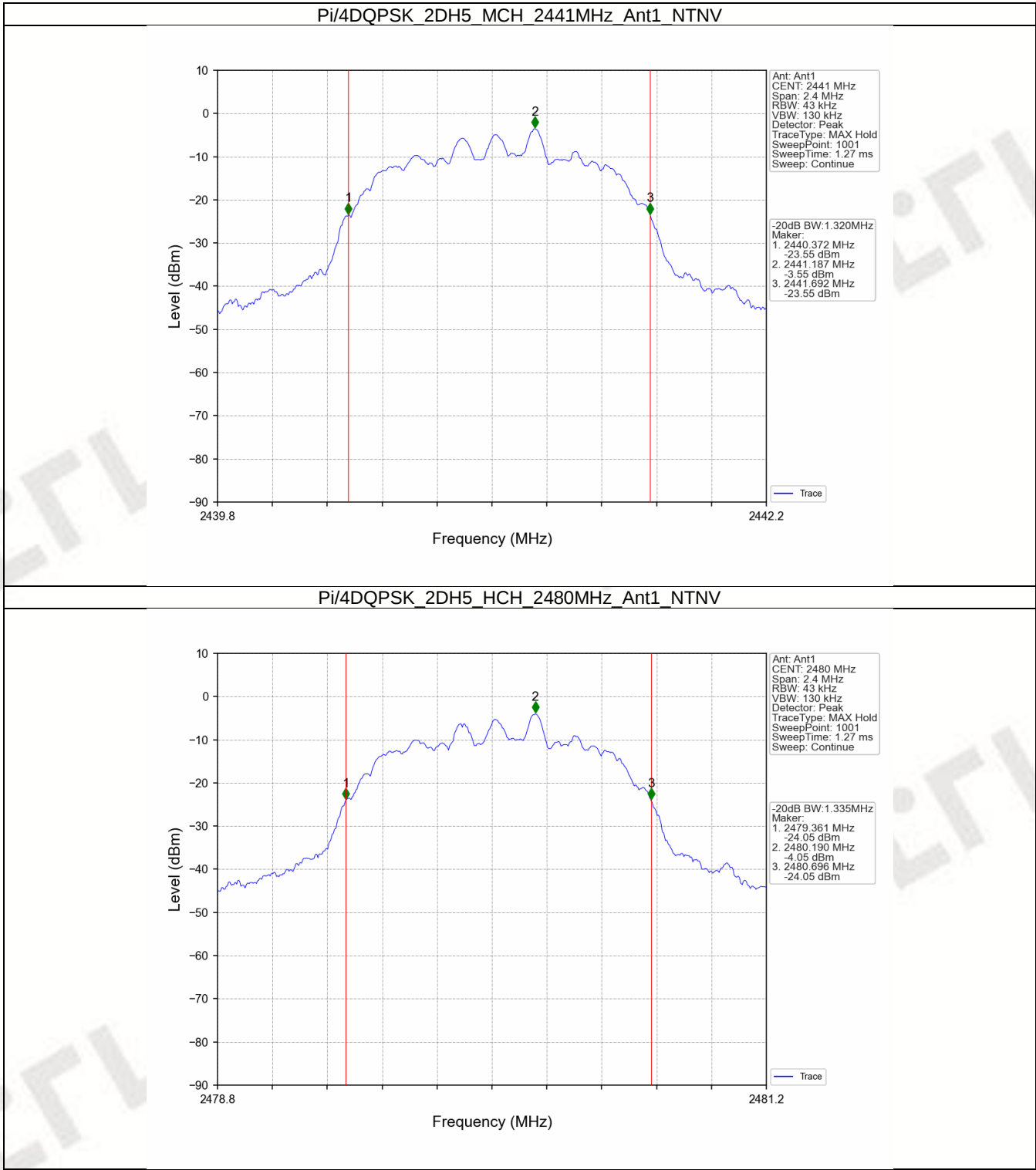
1.2.2 Test Graph



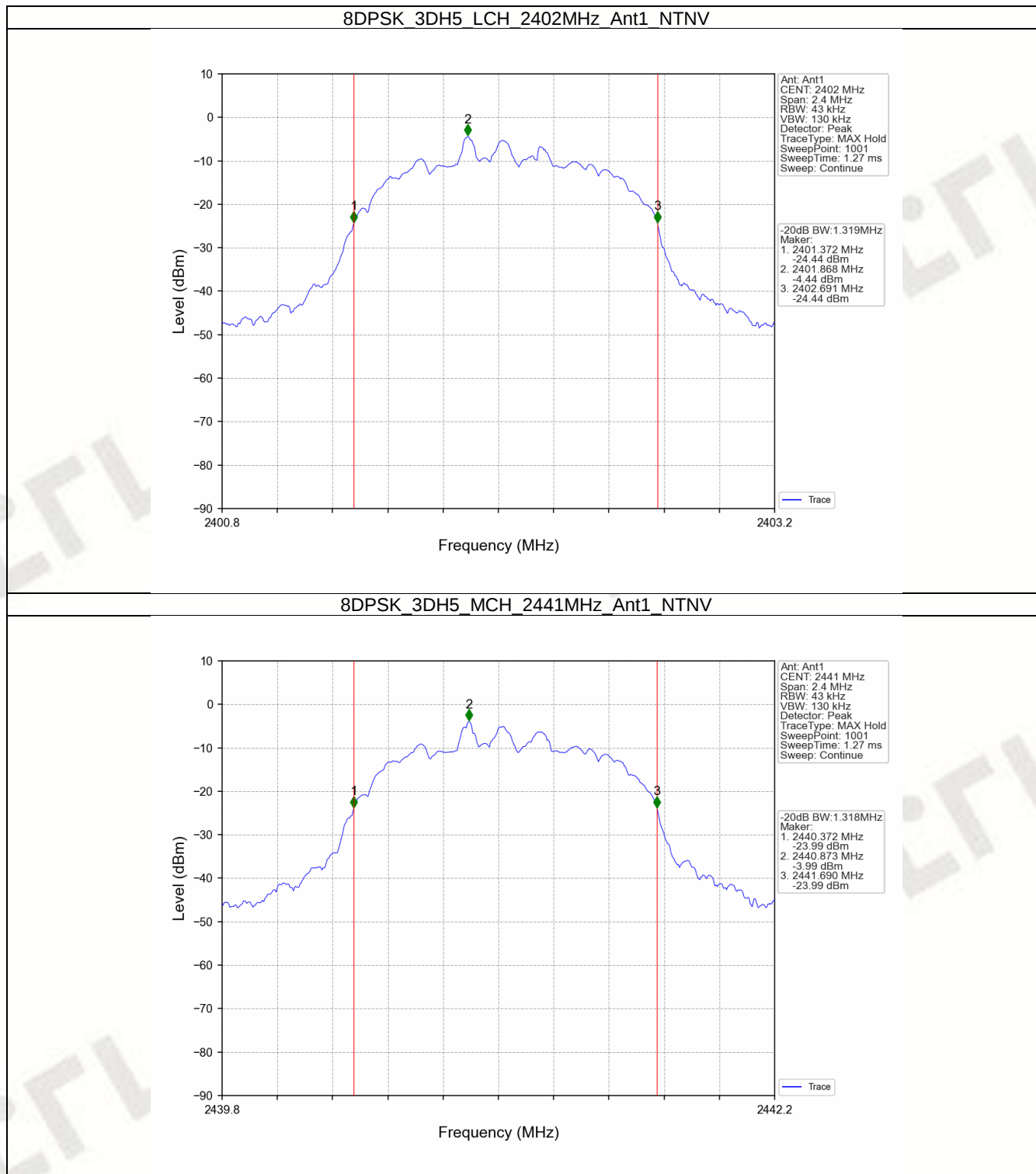
FCCID: 2AU4P-BTS163



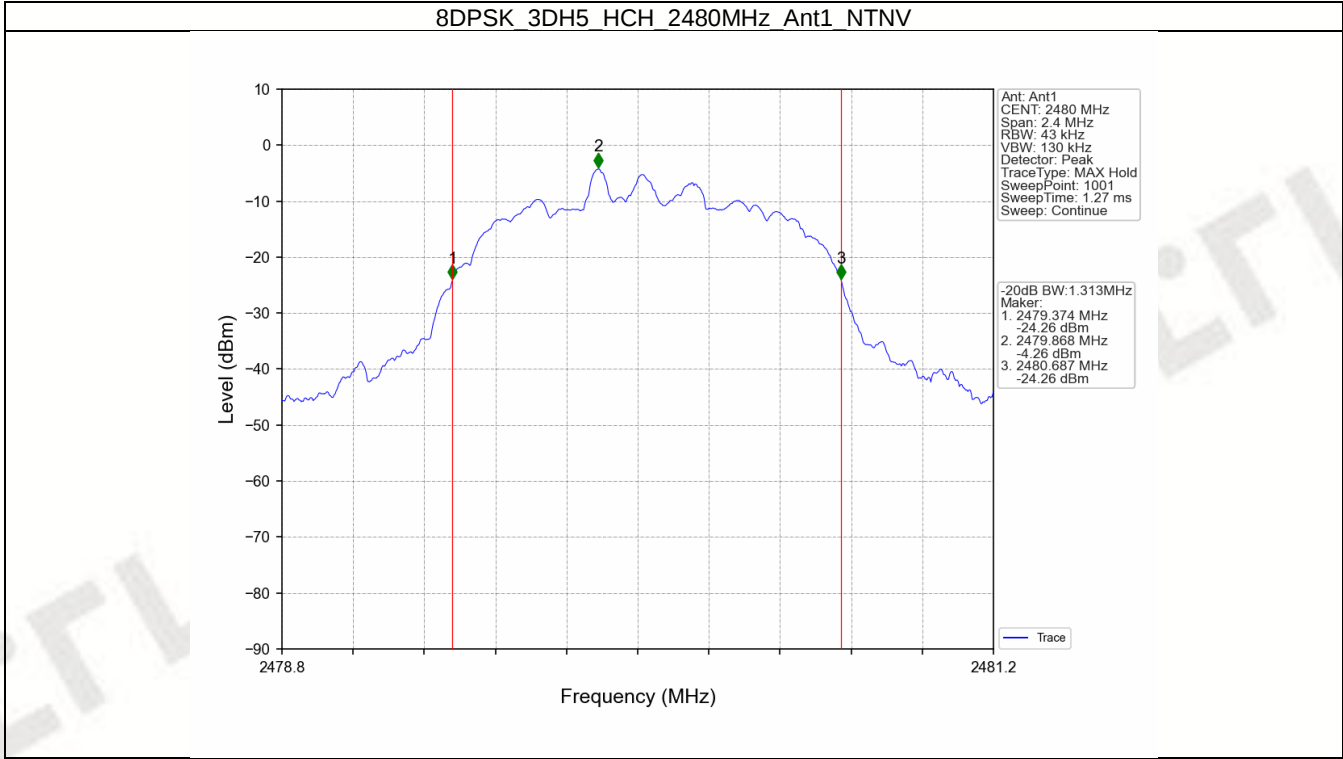
FCCID: 2AU4P-BTS163



FCCID: 2AU4P-BTS163



FCCID: 2AU4P-BTS163



FCCID: 2AU4P-BTS163

2. Maximum Conducted Output Power

2.1 Power

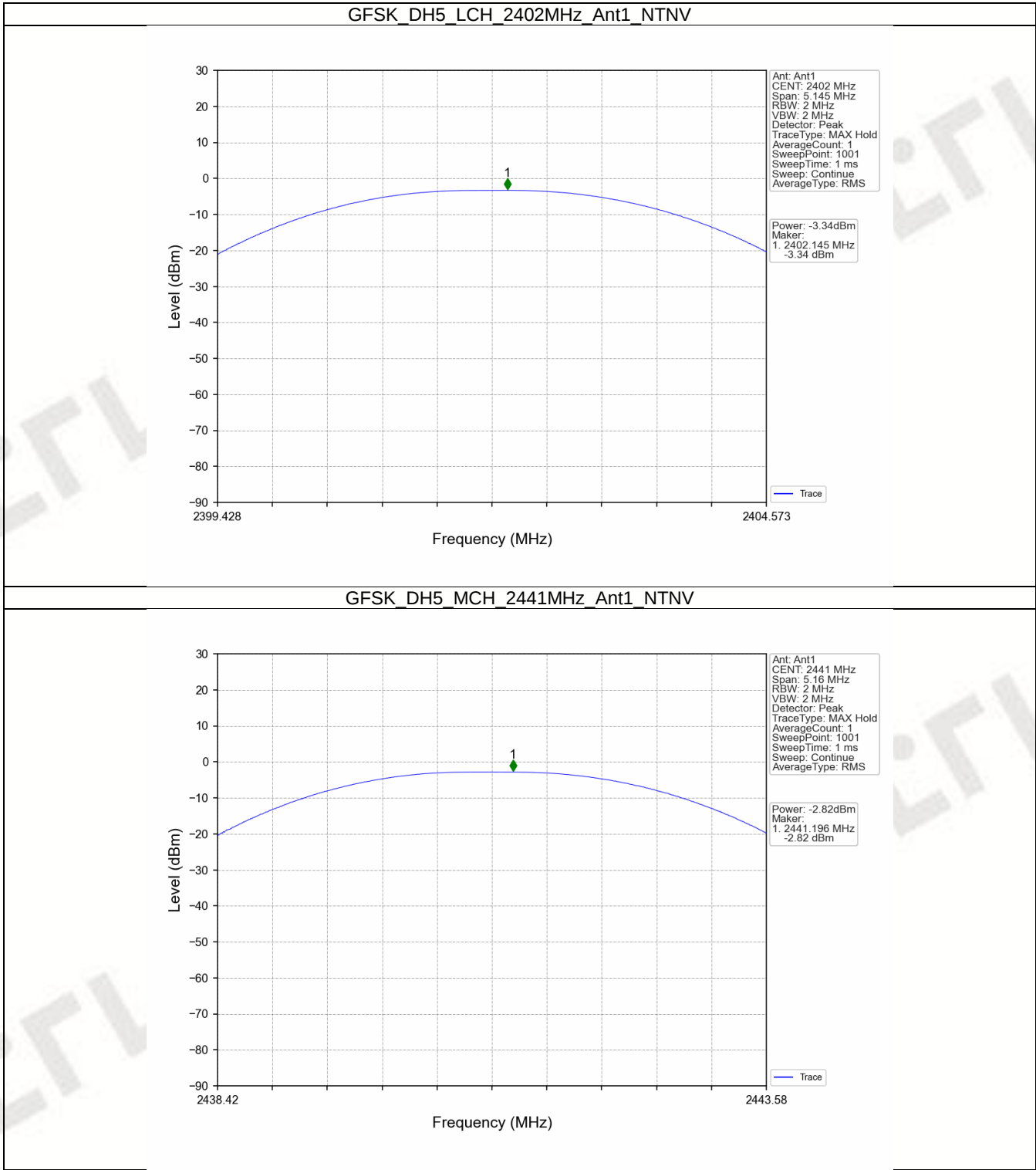
2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Packet Type	Maximum Peak Conducted Output Power (dBm)		Verdict
				ANT1	Limit	
GFSK	SISO	2402	DH5	-3.34	≤ 20.97	Pass
		2441	DH5	-2.82	≤ 20.97	Pass
		2480	DH5	-3.17	≤ 20.97	Pass
Pi/4DQPSK	SISO	2402	2DH5	-2.48	≤ 20.97	Pass
		2441	2DH5	-1.91	≤ 20.97	Pass
		2480	2DH5	-2.32	≤ 20.97	Pass
8DPSK	SISO	2402	3DH5	-2.03	≤ 20.97	Pass
		2441	3DH5	-1.56	≤ 20.97	Pass
		2480	3DH5	-1.96	≤ 20.97	Pass

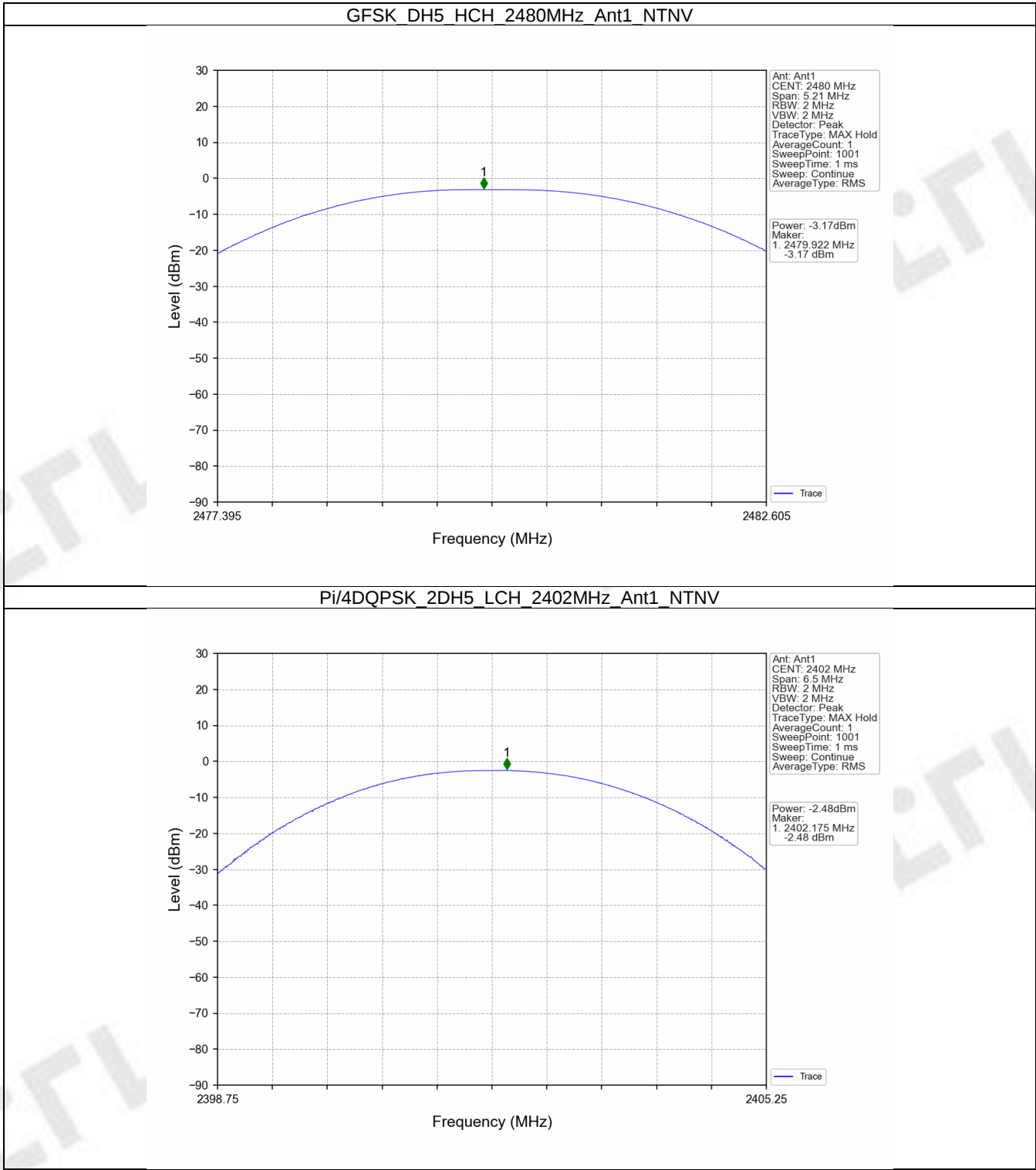
Note1: Antenna Gain: Ant1: -0.58dBi;

FCCID: 2AU4P-BTS163

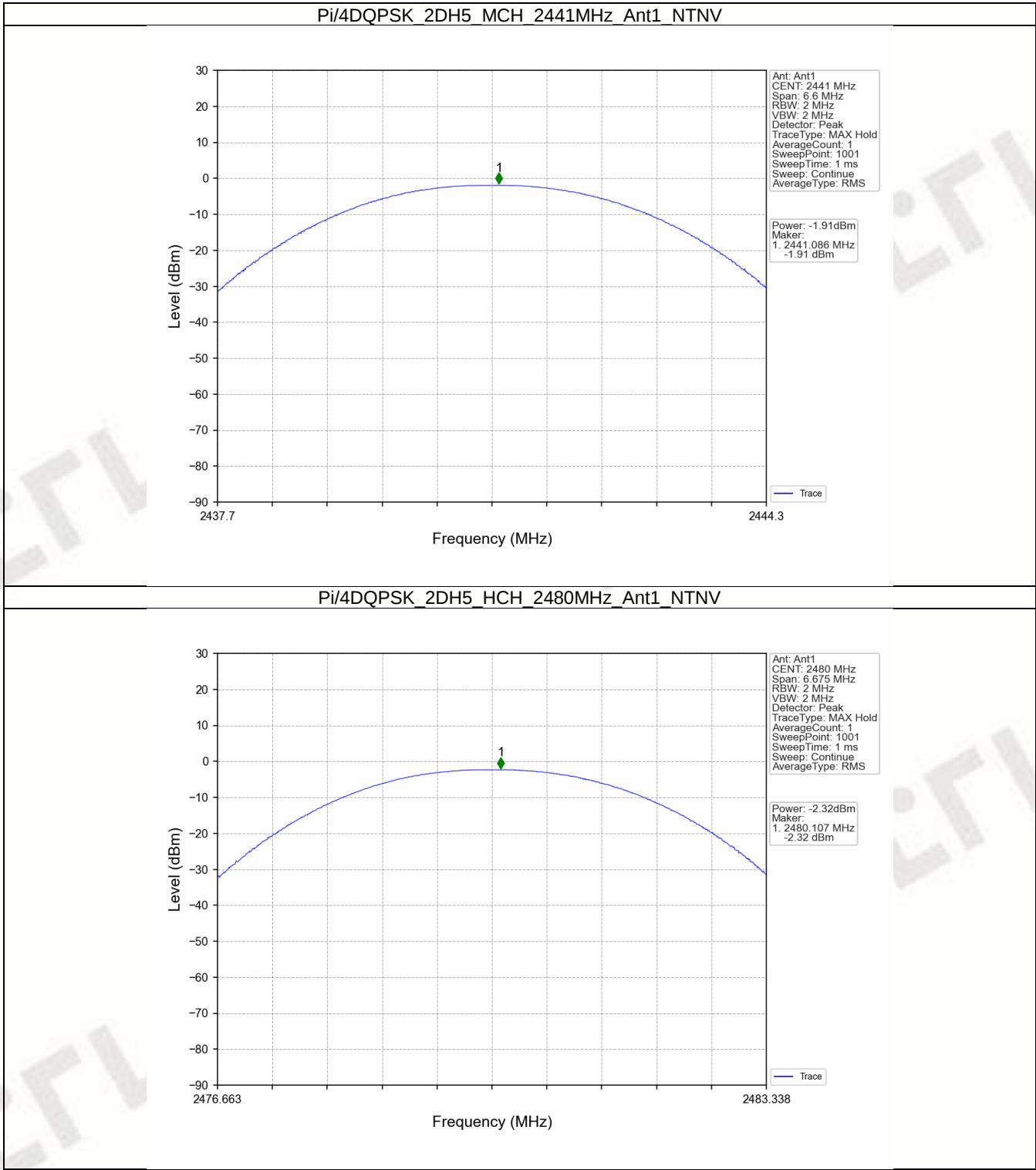
2.1.2 Test Graph



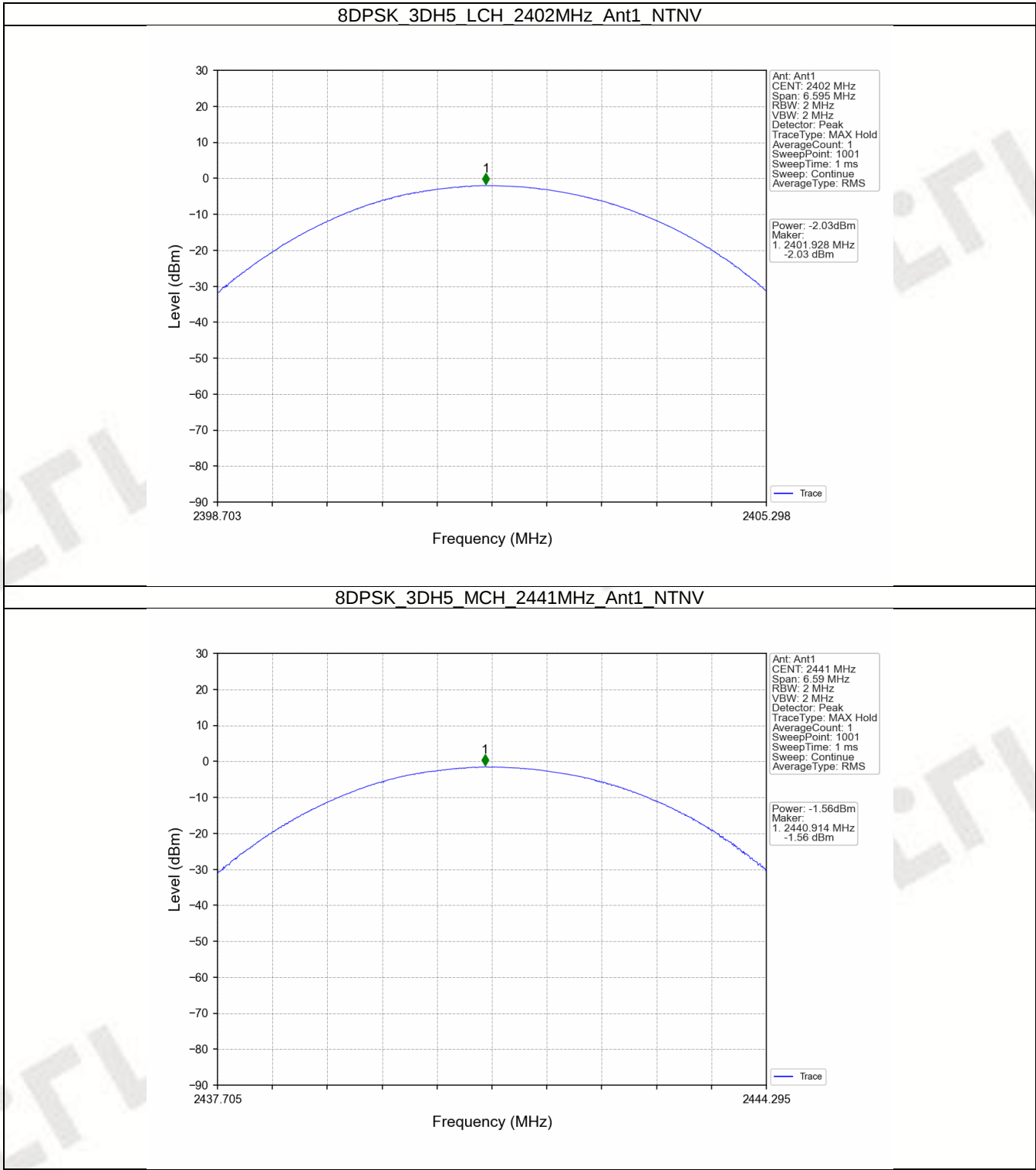
FCCID: 2AU4P-BTS163



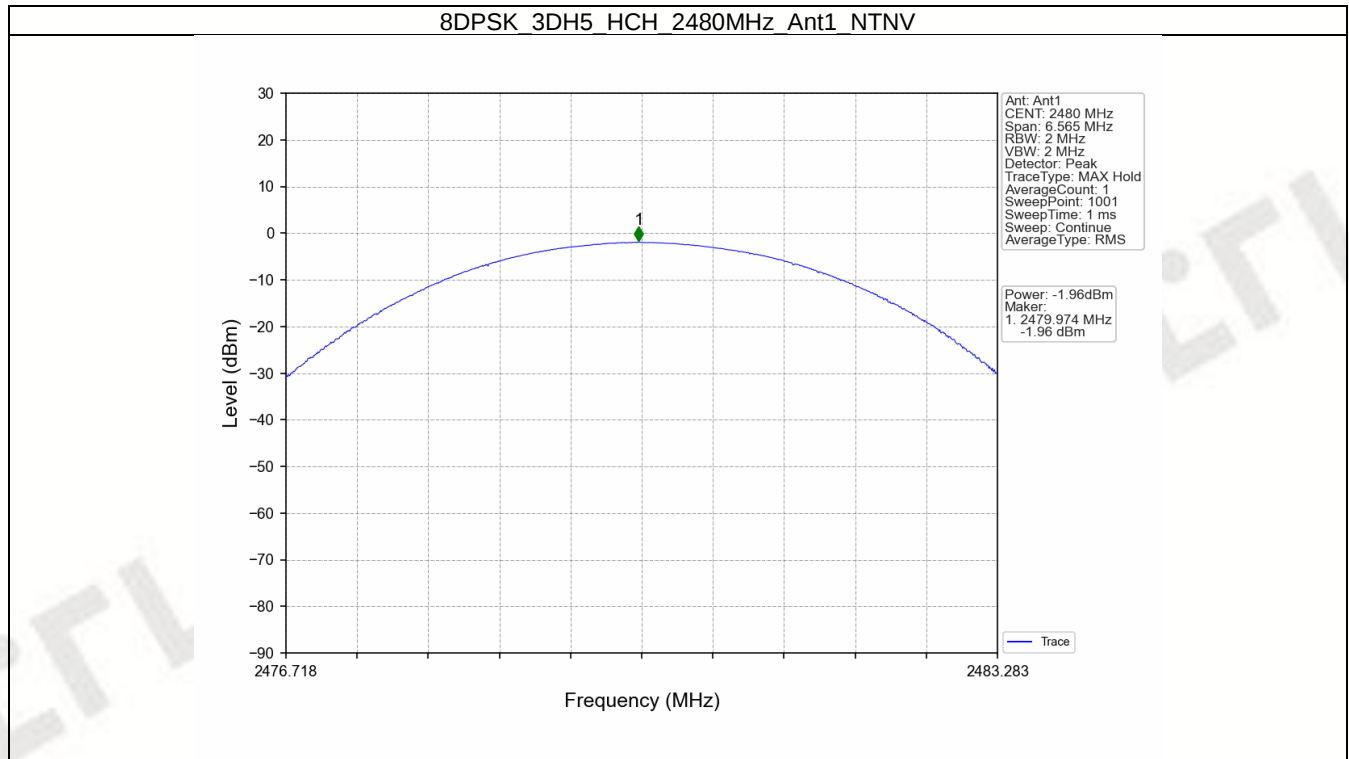
FCCID: 2AU4P-BTS163



FCCID: 2AU4P-BTS163



FCCID: 2AU4P-BTS163



FCCID: 2AU4P-BTS163

3. Carrier Frequency Separation

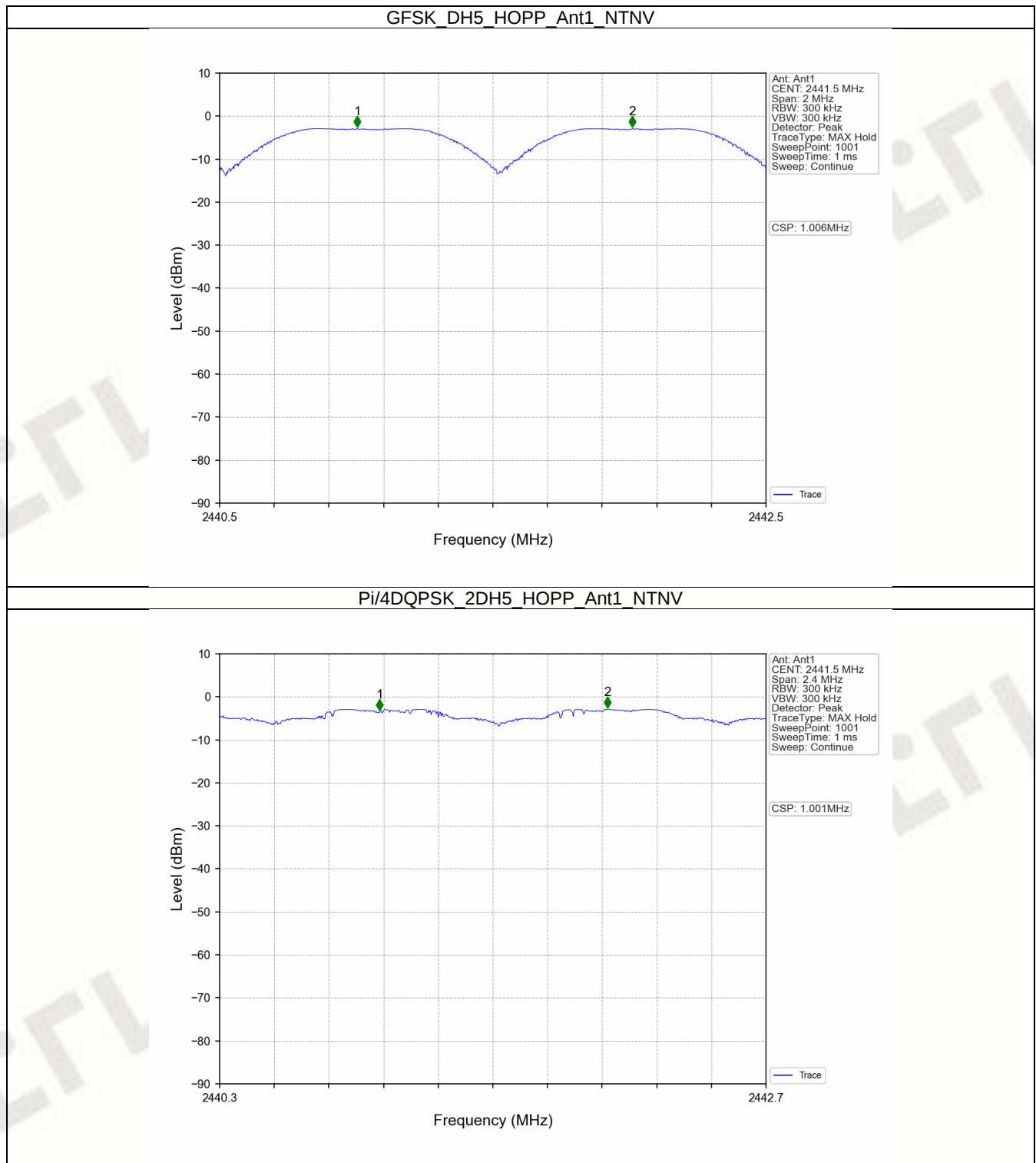
3.1 Ant1

3.1.1 Test Result

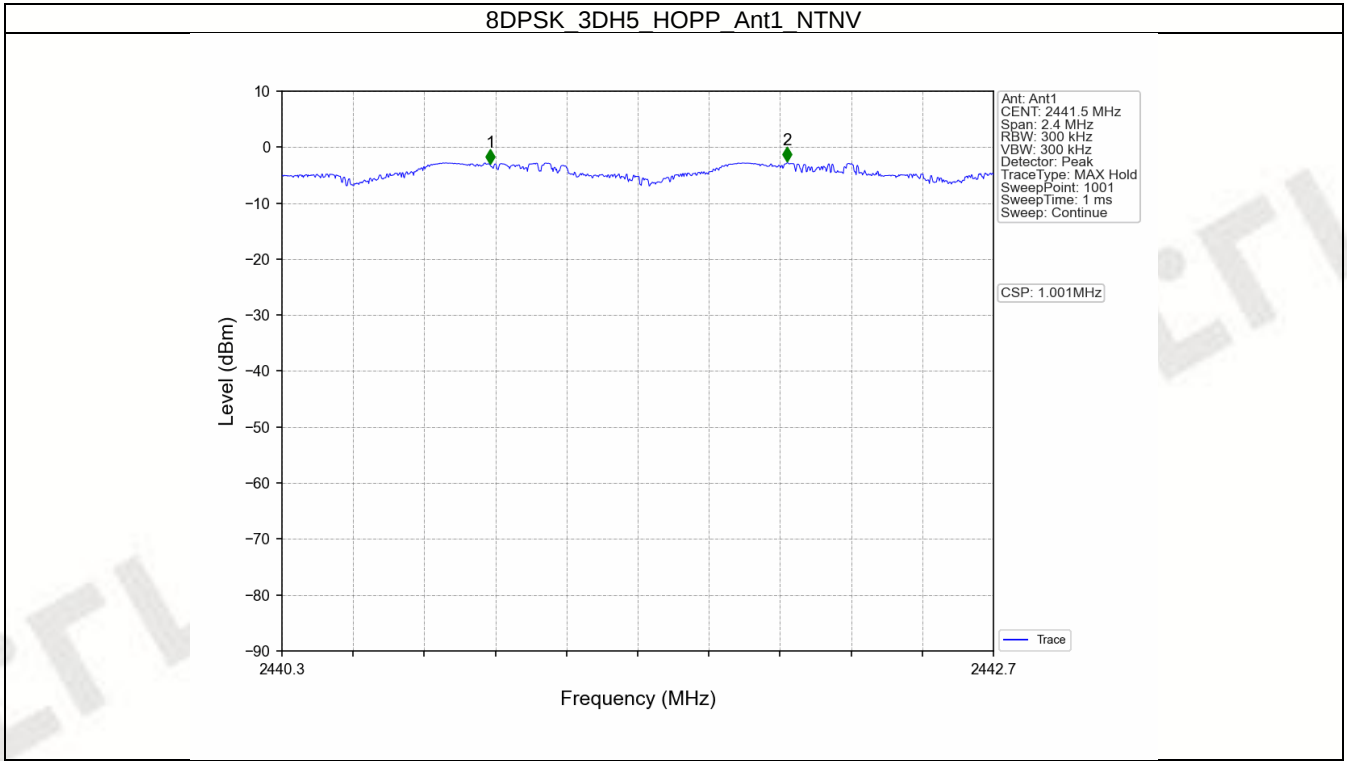
Ant1							
Mode	TX Type	Frequency (MHz)	Packet Type	Channel Separation (MHz)	20dB Bandwidth (MHz)	Limit (MHz)	Verdict
GFSK	SISO	HOPP	DH5	1.006	1.042	≥ 0.695	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	1.001	1.335	≥ 0.89	Pass
8DPSK	SISO	HOPP	3DH5	1.001	1.319	≥ 0.879	Pass

FCCID: 2AU4P-BTS163

3.1.2 Test Graph



FCCID: 2AU4P-BTS163



FCCID: 2AU4P-BTS163

4. Number of Hopping Frequencies

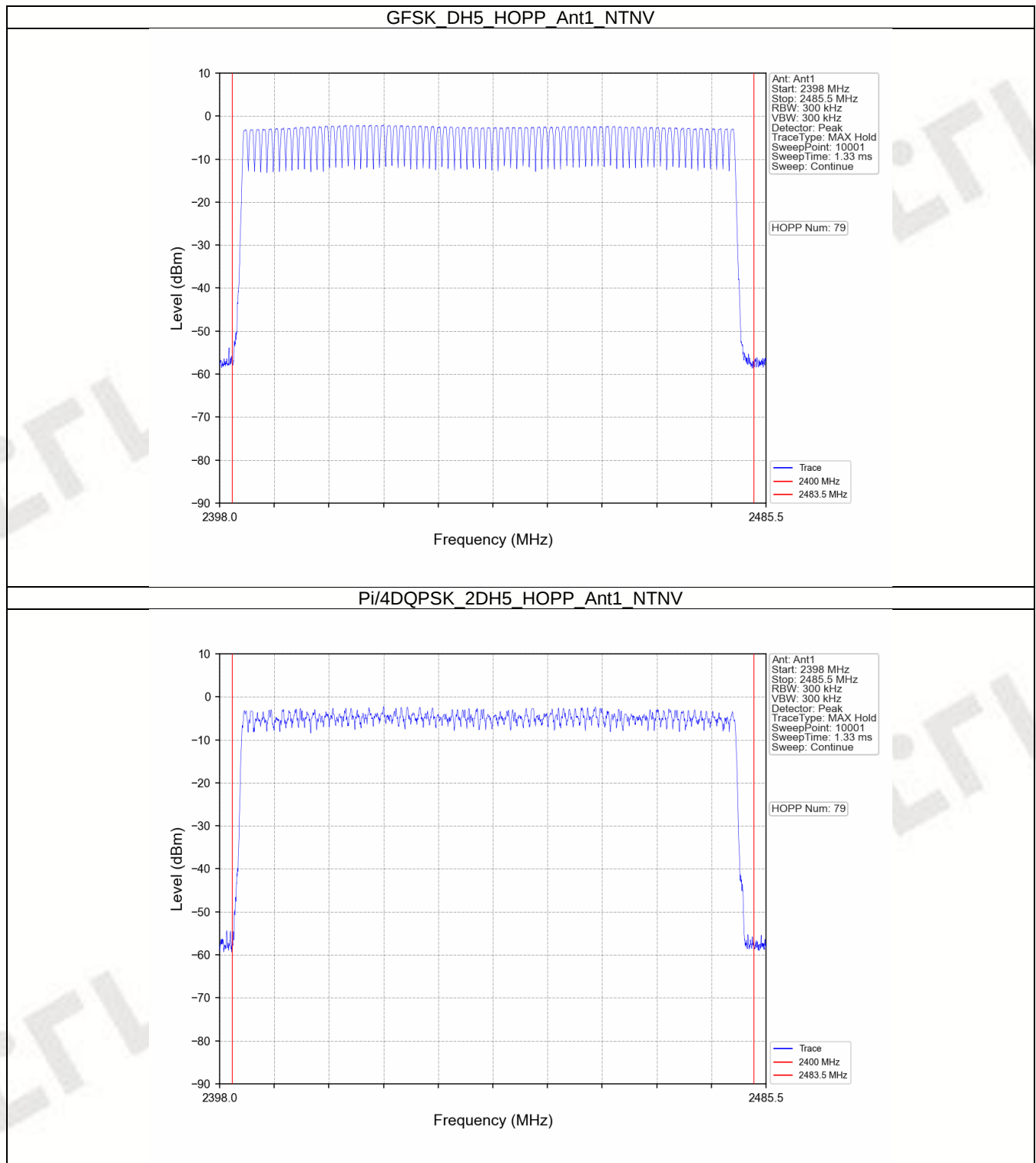
4.1 HoppNum

4.1.1 Test Result

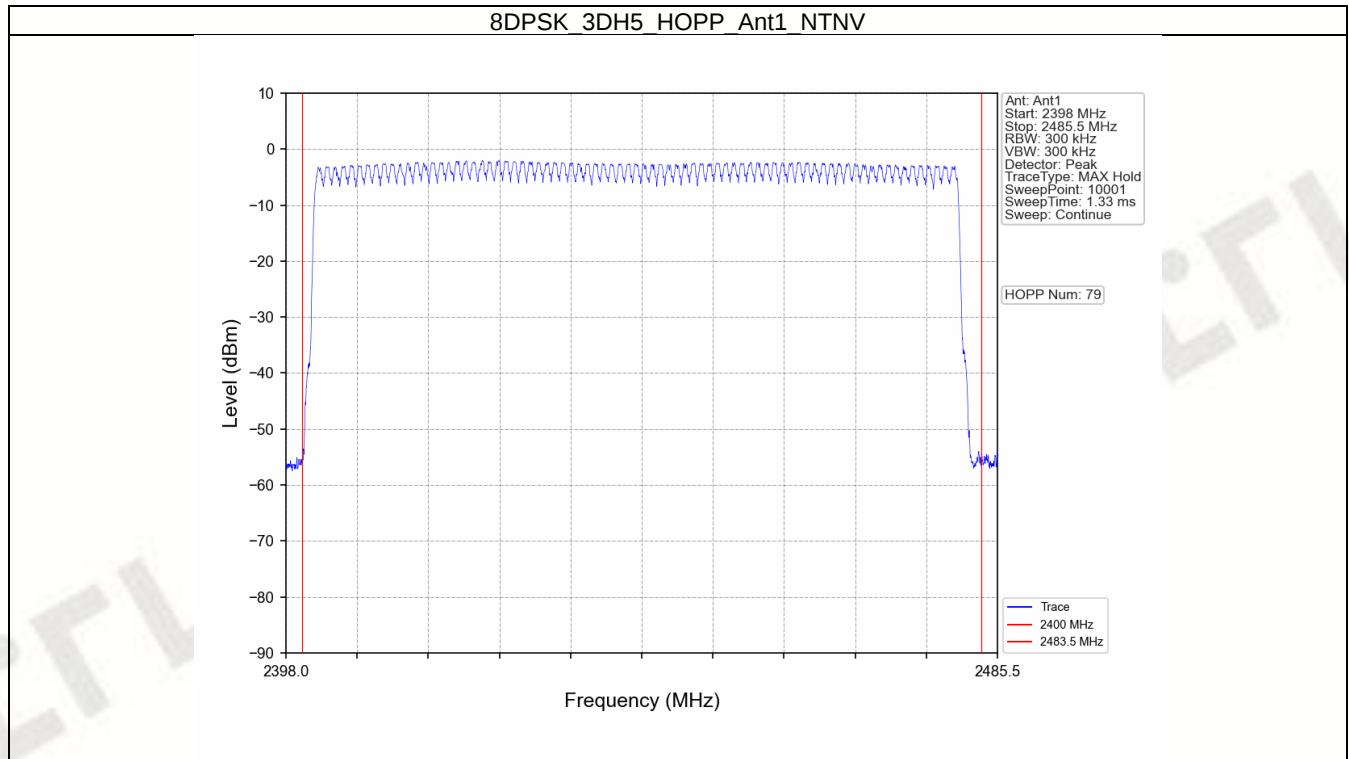
Mode	TX Type	Frequency (MHz)	Packet Type	Num of Hopping Frequencies		Verdict
				ANT1	Limit	
GFSK	SISO	HOPP	DH5	79	>=15	Pass
PI/4DQPSK	SISO	HOPP	2DH5	79	>=15	Pass
8DPSK	SISO	HOPP	3DH5	79	>=15	Pass

FCCID: 2AU4P-BTS163

4.1.2 Test Graph



FCCID: 2AU4P-BTS163



FCCID: 2AU4P-BTS163

5. Time of Occupancy (Dwell Time)

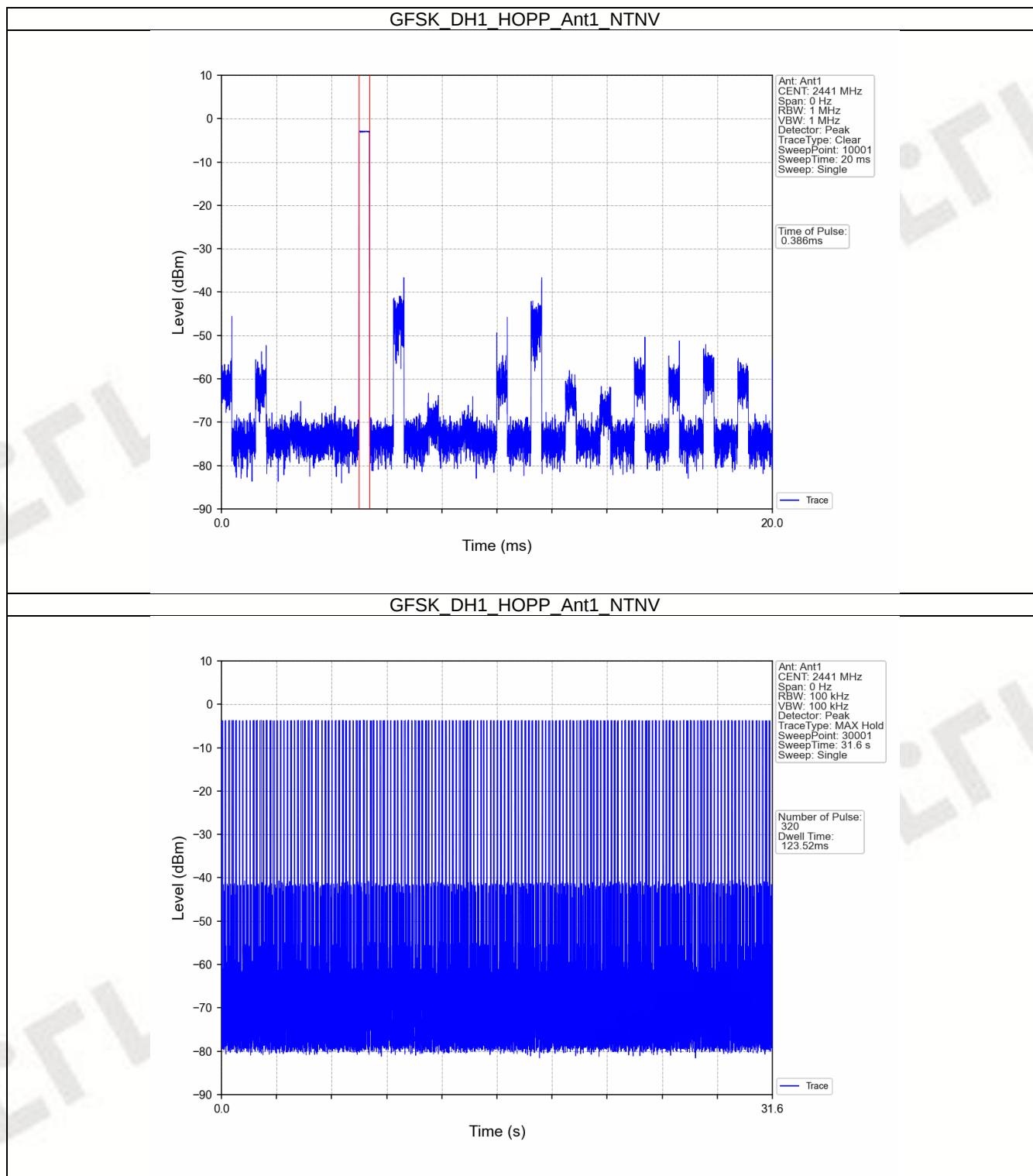
5.1 Ant1

5.1.1 Test Result

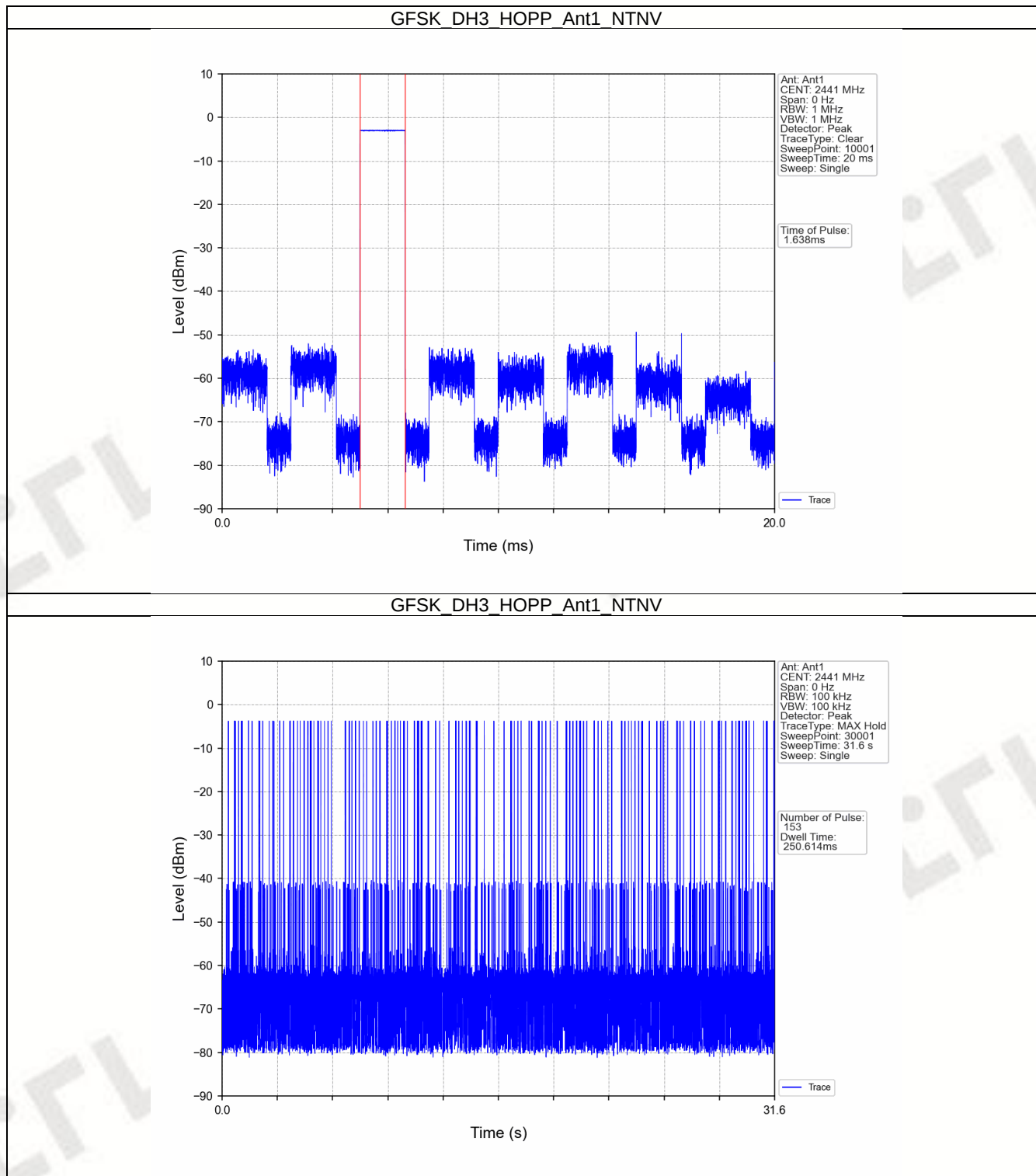
Ant1									
Mode	TX Type	Frequency (MHz)	Packet Type	Duration of Single Pulse (ms)	Observation Period (s)	Num of Pulse in Observation Period	Dwell Time (ms)	Limit (ms)	Verdict
GFSK	SISO	HOPP	DH1	0.386	31.600	320	123.520	<=400	Pass
			DH3	1.638	31.600	153	250.614	<=400	Pass
			DH5	2.890	31.600	101	291.890	<=400	Pass
Pi/4DQPSK	SISO	HOPP	2DH1	0.392	31.600	321	125.832	<=400	Pass
			2DH3	1.648	31.600	160	263.680	<=400	Pass
			2DH5	2.892	31.600	112	323.904	<=400	Pass
8DPSK	SISO	HOPP	3DH1	0.390	31.600	320	124.800	<=400	Pass
			3DH3	1.640	31.600	166	272.240	<=400	Pass
			3DH5	2.892	31.600	103	297.876	<=400	Pass

FCCID: 2AU4P-BTS163

5.1.2 Test Graph

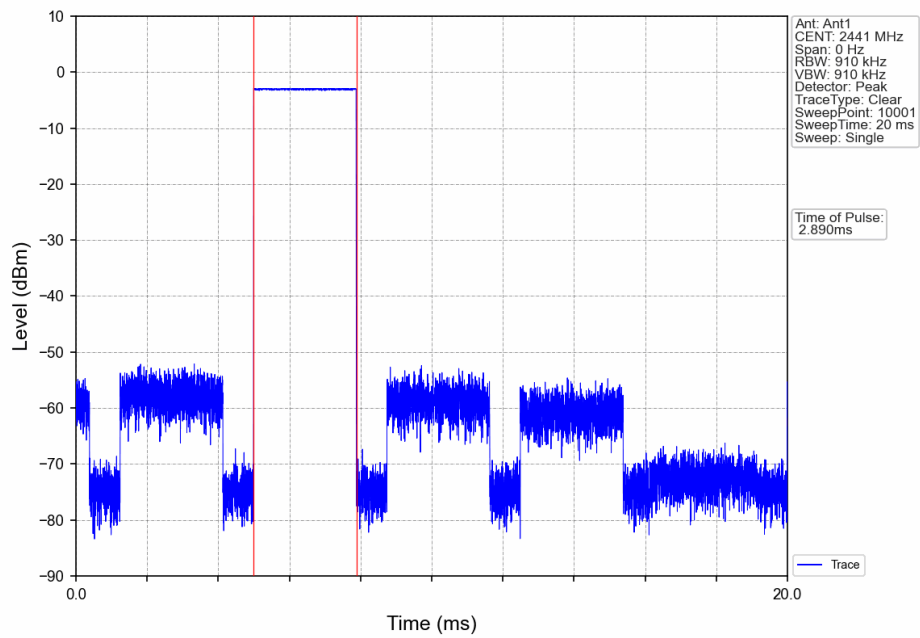


FCCID: 2AU4P-BTS163

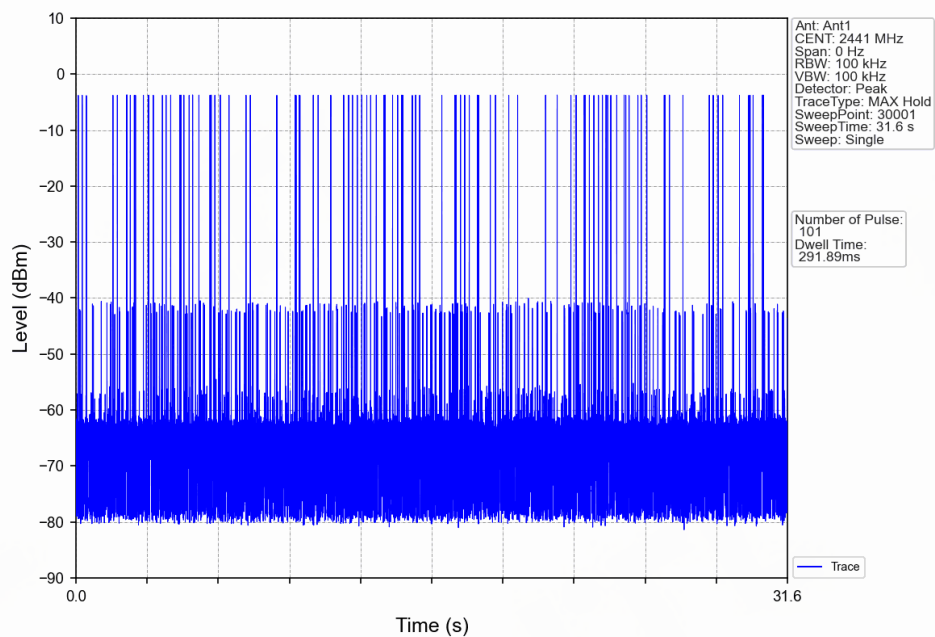


FCCID: 2AU4P-BTS163

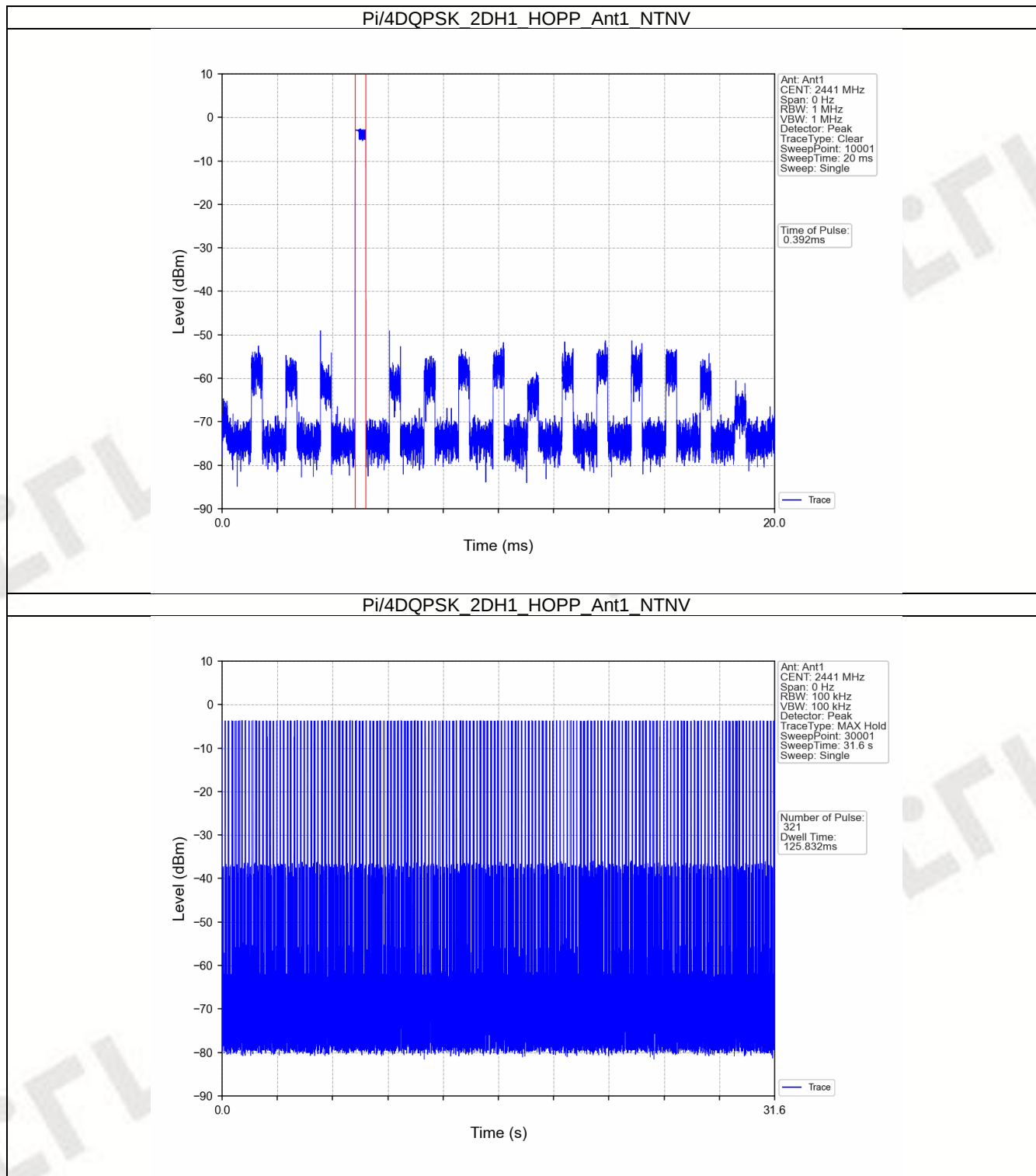
GFSK DH5 HOPP Ant1 NTN



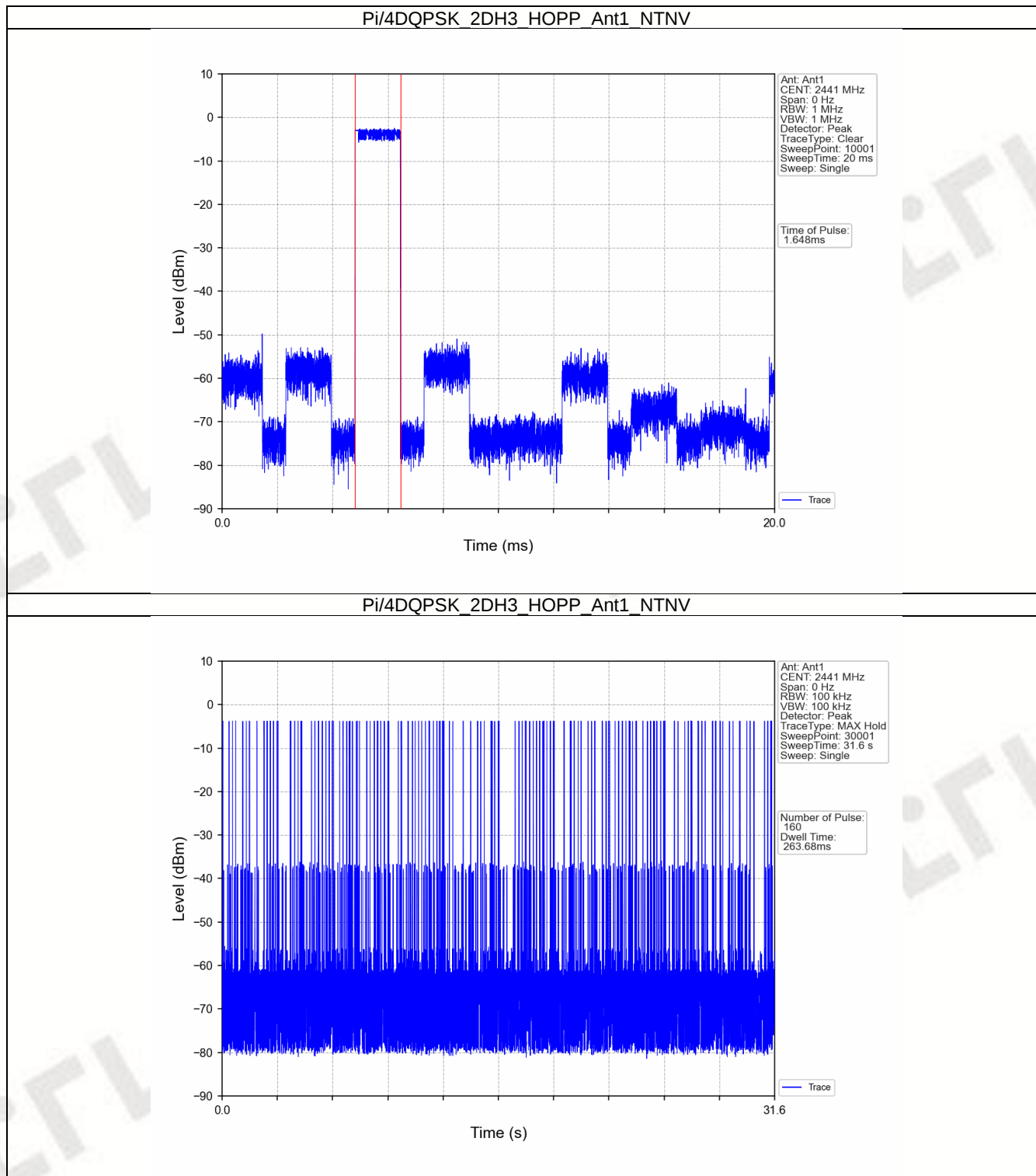
GFSK_DH5_HOPP_Ant1_NTNV



FCCID: 2AU4P-BTS163

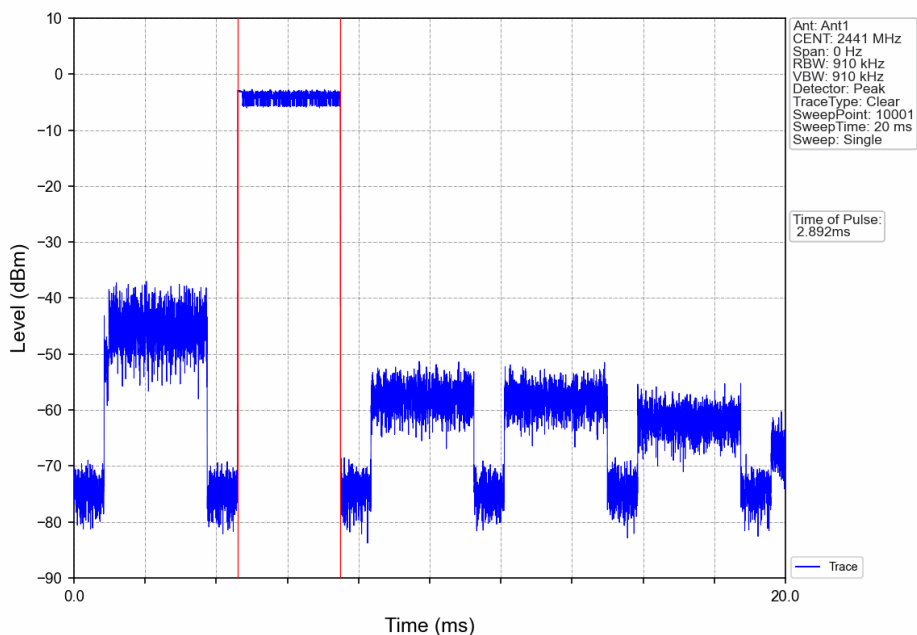


FCCID: 2AU4P-BTS163

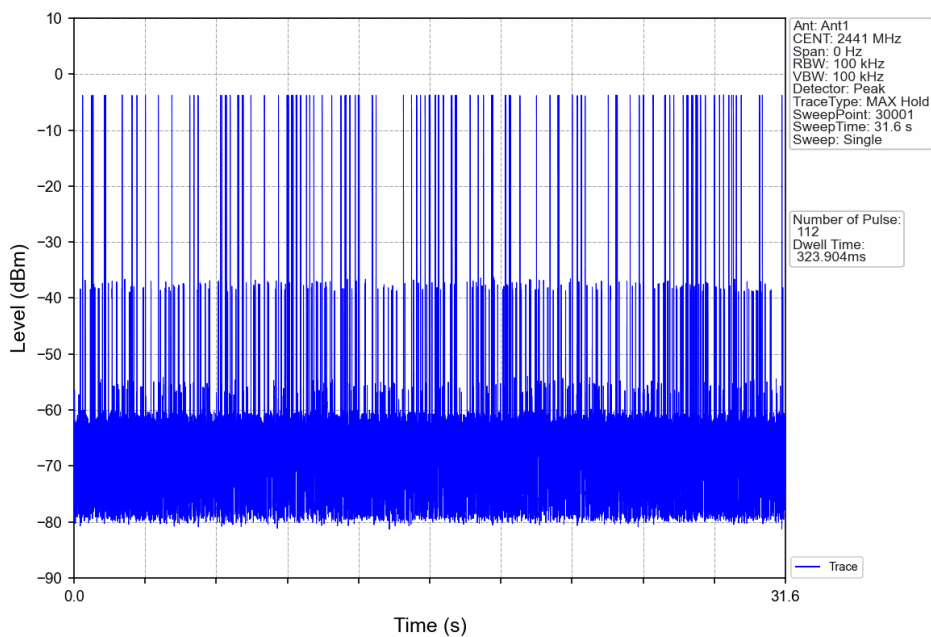


FCCID: 2AU4P-BTS163

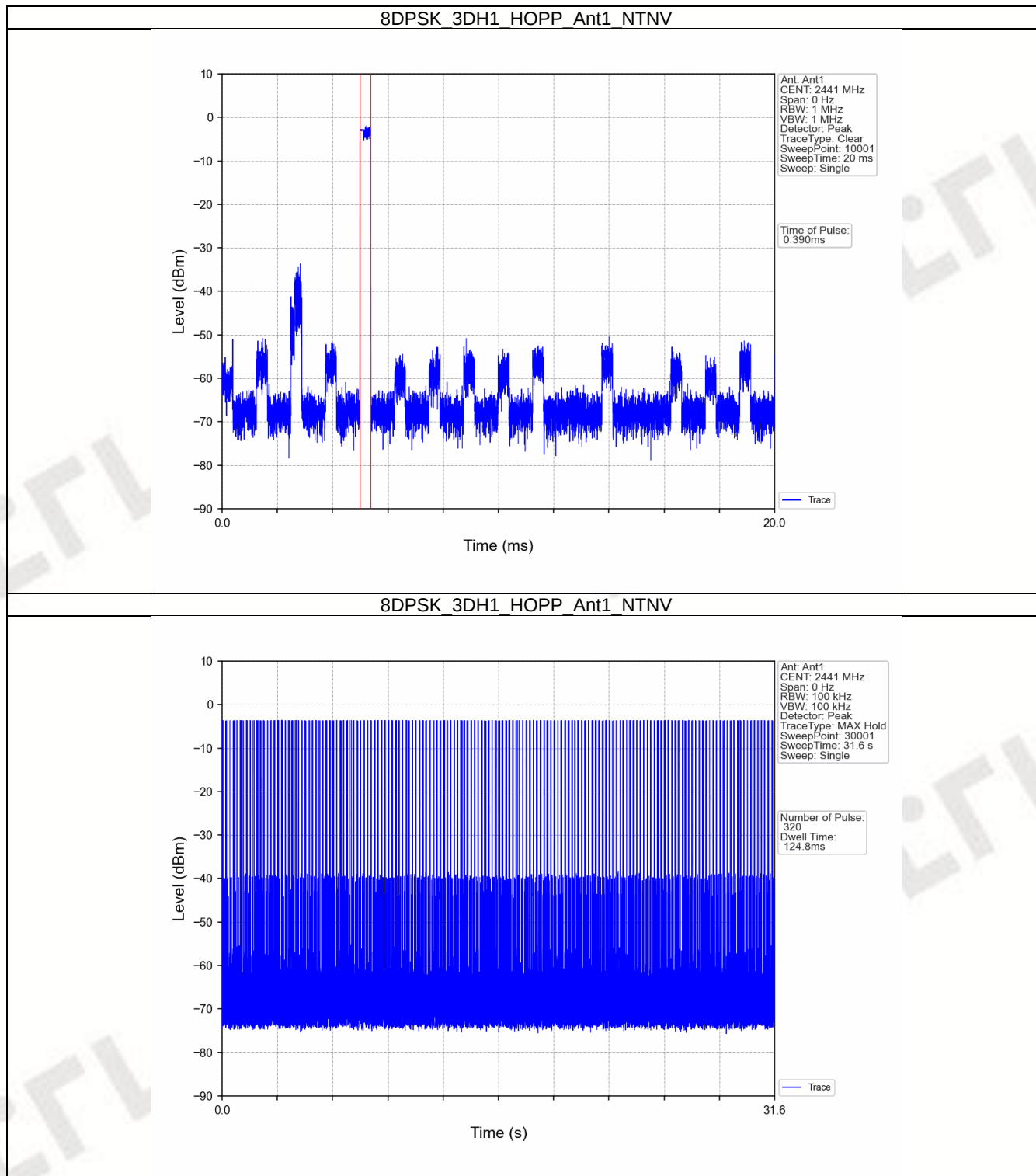
Pi/4DQPSK 2DH5 HOPP Ant1 NTN



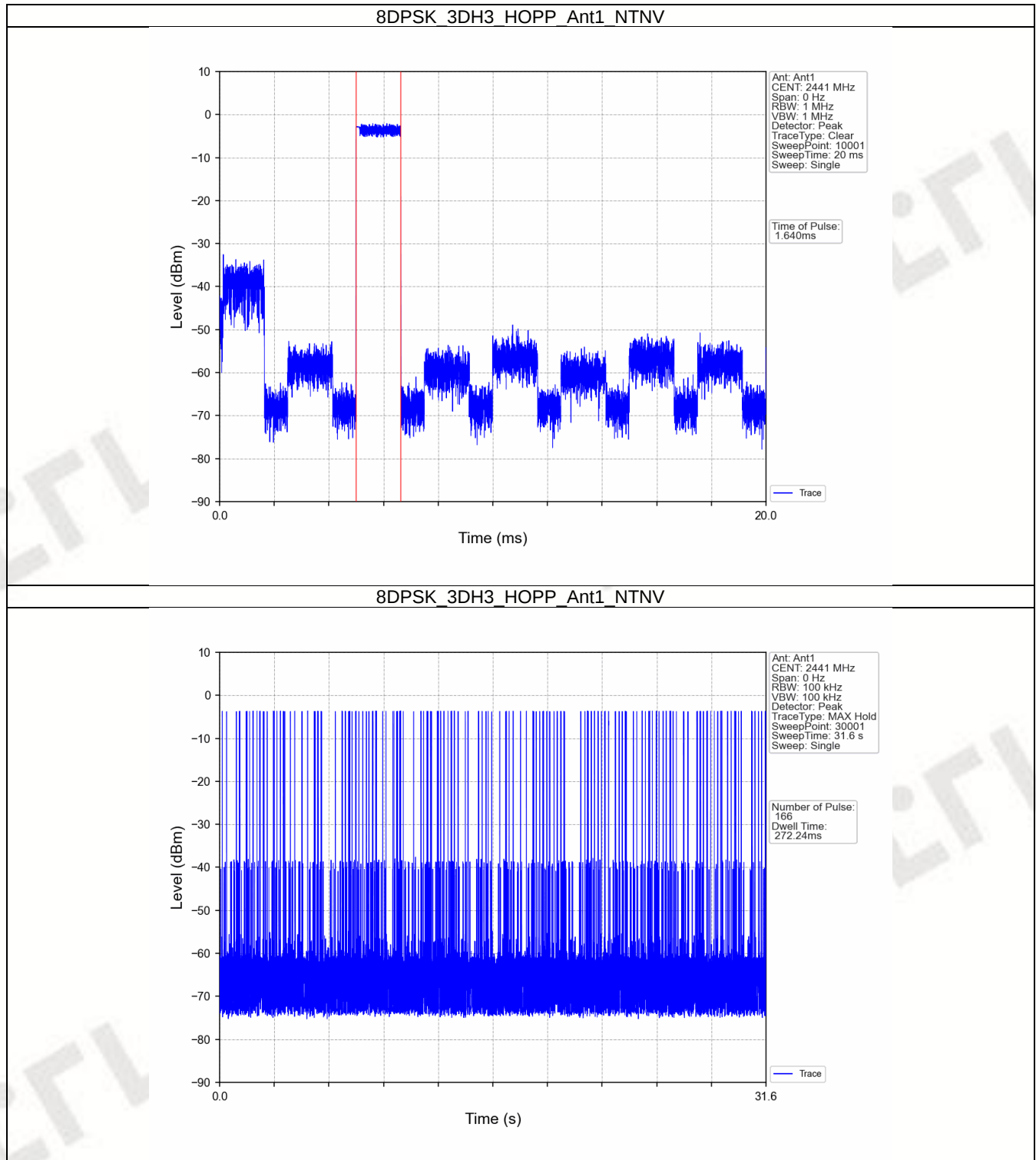
Pi/4DQPSK_2DH5_HOPP_Ant1_NTN



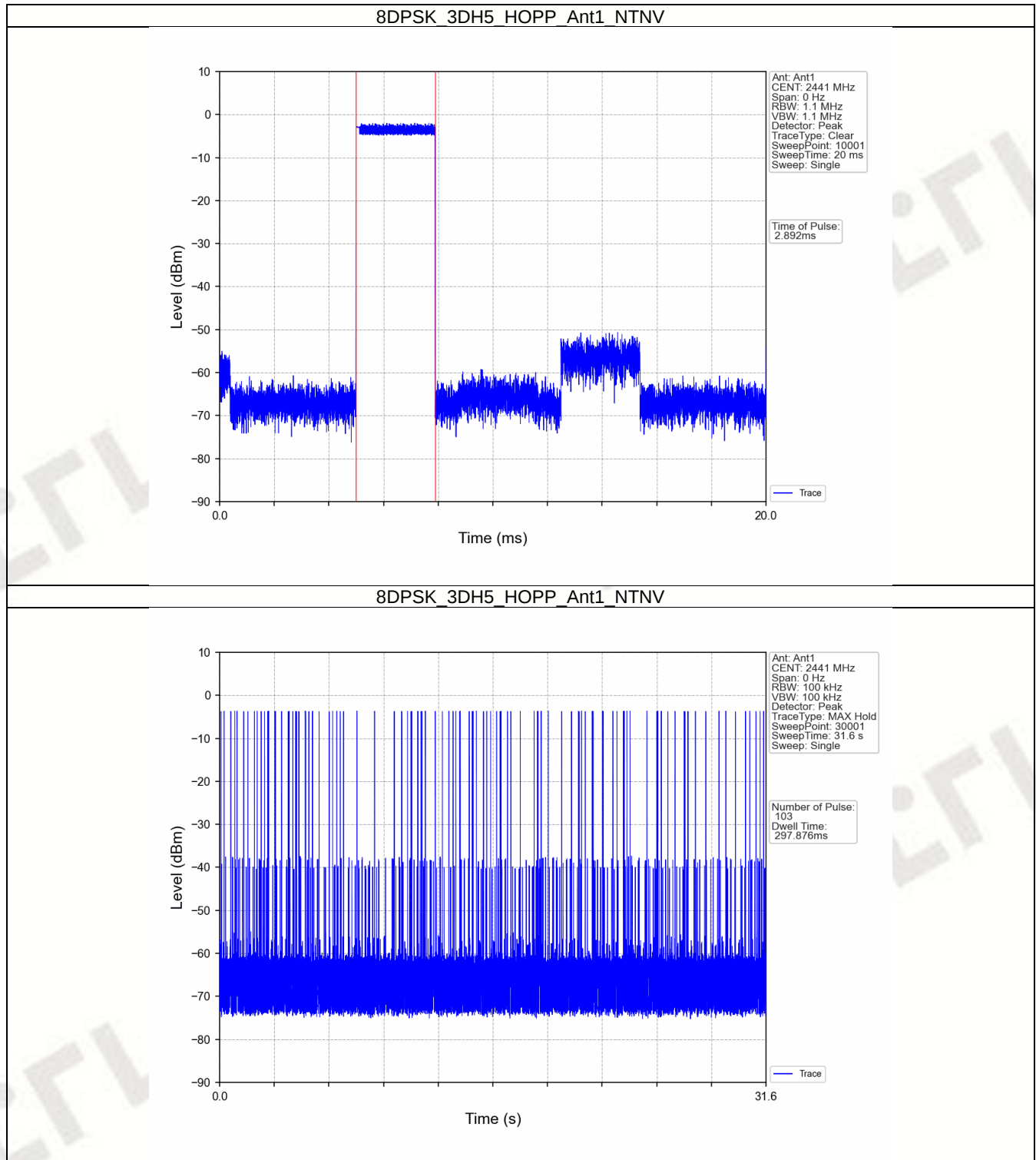
FCCID: 2AU4P-BTS163



FCCID: 2AU4P-BTS163



FCCID: 2AU4P-BTS163



FCCID: 2AU4P-BTS163

6. Unwanted Emissions In Non-restricted Frequency Bands

6.1 Ref

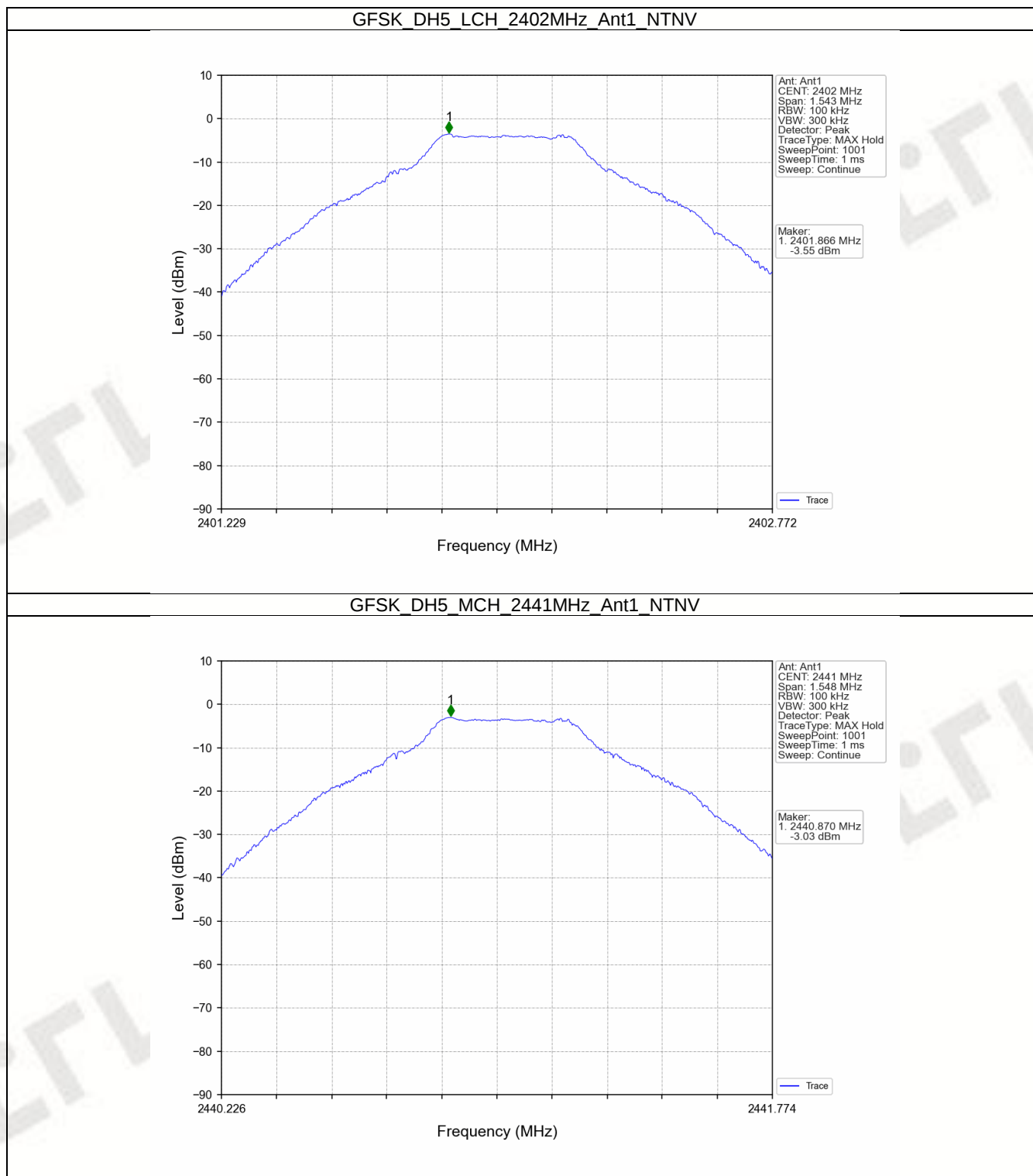
6.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)
GFSK	SISO	2402	DH5	1	-3.55
		2441	DH5	1	-3.03
		2480	DH5	1	-3.39
Pi/4DQPSK	SISO	2402	2DH5	1	-3.57
		2441	2DH5	1	-2.99
		2480	2DH5	1	-3.41
8DPSK	SISO	2402	3DH5	1	-3.44
		2441	3DH5	1	-2.98
		2480	3DH5	1	-3.38

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.

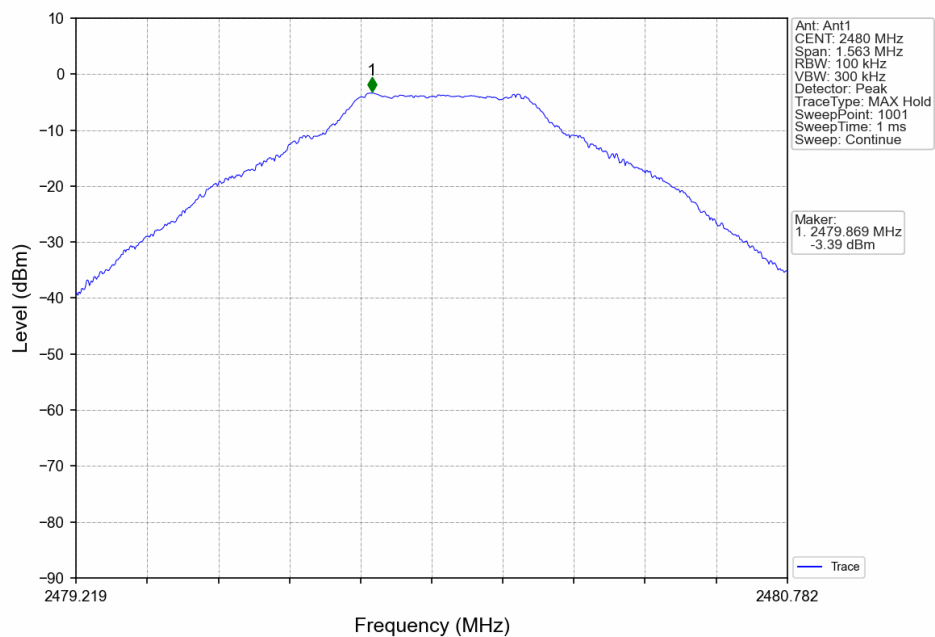
FCCID: 2AU4P-BTS163

6.1.2 Test Graph

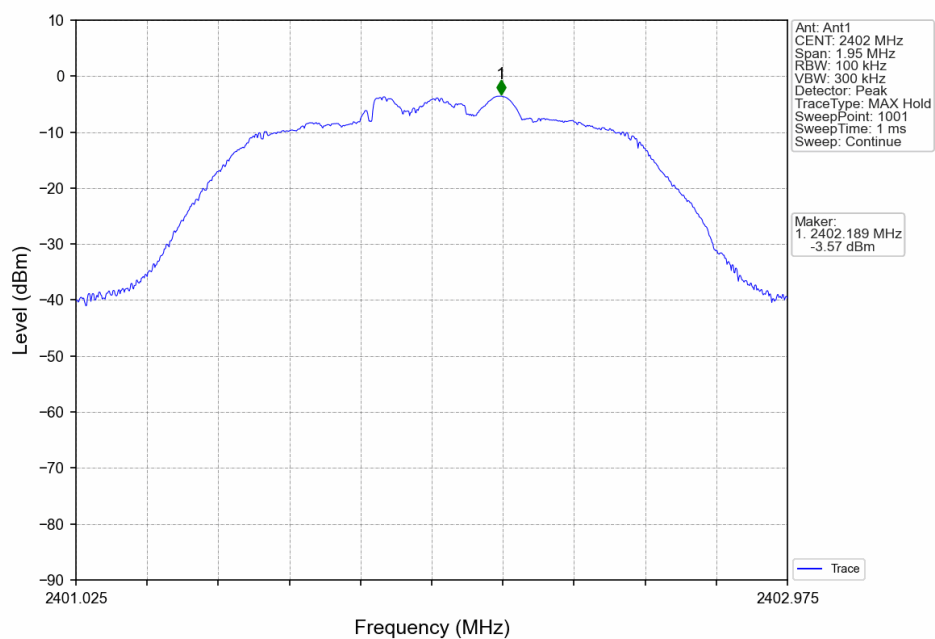


FCCID: 2AU4P-BTS163

GFSK DH5 HCH 2480MHz Ant1 NTNV

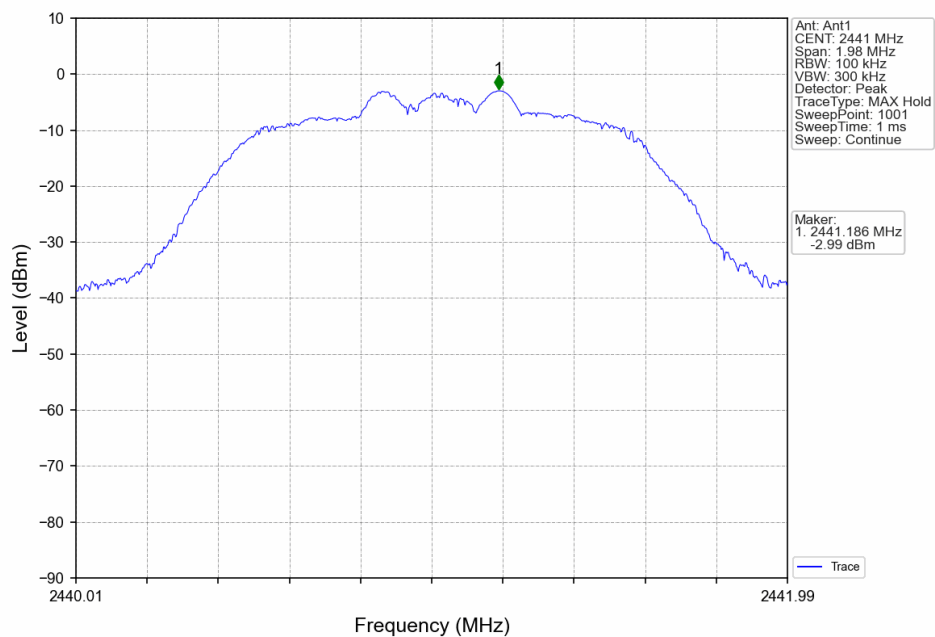


Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV

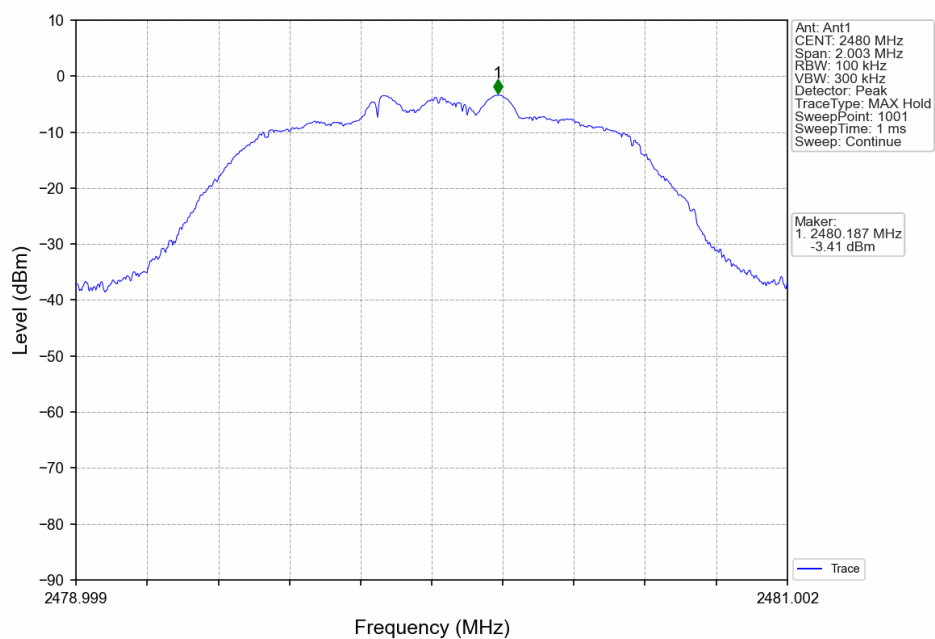


FCCID: 2AU4P-BTS163

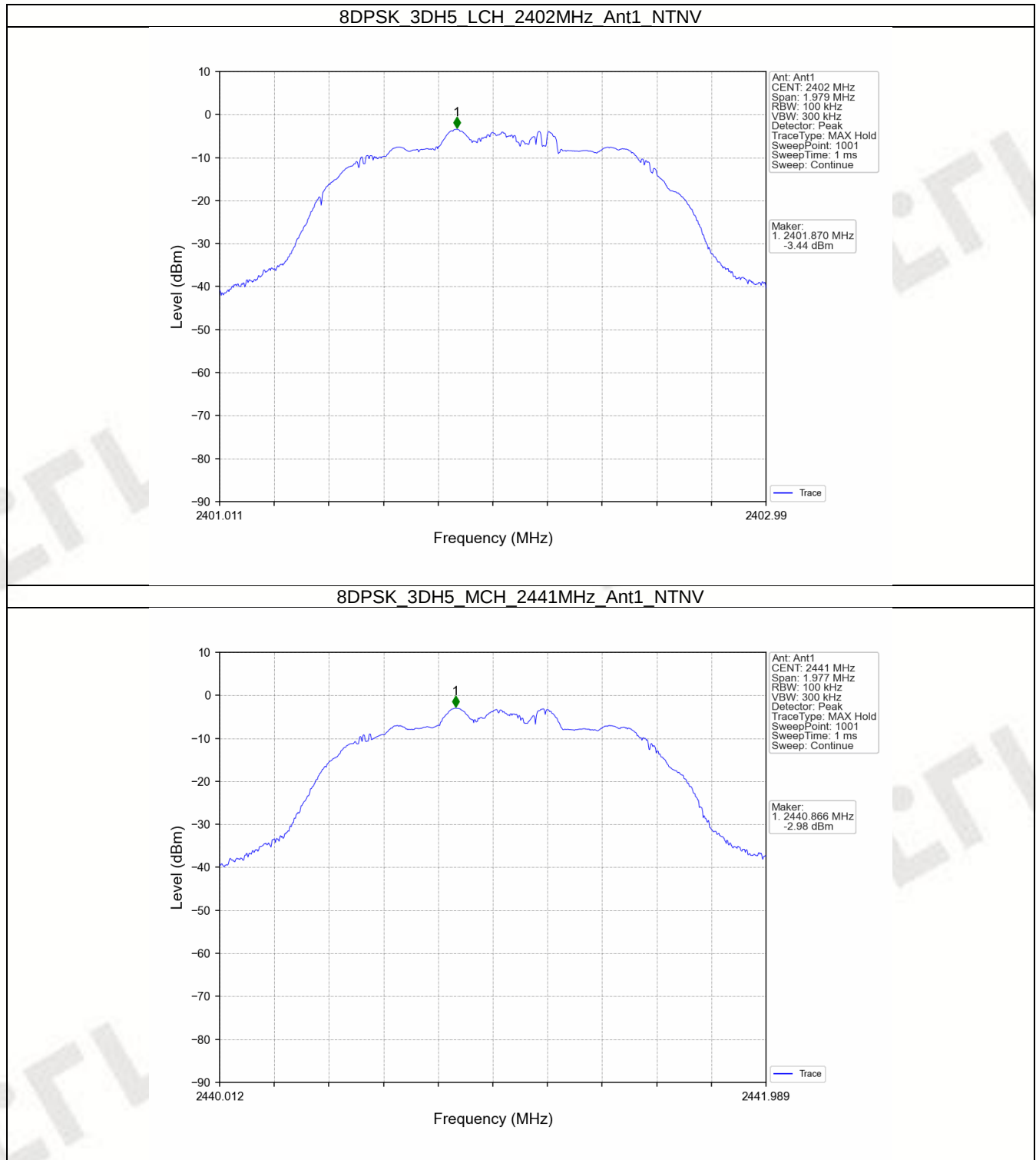
Pi/4DQPSK 2DH5 MCH 2441MHz Ant1 NTN



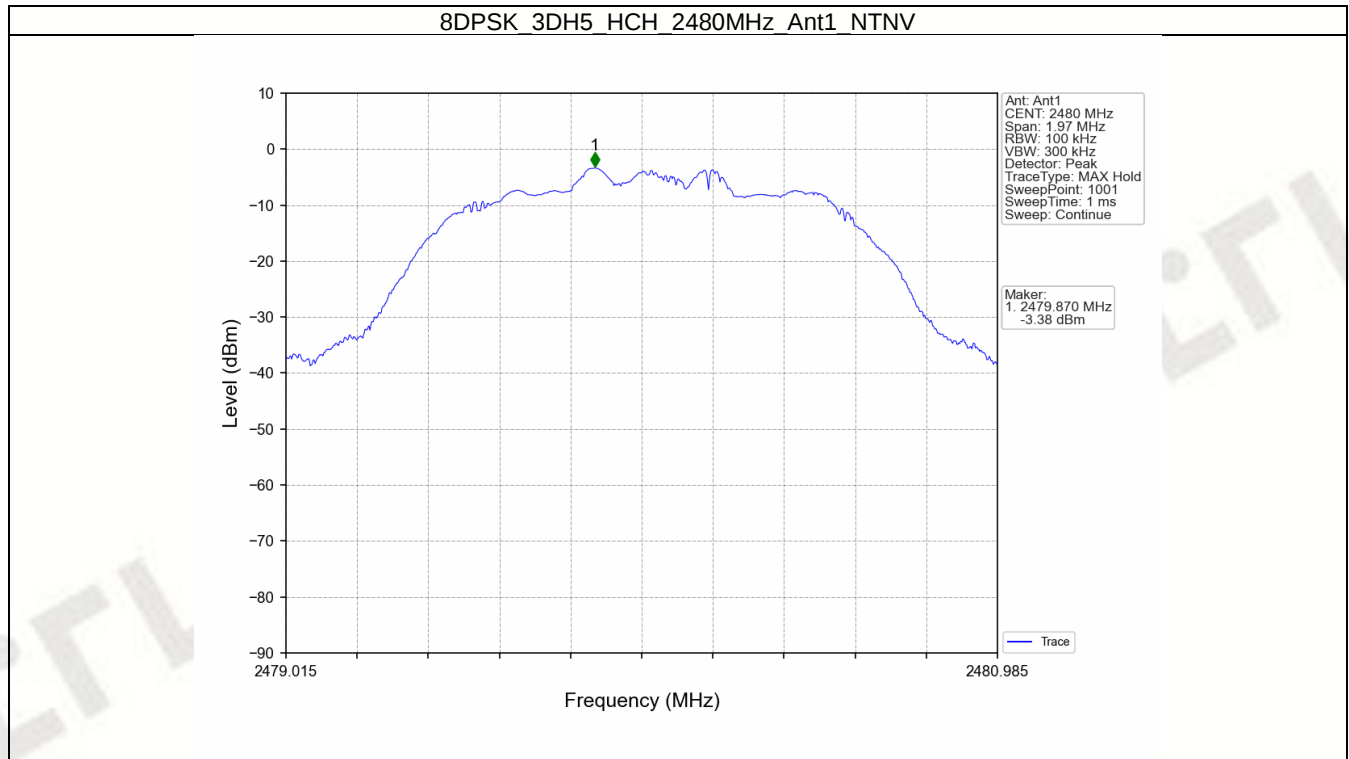
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTN



FCCID: 2AU4P-BTS163



FCCID: 2AU4P-BTS163



FCCID: 2AU4P-BTS163

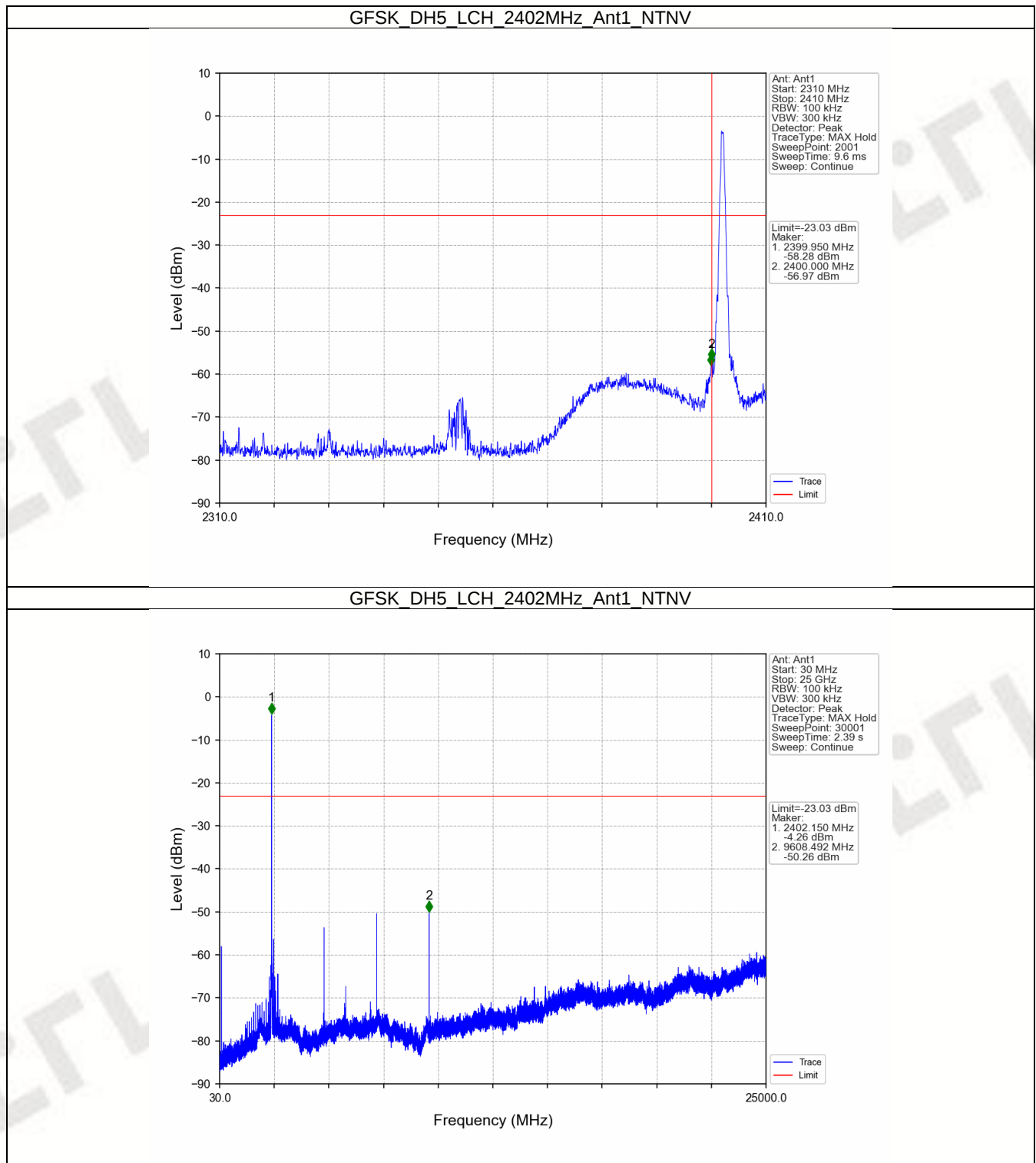
6.2 CSE

6.2.1 Test Result

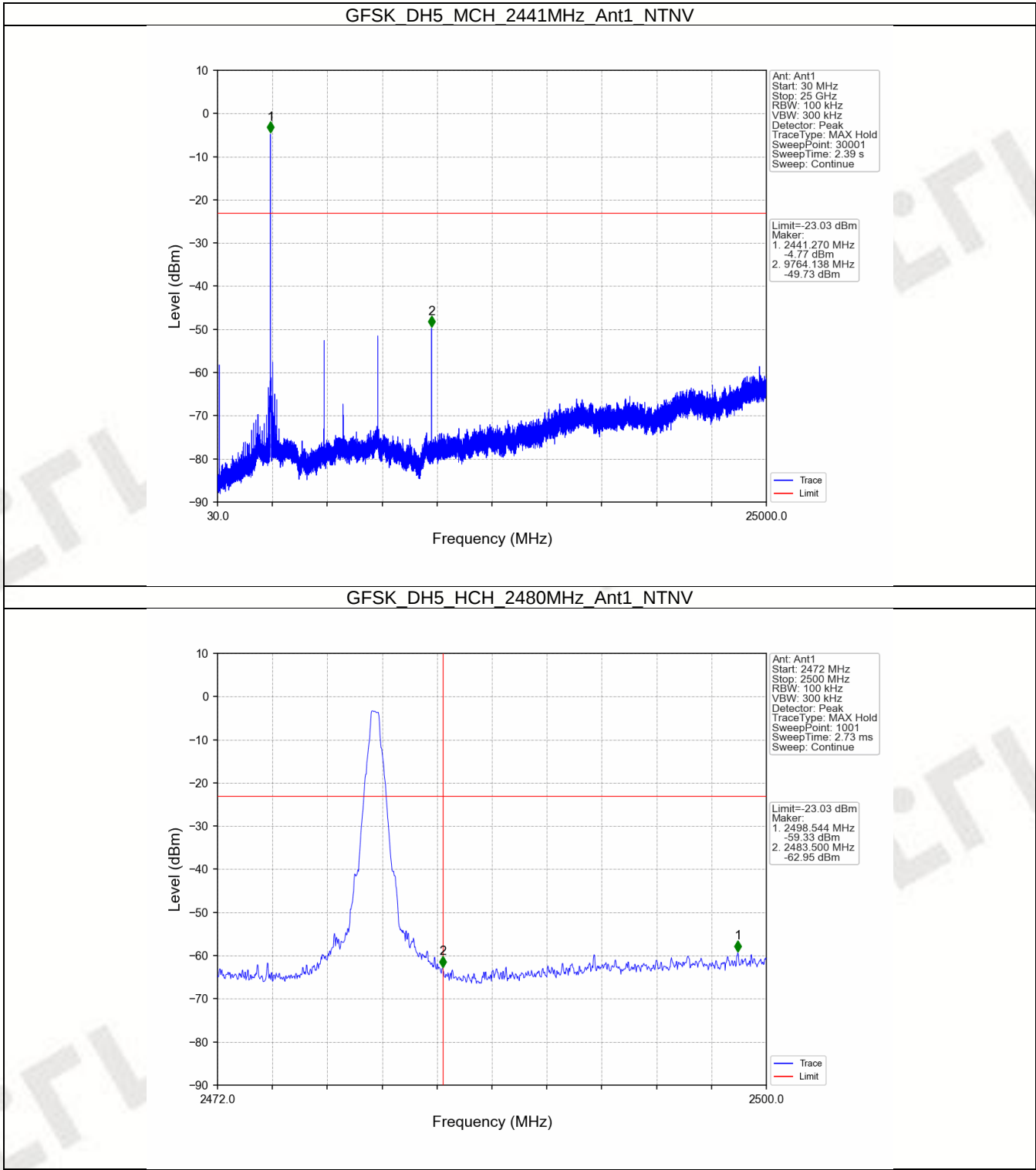
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
GFSK	SISO	2402	DH5	1	-3.03	-23.03	Pass
		2441	DH5	1	-3.03	-23.03	Pass
		2480	DH5	1	-3.03	-23.03	Pass
		HOPP	DH5	1	-3.03	-23.03	Pass
					-3.03	-23.03	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	-2.99	-22.99	Pass
		2441	2DH5	1	-2.99	-22.99	Pass
		2480	2DH5	1	-2.99	-22.99	Pass
		HOPP	2DH5	1	-2.99	-22.99	Pass
					-2.99	-22.99	Pass
8DPSK	SISO	2402	3DH5	1	-2.98	-22.98	Pass
		2441	3DH5	1	-2.98	-22.98	Pass
		2480	3DH5	1	-2.98	-22.98	Pass
		HOPP	3DH5	1	-2.98	-22.98	Pass
					-2.98	-22.98	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.							

FCCID: 2AU4P-BTS163

6.2.2 Test Graph

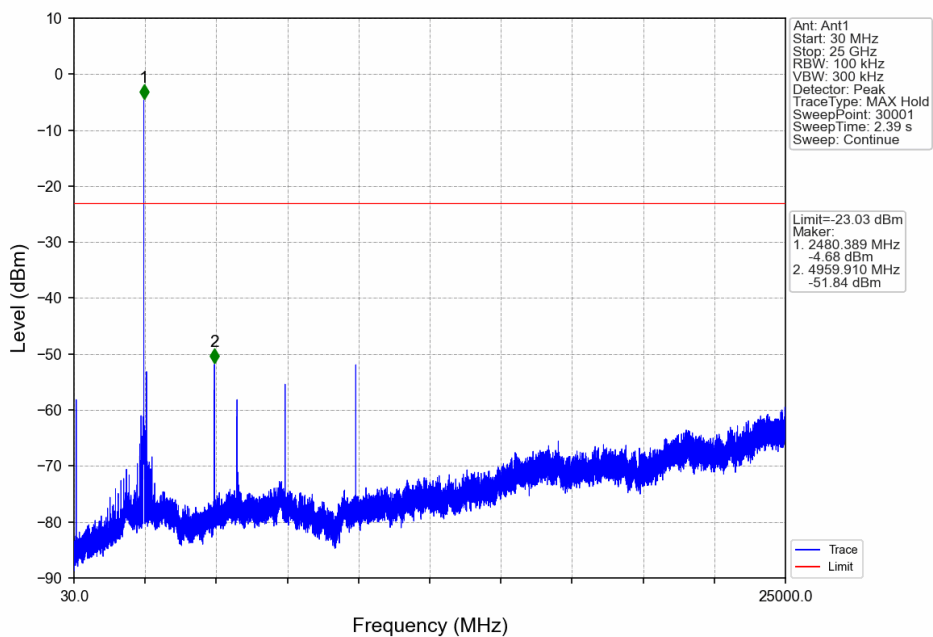


FCCID: 2AU4P-BTS163

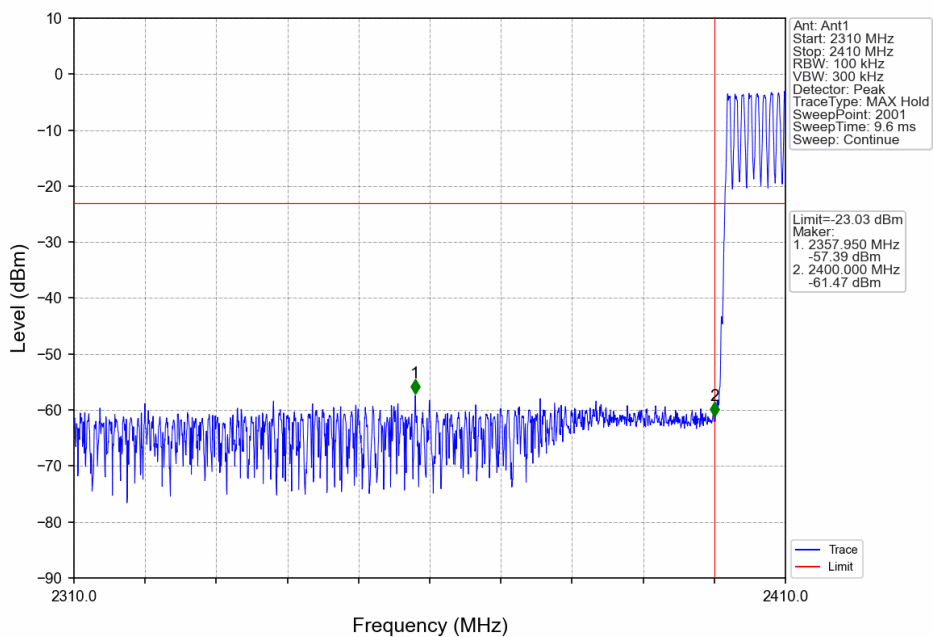


FCCID: 2AU4P-BTS163

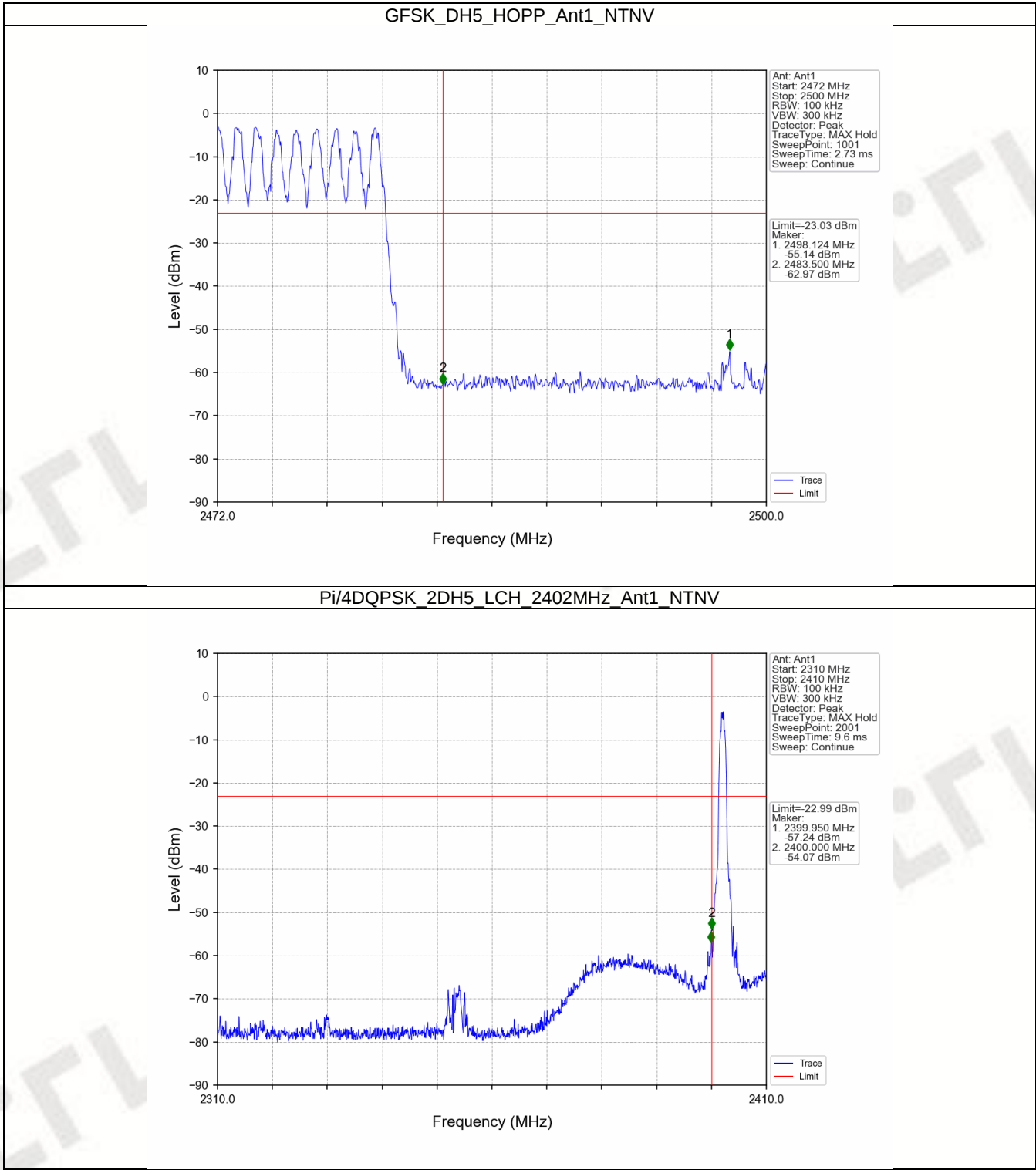
GFSK DH5 HCH 2480MHz Ant1 NTN



GFSK_DH5_HOPP_Ant1_NTN

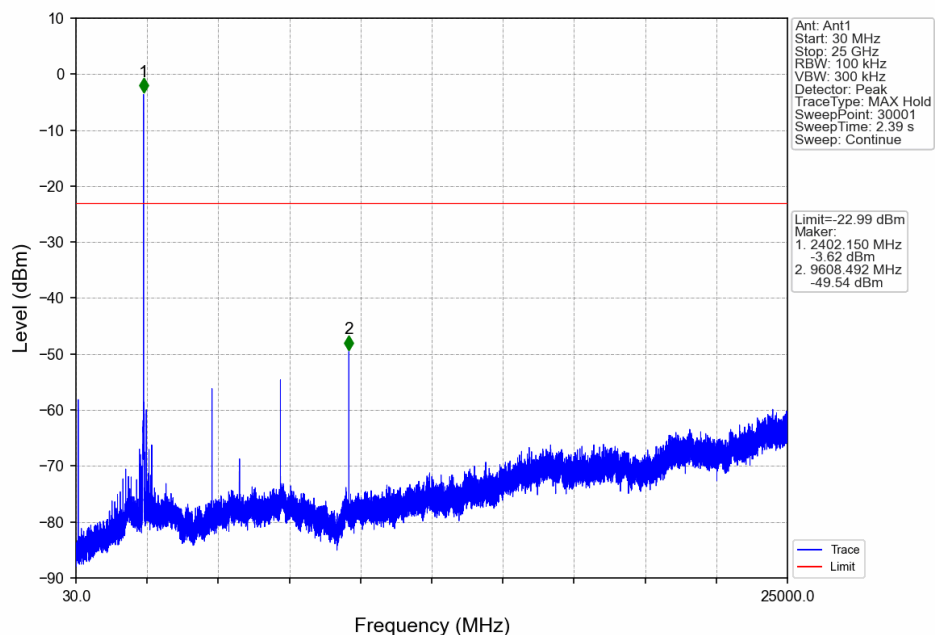


FCCID: 2AU4P-BTS163

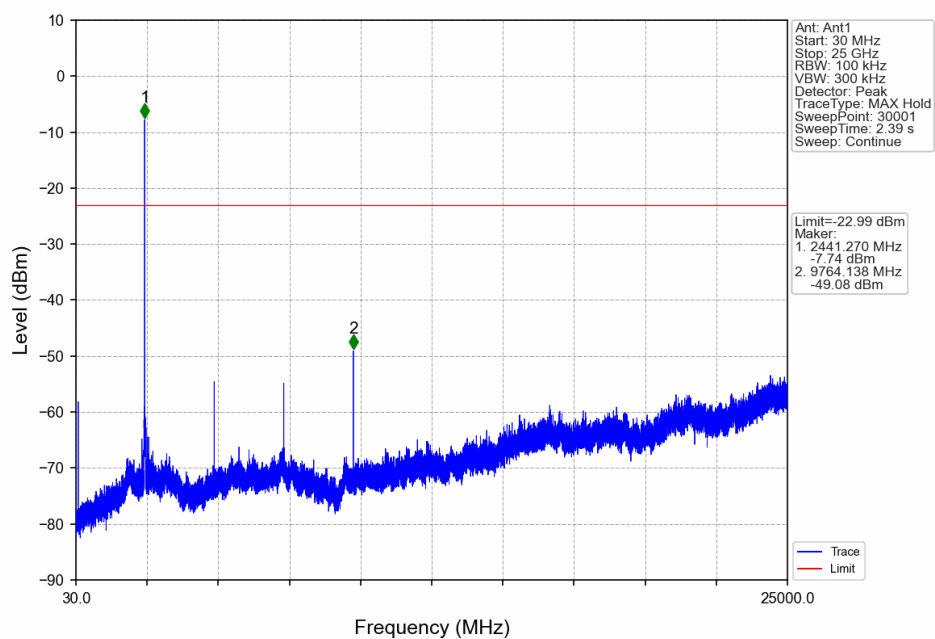


FCCID: 2AU4P-BTS163

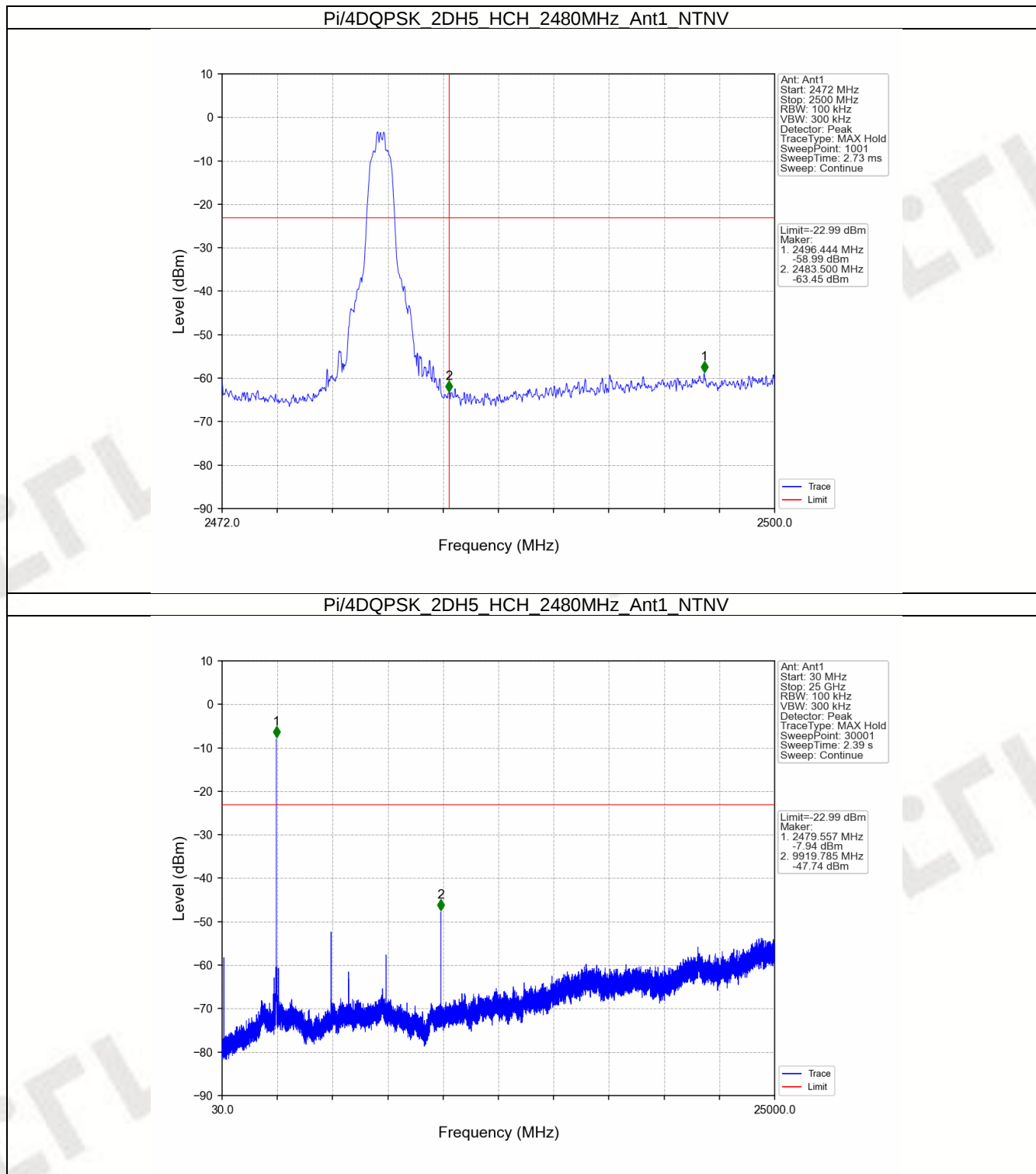
Pi/4DQPSK 2DH5 LCH 2402MHz Ant1 NTN



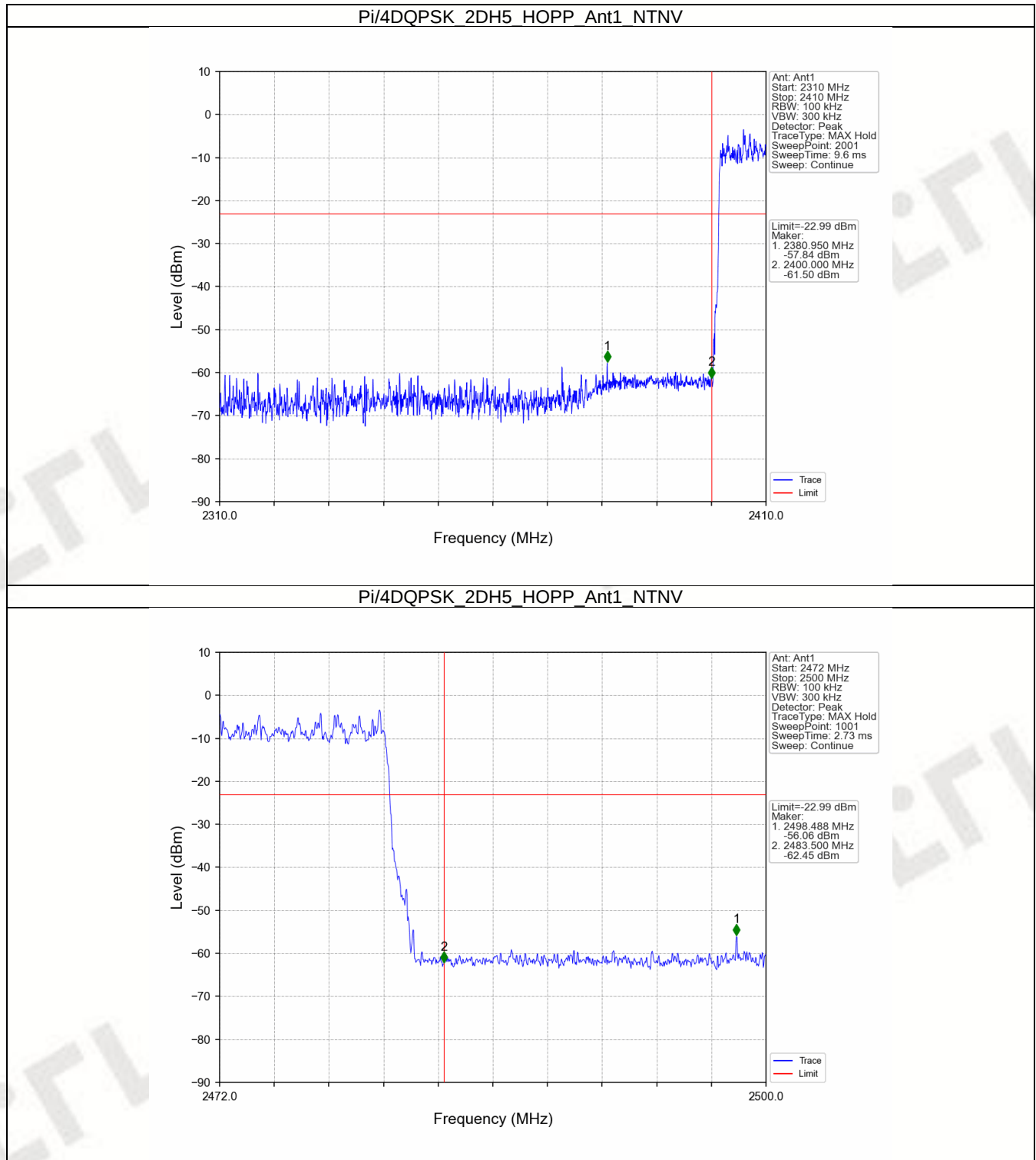
Pi/4DQPSK 2DH5_MCH_2441MHz_Ant1_NTN



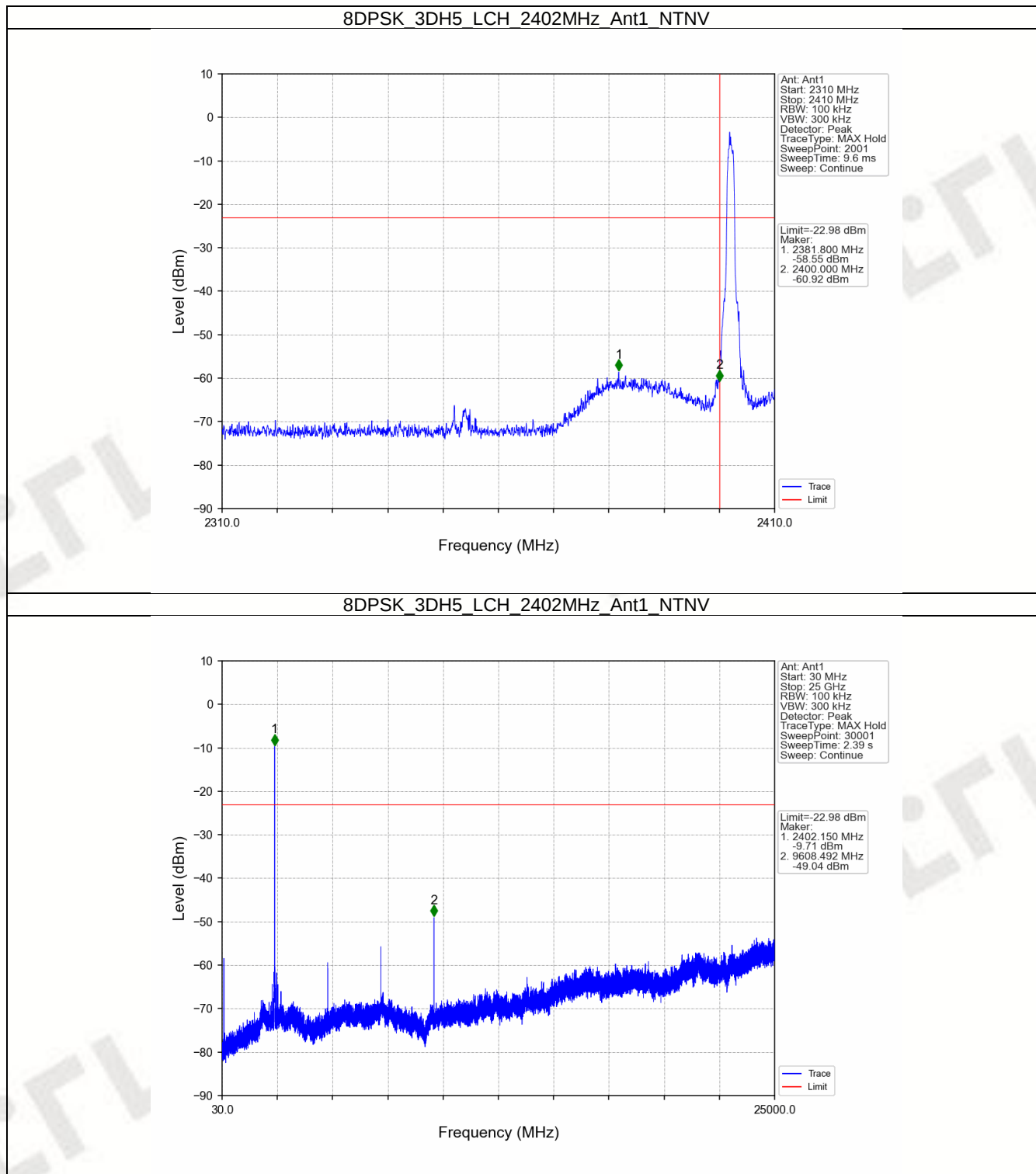
FCCID: 2AU4P-BTS163



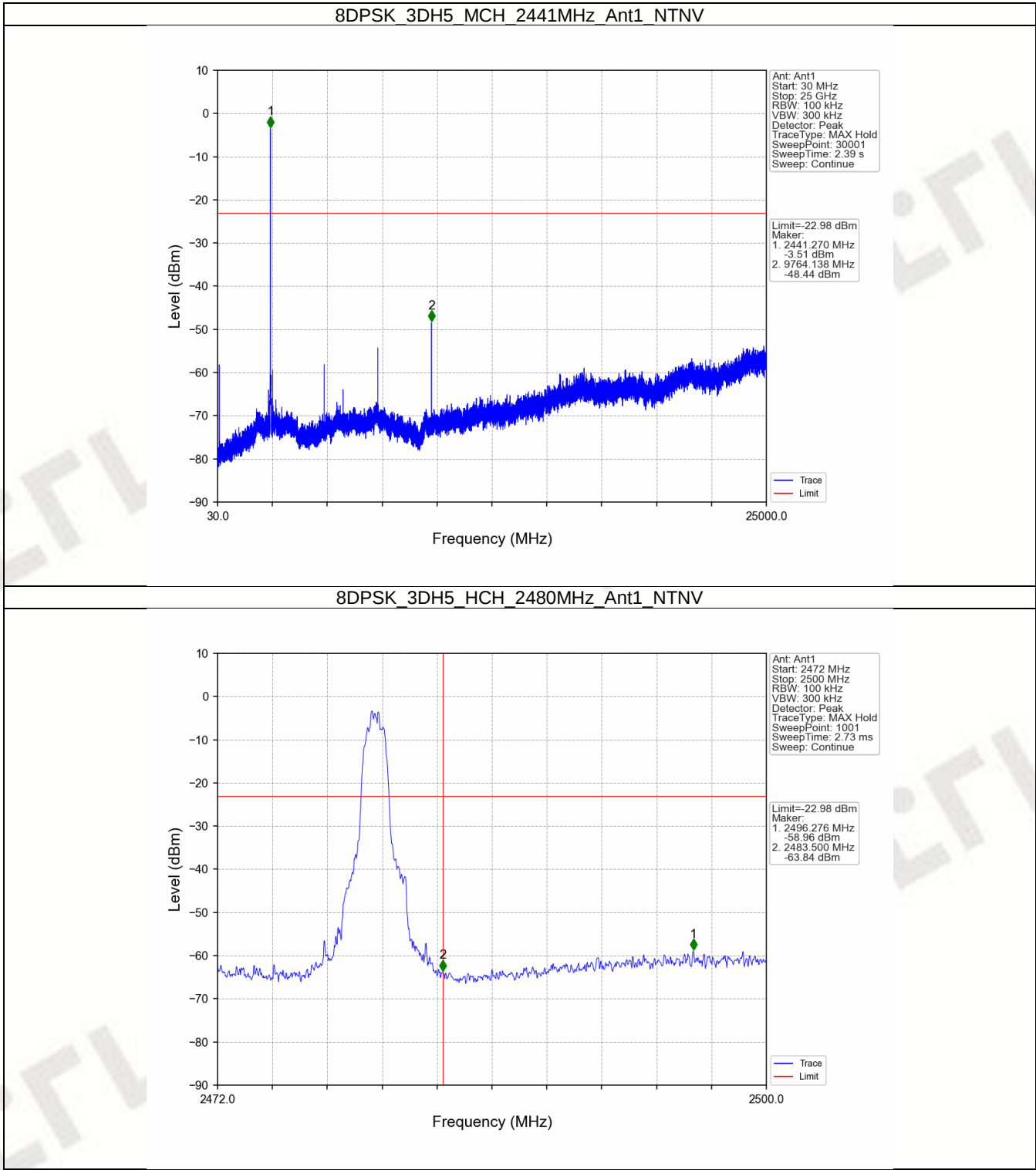
FCCID: 2AU4P-BTS163



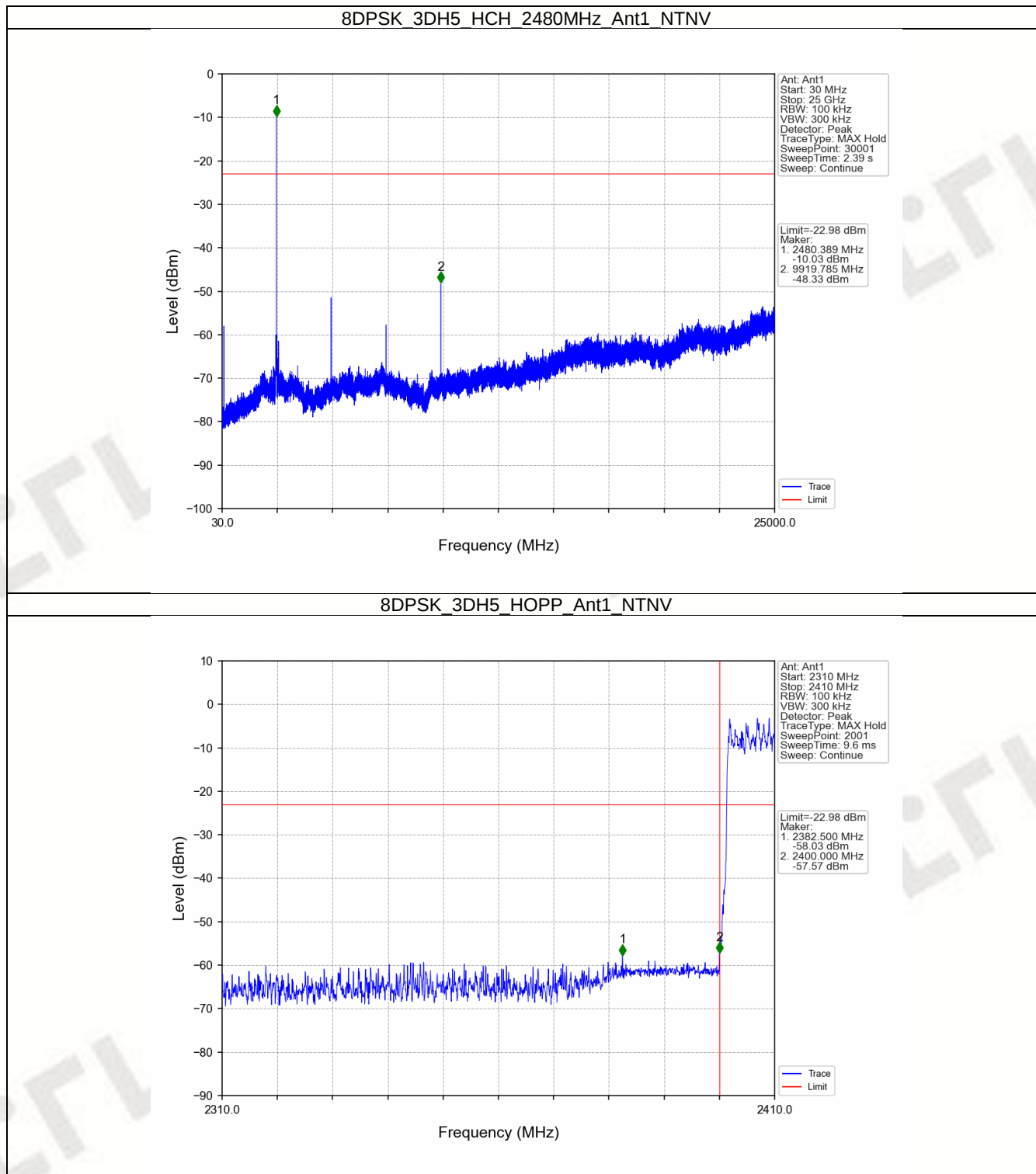
FCCID: 2AU4P-BTS163



FCCID: 2AU4P-BTS163



FCCID: 2AU4P-BTS163



FCCID: 2AU4P-BTS163

