

Appendix Test Data

Project No.:	18220WC10097201	Test Date:	2021.6.4
Test Engineer:	<i>Jomy He</i>	Auditor:	<i>Edward Pan</i>
Temperature:	24.3°C	Relative Humidity:	57 %
Pressure:	1012 hPa		

1. Bandwidth

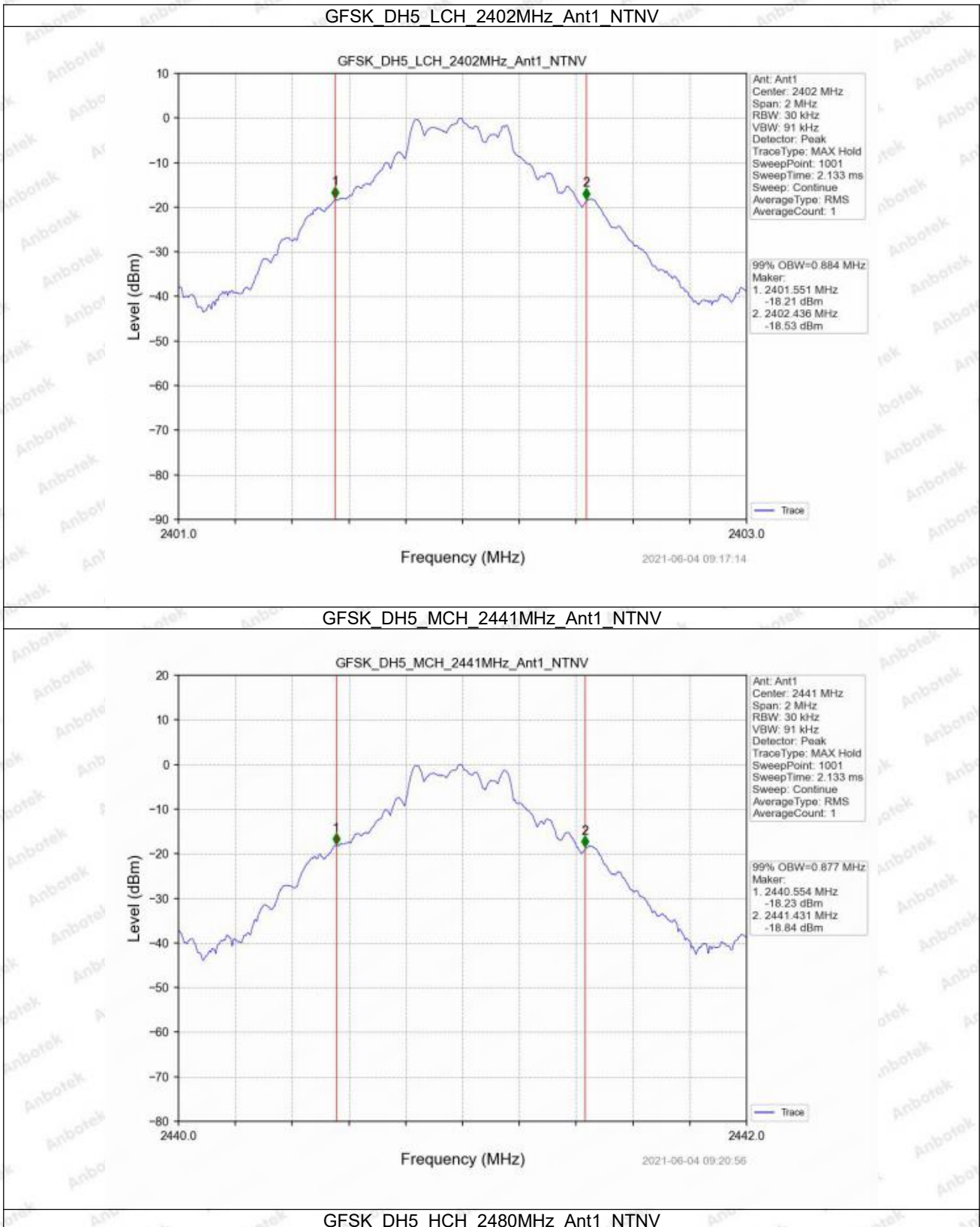
1.1 OBW

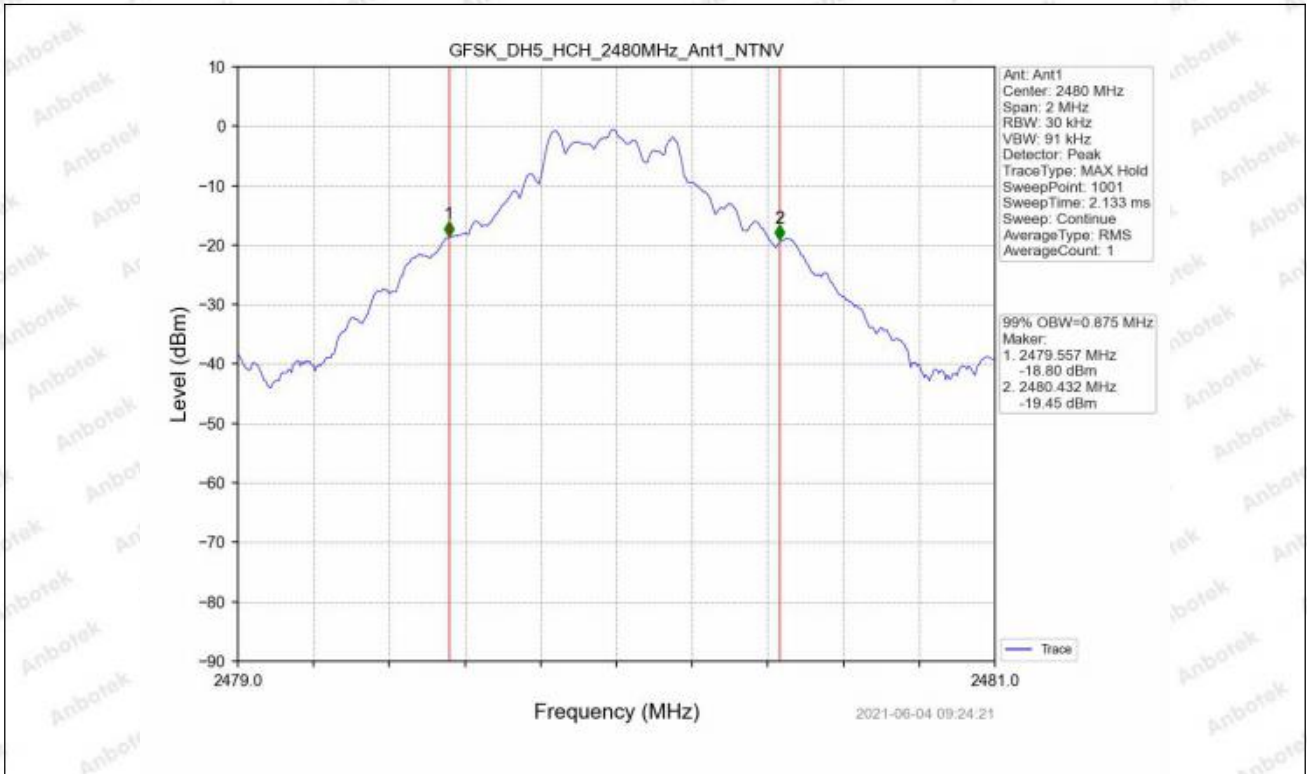
1.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Packet Type	99% Occupied Bandwidth (MHz)		Limit (MHz)	Verdict
				Ant1			
GFSK	SISO	2402	DH5	0.884		/	Note1
		2441	DH5	0.877		/	Note1
		2480	DH5	0.875		/	Note1
Pi/4DQPSK	SISO	2402	2DH5	1.157		/	Note1
		2441	2DH5	1.154		/	Note1
		2480	2DH5	1.153		/	Note1
8DPSK	SISO	2402	3DH5	1.155		/	Note1
		2441	3DH5	1.156		/	Note1
		2480	3DH5	1.156		/	Note1

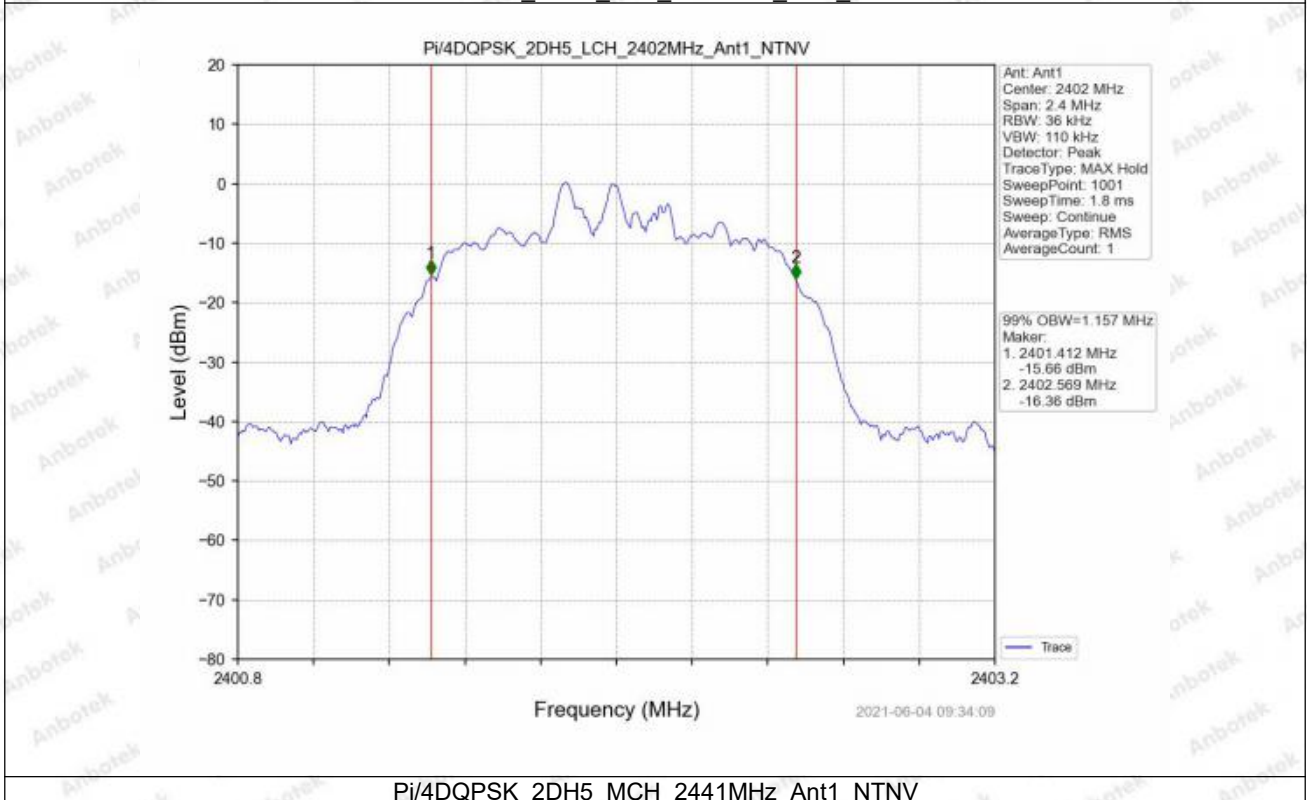
Note1: Only for Report Use

1.1.2 Test Graph





Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



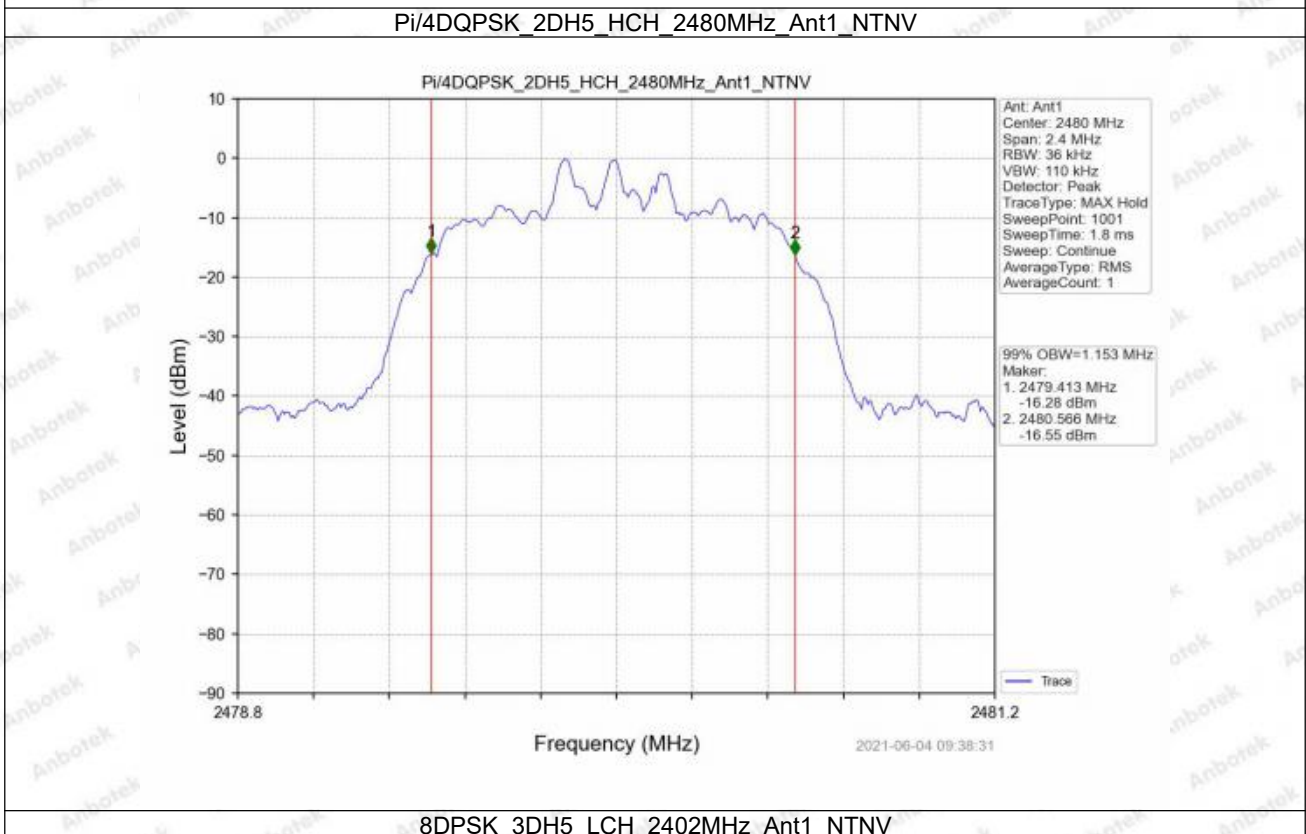
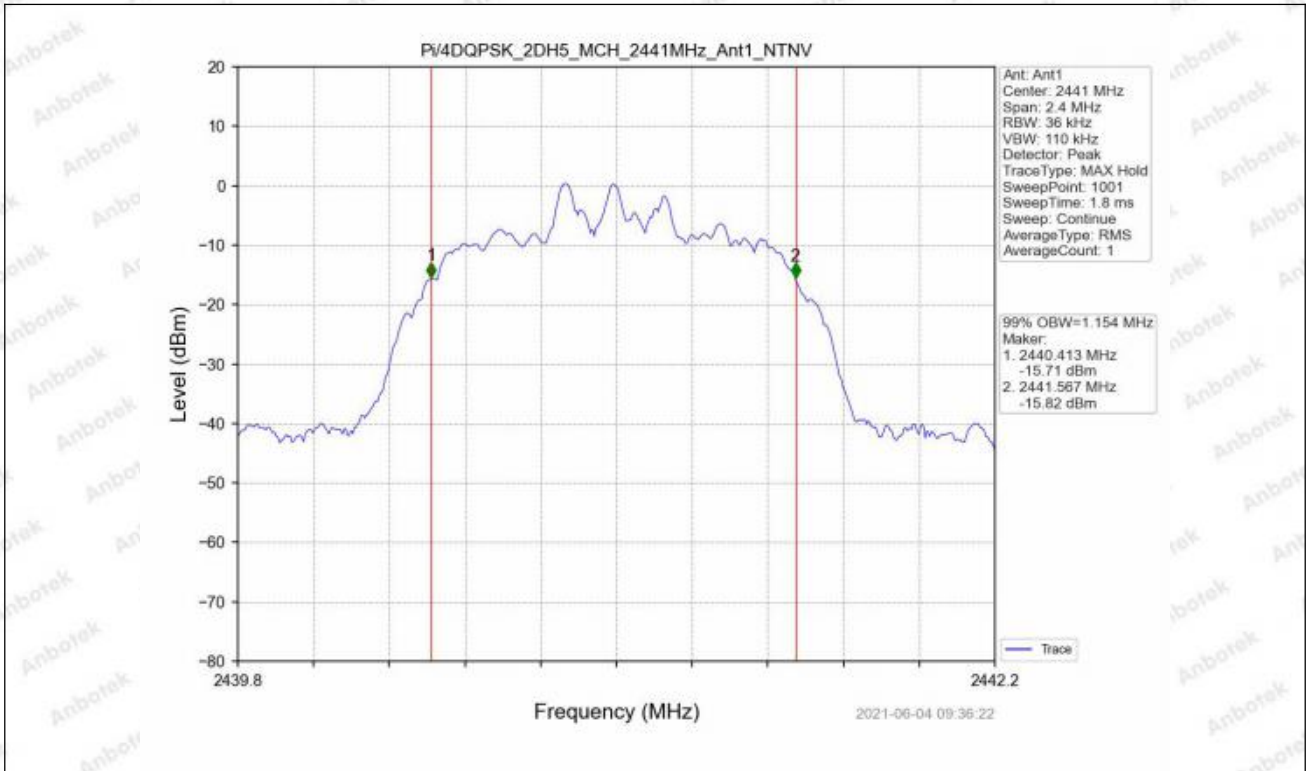
Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV

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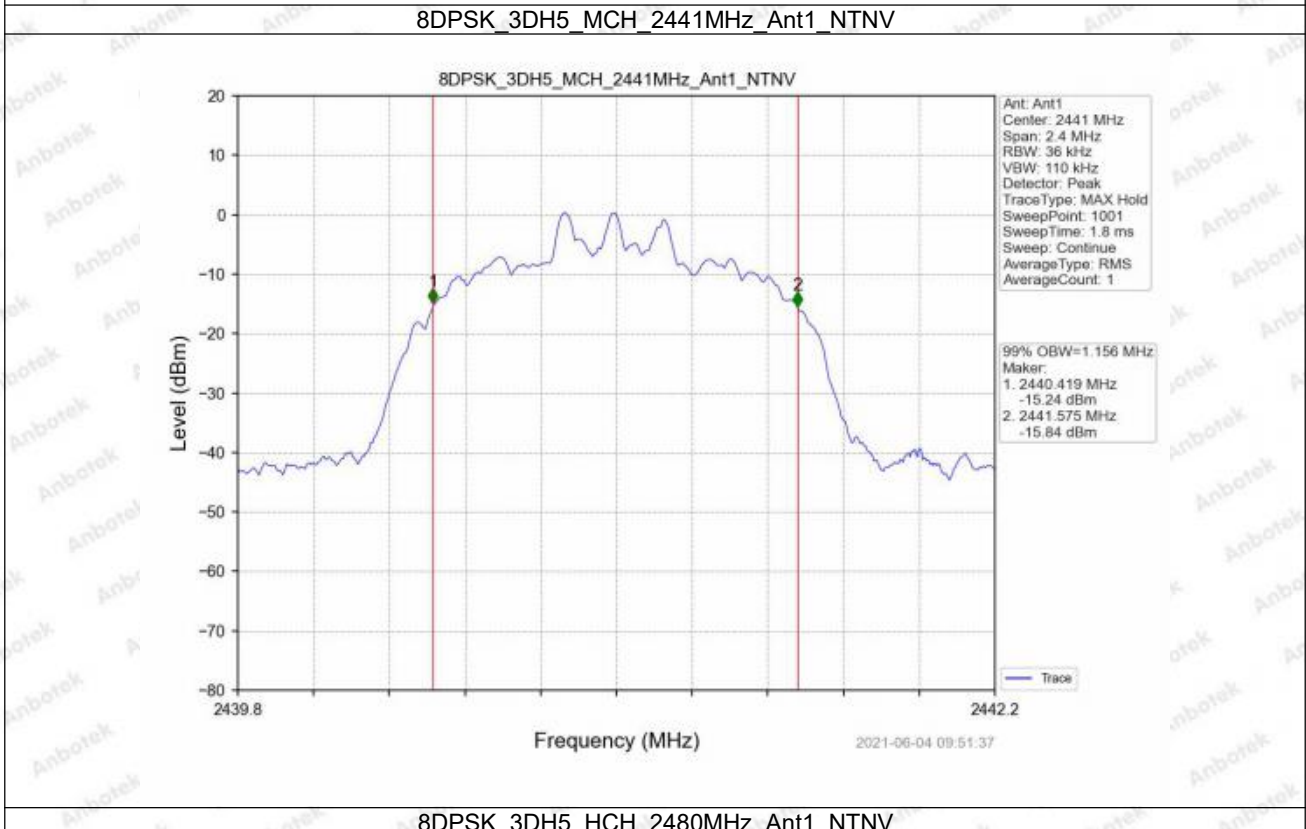
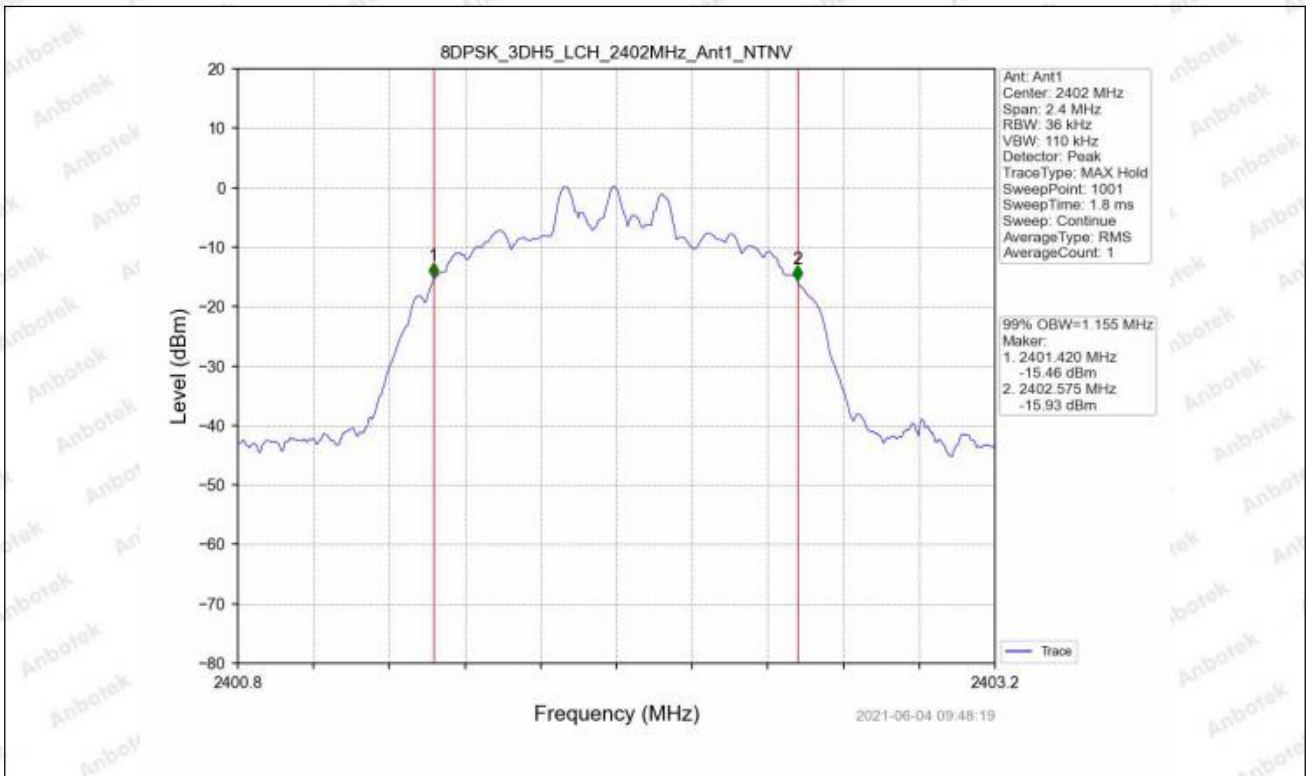
8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV

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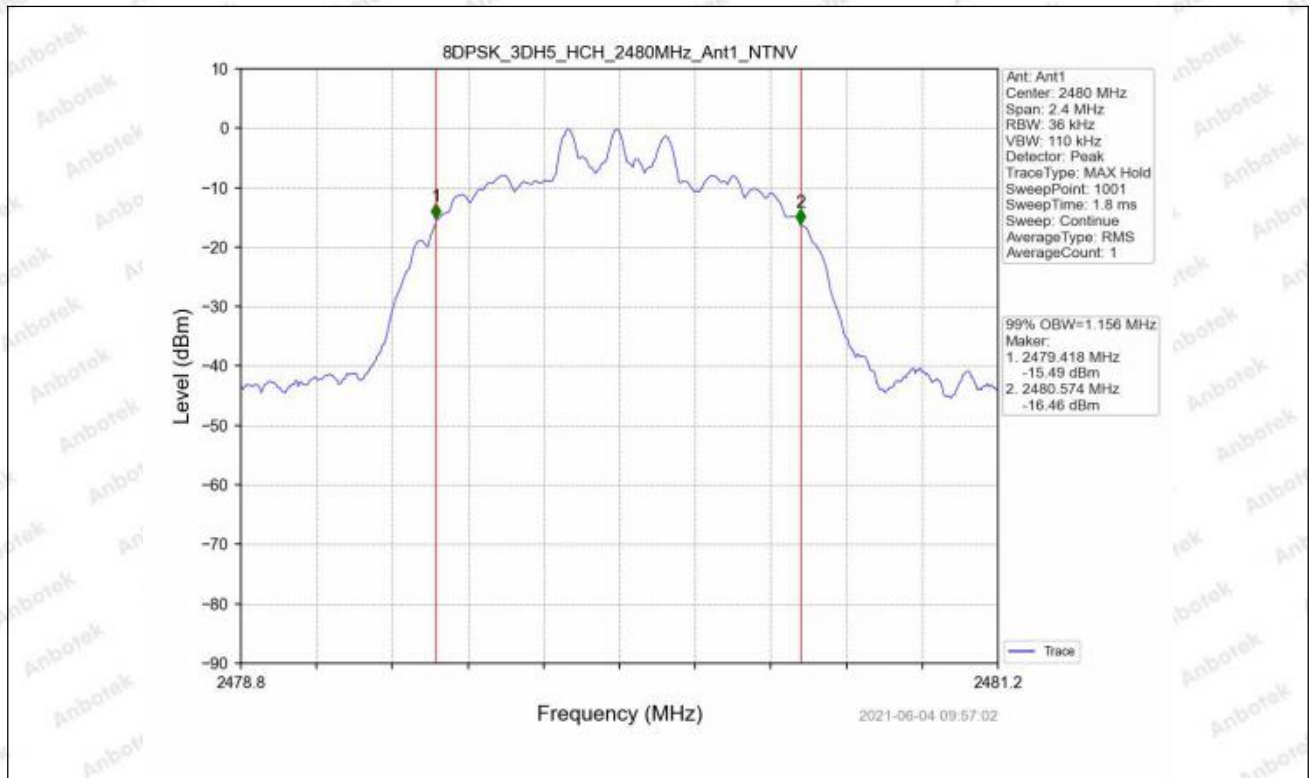
8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV

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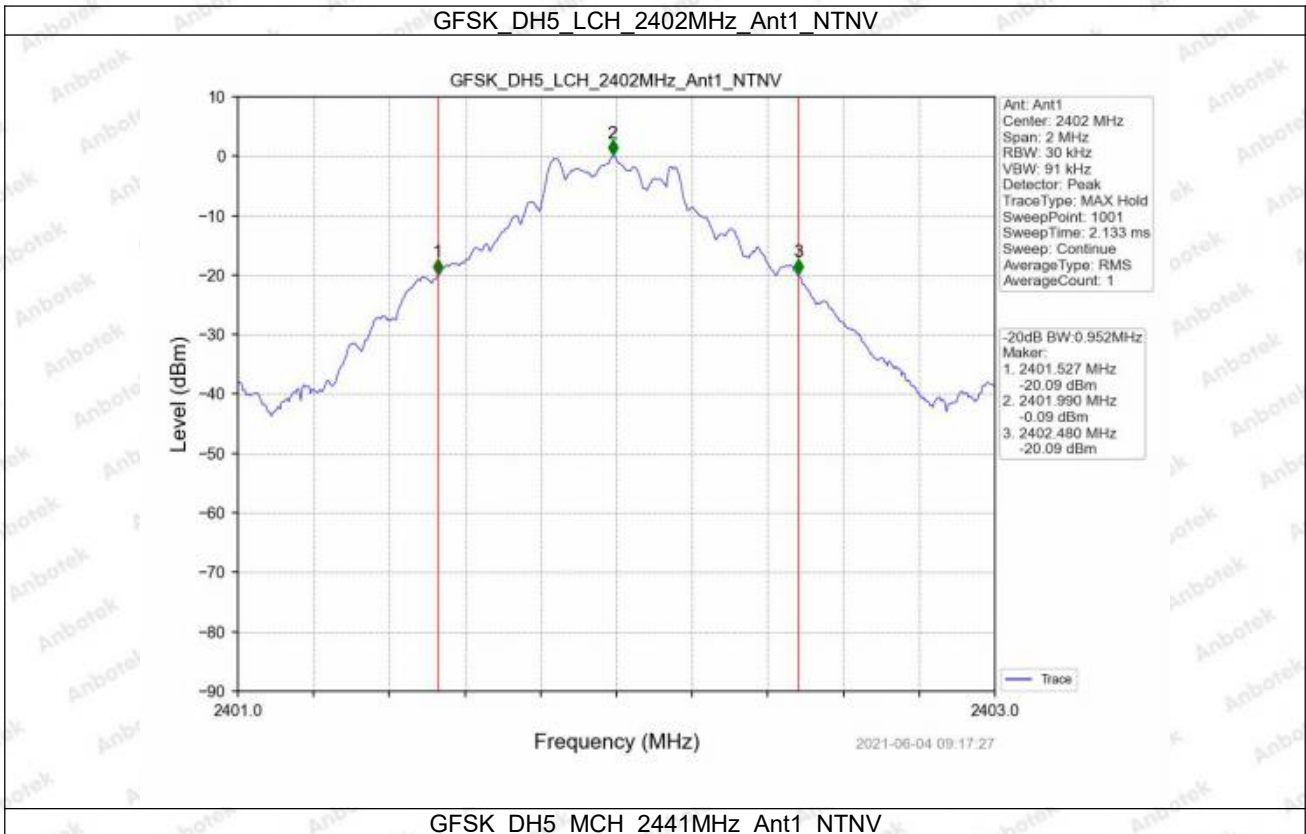
1.2 XDB

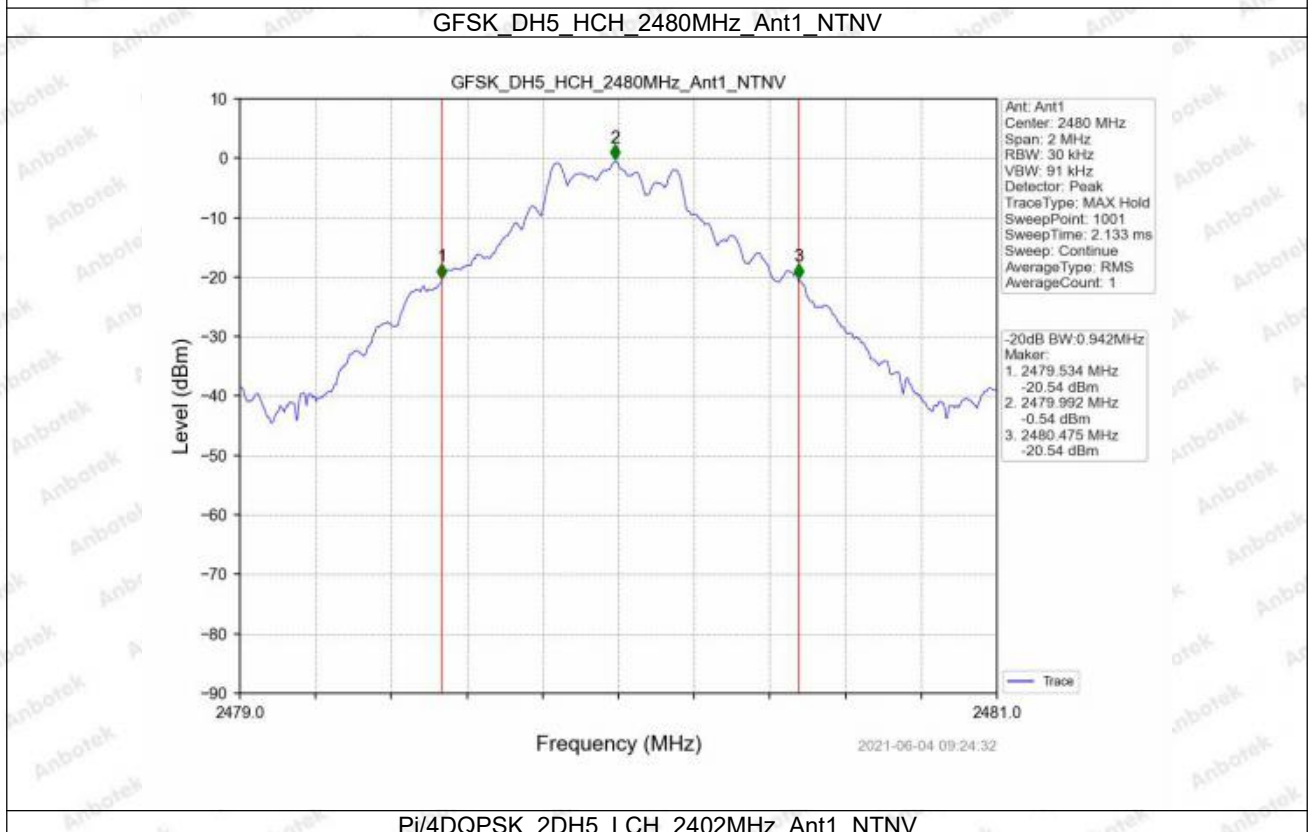
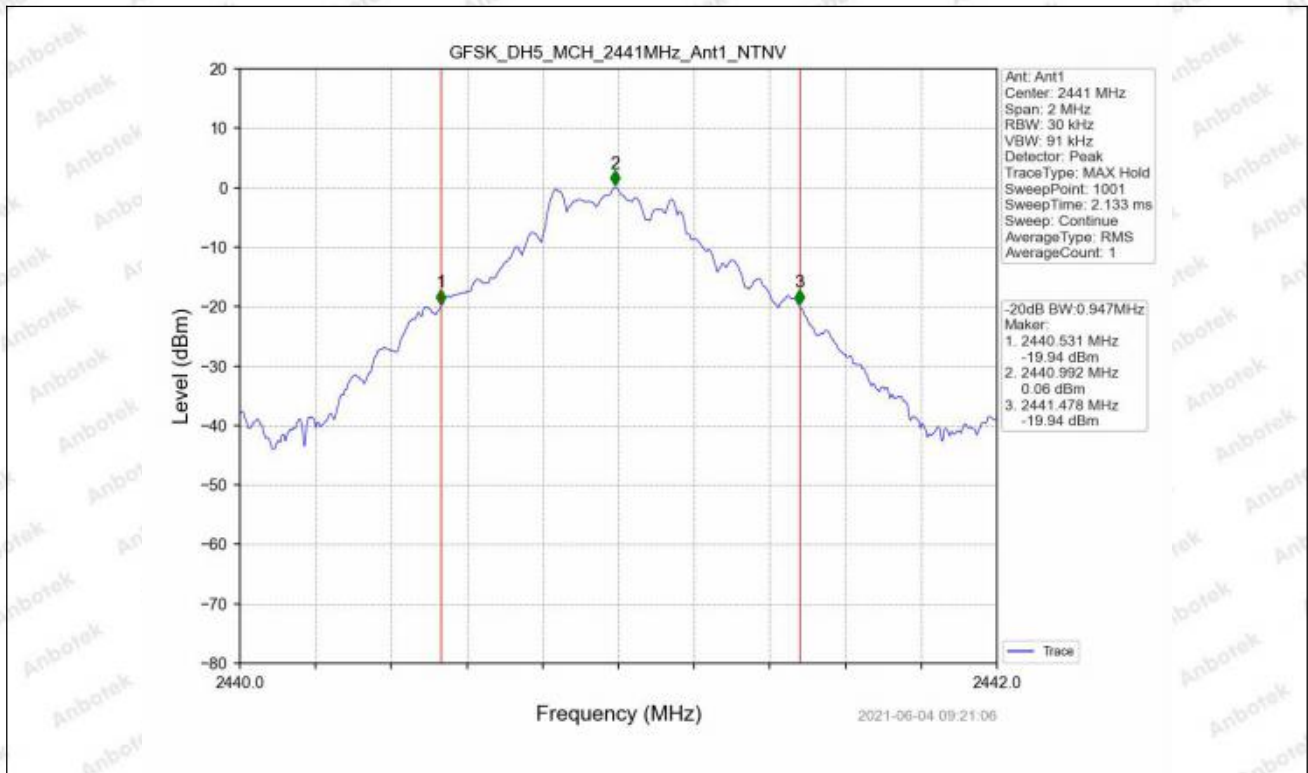
1.2.1 Test Result

Mode	TX Type	Frequency (MHz)	Packet Type	20dB Bandwidth (MHz)	Limit (MHz)	Verdict
				Ant1		
GFSK	SISO	2402	DH5	0.952	/	Note1
		2441	DH5	0.947	/	Note1
		2480	DH5	0.942	/	Note1
Pi/4DQPSK	SISO	2402	2DH5	1.262	/	Note1
		2441	2DH5	1.261	/	Note1
		2480	2DH5	1.257	/	Note1
8DPSK	SISO	2402	3DH5	1.282	/	Note1
		2441	3DH5	1.283	/	Note1
		2480	3DH5	1.279	/	Note1

Note1: Only for Report Use

1.2.2 Test Graph





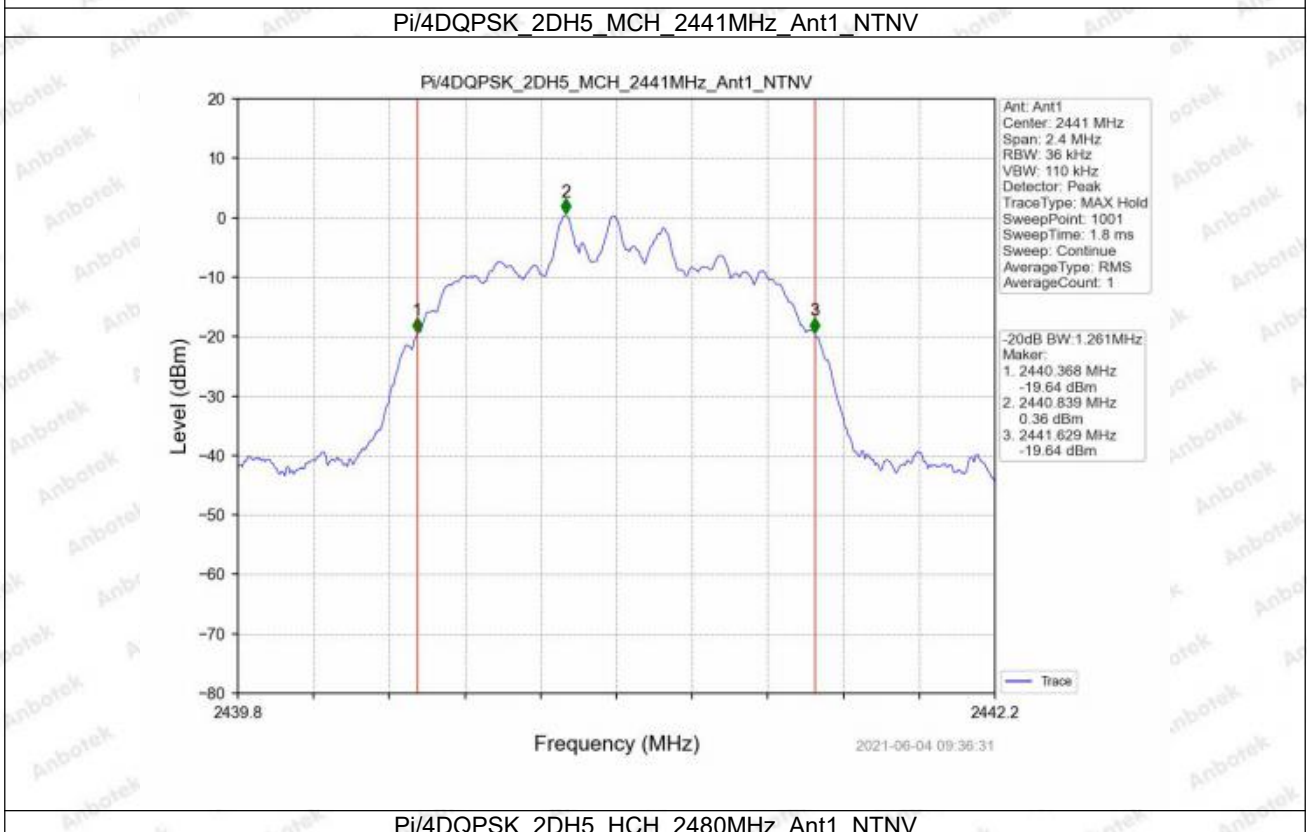
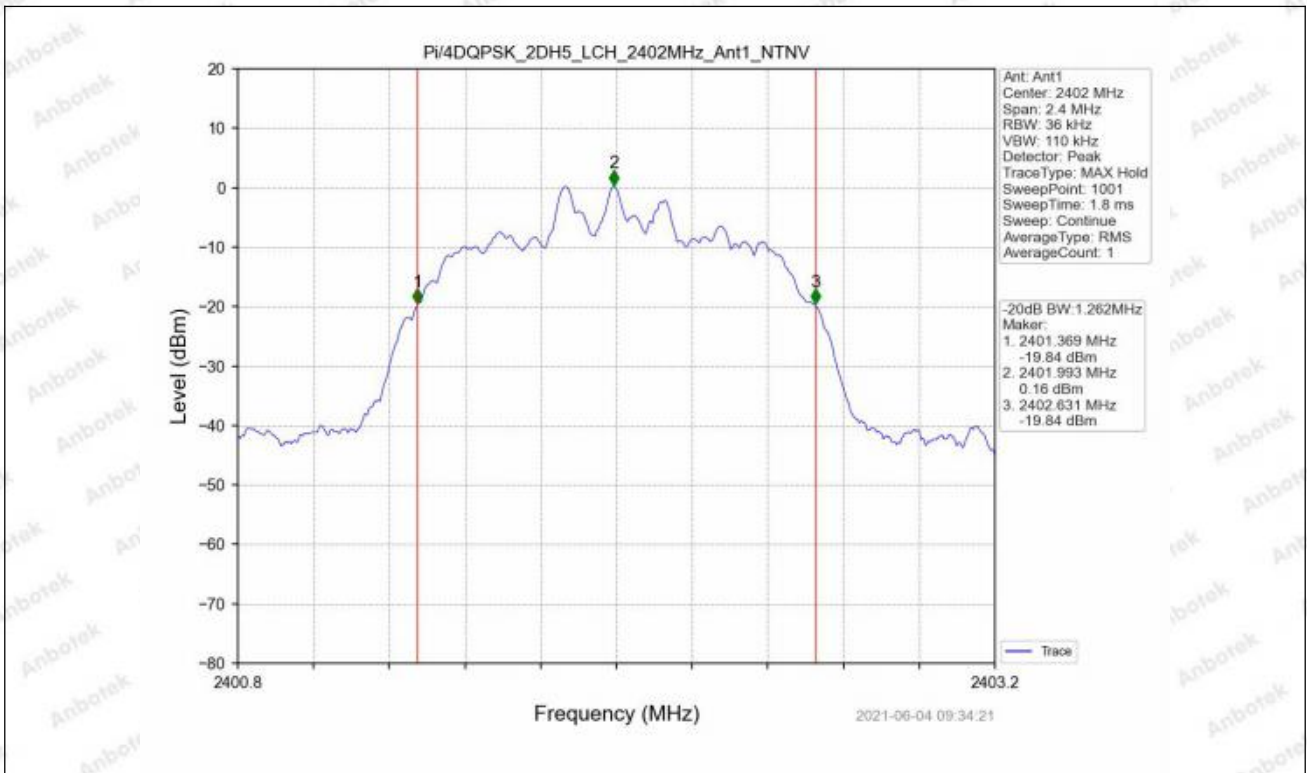
PI/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV

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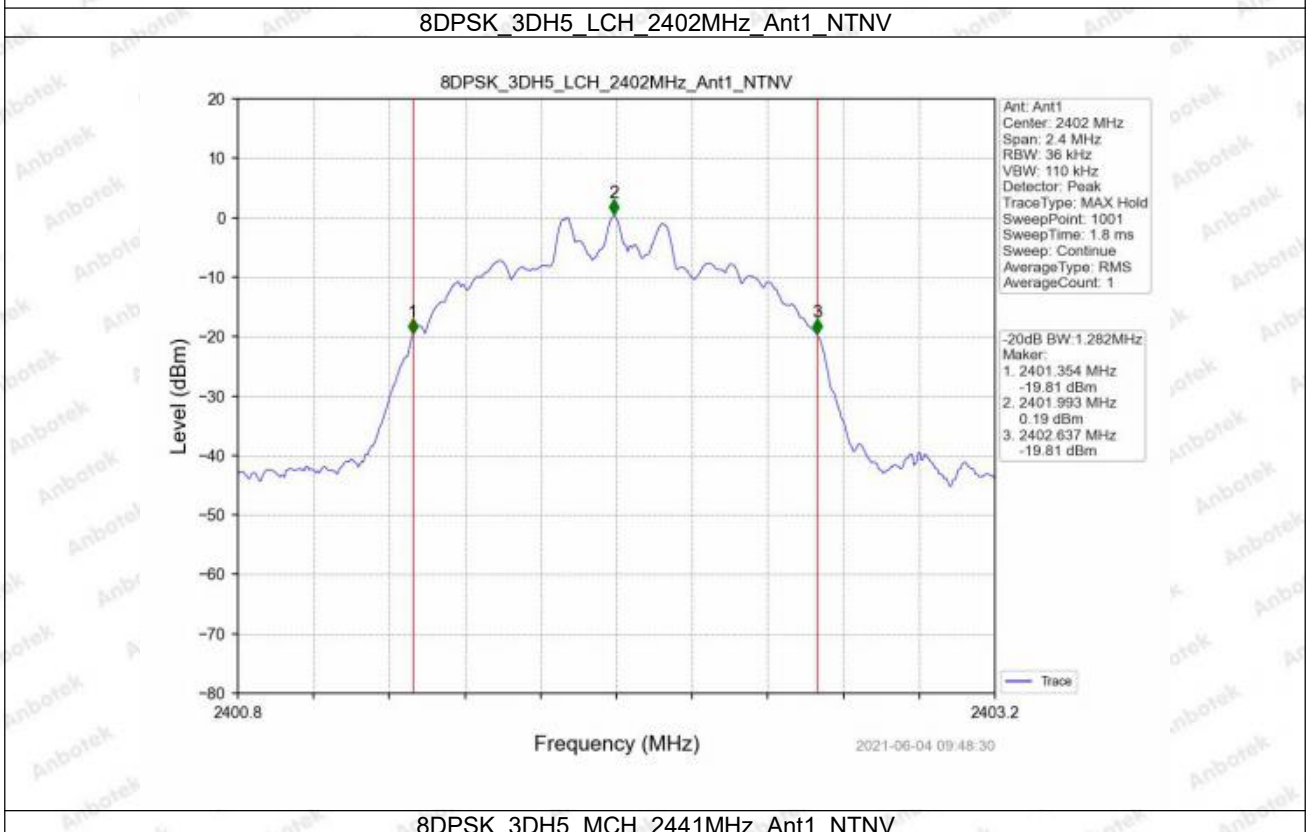
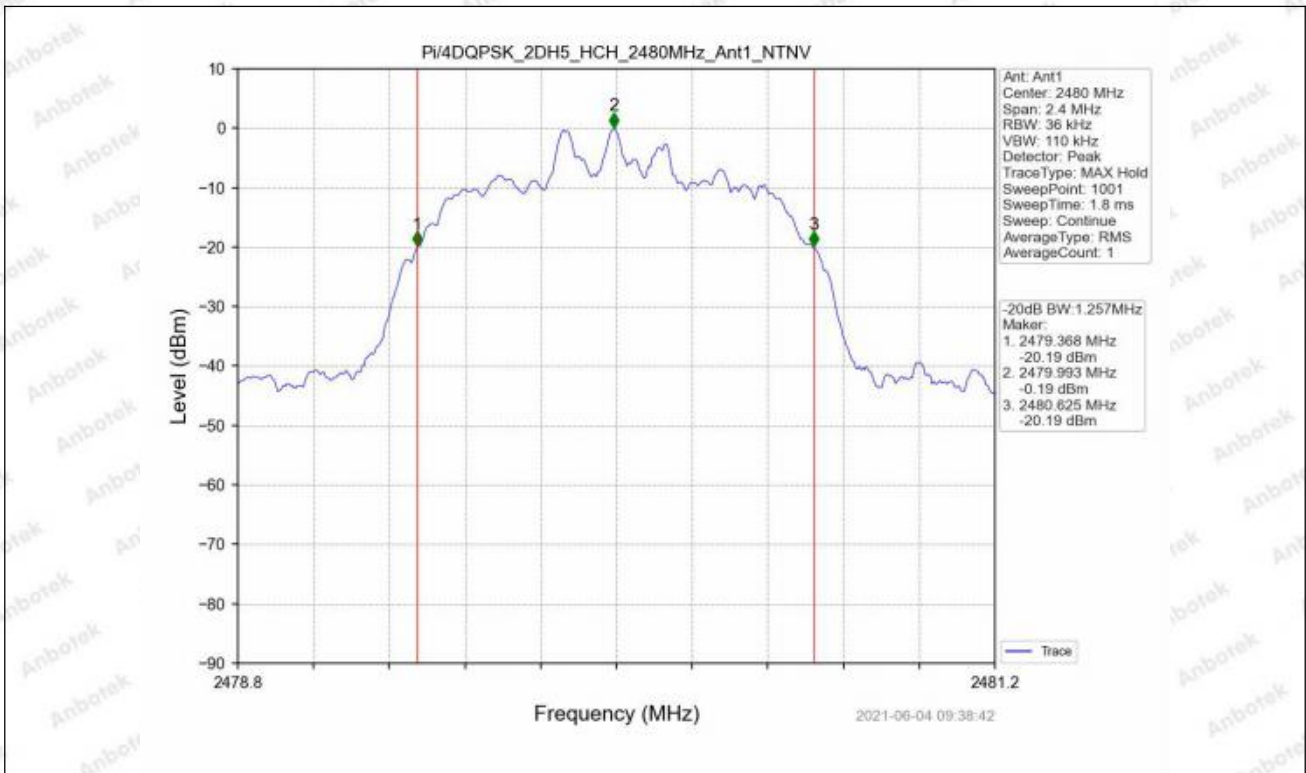
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

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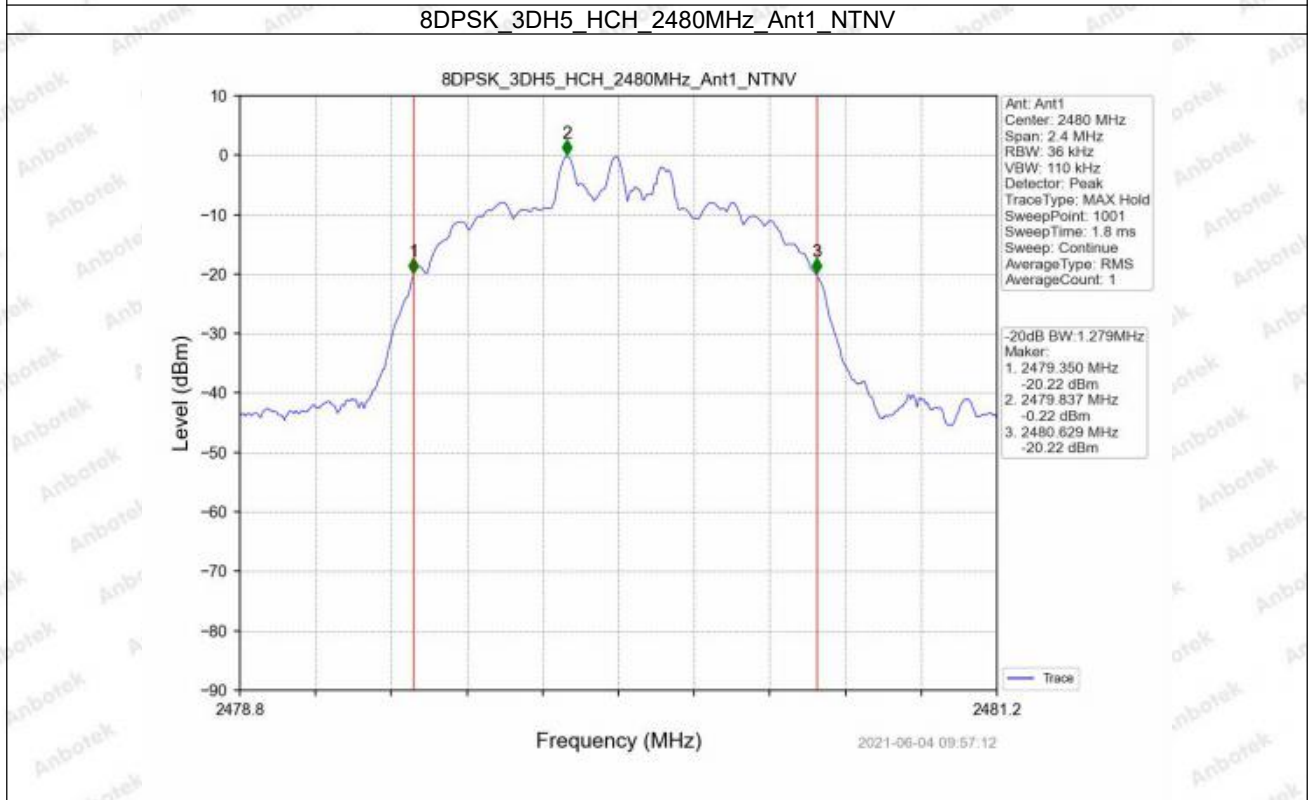
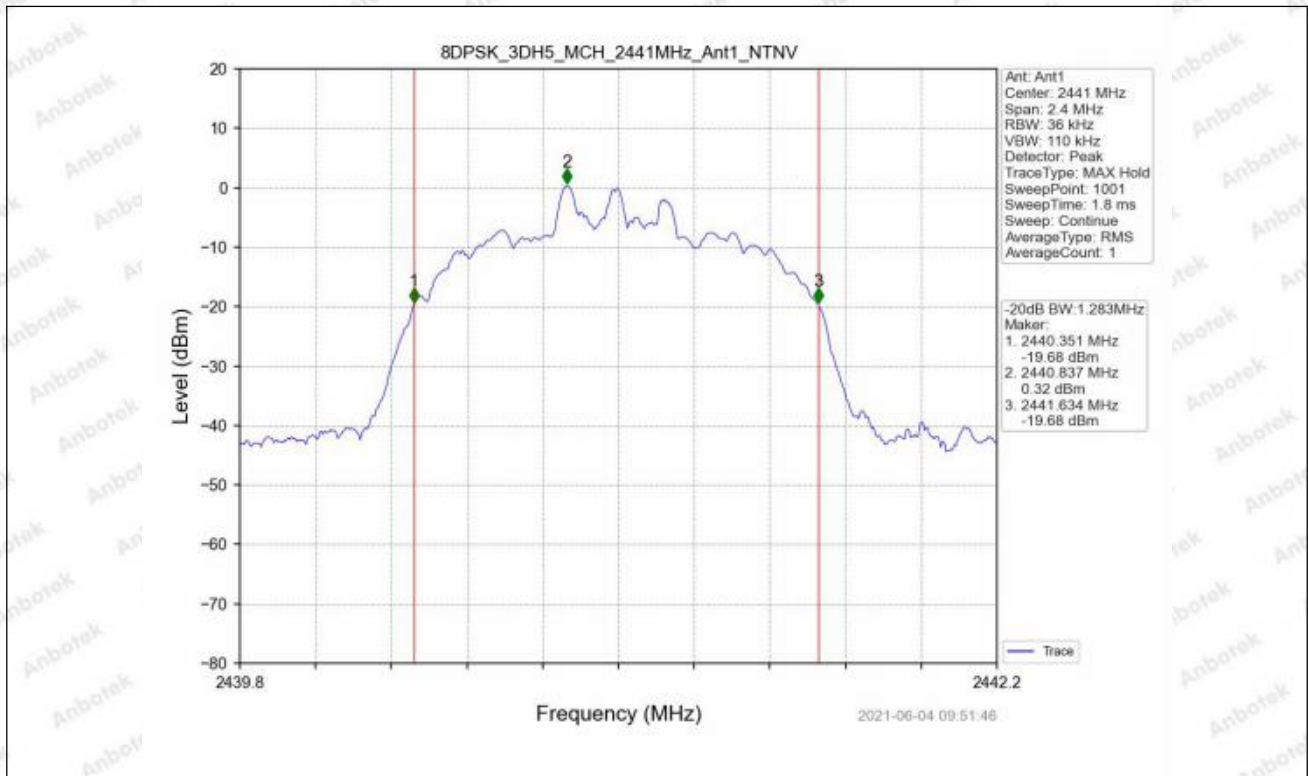
8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV

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2. Maximum Conducted Output Power

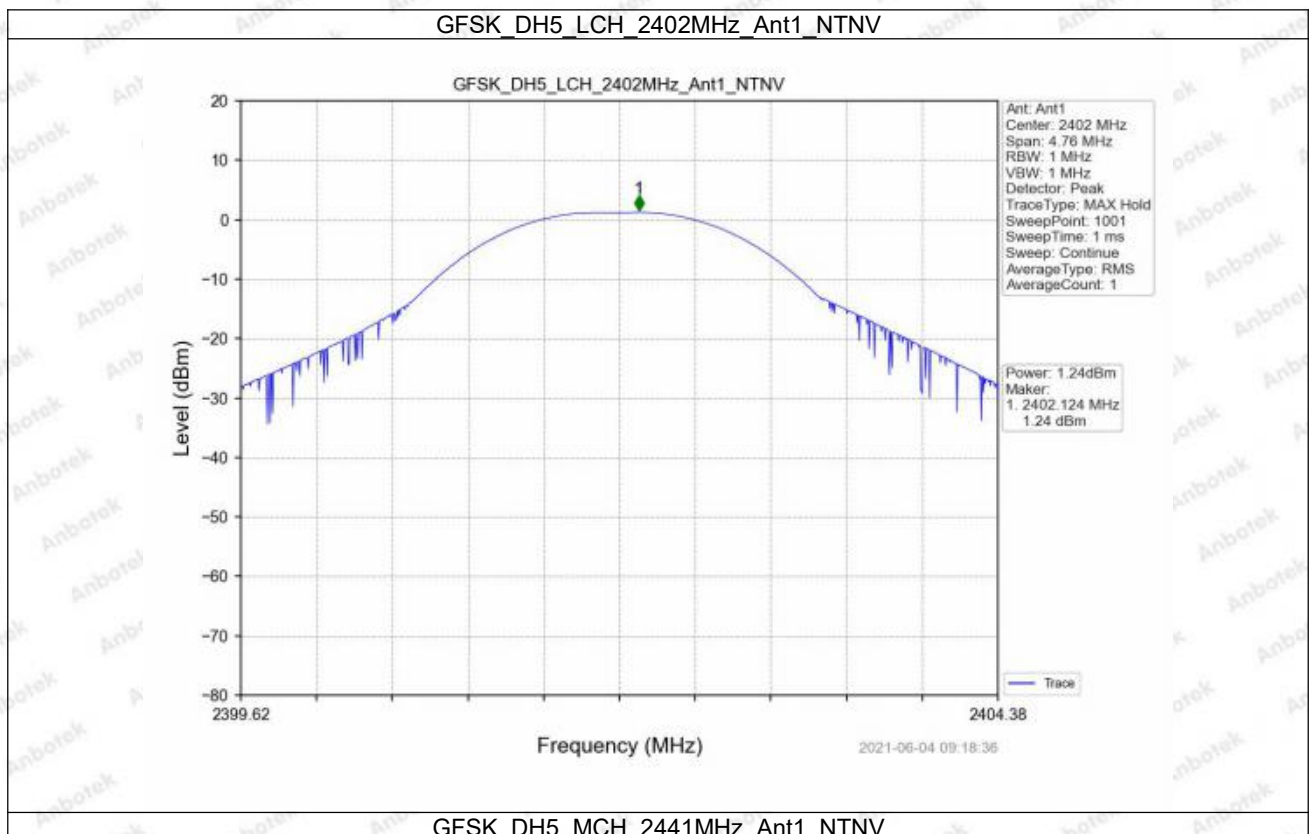
2.1 Power

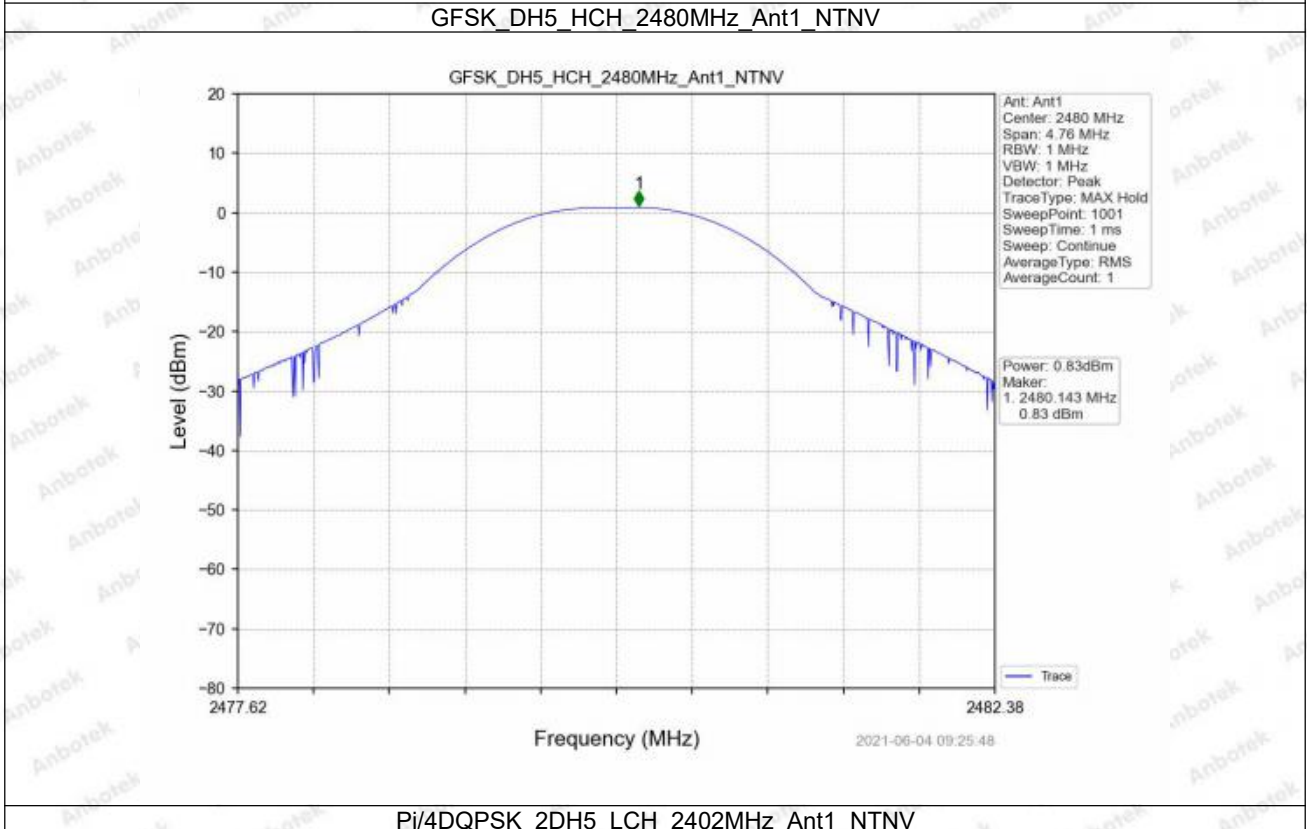
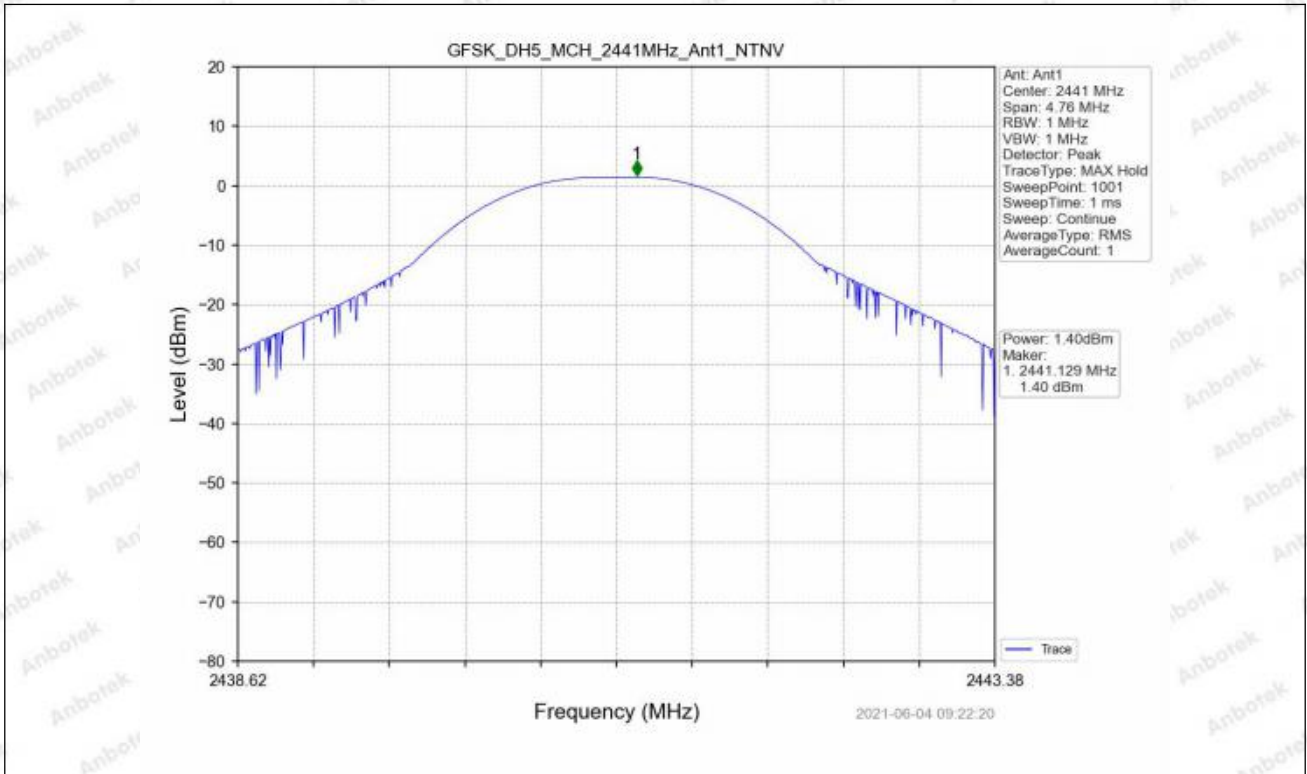
2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Packet Type	Measured Peak Output Power (dBm)	Limit (dBm)	Verdict
				Ant1		
GFSK	SISO	2402	DH5	1.24	<=30	Pass
		2441	DH5	1.40	<=30	Pass
		2480	DH5	0.83	<=30	Pass
Pi/4DQPSK	SISO	2402	2DH5	1.33	<=20.97	Pass
		2441	2DH5	1.51	<=20.97	Pass
		2480	2DH5	0.99	<=20.97	Pass
8DPSK	SISO	2402	3DH5	1.56	<=20.97	Pass
		2441	3DH5	1.72	<=20.97	Pass
		2480	3DH5	1.15	<=20.97	Pass

Note1: Antenna Gain: 0 dBi;

2.1.2 Test Graph





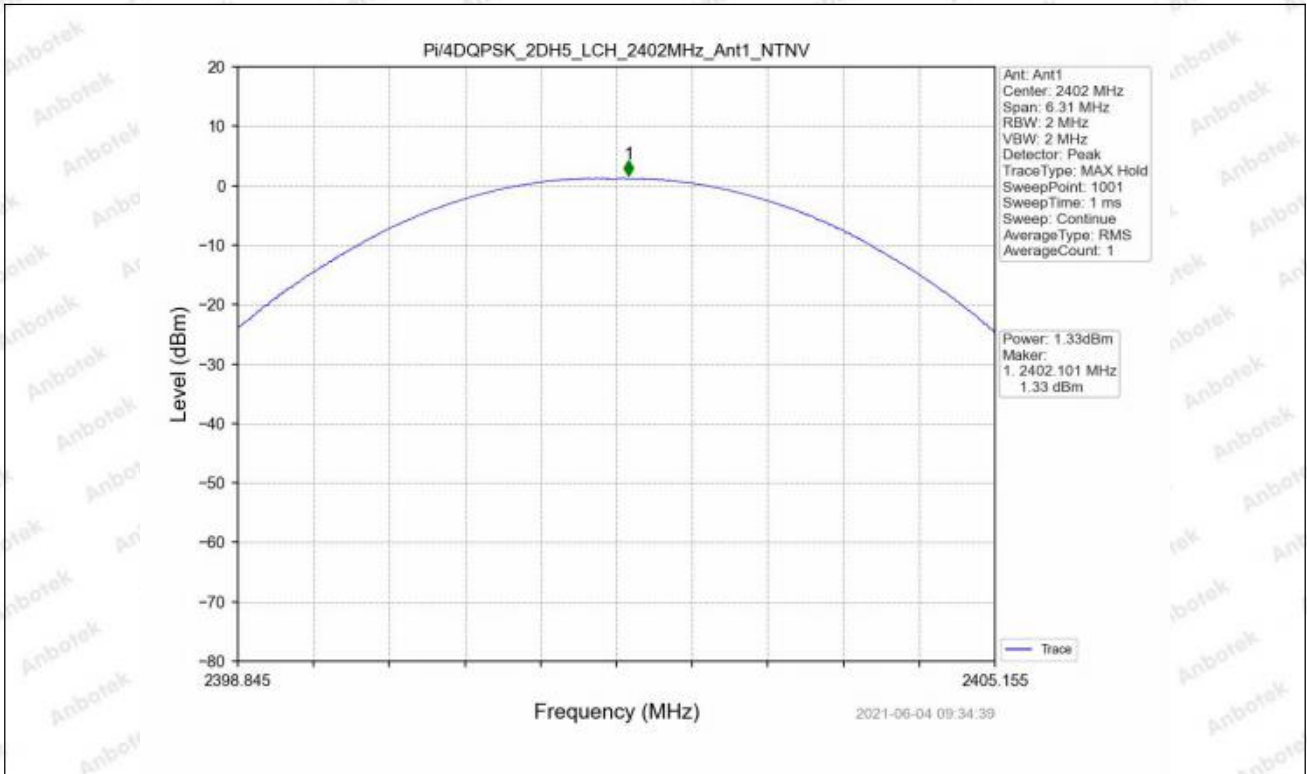
PI/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV

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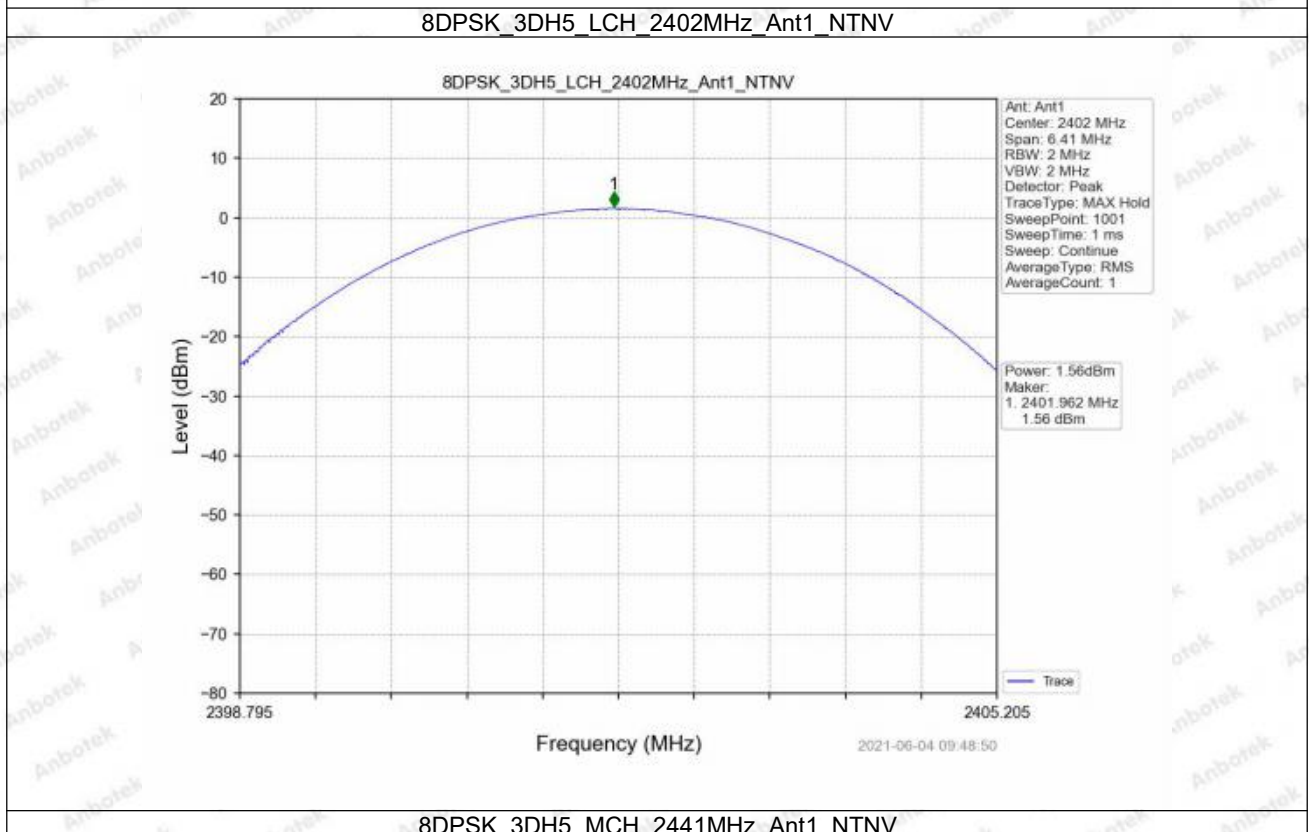
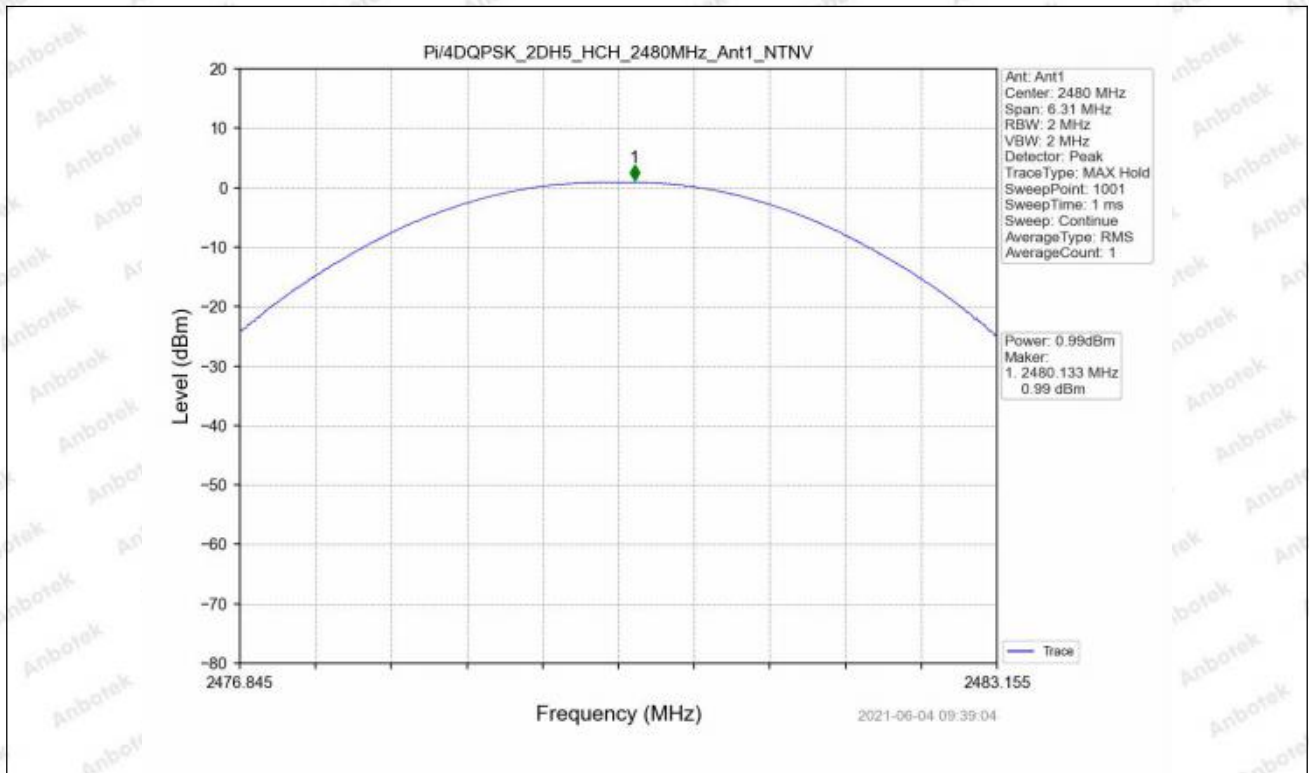
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Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



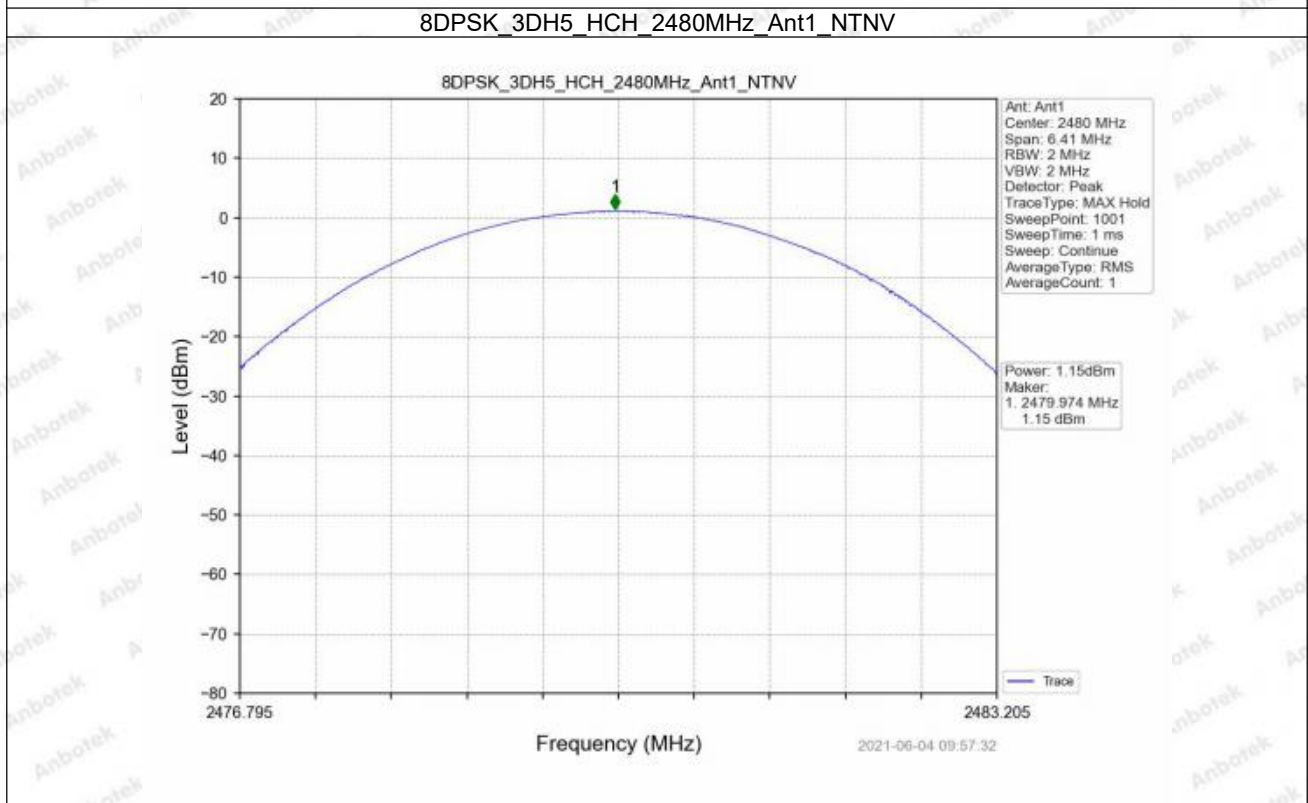
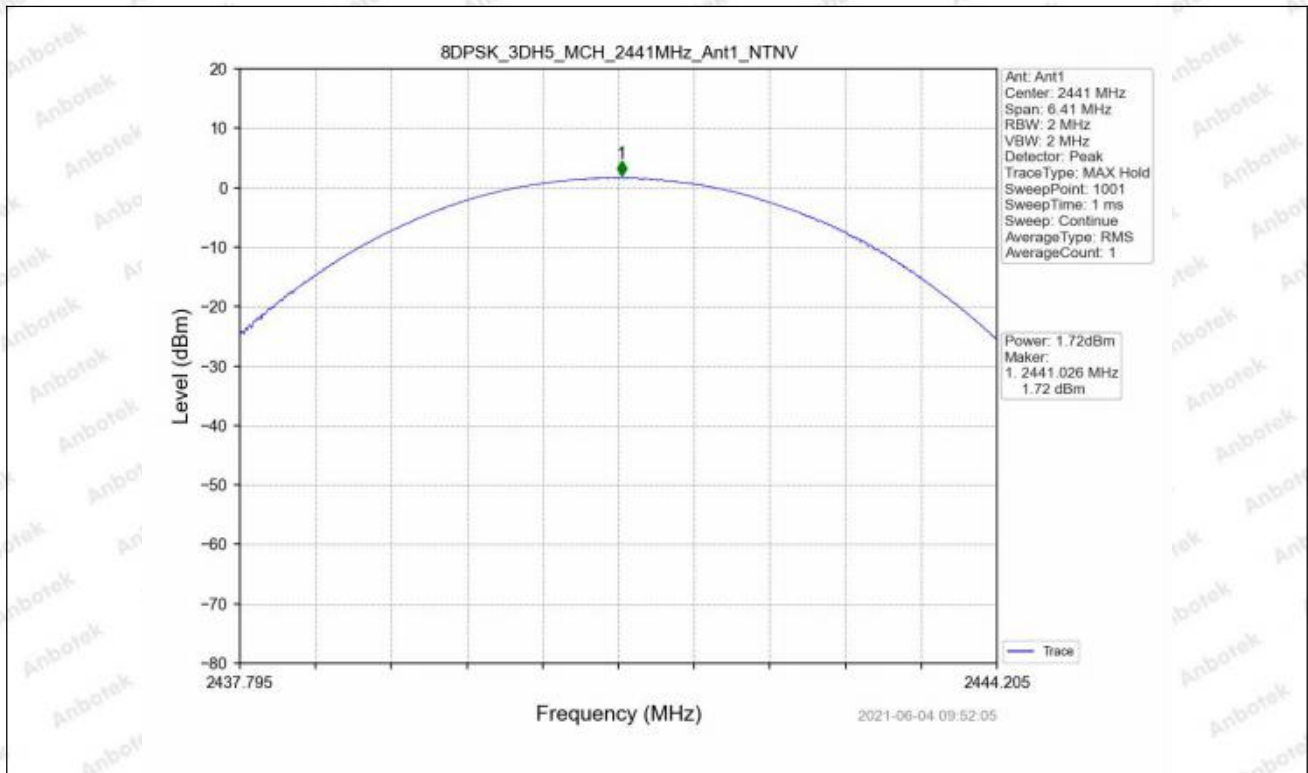
8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV

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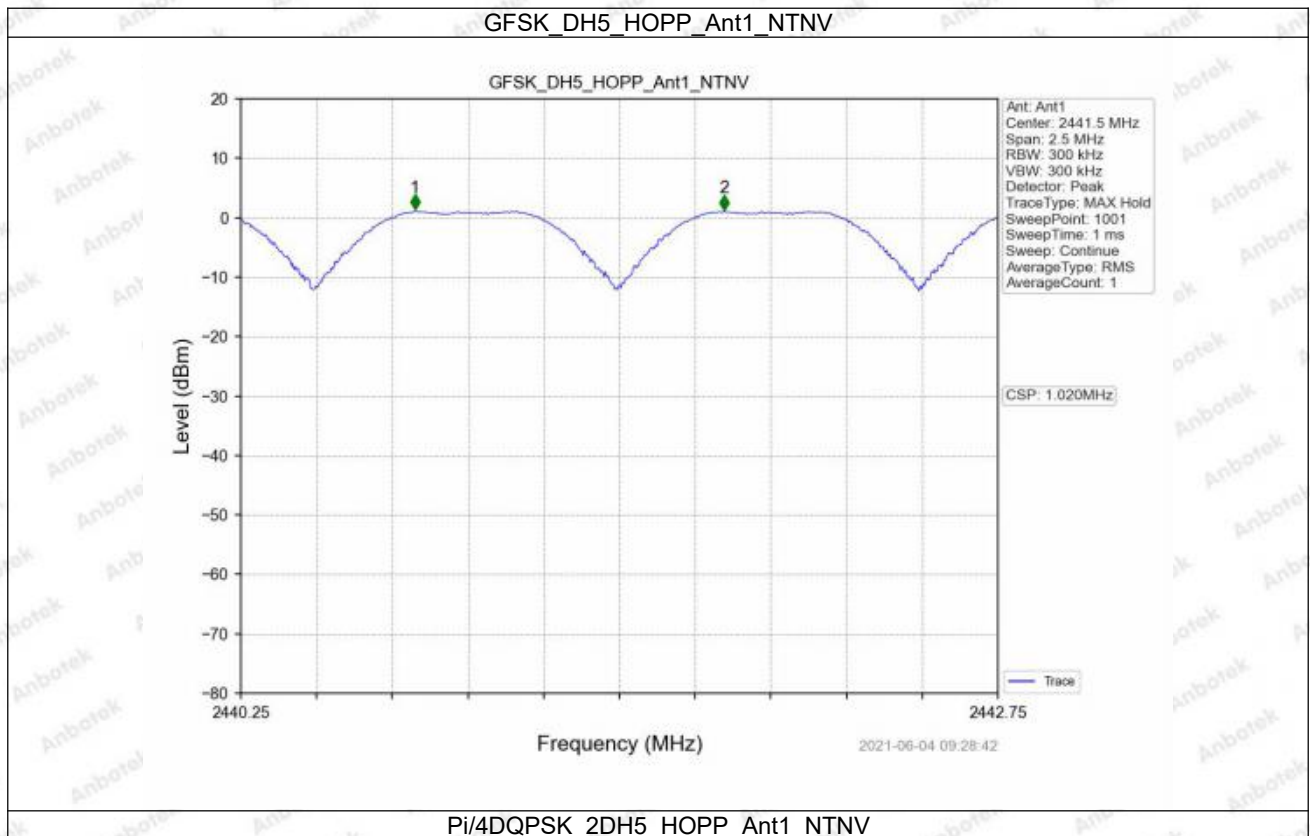
3. Carrier Frequency Separation

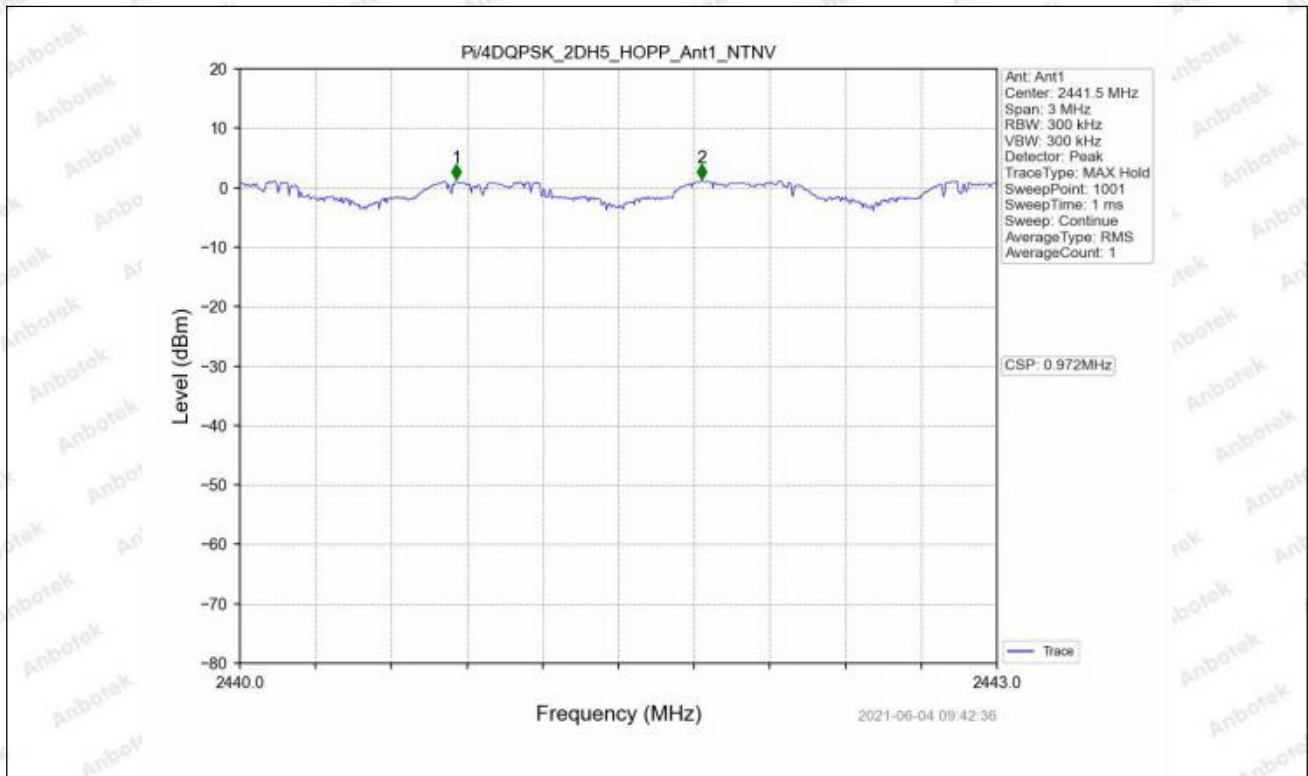
3.1 Ant1

3.1.1 Test Result

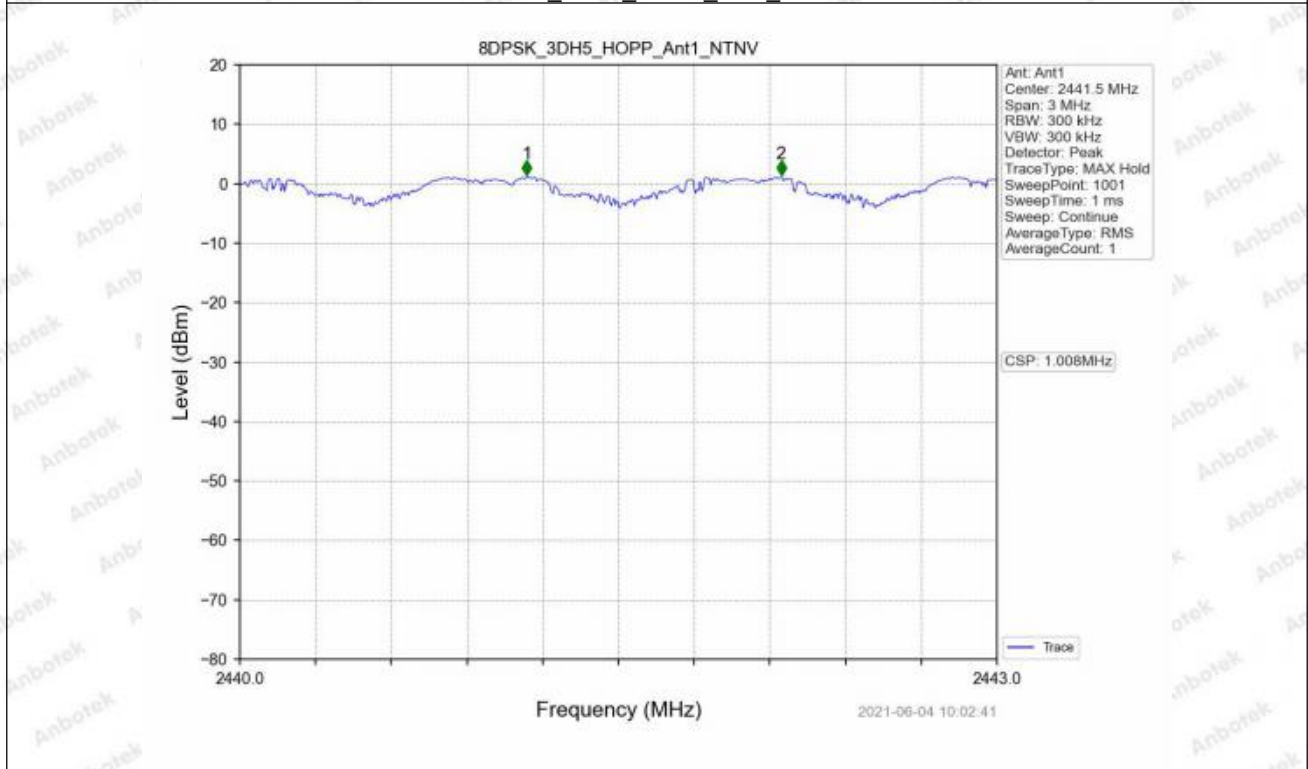
Ant1							
Mode	TX Type	Frequency (MHz)	Packet Type	Channel Separation (MHz)	20dB Bandwidth (MHz)	Limit (MHz)	Verdict
GFSK	SISO	2441	DH5	1.02	0.95	≥ 0.952	Pass
Pi/4DQPSK	SISO	2441	2DH5	0.97	1.26	≥ 0.841	Pass
8DPSK	SISO	2441	3DH5	1.01	1.28	≥ 0.855	Pass

3.1.2 Test Graph





8DPSK_3DH5_HOPP_Ant1_NTNV



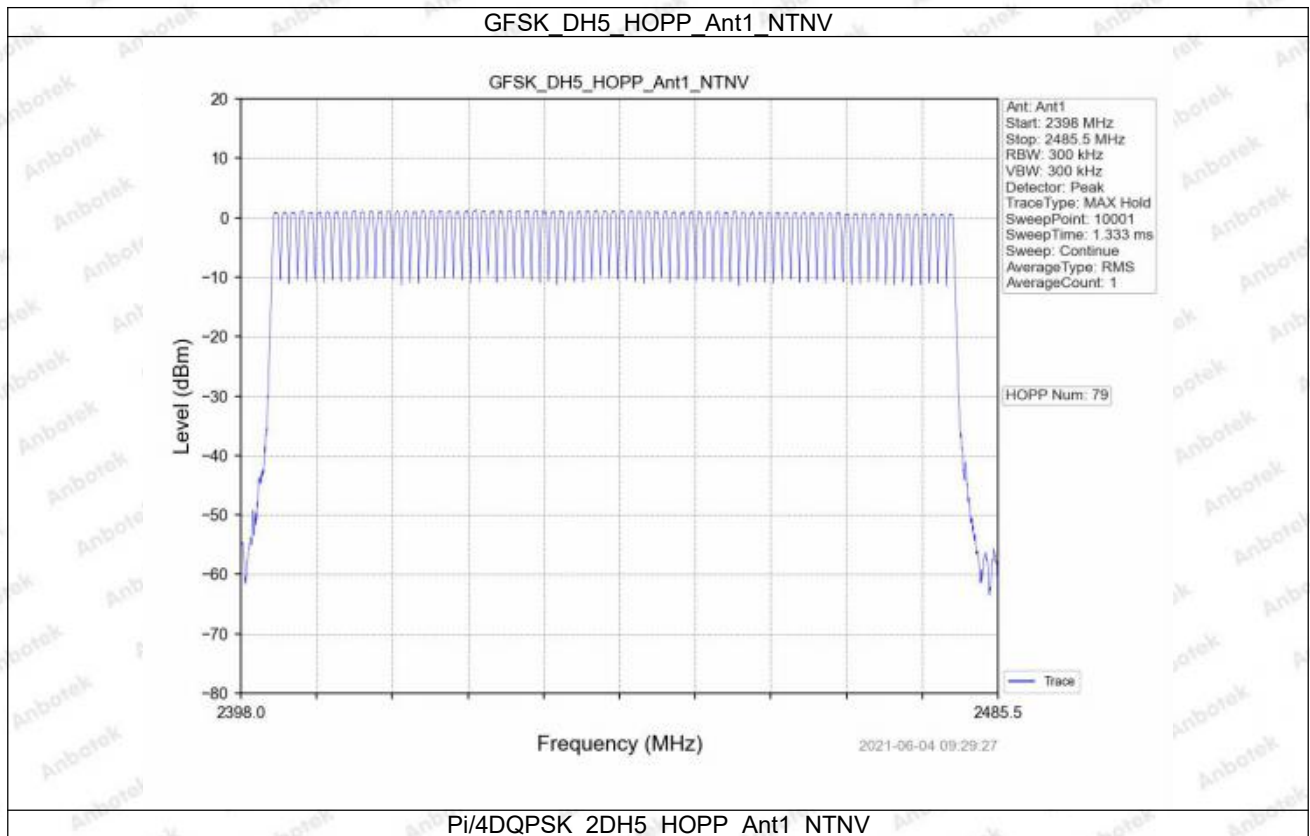
4. Number of Hopping Frequencies

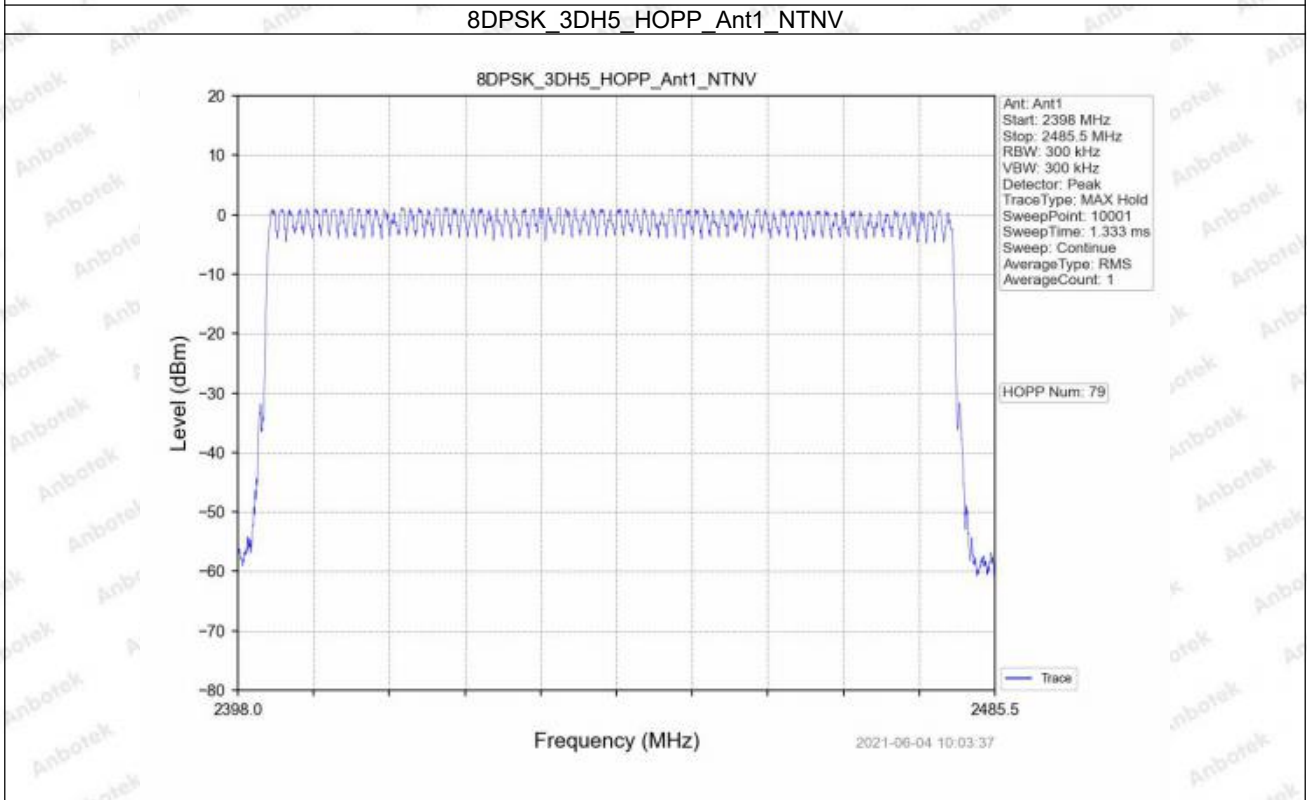
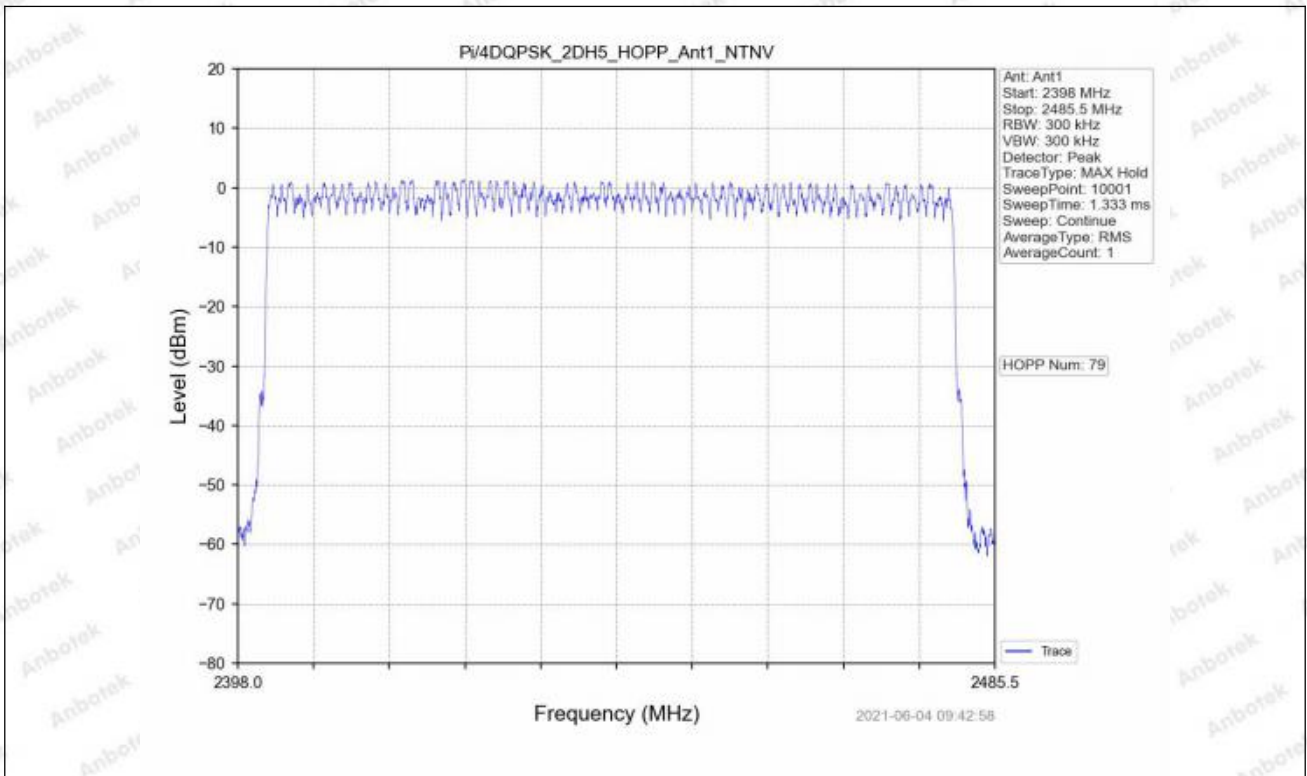
4.1 HopNum

4.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Packet Type	Num of Hopping Frequencies	Limit	Verdict
				Ant1		
GFSK	SISO	2441	DH5	79	>=15	Pass
Pi/4DQPSK	SISO	2441	2DH5	79	>=15	Pass
8DPSK	SISO	2441	3DH5	79	>=15	Pass

4.1.2 Test Graph





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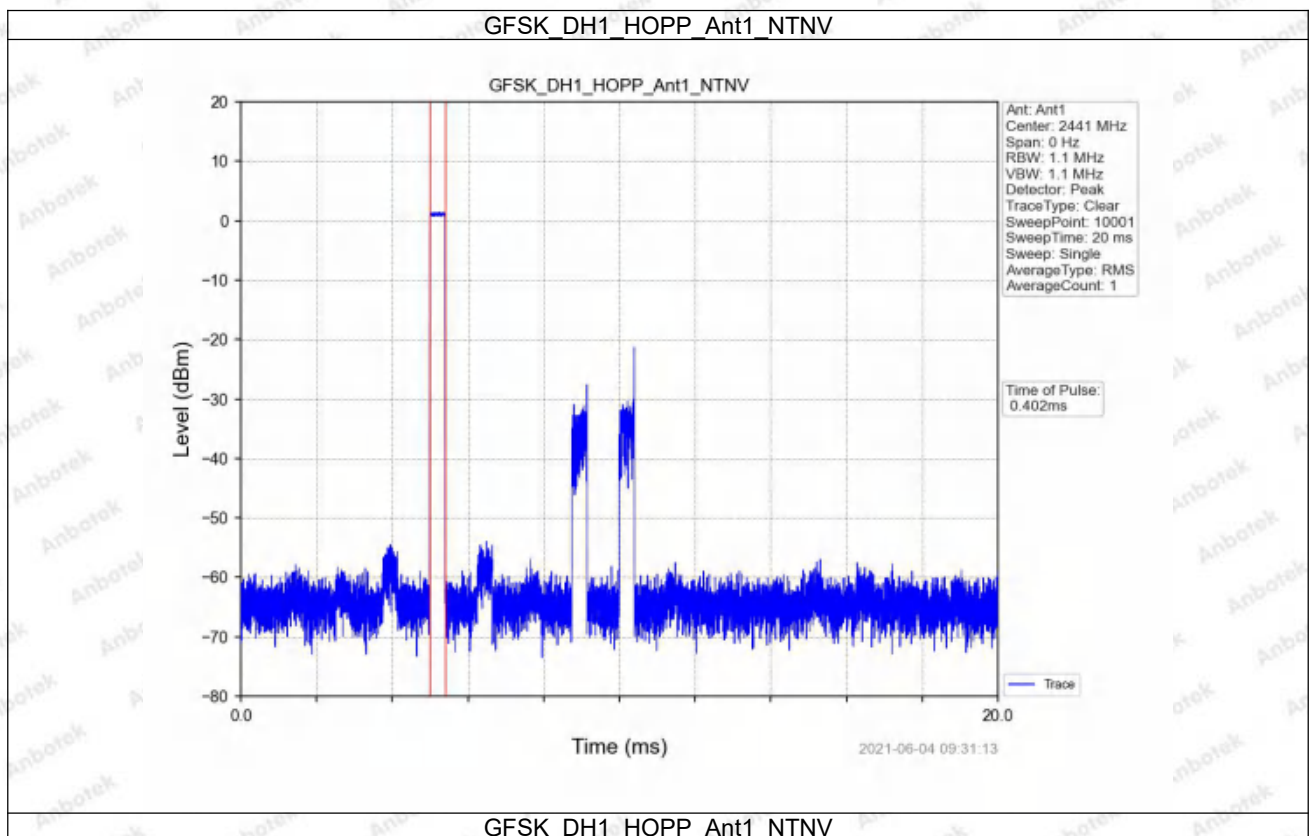
5. Time of Occupancy (Dwell Time)

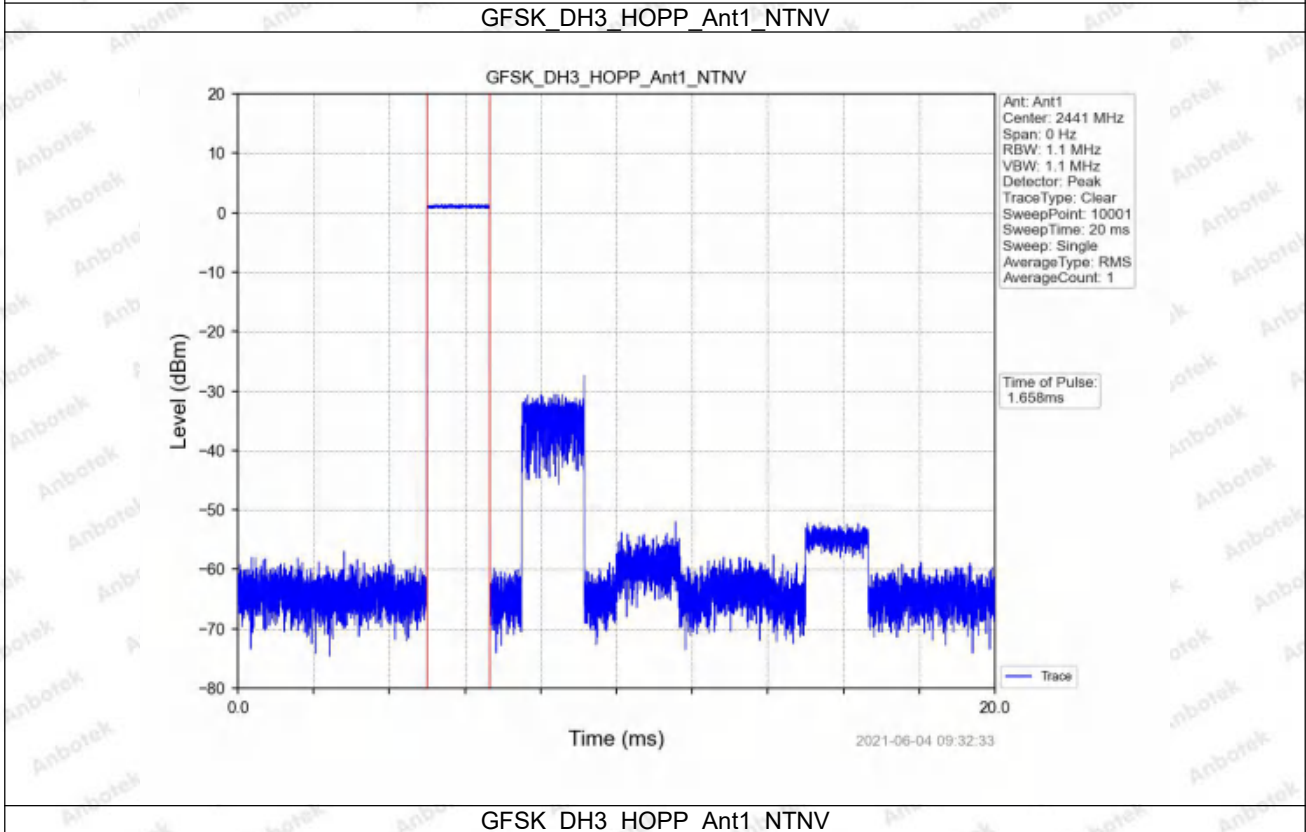
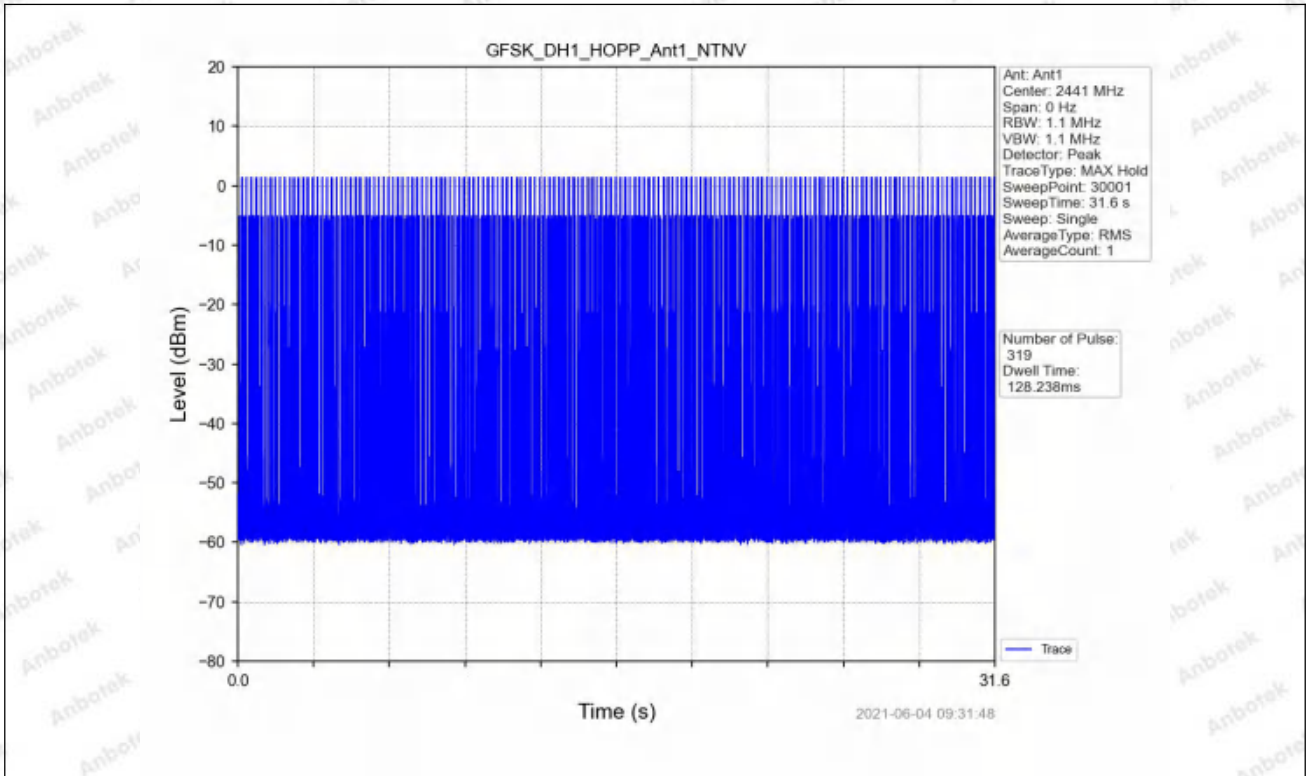
5.1 Ant1

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	2441	DH1	0.40	31.60	319	128.24	<=400	Pass
			DH3	1.66	31.60	152	252.02	<=400	Pass
			DH5	2.91	31.60	108	313.85	<=400	Pass
Pi/4DQPSK	SISO	2441	2DH1	0.41	31.60	319	131.43	<=400	Pass
			2DH3	1.67	31.60	160	266.56	<=400	Pass
			2DH5	2.91	31.60	108	314.50	<=400	Pass
8DPSK	SISO	2441	3DH1	0.41	31.60	319	131.43	<=400	Pass
			3DH3	1.67	31.60	162	269.89	<=400	Pass
			3DH5	2.91	31.60	101	294.31	<=400	Pass

5.1.2 Test Graph



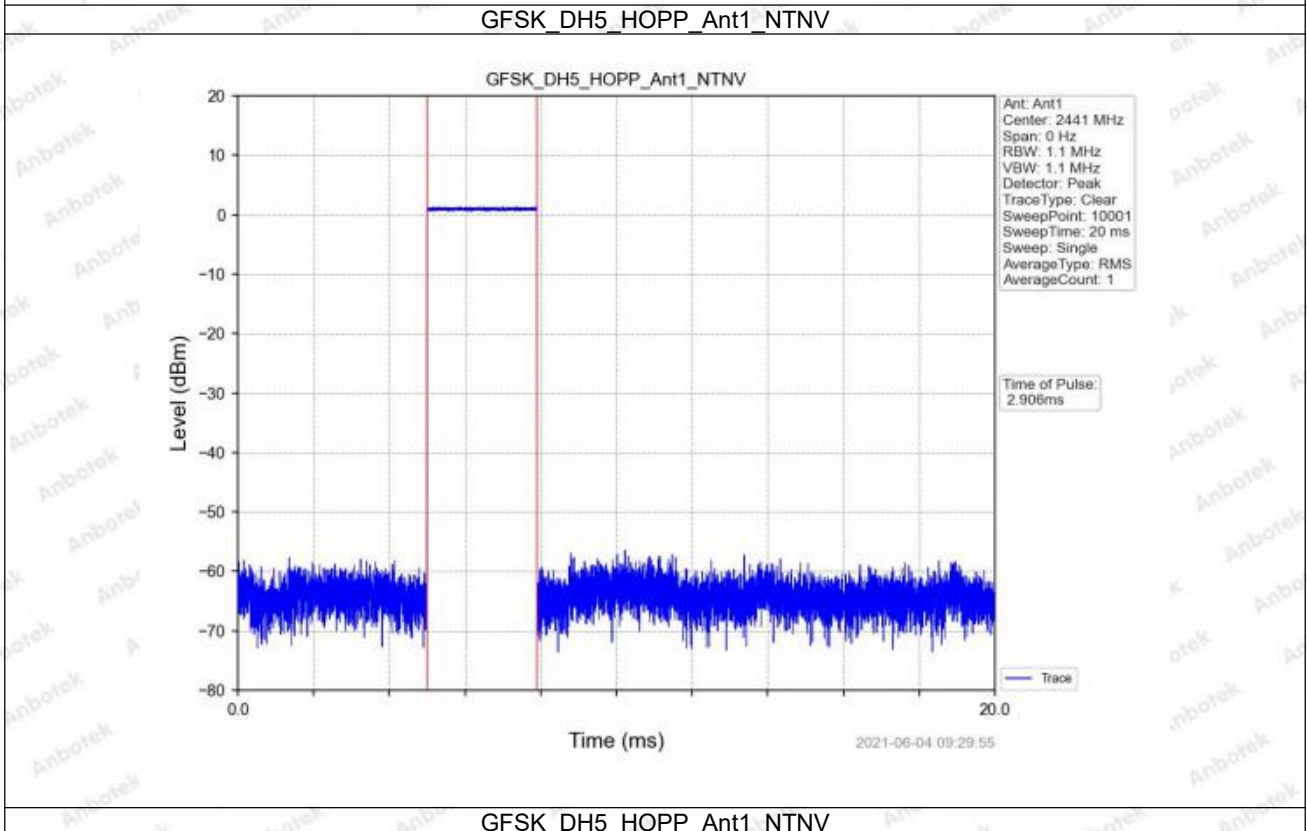
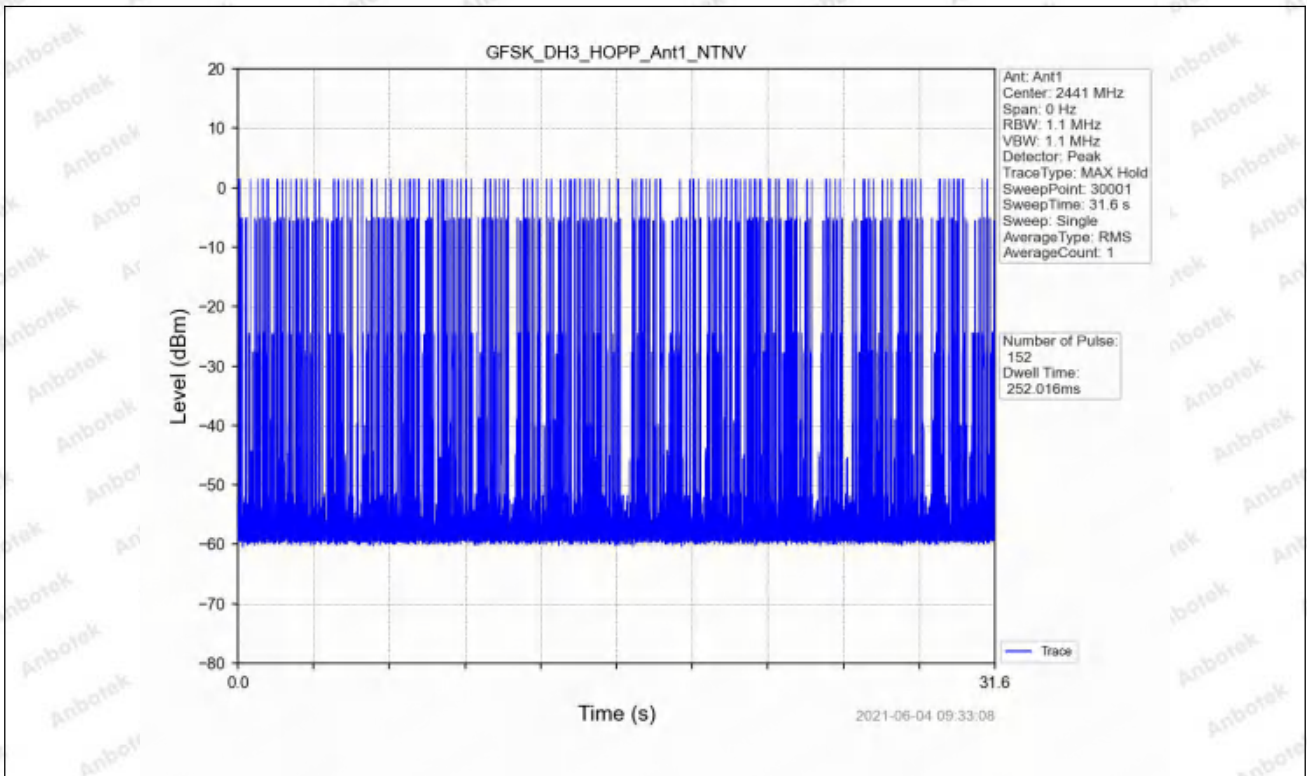


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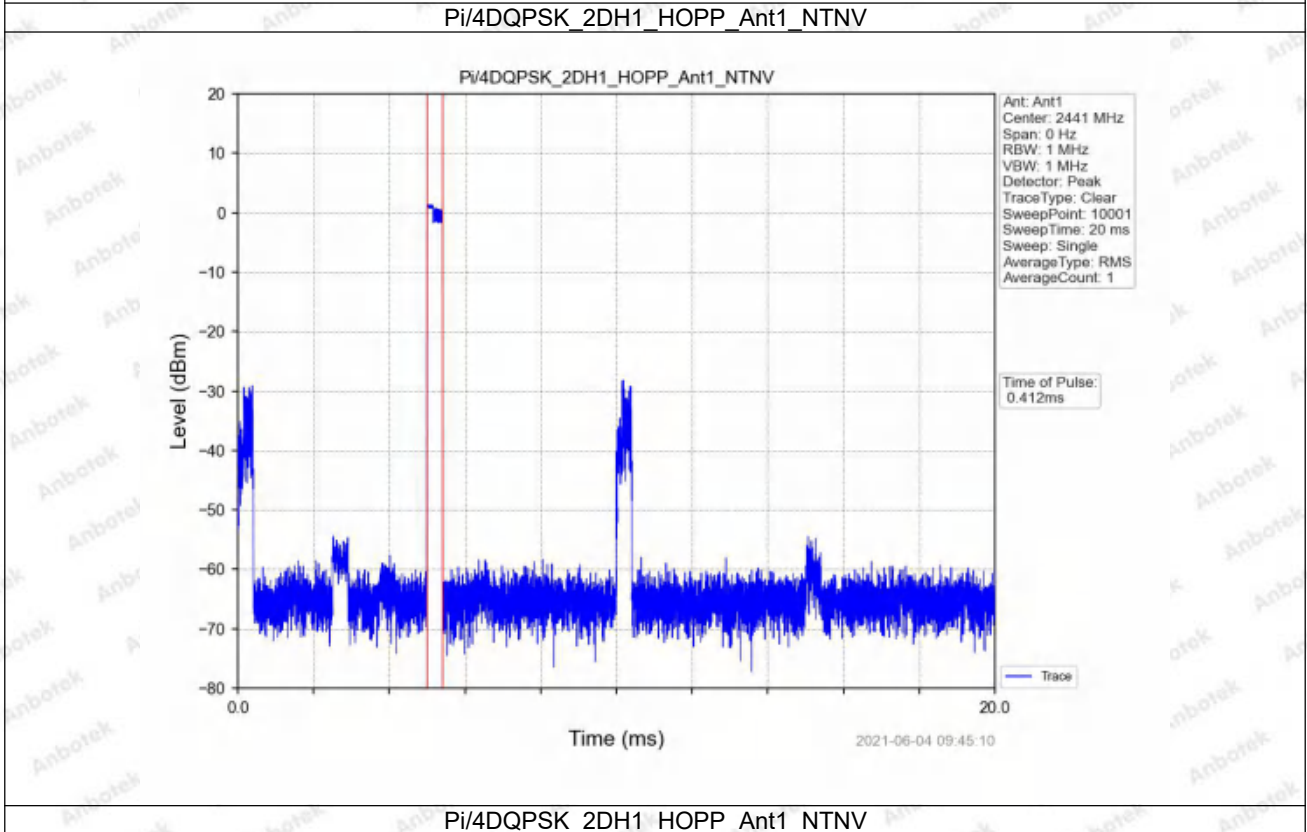
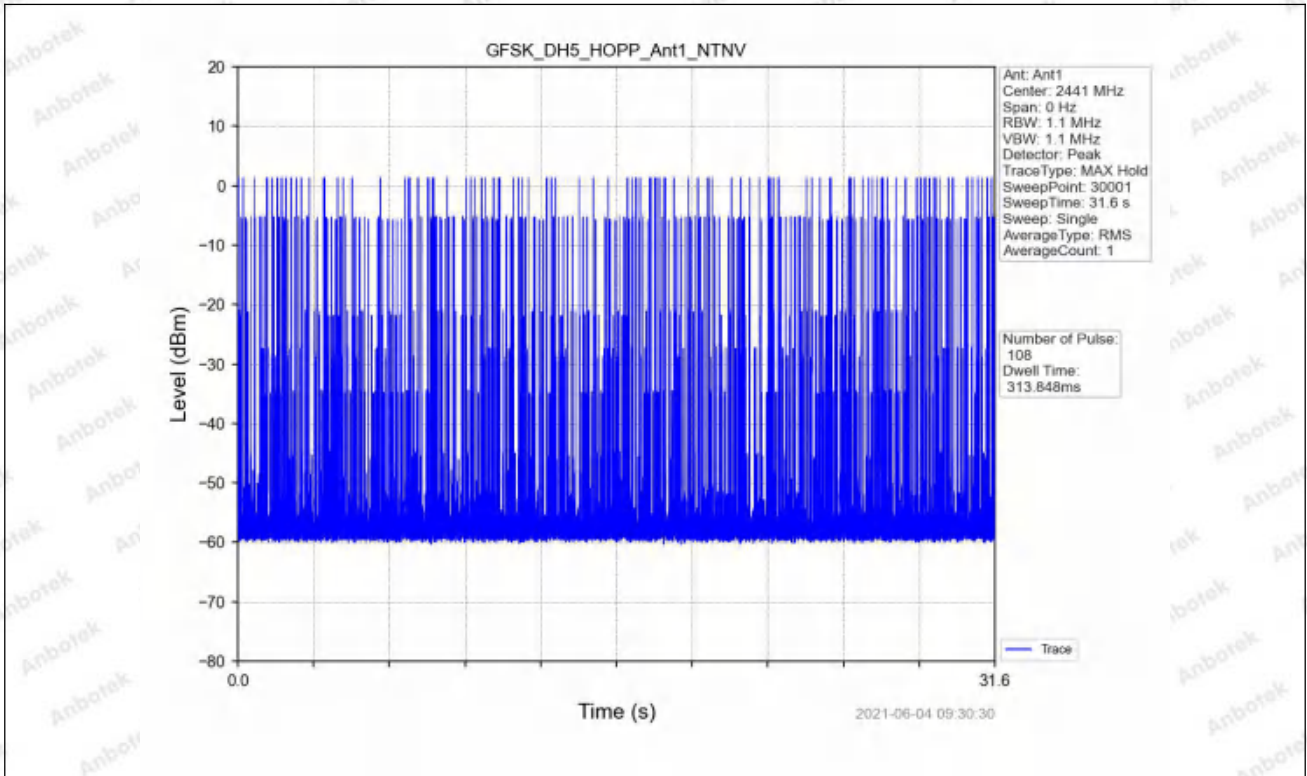


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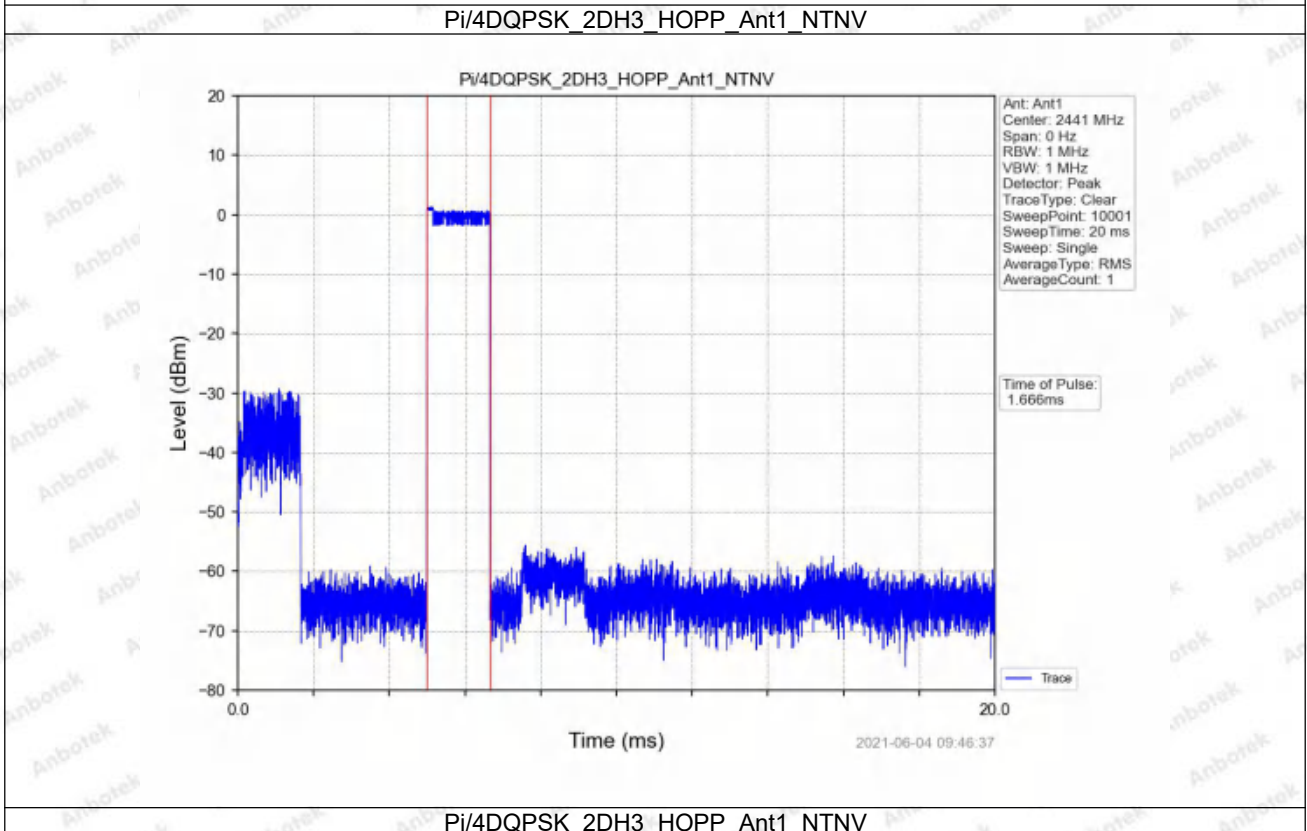
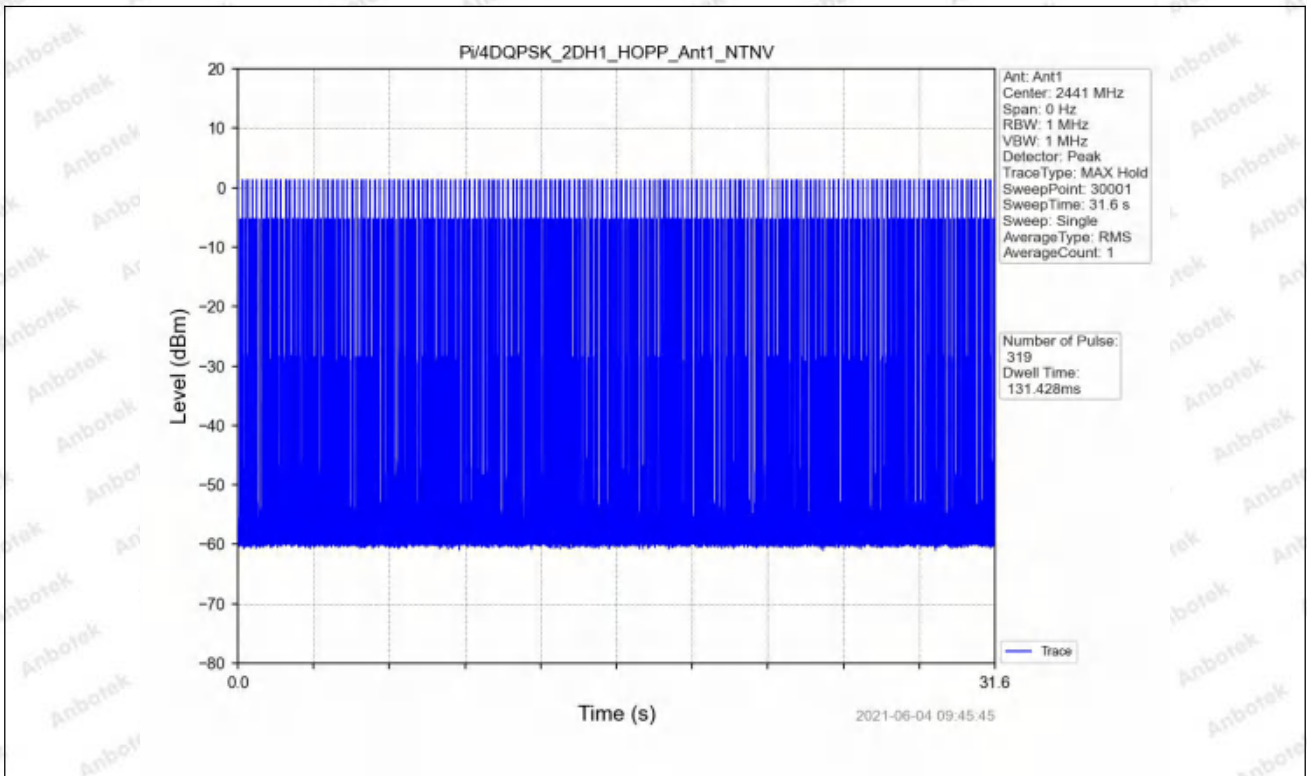


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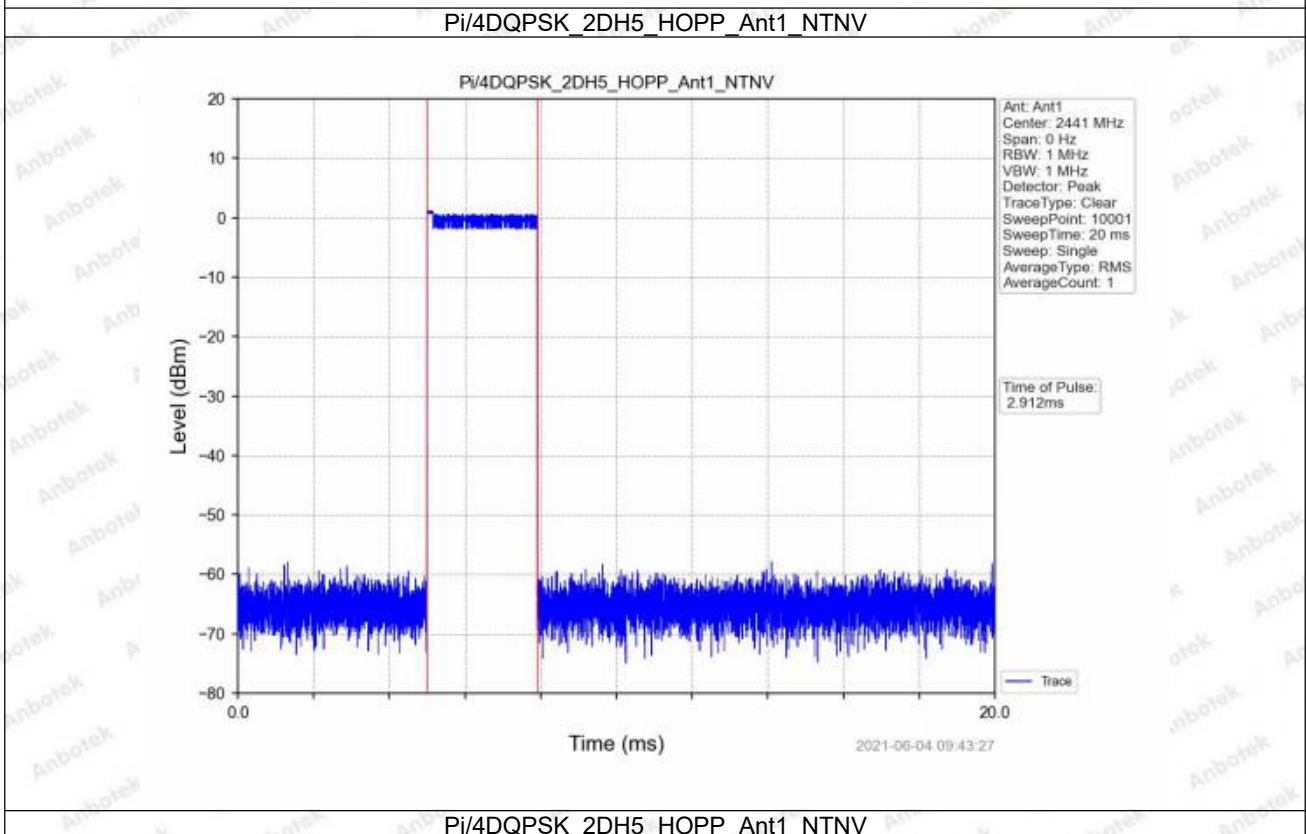
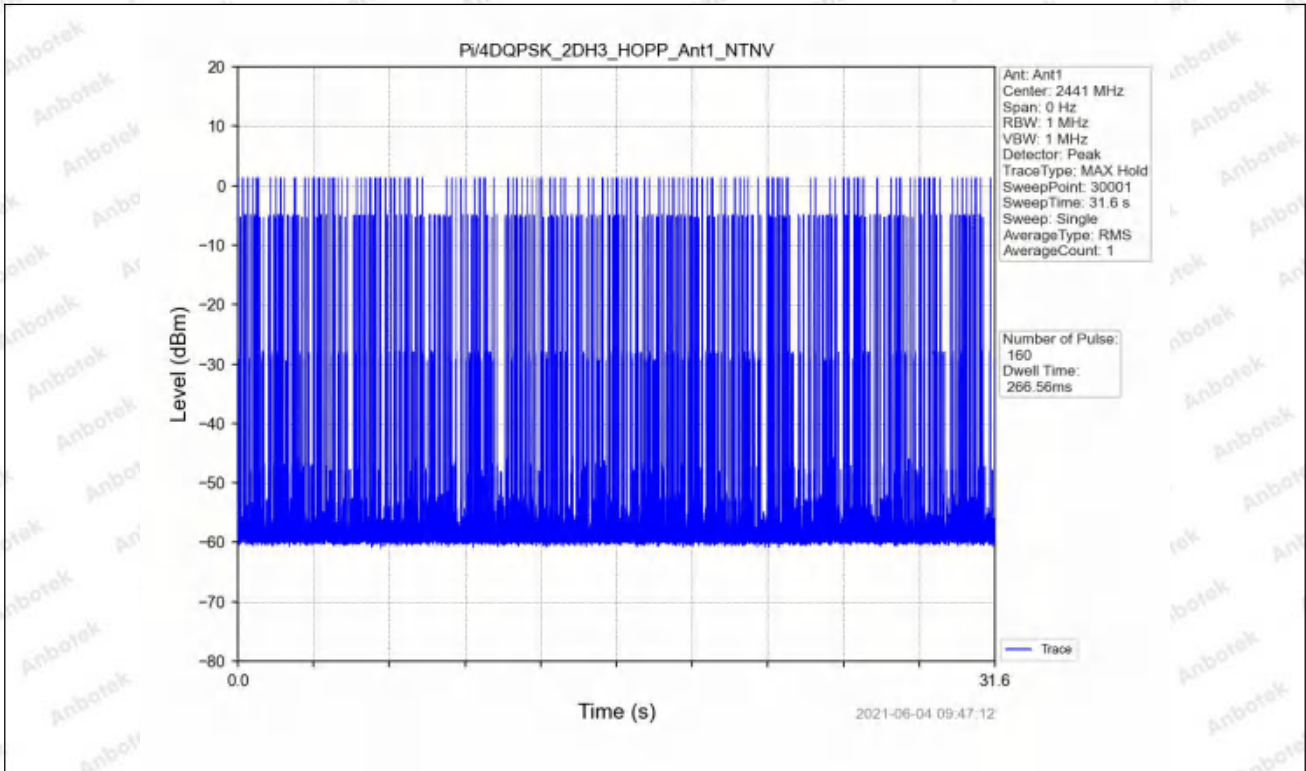


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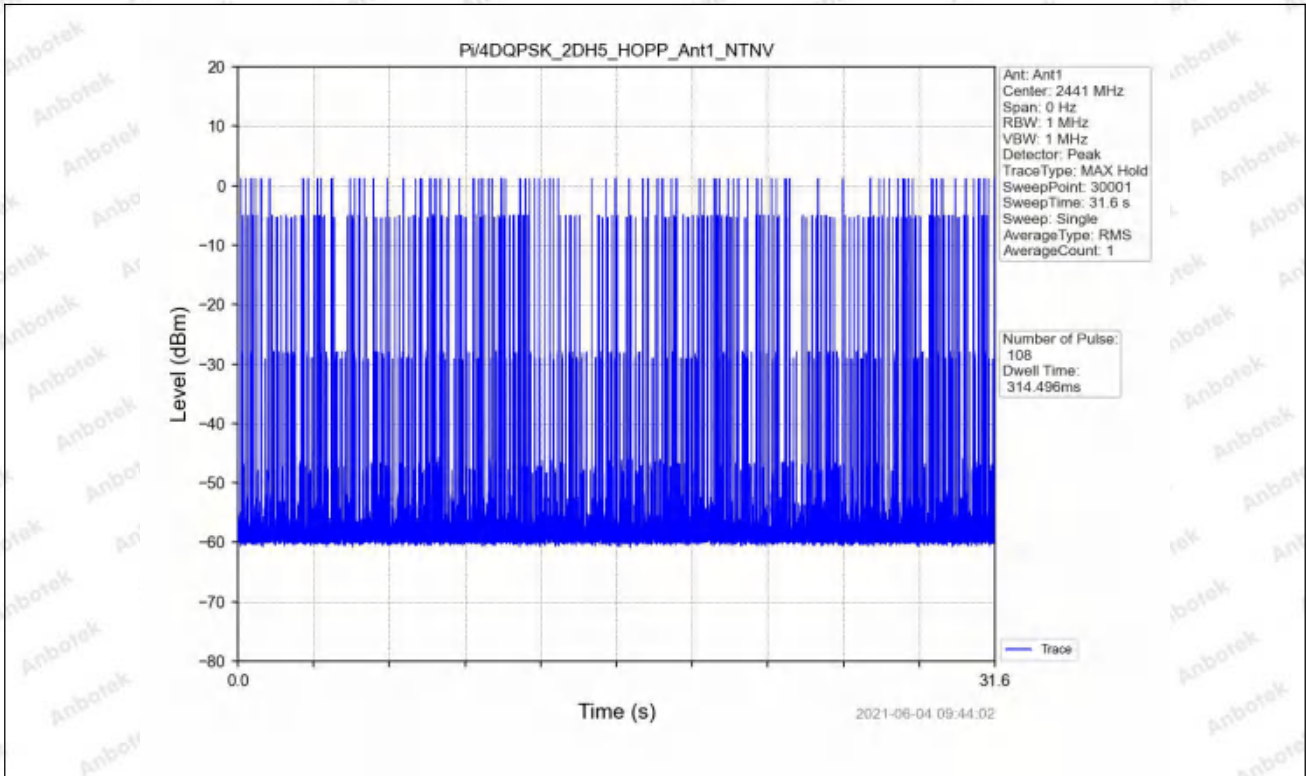


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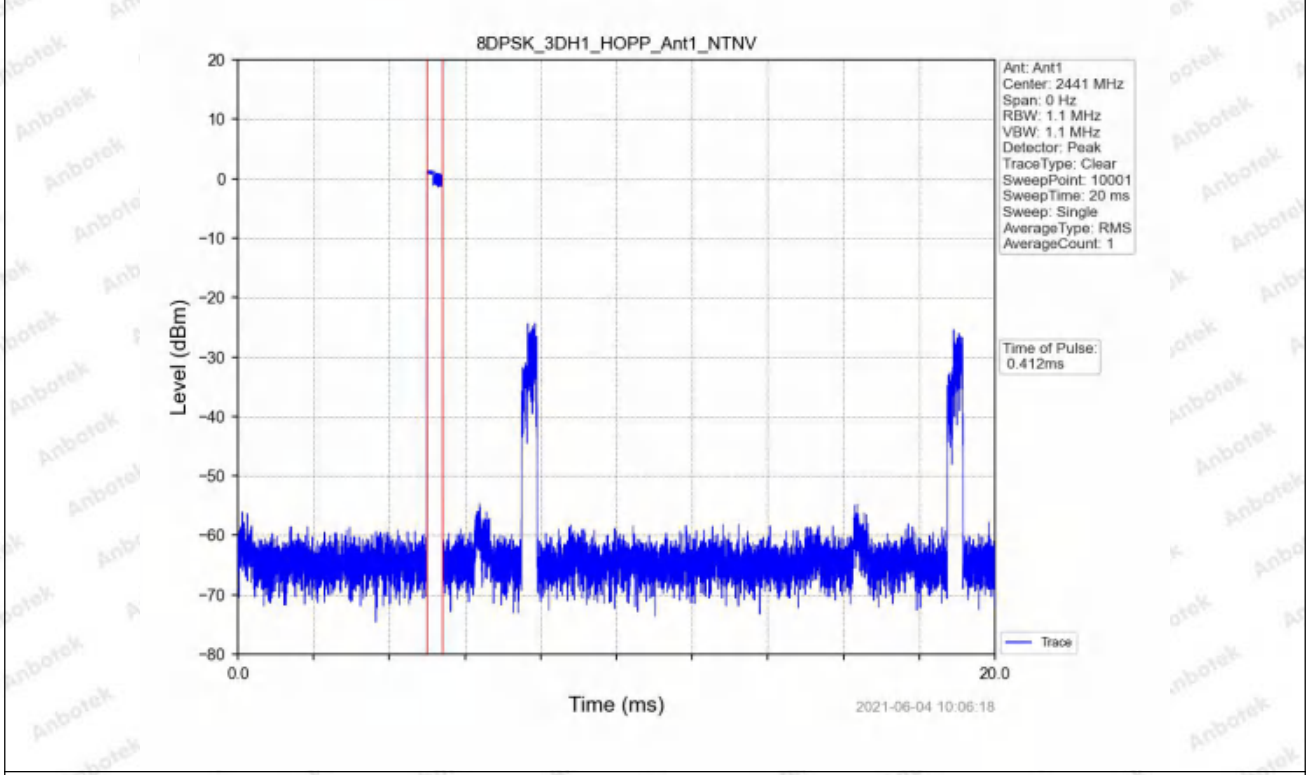
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8DPSK_3DH1_HOPP_Ant1_NTNV

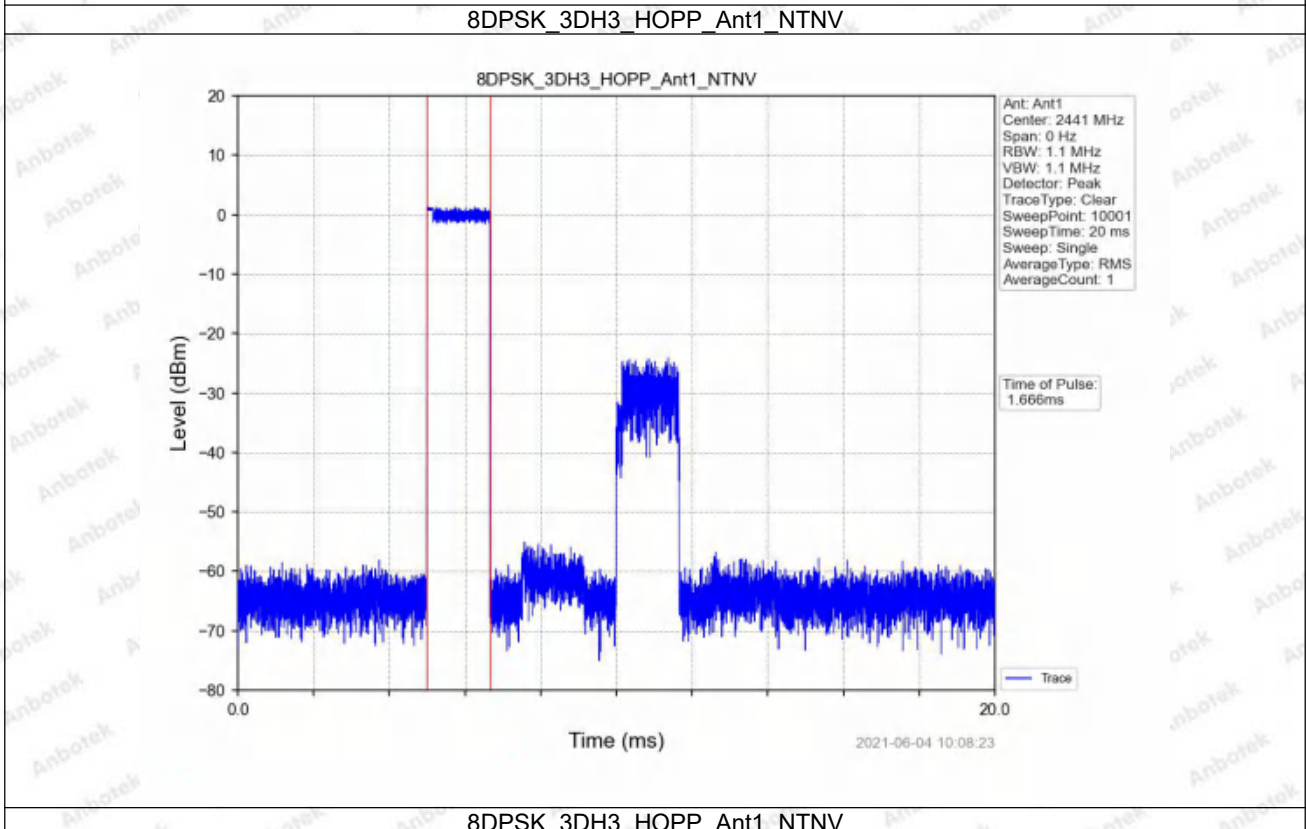
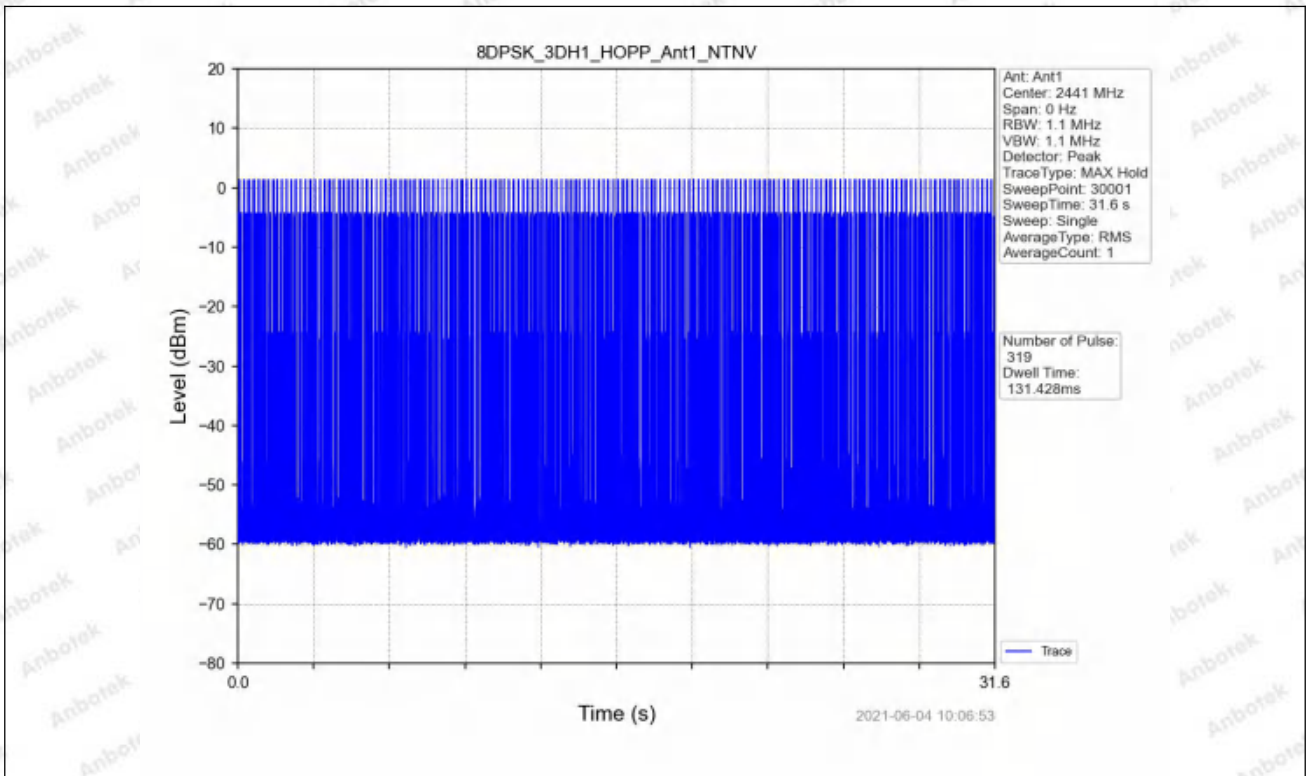


8DPSK_3DH1_HOPP_Ant1_NTNV

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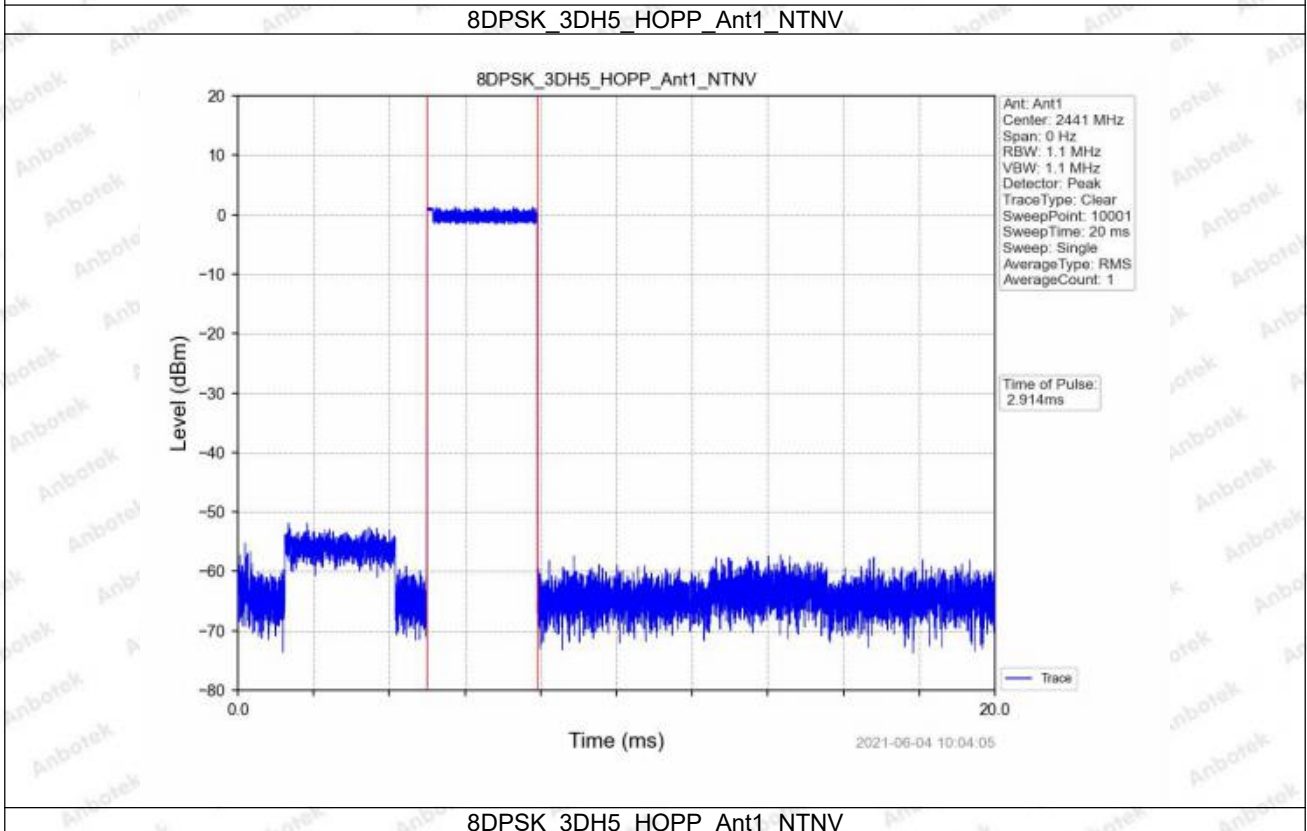
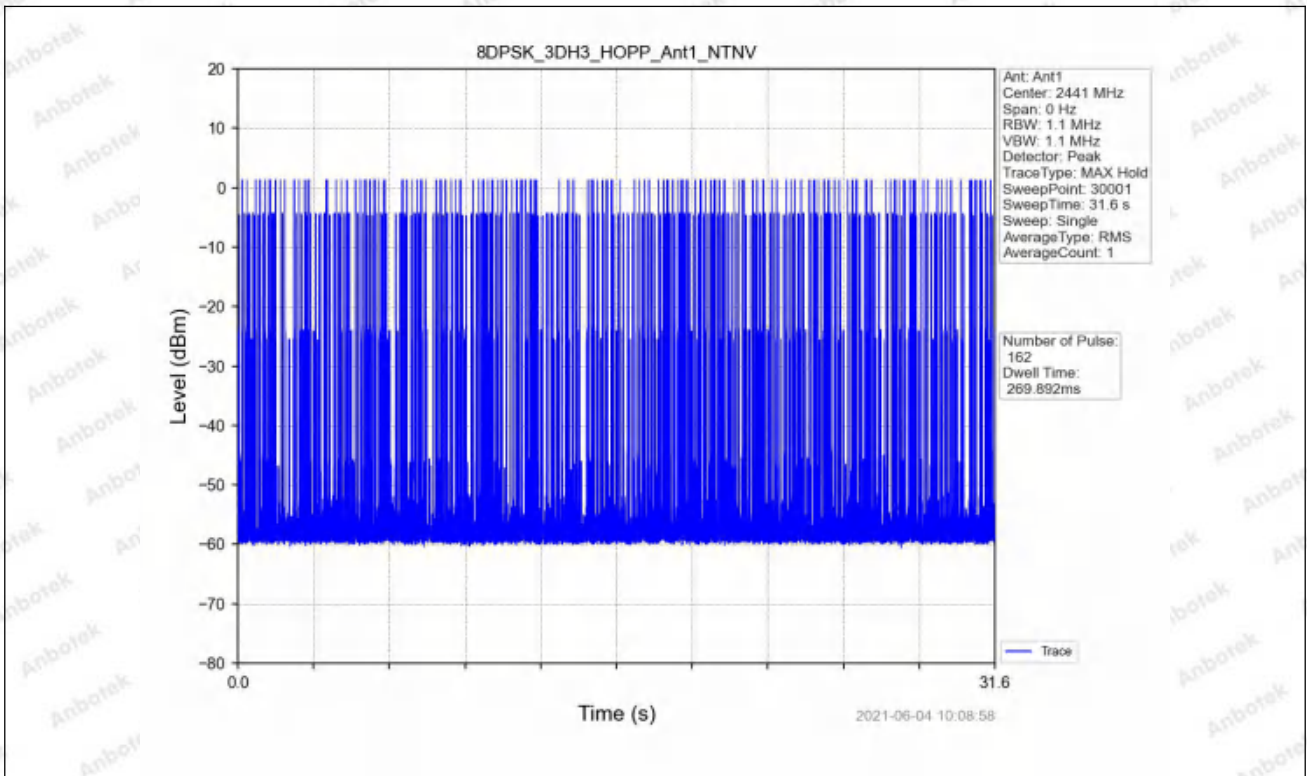


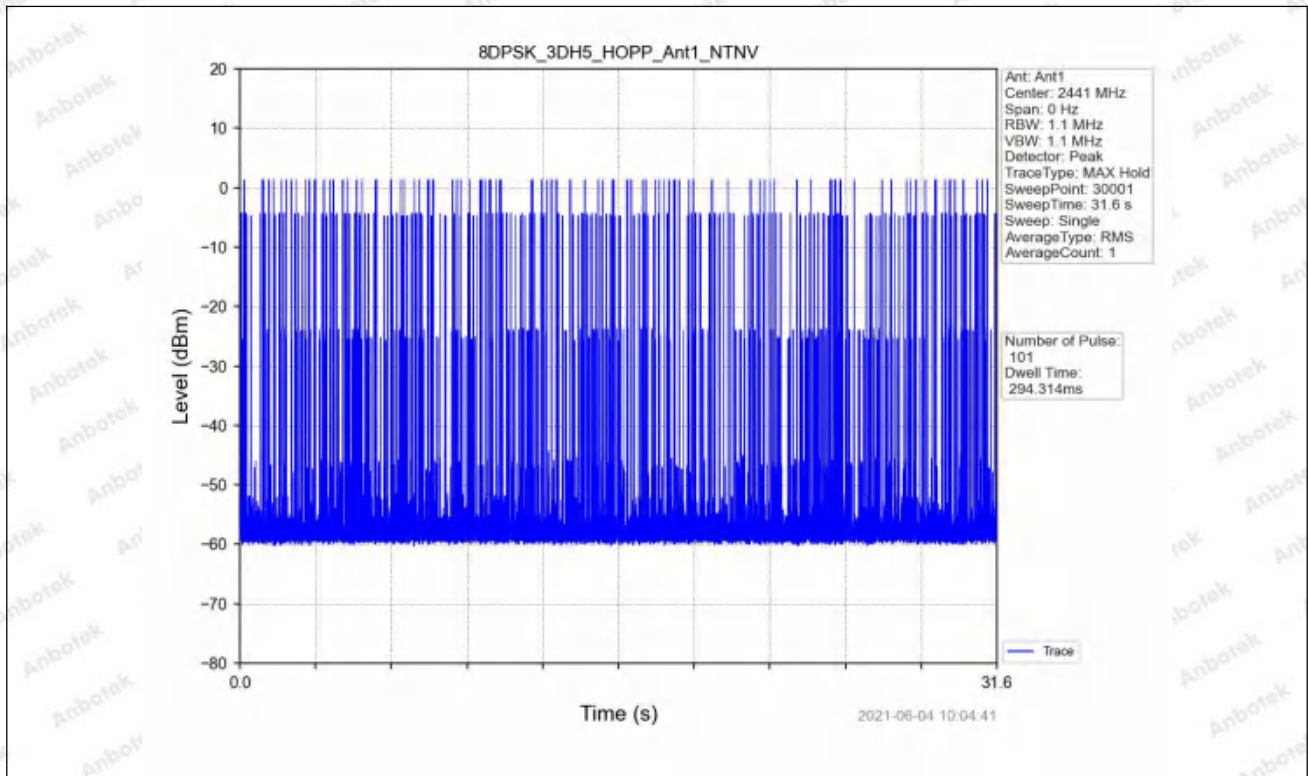
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6. Unwanted Emissions In Non-restricted Frequency Bands

6.1 Ref

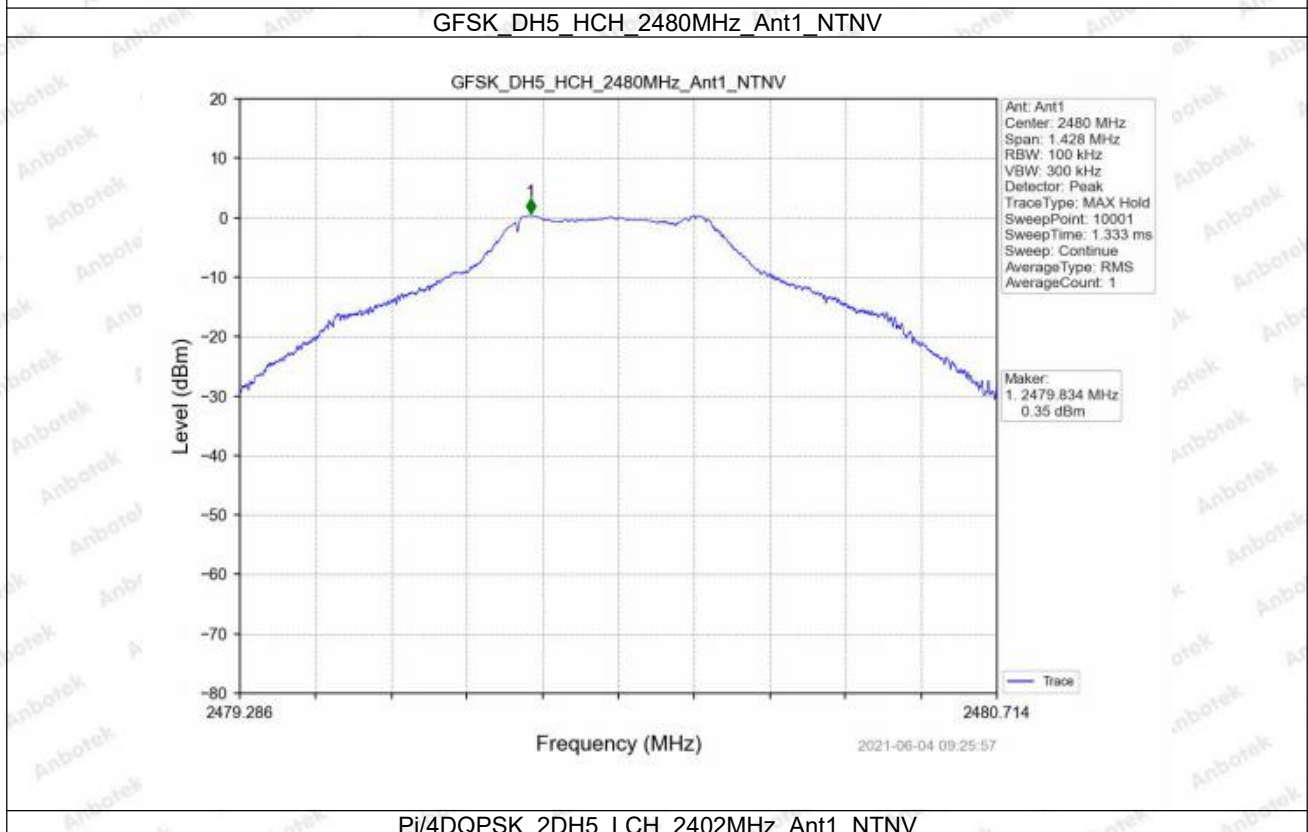
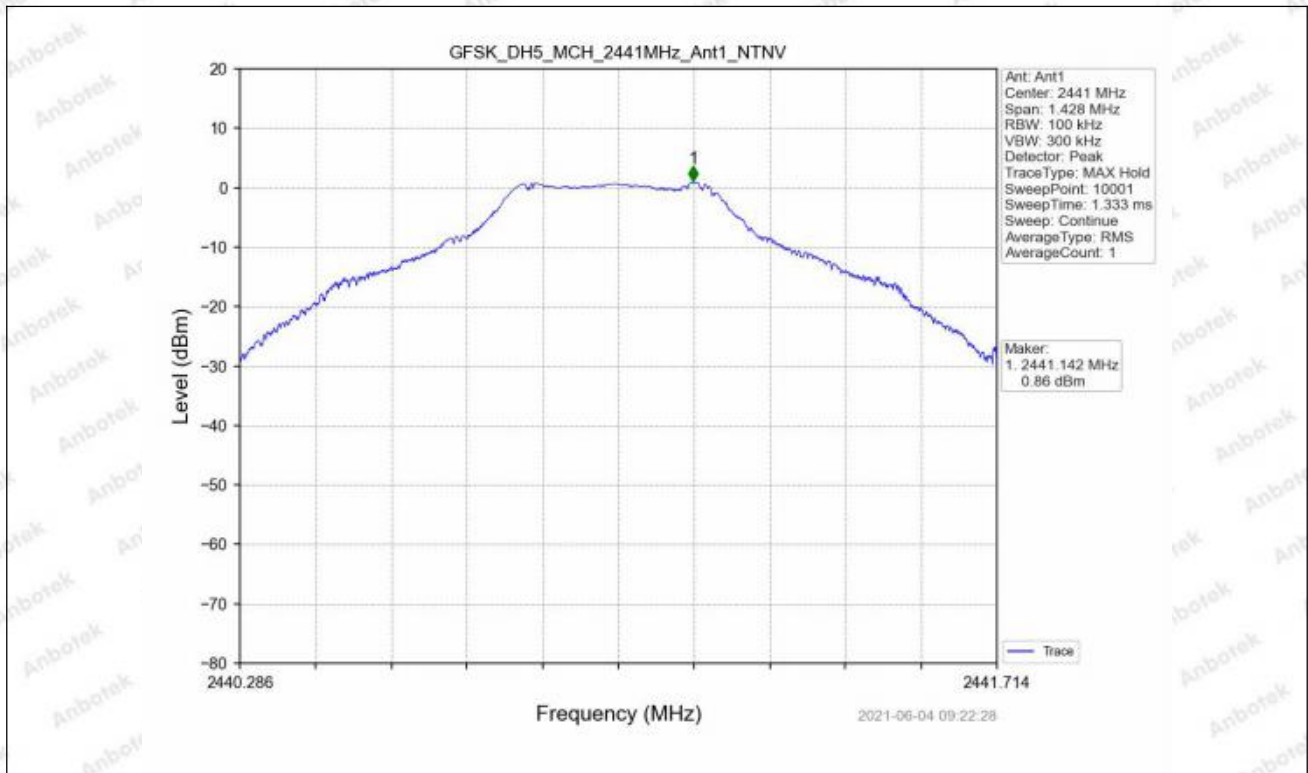
6.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Packet Type	Ant	Level of Reference (dBm)	Limit (dBm)	Verdict
GFSK	SISO	2402	DH5	1	0.69	/	/
		2441	DH5	1	0.86	/	/
		2480	DH5	1	0.35	/	/
Pi/4DQPSK	SISO	2402	2DH5	1	0.71	/	/
		2441	2DH5	1	0.91	/	/
		2480	2DH5	1	0.39	/	/
8DPSK	SISO	2402	3DH5	1	0.76	/	/
		2441	3DH5	1	0.85	/	/
		2480	3DH5	1	0.34	/	/

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.

6.1.2 Test Graph





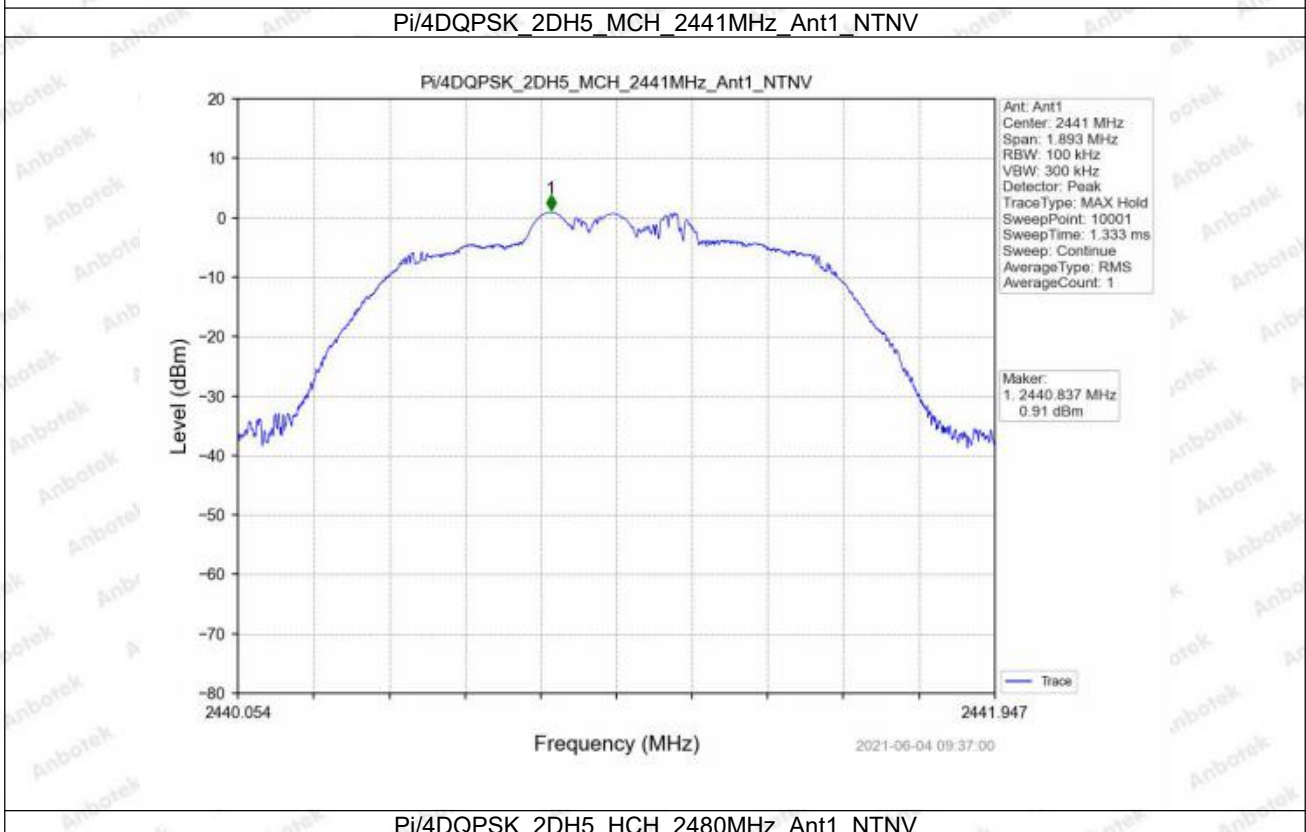
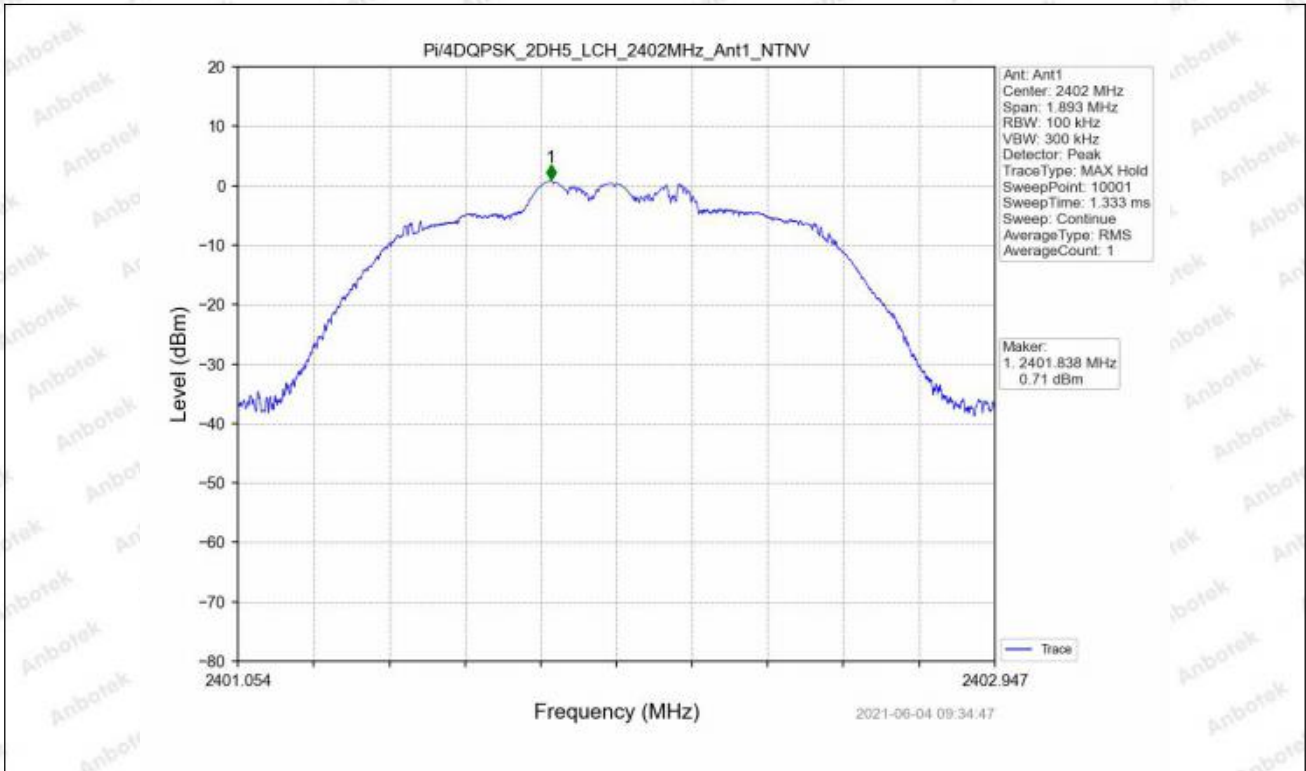
PI/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV

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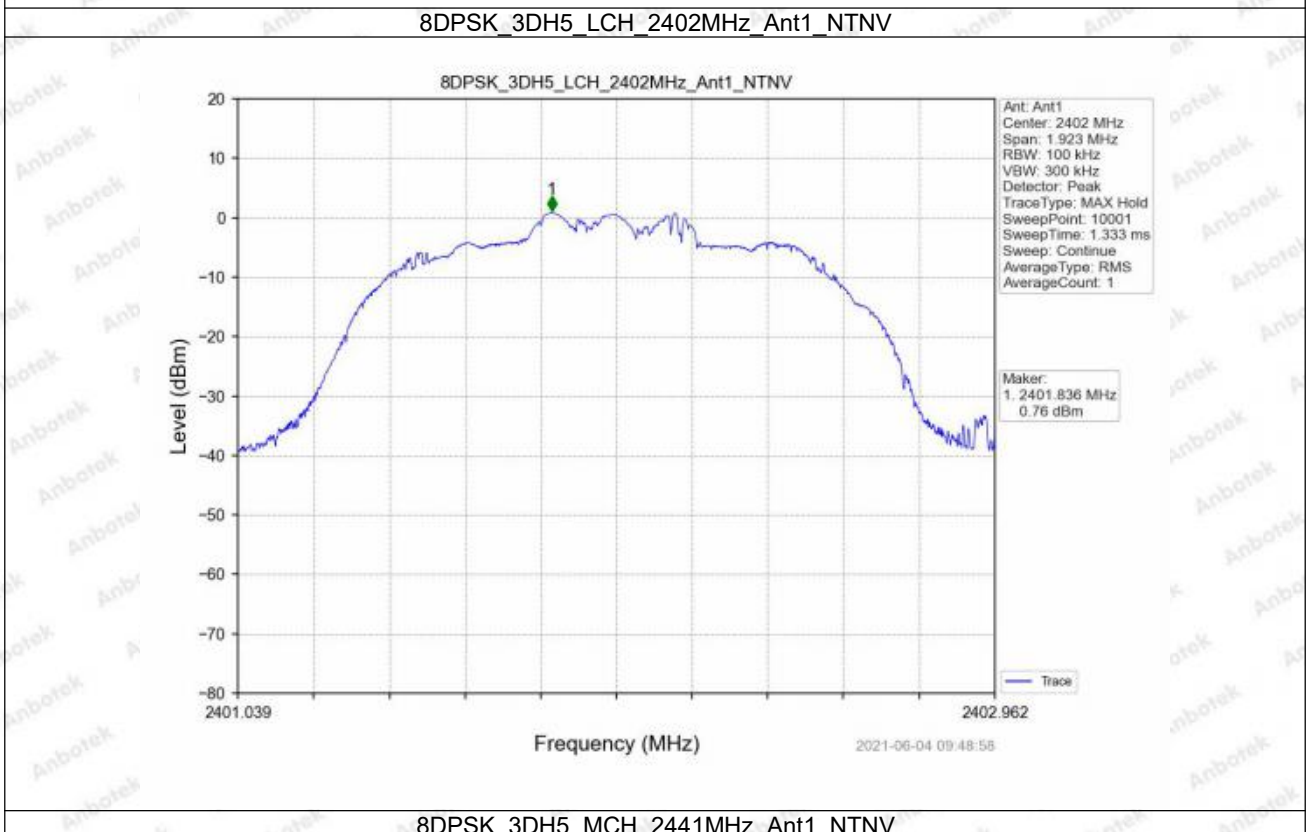
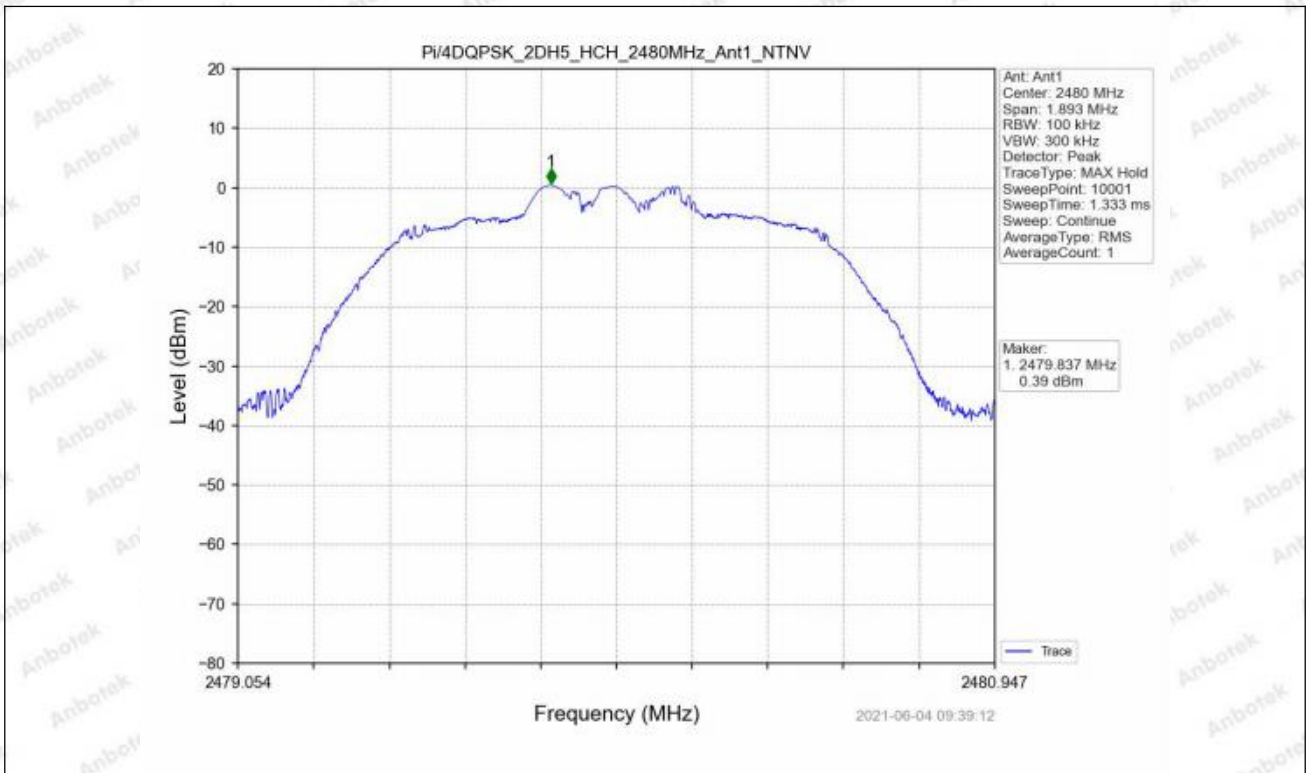
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

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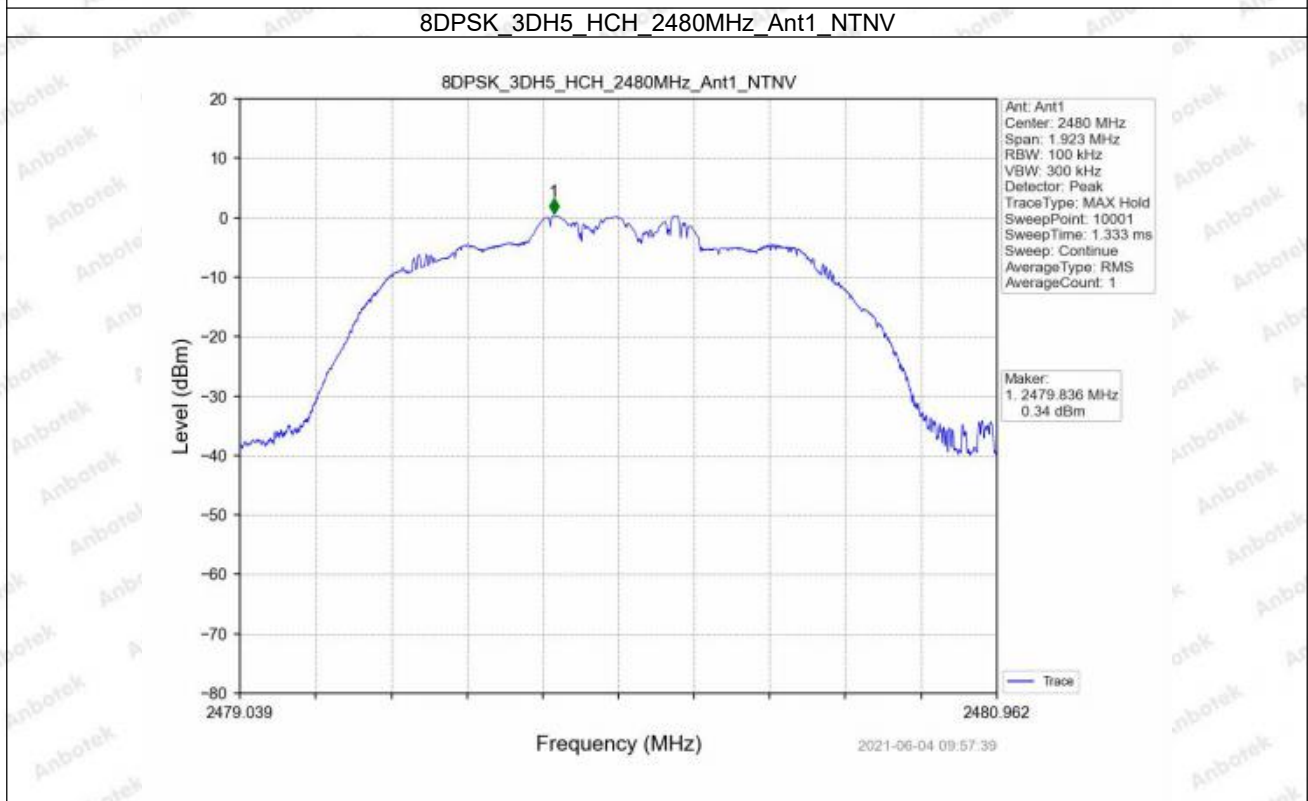
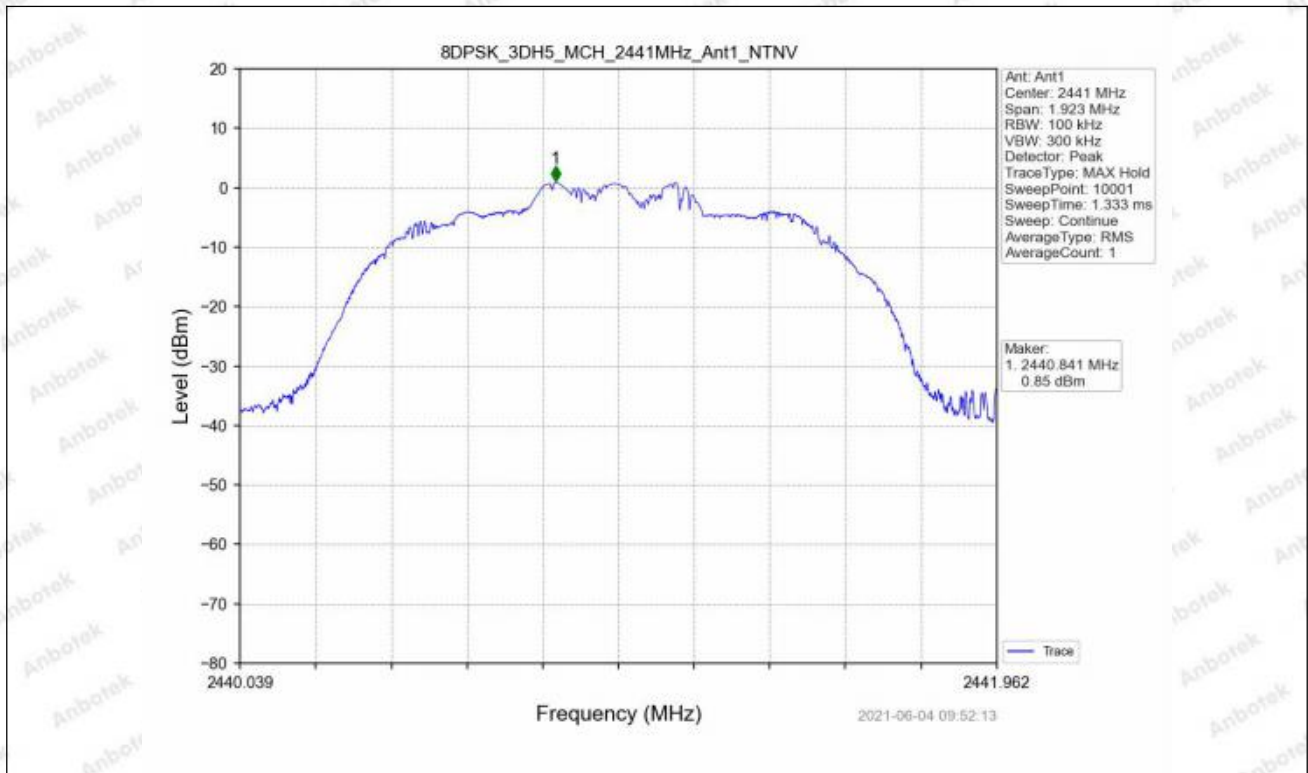
8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV

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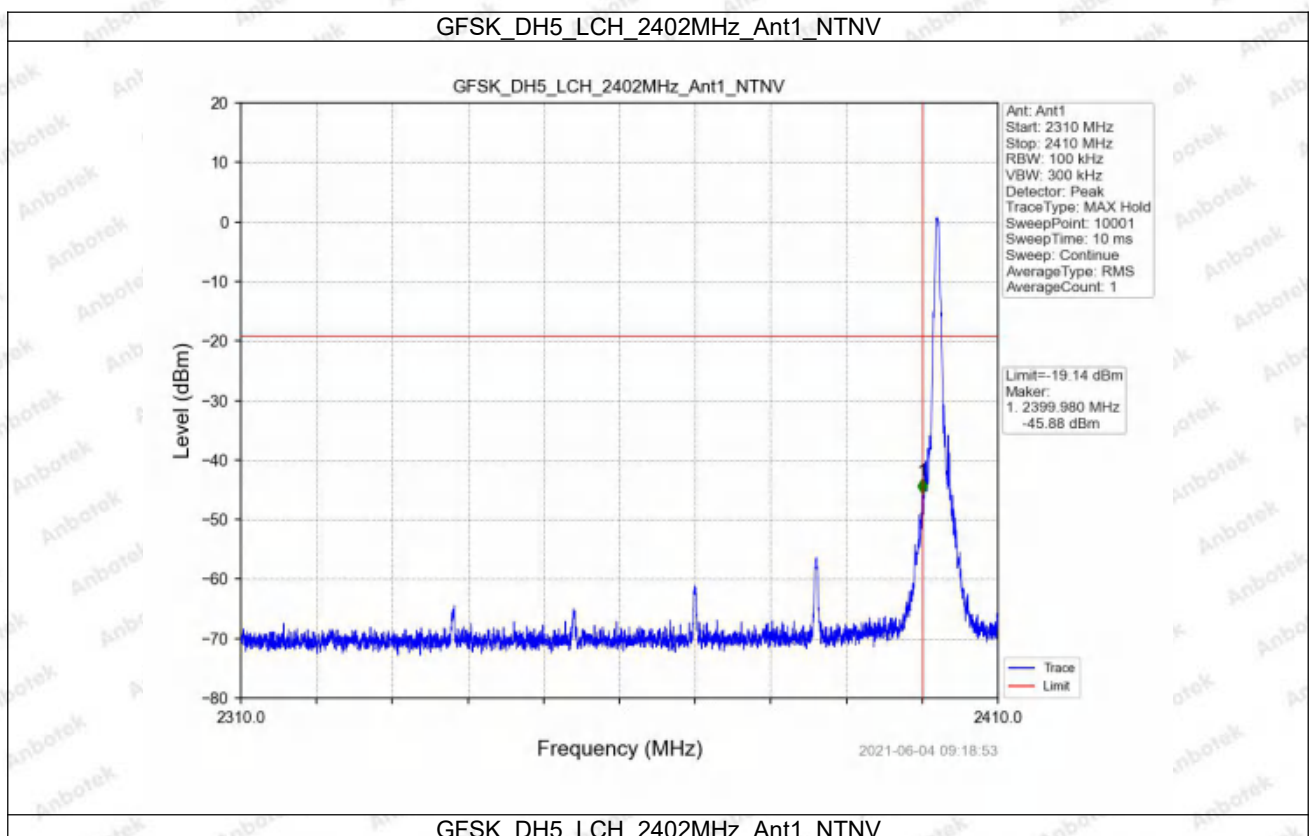
6.2 CSE

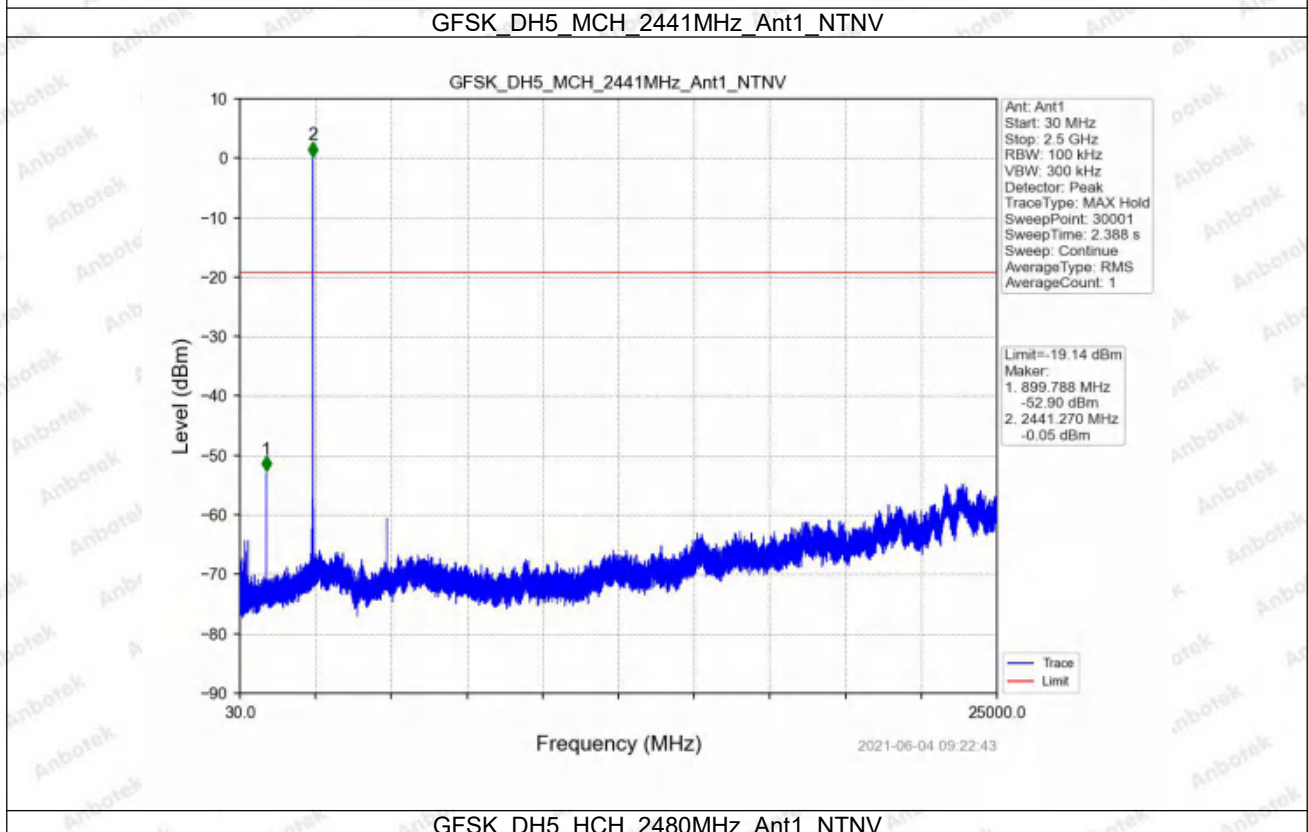
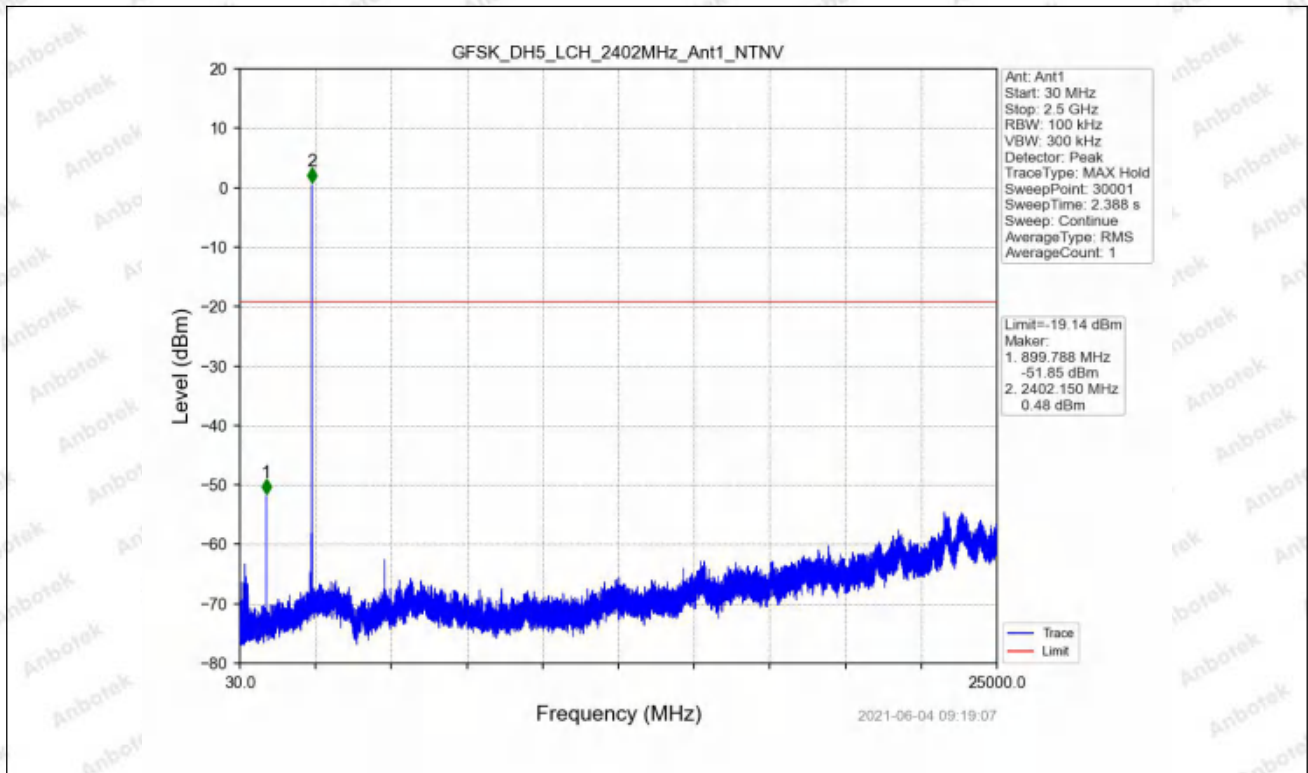
6.2.1 Test Result

Mode	TX Type	Frequency (MHz)	Packet Type	Ant	Level of Reference (dBm)	Limit (dBm)	Verdict
GFSK	SISO	2402	DH5	1	Refer To Test Graph	<=-19.14	Pass
		2441	DH5	1	Refer To Test Graph	<=-19.14	Pass
		2480	DH5	1	Refer To Test Graph	<=-19.14	Pass
		2441	DH5	1	Refer To Test Graph	<=-19.14	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	Refer To Test Graph	<=-19.09	Pass
		2441	2DH5	1	Refer To Test Graph	<=-19.09	Pass
		2480	2DH5	1	Refer To Test Graph	<=-19.09	Pass
		2441	2DH5	1	Refer To Test Graph	<=-19.09	Pass
8DPSK	SISO	2402	3DH5	1	Refer To Test Graph	<=-19.15	Pass
		2441	3DH5	1	Refer To Test Graph	<=-19.15	Pass
		2480	3DH5	1	Refer To Test Graph	<=-19.15	Pass
		2441	3DH5	1	Refer To Test Graph	<=-19.15	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.

6.2.2 Test Graph





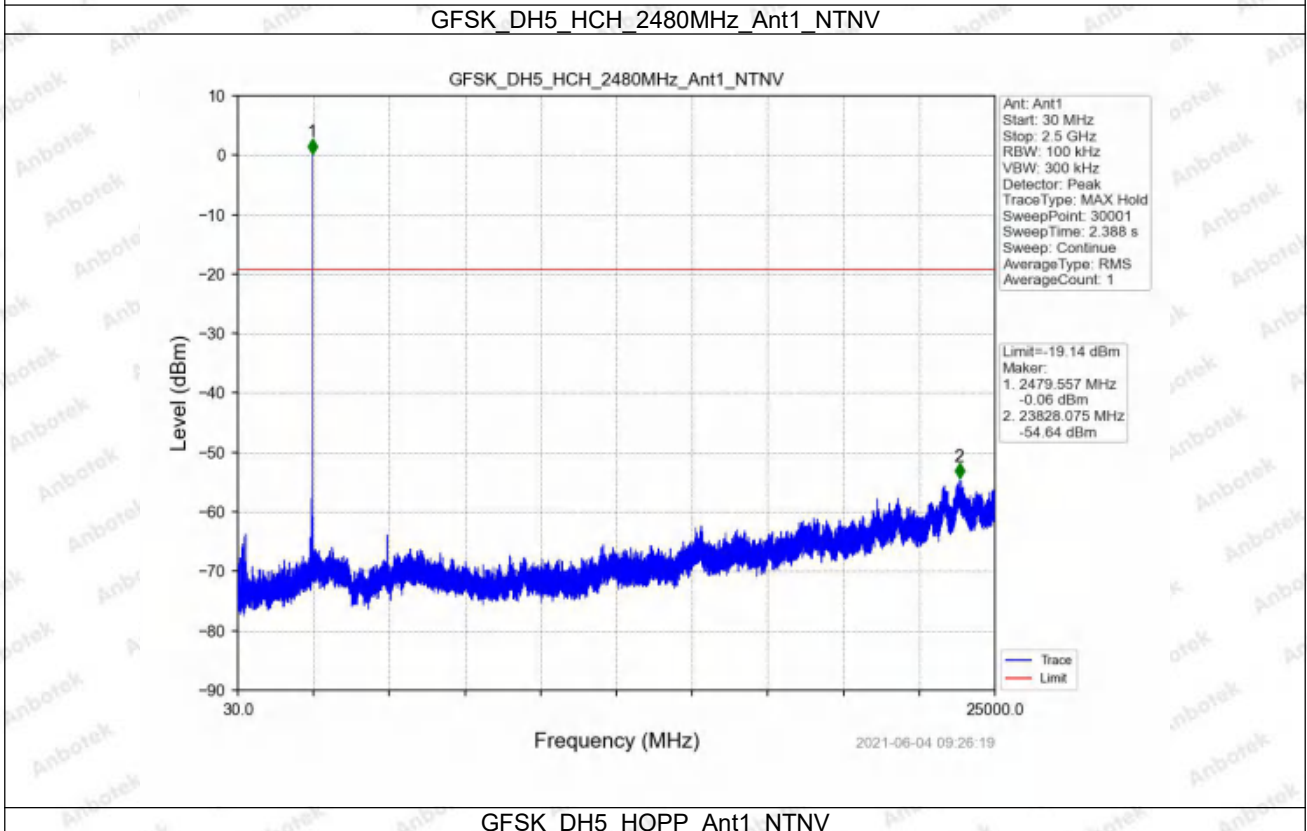
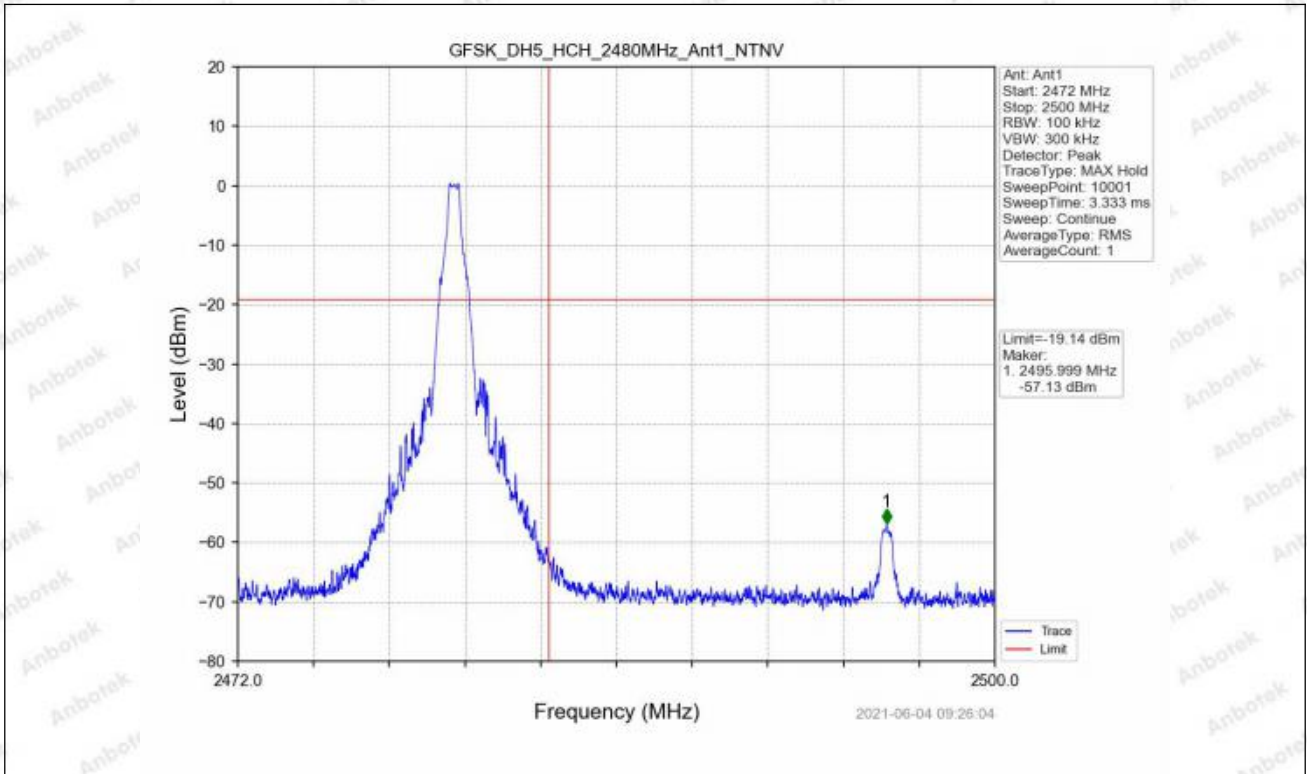
GFSK_DH5_HCH_2480MHz_Ant1_NTNV

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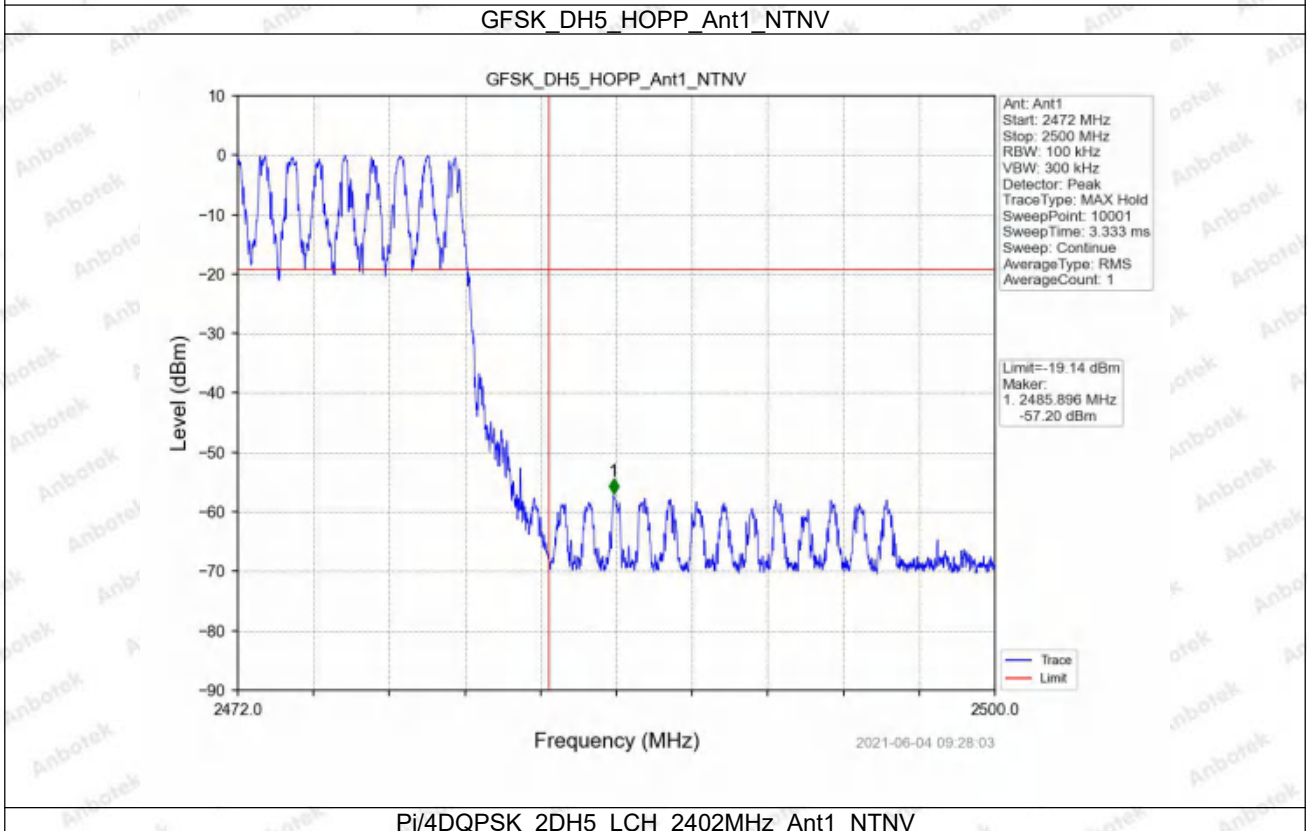
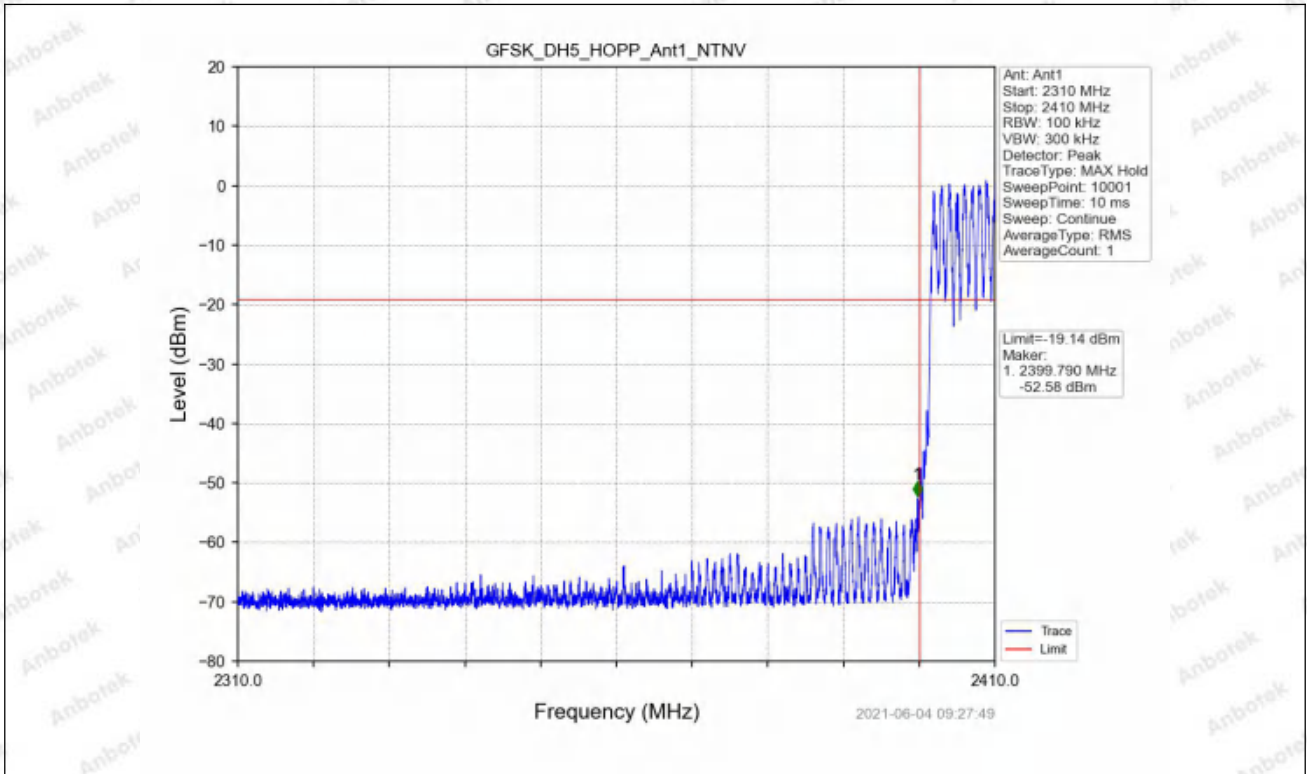
GFSK_DH5_HOPP_Ant1_NTNV

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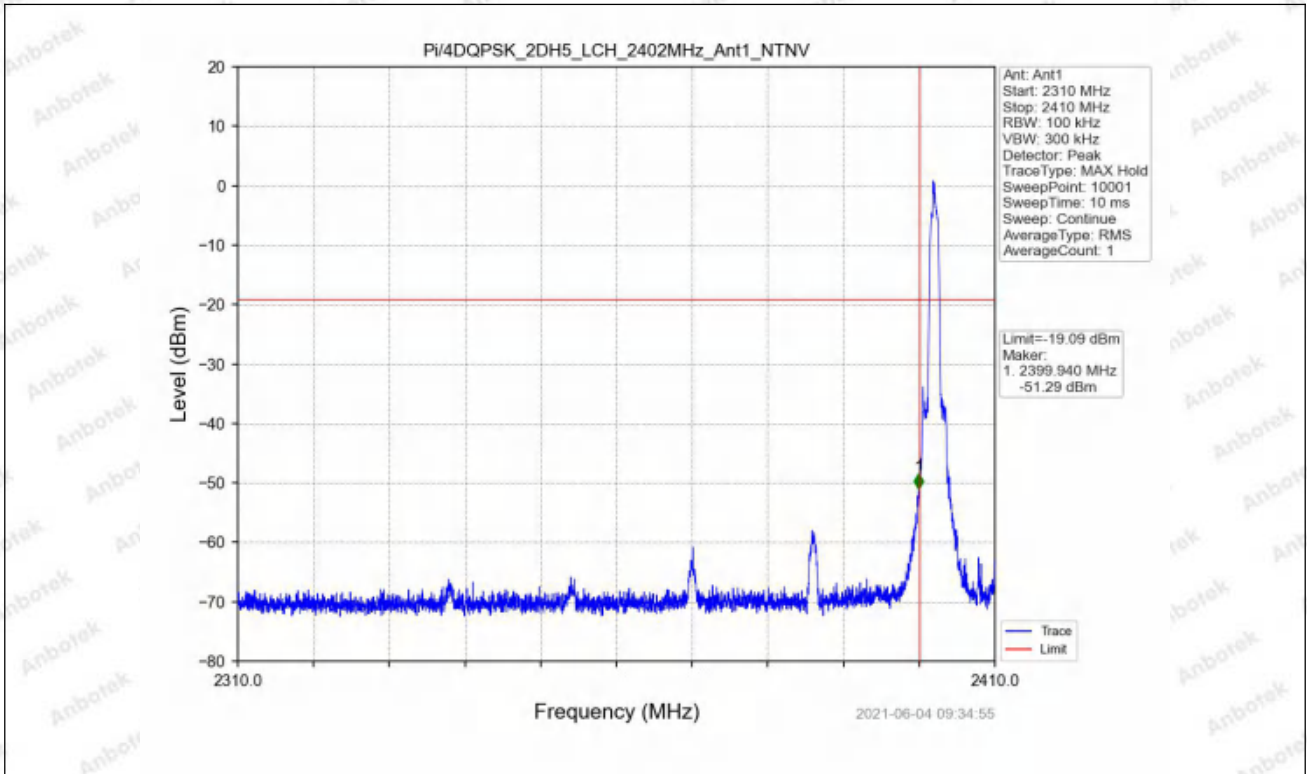
PI/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV

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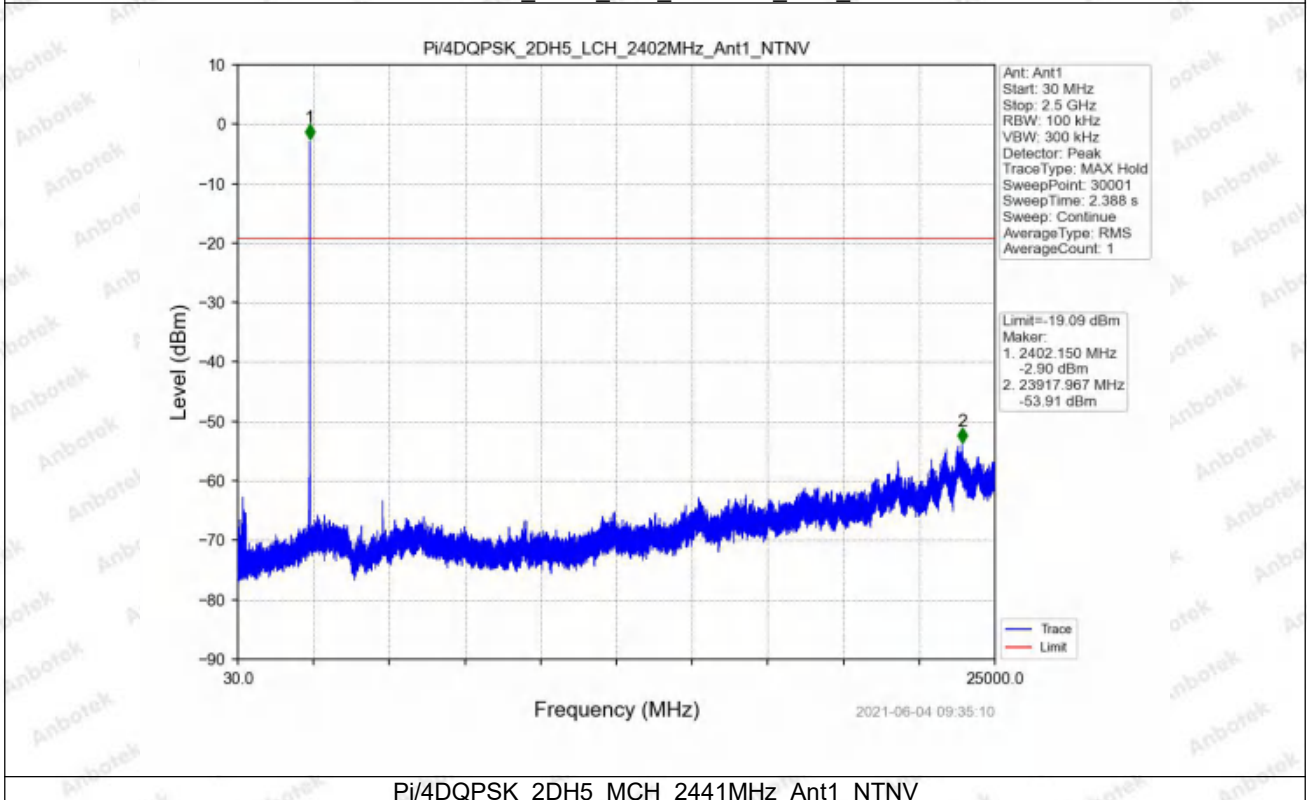
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Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



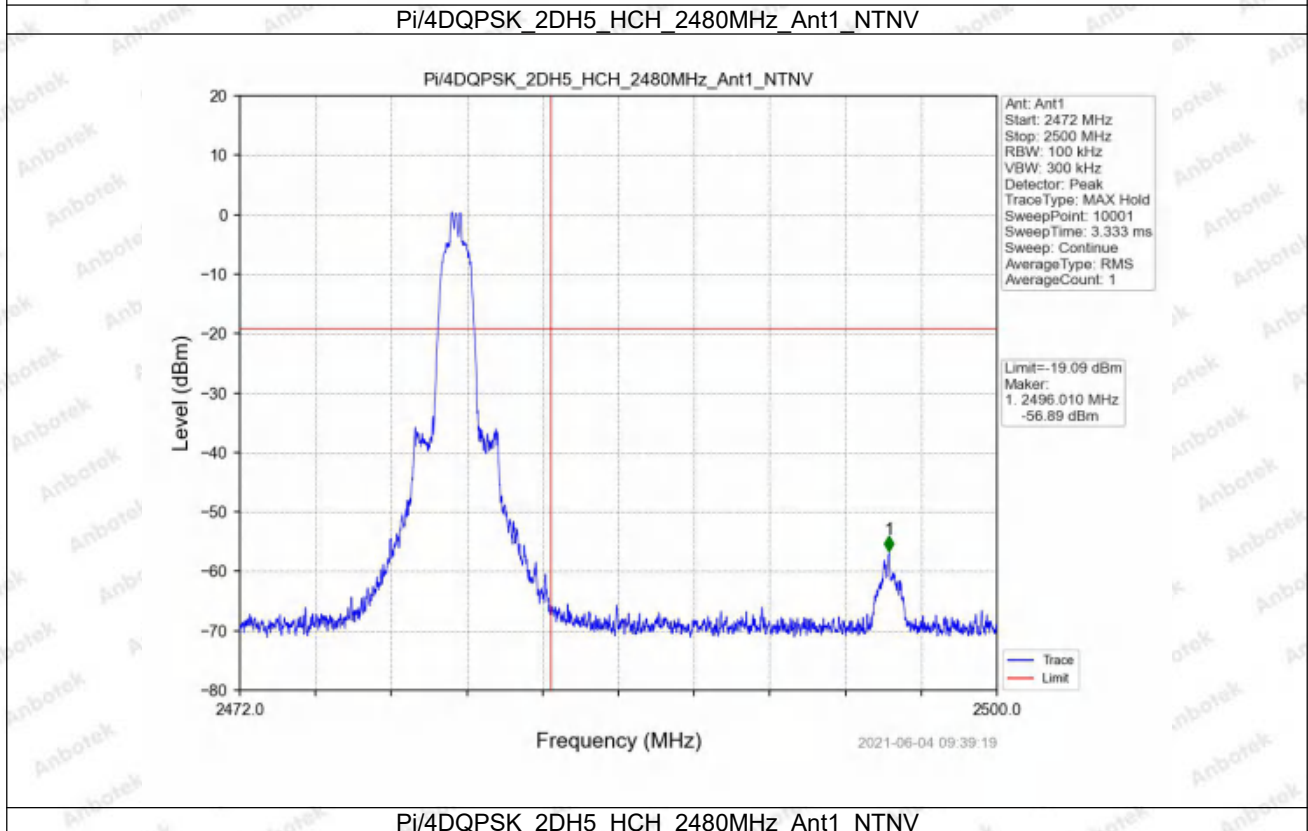
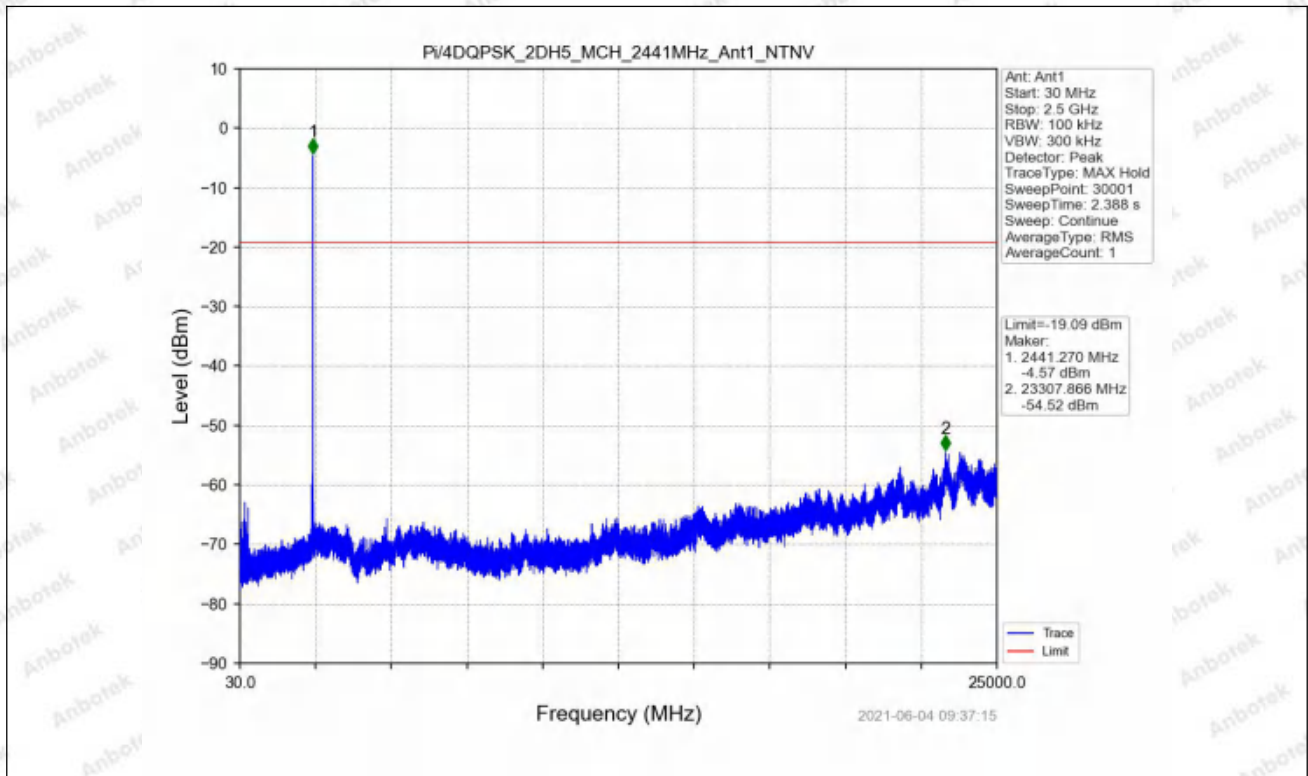
Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV

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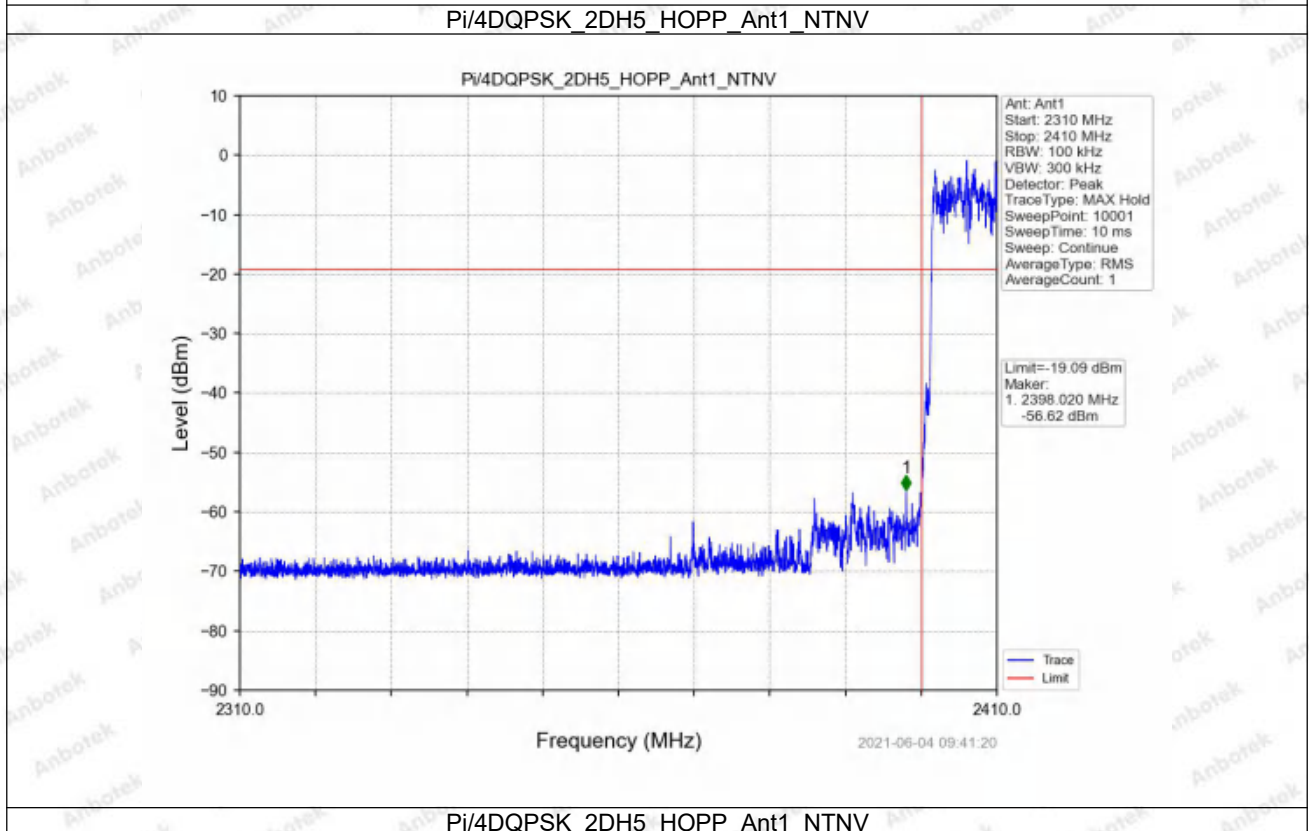
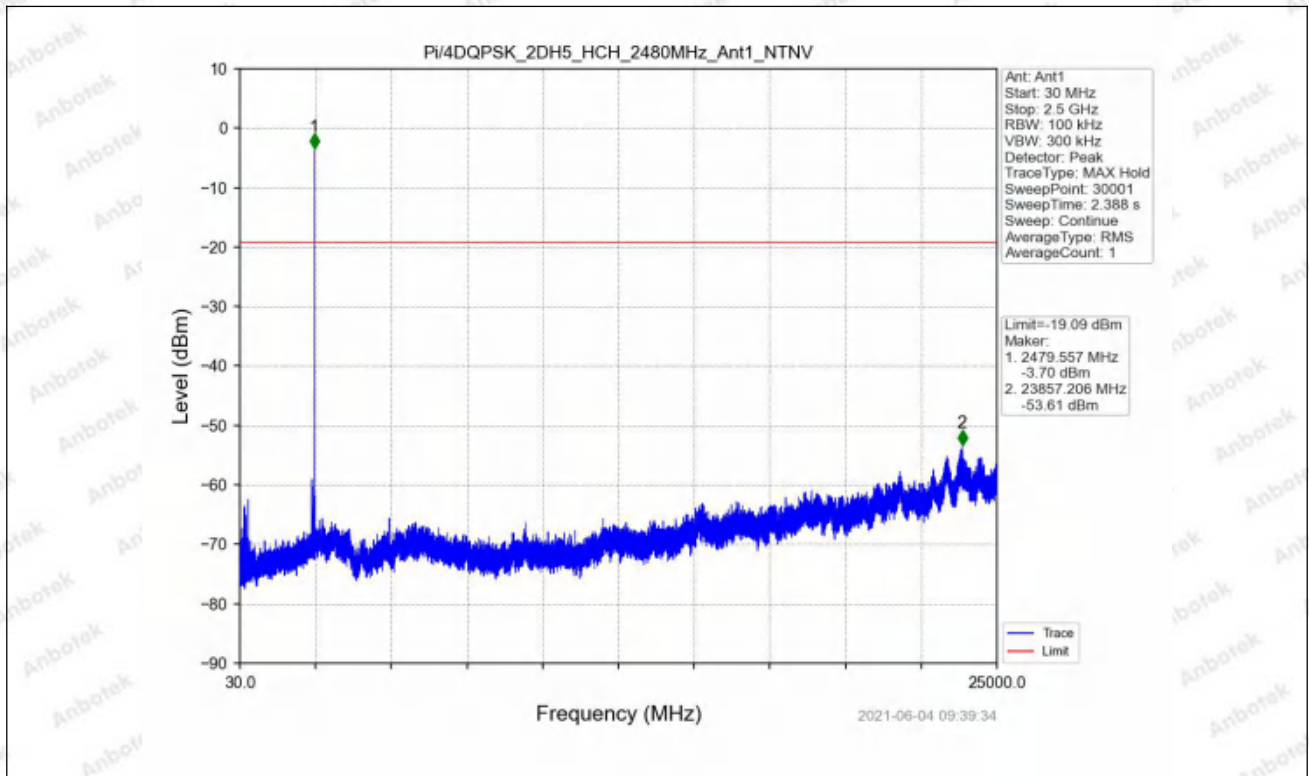


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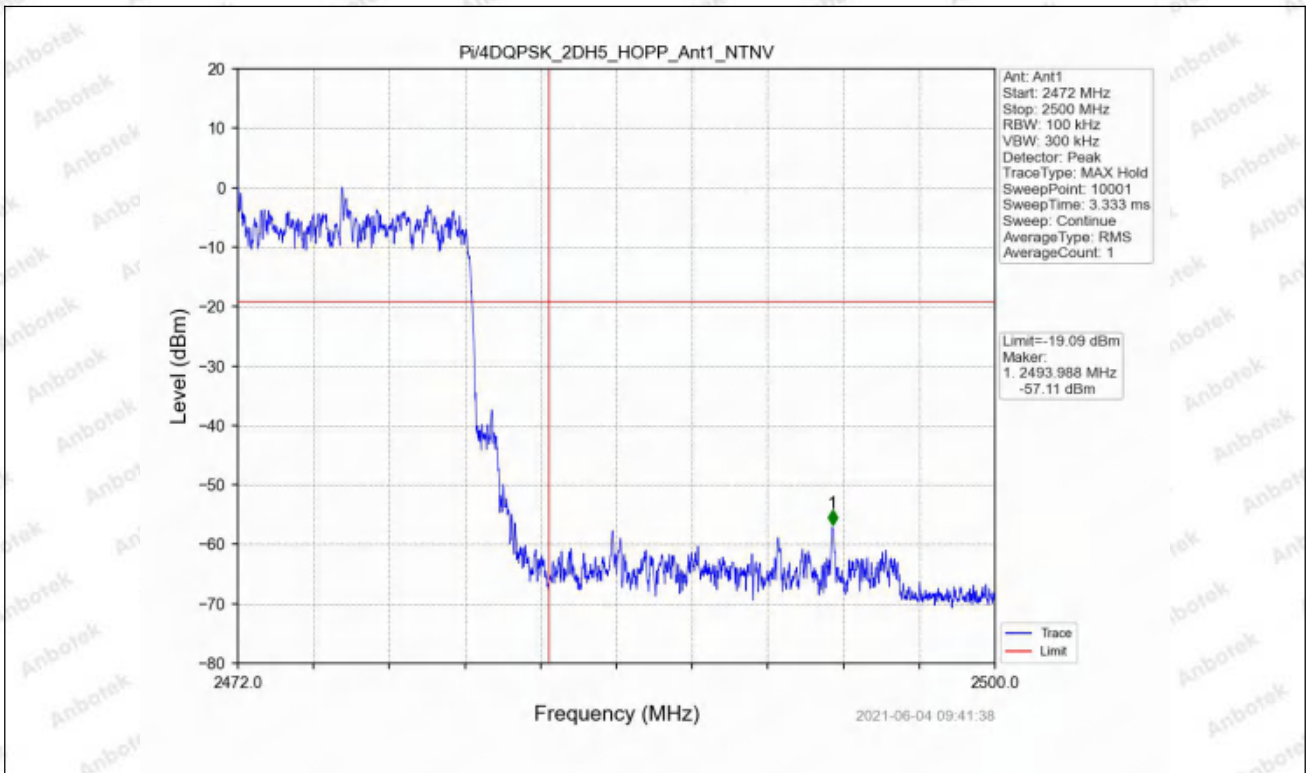


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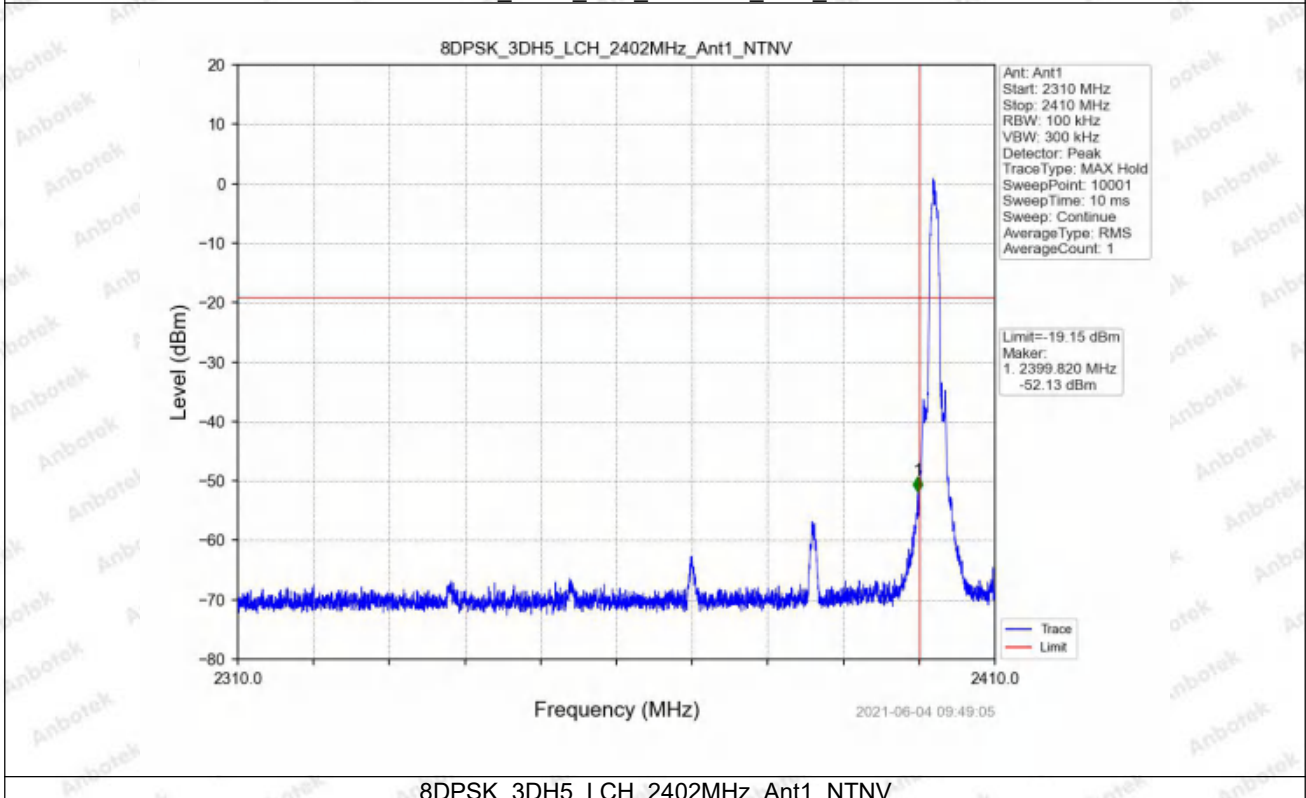
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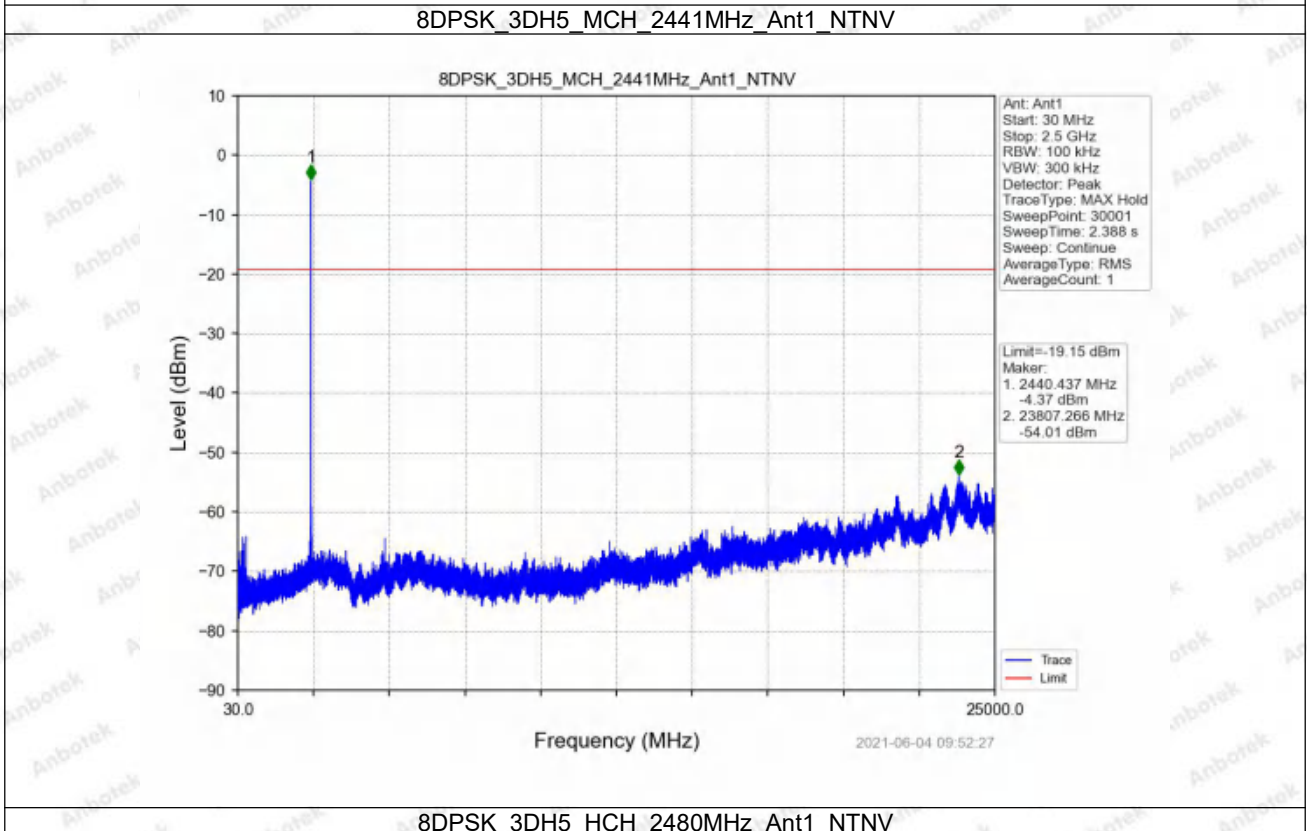
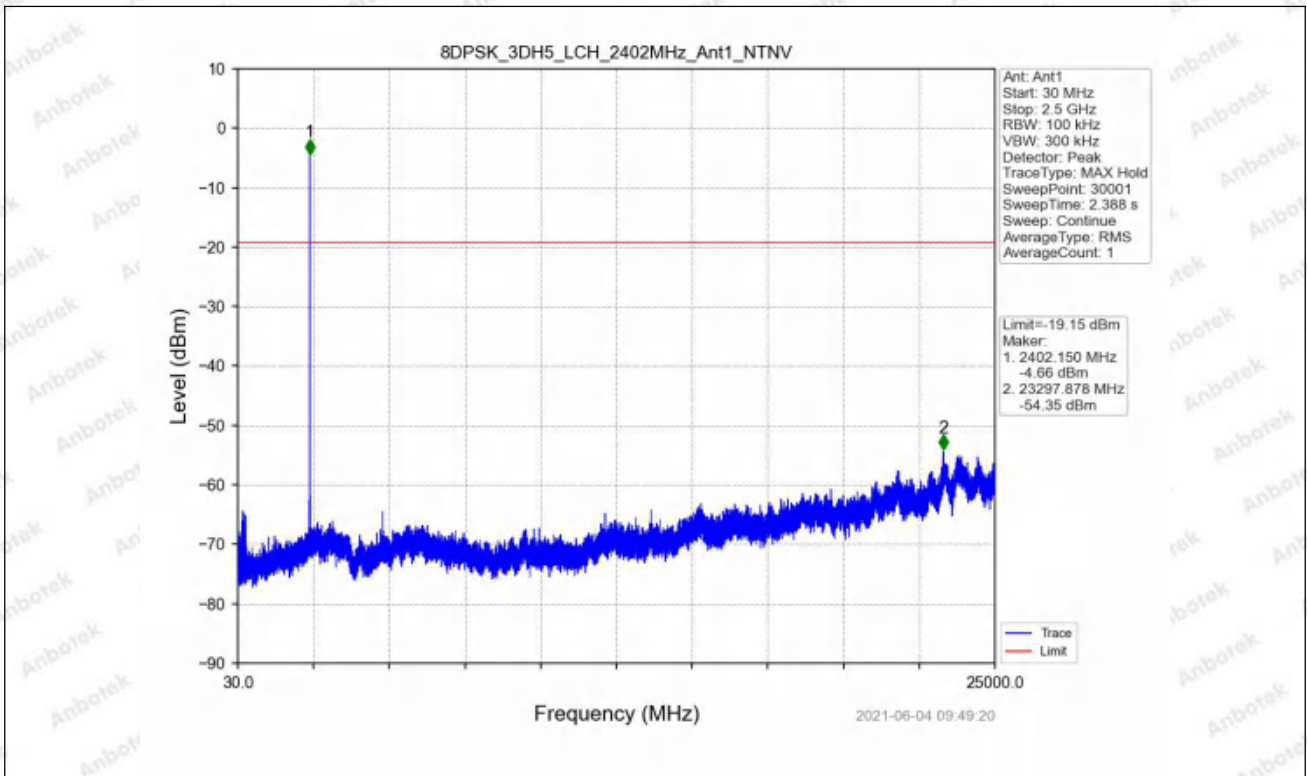
8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV

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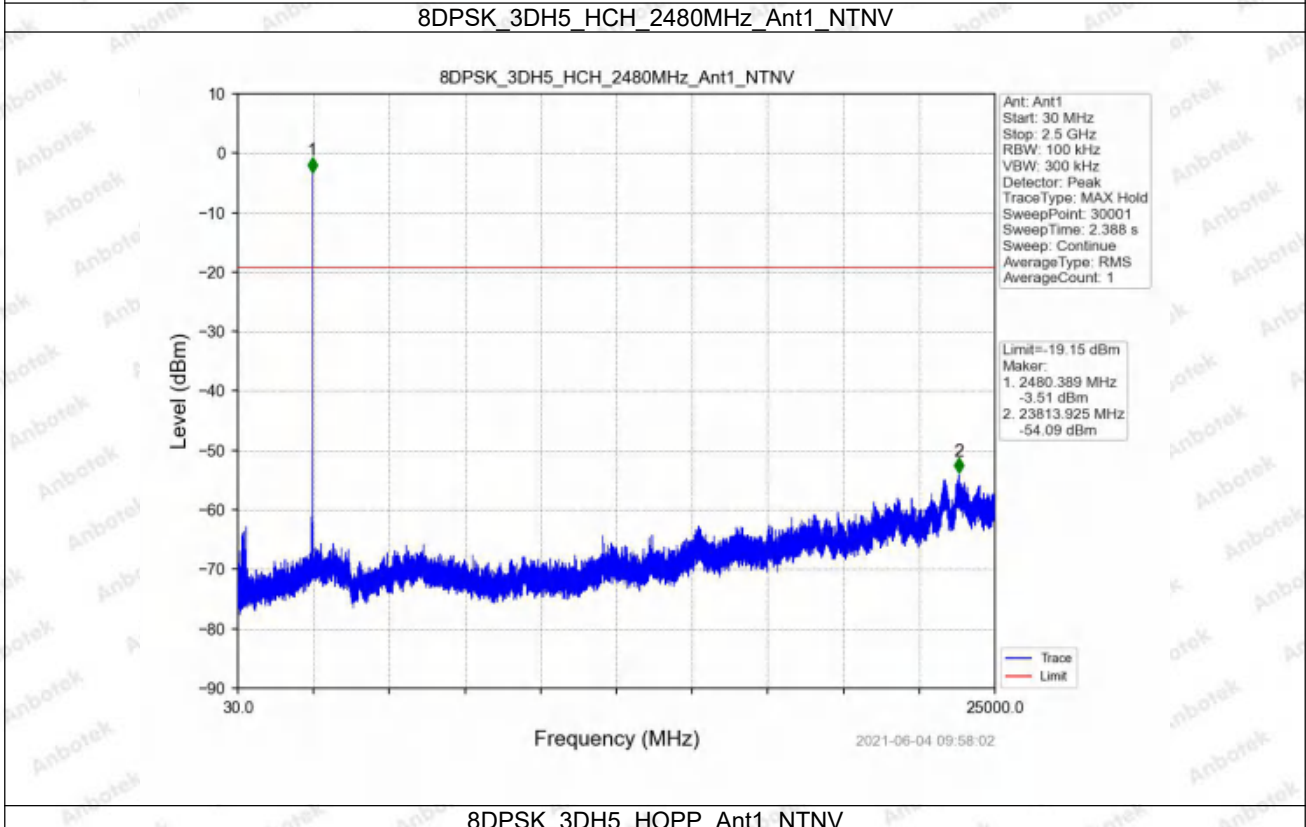
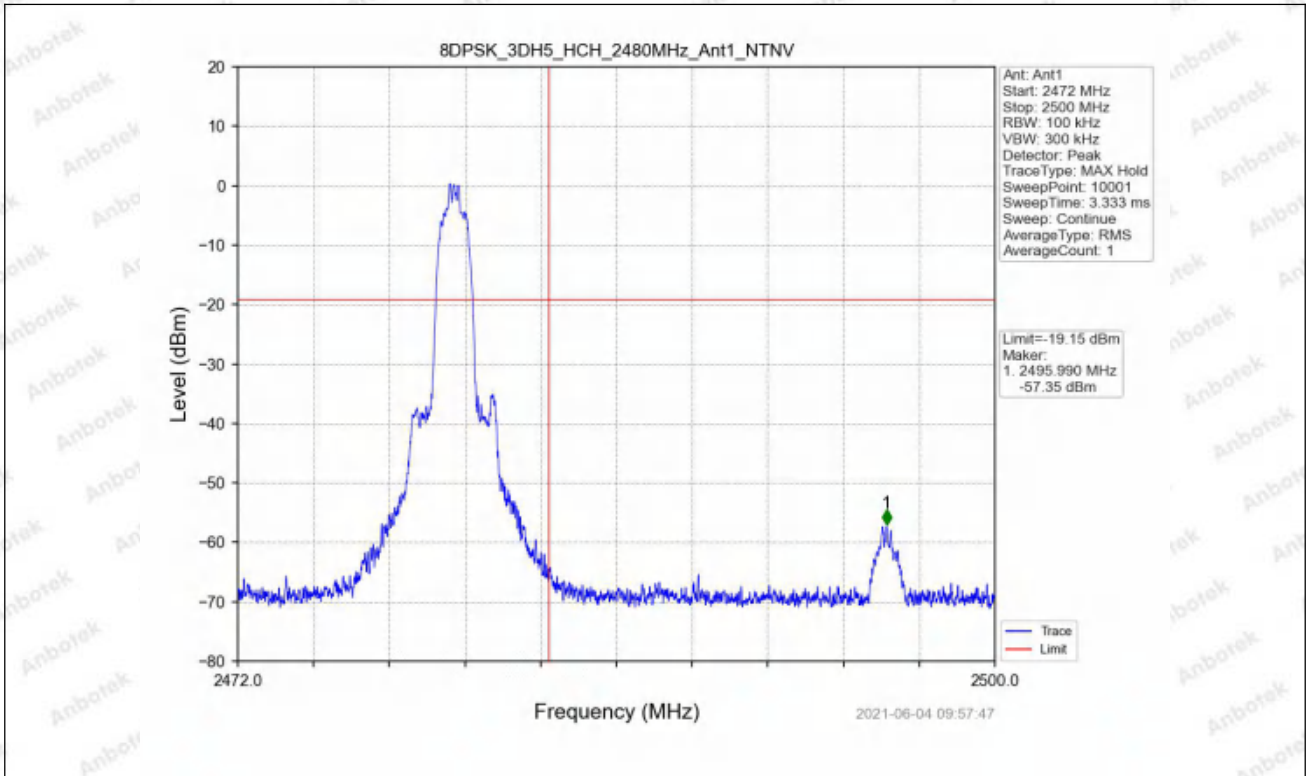
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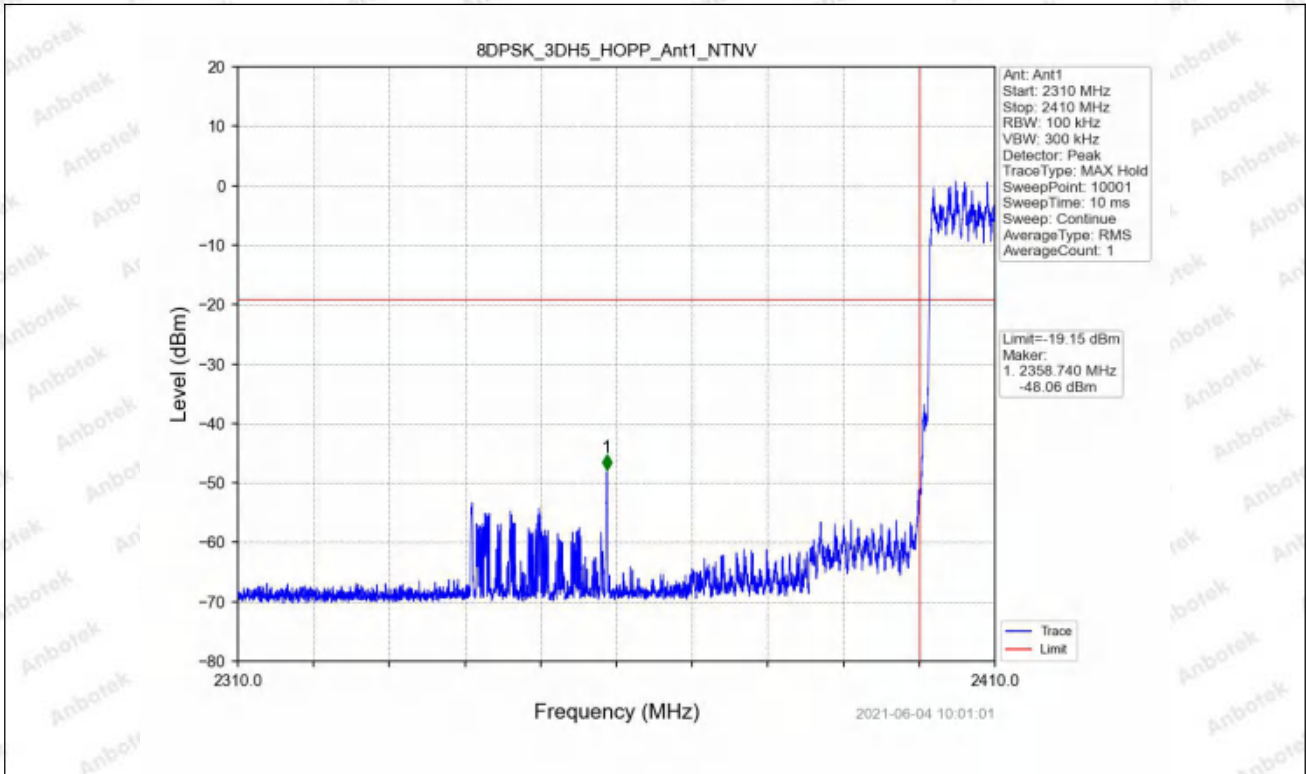
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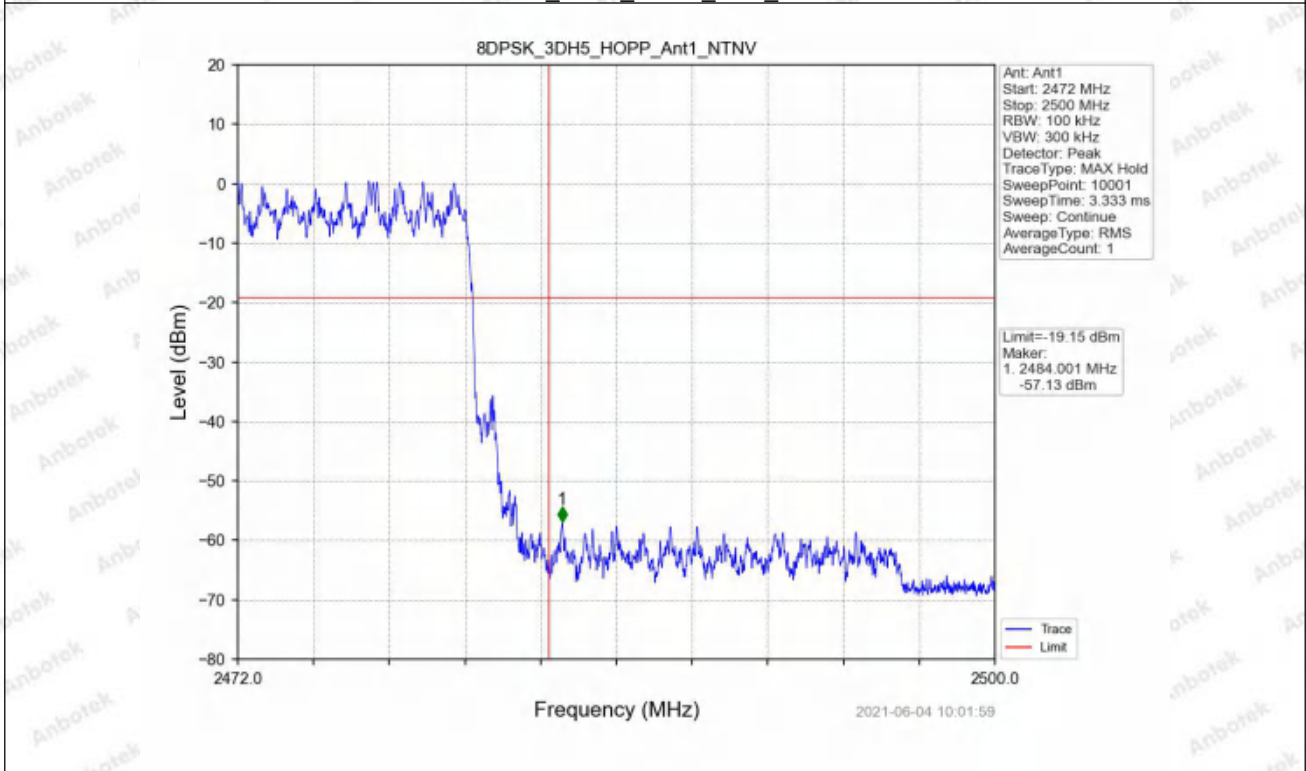
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---End---