Appendix A

Report No.:	CISRR23120601501
Product Name:	Wireless gamepad
Model No.:	BSP-S11
Test Engineer:	Lucas Huang
Supervised by:	Rory Huang

1. Bandwidth

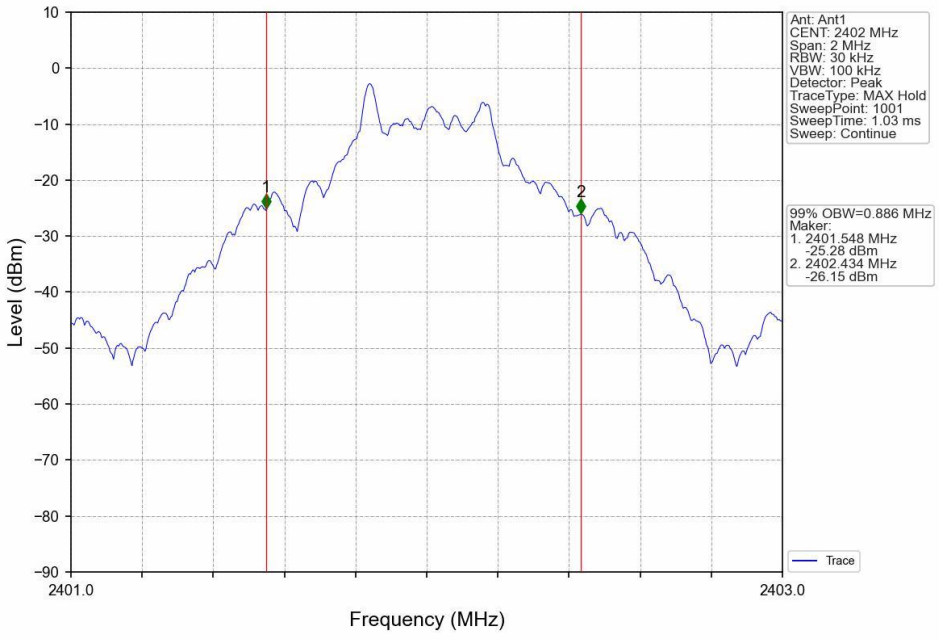
1.1 OBW

1.1.1 Test Result

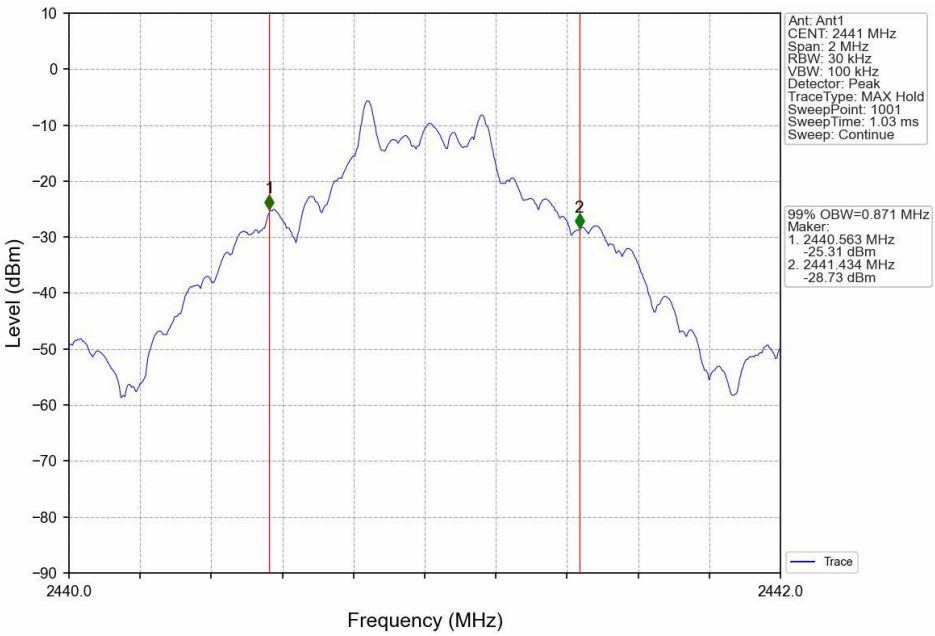
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	99% Occupied Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	0.886	/	Pass
		2441	DH5	1	0.871	/	Pass
		2480	DH5	1	0.898	/	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.166	/	Pass
		2441	2DH5	1	1.156	/	Pass
		2480	2DH5	1	1.167	/	Pass
8DPSK	SISO	2402	3DH5	1	1.151	/	Pass
		2441	3DH5	1	1.154	/	Pass
		2480	3DH5	1	1.155	/	Pass

1.1.2 Test Graph

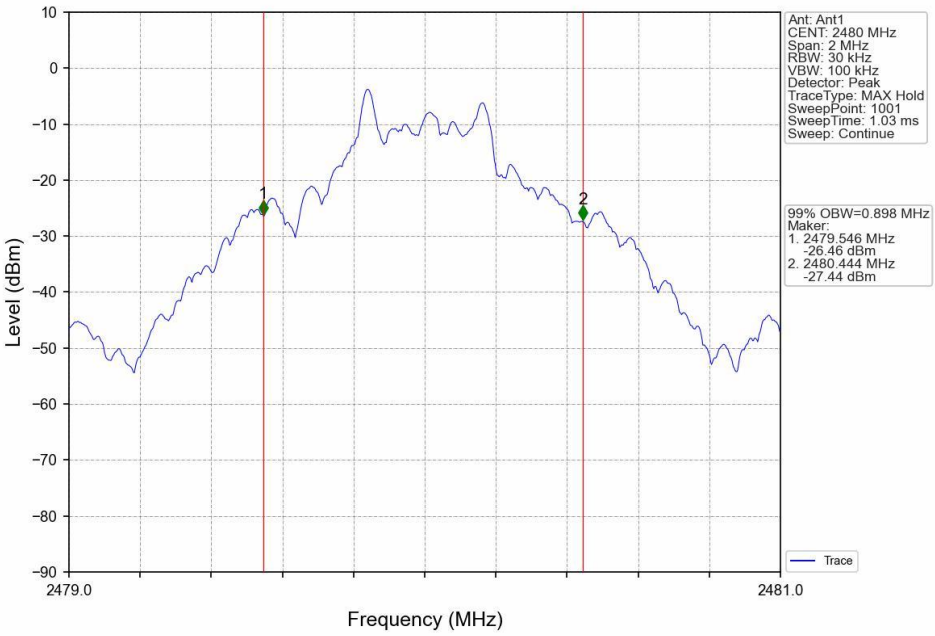
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



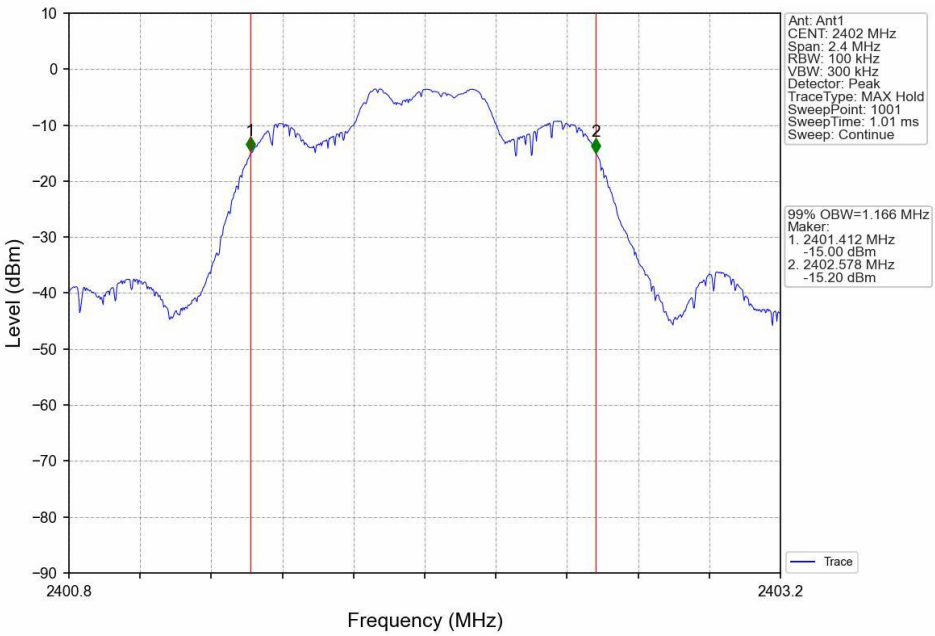
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



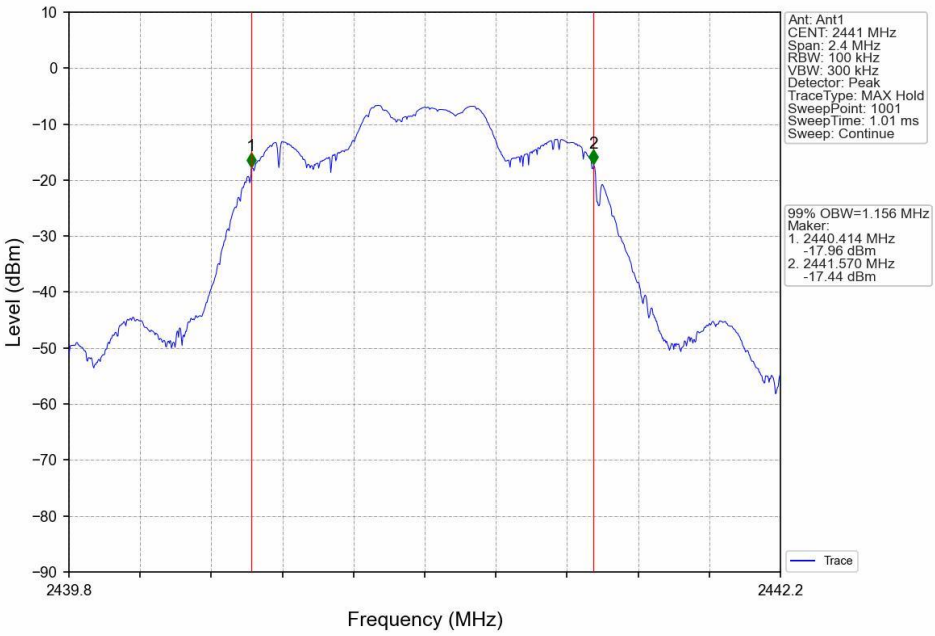
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



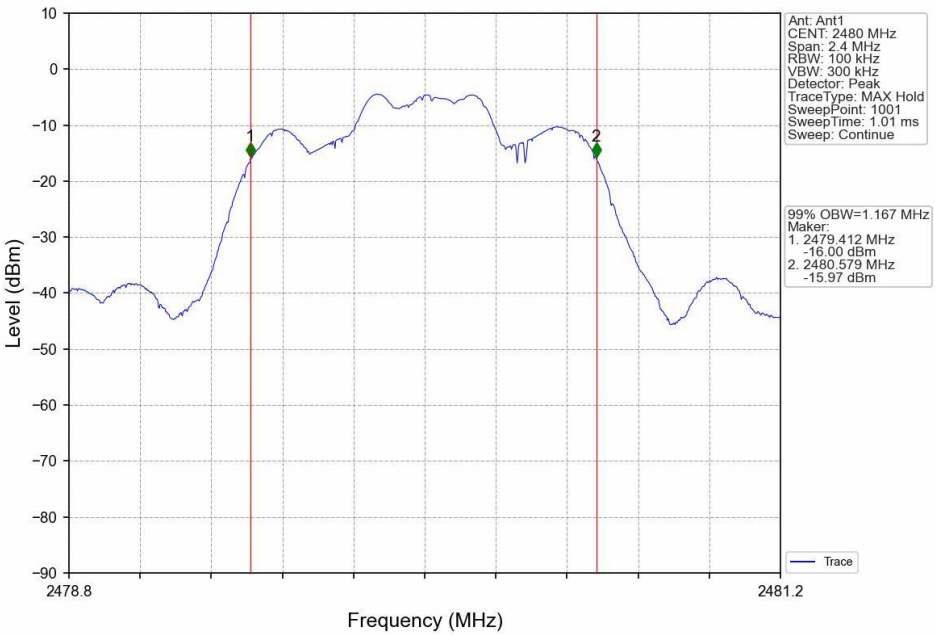
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



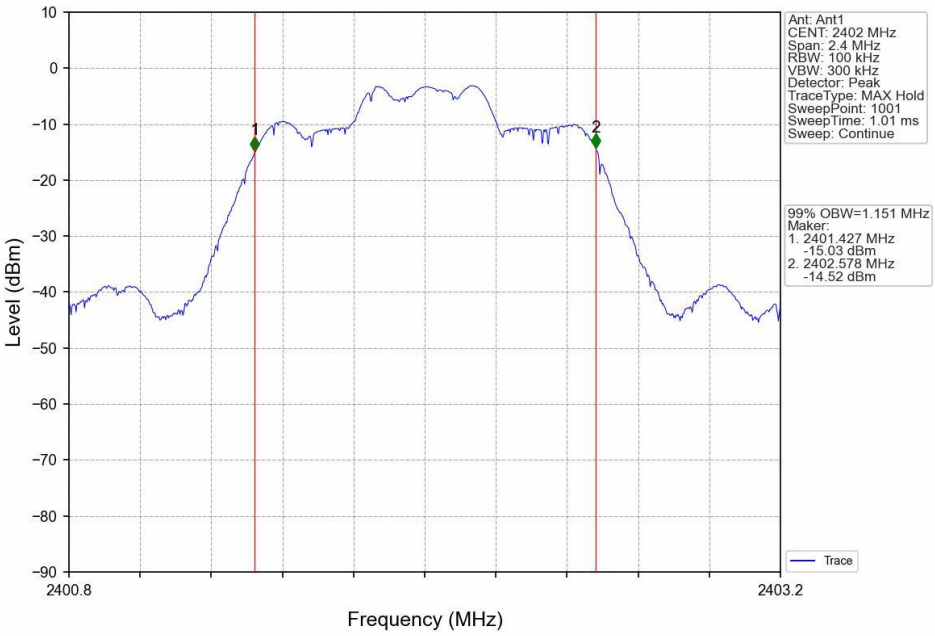
Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



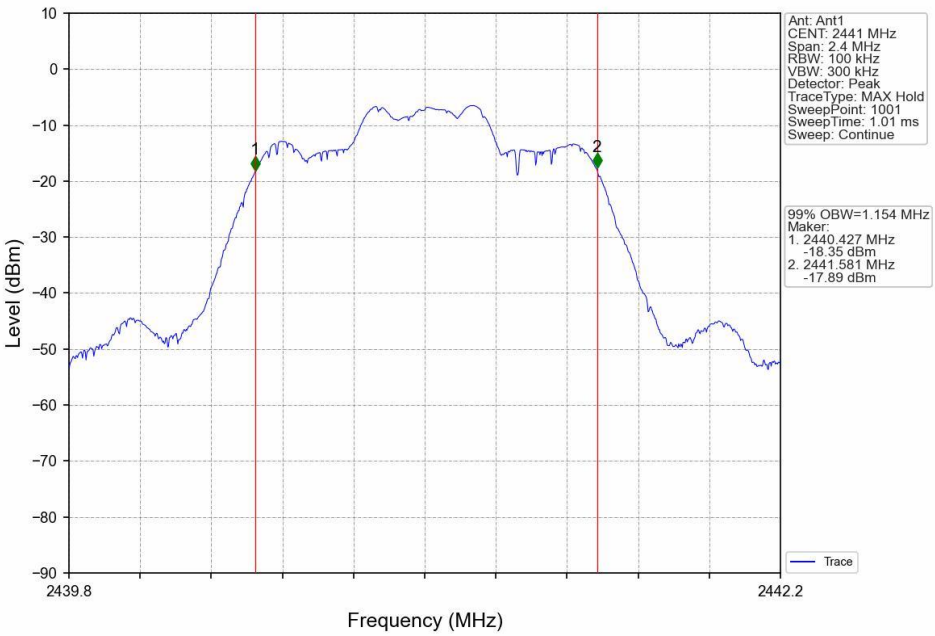
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



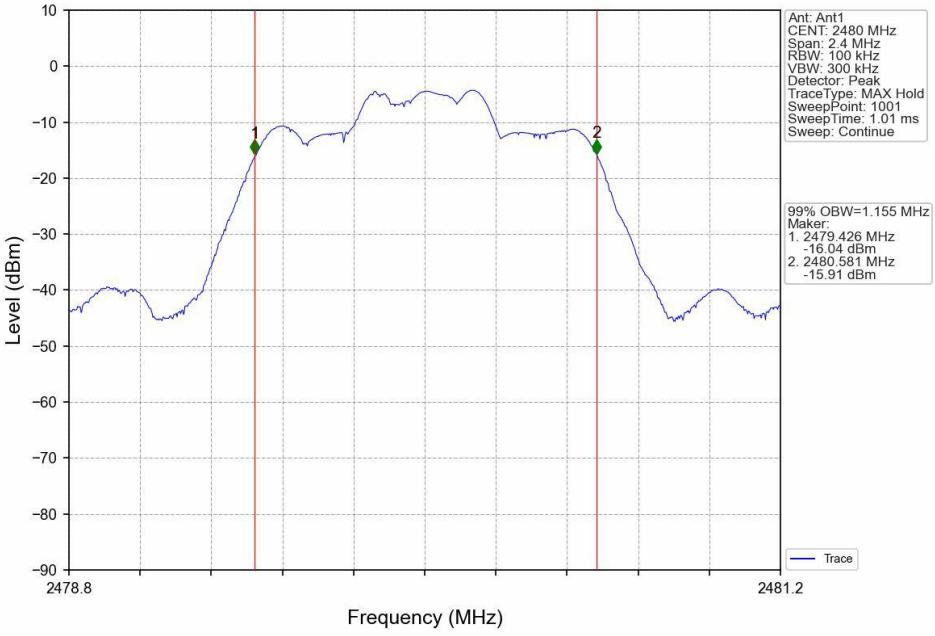
8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV



8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



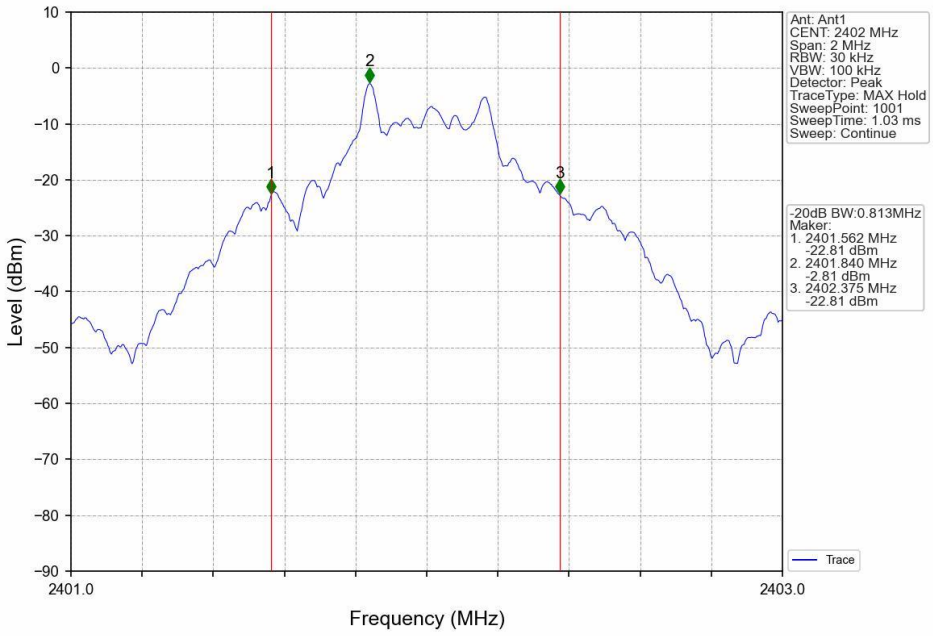
1.2 20dB BW

1.2.1 Test Result

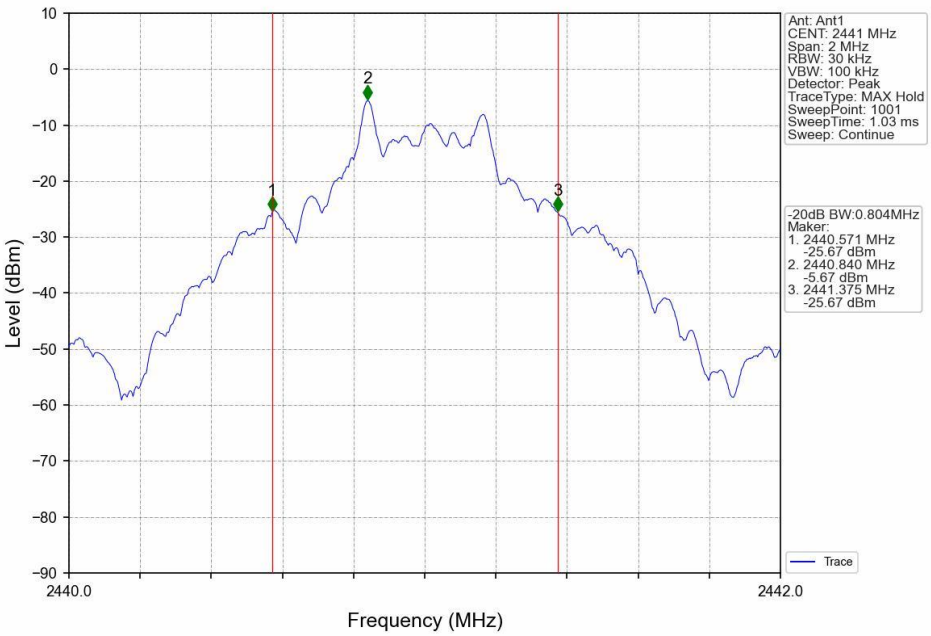
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	20dB Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	0.813	/	Pass
		2441	DH5	1	0.804	/	Pass
		2480	DH5	1	0.811	/	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.277	/	Pass
		2441	2DH5	1	1.290	/	Pass
		2480	2DH5	1	1.290	/	Pass
8DPSK	SISO	2402	3DH5	1	1.276	/	Pass
		2441	3DH5	1	1.277	/	Pass
		2480	3DH5	1	1.275	/	Pass

1.2.2 Test Graph

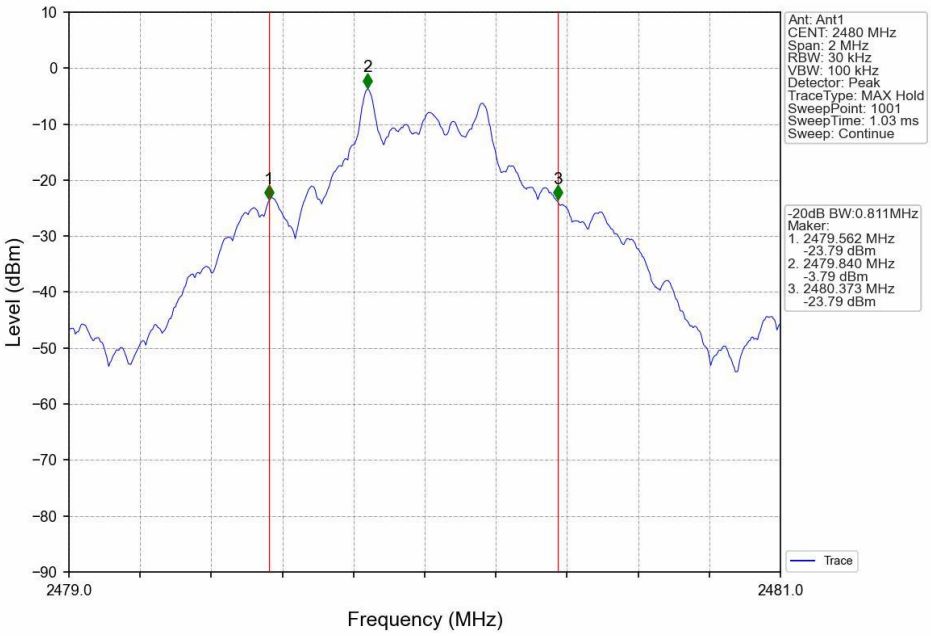
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



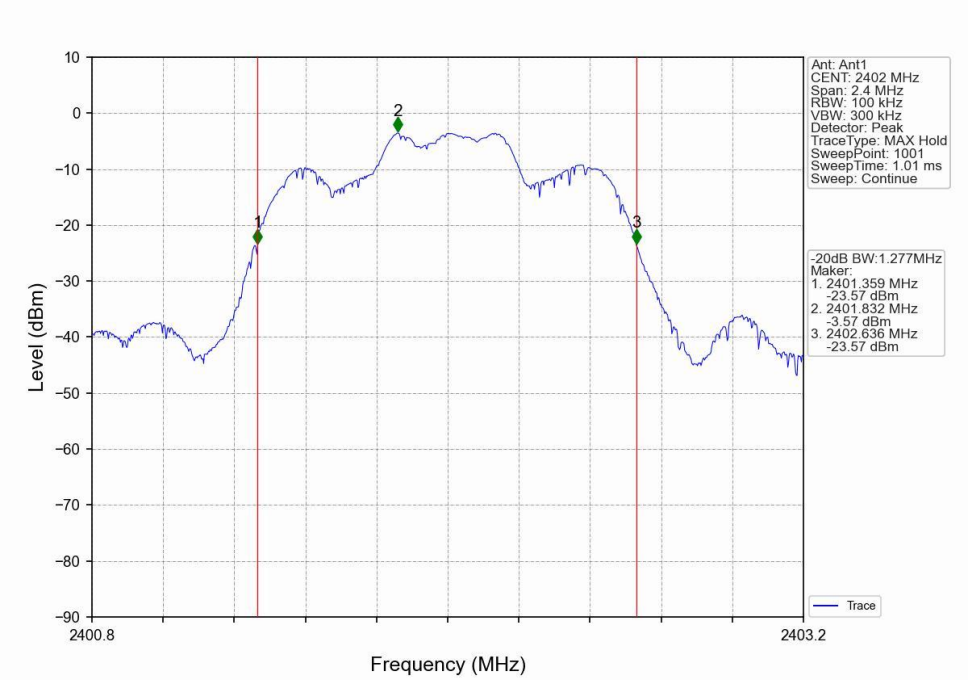
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



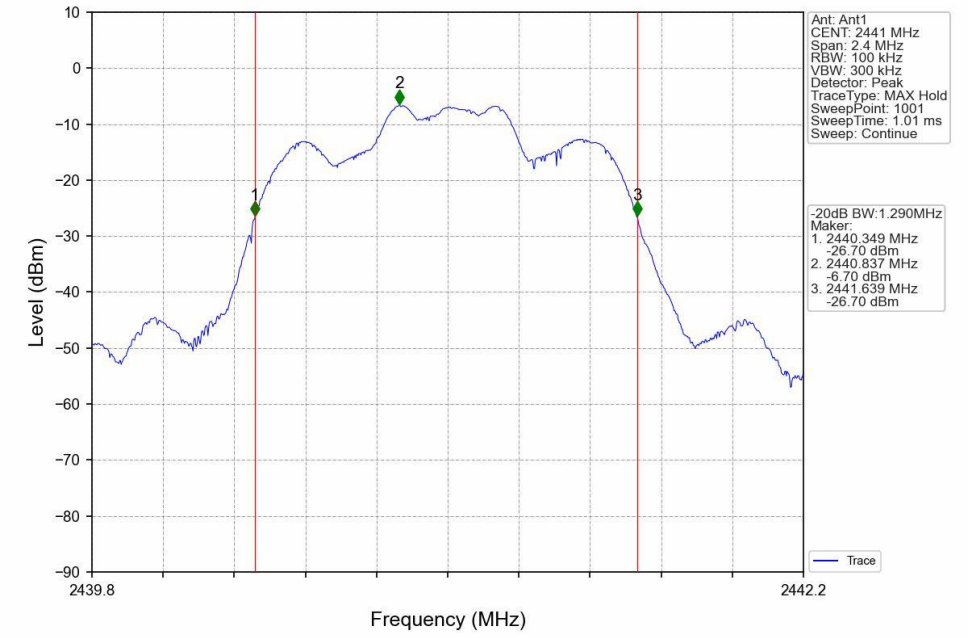
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



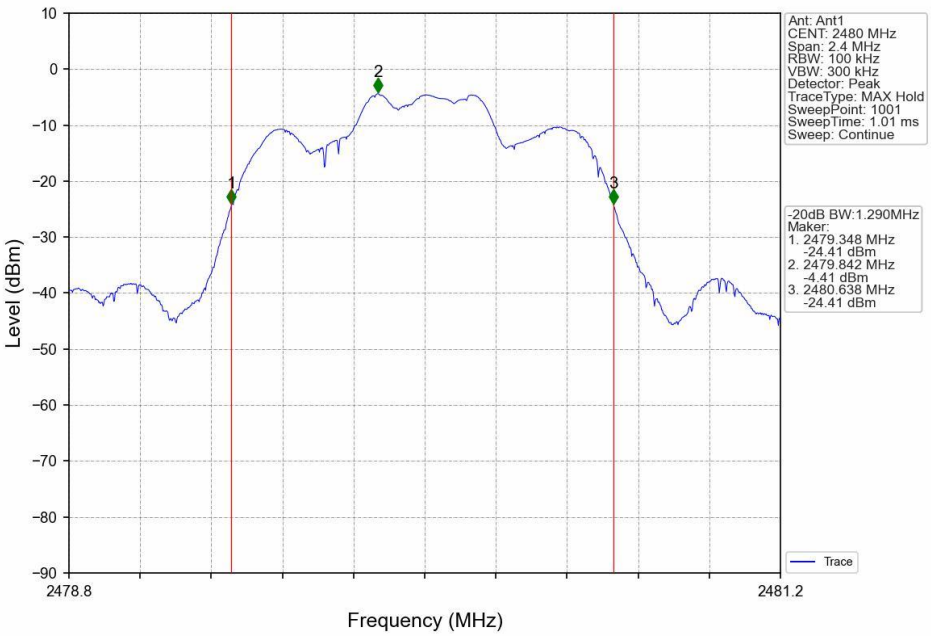
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



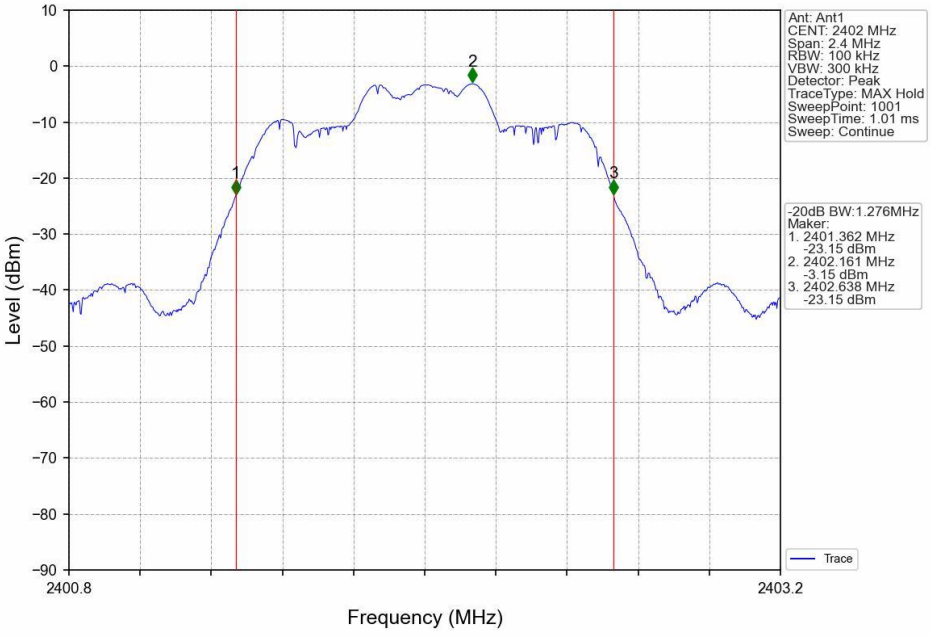
Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



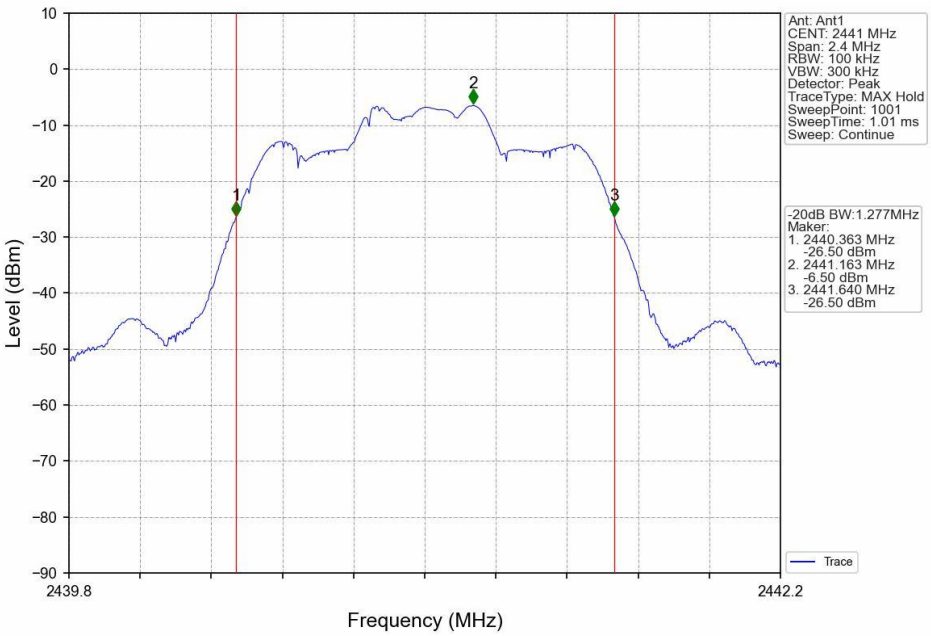
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



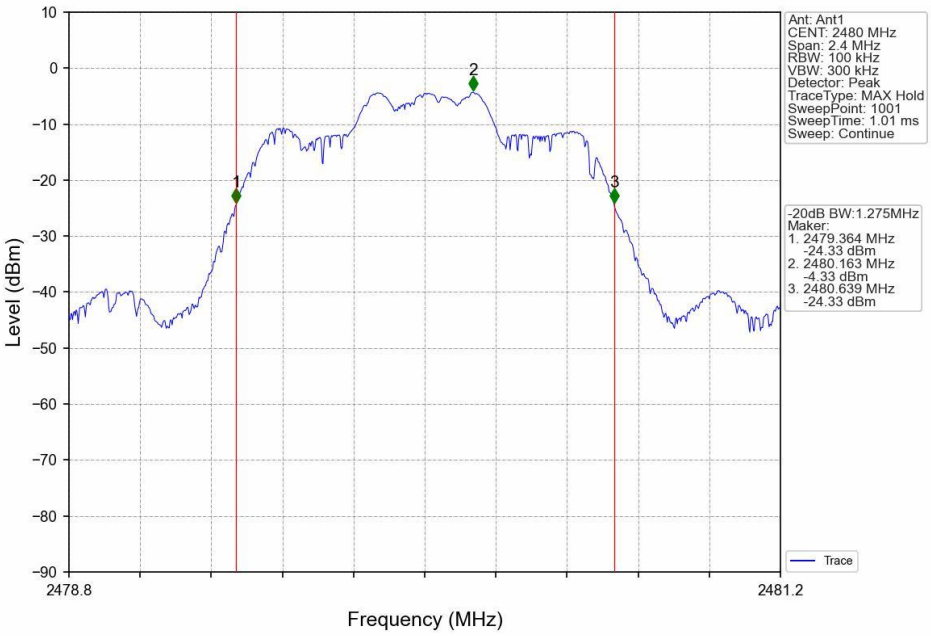
8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV



8DPSK_3DH5_HCH_2480MHz_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	-2.31	<=30	Pass
		2441	DH5	-5.40	<=30	Pass
		2480	DH5	-3.28	<=30	Pass
Pi/4DQPSK	SISO	2402	2DH5	2.35	<=20.97	Pass
		2441	2DH5	-0.89	<=20.97	Pass
		2480	2DH5	1.35	<=20.97	Pass
8DPSK	SISO	2402	3DH5	2.65	<=30	Pass
		2441	3DH5	-0.59	<=30	Pass
		2480	3DH5	1.51	<=30	Pass

3. Carrier Frequency Separation

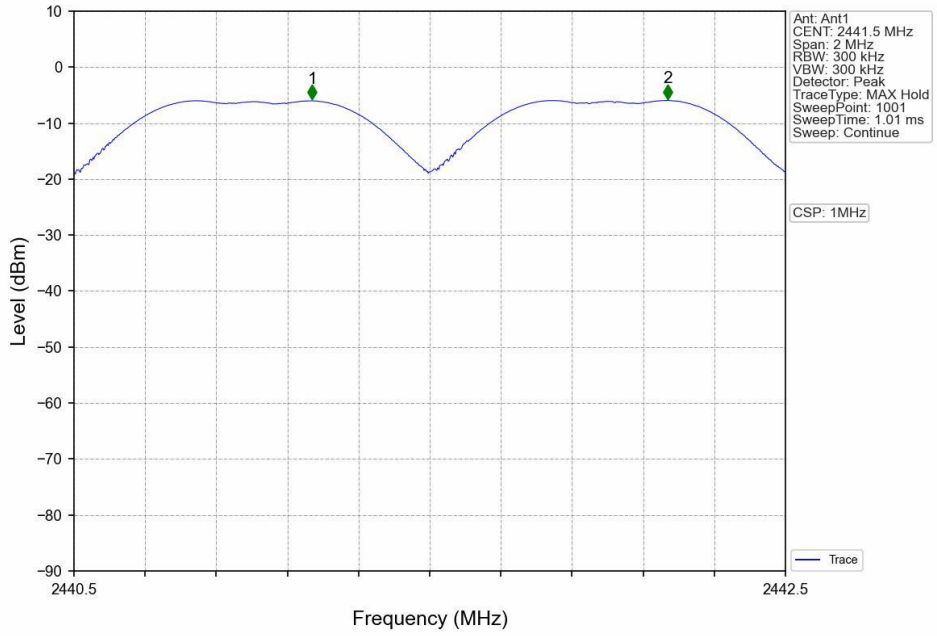
3.1 Ant1

3.1.1 Test Result

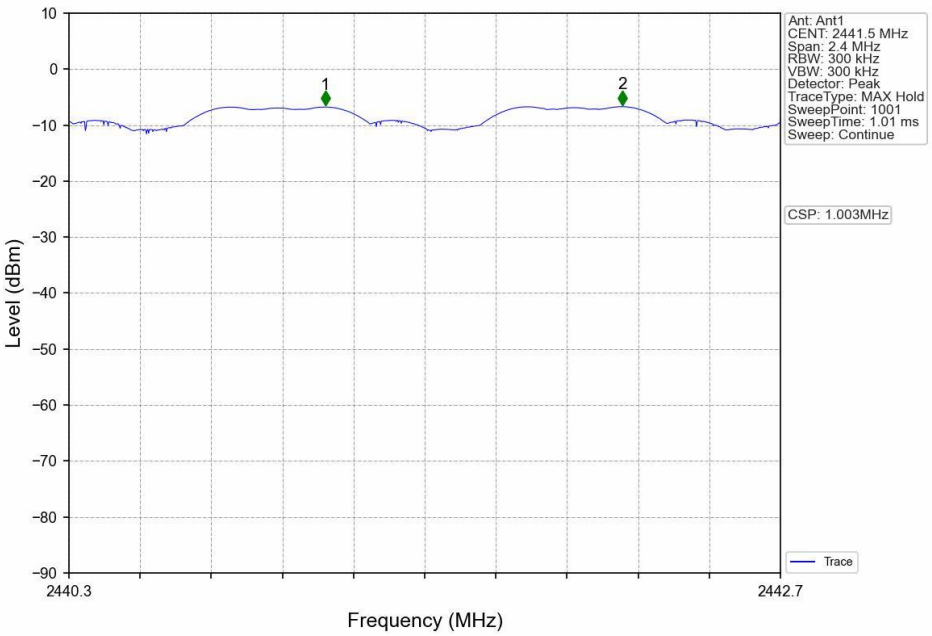
Ant1							
Mode	TX Type	Frequency (MHz)	Packet Type	Channel Separation (MHz)	20dB Bandwidth (MHz)	Limit (MHz)	Verdict
GFSK	SISO	HOPP	DH5	1.000	0.813	>=0.813	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	1.003	1.290	>=0.86	Pass
8DPSK	SISO	HOPP	3DH5	1.414	1.277	>=1.277	Pass

3.1.2 Test Graph

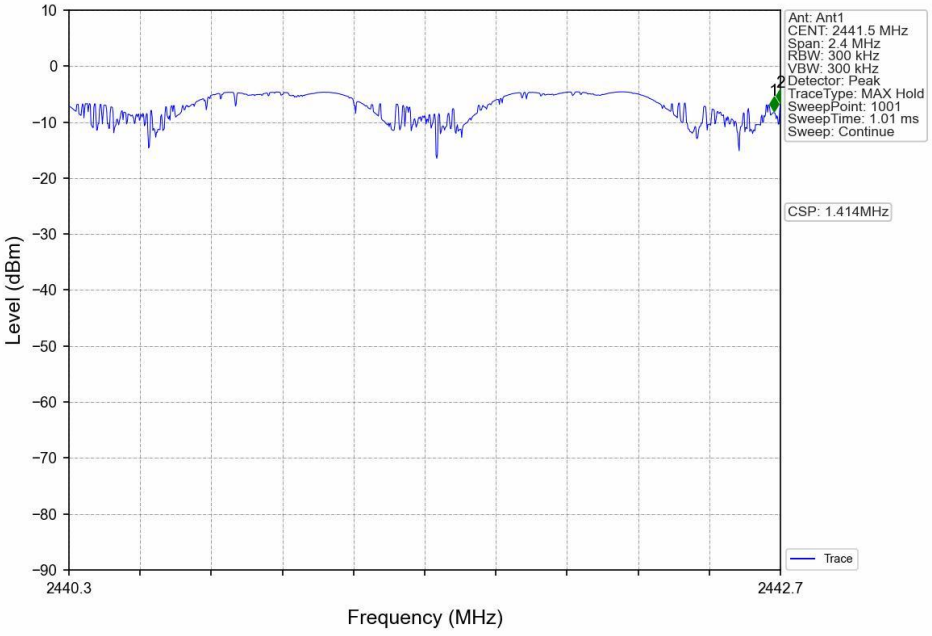
GFSK_DH5_HOPP_Ant1_NTNV



Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV



4. Number of Hopping Frequencies

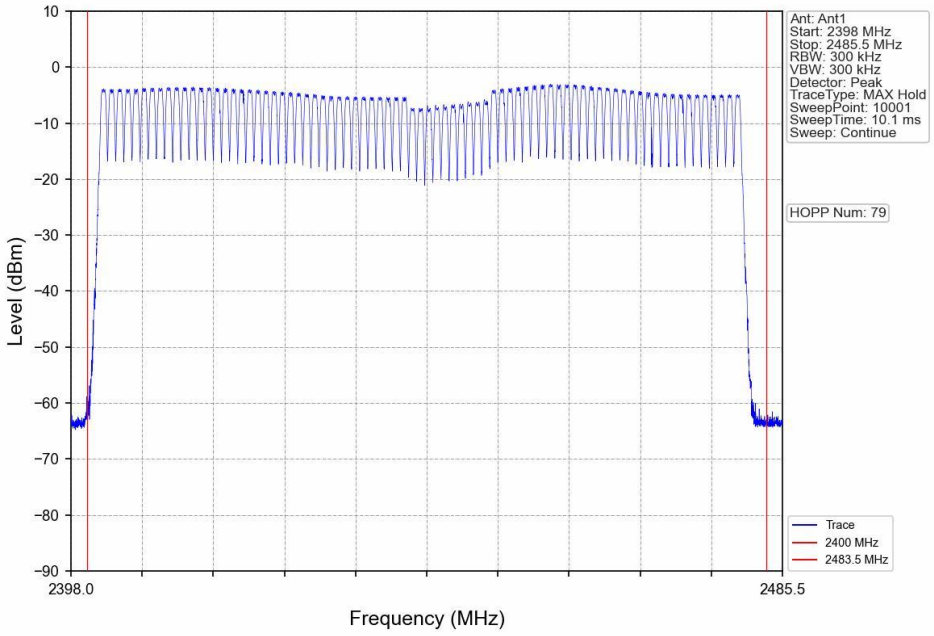
4.1 HoppNum

4.1.1 Test Result

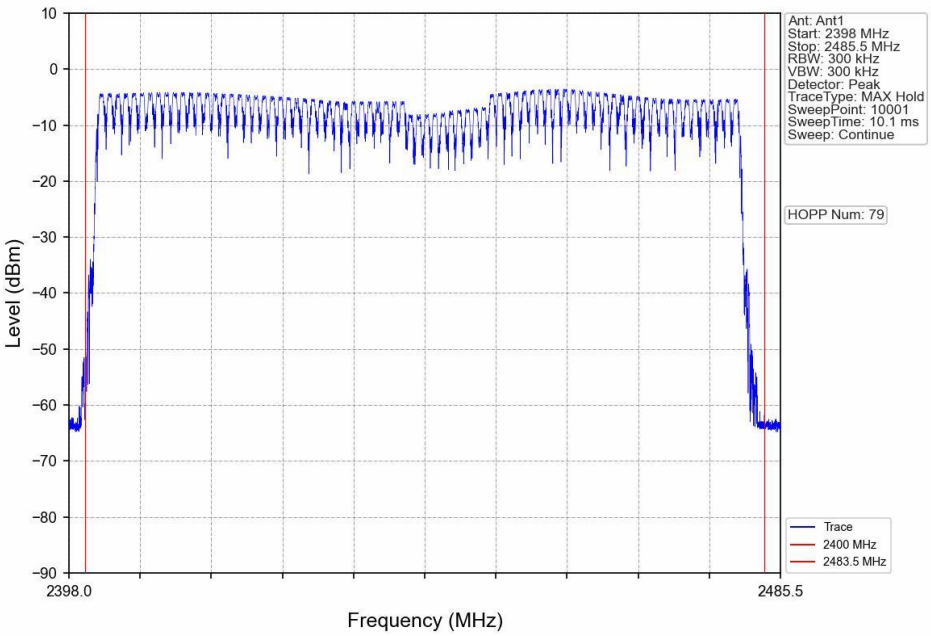
Mode	TX Type	Frequency (MHz)	Packet Type	Num of Hopping Frequencies		Verdict
				ANT1	Limit	
GFSK	SISO	HOPP	DH5	79	>=15	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	79	>=15	Pass
8DPSK	SISO	HOPP	3DH5	79	>=15	Pass

4.1.2 Test Graph

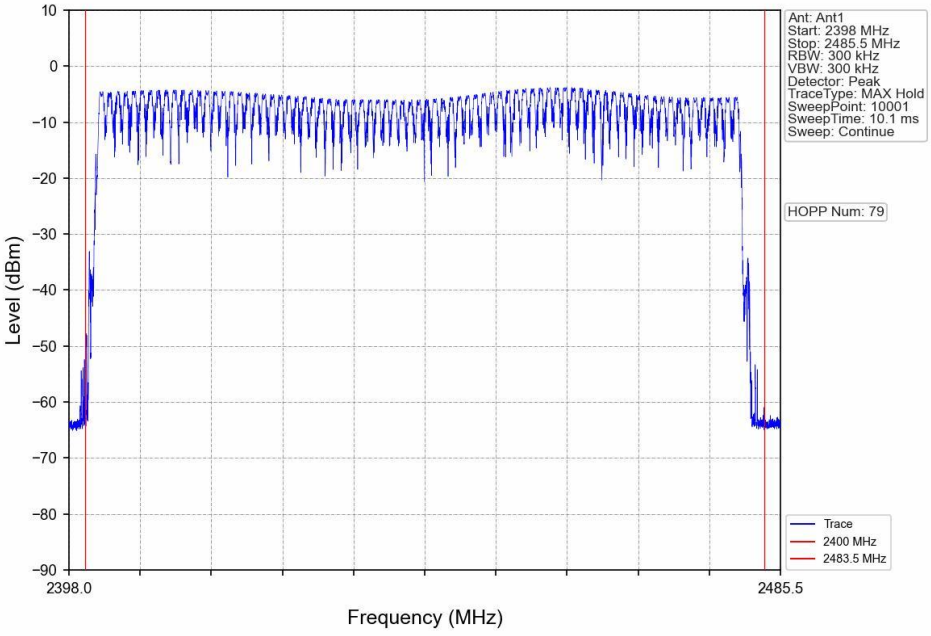
GFSK_DH5_HOPP_Ant1_NTNV



Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV



5. Time of Occupancy (Dwell Time)

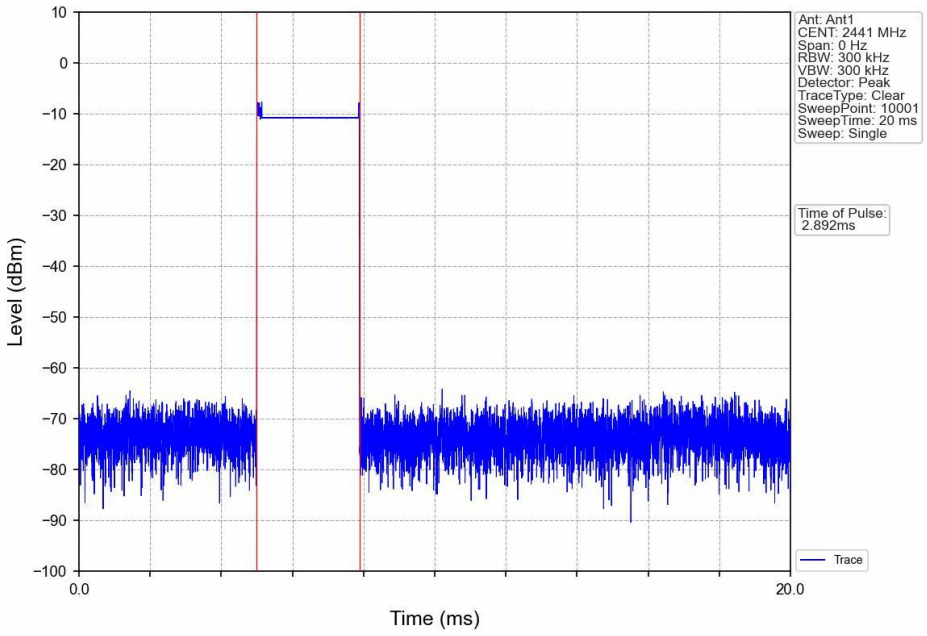
5.1 Ant1

5.1.1 Test Result

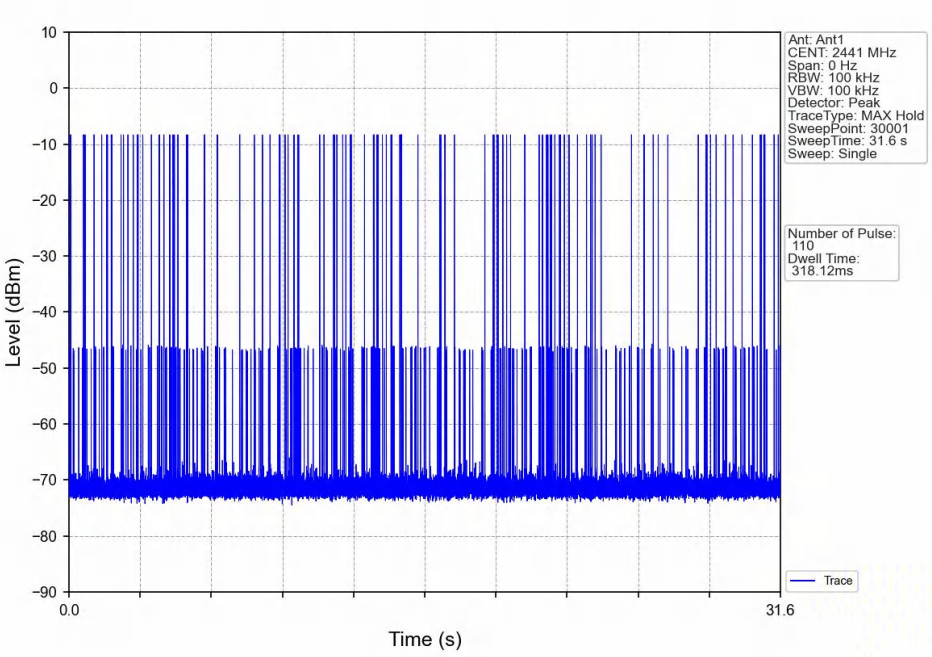
Ant1									
Mode	TX Type	Frequency (MHz)	Packet Type	Duration of Single Pulse (ms)	Observation Period (s)	Num of Pulse in Observation Period	Dwell Time (ms)	Limit (ms)	Verdict
GFSK	SISO	HOPP	DH5	2.892	31.600	110	318.120	<=400	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	2.894	31.600	101	292.294	<=400	Pass
8DPSK	SISO	HOPP	3DH5	2.896	31.600	98	283.808	<=400	Pass

5.1.2 Test Graph

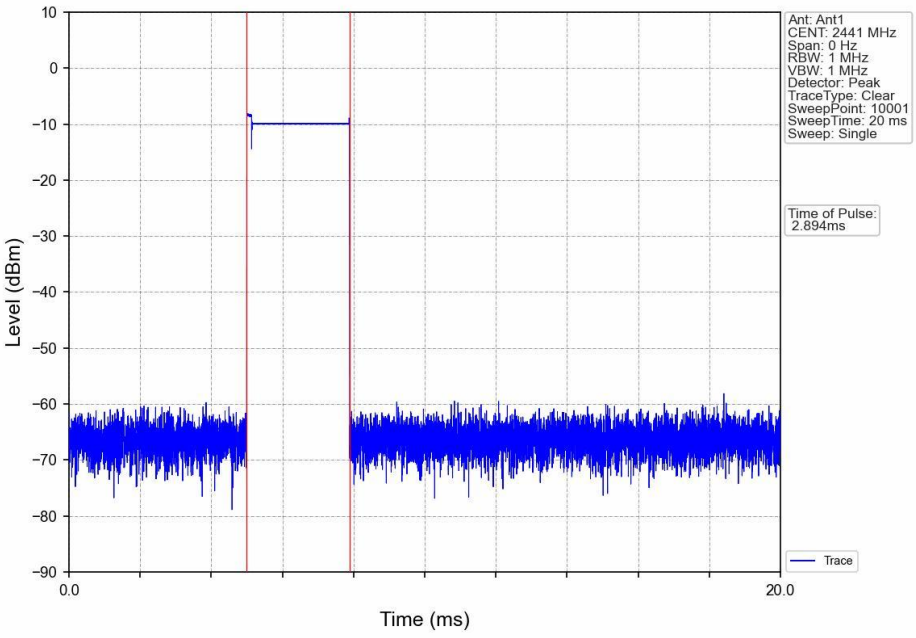
GFSK_DH5_HOPP_Ant1_NTNV



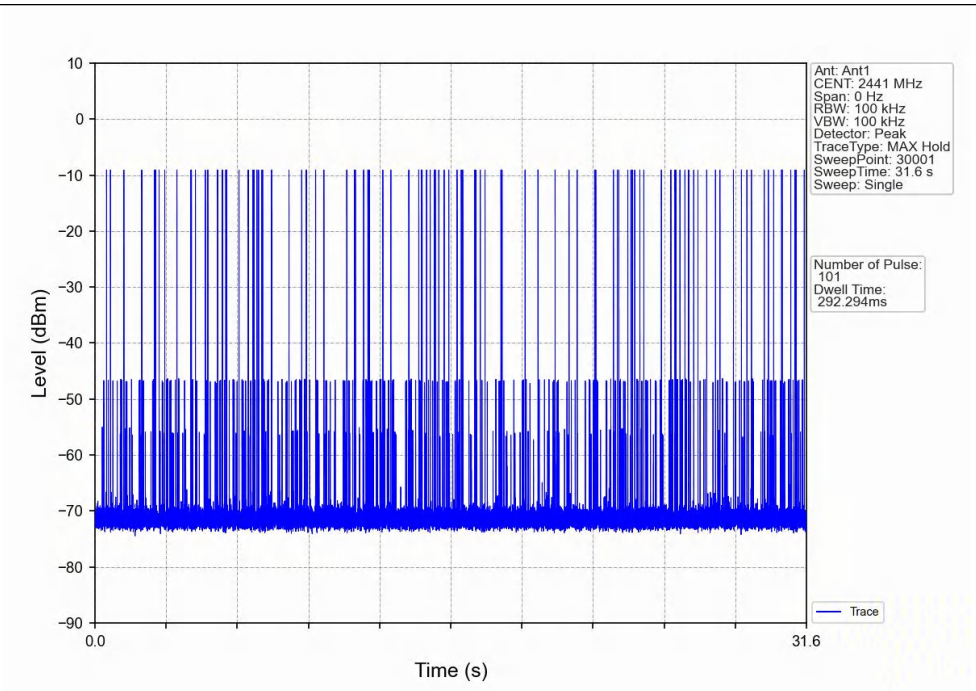
GFSK_DH5_HOPP_Ant1_NTNV



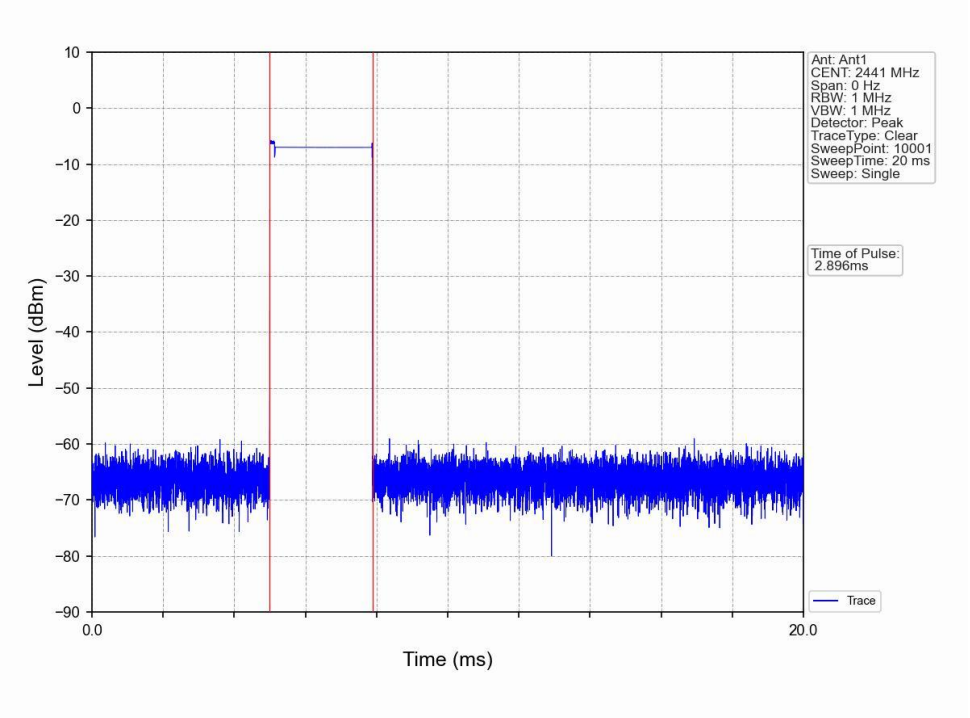
Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV



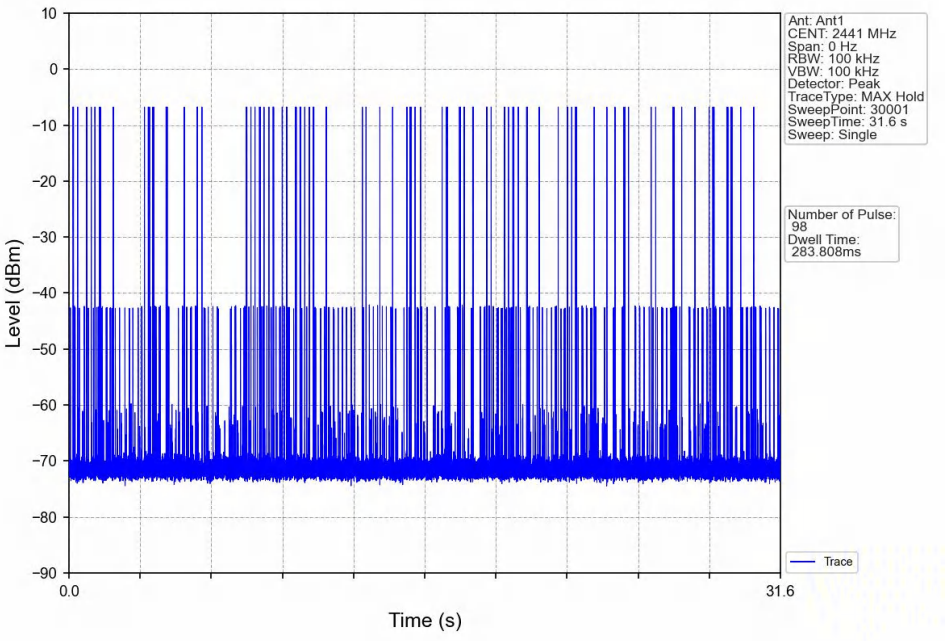
Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV


Ant: Ant1
CENT: 2441 MHz
Span: 0 Hz
RBW: 100 kHz
VBW: 100 kHz
Detector: Peak
TraceType: MAX Hold
SweepPoint: 30001
SweepTime: 31.6 s
Sweep: Single
Number of Pulse:
98
Dwell Time:
283.808ms
Trace
Level (dBm)
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
0.0
31.6
Time (s)

6. Unwanted Emissions In Non-restricted Frequency Bands

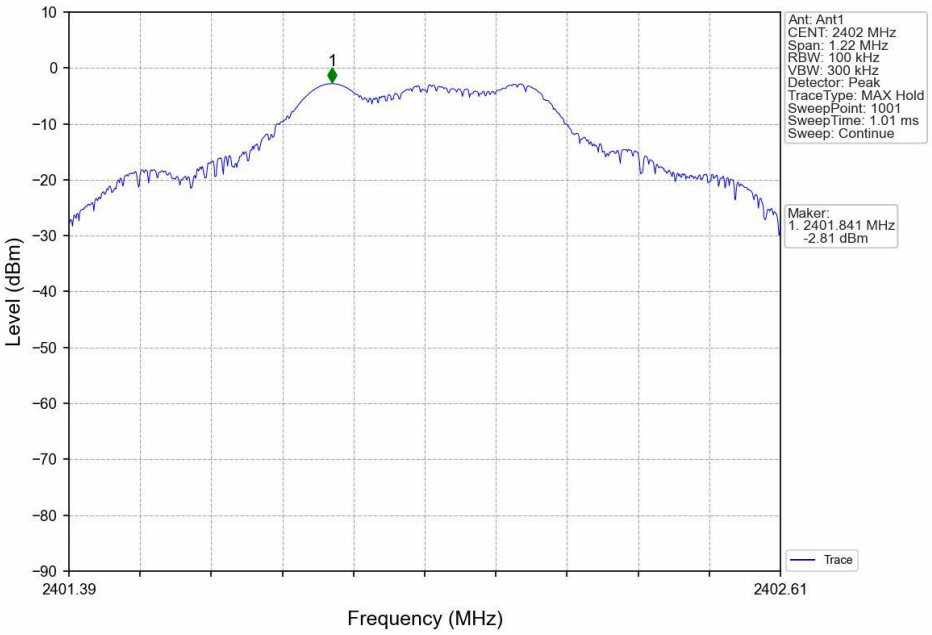
6.1 Ref

6.1.1 Test Result

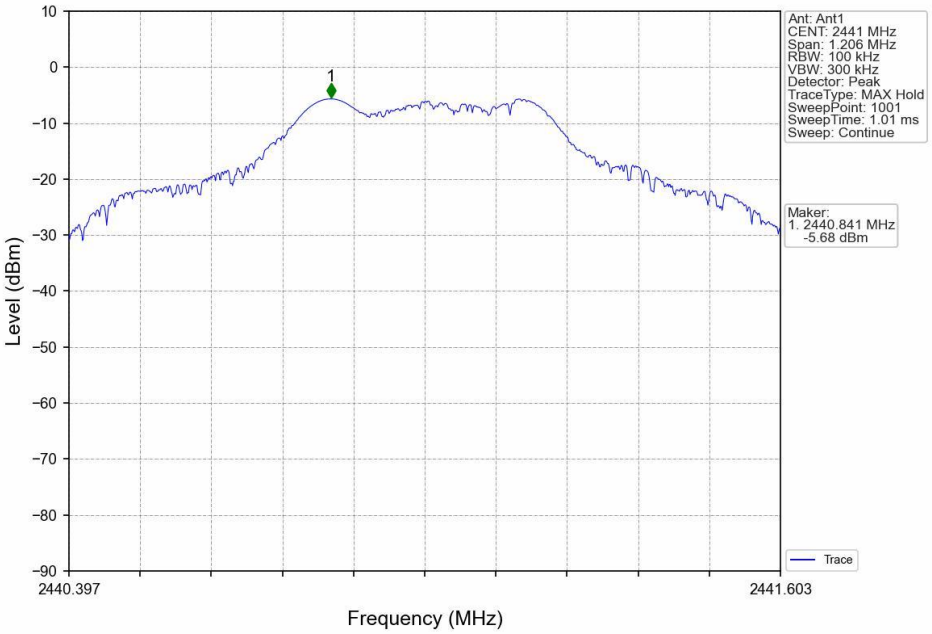
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)
GFSK	SISO	2402	DH5	1	**-2.81**
		2441	DH5	1	-5.68
		2480	DH5	1	-3.81
Pi/4DQPSK	SISO	2402	2DH5	1	**-3.61**
		2441	2DH5	1	-6.66
		2480	2DH5	1	-4.61
8DPSK	SISO	2402	3DH5	1	**-3.17**
		2441	3DH5	1	-6.49
		2480	3DH5	1	-4.33
Note1: Refer 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

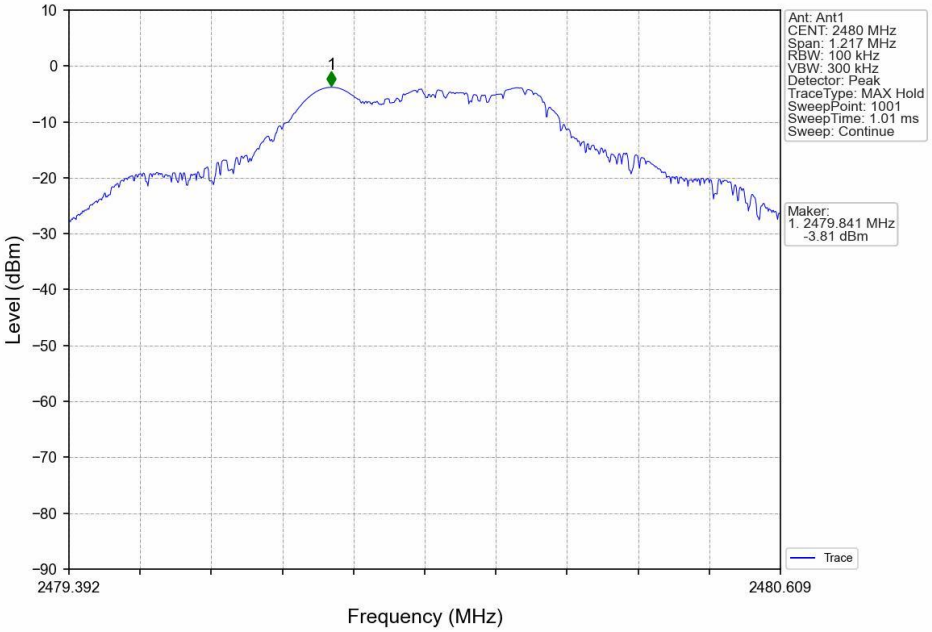
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



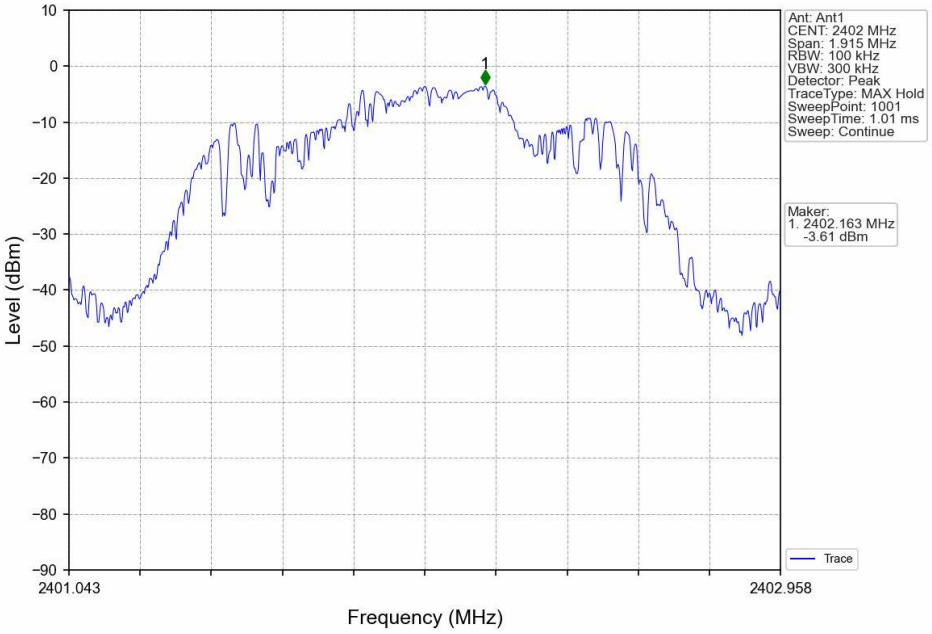
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



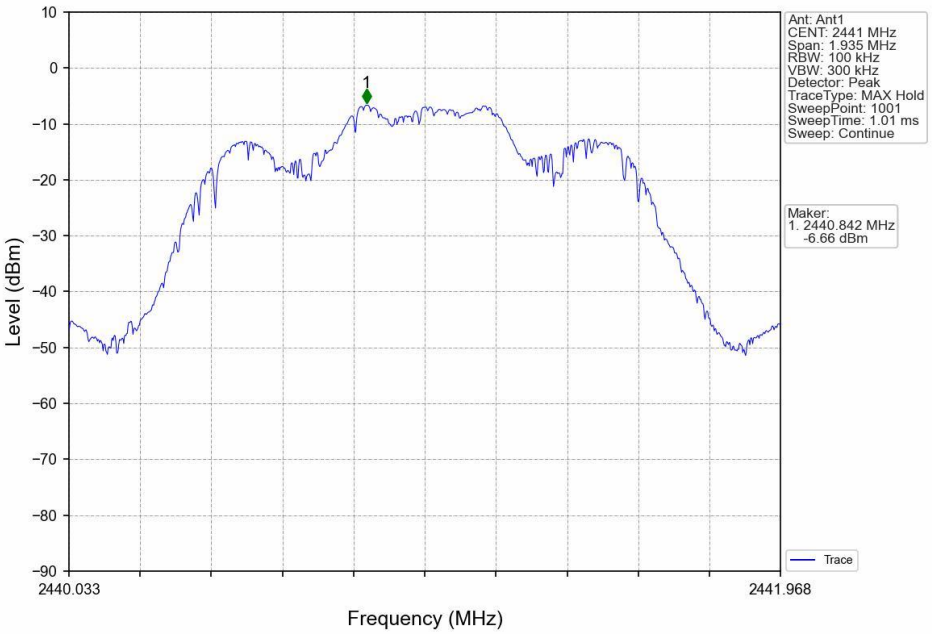
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



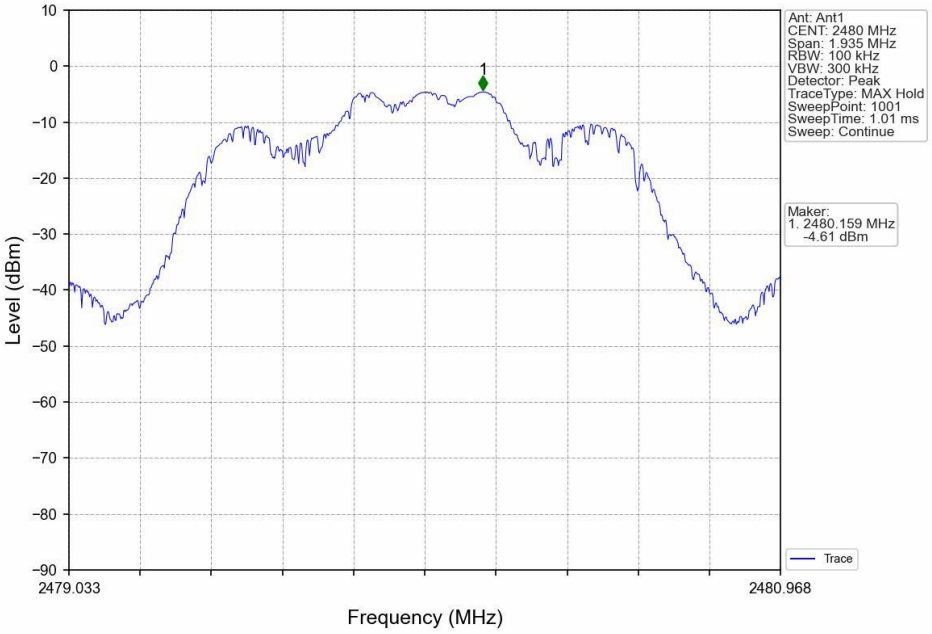
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



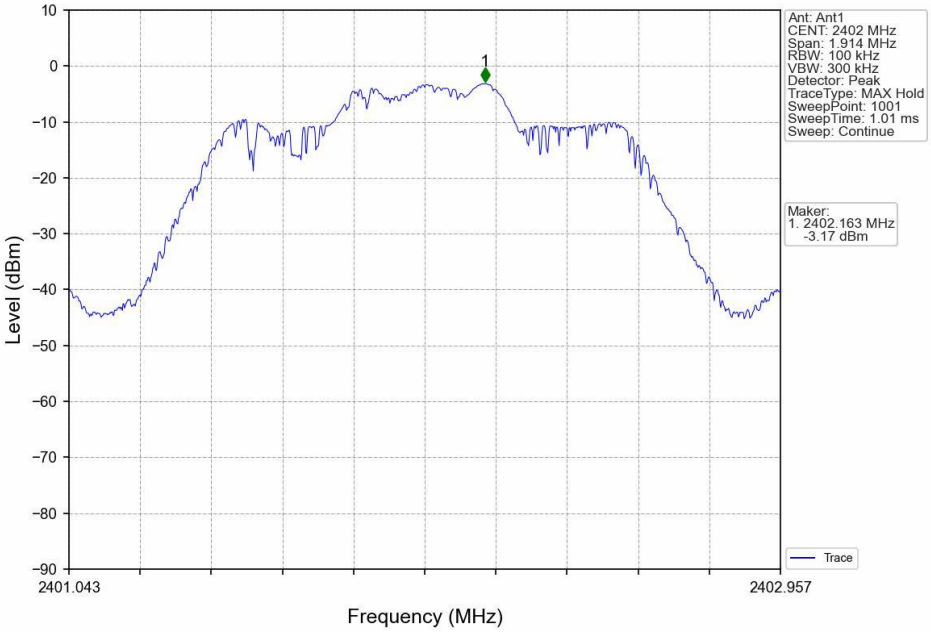
Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



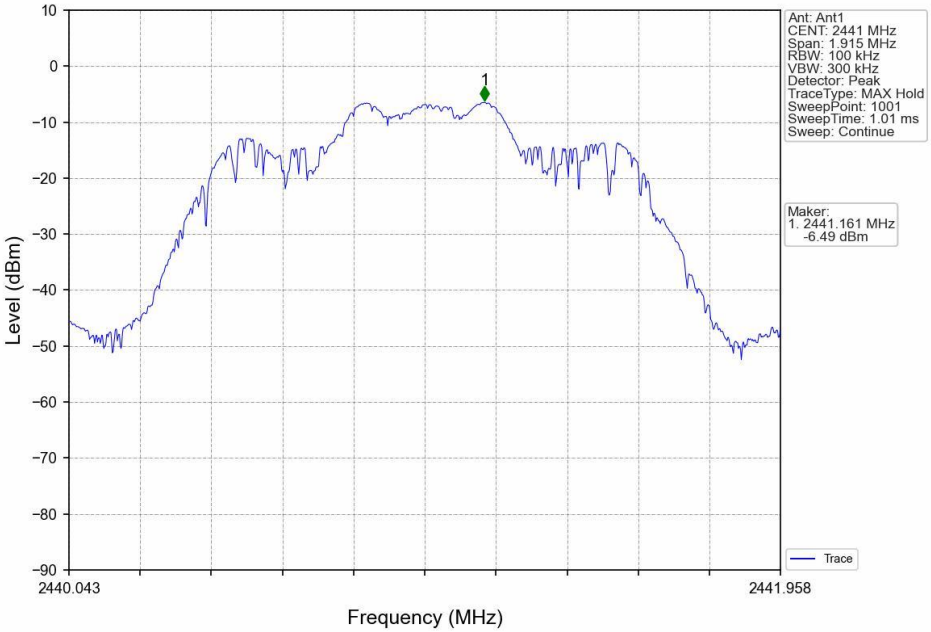
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



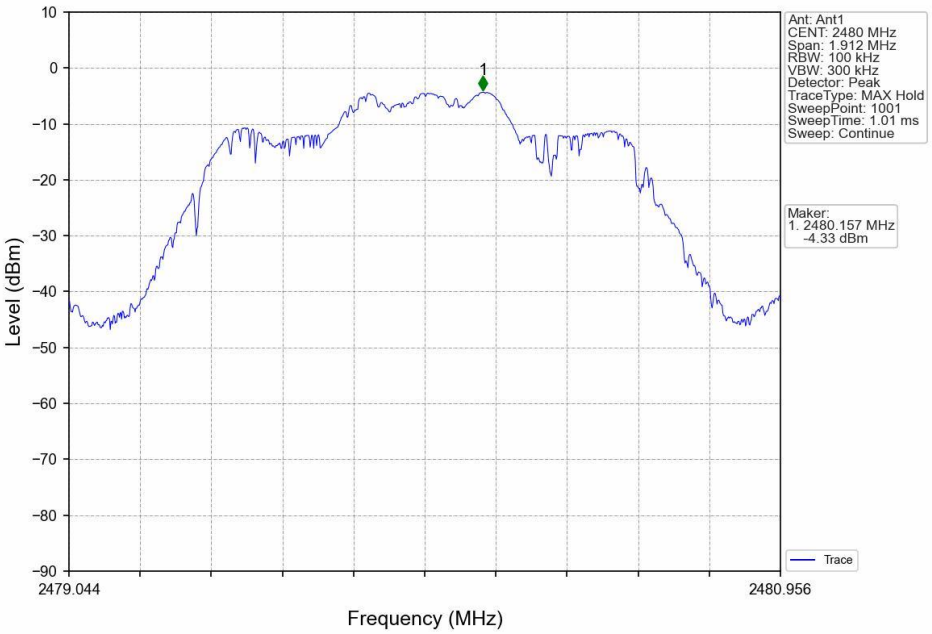
8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV



8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



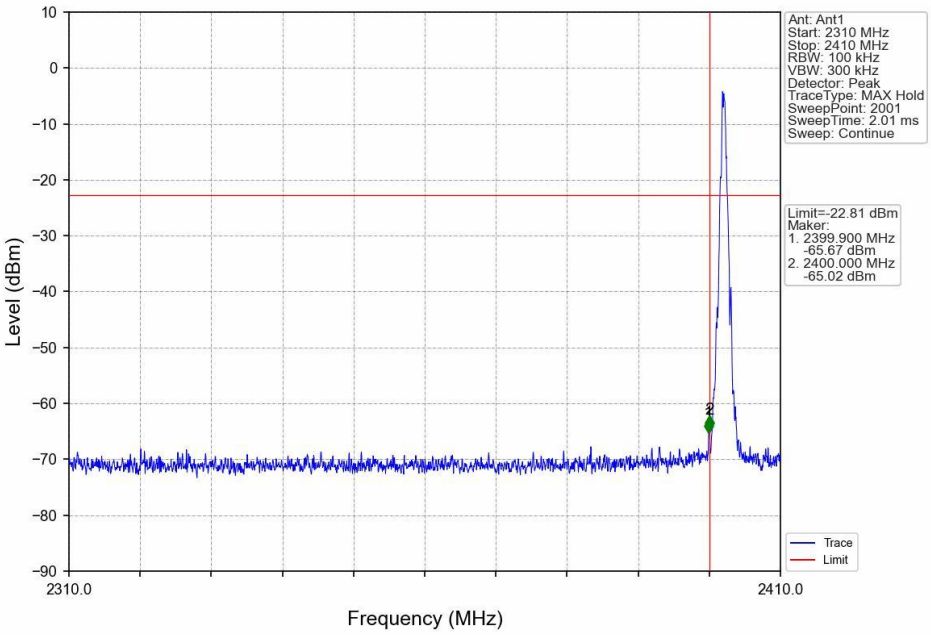
6.2 CSE

6.2.1 Test Result

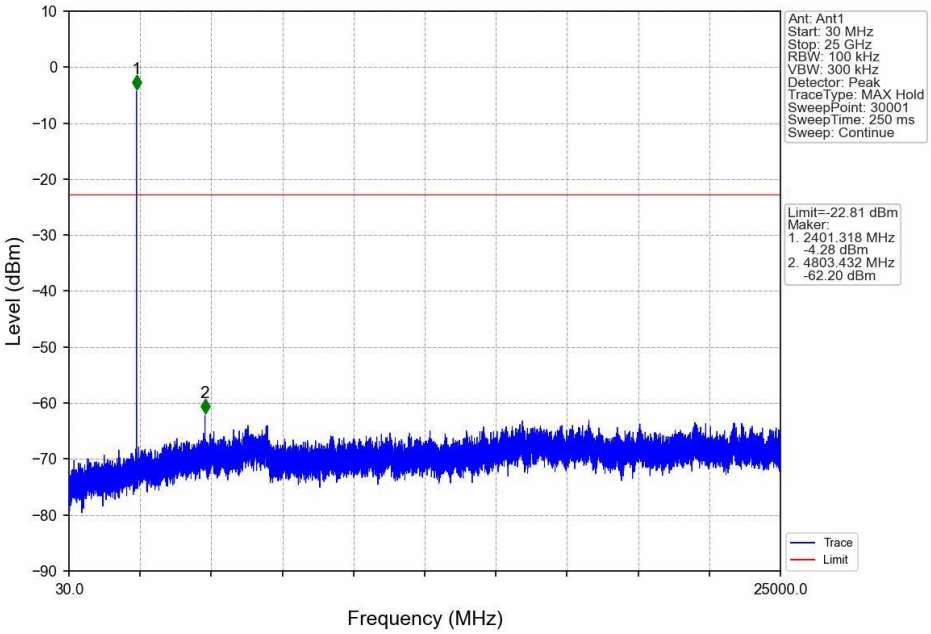
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
GFSK	SISO	2402	DH5	1	-2.81	-22.81	Pass
		2441	DH5	1	-2.81	-22.81	Pass
		2480	DH5	1	-2.81	-22.81	Pass
		HOPP	DH5	1	-2.81	-22.81	Pass
					-2.81	-22.81	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	-3.61	-23.61	Pass
		2441	2DH5	1	-3.61	-23.61	Pass
		2480	2DH5	1	-3.61	-23.61	Pass
		HOPP	2DH5	1	-3.61	-23.61	Pass
					-3.61	-23.61	Pass
8DPSK	SISO	2402	3DH5	1	-3.17	-23.17	Pass
		2441	3DH5	1	-3.17	-23.17	Pass
		2480	3DH5	1	-3.17	-23.17	Pass
		HOPP	3DH5	1	-3.17	-23.17	Pass
					-3.17	-23.17	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

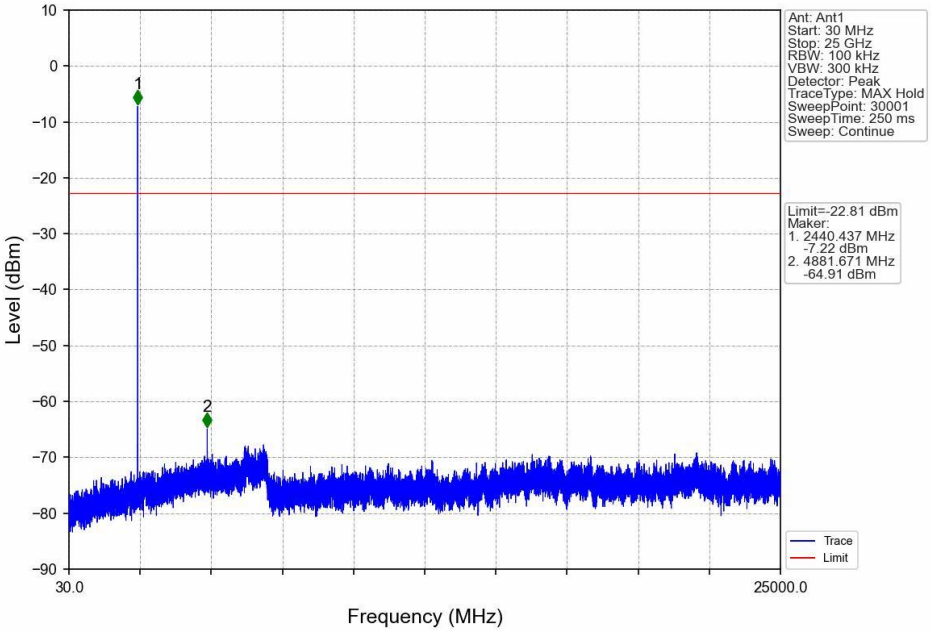
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



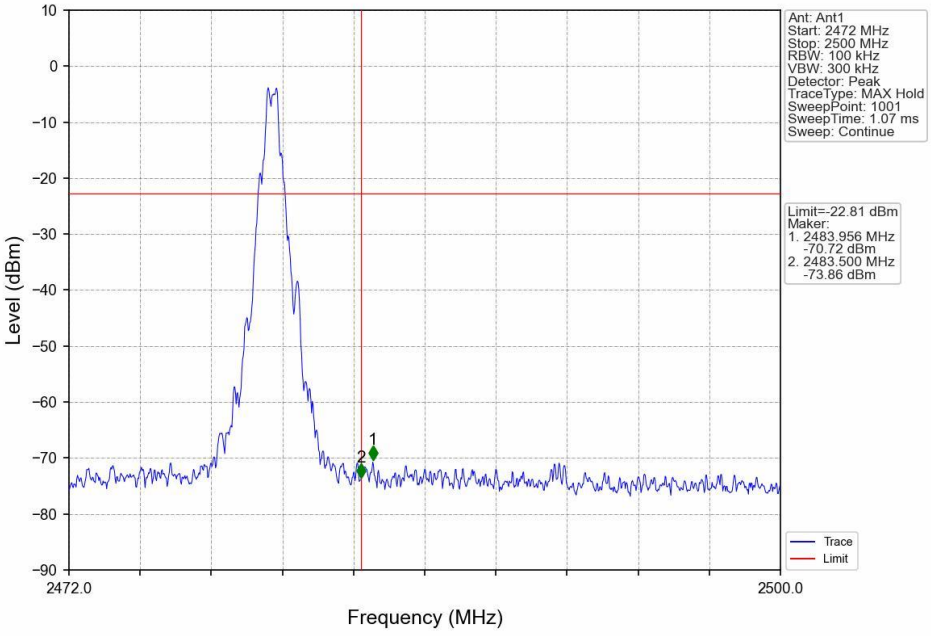
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



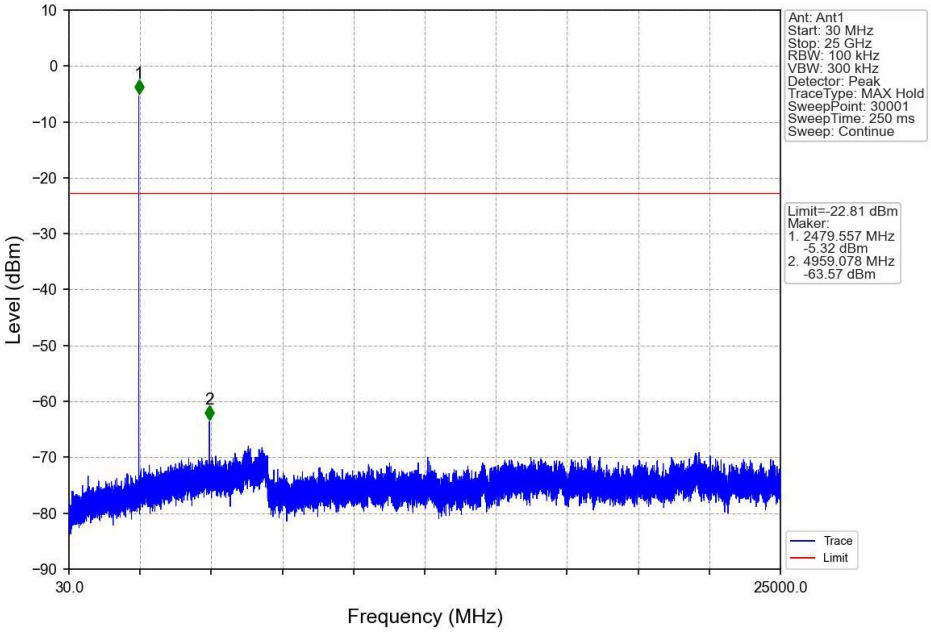
GFSK_DH5_MCH_2441MHz_Ant1_NTNV



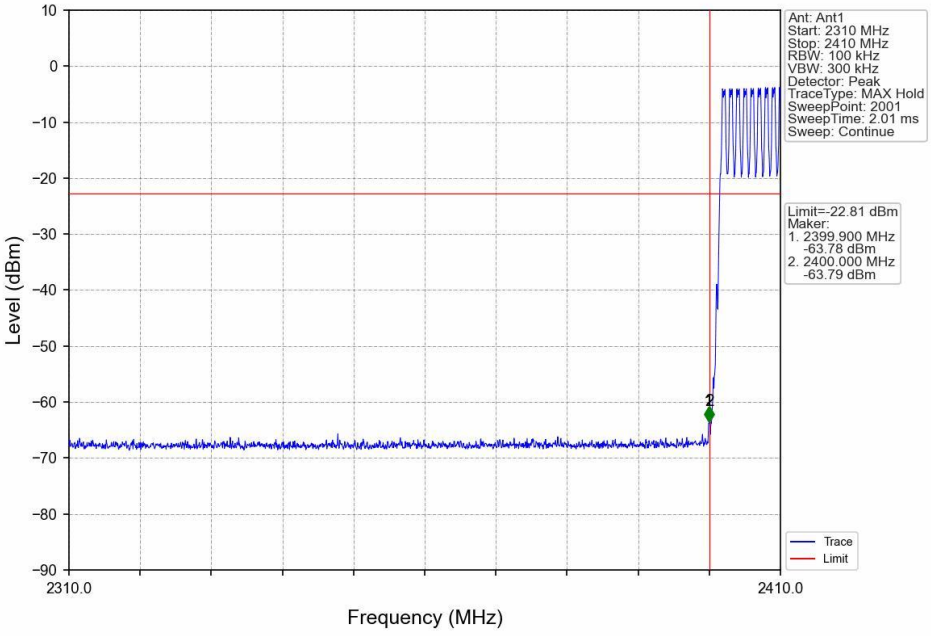
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



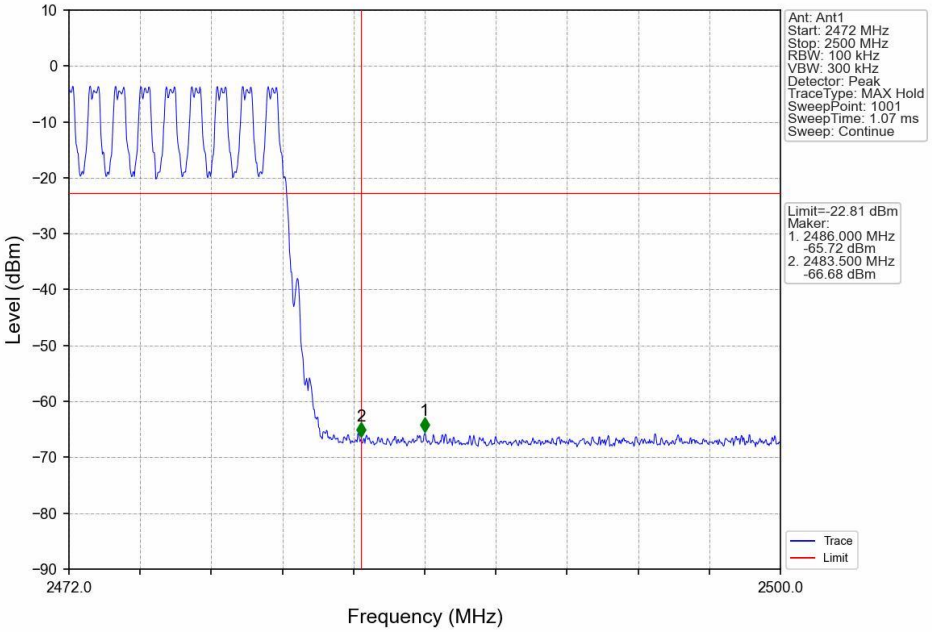
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



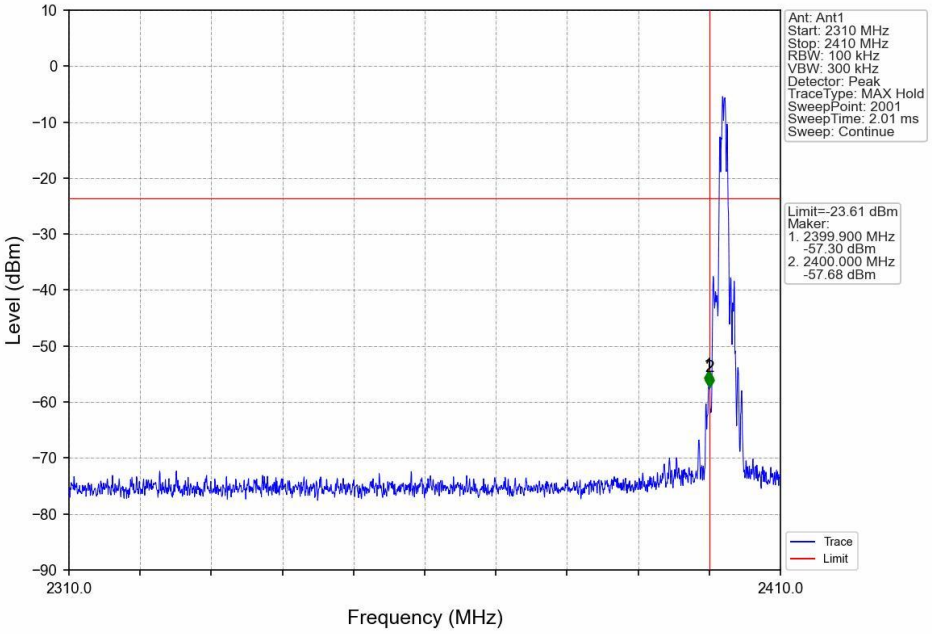
GFSK_DH5_HOPP_Ant1_NTNV



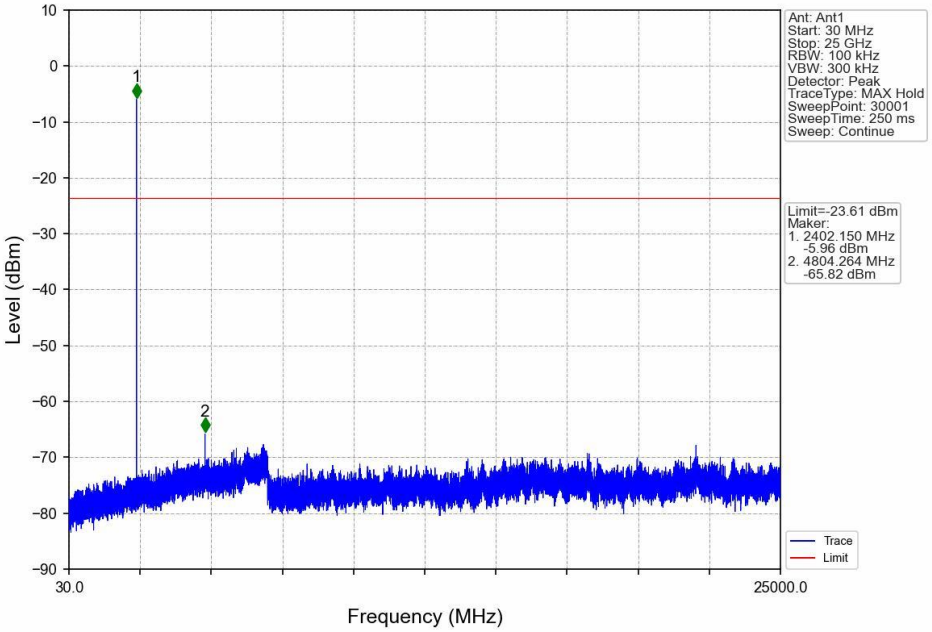
GFSK_DH5_HOPP_Ant1_NTNV



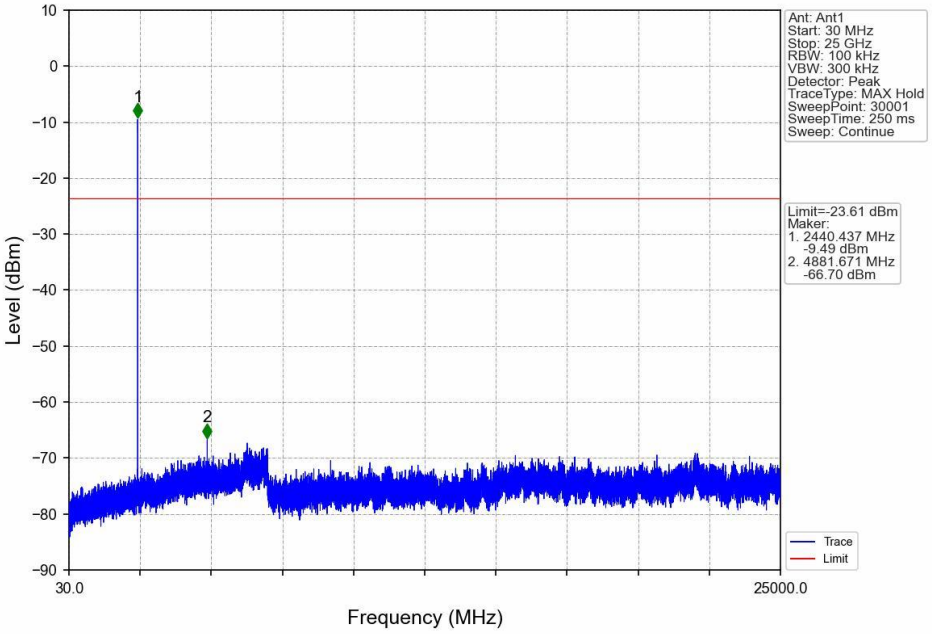
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



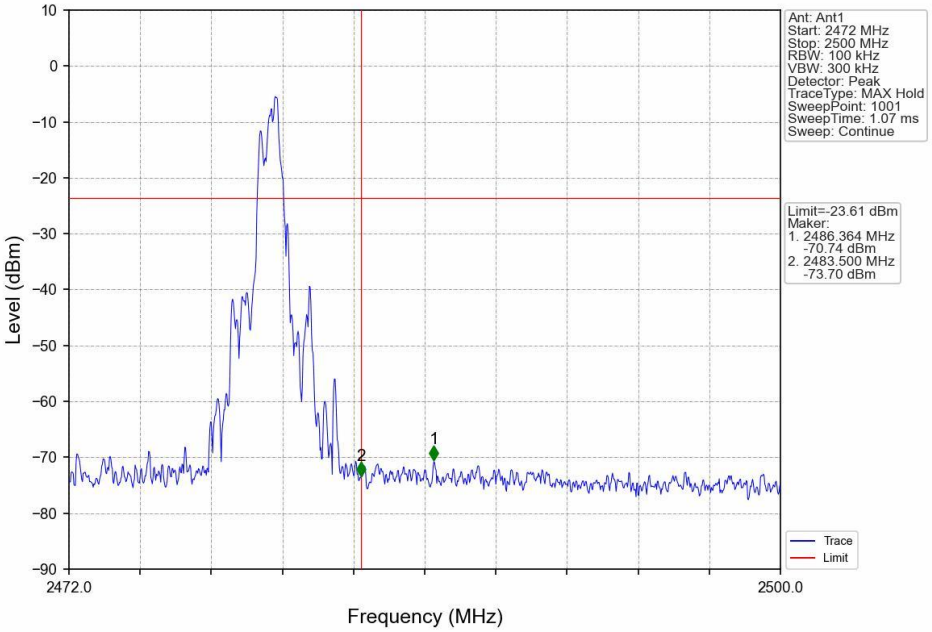
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



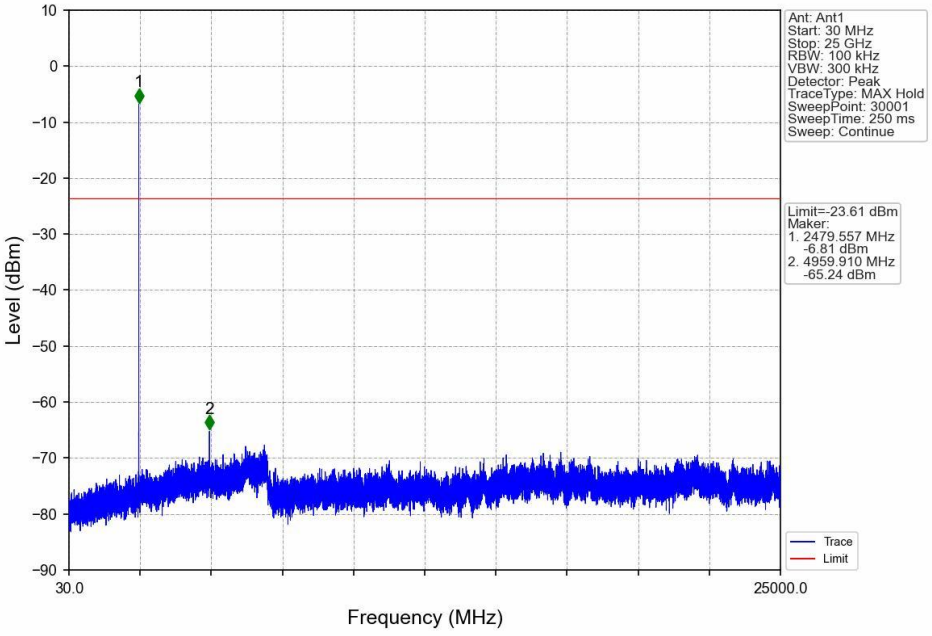
Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



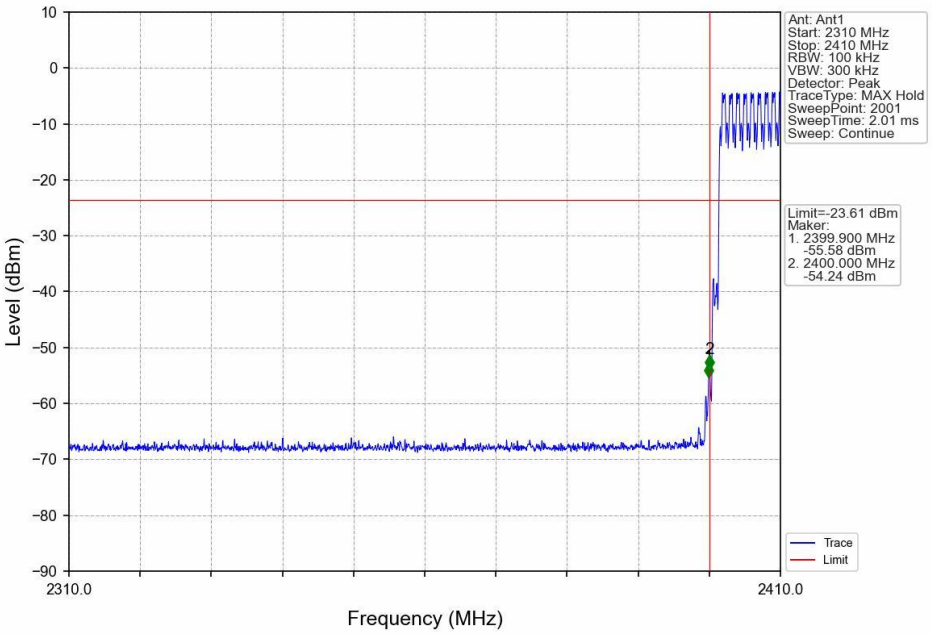
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



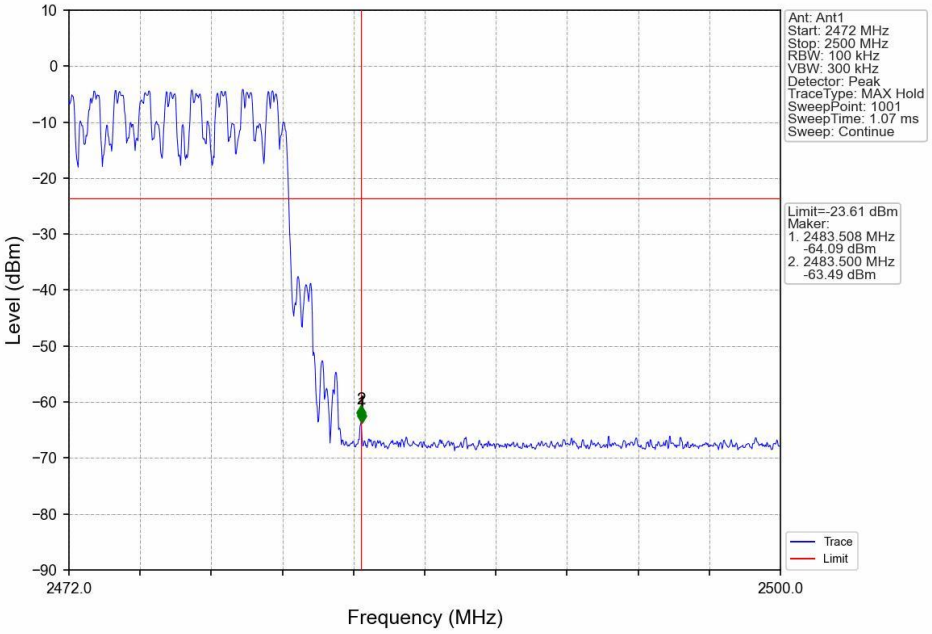
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



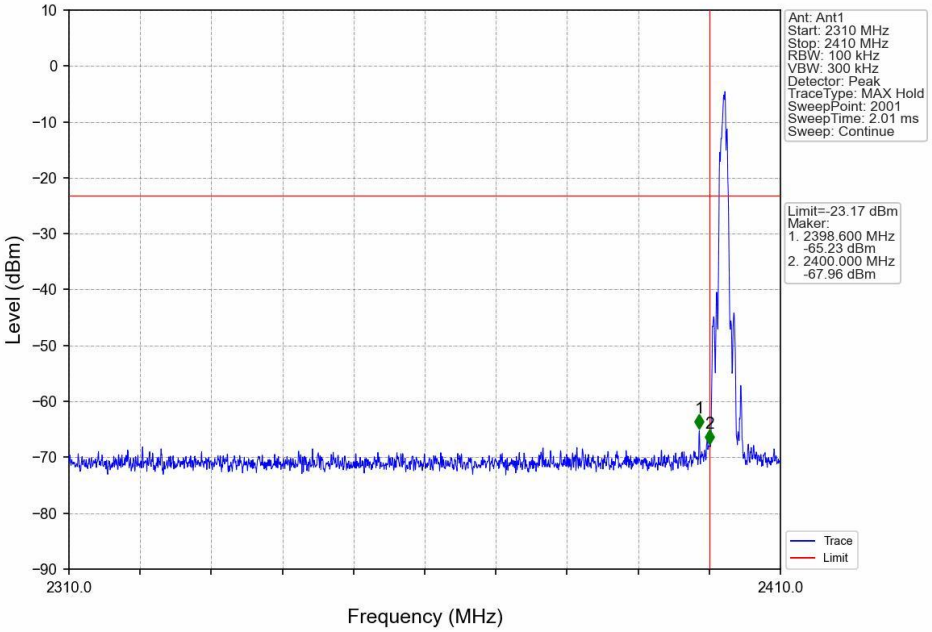
Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV



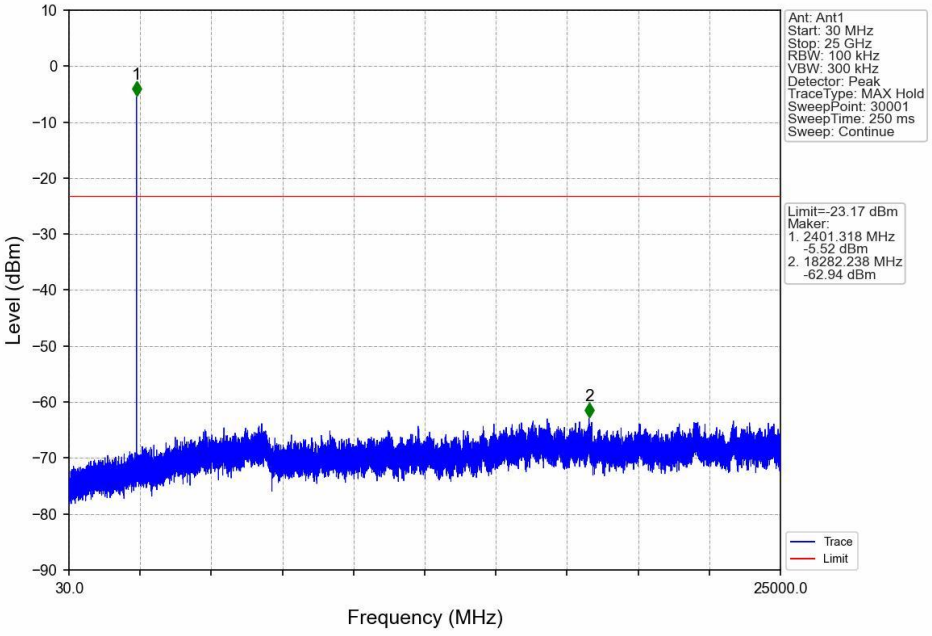
Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV



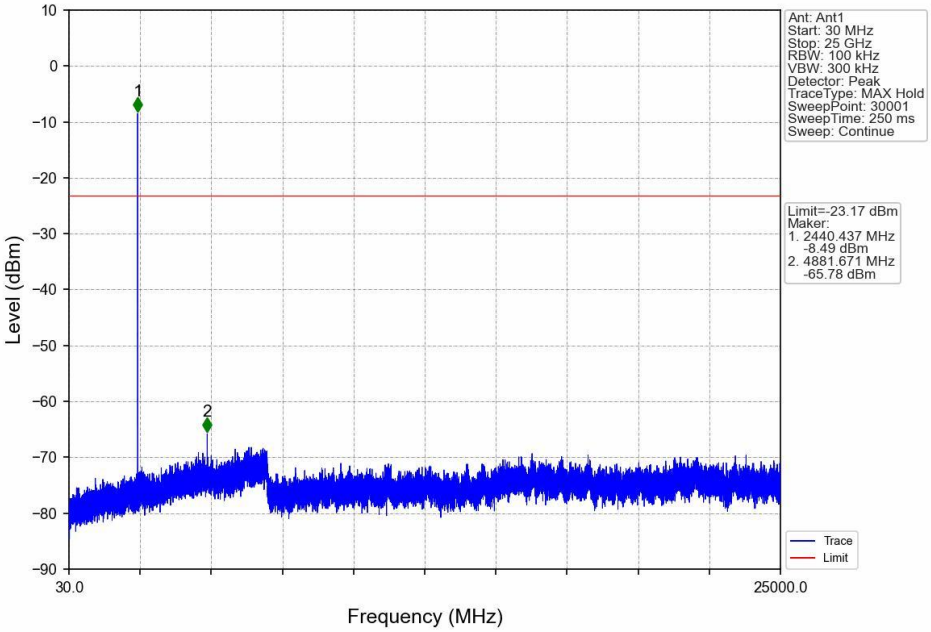
8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



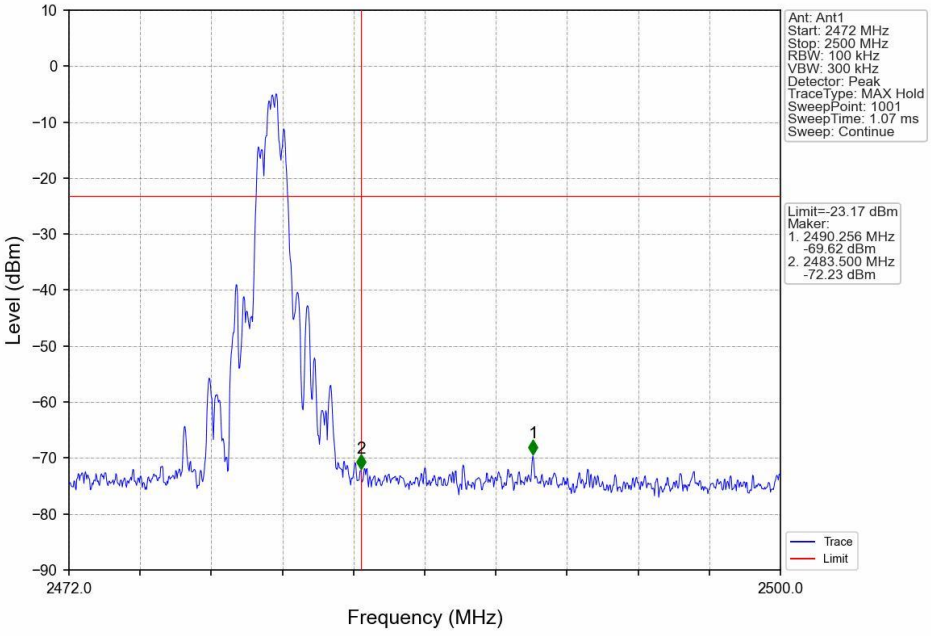
8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



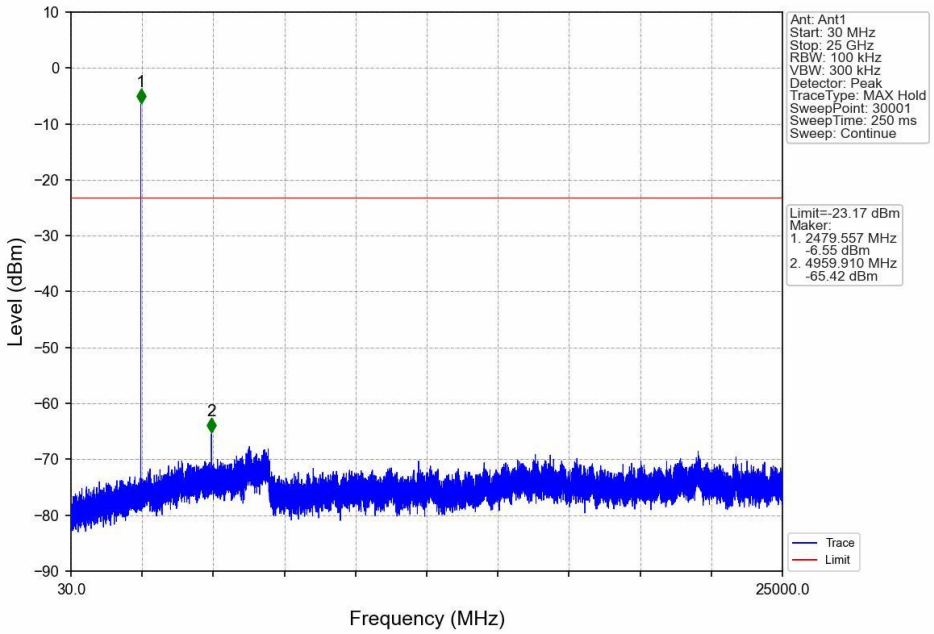
8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV



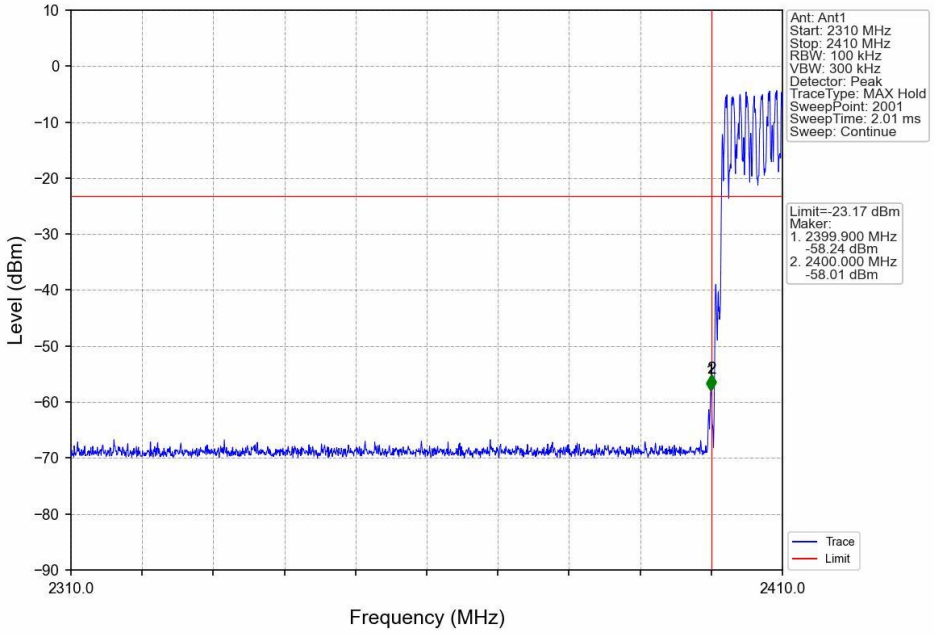
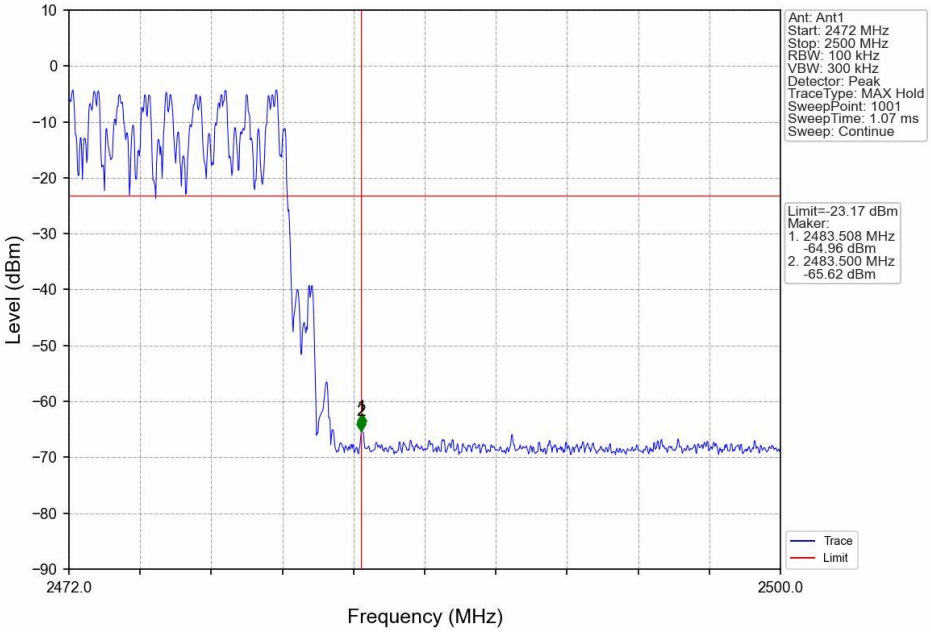
8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV