

# ANNEX D TEST DATA

## For

Project No.:	8229EU010807W
Client:	Guangzhou MUNBYN Information Technology Co., Ltd.
Product Description:	Photo Printer
Model No.:	PR3
FCC ID:	2BF4E-PR3
Technology:	Bluetooth BDR+EDR
Test Engineer:	<i>Mikoy zhu</i>
Test Date:	2024-05-14

## 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

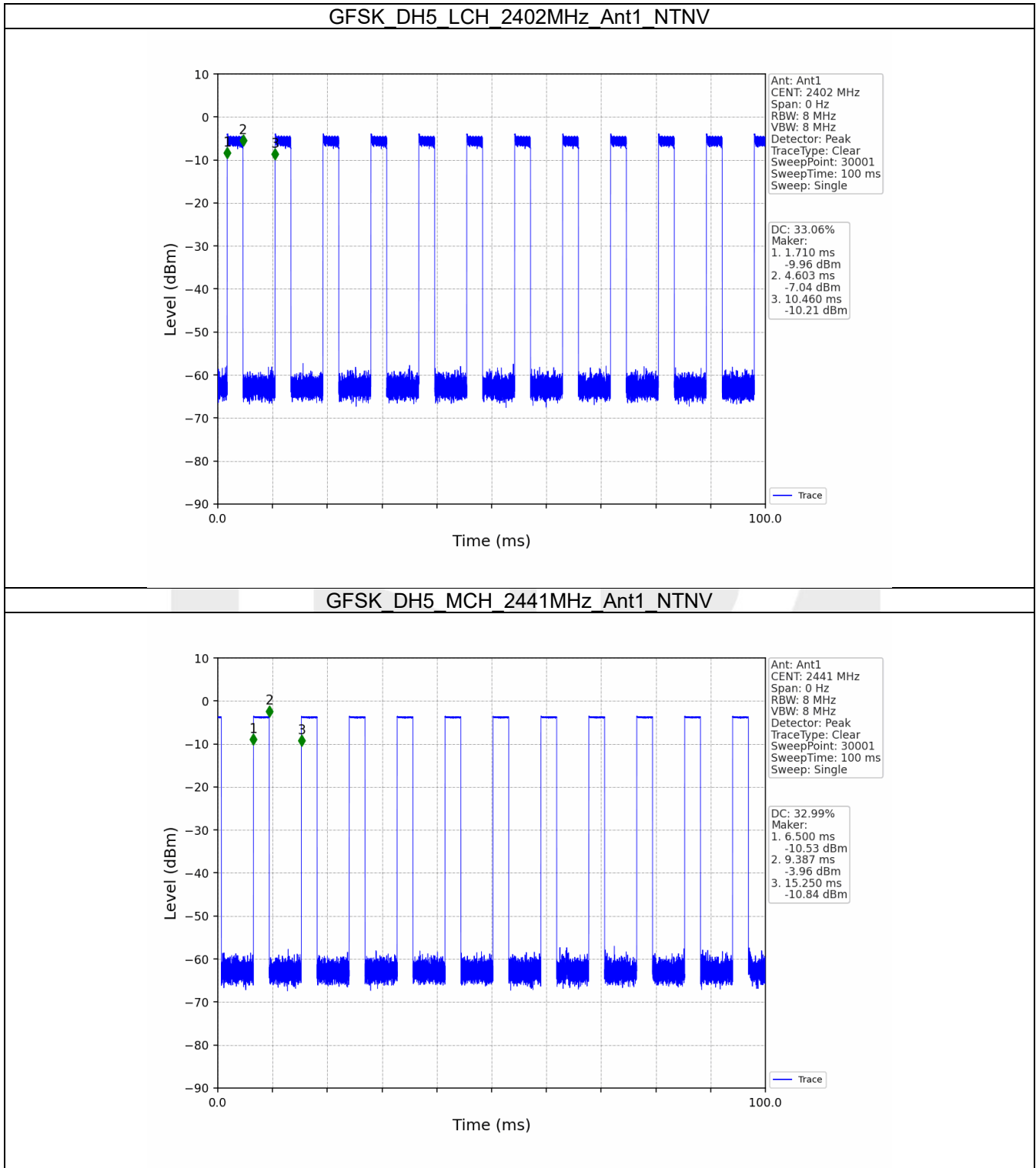
## 1. Duty Cycle

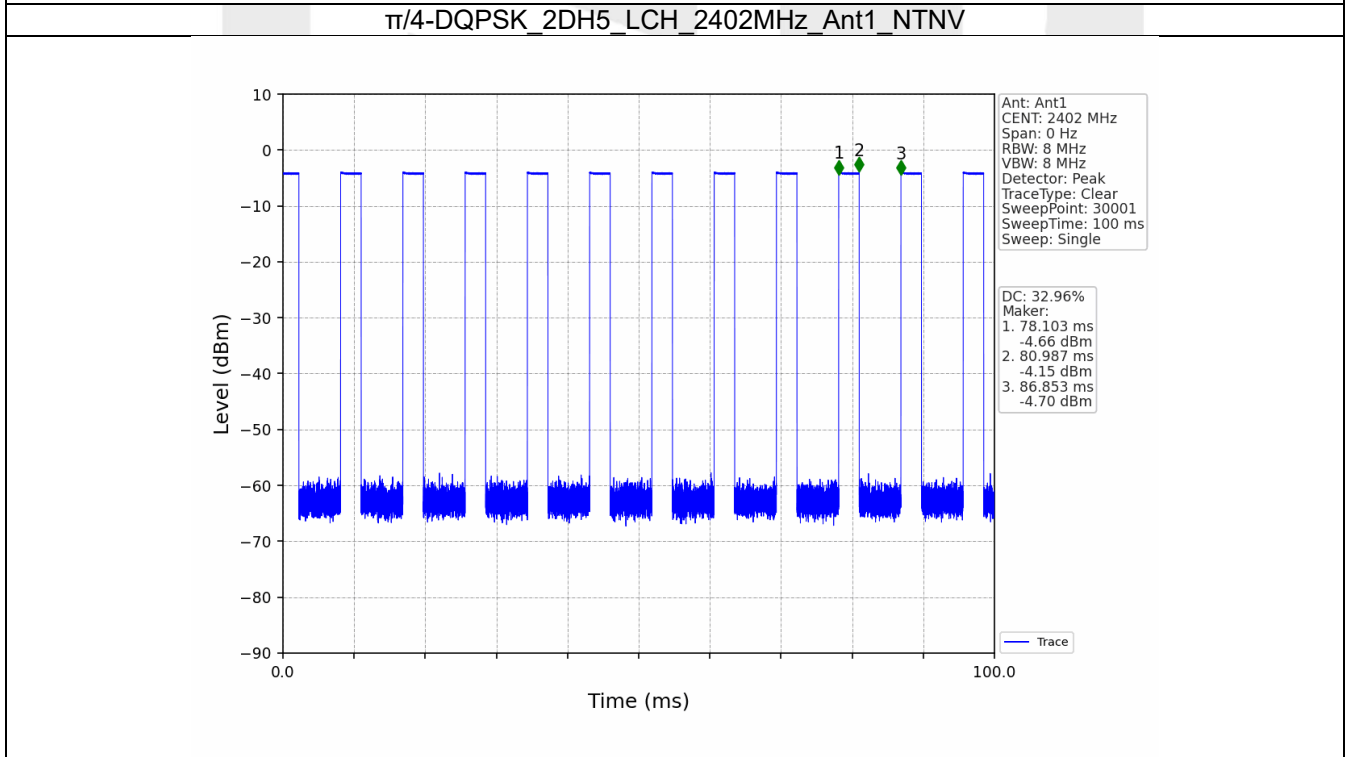
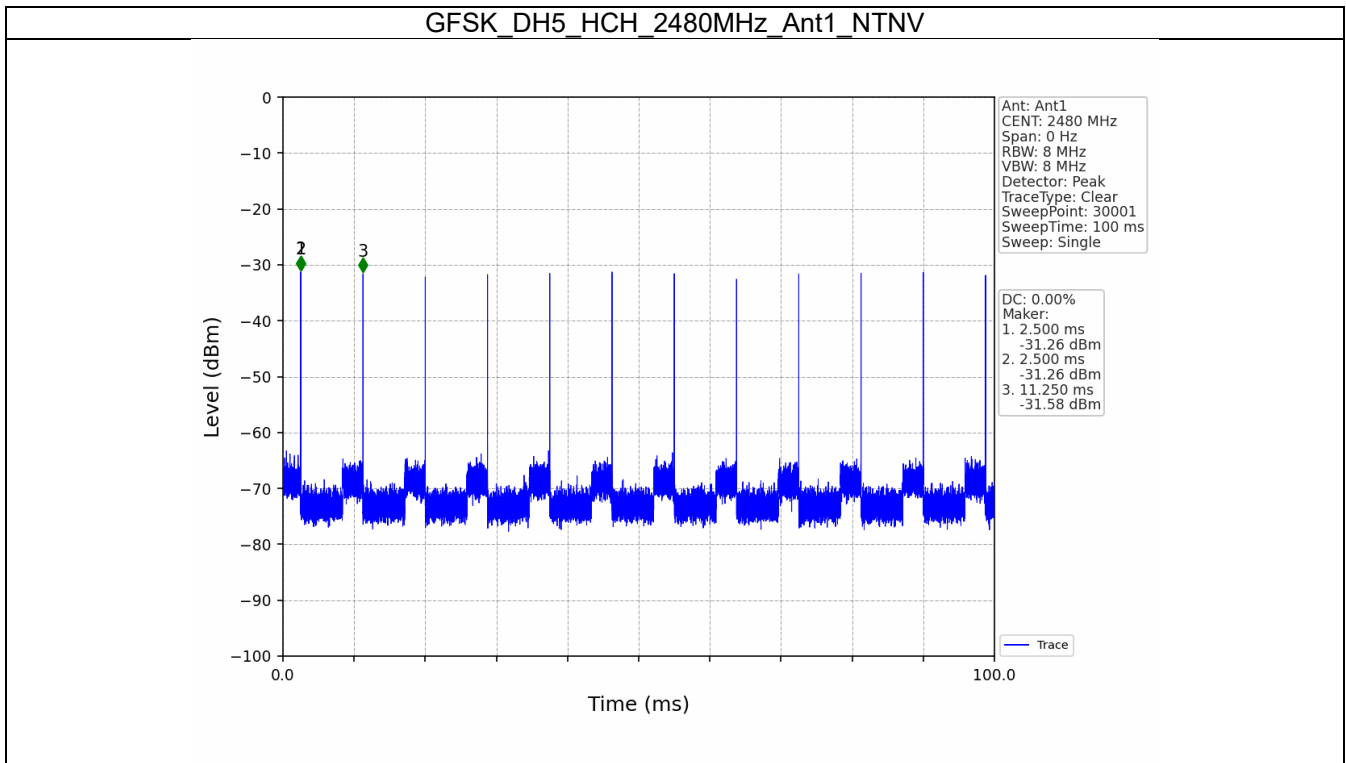
### 1.1 Ant1

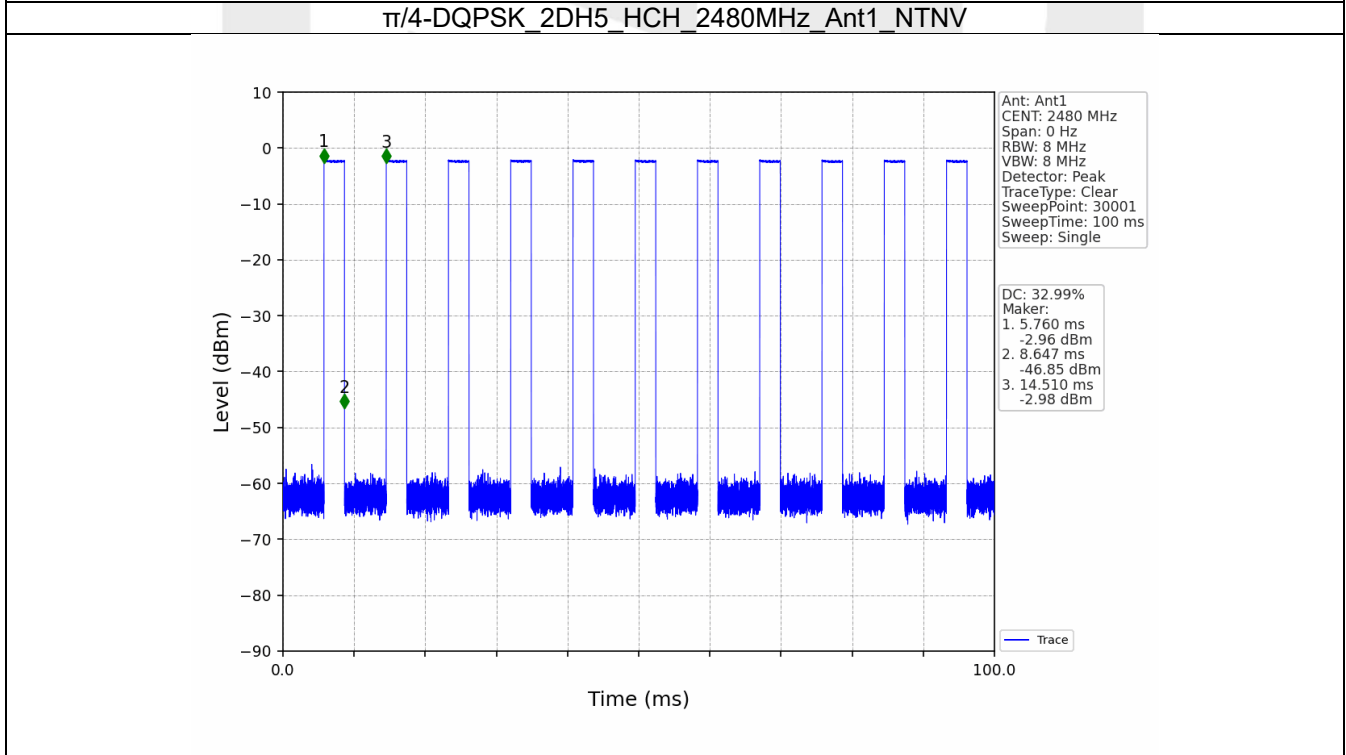
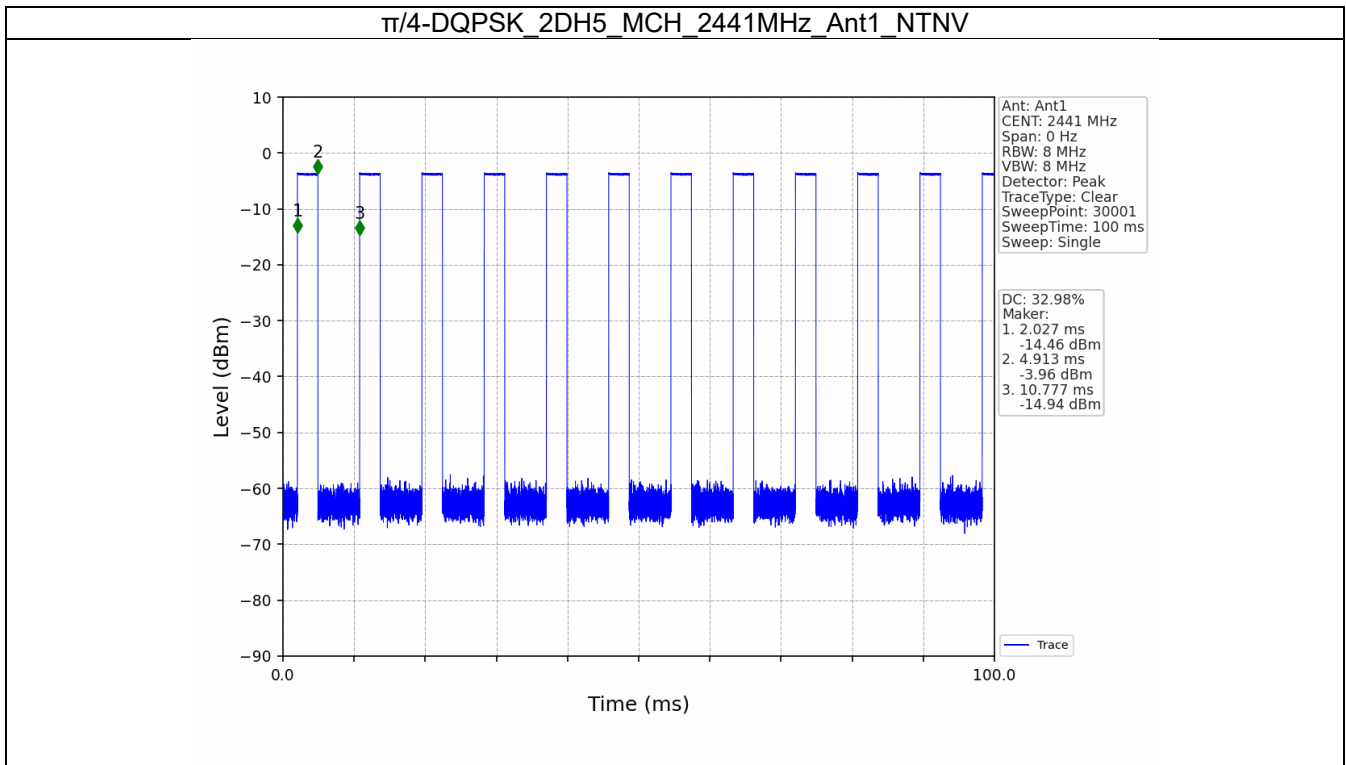
#### 1.1.1 Test Result

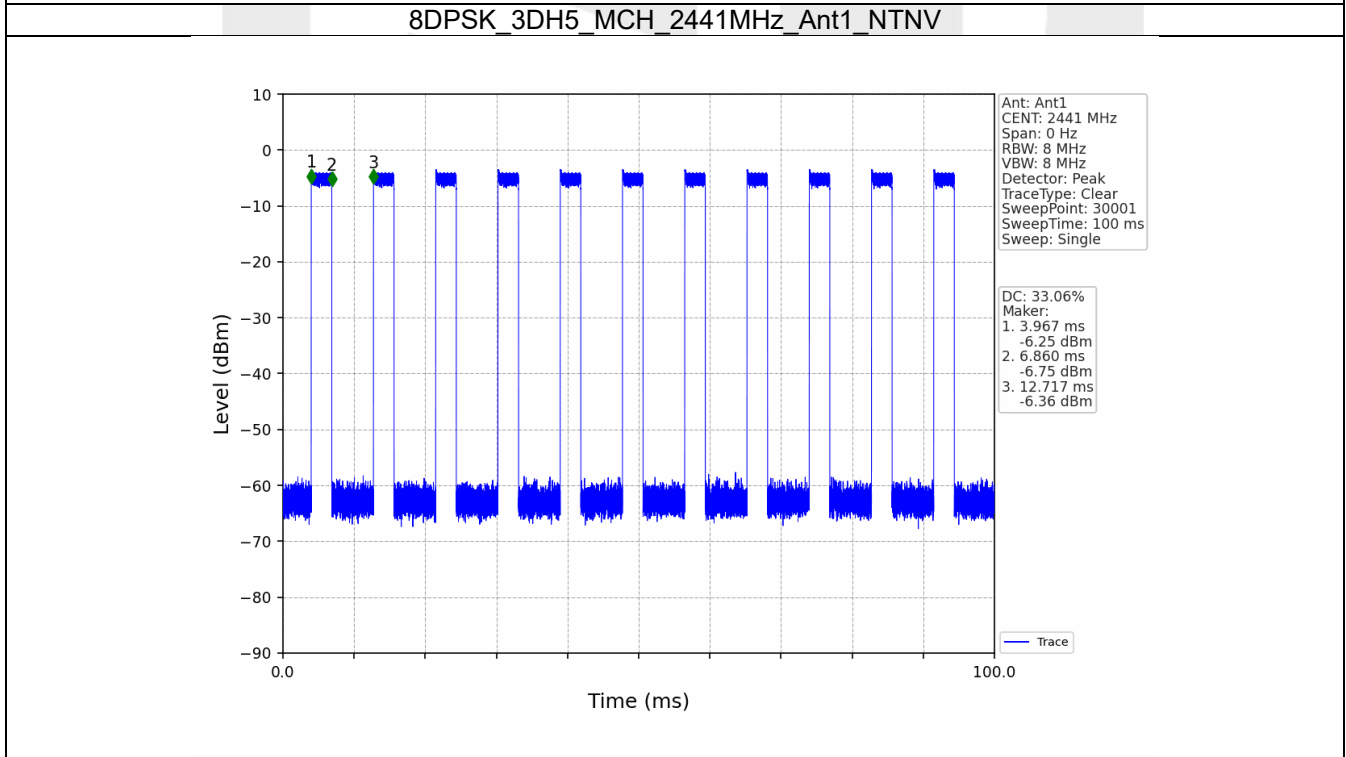
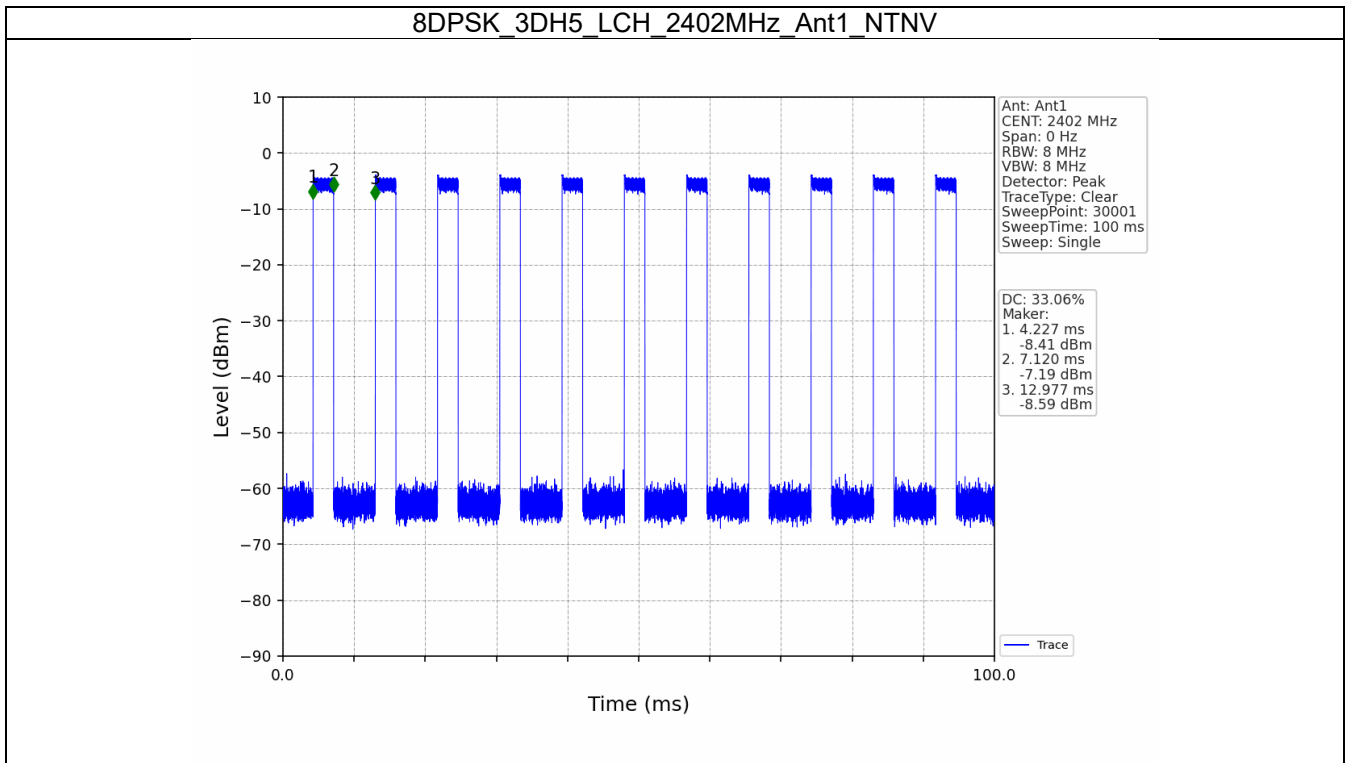
Ant1								
Mode	TX Type	Frequency (MHz)	Packet Type	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
GFSK	SISO	2402	DH5	2.893	8.750	33.06	4.81	0.00
		2441	DH5	2.887	8.750	32.99	4.82	0.00
		2480	DH5	0.000	8.750	0.00	0.00	0.00
π/4-DQPSK	SISO	2402	2DH5	2.884	8.750	32.96	4.82	0.04
		2441	2DH5	2.886	8.750	32.98	4.82	0.00
		2480	2DH5	2.887	8.750	32.99	4.82	0.00
8DPSK	SISO	2402	3DH5	2.893	8.750	33.06	4.81	0.00
		2441	3DH5	2.893	8.750	33.06	4.81	0.00
		2480	3DH5	2.893	8.750	33.06	4.81	0.04

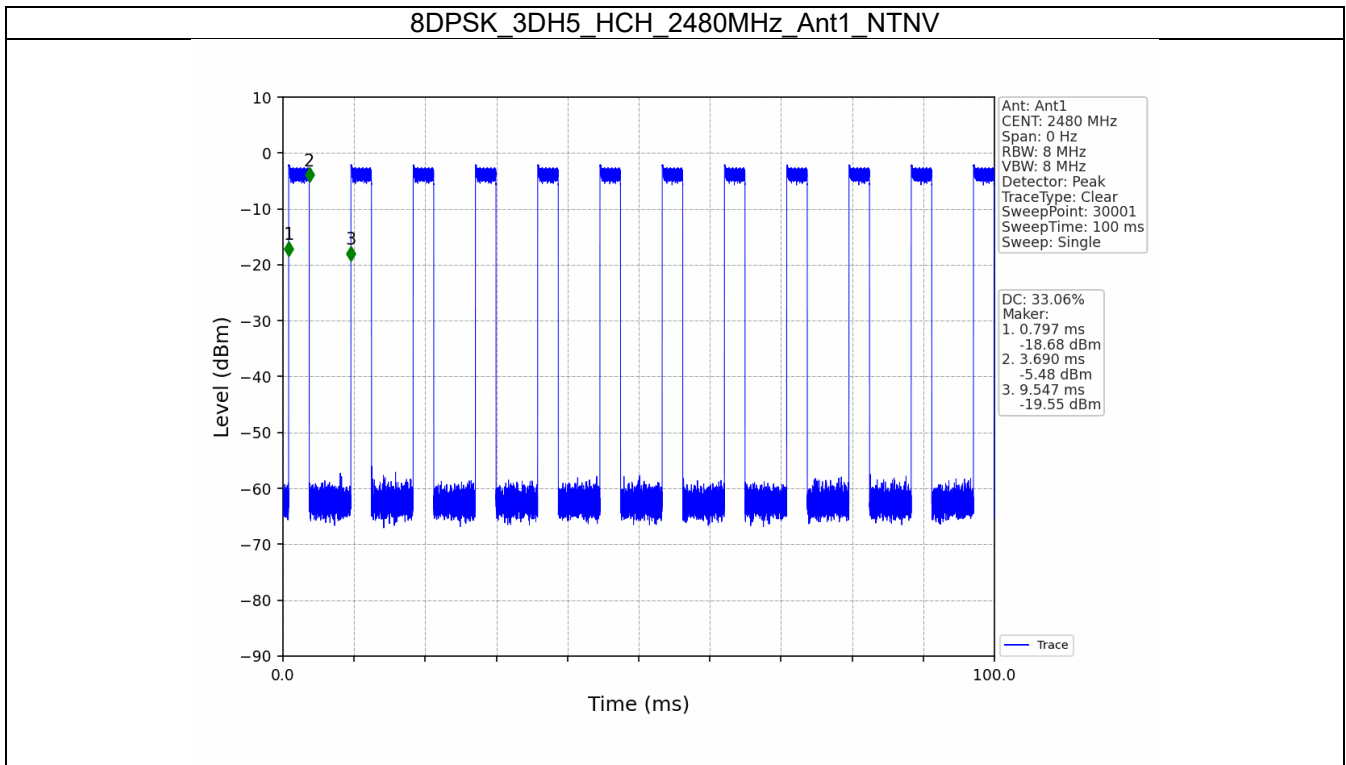
1.1.2 Test Graph













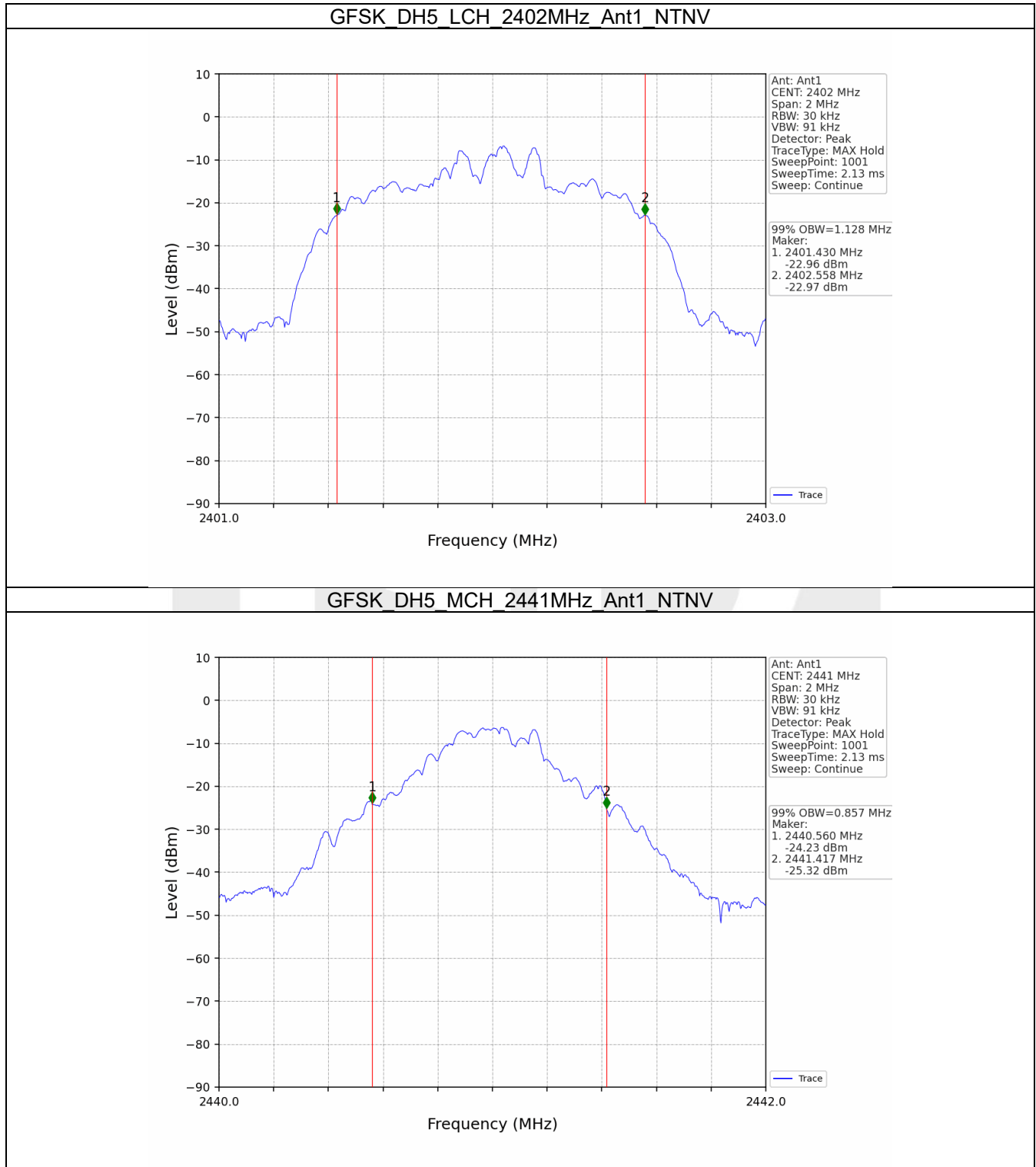
## 2. Bandwidth

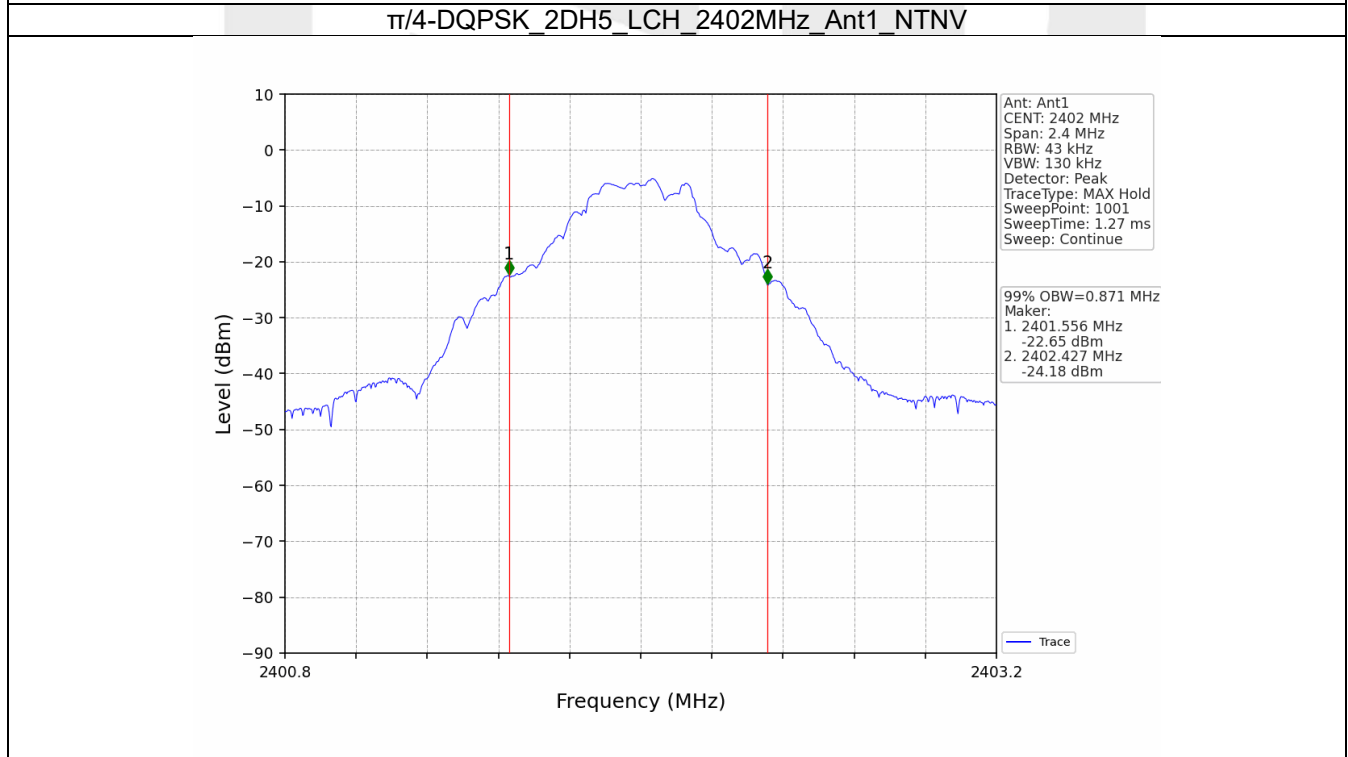
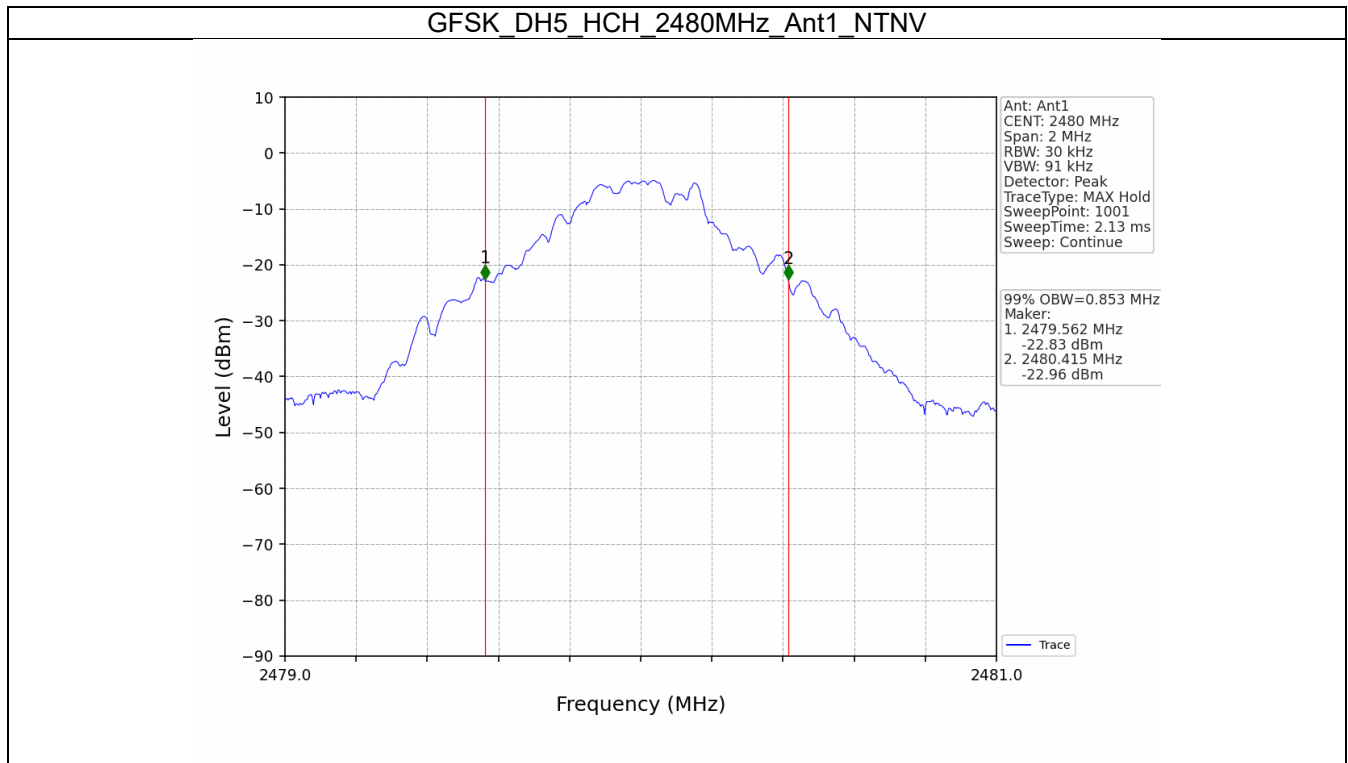
### 2.1 OBW

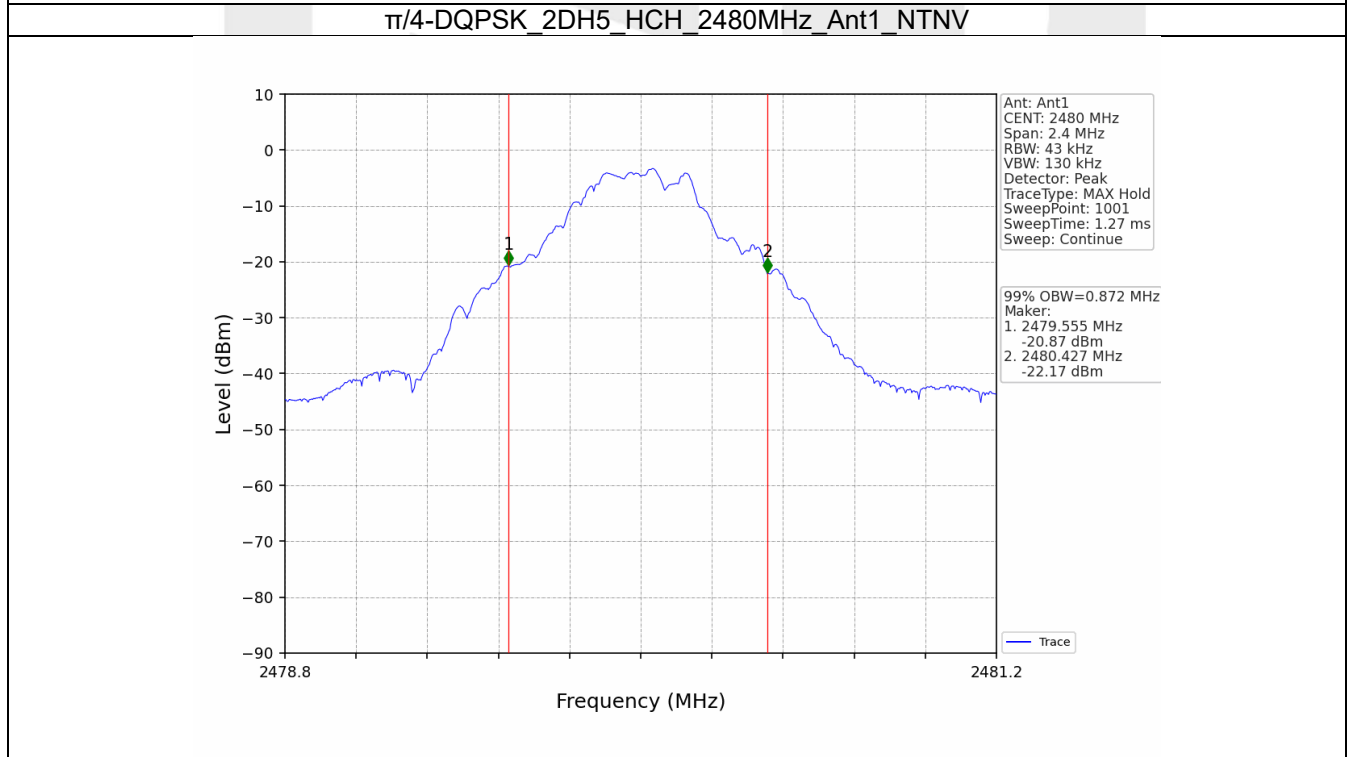
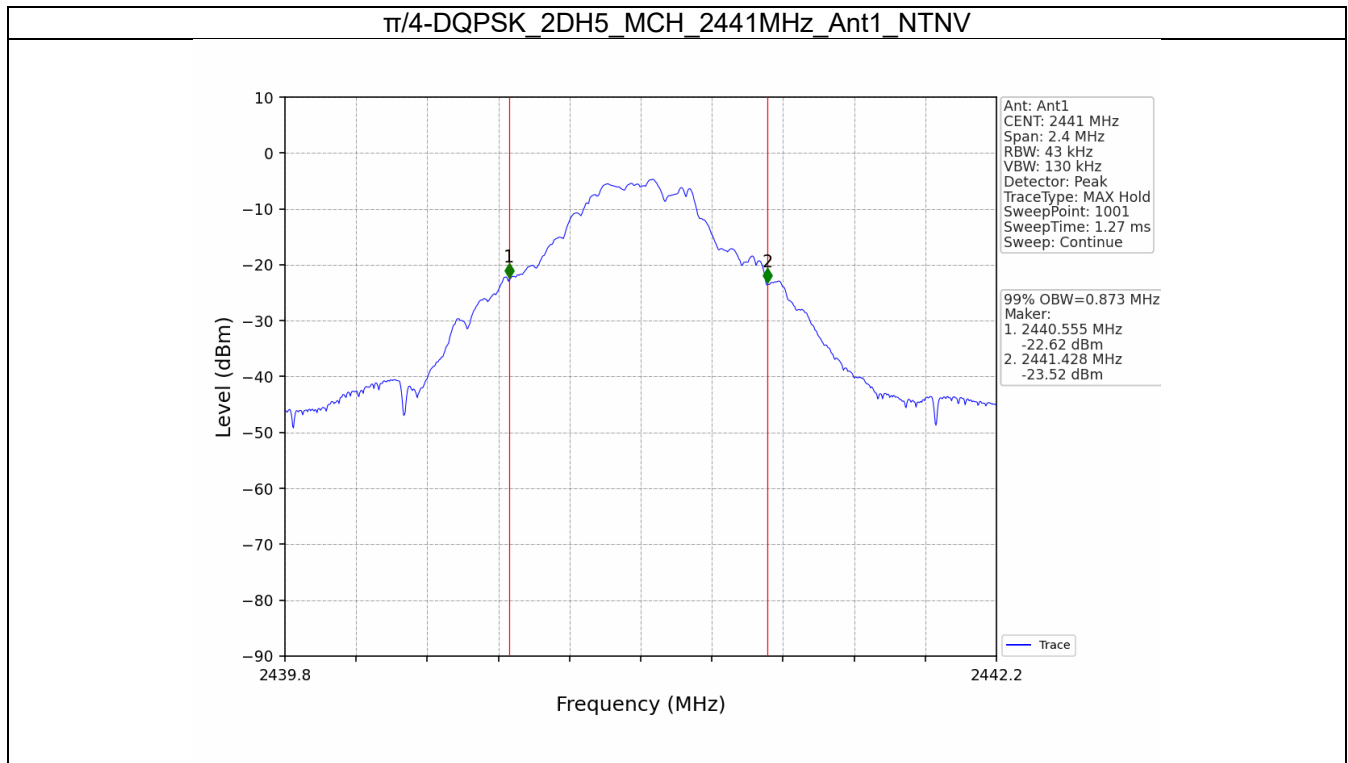
#### 2.1.1 Test Result

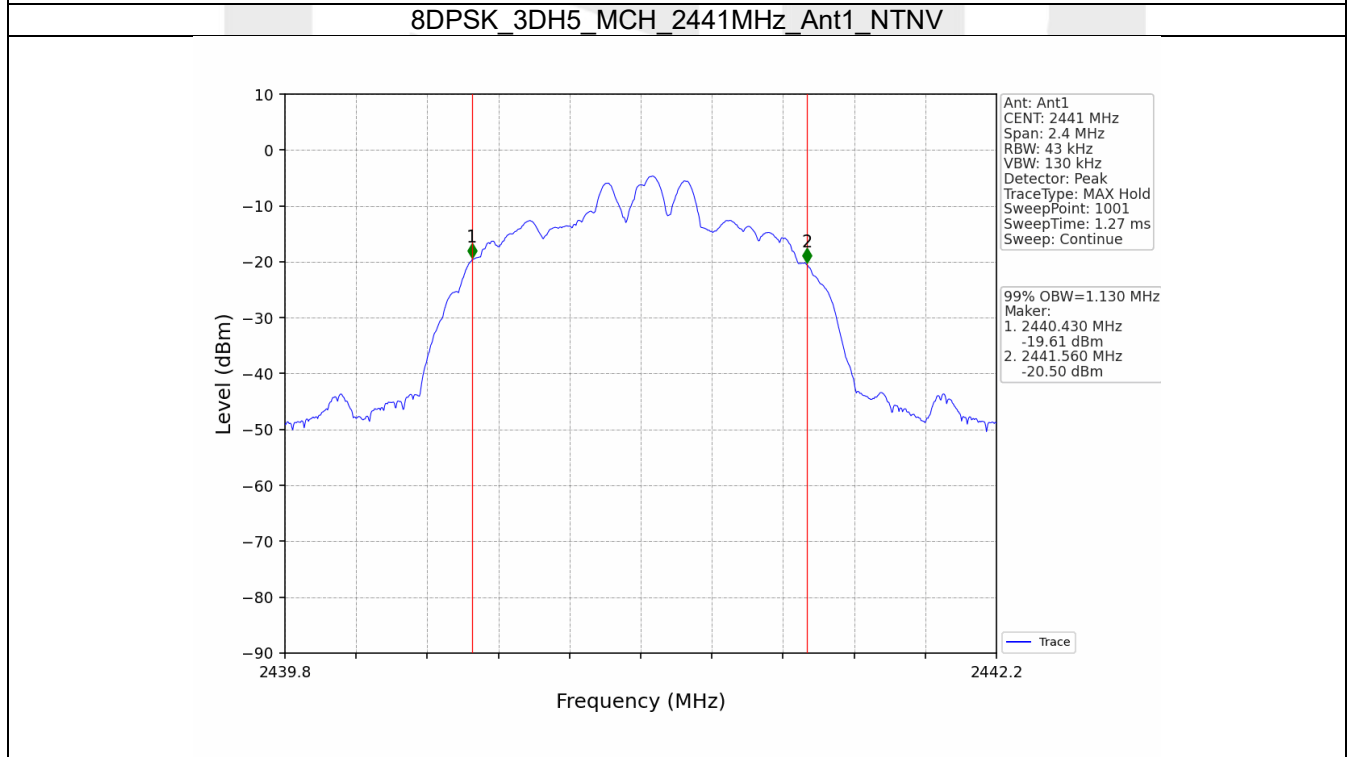
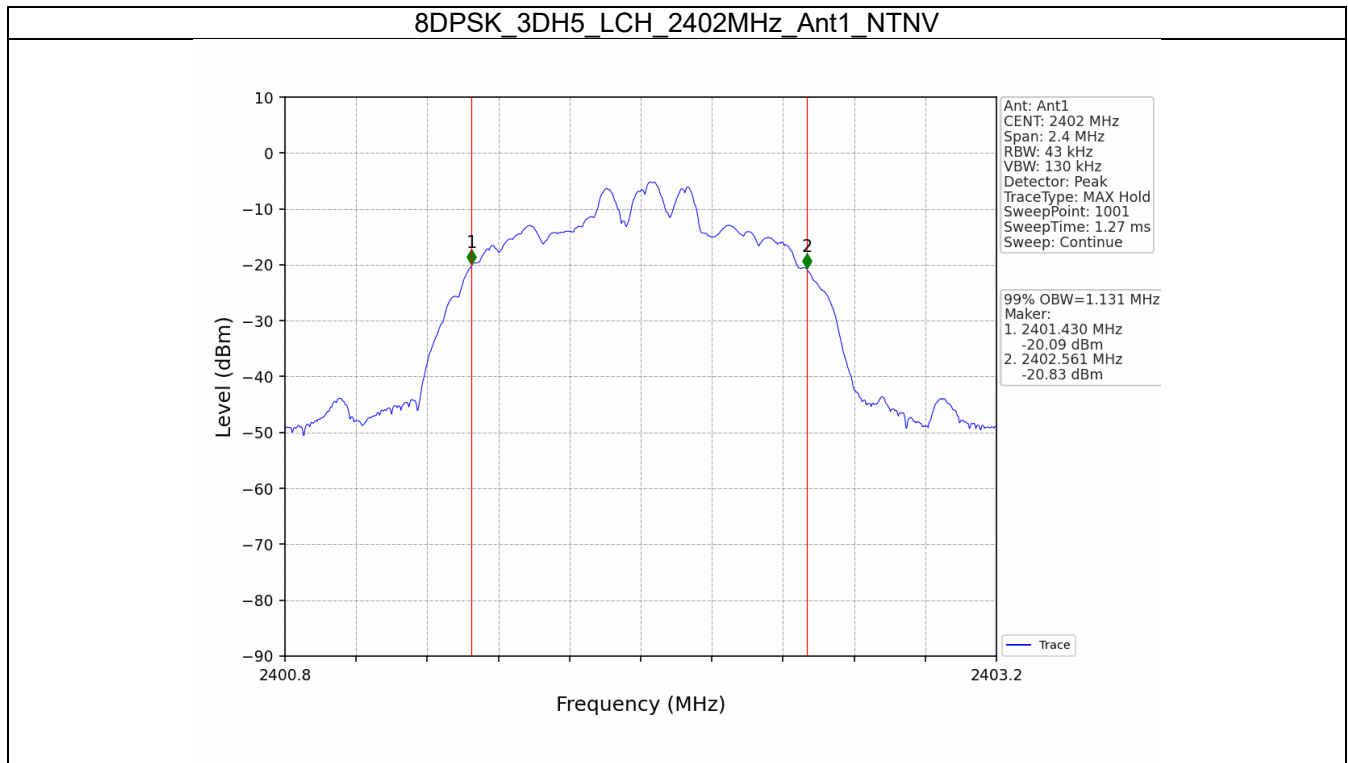
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	99% Occupied Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	1.128	/	Pass
		2441	DH5	1	0.857	/	Pass
		2480	DH5	1	0.853	/	Pass
$\pi/4$ -DQPSK	SISO	2402	2DH5	1	0.871	/	Pass
		2441	2DH5	1	0.873	/	Pass
		2480	2DH5	1	0.872	/	Pass
8DPSK	SISO	2402	3DH5	1	1.131	/	Pass
		2441	3DH5	1	1.130	/	Pass
		2480	3DH5	1	1.134	/	Pass

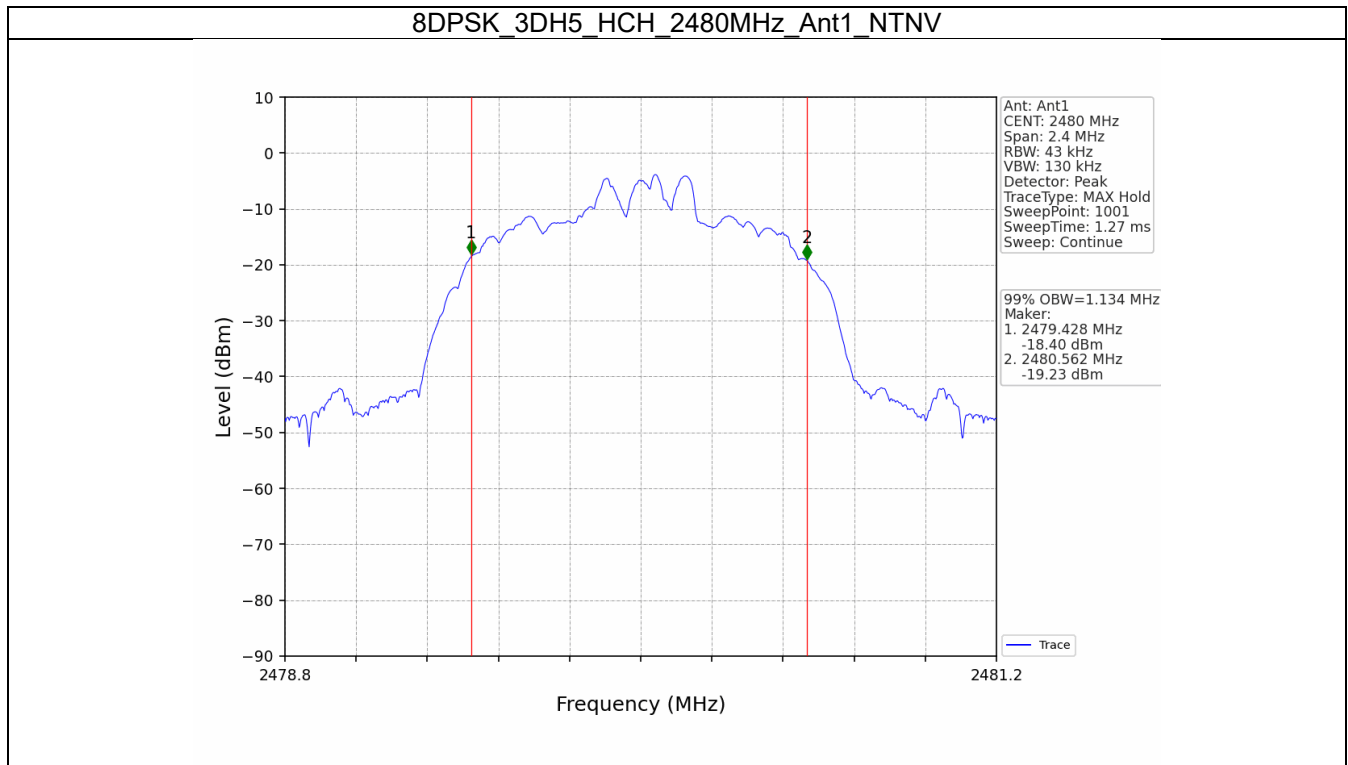
2.1.2 Test Graph









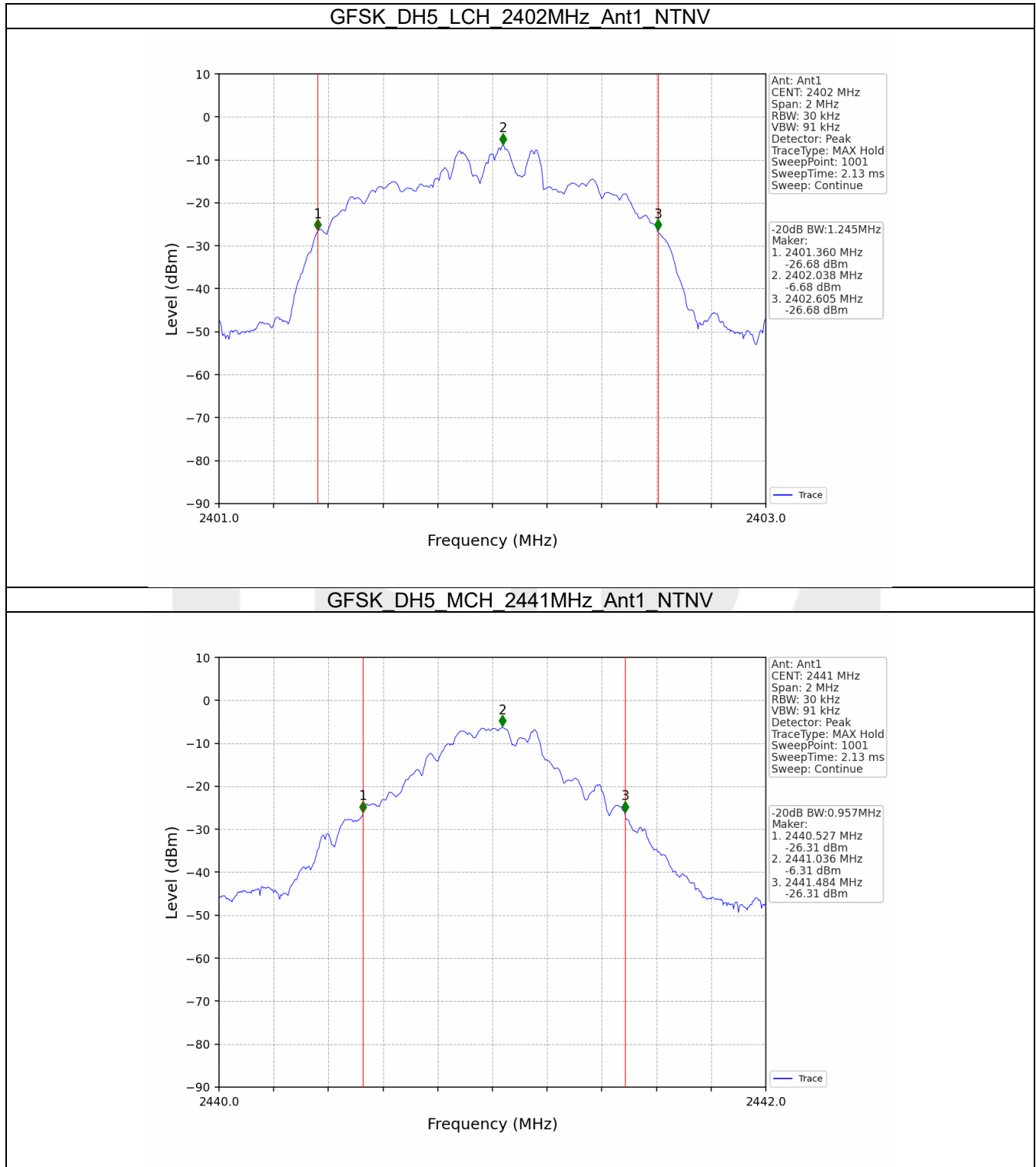


## 2.2 20dB BW

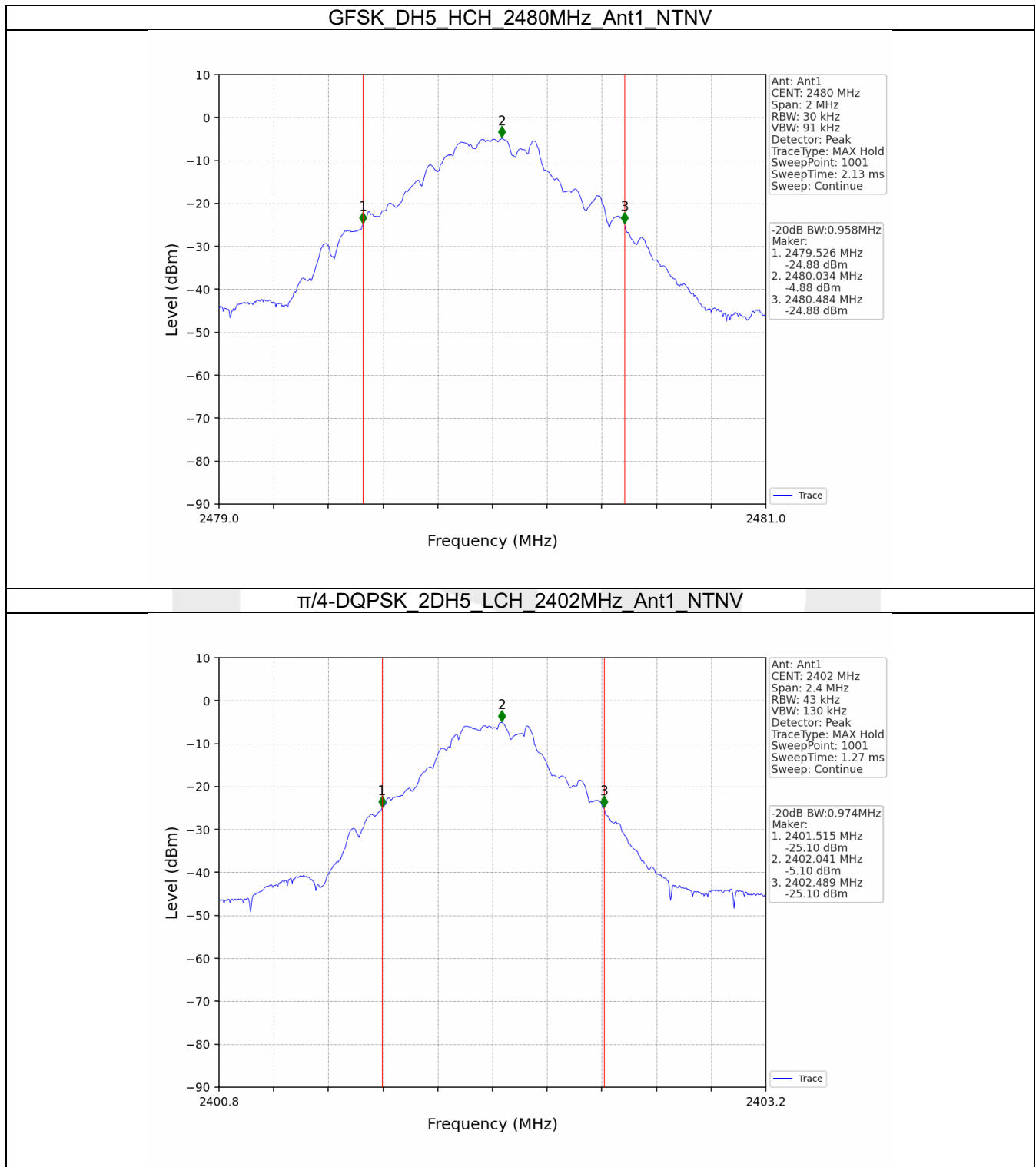
### 2.2.1 Test Result

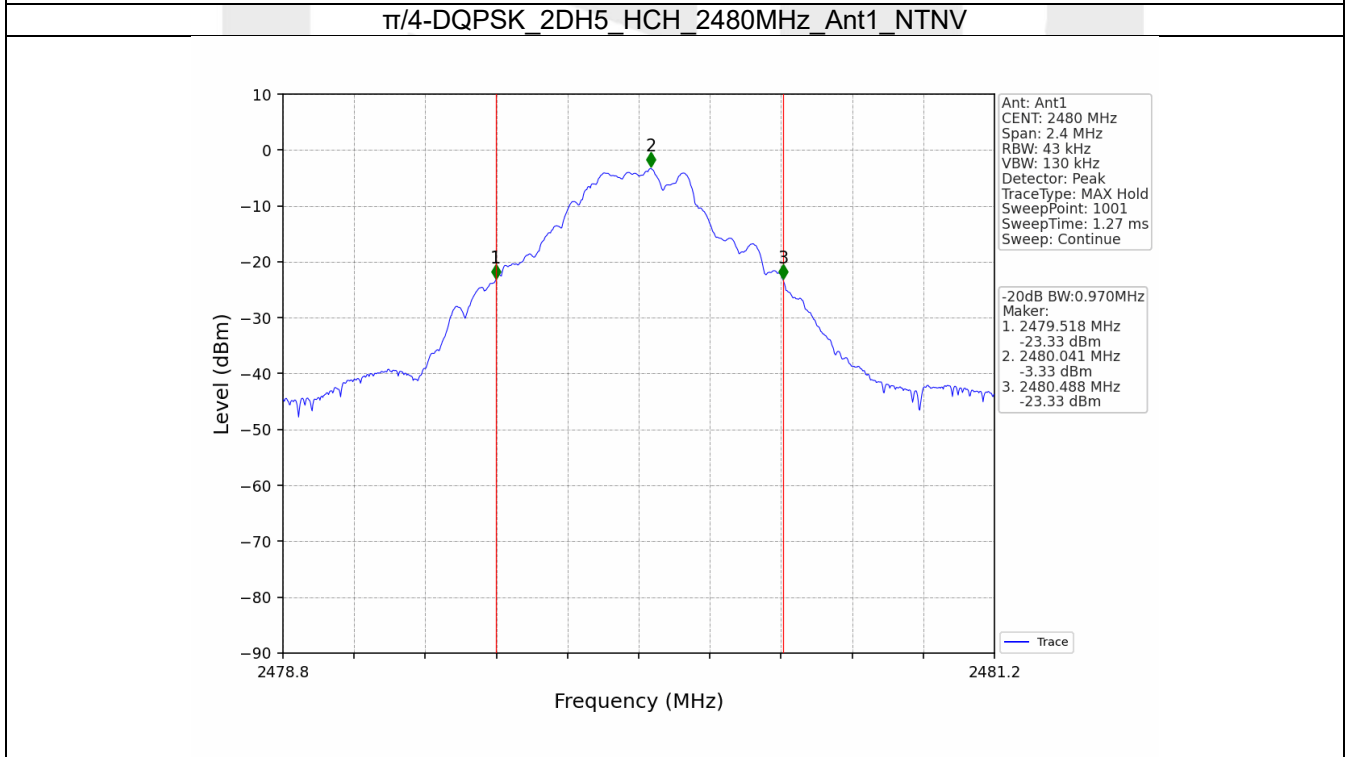
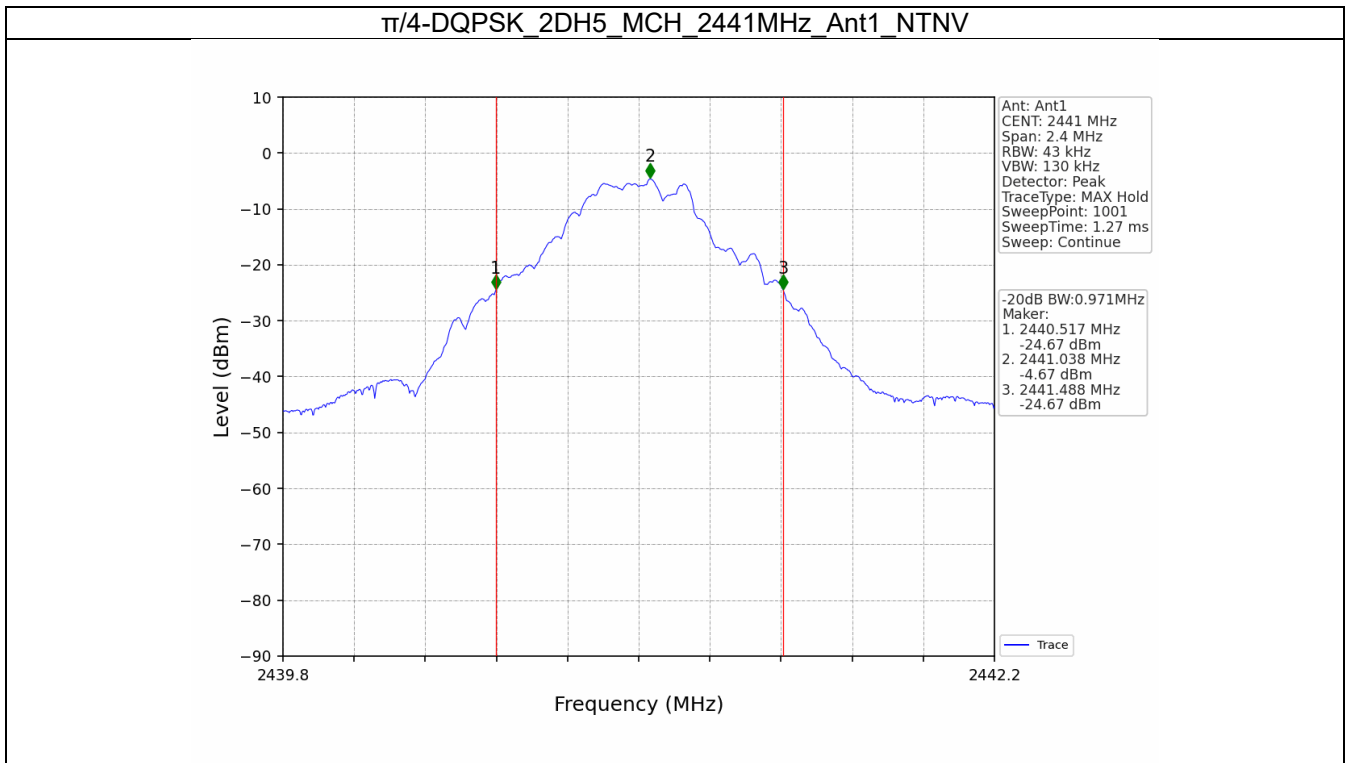
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	20dB Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	1.245	/	Pass
		2441	DH5	1	0.957	/	Pass
		2480	DH5	1	0.958	/	Pass
$\pi/4$ -DQPSK	SISO	2402	2DH5	1	0.974	/	Pass
		2441	2DH5	1	0.971	/	Pass
		2480	2DH5	1	0.970	/	Pass
8DPSK	SISO	2402	3DH5	1	1.233	/	Pass
		2441	3DH5	1	1.232	/	Pass
		2480	3DH5	1	1.232	/	Pass

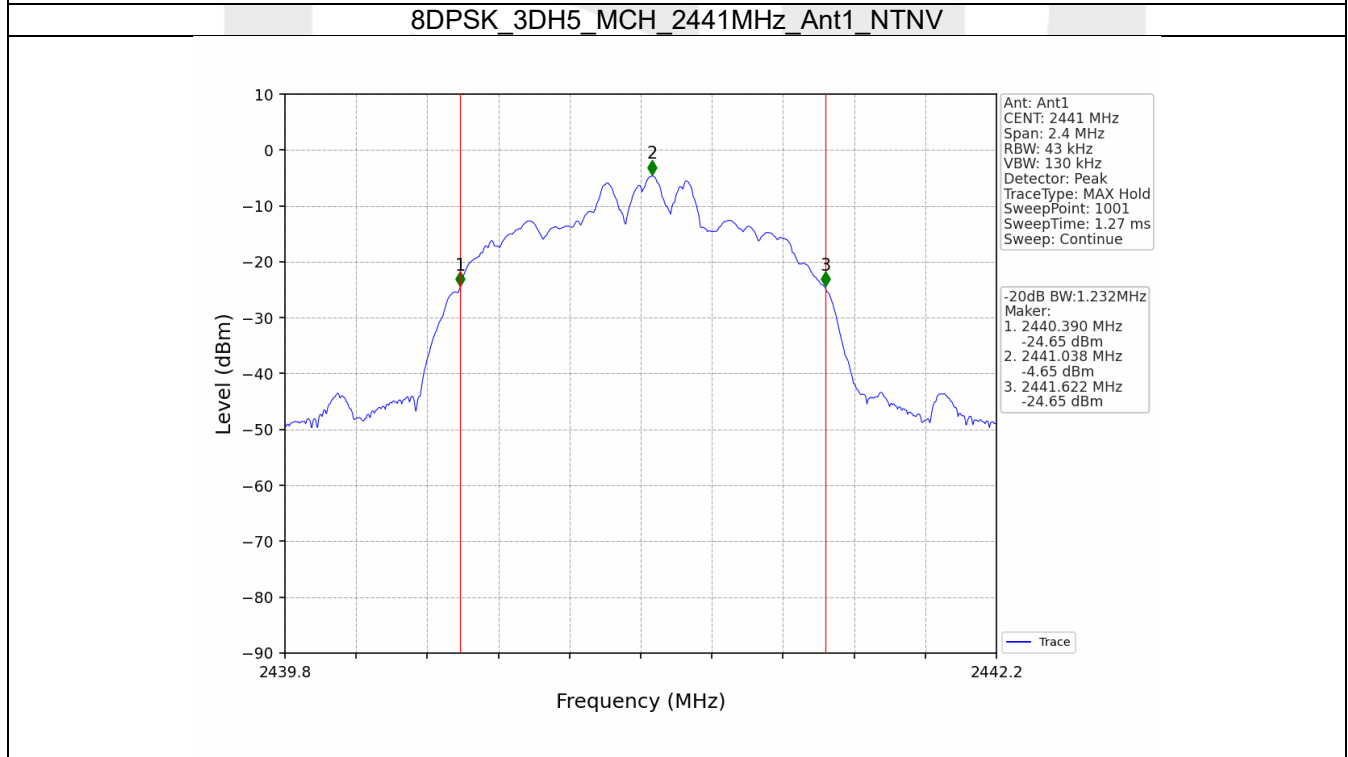
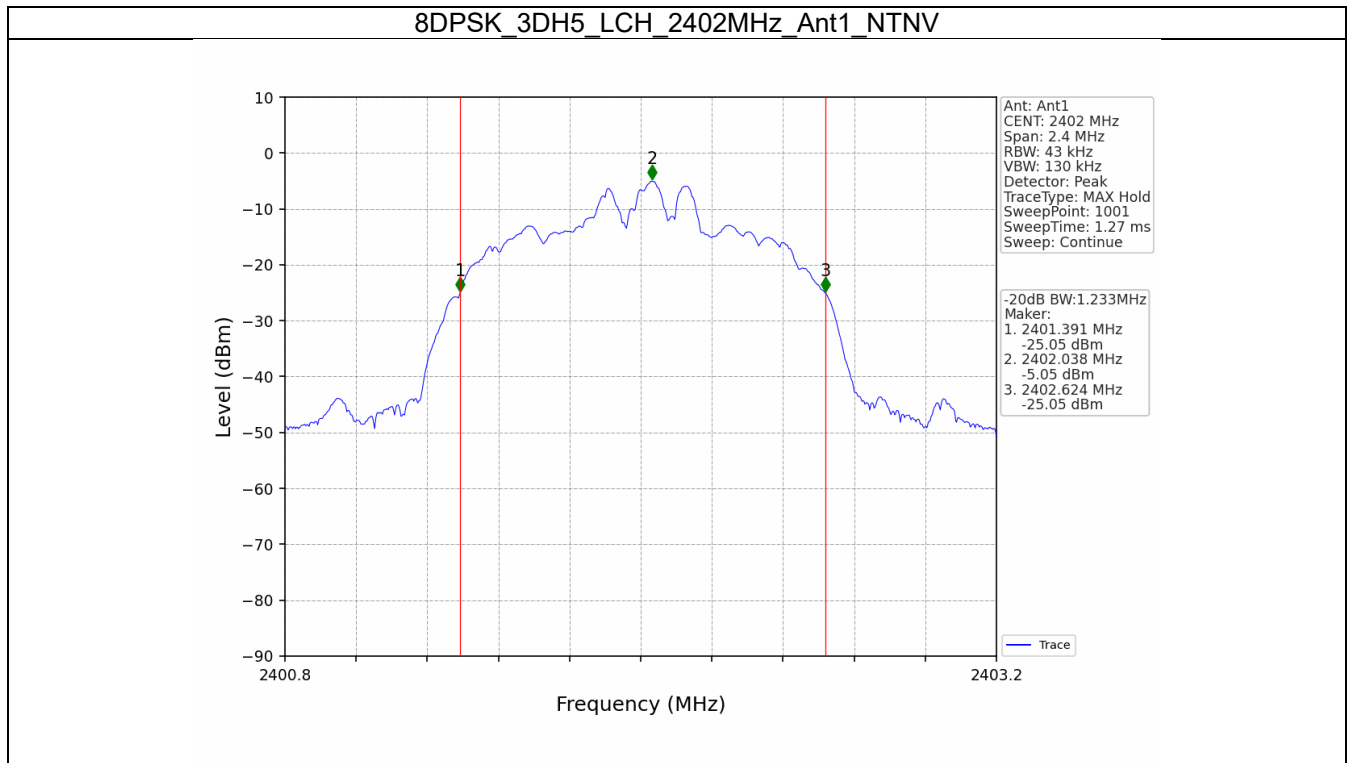
2.2.2 Test Graph

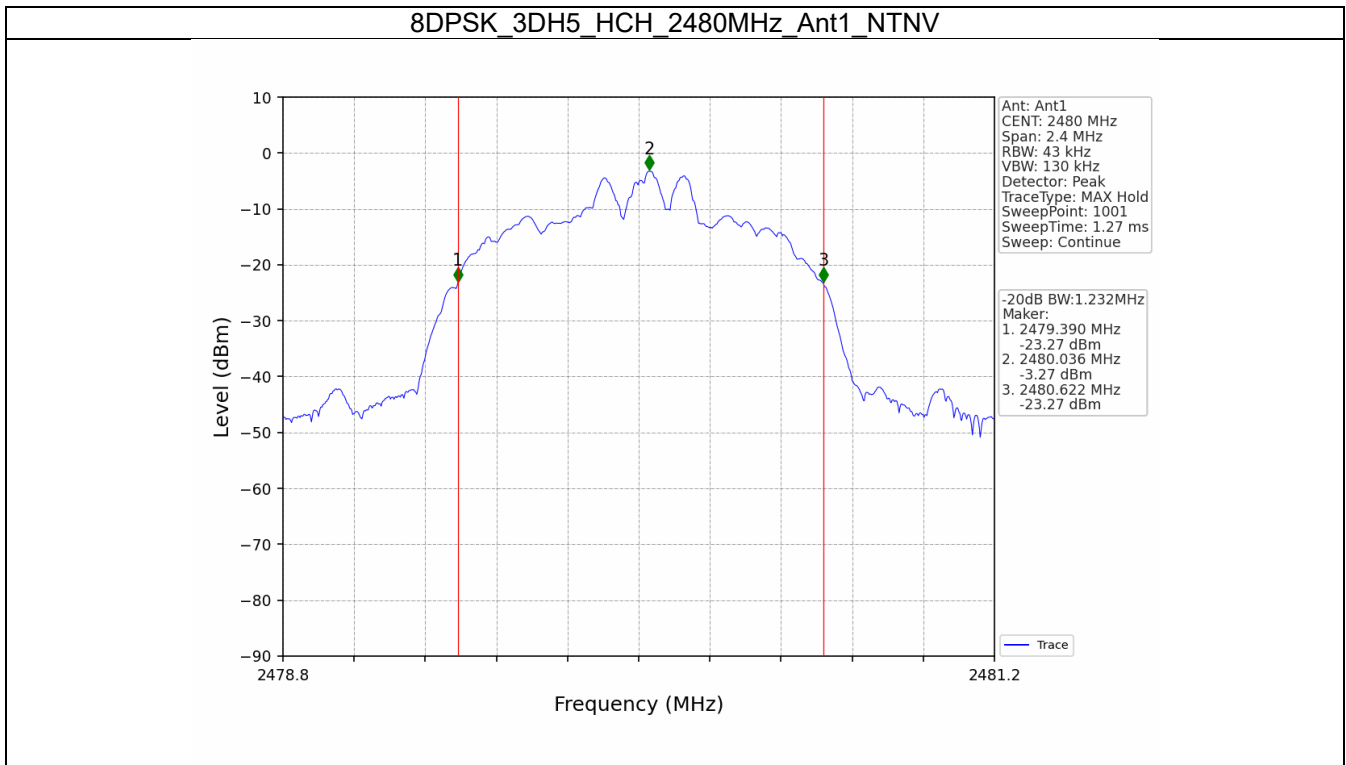












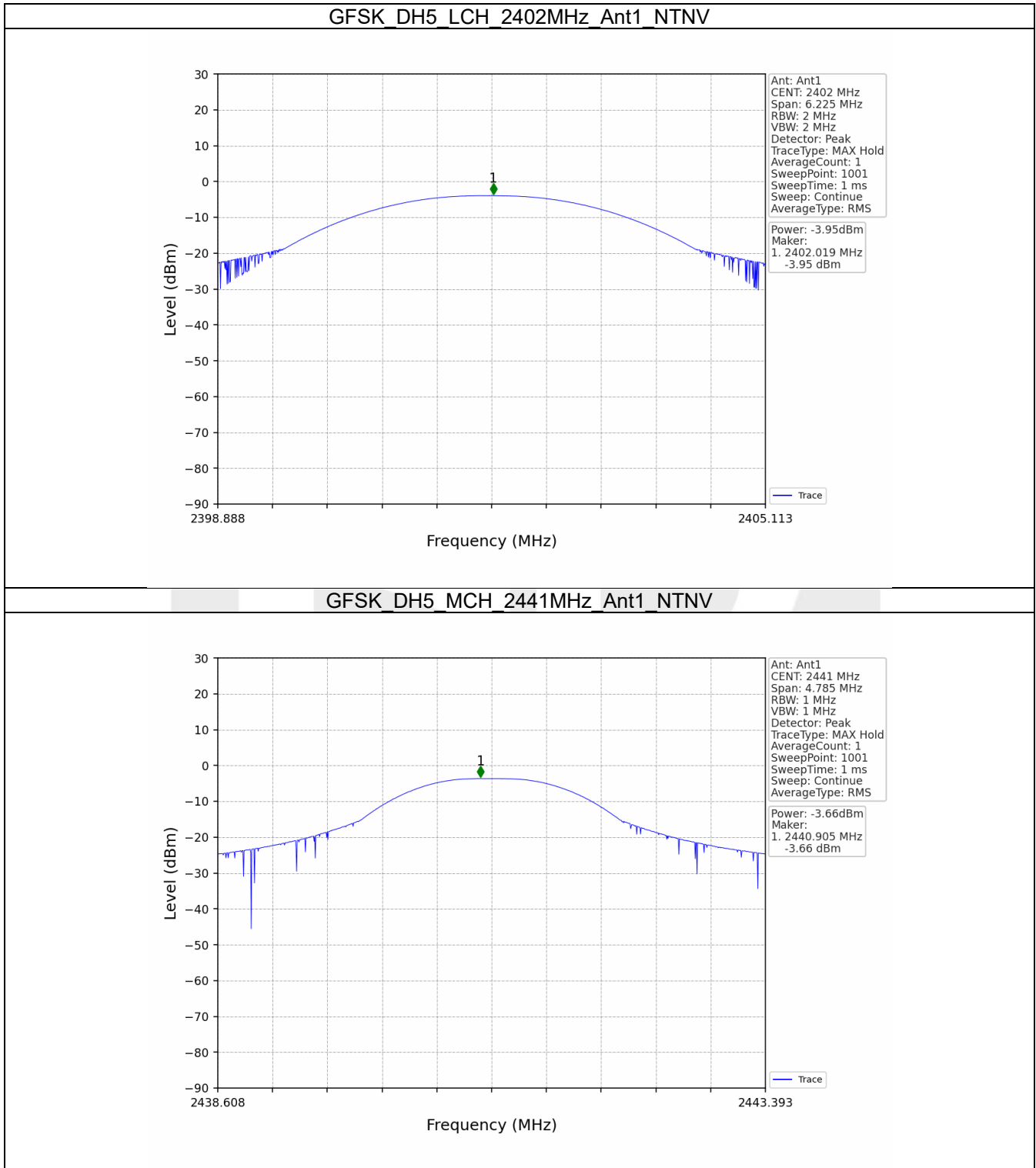
### 3. Maximum Conducted Output Power

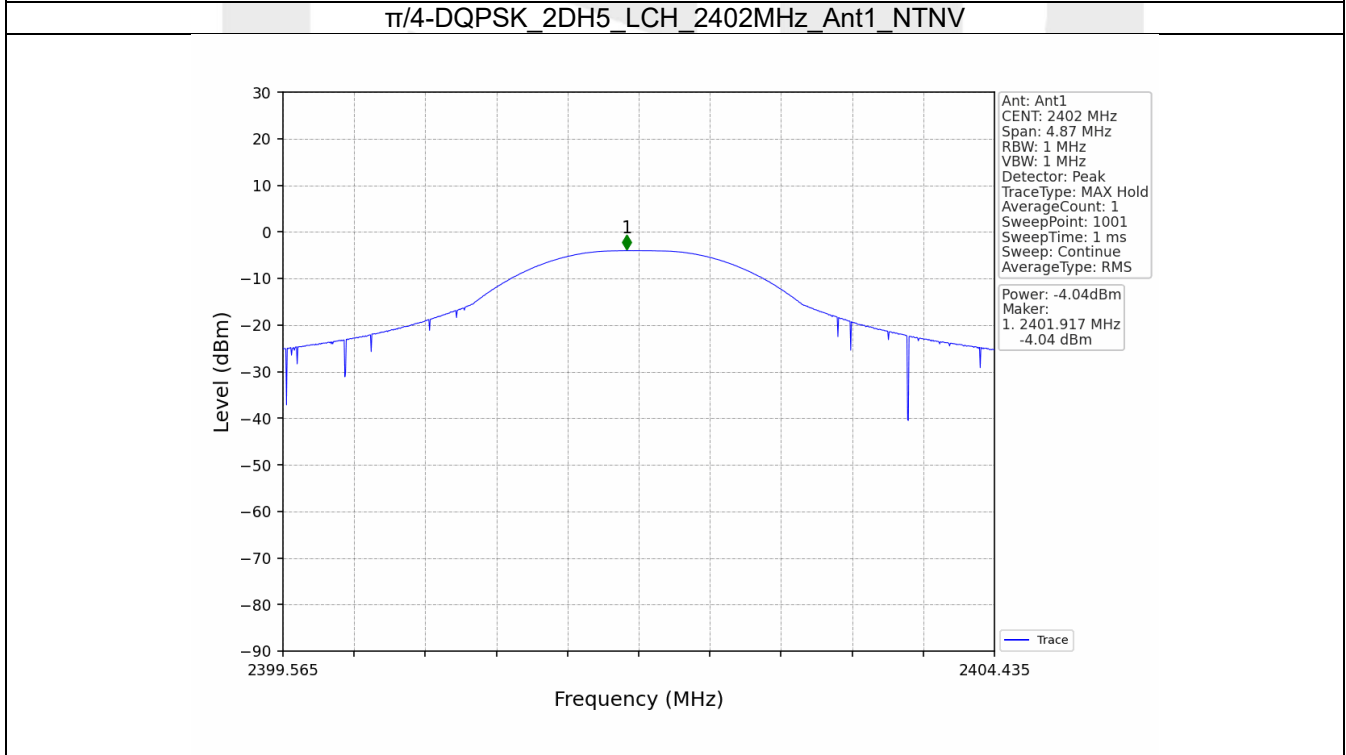
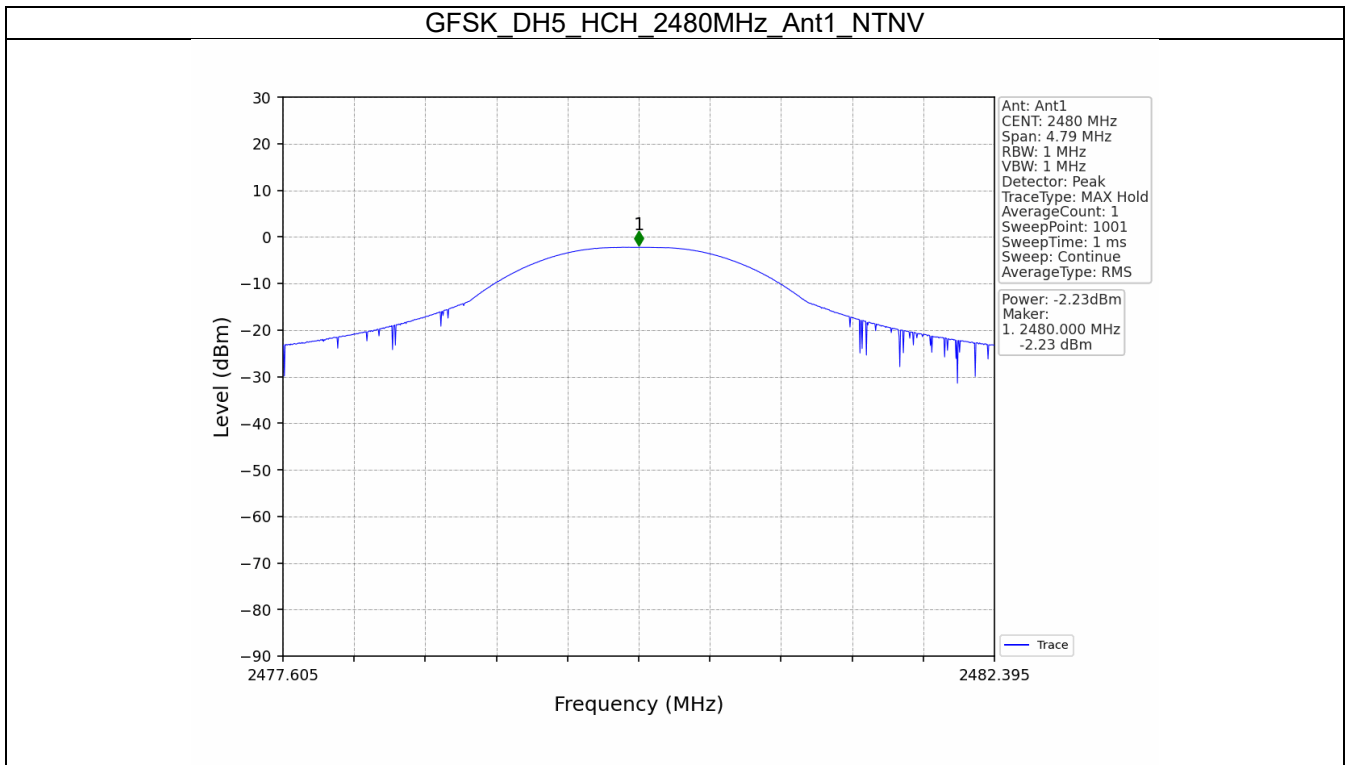
#### 3.1 Power

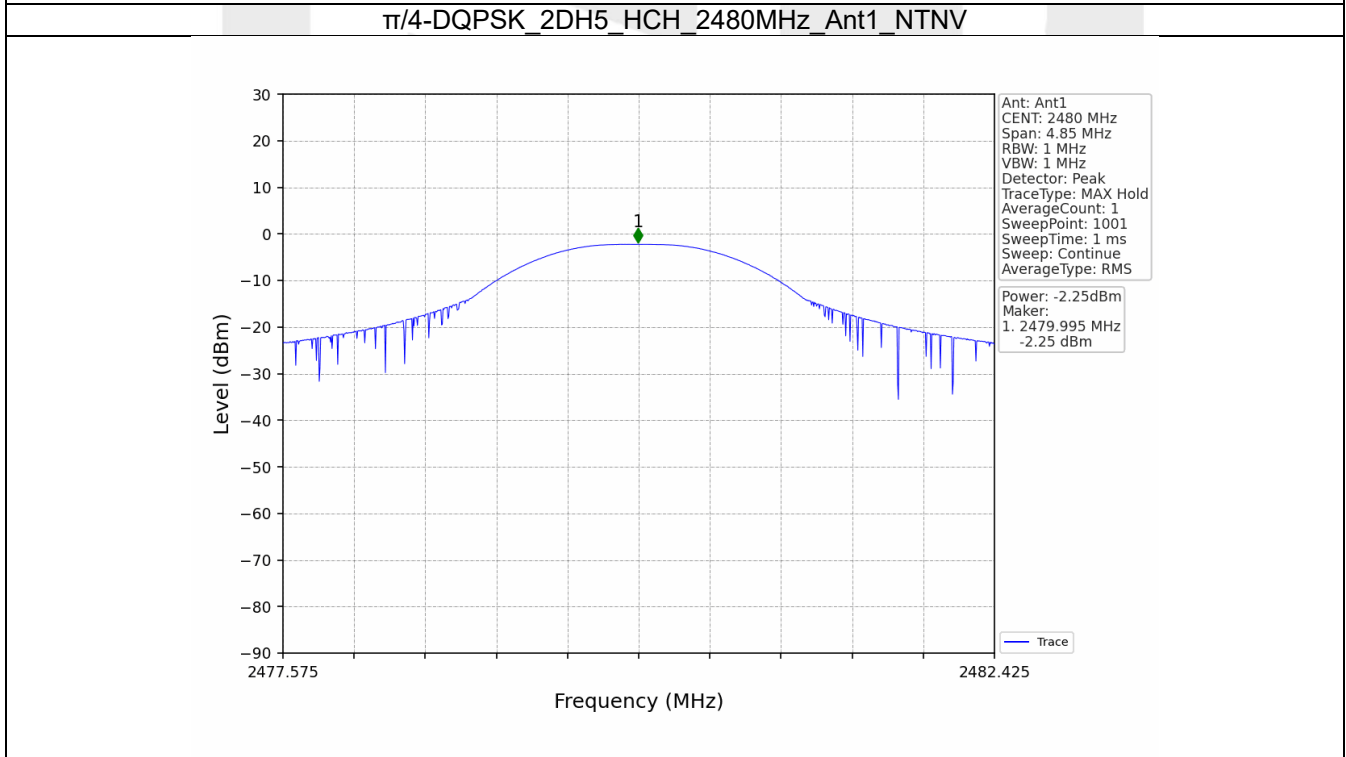
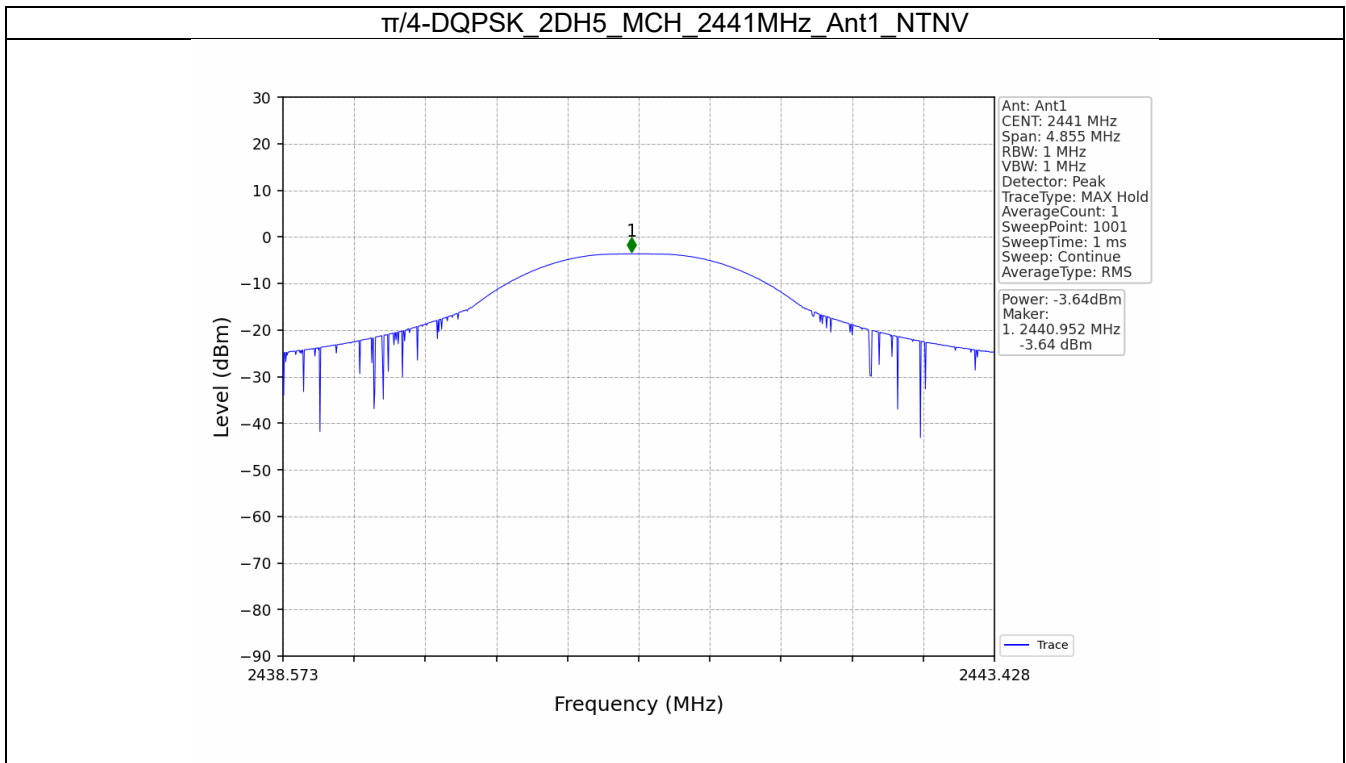
##### 3.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Packet Type	Maximum Peak Conducted Output Power (dBm)		Verdict
				ANT1	Limit	
GFSK	SISO	2402	DH5	-3.95	<=20.97	Pass
		2441	DH5	-3.66	<=20.97	Pass
		2480	DH5	-2.23	<=20.97	Pass
$\pi/4$ -DQPSK	SISO	2402	2DH5	-4.04	<=20.97	Pass
		2441	2DH5	-3.64	<=20.97	Pass
		2480	2DH5	-2.25	<=20.97	Pass
8DPSK	SISO	2402	3DH5	-3.90	<=20.97	Pass
		2441	3DH5	-3.53	<=20.97	Pass
		2480	3DH5	-2.12	<=20.97	Pass

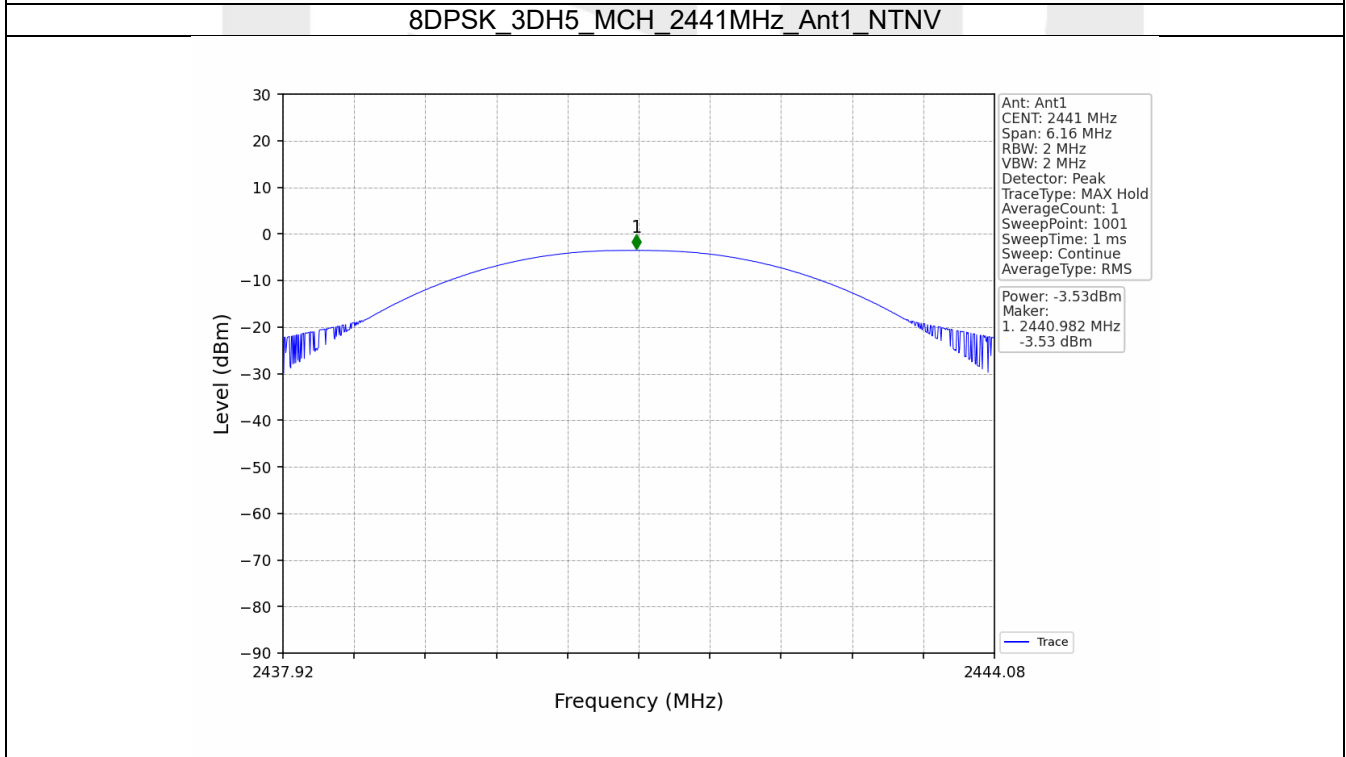
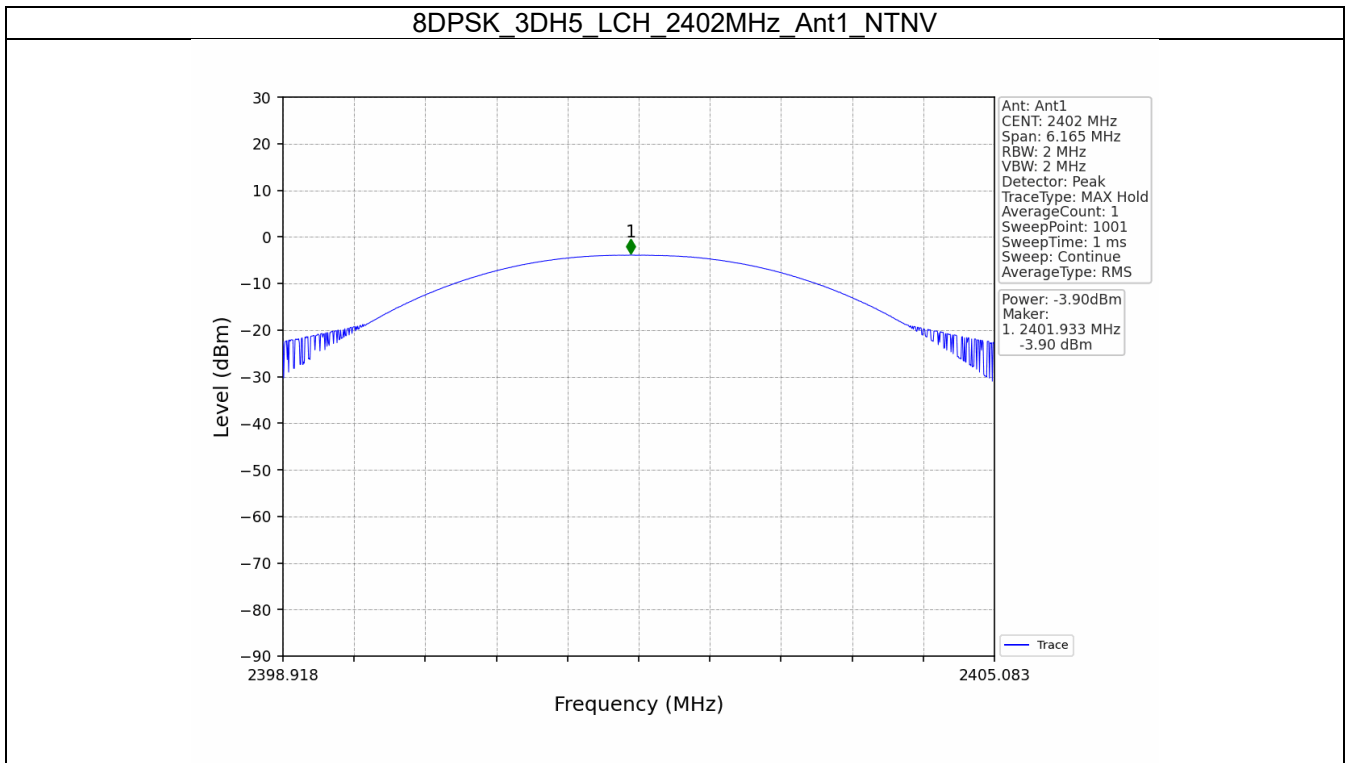
3.1.2 Test Graph

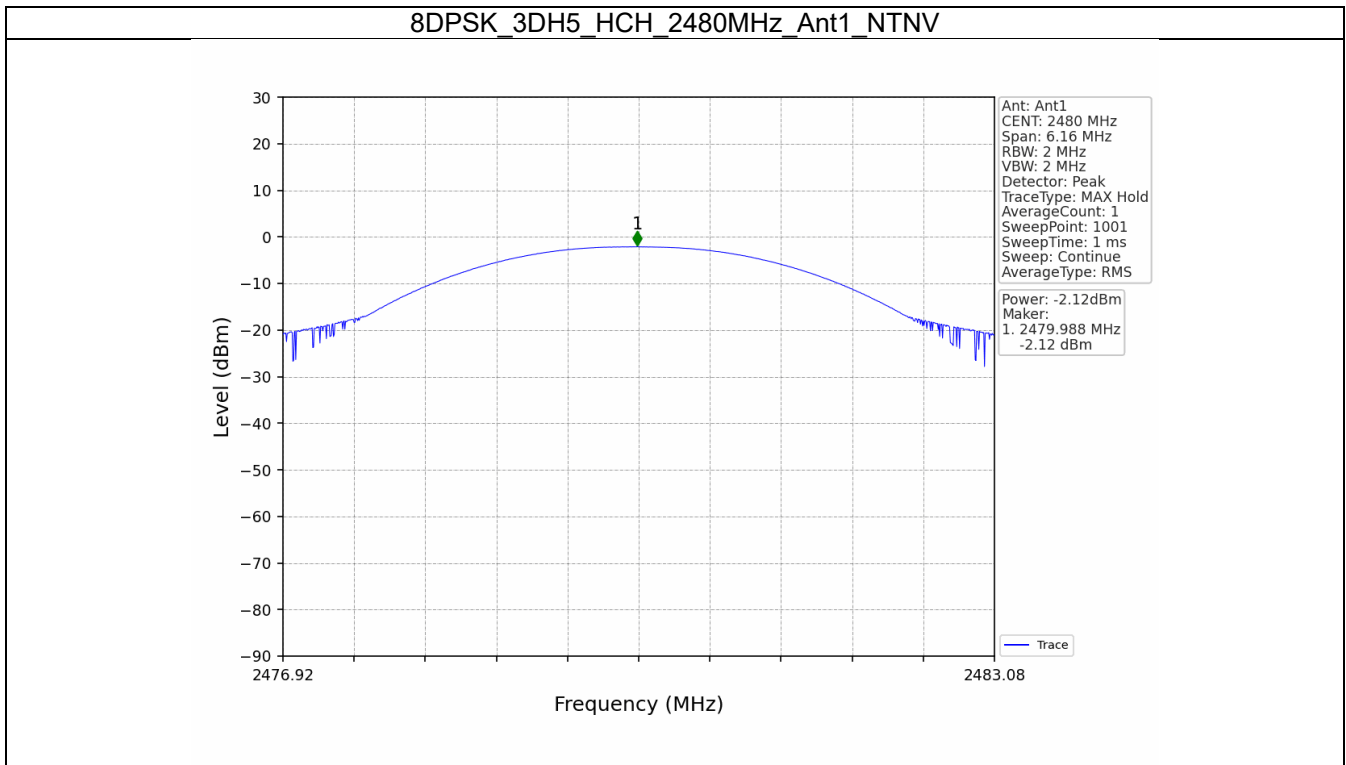












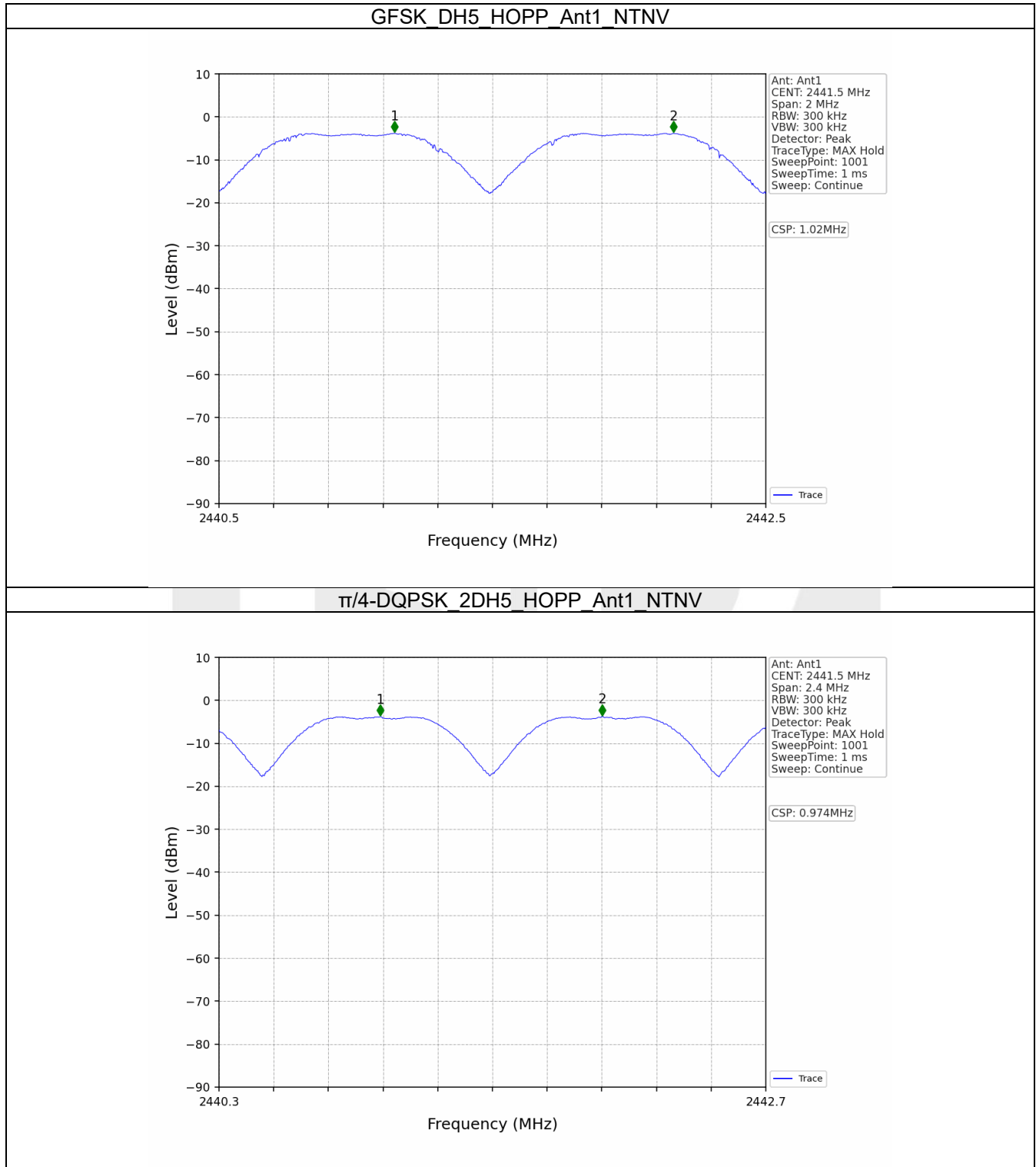
#### 4. Carrier Frequency Separation

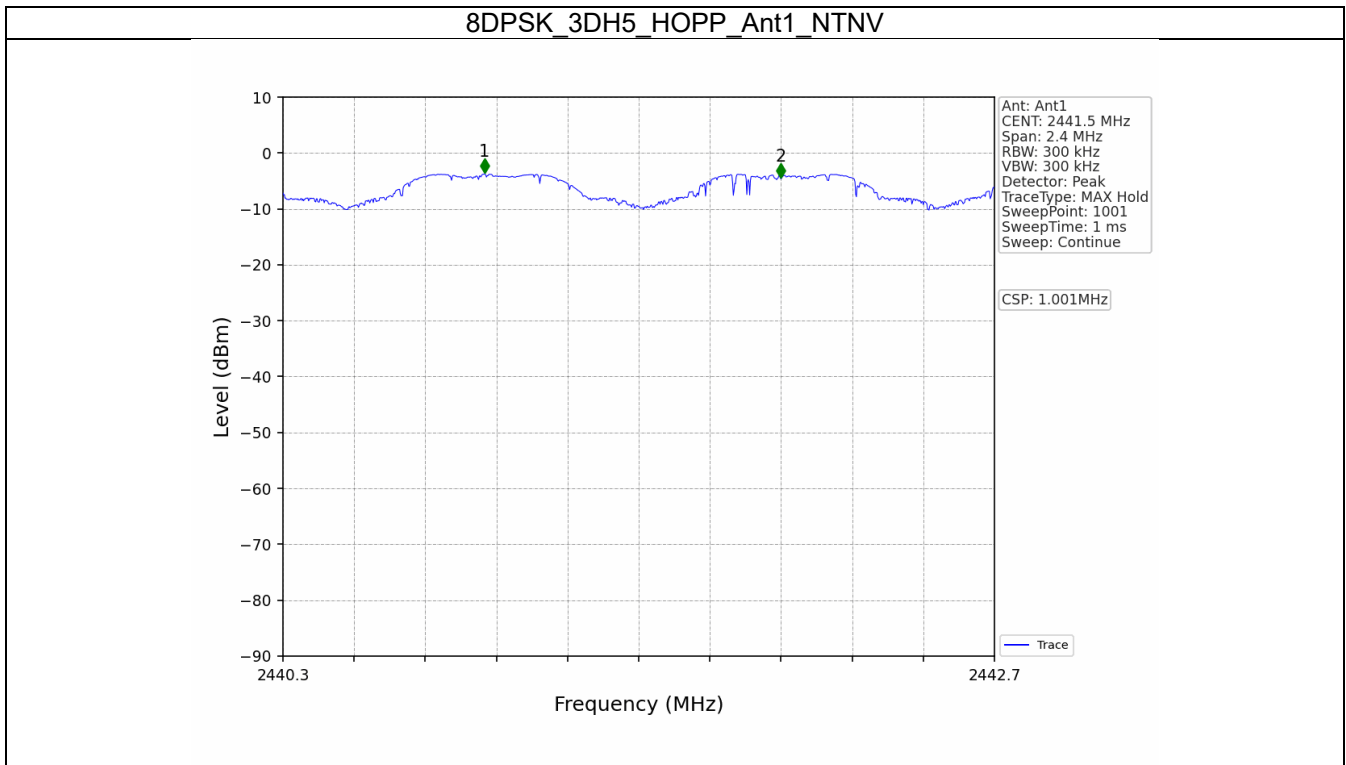
##### 4.1 Ant1

##### 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	1.020	1.245	$\geq 0.83$	Pass
$\pi/4$ -DQPSK	SISO	HOPP	2DH5	0.974	0.974	$\geq 0.974$	Pass
8DPSK	SISO	HOPP	3DH5	1.001	1.233	$\geq 0.822$	Pass

4.1.2 Test Graph





## 5. Number of Hopping Frequencies

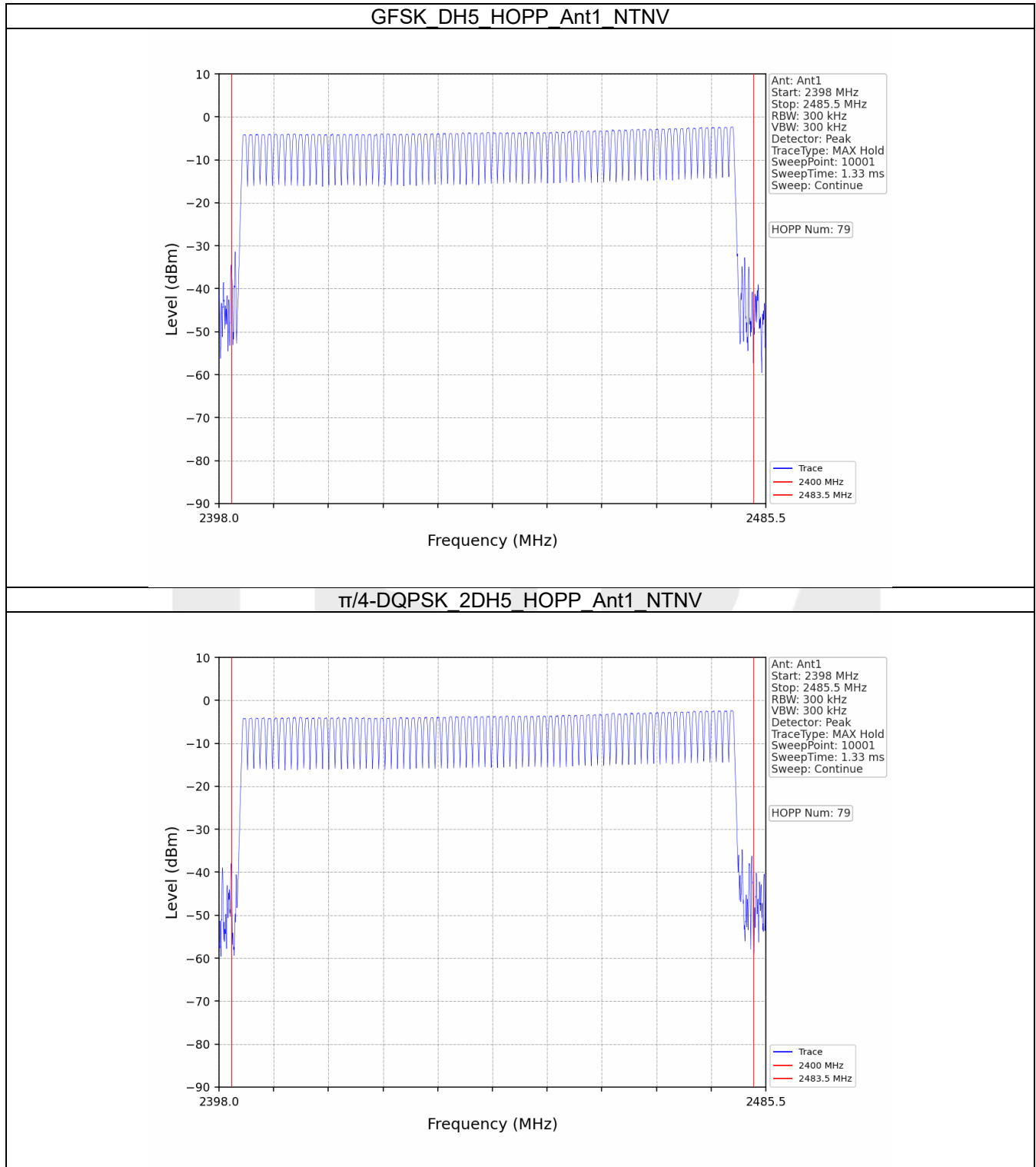
### 5.1 HoppNum

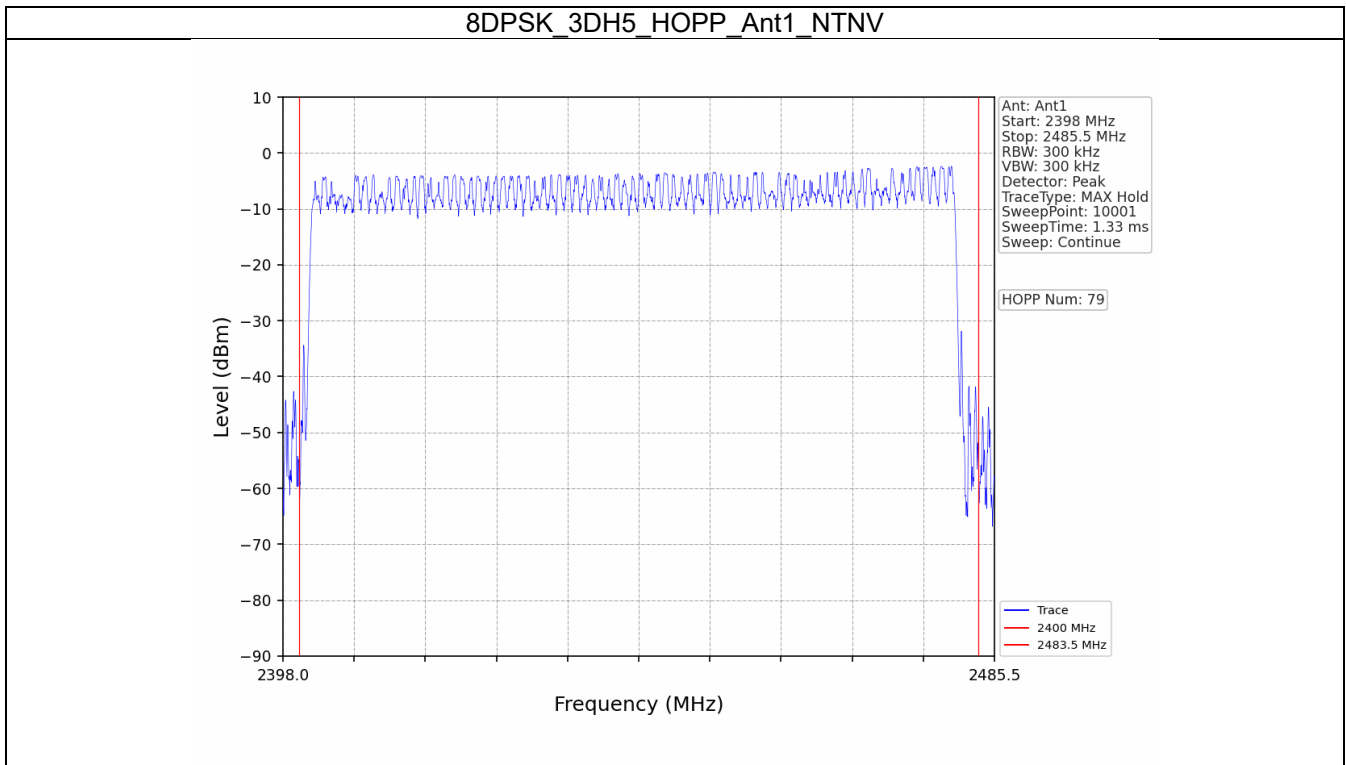
#### 5.1.1 Test Result

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







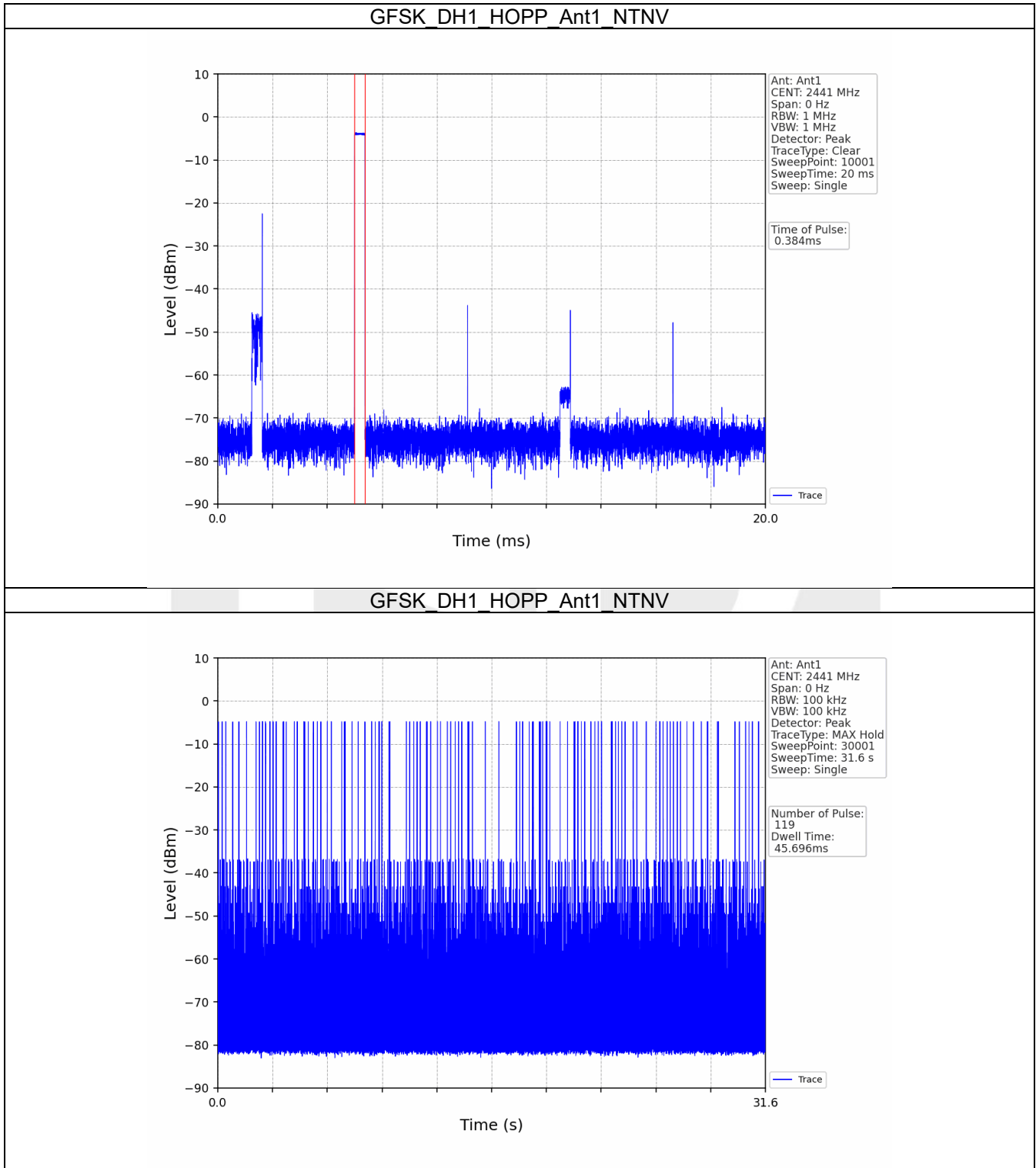
## 6. Time of Occupancy (Dwell Time)

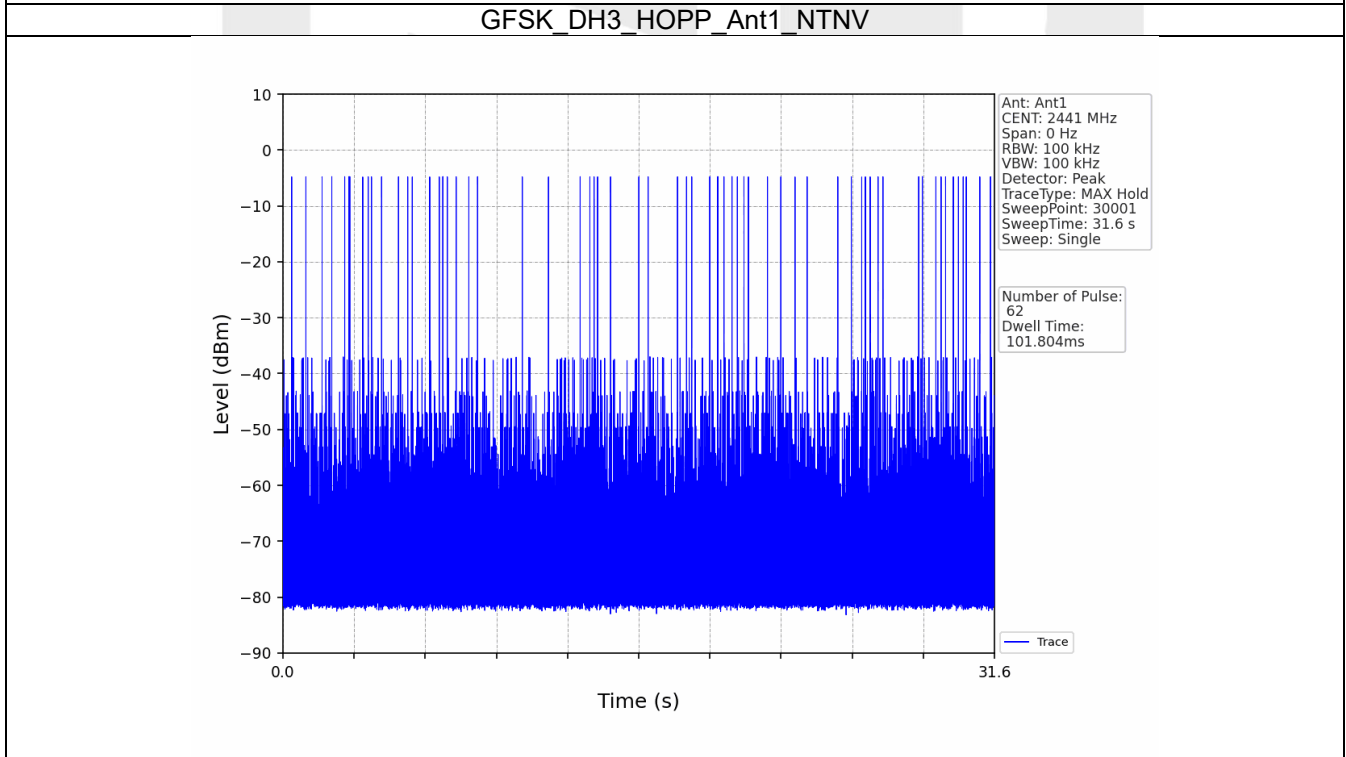
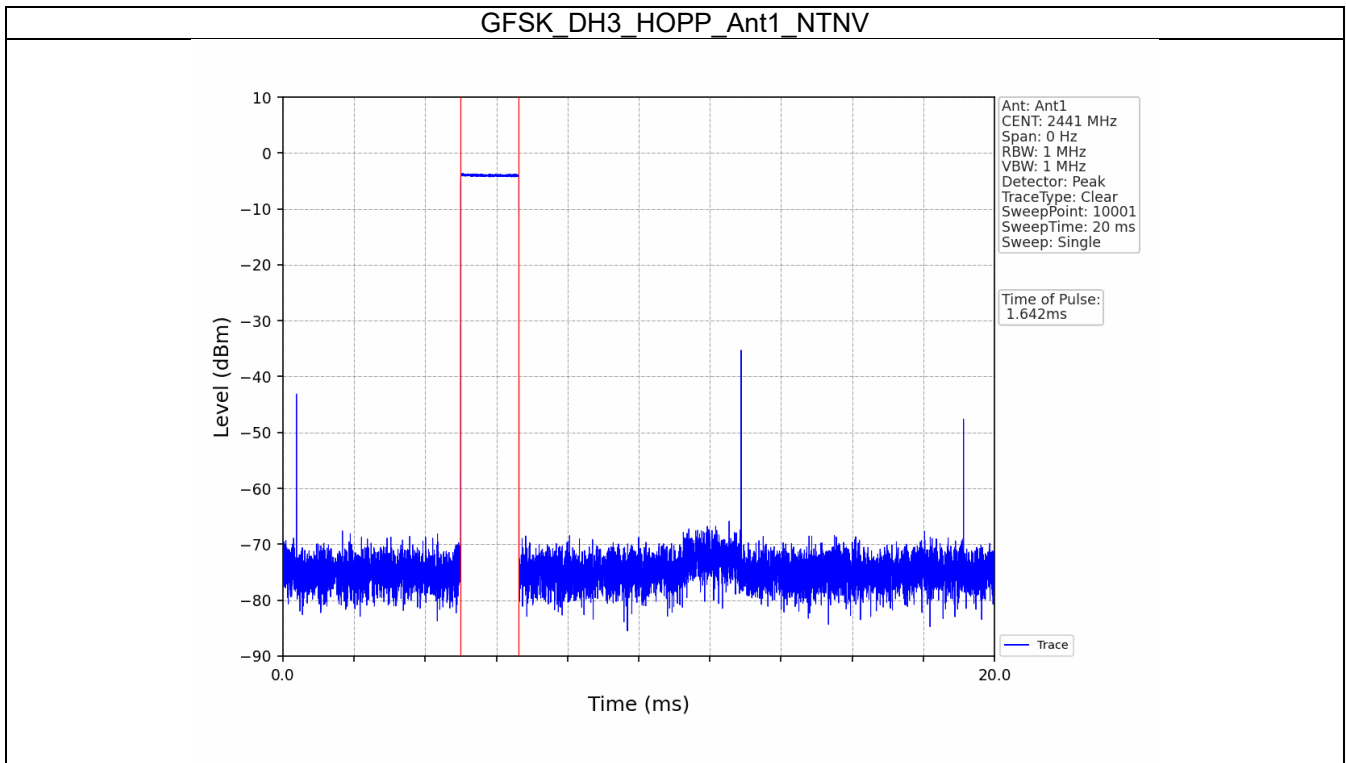
### 6.1 Ant1

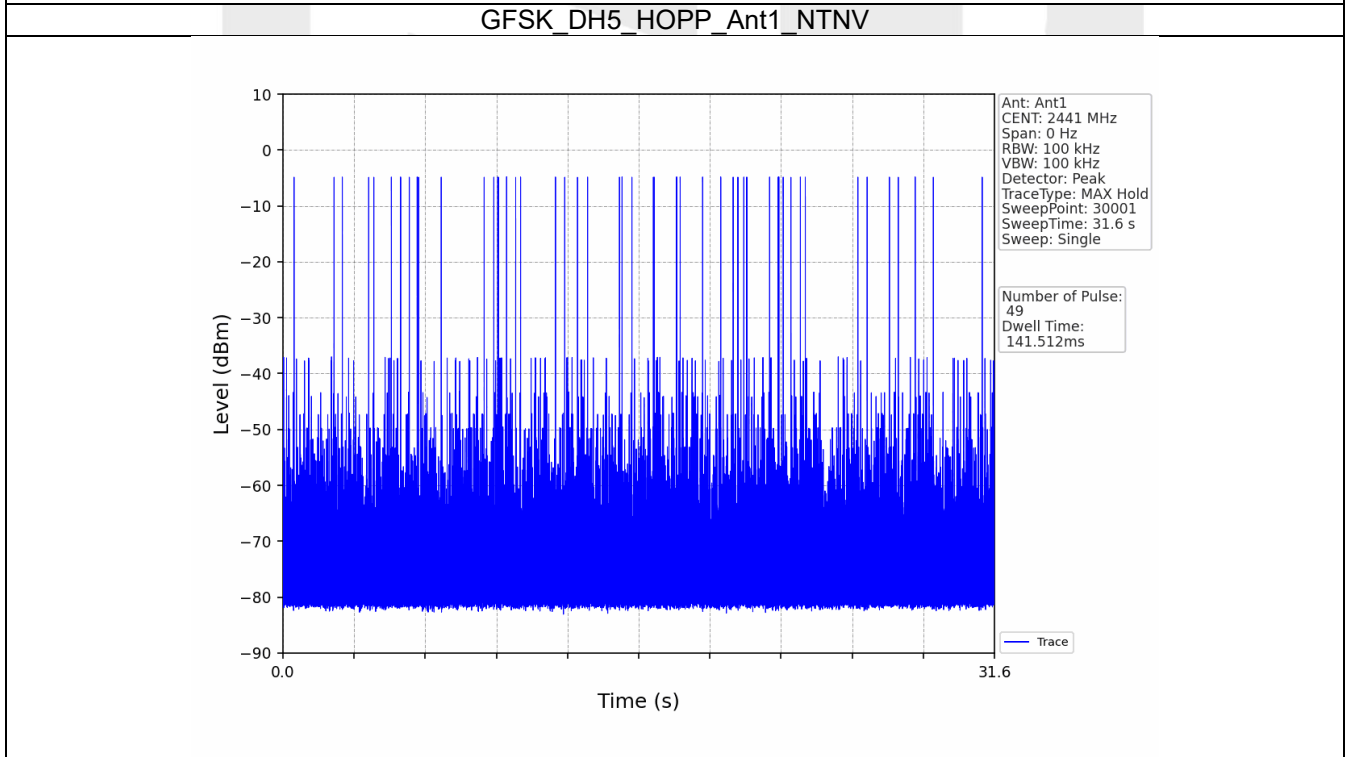
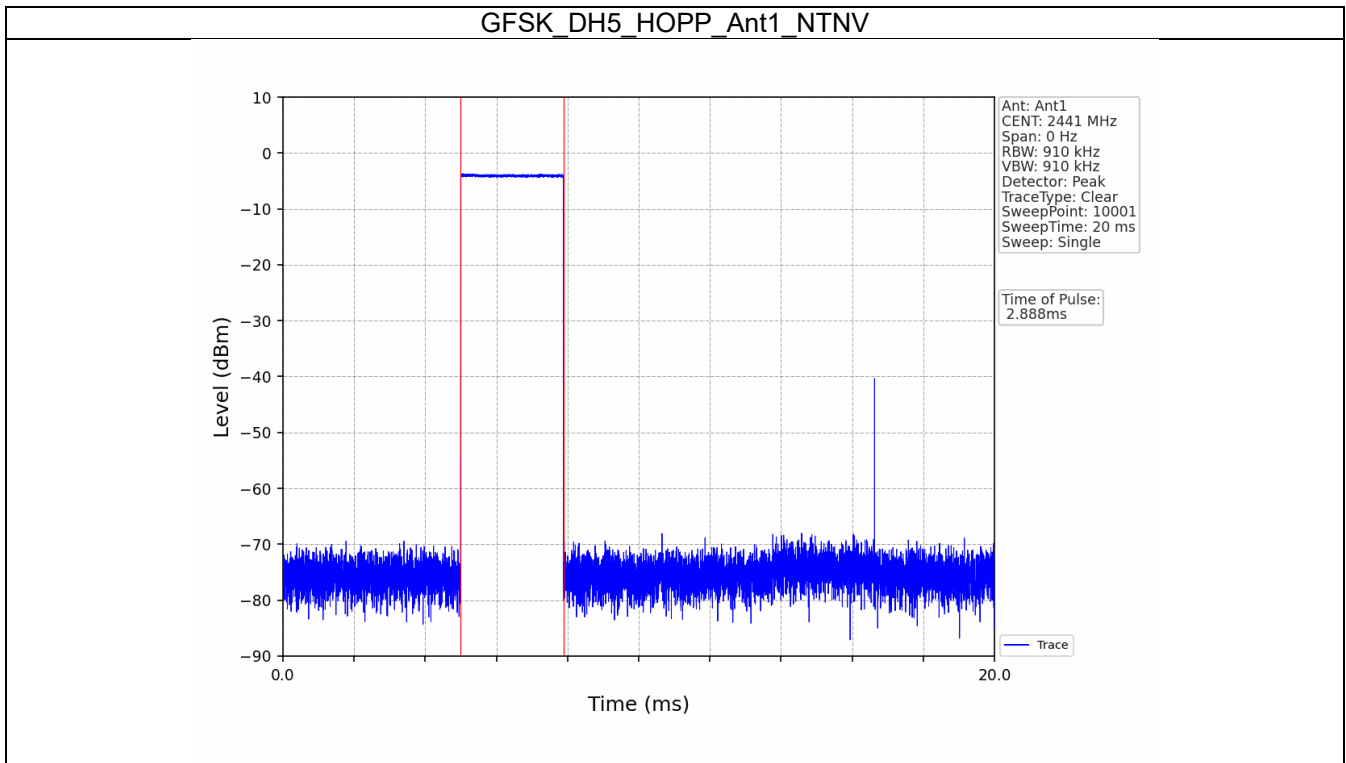
#### 6.1.1 Test Result

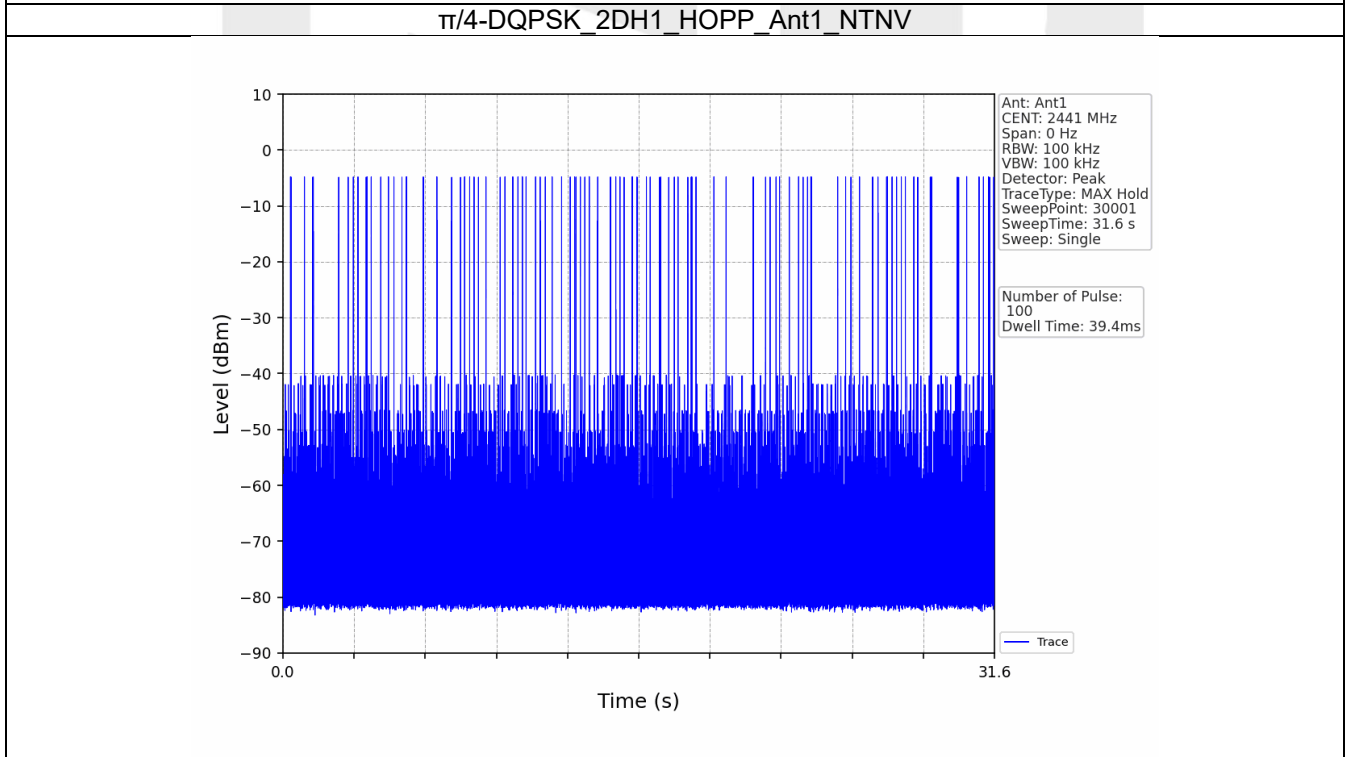
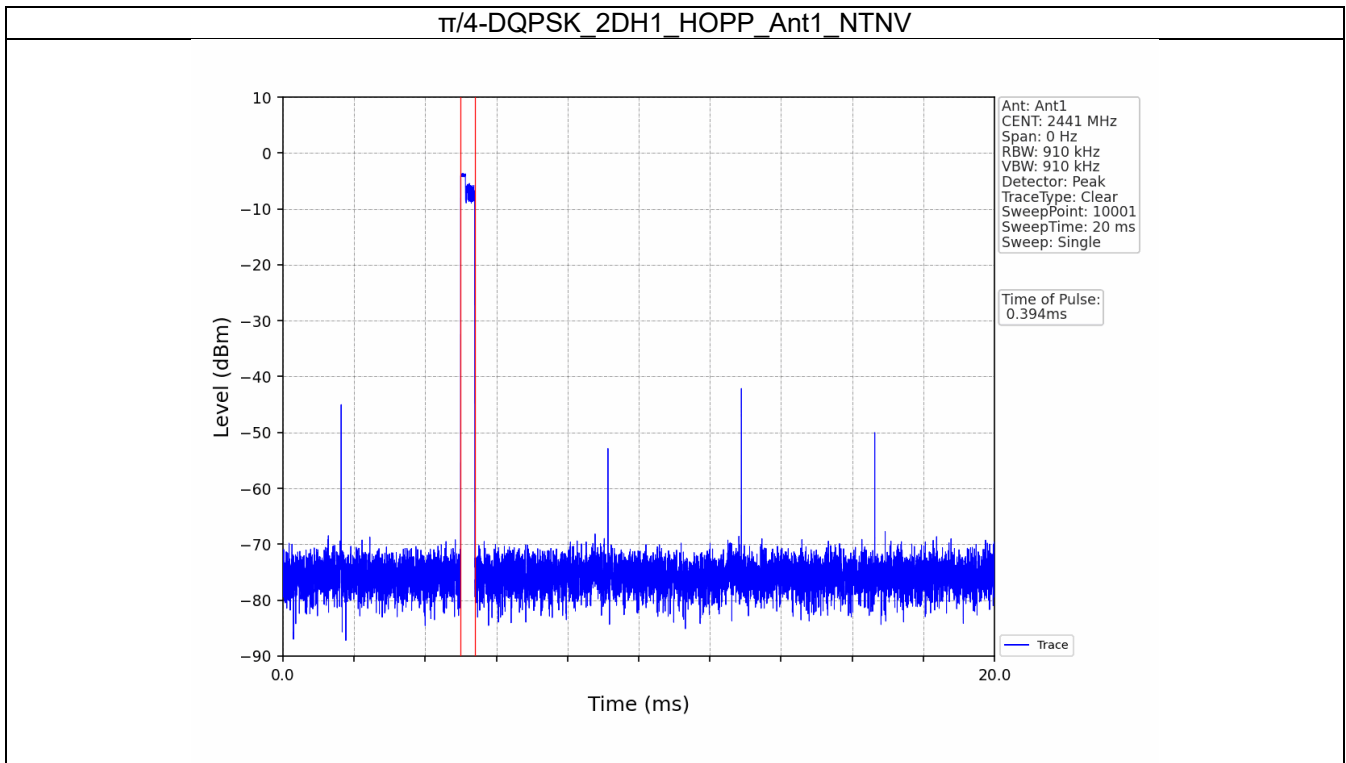
Ant1									
Mode	TX Type	Frequency (MHz)	Packet Type	Duration of Single Pulse (ms)	Observation Period (s)	Num of Pulse in Observation Period	Dwell Time (ms)	Limit (ms)	Verdict
GFSK	SISO	HOPP	DH1	0.384	31.600	119	45.696	<=400	Pass
			DH3	1.642	31.600	62	101.804	<=400	Pass
			DH5	2.888	31.600	49	141.512	<=400	Pass
$\pi/4$ -DQPSK	SISO	HOPP	2DH1	0.394	31.600	100	39.400	<=400	Pass
			2DH3	1.648	31.600	52	85.696	<=400	Pass
			2DH5	2.890	31.600	44	127.160	<=400	Pass
8DPSK	SISO	HOPP	3DH1	0.394	31.600	101	39.794	<=400	Pass
			3DH3	1.644	31.600	63	103.572	<=400	Pass
			3DH5	2.896	31.600	49	141.904	<=400	Pass

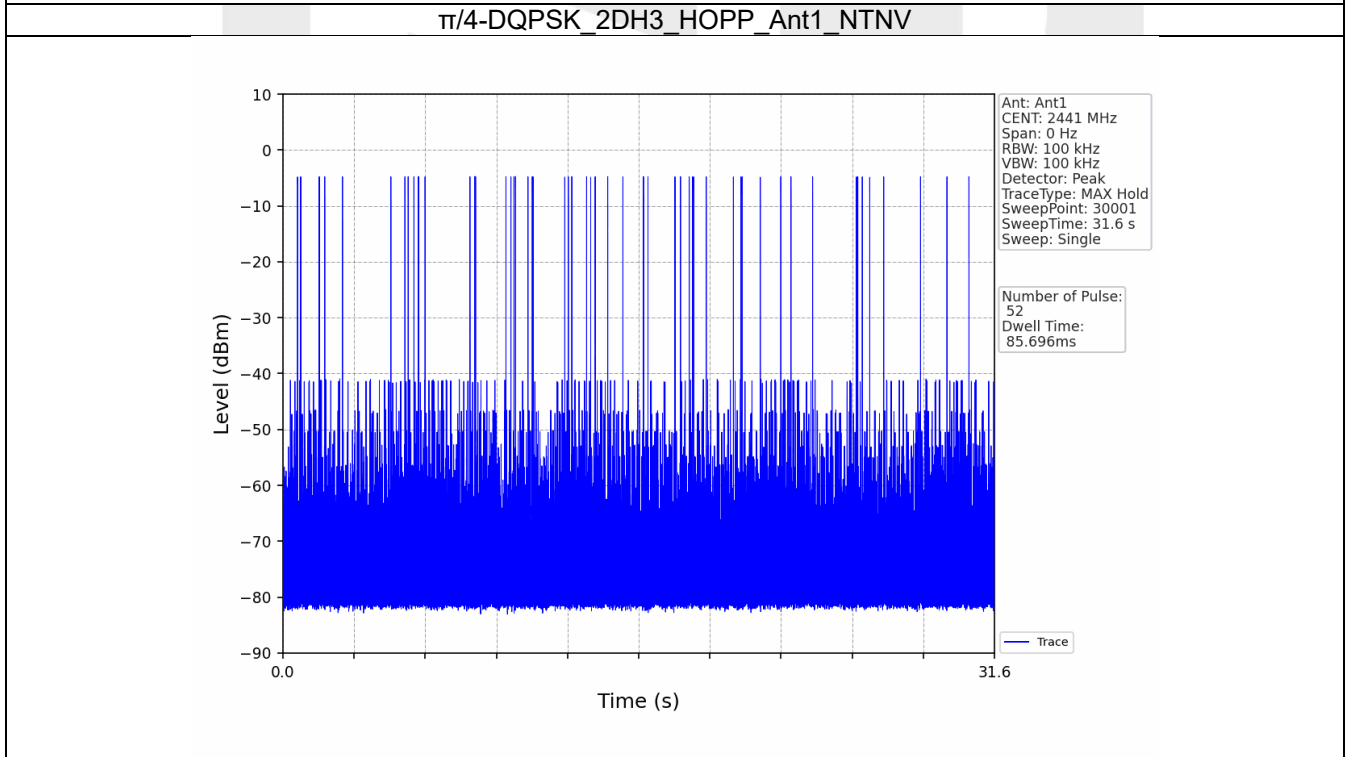
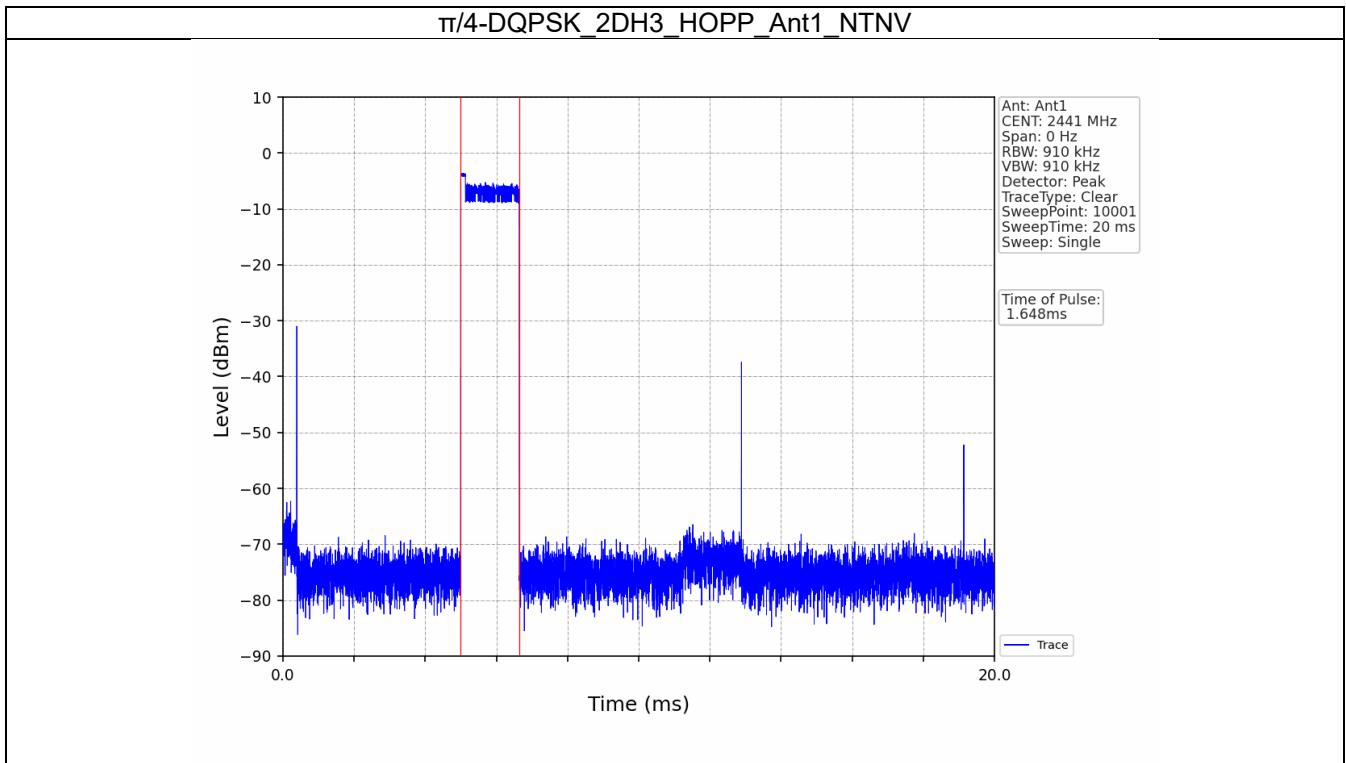
6.1.2 Test Graph

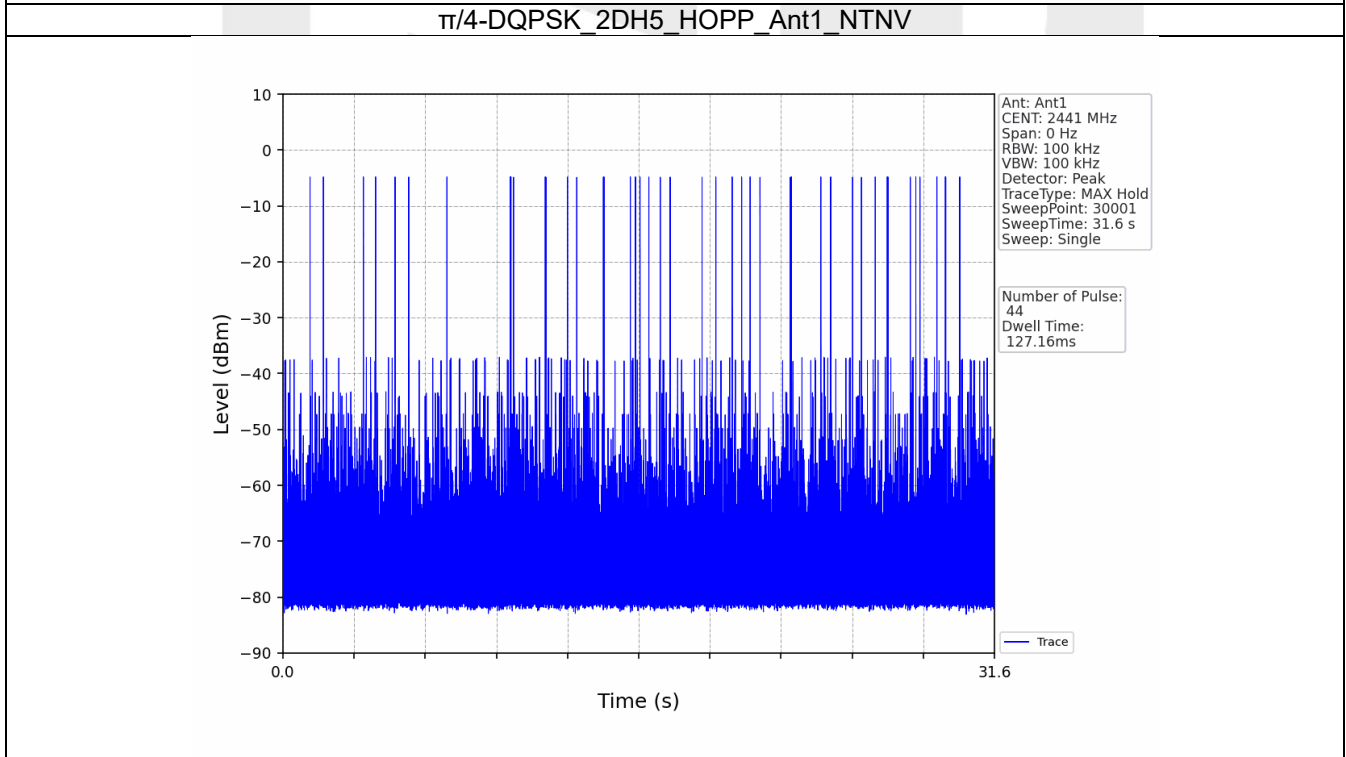
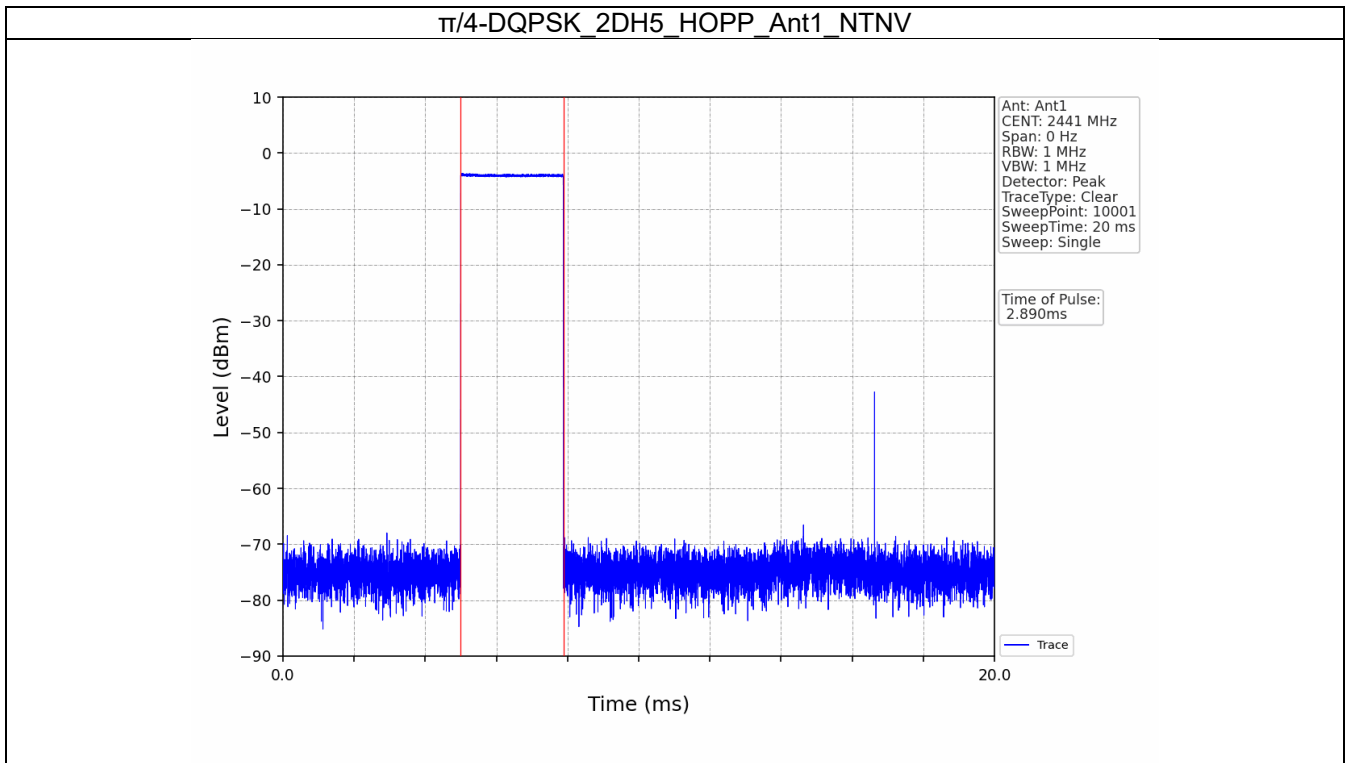


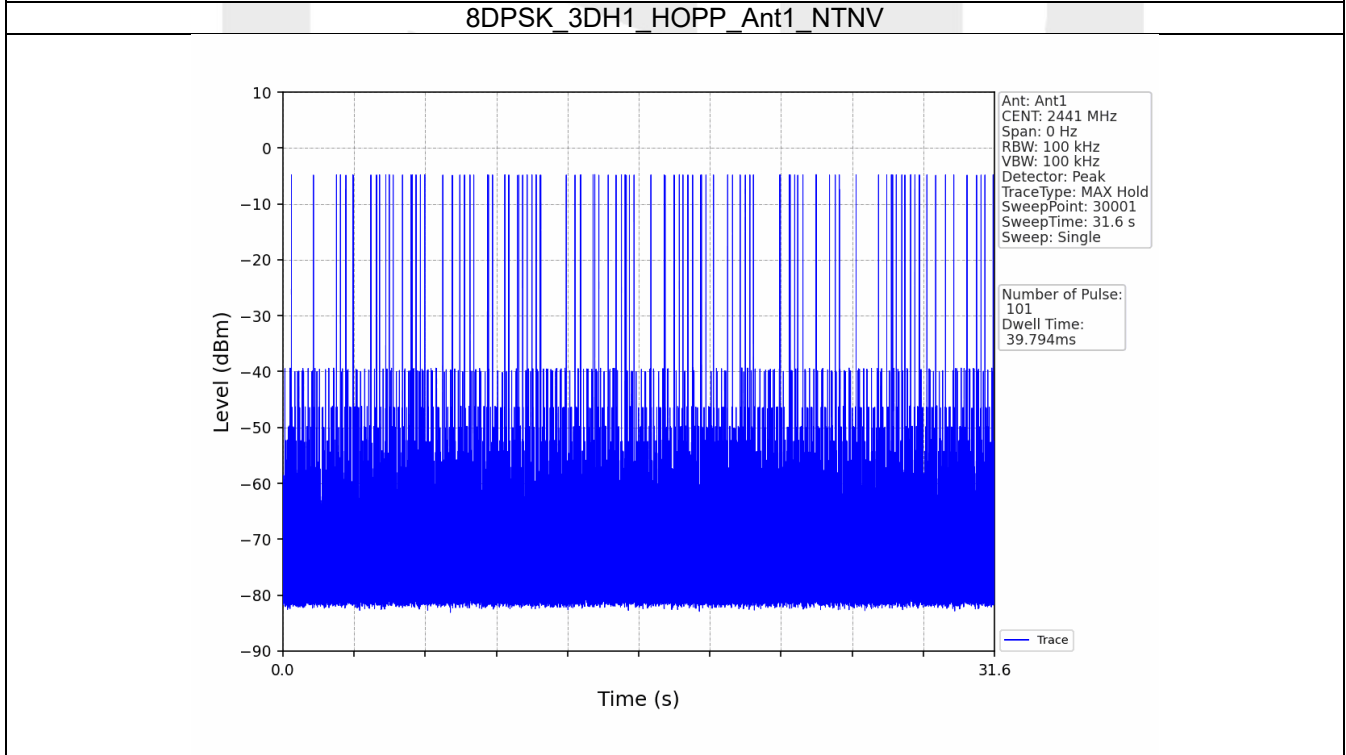
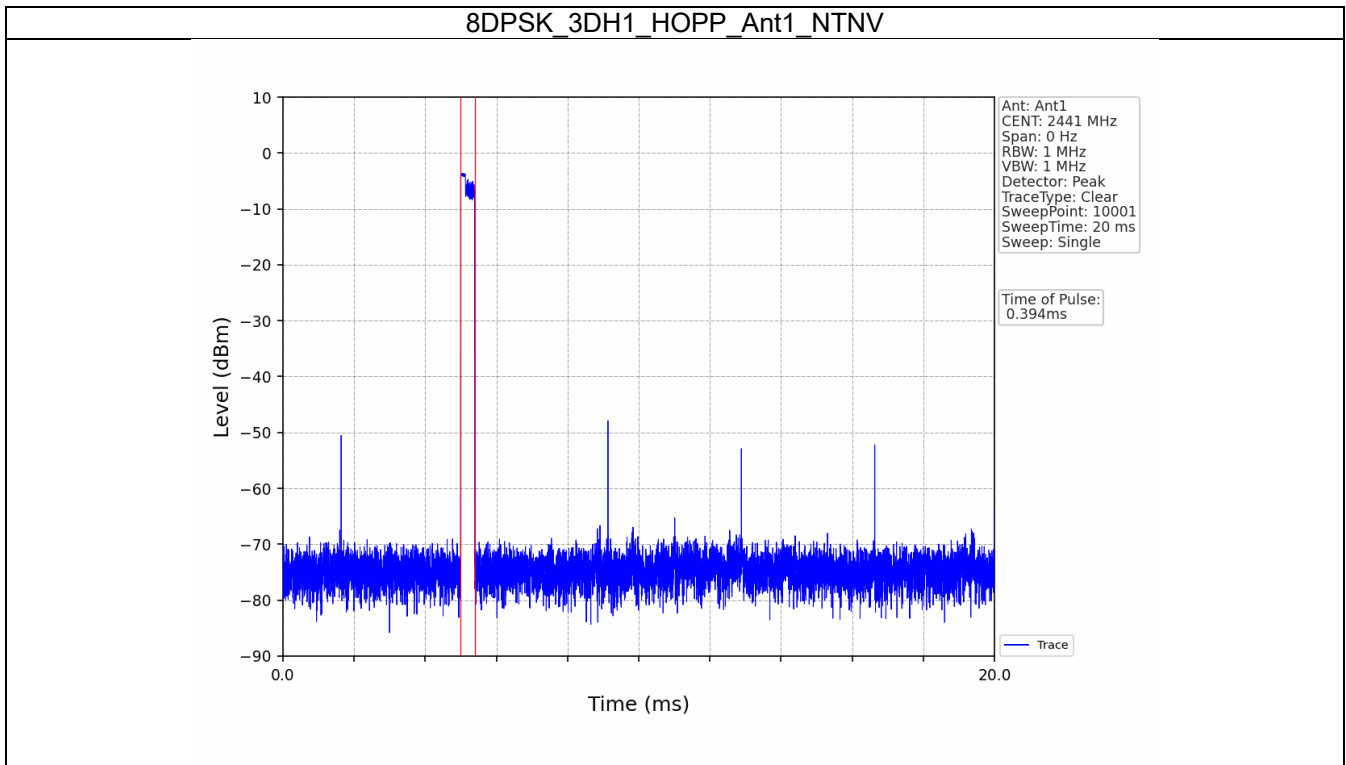




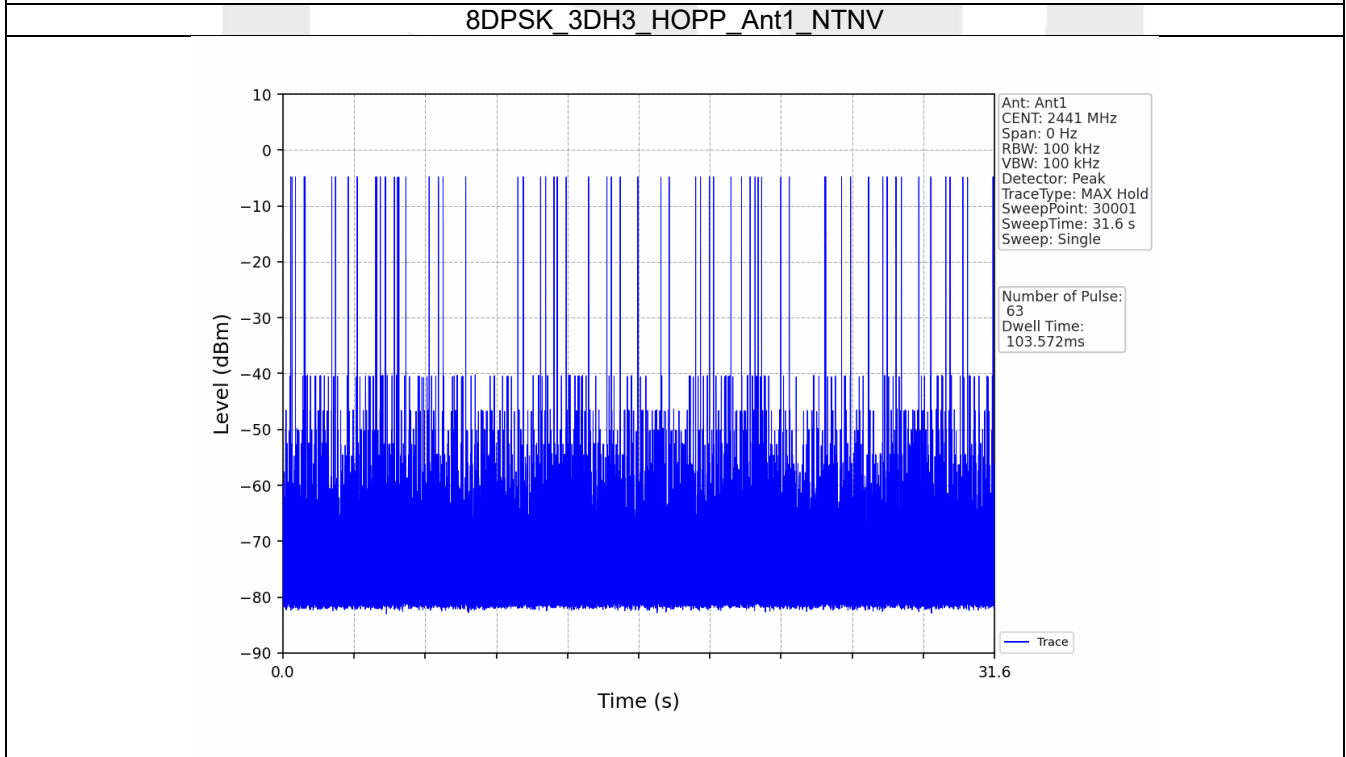
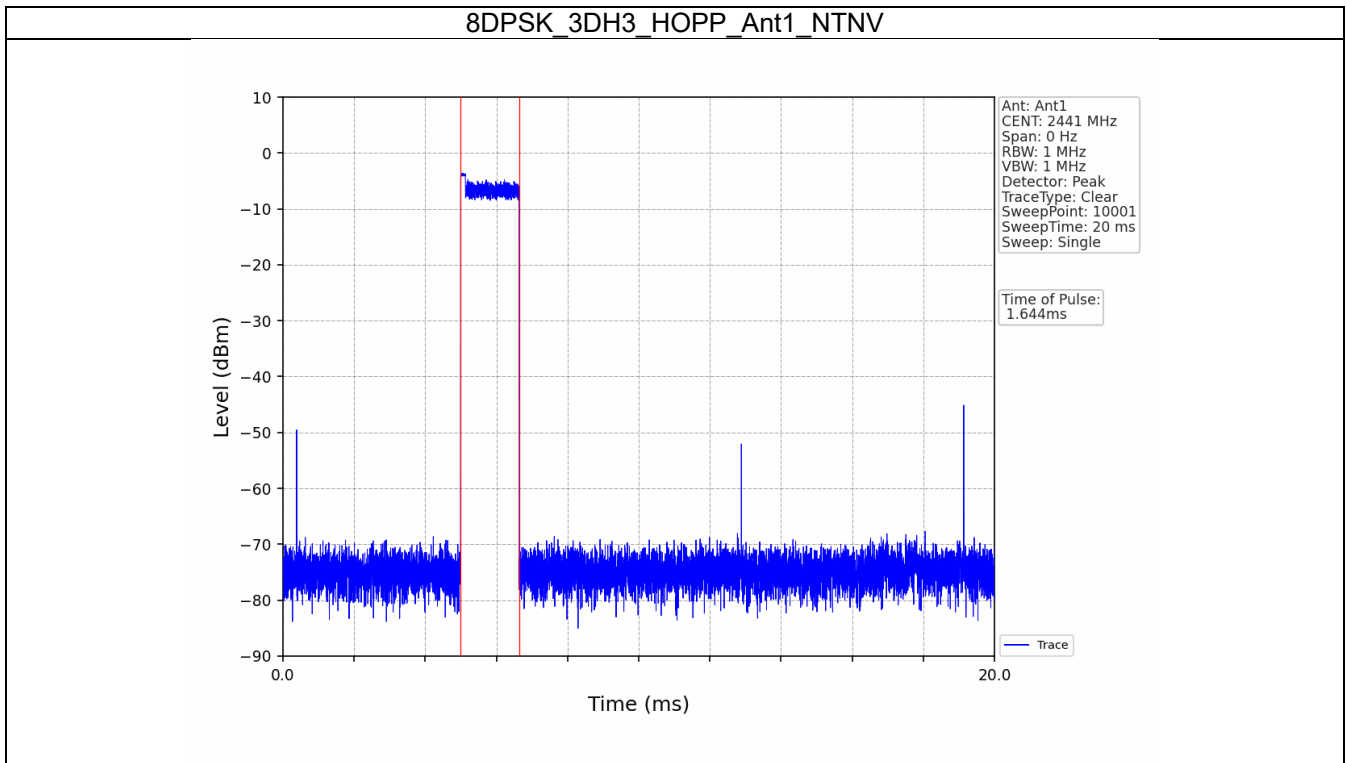


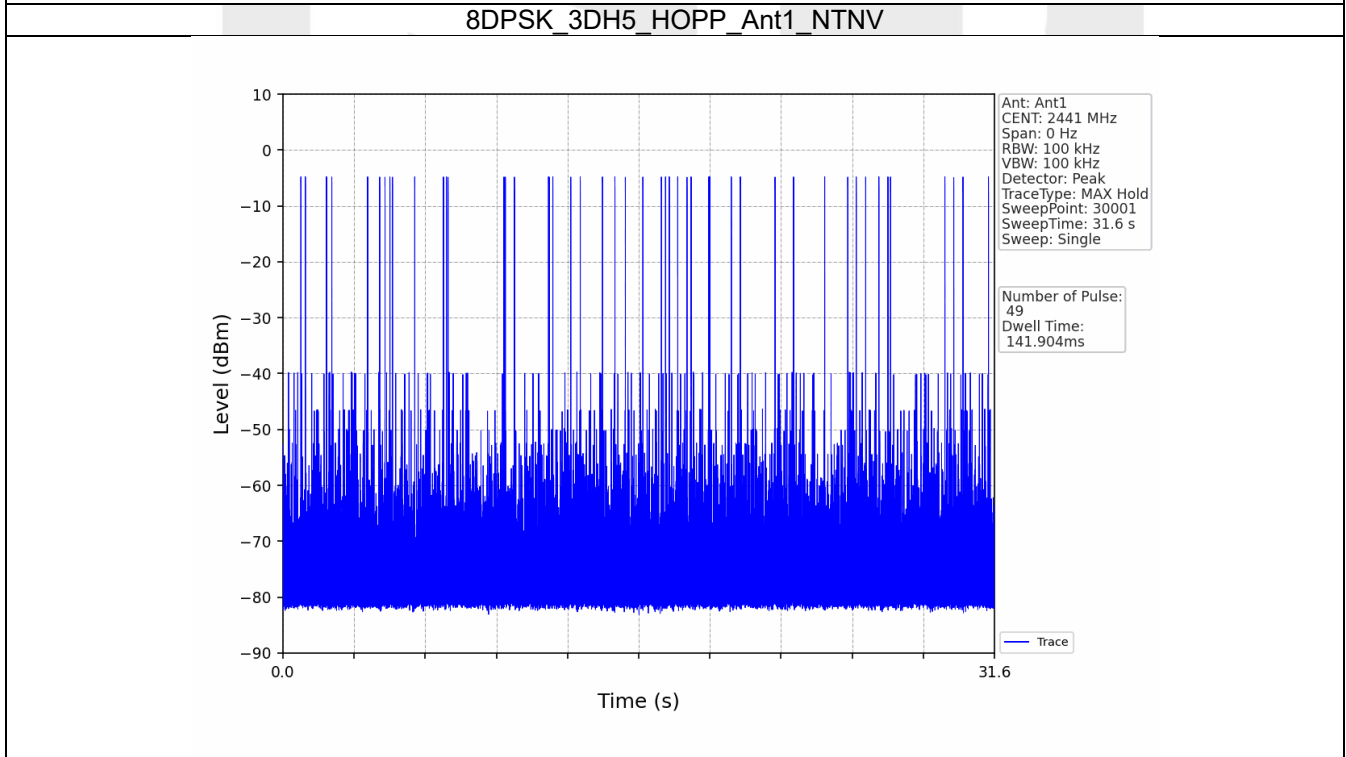
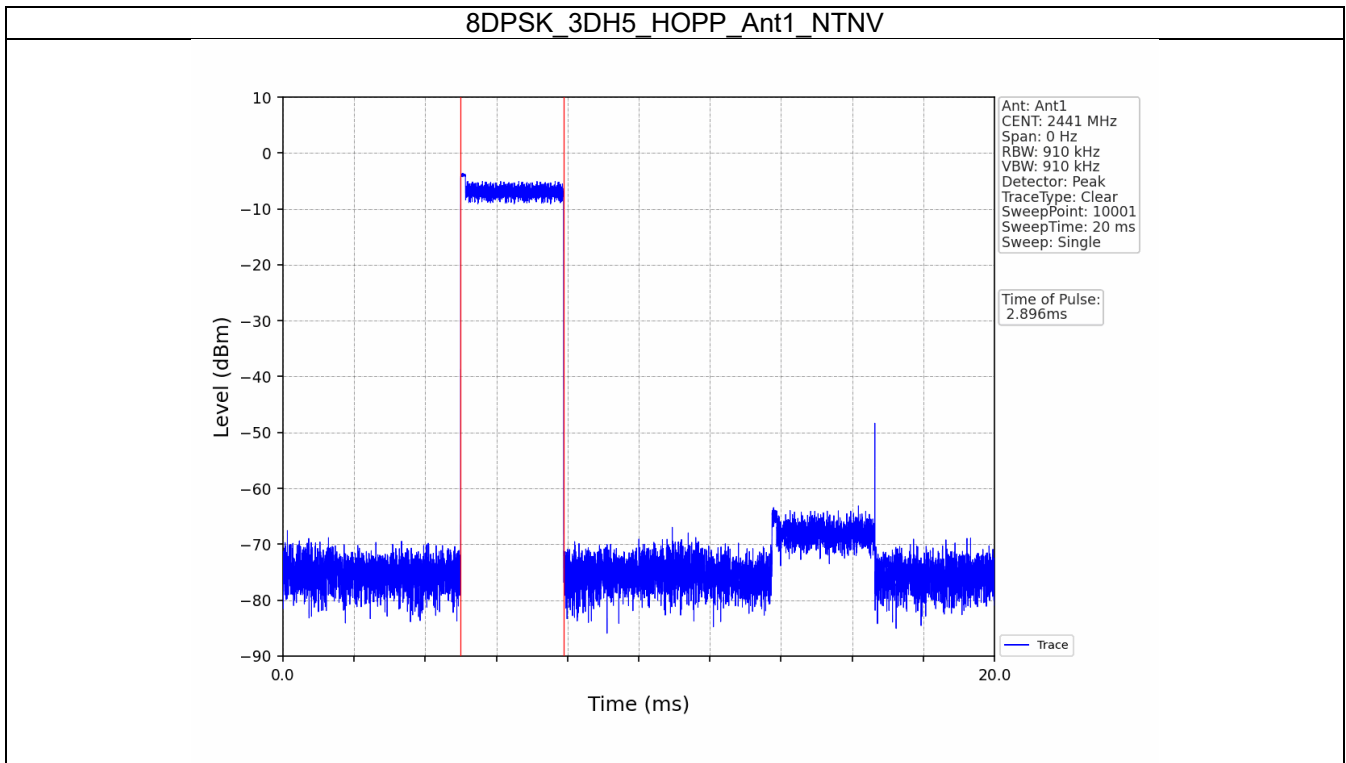












## 7. Unwanted Emissions In Non-restricted Frequency Bands

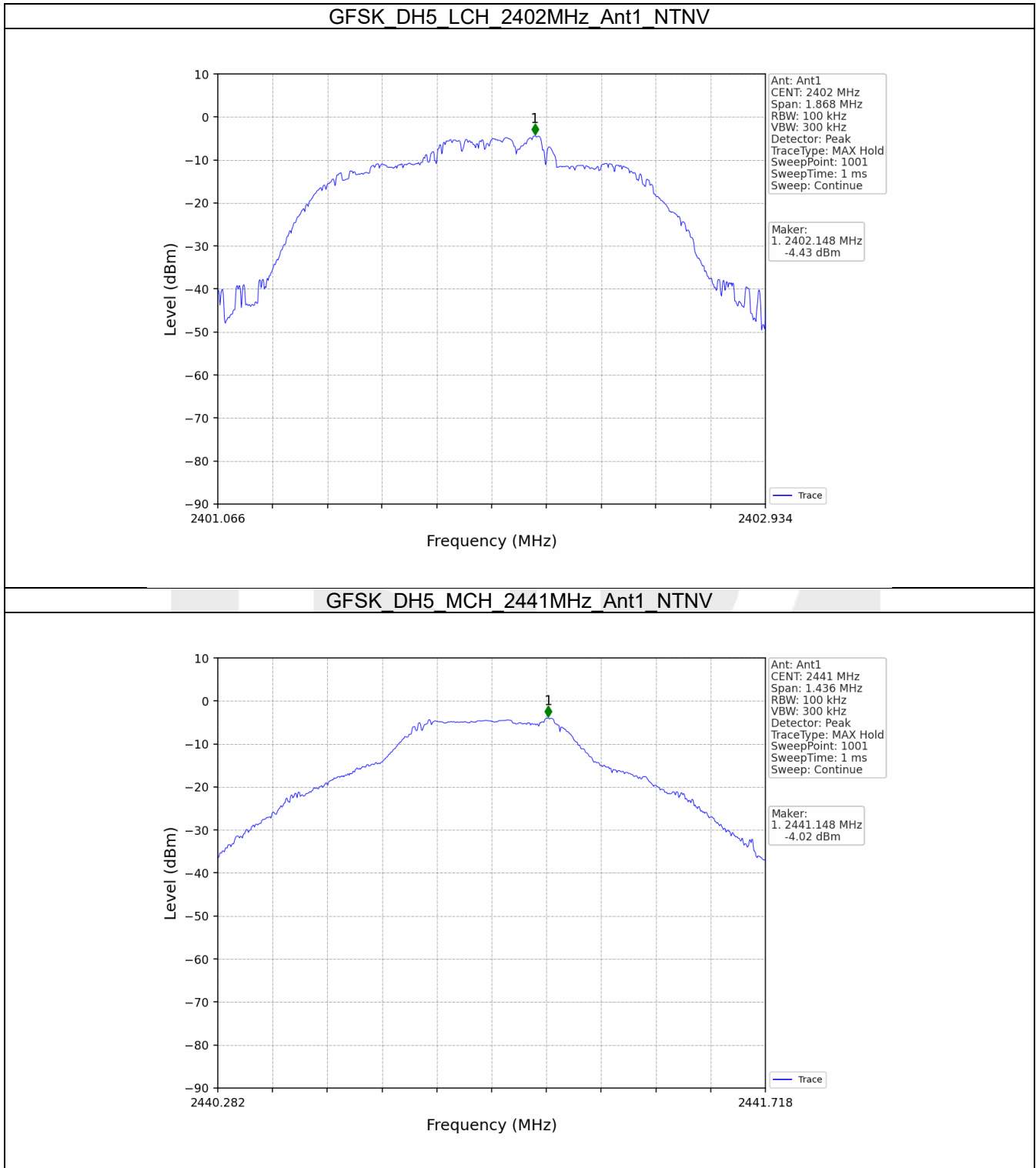
### 7.1 Ref

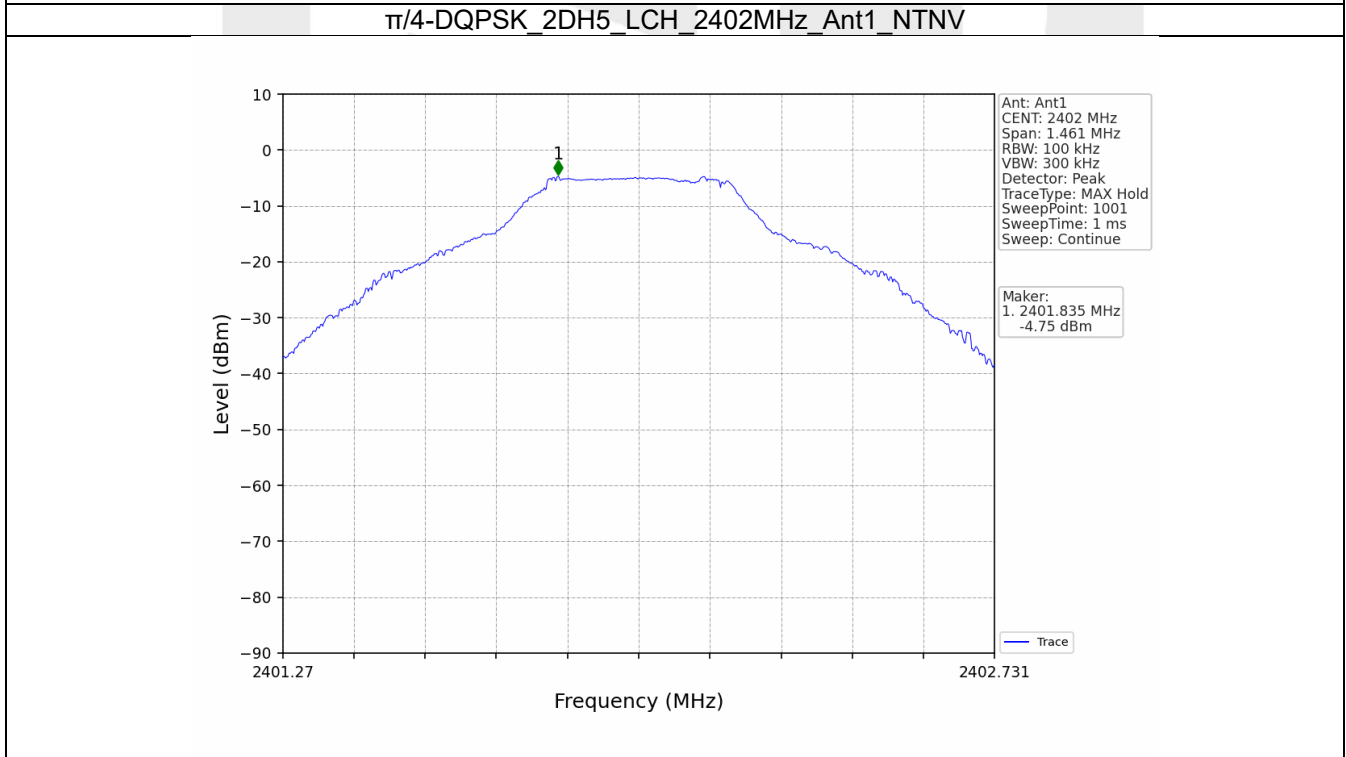
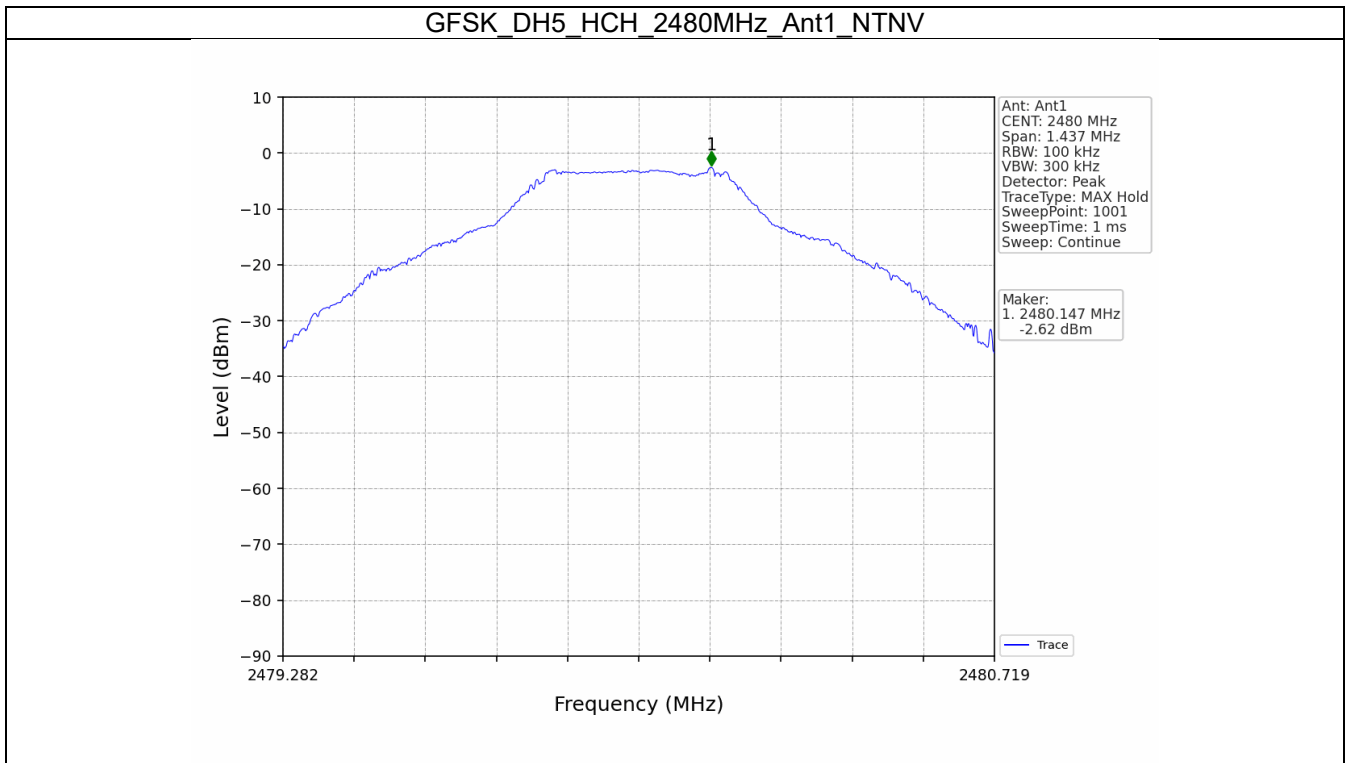
#### 7.1.1 Test Result

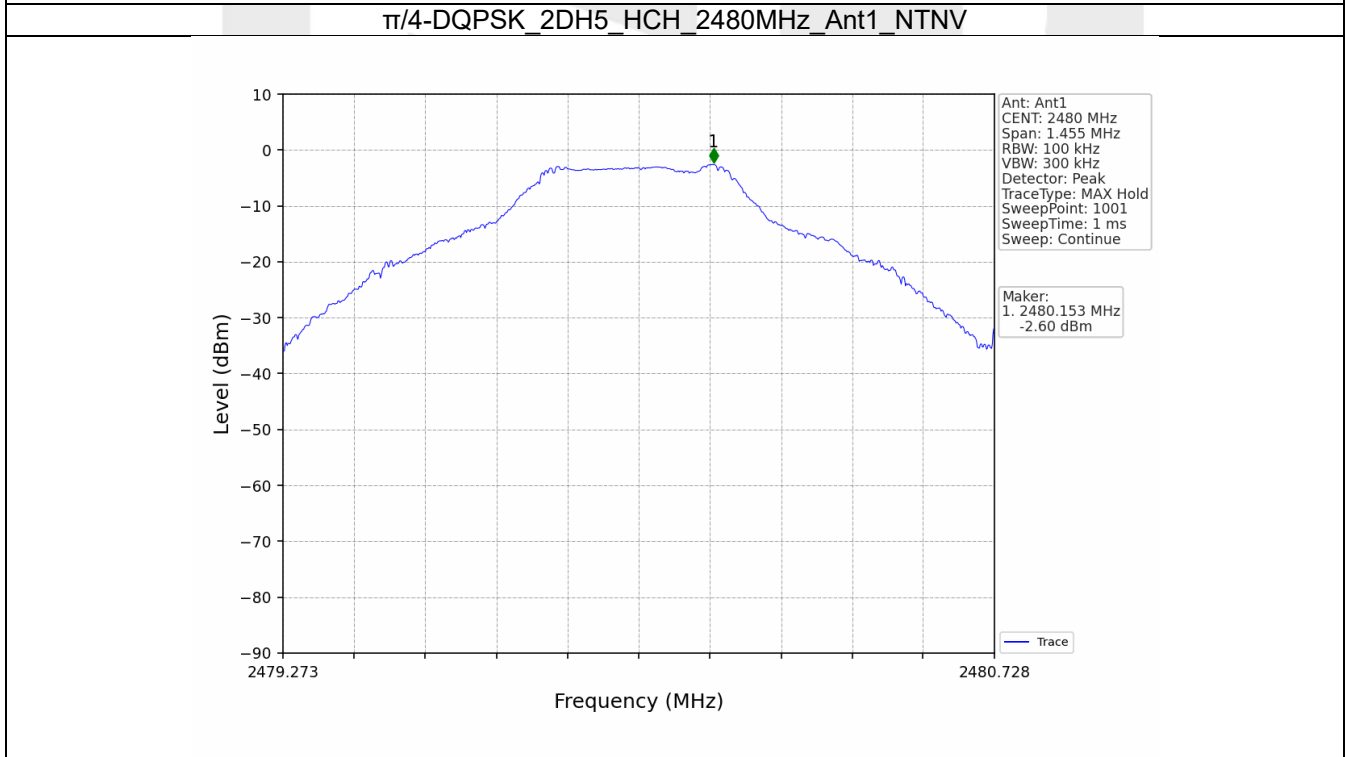
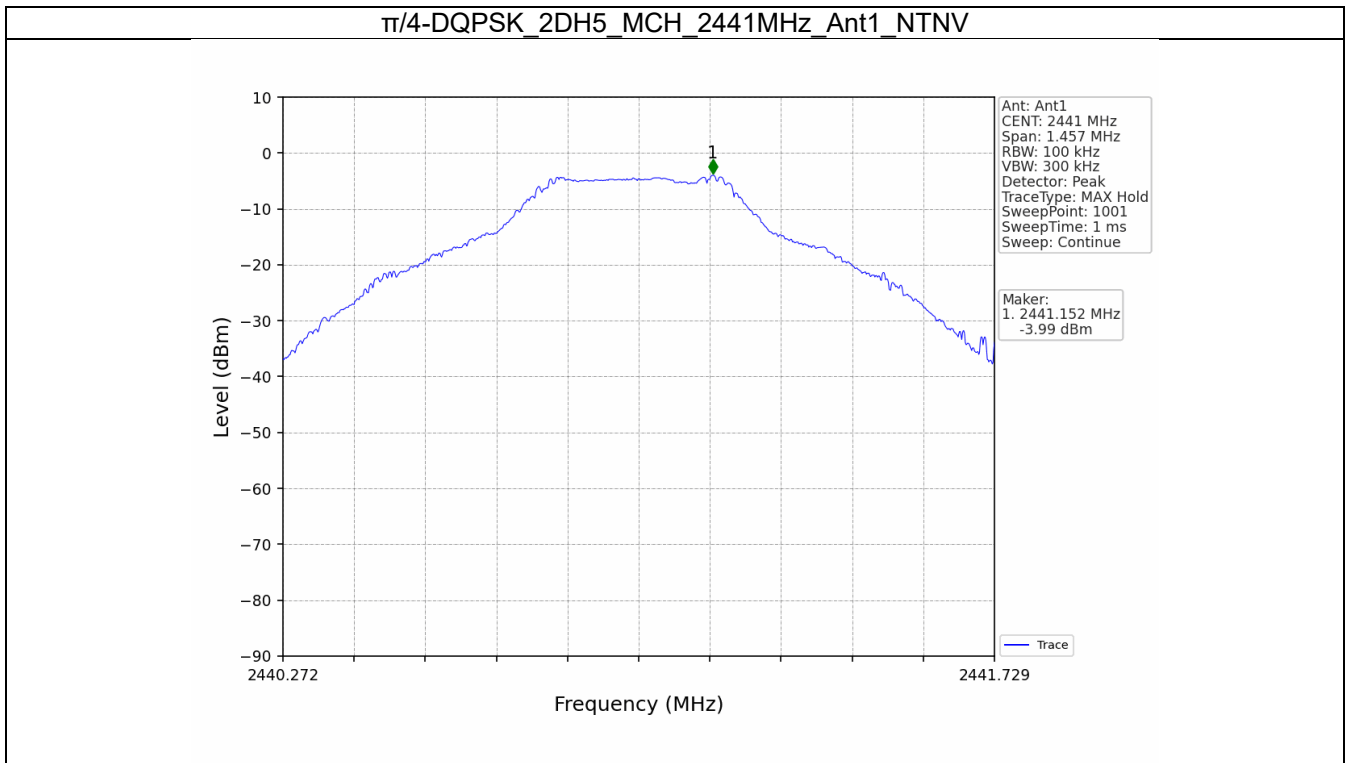
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)
GFSK	SISO	2402	DH5	1	-4.43
		2441	DH5	1	-4.02
		2480	DH5	1	-2.62
$\pi/4$ -DQPSK	SISO	2402	2DH5	1	-4.75
		2441	2DH5	1	-3.99
		2480	2DH5	1	-2.60
8DPSK	SISO	2402	3DH5	1	-4.41
		2441	3DH5	1	-4.04
		2480	3DH5	1	-2.70

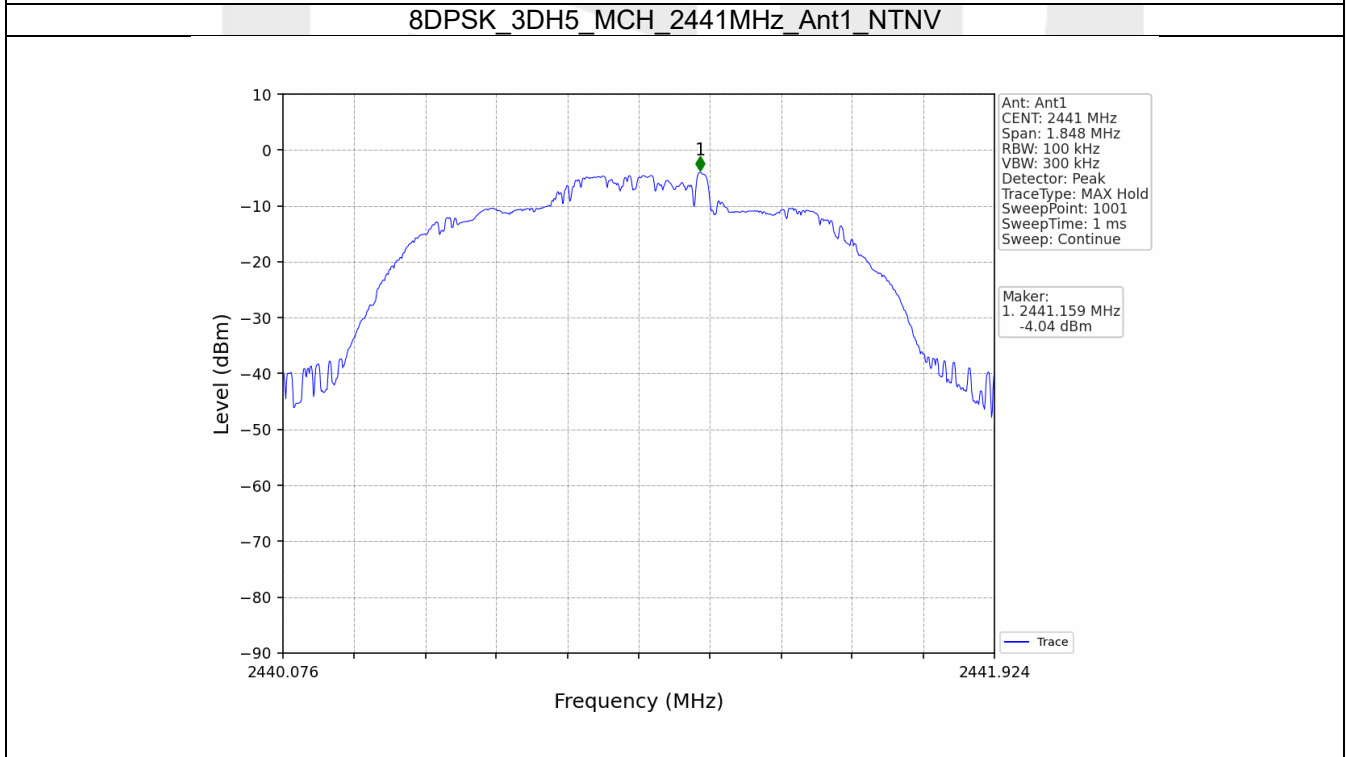
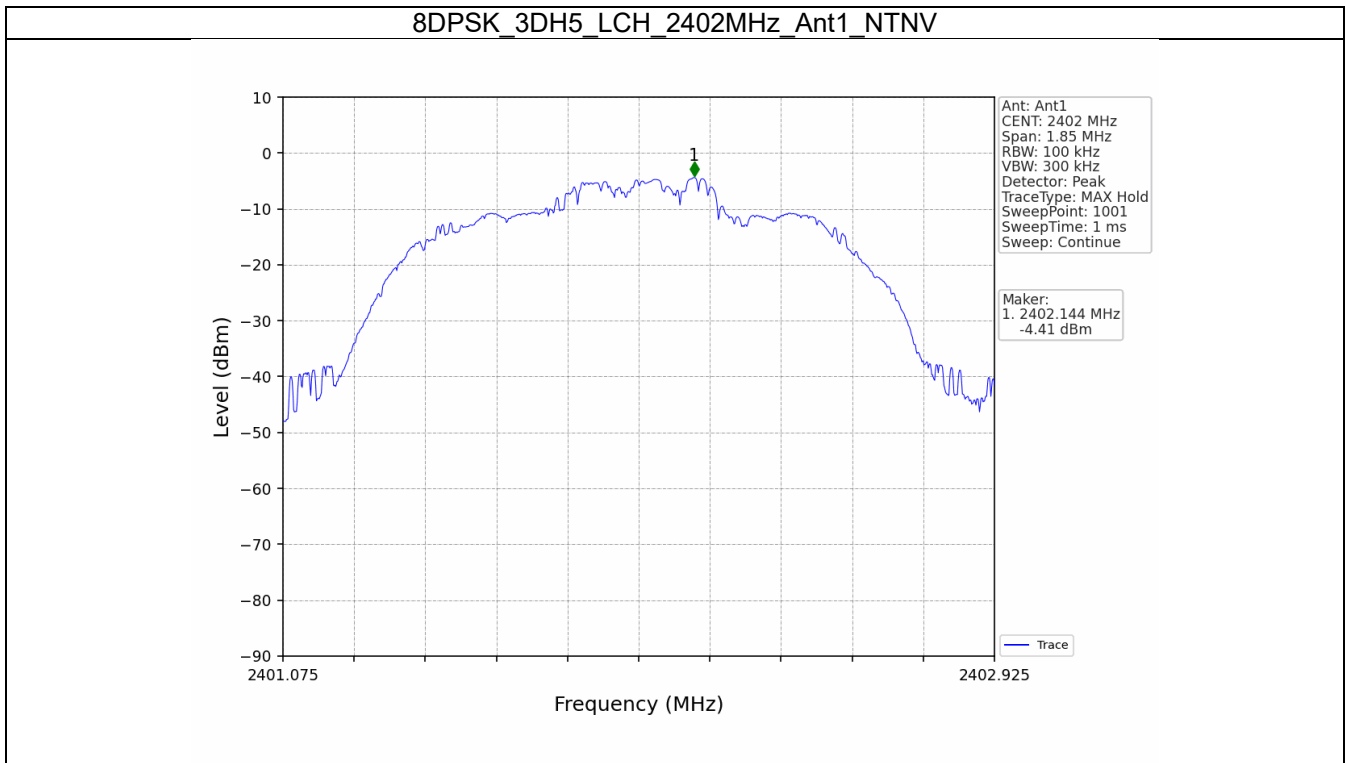
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

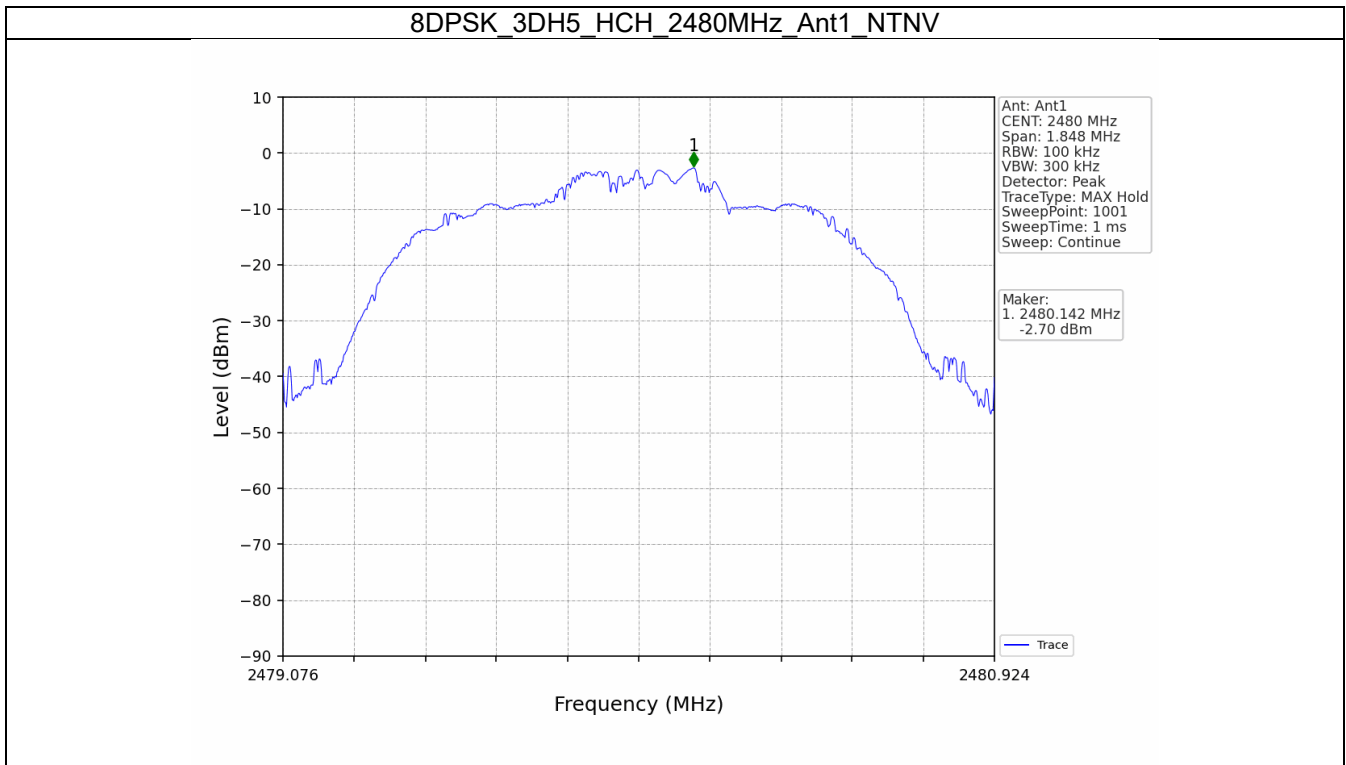
7.1.2 Test Graph











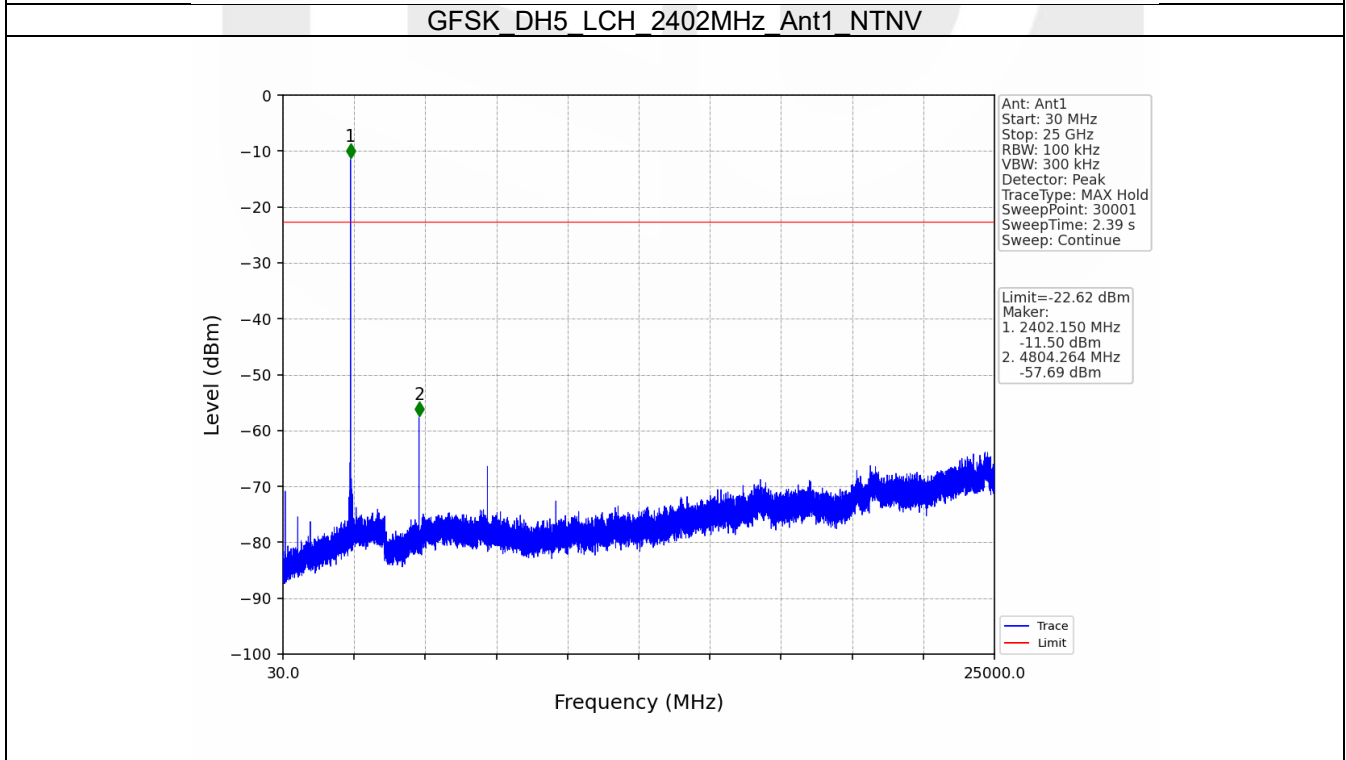
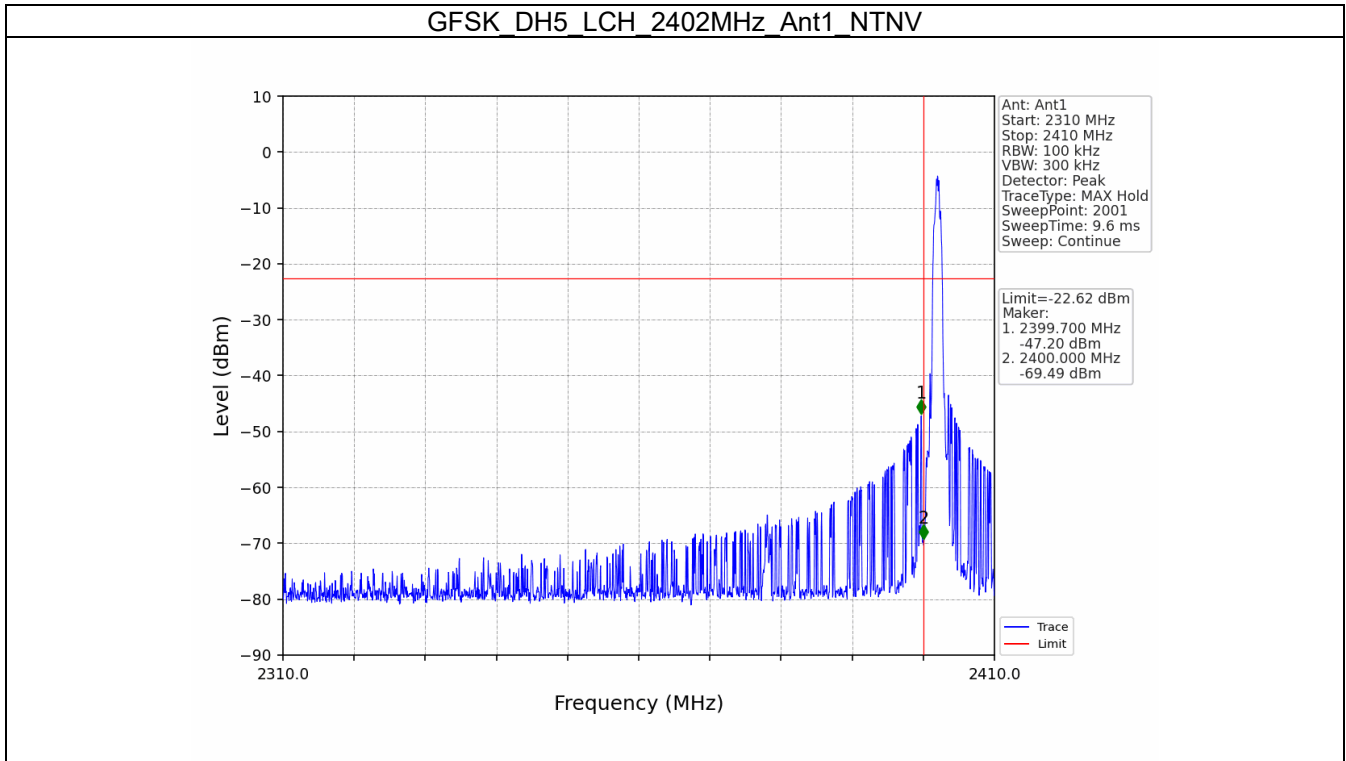


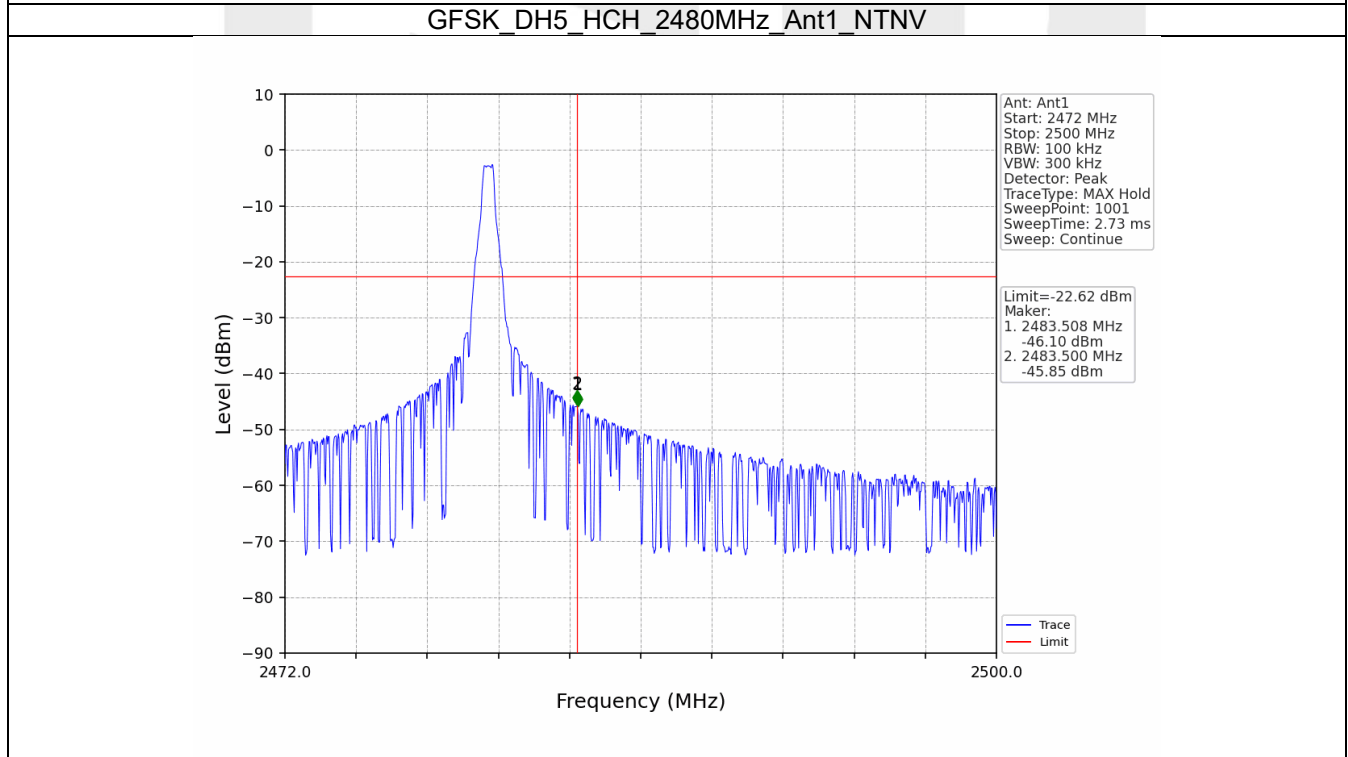
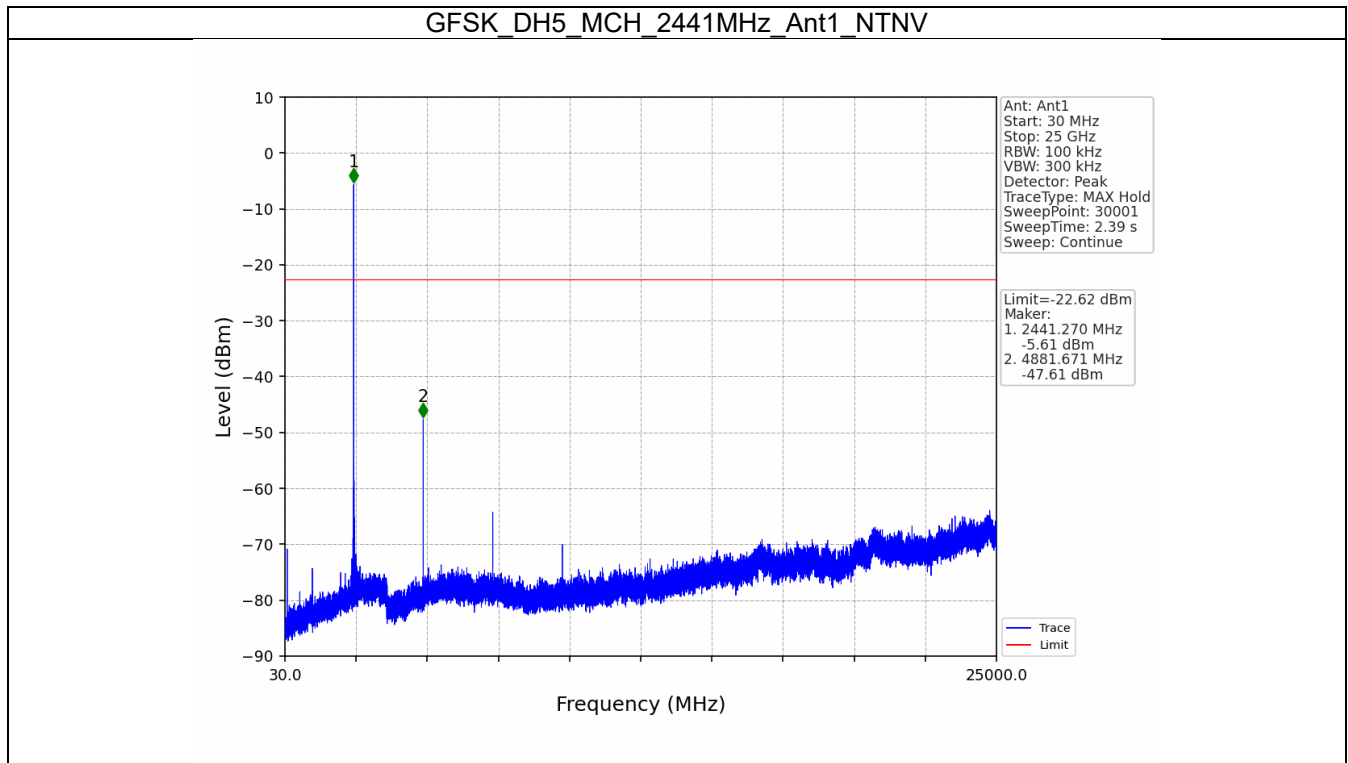
**7.2 CSE**
**7.2.1 Test Result**

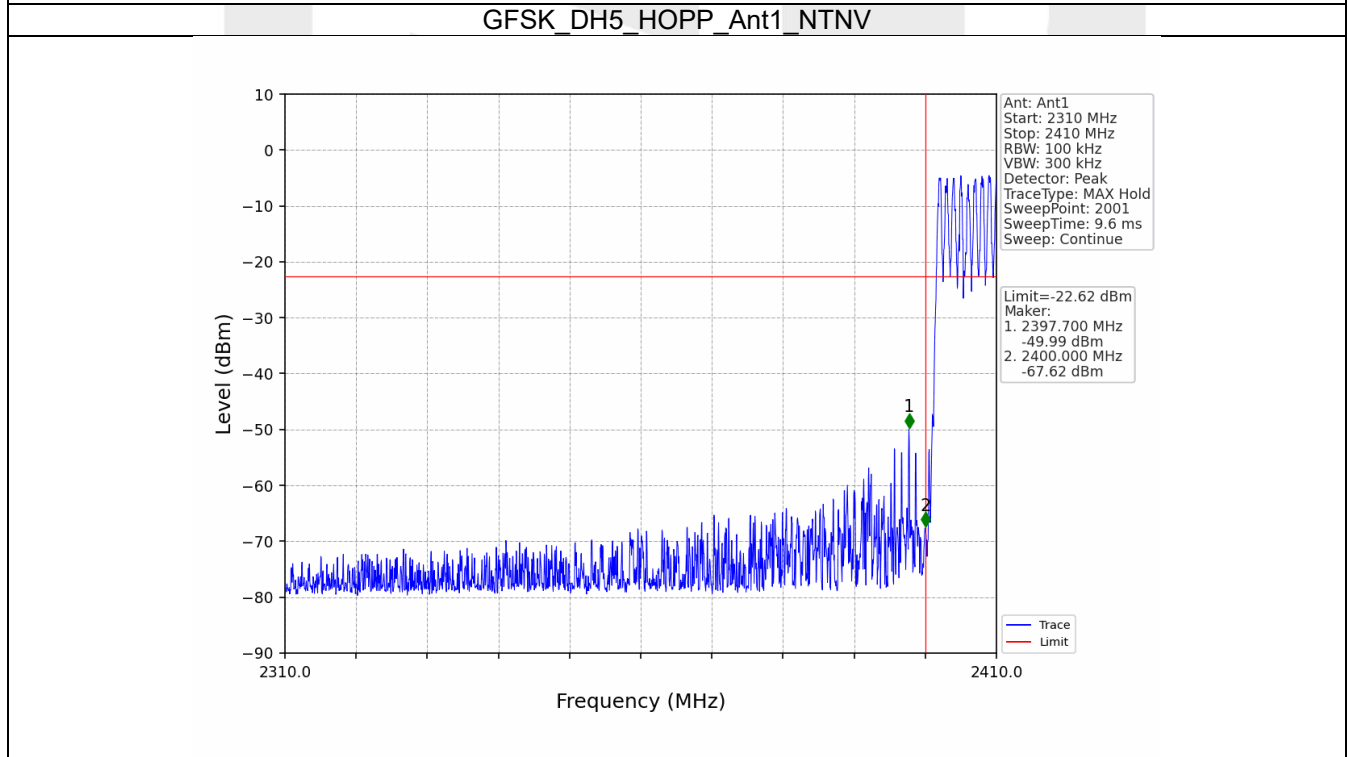
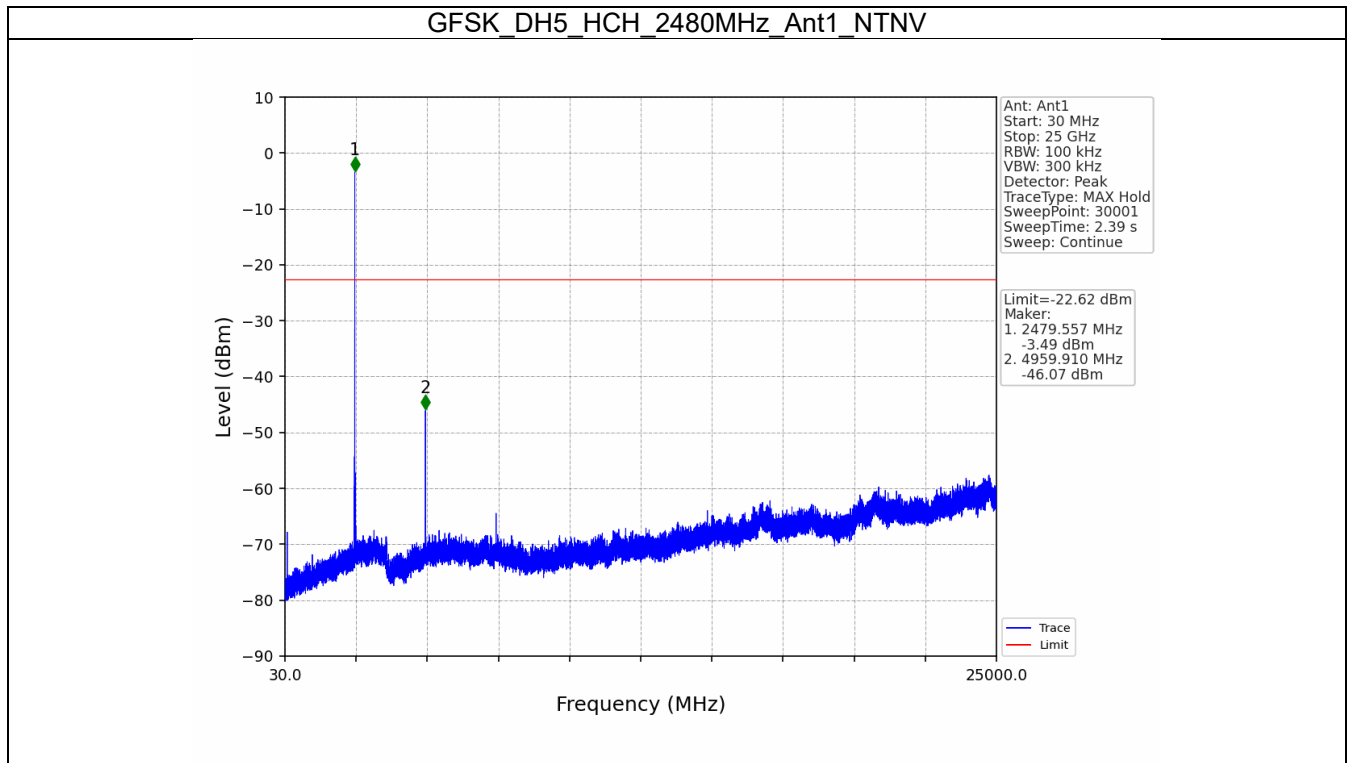
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
GFSK	SISO	2402	DH5	1	-2.62	-22.62	Pass
		2441	DH5	1	-2.62	-22.62	Pass
		2480	DH5	1	-2.62	-22.62	Pass
		HOPP	DH5	1	-2.62	-22.62	Pass
					-2.62	-22.62	Pass
$\pi/4$ -DQPSK	SISO	2402	2DH5	1	-2.60	-22.60	Pass
		2441	2DH5	1	-2.60	-22.60	Pass
		2480	2DH5	1	-2.60	-22.60	Pass
		HOPP	2DH5	1	-2.60	-22.60	Pass
					-2.60	-22.60	Pass
8DPSK	SISO	2402	3DH5	1	-2.70	-22.70	Pass
		2441	3DH5	1	-2.70	-22.70	Pass
		2480	3DH5	1	-2.70	-22.70	Pass
		HOPP	3DH5	1	-2.70	-22.70	Pass
					-2.70	-22.70	Pass

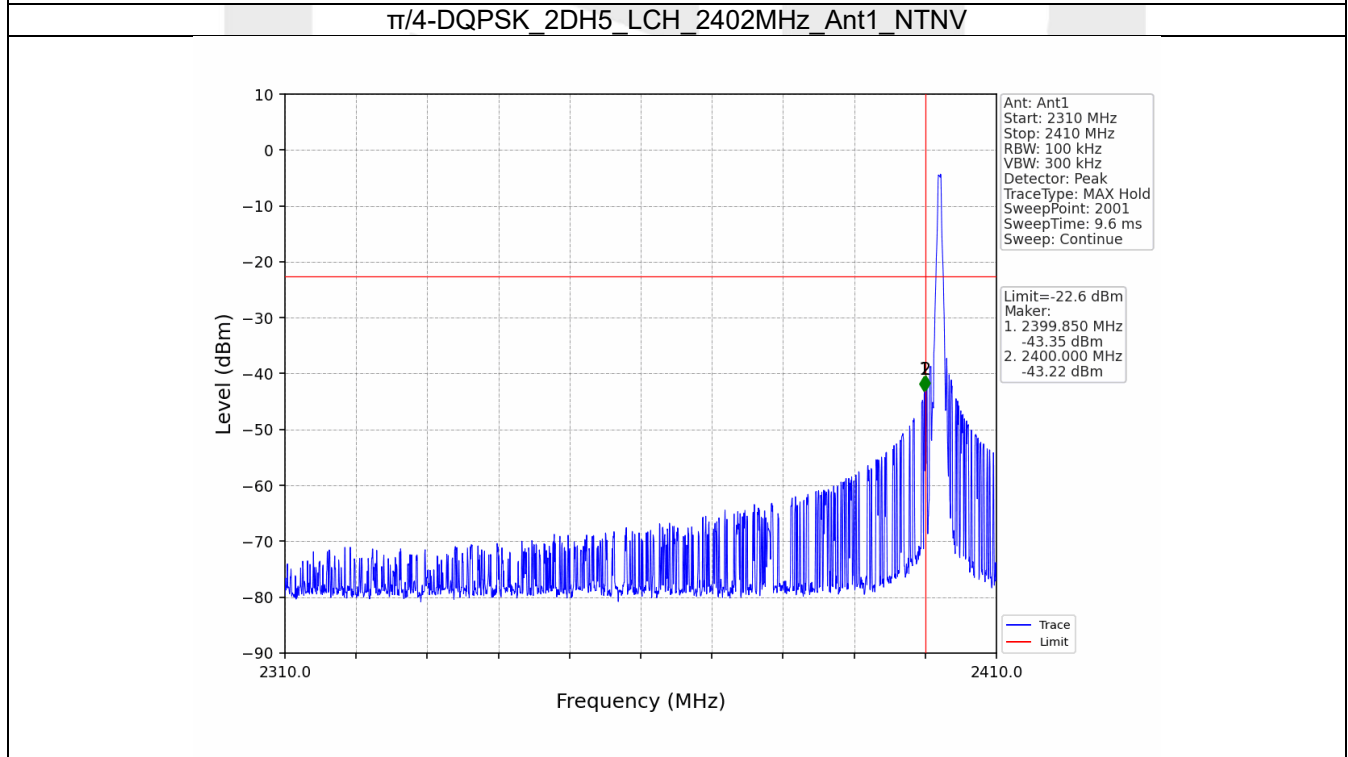
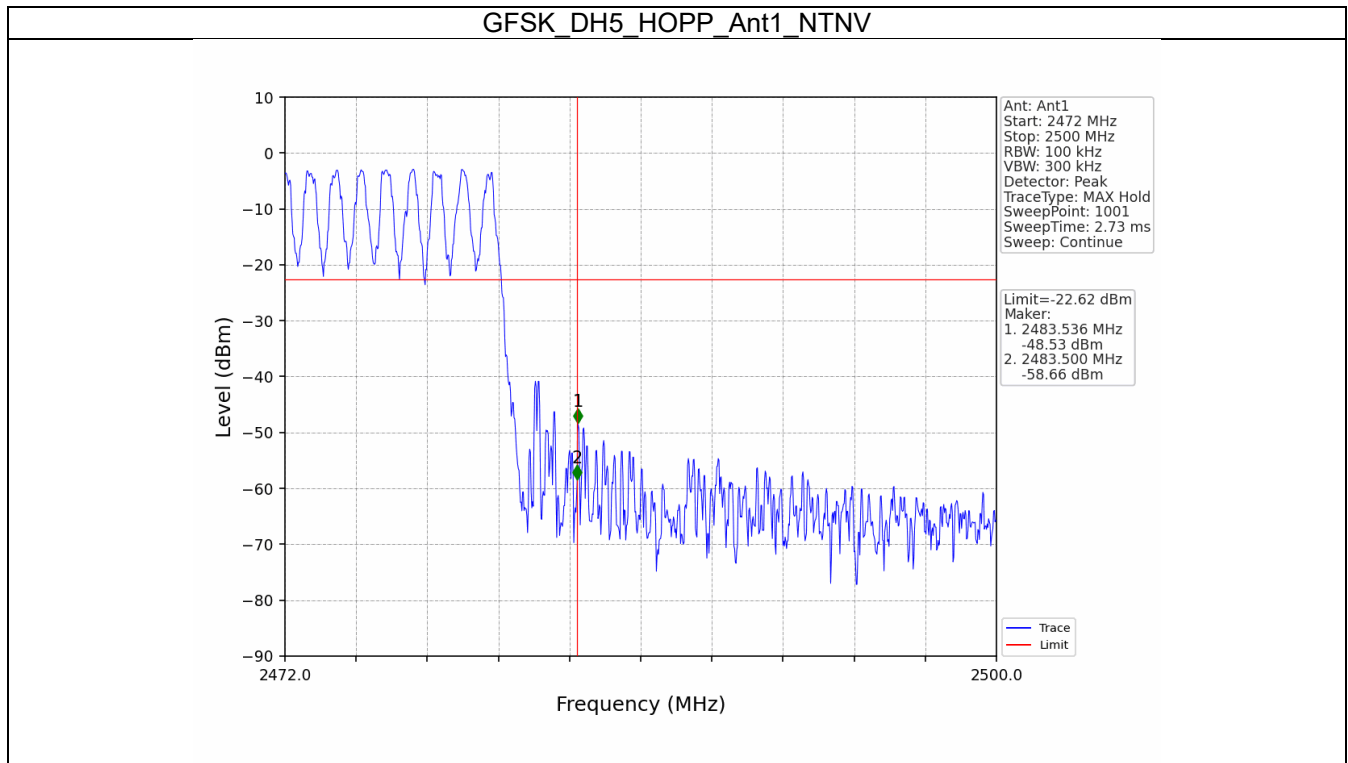
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

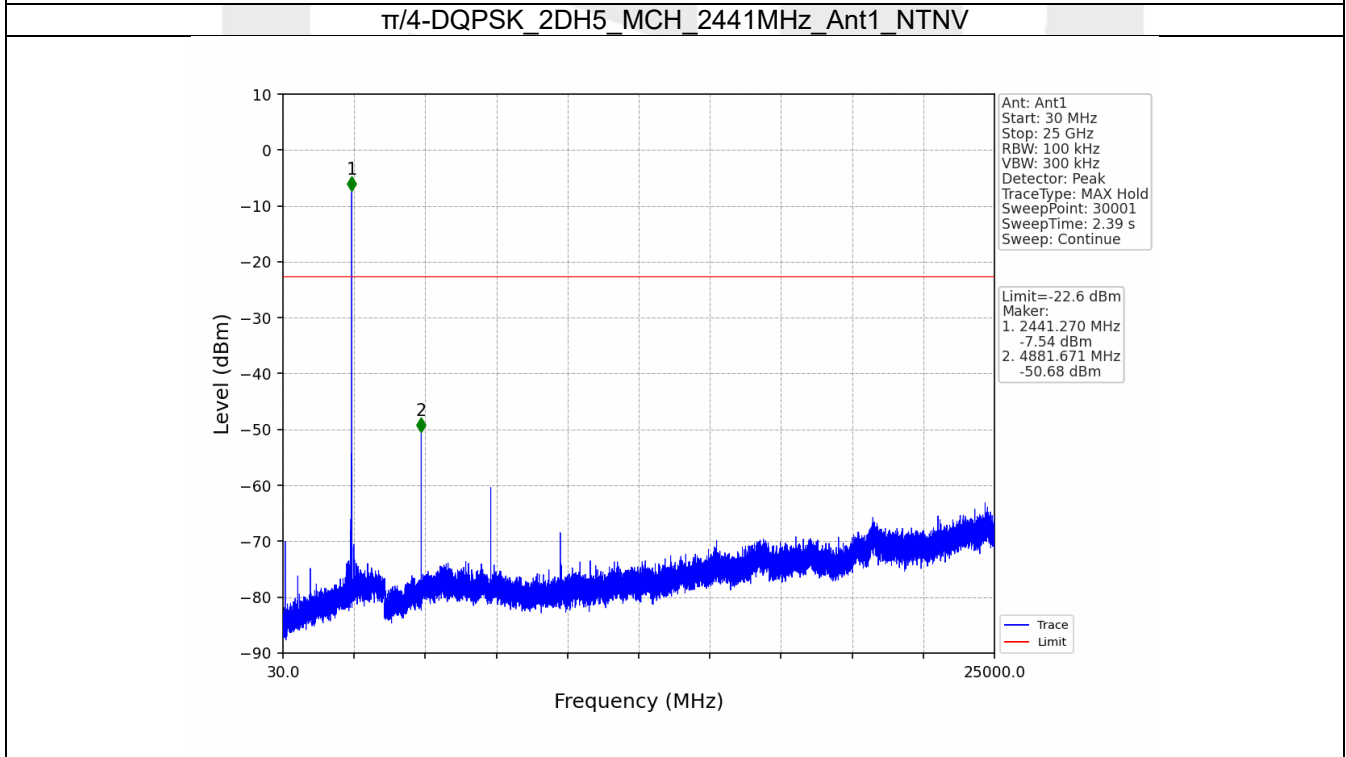
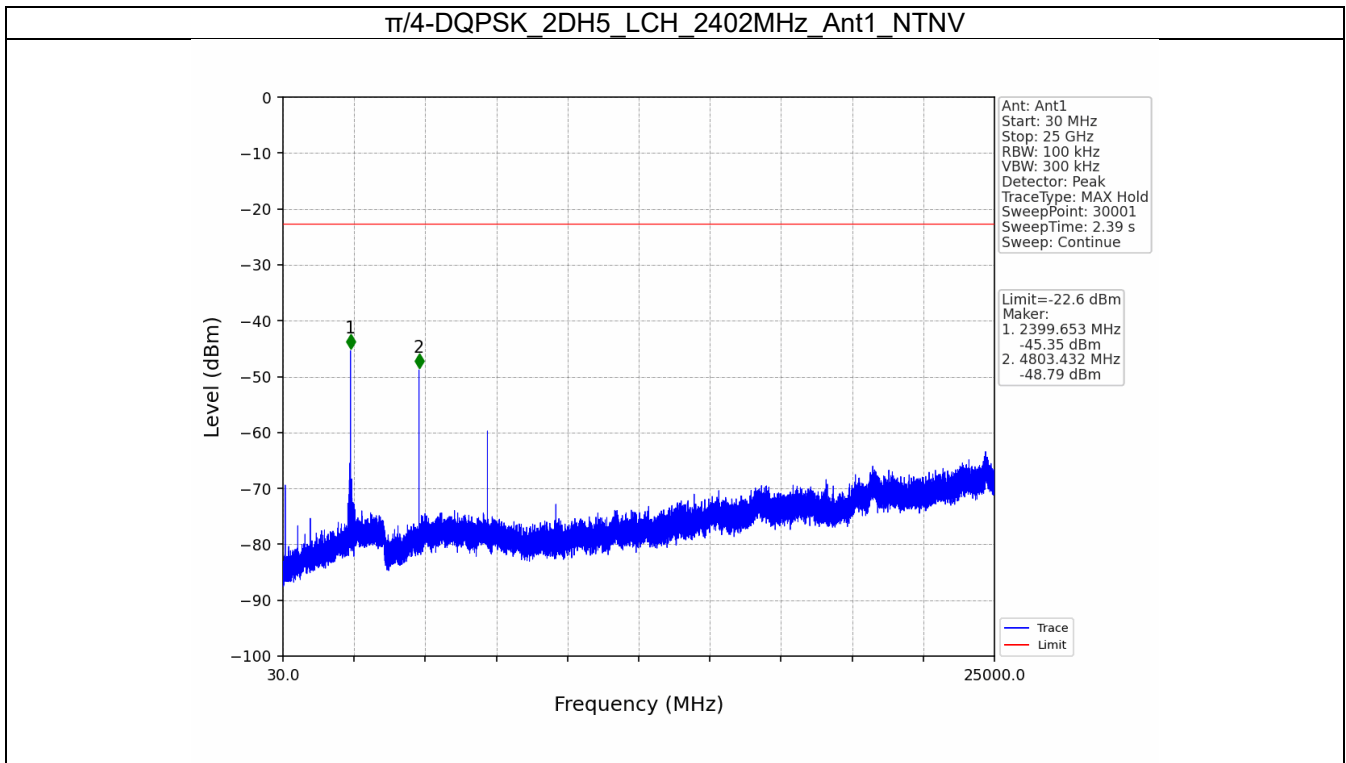
7.2.2 Test Graph

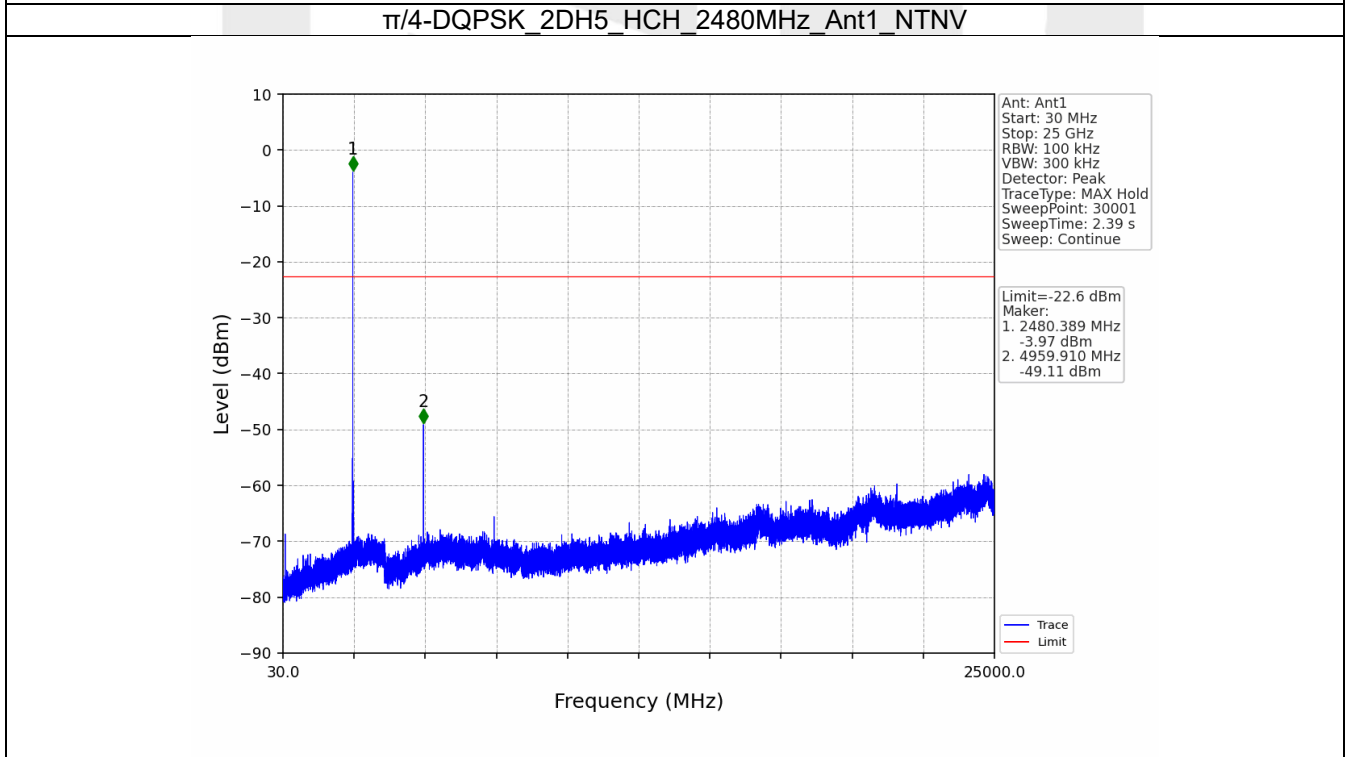
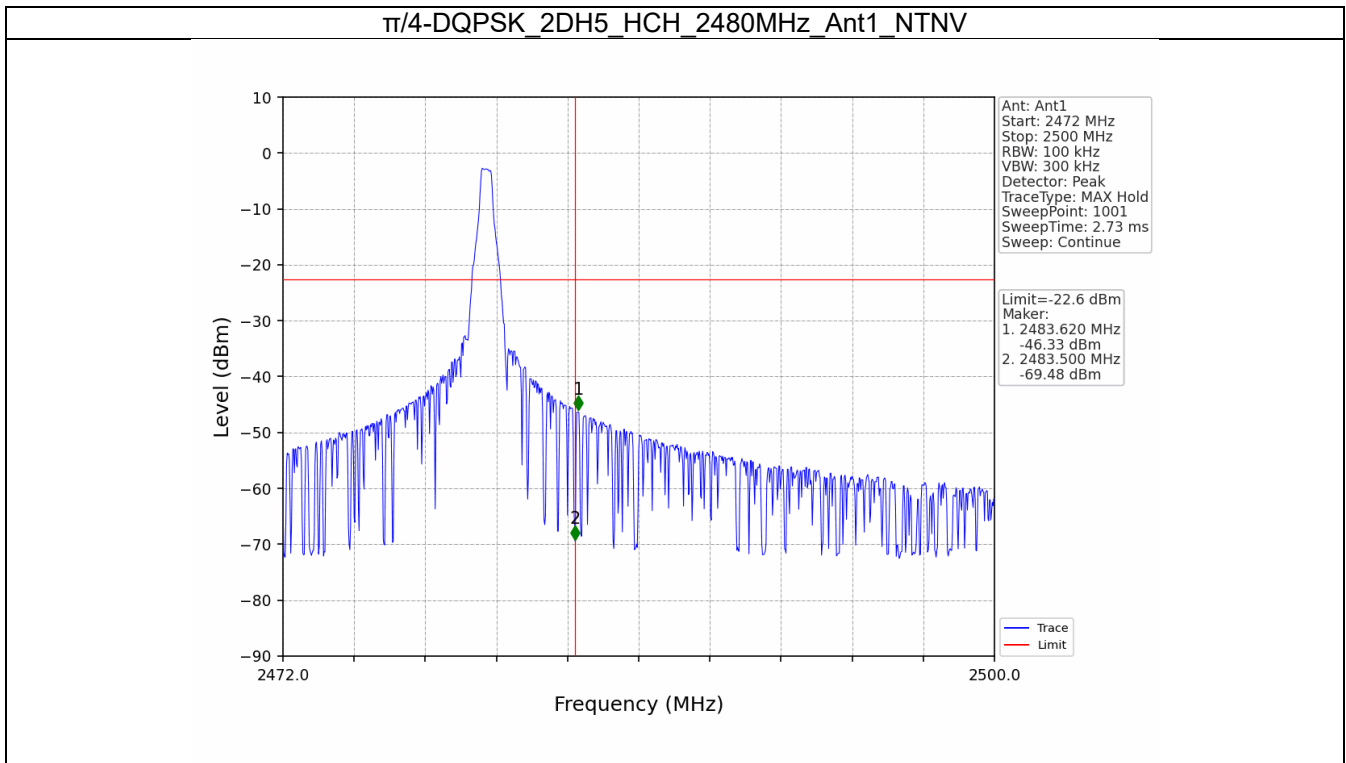


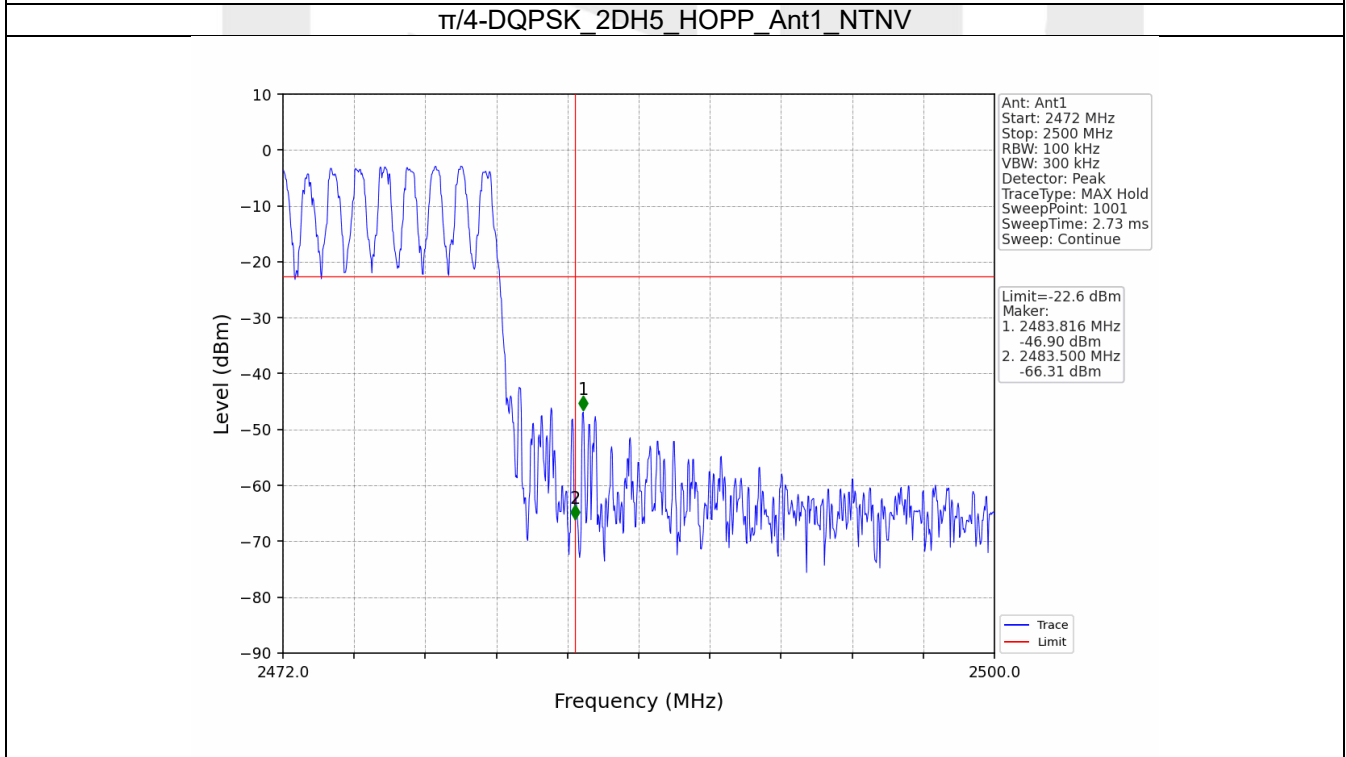
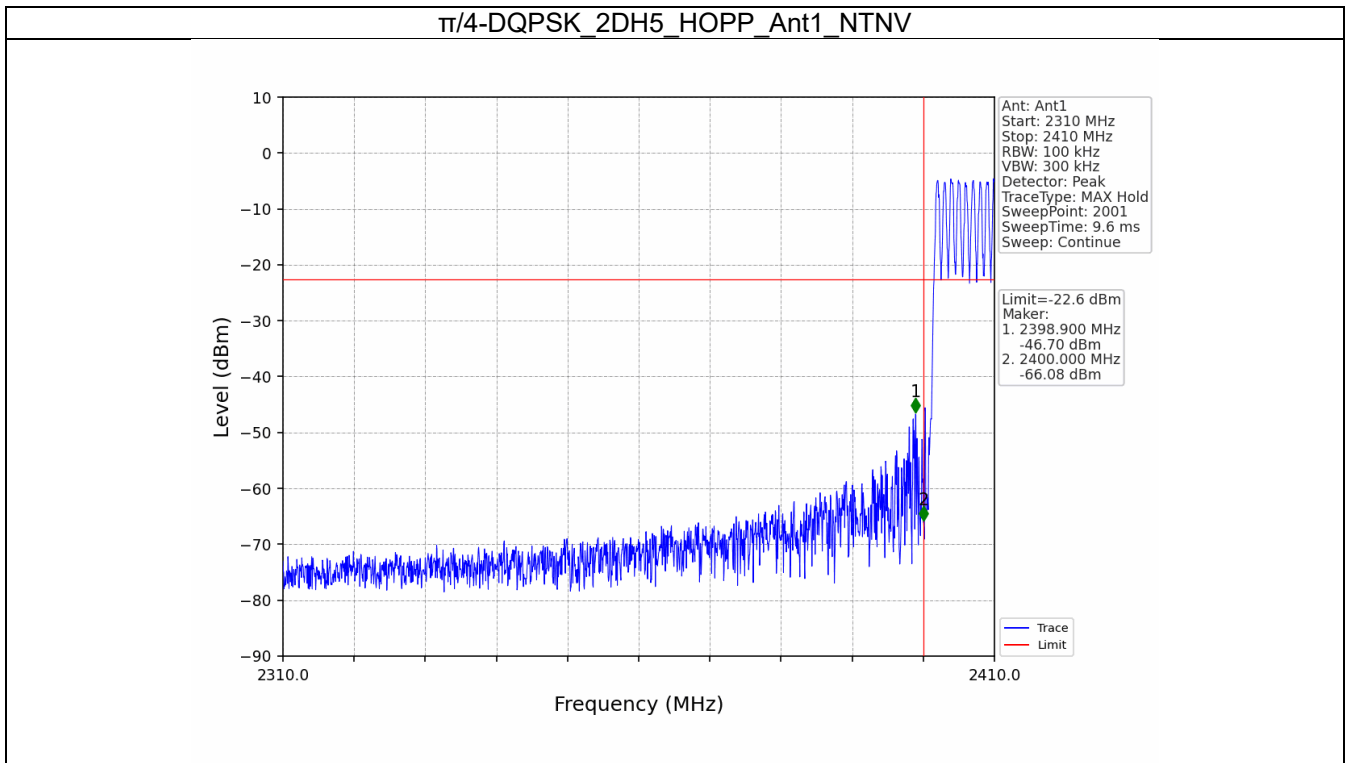




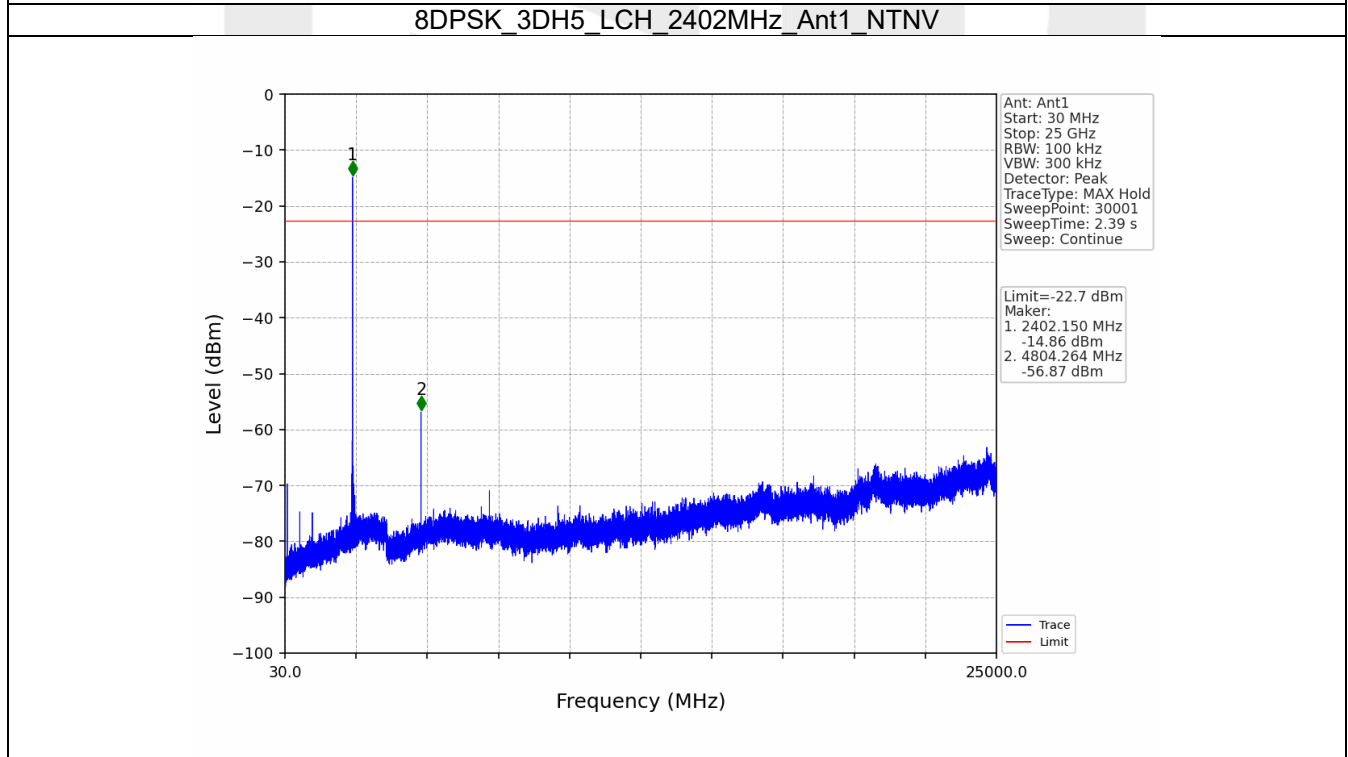
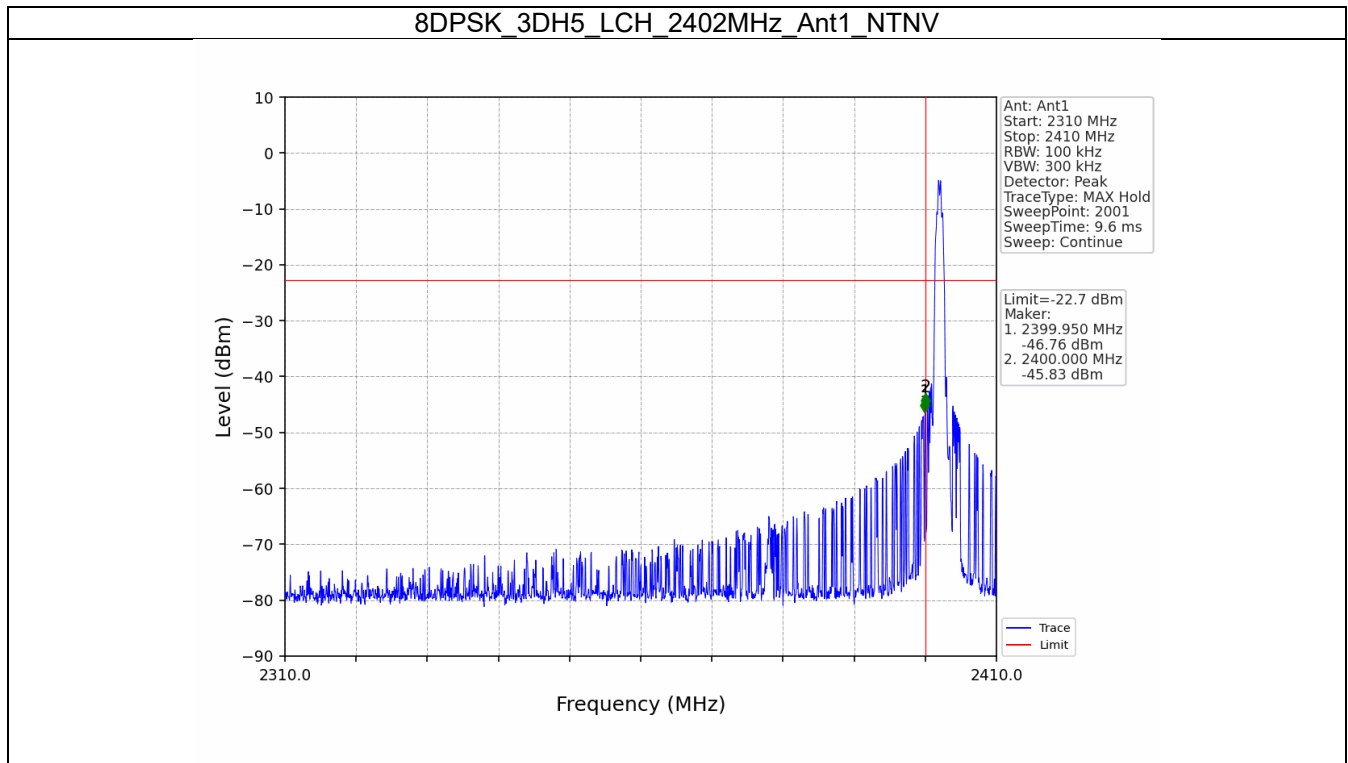


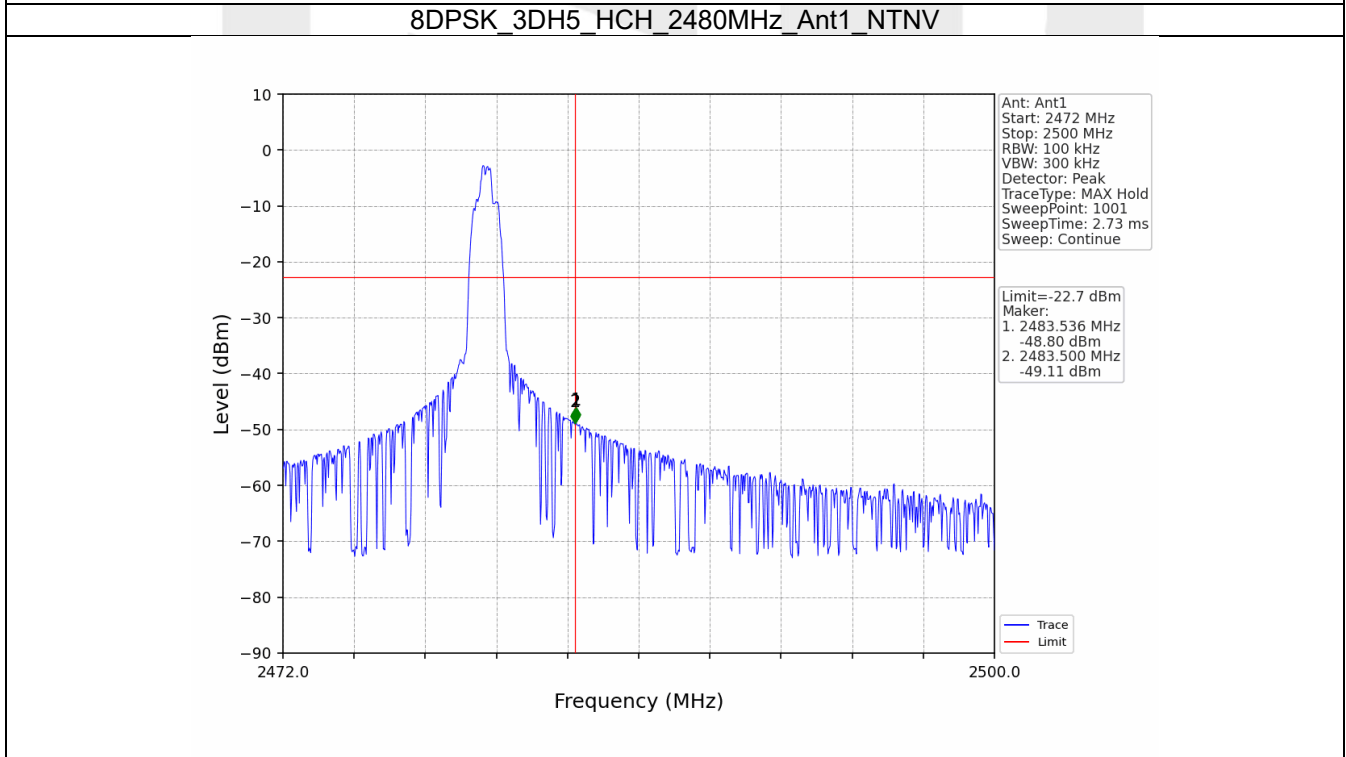
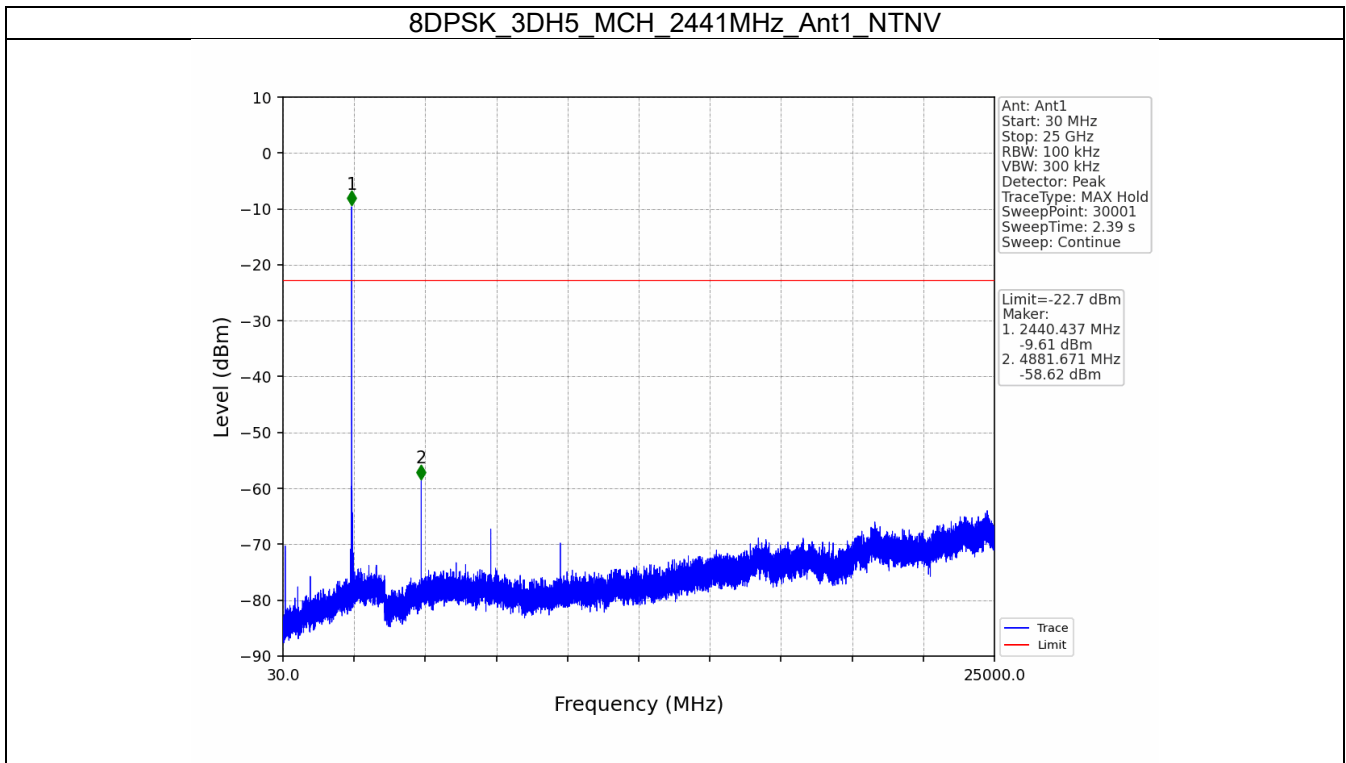


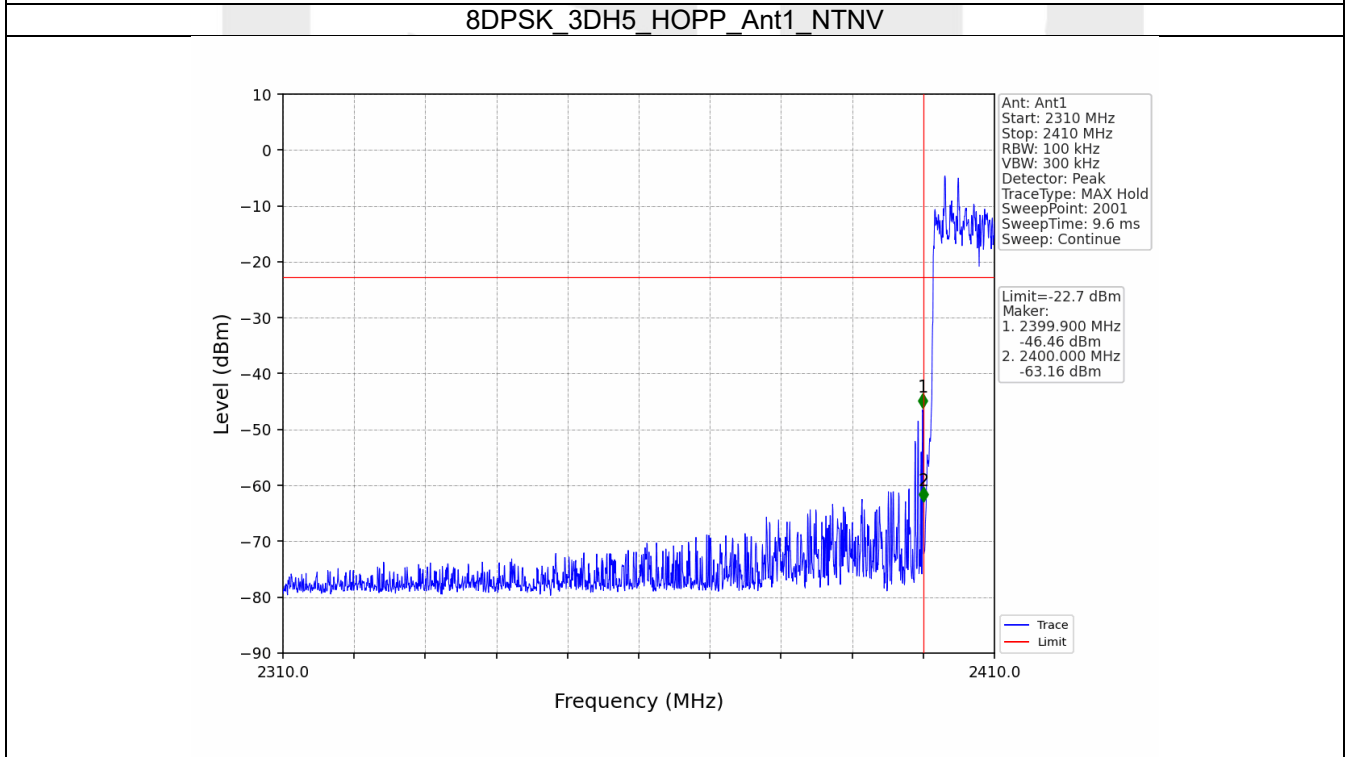
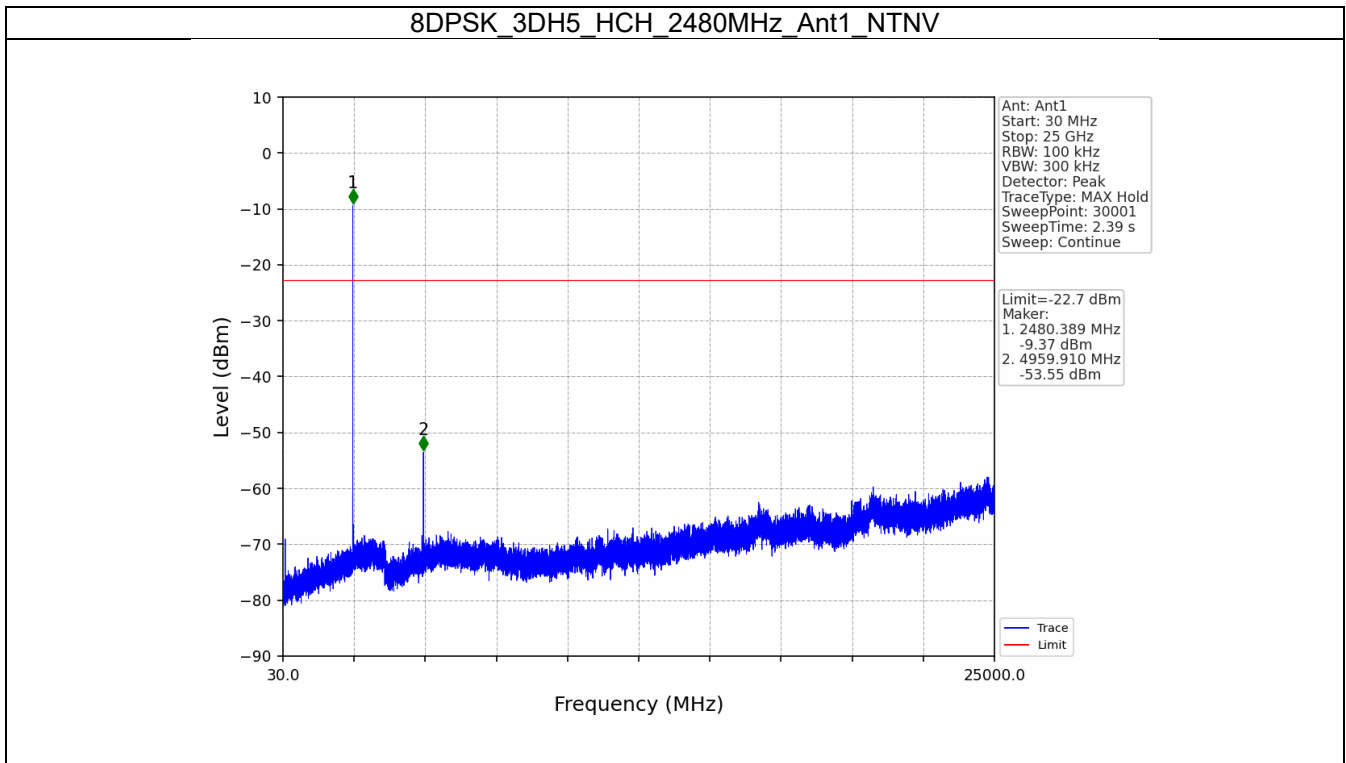


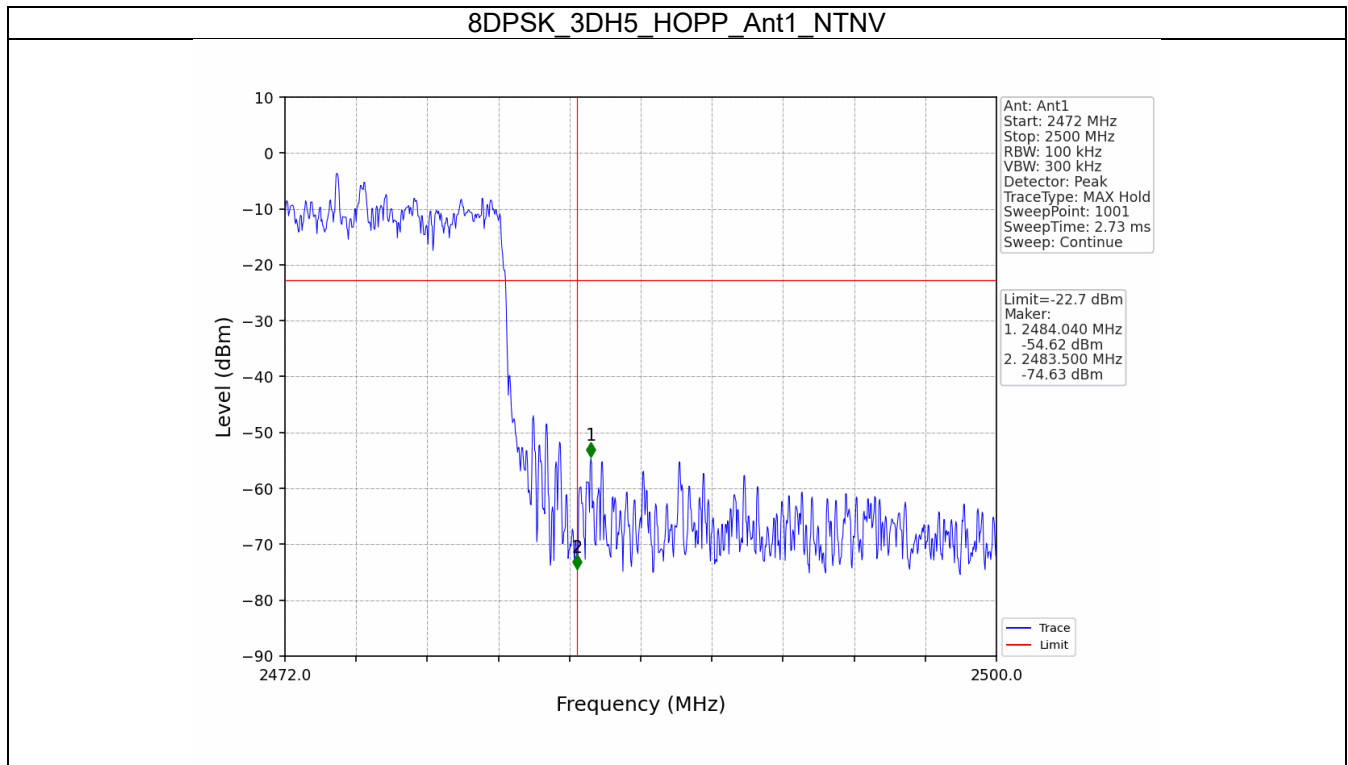












----- End of Report -----