

# RF Test Report

## For

Project No.:	ZKT-241126L16654E-1
Client:	OBDSpace TECHNOLOGY Co., LTD
Manufacturer:	OBDSpace TECHNOLOGY Co., LTD
Product Description:	Truck Scanner
Model No.:	HD3100
Test Engineer:	Jim Liu
Test Date:	2025-01-09

## Test Summary

Item	Result
Duty Cycle	Pass
Bandwidth	Pass
Maximum Conducted Output Power	Pass
Maximum Power Spectral Density	Pass
Unwanted Emissions In Non-restricted Frequency Bands	Pass
Frequency Error	Pass

# 1. Duty Cycle

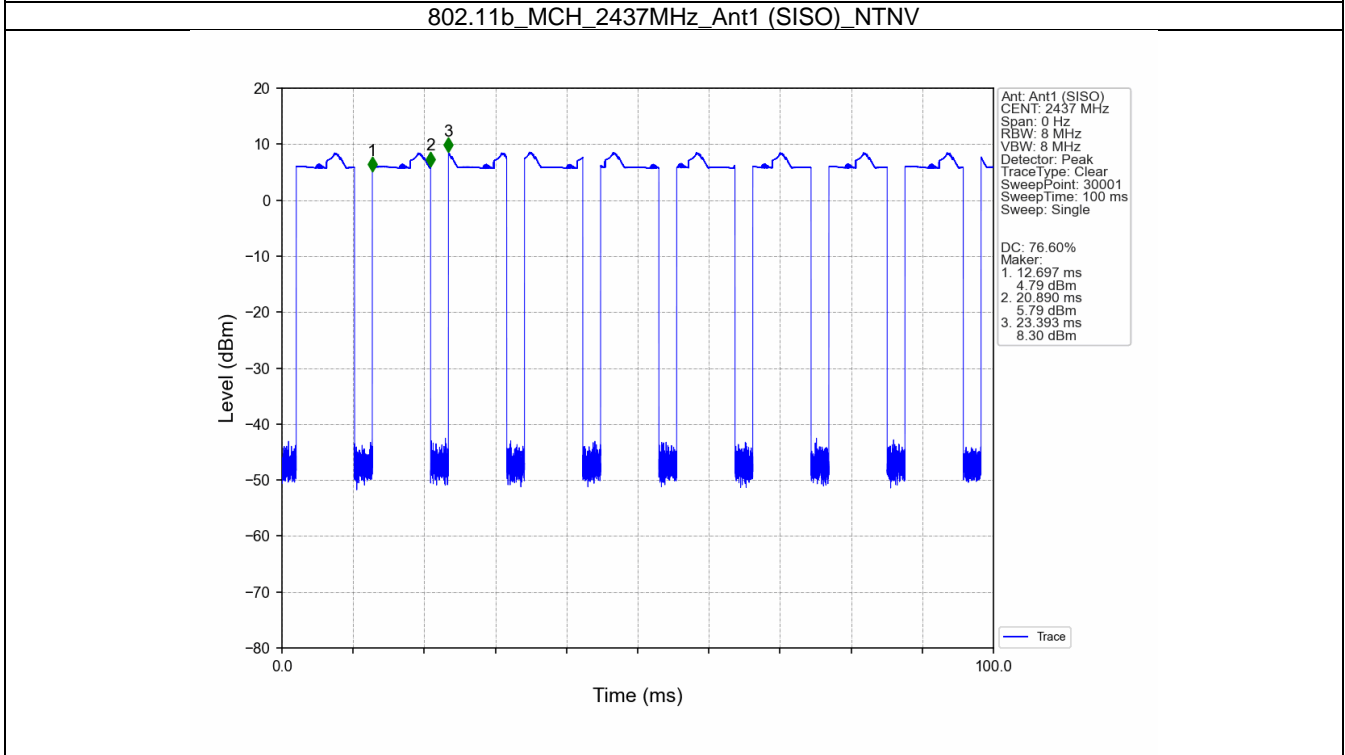
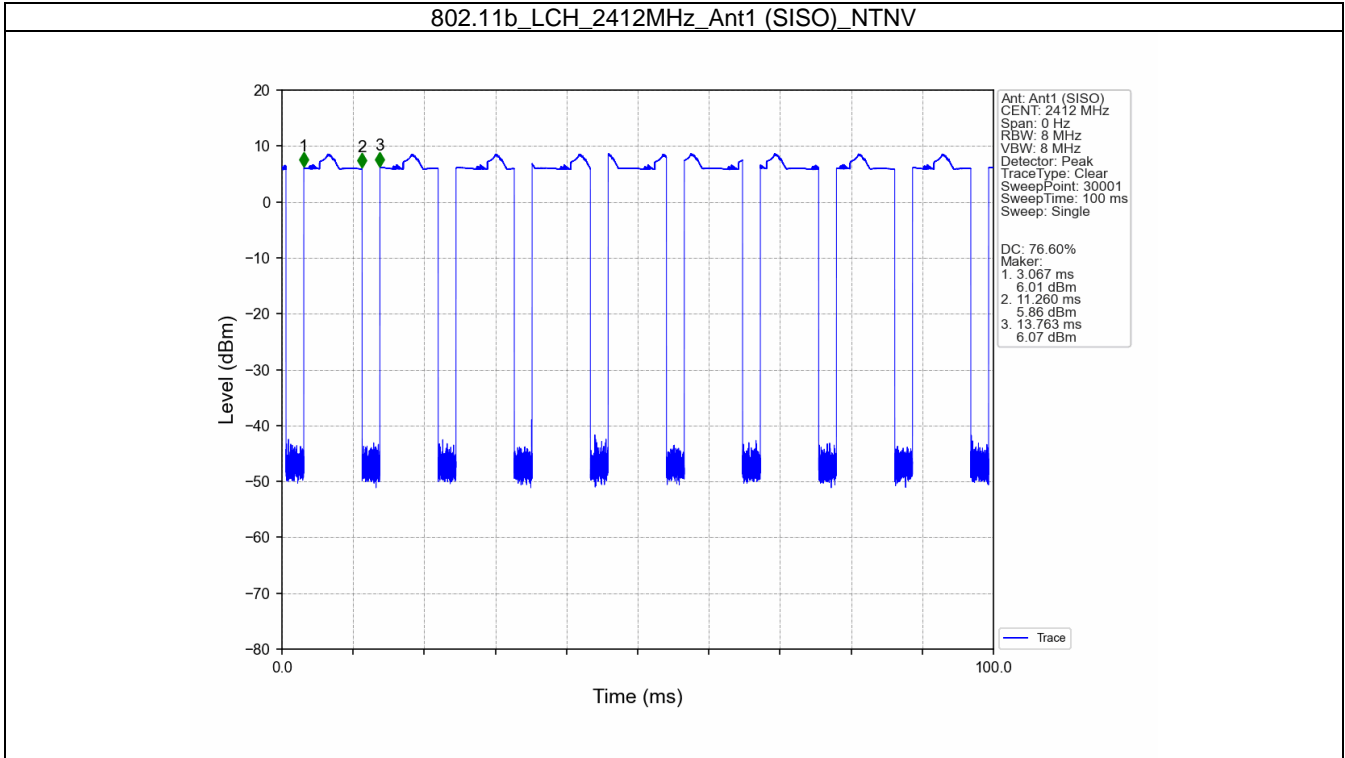
## 1.1 Test Result

### 1.1.1 Ant1

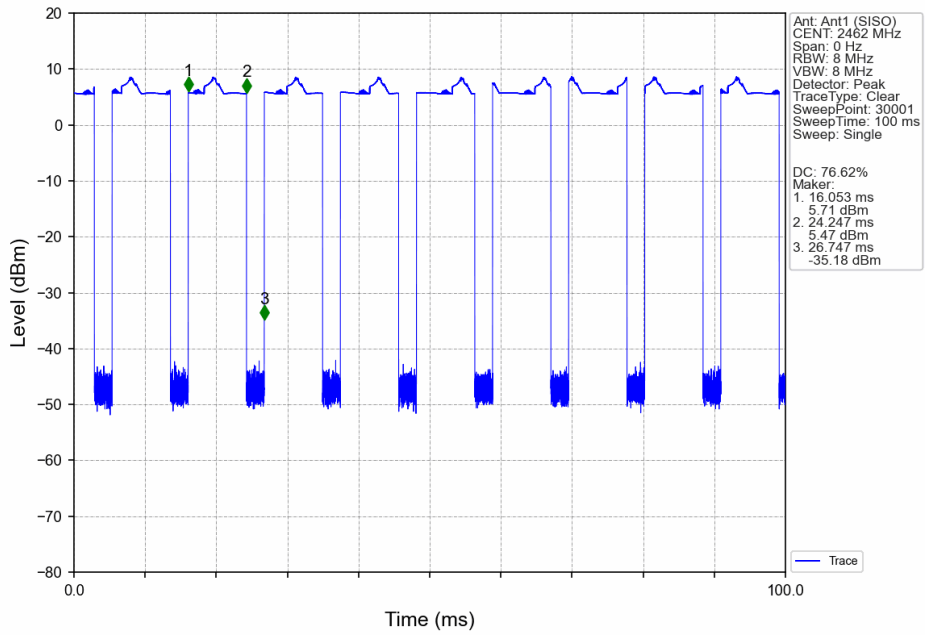
Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	SISO	2412	8.193	10.696	76.60	1.16	0.02
		2437	8.193	10.696	76.60	1.16	0.02
		2462	8.194	10.694	76.62	1.16	0.01
802.11g	SISO	2412	1.360	3.863	35.21	4.53	0.03
		2437	1.362	3.863	35.26	4.53	0.00
		2462	1.362	3.863	35.26	4.53	0.00
802.11n (HT20)	SISO	2412	1.149	3.650	31.48	5.02	0.02
		2437	1.149	3.651	31.47	5.02	0.02
		2462	1.148	3.650	31.45	5.02	0.02
802.11n (HT40)	SISO	2422	0.573	3.075	18.63	7.30	0.03
		2437	0.573	3.075	18.63	7.30	0.03
		2452	0.573	3.075	18.63	7.30	0.03

# 1.2 Test Graph

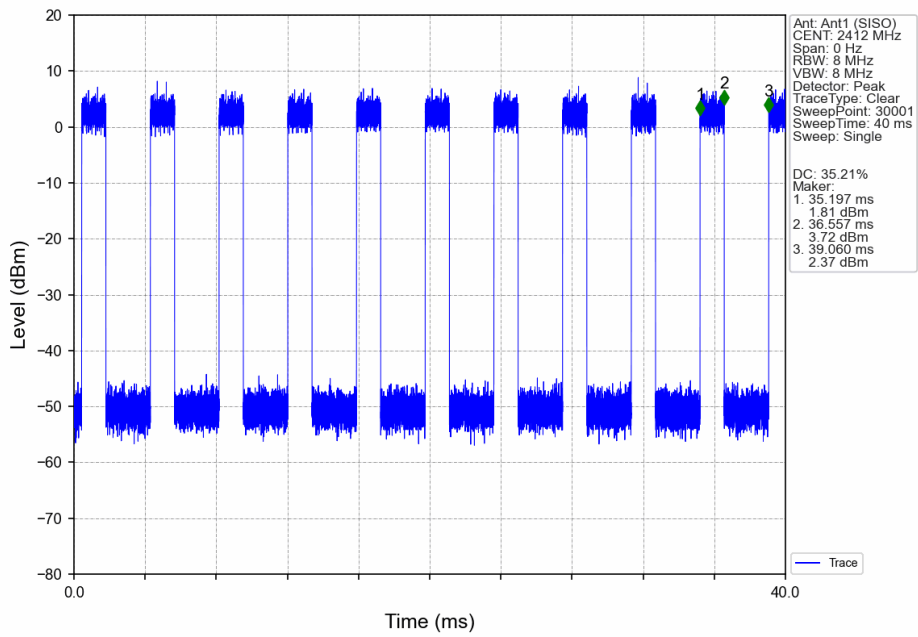
## 1.2.1 Ant1



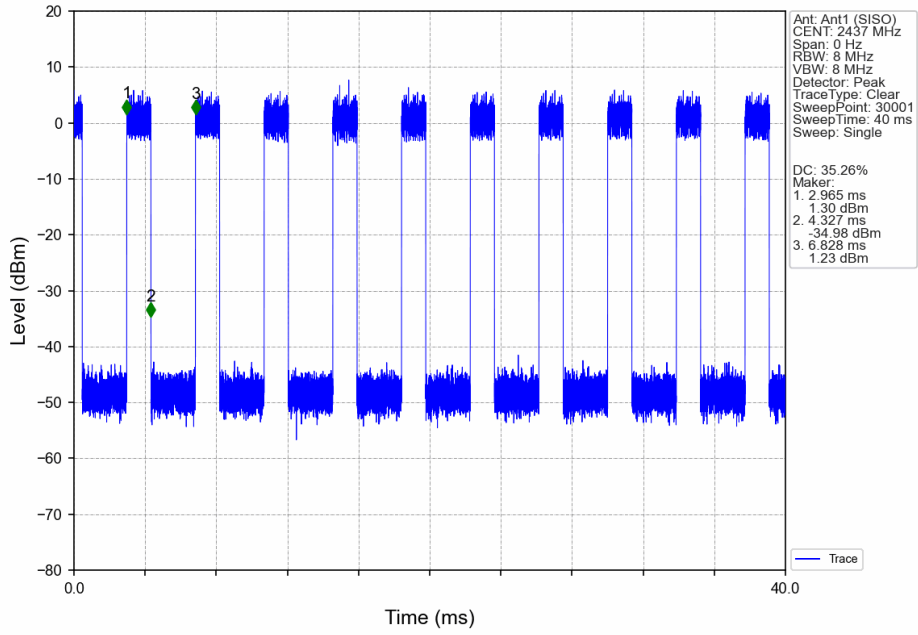
802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



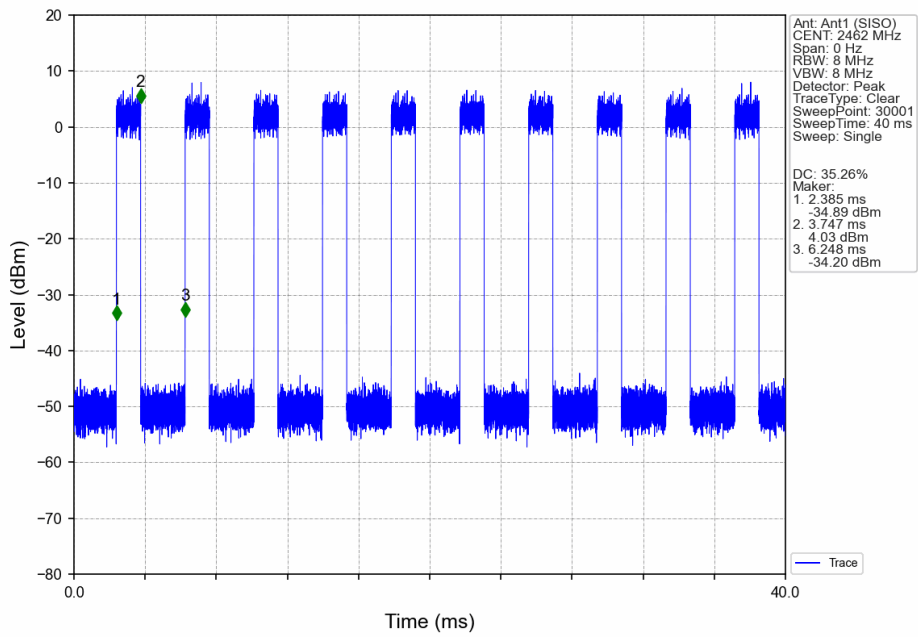
802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



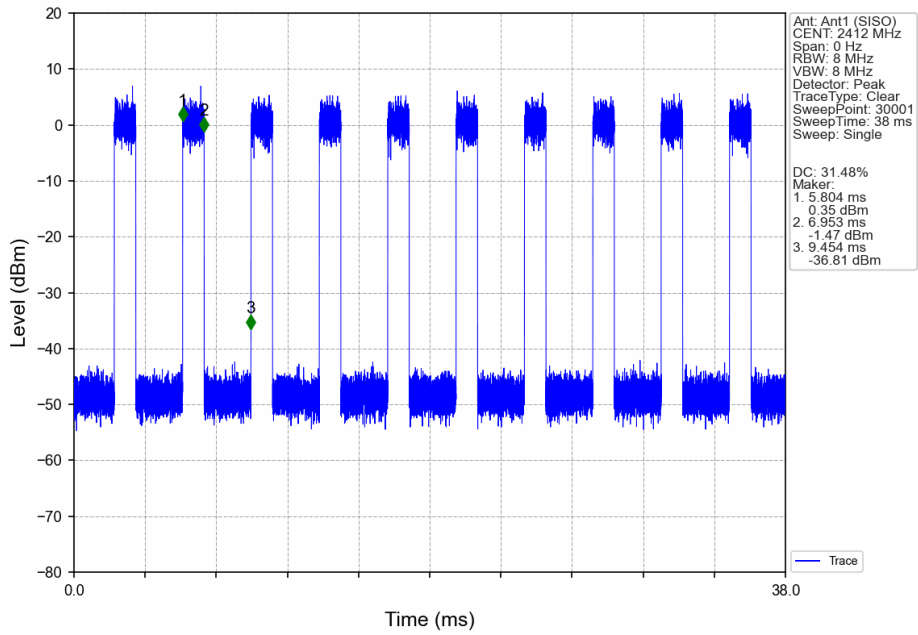
802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



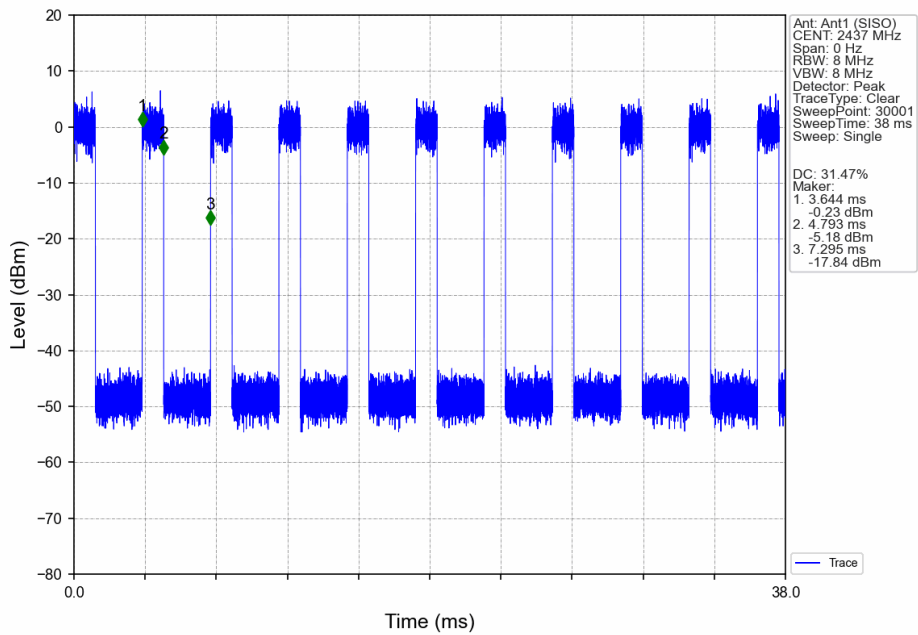
802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



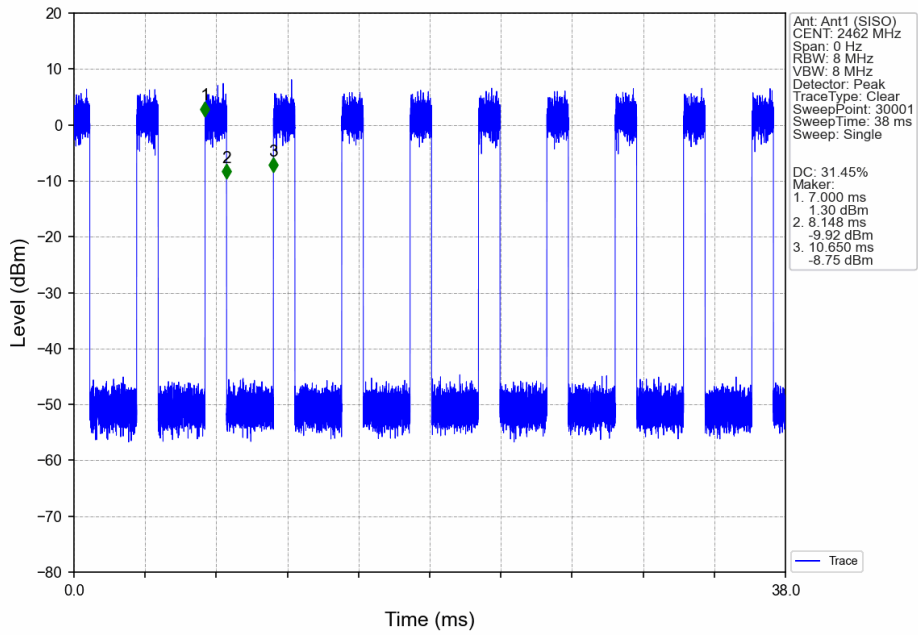
802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



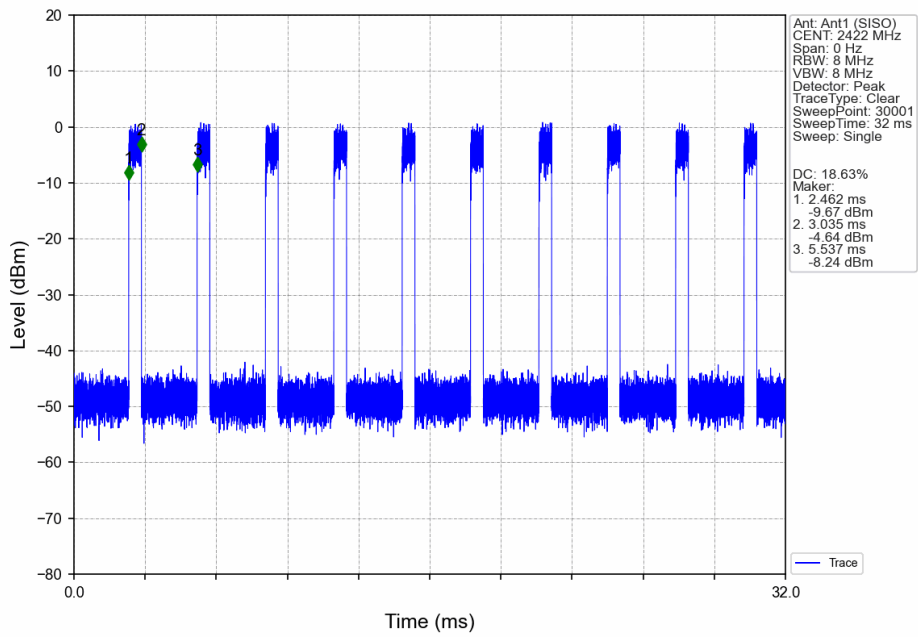
802.11n(HT20)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



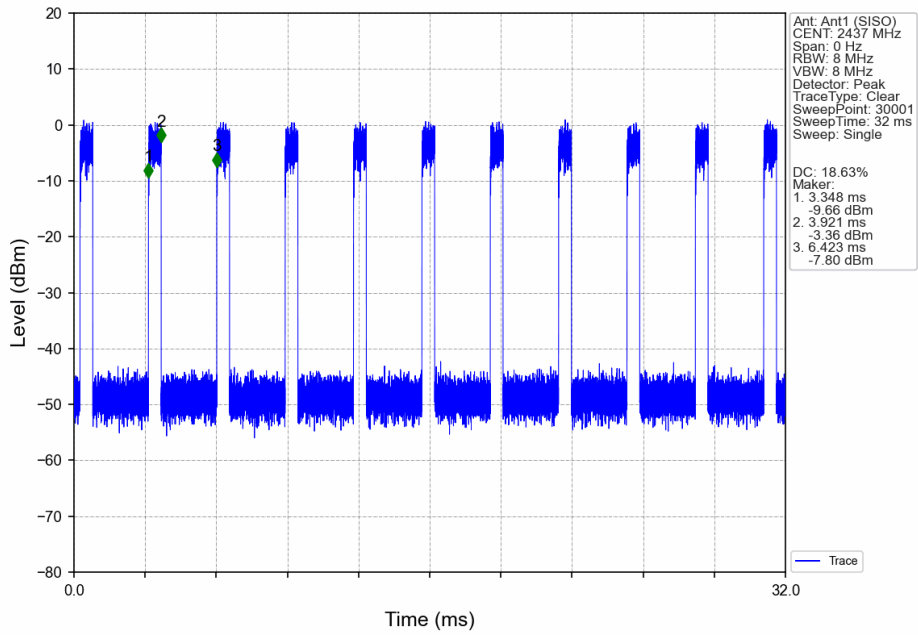
802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



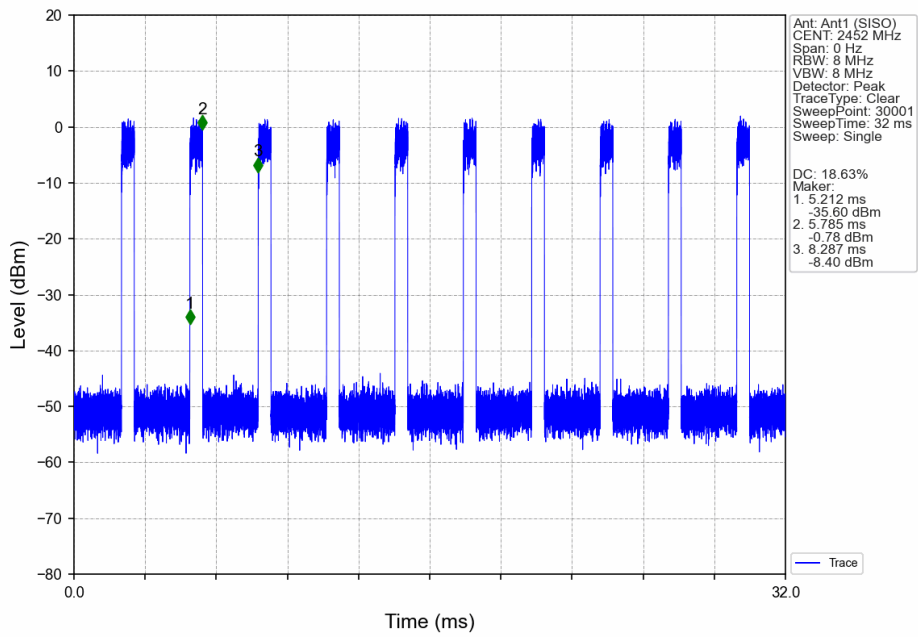
802.11n(HT40)\_LCH\_2422MHz\_Ant1 (SISO)\_NTNV



802.11n(HT40)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



802.11n(HT40)\_HCH\_2452MHz\_Ant1 (SISO)\_NTNV





## 2. Bandwidth

### 2.1 Test Result

#### 2.1.1 OBW

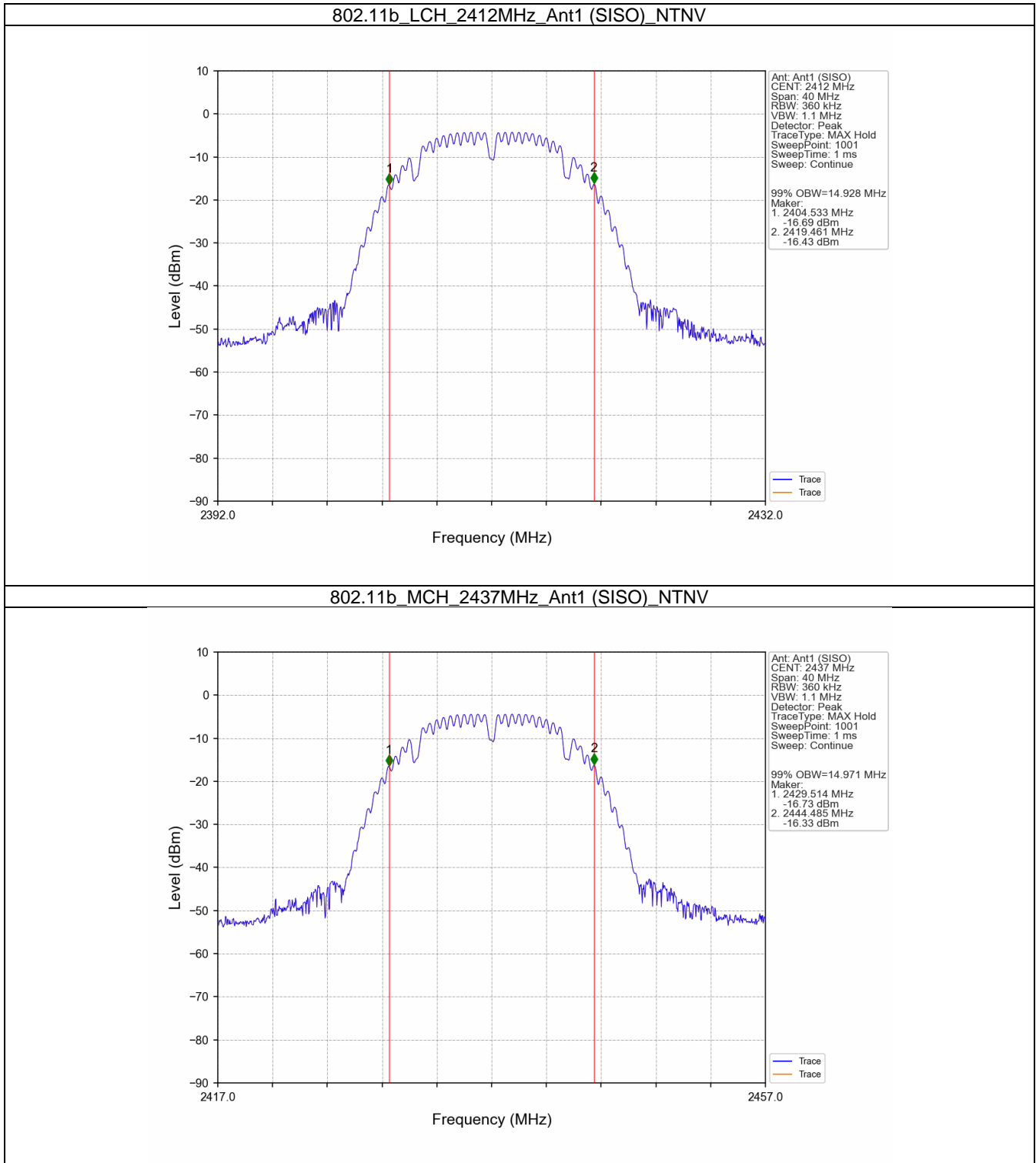
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	14.928	/	Pass
		2437	1	14.971	/	Pass
		2462	1	14.966	/	Pass
802.11g	SISO	2412	1	16.675	/	Pass
		2437	1	16.693	/	Pass
		2462	1	16.702	/	Pass
802.11n (HT20)	SISO	2412	1	17.612	/	Pass
		2437	1	17.629	/	Pass
		2462	1	17.633	/	Pass
802.11n (HT40)	SISO	2422	1	36.292	/	Pass
		2437	1	36.212	/	Pass
		2452	1	36.346	/	Pass

#### 2.1.2 6dB BW

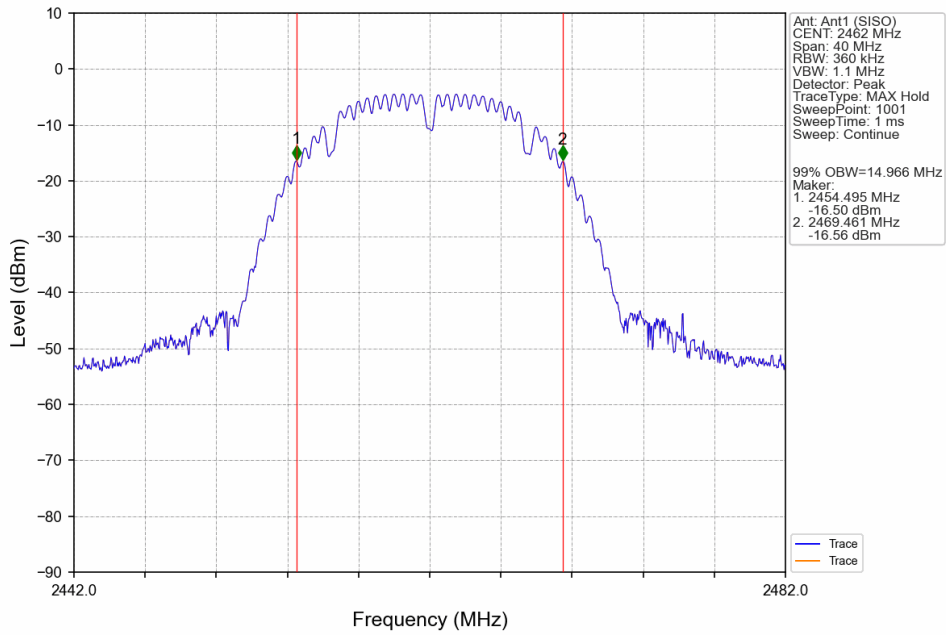
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	10.170	$\geq 0.5$	Pass
		2437	1	12.051	$\geq 0.5$	Pass
		2462	1	10.177	$\geq 0.5$	Pass
802.11g	SISO	2412	1	16.357	$\geq 0.5$	Pass
		2437	1	16.120	$\geq 0.5$	Pass
		2462	1	16.359	$\geq 0.5$	Pass
802.11n (HT20)	SISO	2412	1	17.250	$\geq 0.5$	Pass
		2437	1	17.426	$\geq 0.5$	Pass
		2462	1	17.281	$\geq 0.5$	Pass
802.11n (HT40)	SISO	2422	1	36.055	$\geq 0.5$	Pass
		2437	1	35.946	$\geq 0.5$	Pass
		2452	1	36.217	$\geq 0.5$	Pass

## 2.2 Test Graph

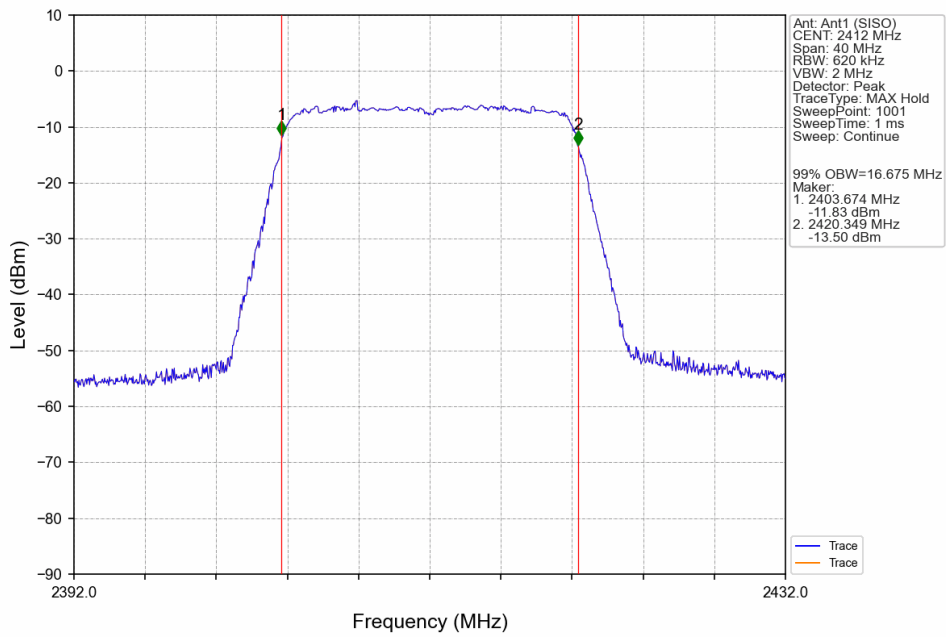
### 2.2.1 OBW



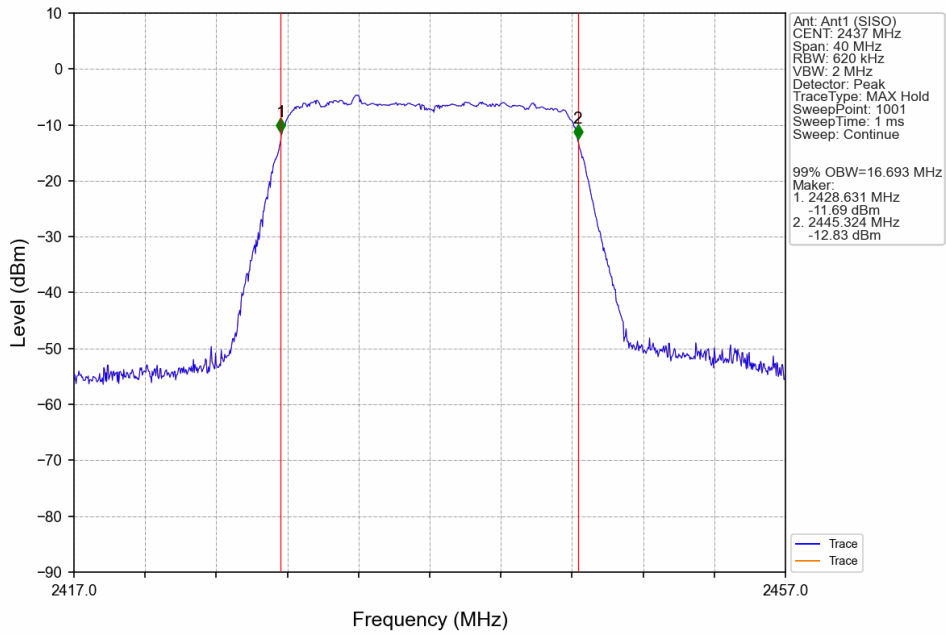
802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



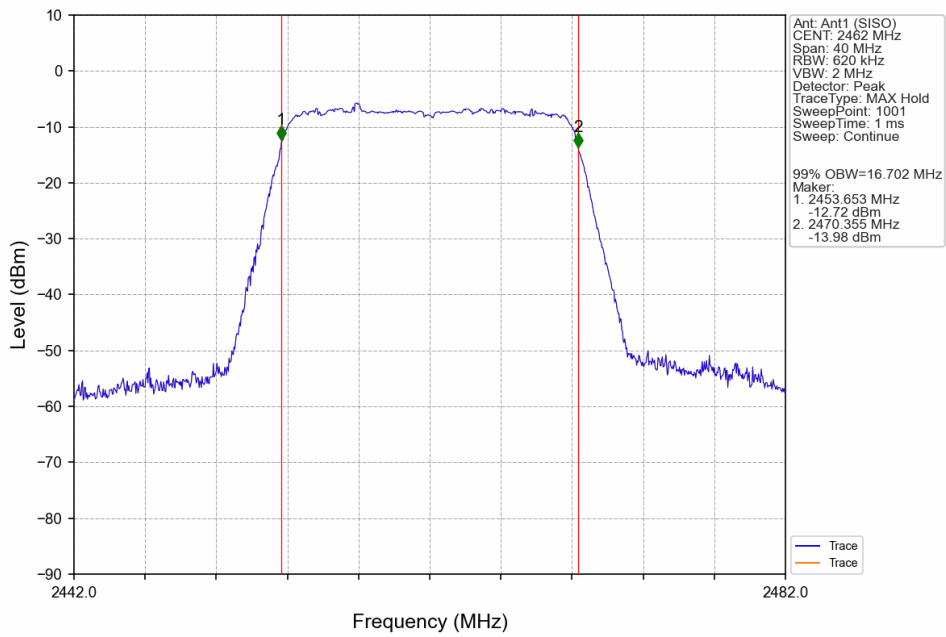
802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



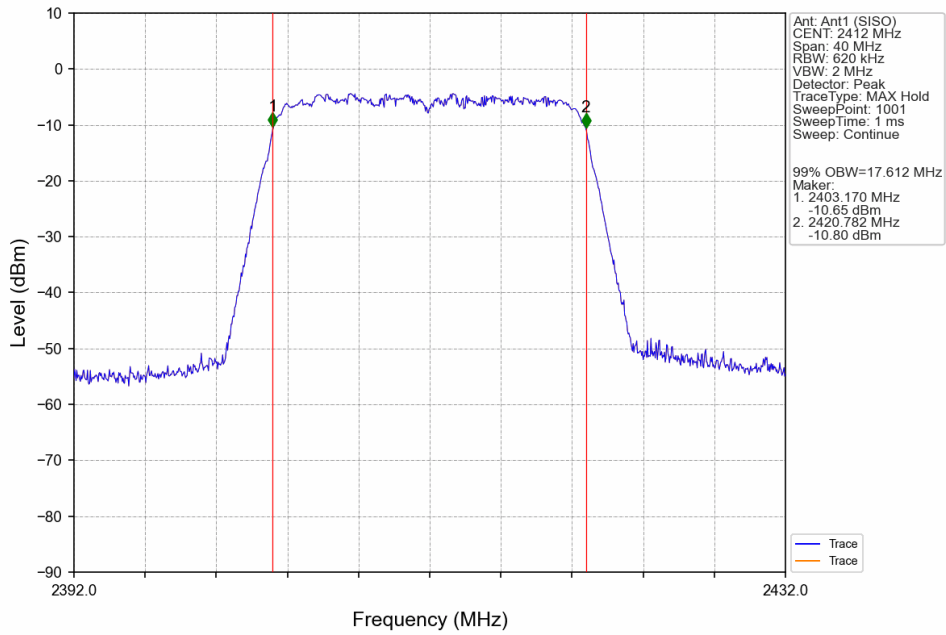
802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



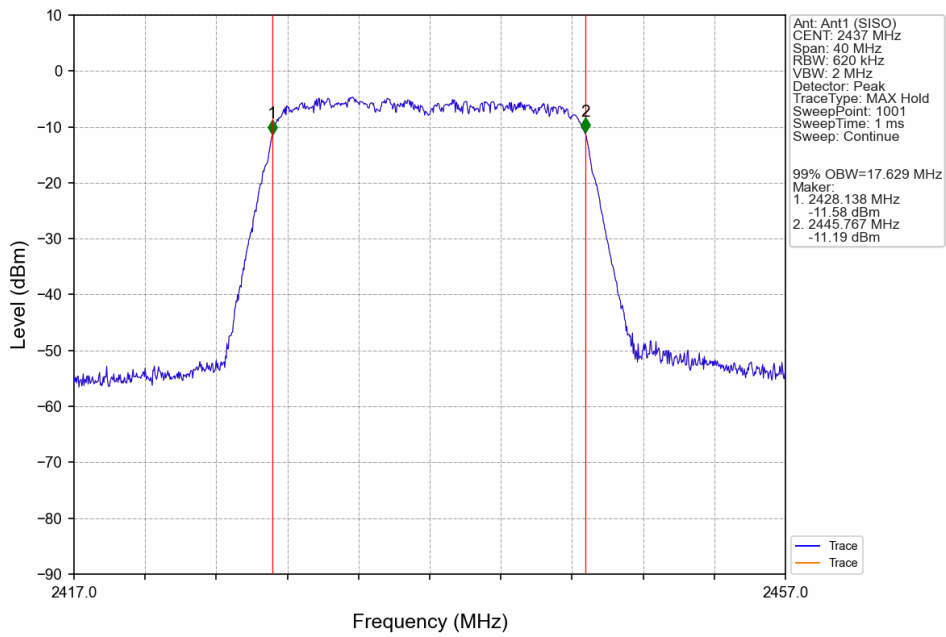
802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



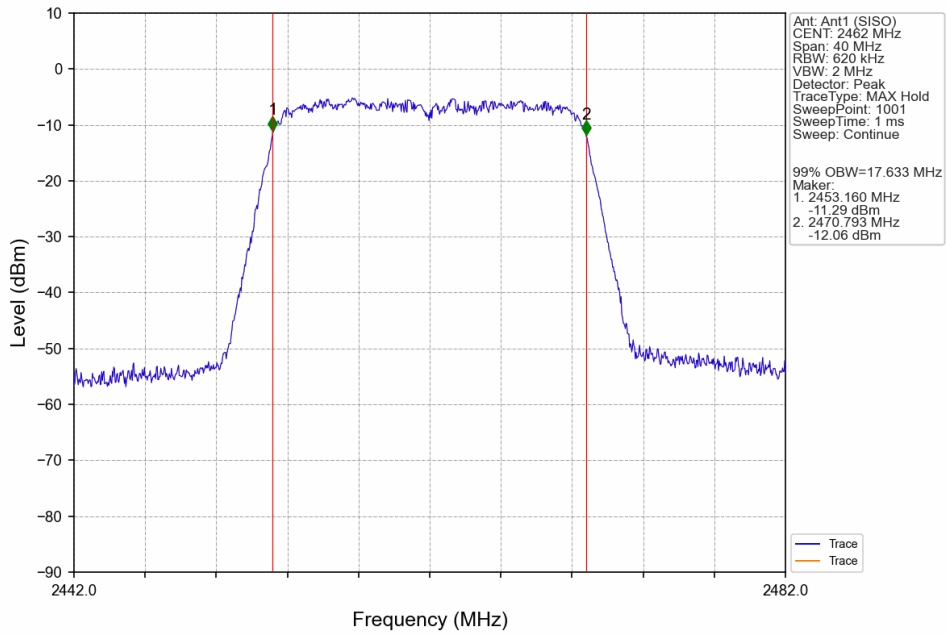
802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



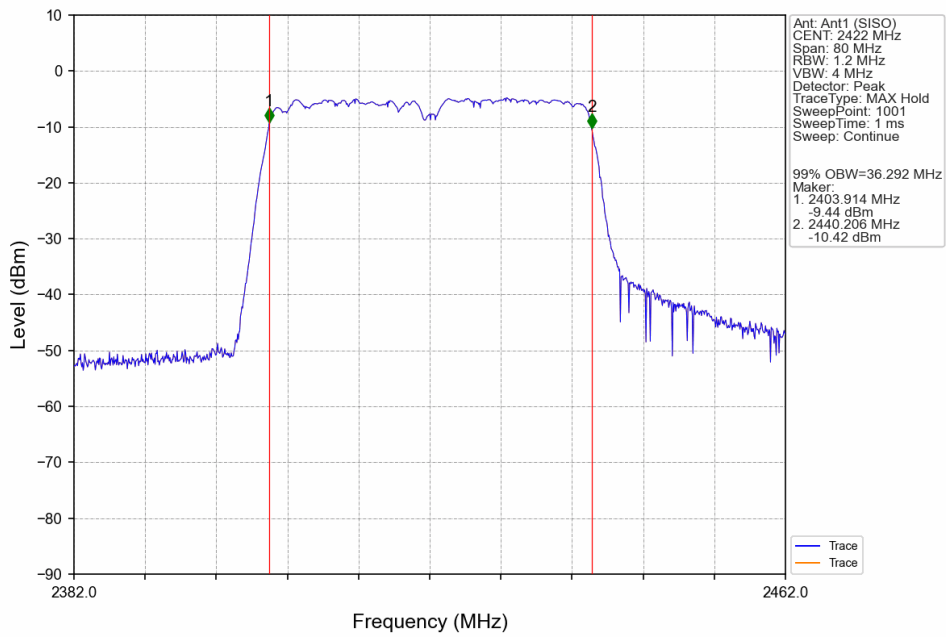
802.11n(HT20)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



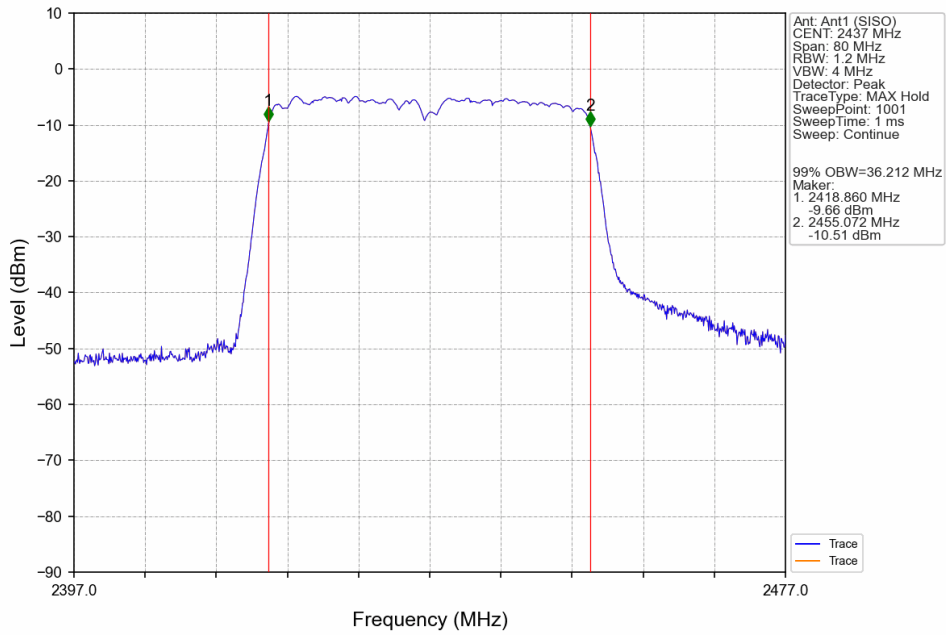
802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



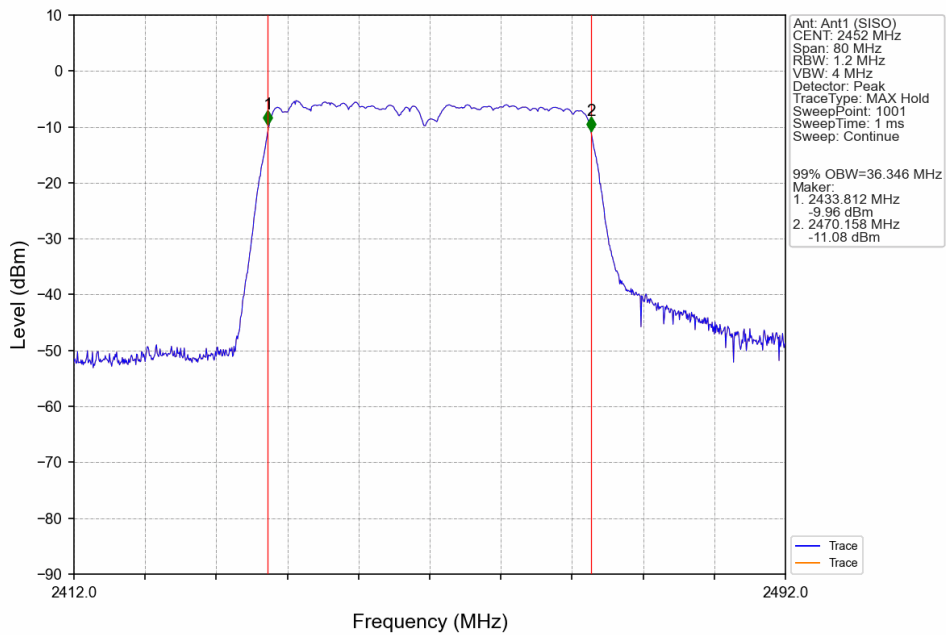
802.11n(HT40)\_LCH\_2422MHz\_Ant1 (SISO)\_NTNV



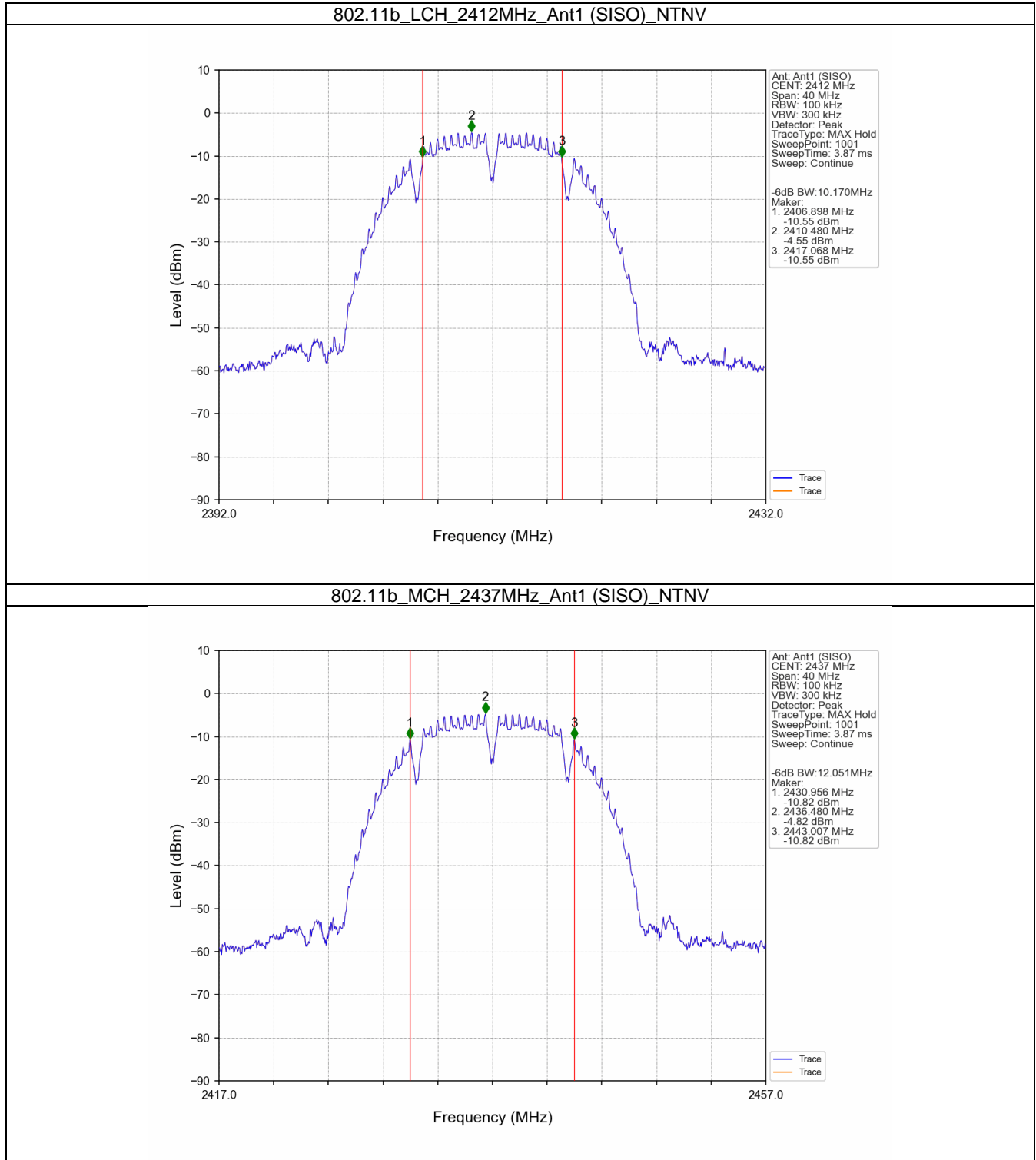
802.11n(HT40)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



802.11n(HT40)\_HCH\_2452MHz\_Ant1 (SISO)\_NTNV

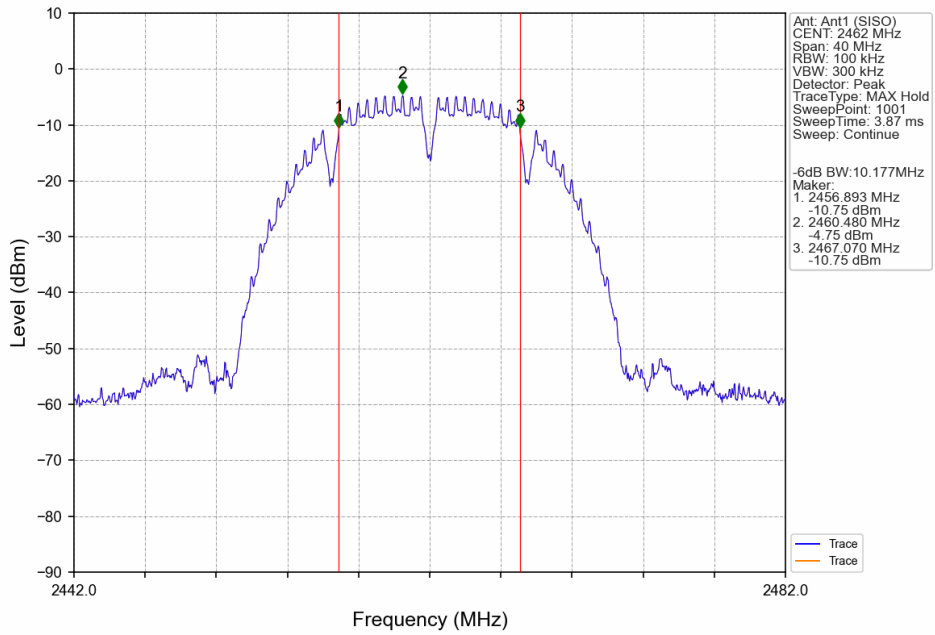


## 2.2.2 6dB BW

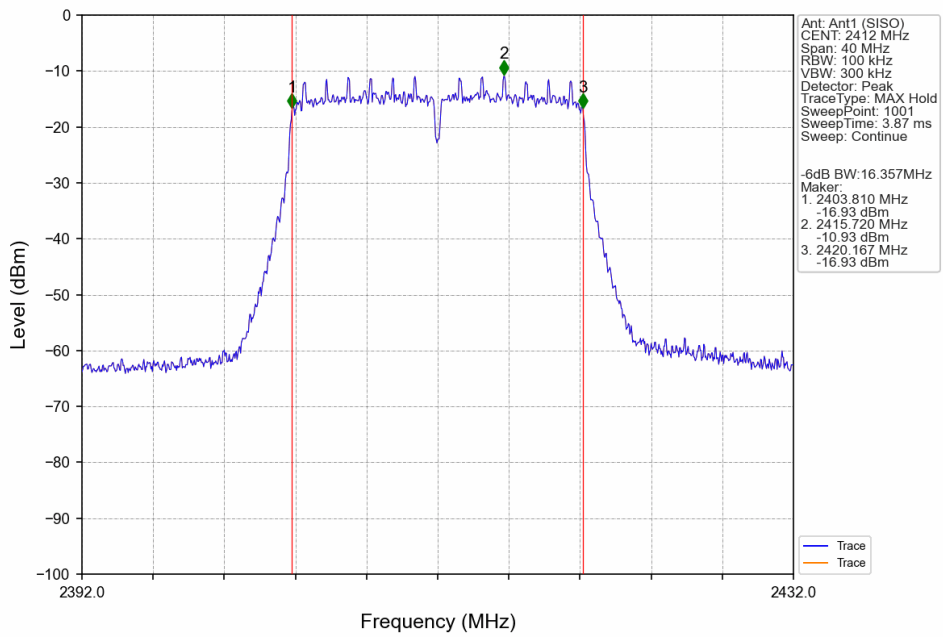




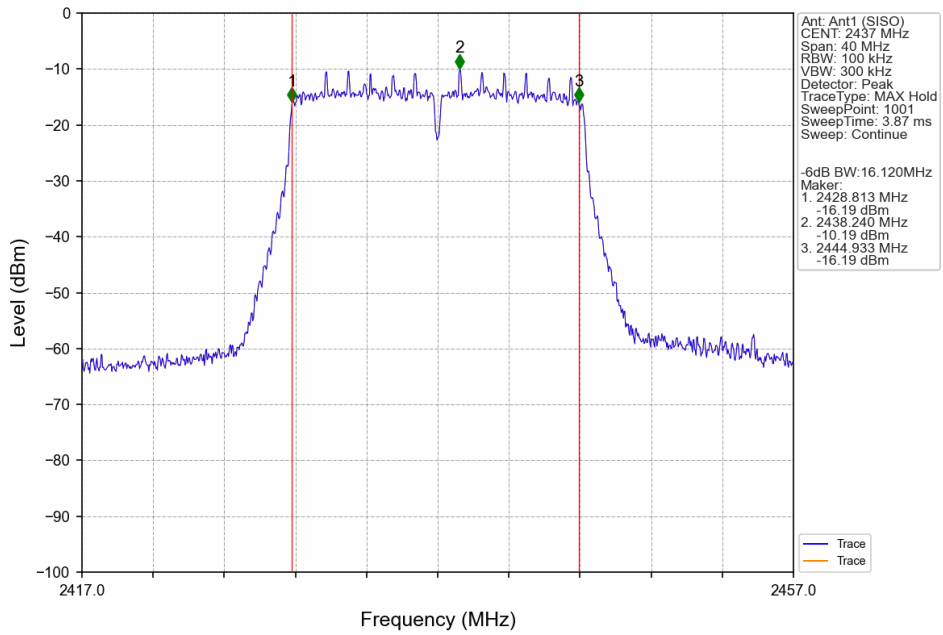
802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



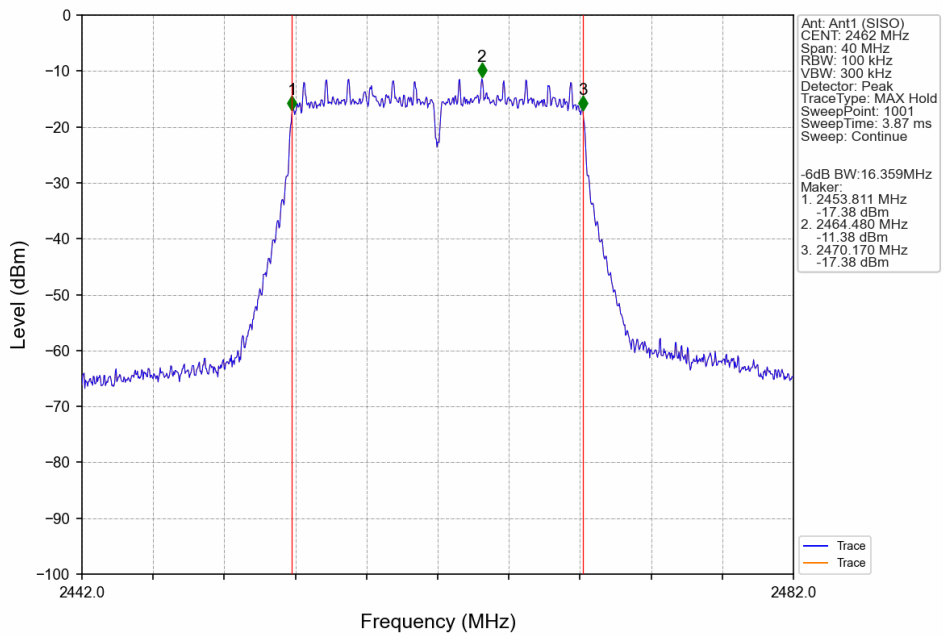
802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



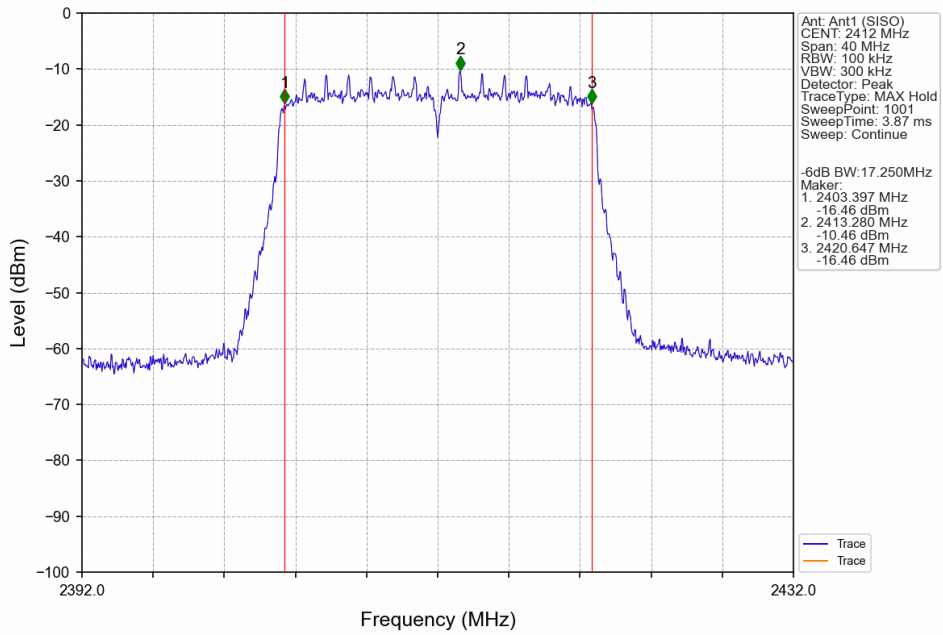
802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



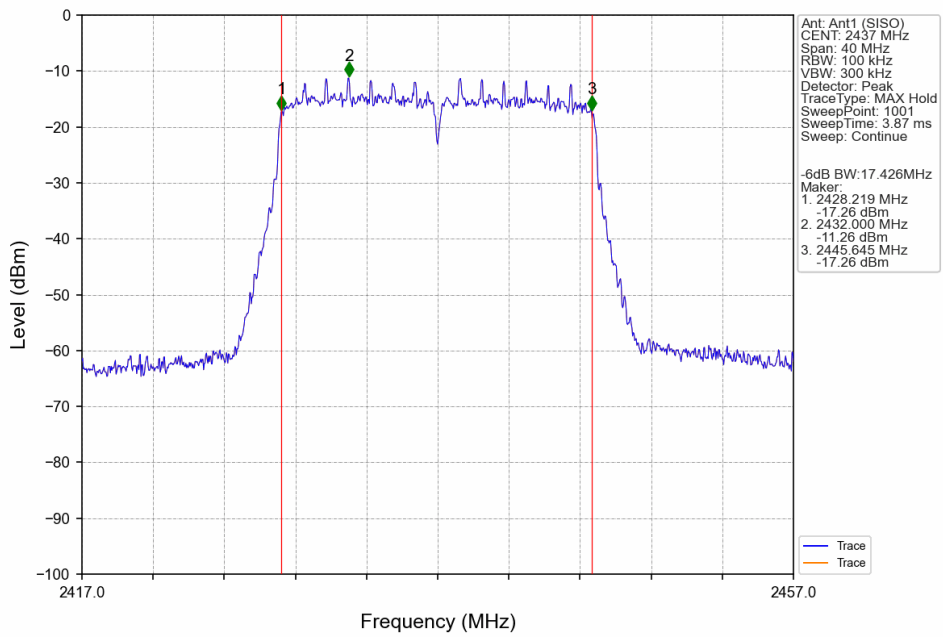
802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



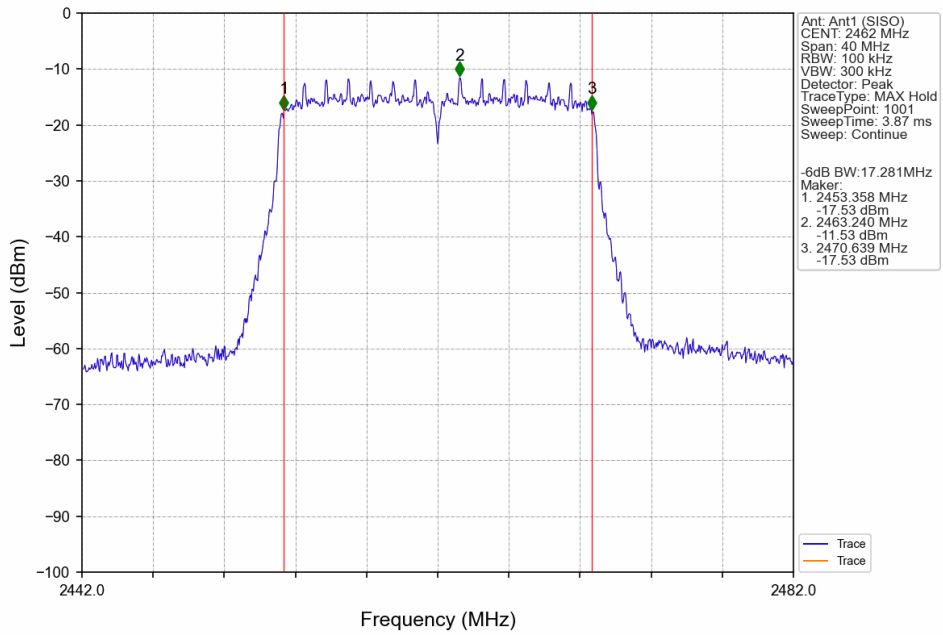
802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



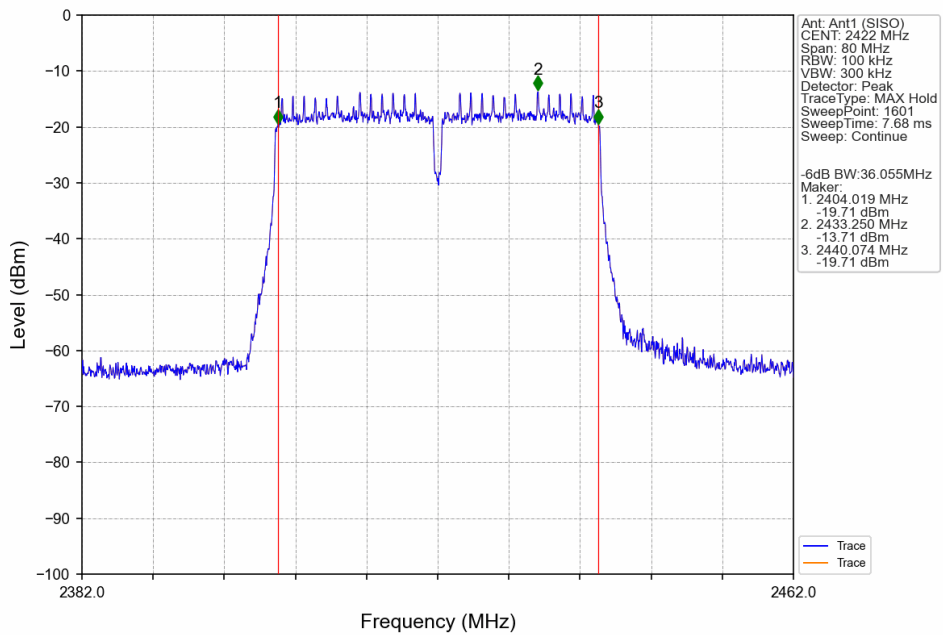
802.11n(HT20)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



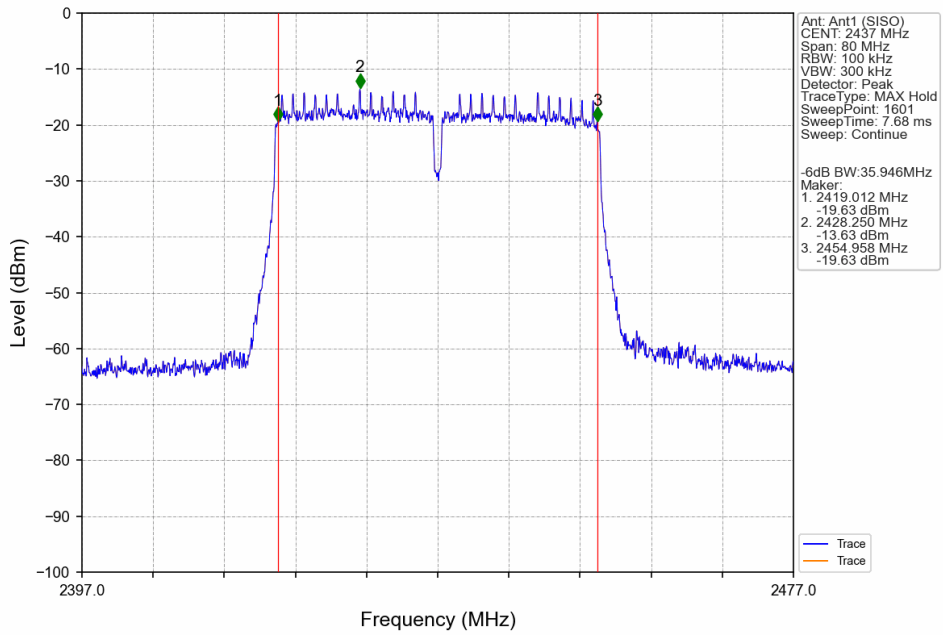
802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



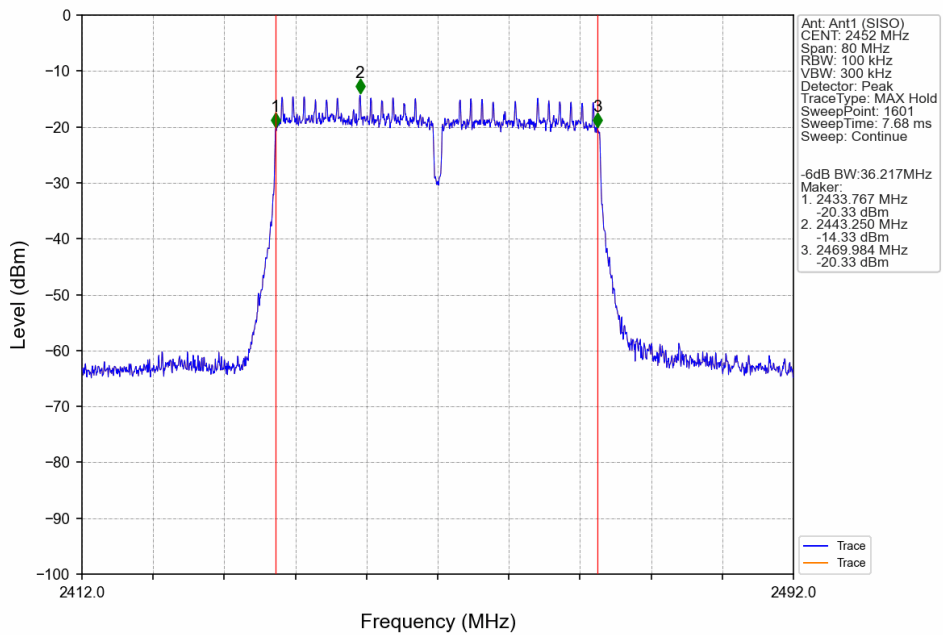
802.11n(HT40)\_LCH\_2422MHz\_Ant1 (SISO)\_NTNV



802.11n(HT40)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



802.11n(HT40)\_HCH\_2452MHz\_Ant1 (SISO)\_NTNV



### 3. Maximum Conducted Output Power

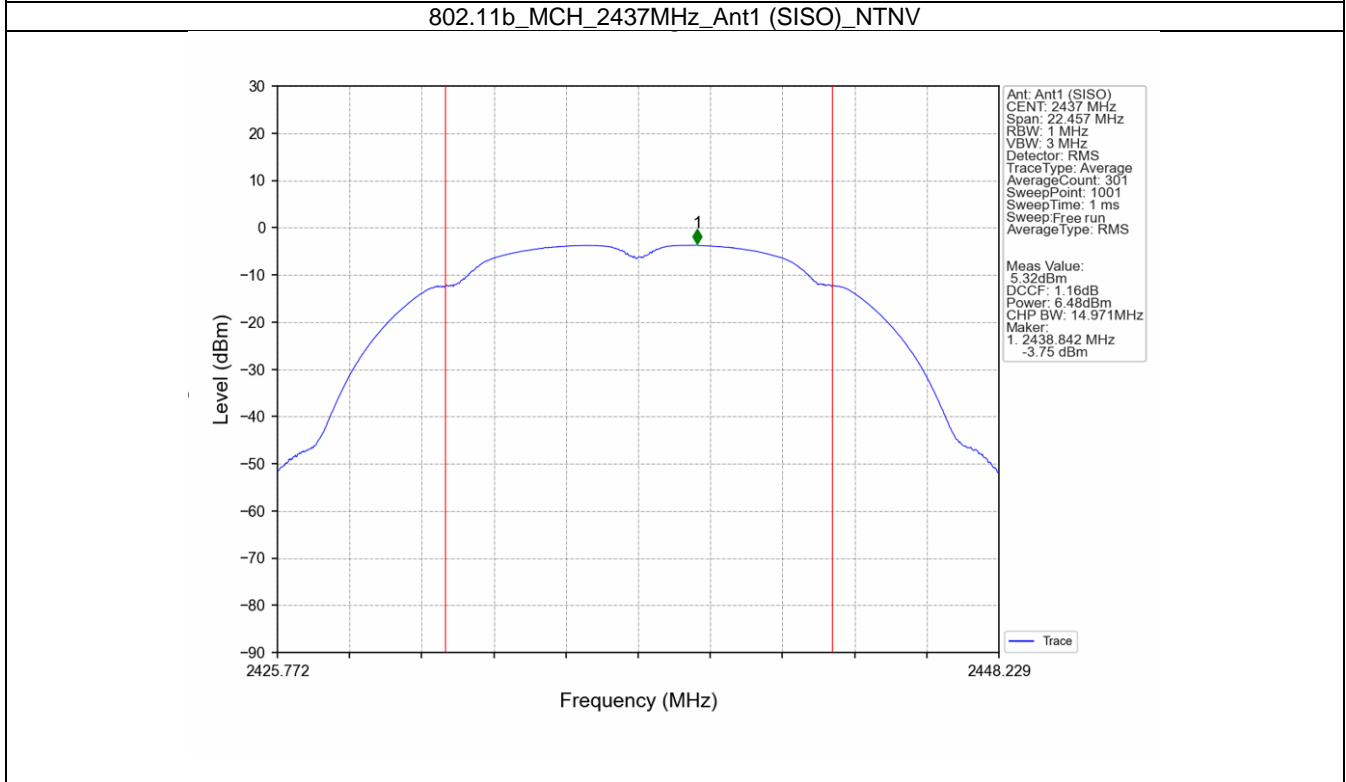
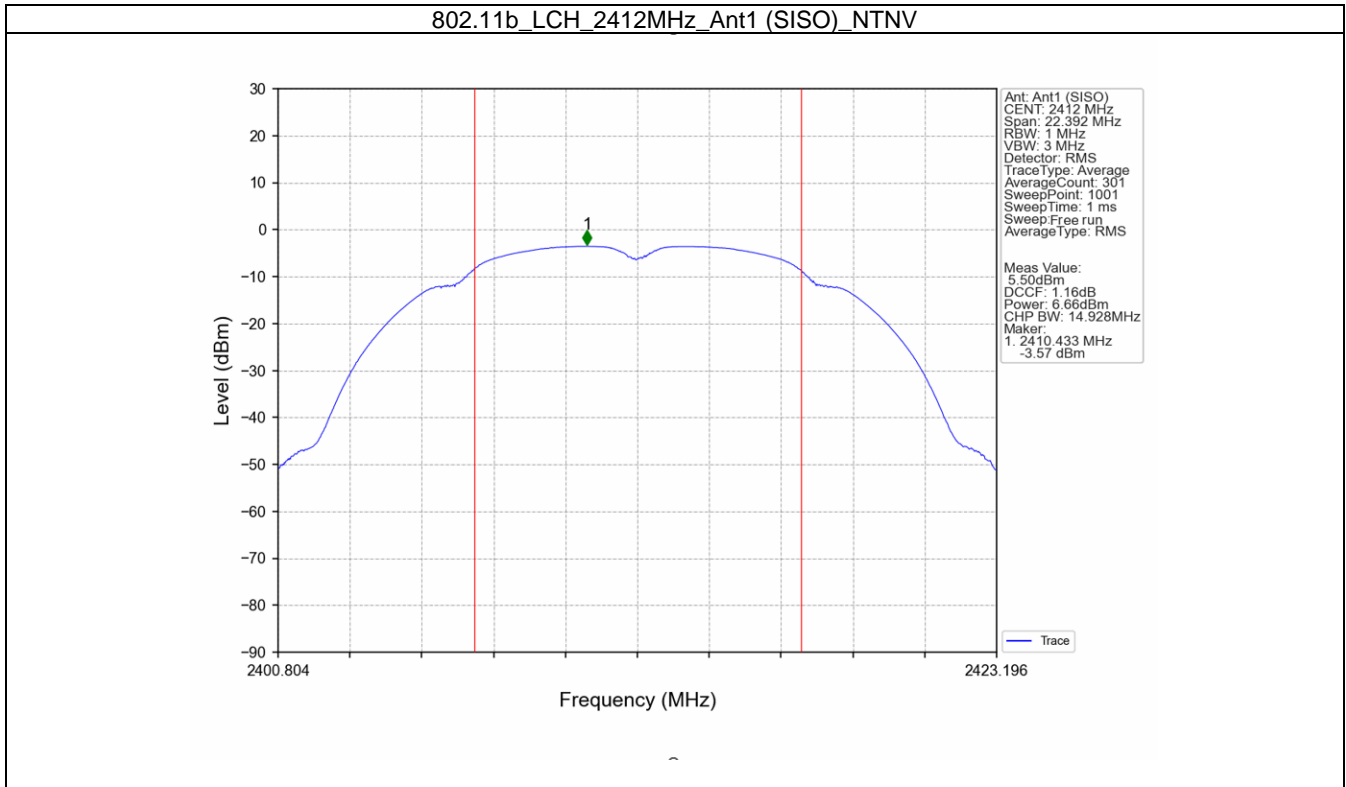
#### 3.1 Test Result

##### 3.1.1 Power

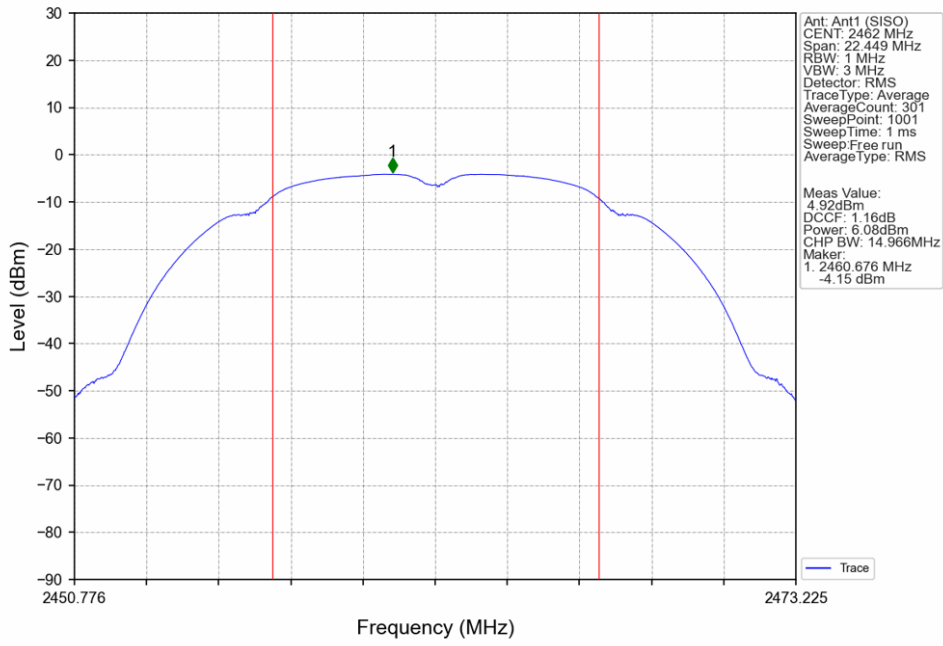
Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	6.66	<=30	Pass
		2437	6.48	<=30	Pass
		2462	6.08	<=30	Pass
802.11g	SISO	2412	5.81	<=30	Pass
		2437	5.84	<=30	Pass
		2462	4.87	<=30	Pass
802.11n (HT20)	SISO	2412	6.03	<=30	Pass
		2437	5.50	<=30	Pass
		2462	5.00	<=30	Pass
802.11n (HT40)	SISO	2422	6.46	<=30	Pass
		2437	5.61	<=30	Pass
		2452	5.52	<=30	Pass

## 3.2 Test Graph

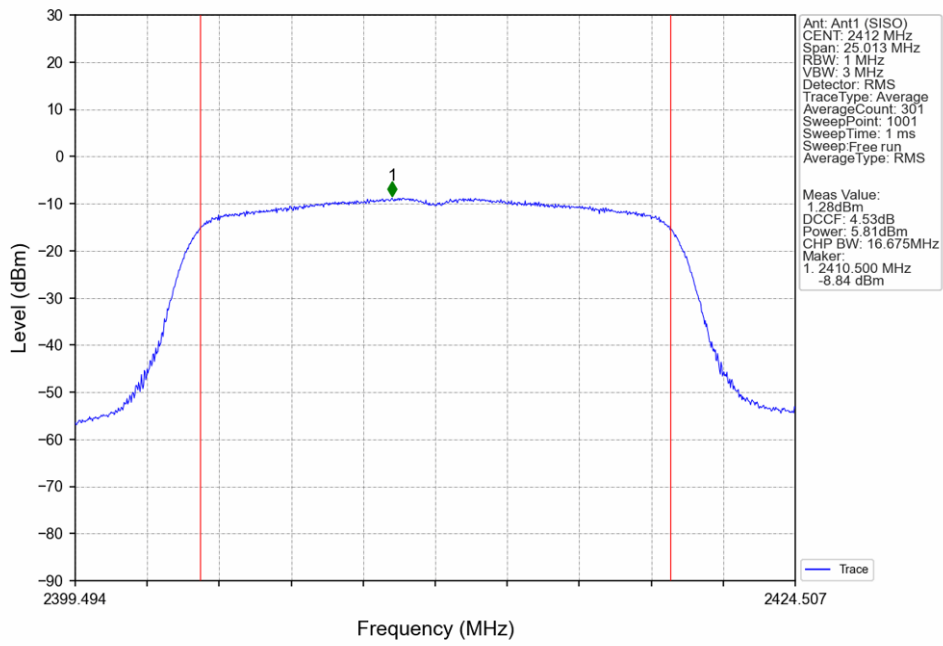
### 3.2.1 Power



802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV

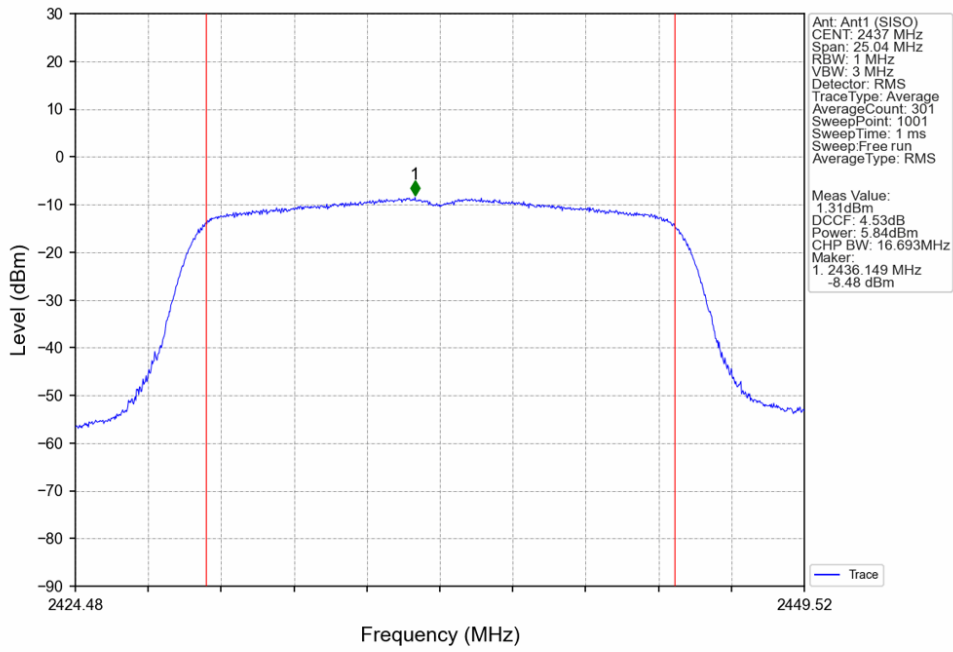


802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV

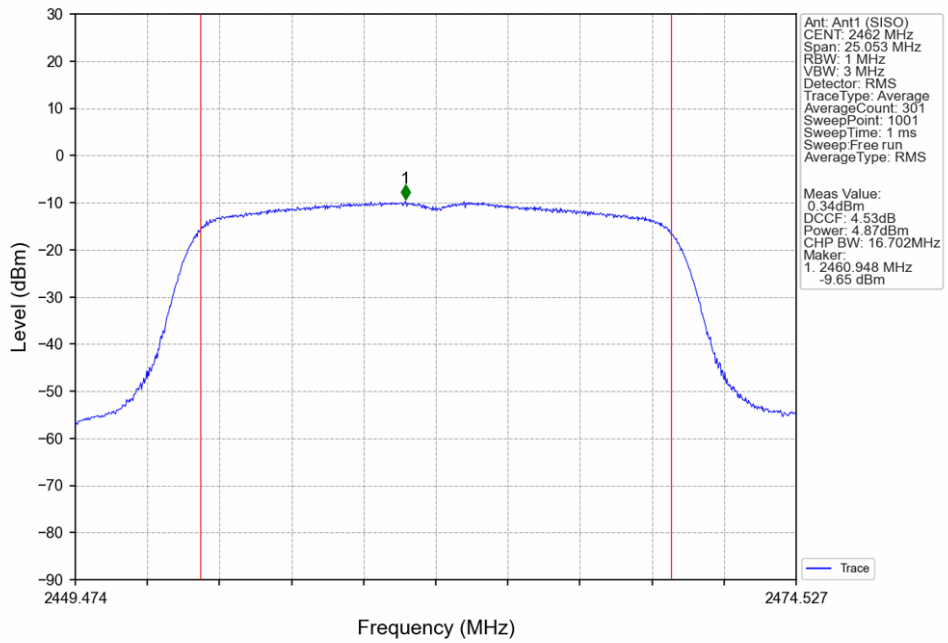




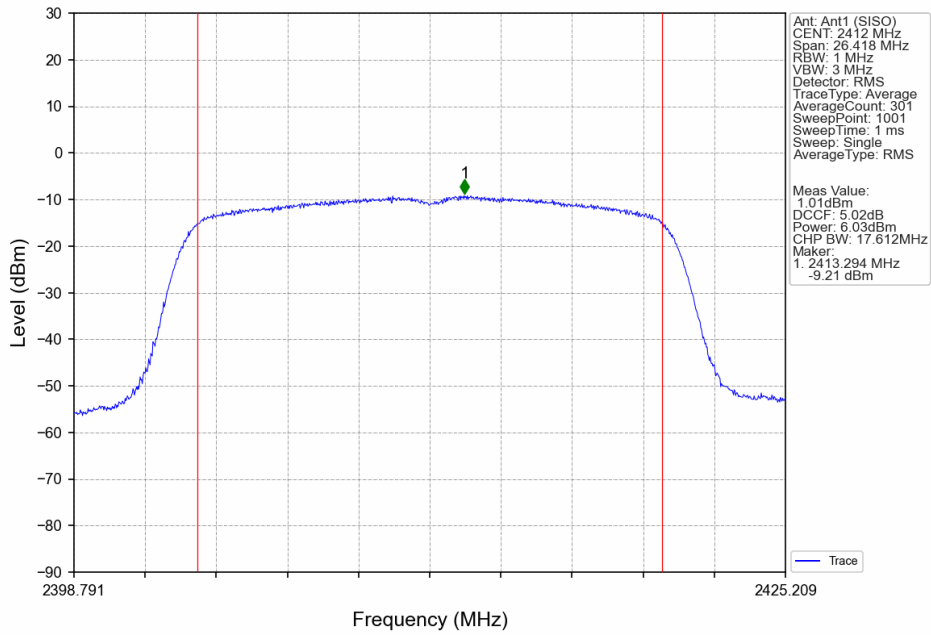
802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



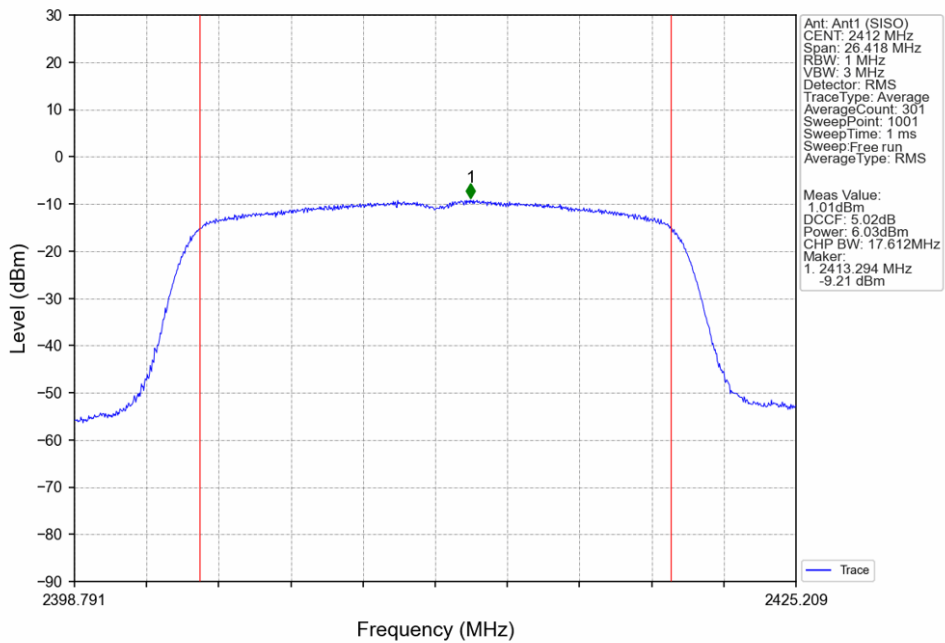
802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



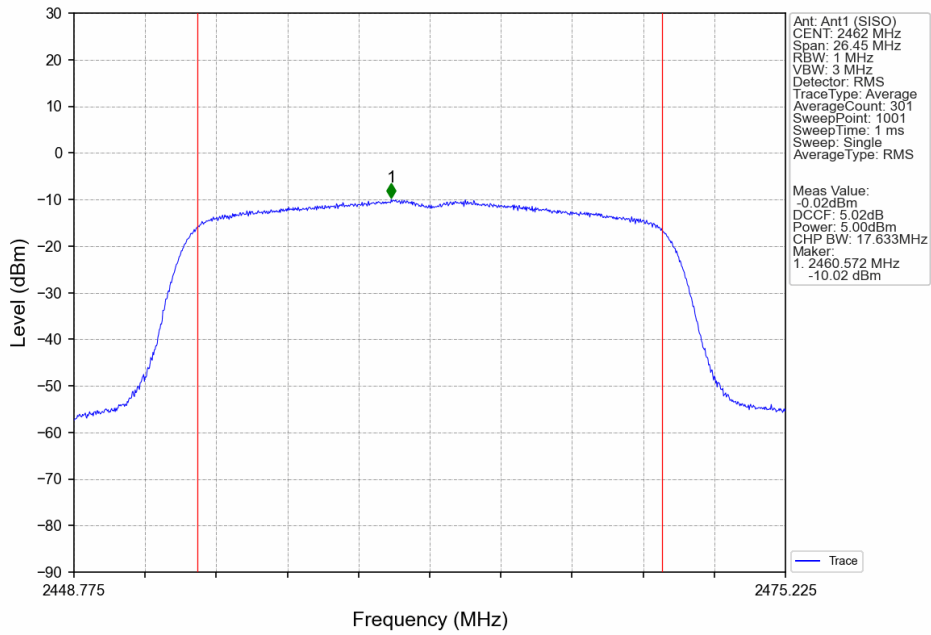
802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



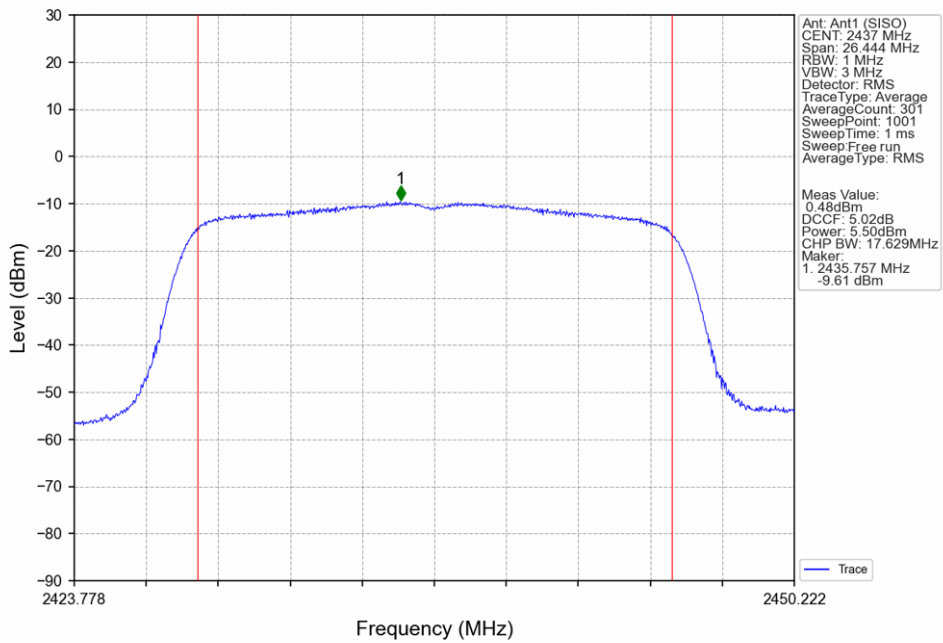
802.11n(HT20)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



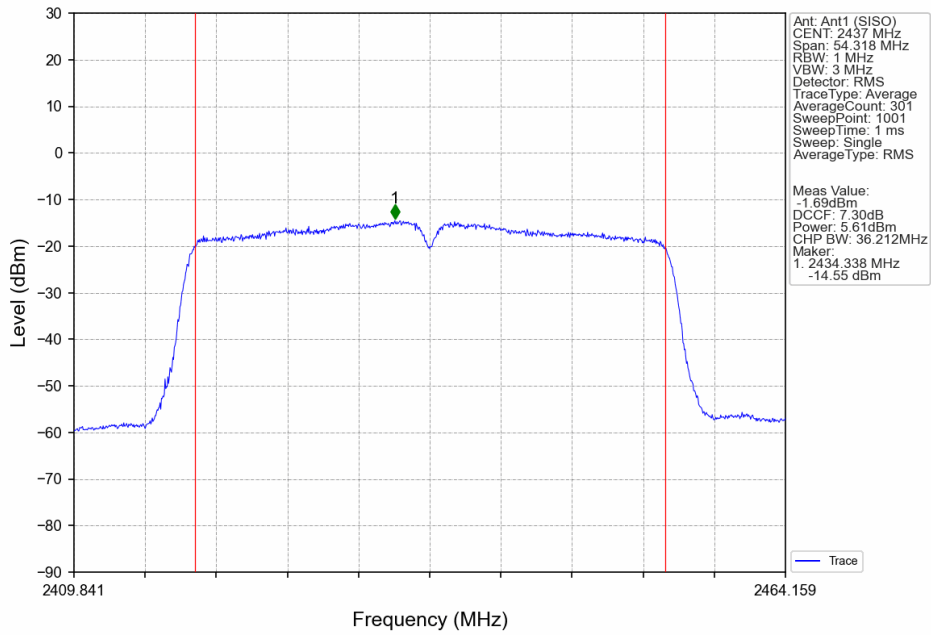
802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



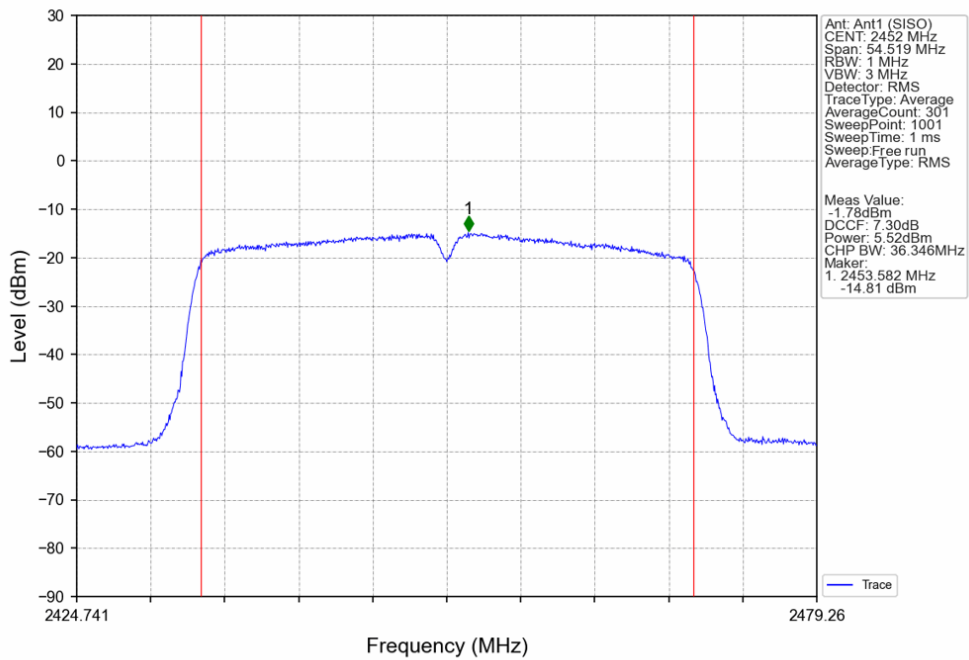
802.11n(HT40)\_LCH\_2422MHz\_Ant1 (SISO)\_NTNV



802.11n(HT40)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



802.11n(HT40)\_HCH\_2452MHz\_Ant1 (SISO)\_NTNV



## 4. Maximum Power Spectral Density

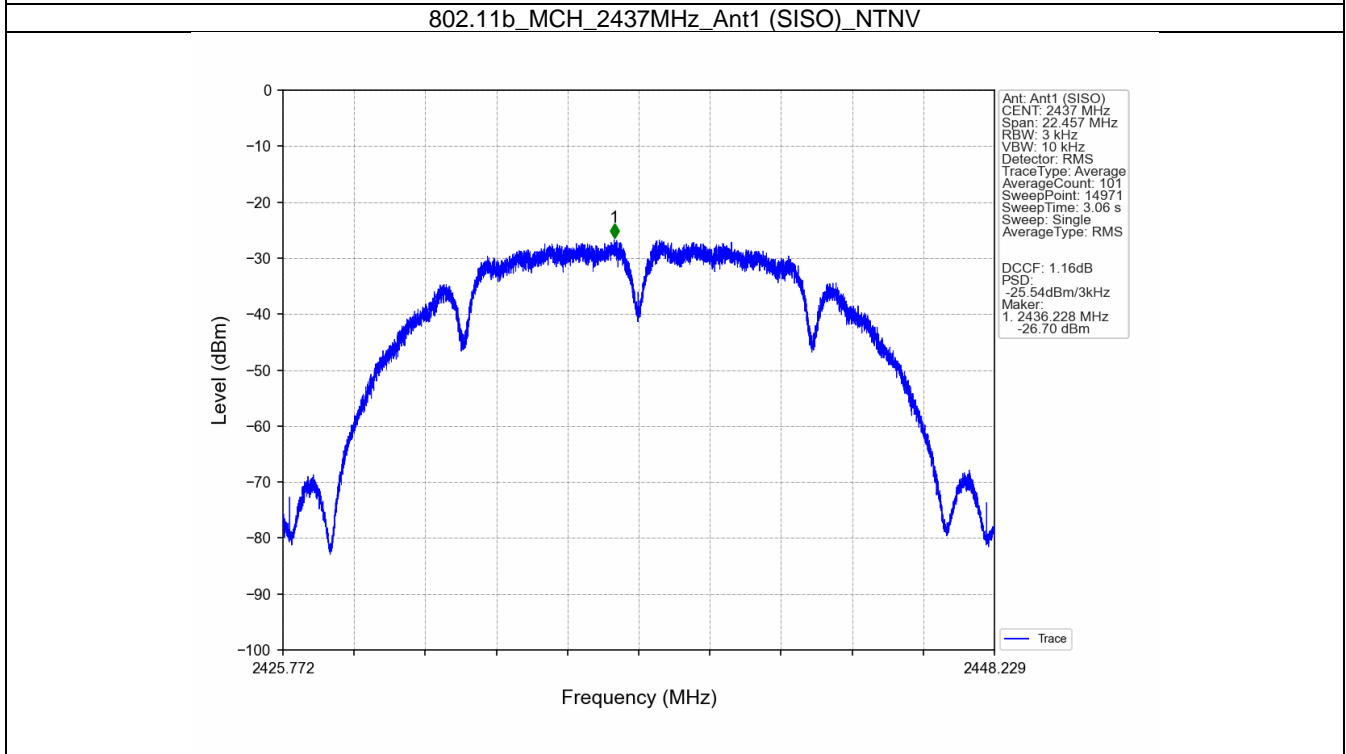
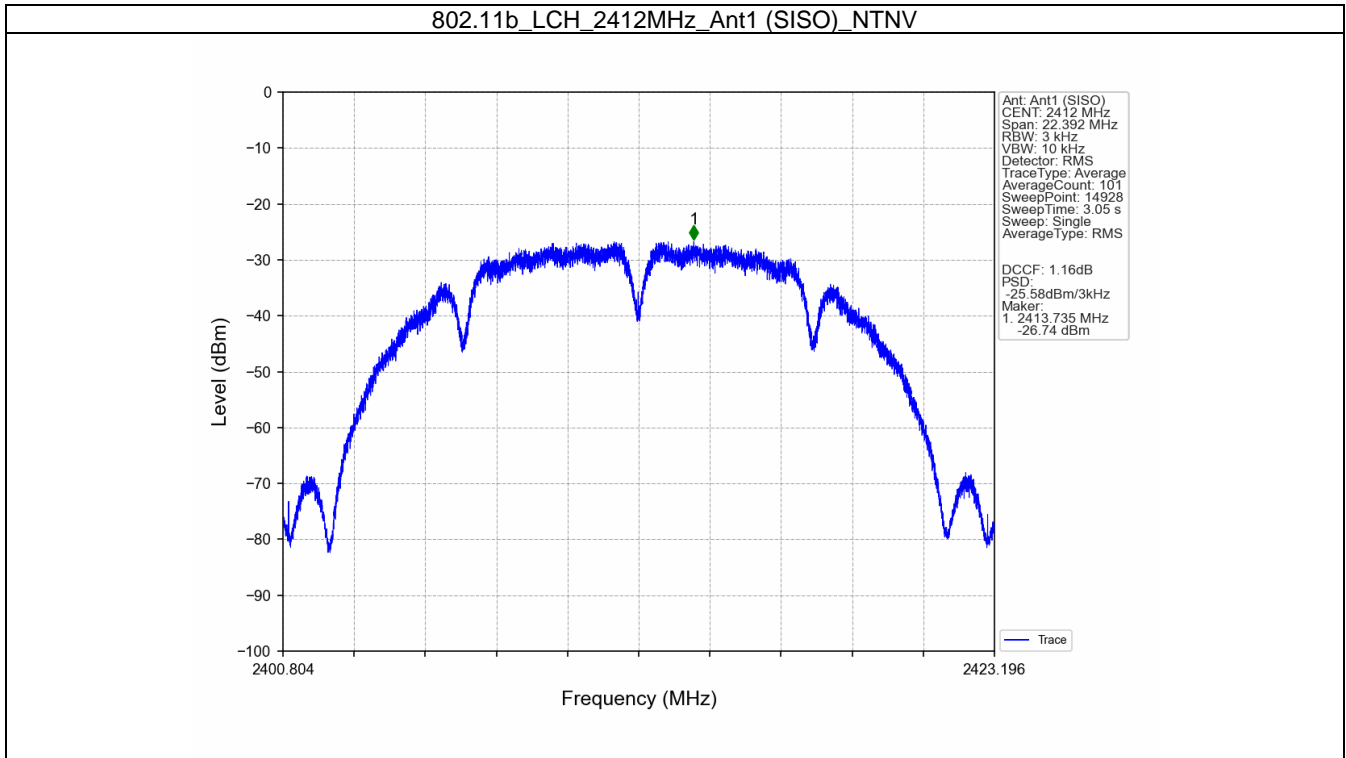
### 4.1 Test Result

#### 4.1.1 PSD

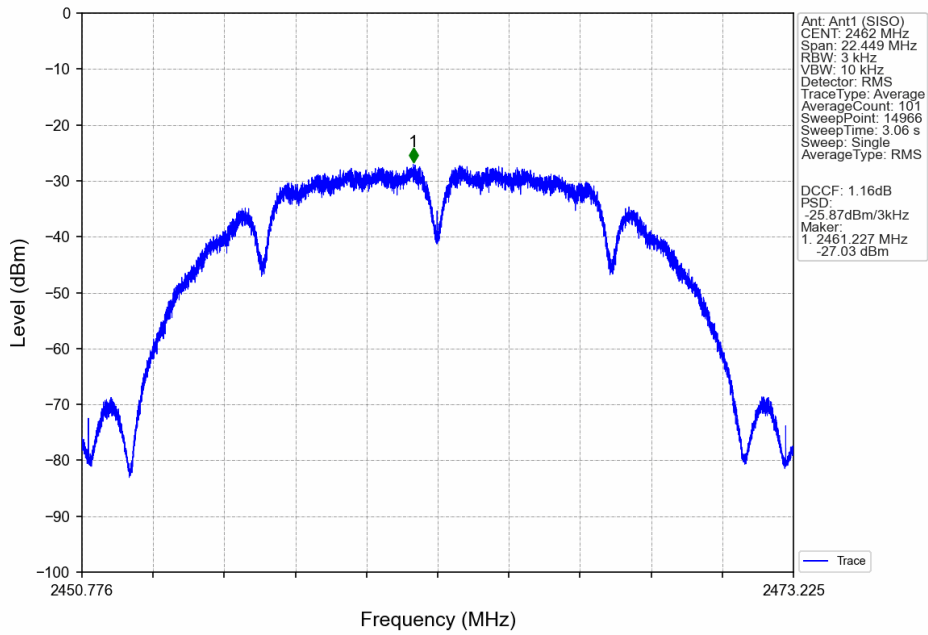
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	-25.58	<=8	Pass
		2437	-25.54	<=8	Pass
		2462	-25.87	<=8	Pass
802.11g	SISO	2412	-25.23	<=8	Pass
		2437	-24.96	<=8	Pass
		2462	-26.24	<=8	Pass
802.11n (HT20)	SISO	2412	-24.30	<=8	Pass
		2437	-24.88	<=8	Pass
		2462	-26.70	<=8	Pass
802.11n (HT40)	SISO	2422	-26.58	<=8	Pass
		2437	-27.28	<=8	Pass
		2452	-27.56	<=8	Pass

## 4.2 Test Graph

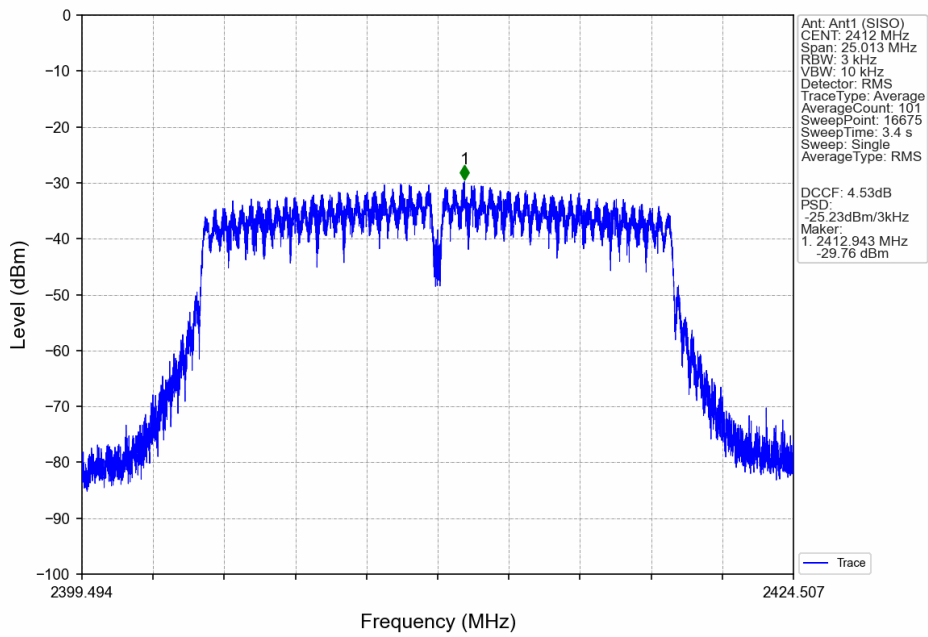
### 4.2.1 PSD



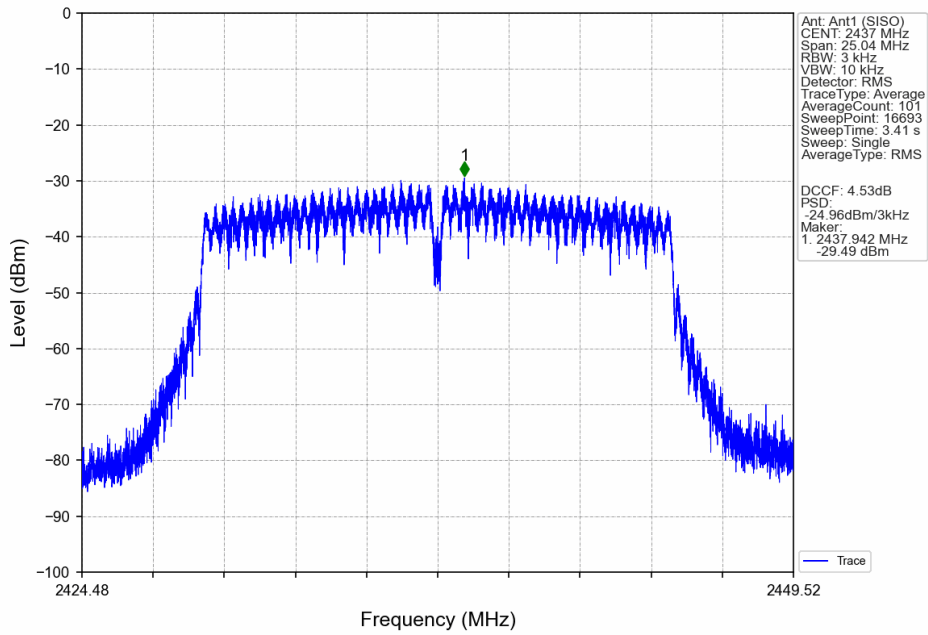
802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



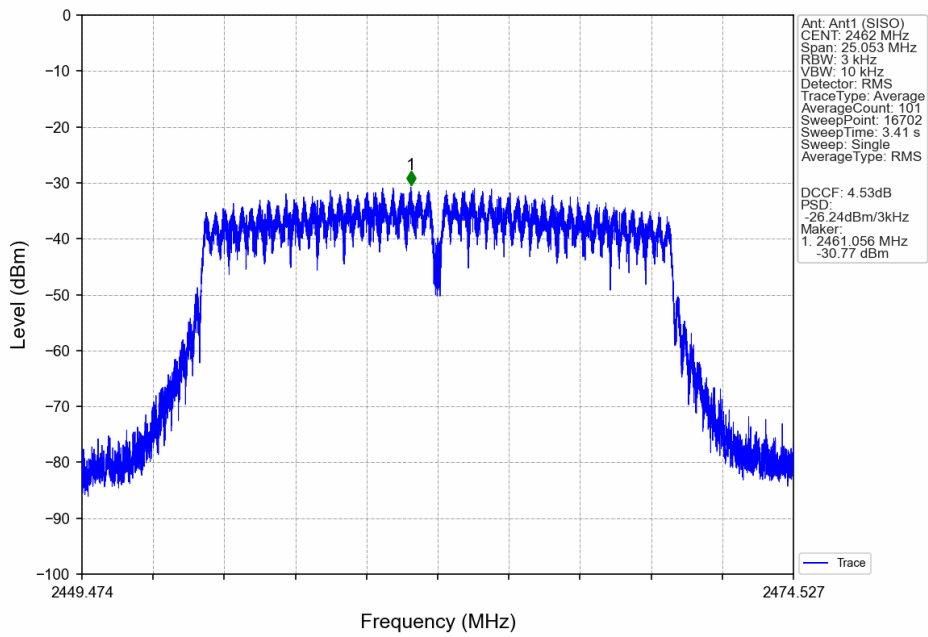
802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV

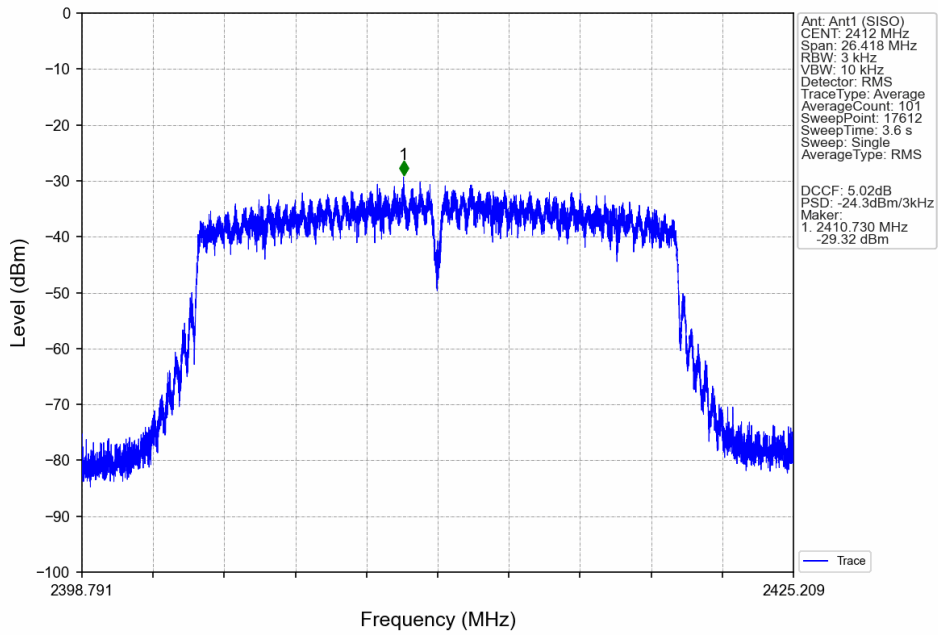


802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV

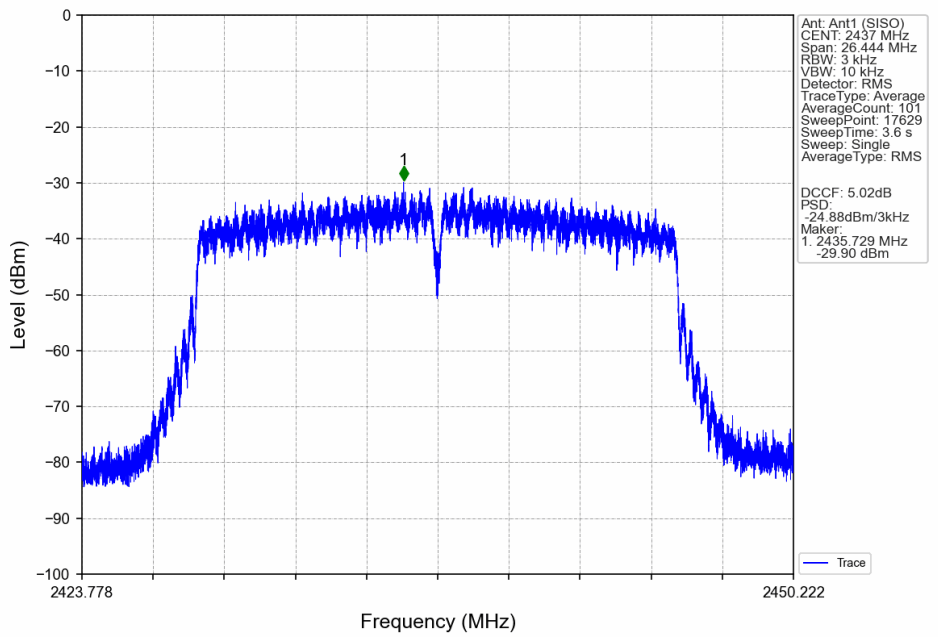




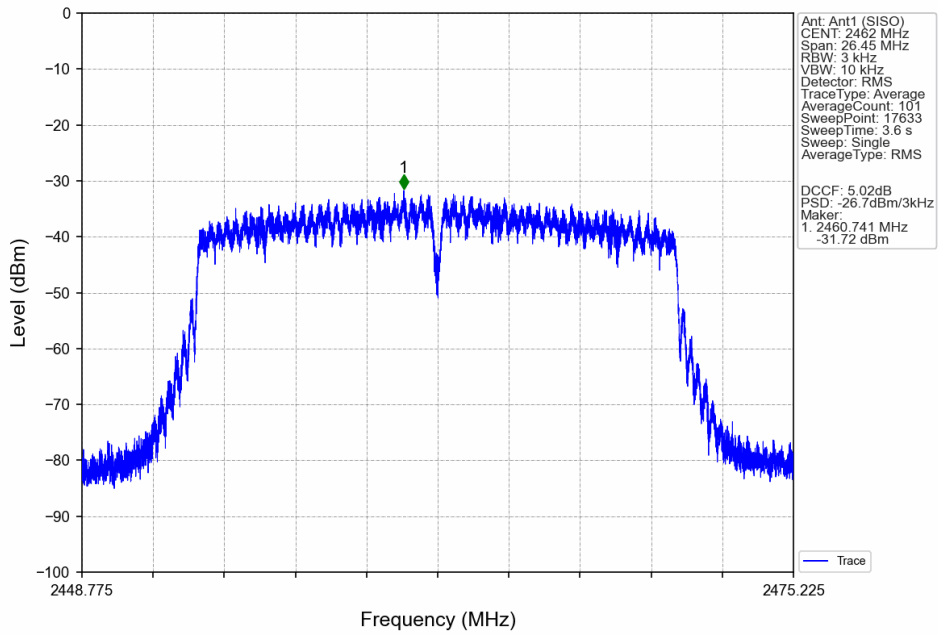
802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



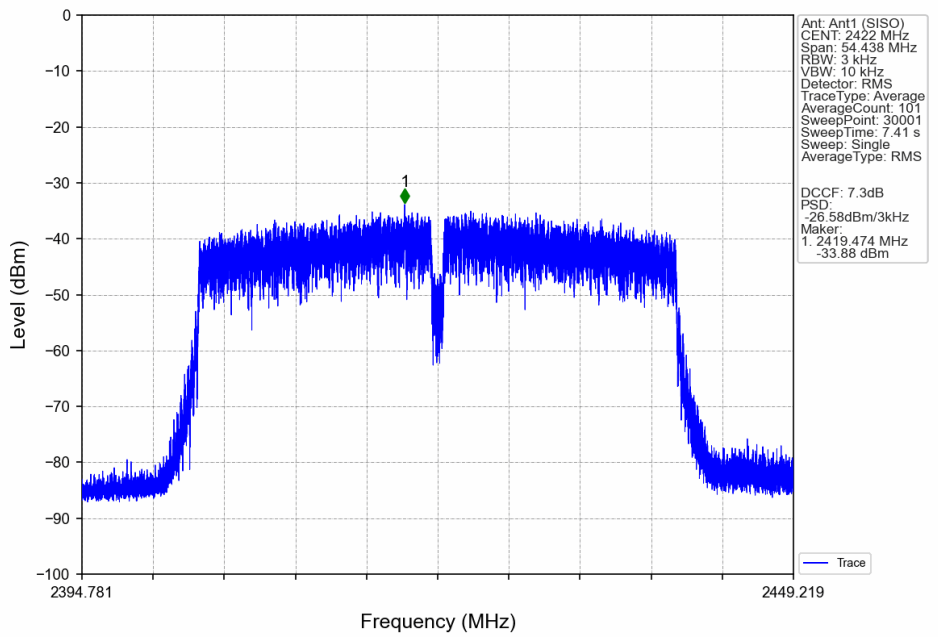
802.11n(HT20)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



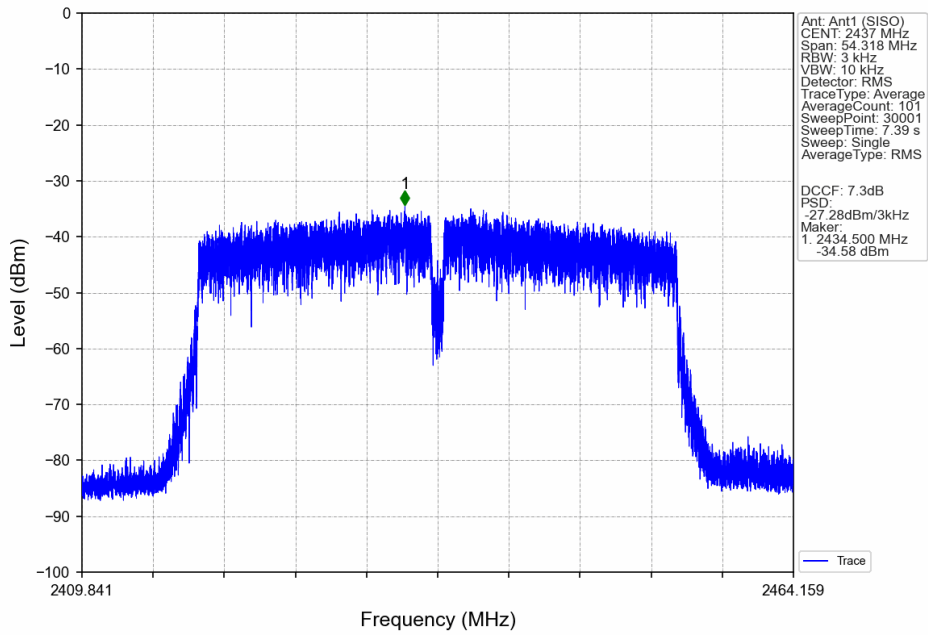
802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



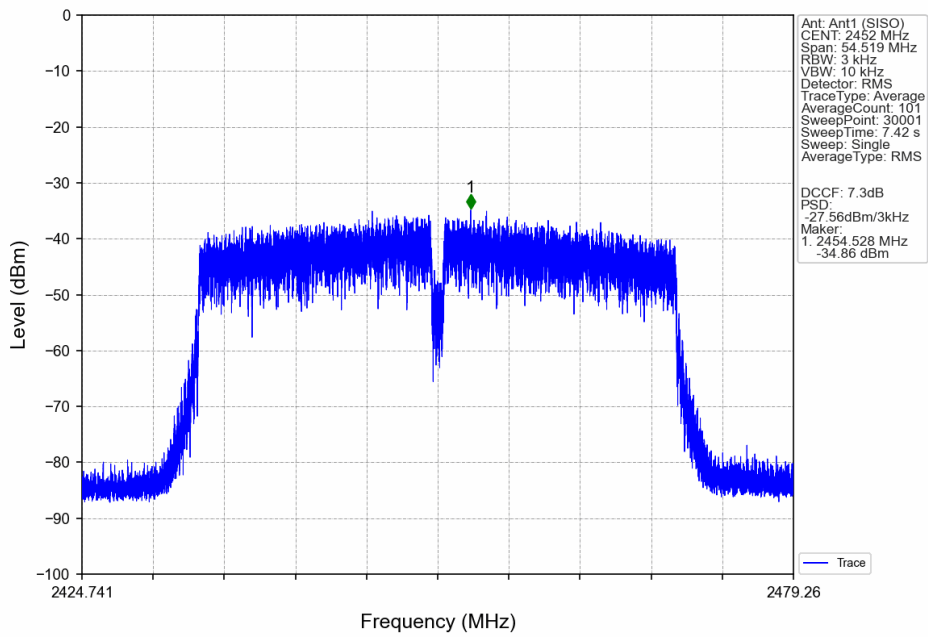
802.11n(HT40)\_LCH\_2422MHz\_Ant1 (SISO)\_NTNV



802.11n(HT40)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



802.11n(HT40)\_HCH\_2452MHz\_Ant1 (SISO)\_NTNV



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

### 5.1 Test Result

#### 5.1.1 Ref

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
802.11b	SISO	2412	1	-4.63
		2437	1	-4.85
		2462	1	-4.98
802.11g	SISO	2412	1	-10.43
		2437	1	-10.36
		2462	1	-11.05
802.11n (HT20)	SISO	2412	1	-10.84
		2437	1	-11.60
		2462	1	-11.74
802.11n (HT40)	SISO	2422	1	-13.86
		2437	1	-14.11
		2452	1	-14.29

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.

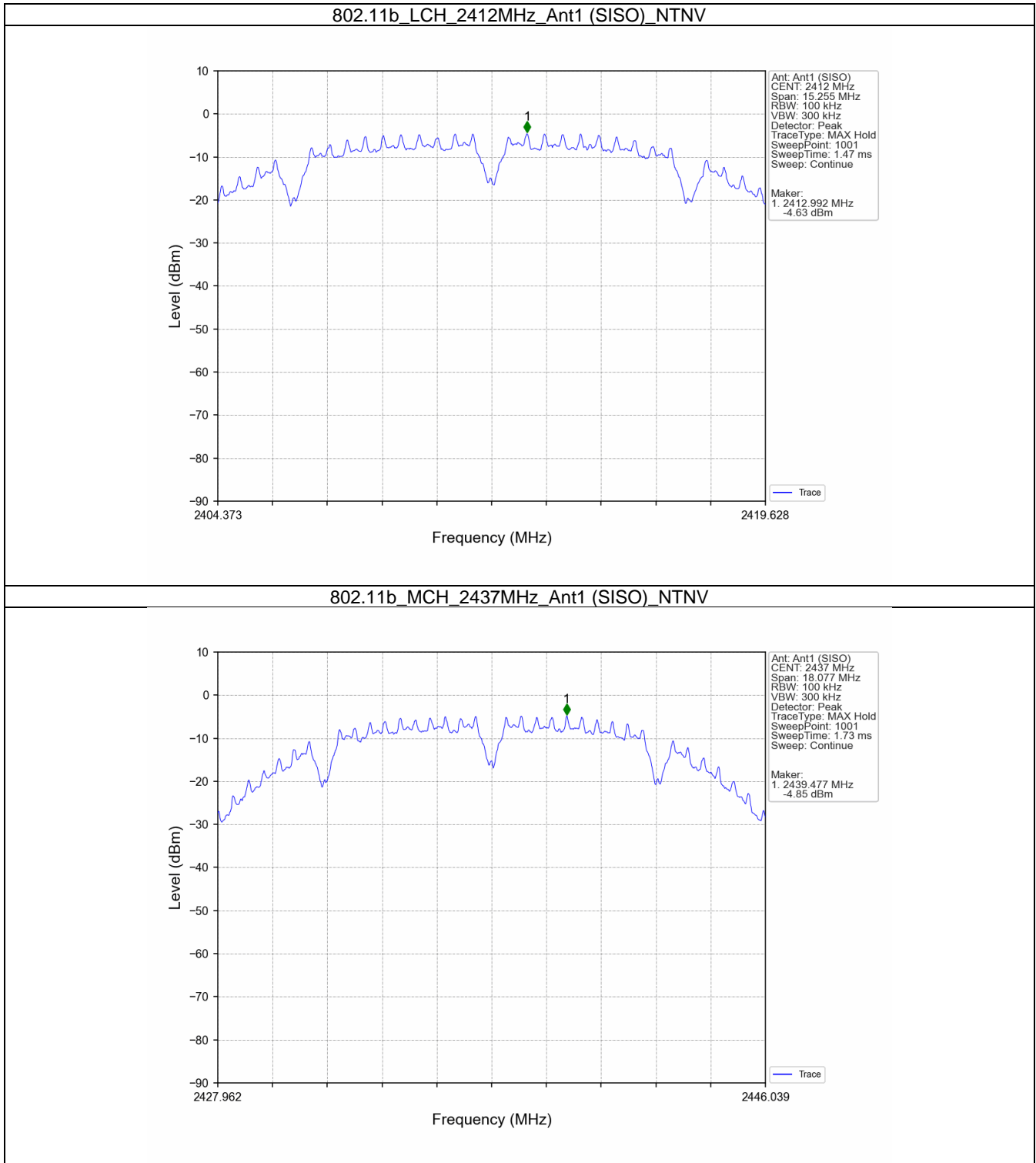
#### 5.1.2 CSE

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	-4.63	-34.63	Pass
		2437	1	-4.85	-34.85	Pass
		2462	1	-4.98	-34.98	Pass
802.11g	SISO	2412	1	-10.43	-40.43	Pass
		2437	1	-10.36	-40.36	Pass
		2462	1	-11.05	-41.05	Pass
802.11n (HT20)	SISO	2412	1	-10.84	-40.84	Pass
		2437	1	-11.60	-41.60	Pass
		2462	1	-11.74	-41.74	Pass
802.11n (HT40)	SISO	2422	1	-13.86	-43.86	Pass
		2437	1	-14.11	-44.11	Pass
		2452	1	-14.29	-44.29	Pass

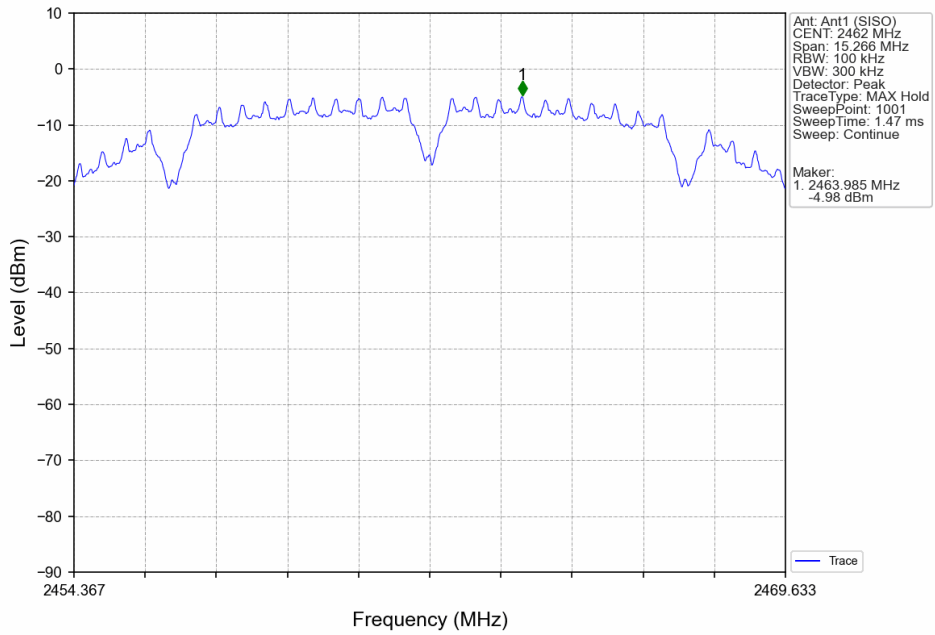
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

## 5.2 Test Graph

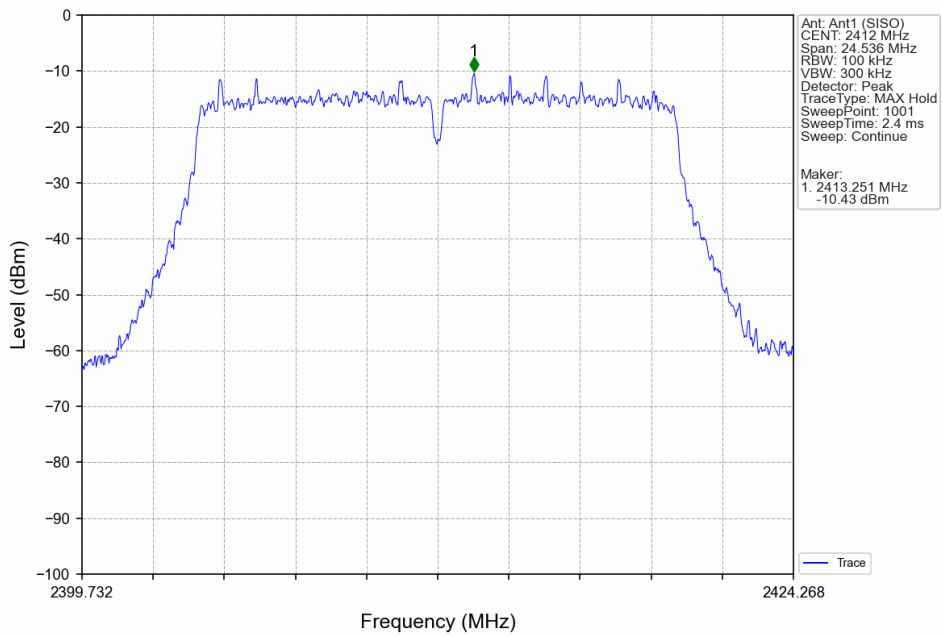
### 5.2.1 Ref



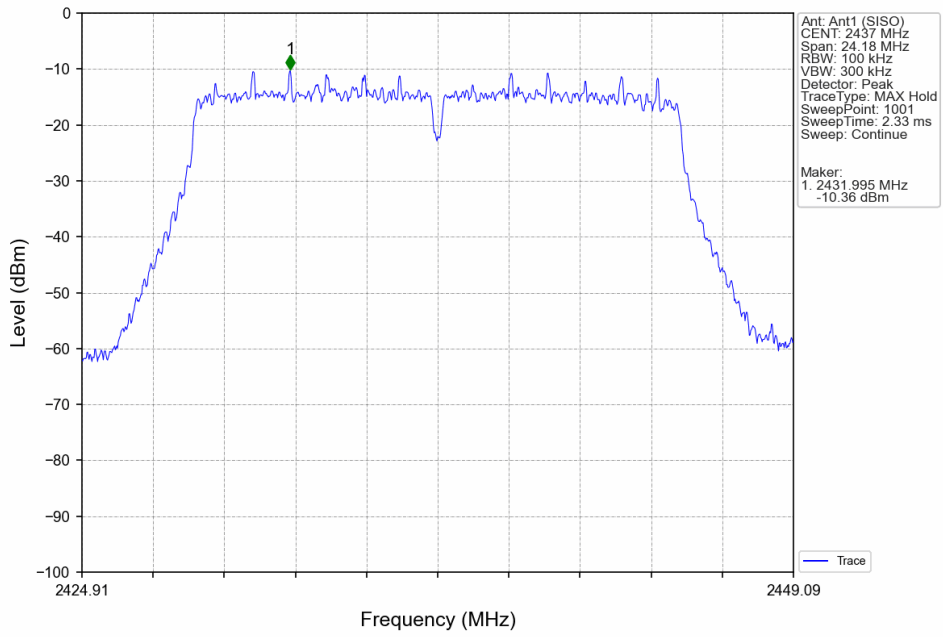
802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



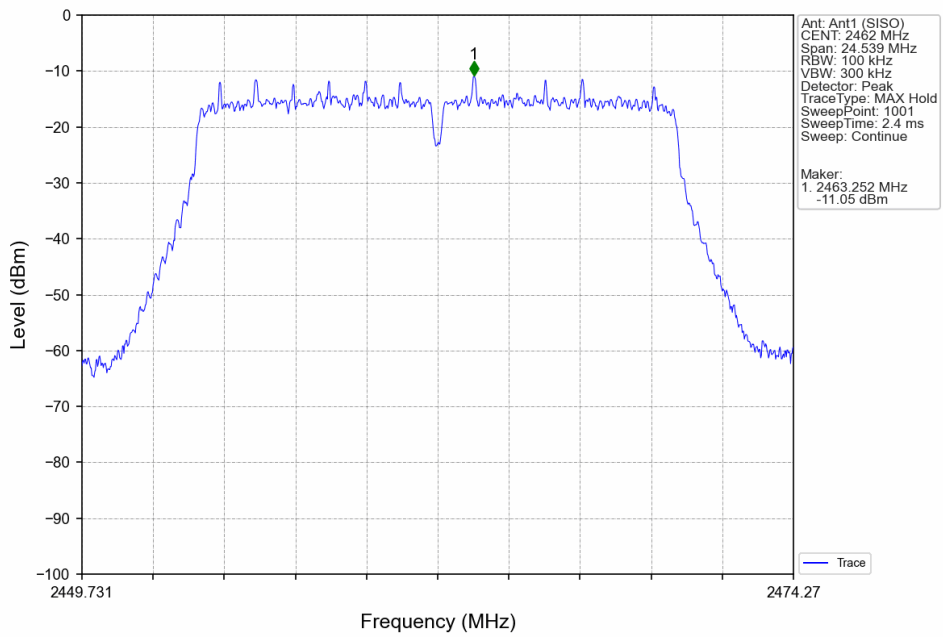
802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



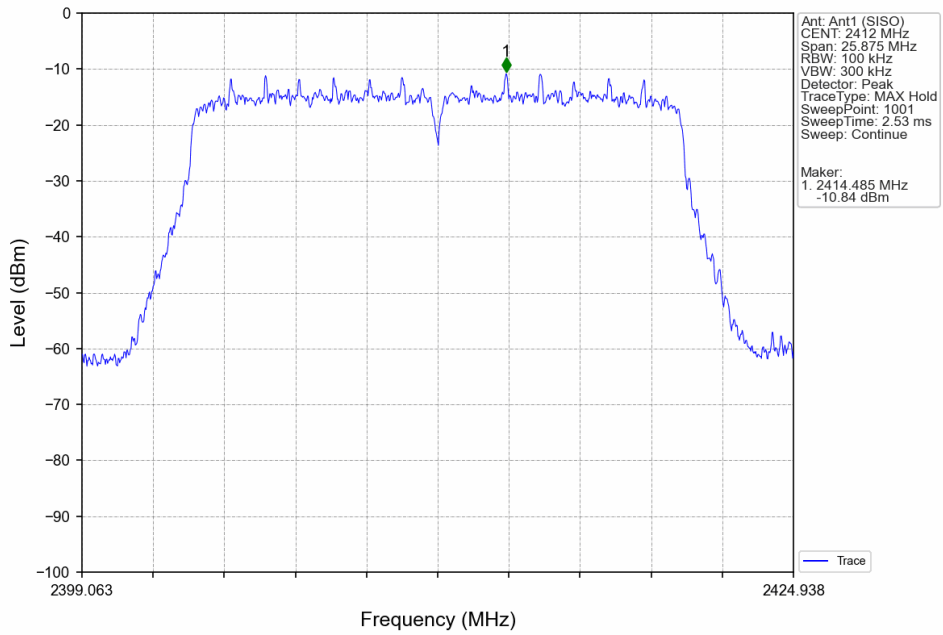
802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



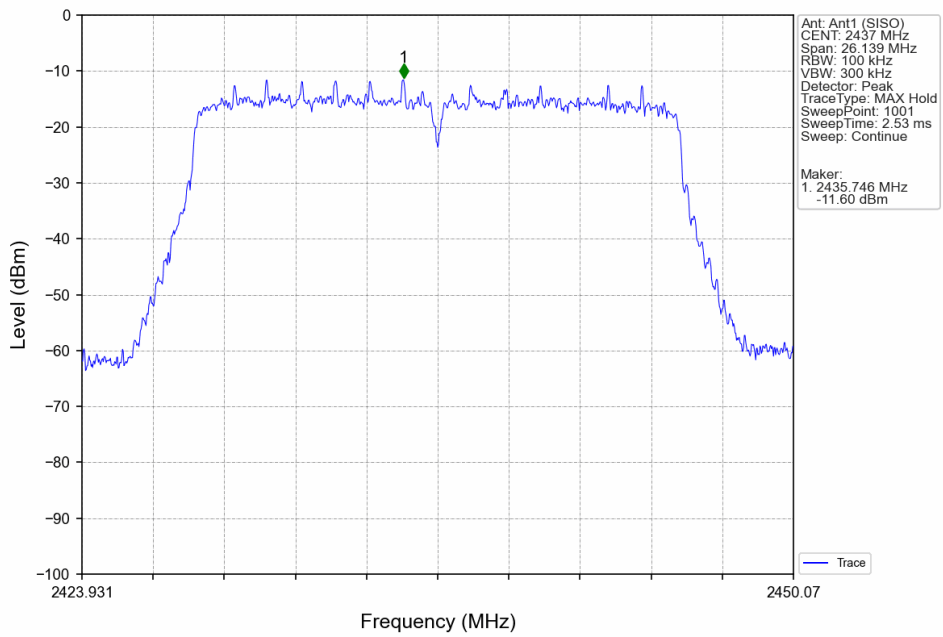
802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV

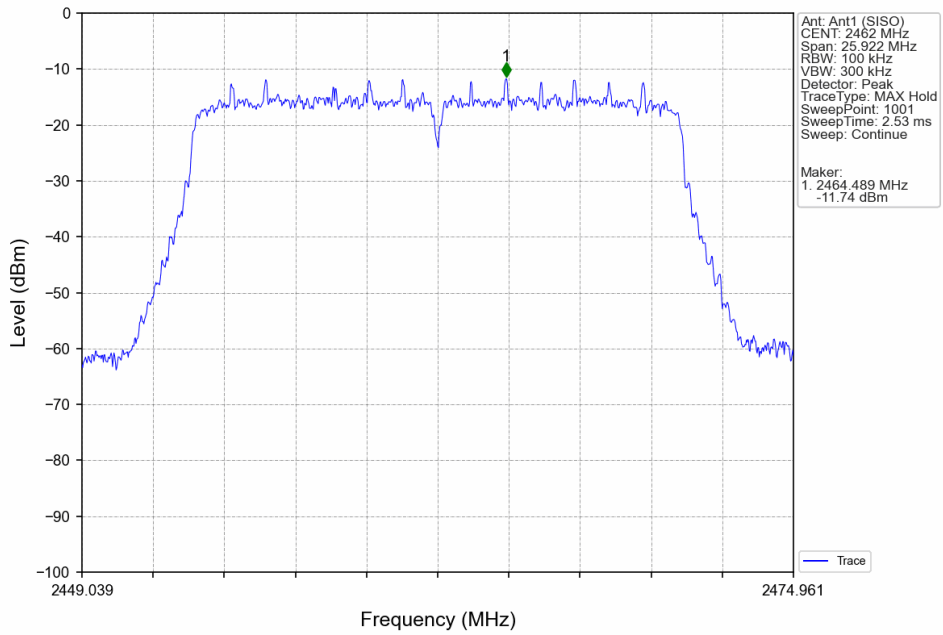


802.11n(HT20)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV

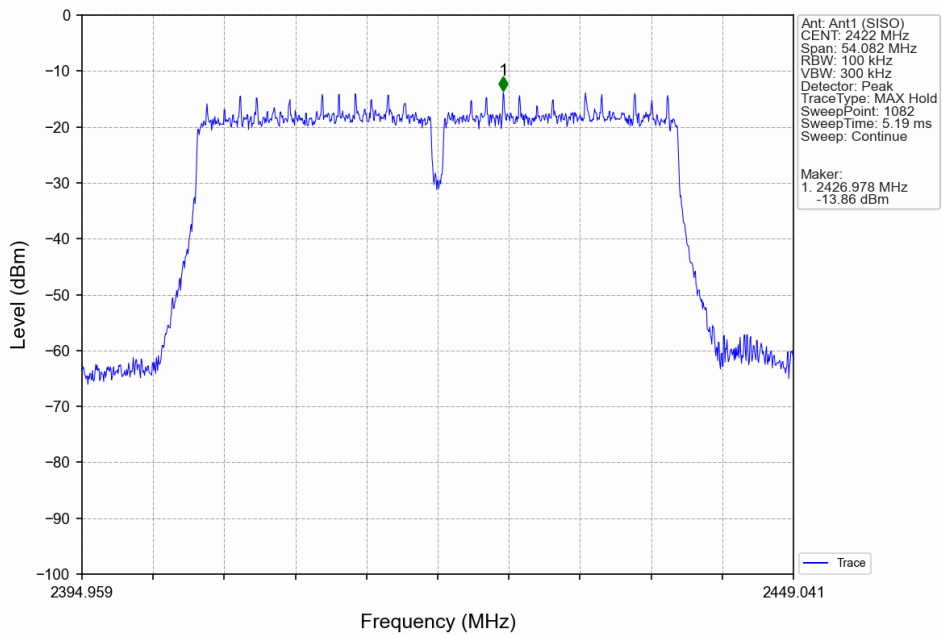




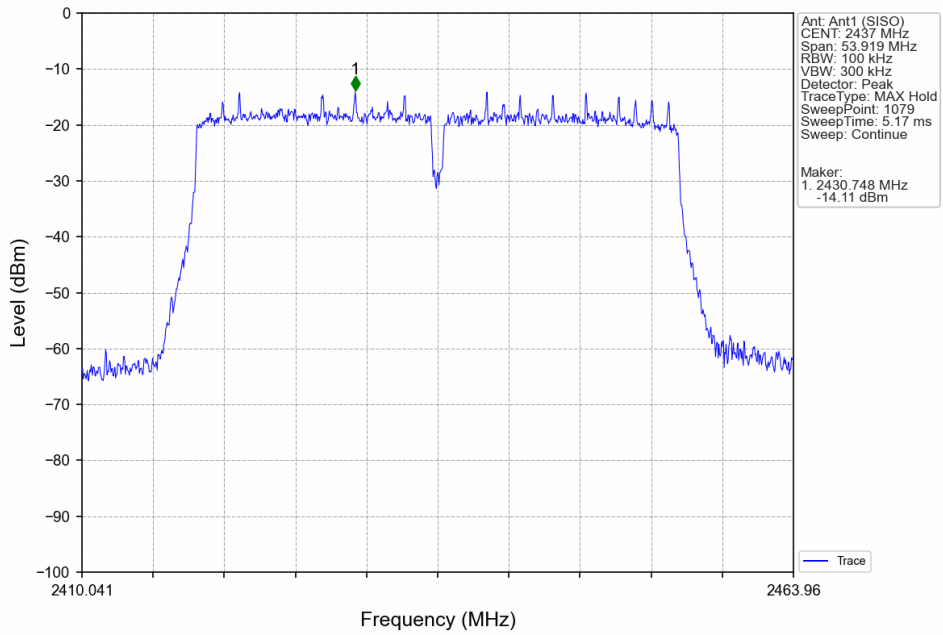
802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



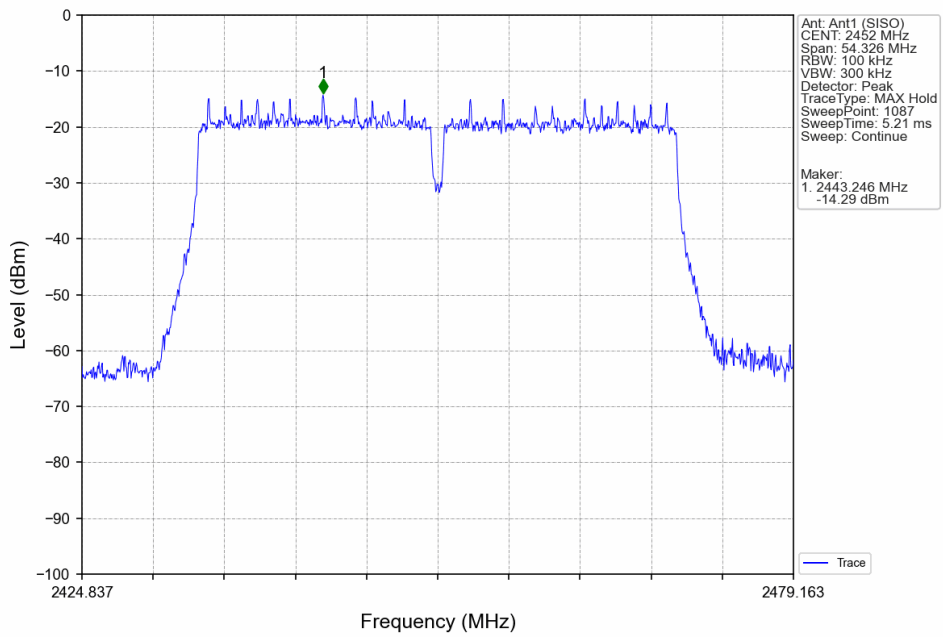
802.11n(HT40)\_LCH\_2422MHz\_Ant1 (SISO)\_NTNV



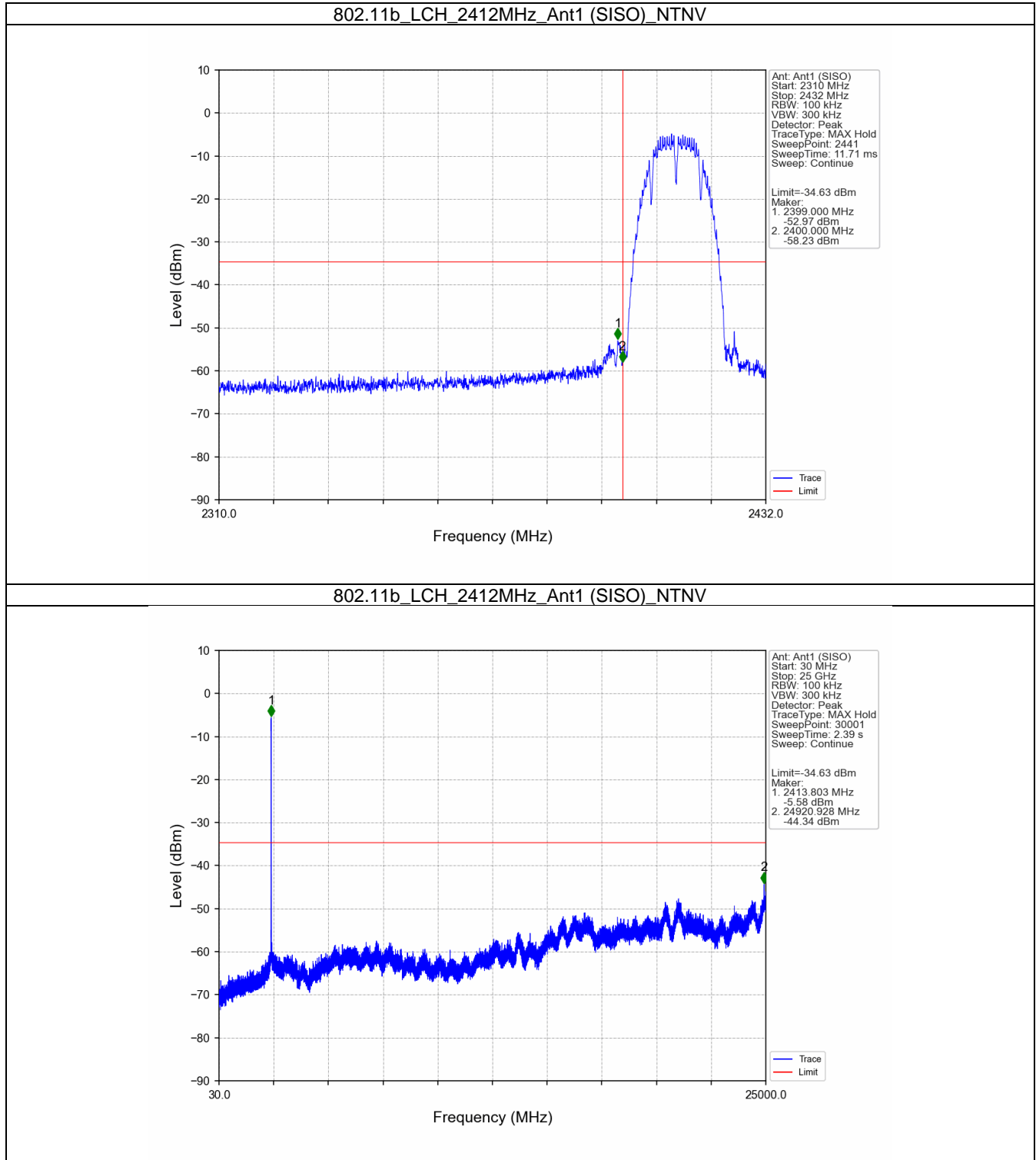
802.11n(HT40)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



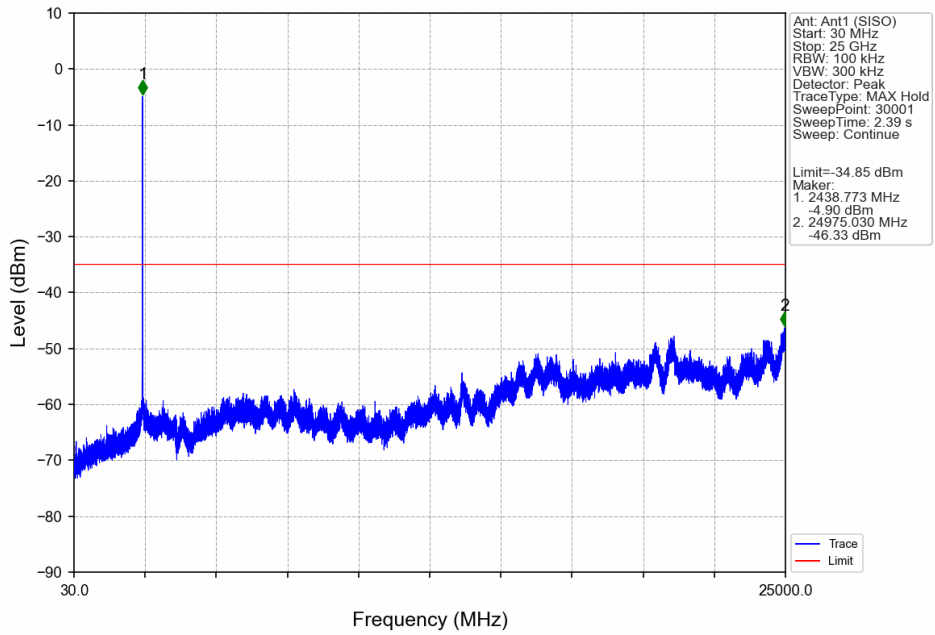
802.11n(HT40)\_HCH\_2452MHz\_Ant1 (SISO)\_NTNV



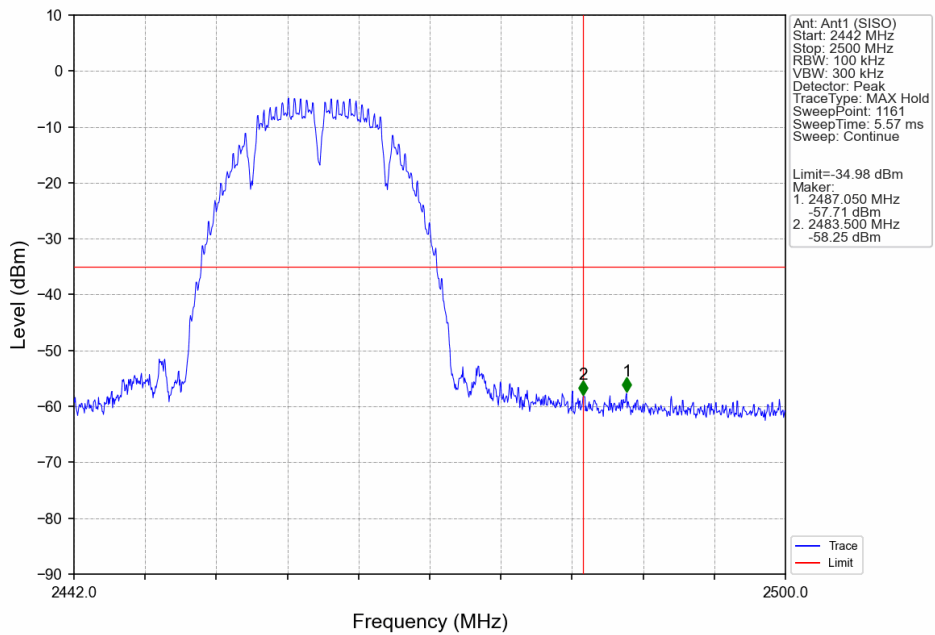
## 5.2.2 CSE



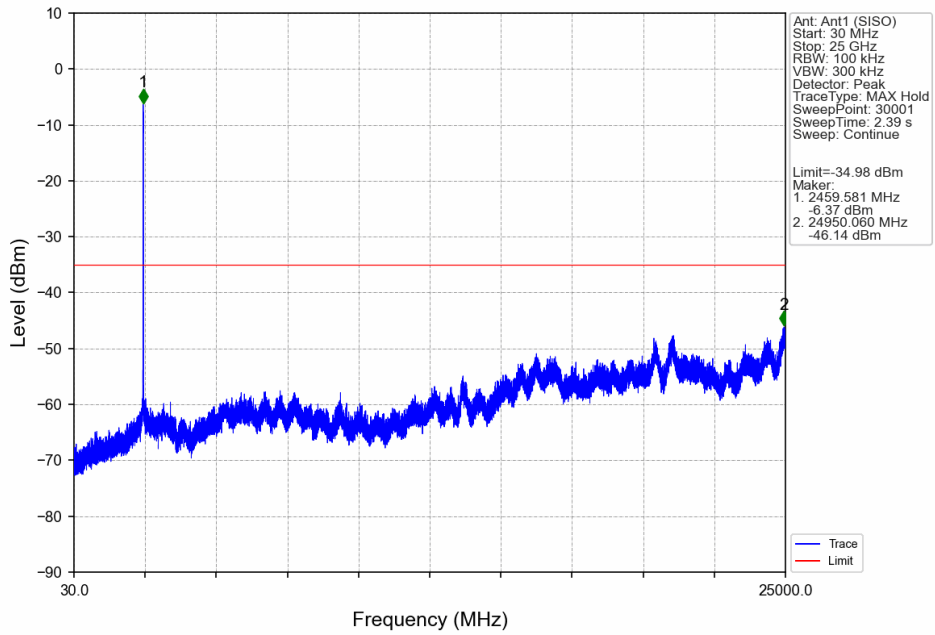
802.11b\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



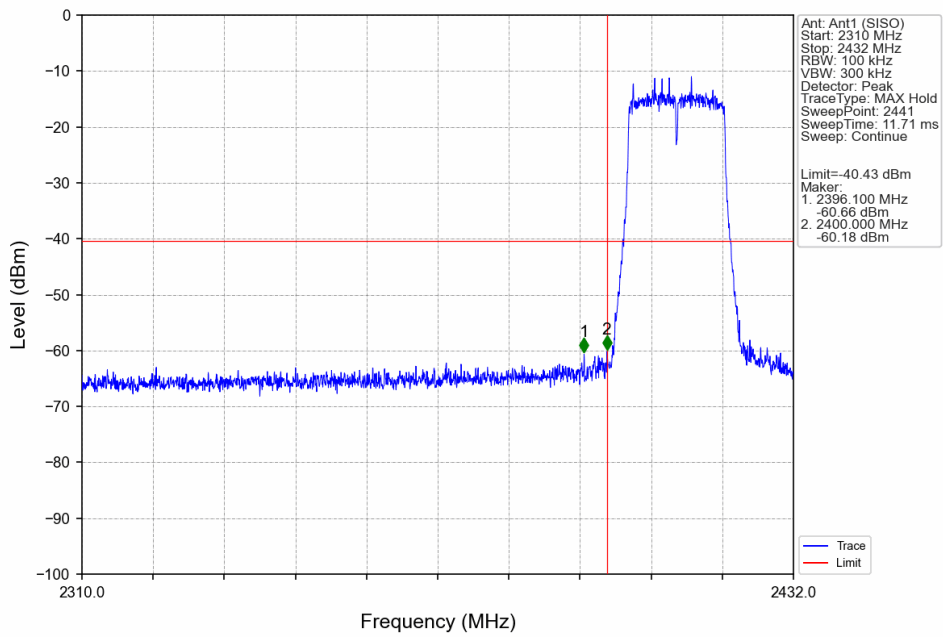
802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



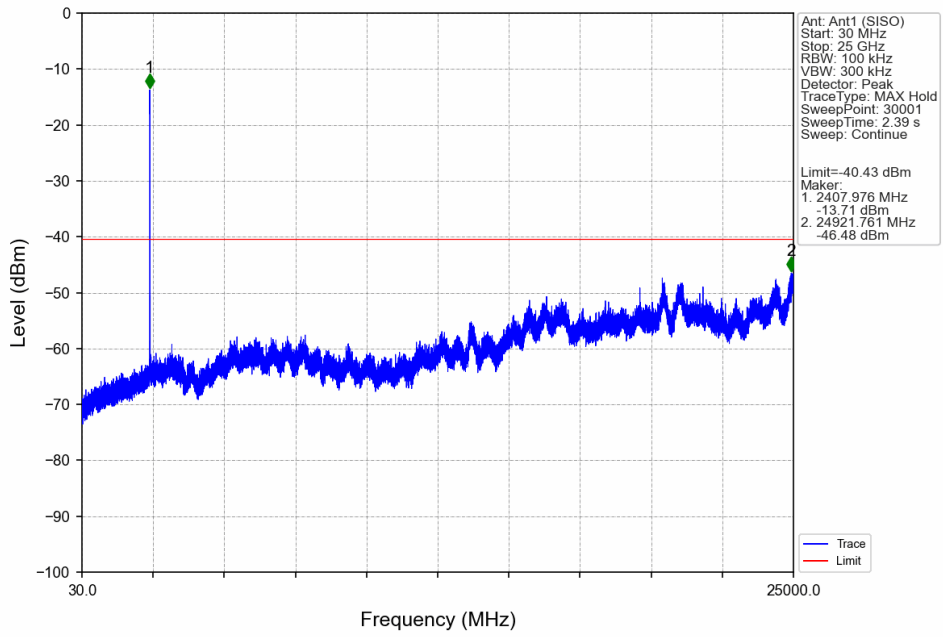
802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



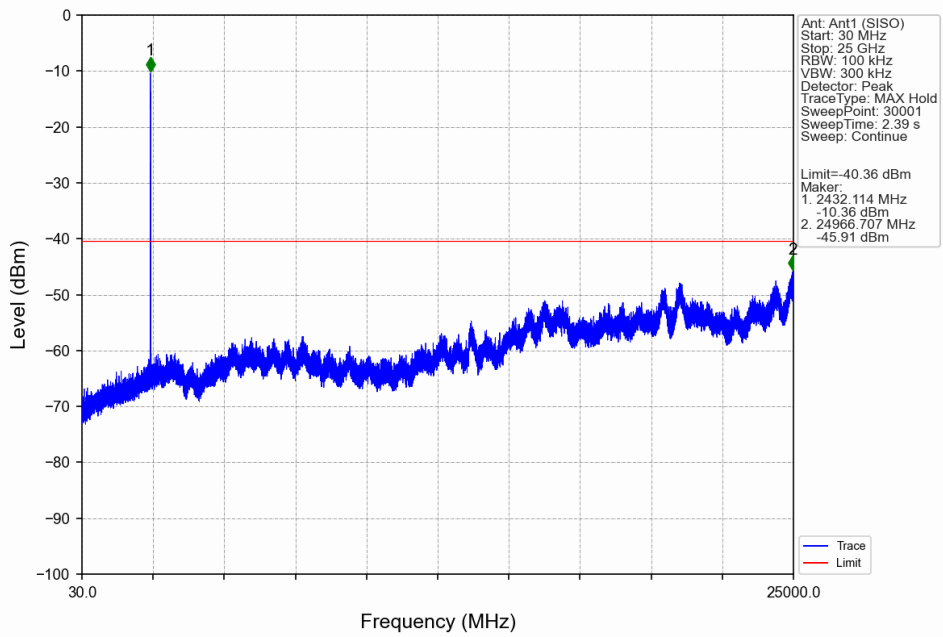
802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



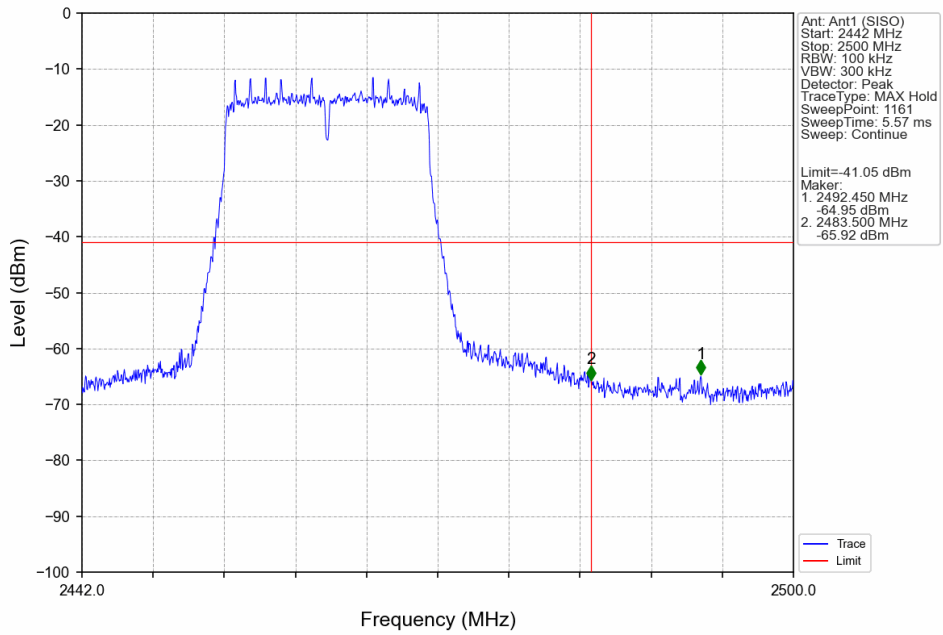
802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



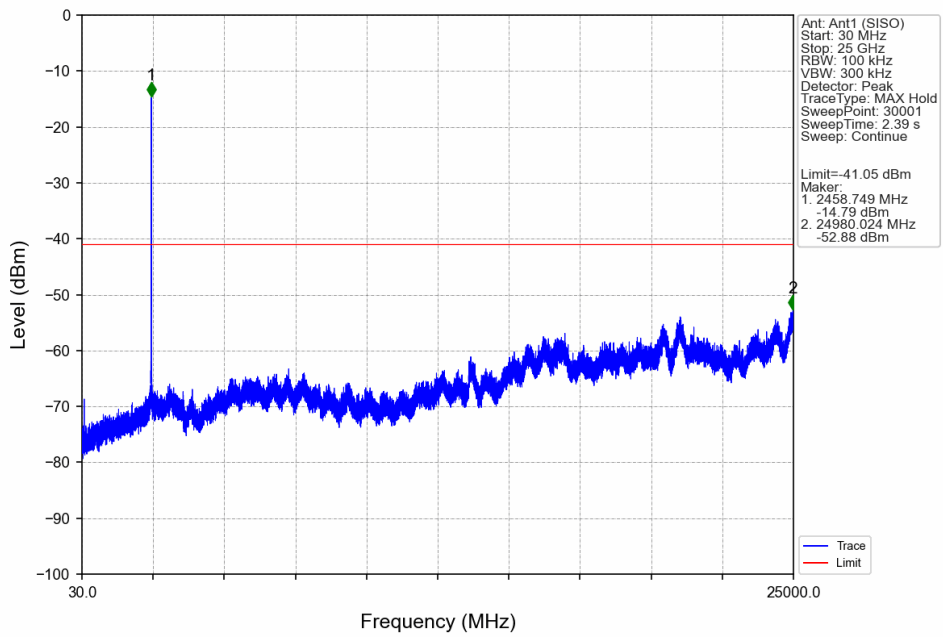
802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



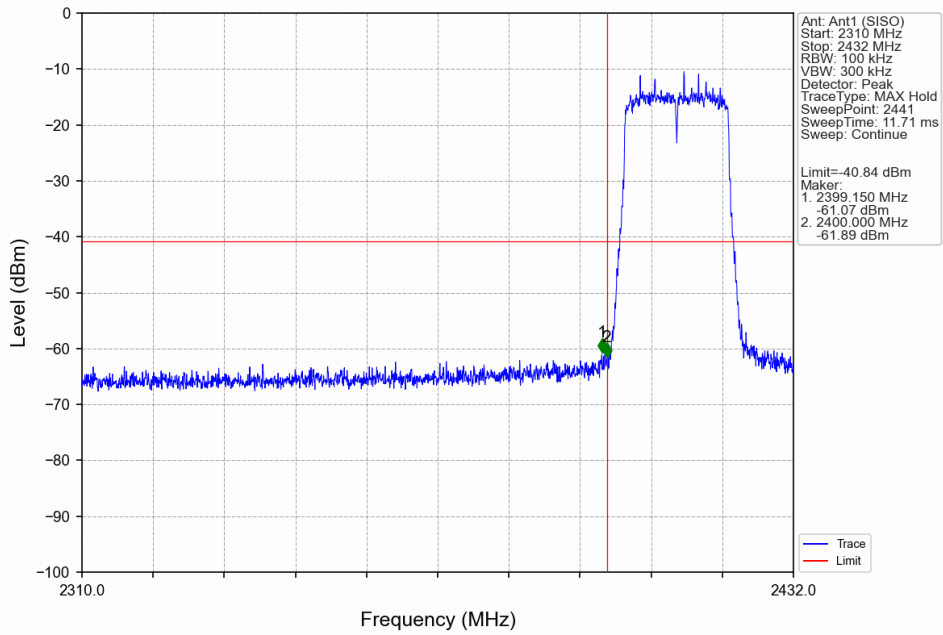
802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



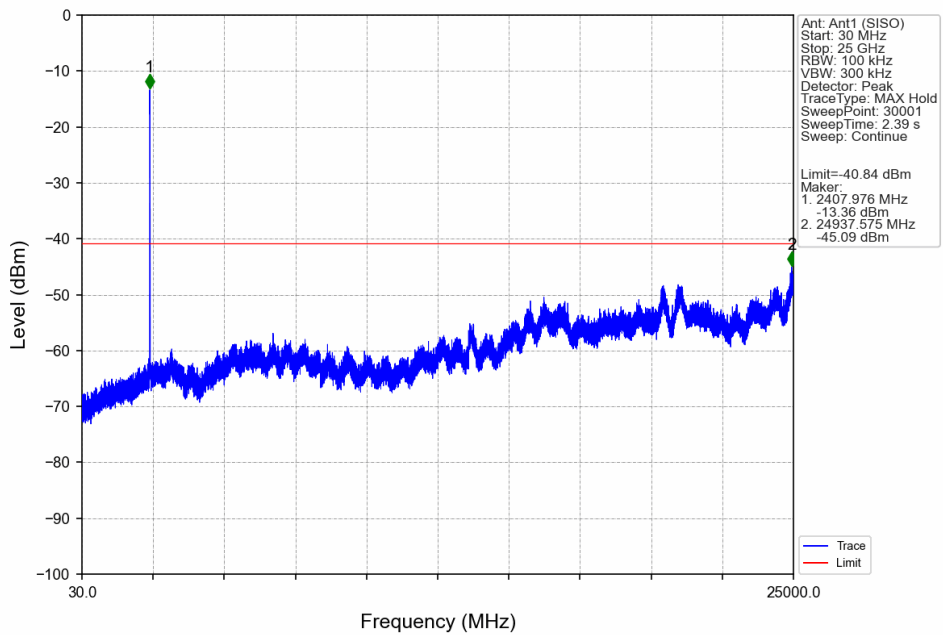
802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV

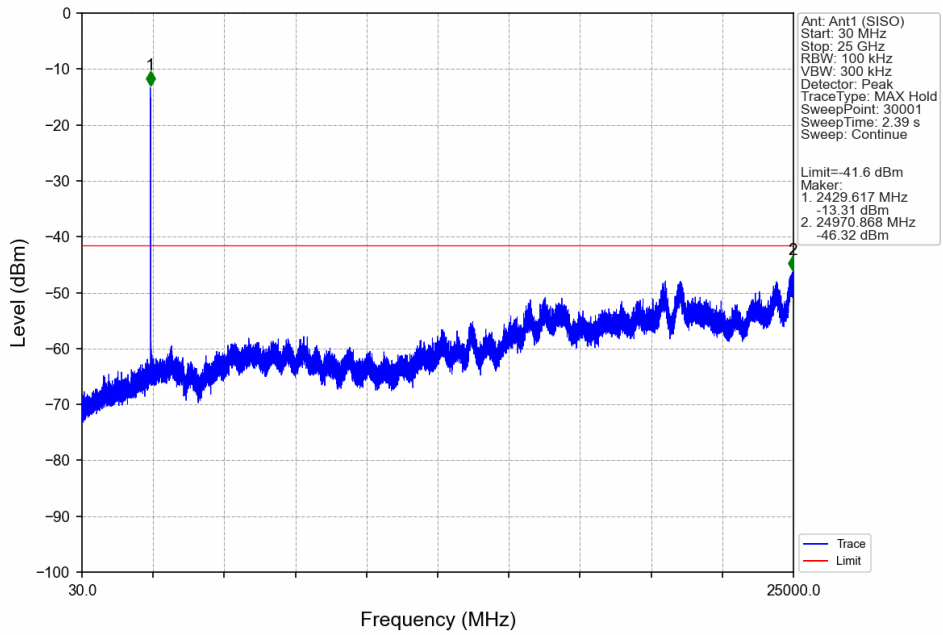


802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV

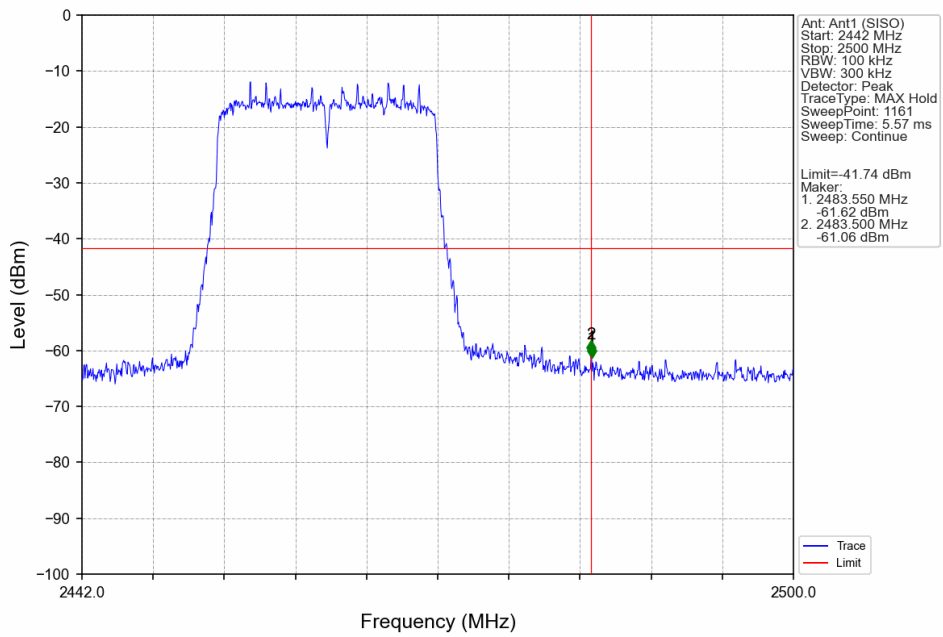




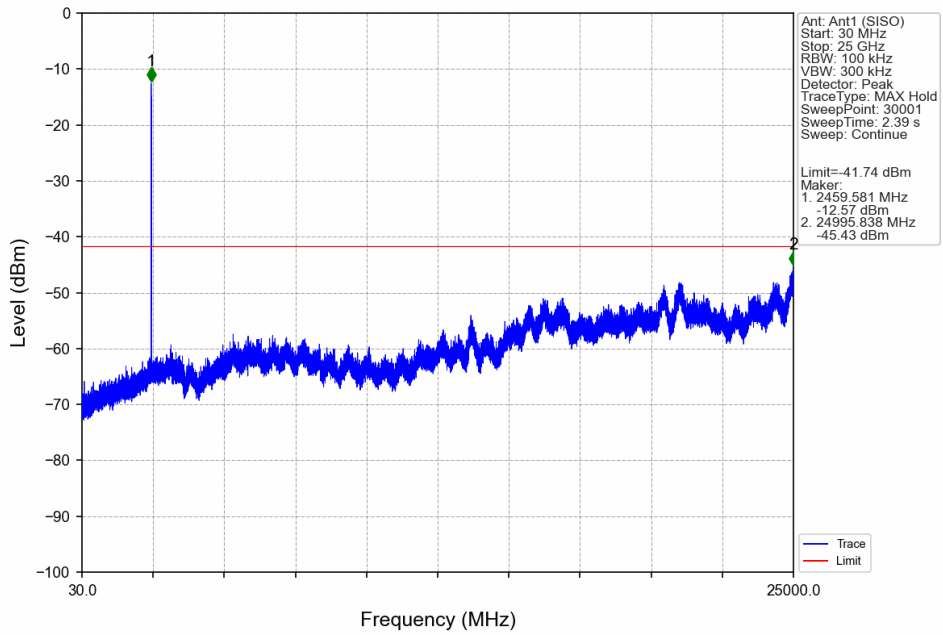
802.11n(HT20)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



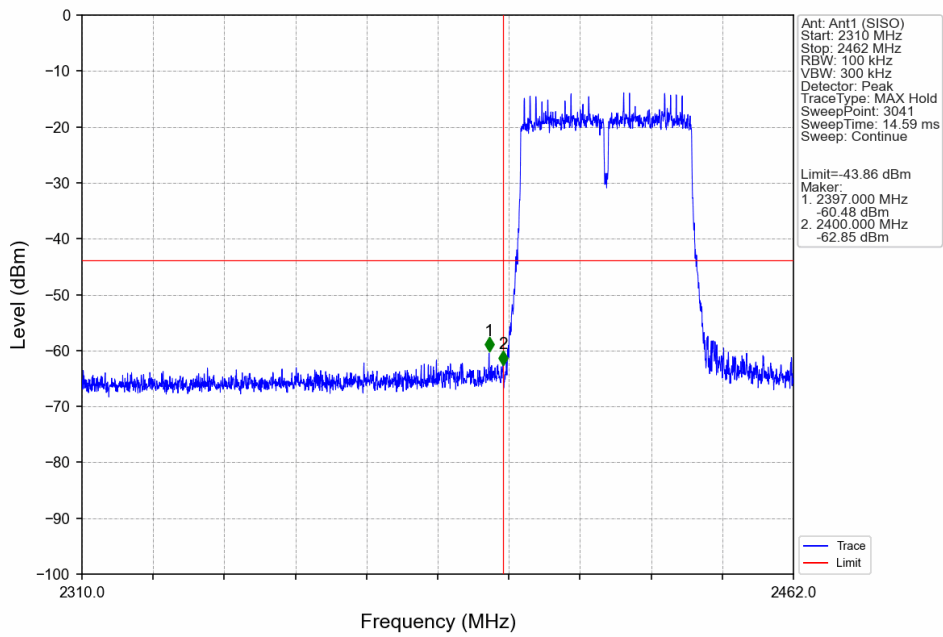
802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



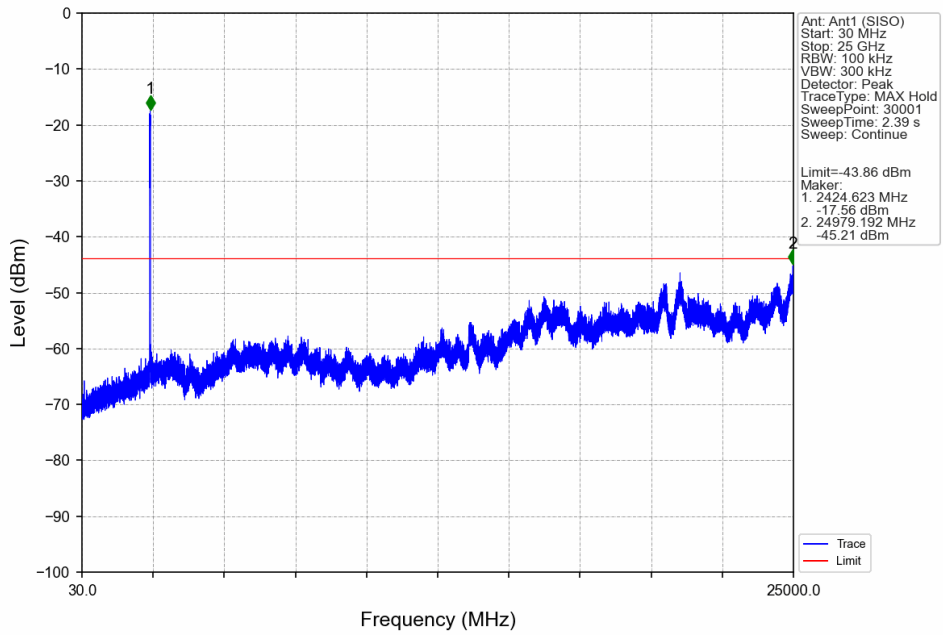
802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



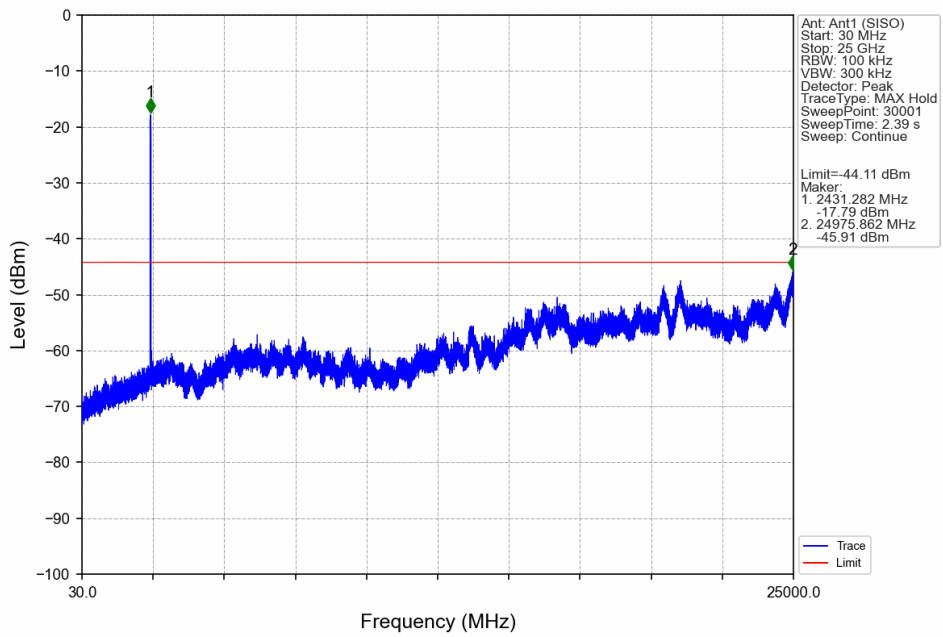
802.11n(HT40)\_LCH\_2422MHz\_Ant1 (SISO)\_NTNV



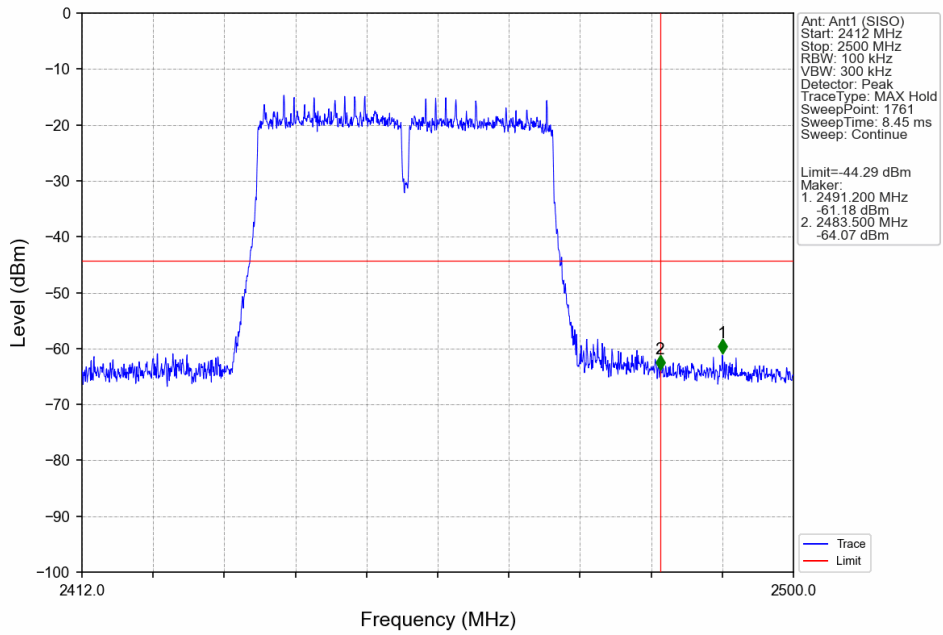
802.11n(HT40)\_LCH\_2422MHz\_Ant1 (SISO)\_NTNV



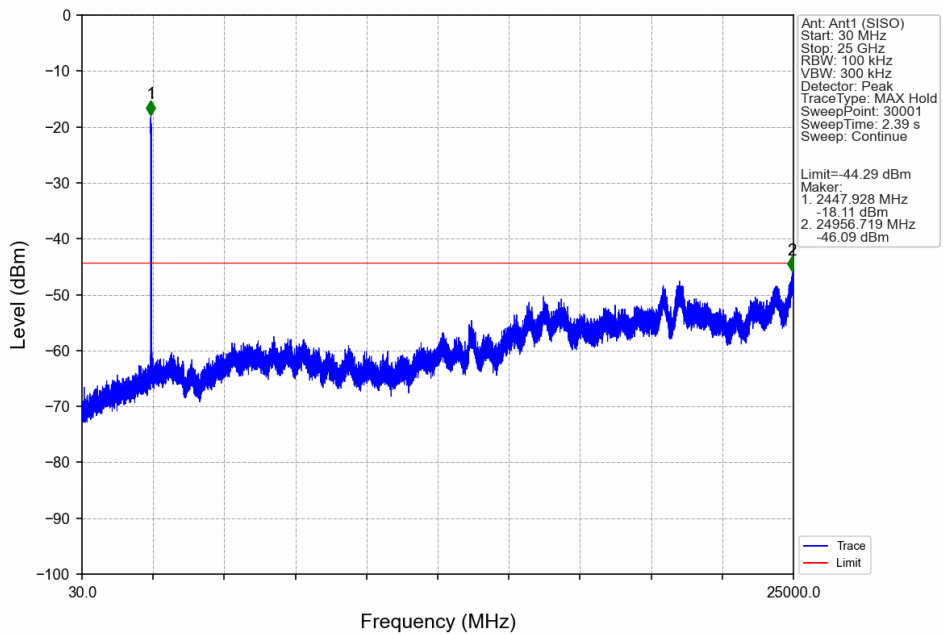
802.11n(HT40)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



802.11n(HT40)\_HCH\_2452MHz\_Ant1 (SISO)\_NTNV



802.11n(HT40)\_HCH\_2452MHz\_Ant1 (SISO)\_NTNV



## 6. Form731

### 6.1 Test Result

#### 6.1.1 Form731

Lower Freq (MHz)	High Freq (MHz)	MAX Power (W)	MAX Power (dBm)
2412	2462	0.0046	6.66
2422	2452	0.0044	6.46