



Shenzhen CTL Testing Technology Co., Ltd.

Zone A, 1/ F, Warehouse 2, Baisha Logistics Company, No. 3011 Shahe West Road,
Nanshan District, Shenzhen, Guangdong, China
Tel: +86-755-89486194 E-mail: ctl@ctl-lab.com

Appendix RF test data for WIFI2.4G

TABLE OF CONTENTS

Appendix RF test data for WIFI2.4G	1
1. Bandwidth.....	2
2. Maximum Conducted Output Power	14
3. Maximum Power Spectral Density	20
4. Unwanted Emissions In Non-restricted Frequency Bands.....	26

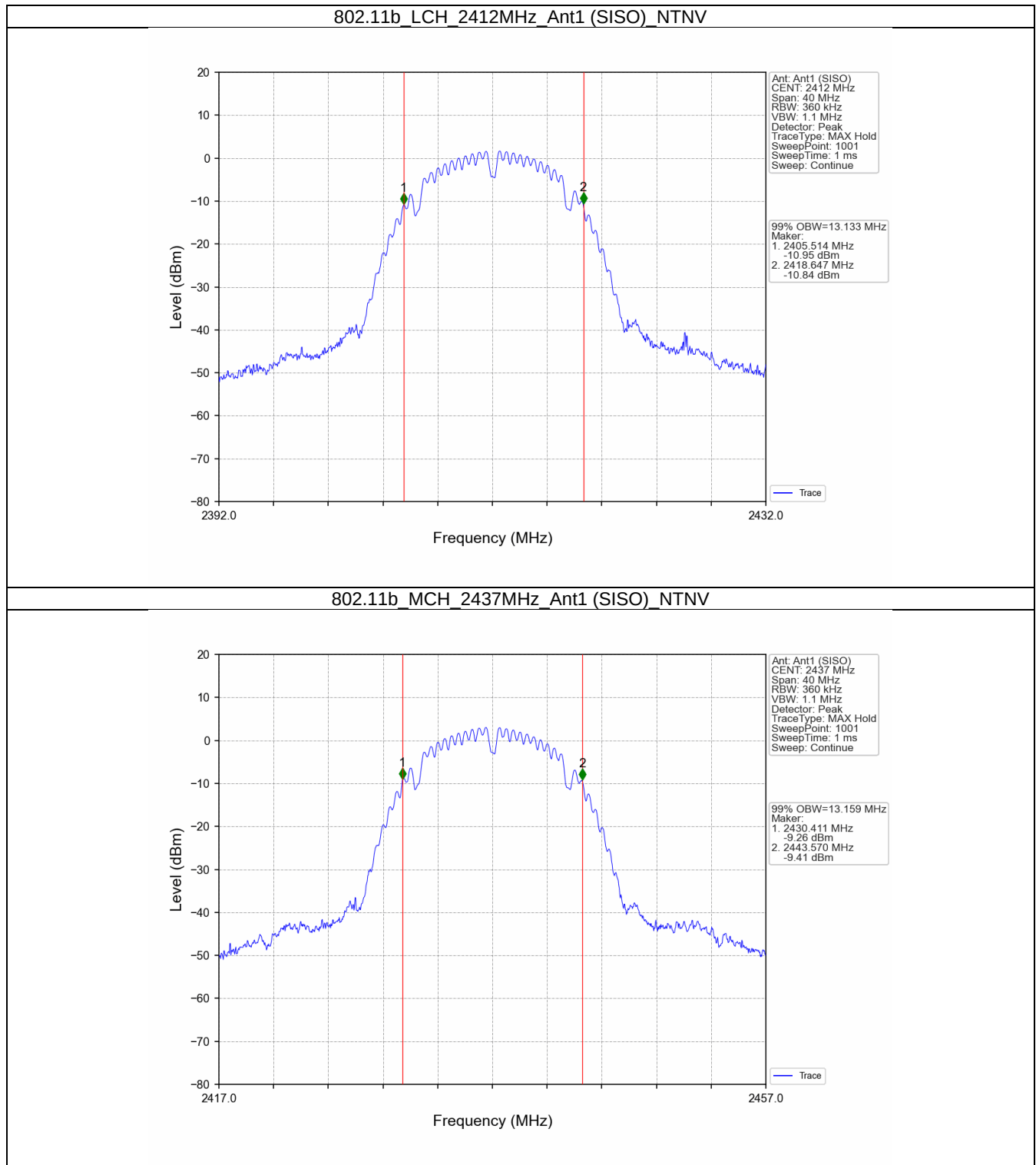
1. Bandwidth

1.1 OBW

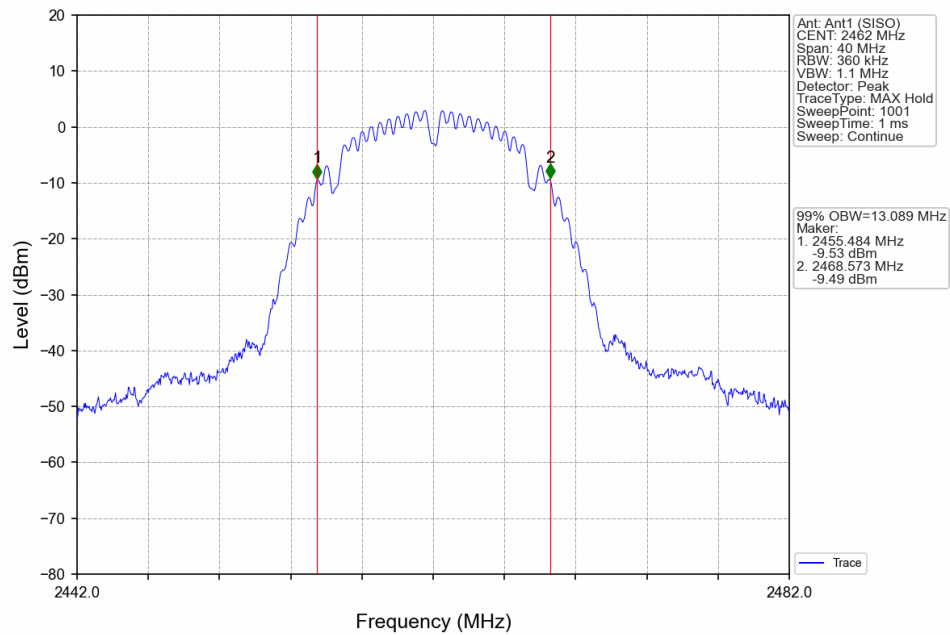
1.1.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	13.133	/	Pass
		2437	1	13.159	/	Pass
		2462	1	13.089	/	Pass
802.11g	SISO	2412	1	18.127	/	Pass
		2437	1	18.148	/	Pass
		2462	1	17.997	/	Pass
802.11n (HT20)	SISO	2412	1	18.875	/	Pass
		2437	1	18.935	/	Pass
		2462	1	18.832	/	Pass

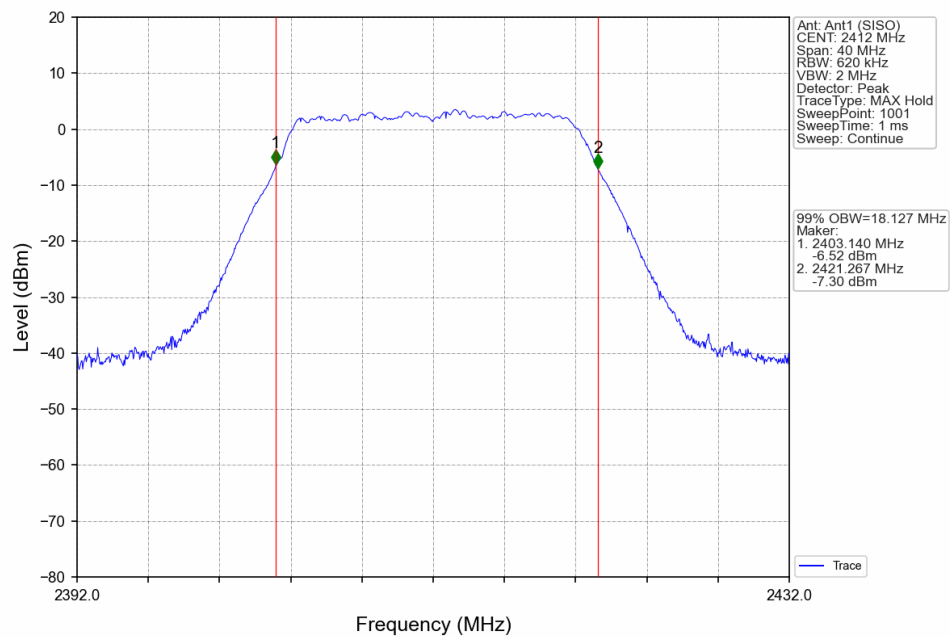
1.1.2 Test Graph



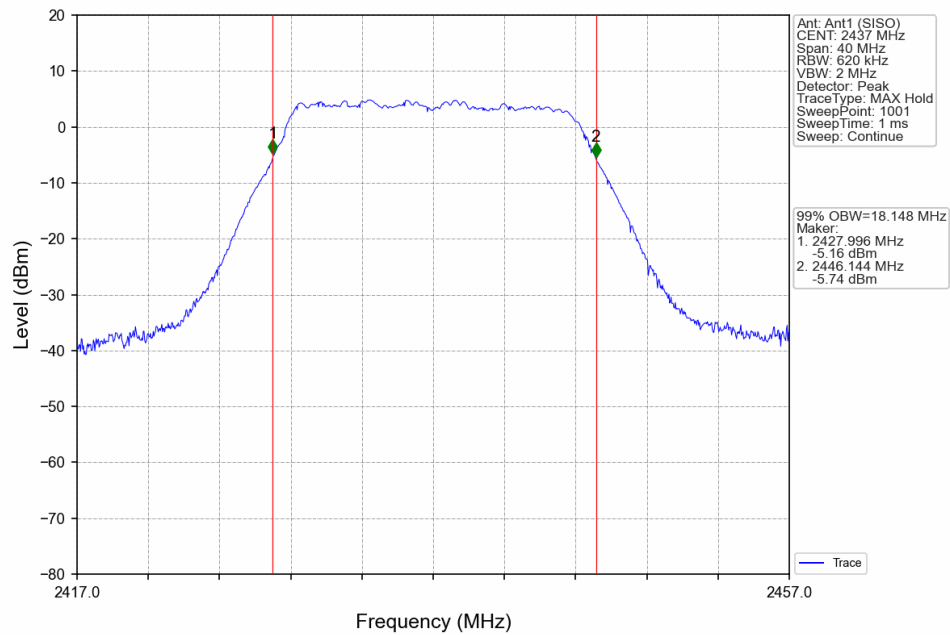
802.11b HCH 2462MHz Ant1 (SISO) NTN



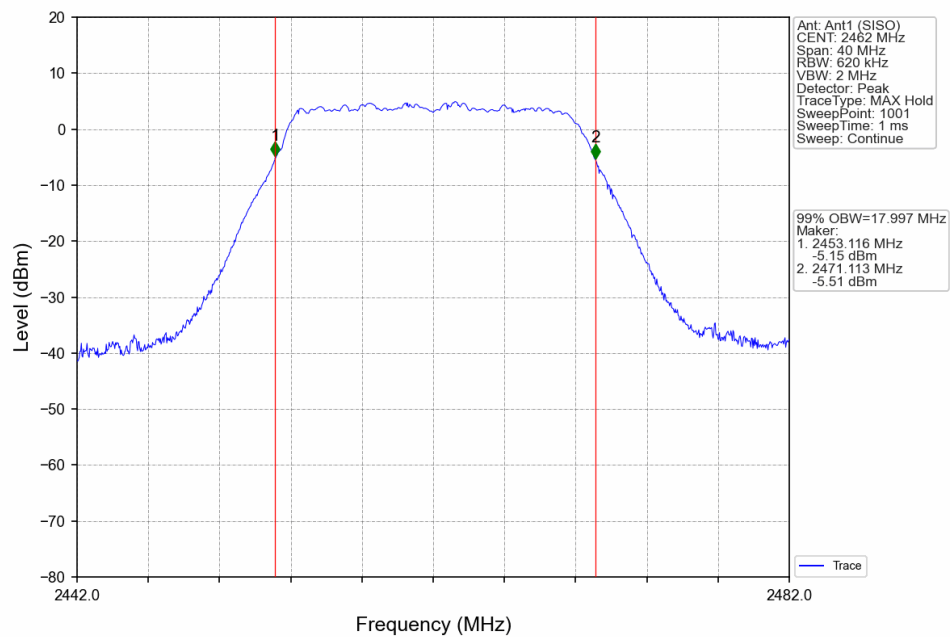
802.11g LCH 2412MHz Ant1 (SISO) NTN



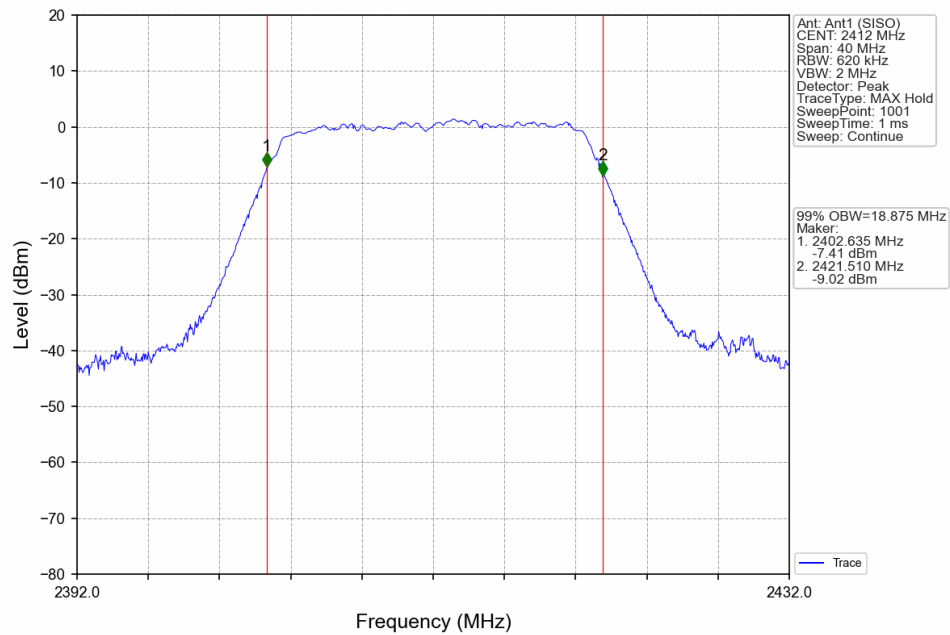
802.11g MCH 2437MHz Ant1 (SISO) NTN



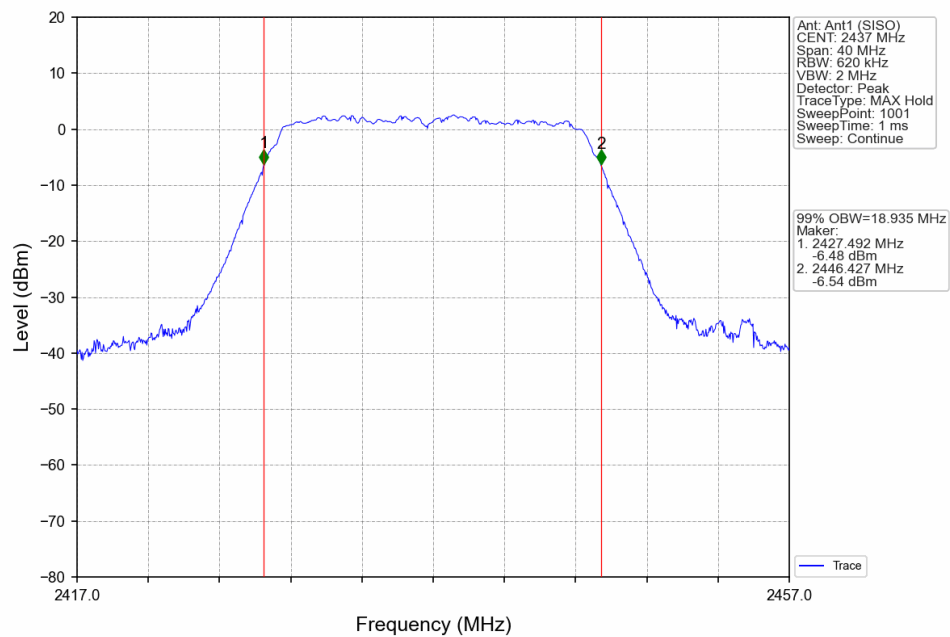
802.11g HCH 2462MHz Ant1 (SISO) NTN

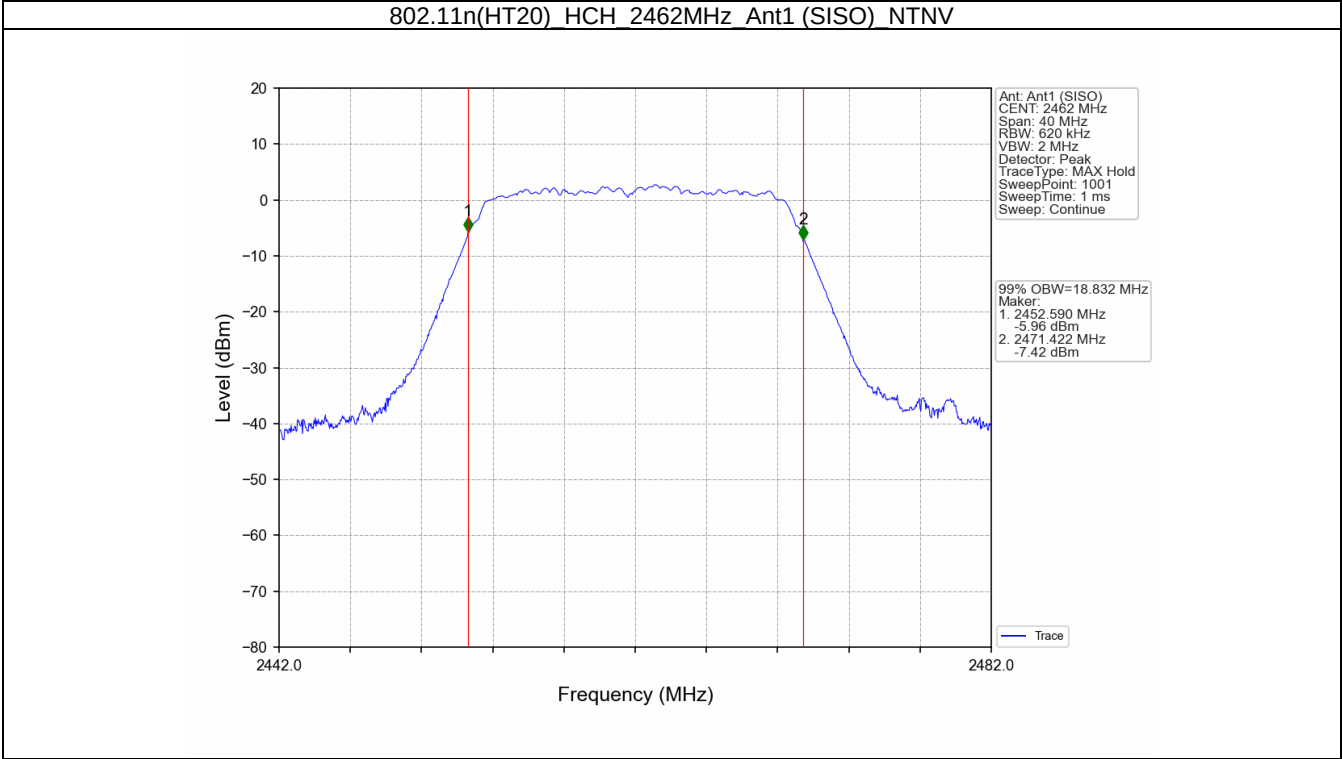


802.11n(HT20) LCH 2412MHz Ant1 (SISO) NTNV



802.11n(HT20) MCH 2437MHz Ant1 (SISO) NTNV



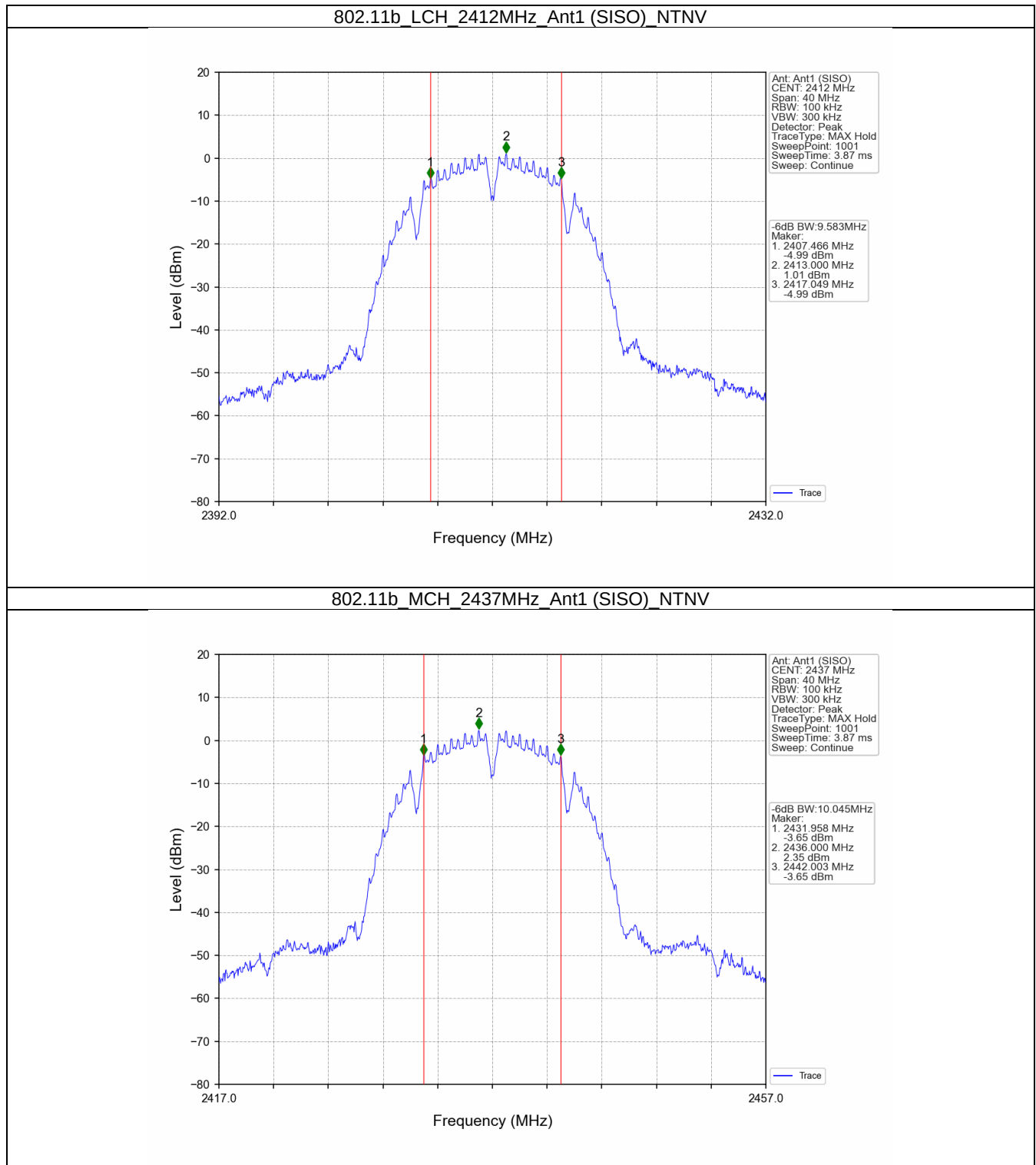


1.2 6dB BW

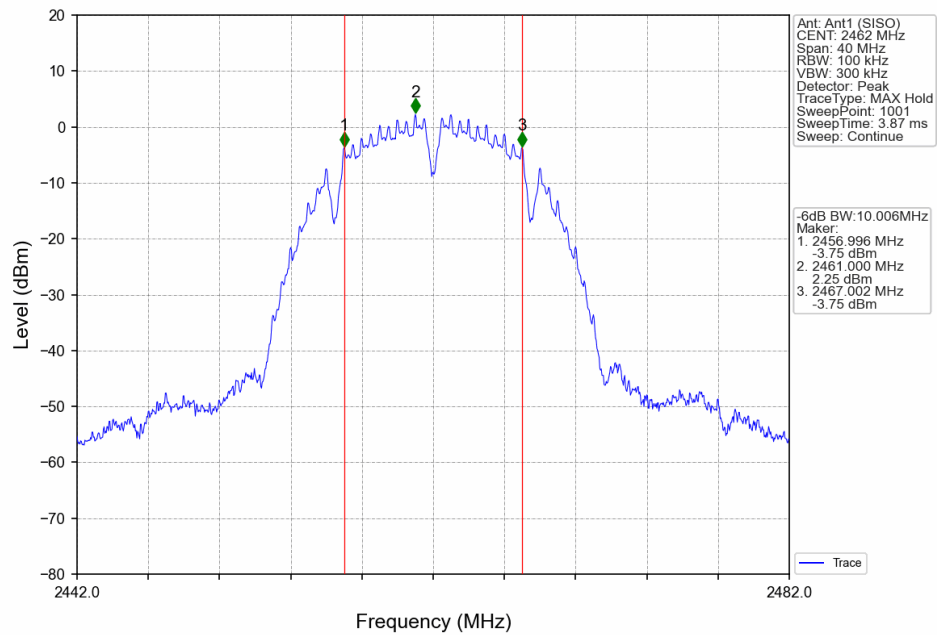
1.2.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	9.583	≥ 0.5	Pass
		2437	1	10.045	≥ 0.5	Pass
		2462	1	10.006	≥ 0.5	Pass
802.11g	SISO	2412	1	16.068	≥ 0.5	Pass
		2437	1	16.354	≥ 0.5	Pass
		2462	1	16.101	≥ 0.5	Pass
802.11n (HT20)	SISO	2412	1	16.662	≥ 0.5	Pass
		2437	1	16.951	≥ 0.5	Pass
		2462	1	16.380	≥ 0.5	Pass

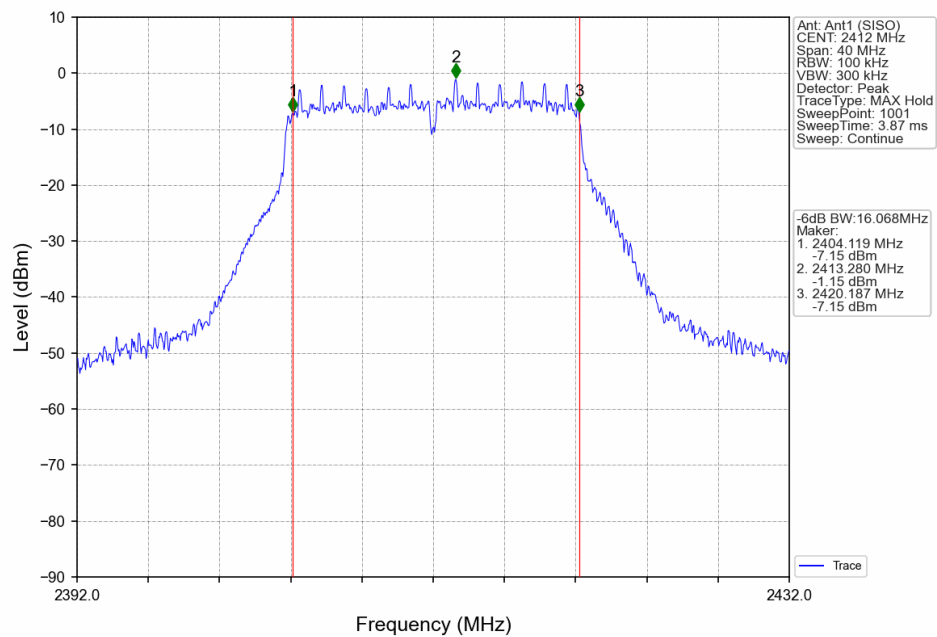
1.2.2 Test Graph



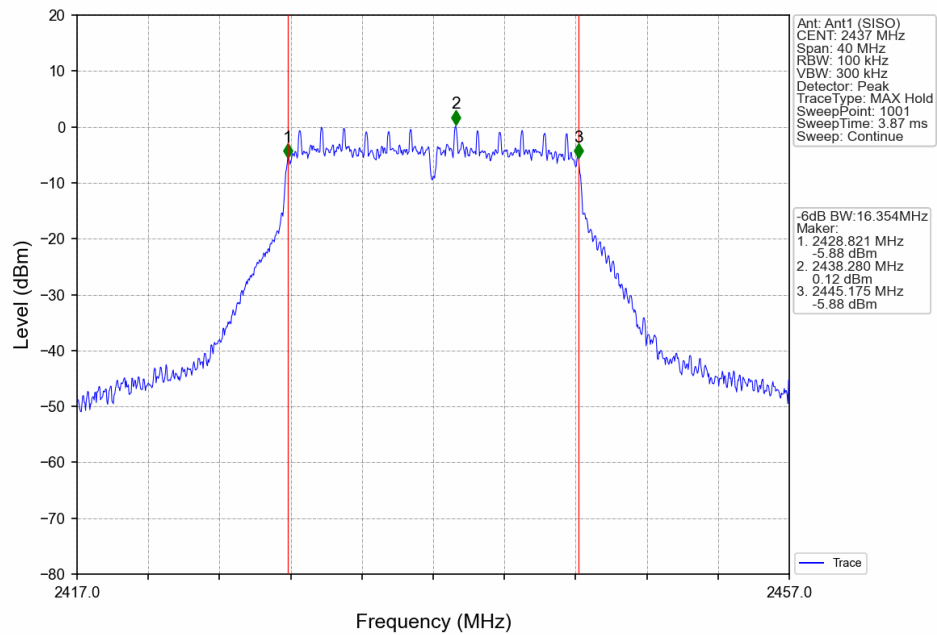
802.11b HCH 2462MHz Ant1 (SISO) NTN



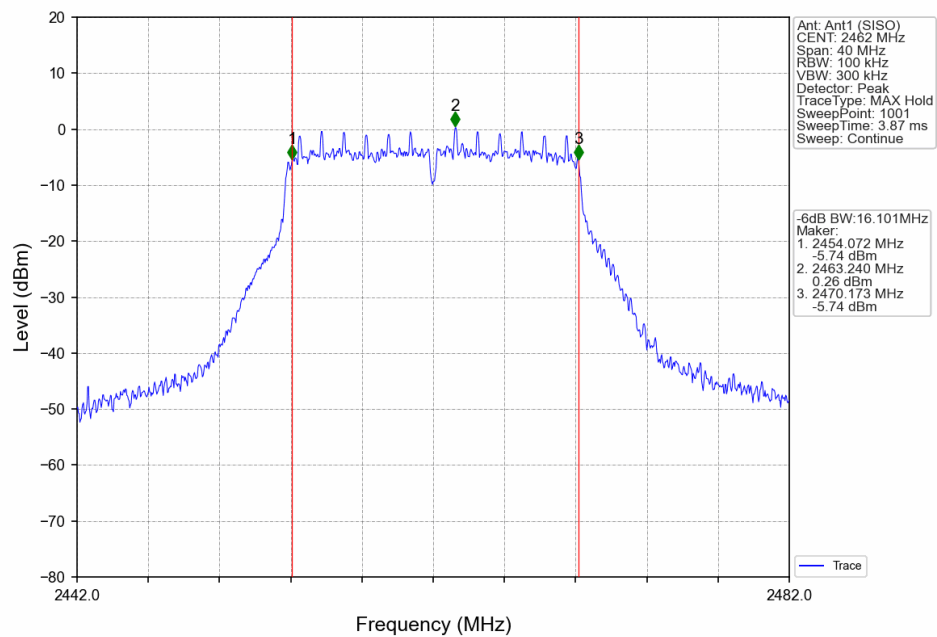
802.11g LCH 2412MHz Ant1 (SISO) NTN



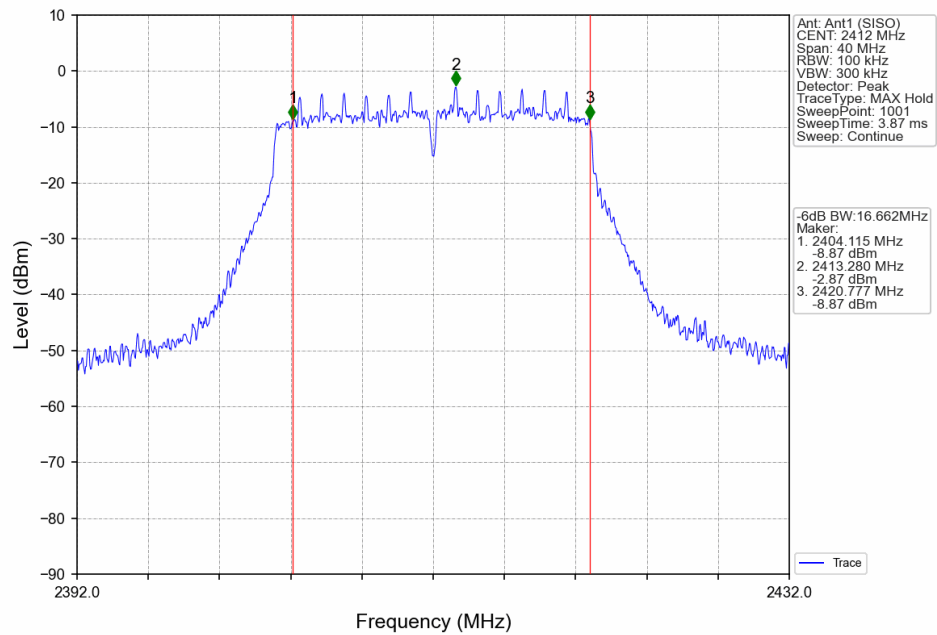
802.11g MCH 2437MHz Ant1 (SISO) NTN



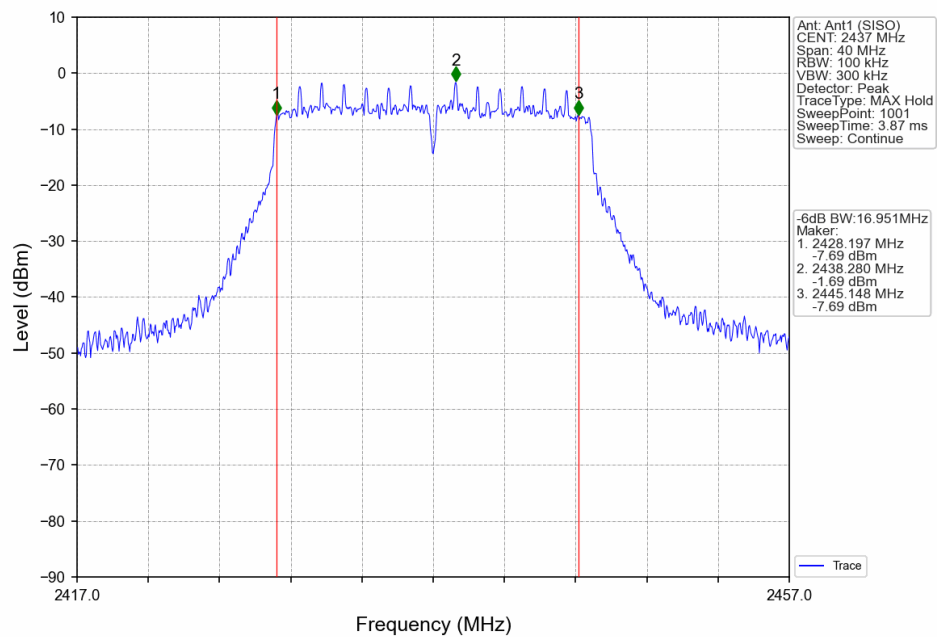
802.11g HCH 2462MHz Ant1 (SISO) NTN

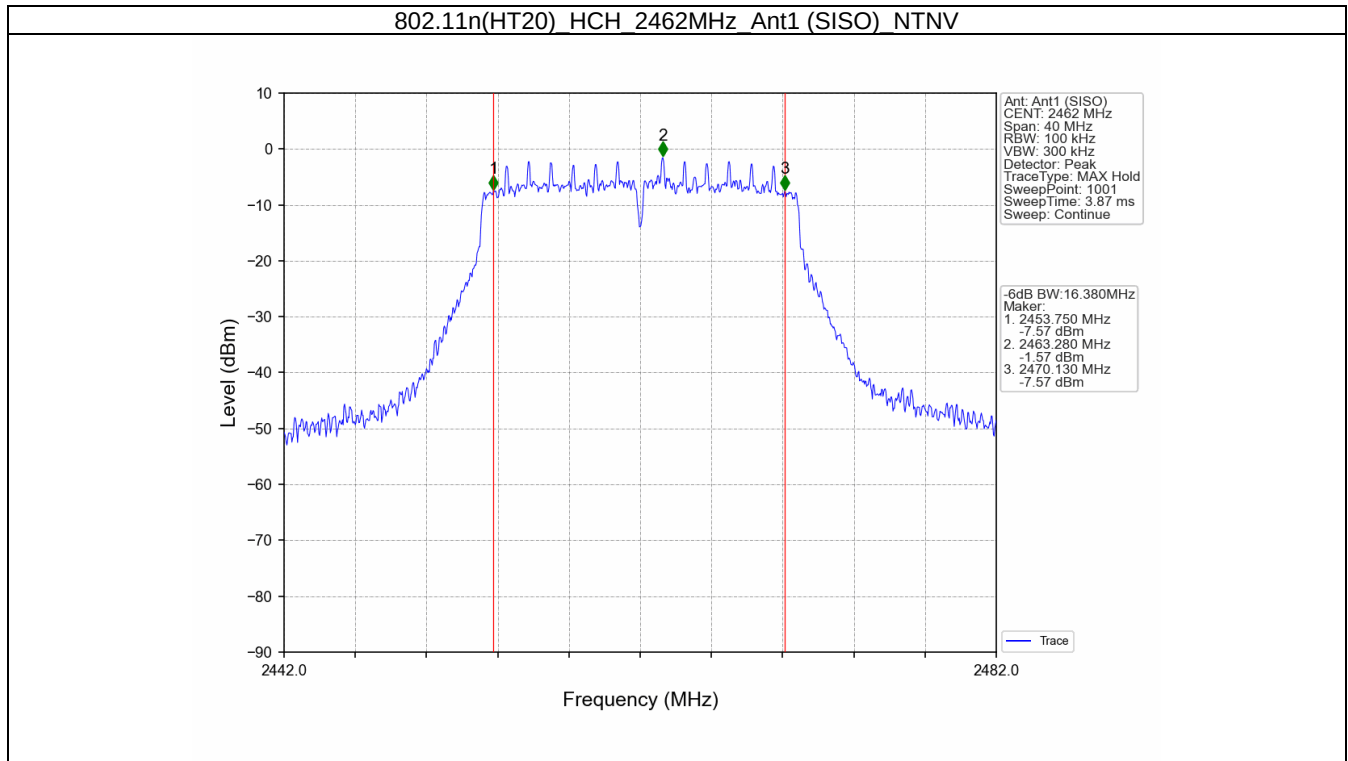


802.11n(HT20) LCH 2412MHz Ant1 (SISO) NTNV



802.11n(HT20) MCH 2437MHz Ant1 (SISO) NTNV





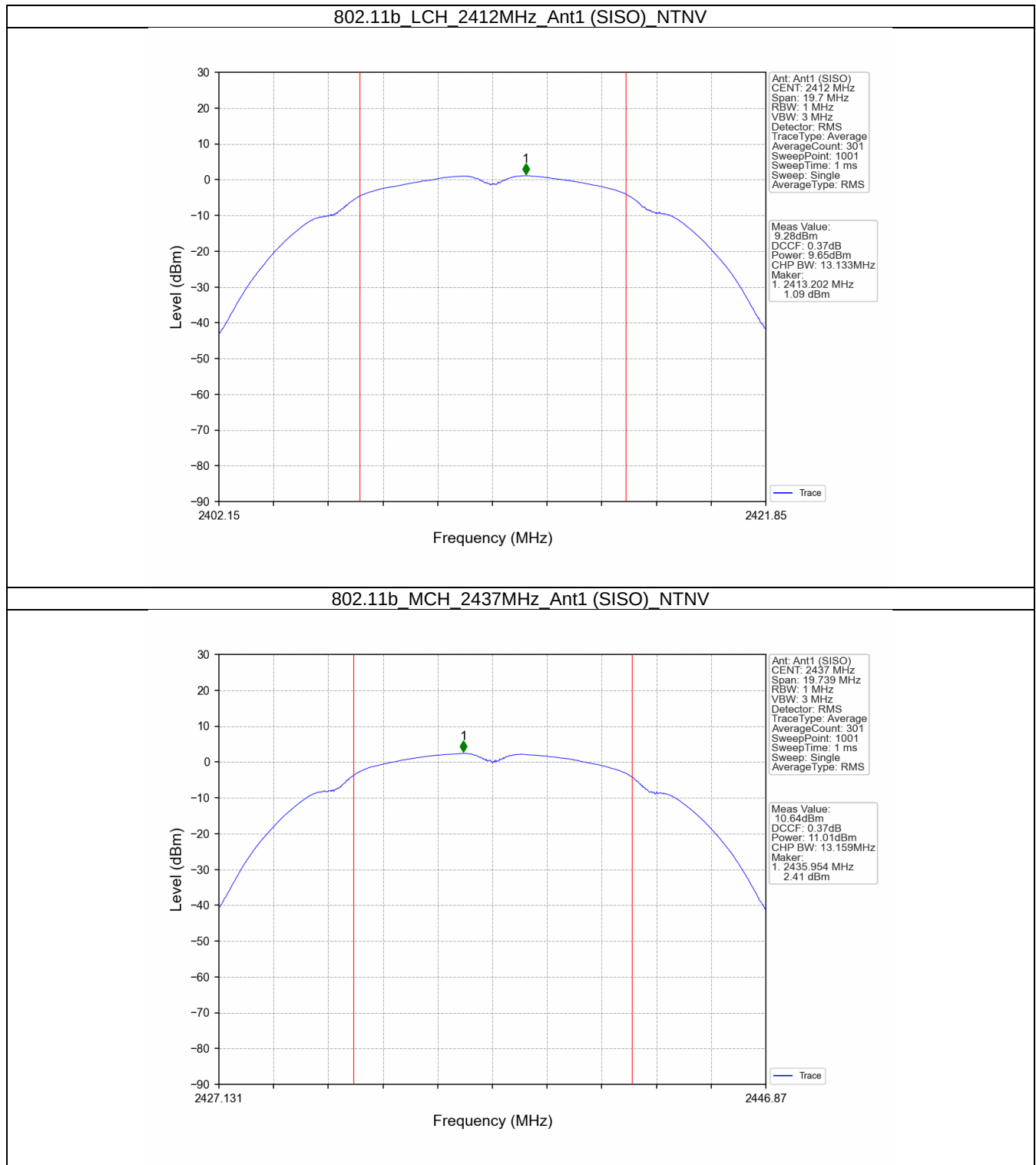
2. Maximum Conducted Output Power

2.1 Power

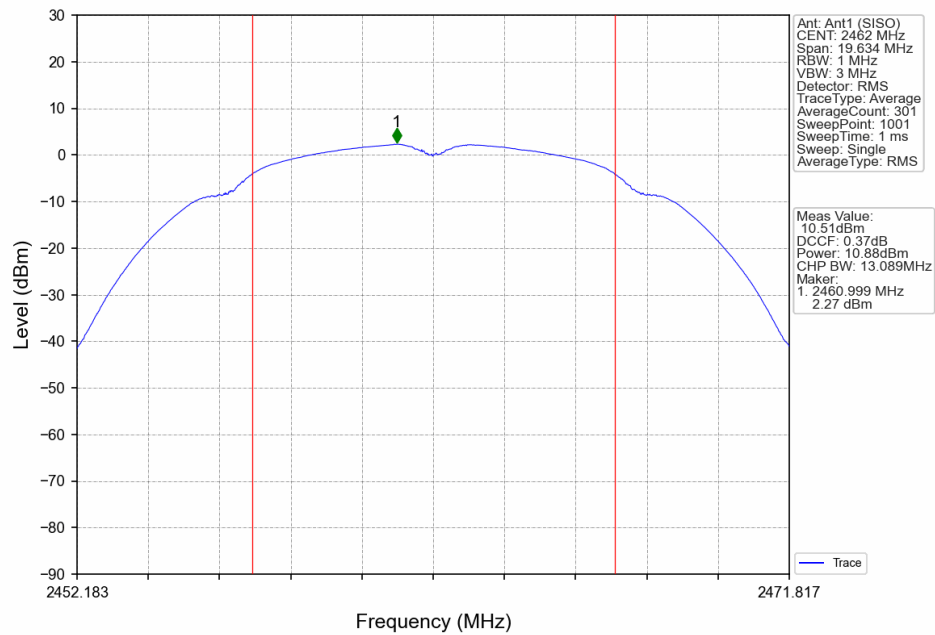
2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	9.65	<=30	Pass
		2437	11.01	<=30	Pass
		2462	10.88	<=30	Pass
802.11g	SISO	2412	9.48	<=30	Pass
		2437	11.01	<=30	Pass
		2462	10.88	<=30	Pass
802.11n (HT20)	SISO	2412	7.69	<=30	Pass
		2437	9.03	<=30	Pass
		2462	8.95	<=30	Pass
Note1: Antenna Gain: Ant1: 4.16dBi;					

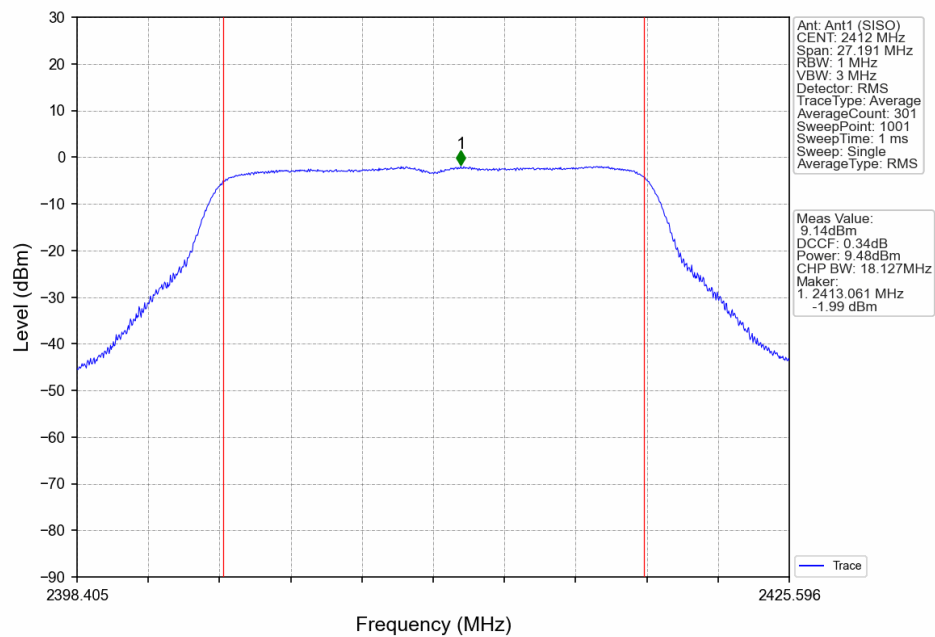
2.1.2 Test Graph



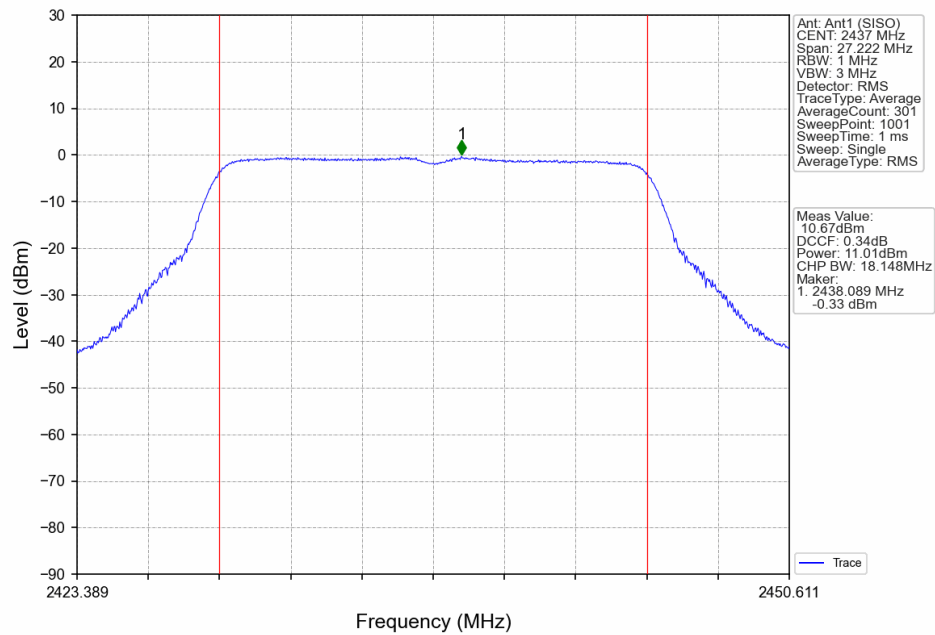
802.11b HCH 2462MHz Ant1 (SISO) NTN



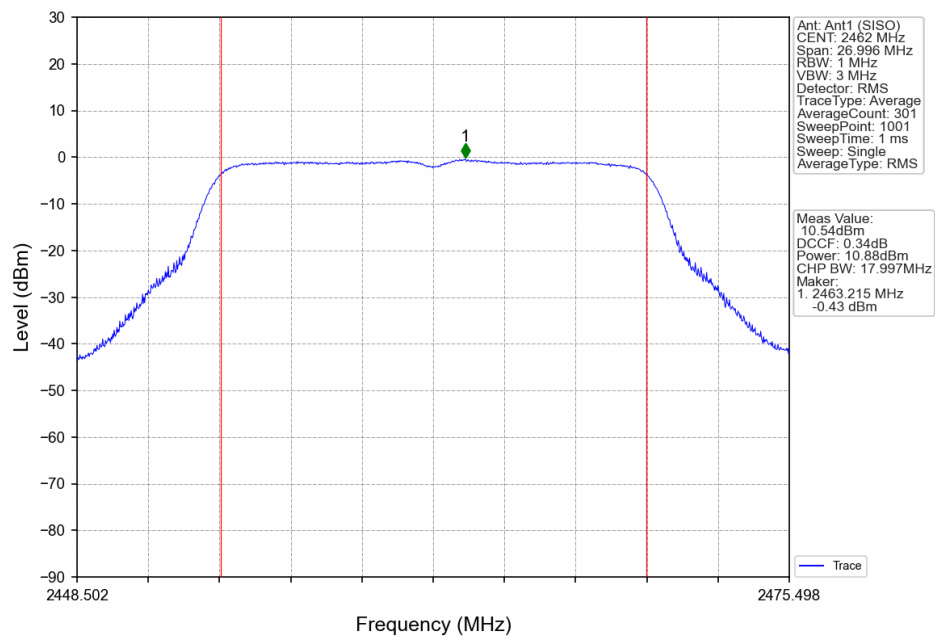
802.11g LCH 2412MHz Ant1 (SISO) NTN



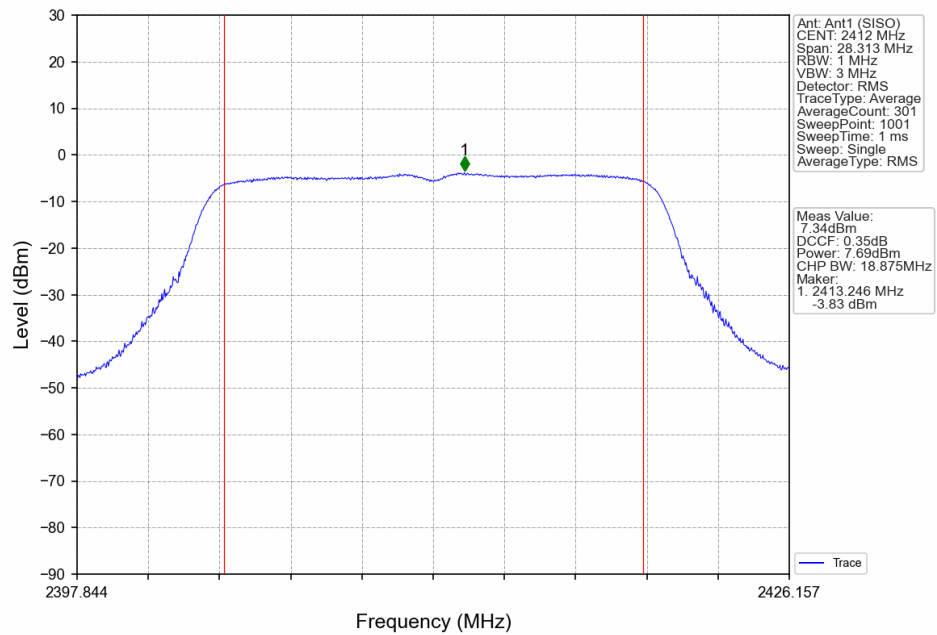
802.11g MCH 2437MHz Ant1 (SISO) NTN



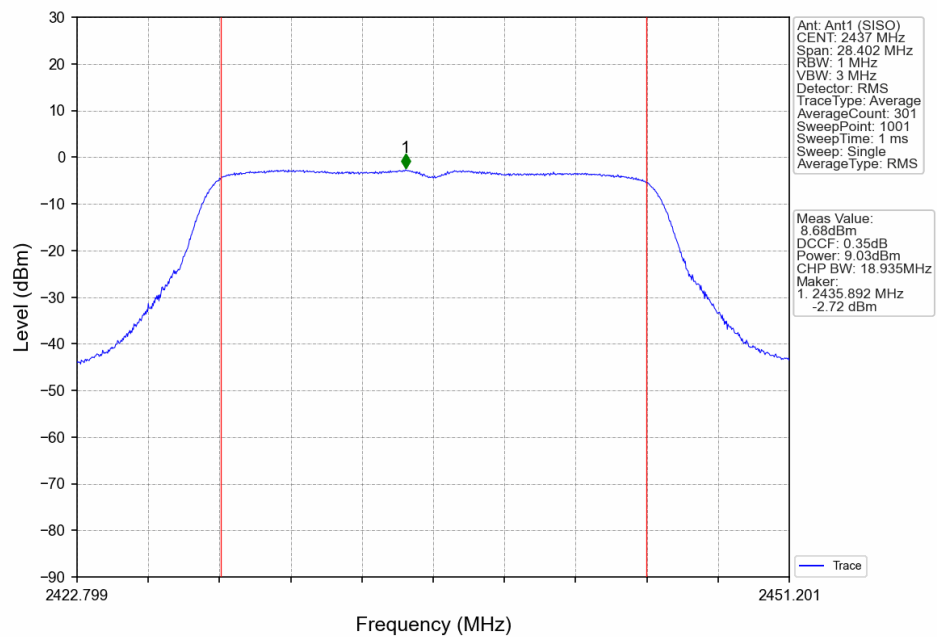
802.11g_HCH_2462MHz_Ant1 (SISO) NTN

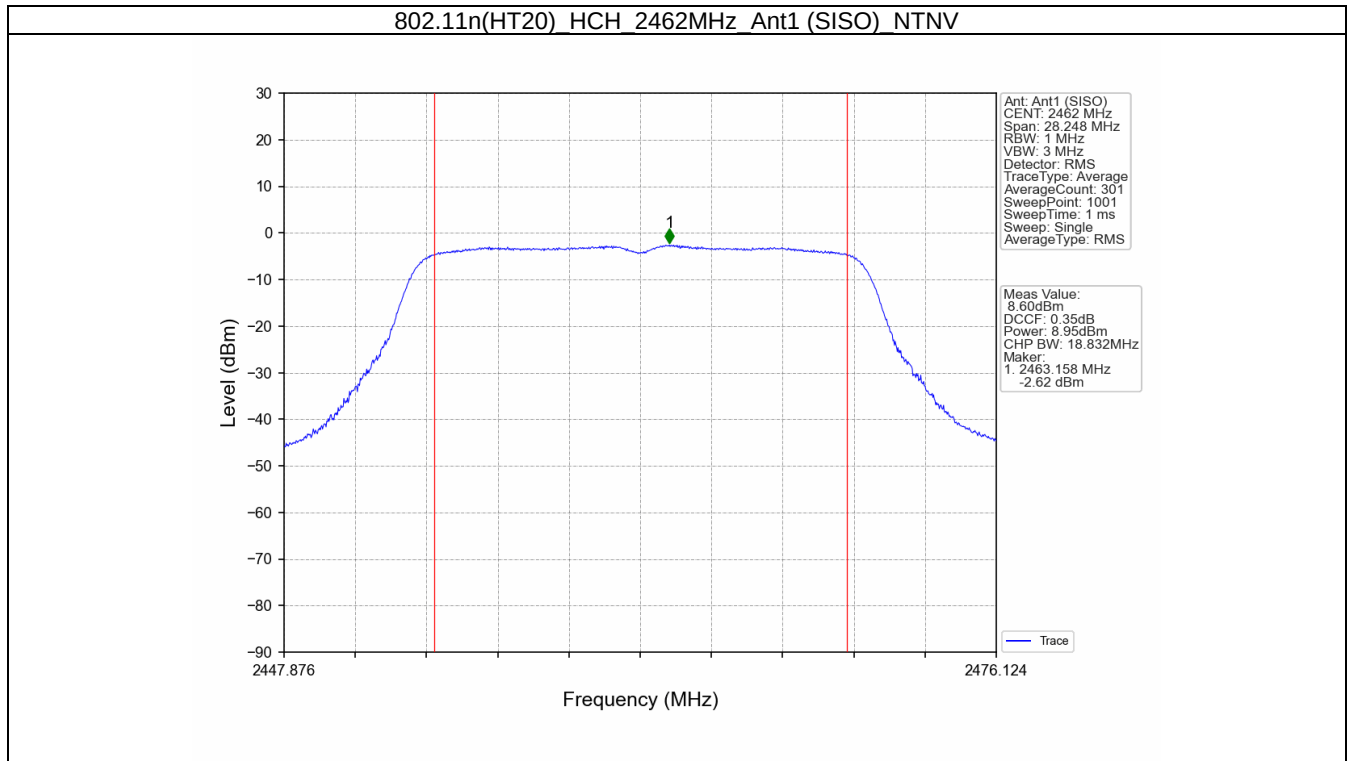


802.11n(HT20) LCH 2412MHz Ant1 (SISO) NTNV



802.11n(HT20) MCH 2437MHz Ant1 (SISO) NTNV





2.2 EIRP

2.2.1 Test Result

Mode	TX Type	Frequency (MHz)	E.I.R.P (dBm)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	13.81	<=36.02	Pass
		2437	15.17	<=36.02	Pass
		2462	15.04	<=36.02	Pass
802.11g	SISO	2412	13.64	<=36.02	Pass
		2437	15.17	<=36.02	Pass
		2462	15.04	<=36.02	Pass
802.11n (HT20)	SISO	2412	11.85	<=36.02	Pass
		2437	13.19	<=36.02	Pass
		2462	13.11	<=36.02	Pass
Note1: Antenna Gain: Ant1: 4.16dBi; Note2: E.I.R.P = Measured Power + Antenna Gain					

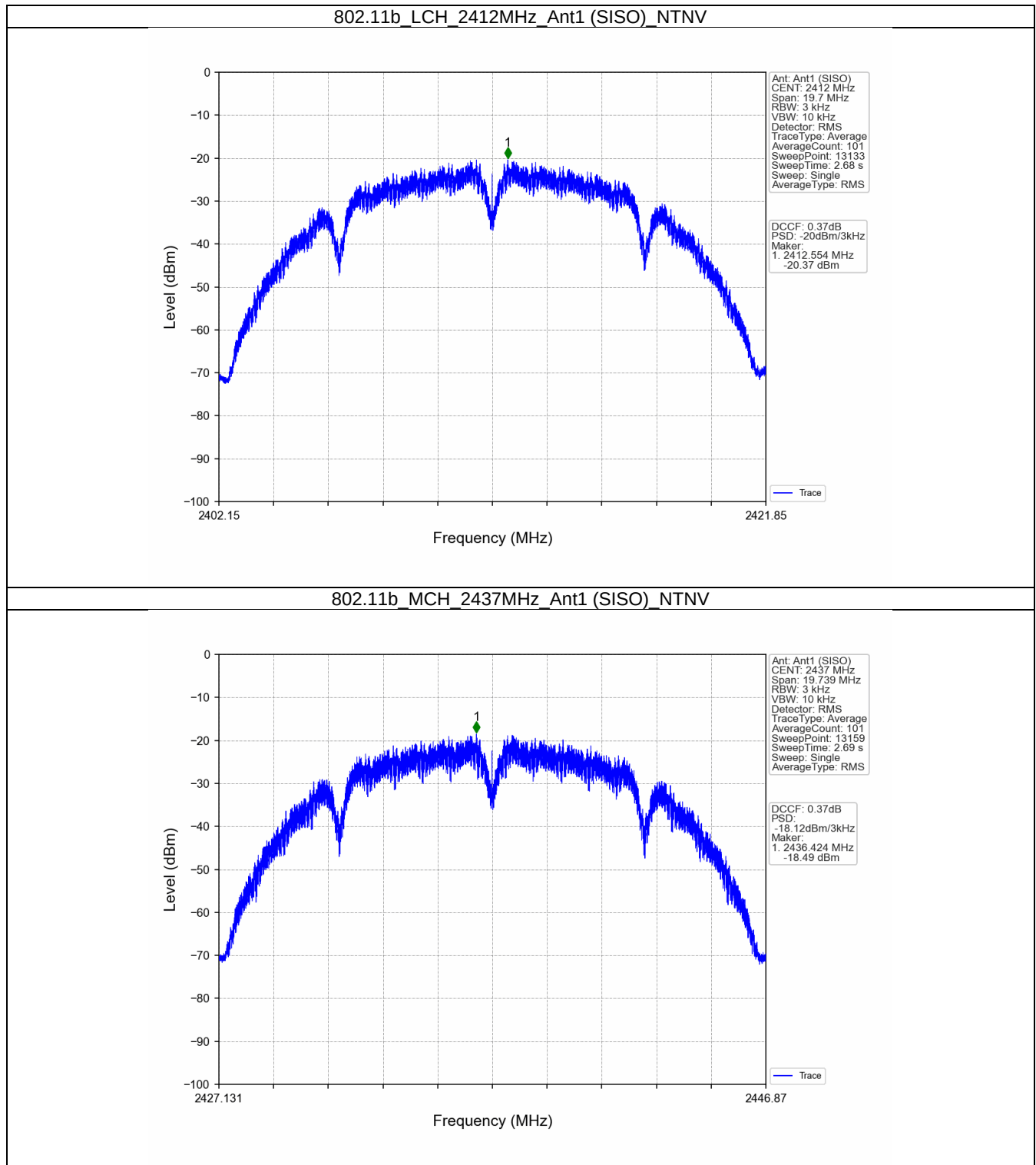
3. Maximum Power Spectral Density

3.1 PSD

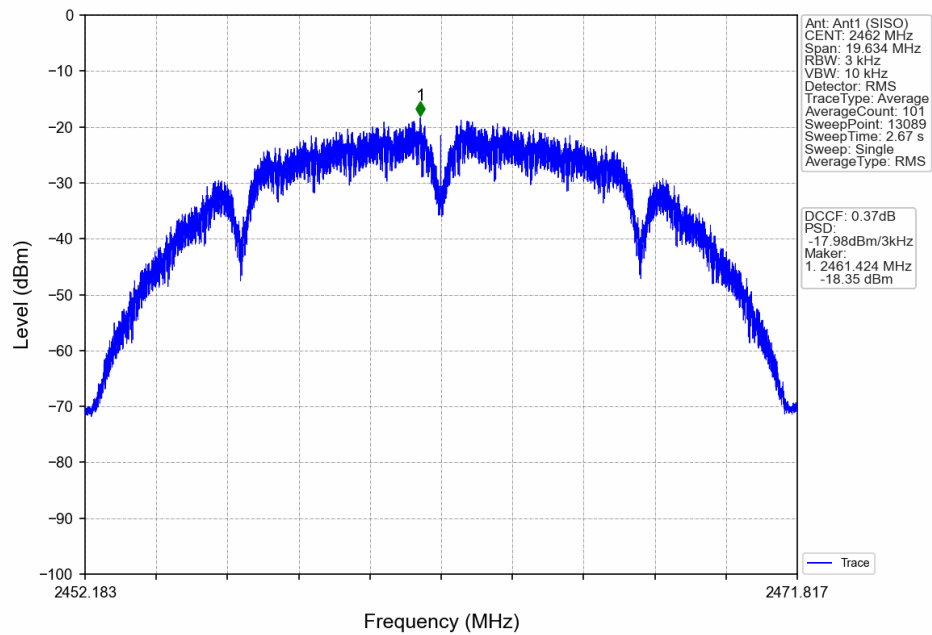
3.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	-20.00	<=8	Pass
		2437	-18.12	<=8	Pass
		2462	-17.98	<=8	Pass
802.11g	SISO	2412	-20.29	<=8	Pass
		2437	-18.71	<=8	Pass
		2462	-18.68	<=8	Pass
802.11n (HT20)	SISO	2412	-22.02	<=8	Pass
		2437	-20.56	<=8	Pass
		2462	-20.72	<=8	Pass
Note1: Antenna Gain: Ant1: 4.16dBi;					

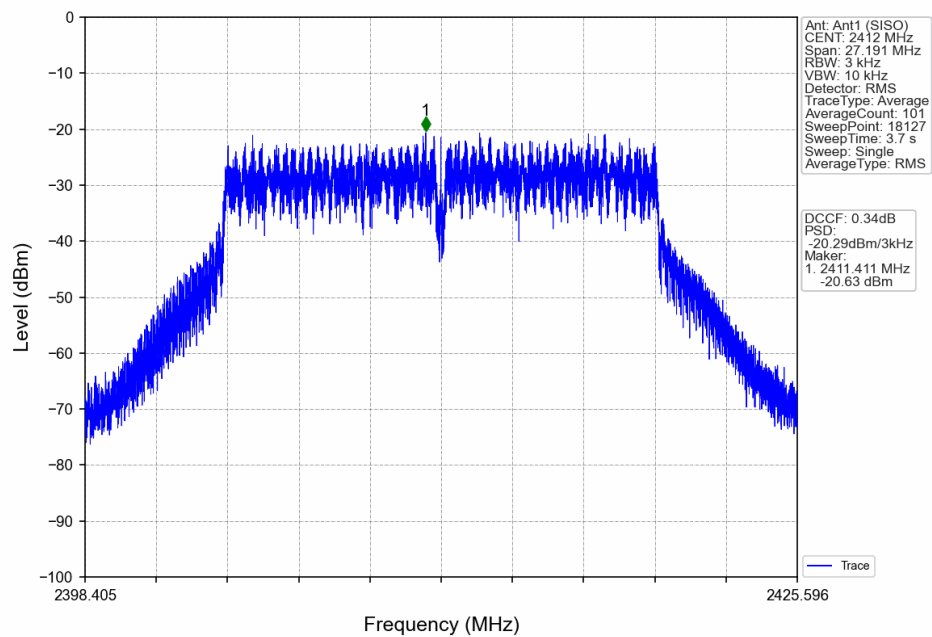
3.1.2 Test Graph



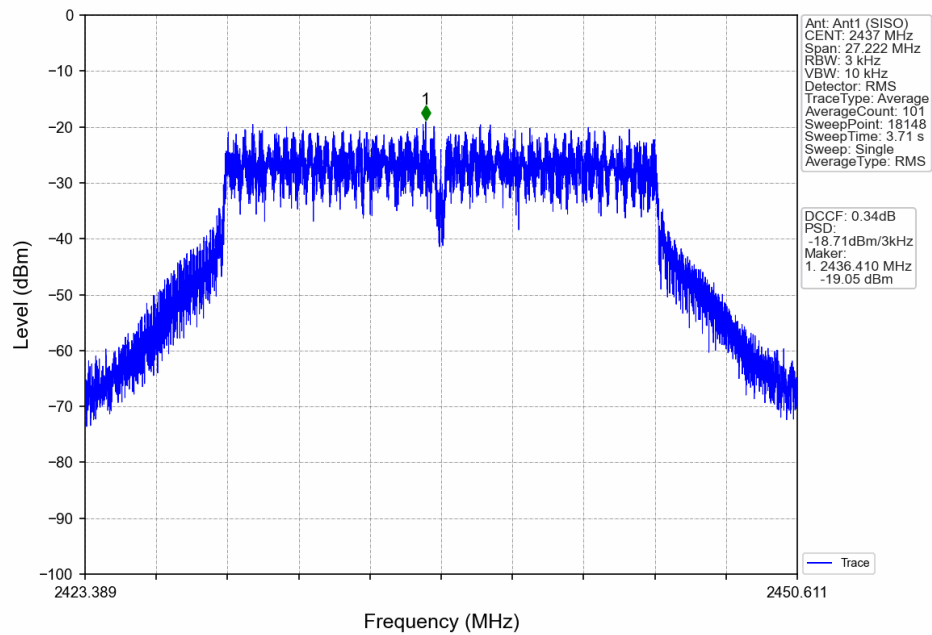
802.11b HCH 2462MHz Ant1 (SISO) NTN



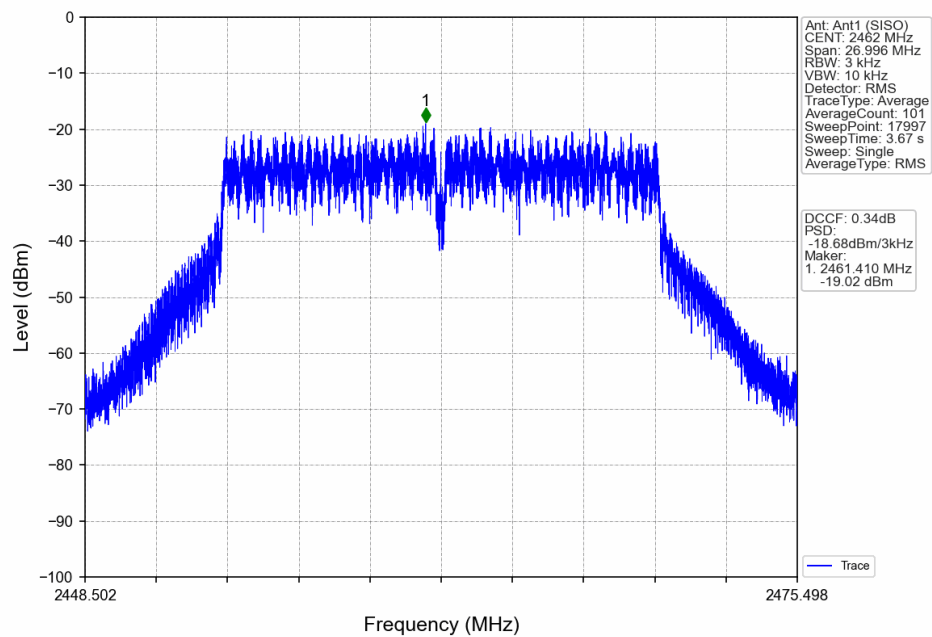
802.11g LCH 2412MHz Ant1 (SISO) NTN



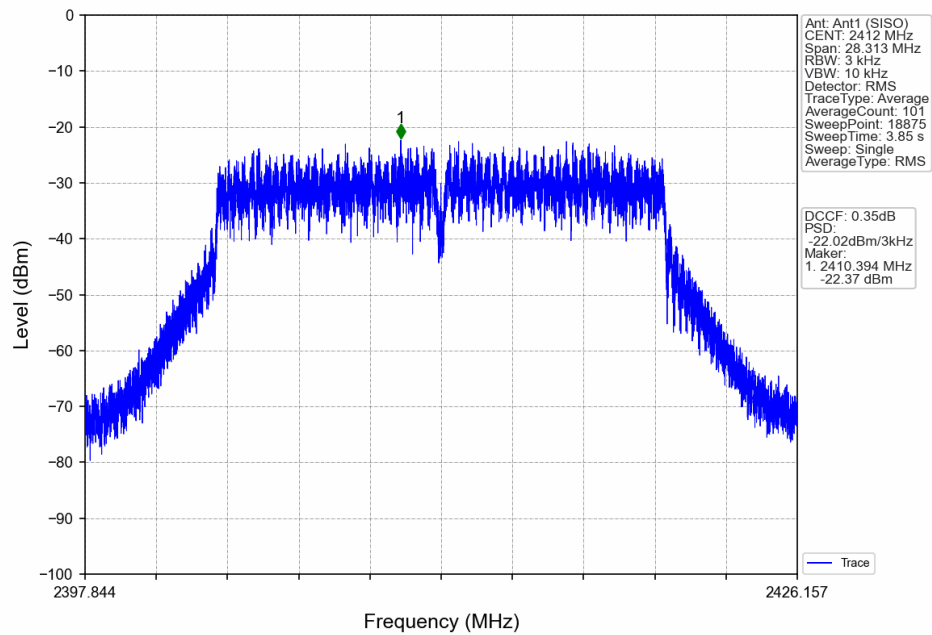
802.11g MCH 2437MHz Ant1 (SISO) NTN



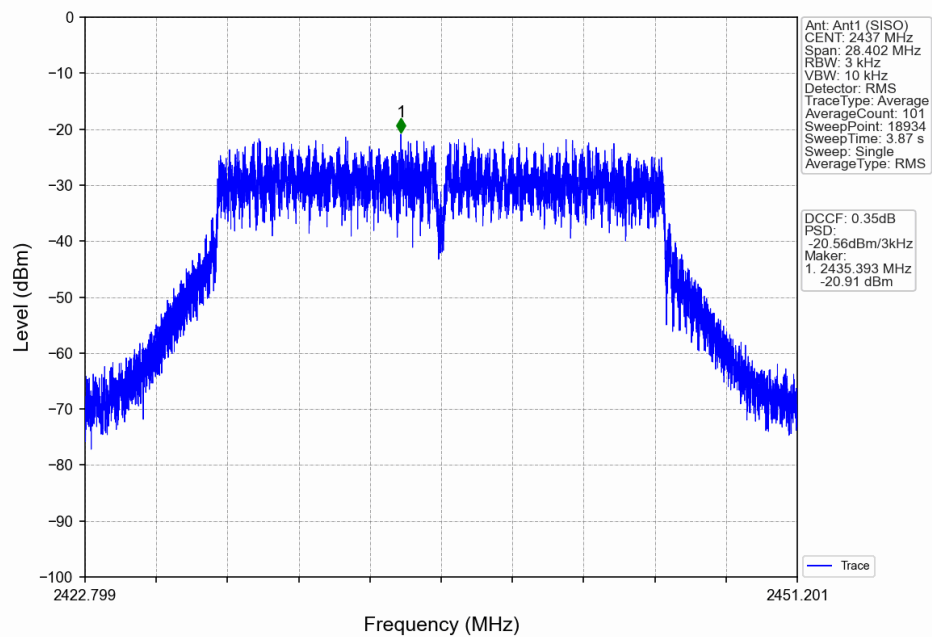
802.11g_HCH_2462MHz_Ant1 (SISO) NTN

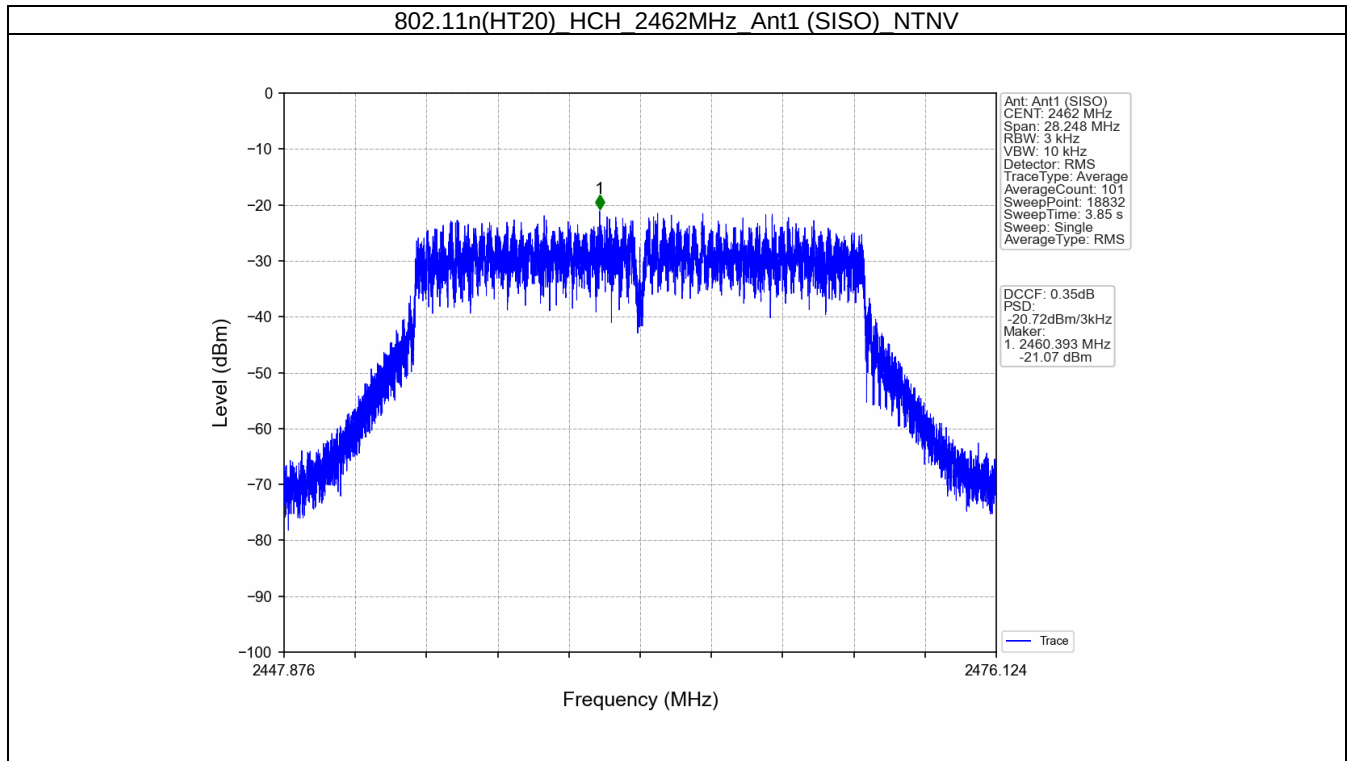


802.11n(HT20) LCH 2412MHz Ant1 (SISO) NTNV



802.11n(HT20) MCH 2437MHz Ant1 (SISO) NTNV





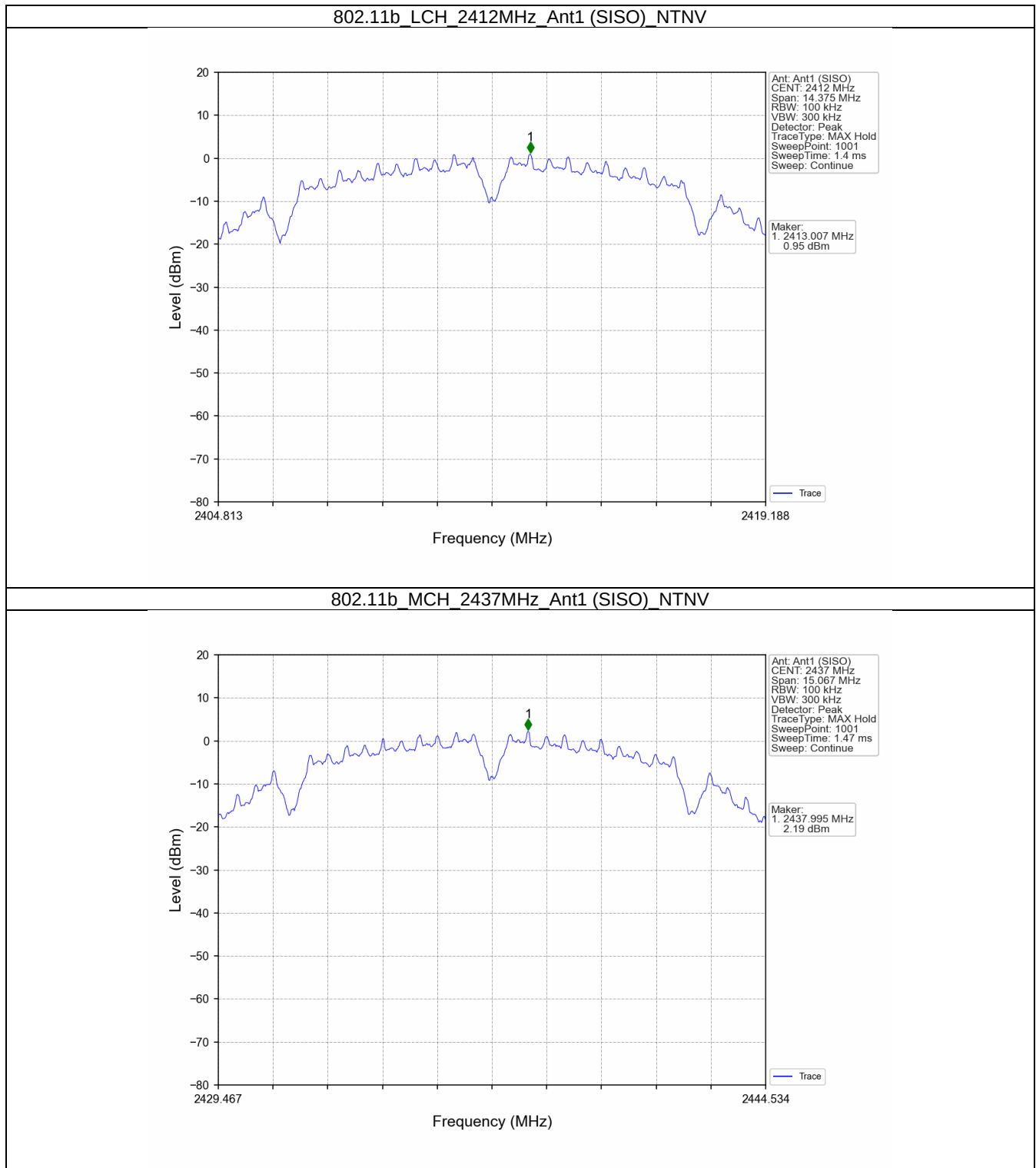
4. Unwanted Emissions In Non-restricted Frequency Bands

4.1 Ref

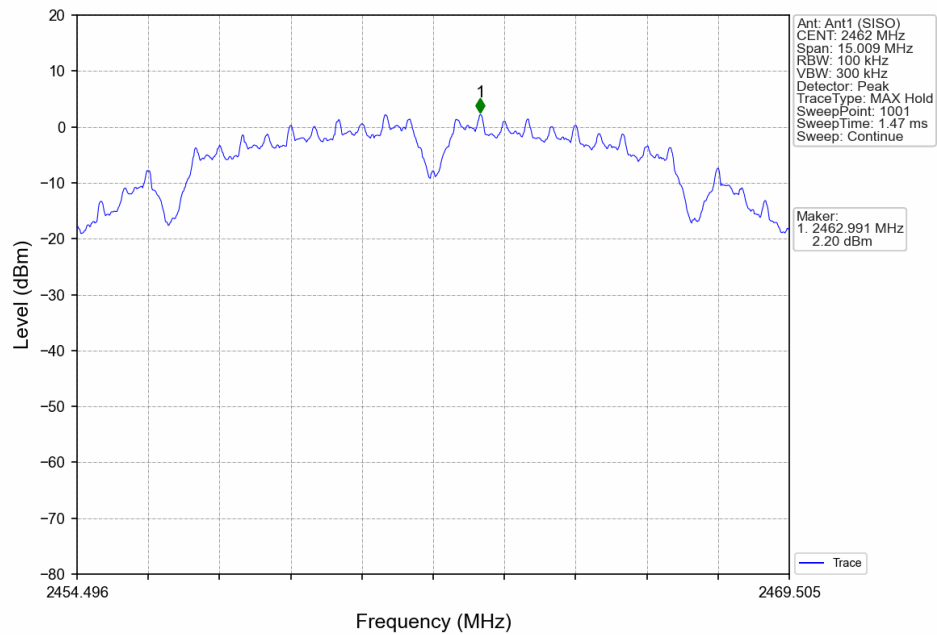
4.1.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
802.11b	SISO	2412	1	0.95
		2437	1	2.19
		2462	1	2.20
802.11g	SISO	2412	1	-1.19
		2437	1	0.37
		2462	1	0.28
802.11n (HT20)	SISO	2412	1	-2.85
		2437	1	-1.71
		2462	1	-1.57
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.				

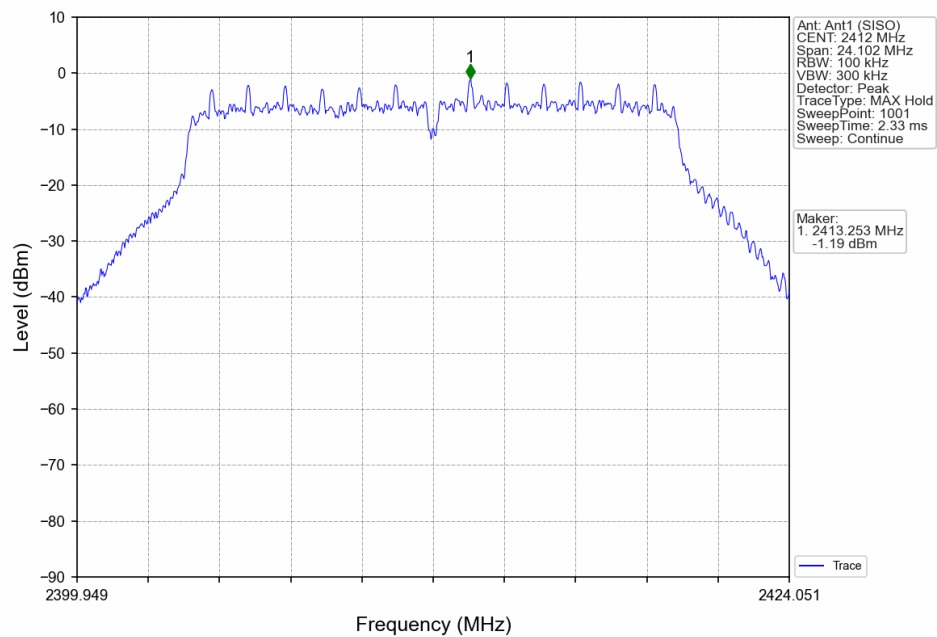
4.1.2 Test Graph



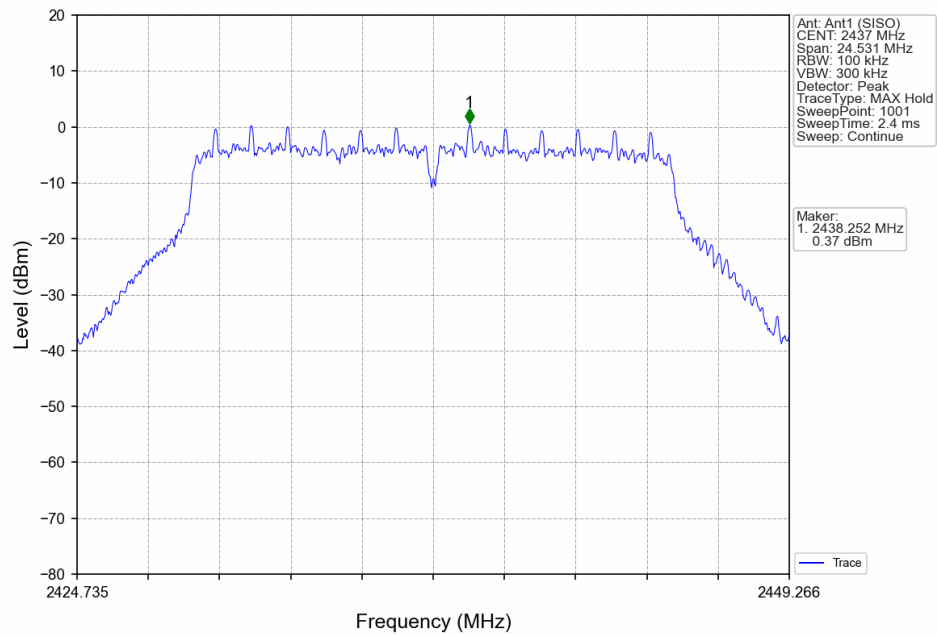
802.11b HCH 2462MHz Ant1 (SISO) NTN



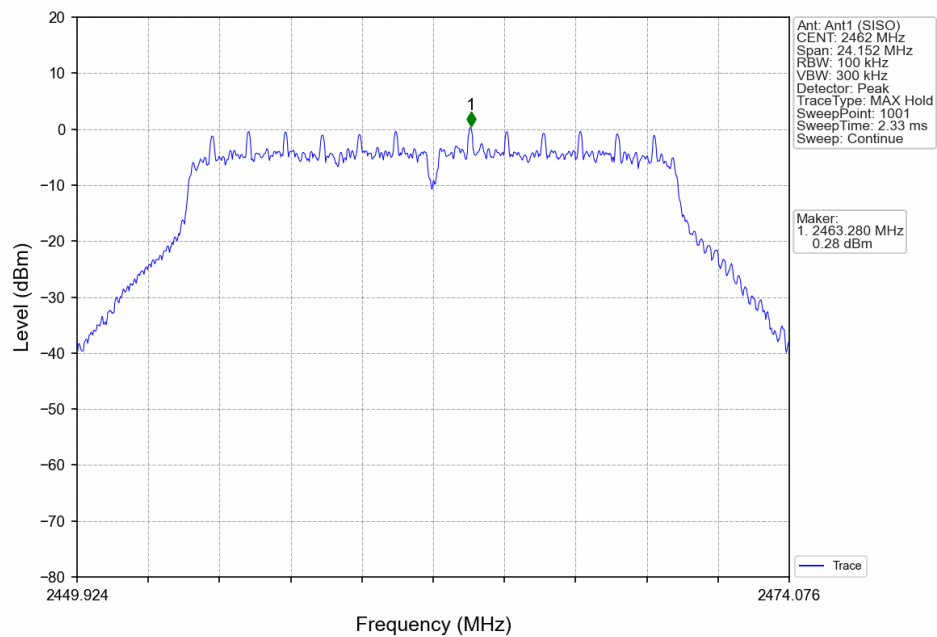
802.11g LCH 2412MHz Ant1 (SISO) NTN



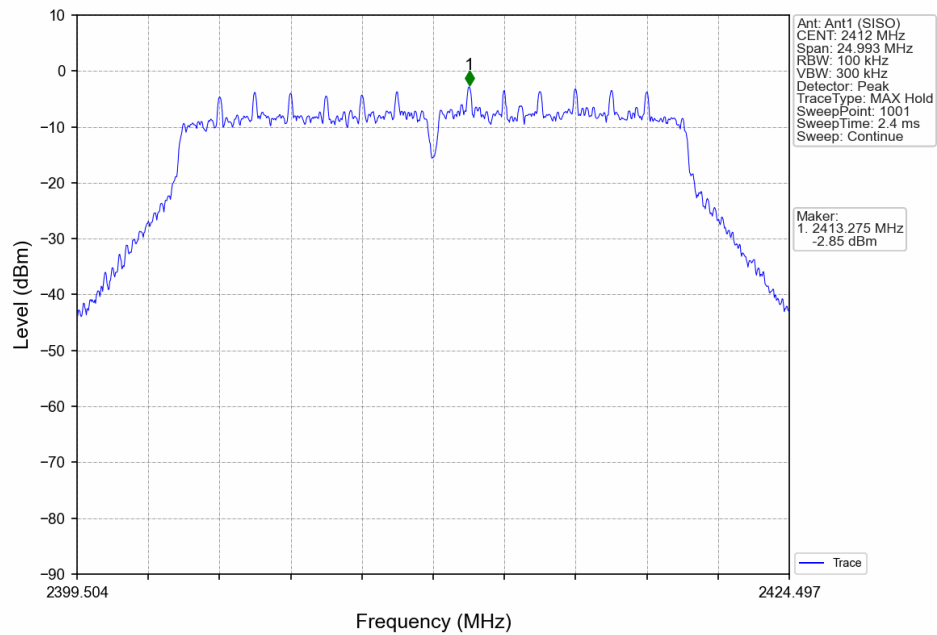
802.11g MCH 2437MHz Ant1 (SISO) NTN



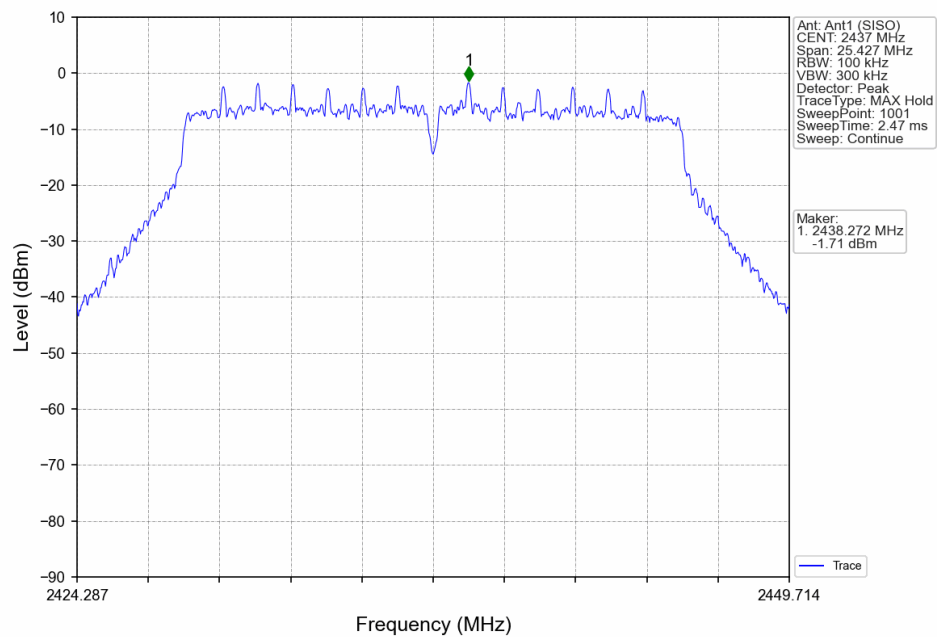
802.11g_HCH_2462MHz_Ant1 (SISO) NTN

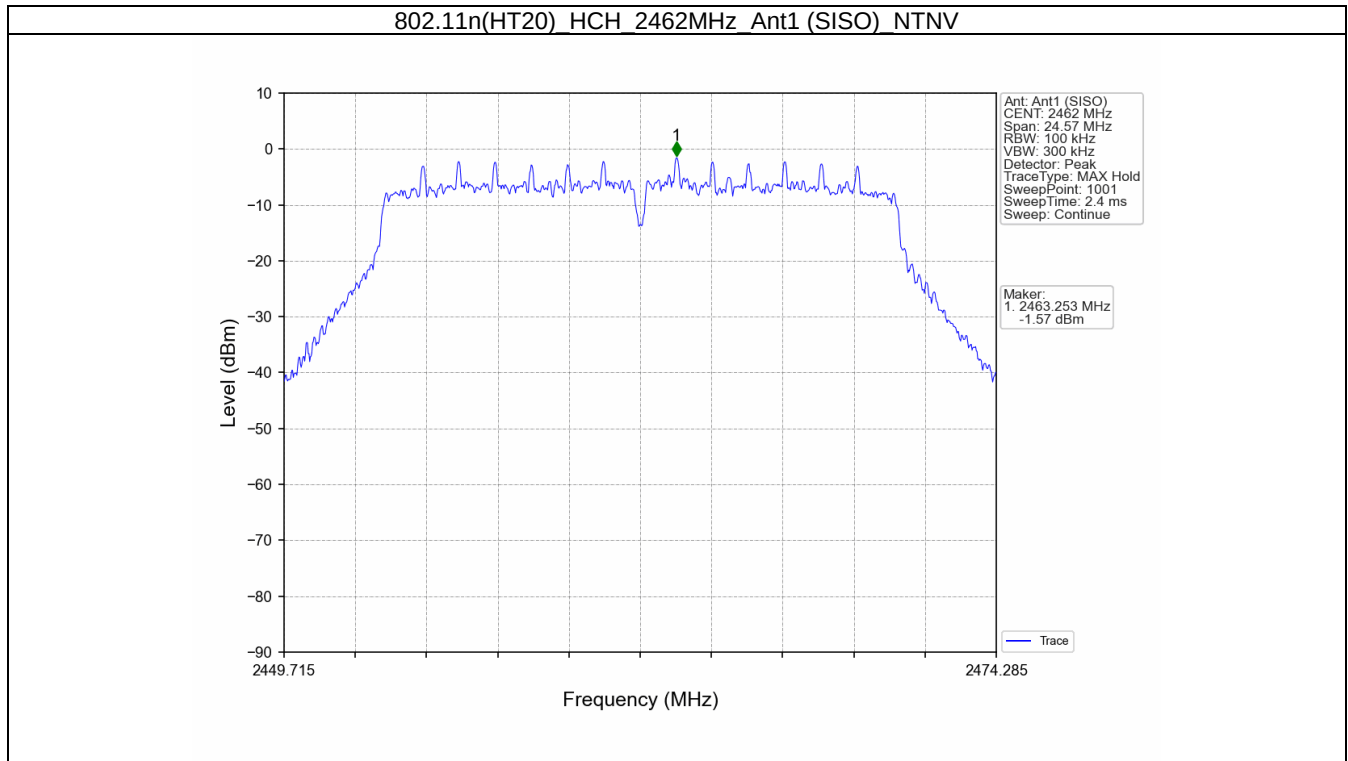


802.11n(HT20) LCH 2412MHz Ant1 (SISO) NTNV



802.11n(HT20) MCH 2437MHz Ant1 (SISO) NTNV



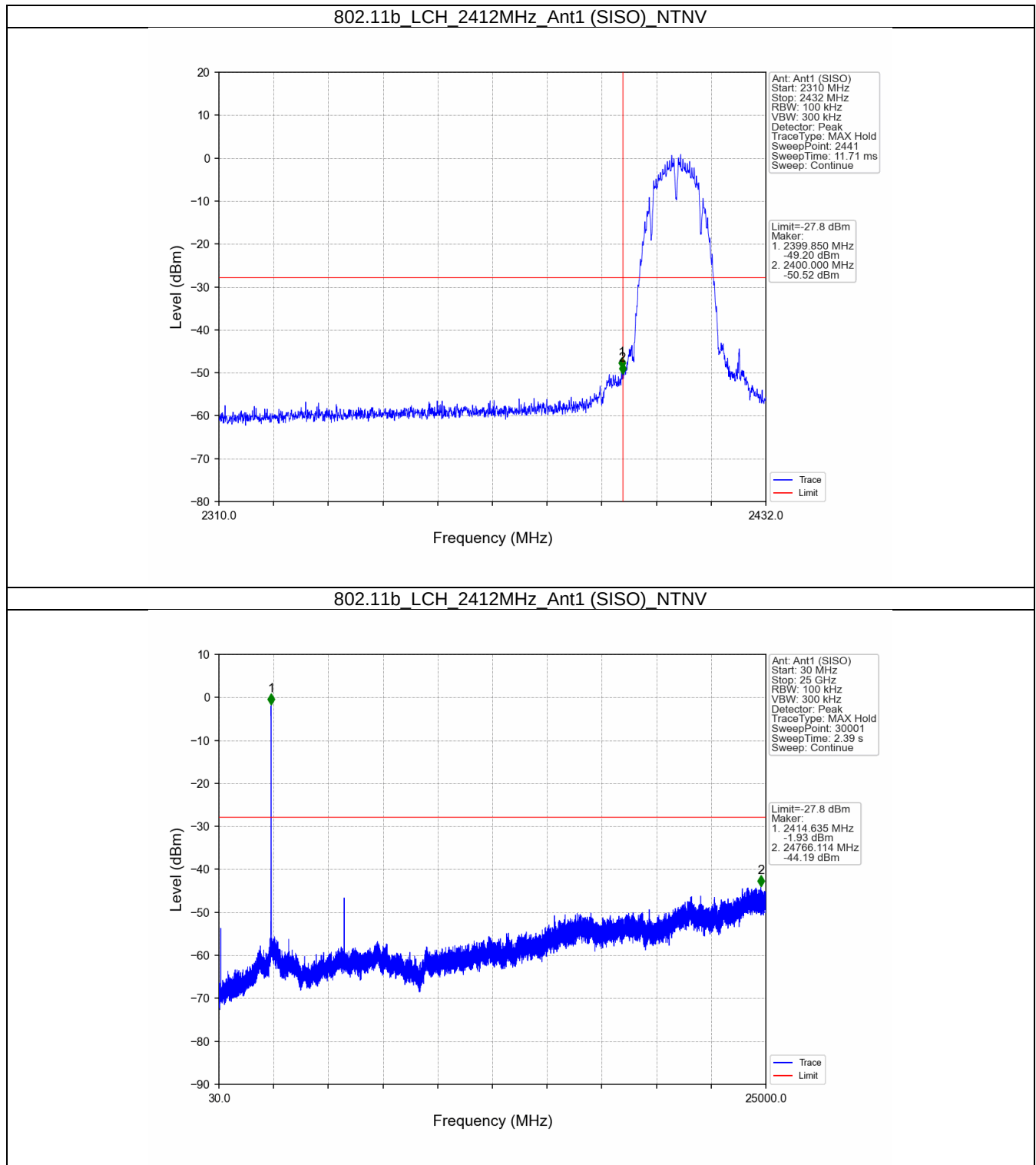


4.2 CSE

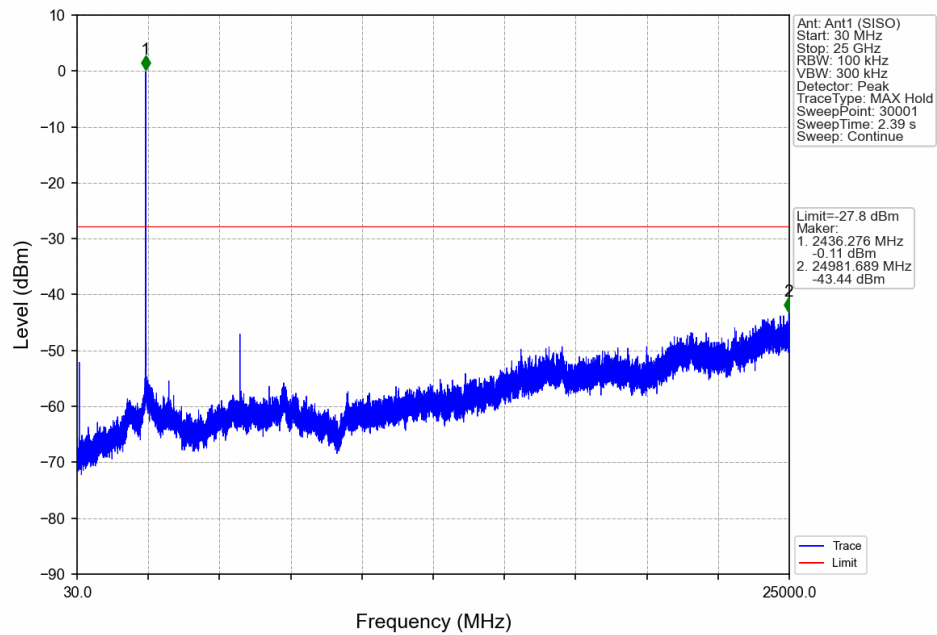
4.2.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	2.20	-27.80	Pass
		2437	1	2.20	-27.80	Pass
		2462	1	2.20	-27.80	Pass
802.11g	SISO	2412	1	0.37	-29.63	Pass
		2437	1	0.37	-29.63	Pass
		2462	1	0.37	-29.63	Pass
802.11n (HT20)	SISO	2412	1	-1.57	-31.57	Pass
		2437	1	-1.57	-31.57	Pass
		2462	1	-1.57	-31.57	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.						

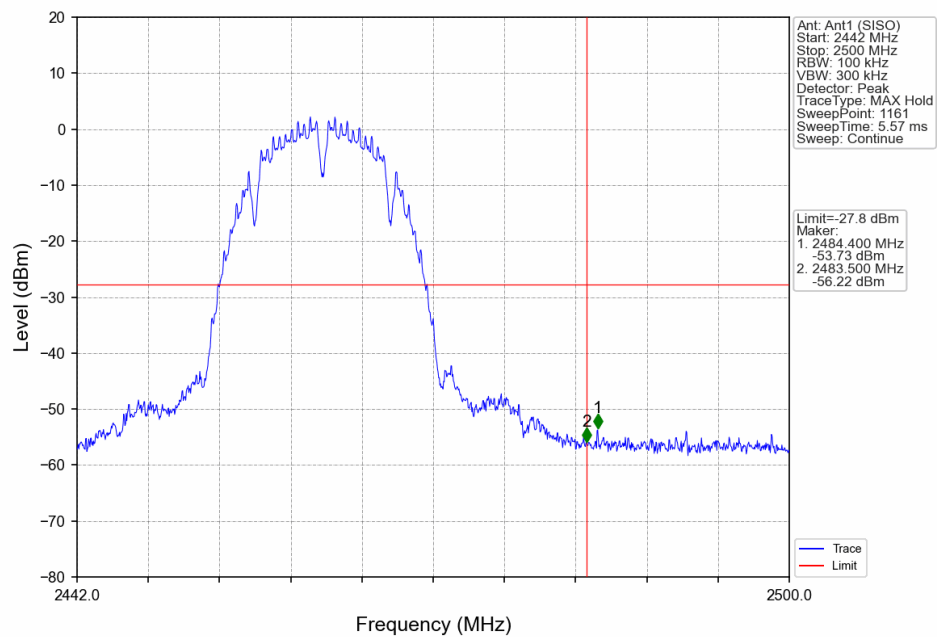
4.2.2 Test Graph



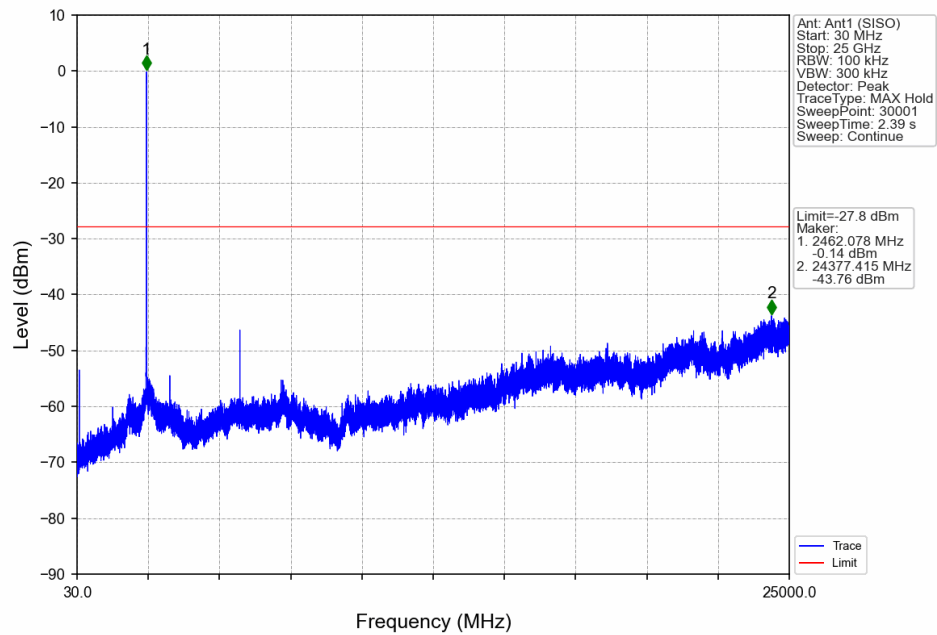
802.11b MCH 2437MHz Ant1 (SISO) NTN



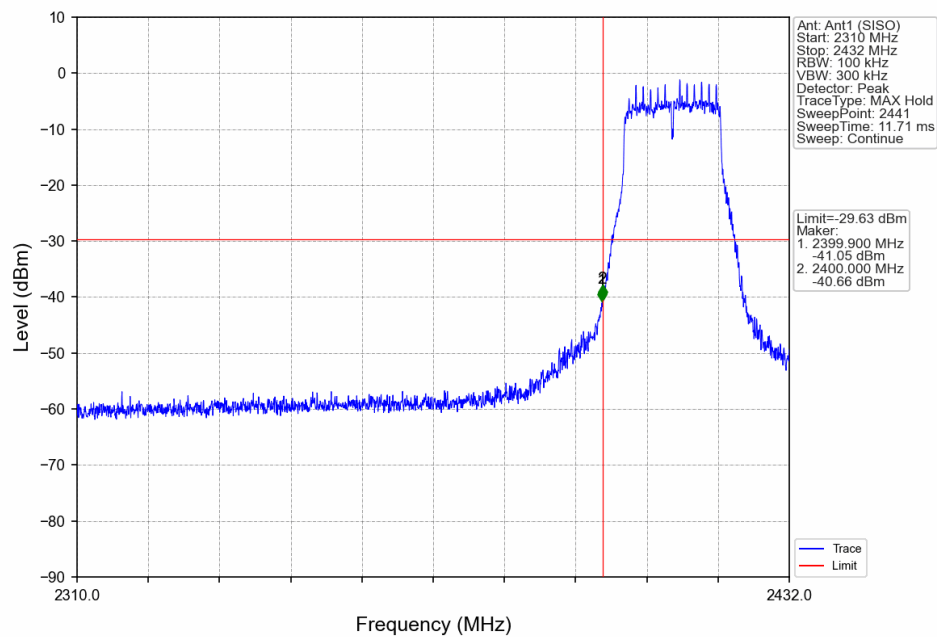
802.11b_HCH_2462MHz_Ant1 (SISO) NTN



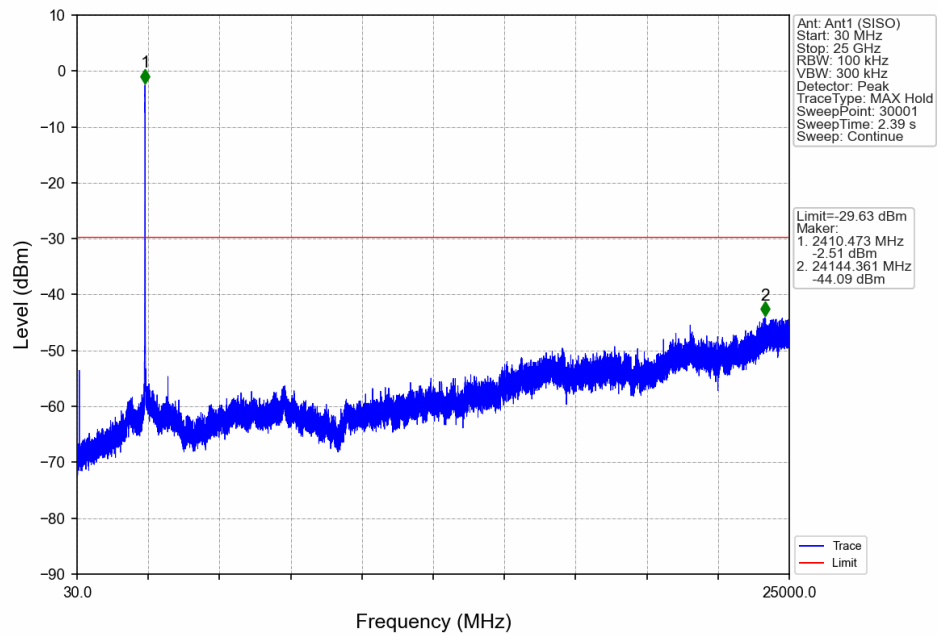
802.11b HCH 2462MHz Ant1 (SISO) NTN



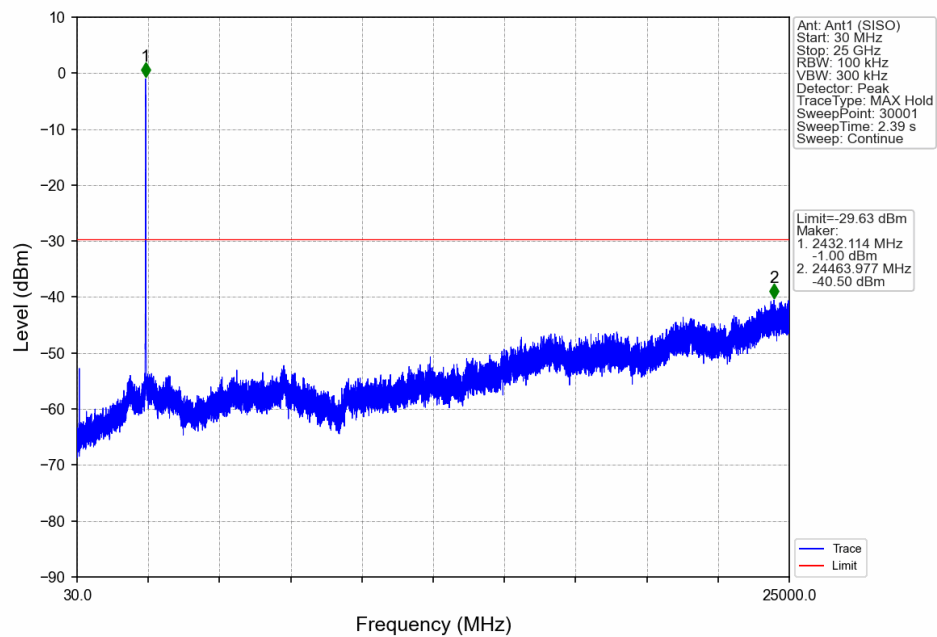
802.11g LCH 2412MHz Ant1 (SISO) NTN

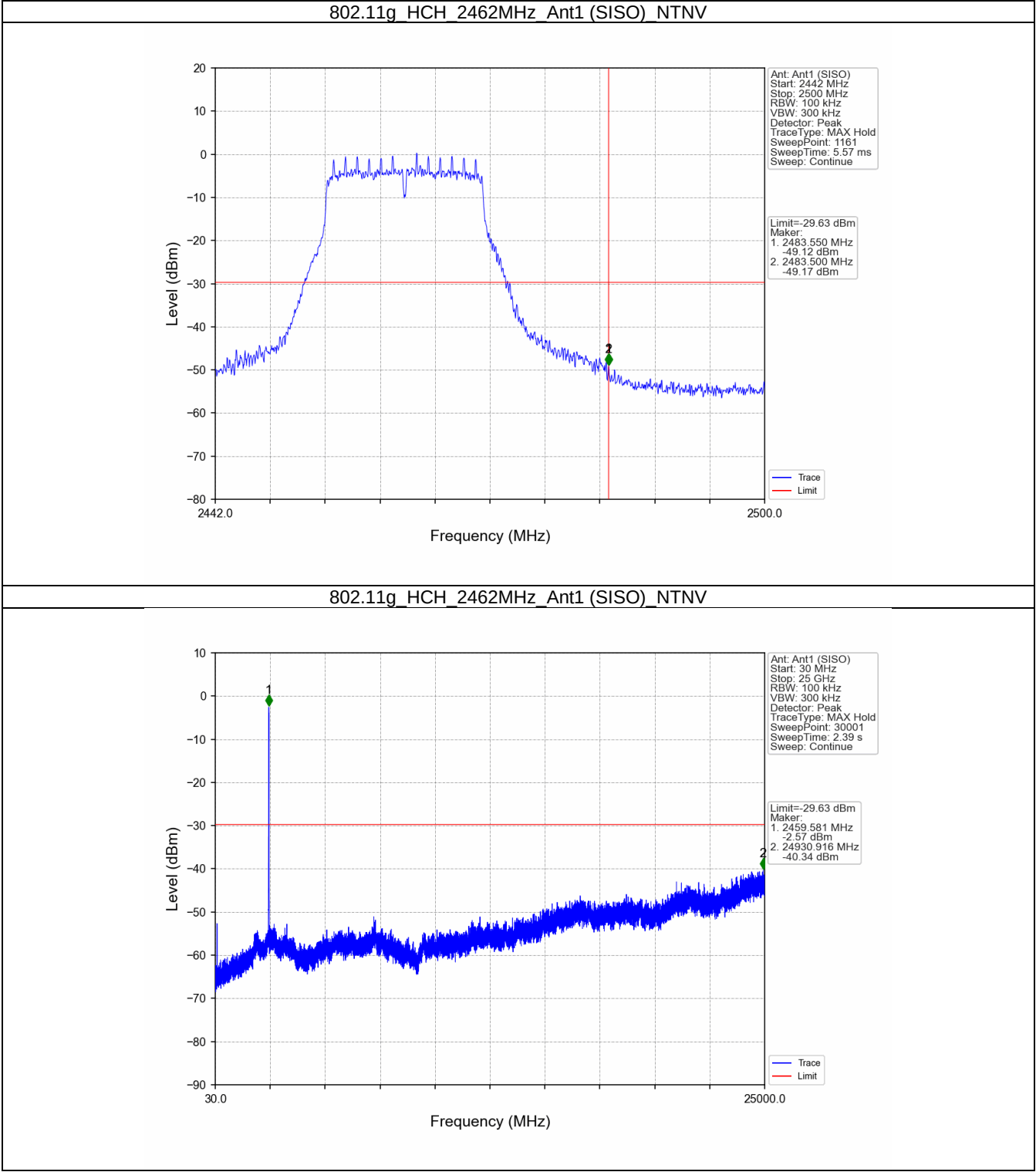


802.11g LCH 2412MHz Ant1 (SISO) NTN

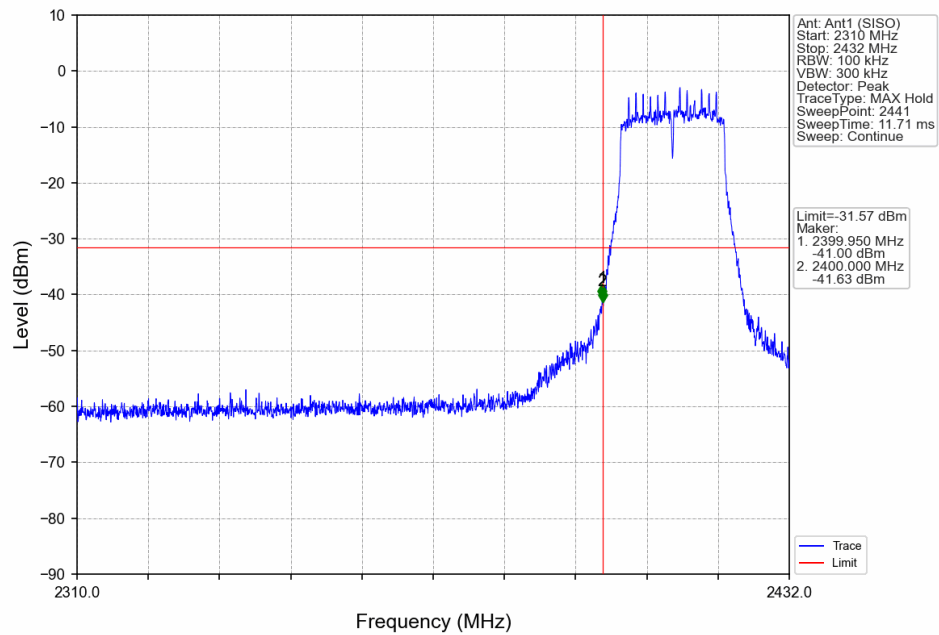


802.11g_MCH_2437MHz_Ant1 (SISO) NTN

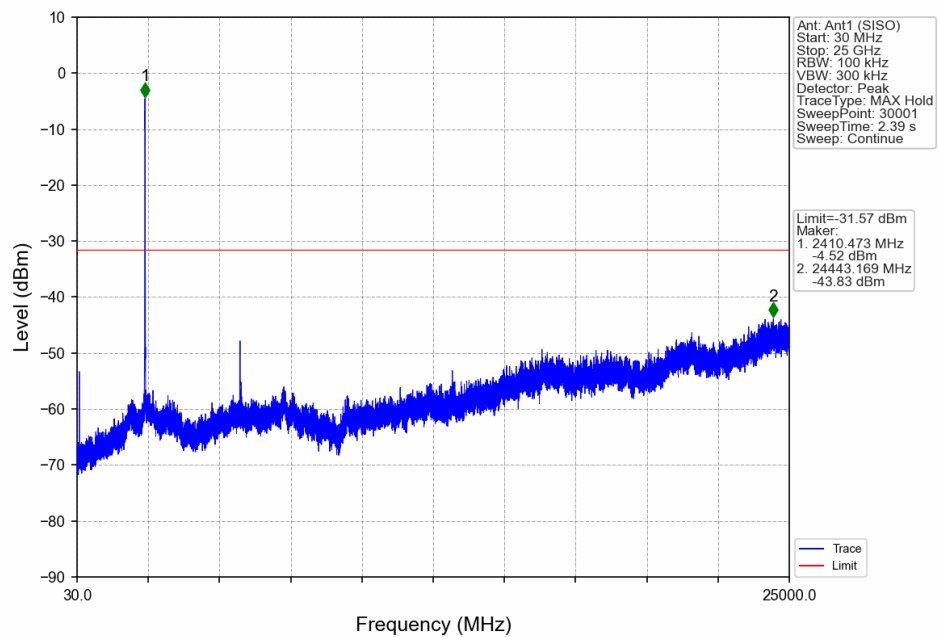




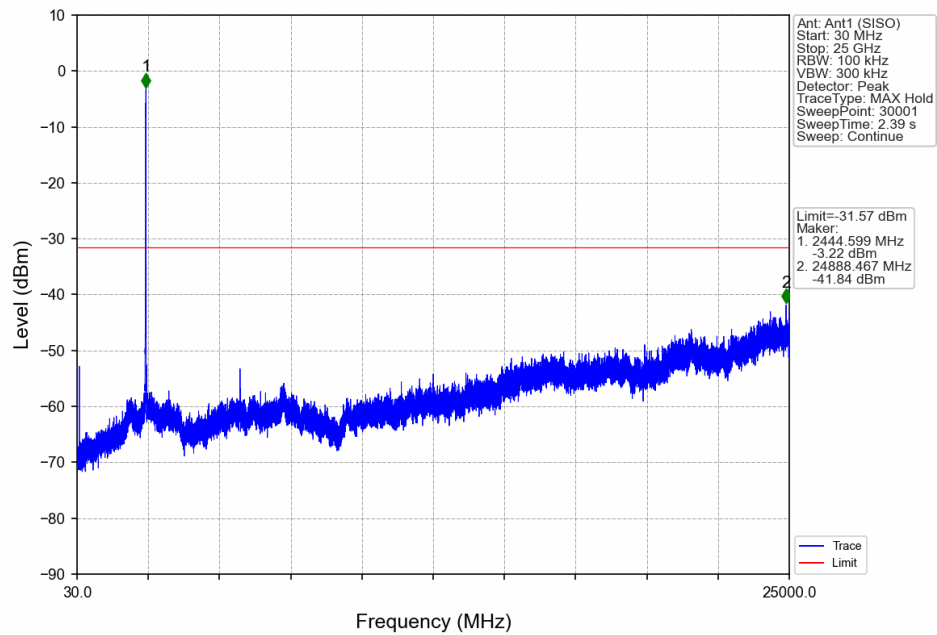
802.11n(HT20) LCH 2412MHz Ant1 (SISO) NTNV



802.11n(HT20) LCH 2412MHz Ant1 (SISO) NTNV



802.11n(HT20) MCH_2437MHz_Ant1 (SISO) NTNV



802.11n(HT20) HCH_2462MHz_Ant1 (SISO) NTNV

