

7.8 Conducted Band Edges Measurement

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)

Test Method: ANSI C63.10 (2020) Section 6.10.4

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

7.8.1 E.U.T. Operation

Operating Environment:

Temperature: 26.3 °C

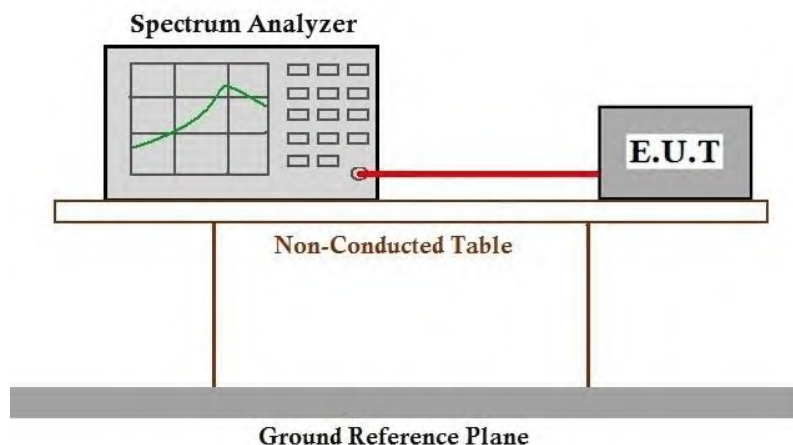
Humidity: 46.4 % RH

Atmospheric Pressure: 1001 mbar

7.8.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	06	TX mode(WLAN2.4G)_Keep the EUT in charging and continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested. Only the data of worst case is recorded in the report.

7.8.3 Test Setup Diagram





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7.8.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.9 Conducted Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)
Test Method: ANSI C63.10 (2020) Section 11.11

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

7.9.1 E.U.T. Operation

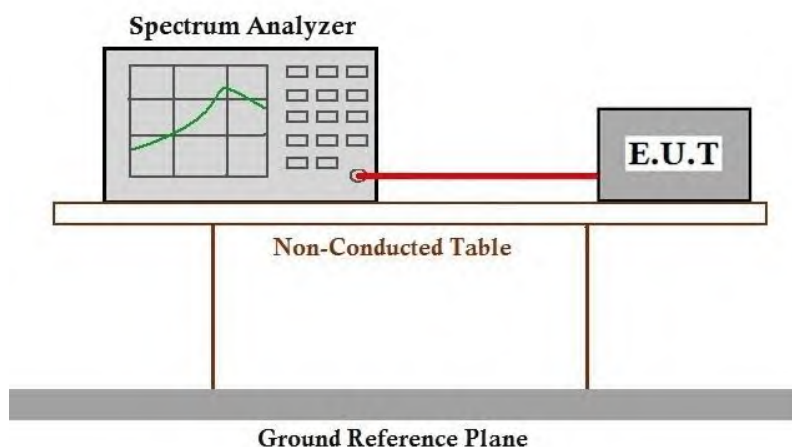
Operating Environment:

Temperature: 26.3 °C Humidity: 46.4 % RH Atmospheric Pressure: 1001 mbar

7.9.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	06	TX mode(WLAN2.4G)_Keep the EUT in charging and continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested. Only the data of worst case is recorded in the report.

7.9.3 Test Setup Diagram





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7.9.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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8 Test Setup Photo

Refer to Appendix - Test Setup Photo for SUCR2510001026WM

9 EUT Constructional Details (EUT Photos)

Refer to Appendix - External Photos for SUCR2510001026WM and Appendix - Internal Photos for SUCR2510001026WM

10 Appendix

1. Duty Cycle

1.1 Test Result

1.1.1 Ant6

Ant6									
Mode	TX Type	Frequency (MHz)	RU	RU Pos	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	MIMO	2412	/	/	0.692	0.701	98.72	0.06	0.03
802.11g	MIMO	2412	/	/	2.097	2.113	99.24	0.03	0.03
802.11n (HT20)	MIMO	2412	/	/	5.380	5.396	99.70	0.01	0.04
802.11n (HT40)	MIMO	2422	/	/	5.401	5.417	99.70	0.01	0.03
802.11ax (HEW20)	MIMO	2412	SU	/	5.350	5.366	99.70	0.01	0.00
802.11ax (HEW40)	MIMO	2422	SU	/	5.189	5.204	99.71	0.01	0.00



2. Bandwidth

2.1 Test Result

2.1.1 OBW

Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	99% Occupied Bandwidth (MHz)		Verdict
						Result	Limit	
802.11b	MIMO	2412	/	/	6	12.660	/	Pass
		2437	/	/	6	12.980	/	Pass
		2462	/	/	6	13.026	/	Pass
802.11g	MIMO	2412	/	/	6	16.682	/	Pass
		2437	/	/	6	16.565	/	Pass
		2462	/	/	6	16.806	/	Pass
802.11n (HT20)	MIMO	2412	/	/	6	17.837	/	Pass
		2437	/	/	6	17.742	/	Pass
		2462	/	/	6	17.874	/	Pass
802.11n (HT40)	MIMO	2422	/	/	6	36.226	/	Pass
		2437	/	/	6	36.054	/	Pass
		2452	/	/	6	35.812	/	Pass
802.11ax (HEW20)	MIMO	2412	SU	/	6	19.083	/	Pass
		2437	SU	/	6	18.944	/	Pass
		2462	SU	/	6	19.061	/	Pass
802.11ax (HEW40)	MIMO	2422	SU	/	6	38.029	/	Pass
		2437	SU	/	6	37.826	/	Pass
		2452	SU	/	6	37.475	/	Pass

2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	6dB Bandwidth (MHz)		Verdict
						Result	Limit	
802.11b	MIMO	2412	/	/	6	8.217	≥ 0.5	Pass
		2437	/	/	6	8.604	≥ 0.5	Pass
		2462	/	/	6	8.189	≥ 0.5	Pass
802.11g	MIMO	2412	/	/	6	16.119	≥ 0.5	Pass
		2437	/	/	6	15.771	≥ 0.5	Pass
		2462	/	/	6	15.905	≥ 0.5	Pass
802.11n (HT20)	MIMO	2412	/	/	6	17.140	≥ 0.5	Pass
		2437	/	/	6	16.481	≥ 0.5	Pass
		2462	/	/	6	16.807	≥ 0.5	Pass
802.11n (HT40)	MIMO	2422	/	/	6	35.882	≥ 0.5	Pass
		2437	/	/	6	35.572	≥ 0.5	Pass
		2452	/	/	6	34.678	≥ 0.5	Pass
802.11ax (HEW20)	MIMO	2412	SU	/	6	18.115	≥ 0.5	Pass
		2437	SU	/	6	17.340	≥ 0.5	Pass
		2462	SU	/	6	16.870	≥ 0.5	Pass
802.11ax	MIMO	2422	SU	/	6	37.601	≥ 0.5	Pass



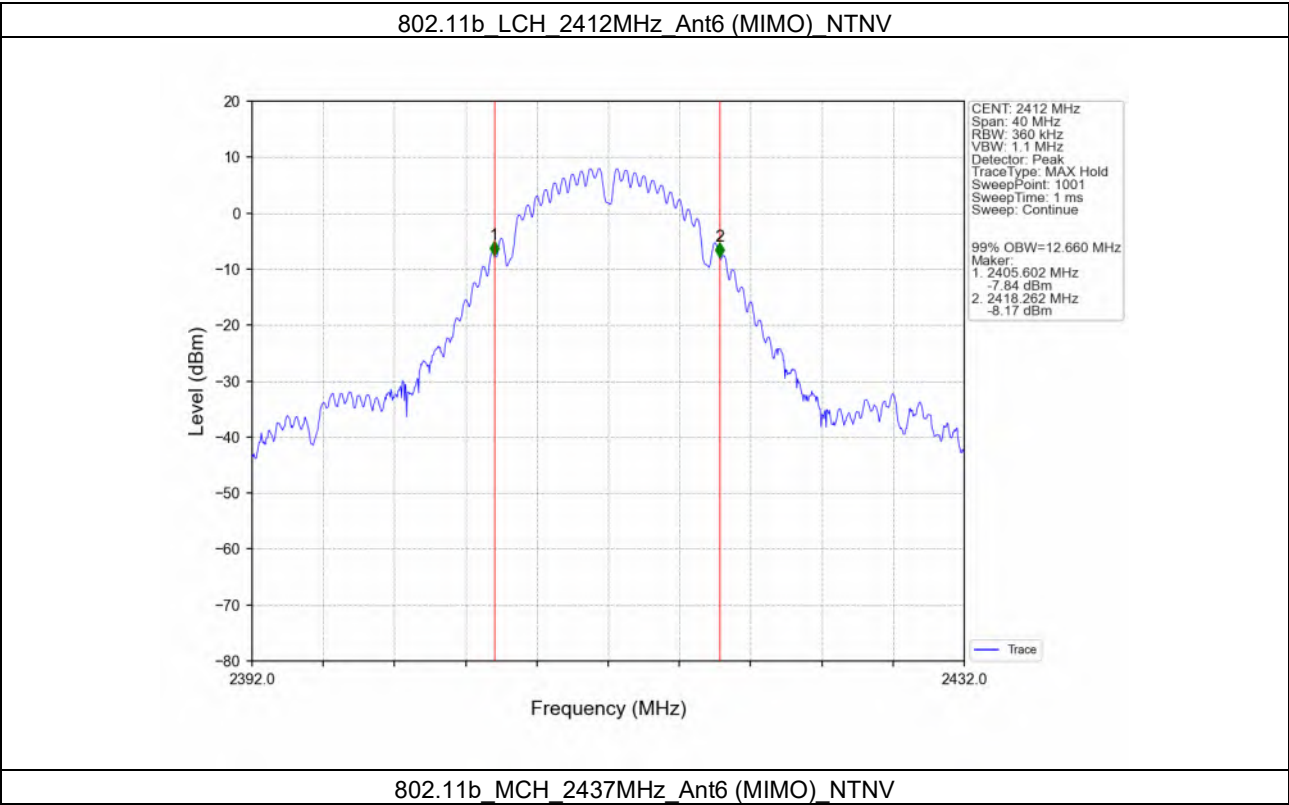
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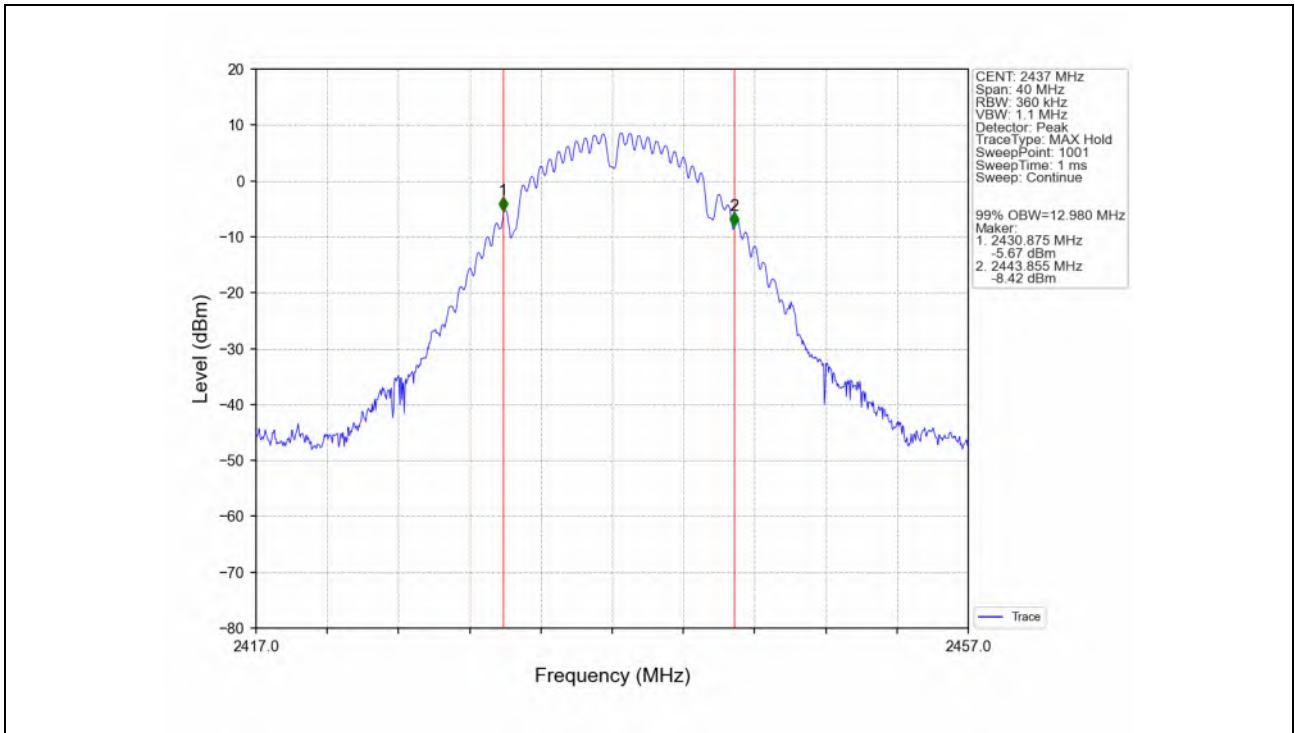
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(HEW40)		2437	SU	/	6	36.536	>=0.5	Pass
		2452	SU	/	6	26.410	>=0.5	Pass

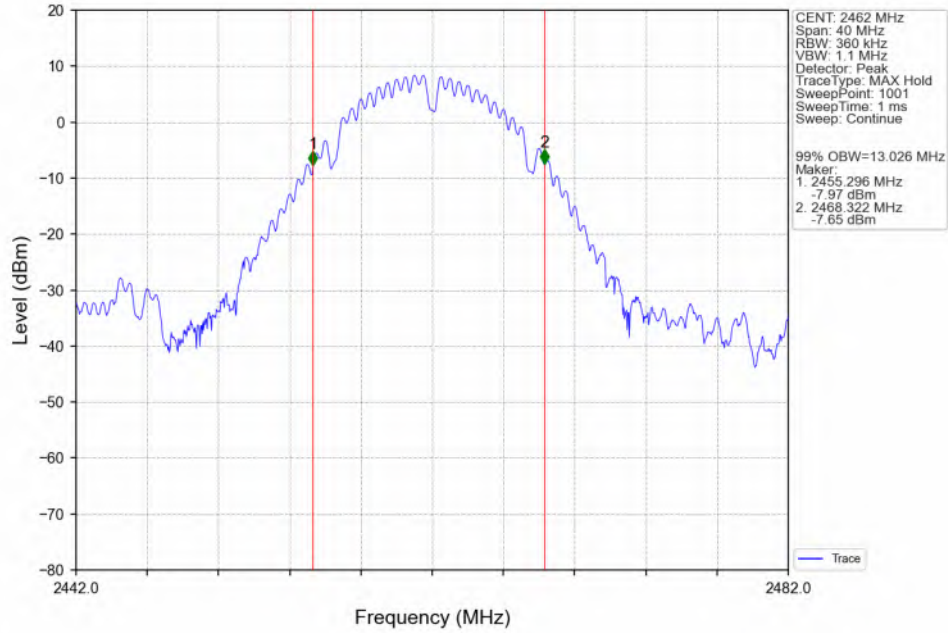
2.2 Test Graph

2.2.1 OBW

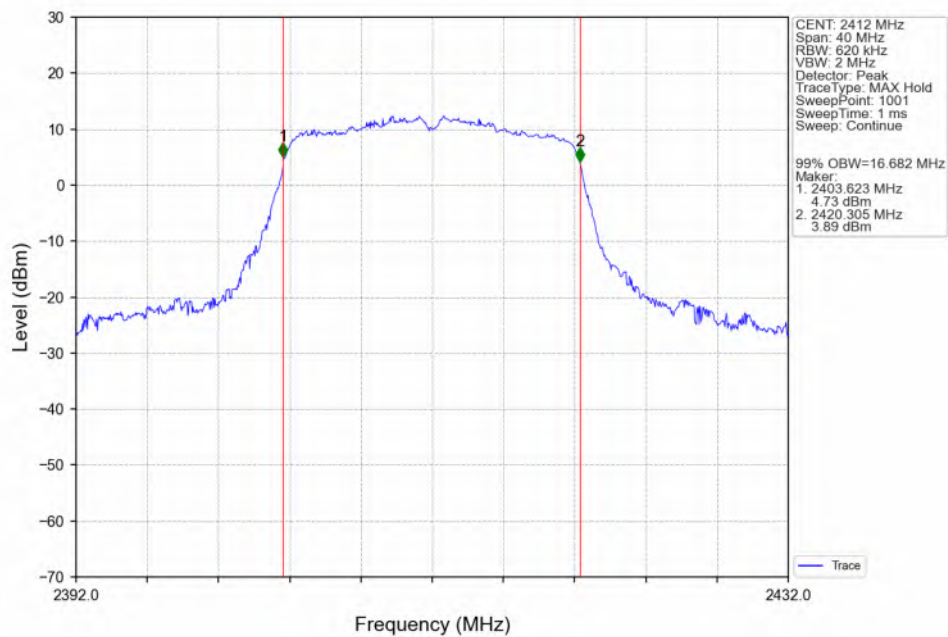




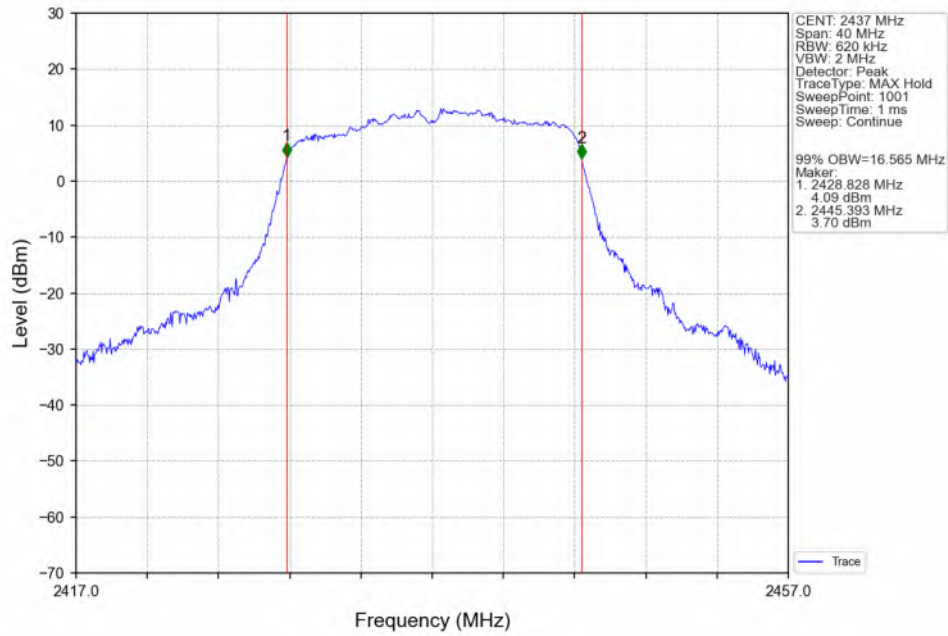
802.11b HCH 2462MHz Ant6 (MIMO) NTN



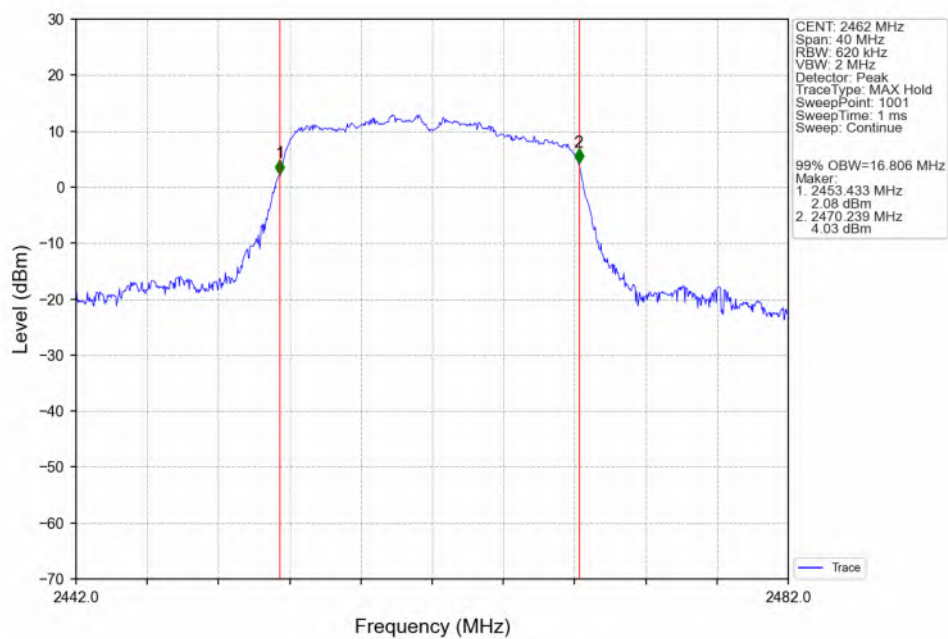
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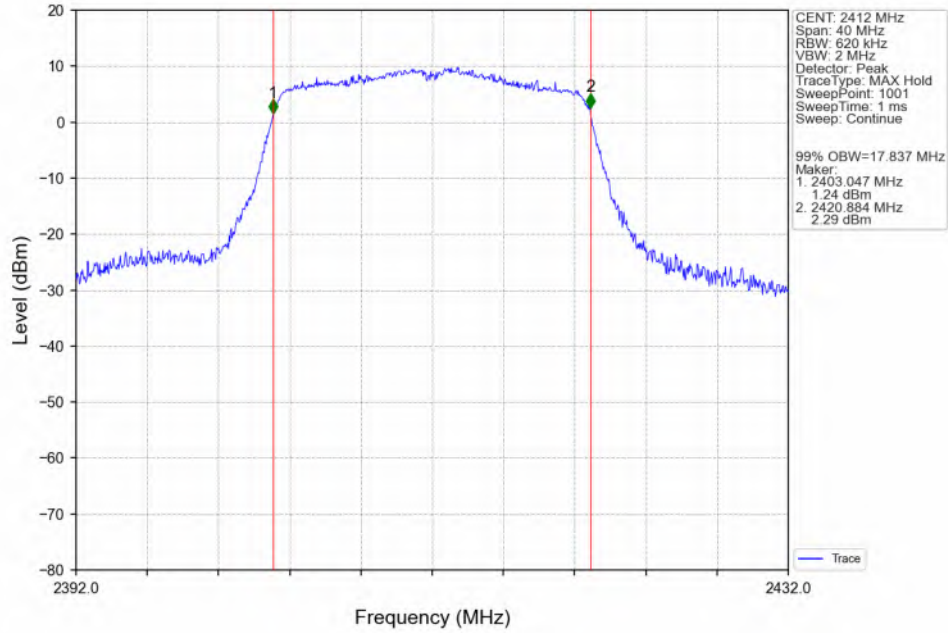
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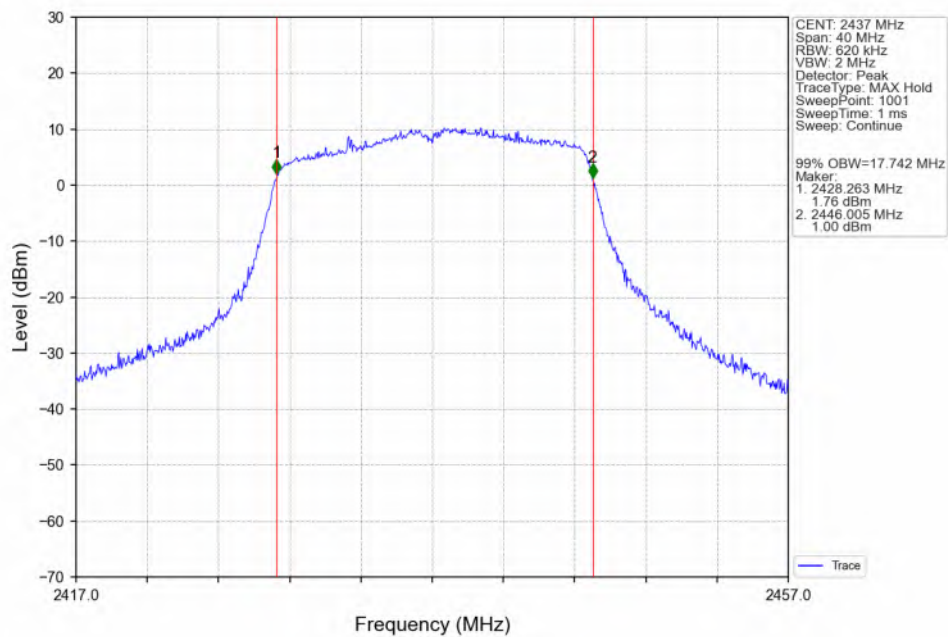
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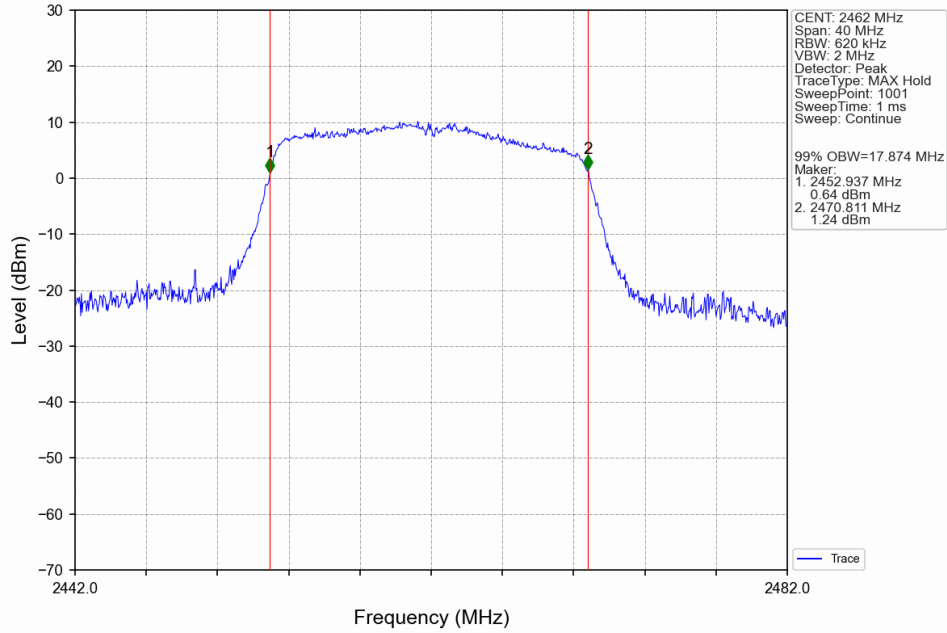
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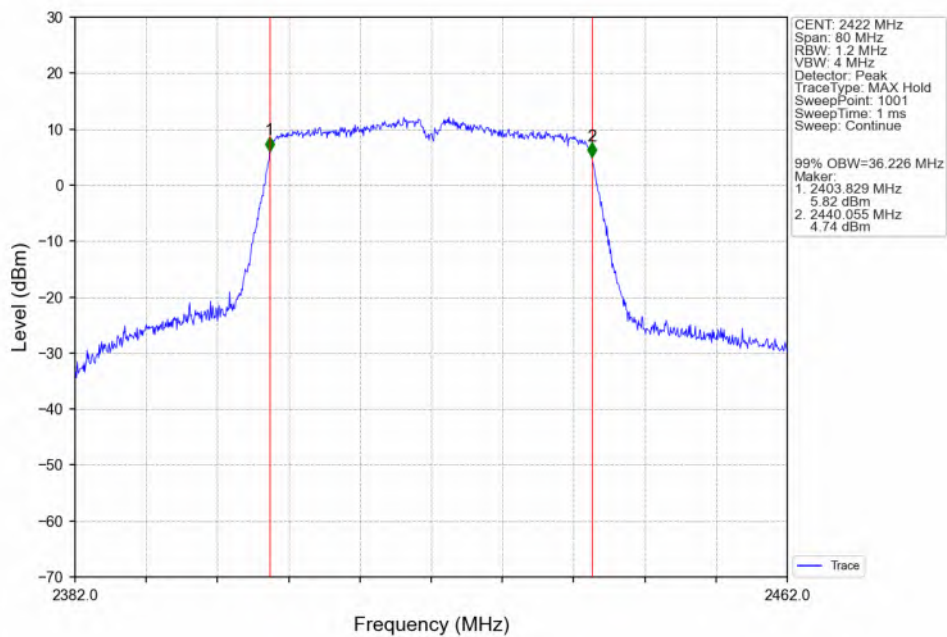
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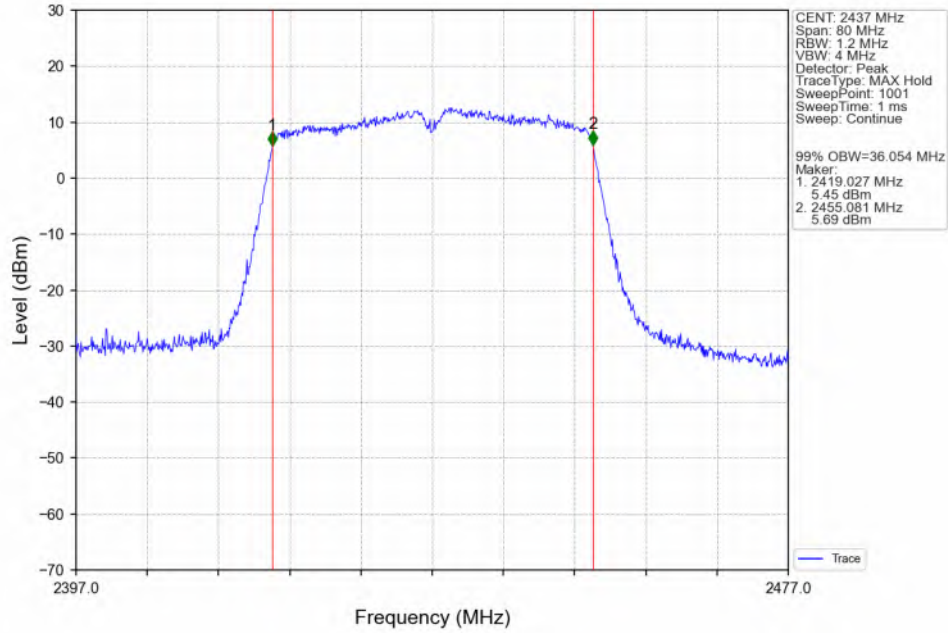
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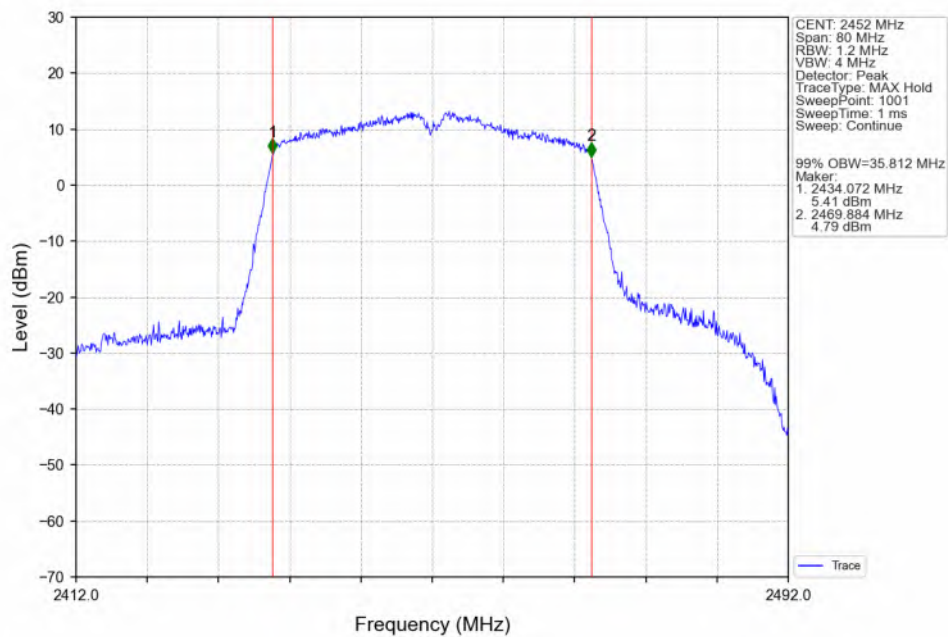
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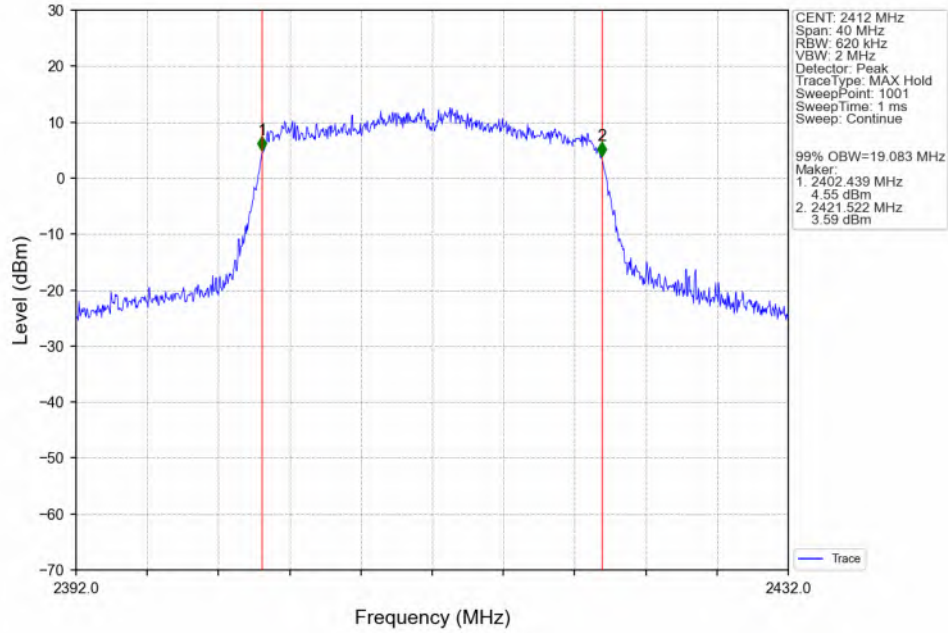
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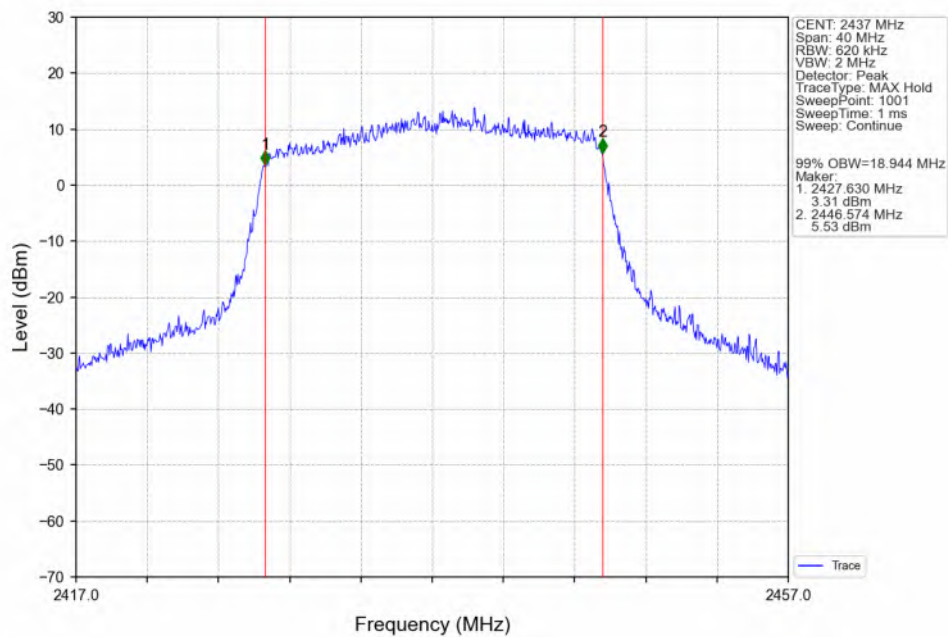
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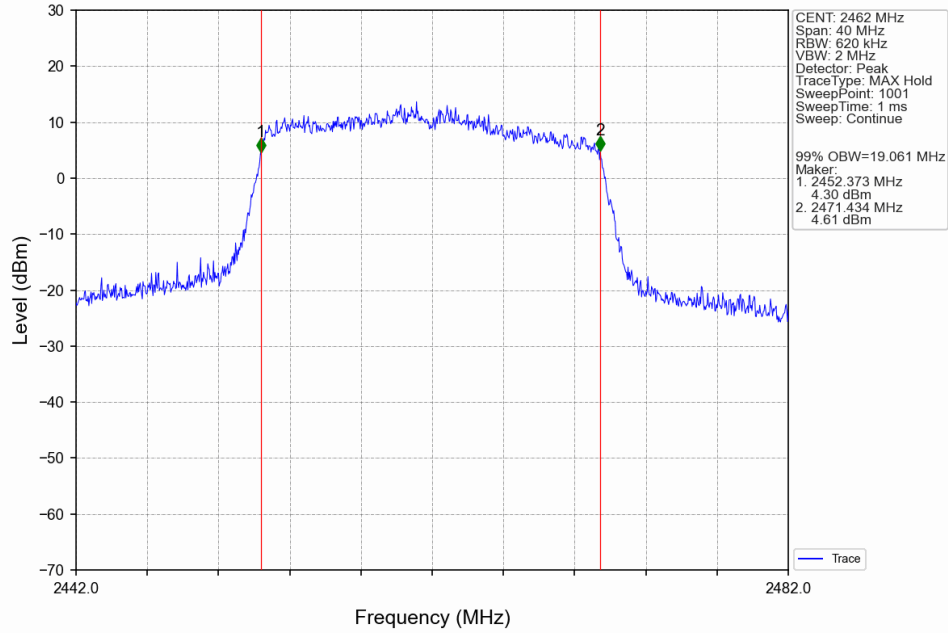
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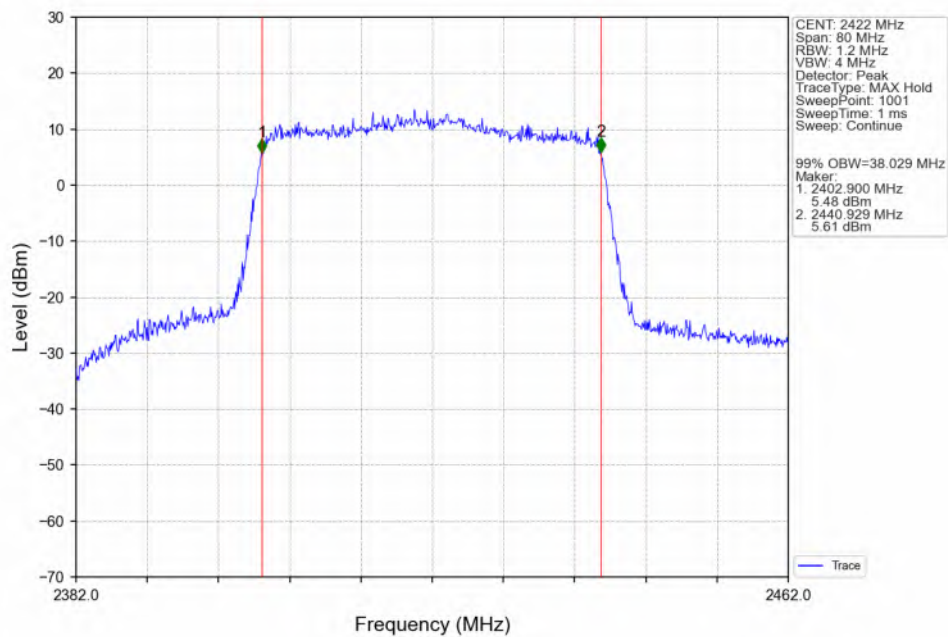
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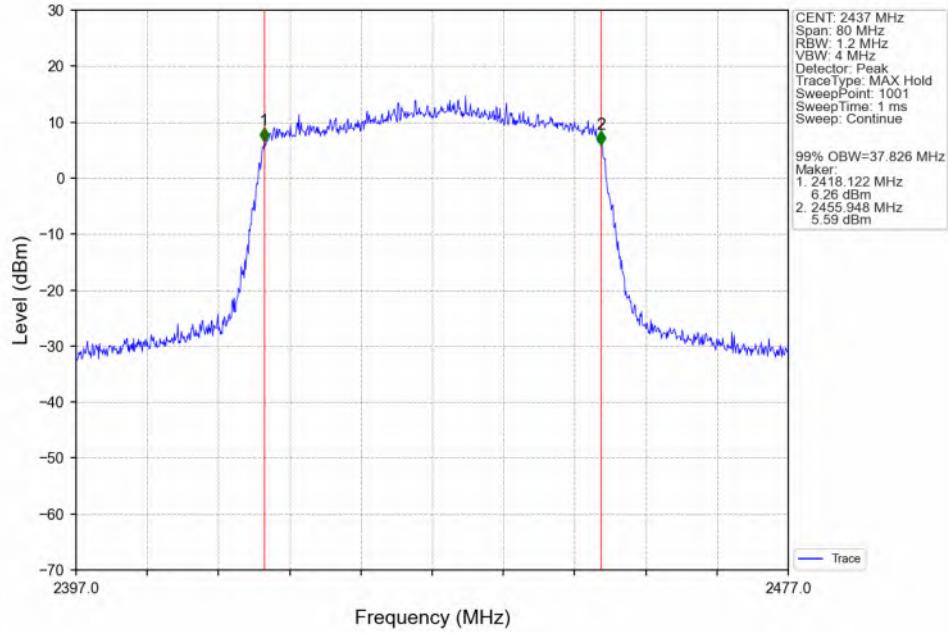
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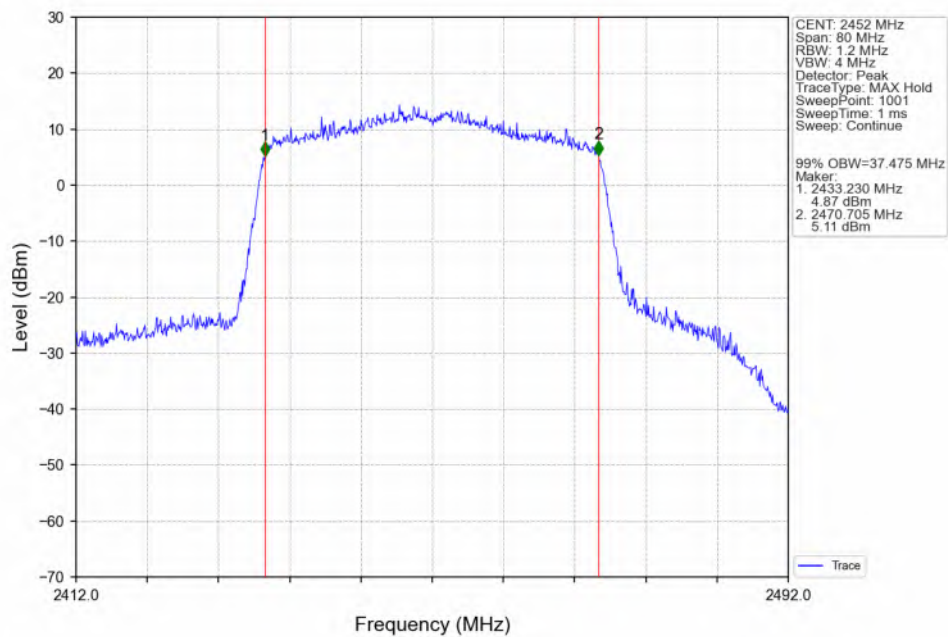
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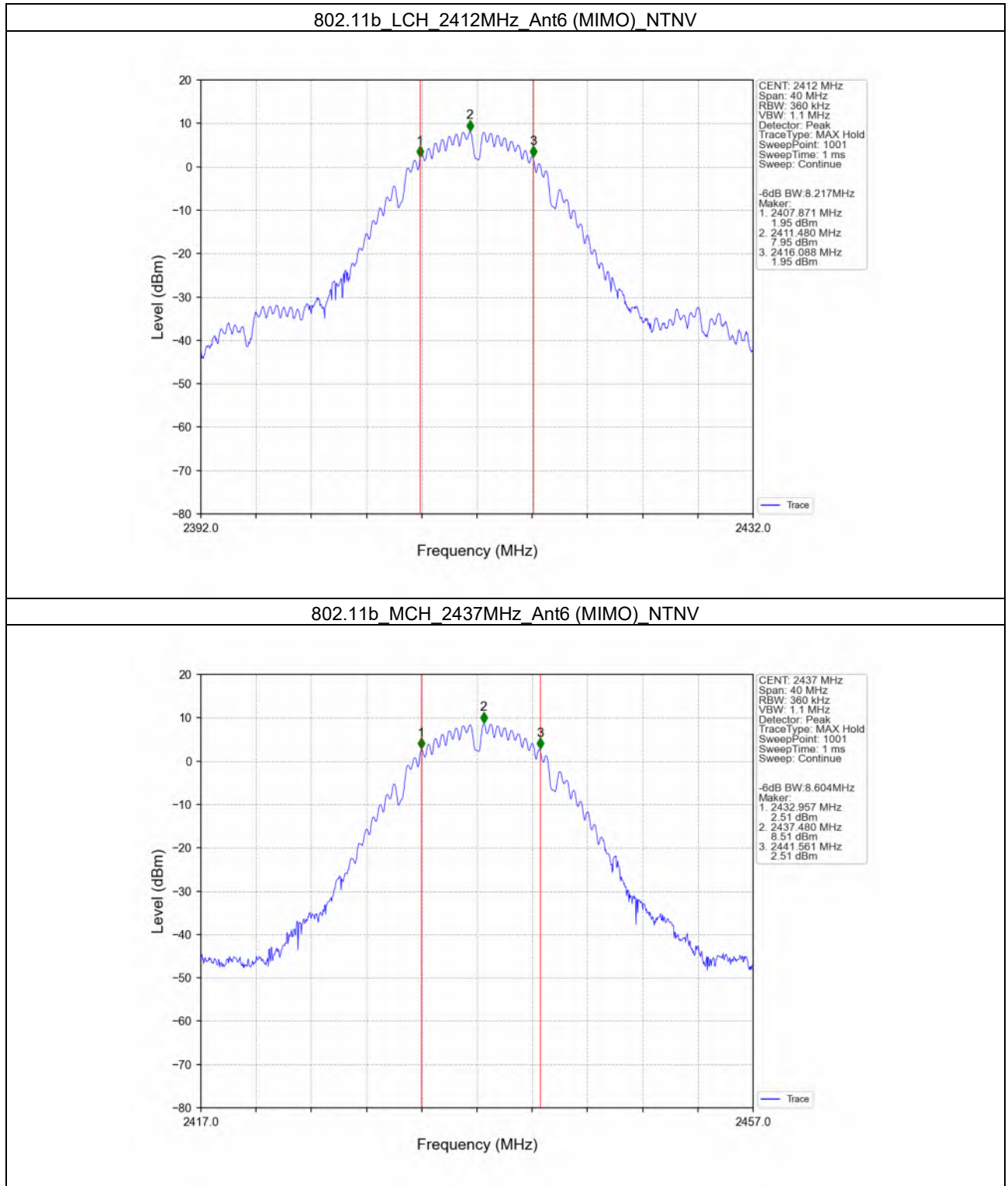
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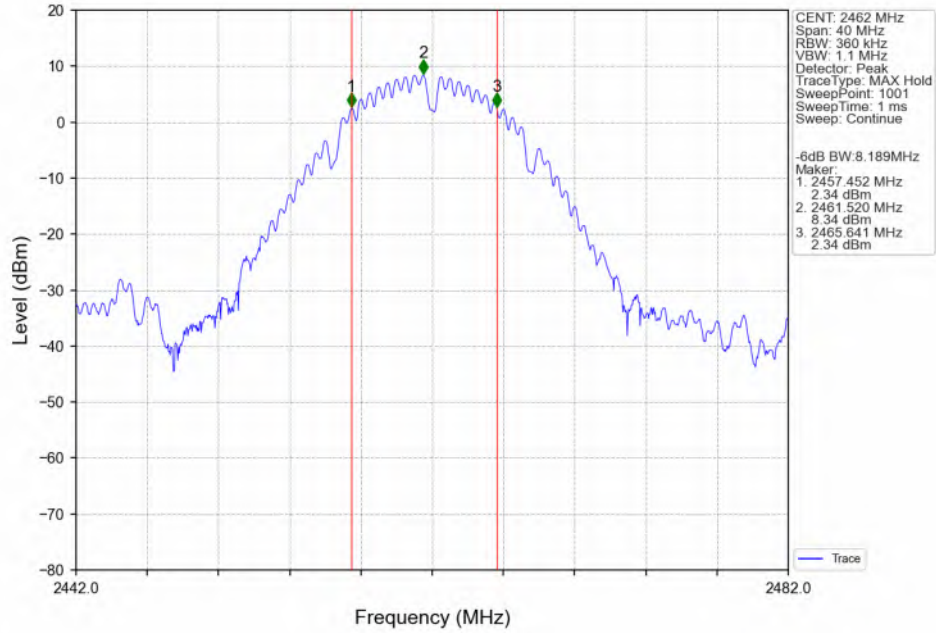
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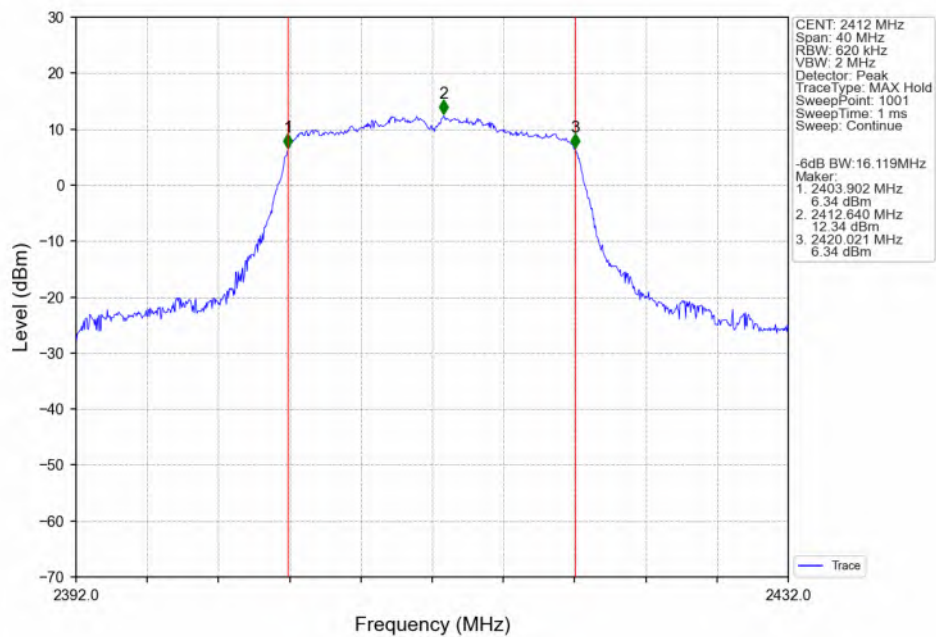
2.2.2 6dB BW



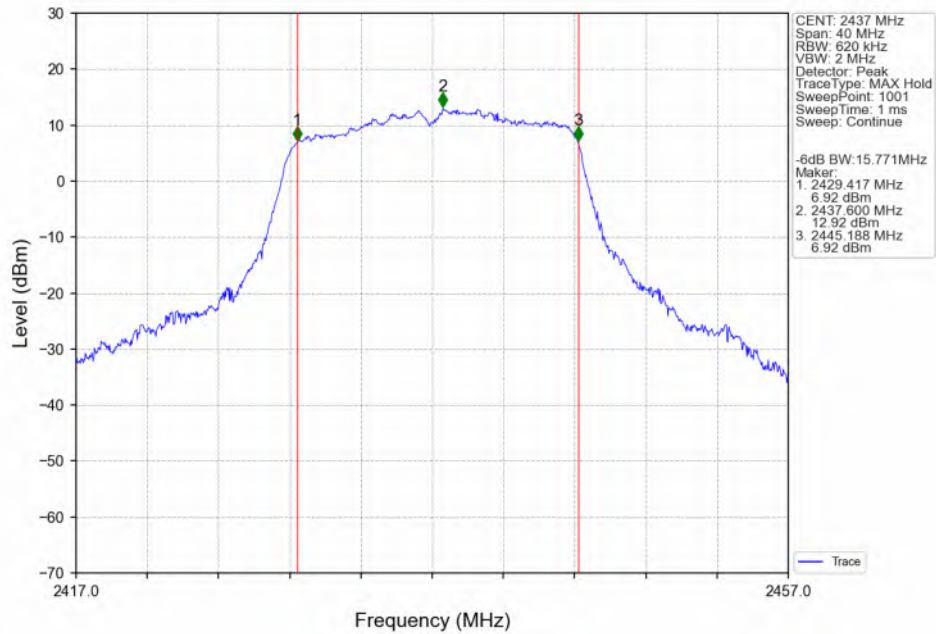
802.11b HCH 2462MHz Ant6 (MIMO) NTN



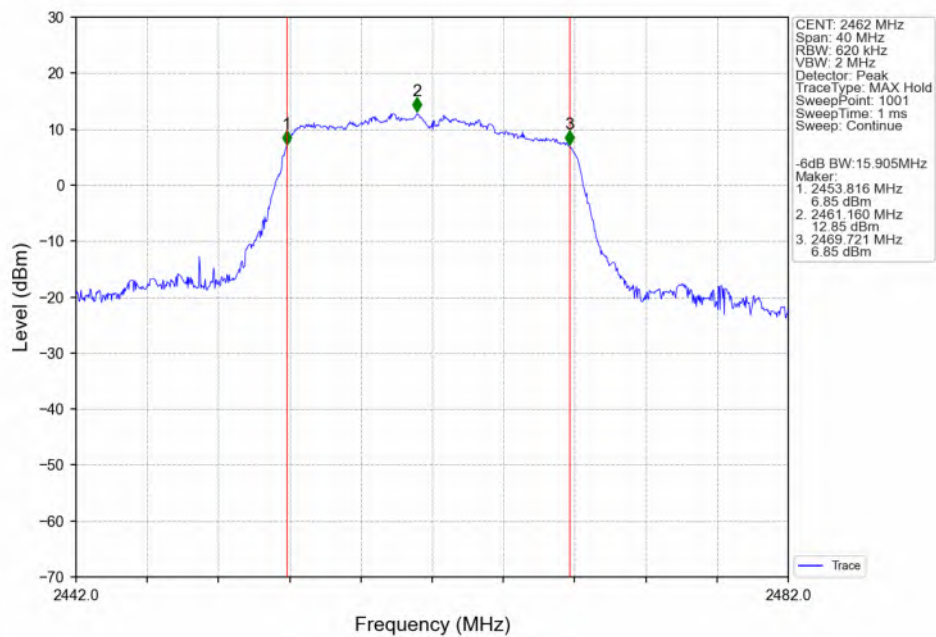
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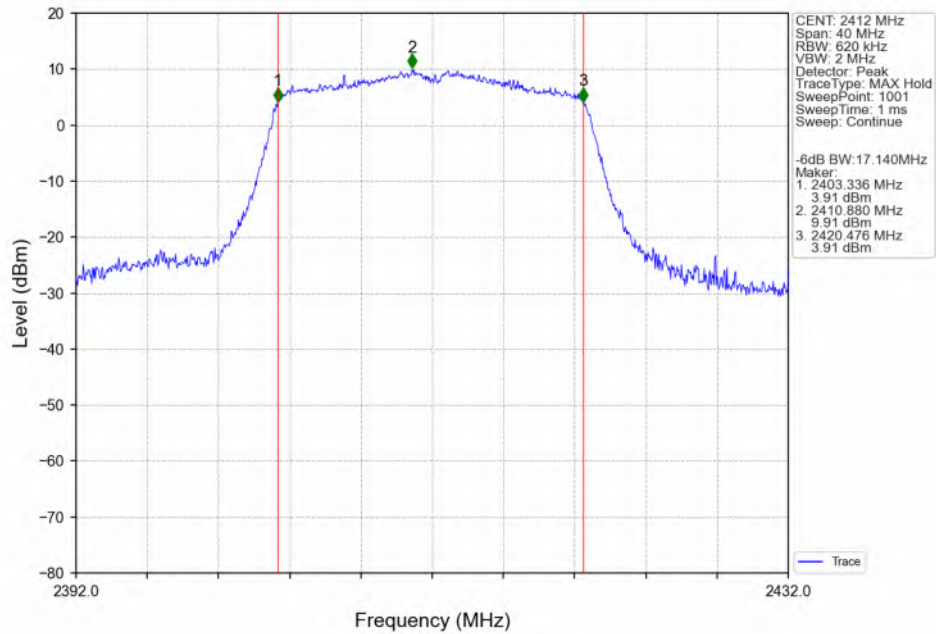
802.11g_MCH_2437MHz_Ant6 (MIMO)_NTNV



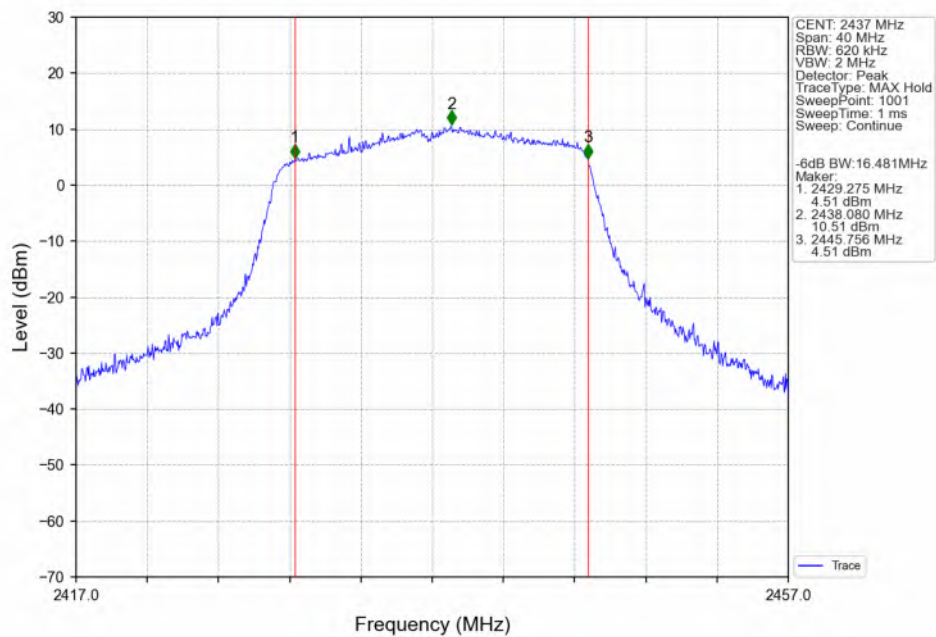
802.11g_HCH_2462MHz_Ant6 (MIMO)_NTNV



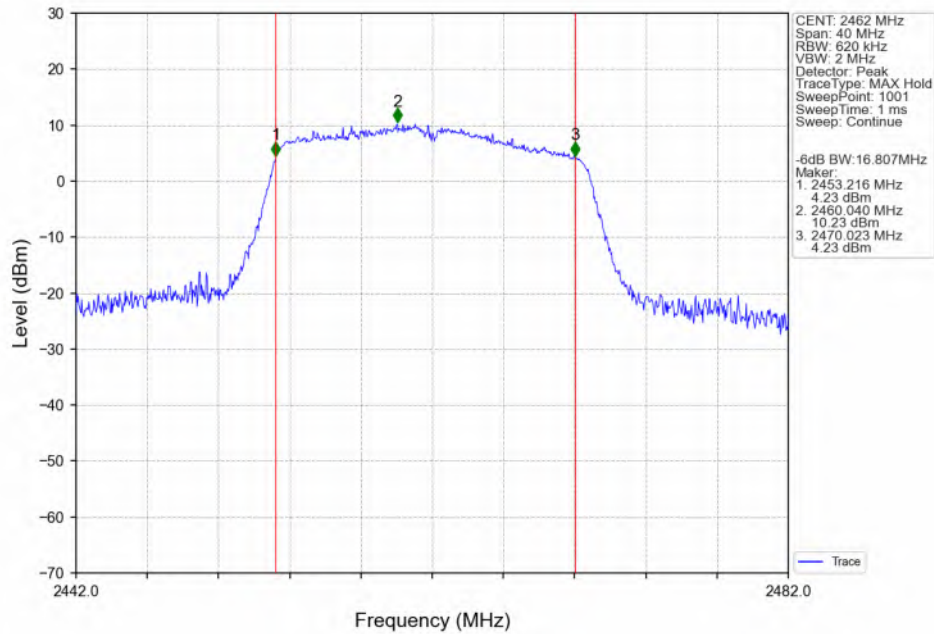
802.11n(HT20) LCH 2412MHz_Ant6 (MIMO) NTN



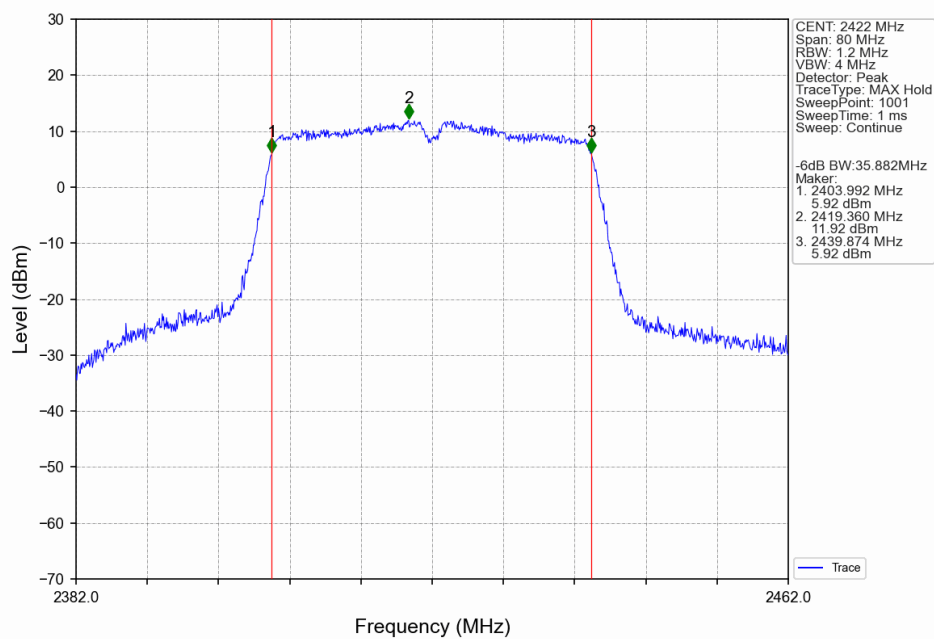
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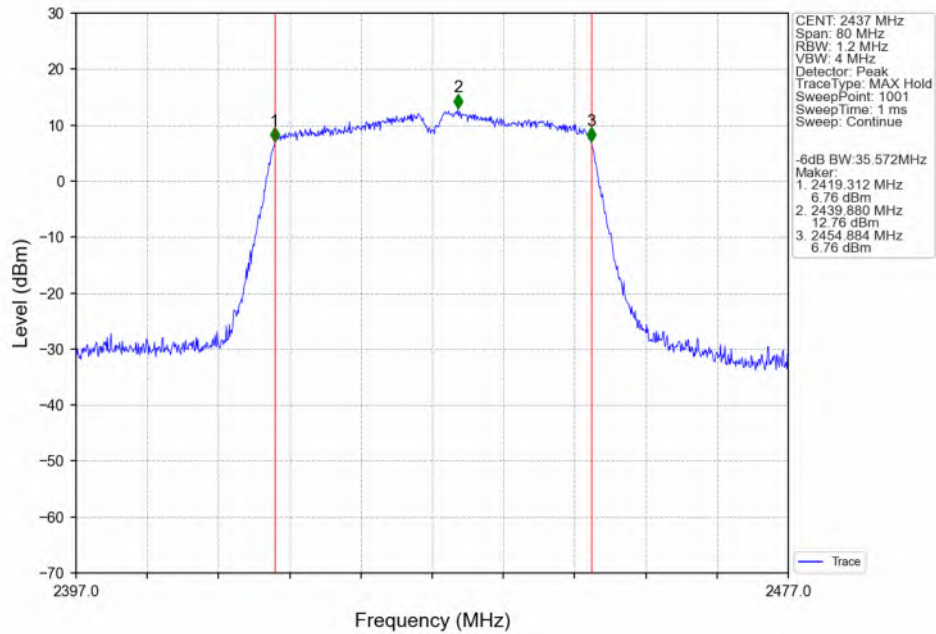
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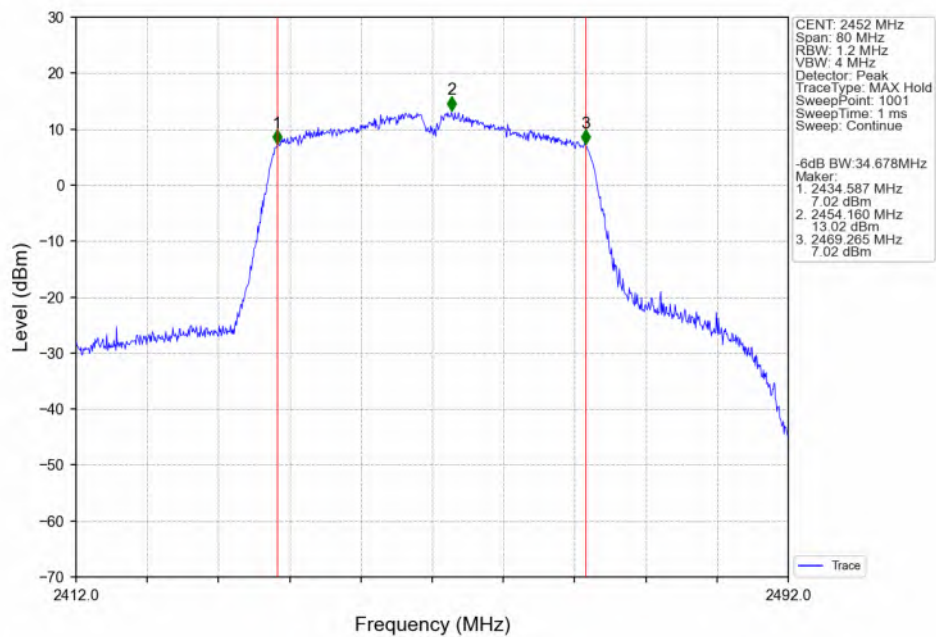
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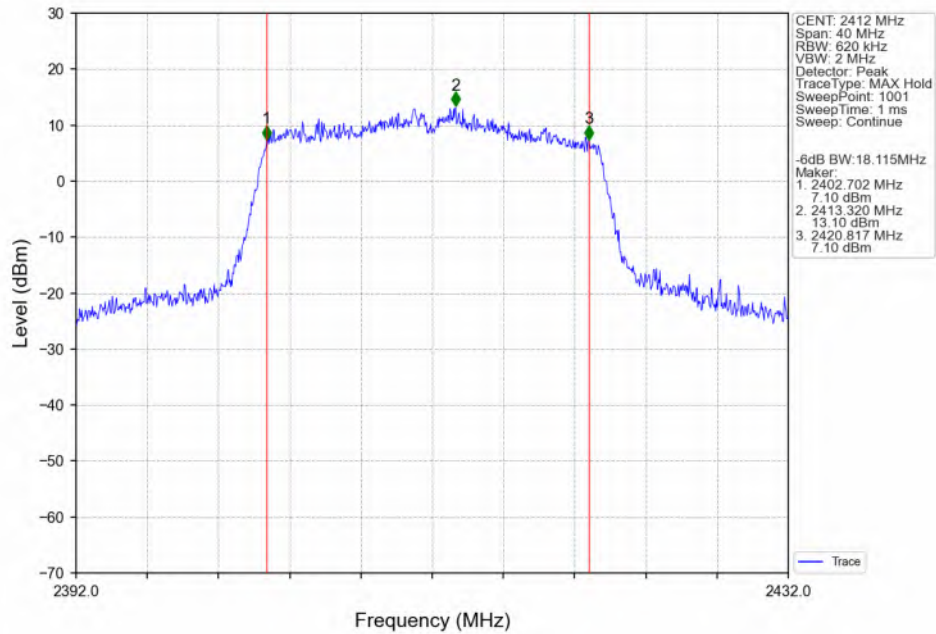
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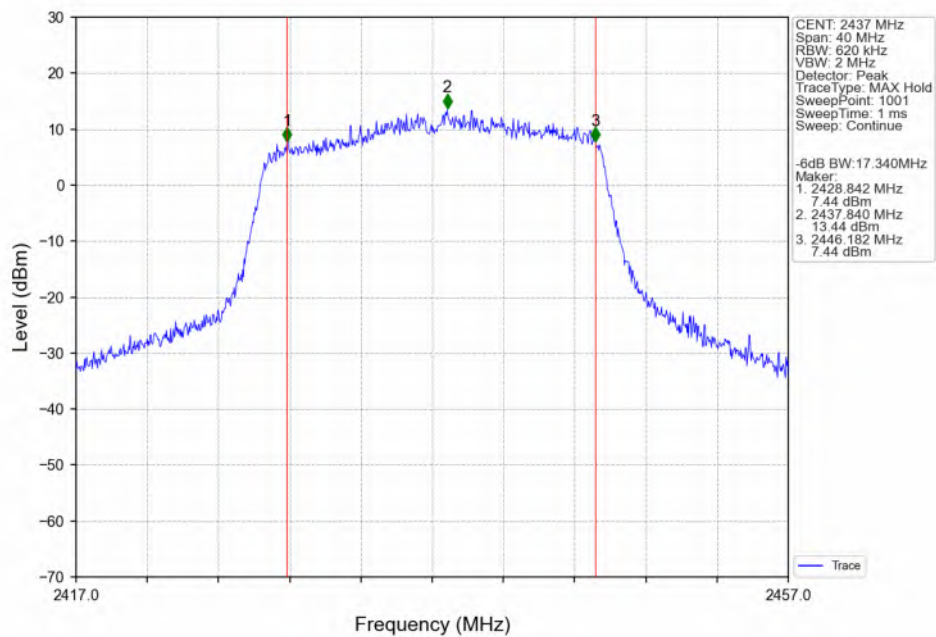
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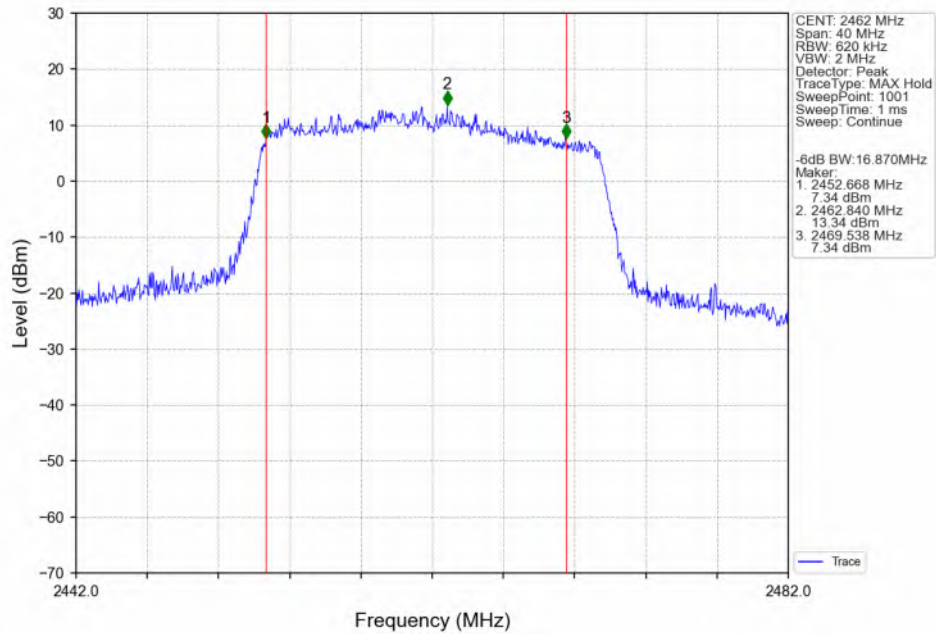
802.11ax(HEW20) LCH 2412MHz SU / Ant6 (MIMO) NTN



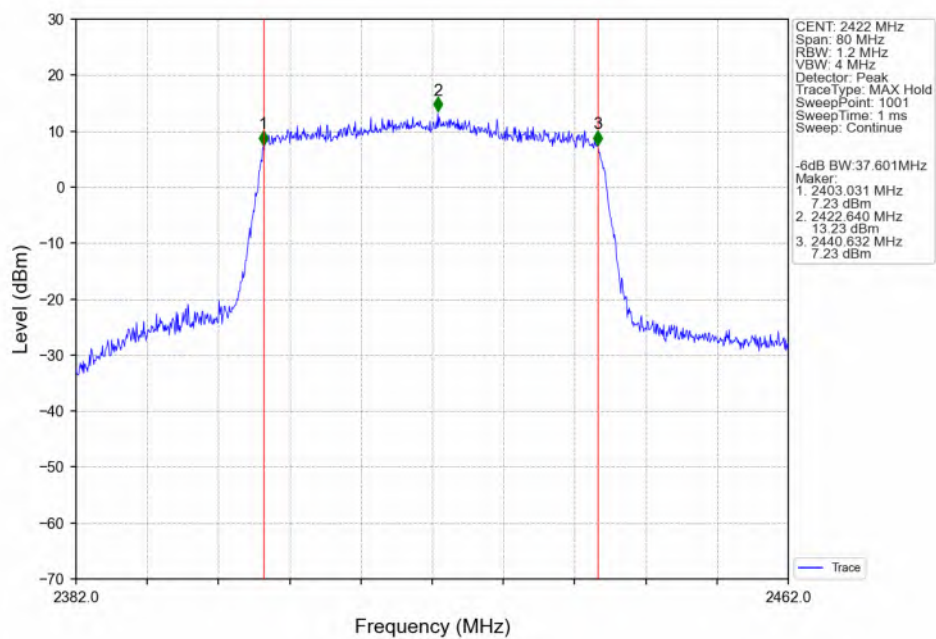
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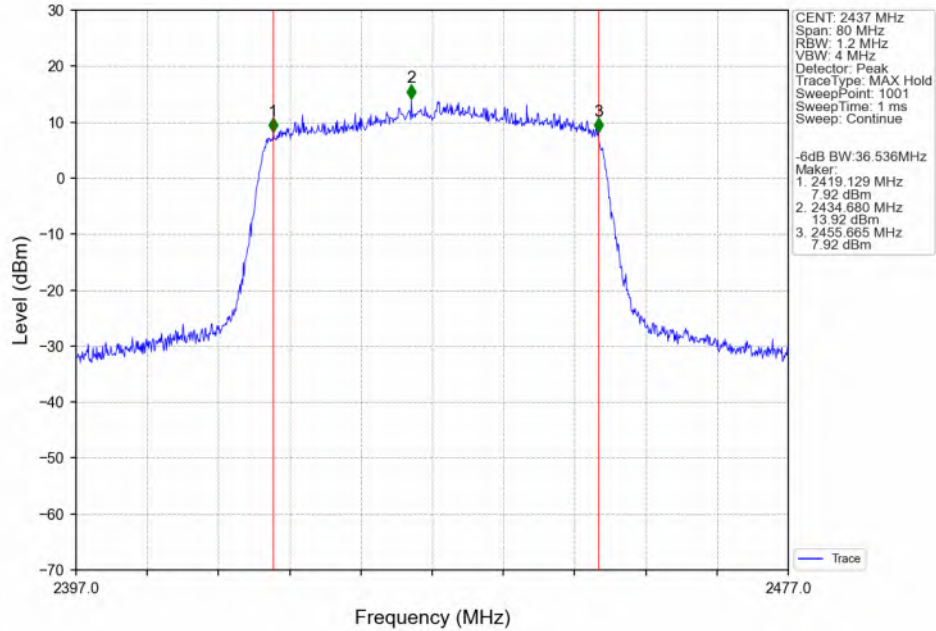
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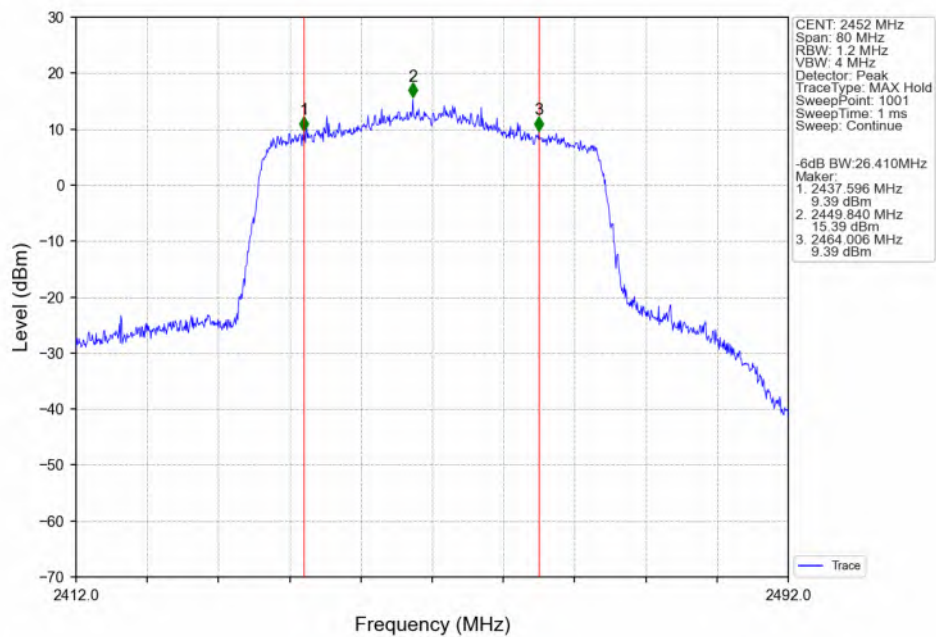
802.11ax(HEW40) LCH 2422MHz SU / Ant6 (MIMO) NTN



802.11ax(HEW40) MCH 2437MHz SU / Ant6 (MIMO) NTN



802.11ax(HEW40) HCH 2452MHz SU / Ant6 (MIMO) NTN





3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

Mode	TX Type	Frequency (MHz)	RU	RU Pos	Maximum Peak Conducted Output Power (dBm)				Verdict
					ANT6	ANT7	MIMO	Limit	
802.11b	MIMO	2412	/	/	17.97	18.05	21.02	<=30	Pass
		2437	/	/	18.62	18.27	21.46	<=30	Pass
		2462	/	/	18.30	18.28	21.30	<=30	Pass
802.11g	MIMO	2412	/	/	23.85	23.26	26.58	<=30	Pass
		2437	/	/	23.81	23.16	26.51	<=30	Pass
		2462	/	/	23.82	23.12	26.49	<=30	Pass
802.11n (HT20)	MIMO	2412	/	/	21.62	21.03	24.35	<=30	Pass
		2437	/	/	21.65	21.00	24.35	<=30	Pass
		2462	/	/	21.45	20.98	24.23	<=30	Pass
802.11n (HT40)	MIMO	2422	/	/	21.78	21.64	24.72	<=30	Pass
		2437	/	/	21.74	21.68	24.72	<=30	Pass
		2452	/	/	21.75	21.65	24.71	<=30	Pass
802.11ax (HEW20)	MIMO	2412	RU26	Left	11.69	11.22	14.47	<=30	Pass
			RU52	Left	15.03	15.11	18.08	<=30	Pass
			RU106	Left	18.88	18.74	21.82	<=30	Pass
			SU	/	21.69	21.10	24.42	<=30	Pass
		2437	RU26	Left	11.45	11.11	14.29	<=30	Pass
			RU52	Left	15.23	15.03	18.14	<=30	Pass
			RU106	Left	18.78	18.94	21.87	<=30	Pass
			SU	/	21.71	21.09	24.42	<=30	Pass
		2462	RU26	Right	11.59	11.43	14.52	<=30	Pass
			RU52	Right	15.26	15.11	18.20	<=30	Pass
			RU106	Right	18.98	19.21	22.11	<=30	Pass
			SU	/	21.52	21.06	24.31	<=30	Pass
802.11ax (HEW40)	MIMO	2422	SU	/	21.88	21.88	24.89	<=30	Pass
		2437	SU	/	21.75	21.52	24.65	<=30	Pass
		2452	SU	/	21.79	21.64	24.73	<=30	Pass
Note1: Antenna Gain: Ant6: -0.50dBi; Ant7: 0.50dBi; Note2: Directional Gain: 0.5dBi									



4. Maximum Power Spectral Density

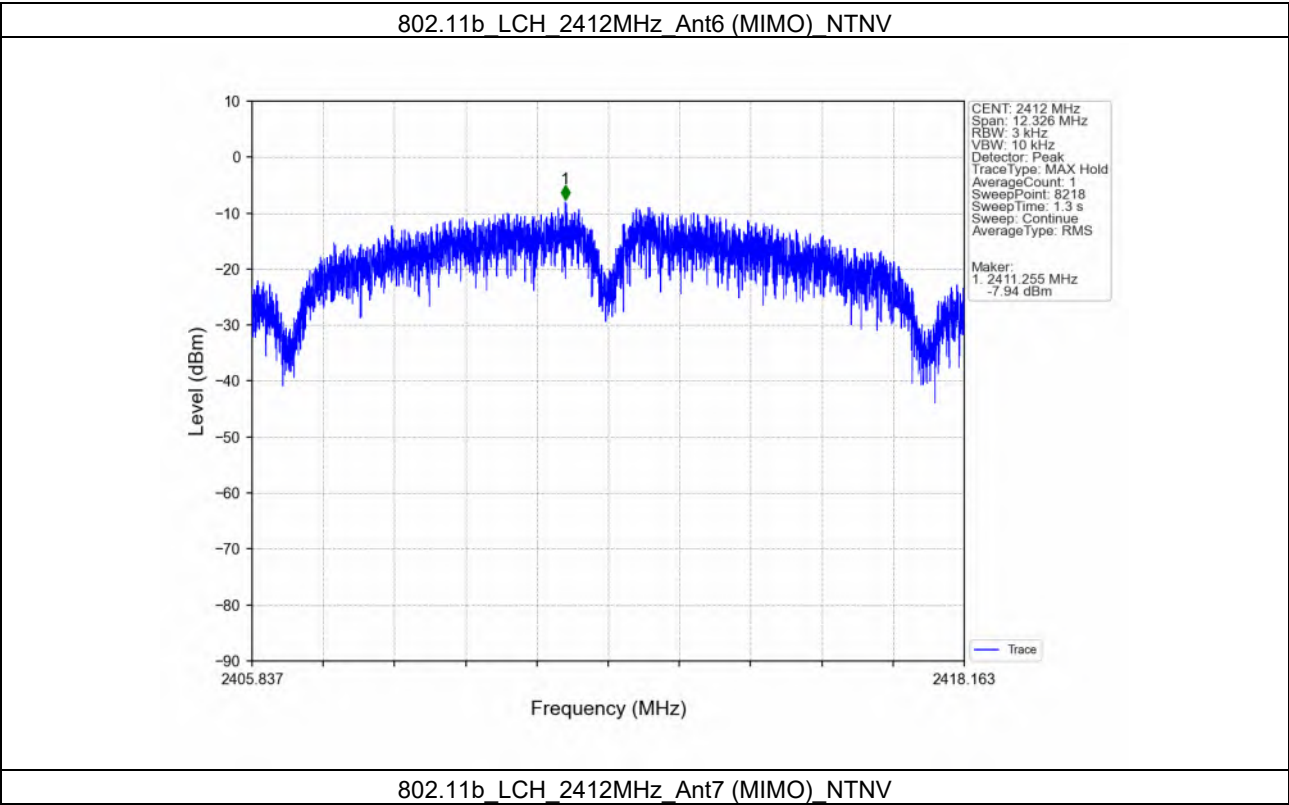
4.1 Test Result

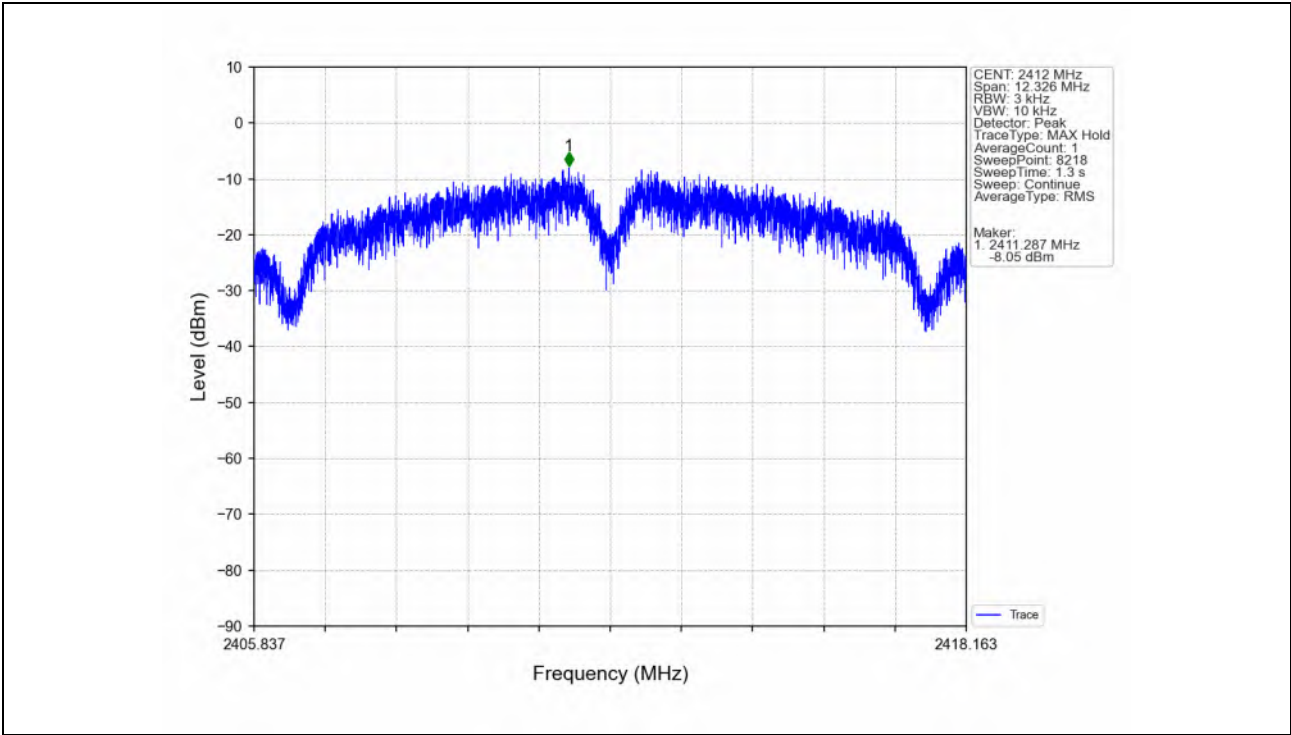
4.1.1 PSD

Mode	TX Type	Frequency (MHz)	RU	RU Pos	Maximum PSD (dBm)				Verdict
					ANT6	ANT7	MIMO	Limit	
802.11b	MIMO	2412	/	/	-7.94	-8.05	-5.84	<=8	Pass
		2437	/	/	-7.01	-7.33	-4.18	<=8	Pass
		2462	/	/	-7.65	-7.58	-4.61	<=8	Pass
802.11g	MIMO	2412	/	/	-6.03	-8.61	-5.53	<=8	Pass
		2437	/	/	-7.94	-9.01	-6.83	<=8	Pass
		2462	/	/	-7.78	-7.46	-6.24	<=8	Pass
802.11n (HT20)	MIMO	2412	/	/	-10.75	-9.46	-8.20	<=8	Pass
		2437	/	/	-9.01	-8.98	-6.30	<=8	Pass
		2462	/	/	-8.94	-10.53	-8.27	<=8	Pass
802.11n (HT40)	MIMO	2422	/	/	-10.73	-11.23	-9.65	<=8	Pass
		2437	/	/	-10.99	-11.28	-9.46	<=8	Pass
		2452	/	/	-10.88	-10.44	-8.50	<=8	Pass
802.11ax (HEW20)	MIMO	2412	RU26	Left	-10.91	-12.83	-8.75	<=8	Pass
			RU52	Left	-10.22	-11.71	-8.38	<=8	Pass
			RU106	Left	-10.16	-12.43	-8.59	<=8	Pass
			SU	/	-10.26	-9.02	-8.20	<=8	Pass
		2437	RU26	Left	-14.06	-11.95	-11.29	<=8	Pass
			RU52	Left	-14.53	-10.70	-10.27	<=8	Pass
			RU106	Left	-13.15	-11.47	-10.16	<=8	Pass
			SU	/	-9.39	-10.40	-8.18	<=8	Pass
		2462	RU26	Right	-13.01	-10.20	-8.72	<=8	Pass
			RU52	Right	-11.25	-13.62	-10.66	<=8	Pass
			RU106	Right	-12.13	-11.99	-10.04	<=8	Pass
			SU	/	-10.87	-10.23	-8.50	<=8	Pass
802.11ax (HEW40)	MIMO	2422	SU	/	-12.06	-13.90	-11.35	<=8	Pass
		2437	SU	/	-12.71	-13.26	-10.32	<=8	Pass
		2452	SU	/	-11.92	-12.81	-11.02	<=8	Pass
Note1: Antenna Gain: Ant6: -0.50dBi; Ant7: 0.50dBi; Note2: Directional Gain: Band1: 3.51dBi									

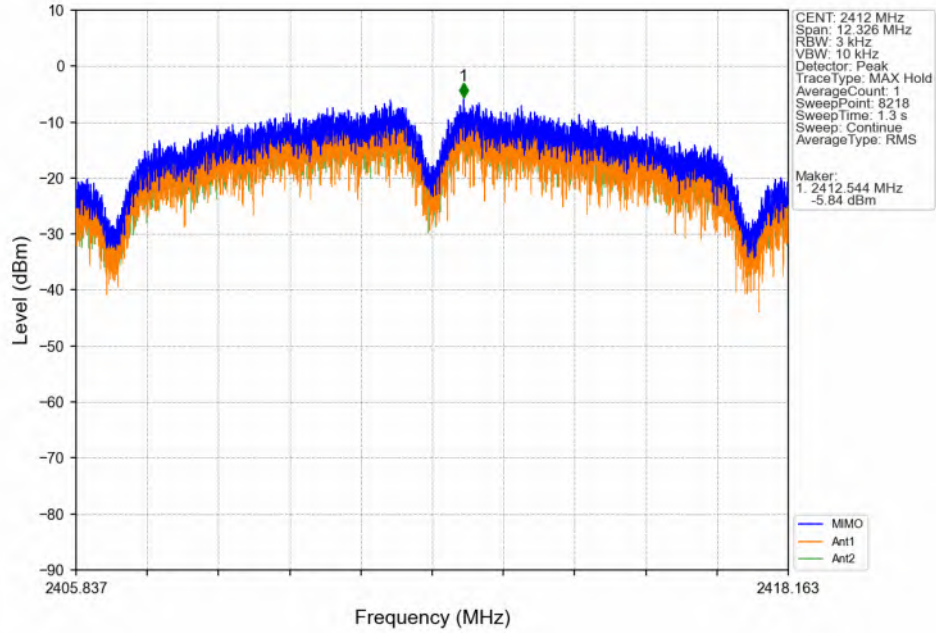
4.2 Test Graph

4.2.1 PSD

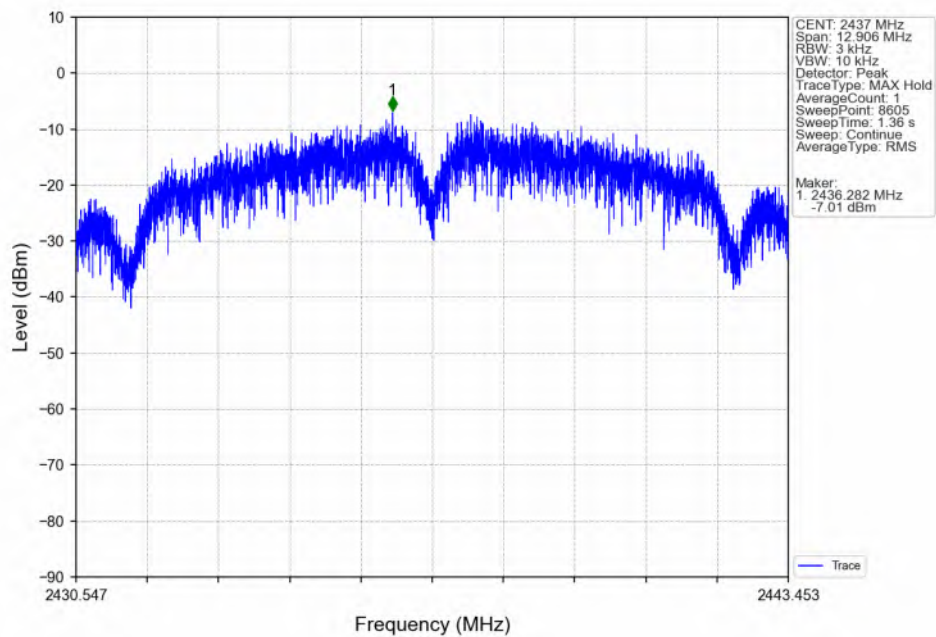




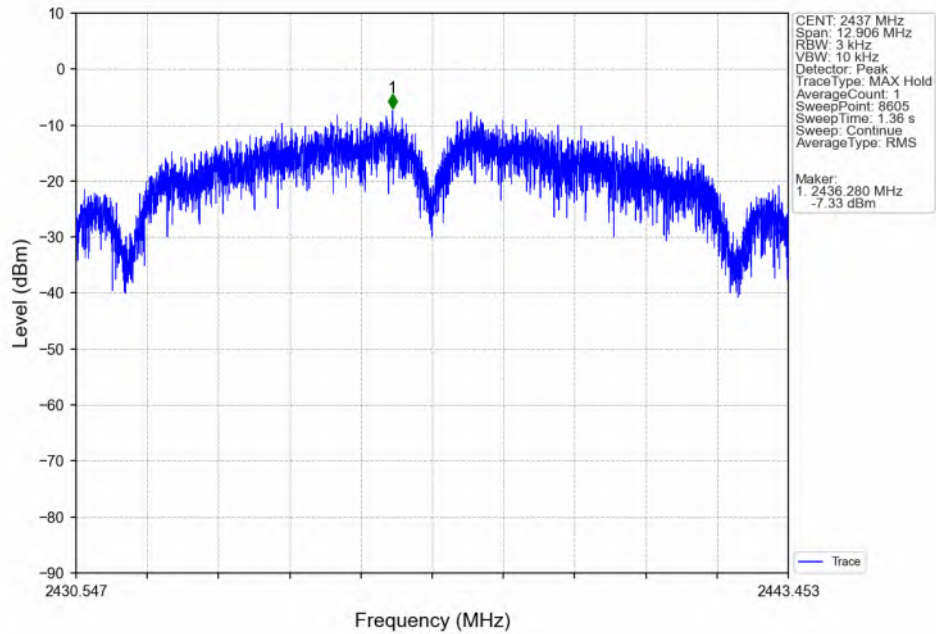
802.11b LCH 2412MHz MIMO NTN



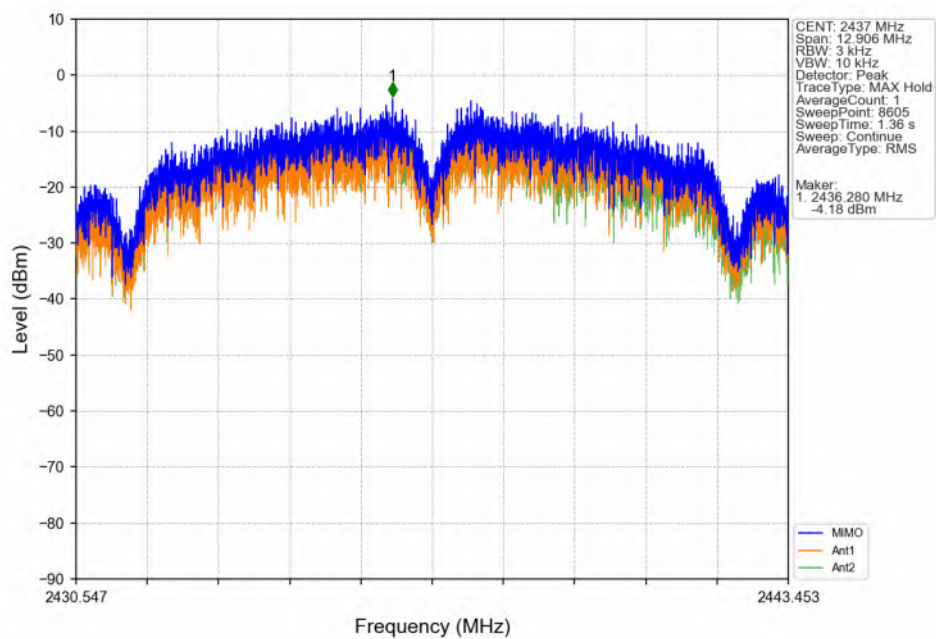
802.11b MCH 2437MHz Ant6 (MIMO) NTN



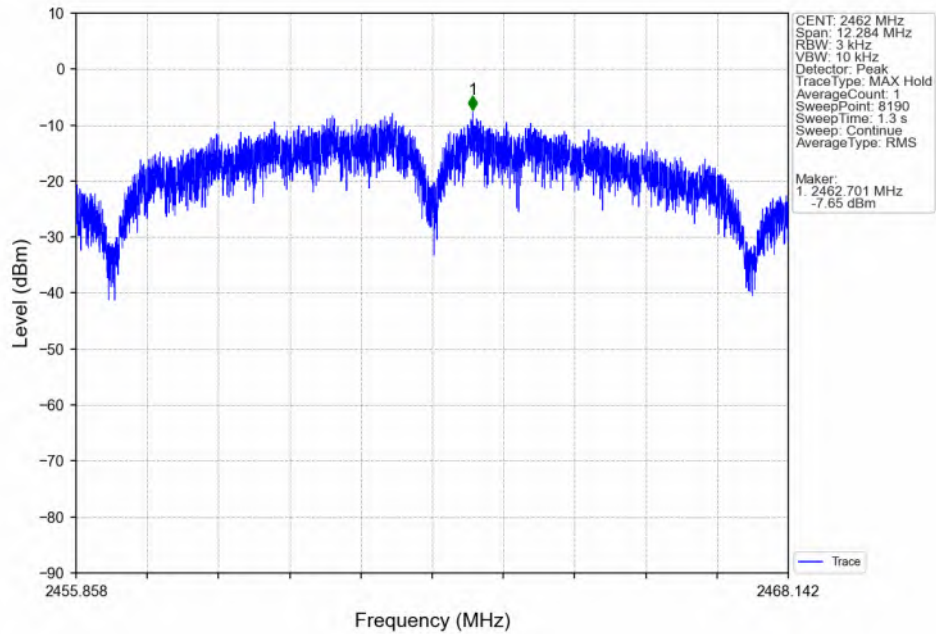
802.11b MCH 2437MHz_Ant7 (MIMO)_NTNV



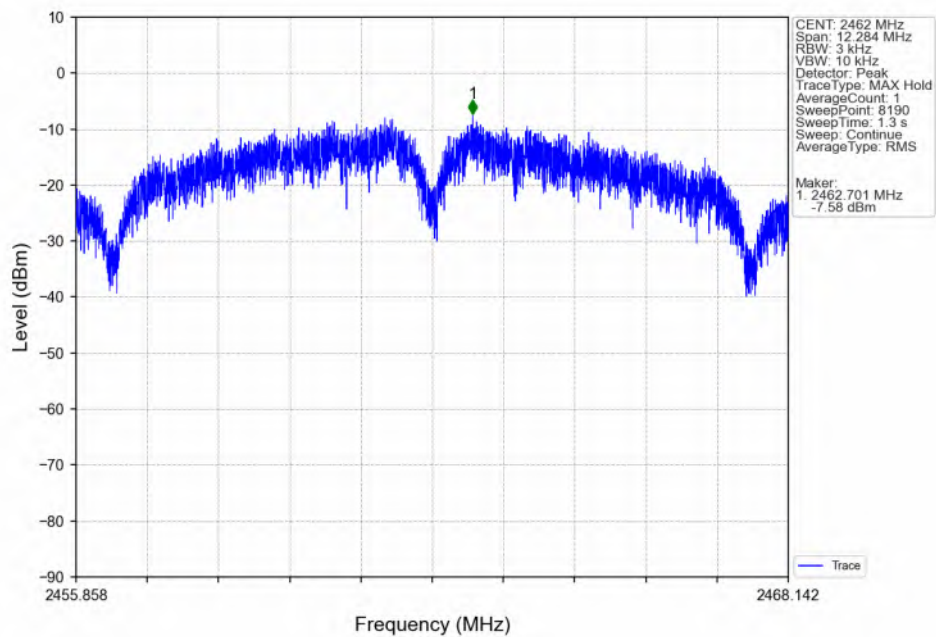
802.11b MCH 2437MHz_MIMO_NTNV



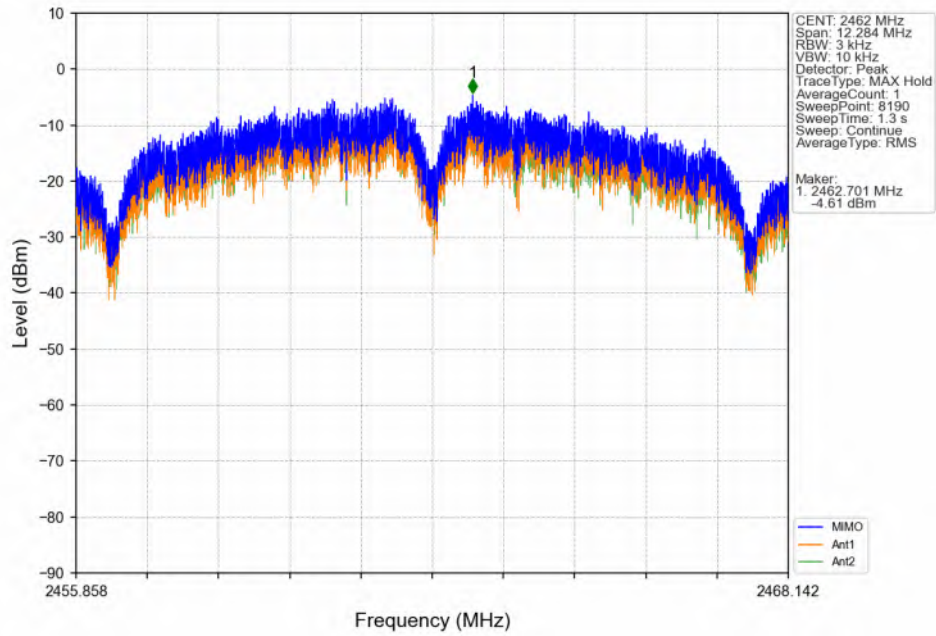
802.11b HCH 2462MHz Ant6 (MIMO) NTN



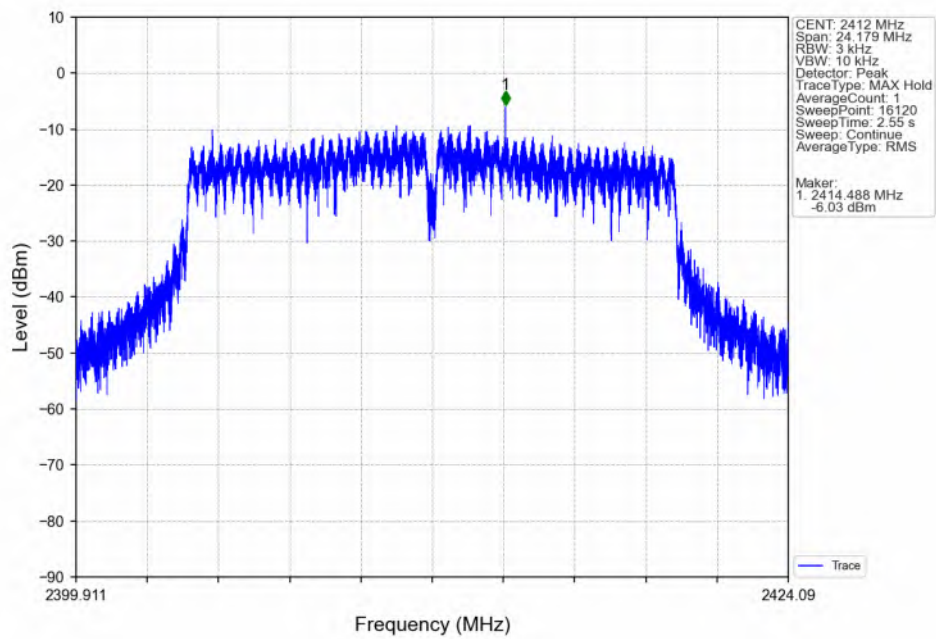
802.11b HCH 2462MHz Ant7 (MIMO) NTN



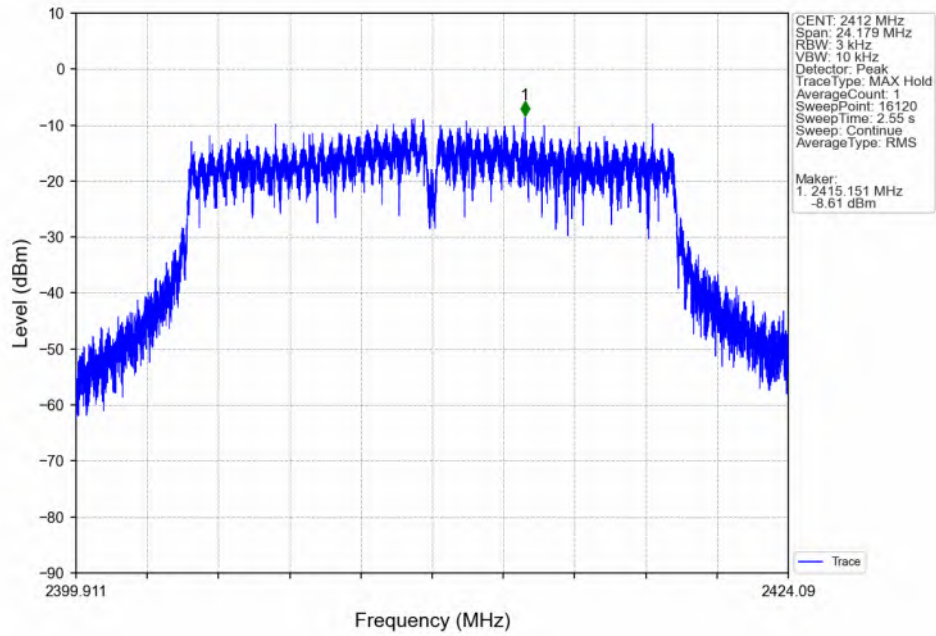
802.11b HCH 2462MHz MIMO_NTNV



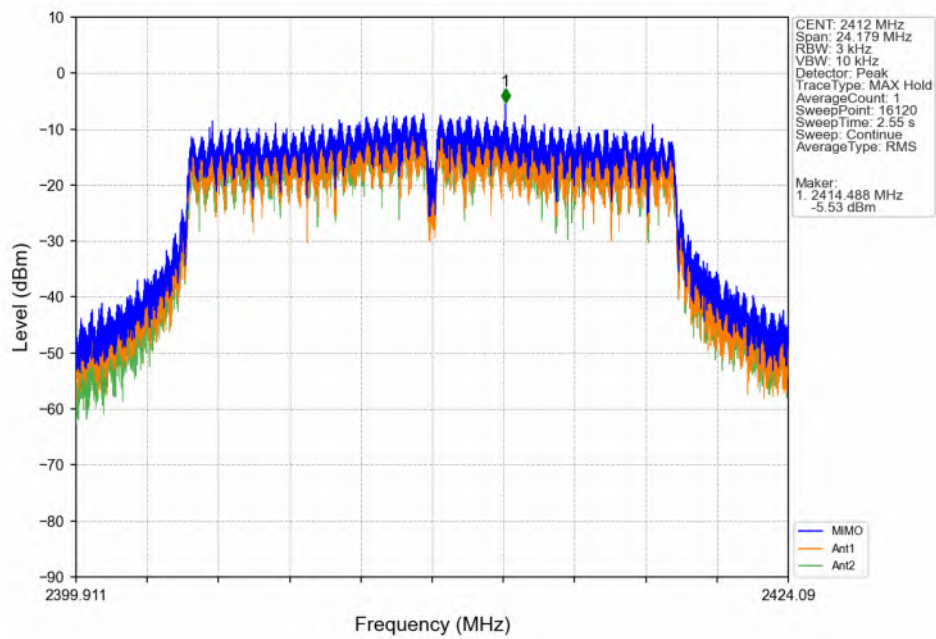
802.11g LCH 2412MHz Ant6 (MIMO)_NTNV



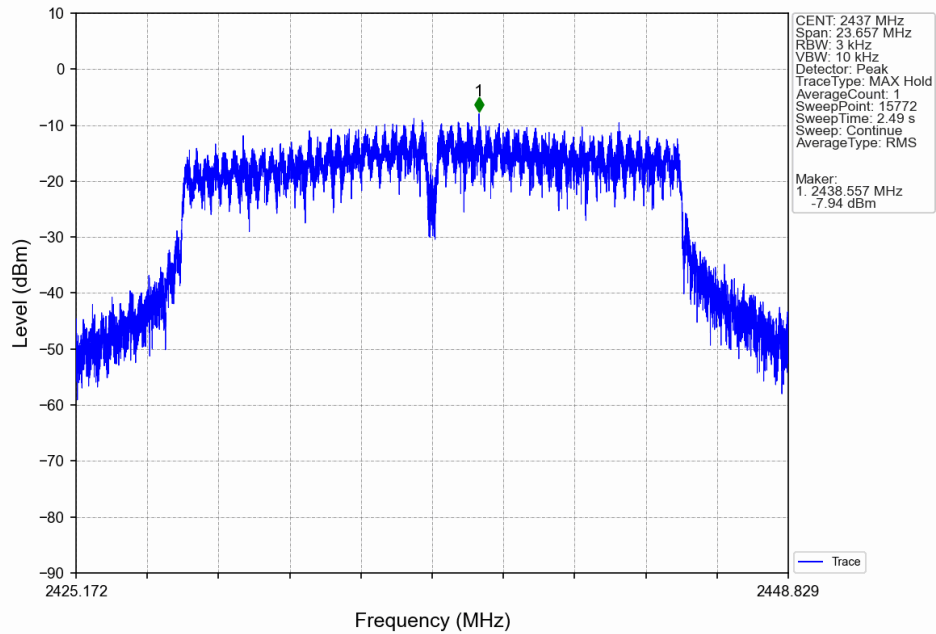
802.11g_LCH_2412MHz_Ant7 (MIMO)_NTNV



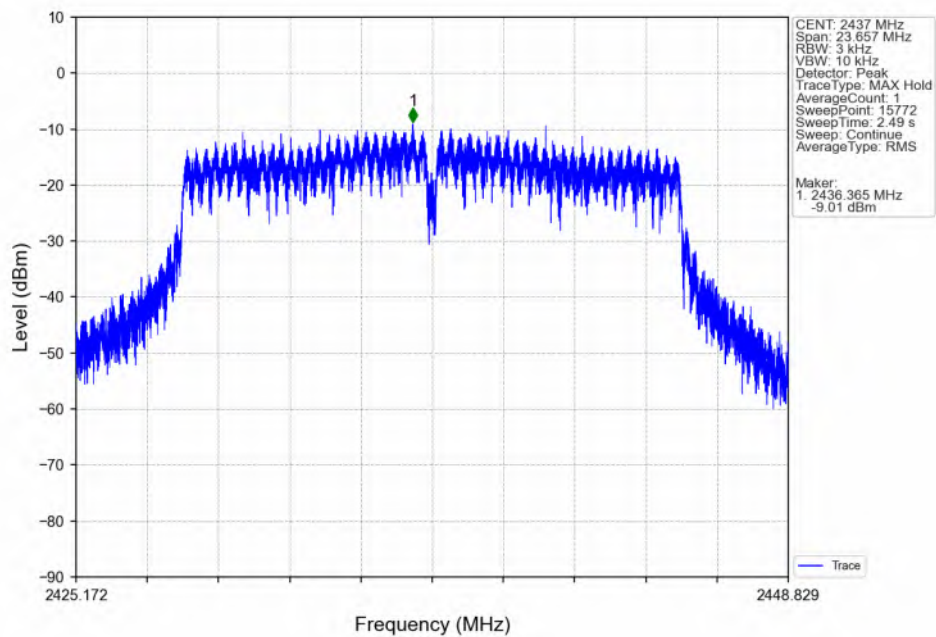
802.11g_LCH_2412MHz_MIMO_NTNV



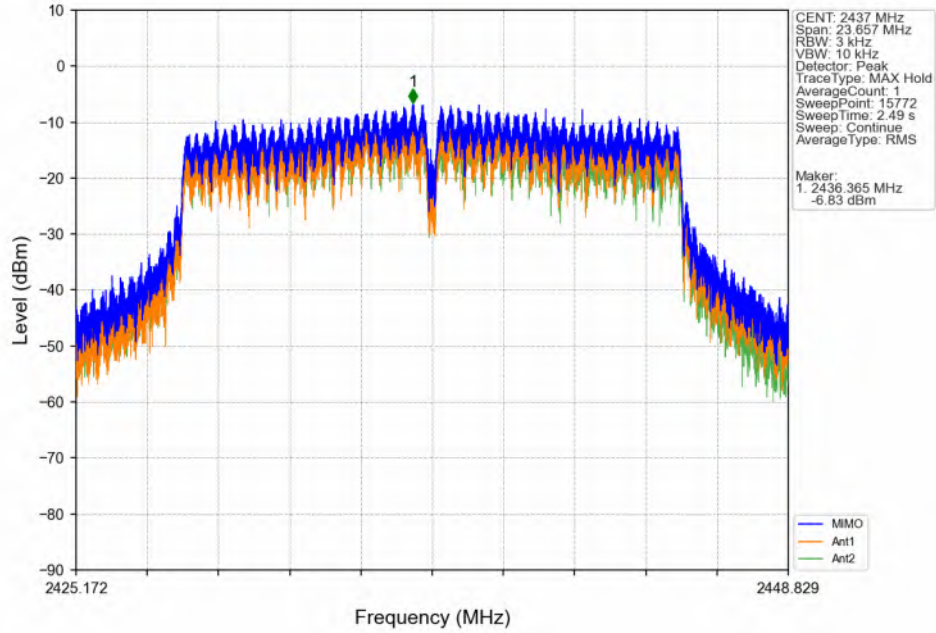
802.11g_MCH_2437MHz_Ant6 (MIMO)_NTNV



802.11g_MCH_2437MHz_Ant7 (MIMO)_NTNV



802.11g_MCH_2437MHz_MIMO_NTNV



802.11g_HCH_2462MHz_Ant6 (MIMO)_NTNV

