

Appendix RF test data for WIFI2.4G

1. Duty Cycle

1.1 Test Result

1.1.1 Ant1

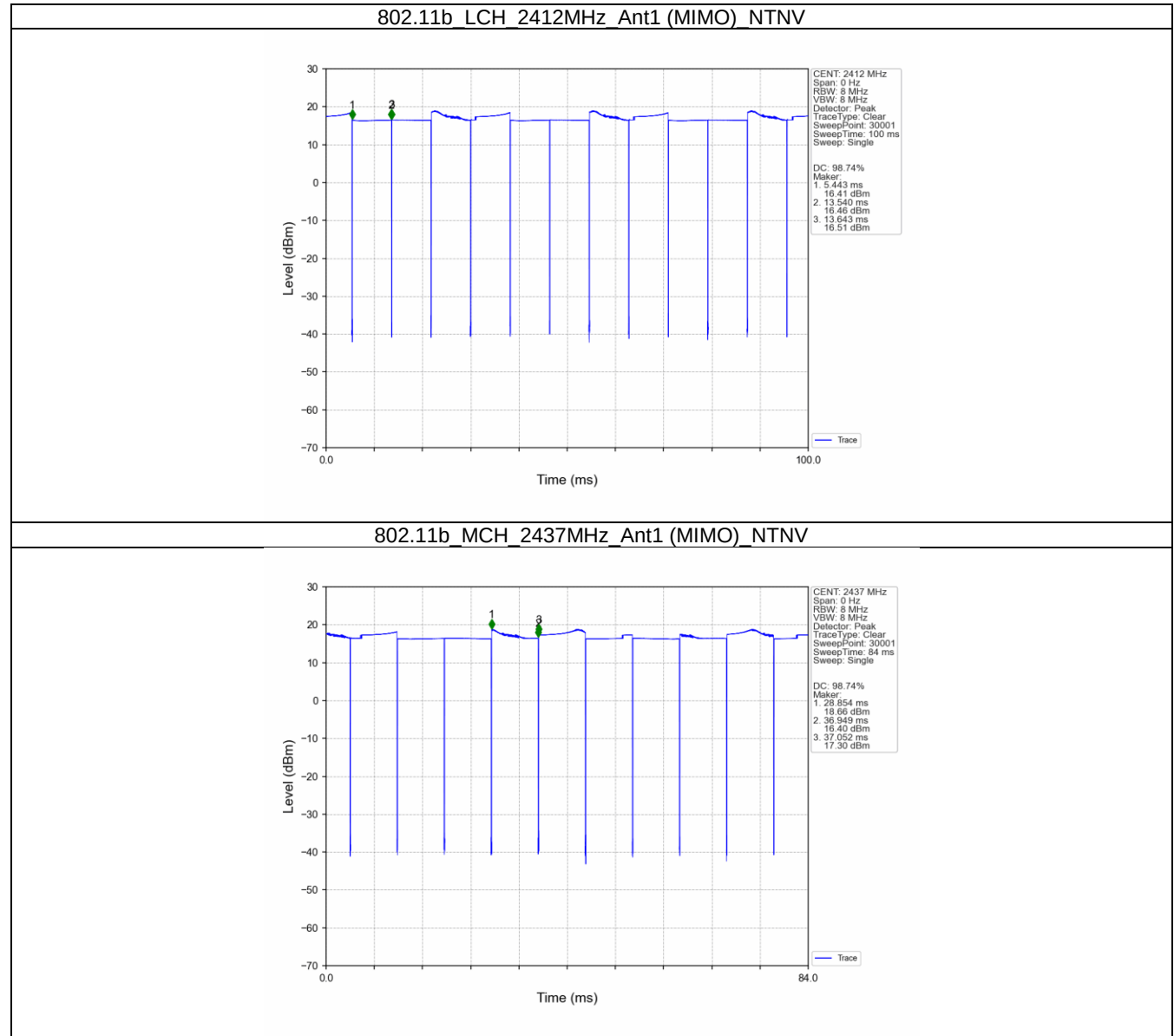
Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	MIMO	2412	8.097	8.200	98.74	0.05	0.04
		2437	8.095	8.198	98.74	0.05	0.03
		2462	8.097	8.200	98.74	0.05	0.04
802.11g	MIMO	2412	1.362	1.464	93.03	0.31	0.06
		2437	1.361	1.462	93.09	0.31	0.00
		2462	1.362	1.463	93.10	0.31	0.00
802.11n (HT20)	MIMO	2412	1.149	1.251	91.85	0.37	0.03
		2437	1.149	1.251	91.85	0.37	0.03
		2462	1.149	1.251	91.85	0.37	0.03
802.11n (HT40)	MIMO	2422	0.573	0.675	84.89	0.71	0.03
		2437	0.573	0.674	85.01	0.71	0.03
		2452	0.573	0.675	84.89	0.71	0.03

1.1.2 Ant2

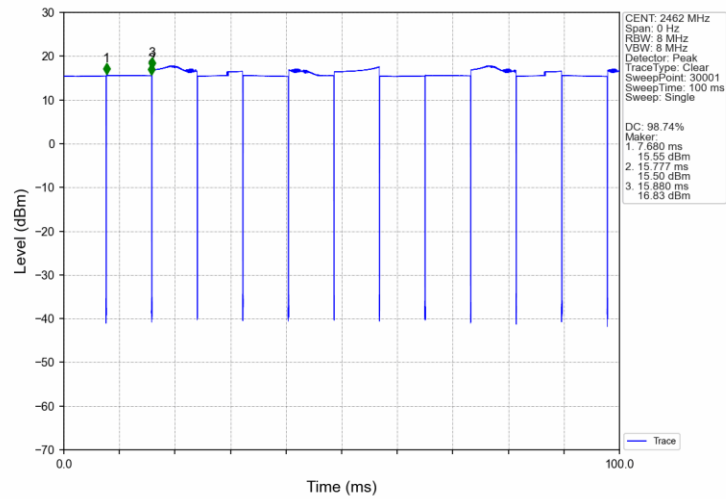
Ant2							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	MIMO	2412	8.095	8.198	98.74	0.05	0.03
		2437	8.097	8.200	98.74	0.05	0.04
		2462	8.097	8.200	98.74	0.05	0.04
802.11g	MIMO	2412	1.361	1.462	93.09	0.31	0.00
		2437	1.360	1.462	93.02	0.31	0.03
		2462	1.360	1.462	93.02	0.31	0.03
802.11n (HT20)	MIMO	2412	1.149	1.251	91.85	0.37	0.03
		2437	1.149	1.252	91.77	0.37	0.06
		2462	1.149	1.251	91.85	0.37	0.03
802.11n (HT40)	MIMO	2422	0.573	0.675	84.89	0.71	0.03
		2437	0.573	0.675	84.89	0.71	0.03
		2452	0.573	0.675	84.89	0.71	0.03

1.2 Test Graph

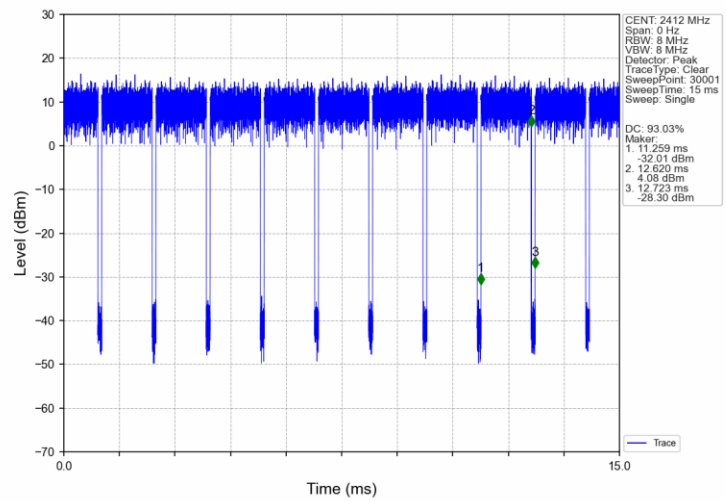
1.2.1 Ant1



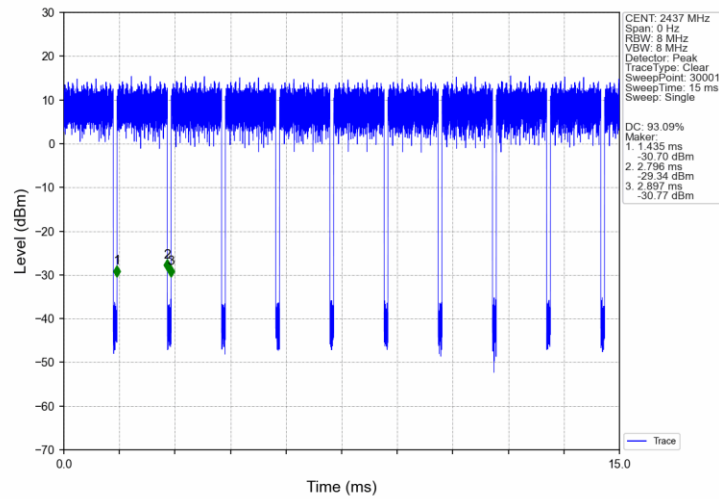
802.11b HCH 2462MHz Ant1 (MIMO) NTN



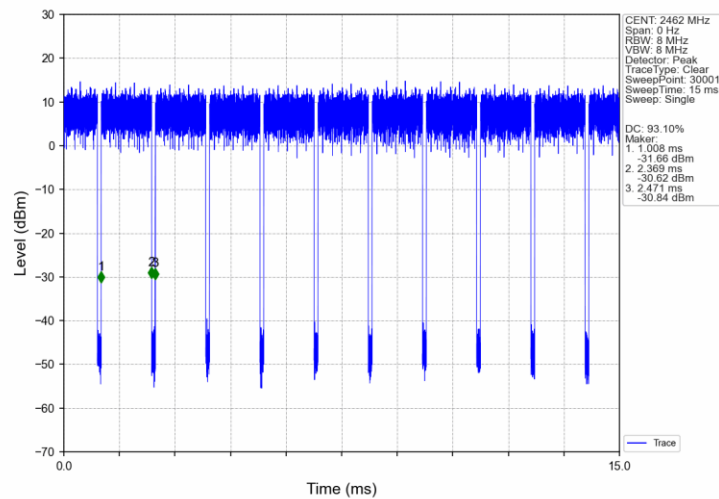
802.11g LCH 2412MHz Ant1 (MIMO) NTN



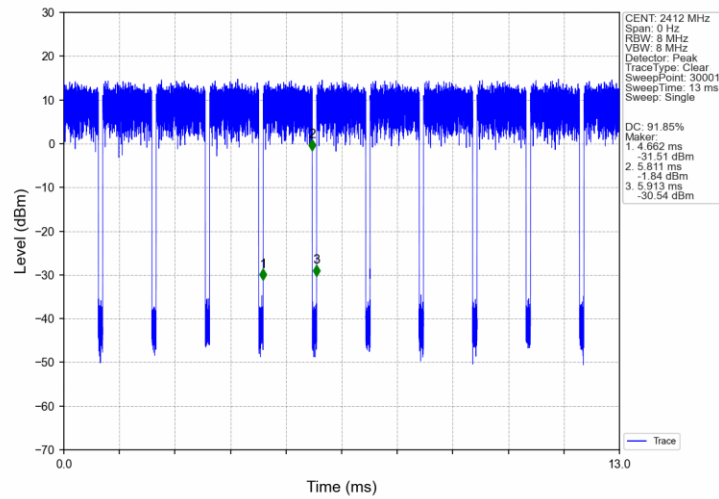
802.11g_MCH_2437MHz_Ant1 (MIMO)_NTNV



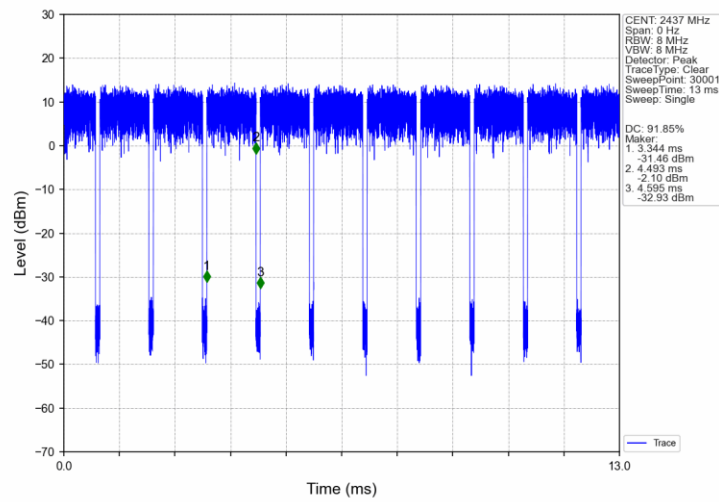
802.11g_HCH_2462MHz_Ant1 (MIMO)_NTNV



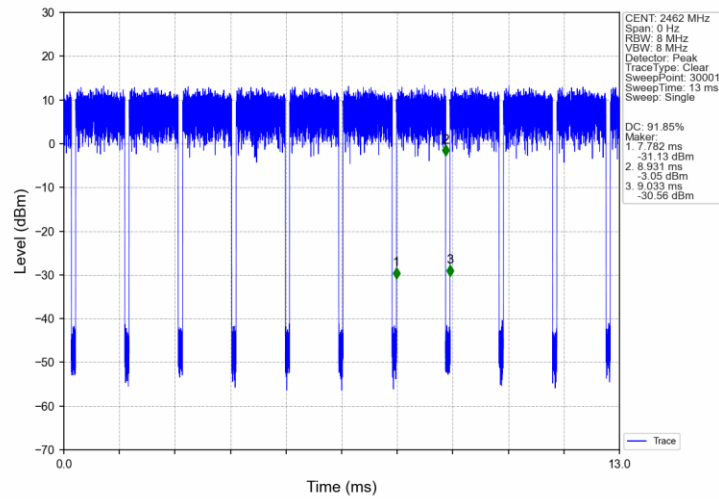
802.11n(HT20) LCH 2412MHz_Ant1 (MIMO) NTNV



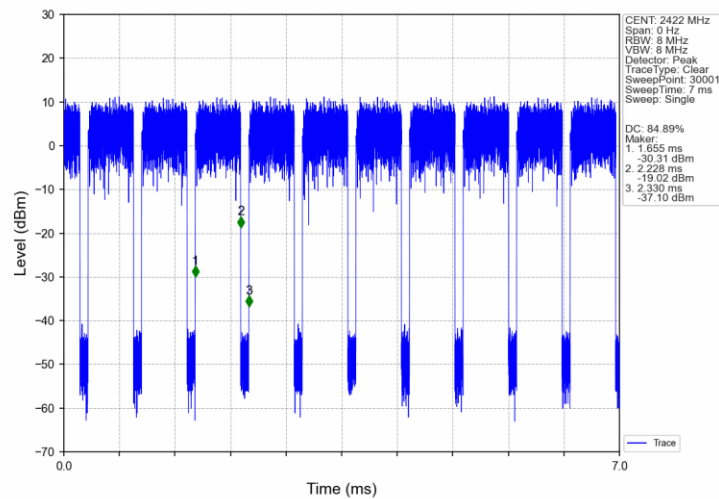
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



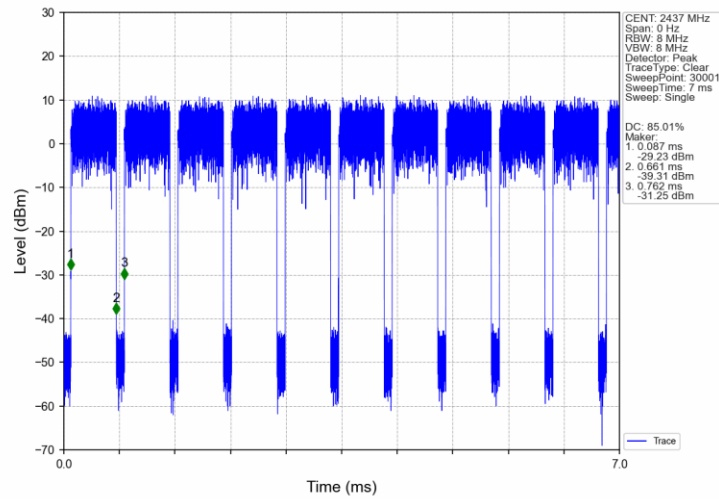
802.11n(HT20) HCH 2462MHz_Ant1 (MIMO) NTN



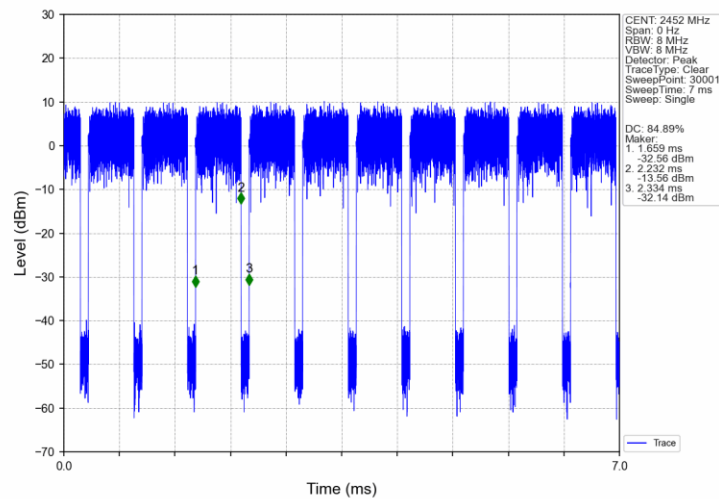
802.11n(HT40) LCH 2422MHz_Ant1 (MIMO) NTN



802.11n(HT40) MCH 2437MHz_Ant1 (MIMO) NTNv

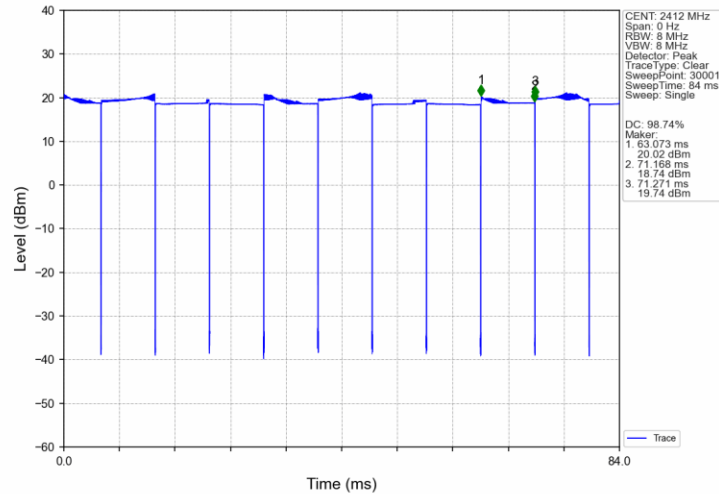


802.11n(HT40) HCH 2452MHz_Ant1 (MIMO) NTNv

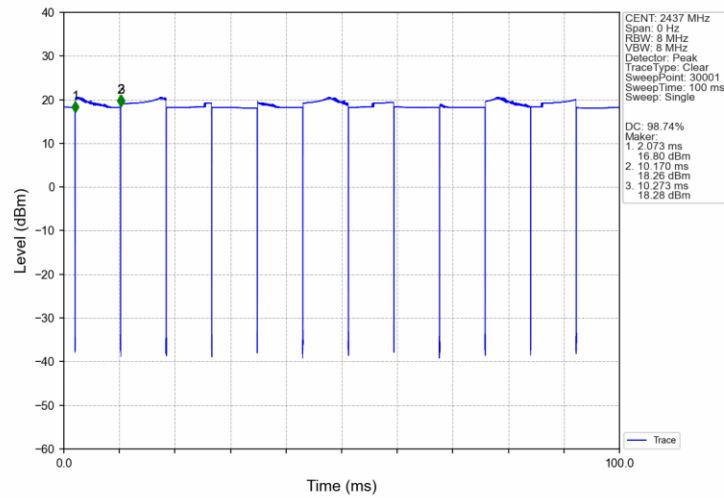


1.2.2 Ant2

802.11b LCH 2412MHz Ant2 (MIMO) NTNV

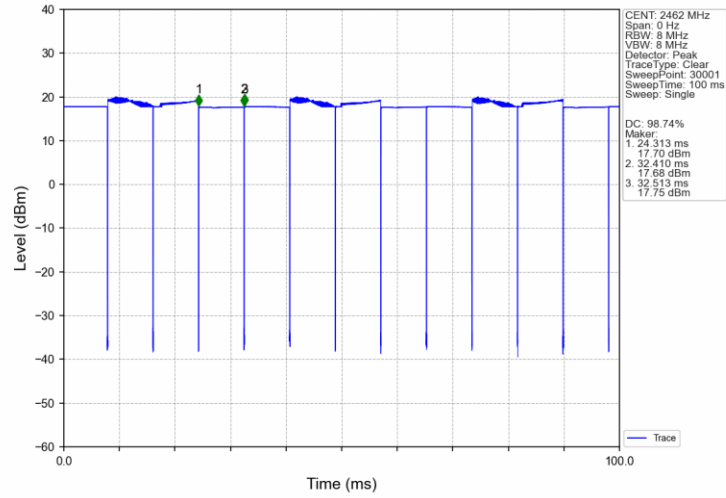


802.11b MCH 2437MHz Ant2 (MIMO) NTNV

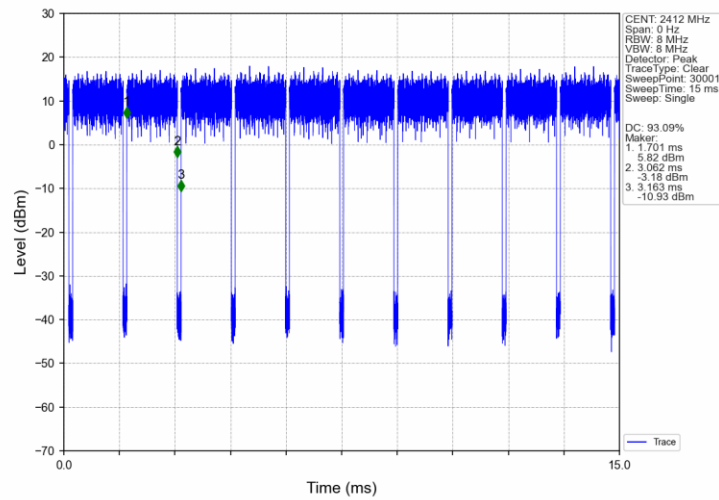




802.11b_HCH_2462MHz_Ant2 (MIMO)_NTNV

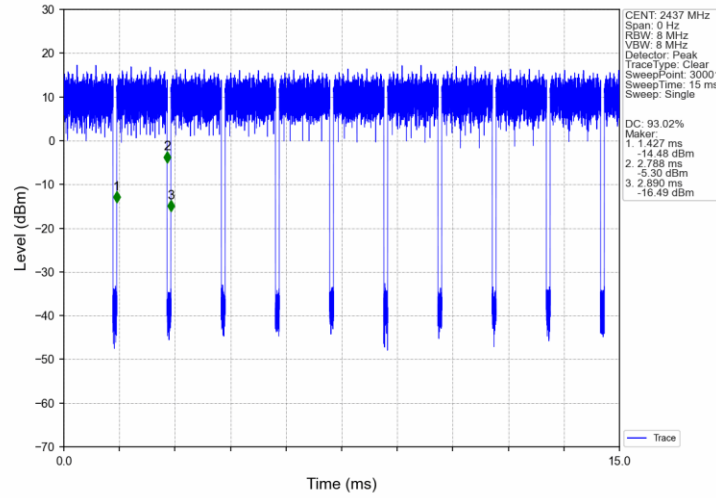


802.11g_LCH_2412MHz_Ant2 (MIMO)_NTNV

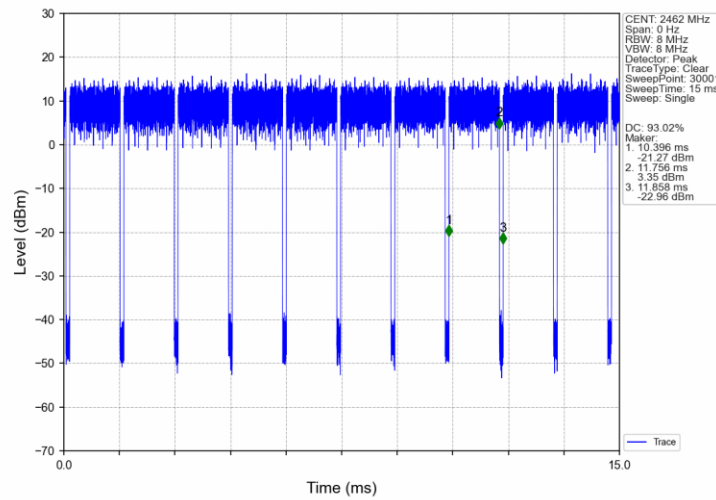




802.11g_MCH_2437MHz_Ant2 (MIMO)_NTNV

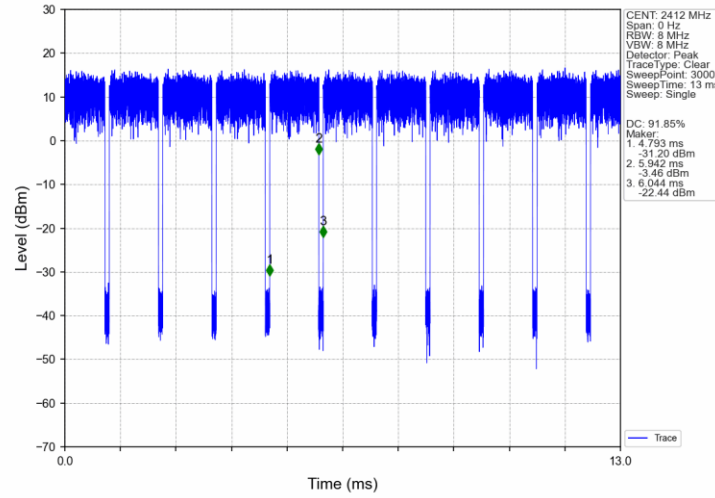


802.11g_HCH_2462MHz_Ant2 (MIMO)_NTNV

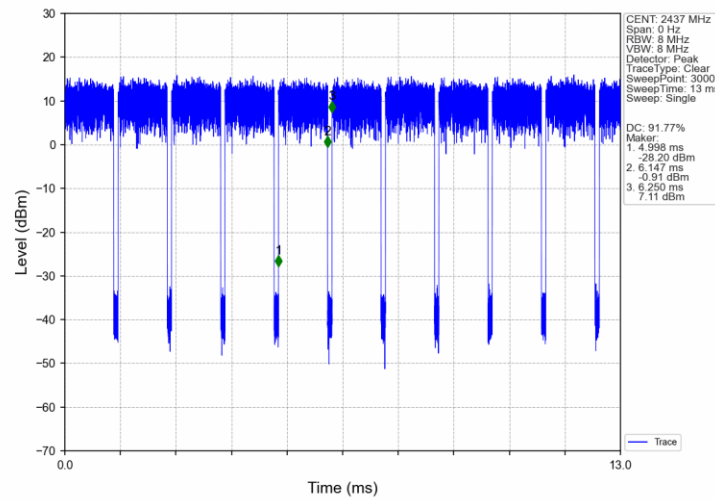




802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV

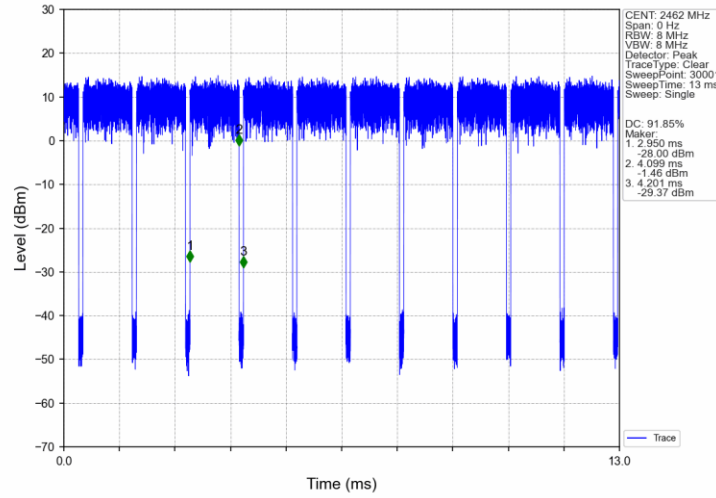


802.11n(HT20)_MCH_2437MHz_Ant2 (MIMO)_NTNV

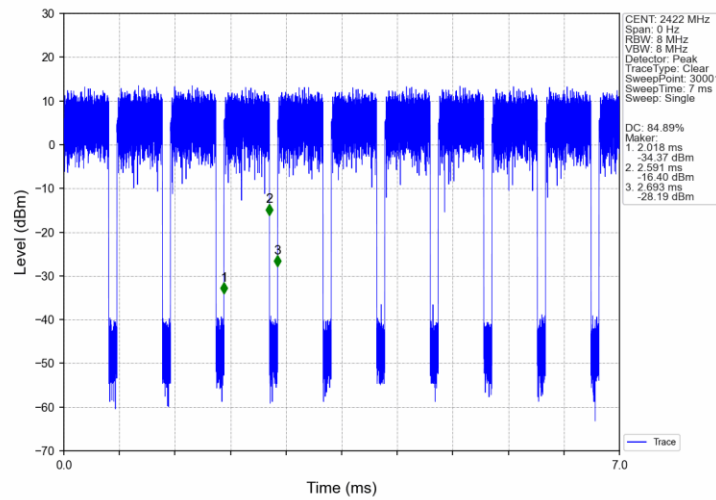




802.11n(HT20)_HCH_2462MHz_Ant2 (MIMO)_NTNV

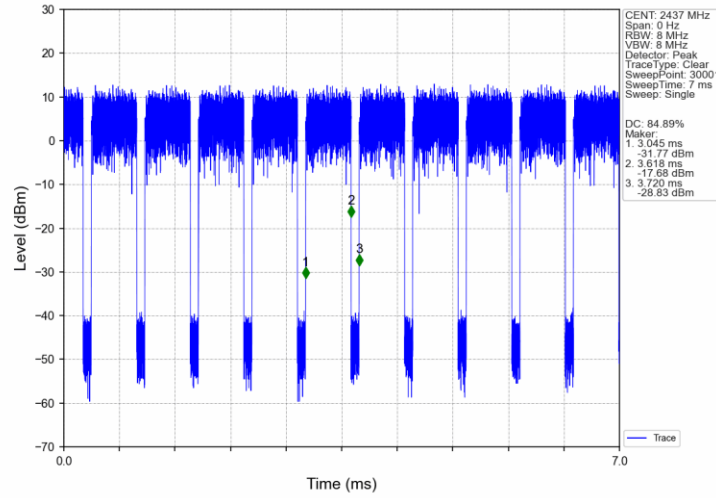


802.11n(HT40)_LCH_2422MHz_Ant2 (MIMO)_NTNV

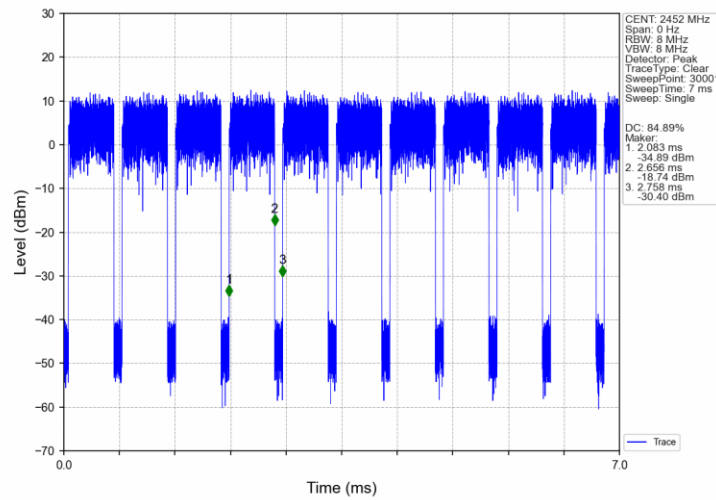




802.11n(HT40)_MCH_2437MHz_Ant2 (MIMO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant2 (MIMO)_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	MIMO	2412	1	14.895	/	Pass
		2437	1	14.844	/	Pass
		2462	1	14.886	/	Pass
802.11g	MIMO	2412	1	16.346	/	Pass
		2437	1	16.342	/	Pass
		2462	1	16.350	/	Pass
802.11n (HT20)	MIMO	2412	1	17.514	/	Pass
		2437	1	17.509	/	Pass
		2462	1	17.513	/	Pass
802.11n (HT40)	MIMO	2422	1	36.264	/	Pass
		2437	1	36.196	/	Pass
		2452	1	36.267	/	Pass

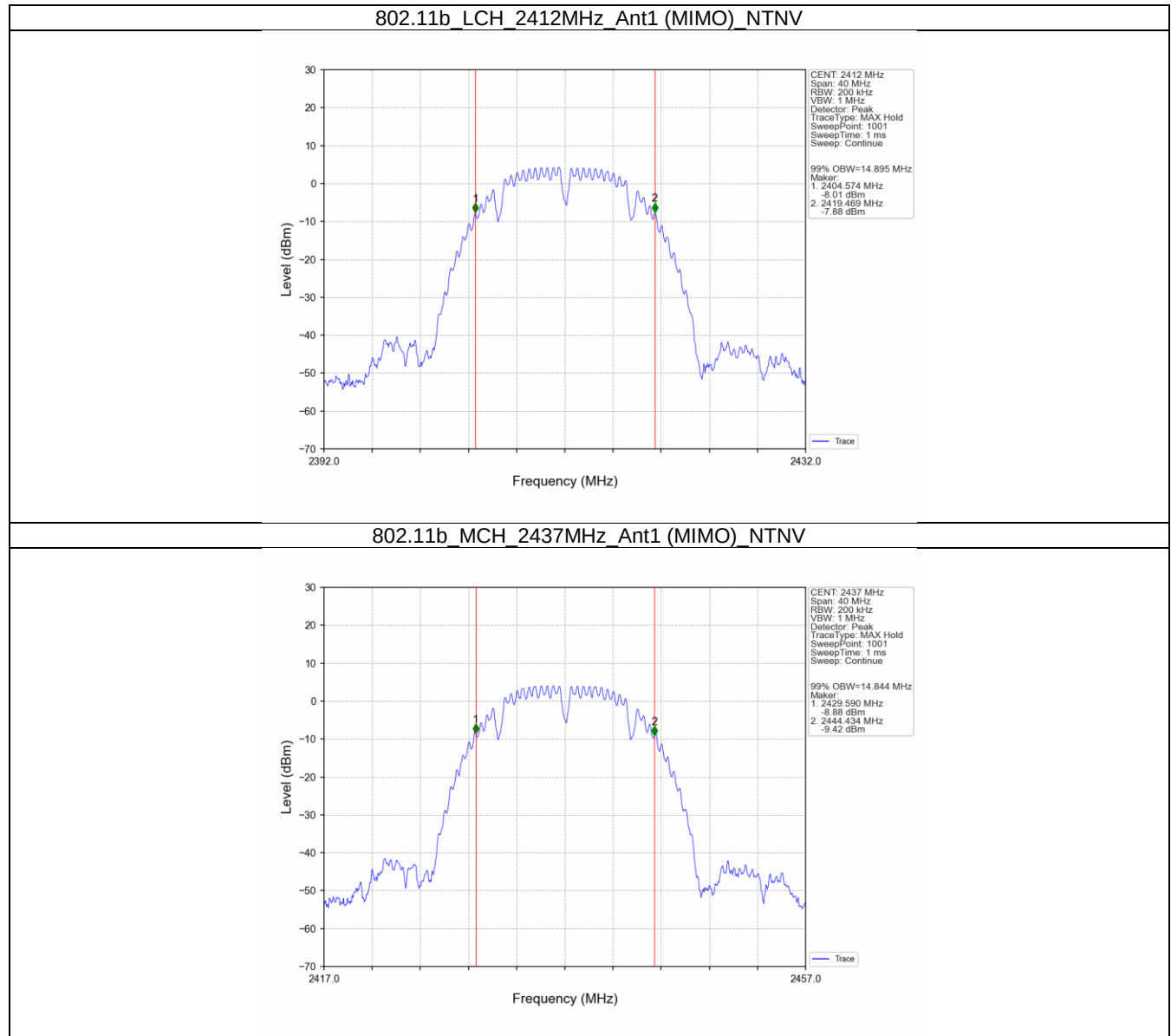
2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	MIMO	2412	1	11.178	≥ 0.5	Pass
		2437	1	11.167	≥ 0.5	Pass
		2462	1	12.080	≥ 0.5	Pass
802.11g	MIMO	2412	1	16.381	≥ 0.5	Pass
		2437	1	16.347	≥ 0.5	Pass
		2462	1	16.384	≥ 0.5	Pass
802.11n (HT20)	MIMO	2412	1	17.572	≥ 0.5	Pass
		2437	1	17.525	≥ 0.5	Pass
		2462	1	17.553	≥ 0.5	Pass
802.11n (HT40)	MIMO	2422	1	36.379	≥ 0.5	Pass
		2437	1	36.340	≥ 0.5	Pass
		2452	1	36.416	≥ 0.5	Pass

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2.2 Test Graph

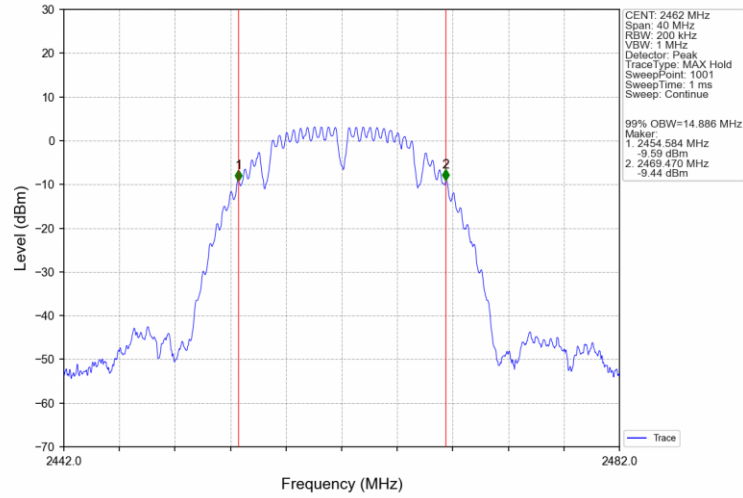
2.2.1 OBW



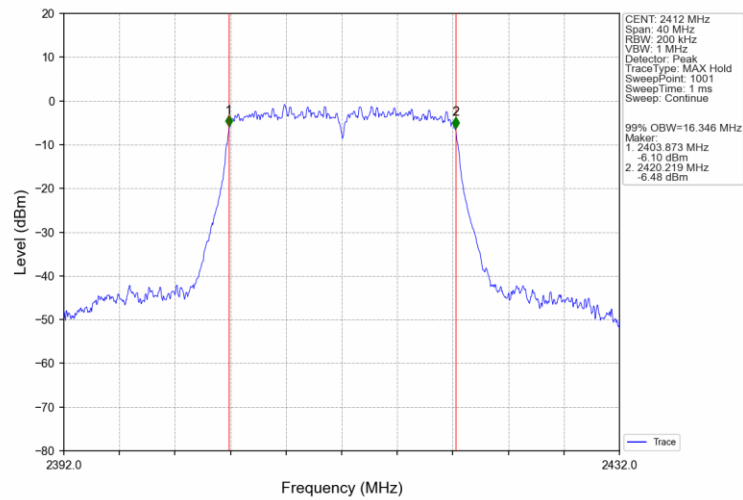


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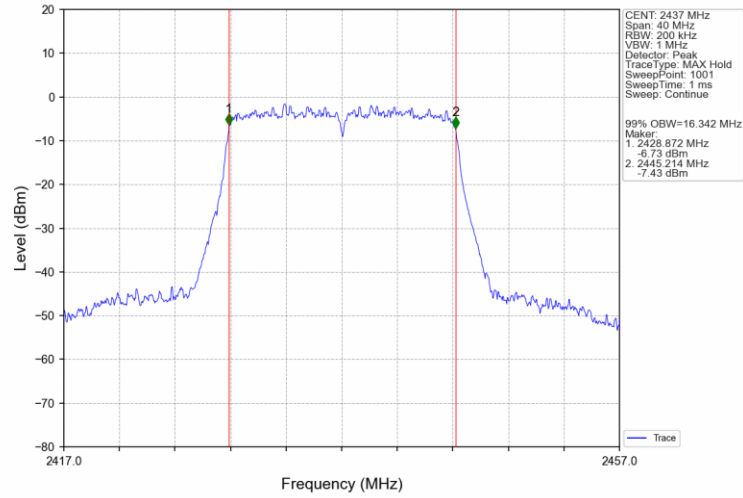
802.11b_HCH_2462MHz_Ant1 (MIMO)_NTNV



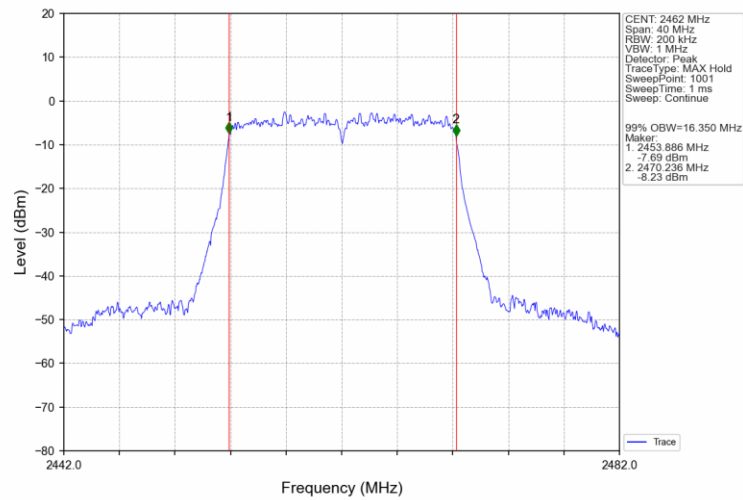
802.11g_LCH_2412MHz_Ant1 (MIMO)_NTNV



802.11g_MCH_2437MHz_Ant1 (MIMO)_NTNV



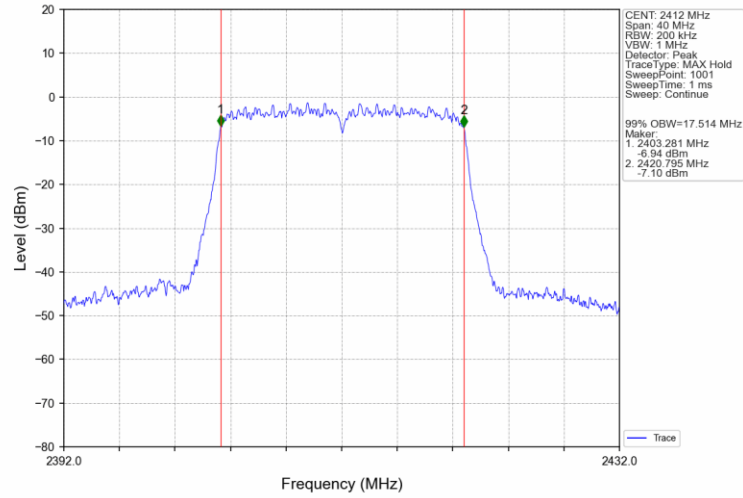
802.11g_HCH_2462MHz_Ant1 (MIMO)_NTNV



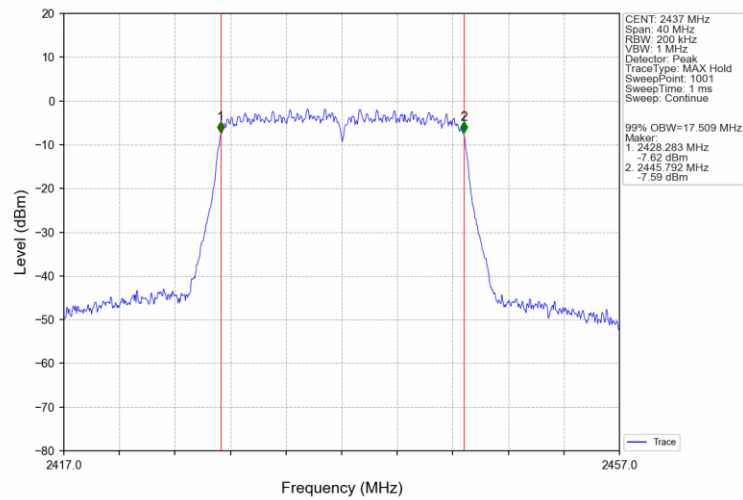


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802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV

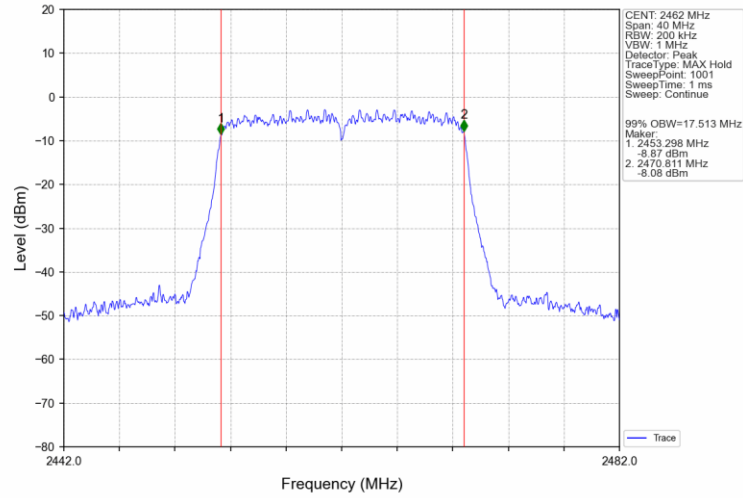


802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV

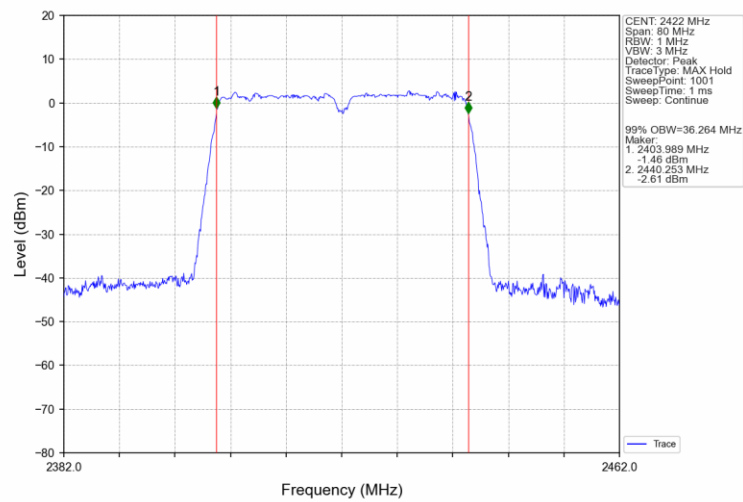




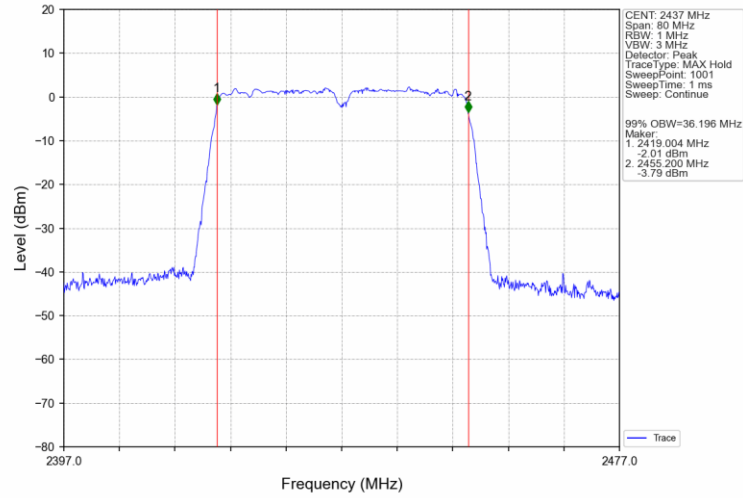
802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



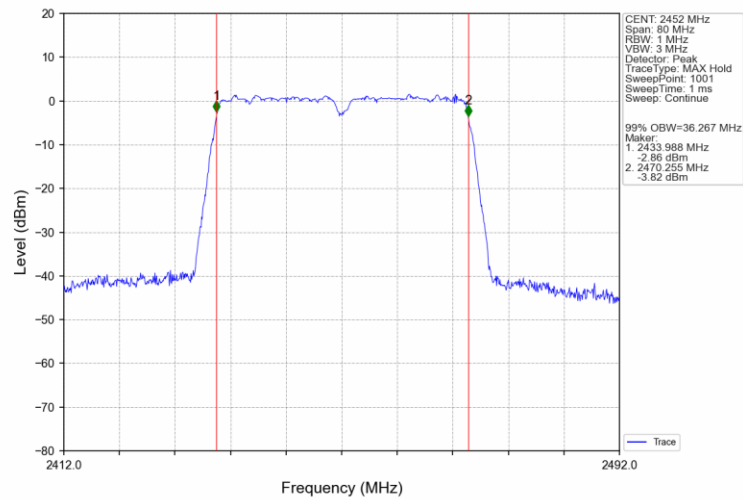
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV

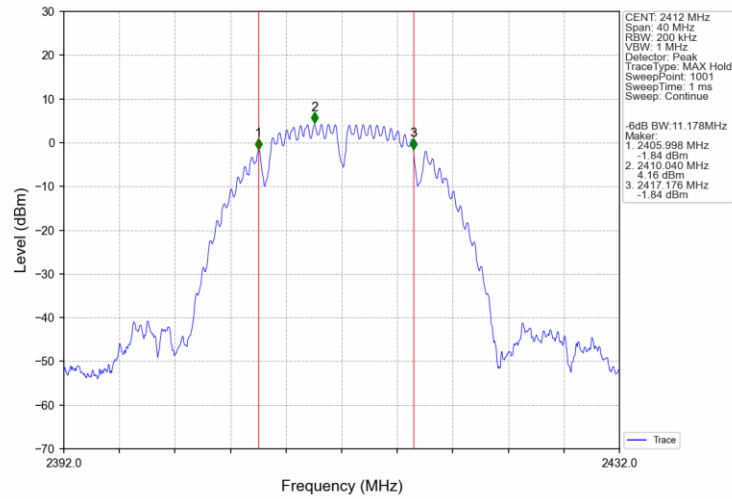


802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV

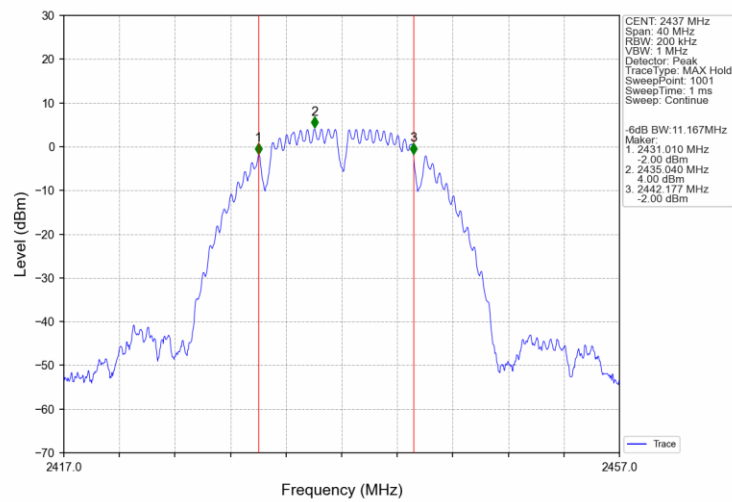


2.2.2 6dB BW

802.11b_LCH_2412MHz_Ant1 (MIMO)_NTNV

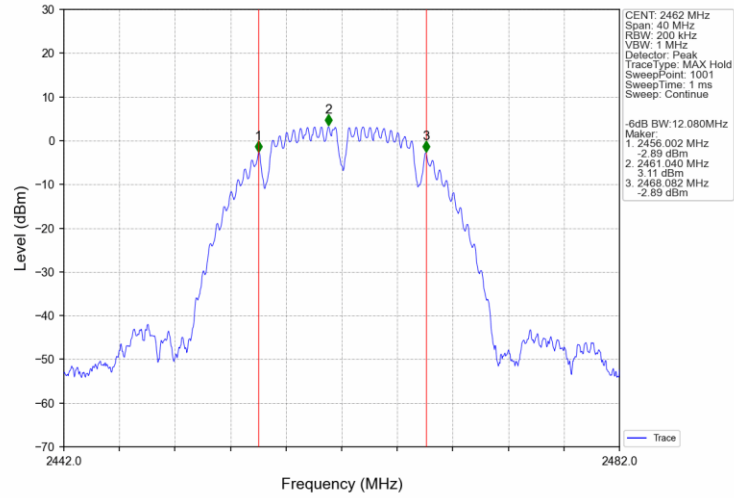


802.11b_MCH_2437MHz_Ant1 (MIMO)_NTNV

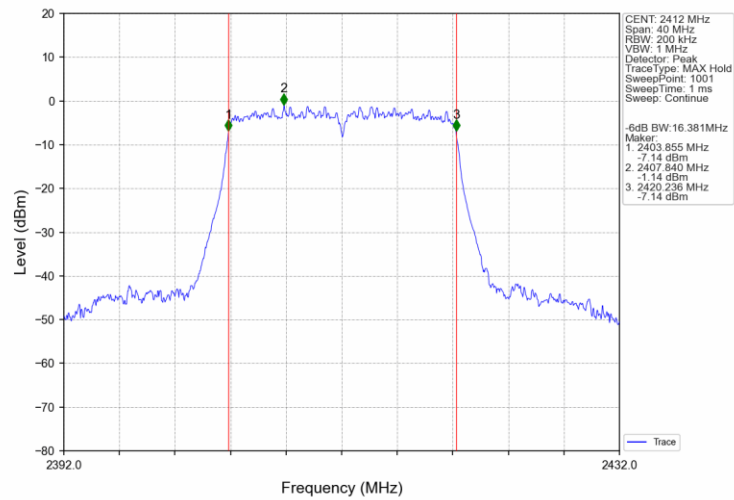




802.11b_HCH_2462MHz_Ant1 (MIMO)_NTNV

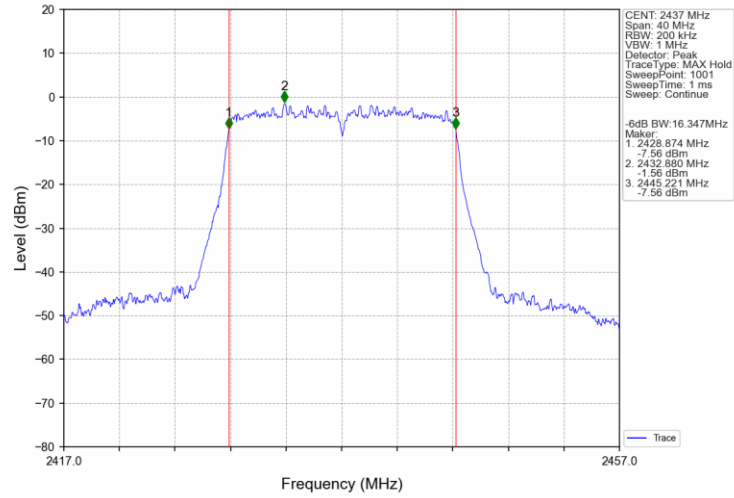


802.11g_LCH_2412MHz_Ant1 (MIMO)_NTNV

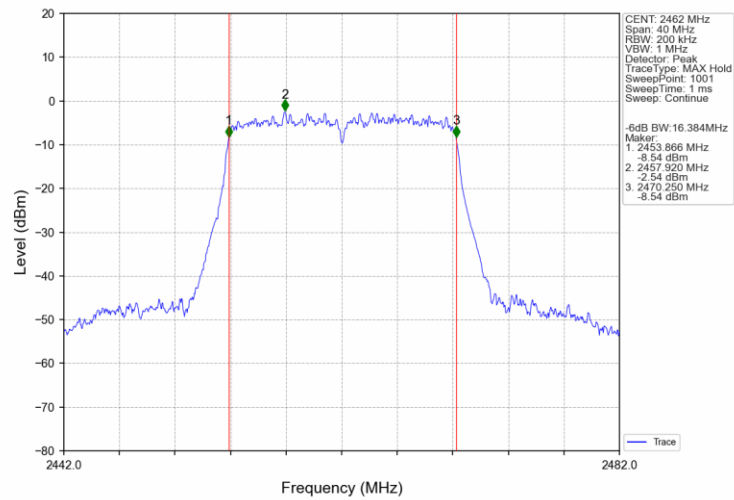


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802.11g_MCH_2437MHz_Ant1 (MIMO)_NTNV

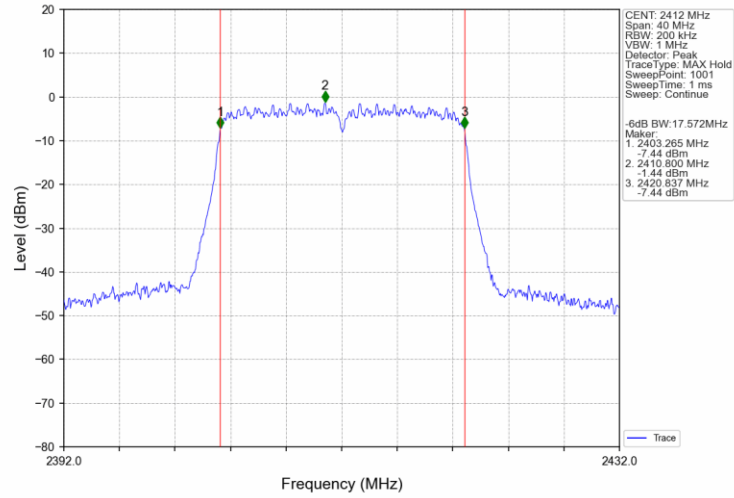


802.11g_HCH_2462MHz_Ant1 (MIMO)_NTNV

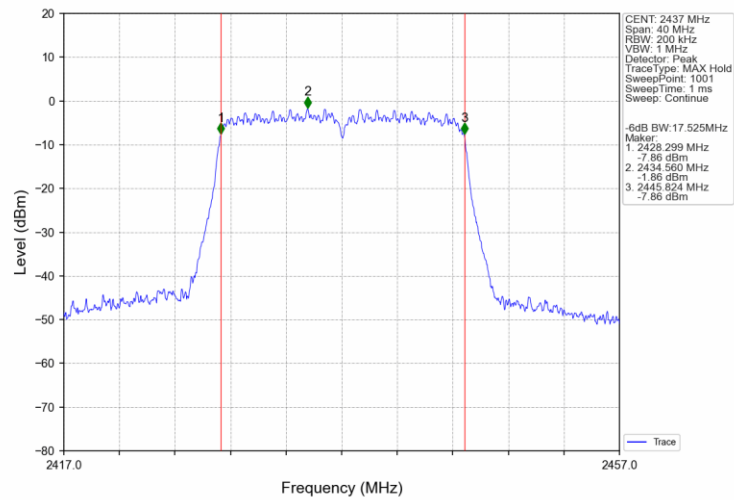


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802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV

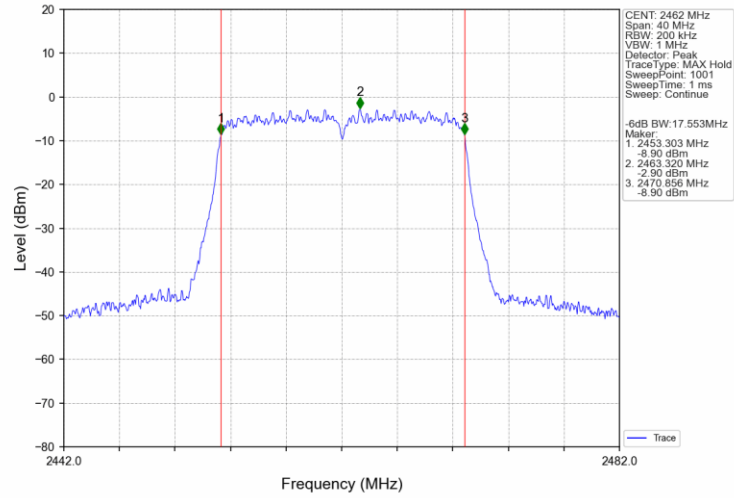


802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV

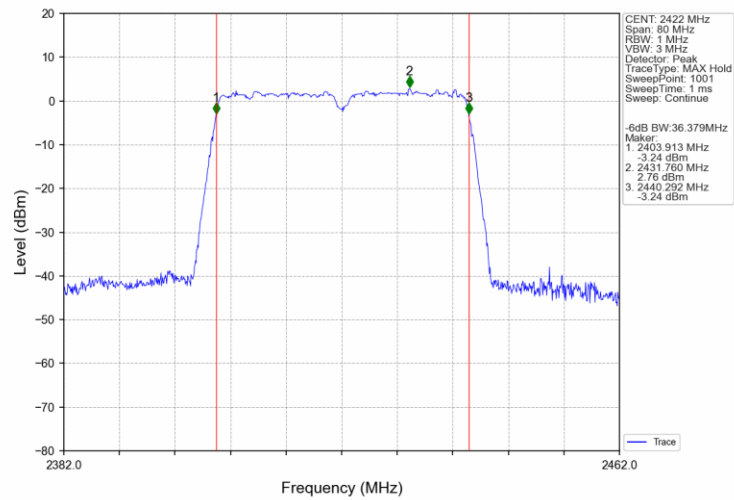


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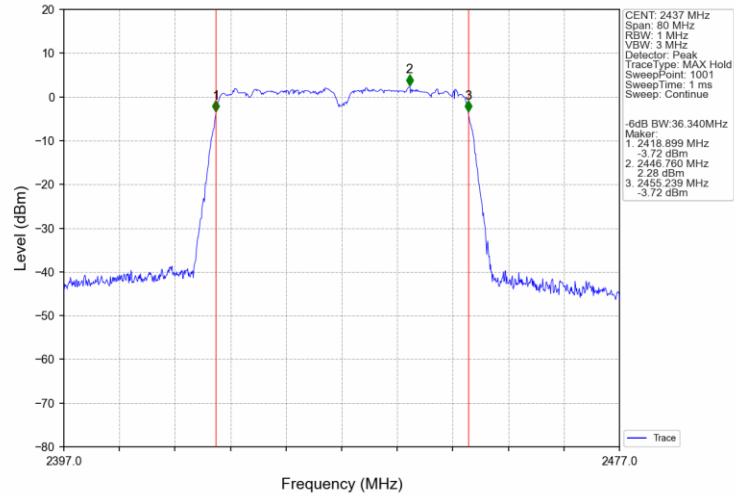
802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



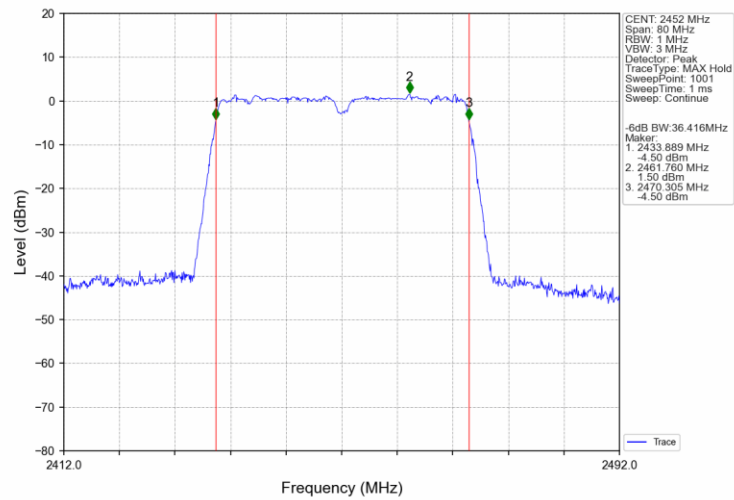
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



Note2: Directional Gain: 4.94dBi

4. Maximum Power Spectral Density

4.1 Test Result

4.1.1 PSD

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm)				Verdict
			ANT1	ANT2	MIMO	Limit	
802.11b	MIMO	2412	-0.61	2.36	3.84	<=8	Pass
		2437	0.47	1.71	4.11	<=8	Pass
		2462	-0.83	0.80	2.26	<=8	Pass
802.11g	MIMO	2412	-2.14	-0.67	1.57	<=8	Pass
		2437	-2.79	-1.29	1.01	<=8	Pass
		2462	-3.64	-2.00	0.15	<=8	Pass
802.11n (HT20)	MIMO	2412	-2.40	-0.63	1.53	<=8	Pass
		2437	-3.06	-1.26	0.84	<=8	Pass
		2462	-3.75	-2.03	0.02	<=8	Pass
802.11n (HT40)	MIMO	2422	-5.33	-3.31	-1.33	<=8	Pass
		2437	-5.76	-3.78	-1.73	<=8	Pass
		2452	-6.51	-4.19	-2.36	<=8	Pass

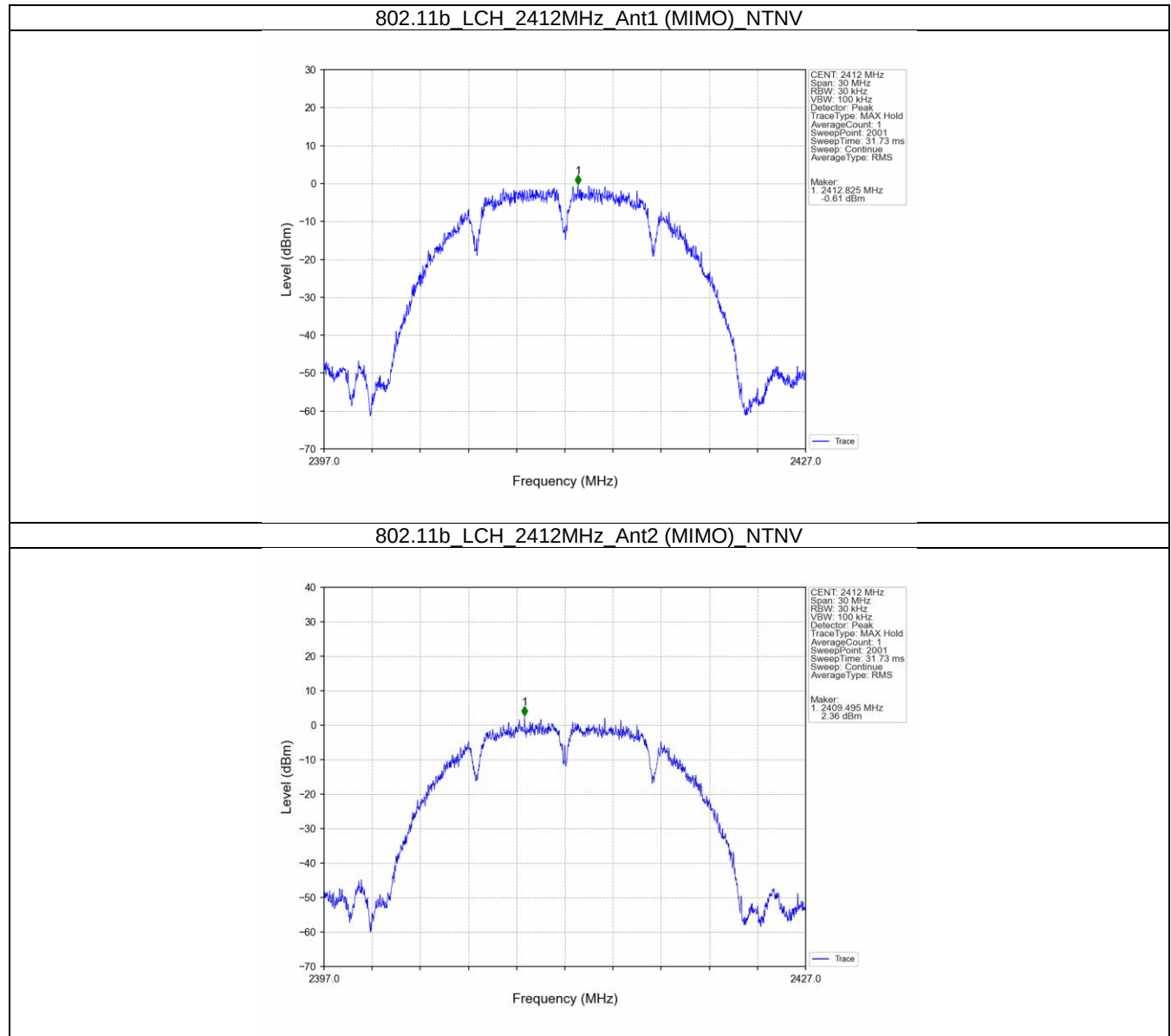
Note1: Antenna Gain: Ant1: 1.95dBi; Ant2: 1.91dBi;

Note2: Directional Gain: 4.94dBi

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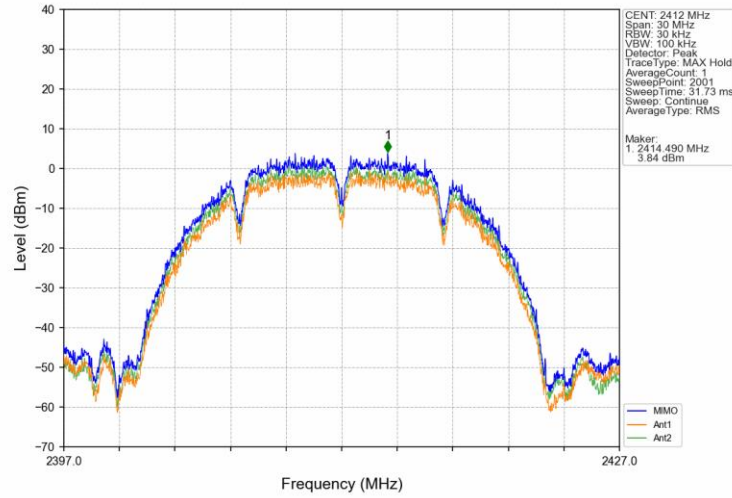
4.2 Test Graph

4.2.1 PSD

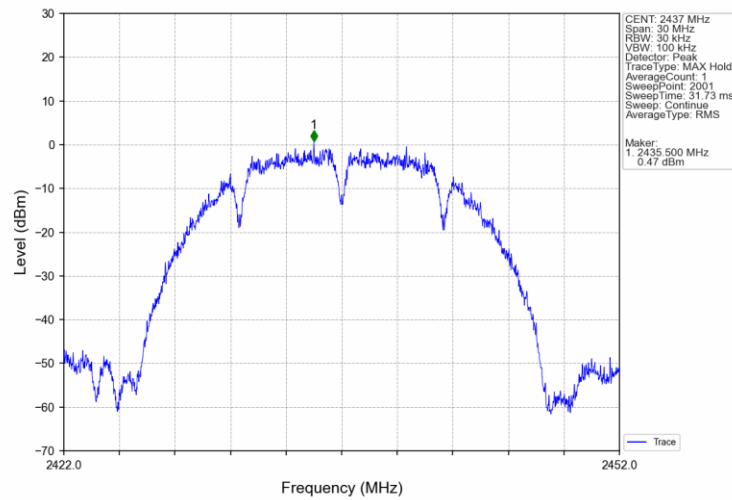




802.11b_LCH_2412MHz_MIMO_NTNV

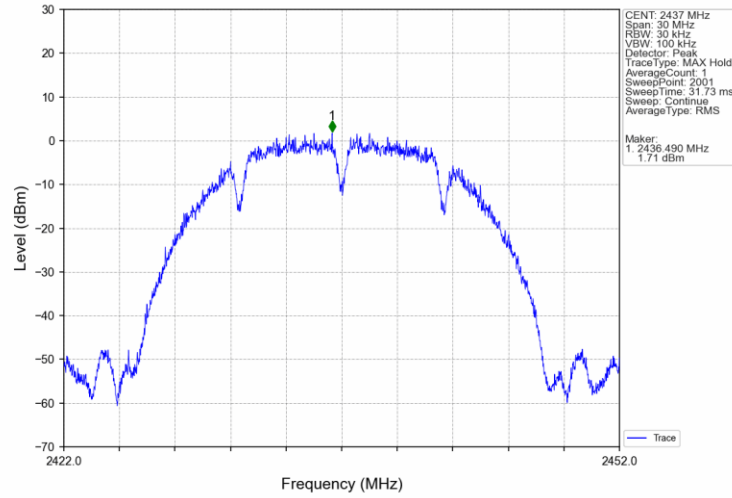


802.11b_MCH_2437MHz_Ant1 (MIMO)_NTNV

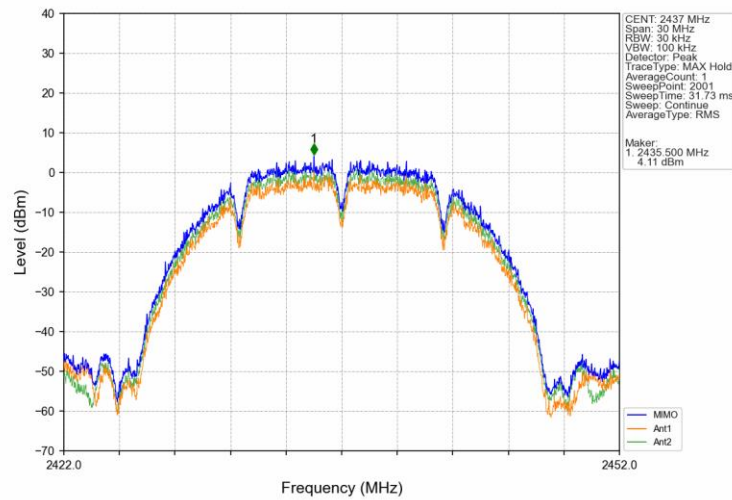


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802.11b_MCH_2437MHz_Ant2 (MIMO)_NTNV



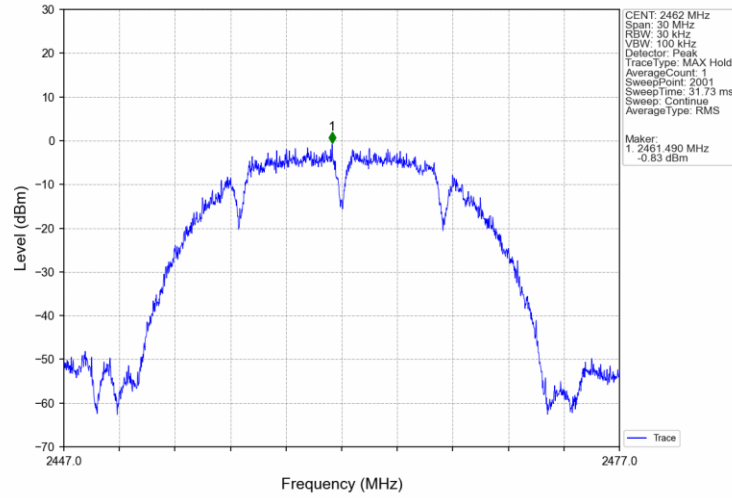
802.11b_MCH_2437MHz_MIMO_NTNV



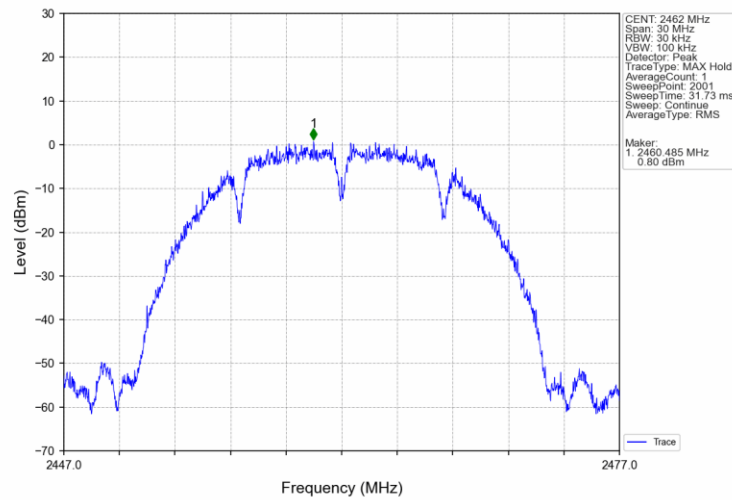


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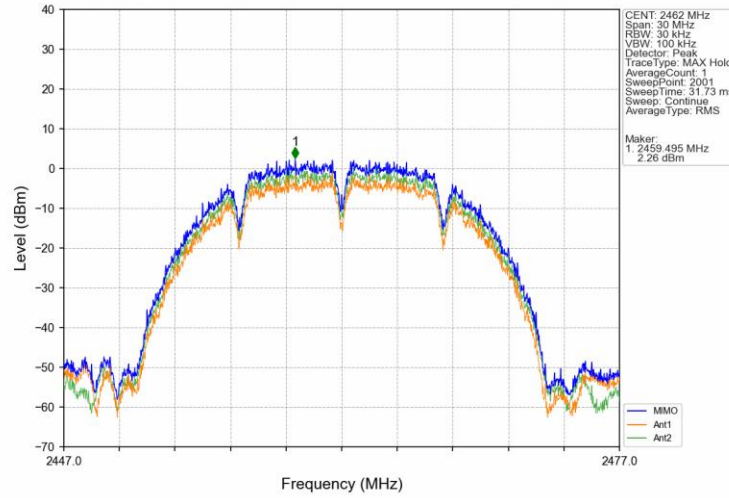
802.11b_HCH_2462MHz_Ant1 (MIMO)_NTNV



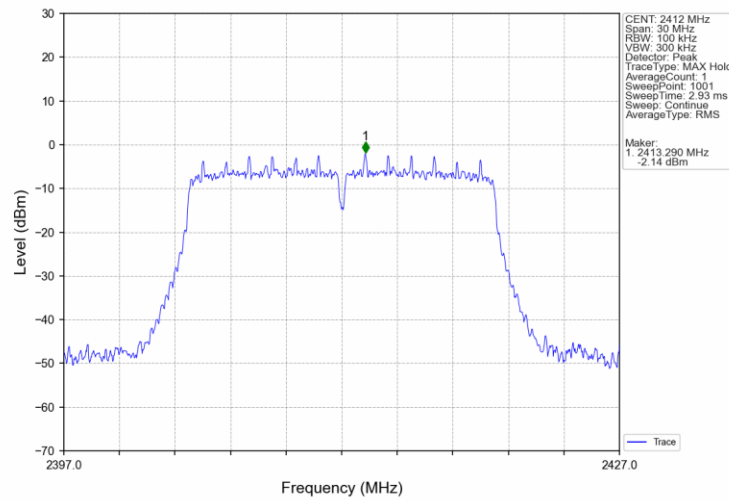
802.11b_HCH_2462MHz_Ant2 (MIMO)_NTNV



802.11b_HCH_2462MHz_MIMO_NTNV

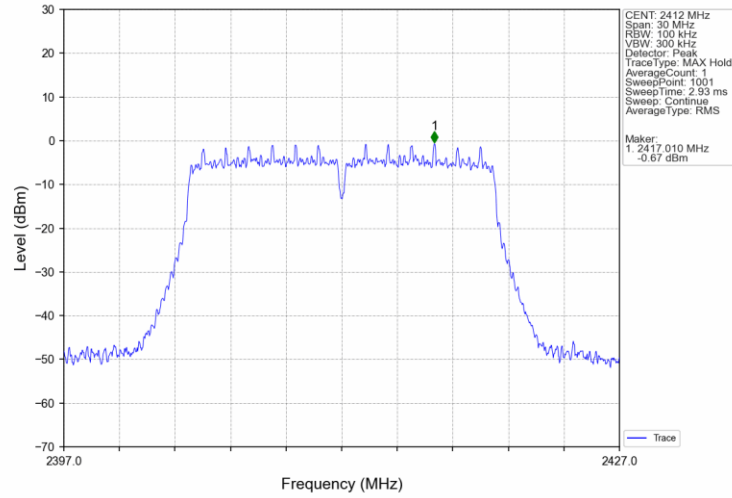


802.11g_LCH_2412MHz_Ant1 (MIMO)_NTNV

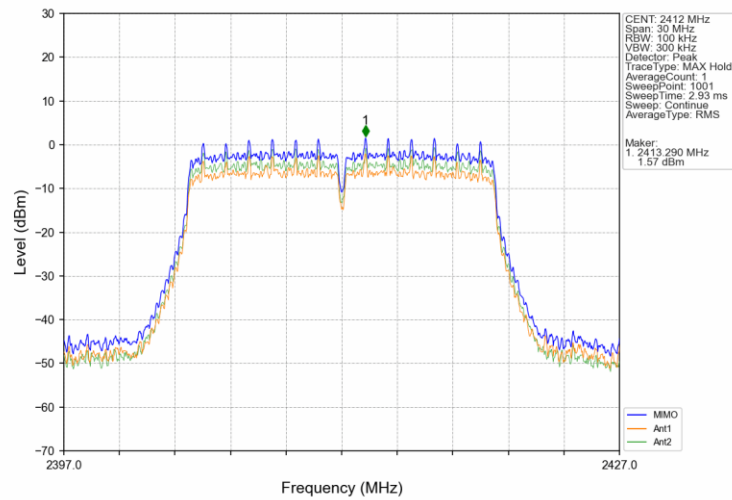




802.11g_LCH_2412MHz_Ant2 (MIMO)_NTNV



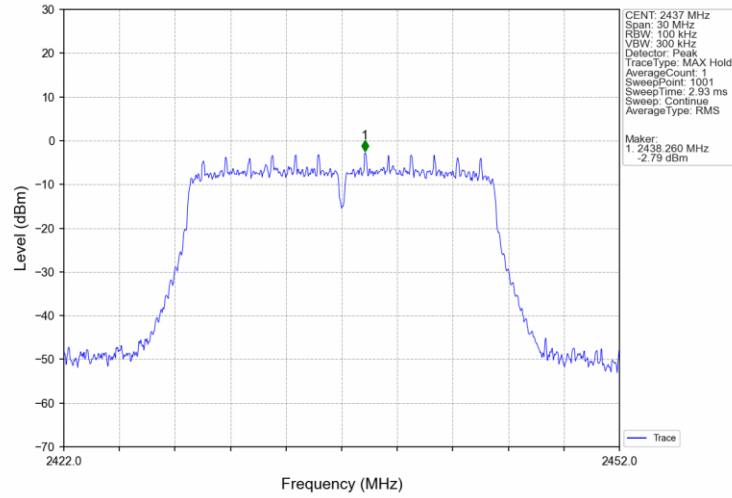
802.11g_LCH_2412MHz_MIMO_NTNV



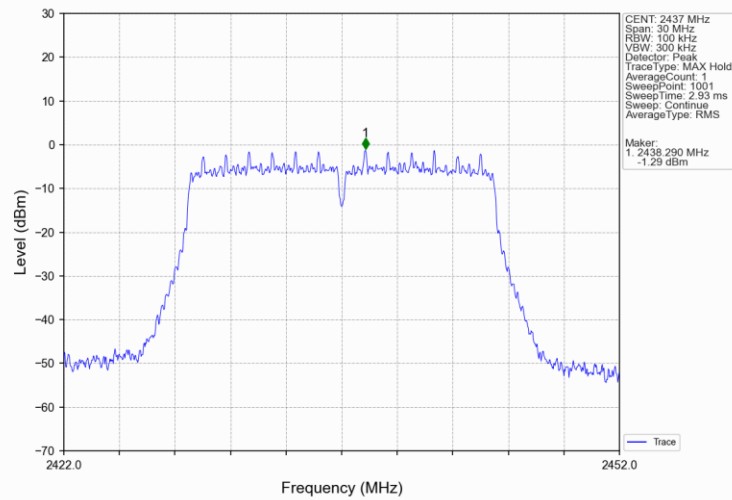


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802.11g_MCH_2437MHz_Ant1 (MIMO)_NTNV



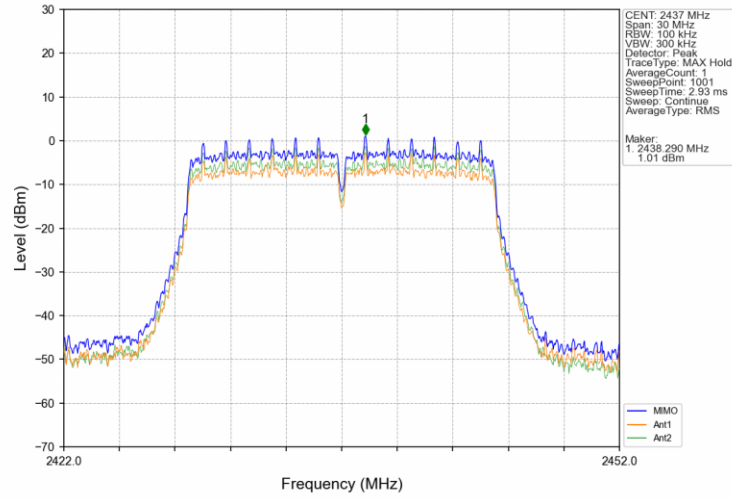
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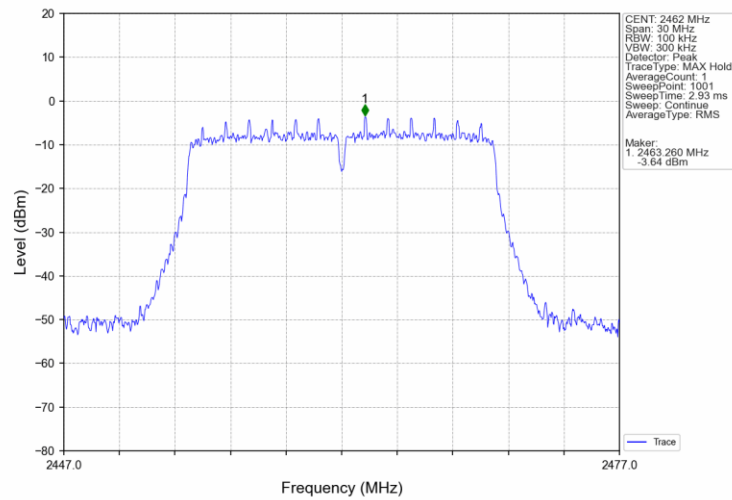


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802.11g_MCH_2437MHz_MIMO_NTNV



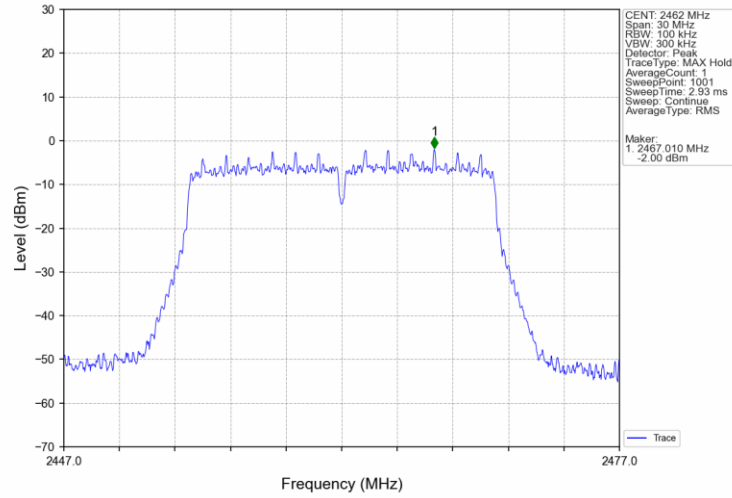
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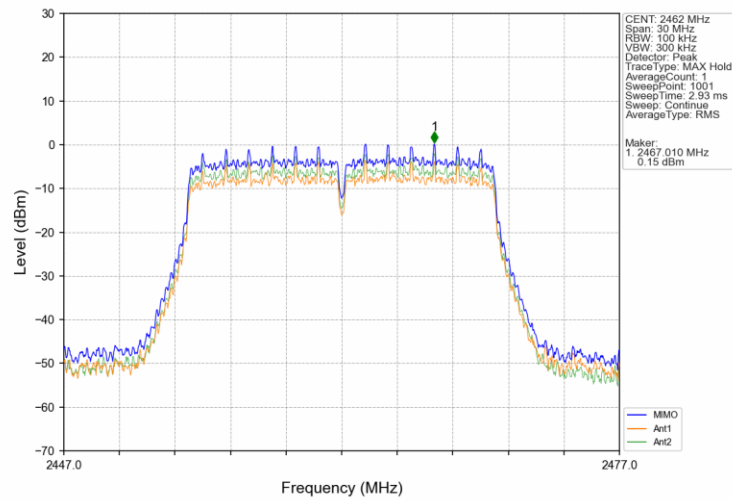


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802.11g_HCH_2462MHz_Ant2 (MIMO)_NTNV



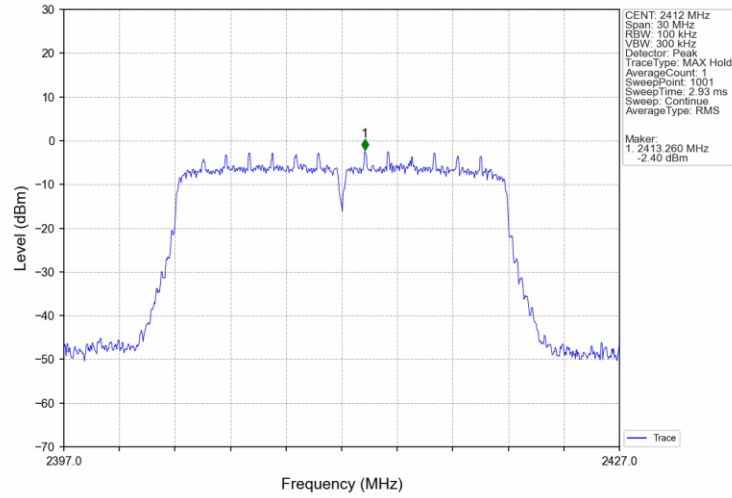
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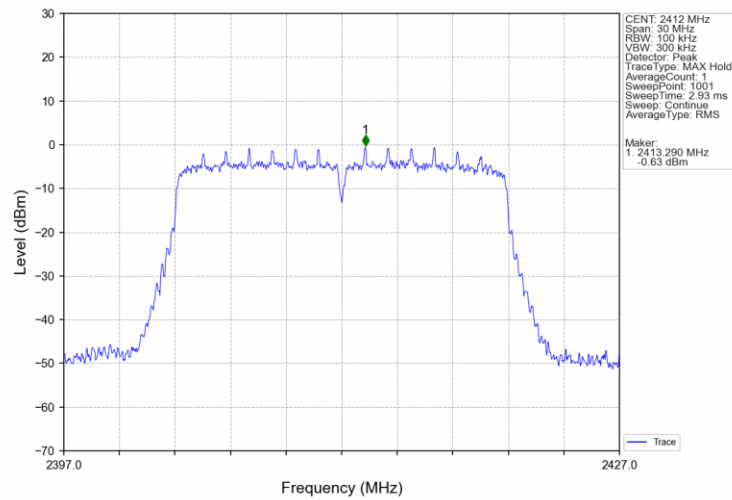


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802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV

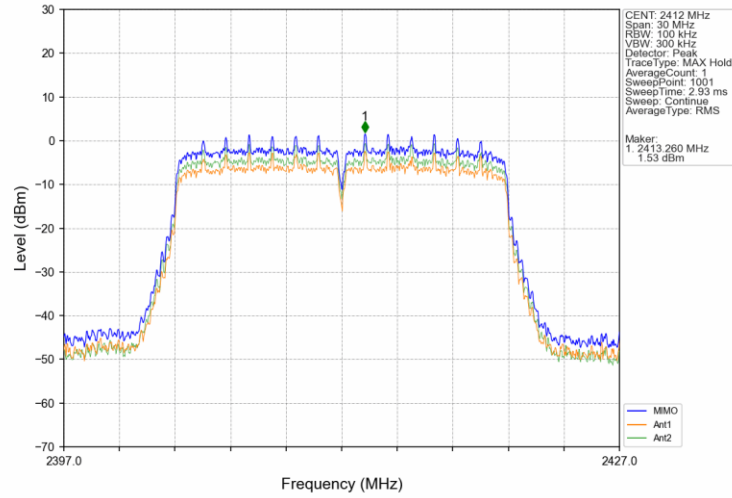


802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV

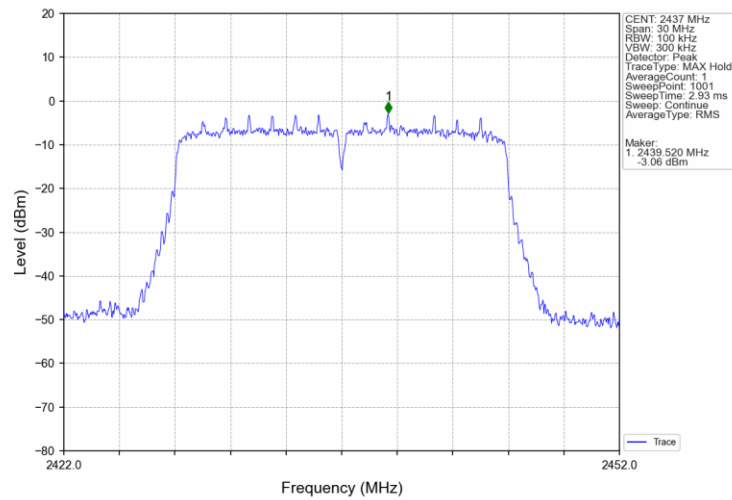


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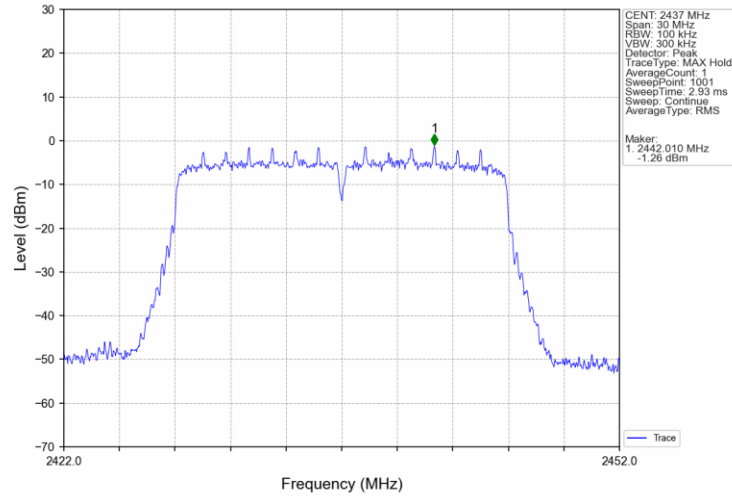


802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV





802.11n(HT20)_MCH_2437MHz_Ant2 (MIMO)_NTNV



802.11n(HT20)_MCH_2437MHz_MIMO_NTNV

