

Appendix RF test data for 5G WIFI_UNII_Band 1

1. Duty Cycle

1.1 Test Result

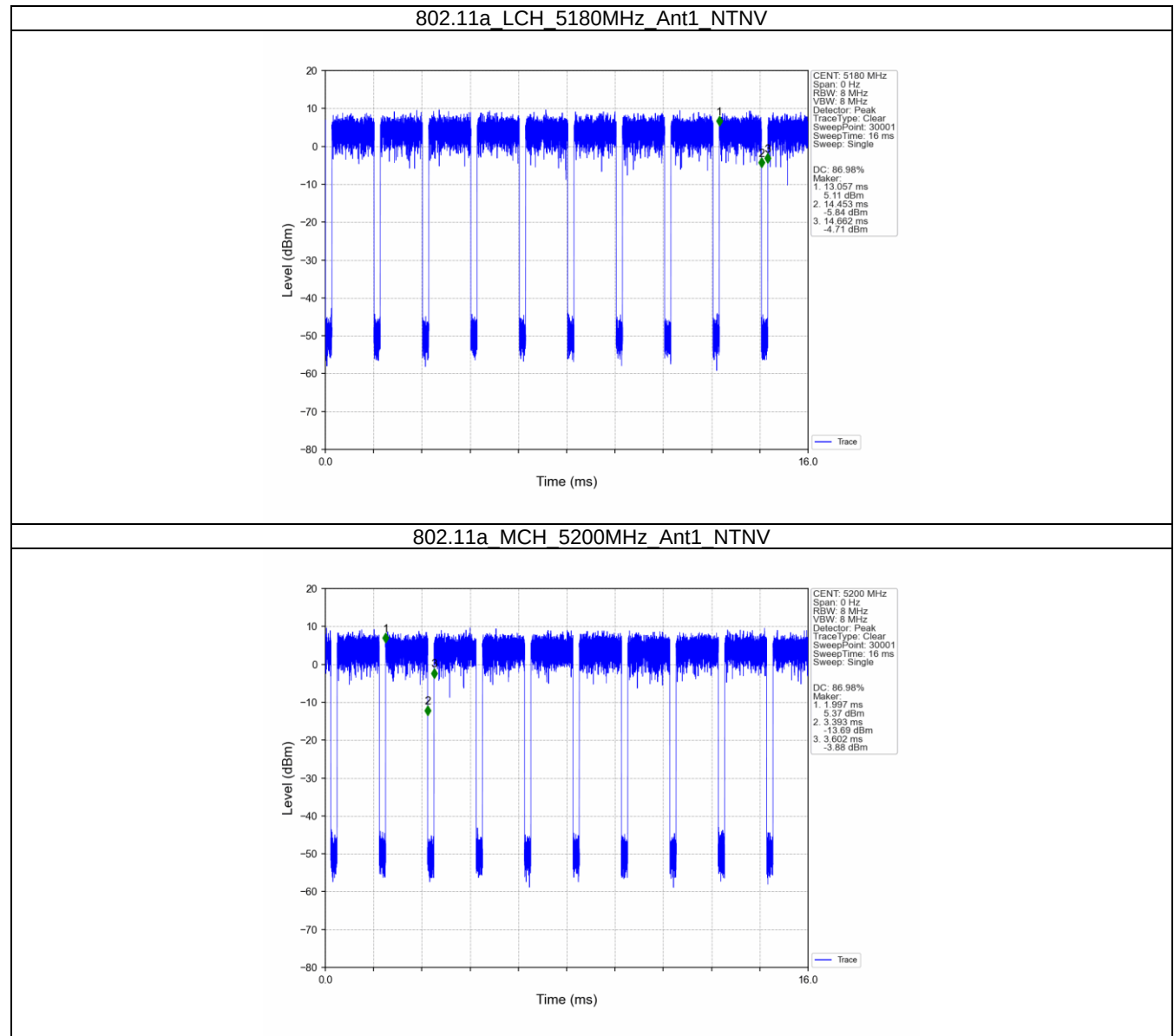
1.1.1 Ant1

Ant1									
Mode	Tx Type	Frequency (MHz)	RU	RU Pos	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11a	SISO	5180	/	/	1.396	1.605	86.98	0.61	0.06
		5200	/	/	1.396	1.605	86.98	0.61	0.03
		5240	/	/	1.396	1.606	86.92	0.61	0.06
802.11n (HT20)	MIMO	5180	/	/	1.309	1.517	86.29	0.64	0.03
		5200	/	/	1.311	1.517	86.42	0.63	0.00
		5240	/	/	1.310	1.520	86.18	0.65	0.06
802.11n (HT40)	MIMO	5190	/	/	0.648	0.857	75.61	1.21	0.06
		5230	/	/	0.648	0.857	75.61	1.21	0.04
802.11ac (VHT20)	MIMO	5180	/	/	0.482	0.690	69.86	1.56	0.07
		5200	/	/	0.481	0.689	69.81	1.56	0.01
		5240	/	/	0.480	0.690	69.57	1.58	0.07
802.11ac (VHT40)	MIMO	5190	/	/	0.267	0.469	56.93	2.45	0.08
		5230	/	/	0.267	0.469	56.93	2.45	0.12
802.11ac (VHT80)	MIMO	5210	/	/	0.149	0.357	41.74	3.79	0.04
802.11ax (HEW20)	MIMO	5180	SU	/	0.429	0.638	67.24	1.72	0.03
		5200	SU	/	0.429	0.638	67.24	1.72	0.08
		5240	SU	/	0.429	0.638	67.24	1.72	0.03
802.11ax (HEW40)	MIMO	5190	SU	/	0.276	0.479	57.62	2.39	0.12
		5230	SU	/	0.269	0.479	56.16	2.51	0.10
802.11ax (HEW80)	MIMO	5210	SU	/	0.185	0.394	46.95	3.28	0.03

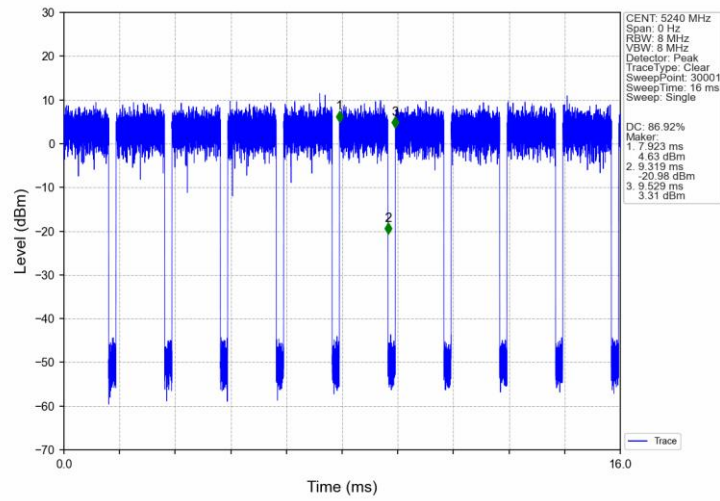
Note: All antennas were tested and recorded the worst result of Ant 1.

1.2 Test Graph

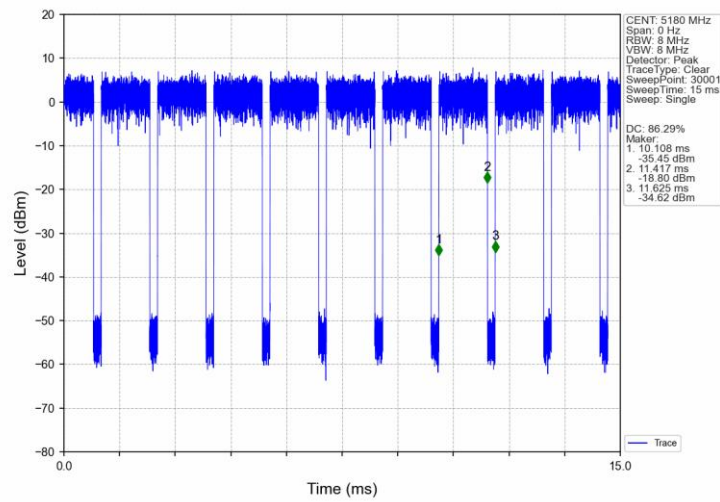
1.2.1 Ant1



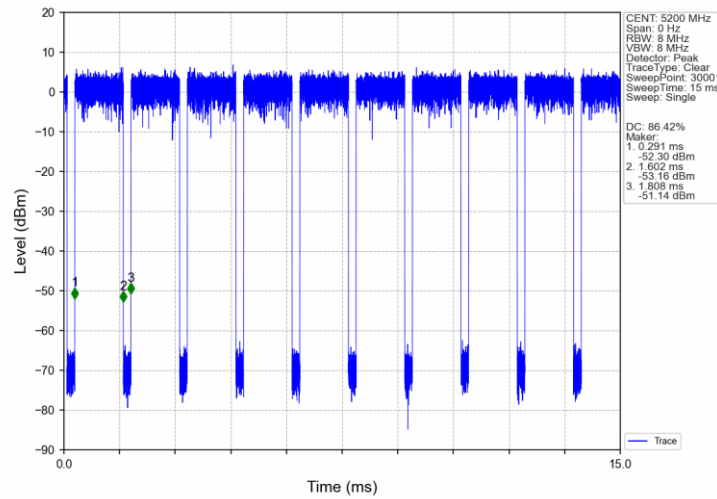
802.11a_HCH_5240MHz_Ant1_NTNV



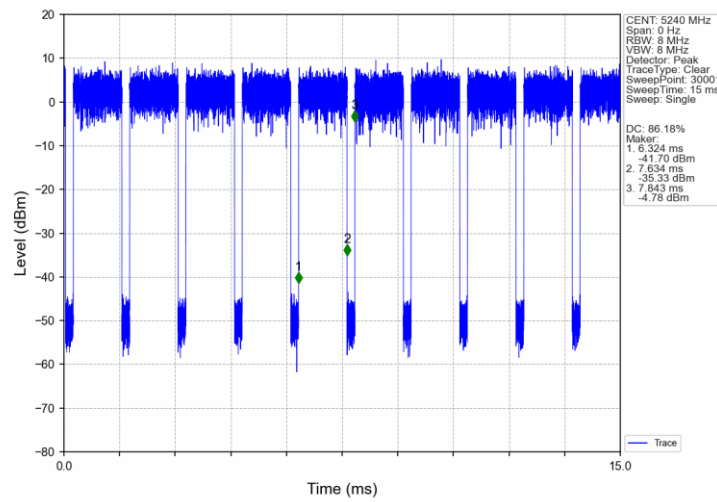
802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



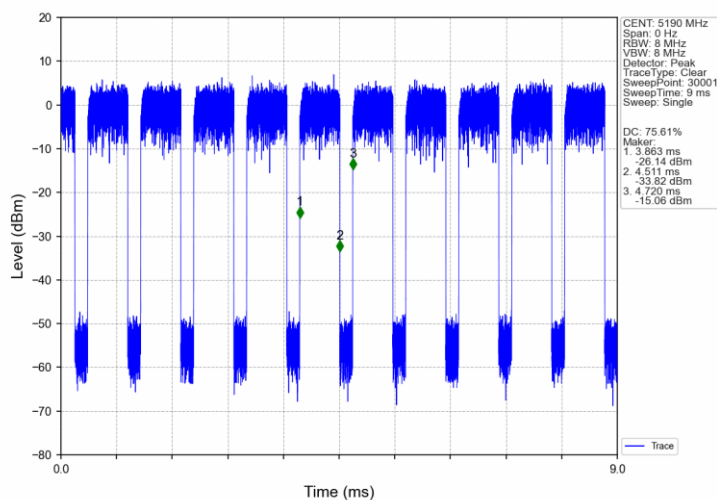
802.11n(HT20)_MCH_5200MHz_Ant1_NTNV



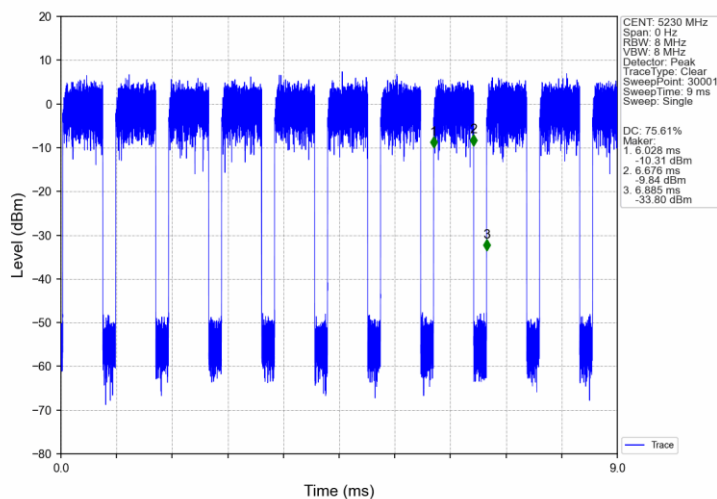
802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



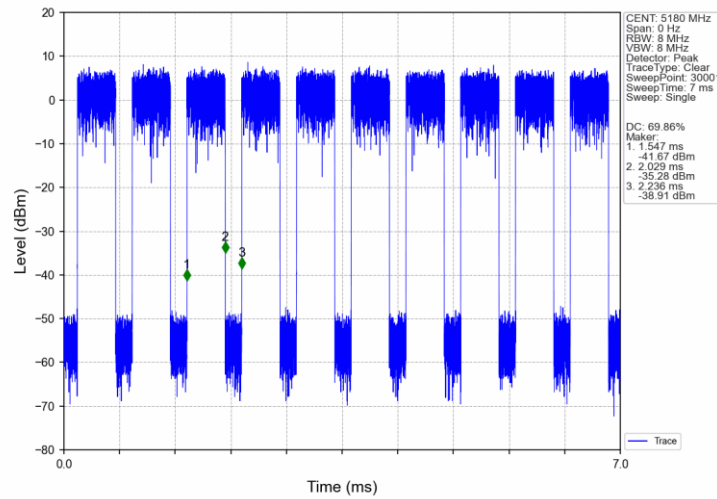
802.11n(HT40)_LCH_5190MHz_Ant1_NTNV



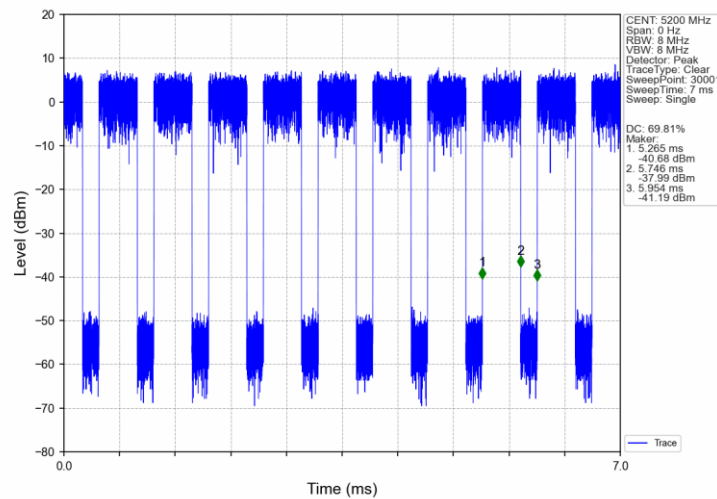
802.11n(HT40)_HCH_5230MHz_Ant1_NTNV



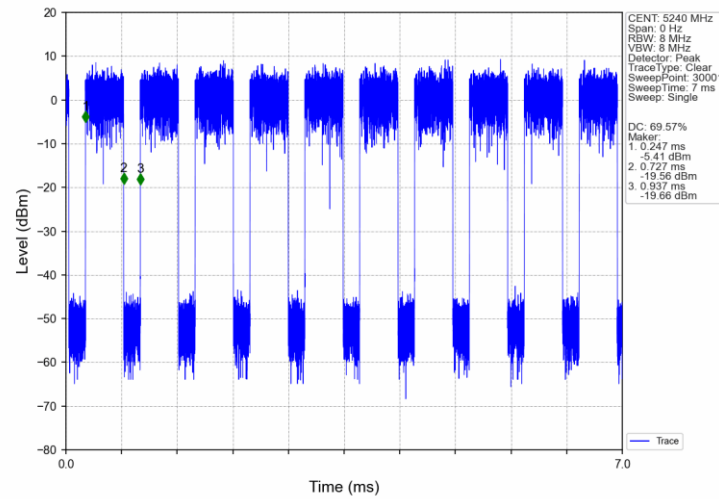
802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



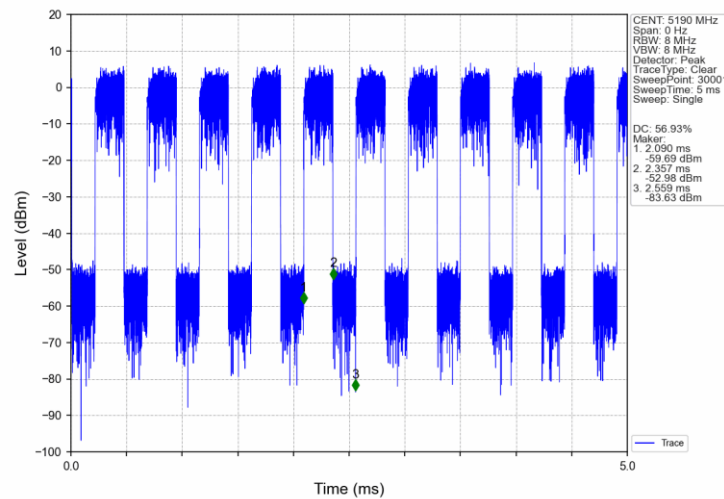
802.11ac(VHT20)_MCH_5200MHz_Ant1_NTNV



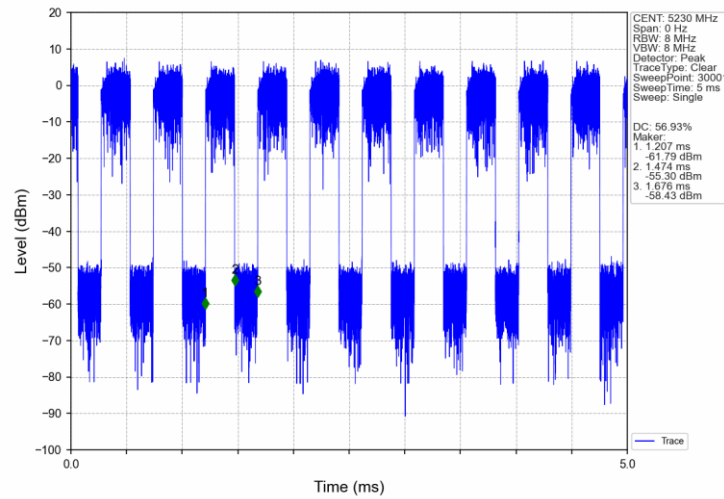
802.11ac(VHT20)_HCH_5240MHz_Ant1_NTNV



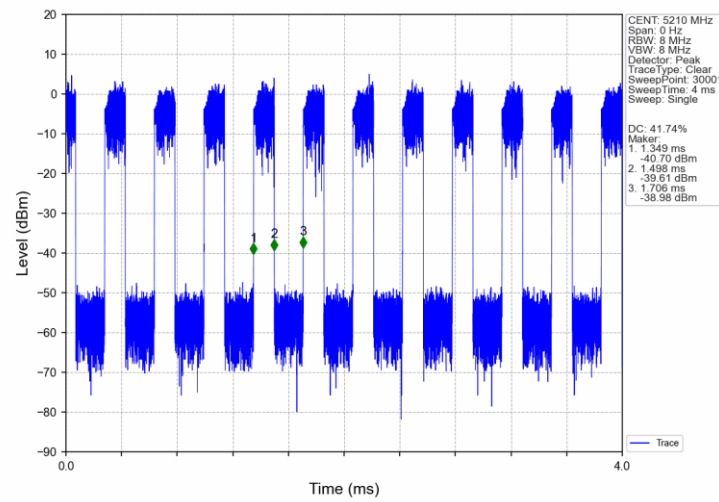
802.11ac(VHT40)_LCH_5190MHz_Ant1_NTNV



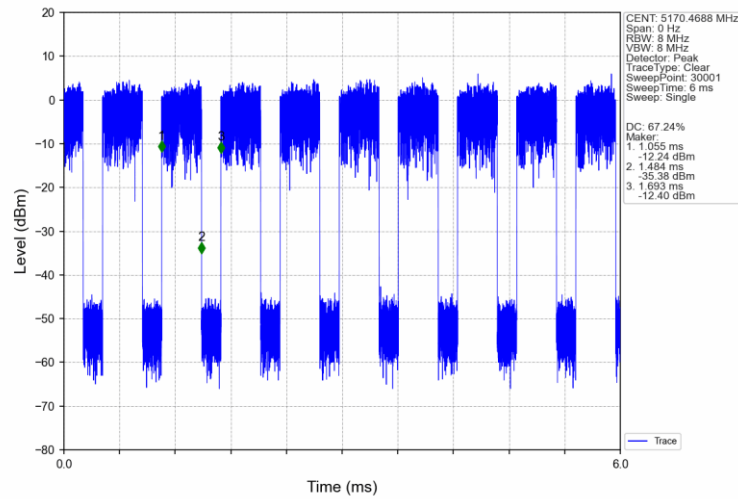
802.11ac(VHT40)_HCH_5230MHz_Ant1_NTNV



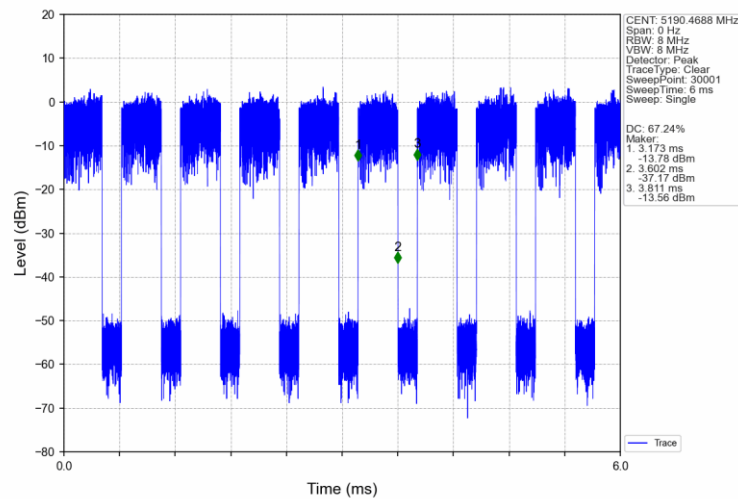
802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



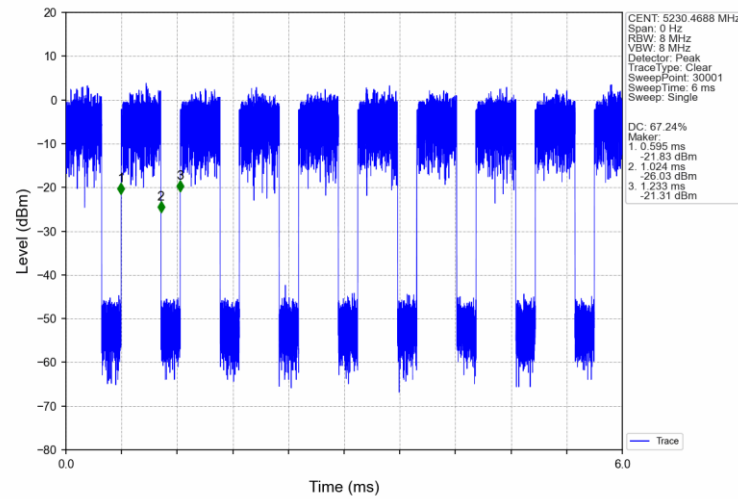
802.11ax(HEW20)_LCH_5180MHz_SU_/_Ant1_NTNV



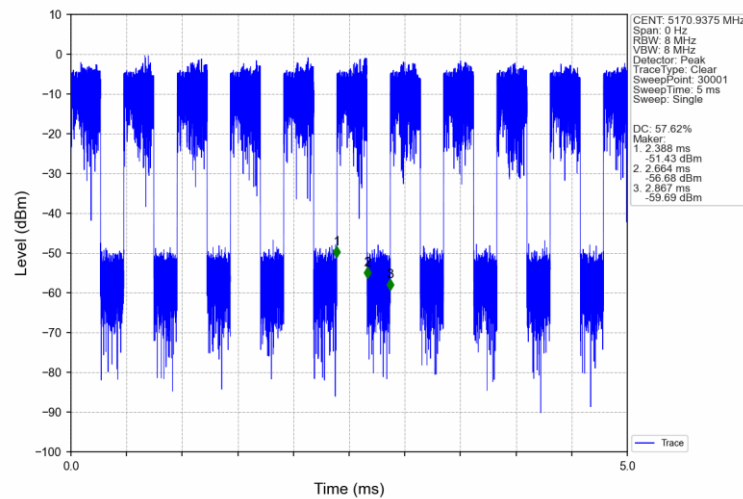
802.11ax(HEW20)_MCH_5200MHz_SU_/_Ant1_NTNV



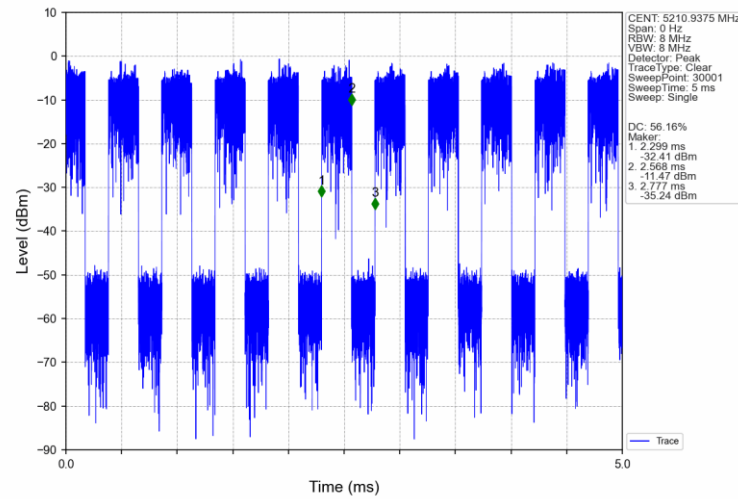
802.11ax(HEW20)_HCH_5240MHz_SU_/_Ant1_NTNV



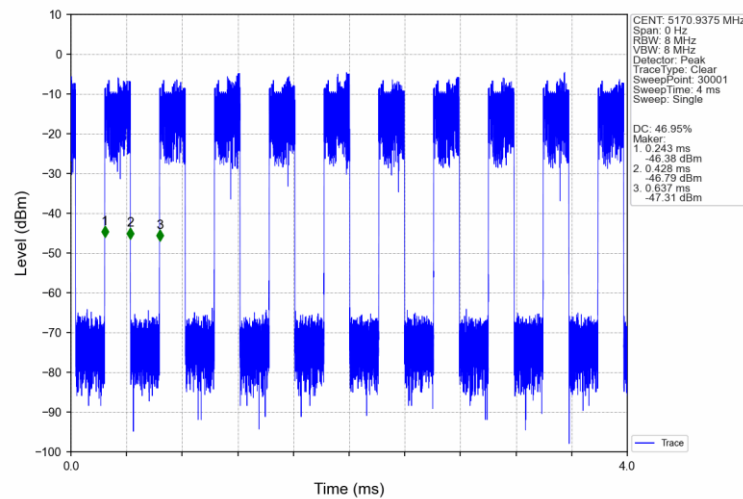
802.11ax(HEW40)_LCH_5190MHz_SU_/_Ant1_NTNV



802.11ax(HEW40)_HCH_5230MHz_SU_/_Ant1_NTNV



802.11ax(HEW80)_MCH_5210MHz_SU_/_Ant1_NTNV



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	
802.11a	SISO	5180	/	/	1	17.044	/	Pass
		5200	/	/	1	17.139	/	Pass
		5240	/	/	1	16.987	/	Pass
802.11n (HT20)	MIMO	5180	/	/	1	18.139	/	Pass
		5200	/	/	1	18.234	/	Pass
		5240	/	/	1	17.884	/	Pass
802.11n (HT40)	MIMO	5190	/	/	1	36.108	/	Pass
		5230	/	/	1	35.916	/	Pass
802.11ac (VHT20)	MIMO	5180	/	/	1	18.203	/	Pass
		5200	/	/	1	18.137	/	Pass
		5240	/	/	1	17.935	/	Pass
802.11ac (VHT40)	MIMO	5190	/	/	1	36.320	/	Pass
		5230	/	/	1	35.954	/	Pass
802.11ac (VHT80)	MIMO	5210	/	/	1	74.996	/	Pass
802.11ax (HEW20)	MIMO	5180	SU	/	1	19.056	/	Pass
		5200	SU	/	1	19.103	/	Pass
		5240	SU	/	1	18.812	/	Pass
802.11ax (HEW40)	MIMO	5190	SU	/	1	37.512	/	Pass
		5230	SU	/	1	37.398	/	Pass
802.11ax (HEW80)	MIMO	5210	SU	/	1	76.318	/	Pass

Note: All antennas were tested and recorded the worst result of Ant 1.

2.1.2 26dB BW

Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	26dB Bandwidth (MHz)		Verdict
						Result	Limit	
802.11a	SISO	5180	/	/	1	23.994	/	Pass
		5200	/	/	1	24.651	/	Pass
		5240	/	/	1	20.121	/	Pass
802.11n (HT20)	MIMO	5180	/	/	1	25.810	/	Pass
		5200	/	/	1	24.352	/	Pass
		5240	/	/	1	20.390	/	Pass
802.11n (HT40)	MIMO	5190	/	/	1	41.326	/	Pass
		5230	/	/	1	40.453	/	Pass
802.11ac (VHT20)	MIMO	5180	/	/	1	24.364	/	Pass
		5200	/	/	1	24.587	/	Pass
		5240	/	/	1	20.478	/	Pass
802.11ac (VHT40)	MIMO	5190	/	/	1	47.252	/	Pass
		5230	/	/	1	40.252	/	Pass
802.11ac (VHT80)	MIMO	5210	/	/	1	80.153	/	Pass
802.11ax (HEW20)	MIMO	5180	SU	/	1	21.773	/	Pass
		5200	SU	/	1	21.811	/	Pass

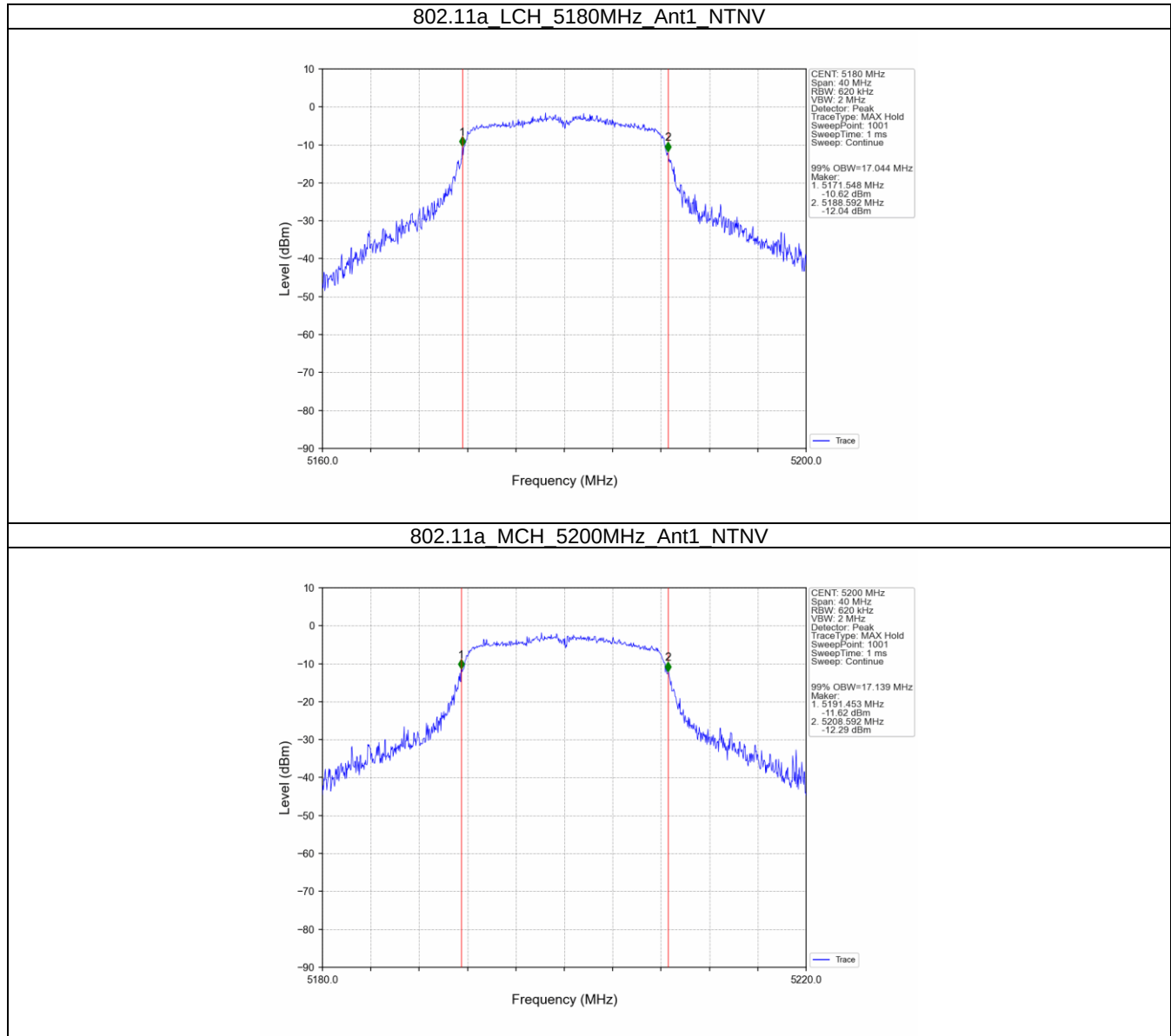


		5240	SU	/	1	20.059	/	Pass
802.11ax (HEW40)	MIMO	5190	SU	/	1	39.829	/	Pass
		5230	SU	/	1	39.855	/	Pass
802.11ax (HEW80)	MIMO	5210	SU	/	1	85.539	/	Pass

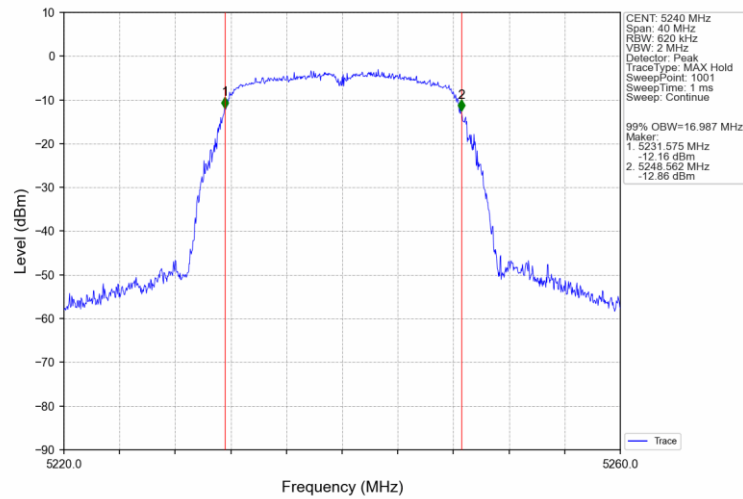
Note: All antennas were tested and recorded worst result of Ant 1.

2.2 Test Graph

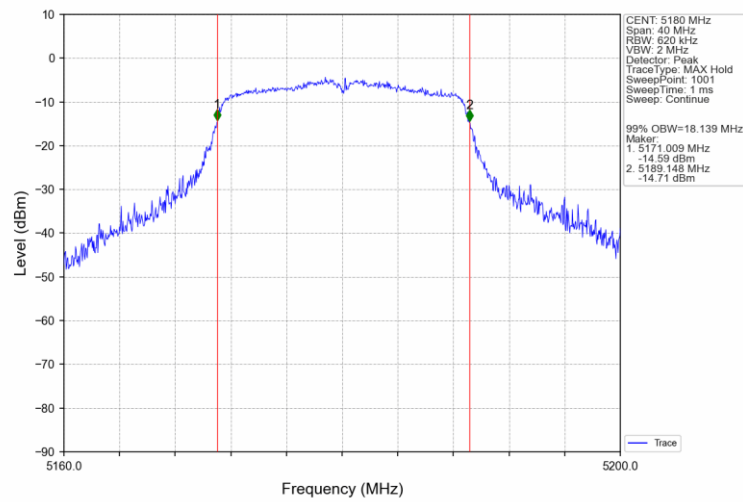
2.2.1 OBW



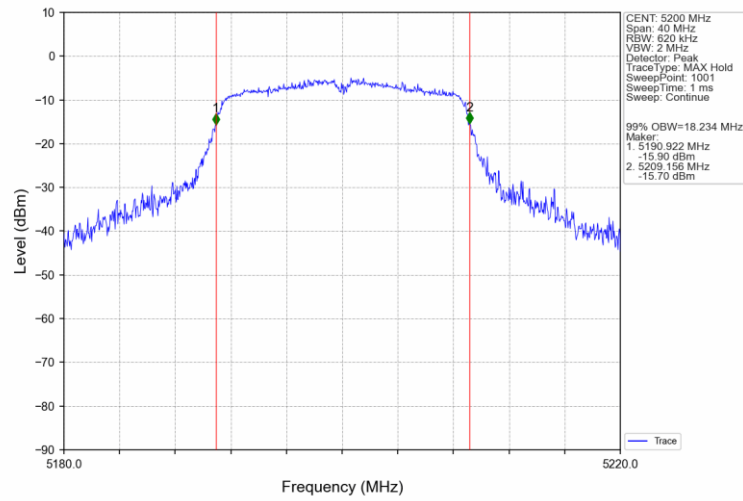
802.11a_HCH_5240MHz_Ant1_NTNV



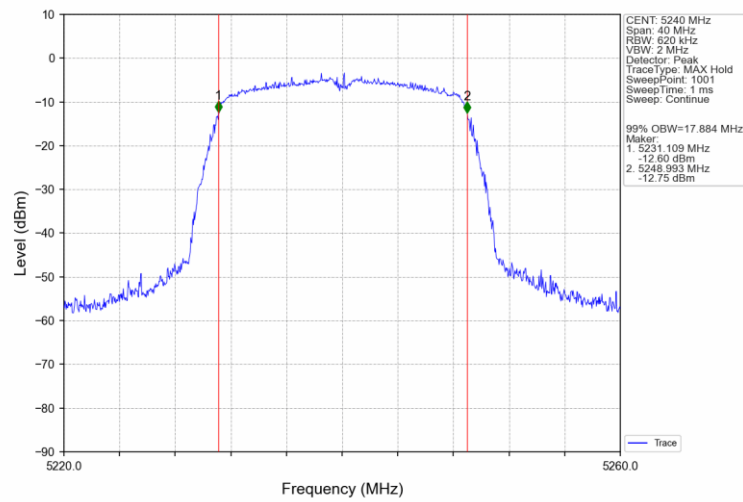
802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



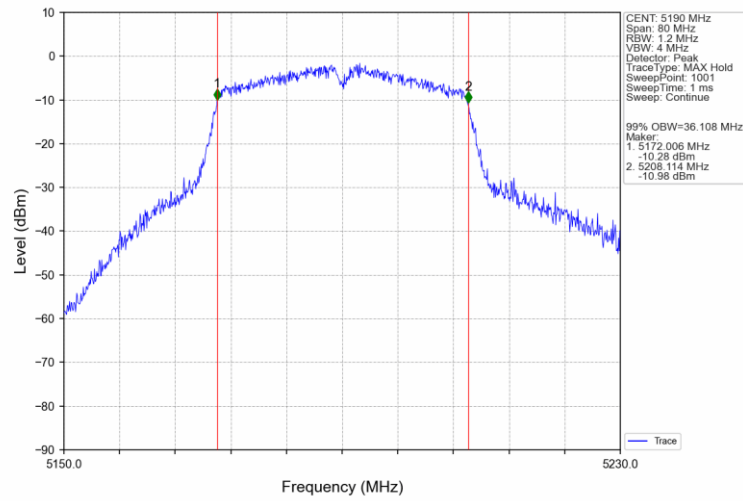
802.11n(HT20)_MCH_5200MHz_Ant1_NTNV



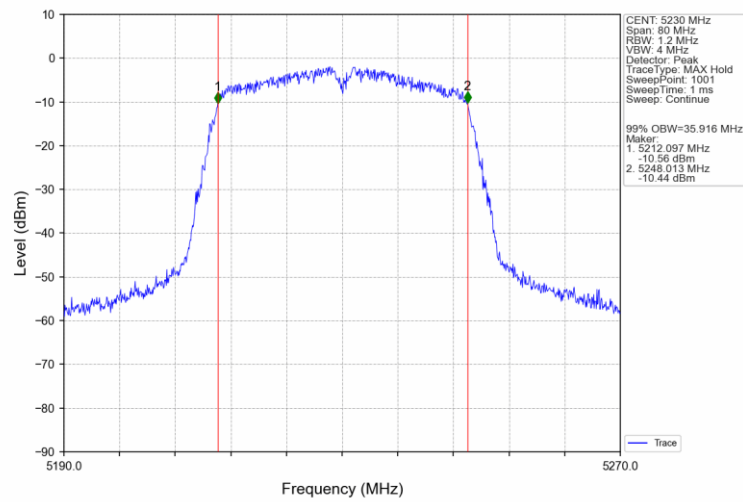
802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



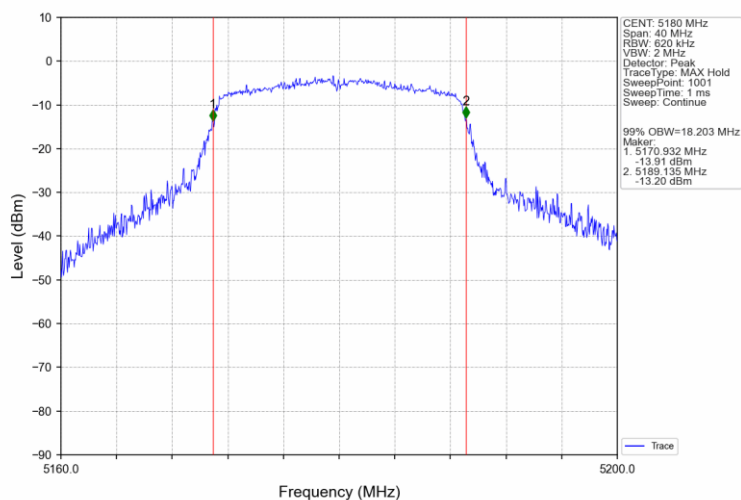
802.11n(HT40)_LCH_5190MHz_Ant1_NTNV



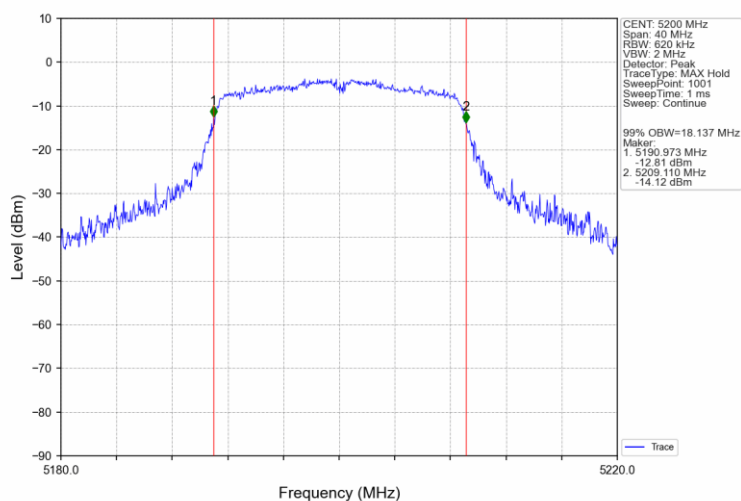
802.11n(HT40)_HCH_5230MHz_Ant1_NTNV



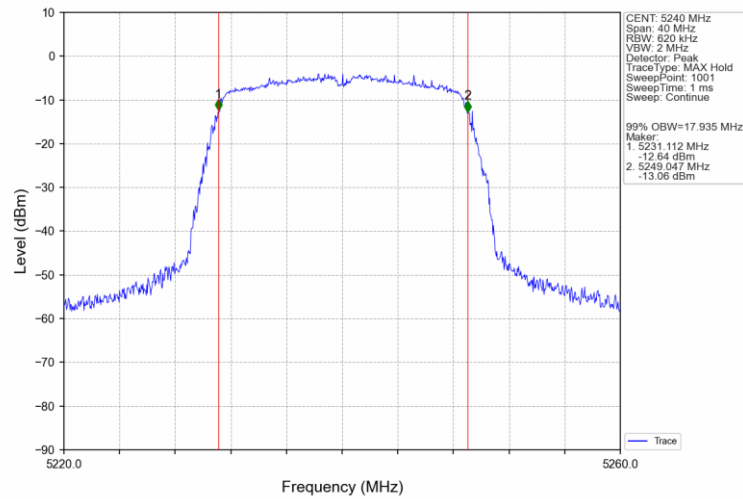
802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



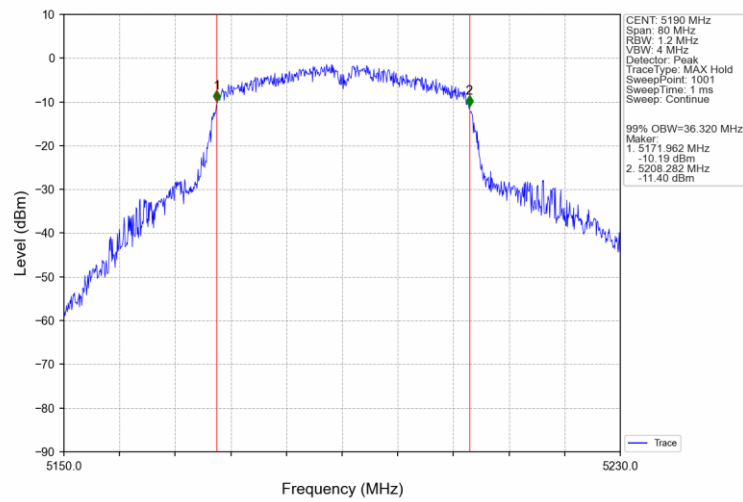
802.11ac(VHT20)_MCH_5200MHz_Ant1_NTNV



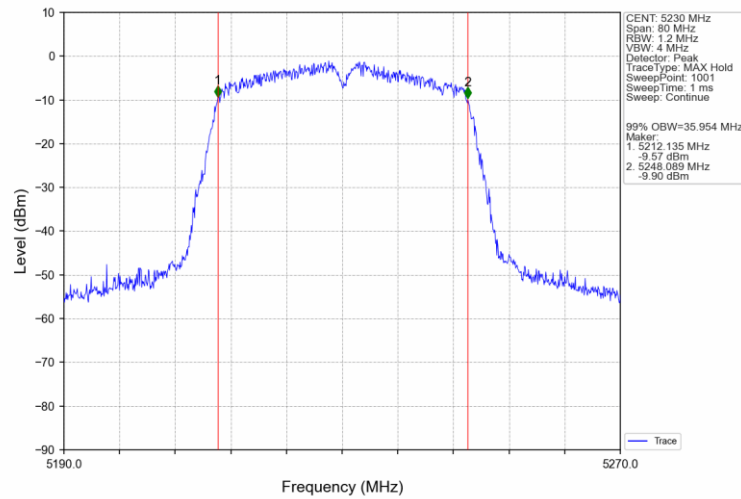
802.11ac(VHT20)_HCH_5240MHz_Ant1_NTNV



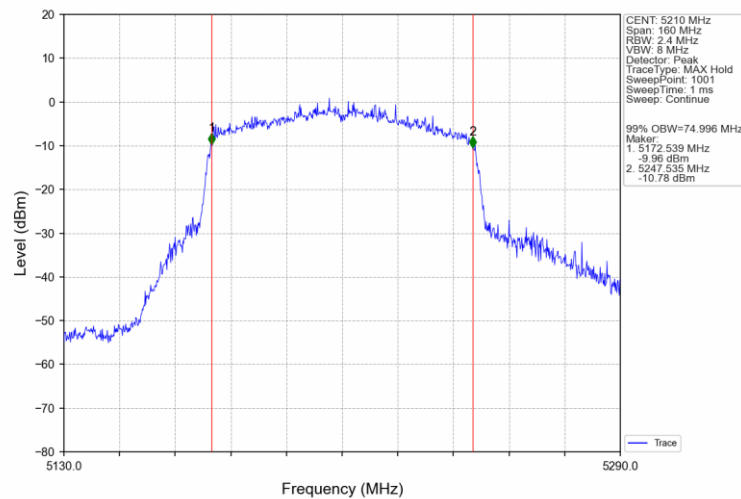
802.11ac(VHT40)_LCH_5190MHz_Ant1_NTNV



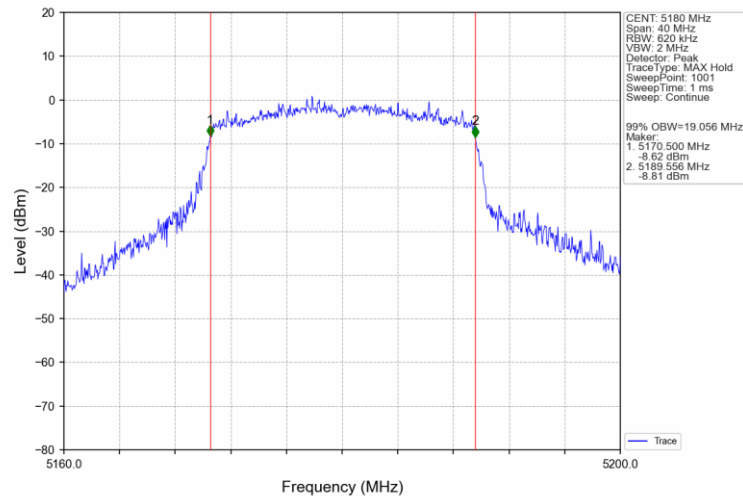
802.11ac(VHT40)_HCH_5230MHz_Ant1_NTNV



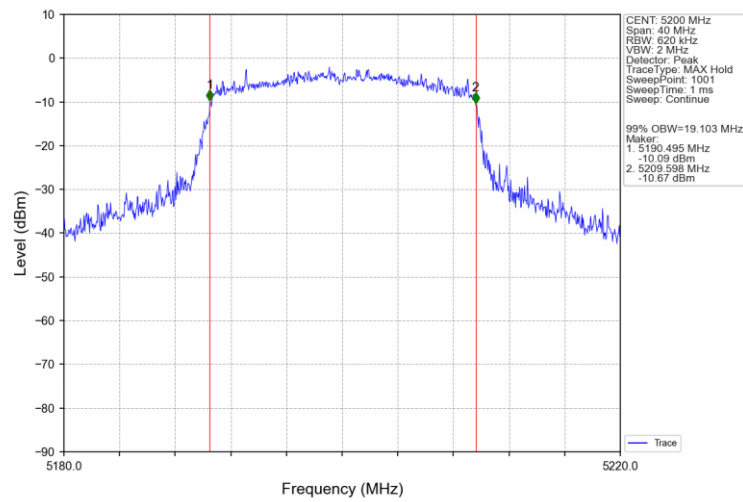
802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



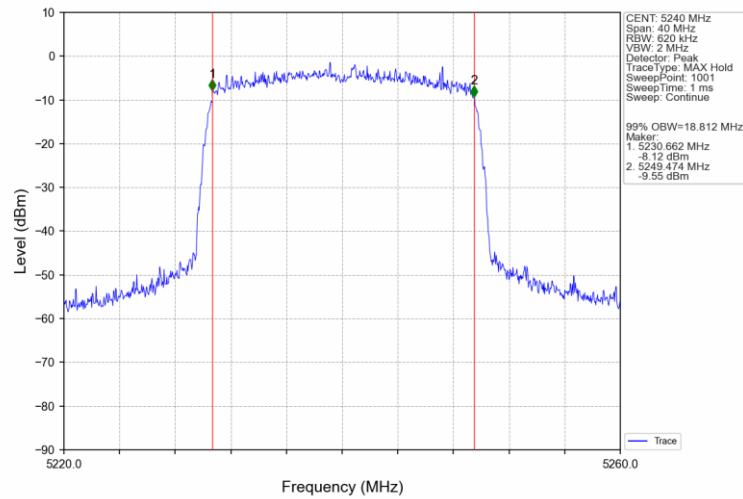
802.11ax(HEW20)_LCH_5180MHz_SU_/_Ant1_NTNV



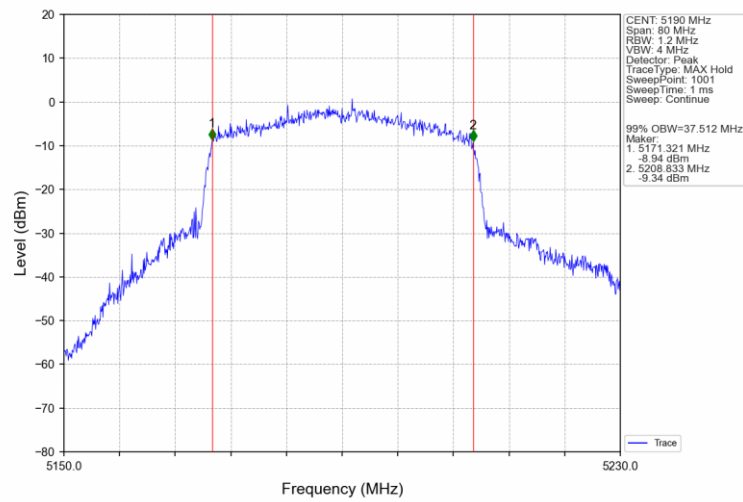
802.11ax(HEW20)_MCH_5200MHz_SU_/_Ant1_NTNV



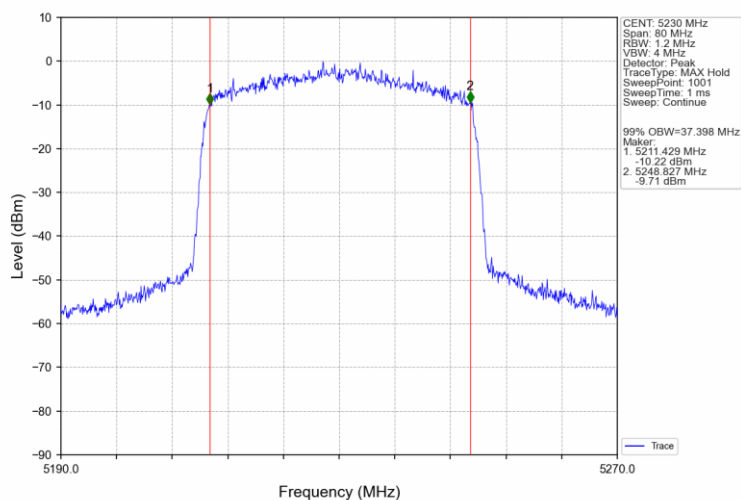
802.11ax(HEW20)_HCH_5240MHz_SU_/_Ant1_NTNV



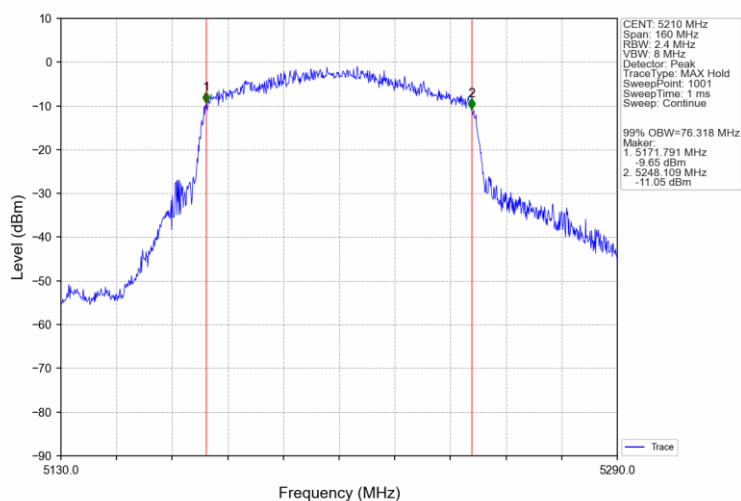
802.11ax(HEW40)_LCH_5190MHz_SU_/_Ant1_NTNV



802.11ax(HEW40)_HCH_5230MHz_SU_ / _Ant1_NTNV

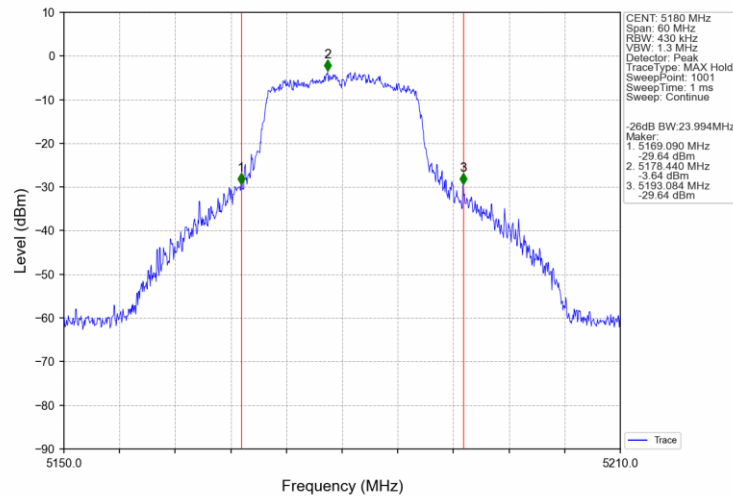


802.11ax(HEW80)_MCH_5210MHz_SU_ / _Ant1_NTNV

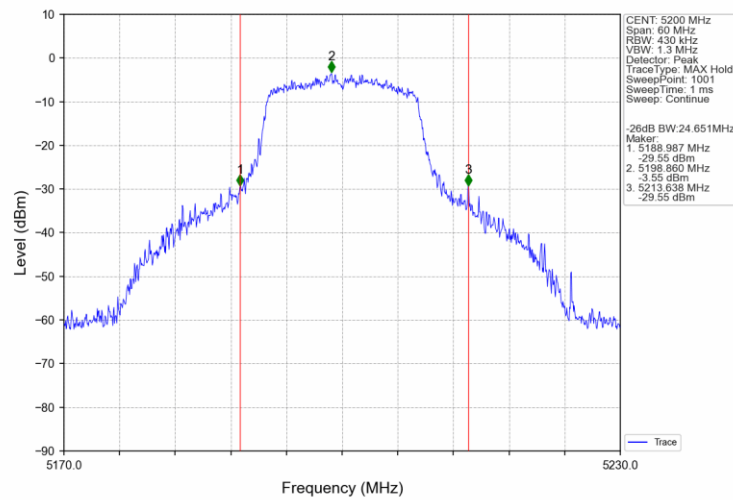


2.2.2 26dB BW

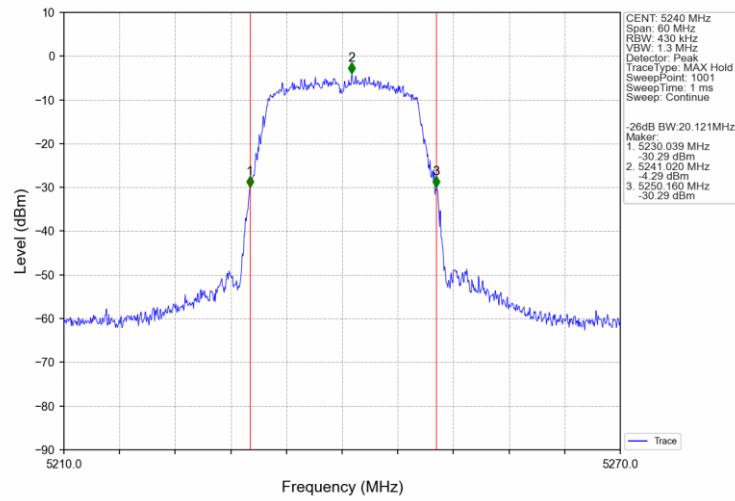
802.11a_LCH_5180MHz_Ant1_NTNV



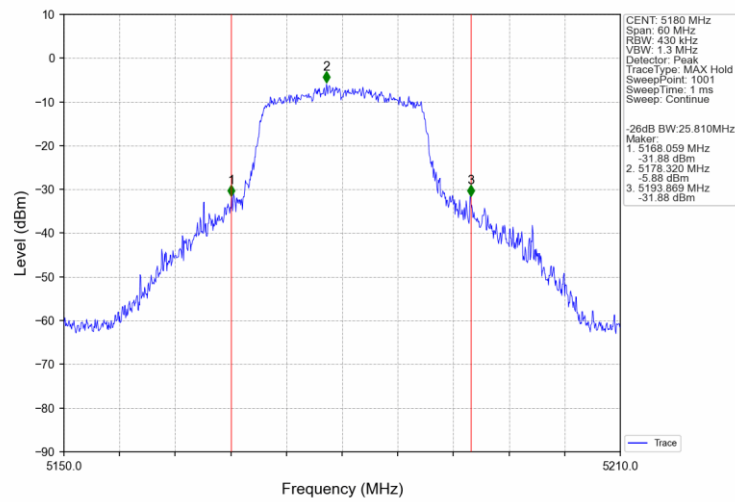
802.11a_MCH_5200MHz_Ant1_NTNV



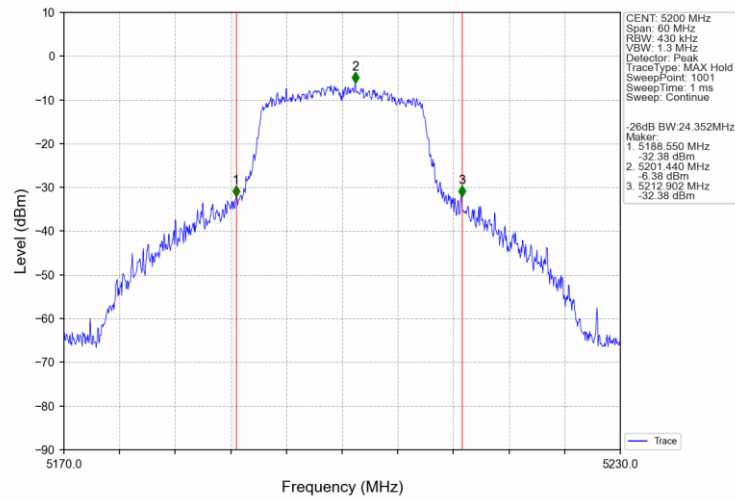
802.11a_HCH_5240MHz_Ant1_NTNV



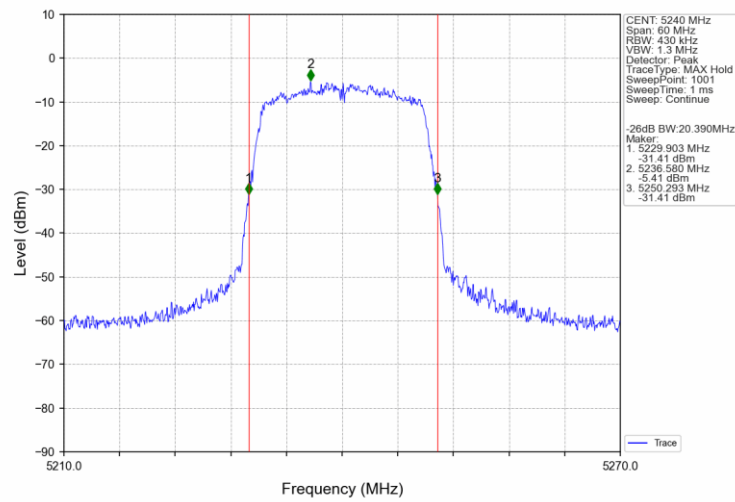
802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



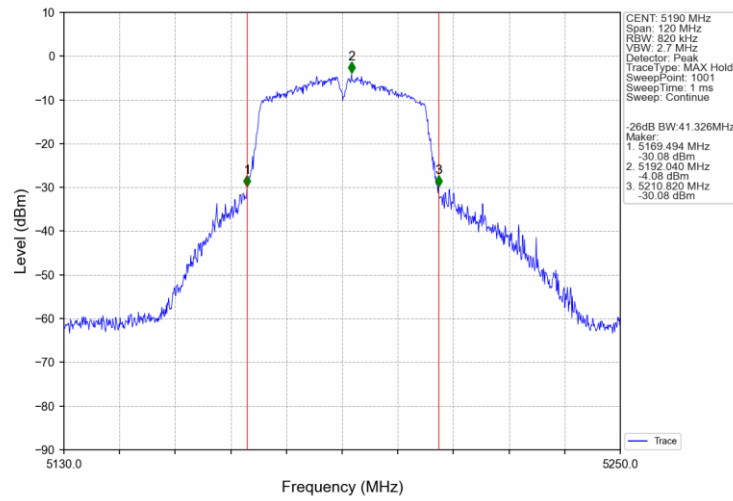
802.11n(HT20)_MCH_5200MHz_Ant1_NTNV



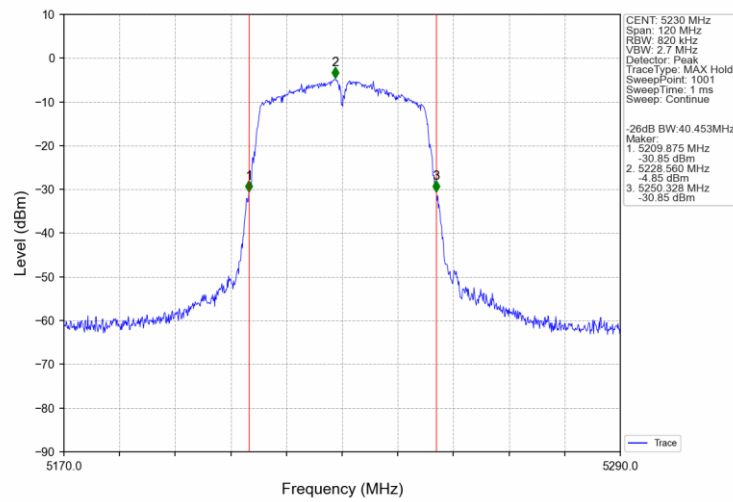
802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



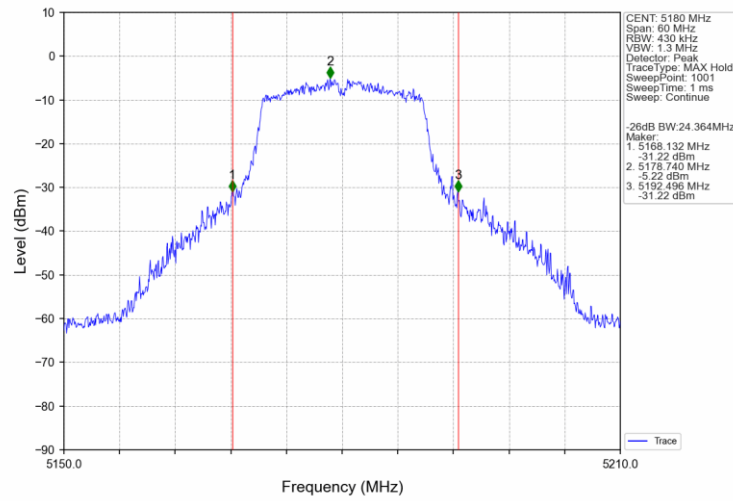
802.11n(HT40)_LCH_5190MHz_Ant1_NTNV



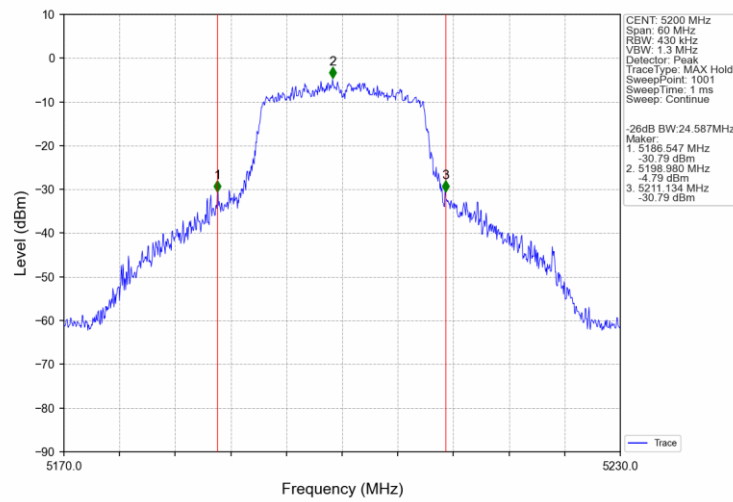
802.11n(HT40)_HCH_5230MHz_Ant1_NTNV



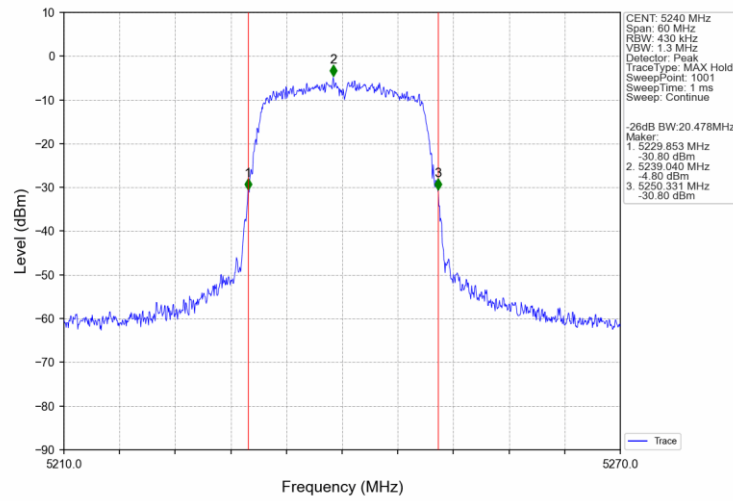
802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



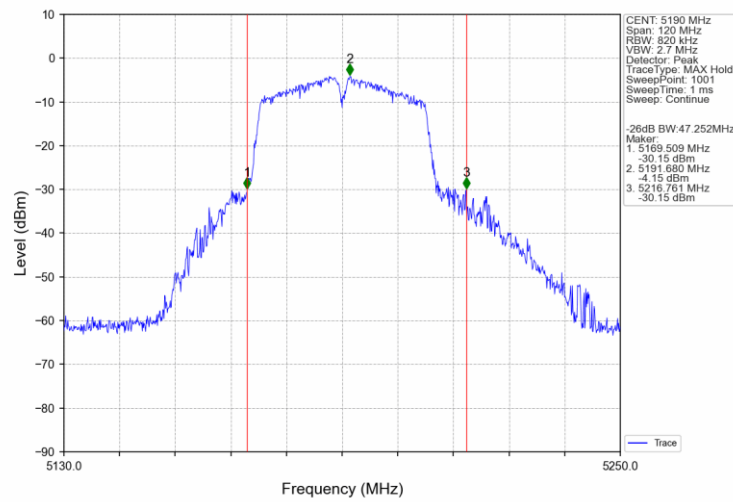
802.11ac(VHT20)_MCH_5200MHz_Ant1_NTNV



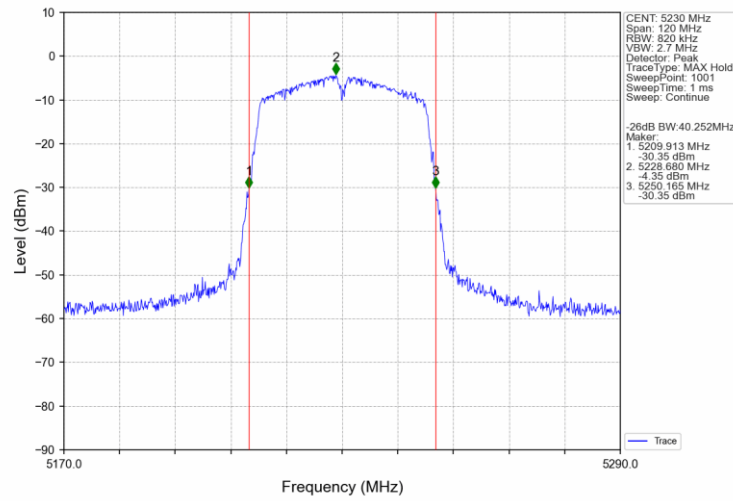
802.11ac(VHT20)_HCH_5240MHz_Ant1_NTNV



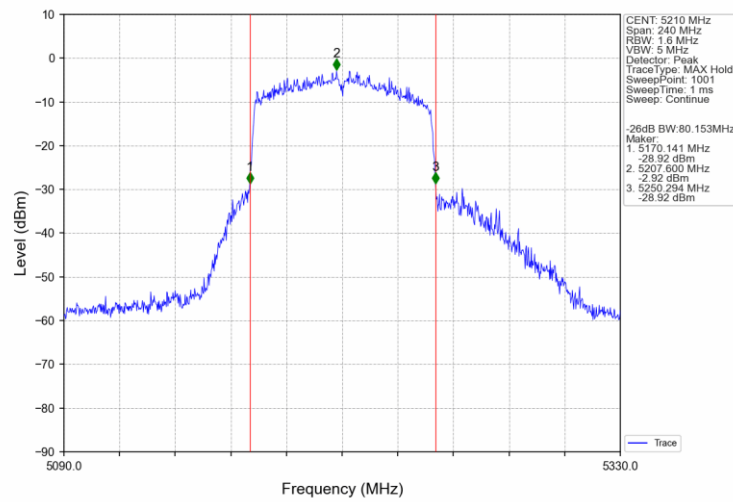
802.11ac(VHT40)_LCH_5190MHz_Ant1_NTNV



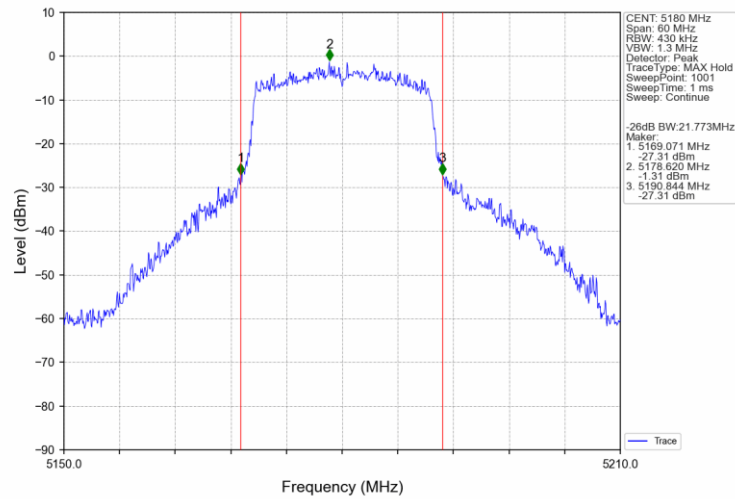
802.11ac(VHT40)_HCH_5230MHz_Ant1_NTNV



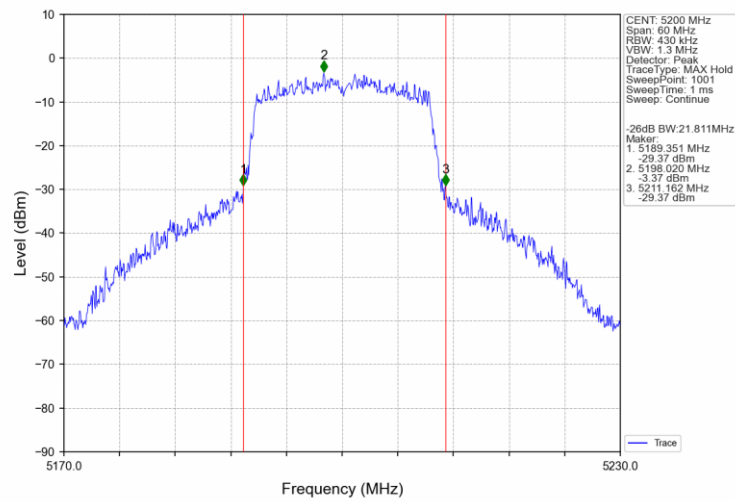
802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



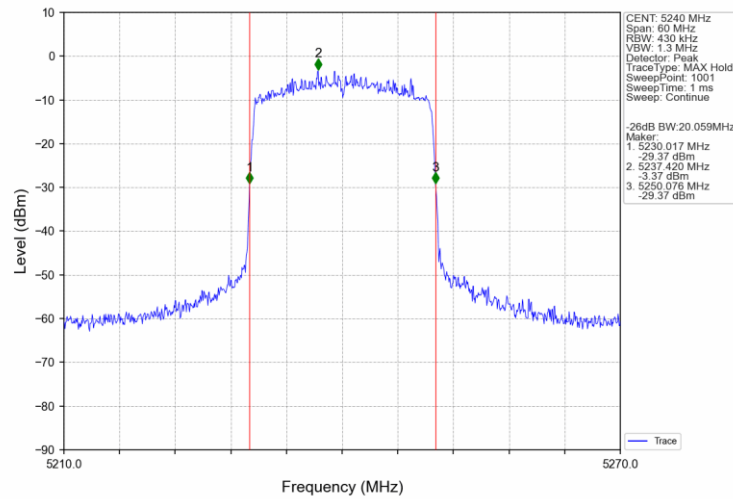
802.11ax(HEW20)_LCH_5180MHz_SU_/_Ant1_NTNV



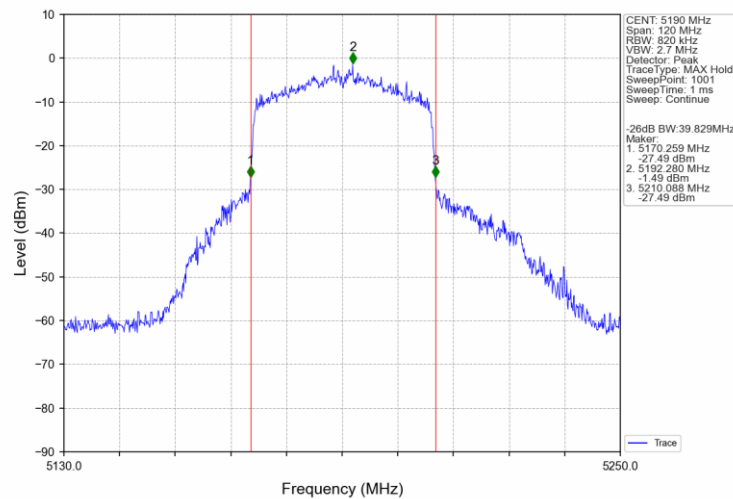
802.11ax(HEW20)_MCH_5200MHz_SU_/_Ant1_NTNV



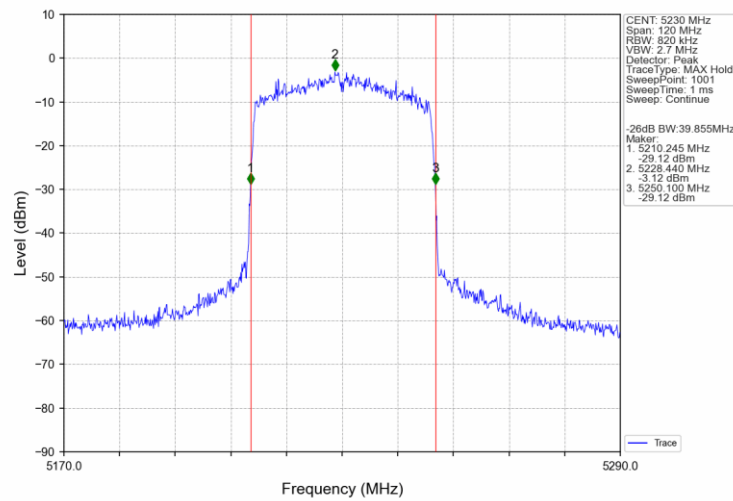
802.11ax(HEW20)_HCH_5240MHz_SU / _Ant1_NTNV



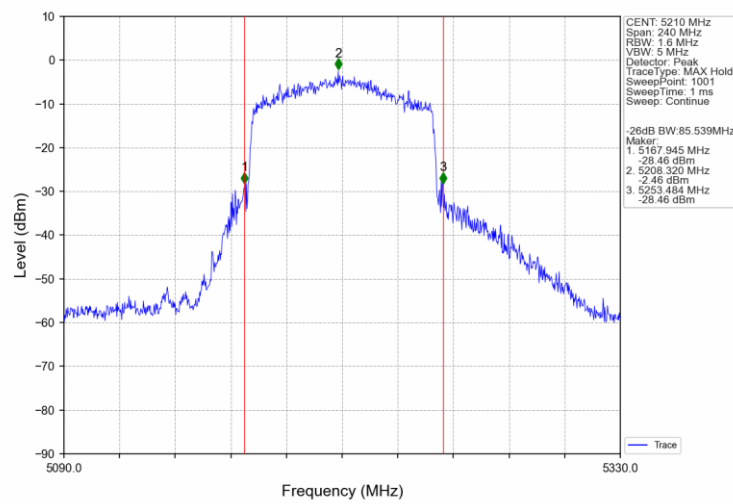
802.11ax(HEW40)_LCH_5190MHz_SU / _Ant1_NTNV



802.11ax(HEW40)_HCH_5230MHz_SU_/_Ant1_NTNV



802.11ax(HEW80)_MCH_5210MHz_SU_/_Ant1_NTNV





3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

Mode	TX Type	Frequency (MHz)	RU	RU Pos	Maximum Average Conducted Output Power (dBm)					Verdict
					ANT1	ANT2	ANT3	MIMO	Limit	
802.11a	SISO	5180	/	/	3.19	3.85	3.08	/	<=29.17	Pass
		5200	/	/	3.15	3.95	2.71	/	<=29.17	Pass
		5240	/	/	2.41	3.58	2.71	/	<=29.17	Pass
802.11n (HT20)	MIMO	5180	/	/	0.94	1.94	0.44	5.92	<=24.4	Pass
		5200	/	/	0.55	1.54	0.19	5.57	<=24.4	Pass
		5240	/	/	1.42	2.86	1.74	6.82	<=24.4	Pass
802.11n (HT40)	MIMO	5190	/	/	1.71	2.67	1.50	6.76	<=24.4	Pass
		5230	/	/	1.72	2.83	1.70	6.89	<=24.4	Pass
802.11ac (VHT20)	MIMO	5180	/	/	1.97	3.03	1.82	7.08	<=24.4	Pass
		5200	/	/	1.93	2.61	1.52	6.81	<=24.4	Pass
		5240	/	/	1.88	3.14	2.09	7.18	<=24.4	Pass
802.11ac (VHT40)	MIMO	5190	/	/	2.25	2.94	1.83	7.14	<=24.4	Pass
		5230	/	/	2.29	3.42	2.58	7.56	<=24.4	Pass
802.11ac (VHT80)	MIMO	5210	/	/	2.77	3.83	2.80	7.93	<=24.4	Pass
802.11ax (HEW20)	MIMO	5180	SU	/	4.17	5.18	3.91	9.23	<=24.4	Pass
		5200	SU	/	2.06	2.76	1.74	6.98	<=24.4	Pass
		5240	SU	/	2.00	3.25	2.20	7.29	<=24.4	Pass
802.11ax (HEW40)	MIMO	5190	SU	/	2.27	3.16	2.19	7.33	<=24.4	Pass
		5230	SU	/	2.00	3.27	2.32	7.34	<=24.4	Pass
802.11ax (HEW80)	MIMO	5210	SU	/	1.86	2.95	1.46	6.91	<=24.4	Pass
Note1: Antenna Gain: Ant1: 6.83dBi; Ant2: 6.83dBi; Ant3: 6.83dBi; Note2: Directional Gain: 11.6dBi										

3.2 Test Graph

3.2.1 Power

