



Shenzhen CTL Testing Technology Co., Ltd.

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1. Bandwidth

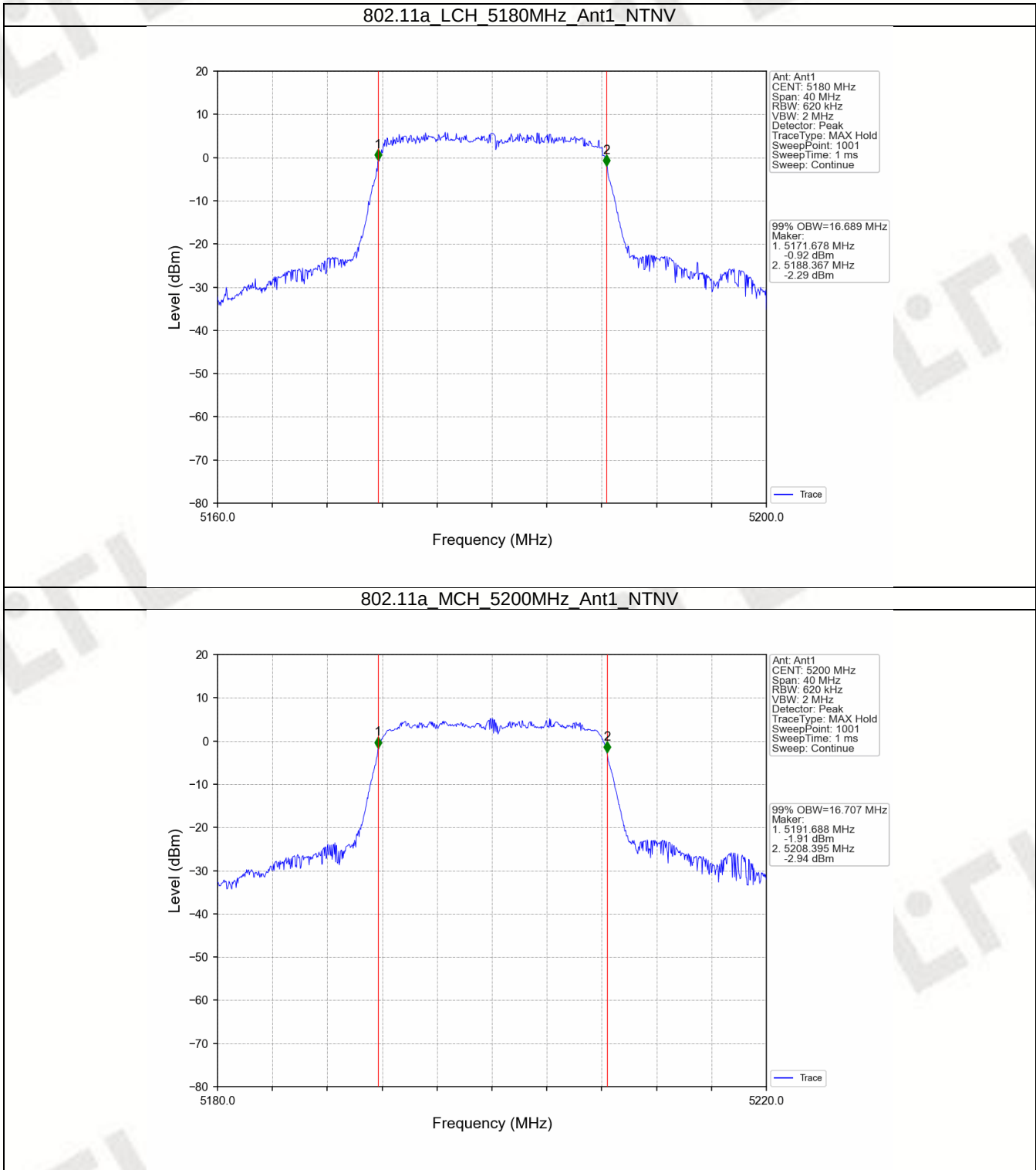
1.1 OBW

1.1.1 Test Result

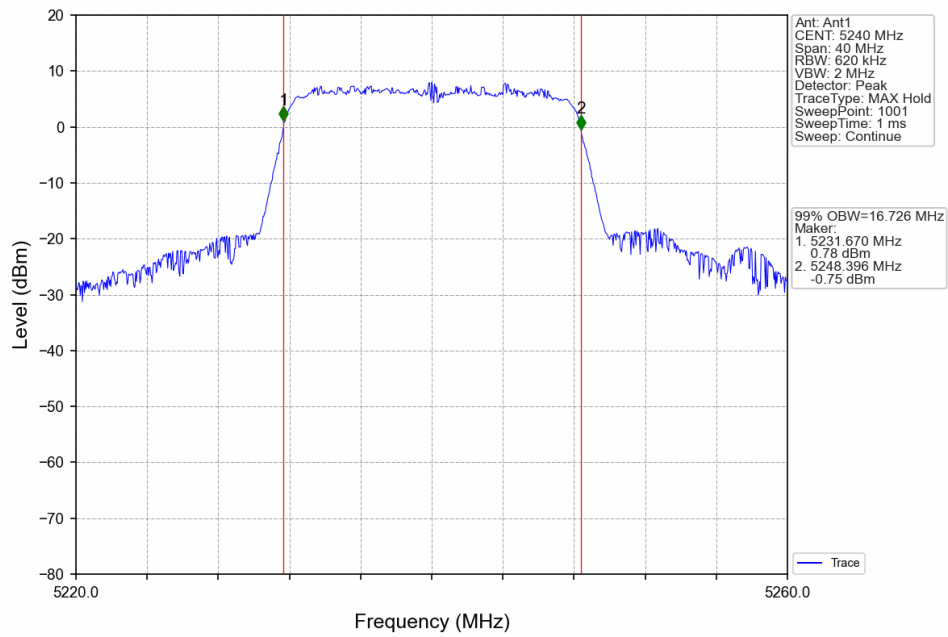
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)	Verdict
				Result	
802.11a	SISO	5180	1	16.689	Pass
		5200	1	16.707	Pass
		5240	1	16.726	Pass
802.11n (HT20)	SISO	5180	1	18.015	Pass
		5200	1	17.978	Pass
		5240	1	17.953	Pass
802.11n (HT40)	SISO	5190	1	37.084	Pass
		5230	1	37.001	Pass
802.11n (HT20)	MIMO	5180	/	18.019	Pass
		5200	/	17.942	Pass
		5240	/	17.978	Pass
802.11n (HT40)	MIMO	5190	/	36.992	Pass
		5230	/	37.160	Pass
802.11ac (VHT20)	SISO	5180	1	17.933	Pass
		5200	1	17.930	Pass
		5240	1	17.928	Pass
802.11ac (VHT40)	SISO	5190	1	36.803	Pass
		5230	1	36.741	Pass
802.11ac (VHT80)	SISO	5210	1	75.608	Pass
802.11ac (VHT20)	MIMO	5180	/	17.826	Pass
		5200	/	17.806	Pass
		5240	/	17.810	Pass
802.11ac (VHT40)	MIMO	5190	/	36.739	Pass
		5230	/	36.699	Pass
802.11ac (VHT80)	MIMO	5210	/	75.707	Pass

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)	Verdict
				Result	
802.11a	SISO	5180	2	16.676	Pass
		5200	2	16.670	Pass
		5240	2	16.672	Pass
802.11n (HT20)	SISO	5180	2	17.804	Pass
		5200	2	17.798	Pass
		5240	2	17.805	Pass
802.11n (HT40)	SISO	5190	2	36.903	Pass
		5230	2	36.701	Pass
802.11ac (VHT20)	SISO	5180	2	17.778	Pass
		5200	2	17.771	Pass
		5240	2	17.783	Pass
802.11ac (VHT40)	SISO	5190	2	36.521	Pass
		5230	2	36.369	Pass
802.11ac (VHT80)	SISO	5210	2	74.968	Pass

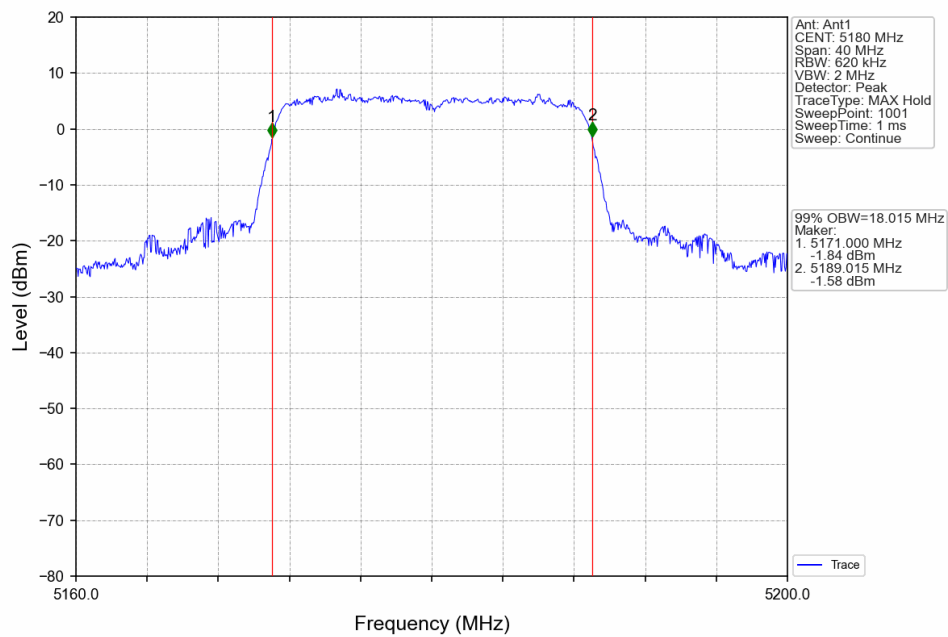
1.1.2 Test Graph



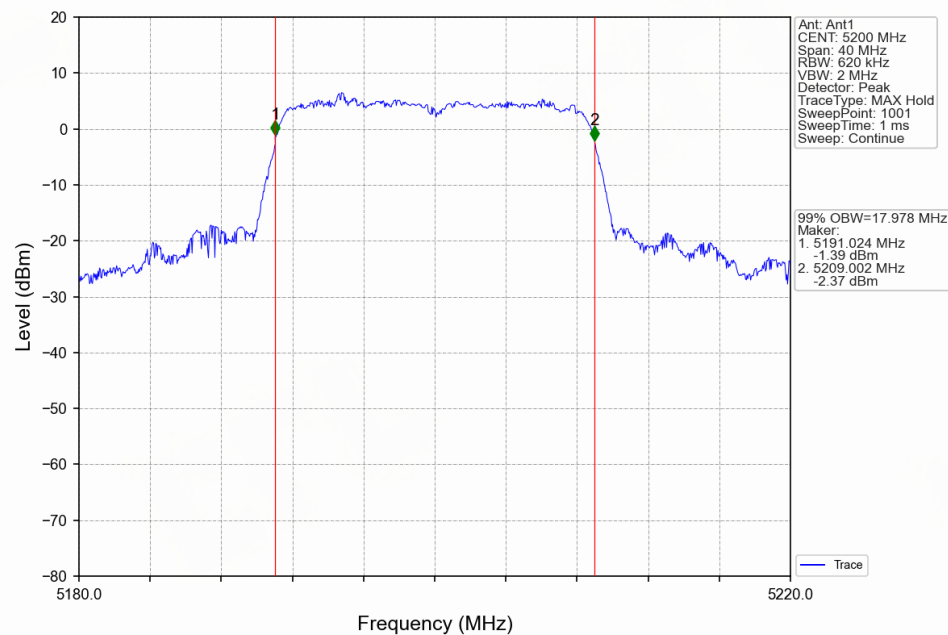
802.11a HCH 5240MHz Ant1 NTV



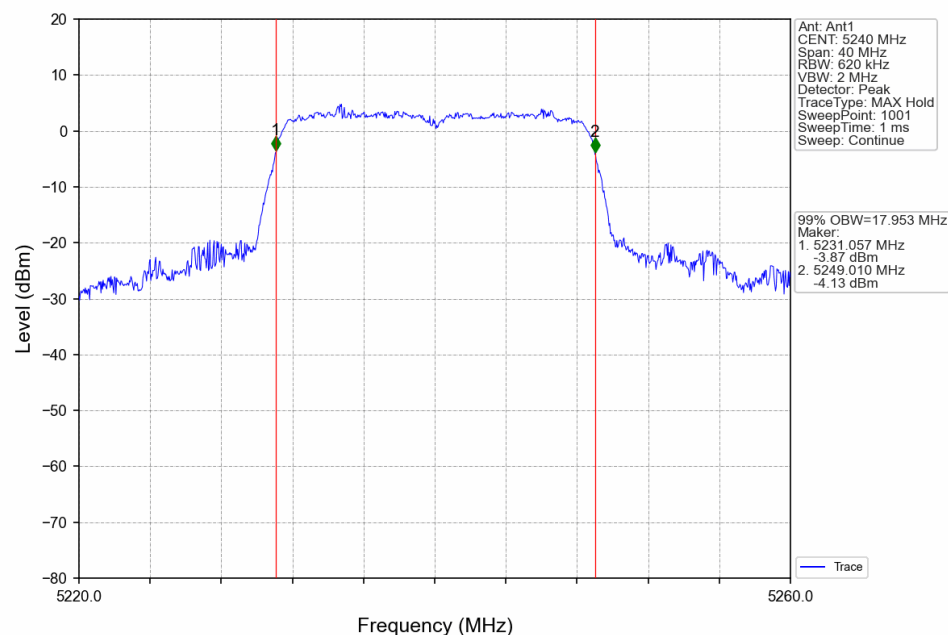
802.11n(HT20) LCH 5180MHz Ant1 NTV



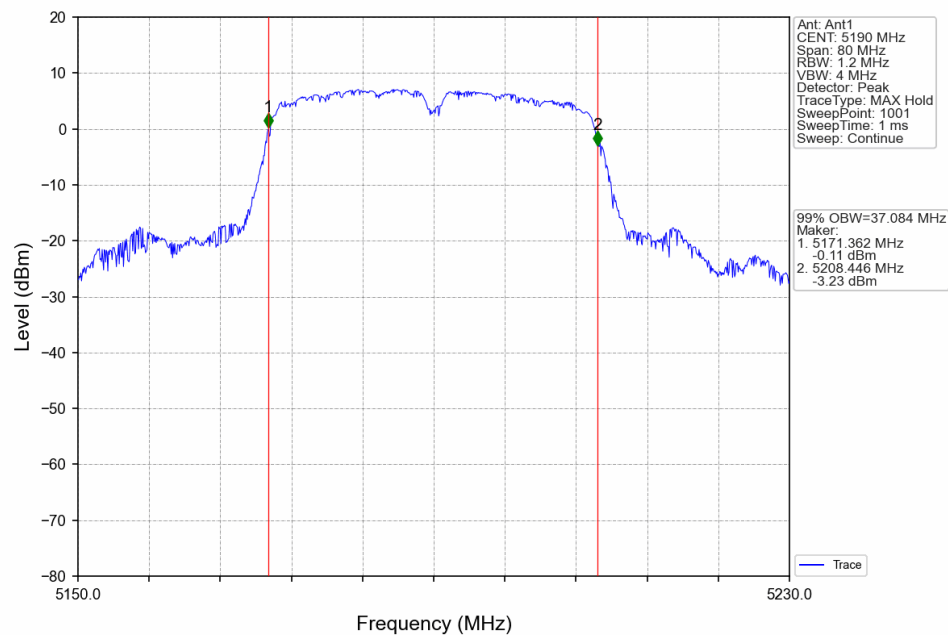
802.11n(HT20) MCH 5200MHz Ant1 NTVN



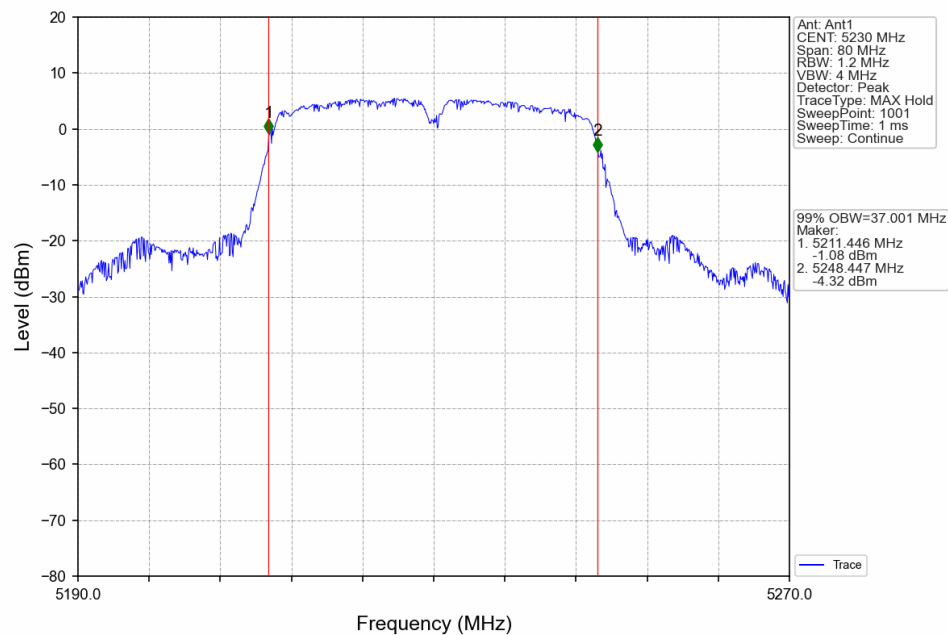
802.11n(HT20) HCH 5240MHz Ant1 NTVN



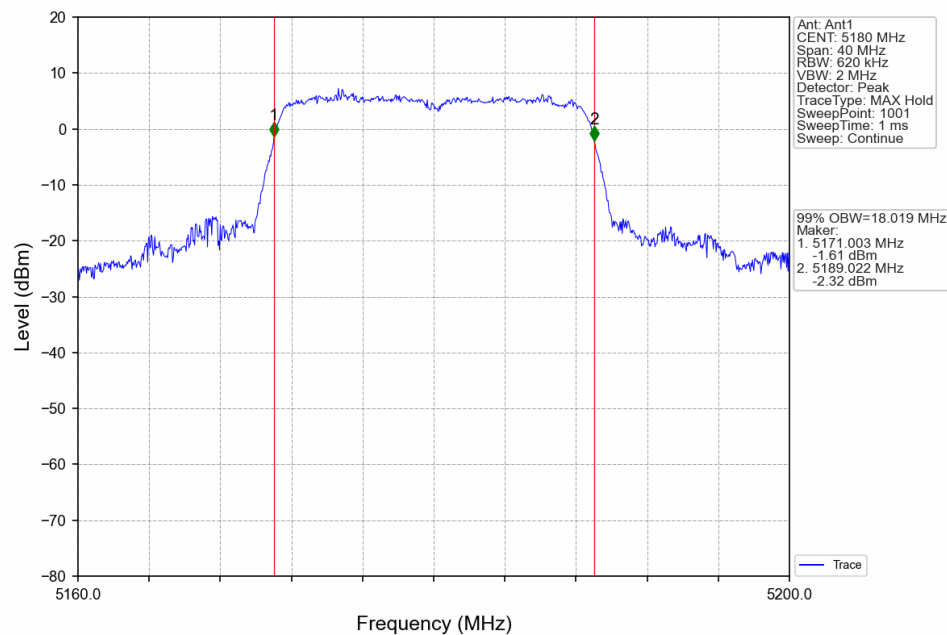
802.11n(HT40) LCH 5190MHz Ant1 NTV



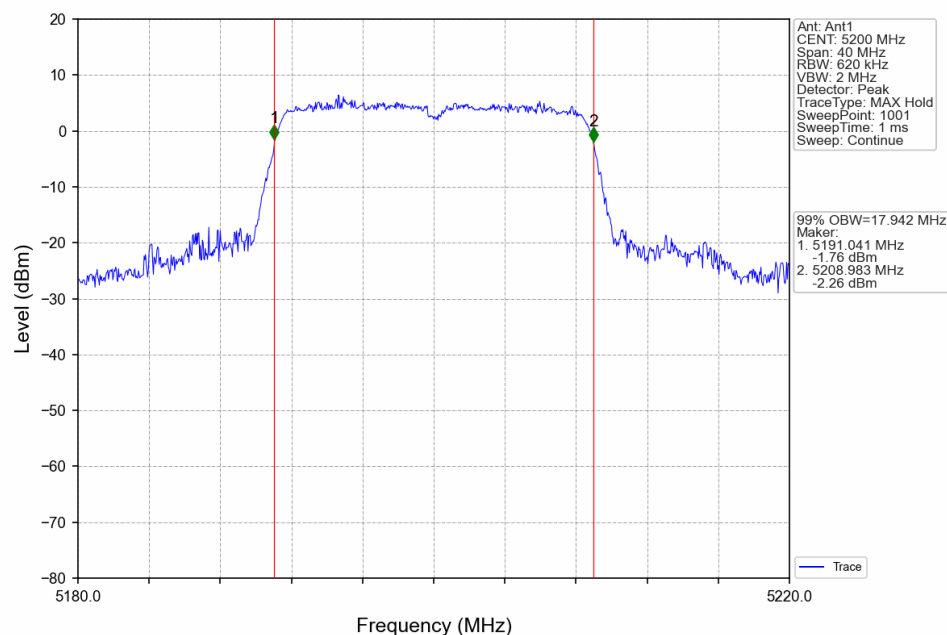
802.11n(HT40) HCH 5230MHz Ant1 NTV



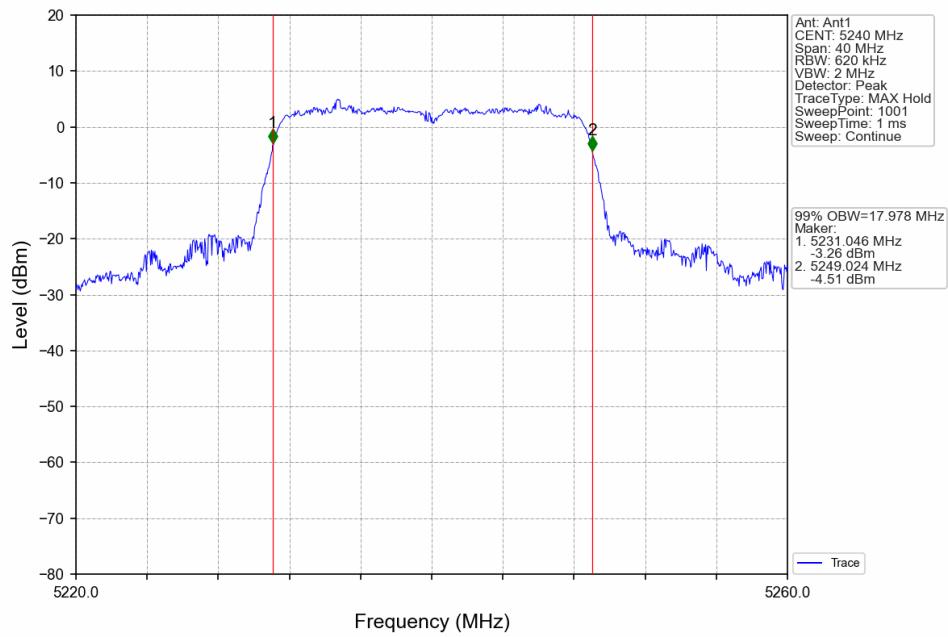
802.11n(HT20) LCH 5180MHz Ant1 NTVN



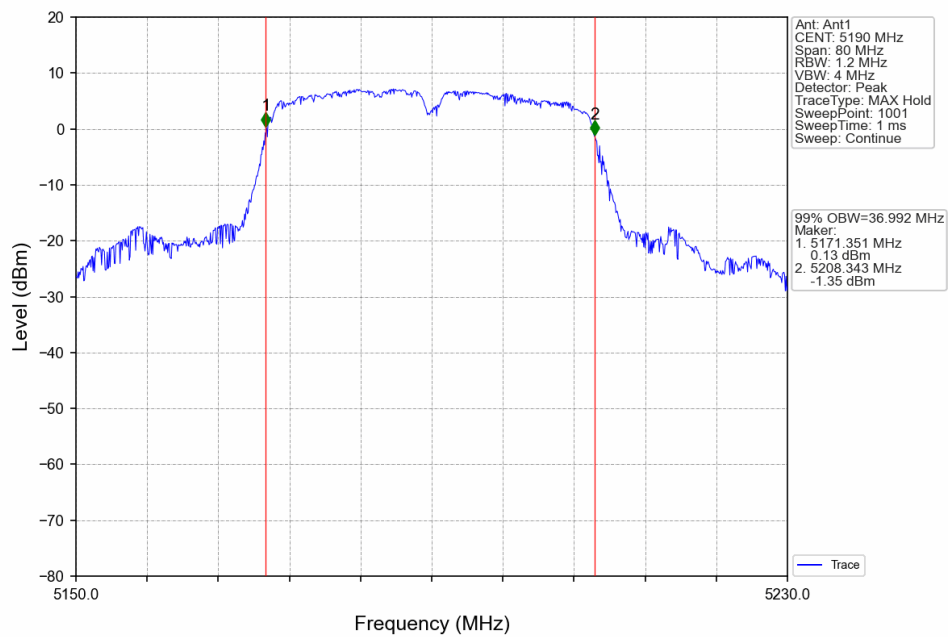
802.11n(HT20) MCH 5200MHz Ant1 NTVN



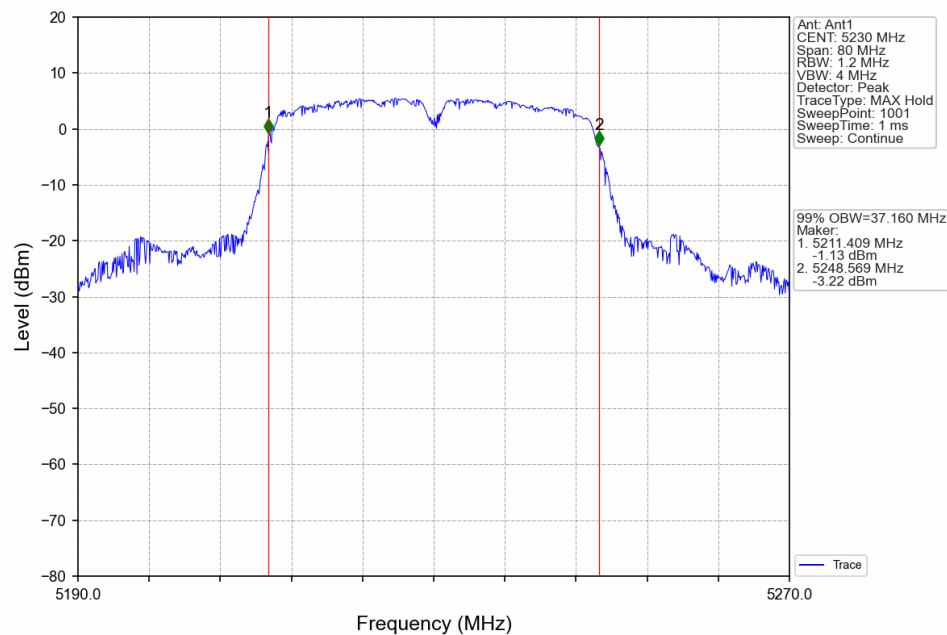
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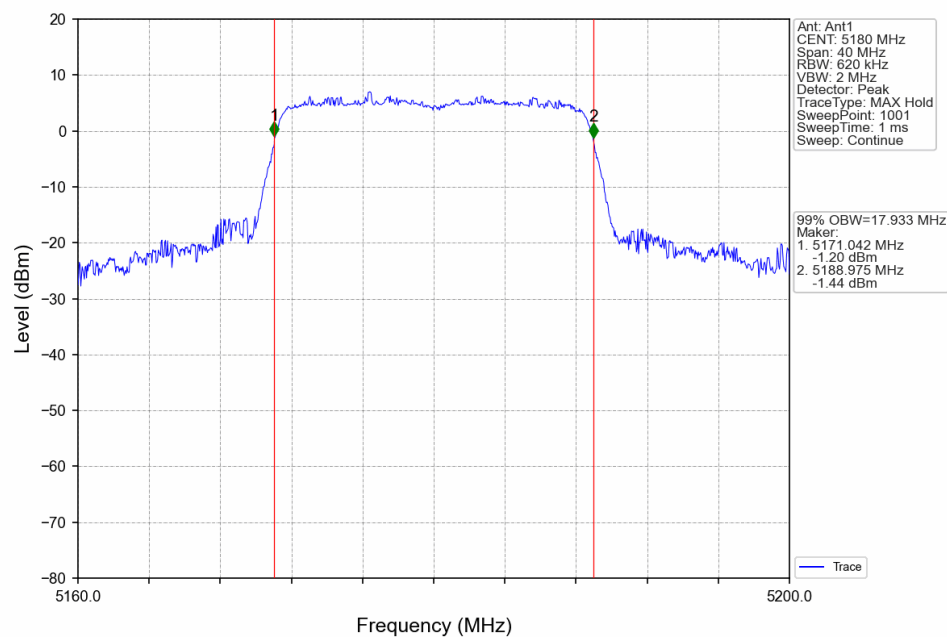
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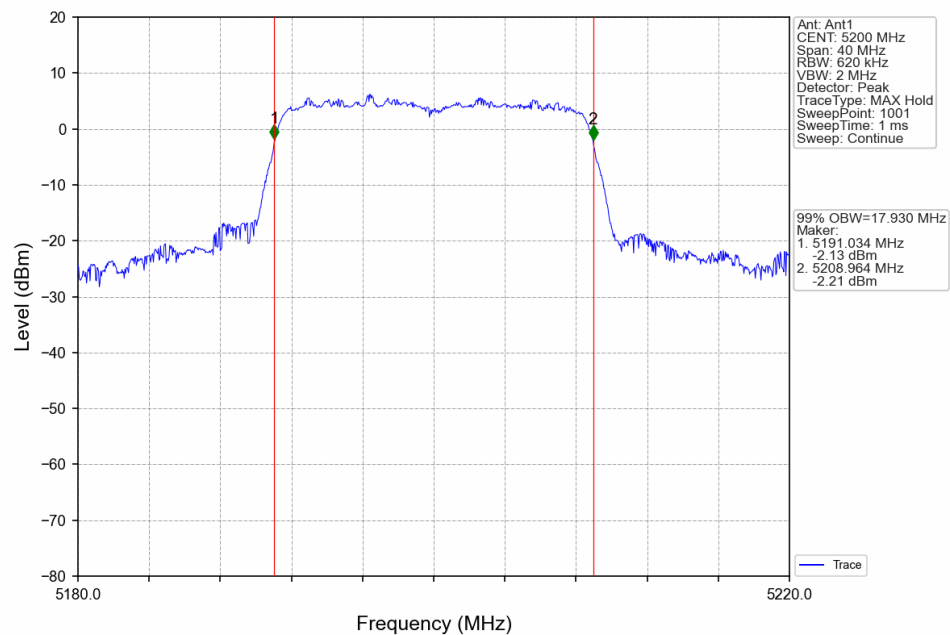
802.11n(HT40) HCH 5230MHz Ant1 NTV



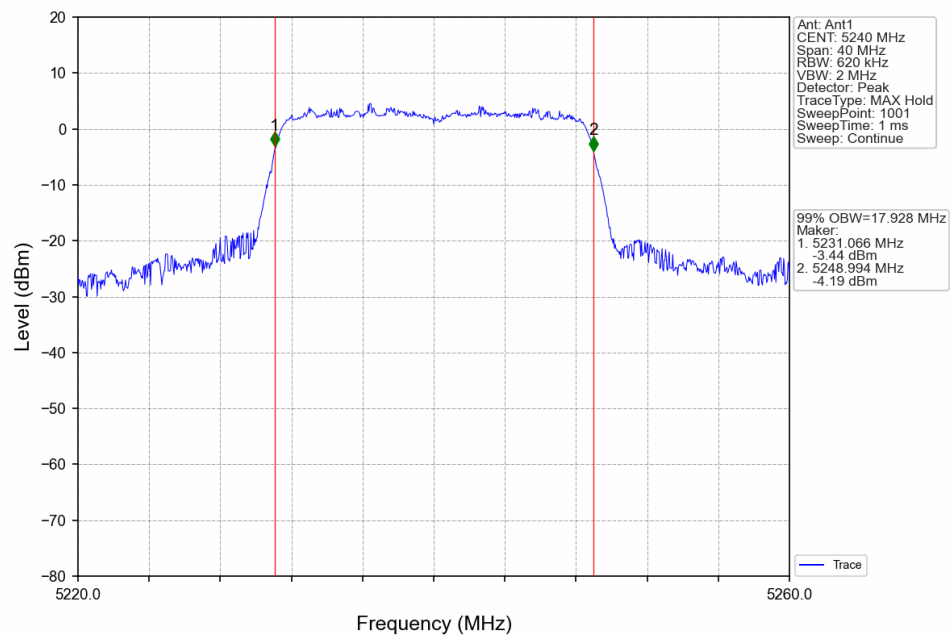
802.11ac(VHT20) LCH 5180MHz Ant1 NTV



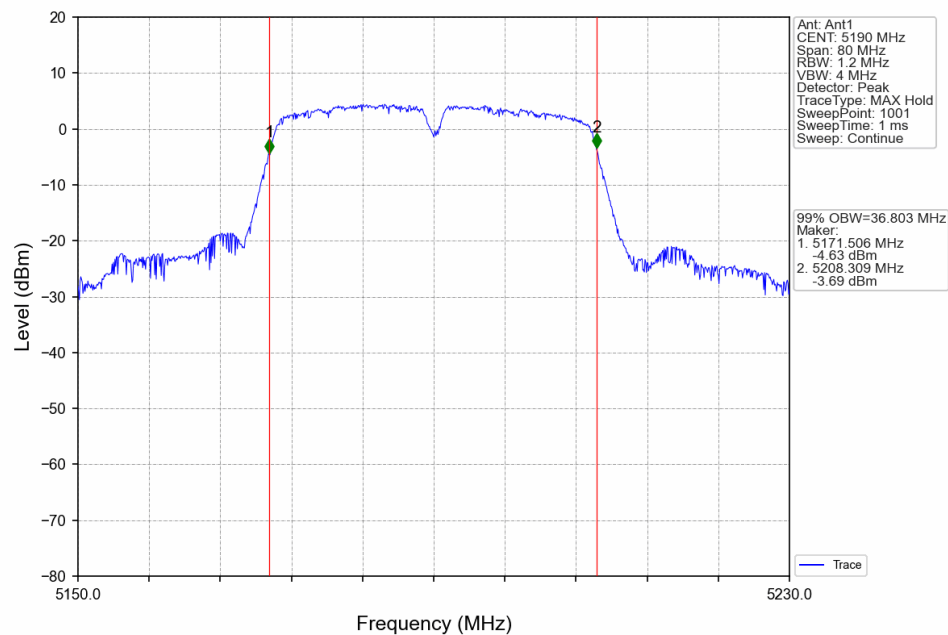
802.11ac(VHT20) MCH 5200MHz Ant1 NTN



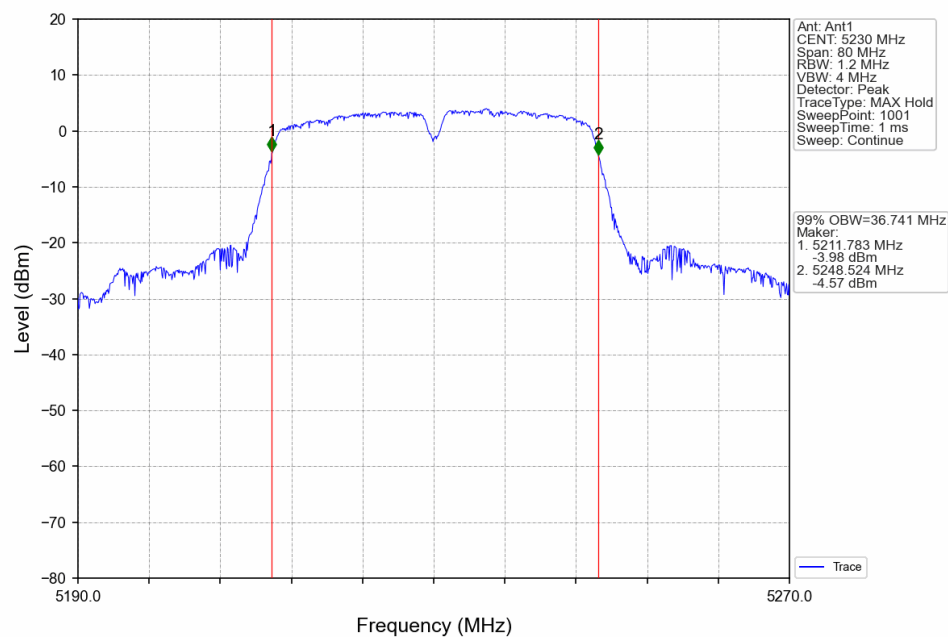
802.11ac(VHT20) HCH 5240MHz Ant1 NTN



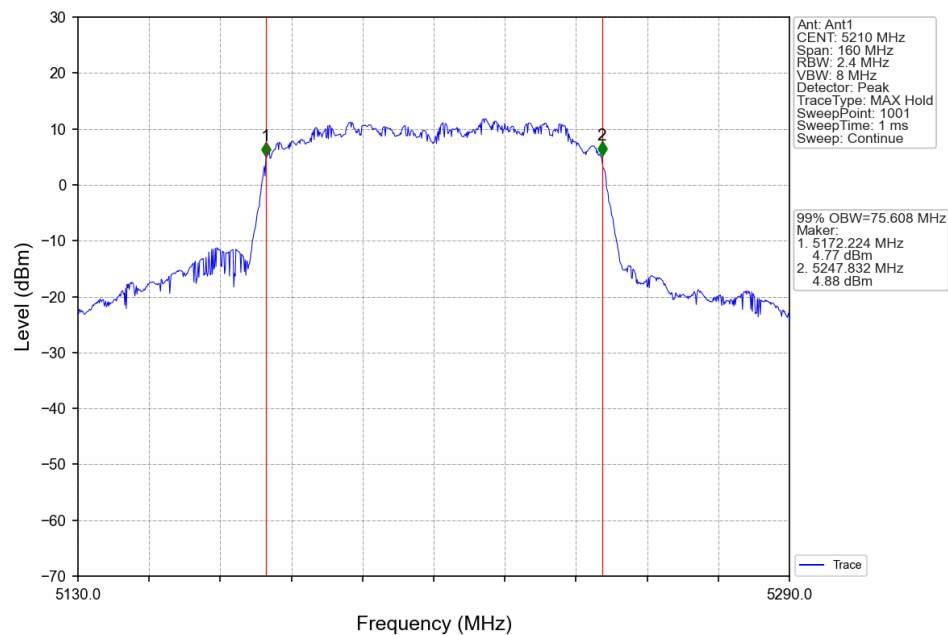
802.11ac(VHT40) LCH 5190MHz Ant1 NTNV



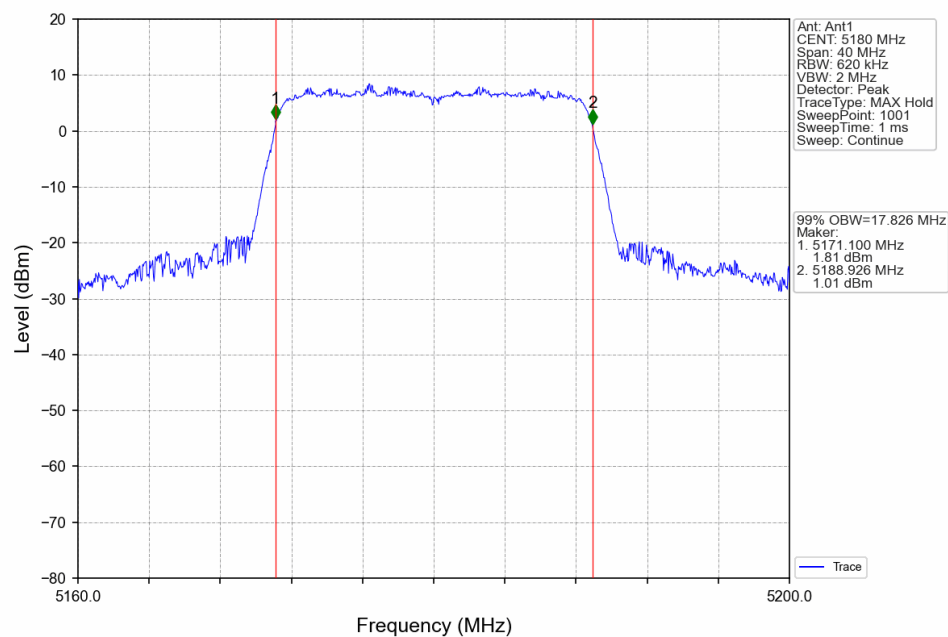
802.11ac(VHT40) HCH 5230MHz Ant1 NTNV



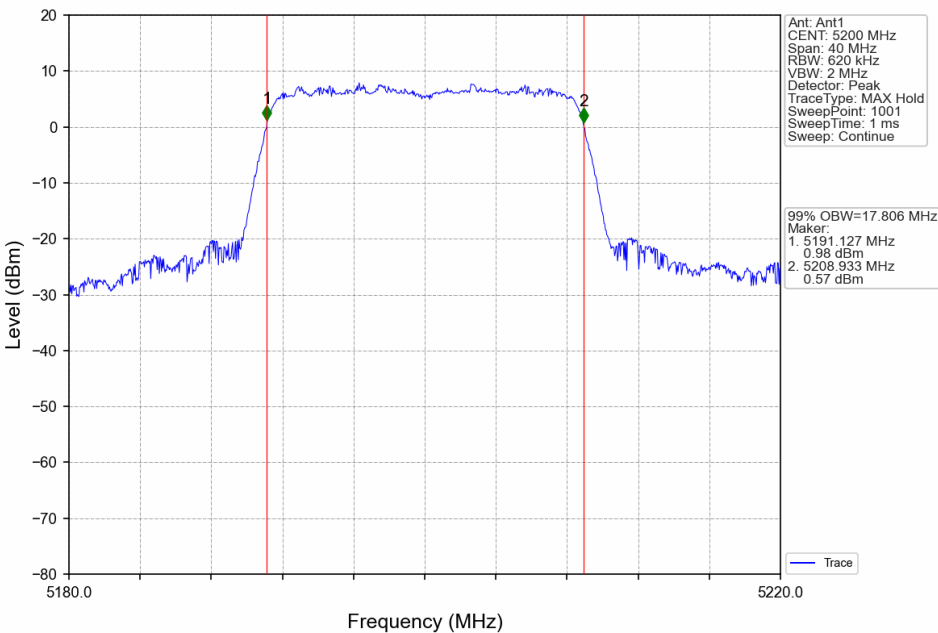
802.11ac(VHT80) MCH 5210MHz Ant1 NTN



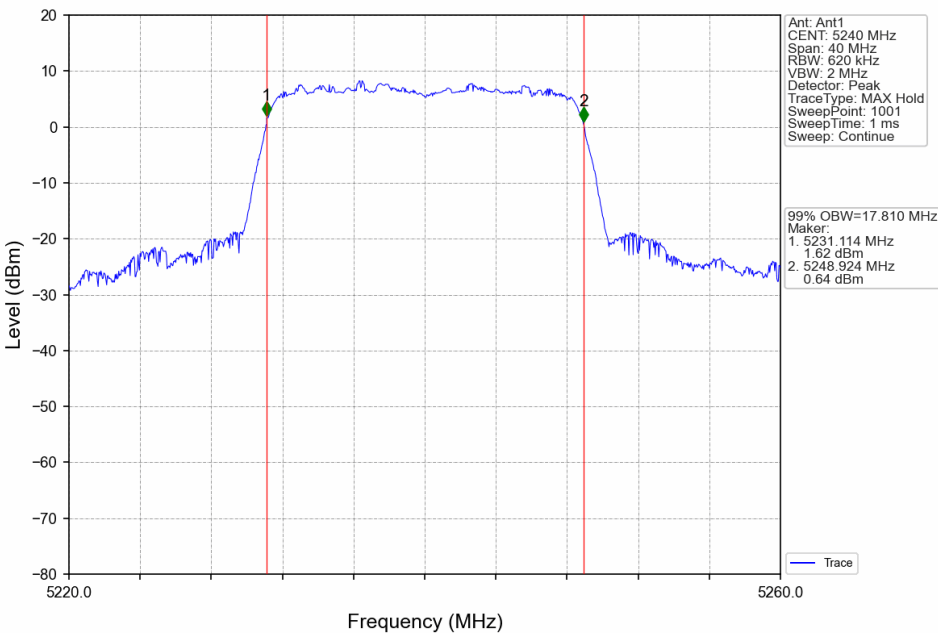
802.11ac(VHT20) LCH 5180MHz Ant1 NTN



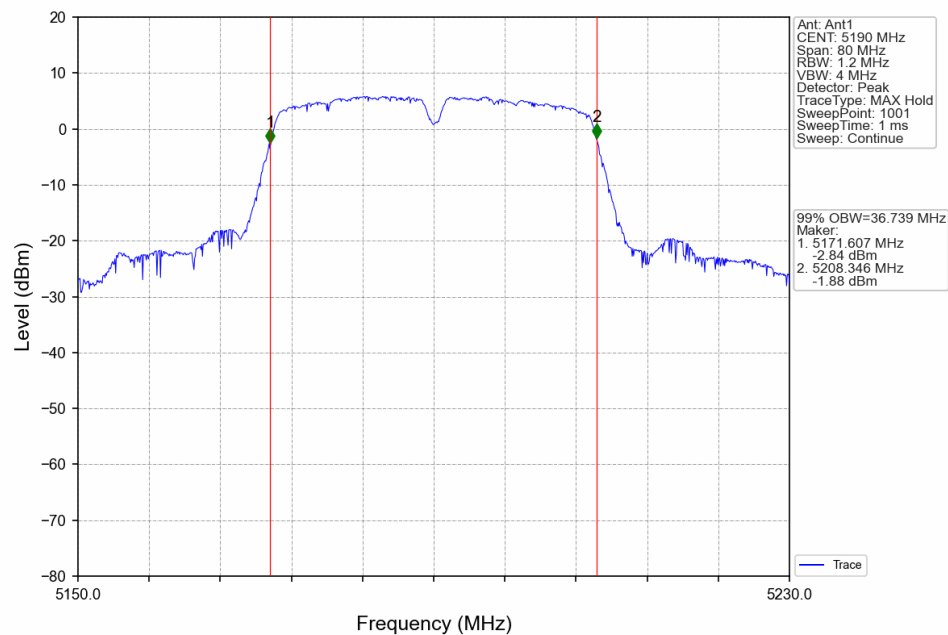
802.11ac(VHT20) MCH 5200MHz Ant1 NTN



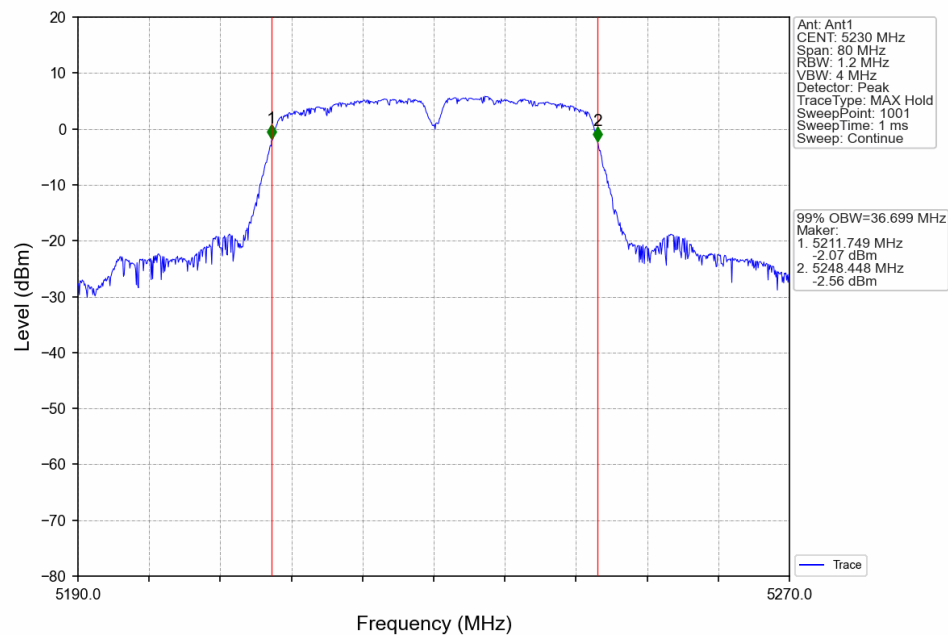
802.11ac(VHT20) HCH 5240MHz Ant1 NTN

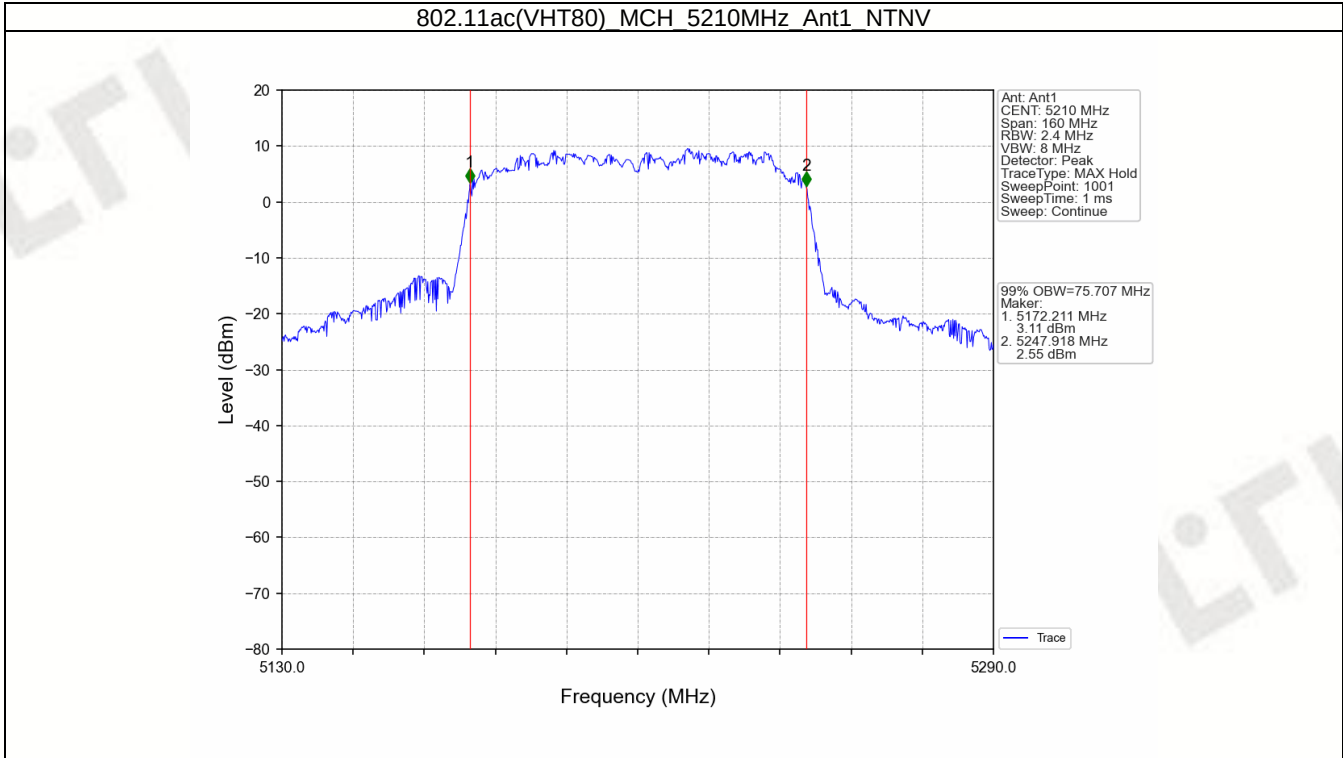


802.11ac(VHT40) LCH 5190MHz Ant1 NTN

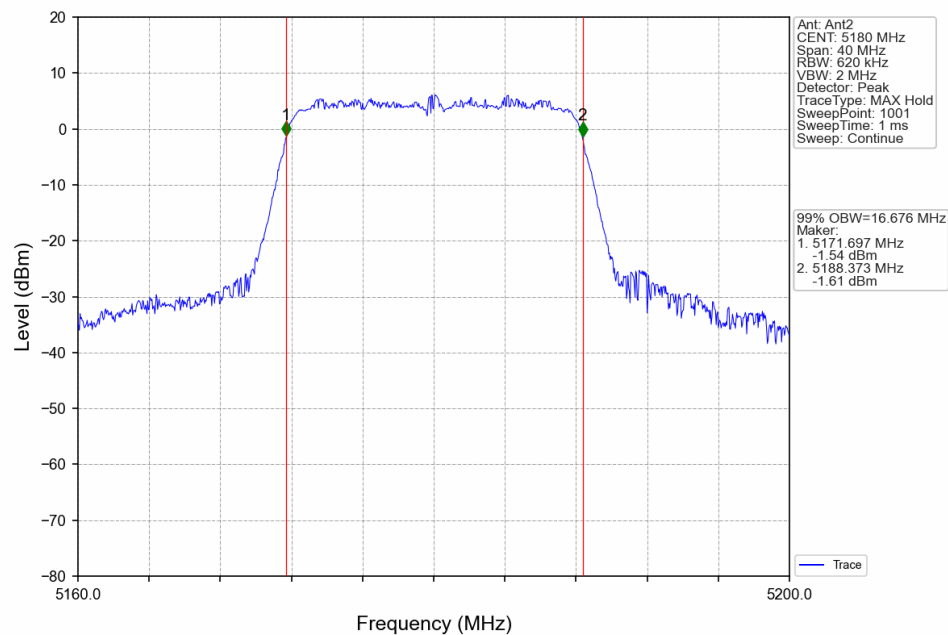


802.11ac(VHT40) HCH 5230MHz Ant1 NTN

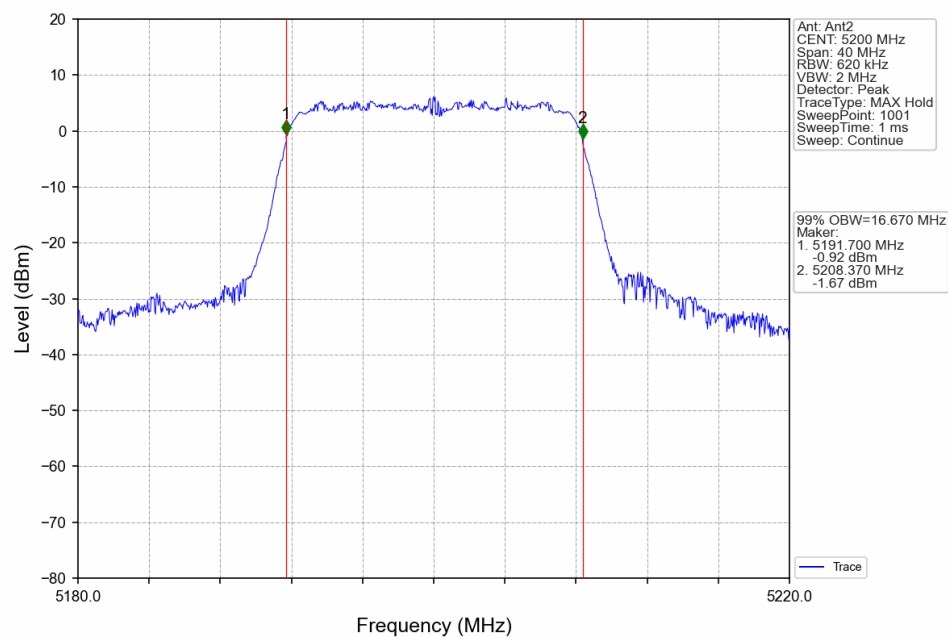




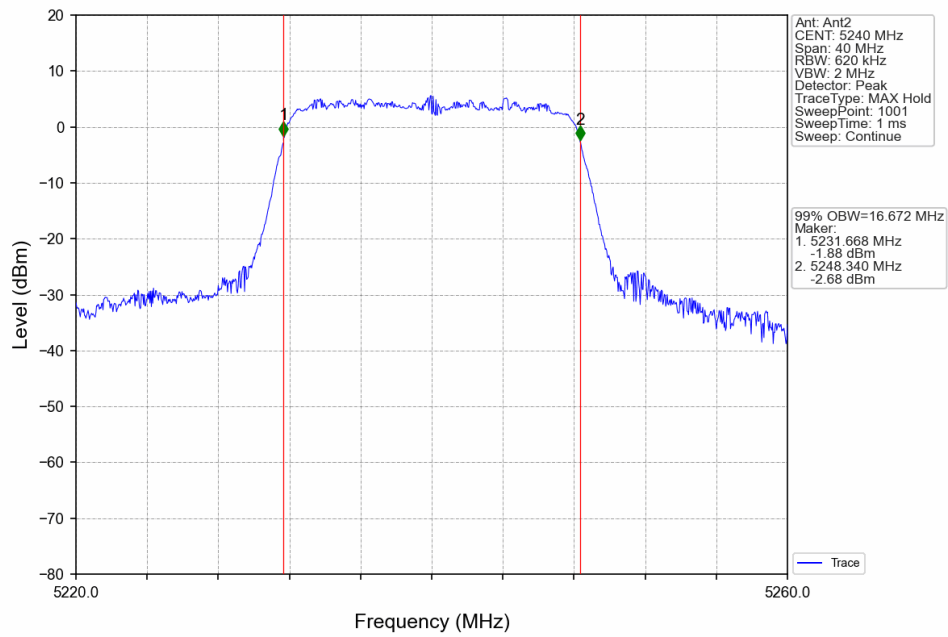
802.11a LCH 5180MHz Ant2 NTV



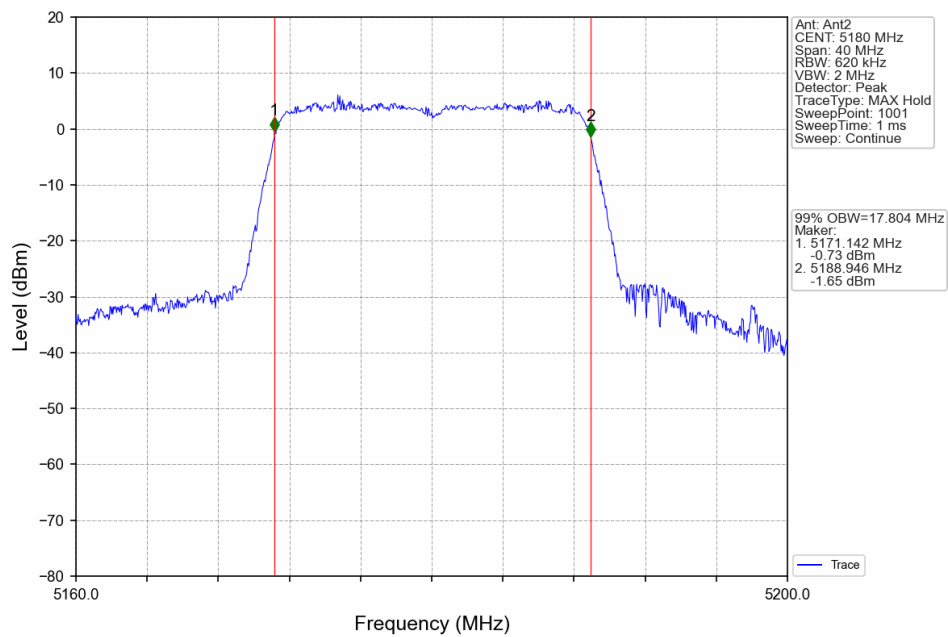
802.11a MCH 5200MHz Ant2 NTV



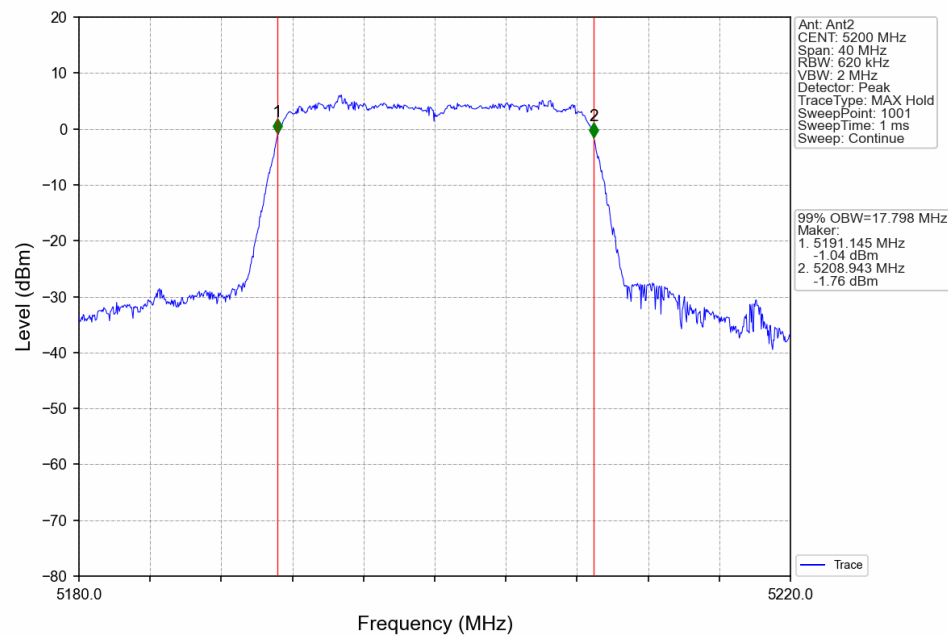
802.11a HCH 5240MHz Ant2 NTV



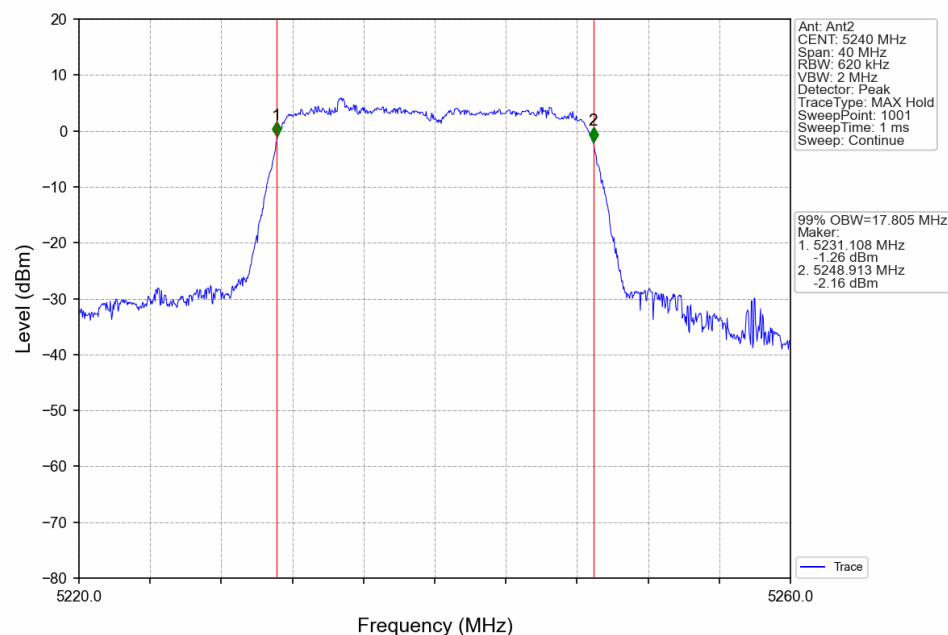
802.11n(HT20) LCH 5180MHz Ant2 NTV

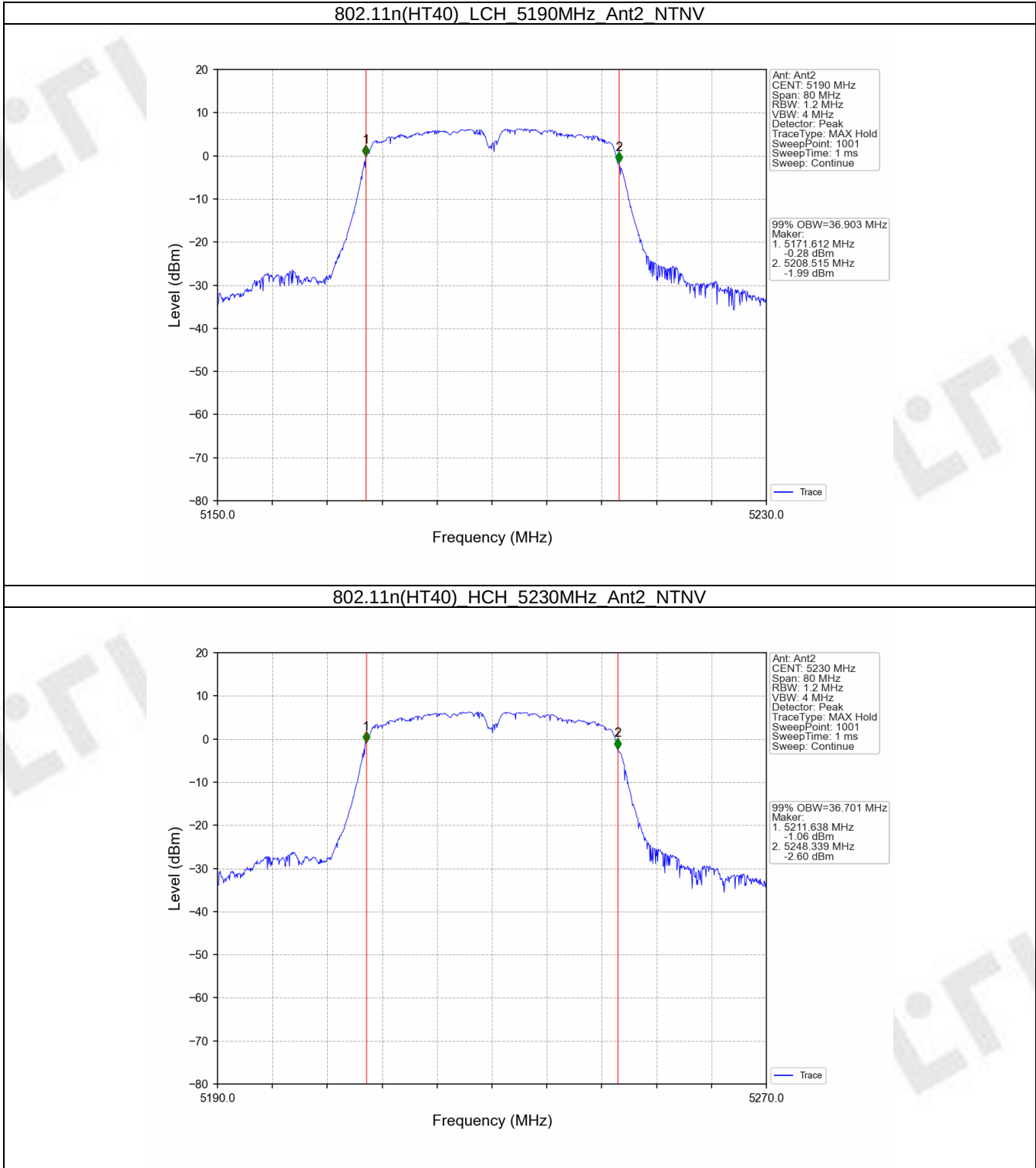


802.11n(HT20) MCH 5200MHz Ant2 NTV

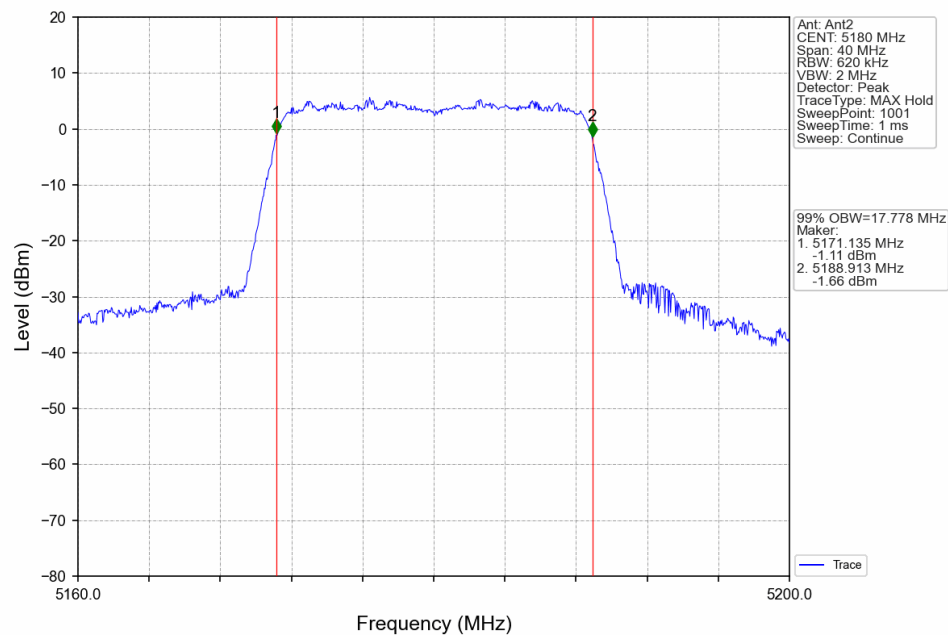


802.11n(HT20) HCH 5240MHz Ant2 NTV

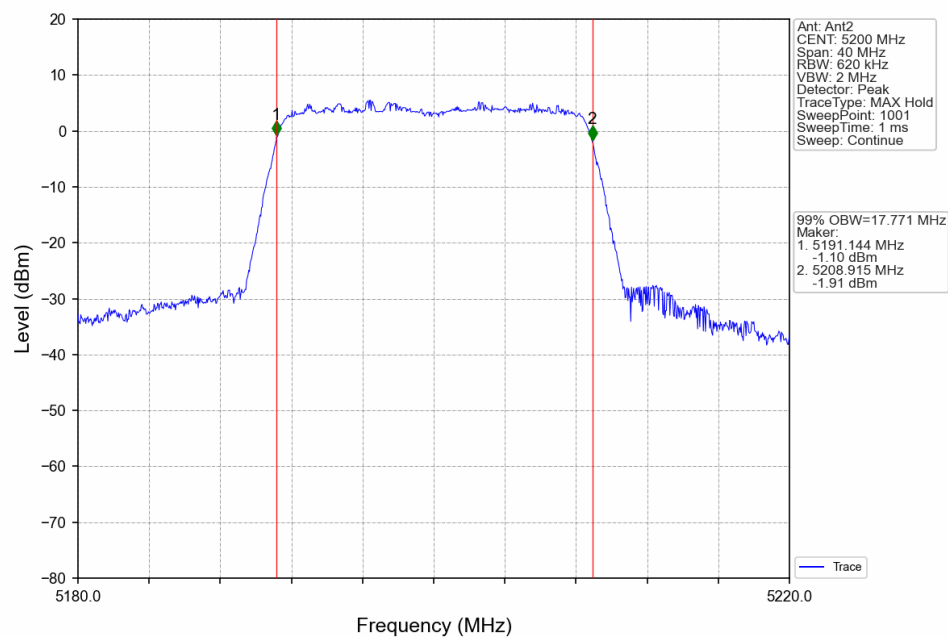




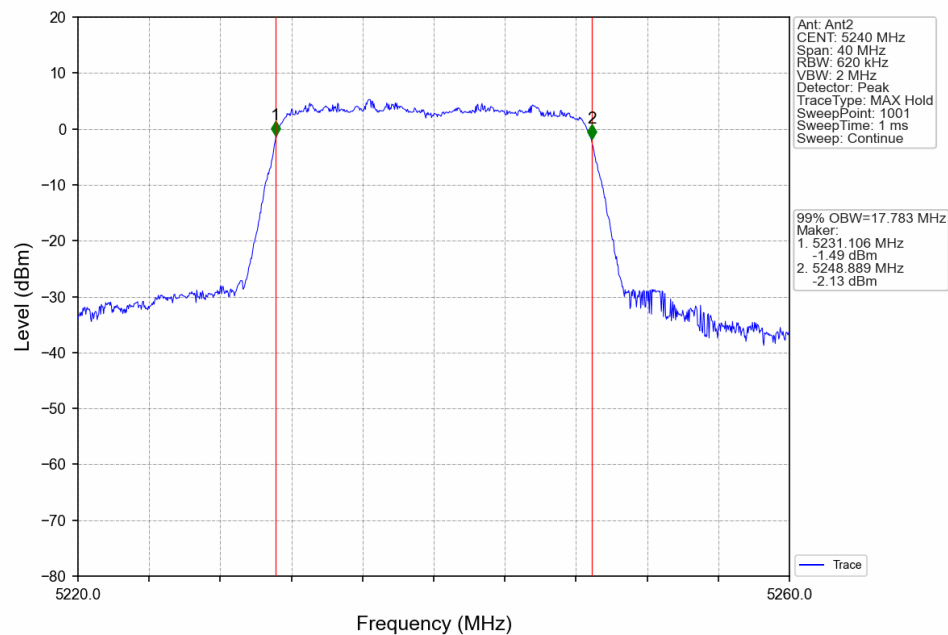
802.11ac(VHT20) LCH 5180MHz Ant2 NTN



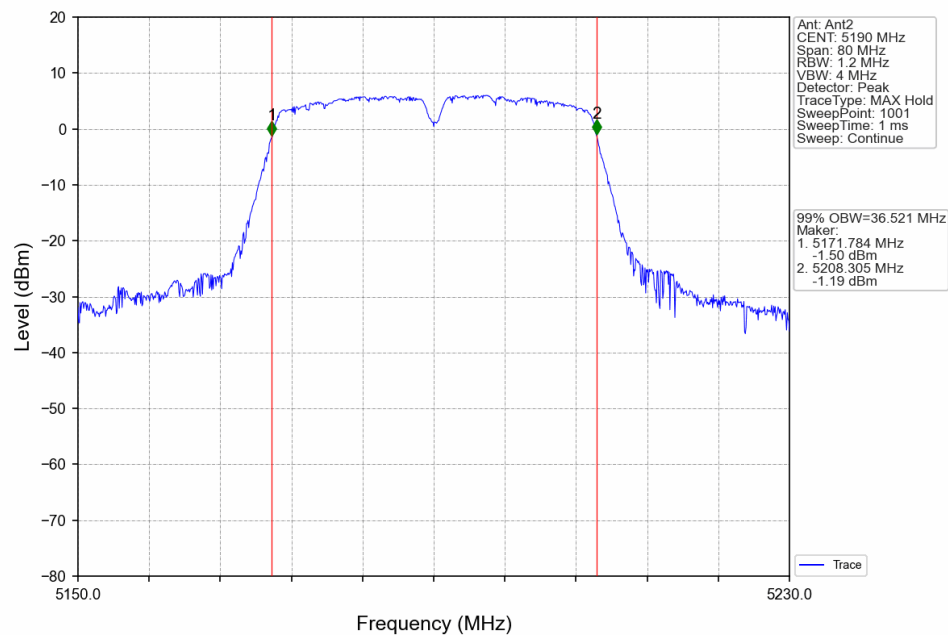
802.11ac(VHT20) MCH 5200MHz Ant2 NTN



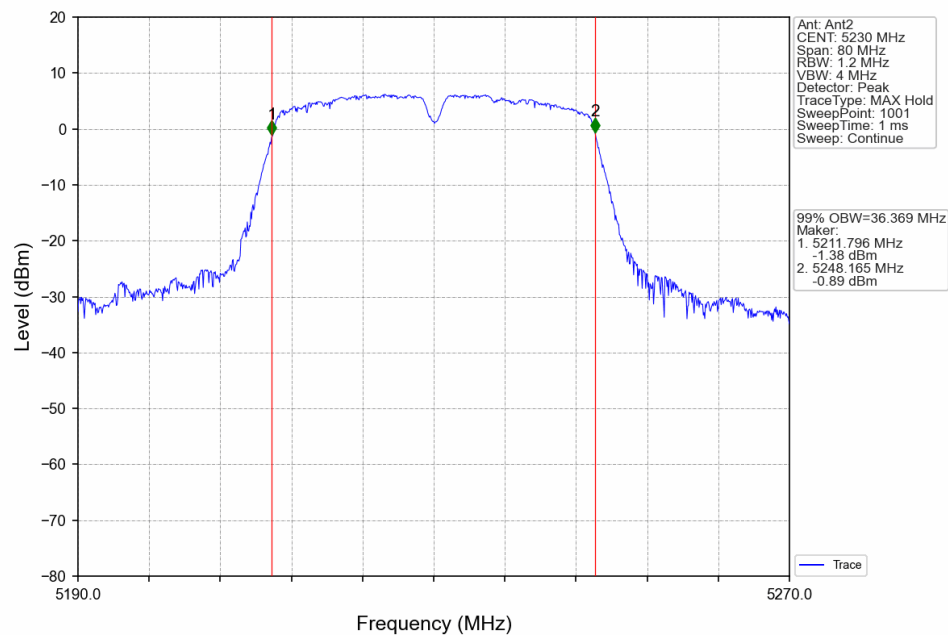
802.11ac(VHT20) HCH 5240MHz Ant2 NTN



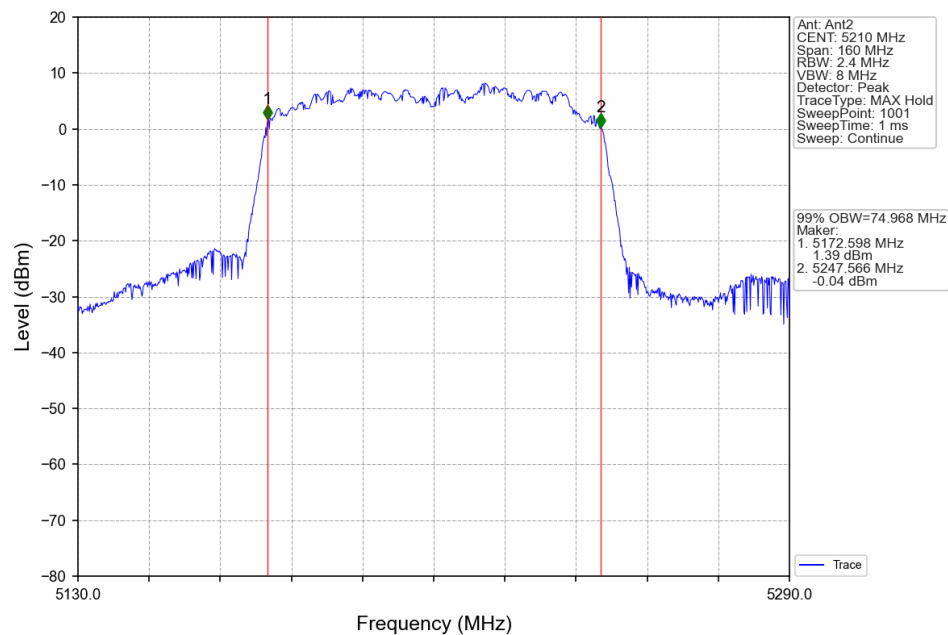
802.11ac(VHT40) LCH 5190MHz Ant2 NTN



802.11ac(VHT40) HCH 5230MHz Ant2 NTN



802.11ac(VHT80) MCH 5210MHz Ant2 NTN



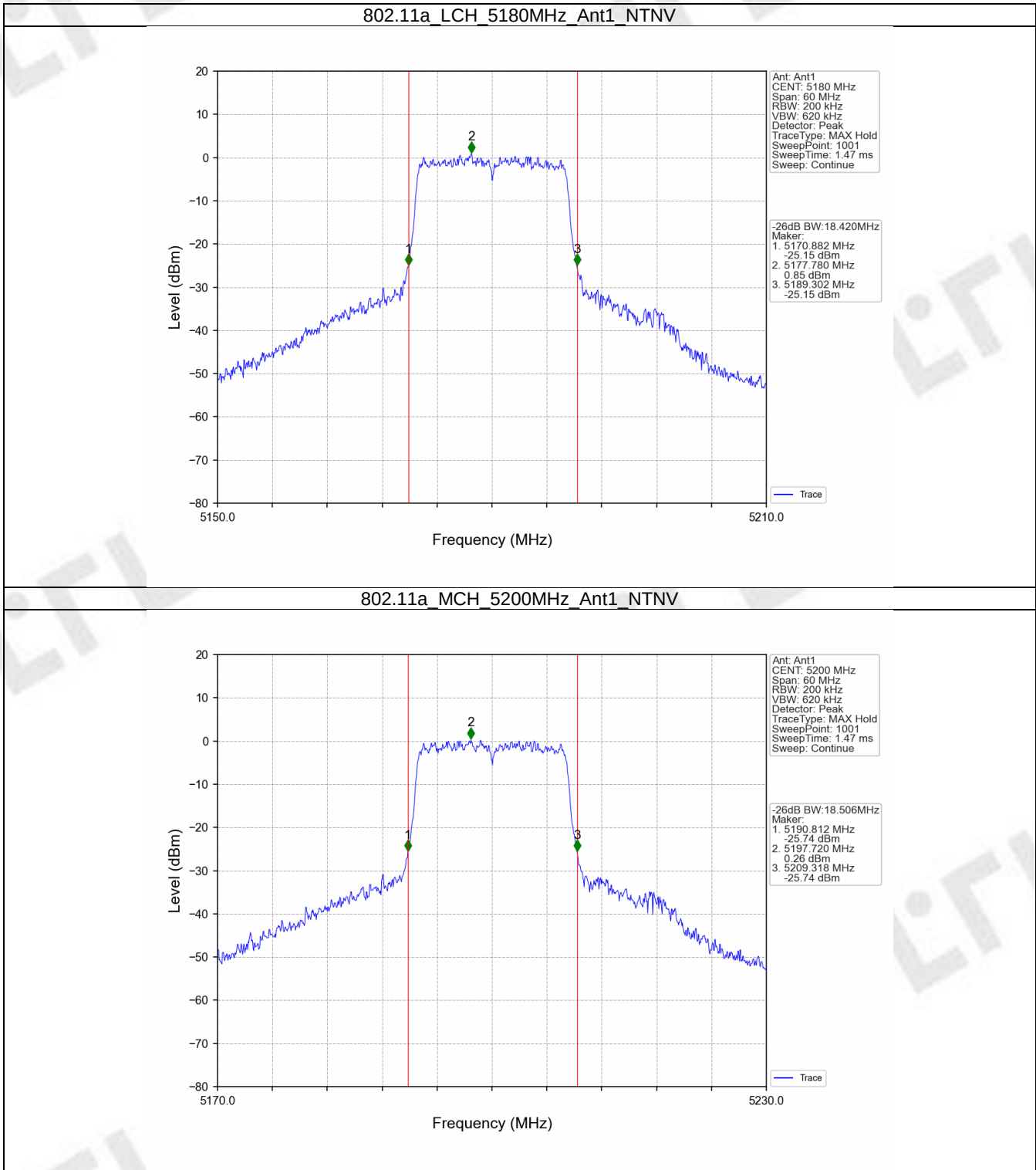
1.2 26dB BW

1.2.1 Test Result

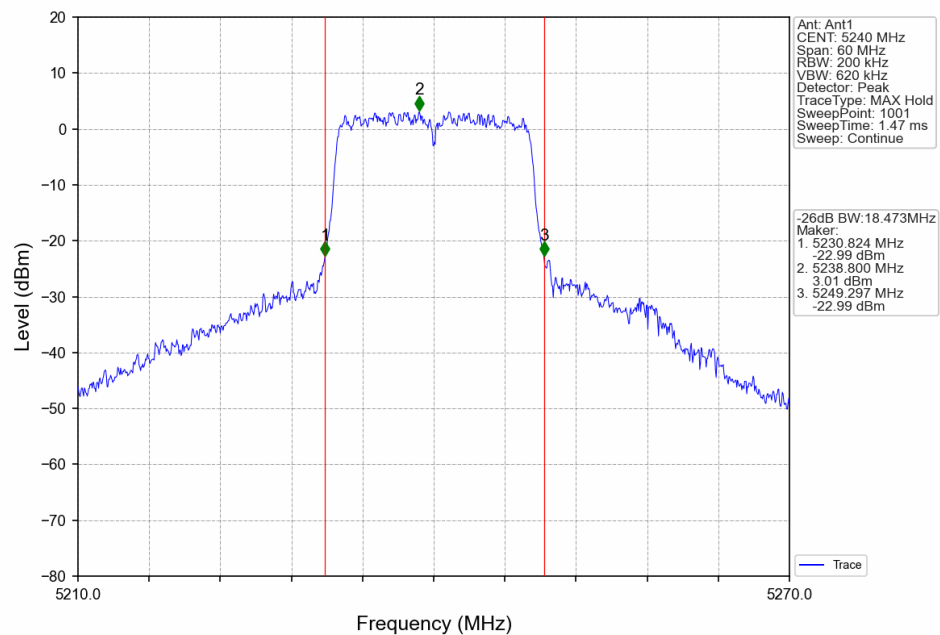
Mode	TX Type	Frequency (MHz)	ANT	26dB Bandwidth (MHz)	Verdict
				Result	
802.11a	SISO	5180	1	18.420	Pass
		5200	1	18.506	Pass
		5240	1	18.473	Pass
802.11n (HT20)	SISO	5180	1	19.990	Pass
		5200	1	19.992	Pass
		5240	1	19.882	Pass
802.11n (HT40)	SISO	5190	1	41.995	Pass
		5230	1	45.084	Pass
802.11n (HT20)	MIMO	5180	/	20.022	Pass
		5200	/	19.864	Pass
		5240	/	19.901	Pass
802.11n (HT40)	MIMO	5190	/	43.461	Pass
		5230	/	42.203	Pass
802.11ac (VHT20)	SISO	5180	1	20.958	Pass
		5200	1	20.373	Pass
		5240	1	19.707	Pass
802.11ac (VHT40)	SISO	5190	1	45.540	Pass
		5230	1	41.530	Pass
802.11ac (VHT80)	SISO	5210	1	92.126	Pass
802.11ac (VHT20)	MIMO	5180	/	19.459	Pass
		5200	/	19.402	Pass
		5240	/	19.423	Pass
802.11ac (VHT40)	MIMO	5190	/	41.318	Pass
		5230	/	41.204	Pass
802.11ac (VHT80)	MIMO	5210	/	95.162	Pass

Mode	TX Type	Frequency (MHz)	ANT	26dB Bandwidth (MHz)	Verdict
				Result	
802.11a	SISO	5180	2	18.534	Pass
		5200	2	18.515	Pass
		5240	2	18.356	Pass
802.11n (HT20)	SISO	5180	2	19.447	Pass
		5200	2	19.379	Pass
		5240	2	19.321	Pass
802.11n (HT40)	SISO	5190	2	41.792	Pass
		5230	2	41.548	Pass
802.11ac (VHT20)	SISO	5180	2	19.470	Pass
		5200	2	19.416	Pass
		5240	2	19.355	Pass
802.11ac (VHT40)	SISO	5190	2	41.393	Pass
		5230	2	40.901	Pass
802.11ac (VHT80)	SISO	5210	2	81.027	Pass

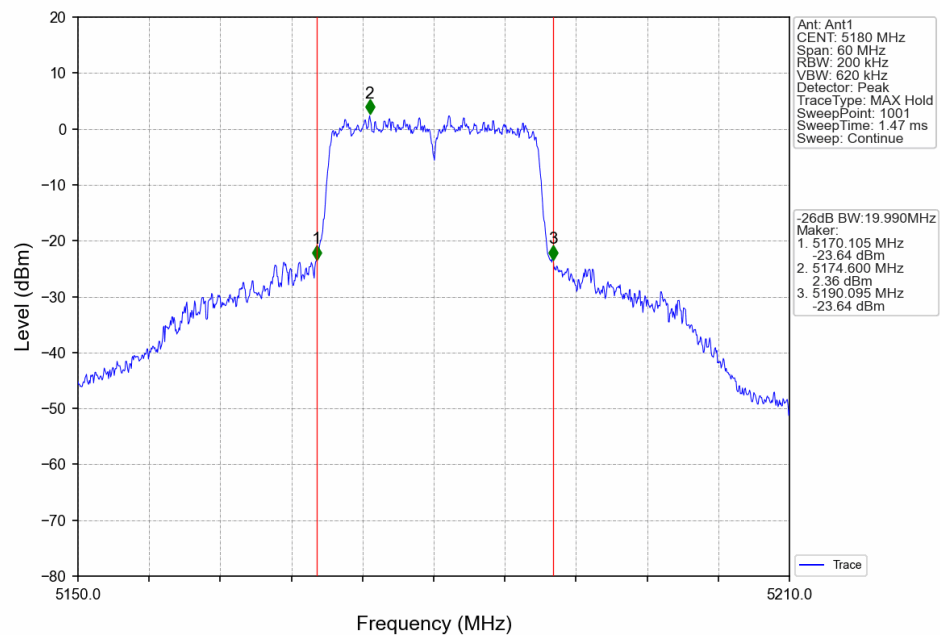
1.2.2 Test Graph



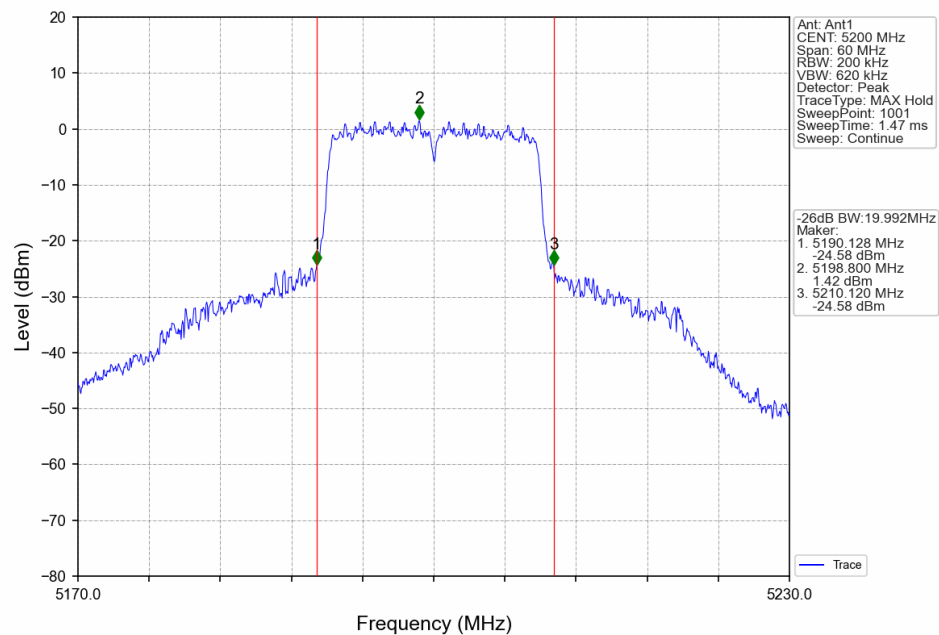
802.11a HCH 5240MHz Ant1 NTNV



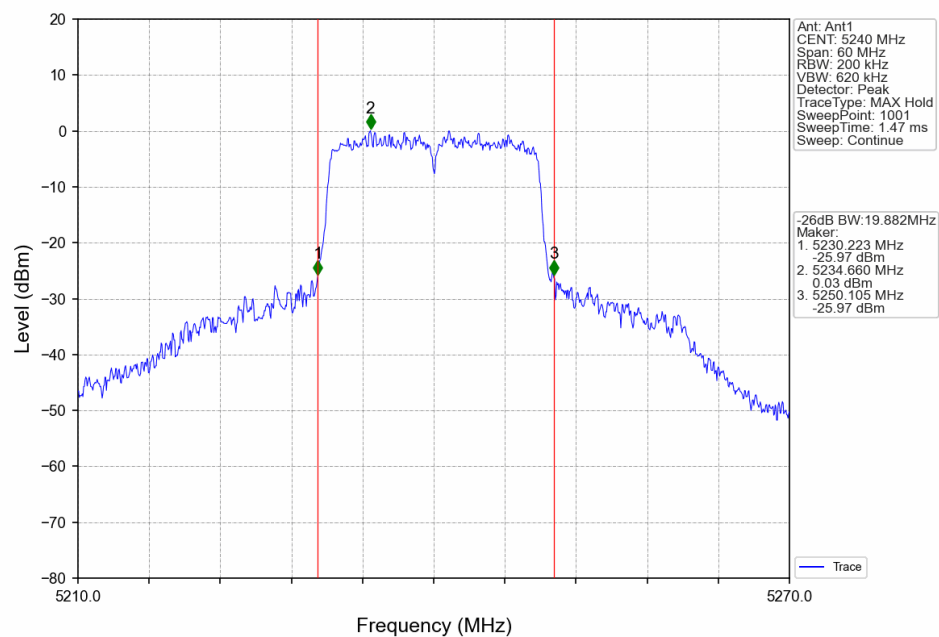
802.11n(HT20) LCH 5180MHz Ant1 NTNV



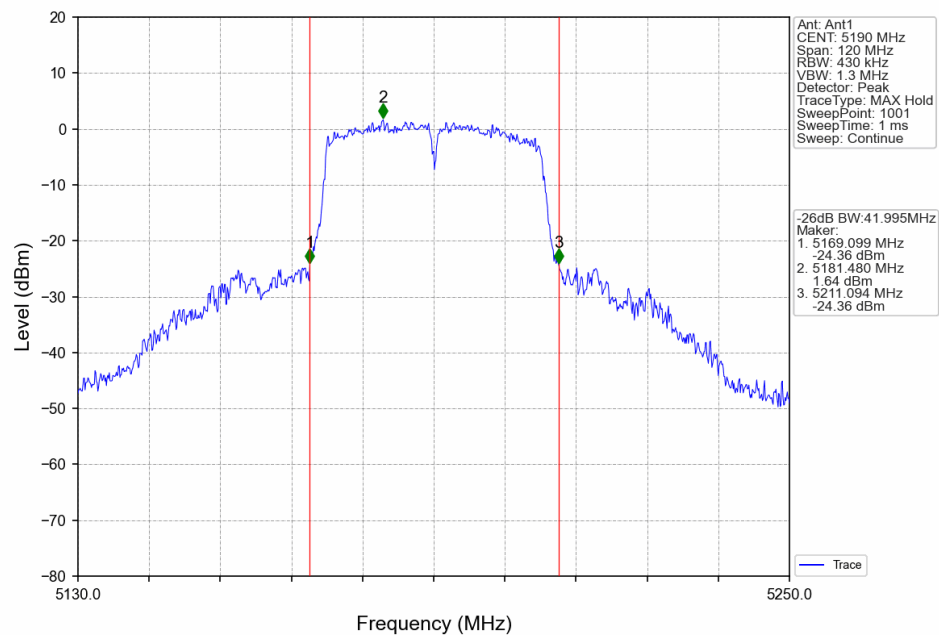
802.11n(HT20) MCH 5200MHz Ant1 NTV



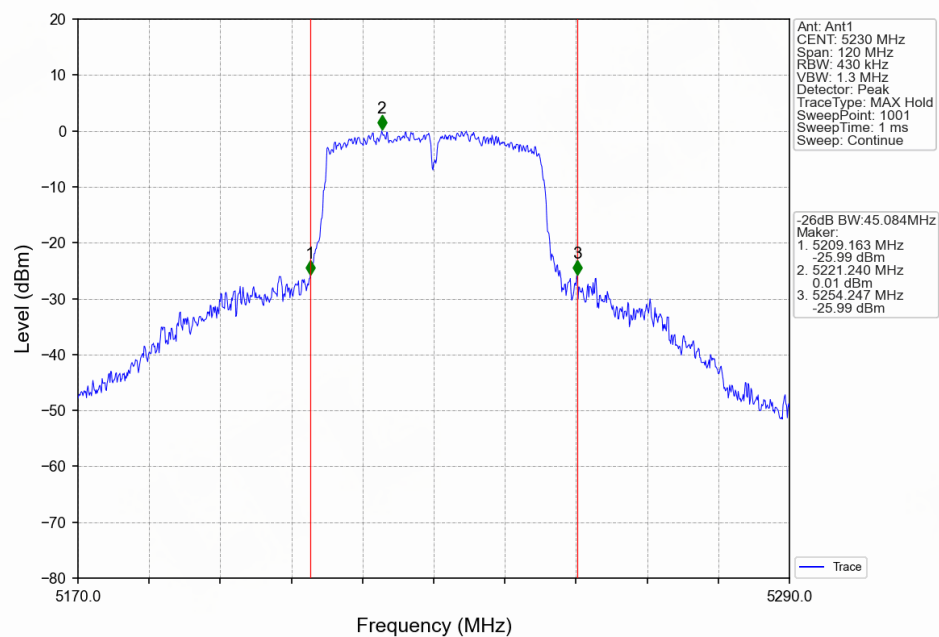
802.11n(HT20) HCH 5240MHz Ant1 NTV



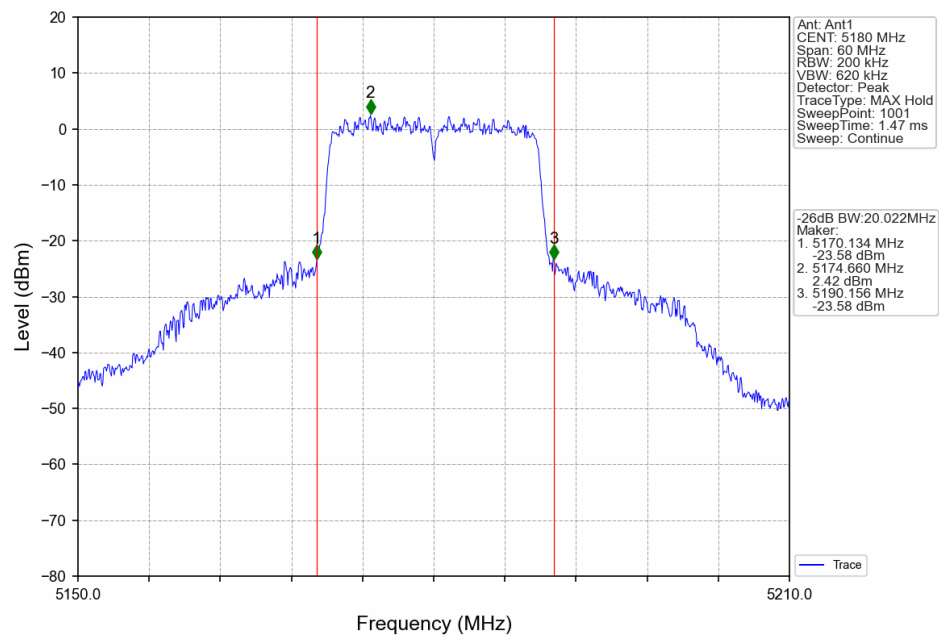
802.11n(HT40) LCH 5190MHz Ant1 NTV



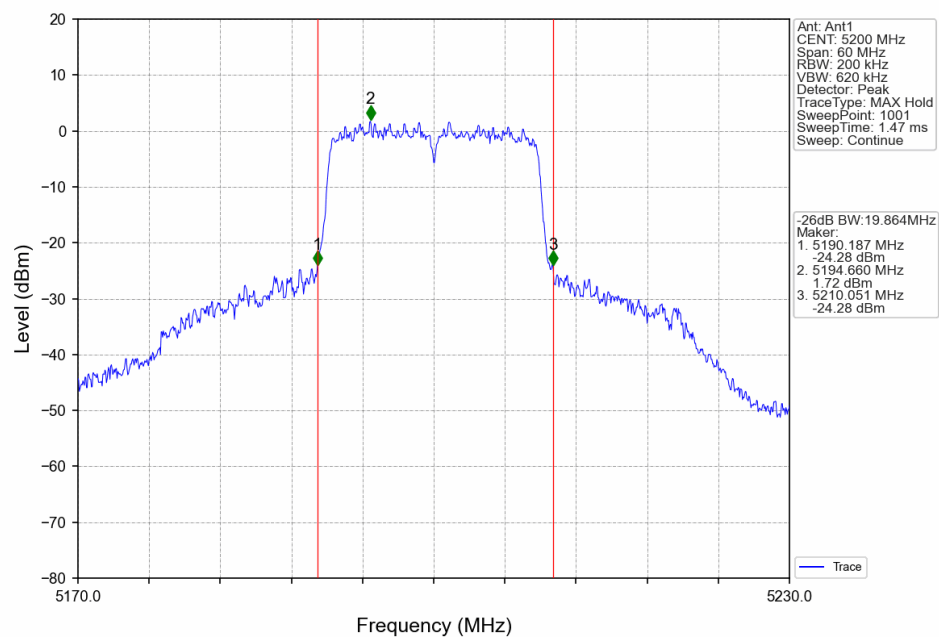
802.11n(HT40) HCH 5230MHz Ant1 NTV



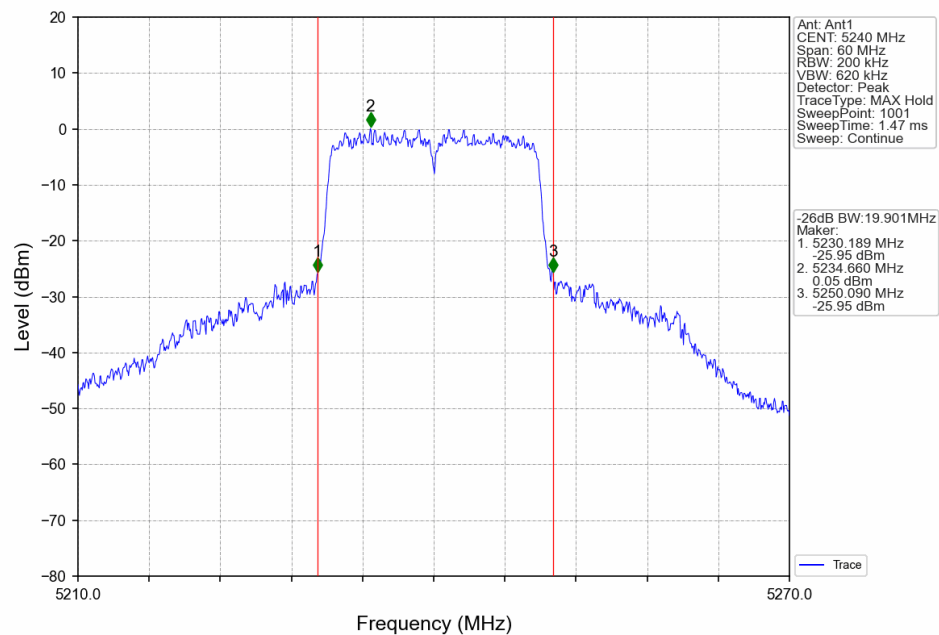
802.11n(HT20) LCH 5180MHz Ant1 NTN



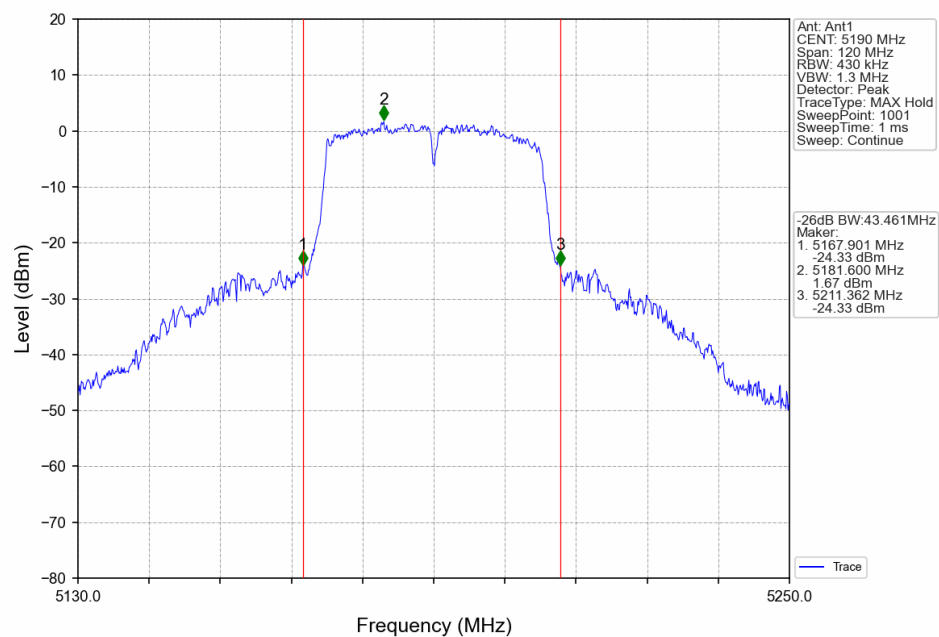
802.11n(HT20) MCH 5200MHz Ant1 NTN



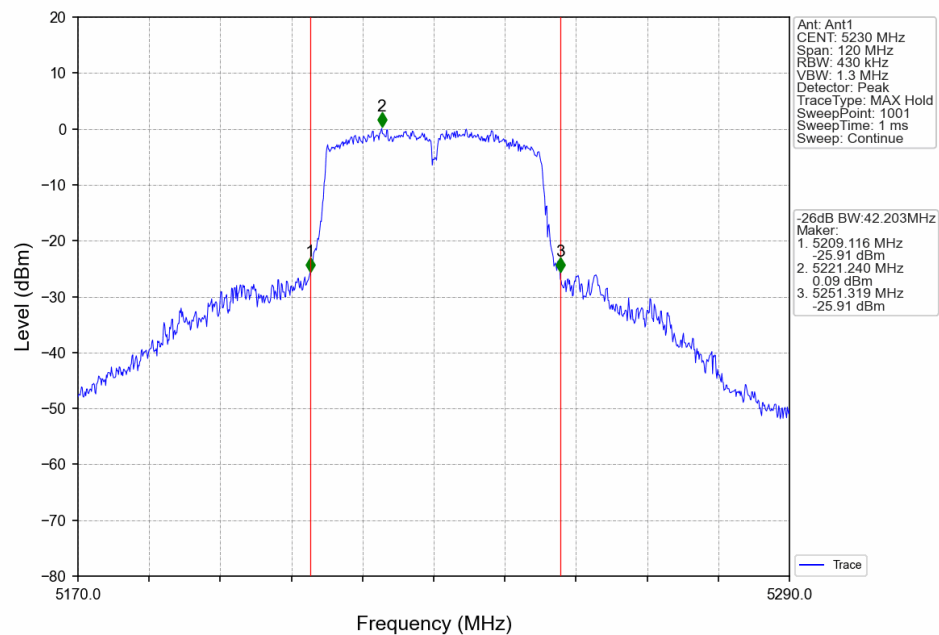
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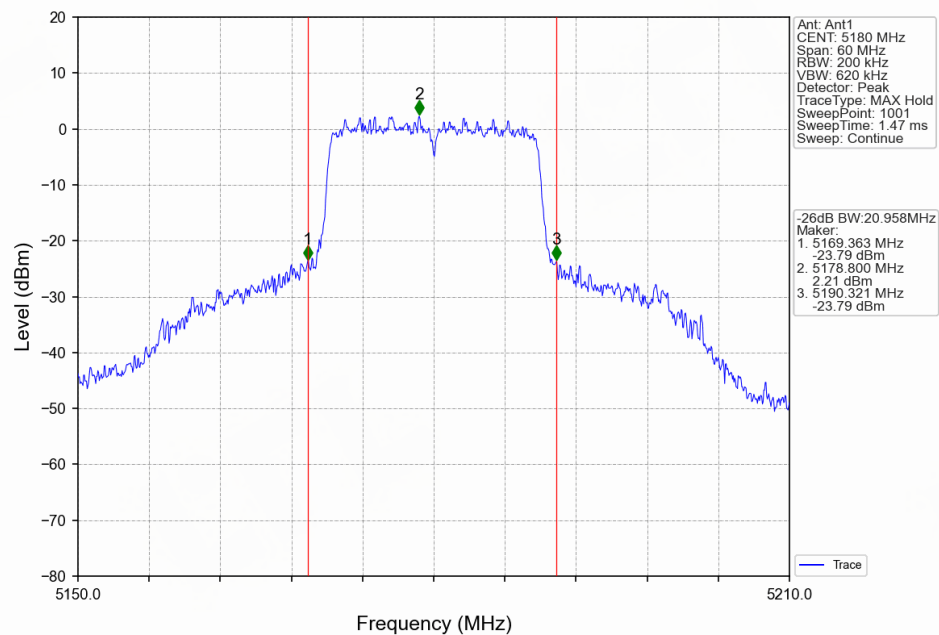
802.11n(HT40) LCH 5190MHz Ant1 NTV



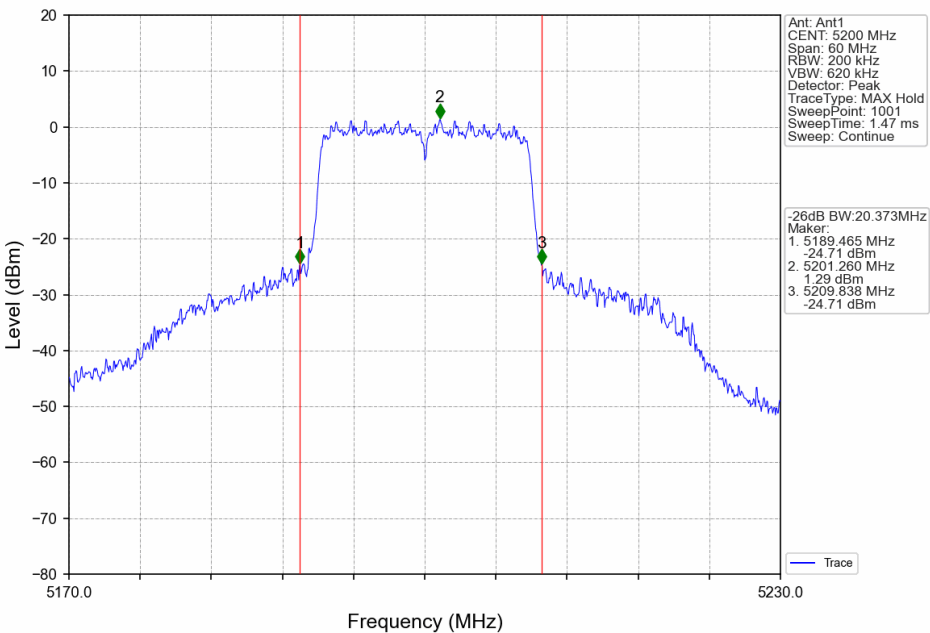
802.11n(HT40) HCH 5230MHz Ant1 NTV



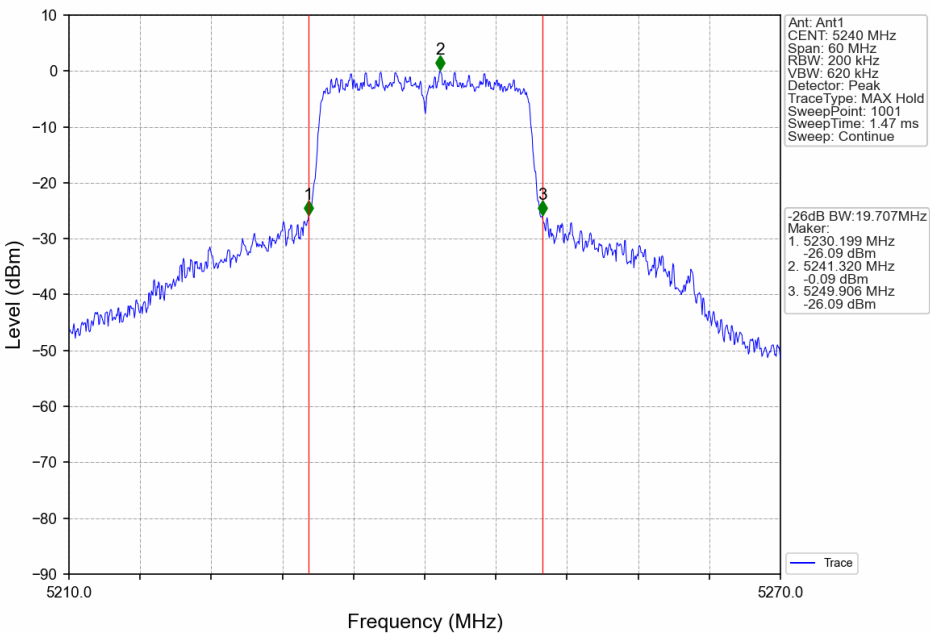
802.11ac(VHT20) LCH 5180MHz Ant1 NTV



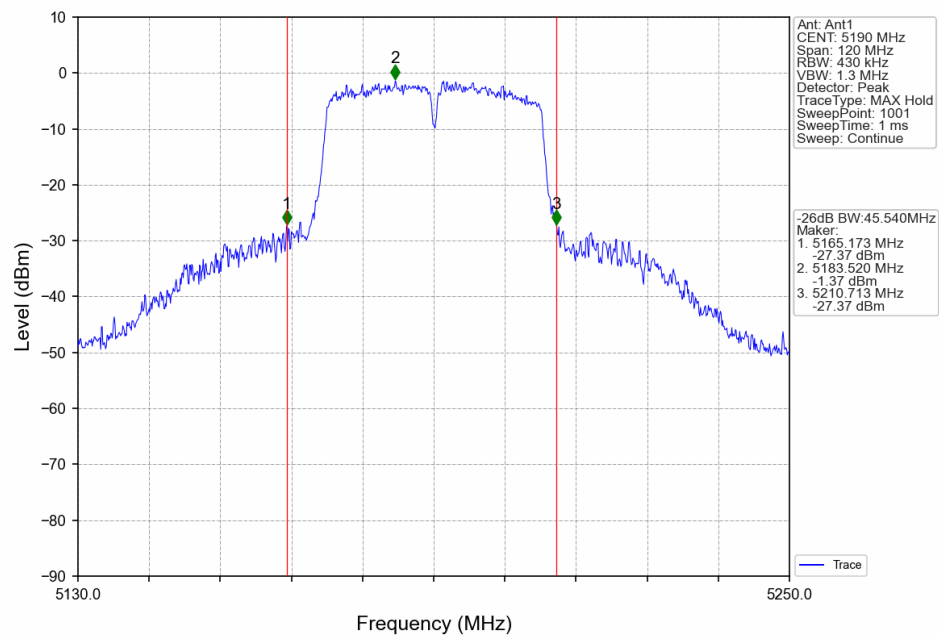
802.11ac(VHT20) MCH 5200MHz Ant1 NTN



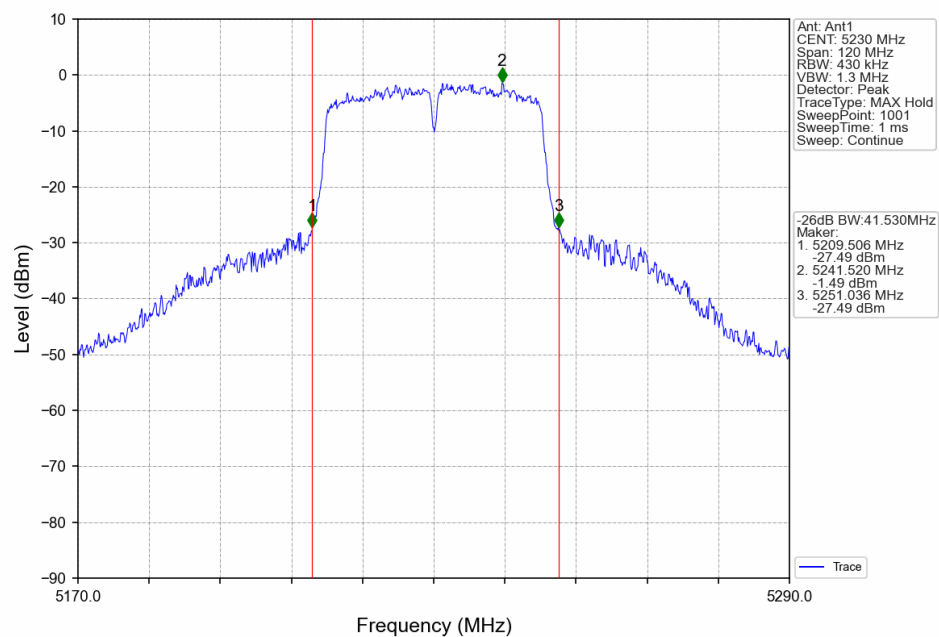
802.11ac(VHT20) HCH 5240MHz Ant1 NTN



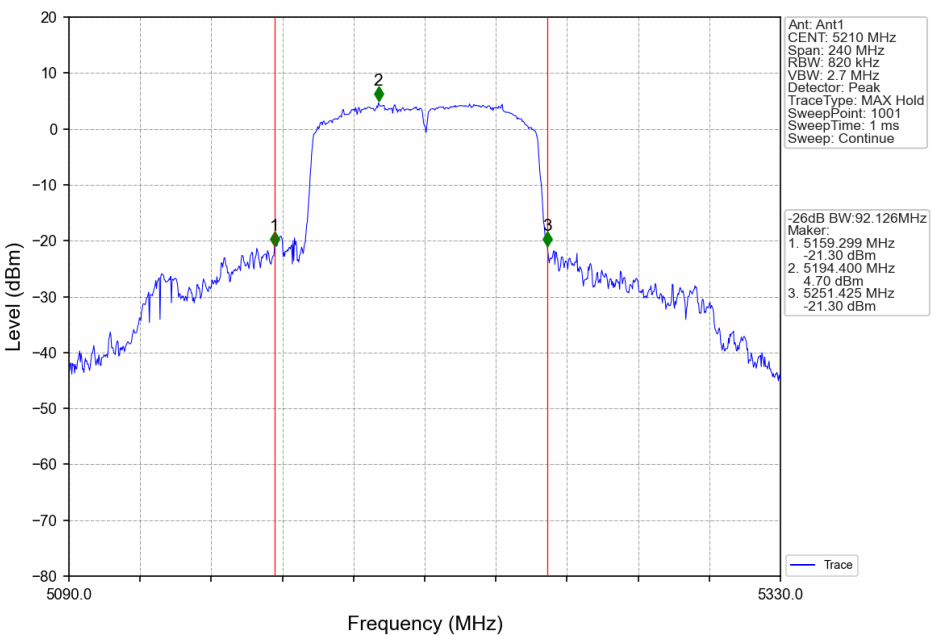
802.11ac(VHT40) LCH 5190MHz Ant1 NTN



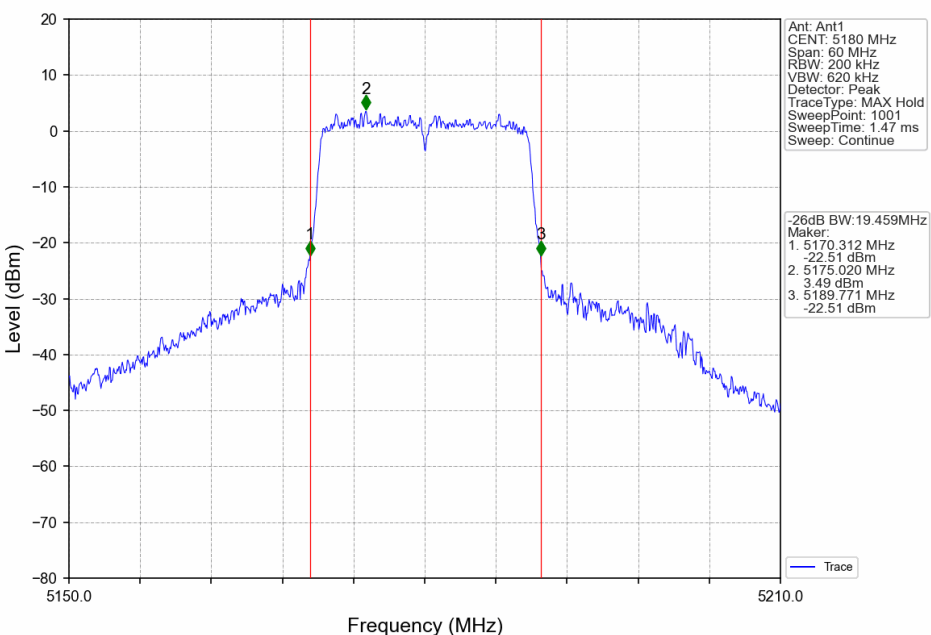
802.11ac(VHT40) HCH 5230MHz Ant1 NTN



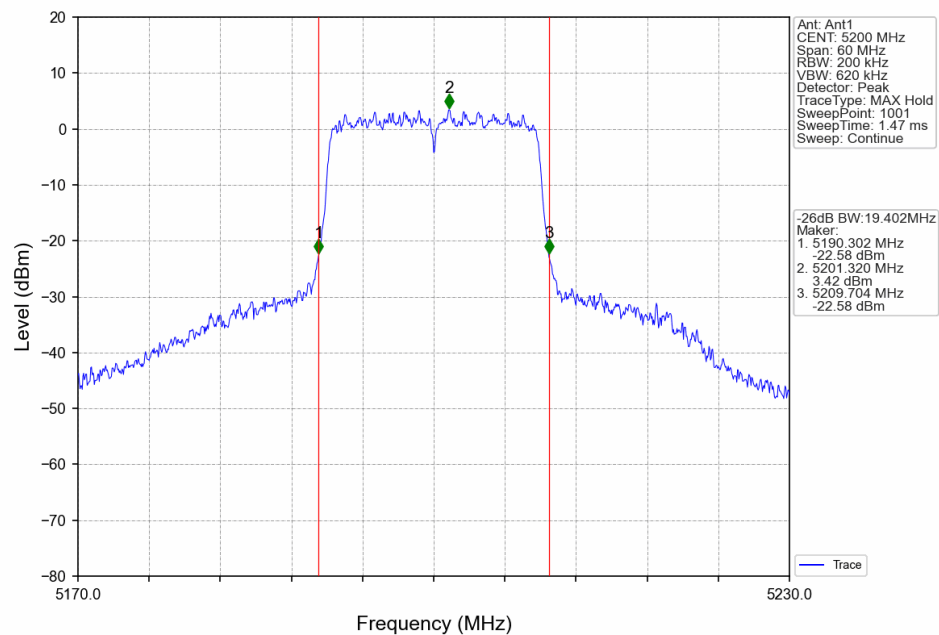
802.11ac(VHT80) MCH 5210MHz Ant1 NTN



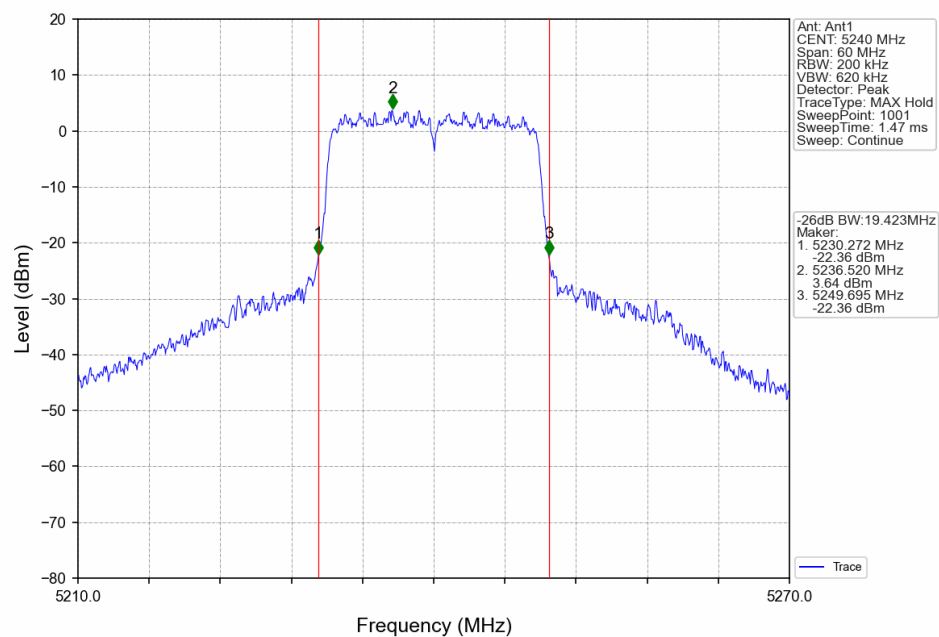
802.11ac(VHT20) LCH 5180MHz Ant1 NTN



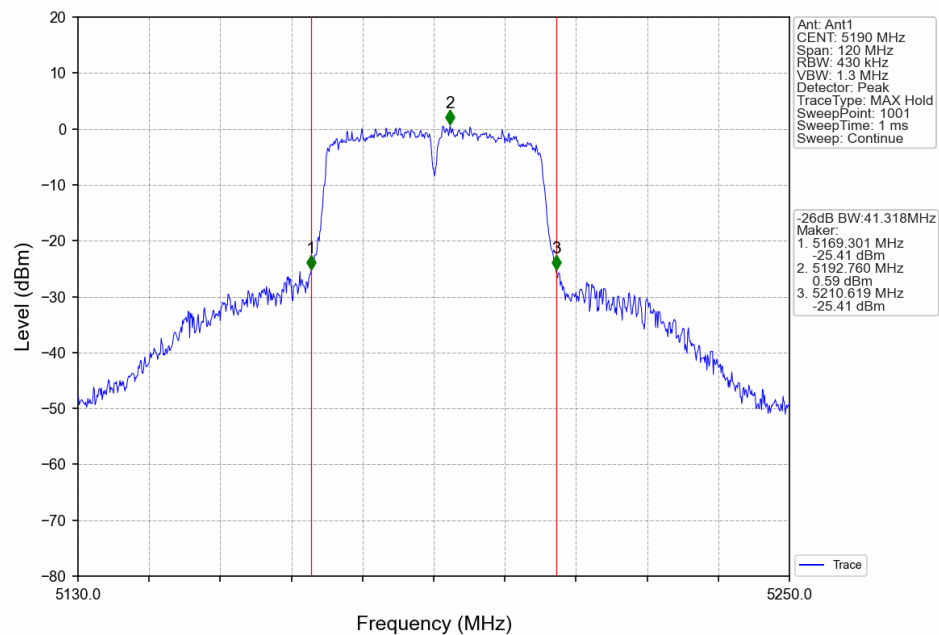
802.11ac(VHT20) MCH 5200MHz Ant1 NTN



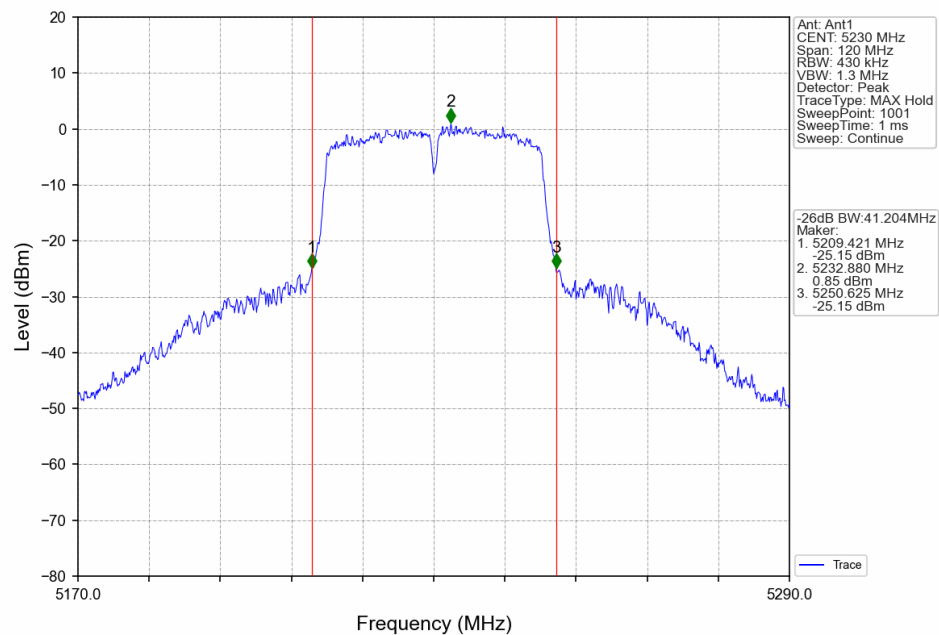
802.11ac(VHT20) HCH 5240MHz Ant1 NTN

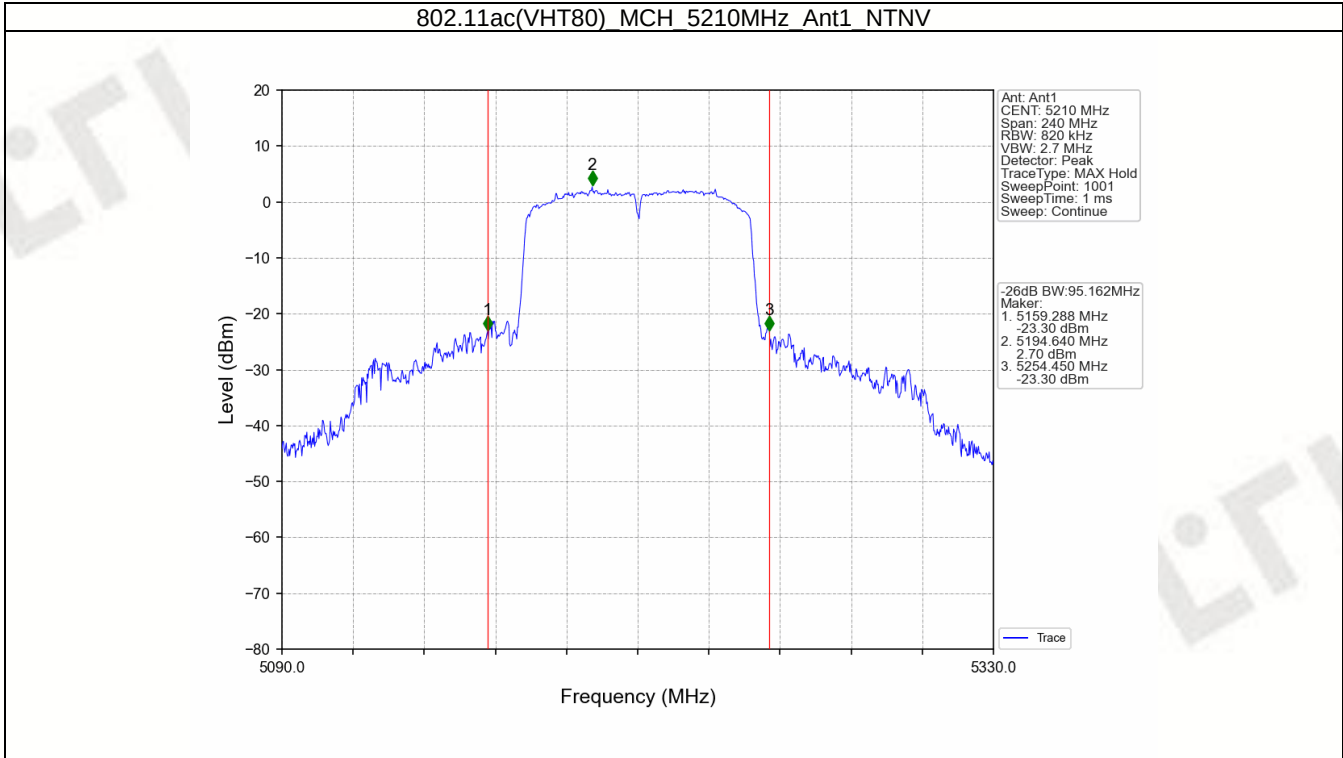


802.11ac(VHT40) LCH 5190MHz Ant1 NTN

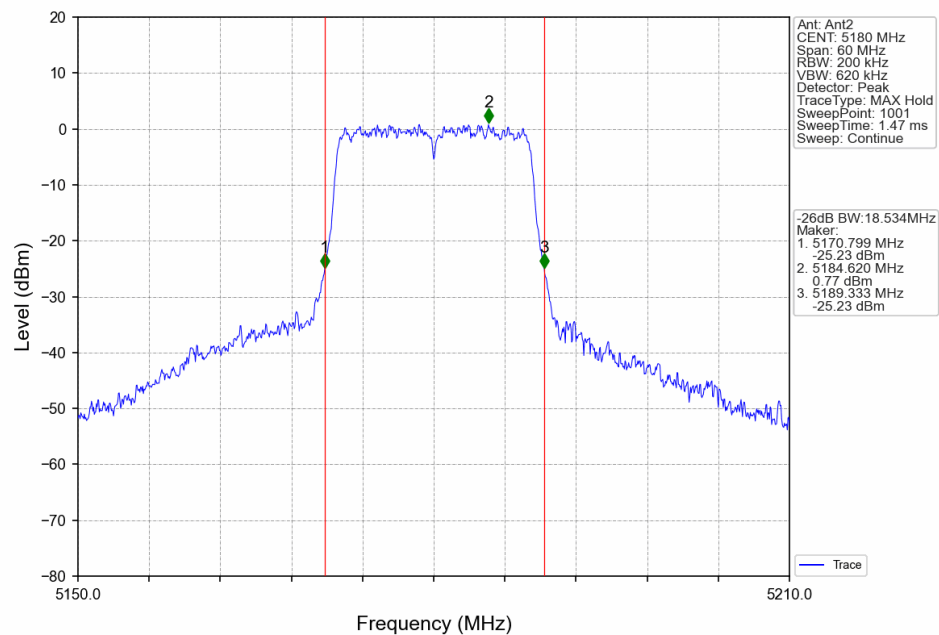


802.11ac(VHT40) HCH 5230MHz Ant1 NTN

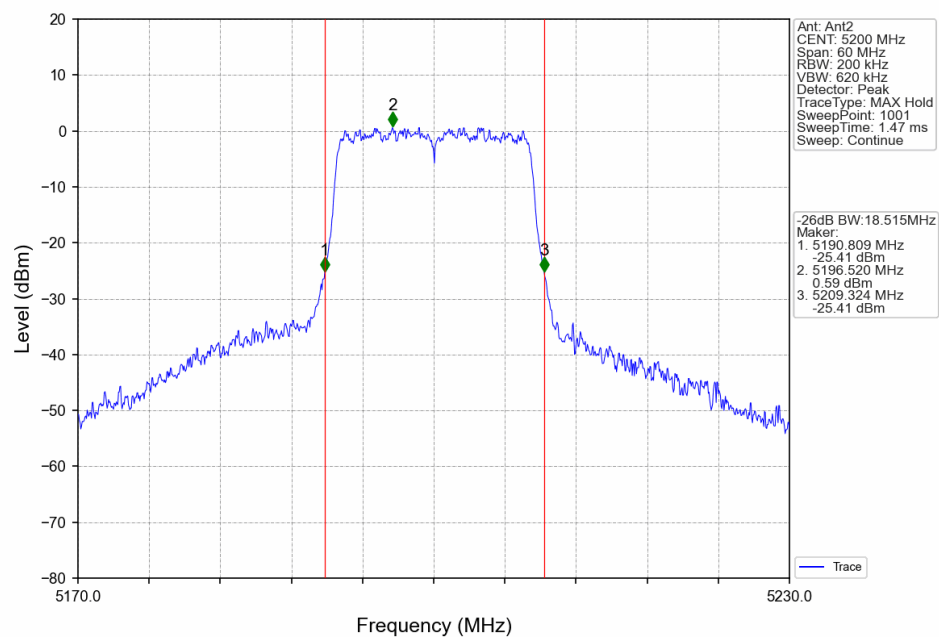




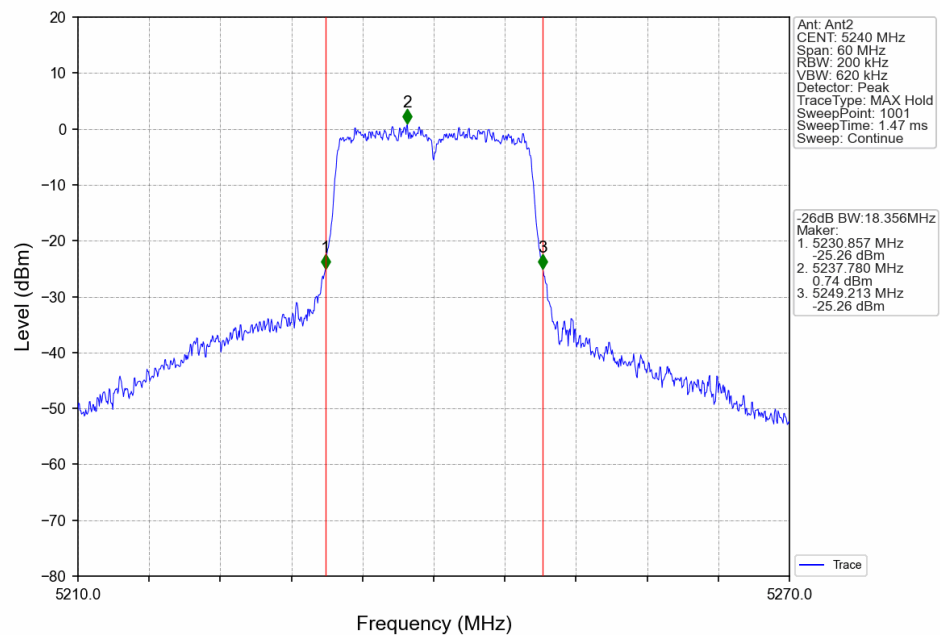
802.11a LCH 5180MHz Ant2 NTNV



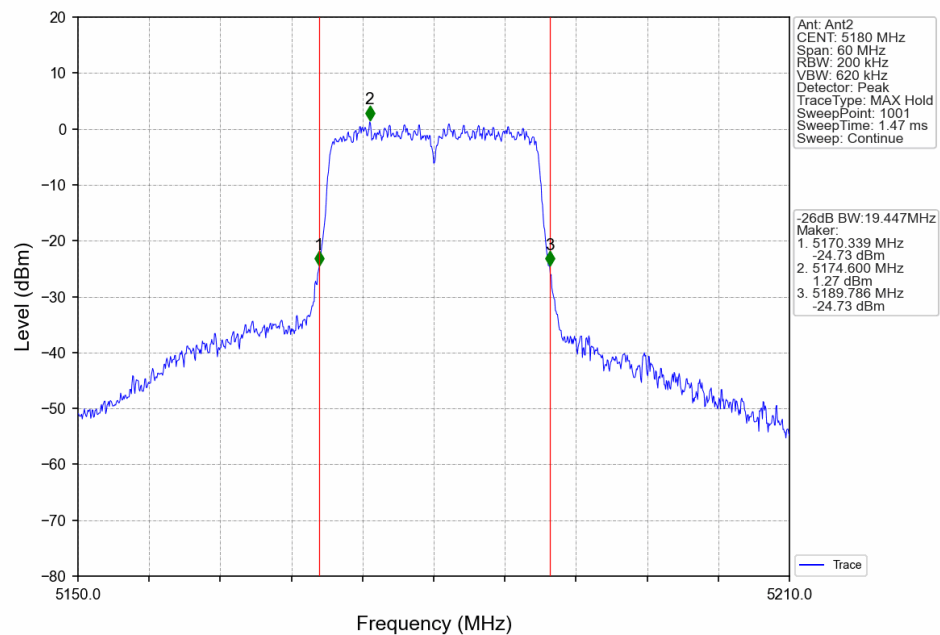
802.11a MCH 5200MHz Ant2 NTNV



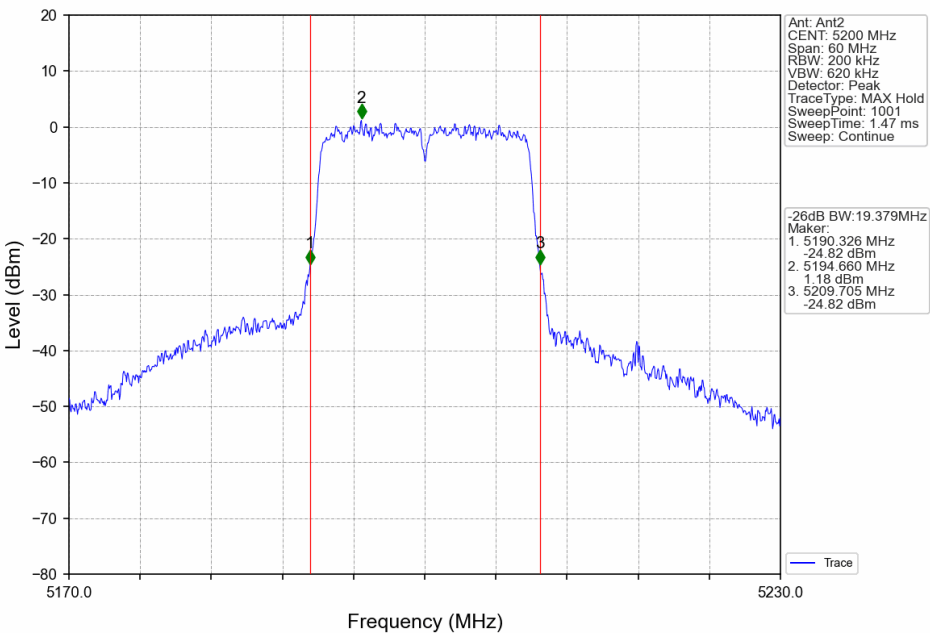
802.11a HCH 5240MHz Ant2 NTN



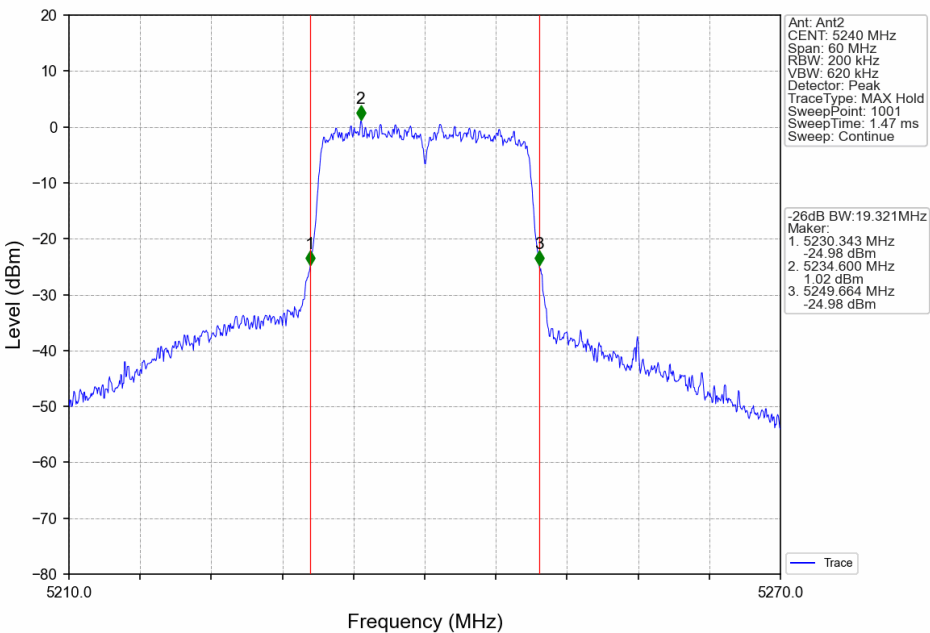
802.11n(HT20) LCH 5180MHz Ant2 NTN



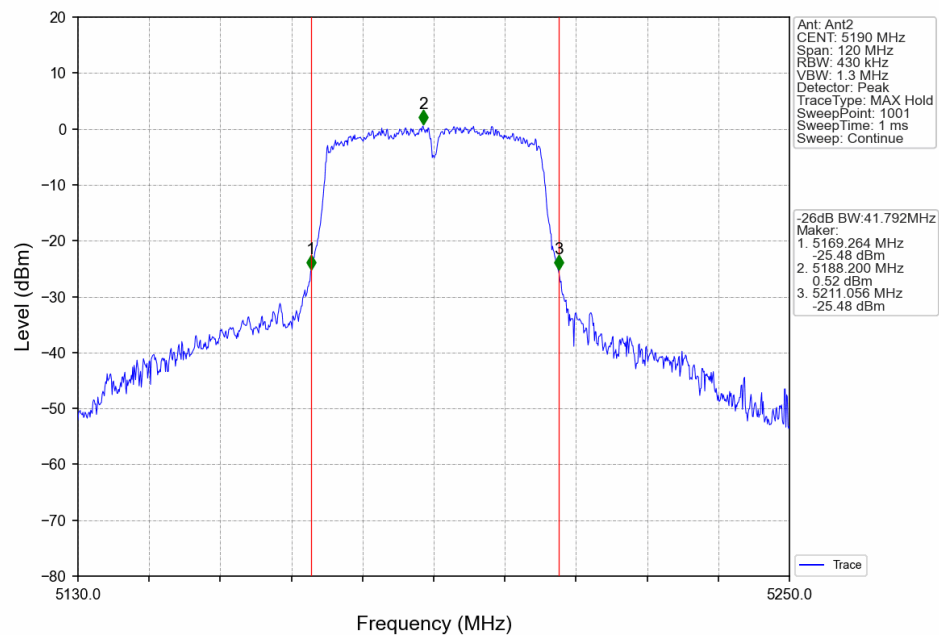
802.11n(HT20) MCH 5200MHz Ant2 NTN



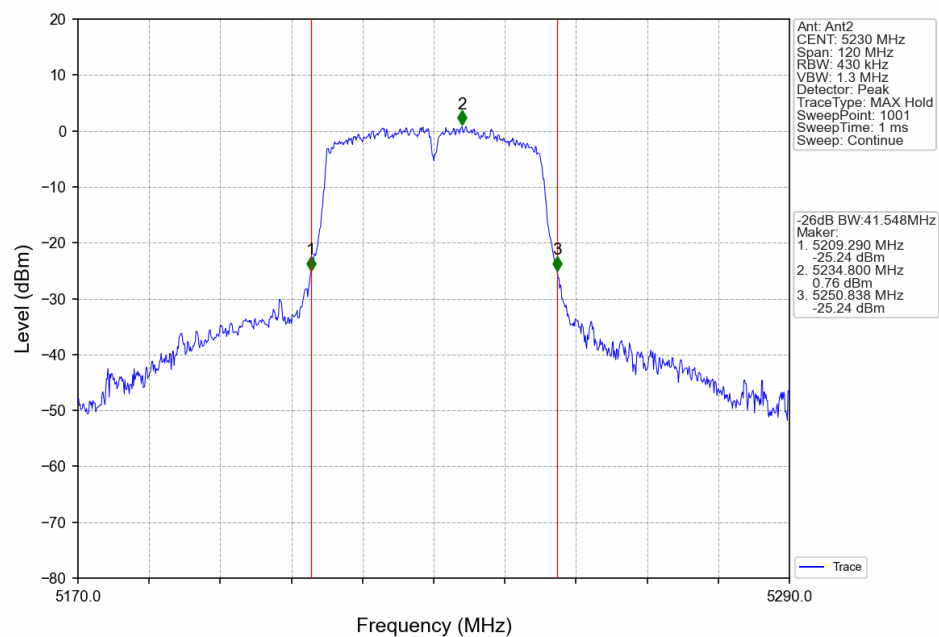
802.11n(HT20) HCH 5240MHz Ant2 NTN



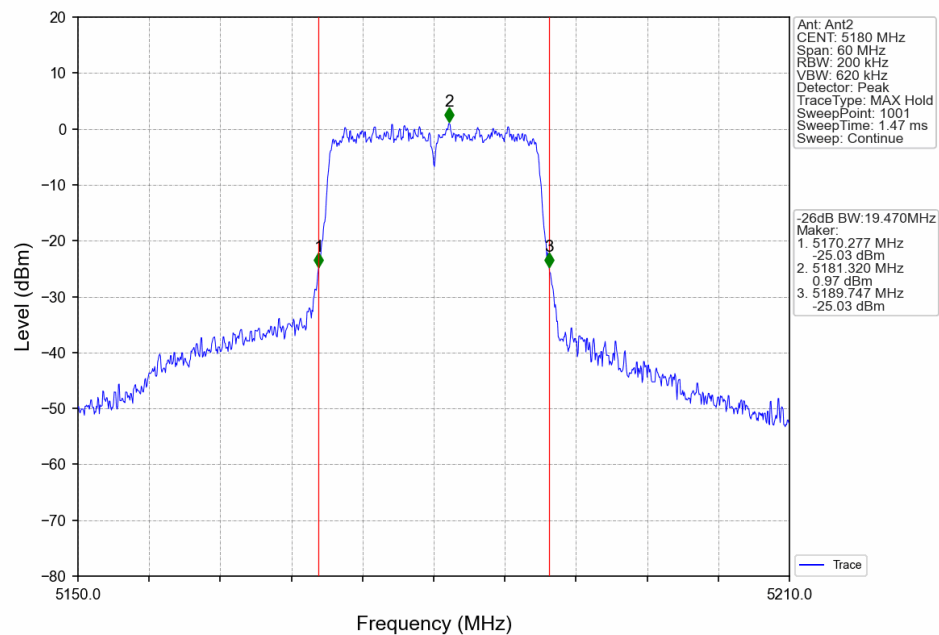
802.11n(HT40) LCH 5190MHz Ant2 NTN



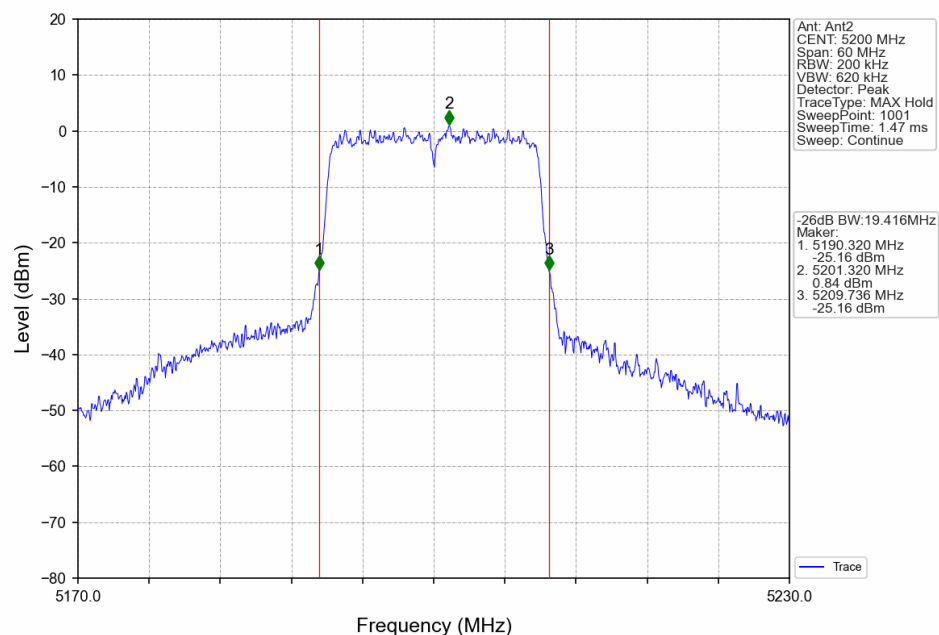
802.11n(HT40) HCH 5230MHz Ant2 NTN



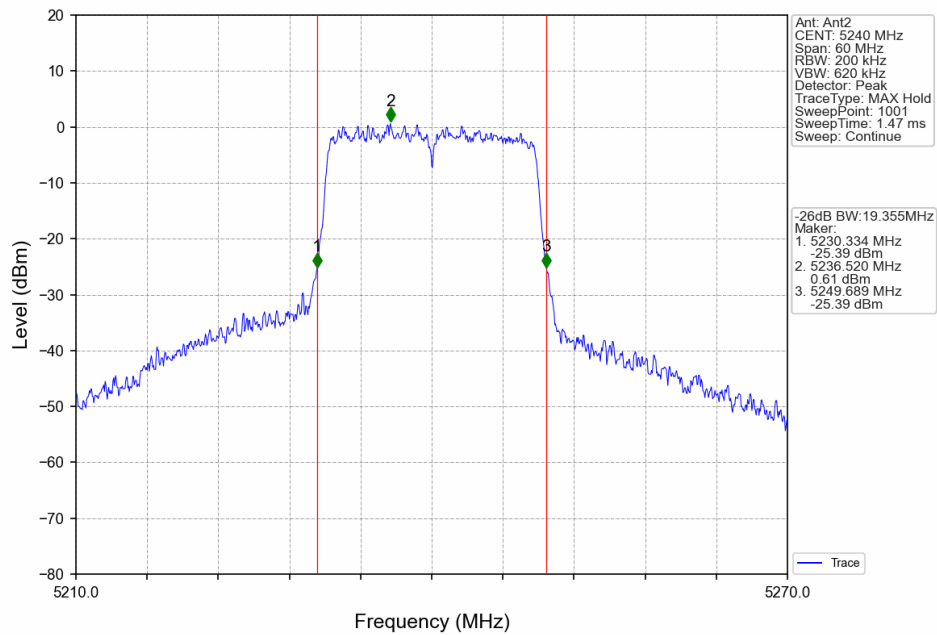
802.11ac(VHT20) LCH 5180MHz Ant2 NTN



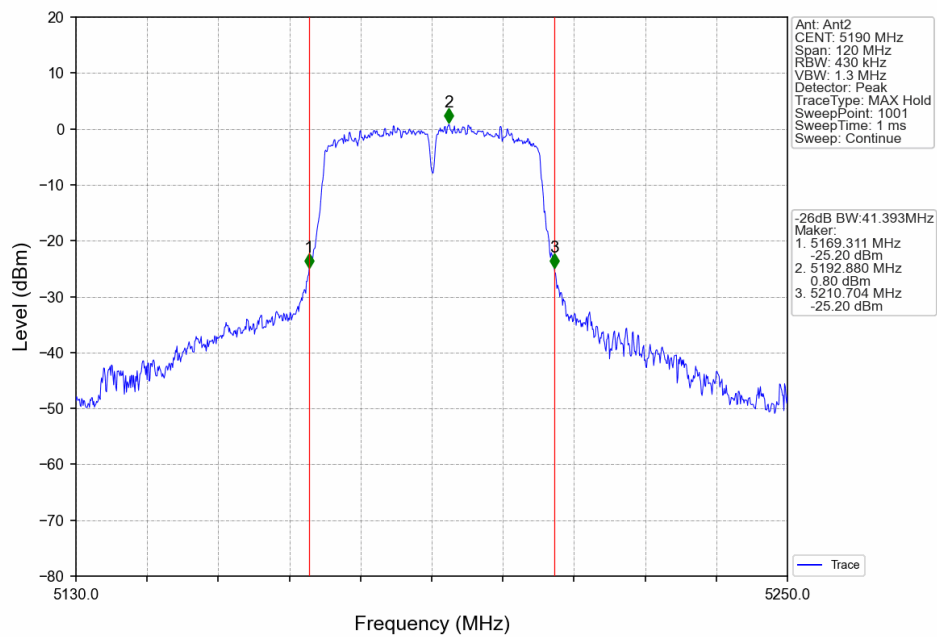
802.11ac(VHT20) MCH 5200MHz Ant2 NTN



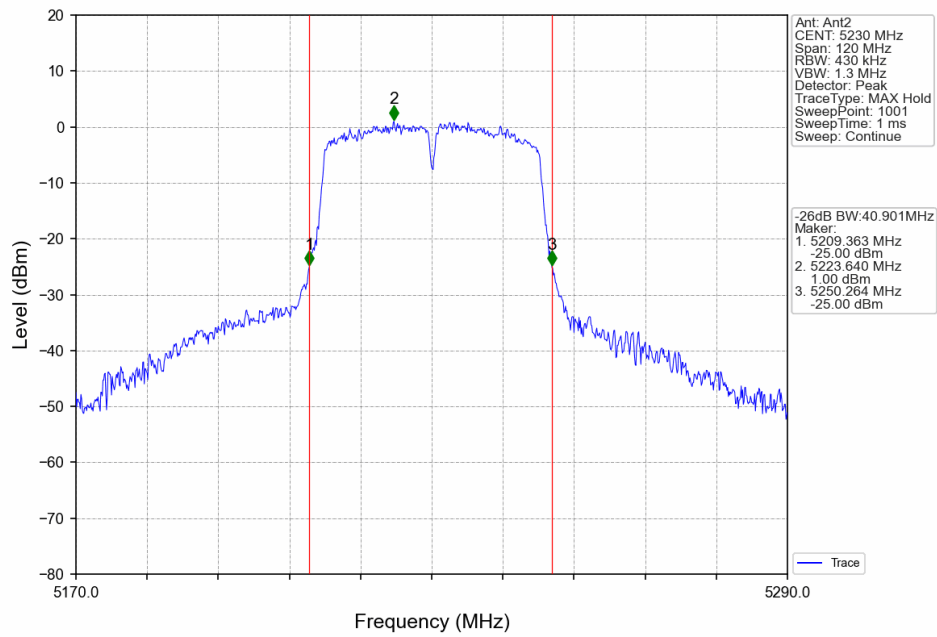
802.11ac(VHT20) HCH 5240MHz Ant2 NTNV



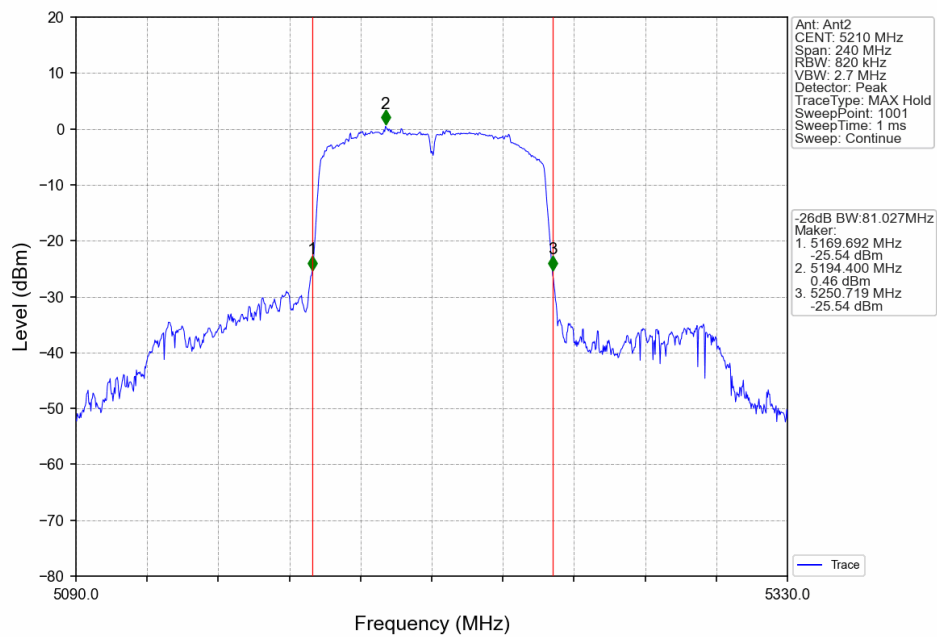
802.11ac(VHT40) LCH 5190MHz Ant2 NTNV



802.11ac(VHT40) HCH 5230MHz Ant2 NTNV



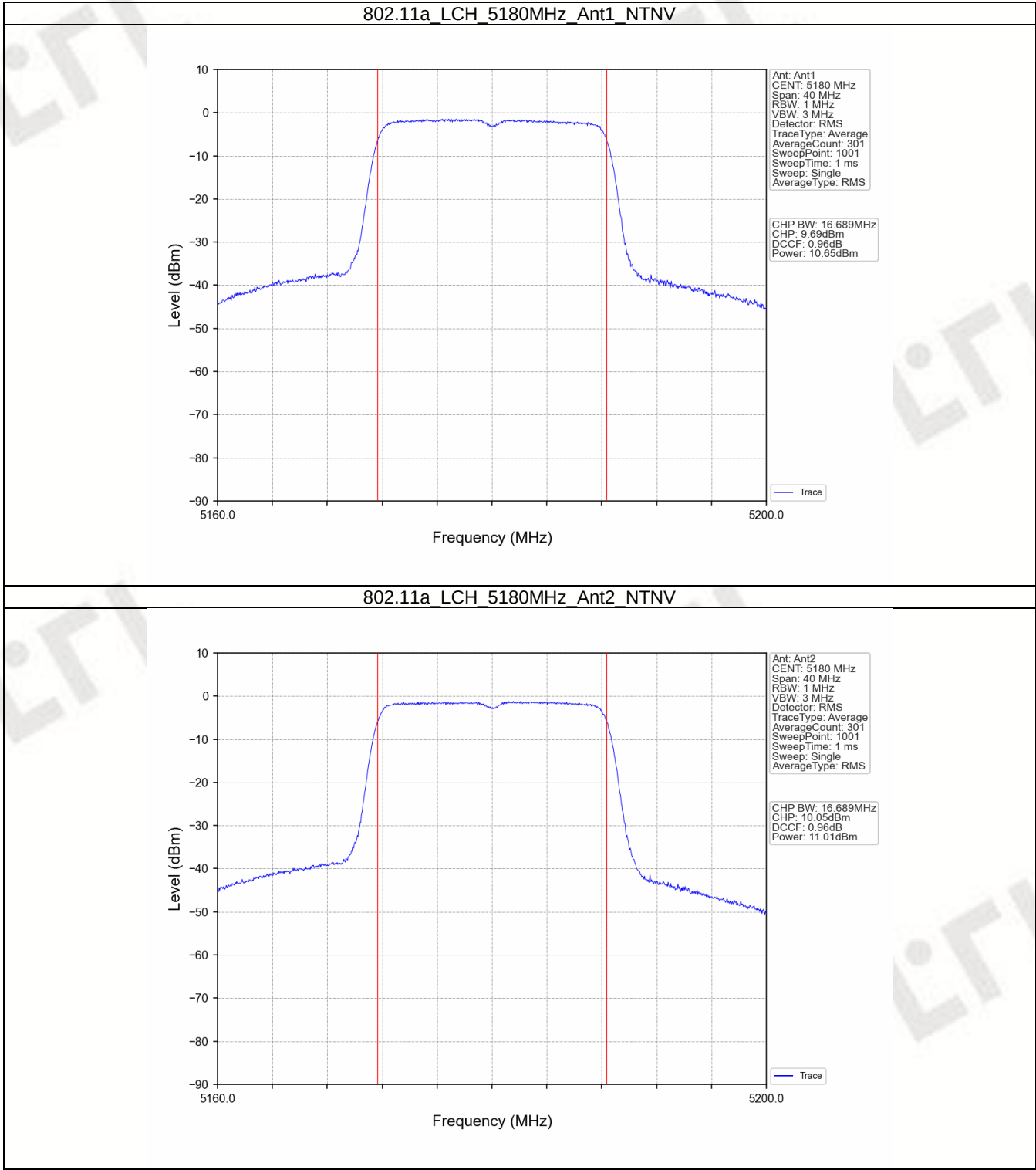
802.11ac(VHT80) MCH 5210MHz Ant2 NTNV



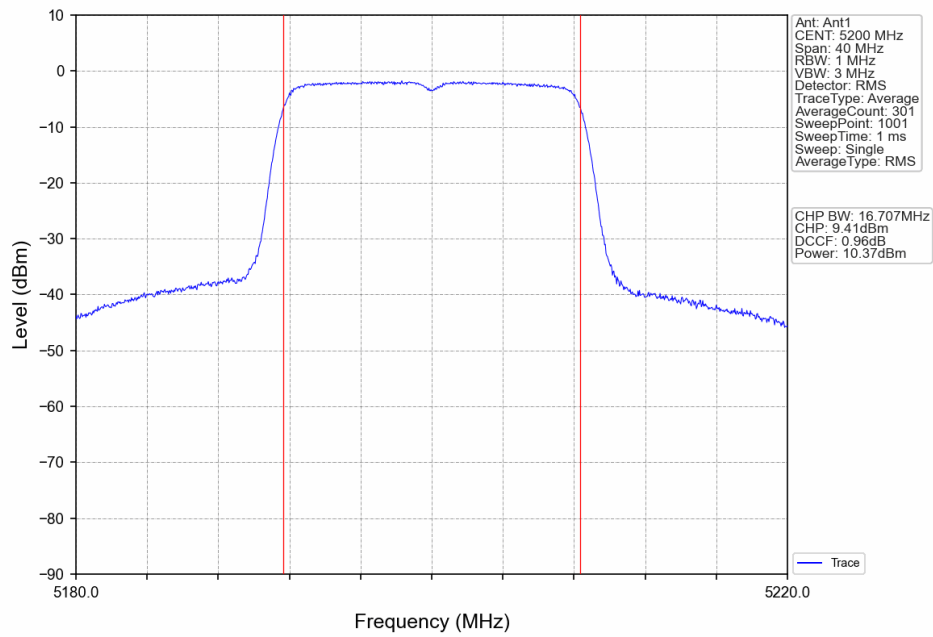
Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)				Verdict
			ANT1	ANT2	MIMO	Limit	
802.11a	SISO	5180	10.65	11.01	/	<=23.98	Pass
		5200	10.37	11.10	/	<=23.98	Pass
		5240	13.01	10.72	/	<=23.98	Pass
802.11n (HT20)	SISO	5180	12.17	11.13	/	<=23.98	Pass
		5200	11.46	10.96	/	<=23.98	Pass
		5240	9.89	10.97	/	<=23.98	Pass
802.11n (HT40)	SISO	5190	11.57	11.15	/	<=23.98	Pass
		5230	10.39	10.97	/	<=23.98	Pass
802.11n (HT20)	MIMO	5180	12.25	10.98	14.67	<=23.98	Pass
		5200	11.42	11.18	14.31	<=23.98	Pass
		5240	9.92	11.03	13.52	<=23.98	Pass
802.11n (HT40)	MIMO	5190	12.00	11.10	14.58	<=23.98	Pass
		5230	10.50	12.31	14.51	<=23.98	Pass
802.11ac (VHT20)	SISO	5180	12.17	10.86	/	<=23.98	Pass
		5200	11.24	11.27	/	<=23.98	Pass
		5240	9.92	11.09	/	<=23.98	Pass
802.11ac (VHT40)	SISO	5190	8.29	11.08	/	<=23.98	Pass
		5230	8.71	11.57	/	<=23.98	Pass
802.11ac (VHT80)	SISO	5210	14.98	11.39	/	<=23.98	Pass
802.11ac (VHT20)	MIMO	5180	13.64	11.46	15.70	<=23.98	Pass
		5200	13.30	11.30	15.42	<=23.98	Pass
		5240	13.58	10.82	15.43	<=23.98	Pass
802.11ac (VHT40)	MIMO	5190	10.93	11.30	14.13	<=23.98	Pass
		5230	10.72	11.28	14.02	<=23.98	Pass
802.11ac (VHT80)	MIMO	5210	12.72	11.16	15.02	<=23.98	Pass

Note1: Antenna Gain: Ant1: 2.50dBi; Ant2: 2.50dBi;
Note2: Directional Gain: 5.5dBi

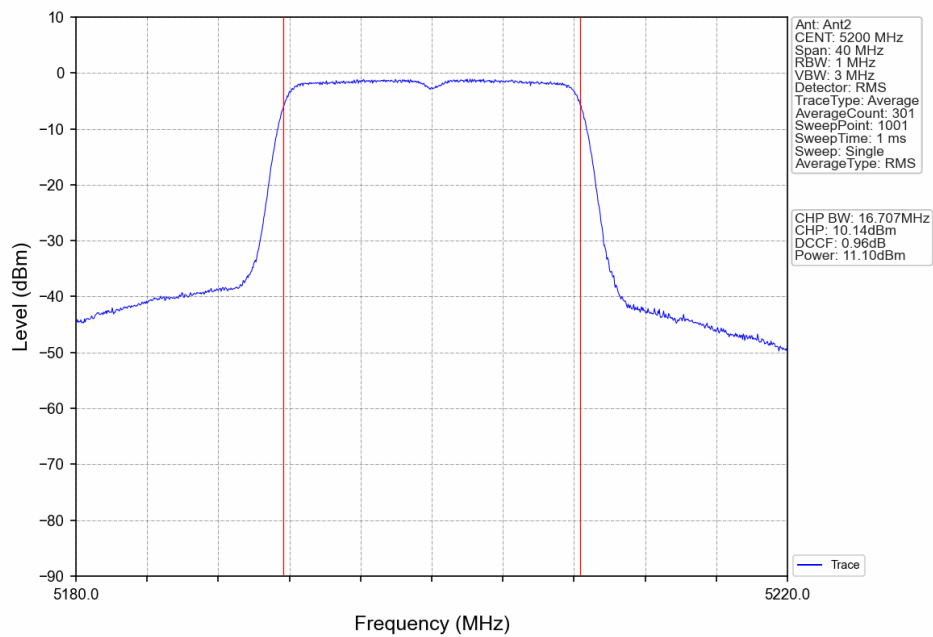
2.1.2 Test Graph



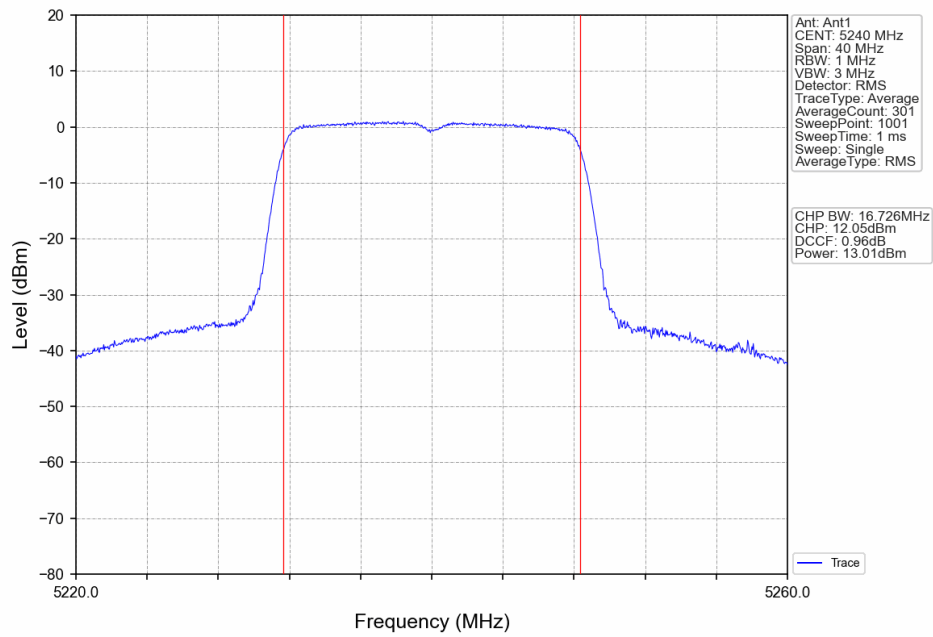
802.11a MCH 5200MHz Ant1 NTN



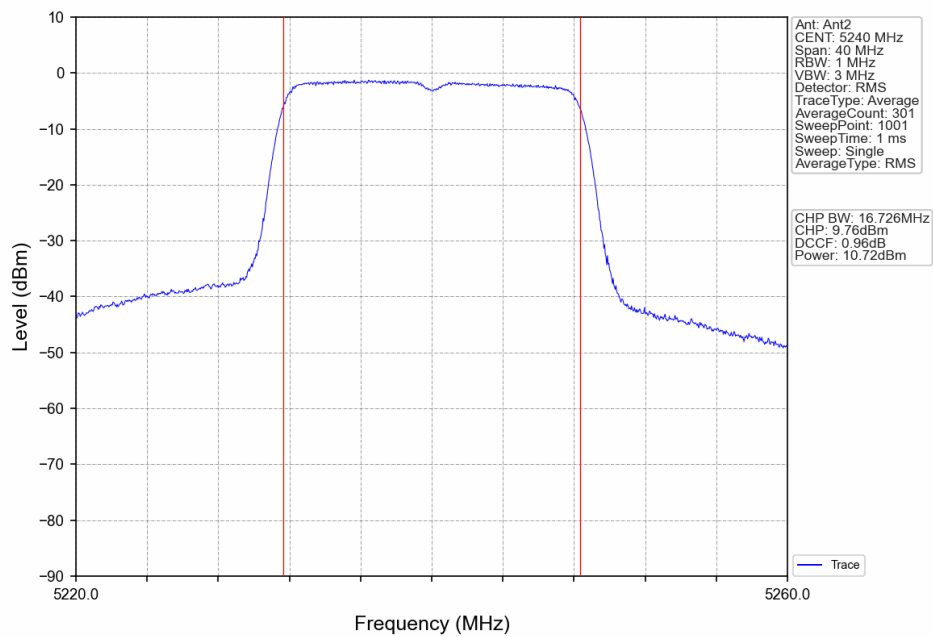
802.11a MCH 5200MHz Ant2 NTN



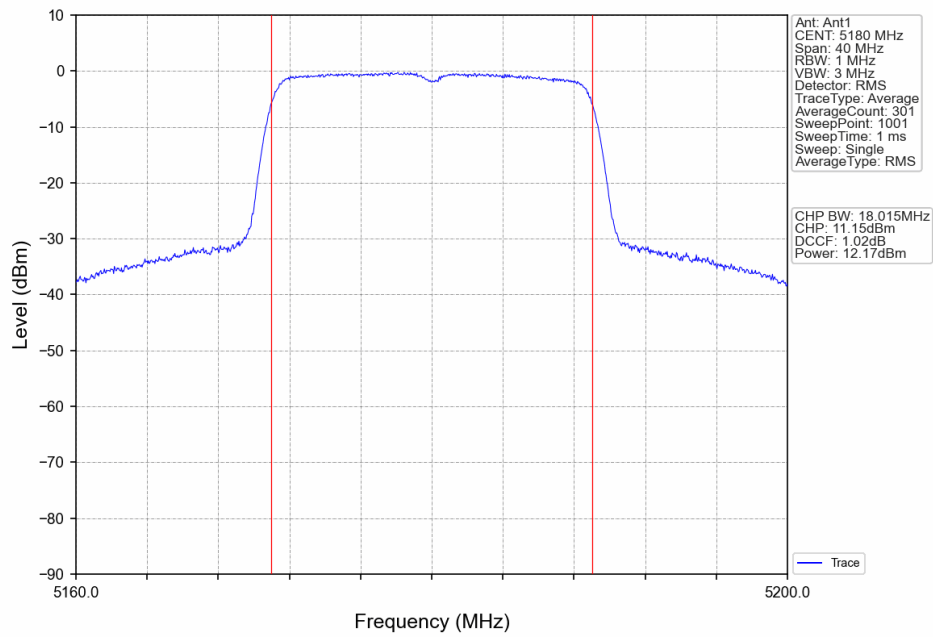
802.11a HCH 5240MHz Ant1 NTN



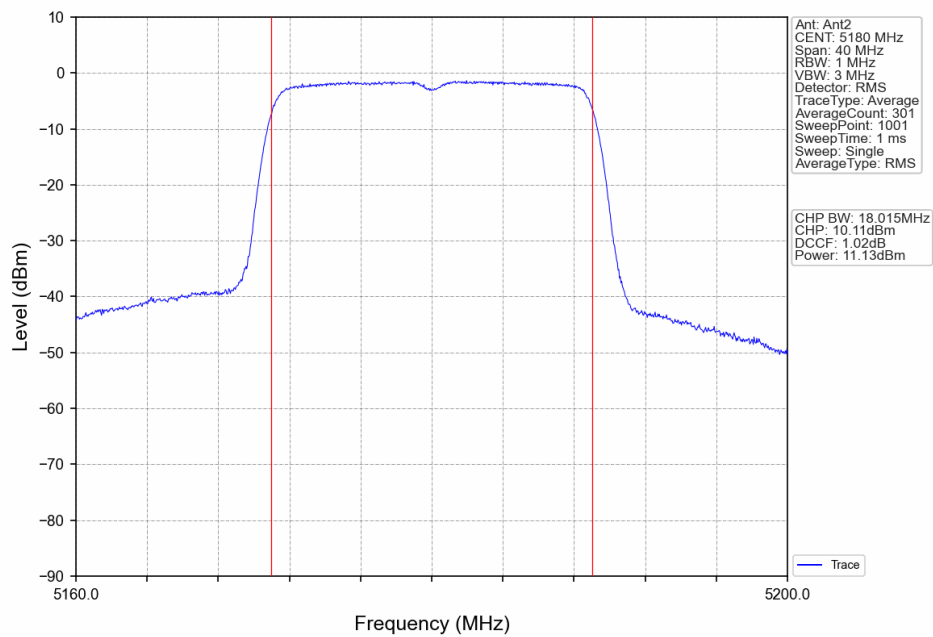
802.11a HCH 5240MHz Ant2 NTN



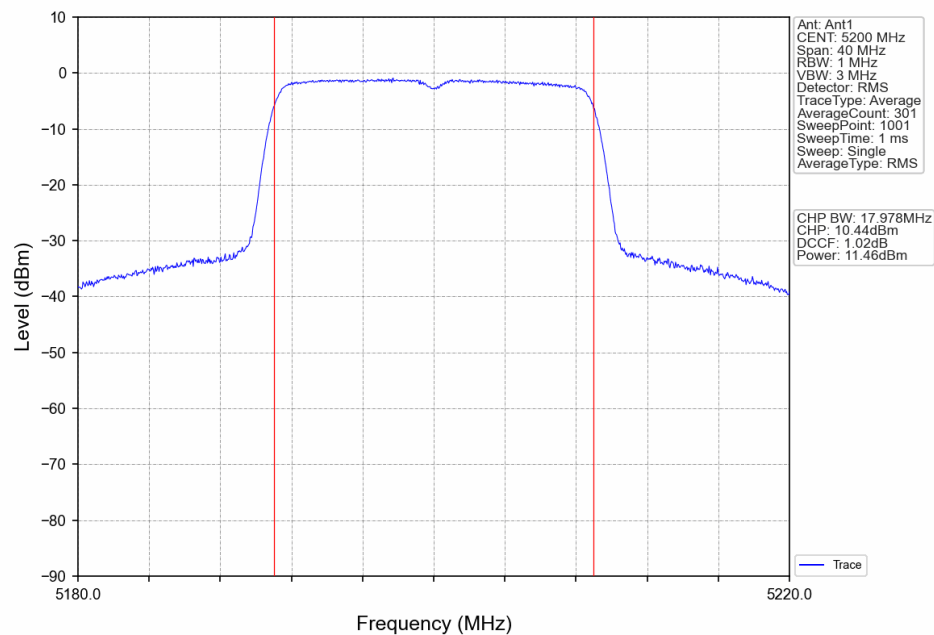
802.11n(HT20) LCH 5180MHz Ant1 NTV



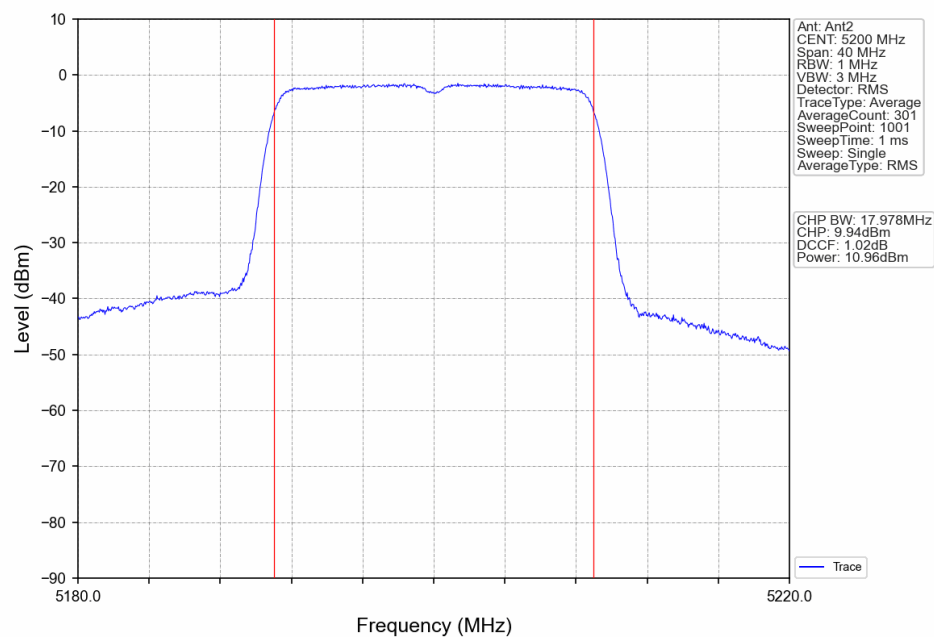
802.11n(HT20) LCH 5180MHz Ant2 NTV



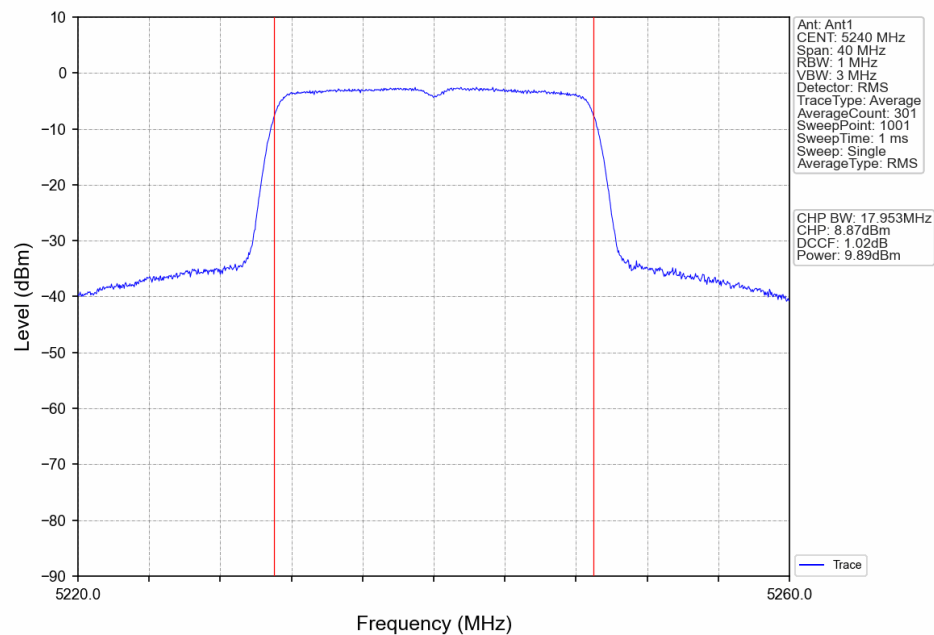
802.11n(HT20) MCH 5200MHz Ant1 NTV



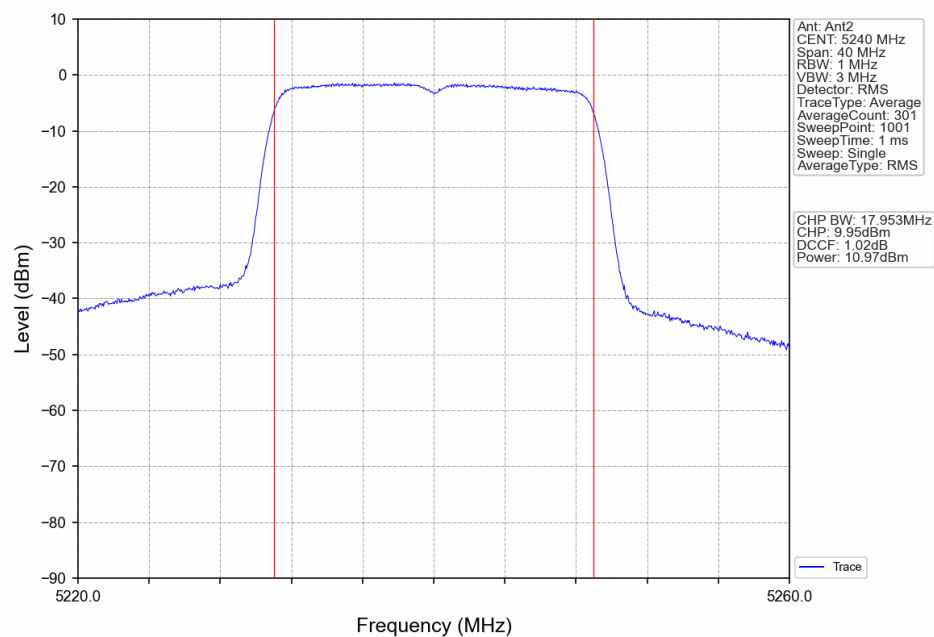
802.11n(HT20) MCH 5200MHz Ant2 NTV



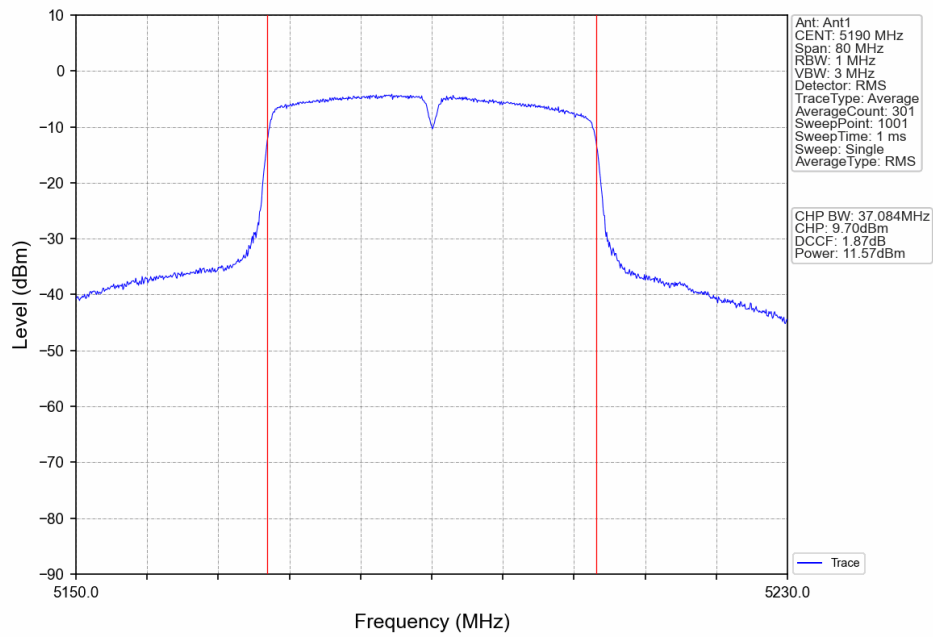
802.11n(HT20) HCH 5240MHz Ant1 NTV



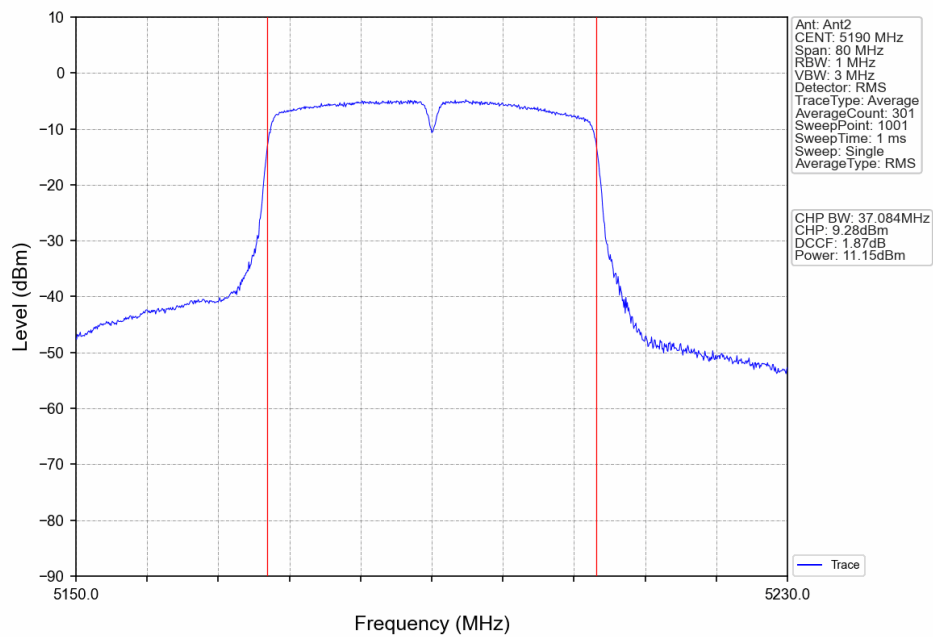
802.11n(HT20) HCH 5240MHz Ant2 NTV



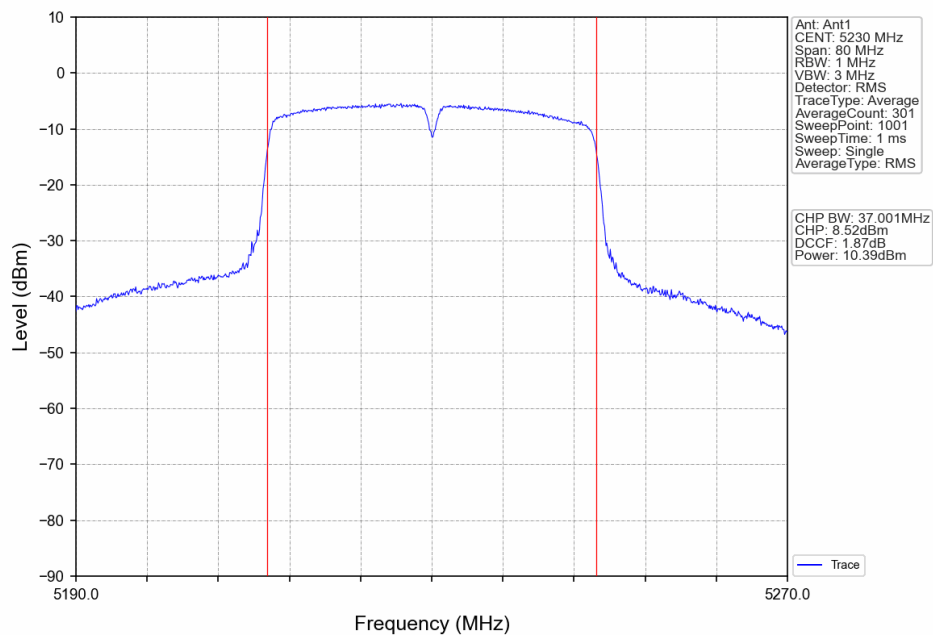
802.11n(HT40) LCH 5190MHz Ant1 NTV



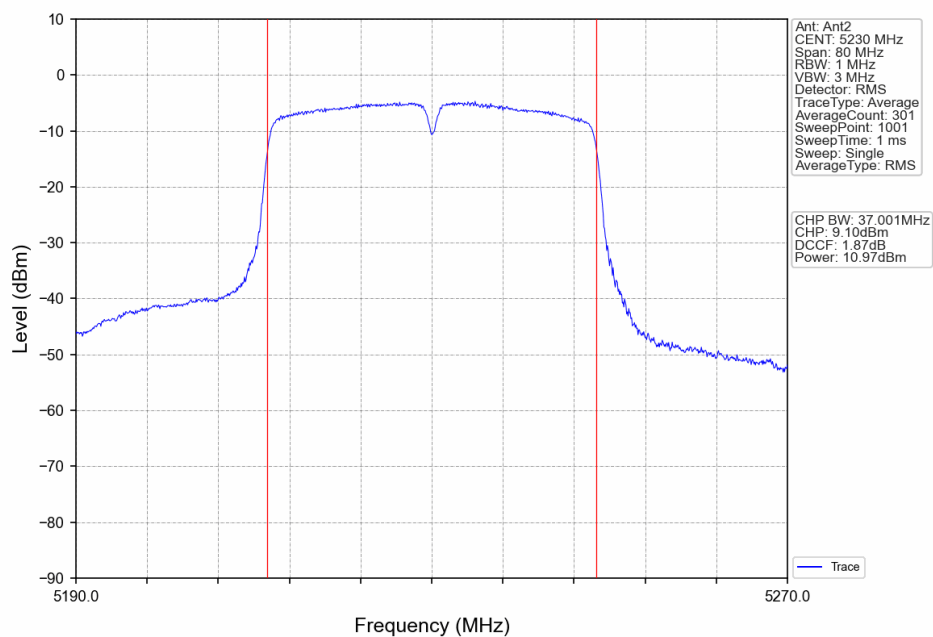
802.11n(HT40) LCH 5190MHz Ant2 NTV



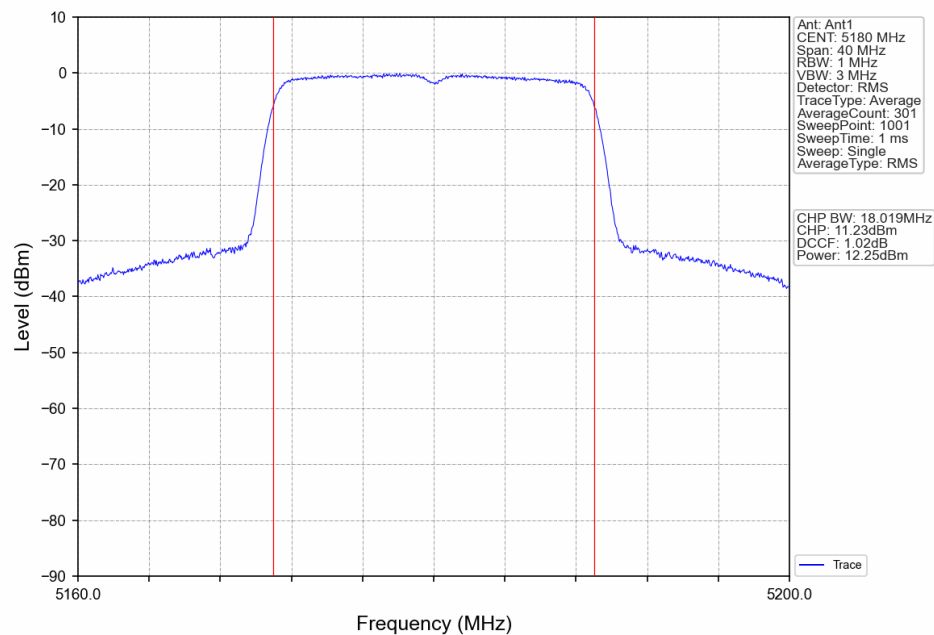
802.11n(HT40) HCH 5230MHz Ant1 NTV



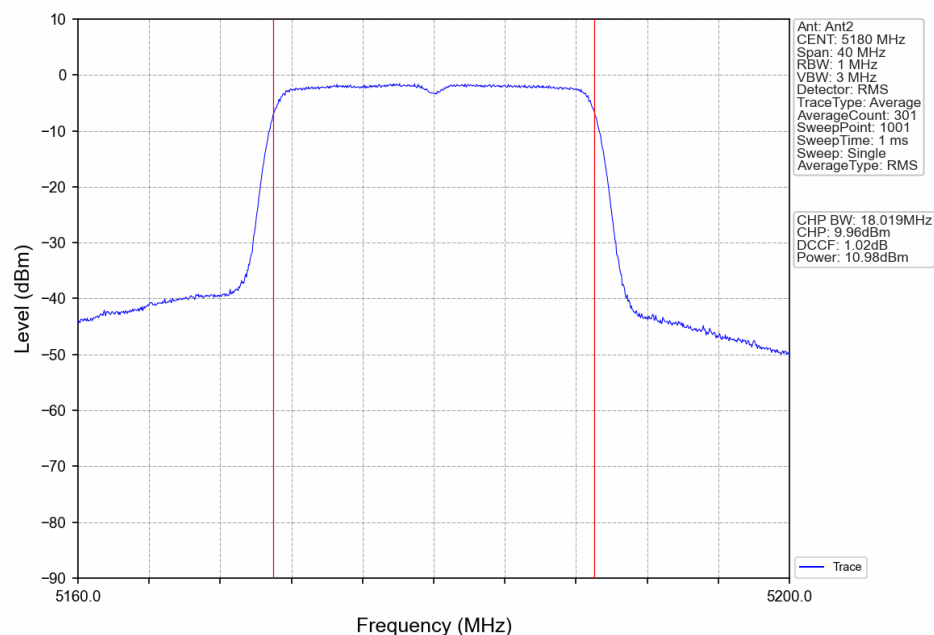
802.11n(HT40) HCH 5230MHz Ant2 NTV



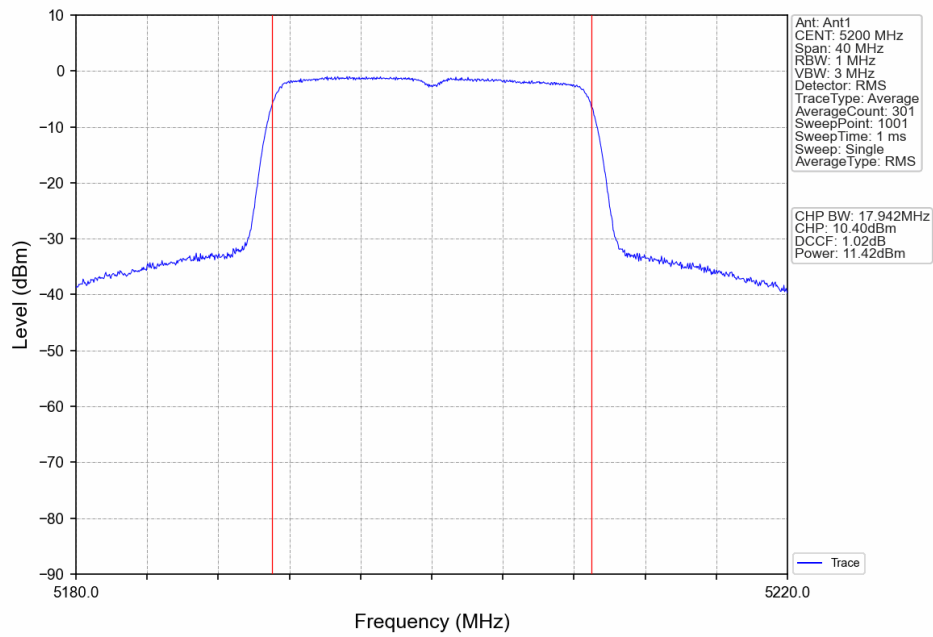
802.11n(HT20) LCH 5180MHz Ant1 NTV



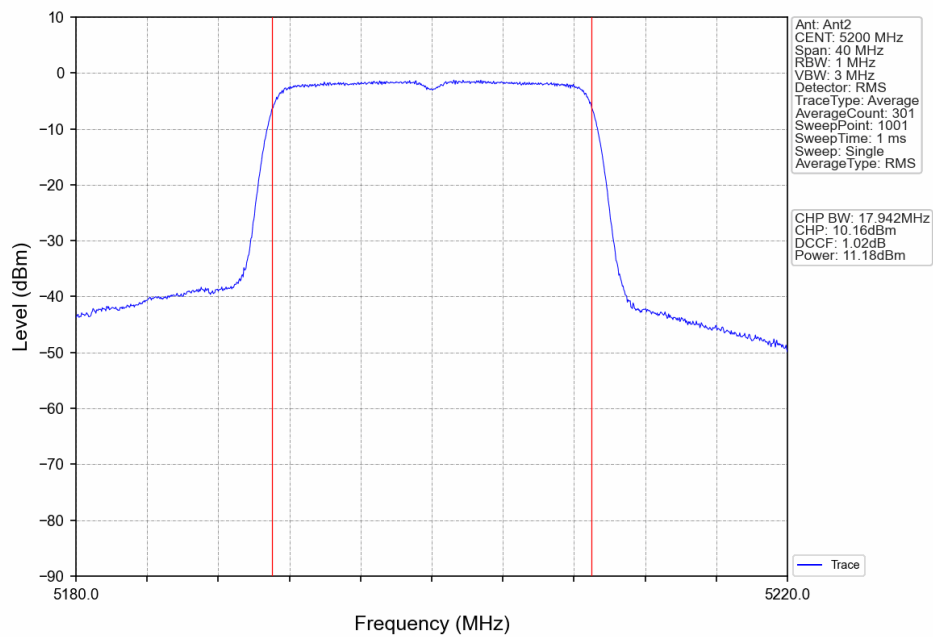
802.11n(HT20) LCH 5180MHz Ant2 NTV



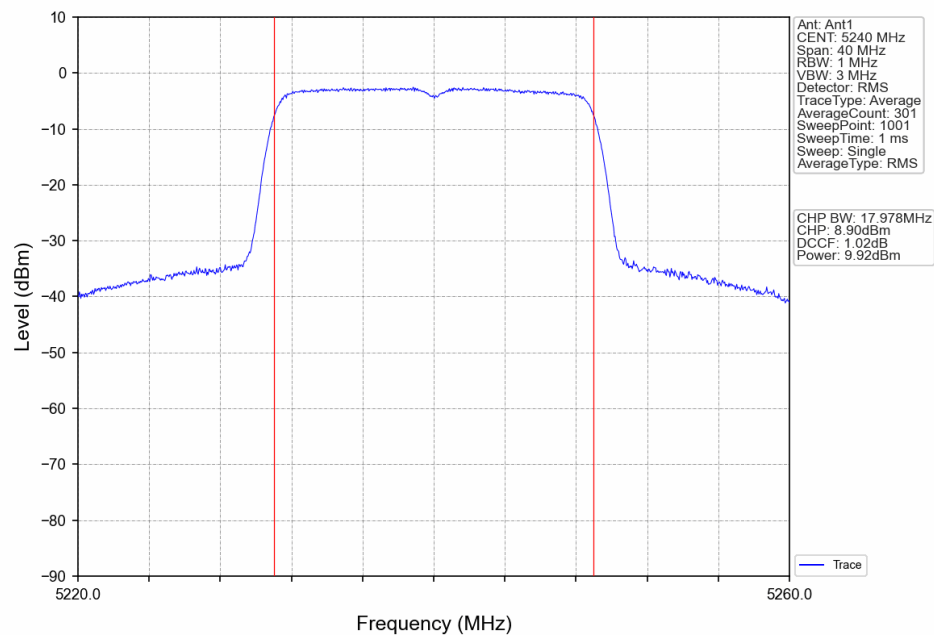
802.11n(HT20) MCH 5200MHz Ant1 NTN



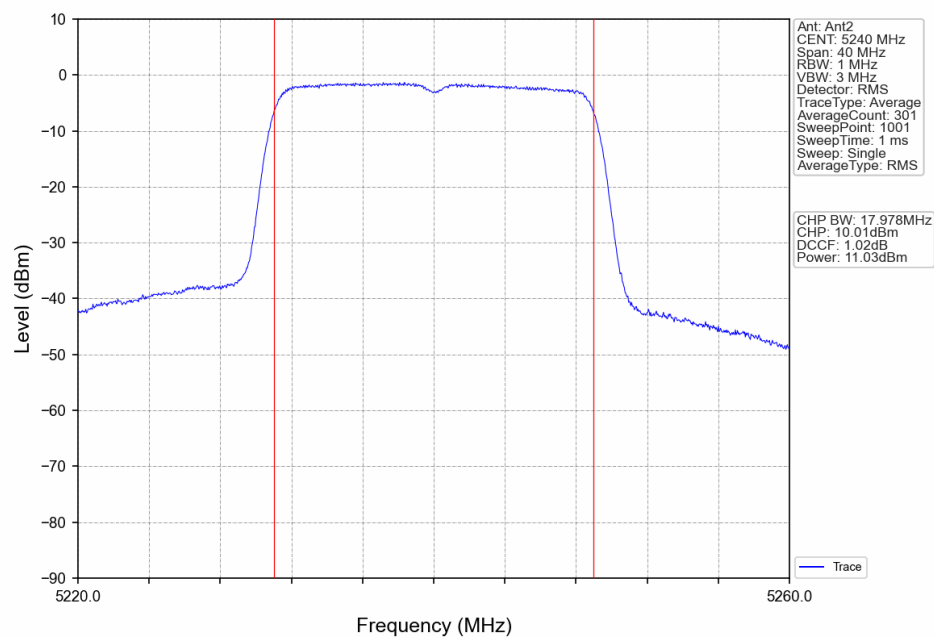
802.11n(HT20) MCH 5200MHz Ant2 NTN



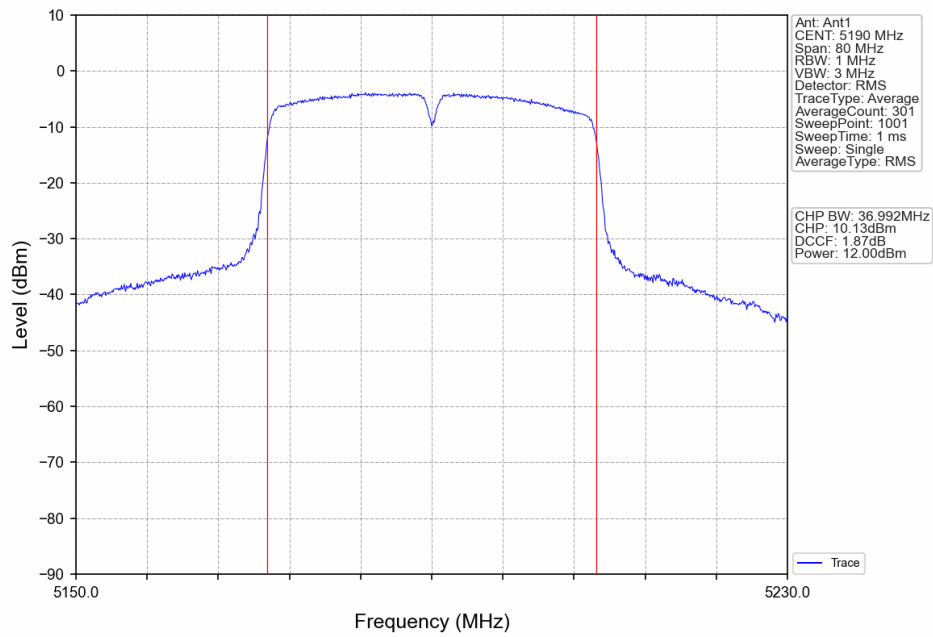
802.11n(HT20) HCH 5240MHz Ant1 NTV



802.11n(HT20) HCH 5240MHz Ant2 NTV



802.11n(HT40) LCH 5190MHz Ant1 NTV



802.11n(HT40) LCH 5190MHz Ant2 NTV

