

Appendix RF Test Data for WIFI 5G

Company: : YEAHER INC.

EUT : Portable Computer

FCC ID: : 2BEMH-N15AB

Model Number : N15AB

Report No. : HTT202508371F03

Reviewed By : Heber He

1. Duty Cycle

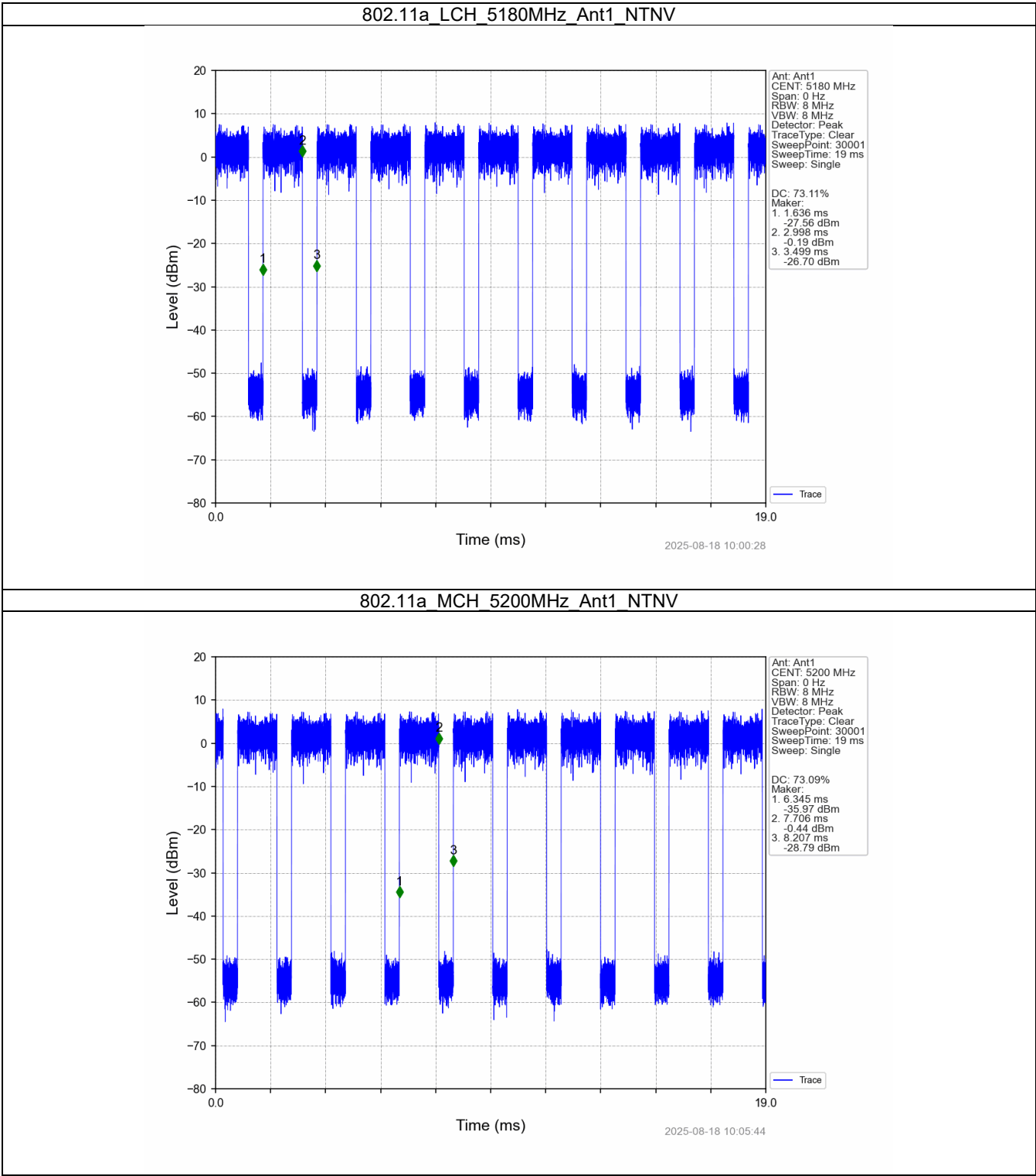
1.1 Test Result

1.1.1 Ant1

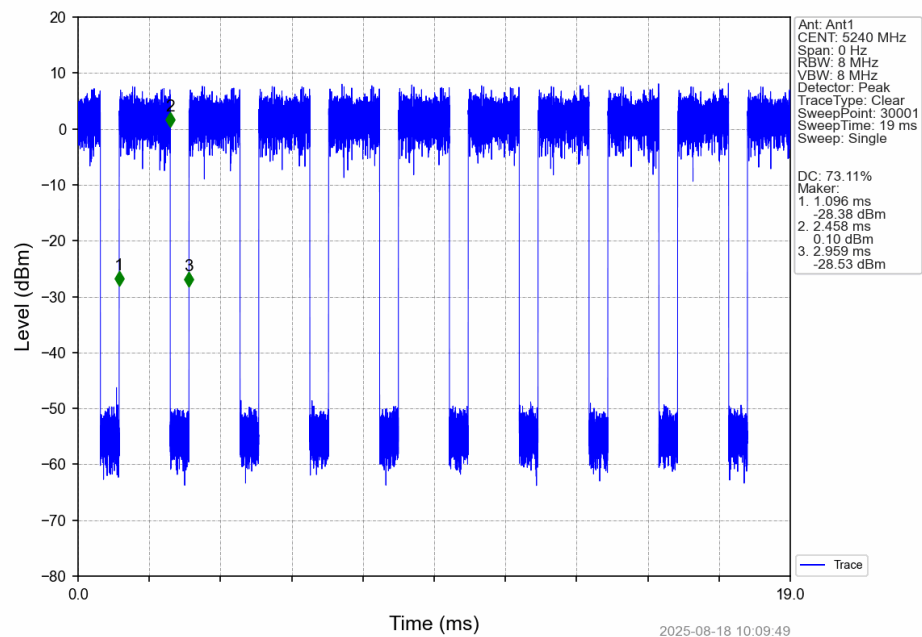
Ant1							
Mode	Tx Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11a	SISO	5180	1.362	1.863	73.11	1.36	0.03
		5200	1.361	1.862	73.09	1.36	0.03
		5240	1.362	1.863	73.11	1.36	0.03
		5745	1.362	1.862	73.15	1.36	0.03
		5785	1.362	1.863	73.11	1.36	0.03
		5825	1.362	1.863	73.11	1.36	0.03
802.11n (HT20)	MIMO	5180	1.274	1.775	71.77	1.44	0.02
		5200	1.274	1.775	71.77	1.44	0.03
		5240	1.274	1.775	71.77	1.44	0.02
		5745	1.274	1.775	71.77	1.44	0.03
		5785	1.273	1.774	71.76	1.44	0.03
		5825	1.273	1.774	71.76	1.44	0.03
802.11n (HT40)	MIMO	5190	0.634	1.134	55.91	2.53	0.01
		5230	0.633	1.134	55.82	2.53	0.03
		5755	0.634	1.134	55.91	2.53	0.03
		5795	0.633	1.134	55.82	2.53	0.03
802.11ac (VHT20)	MIMO	5180	1.277	1.778	71.82	1.44	0.03
		5200	1.277	1.778	71.82	1.44	0.03
		5240	1.278	1.779	71.84	1.44	0.03
		5745	1.277	1.778	71.82	1.44	0.03
		5785	1.278	1.779	71.84	1.44	0.03
		5825	1.278	1.779	71.84	1.44	0.03
802.11ac (VHT40)	MIMO	5190	0.633	1.134	55.82	2.53	0.03
		5230	0.633	1.134	55.82	2.53	0.03
		5755	0.634	1.134	55.91	2.53	0.03
		5795	0.637	1.138	55.98	2.52	0.02
802.11ac (VHT80)	MIMO	5210	0.318	0.818	38.88	4.10	0.03
		5775	0.317	0.818	38.75	4.12	0.03

1.2 Test Graph

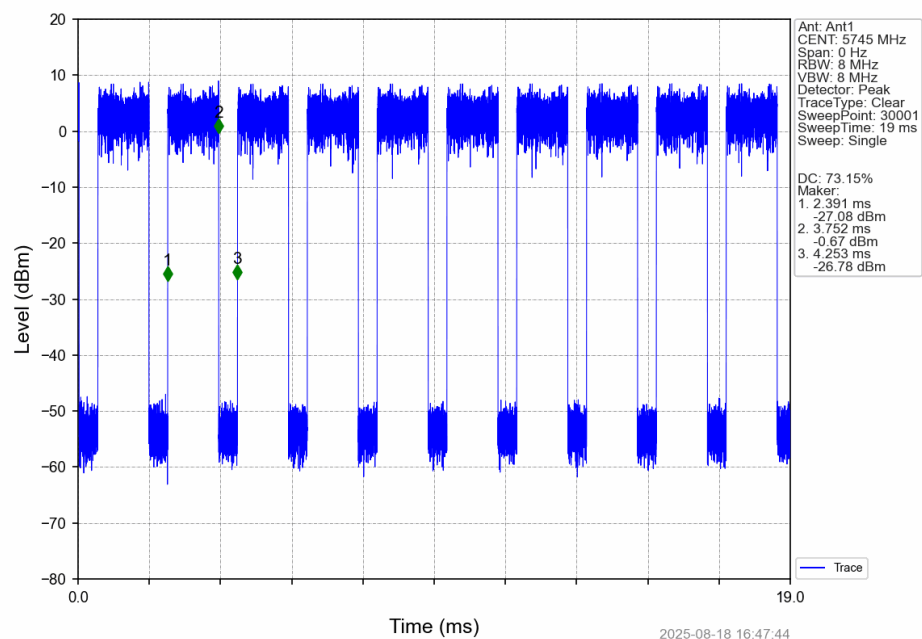
1.2.1 Ant1



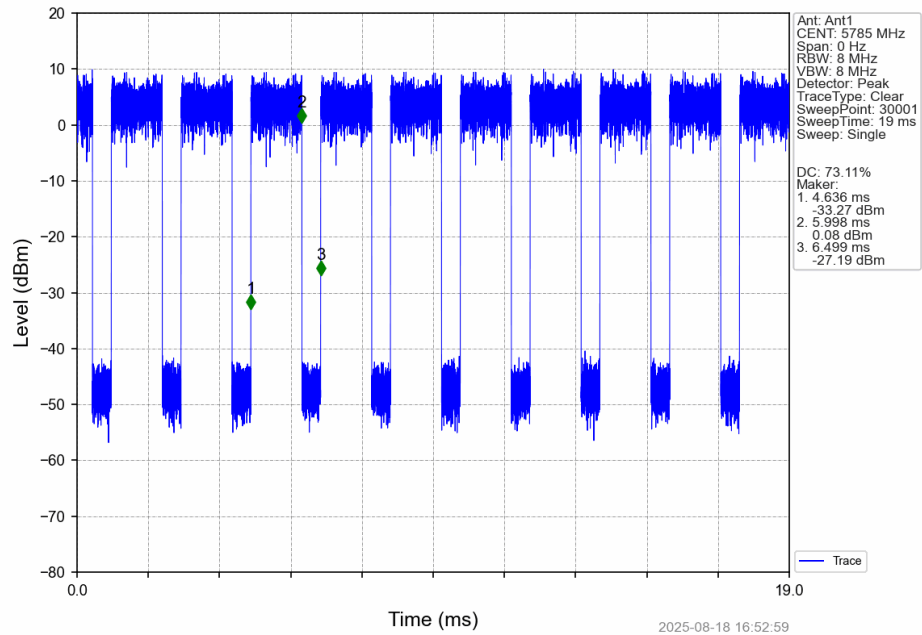
802.11a_HCH_5240MHz_Ant1_NTNV



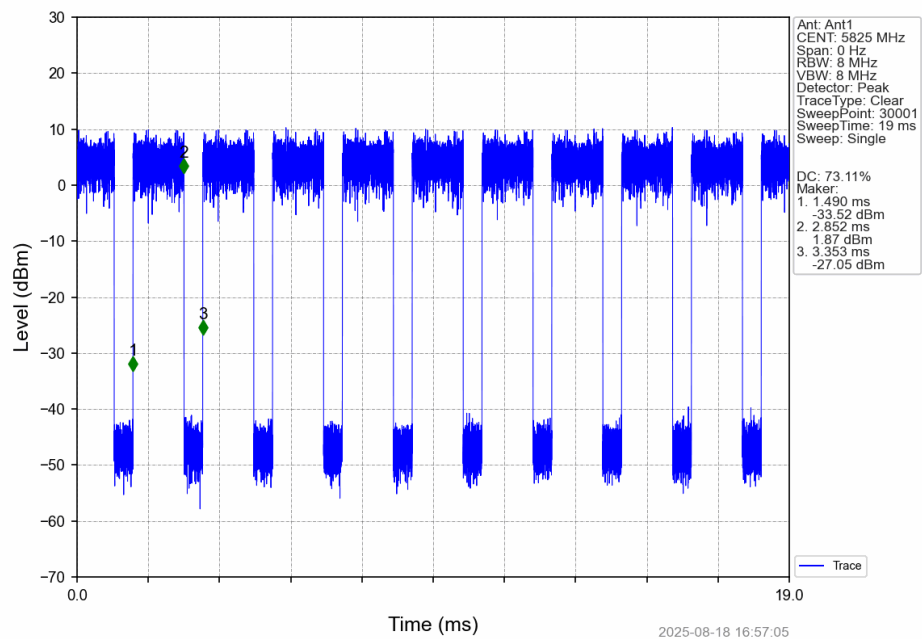
802.11a_LCH_5745MHz_Ant1_NTNV



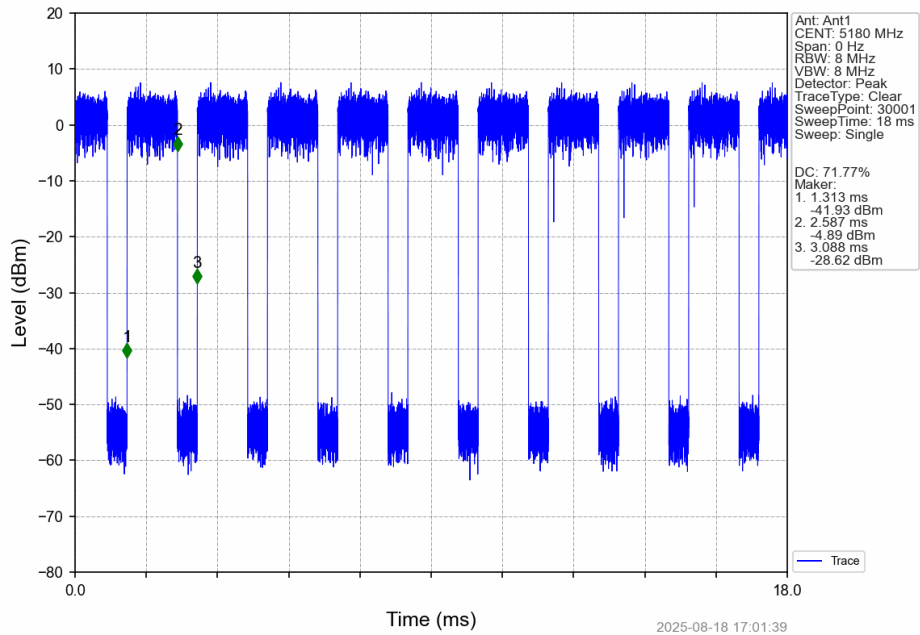
802.11a_MCH_5785MHz_Ant1_NTNV



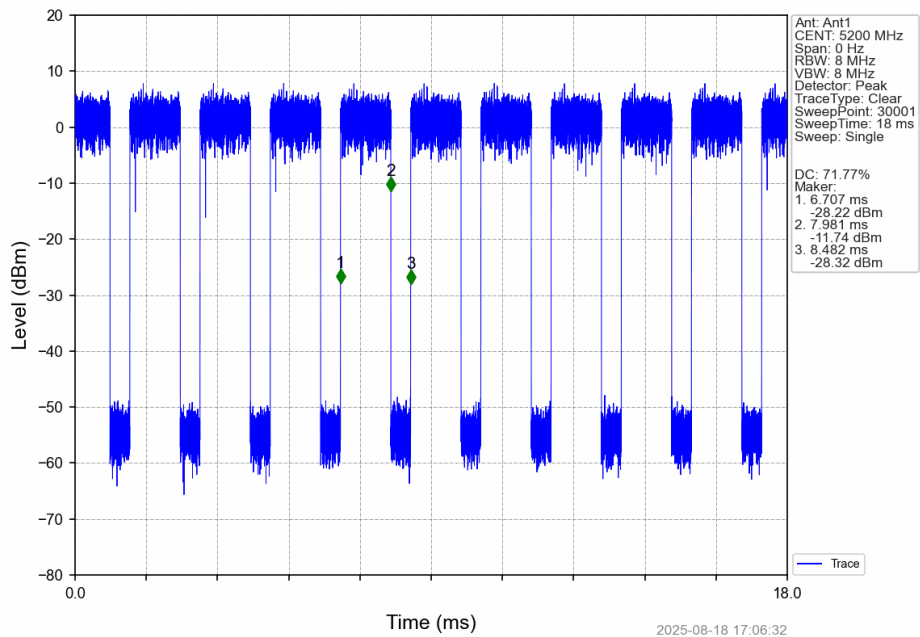
802.11a_HCH_5825MHz_Ant1_NTNV



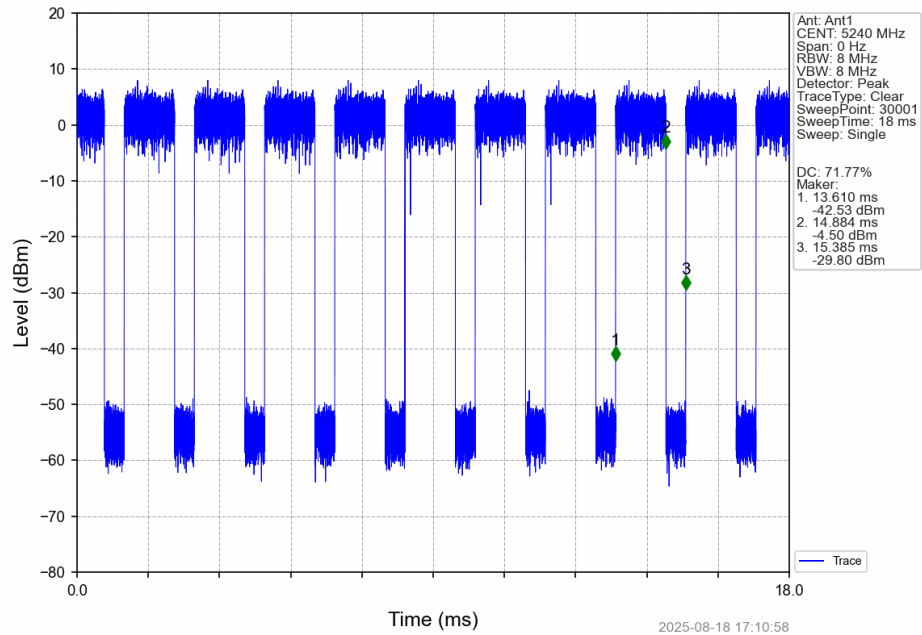
802.11n(HT20) LCH 5180MHz Ant1 NTN



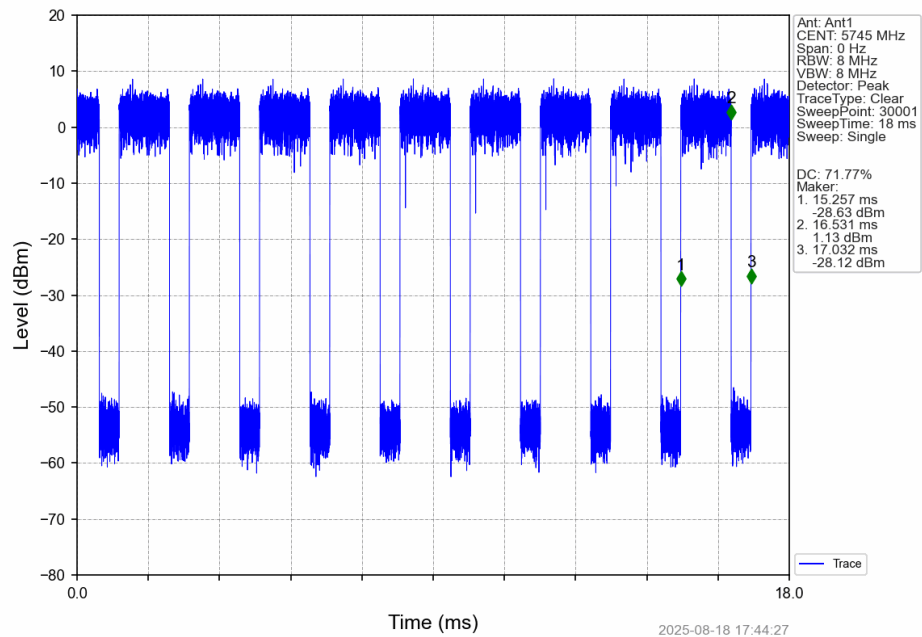
802.11n(HT20)_MCH_5200MHz_Ant1_NTN



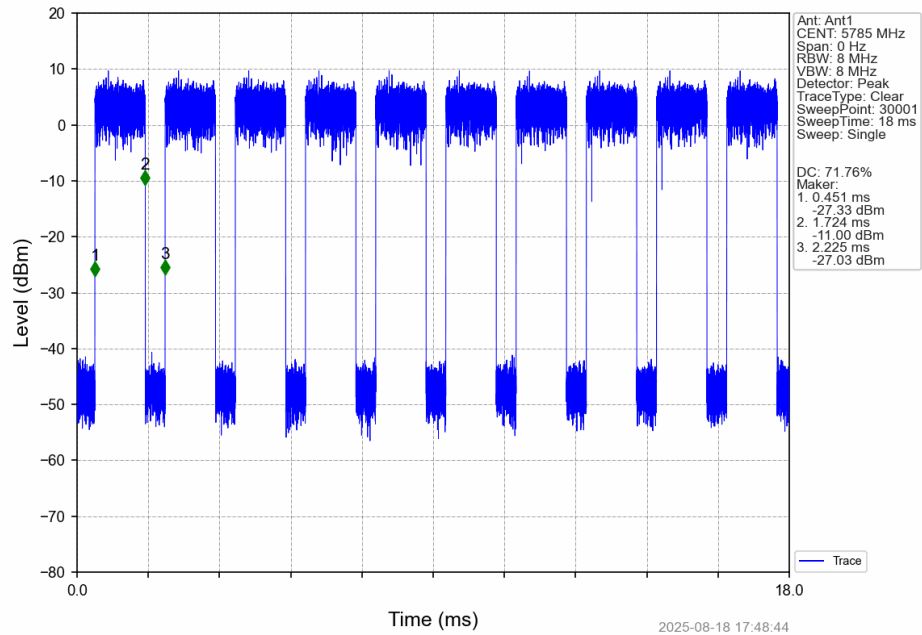
802.11n(HT20) HCH 5240MHz Ant1 NTN



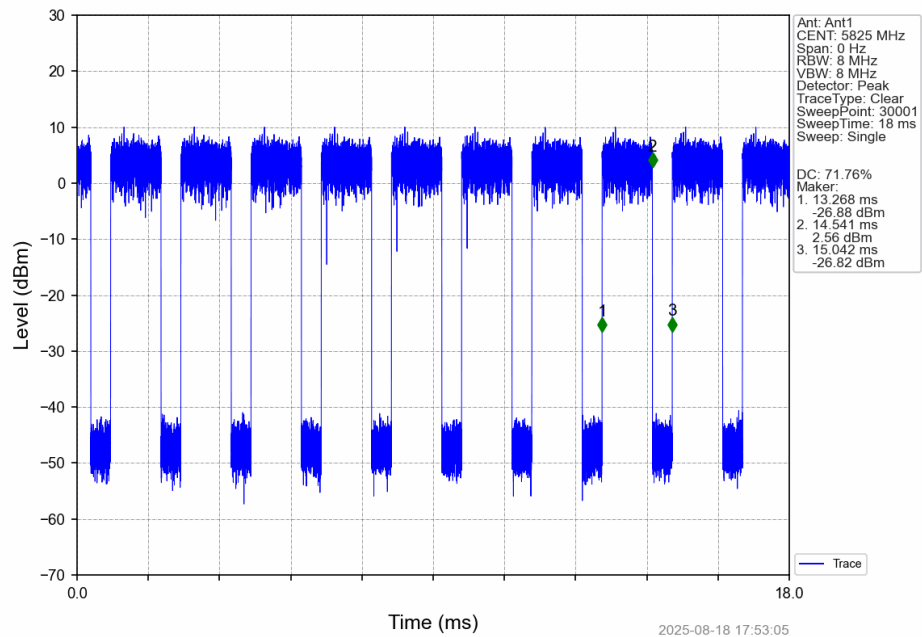
802.11n(HT20)_LCH_5745MHz_Ant1_NTN



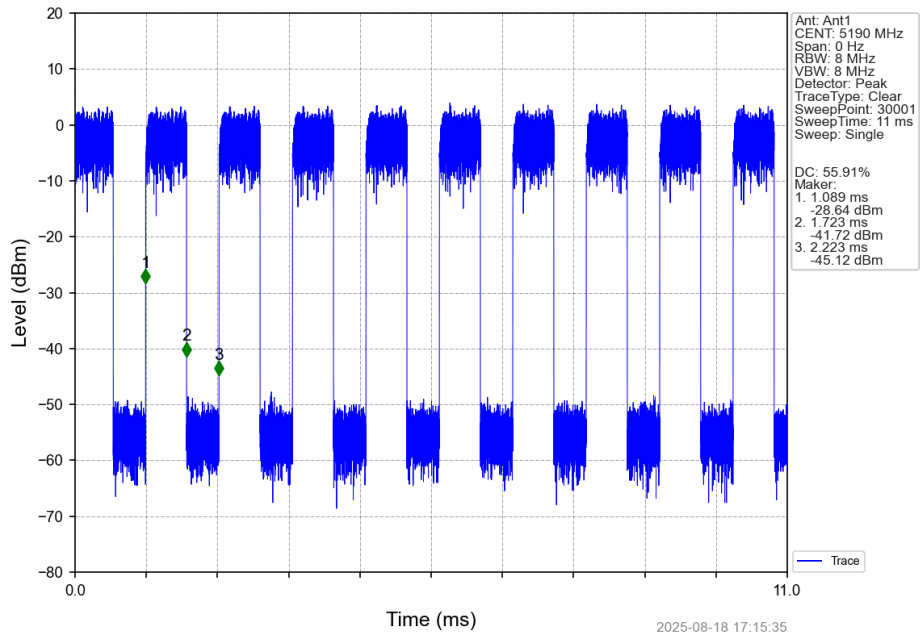
802.11n(HT20) MCH 5785MHz Ant1 NTN



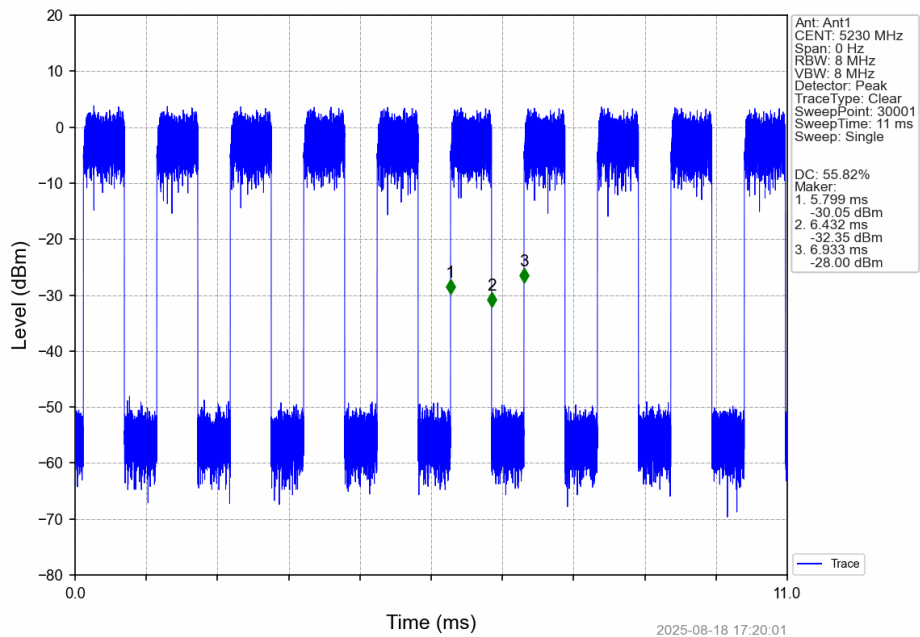
802.11n(HT20)_HCH_5825MHz_Ant1_NTN



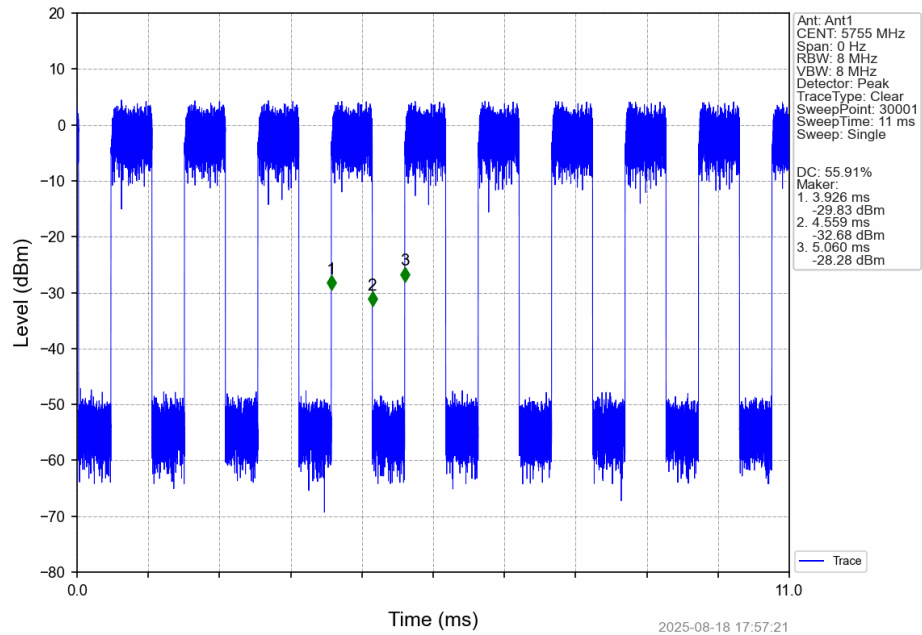
802.11n(HT40) LCH 5190MHz Ant1 NTN



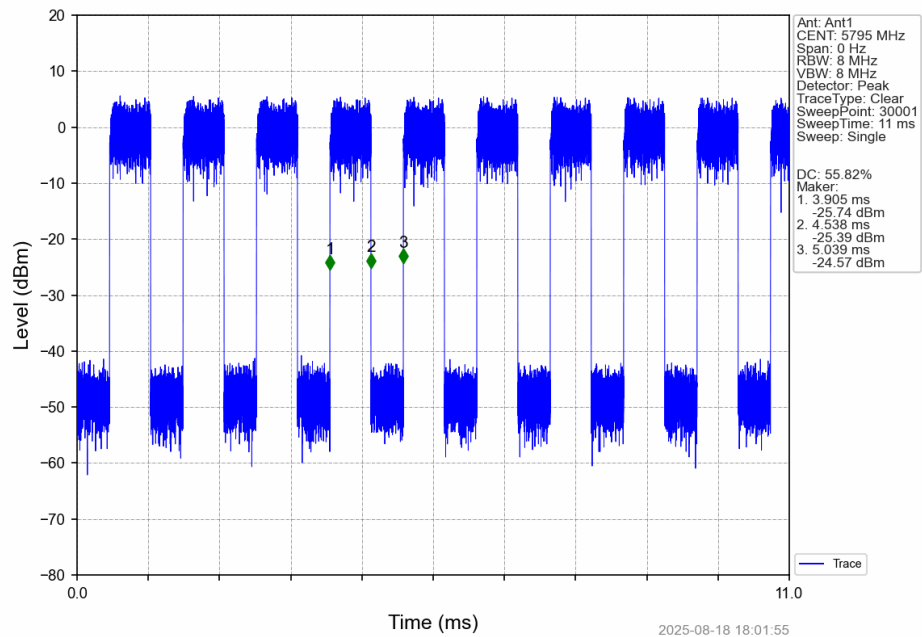
802.11n(HT40)_HCH_5230MHz_Ant1_NTN



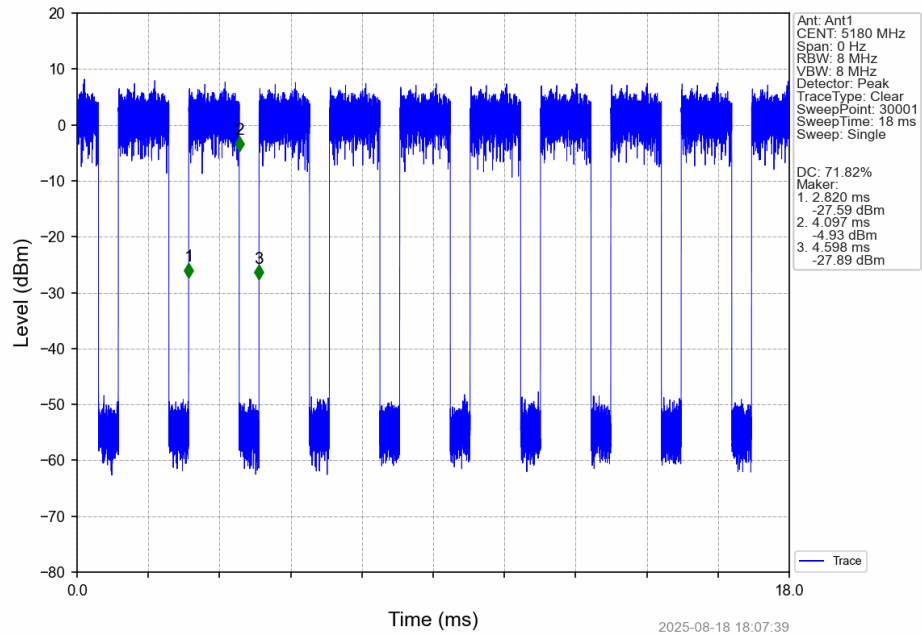
802.11n(HT40) LCH 5755MHz Ant1 NTN



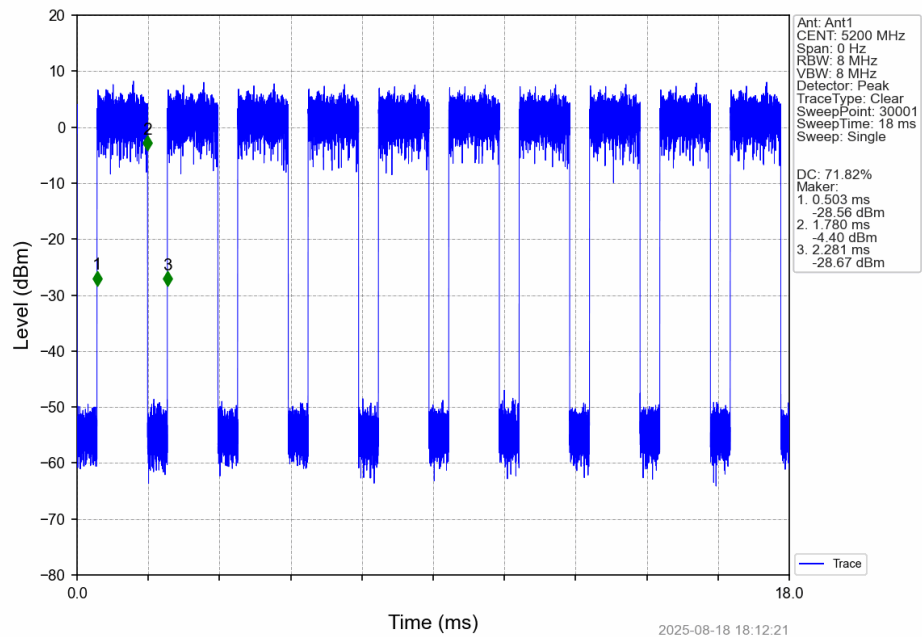
802.11n(HT40)_HCH_5795MHz_Ant1_NTN



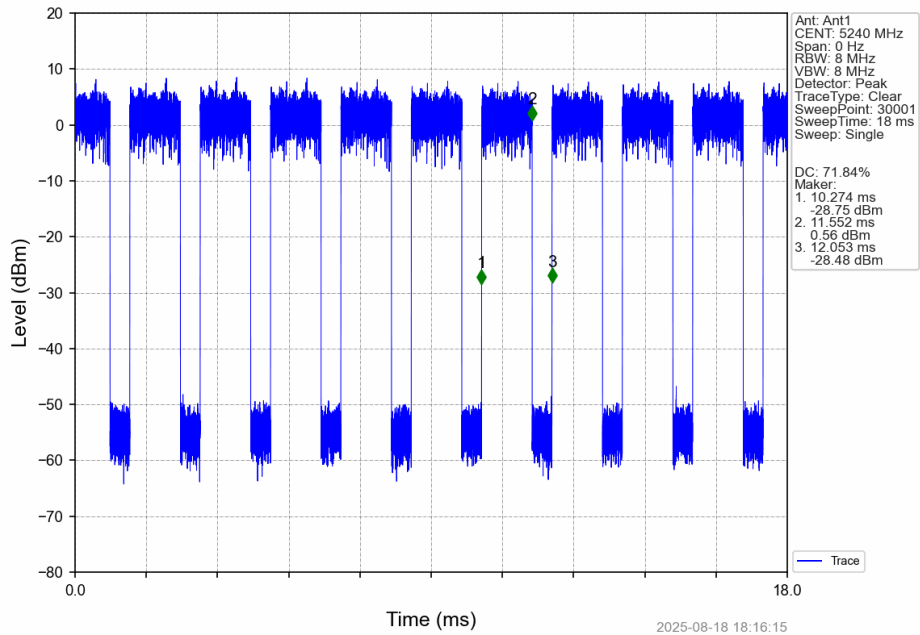
802.11ac(VHT20) LCH 5180MHz Ant1 NTN



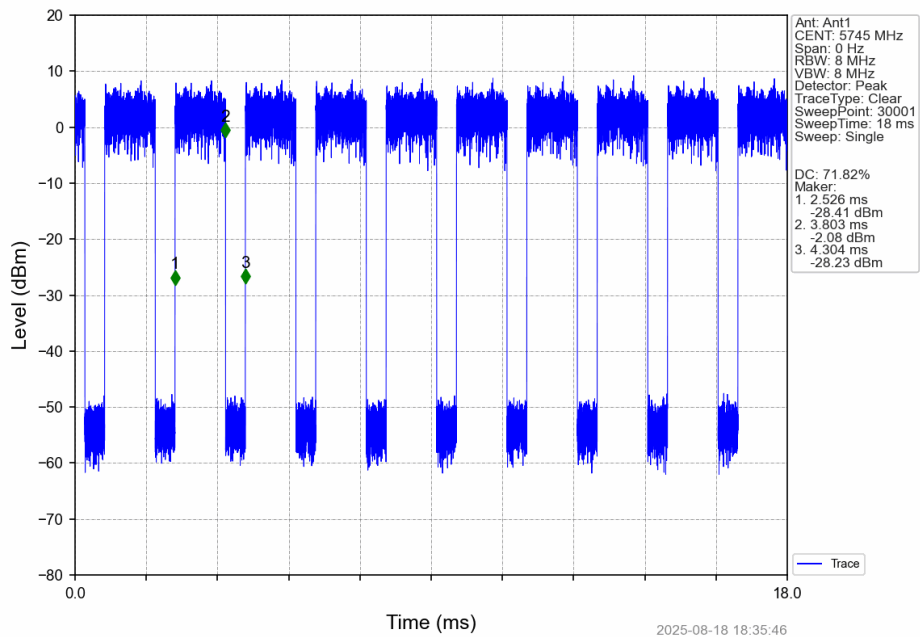
802.11ac(VHT20) MCH 5200MHz Ant1 NTN



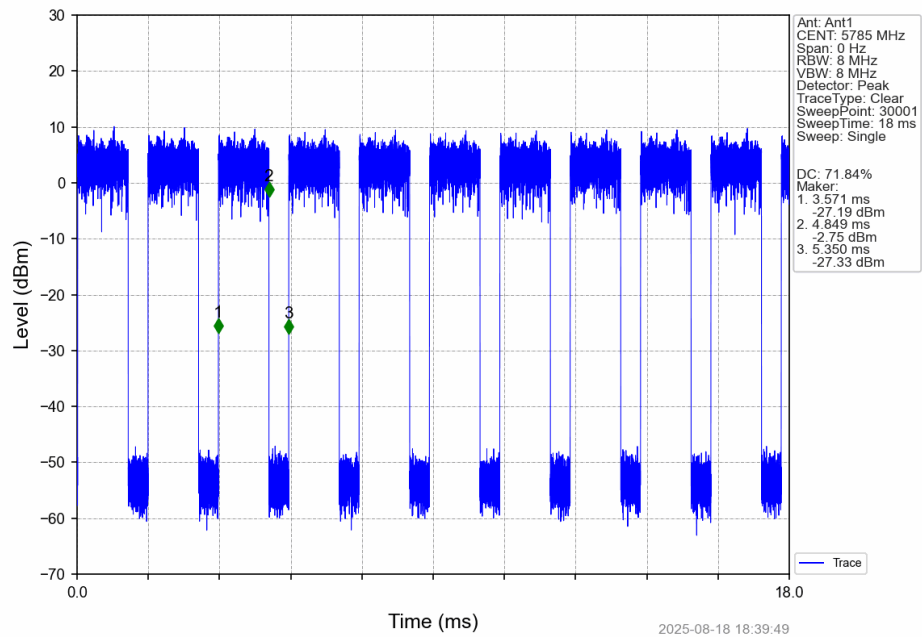
802.11ac(VHT20) HCH 5240MHz Ant1 NTN



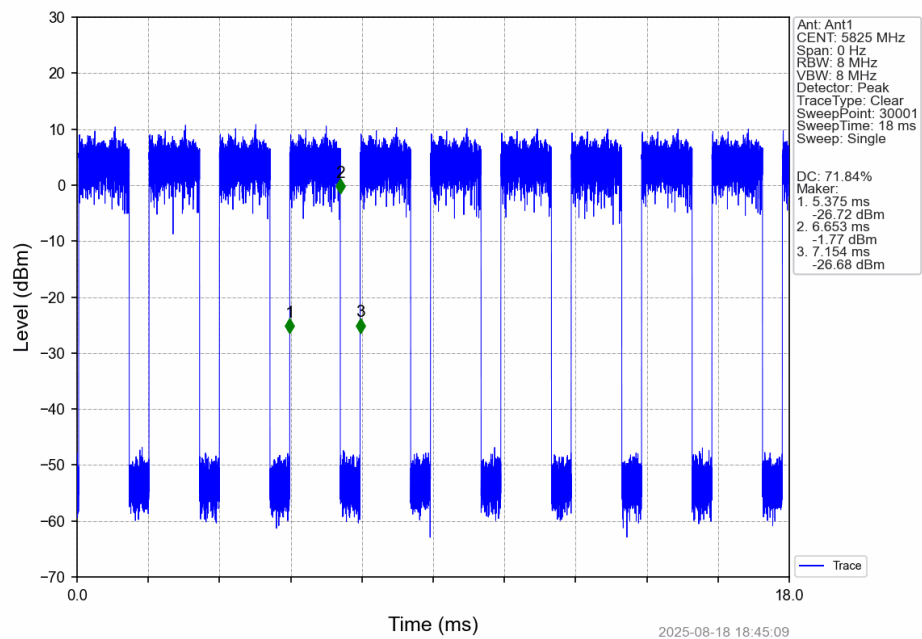
802.11ac(VHT20)_LCH_5745MHz_Ant1_NTN



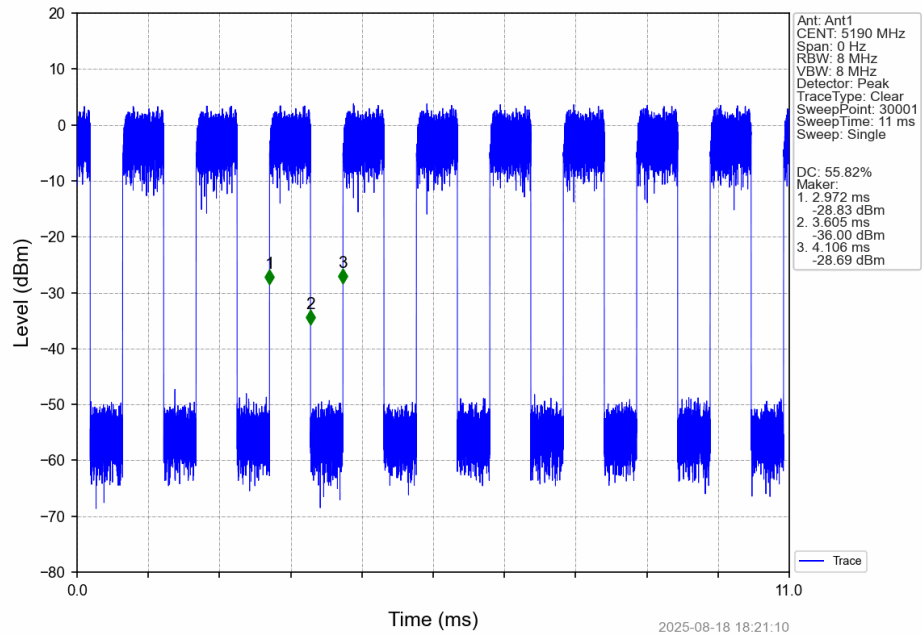
802.11ac(VHT20) MCH 5785MHz Ant1 NTN



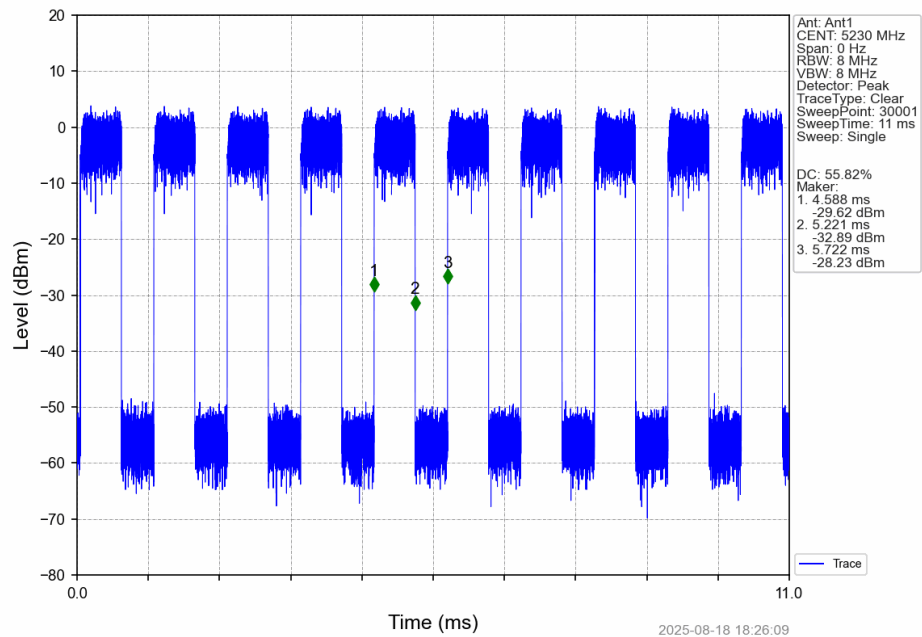
802.11ac(VHT20)_HCH_5825MHz_Ant1_NTN



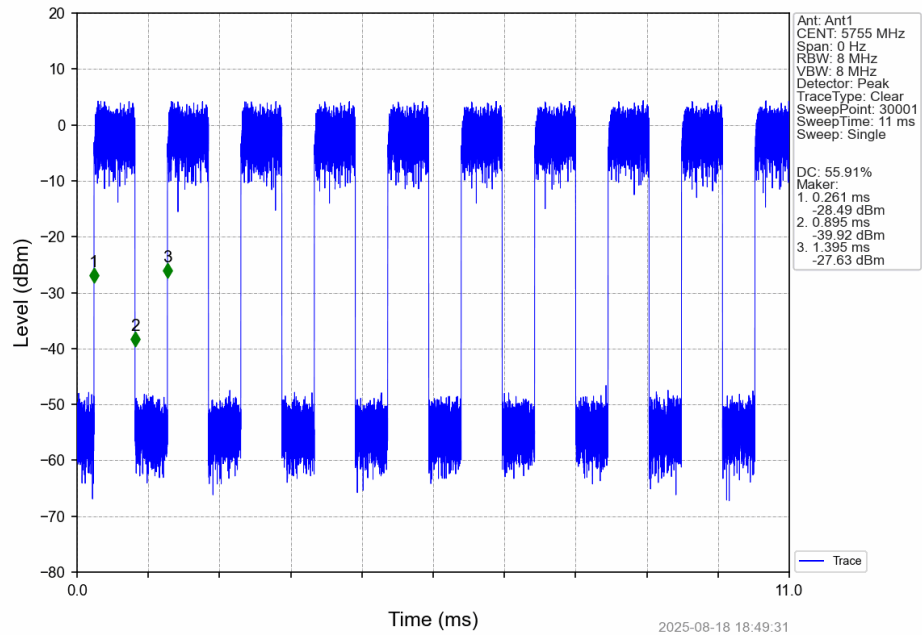
802.11ac(VHT40) LCH 5190MHz Ant1 NTN



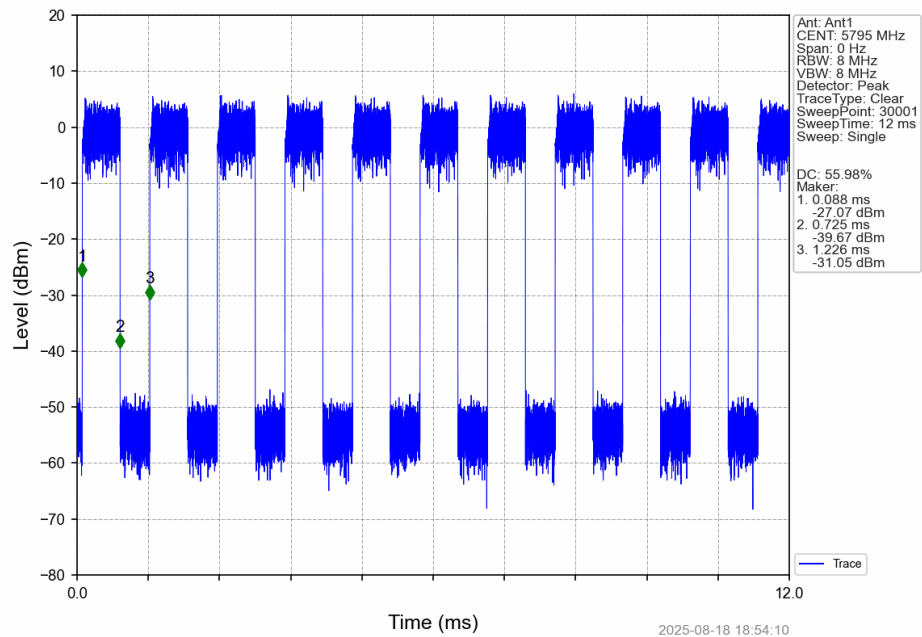
802.11ac(VHT40) HCH 5230MHz Ant1 NTN



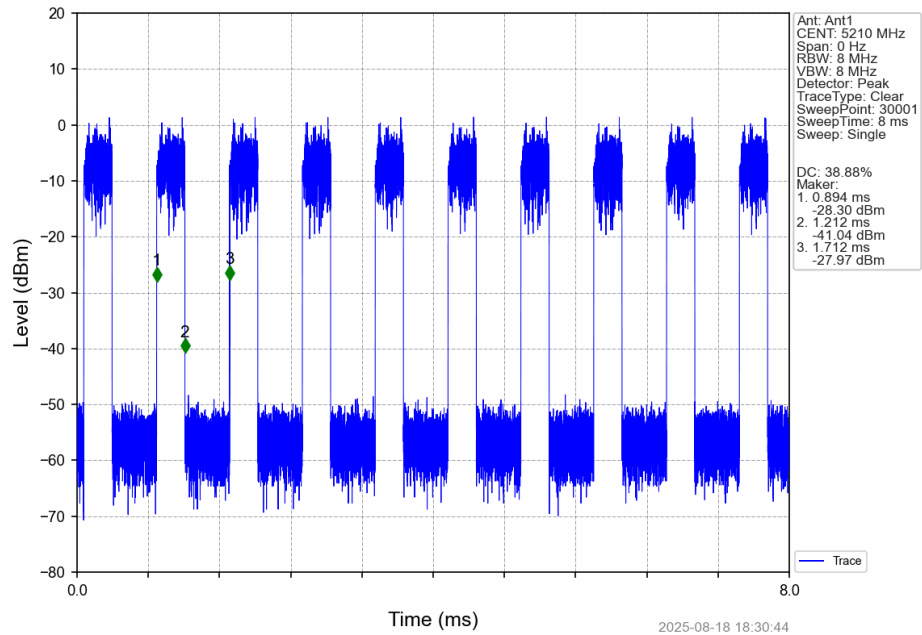
802.11ac(VHT40) LCH 5755MHz Ant1 NTN



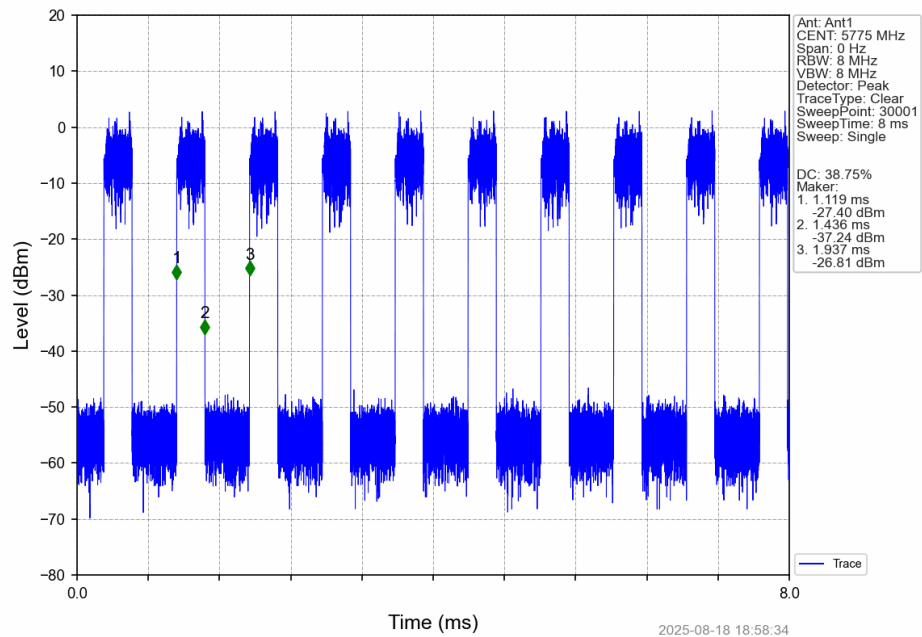
802.11ac(VHT40)_HCH_5795MHz_Ant1_NTN



802.11ac(VHT80) MCH 5210MHz Ant1 NTN



802.11ac(VHT80) MCH 5775MHz Ant1 NTN



2. Bandwidth

2.1 Test Result

2.1.1 OBW

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5180	1	16.639	/	Pass
		5200	1	16.647	/	Pass
		5240	1	16.645	/	Pass
		5745	1	16.642	/	Pass
		5785	1	16.665	/	Pass
		5825	1	16.630	/	Pass
802.11n (HT20)	MIMO	5180	1	17.744	/	Pass
		5200	1	17.769	/	Pass
		5240	1	17.741	/	Pass
		5745	1	17.778	/	Pass
		5785	1	17.777	/	Pass
		5825	1	17.733	/	Pass
802.11n (HT40)	MIMO	5190	1	36.242	/	Pass
		5230	1	36.376	/	Pass
		5755	1	36.306	/	Pass
		5795	1	36.286	/	Pass
802.11ac (VHT20)	MIMO	5180	1	17.717	/	Pass
		5200	1	17.701	/	Pass
		5240	1	17.718	/	Pass
		5745	1	17.730	/	Pass
		5785	1	17.704	/	Pass
		5825	1	17.700	/	Pass
802.11ac (VHT40)	MIMO	5190	1	36.358	/	Pass
		5230	1	36.422	/	Pass
		5755	1	36.351	/	Pass
		5795	1	36.262	/	Pass
802.11ac (VHT80)	MIMO	5210	1	74.930	/	Pass
		5775	1	74.643	/	Pass

2.1.2 26dB BW

Mode	TX Type	Frequency (MHz)	ANT	26dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5180	1	18.952	/	Pass
		5200	1	18.969	/	Pass
		5240	1	18.838	/	Pass
802.11n (HT20)	MIMO	5180	1	19.770	/	Pass
		5200	1	19.851	/	Pass
		5240	1	19.851	/	Pass
802.11n (HT40)	MIMO	5190	1	41.919	/	Pass
		5230	1	42.056	/	Pass
802.11ac (VHT20)	MIMO	5180	1	19.815	/	Pass
		5200	1	19.692	/	Pass
		5240	1	19.896	/	Pass
802.11ac (VHT40)	MIMO	5190	1	41.359	/	Pass
		5230	1	42.056	/	Pass

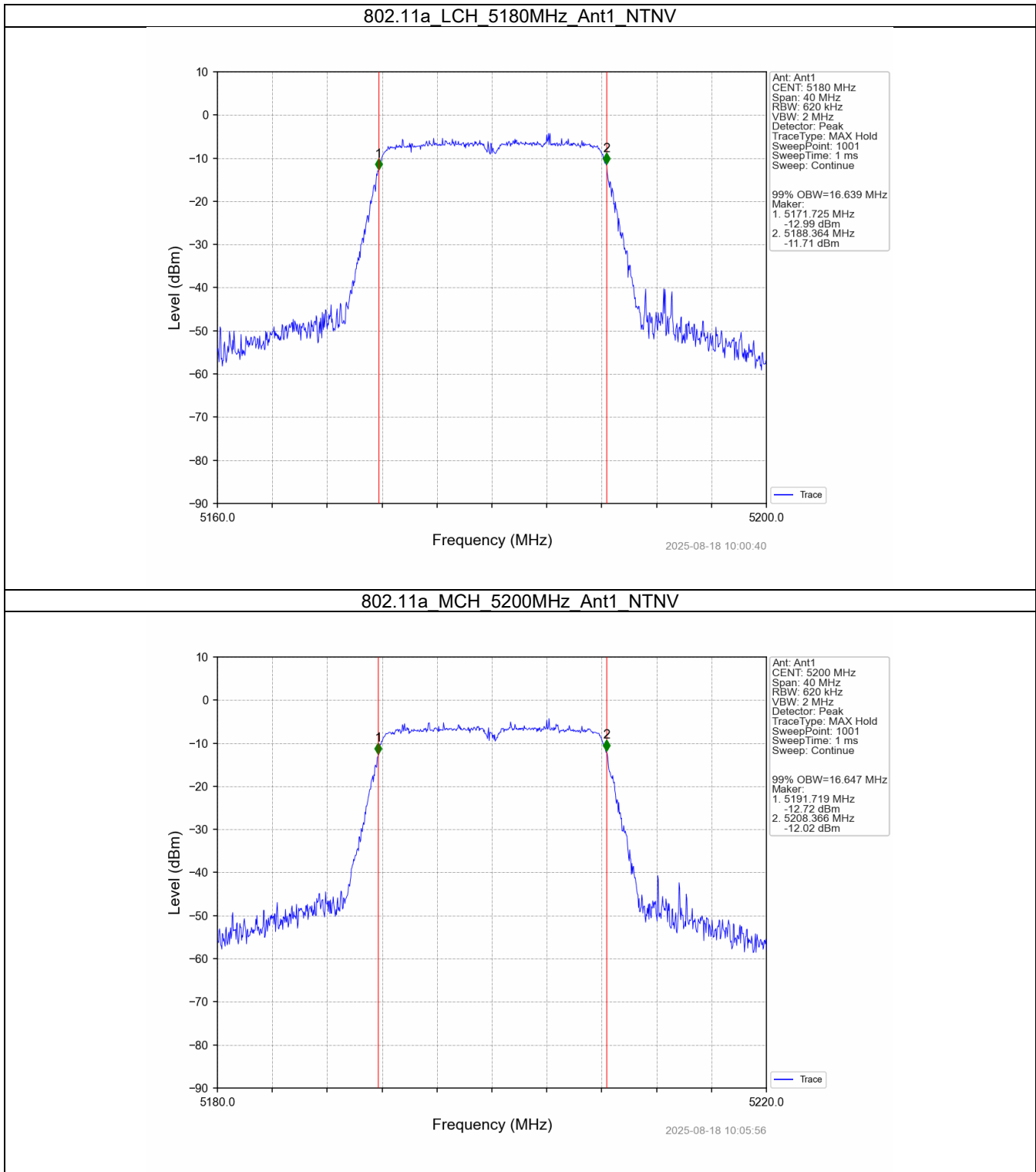
802.11ac (VHT80)	MIMO	5210	1	81.013	/	Pass
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2.1.3 6dB BW

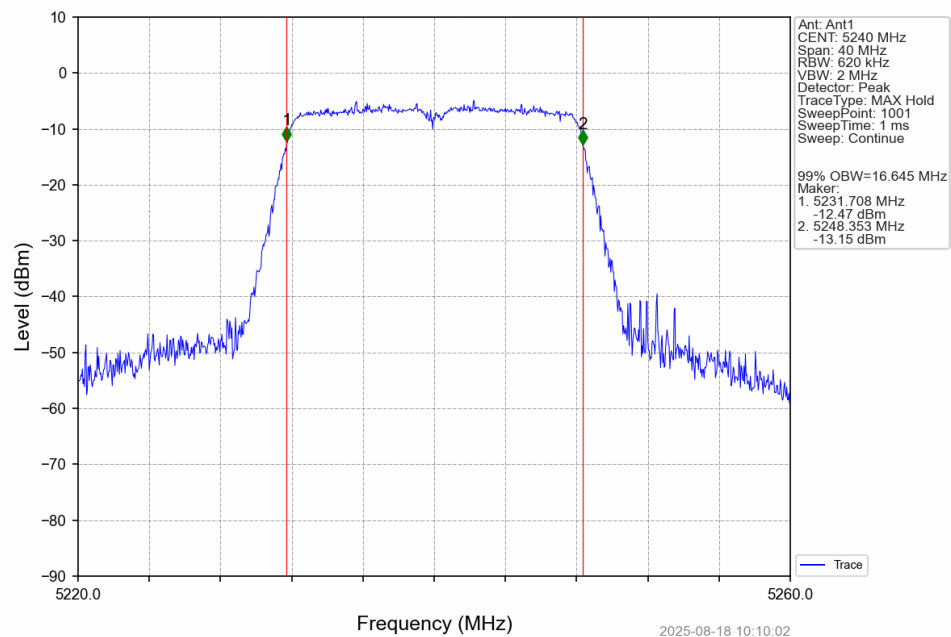
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5745	1	16.357	≥ 0.5	Pass
		5785	1	16.342	≥ 0.5	Pass
		5825	1	16.353	≥ 0.5	Pass
802.11n (HT20)	MIMO	5745	1	17.578	≥ 0.5	Pass
		5785	1	17.549	≥ 0.5	Pass
		5825	1	17.592	≥ 0.5	Pass
802.11n (HT40)	MIMO	5755	1	35.171	≥ 0.5	Pass
		5795	1	33.959	≥ 0.5	Pass
802.11ac (VHT20)	MIMO	5745	1	17.191	≥ 0.5	Pass
		5785	1	17.582	≥ 0.5	Pass
		5825	1	17.553	≥ 0.5	Pass
802.11ac (VHT40)	MIMO	5755	1	35.174	≥ 0.5	Pass
		5795	1	34.475	≥ 0.5	Pass
802.11ac (VHT80)	MIMO	5775	1	73.852	≥ 0.5	Pass

2.2 Test Graph

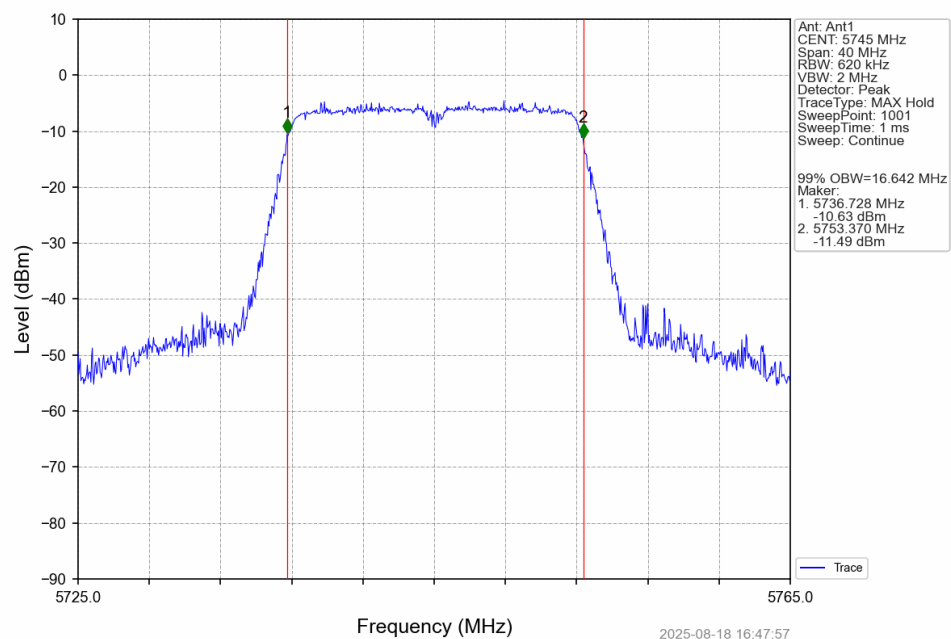
2.2.1 OBW



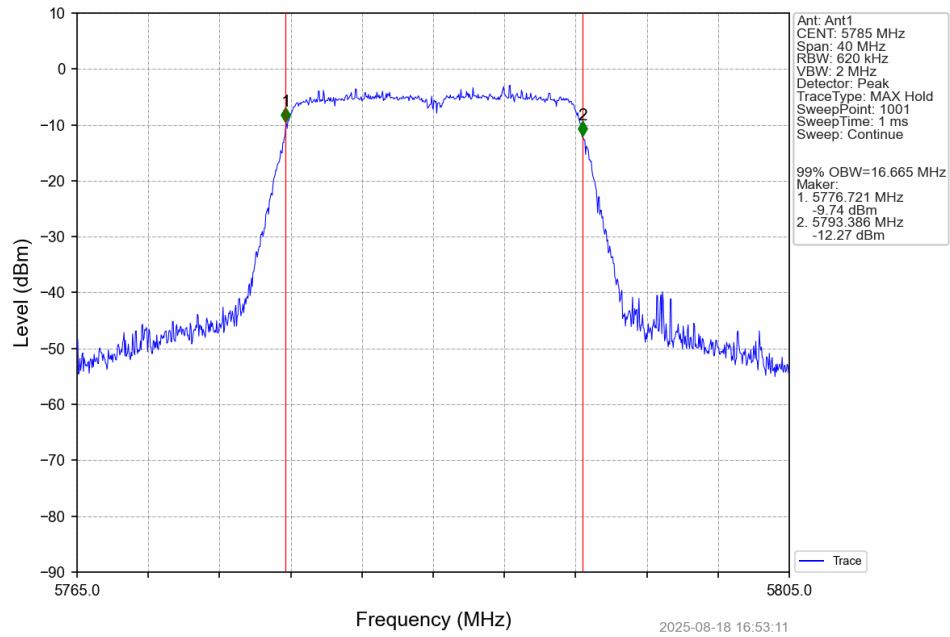
802.11a_HCH_5240MHz_Ant1_NTNV



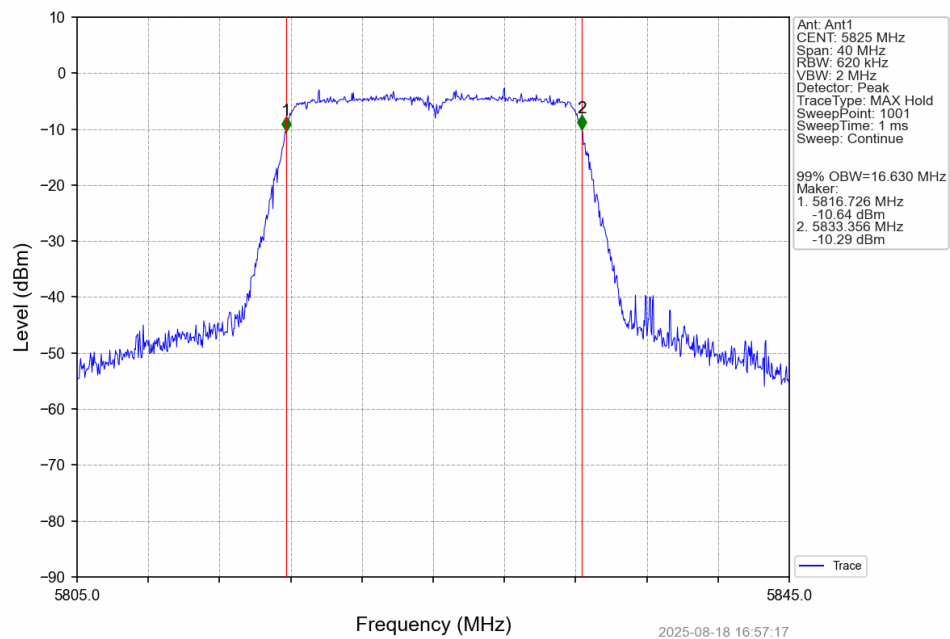
802.11a_LCH_5745MHz_Ant1_NTNV



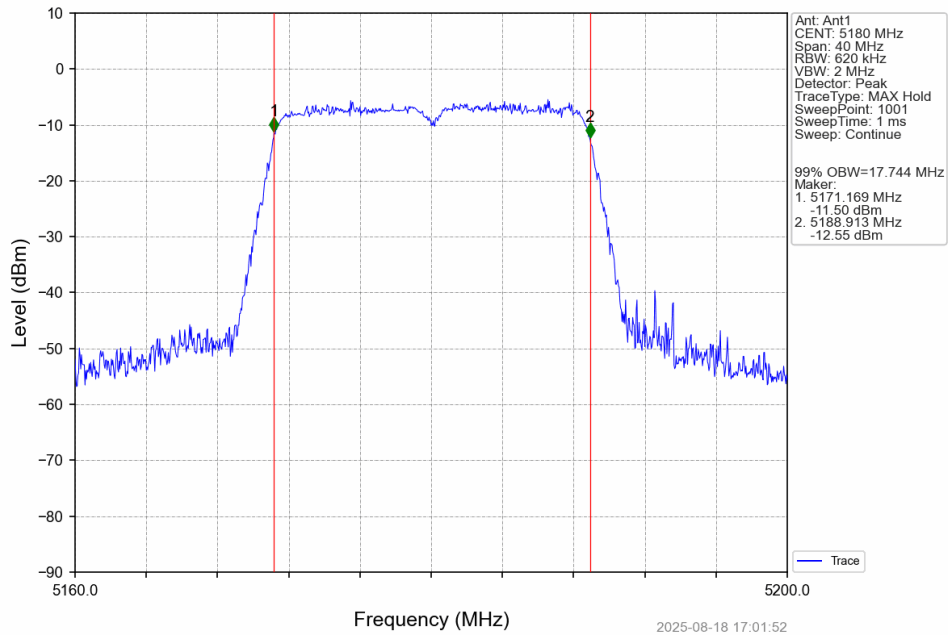
802.11a_MCH_5785MHz_Ant1_NTNV



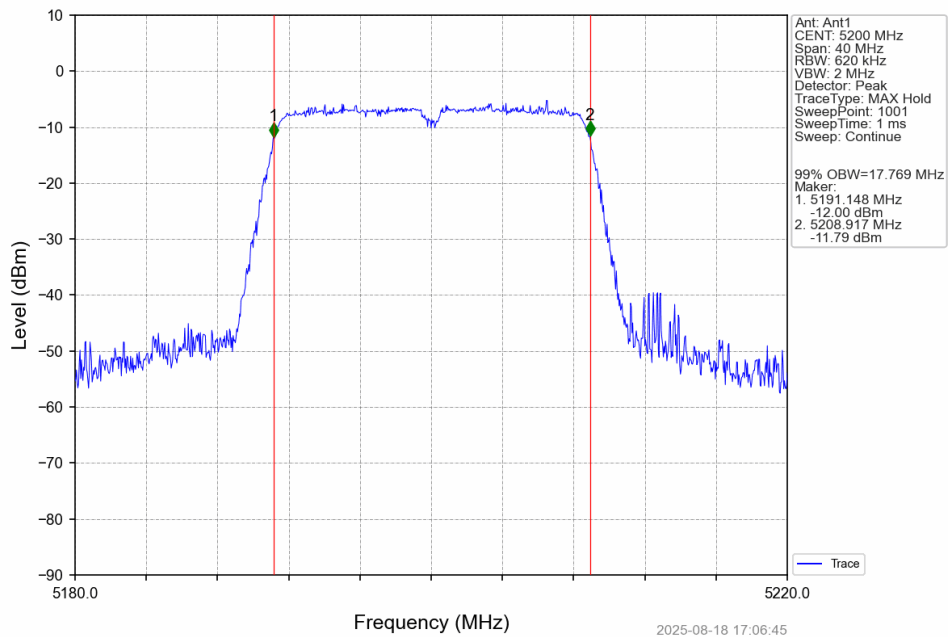
802.11a_HCH_5825MHz_Ant1_NTNV



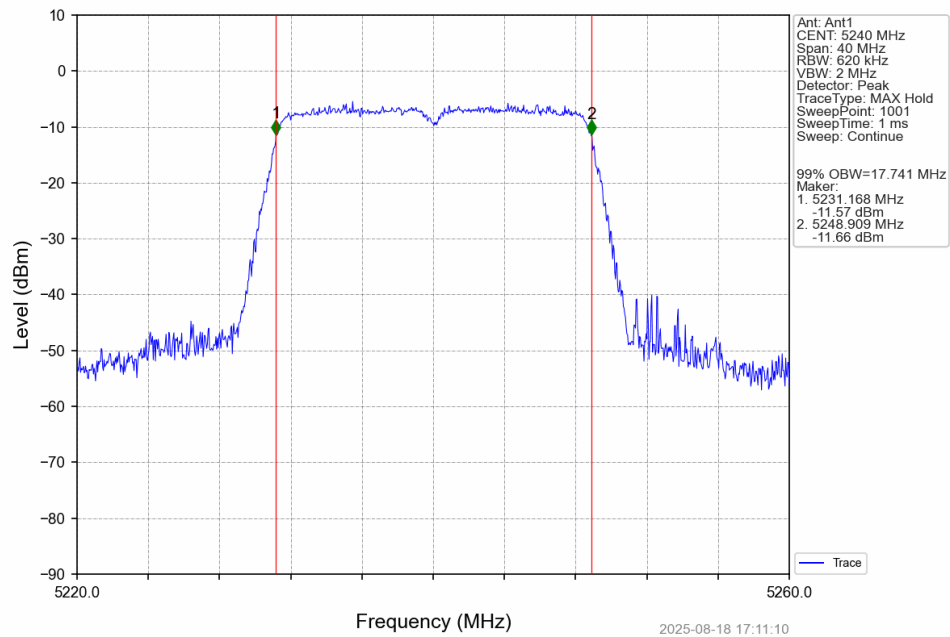
802.11n(HT20) LCH 5180MHz Ant1 NTN



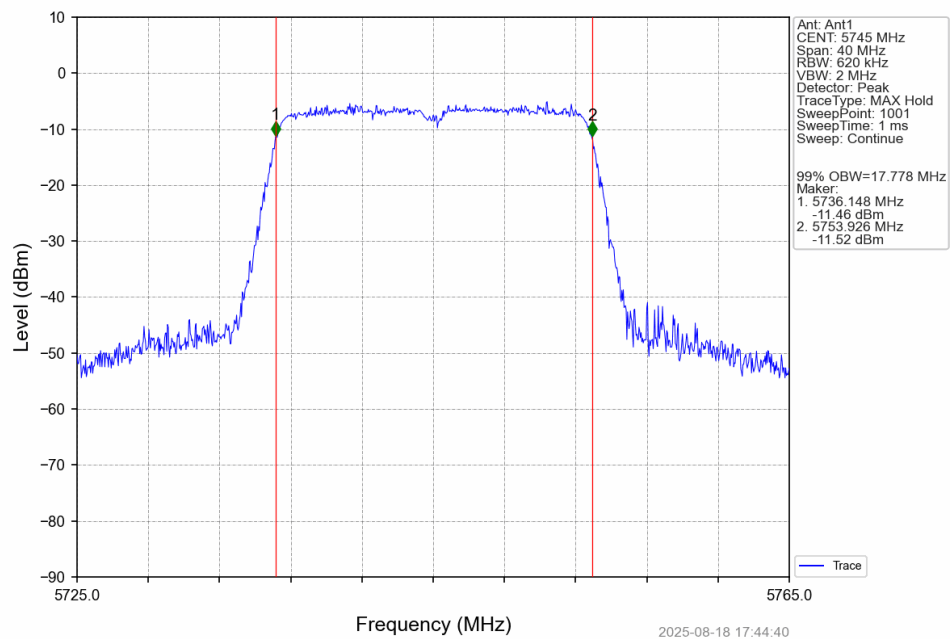
802.11n(HT20)_MCH_5200MHz_Ant1_NTN



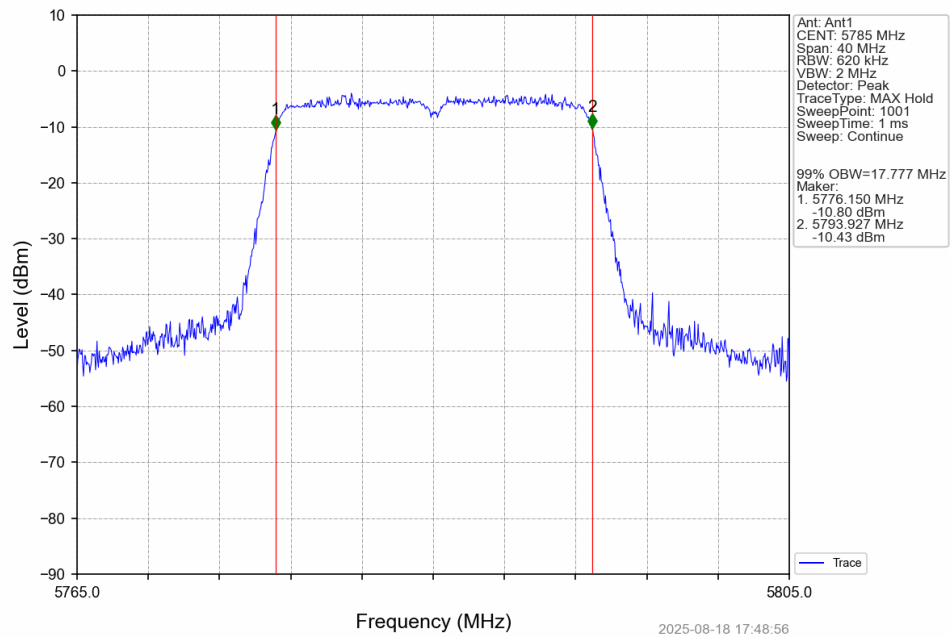
802.11n(HT20) HCH 5240MHz Ant1 NTN



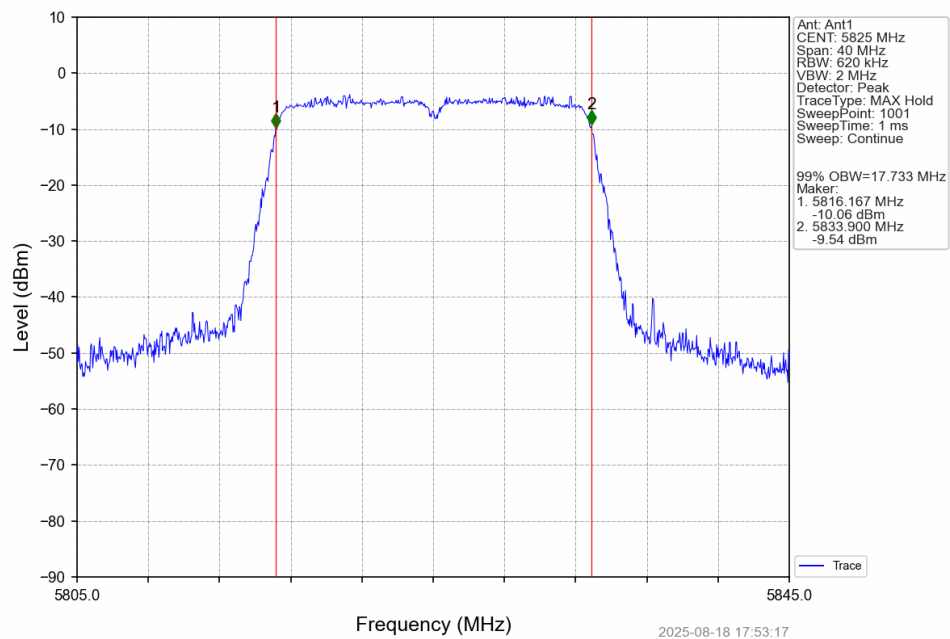
802.11n(HT20)_LCH_5745MHz_Ant1_NTN



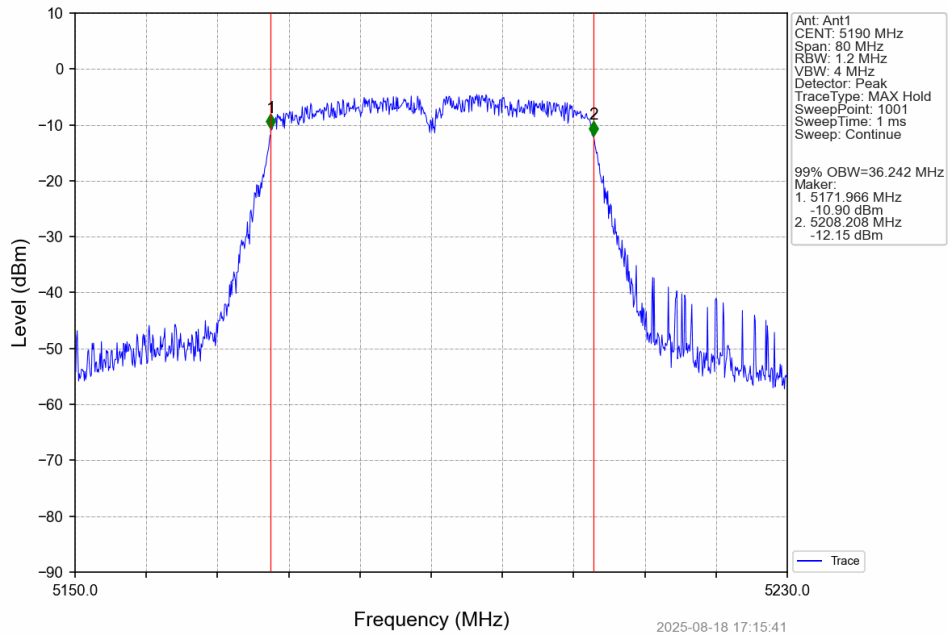
802.11n(HT20) MCH 5785MHz Ant1 NTN



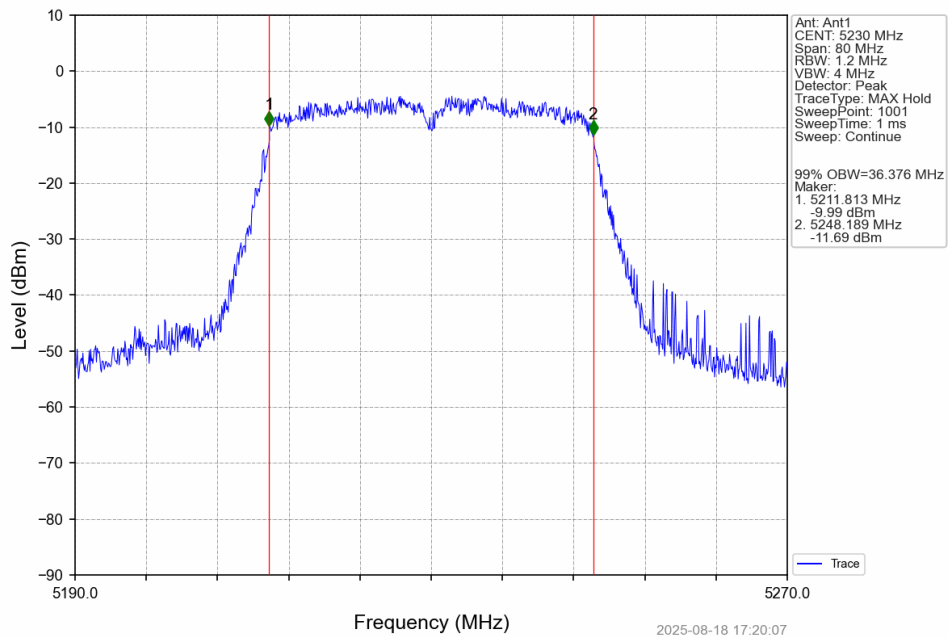
802.11n(HT20)_HCH_5825MHz_Ant1_NTN



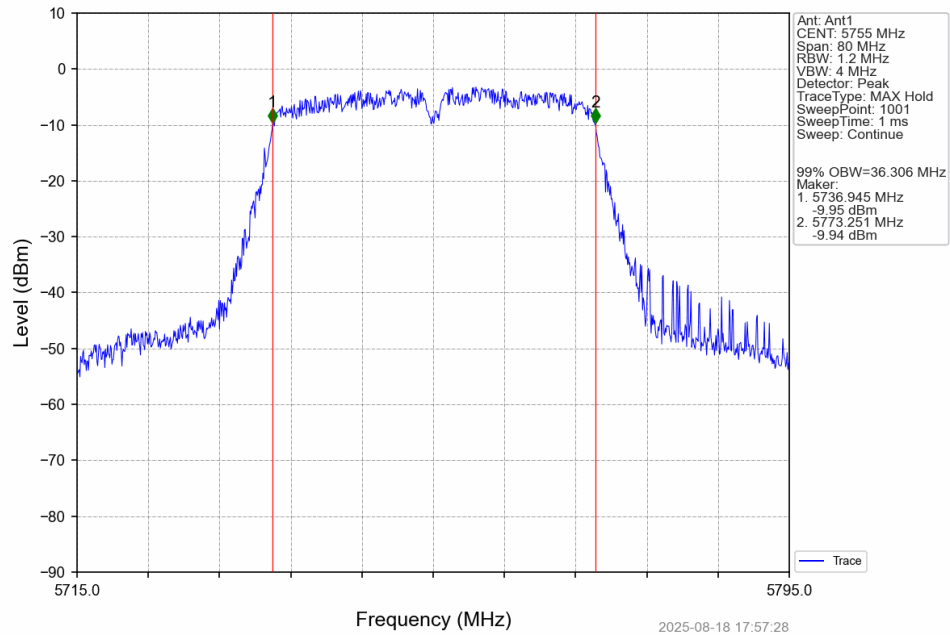
802.11n(HT40) LCH 5190MHz Ant1 NTN



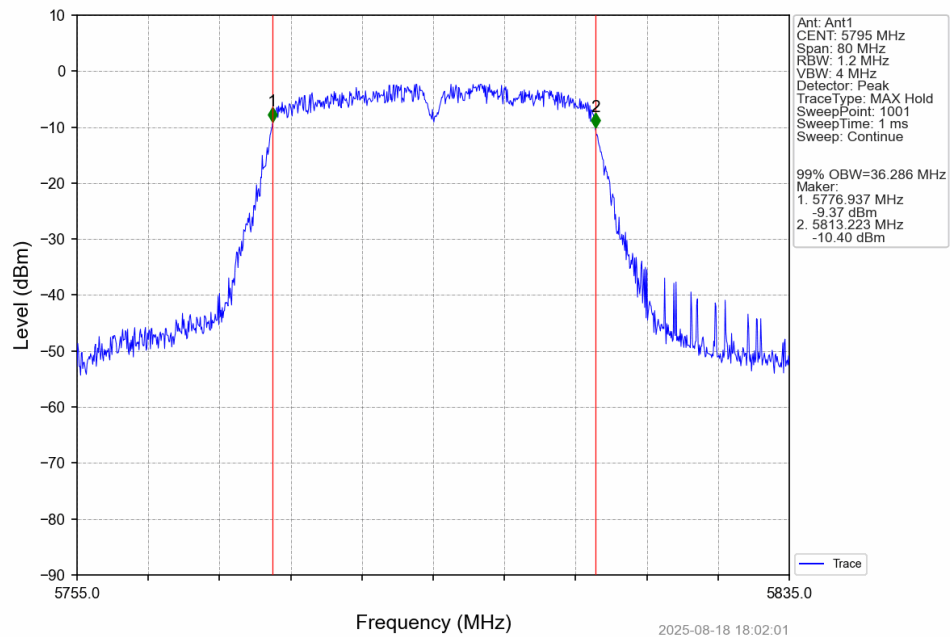
802.11n(HT40)_HCH_5230MHz_Ant1_NTN



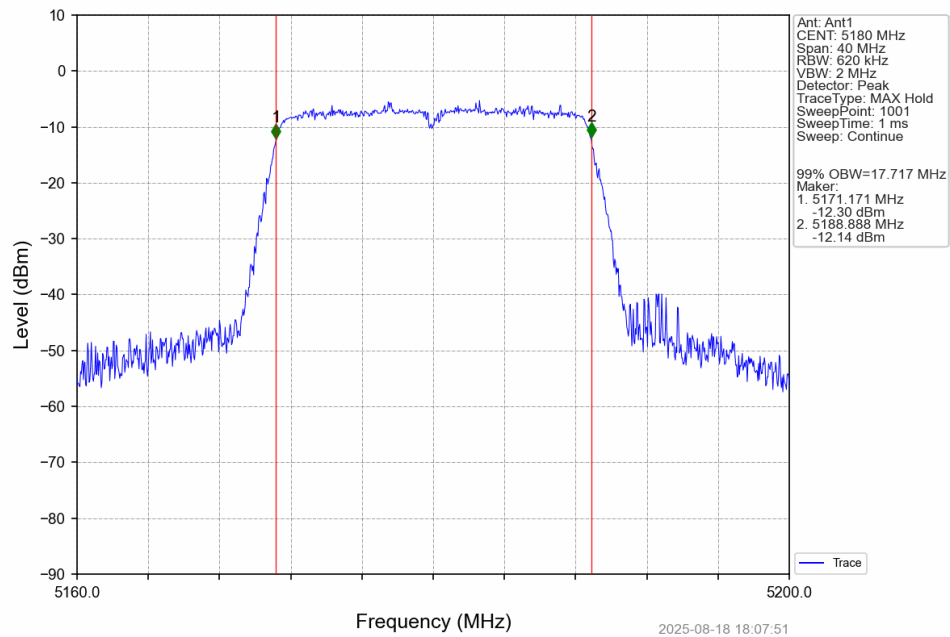
802.11n(HT40) LCH 5755MHz Ant1 NTN



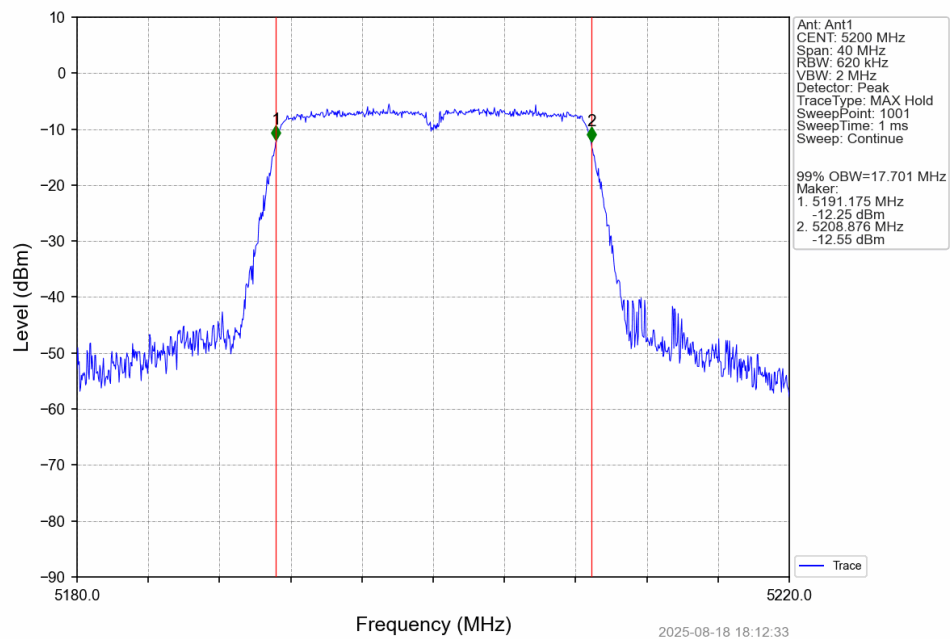
802.11n(HT40)_HCH_5795MHz_Ant1_NTN



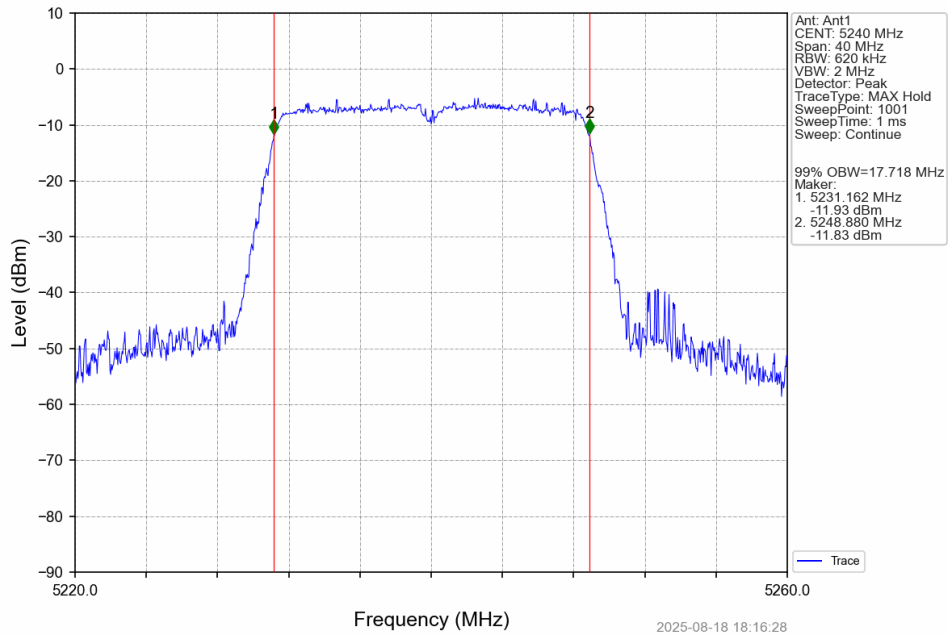
802.11ac(VHT20) LCH 5180MHz Ant1 NTN



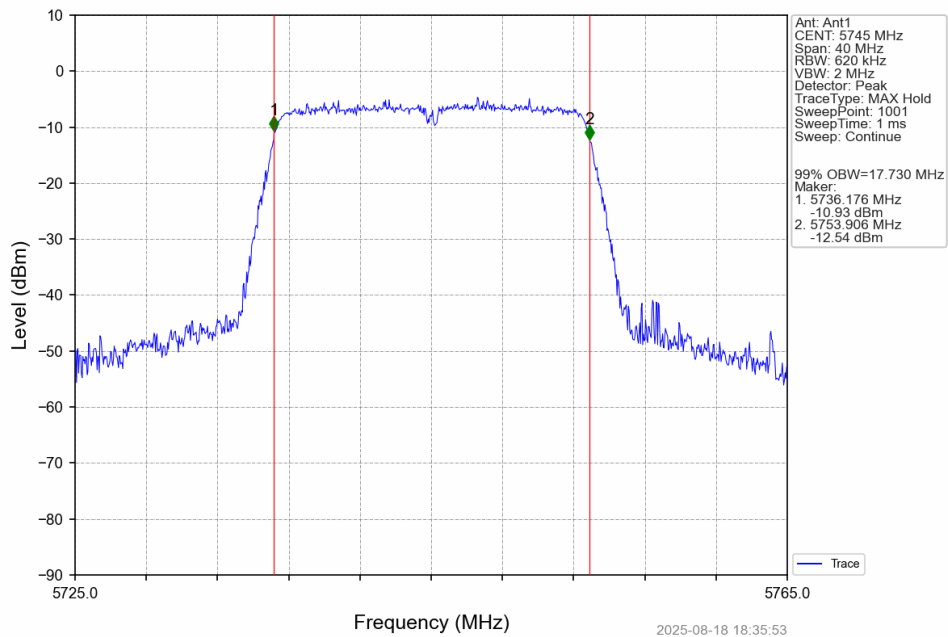
802.11ac(VHT20) MCH 5200MHz Ant1 NTN



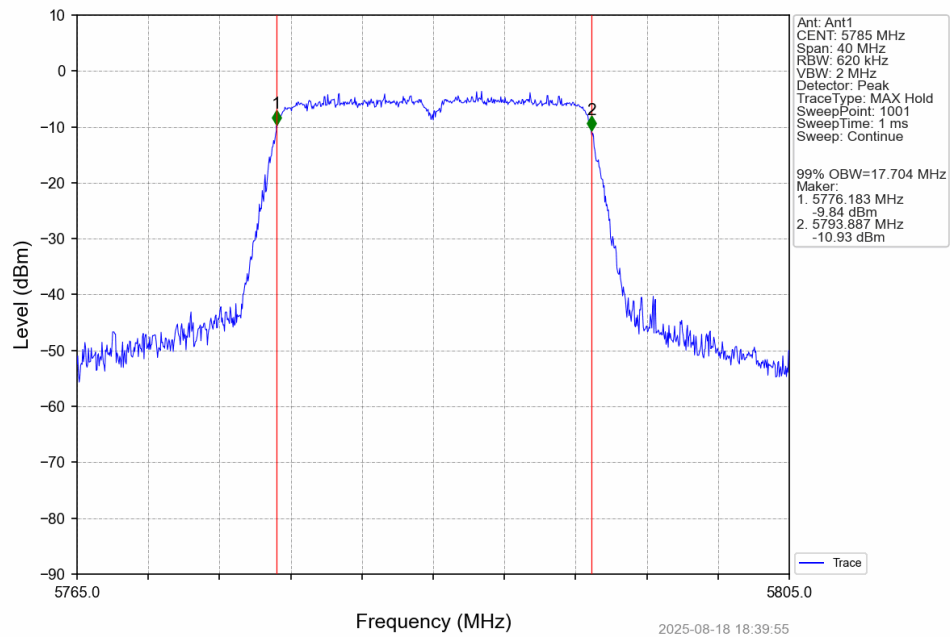
802.11ac(VHT20) HCH 5240MHz Ant1 NTN



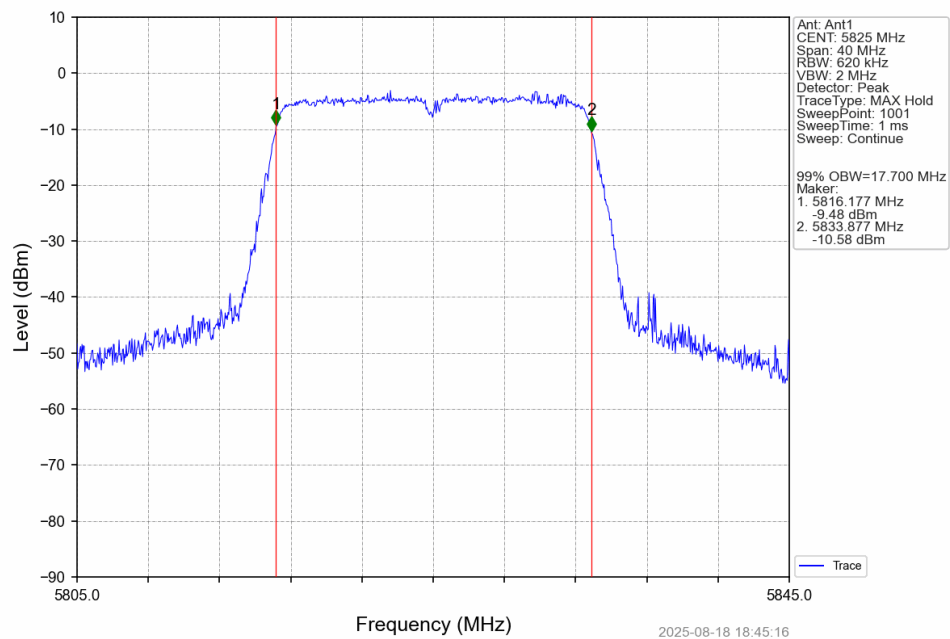
802.11ac(VHT20)_LCH_5745MHz_Ant1_NTN



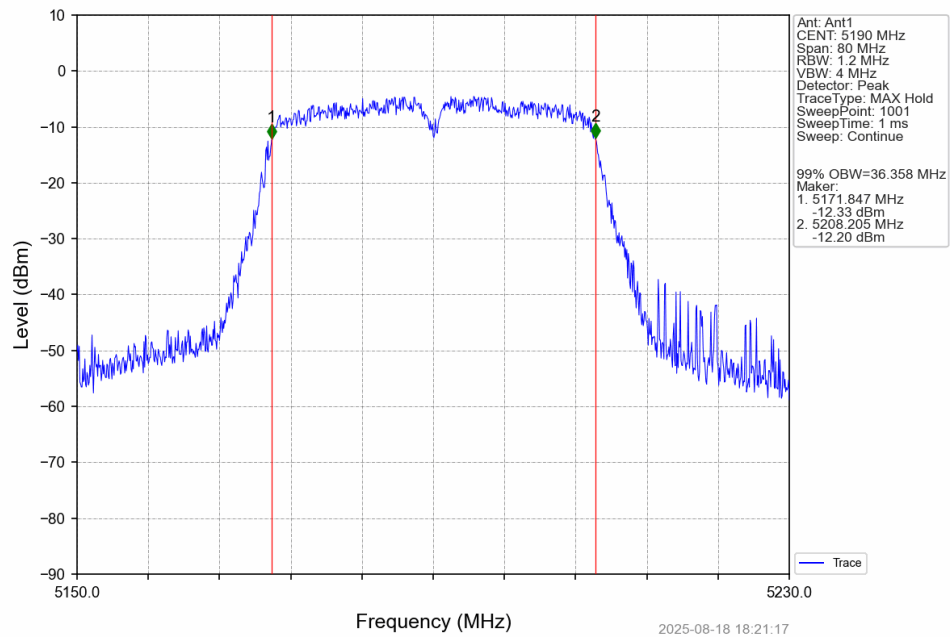
802.11ac(VHT20) MCH 5785MHz Ant1 NTN



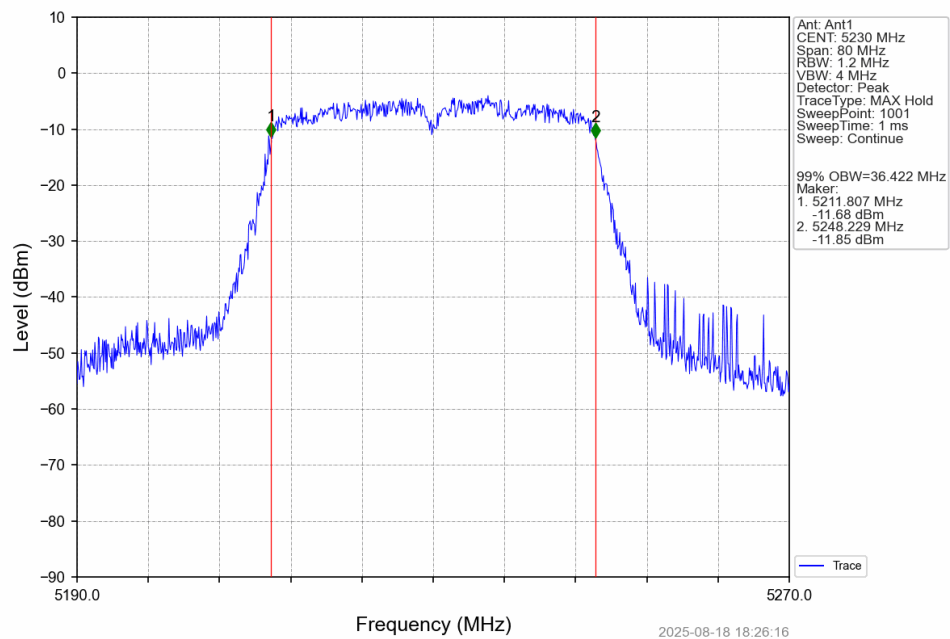
802.11ac(VHT20)_HCH_5825MHz_Ant1_NTN



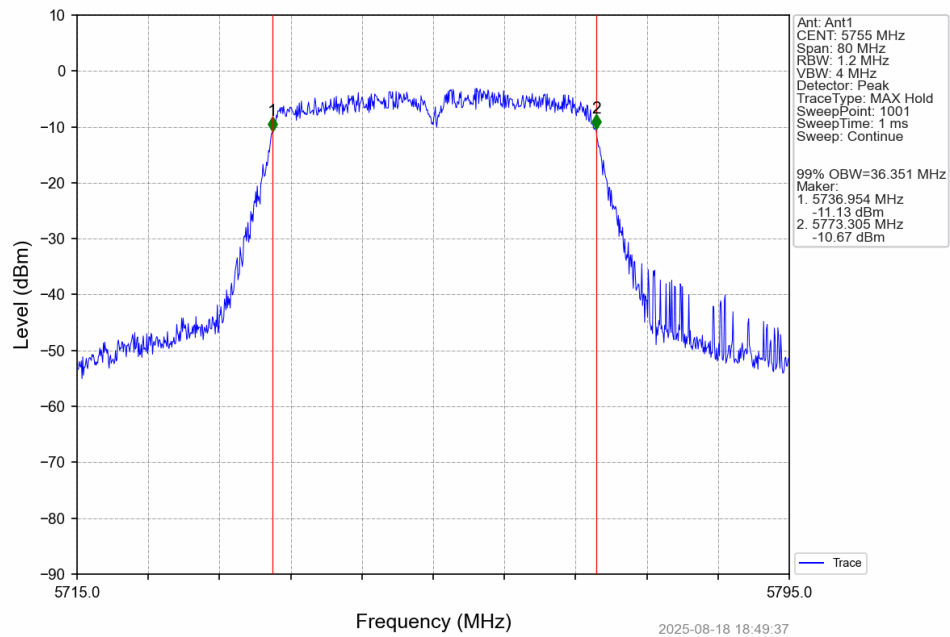
802.11ac(VHT40) LCH 5190MHz Ant1 NTN



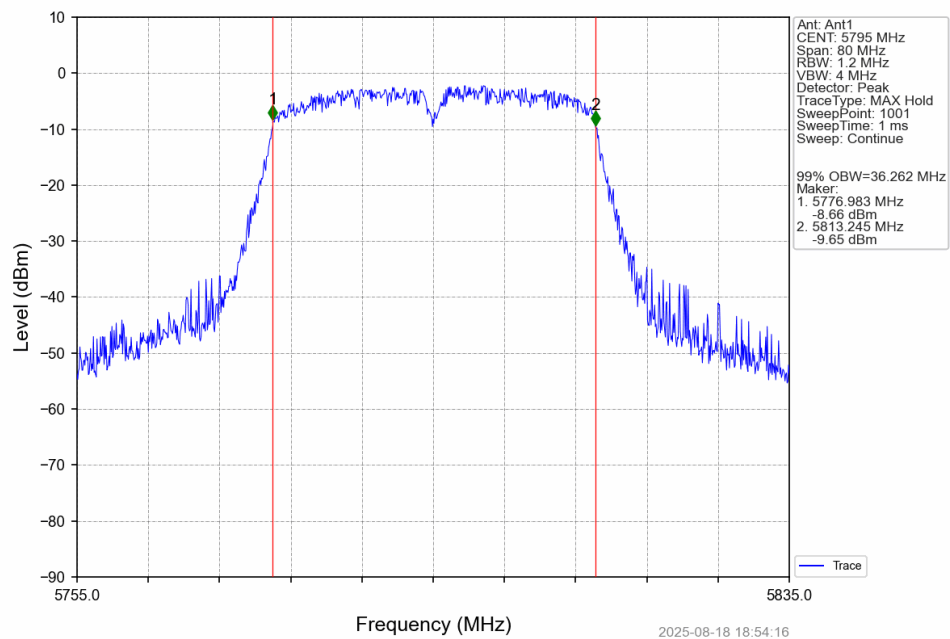
802.11ac(VHT40) HCH 5230MHz Ant1 NTN



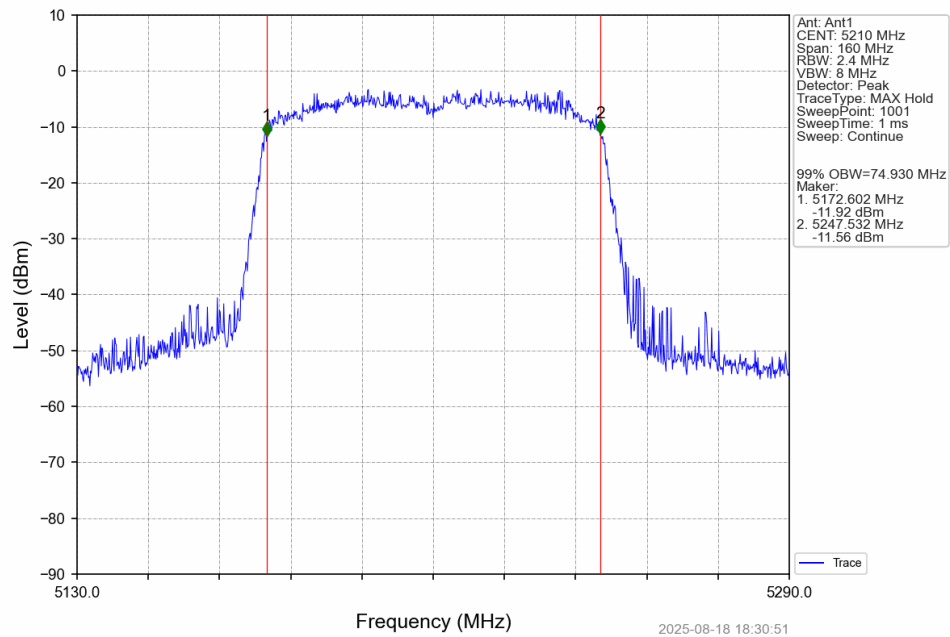
802.11ac(VHT40) LCH 5755MHz Ant1 NTN



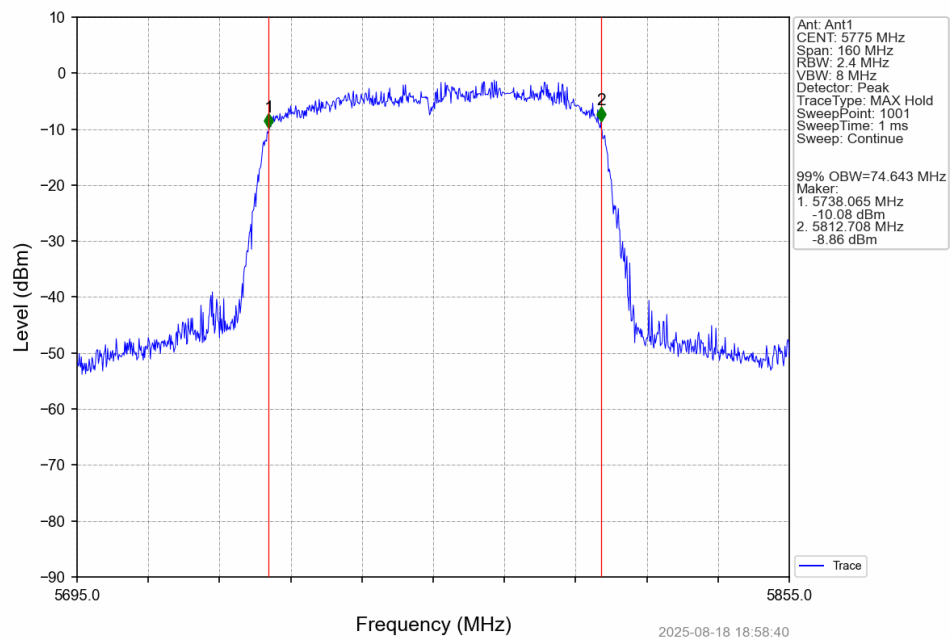
802.11ac(VHT40)_HCH_5795MHz_Ant1_NTN



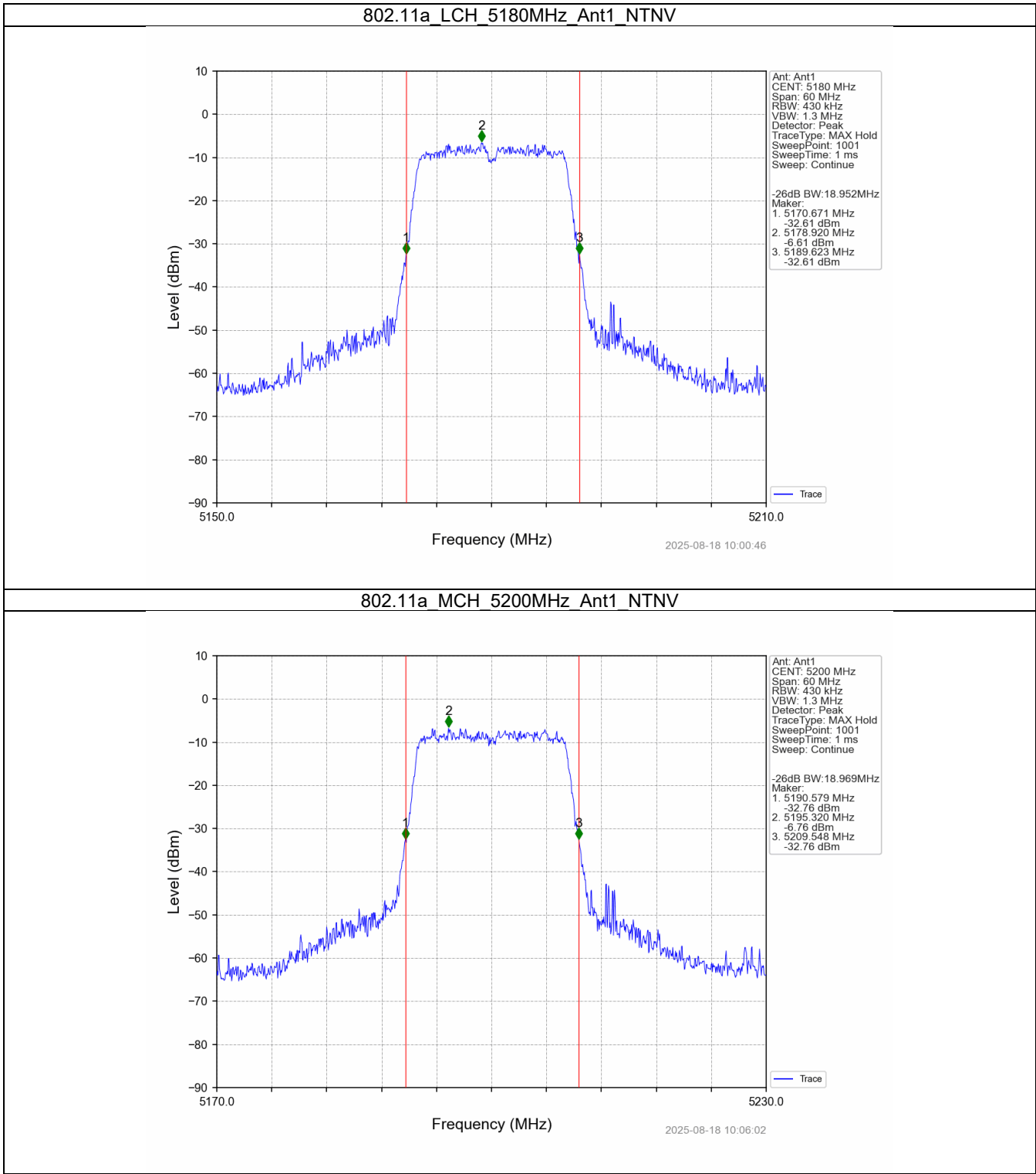
802.11ac(VHT80) MCH 5210MHz Ant1 NTN



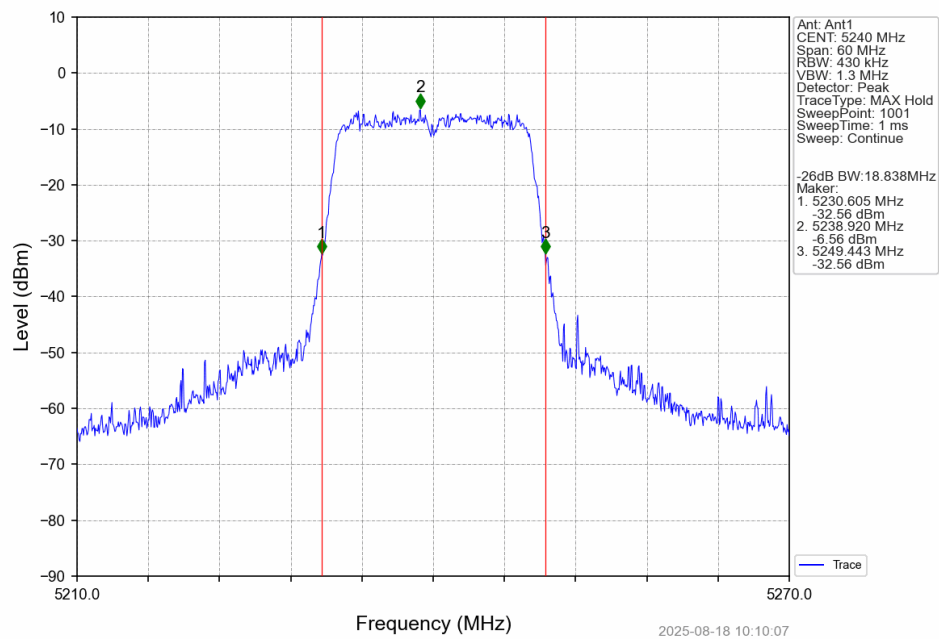
802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV



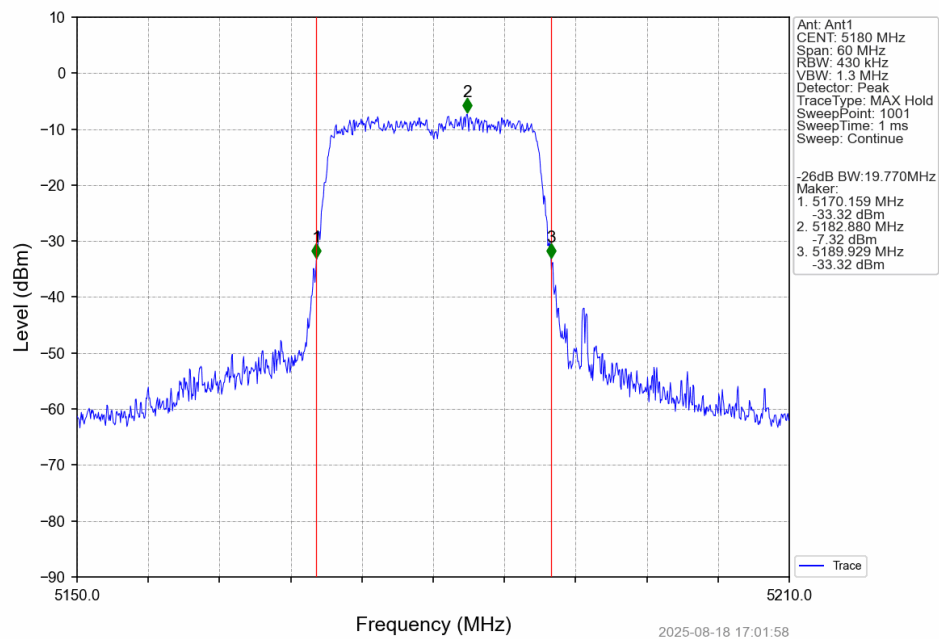
2.2.2 26dB BW



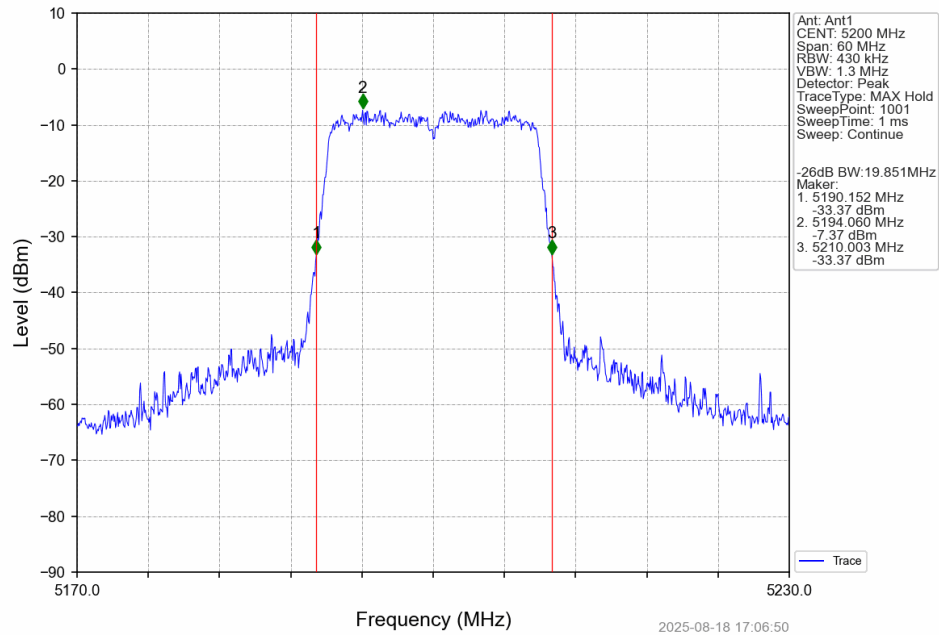
802.11a_HCH_5240MHz_Ant1_NTNV



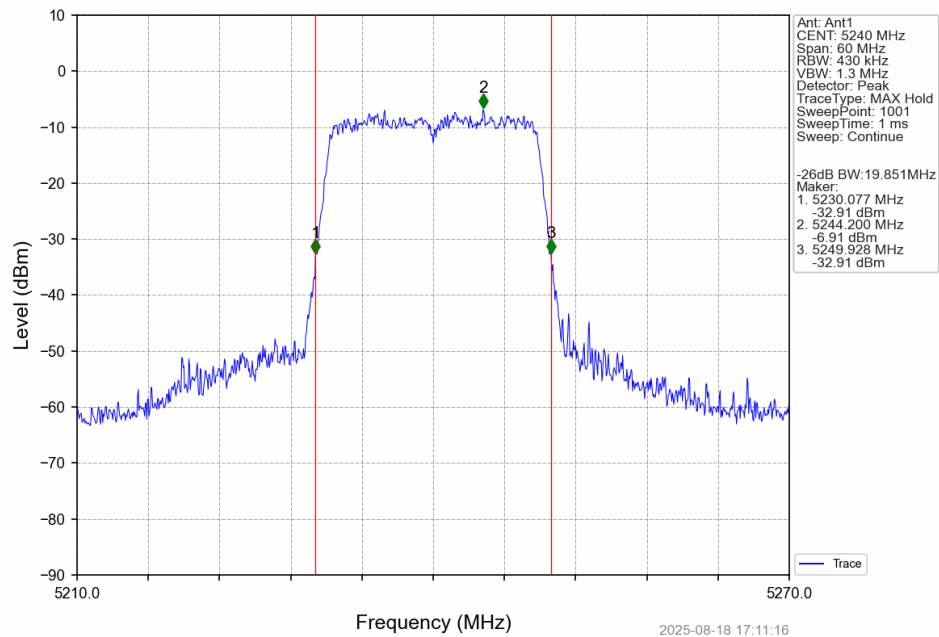
802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



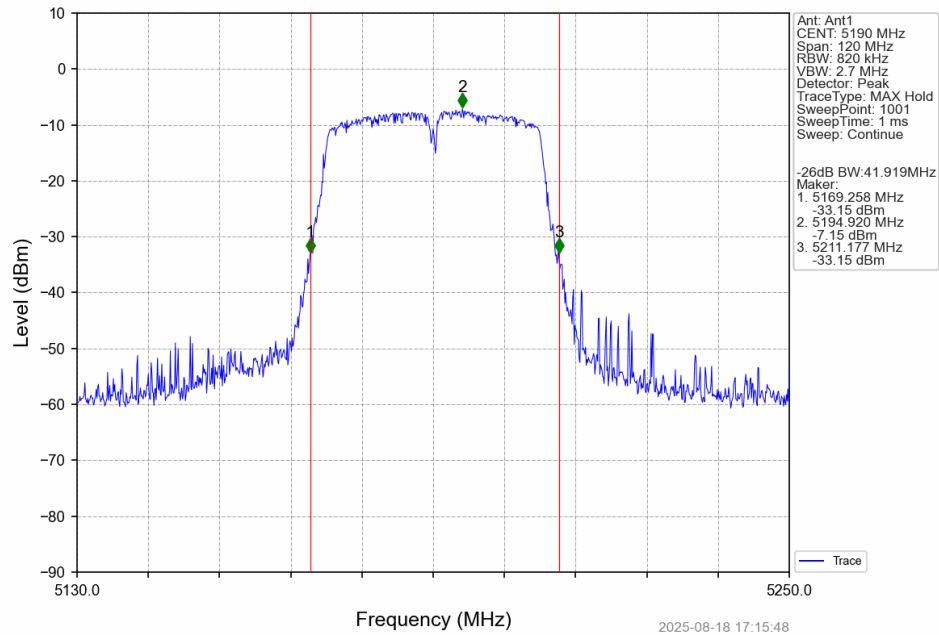
802.11n(HT20) MCH 5200MHz Ant1 NTN



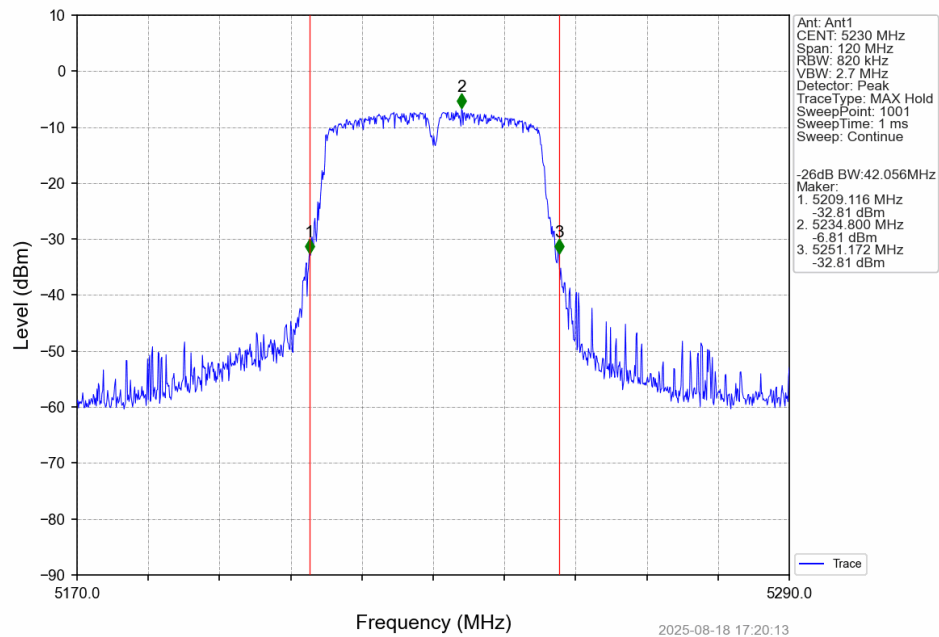
802.11n(HT20)_HCH 5240MHz_Ant1 NTN



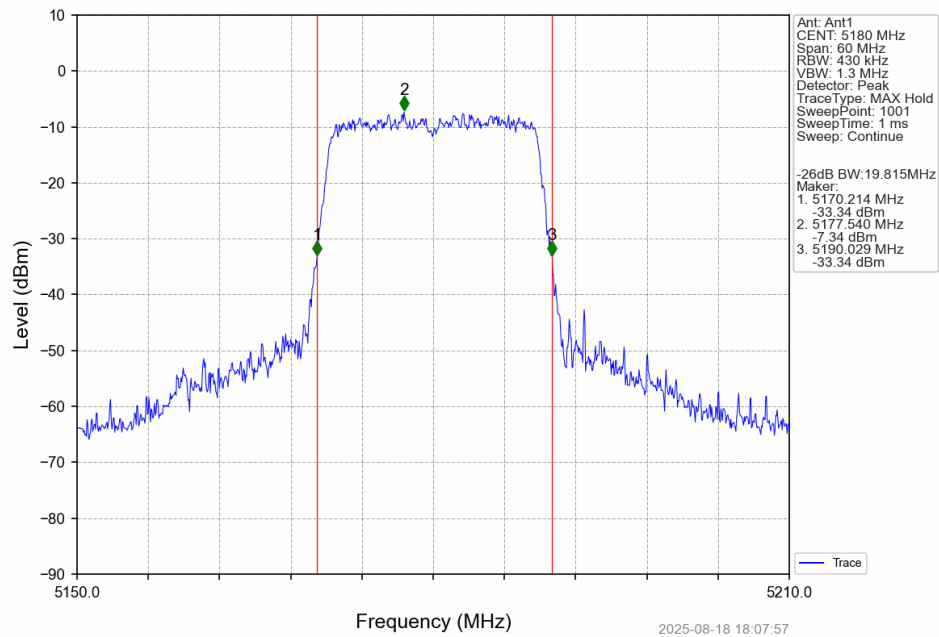
802.11n(HT40) LCH 5190MHz Ant1 NTN



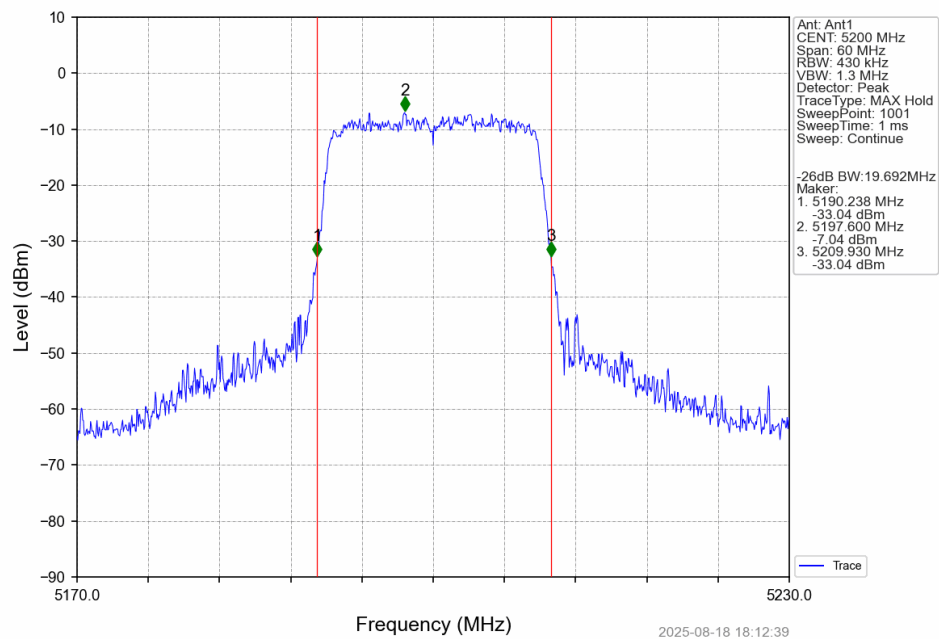
802.11n(HT40)_HCH_5230MHz_Ant1_NTN



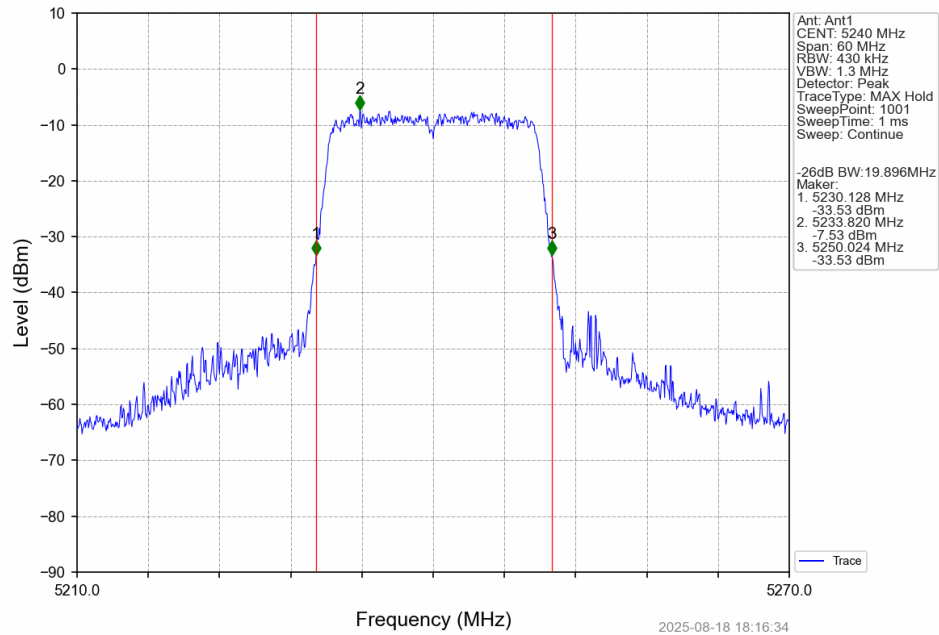
802.11ac(VHT20) LCH 5180MHz Ant1 NTN



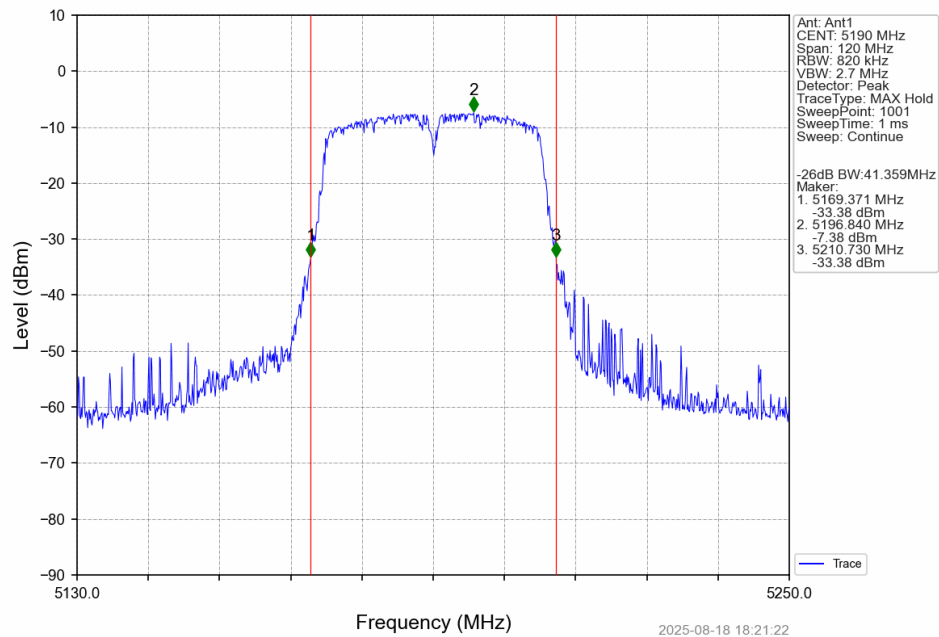
802.11ac(VHT20) MCH 5200MHz Ant1 NTN



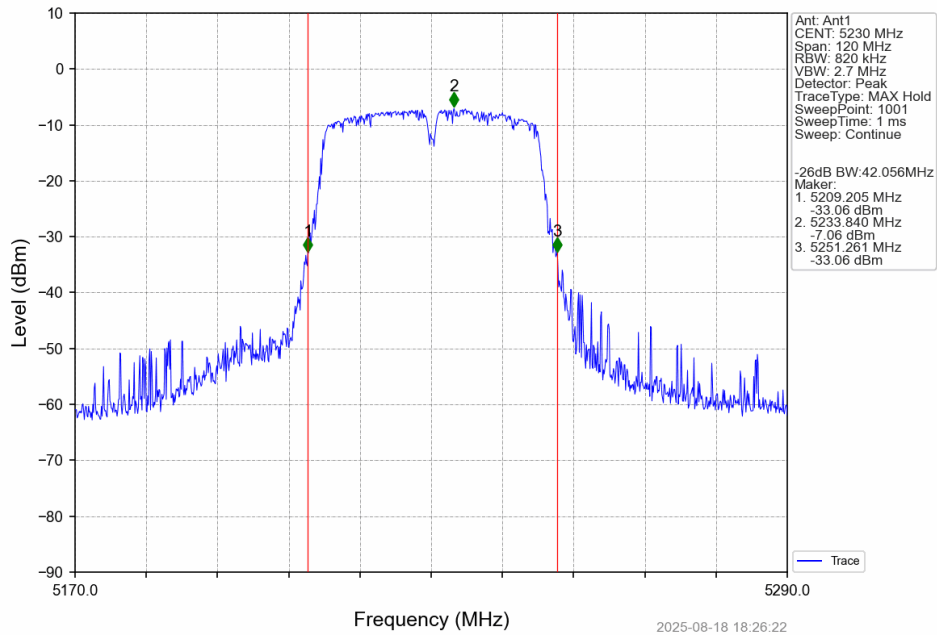
802.11ac(VHT20) HCH 5240MHz Ant1 NTN



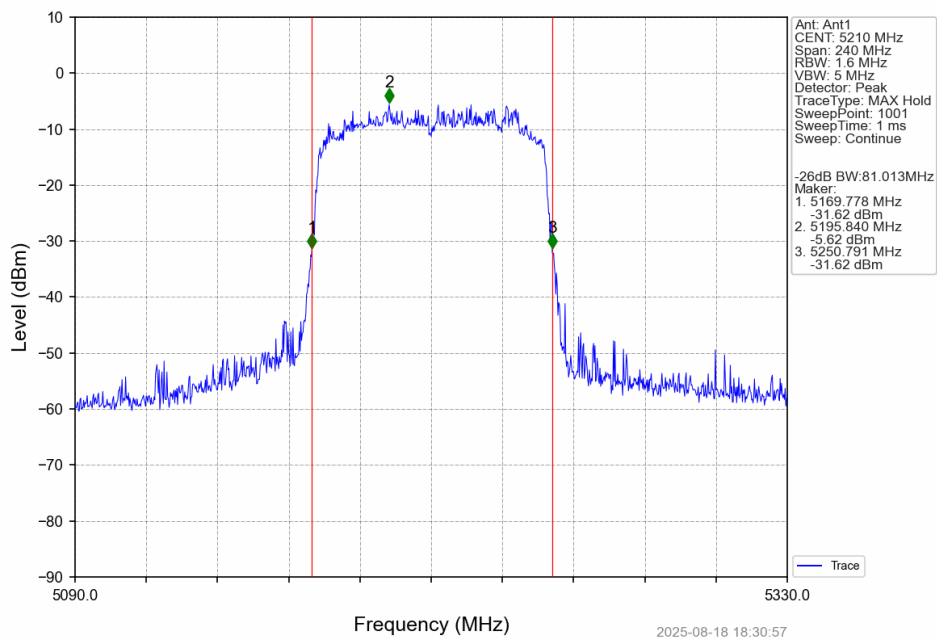
802.11ac(VHT40)_LCH_5190MHz_Ant1_NTN



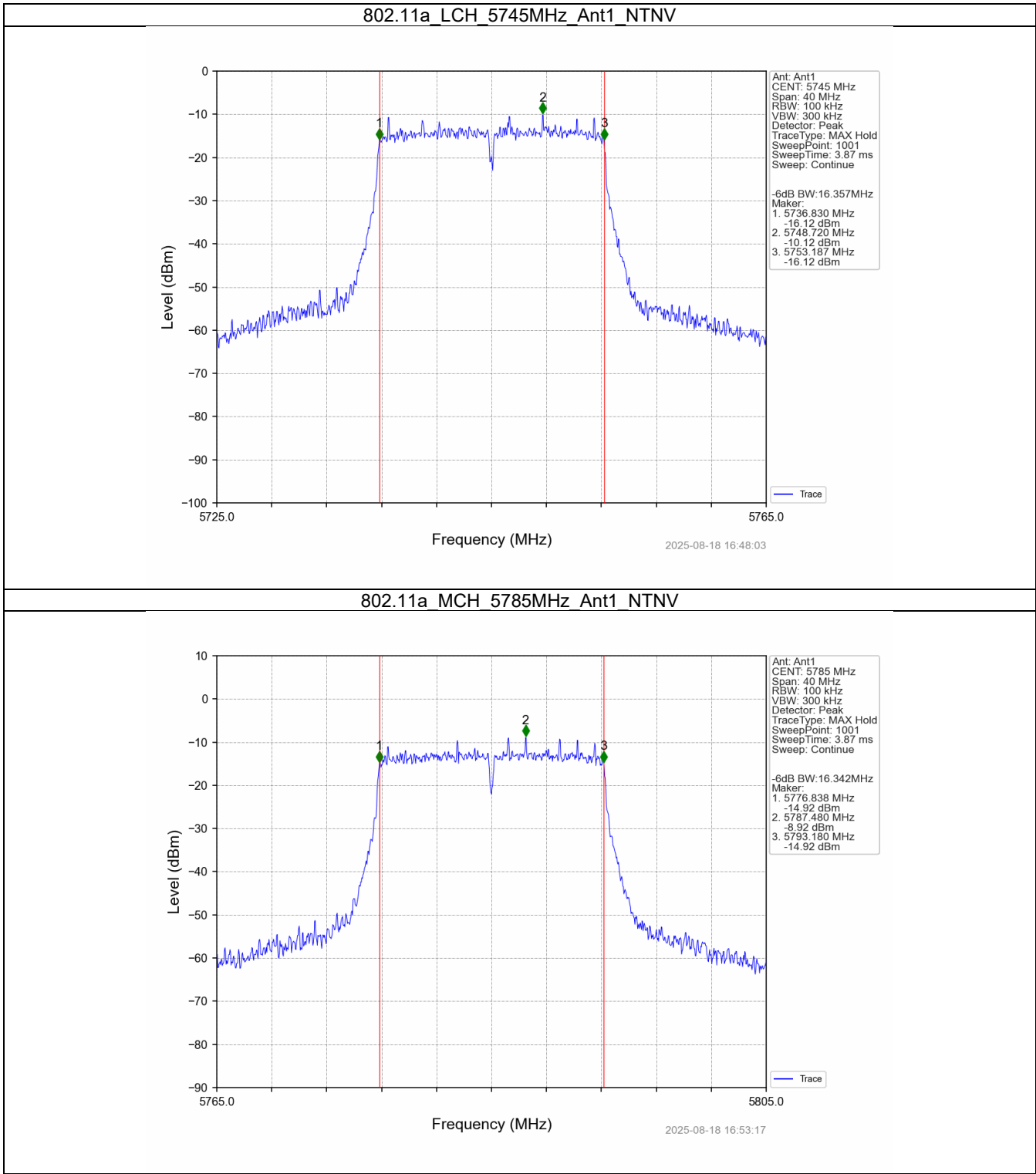
802.11ac(VHT40) HCH 5230MHz Ant1 NTN



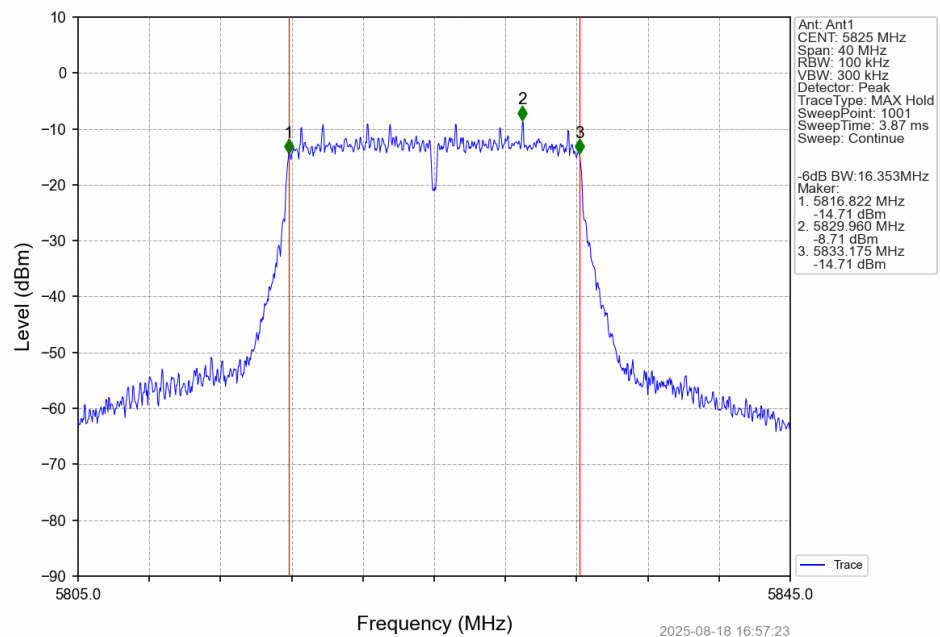
802.11ac(VHT80)_MCH_5210MHz_Ant1_NTN



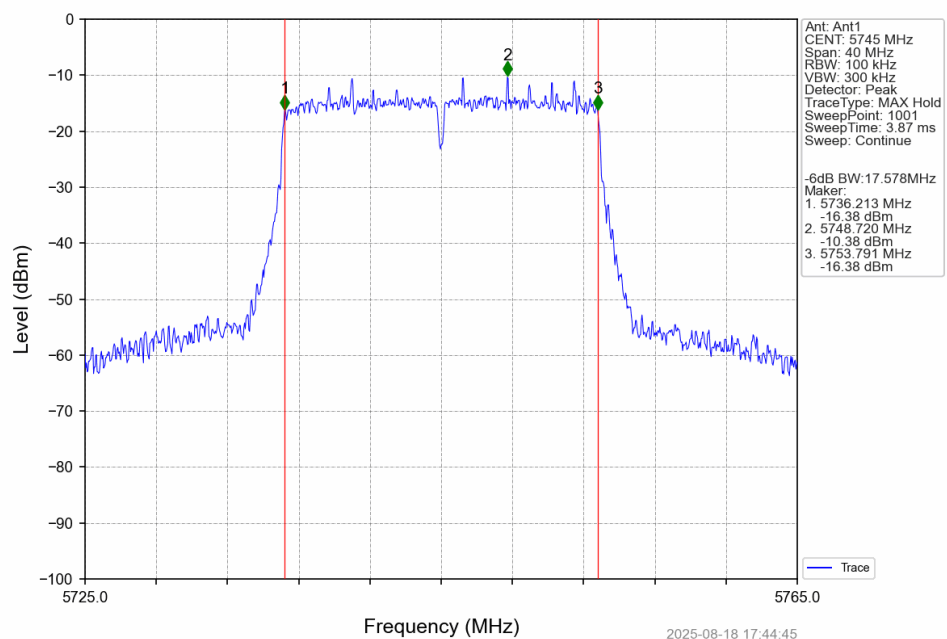
2.2.3 6dB BW



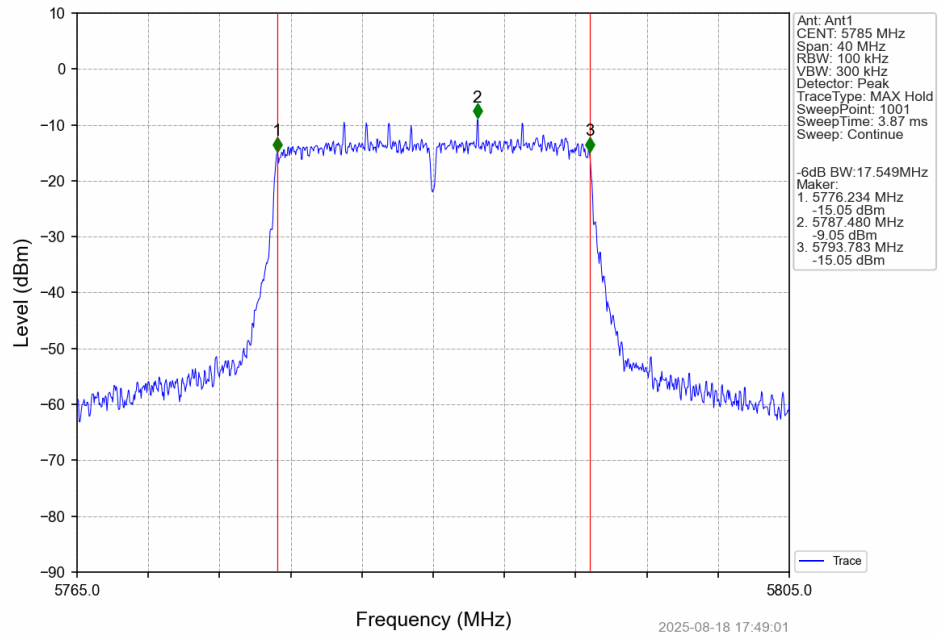
802.11a_HCH_5825MHz_Ant1_NTNV



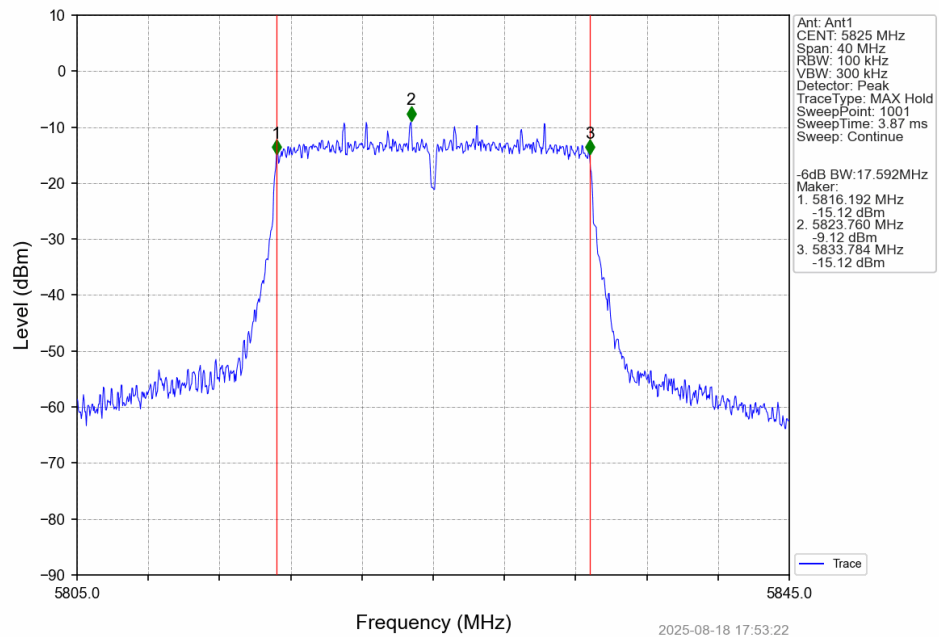
802.11n(HT20)_LCH_5745MHz_Ant1_NTNV



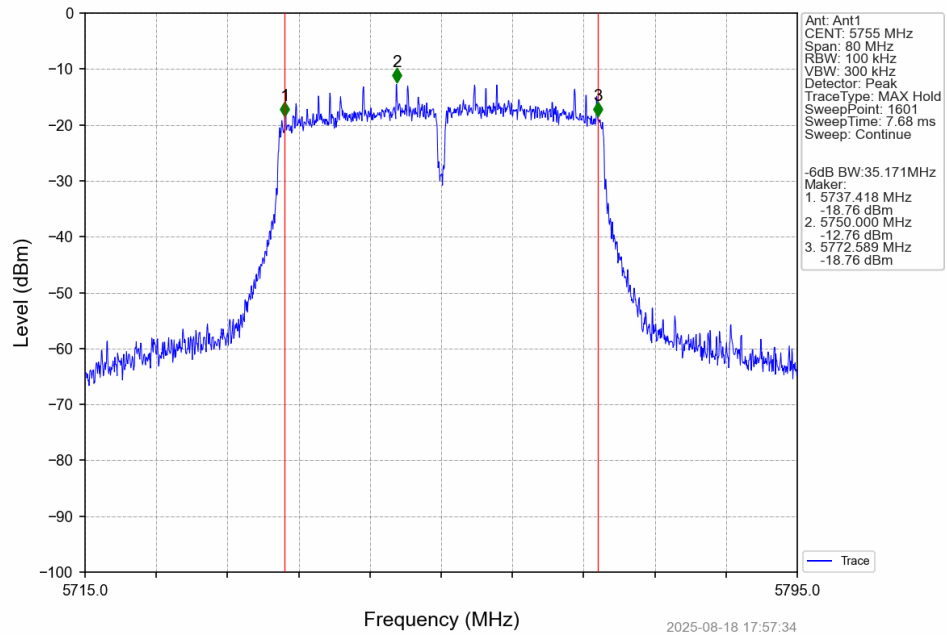
802.11n(HT20) MCH 5785MHz Ant1 NTN



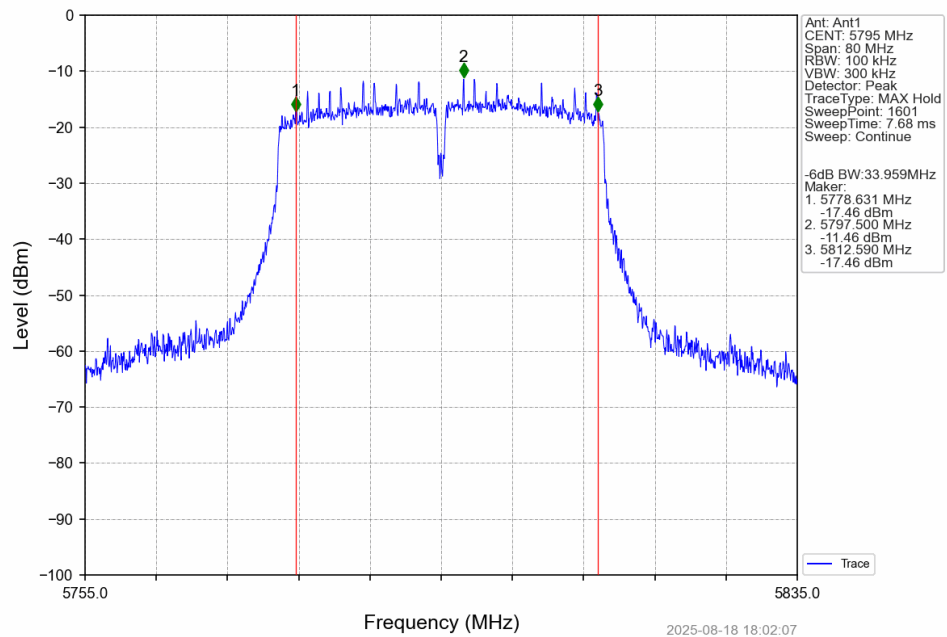
802.11n(HT20)_HCH_5825MHz_Ant1_NTN



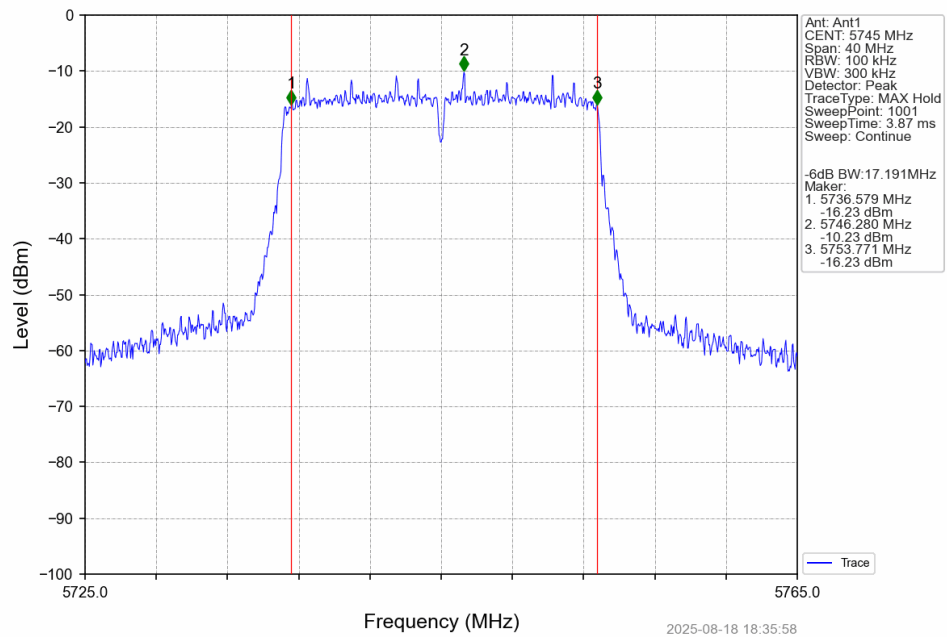
802.11n(HT40) LCH 5755MHz Ant1 NTN



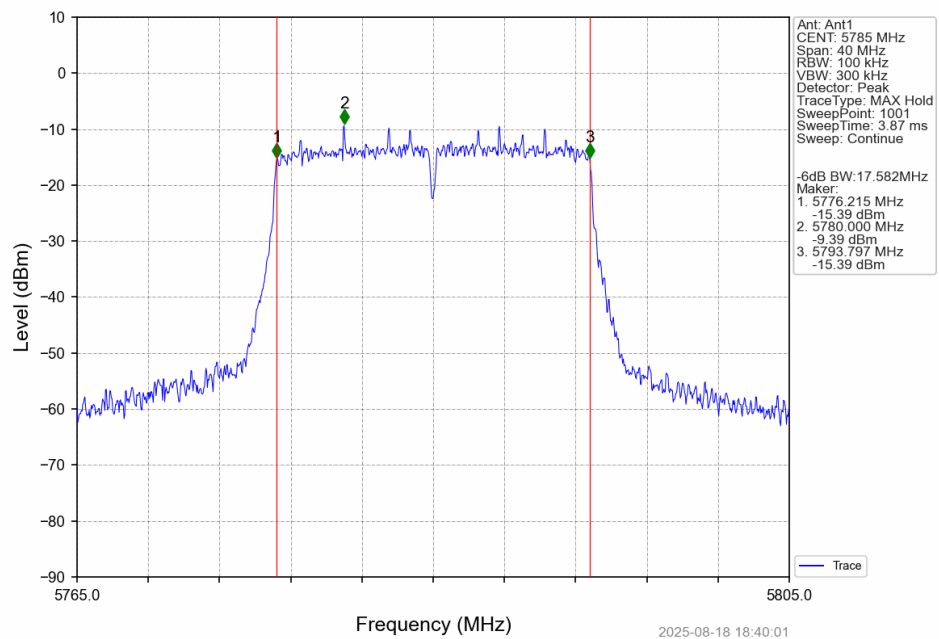
802.11n(HT40)_HCH 5795MHz Ant1 NTN



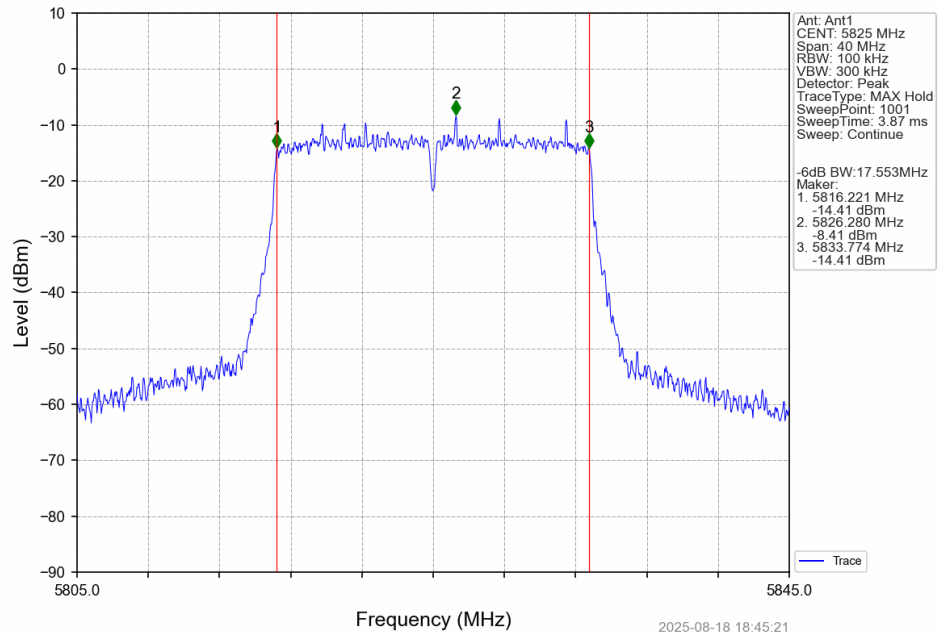
802.11ac(VHT20) LCH 5745MHz Ant1 NTN



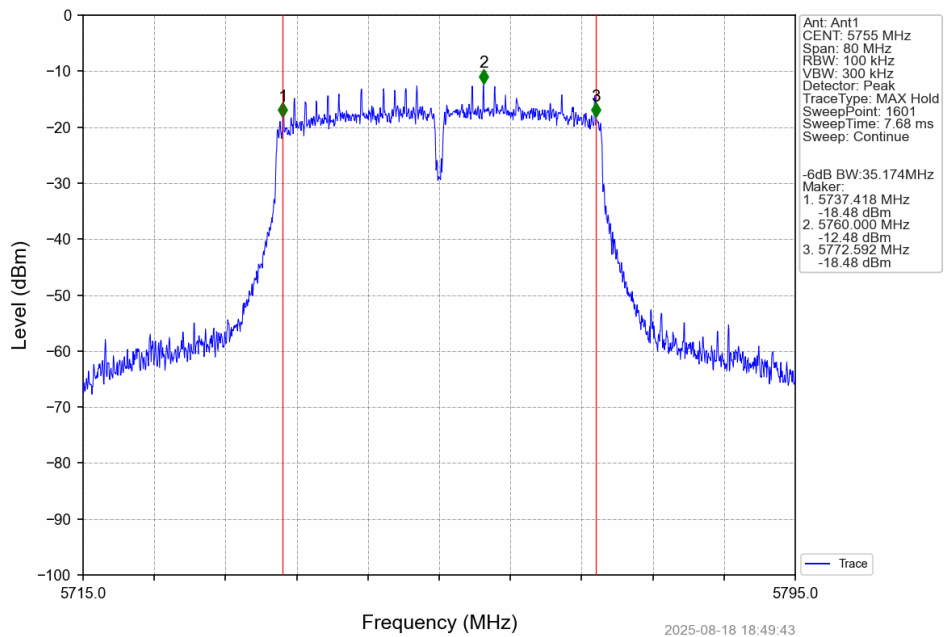
802.11ac(VHT20) MCH 5785MHz Ant1 NTN



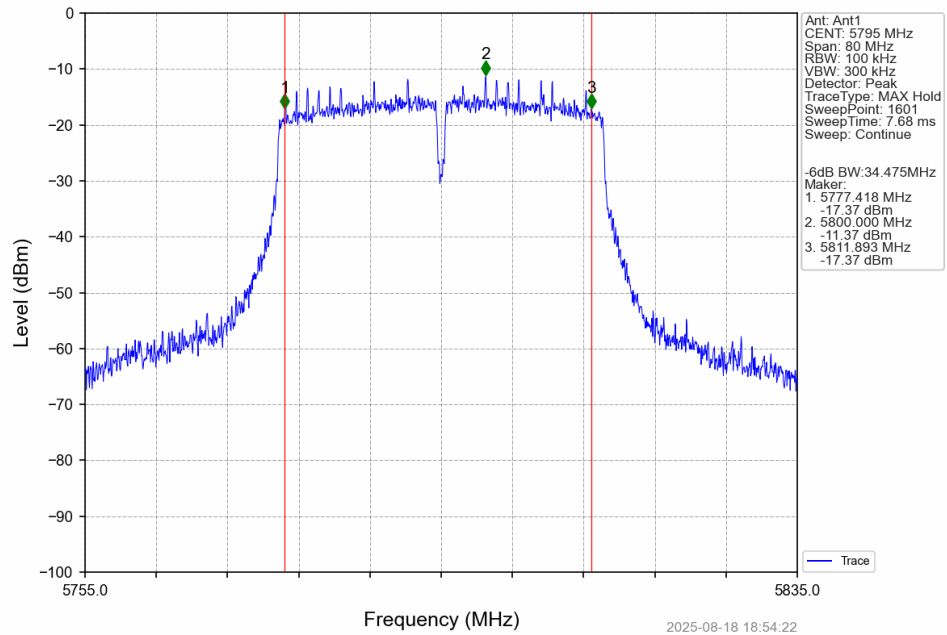
802.11ac(VHT20) HCH 5825MHz Ant1 NTN



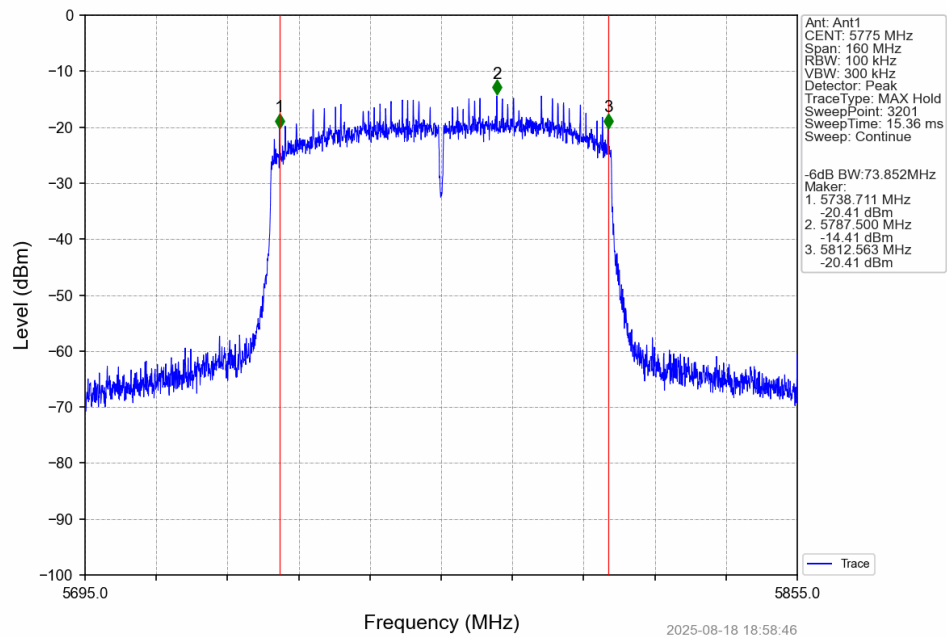
802.11ac(VHT40)_LCH_5755MHz_Ant1_NTN



802.11ac(VHT40) HCH 5795MHz Ant1 NTN



802.11ac(VHT80)_MCH_5775MHz_Ant1_NTN



3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)				Verdict
			ANT1	ANT2	MIMO	Limit	
802.11a	SISO	5180	0.91	0.80	/	<=23.98	Pass
		5200	0.78	0.78	/	<=23.98	Pass
		5240	0.95	0.64	/	<=23.98	Pass
		5745	1.43	1.11	/	<=30	Pass
		5785	2.32	2.22	/	<=30	Pass
		5825	3.07	2.51	/	<=30	Pass
802.11n (HT20)	MIMO	5180	0.47	0.77	3.63	<=23.73	Pass
		5200	0.82	0.84	3.84	<=23.73	Pass
		5240	0.71	0.79	3.76	<=23.73	Pass
		5745	1.04	0.91	3.99	<=29.45	Pass
		5785	1.96	1.84	4.91	<=29.45	Pass
		5825	2.66	2.45	5.57	<=29.45	Pass
802.11n (HT40)	MIMO	5190	0.37	0.46	3.43	<=23.73	Pass
		5230	0.43	0.34	3.40	<=23.73	Pass
		5755	1.50	1.41	4.47	<=29.45	Pass
		5795	2.51	2.35	5.44	<=29.45	Pass
802.11ac (VHT20)	MIMO	5180	0.49	0.73	3.62	<=23.73	Pass
		5200	0.68	0.82	3.76	<=23.73	Pass
		5240	0.66	0.66	3.67	<=23.98	Pass
		5745	1.08	0.91	4.01	<=29.45	Pass
		5785	2.41	1.95	5.20	<=29.45	Pass
		5825	2.89	2.30	5.62	<=29.45	Pass
802.11ac (VHT40)	MIMO	5190	0.27	0.56	3.43	<=23.73	Pass
		5230	0.52	0.36	3.45	<=23.73	Pass
		5755	1.78	1.54	4.67	<=29.45	Pass
		5795	2.45	2.13	5.30	<=29.45	Pass
802.11ac (VHT80)	MIMO	5210	0.80	0.39	3.61	<=23.73	Pass
		5775	2.10	1.95	5.04	<=29.45	Pass
Note1: Antenna Gain: - Band: 1 Ant1: 4.01dBi; - Band: 3 Ant1: 3.47dBi; - Band: 1 Ant2: 2.31dBi; - Band: 3 Ant2: 3.61dBi; Note2: Directional Gain: Ant1:6.25dBi. Ant 2: 6.55dBi							

4. Maximum Power Spectral Density

4.1 Test Result

4.1.1 PSD

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/MHz)				Verdict
			ANT1	ANT2	MIMO	Limit	
802.11a	SISO	5180	-10.38	-10.23	/	<=11	Pass
		5200	-10.31	-10.21	/	<=11	Pass
		5240	-10.11	-10.51	/	<=11	Pass
802.11n (HT20)	MIMO	5180	-10.98	-10.27	-7.71	<=10.75	Pass
		5200	-10.53	-10.72	-7.76	<=10.75	Pass
		5240	-10.43	-10.83	-7.81	<=10.75	Pass
802.11n (HT40)	MIMO	5190	-13.64	-13.35	-10.56	<=10.75	Pass
		5230	-13.48	-13.71	-10.62	<=10.75	Pass
802.11ac (VHT20)	MIMO	5180	-10.95	-10.81	-7.98	<=10.75	Pass
		5200	-10.58	-10.63	-7.68	<=10.75	Pass
		5240	-10.60	-10.66	-7.79	<=10.75	Pass
802.11ac (VHT40)	MIMO	5190	-13.79	-13.42	-10.80	<=10.75	Pass
		5230	-13.78	-13.76	-10.90	<=10.75	Pass
802.11ac (VHT80)	MIMO	5210	-16.37	-16.38	-13.60	<=10.75	Pass

Note1: Antenna Gain:
- Band: 1 Ant1: 4.01dBi;
- Band: 3 Ant1: 3.47dBi;
- Band: 1 Ant2: 2.31dBi;
- Band: 3 Ant2: 3.61dBi;
Note2: Directional Gain: Ant1:6.25dBi, Ant 2: 6.55dBi

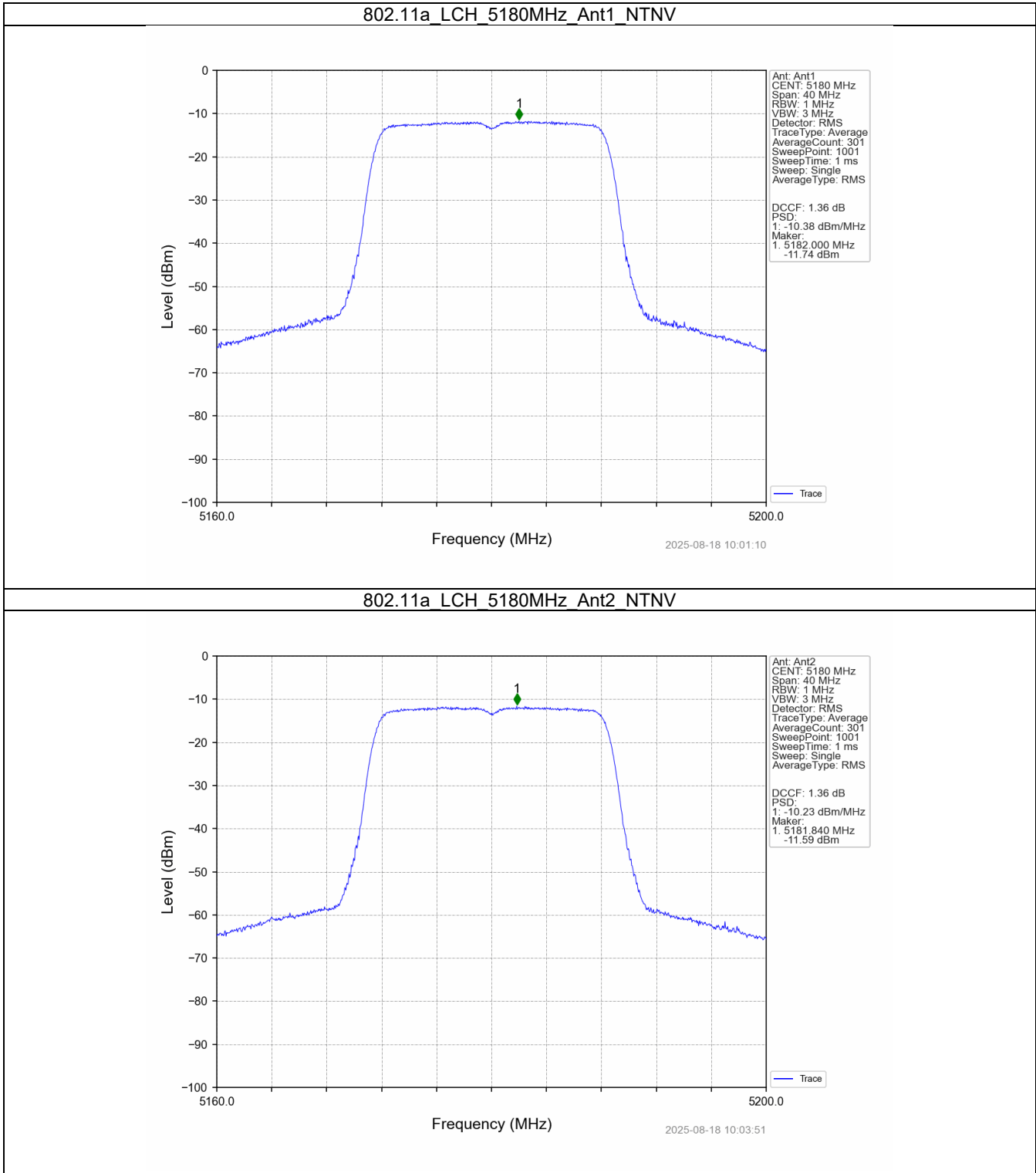
4.1.2 PSD-Band3

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/500kHz)				Verdict
			ANT1	ANT2	MIMO	Limit	
802.11a	SISO	5745	-12.51	-12.87	/	<=30	Pass
		5785	-11.34	-11.78	/	<=30	Pass
		5825	-11.19	-11.51	/	<=30	Pass
802.11n (HT20)	MIMO	5745	-13.26	-13.31	-10.43	<=29.45	Pass
		5785	-11.96	-12.05	-9.09	<=29.45	Pass
		5825	-11.53	-12.16	-8.90	<=29.45	Pass
802.11n (HT40)	MIMO	5755	-15.28	-15.66	-12.65	<=29.45	Pass
		5795	-14.05	-14.66	-11.51	<=29.45	Pass
802.11ac (VHT20)	MIMO	5745	-12.82	-13.31	-10.05	<=29.45	Pass
		5785	-12.24	-12.24	-9.32	<=29.45	Pass
		5825	-11.36	-11.68	-8.57	<=29.45	Pass
802.11ac (VHT40)	MIMO	5755	-15.11	-15.33	-12.32	<=29.45	Pass
		5795	-14.16	-14.19	-11.47	<=29.45	Pass
802.11ac (VHT80)	MIMO	5775	-17.35	-18.19	-15.04	<=29.45	Pass

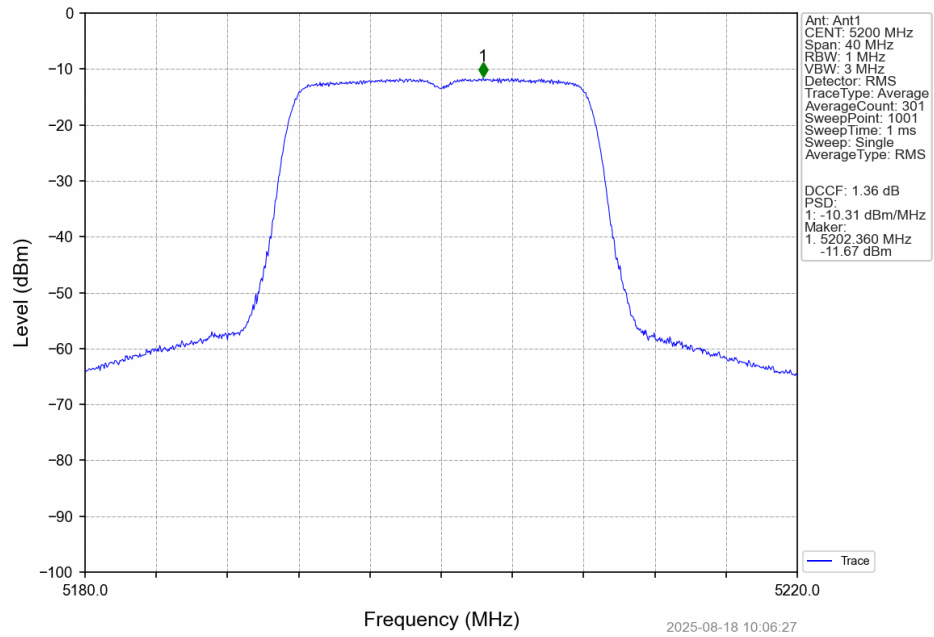
Note1: Antenna Gain:
- Band: 1 Ant1: 4.01dBi;
- Band: 3 Ant1: 3.47dBi;
- Band: 1 Ant2: 2.31dBi;
- Band: 3 Ant2: 3.61dBi;
Note2: Directional Gain: Ant1:6.25dBi, Ant 2: 6.55dBi

4.2 Test Graph

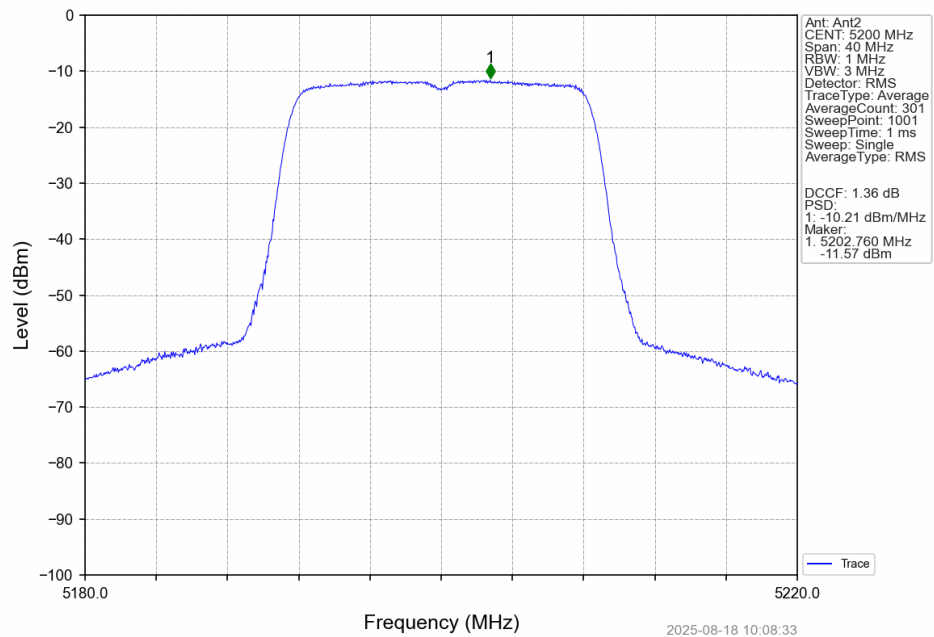
4.2.1 PSD



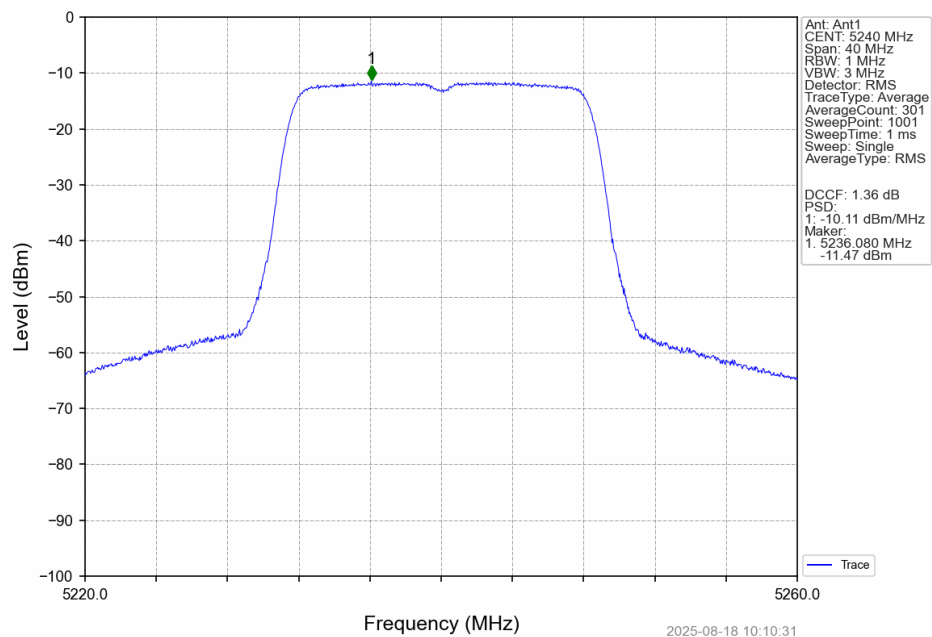
802.11a_MCH_5200MHz_Ant1_NTNV



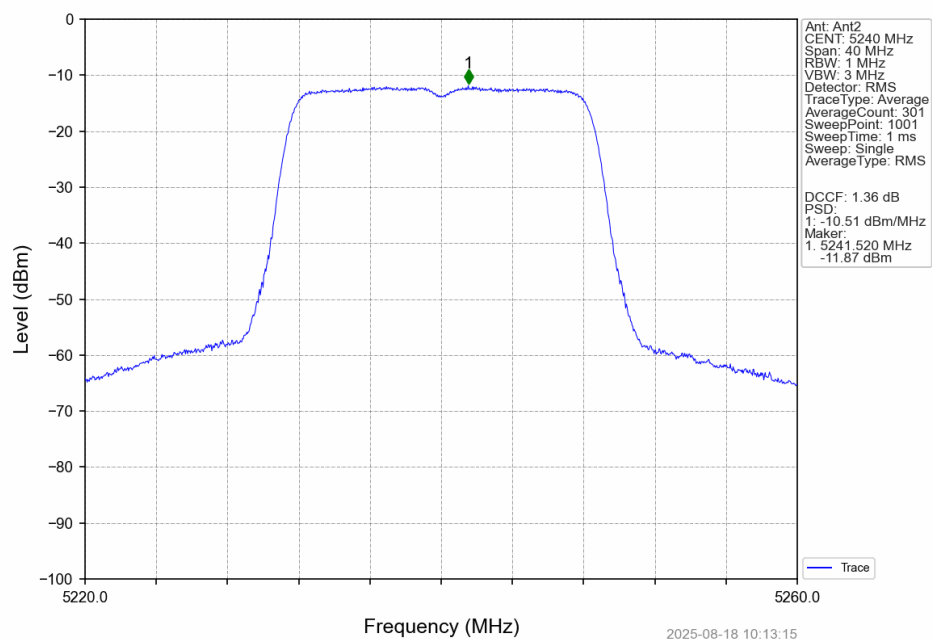
802.11a_MCH_5200MHz_Ant2_NTNV



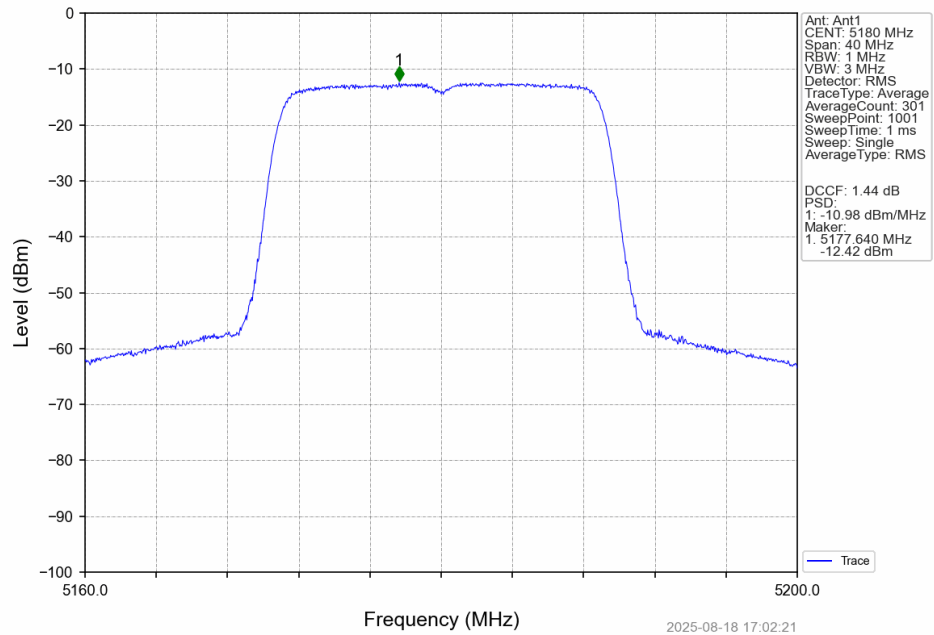
802.11a_HCH_5240MHz_Ant1_NTNV



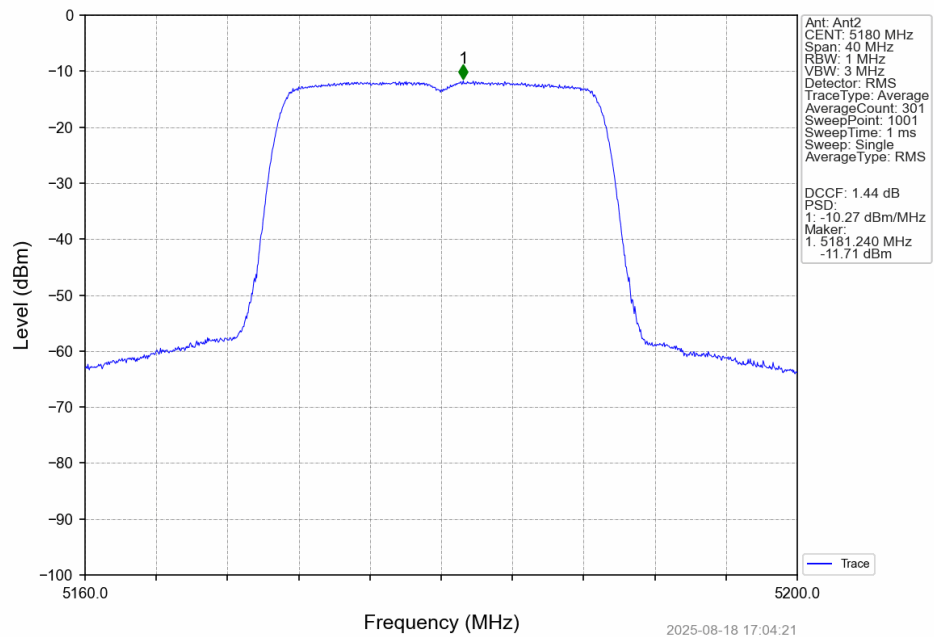
802.11a_HCH_5240MHz_Ant2_NTNV



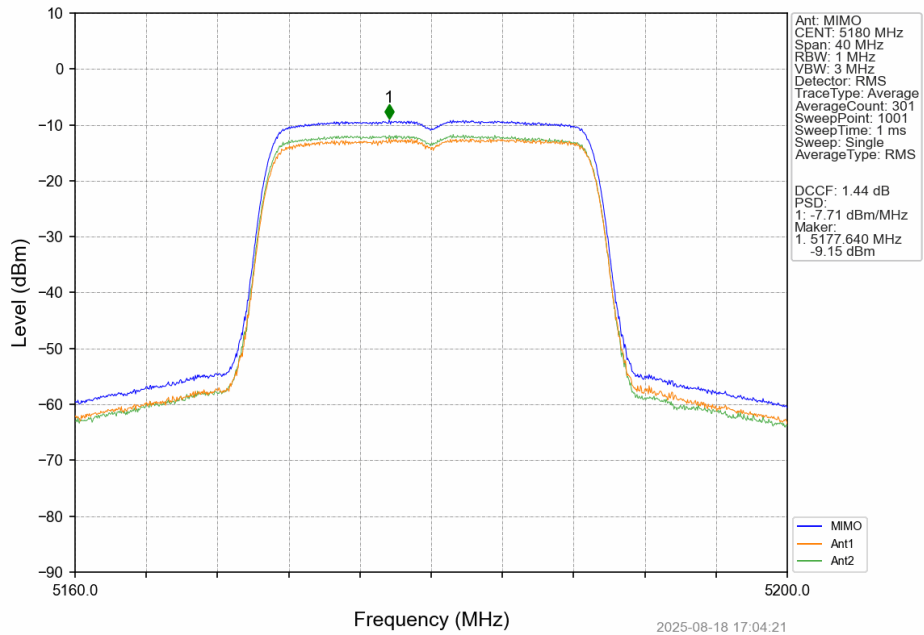
802.11n(HT20) LCH 5180MHz Ant1 NTN



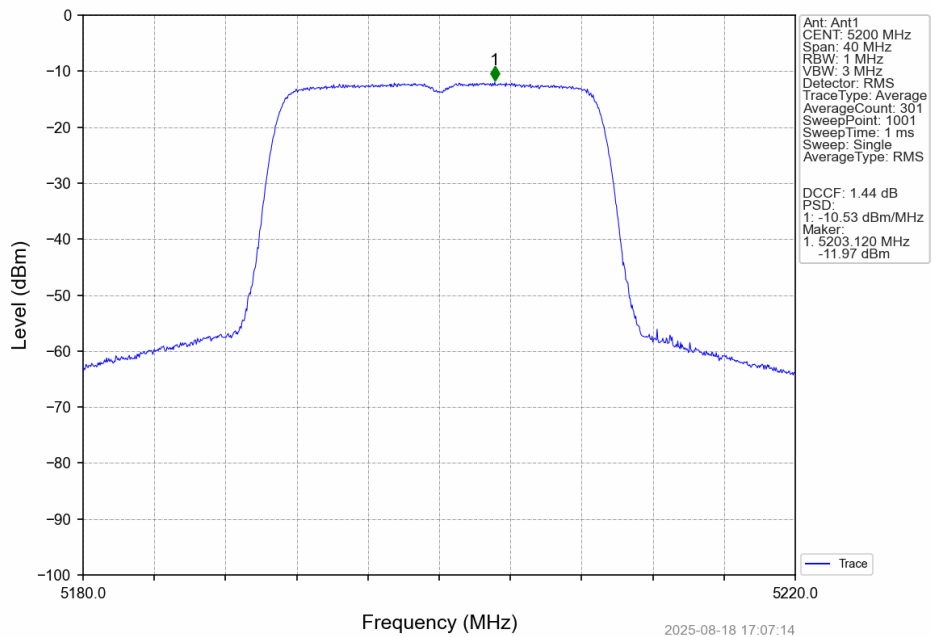
802.11n(HT20) LCH 5180MHz Ant2 NTN



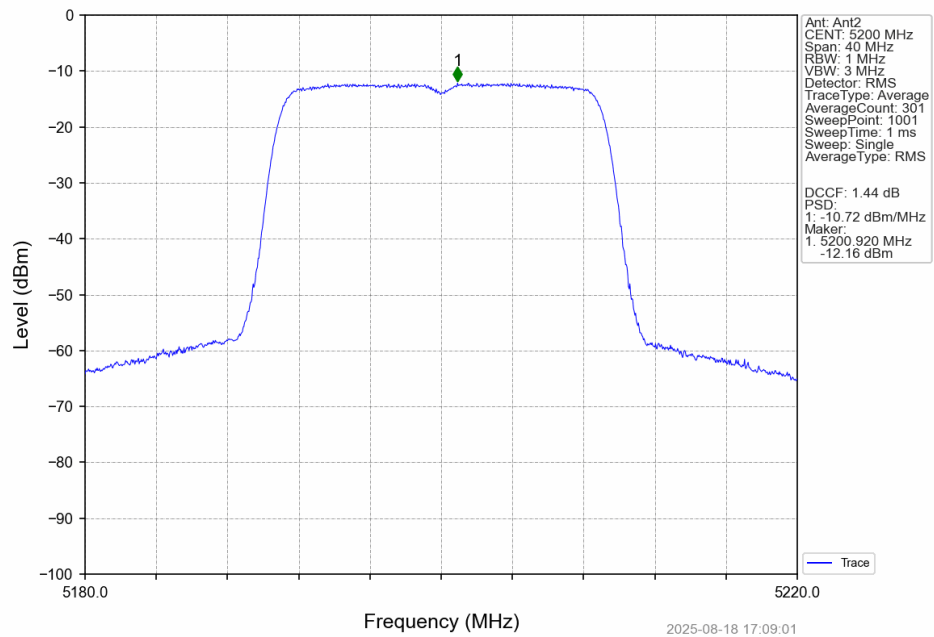
802.11n(HT20) LCH 5180MHz MIMO NTN



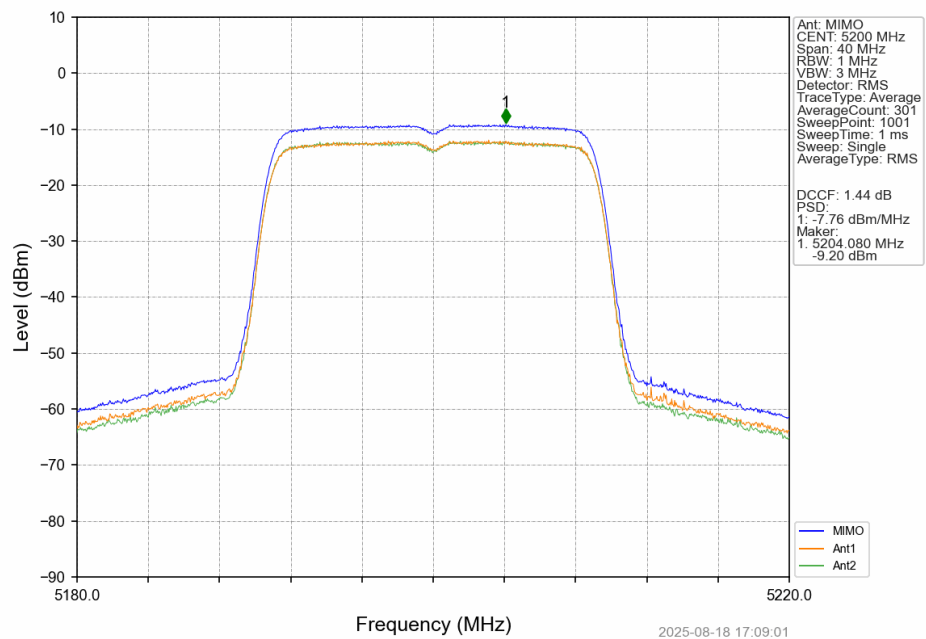
802.11n(HT20) MCH 5200MHz Ant1 NTN



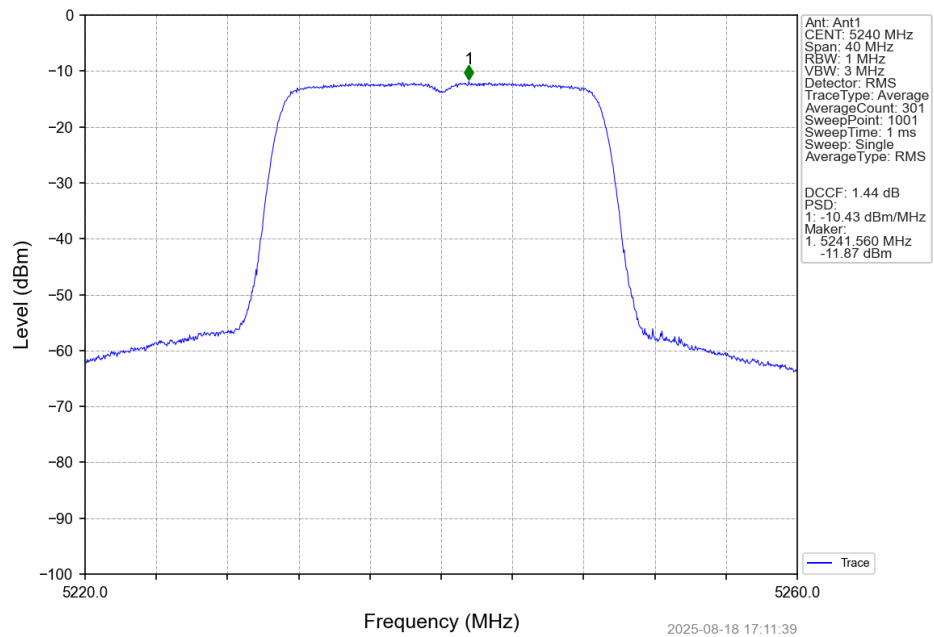
802.11n(HT20) MCH 5200MHz Ant2 NTN



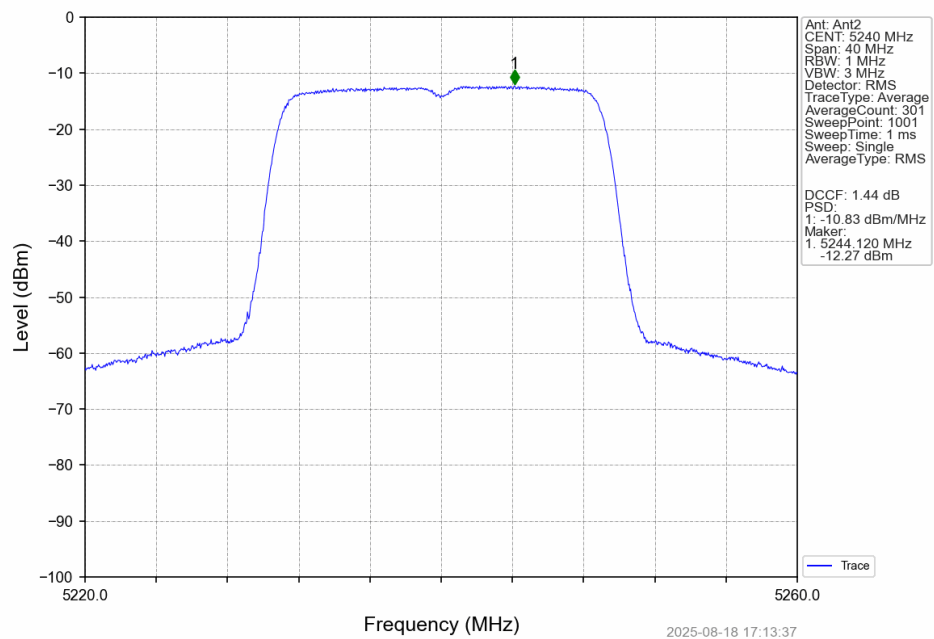
802.11n(HT20) MCH 5200MHz MIMO NTN



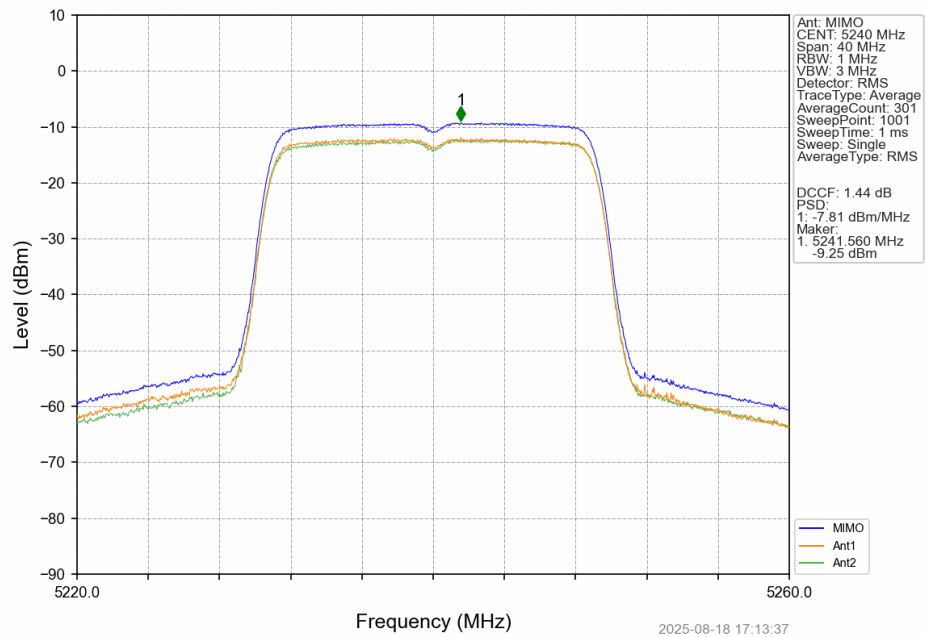
802.11n(HT20) HCH 5240MHz Ant1 NTN



802.11n(HT20)_HCH_5240MHz_Ant2_NTN



802.11n(HT20) HCH 5240MHz MIMO NTN



802.11n(HT40) LCH 5190MHz Ant1 NTN

