



RF Test Report

For BTEK250612049A01-T05

Project No.:	BTEK250612049A01E03
Product Description:	23.8°C, 59%, 101.5kPa
Test Engineer:	Zora
Test Date:	2025-09-19



Test Summary

Item	Result
Duty Cycle	Pass
Bandwidth	Pass
Maximum Conducted Output Power	Pass
Maximum Power Spectral Density	Pass
Frequency Stability	Pass
Band Edge	Pass
Additional Spurious Emission	Pass



1. Duty Cycle

1.1 Test Result

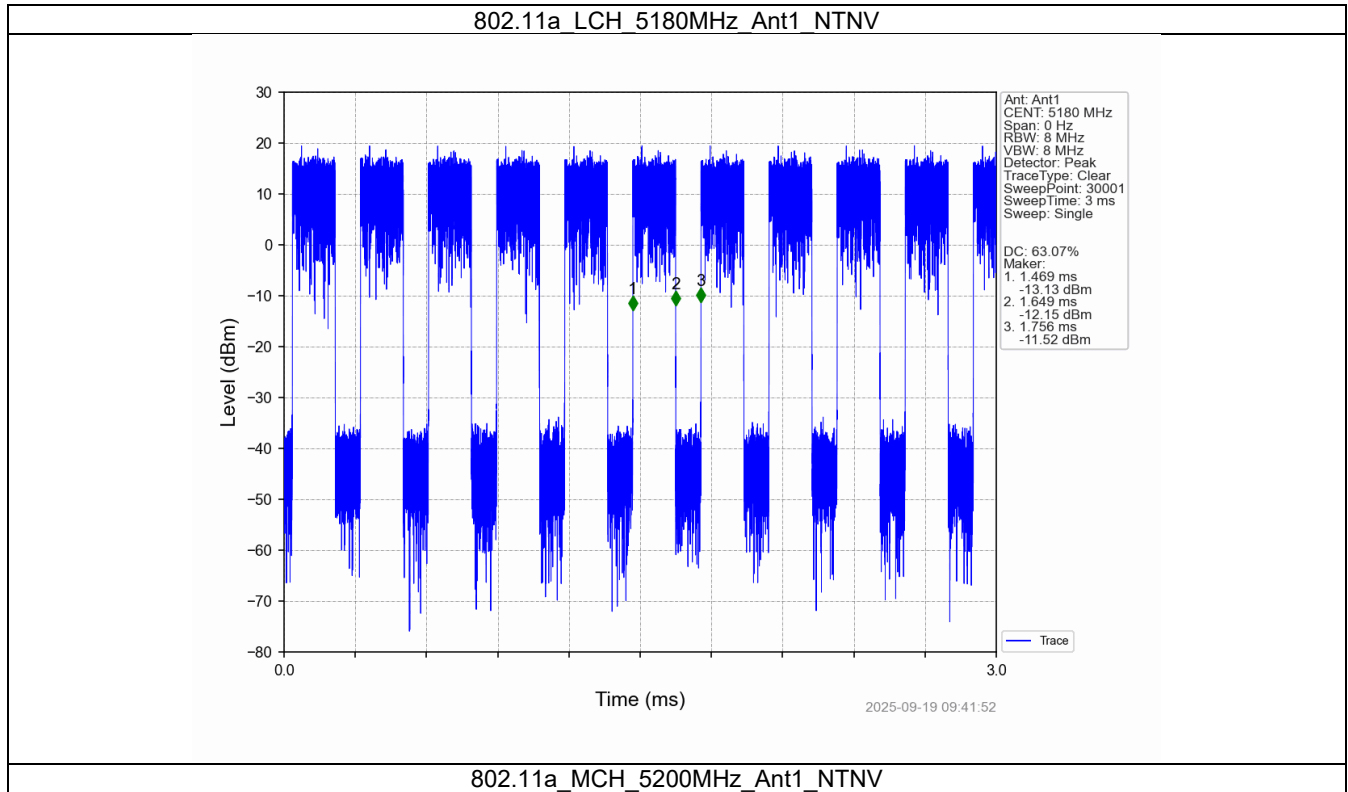
1.1.1 Ant1

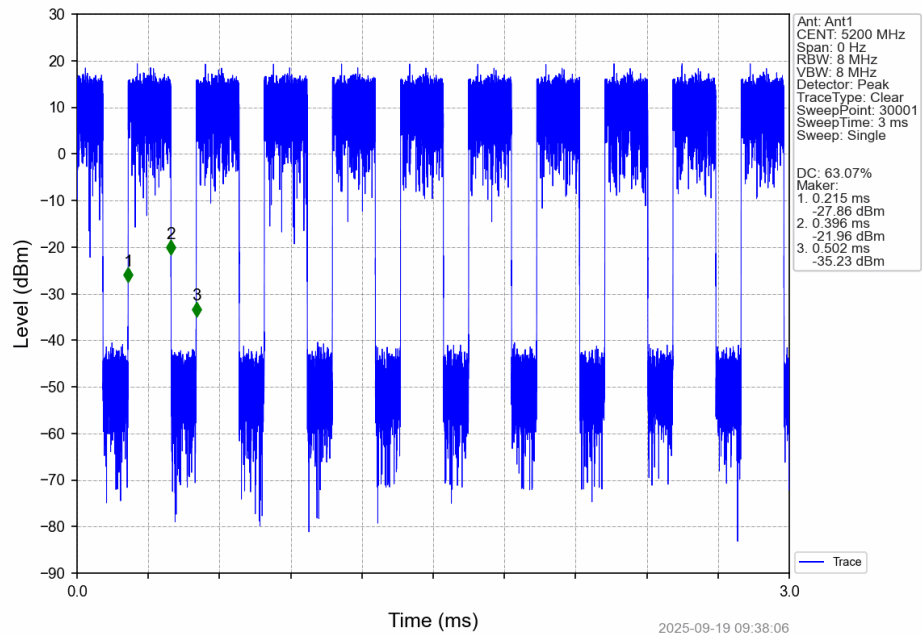
Ant1							
Mode	Tx Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11a	SISO	5180	0.181	0.287	63.07	2.00	0.06
		5200	0.181	0.287	63.07	2.00	0.07
		5240	0.181	0.287	63.07	2.00	0.09
802.11n (HT20)	SISO	5180	0.168	0.276	60.87	2.16	0.06
		5200	0.172	0.275	62.55	2.04	0.17
		5240	0.170	0.276	61.59	2.10	0.06
802.11ac (VHT20)	SISO	5180	0.153	0.260	58.85	2.30	0.12
		5200	0.153	0.260	58.85	2.30	0.08
		5240	0.169	0.276	61.23	2.13	0.07



1.2 Test Graph

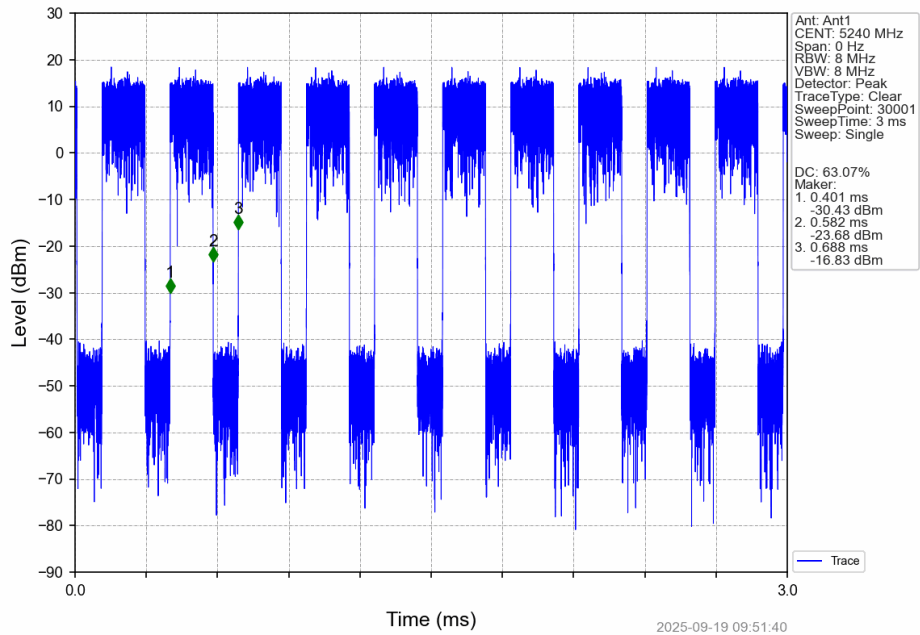
1.2.1 Ant1



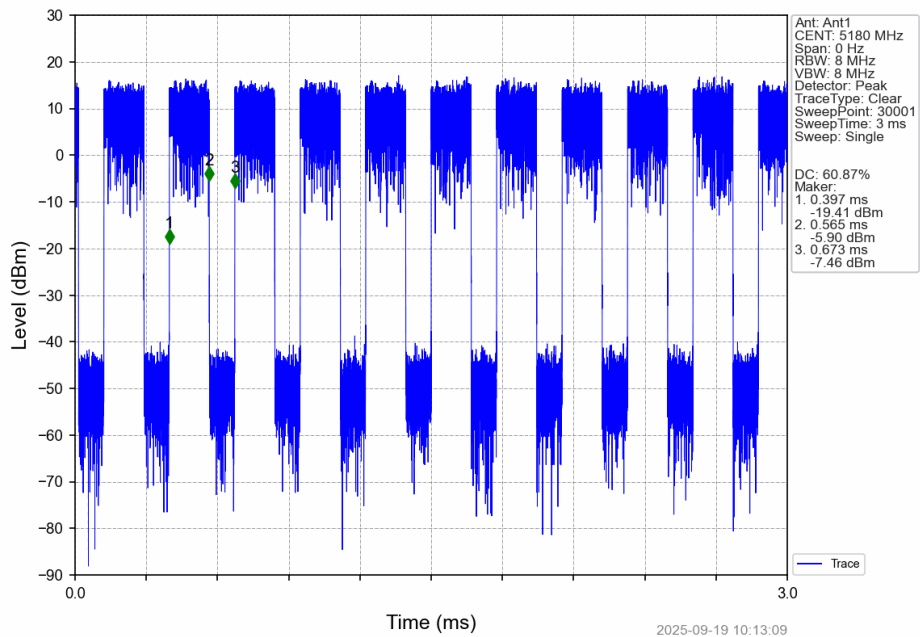




802.11a_HCH_5240MHz_Ant1_NTNV

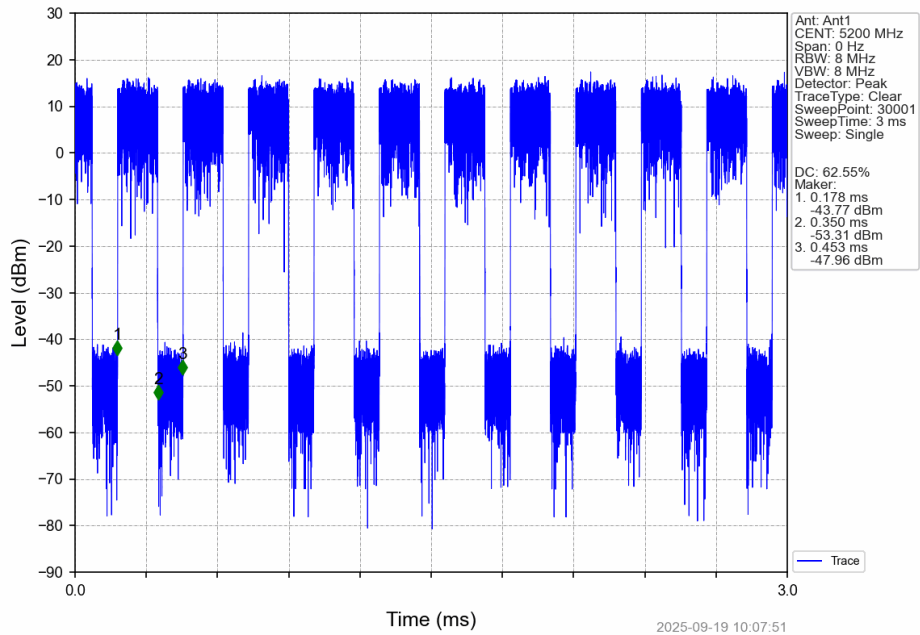


802.11n(HT20)_LCH_5180MHz_Ant1_NTNV

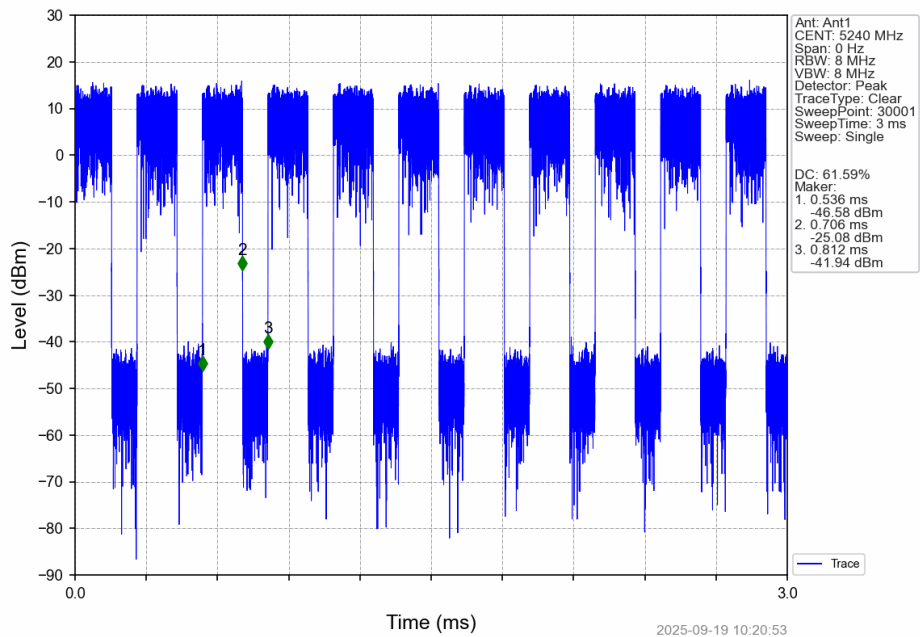




802.11n(HT20)_MCH_5200MHz_Ant1_NTNV

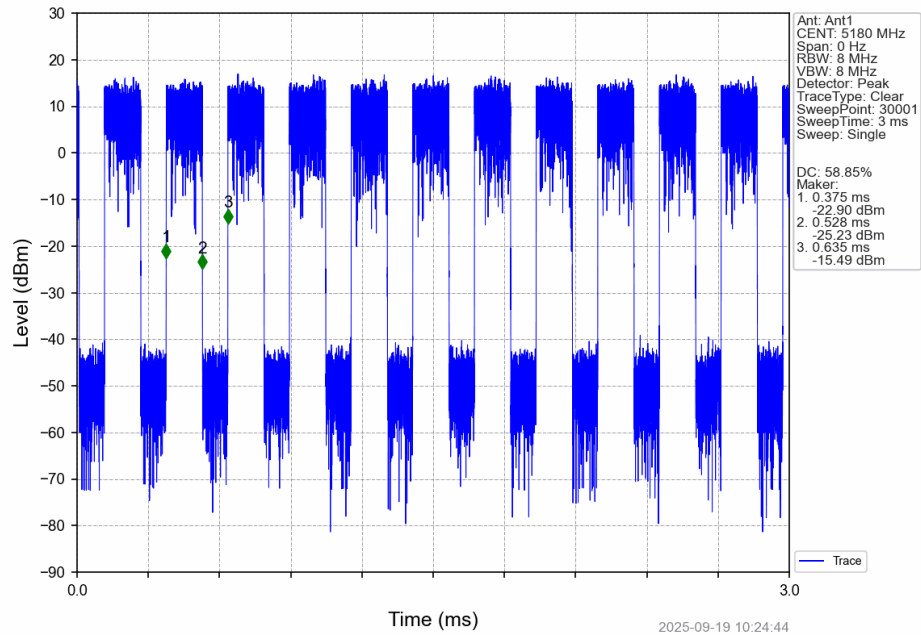


802.11n(HT20)_HCH_5240MHz_Ant1_NTNV

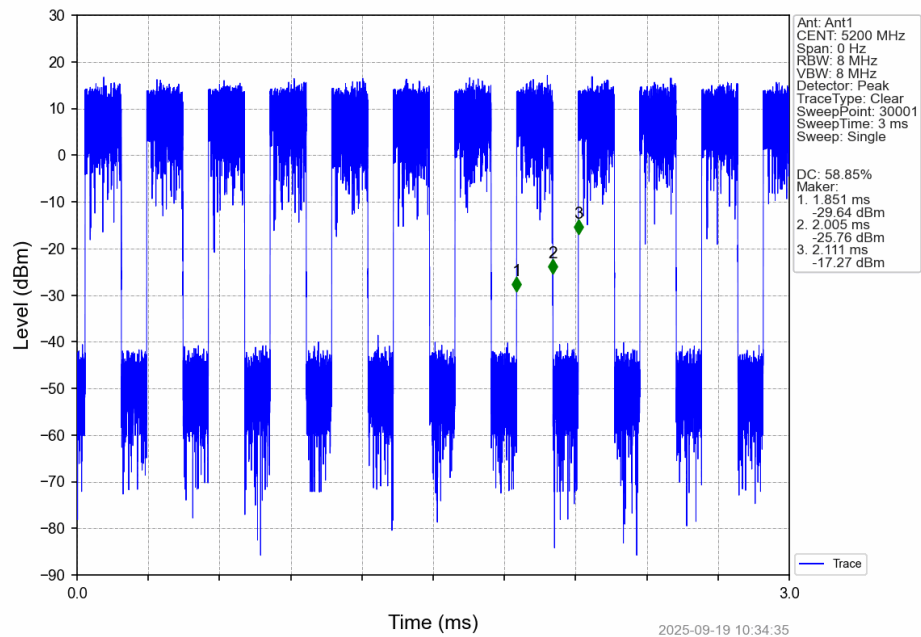


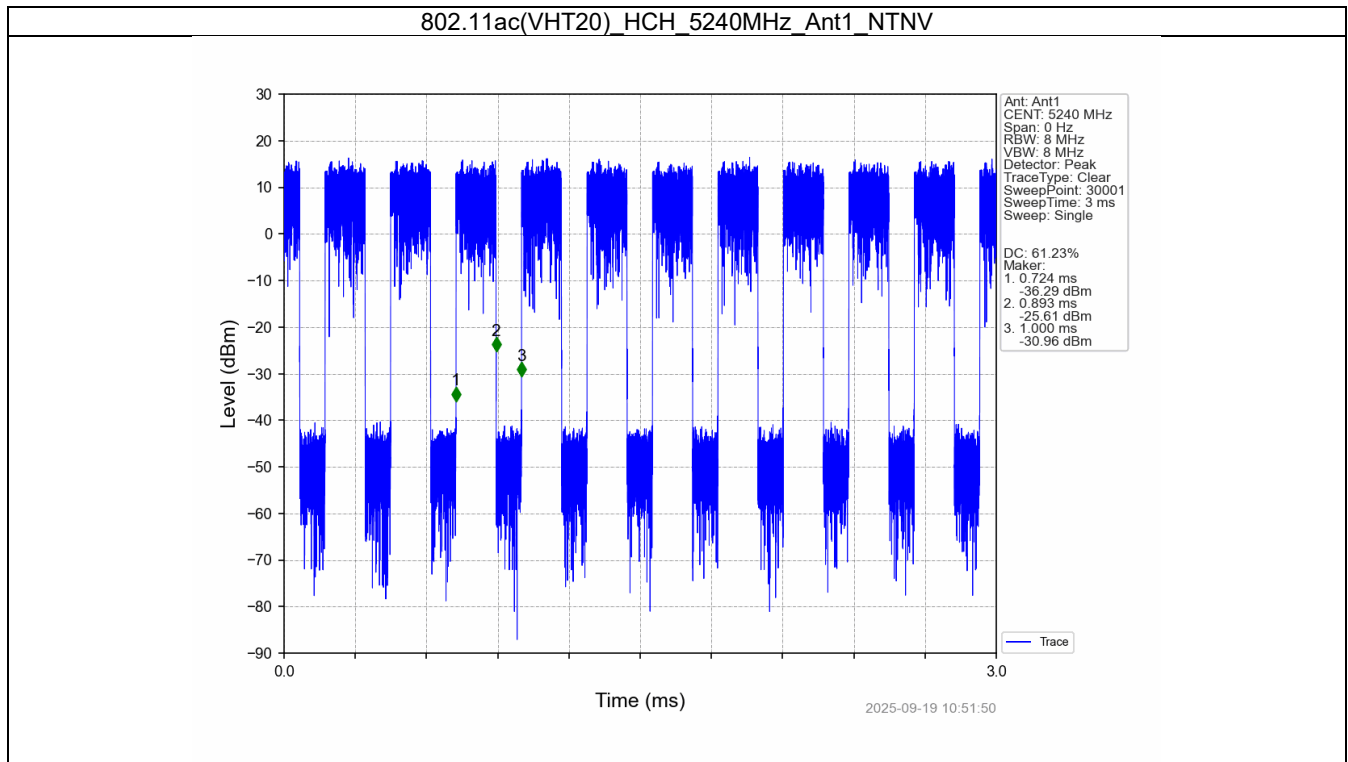


802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



802.11ac(VHT20)_MCH_5200MHz_Ant1_NTNV







2. Bandwidth

2.1 Test Result

2.1.1 OBW

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5180	1	17.512	/	Pass
		5200	1	17.467	/	Pass
		5240	1	17.607	/	Pass
802.11n (HT20)	SISO	5180	1	18.660	/	Pass
		5200	1	18.515	/	Pass
		5240	1	18.636	/	Pass
802.11ac (VHT20)	SISO	5180	1	18.626	/	Pass
		5200	1	18.472	/	Pass
		5240	1	18.526	/	Pass

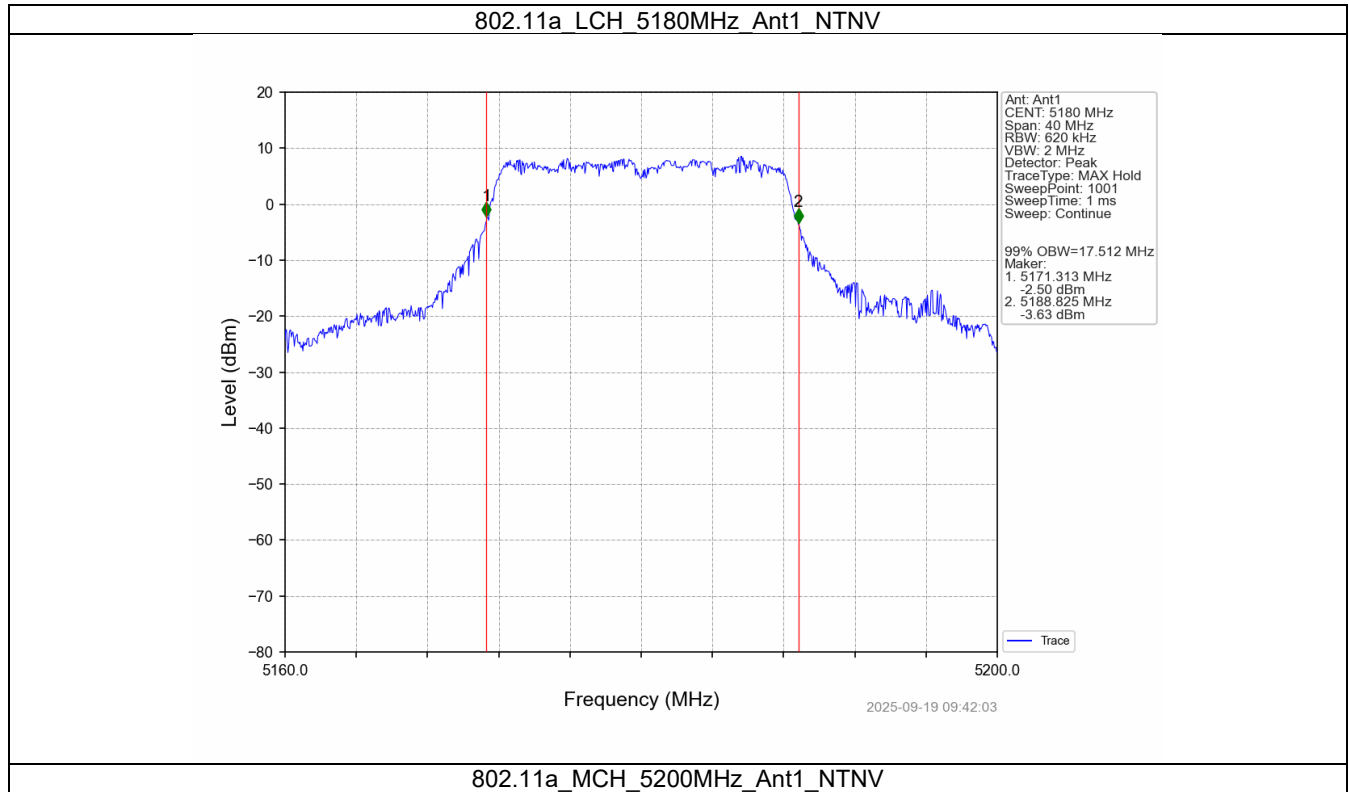
2.1.2 26dB BW

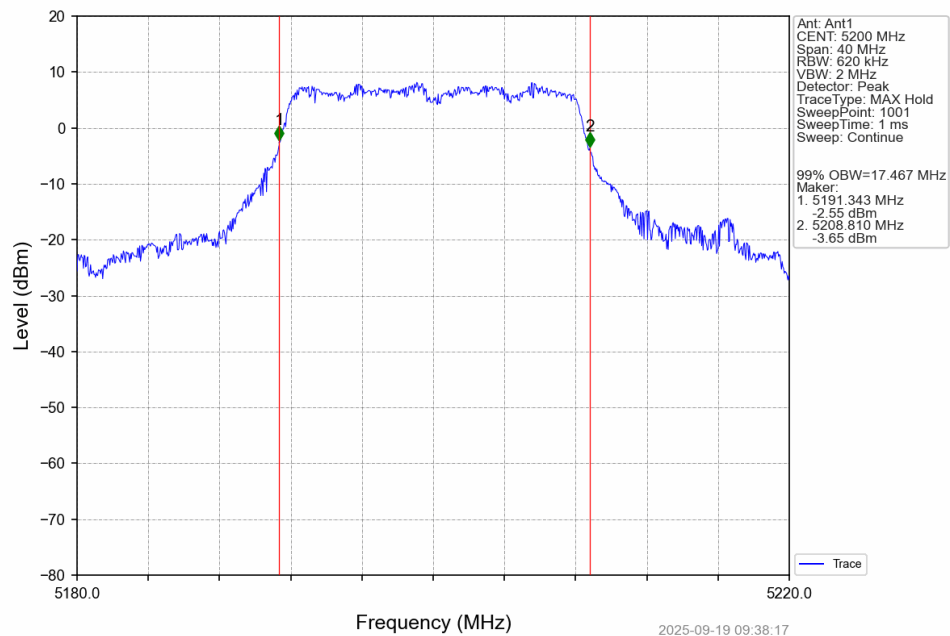
Mode	TX Type	Frequency (MHz)	ANT	26dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5180	1	28.421	/	Pass
		5200	1	28.176	/	Pass
		5240	1	28.410	/	Pass
802.11n (HT20)	SISO	5180	1	33.169	/	Pass
		5200	1	24.078	/	Pass
		5240	1	22.840	/	Pass
802.11ac (VHT20)	SISO	5180	1	30.534	/	Pass
		5200	1	24.019	/	Pass
		5240	1	22.622	/	Pass



2.2 Test Graph

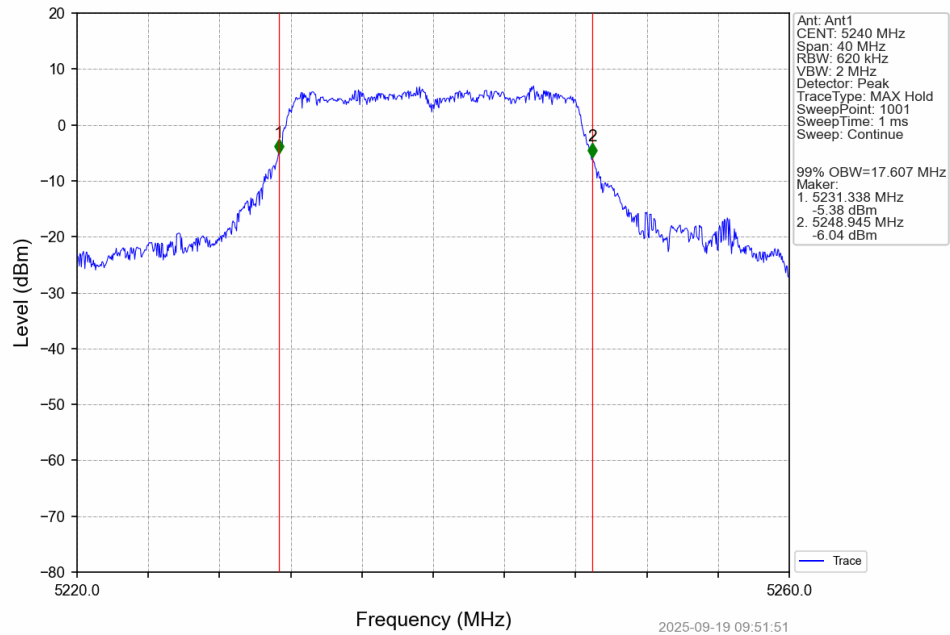
2.2.1 OBW



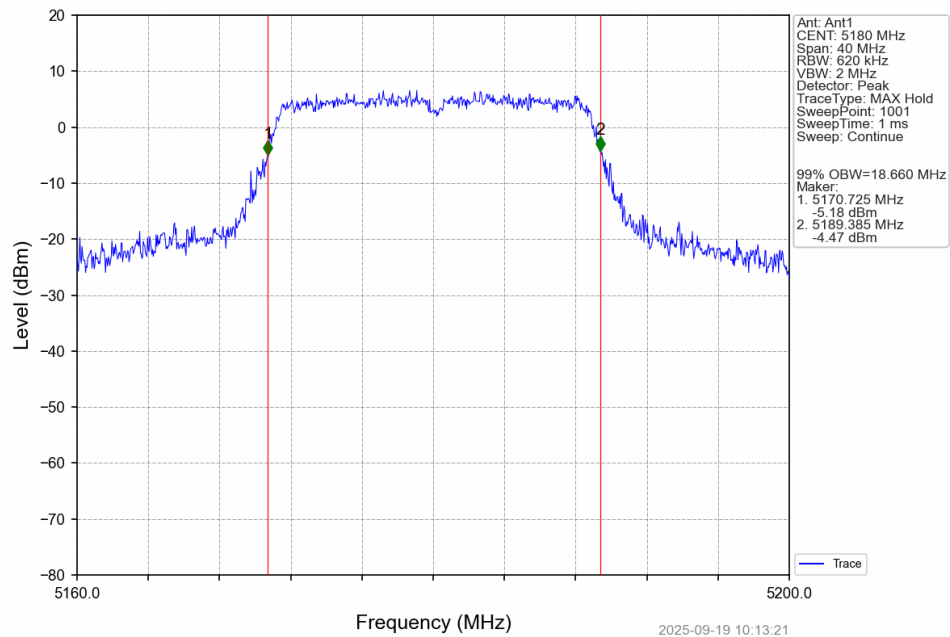




802.11a_HCH_5240MHz_Ant1_NTNV

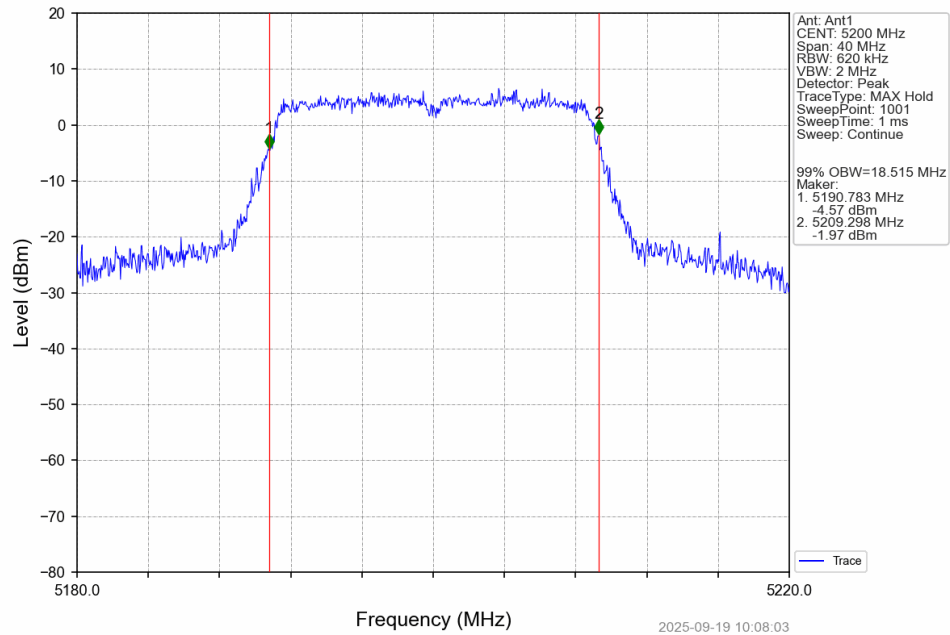


802.11n(HT20)_LCH_5180MHz_Ant1_NTNV

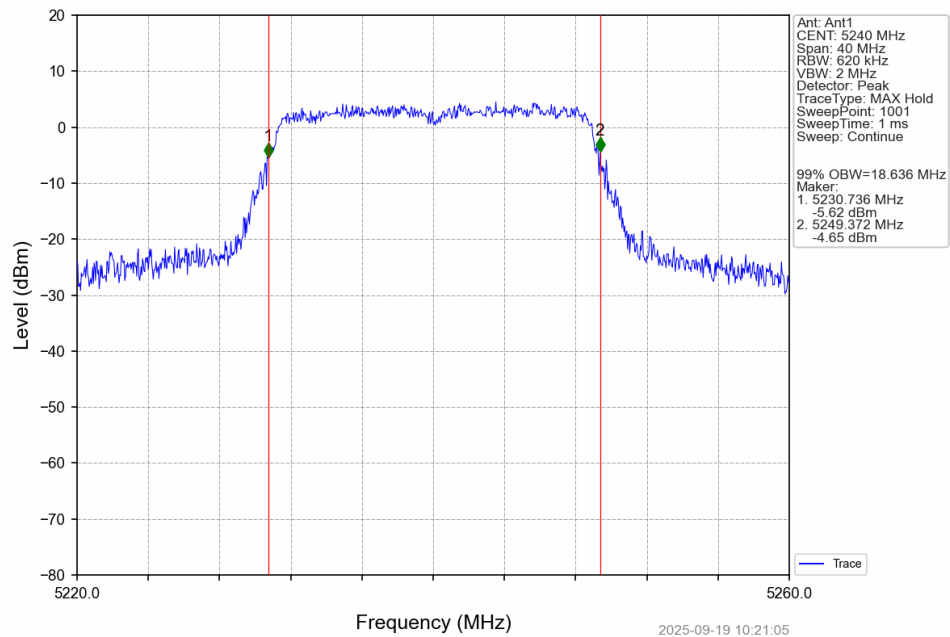




802.11n(HT20)_MCH_5200MHz_Ant1_NTNV

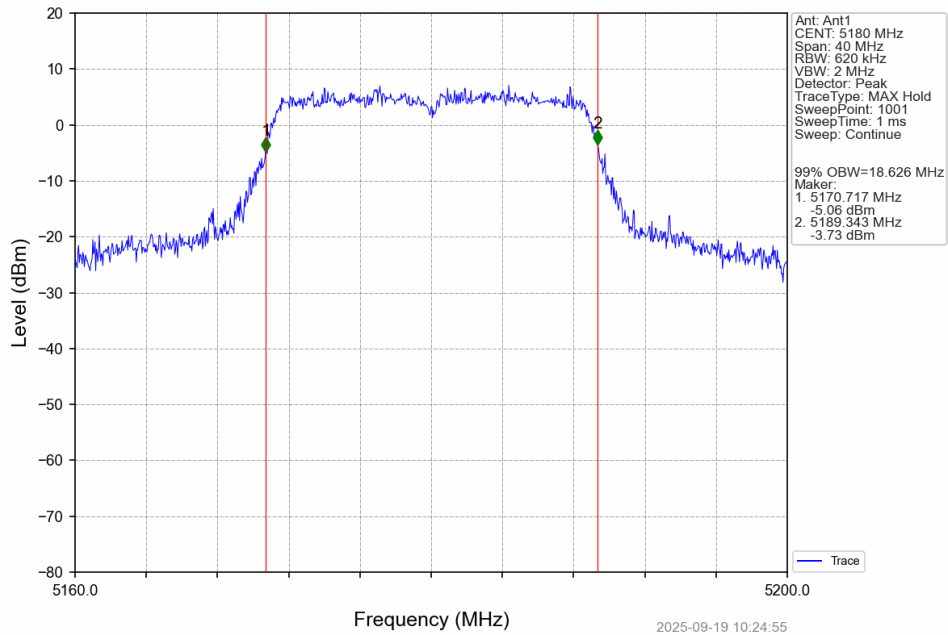


802.11n(HT20)_HCH_5240MHz_Ant1_NTNV

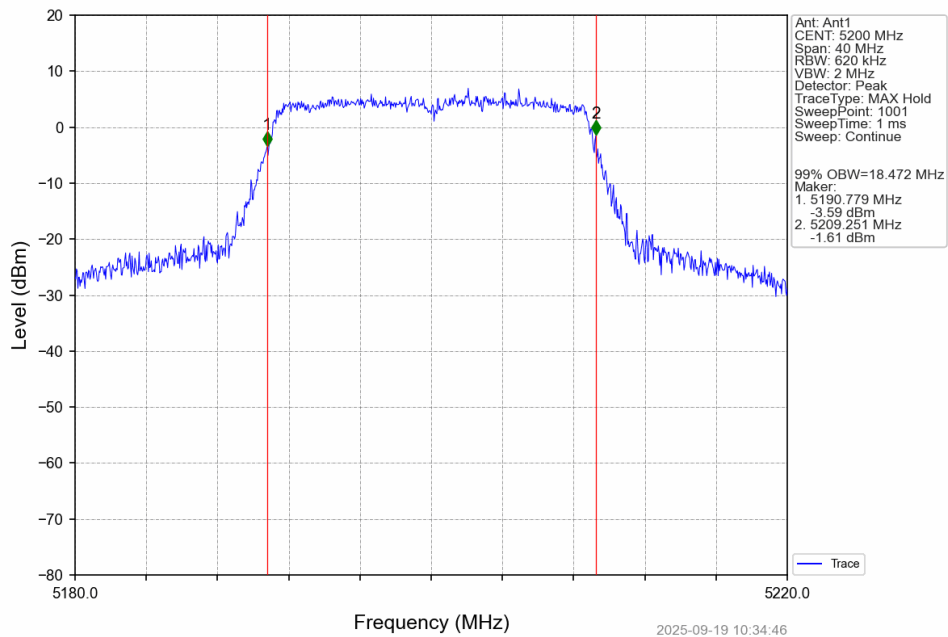


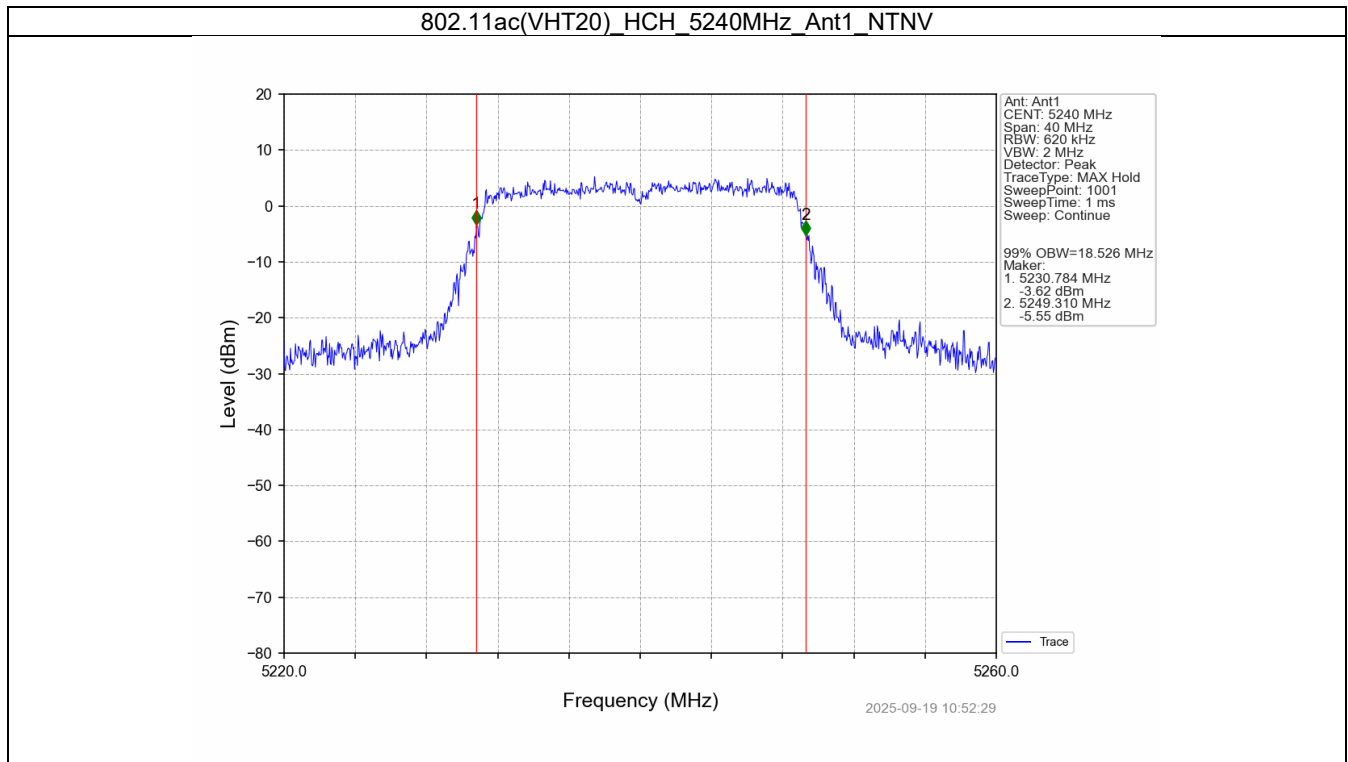


802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



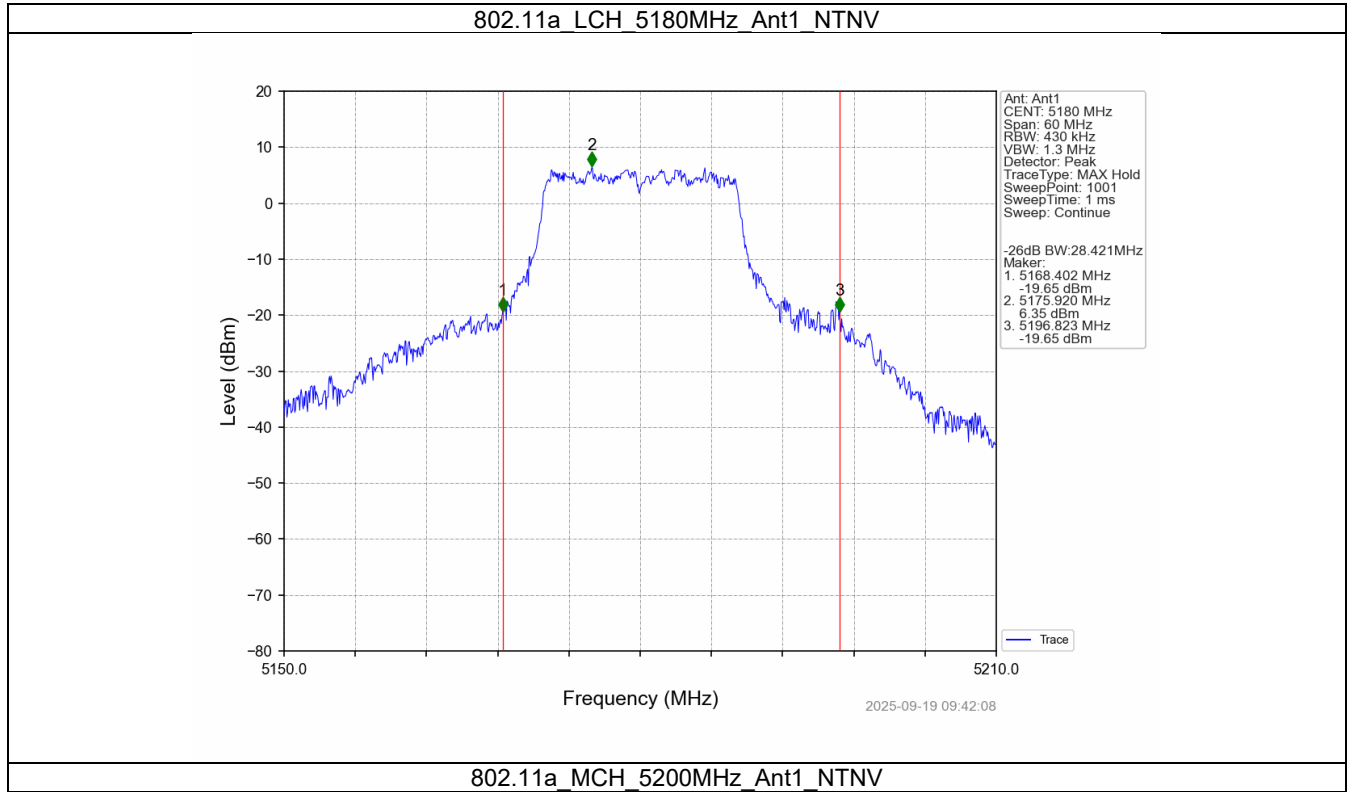
802.11ac(VHT20)_MCH_5200MHz_Ant1_NTNV

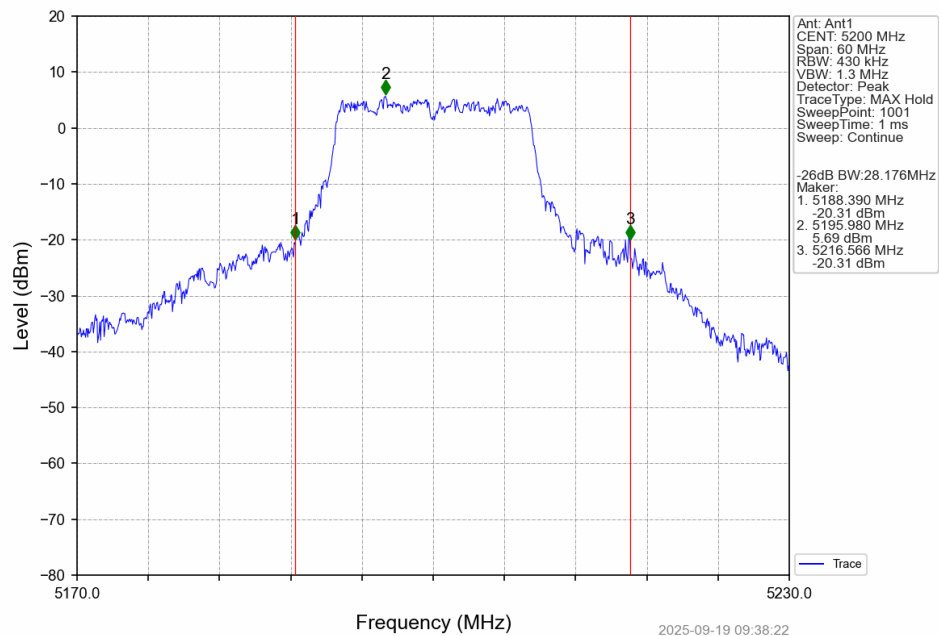






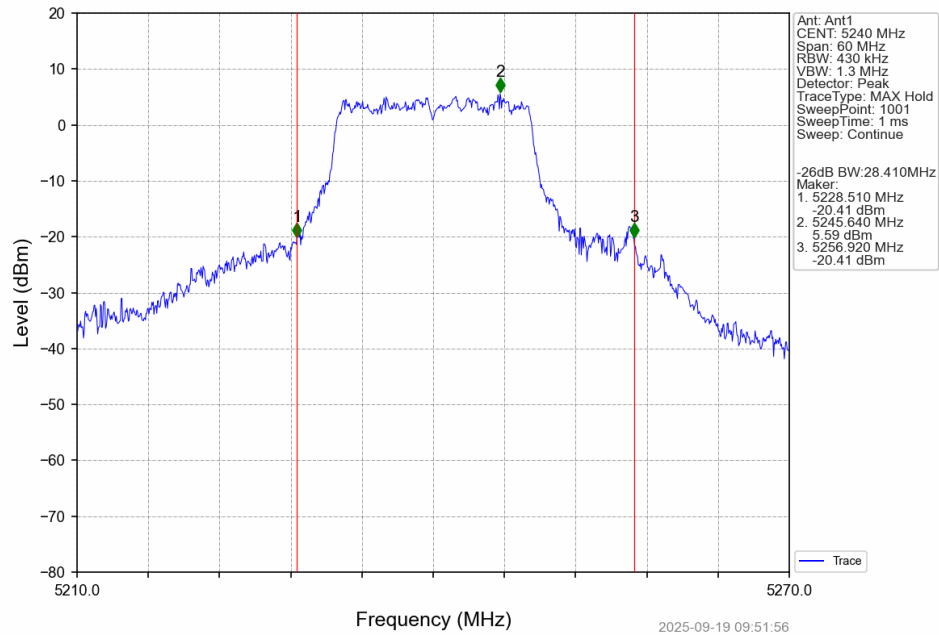
2.2.2 26dB BW



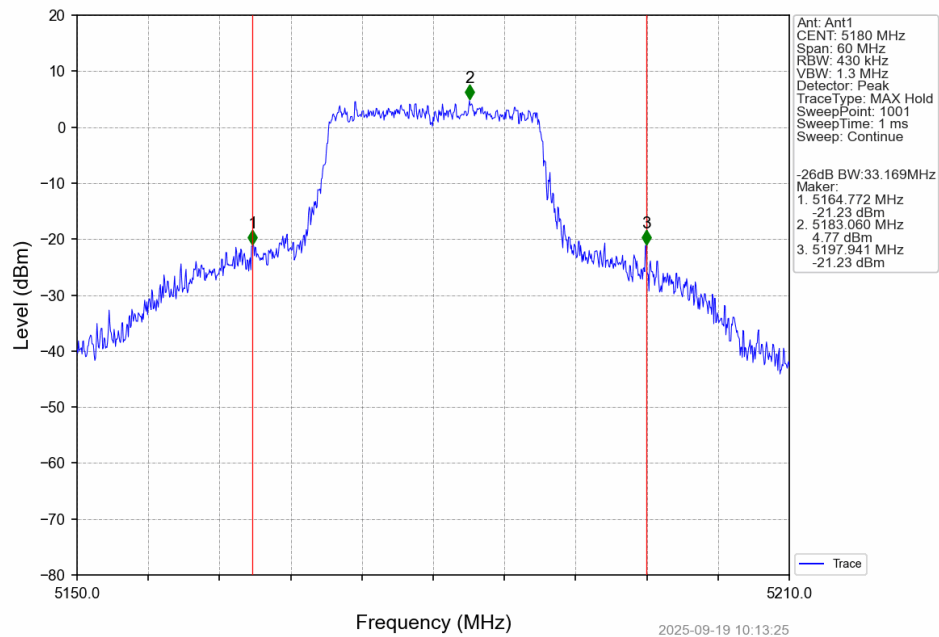




802.11a_HCH_5240MHz_Ant1_NTNV

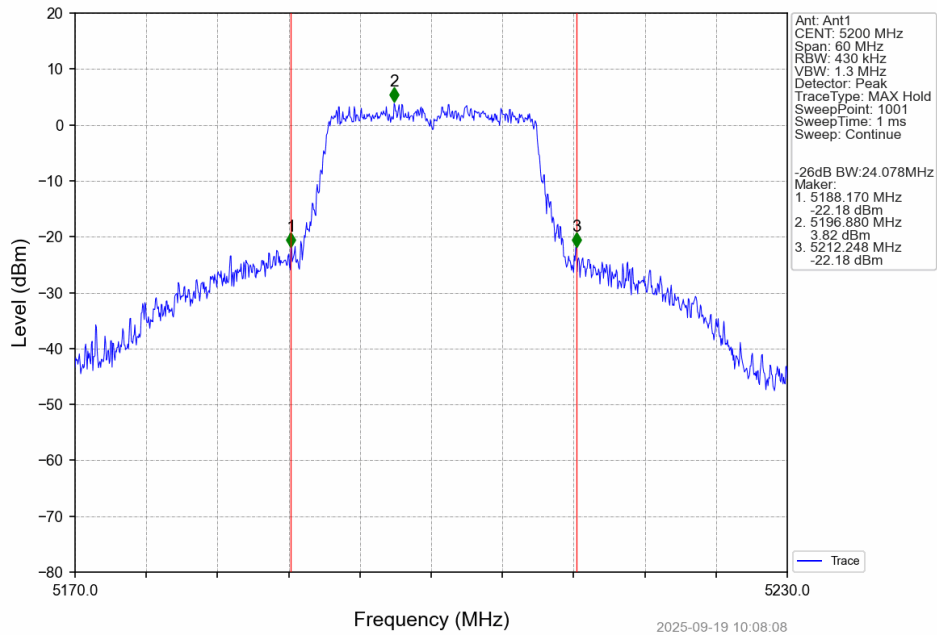


802.11n(HT20)_LCH_5180MHz_Ant1_NTNV

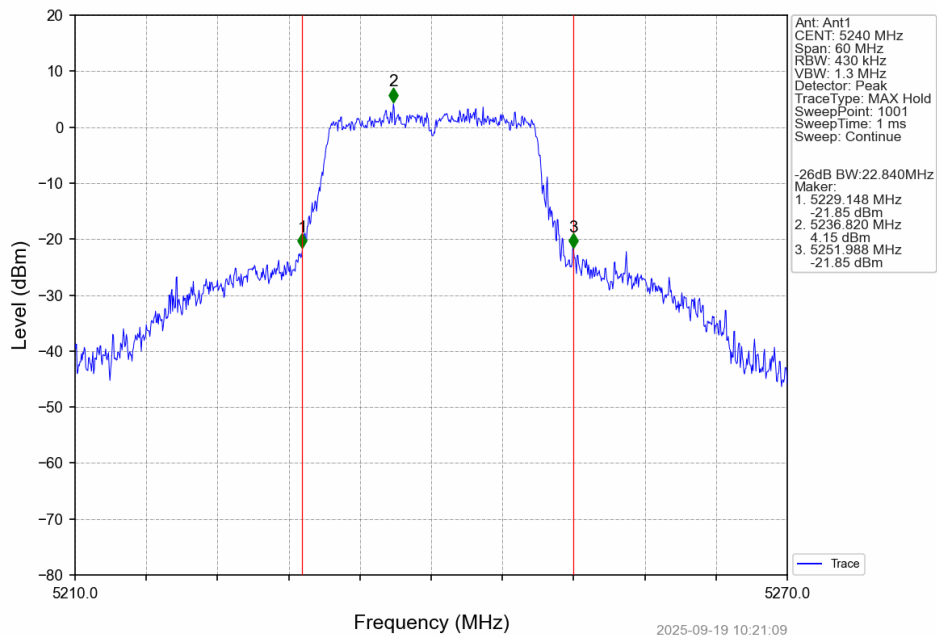




802.11n(HT20)_MCH_5200MHz_Ant1_NTNV

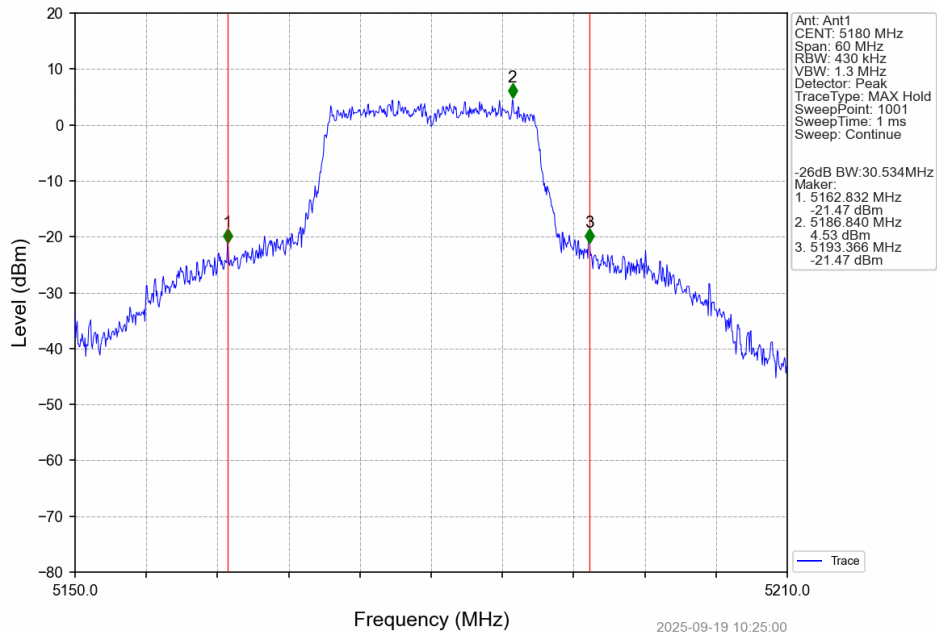


802.11n(HT20)_HCH_5240MHz_Ant1_NTNV

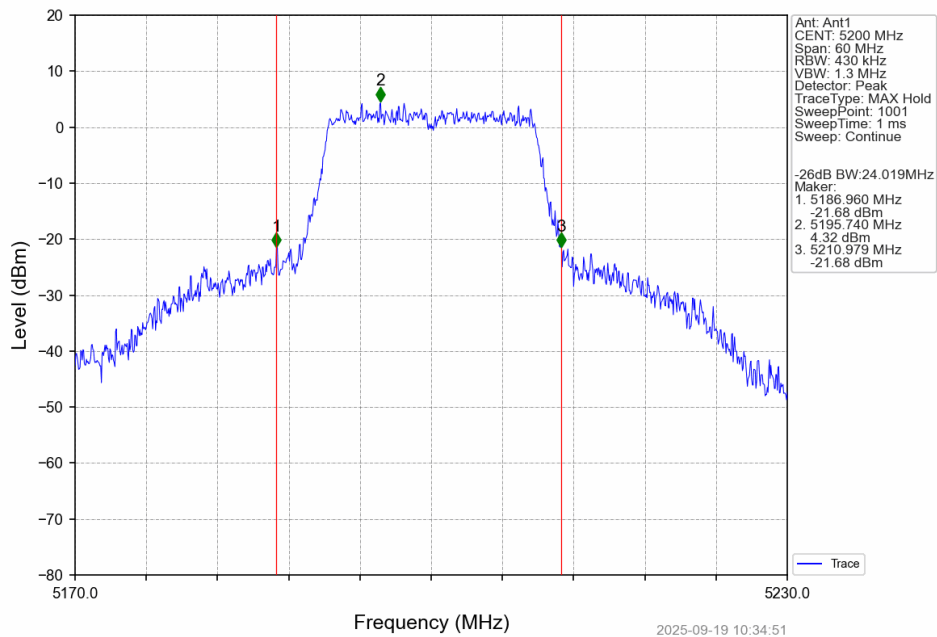


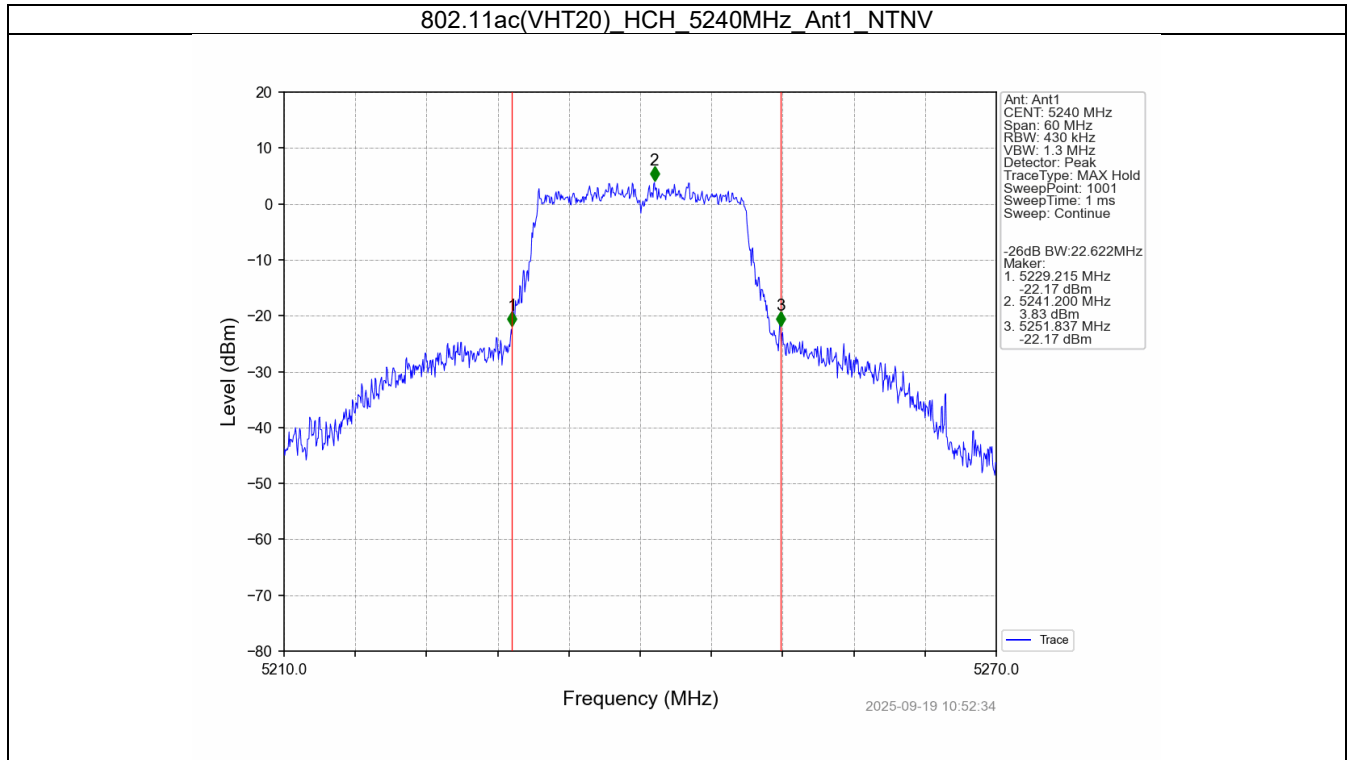


802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



802.11ac(VHT20)_MCH_5200MHz_Ant1_NTNV







3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

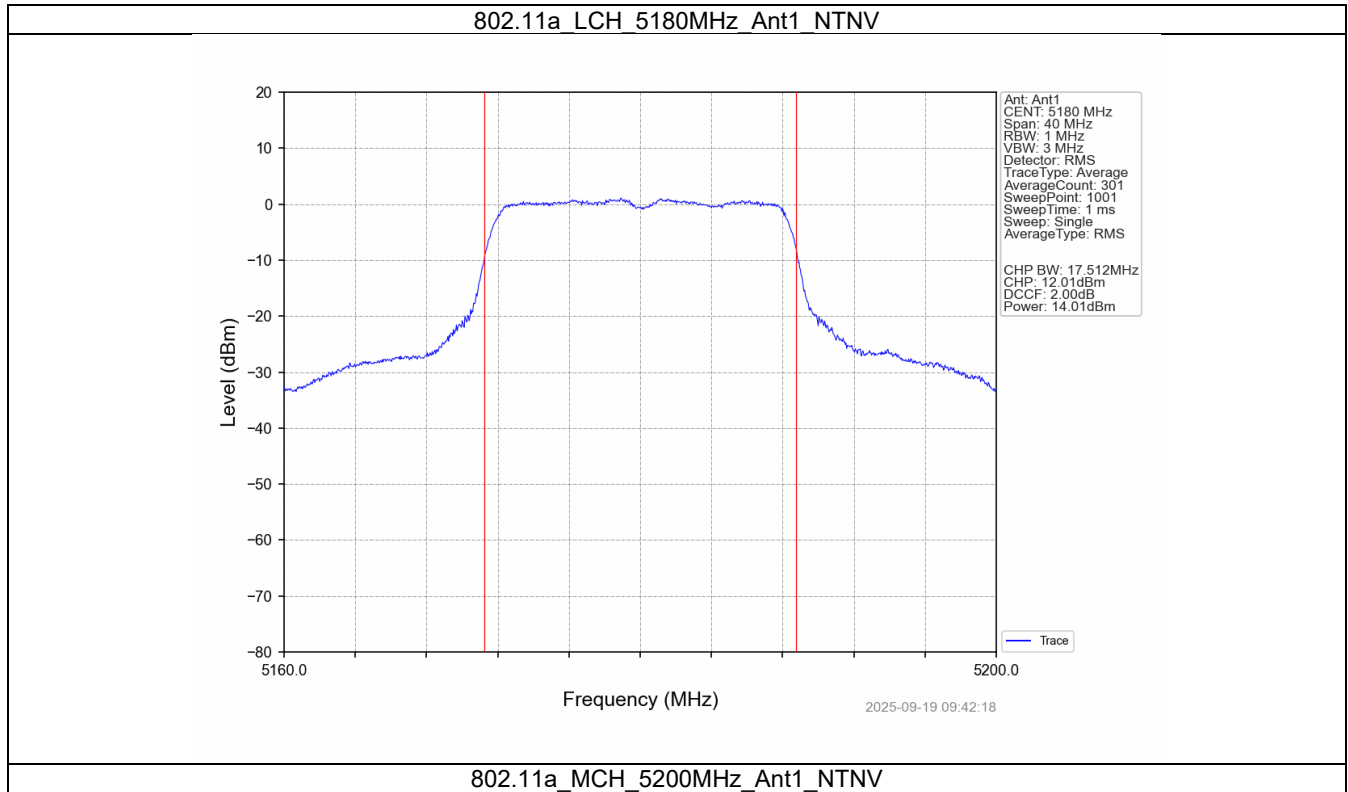
Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
802.11a	SISO	5180	14.01	<=23.98	Pass
		5200	13.55	<=23.98	Pass
		5240	12.27	<=23.98	Pass
802.11n (HT20)	SISO	5180	12.08	<=23.98	Pass
		5200	11.42	<=23.98	Pass
		5240	10.15	<=23.98	Pass
802.11ac (VHT20)	SISO	5180	12.16	<=23.98	Pass
		5200	11.68	<=23.98	Pass
		5240	10.56	<=23.98	Pass

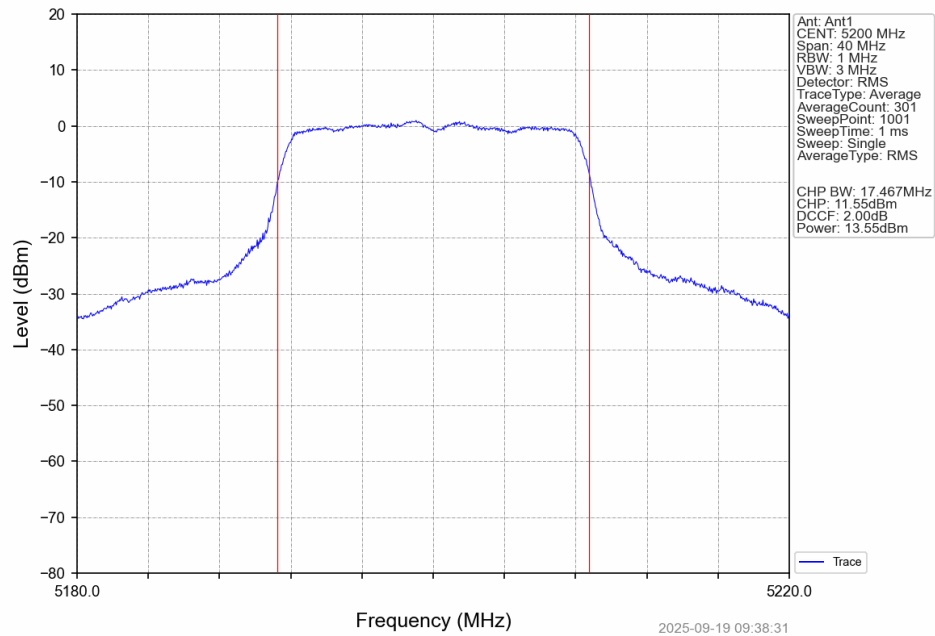
Note1: Antenna Gain: Ant1: 0.00dBi;



3.2 Test Graph

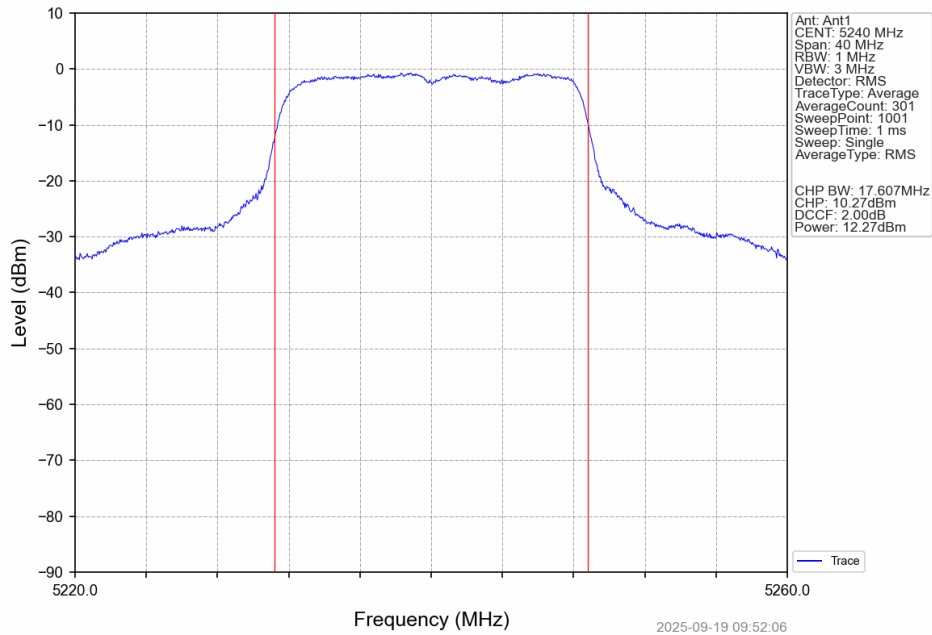
3.2.1 Power



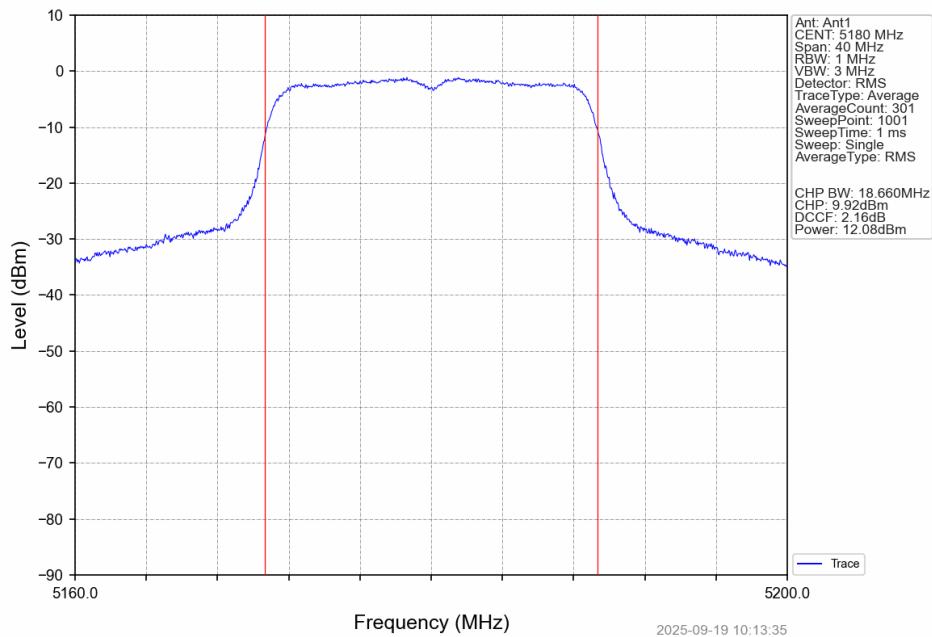




802.11a_HCH_5240MHz_Ant1_NTNV

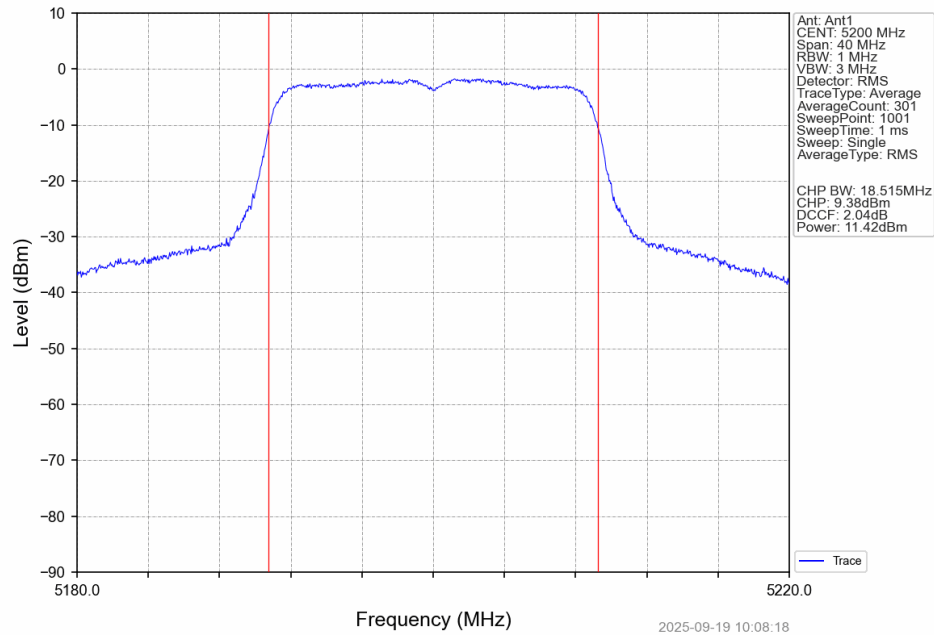


802.11n(HT20)_LCH_5180MHz_Ant1_NTNV

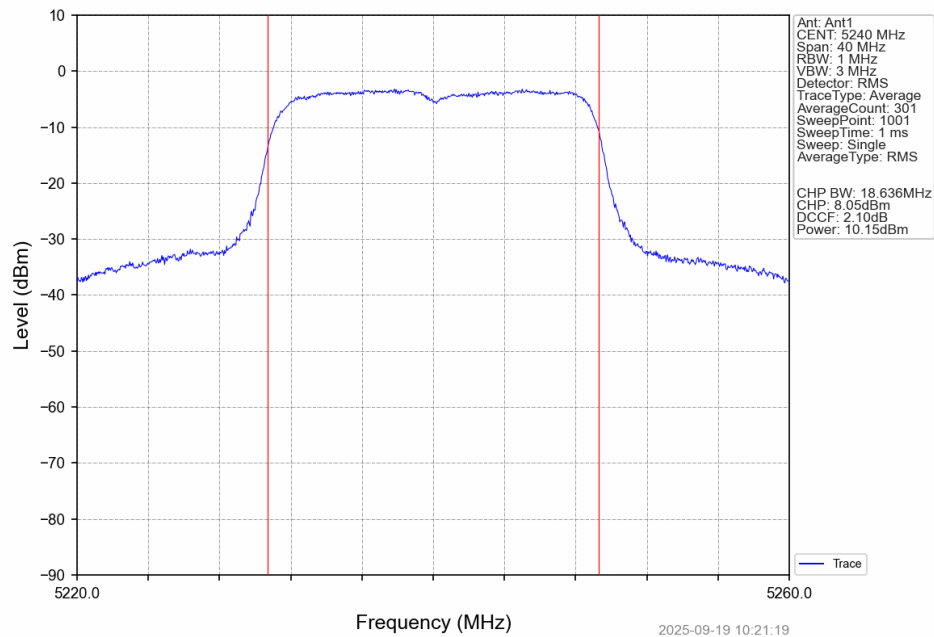




802.11n(HT20)_MCH_5200MHz_Ant1_NTNV

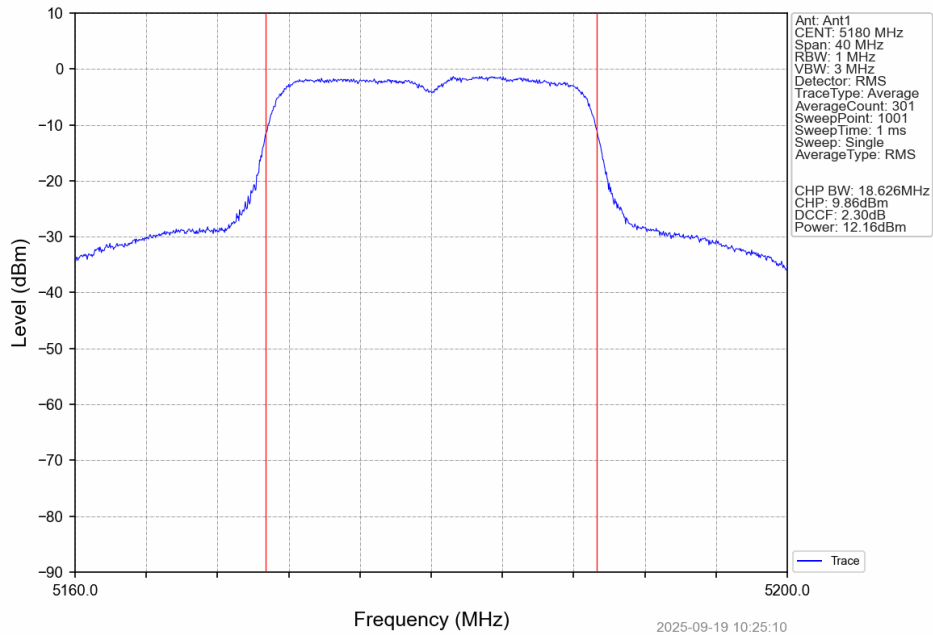


802.11n(HT20)_HCH_5240MHz_Ant1_NTNV

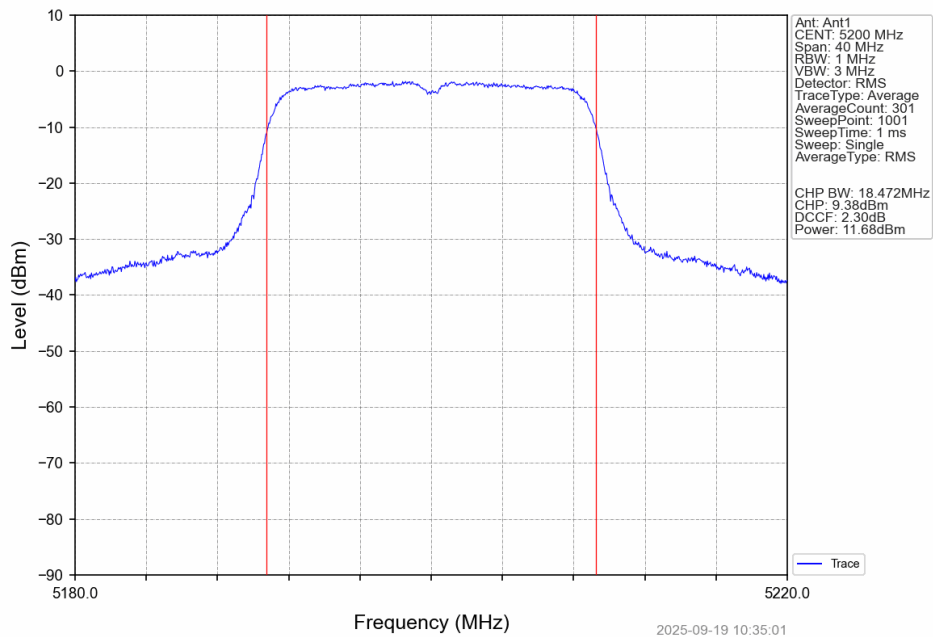


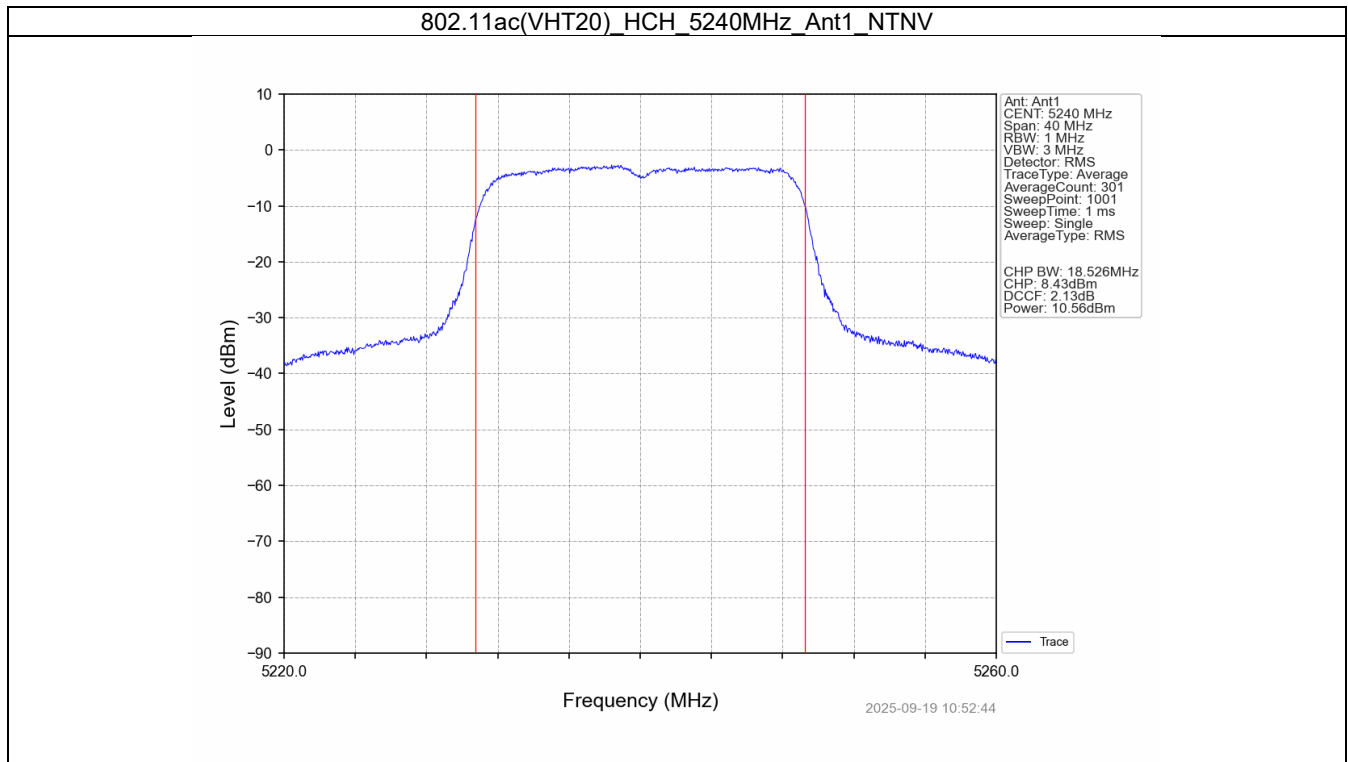


802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



802.11ac(VHT20)_MCH_5200MHz_Ant1_NTNV







4. Maximum Power Spectral Density

4.1 Test Result

4.1.1 PSD

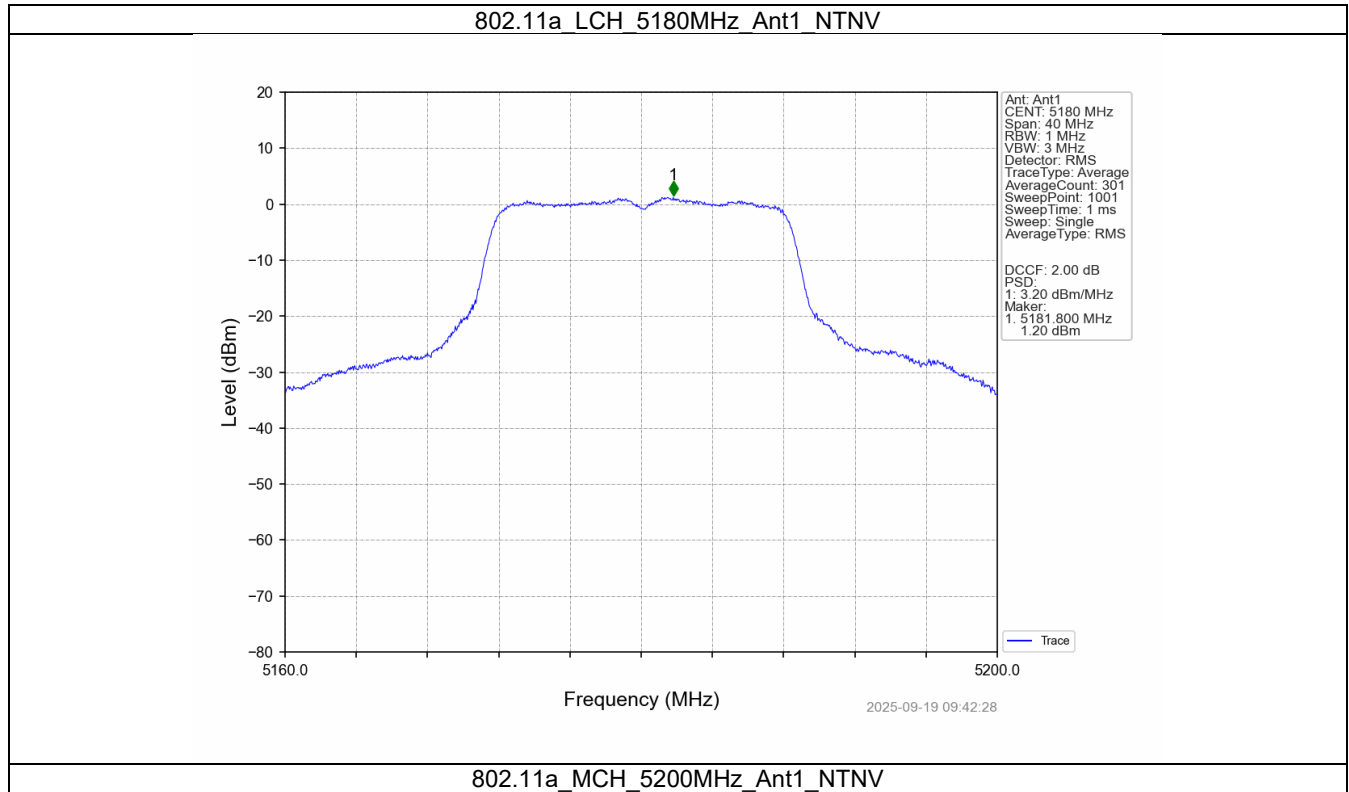
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/MHz)		Verdict
			ANT1	Limit	
802.11a	SISO	5180	3.20	<=11	Pass
		5200	2.59	<=11	Pass
		5240	1.51	<=11	Pass
802.11n (HT20)	SISO	5180	0.99	<=11	Pass
		5200	0.34	<=11	Pass
		5240	-1.12	<=11	Pass
802.11ac (VHT20)	SISO	5180	1.08	<=11	Pass
		5200	0.45	<=11	Pass
		5240	-0.72	<=11	Pass

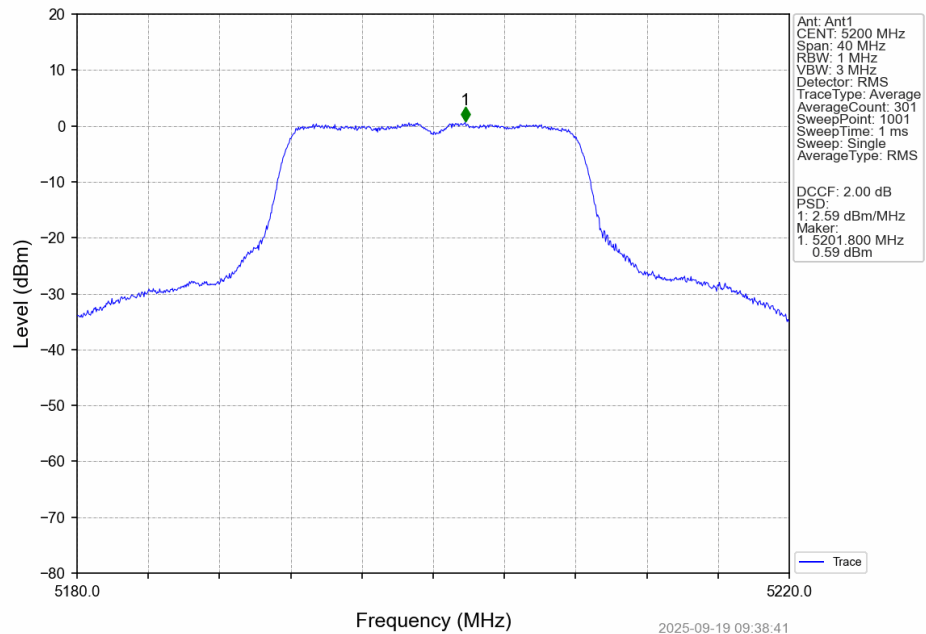
Note1: Antenna Gain: Ant1: 0.00dBi;



4.2 Test Graph

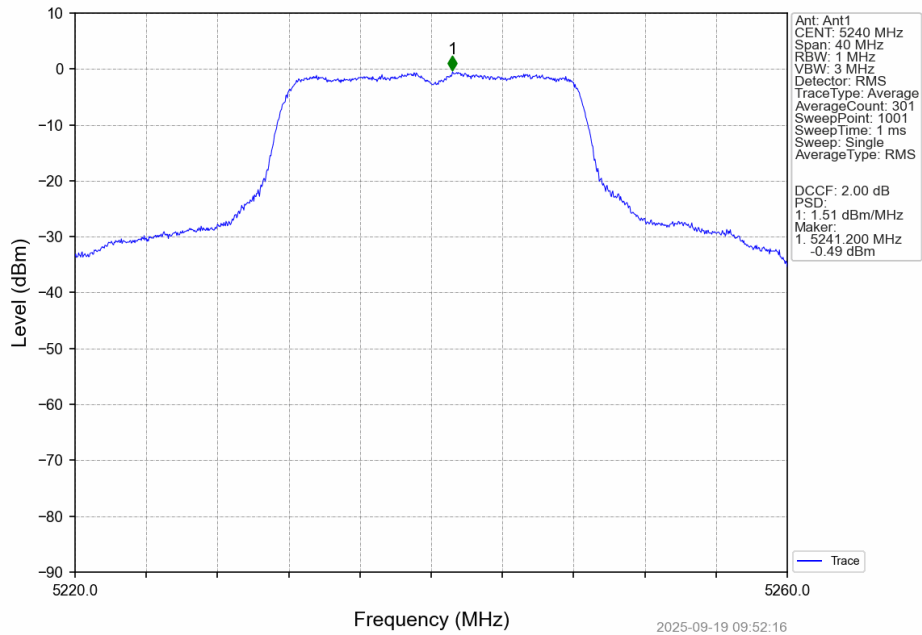
4.2.1 PSD



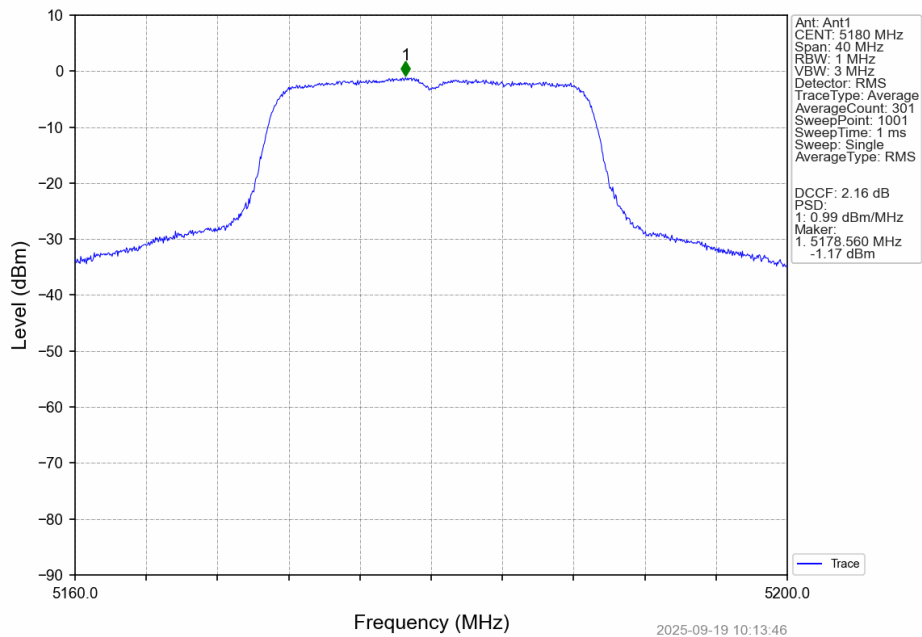




802.11a_HCH_5240MHz_Ant1_NTNV

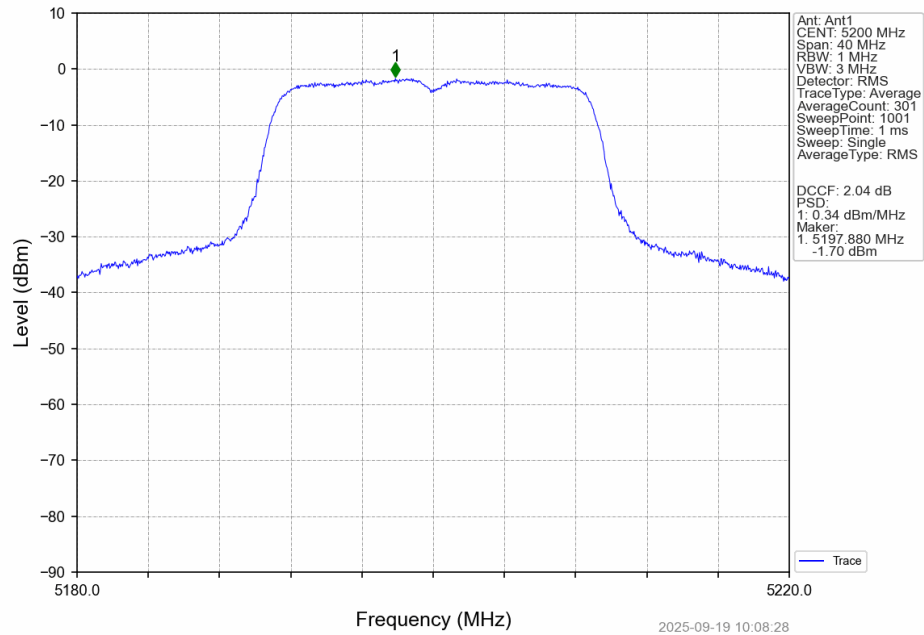


802.11n(HT20)_LCH_5180MHz_Ant1_NTNV

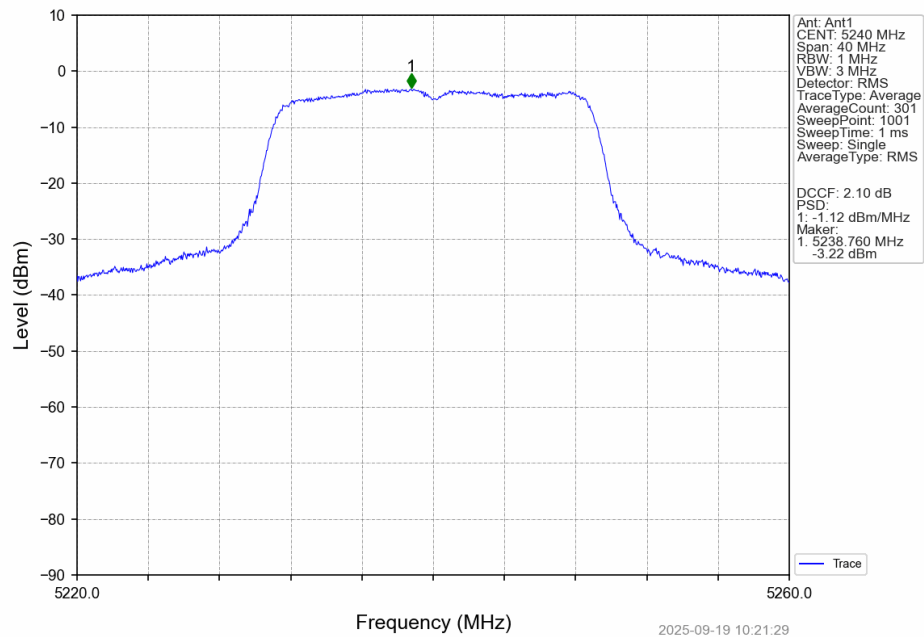




802.11n(HT20)_MCH_5200MHz_Ant1_NTNV

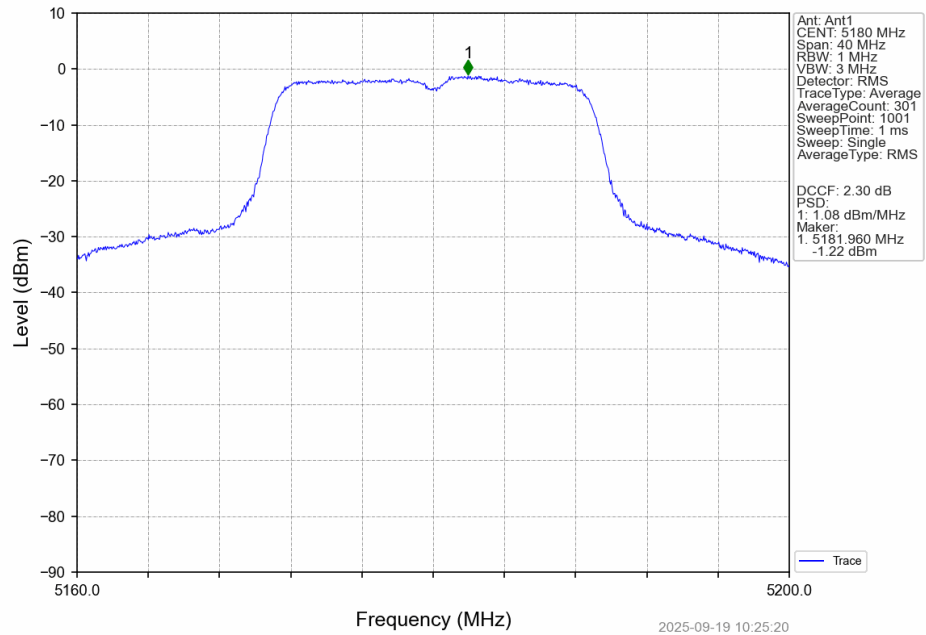


802.11n(HT20)_HCH_5240MHz_Ant1_NTNV

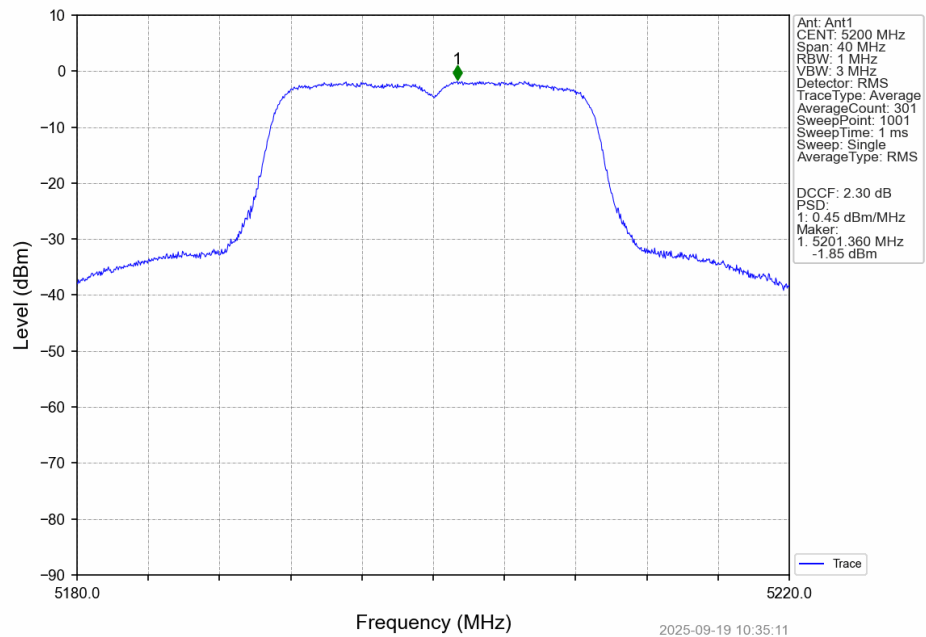


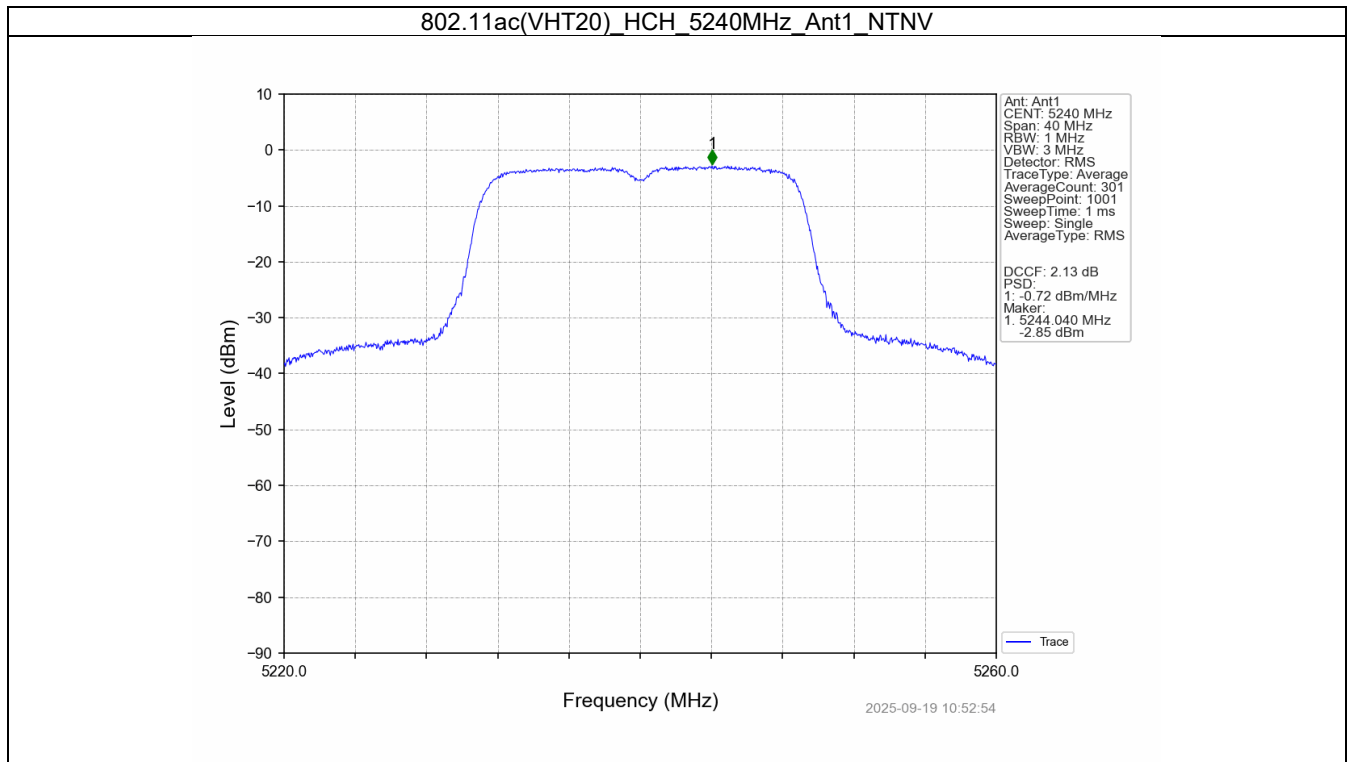


802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



802.11ac(VHT20)_MCH_5200MHz_Ant1_NTNV







5. Frequency Stability

5.1 Test Result

5.1.1 Ant1

Ant1							
Mode	Tx Type	Frequency (MHz)	Temperature (°C)	Voltage (VAC)	Measured Frequency (MHz)	Limit (MHz)	Verdict
802.11a	SISO	5180	20	102	5180.060	5150 to 5250	Pass
				120	5180.040	5150 to 5250	Pass
				138	5180.040	5150 to 5250	Pass
			-30	120	5180.040	5150 to 5250	Pass
			-20	120	5180.080	5150 to 5250	Pass
			-10	120	5180.060	5150 to 5250	Pass
			0	120	5180.060	5150 to 5250	Pass
			10	120	5180.080	5150 to 5250	Pass
			30	120	5180.060	5150 to 5250	Pass
			40	120	5180.020	5150 to 5250	Pass
			50	120	5180.040	5150 to 5250	Pass
		5200	20	102	5200.040	5150 to 5250	Pass
				120	5200.060	5150 to 5250	Pass
				138	5200.060	5150 to 5250	Pass
			-30	120	5200.080	5150 to 5250	Pass
			-20	120	5200.080	5150 to 5250	Pass
			-10	120	5200.040	5150 to 5250	Pass
			0	120	5200.040	5150 to 5250	Pass
			10	120	5200.040	5150 to 5250	Pass
			30	120	5200.080	5150 to 5250	Pass
			40	120	5200.020	5150 to 5250	Pass
			50	120	5200.080	5150 to 5250	Pass
		5240	20	102	5240.080	5150 to 5250	Pass
				120	5240.060	5150 to 5250	Pass
				138	5240.060	5150 to 5250	Pass
			-30	120	5240.020	5150 to 5250	Pass
			-20	120	5240.040	5150 to 5250	Pass
			-10	120	5240.080	5150 to 5250	Pass
			0	120	5240.060	5150 to 5250	Pass
			10	120	5240.040	5150 to 5250	Pass
			30	120	5240.040	5150 to 5250	Pass
			40	120	5240.080	5150 to 5250	Pass
			50	120	5240.060	5150 to 5250	Pass
802.11n (HT20)	SISO	5180	20	102	5180.060	5150 to 5250	Pass
				120	5180.060	5150 to 5250	Pass
				138	5180.040	5150 to 5250	Pass
			-30	120	5180.040	5150 to 5250	Pass
			-20	120	5180.020	5150 to 5250	Pass
			-10	120	5180.040	5150 to 5250	Pass
			0	120	5180.040	5150 to 5250	Pass
			10	120	5180.080	5150 to 5250	Pass



			30	120	5180.060	5150 to 5250	Pass
			40	120	5180.060	5150 to 5250	Pass
			50	120	5180.060	5150 to 5250	Pass
		5200	20	102	5200.020	5150 to 5250	Pass
				120	5200.080	5150 to 5250	Pass
				138	5200.080	5150 to 5250	Pass
			-30	120	5200.020	5150 to 5250	Pass
			-20	120	5200.080	5150 to 5250	Pass
			-10	120	5200.040	5150 to 5250	Pass
			0	120	5200.080	5150 to 5250	Pass
			10	120	5200.040	5150 to 5250	Pass
			30	120	5200.080	5150 to 5250	Pass
			40	120	5200.080	5150 to 5250	Pass
			50	120	5200.000	5150 to 5250	Pass
		5240	20	102	5240.080	5150 to 5250	Pass
				120	5240.040	5150 to 5250	Pass
				138	5240.020	5150 to 5250	Pass
			-30	120	5240.060	5150 to 5250	Pass
			-20	120	5240.040	5150 to 5250	Pass
			-10	120	5240.060	5150 to 5250	Pass
			0	120	5240.080	5150 to 5250	Pass
			10	120	5240.080	5150 to 5250	Pass
			30	120	5240.000	5150 to 5250	Pass
			40	120	5240.100	5150 to 5250	Pass
			50	120	5240.040	5150 to 5250	Pass
802.11ac (VHT20)	SISO	5180	20	102	5180.060	5150 to 5250	Pass
				120	5180.020	5150 to 5250	Pass
				138	5180.060	5150 to 5250	Pass
			-30	120	5180.040	5150 to 5250	Pass
			-20	120	5180.020	5150 to 5250	Pass
			-10	120	5180.020	5150 to 5250	Pass
			0	120	5180.040	5150 to 5250	Pass
			10	120	5180.020	5150 to 5250	Pass
			30	120	5180.040	5150 to 5250	Pass
			40	120	5180.040	5150 to 5250	Pass
			50	120	5180.060	5150 to 5250	Pass
		5200	20	102	5200.120	5150 to 5250	Pass
				120	5200.080	5150 to 5250	Pass
				138	5200.020	5150 to 5250	Pass
			-30	120	5200.040	5150 to 5250	Pass
			-20	120	5200.040	5150 to 5250	Pass
			-10	120	5200.020	5150 to 5250	Pass
			0	120	5200.060	5150 to 5250	Pass
			10	120	5200.000	5150 to 5250	Pass
			30	120	5200.080	5150 to 5250	Pass
			40	120	5200.040	5150 to 5250	Pass
			50	120	5200.060	5150 to 5250	Pass
		5240	20	102	5240.120	5150 to 5250	Pass
				120	5240.000	5150 to 5250	Pass
				138	5240.040	5150 to 5250	Pass
			-30	120	5240.080	5150 to 5250	Pass
			-20	120	5240.080	5150 to 5250	Pass
			-10	120	5240.040	5150 to 5250	Pass
			0	120	5240.060	5150 to 5250	Pass



			10	120	5240.080	5150 to 5250	Pass
			30	120	5240.040	5150 to 5250	Pass
			40	120	5240.080	5150 to 5250	Pass
			50	120	5240.120	5150 to 5250	Pass

6. Band Edge

6.1 Test Result

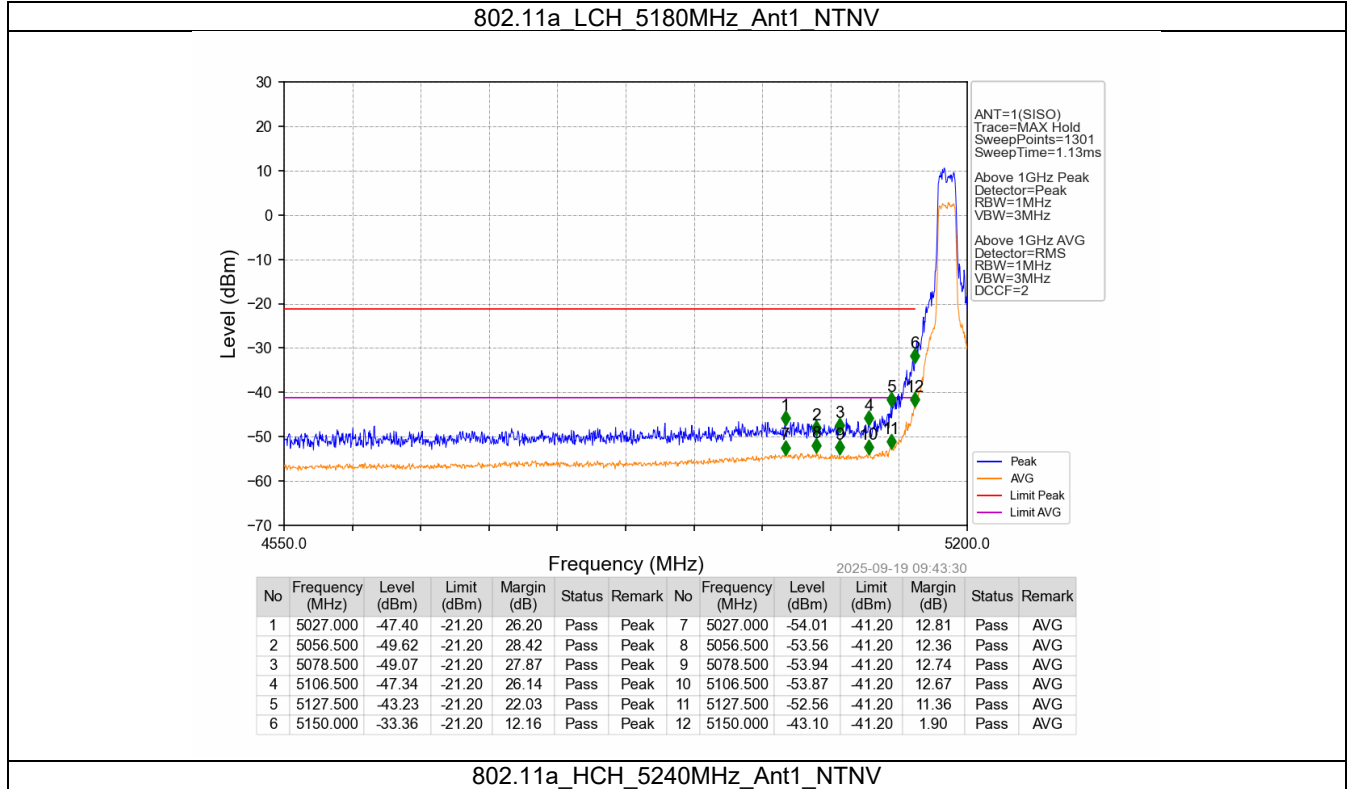
6.1.1 BandEdge

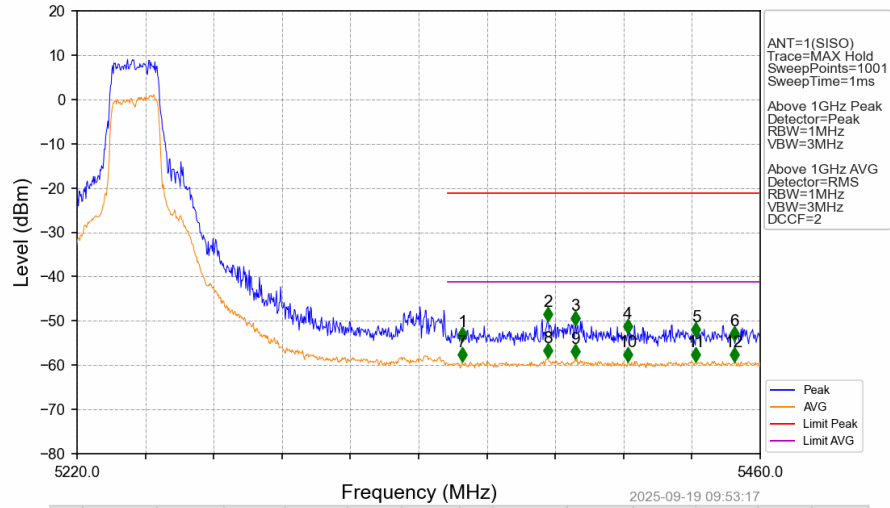
Mode	TX Type	Frequency (MHz)	ANT	Level of Unwanted Emissions (dBm)		Verdict
				Result	Limit	
802.11a	SISO	5180	1	Refer To Test Graph		Pass
		5240	1	Refer To Test Graph		Pass
802.11n (HT20)	SISO	5180	1	Refer To Test Graph		Pass
		5240	1	Refer To Test Graph		Pass
802.11ac (VHT20)	SISO	5180	1	Refer To Test Graph		Pass
		5240	1	Refer To Test Graph		Pass



6.2 Test Graph

6.2.1 BandEdge

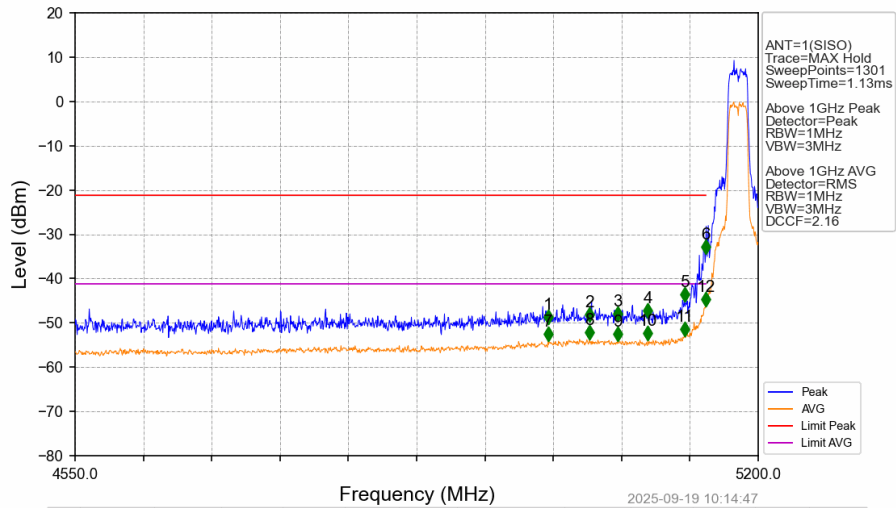




No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	5355.360	-54.63	-21.20	33.43	Pass	Peak	7	5355.360	-59.12	-41.20	17.92	Pass	AVG
2	5385.360	-50.10	-21.20	28.90	Pass	Peak	8	5385.360	-58.32	-41.20	17.12	Pass	AVG
3	5394.960	-51.05	-21.20	29.85	Pass	Peak	9	5394.960	-58.46	-41.20	17.26	Pass	AVG
4	5413.440	-52.74	-21.20	31.54	Pass	Peak	10	5413.440	-59.11	-41.20	17.91	Pass	AVG
5	5437.440	-53.45	-21.20	32.25	Pass	Peak	11	5437.440	-59.14	-41.20	17.94	Pass	AVG
6	5450.880	-54.42	-21.20	33.22	Pass	Peak	12	5450.880	-59.10	-41.20	17.90	Pass	AVG

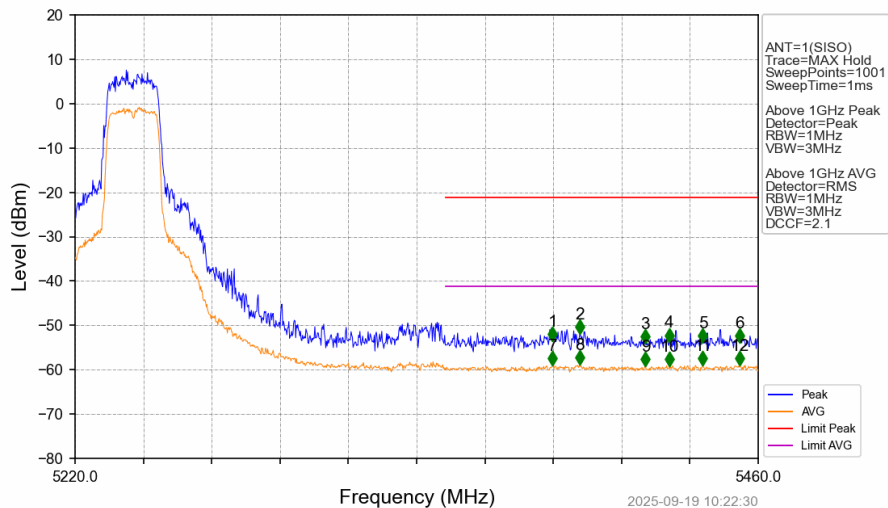


802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	5000.000	-50.24	-21.20	29.04	Pass	Peak	7	5000.000	-54.07	-41.20	12.87	Pass	AVG
2	5039.500	-49.63	-21.20	28.43	Pass	Peak	8	5039.500	-53.66	-41.20	12.46	Pass	AVG
3	5066.500	-49.54	-21.20	28.34	Pass	Peak	9	5066.500	-54.02	-41.20	12.82	Pass	AVG
4	5095.000	-48.77	-21.20	27.57	Pass	Peak	10	5095.000	-53.86	-41.20	12.66	Pass	AVG
5	5130.000	-45.12	-21.20	23.92	Pass	Peak	11	5130.000	-52.92	-41.20	11.72	Pass	AVG
6	5150.000	-34.33	-21.20	13.13	Pass	Peak	12	5150.000	-46.31	-41.20	5.11	Pass	AVG

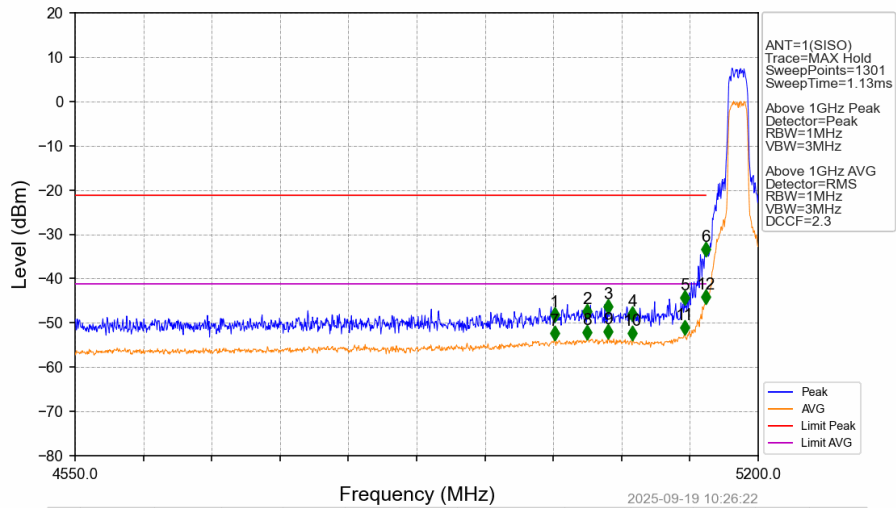
802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	5387.760	-53.57	-21.20	32.37	Pass	Peak	7	5387.760	-59.08	-41.20	17.88	Pass	AVG
2	5397.360	-51.84	-21.20	30.64	Pass	Peak	8	5397.360	-58.81	-41.20	17.61	Pass	AVG
3	5420.400	-54.09	-21.20	32.89	Pass	Peak	9	5420.400	-59.19	-41.20	17.99	Pass	AVG
4	5428.800	-53.81	-21.20	32.61	Pass	Peak	10	5428.800	-59.11	-41.20	17.91	Pass	AVG
5	5440.560	-53.83	-21.20	32.63	Pass	Peak	11	5440.560	-59.01	-41.20	17.81	Pass	AVG
6	5453.520	-53.85	-21.20	32.65	Pass	Peak	12	5453.520	-59.01	-41.20	17.81	Pass	AVG



802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



802.11ac(VHT20)_HCH_5240MHz_Ant1_NTNV

