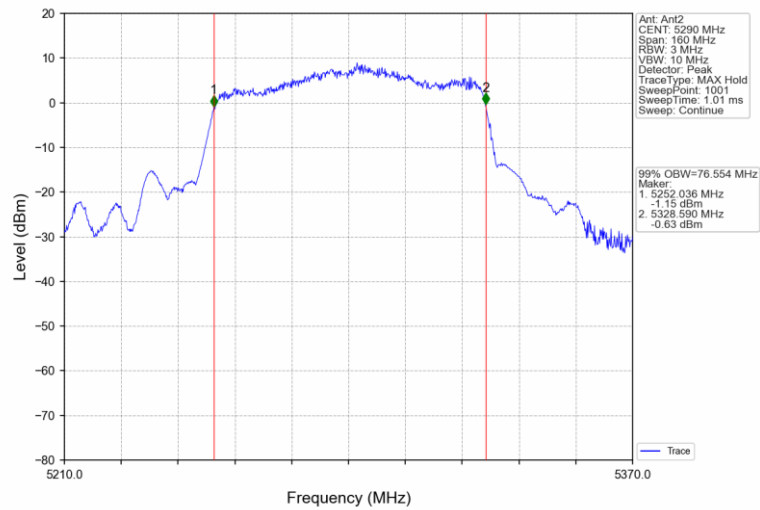
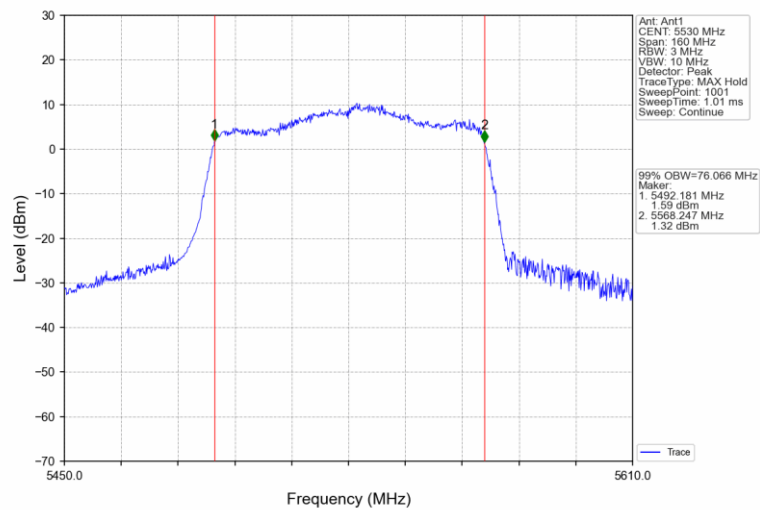
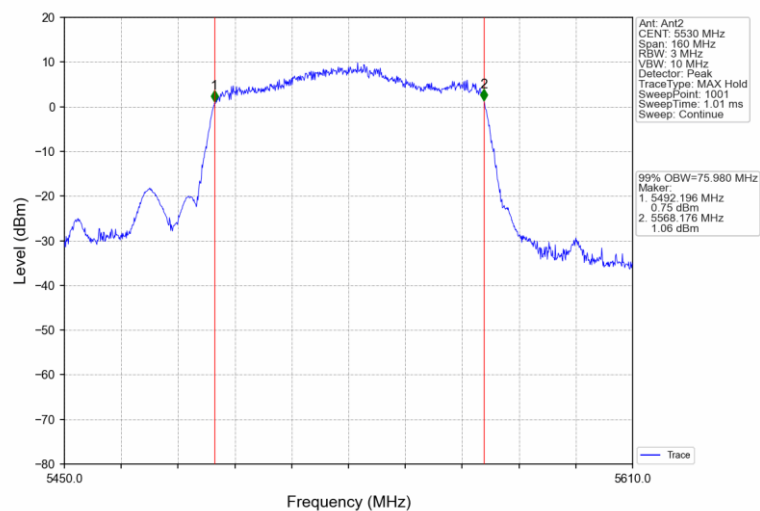




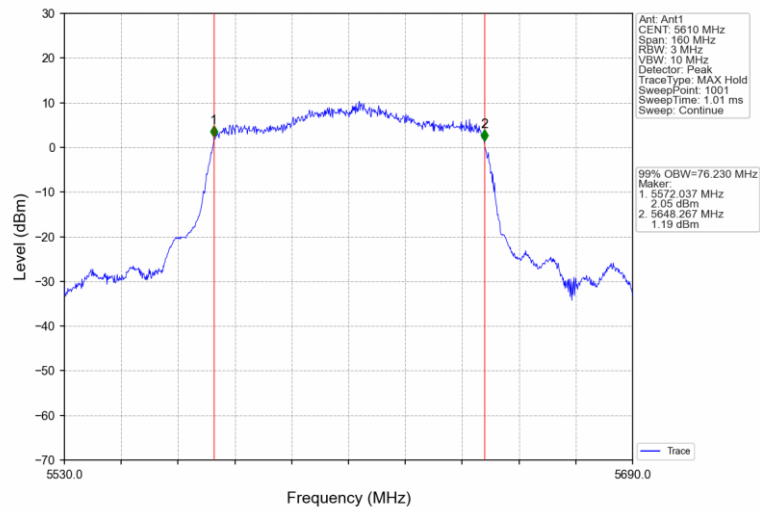
802.11ac(VHT80)_LCH_5530MHz_Ant1_NTNV



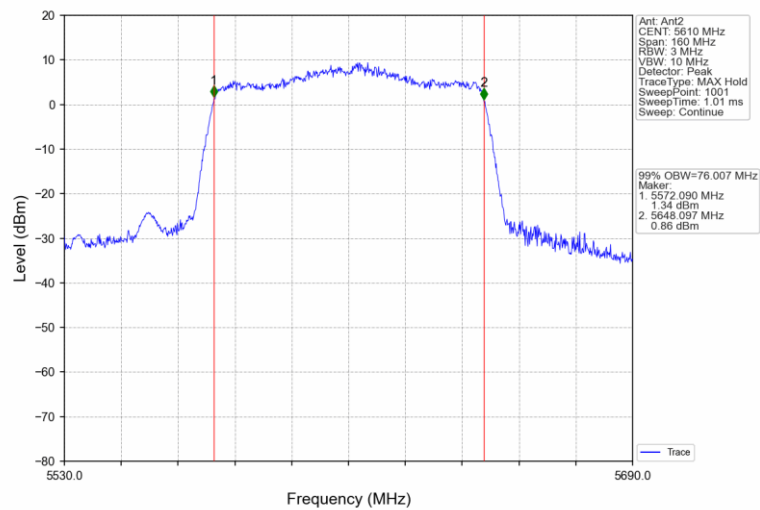
802.11ac(VHT80)_LCH_5530MHz_Ant2_NTNV



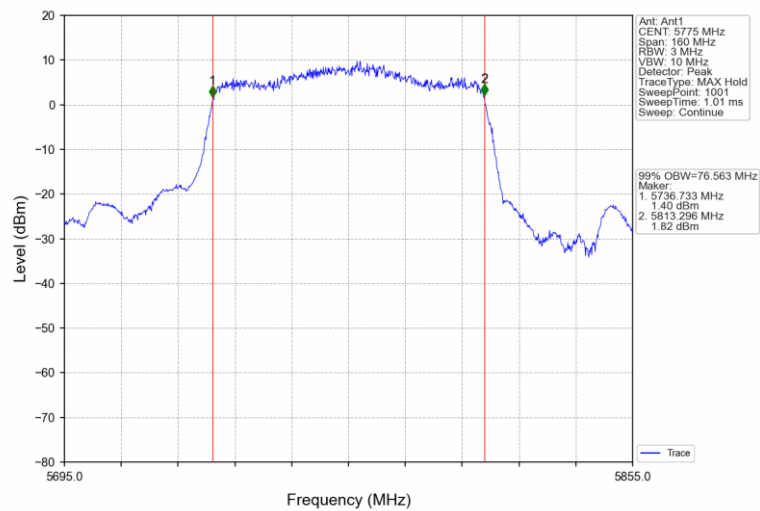
802.11ac(VHT80)_HCH_5610MHz_Ant1_NTNV



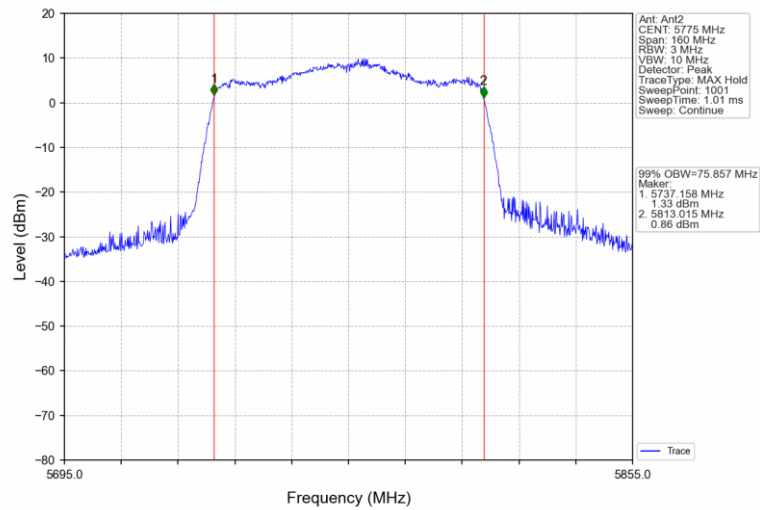
802.11ac(VHT80)_HCH_5610MHz_Ant2_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant2_NTNV



8.3 Maximum conducted output power

Test Method

According to KDB789033 D02

Test Method

According to C63.10, the EUT was placed on 0.8m height table, the RF output of EUT was connected to the test power meter by RF cable. The path loss was compensated to the results for each measurement.

1. Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the following conditions are satisfied:
The EUT is configured to transmit continuously or to transmit with a consistent duty cycle.
At all times when the EUT is transmitting, it must be transmitting at its maximum power control level. The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
2. If the transmitter does not transmit continuously, measure the duty cycle, x , of the transmitter output signal as described in 12.2 in C63.10-2020.
3. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
4. Adjust the measurement in dBm by adding $10 \log (1/x)$ where x is the duty cycle (e.g., $10 \log (1/0.25)$ if the duty cycle is 25%).

FCC Limits:

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26dB emission bandwidth in megahertz.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

Test result as below table

IEEE 802.11a modulation Test Result

Band	Channel	Frequency (MHz)	Ant1 Max Conducted Power (dBm)	Ant2 Max Conducted Power (dBm)	Conducted Power Limit (dBm)
5.2G Band	Low	5180	10.2	10.4	24.00
	Middle	5200	9.7	10.2	24.00
	High	5240	9.6	10.1	24.00
5.3G Band	Low	5260	10.1	10.1	24.00
	Middle	5300	10.0	10.5	24.00
	High	5320	9.7	10.0	24.00
5.6G Band	Low	5500	10.8	11.1	24.00
	Middle	5580	10.7	10.9	24.00
	High	5700	10.9	11.0	24.00
5.8G Band	Low	5745	10.7	11.2	30.00
	Middle	5785	10.9	11.0	30.00
	High	5825	10.8	11.1	30.00

IEEE 802.11n HT20 modulation Test Result

Band	Channel	Frequency (MHz)	Ant1 Max Conducted Power (dBm)	Ant2 Max Conducted Power (dBm)	Total Conducted (dBm)	Conducted Power Limit (dBm)
5.2G Band	Low	5180	10.1	10.3	13.2	24.00
	Middle	5200	9.6	10.3	13.0	24.00
	High	5240	9.5	10.0	12.8	24.00
5.3G Band	Low	5260	10.3	10.2	13.3	24.00
	Middle	5300	10.0	10.4	13.2	24.00
	High	5320	9.9	10.2	13.1	24.00
5.6G Band	Low	5500	10.3	10.6	13.5	24.00
	Middle	5580	10.2	10.5	13.4	24.00
	High	5700	10.2	10.5	13.4	24.00
5.8G Band	Low	5745	10.5	10.7	13.6	30.00
	Middle	5785	10.3	10.3	13.3	30.00
	High	5825	10.4	10.5	13.5	30.00

IEEE 802.11n HT40 modulation Test Result

Band	Channel	Frequency (MHz)	Ant1 Max Conducted Power (dBm)	Ant2 Max Conducted Power (dBm)	Total Conducted (dBm)	Conducted Power Limit (dBm)
5.2G Band	Low	5190	9.7	10.1	12.9	24.00
	High	5230	9.6	10.3	13.0	24.00
5.3G Band	Low	5270	10.2	10.4	13.3	24.00
	High	5310	10.0	10.4	13.2	24.00
5.6G Band	Low	5510	10.4	10.6	13.5	24.00
	Middle	5550	10.3	10.5	13.4	24.00
	High	5670	10.2	10.5	13.4	24.00
5.8G Band	Low	5755	10.4	10.6	13.5	30.00
	High	5795	10.5	10.7	13.6	30.00

IEEE 802.11n ac20 modulation Test Result

Band	Channel	Frequency (MHz)	Ant1 Max Conducted Power (dBm)	Ant2 Max Conducted Power (dBm)	Total Conducted (dBm)	Conducted Power Limit (dBm)
5.2G Band	Low	5180	9.90	10.3	13.1	24.00
	Middle	5200	9.70	10.2	13.0	24.00
	High	5240	9.70	10.1	12.9	24.00
5.3G Band	Low	5260	10.1	10.3	13.2	24.00
	Middle	5300	9.7	10.0	12.9	24.00
	High	5320	9.5	10.1	12.8	24.00
5.6G Band	Low	5500	10.2	10.1	13.2	24.00
	Middle	5580	10.3	10.2	13.3	24.00
	High	5700	10.4	10.1	13.3	24.00
5.8G Band	Low	5745	10.5	10.5	13.5	30.00
	Middle	5785	10.3	10.4	13.4	30.00
	High	5825	10.3	10.3	13.3	30.00

IEEE 802.11n ac40 modulation Test Result

Band	Channel	Frequency (MHz)	Ant1 Max Conducted Power (dBm)	Ant2 Max Conducted Power (dBm)	Total Conducted (dBm)	Conducted Power Limit (dBm)
5.2G Band	Low	5190	9.2	9.3	12.3	24.00
	High	5230	9.1	9.1	12.1	24.00
5.3G Band	Low	5270	9.3	9.5	12.4	24.00
	High	5310	9.2	9.3	12.3	24.00
5.6G Band	Low	5510	9.3	9.3	12.3	24.00
	Middle	5550	9.0	9.2	12.1	24.00
	High	5670	8.9	9.1	12.0	24.00
5.8G Band	Low	5755	9.4	9.5	12.5	30.00
	High	5795	9.2	9.3	12.3	30.00

IEEE 802.11n ac80 modulation Test Result

Band	Channel	Frequency (MHz)	Ant1 Max Conducted Power (dBm)	Ant2 Max Conducted Power (dBm)	Total Conducted (dBm)	Conducted Power Limit (dBm)
5.2G Band	Middle	5210	8.3	8.5	11.4	24.00
5.3G Band	High	5290	8.3	8.4	11.4	24.00
5.6G Band	Low	5530	8.2	8.3	11.3	24.00
	Hight	5610	8.3	8.4	11.4	24.00
5.8G Band	High	5775	8.3	8.4	11.4	30.00

NOTE 1: the 11 dBm + 10 log B is greater than 250mW.

NOTE 2: $\text{Power}^{\text{SUM}} = 10 * \text{Log}(10^{(\text{PowerAnt1}/10)} + 10^{(\text{PowerAnt2}/10)})$

8.4 Maximum power spectral density

Test Method (Method SA-2 in C63.10-2020)

The EUT was placed on 0.8m height table, the RF output of EUT was connected to the test receiver by RF cable. The path loss was compensated to the results for each measurement. (trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

1. Measure the duty cycle.
2. Set span to encompass the entire emission bandwidth (EBW) of the signal.
3. Set RBW = 1 MHz.
4. Set VBW $\geq$ 3 MHz.
5. Number of points in sweep $\geq$ 2 Span / RBW.
6. Sweep time = auto.
7. Detector = RMS
8. Trace average at least 100 traces in power averaging mode.
9. Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add $10 \log(1/0.25) = 6$ dB if the duty cycle is 25 percent.

Limit:

FCC Limits:

The maximum power spectral density shall not exceed 11dBm for the 5.15-5.25GHz, 5.25-5.35GHz, 5.47-5.725 GHz Band in any 1 megahertz band.

For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500kHz band.

Test Result

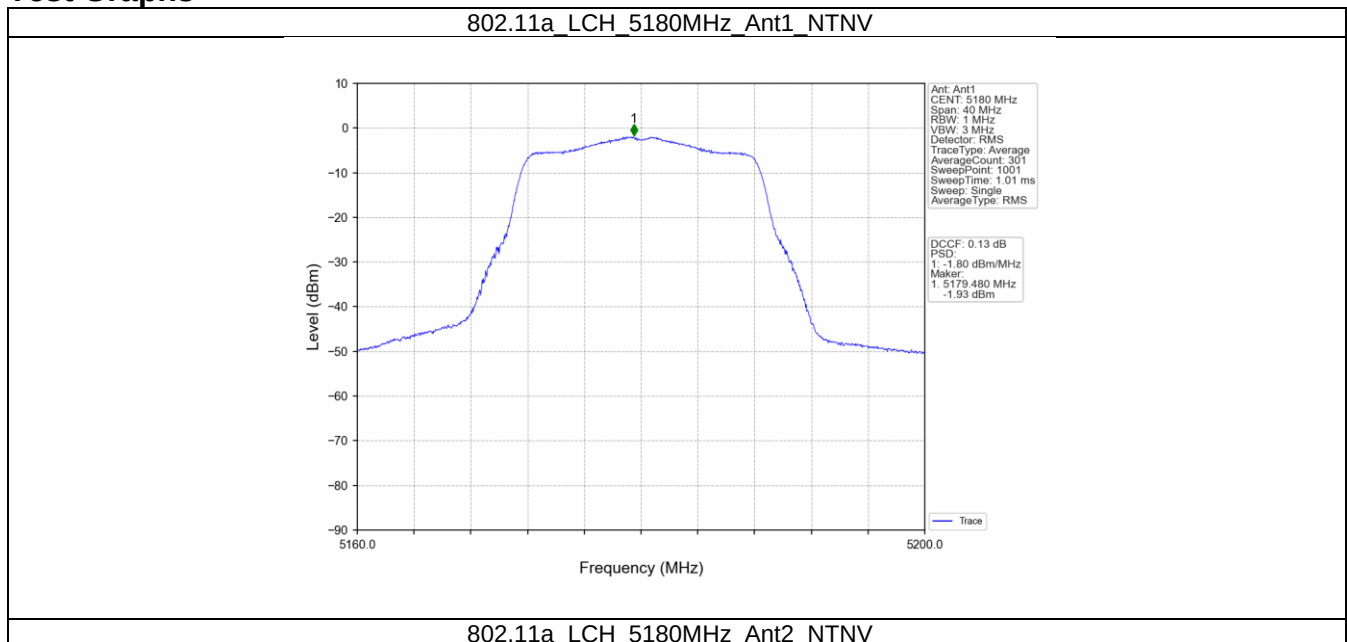
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/MHz)				Verdict
			ANT1	ANT2	MIMO	Limit	
802.11a	SISO	5180	-1.80	-0.78	/	<=11	Pass
		5200	-1.19	-0.93	/	<=11	Pass
		5240	-1.06	-1.03	/	<=11	Pass
		5260	-0.68	-0.81	/	<=11	Pass
		5300	-1.33	-0.99	/	<=11	Pass
		5320	-0.63	-0.91	/	<=11	Pass
		5500	0.21	-0.19	/	<=11	Pass
		5580	0.45	0.07	/	<=11	Pass
802.11n (HT20)	MIMO	5700	0.20	-0.42	/	<=11	Pass
		5180	-1.86	-0.84	1.68	<=11	Pass
		5200	-1.42	-1.37	1.55	<=11	Pass
		5240	-1.40	-1.34	1.62	<=11	Pass
		5260	-0.79	-1.01	2.07	<=11	Pass
		5300	-1.63	-1.23	1.52	<=11	Pass
		5320	-0.97	-1.03	1.85	<=11	Pass
		5500	-0.90	-1.36	1.77	<=11	Pass
802.11n (HT40)	MIMO	5580	-0.69	-1.11	2.09	<=11	Pass
		5700	-0.98	-1.63	1.59	<=11	Pass
		5190	-5.06	-5.14	-2.15	<=11	Pass
		5230	-4.29	-4.68	-1.52	<=11	Pass
		5270	-4.70	-4.55	-1.74	<=11	Pass
		5310	-4.17	-4.13	-1.28	<=11	Pass
		5510	-3.91	-3.87	-0.90	<=11	Pass
		5550	-3.11	-4.51	-0.76	<=11	Pass
802.11ac (VHT20)	MIMO	5670	-3.82	-4.88	-1.36	<=11	Pass
		5180	-1.88	-0.92	1.53	<=11	Pass
		5200	-1.59	-1.10	1.58	<=11	Pass
		5240	-1.53	-1.38	1.45	<=11	Pass
		5260	-0.87	-0.80	1.97	<=11	Pass
		5300	-1.63	-1.11	1.65	<=11	Pass
		5320	-1.02	-1.10	1.83	<=11	Pass
		5500	0.13	-0.44	2.73	<=11	Pass
802.11ac (VHT40)	MIMO	5580	-0.08	-0.63	2.54	<=11	Pass
		5700	-0.12	-1.34	2.22	<=11	Pass
		5190	-5.07	-5.08	-2.23	<=11	Pass
		5230	-4.40	-4.95	-1.80	<=11	Pass
		5270	-4.95	-5.08	-2.14	<=11	Pass
		5310	-4.68	-5.37	-2.04	<=11	Pass
		5510	-3.17	-3.63	-0.49	<=11	Pass
		5550	-2.88	-4.09	-0.50	<=11	Pass
802.11ac (VHT80)	MIMO	5670	-3.41	-4.51	-1.01	<=11	Pass
		5210	-7.27	-6.25	-3.86	<=11	Pass
		5290	-7.02	-7.13	-4.07	<=11	Pass
		5530	-5.59	-6.05	-2.87	<=11	Pass
		5610	-5.85	-6.33	-3.13	<=11	Pass

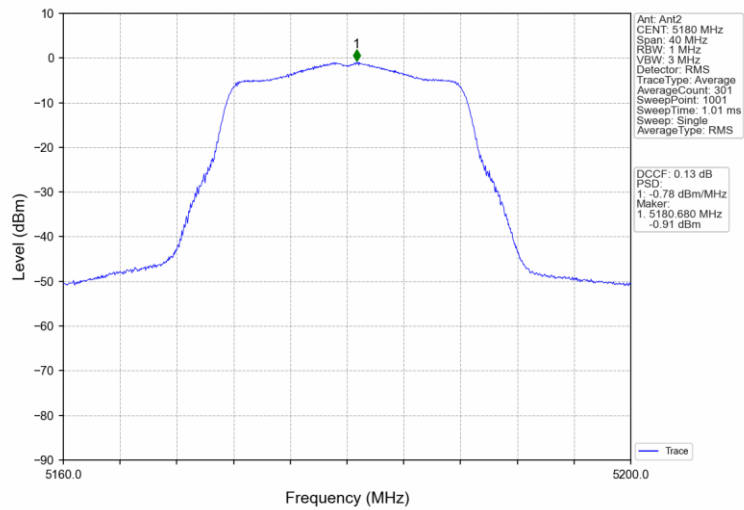
Note1: Antenna Gain: Ant1: 2.3dBi; Ant2: 4.15dBi;

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/500kHz)				Verdict
			ANT1	ANT2	MIMO	Limit	
802.11a	SISO	5745	-2.51	-2.88	/	<=30	Pass
		5785	-2.21	-3.12	/	<=30	Pass
		5825	-1.97	-3.16	/	<=30	Pass
802.11n (HT20)	MIMO	5745	-3.70	-4.31	-1.02	<=30	Pass
		5785	-3.60	-4.47	-1.08	<=30	Pass
		5825	-3.65	-4.57	-1.10	<=30	Pass
802.11n (HT40)	MIMO	5755	-7.21	-6.93	-4.10	<=30	Pass
		5795	-6.69	-7.48	-4.06	<=30	Pass
802.11ac (VHT20)	MIMO	5745	-3.28	-3.59	-0.45	<=30	Pass
		5785	-3.06	-4.06	-0.54	<=30	Pass
		5825	-2.99	-4.05	-0.66	<=30	Pass
802.11ac (VHT40)	MIMO	5755	-6.31	-6.88	-3.57	<=30	Pass
		5795	-6.34	-7.00	-3.76	<=30	Pass
802.11ac (VHT80)	MIMO	5775	-9.22	-9.36	-6.32	<=30	Pass

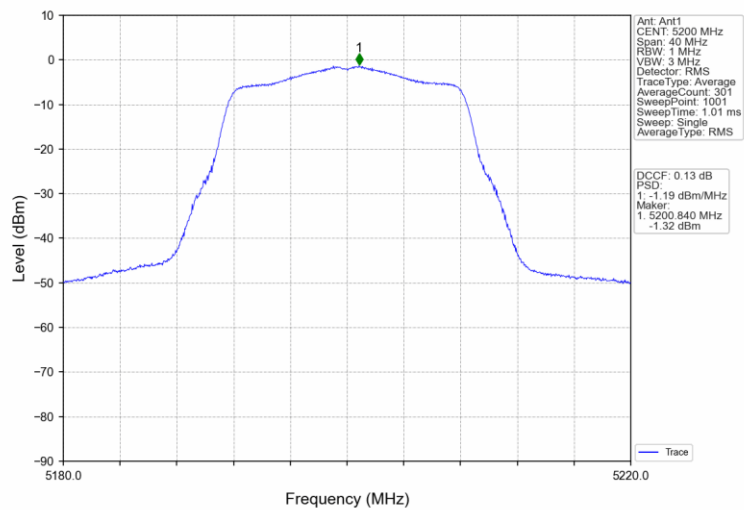
Note1: Antenna Gain: Ant1: 2.3dBi; Ant2: 4.15dBi;

Test Graphs

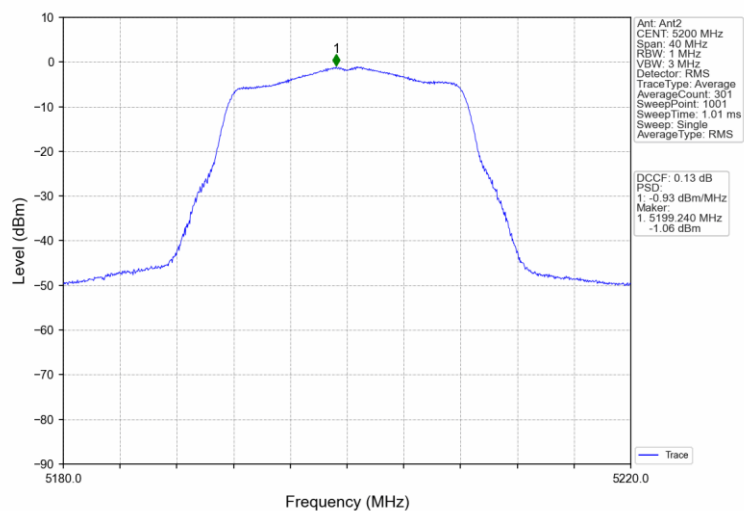




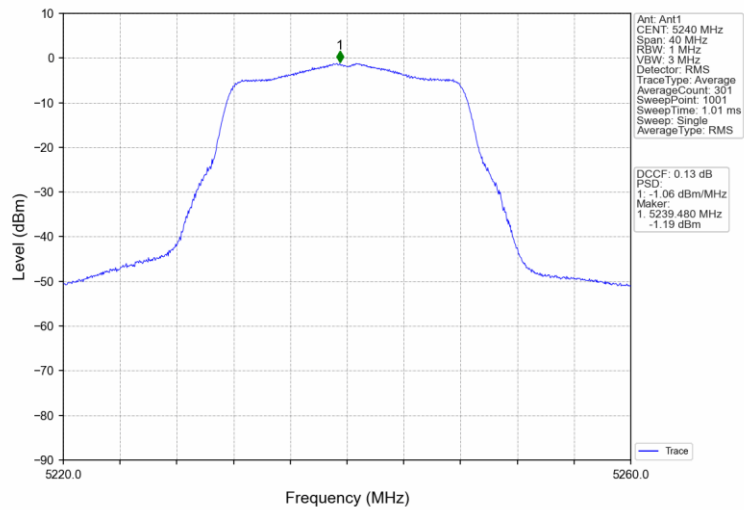
802.11a_MCH_5200MHz_Ant1_NTNV



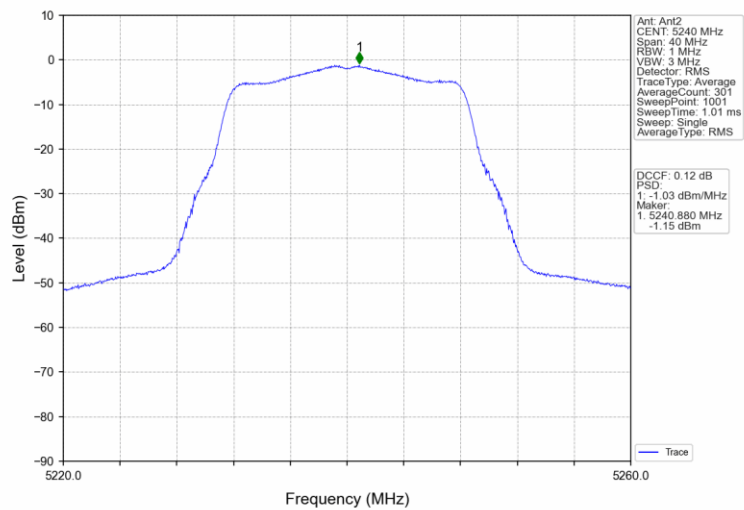
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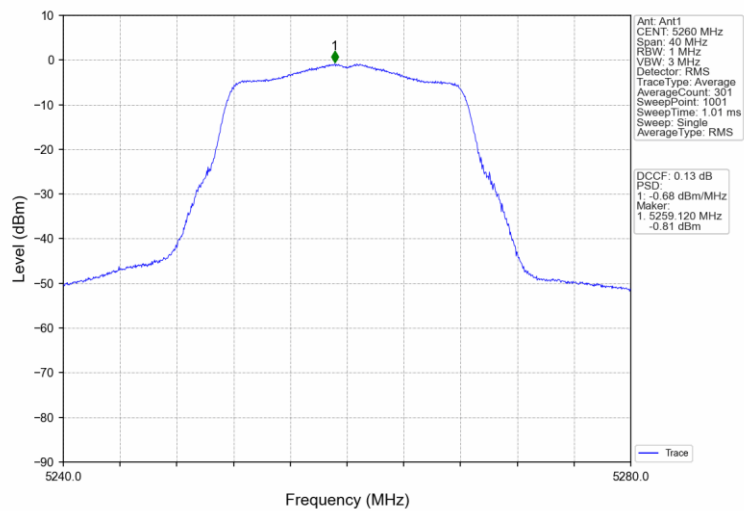
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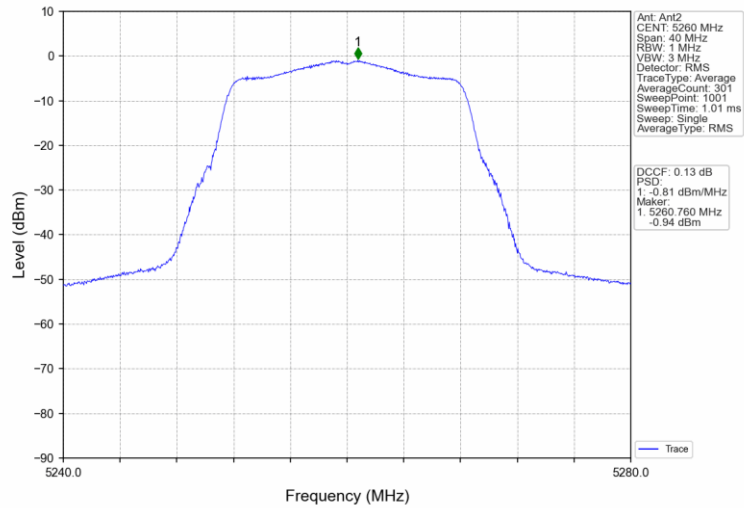
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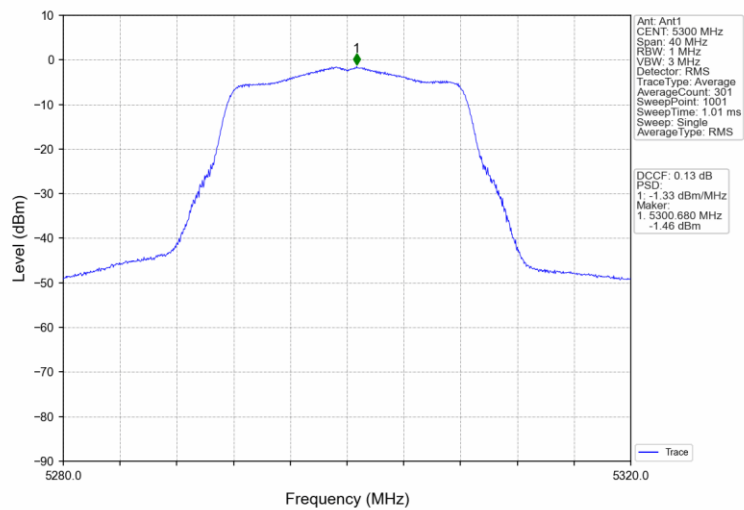
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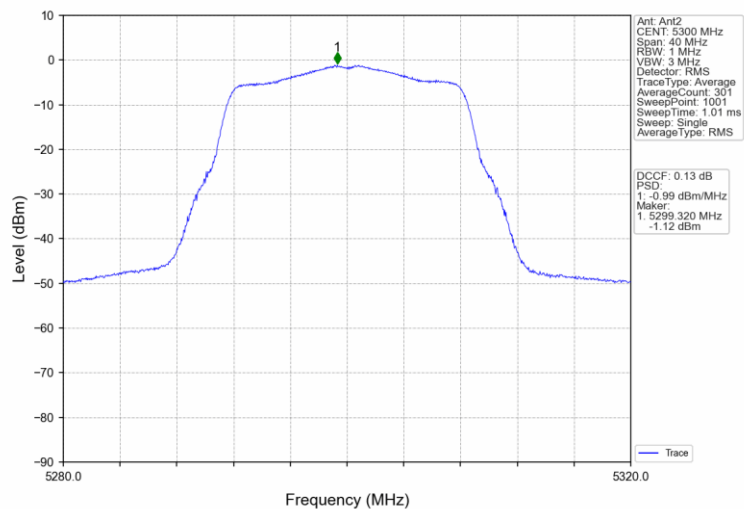
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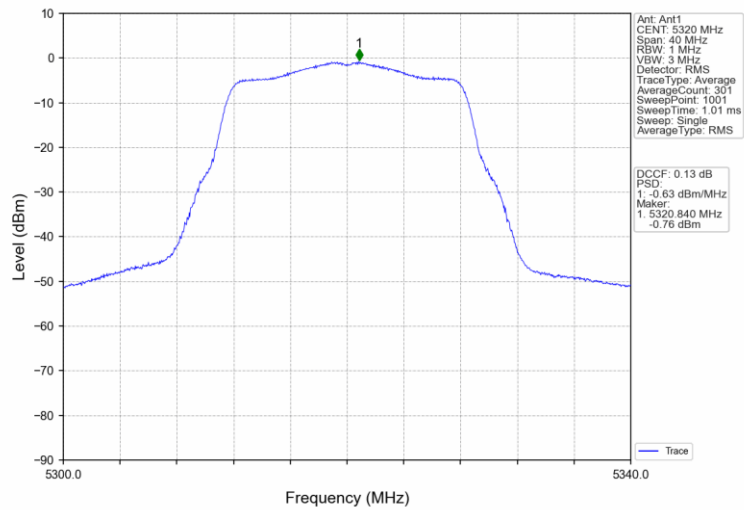
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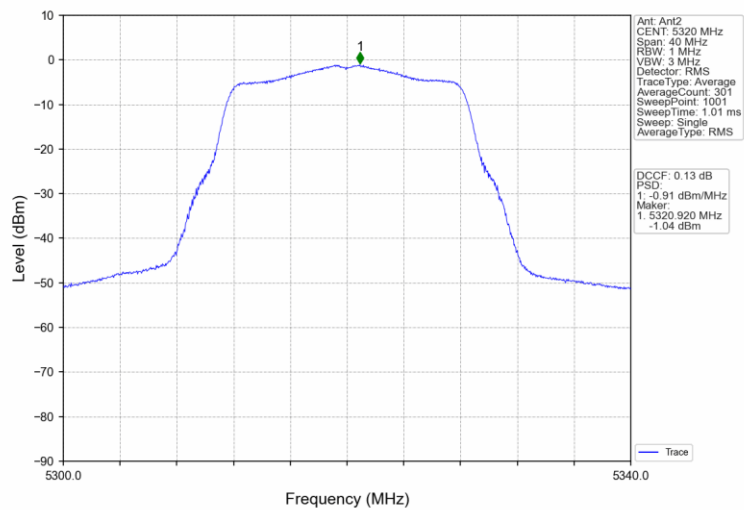
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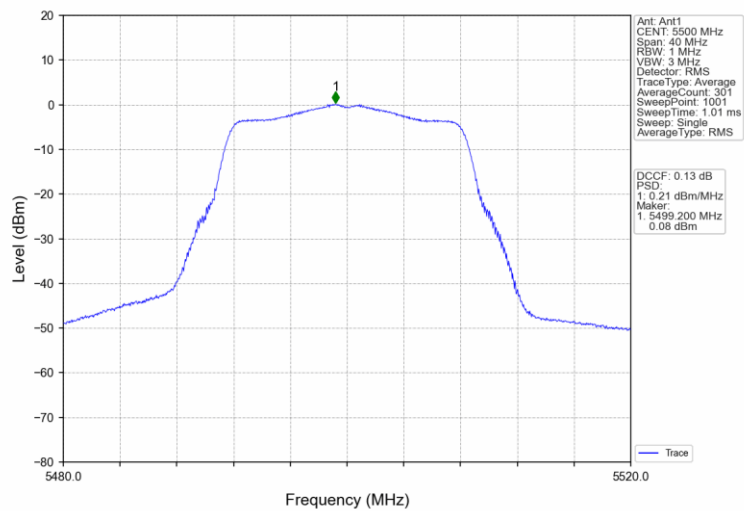
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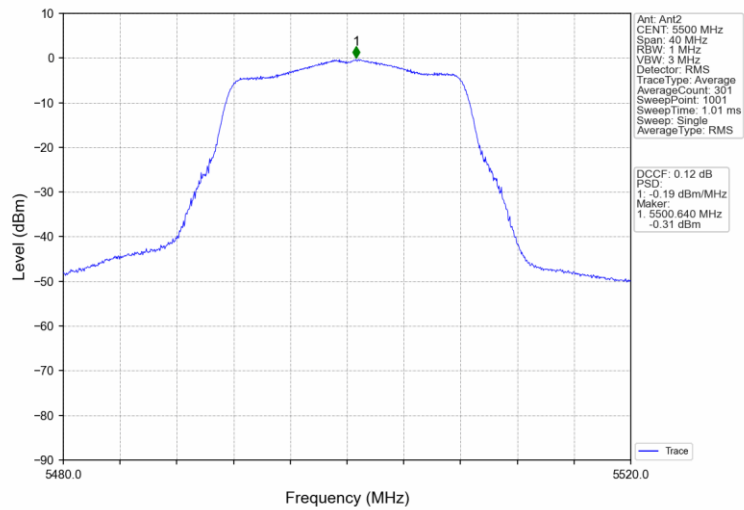
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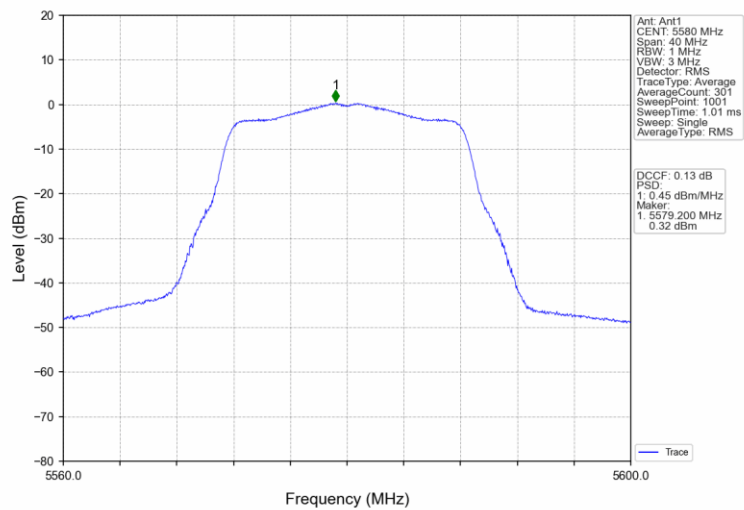
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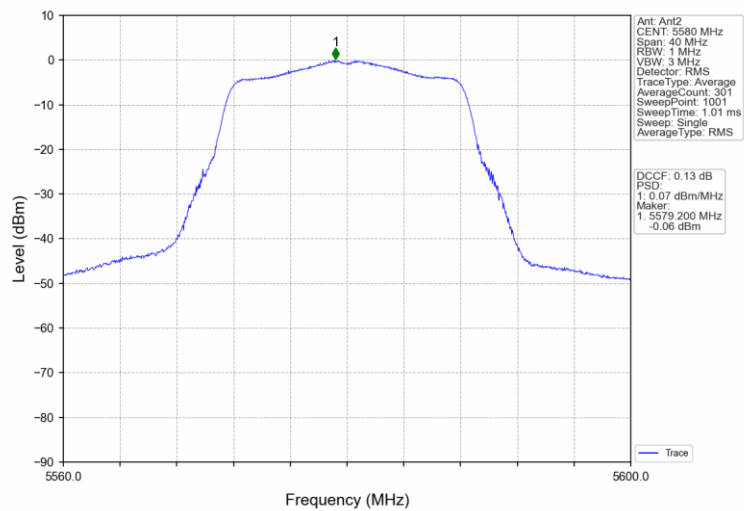
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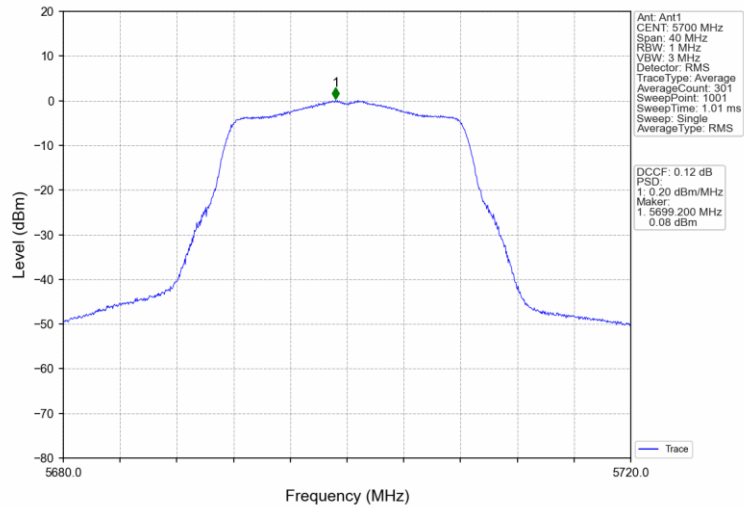
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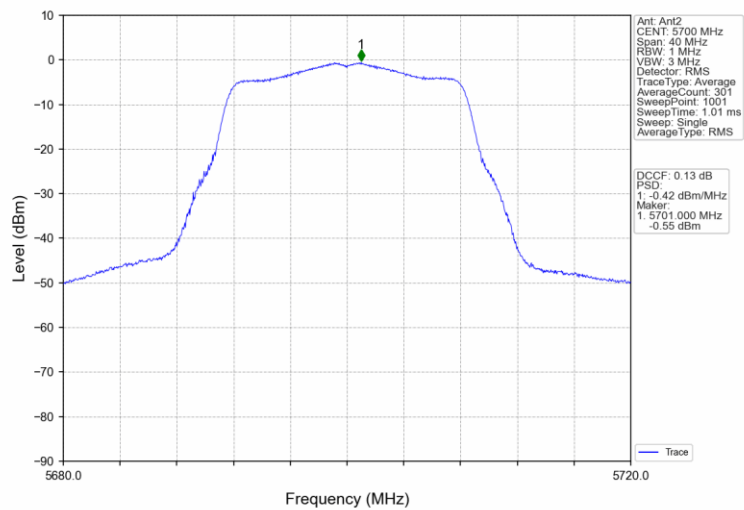
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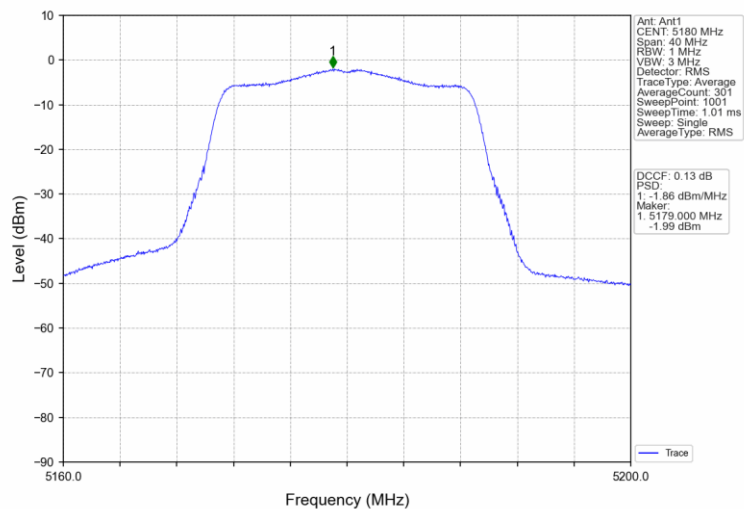
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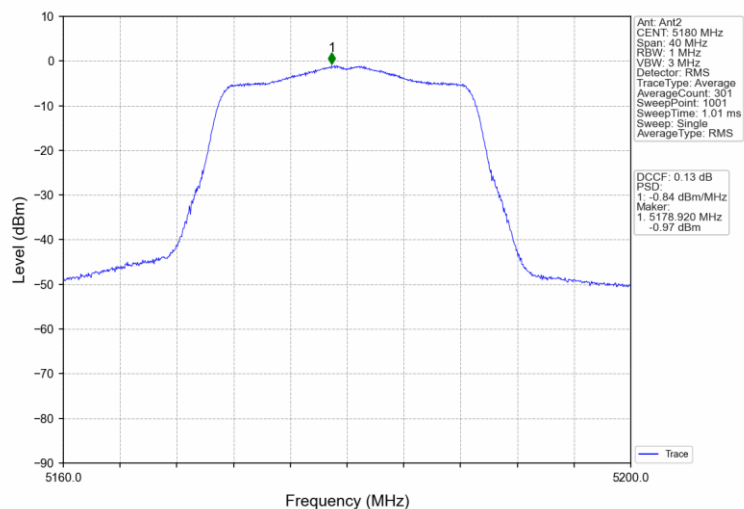
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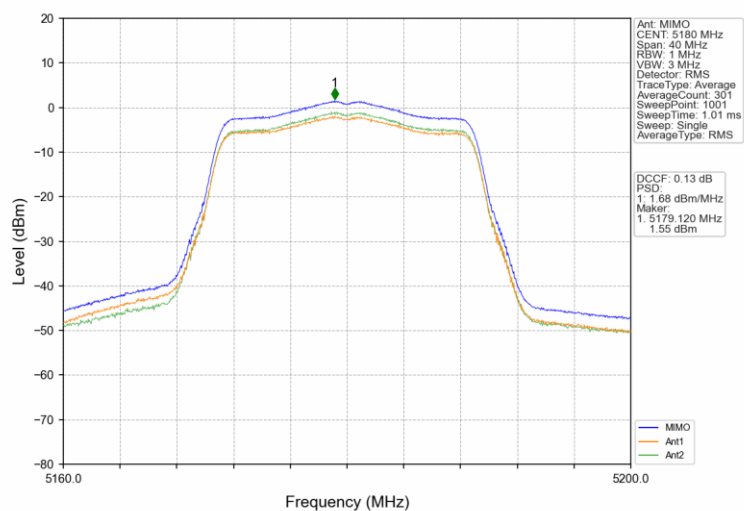
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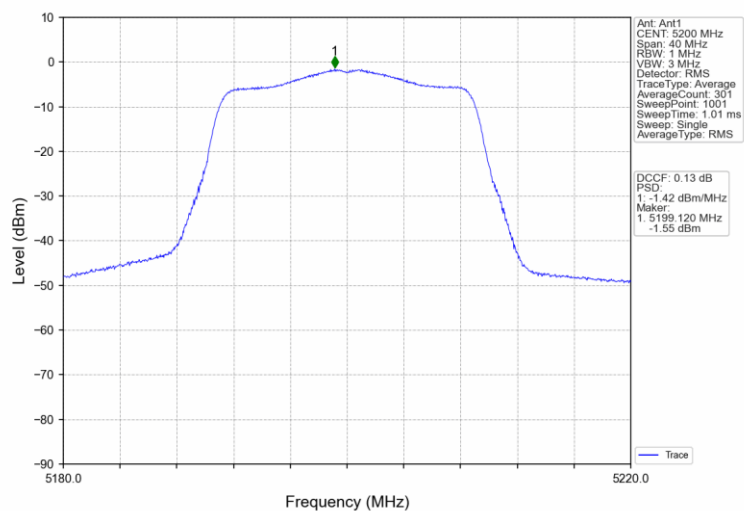
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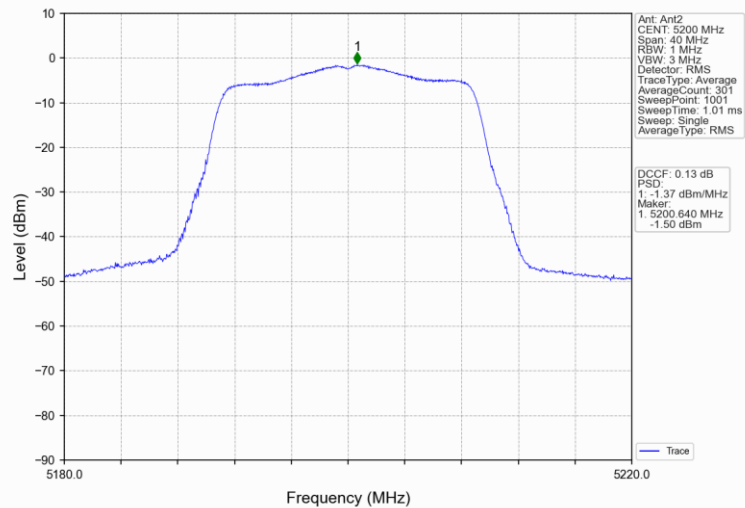
802.11n(HT20)_LCH_5180MHz_MIMO_NTNV



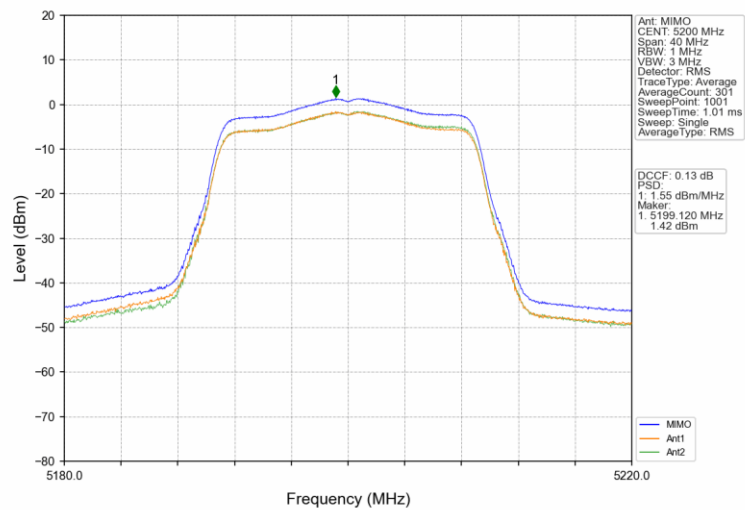
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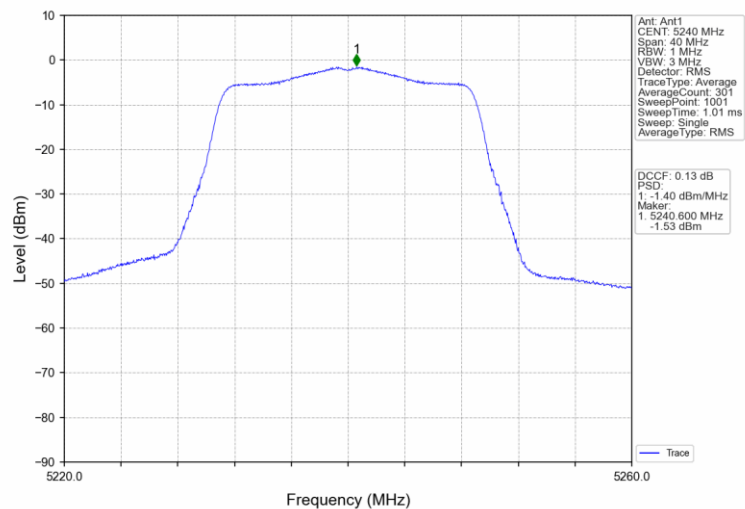
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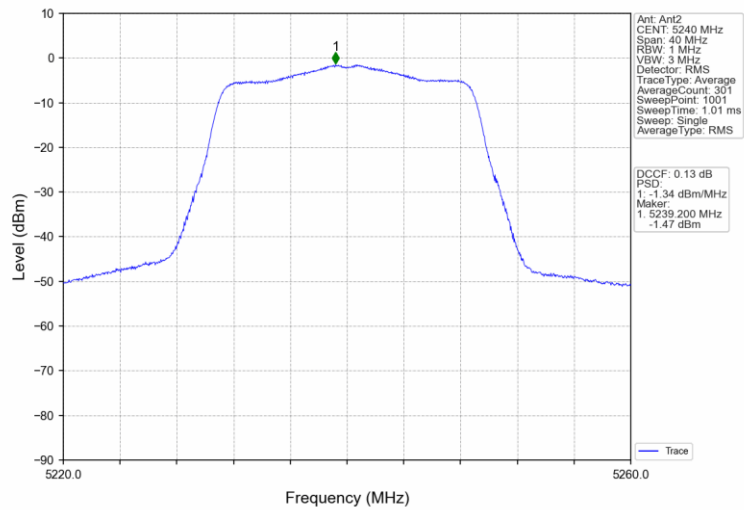
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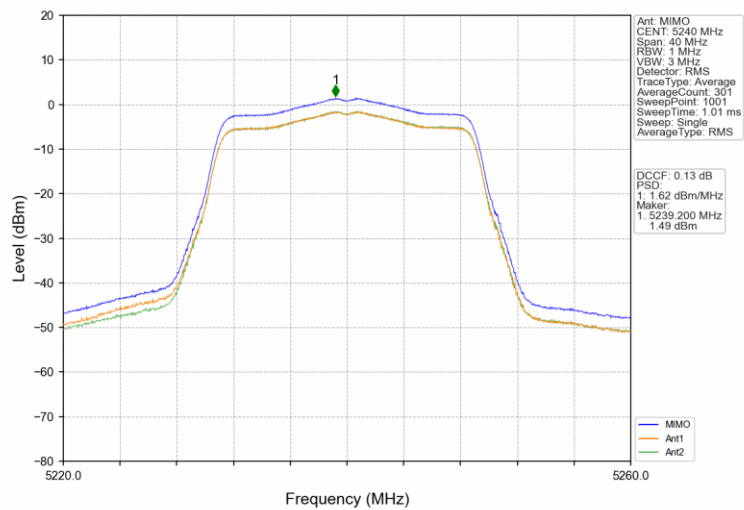
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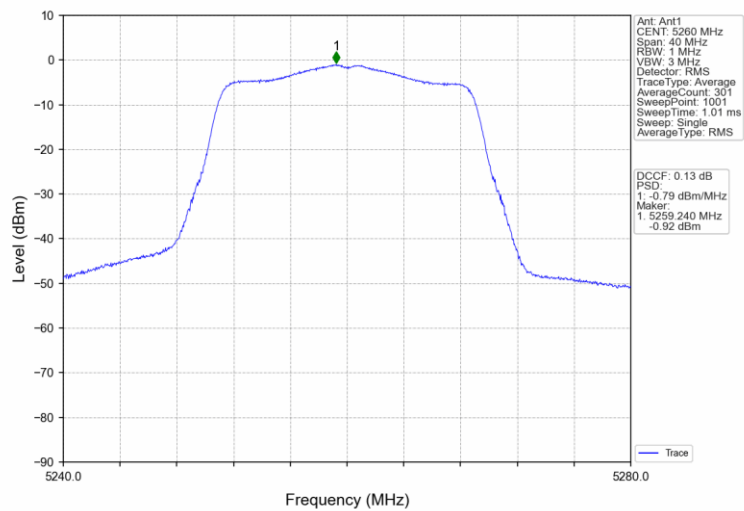
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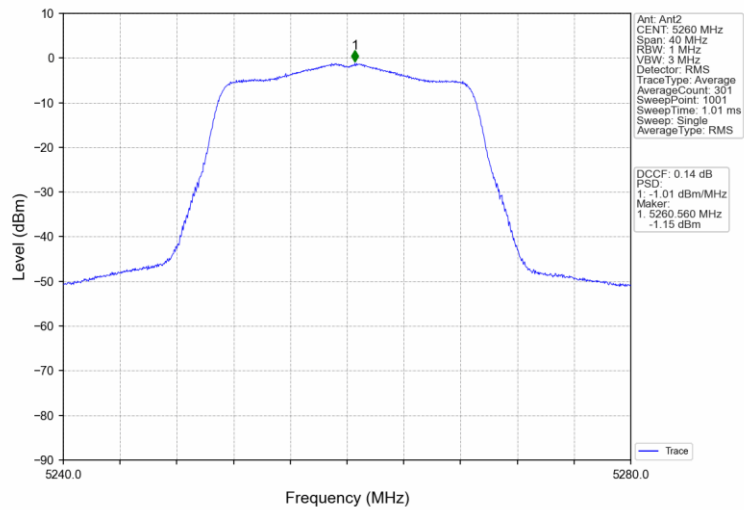
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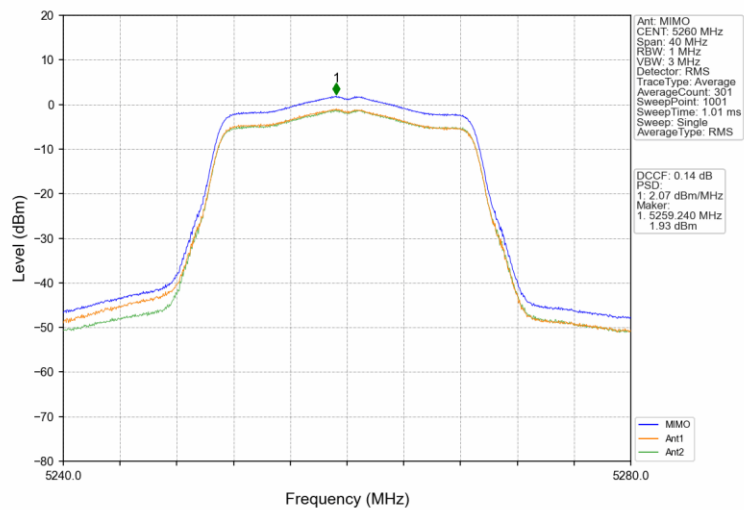
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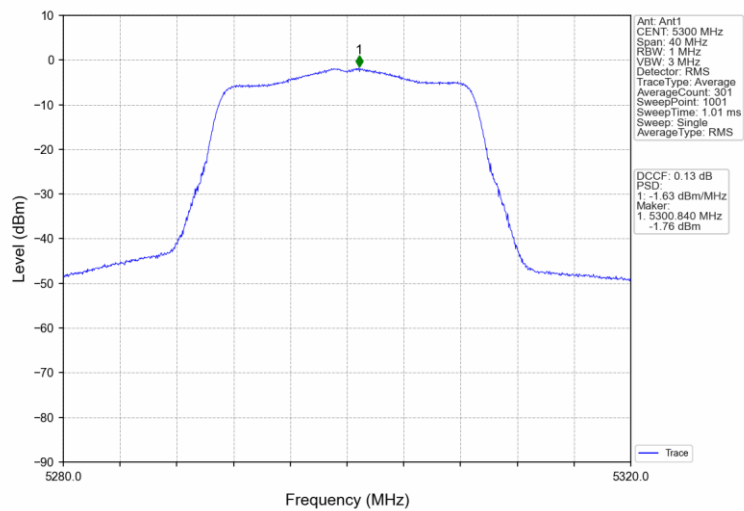
802.11n(HT20)_LCH_5260MHz_Ant2_NTNV



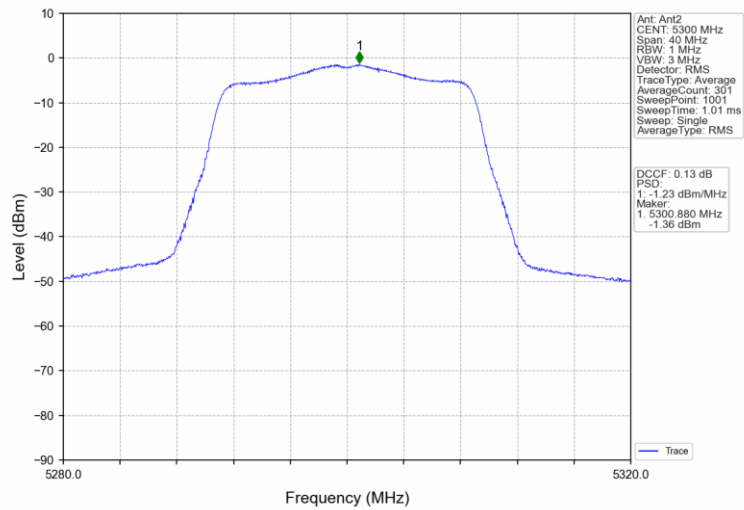
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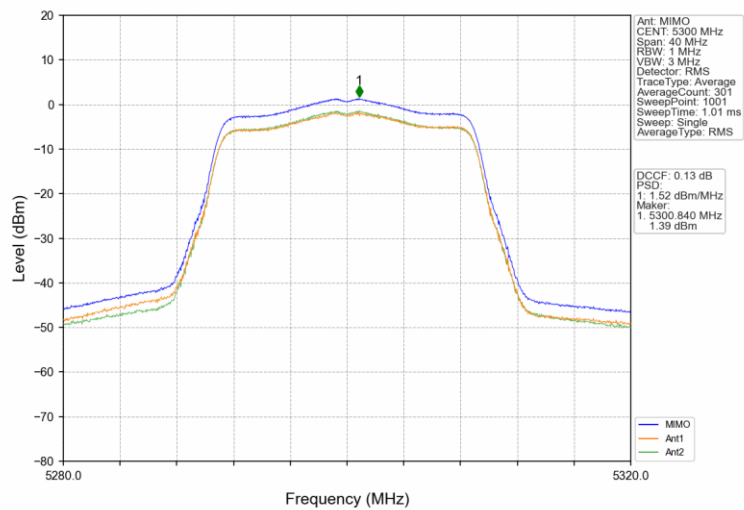
802.11n(HT20)_MCH_5300MHz_Ant1_NTNV



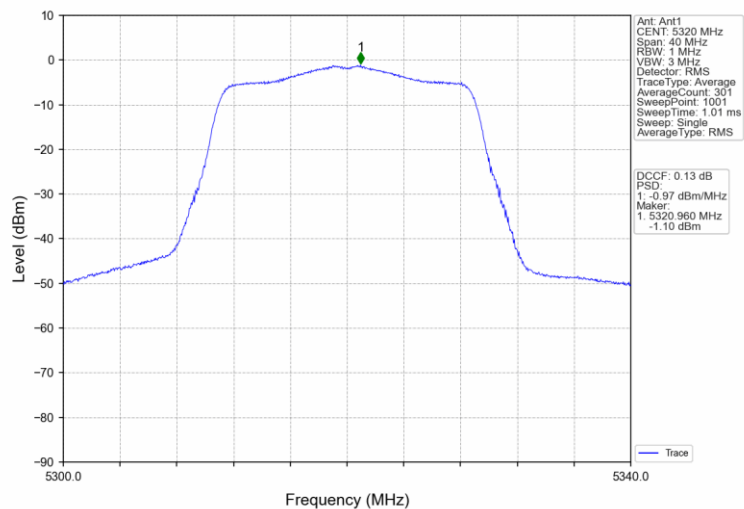
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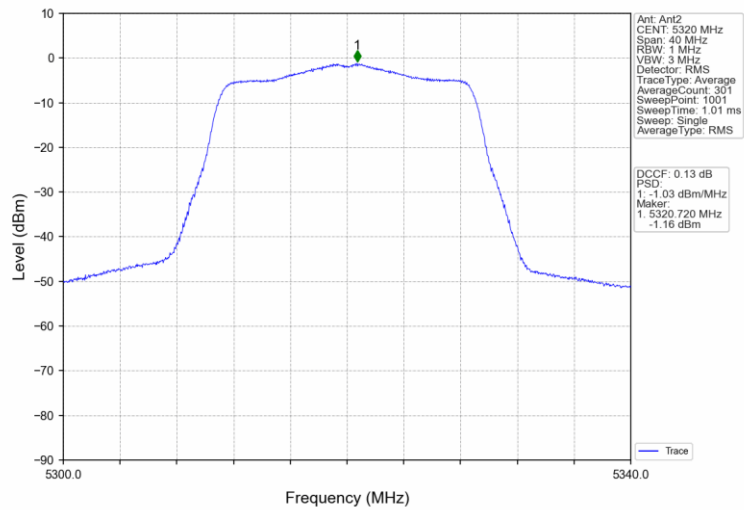
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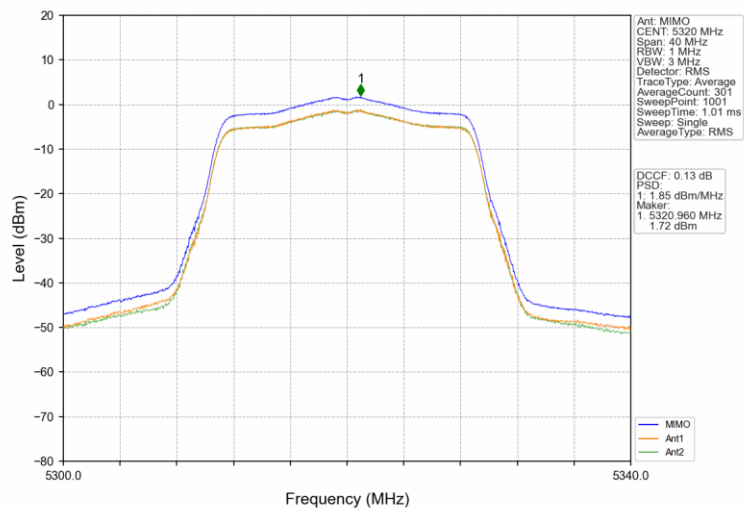
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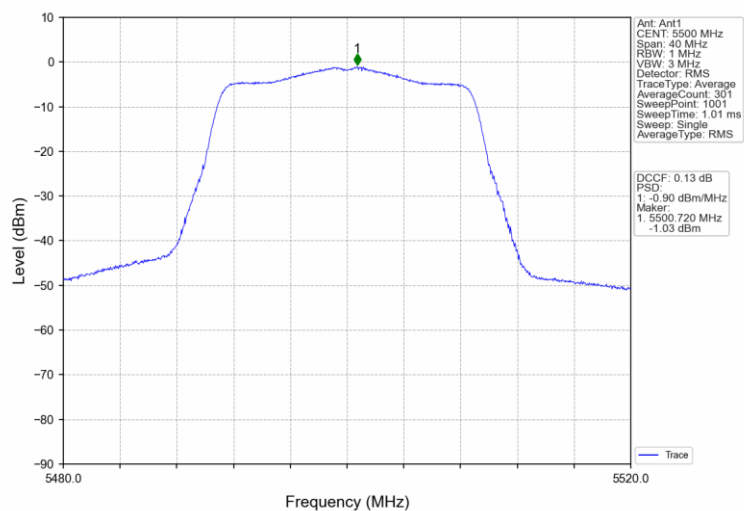
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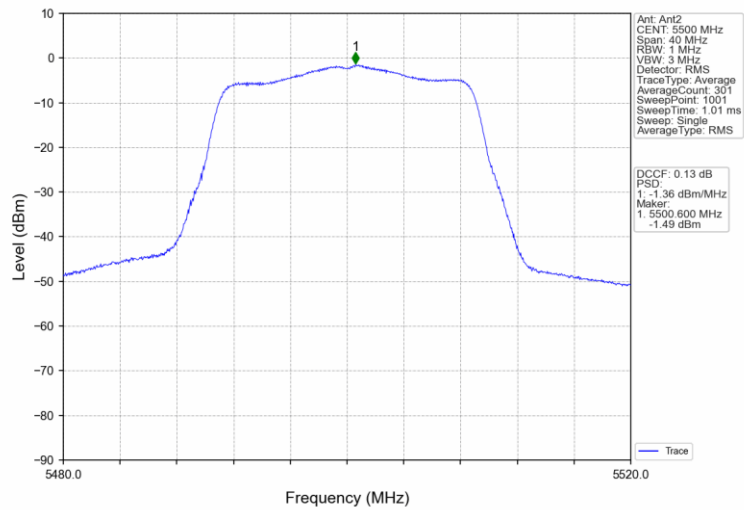
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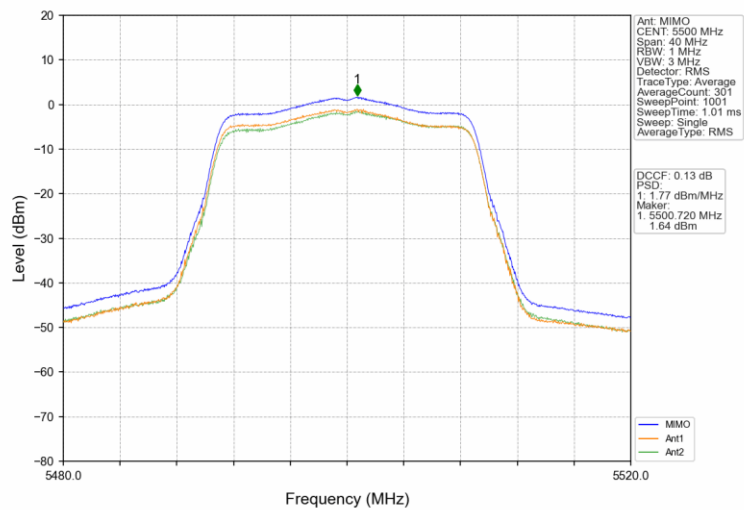
802.11n(HT20)_LCH_5500MHz_Ant1_NTNV



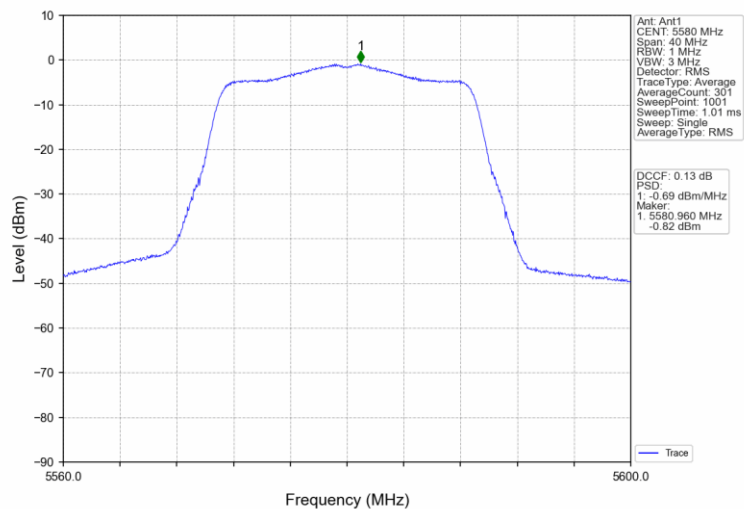
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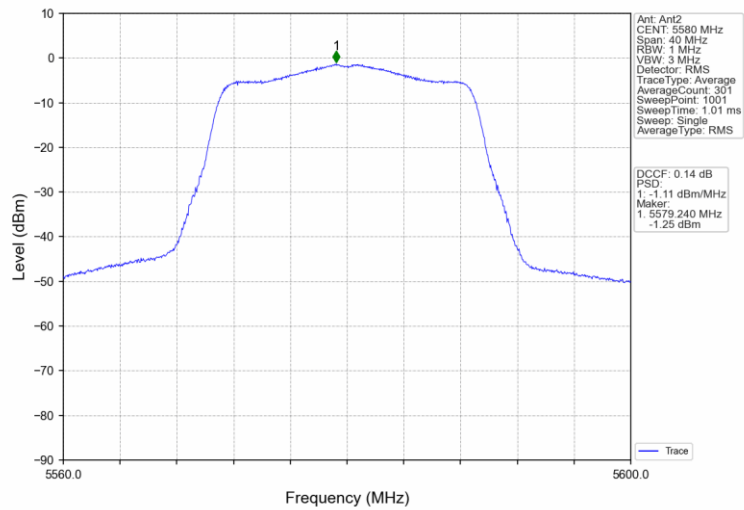
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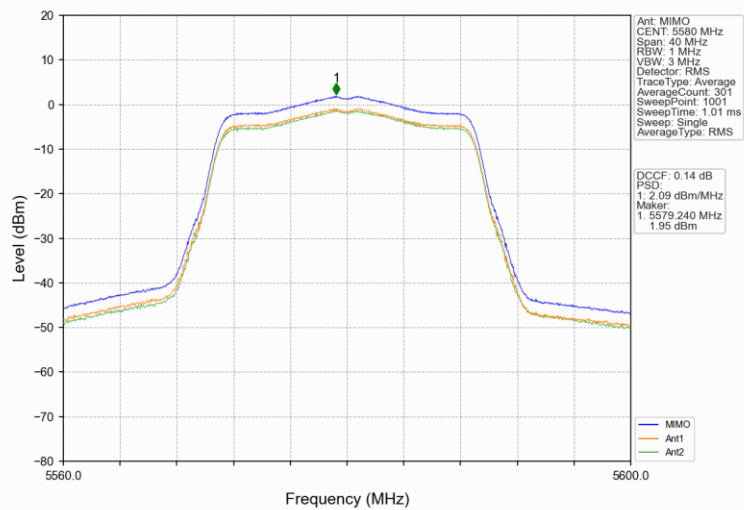
802.11n(HT20) MCH_5580MHz_Ant1_NTNV



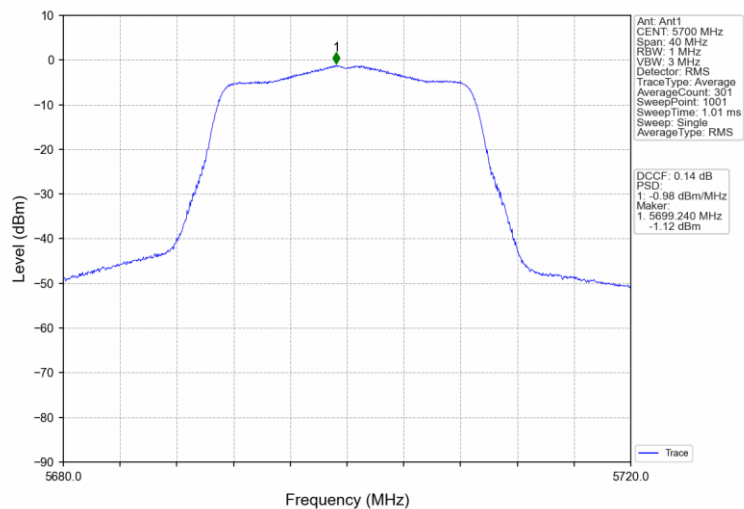
802.11n(HT20) MCH_5580MHz_Ant2_NTNV



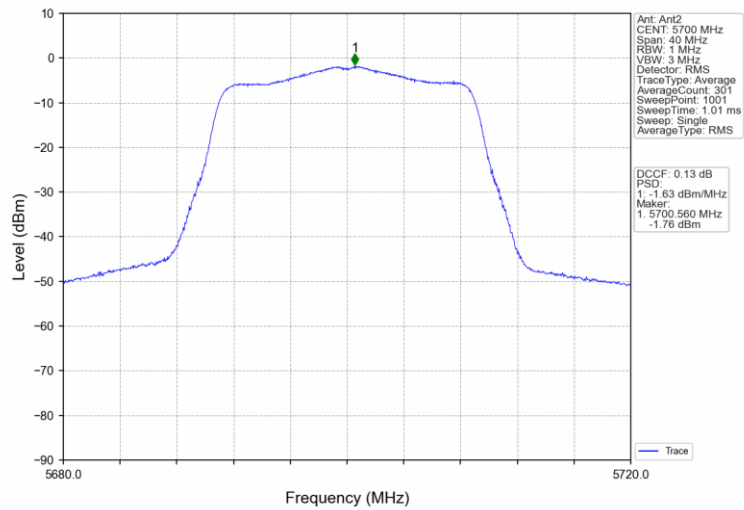
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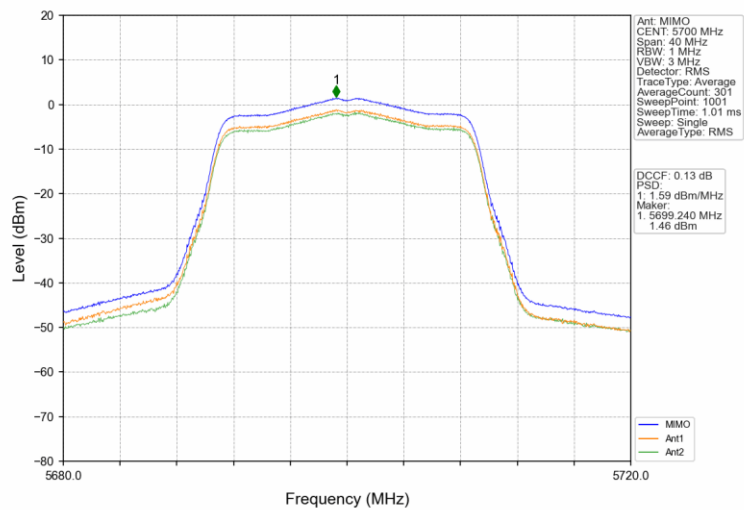
802.11n(HT20)_HCH_5700MHz_Ant1_NTNV



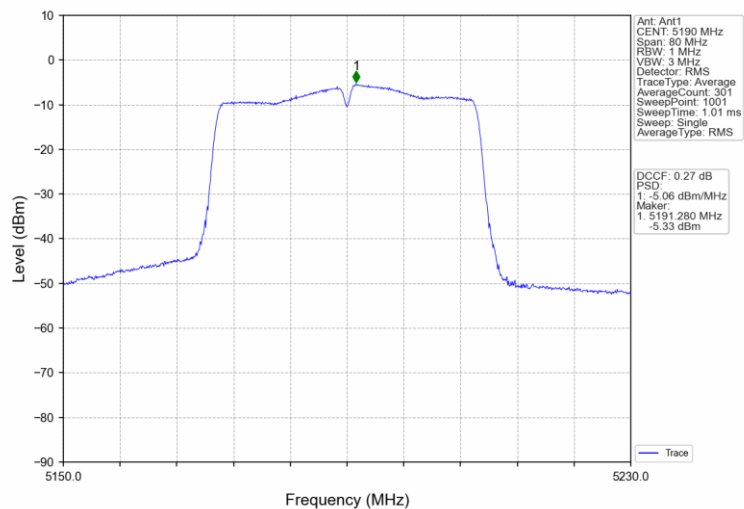
802.11n(HT20)_HCH_5700MHz_Ant2_NTNV



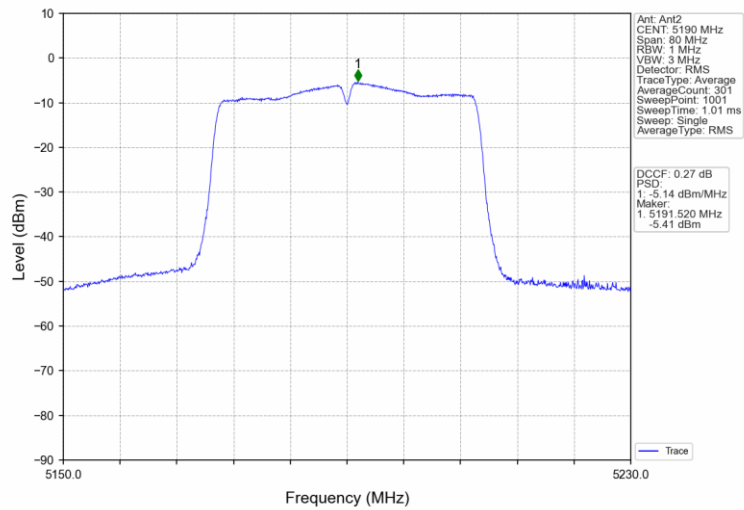
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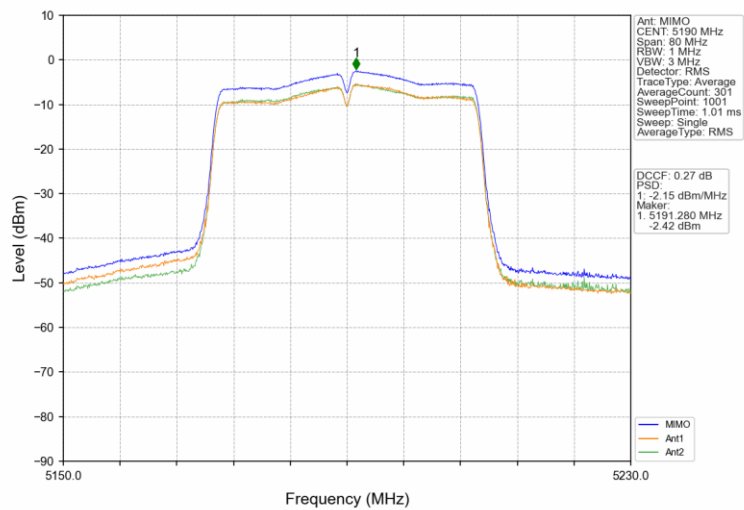
802.11n(HT40)_LCH_5190MHz_Ant1_NTNV



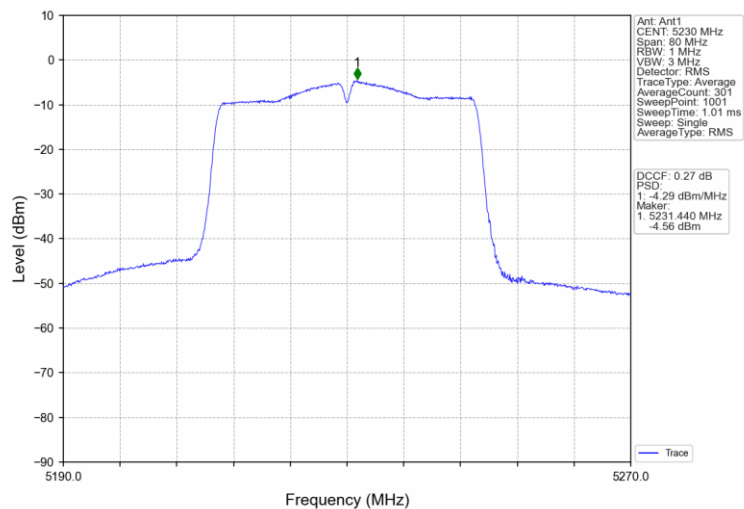
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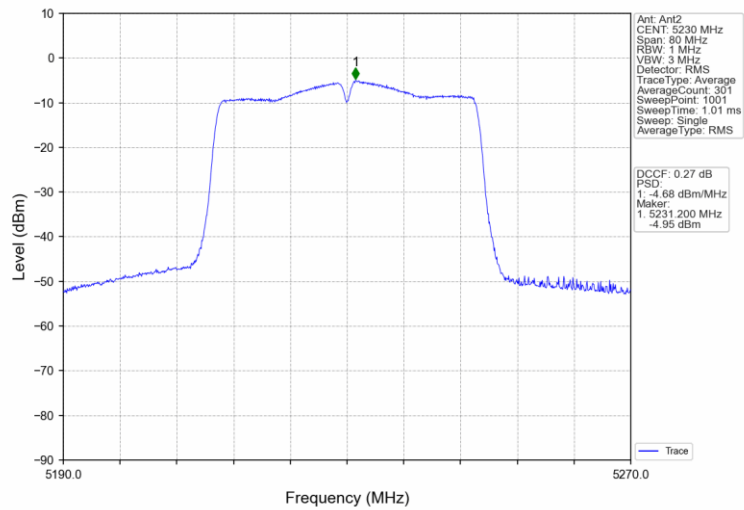
802.11n(HT40) LCH 5190MHz MIMO NTNv



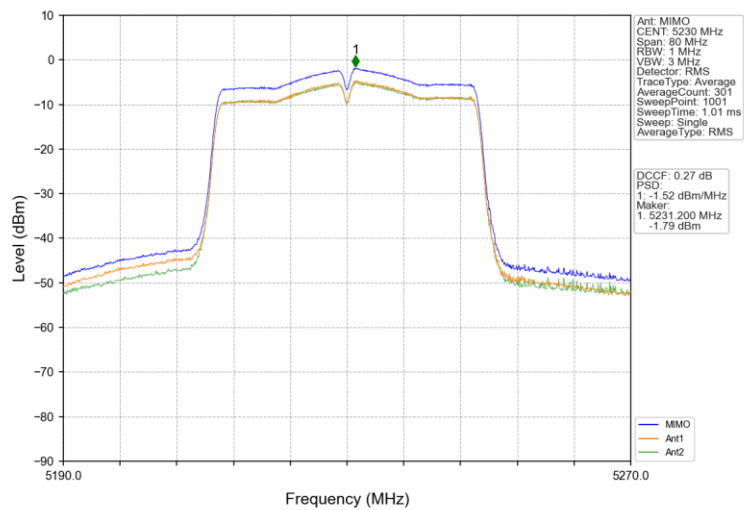
802.11n(HT40) HCH 5230MHz Ant1 NTNv



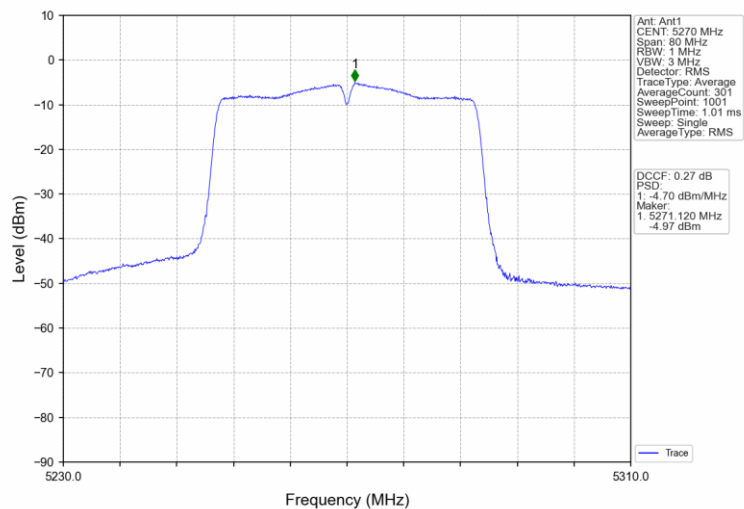
802.11n(HT40) HCH 5230MHz Ant2 NTNv



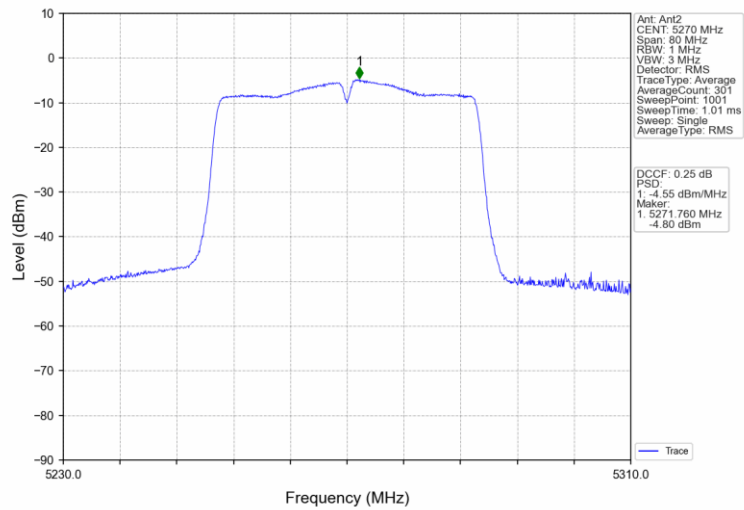
802.11n(HT40)_HCH_5230MHz_MIMO_NTNV



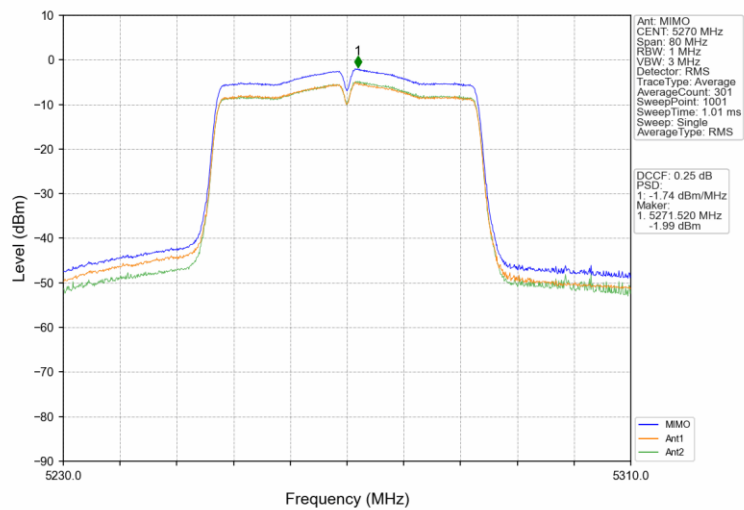
802.11n(HT40)_LCH_5270MHz_Ant1_NTNV



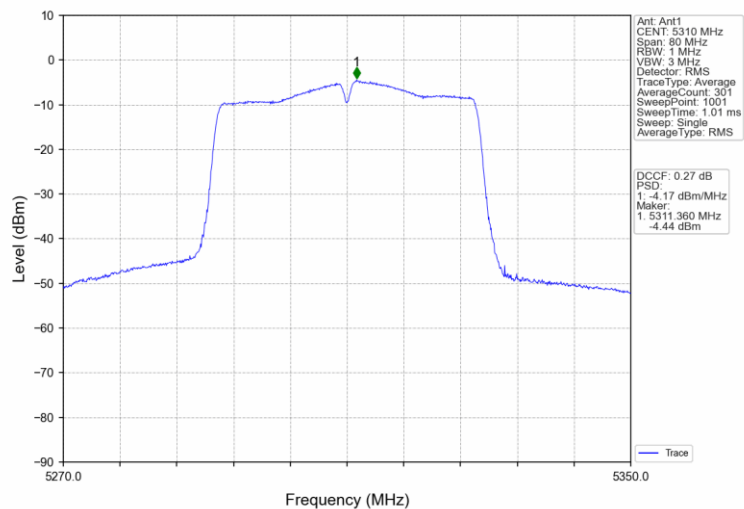
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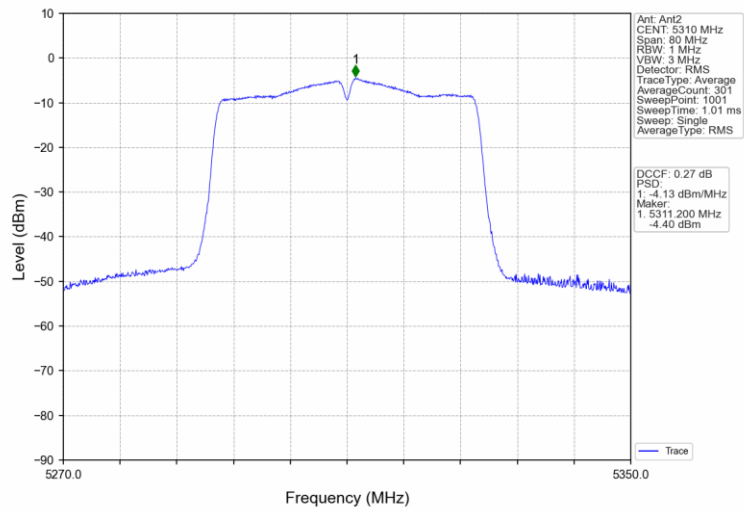
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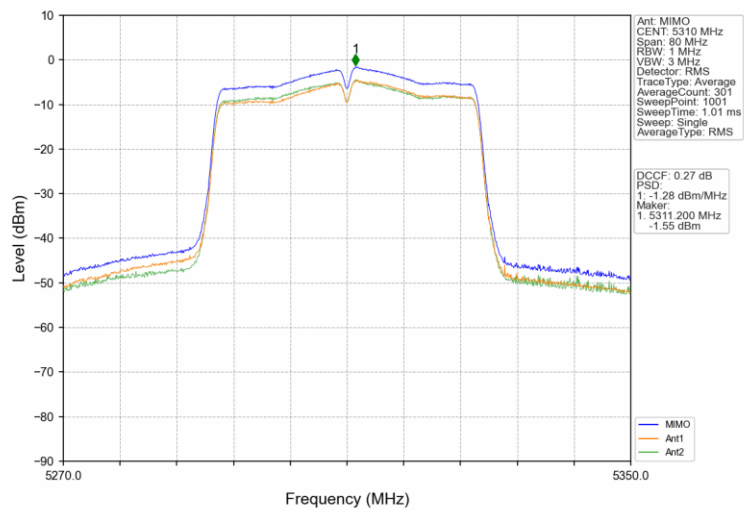
802.11n(HT40) HCH_5310MHz_Ant1_NTNV



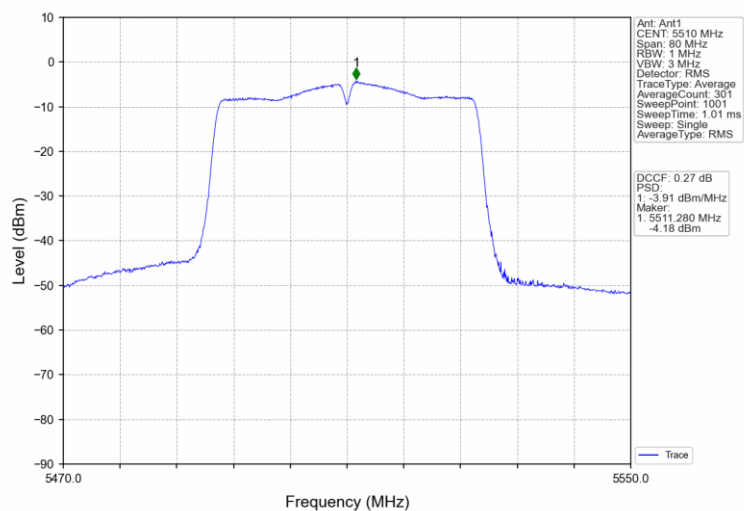
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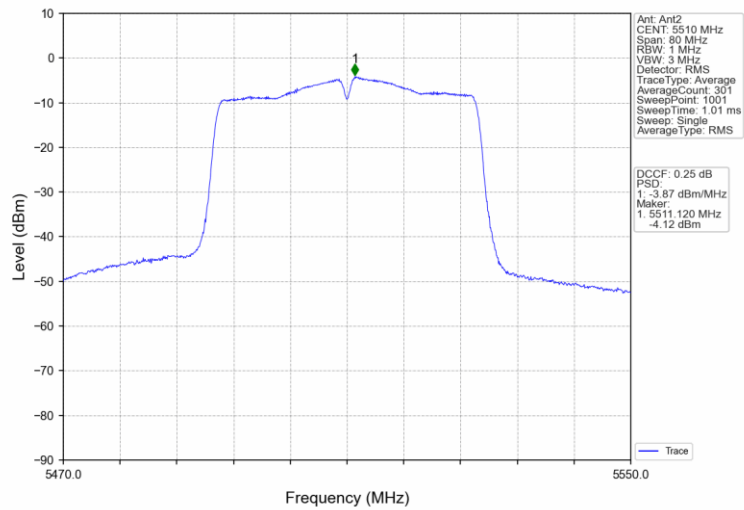
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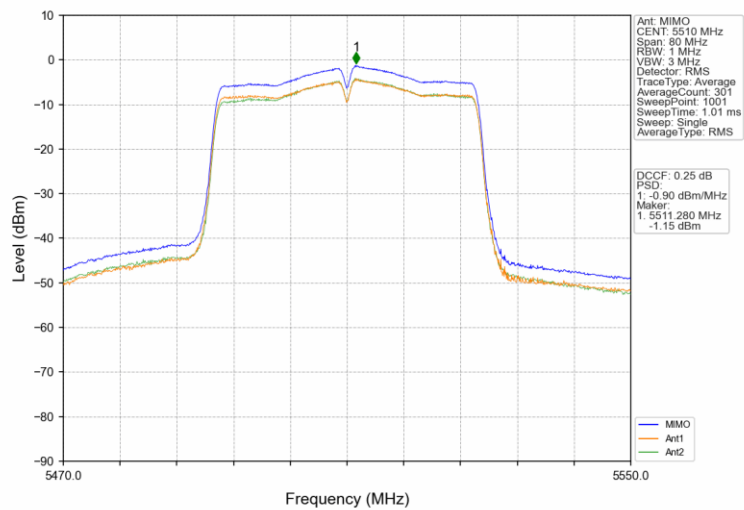
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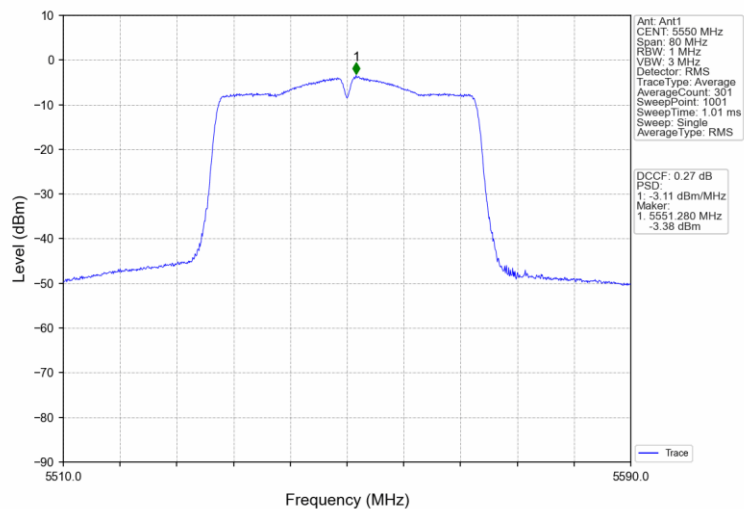
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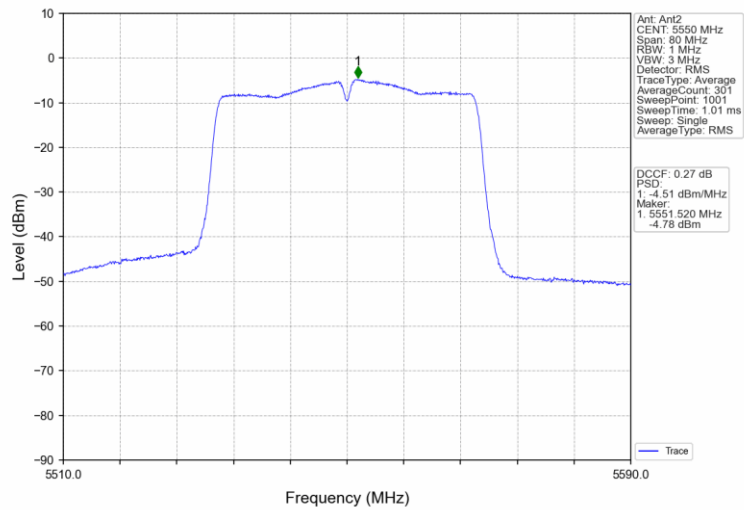
802.11n(HT40) LCH_5510MHz_MIMO_NTNV



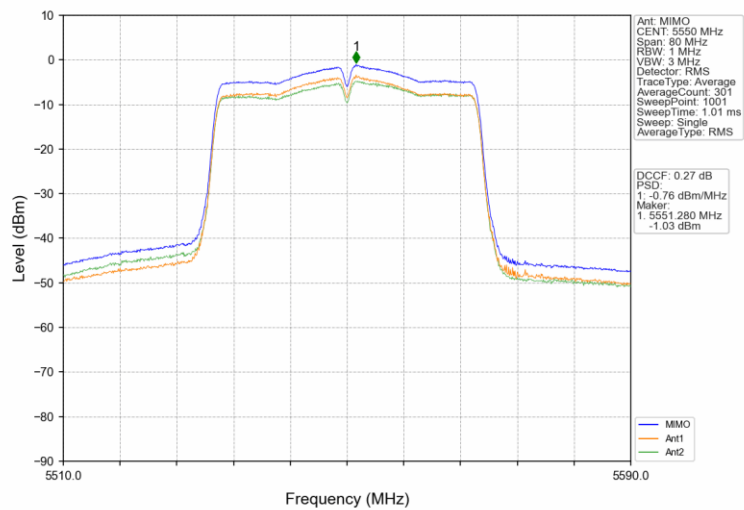
802.11n(HT40) MCH_5550MHz_Ant1_NTNV



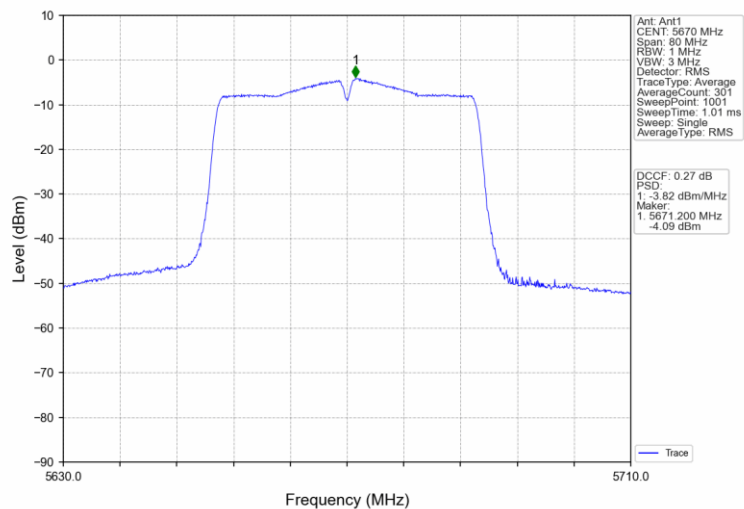
802.11n(HT40) MCH_5550MHz_Ant2_NTNV



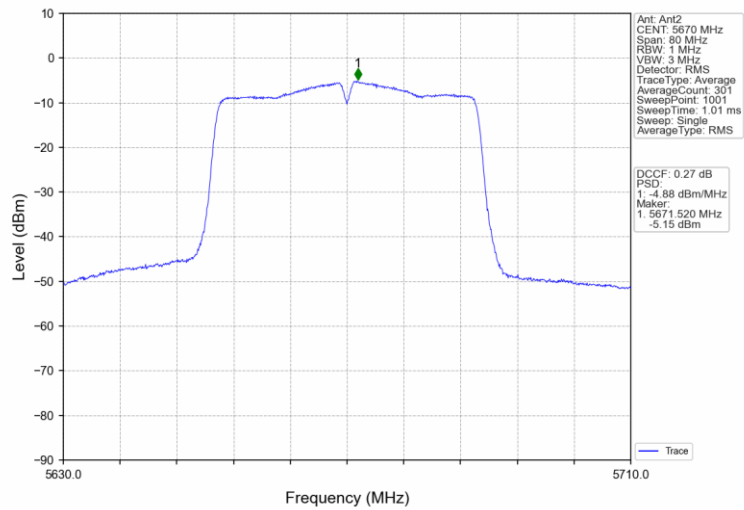
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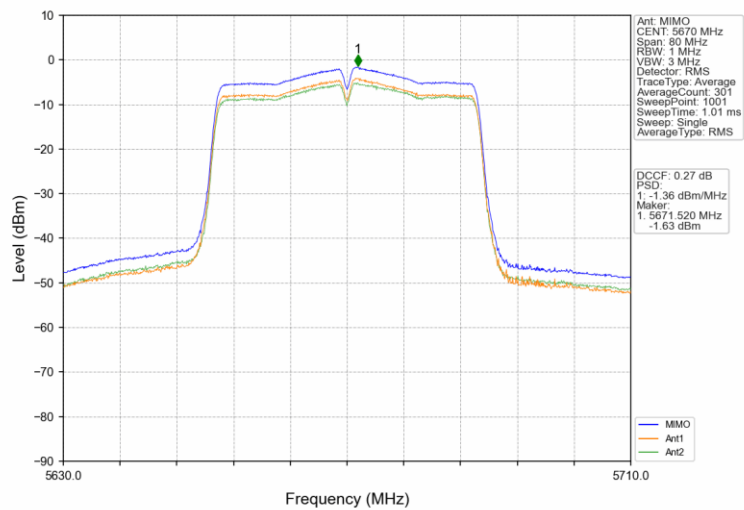
802.11n(HT40)_HCH_5670MHz_Ant1_NTNV



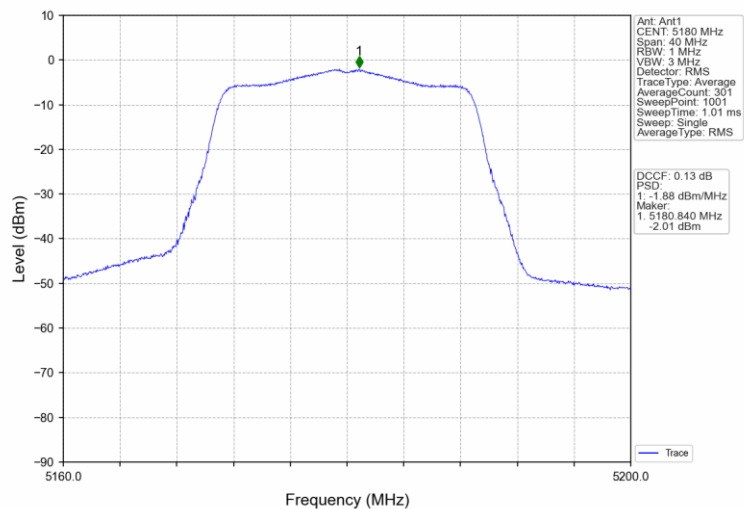
802.11n(HT40)_HCH_5670MHz_Ant2_NTNV



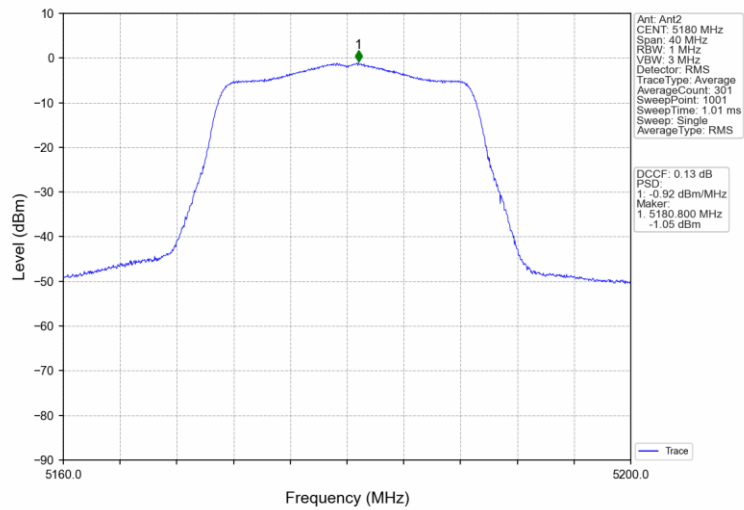
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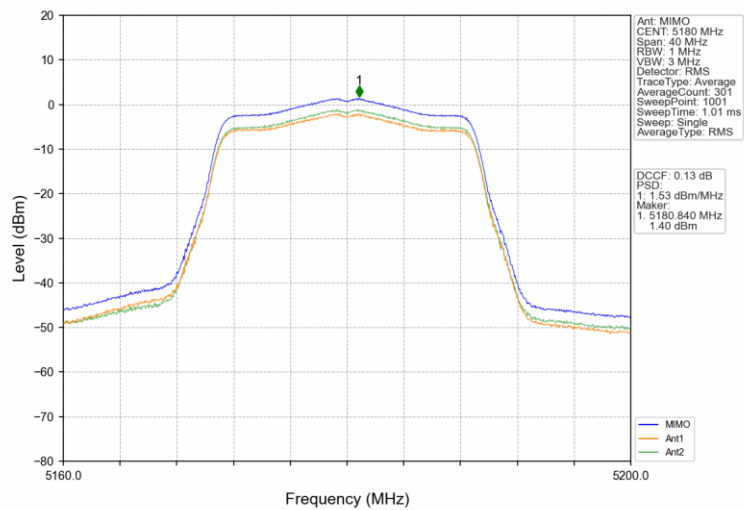
802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



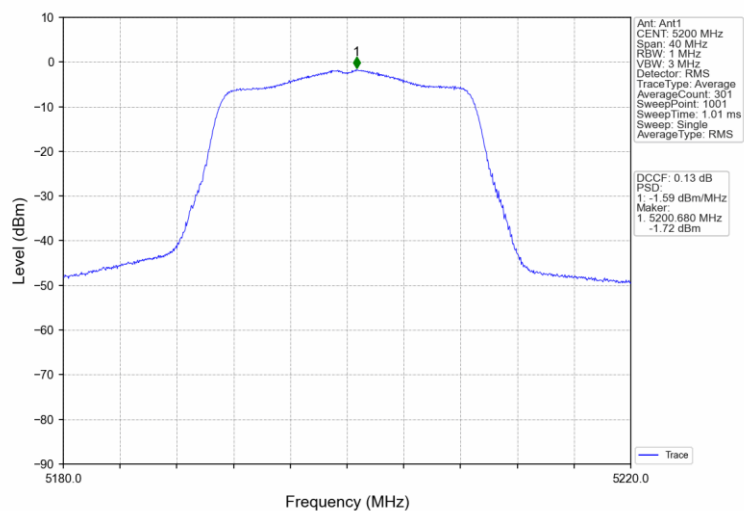
802.11ac(VHT20)_LCH_5180MHz_Ant2_NTNV



802.11ac(VHT20) LCH 5180MHz MIMO NTNv



802.11ac(VHT20) MCH 5200MHz Ant1 NTNv



802.11ac(VHT20) MCH 5200MHz Ant2 NTNv