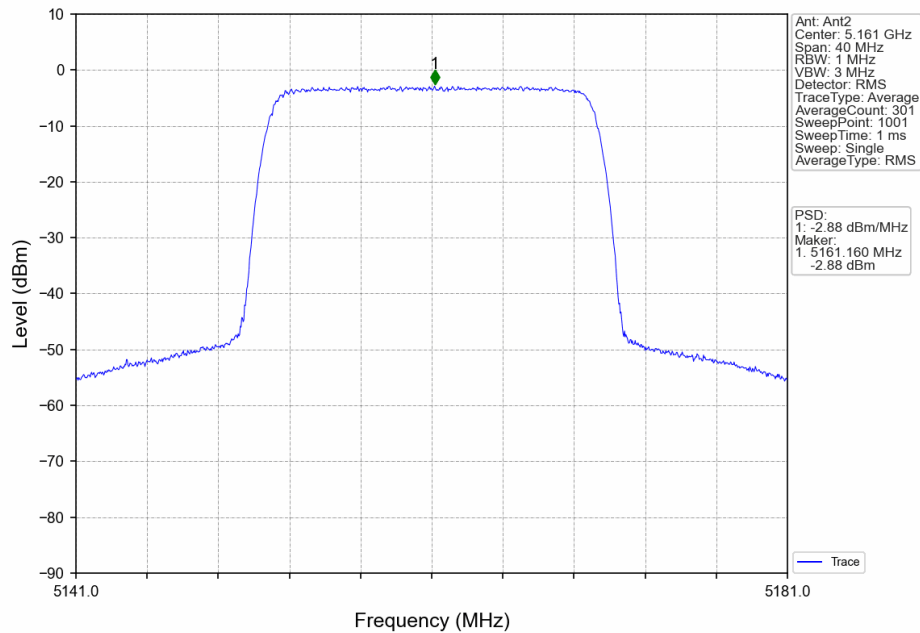
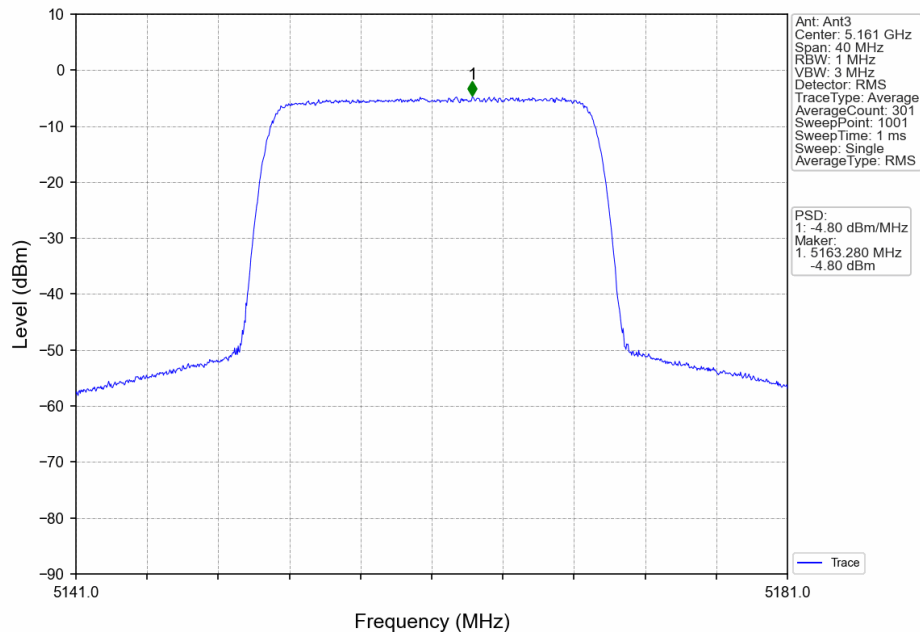


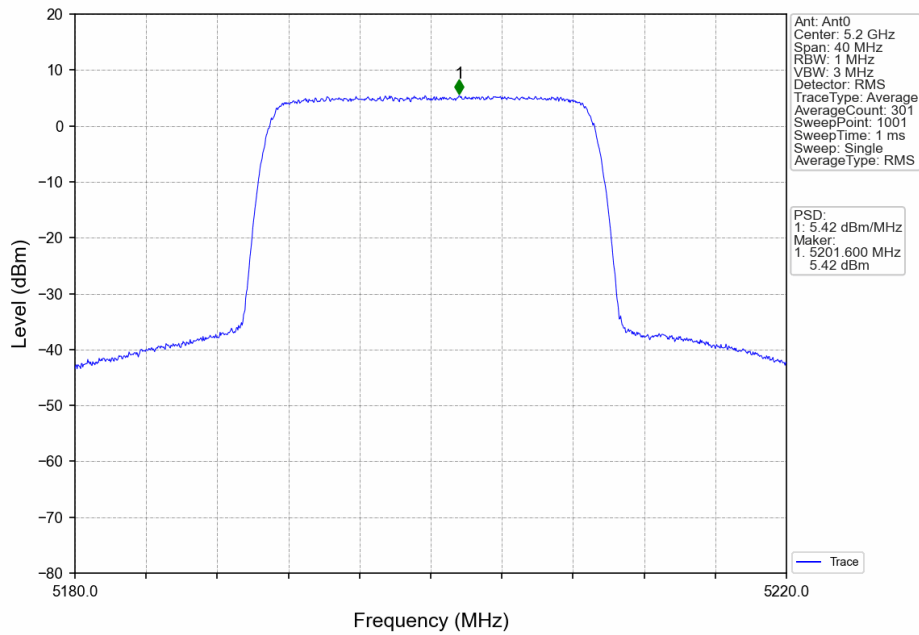
20_LCH_5161MHz_Ant2_NTNV



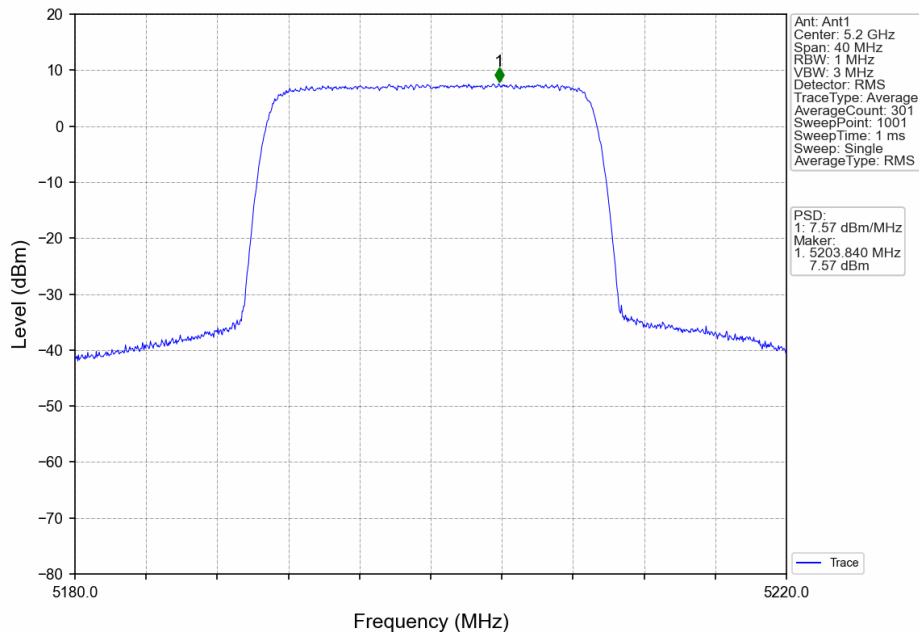
20_LCH_5161MHz_Ant3_NTNV



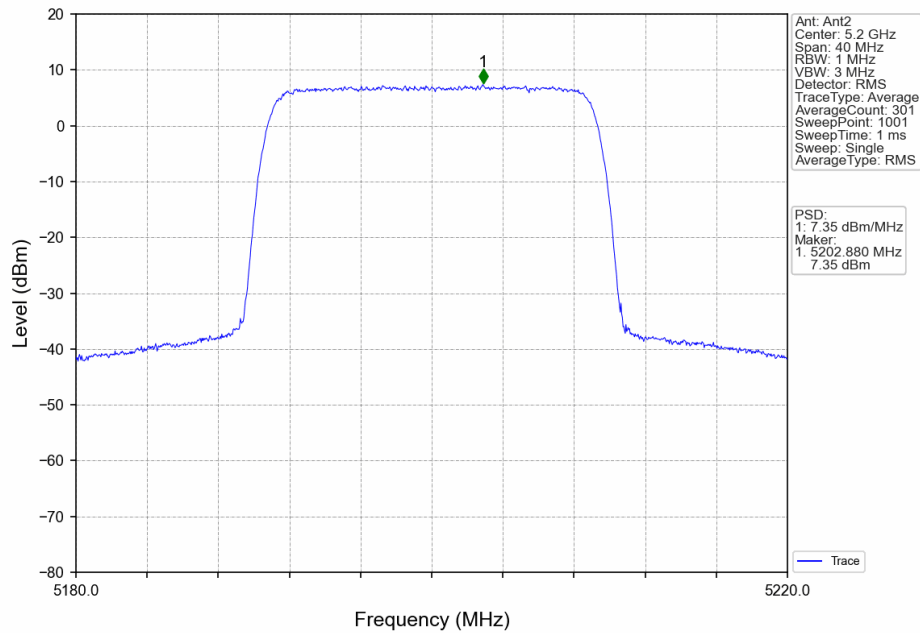
20_MCH_5200MHz_Ant0_NTNV



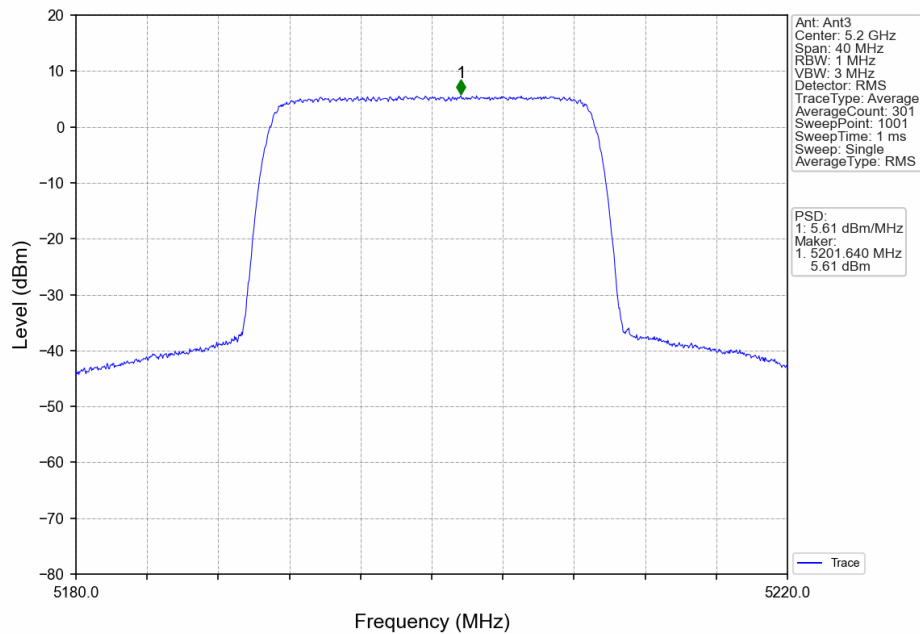
20_MCH_5200MHz_Ant1_NTNV



20_MCH_5200MHz_Ant2_NTNV



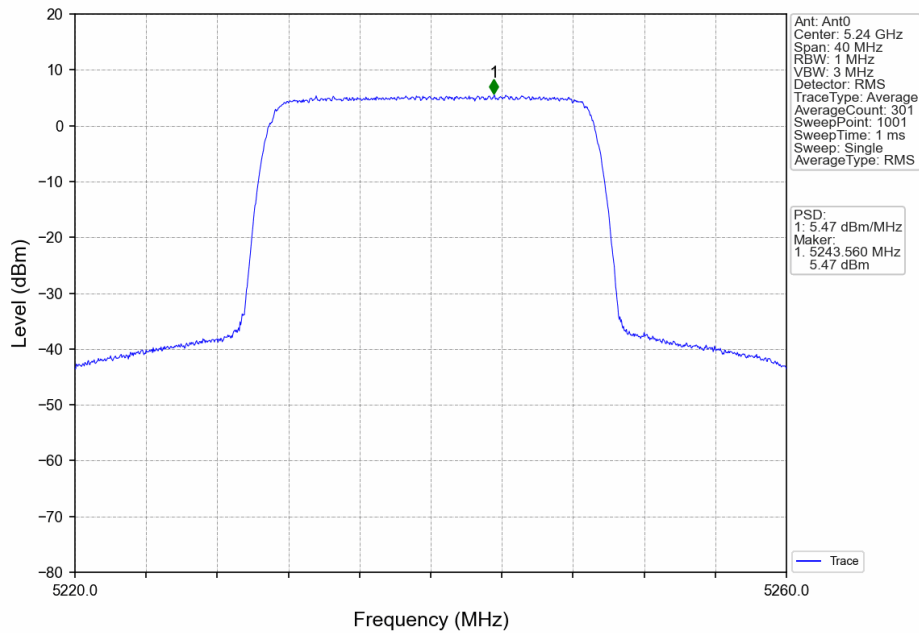
20_MCH_5200MHz_Ant3_NTNV



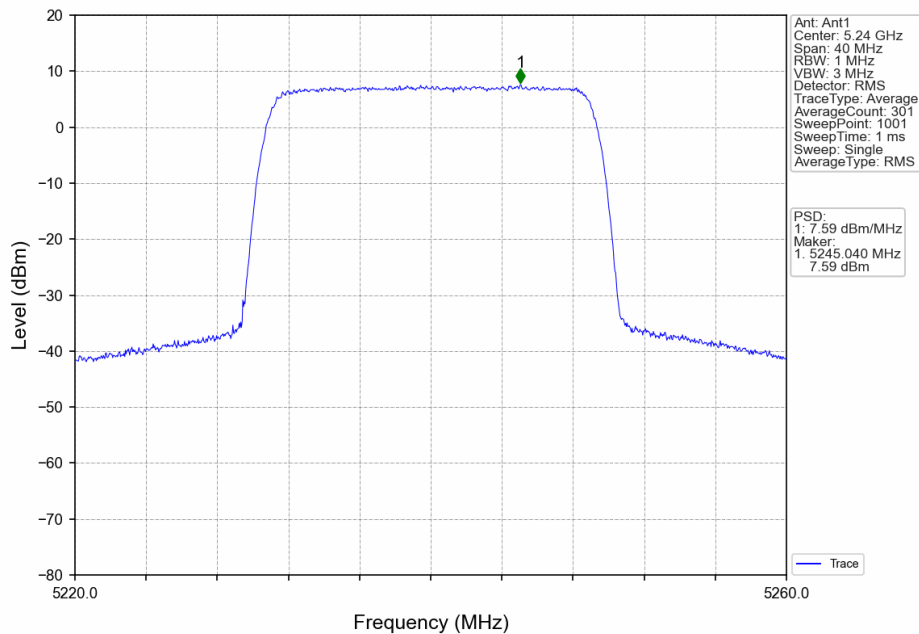
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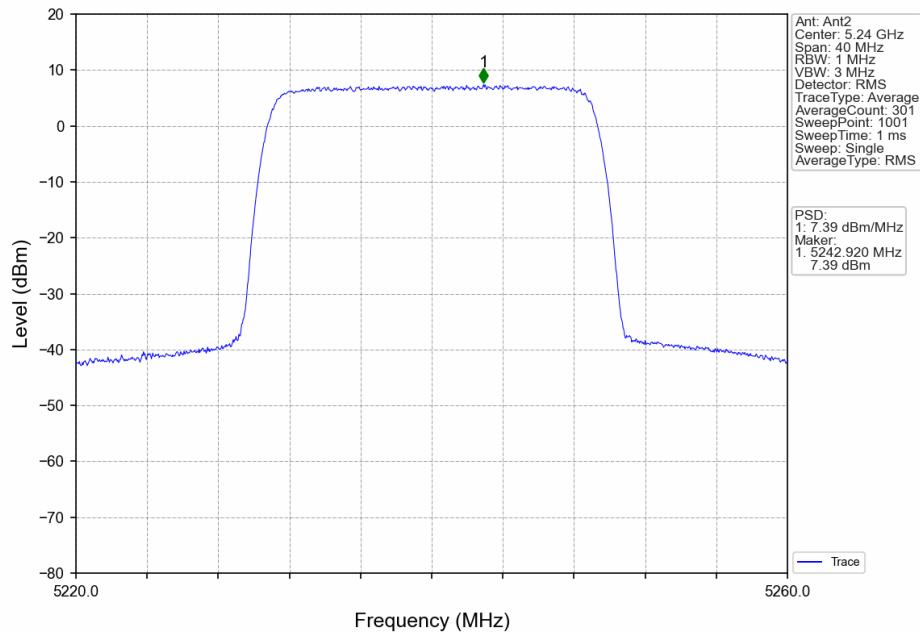
20_HCH_5240MHz_Ant0_NTNV



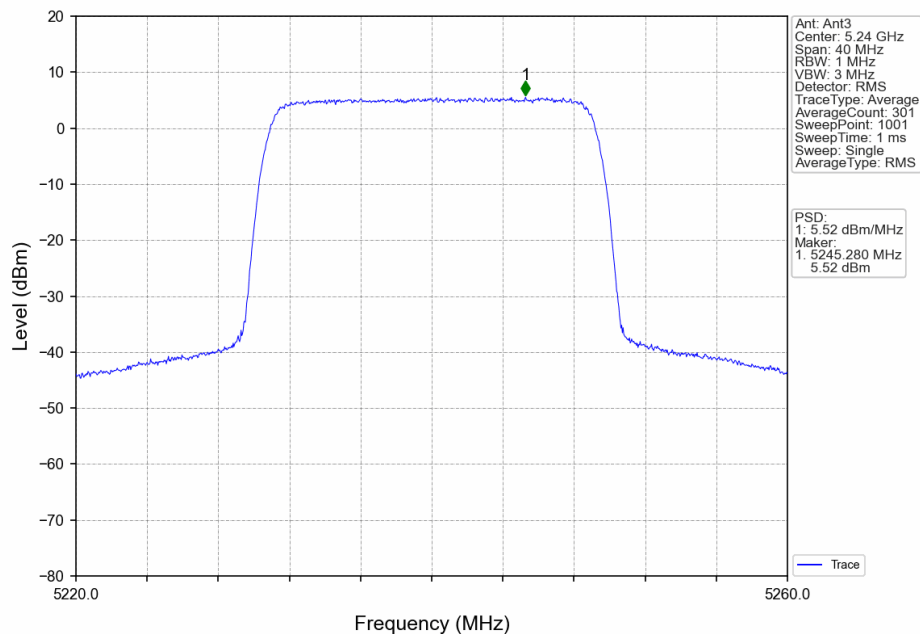
20_HCH_5240MHz_Ant1_NTNV



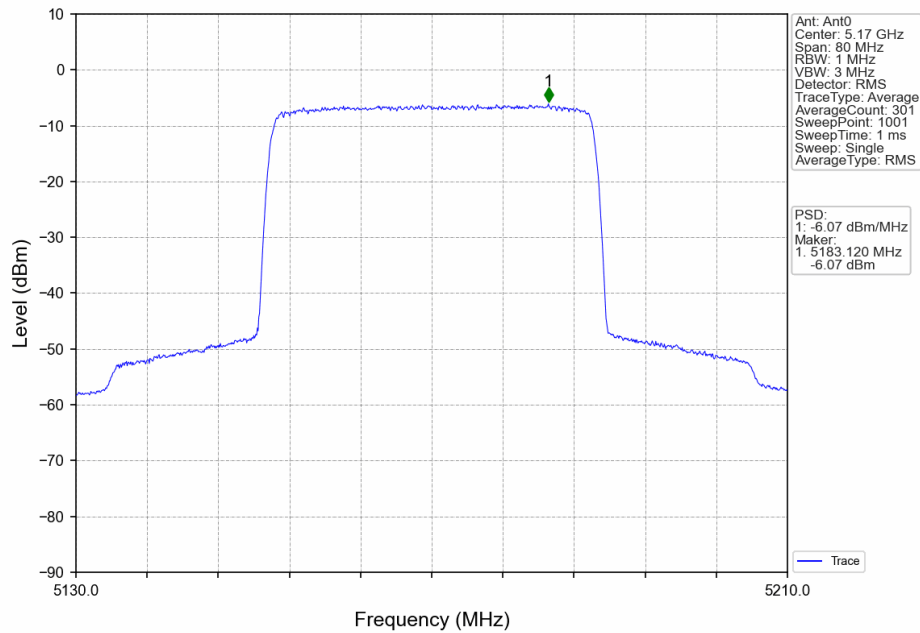
20_HCH_5240MHz_Ant2_NTNV



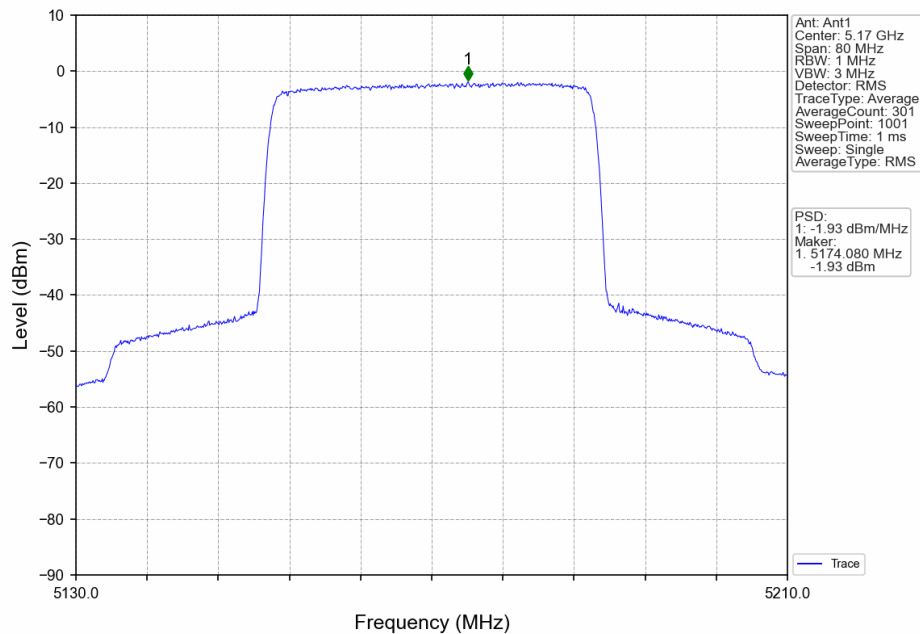
20_HCH_5240MHz_Ant3_NTNV



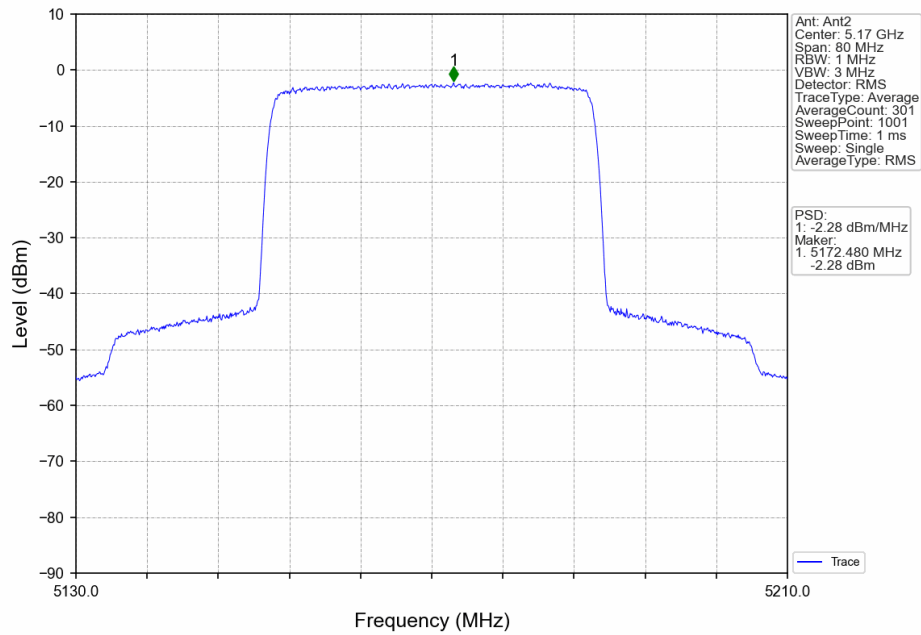
40_LCH_5170MHz_Ant0_NTNV



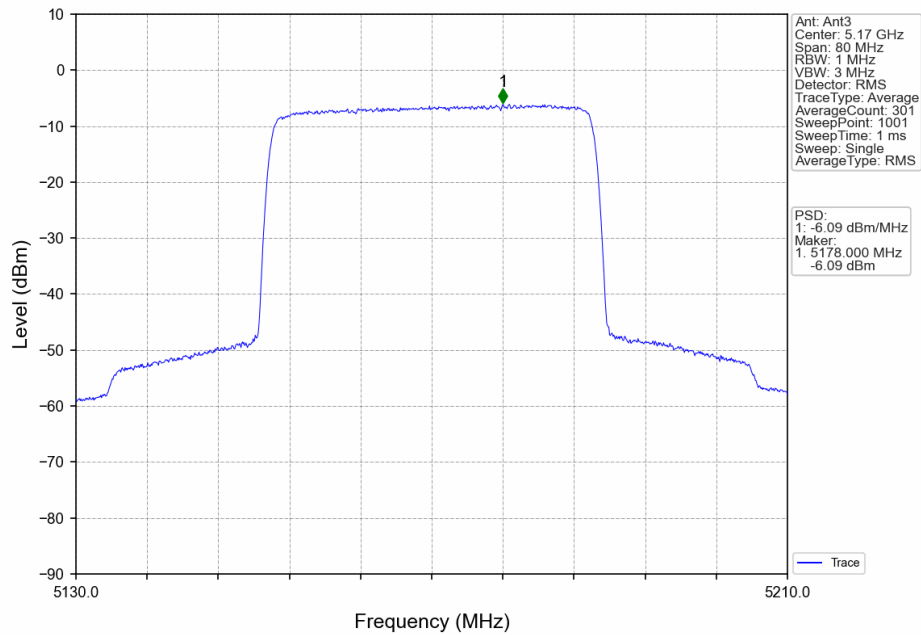
40_LCH_5170MHz_Ant1_NTNV



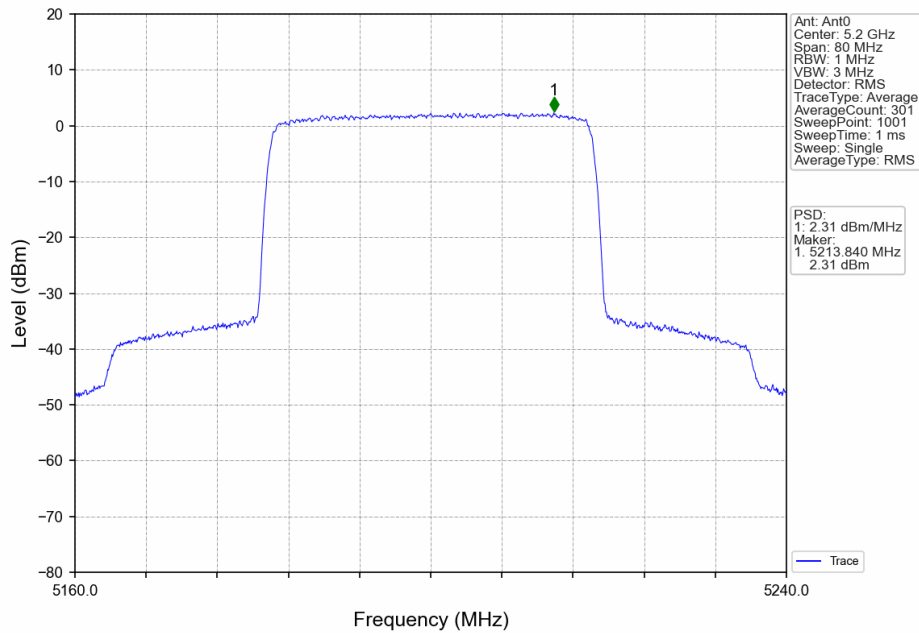
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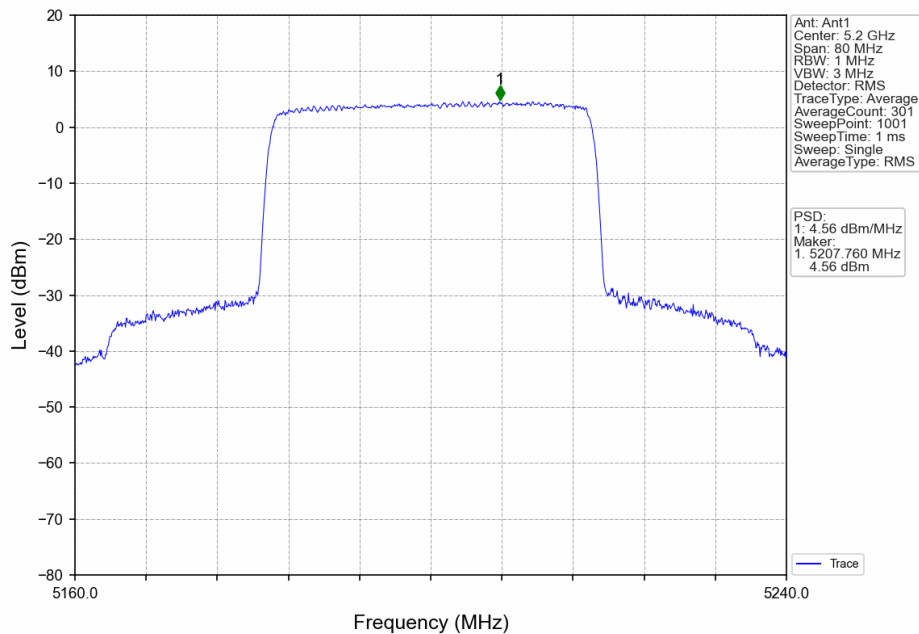
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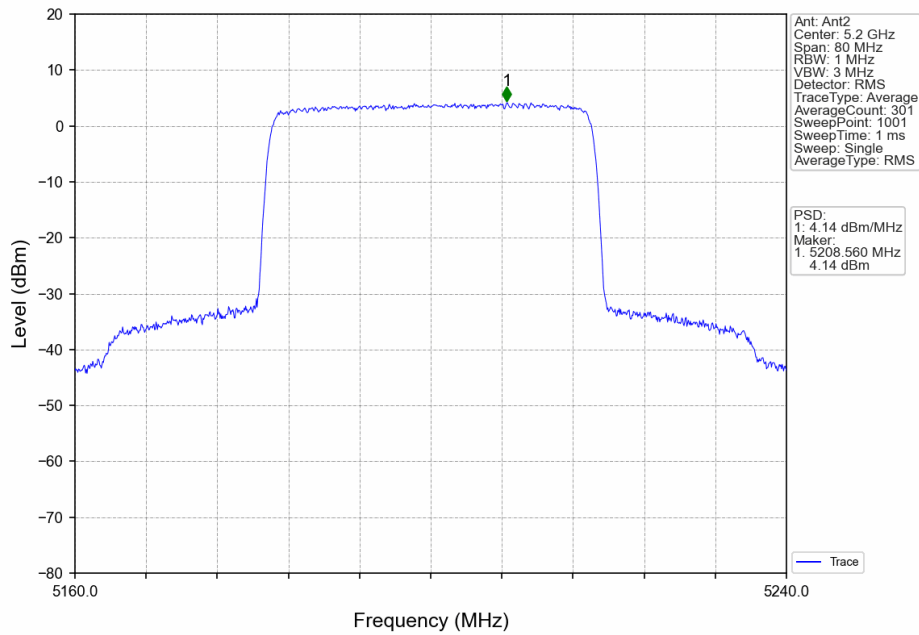
40_MCH_5200MHz_Ant0_NTNV



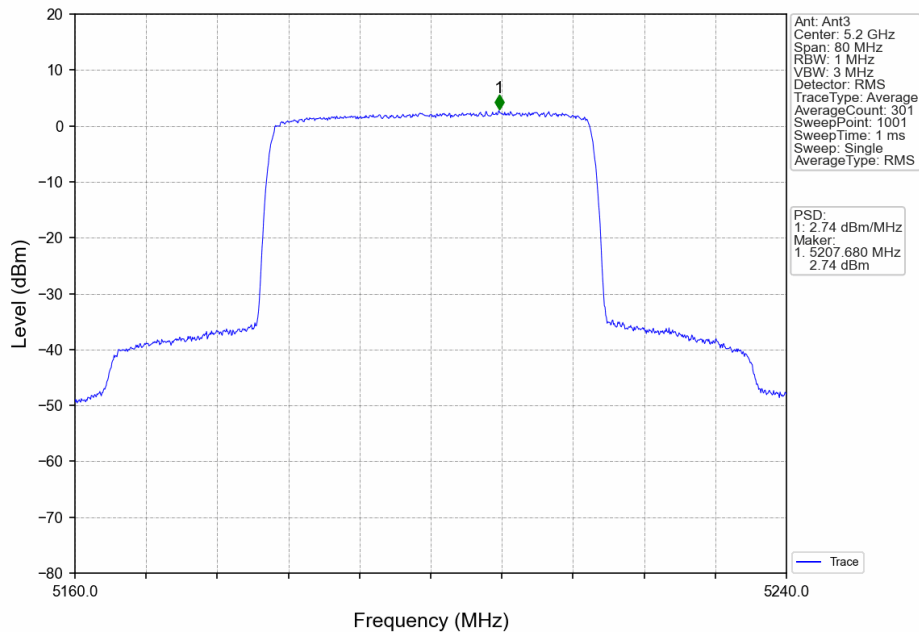
40_MCH_5200MHz_Ant1_NTNV



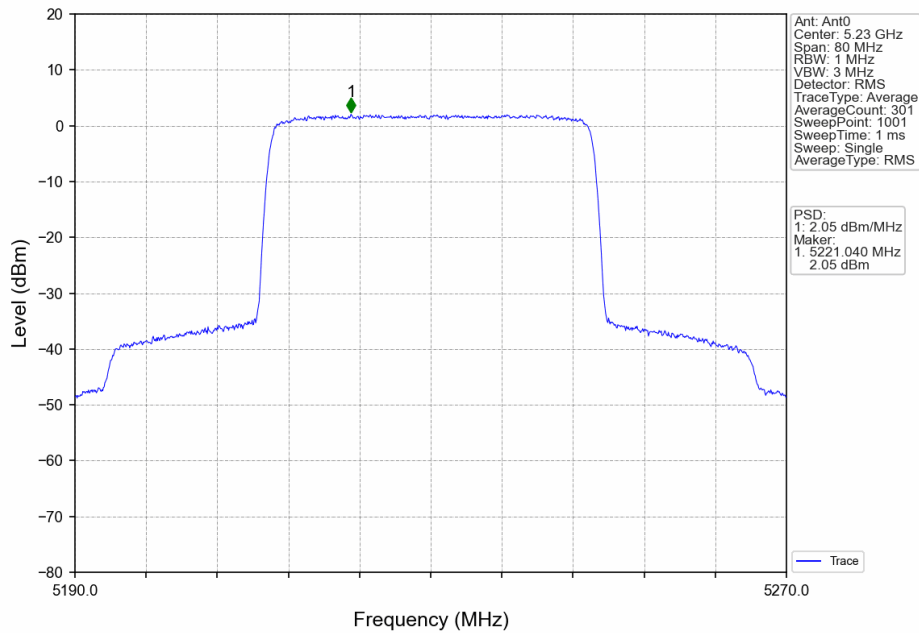
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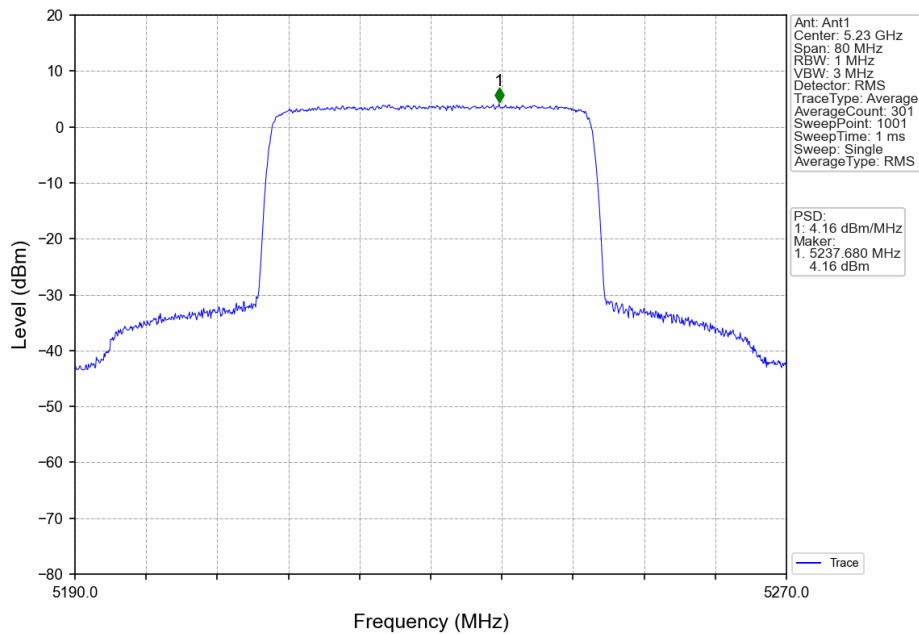
40_MCH_5200MHz_Ant3_NTNV



40_HCH_5230MHz_Ant0_NTNV



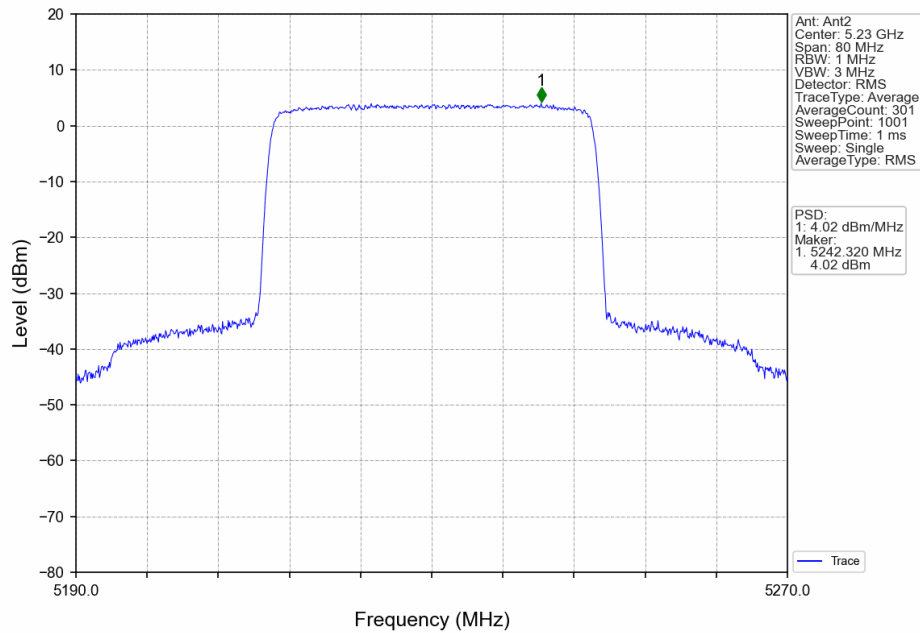
40_HCH_5230MHz_Ant1_NTNV



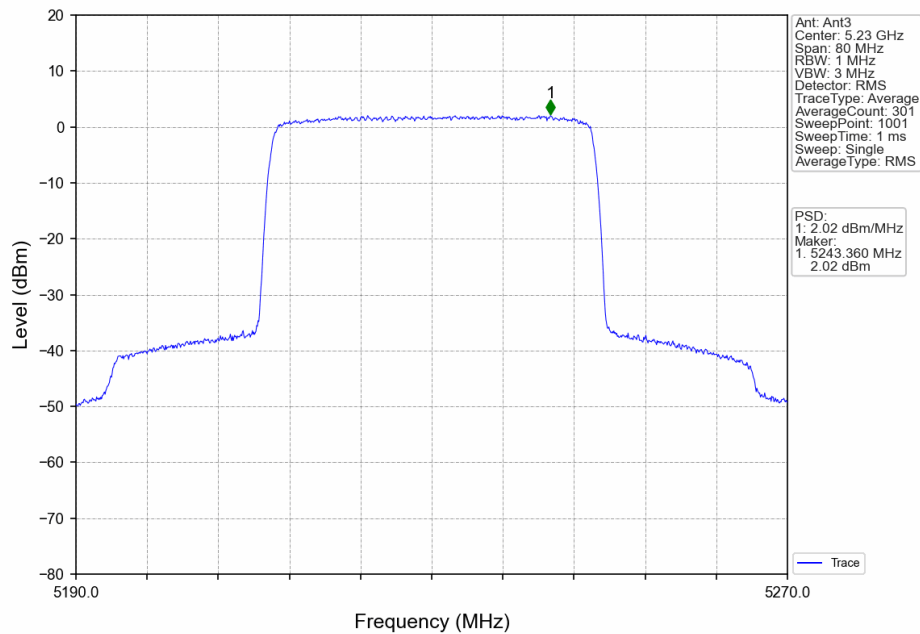
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40_HCH_5230MHz_Ant2_NTNV



40_HCH_5230MHz_Ant3_NTNV



5. Frequency Stability

5.1 Ant0

5.1.1 Test Result

Ant0							
Mode	Tx Type	Frequency (MHz)	Temperature (°C)	Voltage (VDC)	Measured Frequency (MHz)	Limit (MHz)	Verdict
10	SISO	5157	20	13.09	5157.010	5150 to 5250	Pass
				15.40	5157.070	5150 to 5250	Pass
				17.71	5157.000	5150 to 5250	Pass
			-30	15.40	5157.020	5150 to 5250	Pass
				15.40	5157.020	5150 to 5250	Pass
				15.40	5157.060	5150 to 5250	Pass
			0	15.40	5157.080	5150 to 5250	Pass
				15.40	5157.040	5150 to 5250	Pass
				15.40	5157.080	5150 to 5250	Pass
			40	15.40	5157.040	5150 to 5250	Pass
				15.40	5157.040	5150 to 5250	Pass
				15.40	5157.040	5150 to 5250	Pass
		5200	20	13.09	5200.020	5150 to 5250	Pass
				15.40	5200.080	5150 to 5250	Pass
				17.71	5200.030	5150 to 5250	Pass
			-30	15.40	5200.050	5150 to 5250	Pass
				15.40	5200.060	5150 to 5250	Pass
				15.40	5200.080	5150 to 5250	Pass
			0	15.40	5200.020	5150 to 5250	Pass
				15.40	5200.040	5150 to 5250	Pass
				15.40	5200.040	5150 to 5250	Pass
			40	15.40	5200.050	5150 to 5250	Pass
				15.40	5200.070	5150 to 5250	Pass
				15.40	5200.070	5150 to 5250	Pass
		5245	20	13.09	5245.050	5150 to 5250	Pass
				15.40	5245.020	5150 to 5250	Pass
				17.71	5245.000	5150 to 5250	Pass
			-30	15.40	5245.030	5150 to 5250	Pass
				15.40	5245.030	5150 to 5250	Pass
				15.40	5245.040	5150 to 5250	Pass
			0	15.40	5245.030	5150 to 5250	Pass
				15.40	5245.050	5150 to 5250	Pass
				15.40	5245.000	5150 to 5250	Pass
			40	15.40	5245.070	5150 to 5250	Pass
				15.40	5245.070	5150 to 5250	Pass
				15.40	5245.070	5150 to 5250	Pass



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			50	15.40	5245.030	5150 to 5250	Pass
20	SISO	5161	20	13.09	5161.180	5150 to 5250	Pass
				15.40	5161.000	5150 to 5250	Pass
				17.71	5161.020	5150 to 5250	Pass
			-30	15.40	5161.000	5150 to 5250	Pass
			-20	15.40	5161.000	5150 to 5250	Pass
			-10	15.40	5161.040	5150 to 5250	Pass
			0	15.40	5161.100	5150 to 5250	Pass
			10	15.40	5161.060	5150 to 5250	Pass
			30	15.40	5161.100	5150 to 5250	Pass
			40	15.40	5161.140	5150 to 5250	Pass
		5200	50	15.40	5161.040	5150 to 5250	Pass
			20	13.09	5200.120	5150 to 5250	Pass
				15.40	5200.100	5150 to 5250	Pass
				17.71	5200.080	5150 to 5250	Pass
			-30	15.40	5200.000	5150 to 5250	Pass
			-20	15.40	5200.120	5150 to 5250	Pass
			-10	15.40	5200.060	5150 to 5250	Pass
			0	15.40	5200.100	5150 to 5250	Pass
			10	15.40	5200.020	5150 to 5250	Pass
			30	15.40	5200.060	5150 to 5250	Pass
			40	15.40	5200.040	5150 to 5250	Pass
			50	15.40	5200.060	5150 to 5250	Pass
		5240	20	13.09	5240.040	5150 to 5250	Pass
				15.40	5240.080	5150 to 5250	Pass
				17.71	5240.040	5150 to 5250	Pass
			-30	15.40	5240.040	5150 to 5250	Pass
			-20	15.40	5240.100	5150 to 5250	Pass
			-10	15.40	5240.060	5150 to 5250	Pass
			0	15.40	5240.080	5150 to 5250	Pass
			10	15.40	5240.000	5150 to 5250	Pass
			30	15.40	5240.040	5150 to 5250	Pass
			40	15.40	5240.120	5150 to 5250	Pass
40	SISO	5170	50	15.40	5240.040	5150 to 5250	Pass
			20	13.09	5170.080	5150 to 5250	Pass
				15.40	5170.040	5150 to 5250	Pass
				17.71	5170.200	5150 to 5250	Pass
			-30	15.40	5170.360	5150 to 5250	Pass
			-20	15.40	5170.040	5150 to 5250	Pass
			-10	15.40	5170.120	5150 to 5250	Pass
			0	15.40	5170.120	5150 to 5250	Pass
			10	15.40	5170.080	5150 to 5250	Pass



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			30	15.40	5170.160	5150 to 5250	Pass
			40	15.40	5170.080	5150 to 5250	Pass
			50	15.40	5170.320	5150 to 5250	Pass
		5200	20	13.09	5200.320	5150 to 5250	Pass
				15.40	5200.240	5150 to 5250	Pass
				17.71	5200.640	5150 to 5250	Pass
			-30	15.40	5200.280	5150 to 5250	Pass
			-20	15.40	5200.120	5150 to 5250	Pass
			-10	15.40	5200.120	5150 to 5250	Pass
			0	15.40	5200.120	5150 to 5250	Pass
			10	15.40	5200.040	5150 to 5250	Pass
			30	15.40	5200.200	5150 to 5250	Pass
			40	15.40	5199.920	5150 to 5250	Pass
			50	15.40	5200.200	5150 to 5250	Pass
		5230	20	13.09	5230.120	5150 to 5250	Pass
				15.40	5230.040	5150 to 5250	Pass
				17.71	5230.160	5150 to 5250	Pass
			-30	15.40	5230.160	5150 to 5250	Pass
			-20	15.40	5230.080	5150 to 5250	Pass
			-10	15.40	5230.080	5150 to 5250	Pass
			0	15.40	5230.280	5150 to 5250	Pass
			10	15.40	5230.000	5150 to 5250	Pass
			30	15.40	5230.080	5150 to 5250	Pass
			40	15.40	5230.440	5150 to 5250	Pass
			50	15.40	5230.240	5150 to 5250	Pass

MIMO mode Antenna0+Antenna3

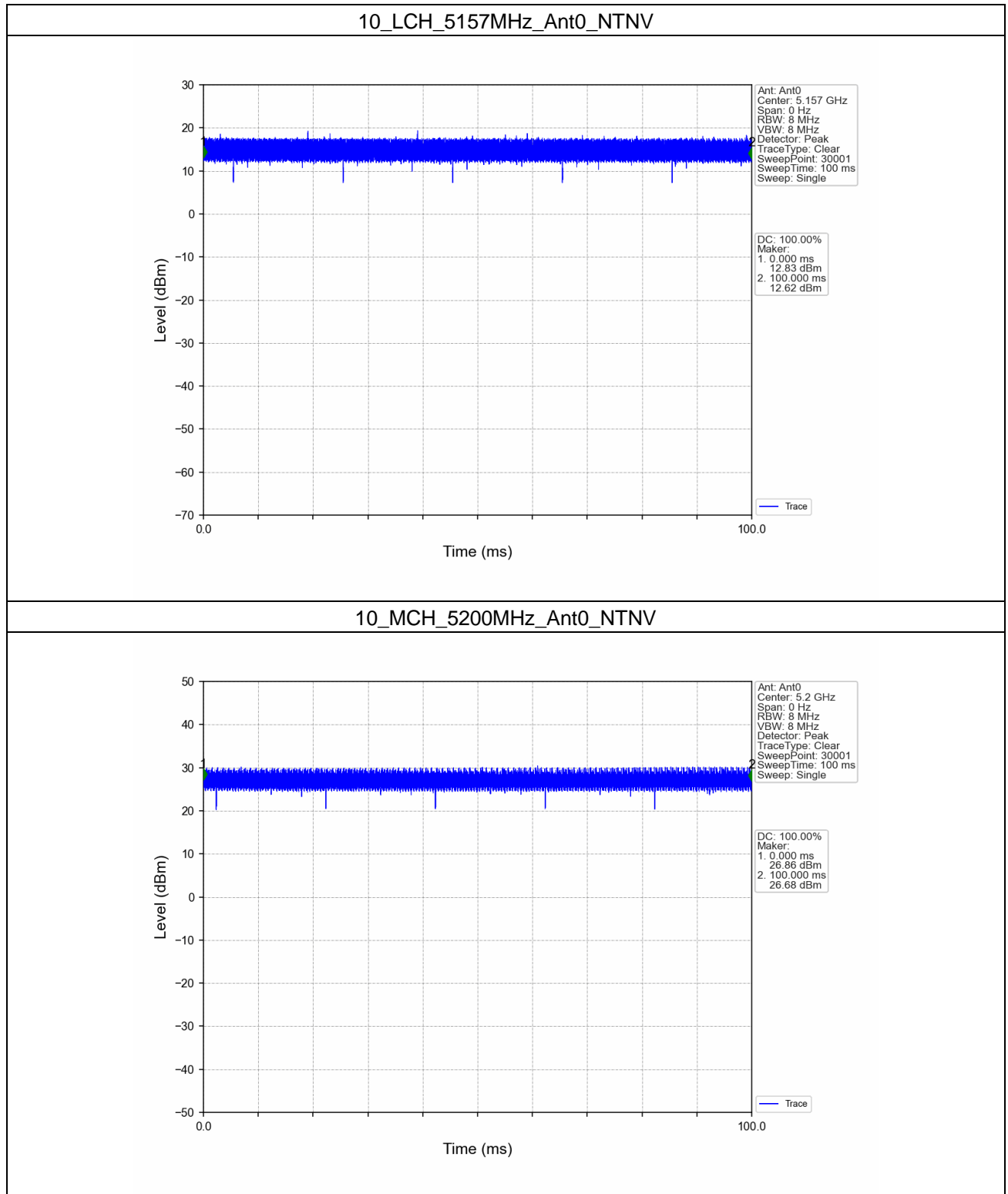
1. Duty Cycle

1.1 Ant0

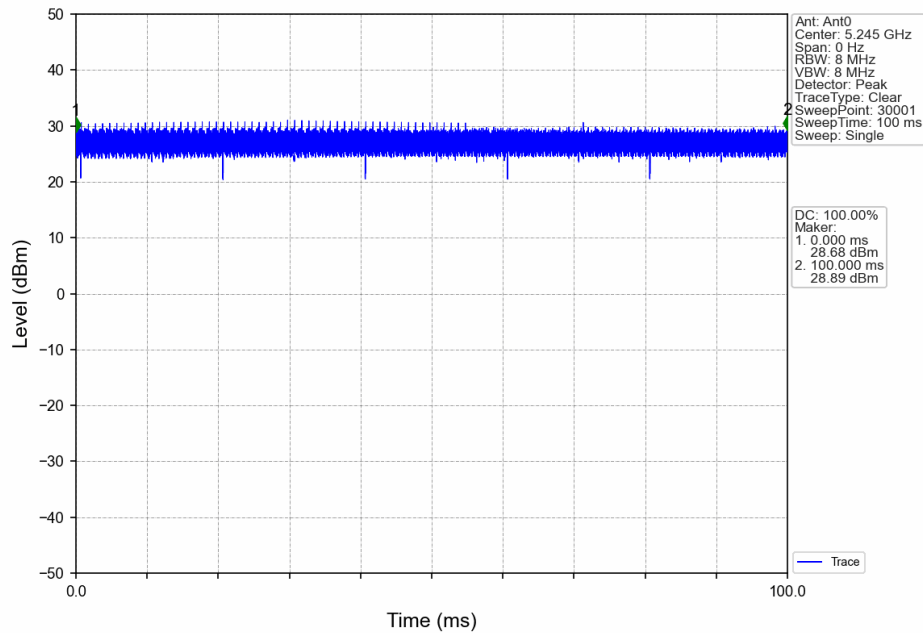
1.1.1 Test Result

Ant0							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
10	MIMO	5157	100.000	100.000	100.00	0.00	0.00
		5200	100.000	100.000	100.00	0.00	0.00
		5245	100.000	100.000	100.00	0.00	0.00
20	MIMO	5161	9.920	10.007	99.13	0.04	0.13
		5200	19.917	20.000	99.59	0.02	0.00
		5240	19.910	20.000	99.55	0.02	0.02
40	MIMO	5170	19.933	20.000	99.67	0.01	0.00
		5200	9.960	10.027	99.33	0.03	0.53
		5230	19.936	20.000	99.68	0.01	0.00

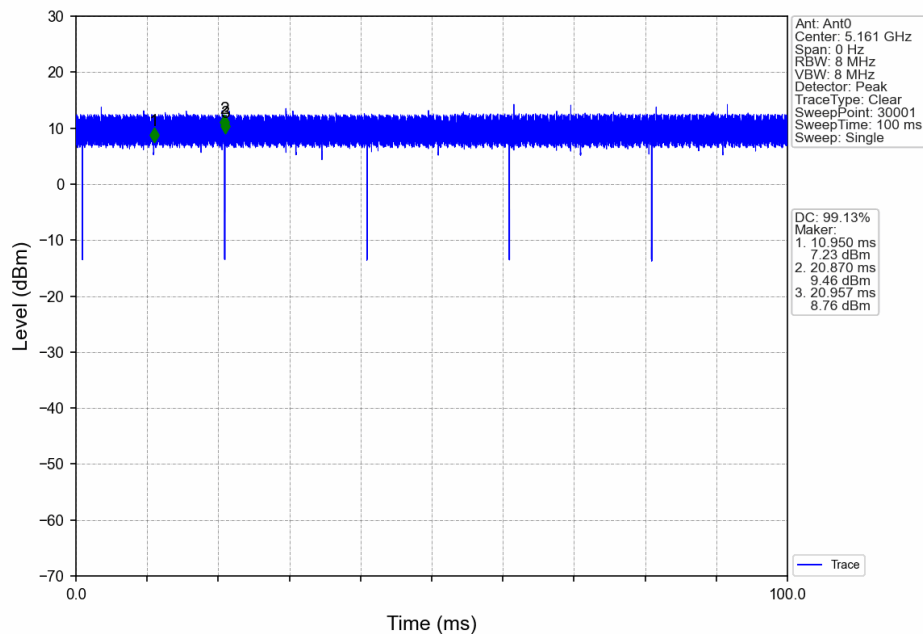
1.1.2 Test Graph



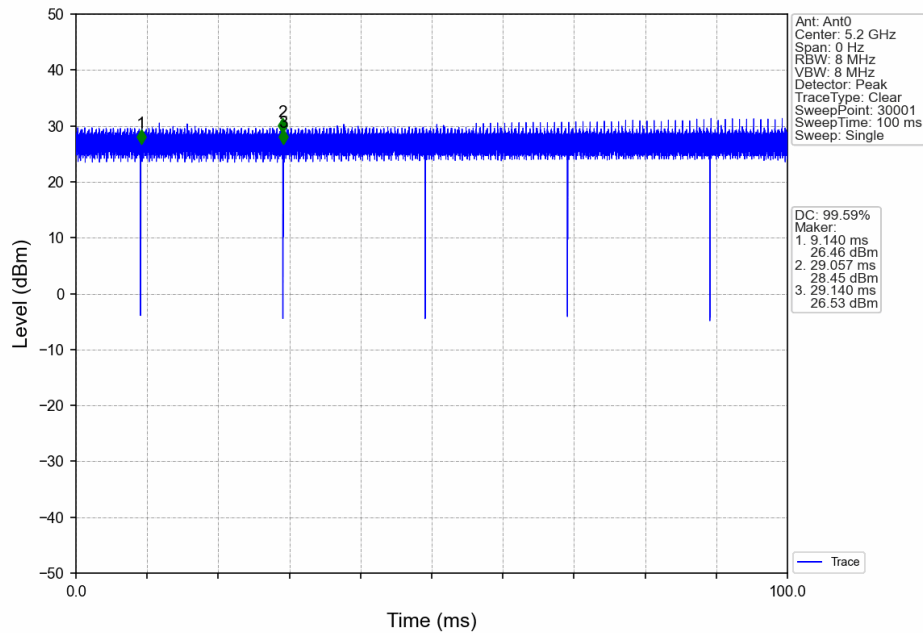
10_HCH_5245MHz_Ant0_NTNV



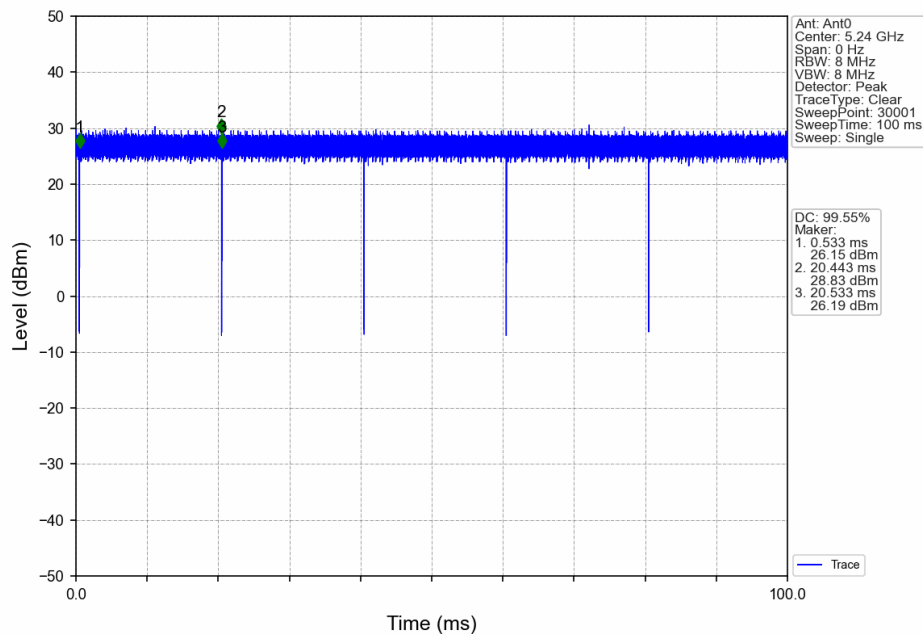
20_LCH_5161MHz_Ant0_NTNV



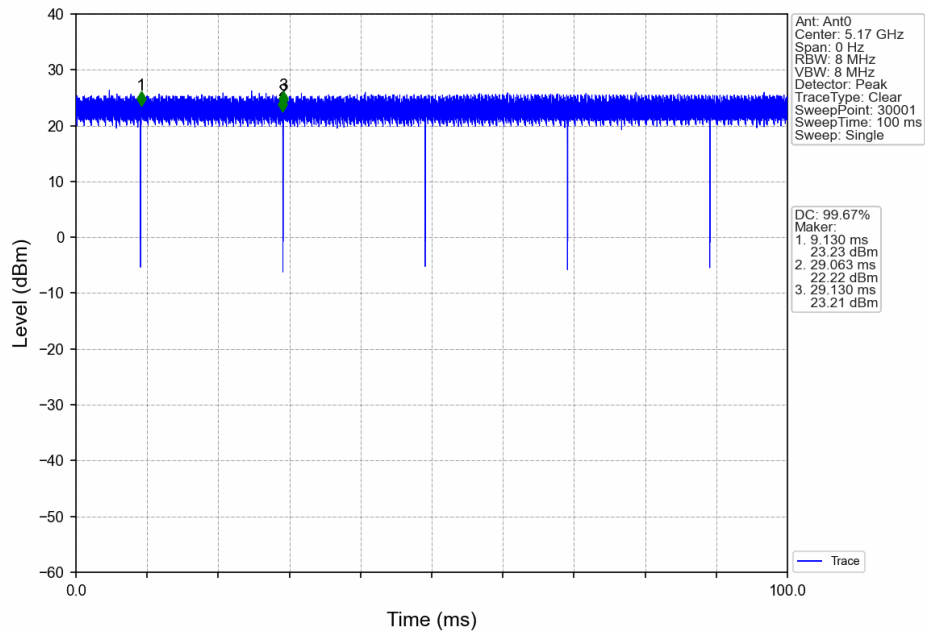
20_MCH_5200MHz_Ant0_NTNV



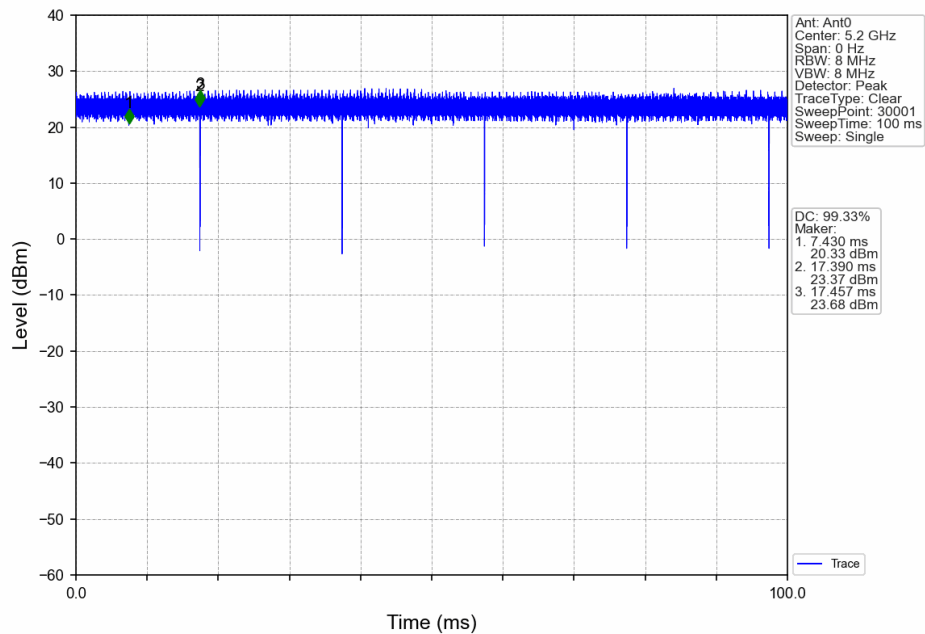
20_HCH_5240MHz_Ant0_NTNV

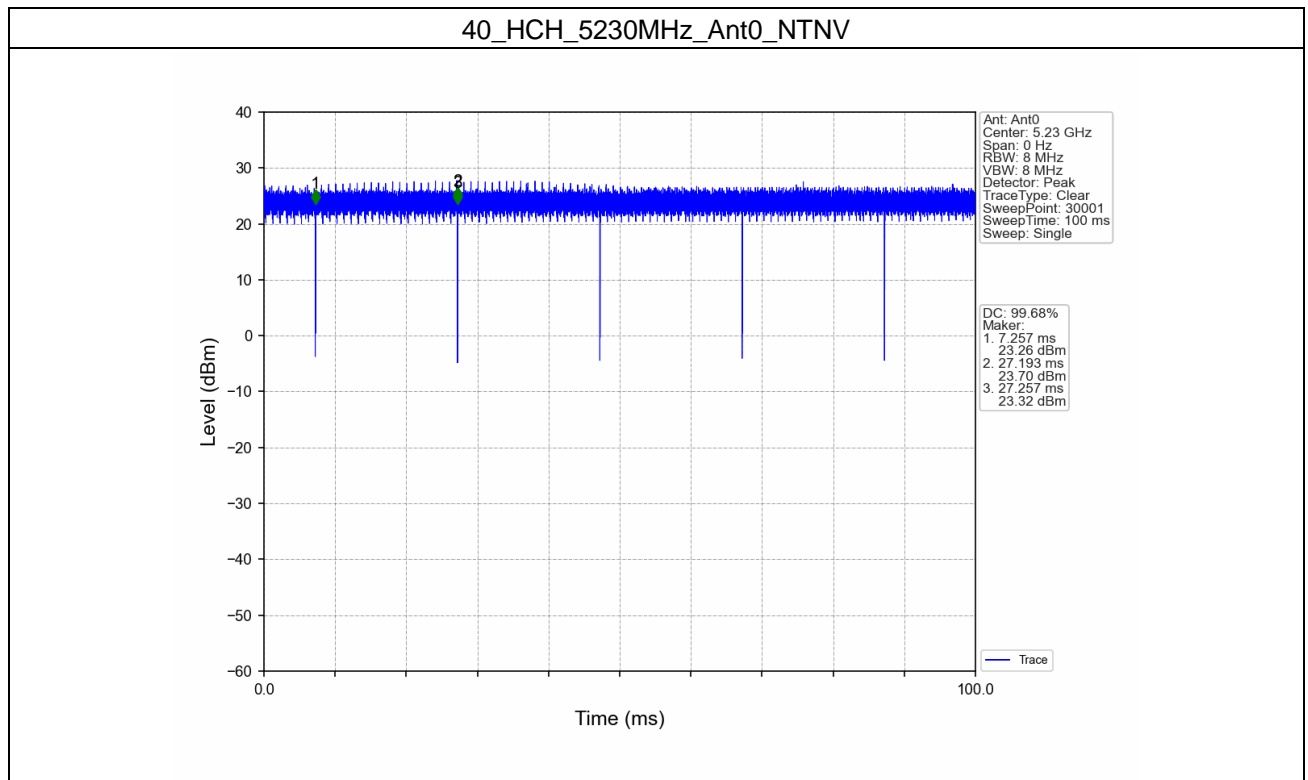


40_LCH_5170MHz_Ant0_NTNV



40_MCH_5200MHz_Ant0_NTNV





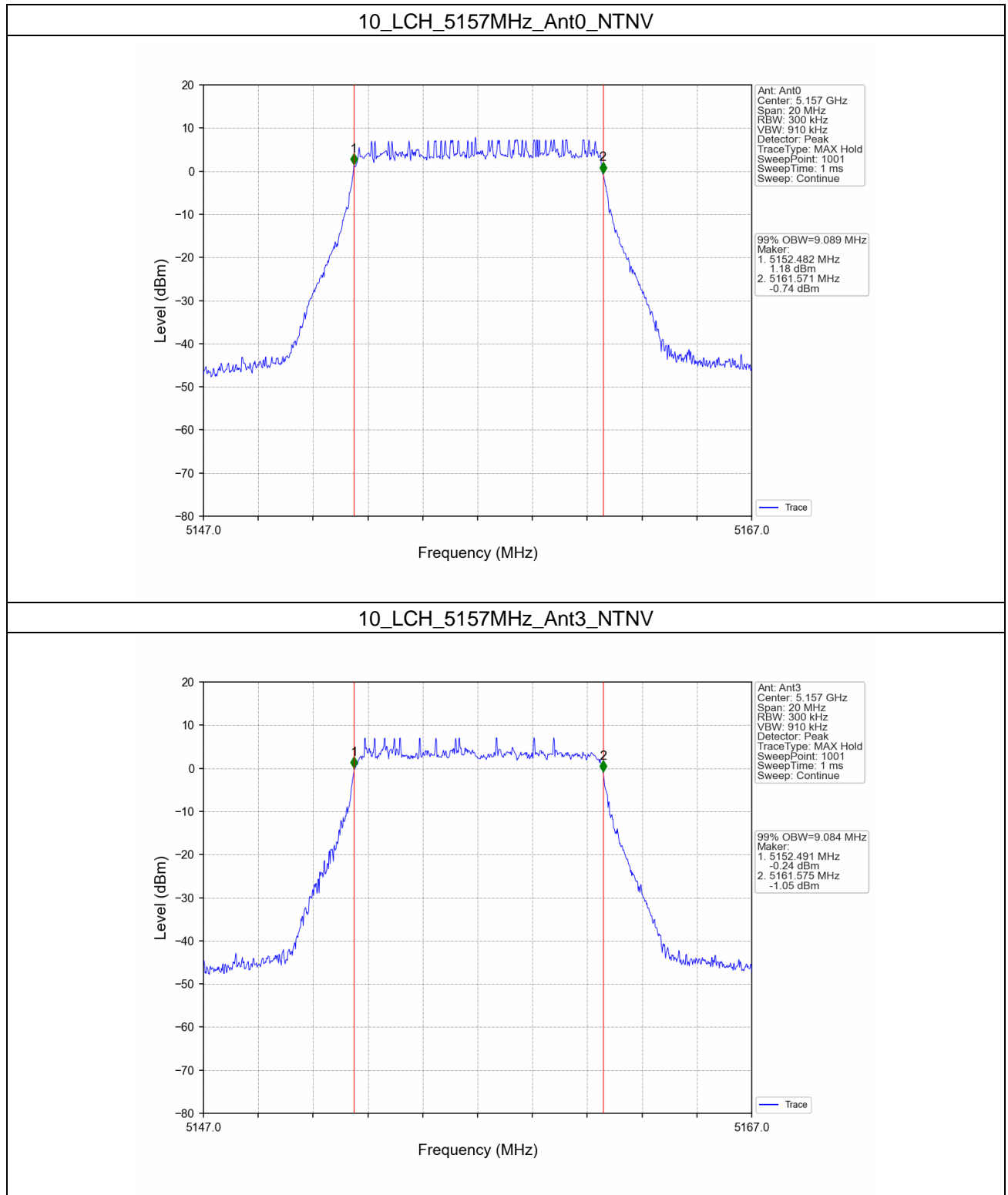
2. Bandwidth

2.1 OBW

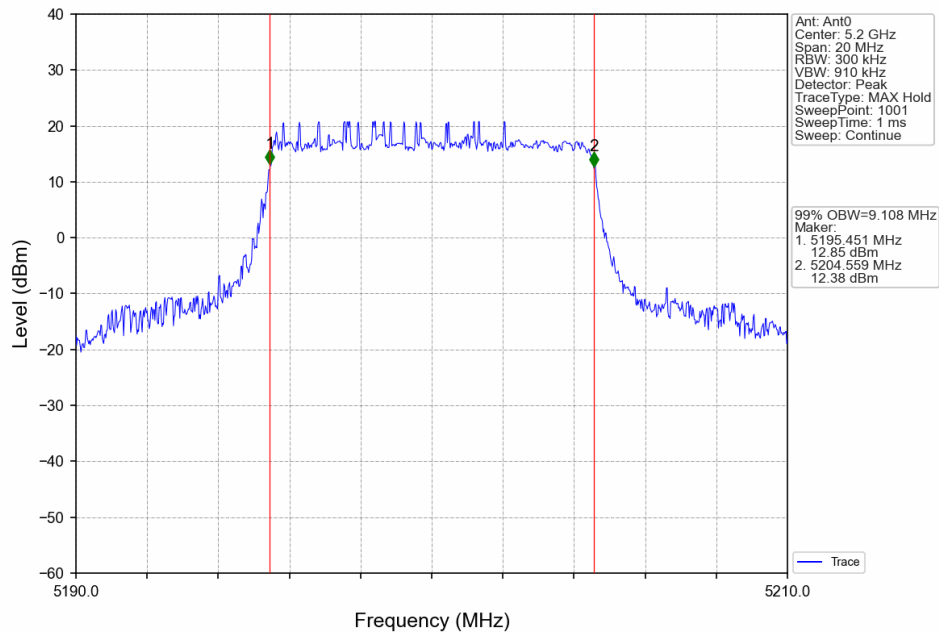
2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)	Verdict
				Result	
10	MIMO	5157	0	9.089	Pass
			3	9.084	Pass
		5200	0	9.108	Pass
			3	9.067	Pass
		5245	0	9.035	Pass
			3	9.010	Pass
20	MIMO	5161	0	17.941	Pass
			3	18.040	Pass
		5200	0	18.282	Pass
			3	18.014	Pass
		5240	0	18.260	Pass
			3	18.164	Pass
40	MIMO	5170	0	39.373	Pass
			3	38.776	Pass
		5200	0	41.306	Pass
			3	38.542	Pass
		5230	0	46.829	Pass
			3	45.377	Pass

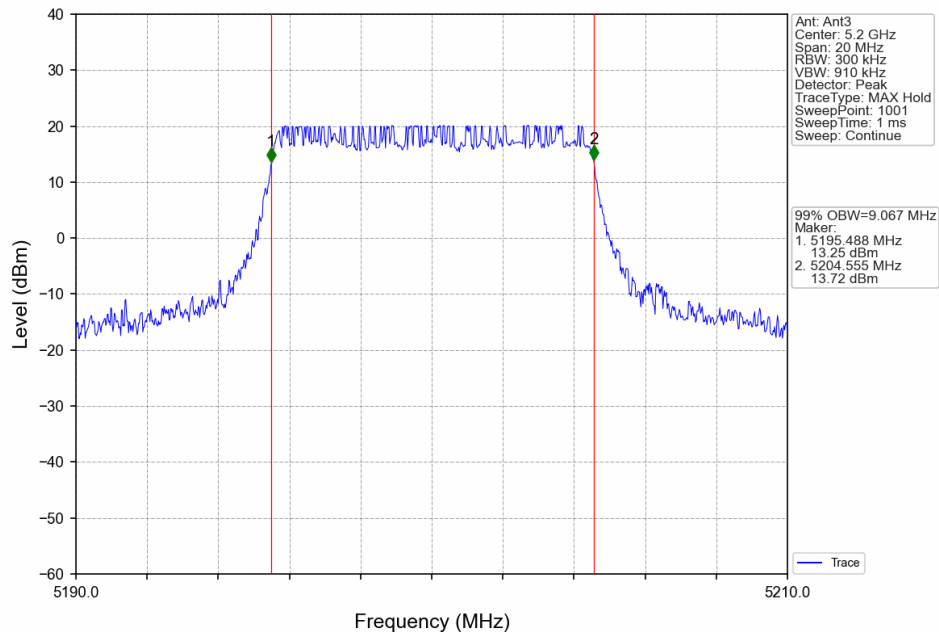
2.1.2 Test Graph



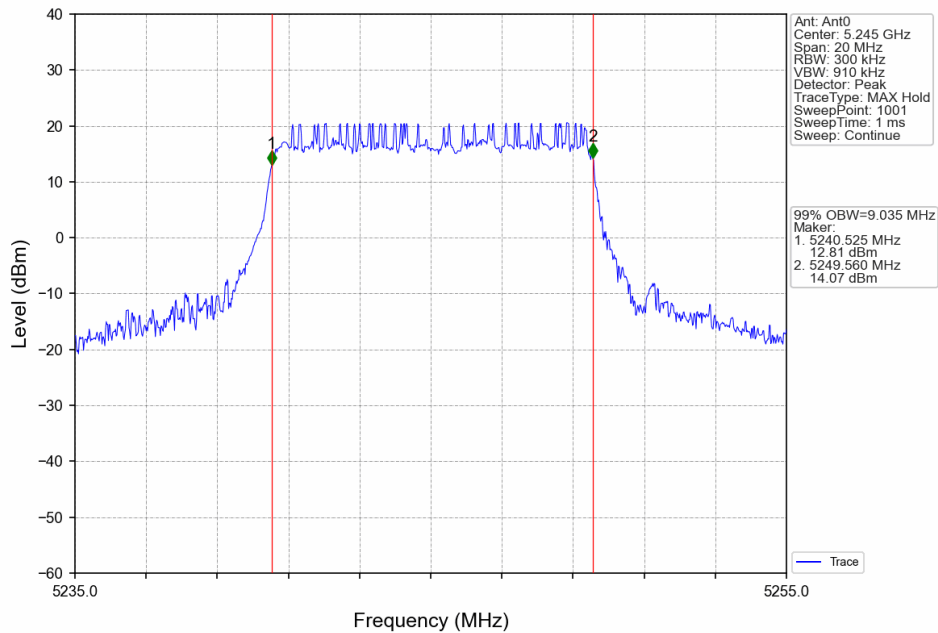
10_MCH_5200MHz_Ant0_NTNV



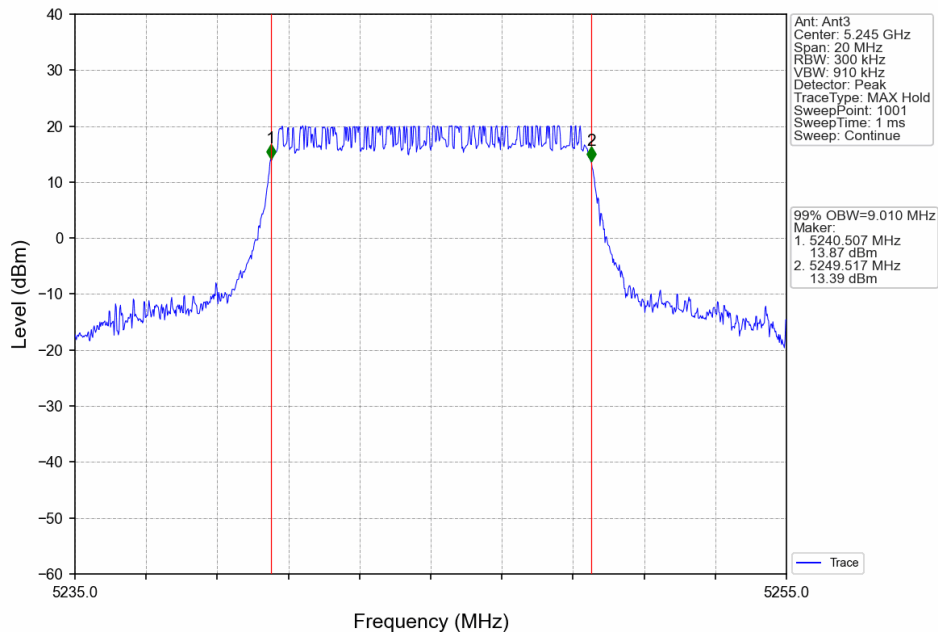
10_MCH_5200MHz_Ant3_NTNV



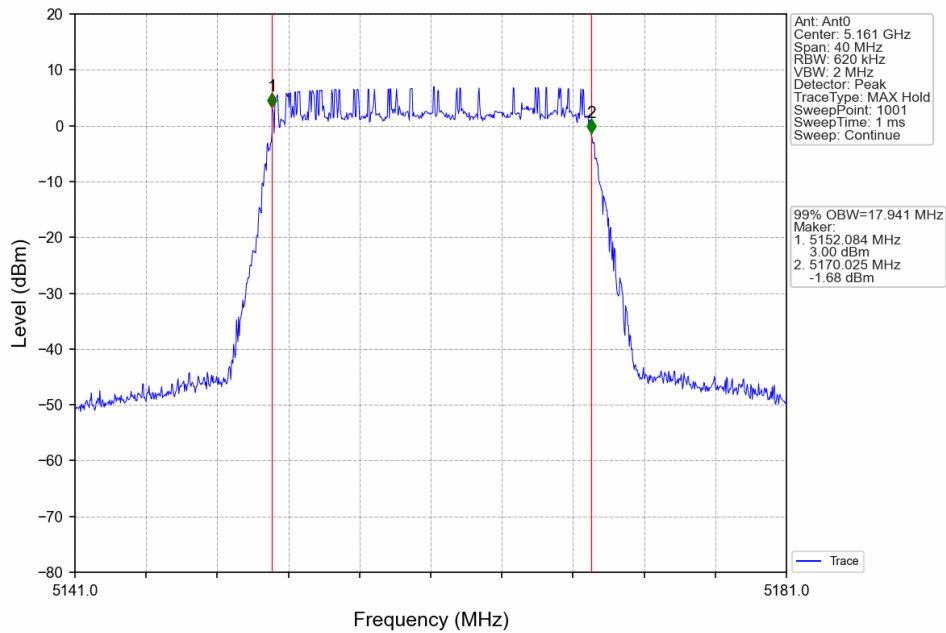
10_HCH_5245MHz_Ant0_NTNV



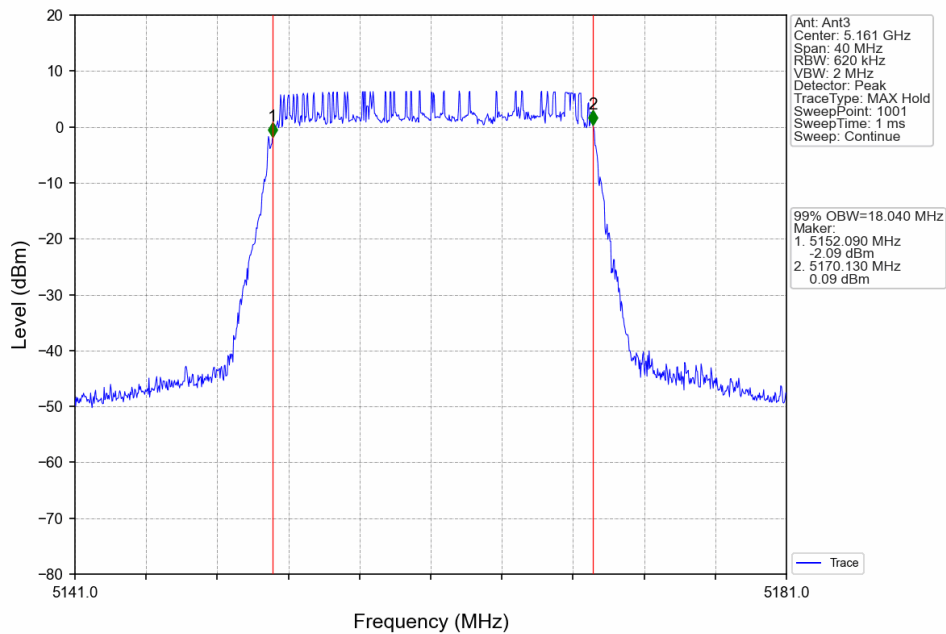
10_HCH_5245MHz_Ant3_NTNV



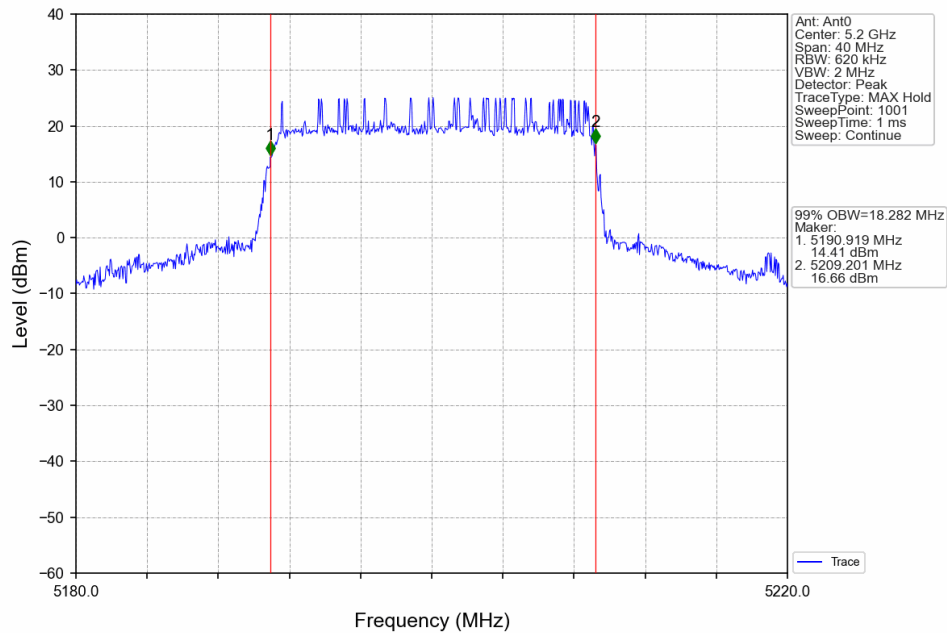
20_LCH_5161MHz_Ant0_NTNV



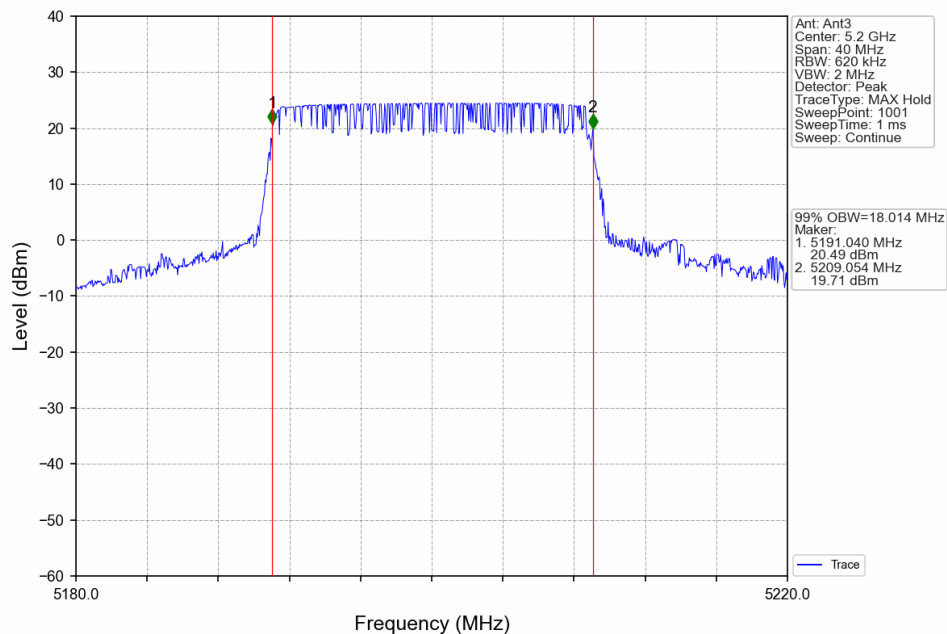
20_LCH_5161MHz_Ant3_NTNV



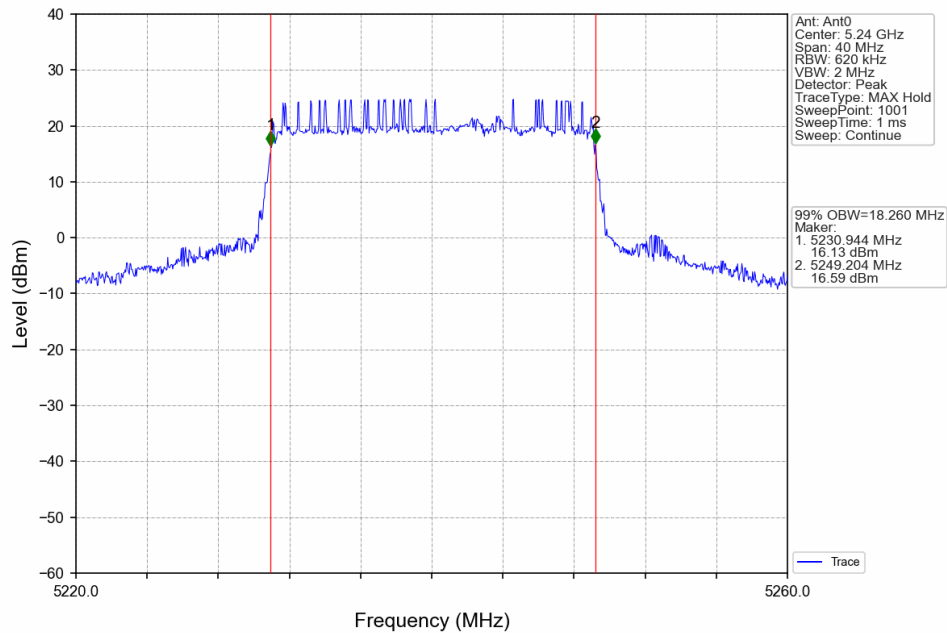
20_MCH_5200MHz_Ant0_NTNV



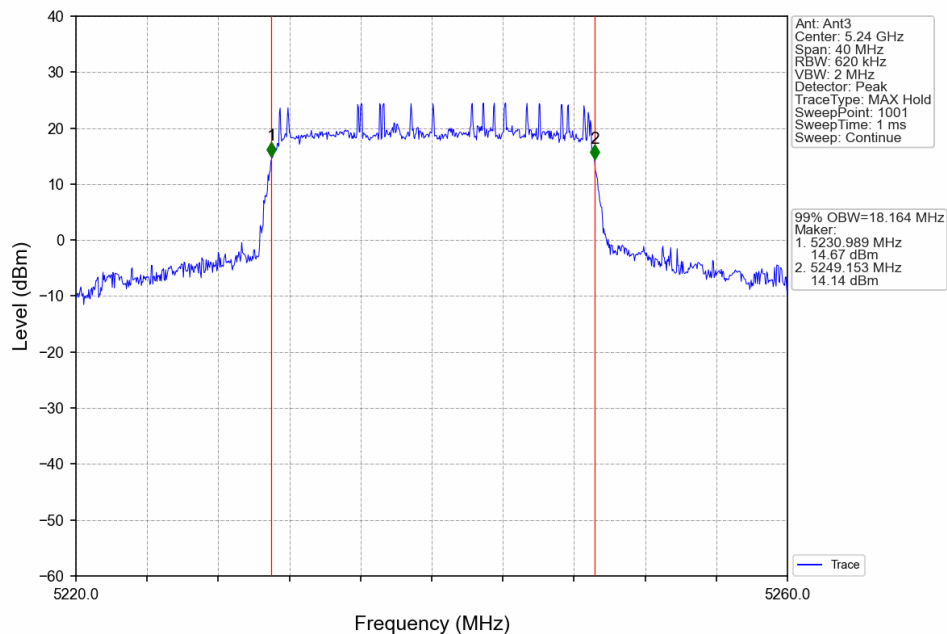
20_MCH_5200MHz_Ant3_NTNV



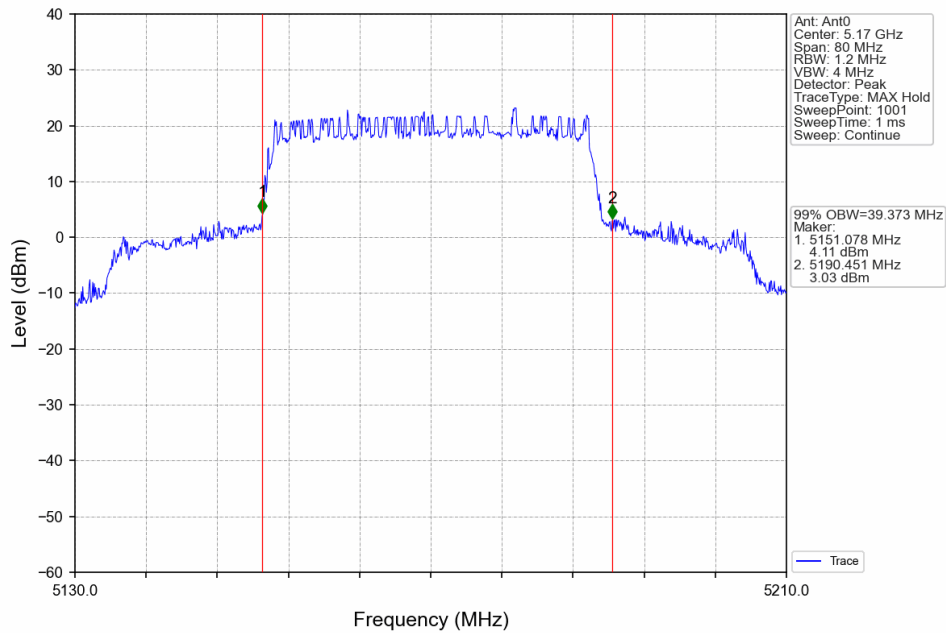
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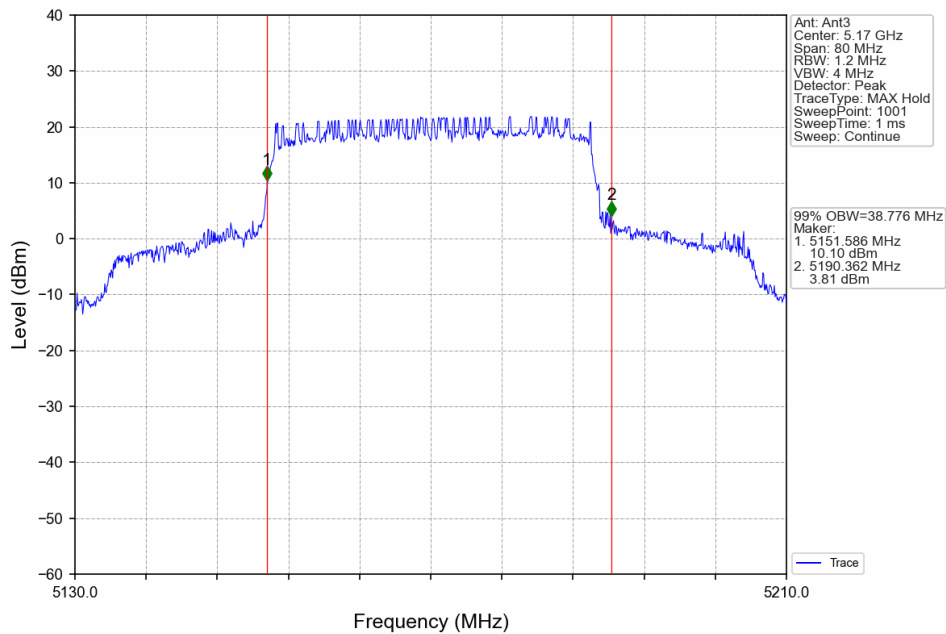
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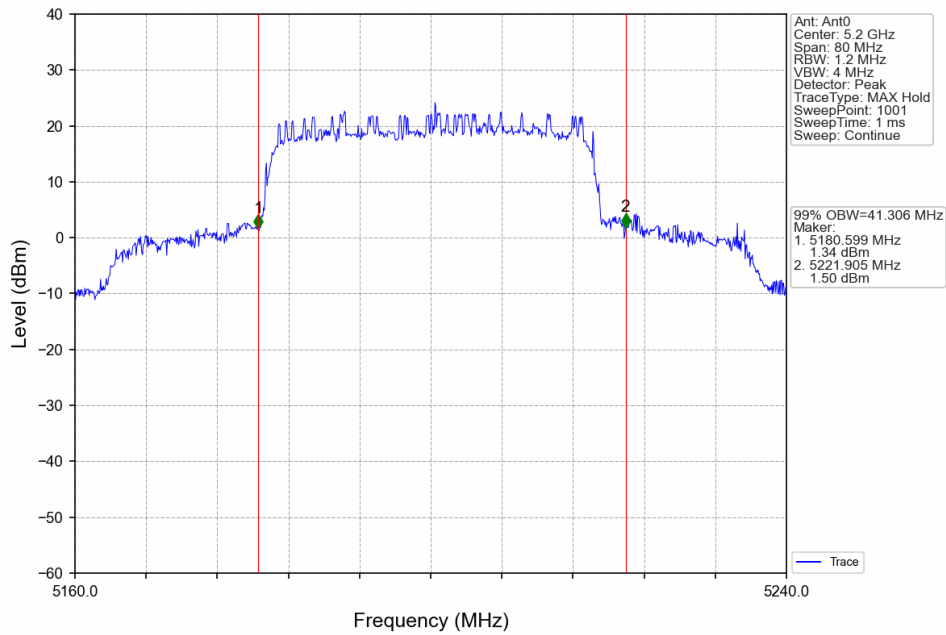
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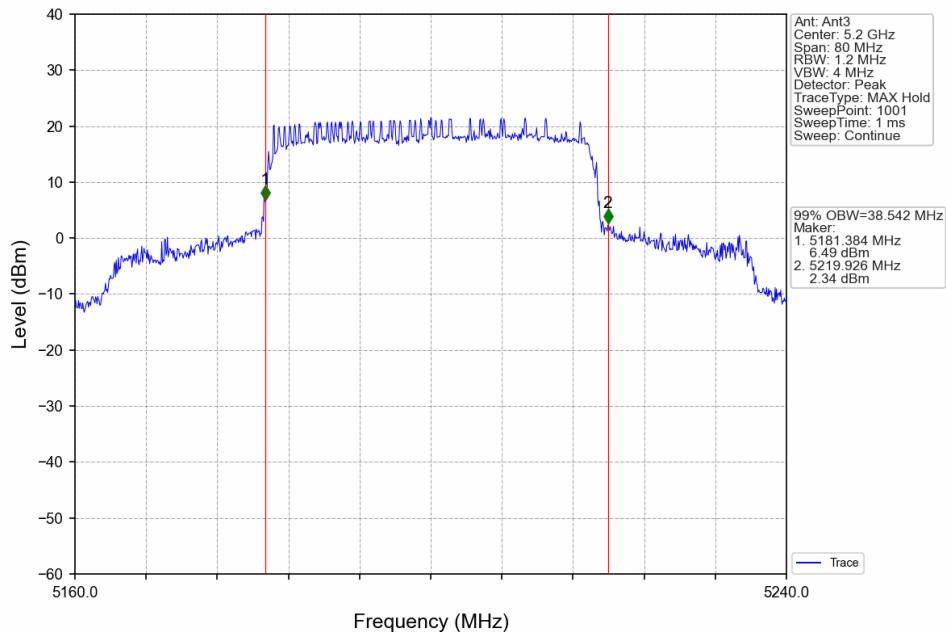
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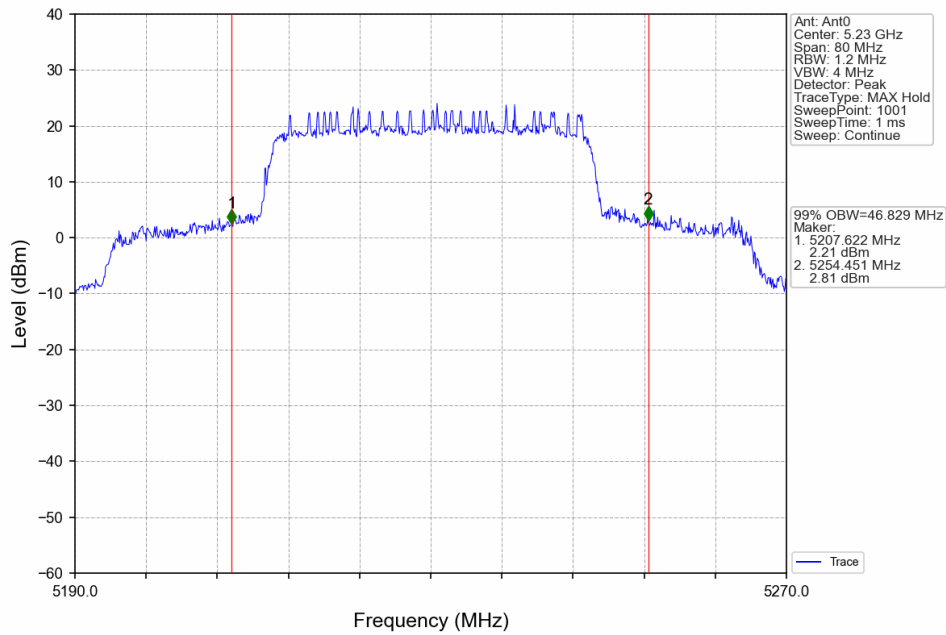


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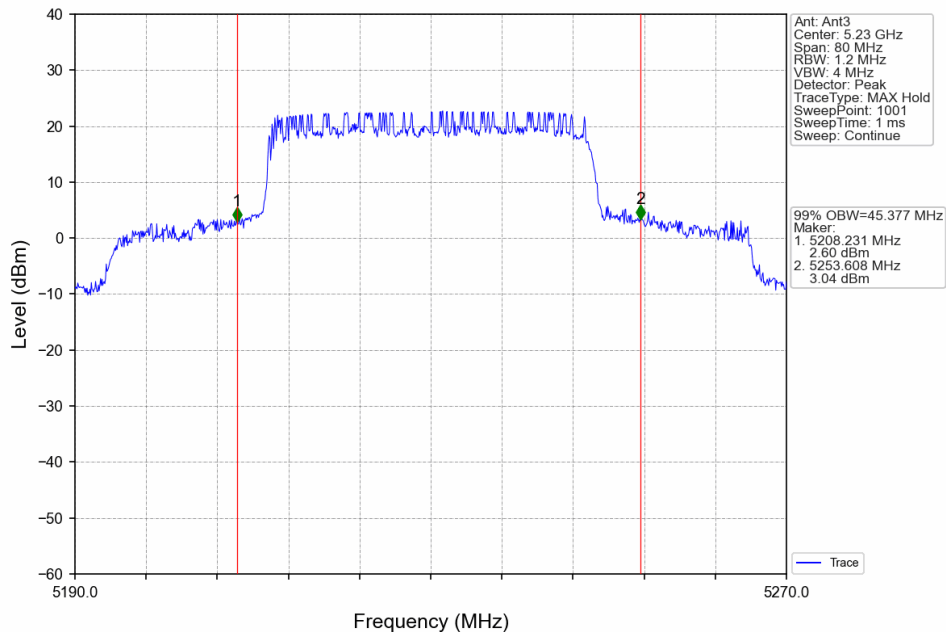
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40_HCH_5230MHz_Ant0_NTNV



40_HCH_5230MHz_Ant3_NTNV



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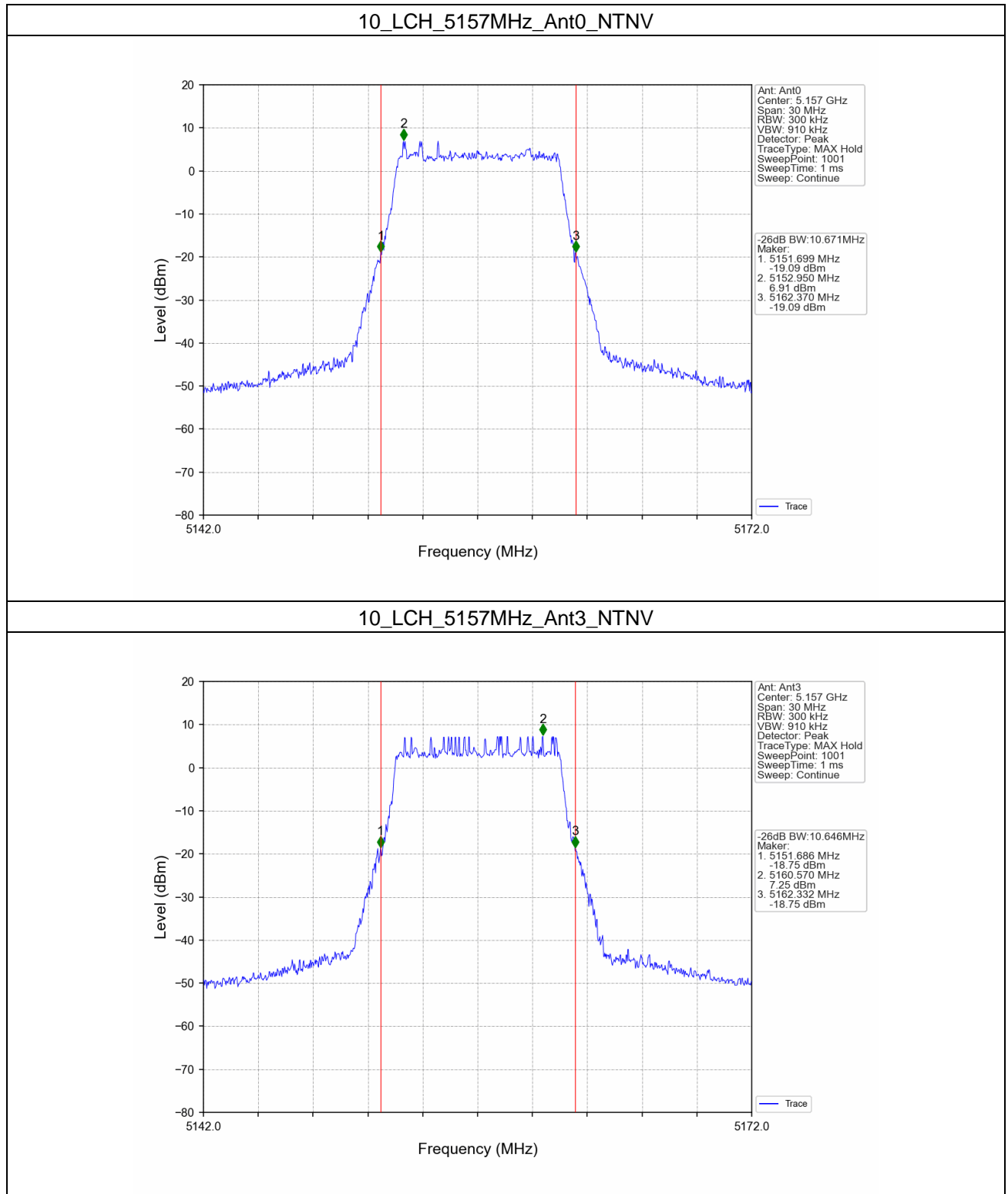
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2.2 26dB BW

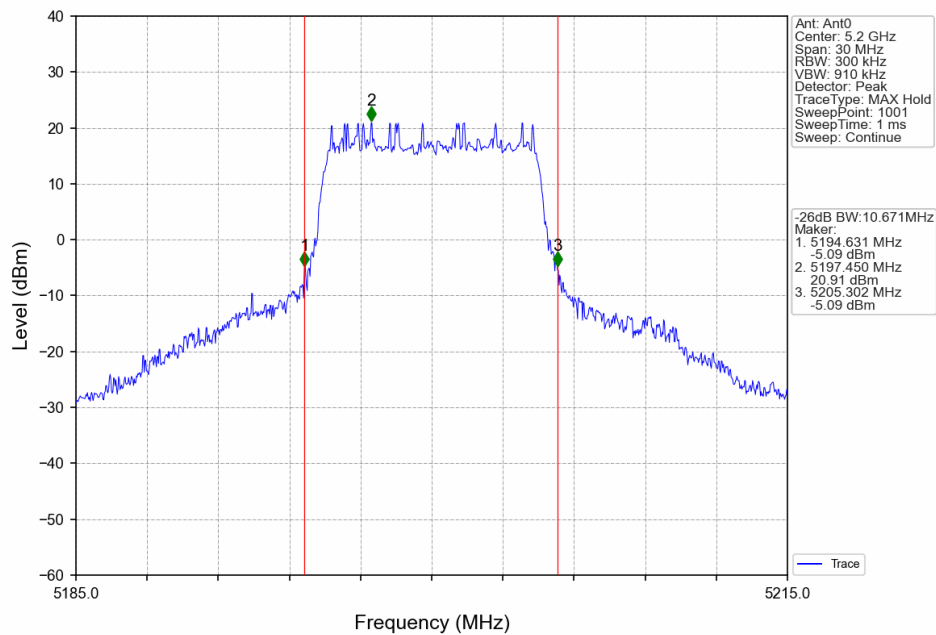
2.2.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	26dB Bandwidth (MHz)	Verdict
				Result	
10	MIMO	5157	0	10.671	Pass
			3	10.646	Pass
		5200	0	10.671	Pass
			3	10.515	Pass
		5245	0	10.503	Pass
			3	10.780	Pass
20	MIMO	5161	0	19.739	Pass
			3	19.877	Pass
		5200	0	27.191	Pass
			3	25.300	Pass
		5240	0	23.836	Pass
			3	25.964	Pass
40	MIMO	5170	0	71.256	Pass
			3	71.490	Pass
		5200	0	71.033	Pass
			3	70.357	Pass
		5230	0	71.388	Pass
			3	72.084	Pass

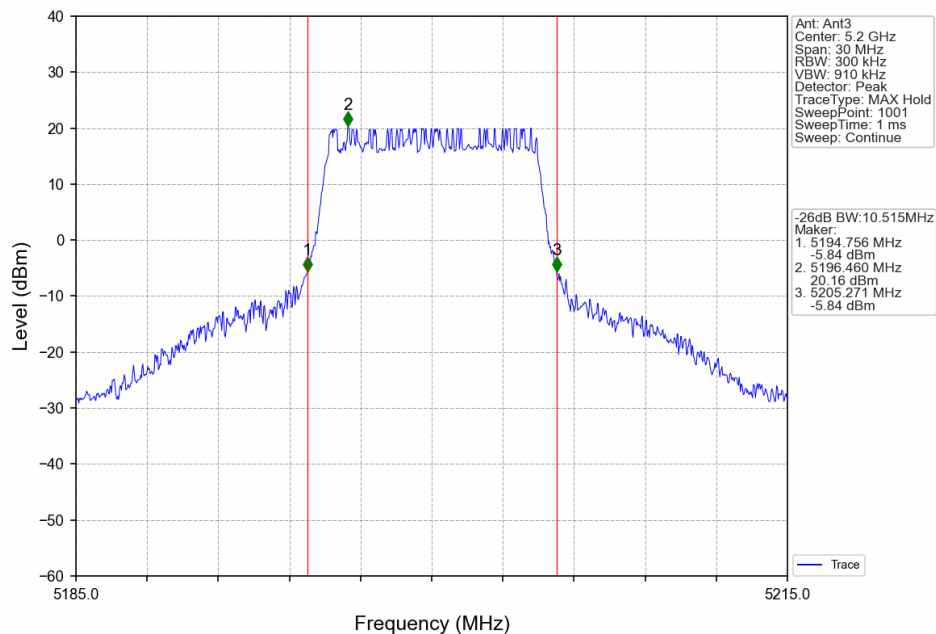
2.2.2 Test Graph



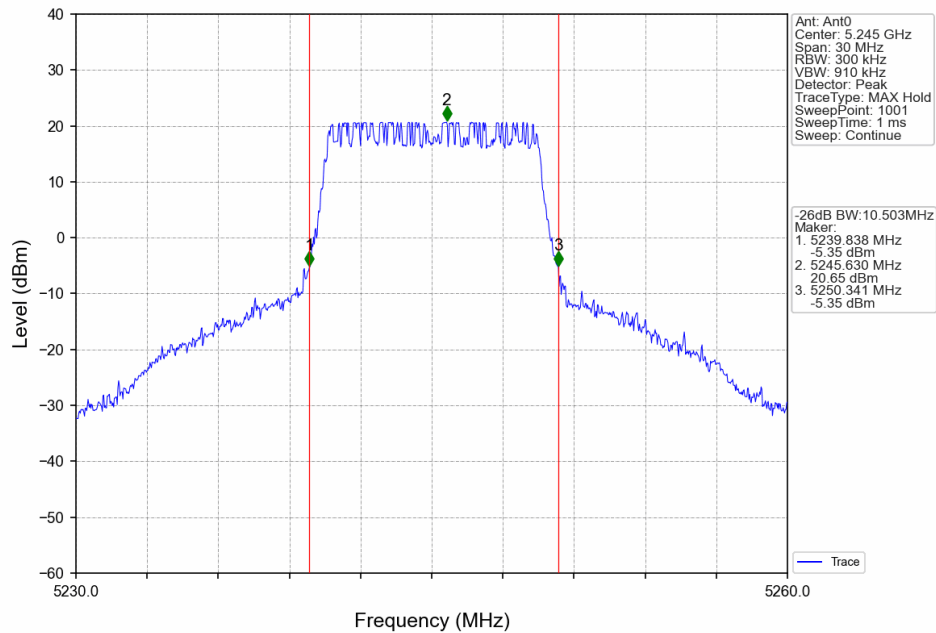
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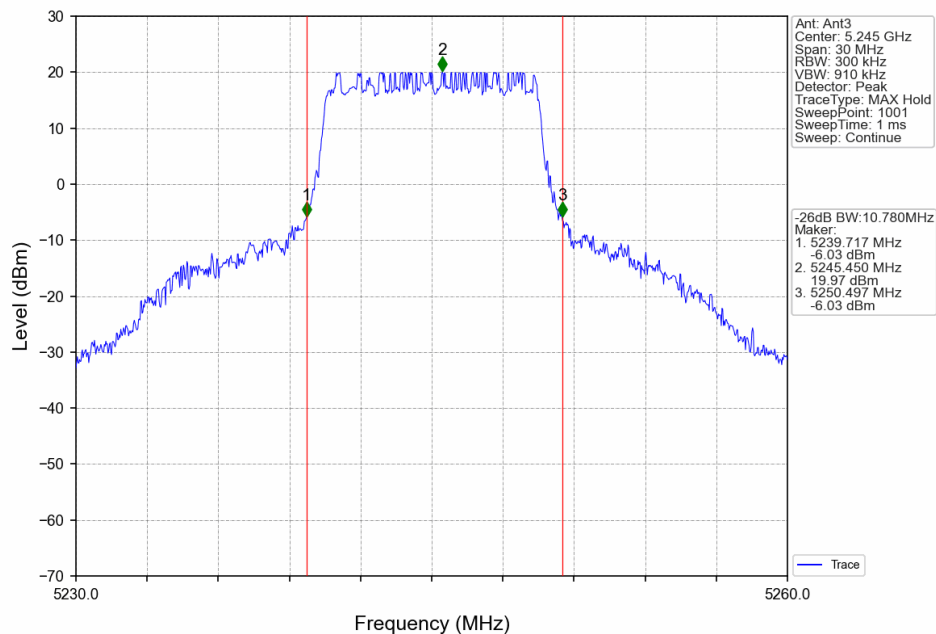
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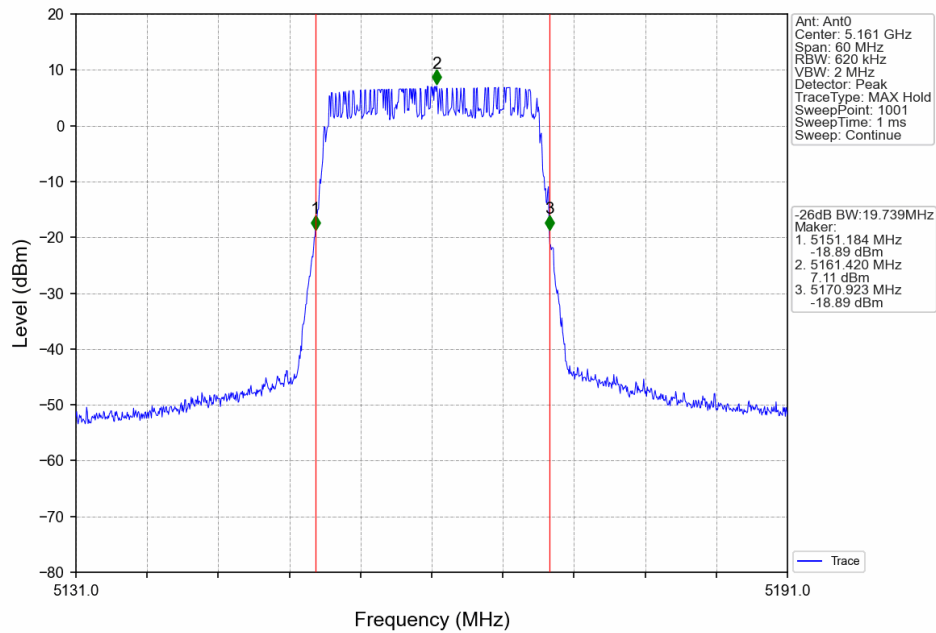
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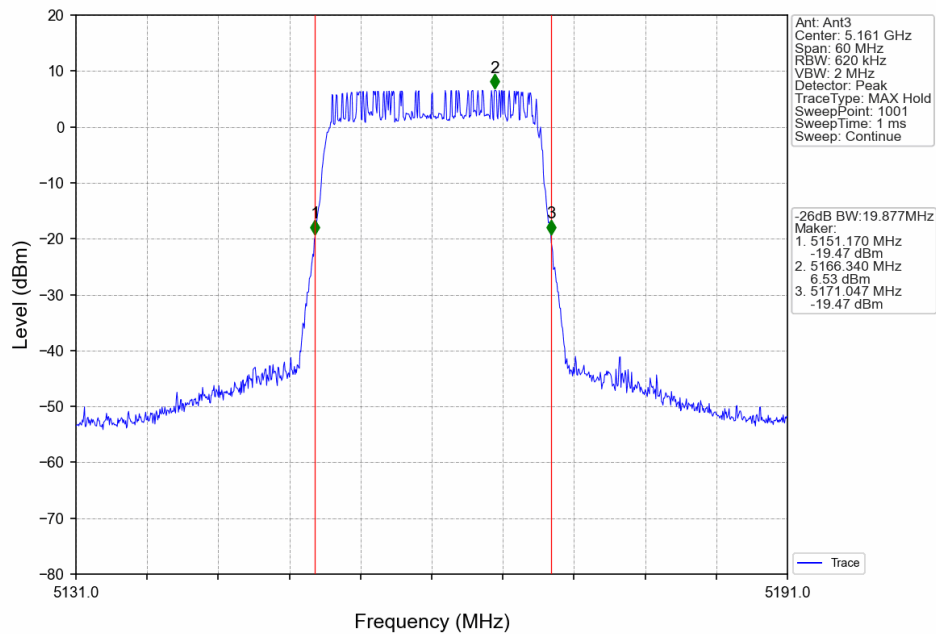
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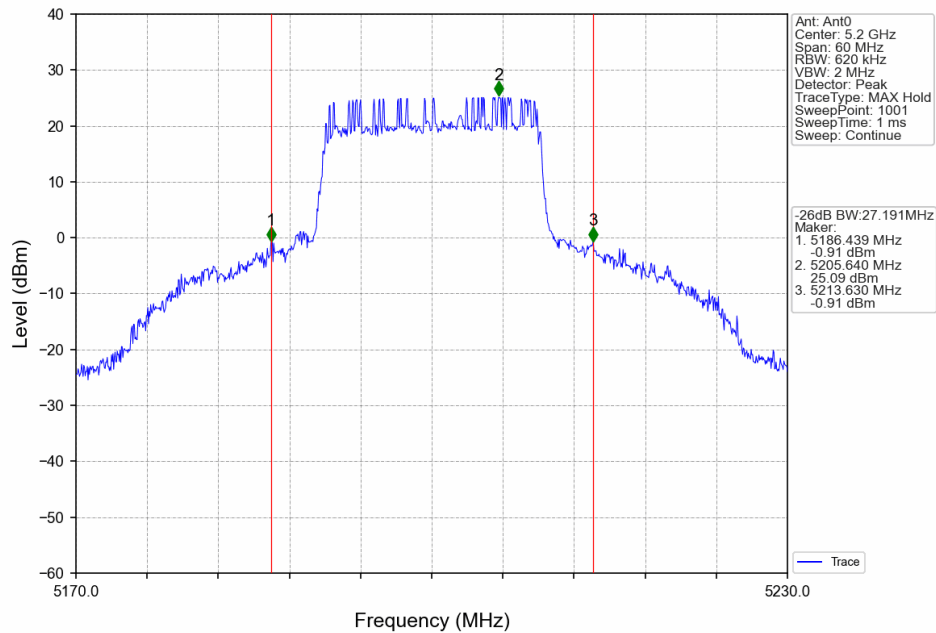
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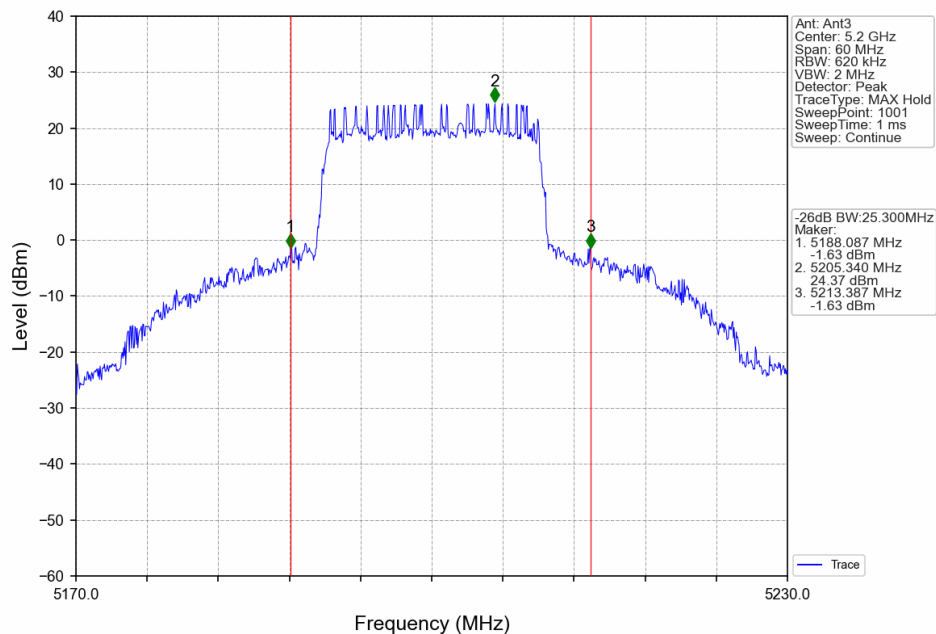
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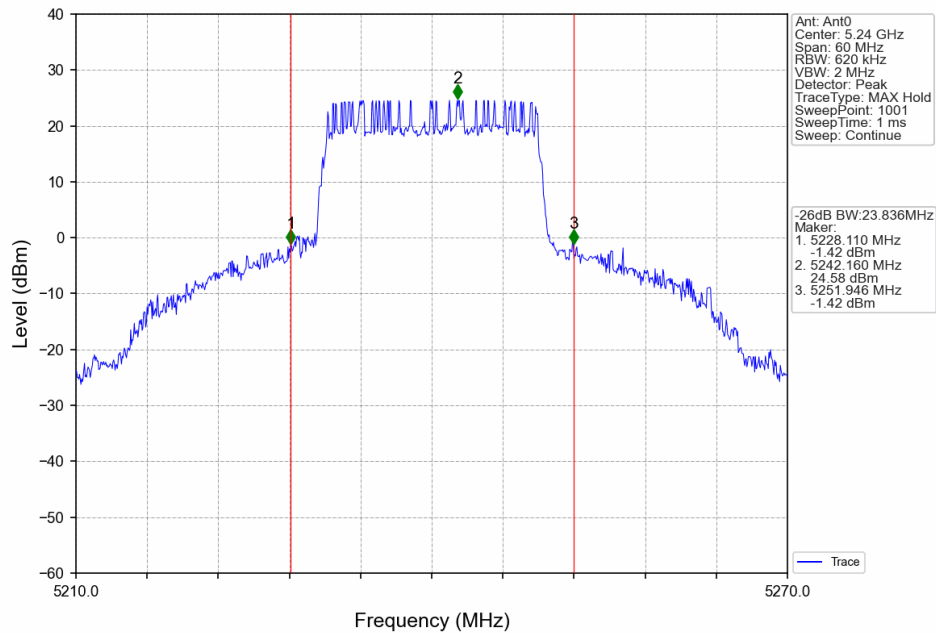
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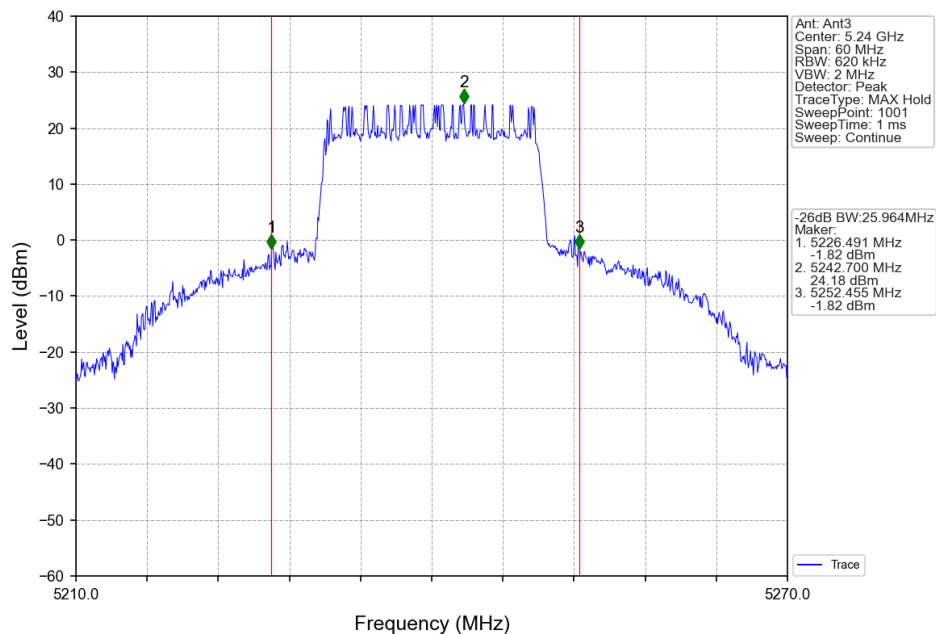
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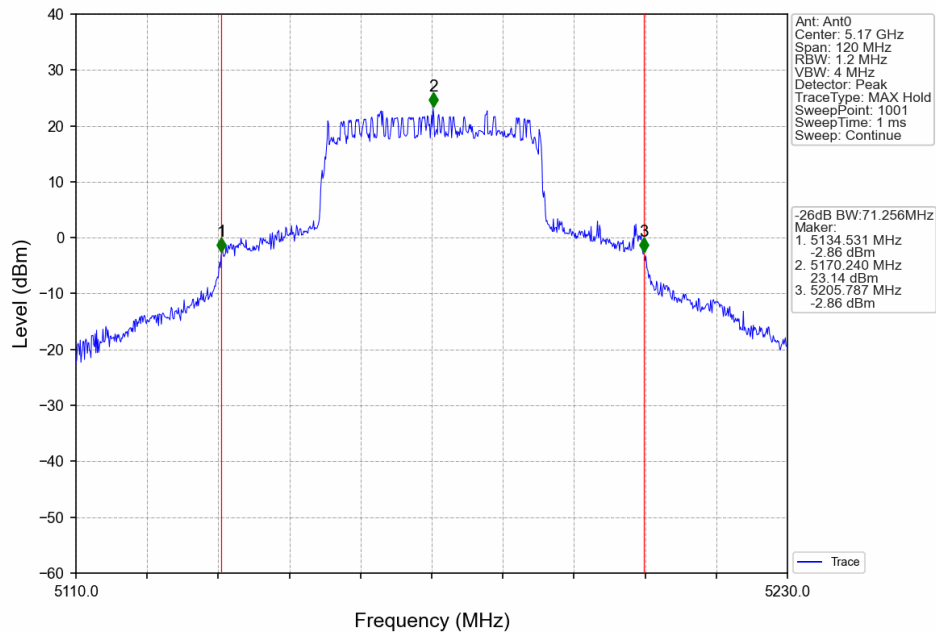
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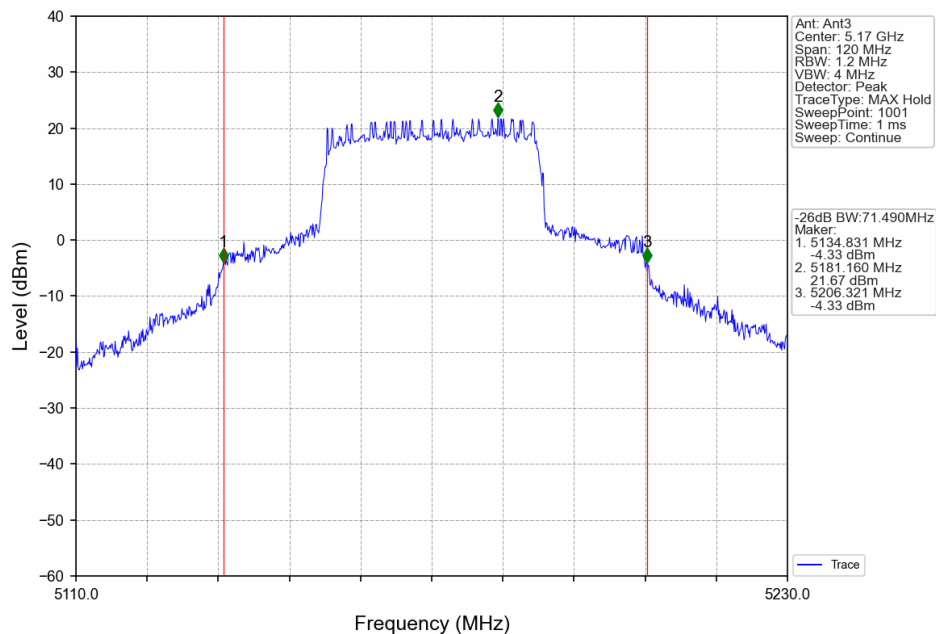
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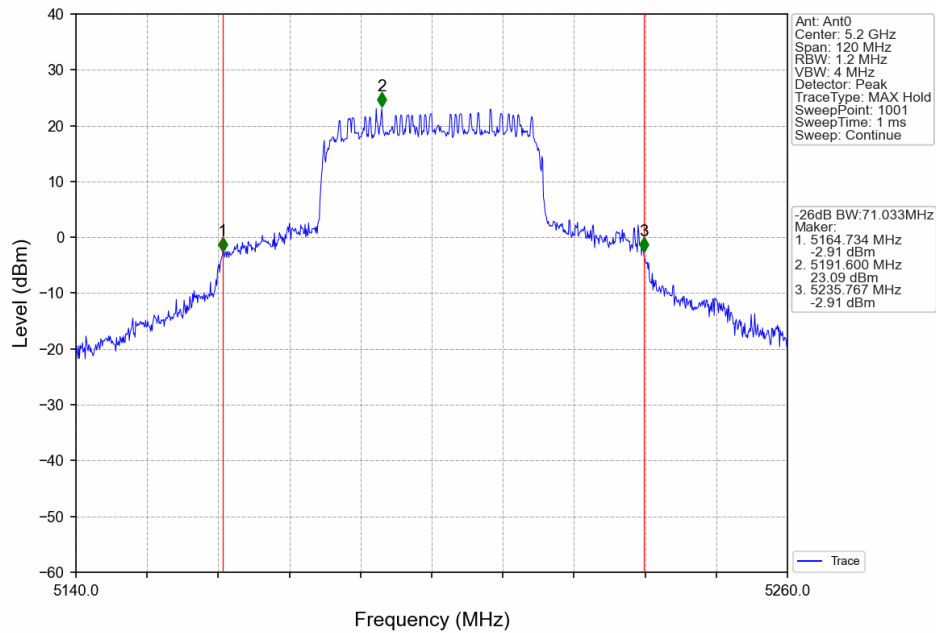
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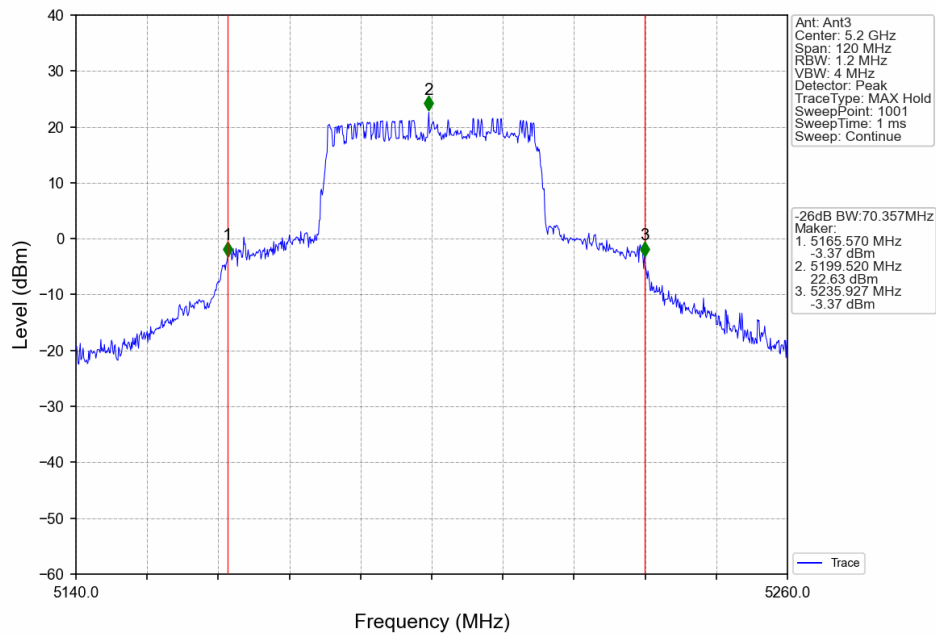
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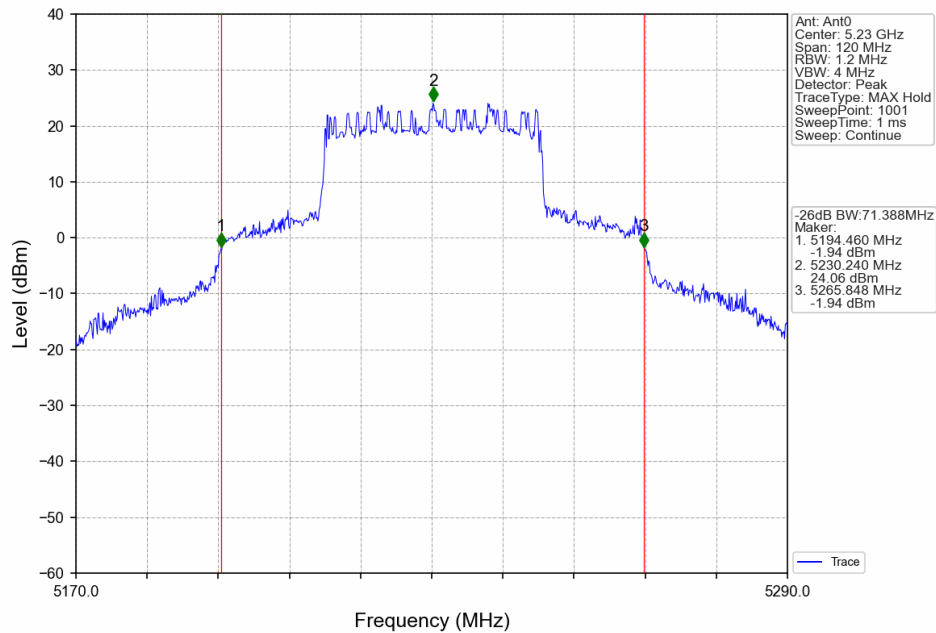
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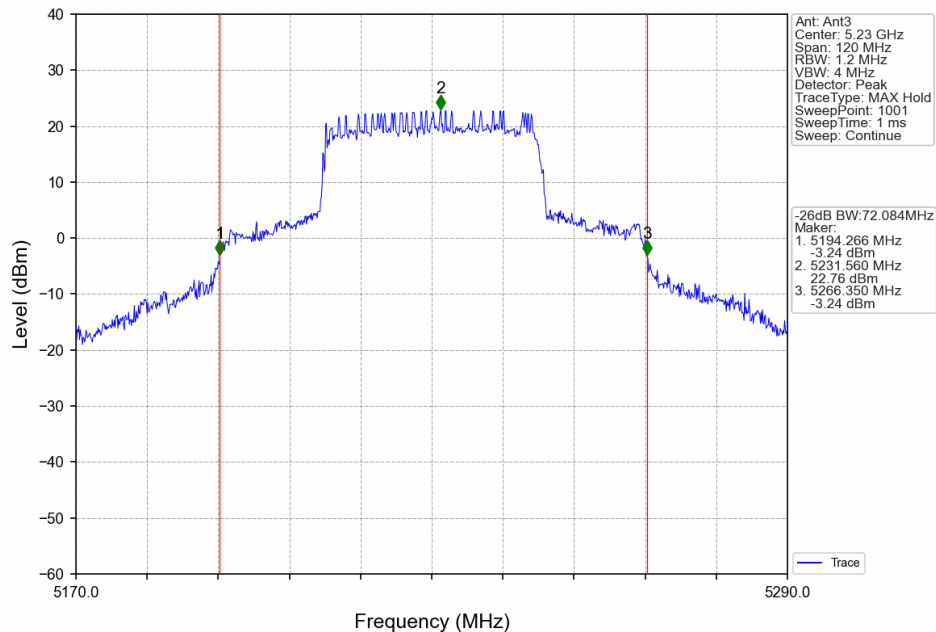
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40_HCH_5230MHz_Ant0_NTNV



40_HCH_5230MHz_Ant3_NTNV



3. Maximum Conducted Output Power and EIRP

3.1 Maximum Conducted Output Power

3.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)				Verdict
			ANT0	ANT3	MIMO	Limit	
10	MIMO	5157	9.31	8.91	12.12	<=29.99	Pass
		5200	14.62	14.05	17.35	<=29.99	Pass
		5245	14.42	13.85	17.15	<=29.99	Pass
20	MIMO	5161	7.27	6.59	9.95	<=29.99	Pass
		5200	14.63	14.06	17.36	<=29.99	Pass
		5240	14.40	13.88	17.16	<=29.99	Pass
40	MIMO	5170	10.86	10.73	13.81	<=29.99	Pass
		5200	14.28	13.75	17.03	<=29.99	Pass
		5230	13.98	13.55	16.78	<=29.99	Pass

Note1: Antenna Gain: Ant0: 3.00dBi; Ant3: 3.00dBi;

Note2: Directional Gain= $10\log [(10^{G1/20} + 10^{G2/20})^2/N_{ANT}] = 10\log [(10^{3.00/20} + 10^{3.00/20})^2/2] = 6.01\text{dBi}$.

Note3: Antennas 0+1,0+3,1+2 and 2+3 were tested. Only the worst case (Antenna 0+3) was recorded in the report.

3.2 EIRP

3.2.1 Test Result

Mode	TX Type	Frequency (MHz)	EIRP (dBm)				Verdict
			ANT0	ANT3	MIMO	Limit	
10	MIMO	5157	12.31	11.91	15.12	<=21	Pass
		5200	17.62	17.05	20.35	<=21	Pass
		5245	17.42	16.85	20.15	<=21	Pass
20	MIMO	5161	10.27	9.59	12.95	<=21	Pass
		5200	17.63	17.06	20.36	<=21	Pass
		5240	17.40	16.88	20.16	<=21	Pass
40	MIMO	5170	13.86	13.73	16.81	<=21	Pass
		5200	17.28	16.75	20.03	<=21	Pass
		5230	16.98	16.55	19.78	<=21	Pass

Note1: Antenna Gain: Ant0: 3.00dBi; Ant3: 3.00dBi;

Note2: Directional Gain= $10\log [(10^{G1/20} + 10^{G2/20})^2/N_{ANT}] = 10\log [(10^{3.00/20} + 10^{3.00/20})^2/2] = 6.01\text{dBi}$.

Note3: Antennas 0+1,0+3,1+2 and 2+3 were tested. Only the worst case (Antenna 0+3) was recorded in the report.

4. Maximum Power Spectral Density

4.1 PSD

4.1.1 Test Result

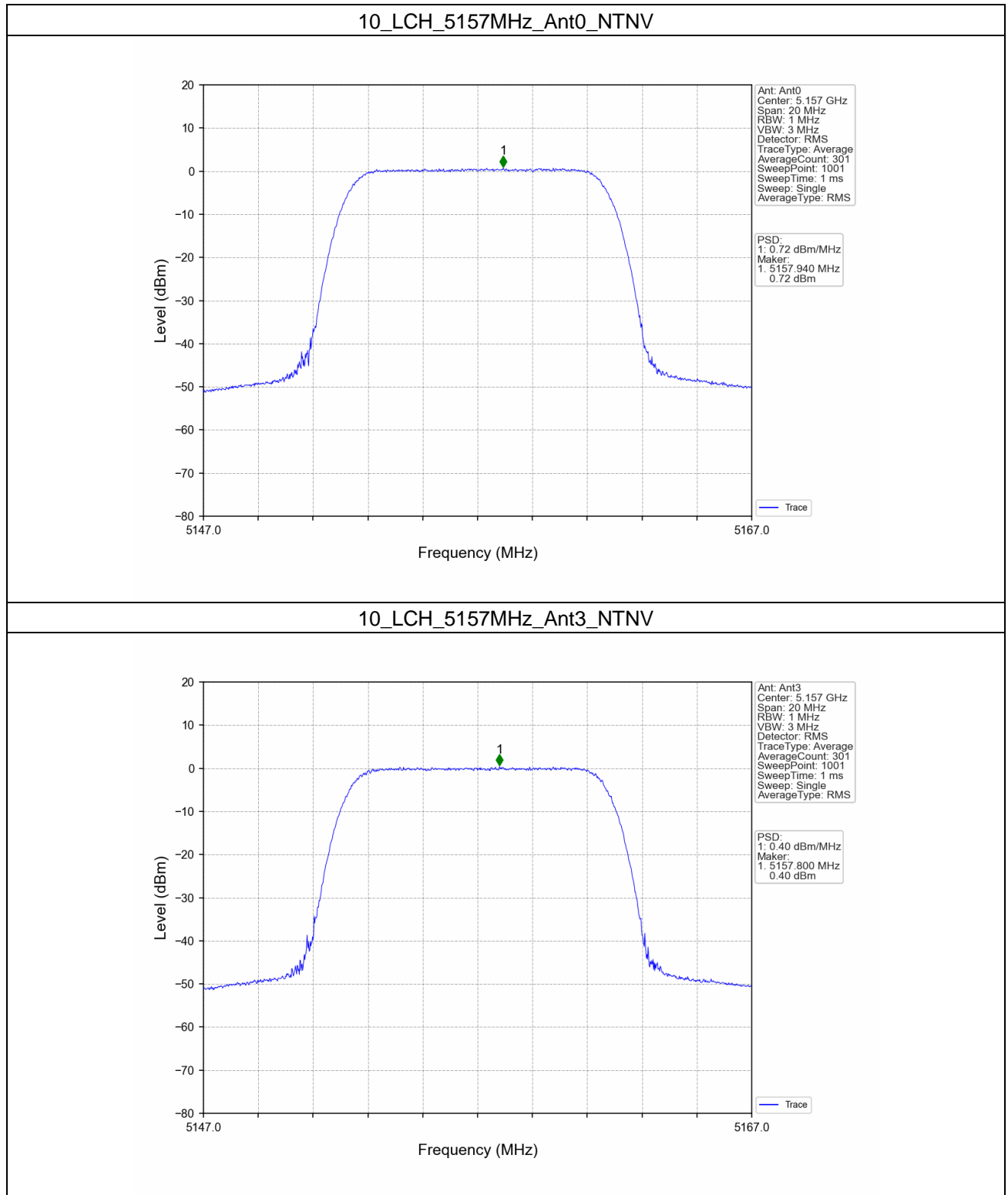
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/MHz)				Verdict
			ANT0	ANT3	MIMO	Limit	
10	MIMO	5157	0.72	0.40	3.51	<=16.99	Pass
		5200	6.07	5.49	8.67	<=16.99	Pass
		5245	5.82	5.37	8.47	<=16.99	Pass
20	MIMO	5161	-4.19	-4.82	-1.57	<=16.99	Pass
		5200	3.07	2.44	5.65	<=16.99	Pass
		5240	3.11	2.18	5.58	<=16.99	Pass
40	MIMO	5170	-3.82	-3.59	-0.87	<=16.99	Pass
		5200	-0.11	-0.97	2.32	<=16.99	Pass
		5230	-0.54	-1.25	2.03	<=16.99	Pass

Note1: Antenna Gain: Ant0: 3.00dBi; Ant3: 3.00dBi;

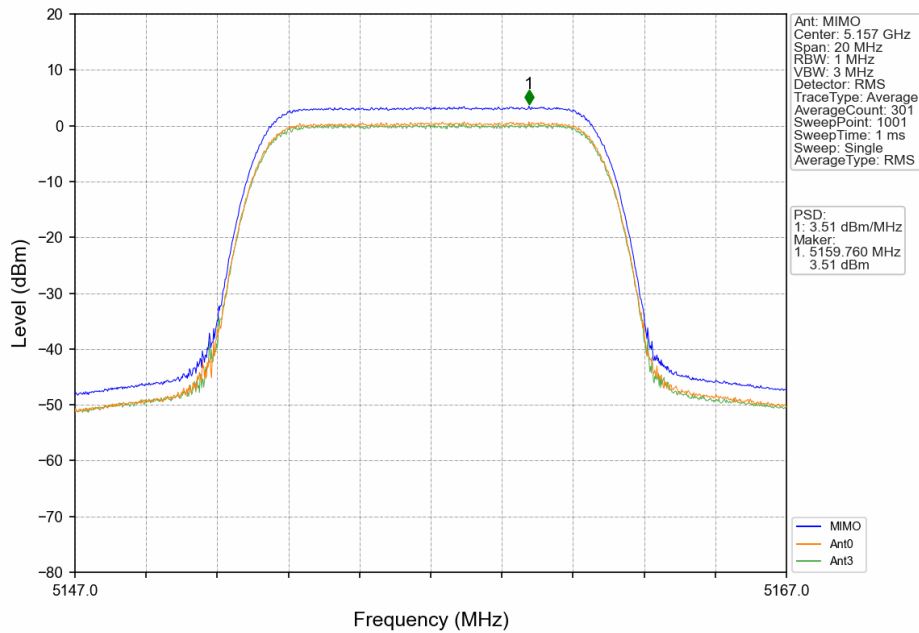
Note2: Directional Gain= $10\log [(10^{G1/20} + 10^{G2/20})^2/N_{ANT}] = 10\log [(10^{3.00/20} + 10^{3.00/20})^2/2] = 6.01\text{dBi}$.

Note3: Antennas 0+1,0+3,1+2 and 2+3 were tested. Only the worst case (Antenna 0+3) was recorded in the report.

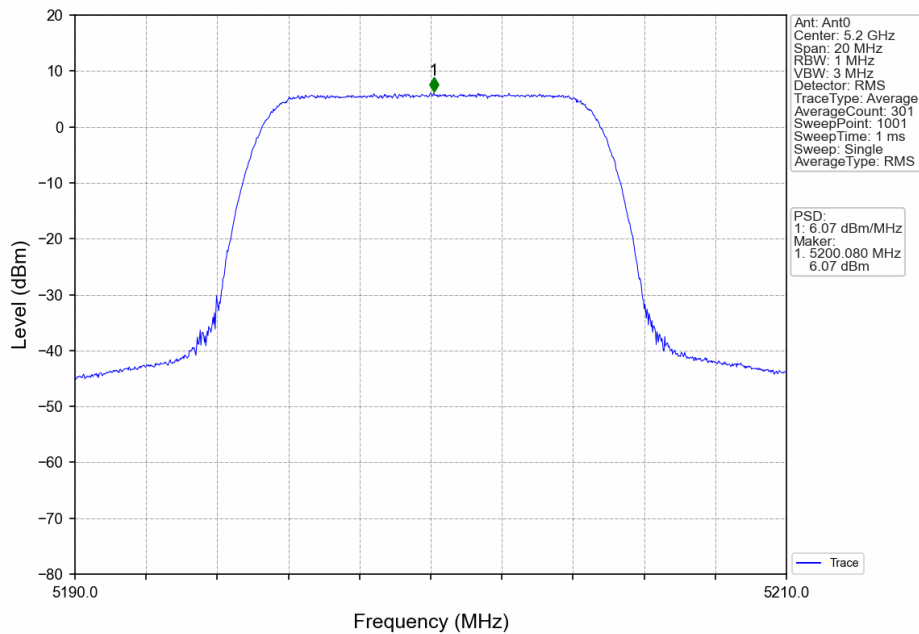
4.1.2 Test Graph



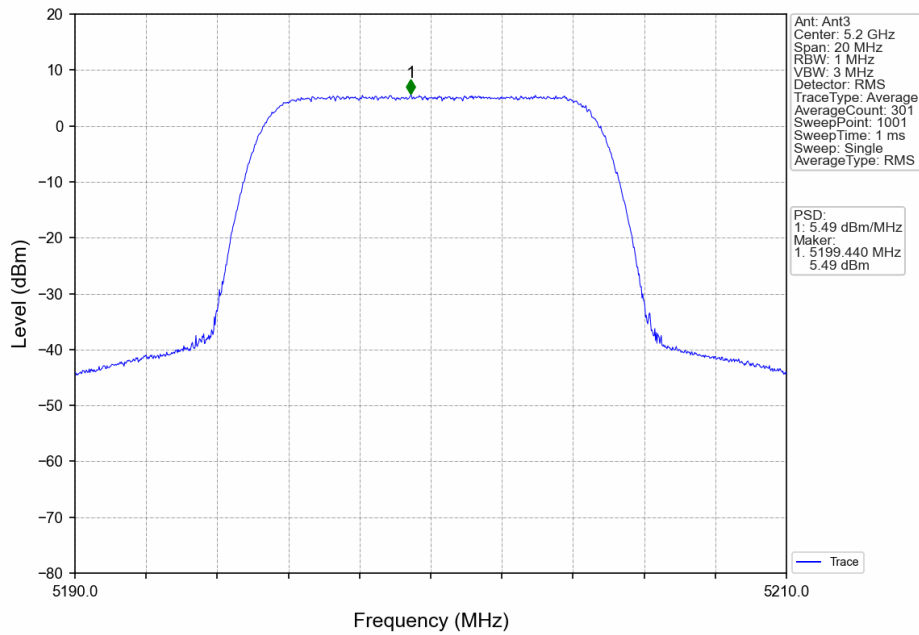
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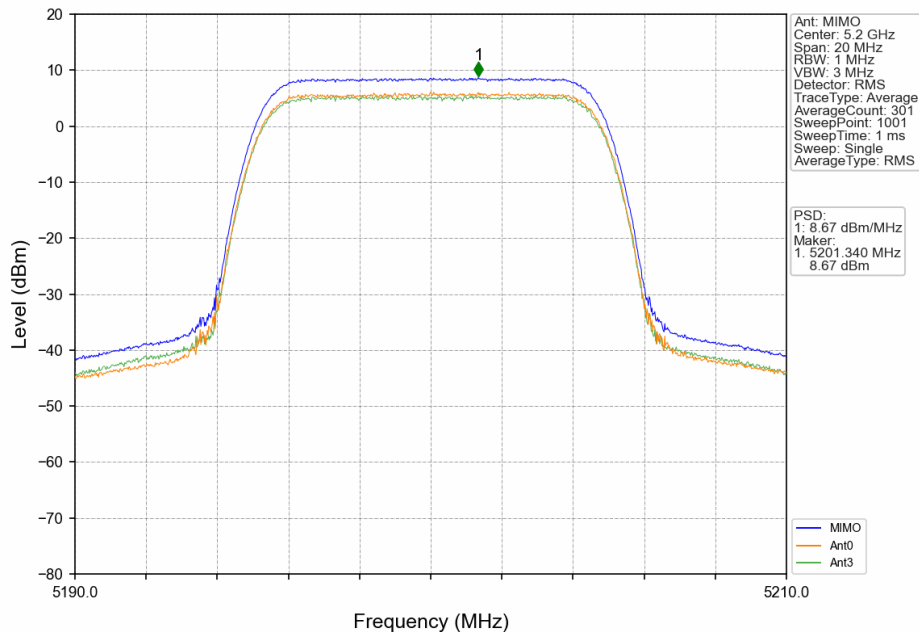
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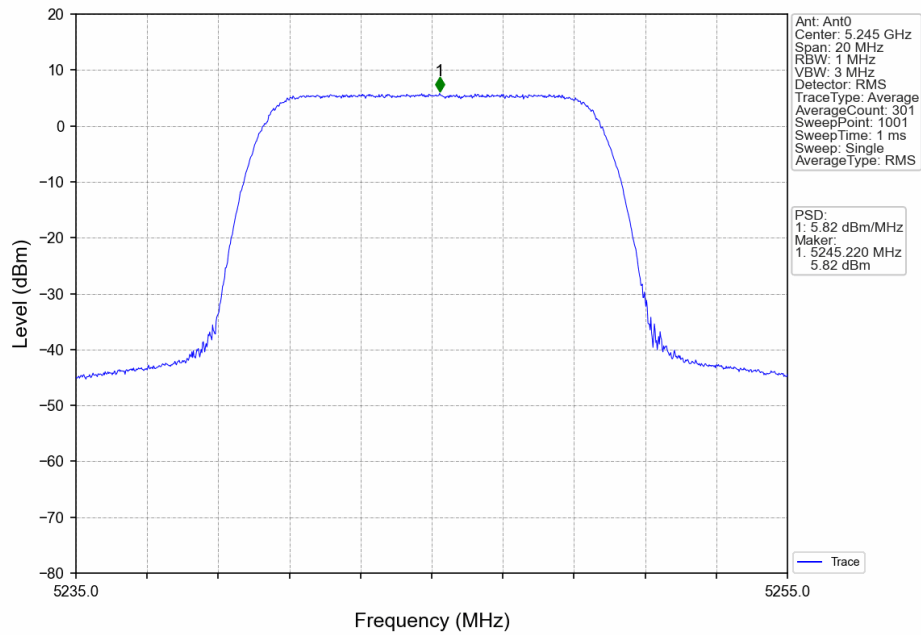
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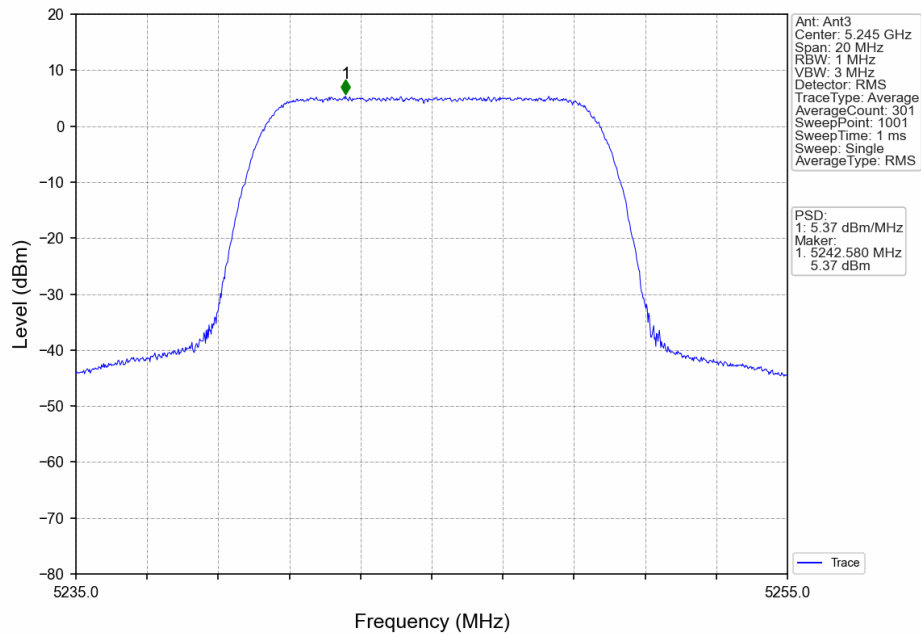
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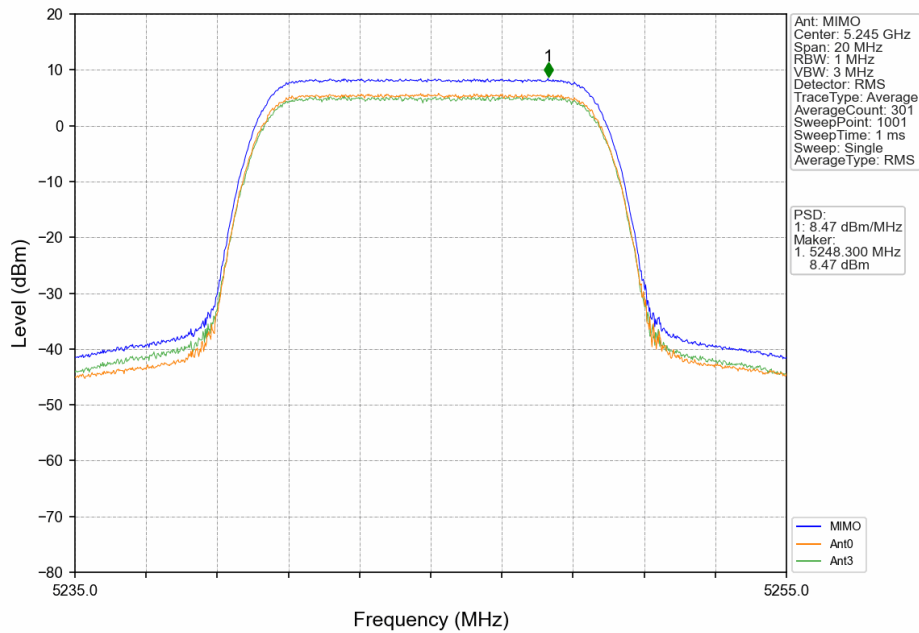
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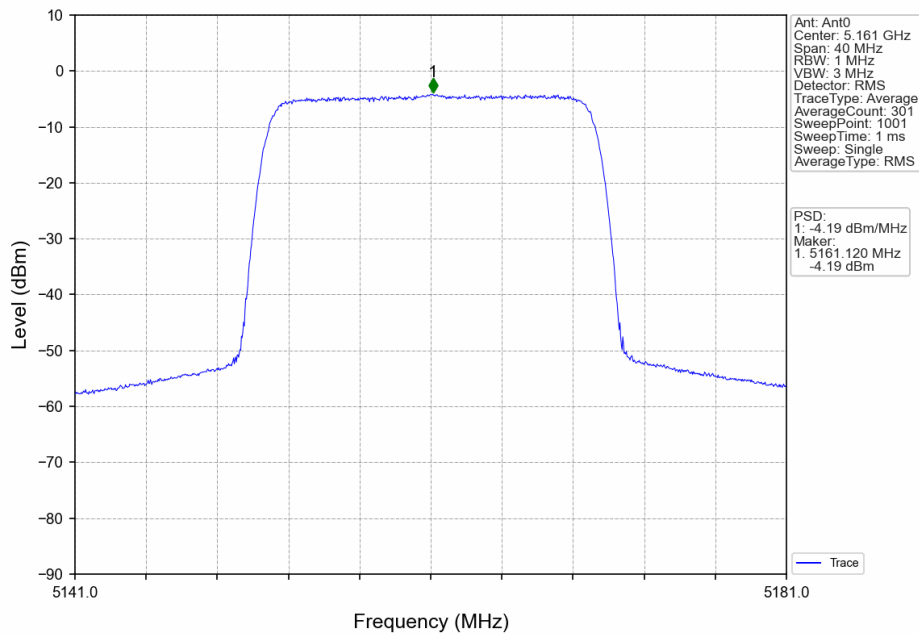
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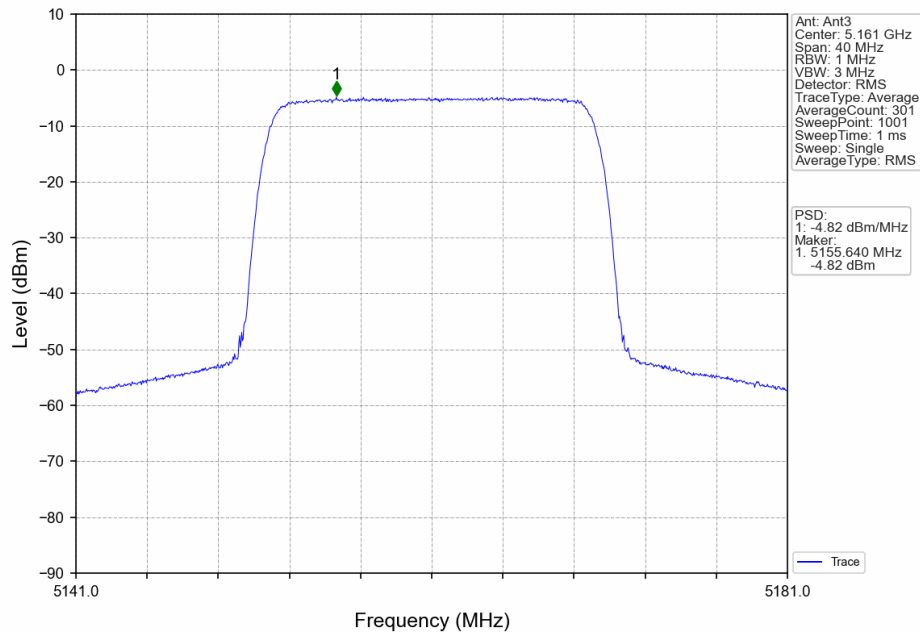
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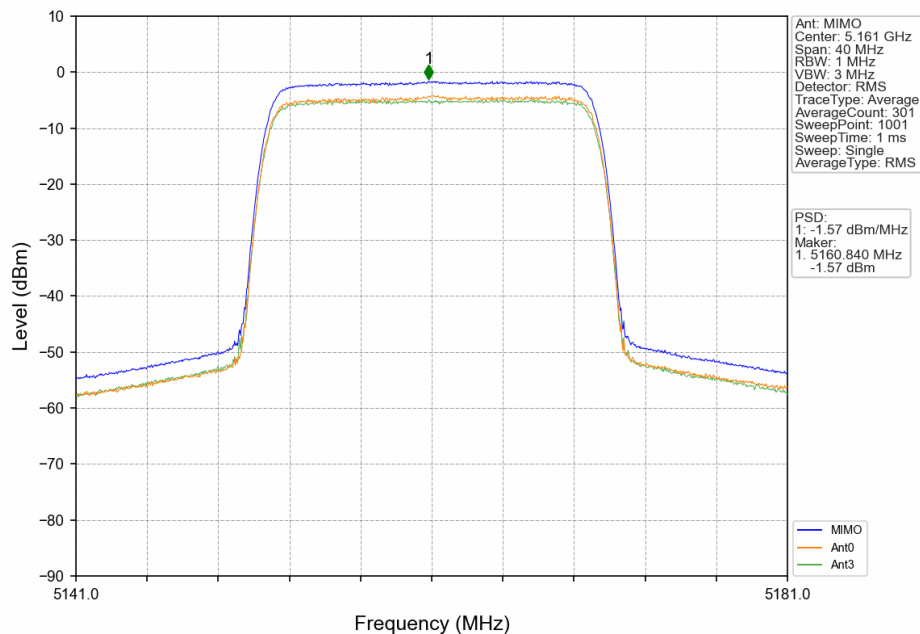
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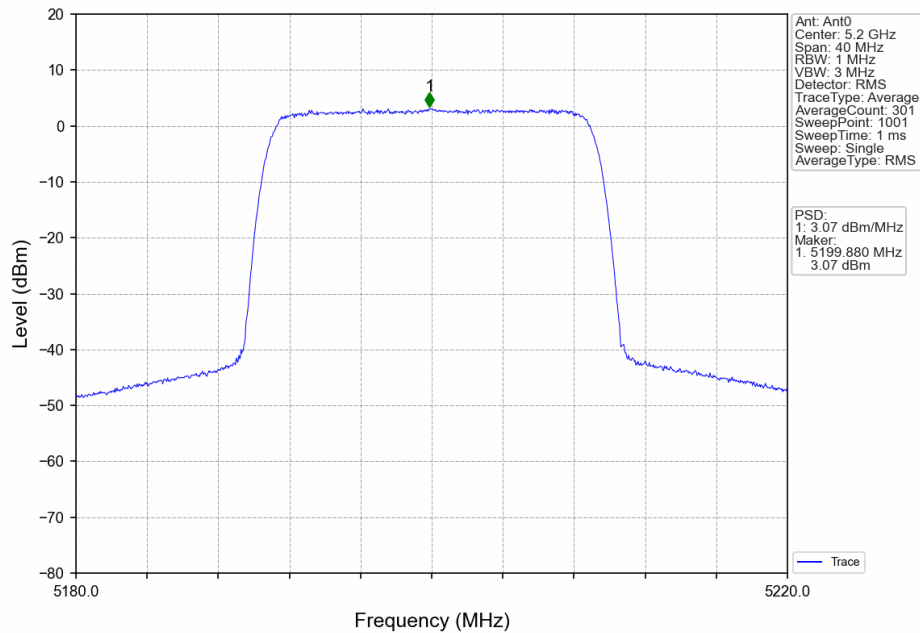


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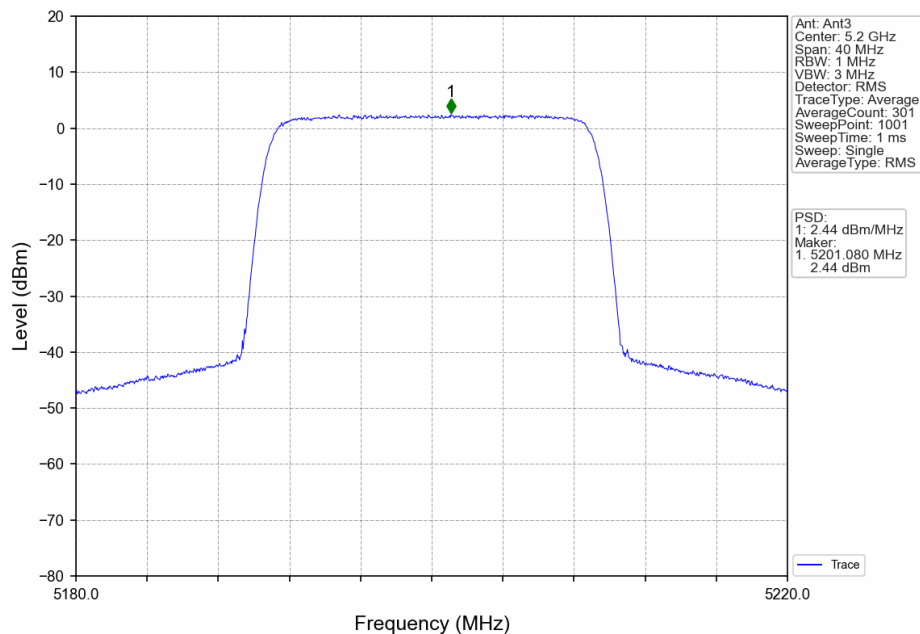


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20_MCH_5200MHz_Ant0_NTNV



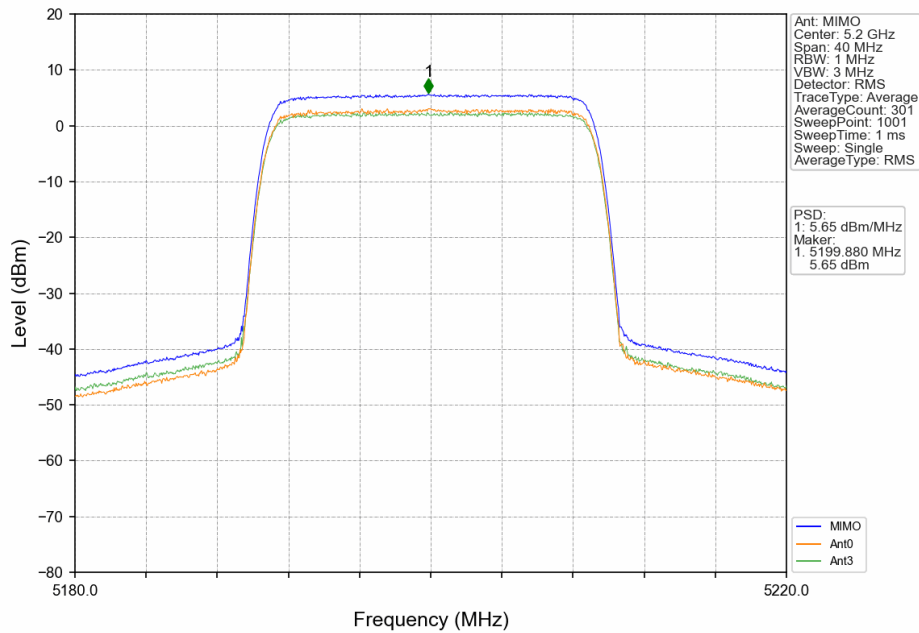
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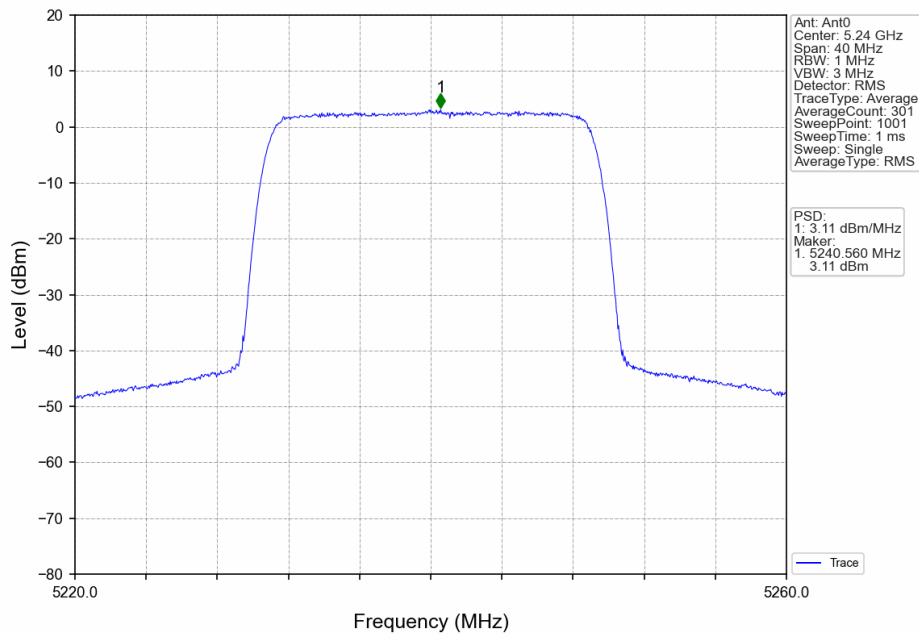
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20_MCH_5200MHz_MIMO_NTNV



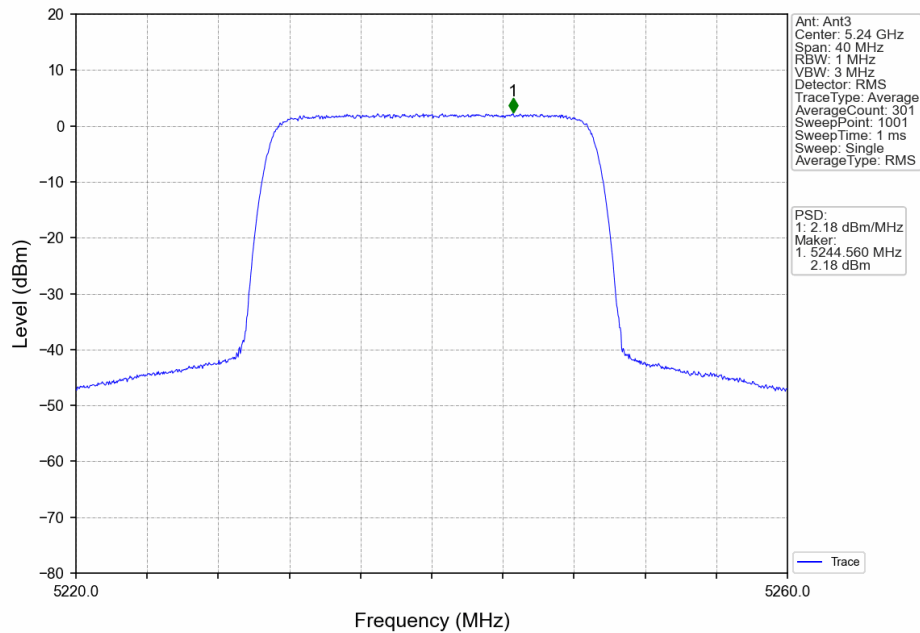
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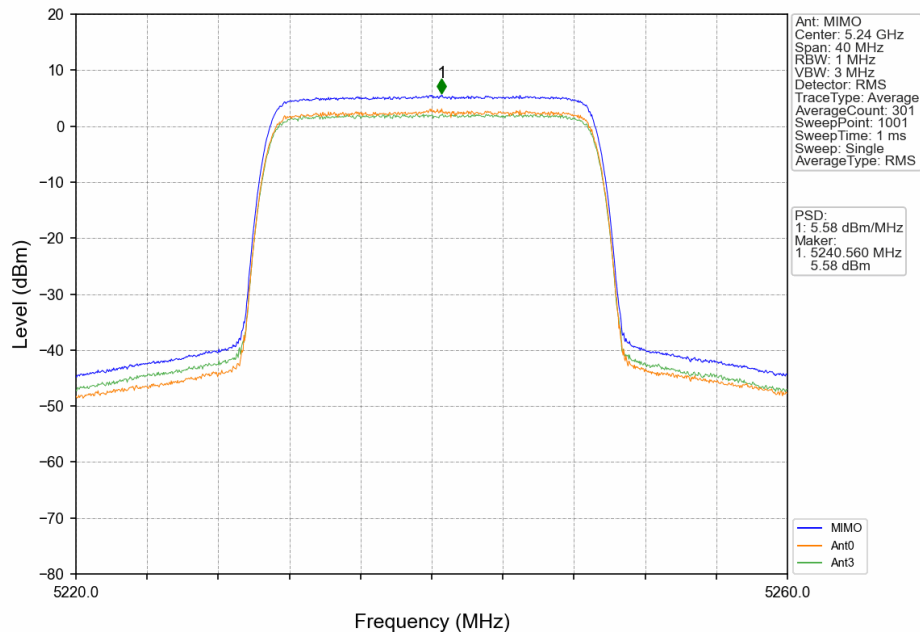
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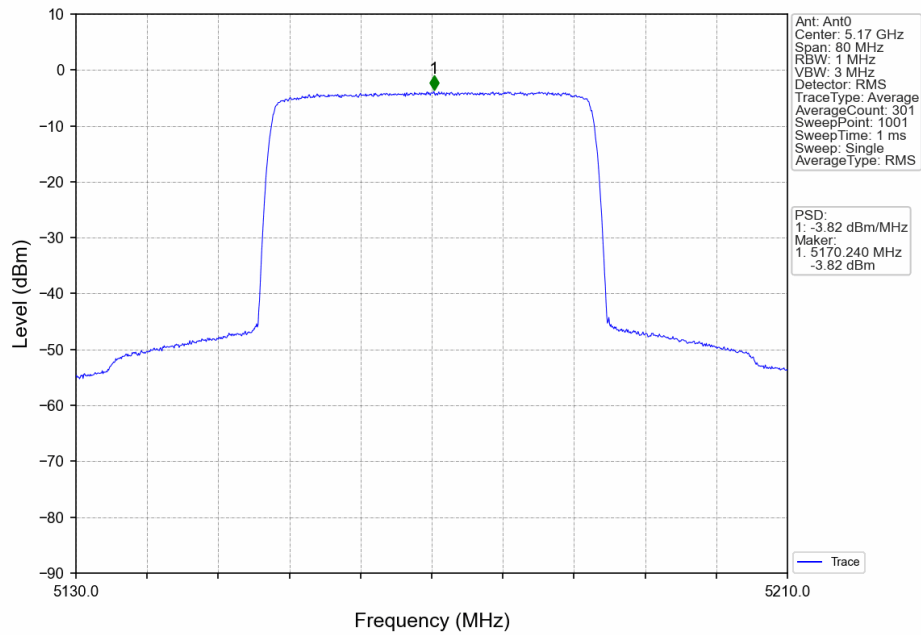
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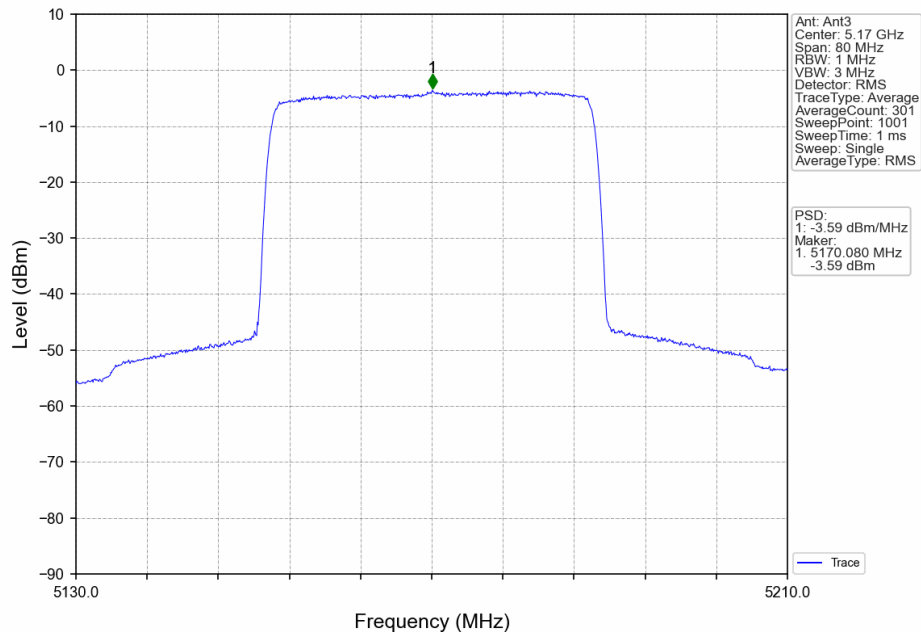
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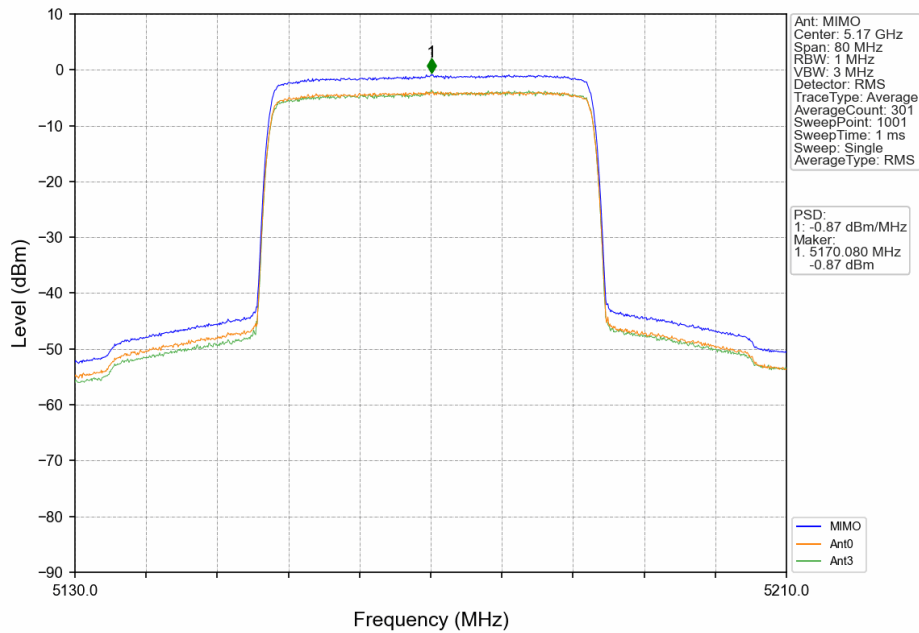
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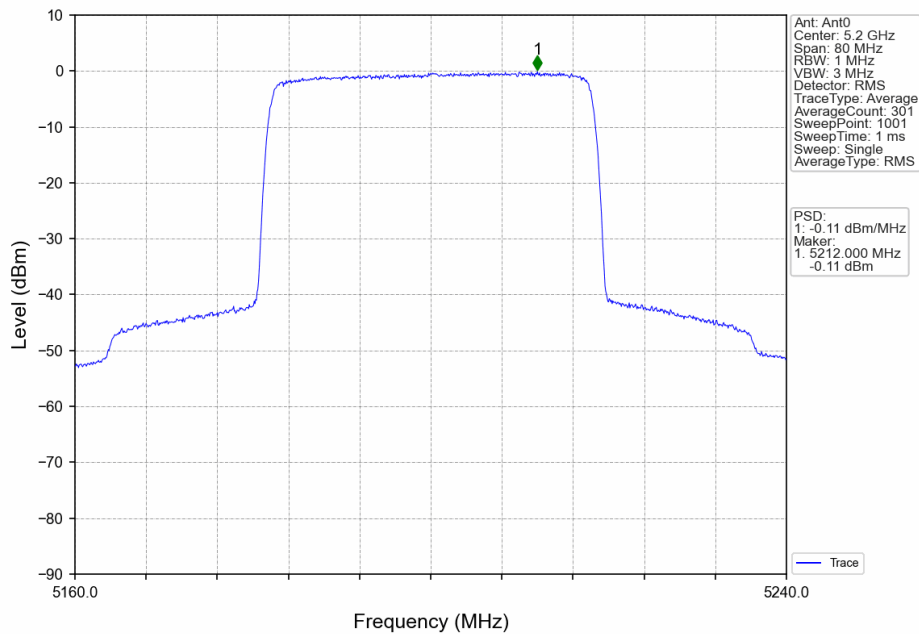
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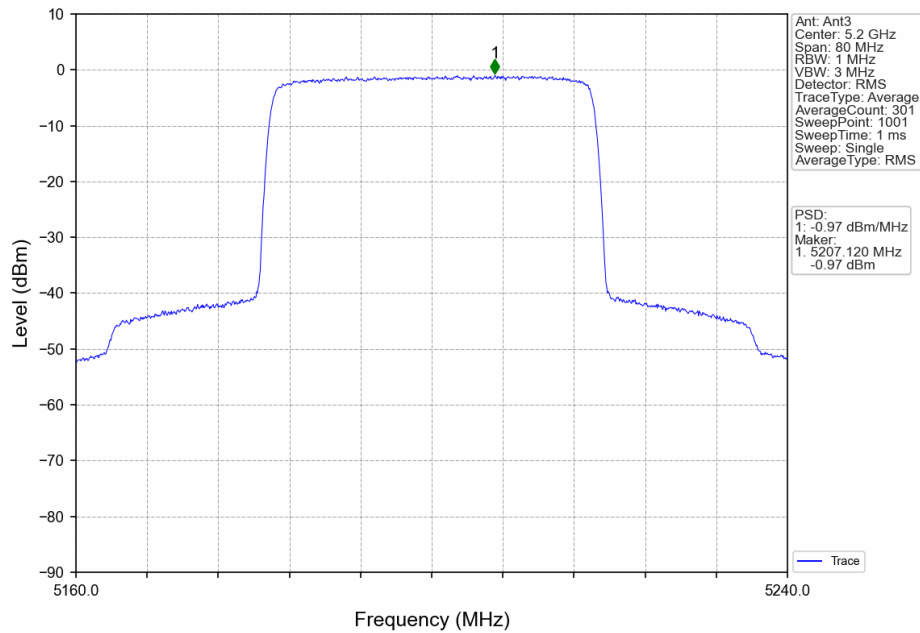
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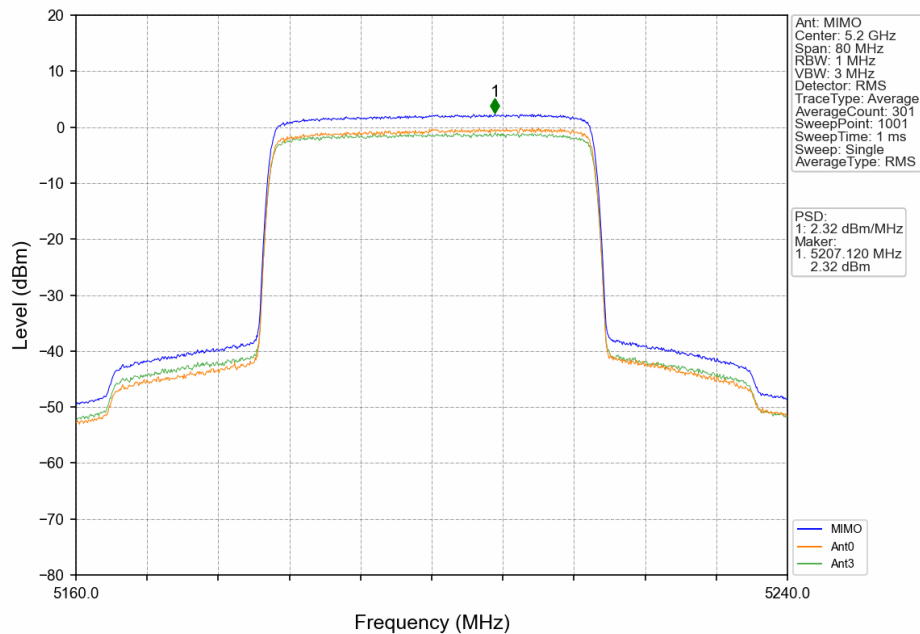
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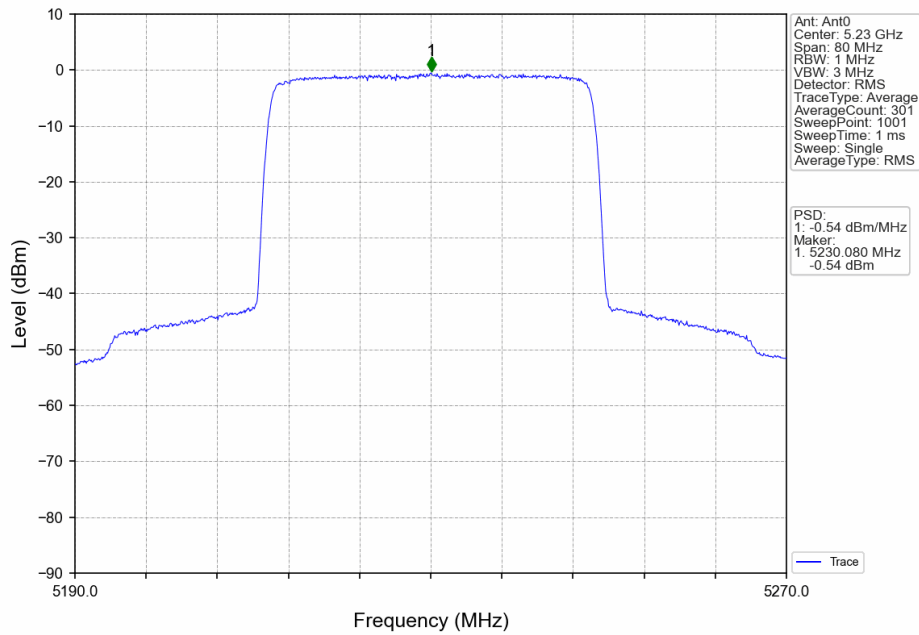
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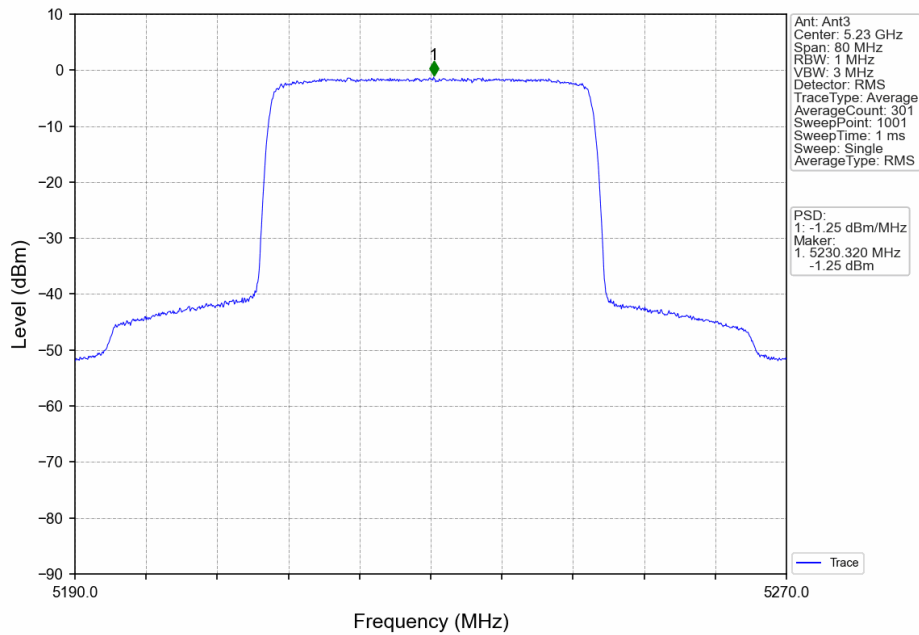
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40_HCH_5230MHz_Ant3_NTNV

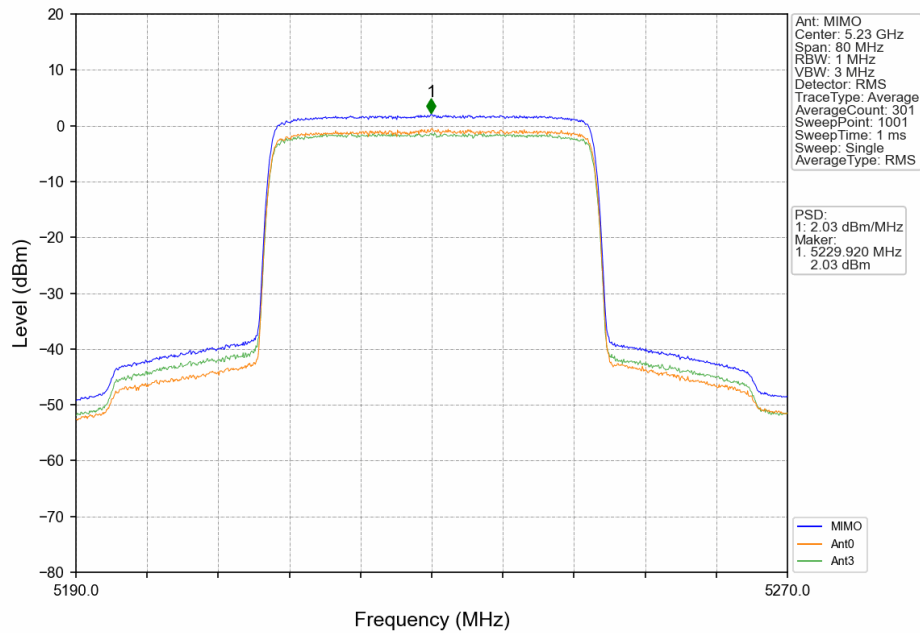


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40_HCH_5230MHz_MIMO_NTNV



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5. Frequency Stability

5.1 Ant0

5.1.1 Test Result

Ant0							
Mode	Tx Type	Frequency (MHz)	Temperature (°C)	Voltage (VDC)	Measured Frequency (MHz)	Limit (MHz)	Verdict
10	MIMO	5157	20	13.09	5157.020	5150 to 5250	Pass
				15.40	5157.030	5150 to 5250	Pass
				17.71	5157.020	5150 to 5250	Pass
			-30	15.40	5157.020	5150 to 5250	Pass
				15.40	5157.030	5150 to 5250	Pass
				15.40	5157.010	5150 to 5250	Pass
			0	15.40	5157.030	5150 to 5250	Pass
				15.40	5157.030	5150 to 5250	Pass
				15.40	5157.030	5150 to 5250	Pass
			50	15.40	5157.030	5150 to 5250	Pass
				15.40	5157.020	5150 to 5250	Pass
				15.40	5157.020	5150 to 5250	Pass
		5200	20	13.09	5200.030	5150 to 5250	Pass
				15.40	5200.040	5150 to 5250	Pass
				17.71	5200.020	5150 to 5250	Pass
			-30	15.40	5200.020	5150 to 5250	Pass
				15.40	5200.010	5150 to 5250	Pass
				15.40	5200.010	5150 to 5250	Pass
			0	15.40	5200.010	5150 to 5250	Pass
				15.40	5200.040	5150 to 5250	Pass
				15.40	5200.020	5150 to 5250	Pass
			50	15.40	5199.990	5150 to 5250	Pass
				15.40	5200.030	5150 to 5250	Pass
				15.40	5200.030	5150 to 5250	Pass
		5245	20	13.09	5245.030	5150 to 5250	Pass
				15.40	5245.010	5150 to 5250	Pass
				17.71	5245.030	5150 to 5250	Pass
			-30	15.40	5245.020	5150 to 5250	Pass
				15.40	5245.030	5150 to 5250	Pass
				15.40	5245.020	5150 to 5250	Pass
			0	15.40	5245.000	5150 to 5250	Pass
				15.40	5245.060	5150 to 5250	Pass
				15.40	5245.000	5150 to 5250	Pass
			40	15.40	5245.000	5150 to 5250	Pass
				15.40	5245.010	5150 to 5250	Pass
				15.40	5245.010	5150 to 5250	Pass

			50	15.40	5245.020	5150 to 5250	Pass
20	MIMO	5161	20	13.09	5161.020	5150 to 5250	Pass
				15.40	5161.040	5150 to 5250	Pass
				17.71	5161.060	5150 to 5250	Pass
			-30	15.40	5161.060	5150 to 5250	Pass
			-20	15.40	5161.060	5150 to 5250	Pass
			-10	15.40	5161.080	5150 to 5250	Pass
			0	15.40	5161.040	5150 to 5250	Pass
			10	15.40	5161.080	5150 to 5250	Pass
			30	15.40	5161.040	5150 to 5250	Pass
			40	15.40	5161.060	5150 to 5250	Pass
		5200	50	15.40	5161.020	5150 to 5250	Pass
			20	13.09	5200.060	5150 to 5250	Pass
				15.40	5200.000	5150 to 5250	Pass
				17.71	5200.060	5150 to 5250	Pass
			-30	15.40	5200.040	5150 to 5250	Pass
			-20	15.40	5200.060	5150 to 5250	Pass
			-10	15.40	5200.020	5150 to 5250	Pass
			0	15.40	5200.020	5150 to 5250	Pass
			10	15.40	5200.040	5150 to 5250	Pass
			30	15.40	5200.040	5150 to 5250	Pass
			40	15.40	5200.040	5150 to 5250	Pass
			50	15.40	5200.020	5150 to 5250	Pass
		5240	20	13.09	5240.020	5150 to 5250	Pass
				15.40	5240.040	5150 to 5250	Pass
				17.71	5240.100	5150 to 5250	Pass
			-30	15.40	5240.060	5150 to 5250	Pass
			-20	15.40	5240.000	5150 to 5250	Pass
			-10	15.40	5240.000	5150 to 5250	Pass
			0	15.40	5240.040	5150 to 5250	Pass
			10	15.40	5240.040	5150 to 5250	Pass
			30	15.40	5239.980	5150 to 5250	Pass
			40	15.40	5240.100	5150 to 5250	Pass
			50	15.40	5240.040	5150 to 5250	Pass
40	MIMO	5170	20	13.09	5170.080	5150 to 5250	Pass
				15.40	5170.080	5150 to 5250	Pass
				17.71	5170.120	5150 to 5250	Pass
			-30	15.40	5170.160	5150 to 5250	Pass
			-20	15.40	5170.040	5150 to 5250	Pass
			-10	15.40	5170.080	5150 to 5250	Pass
			0	15.40	5170.080	5150 to 5250	Pass
			10	15.40	5170.120	5150 to 5250	Pass



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			30	15.40	5170.080	5150 to 5250	Pass
			40	15.40	5170.120	5150 to 5250	Pass
			50	15.40	5170.120	5150 to 5250	Pass
		5200	20	13.09	5200.120	5150 to 5250	Pass
				15.40	5200.080	5150 to 5250	Pass
				17.71	5200.120	5150 to 5250	Pass
			-30	15.40	5200.120	5150 to 5250	Pass
			-20	15.40	5200.080	5150 to 5250	Pass
			-10	15.40	5200.120	5150 to 5250	Pass
			0	15.40	5200.080	5150 to 5250	Pass
			10	15.40	5200.040	5150 to 5250	Pass
			30	15.40	5200.000	5150 to 5250	Pass
			40	15.40	5200.080	5150 to 5250	Pass
			50	15.40	5200.120	5150 to 5250	Pass
		5230	20	13.09	5230.040	5150 to 5250	Pass
				15.40	5230.120	5150 to 5250	Pass
				17.71	5230.080	5150 to 5250	Pass
			-30	15.40	5230.160	5150 to 5250	Pass
			-20	15.40	5230.120	5150 to 5250	Pass
			-10	15.40	5230.120	5150 to 5250	Pass
			0	15.40	5230.040	5150 to 5250	Pass
			10	15.40	5230.080	5150 to 5250	Pass
			30	15.40	5230.000	5150 to 5250	Pass
			40	15.40	5230.080	5150 to 5250	Pass
			50	15.40	5230.080	5150 to 5250	Pass

- End of the Report -