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Annex for 5G Wi-Fi BAND3

Test Report No.: CTL2506052011-WF04

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1. Duty Cycle

1.1 Test Result

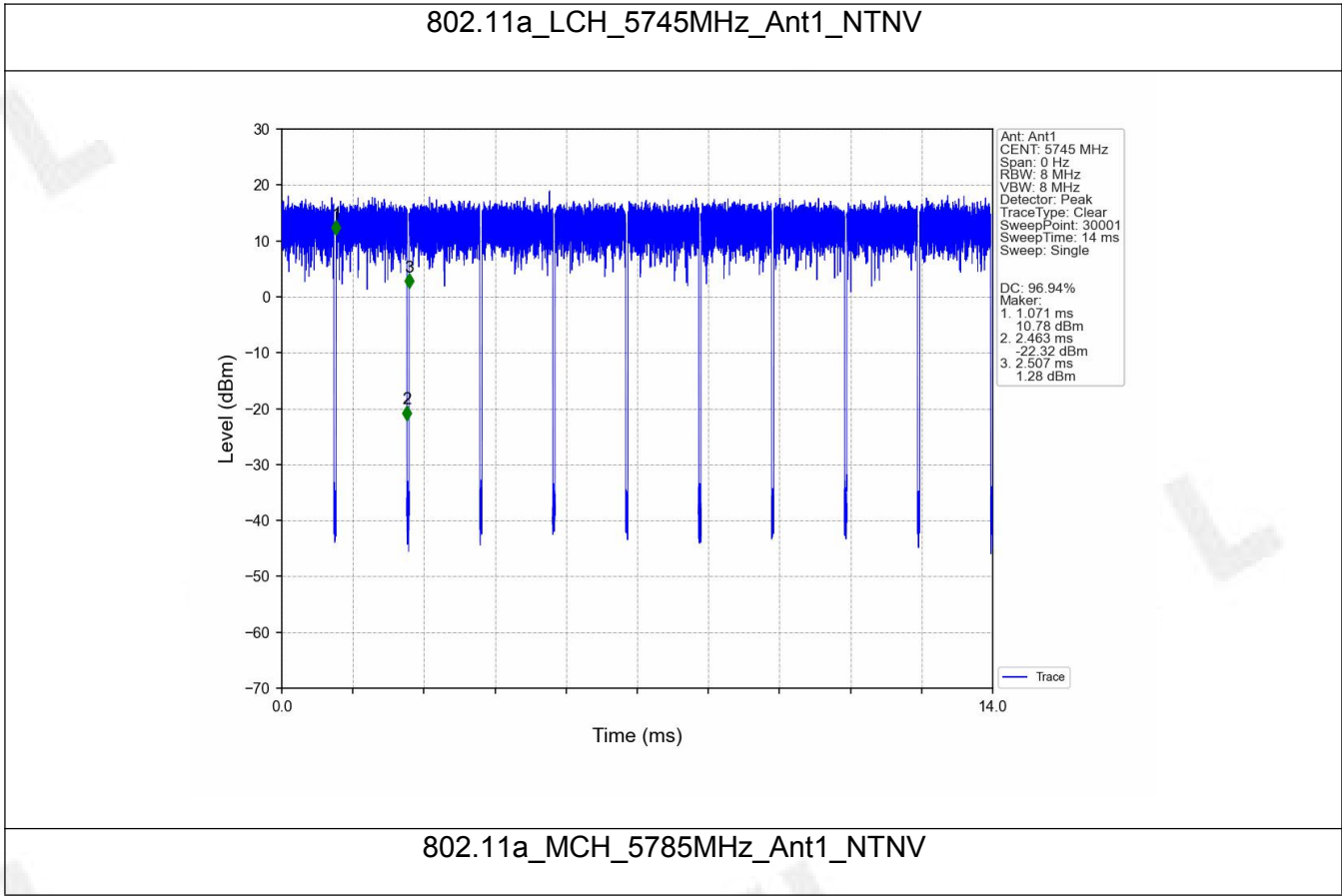
1.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11a	SISO	5745	1.392	1.436	96.94	0.14	0.03
		5785	1.393	1.437	96.94	0.14	0.03
		5825	1.392	1.437	96.87	0.14	0.03
802.11n (HT20)	SISO	5745	1.301	1.345	96.73	0.14	0.04
		5785	1.301	1.345	96.73	0.14	0.03
		5825	1.301	1.345	96.73	0.14	0.03
802.11n (HT40)	SISO	5755	0.649	0.693	93.65	0.28	0.07
		5795	0.649	0.693	93.65	0.28	0.07
802.11ac (VHT20)	SISO	5745	1.312	1.356	96.76	0.14	0.07
		5785	1.312	1.357	96.68	0.15	0.03
		5825	1.313	1.357	96.76	0.14	0.07
802.11ac (VHT40)	SISO	5755	0.654	0.696	93.97	0.27	0.03
		5795	0.652	0.696	93.68	0.28	0.00
802.11ac (VHT80)	SISO	5775	0.325	0.369	88.08	0.55	0.10

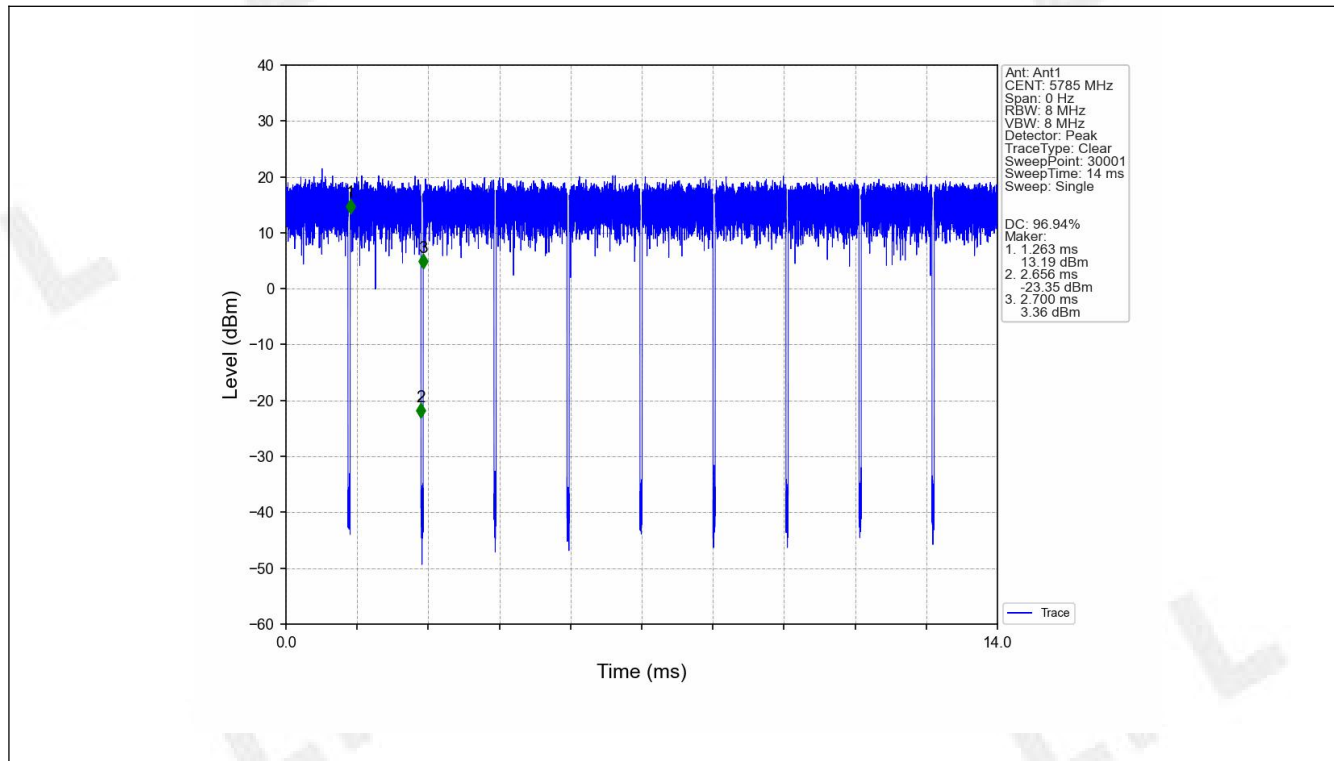
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1.2 Test Graph

1.2.1 Ant1

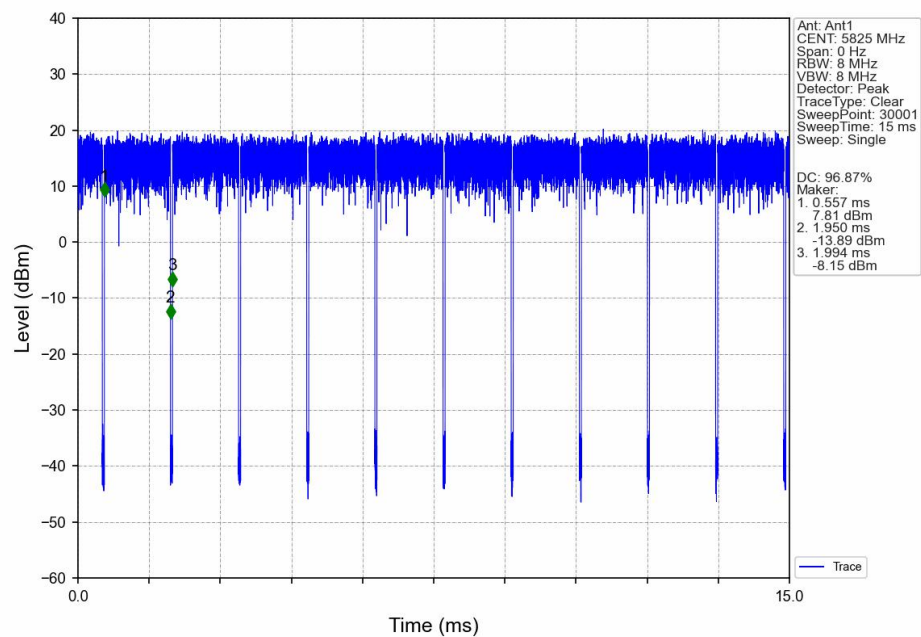


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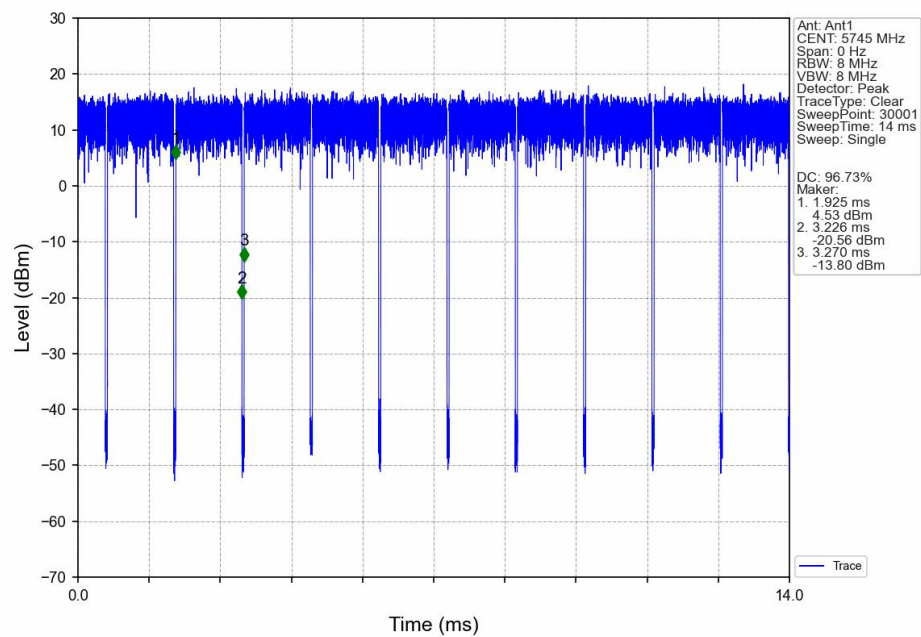


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802.11a_HCH_5825MHz_Ant1_NTNV

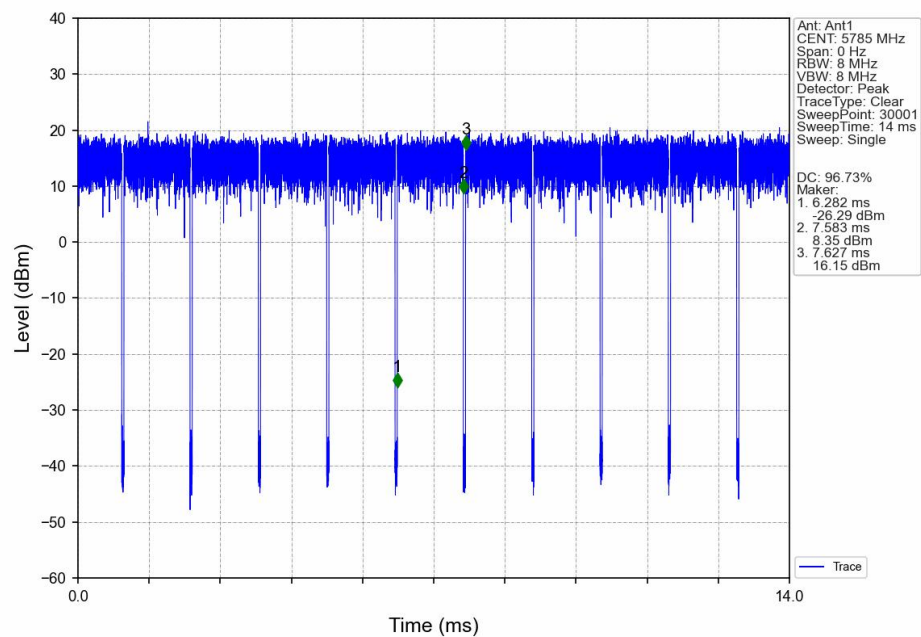


802.11n(HT20)_LCH_5745MHz_Ant1_NTNV

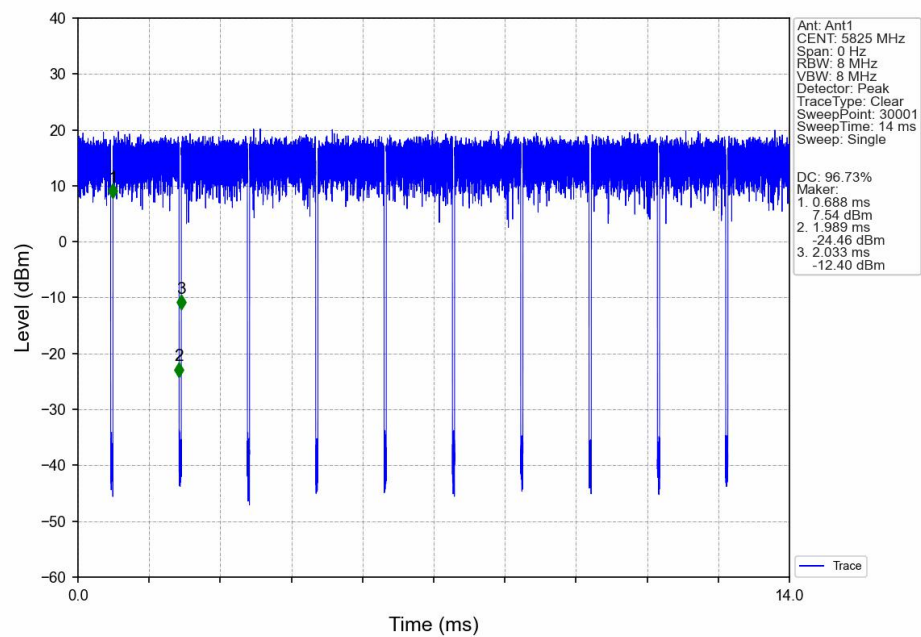


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802.11n(HT20)_MCH_5785MHz_Ant1_NTNV

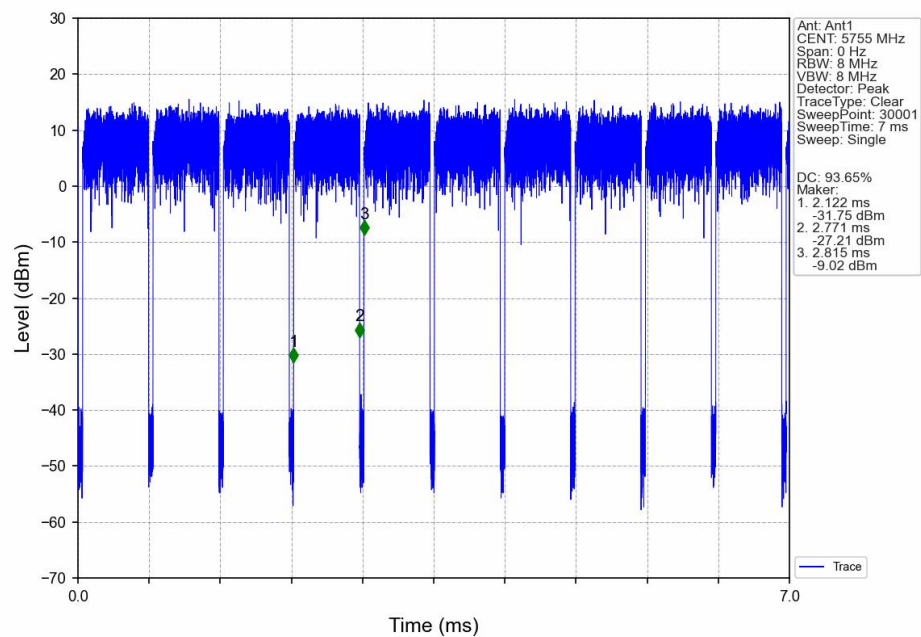


802.11n(HT20)_HCH_5825MHz_Ant1_NTNV

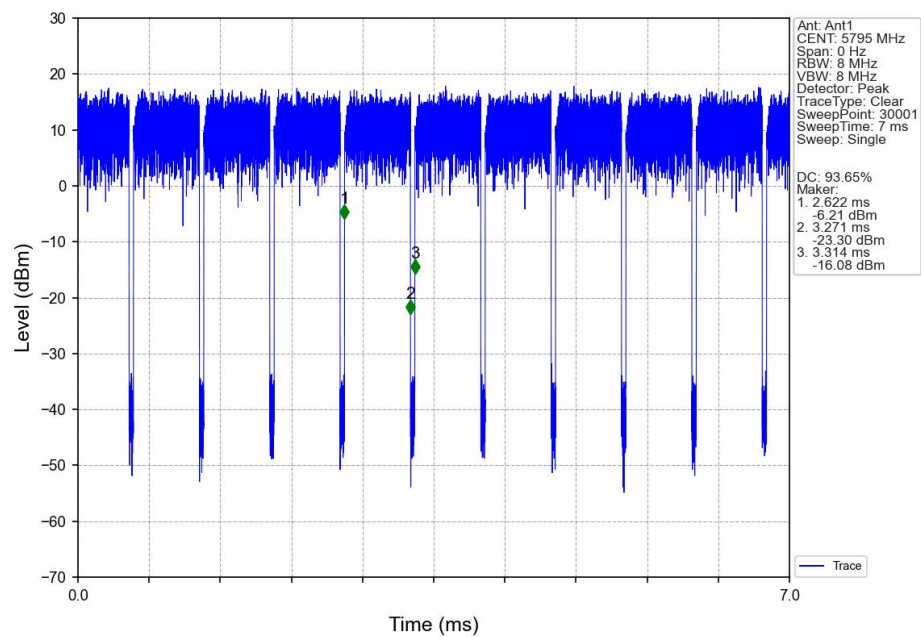


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802.11n(HT40)_LCH_5755MHz_Ant1_NTNV

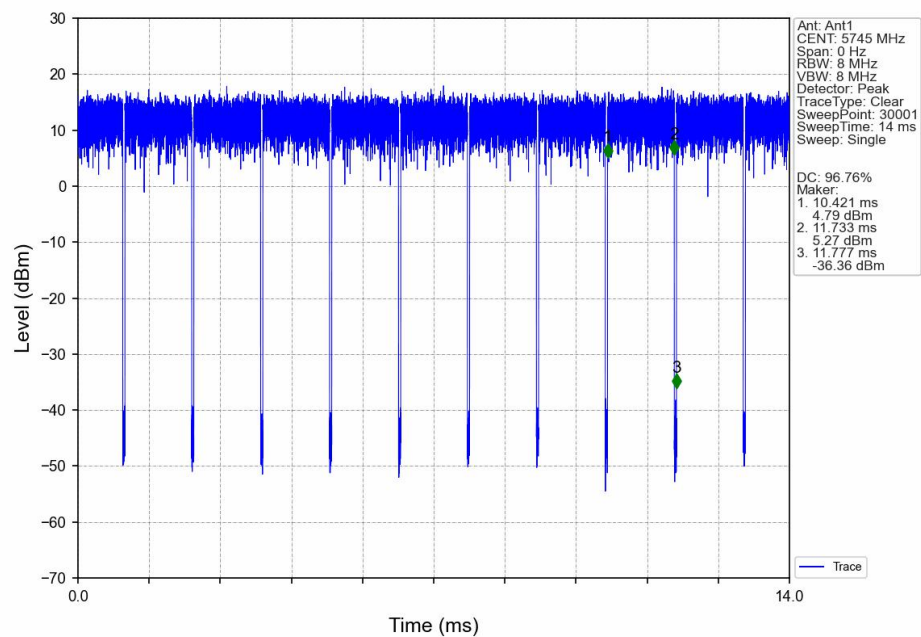


802.11n(HT40)_HCH_5795MHz_Ant1_NTNV

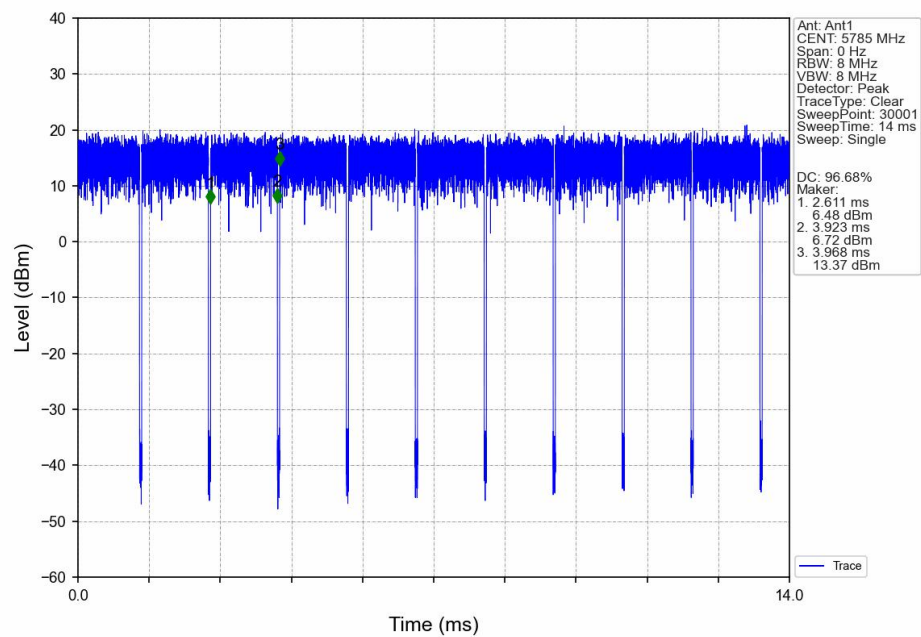


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802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV

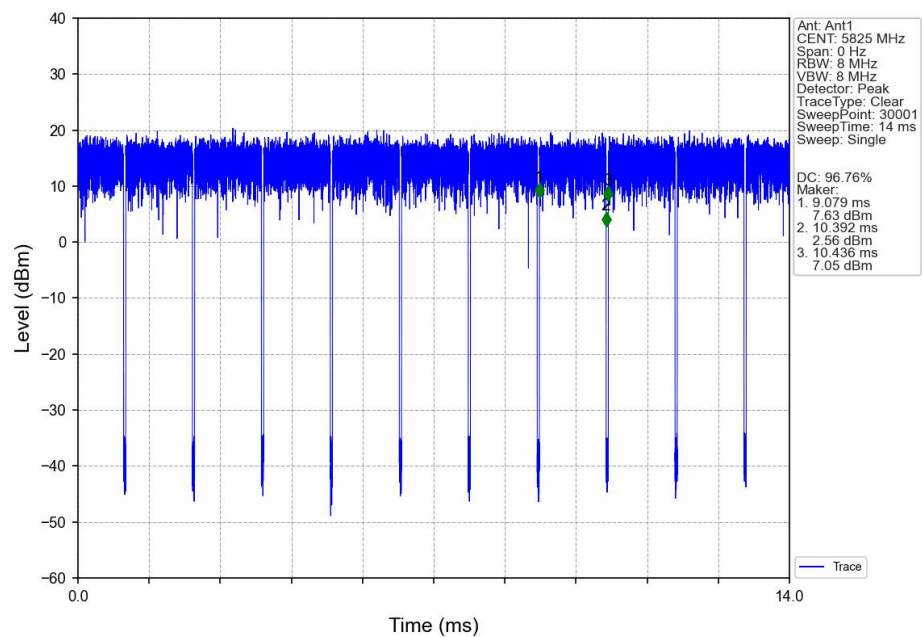


802.11ac(VHT20)_MCH_5785MHz_Ant1_NTNV

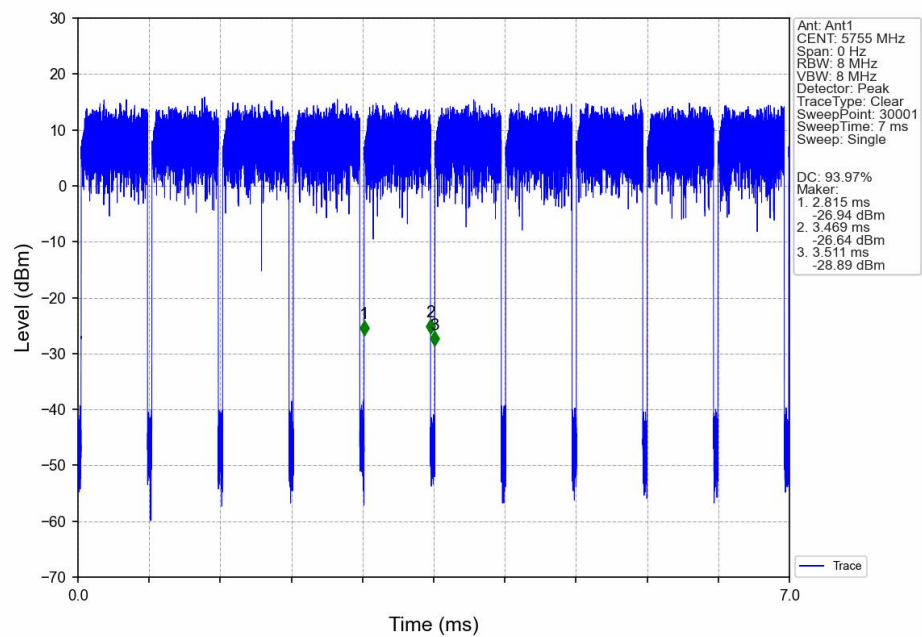


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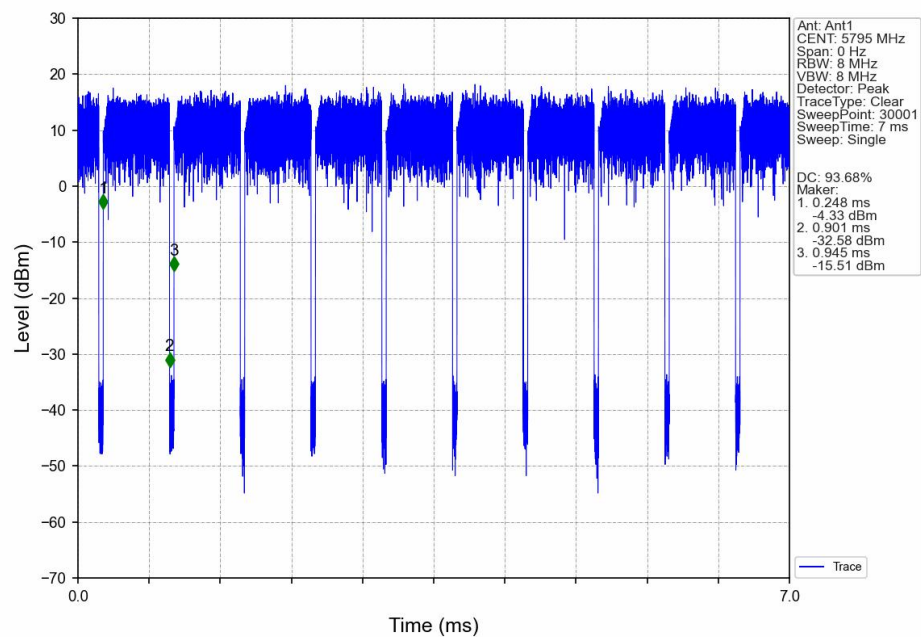


802.11ac(VHT40)_LCH_5755MHz_Ant1_NTNV

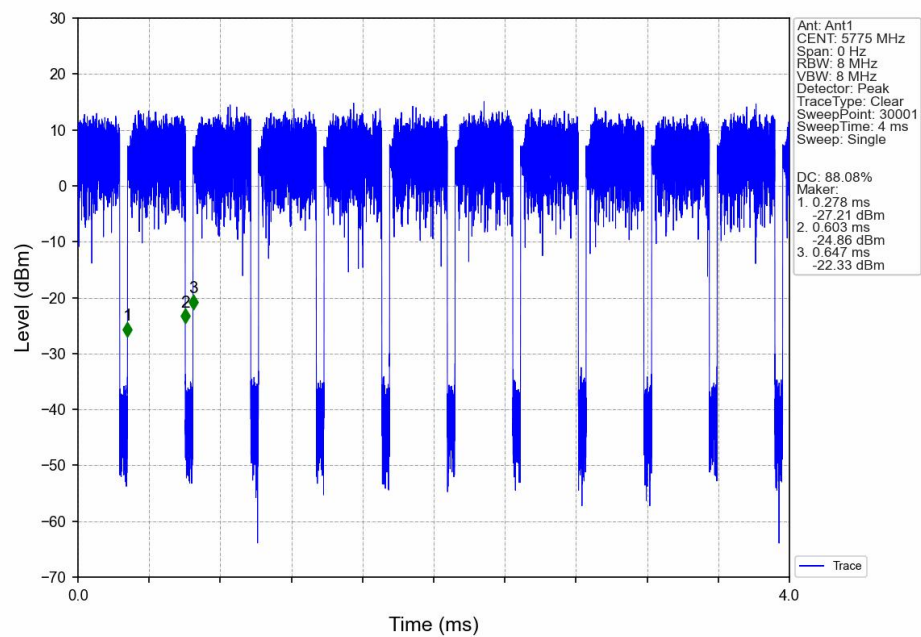


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802.11ac(VHT40)_HCH_5795MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV



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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	5745	1	18.261	/	Pass
		5785	1	17.895	/	Pass
		5825	1	17.948	/	Pass
802.11n (HT20)	SISO	5745	1	18.805	/	Pass
		5785	1	18.817	/	Pass
		5825	1	18.787	/	Pass
802.11n (HT40)	SISO	5755	1	37.383	/	Pass
		5795	1	37.432	/	Pass
802.11ac (VHT20)	SISO	5745	1	18.629	/	Pass
		5785	1	18.570	/	Pass
		5825	1	18.665	/	Pass
802.11ac (VHT40)	SISO	5755	1	37.104	/	Pass
		5795	1	37.369	/	Pass
802.11ac (VHT80)	SISO	5775	1	77.543	/	Pass

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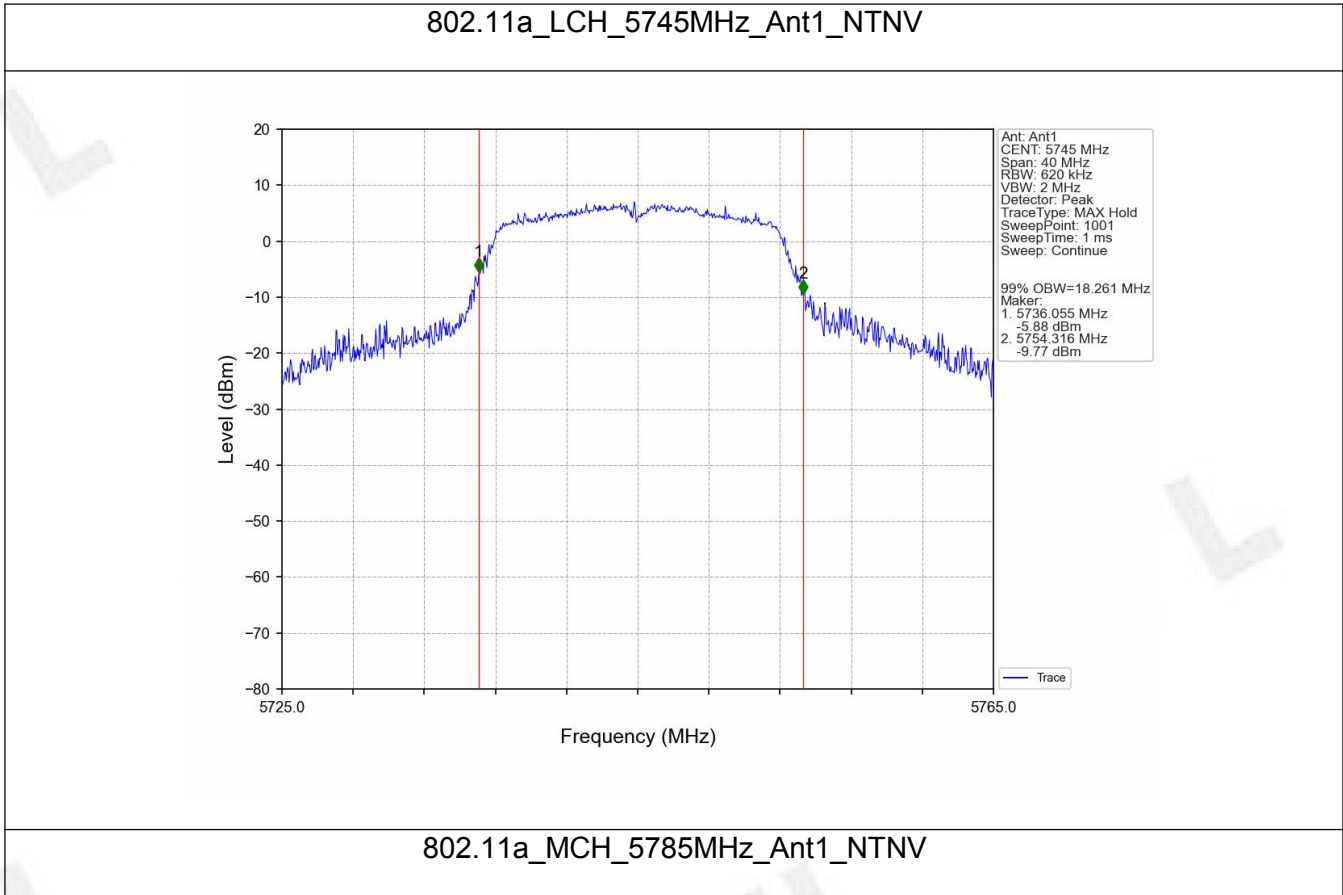
2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5745	1	14.724	≥ 0.5	Pass
		5785	1	15.124	≥ 0.5	Pass
		5825	1	15.439	≥ 0.5	Pass
802.11n (HT20)	SISO	5745	1	15.117	≥ 0.5	Pass
		5785	1	15.131	≥ 0.5	Pass
		5825	1	15.091	≥ 0.5	Pass
802.11n (HT40)	SISO	5755	1	35.104	≥ 0.5	Pass
		5795	1	35.103	≥ 0.5	Pass
802.11ac (VHT20)	SISO	5745	1	15.078	≥ 0.5	Pass
		5785	1	13.851	≥ 0.5	Pass
		5825	1	15.086	≥ 0.5	Pass
802.11ac (VHT40)	SISO	5755	1	33.909	≥ 0.5	Pass
		5795	1	33.906	≥ 0.5	Pass
802.11ac (VHT80)	SISO	5775	1	75.153	≥ 0.5	Pass

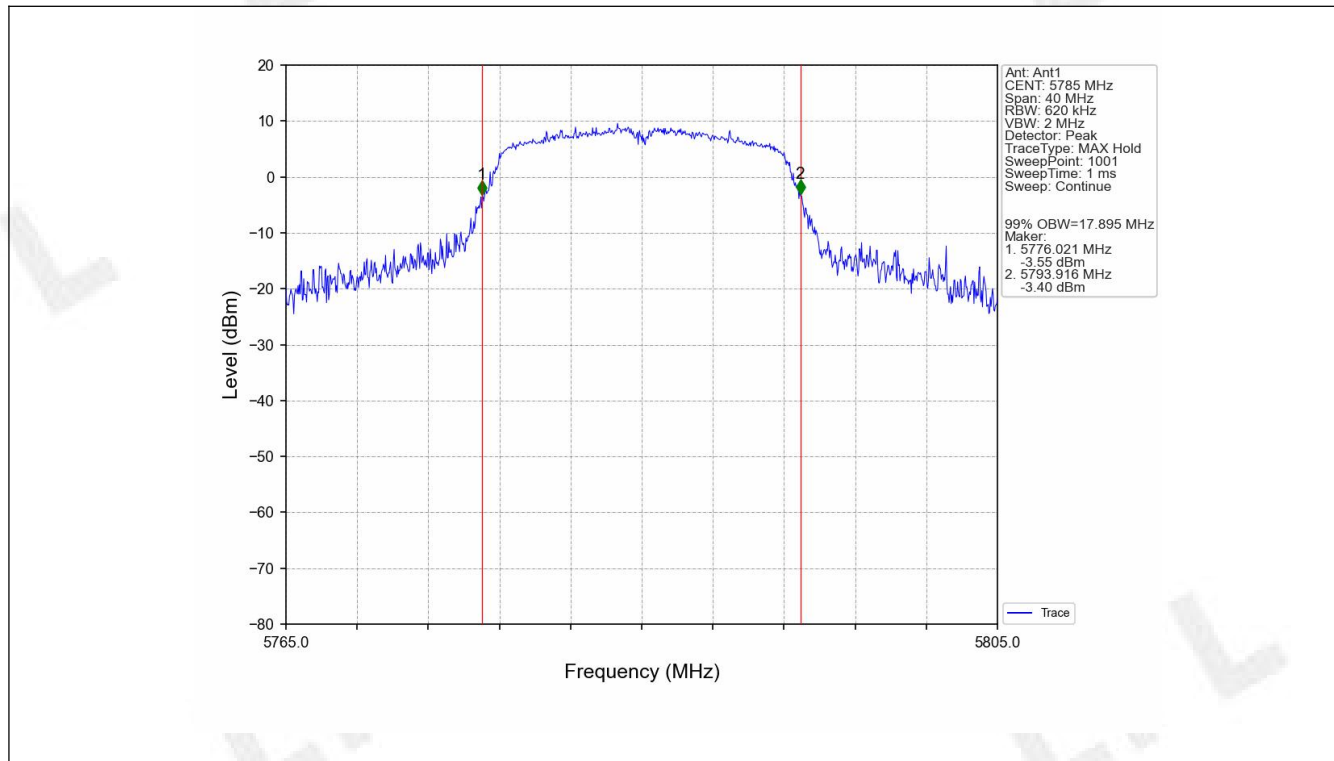
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2.2 Test Graph

2.2.1 OBW

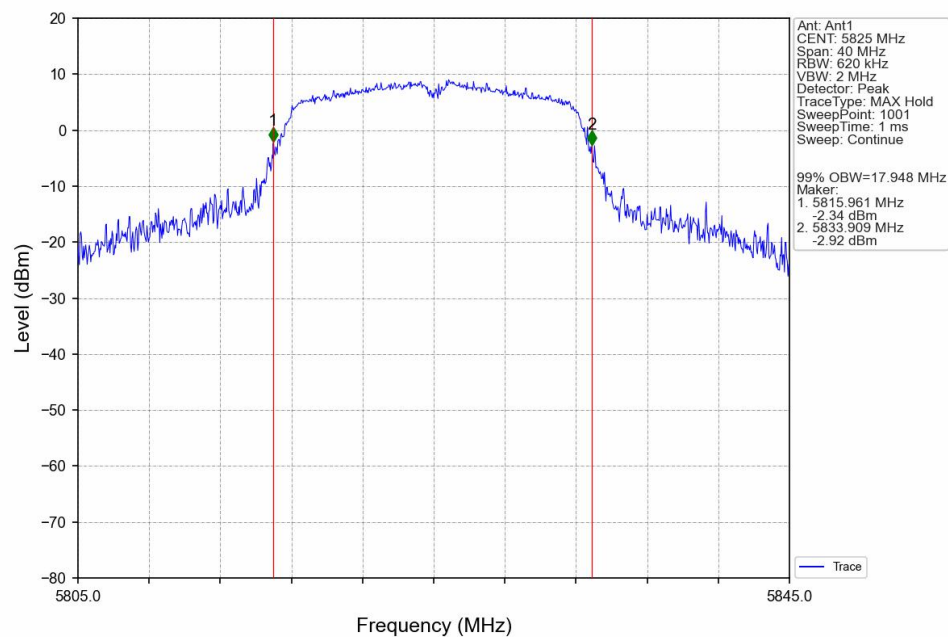


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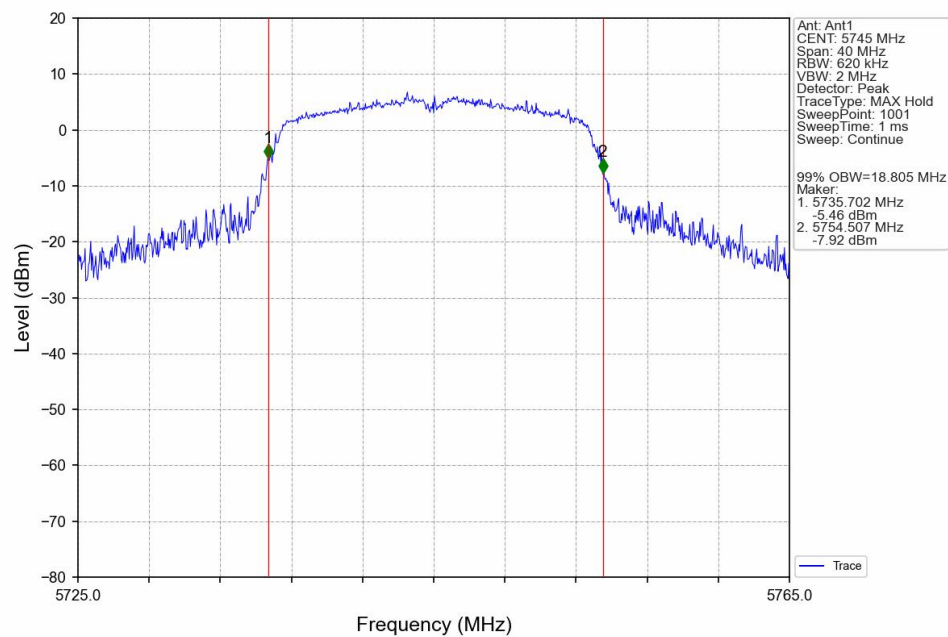


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802.11a_HCH_5825MHz_Ant1_NTNV

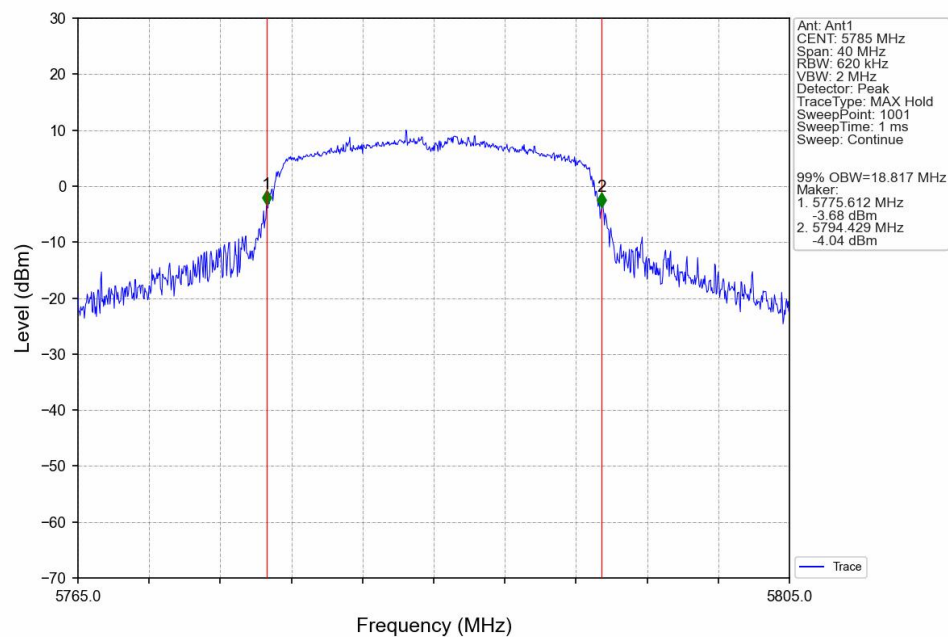


802.11n(HT20)_LCH_5745MHz_Ant1_NTNV

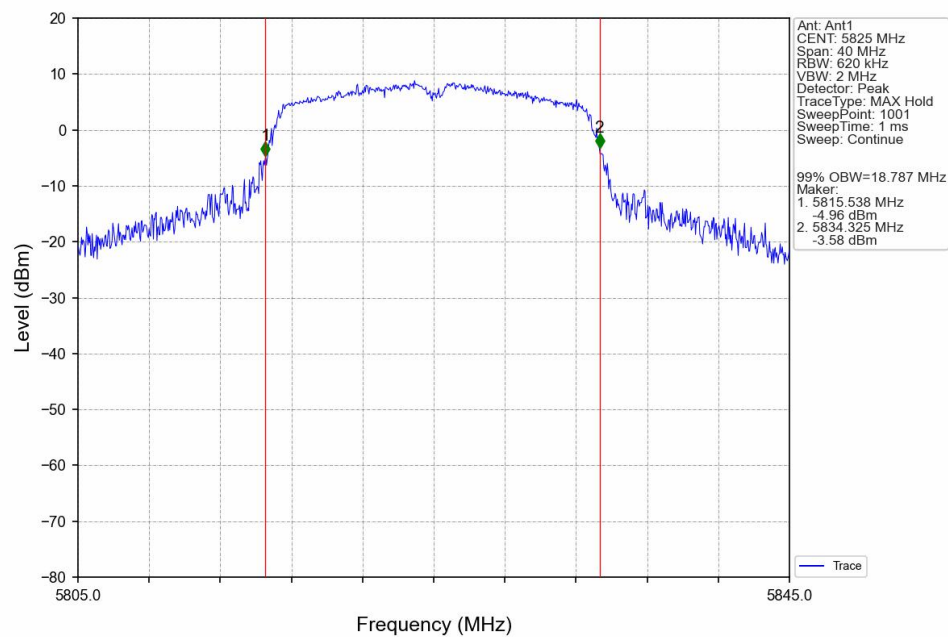


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802.11n(HT20)_MCH_5785MHz_Ant1_NTNV

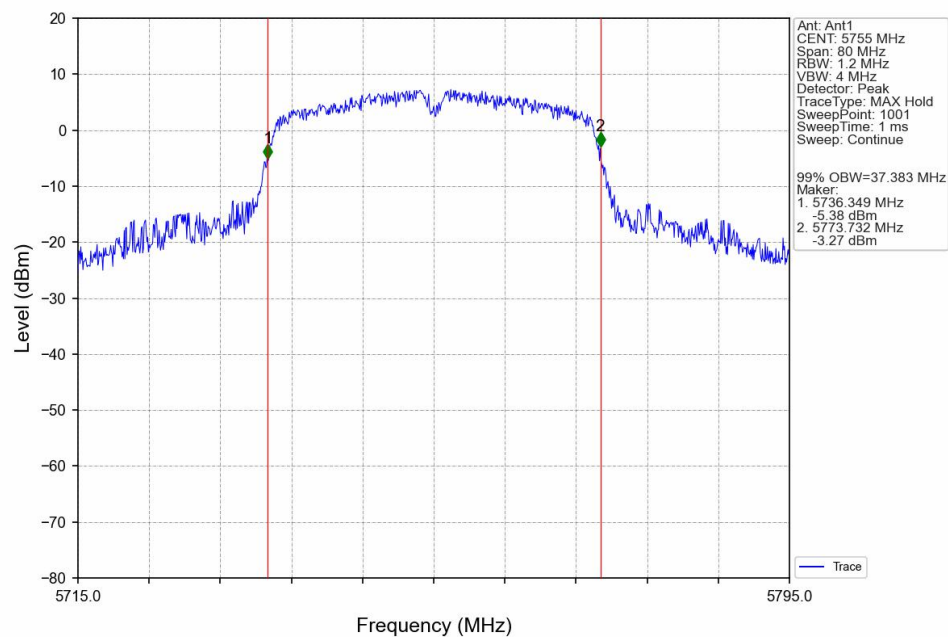


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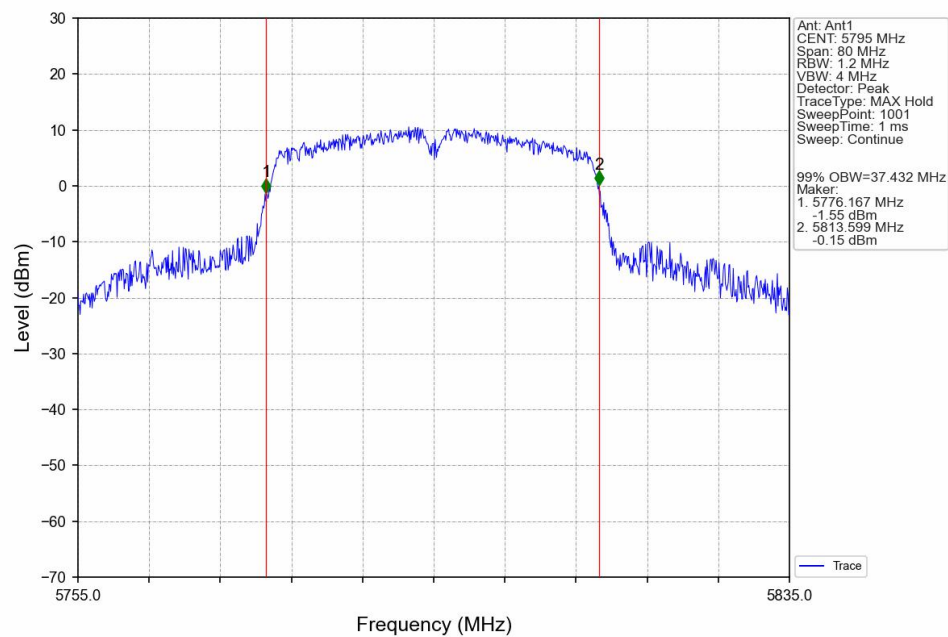


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802.11n(HT40)_LCH_5755MHz_Ant1_NTNV

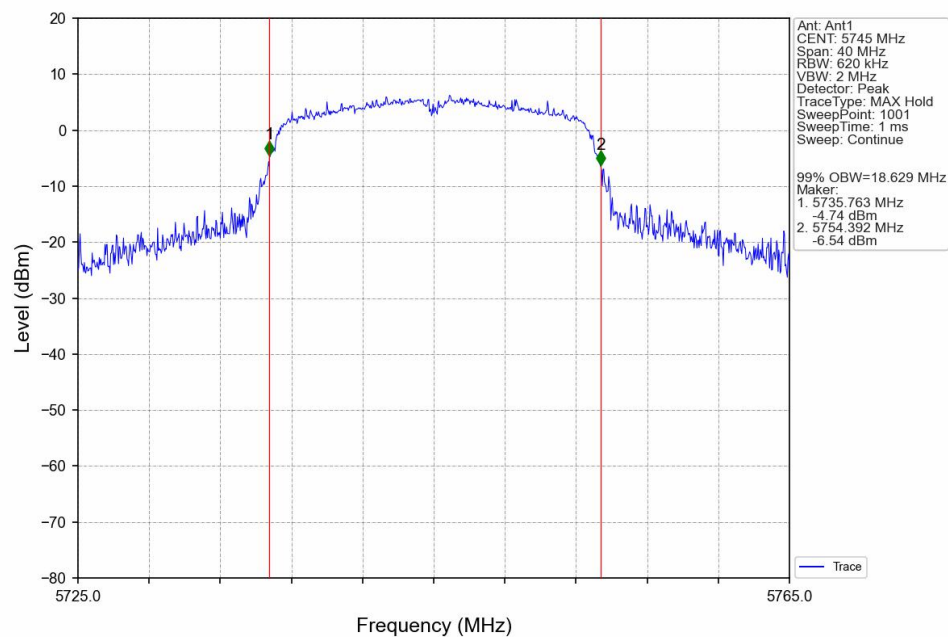


802.11n(HT40)_HCH_5795MHz_Ant1_NTNV

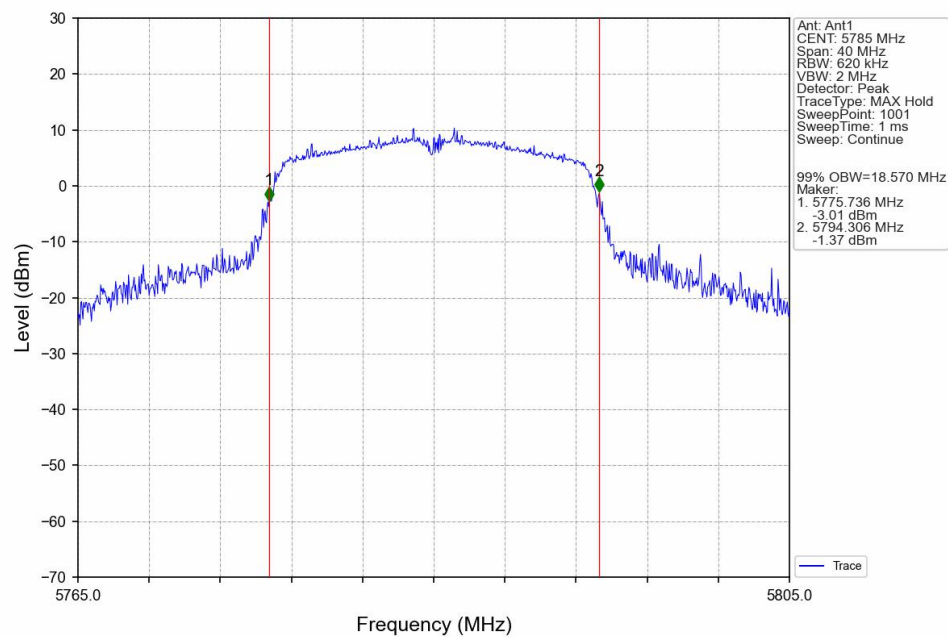


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802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV

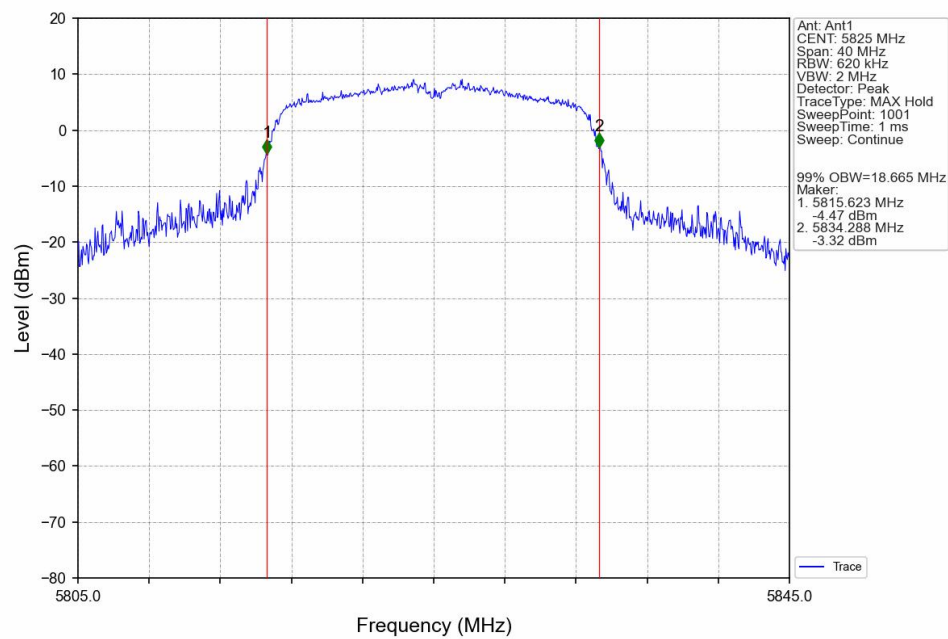


802.11ac(VHT20)_MCH_5785MHz_Ant1_NTNV

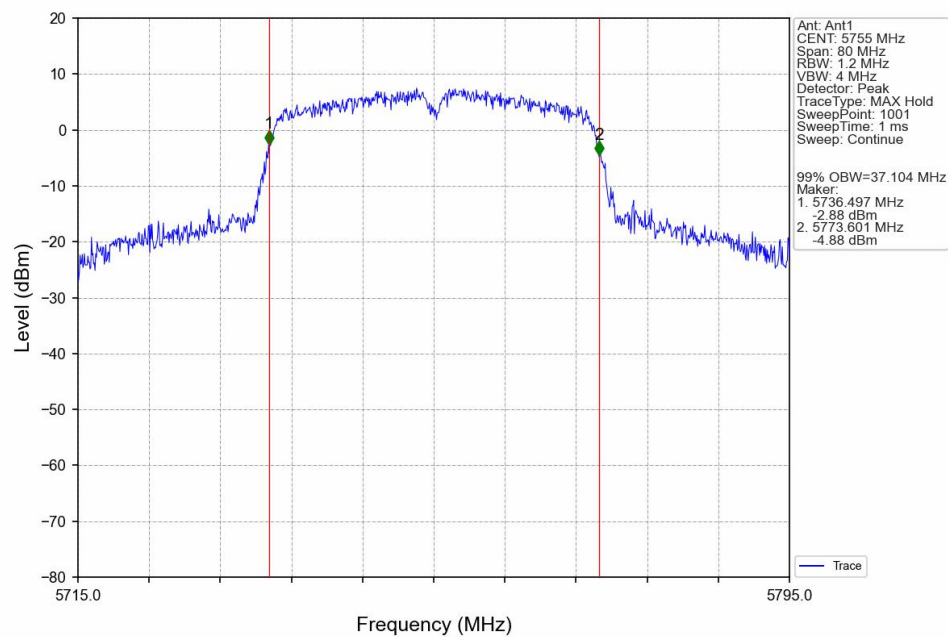


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802.11ac(VHT20)_HCH_5825MHz_Ant1_NTNV

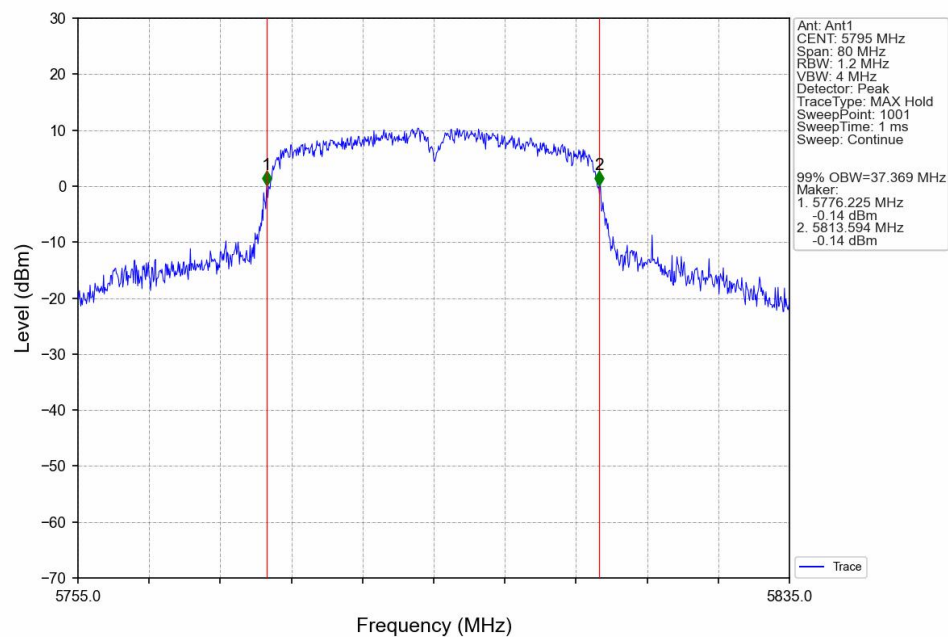


802.11ac(VHT40)_LCH_5755MHz_Ant1_NTNV

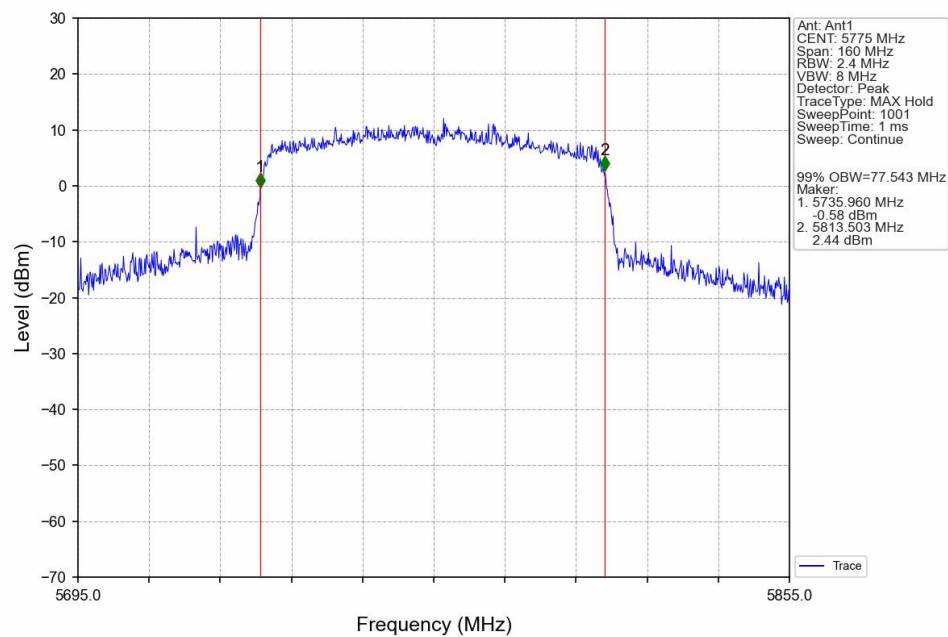


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802.11ac(VHT40)_HCH_5795MHz_Ant1_NTNV

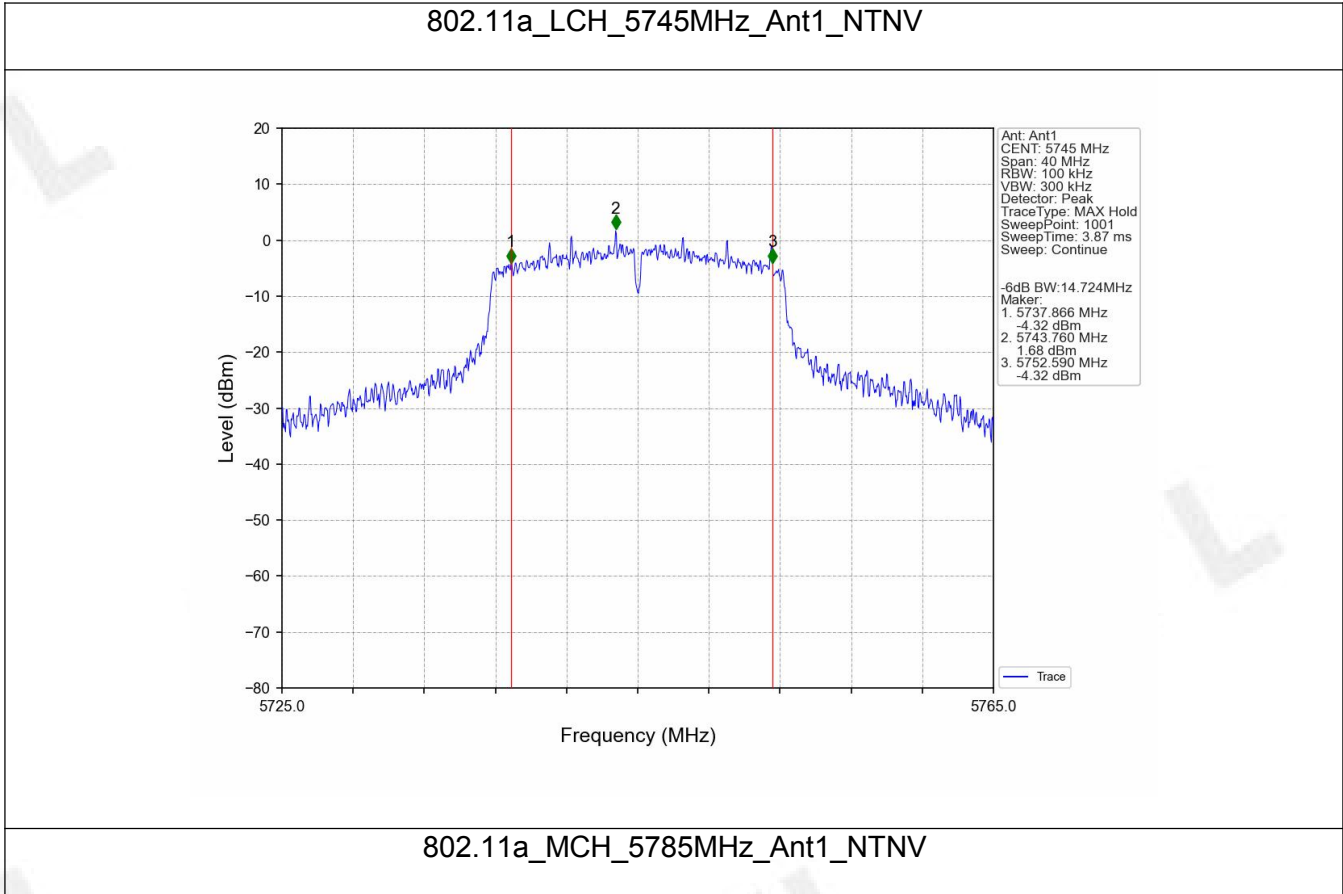


802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV

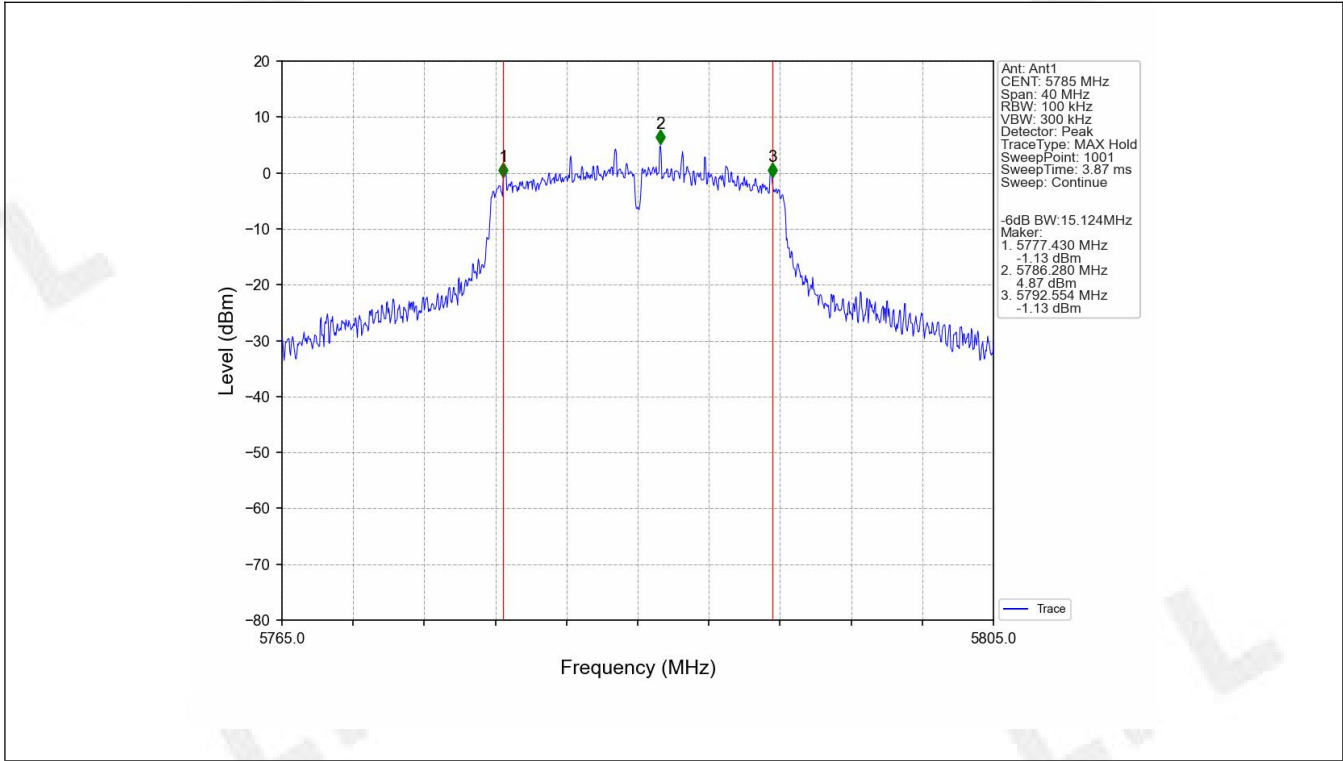


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2.2.2 6dB BW

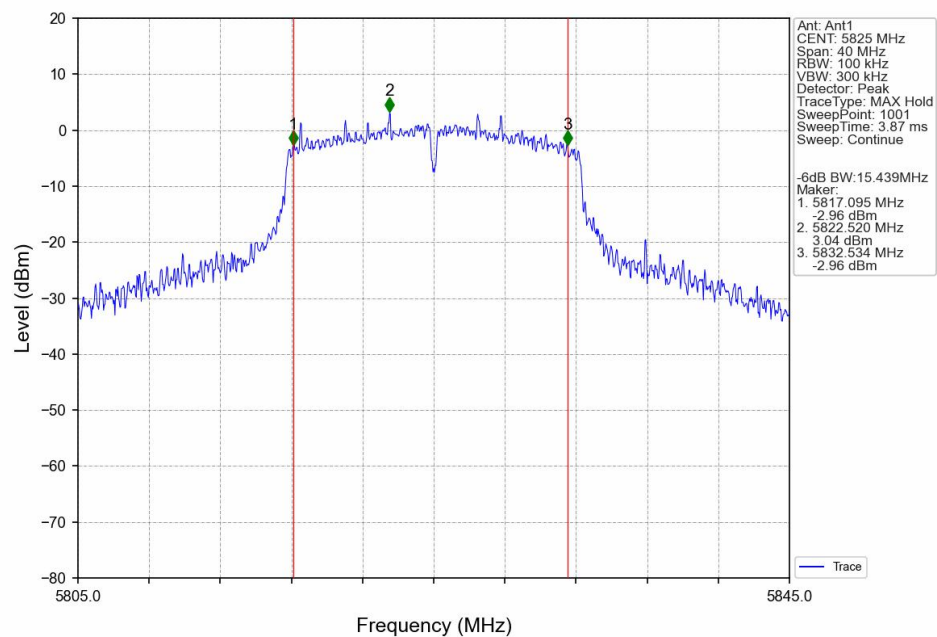


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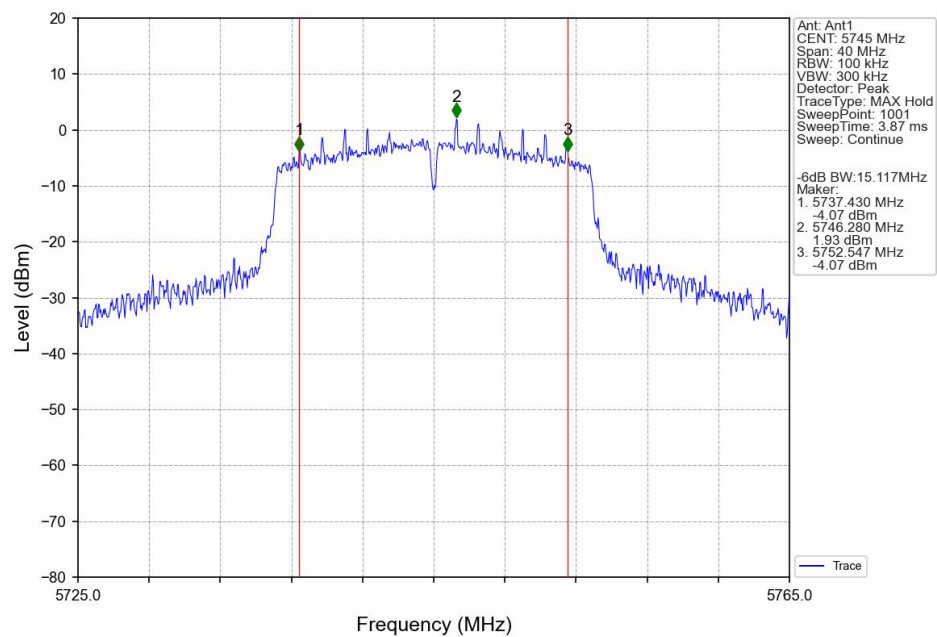


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802.11a_HCH_5825MHz_Ant1_NTNV

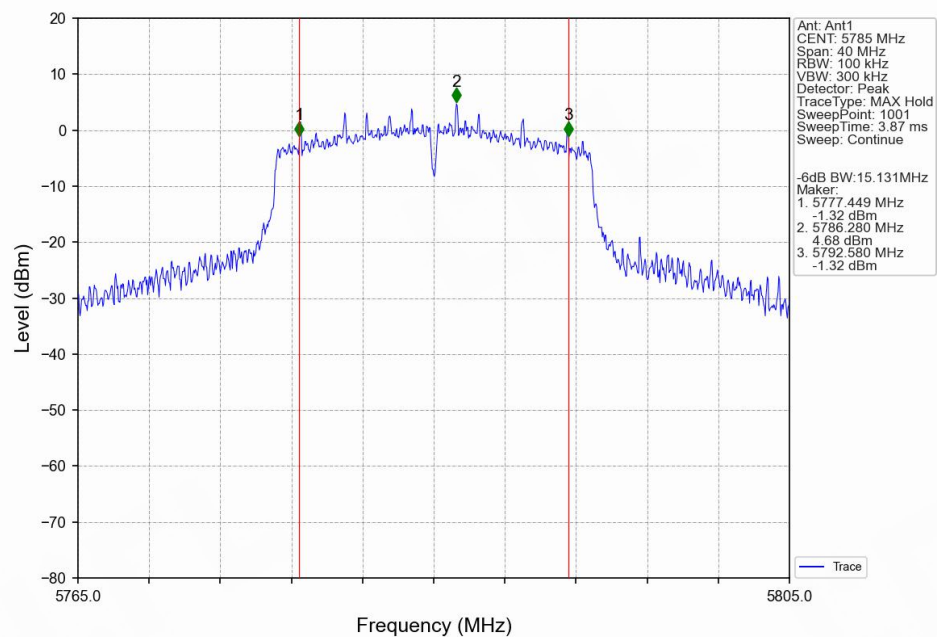


802.11n(HT20)_LCH_5745MHz_Ant1_NTNV

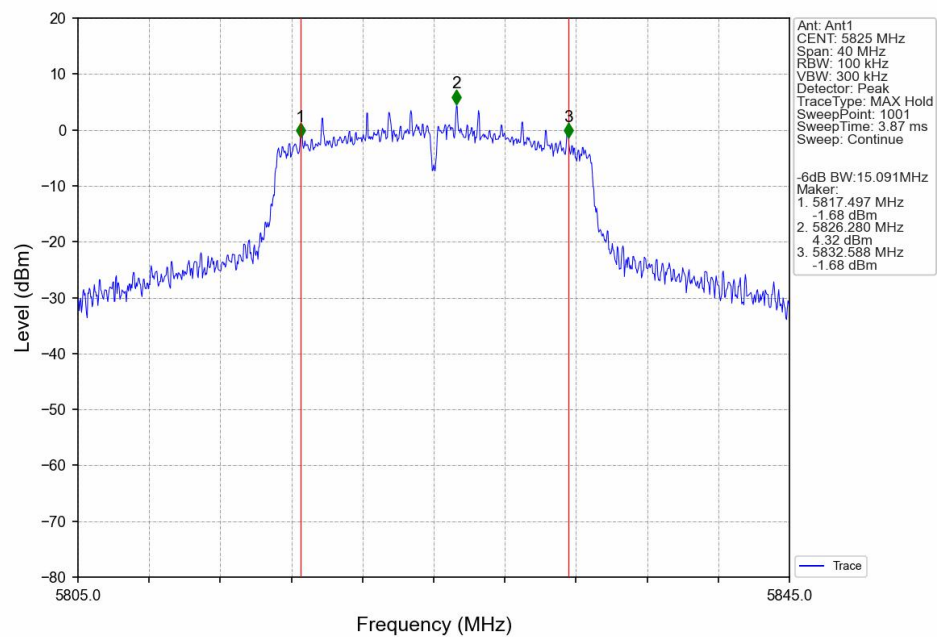


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802.11n(HT20)_MCH_5785MHz_Ant1_NTNV

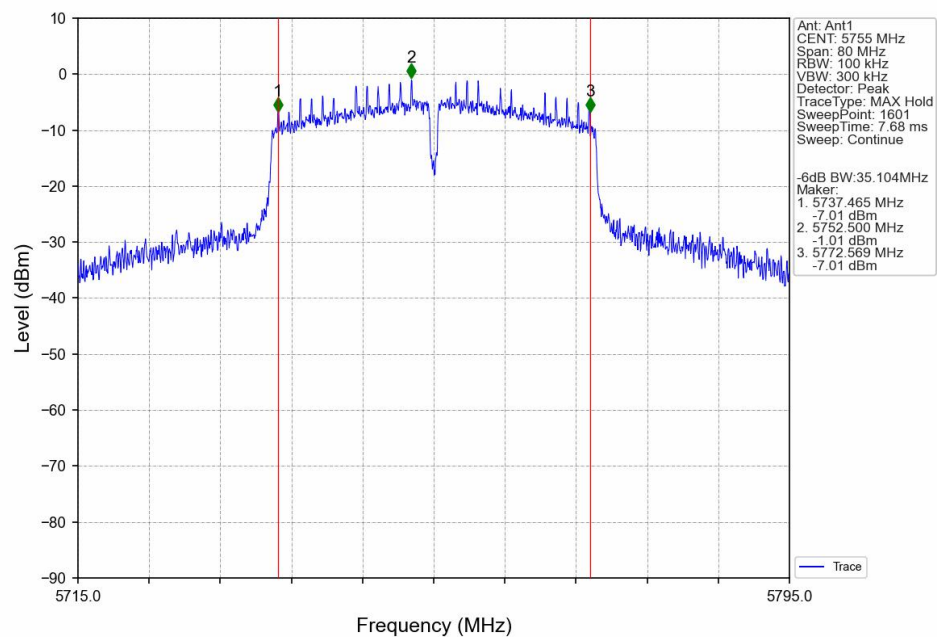


802.11n(HT20)_HCH_5825MHz_Ant1_NTNV

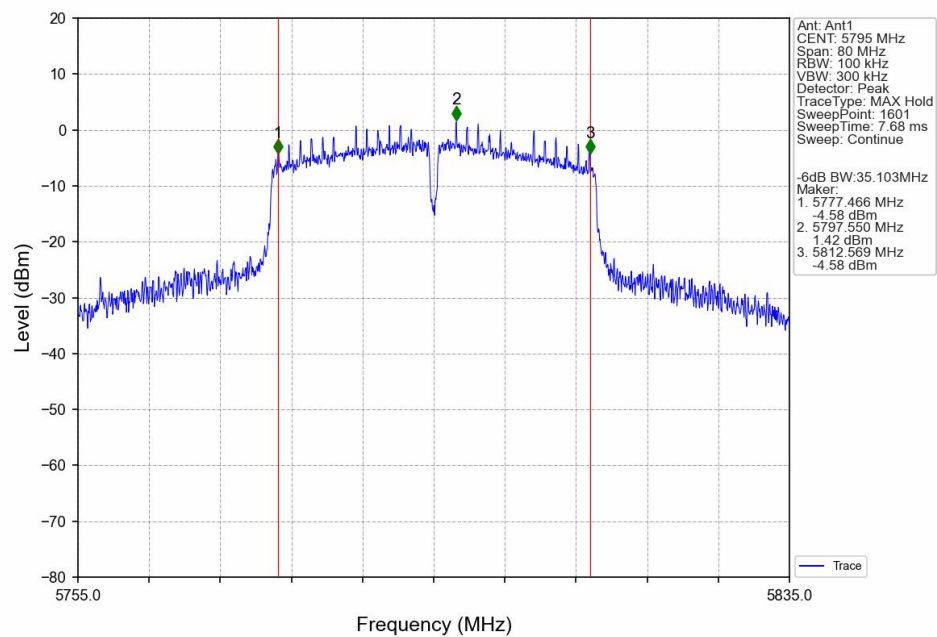


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802.11n(HT40)_LCH_5755MHz_Ant1_NTNV

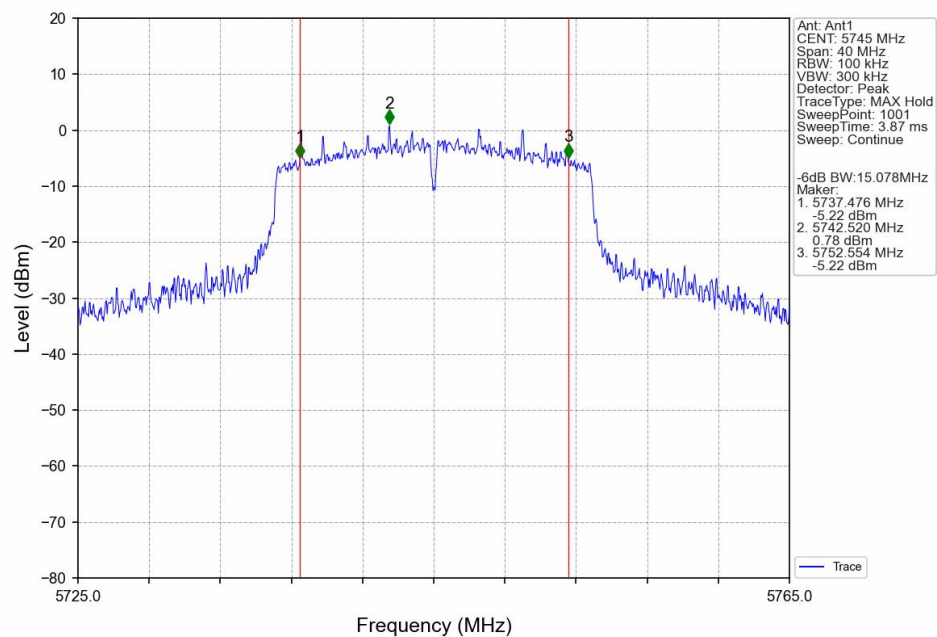


802.11n(HT40)_HCH_5795MHz_Ant1_NTNV

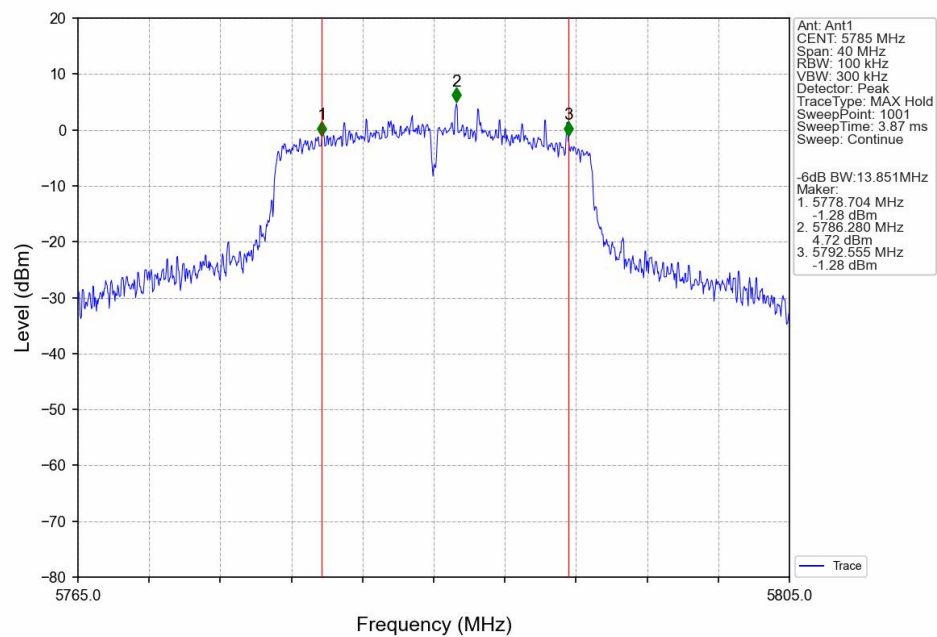


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802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV

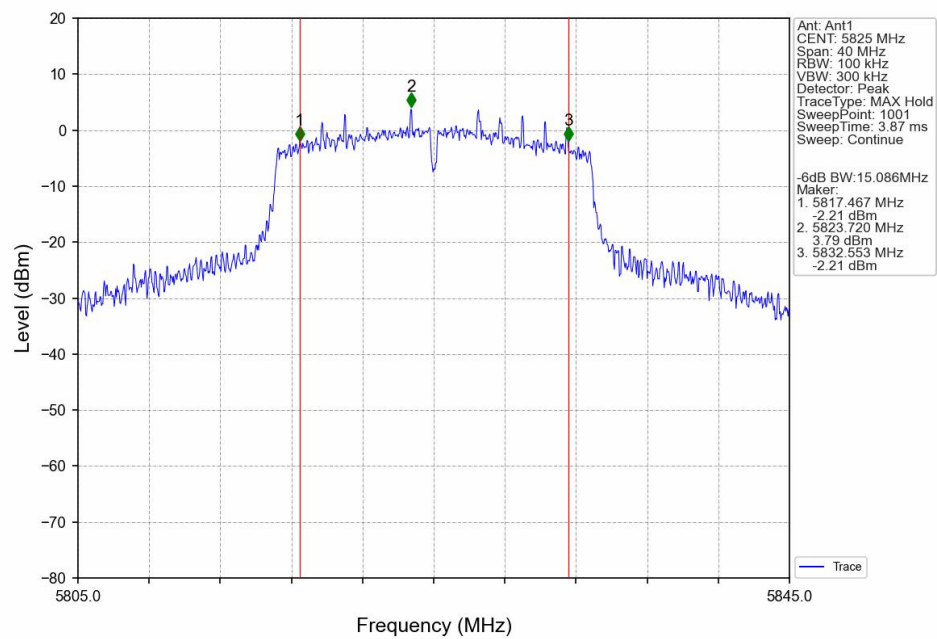


802.11ac(VHT20)_MCH_5785MHz_Ant1_NTNV

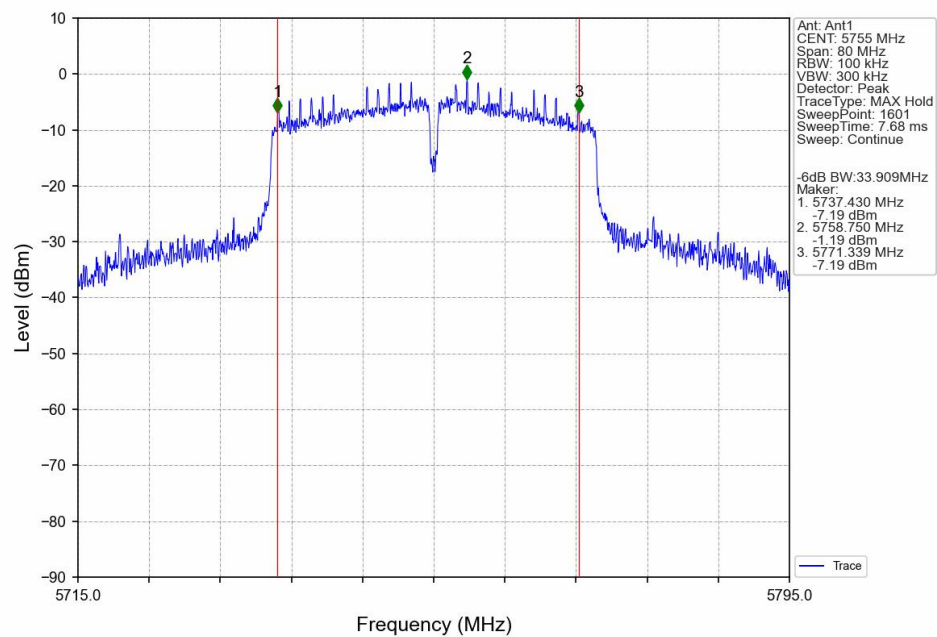


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802.11ac(VHT20)_HCH_5825MHz_Ant1_NTNV

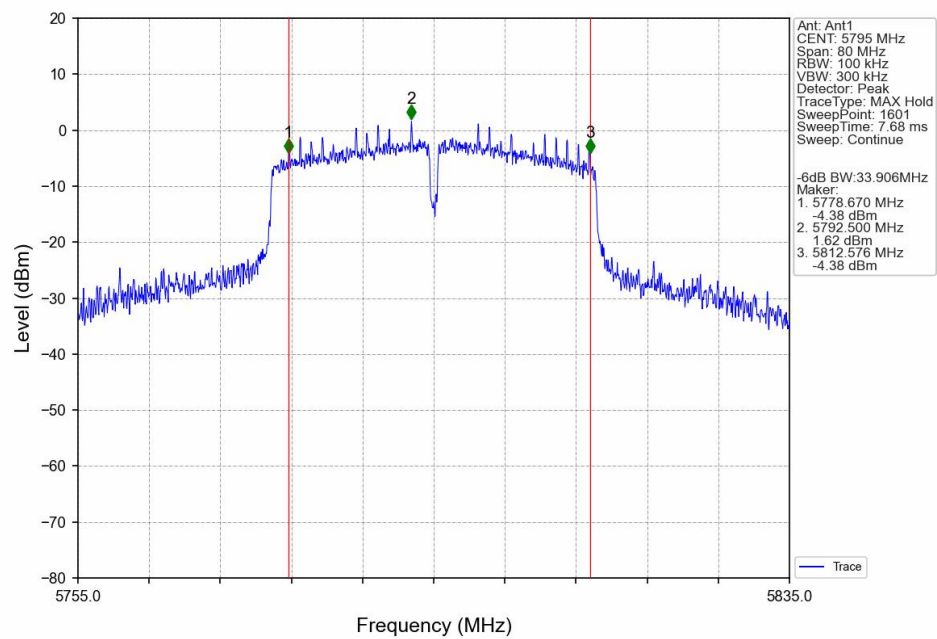


802.11ac(VHT40)_LCH_5755MHz_Ant1_NTNV

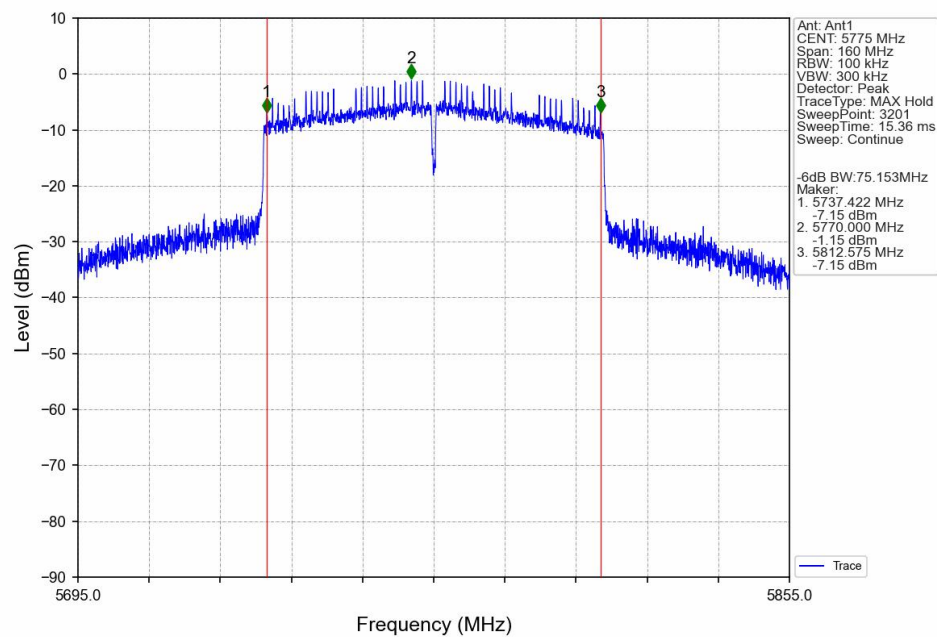


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802.11ac(VHT40)_HCH_5795MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV



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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	5745	12.18	<=30	Pass
		5785	14.63	<=30	Pass
		5825	14.47	<=30	Pass
802.11n (HT20)	SISO	5745	11.69	<=30	Pass
		5785	14.48	<=30	Pass
		5825	14.33	<=30	Pass
802.11n (HT40)	SISO	5755	11.65	<=30	Pass
		5795	14.52	<=30	Pass
802.11ac (VHT20)	SISO	5745	11.69	<=30	Pass
		5785	14.50	<=30	Pass
		5825	14.27	<=30	Pass
802.11ac (VHT40)	SISO	5755	11.59	<=30	Pass
		5795	14.54	<=30	Pass
802.11ac (VHT80)	SISO	5775	14.41	<=30	Pass
Note1: Antenna Gain: Ant1: 3.00dBi;					

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4. Maximum Power Spectral Density

4.1 Test Result

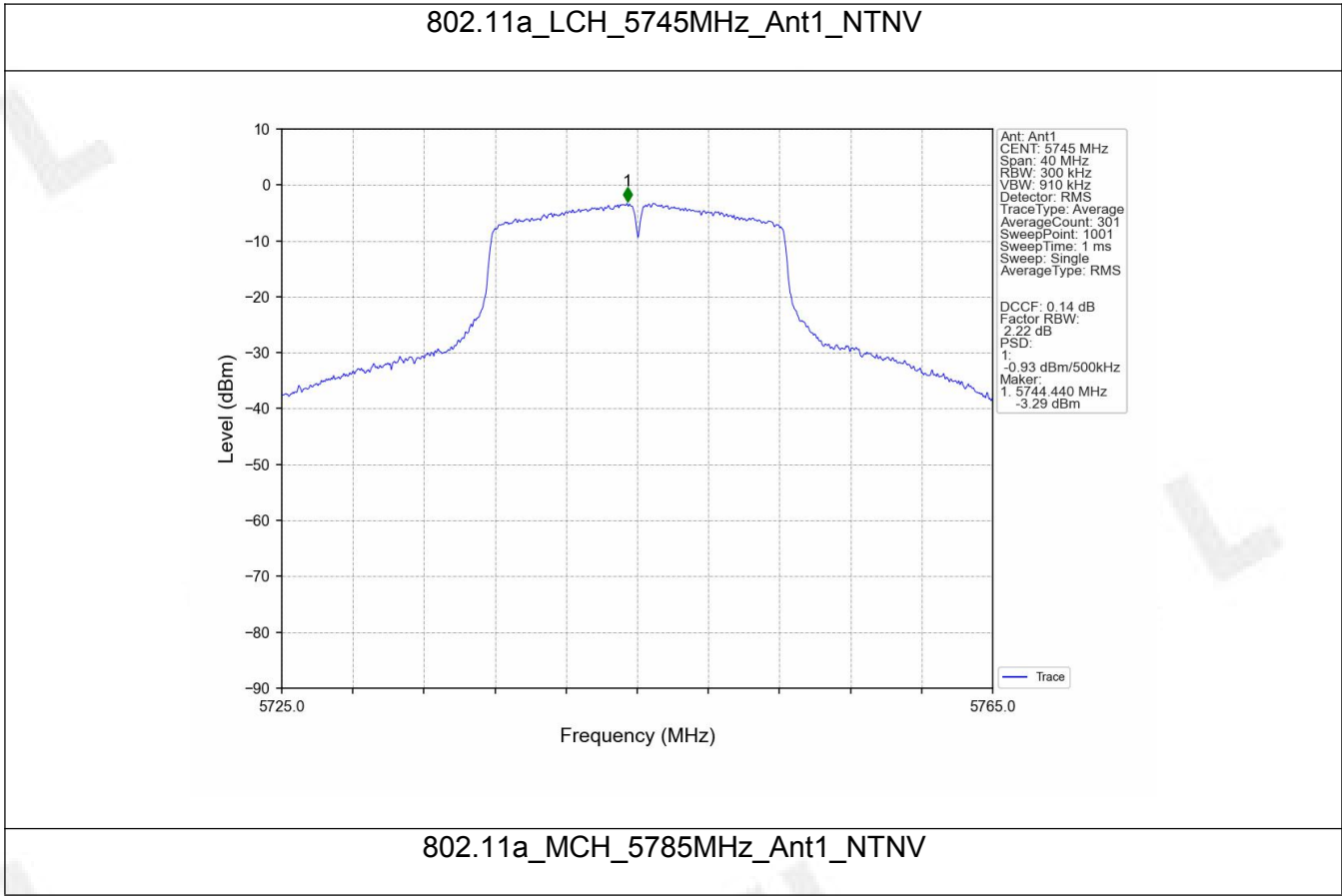
4.1.1 PSD-Band3

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/500kHz)		Verdict
			ANT1	Limit	
802.11a	SISO	5745	-0.93	<=30	Pass
		5785	-1.49	<=30	Pass
		5825	-1.28	<=30	Pass
802.11n (HT20)	SISO	5745	-1.58	<=30	Pass
		5785	-2.00	<=30	Pass
		5825	-1.30	<=30	Pass
802.11n (HT40)	SISO	5755	-4.35	<=30	Pass
		5795	-4.35	<=30	Pass
802.11ac (VHT20)	SISO	5745	-1.68	<=30	Pass
		5785	-1.64	<=30	Pass
		5825	-1.45	<=30	Pass
802.11ac (VHT40)	SISO	5755	-4.67	<=30	Pass
		5795	-4.57	<=30	Pass
802.11ac (VHT80)	SISO	5775	-7.42	<=30	Pass
Note1: Antenna Gain: Ant1: 3.00dBi;					

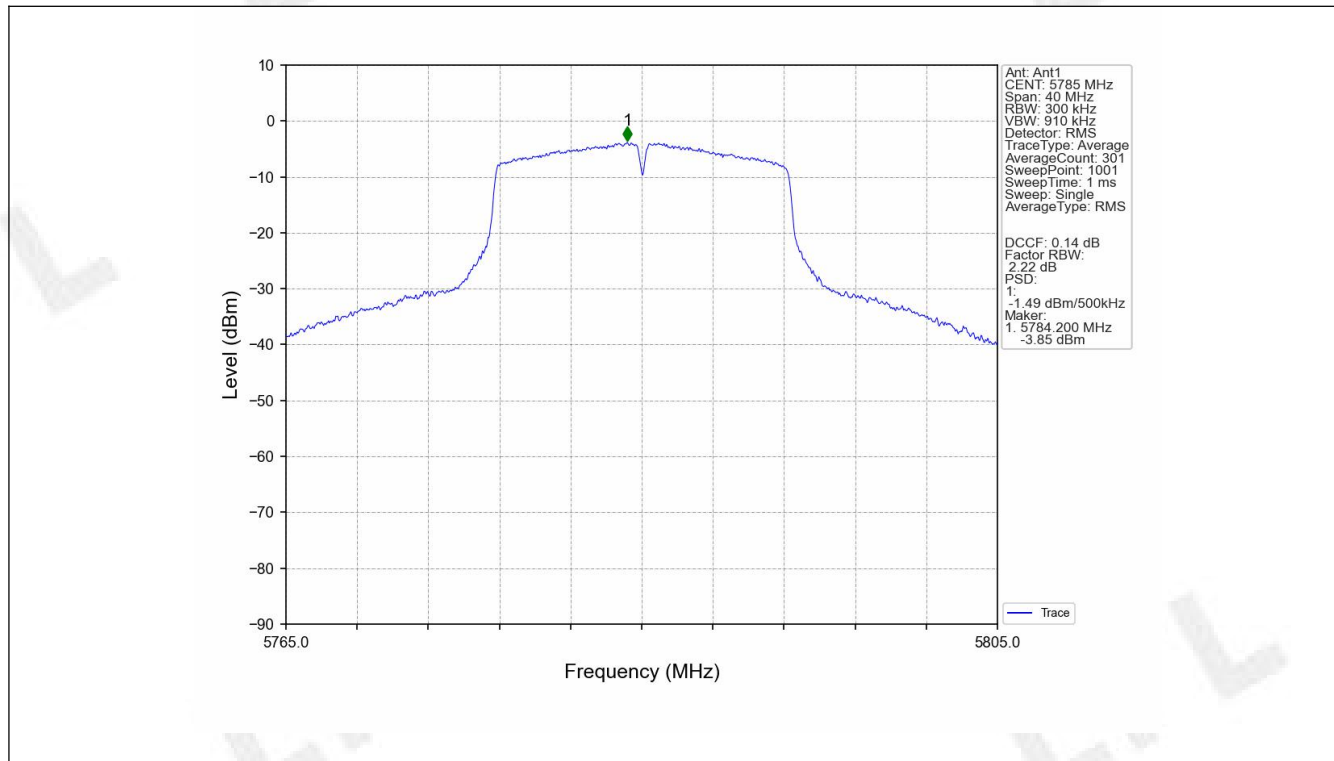
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4.2 Test Graph

4.2.1 PSD-Band3

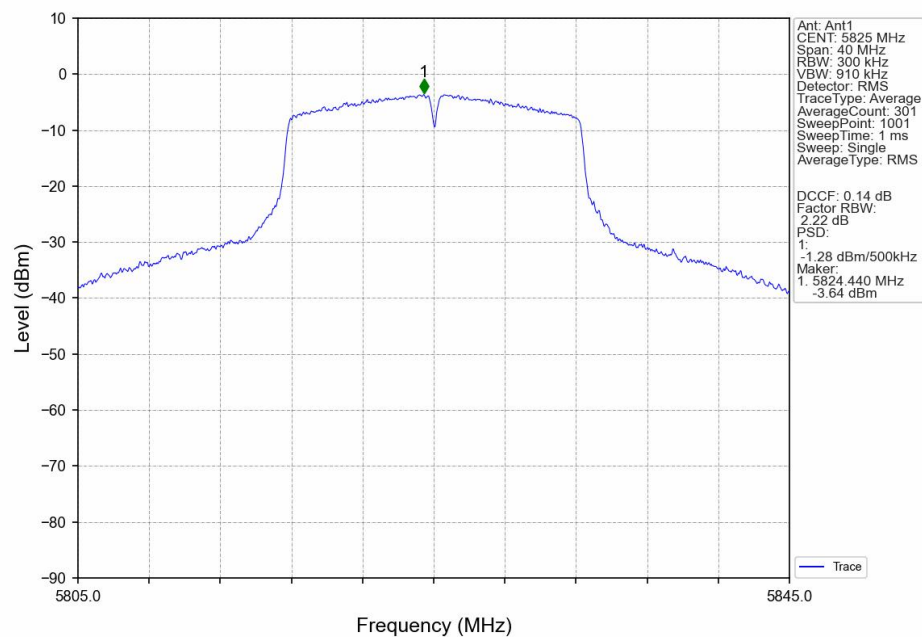


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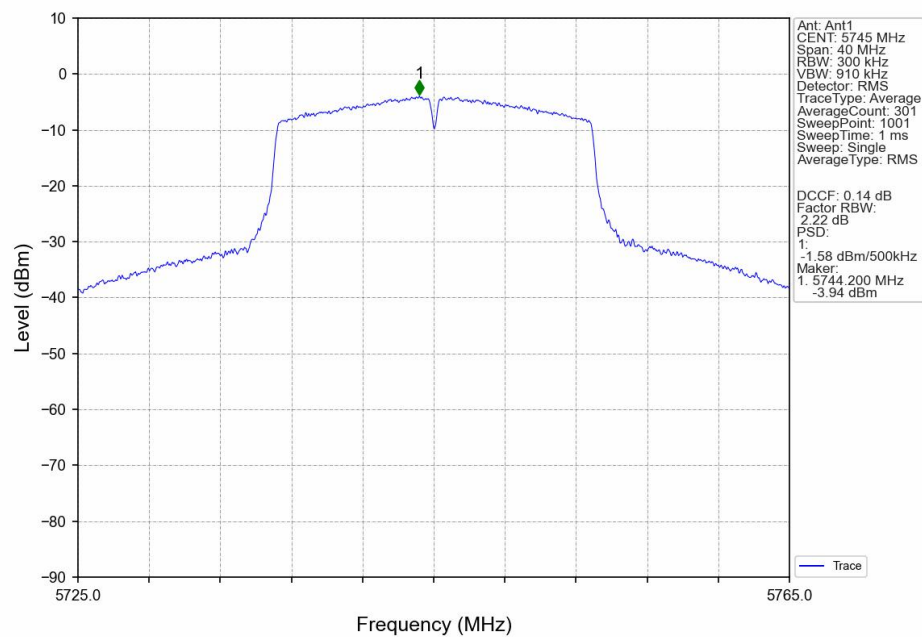


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802.11a_HCH_5825MHz_Ant1_NTNV

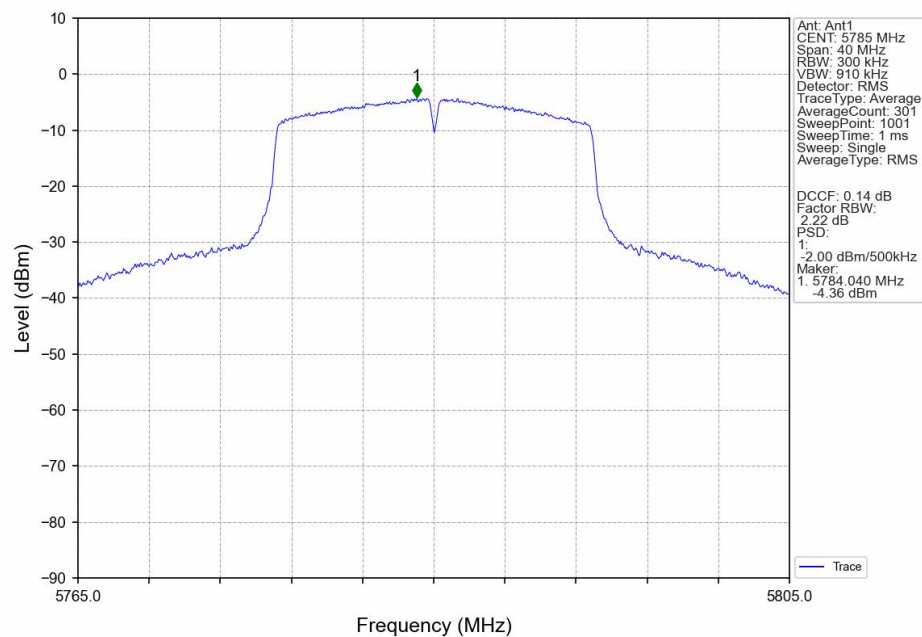


802.11n(HT20)_LCH_5745MHz_Ant1_NTNV

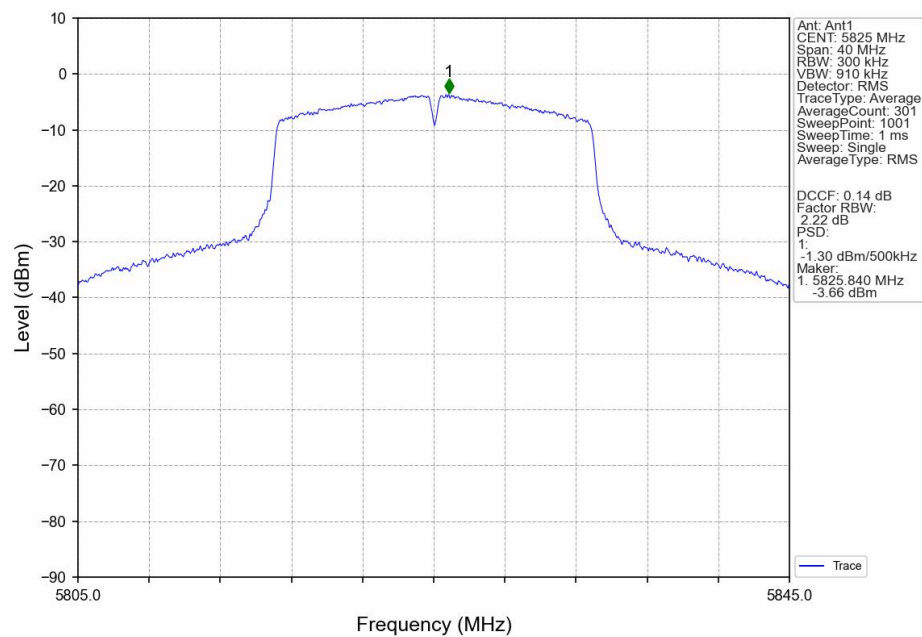


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802.11n(HT20)_MCH_5785MHz_Ant1_NTNV

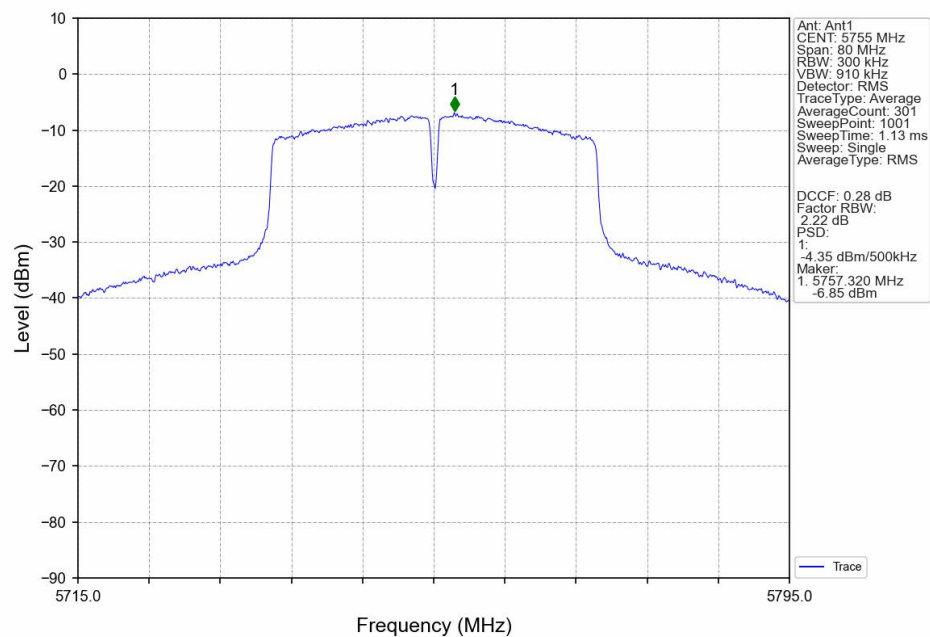


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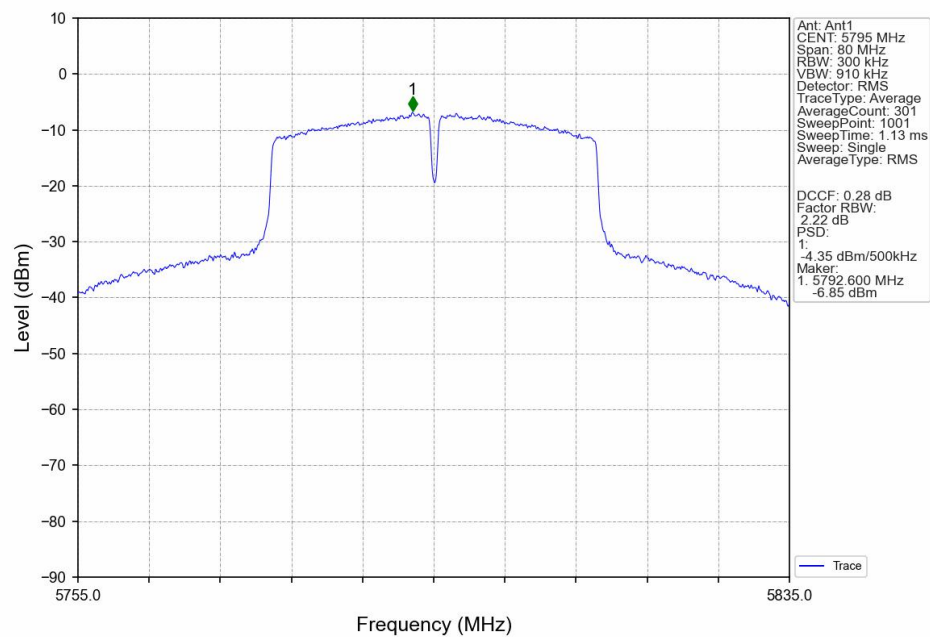


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802.11n(HT40)_LCH_5755MHz_Ant1_NTNV

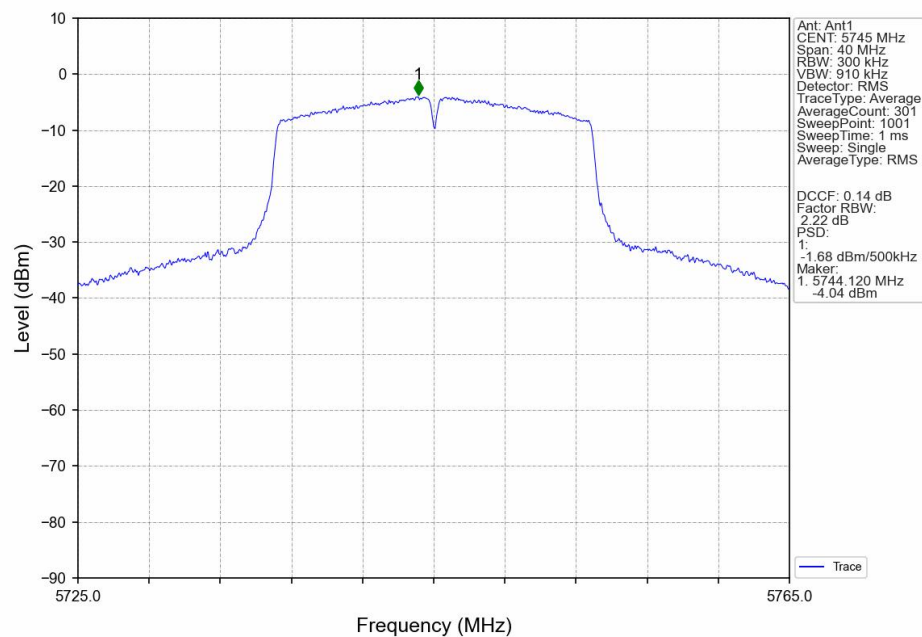


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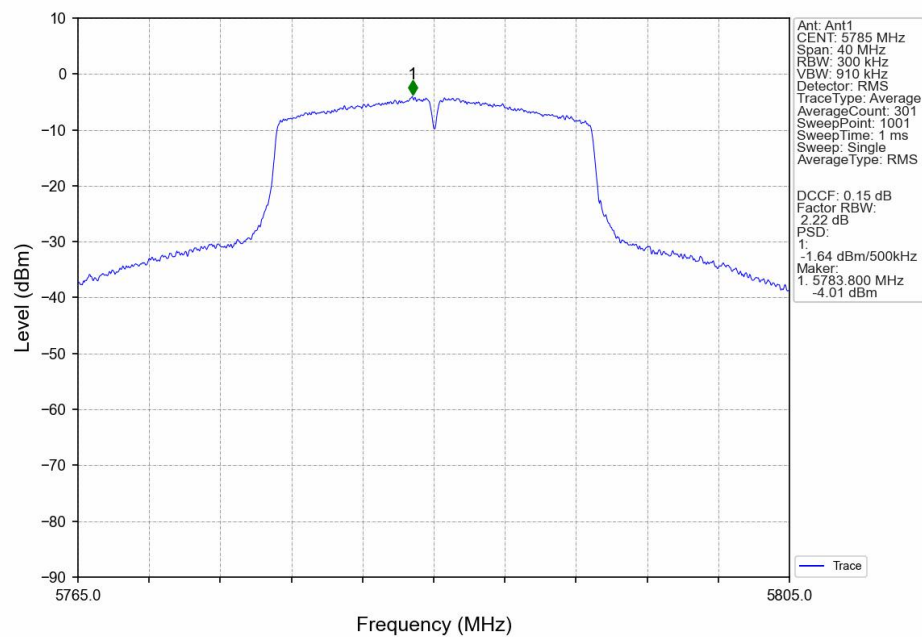


FCCID: 2AUARVENU701

802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV

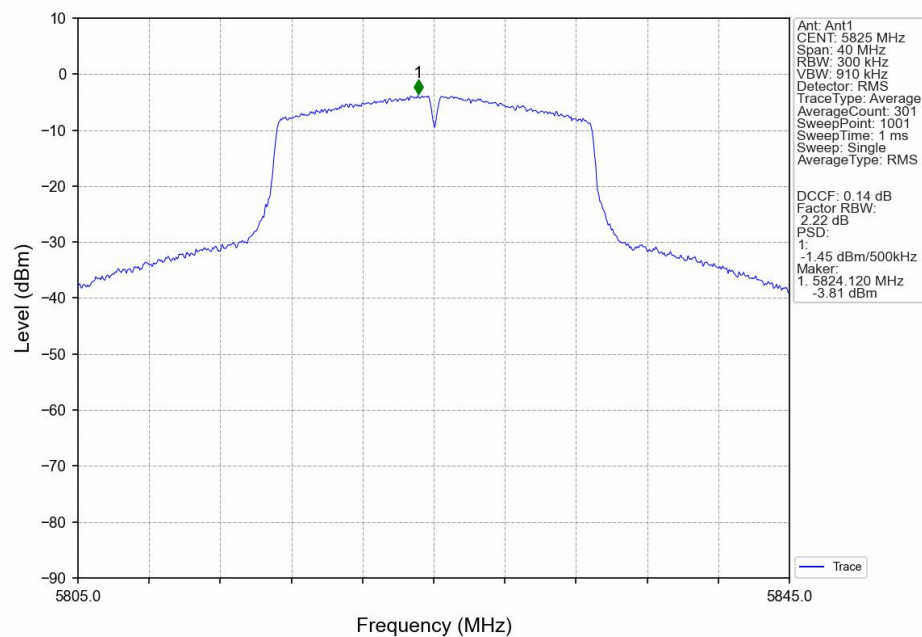


802.11ac(VHT20)_MCH_5785MHz_Ant1_NTNV

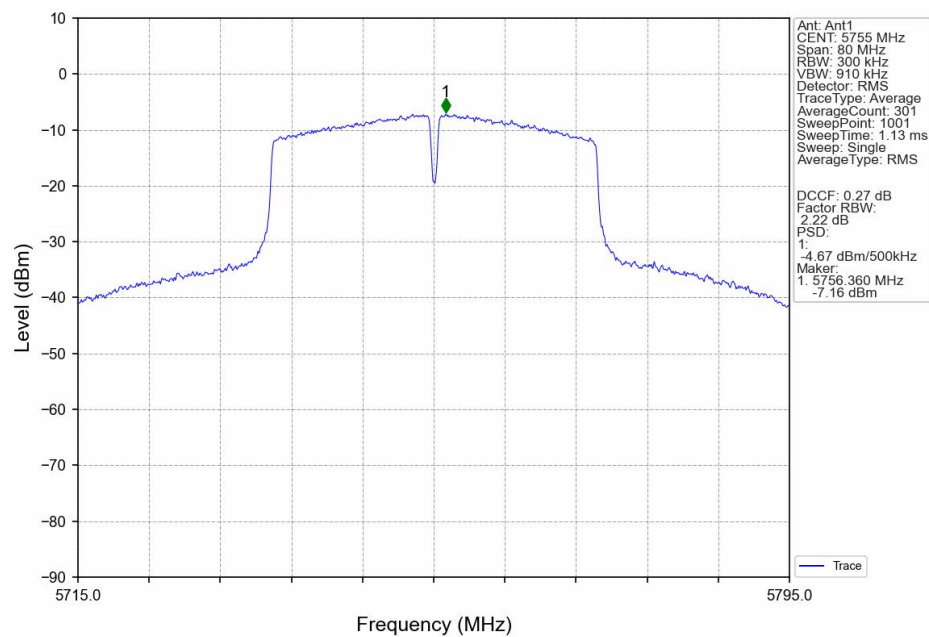


FCCID: 2AUARVENU701

802.11ac(VHT20)_HCH_5825MHz_Ant1_NTNV

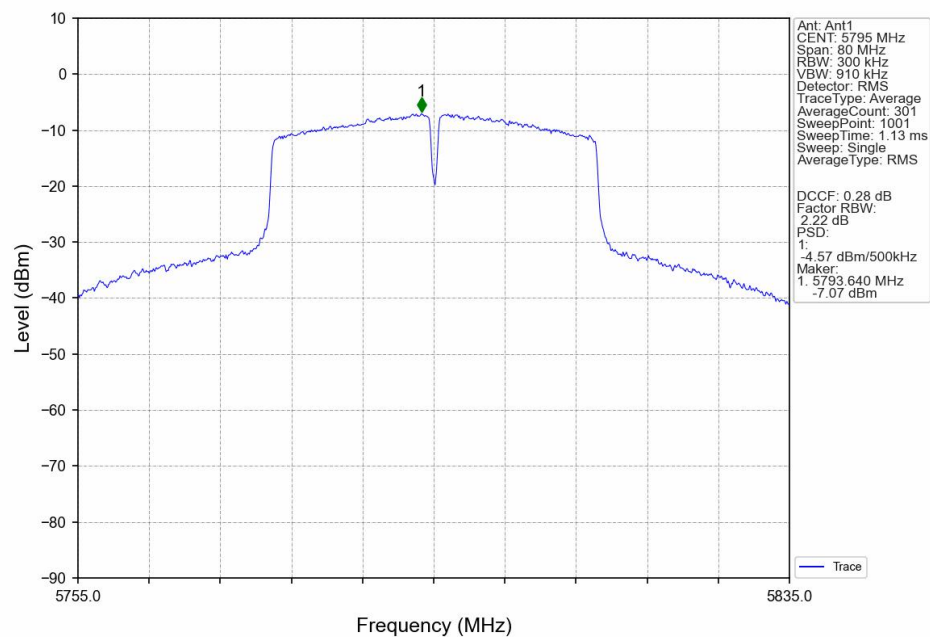


802.11ac(VHT40)_LCH_5755MHz_Ant1_NTNV

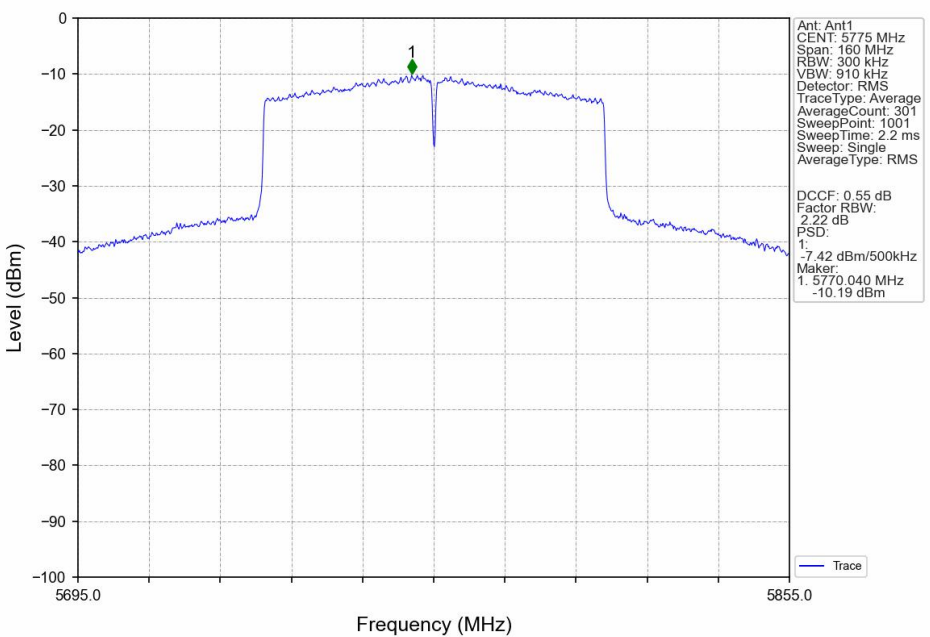


FCCID: 2AUARVENU701

802.11ac(VHT40)_HCH_5795MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV



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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
Carrier Wave	SISO	5745	20	102	5744.999	5725 to 5850	Pass
				120	5744.999	5725 to 5850	Pass
				138	5744.999	5725 to 5850	Pass
			-30	120	5744.998	5725 to 5850	Pass
			-20	120	5744.998	5725 to 5850	Pass
			-10	120	5744.998	5725 to 5850	Pass
			0	120	5744.998	5725 to 5850	Pass
			10	120	5744.998	5725 to 5850	Pass
			30	120	5744.998	5725 to 5850	Pass
			40	120	5744.998	5725 to 5850	Pass
			50	120	5744.998	5725 to 5850	Pass
		5785	20	102	5784.999	5725 to 5850	Pass
				120	5784.999	5725 to 5850	Pass
				138	5784.999	5725 to 5850	Pass
			-30	120	5784.999	5725 to 5850	Pass
			-20	120	5784.999	5725 to 5850	Pass
			-10	120	5784.999	5725 to 5850	Pass

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			0	120	5784.999	5725 to 5850	Pass
			10	120	5784.999	5725 to 5850	Pass
			30	120	5784.998	5725 to 5850	Pass
			40	120	5784.998	5725 to 5850	Pass
			50	120	5784.998	5725 to 5850	Pass
		5825	20	102	5824.998	5725 to 5850	Pass
				120	5824.998	5725 to 5850	Pass
				138	5824.998	5725 to 5850	Pass
			-30	120	5824.998	5725 to 5850	Pass
			-20	120	5824.998	5725 to 5850	Pass
			-10	120	5824.998	5725 to 5850	Pass
			0	120	5824.998	5725 to 5850	Pass
			10	120	5824.999	5725 to 5850	Pass
			30	120	5824.999	5725 to 5850	Pass
			40	120	5824.999	5725 to 5850	Pass
			50	120	5824.999	5725 to 5850	Pass
		5755	20	102	5754.999	5725 to 5850	Pass
				120	5754.999	5725 to 5850	Pass
				138	5754.999	5725 to 5850	Pass
			-30	120	5754.999	5725 to 5850	Pass
			-20	120	5754.999	5725 to 5850	Pass
			-10	120	5754.999	5725 to 5850	Pass
			0	120	5754.999	5725 to 5850	Pass
			10	120	5754.998	5725 to 5850	Pass
			30	120	5754.999	5725 to 5850	Pass

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			40	120	5754.998	5725 to 5850	Pass
			50	120	5754.998	5725 to 5850	Pass
		5795	20	102	5794.998	5725 to 5850	Pass
				120	5794.998	5725 to 5850	Pass
				138	5794.998	5725 to 5850	Pass
			-30	120	5794.998	5725 to 5850	Pass
			-20	120	5794.998	5725 to 5850	Pass
			-10	120	5794.999	5725 to 5850	Pass
			0	120	5794.999	5725 to 5850	Pass
			10	120	5794.998	5725 to 5850	Pass
			30	120	5794.999	5725 to 5850	Pass
			40	120	5794.999	5725 to 5850	Pass
			50	120	5794.999	5725 to 5850	Pass
		5775	20	102	5774.999	5725 to 5850	Pass
				120	5774.999	5725 to 5850	Pass
				138	5774.999	5725 to 5850	Pass
			-30	120	5774.999	5725 to 5850	Pass
			-20	120	5774.999	5725 to 5850	Pass
			-10	120	5774.999	5725 to 5850	Pass
			0	120	5774.999	5725 to 5850	Pass
			10	120	5774.998	5725 to 5850	Pass
			30	120	5774.998	5725 to 5850	Pass
			40	120	5774.998	5725 to 5850	Pass
			50	120	5774.998	5725 to 5850	Pass