



Shenzhen CTL Testing Technology Co., Ltd.

Fl. A1, Bldg. A3, No. 2533 GuanGuang Road, Fenghuang Community

Fenghuang Street, Guangming District Shenzhen, Guangdong, People' s Republic of China

Tel: +86-755-89486194 E-mail: ctl@ctl-lab.com

Annex for 5G Wi-Fi BAND3

Test Report No.: CTL2602252021-WF04

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FCC ID: 2AUARVENUVT5

1. Duty Cycle

1.1 Test Result

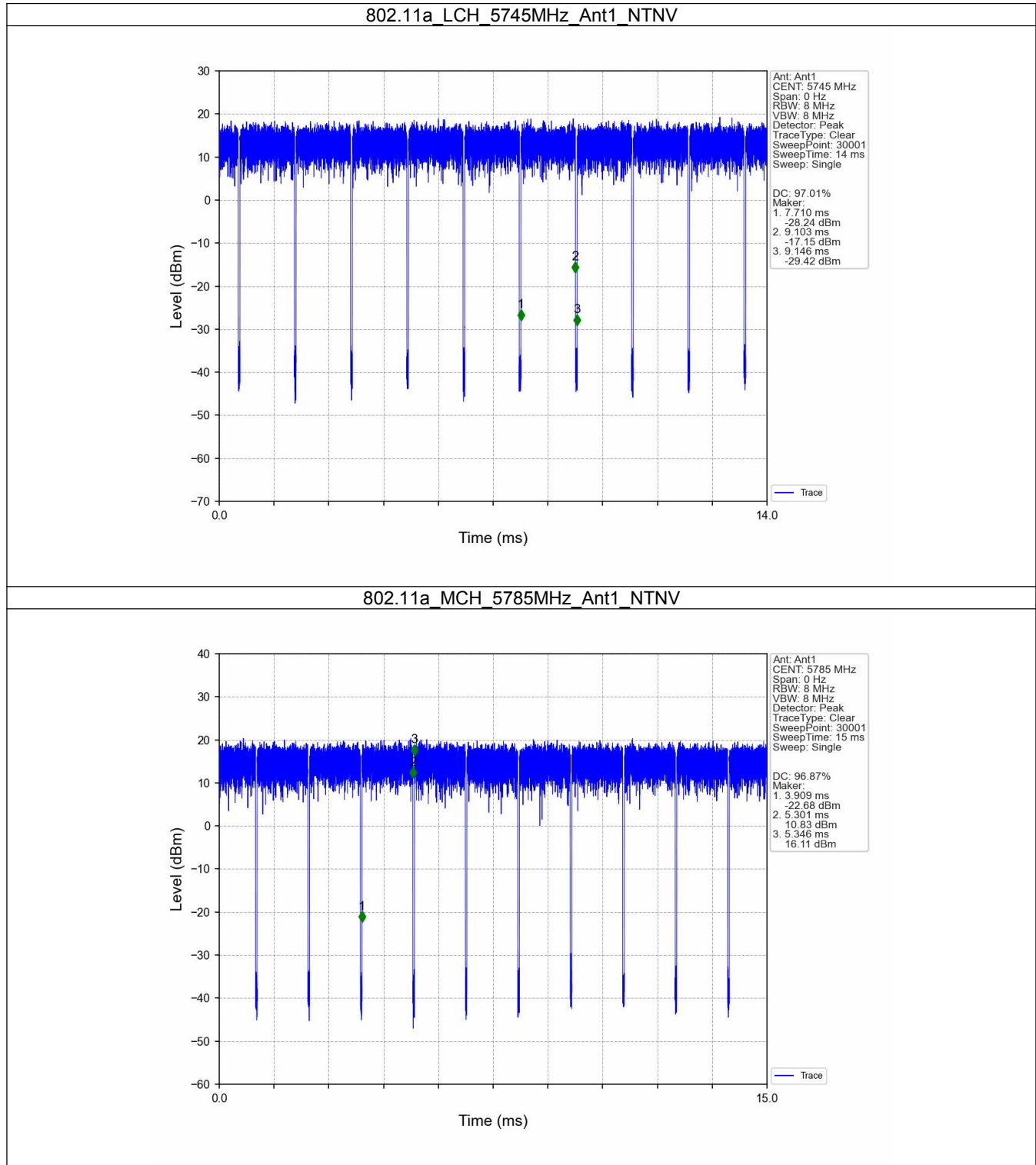
1.1.1 Ant1

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	1.393	1.436	97.01	0.13	0.07
		5785	1.393	1.438	96.87	0.14	0.03
		5825	1.394	1.437	97.01	0.13	0.06
802.11n (HT20)	SISO	5745	1.290	1.333	96.77	0.14	0.04
		5785	1.288	1.333	96.62	0.15	0.07
		5825	1.290	1.333	96.77	0.14	0.07
802.11n (HT40)	SISO	5755	0.637	0.680	93.68	0.28	0.03
		5795	0.638	0.680	93.82	0.28	0.03
802.11ac (VHT20)	SISO	5745	1.314	1.356	96.90	0.14	0.03
		5785	1.314	1.356	96.90	0.14	0.00
		5825	1.313	1.357	96.76	0.14	0.07
802.11ac (VHT40)	SISO	5755	0.653	0.696	93.82	0.28	0.03
		5795	0.652	0.696	93.68	0.28	0.04
802.11ac (VHT80)	SISO	5775	0.324	0.368	88.04	0.55	0.04

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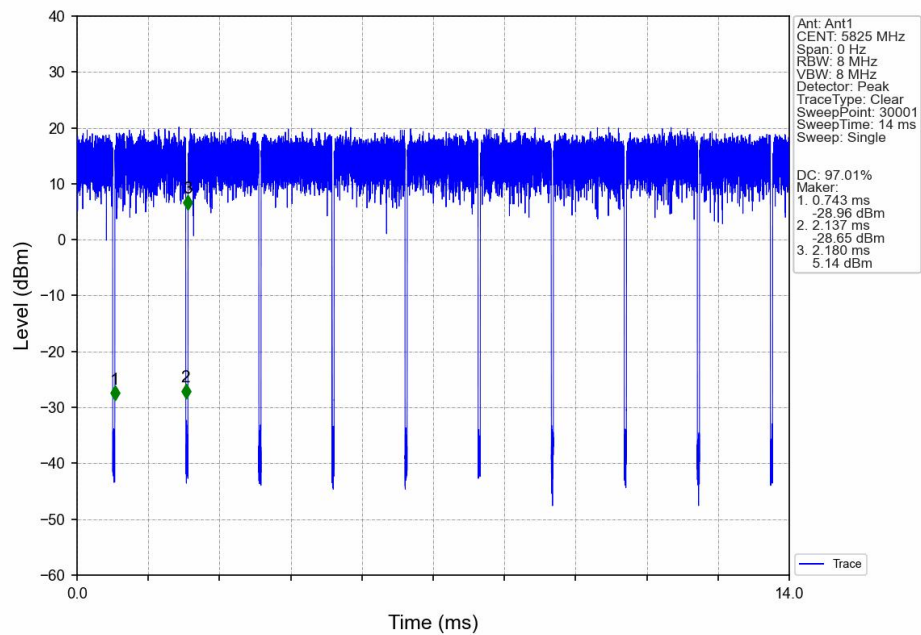
1.2 Test Graph

1.2.1 Ant1

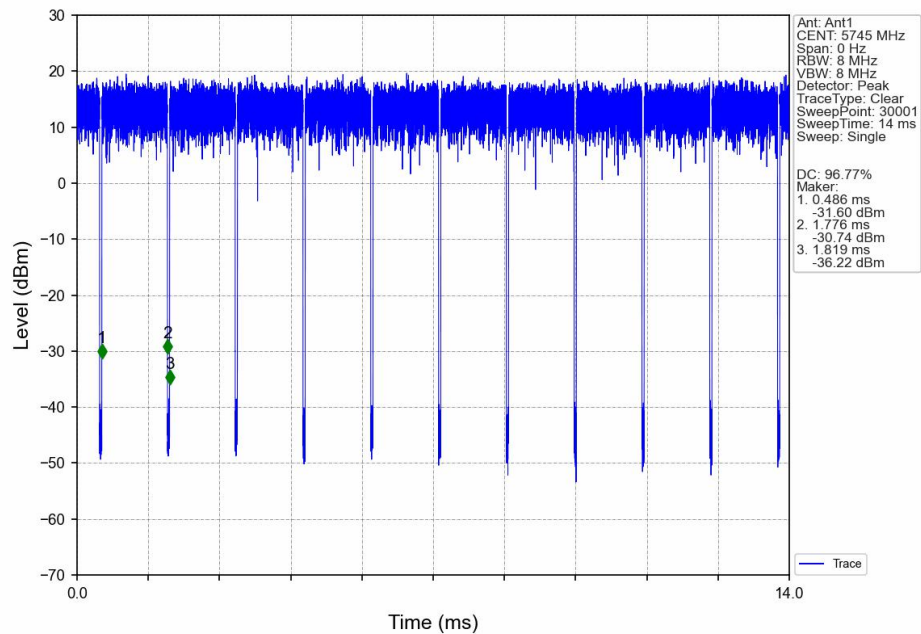


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802.11a_HCH_5825MHz_Ant1_NTNV

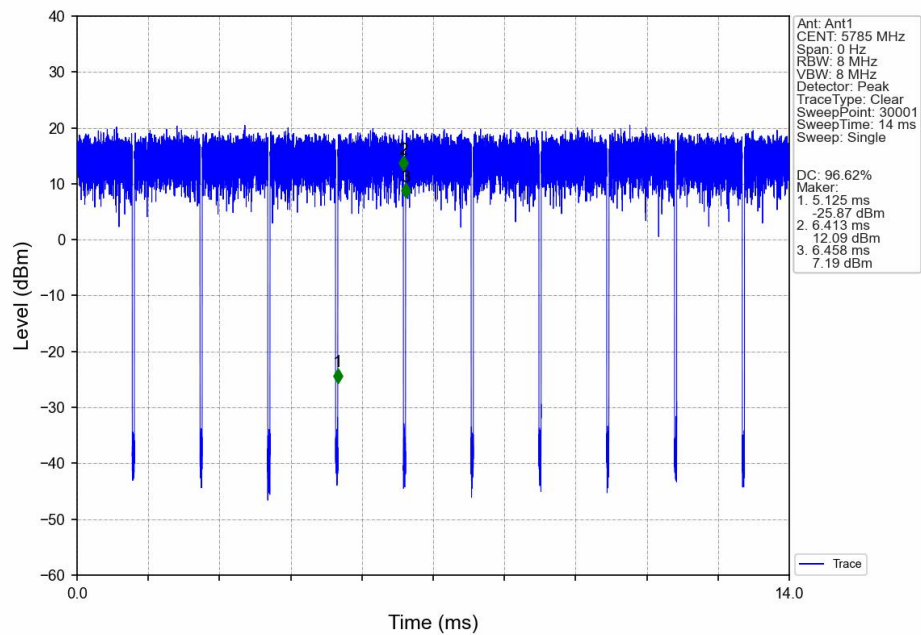


802.11n(HT20)_LCH_5745MHz_Ant1_NTNV

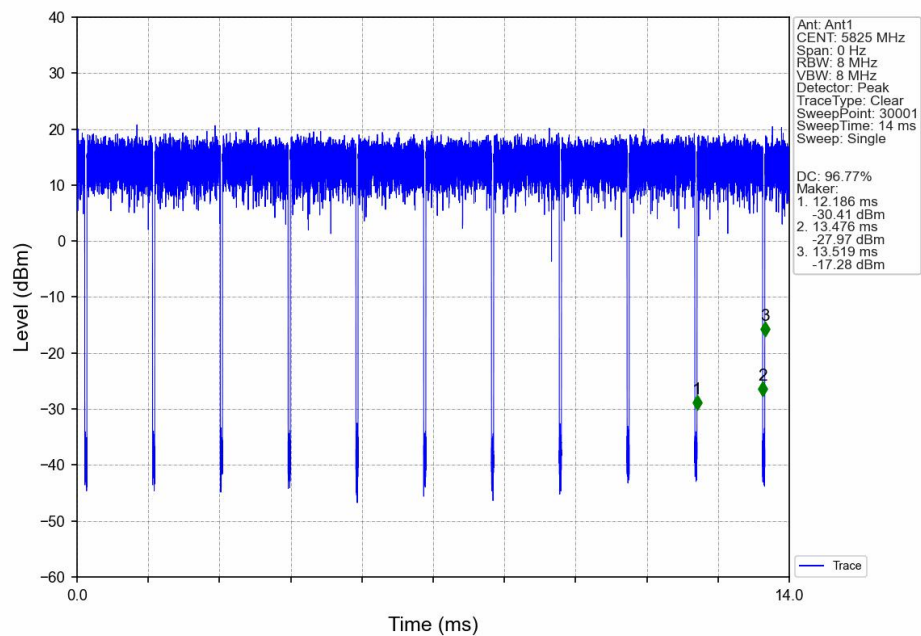


FCC ID: 2AUARVENUVT5

802.11n(HT20)_MCH_5785MHz_Ant1_NTNV

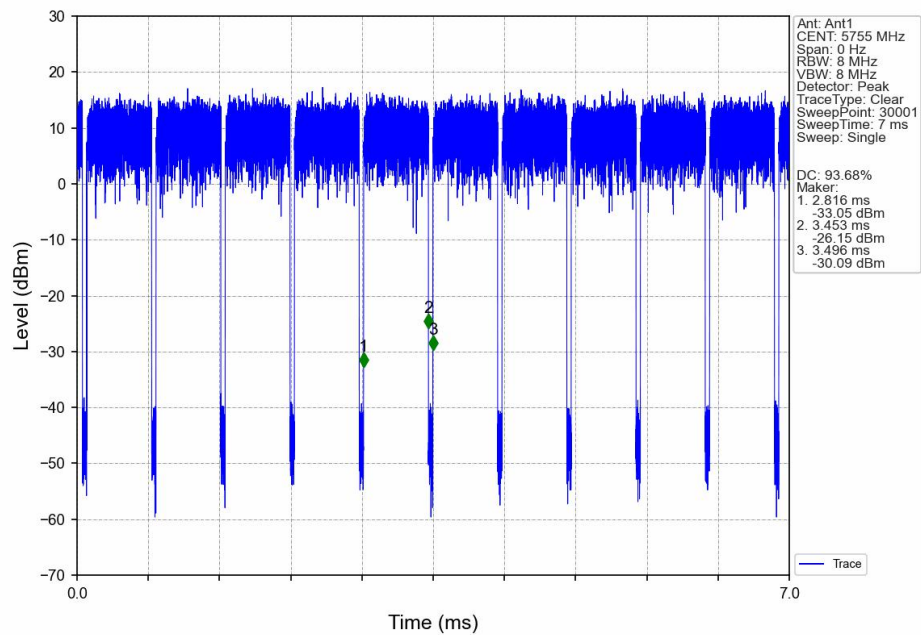


802.11n(HT20)_HCH_5825MHz_Ant1_NTNV

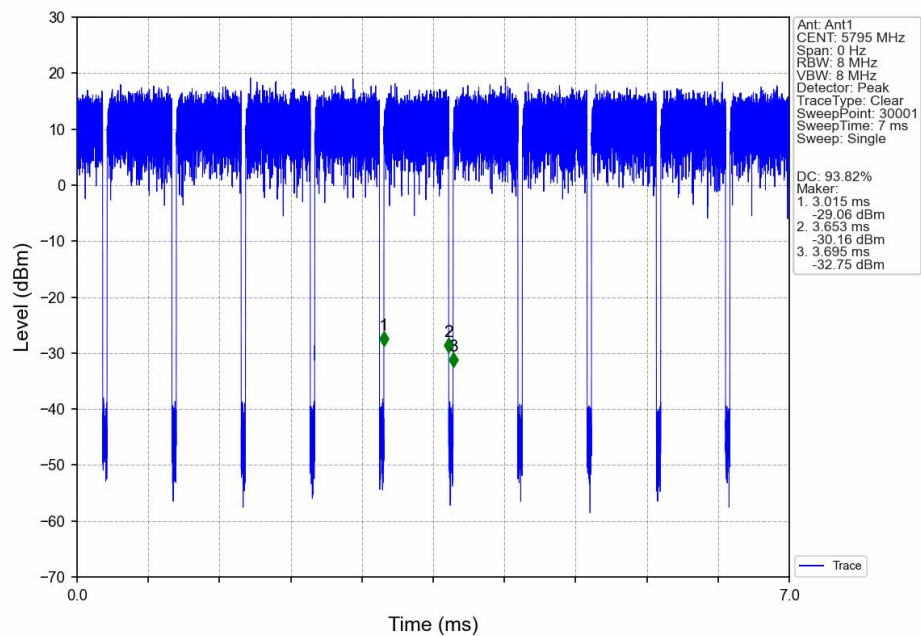


FCC ID: 2AUARVENUVT5

802.11n(HT40)_LCH_5755MHz_Ant1_NTNV

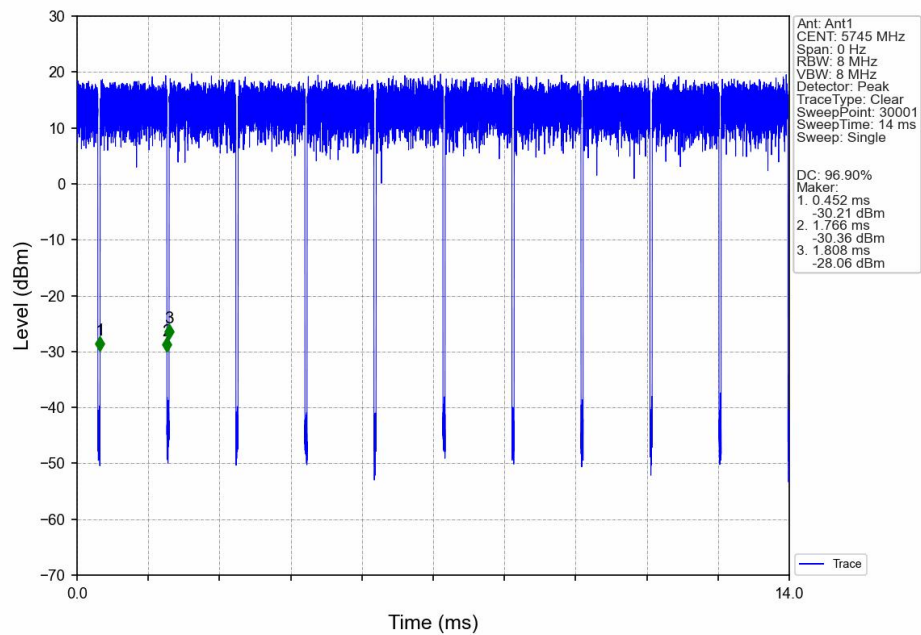


802.11n(HT40)_HCH_5795MHz_Ant1_NTNV

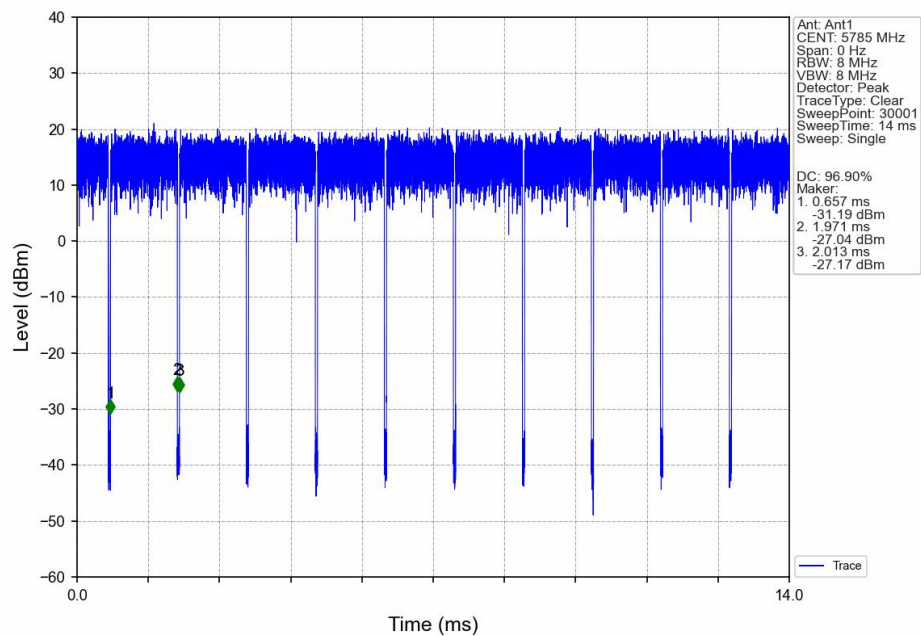


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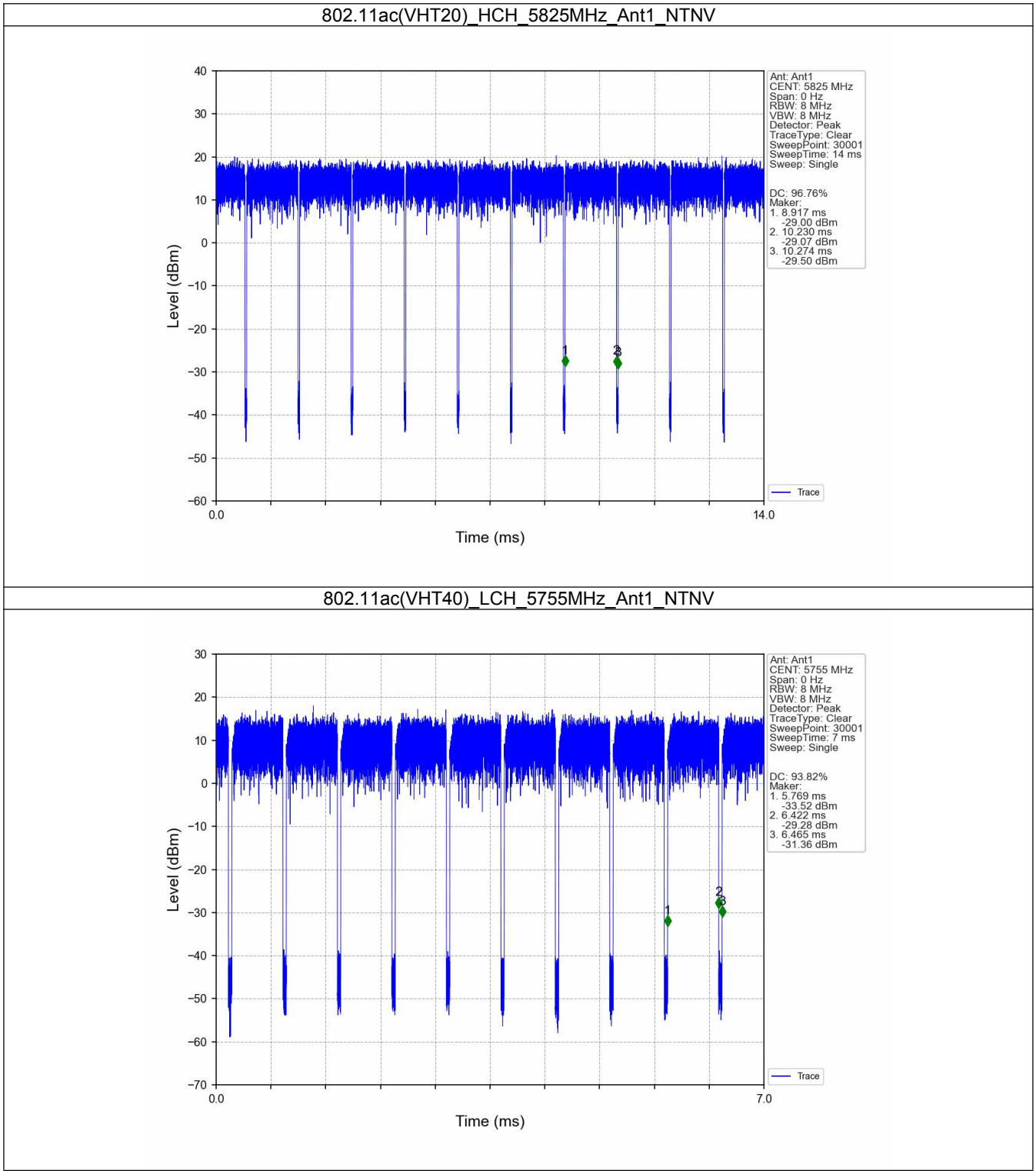
802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV



802.11ac(VHT20)_MCH_5785MHz_Ant1_NTNV

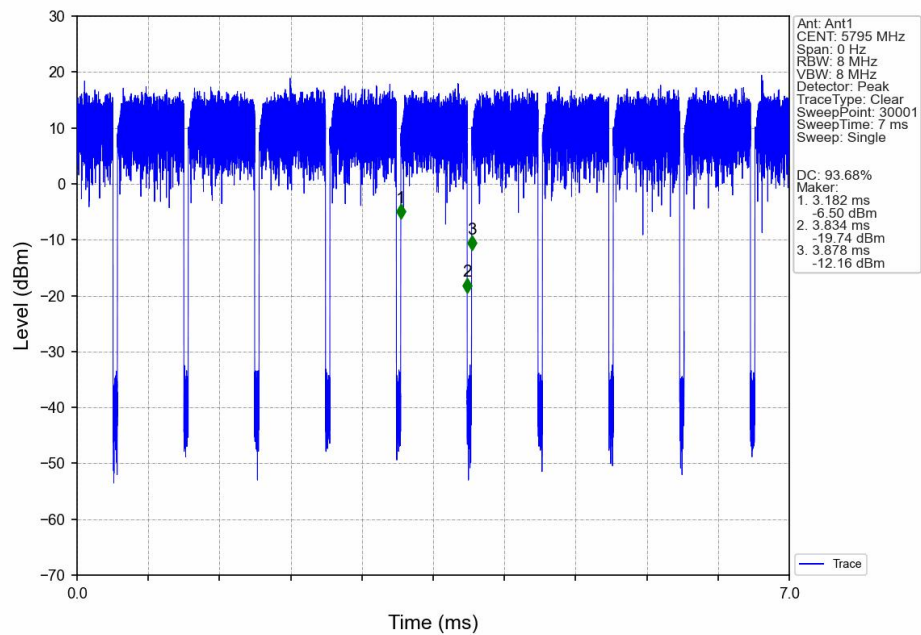


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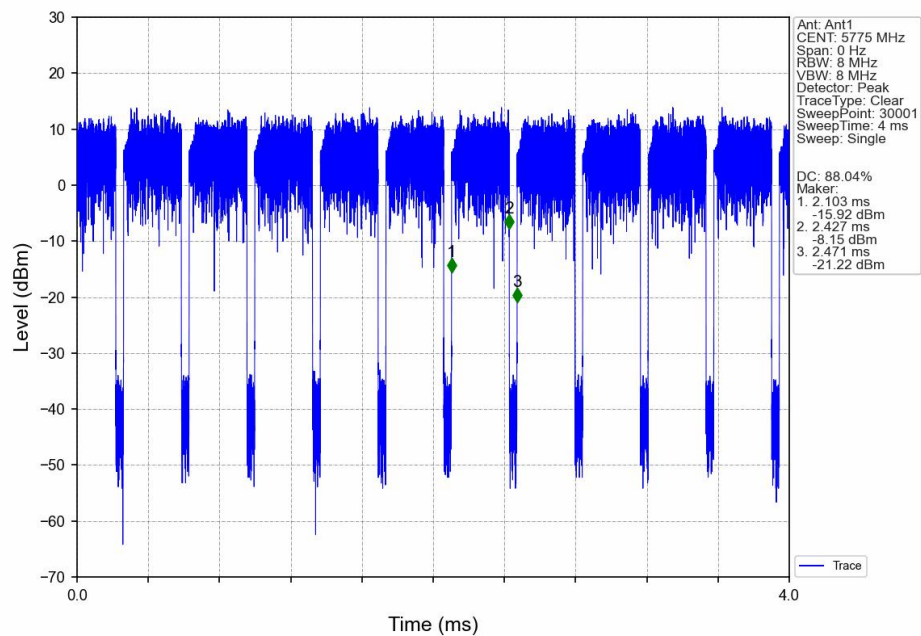


FCC ID: 2AUARVENUVT5

802.11ac(VHT40)_HCH_5795MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV



FCC ID: 2AUARVENUVT5

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	16.622	/	Pass
		5785	1	16.600	/	Pass
		5825	1	16.613	/	Pass
802.11n (HT20)	SISO	5745	1	17.772	/	Pass
		5785	1	17.689	/	Pass
		5825	1	17.666	/	Pass
802.11n (HT40)	SISO	5755	1	36.699	/	Pass
		5795	1	36.484	/	Pass
802.11ac (VHT20)	SISO	5745	1	17.723	/	Pass
		5785	1	17.696	/	Pass
		5825	1	17.707	/	Pass
802.11ac (VHT40)	SISO	5755	1	36.528	/	Pass
		5795	1	36.281	/	Pass
802.11ac (VHT80)	SISO	5775	1	75.492	/	Pass

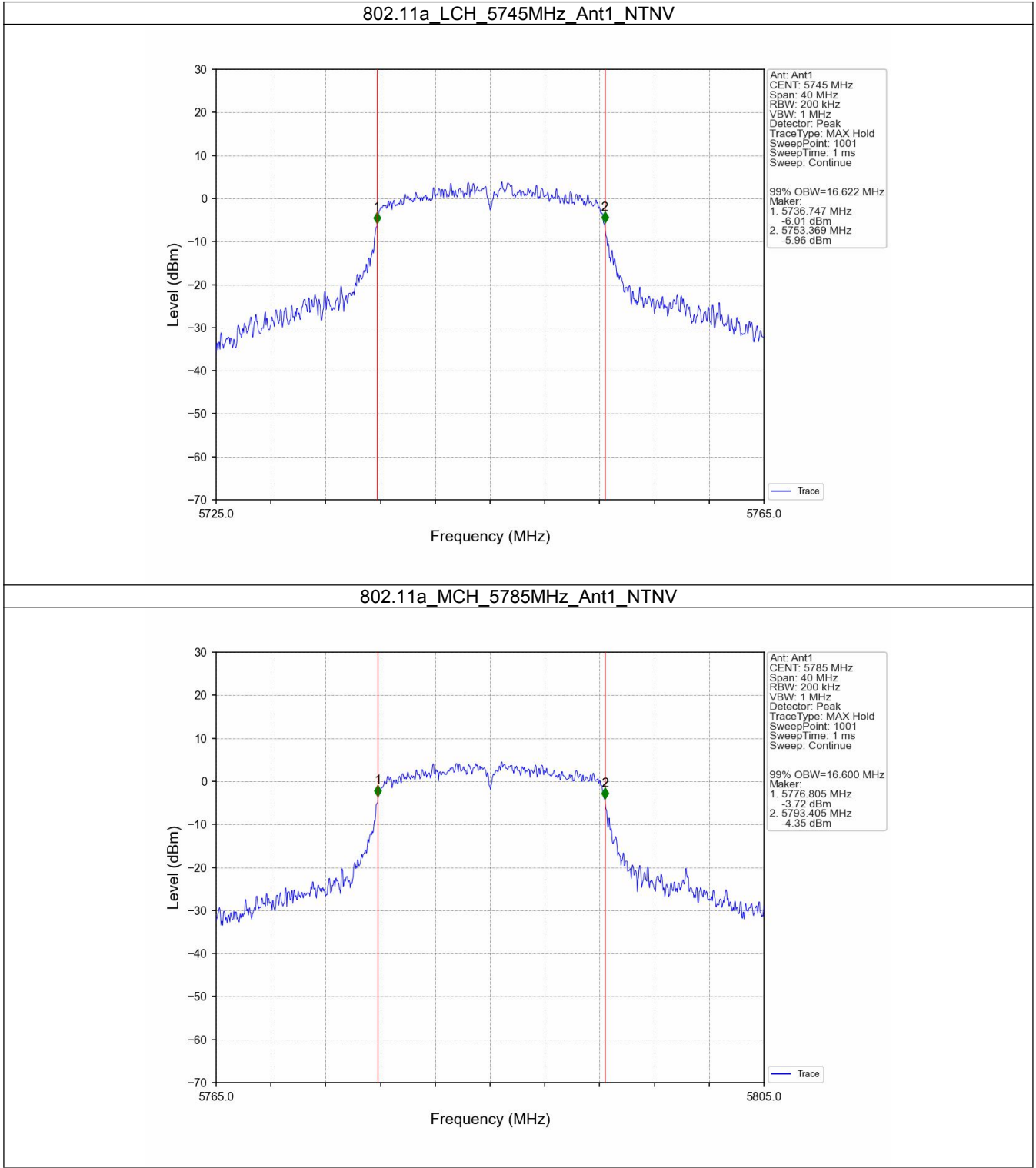
2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5745	1	15.319	≥ 0.5	Pass
		5785	1	15.169	≥ 0.5	Pass
		5825	1	15.391	≥ 0.5	Pass
802.11n (HT20)	SISO	5745	1	15.168	≥ 0.5	Pass
		5785	1	15.459	≥ 0.5	Pass
		5825	1	15.116	≥ 0.5	Pass
802.11n (HT40)	SISO	5755	1	35.167	≥ 0.5	Pass
		5795	1	35.105	≥ 0.5	Pass
802.11ac (VHT20)	SISO	5745	1	17.111	≥ 0.5	Pass
		5785	1	15.372	≥ 0.5	Pass
		5825	1	15.167	≥ 0.5	Pass
802.11ac (VHT40)	SISO	5755	1	35.061	≥ 0.5	Pass
		5795	1	33.865	≥ 0.5	Pass
802.11ac (VHT80)	SISO	5775	1	75.056	≥ 0.5	Pass

FCC ID: 2AUARVENUVT5

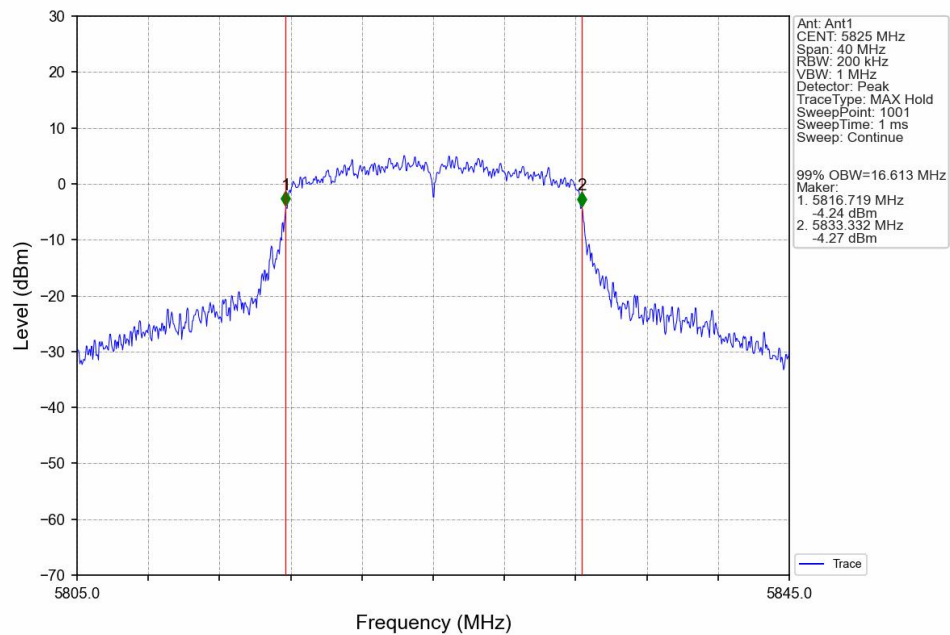
2.2 Test Graph

2.2.1 OBW

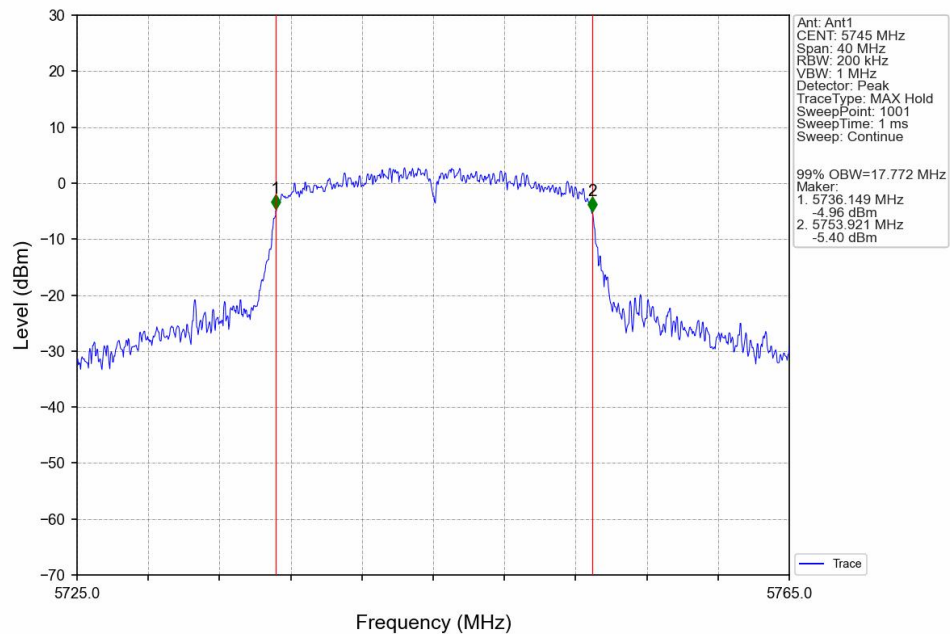


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802.11a_HCH_5825MHz_Ant1_NTNV

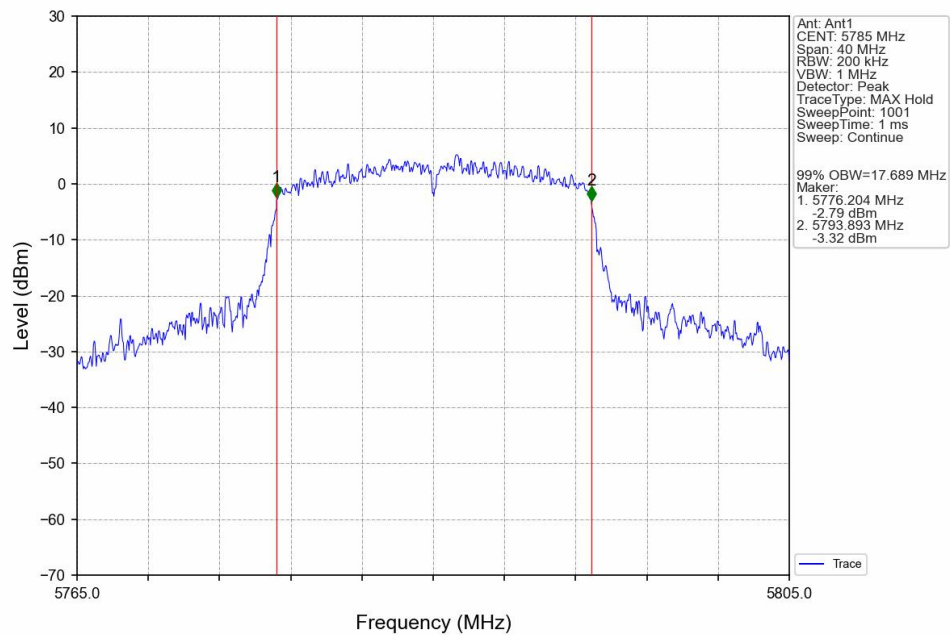


802.11n(HT20)_LCH_5745MHz_Ant1_NTNV

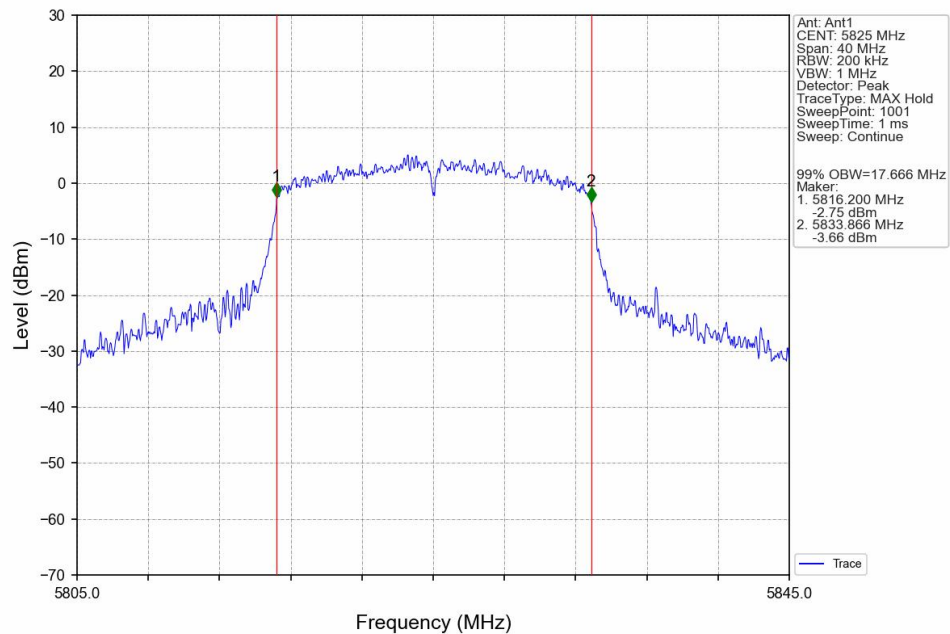


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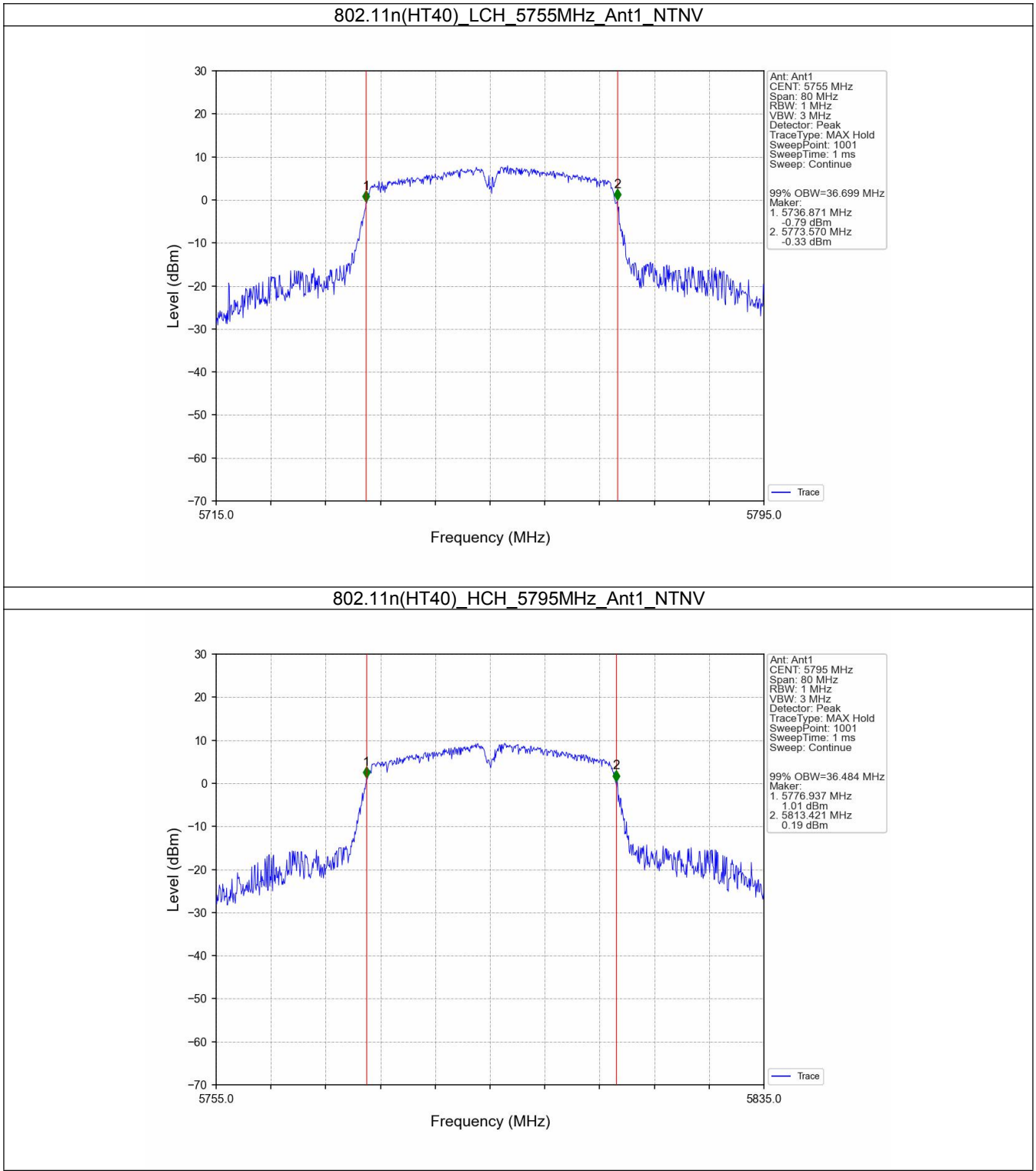
802.11n(HT20)_MCH_5785MHz_Ant1_NTNV



802.11n(HT20)_HCH_5825MHz_Ant1_NTNV

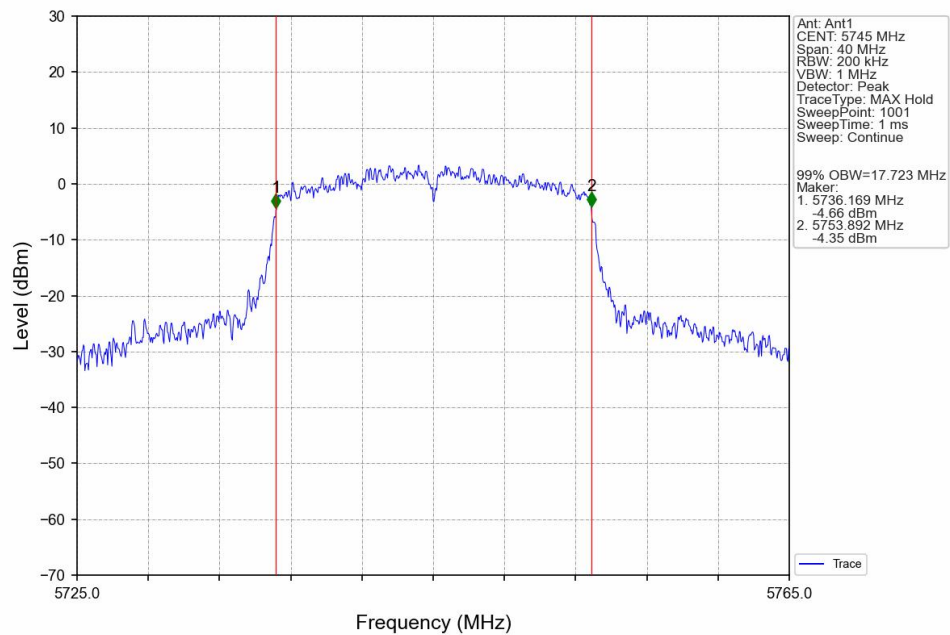


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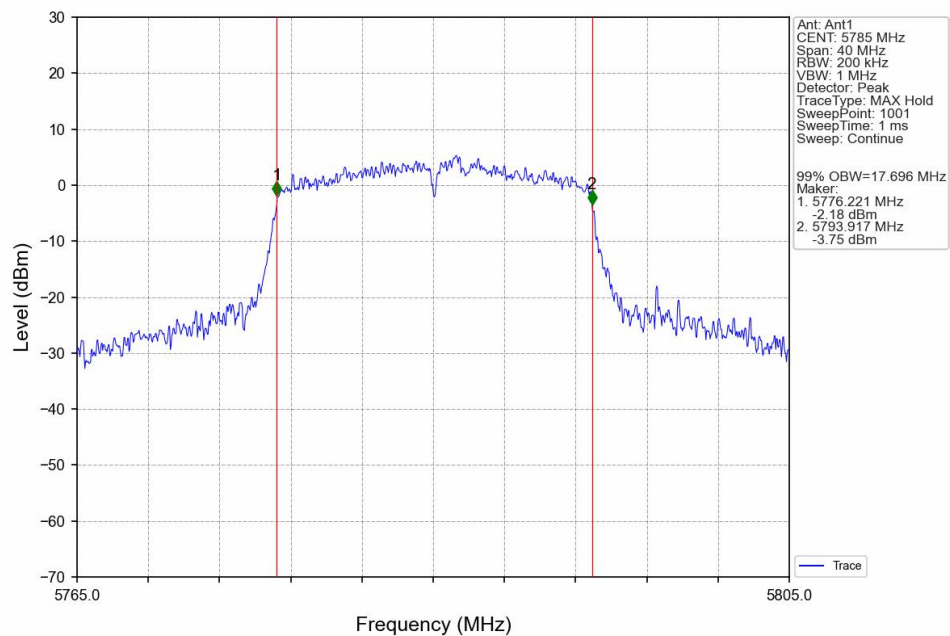


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802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV

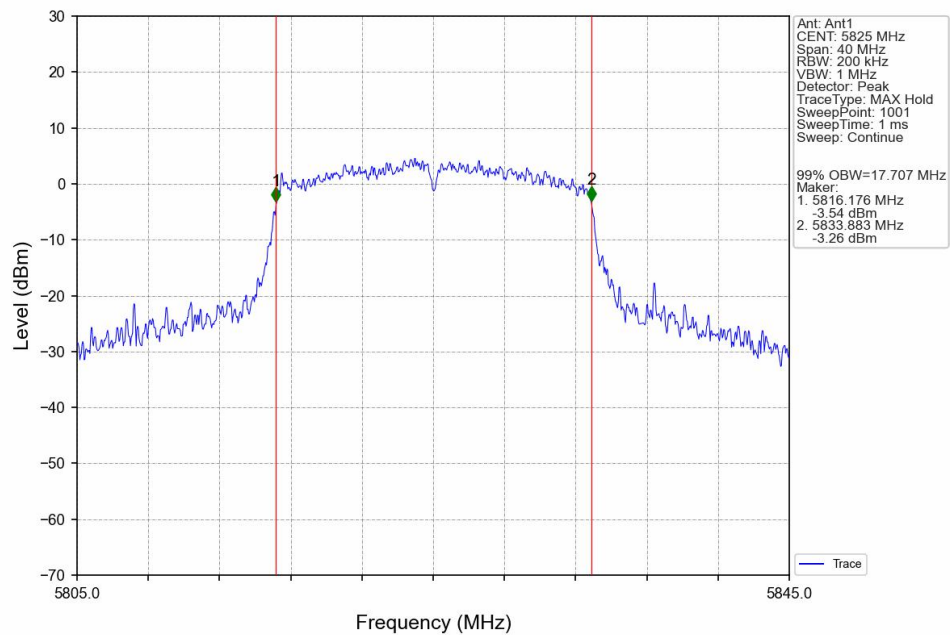


802.11ac(VHT20)_MCH_5785MHz_Ant1_NTNV

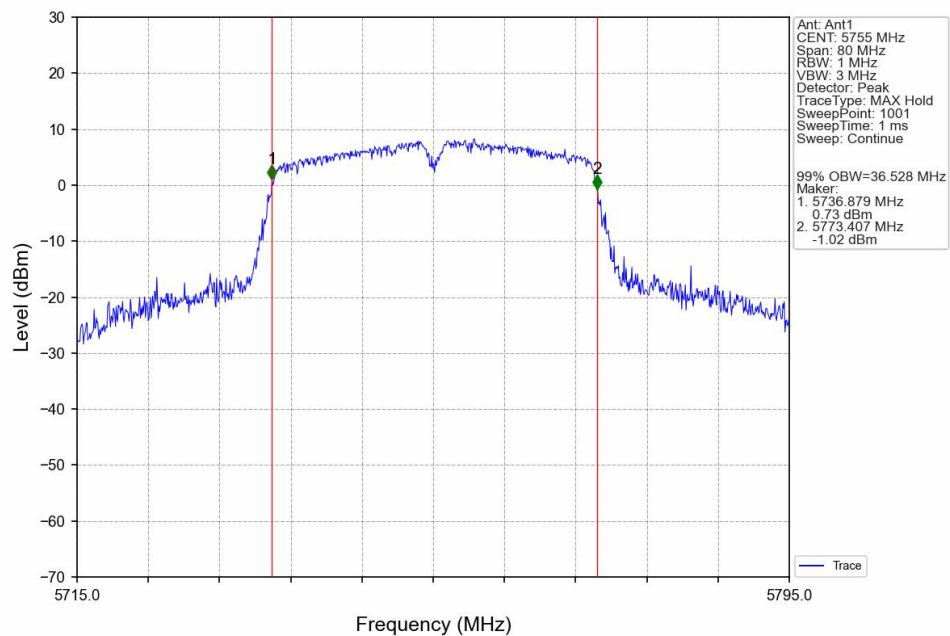


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802.11ac(VHT20)_HCH_5825MHz_Ant1_NTNV

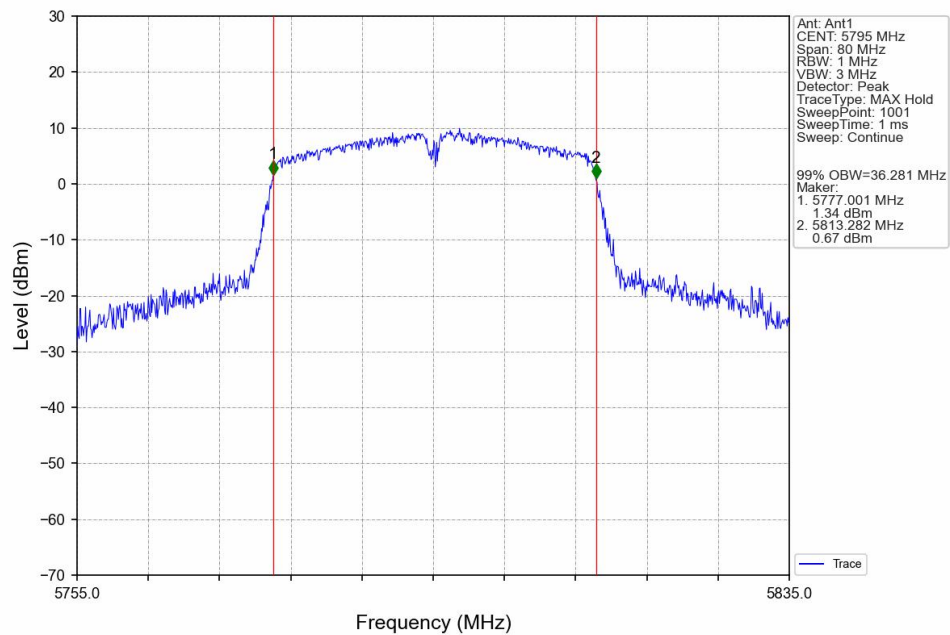


802.11ac(VHT40)_LCH_5755MHz_Ant1_NTNV

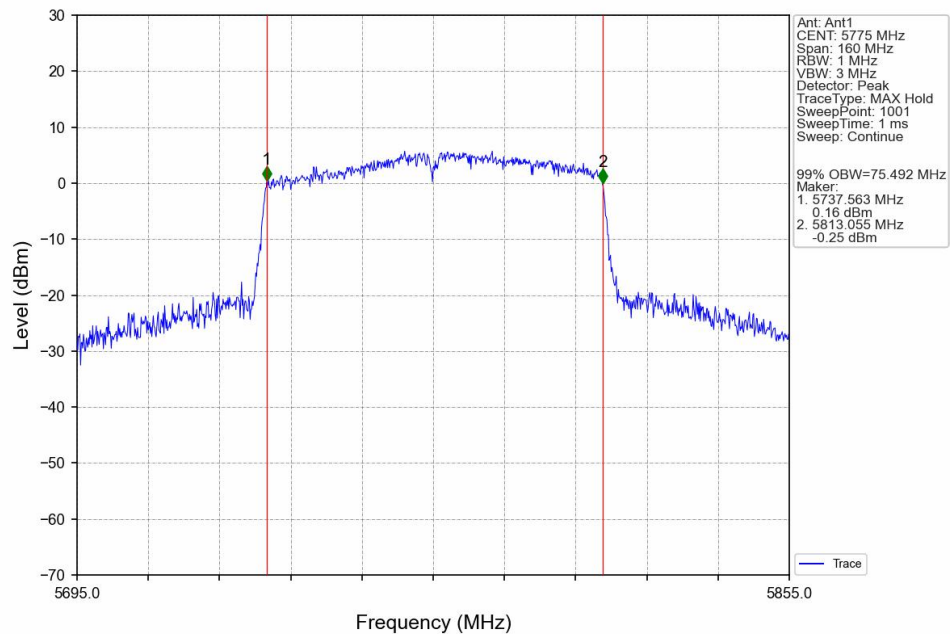


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802.11ac(VHT40)_HCH_5795MHz_Ant1_NTNV

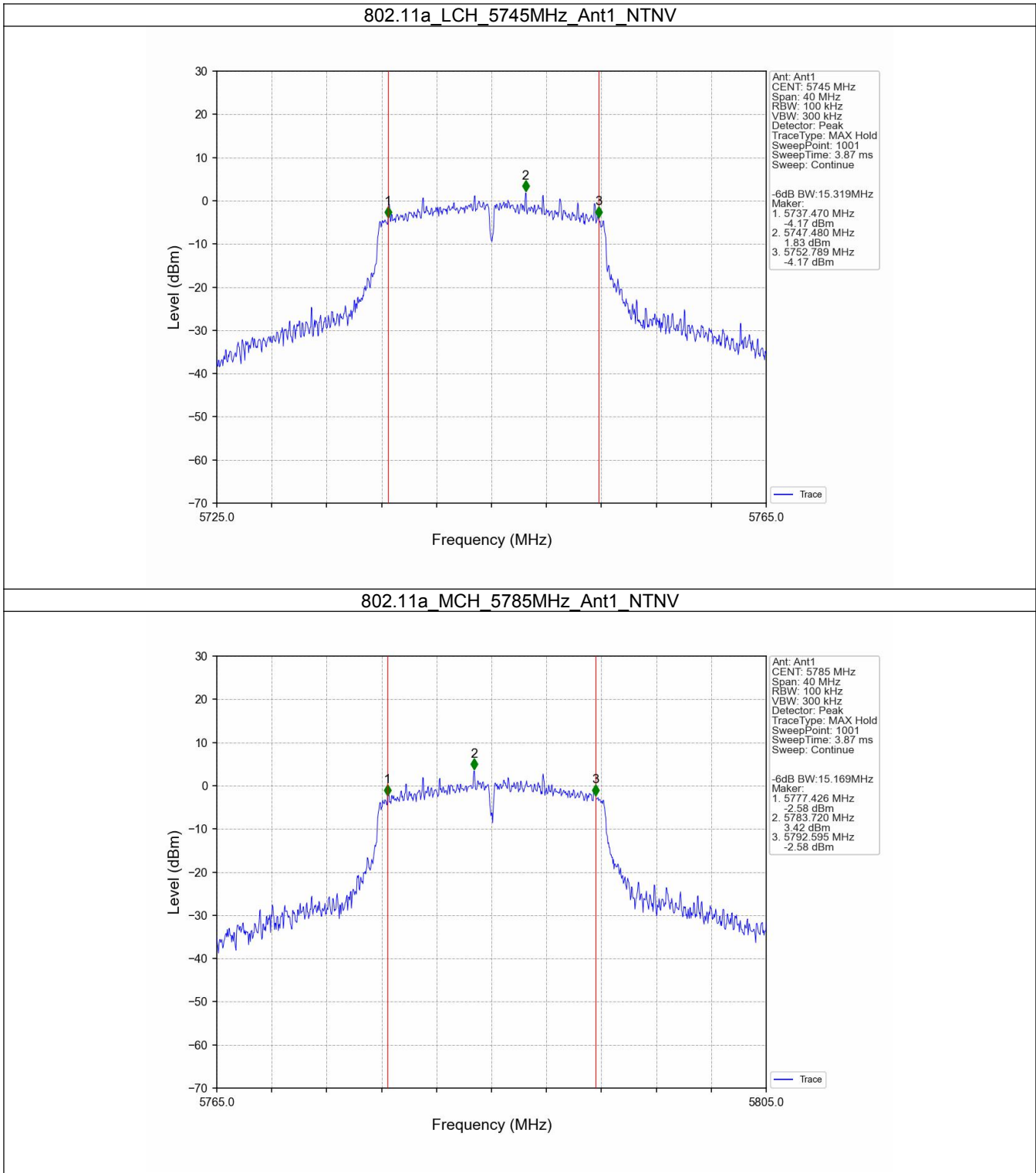


802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV



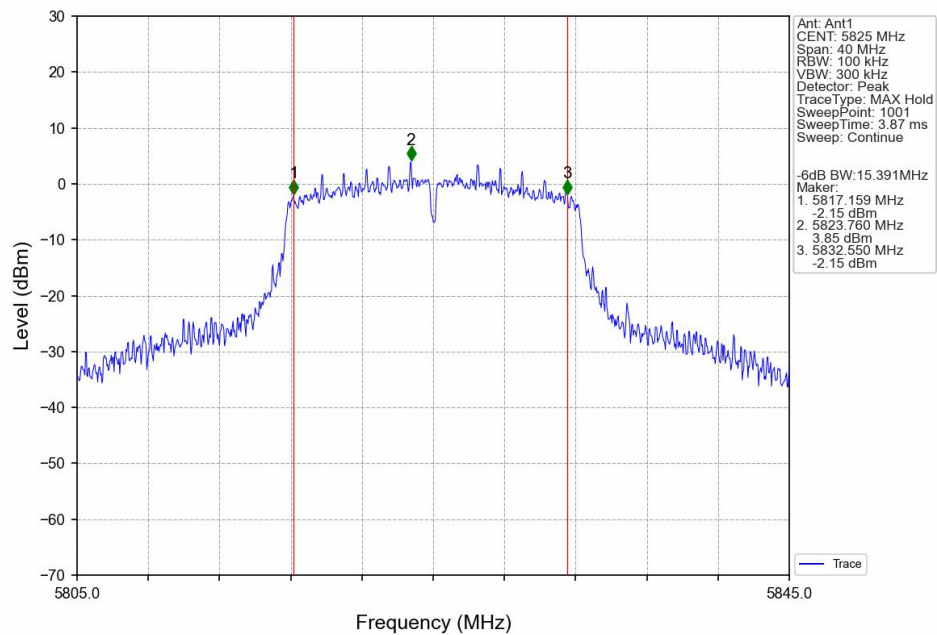
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2.2.2 6dB BW

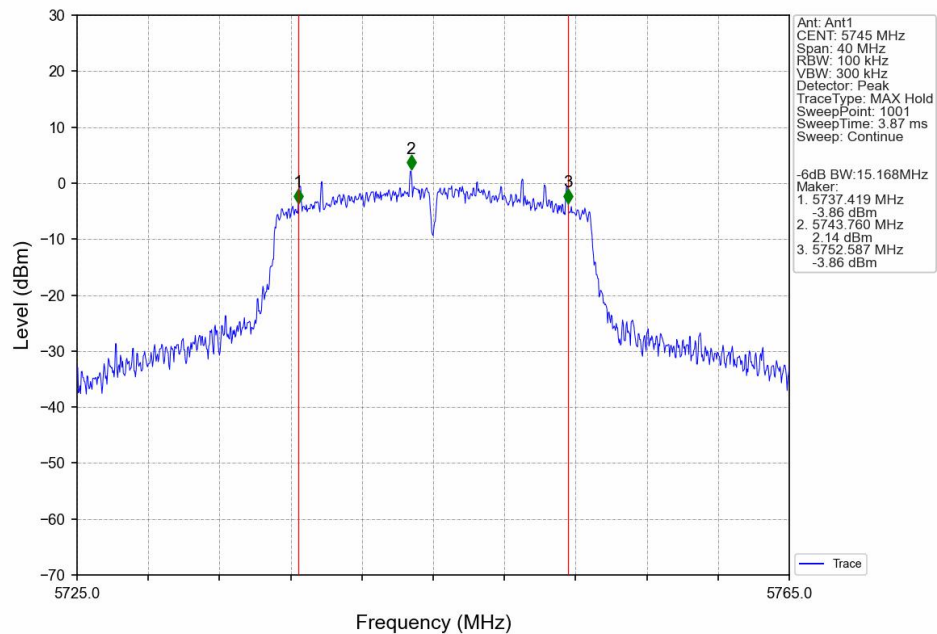


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802.11a_HCH_5825MHz_Ant1_NTNV

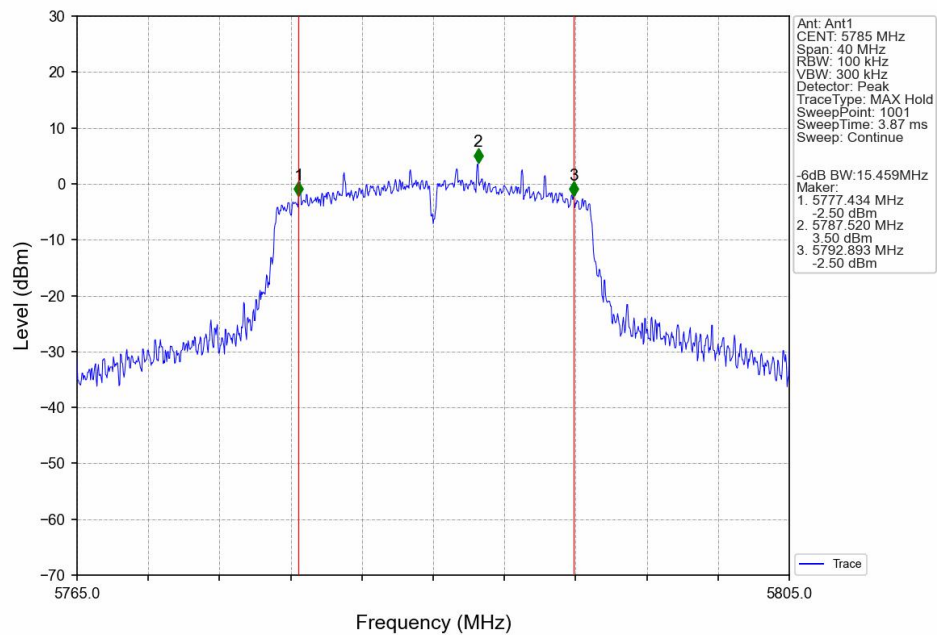


802.11n(HT20)_LCH_5745MHz_Ant1_NTNV

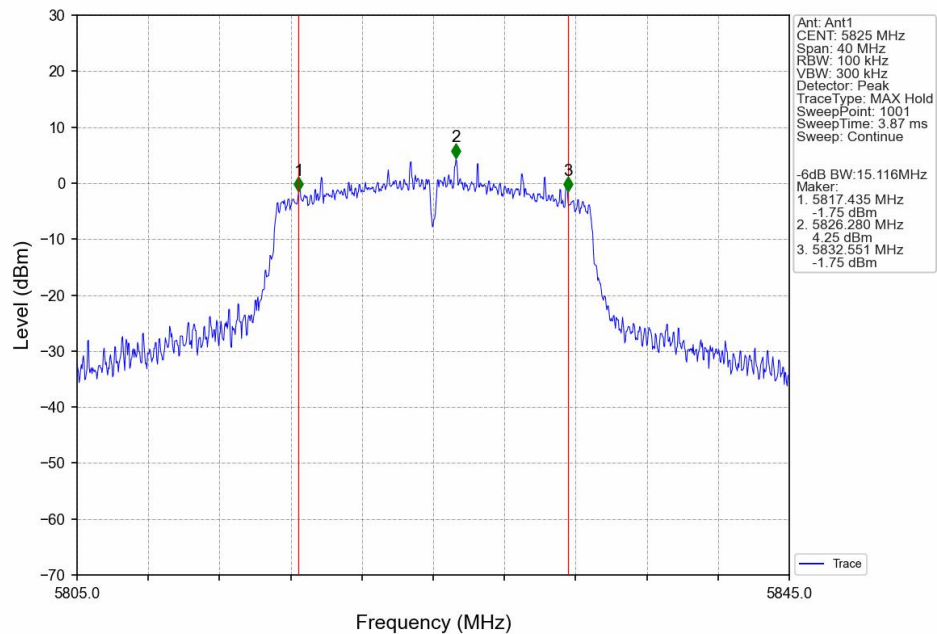


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802.11n(HT20)_MCH_5785MHz_Ant1_NTNV

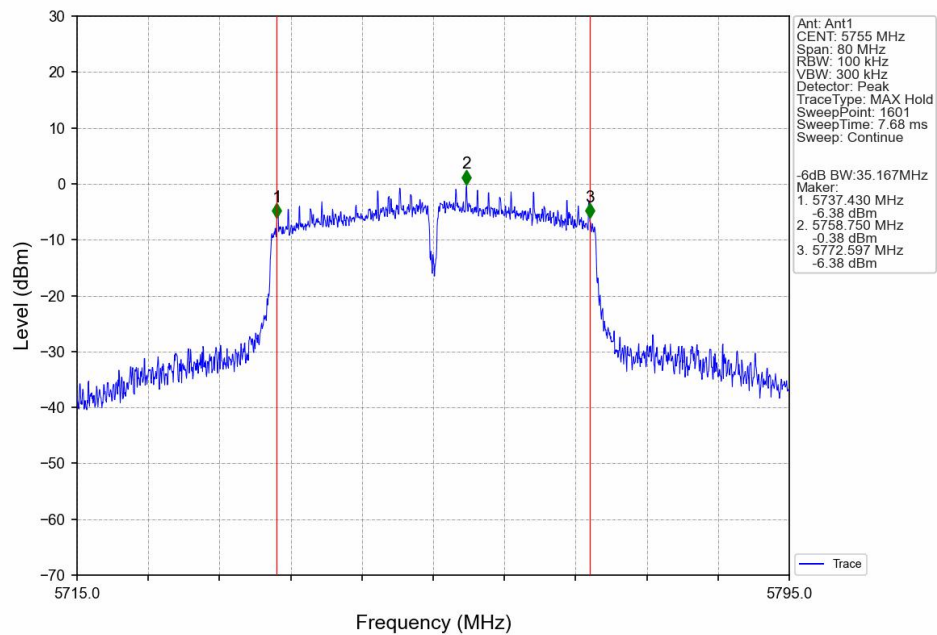


802.11n(HT20)_HCH_5825MHz_Ant1_NTNV

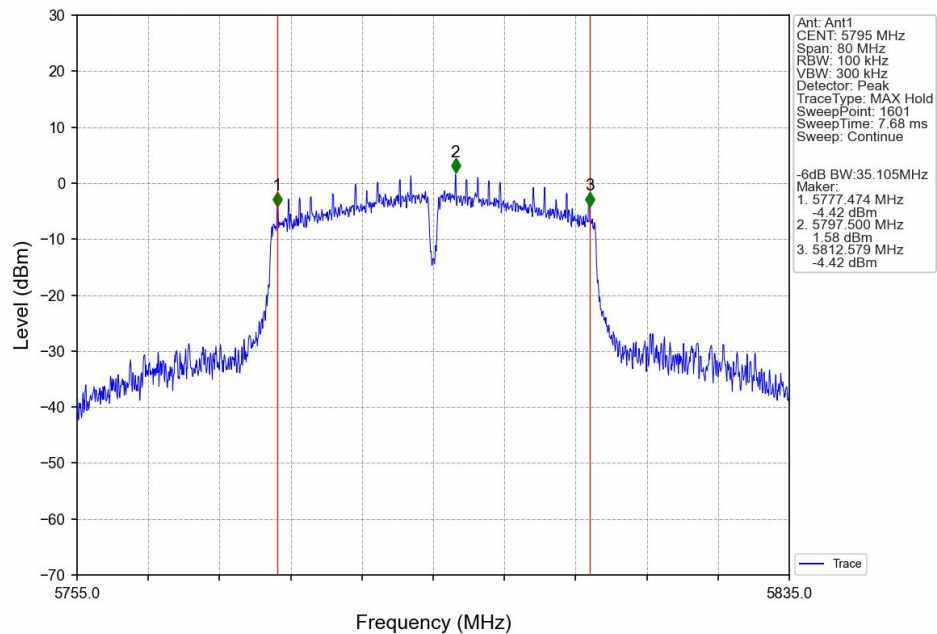


FCC ID: 2AUARVENUVT5

802.11n(HT40)_LCH_5755MHz_Ant1_NTNV

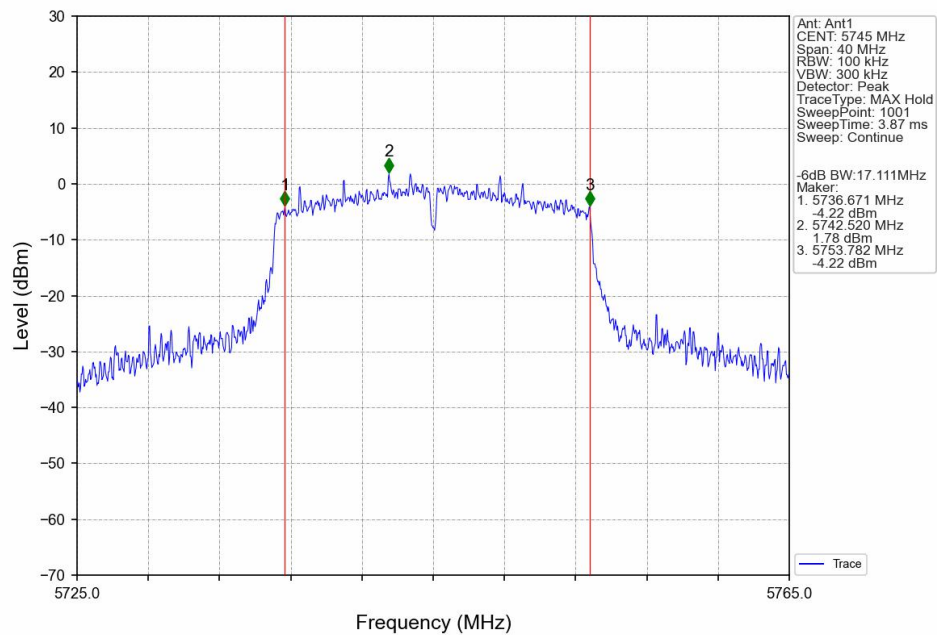


802.11n(HT40)_HCH_5795MHz_Ant1_NTNV

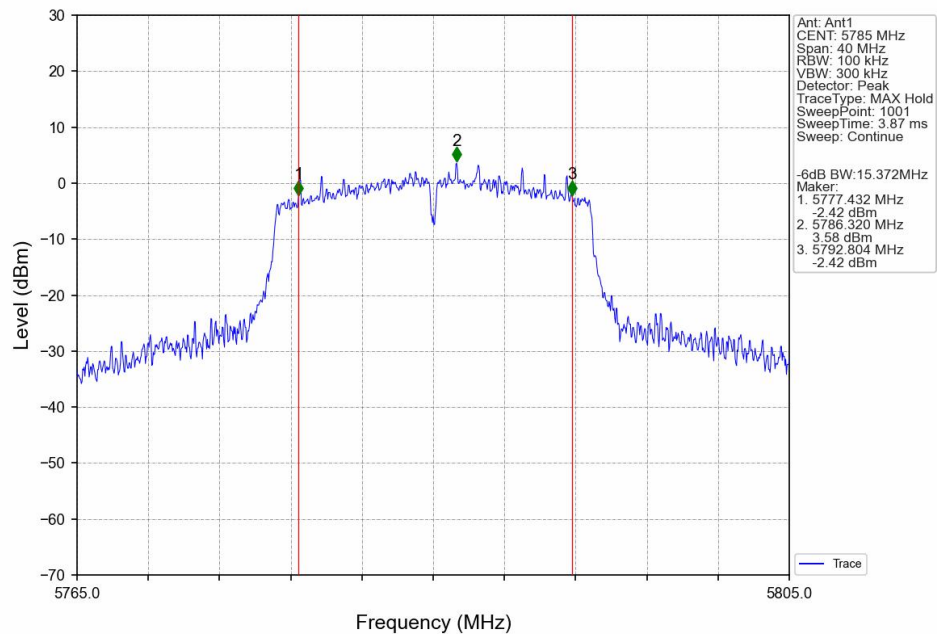


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802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV

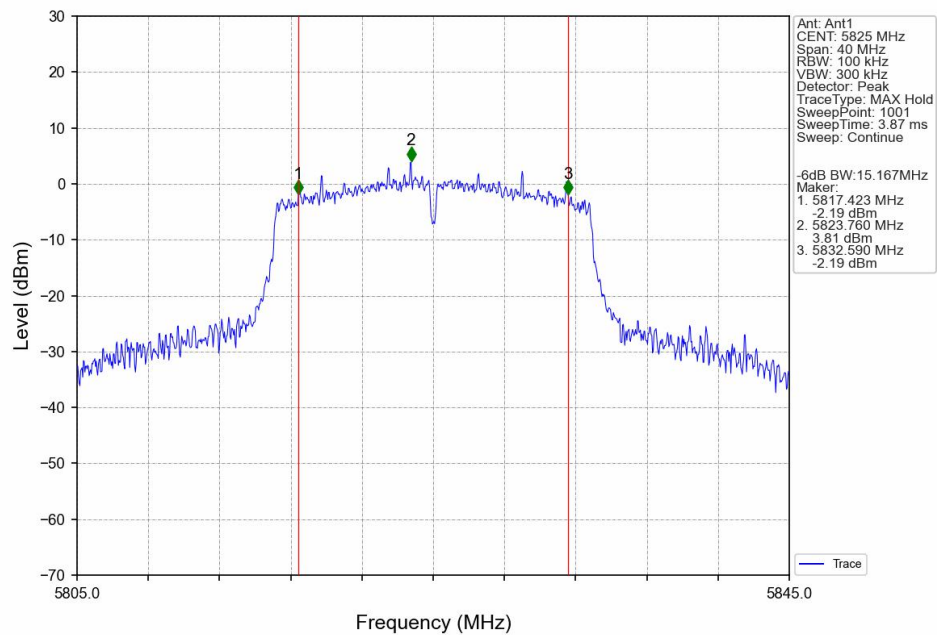


802.11ac(VHT20)_MCH_5785MHz_Ant1_NTNV

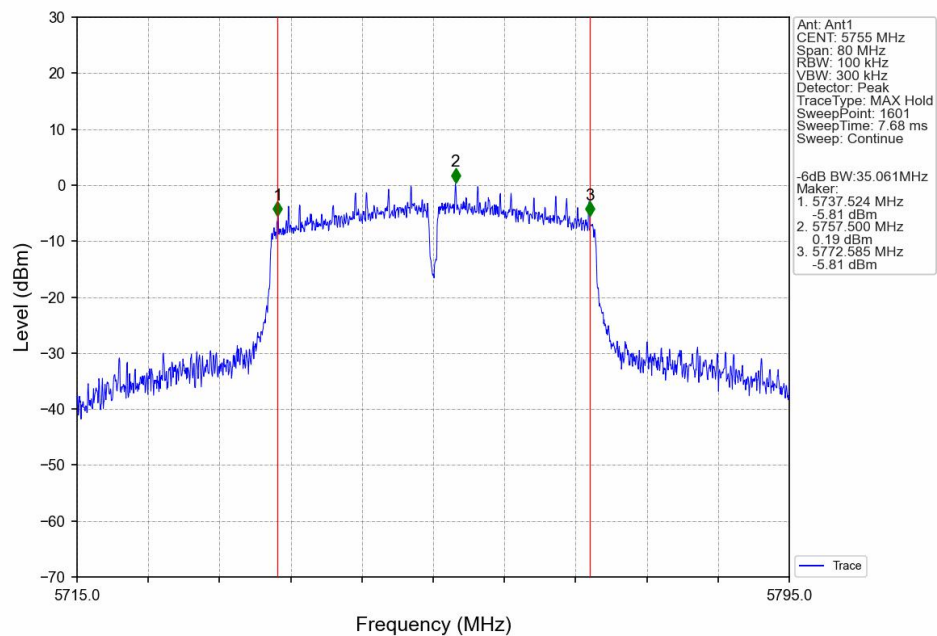


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802.11ac(VHT20)_HCH_5825MHz_Ant1_NTNV

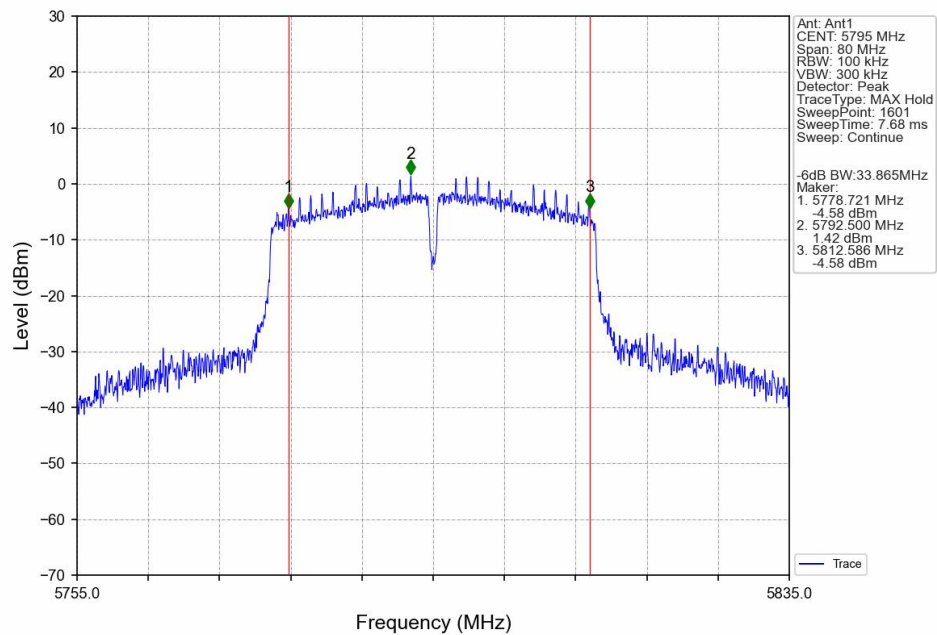


802.11ac(VHT40)_LCH_5755MHz_Ant1_NTNV

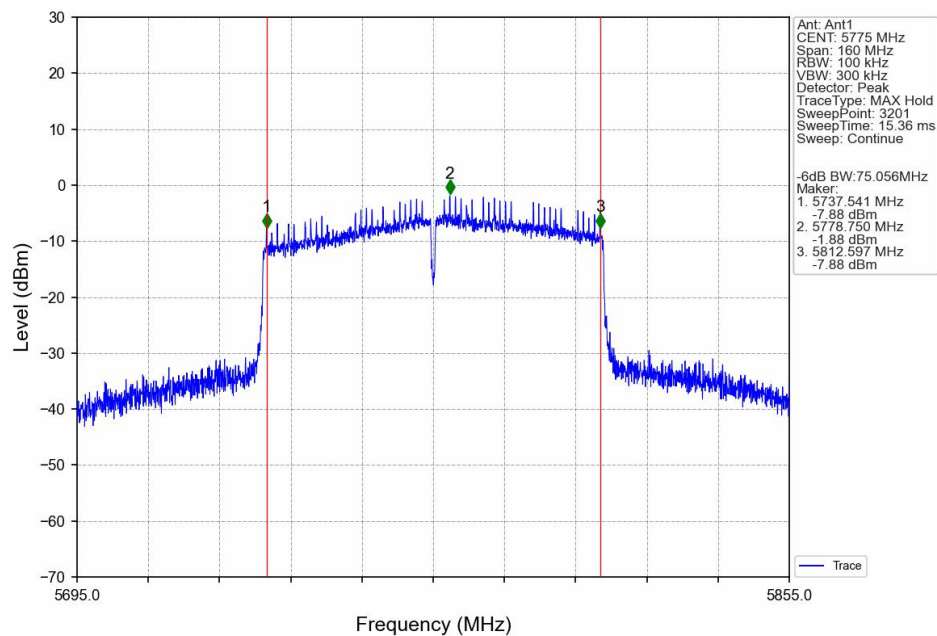


FCC ID: 2AUARVENUVT5

802.11ac(VHT40)_HCH_5795MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV



FCC ID: 2AUARVENUVT5

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	13.17	<=30	Pass
		5785	14.50	<=30	Pass
		5825	14.66	<=30	Pass
802.11n (HT20)	SISO	5745	13.09	<=30	Pass
		5785	14.52	<=30	Pass
		5825	14.50	<=30	Pass
802.11n (HT40)	SISO	5755	13.45	<=30	Pass
		5795	14.64	<=30	Pass
802.11ac (VHT20)	SISO	5745	13.25	<=30	Pass
		5785	14.79	<=30	Pass
		5825	14.58	<=30	Pass
802.11ac (VHT40)	SISO	5755	13.63	<=30	Pass
		5795	14.75	<=30	Pass
802.11ac (VHT80)	SISO	5775	14.24	<=30	Pass
Note1: Antenna Gain: Ant1: 2.92dBi;					

FCC ID: 2AUARVENUVT5

4. Maximum Power Spectral Density

4.1 Test Result

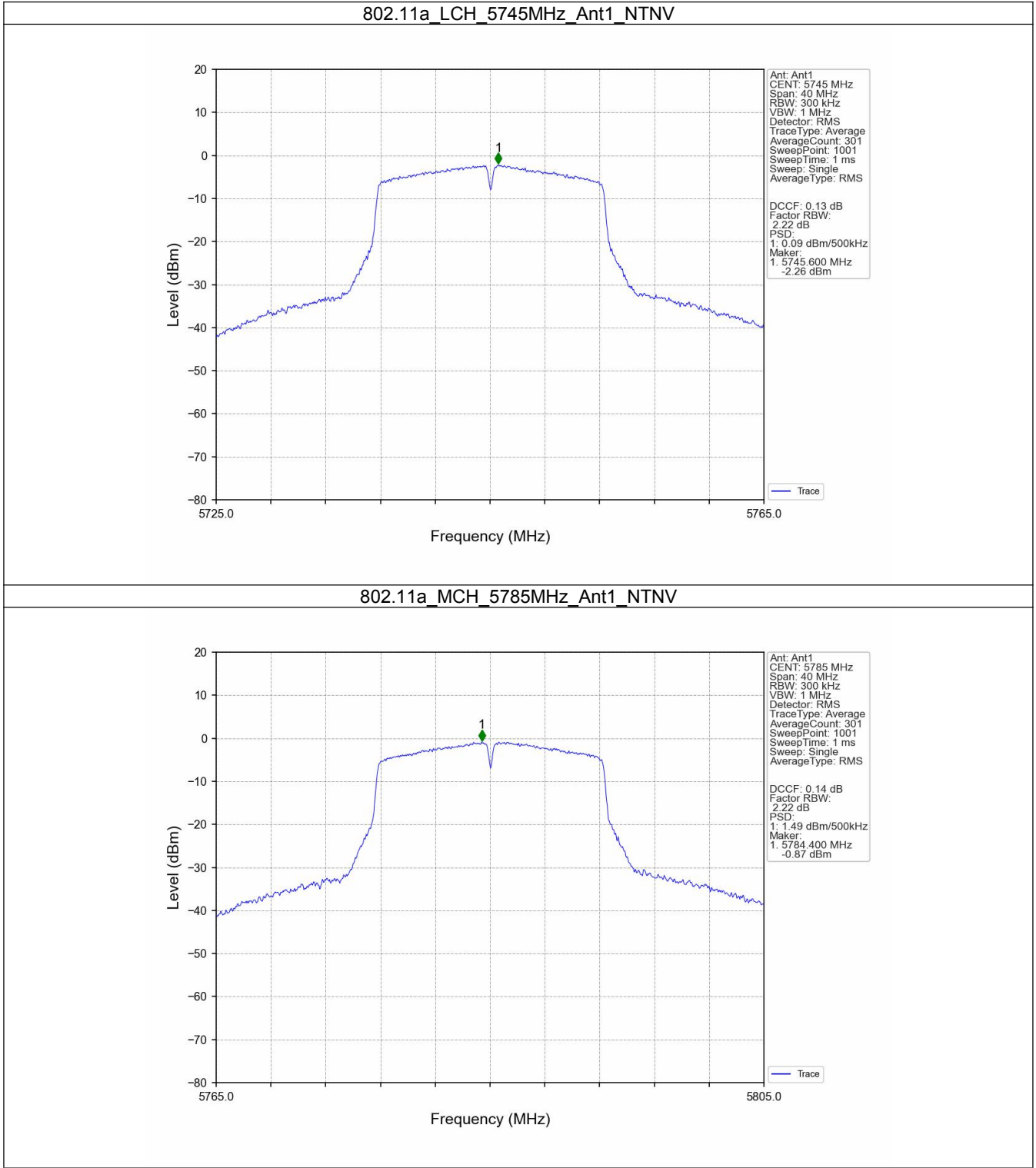
4.1.1 PSD-Band3

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/500kHz)		Verdict
			ANT1	Limit	
802.11a	SISO	5745	0.09	<=30	Pass
		5785	1.49	<=30	Pass
		5825	1.53	<=30	Pass
802.11n (HT20)	SISO	5745	-0.28	<=30	Pass
		5785	1.42	<=30	Pass
		5825	1.37	<=30	Pass
802.11n (HT40)	SISO	5755	-2.77	<=30	Pass
		5795	-1.28	<=30	Pass
802.11ac (VHT20)	SISO	5745	0.35	<=30	Pass
		5785	1.65	<=30	Pass
		5825	1.46	<=30	Pass
802.11ac (VHT40)	SISO	5755	-2.73	<=30	Pass
		5795	-1.34	<=30	Pass
802.11ac (VHT80)	SISO	5775	-4.77	<=30	Pass
Note1: Antenna Gain: Ant1: 2.92dBi;					

FCC ID: 2AUARVENUVT5

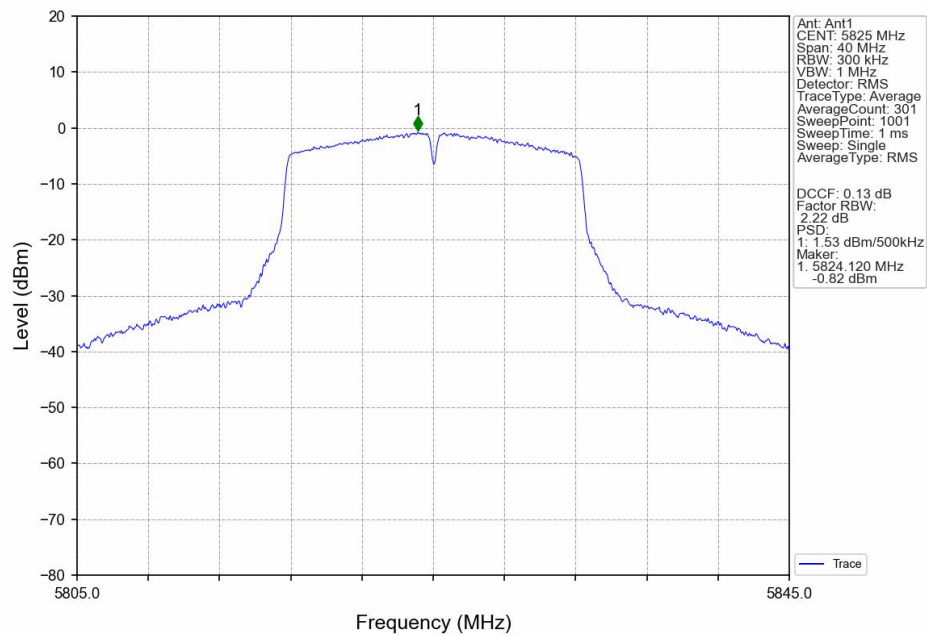
4.2 Test Graph

4.2.1 PSD-Band3

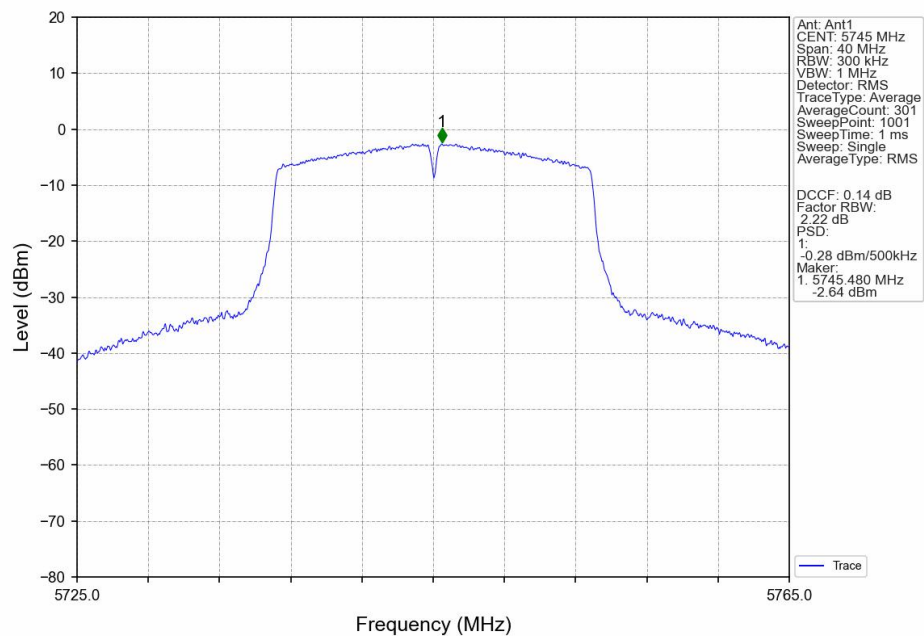


FCC ID: 2AUARVENUVT5

802.11a_HCH_5825MHz_Ant1_NTNV

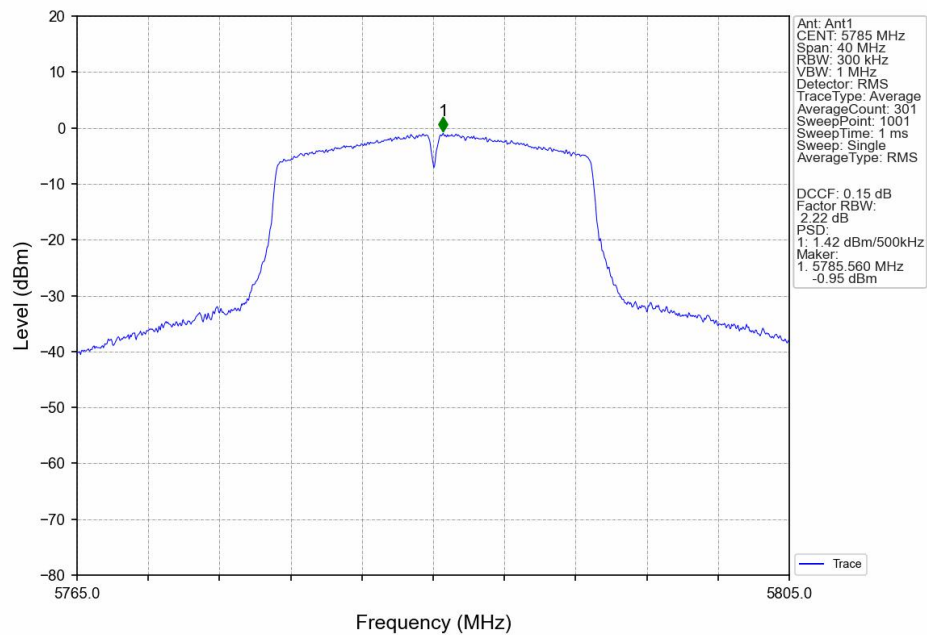


802.11n(HT20)_LCH_5745MHz_Ant1_NTNV

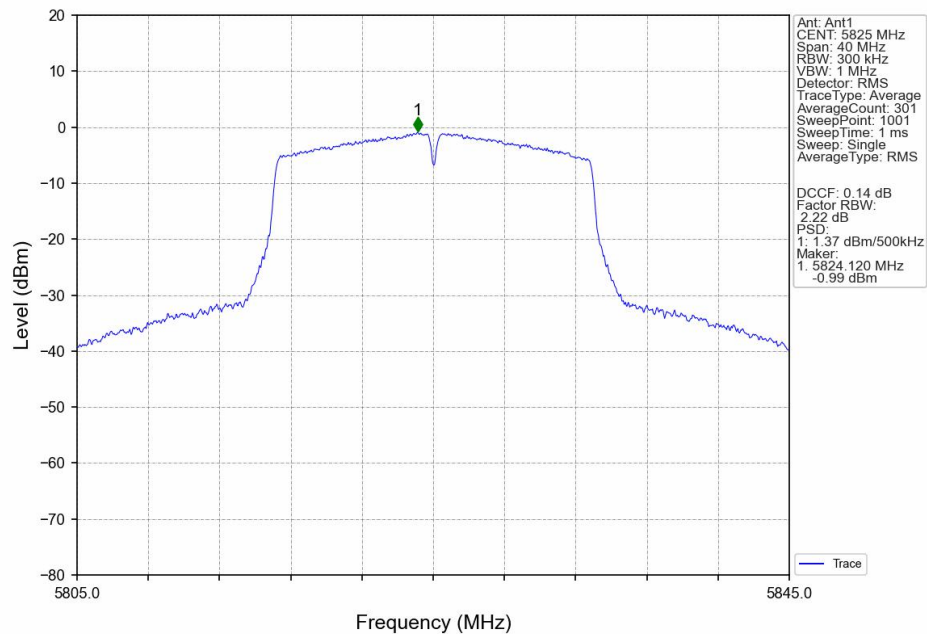


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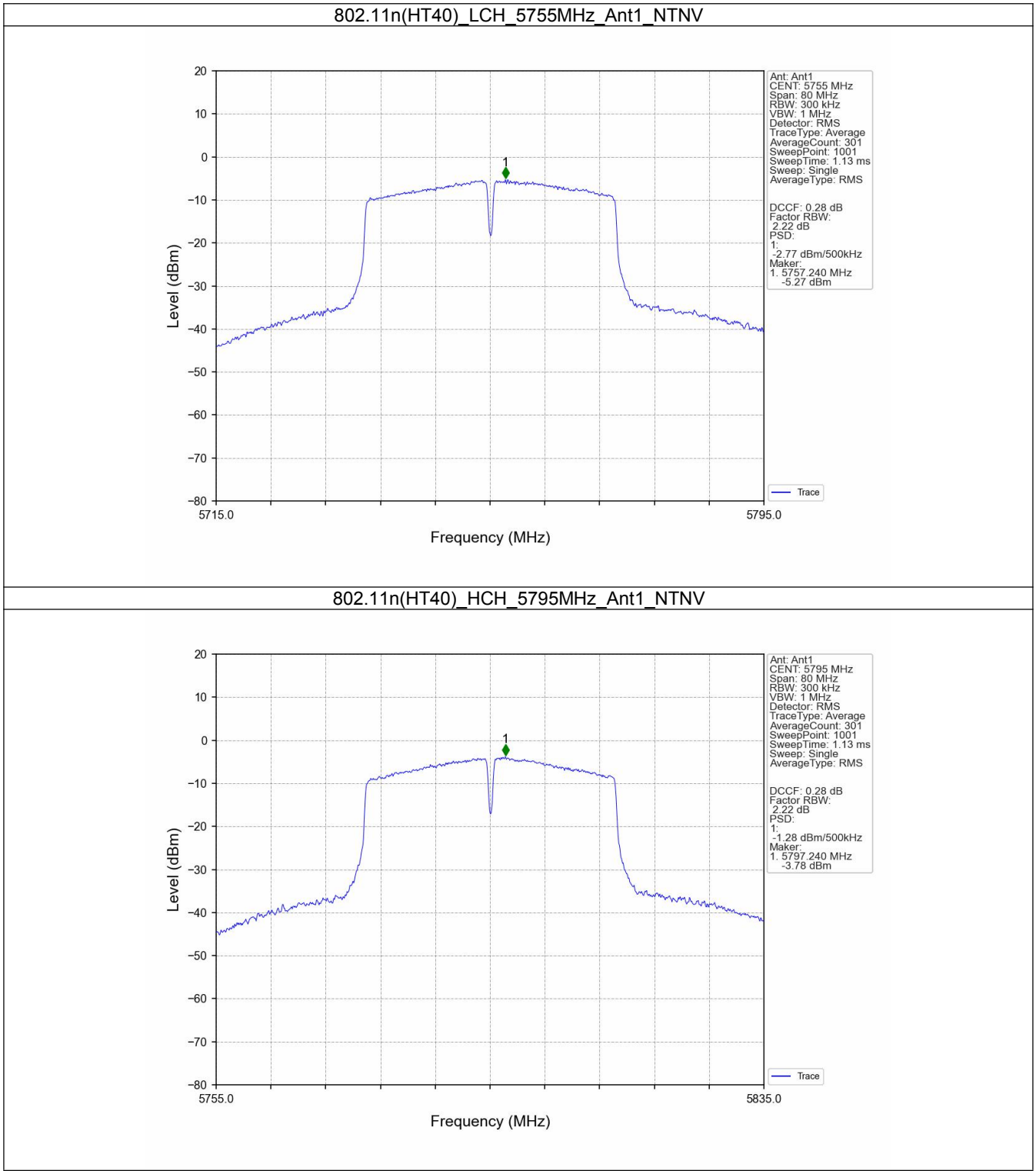
802.11n(HT20)_MCH_5785MHz_Ant1_NTNV



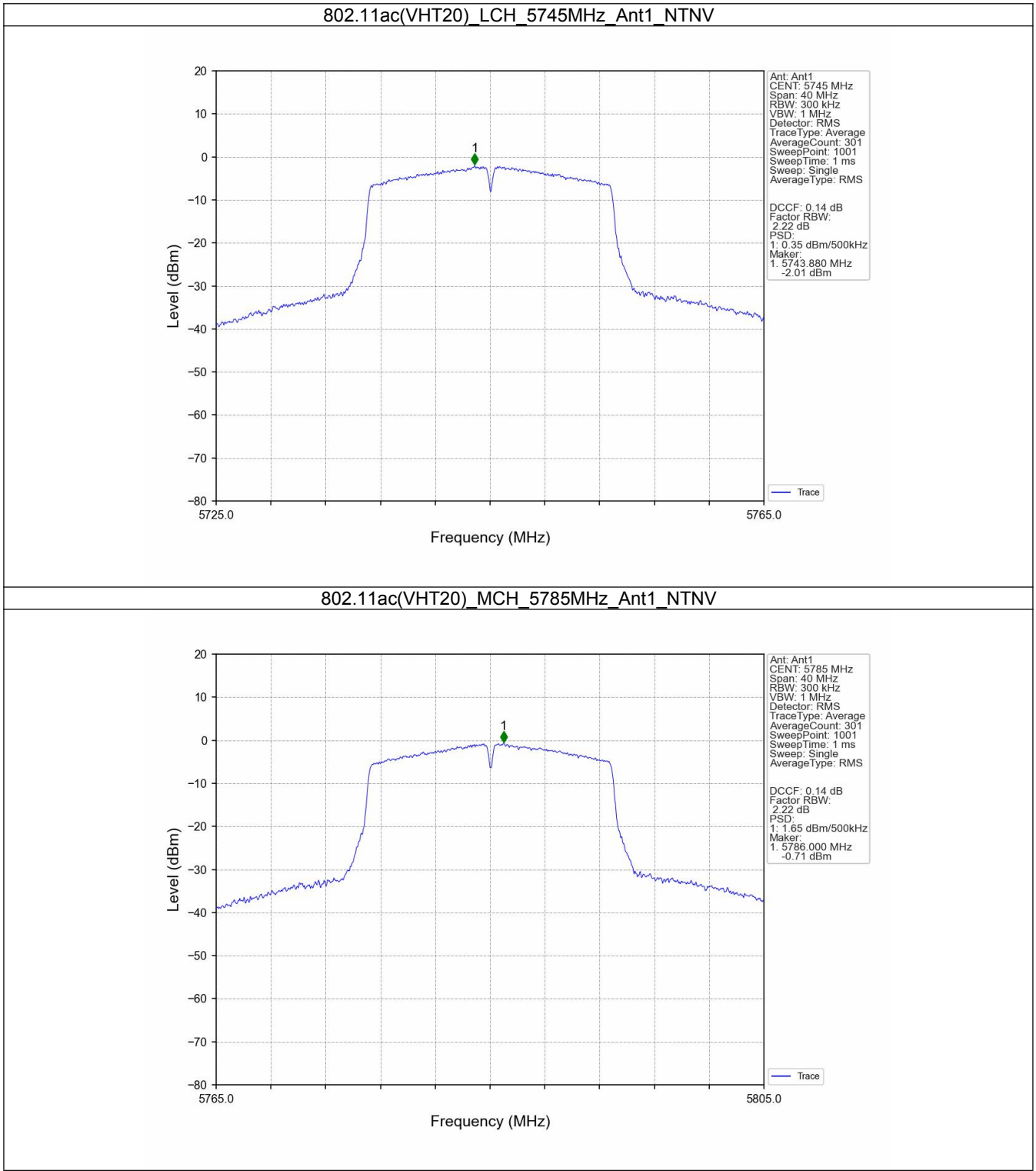
802.11n(HT20)_HCH_5825MHz_Ant1_NTNV



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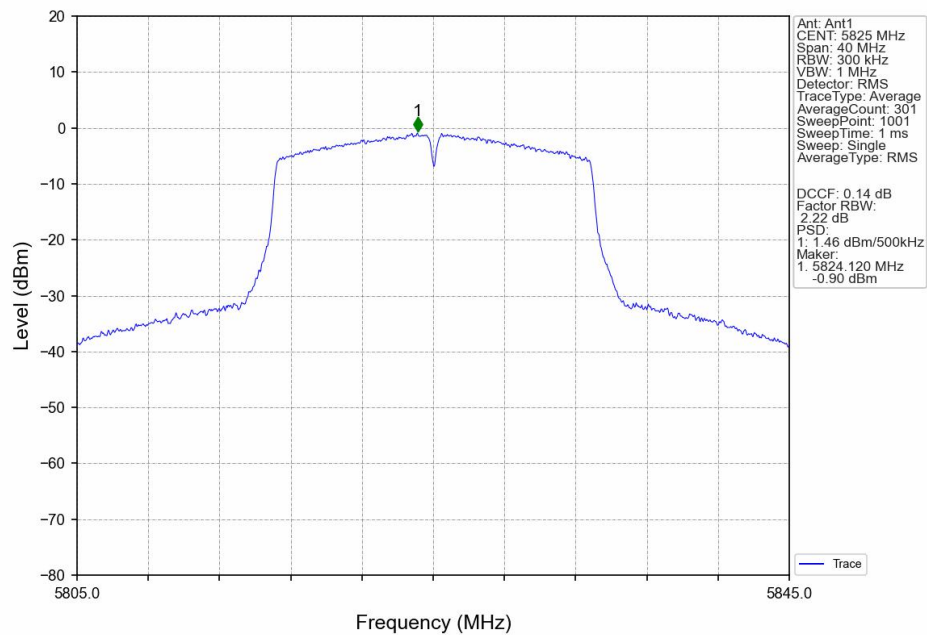


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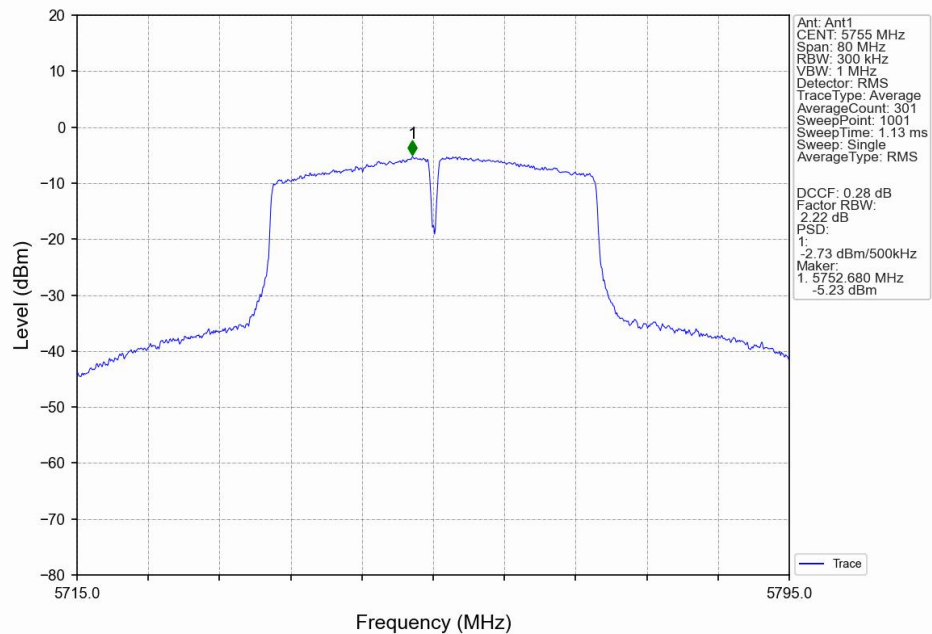


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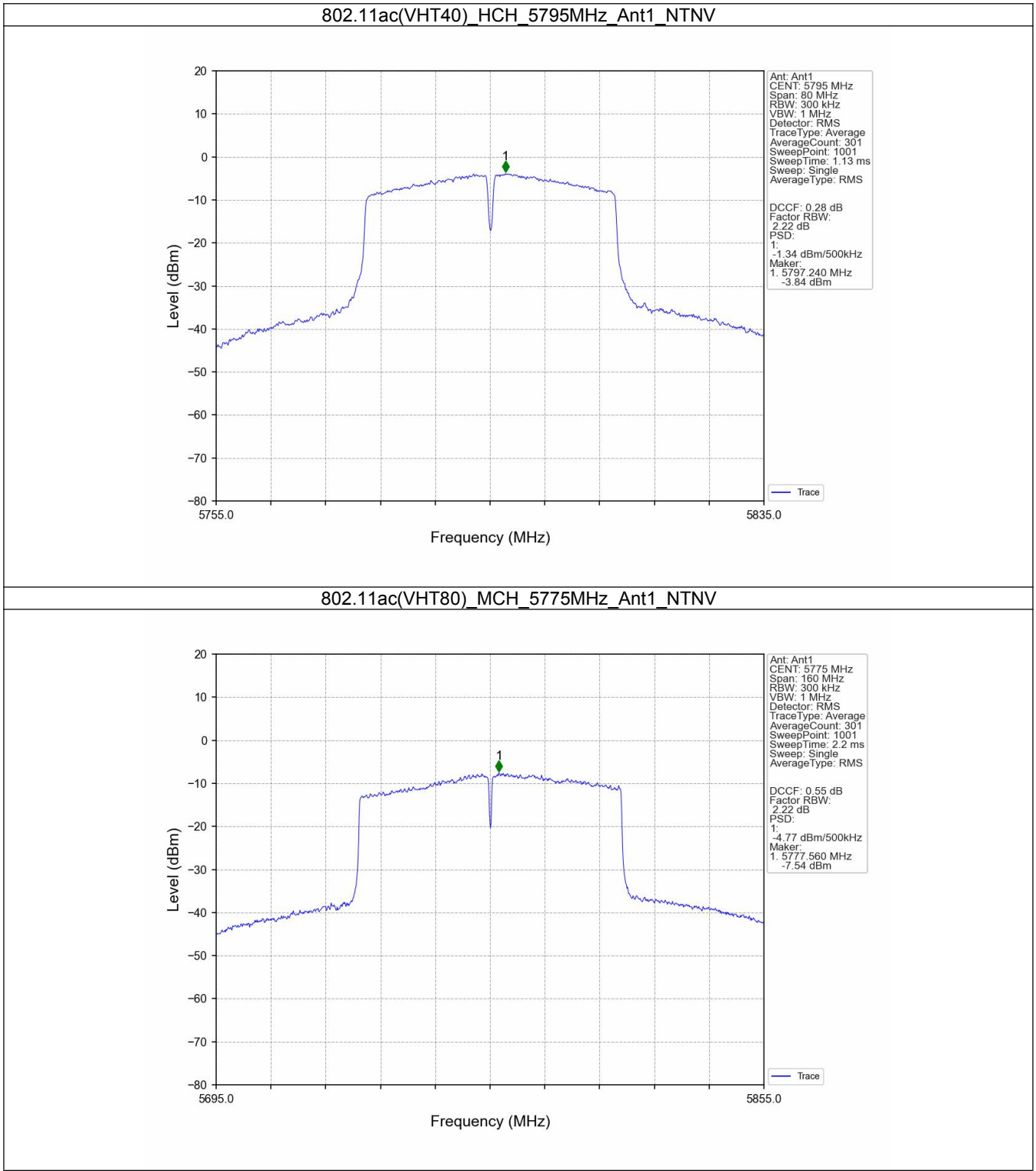
802.11ac(VHT20)_HCH_5825MHz_Ant1_NTNV



802.11ac(VHT40)_LCH_5755MHz_Ant1_NTNV



FCC ID: 2AUARVENUVT5



FCC ID: 2AUARVENUVT5

5. Frequency Stability

5.1 Test Result

5.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	Temperature (°C)	Voltage	Measured Frequency (MHz)	Limit (MHz)	Verdict
Carrier Wave	SISO	5745	20	LV	5745.001	5725 to 5850	Pass
				NV	5745.001	5725 to 5850	Pass
				HV	5745.001	5725 to 5850	Pass
			-30	NV	5745.001	5725 to 5850	Pass
			-20	NV	5745.001	5725 to 5850	Pass
			-10	NV	5745.001	5725 to 5850	Pass
			0	NV	5745.001	5725 to 5850	Pass
			10	NV	5745.001	5725 to 5850	Pass
			30	NV	5745.001	5725 to 5850	Pass
			40	NV	5745.001	5725 to 5850	Pass
		5785	20	NV	5745.001	5725 to 5850	Pass
				LV	5785.001	5725 to 5850	Pass
				NV	5785.001	5725 to 5850	Pass
			-30	NV	5785.001	5725 to 5850	Pass
			-20	NV	5785.001	5725 to 5850	Pass
			-10	NV	5785.001	5725 to 5850	Pass
			0	NV	5785.001	5725 to 5850	Pass
			10	NV	5785.001	5725 to 5850	Pass
			30	NV	5785.001	5725 to 5850	Pass
			40	NV	5785.001	5725 to 5850	Pass
		5825	20	NV	5785.001	5725 to 5850	Pass
				LV	5825.001	5725 to 5850	Pass
				NV	5825.001	5725 to 5850	Pass
			-30	NV	5825.001	5725 to 5850	Pass
			-20	NV	5825.001	5725 to 5850	Pass
			-10	NV	5825.001	5725 to 5850	Pass
			0	NV	5825.001	5725 to 5850	Pass
			10	NV	5825.001	5725 to 5850	Pass
			30	NV	5825.001	5725 to 5850	Pass
			40	NV	5825.001	5725 to 5850	Pass
		5755	20	NV	5825.001	5725 to 5850	Pass
				LV	5755.001	5725 to 5850	Pass
				NV	5755.001	5725 to 5850	Pass
			-30	NV	5755.001	5725 to 5850	Pass
			-20	NV	5755.001	5725 to 5850	Pass
			-10	NV	5755.001	5725 to 5850	Pass
			0	NV	5755.001	5725 to 5850	Pass
			10	NV	5755.001	5725 to 5850	Pass
			30	NV	5755.001	5725 to 5850	Pass
			40	NV	5755.001	5725 to 5850	Pass
		5795	20	NV	5755.001	5725 to 5850	Pass
				LV	5795.001	5725 to 5850	Pass
				NV	5795.001	5725 to 5850	Pass

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			-30	NV	5795.001	5725 to 5850	Pass
			-20	NV	5795.001	5725 to 5850	Pass
			-10	NV	5795.001	5725 to 5850	Pass
			0	NV	5795.001	5725 to 5850	Pass
			10	NV	5795.001	5725 to 5850	Pass
			30	NV	5795.001	5725 to 5850	Pass
			40	NV	5795.001	5725 to 5850	Pass
			50	NV	5795.001	5725 to 5850	Pass
		5775	20	LV	5775.001	5725 to 5850	Pass
				NV	5775.001	5725 to 5850	Pass
				HV	5775.001	5725 to 5850	Pass
			-30	NV	5775.001	5725 to 5850	Pass
			-20	NV	5775.001	5725 to 5850	Pass
			-10	NV	5775.001	5725 to 5850	Pass
			0	NV	5775.001	5725 to 5850	Pass
			10	NV	5775.001	5725 to 5850	Pass
			30	NV	5775.001	5725 to 5850	Pass
			40	NV	5775.001	5725 to 5850	Pass
			50	NV	5775.001	5725 to 5850	Pass