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Annex for 5GHz Wi-Fi Band I

Test Report No.: CTL2604012071-WF03

FCCID: 2APQC-TIDE16

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FCCID: 2APQC-TIDE16

1. Bandwidth

1.1 Test Result

1.1.1 OBW

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5180	1	16.557	/	Pass
		5200	1	16.562	/	Pass
		5240	1	16.578	/	Pass
802.11n (HT20)	SISO	5180	1	17.727	/	Pass
		5200	1	17.668	/	Pass
		5240	1	17.698	/	Pass
802.11n (HT40)	SISO	5190	1	36.538	/	Pass
		5230	1	36.540	/	Pass
802.11ac (VHT20)	SISO	5180	1	17.669	/	Pass
		5200	1	17.667	/	Pass
		5240	1	17.656	/	Pass
802.11ac (VHT40)	SISO	5190	1	36.697	/	Pass
		5230	1	36.571	/	Pass
802.11ac (VHT80)	SISO	5210	1	76.316	/	Pass

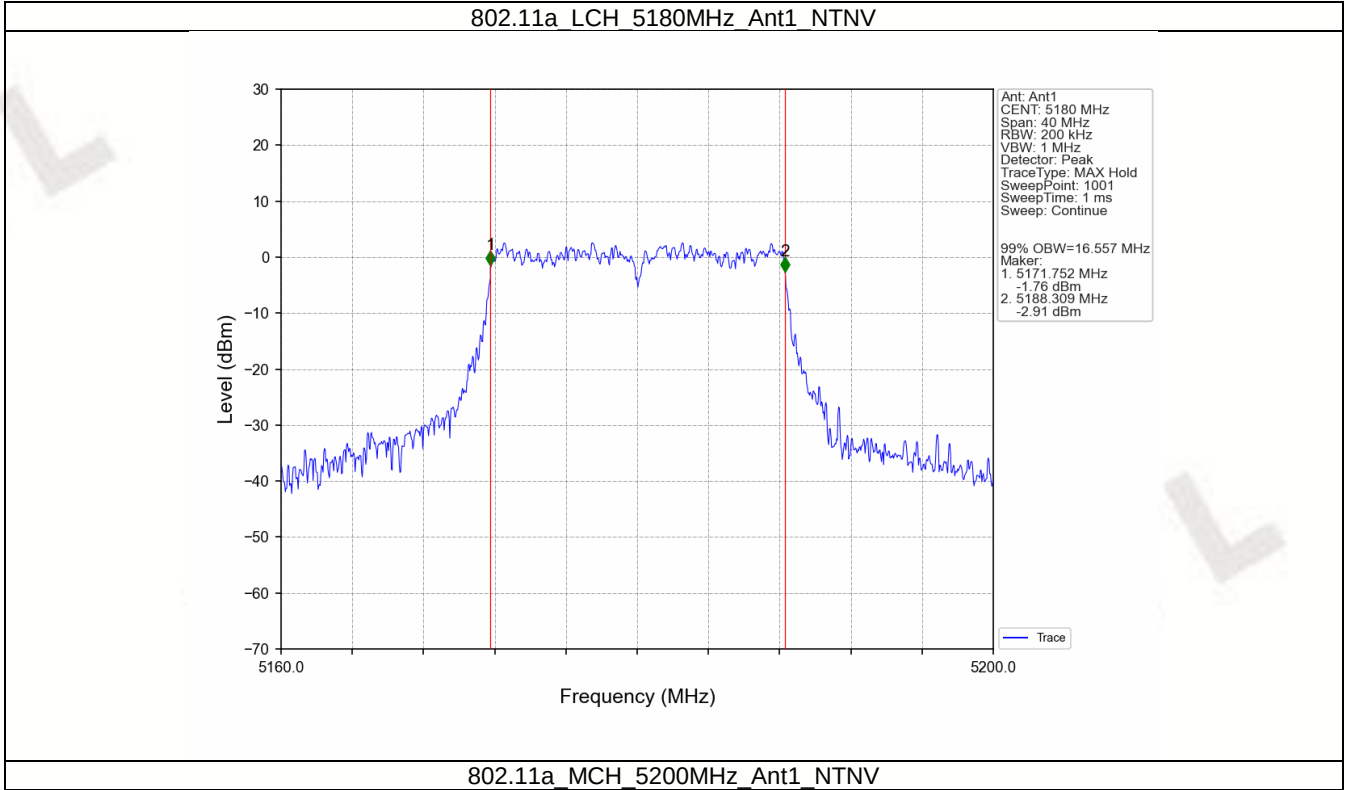
1.1.2 26dB BW

Mode	TX Type	Frequency (MHz)	ANT	26dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5180	1	19.369	/	Pass
		5200	1	19.640	/	Pass
		5240	1	19.628	/	Pass
802.11n (HT20)	SISO	5180	1	19.922	/	Pass
		5200	1	20.158	/	Pass
		5240	1	20.735	/	Pass
802.11n (HT40)	SISO	5190	1	42.716	/	Pass
		5230	1	44.616	/	Pass
802.11ac (VHT20)	SISO	5180	1	19.963	/	Pass
		5200	1	19.927	/	Pass
		5240	1	19.728	/	Pass
802.11ac (VHT40)	SISO	5190	1	42.391	/	Pass
		5230	1	43.661	/	Pass
802.11ac (VHT80)	SISO	5210	1	83.393	/	Pass

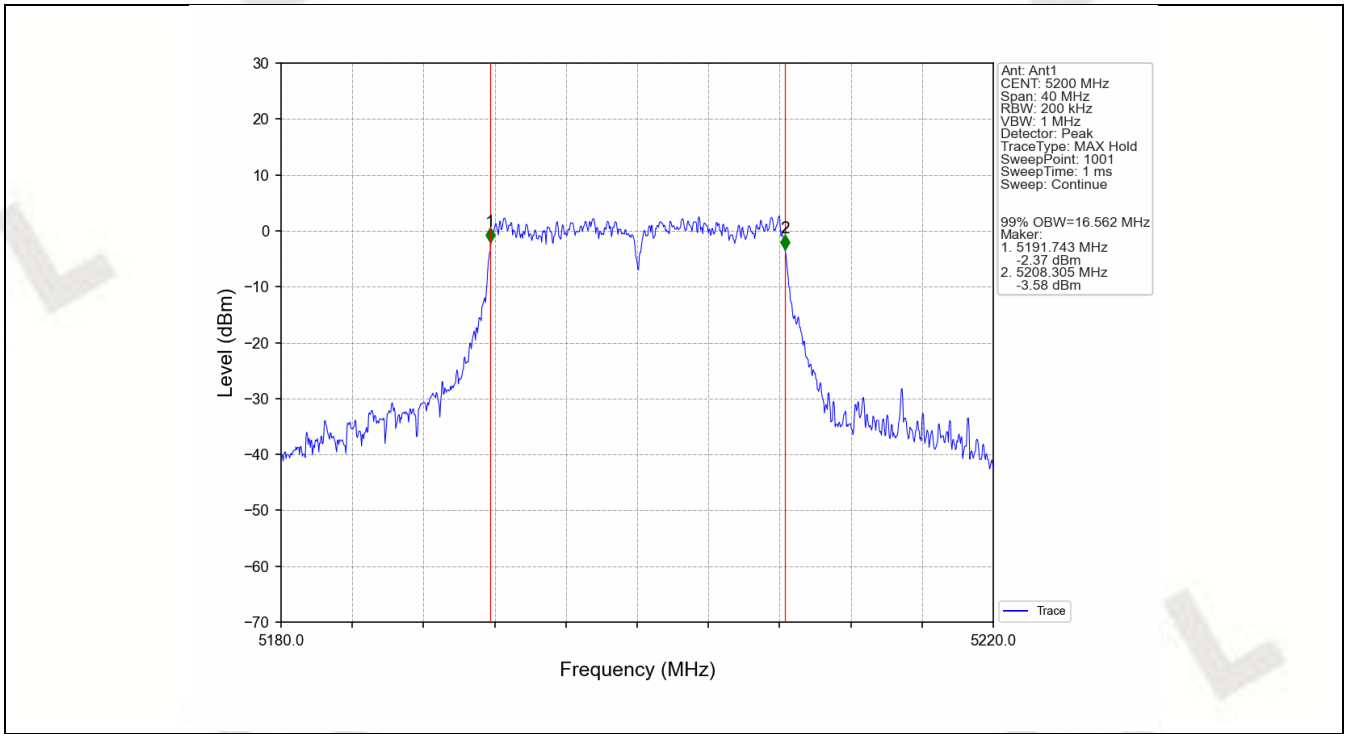
FCCID: 2APQC-TIDE16

1.2 Test Graph

1.2.1 OBW

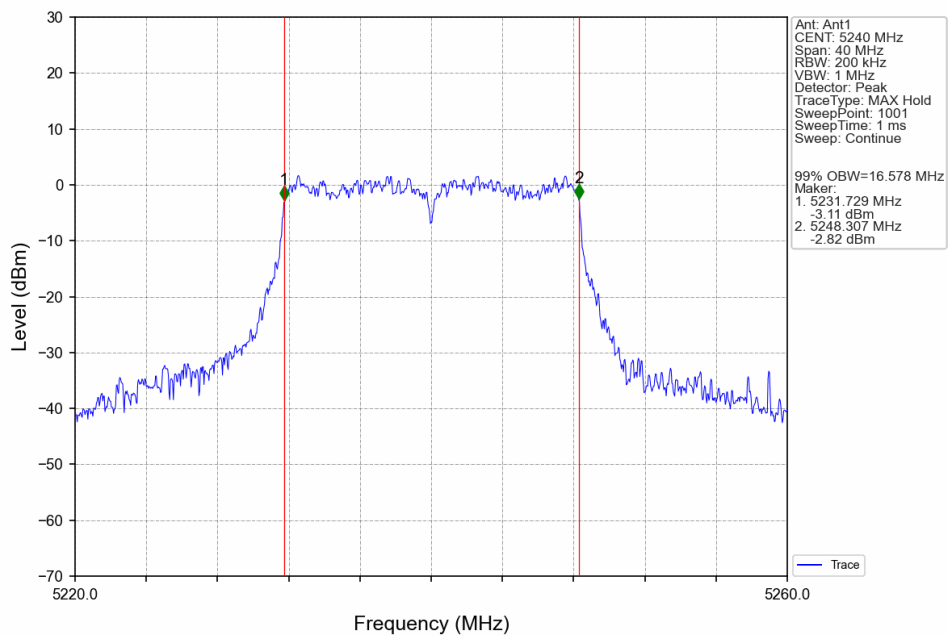


FCCID: 2APQC-TIDE16

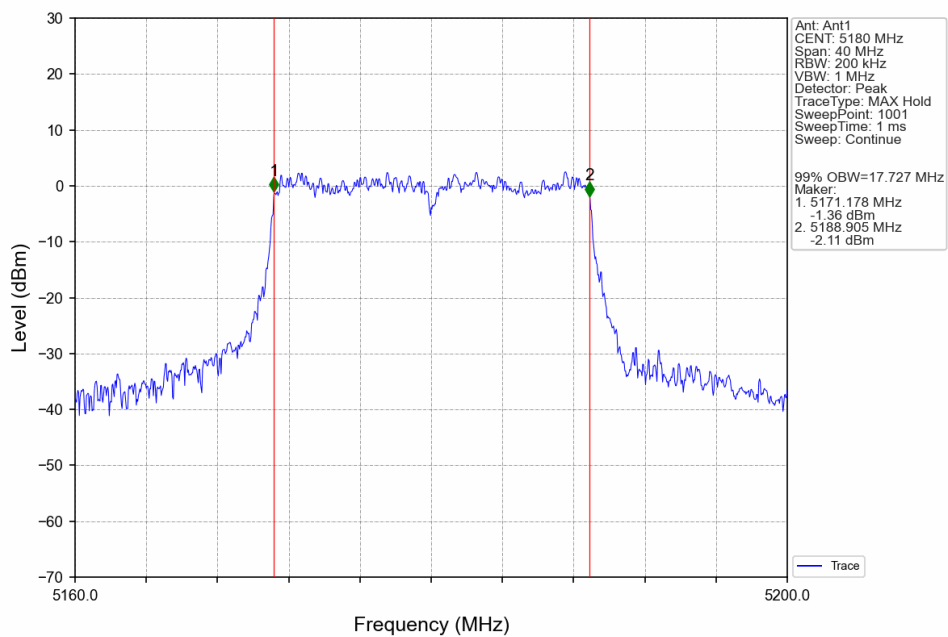


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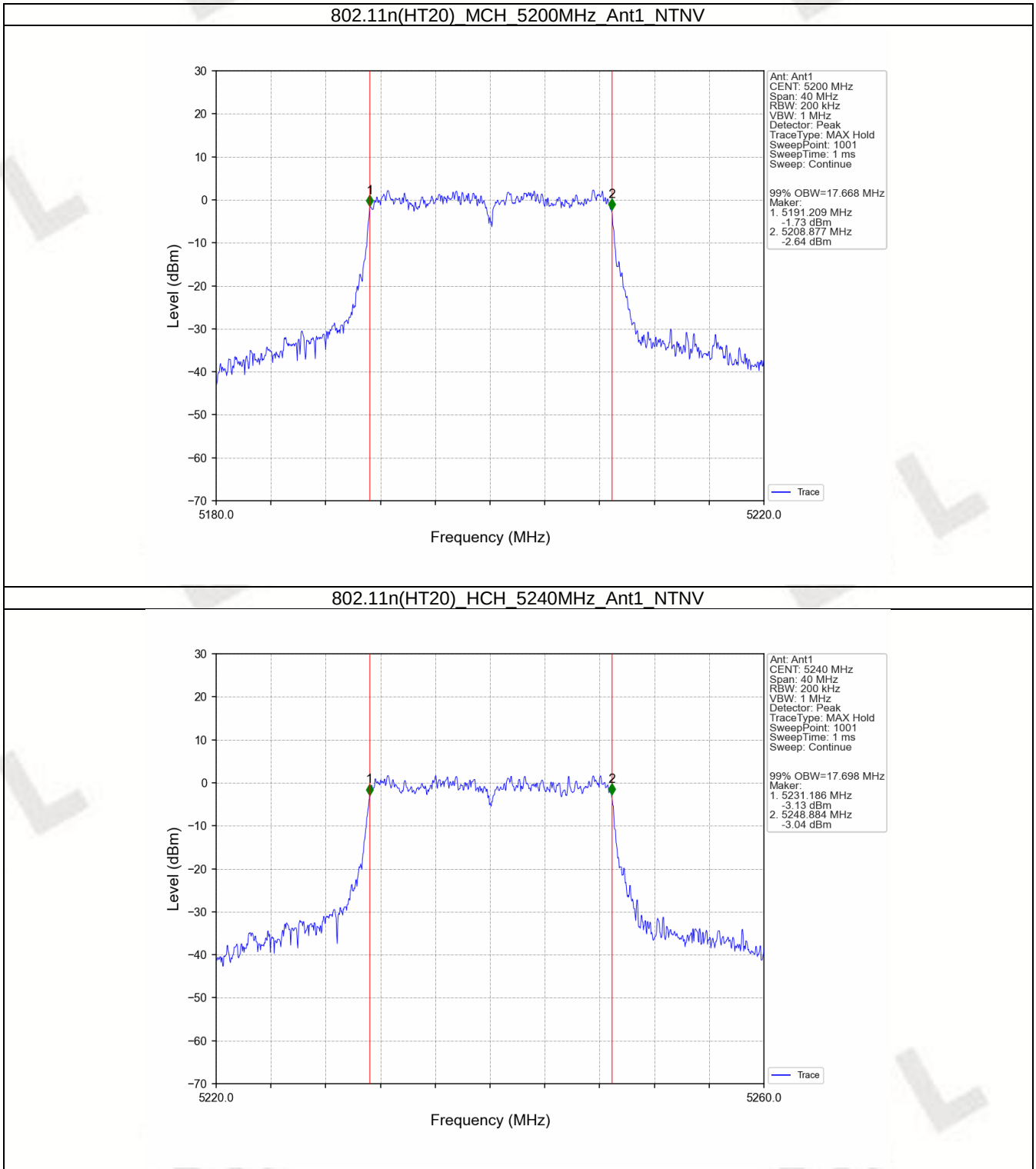
802.11a HCH 5240MHz Ant1 NTN



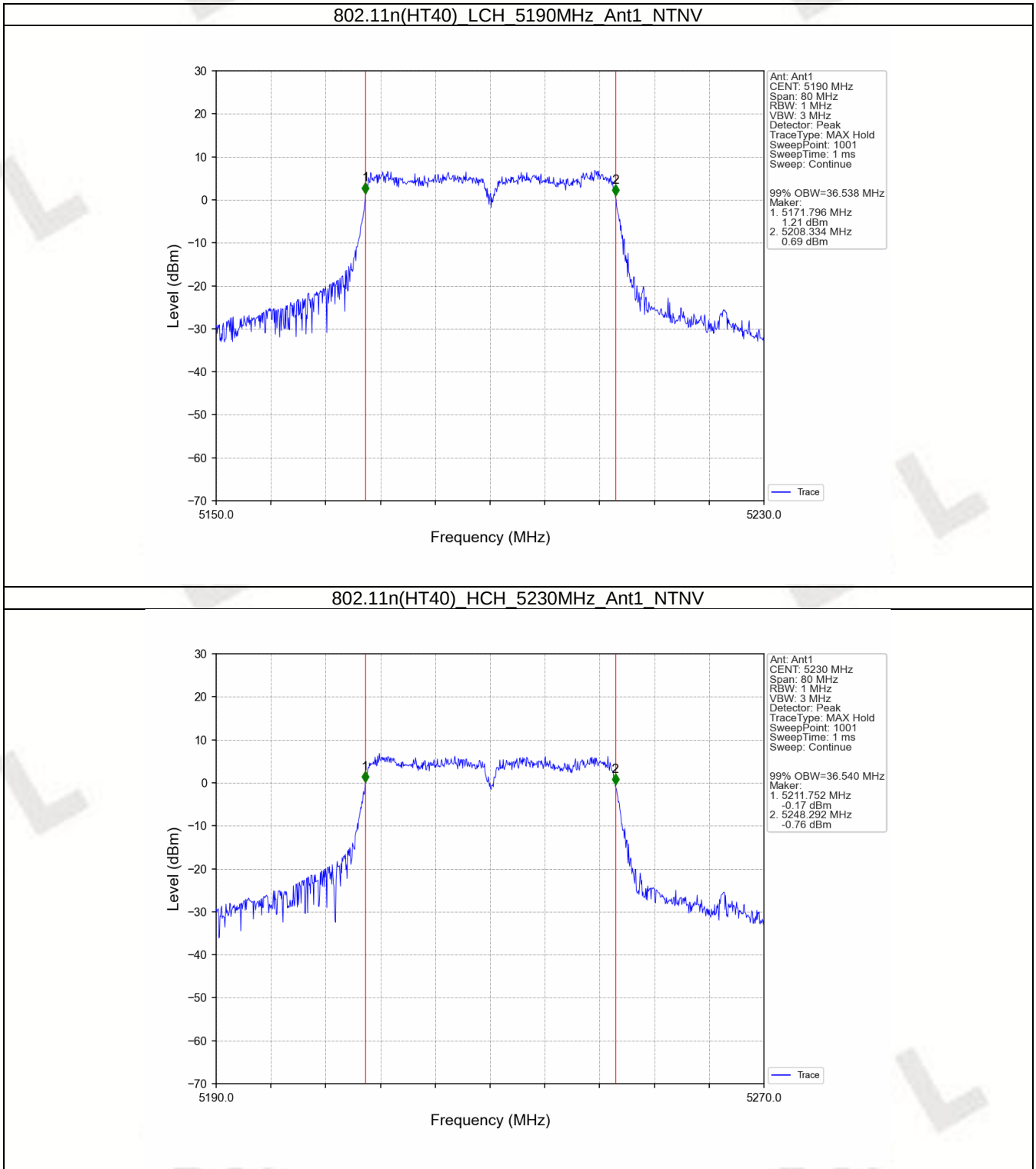
802.11n(HT20) LCH 5180MHz Ant1 NTN



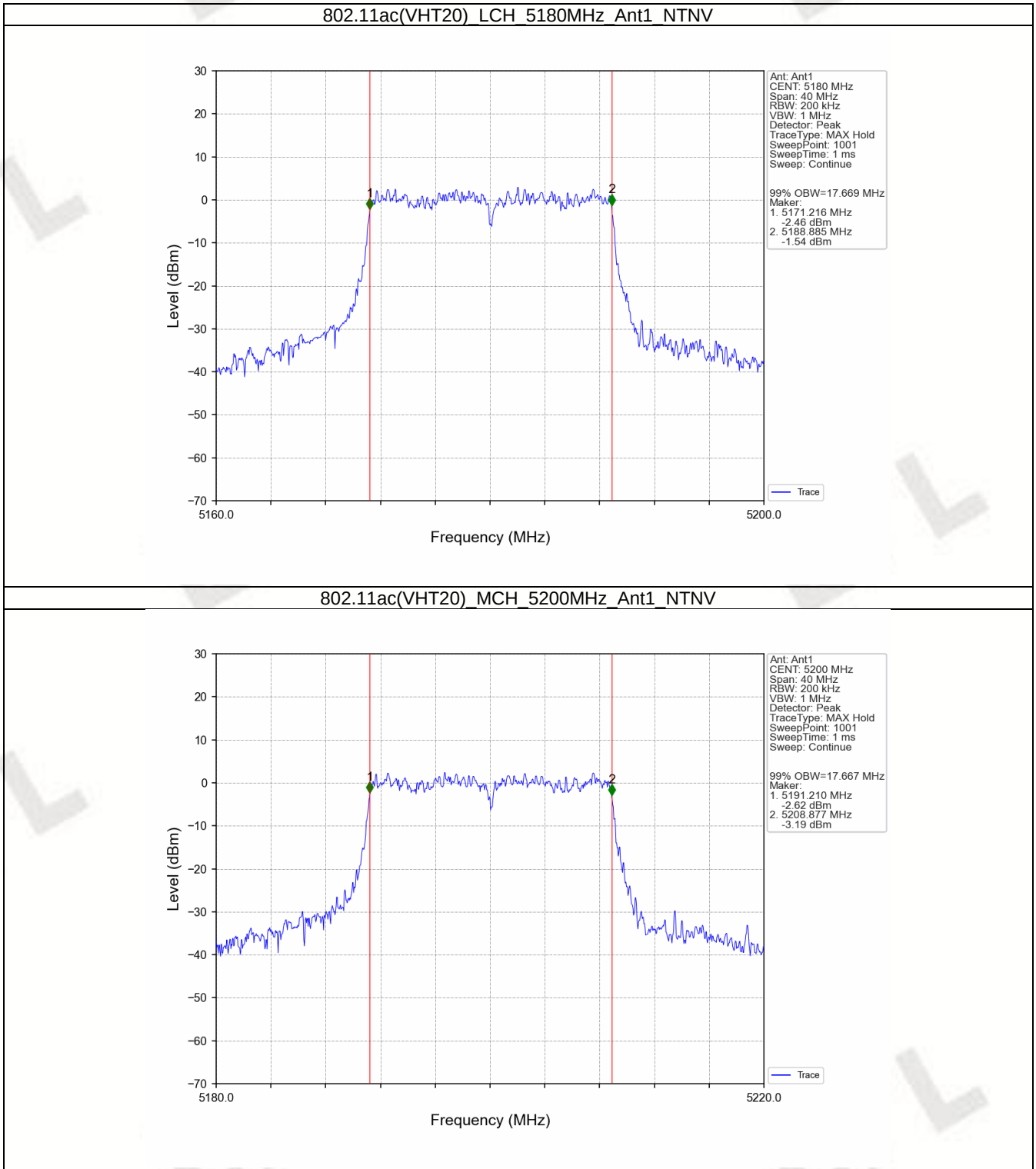
FCCID: 2APQC-TIDE16



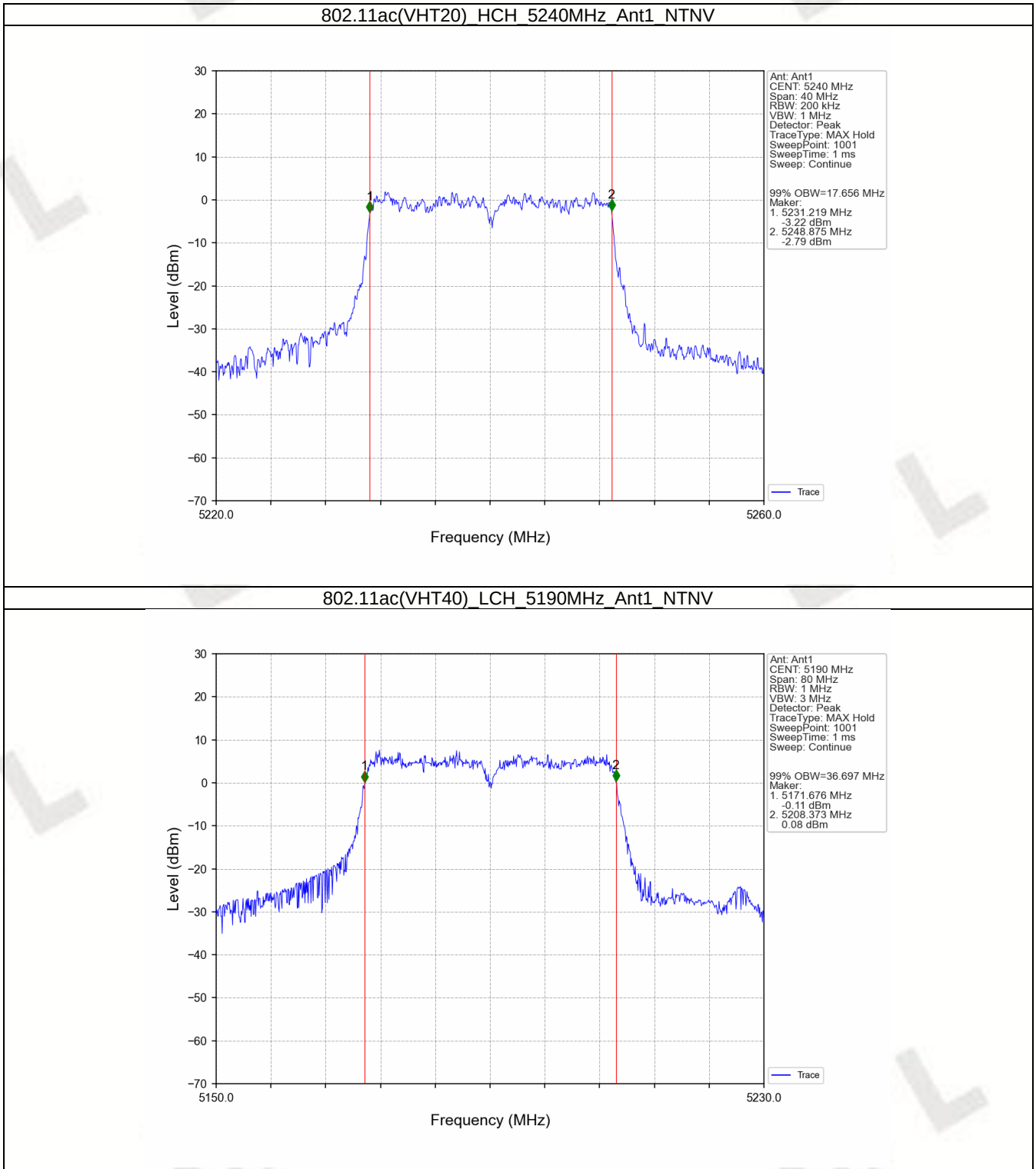
FCCID: 2APQC-TIDE16



FCCID: 2APQC-TIDE16

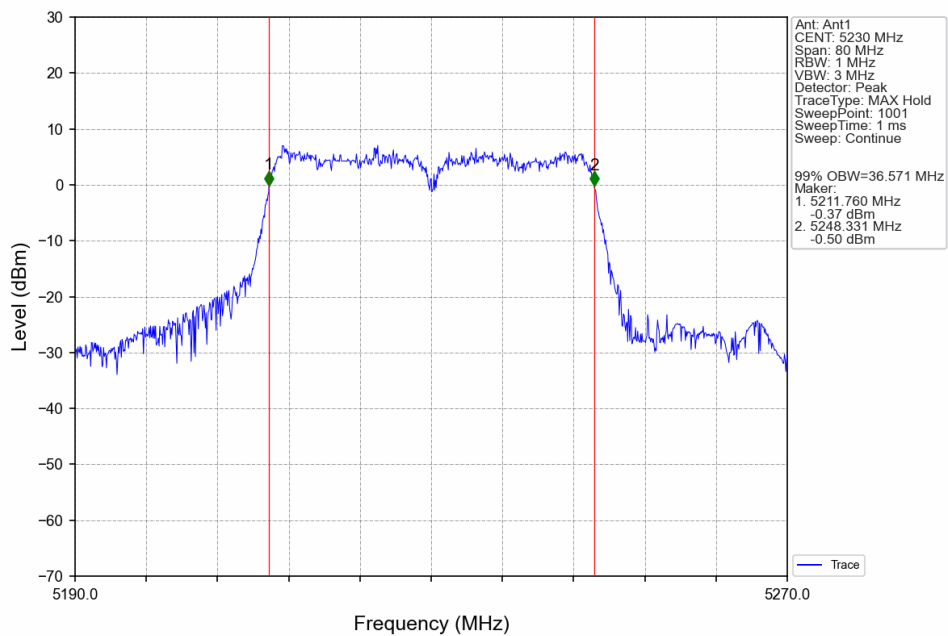


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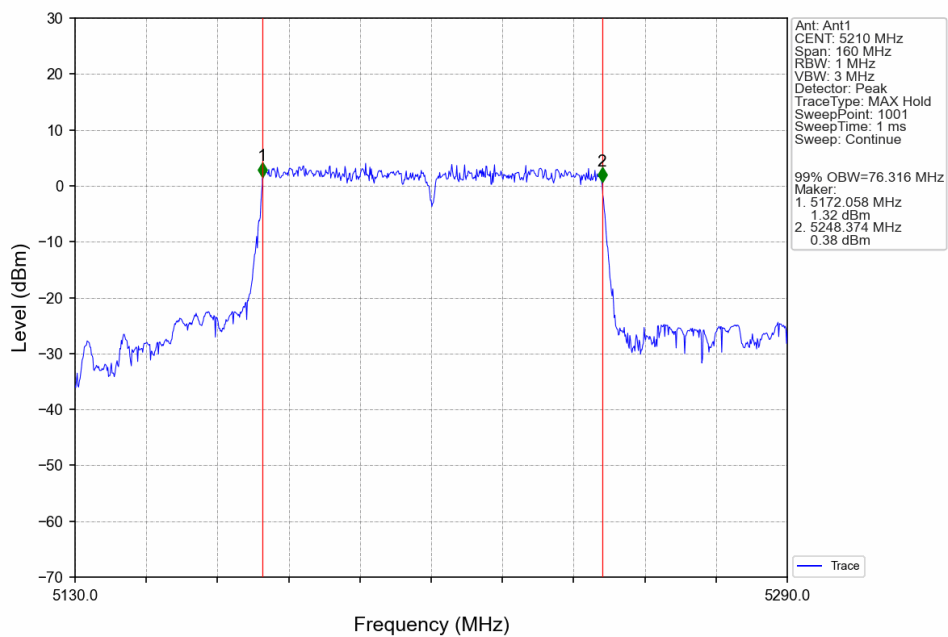


FCCID: 2APQC-TIDE16

802.11ac(VHT40) HCH 5230MHz Ant1 NTN

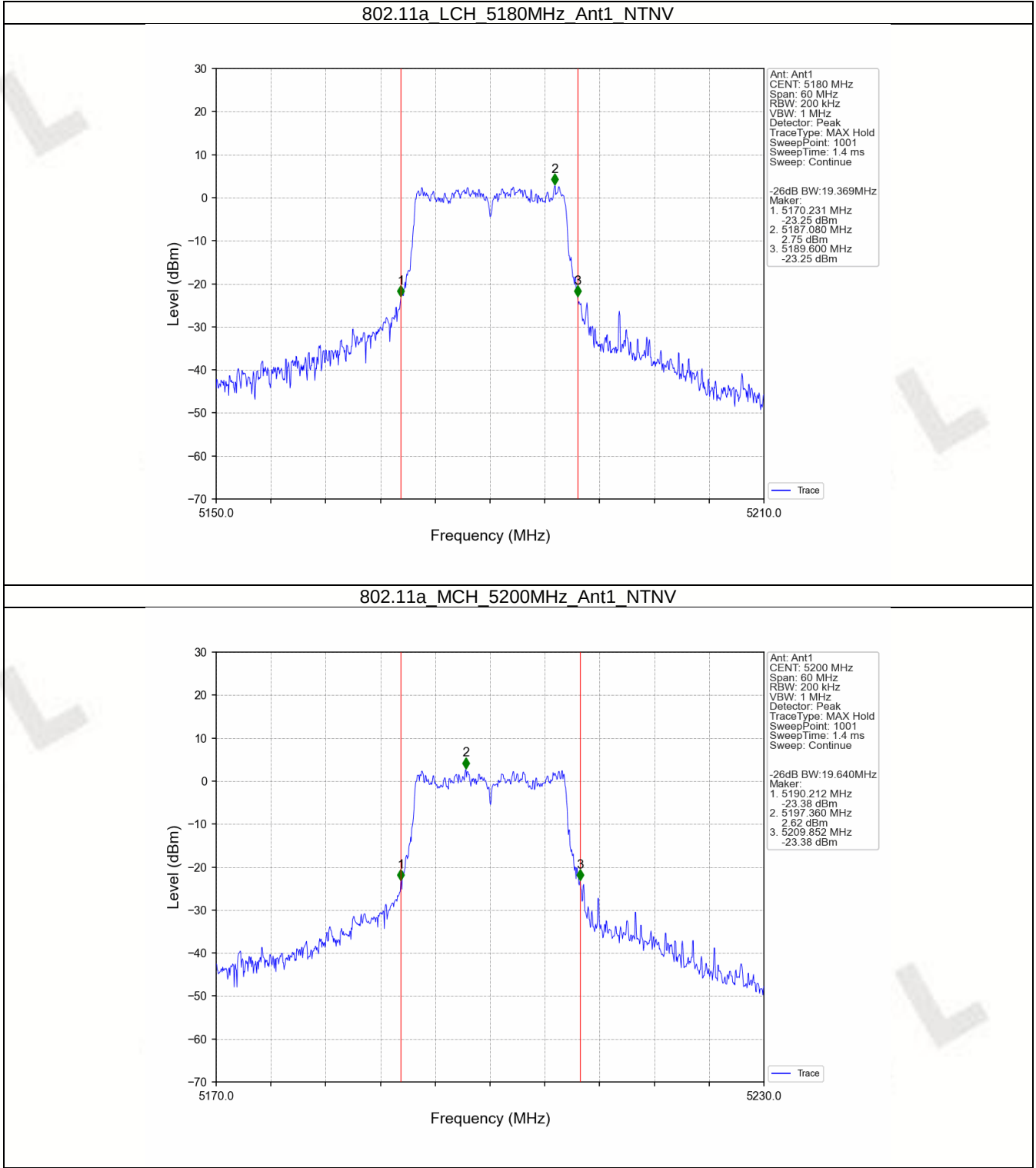


802.11ac(VHT80) MCH 5210MHz Ant1 NTN



FCCID: 2APQC-TIDE16

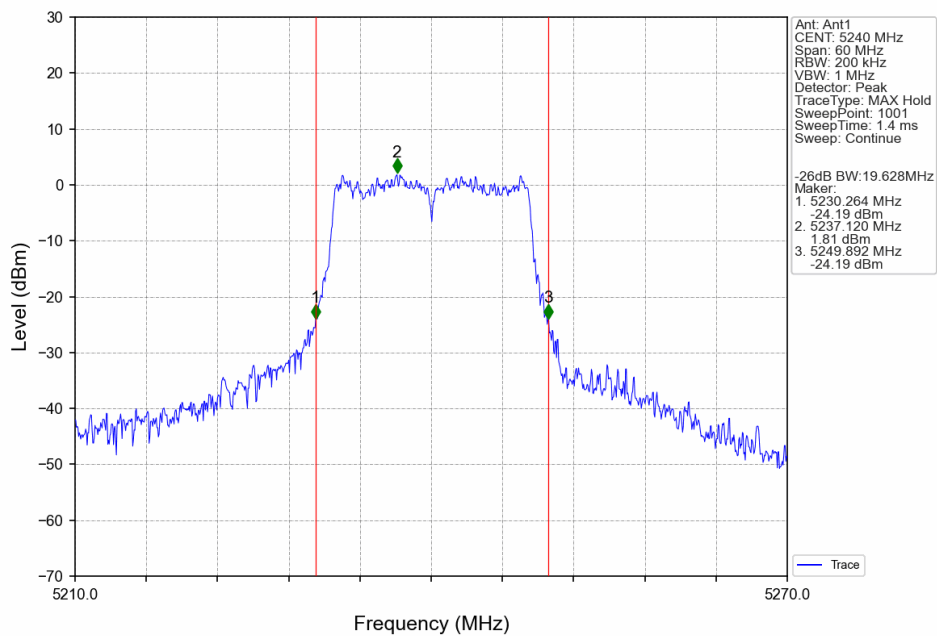
1.2.2 26dB BW



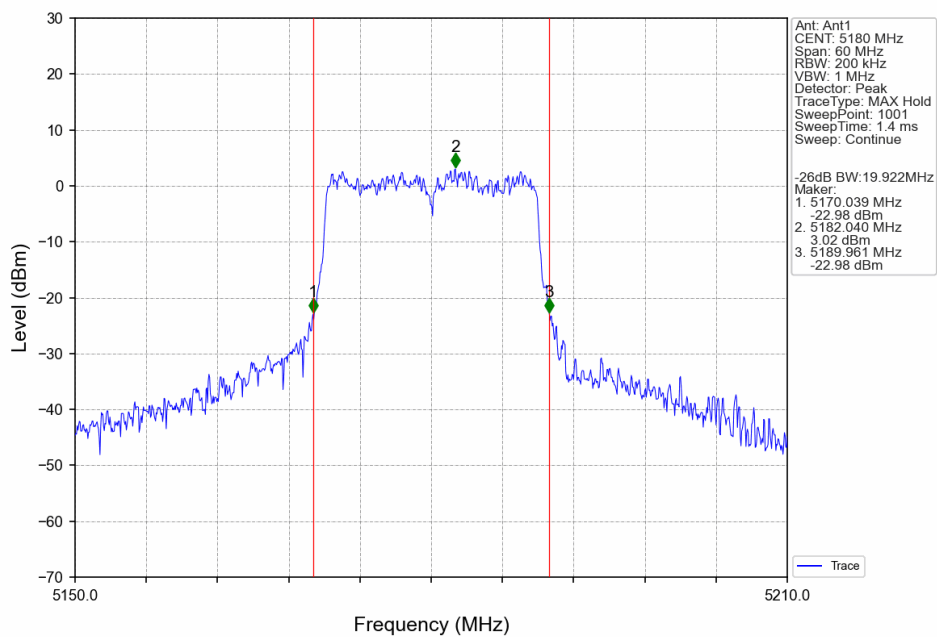
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FCCID: 2APQC-TIDE16

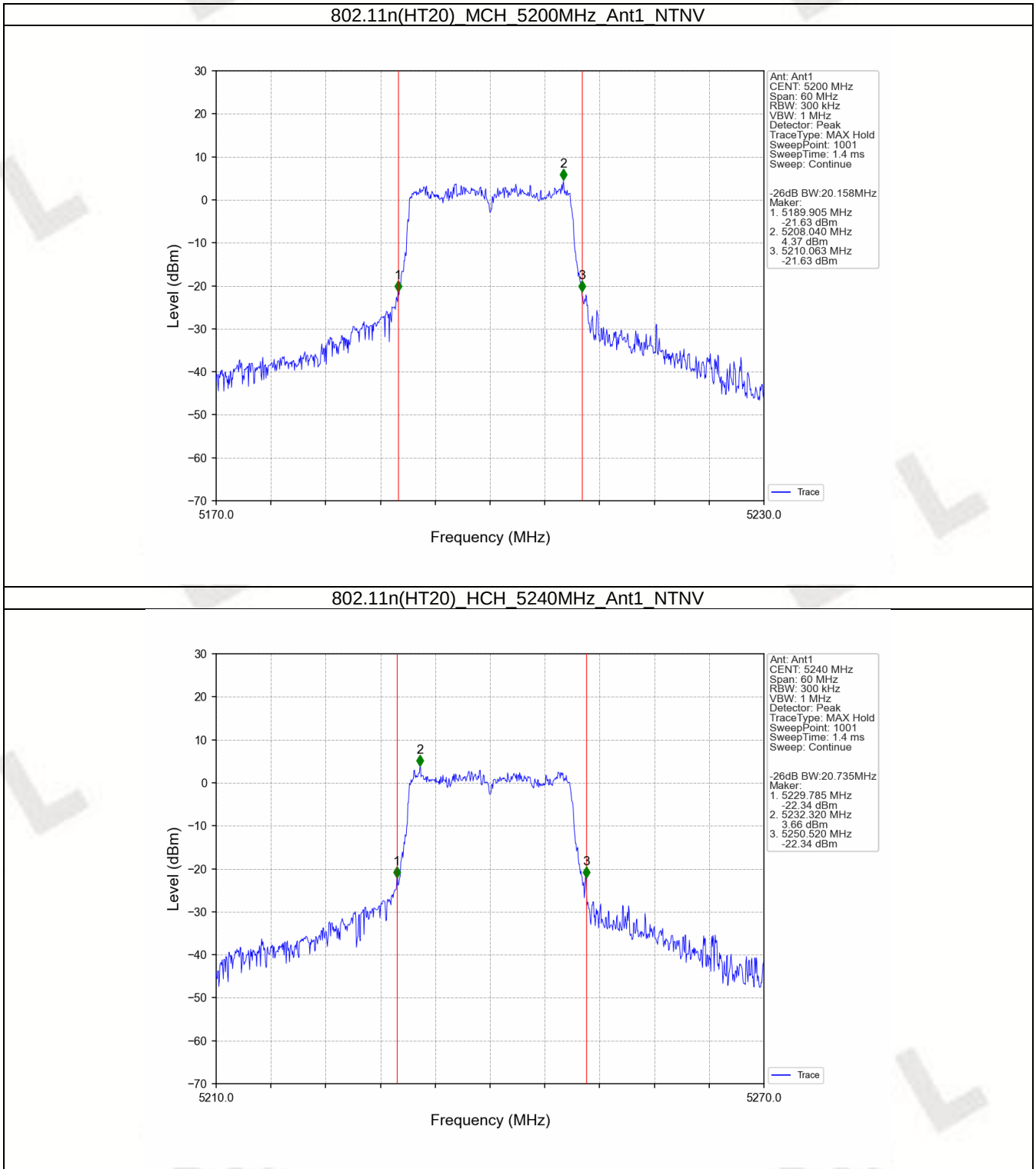
802.11a HCH 5240MHz Ant1 NTNV



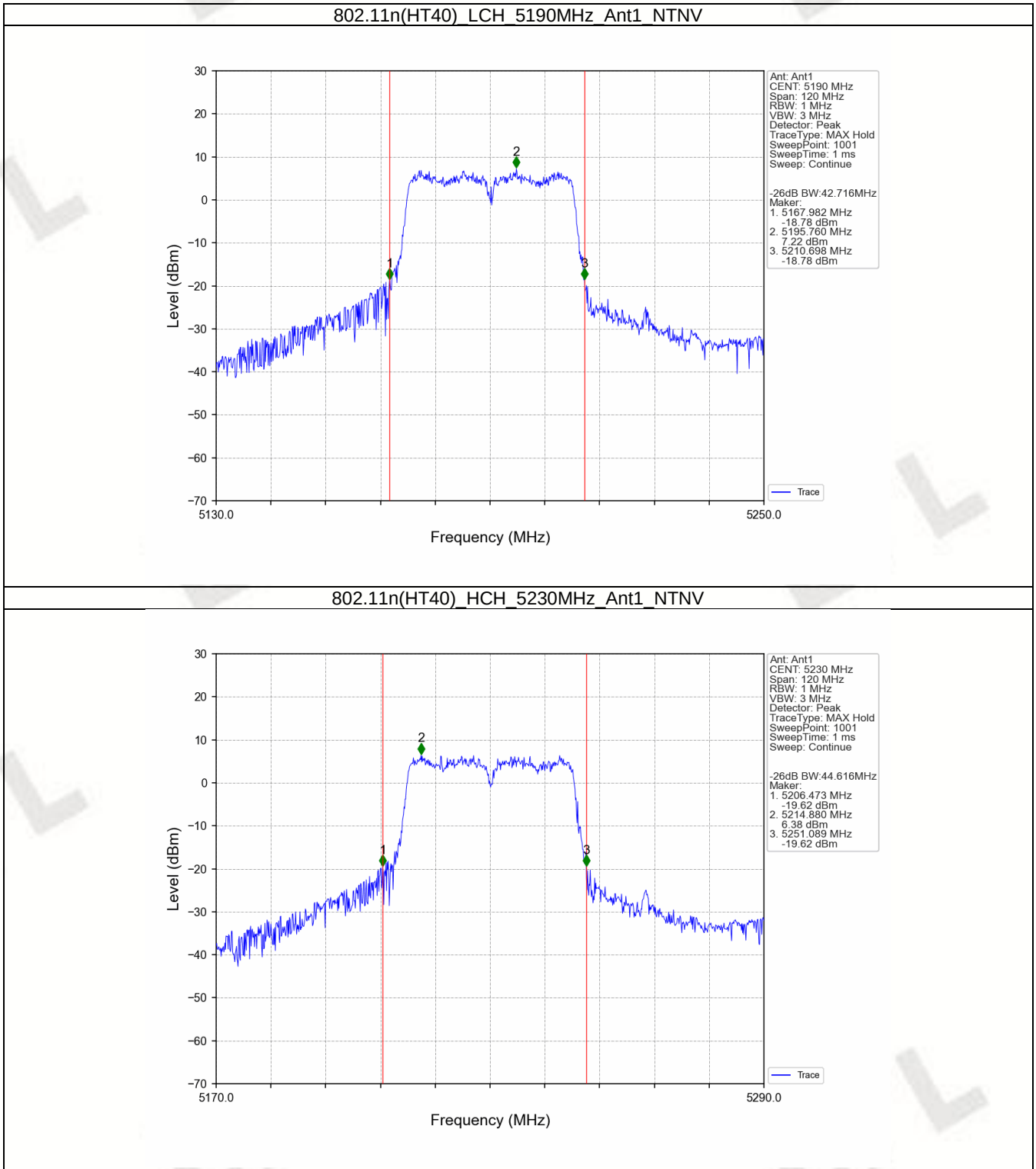
802.11n(HT20) LCH 5180MHz Ant1 NTNV



FCCID: 2APQC-TIDE16

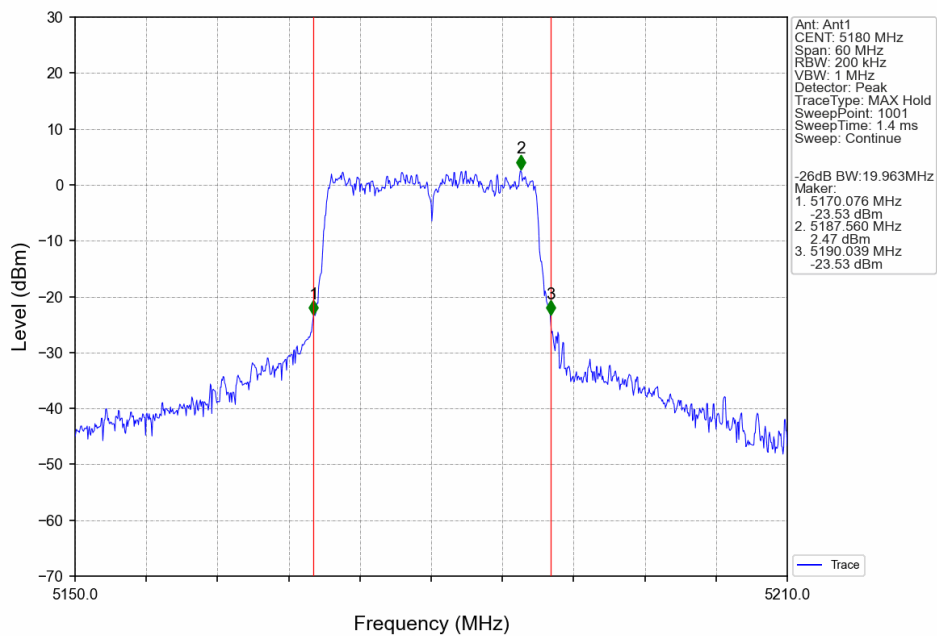


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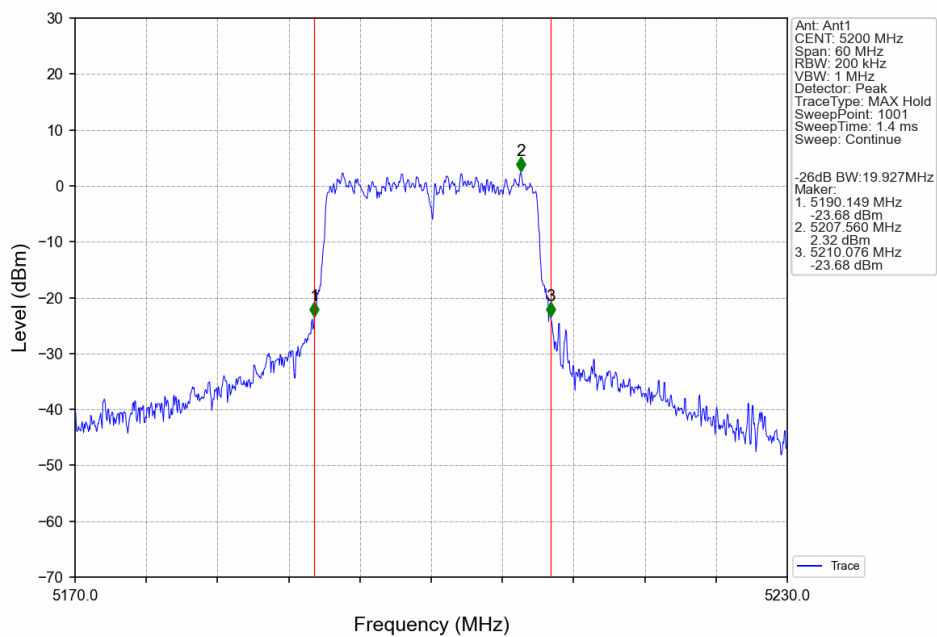


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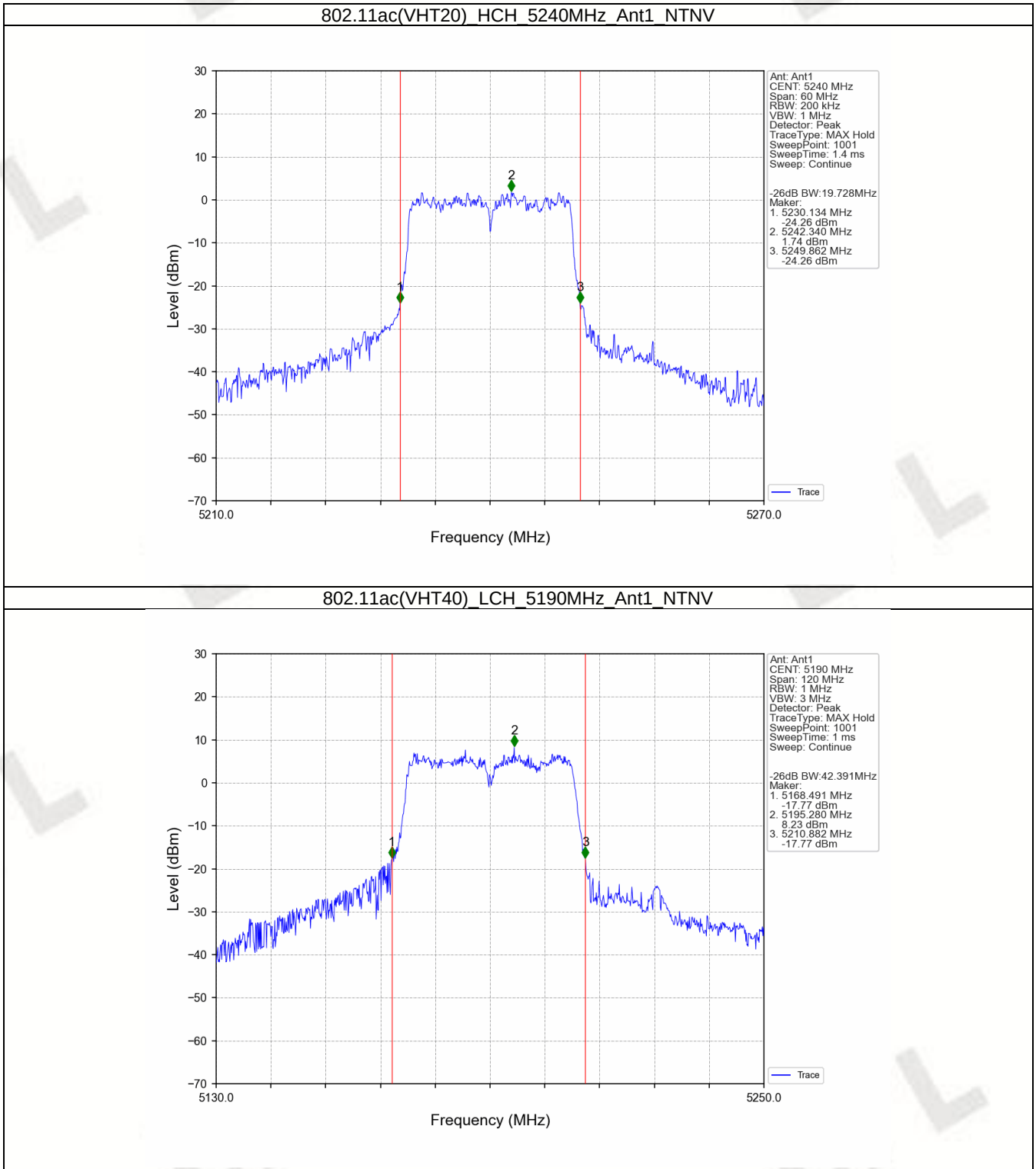
802.11ac(VHT20) LCH 5180MHz Ant1 NTN



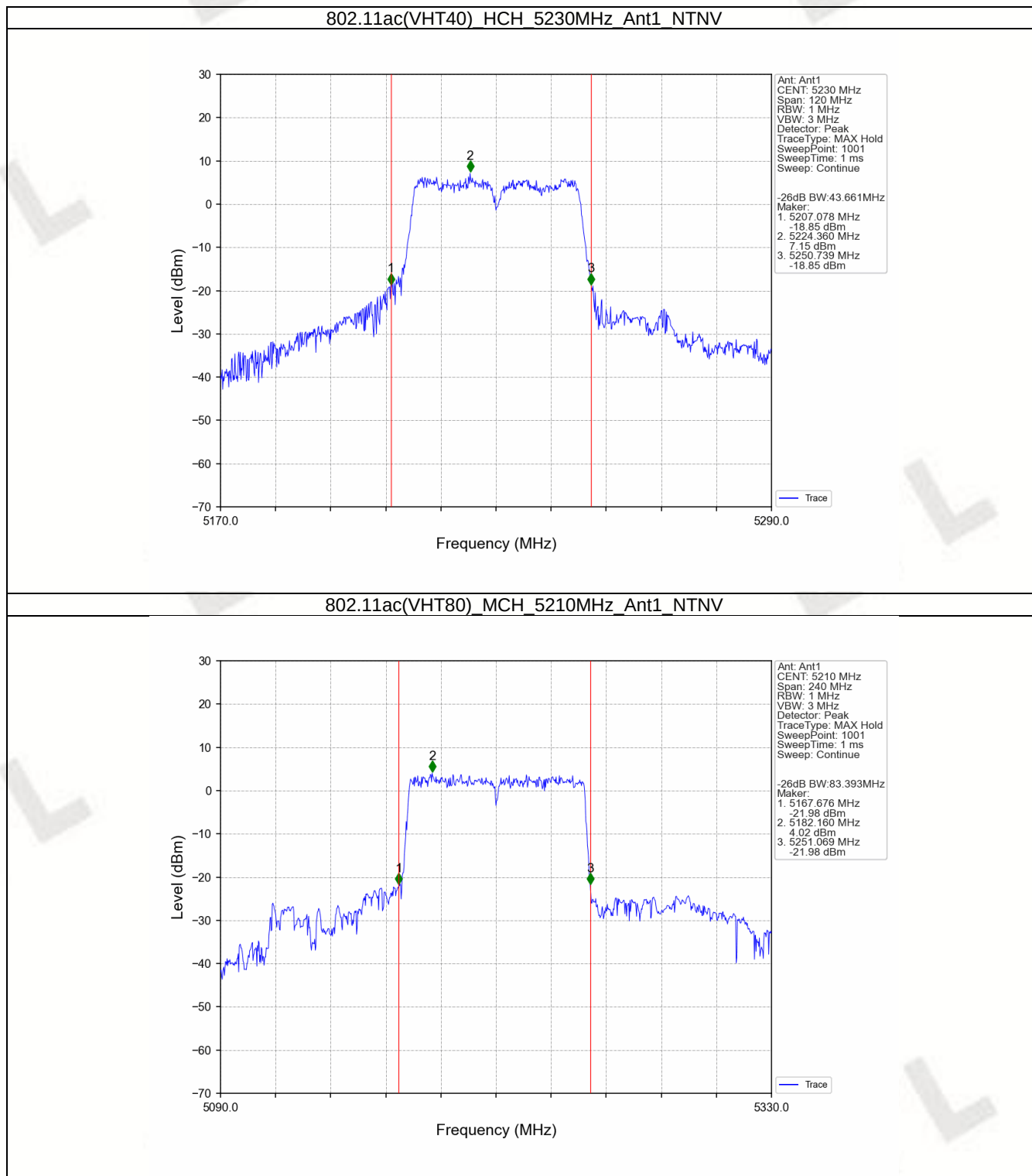
802.11ac(VHT20)_MCH_5200MHz_Ant1_NTN



FCCID: 2APQC-TIDE16



FCCID: 2APQC-TIDE16



FCCID: 2APQC-TIDE16

2. Maximum Conducted Output Power

2.1 Test Result

2.1.1 Power

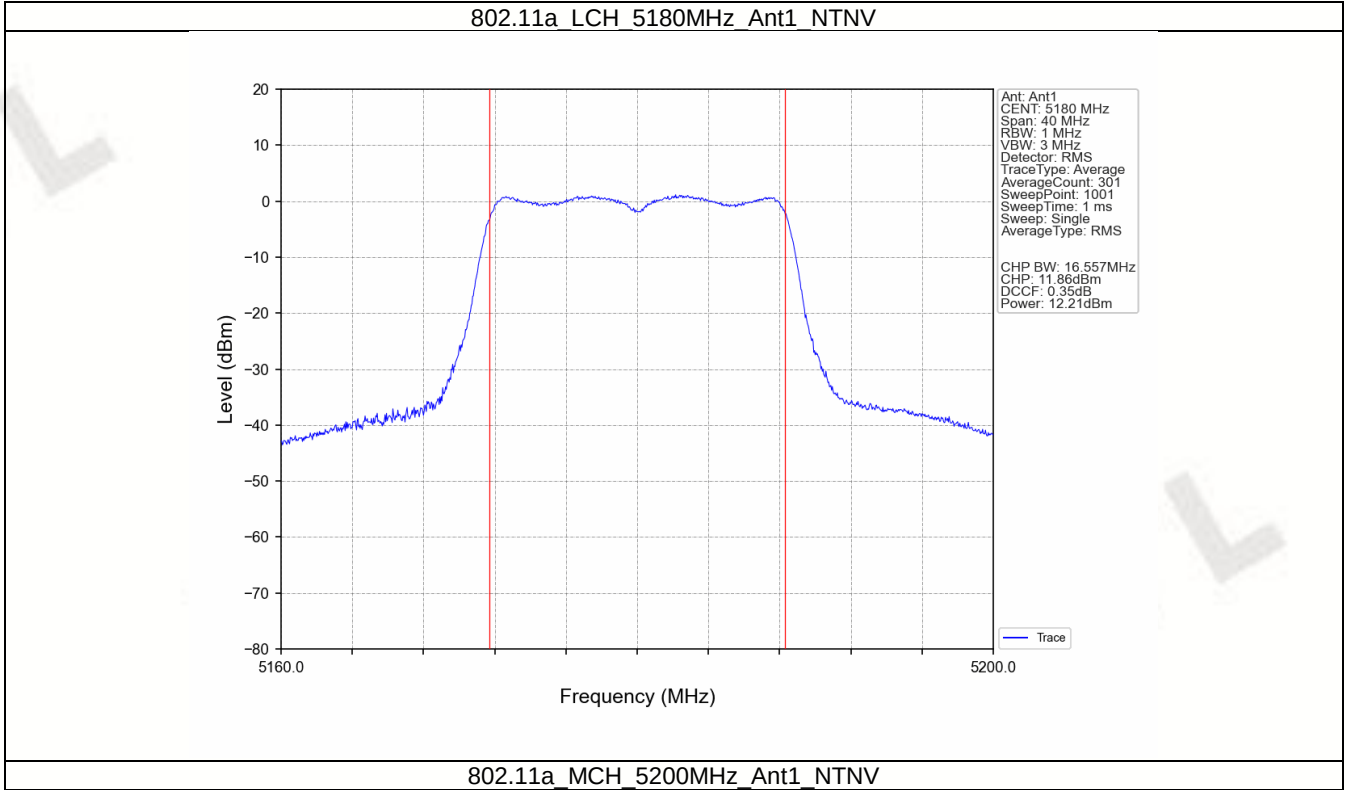
Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
802.11a	SISO	5180	12.21	<=23.98	Pass
		5200	12.06	<=23.98	Pass
		5240	11.36	<=23.98	Pass
802.11n (HT20)	SISO	5180	12.36	<=23.98	Pass
		5200	12.20	<=23.98	Pass
		5240	11.55	<=23.98	Pass
802.11n (HT40)	SISO	5190	12.43	<=23.98	Pass
		5230	12.13	<=23.98	Pass
802.11ac (VHT20)	SISO	5180	12.30	<=23.98	Pass
		5200	12.22	<=23.98	Pass
		5240	11.56	<=23.98	Pass
802.11ac (VHT40)	SISO	5190	12.44	<=23.98	Pass
		5230	11.98	<=23.98	Pass
802.11ac (VHT80)	SISO	5210	13.24	<=23.98	Pass

Note1: Antenna Gain: Ant1: 3.00dBi;

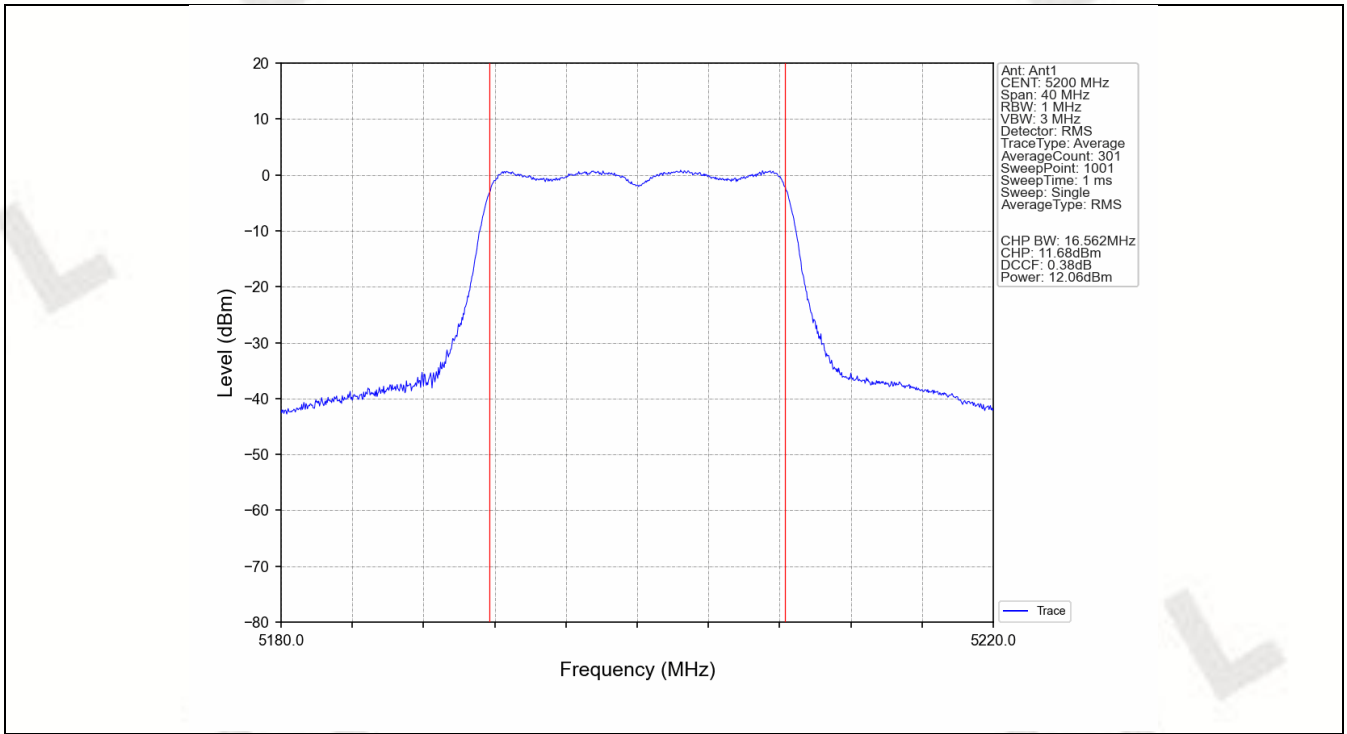
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2.2 Test Graph

2.2.1 Power

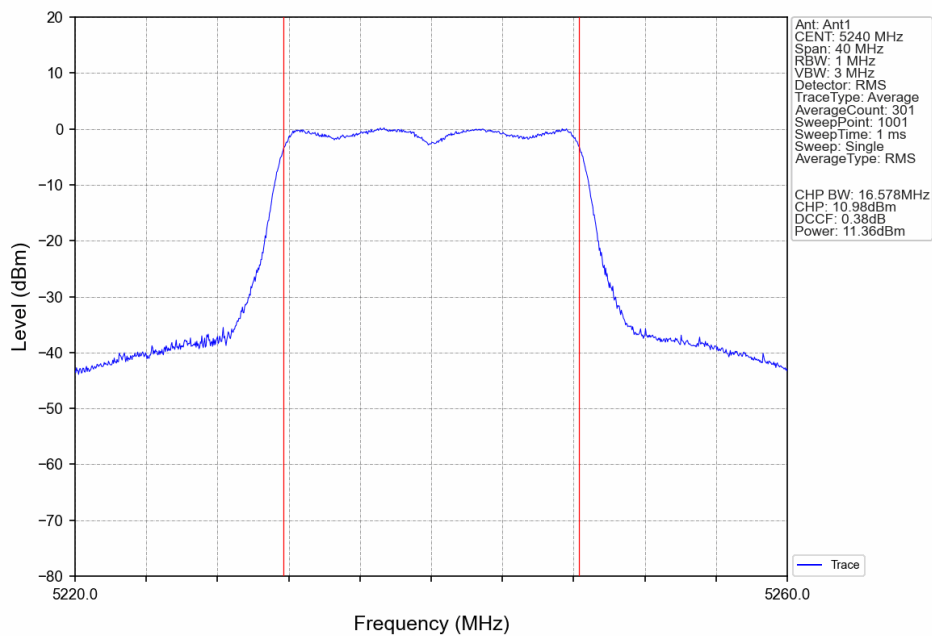


FCCID: 2APQC-TIDE16

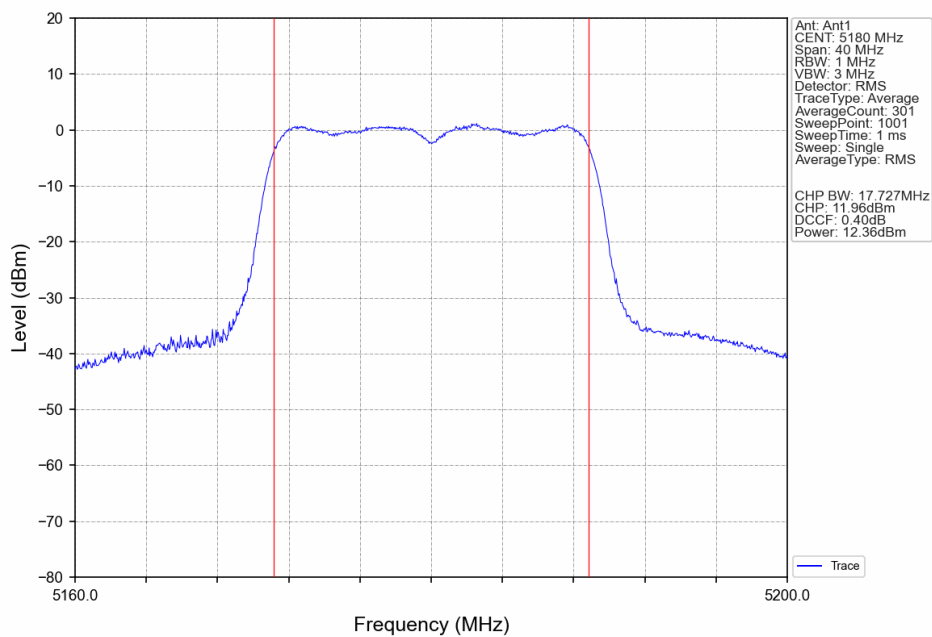


FCCID: 2APQC-TIDE16

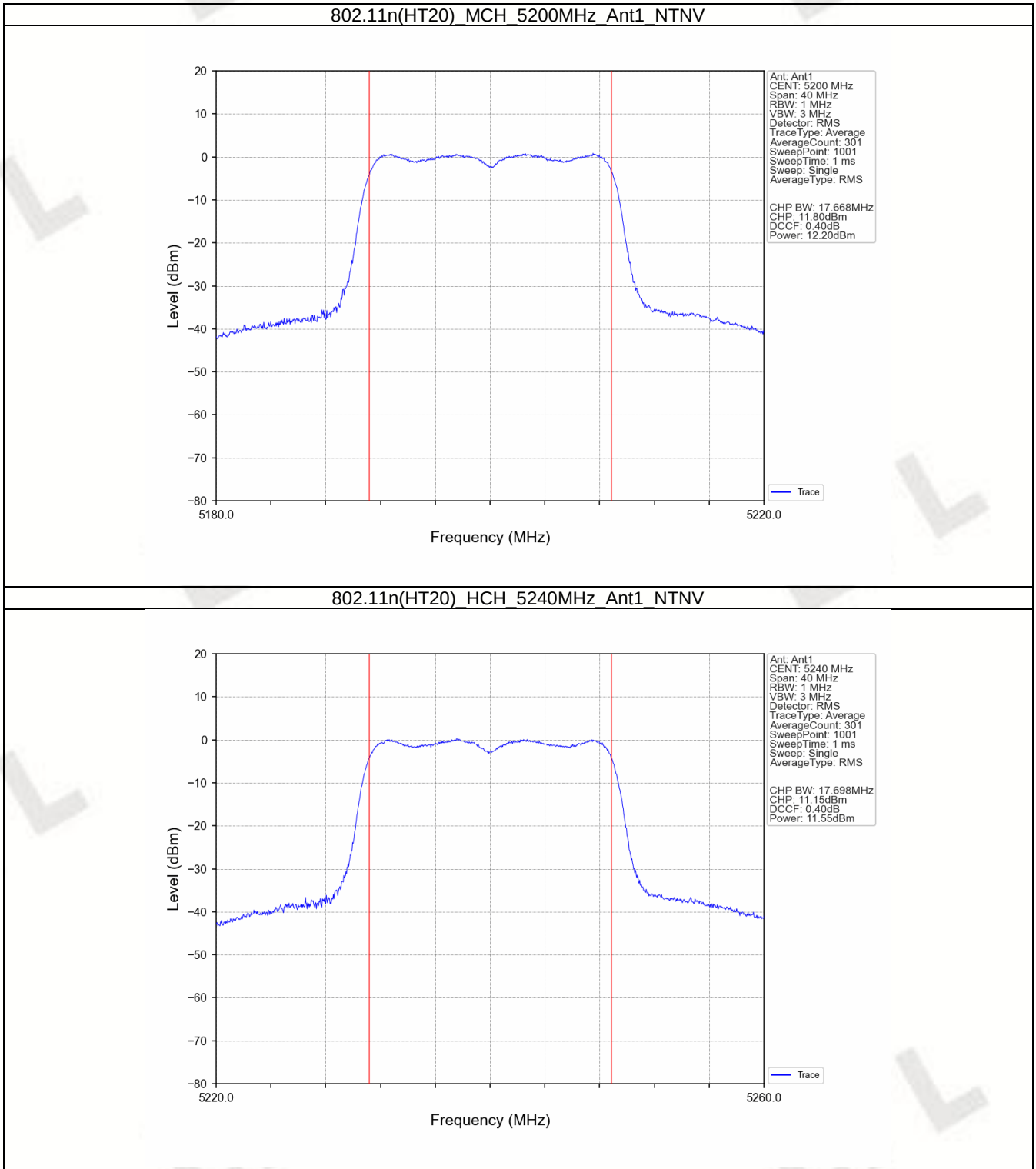
802.11a HCH 5240MHz Ant1 NTN



802.11n(HT20) LCH 5180MHz Ant1 NTN

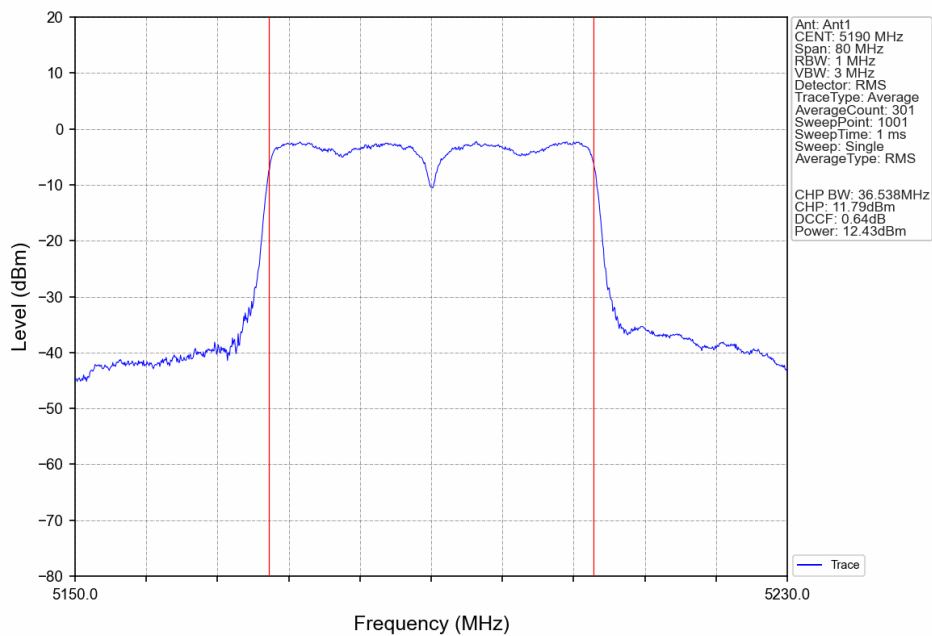


FCCID: 2APQC-TIDE16

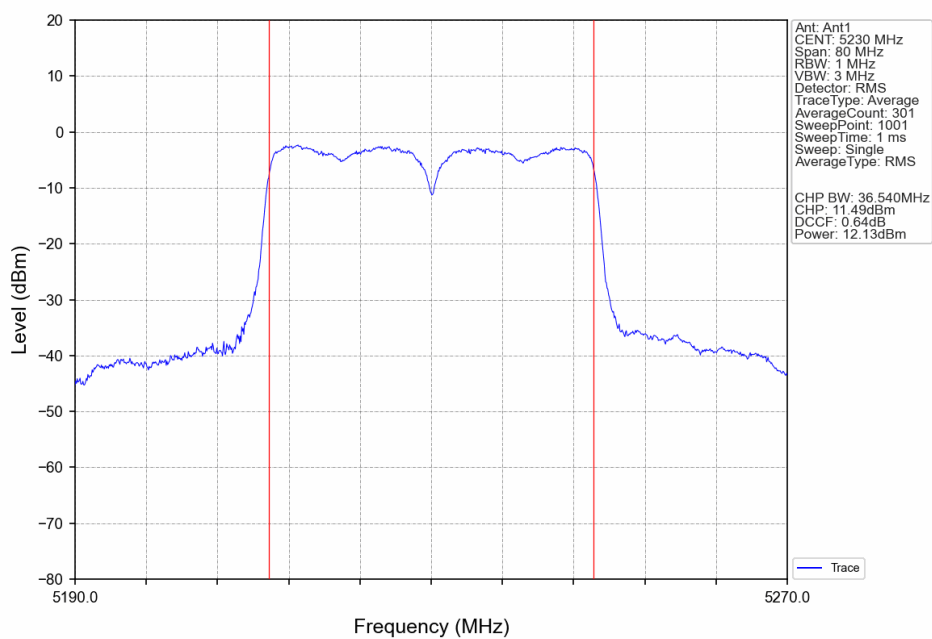


FCCID: 2APQC-TIDE16

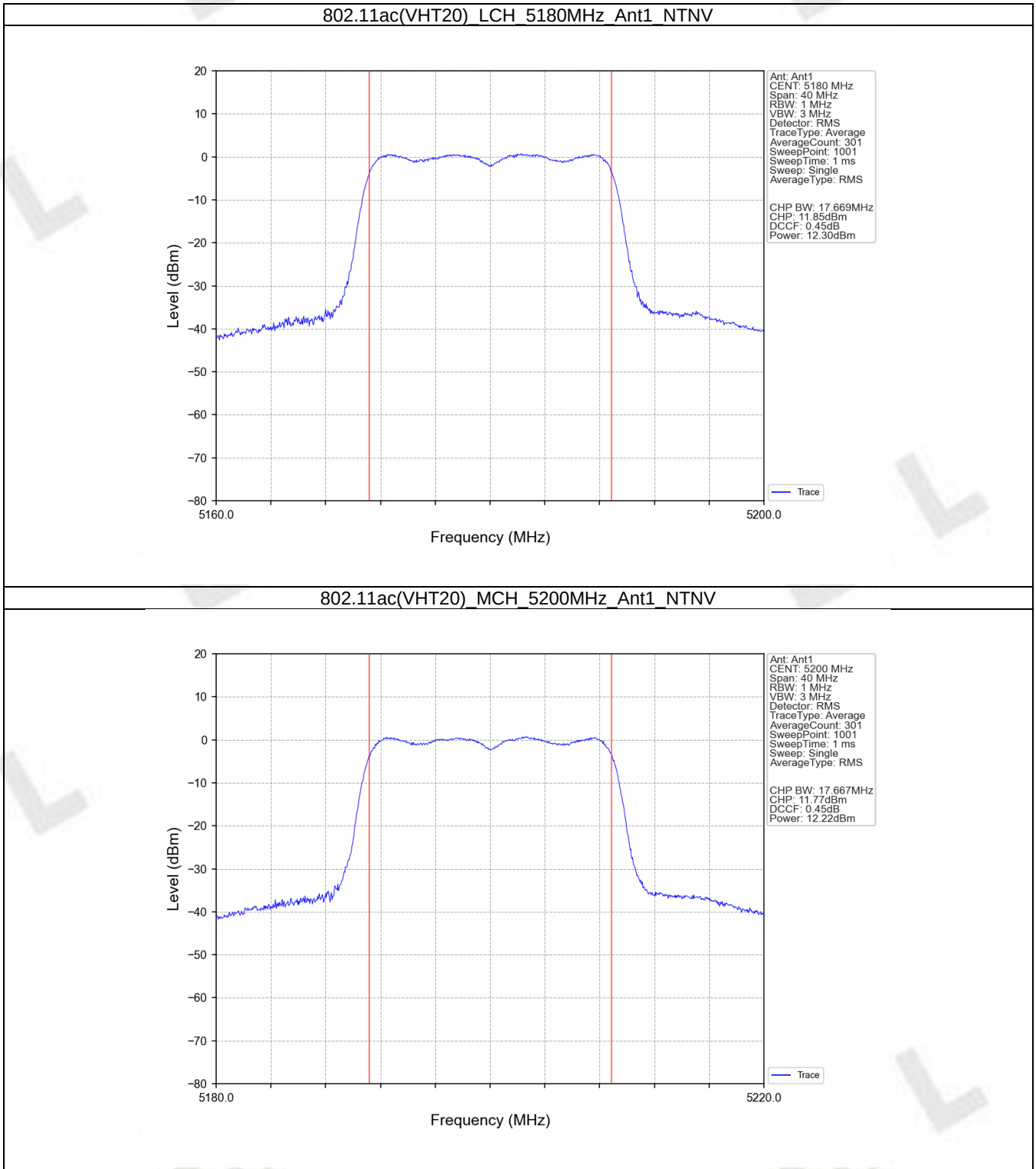
802.11n(HT40) LCH 5190MHz Ant1 NTN



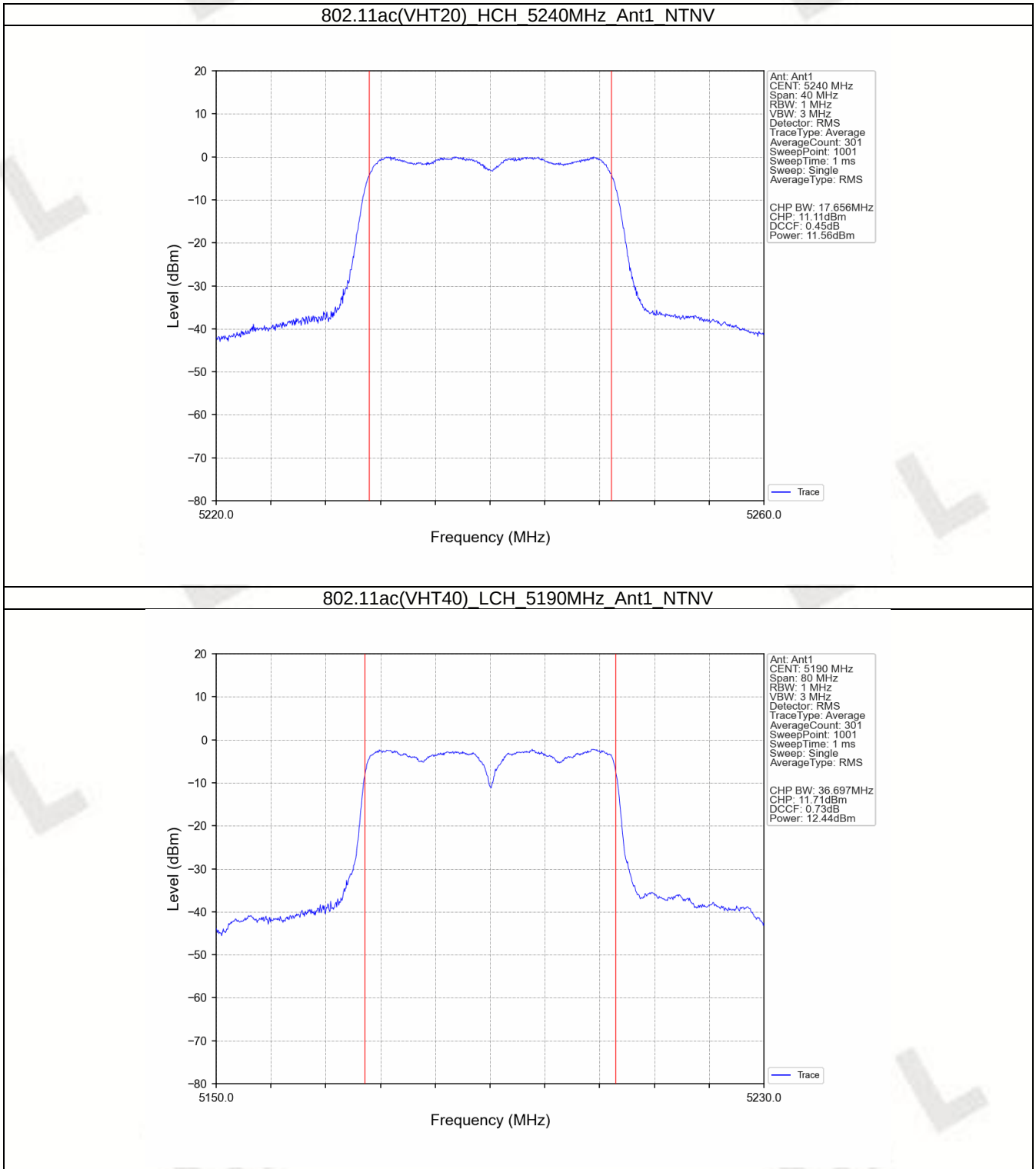
802.11n(HT40)_HCH_5230MHz_Ant1_NTN



FCCID: 2APQC-TIDE16

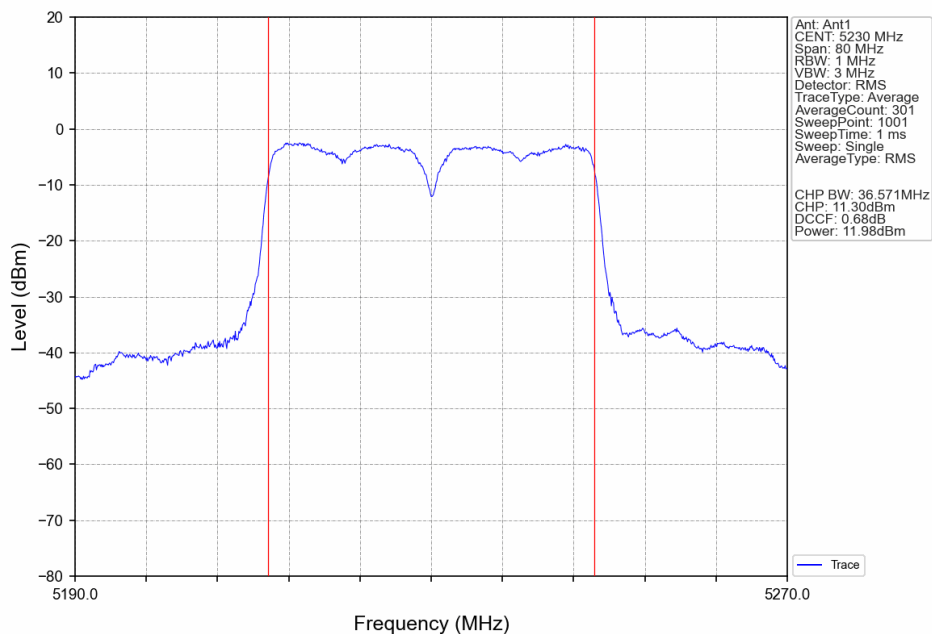


FCCID: 2APQC-TIDE16

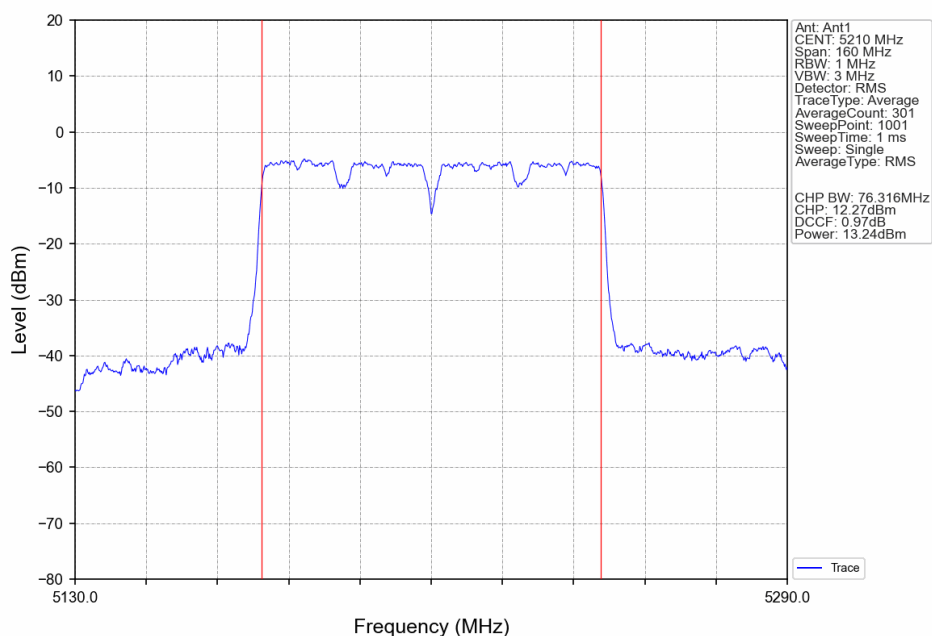


FCCID: 2APQC-TIDE16

802.11ac(VHT40) HCH 5230MHz Ant1 NTNV



802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



FCCID: 2APQC-TIDE16

3. Maximum Power Spectral Density

3.1 Test Result

3.1.1 PSD

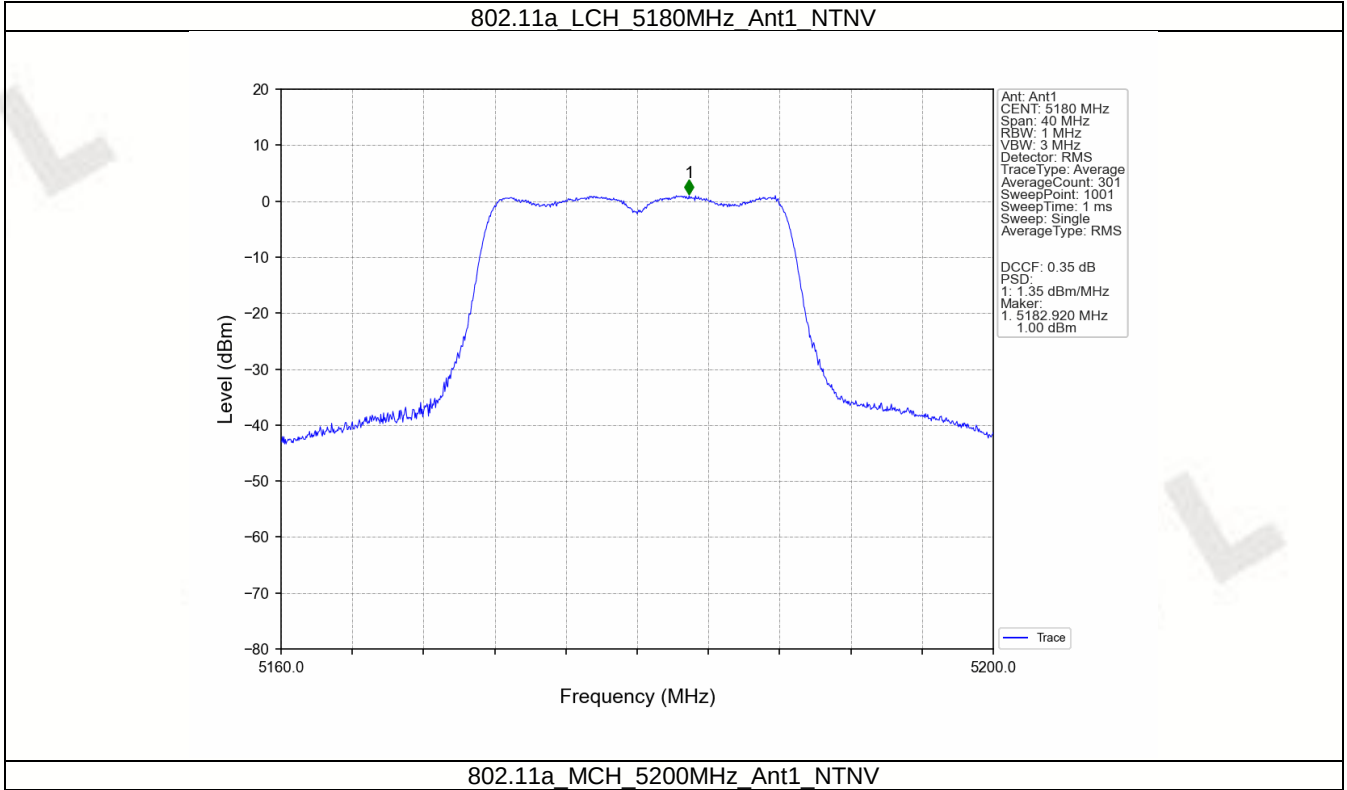
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/MHz)		Verdict
			ANT1	Limit	
802.11a	SISO	5180	1.35	<=11	Pass
		5200	1.42	<=11	Pass
		5240	0.74	<=11	Pass
802.11n (HT20)	SISO	5180	1.28	<=11	Pass
		5200	1.17	<=11	Pass
		5240	0.59	<=11	Pass
802.11n (HT40)	SISO	5190	-1.44	<=11	Pass
		5230	-1.70	<=11	Pass
802.11ac (VHT20)	SISO	5180	1.31	<=11	Pass
		5200	1.06	<=11	Pass
		5240	0.44	<=11	Pass
802.11ac (VHT40)	SISO	5190	-1.54	<=11	Pass
		5230	-1.87	<=11	Pass
802.11ac (VHT80)	SISO	5210	-4.04	<=11	Pass

Note1: Antenna Gain: Ant1: 3.00dBi;

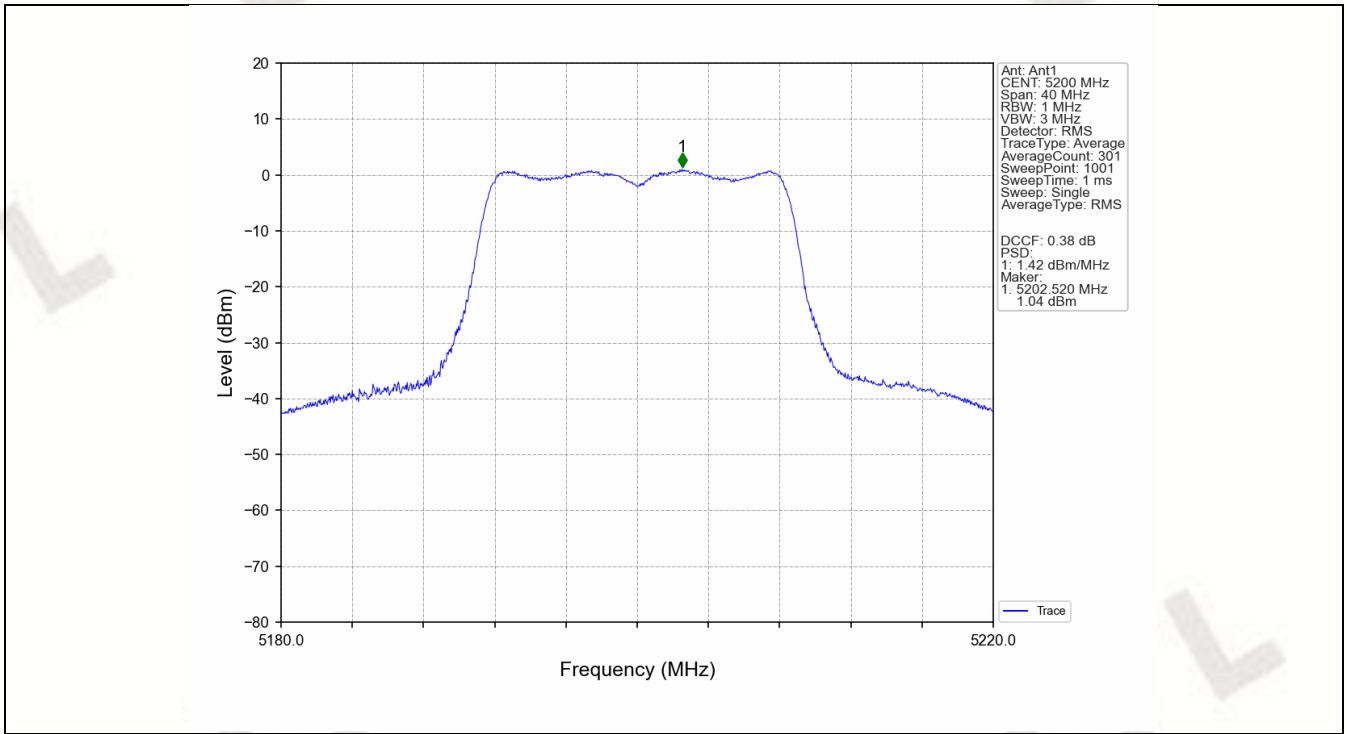
FCCID: 2APQC-TIDE16

3.2 Test Graph

3.2.1 PSD

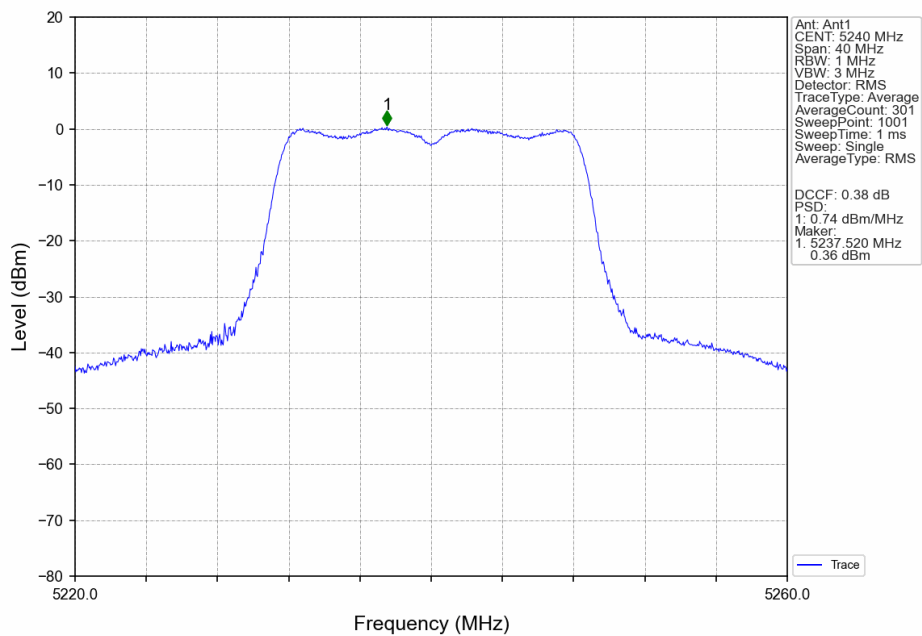


FCCID: 2APQC-TIDE16

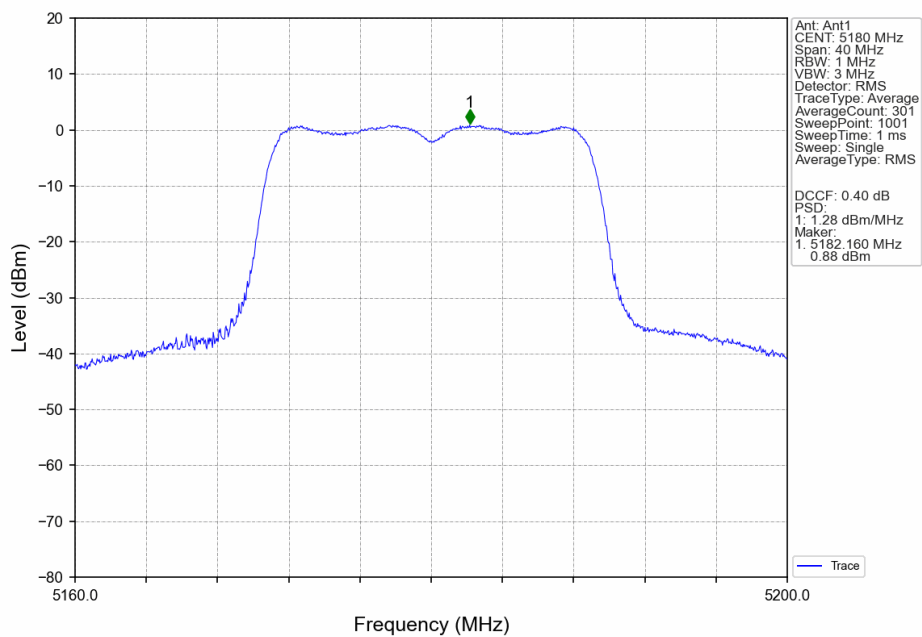


FCCID: 2APQC-TIDE16

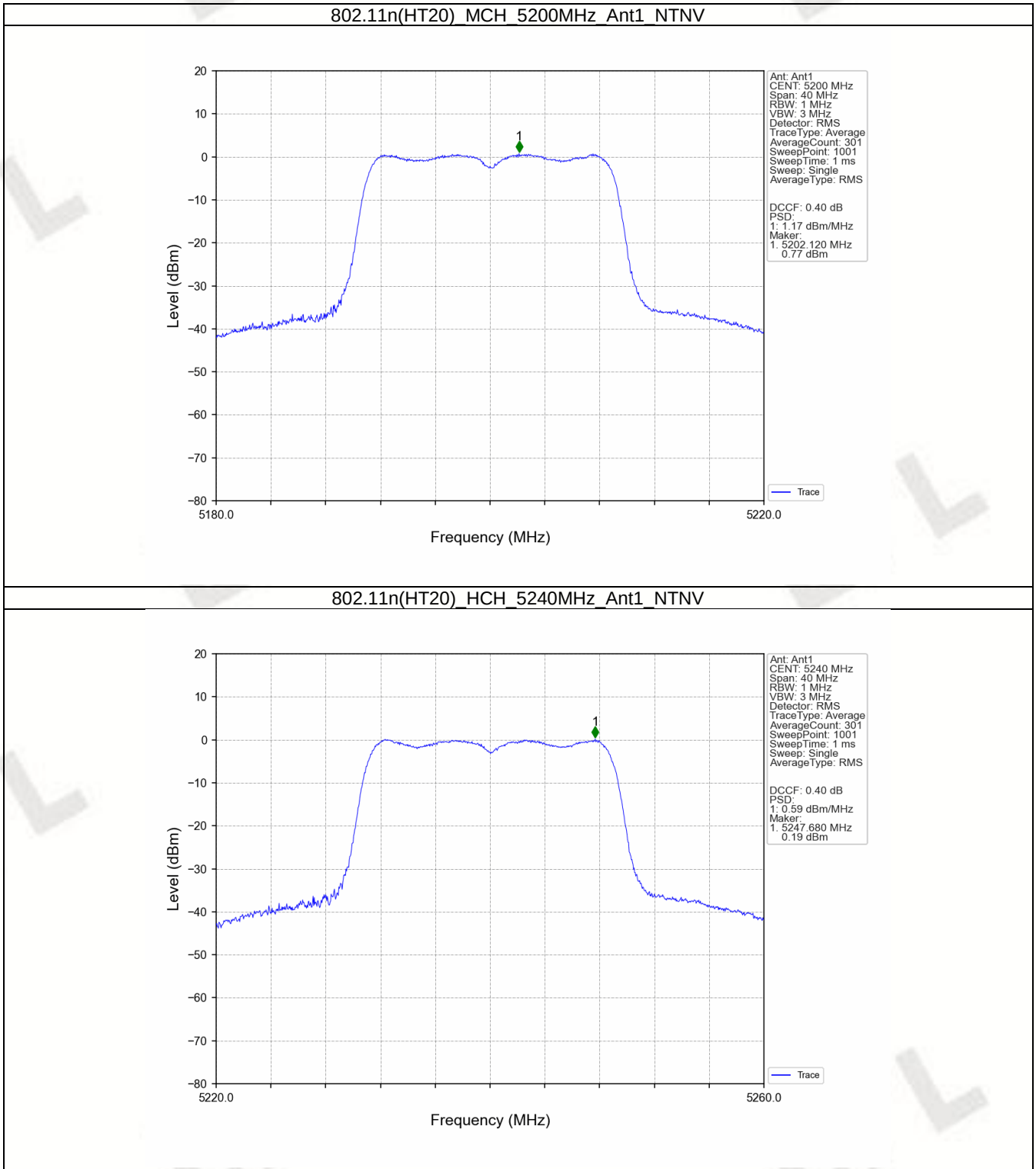
802.11a HCH 5240MHz Ant1 NTV



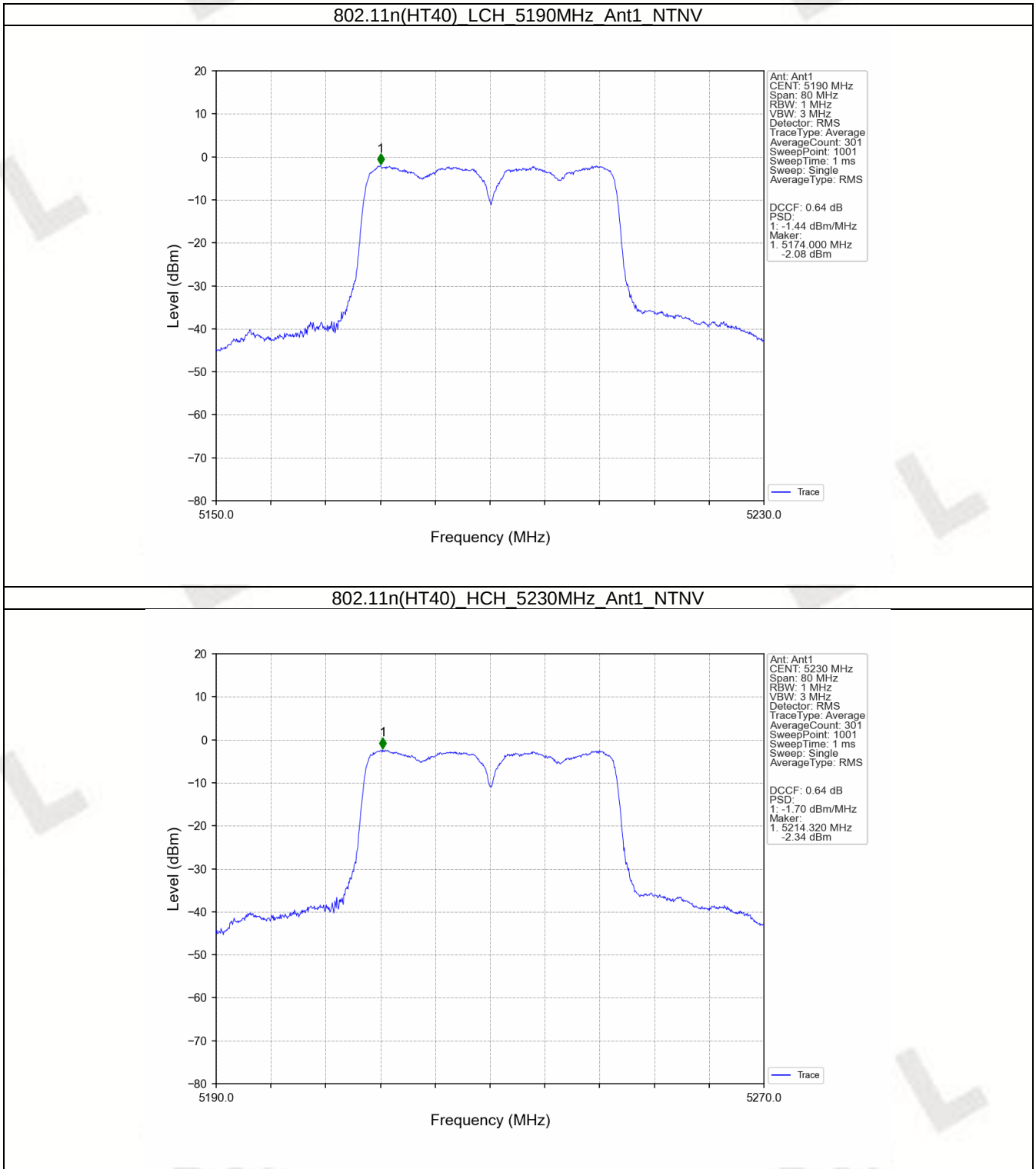
802.11n(HT20)_LCH_5180MHz_Ant1_NTV



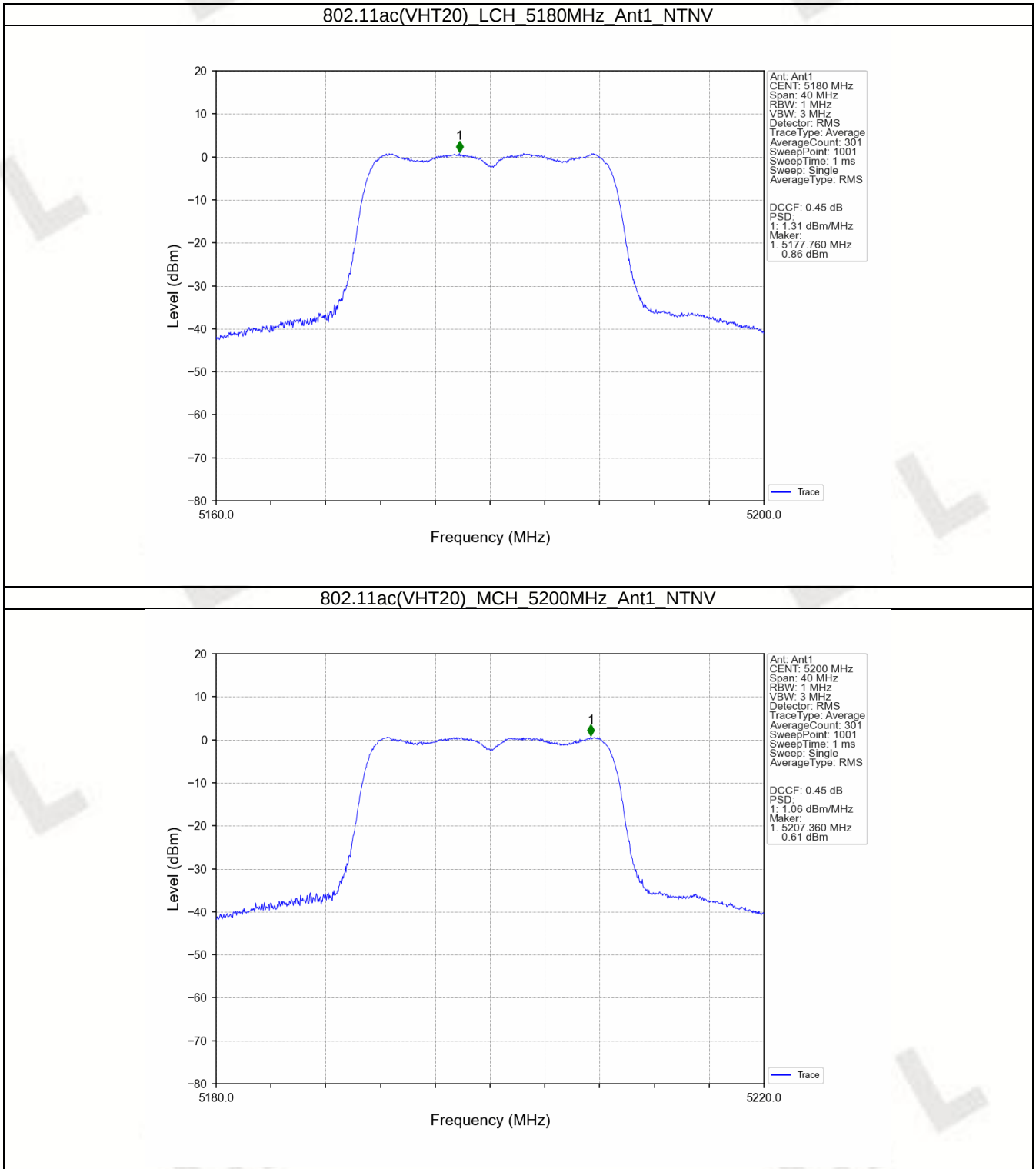
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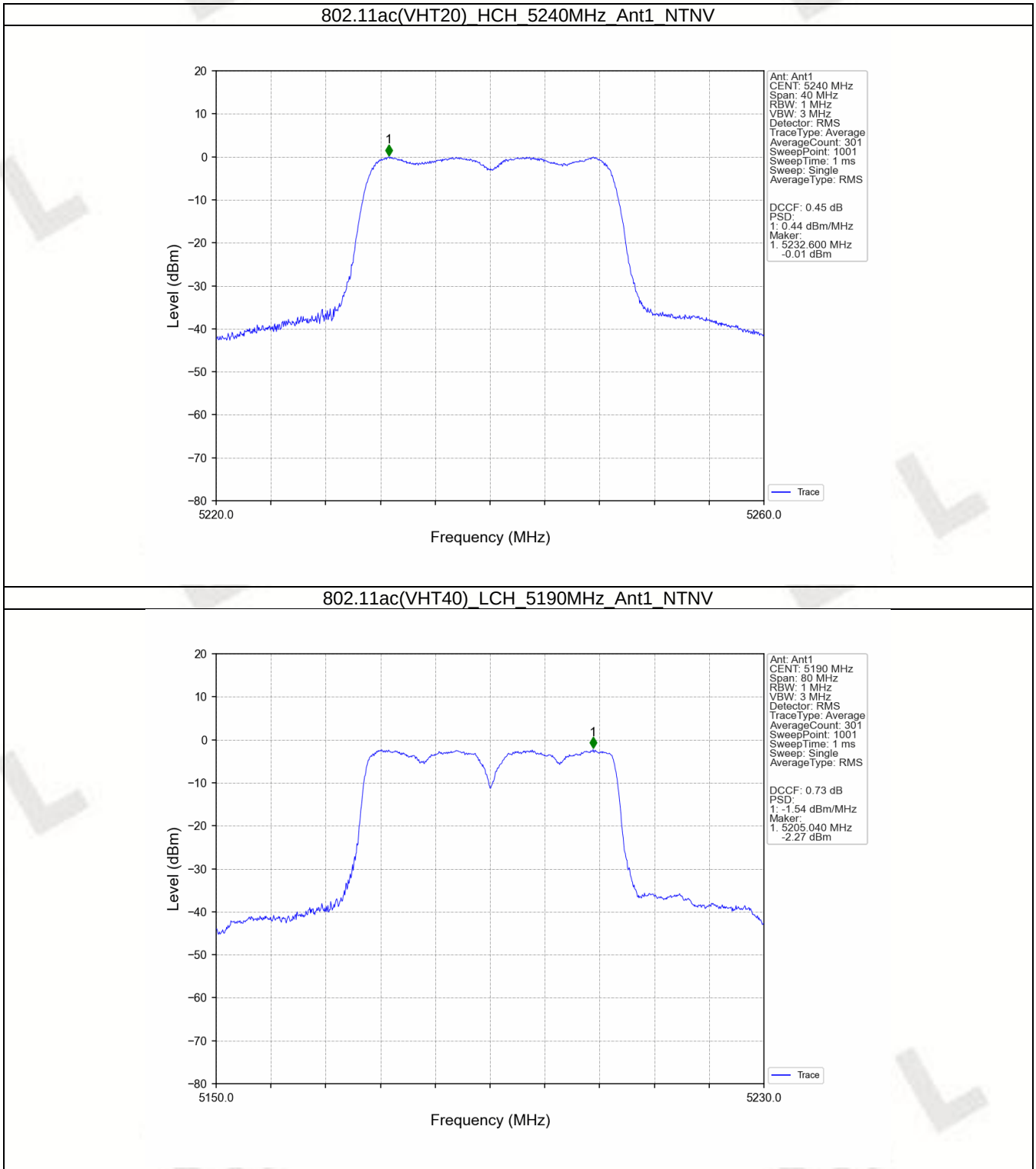
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FCCID: 2APQC-TIDE16

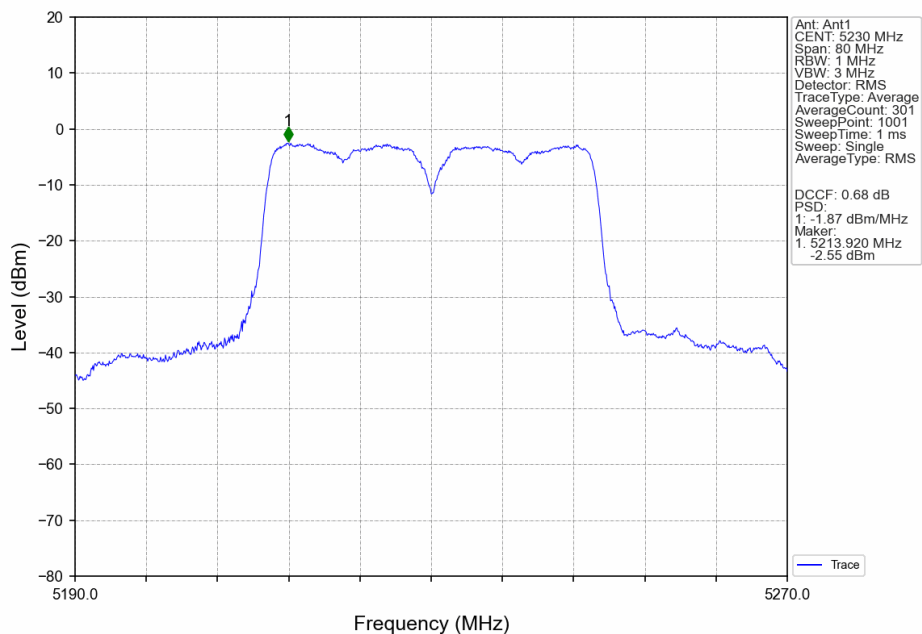


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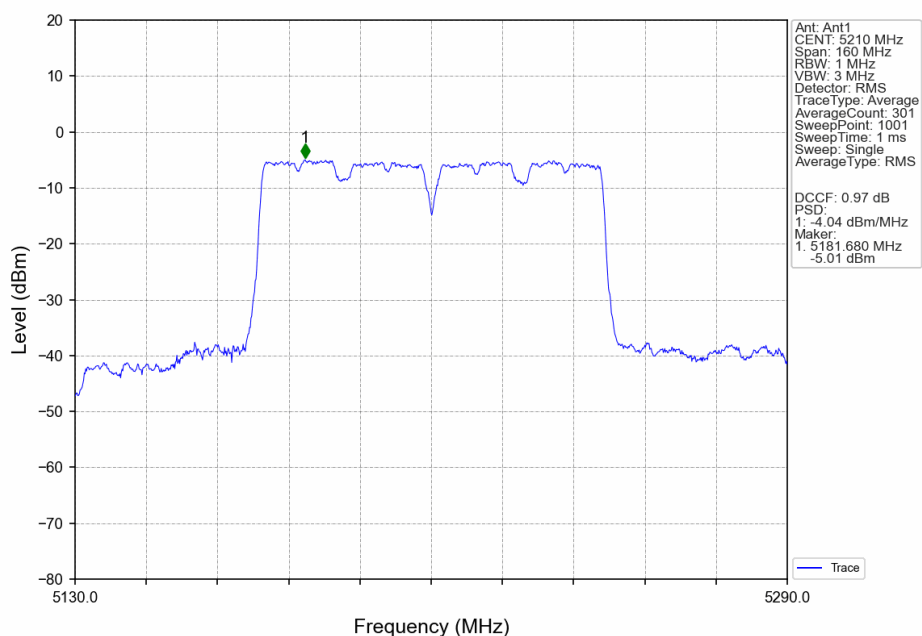


FCCID: 2APQC-TIDE16

802.11ac(VHT40) HCH 5230MHz Ant1 NTNV



802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



FCCID: 2APQC-TIDE16

4. Frequency Stability

4.1 Test Result

4.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	Temperature (°C)	Voltage	Measured Frequency (MHz)	Limit (MHz)	Verdict
Carrier Wave	SISO	5180	20	LV	5179.998	5150 to 5250	Pass
				NV	5179.998	5150 to 5250	Pass
				HV	5179.998	5150 to 5250	Pass
			-30	NV	5179.998	5150 to 5250	Pass
			-20	NV	5179.998	5150 to 5250	Pass
			-10	NV	5179.998	5150 to 5250	Pass
			0	NV	5179.998	5150 to 5250	Pass
			10	NV	5179.998	5150 to 5250	Pass
			30	NV	5179.999	5150 to 5250	Pass
			40	NV	5179.999	5150 to 5250	Pass
			50	NV	5179.999	5150 to 5250	Pass
		5200	20	LV	5200.007	5150 to 5250	Pass
				NV	5200.007	5150 to 5250	Pass
				HV	5200.007	5150 to 5250	Pass
			-30	NV	5200.008	5150 to 5250	Pass
			-20	NV	5200.008	5150 to 5250	Pass
			-10	NV	5200.008	5150 to 5250	Pass
			0	NV	5200.008	5150 to 5250	Pass
			10	NV	5200.008	5150 to 5250	Pass
			30	NV	5200.008	5150 to 5250	Pass
			40	NV	5200.008	5150 to 5250	Pass
			50	NV	5200.008	5150 to 5250	Pass
		5240	20	LV	5240.008	5150 to 5250	Pass
				NV	5240.008	5150 to 5250	Pass
				HV	5240.008	5150 to 5250	Pass
			-30	NV	5240.008	5150 to 5250	Pass
			-20	NV	5240.008	5150 to 5250	Pass
			-10	NV	5240.008	5150 to 5250	Pass
			0	NV	5240.008	5150 to 5250	Pass
			10	NV	5240.008	5150 to 5250	Pass
			30	NV	5240.008	5150 to 5250	Pass
			40	NV	5240.008	5150 to 5250	Pass
			50	NV	5240.008	5150 to 5250	Pass
		5190	20	LV	5190.008	5150 to 5250	Pass
				NV	5190.008	5150 to 5250	Pass
				HV	5190.008	5150 to 5250	Pass
			-30	NV	5190.008	5150 to 5250	Pass
			-20	NV	5190.008	5150 to 5250	Pass
			-10	NV	5190.008	5150 to 5250	Pass
			0	NV	5190.008	5150 to 5250	Pass
			10	NV	5190.008	5150 to 5250	Pass
			30	NV	5190.008	5150 to 5250	Pass
			40	NV	5190.008	5150 to 5250	Pass

FCCID: 2APQC-TIDE16

		5230	50	NV	5190.008	5150 to 5250	Pass
			20	LV	5230.009	5150 to 5250	Pass
				NV	5230.009	5150 to 5250	Pass
				HV	5230.009	5150 to 5250	Pass
			-30	NV	5230.009	5150 to 5250	Pass
			-20	NV	5230.009	5150 to 5250	Pass
			-10	NV	5230.009	5150 to 5250	Pass
			0	NV	5230.009	5150 to 5250	Pass
			10	NV	5230.009	5150 to 5250	Pass
			30	NV	5230.009	5150 to 5250	Pass
			40	NV	5230.009	5150 to 5250	Pass
			50	NV	5230.009	5150 to 5250	Pass
		5210	20	LV	5210.009	5150 to 5250	Pass
				NV	5210.009	5150 to 5250	Pass
				HV	5210.009	5150 to 5250	Pass
			-30	NV	5210.009	5150 to 5250	Pass
			-20	NV	5210.009	5150 to 5250	Pass
			-10	NV	5210.009	5150 to 5250	Pass
			0	NV	5210.009	5150 to 5250	Pass
			10	NV	5210.009	5150 to 5250	Pass
			30	NV	5210.009	5150 to 5250	Pass
			40	NV	5210.009	5150 to 5250	Pass
			50	NV	5210.009	5150 to 5250	Pass