



RF Test Report

For BTEK251014013A01E01

Project No.:	BTEK251014013A01E01-02
Product Description:	20.1°C, 52%, 102.5kPa
Test Engineer:	Zora
Test Date:	2025-10-27



Test Summary

Item	Result
Duty Cycle	Pass
Bandwidth	Pass
Maximum Conducted Output Power	Pass
Maximum Power Spectral Density	Pass
Frequency Stability	Pass
Band Edge	Pass



1. Duty Cycle

1.1 Test Result

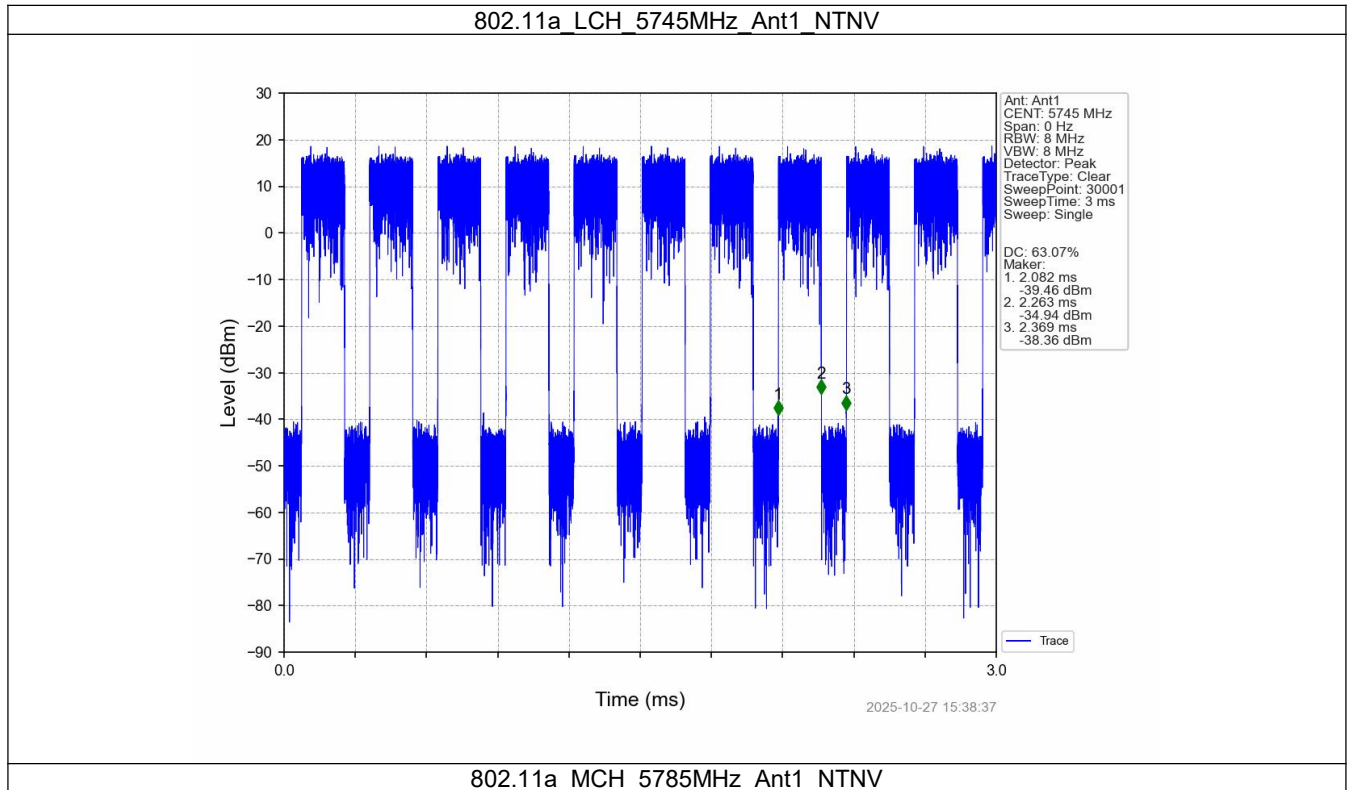
1.1.1 Ant1

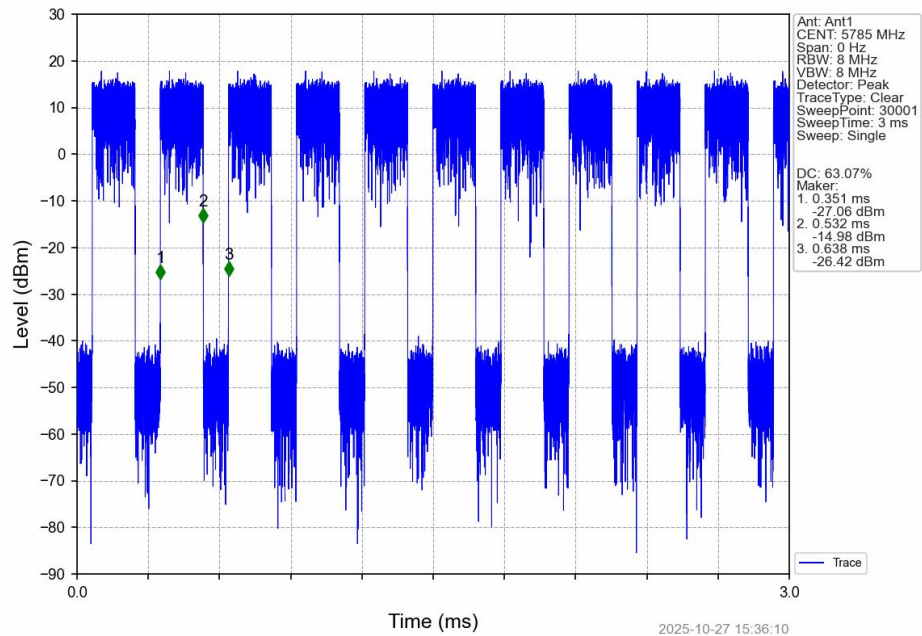
Ant1							
Mode	Tx Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11a	SISO	5745	0.181	0.287	63.07	2.00	0.05
		5785	0.181	0.287	63.07	2.00	0.04
		5825	0.181	0.287	63.07	2.00	0.08
802.11n (HT20)	SISO	5745	0.173	0.276	62.68	2.03	0.09
		5785	0.173	0.276	62.68	2.03	0.10
		5825	0.170	0.276	61.59	2.10	0.08
802.11ac (VHT20)	SISO	5745	0.153	0.259	59.07	2.29	0.14
		5785	0.153	0.260	58.85	2.30	0.12
		5825	0.153	0.260	58.85	2.30	0.10



1.2 Test Graph

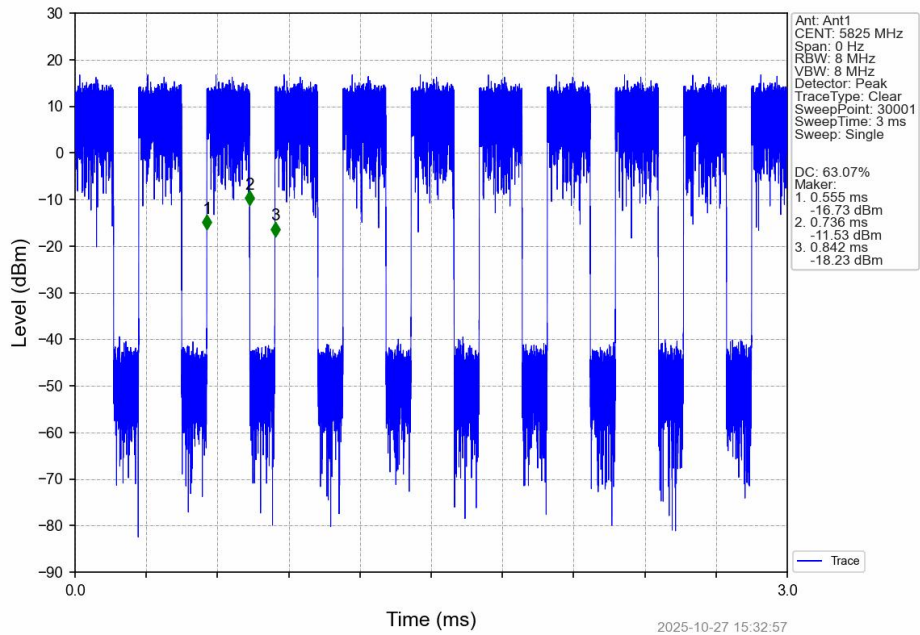
1.2.1 Ant1



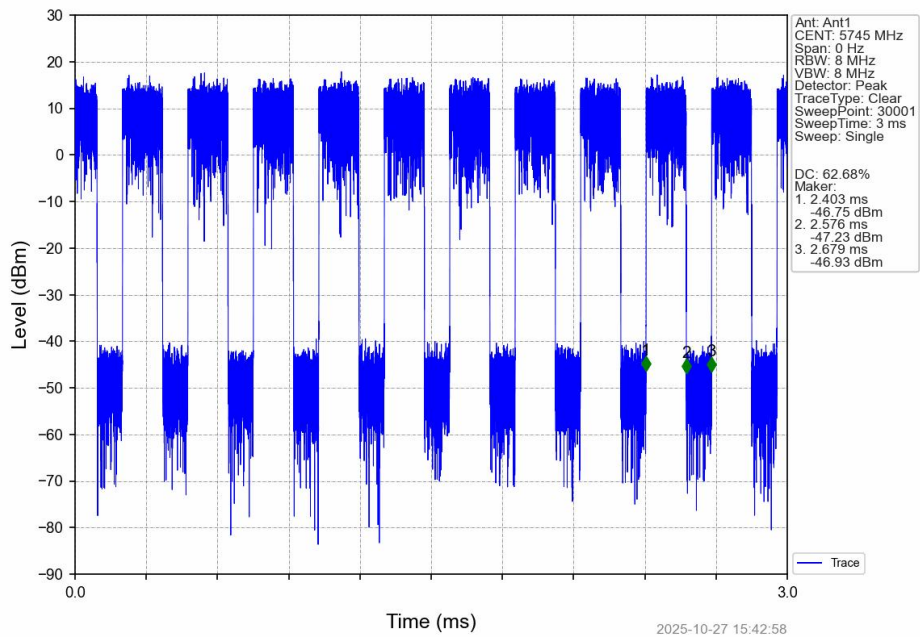




802.11a_HCH_5825MHz_Ant1_NTNV

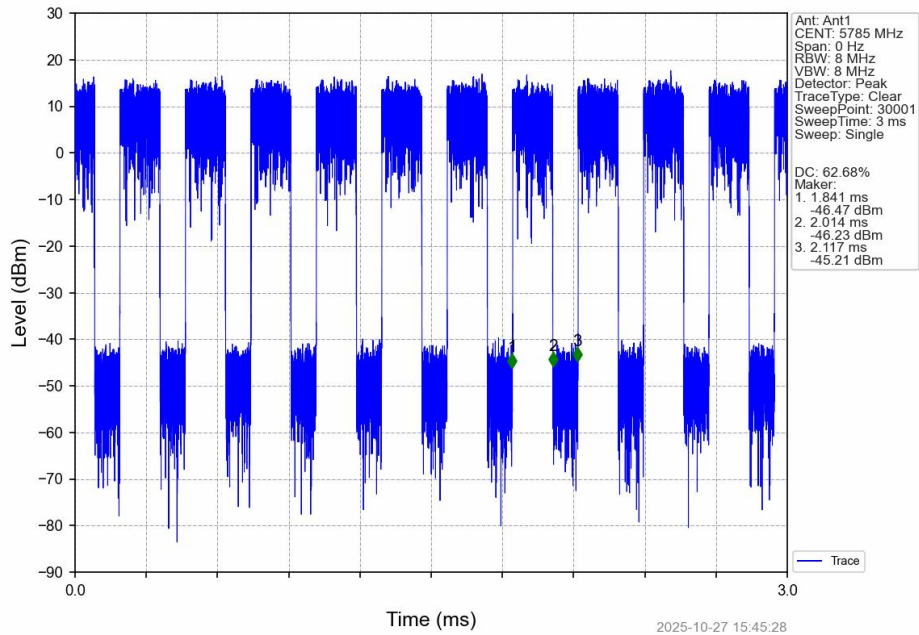


802.11n(HT20)_LCH_5745MHz_Ant1_NTNV

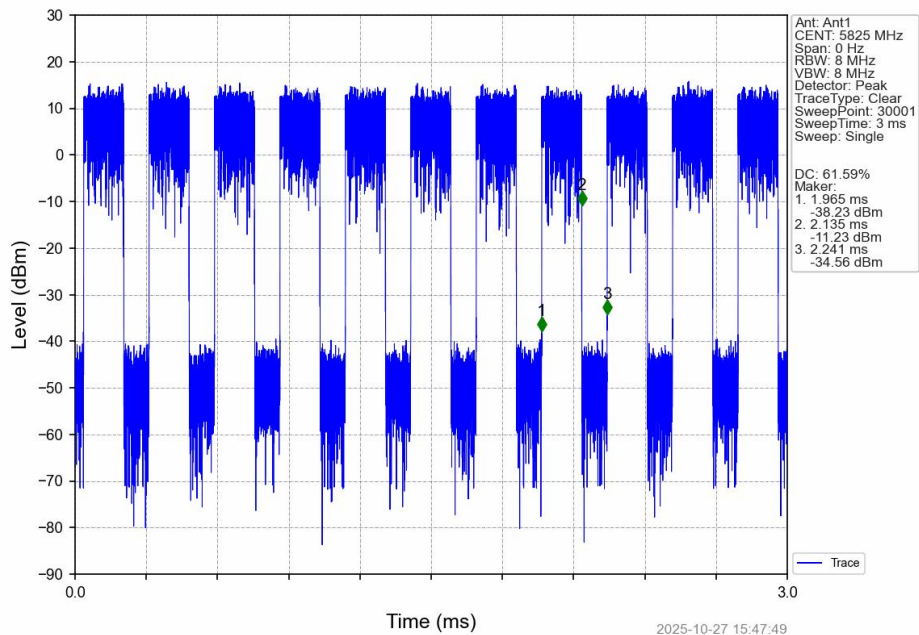




802.11n(HT20)_MCH_5785MHz_Ant1_NTNV

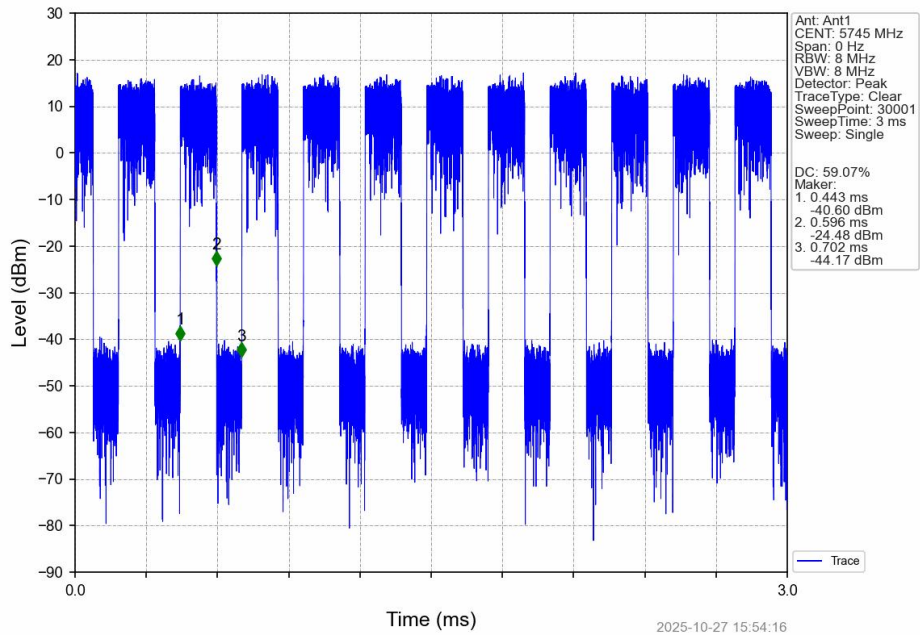


802.11n(HT20)_HCH_5825MHz_Ant1_NTNV

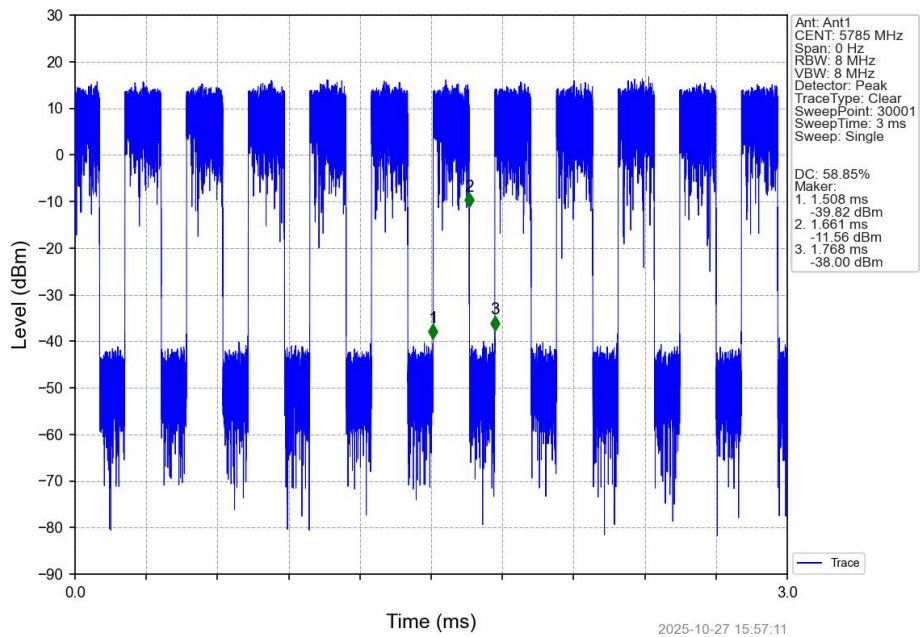


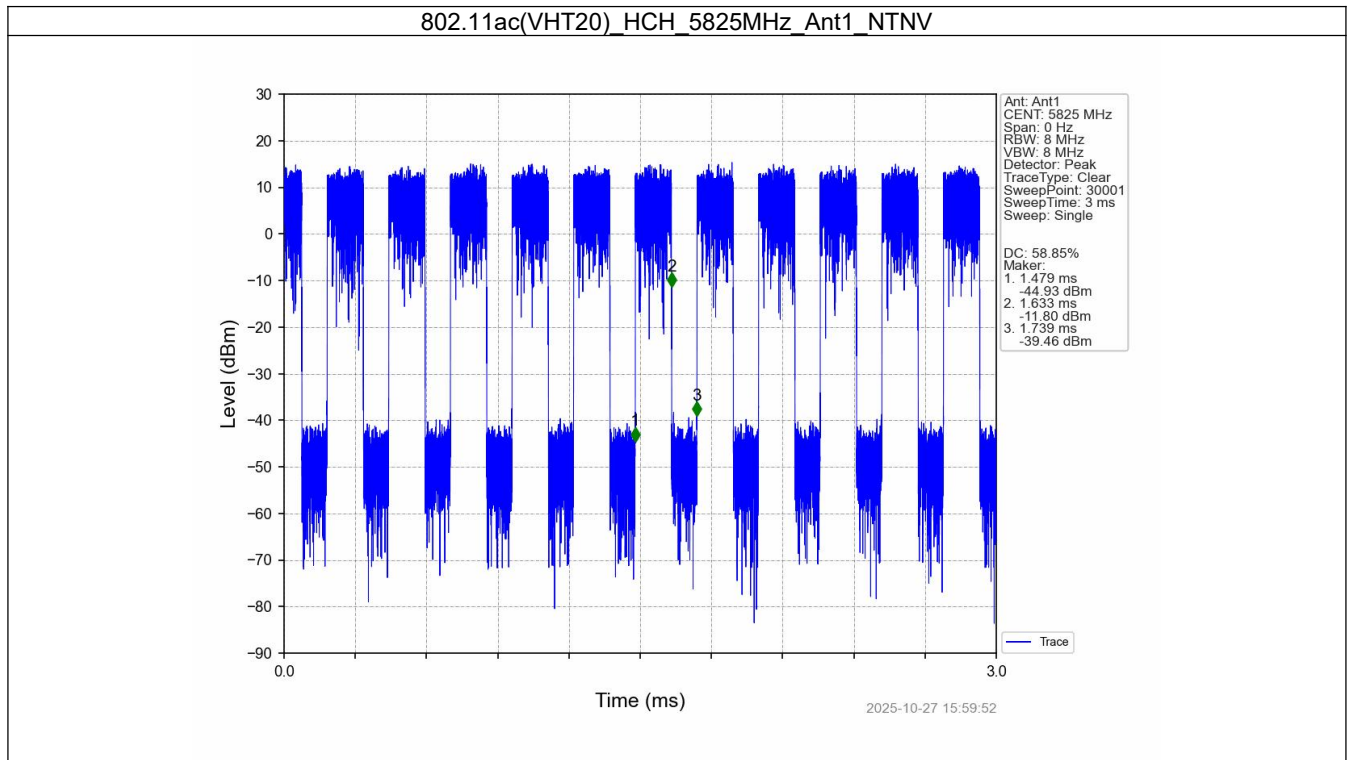


802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV



802.11ac(VHT20)_MCH_5785MHz_Ant1_NTNV







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	18.274	/	Pass
		5785	1	18.848	/	Pass
		5825	1	18.291	/	Pass
802.11n (HT20)	SISO	5745	1	18.625	/	Pass
		5785	1	18.675	/	Pass
		5825	1	18.646	/	Pass
802.11ac (VHT20)	SISO	5745	1	18.703	/	Pass
		5785	1	18.860	/	Pass
		5825	1	18.684	/	Pass

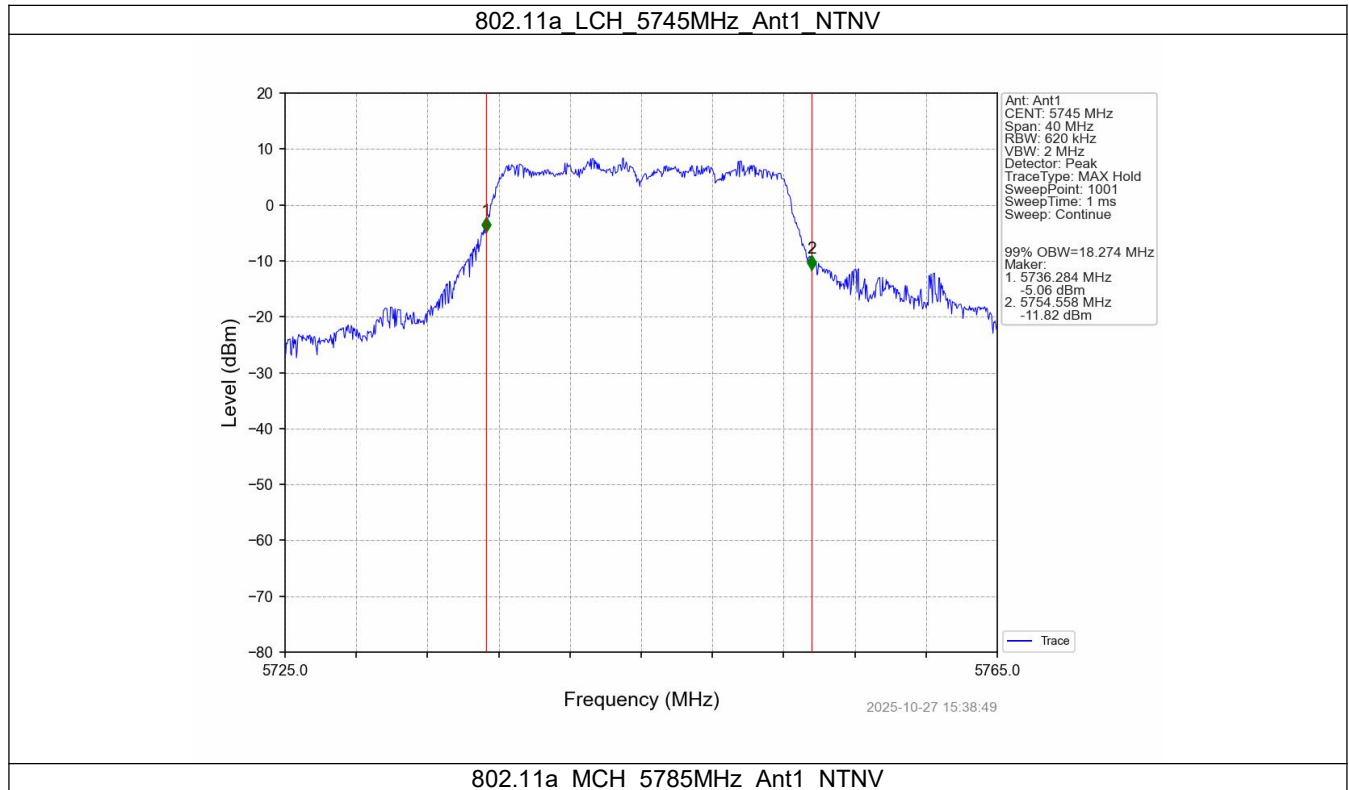
2.1.2 6dB BW

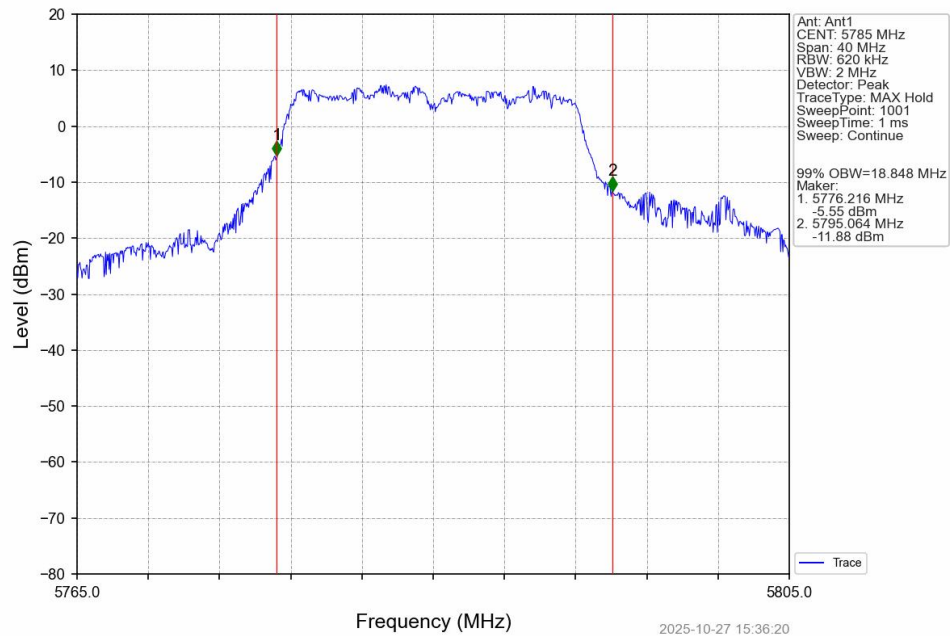
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5745	1	16.071	≥ 0.5	Pass
		5785	1	16.311	≥ 0.5	Pass
		5825	1	16.375	≥ 0.5	Pass
802.11n (HT20)	SISO	5745	1	17.727	≥ 0.5	Pass
		5785	1	17.610	≥ 0.5	Pass
		5825	1	17.453	≥ 0.5	Pass
802.11ac (VHT20)	SISO	5745	1	17.666	≥ 0.5	Pass
		5785	1	17.634	≥ 0.5	Pass
		5825	1	17.701	≥ 0.5	Pass



2.2 Test Graph

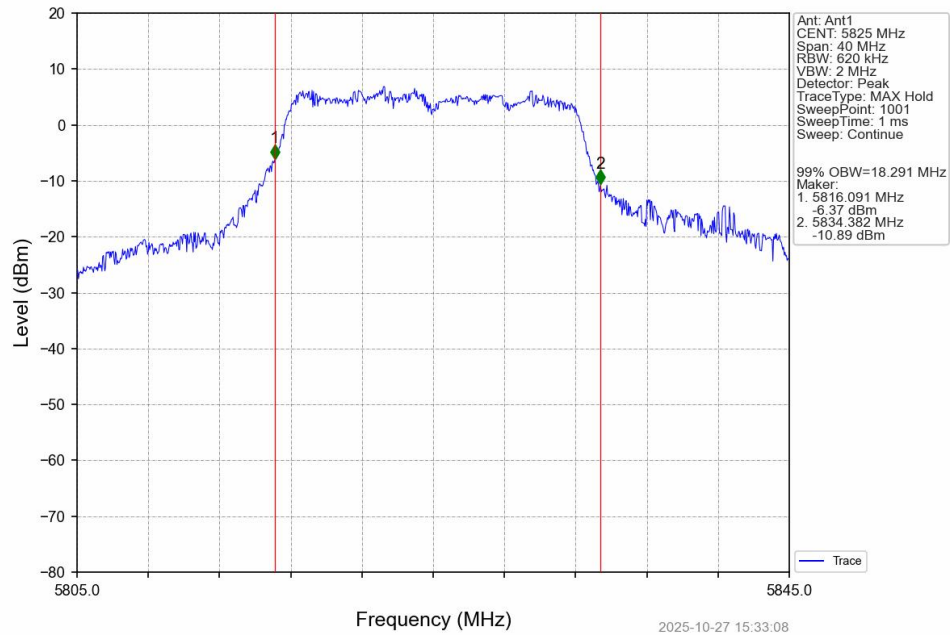
2.2.1 OBW



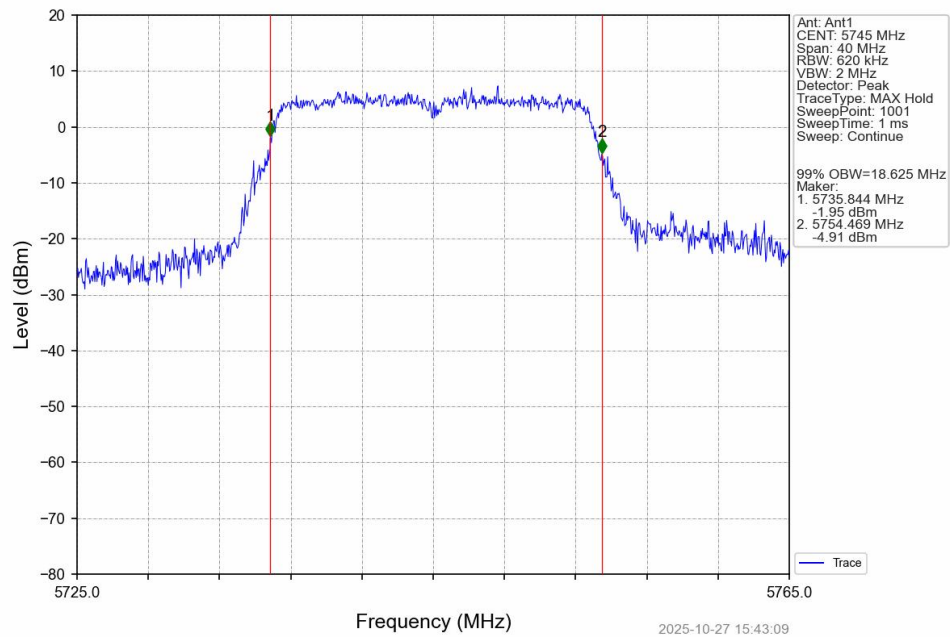




802.11a_HCH_5825MHz_Ant1_NTNV

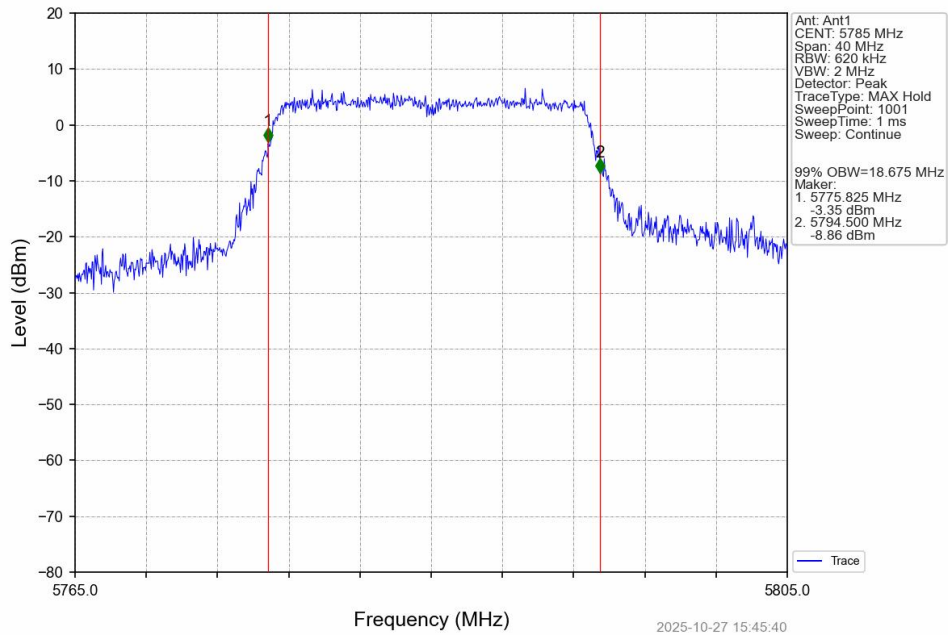


802.11n(HT20)_LCH_5745MHz_Ant1_NTNV

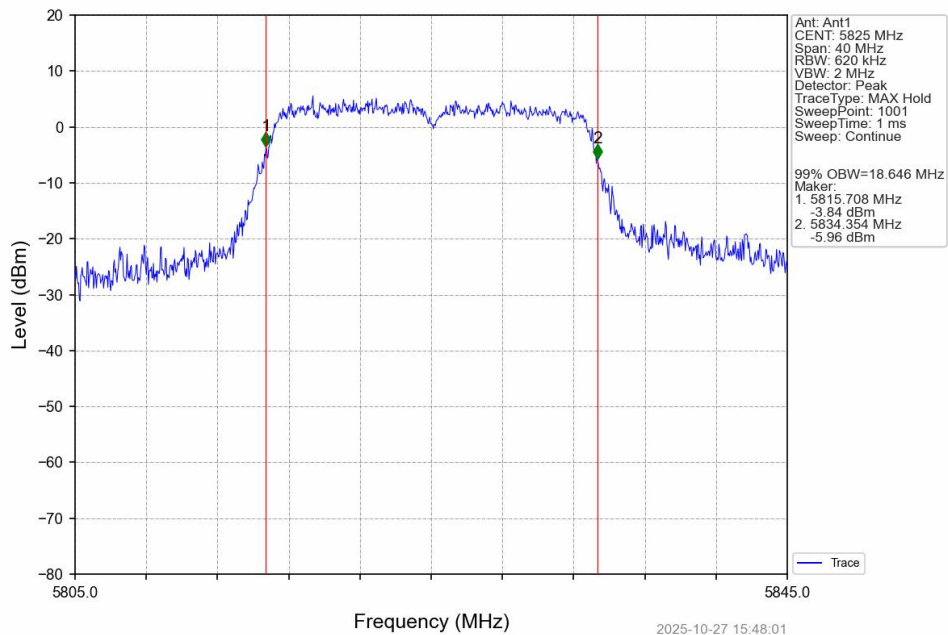




802.11n(HT20)_MCH_5785MHz_Ant1_NTNV

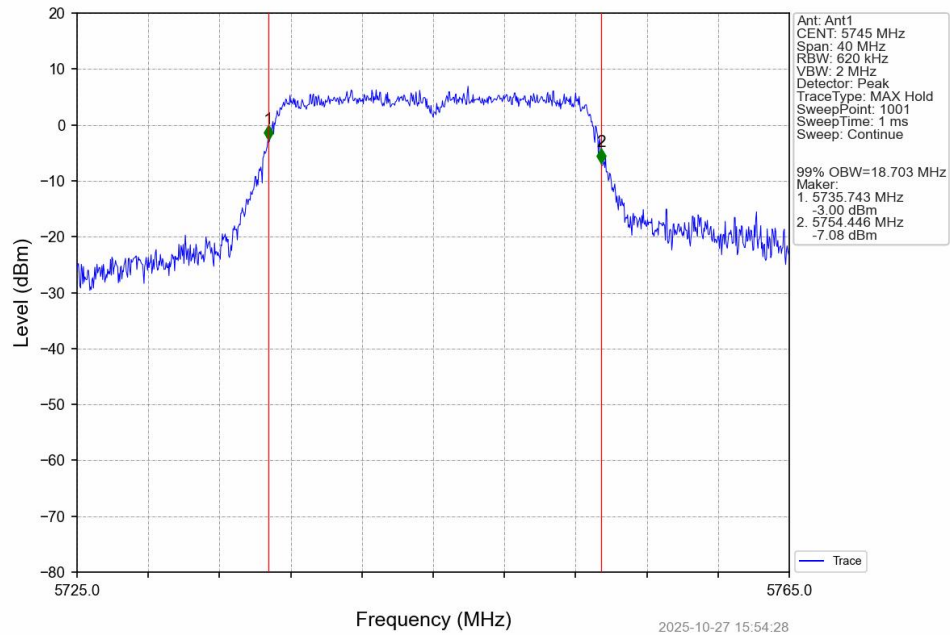


802.11n(HT20)_HCH_5825MHz_Ant1_NTNV

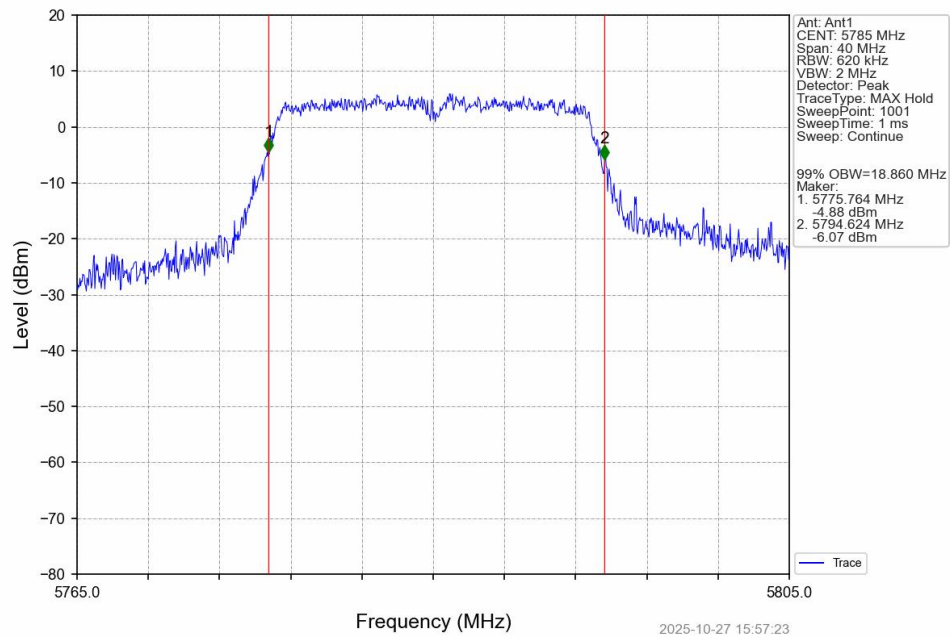


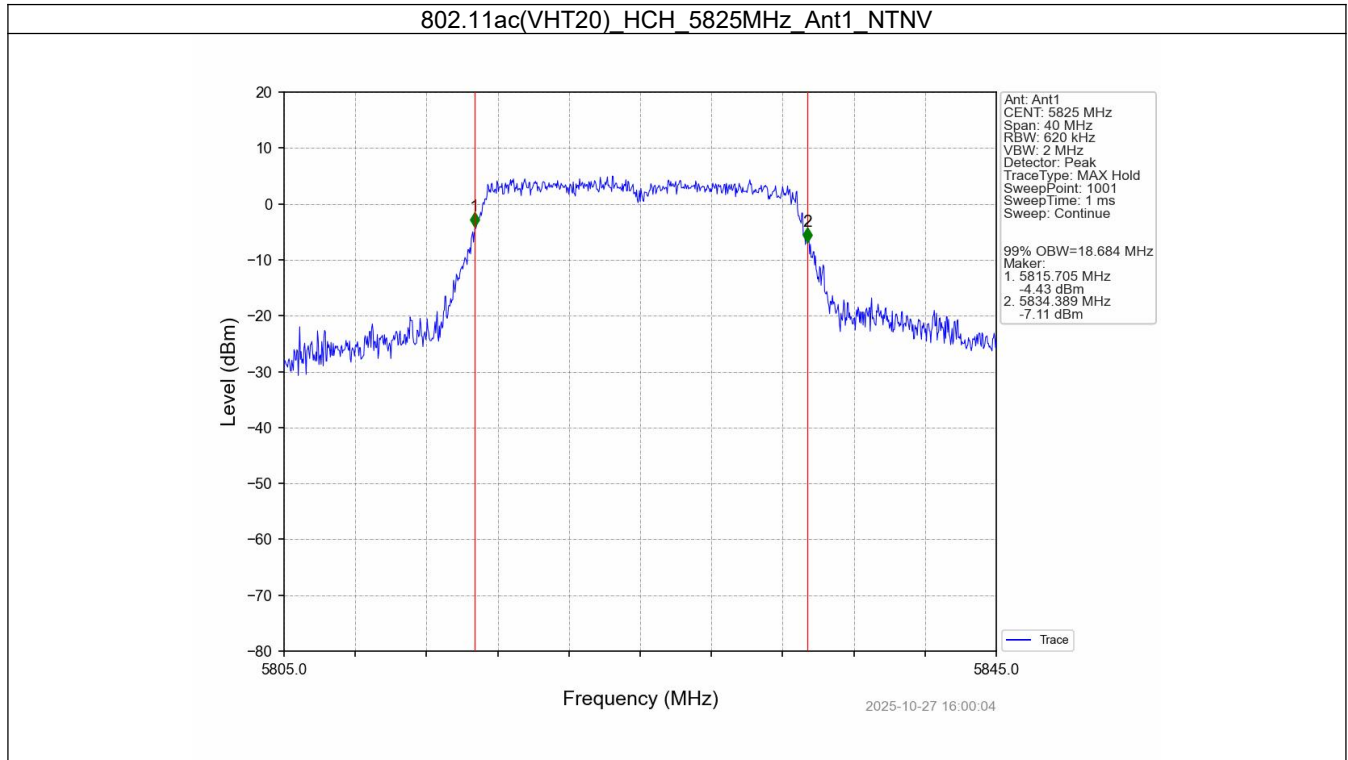


802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV



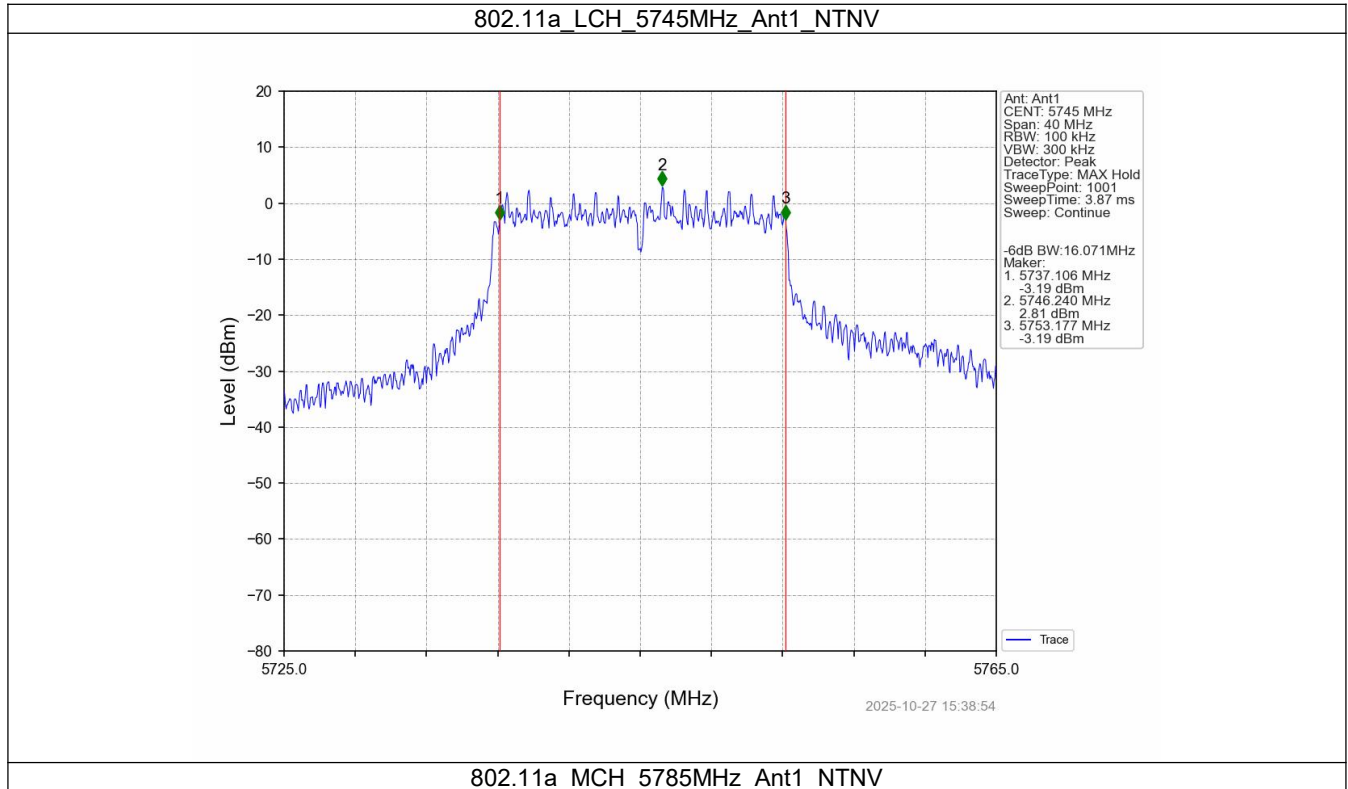
802.11ac(VHT20)_MCH_5785MHz_Ant1_NTNV

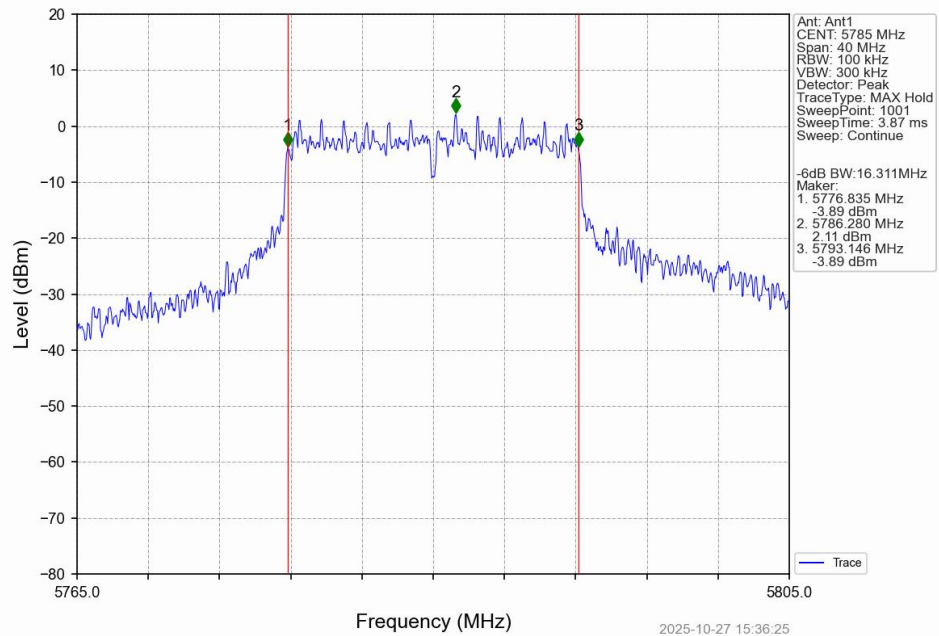






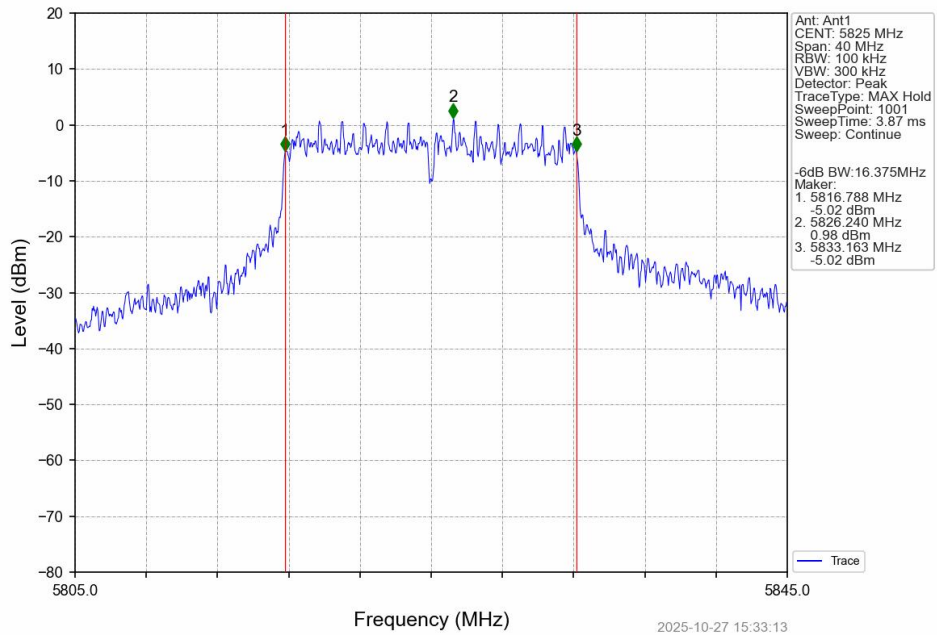
2.2.2 6dB BW



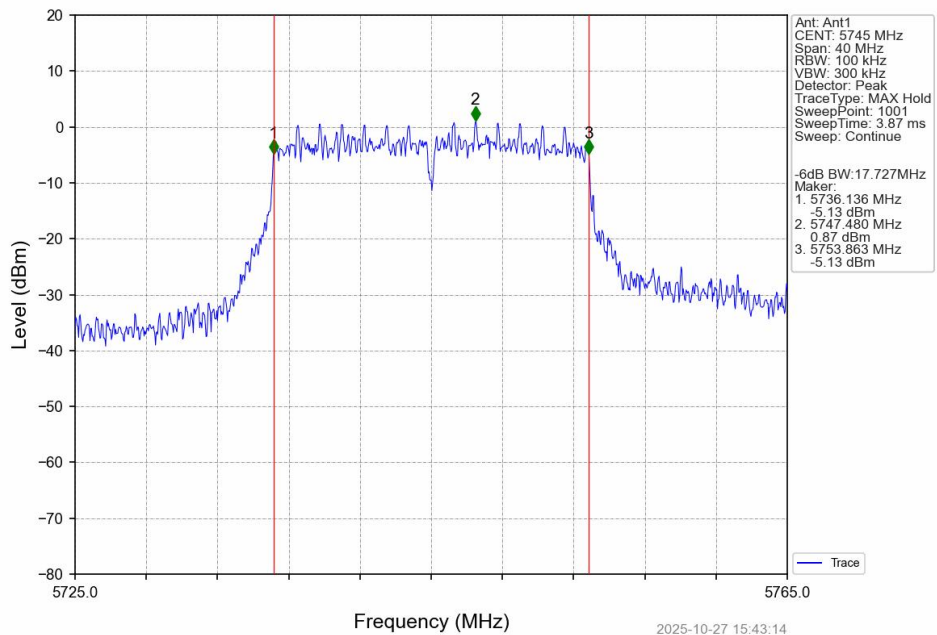




802.11a_HCH_5825MHz_Ant1_NTNV

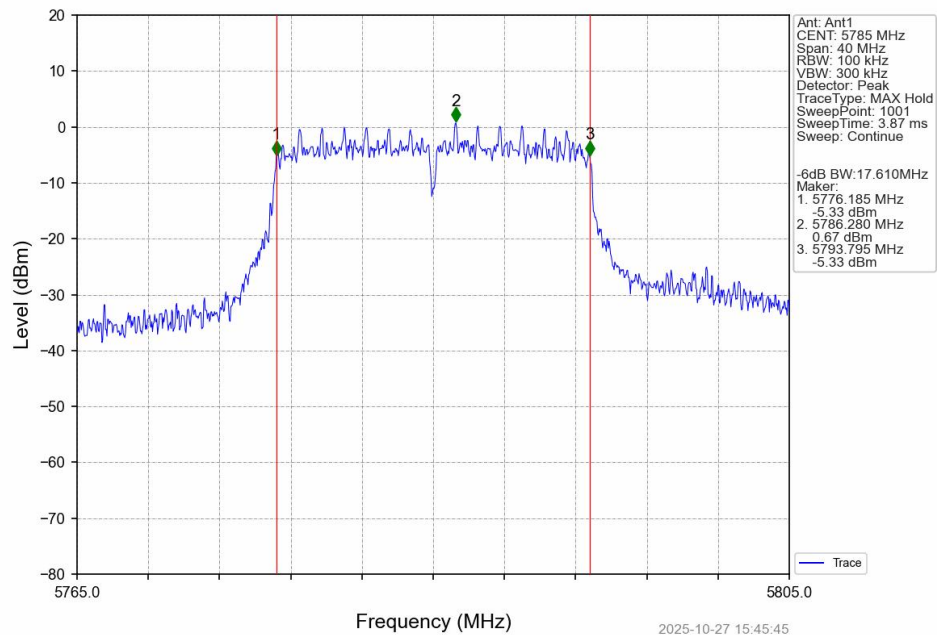


802.11n(HT20)_LCH_5745MHz_Ant1_NTNV

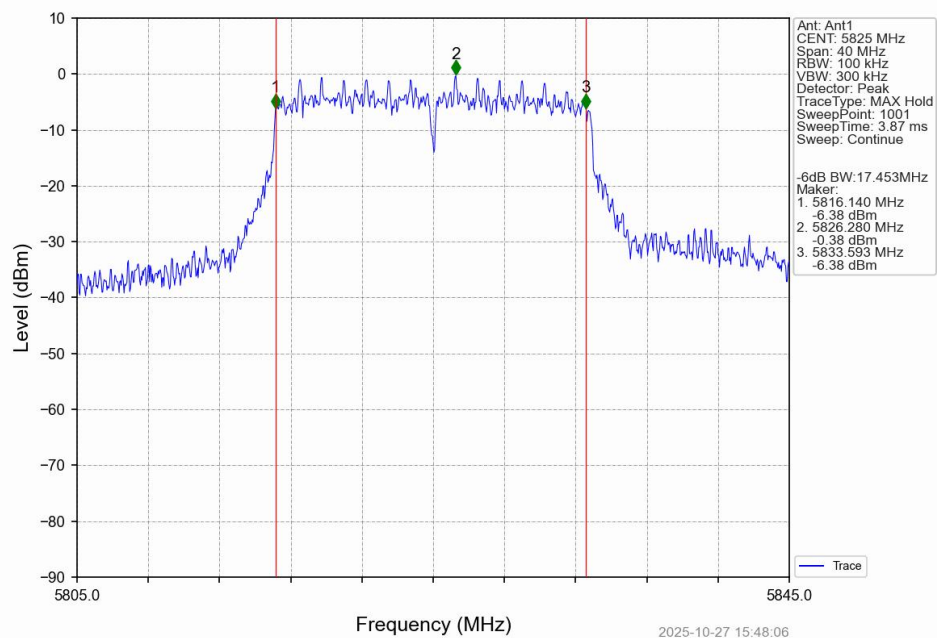




802.11n(HT20)_MCH_5785MHz_Ant1_NTNV

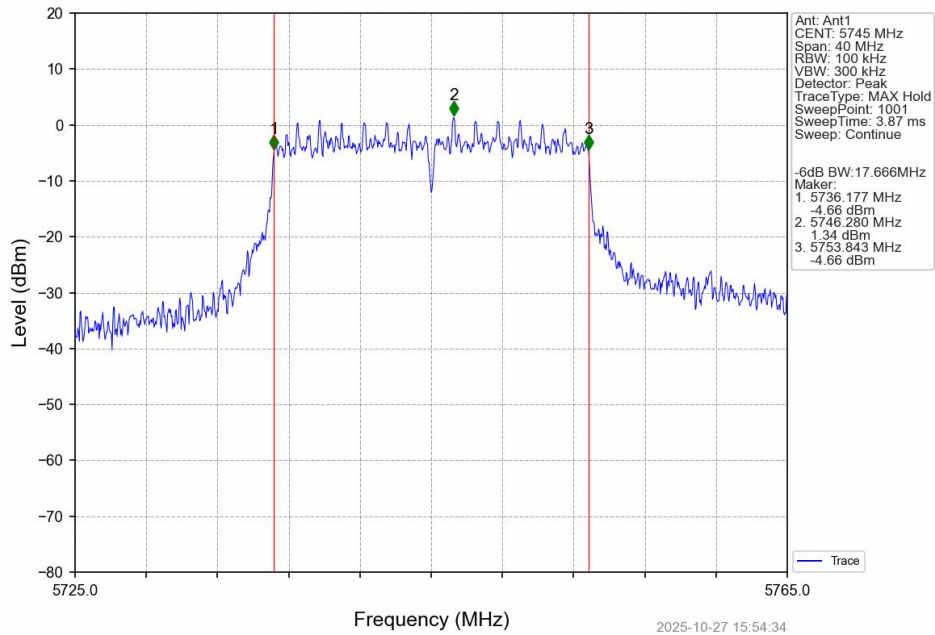


802.11n(HT20)_HCH_5825MHz_Ant1_NTNV

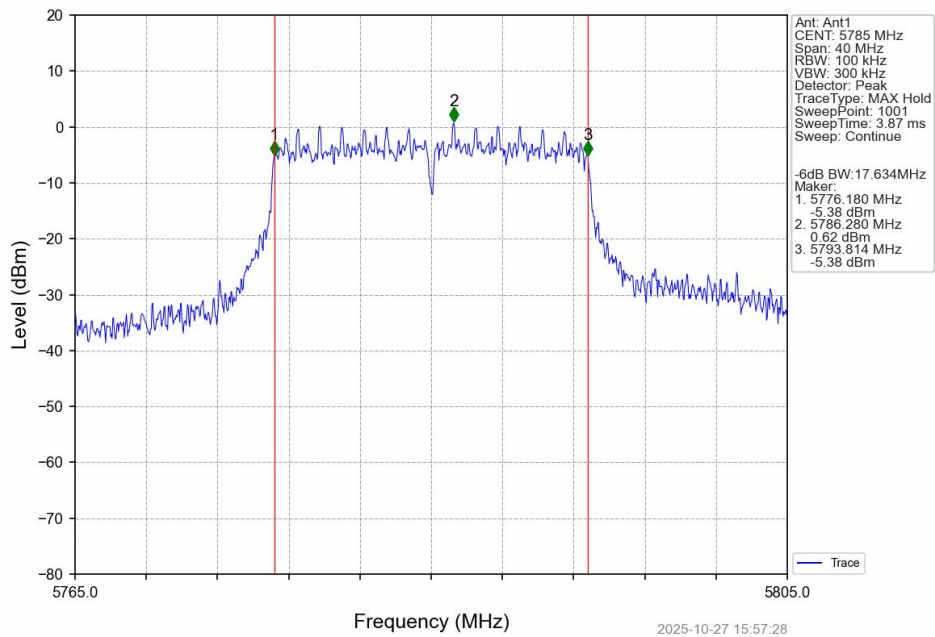


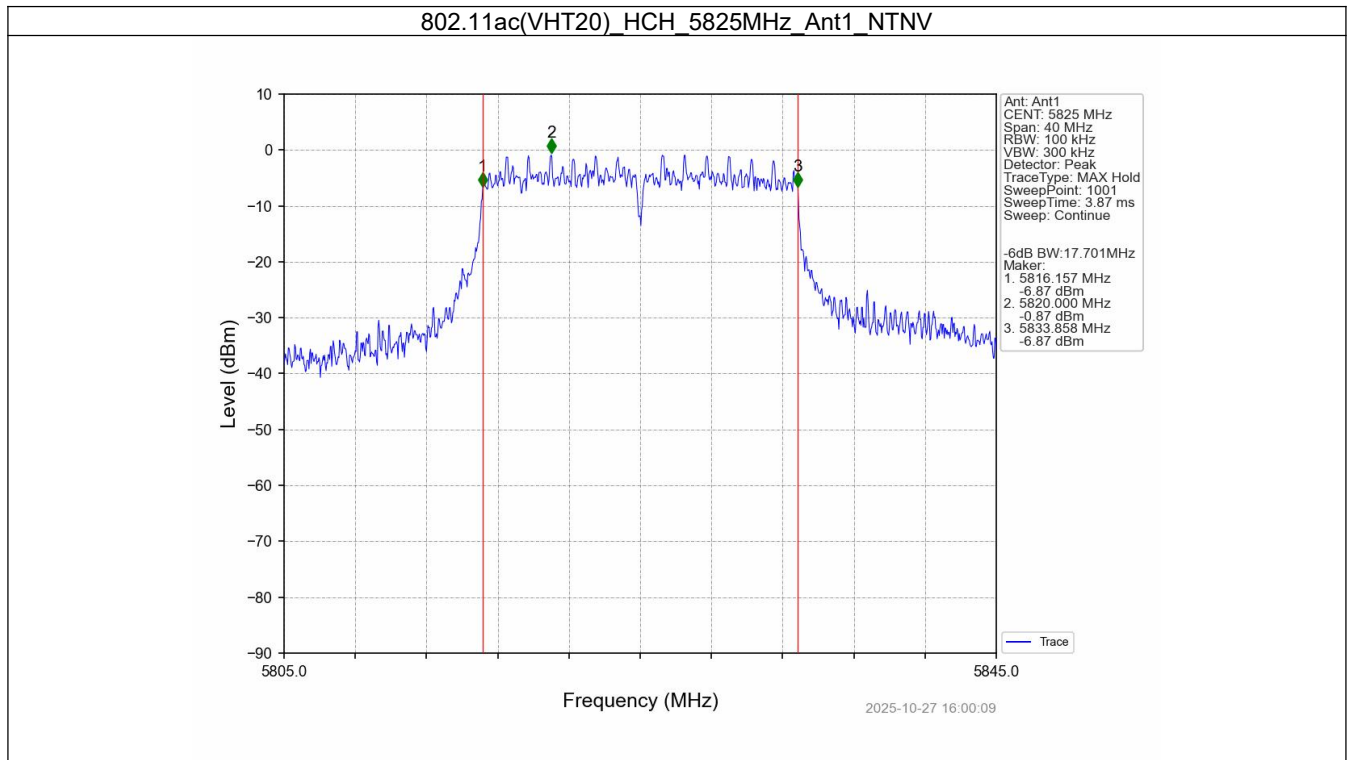


802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV



802.11ac(VHT20)_MCH_5785MHz_Ant1_NTNV







3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

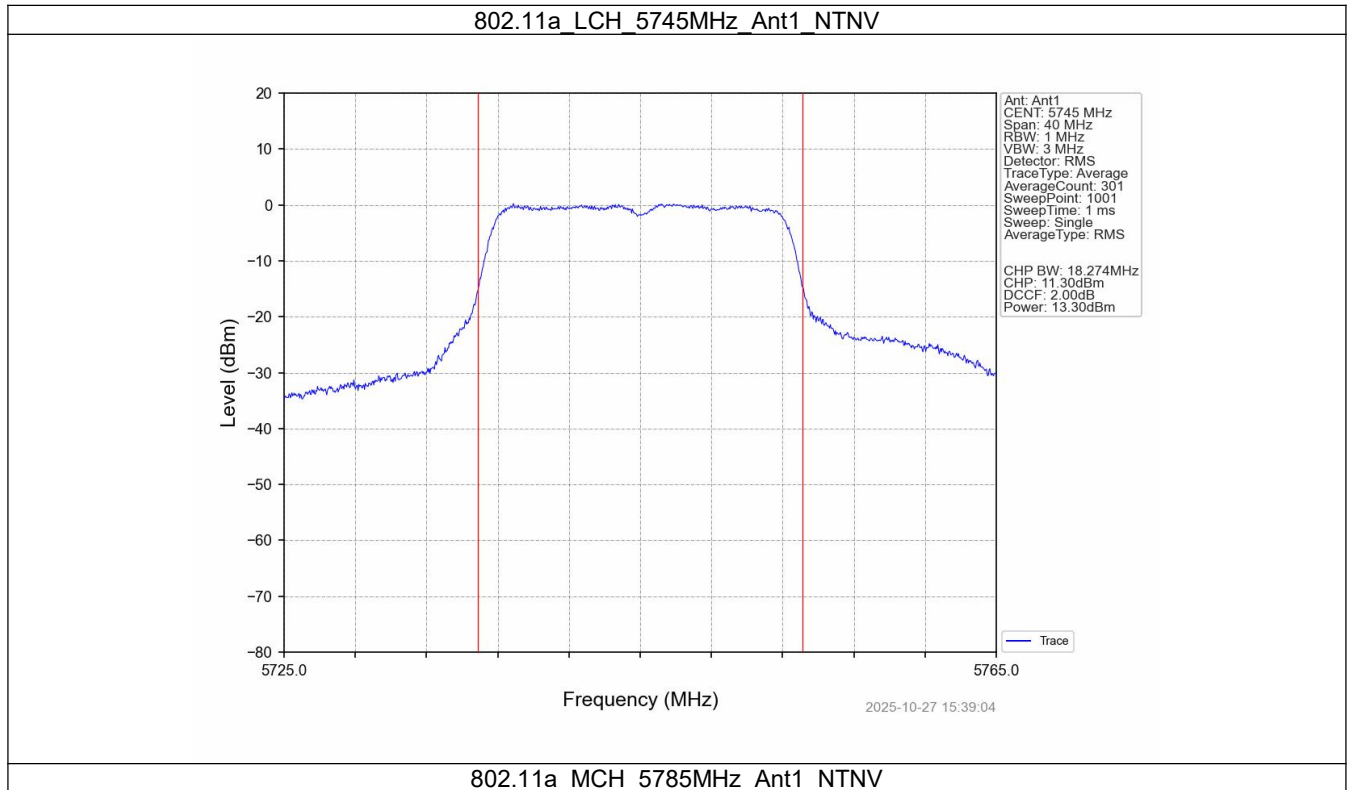
Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
802.11a	SISO	5745	13.30	<=30	Pass
		5785	12.65	<=30	Pass
		5825	11.82	<=30	Pass
802.11n (HT20)	SISO	5745	11.97	<=30	Pass
		5785	11.26	<=30	Pass
		5825	10.37	<=30	Pass
802.11ac (VHT20)	SISO	5745	12.09	<=30	Pass
		5785	11.46	<=30	Pass
		5825	10.48	<=30	Pass

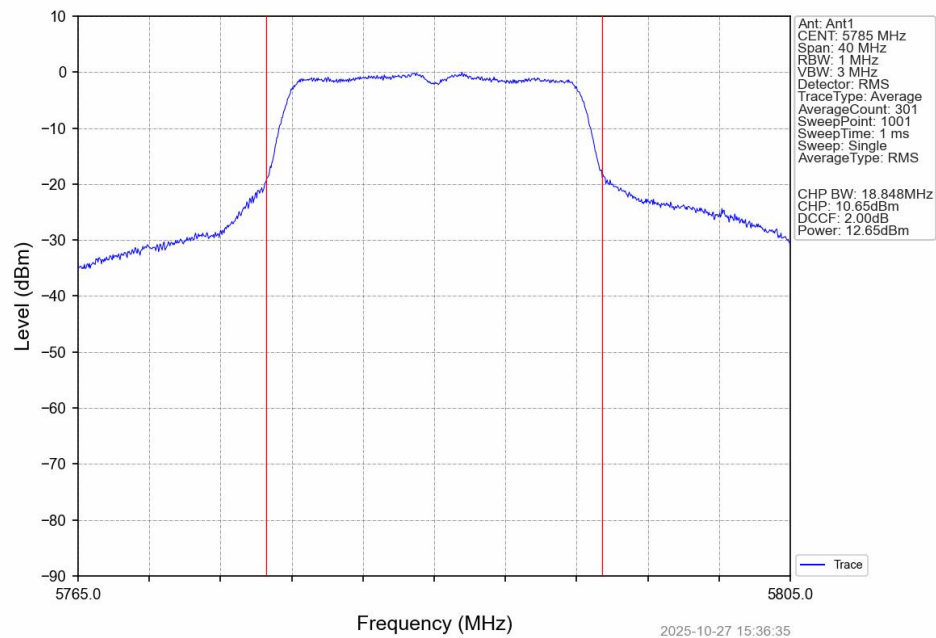
Note1: Antenna Gain: Ant1: 2.1dBi;



3.2 Test Graph

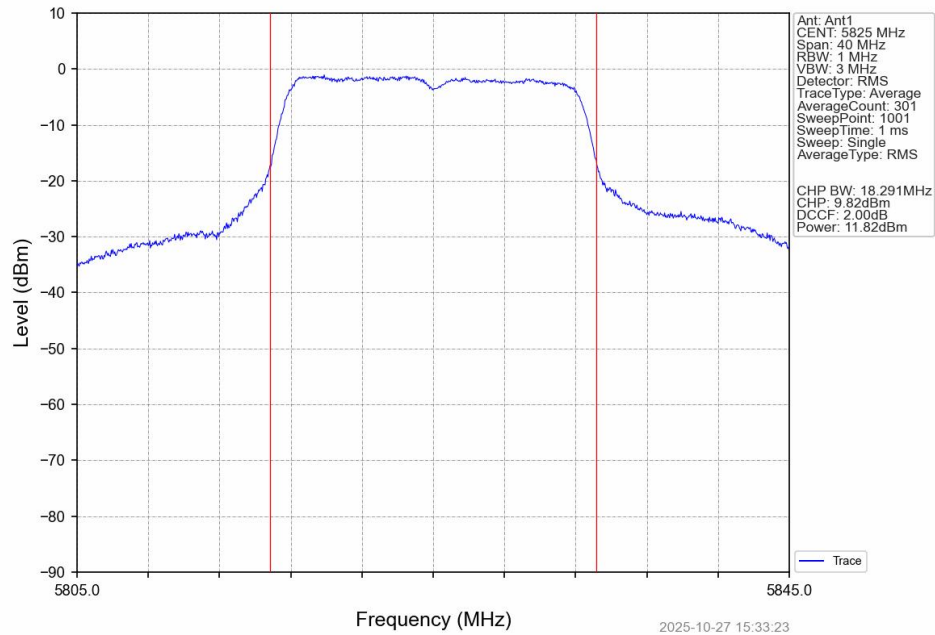
3.2.1 Power



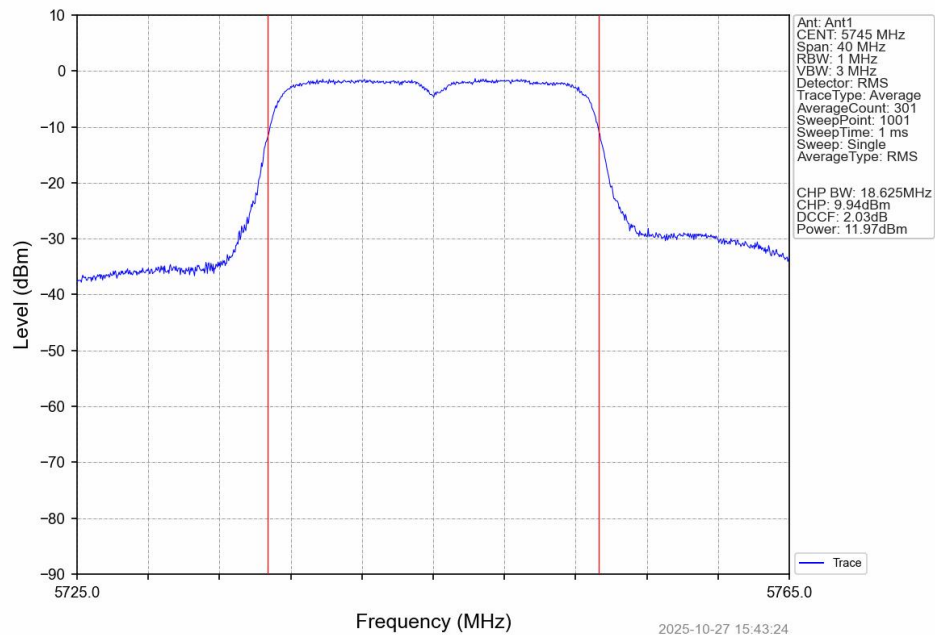




802.11a_HCH_5825MHz_Ant1_NTNV

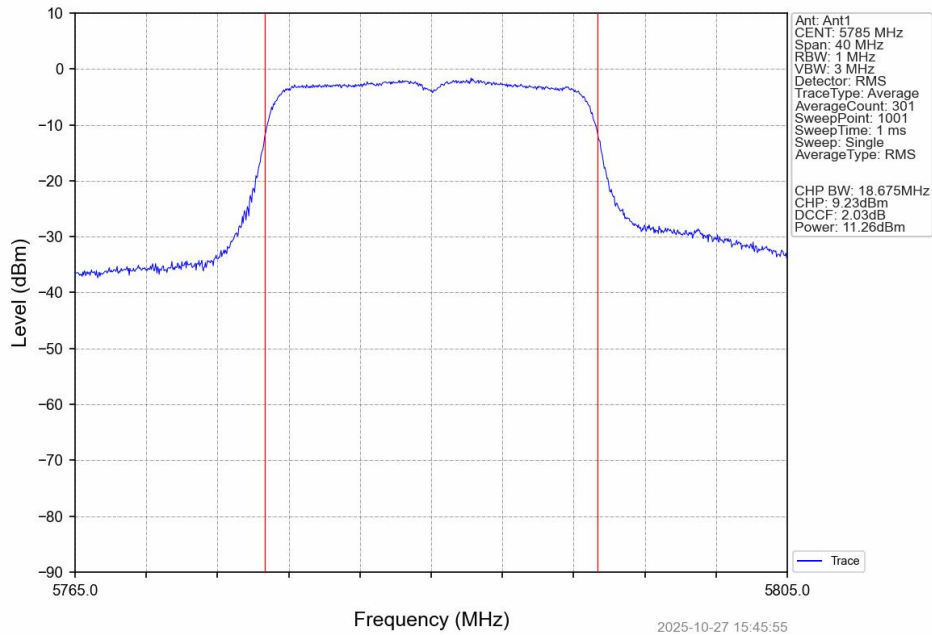


802.11n(HT20)_LCH_5745MHz_Ant1_NTNV

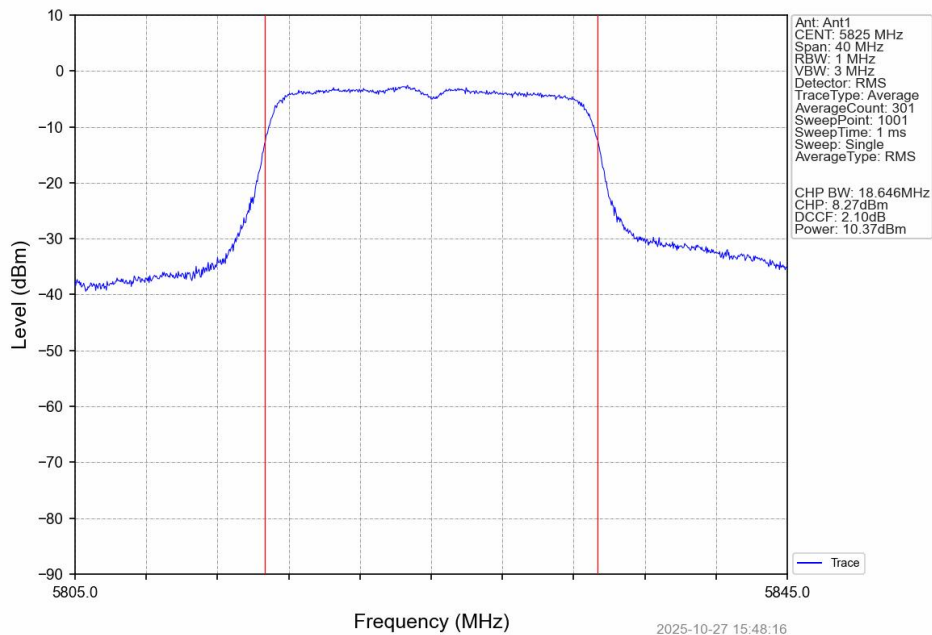




802.11n(HT20)_MCH_5785MHz_Ant1_NTNV

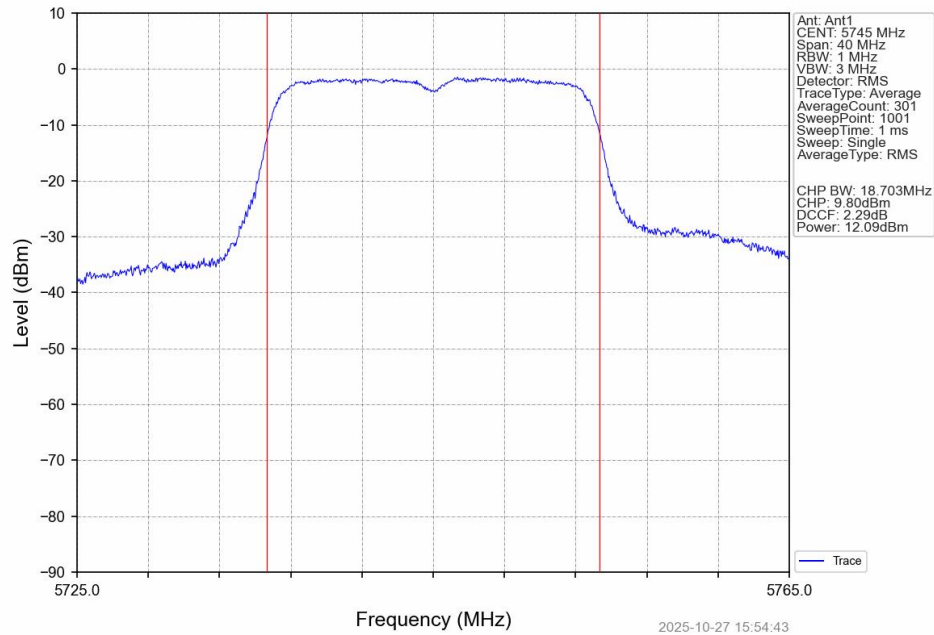


802.11n(HT20)_HCH_5825MHz_Ant1_NTNV

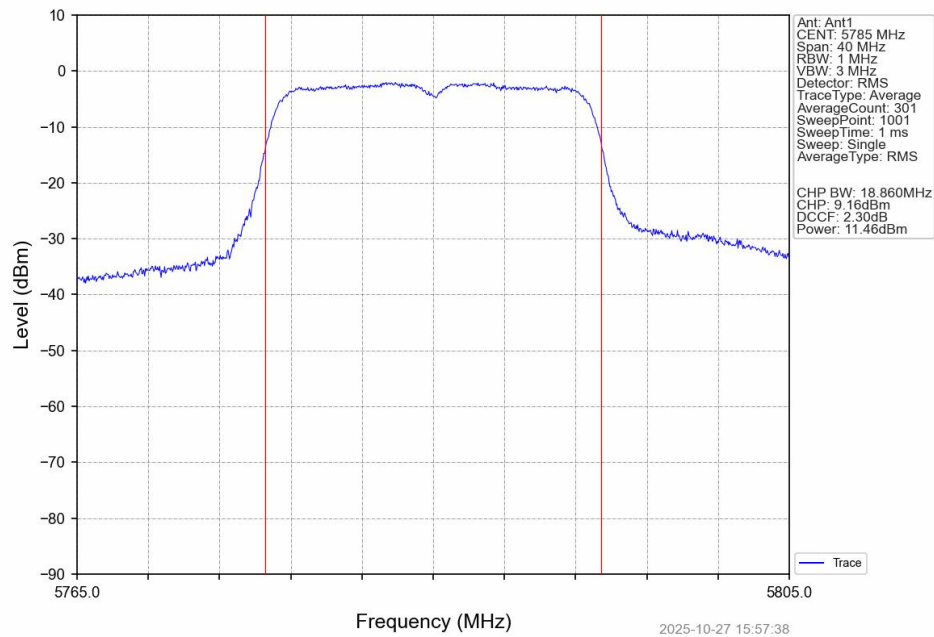


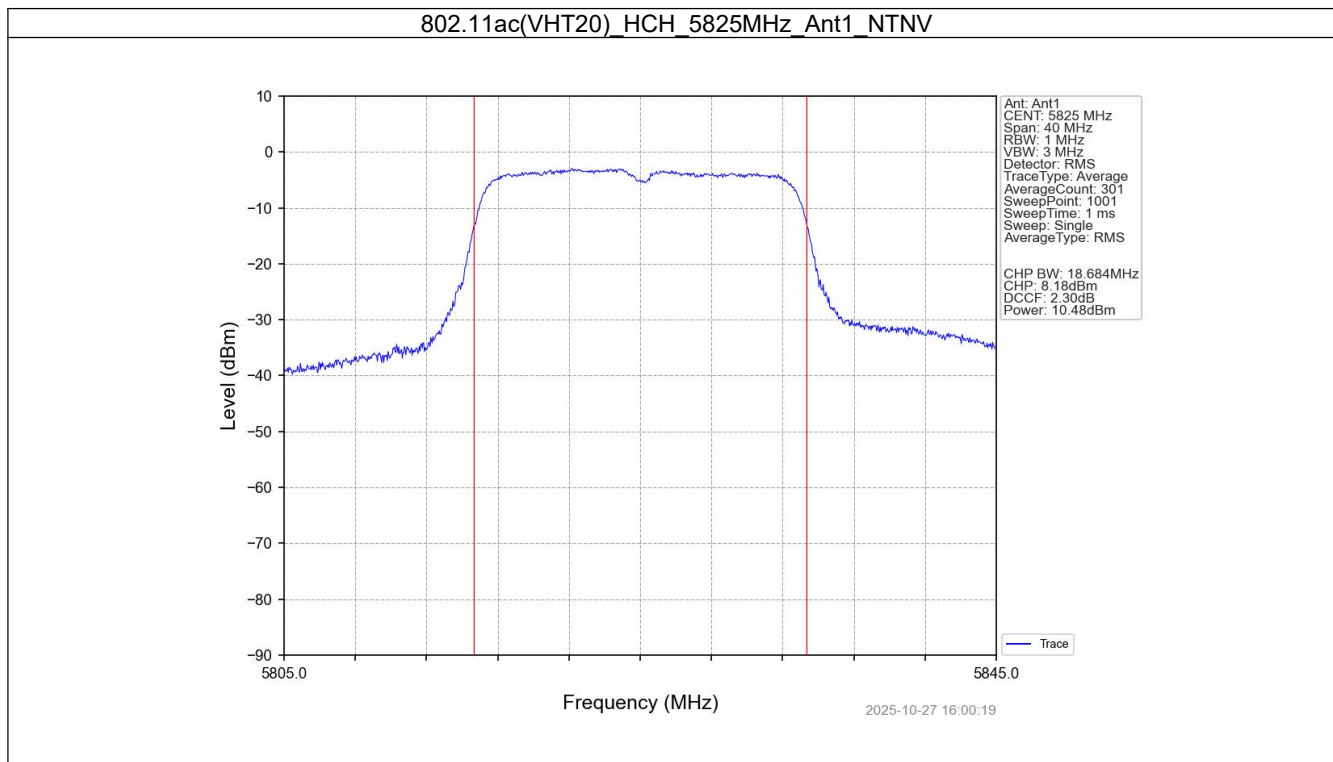


802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV



802.11ac(VHT20)_MCH_5785MHz_Ant1_NTNV







4. Maximum Power Spectral Density

4.1 Test Result

4.1.1 PSD-Band3

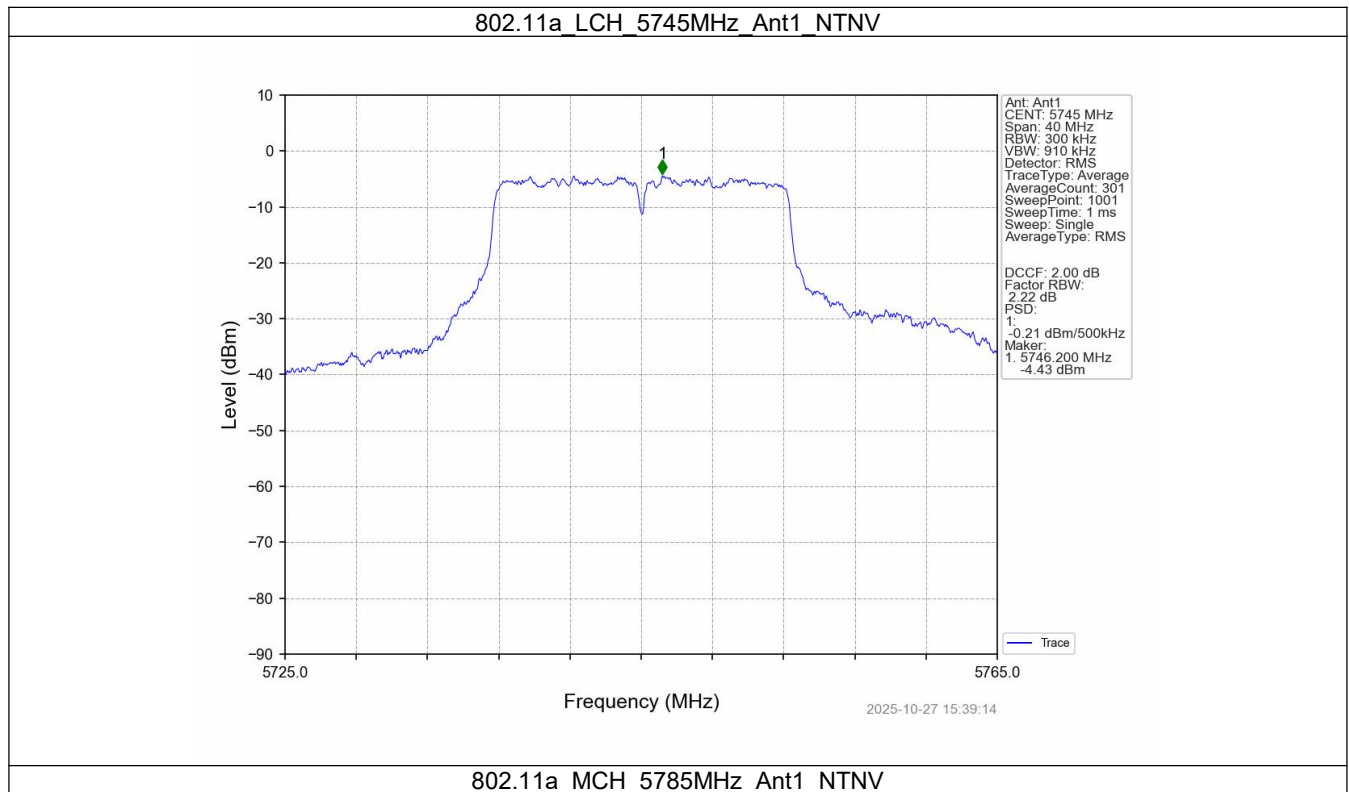
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/500kHz)		Verdict
			ANT1	Limit	
802.11a	SISO	5745	-0.21	<=30	Pass
		5785	-0.69	<=30	Pass
		5825	-1.76	<=30	Pass
802.11n (HT20)	SISO	5745	-1.57	<=30	Pass
		5785	-2.06	<=30	Pass
		5825	-2.96	<=30	Pass
802.11ac (VHT20)	SISO	5745	-1.03	<=30	Pass
		5785	-2.17	<=30	Pass
		5825	-2.89	<=30	Pass

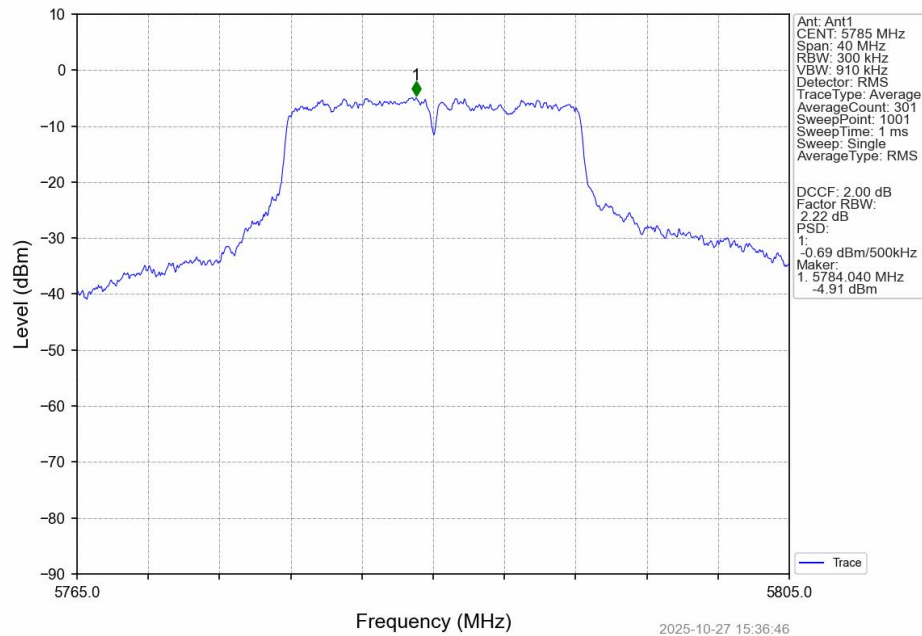
Note1: Antenna Gain: Ant1: 2.1dBi;



4.2 Test Graph

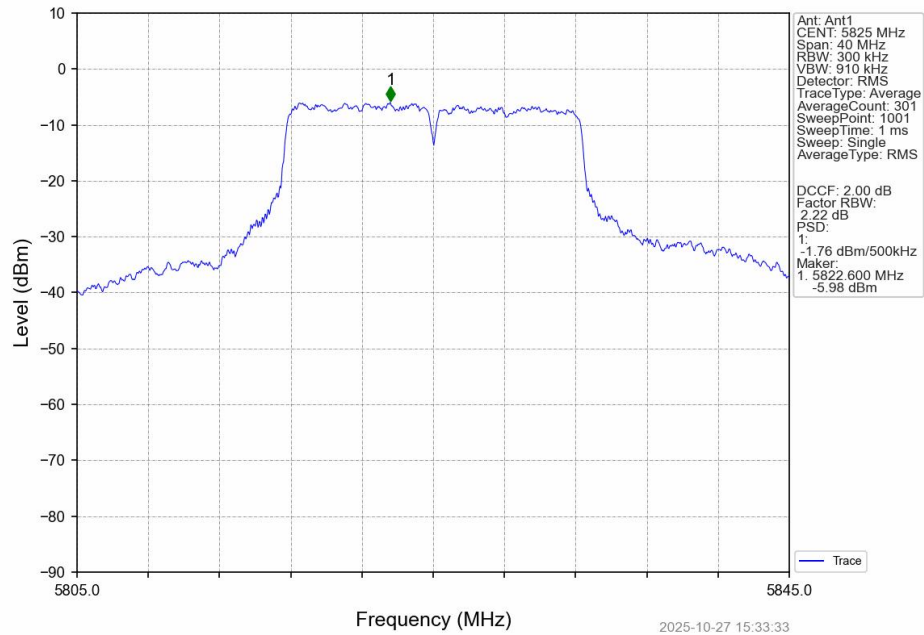
4.2.1 PSD-Band3



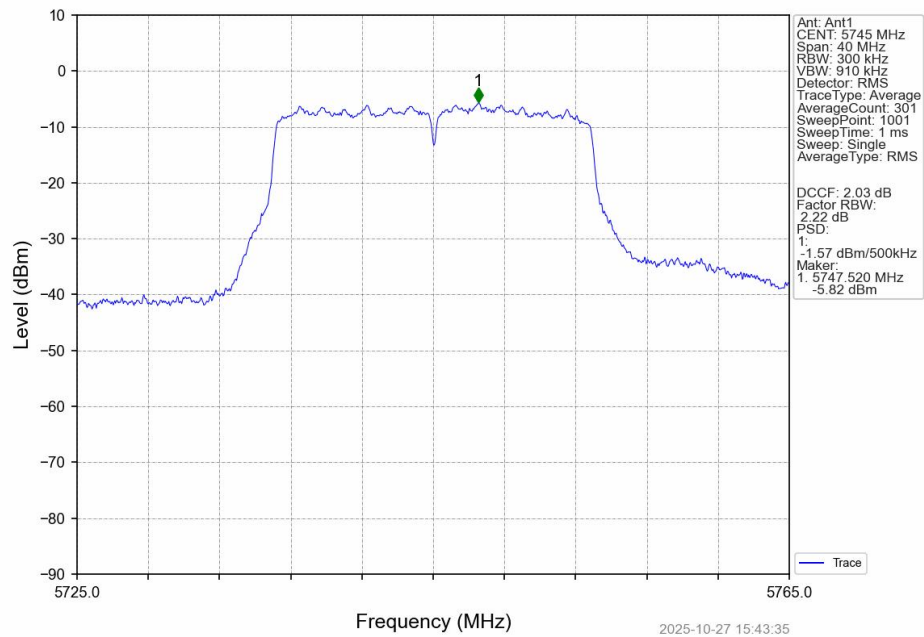




802.11a_HCH_5825MHz_Ant1_NTNV

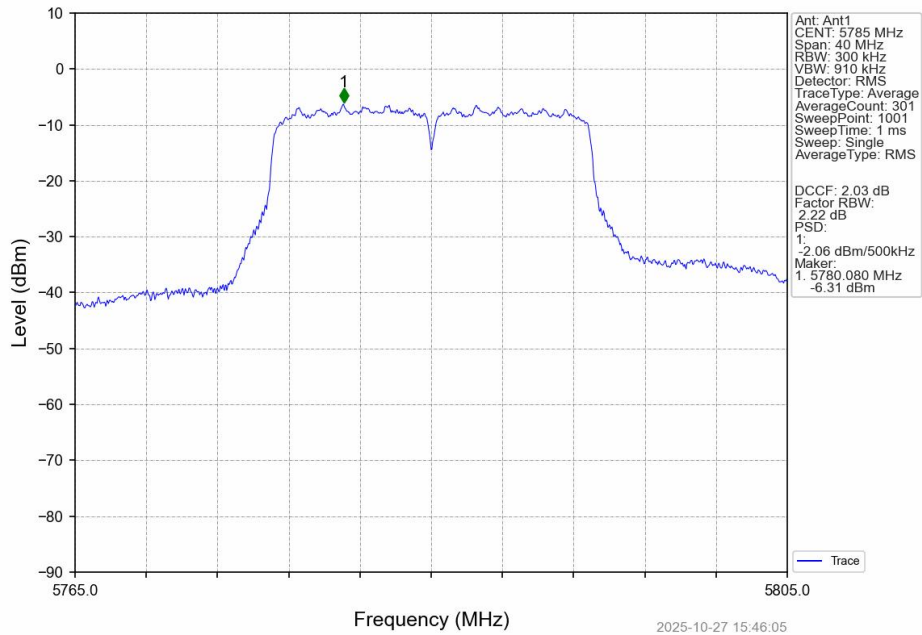


802.11n(HT20)_LCH_5745MHz_Ant1_NTNV

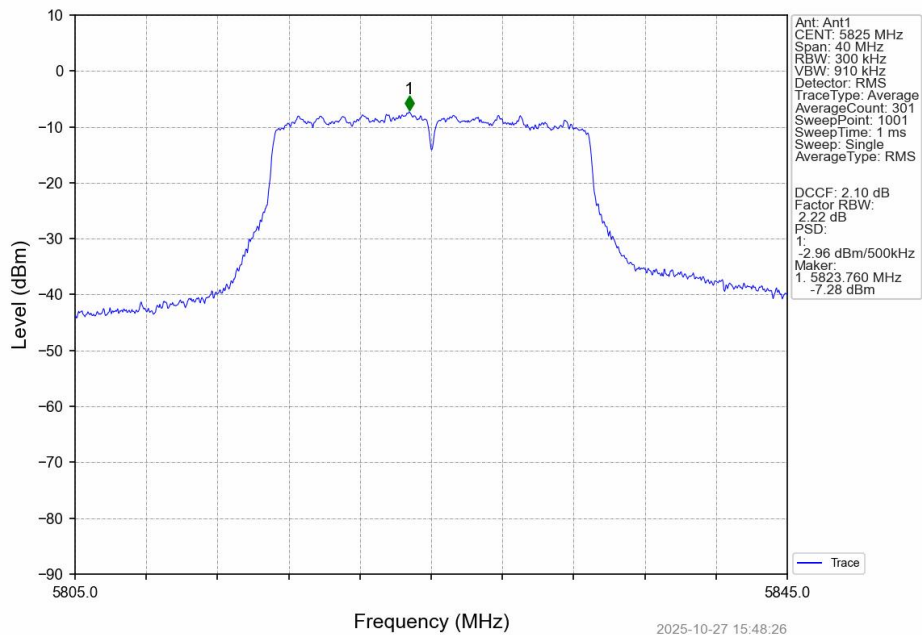




802.11n(HT20)_MCH_5785MHz_Ant1_NTNV

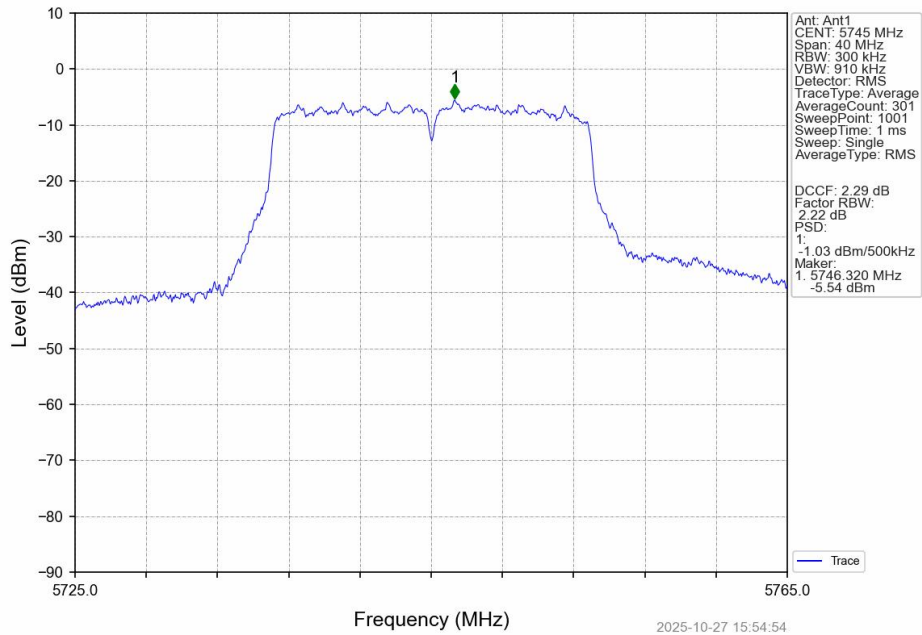


802.11n(HT20)_HCH_5825MHz_Ant1_NTNV

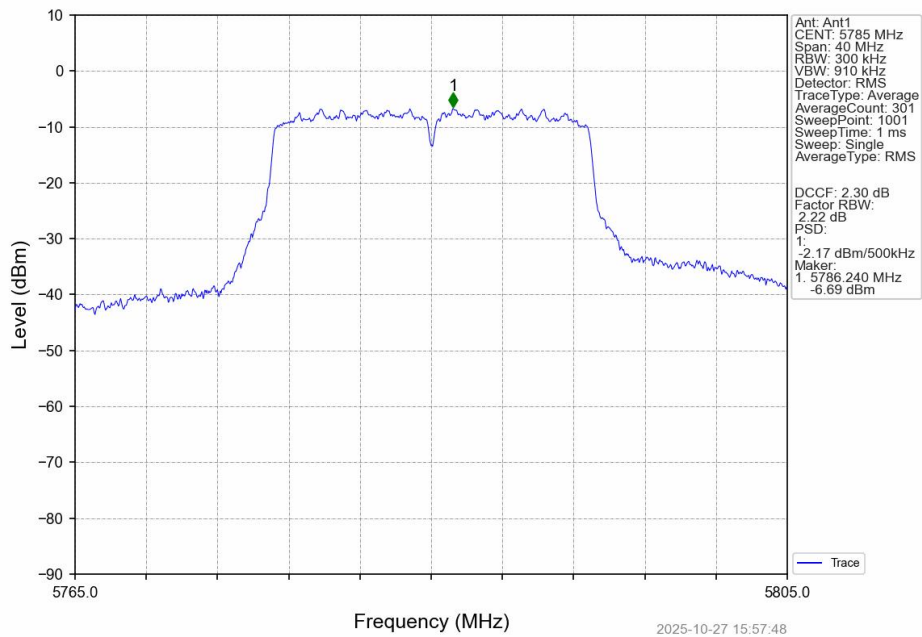


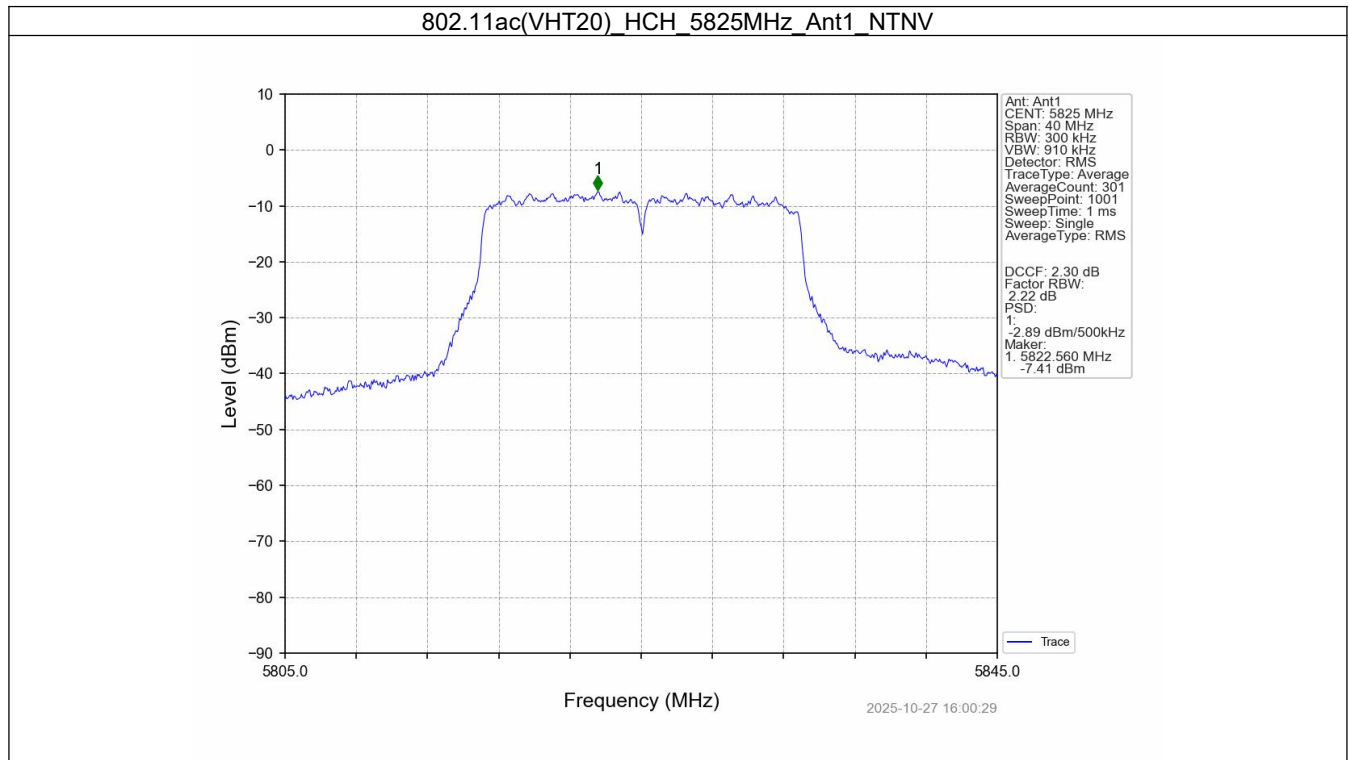


802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV



802.11ac(VHT20)_MCH_5785MHz_Ant1_NTNV







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
802.11a	SISO	5745	20	102	5745.040	5725 to 5850	Pass
				120	5744.980	5725 to 5850	Pass
				138	5745.020	5725 to 5850	Pass
			-30	120	5745.000	5725 to 5850	Pass
			-20	120	5745.040	5725 to 5850	Pass
			-10	120	5745.040	5725 to 5850	Pass
			0	120	5745.020	5725 to 5850	Pass
			10	120	5745.000	5725 to 5850	Pass
			30	120	5745.000	5725 to 5850	Pass
			40	120	5745.000	5725 to 5850	Pass
			50	120	5745.040	5725 to 5850	Pass
		5785	20	102	5785.040	5725 to 5850	Pass
				120	5785.060	5725 to 5850	Pass
				138	5785.020	5725 to 5850	Pass
			-30	120	5785.020	5725 to 5850	Pass
			-20	120	5785.020	5725 to 5850	Pass
			-10	120	5785.040	5725 to 5850	Pass
			0	120	5785.040	5725 to 5850	Pass
			10	120	5785.000	5725 to 5850	Pass
			30	120	5785.060	5725 to 5850	Pass
			40	120	5785.040	5725 to 5850	Pass
			50	120	5785.020	5725 to 5850	Pass
		5825	20	102	5825.020	5725 to 5850	Pass
				120	5825.000	5725 to 5850	Pass
				138	5825.040	5725 to 5850	Pass
			-30	120	5825.000	5725 to 5850	Pass
			-20	120	5825.000	5725 to 5850	Pass
			-10	120	5825.020	5725 to 5850	Pass
			0	120	5825.040	5725 to 5850	Pass
			10	120	5825.020	5725 to 5850	Pass
			30	120	5825.040	5725 to 5850	Pass
			40	120	5825.040	5725 to 5850	Pass
			50	120	5825.040	5725 to 5850	Pass
802.11n (HT20)	SISO	5745	20	102	5745.020	5725 to 5850	Pass
				120	5745.060	5725 to 5850	Pass
				138	5745.020	5725 to 5850	Pass
			-30	120	5745.040	5725 to 5850	Pass
			-20	120	5745.000	5725 to 5850	Pass
			-10	120	5745.020	5725 to 5850	Pass
			0	120	5745.100	5725 to 5850	Pass
			10	120	5745.000	5725 to 5850	Pass



			30	120	5745.040	5725 to 5850	Pass
			40	120	5745.100	5725 to 5850	Pass
			50	120	5745.080	5725 to 5850	Pass
		5785	20	102	5785.020	5725 to 5850	Pass
				120	5785.000	5725 to 5850	Pass
				138	5785.040	5725 to 5850	Pass
			-30	120	5785.040	5725 to 5850	Pass
			-20	120	5785.100	5725 to 5850	Pass
			-10	120	5785.020	5725 to 5850	Pass
			0	120	5785.120	5725 to 5850	Pass
			10	120	5785.060	5725 to 5850	Pass
			30	120	5785.020	5725 to 5850	Pass
			40	120	5785.000	5725 to 5850	Pass
			50	120	5785.100	5725 to 5850	Pass
		5825	20	102	5825.000	5725 to 5850	Pass
				120	5825.080	5725 to 5850	Pass
				138	5825.000	5725 to 5850	Pass
			-30	120	5825.020	5725 to 5850	Pass
			-20	120	5824.980	5725 to 5850	Pass
			-10	120	5825.000	5725 to 5850	Pass
			0	120	5824.980	5725 to 5850	Pass
			10	120	5825.080	5725 to 5850	Pass
			30	120	5824.980	5725 to 5850	Pass
			40	120	5825.040	5725 to 5850	Pass
			50	120	5825.000	5725 to 5850	Pass
802.11ac (VHT20)	SISO	5745	20	102	5745.020	5725 to 5850	Pass
				120	5745.040	5725 to 5850	Pass
				138	5745.080	5725 to 5850	Pass
			-30	120	5745.000	5725 to 5850	Pass
			-20	120	5745.000	5725 to 5850	Pass
			-10	120	5744.980	5725 to 5850	Pass
			0	120	5745.060	5725 to 5850	Pass
			10	120	5744.980	5725 to 5850	Pass
			30	120	5745.000	5725 to 5850	Pass
			40	120	5745.020	5725 to 5850	Pass
			50	120	5745.000	5725 to 5850	Pass
		5785	20	102	5785.020	5725 to 5850	Pass
				120	5785.000	5725 to 5850	Pass
				138	5785.040	5725 to 5850	Pass
			-30	120	5785.020	5725 to 5850	Pass
			-20	120	5785.000	5725 to 5850	Pass
			-10	120	5785.020	5725 to 5850	Pass
			0	120	5785.020	5725 to 5850	Pass
			10	120	5784.980	5725 to 5850	Pass
			30	120	5784.980	5725 to 5850	Pass
			40	120	5785.060	5725 to 5850	Pass
			50	120	5785.060	5725 to 5850	Pass
		5825	20	102	5824.980	5725 to 5850	Pass
				120	5825.000	5725 to 5850	Pass
				138	5825.020	5725 to 5850	Pass
			-30	120	5825.020	5725 to 5850	Pass
			-20	120	5825.000	5725 to 5850	Pass
			-10	120	5825.040	5725 to 5850	Pass
			0	120	5825.060	5725 to 5850	Pass
			0	120	5825.060	5725 to 5850	Pass



			10	120	5825.060	5725 to 5850	Pass
			30	120	5824.960	5725 to 5850	Pass
			40	120	5825.040	5725 to 5850	Pass
			50	120	5825.040	5725 to 5850	Pass

6. Band Edge

6.1 Test Result

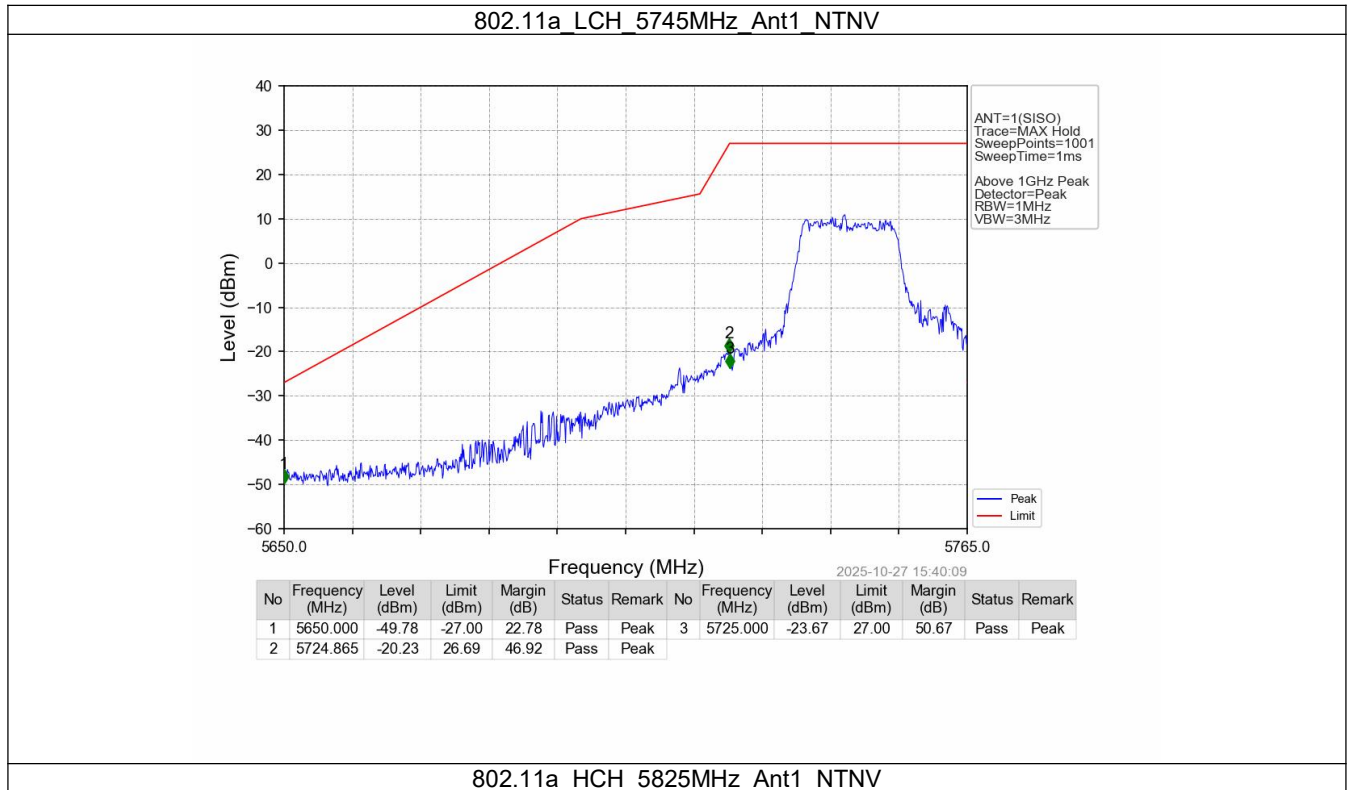
6.1.1 BandEdge

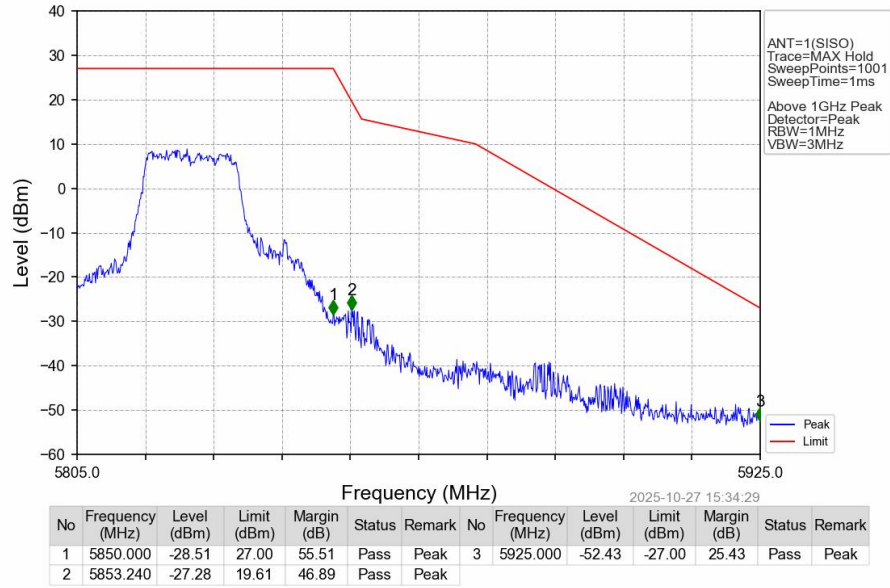
Mode	TX Type	Frequency (MHz)	ANT	Level of Unwanted Emissions (dBm)		Verdict
				Result	Limit	
802.11a	SISO	5745	1	Refer To Test Graph		Pass
		5825	1	Refer To Test Graph		Pass
802.11n (HT20)	SISO	5745	1	Refer To Test Graph		Pass
		5825	1	Refer To Test Graph		Pass
802.11ac (VHT20)	SISO	5745	1	Refer To Test Graph		Pass
		5825	1	Refer To Test Graph		Pass



6.2 Test Graph

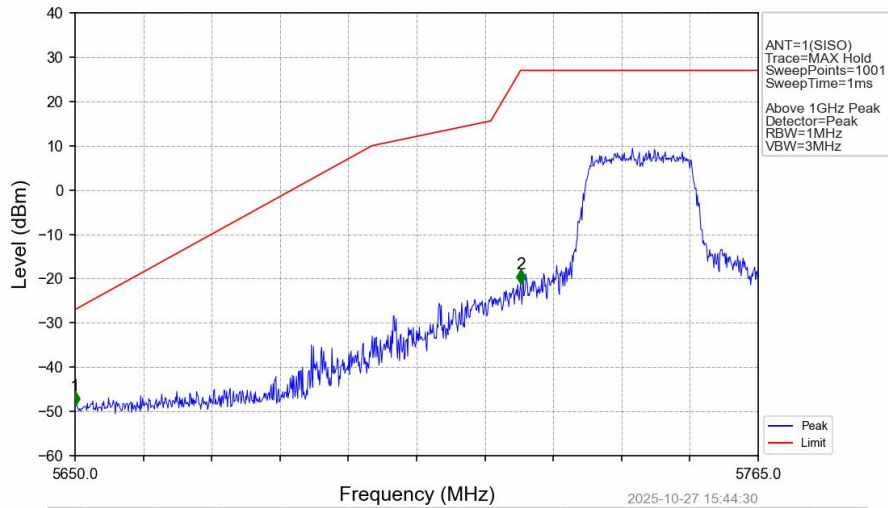
6.2.1 BandEdge



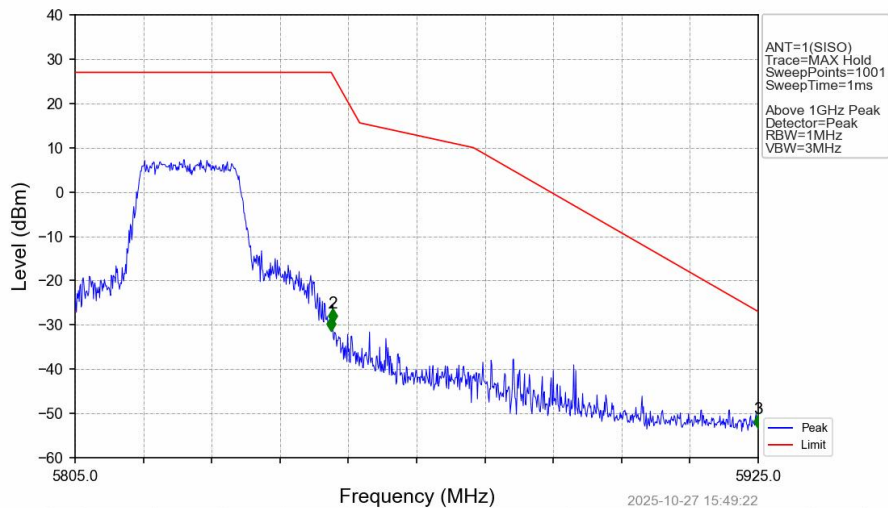




802.11n(HT20)_LCH_5745MHz_Ant1_NTNV

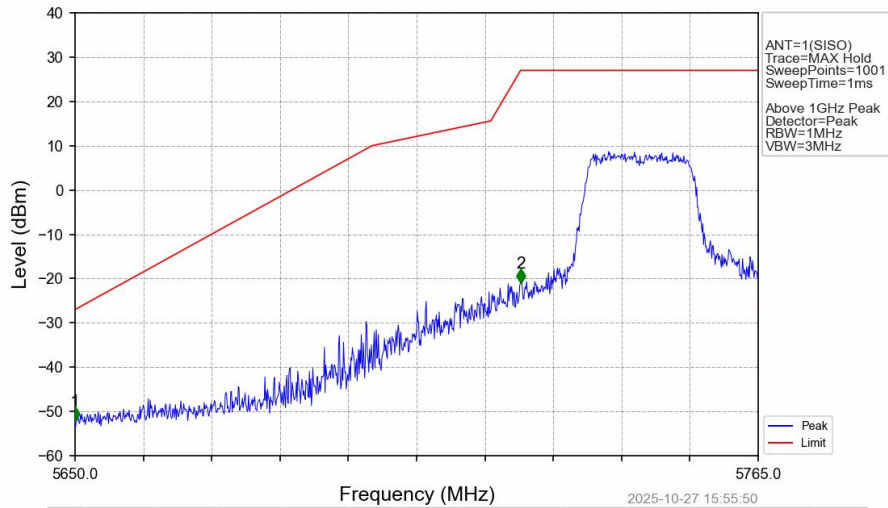


802.11n(HT20)_HCH_5825MHz_Ant1_NTNV



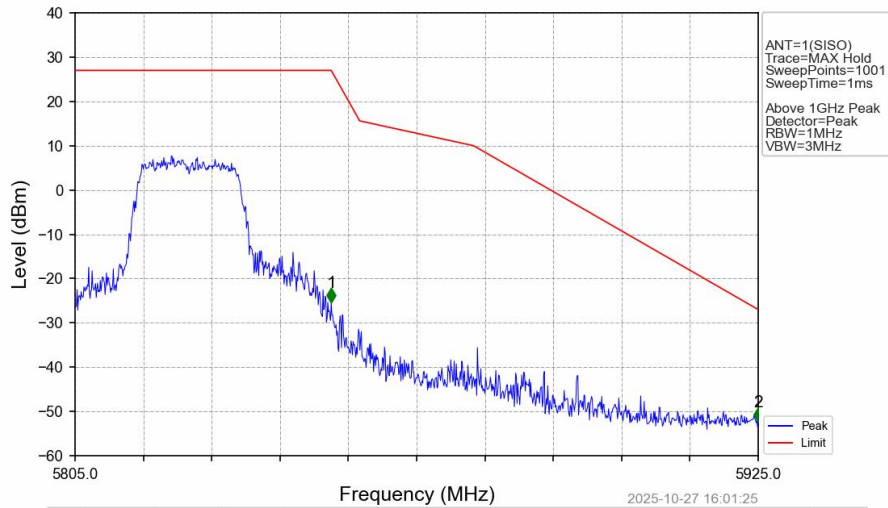


802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV



No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	5650.000	-52.13	-27.00	25.13	Pass	Peak	2	5725.000	-20.99	27.00	47.99	Pass	Peak

802.11ac(VHT20)_HCH_5825MHz_Ant1_NTNV



No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	5850.000	-25.27	27.00	52.27	Pass	Peak	2	5925.000	-52.37	-27.00	25.37	Pass	Peak