

ANNEX E TEST DATA

For

Project No.:	8236EU121103W
Client:	Dragonglass Technology (SHENZHEN) Co., Ltd.
Product Description:	ROUTER
Model No.:	DGR7
FCC ID:	2A7HY-DGR7
Technology:	WiFi 5G
Test Engineer:	<i>Mikoy zhu</i>
Test Date:	2024-12-27

Test Summary

Item	Result
Duty Cycle	Pass
Bandwidth	Pass
Maximum Conducted Output Power	Pass
Maximum Power Spectral Density	Pass
Unwanted Emissions In Non-restricted Frequency Bands	Pass
Frequency Stability	Pass

1. Duty Cycle

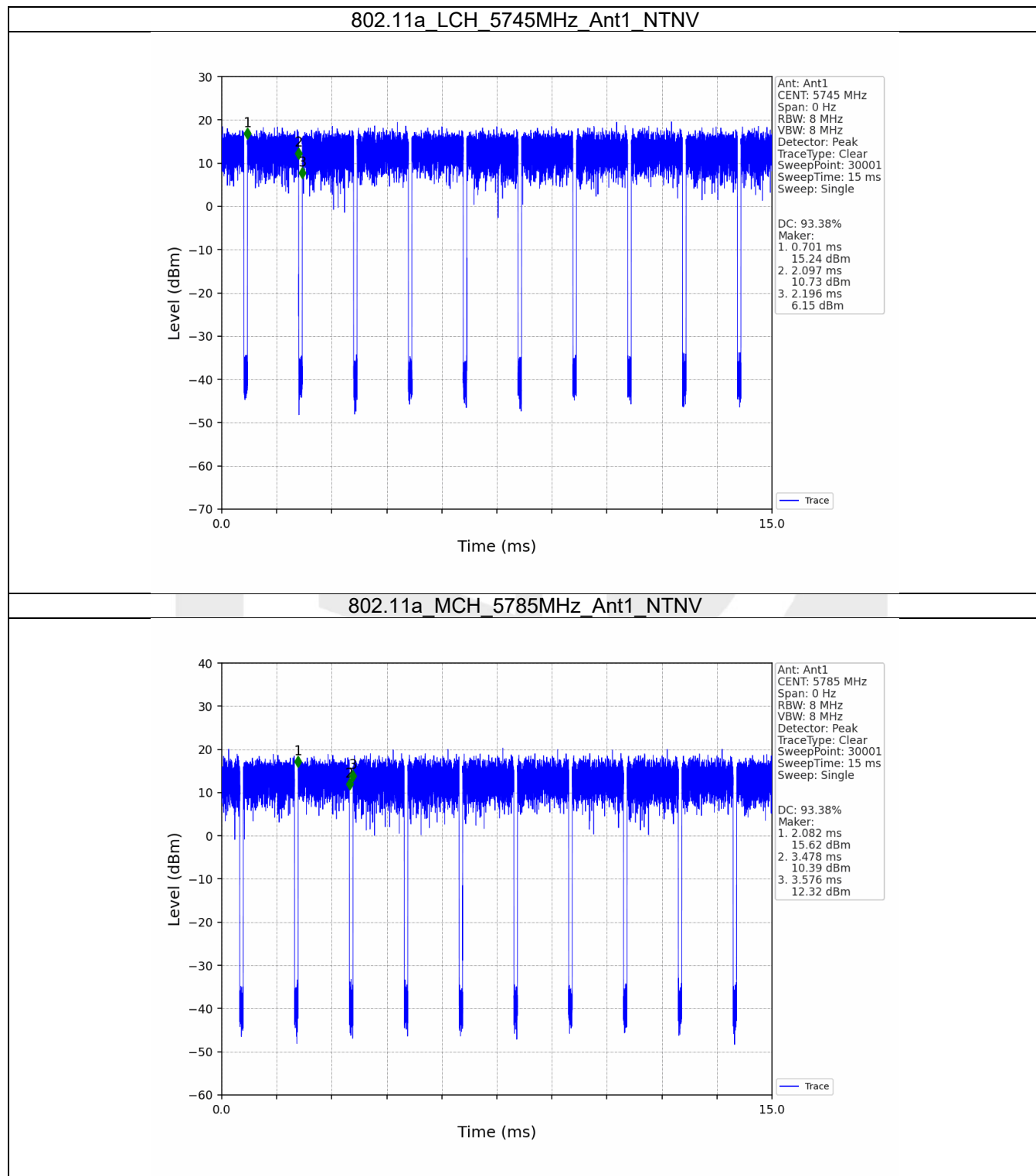
1.1 Test Result

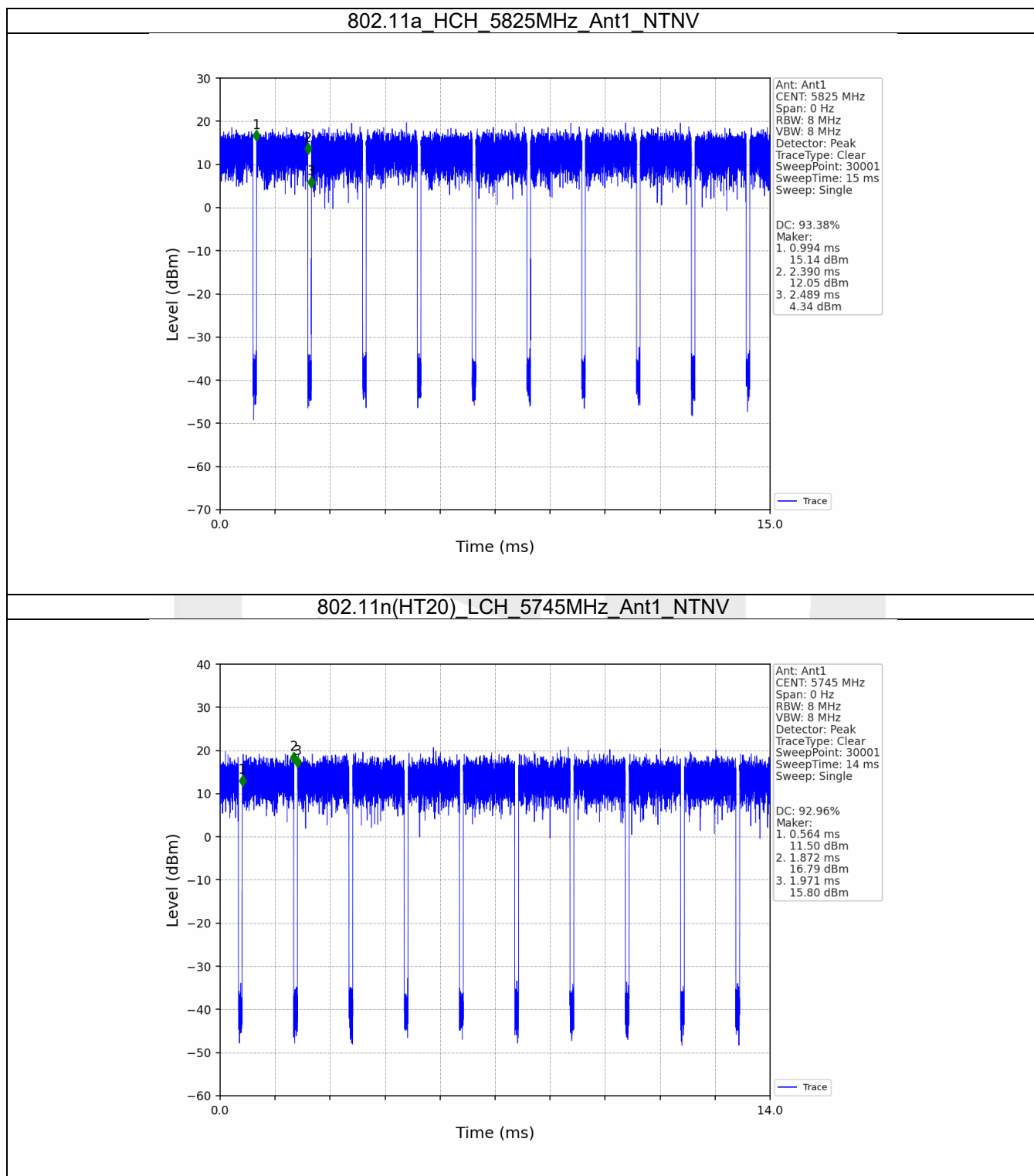
1.1.1 Ant1

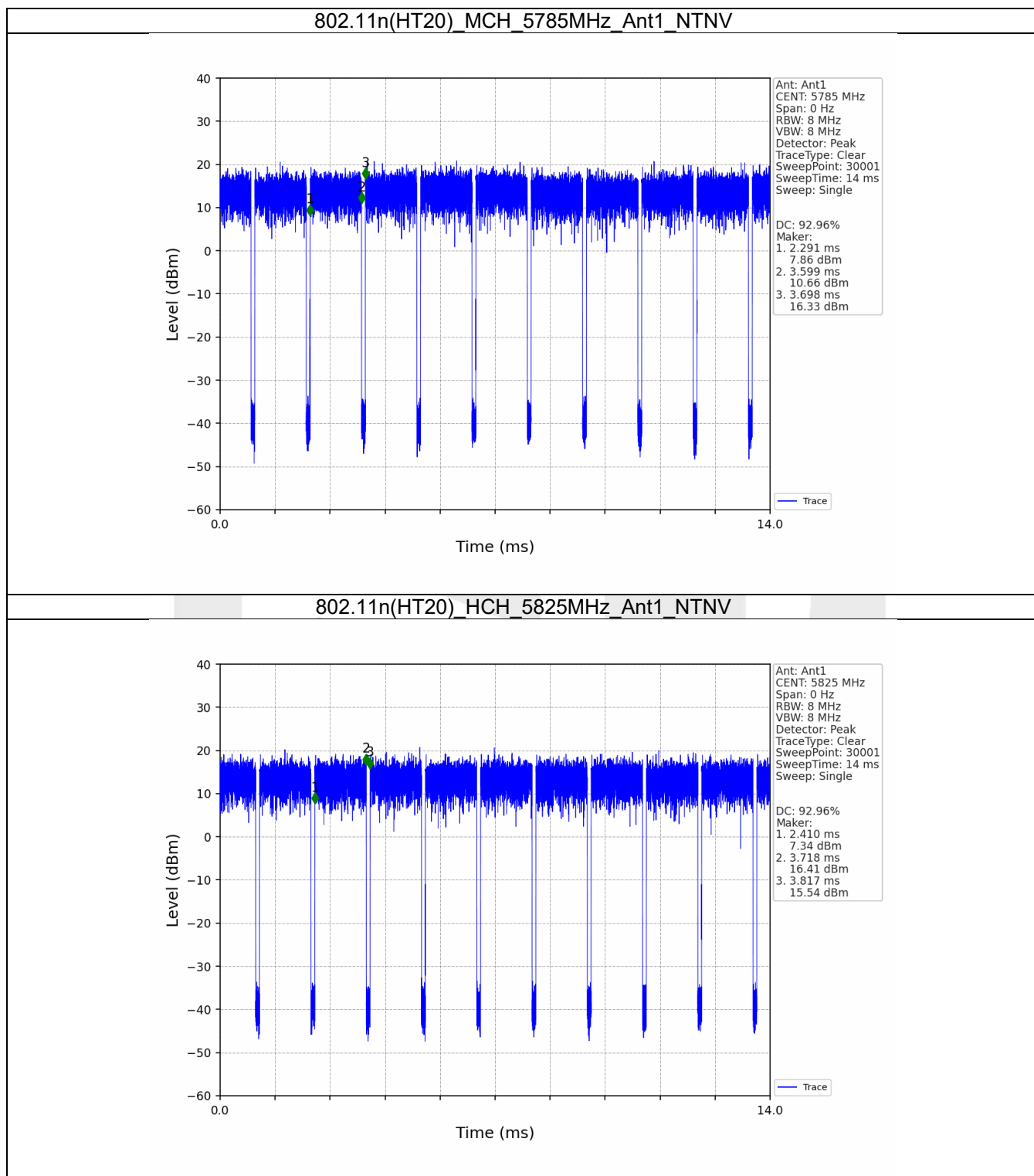
Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11a	SISO	5745	1.396	1.495	93.38	0.30	0.03
		5785	1.396	1.495	93.38	0.30	0.03
		5825	1.396	1.495	93.38	0.30	0.03
802.11n (HT20)	SISO	5745	1.308	1.407	92.96	0.32	0.03
		5785	1.308	1.407	92.96	0.32	0.03
		5825	1.308	1.407	92.96	0.32	0.03

1.2 Test Graph

1.2.1 Ant1







2. Bandwidth

2.1 Test Result

2.1.1 OBW

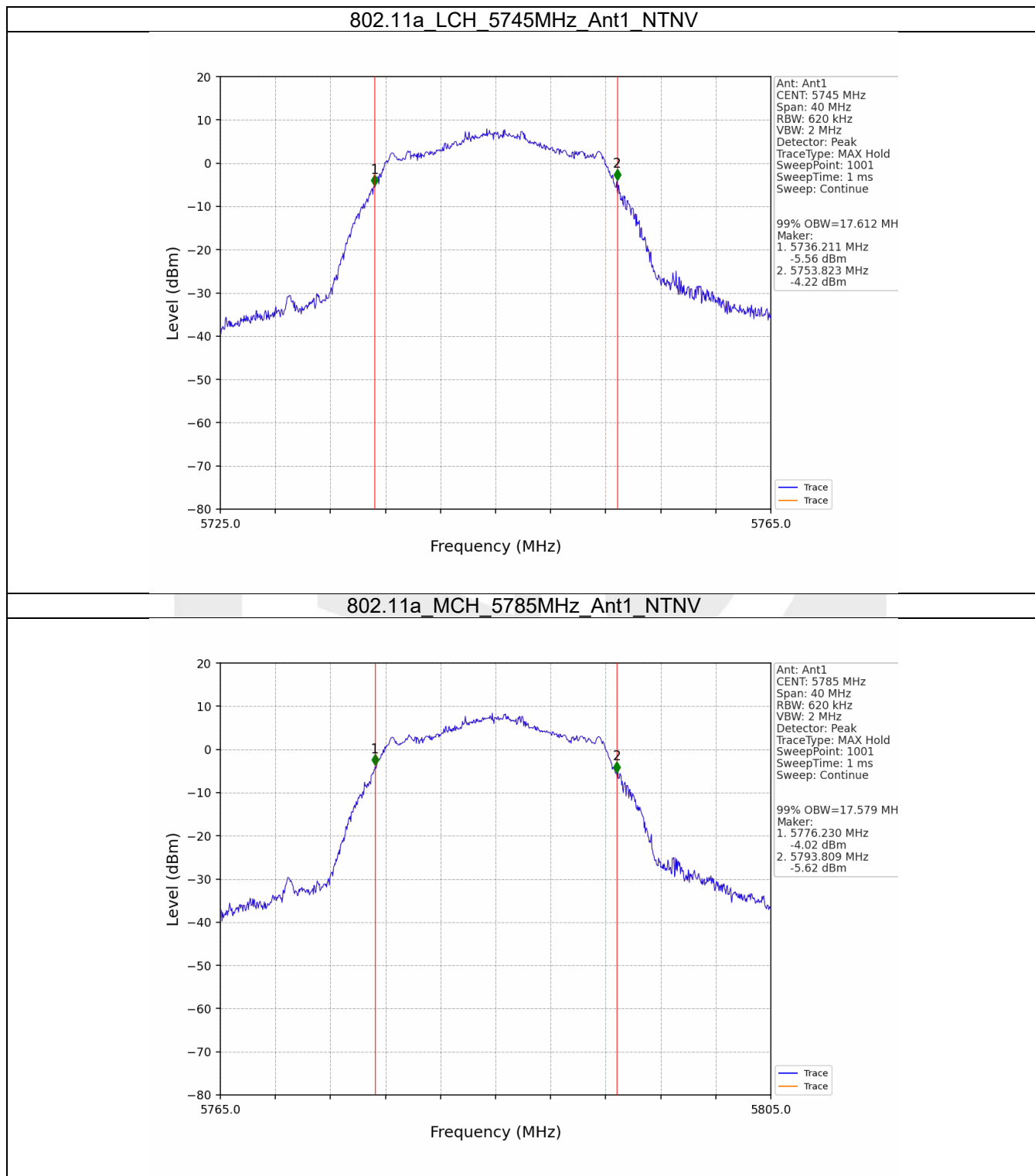
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5745	1	17.612	/	Pass
		5785	1	17.579	/	Pass
		5825	1	17.550	/	Pass
802.11n (HT20)	SISO	5745	1	18.555	/	Pass
		5785	1	18.509	/	Pass
		5825	1	18.560	/	Pass

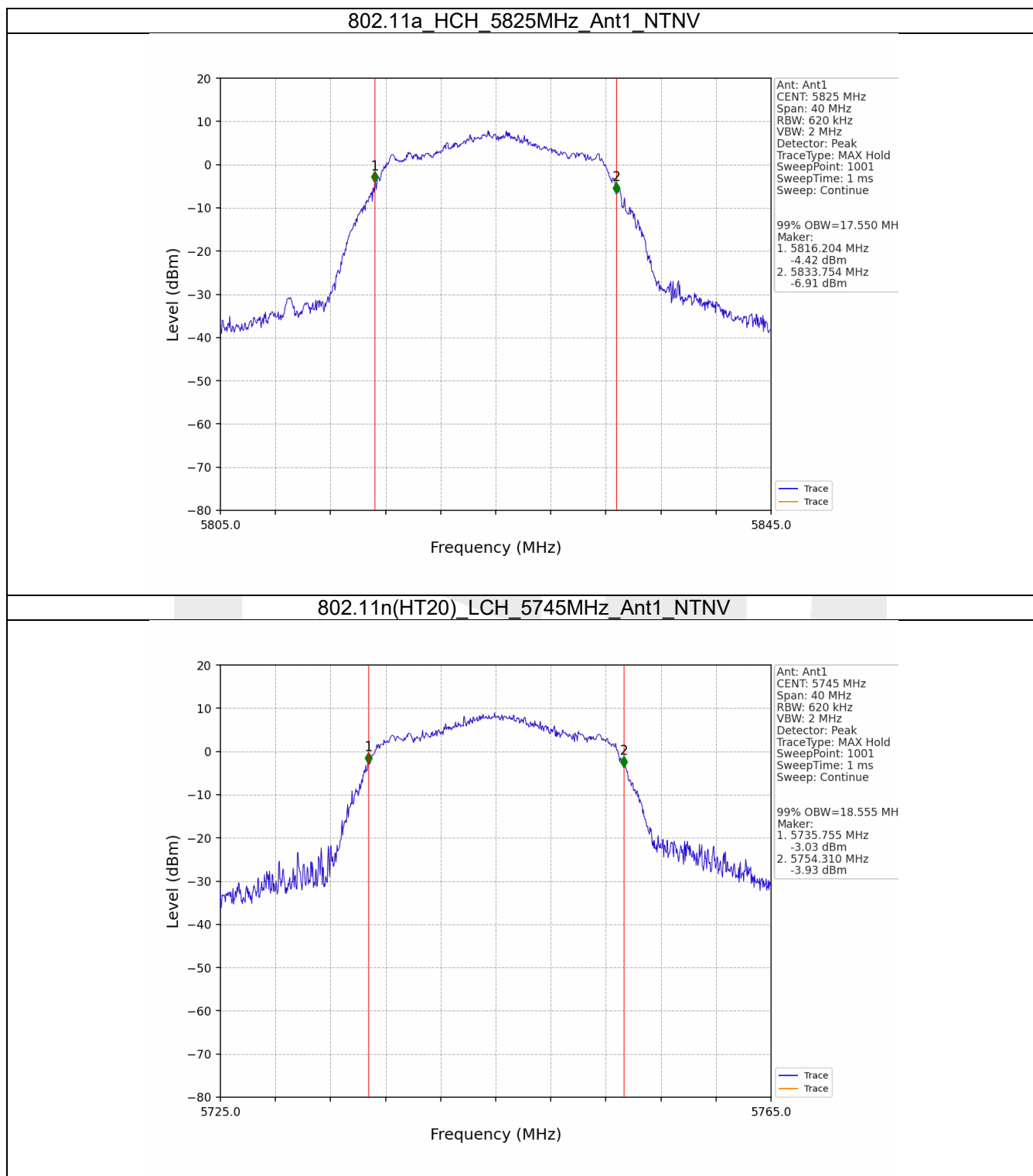
2.1.2 6dB BW

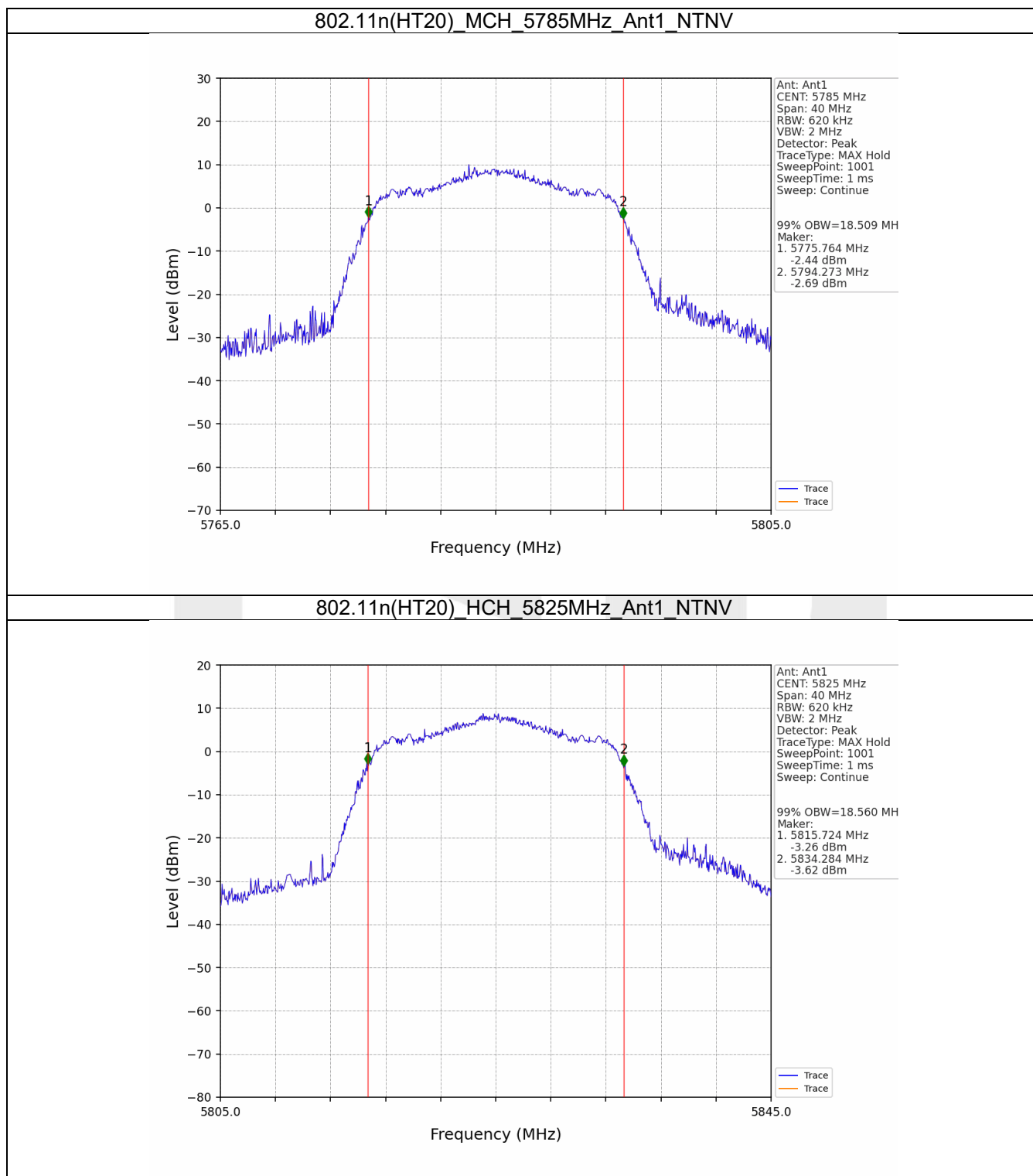
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5745	1	15.172	≥ 0.5	Pass
		5785	1	15.226	≥ 0.5	Pass
		5825	1	15.220	≥ 0.5	Pass
802.11n (HT20)	SISO	5745	1	15.234	≥ 0.5	Pass
		5785	1	15.223	≥ 0.5	Pass
		5825	1	15.237	≥ 0.5	Pass

2.2 Test Graph

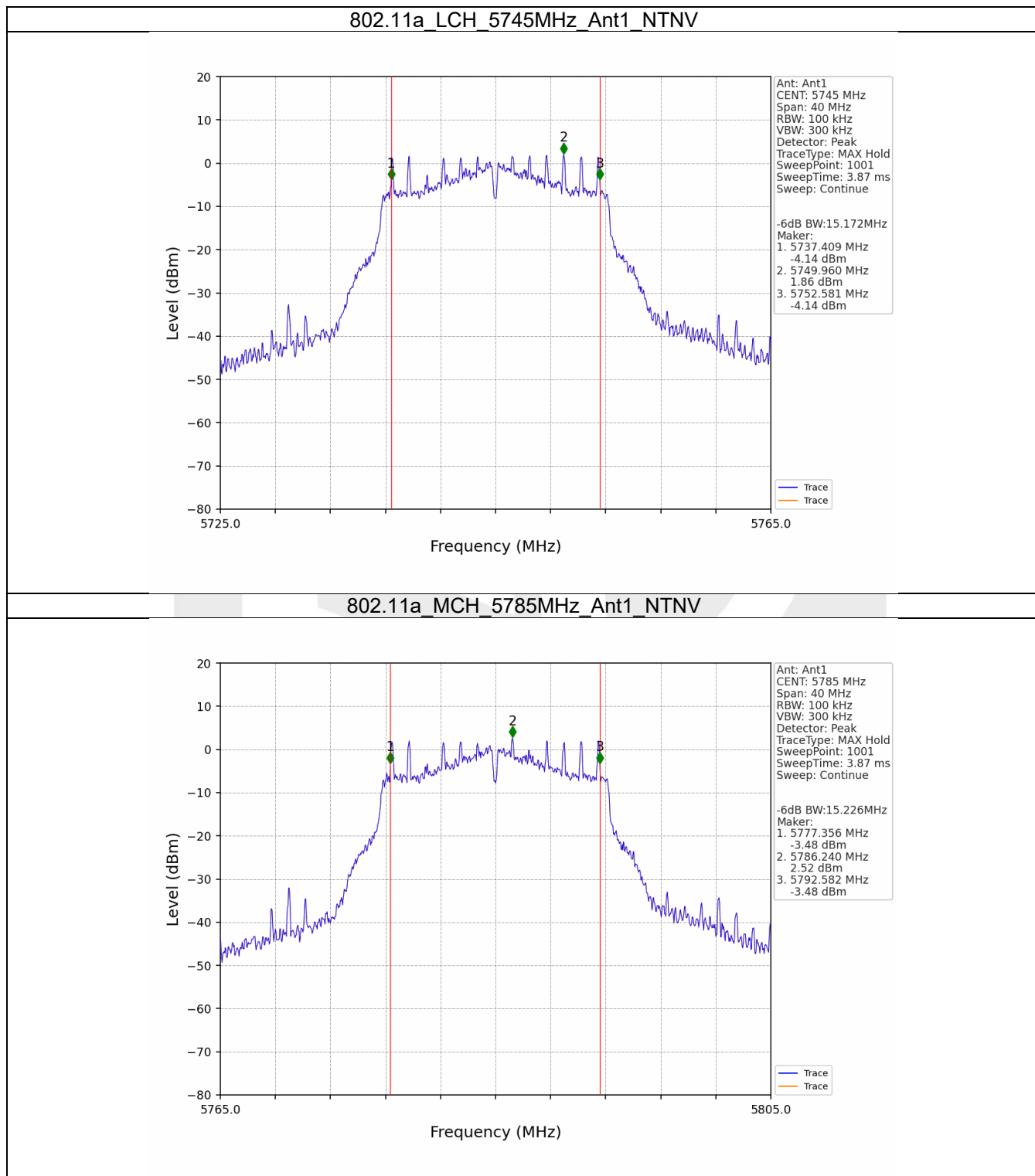
2.2.1 OBW

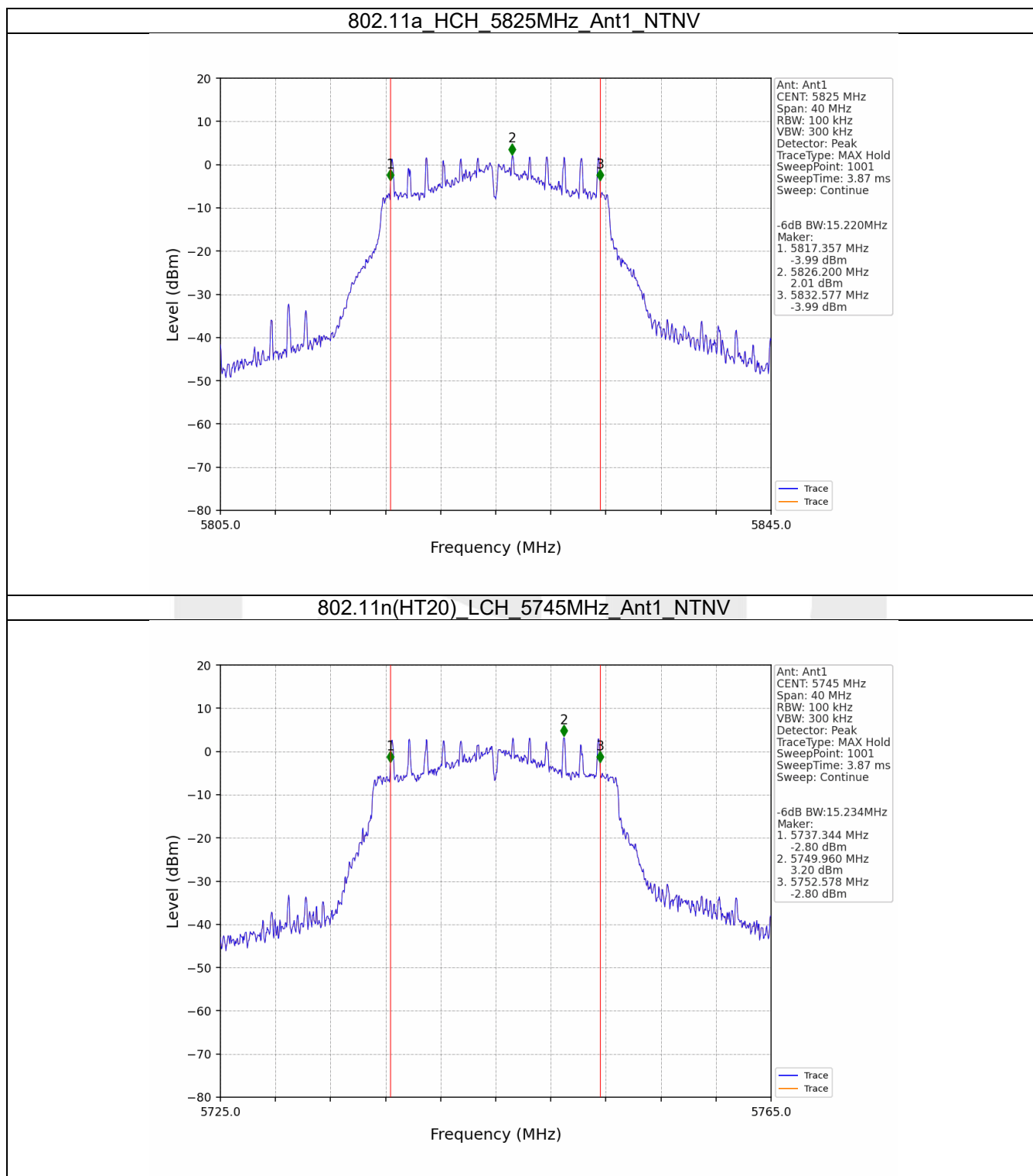


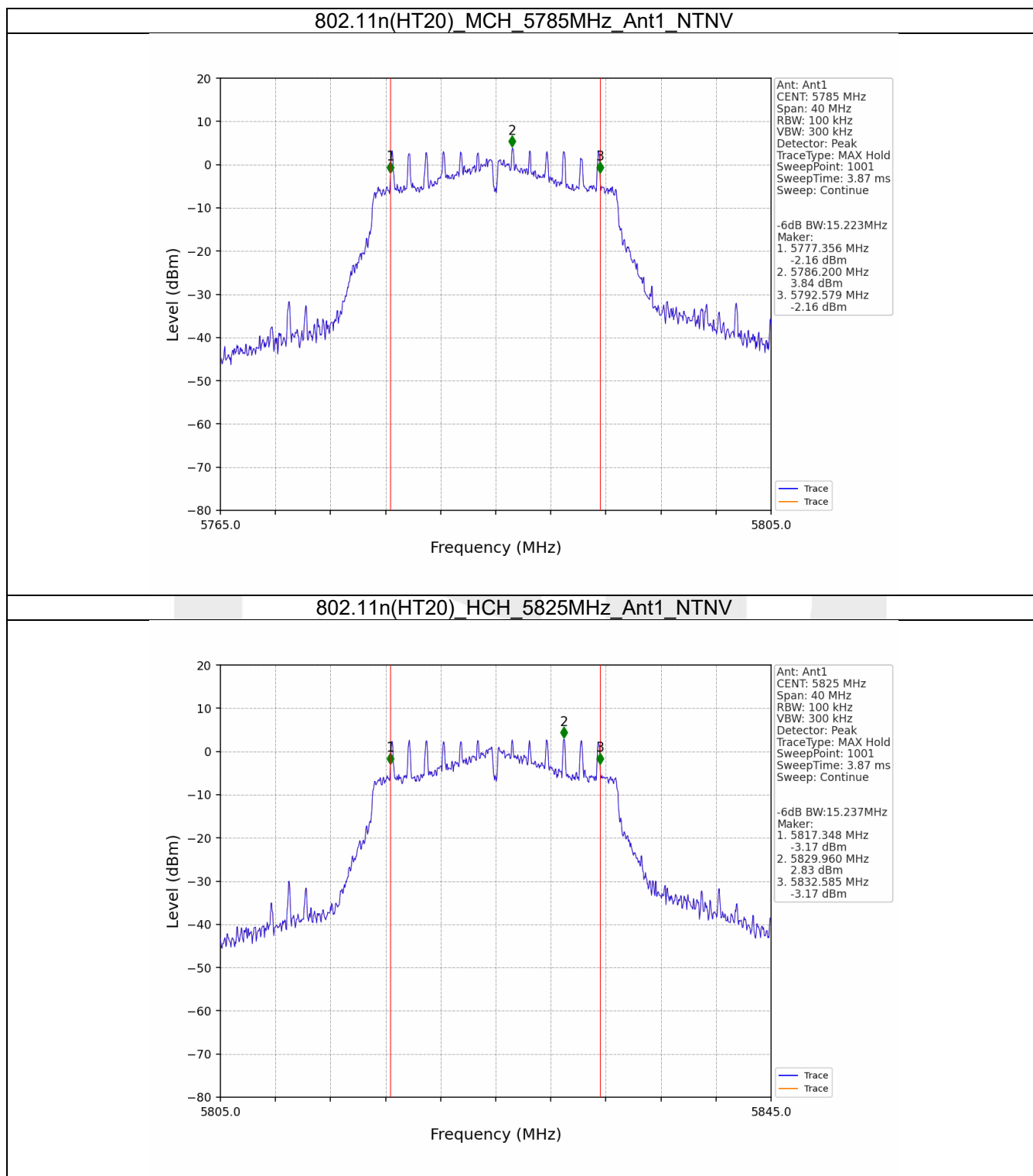




2.2.2 6dB BW







3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

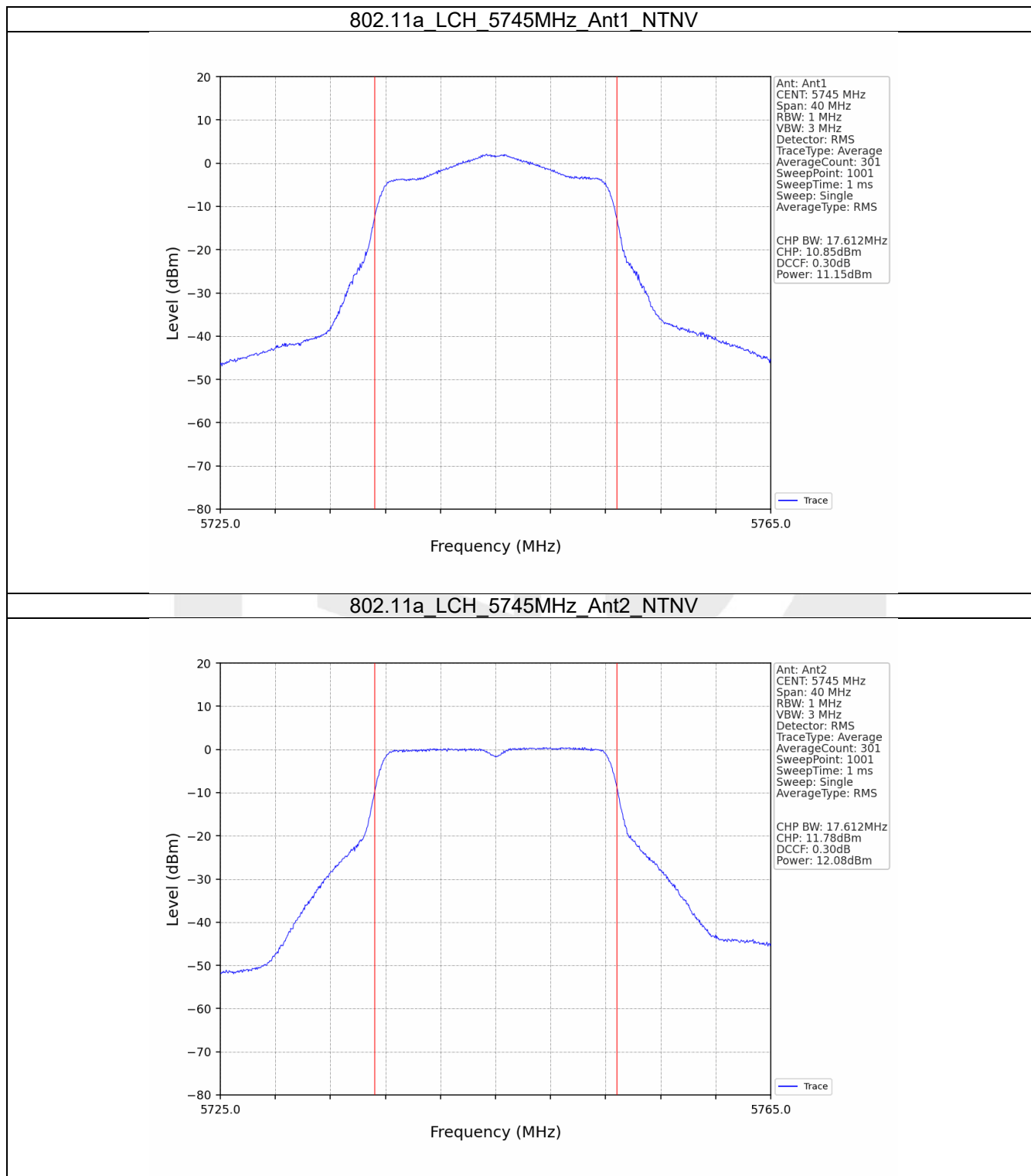
Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)			Verdict
			ANT1	ANT2	Limit	
802.11a	SISO	5745	11.15	12.08	≤ 30	Pass
		5785	11.58	13.05	≤ 30	Pass
		5825	11.15	12.65	≤ 30	Pass
802.11n (HT20)	SISO	5745	12.25	12.08	≤ 30	Pass
		5785	12.44	12.99	≤ 30	Pass
		5825	12.07	12.62	≤ 30	Pass

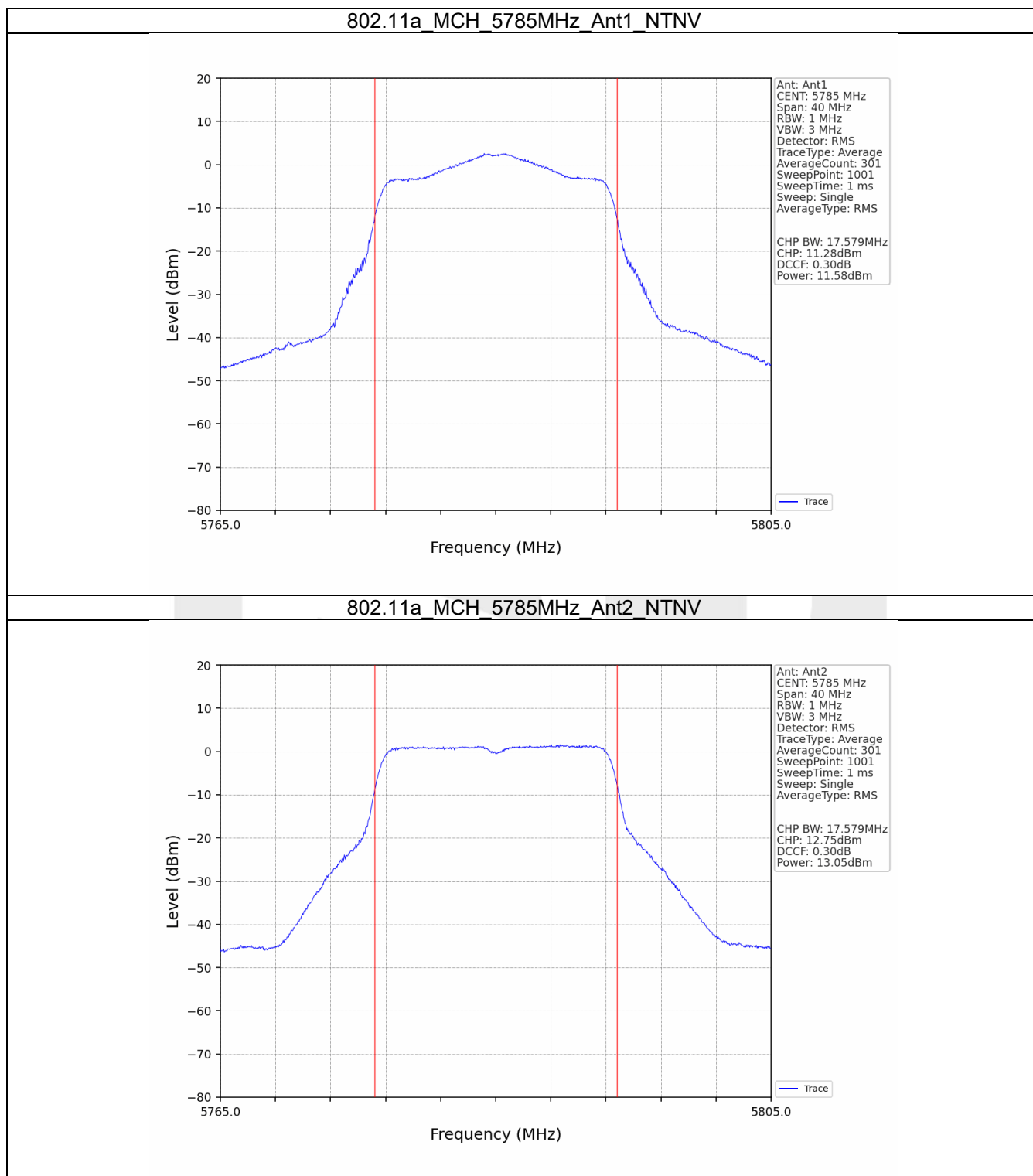
3.1.2 MIMO

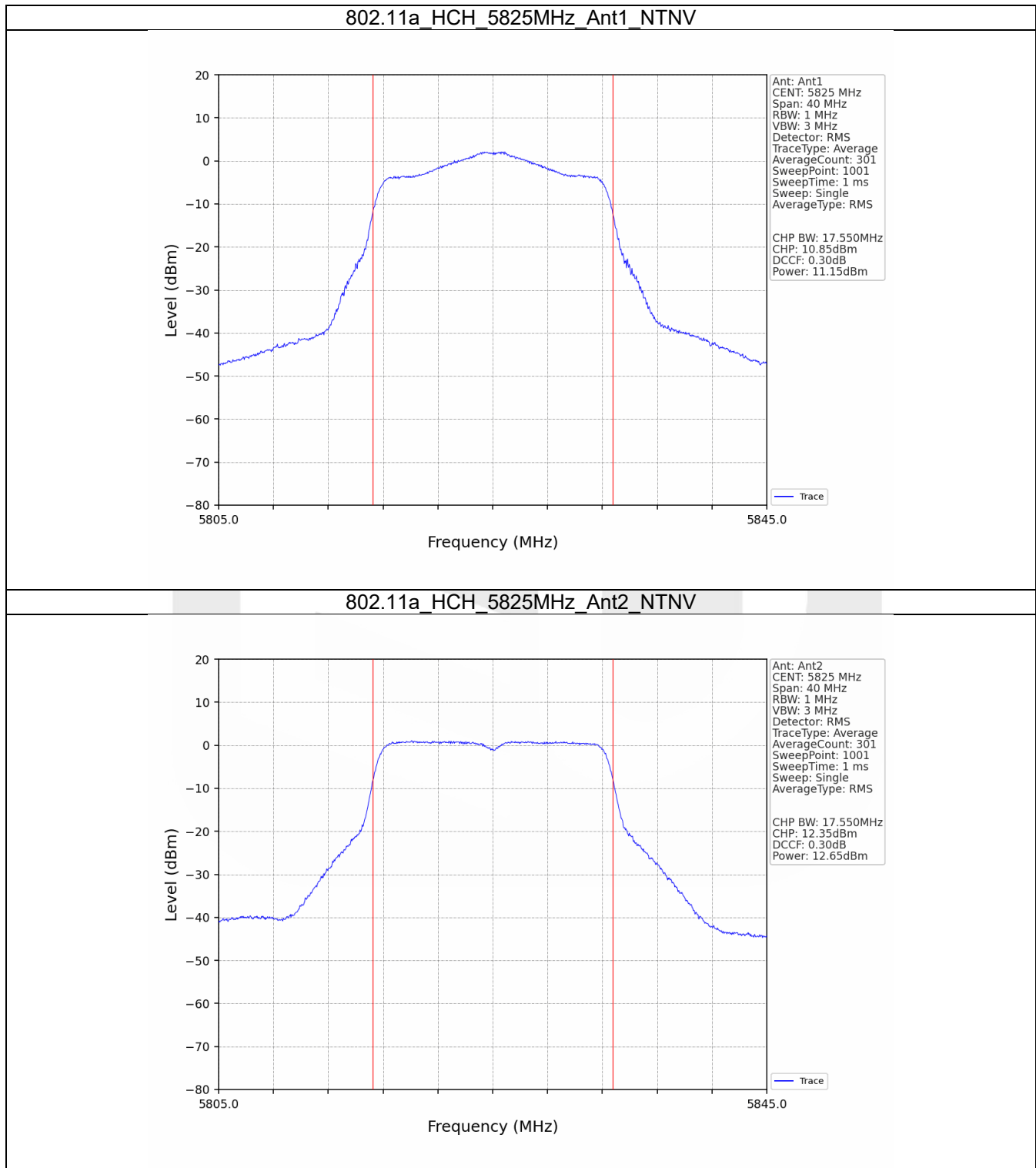
Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)		Verdict
			MIMO	Limit	
802.11n (HT20)	SISO	5745	15.18	≤ 30	Pass
		5785	15.73	≤ 30	Pass
		5825	15.36	≤ 30	Pass

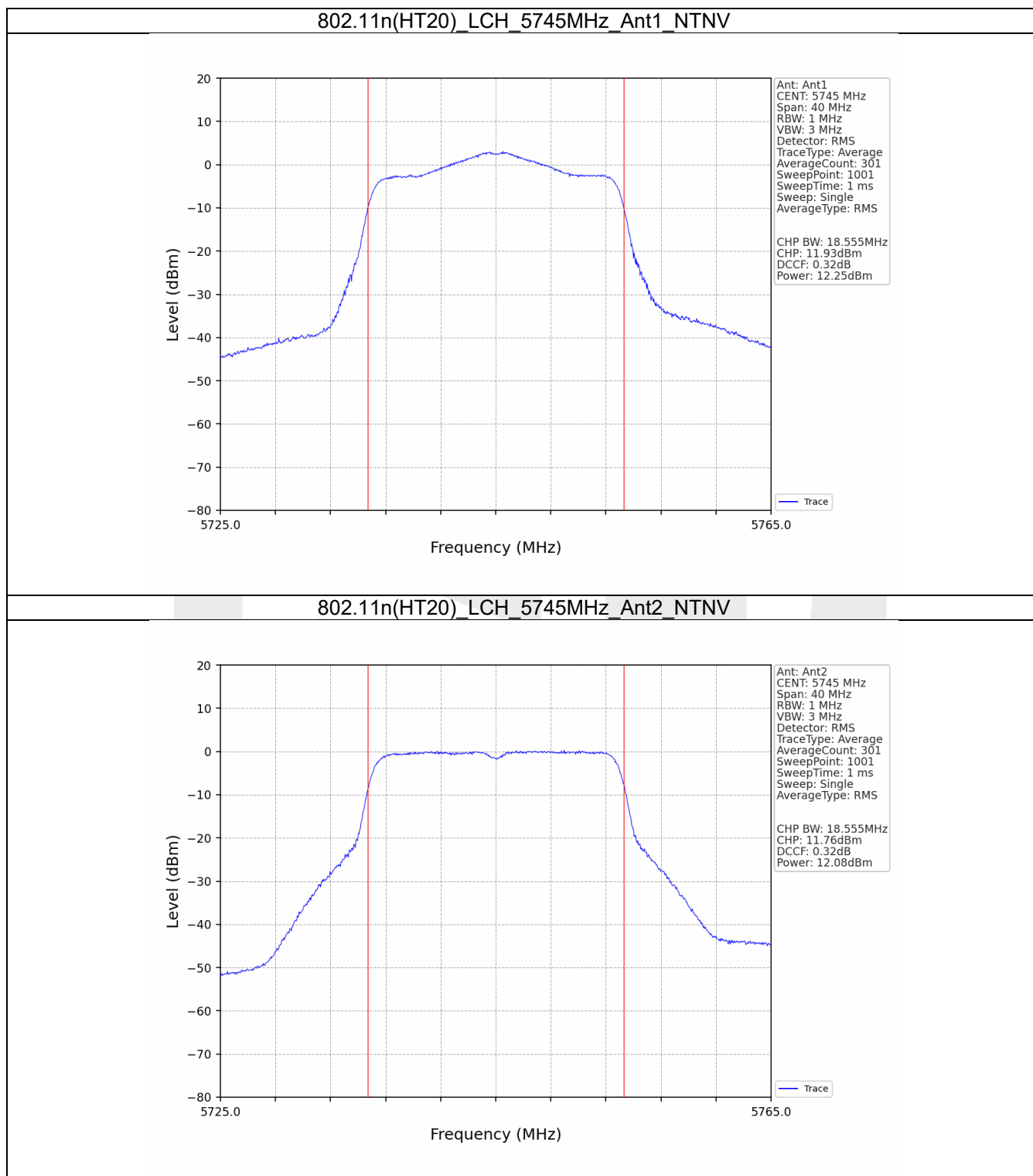
3.2 Test Graph

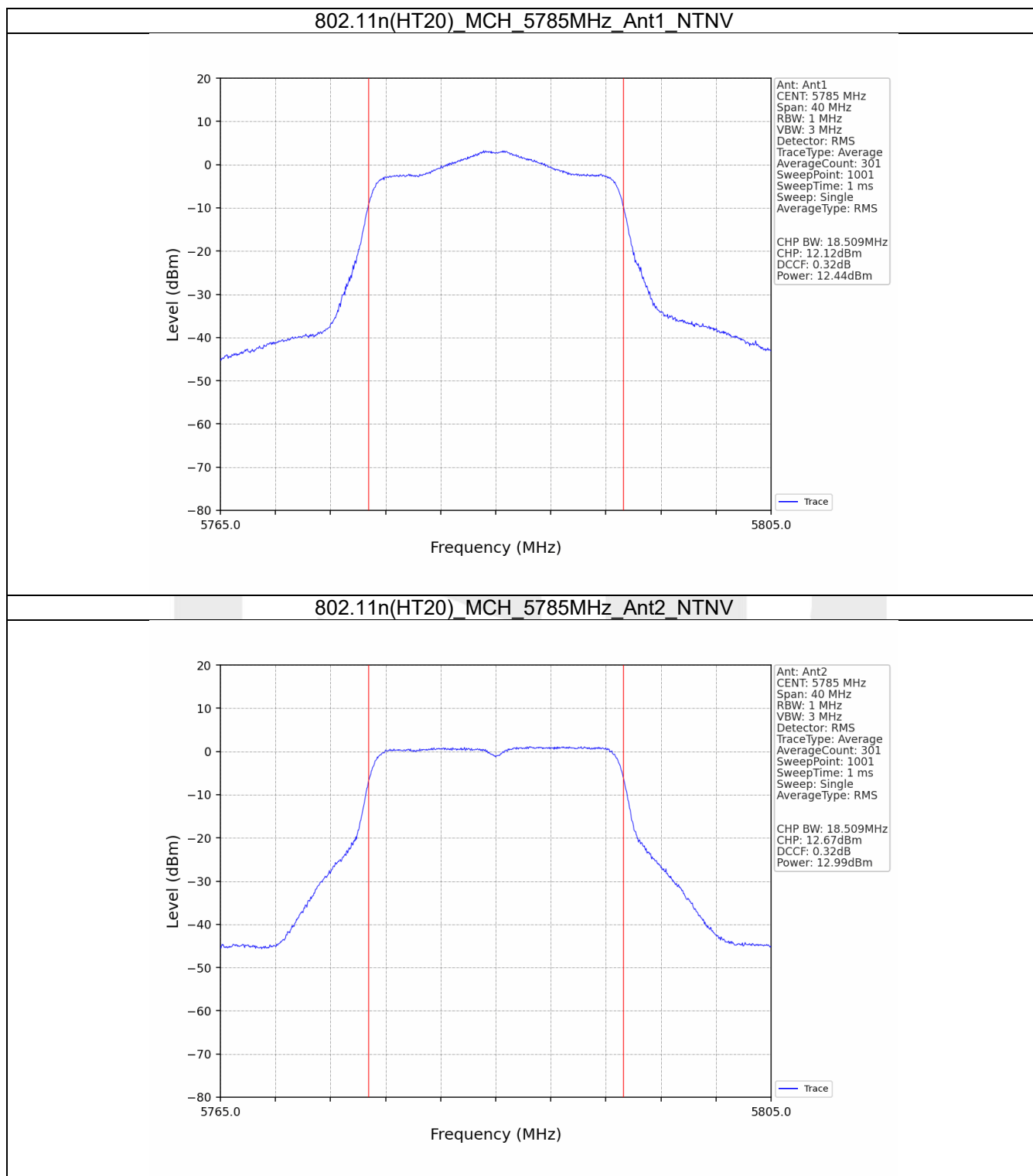
3.2.1 Power

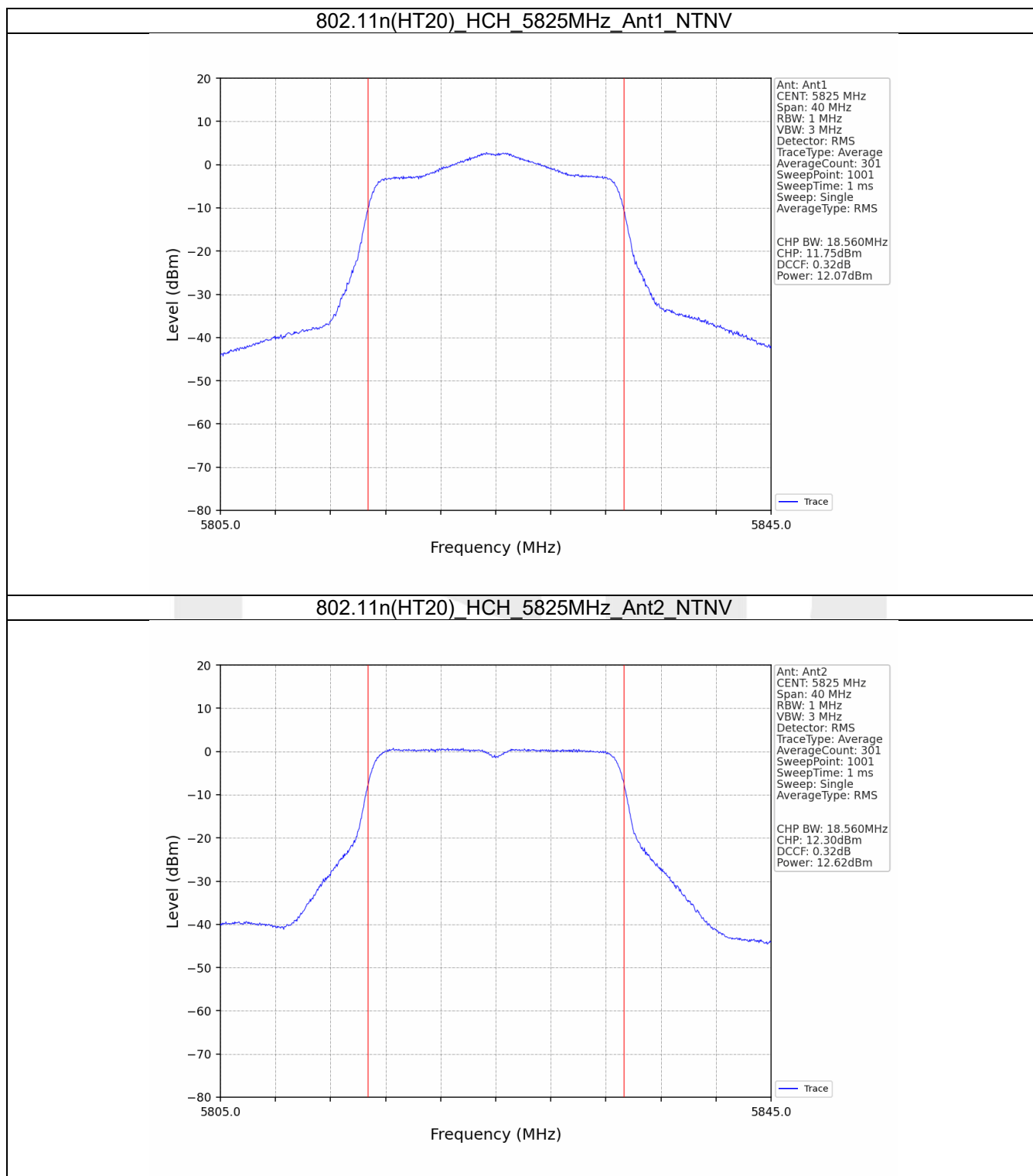












4. Maximum Power Spectral Density

4.1 Test Result

4.1.1 PSD

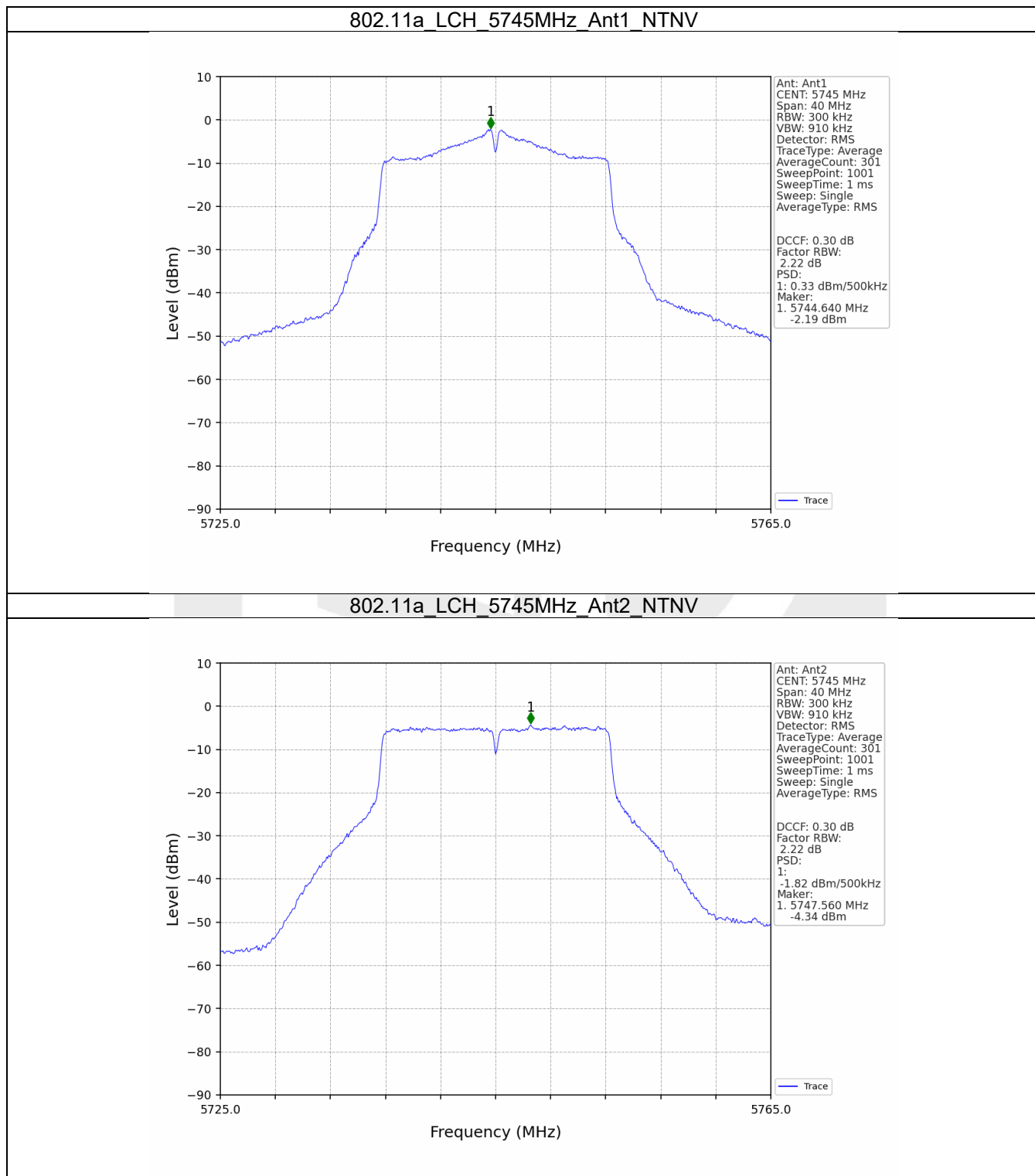
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/500kHz)			Verdict
			ANT1	ANT2	Limit	
802.11a	SISO	5745	0.33	-1.82	<=30	Pass
		5785	0.86	-0.84	<=30	Pass
		5825	0.45	-1.56	<=30	Pass
802.11n (HT20)	SISO	5745	1.23	-1.80	<=30	Pass
		5785	1.57	-1.14	<=30	Pass
		5825	1.25	-1.53	<=30	Pass

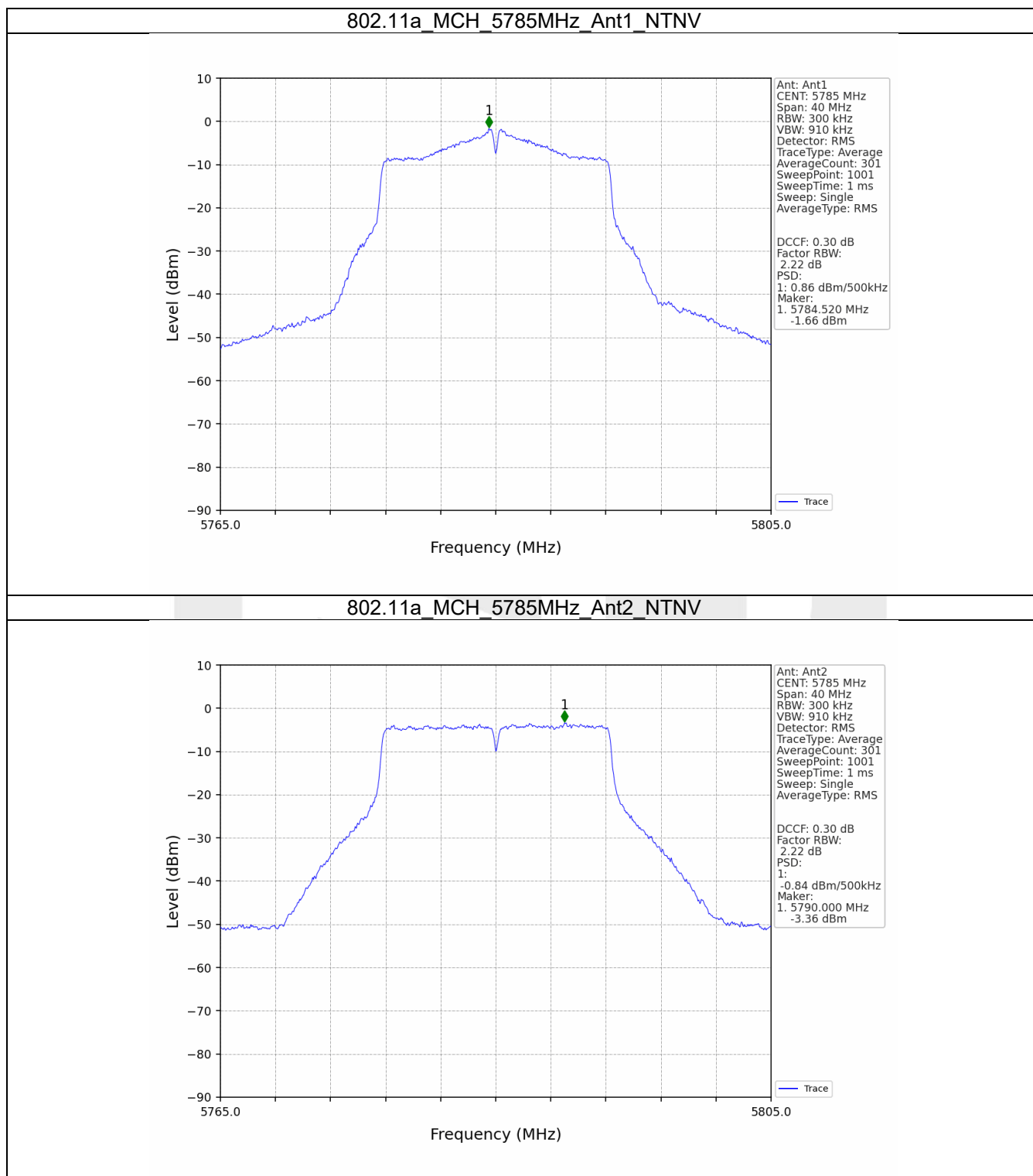
4.1.1 MIMO

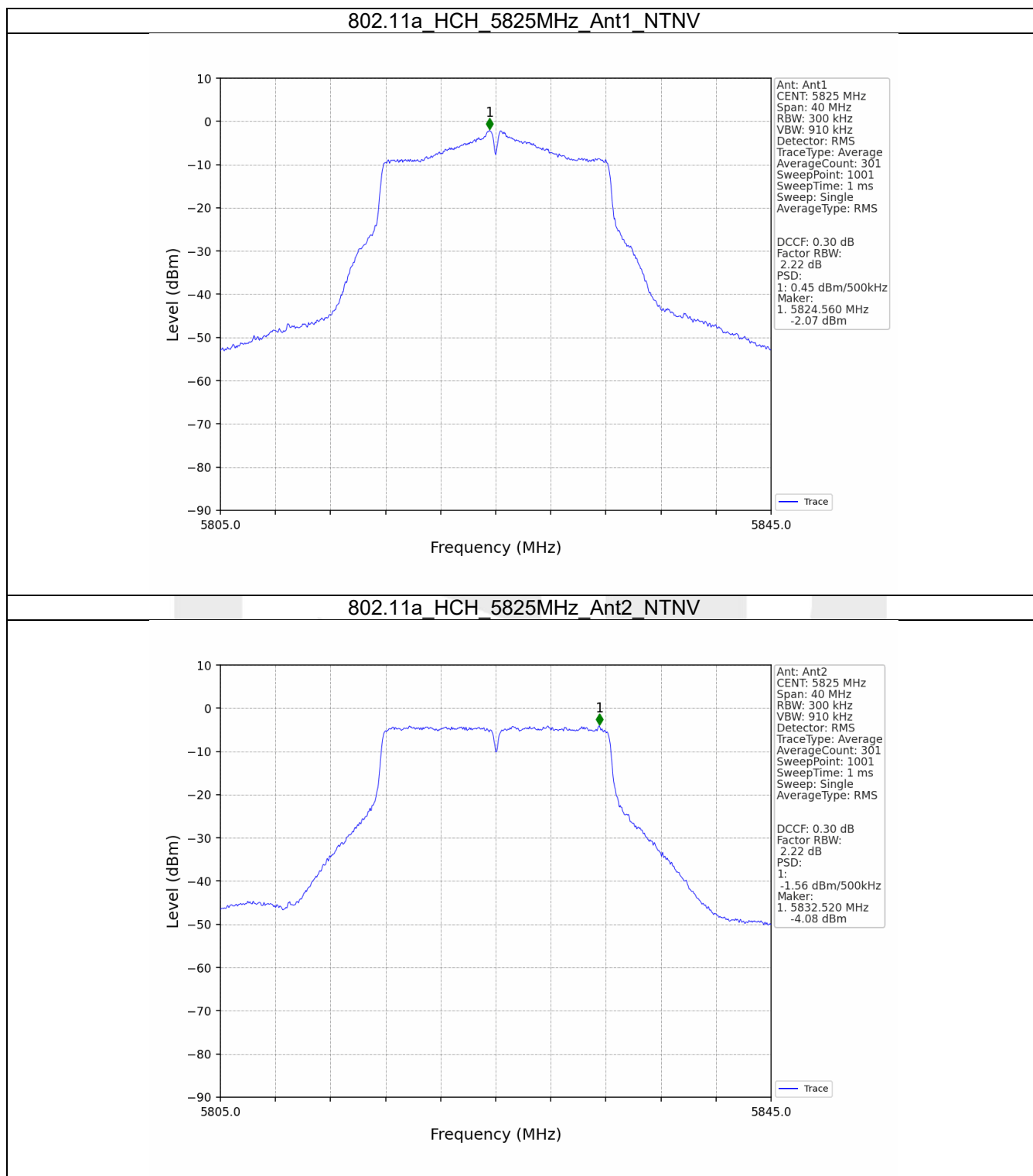
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/500kHz)		Verdict
			MIMO	Limit	
802.11n (HT20)	SISO	5745	2.98	<=30	Pass
		5785	3.43	<=30	Pass
		5825	3.09	<=30	Pass

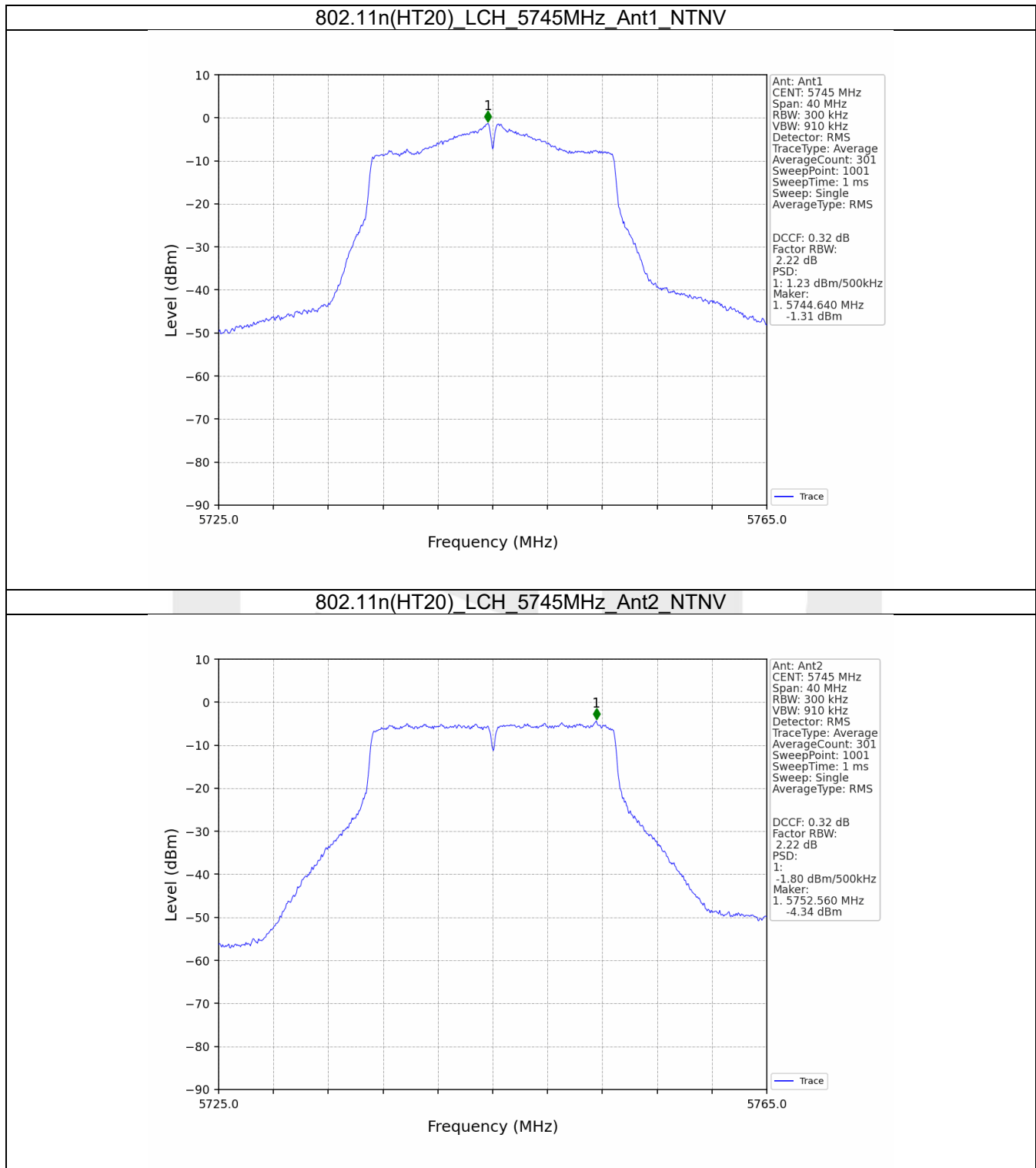
4.2 Test Graph

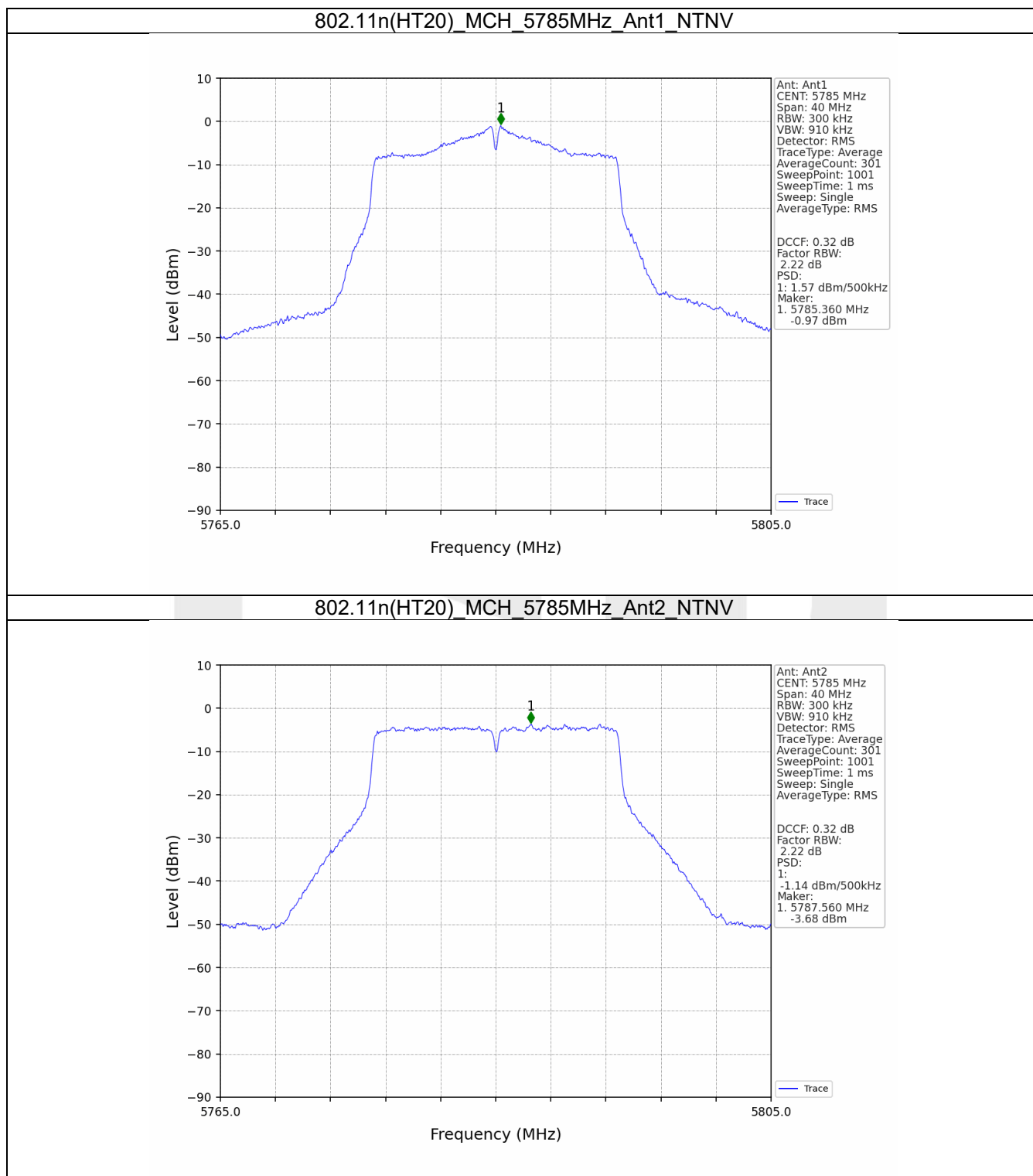
4.2.1 PSD



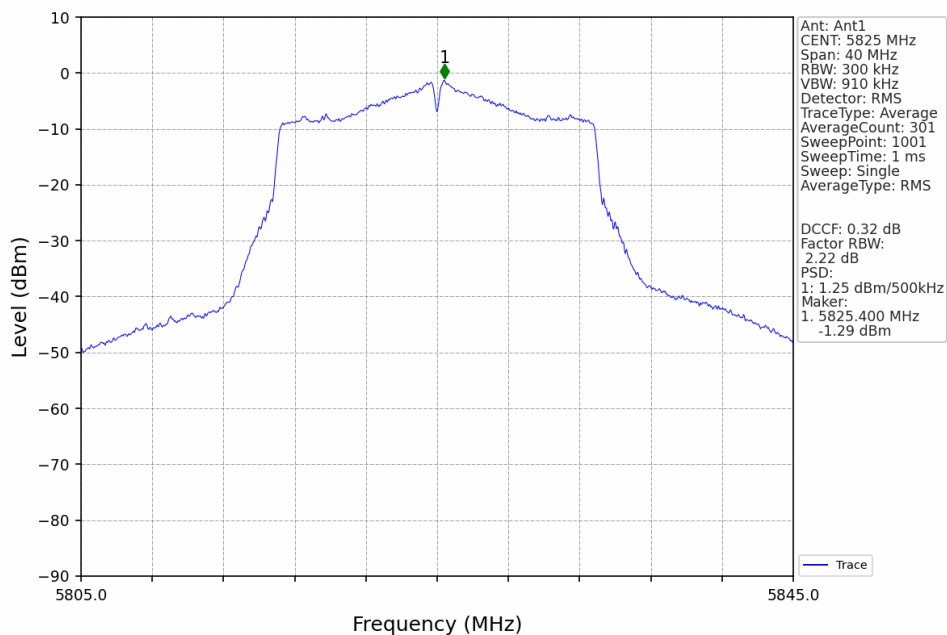




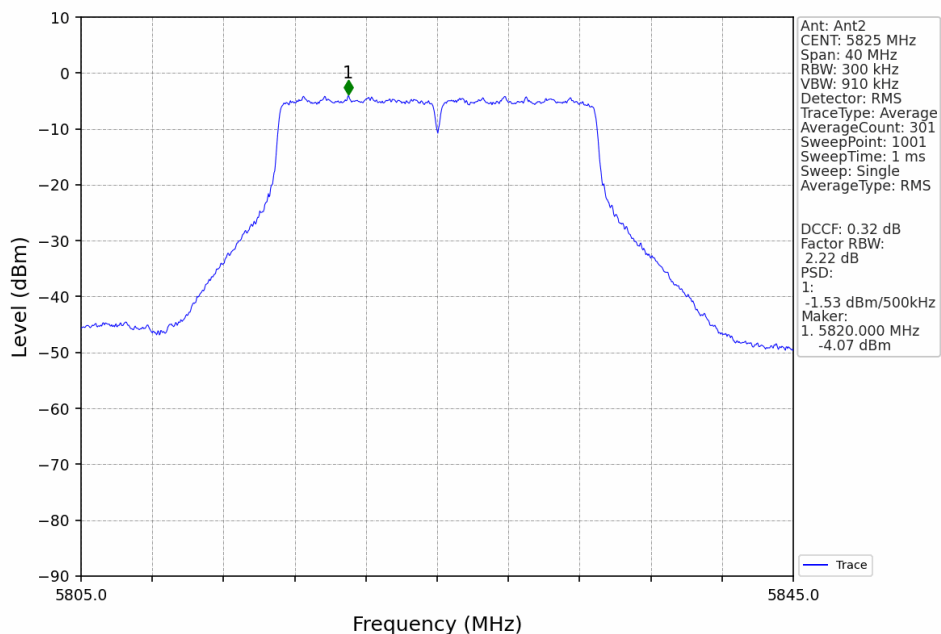




802.11n(HT20)_HCH_5825MHz_Ant1_NTNV



802.11n(HT20)_HCH_5825MHz_Ant2_NTNV



5. Unwanted Emissions In Restricted Frequency Bands

5.1 Test Result

5.1.1 CSE

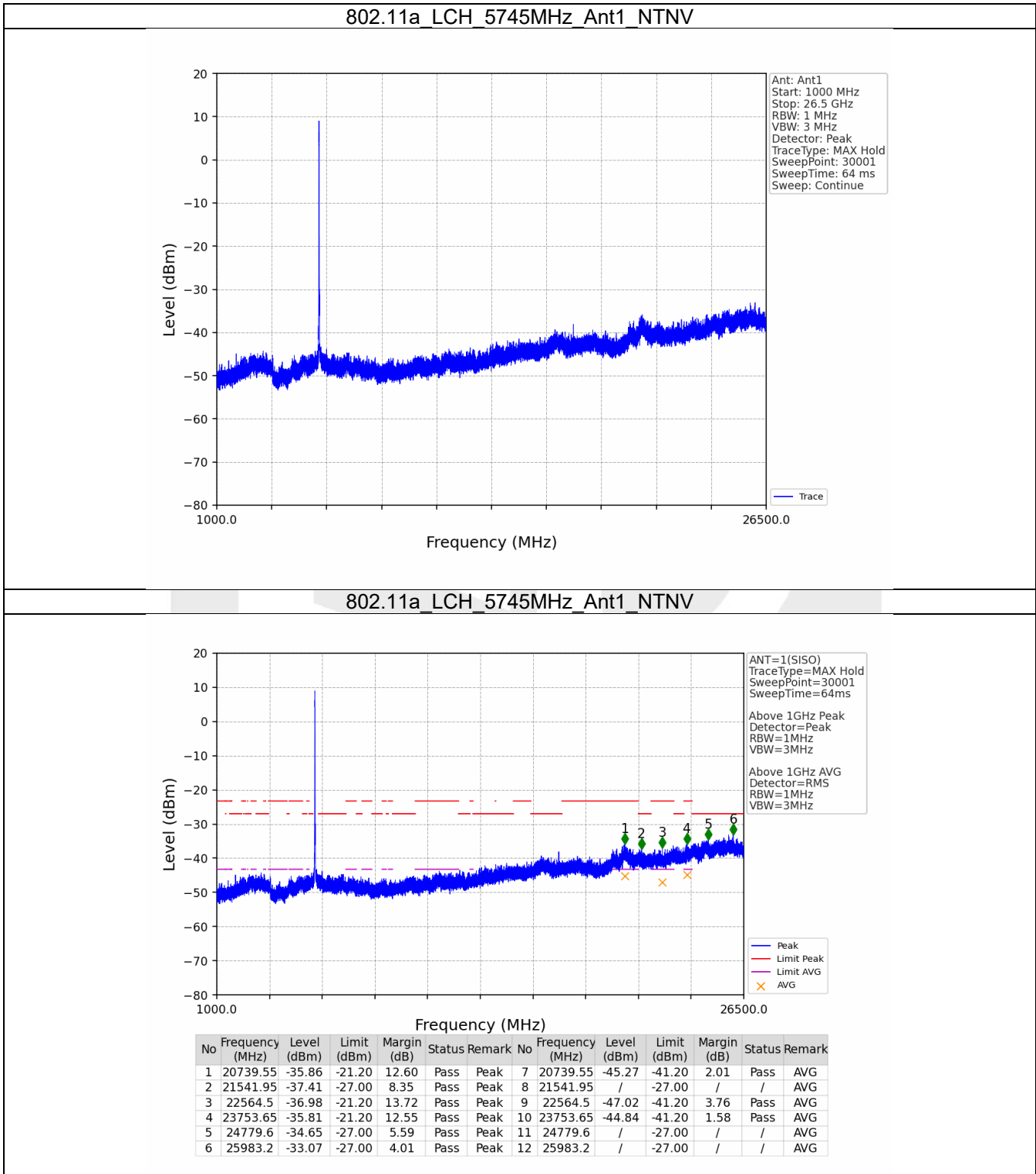
Mode	TX Type	Frequency (MHz)	ANT	Level of Unwanted Emissions (dBm)		Verdict
				Result	Limit	
802.11a	SISO	5745	1	Refer To Test Graph		Pass
			2	Refer To Test Graph		Pass
		5785	1	Refer To Test Graph		Pass
			2	Refer To Test Graph		Pass
		5825	1	Refer To Test Graph		Pass
			2	Refer To Test Graph		Pass
802.11n (HT20)	SISO	5745	1	Refer To Test Graph		Pass
			2	Refer To Test Graph		Pass
		5785	1	Refer To Test Graph		Pass
			2	Refer To Test Graph		Pass
		5825	1	Refer To Test Graph		Pass
			2	Refer To Test Graph		Pass

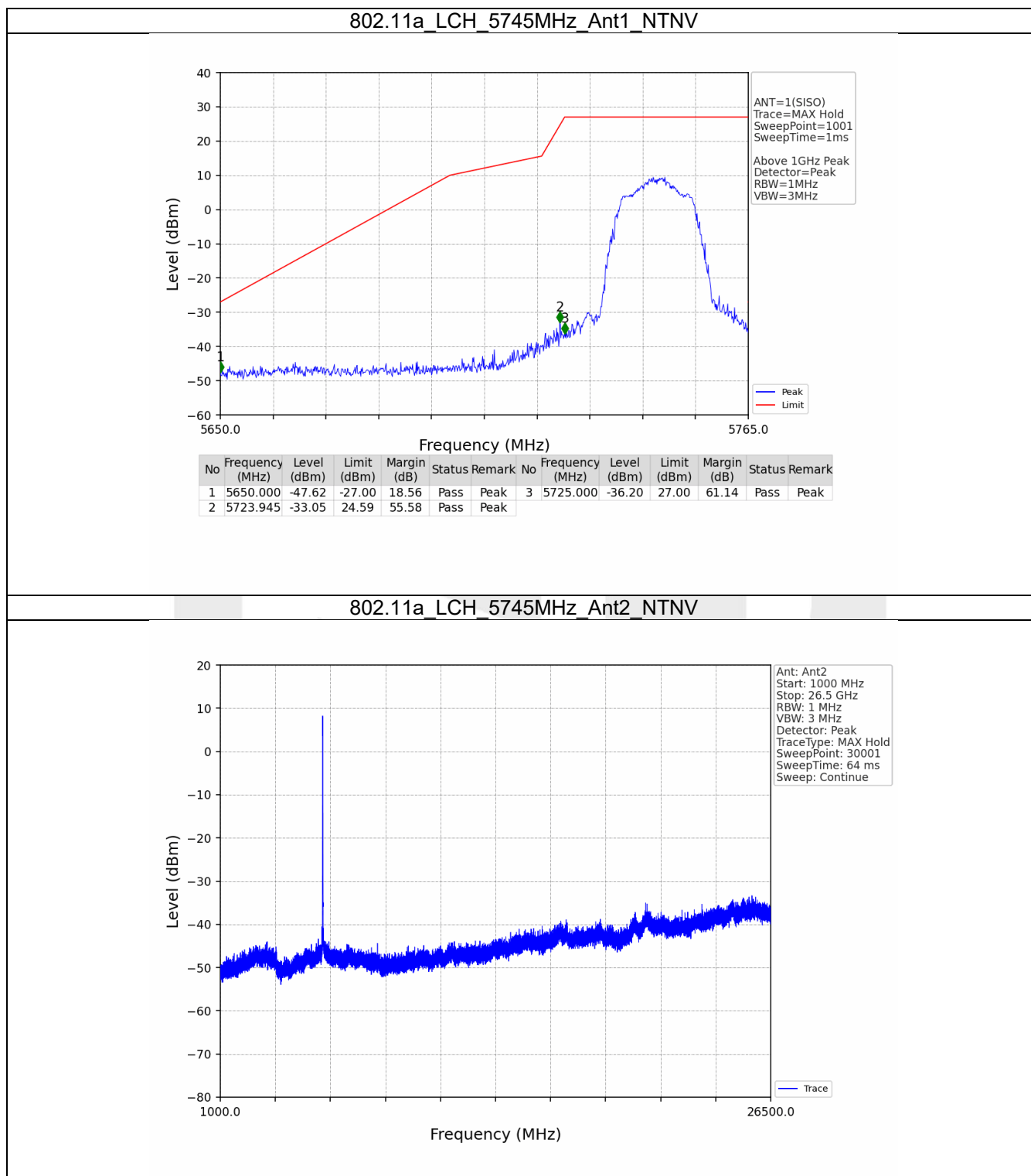
Note:

1. $EIRP[dBm] = E[dBuV/m] - 95.2$, for $d = 3$ m;
2. Level[dBm] results have calculated the antenna gain;
3. Antenna gain= 2.10dBi.
4. The results of MIMO mode passes when the margin of the emission values for both antenna 1 and antenna 2 is greater than 3 dB.

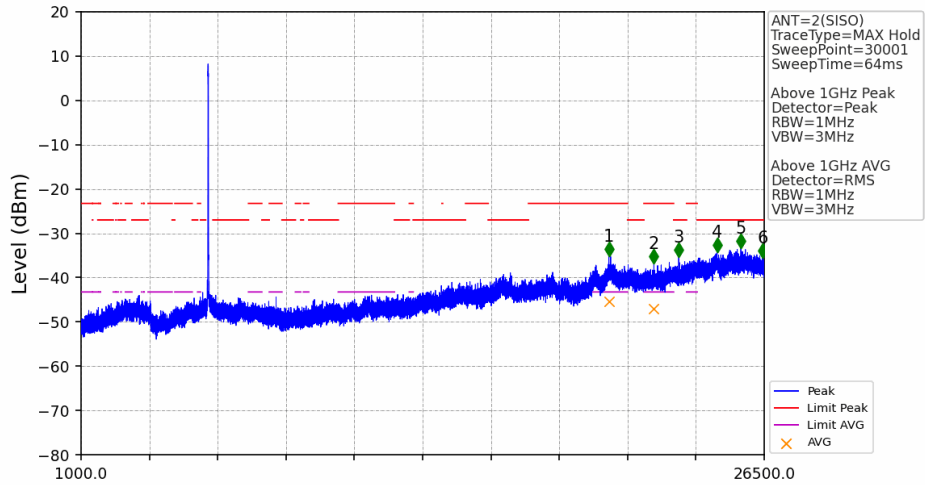
5.2 Test Graph

5.2.1 CSE



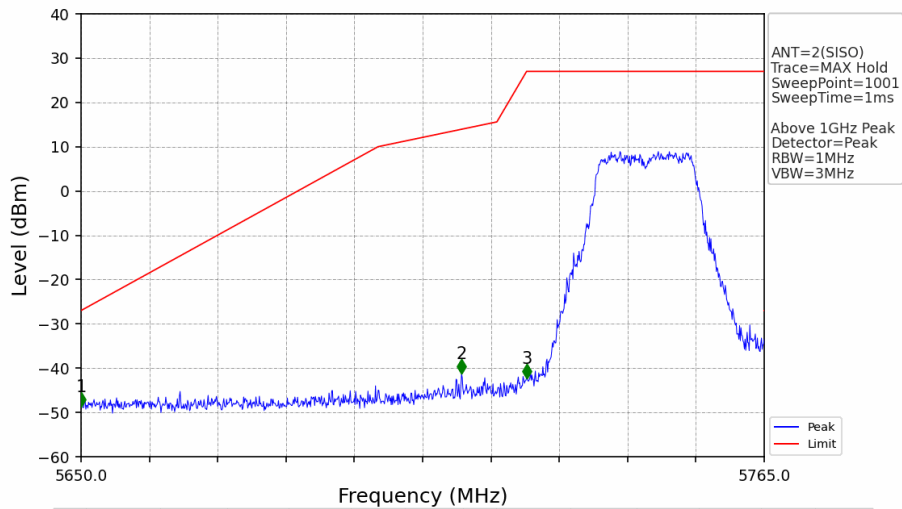


802.11a_LCH_5745MHz_Ant2_NTNV

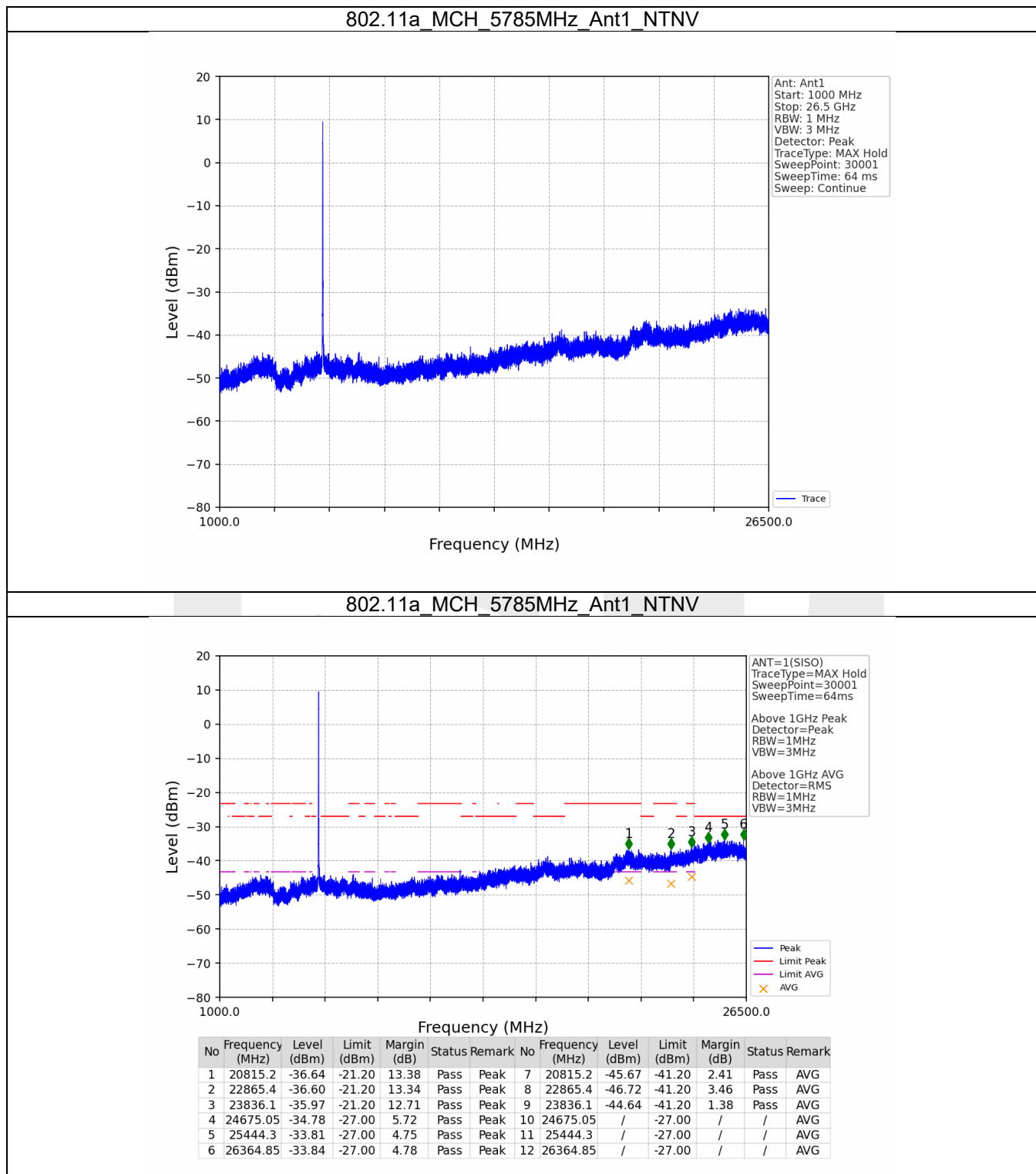


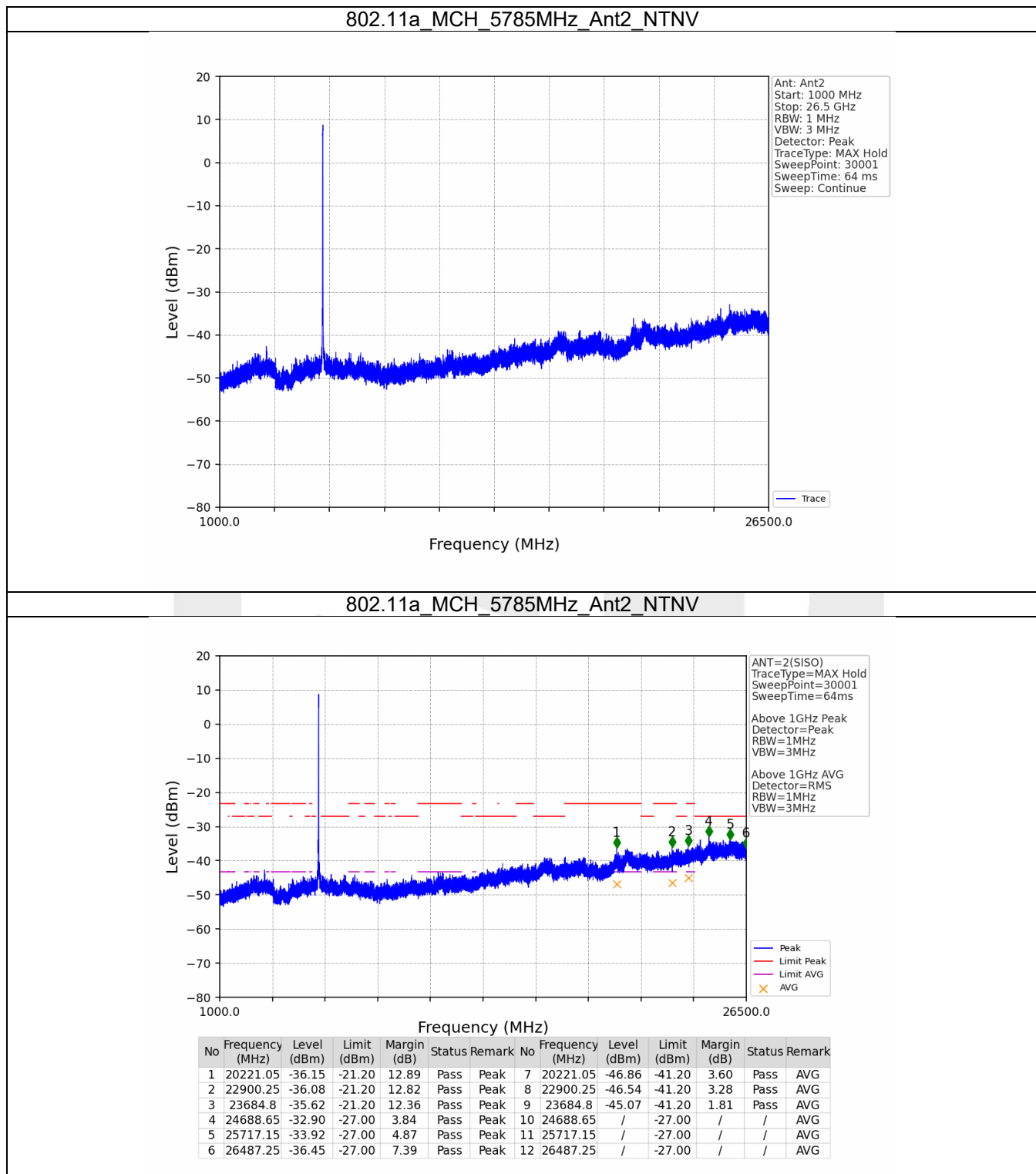
No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	20701.3	-35.06	-21.20	11.80	Pass	Peak	7	20701.3	-45.37	-41.20	2.11	Pass	AVG
2	22384.3	-36.69	-21.20	13.43	Pass	Peak	8	22384.3	-47.01	-41.20	3.75	Pass	AVG
3	23309.95	-35.35	-27.00	6.29	Pass	Peak	9	23309.95	/	-27.00	/	/	AVG
4	24740.5	-34.25	-27.00	5.19	Pass	Peak	10	24740.5	/	-27.00	/	/	AVG
5	25629.6	-33.36	-27.00	4.30	Pass	Peak	11	25629.6	/	-27.00	/	/	AVG
6	26432	-35.52	-27.00	6.46	Pass	Peak	12	26432	/	-27.00	/	/	AVG

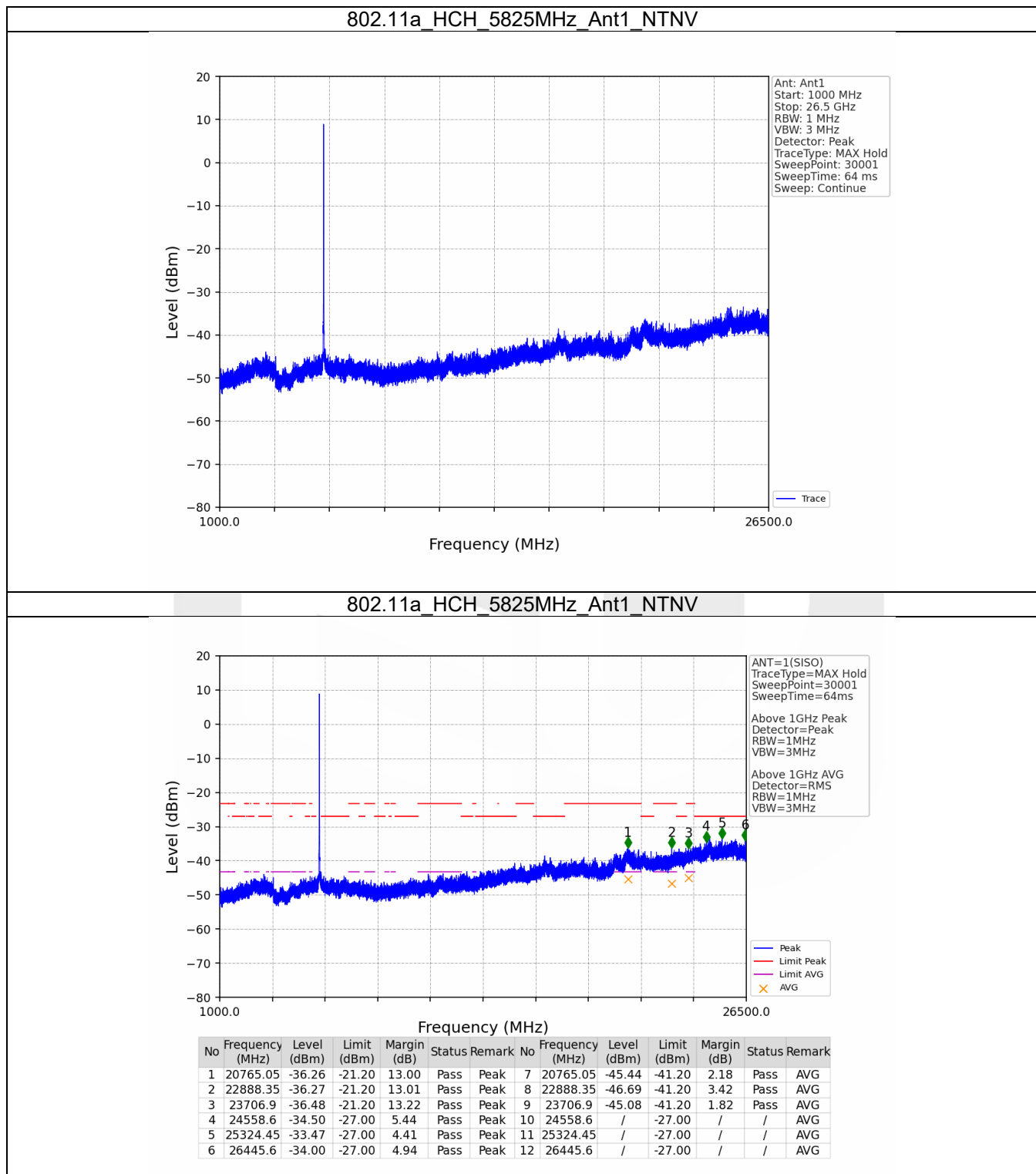
802.11a_LCH_5745MHz_Ant2_NTNV

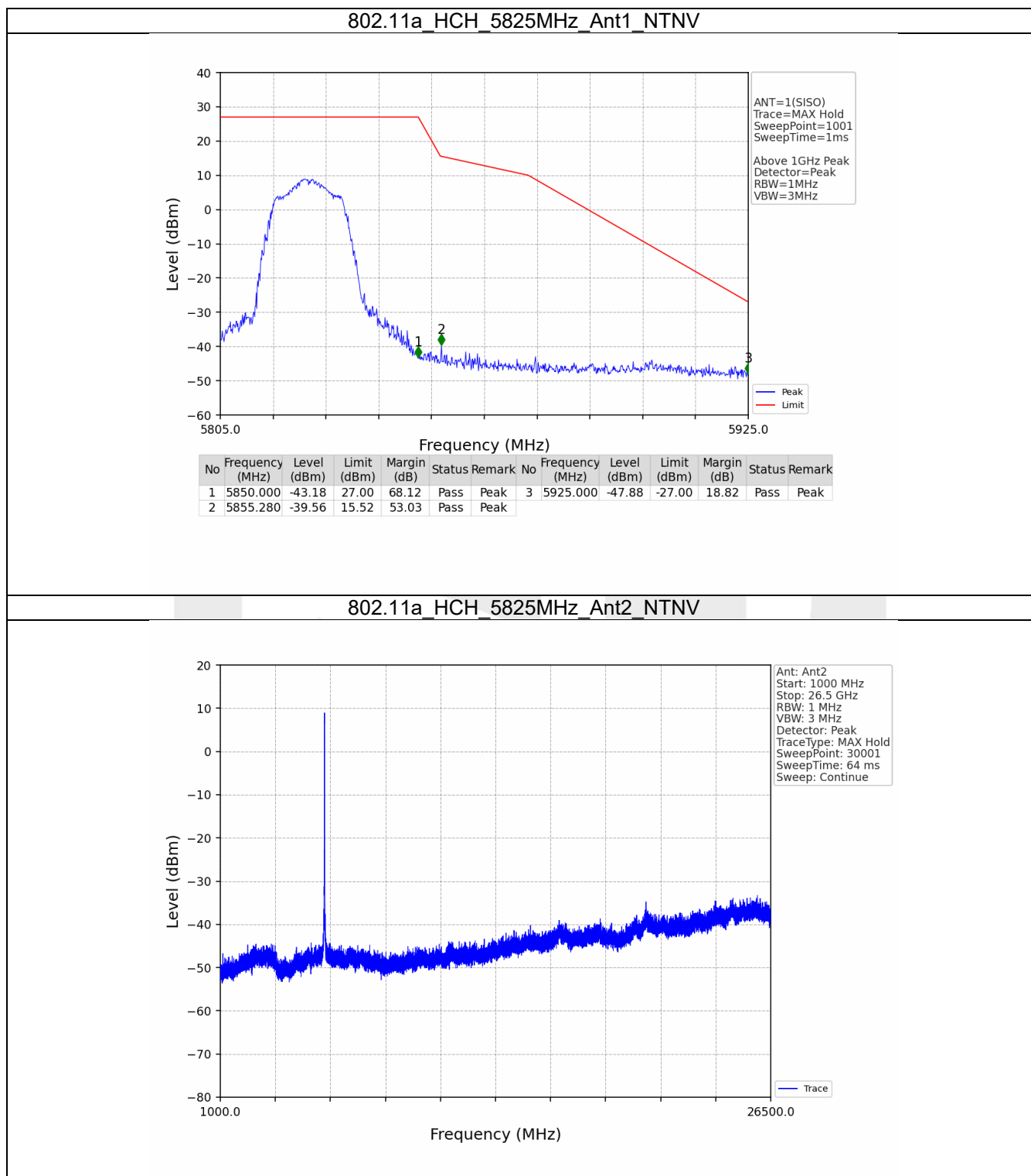


No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	5650.000	-48.63	-27.00	19.57	Pass	Peak	3	5725.000	-42.20	27.00	67.14	Pass	Peak
2	5714.055	-41.13	13.94	53.01	Pass	Peak							

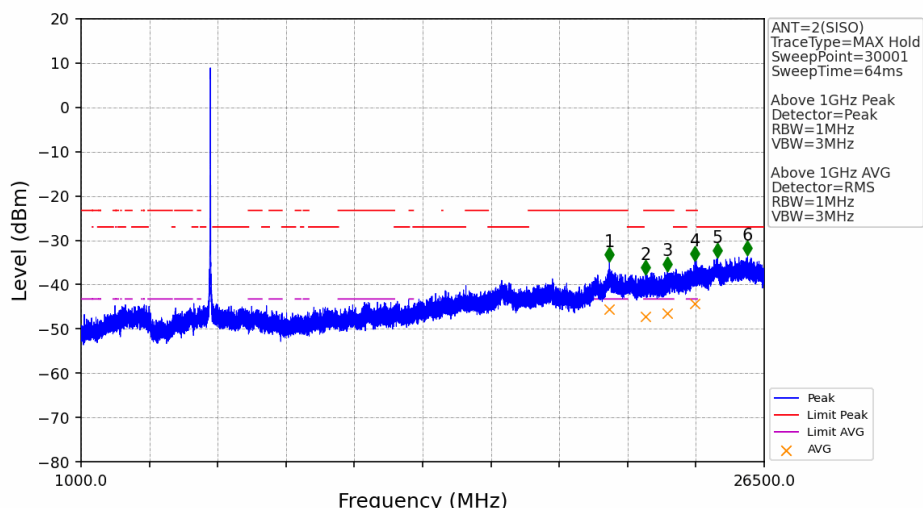






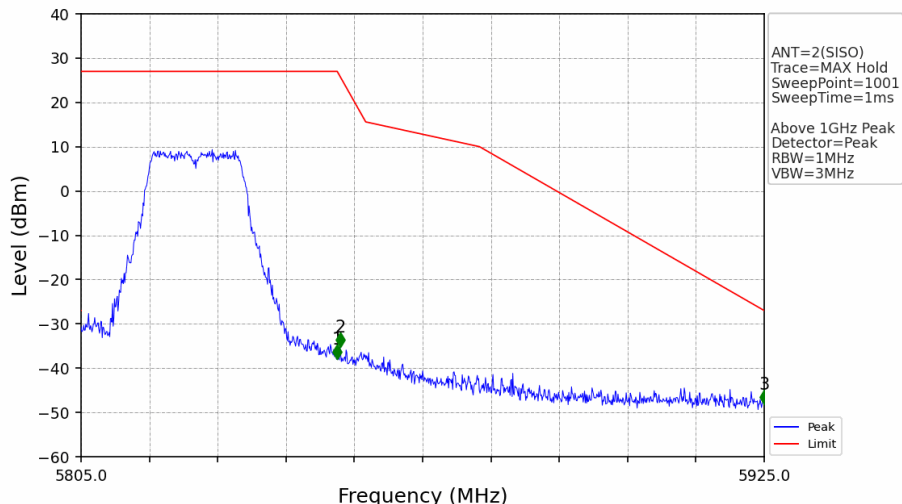


802.11a_HCH_5825MHz_Ant2_NTNV

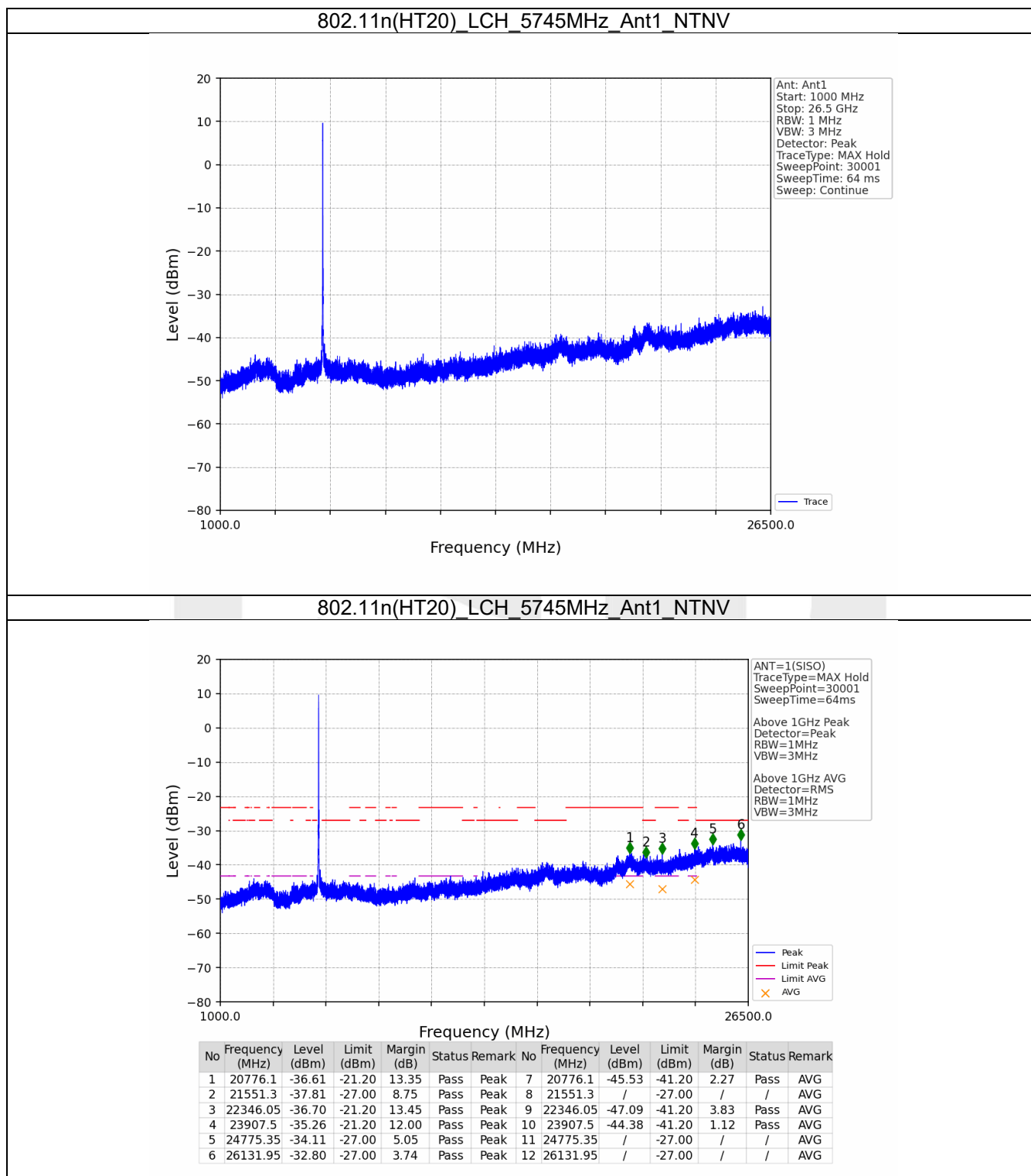


No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	20721.7	-34.78	-21.20	11.52	Pass	Peak	7	20721.7	-45.49	-41.20	2.23	Pass	AVG
2	22074.05	-37.65	-21.20	14.39	Pass	Peak	8	22074.05	-47.20	-41.20	3.94	Pass	AVG
3	22885.8	-36.87	-21.20	13.61	Pass	Peak	9	22885.8	-46.42	-41.20	3.16	Pass	AVG
4	23915.15	-34.52	-21.20	11.26	Pass	Peak	10	23915.15	-44.27	-41.20	1.01	Pass	AVG
5	24751.55	-33.89	-27.00	4.83	Pass	Peak	11	24751.55	/	-27.00	/	/	AVG
6	25880.35	-33.29	-27.00	4.23	Pass	Peak	12	25880.35	/	-27.00	/	/	AVG

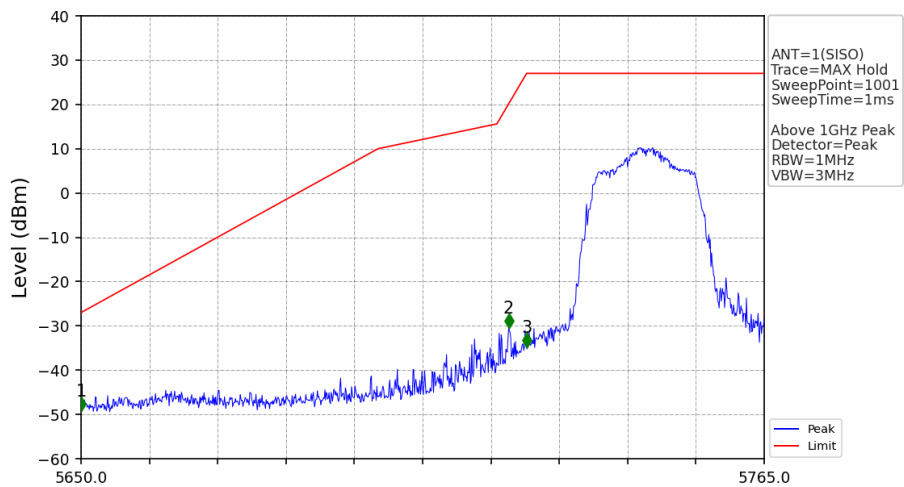
802.11a_HCH_5825MHz_Ant2_NTNV



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	-37.96	27.00	62.90	Pass	Peak	3	5925.000	-48.13	-27.00	19.07	Pass	Peak
2	5850.480	-35.16	25.91	59.01	Pass	Peak							

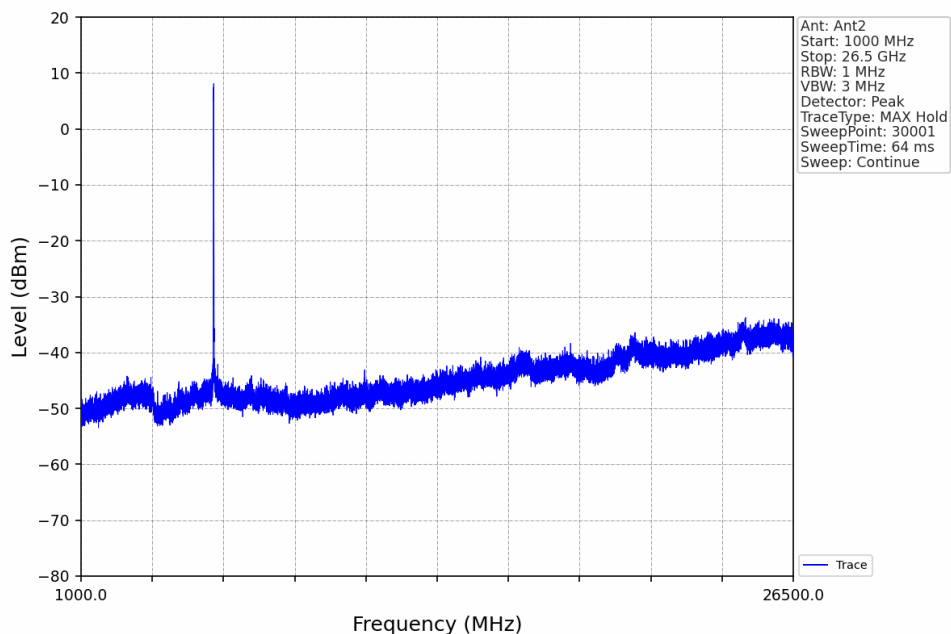


802.11n(HT20)_LCH_5745MHz_Ant1_NTNV

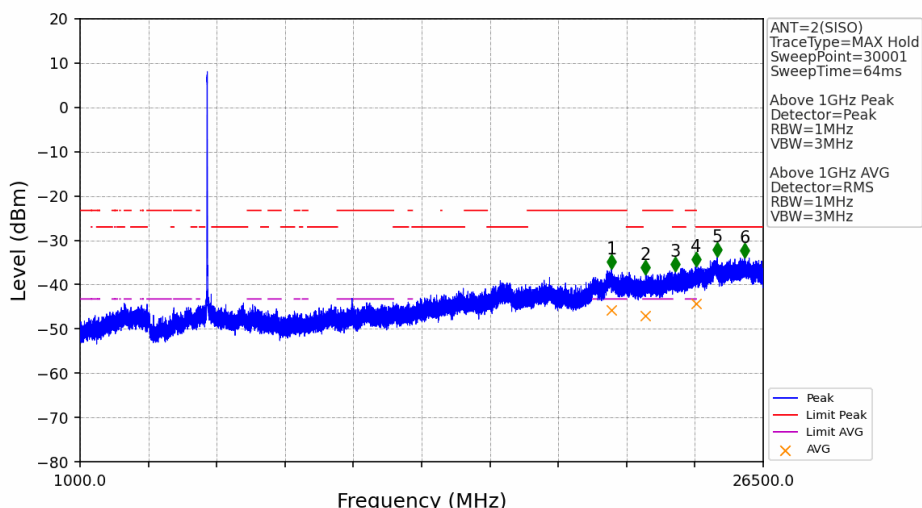


No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	5650.000	-49.13	-27.00	20.07	Pass	Peak	3	5725.000	-34.84	27.00	59.78	Pass	Peak
2	5721.990	-30.41	20.14	48.48	Pass	Peak							

802.11n(HT20)_LCH_5745MHz_Ant2_NTNV

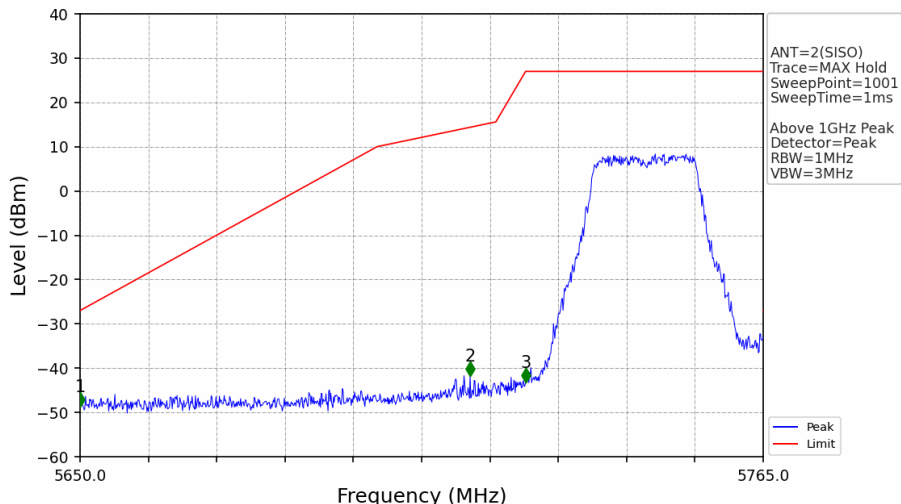


802.11n(HT20)_LCH_5745MHz_Ant2_NTNV

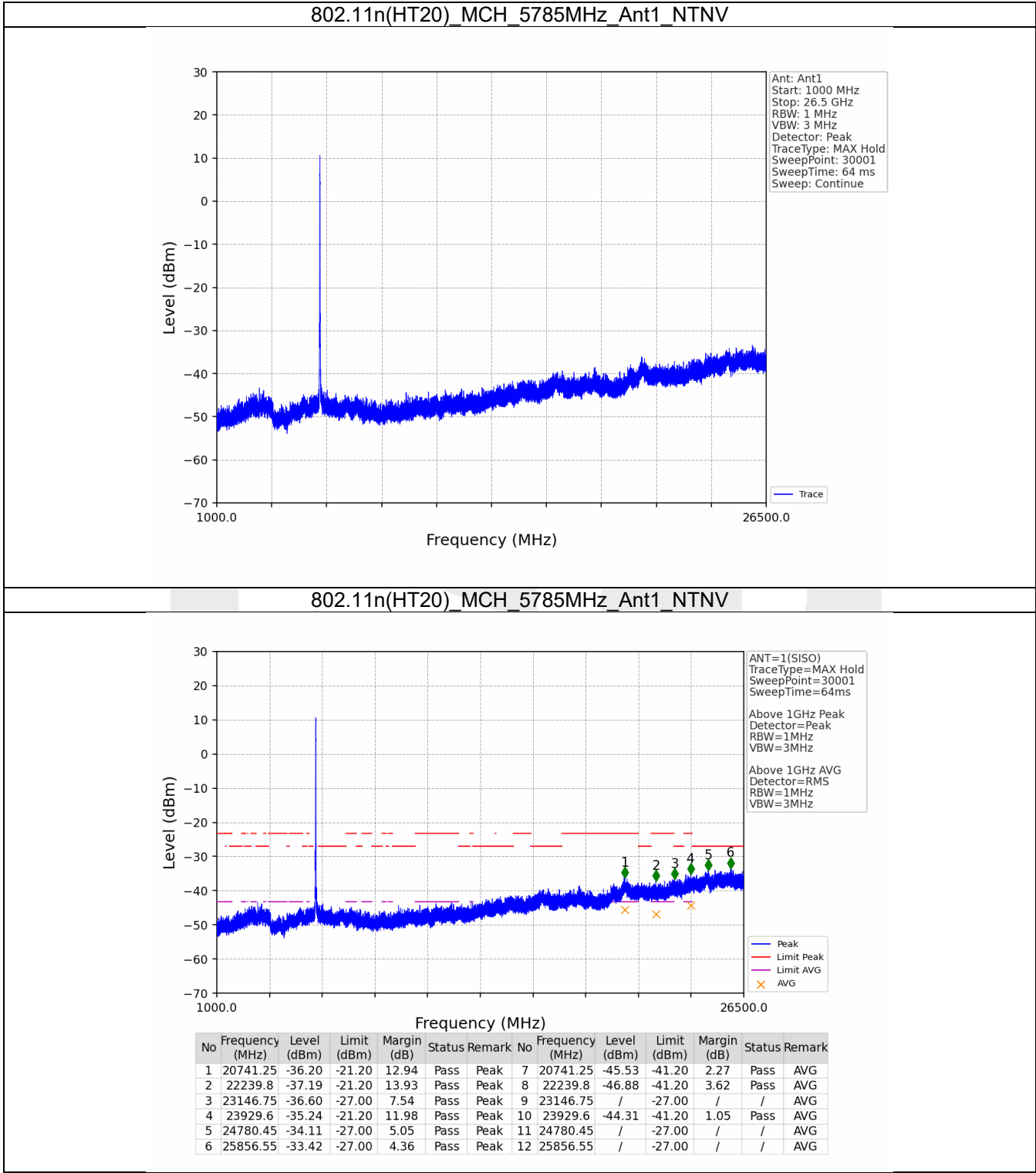


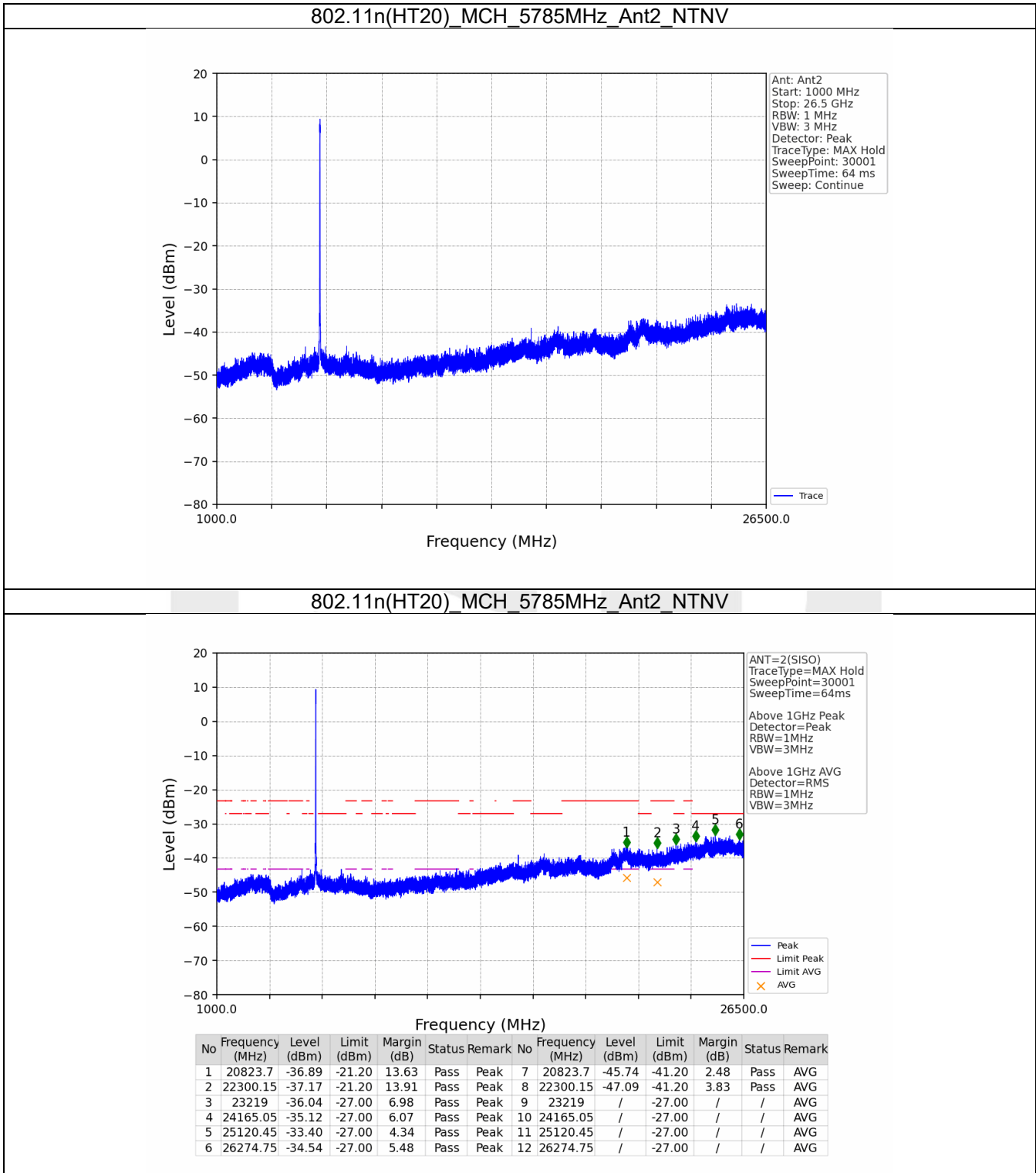
No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	20833.9	-36.43	-21.20	13.17	Pass	Peak	7	20833.9	-45.77	-41.20	2.51	Pass	AVG
2	22112.3	-37.64	-21.20	14.38	Pass	Peak	8	22112.3	-47.09	-41.20	3.83	Pass	AVG
3	23219	-36.90	-27.00	7.83	Pass	Peak	9	23219	/	-27.00	/	/	AVG
4	23990.8	-35.82	-21.20	12.56	Pass	Peak	10	23990.8	-44.25	-41.20	0.99	Pass	AVG
5	24788.95	-33.74	-27.00	4.68	Pass	Peak	11	24788.95	/	-27.00	/	/	AVG
6	25810.65	-33.92	-27.00	4.86	Pass	Peak	12	25810.65	/	-27.00	/	/	AVG

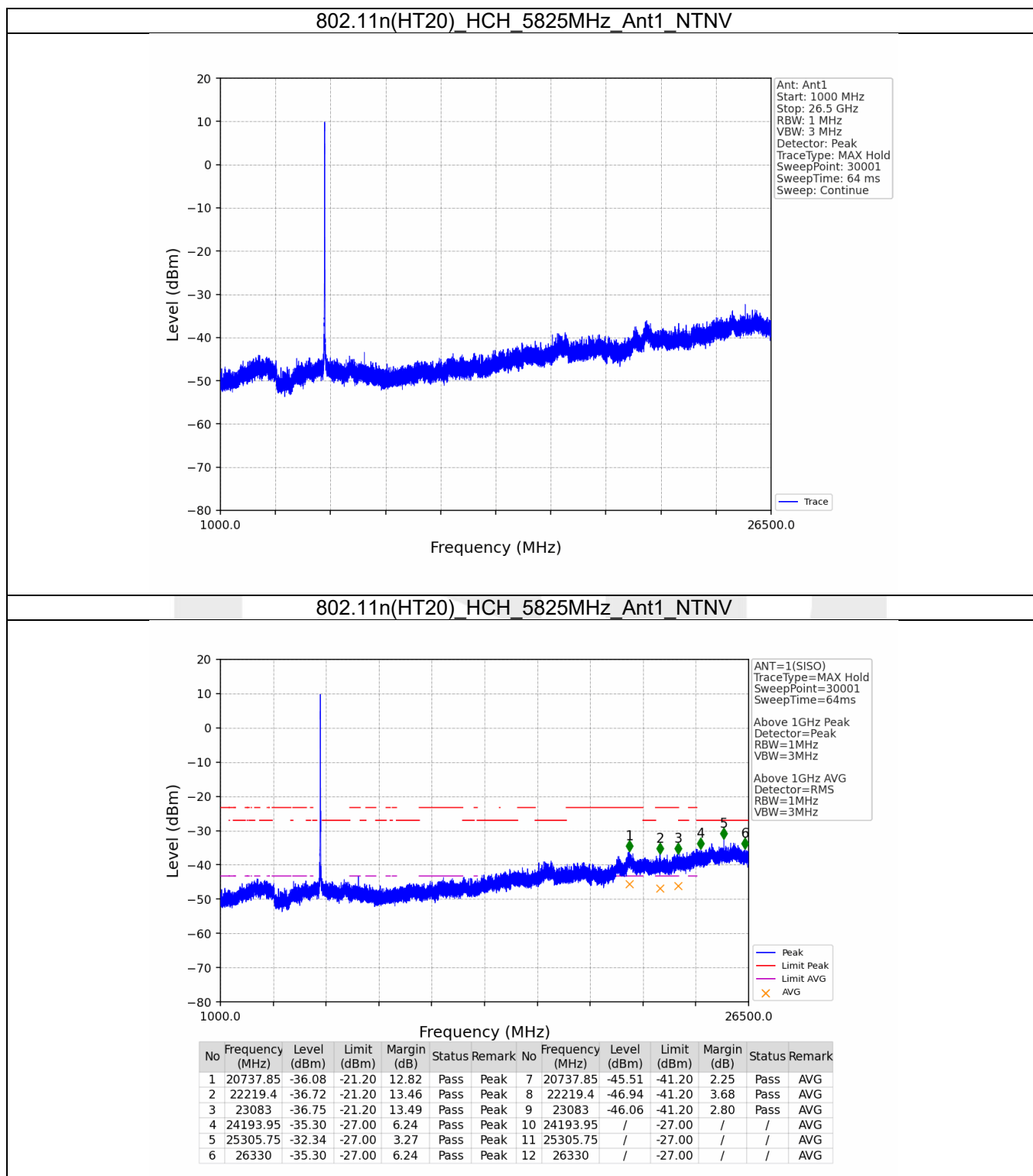
802.11n(HT20)_LCH_5745MHz_Ant2_NTNV



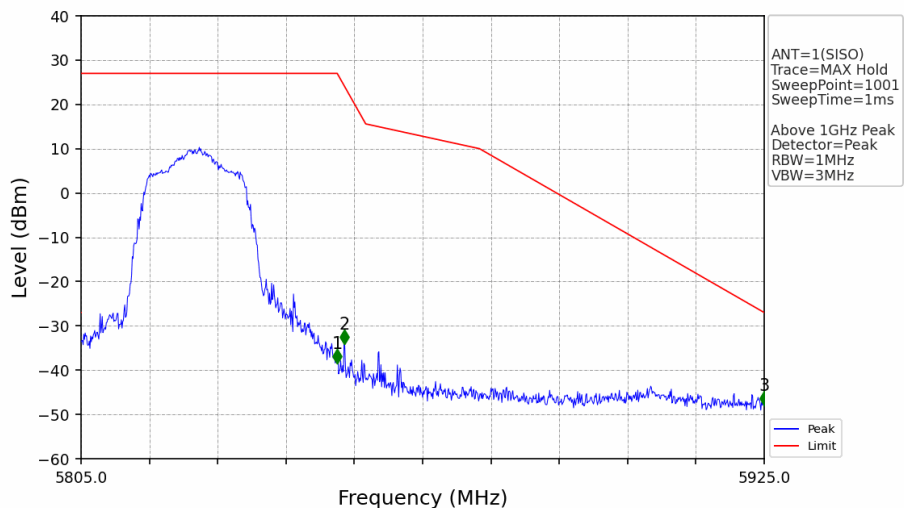
No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	5650.000	-48.71	-27.00	19.65	Pass	Peak	3	5725.000	-43.13	27.00	68.07	Pass	Peak
2	5715.665	-41.65	14.39	53.98	Pass	Peak							





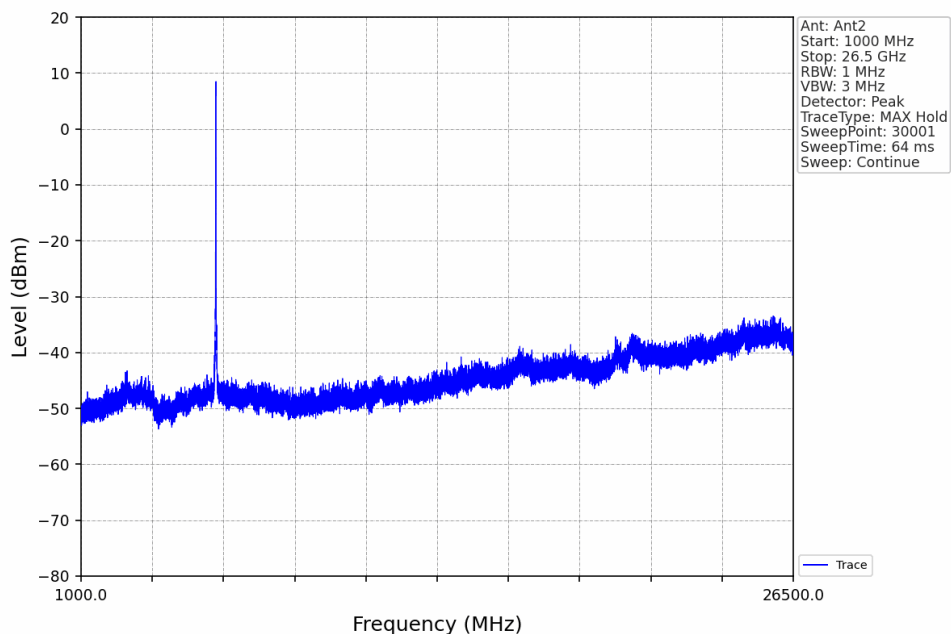


802.11n(HT20)_HCH_5825MHz_Ant1_NTNV

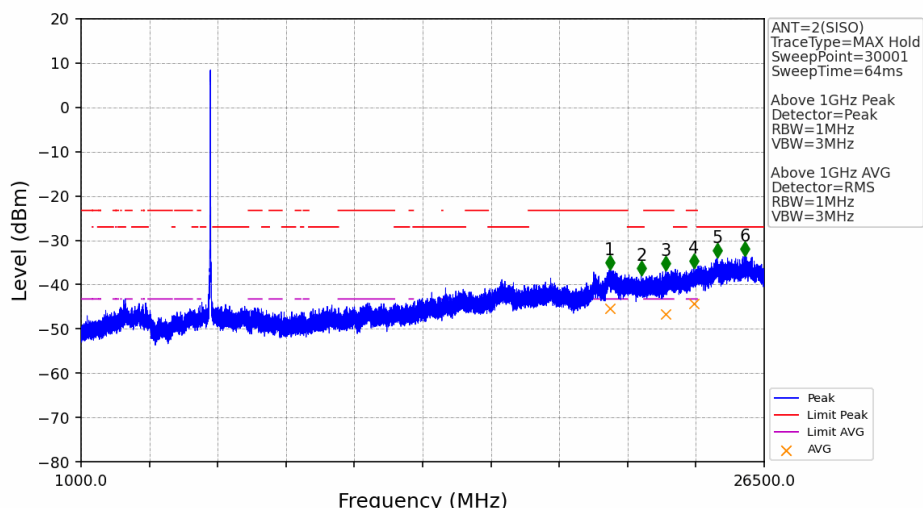


No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	5850.000	-38.40	27.00	63.34	Pass	Peak	3	5925.000	-47.88	-27.00	18.82	Pass	Peak
2	5851.200	-34.05	24.26	56.25	Pass	Peak							

802.11n(HT20)_HCH_5825MHz_Ant2_NTNV

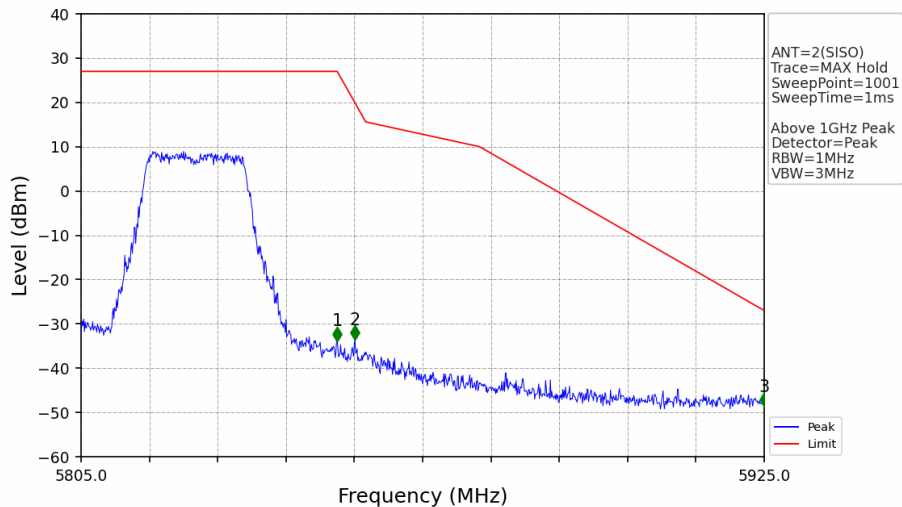


802.11n(HT20)_HCH_5825MHz_Ant2_NTNV



No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	20733.6	-36.56	-21.20	13.30	Pass	Peak	7	20733.6	-45.44	-41.20	2.18	Pass	AVG
2	21907.45	-37.95	-27.00	8.89	Pass	Peak	8	21907.45	/	-27.00	/	/	AVG
3	22813.55	-36.78	-21.20	13.53	Pass	Peak	9	22813.55	-46.75	-41.20	3.49	Pass	AVG
4	23871.8	-36.31	-21.20	13.05	Pass	Peak	10	23871.8	-44.29	-41.20	1.03	Pass	AVG
5	24737.95	-33.78	-27.00	4.72	Pass	Peak	11	24737.95	/	-27.00	/	/	AVG
6	25781.75	-33.45	-27.00	4.39	Pass	Peak	12	25781.75	/	-27.00	/	/	AVG

802.11n(HT20)_HCH_5825MHz_Ant2_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	-33.81	27.00	58.75	Pass	Peak	3	5925.000	-48.69	-27.00	19.63	Pass	Peak
2	5853.120	-33.61	19.89	51.43	Pass	Peak							

6. Frequency Stability

6.1 Test Result

6.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	Temperature (°C)	Voltage (VAC)	Measured Frequency (MHz)	Limit (MHz)	Verdict
802.11a	SISO	5745	20	102	5745.020	5725 to 5850	Pass
				120	5745.000	5725 to 5850	Pass
				138	5745.020	5725 to 5850	Pass
			-30	120	5744.980	5725 to 5850	Pass
			-20	120	5744.980	5725 to 5850	Pass
			-10	120	5744.980	5725 to 5850	Pass
			0	120	5745.000	5725 to 5850	Pass
			10	120	5745.000	5725 to 5850	Pass
			30	120	5745.020	5725 to 5850	Pass
			40	120	5744.980	5725 to 5850	Pass
			50	120	5744.980	5725 to 5850	Pass
		5785	20	102	5785.040	5725 to 5850	Pass
				120	5785.000	5725 to 5850	Pass
				138	5784.980	5725 to 5850	Pass
			-30	120	5785.000	5725 to 5850	Pass
			-20	120	5785.000	5725 to 5850	Pass
			-10	120	5785.000	5725 to 5850	Pass
			0	120	5785.020	5725 to 5850	Pass
			10	120	5785.000	5725 to 5850	Pass
			30	120	5785.000	5725 to 5850	Pass
			40	120	5785.000	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	5824.960	5725 to 5850	Pass
			-30	120	5824.980	5725 to 5850	Pass
			-20	120	5825.020	5725 to 5850	Pass
			-10	120	5825.000	5725 to 5850	Pass
			0	120	5825.000	5725 to 5850	Pass
			10	120	5824.980	5725 to 5850	Pass
			30	120	5825.020	5725 to 5850	Pass
			40	120	5825.020	5725 to 5850	Pass
			50	120	5825.000	5725 to 5850	Pass
802.11n (HT20)	SISO	5745	20	102	5744.980	5725 to 5850	Pass
				120	5745.000	5725 to 5850	Pass
				138	5745.000	5725 to 5850	Pass
			-30	120	5745.000	5725 to 5850	Pass
			-20	120	5745.040	5725 to 5850	Pass
			-10	120	5745.020	5725 to 5850	Pass
			0	120	5744.980	5725 to 5850	Pass
			10	120	5745.040	5725 to 5850	Pass

			30	120	5745.000	5725 to 5850	Pass
			40	120	5745.000	5725 to 5850	Pass
			50	120	5745.000	5725 to 5850	Pass
		5785	20	102	5785.000	5725 to 5850	Pass
				120	5785.020	5725 to 5850	Pass
				138	5784.960	5725 to 5850	Pass
			-30	120	5784.980	5725 to 5850	Pass
			-20	120	5785.000	5725 to 5850	Pass
			-10	120	5785.000	5725 to 5850	Pass
			0	120	5785.000	5725 to 5850	Pass
			10	120	5784.980	5725 to 5850	Pass
			30	120	5784.980	5725 to 5850	Pass
			40	120	5785.000	5725 to 5850	Pass
			50	120	5784.980	5725 to 5850	Pass
		5825	20	102	5825.000	5725 to 5850	Pass
				120	5824.980	5725 to 5850	Pass
				138	5825.020	5725 to 5850	Pass
			-30	120	5824.980	5725 to 5850	Pass
			-20	120	5824.980	5725 to 5850	Pass
			-10	120	5825.000	5725 to 5850	Pass
			0	120	5825.000	5725 to 5850	Pass
			10	120	5825.000	5725 to 5850	Pass
			30	120	5825.000	5725 to 5850	Pass
			40	120	5825.020	5725 to 5850	Pass
			50	120	5825.000	5725 to 5850	Pass

----- End of Report -----