

ANNEX F TEST DATA

For

Project No.:	8134EU010302W
Client:	Autel Intelligent Technology Corp., Ltd.
Product Description:	ADAS Calibration Frame
Model No.:	IA700
FCC ID:	WQ8-DA2211
Technology:	WiFi 5G
Test Engineer:	<i>Mikoy zhu</i>
Test Date:	2023-11-17

Test Summary

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

Description of Module

WiFi Module	Module No.	ANT No.	Antenna Gain
WiFi Module 1	AP6365SD	ANT 1	2.0
		ANT 2	2.0
WiFi Module 2	AP6365SD	ANT 3	2.0
		ANT 4	2.0

Note:

The EUT has two same WiFi modules inside.

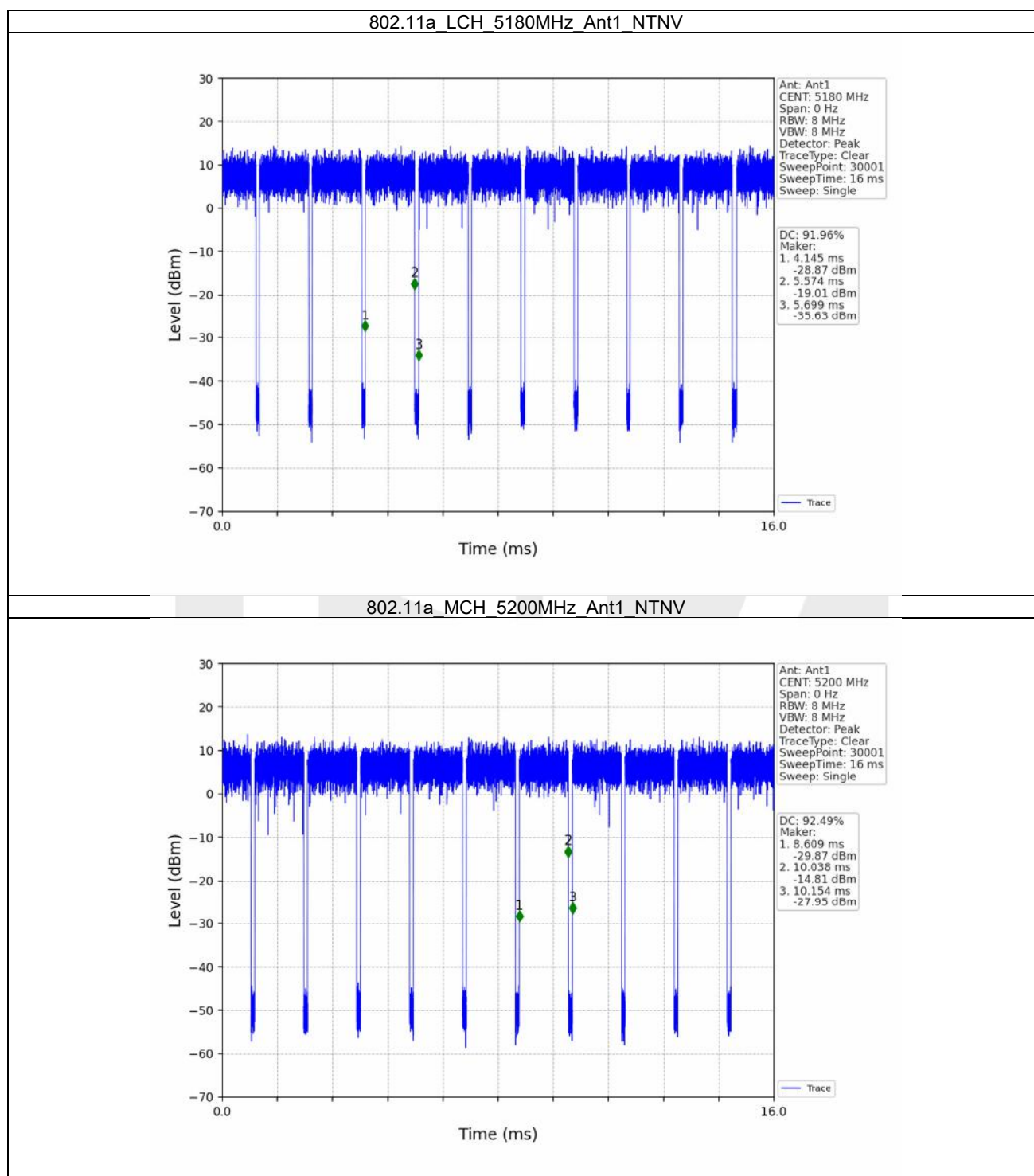
1. Duty Cycle

1.1 WiFi Module 1

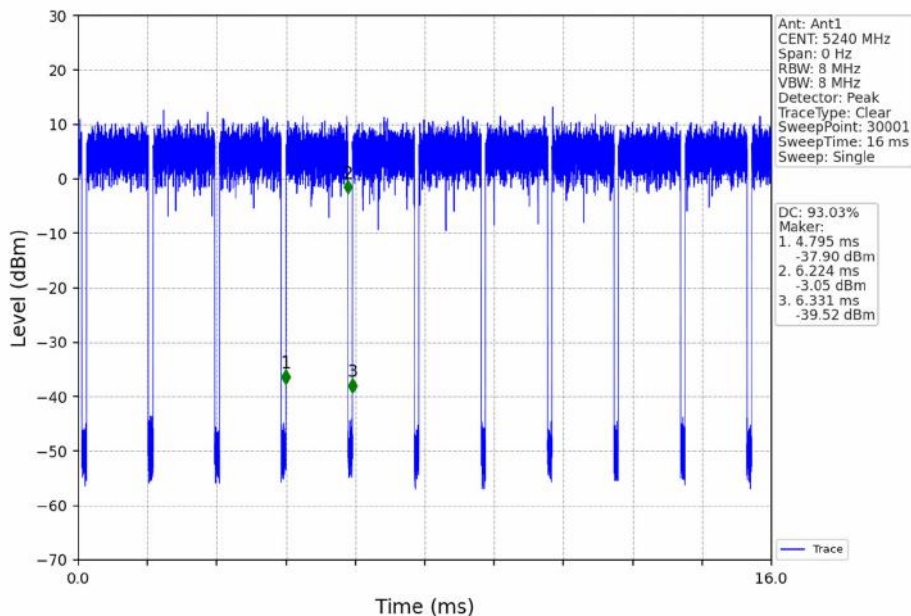
1.1.1 Test Result

Ant1							
Mode	Tx Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11a	SISO	5180	1.429	1.554	91.96	0.36	2.20
		5200	1.429	1.545	92.49	0.34	1.13
		5240	1.429	1.536	93.03	0.31	0.03
		5745	1.429	1.549	92.25	0.35	1.90
		5785	1.430	1.572	90.97	0.41	3.23
		5825	1.429	1.554	91.96	0.36	2.20
802.11n (HT20)	SISO	5180	1.207	1.314	91.86	0.37	0.03
		5200	1.207	1.313	91.93	0.37	0.00
		5240	1.206	1.332	90.54	0.43	2.55
		5745	1.207	1.331	90.68	0.42	6.72
		5785	1.207	1.242	97.18	0.12	0.17
		5825	1.208	1.332	90.69	0.42	1.90
802.11n (HT40)	SISO	5190	0.602	0.718	83.84	0.77	3.32
		5230	0.603	0.719	83.87	0.76	3.32
		5755	0.603	0.718	83.98	0.76	3.27
		5795	0.602	0.718	83.84	0.77	3.29
802.11ac (VHT20)	SISO	5180	1.214	1.330	91.28	0.40	1.88
		5200	1.214	1.331	91.21	0.40	1.94
		5240	1.215	1.331	91.28	0.40	5.92
		5745	1.215	1.331	91.28	0.40	1.93
		5785	1.214	1.330	91.28	0.40	1.90
		5825	1.214	1.330	91.28	0.40	1.92
802.11ac (VHT40)	SISO	5190	0.606	0.722	83.93	0.76	3.31
		5230	0.606	0.722	83.93	0.76	3.28
		5755	0.606	0.783	77.39	1.11	17.13
		5795	0.606	0.721	84.05	0.75	3.25
802.11ac (VHT80)	SISO	5210	0.304	0.420	72.38	1.40	5.00
		5775	0.304	0.527	57.69	2.39	19.81

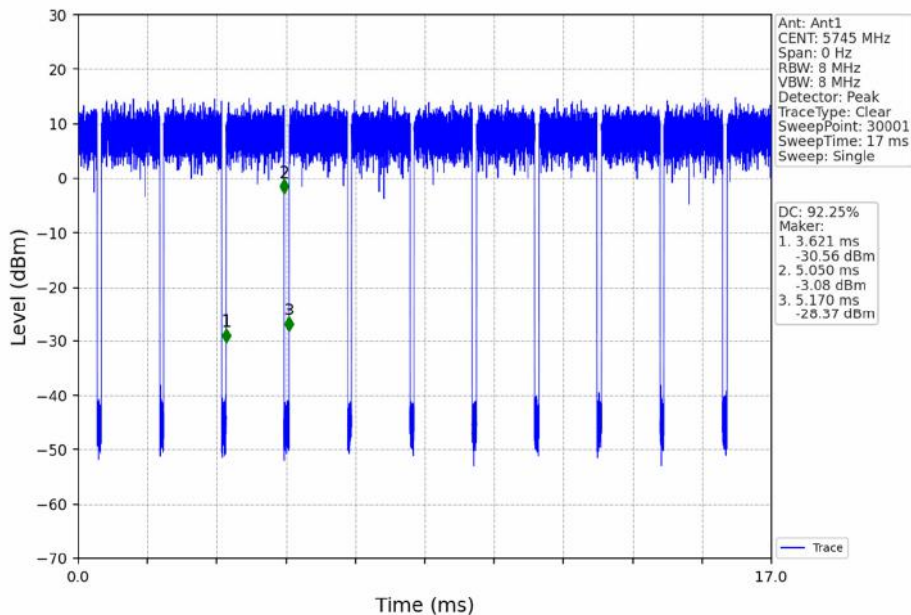
1.1.2 Test Graph



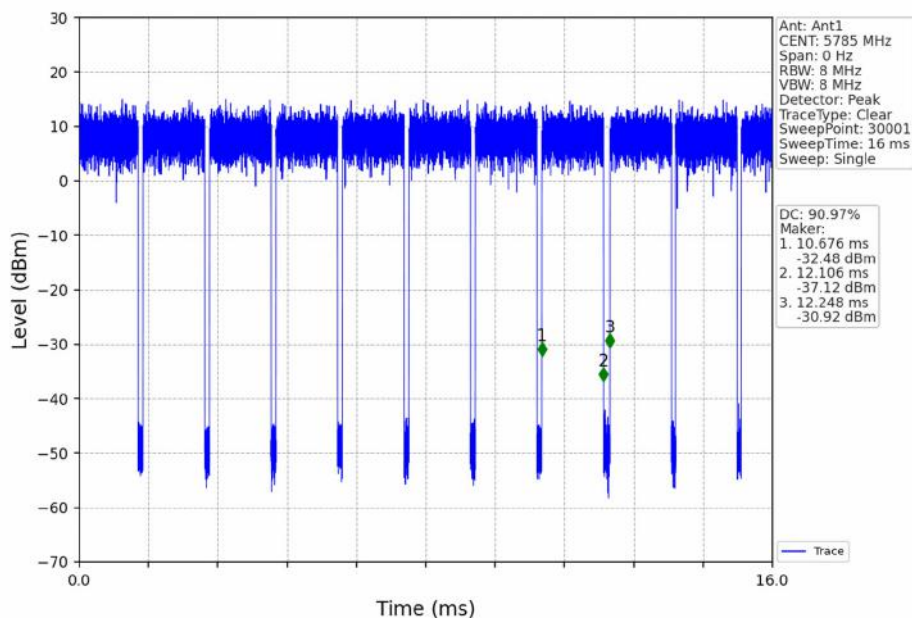
802.11a_HCH_5240MHz_Ant1_NTNV



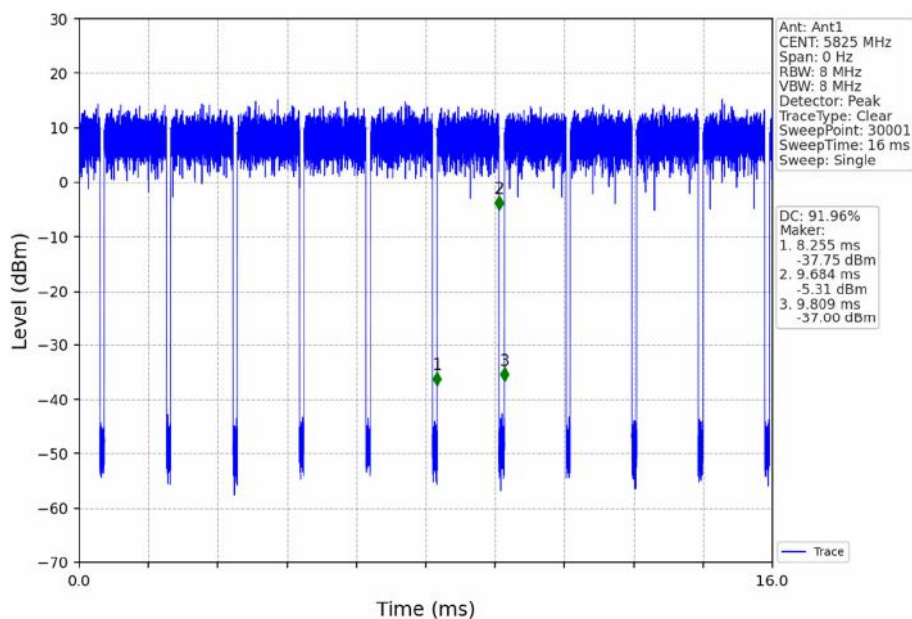
802.11a_LCH_5745MHz_Ant1_NTNV



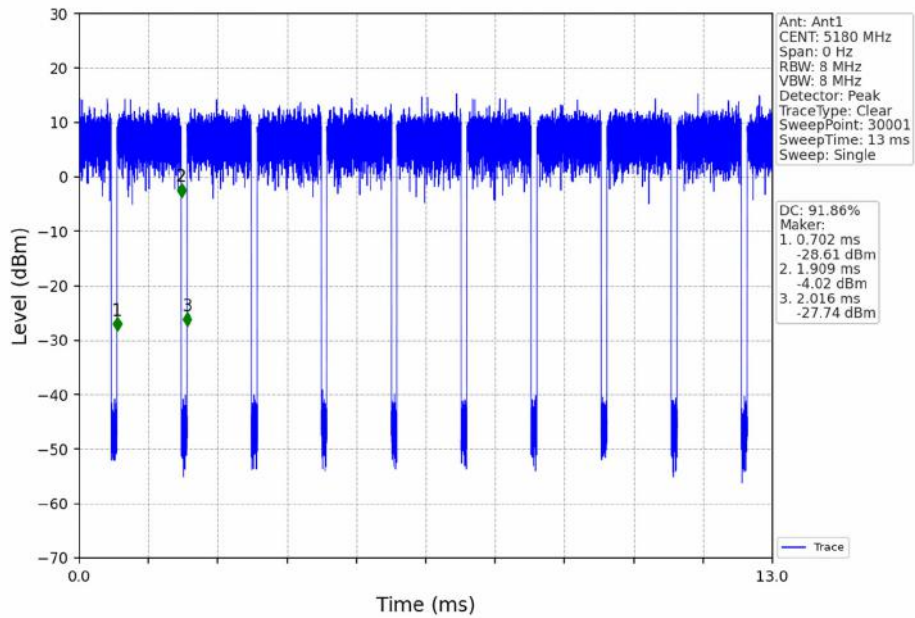
802.11a_MCH_5785MHz_Ant1_NTNV



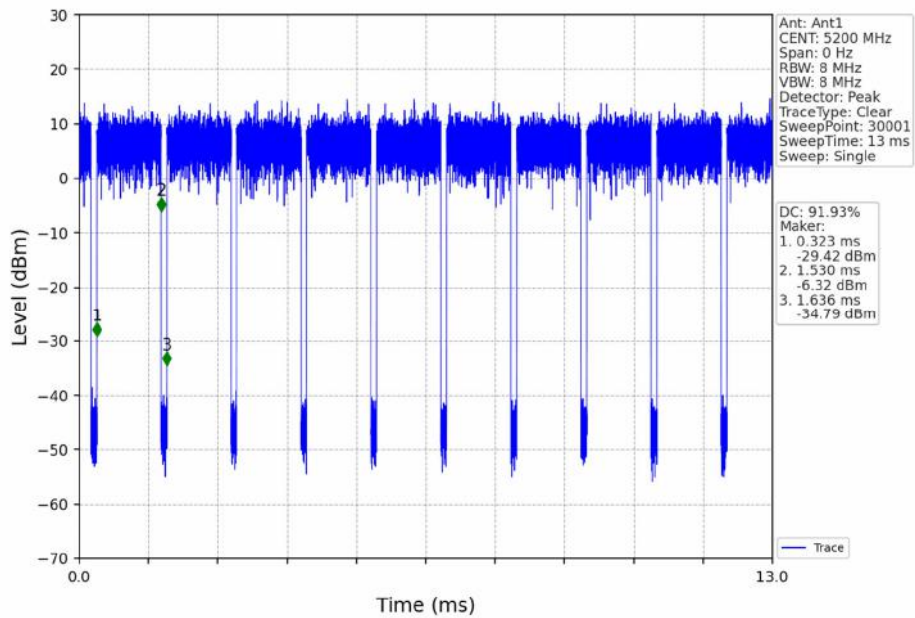
802.11a_HCH_5825MHz_Ant1_NTNV

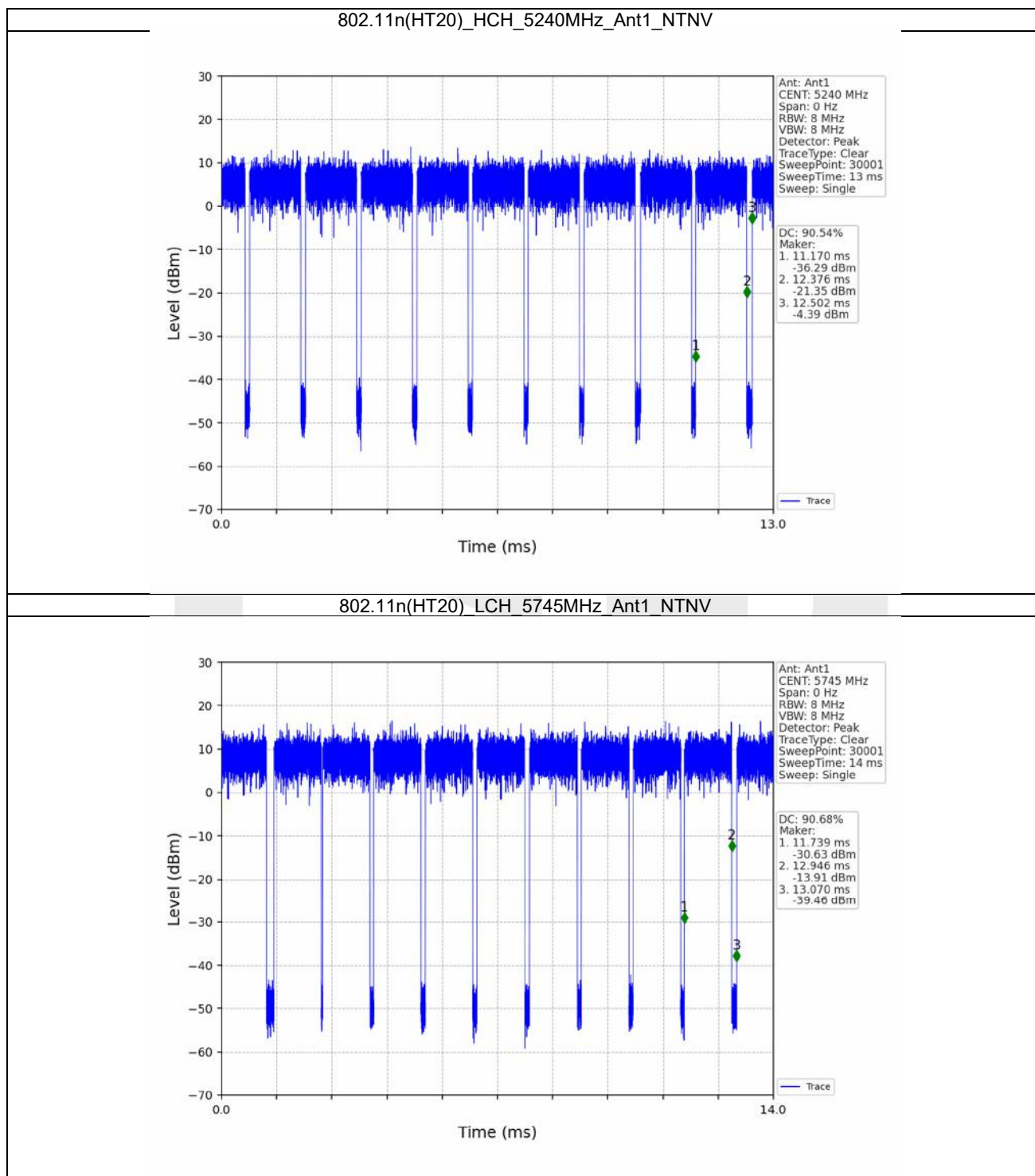


802.11n(HT20)_LCH_5180MHz_Ant1_NTNV

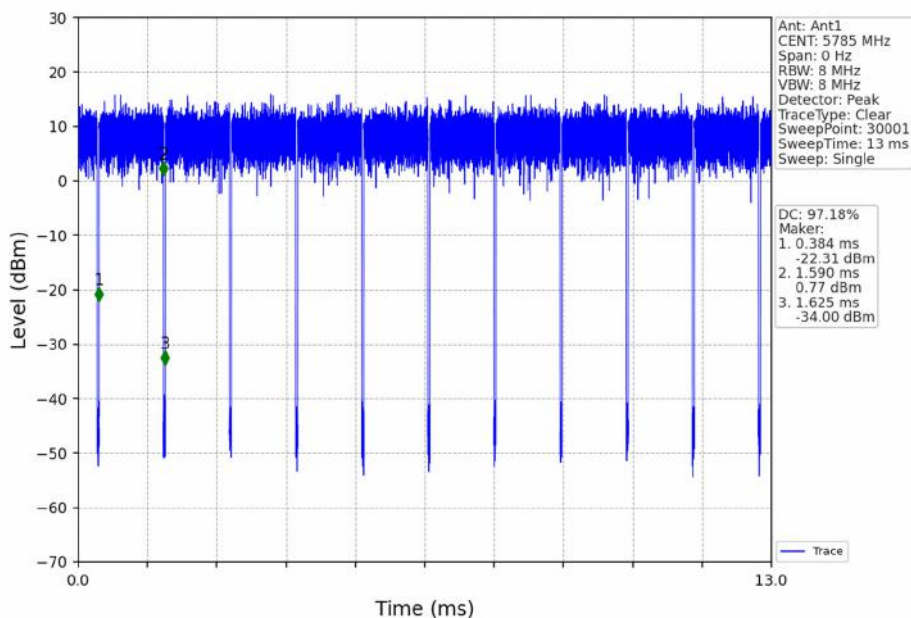


802.11n(HT20)_MCH_5200MHz_Ant1_NTNV

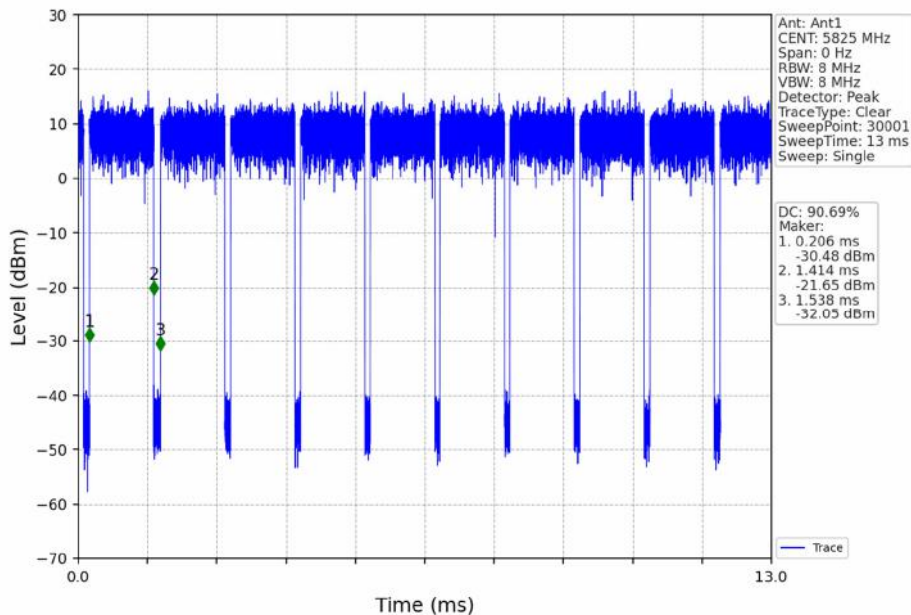


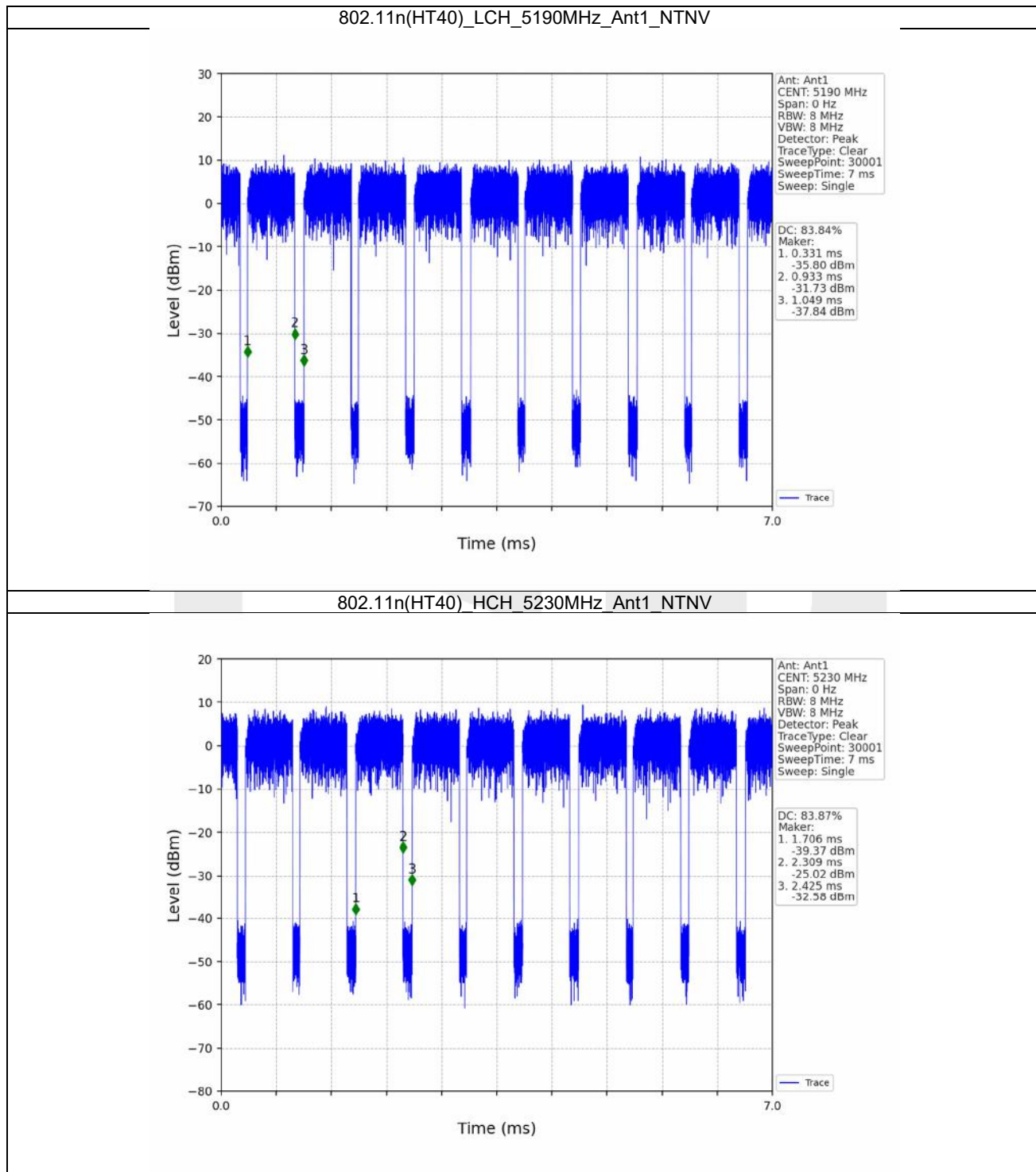


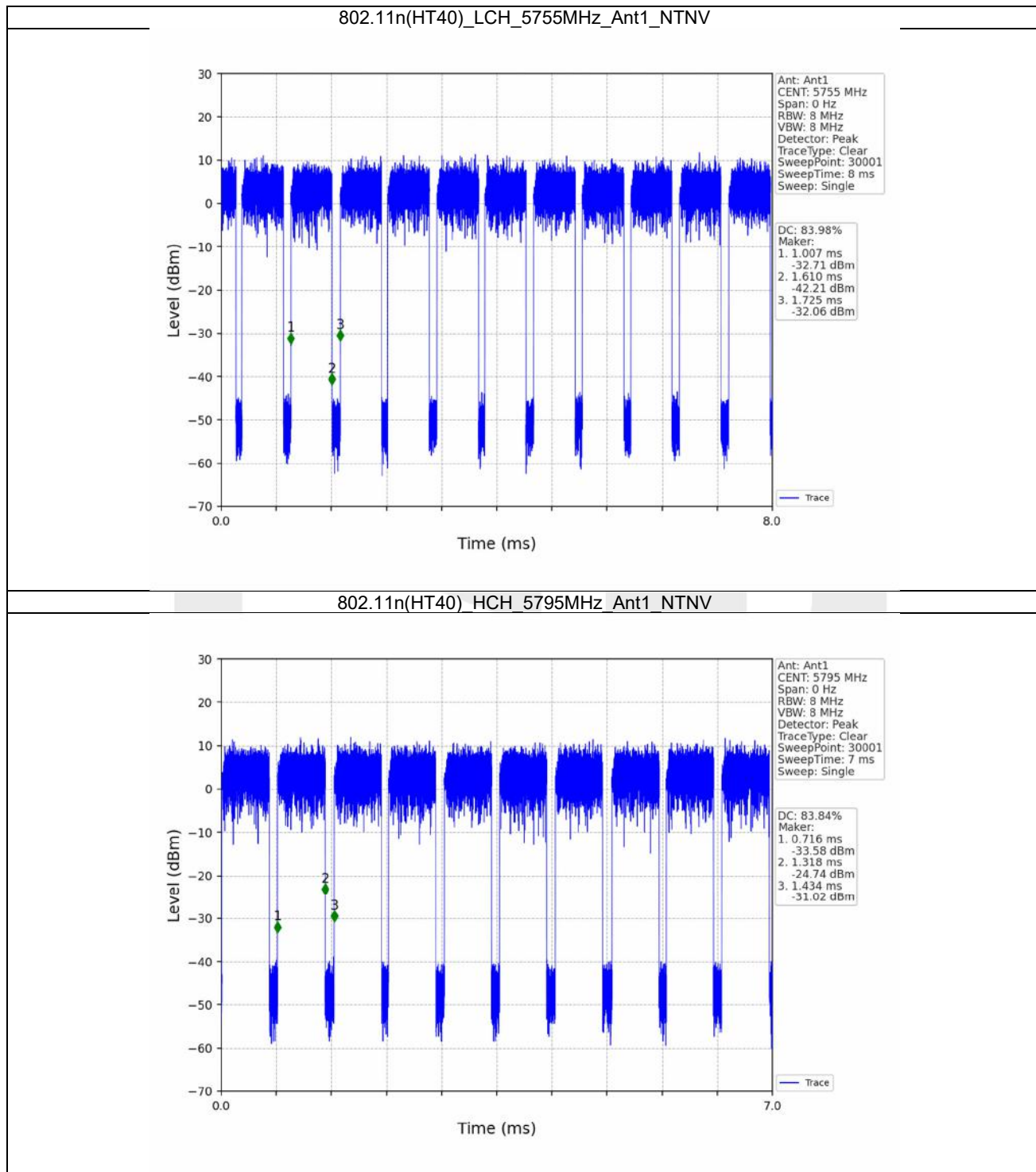
802.11n(HT20)_MCH_5785MHz_Ant1_NTNV

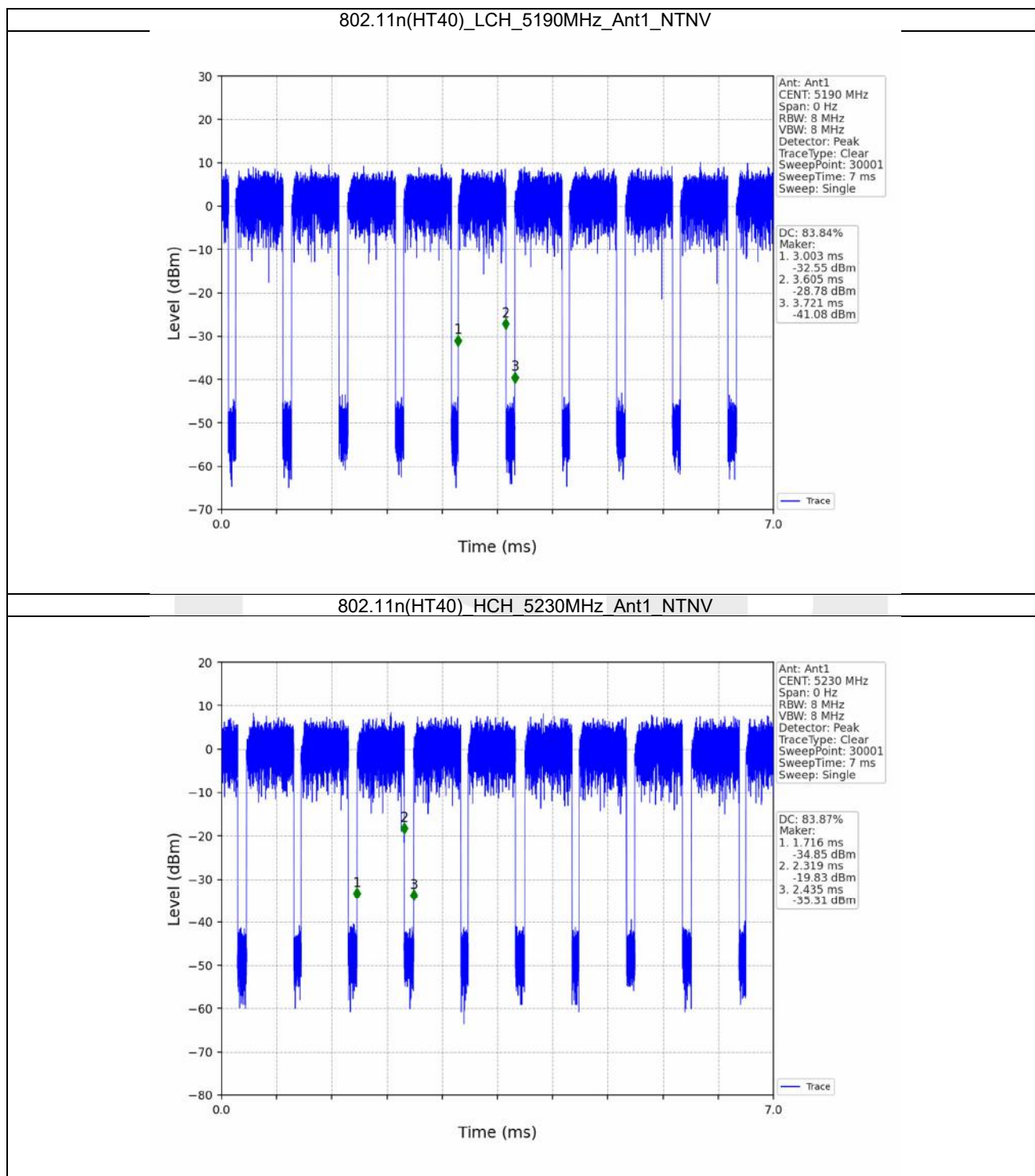


802.11n(HT20)_HCH_5825MHz_Ant1_NTNV

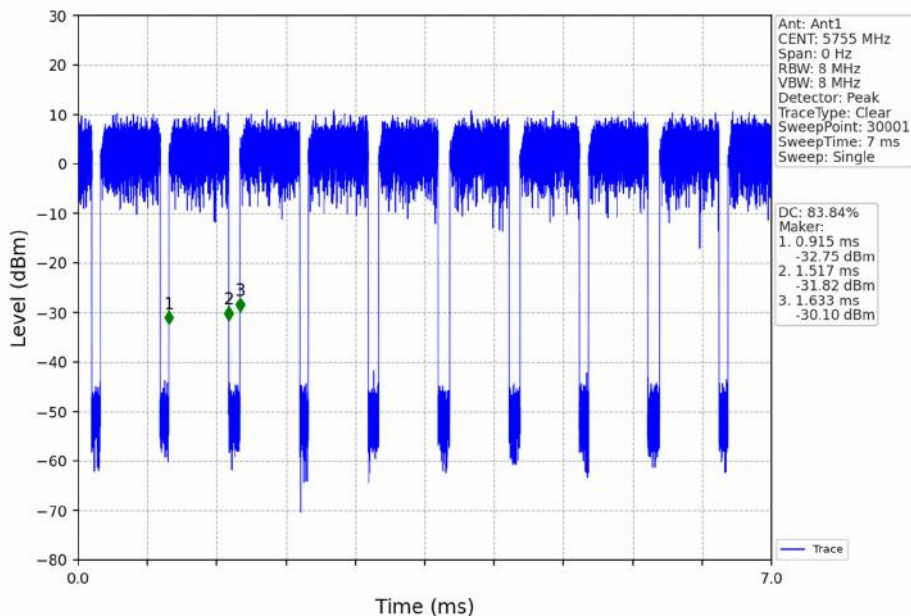




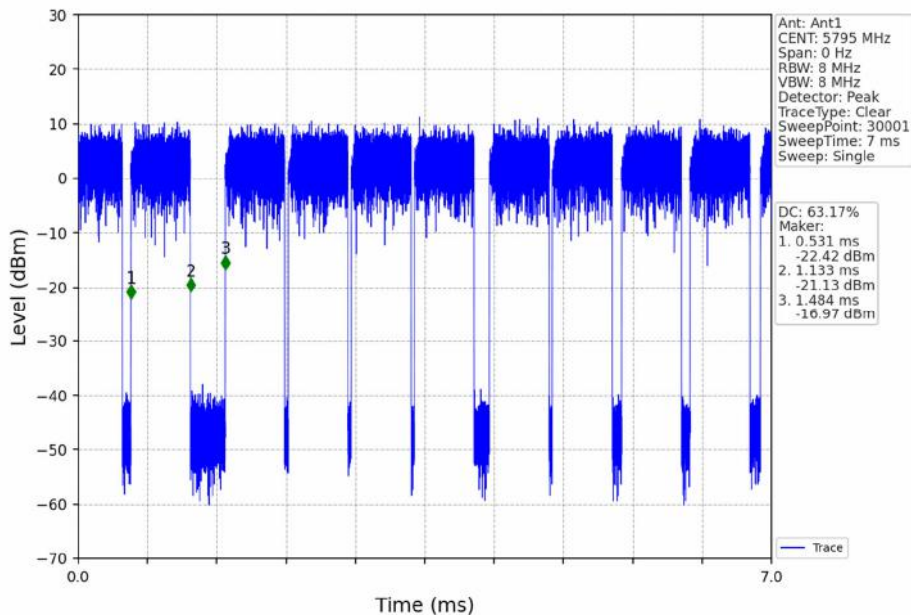




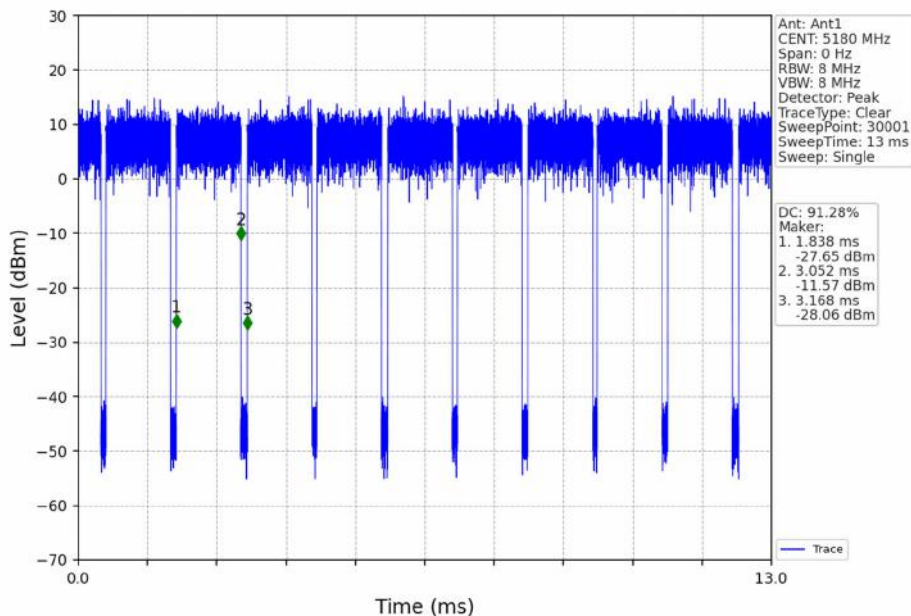
802.11n(HT40)_LCH_5755MHz_Ant1_NTNV



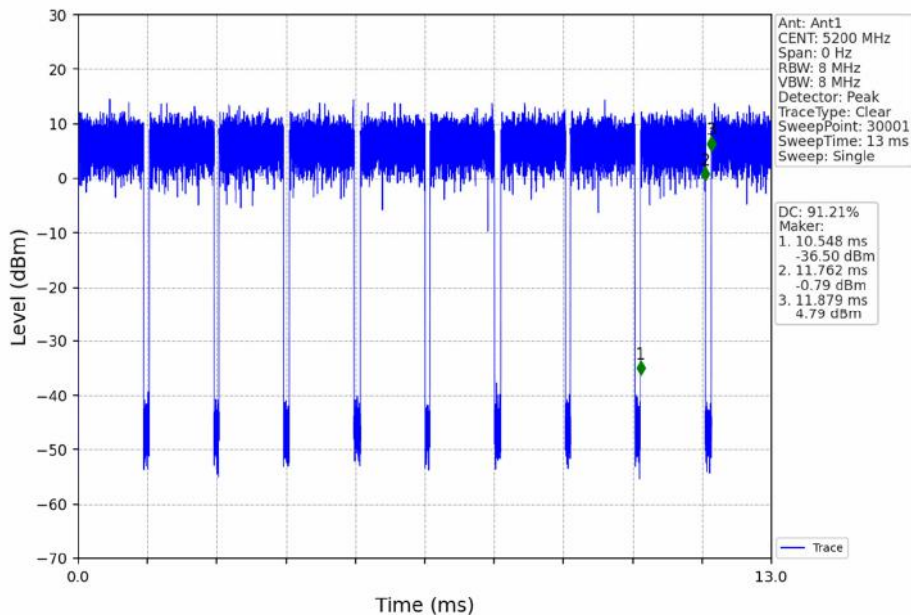
802.11n(HT40)_HCH_5795MHz_Ant1_NTNV



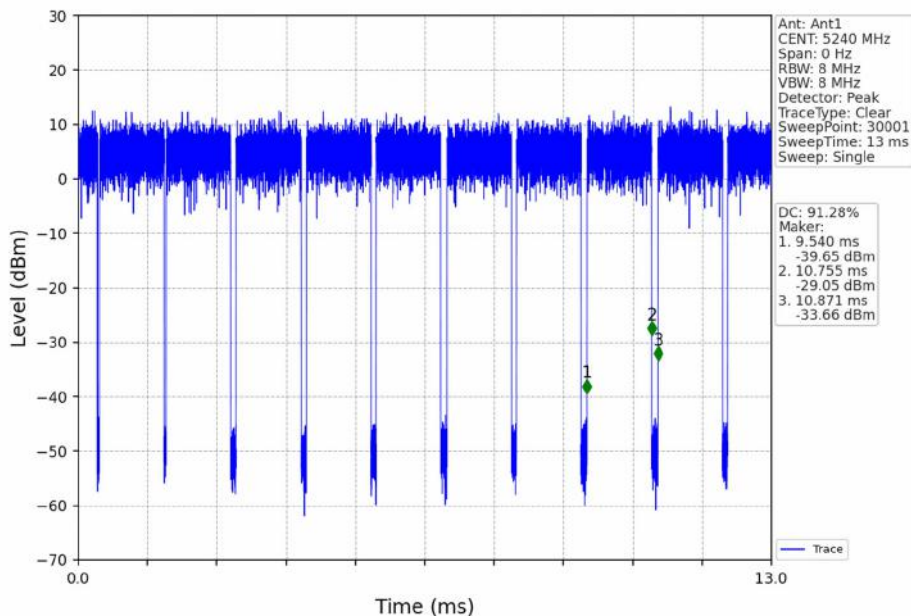
802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



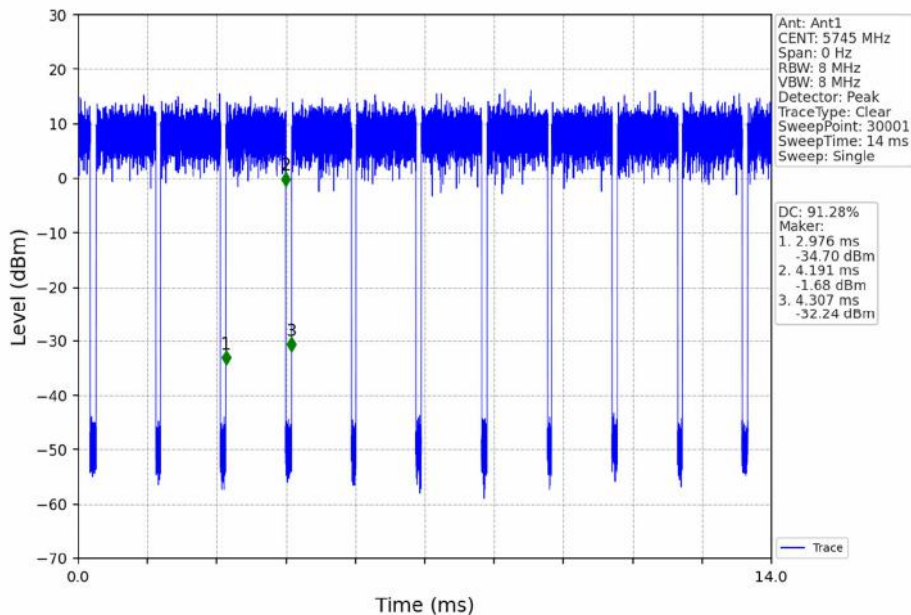
802.11ac(VHT20)_MCH_5200MHz_Ant1_NTNV

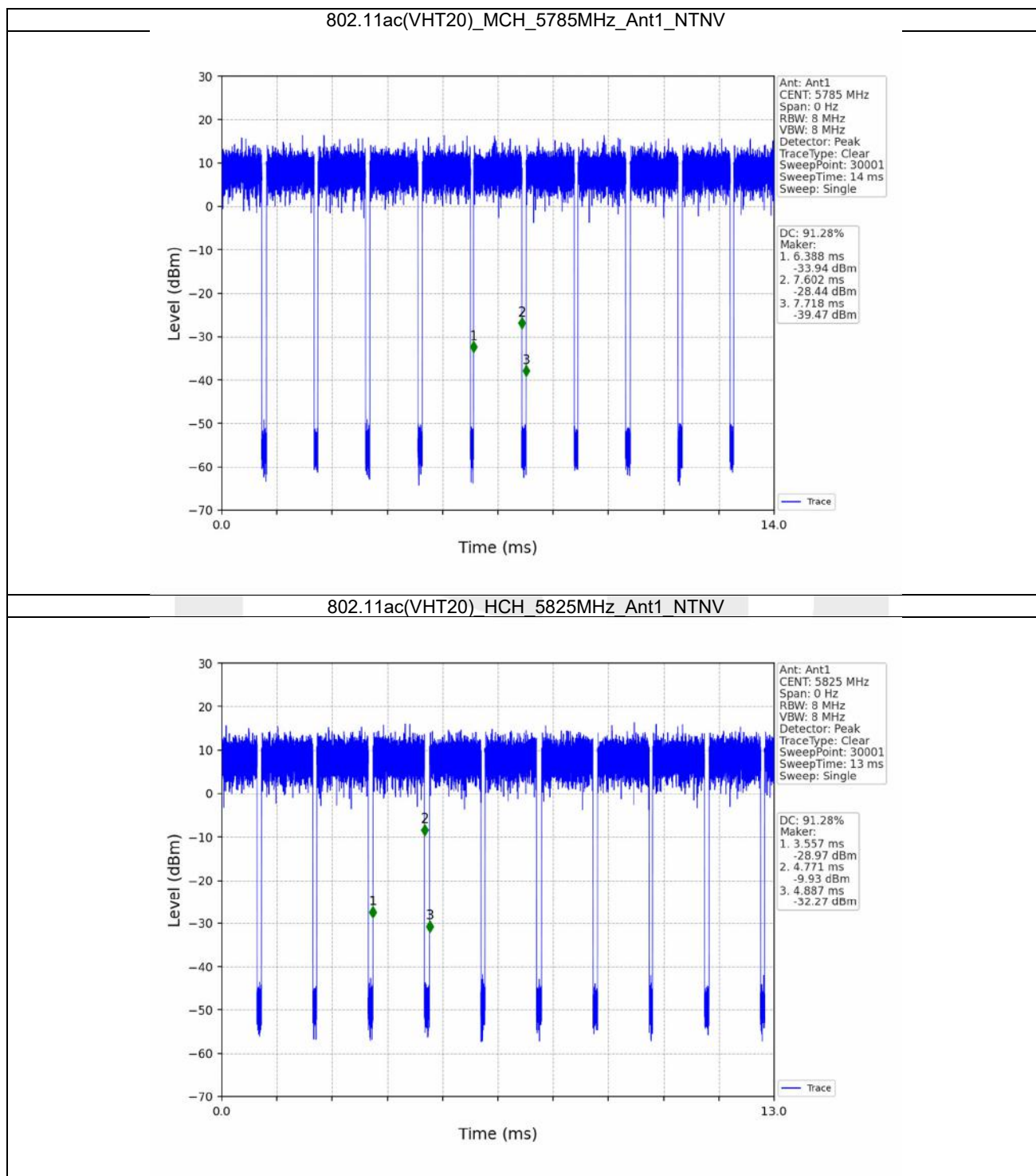


802.11ac(VHT20)_HCH_5240MHz_Ant1_NTNV

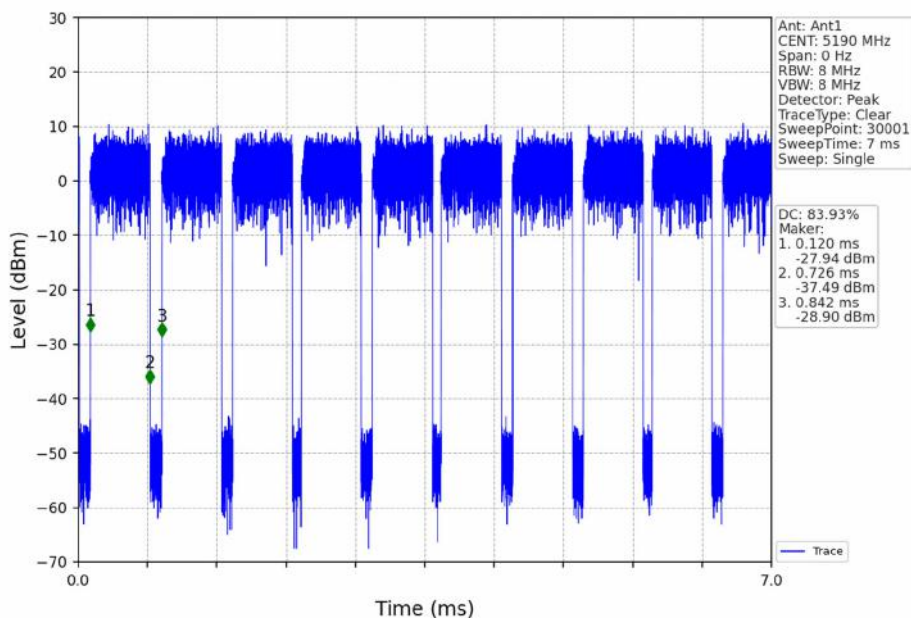


802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV

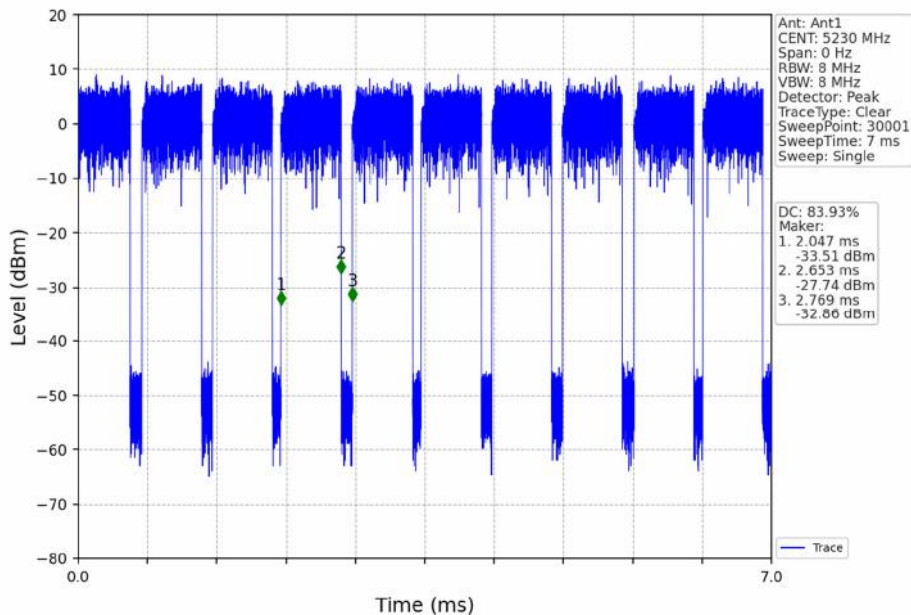




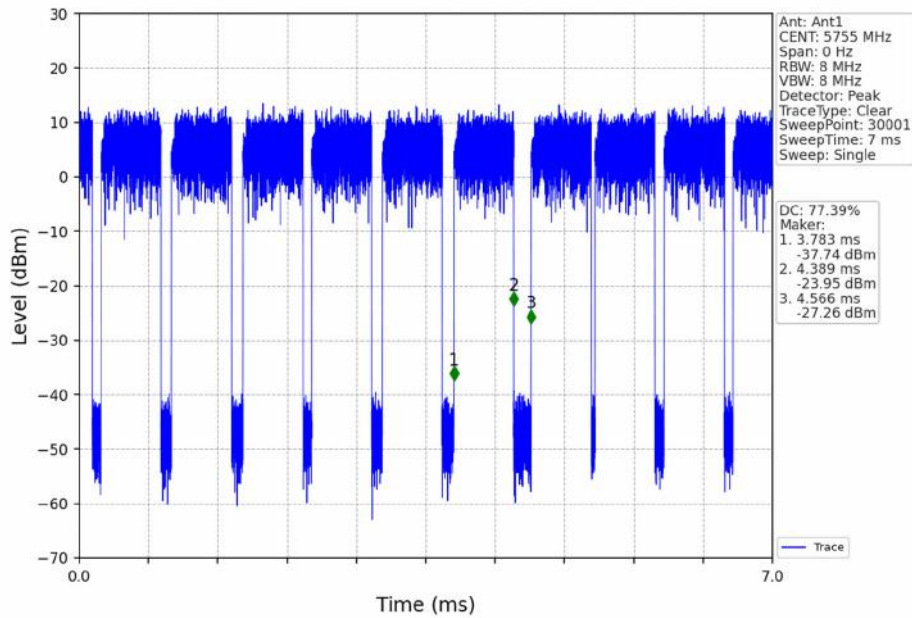
802.11ac(VHT40)_LCH_5190MHz_Ant1_NTNV



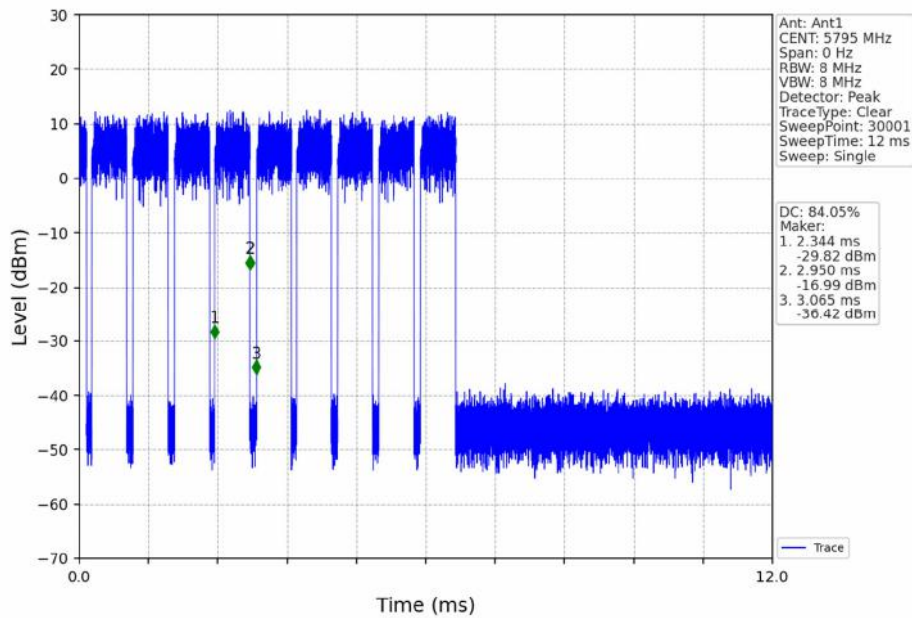
802.11ac(VHT40)_HCH_5230MHz_Ant1_NTNV



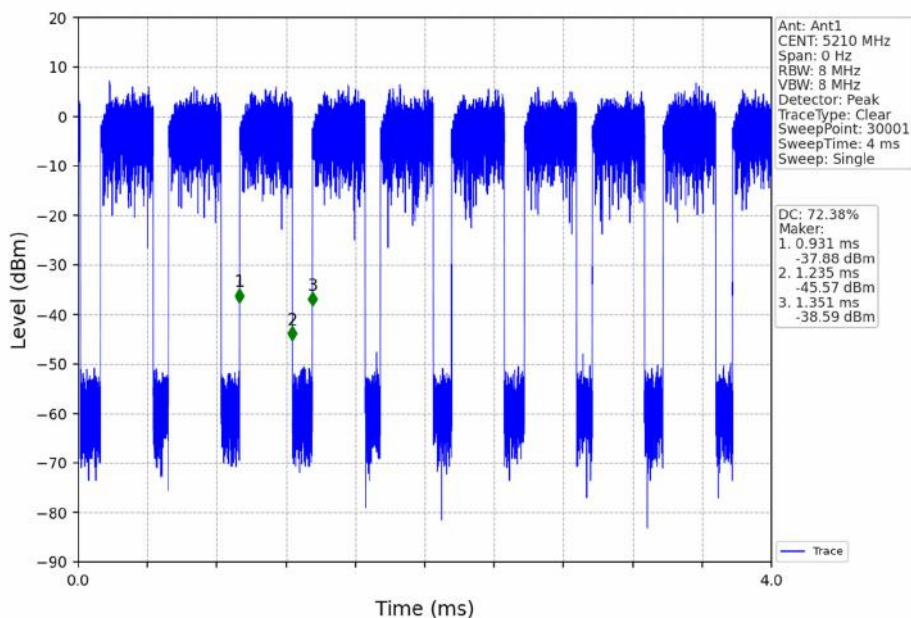
802.11ac(VHT40)_LCH_5755MHz_Ant1_NTNV



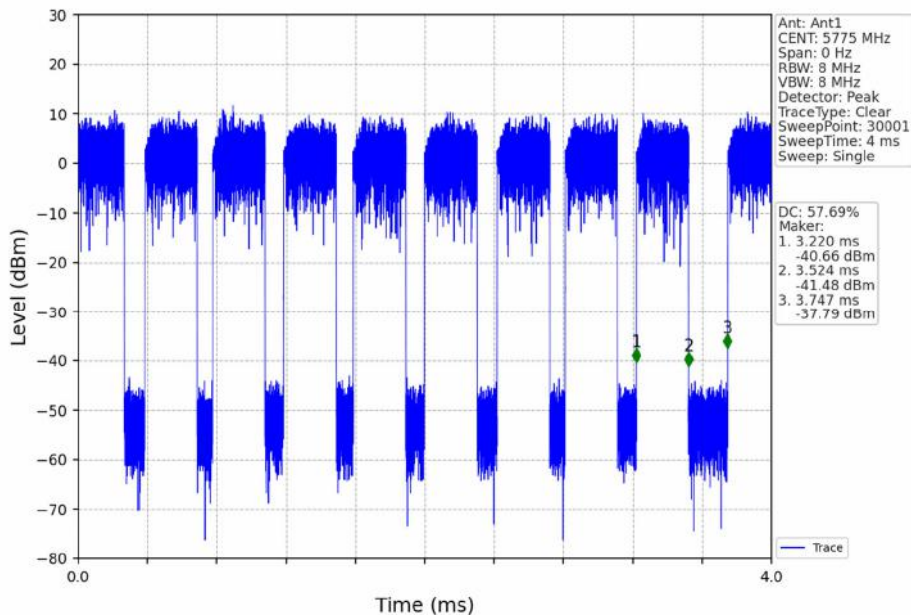
802.11ac(VHT40)_HCH_5795MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV

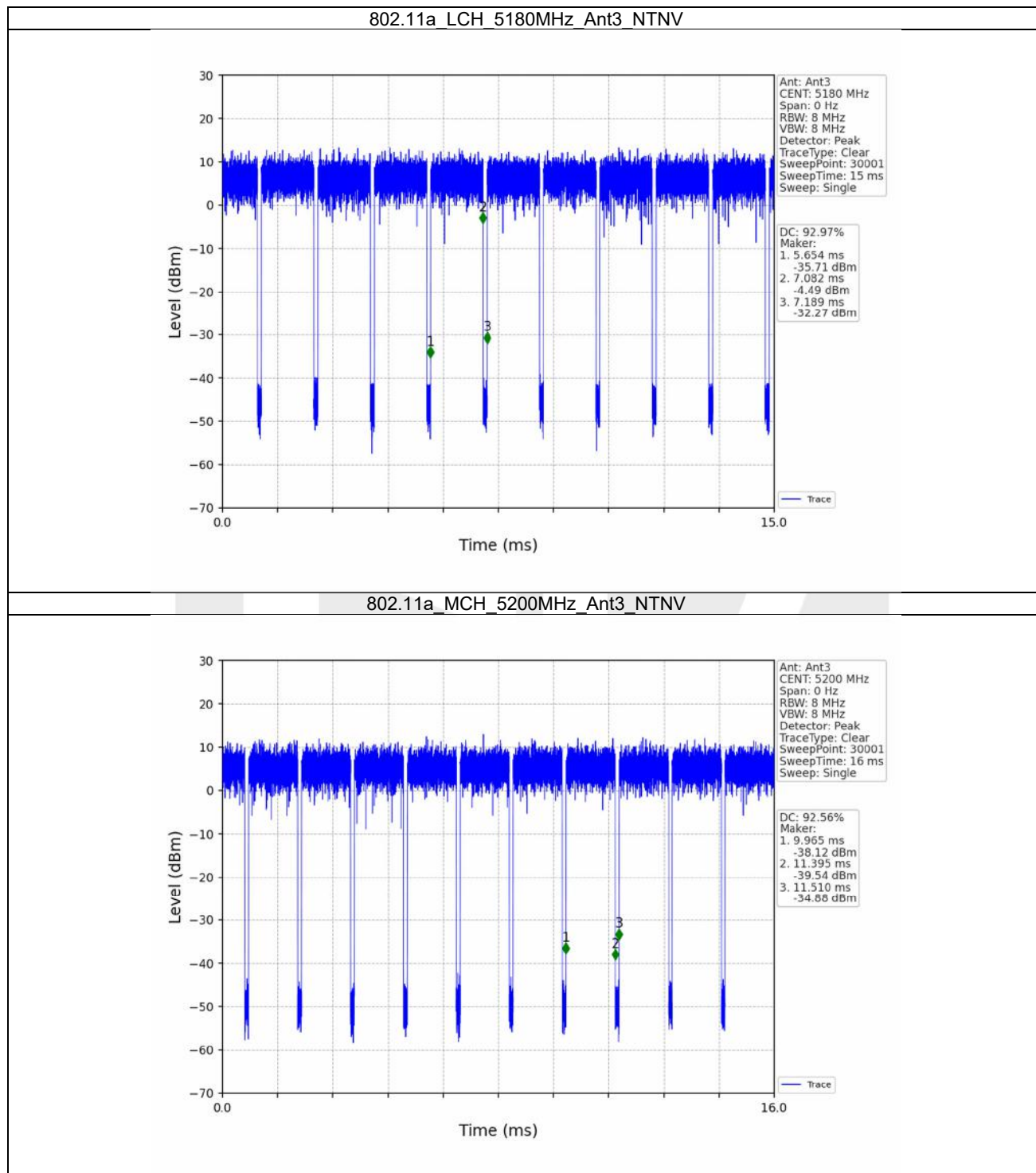


1.2 WiFi Module 2

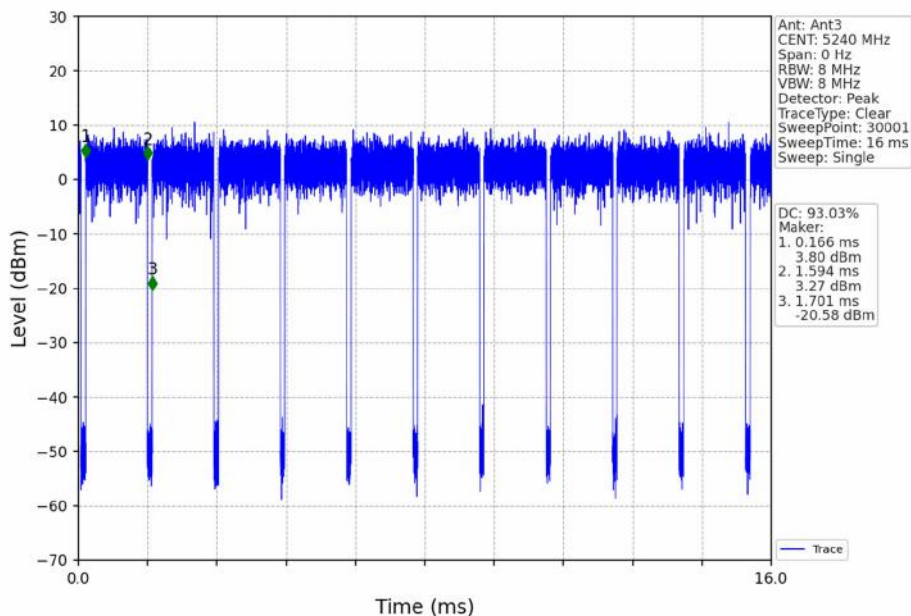
1.2.1 Test Result

Ant3							
Mode	Tx Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11a	SISO	5180	1.428	1.536	92.97	0.32	0.58
		5200	1.430	1.545	92.56	0.34	0.64
		5240	1.428	1.535	93.03	0.31	0.59
		5745	1.429	1.553	92.02	0.36	2.17
		5785	1.430	1.554	92.02	0.36	2.15
		5825	1.430	1.554	92.02	0.36	1.12
802.11n (HT20)	SISO	5180	1.207	1.314	91.86	0.37	0.04
		5200	1.207	1.314	91.86	0.37	0.06
		5240	1.208	1.314	91.93	0.37	0.03
		5745	1.208	1.317	91.72	0.38	0.23
		5785	1.207	1.314	91.86	0.37	0.04
		5825	1.208	1.323	91.31	0.39	1.27
802.11n (HT40)	SISO	5190	0.602	0.718	83.84	0.77	3.29
		5230	0.602	0.718	83.84	0.77	3.29
		5755	0.602	0.718	83.84	0.77	3.32
		5795	0.603	0.726	83.06	0.81	6.45
802.11ac (VHT20)	SISO	5180	1.215	1.330	91.35	0.39	1.92
		5200	1.215	1.331	91.28	0.40	1.92
		5240	1.214	1.330	91.28	0.40	1.94
		5745	1.215	1.338	90.81	0.42	2.36
		5785	1.221	1.374	88.86	0.51	7.43
		5825	1.215	1.331	91.28	0.40	1.92
802.11ac (VHT40)	SISO	5190	0.606	0.722	83.93	0.76	3.28
		5230	0.606	0.722	83.93	0.76	3.27
		5755	0.606	0.722	83.93	0.76	3.27
		5795	0.607	0.768	79.04	1.02	11.85
802.11ac (VHT80)	SISO	5210	0.304	0.420	72.38	1.40	5.03
		5775	0.304	0.641	47.43	3.24	42.40

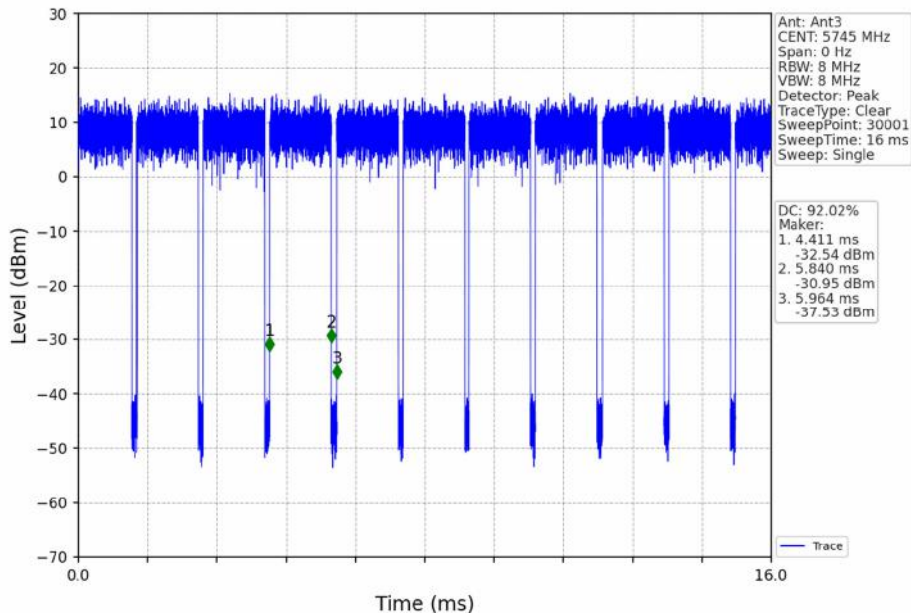
1.2.2 Test Graph



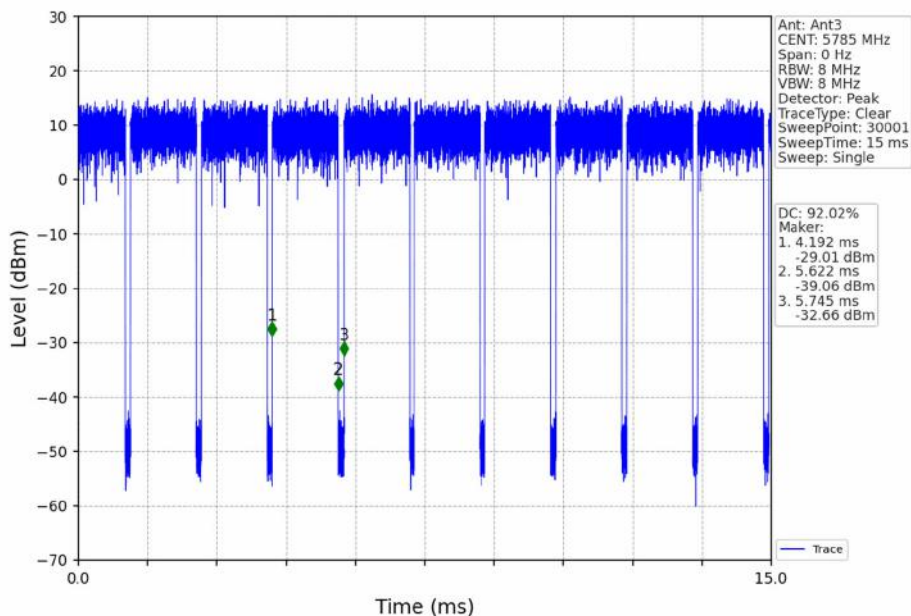
802.11a_HCH_5240MHz_Ant3_NTNV



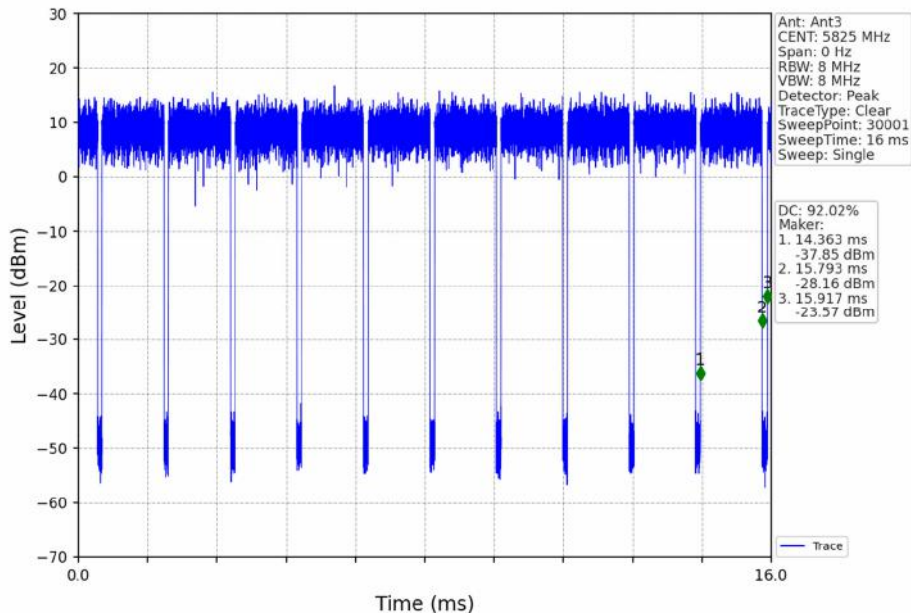
802.11a_LCH_5745MHz_Ant3_NTNV



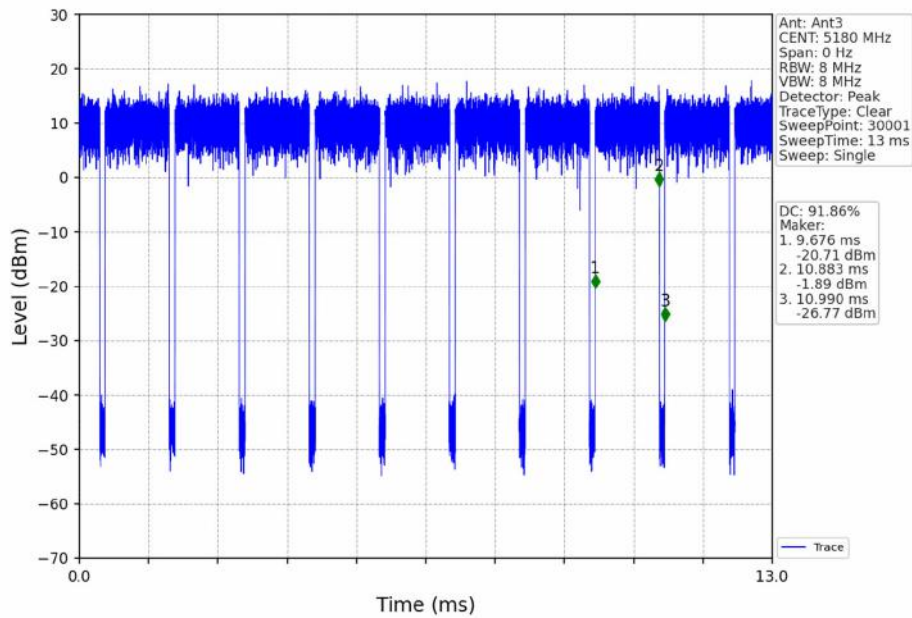
802.11a_MCH_5785MHz_Ant3_NTNV



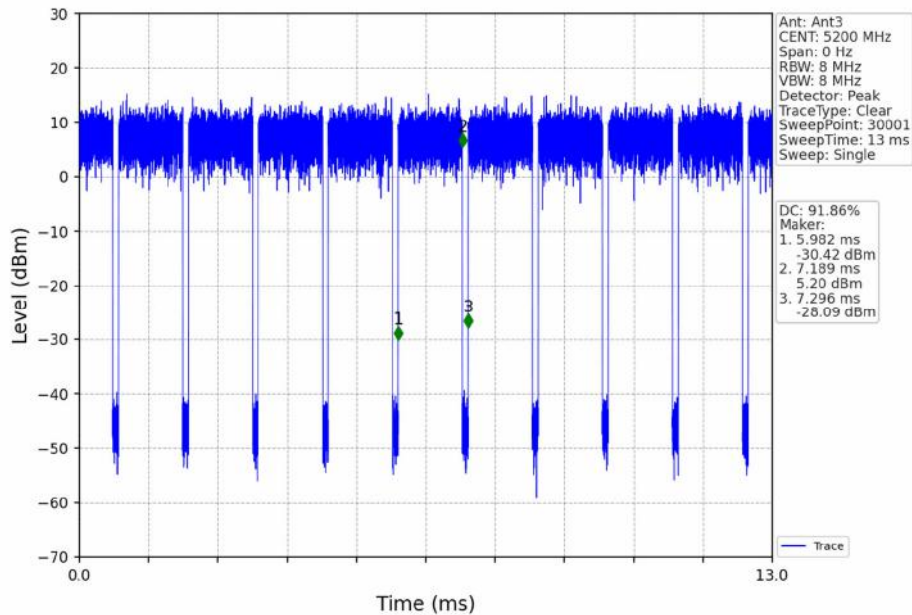
802.11a_HCH_5825MHz_Ant3_NTNV



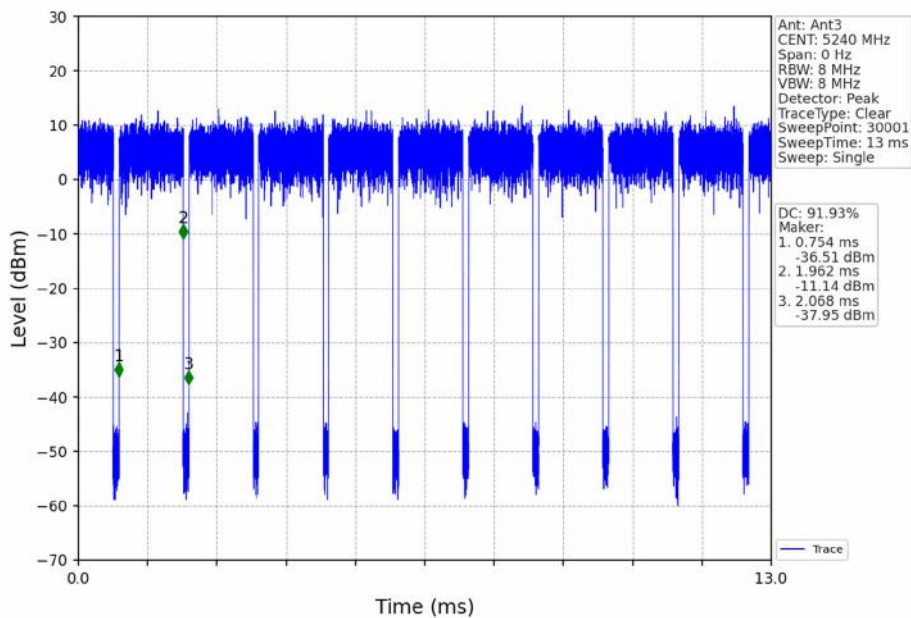
802.11n(HT20)_LCH_5180MHz_Ant3_NTNV



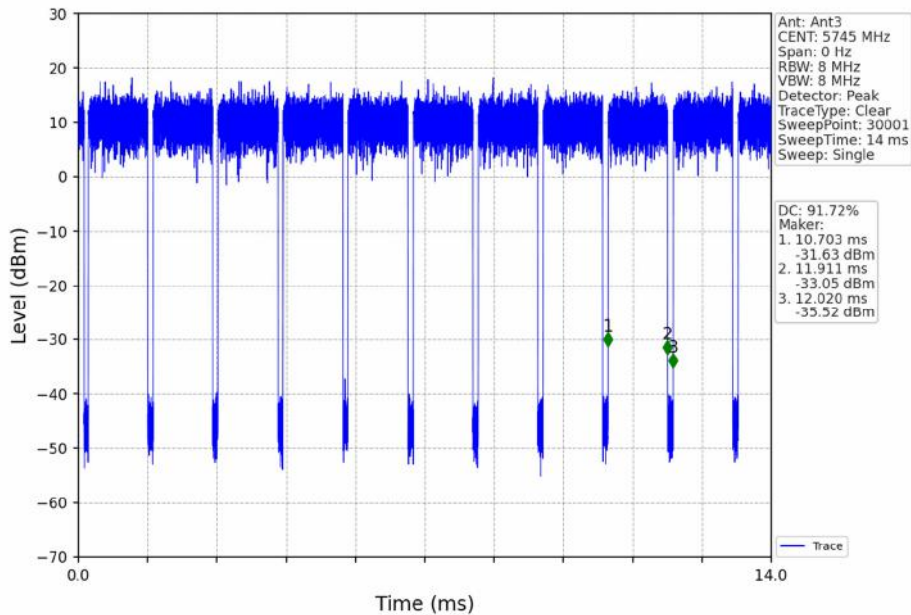
802.11n(HT20)_MCH_5200MHz_Ant3_NTNV



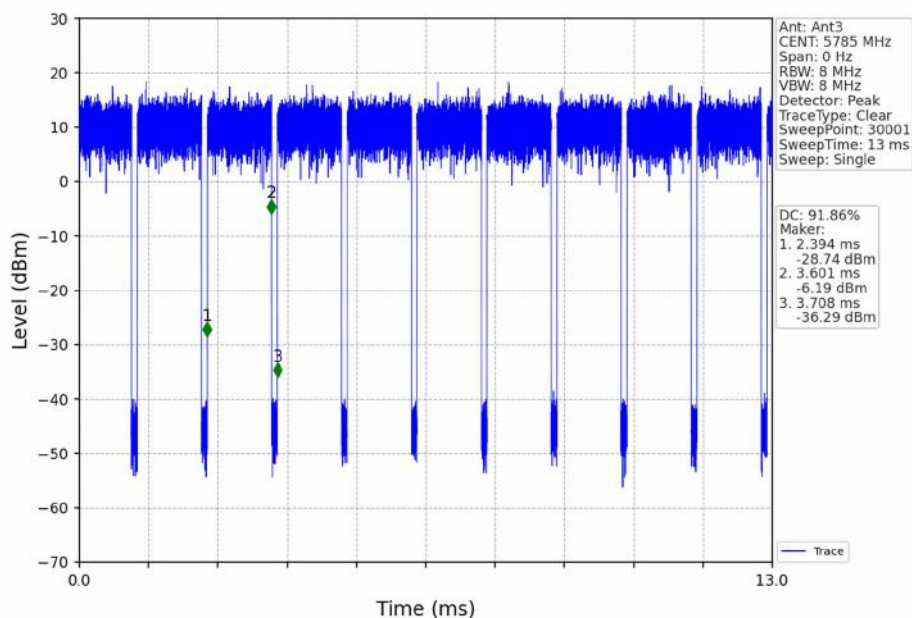
802.11n(HT20)_HCH_5240MHz_Ant3_NTNV



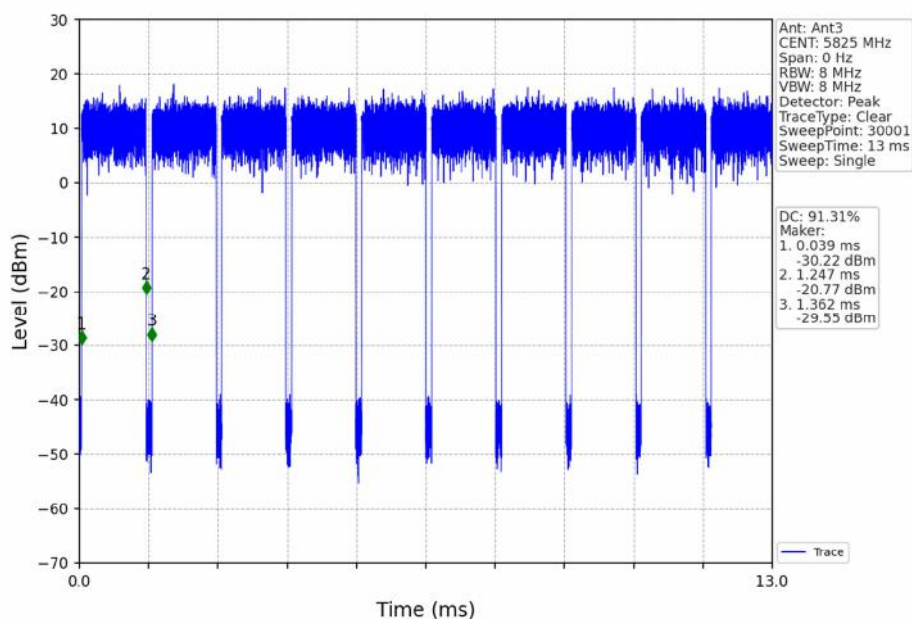
802.11n(HT20)_LCH_5745MHz_Ant3_NTNV



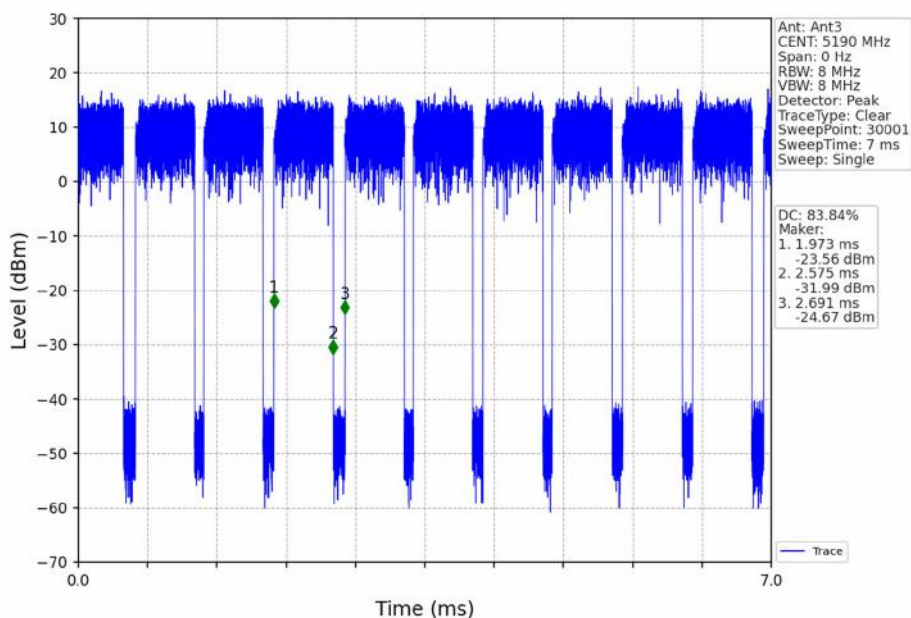
802.11n(HT20)_MCH_5785MHz_Ant3_NTNV



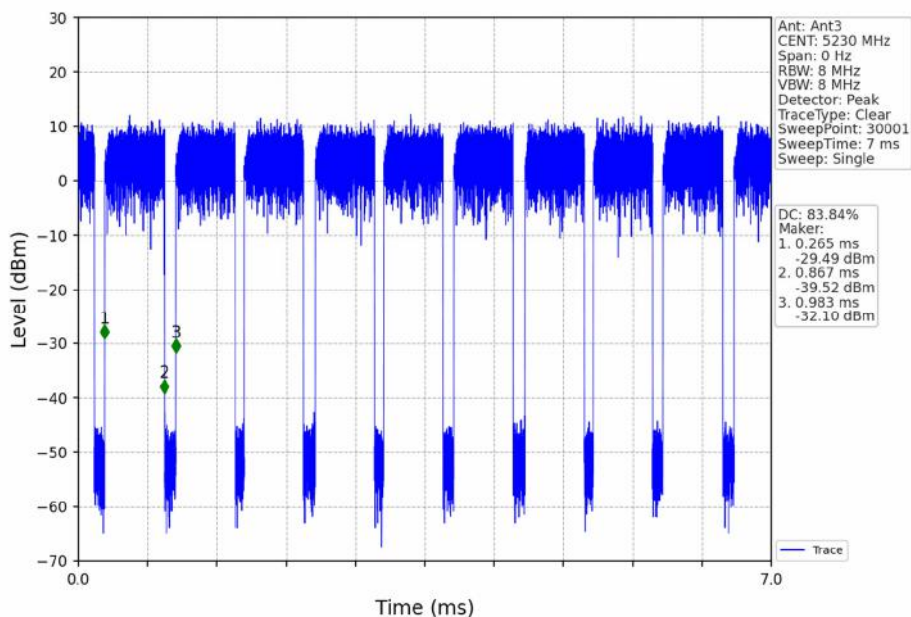
802.11n(HT20)_HCH_5825MHz_Ant3_NTNV

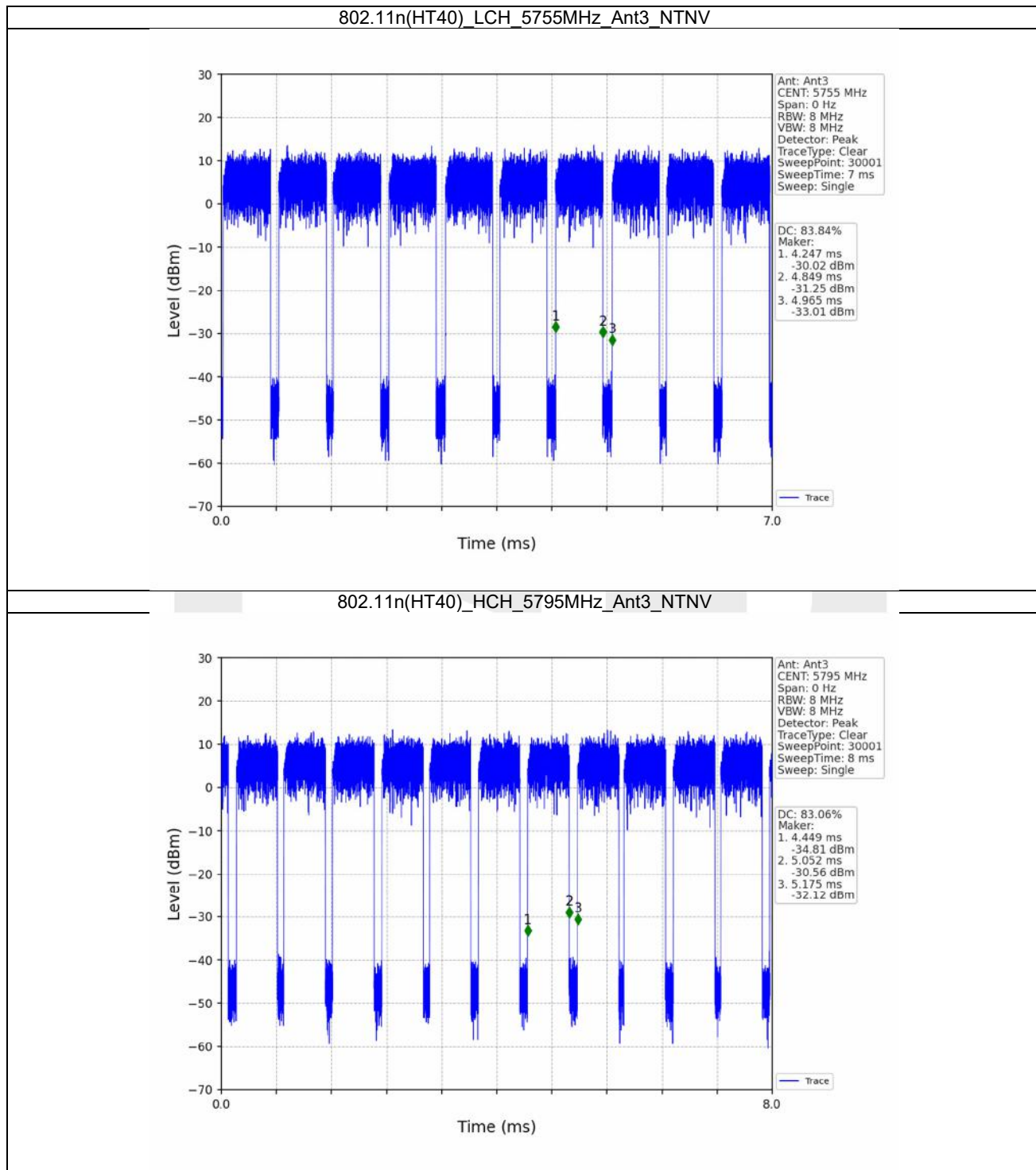


802.11n(HT40)_LCH_5190MHz_Ant3_NTNV

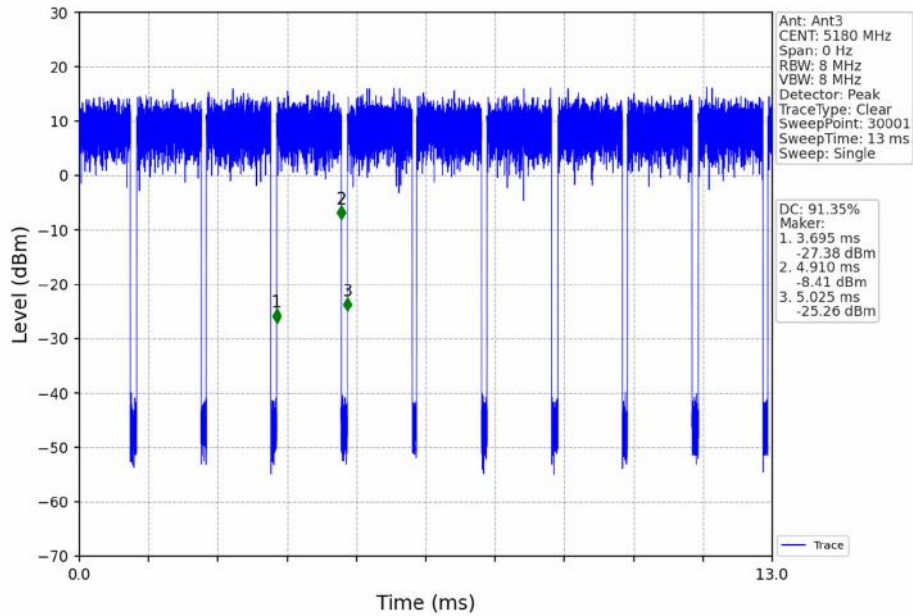


802.11n(HT40)_HCH_5230MHz_Ant3_NTNV

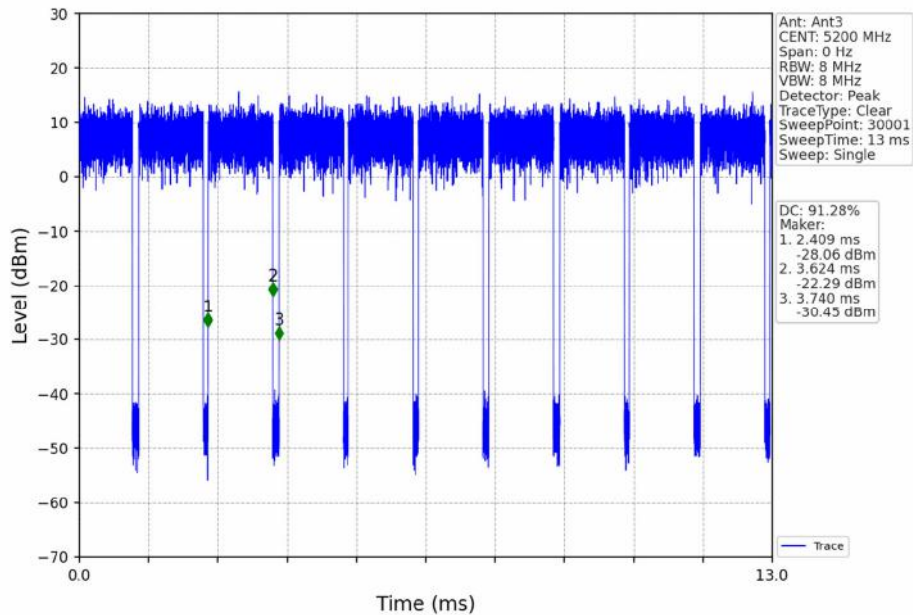




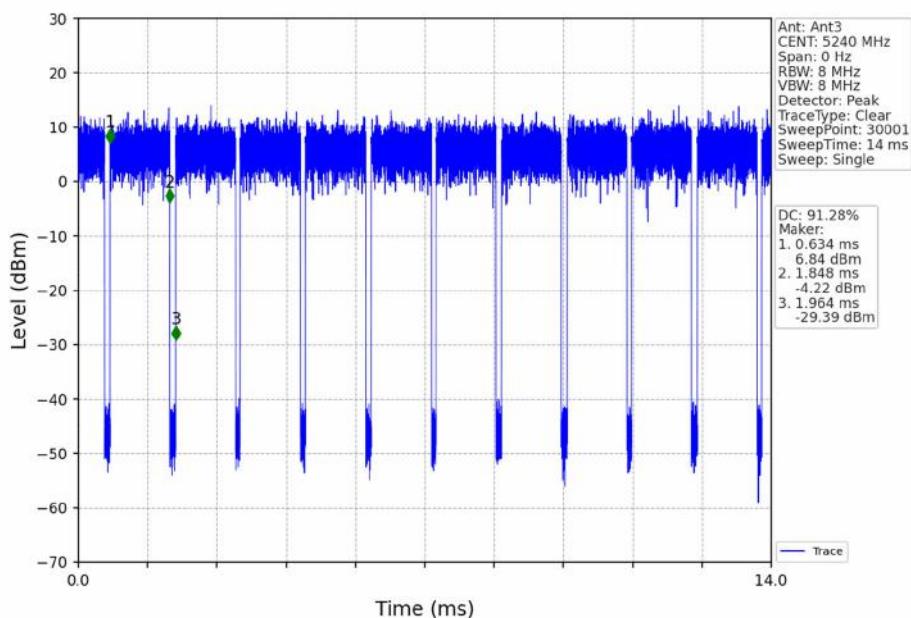
802.11ac(VHT20)_LCH_5180MHz_Ant3_NTNV



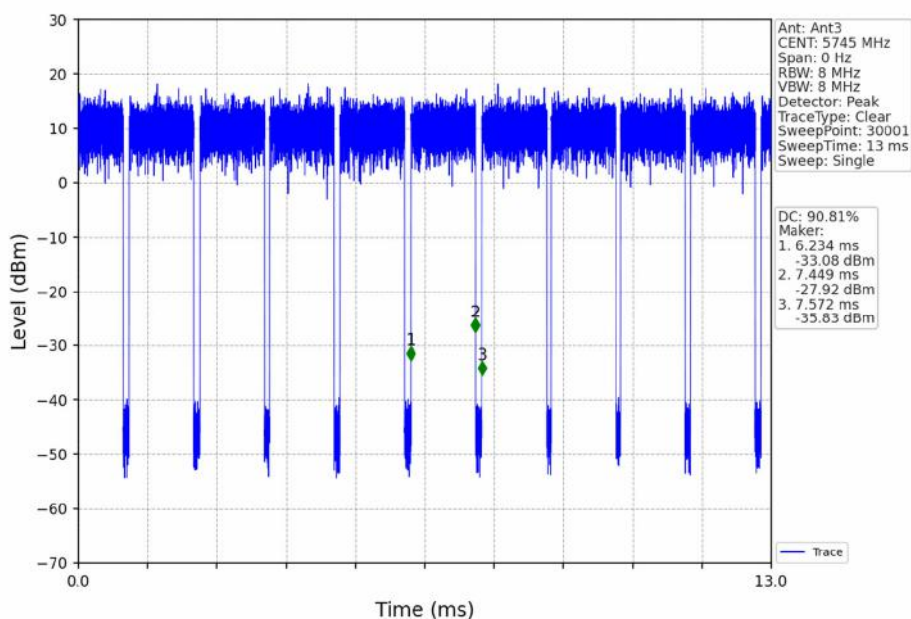
802.11ac(VHT20)_MCH_5200MHz_Ant3_NTNV



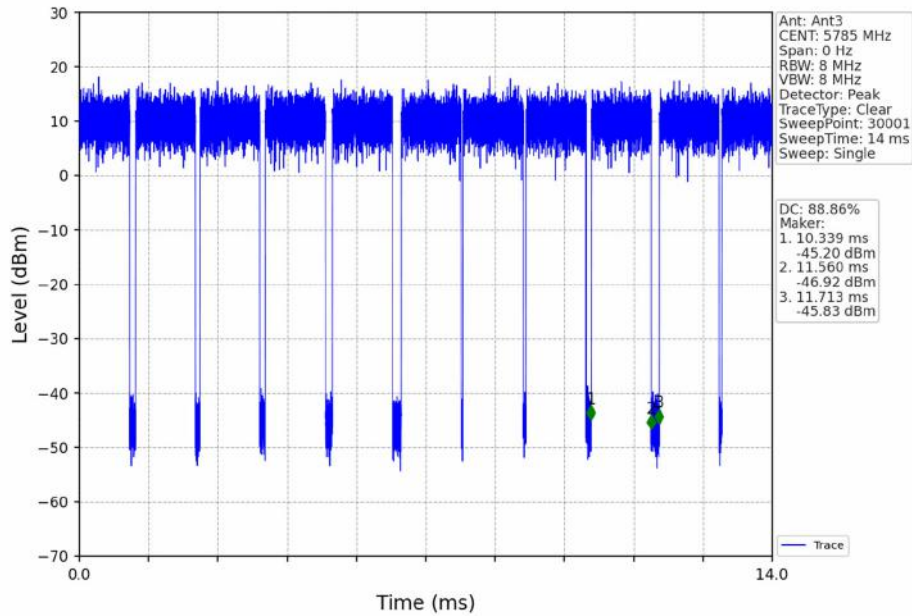
802.11ac(VHT20)_HCH_5240MHz_Ant3_NTNV



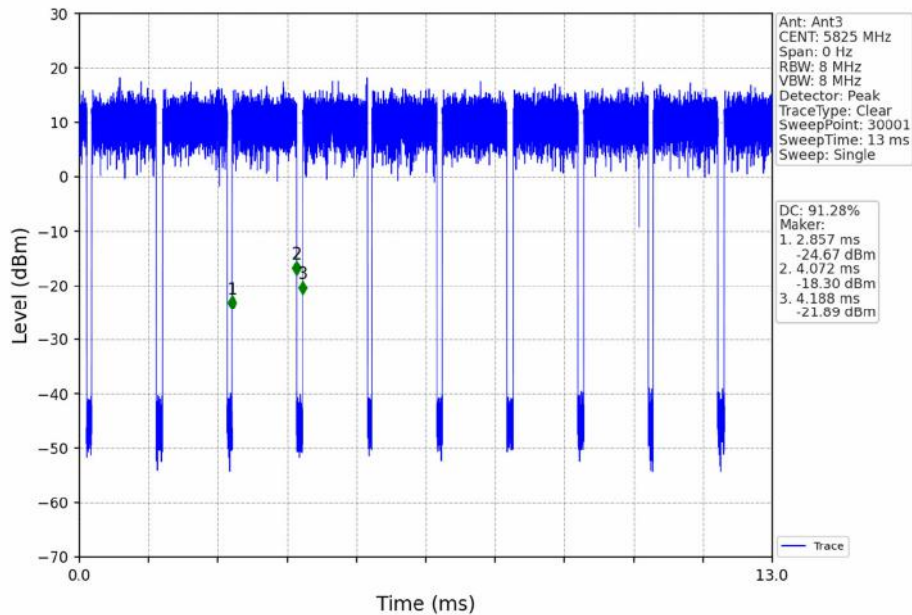
802.11ac(VHT20)_LCH_5745MHz_Ant3_NTNV



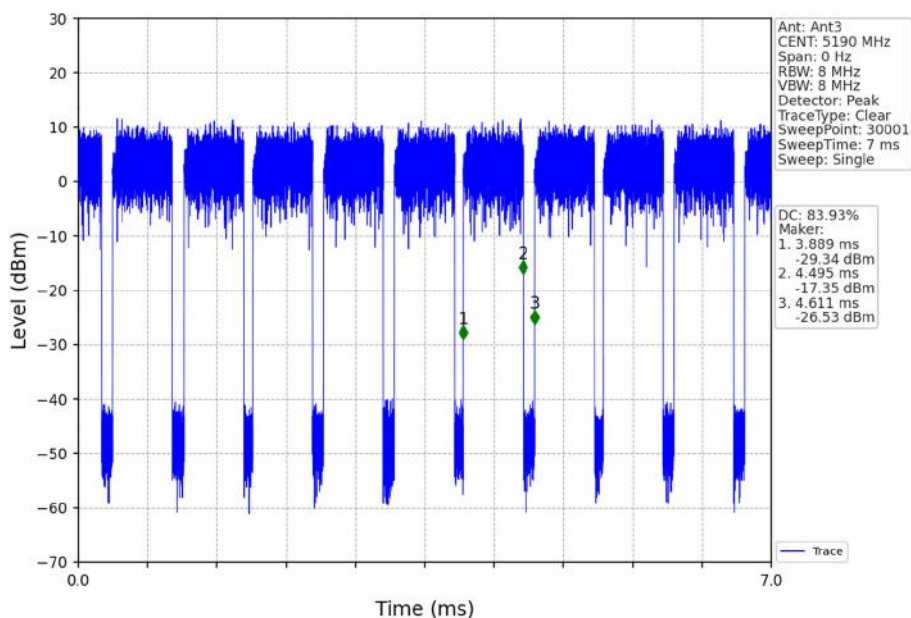
802.11ac(VHT20)_MCH_5785MHz_Ant3_NTNV



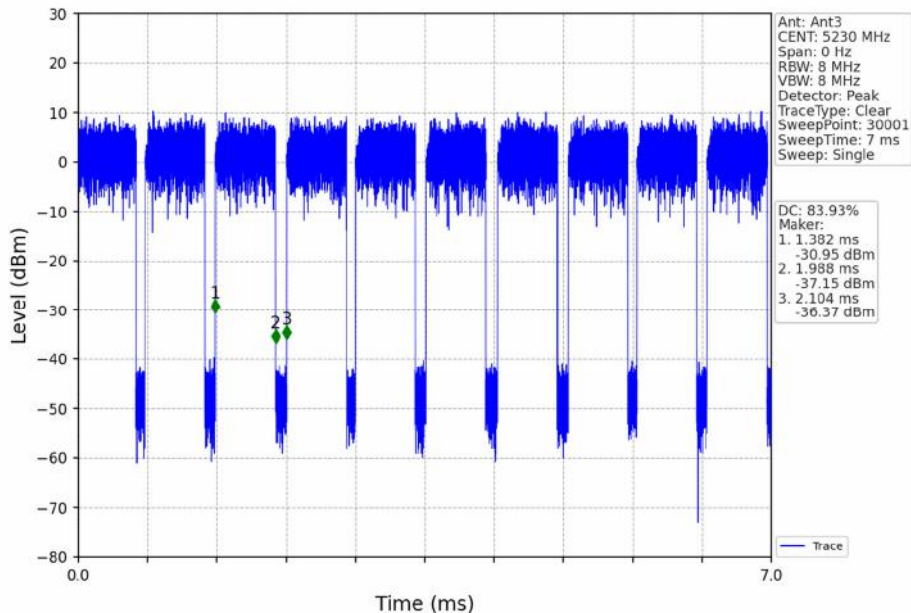
802.11ac(VHT20)_HCH_5825MHz_Ant3_NTNV



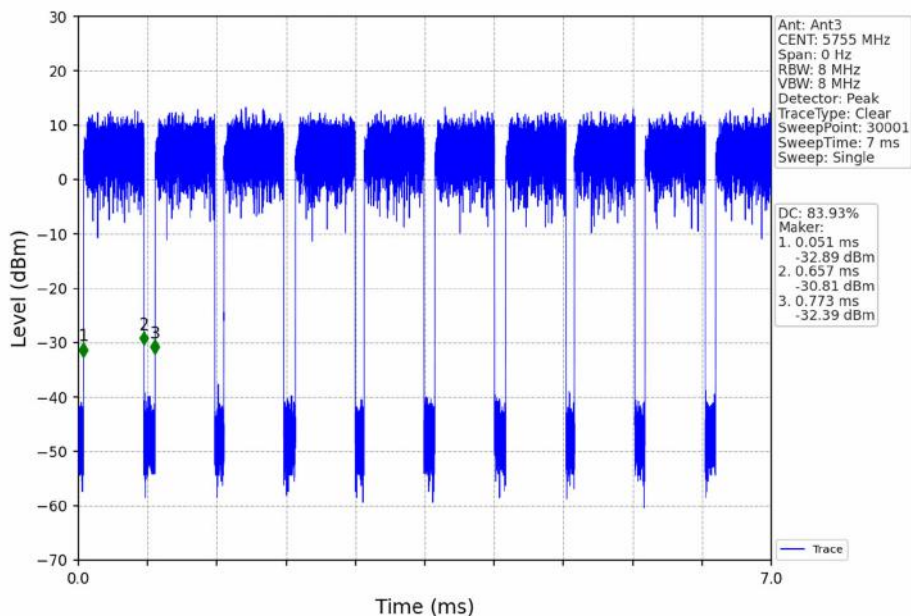
802.11ac(VHT40)_LCH_5190MHz_Ant3_NTNV



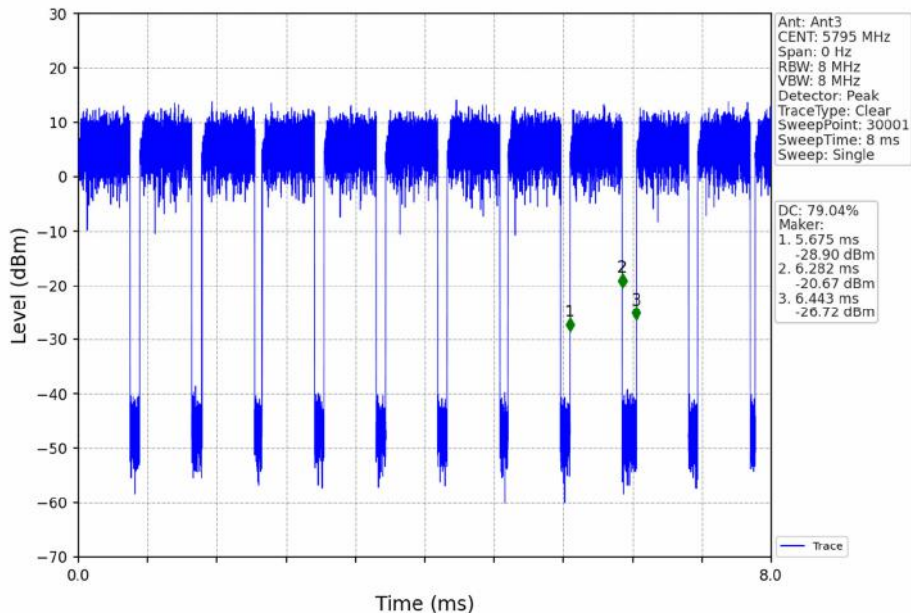
802.11ac(VHT40)_HCH_5230MHz_Ant3_NTNV



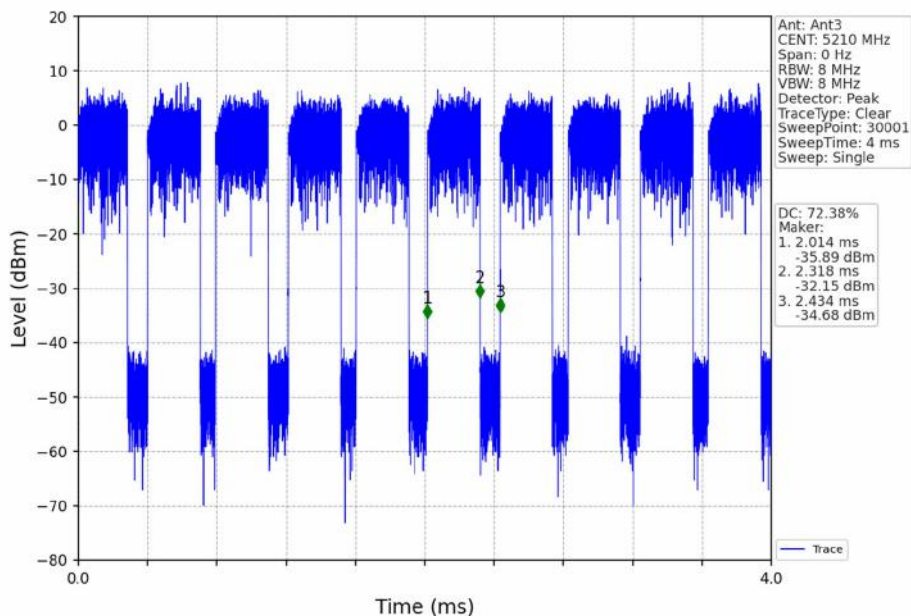
802.11ac(VHT40)_LCH_5755MHz_Ant3_NTNV



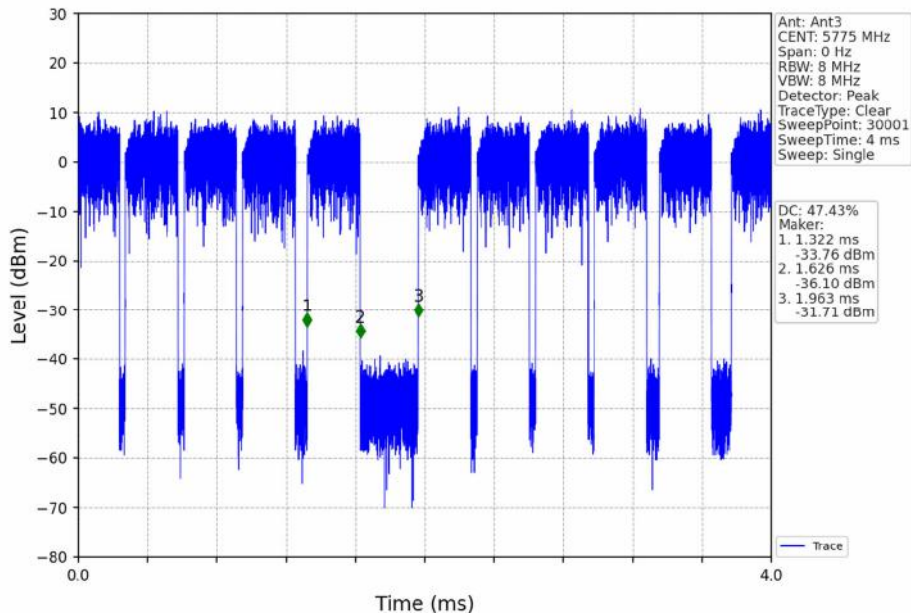
802.11ac(VHT40)_HCH_5795MHz_Ant3_NTNV



802.11ac(VHT80)_MCH_5210MHz_Ant3_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant3_NTNV



2. Bandwidth

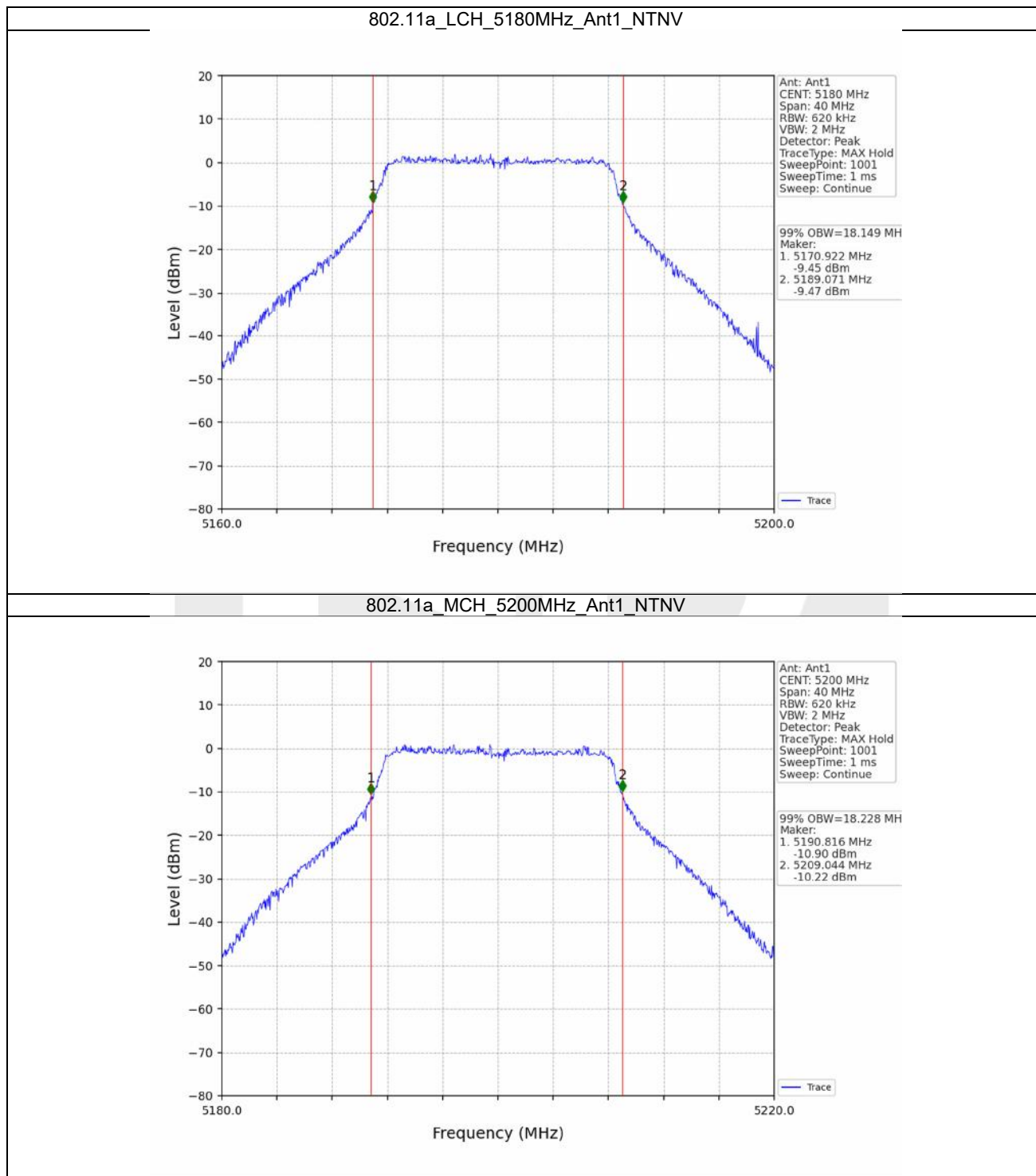
Note: For multiple-input multiple-output (MIMO) systems, if the measured channel bandwidth on testing the middle channel exceeds the minimum permitted bandwidth by more than 50% on one transmit chain, then it is not necessary to repeat testing on the other chains.

2.1.1.1. OBW (WiFi Module 1)

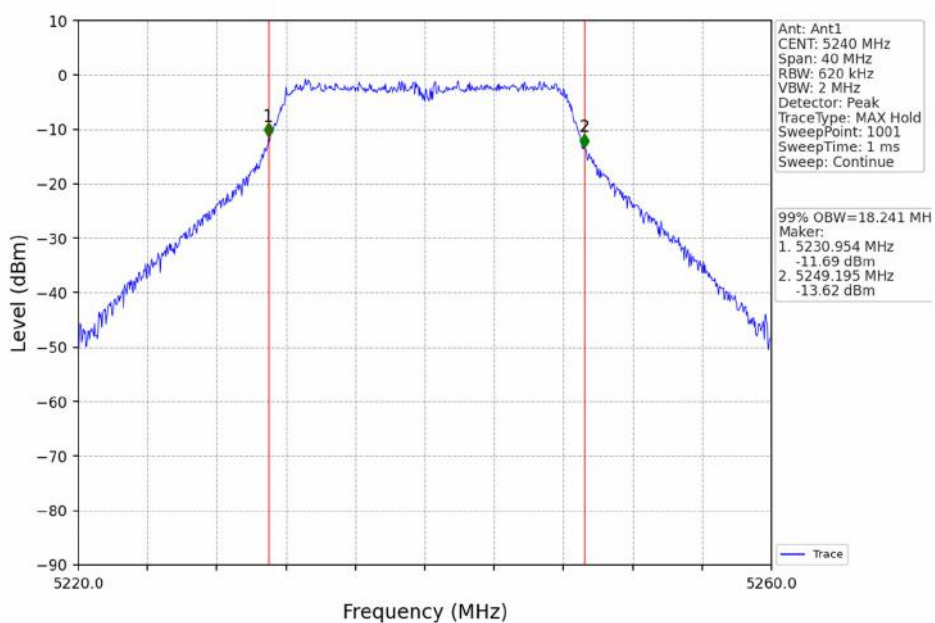
2.1.1.1.1. Test Result

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)	Verdict
				Result	
802.11a	SISO	5180	1	18.149	Pass
		5200	1	18.228	Pass
		5240	1	18.241	Pass
		5745	1	18.192	Pass
		5785	1	18.213	Pass
		5825	1	18.167	Pass
802.11n (HT20)	SISO	5180	1	19.117	Pass
		5200	1	19.155	Pass
		5240	1	19.171	Pass
		5745	1	19.128	Pass
		5785	1	19.141	Pass
		5825	1	19.077	Pass
802.11n (HT40)	SISO	5190	1	37.924	Pass
		5230	1	38.009	Pass
		5755	1	38.055	Pass
		5795	1	38.062	Pass
802.11ac (VHT20)	SISO	5180	1	19.115	Pass
		5200	1	19.136	Pass
		5240	1	19.167	Pass
		5745	1	19.107	Pass
		5785	1	19.207	Pass
		5825	1	19.154	Pass
802.11ac (VHT40)	SISO	5190	1	37.948	Pass
		5230	1	38.073	Pass
		5755	1	38.056	Pass
		5795	1	37.993	Pass
802.11ac (VHT80)	SISO	5210	1	77.820	Pass
		5775	1	77.419	Pass

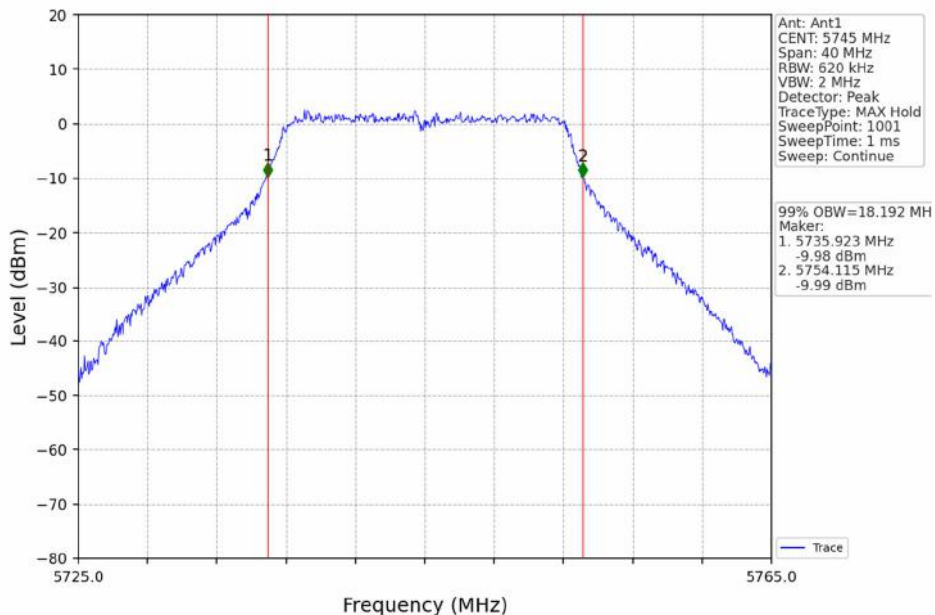
2.1.1.2. Test Graph



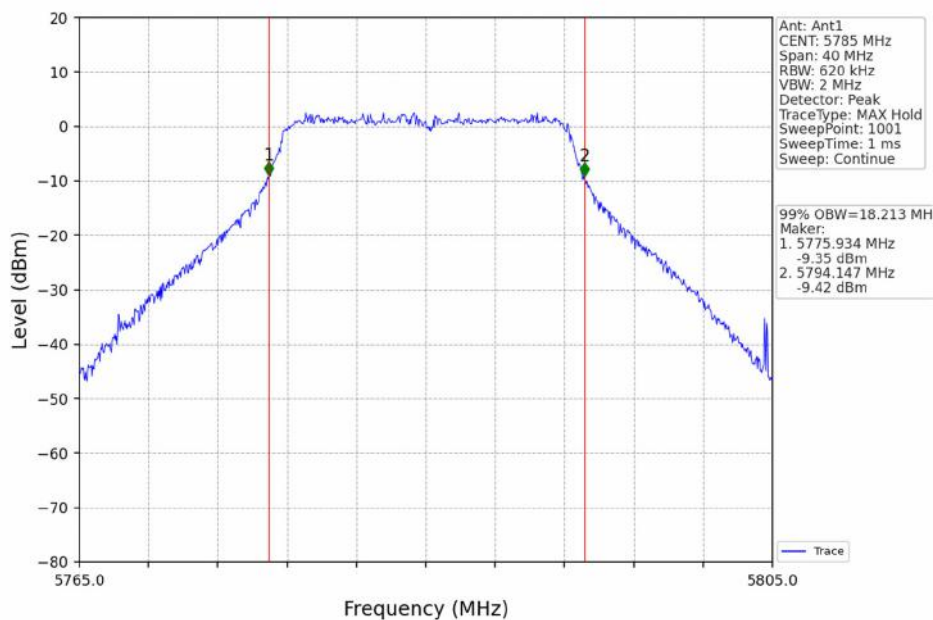
802.11a_HCH_5240MHz_Ant1_NTNV



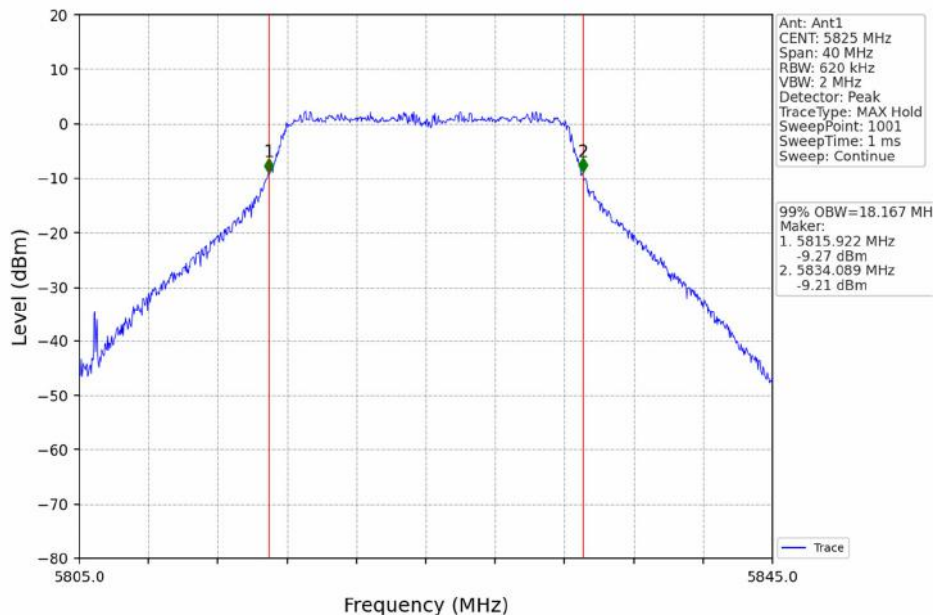
802.11a_LCH_5745MHz_Ant1_NTNV

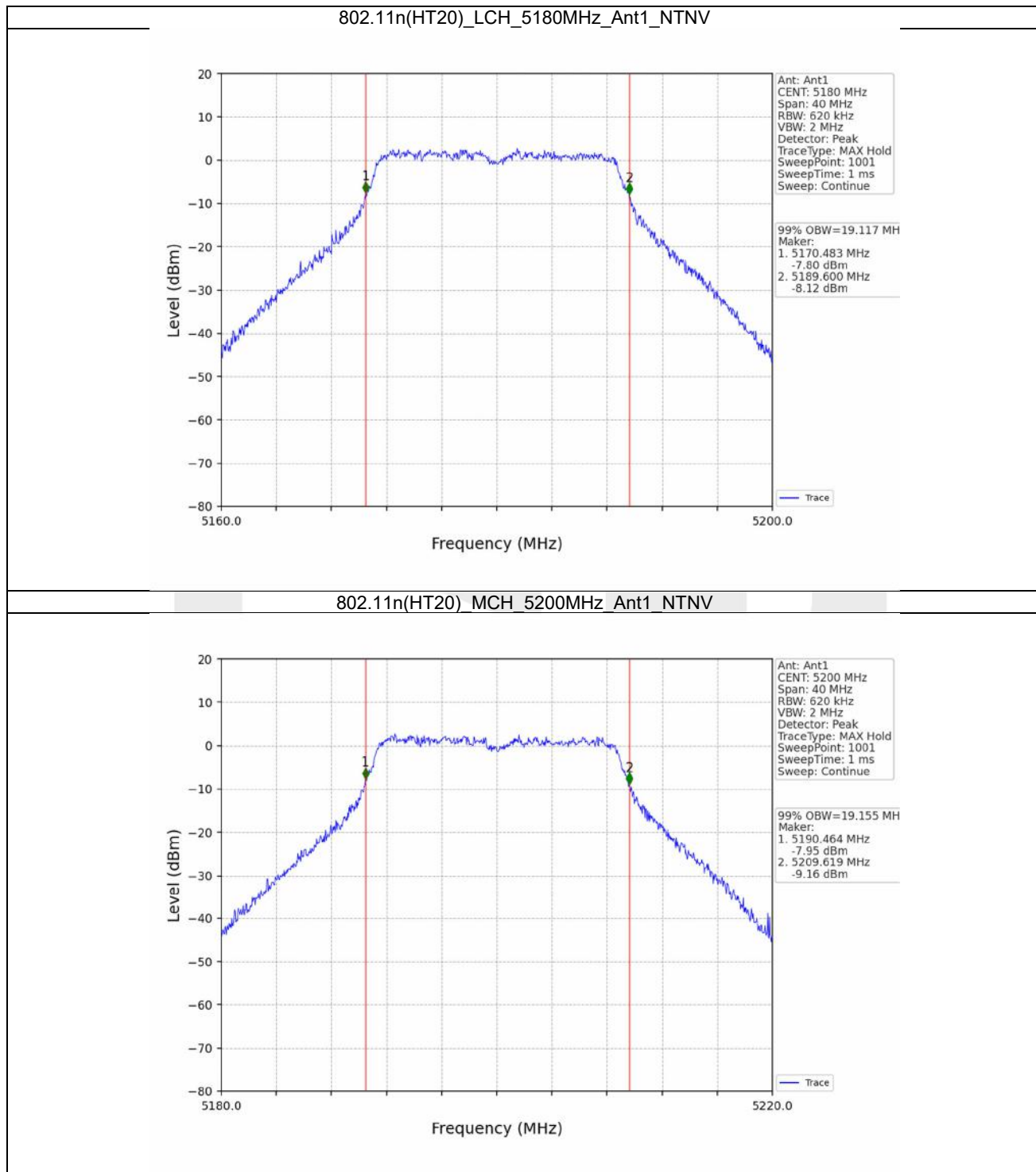


802.11a_MCH_5785MHz_Ant1_NTNV



802.11a_HCH_5825MHz_Ant1_NTNV





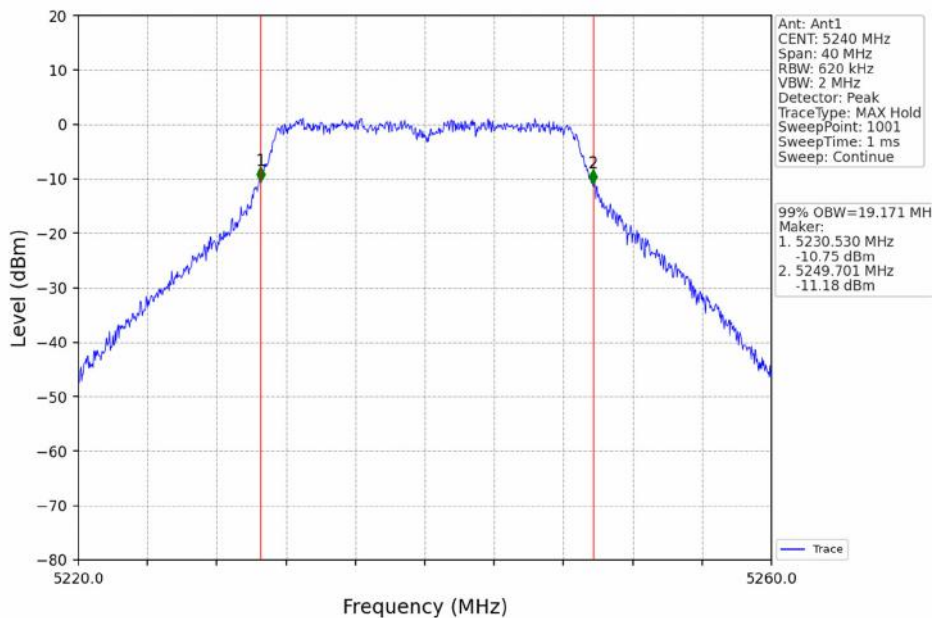
SHENZHEN EU TESTING LABORATORY LIMITED

Address: 101, Building B1, Fuqiao Fourth Area, Qiaotou Community, Fuhai Subdistrict, Baoan District, Shenzhen, Guangdong, China

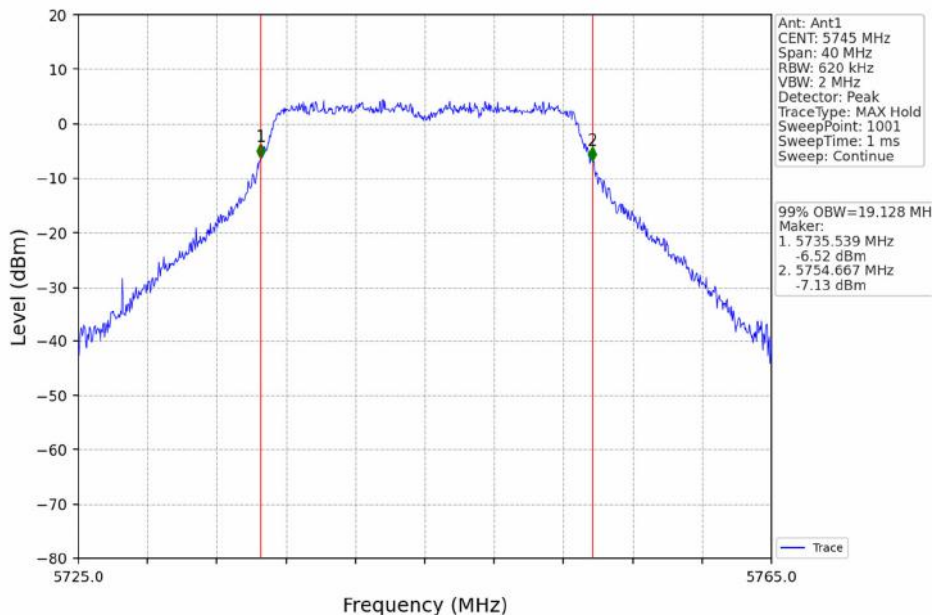
Website: www.eu-test.com

Tel: (86)-755-2357-9714 Email: Service@eu-test.com

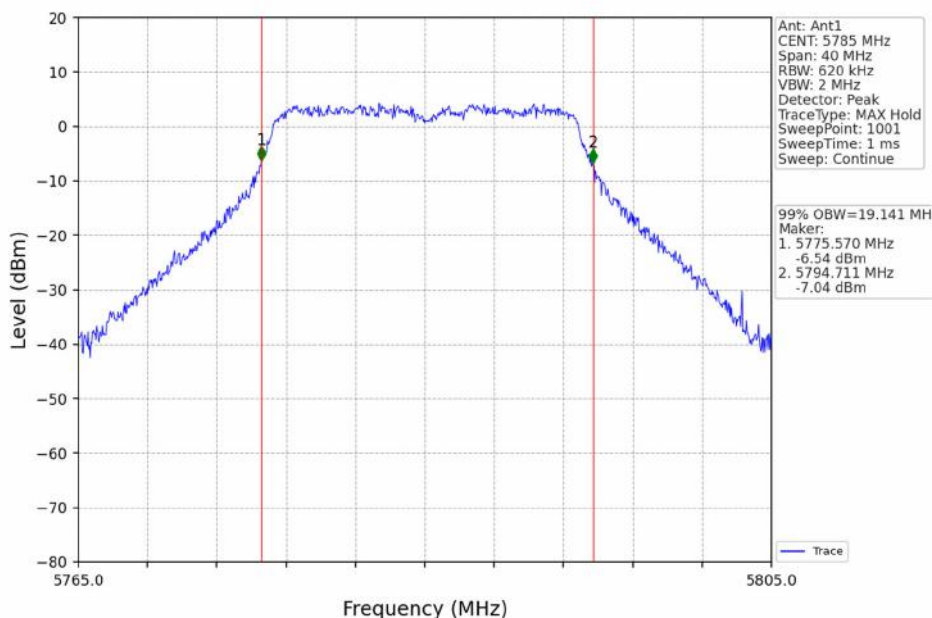
802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



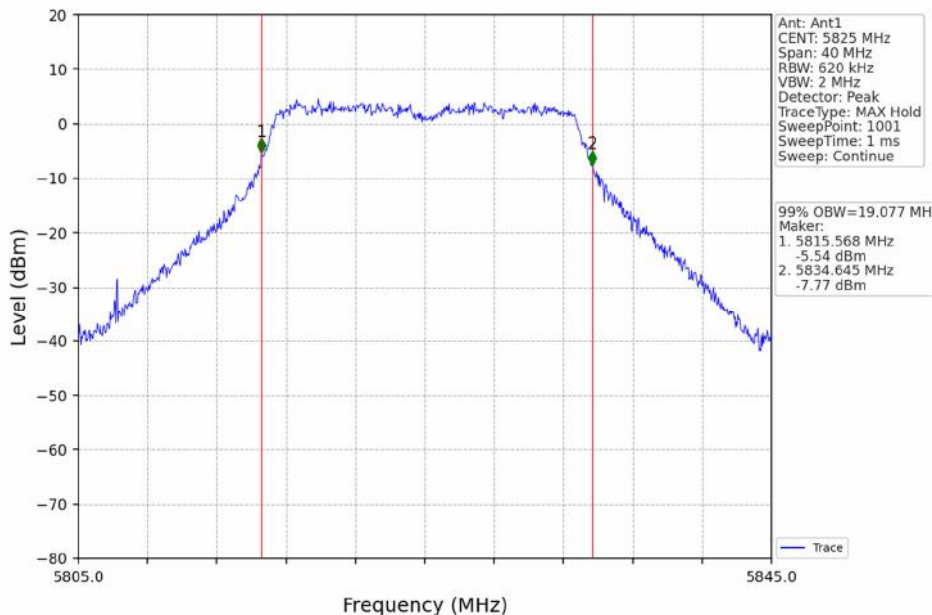
802.11n(HT20)_LCH_5745MHz_Ant1_NTNV

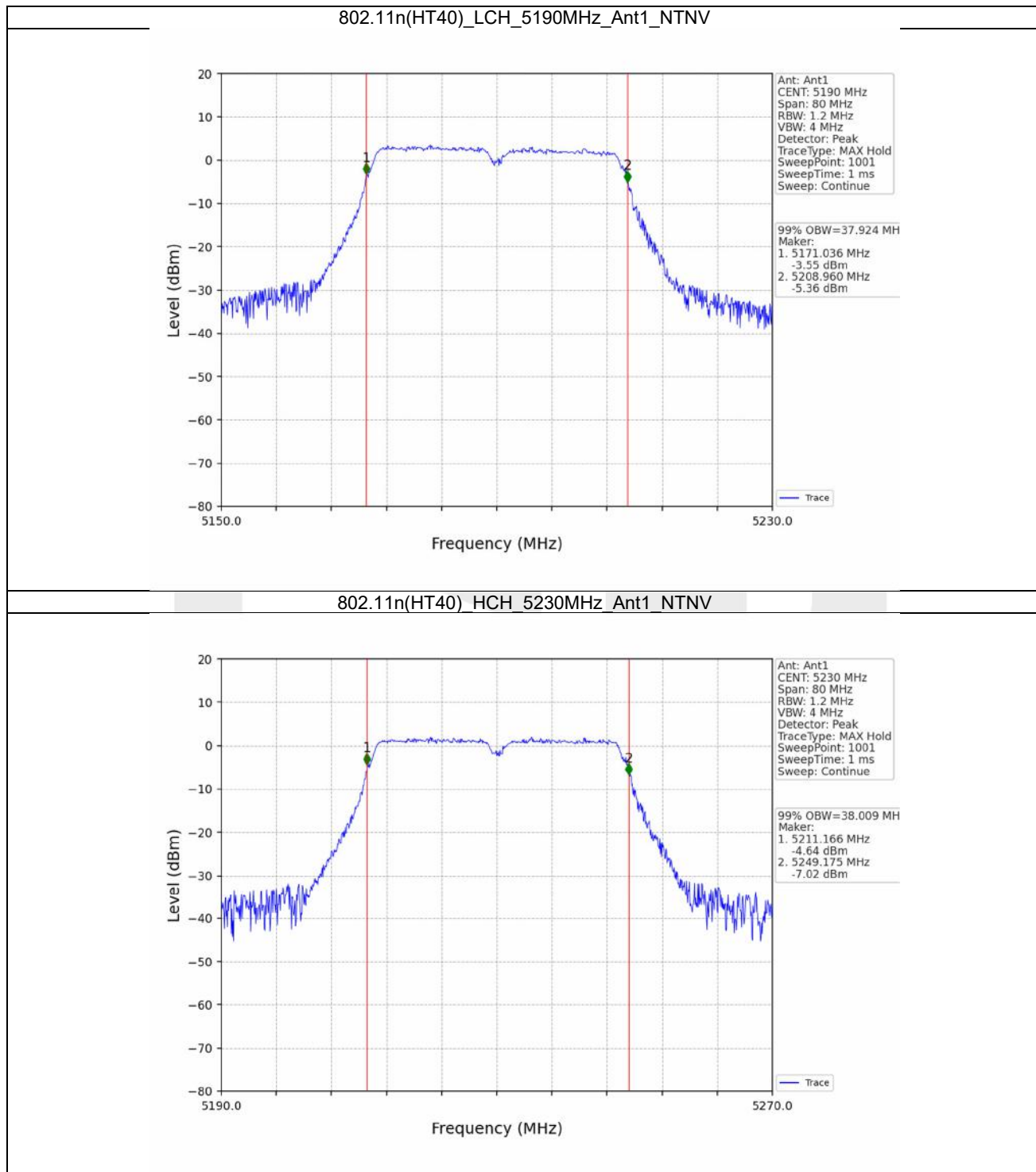


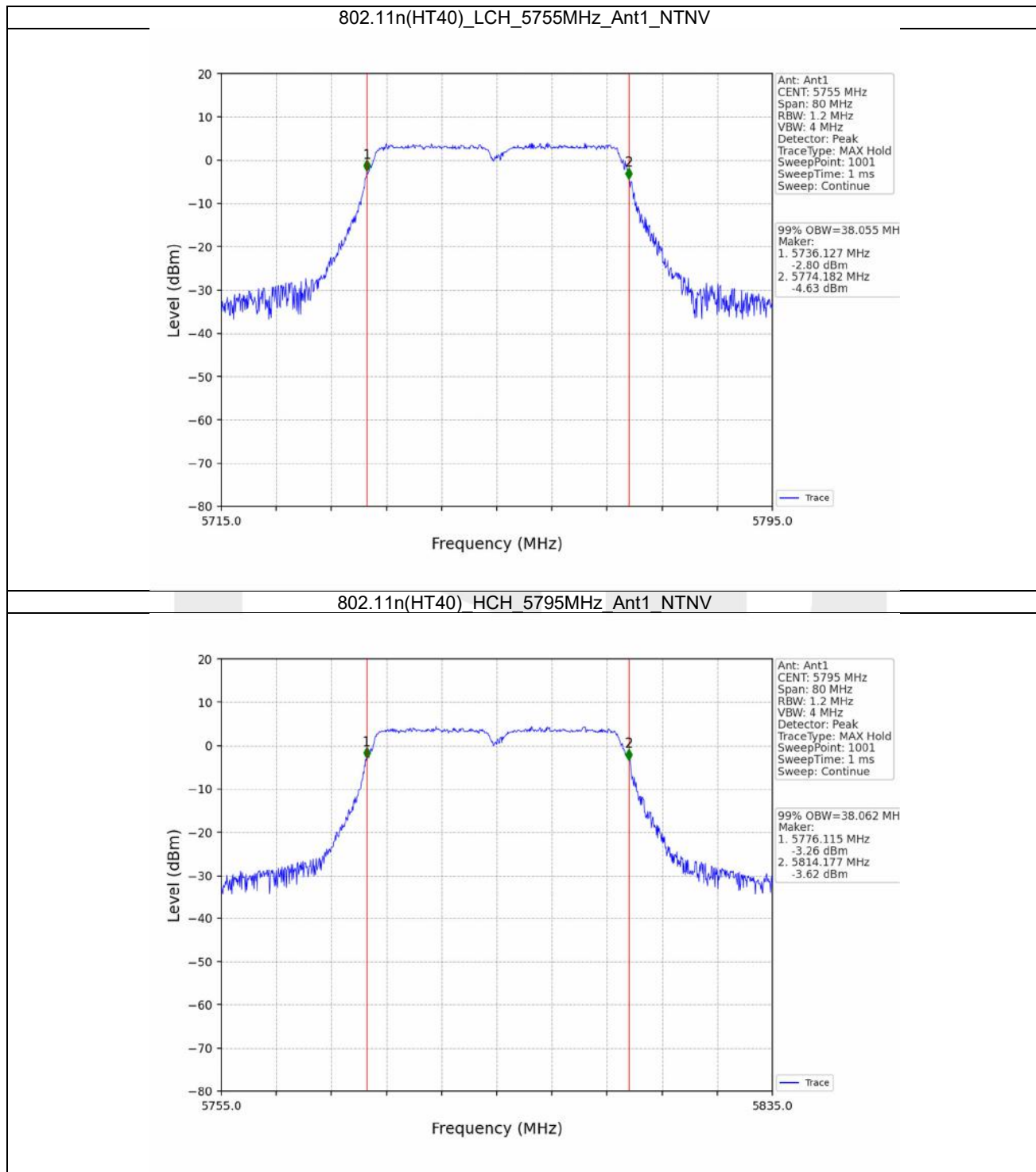
802.11n(HT20)_MCH_5785MHz_Ant1_NTNV



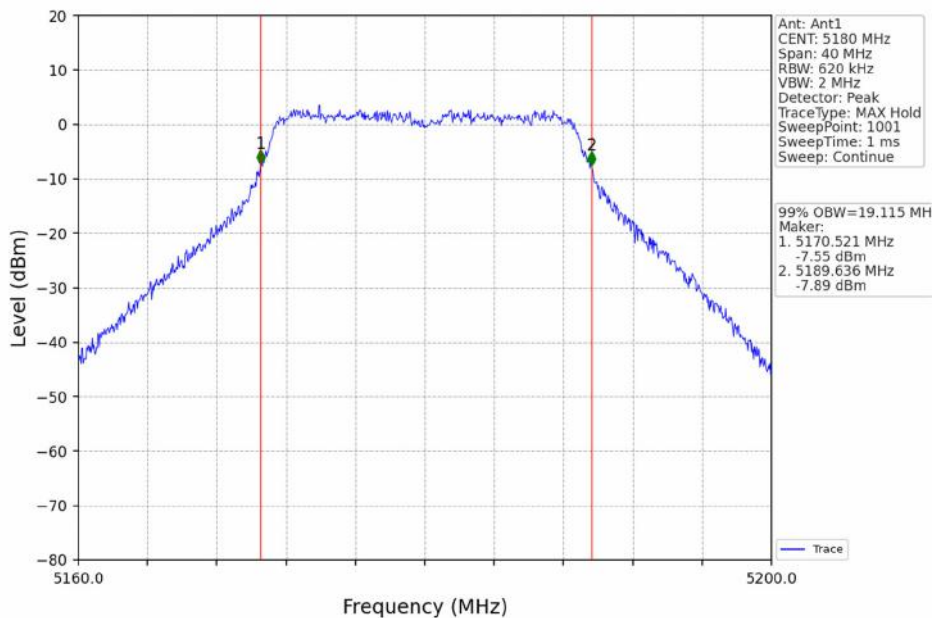
802.11n(HT20)_HCH_5825MHz_Ant1_NTNV



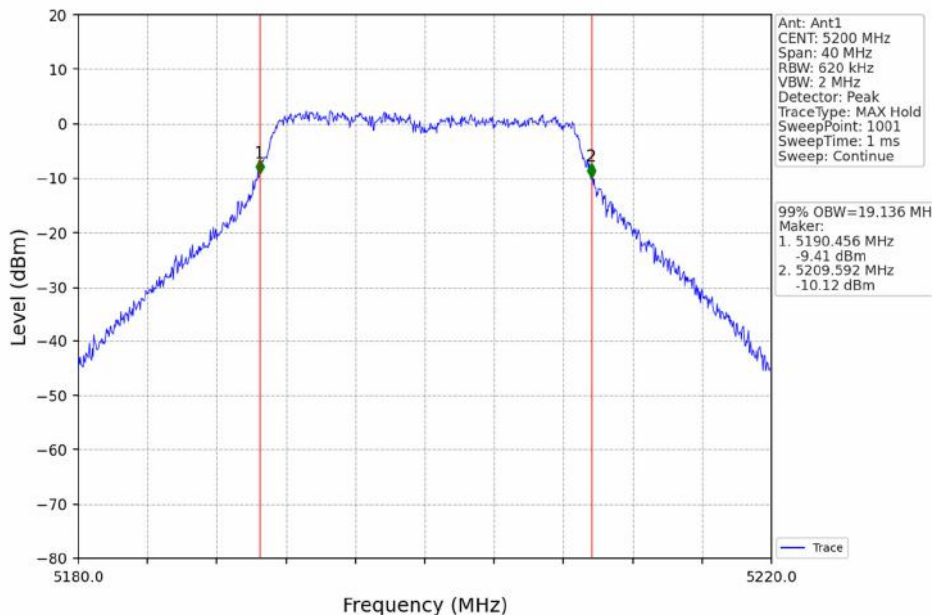




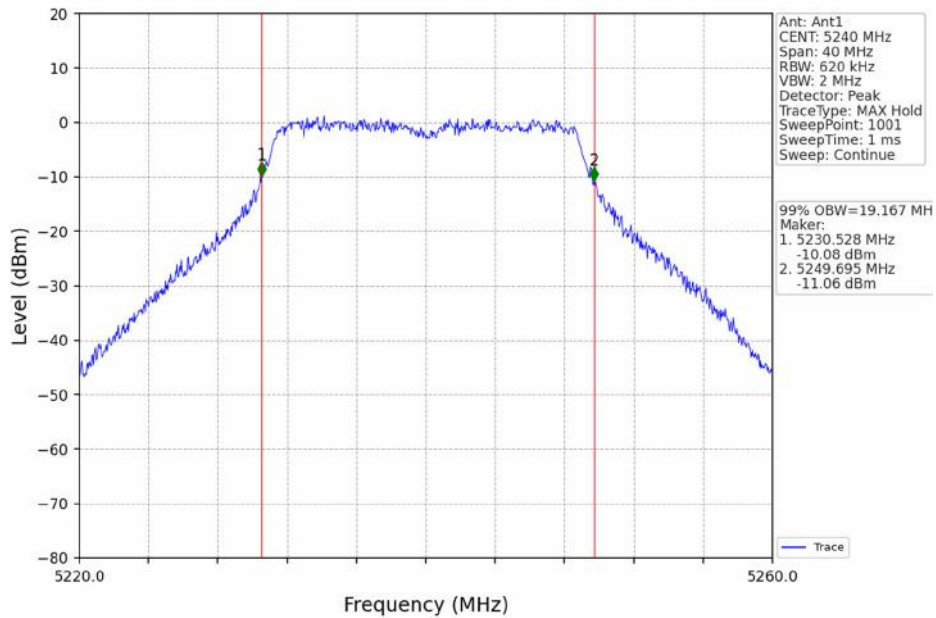
802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



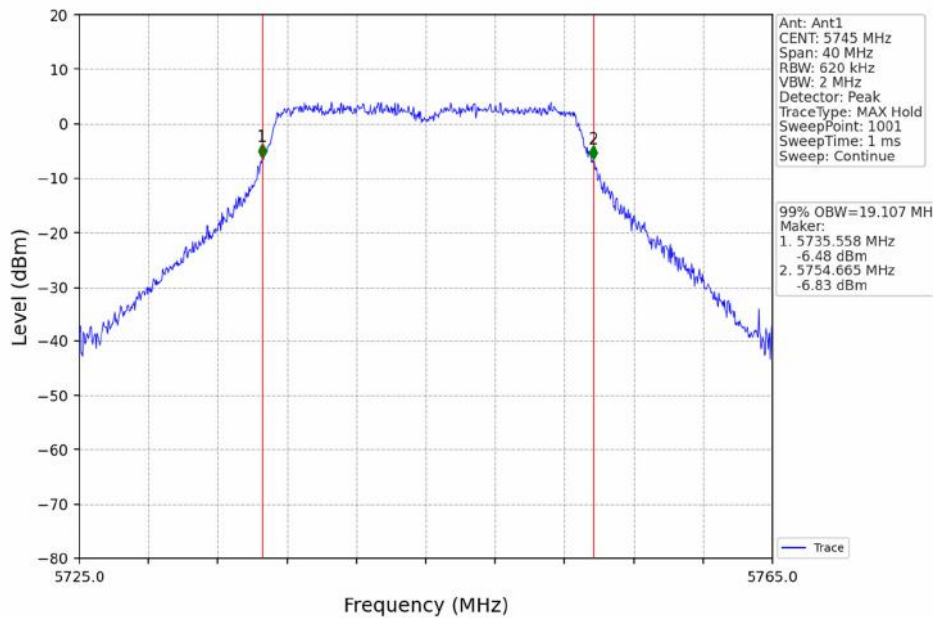
802.11ac(VHT20)_MCH_5200MHz_Ant1_NTNV



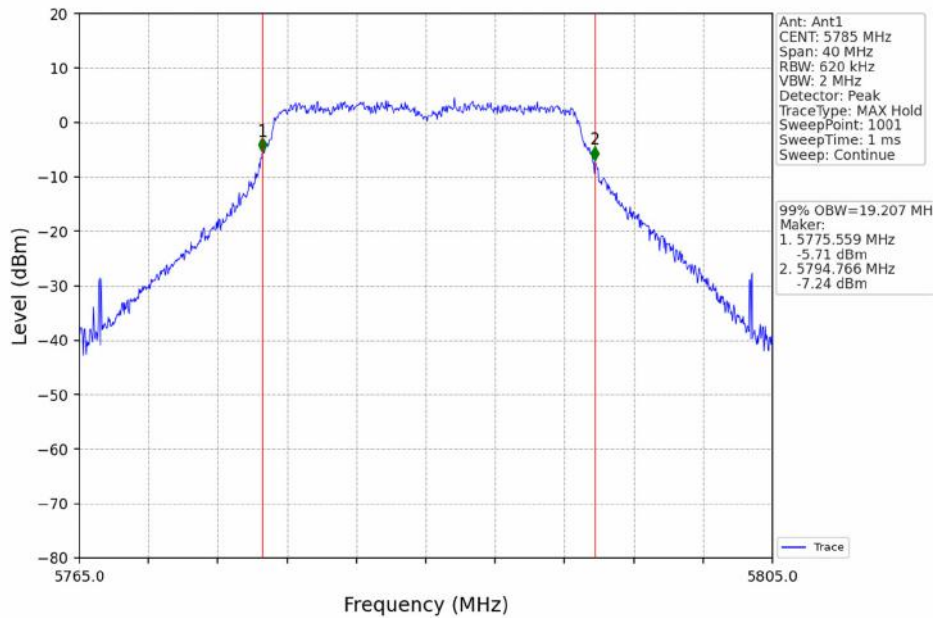
802.11ac(VHT20)_HCH_5240MHz_Ant1_NTNV



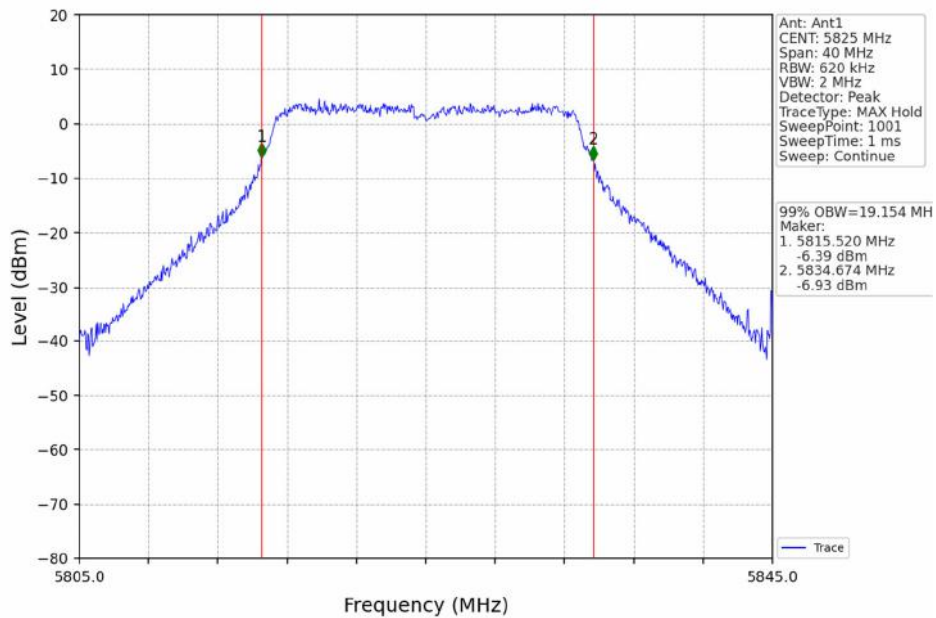
802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV



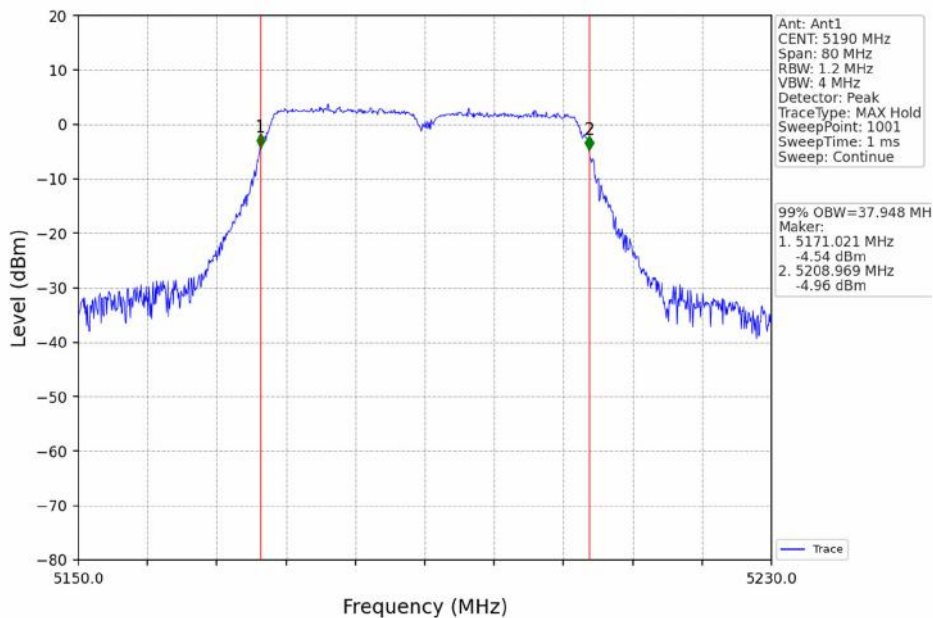
802.11ac(VHT20)_MCH_5785MHz_Ant1_NTNV



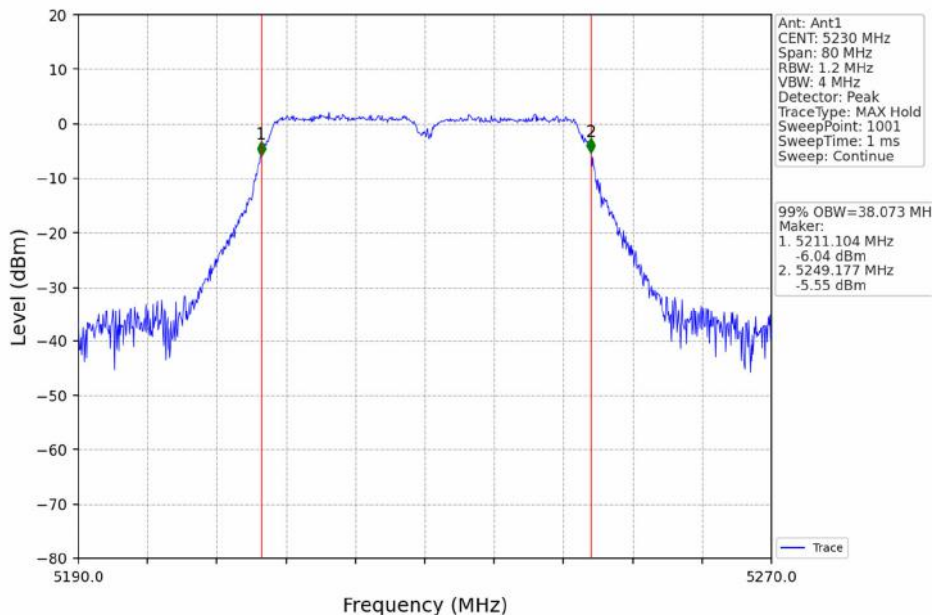
802.11ac(VHT20)_HCH_5825MHz_Ant1_NTNV

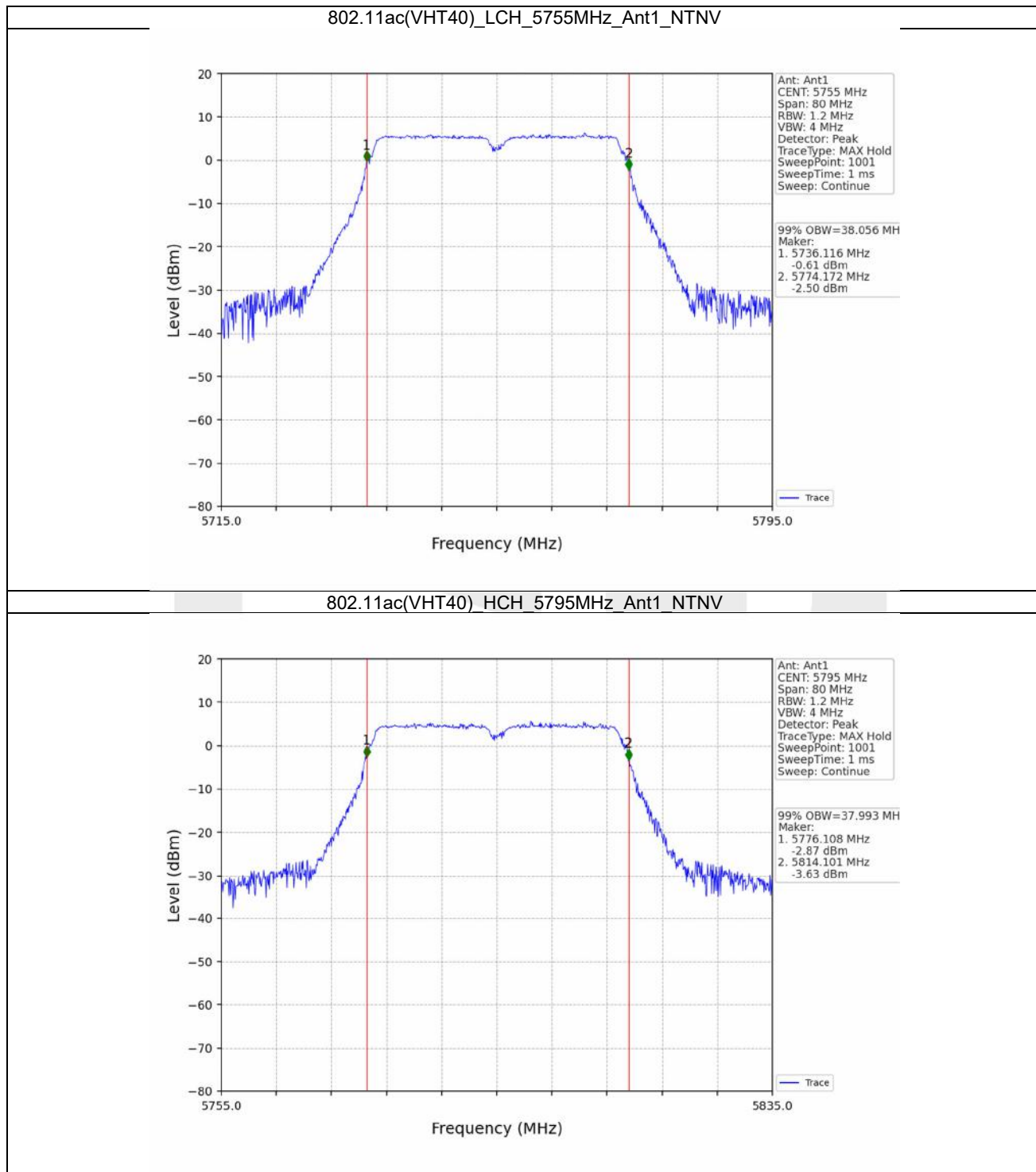


802.11ac(VHT40)_LCH_5190MHz_Ant1_NTNV

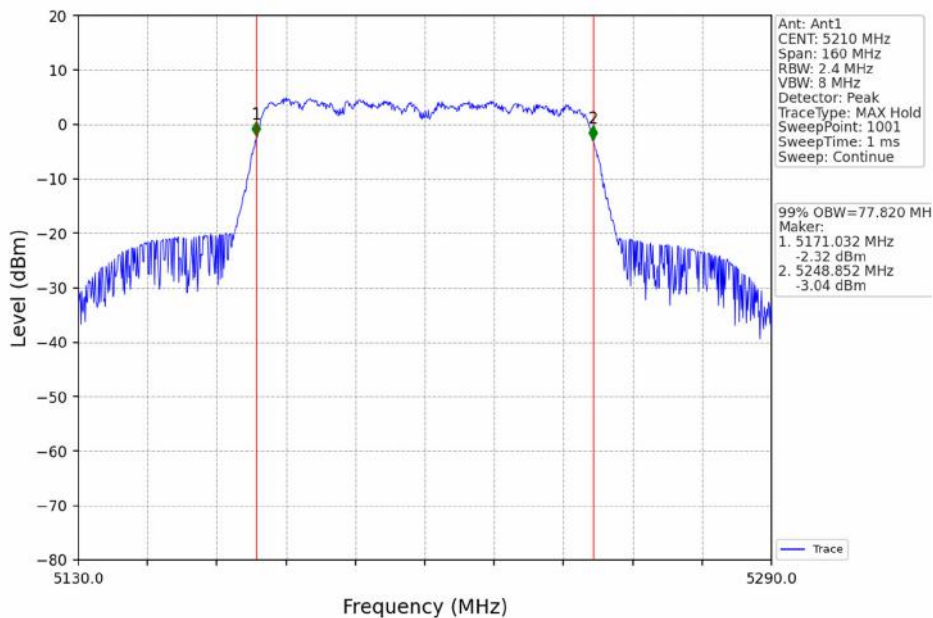


802.11ac(VHT40)_HCH_5230MHz_Ant1_NTNV

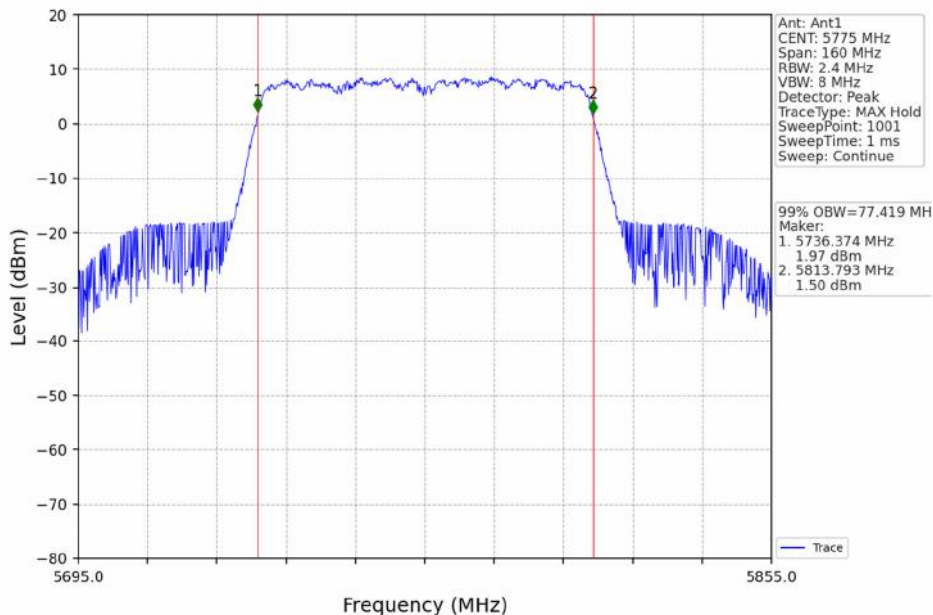




802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV

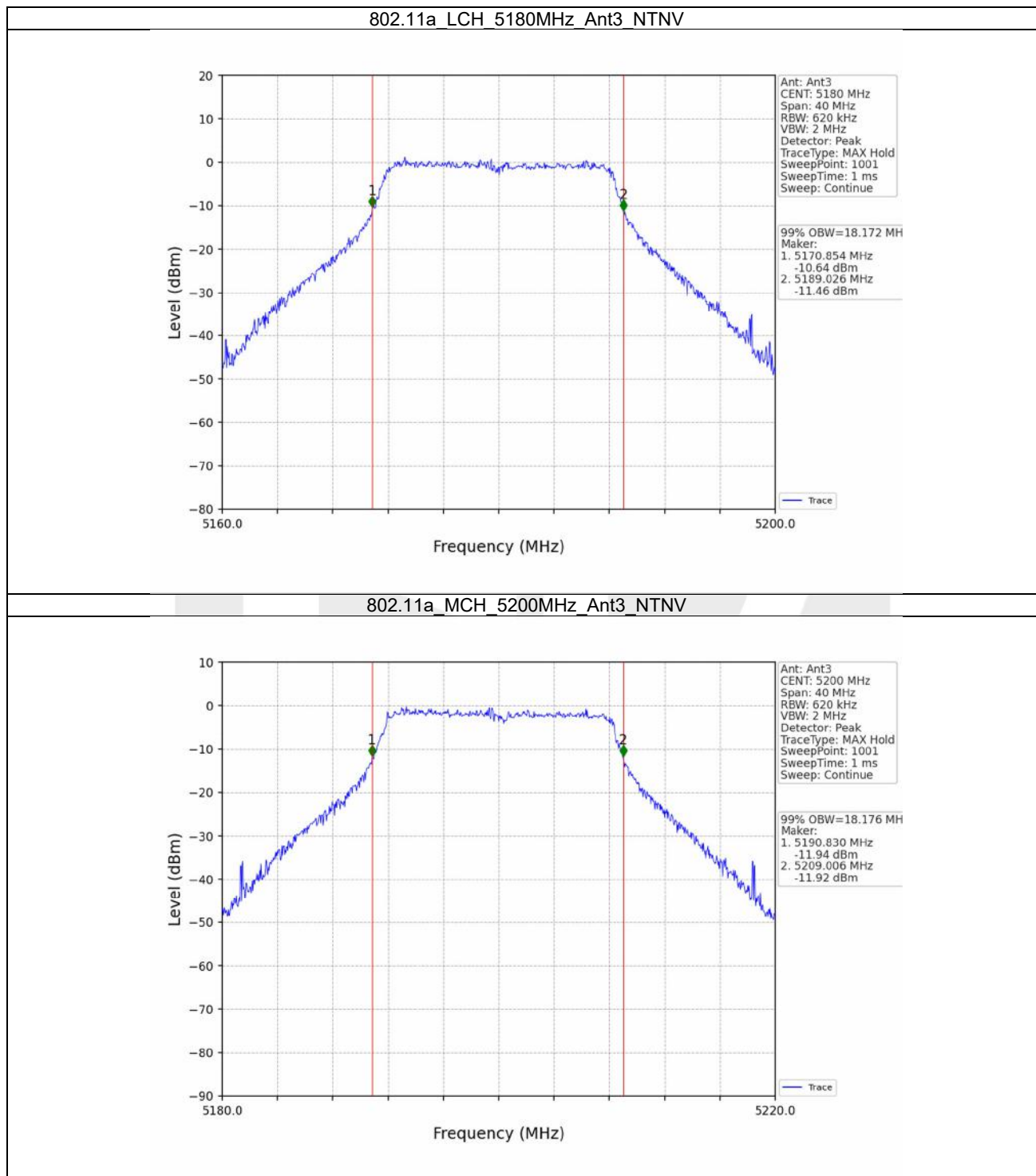


2.1.2 OBW (WiFi Module 2)

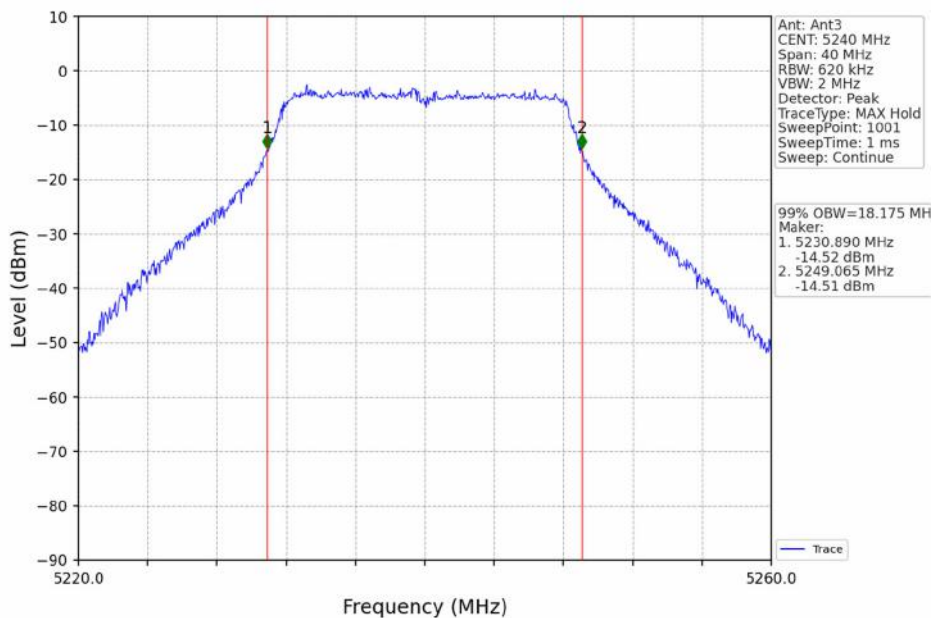
2.1.2.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)	Verdict
				Result	
802.11a	SISO	5180	3	18.172	Pass
		5200	3	18.176	Pass
		5240	3	18.175	Pass
		5745	3	18.219	Pass
		5785	3	18.252	Pass
		5825	3	18.224	Pass
802.11n (HT20)	SISO	5180	3	19.297	Pass
		5200	3	19.081	Pass
		5240	3	19.160	Pass
		5745	3	19.146	Pass
		5785	3	19.217	Pass
		5825	3	19.155	Pass
802.11n (HT40)	SISO	5190	3	38.234	Pass
		5230	3	37.964	Pass
		5755	3	38.160	Pass
		5795	3	37.985	Pass
802.11ac (VHT20)	SISO	5180	3	19.052	Pass
		5200	3	19.138	Pass
		5240	3	19.187	Pass
		5745	3	19.106	Pass
		5785	3	19.086	Pass
		5825	3	19.116	Pass
802.11ac (VHT40)	SISO	5190	3	37.718	Pass
		5230	3	37.921	Pass
		5755	3	38.126	Pass
		5795	3	37.937	Pass
802.11ac (VHT80)	SISO	5210	3	77.377	Pass
		5775	3	77.511	Pass

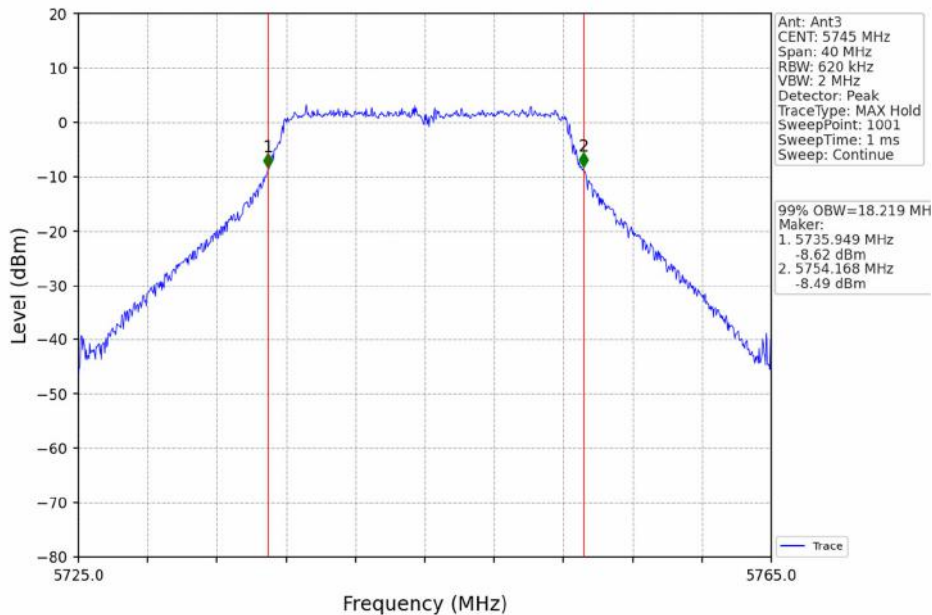
2.1.2.2 Test Graph



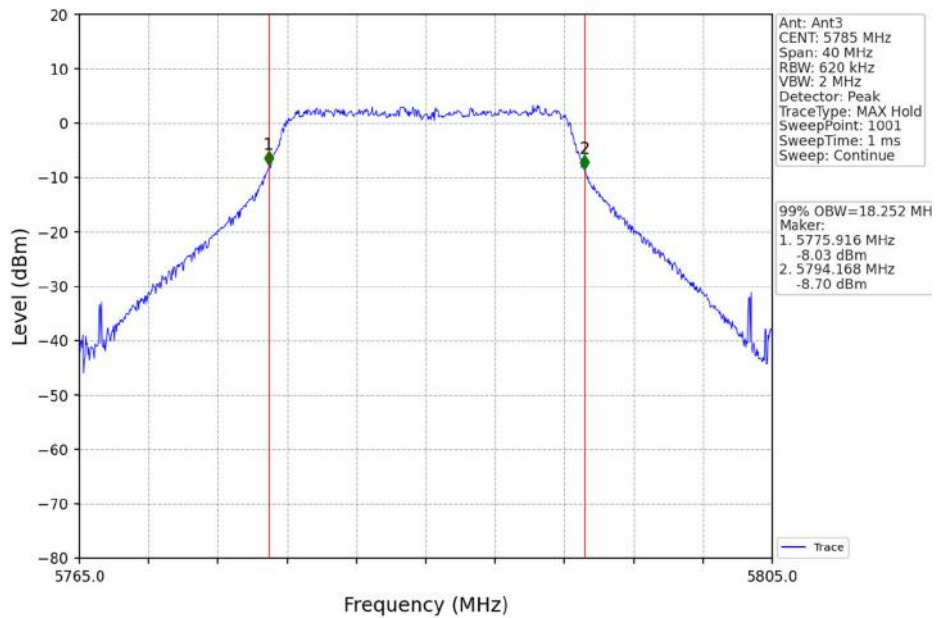
802.11a_HCH_5240MHz_Ant3_NTNV



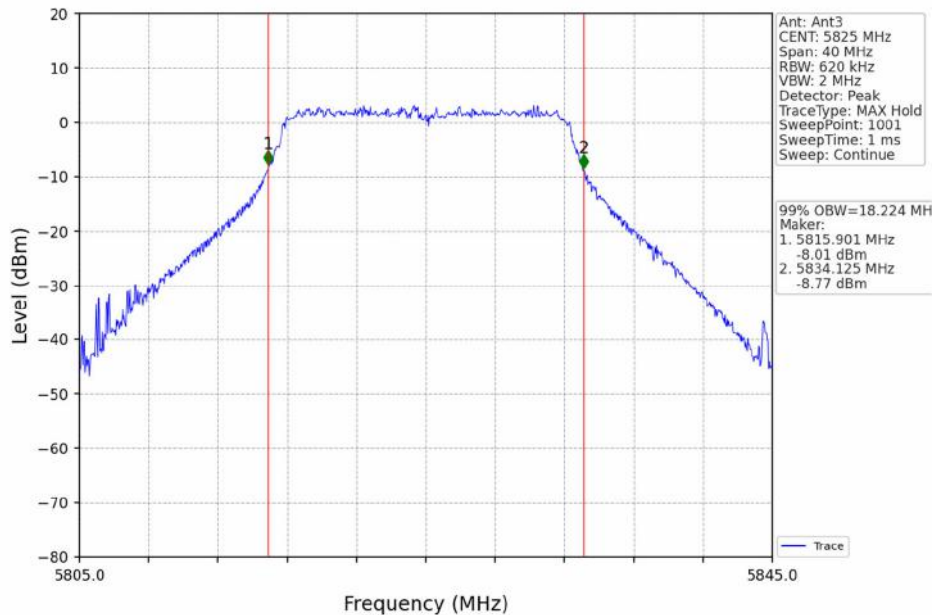
802.11a_LCH_5745MHz_Ant3_NTNV



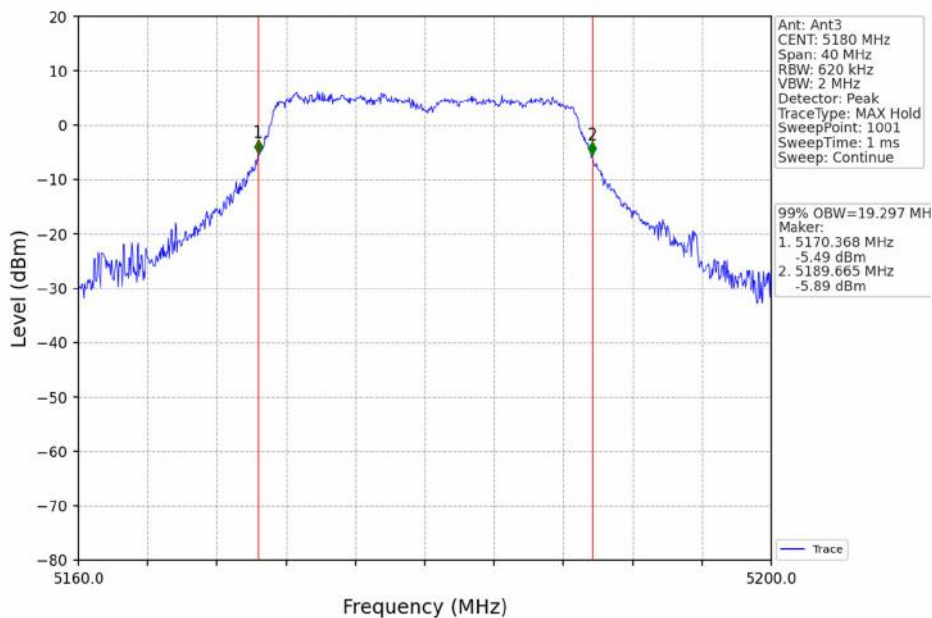
802.11a_MCH_5785MHz_Ant3_NTNV



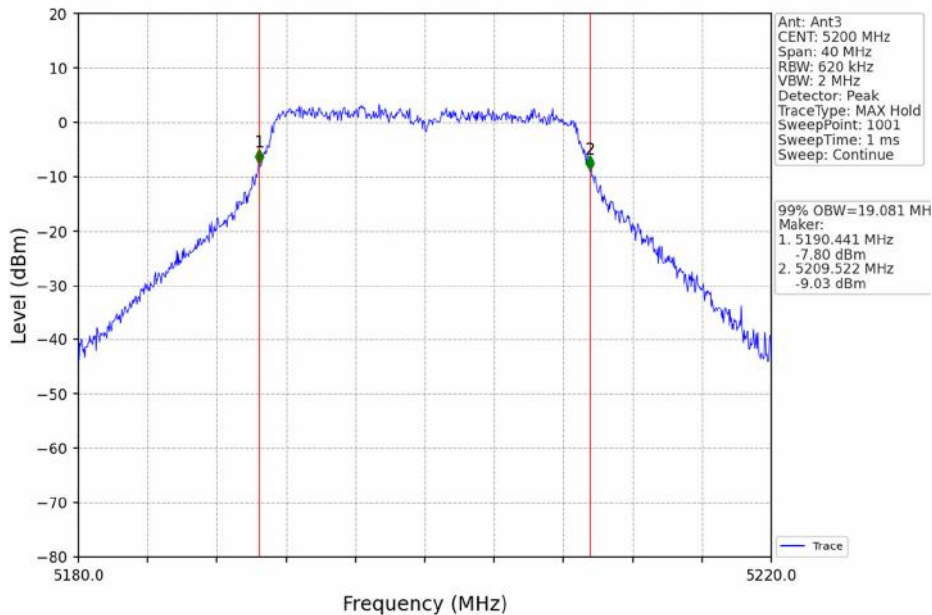
802.11a_HCH_5825MHz_Ant3_NTNV



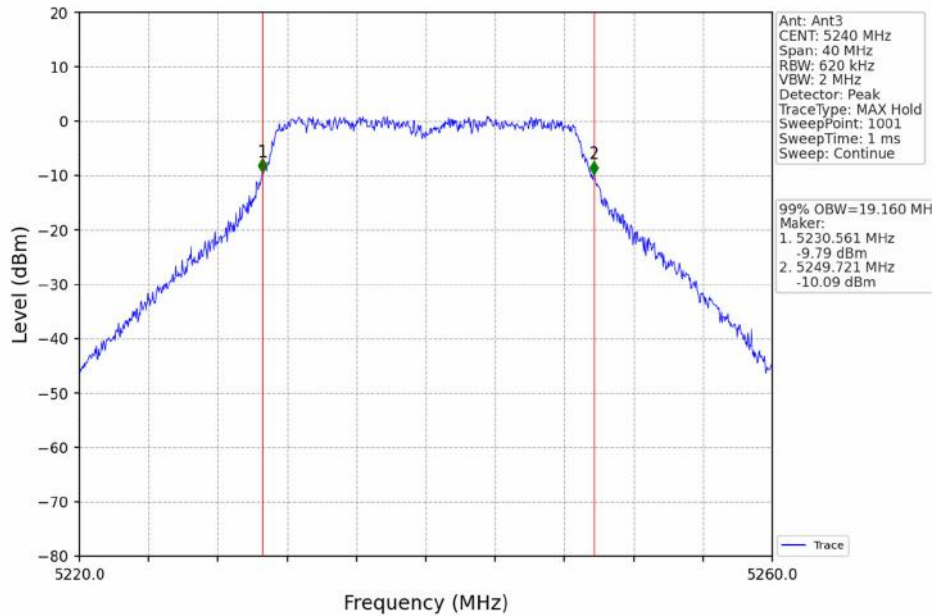
802.11n(HT20)_LCH_5180MHz_Ant3_NTNV



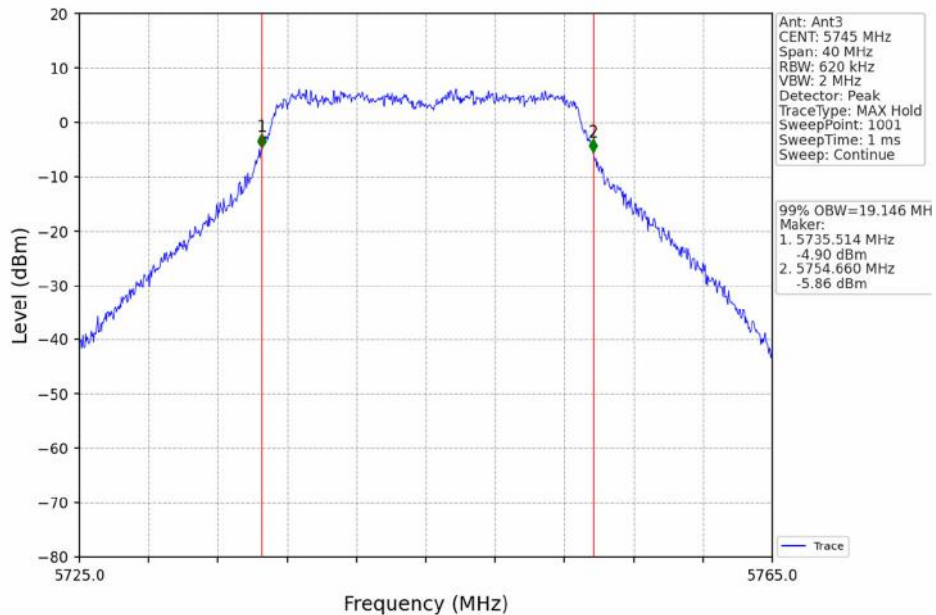
802.11n(HT20)_MCH_5200MHz_Ant3_NTNV



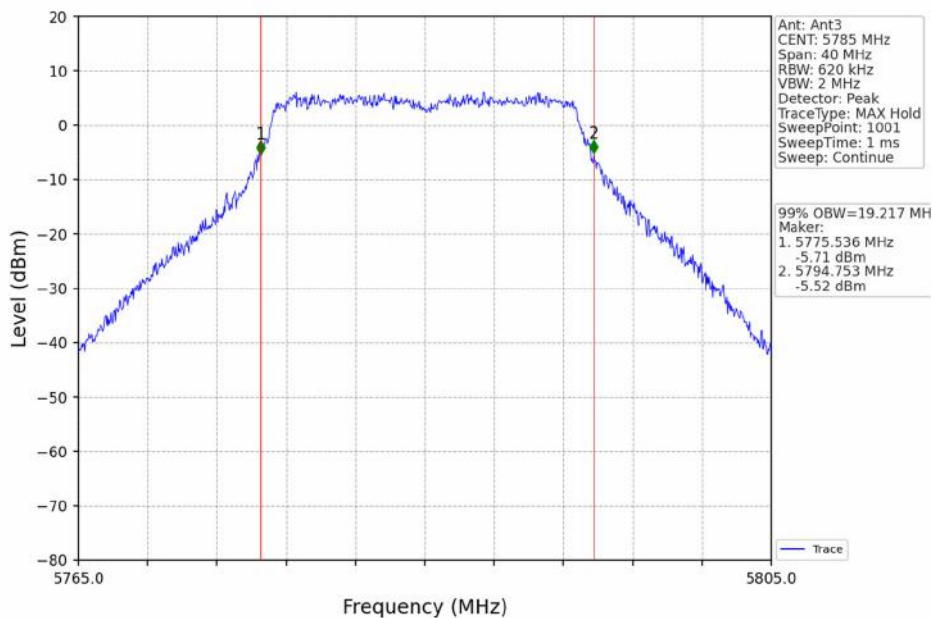
802.11n(HT20)_HCH_5240MHz_Ant3_NTNV



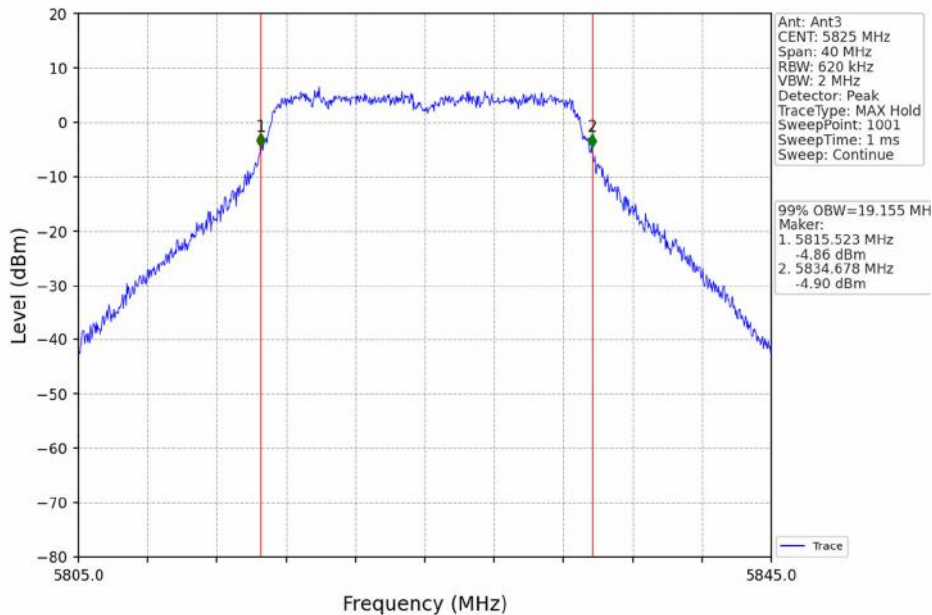
802.11n(HT20)_LCH_5745MHz_Ant3_NTNV

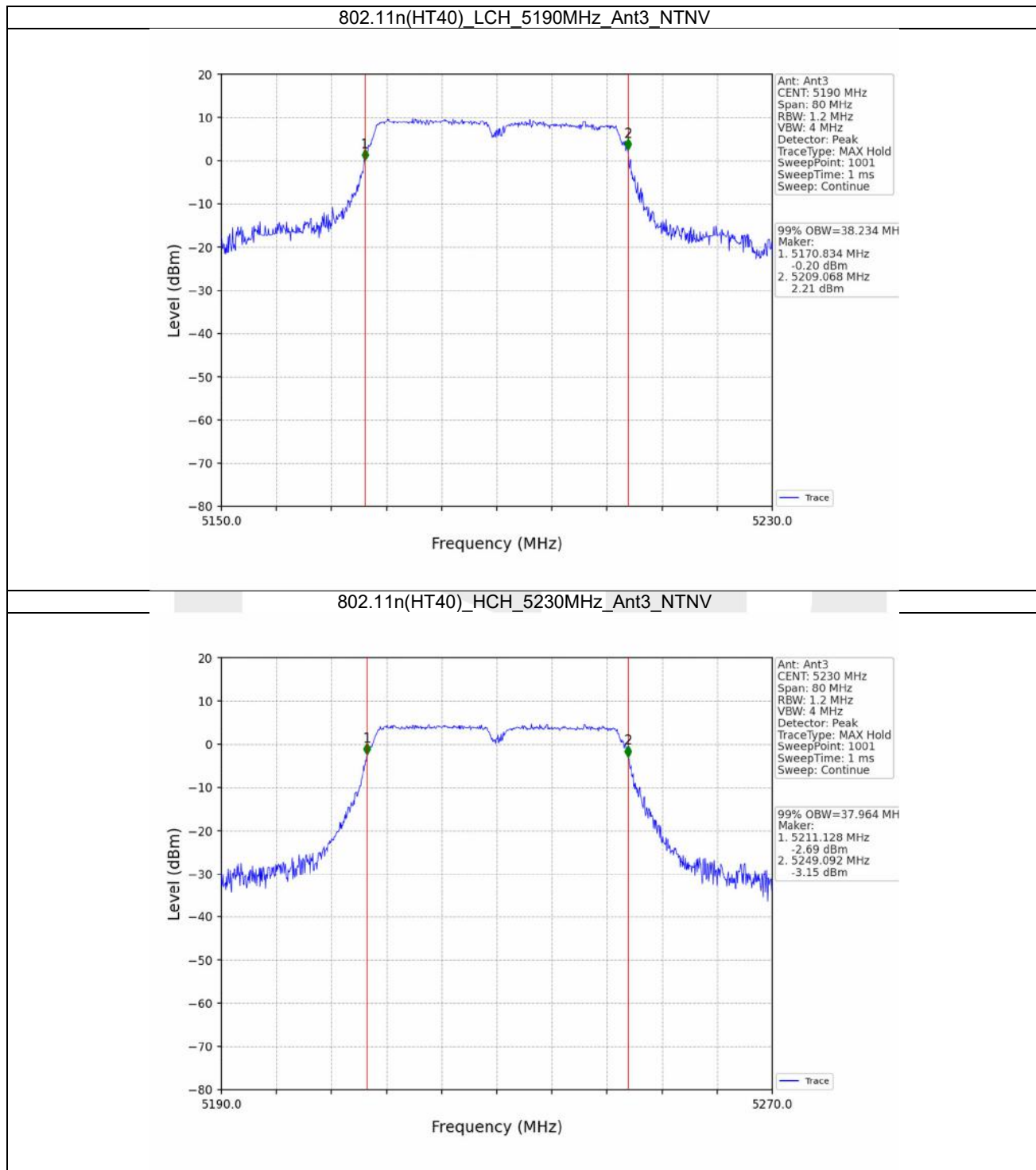


802.11n(HT20)_MCH_5785MHz_Ant3_NTNV

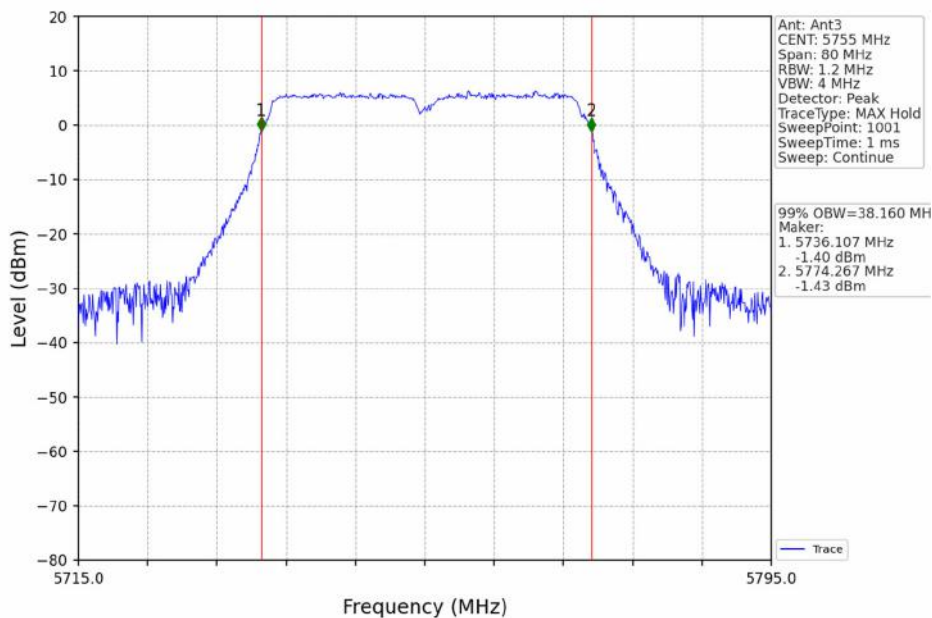


802.11n(HT20)_HCH_5825MHz_Ant3_NTNV

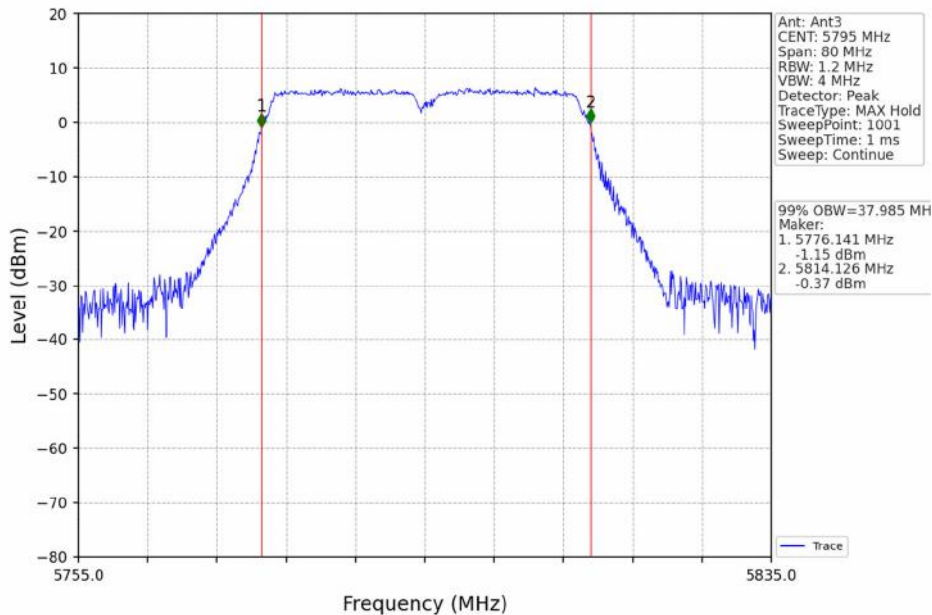




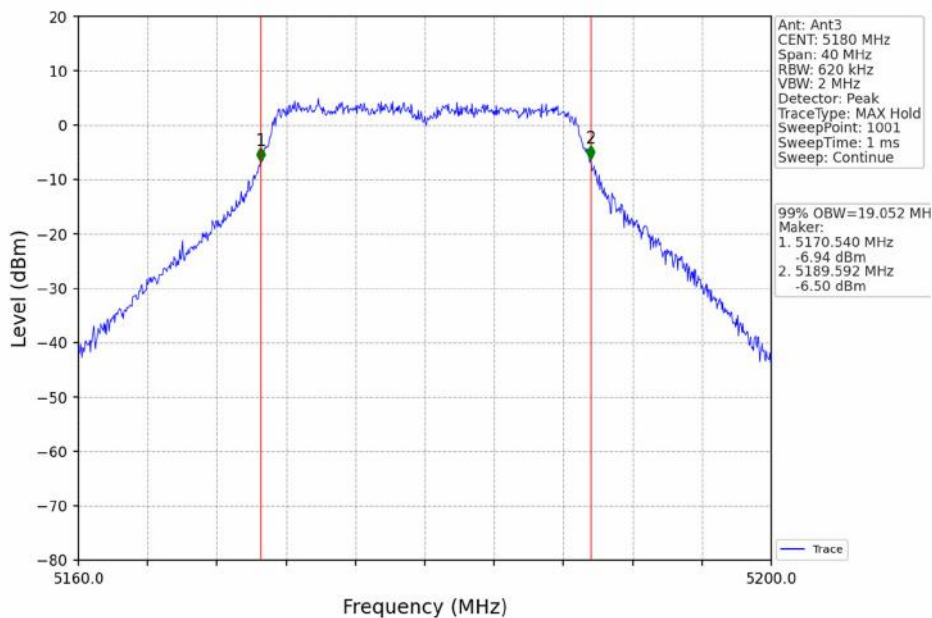
802.11n(HT40)_LCH_5755MHz_Ant3_NTNV



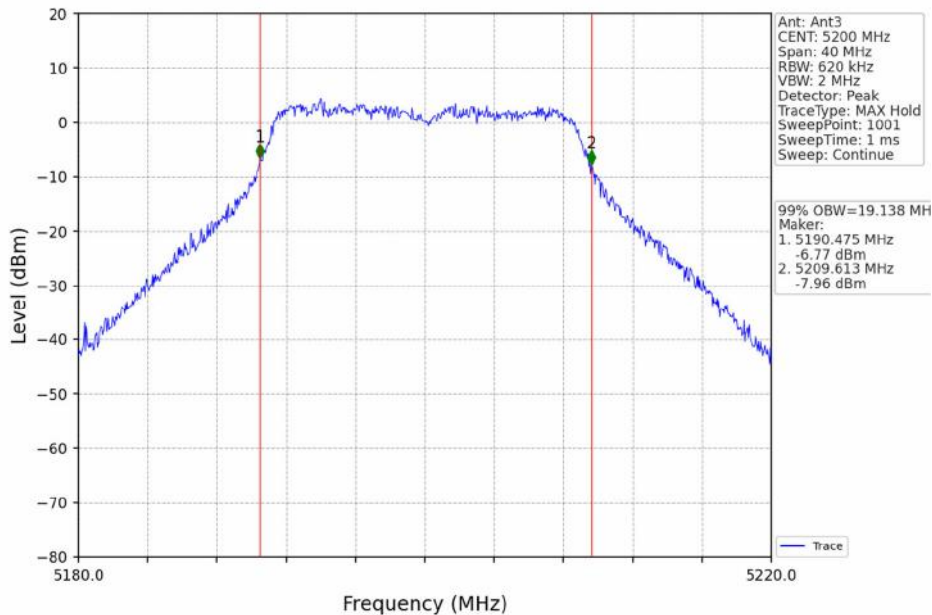
802.11n(HT40)_HCH_5795MHz_Ant3_NTNV



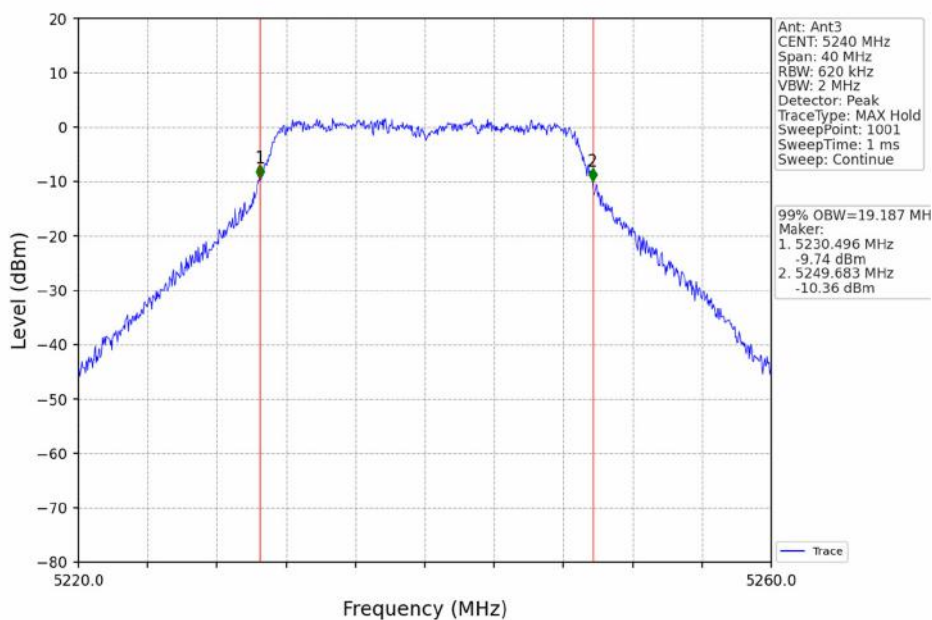
802.11ac(VHT20)_LCH_5180MHz_Ant3_NTNV



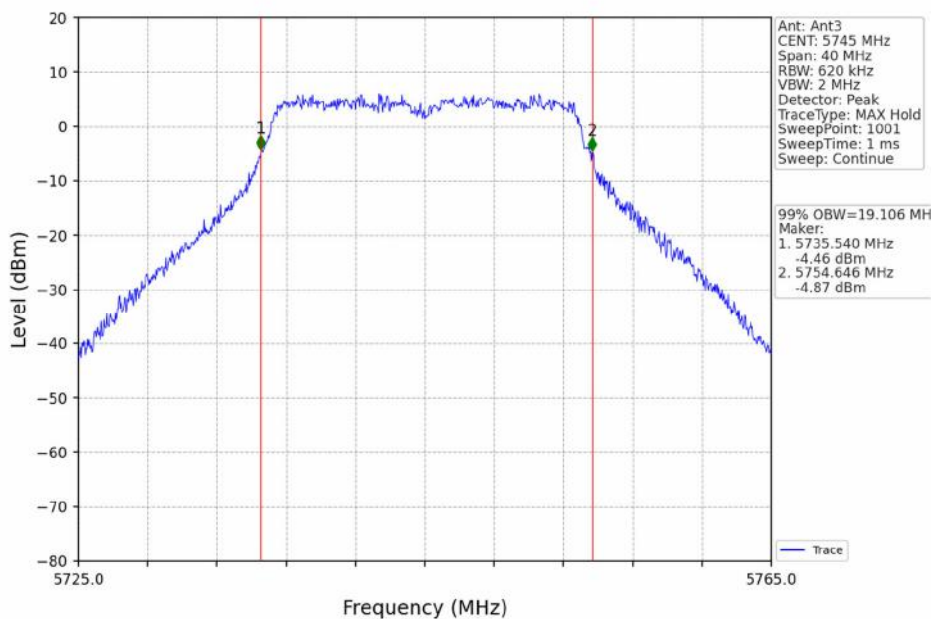
802.11ac(VHT20)_MCH_5200MHz_Ant3_NTNV



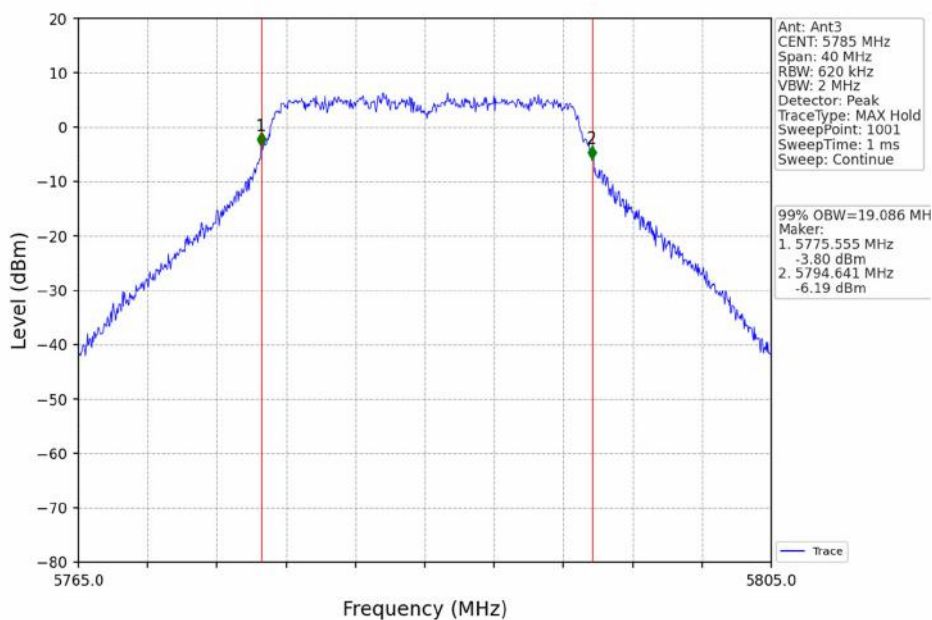
802.11ac(VHT20)_HCH_5240MHz_Ant3_NTNV



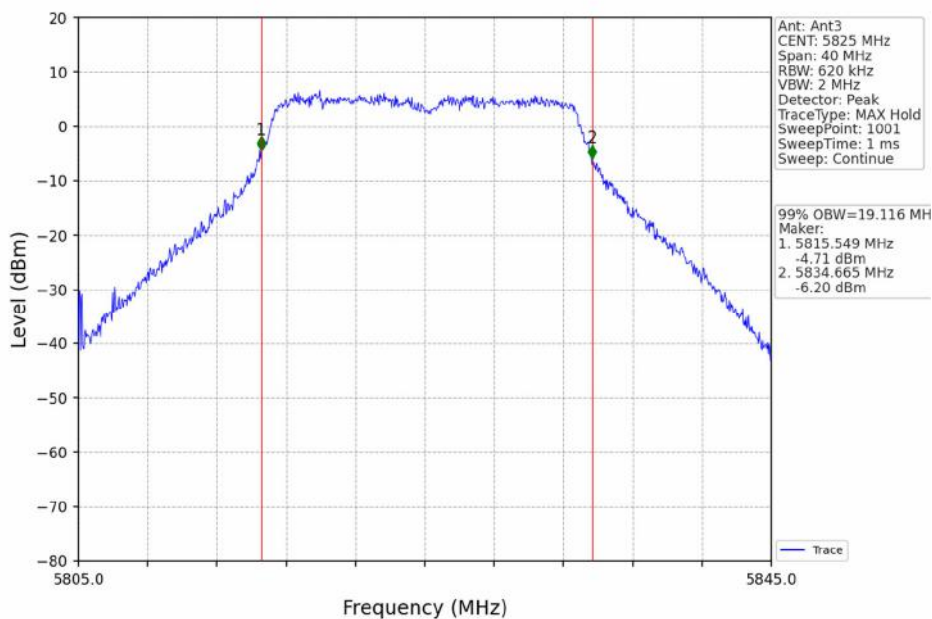
802.11ac(VHT20)_LCH_5745MHz_Ant3_NTNV



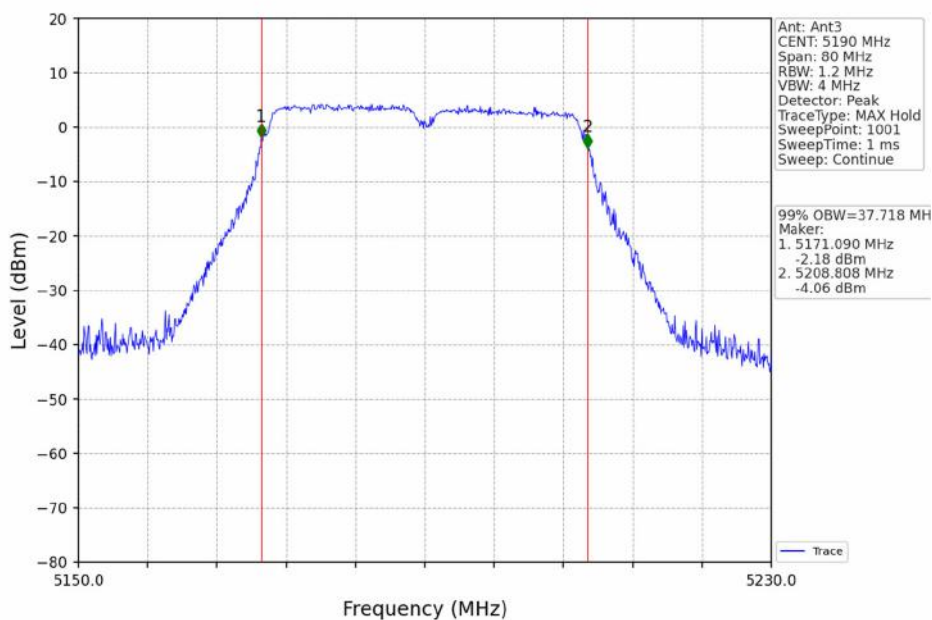
802.11ac(VHT20)_MCH_5785MHz_Ant3_NTNV



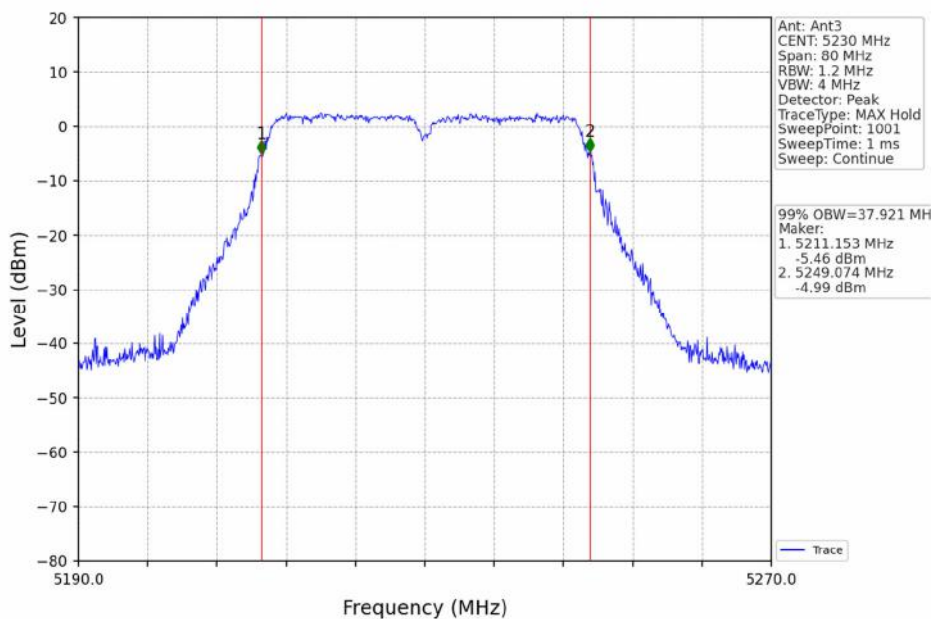
802.11ac(VHT20)_HCH_5825MHz_Ant3_NTNV



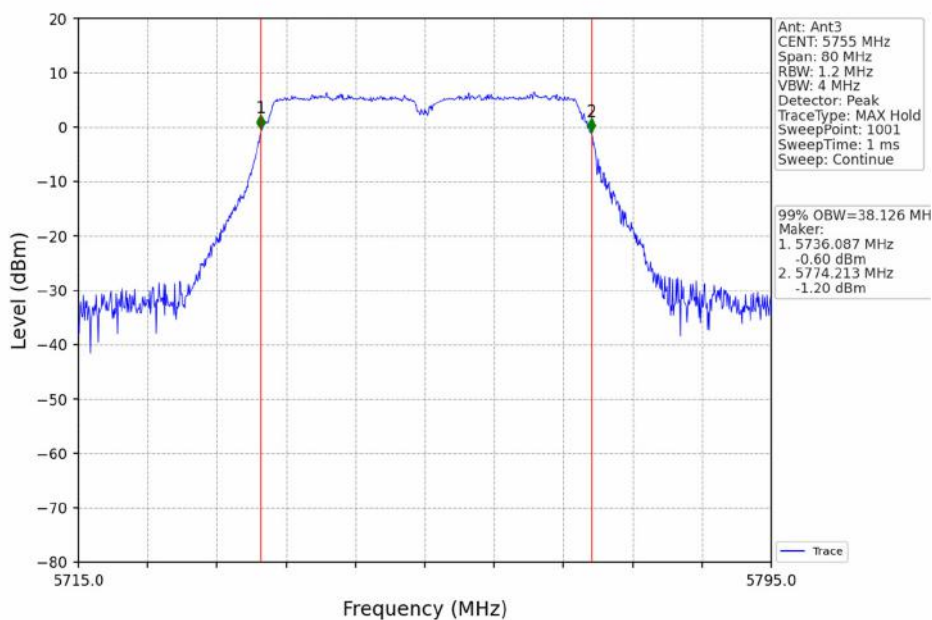
802.11ac(VHT40)_LCH_5190MHz_Ant3_NTNV



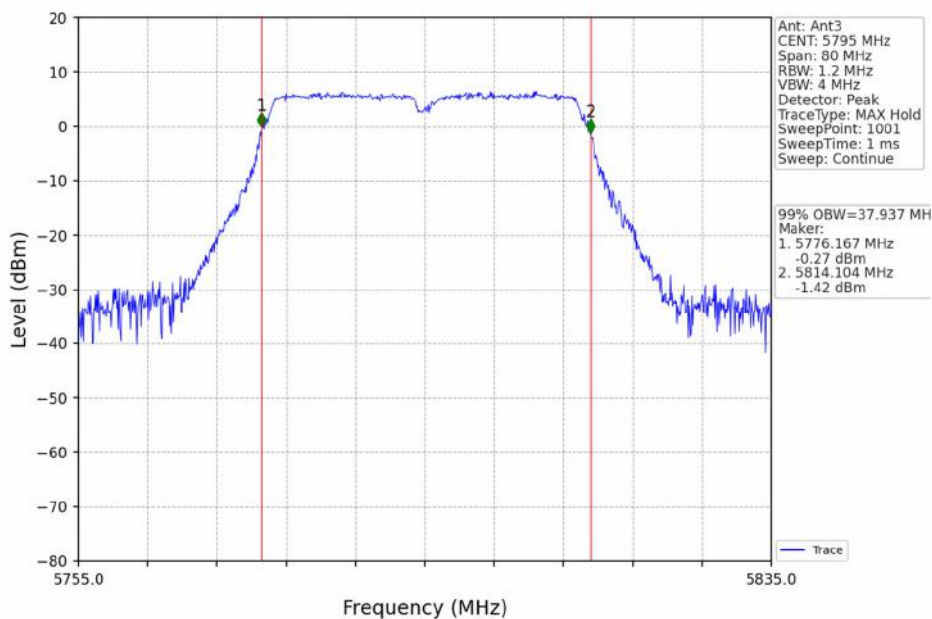
802.11ac(VHT40)_HCH_5230MHz_Ant3_NTNV



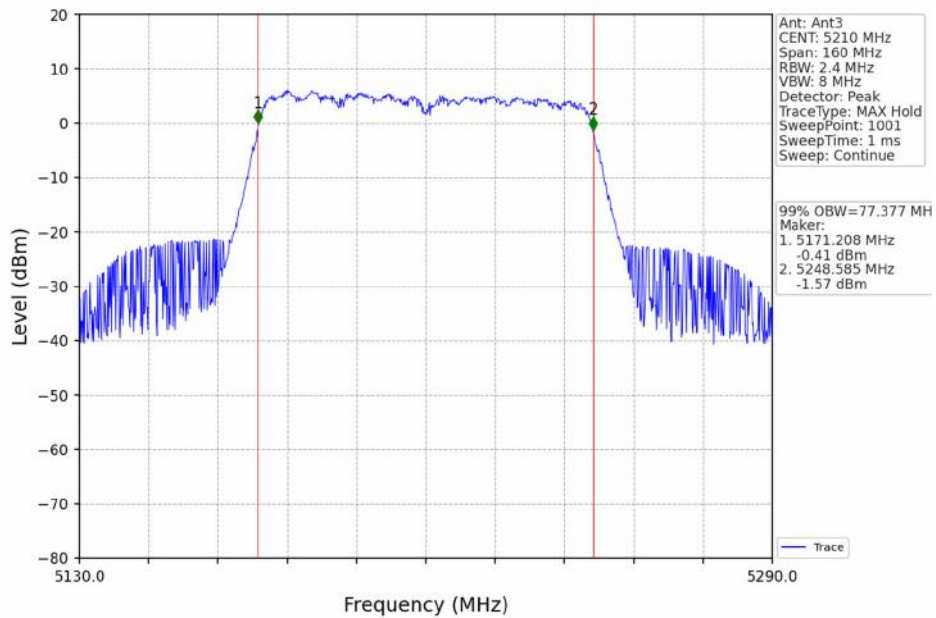
802.11ac(VHT40)_LCH_5755MHz_Ant3_NTNV



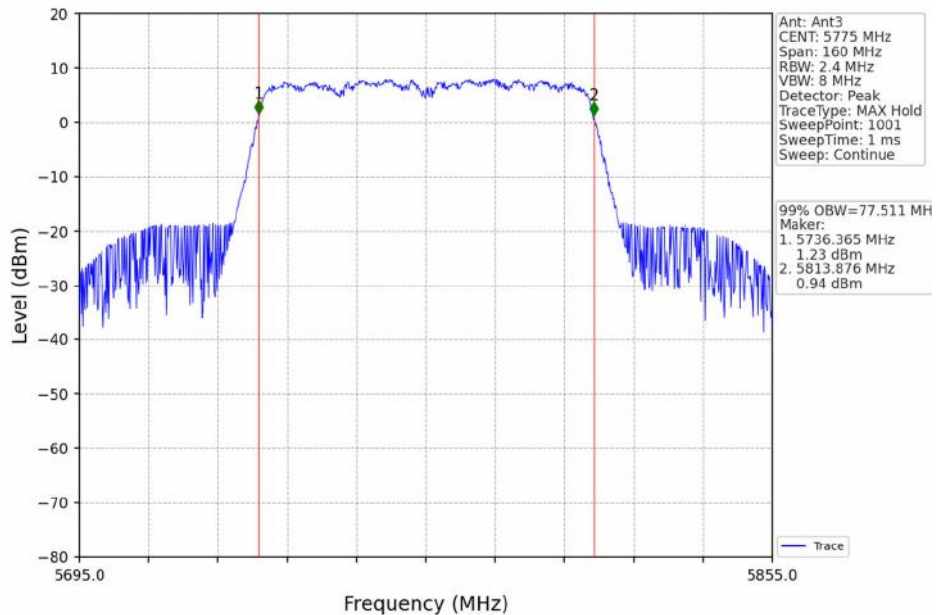
802.11ac(VHT40)_HCH_5795MHz_Ant3_NTNV



802.11ac(VHT80)_MCH_5210MHz_Ant3_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant3_NTNV

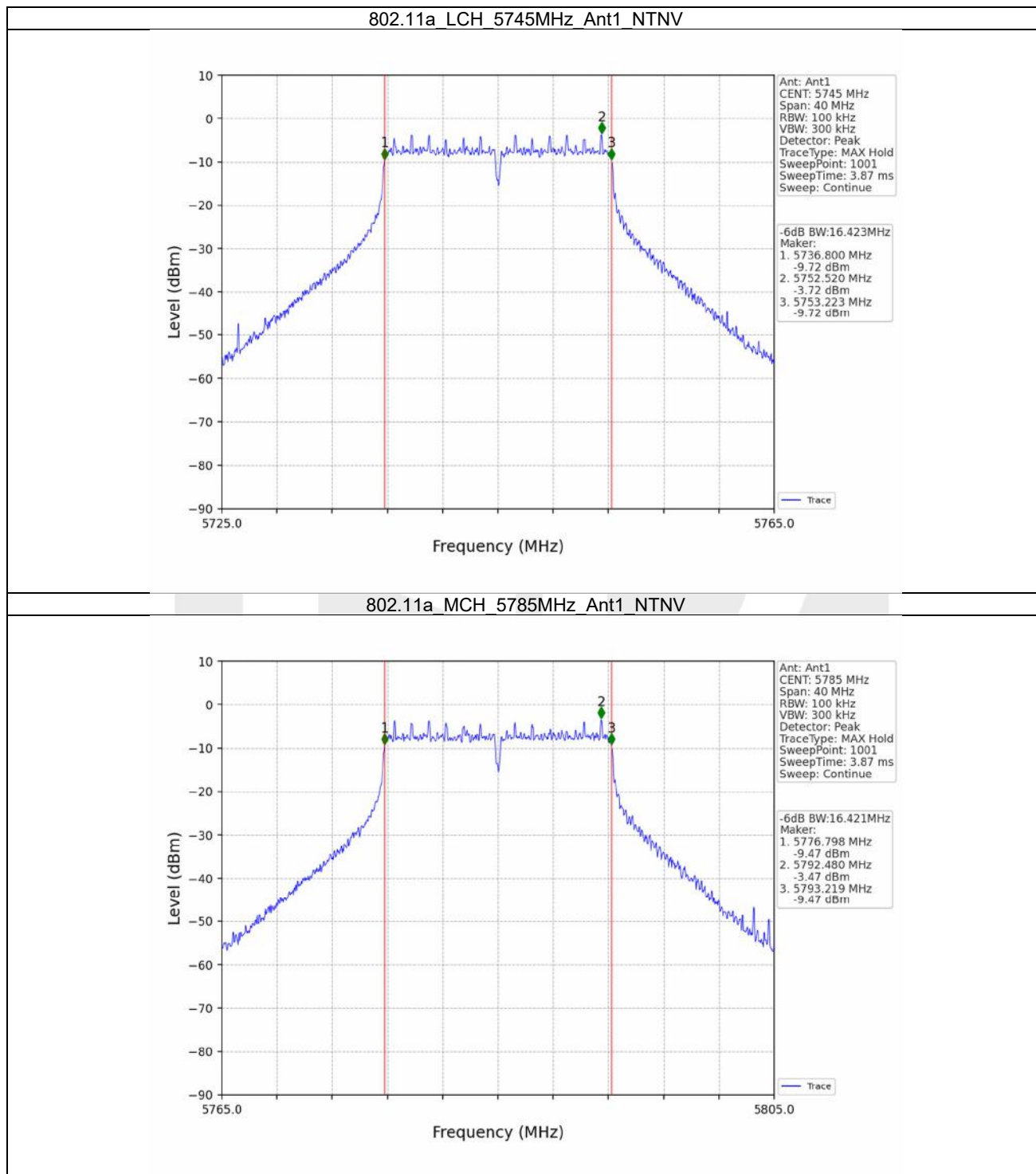


2.2.1. 6dB BW (WiFi Module 1)

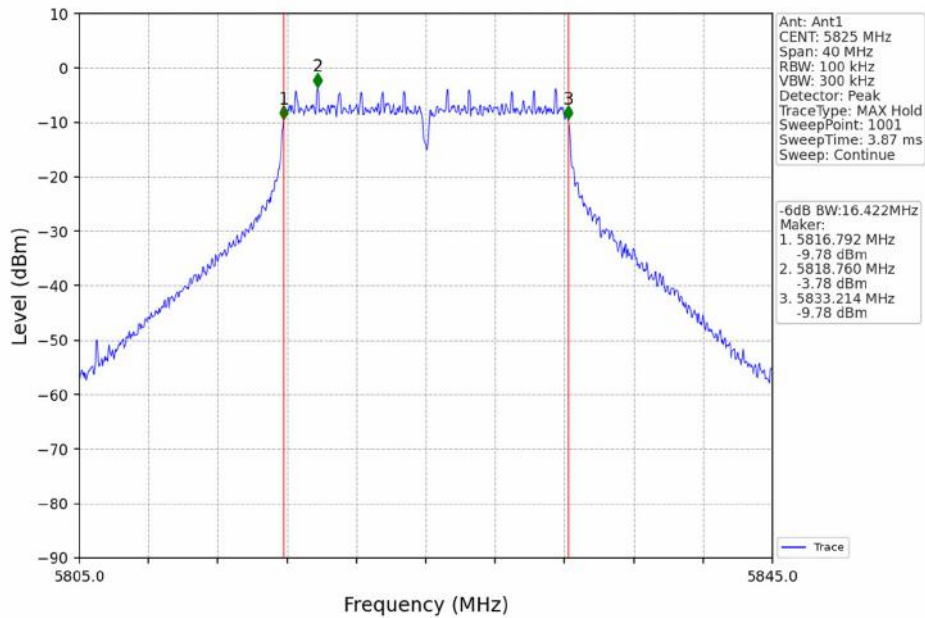
2.2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5745	1	16.423	≥ 0.5	Pass
		5785	1	16.421	≥ 0.5	Pass
		5825	1	16.422	≥ 0.5	Pass
802.11n (HT20)	SISO	5745	1	17.670	≥ 0.5	Pass
		5785	1	17.666	≥ 0.5	Pass
		5825	1	17.692	≥ 0.5	Pass
802.11n (HT40)	SISO	5755	1	36.527	≥ 0.5	Pass
		5795	1	36.521	≥ 0.5	Pass
802.11ac (VHT20)	SISO	5745	1	17.684	≥ 0.5	Pass
		5785	1	17.724	≥ 0.5	Pass
		5825	1	17.670	≥ 0.5	Pass
802.11ac (VHT40)	SISO	5755	1	36.528	≥ 0.5	Pass
		5795	1	36.528	≥ 0.5	Pass
802.11ac (VHT80)	SISO	5775	1	76.509	≥ 0.5	Pass

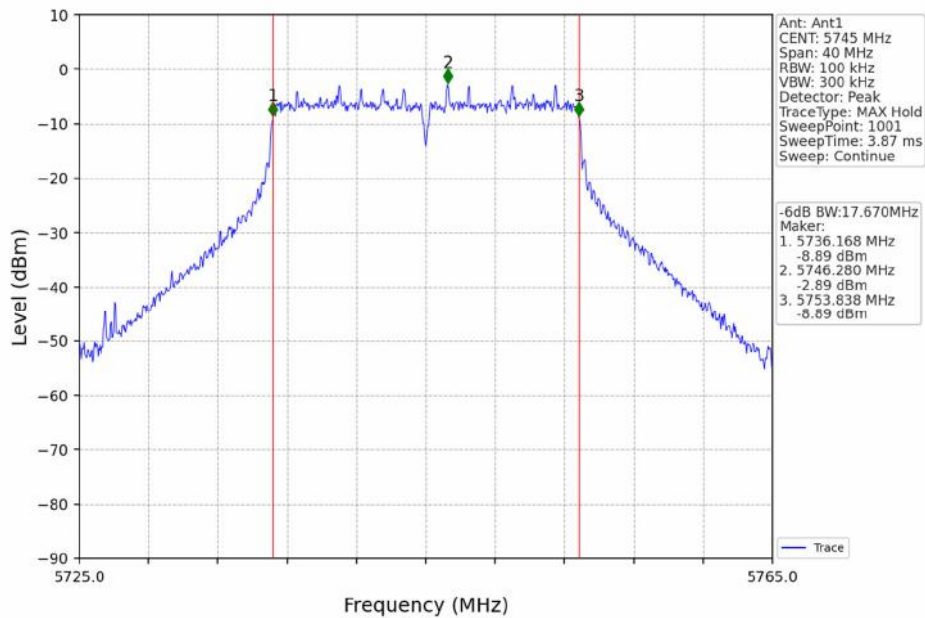
2.2.1.2 Test Graph



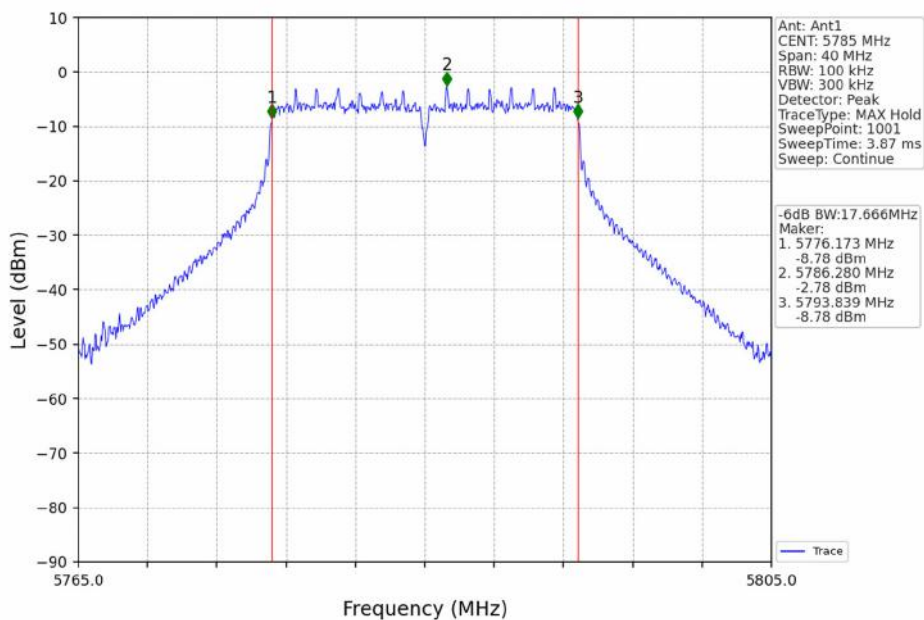
802.11a_HCH_5825MHz_Ant1_NTNV



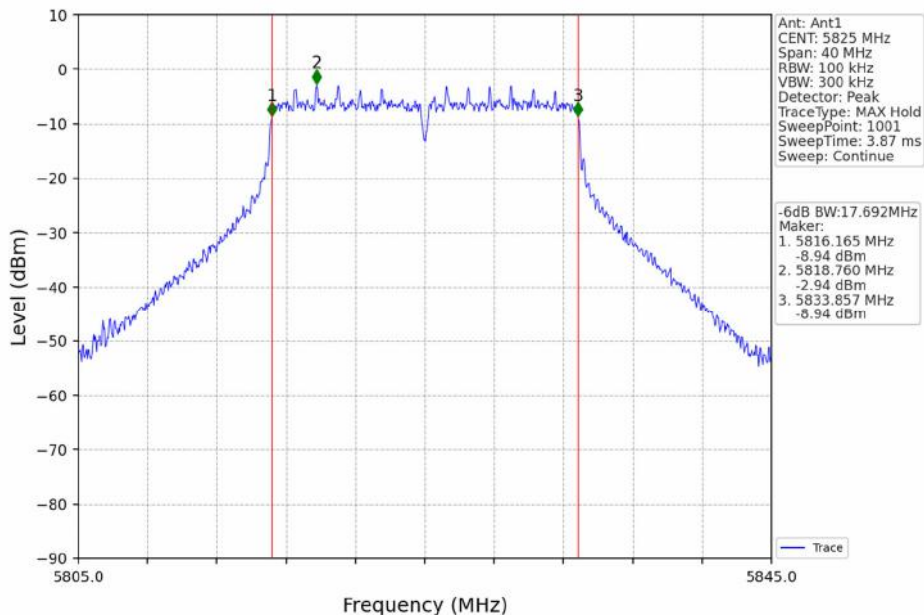
802.11n(HT20) LCH_5745MHz_Ant1_NTNV

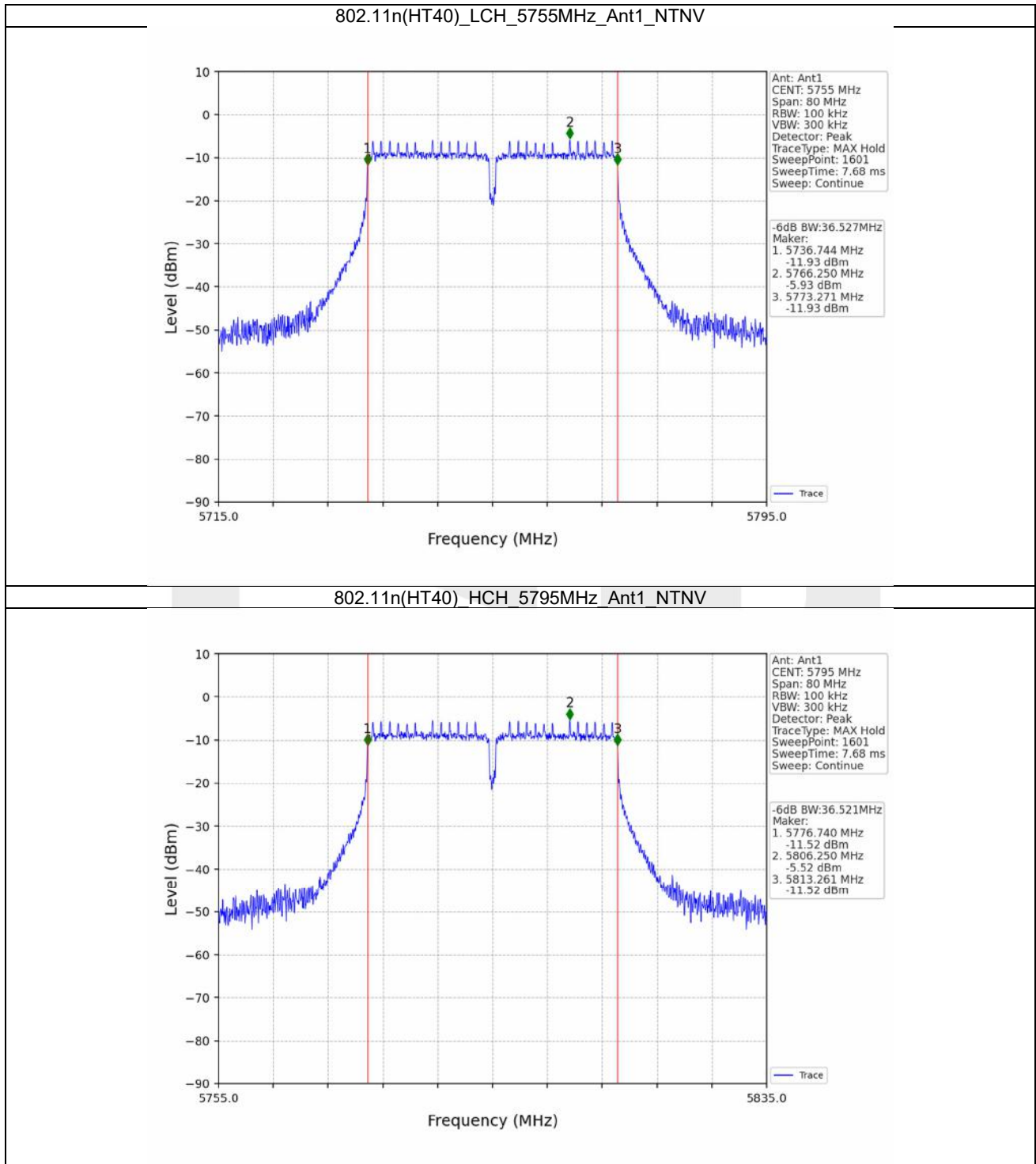


802.11n(HT20)_MCH_5785MHz_Ant1_NTNV

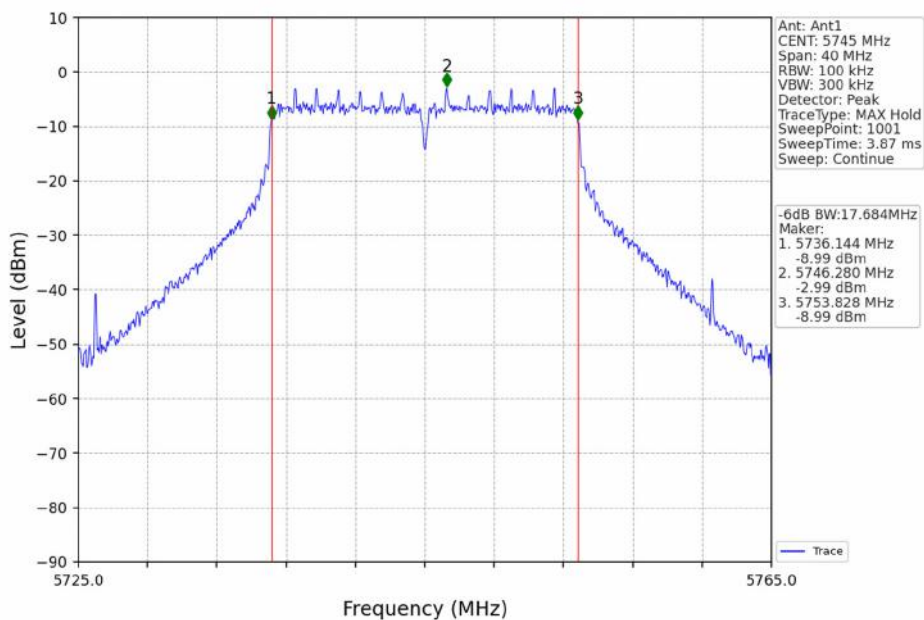


802.11n(HT20)_HCH_5825MHz_Ant1_NTNV

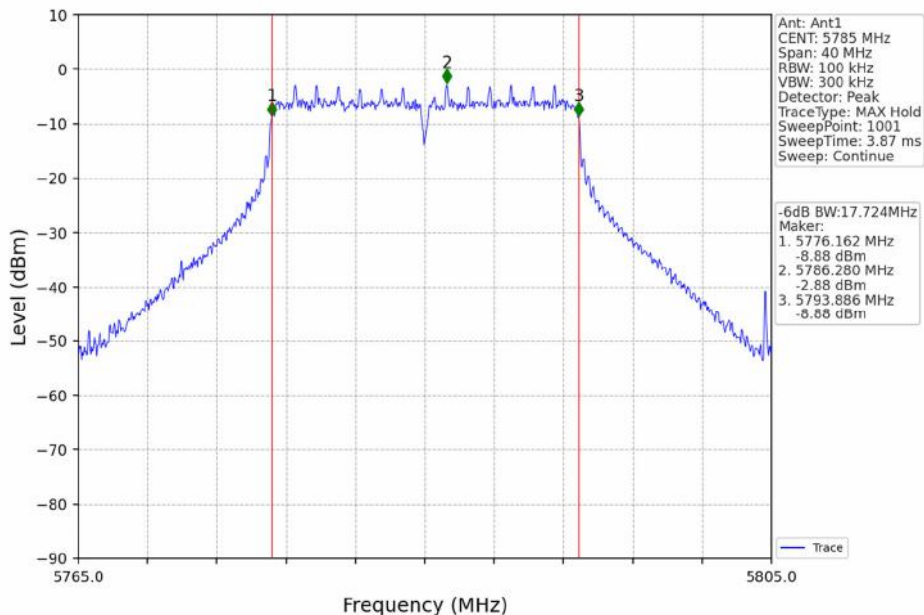




802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV



802.11ac(VHT20)_MCH_5785MHz_Ant1_NTNV



802.11ac(VHT20)_HCH_5825MHz_Ant1_NTNV