

Appendix RF Test Data for 2.4G WIFI

Company: : Shenzhen Speediance Living Technology co., Ltd.

EUT : Interactive Multi-Media DigitalFitness Equipment

FCC ID: : 2A4WP-GMBS3100A1

Model Number : GMBS3100A1

Report No. : HTT202606671F01

Reviewed By : Heber He

1. Duty Cycle

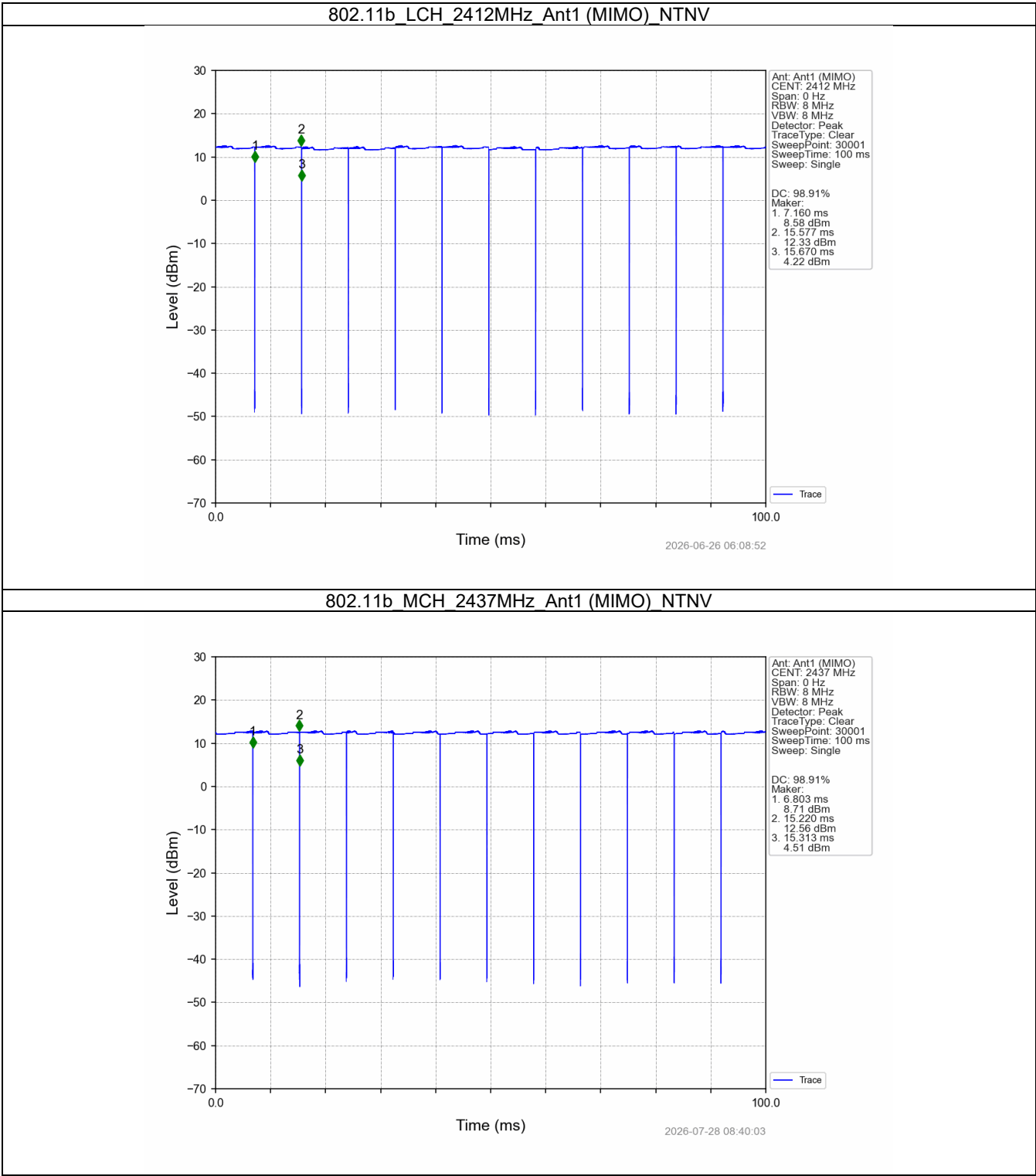
1.1 Test Result

1.1.1 Ant1

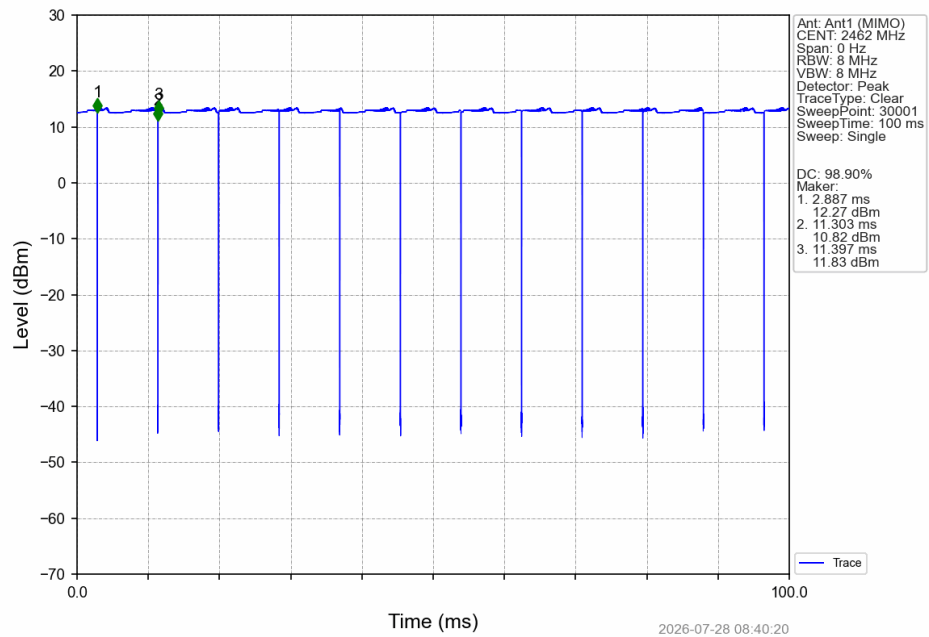
Ant1									
Mode	Tx Type	Frequency (MHz)	RU	RU Pos	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	MIMO	2412	/	/	8.417	8.510	98.91	0.05	0.00
		2437	/	/	8.417	8.510	98.91	0.05	0.04
		2462	/	/	8.416	8.510	98.90	0.05	0.00
802.11g	MIMO	2412	/	/	1.397	1.495	93.44	0.29	0.03
		2437	/	/	1.397	1.496	93.38	0.30	0.03
		2462	/	/	1.397	1.496	93.38	0.30	0.03
802.11n (HT20)	MIMO	2412	/	/	1.309	1.408	92.97	0.32	0.03
		2437	/	/	1.309	1.408	92.97	0.32	0.03
		2462	/	/	1.309	1.408	92.97	0.32	0.03
802.11ax (HEW20)	MIMO	2412	SU	/	1.021	1.121	91.08	0.41	0.03
		2437	SU	/	1.021	1.120	91.16	0.40	0.03
		2462	SU	/	1.021	1.120	91.16	0.40	0.03

1.2 Test Graph

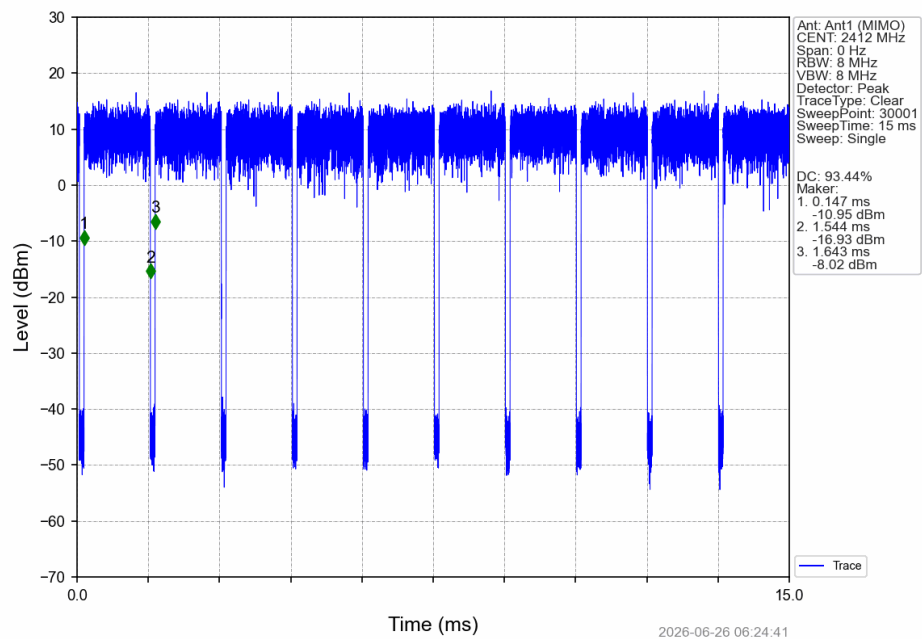
1.2.1 Ant1



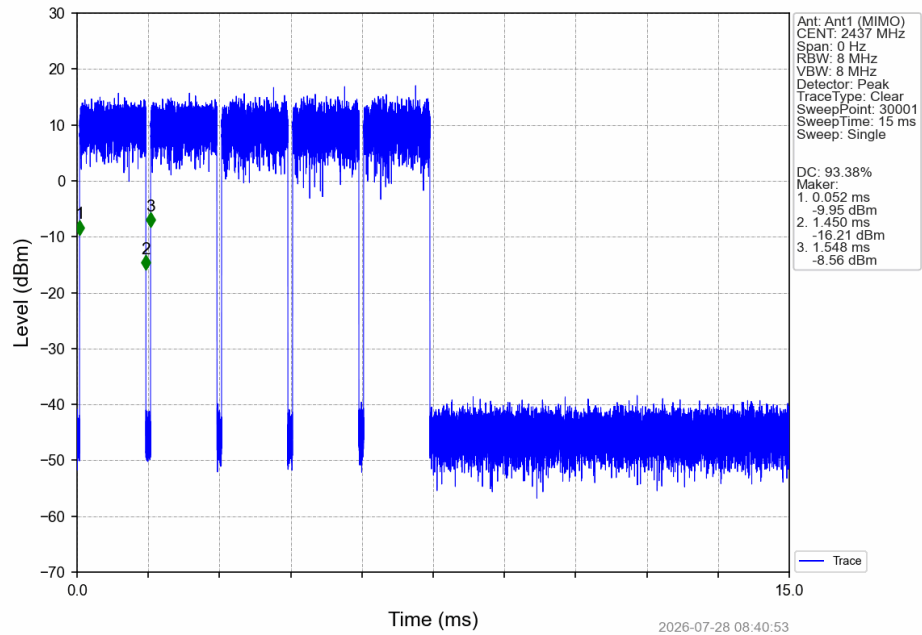
802.11b HCH 2462MHz Ant1 (MIMO) NTN



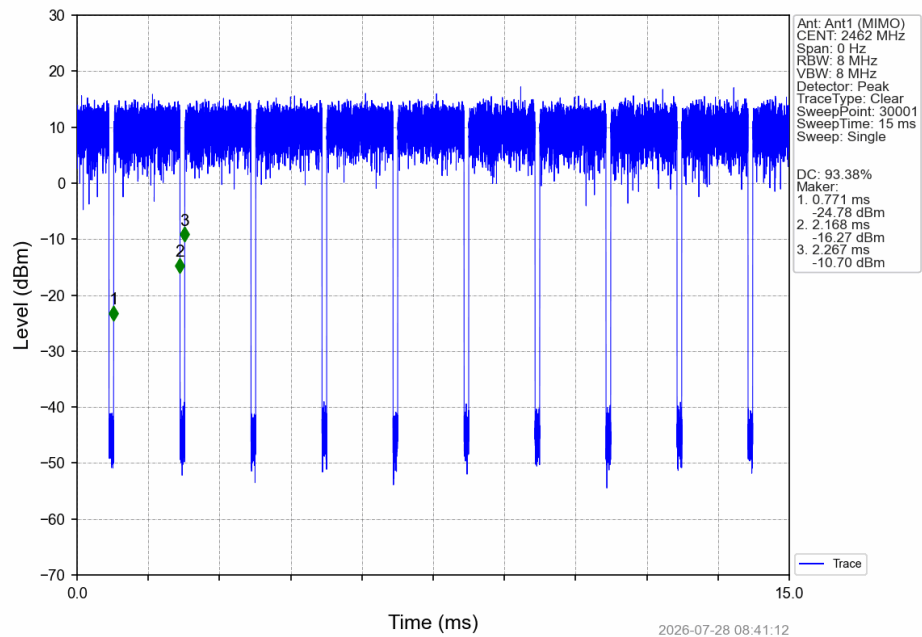
802.11g_LCH 2412MHz Ant1 (MIMO) NTN



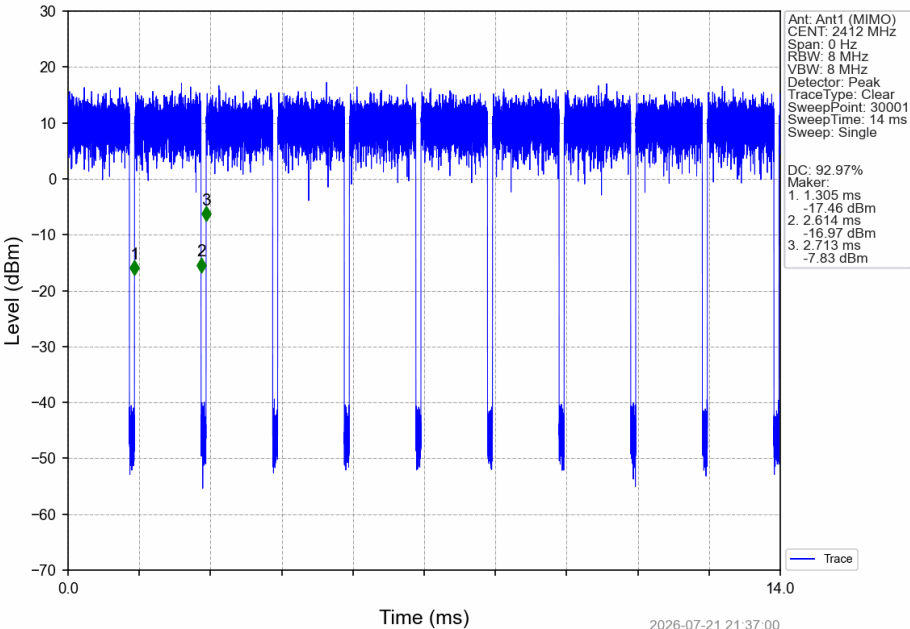
802.11g MCH 2437MHz Ant1 (MIMO) NTNV



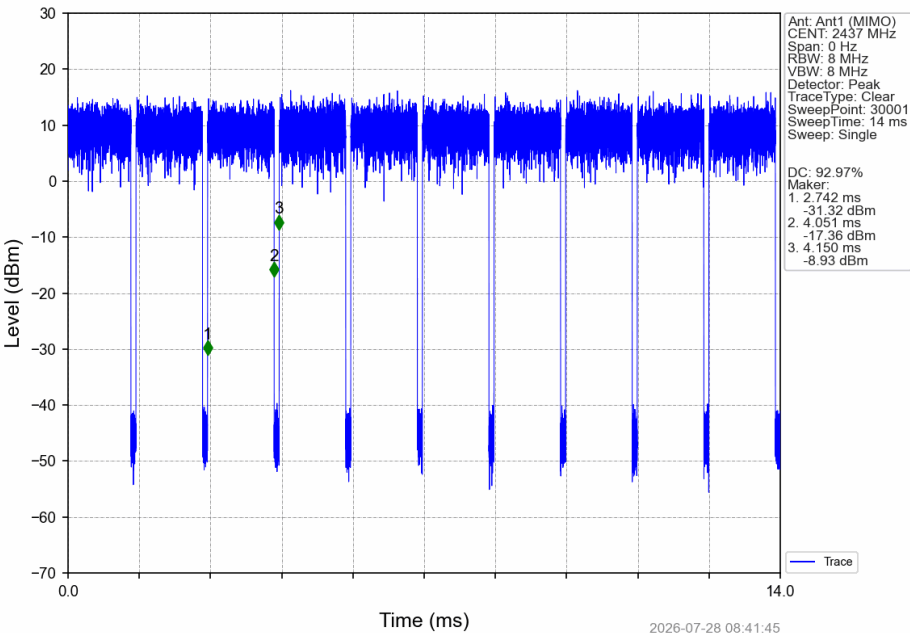
802.11g_HCH_2462MHz_Ant1 (MIMO)_NTNV



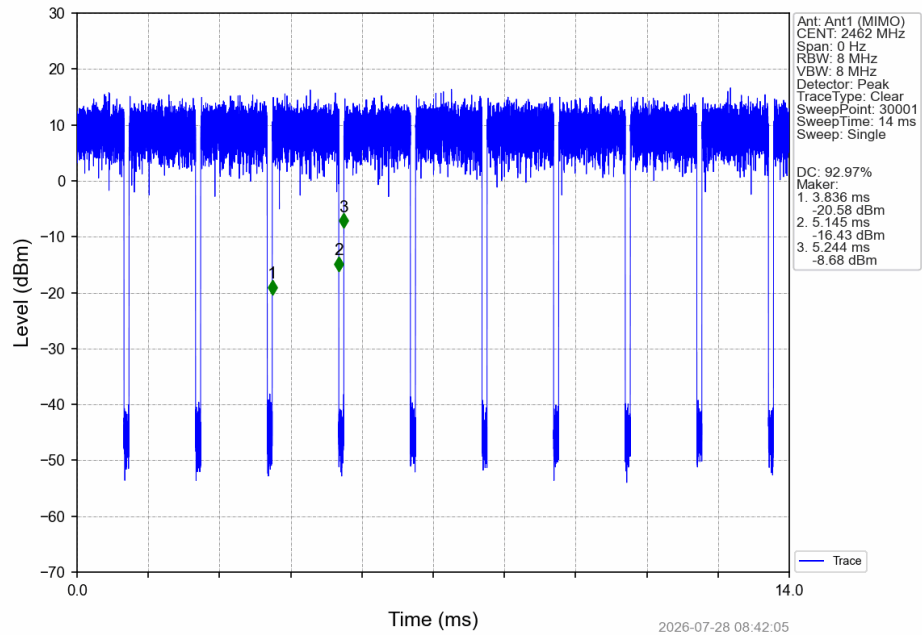
802.11n(HT20) LCH 2412MHz Ant1 (MIMO) NTN



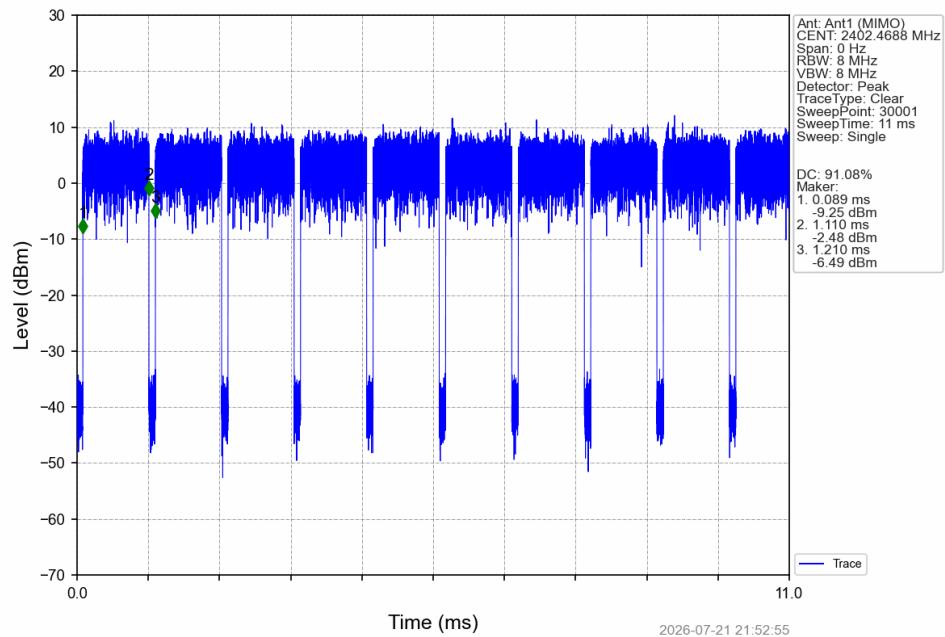
802.11n(HT20) MCH 2437MHz Ant1 (MIMO) NTN



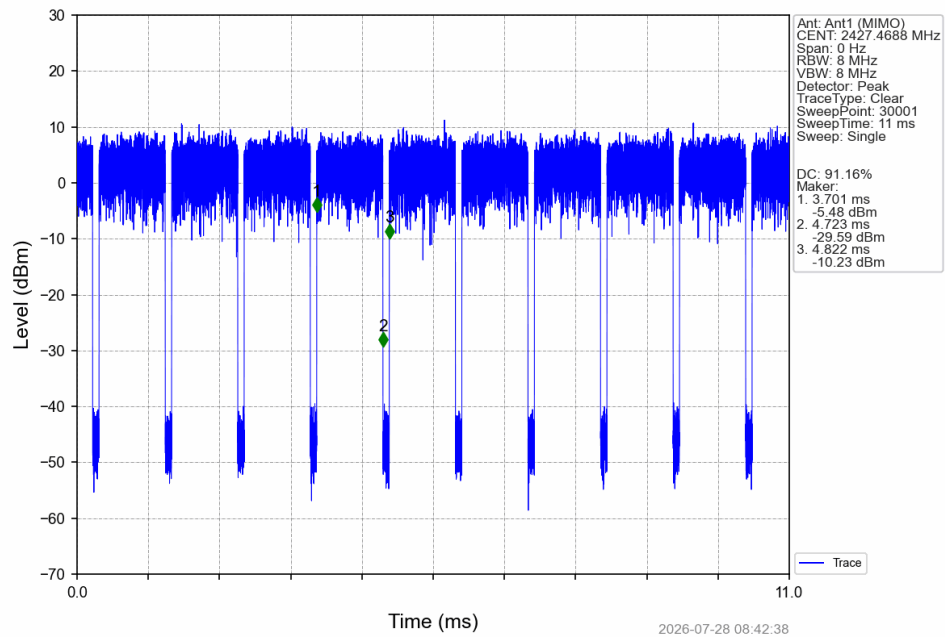
802.11n(HT20) HCH 2462MHz Ant1 (MIMO) NTN



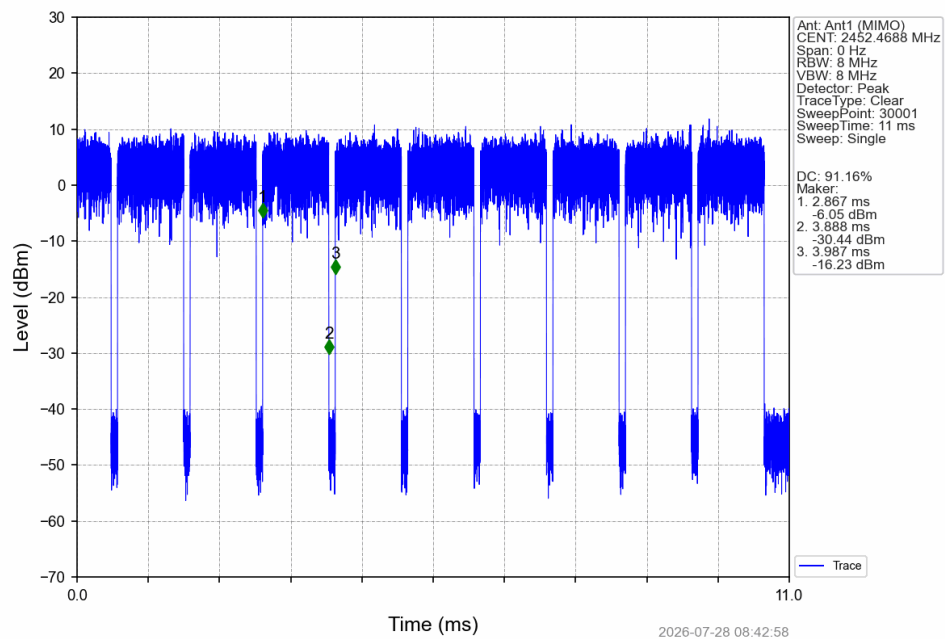
802.11ax(HEW20) LCH 2412MHz_SU / _Ant1 (MIMO) NTN



802.11ax(HEW20) MCH 2437MHz SU / Ant1 (MIMO) NTN



802.11ax(HEW20) HCH 2462MHz SU / Ant1 (MIMO) NTN



2. Bandwidth

2.1 Test Result

2.1.1 OBW

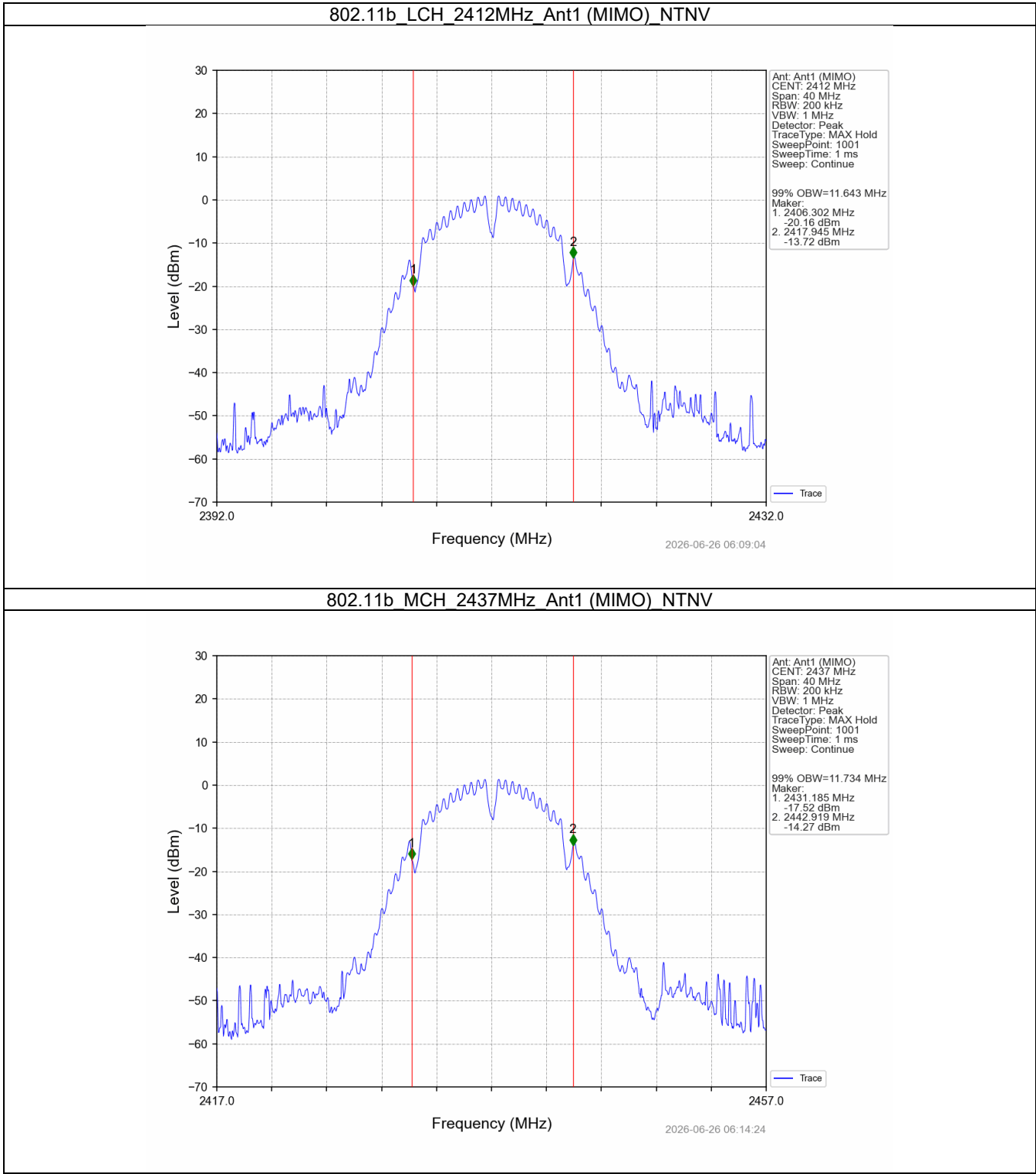
Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	99% Occupied Bandwidth (MHz)		Verdict
						Result	Limit	
802.11b	MIMO	2412	/	/	1	11.643	/	Pass
		2437	/	/	1	11.734	/	Pass
		2462	/	/	1	11.697	/	Pass
802.11g	MIMO	2412	/	/	1	16.654	/	Pass
		2437	/	/	1	16.660	/	Pass
		2462	/	/	1	16.664	/	Pass
802.11n (HT20)	MIMO	2412	/	/	1	17.764	/	Pass
		2437	/	/	1	17.828	/	Pass
		2462	/	/	1	17.767	/	Pass
802.11ax (HEW20)	MIMO	2412	SU	/	1	18.970	/	Pass
		2437	SU	/	1	18.939	/	Pass
		2462	SU	/	1	18.934	/	Pass

2.1.2 6dB BW

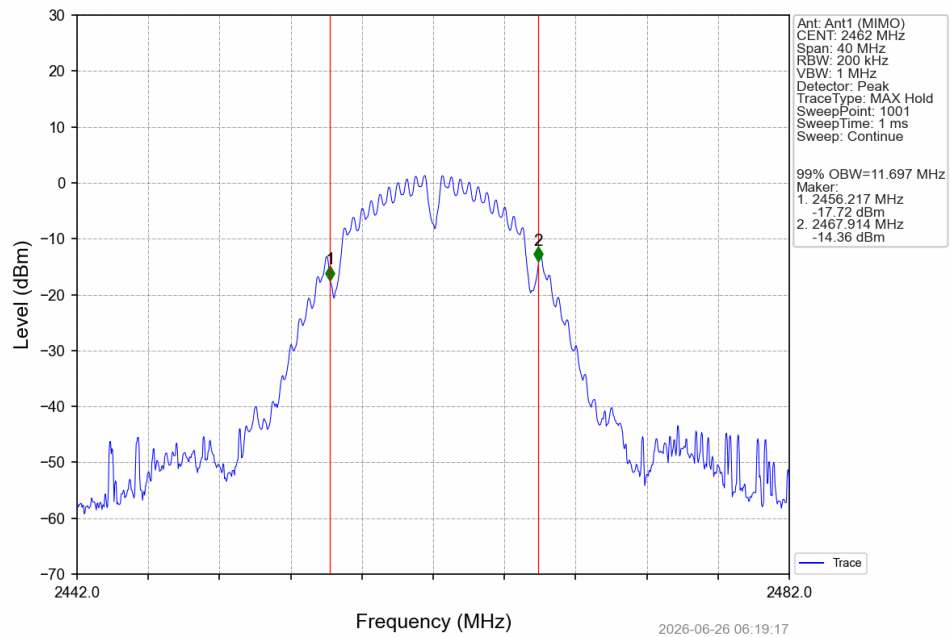
Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	6dB Bandwidth (MHz)		Verdict
						Result	Limit	
802.11b	MIMO	2412	/	/	1	7.676	>=0.5	Pass
		2437	/	/	1	8.071	>=0.5	Pass
		2462	/	/	1	8.079	>=0.5	Pass
802.11g	MIMO	2412	/	/	1	16.318	>=0.5	Pass
		2437	/	/	1	16.384	>=0.5	Pass
		2462	/	/	1	16.354	>=0.5	Pass
802.11n (HT20)	MIMO	2412	/	/	1	17.450	>=0.5	Pass
		2437	/	/	1	17.576	>=0.5	Pass
		2462	/	/	1	17.476	>=0.5	Pass
802.11ax (HEW20)	MIMO	2412	SU	/	1	18.620	>=0.5	Pass
		2437	SU	/	1	18.035	>=0.5	Pass
		2462	SU	/	1	18.776	>=0.5	Pass

2.2 Test Graph

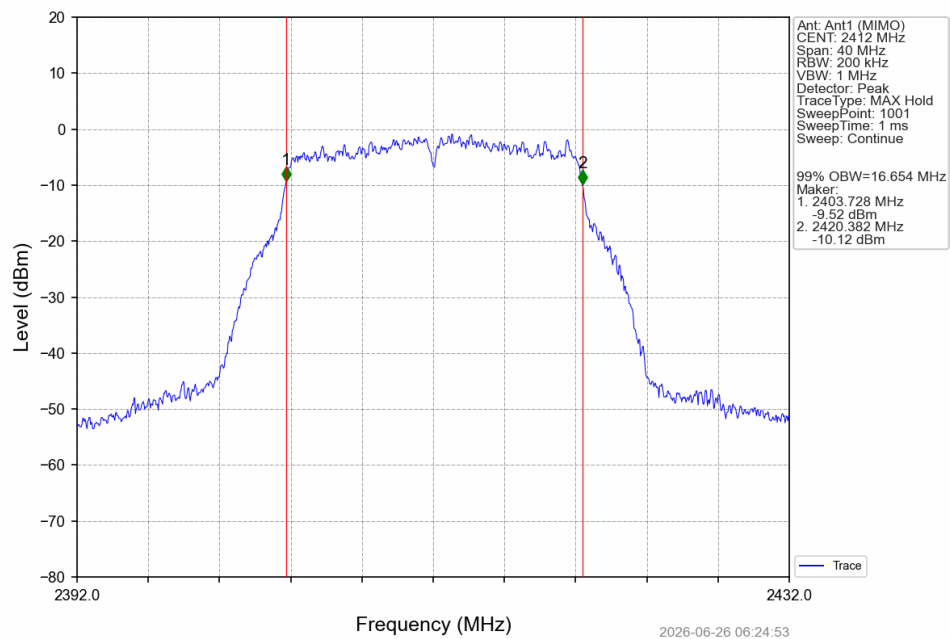
2.2.1 OBW



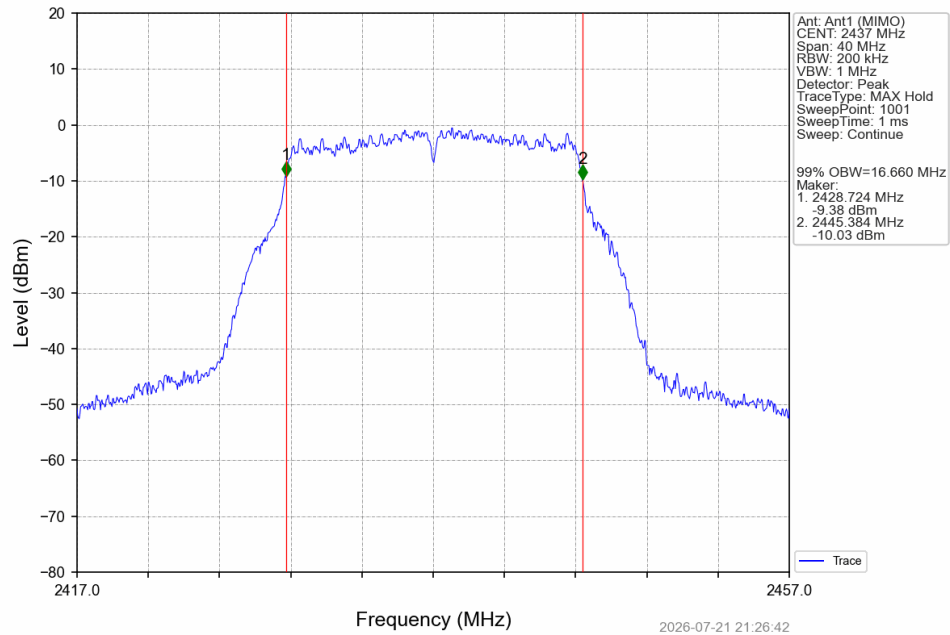
802.11b HCH 2462MHz Ant1 (MIMO) NTN



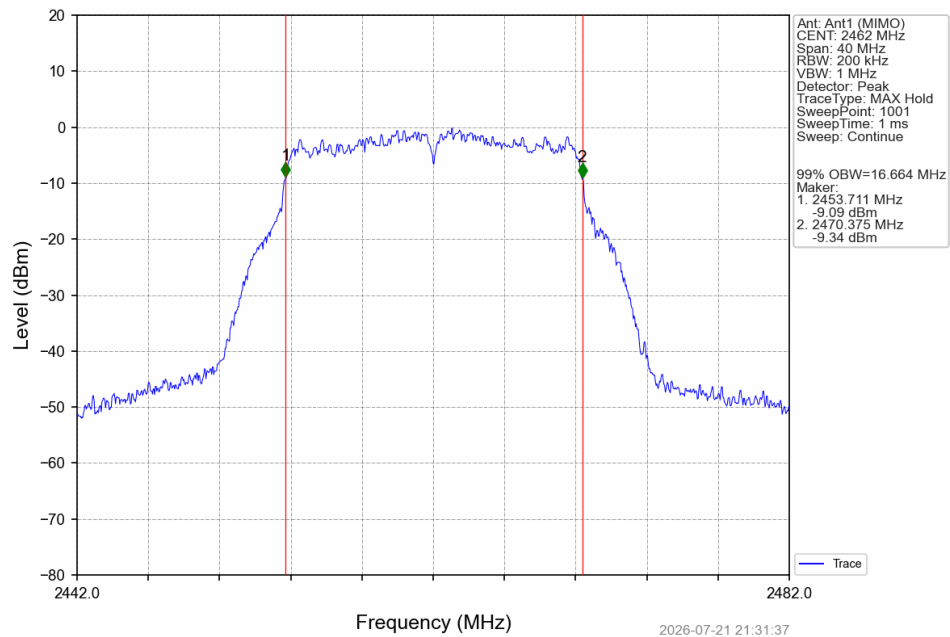
802.11g LCH 2412MHz Ant1 (MIMO) NTN



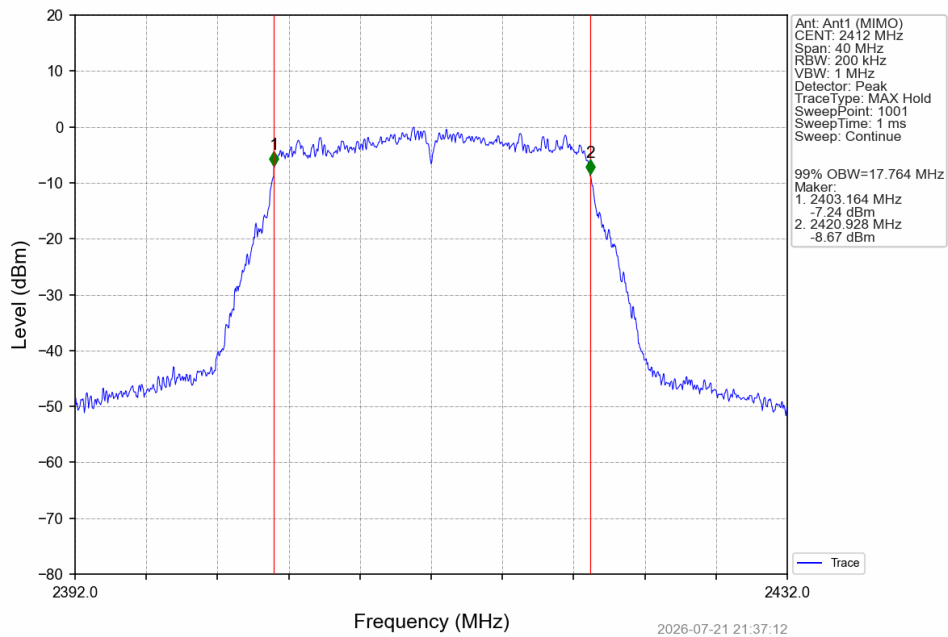
802.11g MCH 2437MHz Ant1 (MIMO) NTN



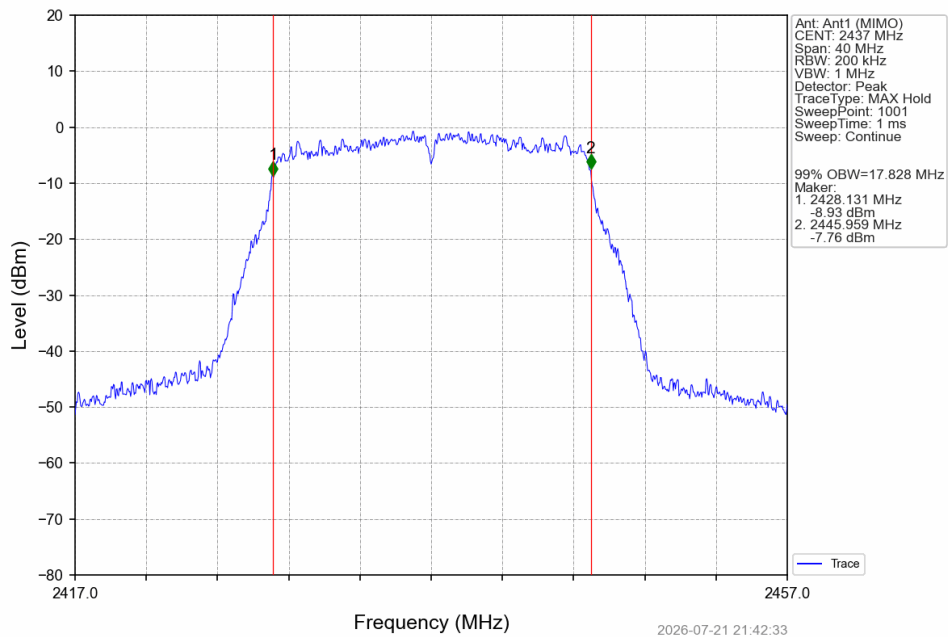
802.11g_HCH_2462MHz_Ant1 (MIMO)_NTN



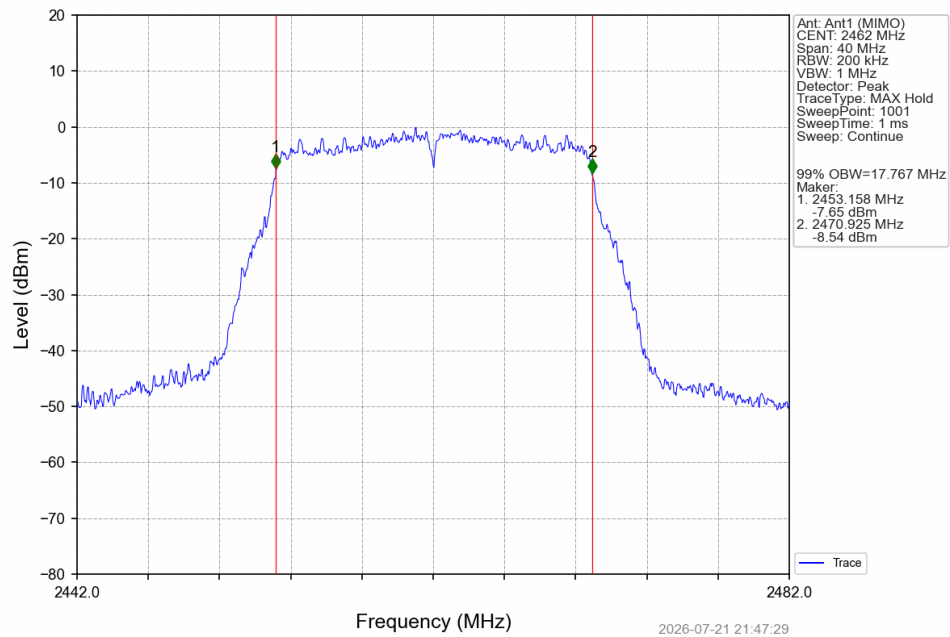
802.11n(HT20) LCH 2412MHz Ant1 (MIMO) NTN



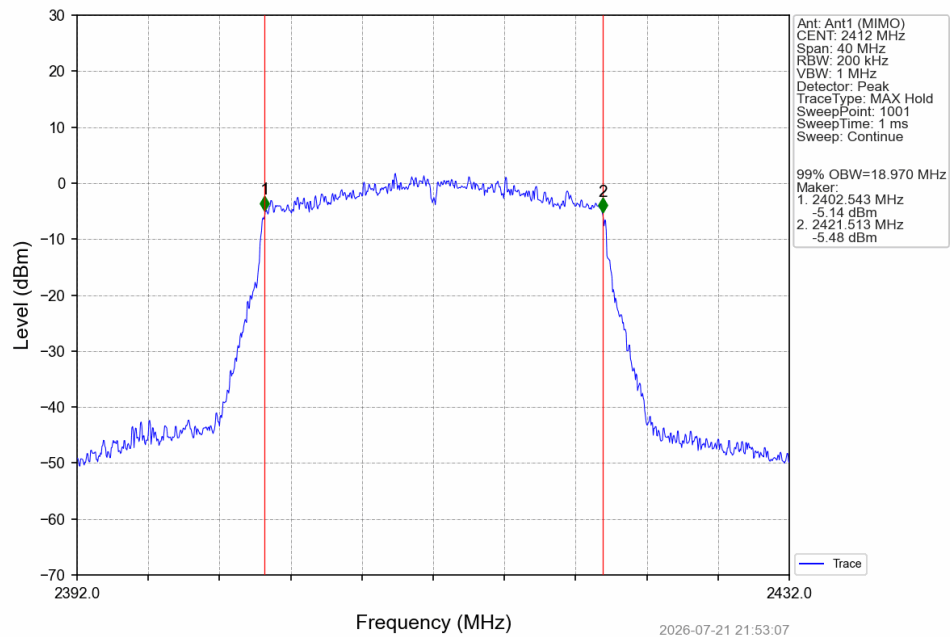
802.11n(HT20) MCH 2437MHz Ant1 (MIMO) NTN



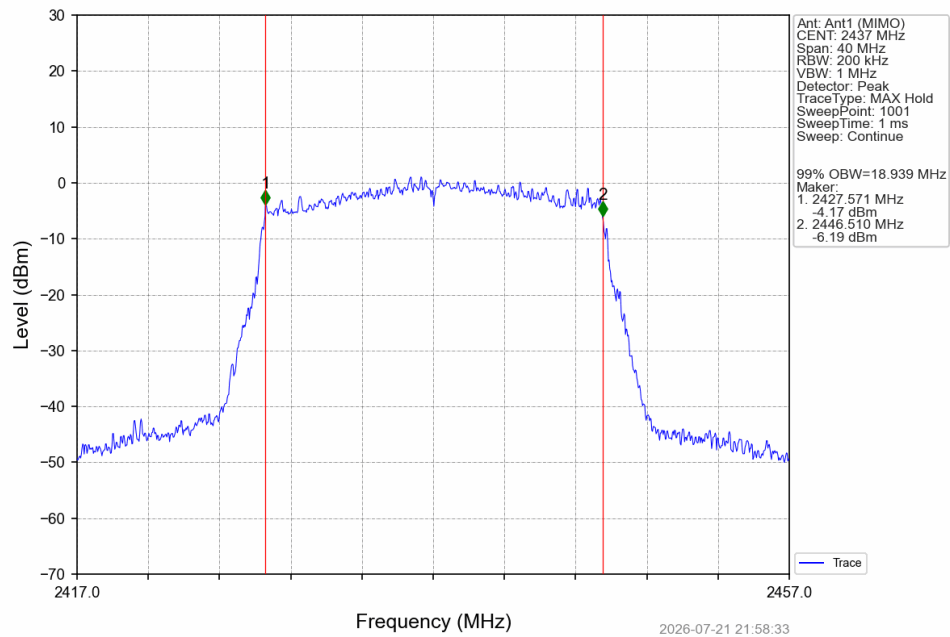
802.11n(HT20) HCH 2462MHz Ant1 (MIMO) NTN



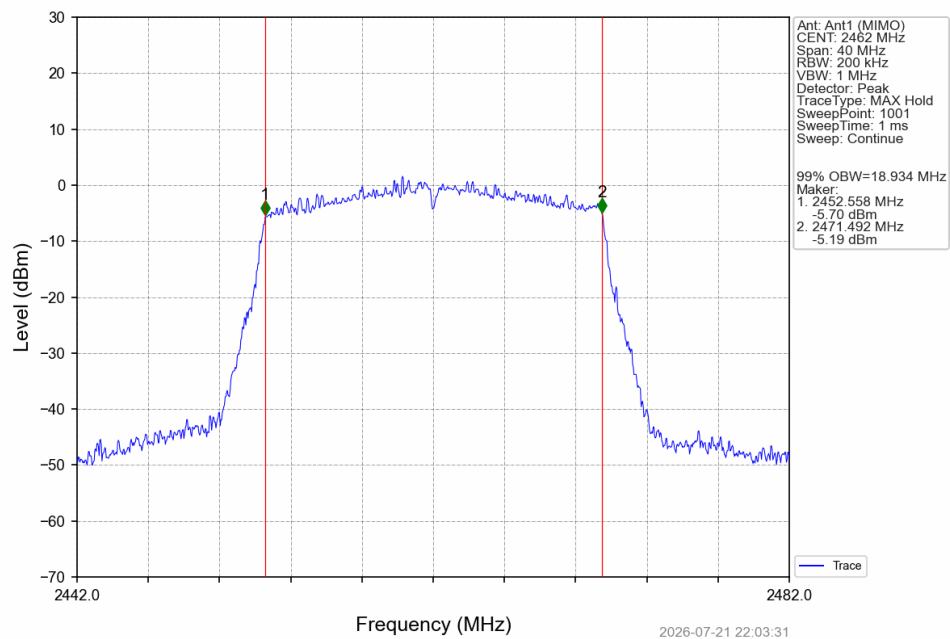
802.11ax(HEW20)_LCH_2412MHz_SU / _Ant1 (MIMO)_NTNV



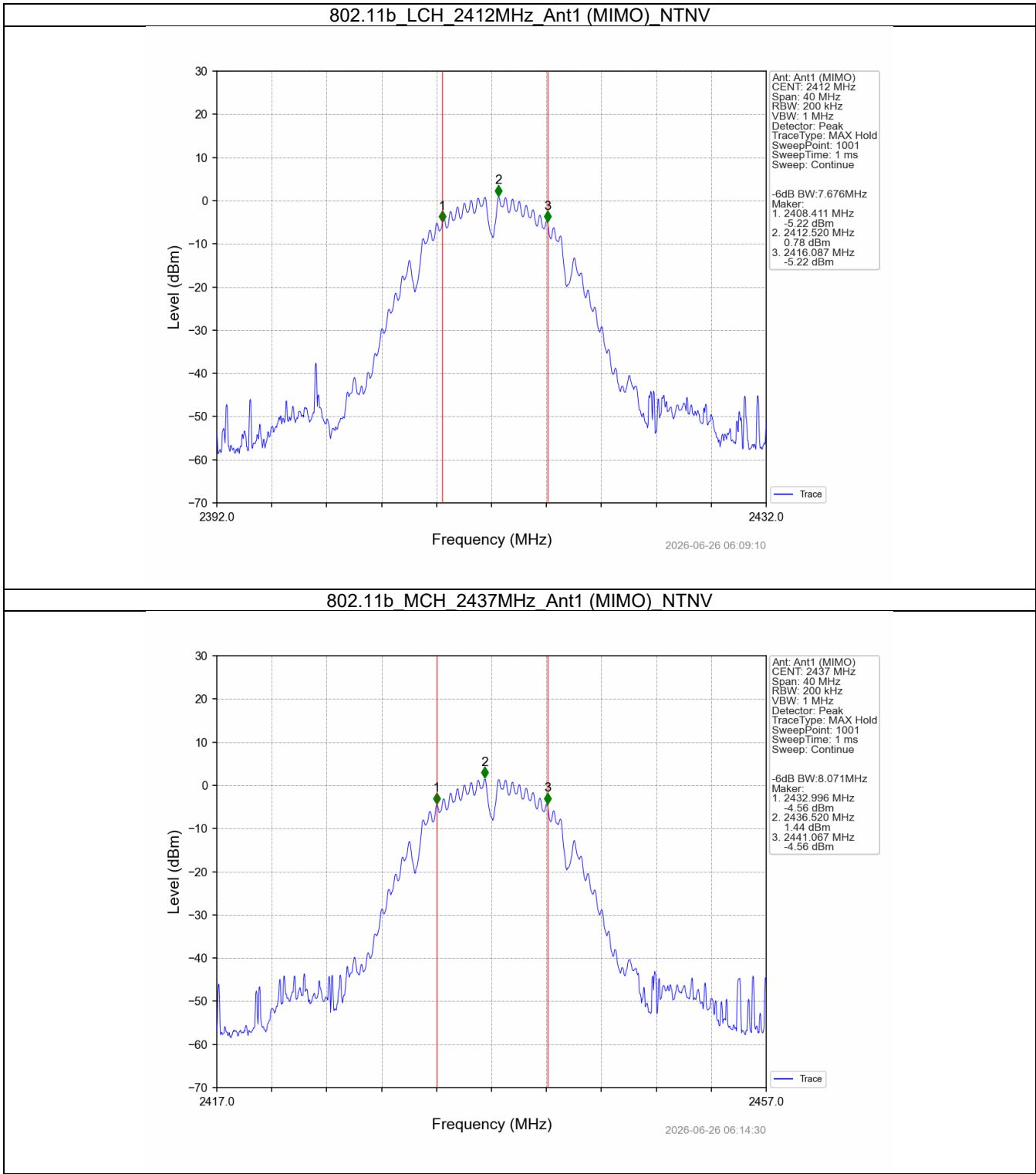
802.11ax(HEW20) MCH 2437MHz SU / Ant1 (MIMO) NTN



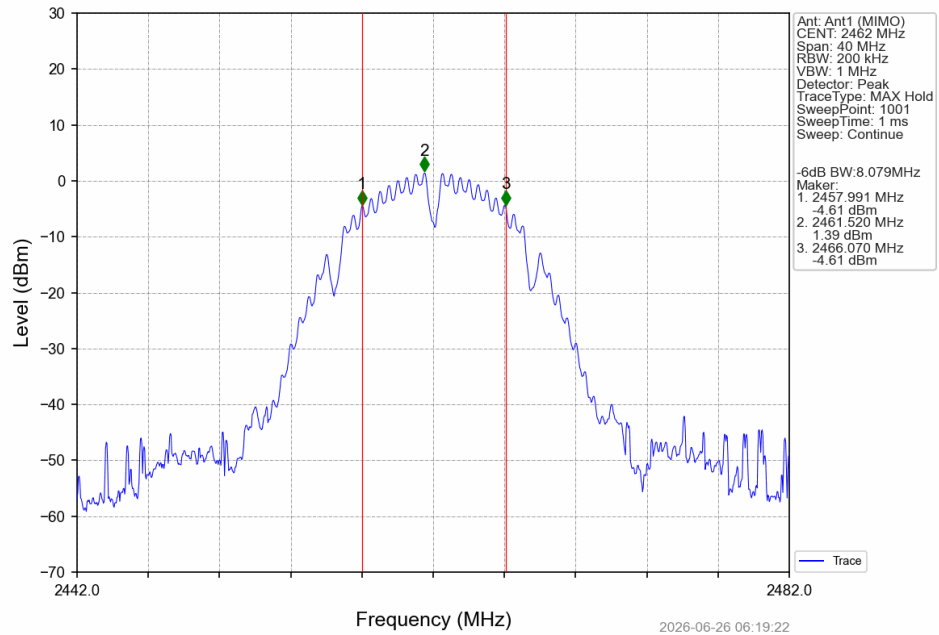
802.11ax(HEW20) HCH 2462MHz SU / Ant1 (MIMO) NTN



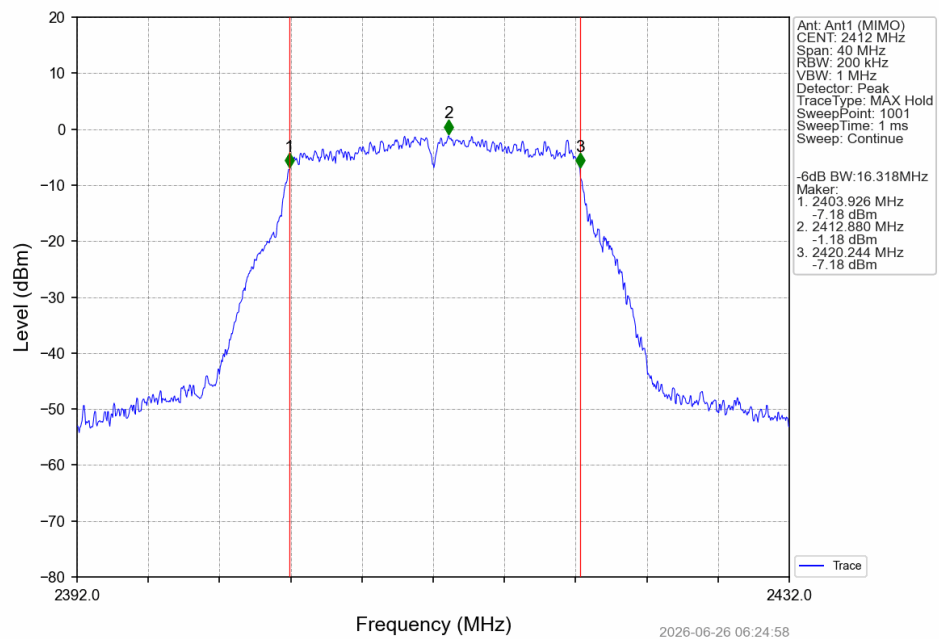
2.2.2 6dB BW



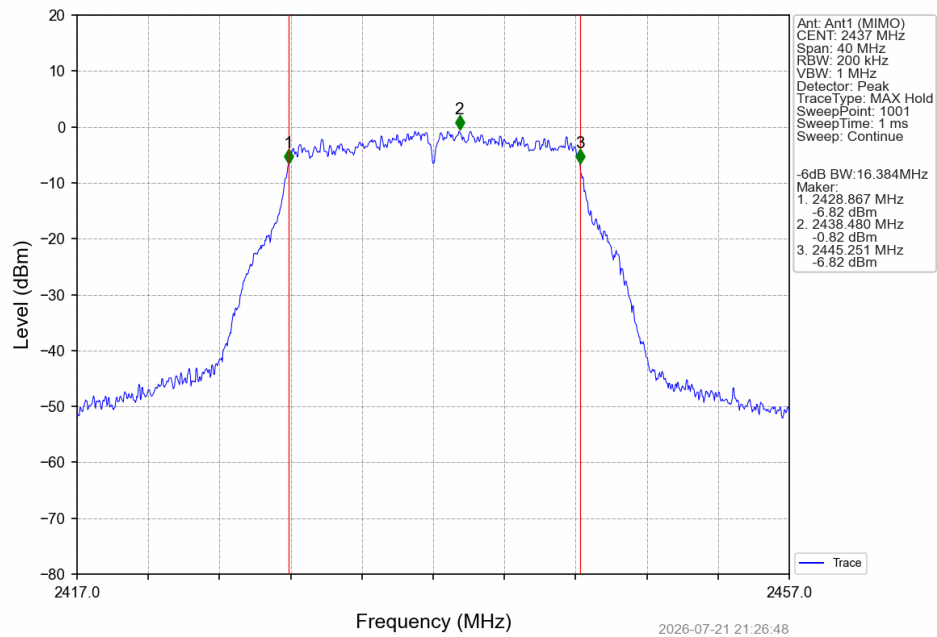
802.11b HCH 2462MHz Ant1 (MIMO) NTNV



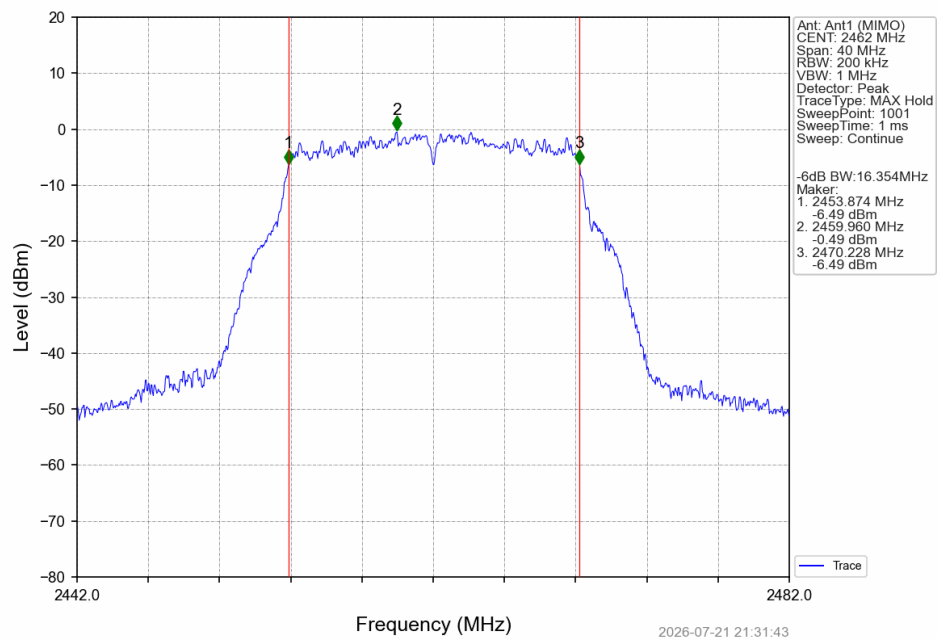
802.11g_LCH_2412MHz_Ant1 (MIMO)_NTNV



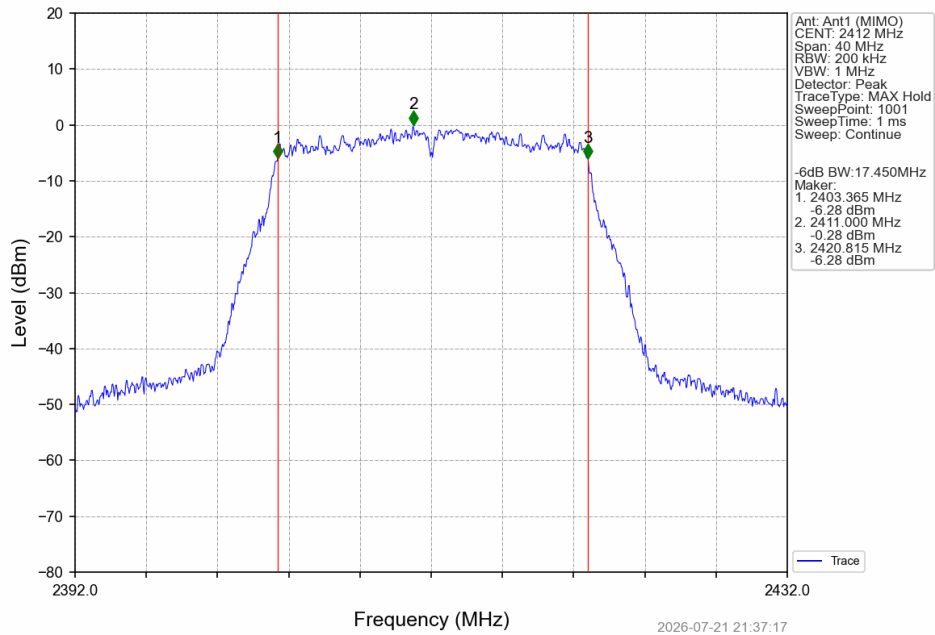
802.11g MCH 2437MHz Ant1 (MIMO) NTN



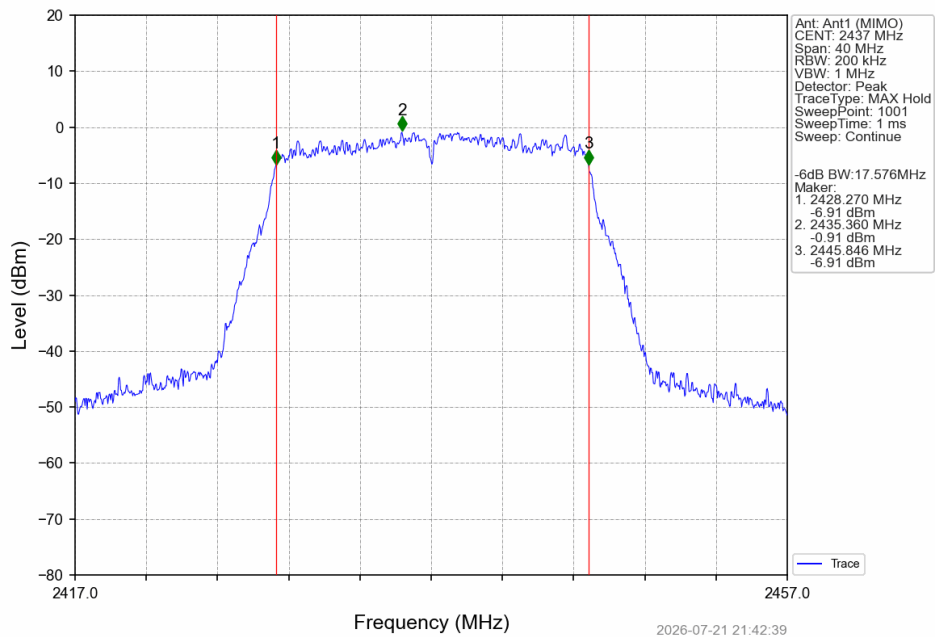
802.11g_HCH_2462MHz_Ant1 (MIMO)_NTN



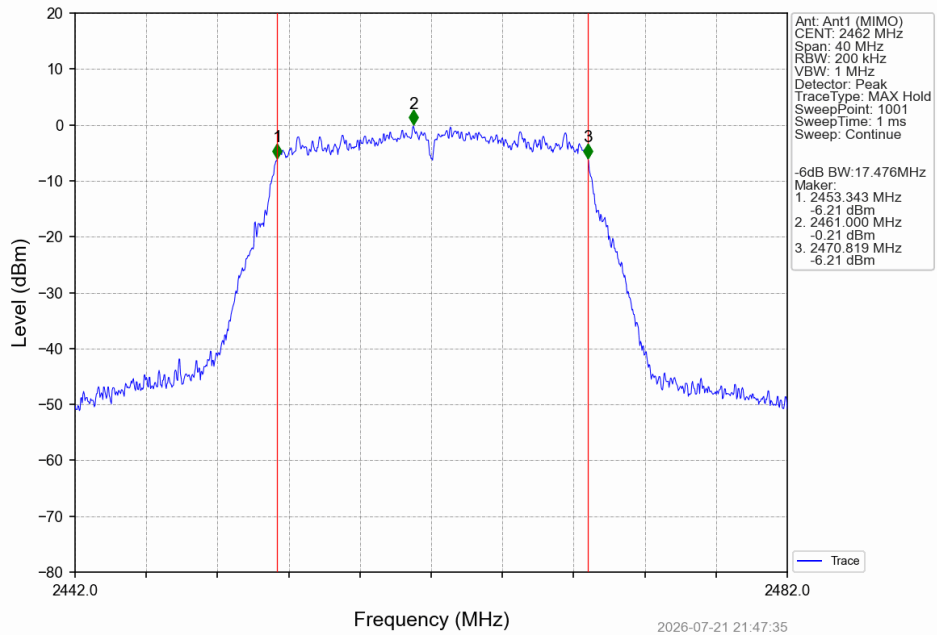
802.11n(HT20) LCH 2412MHz Ant1 (MIMO) NTNV



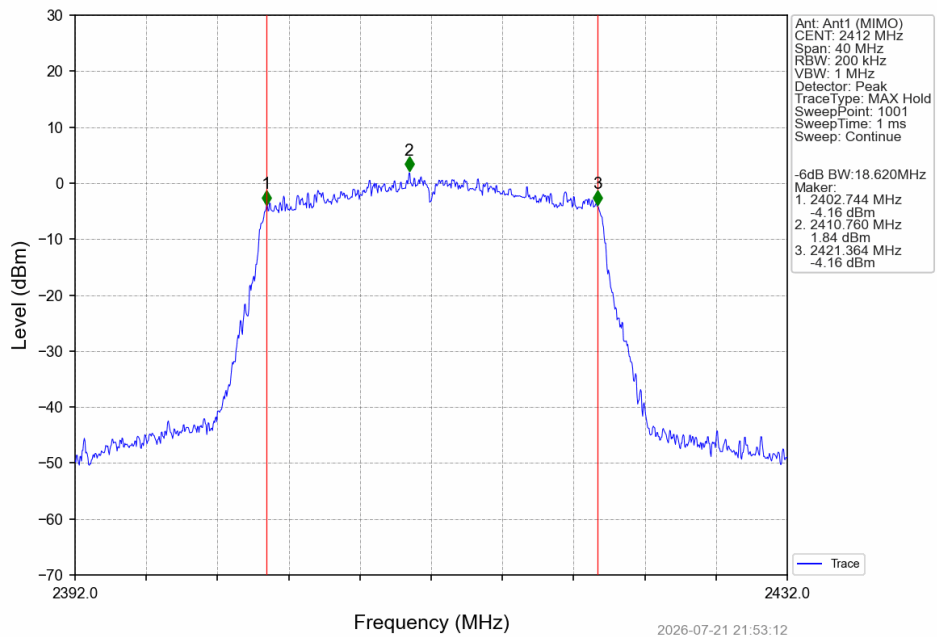
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



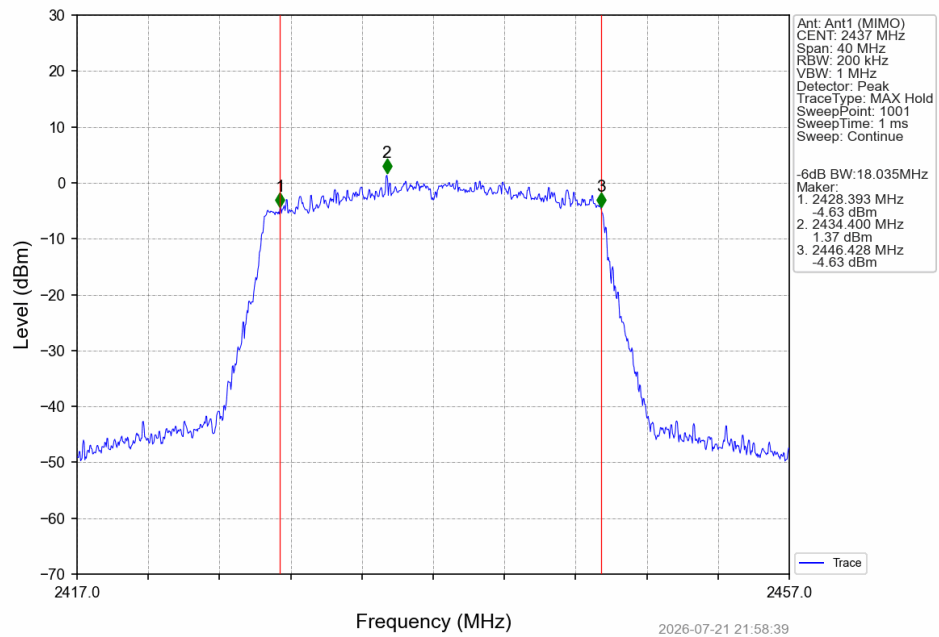
802.11n(HT20) HCH 2462MHz Ant1 (MIMO) NTN



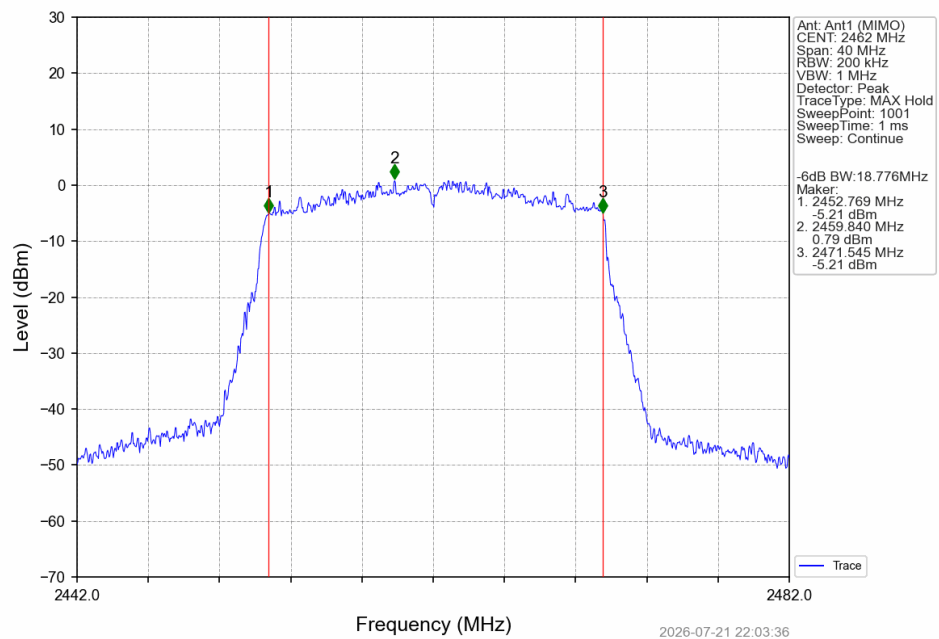
802.11ax(HEW20)_LCH_2412MHz_SU_/_Ant1 (MIMO)_NTN



802.11ax(HEW20) MCH 2437MHz SU / Ant1 (MIMO) NTN



802.11ax(HEW20)_HCH_2462MHz_SU / Ant1 (MIMO) NTN



3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

Mode	TX Type	Frequency (MHz)	RU	RU Pos	Maximum Peak Conducted Output Power (dBm)				Verdict
					ANT1	ANT2	MIMO	Limit	
802.11b	MIMO	2412	/	/	13.17	13.53	16.36	<=29.9	Pass
		2437	/	/	11.33	11.00	14.18	<=29.9	Pass
		2462	/	/	11.22	11.16	14.20	<=29.9	Pass
802.11g	MIMO	2412	/	/	16.14	16.46	19.31	<=29.9	Pass
		2437	/	/	16.75	17.51	20.16	<=29.9	Pass
		2462	/	/	16.84	17.85	20.38	<=29.9	Pass
802.11n (HT20)	MIMO	2412	/	/	16.90	17.91	20.44	<=29.9	Pass
		2437	/	/	16.71	17.73	20.26	<=29.9	Pass
		2462	/	/	16.86	17.71	20.32	<=29.9	Pass
802.11ax (HEW20)	MIMO	2412	SU	/	18.58	19.11	21.86	<=29.9	Pass
		2437	SU	/	18.07	18.64	21.37	<=29.9	Pass
		2462	SU	/	18.42	19.05	21.76	<=29.9	Pass

4. Maximum Power Spectral Density

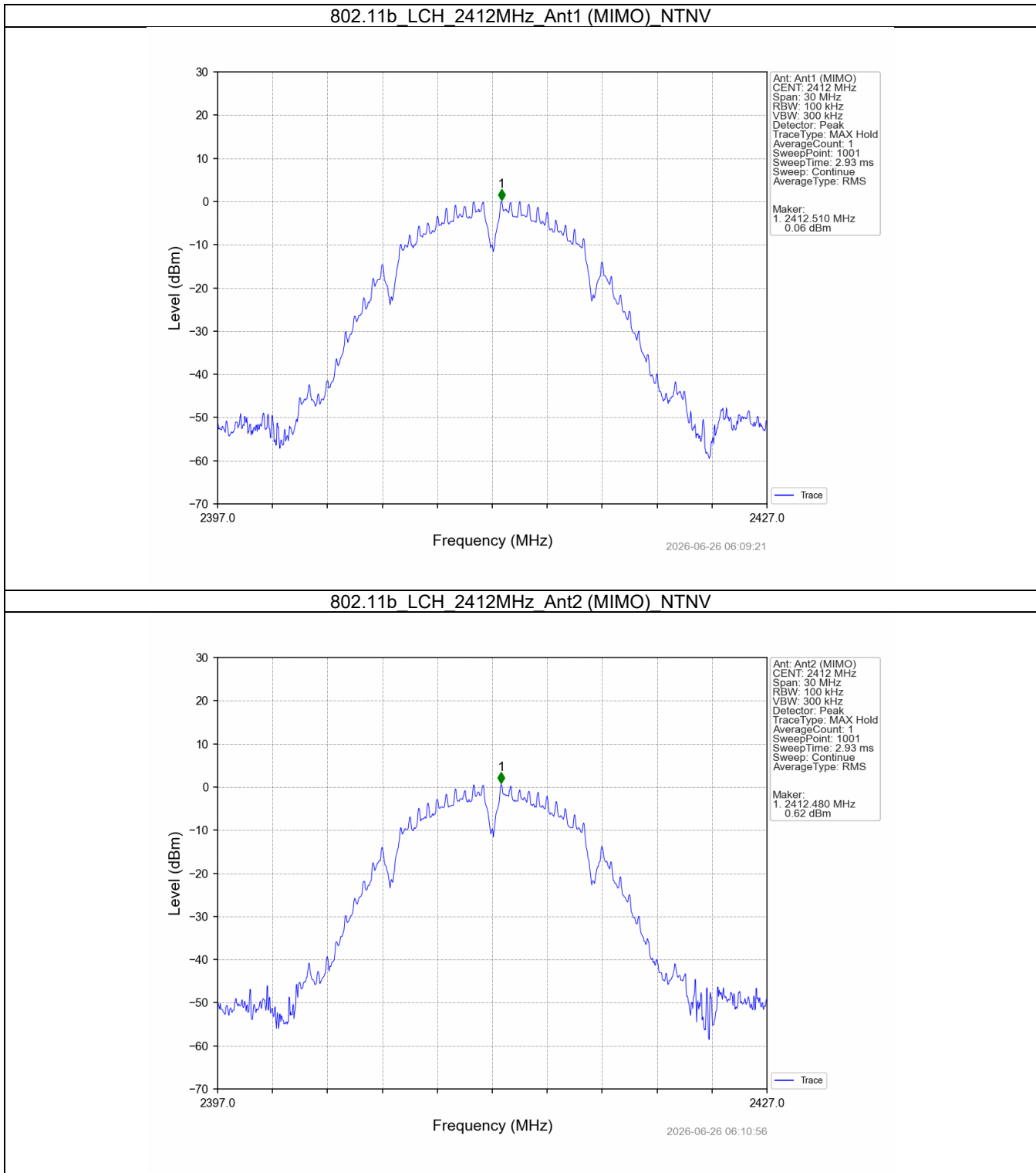
4.1 Test Result

4.1.1 PSD

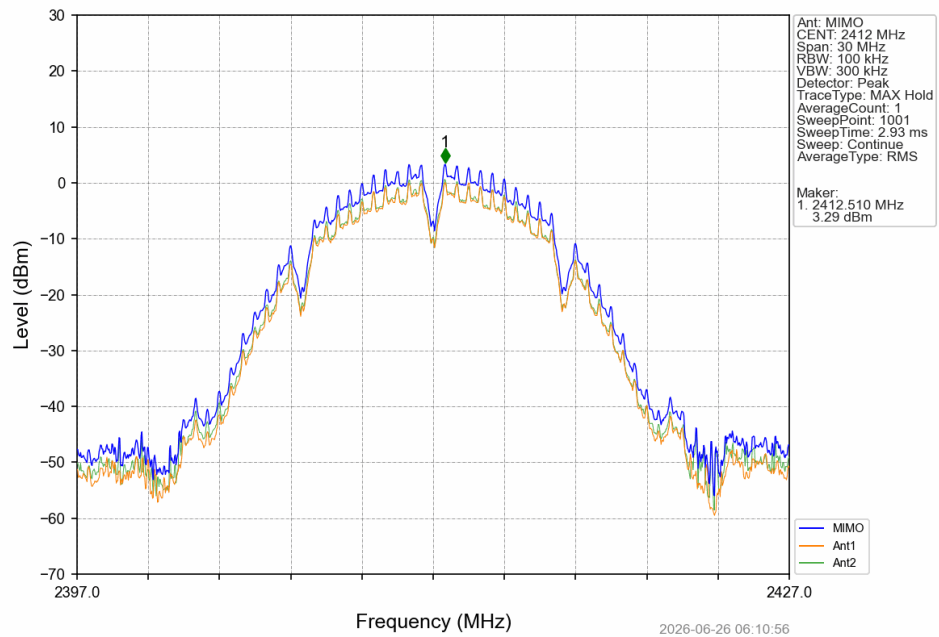
Mode	TX Type	Frequency (MHz)	RU	RU Pos	Maximum PSD (dBm)				Verdict
					ANT1	ANT2	MIMO	Limit(dBm/3kHz)	
802.11b	MIMO	2412	/	/	0.06dBm/100kHz	0.62dBm/100kHz	3.29dBm/100kHz	<=8	Pass
		2437	/	/	0.89dBm/100kHz	0.58dBm/100kHz	3.73dBm/100kHz	<=8	Pass
		2462	/	/	0.97dBm/100kHz	0.82dBm/100kHz	3.80dBm/100kHz	<=8	Pass
802.11g	MIMO	2412	/	/	-3.58dBm/100kHz	-3.49dBm/100kHz	-0.64dBm/100kHz	<=8	Pass
		2437	/	/	-3.03dBm/100kHz	-2.81dBm/100kHz	0.00dBm/100kHz	<=8	Pass
		2462	/	/	-2.59dBm/100kHz	-2.60dBm/100kHz	0.03dBm/100kHz	<=8	Pass
802.11n (HT20)	MIMO	2412	/	/	-2.54dBm/100kHz	-1.95dBm/100kHz	0.53dBm/100kHz	<=8	Pass
		2437	/	/	-2.74dBm/100kHz	-2.37dBm/100kHz	0.39dBm/100kHz	<=8	Pass
		2462	/	/	-2.73dBm/100kHz	-2.41dBm/100kHz	0.37dBm/100kHz	<=8	Pass
802.11ax (HEW20)	MIMO	2412	SU	/	-2.29dBm/100kHz	-2.08dBm/100kHz	0.64dBm/100kHz	<=8	Pass
		2437	SU	/	-2.50dBm/100kHz	-2.29dBm/100kHz	0.35dBm/100kHz	<=8	Pass
		2462	SU	/	-2.65dBm/100kHz	-2.35dBm/100kHz	0.32dBm/100kHz	<=8	Pass

4.2 Test Graph

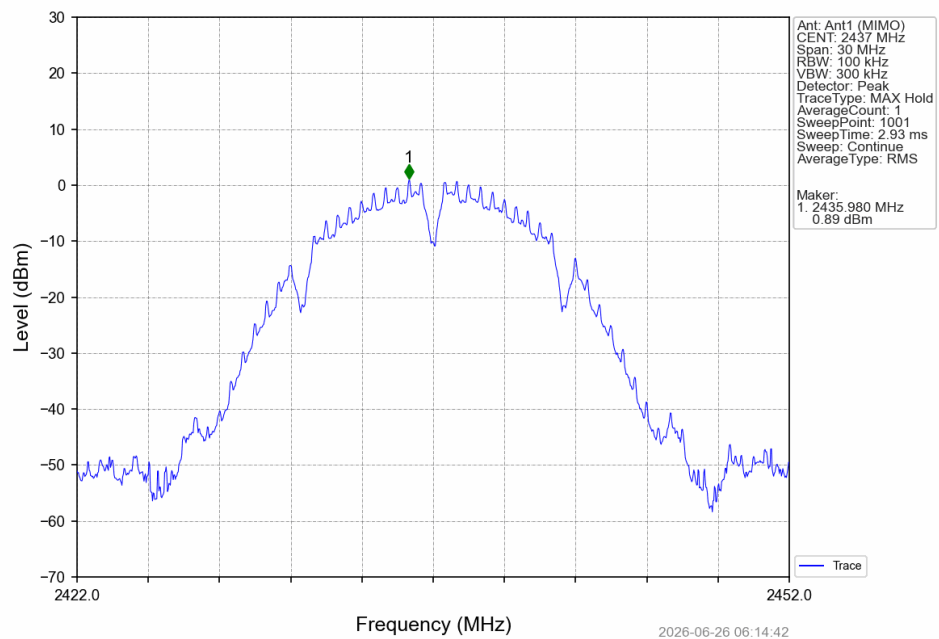
4.2.1 PSD



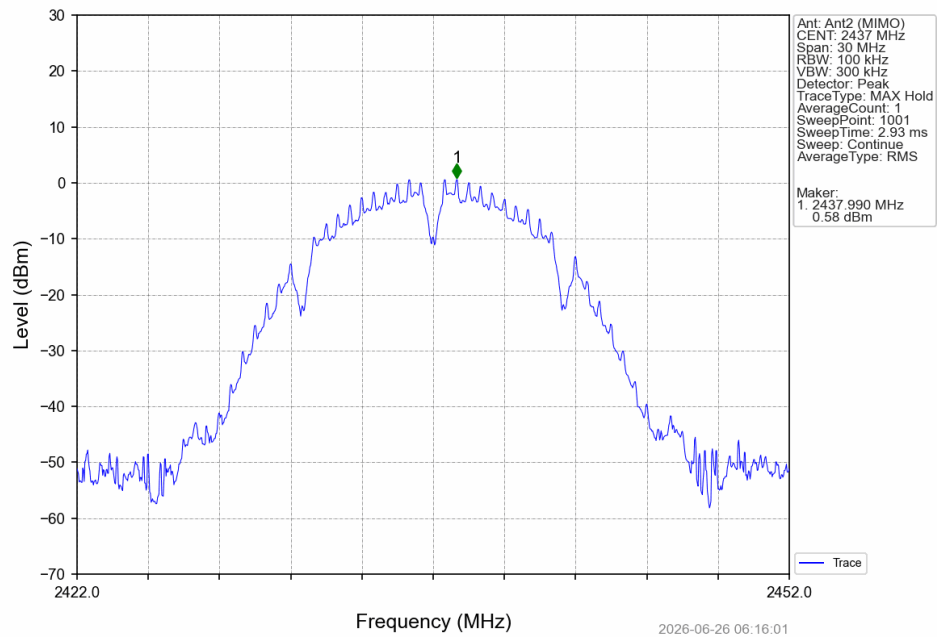
802.11b LCH 2412MHz MIMO NTN



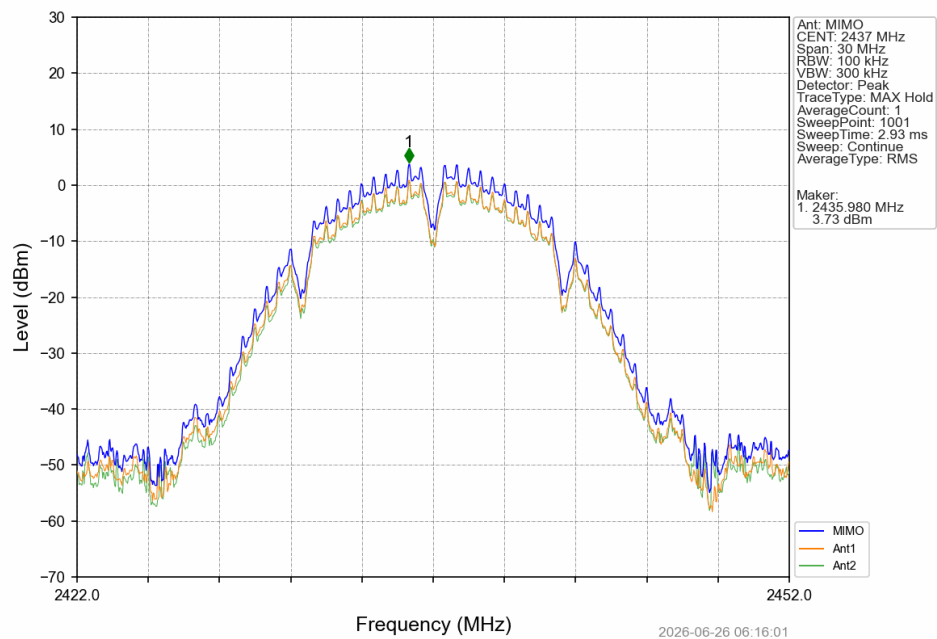
802.11b_MCH_2437MHz_Ant1 (MIMO)_NTN



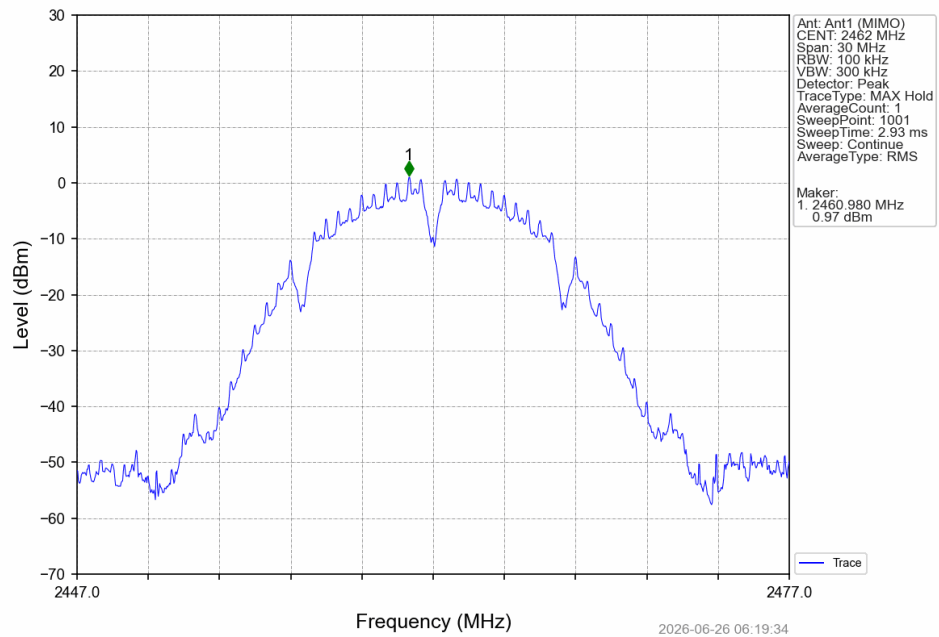
802.11b MCH 2437MHz Ant2 (MIMO) NTN



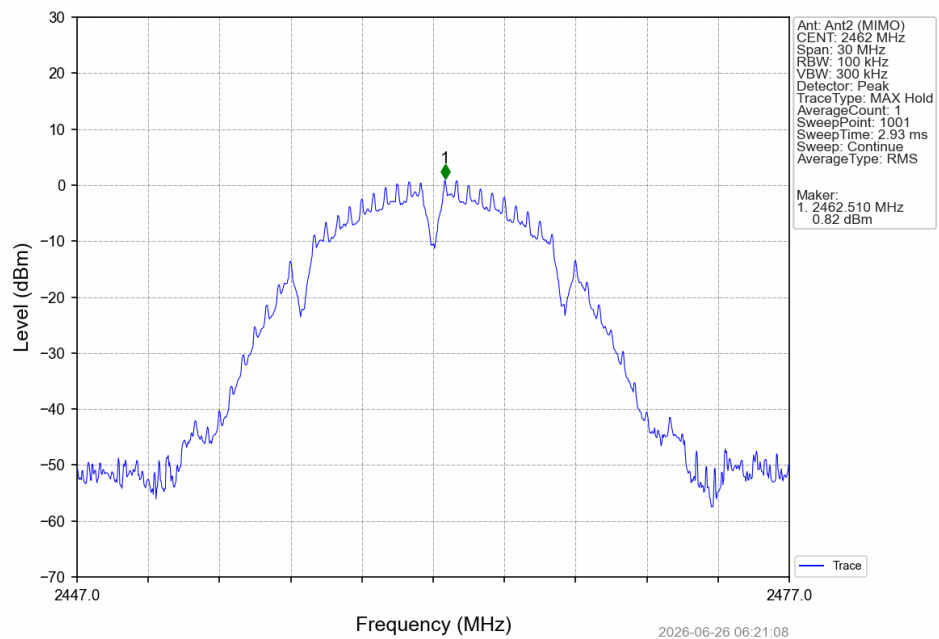
802.11b MCH 2437MHz MIMO NTN



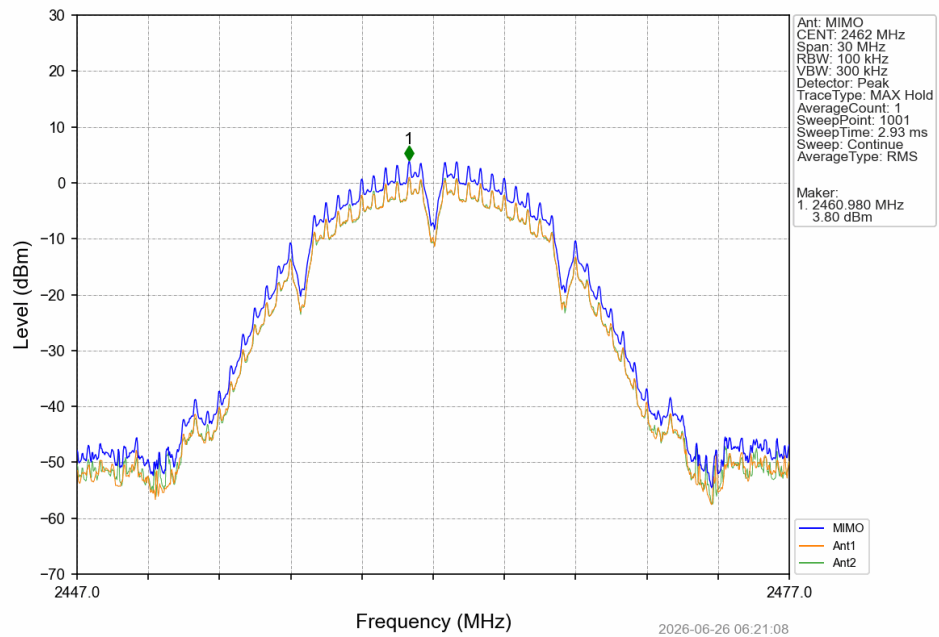
802.11b HCH 2462MHz Ant1 (MIMO) NTNV



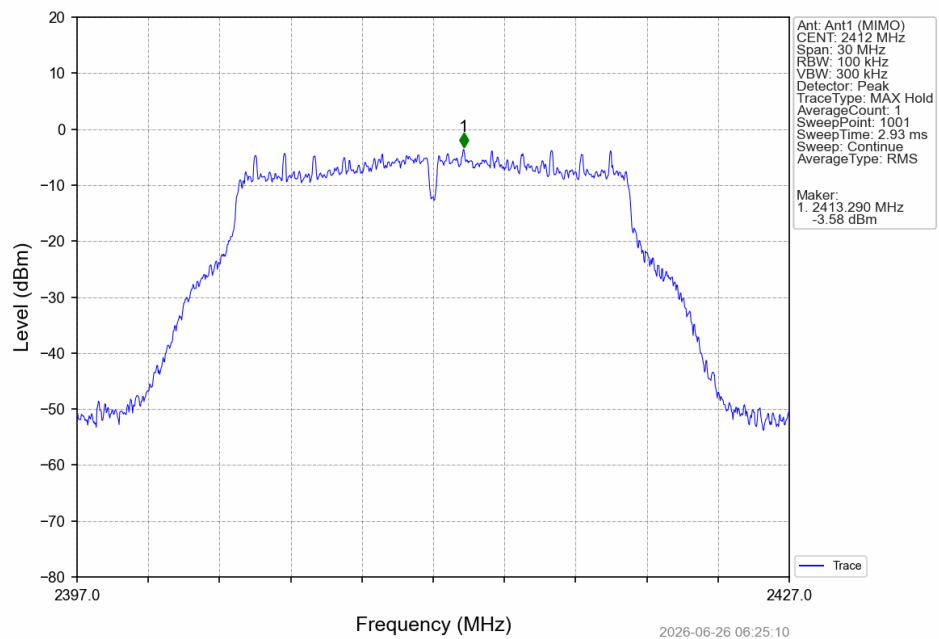
802.11b_HCH_2462MHz_Ant2 (MIMO)_NTNV



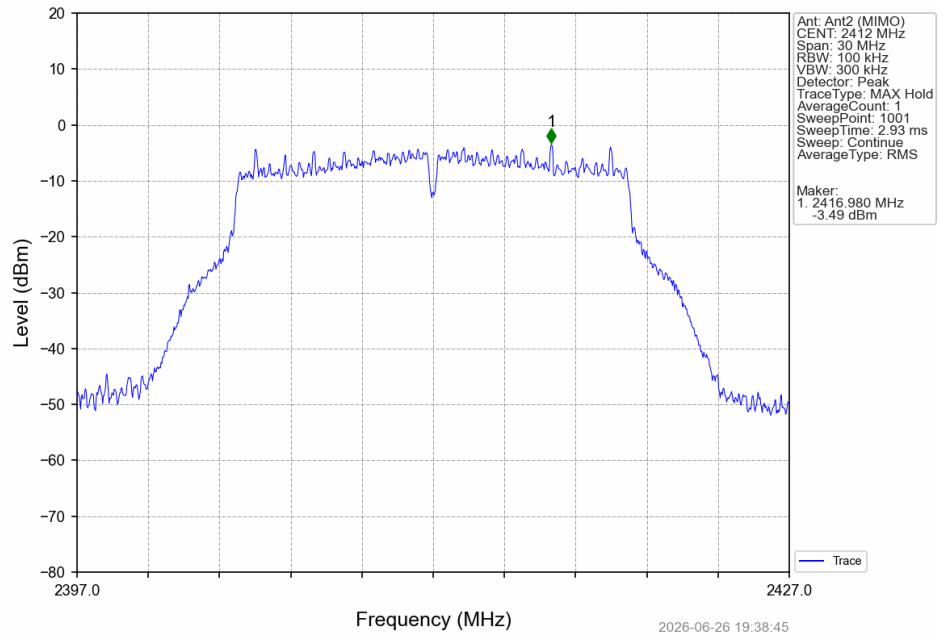
802.11b HCH 2462MHz MIMO NTN



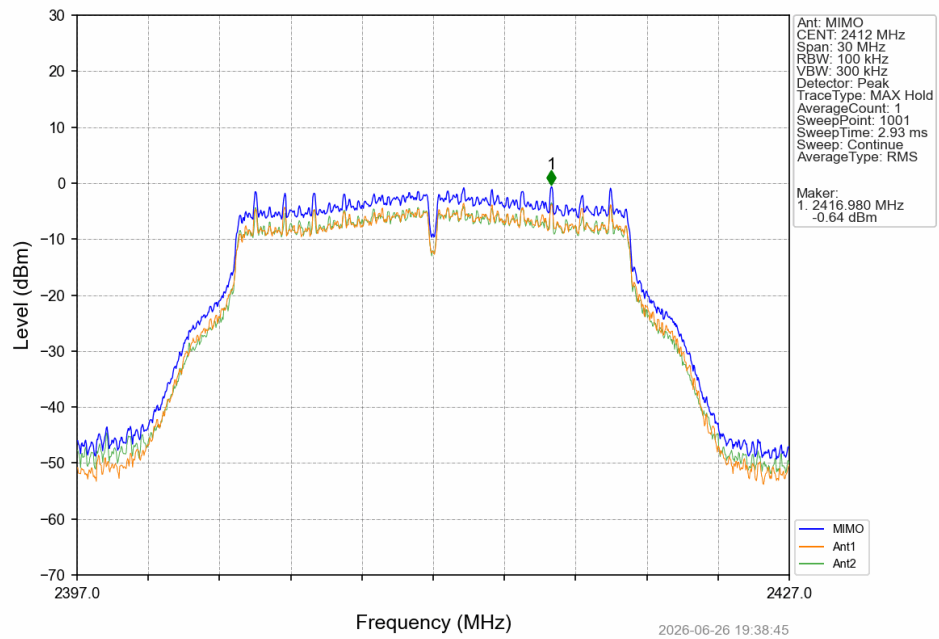
802.11g_LCH_2412MHz_Ant1 (MIMO)_NTN



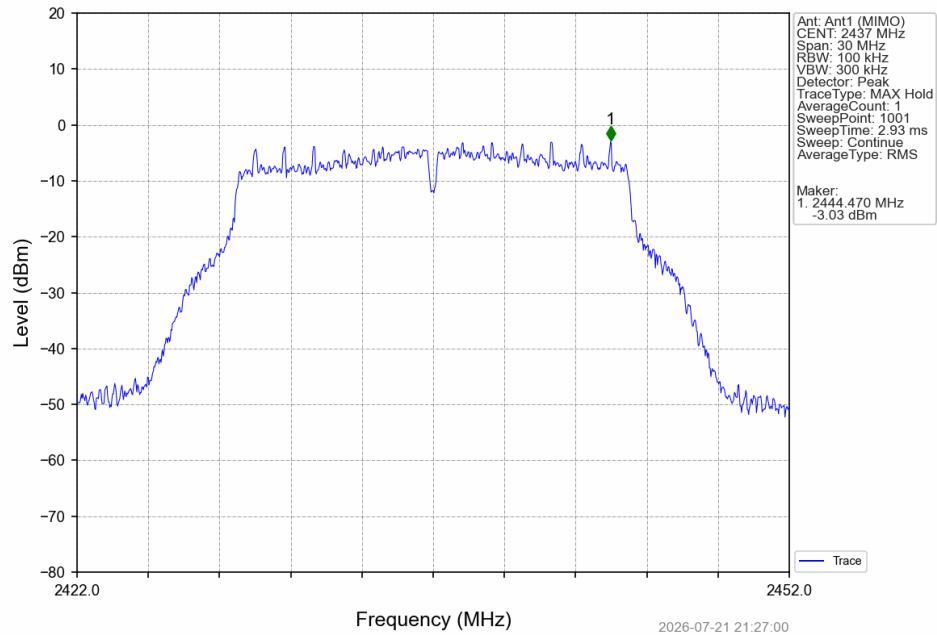
802.11g LCH 2412MHz Ant2 (MIMO) NTN



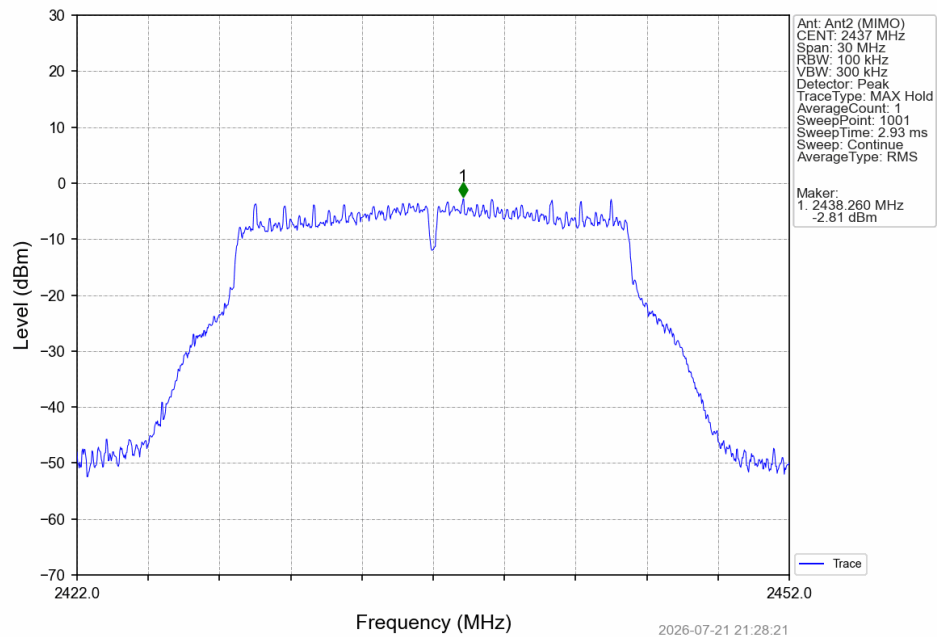
802.11g LCH 2412MHz MIMO NTN



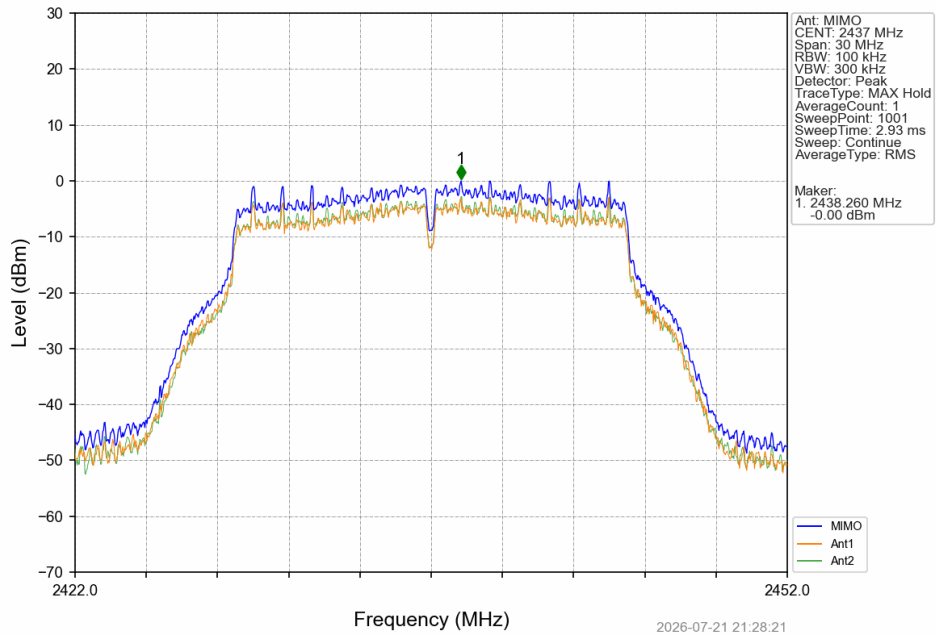
802.11g MCH 2437MHz Ant1 (MIMO) NTNV



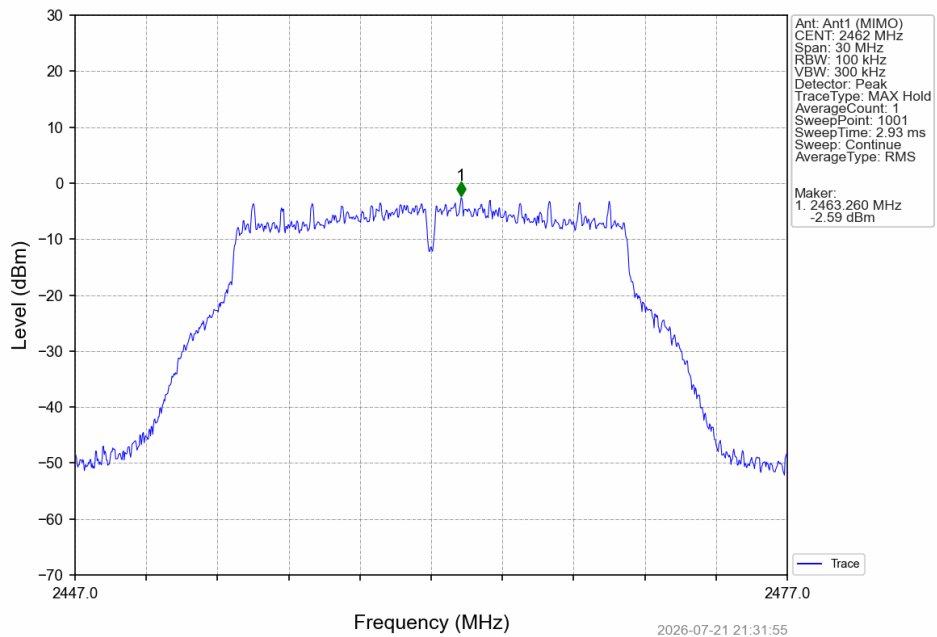
802.11g MCH 2437MHz Ant2 (MIMO) NTNV



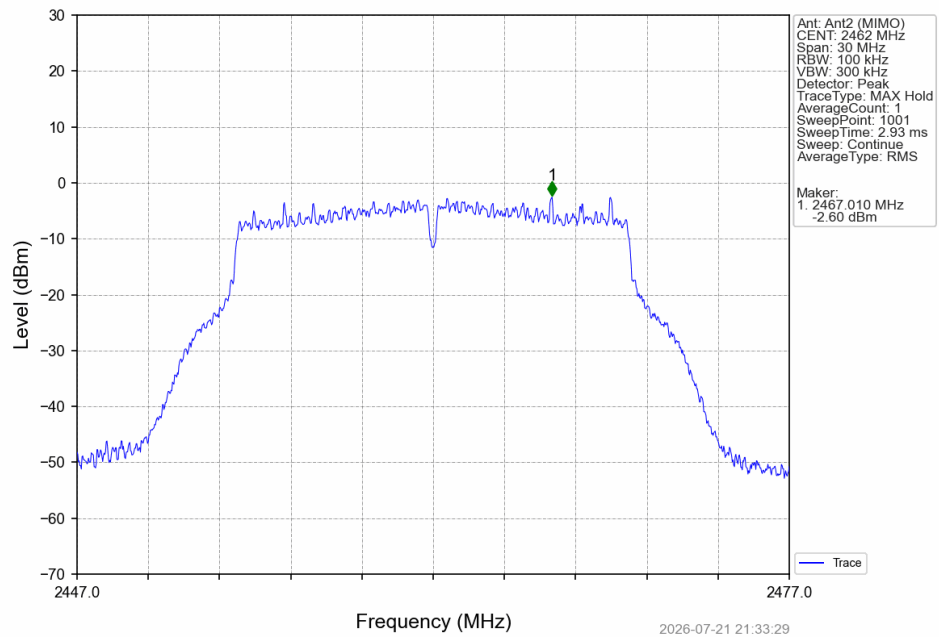
802.11g MCH 2437MHz MIMO NTN



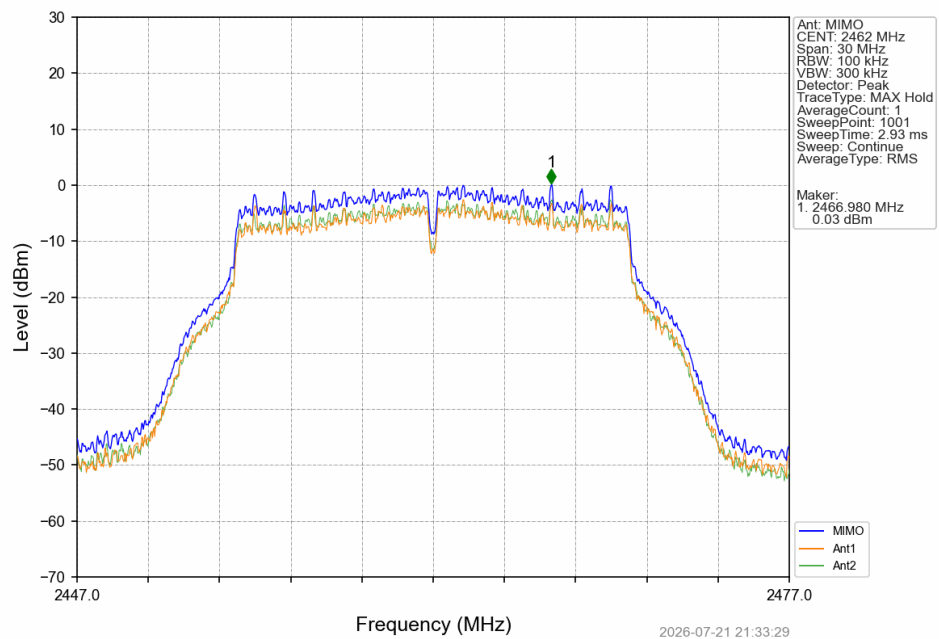
802.11g_HCH_2462MHz_Ant1 (MIMO)_NTN



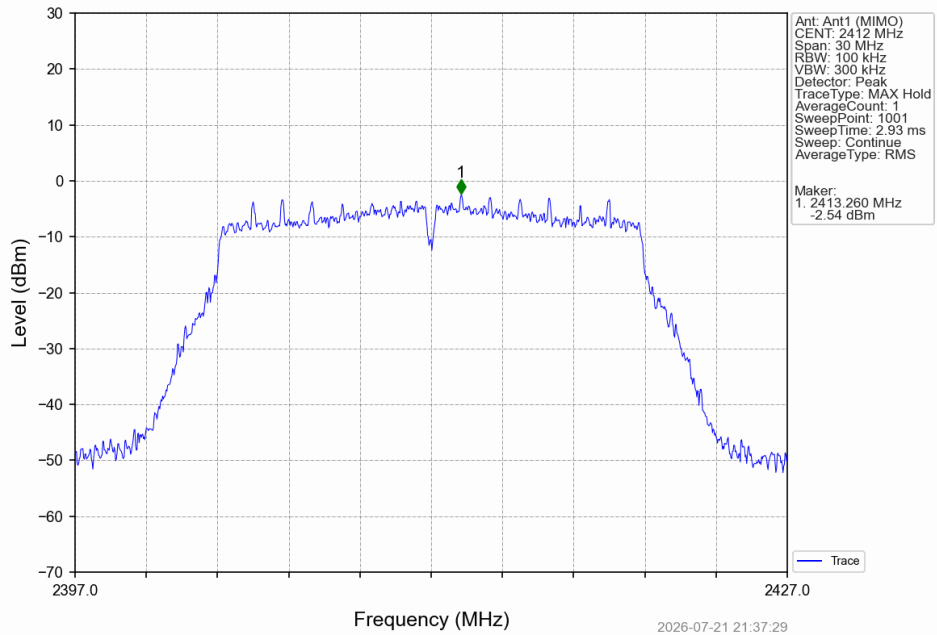
802.11g HCH 2462MHz Ant2 (MIMO) NTV



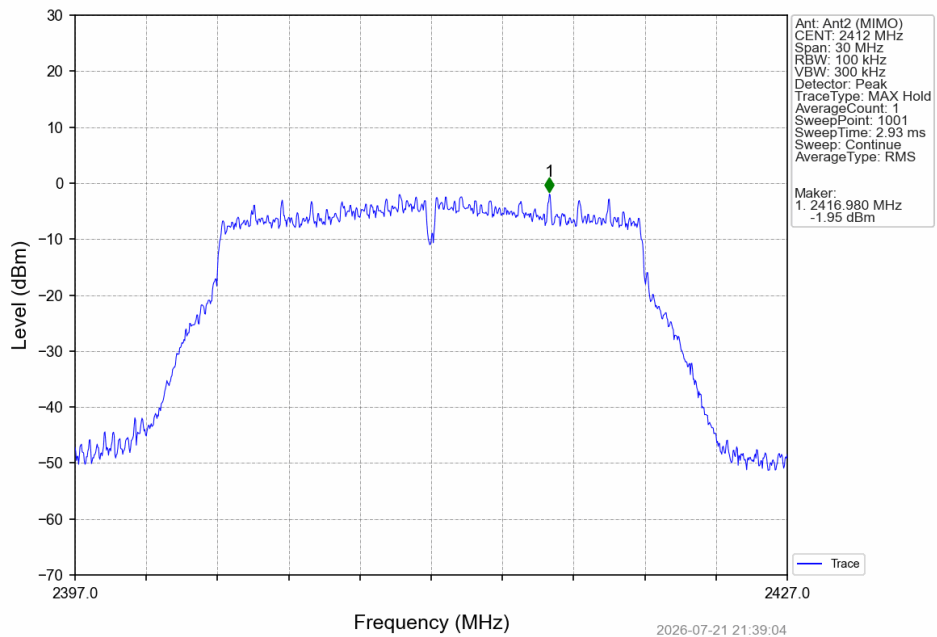
802.11g HCH 2462MHz MIMO NTV



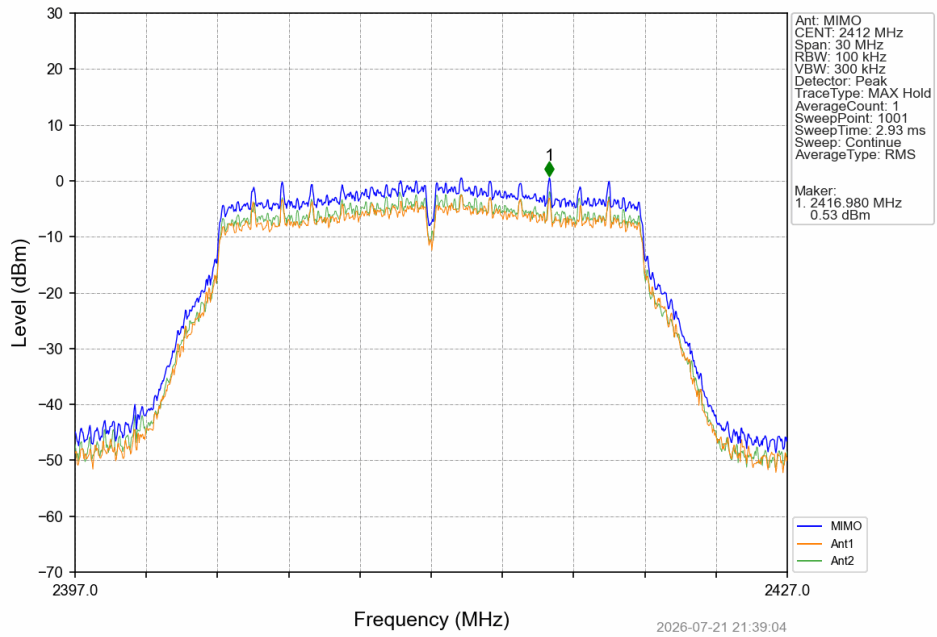
802.11n(HT20) LCH 2412MHz Ant1 (MIMO) NTN



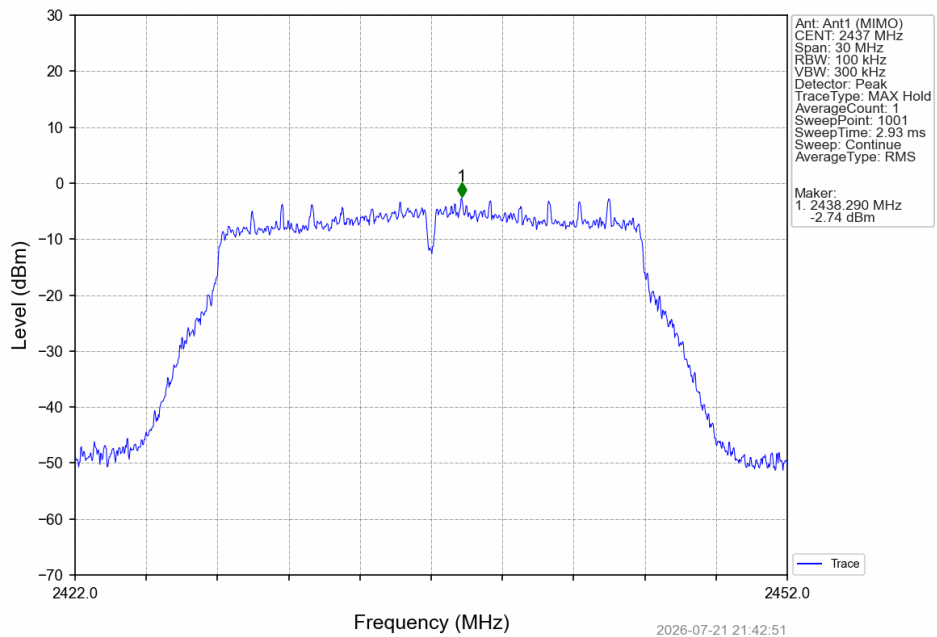
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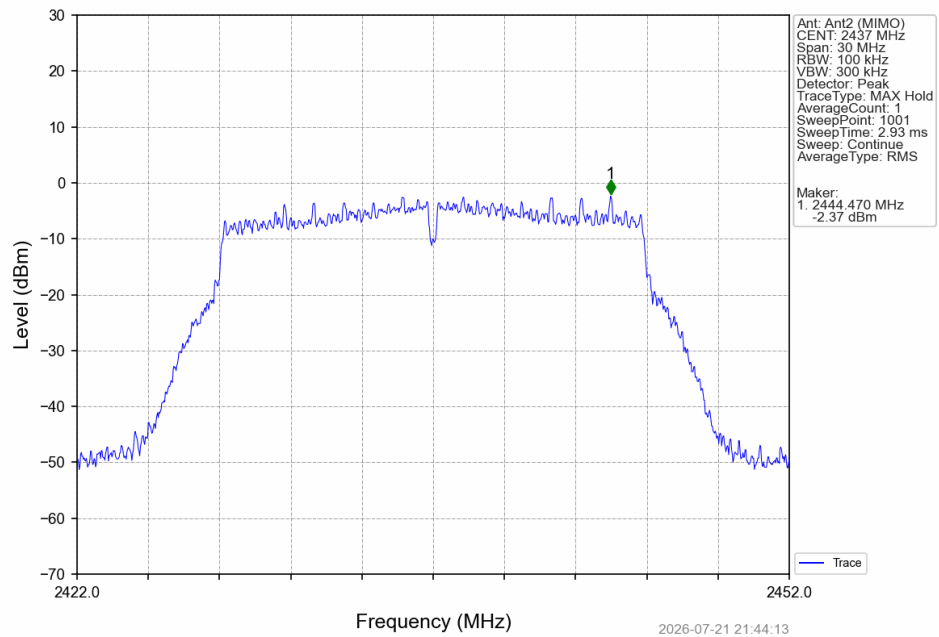
802.11n(HT20) LCH 2412MHz MIMO NTNV



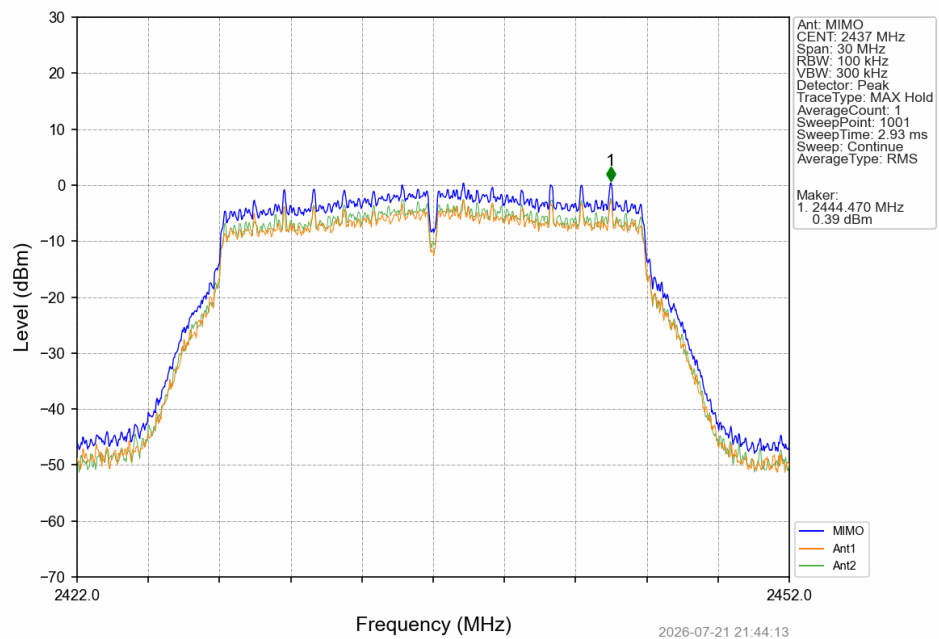
802.11n(HT20) MCH 2437MHz Ant1 (MIMO) NTNV



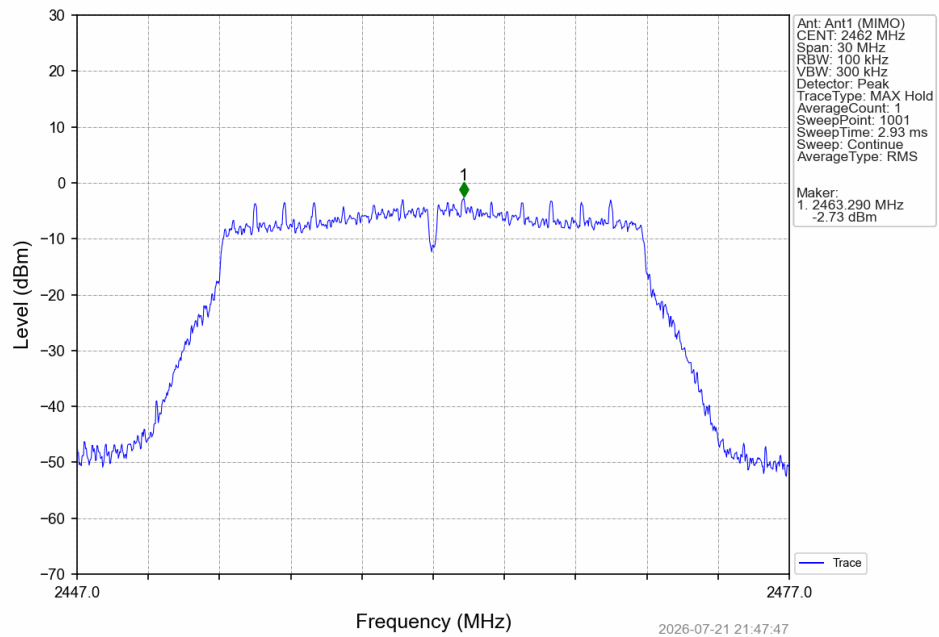
802.11n(HT20) MCH 2437MHz Ant2 (MIMO) NTN



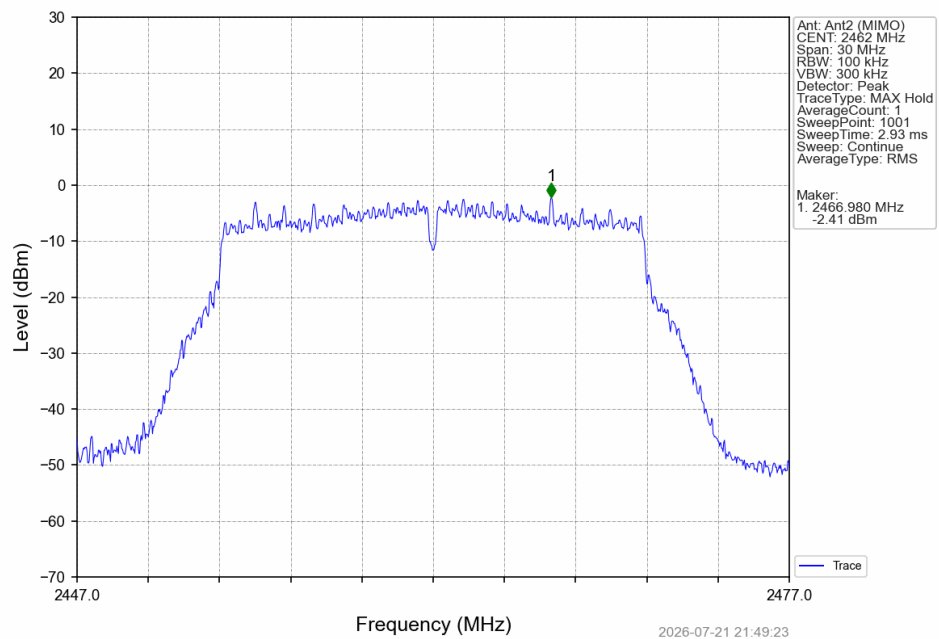
802.11n(HT20) MCH 2437MHz MIMO NTN



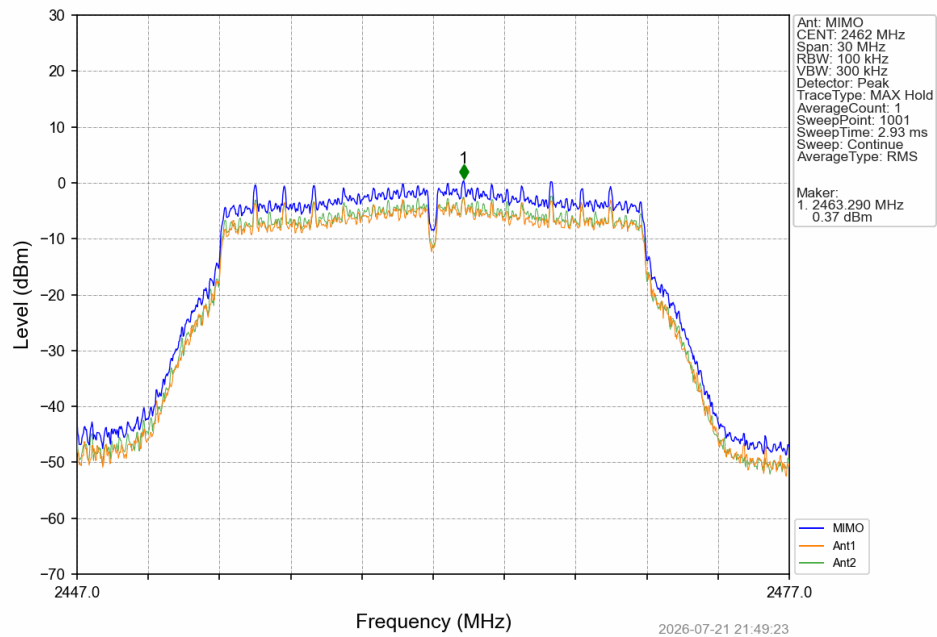
802.11n(HT20) HCH 2462MHz Ant1 (MIMO) NTN



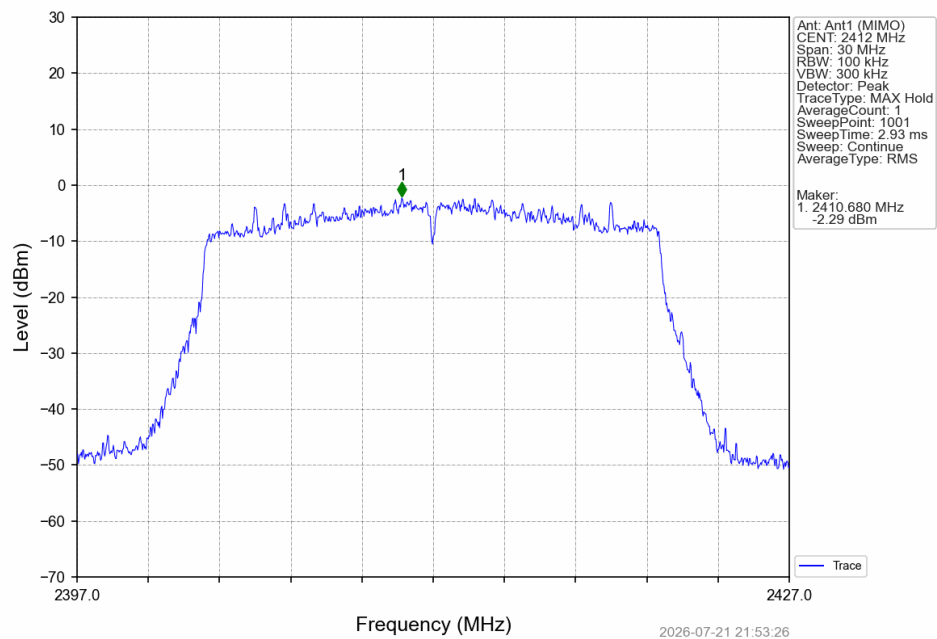
802.11n(HT20) HCH 2462MHz Ant2 (MIMO) NTN



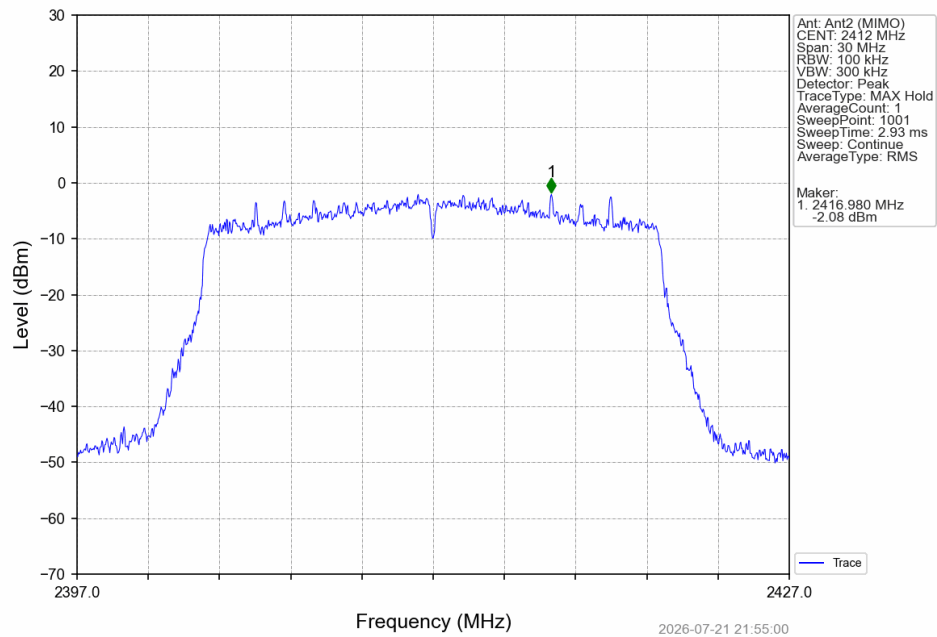
802.11n(HT20) HCH 2462MHz MIMO NTN



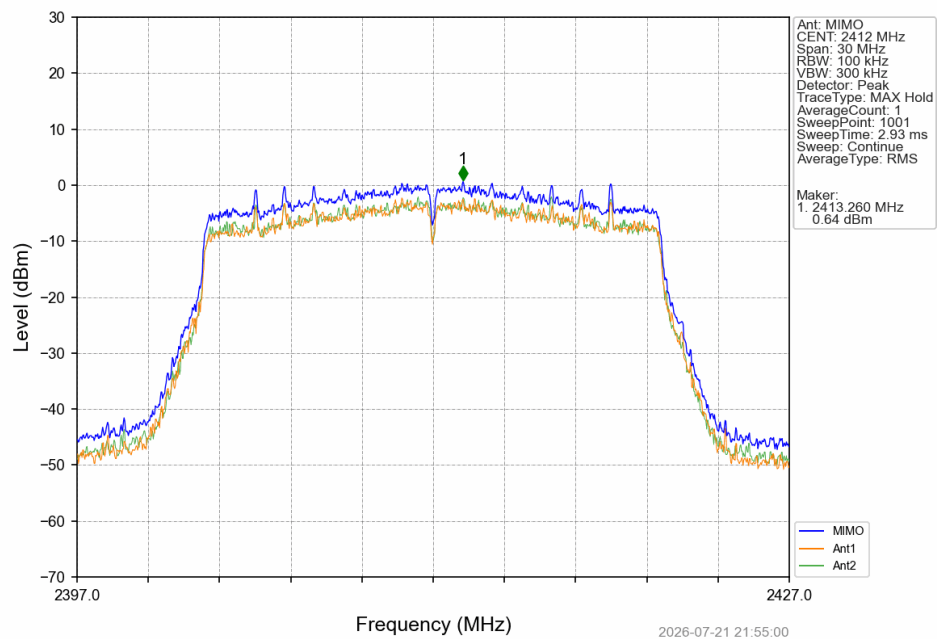
802.11ax(HEW20) LCH 2412MHz SU / Ant1 (MIMO) NTN



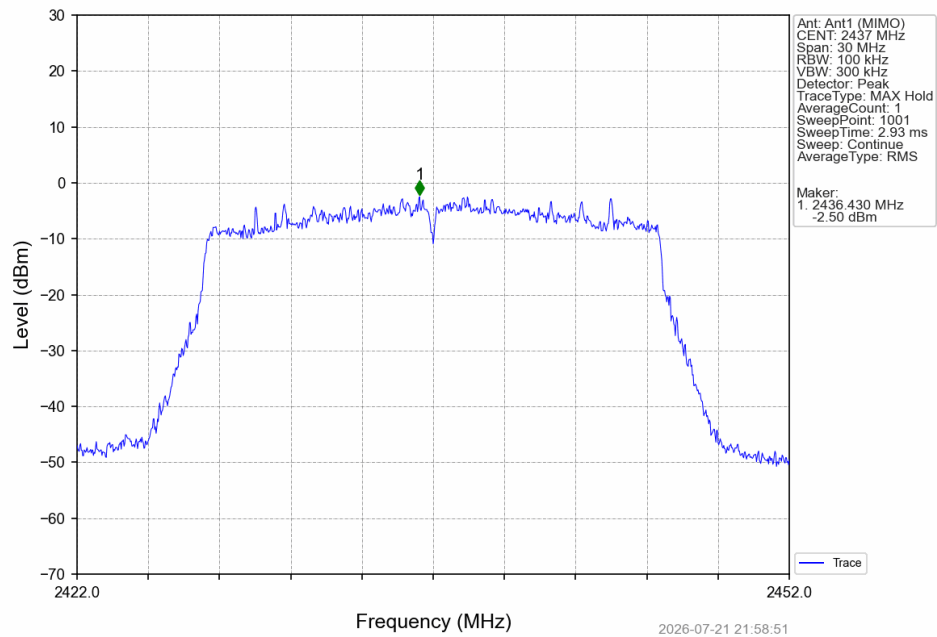
802.11ax(HEW20) LCH 2412MHz SU / Ant2 (MIMO) NTN



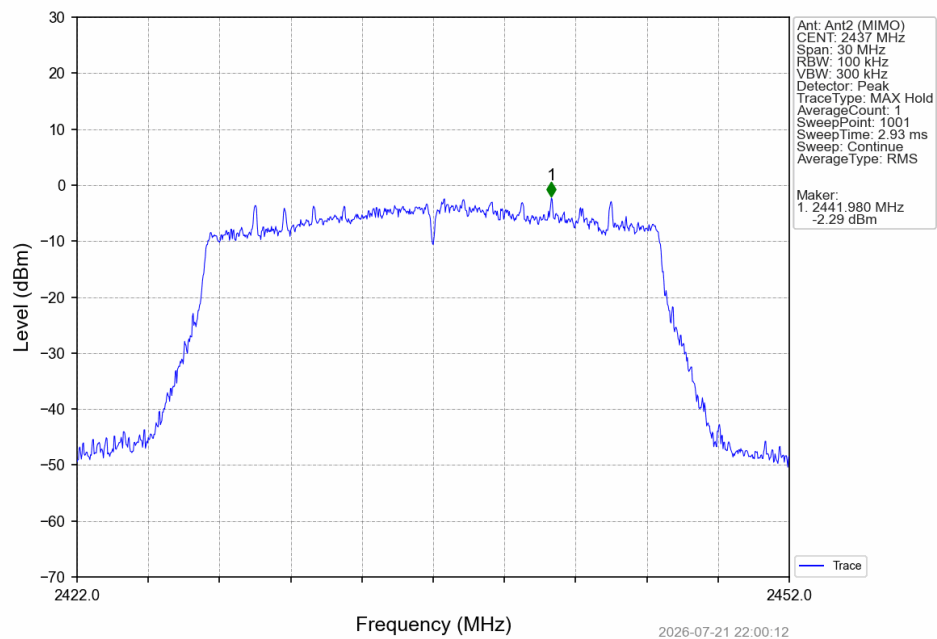
802.11ax(HEW20) LCH 2412MHz SU / MIMO NTN



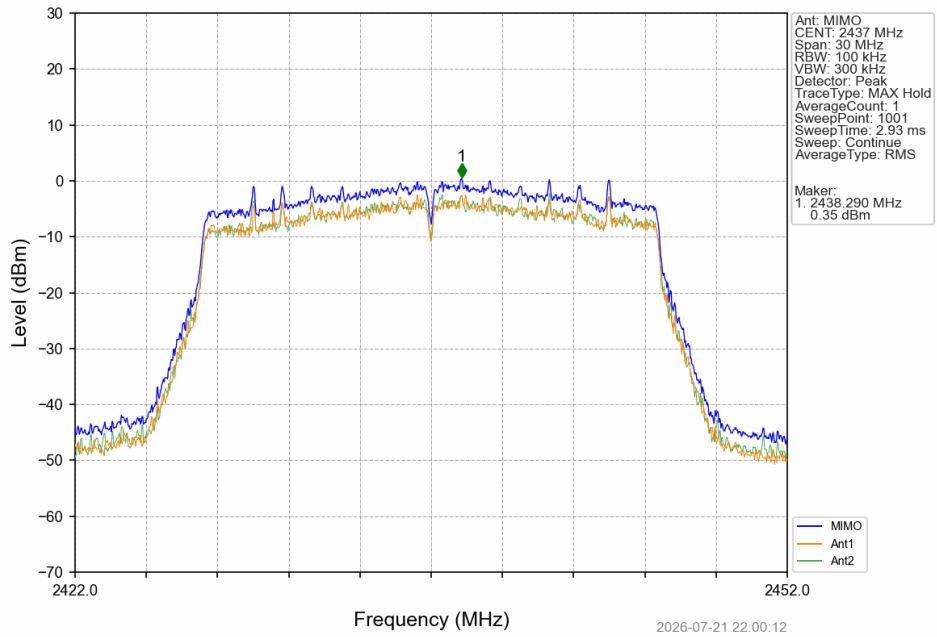
802.11ax(HEW20) MCH 2437MHz SU / Ant1 (MIMO) NTN



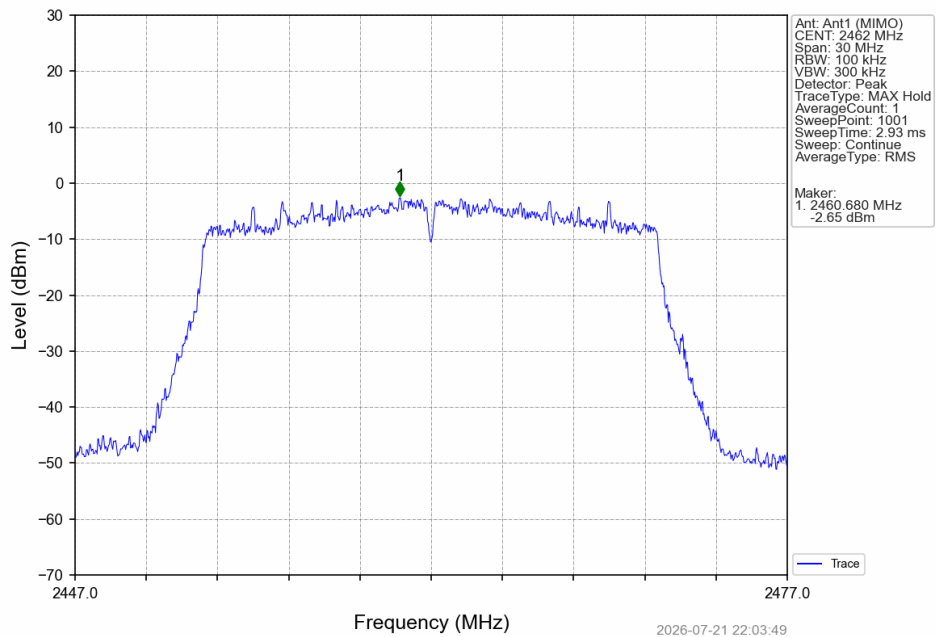
802.11ax(HEW20) MCH 2437MHz SU / Ant2 (MIMO) NTN



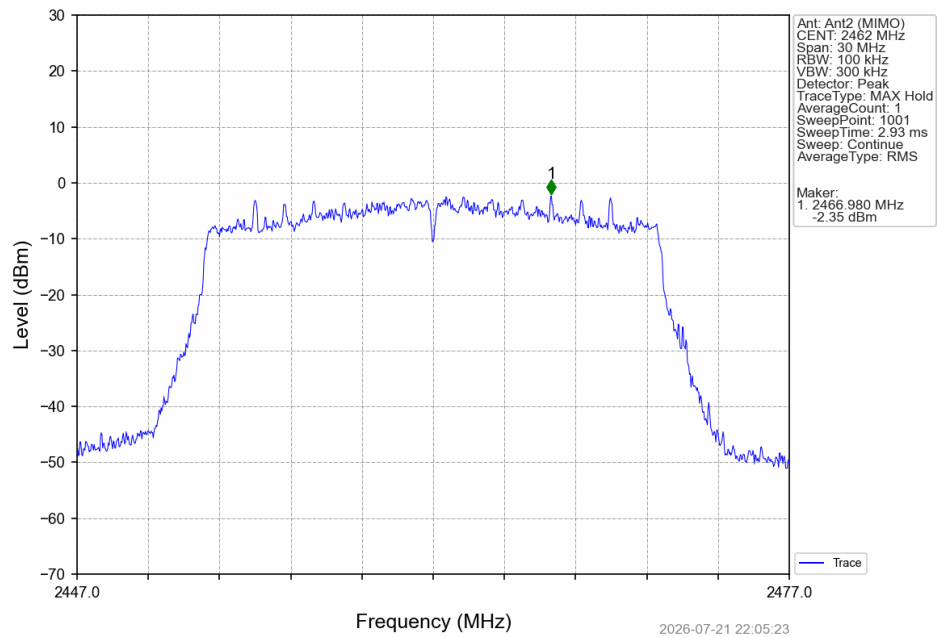
802.11ax(HEW20) MCH 2437MHz SU / MIMO NTV



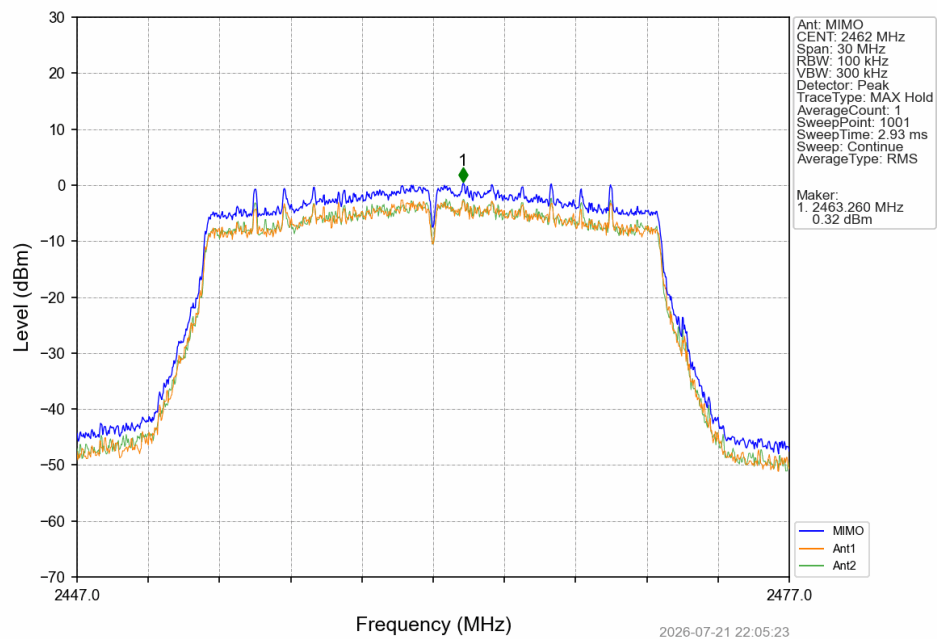
802.11ax(HEW20) HCH 2462MHz SU / Ant1 (MIMO) NTV



802.11ax(HEW20) HCH 2462MHz SU / Ant2 (MIMO) NTN



802.11ax(HEW20) HCH 2462MHz SU / MIMO NTN



5. Unwanted Emissions In Non-restricted Frequency Bands

5.1 Test Result

5.1.1 Ref

Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	Level of Reference (dBm)
802.11b	MIMO	2412	/	/	1	0.12
					2	0.40
		2437	/	/	1	1.03
					2	0.49
		2462	/	/	1	1.02
					2	0.50
802.11g	MIMO	2412	/	/	1	-3.47
					2	-3.49
		2437	/	/	1	-2.97
					2	-2.67
		2462	/	/	1	-2.65
					2	-2.18
802.11n (HT20)	MIMO	2412	/	/	1	-2.86
					2	-2.14
		2437	/	/	1	-2.63
					2	-2.09
		2462	/	/	1	-3.05
					2	-2.30
802.11ax (HEW20)	MIMO	2412	SU	/	1	-2.41
					2	-2.32
		2437	SU	/	1	-2.67
					2	-2.39
		2462	SU	/	1	-2.77
					2	-2.28

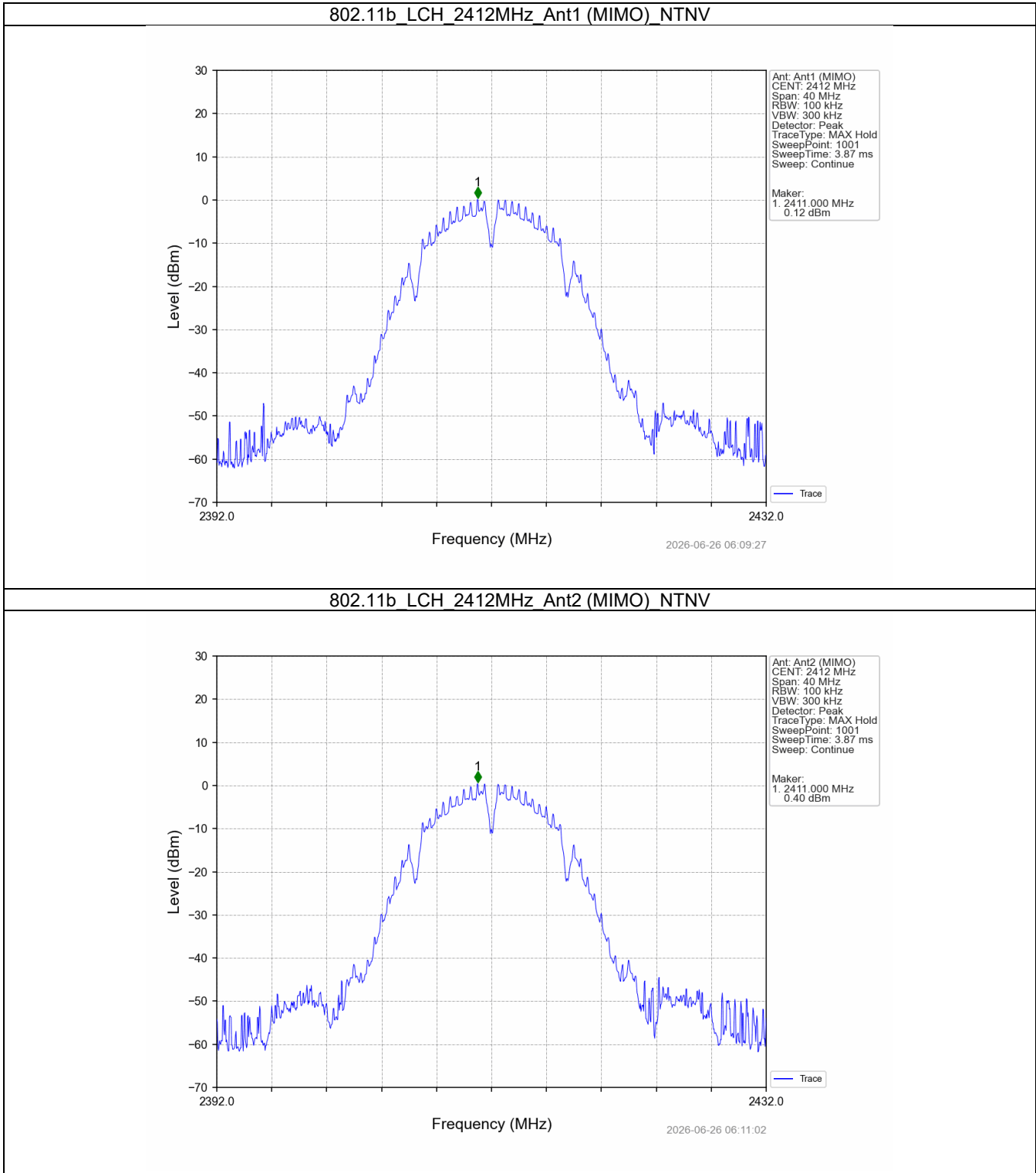
5.1.2 CSE

Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	MIMO	2412	/	/	1	0.12	-19.88	Pass
					2	0.40	-19.60	Pass
		2437	/	/	1	1.03	-18.97	Pass
					2	0.49	-19.51	Pass
		2462	/	/	1	1.02	-18.98	Pass
					2	0.50	-19.50	Pass
802.11g	MIMO	2412	/	/	1	-3.47	-23.47	Pass
					2	-3.49	-23.49	Pass
		2437	/	/	1	-2.97	-22.97	Pass
					2	-2.67	-22.67	Pass
		2462	/	/	1	-2.65	-22.65	Pass
					2	-2.18	-22.18	Pass
802.11n (HT20)	MIMO	2412	/	/	1	-2.86	-22.86	Pass
					2	-2.14	-22.14	Pass
		2437	/	/	1	-2.63	-22.63	Pass
					2	-2.09	-22.09	Pass
		2462	/	/	1	-3.05	-23.05	Pass
					2	-2.28	-22.28	Pass

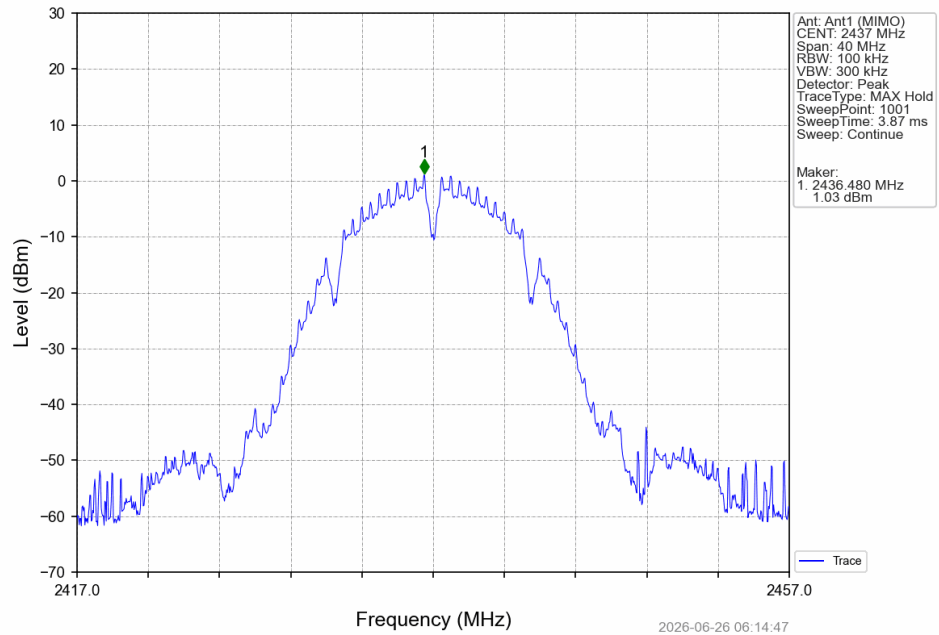
					2	-2.30	-22.30	Pass
802.11ax (HEW20)	MIMO	2412	SU	/	1	-2.41	-22.41	Pass
					2	-2.32	-22.32	Pass
					1	-2.67	-22.67	Pass
		2437	SU	/	2	-2.39	-22.39	Pass
					1	-2.77	-22.77	Pass
					2	-2.28	-22.28	Pass
2462	SU	/			1	-2.77	-22.77	Pass
					2	-2.28	-22.28	Pass

5.2 Test Graph

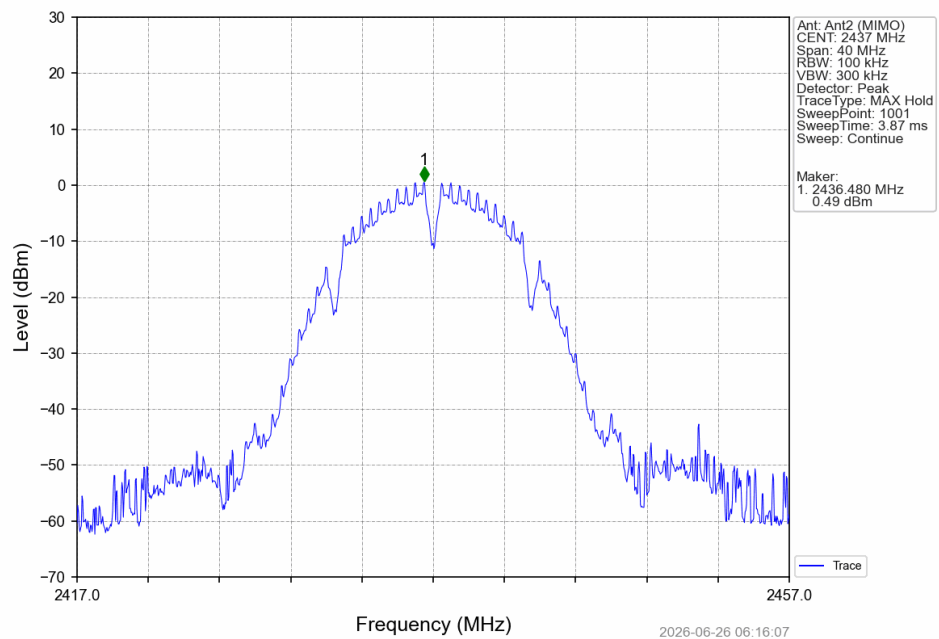
5.2.1 Ref



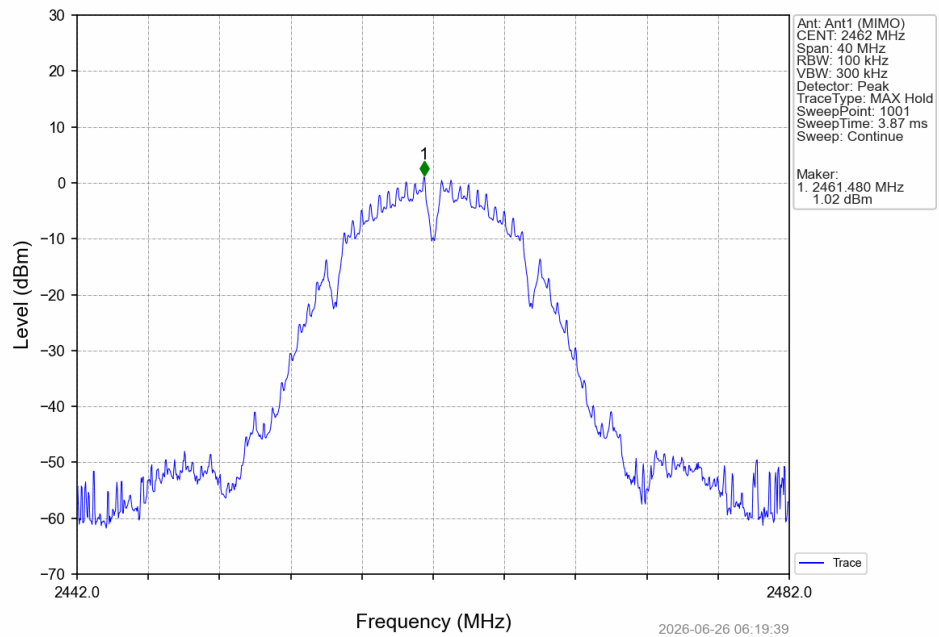
802.11b MCH 2437MHz Ant1 (MIMO) NTNV



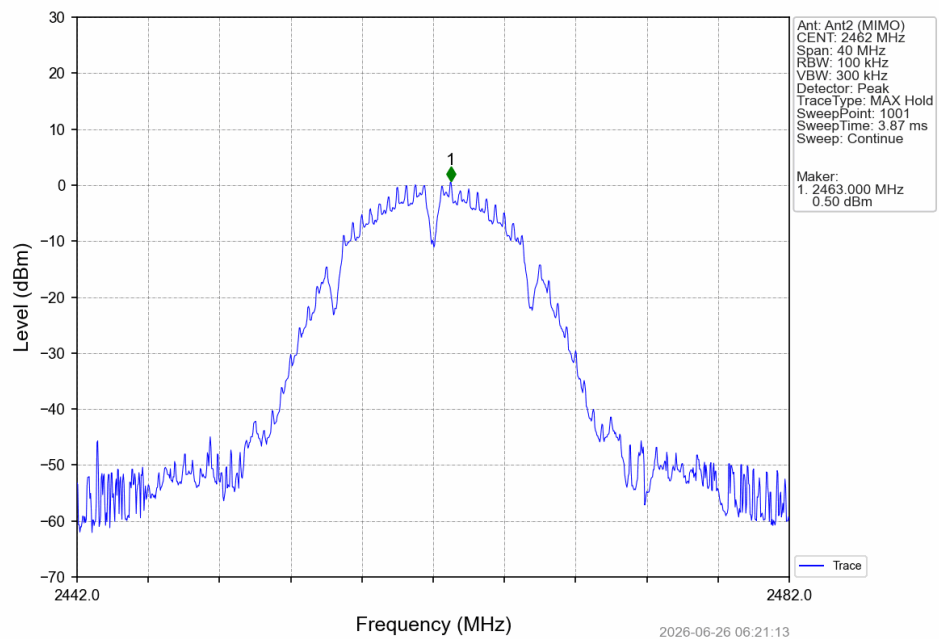
802.11b_MCH_2437MHz_Ant2 (MIMO)_NTNV



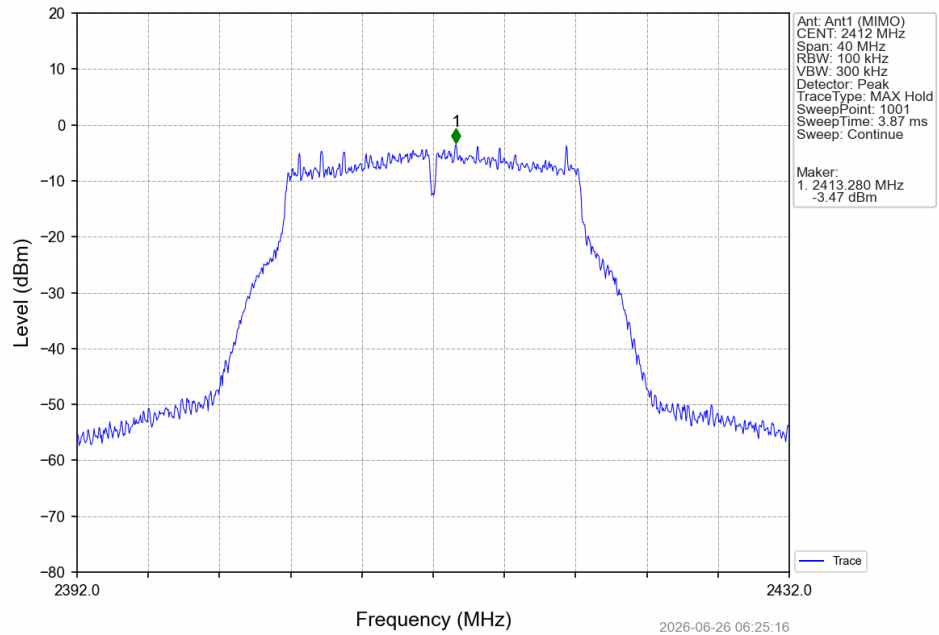
802.11b HCH 2462MHz Ant1 (MIMO) NTN



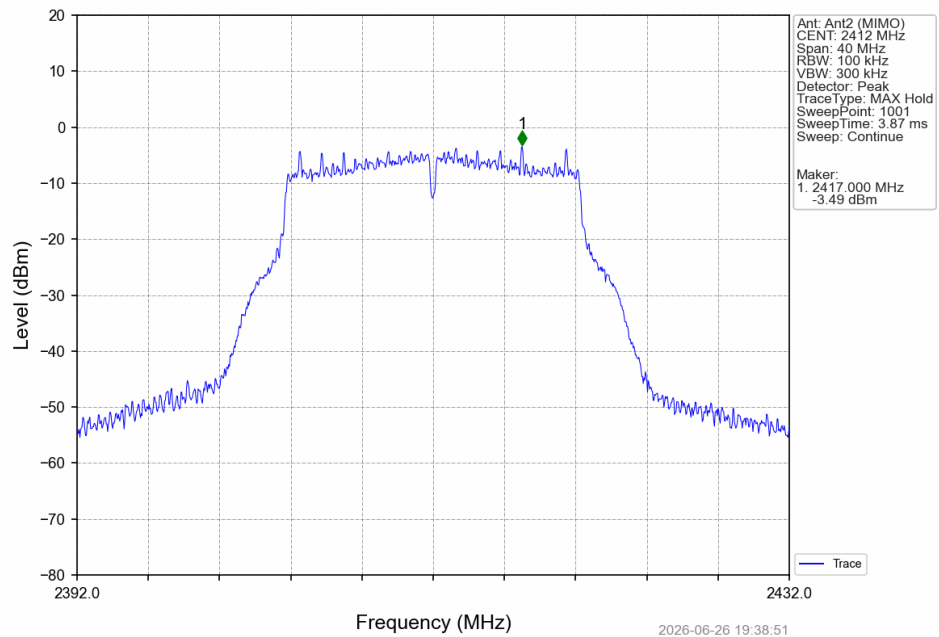
802.11b_HCH_2462MHz_Ant2 (MIMO)_NTN



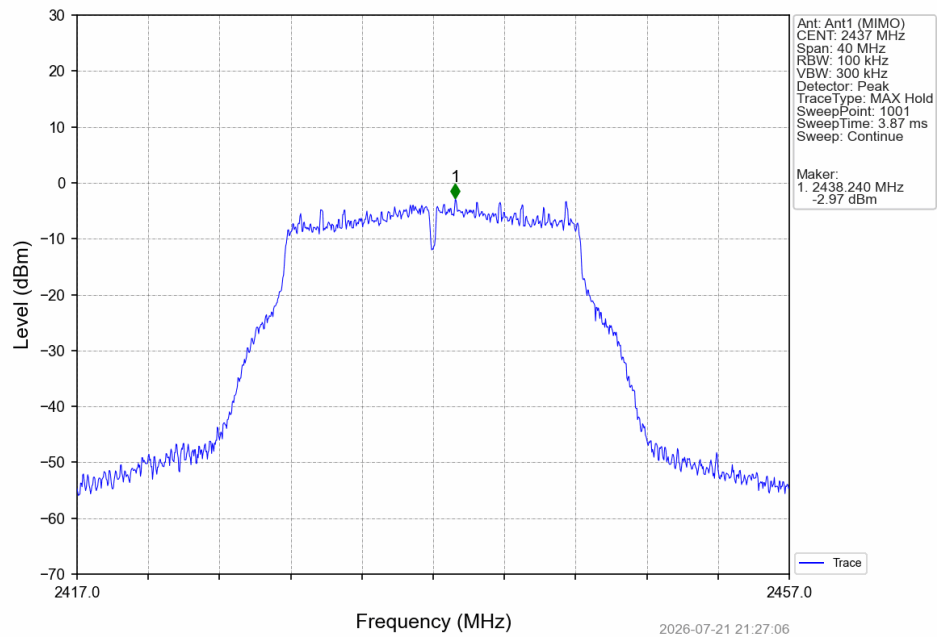
802.11g_LCH_2412MHz_Ant1 (MIMO)_NTNV



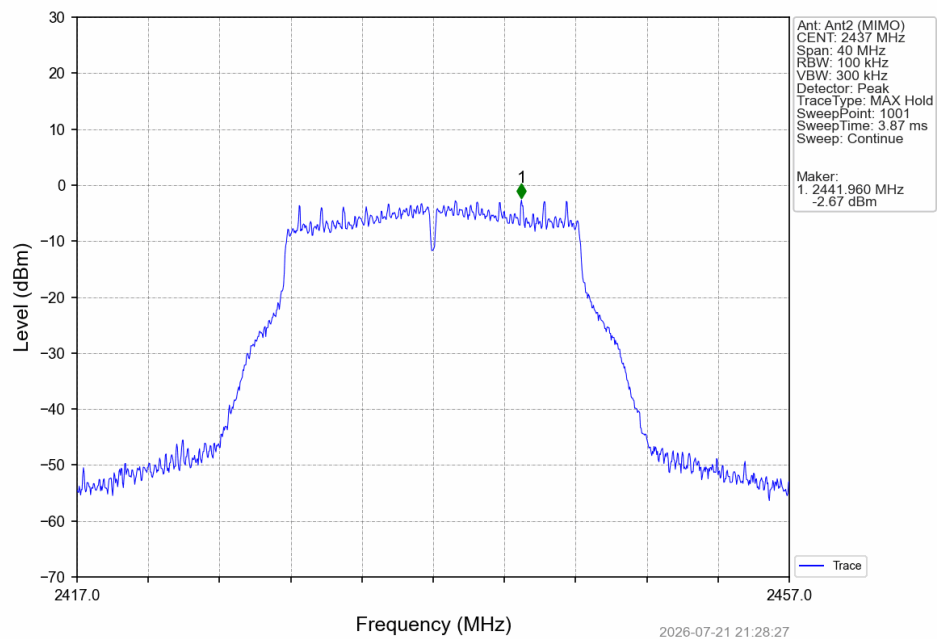
802.11g_LCH_2412MHz_Ant2 (MIMO)_NTNV



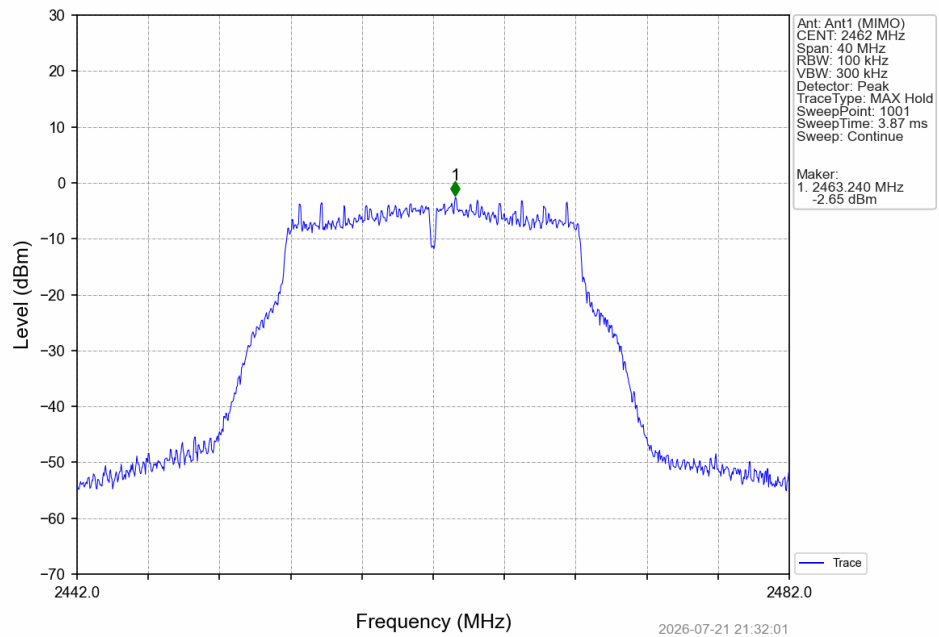
802.11g MCH 2437MHz Ant1 (MIMO) NTNV



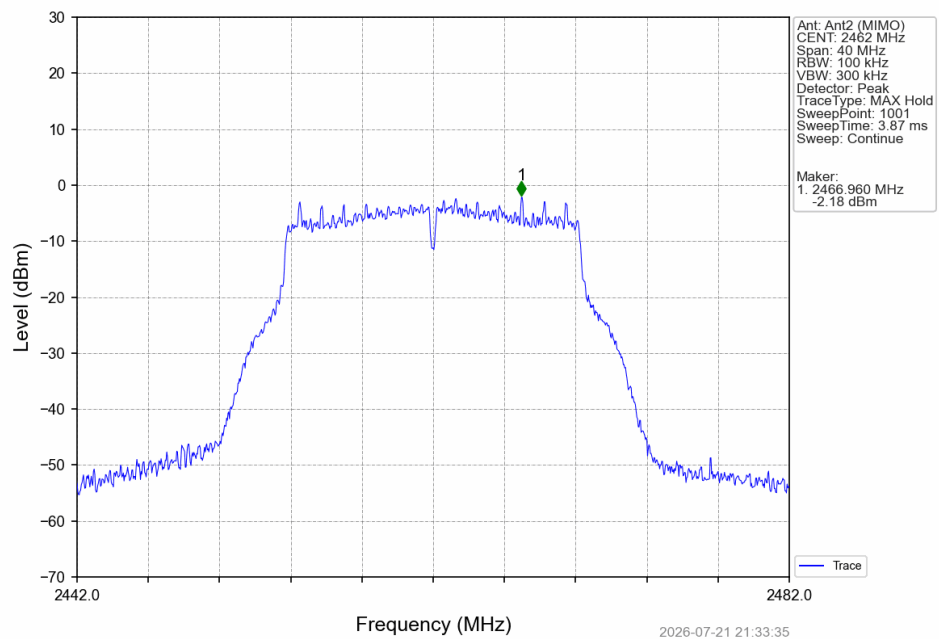
802.11g MCH 2437MHz Ant2 (MIMO) NTNV



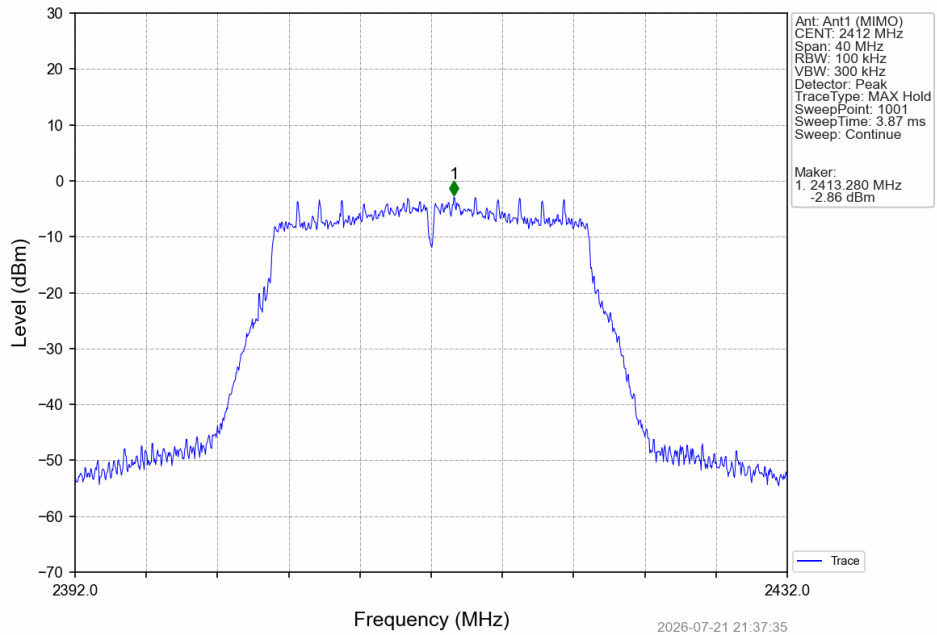
802.11g HCH 2462MHz Ant1 (MIMO) NTNV



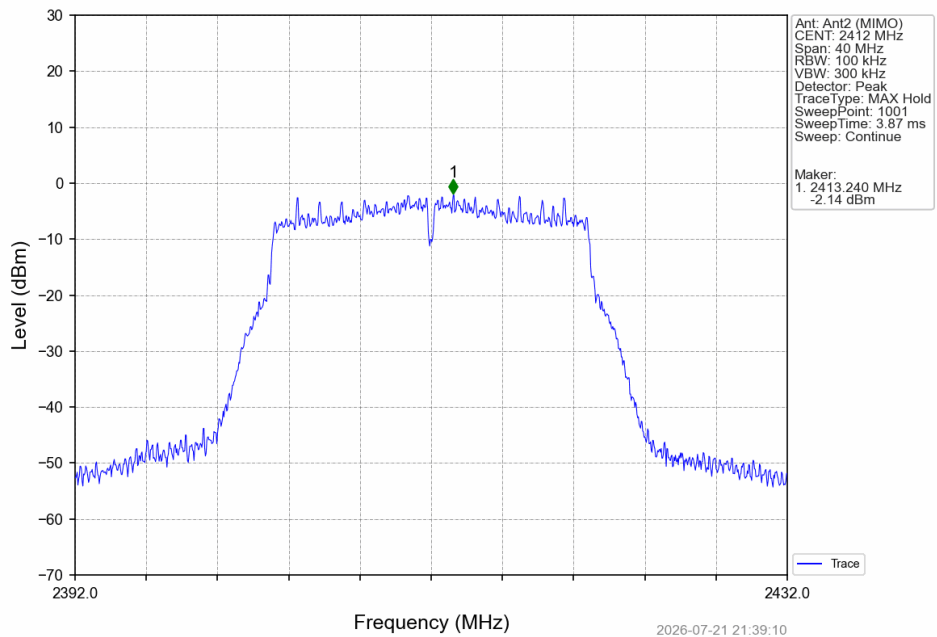
802.11g_HCH_2462MHz_Ant2 (MIMO)_NTNV



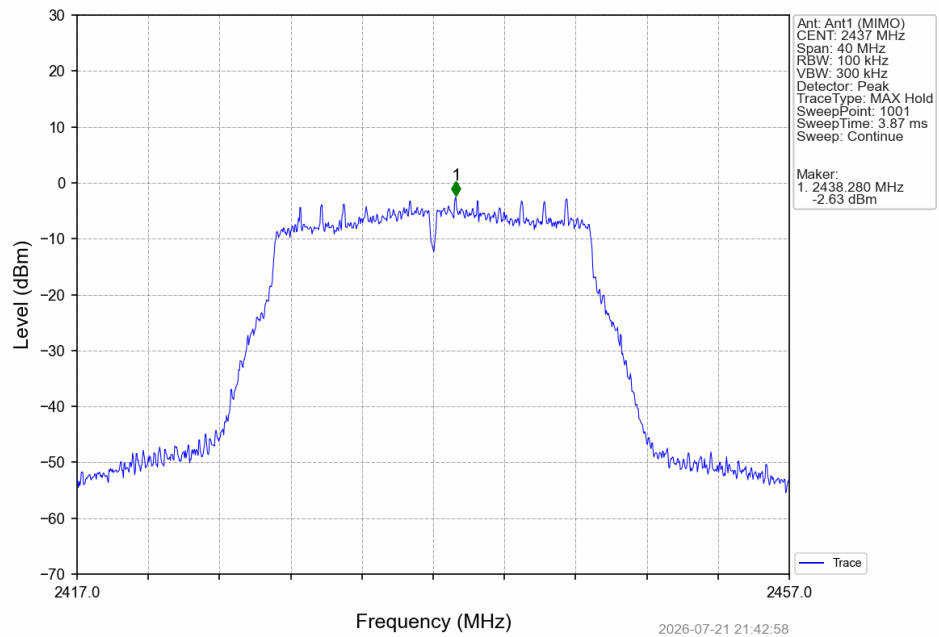
802.11n(HT20) LCH 2412MHz Ant1 (MIMO) NTNV



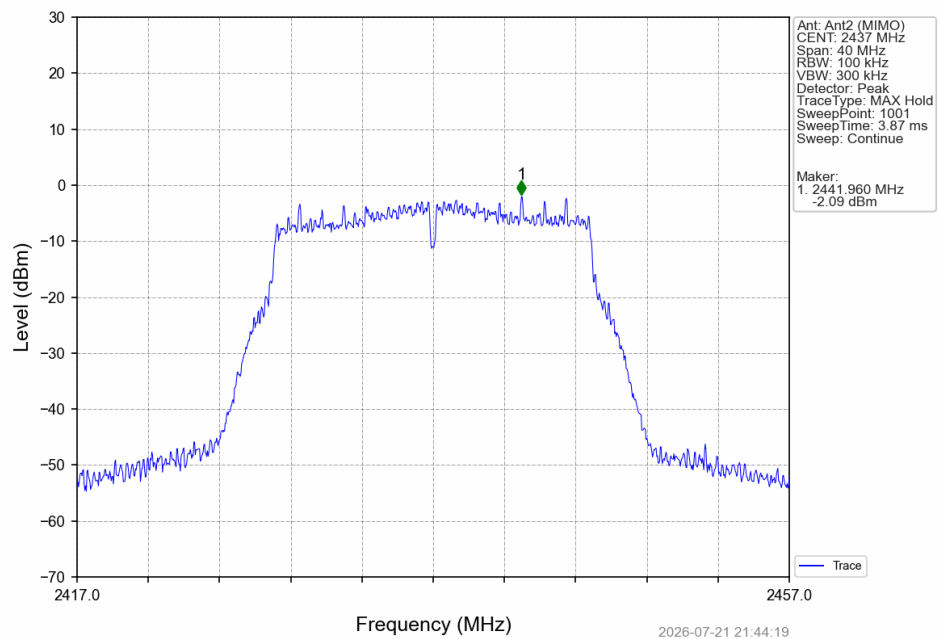
802.11n(HT20) LCH 2412MHz Ant2 (MIMO) NTNV



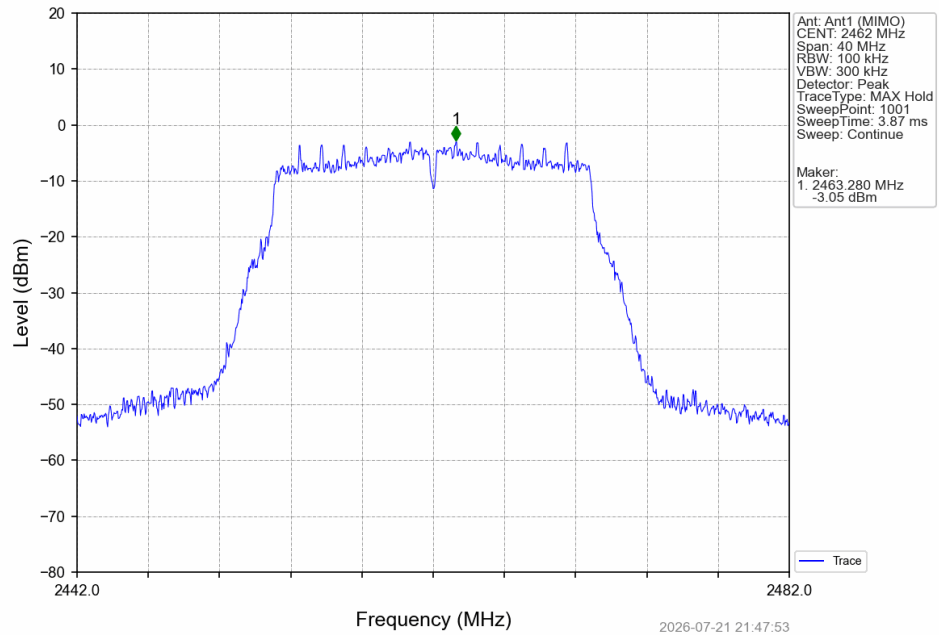
802.11n(HT20) MCH 2437MHz Ant1 (MIMO) NTN



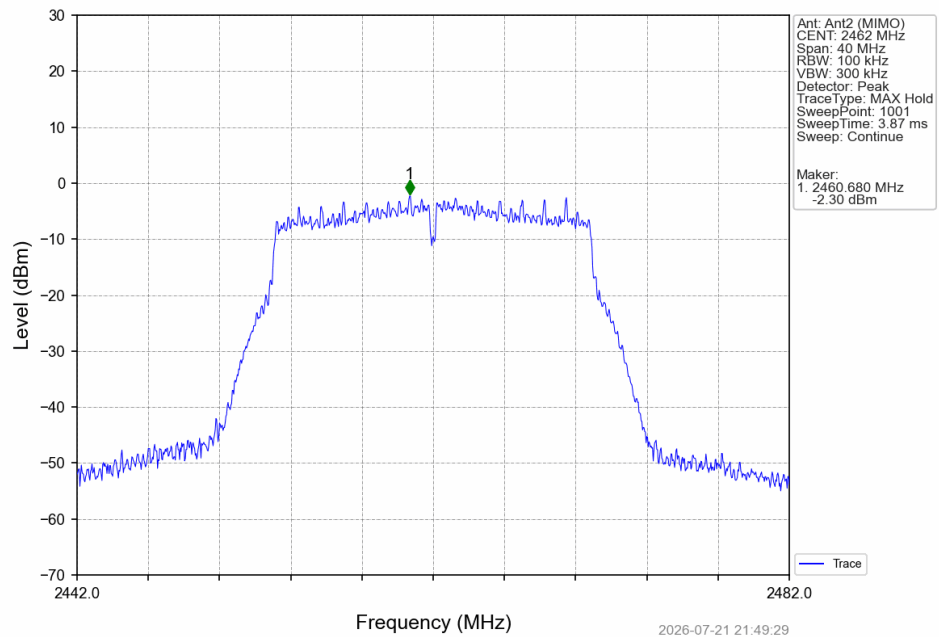
802.11n(HT20) MCH 2437MHz Ant2 (MIMO) NTN



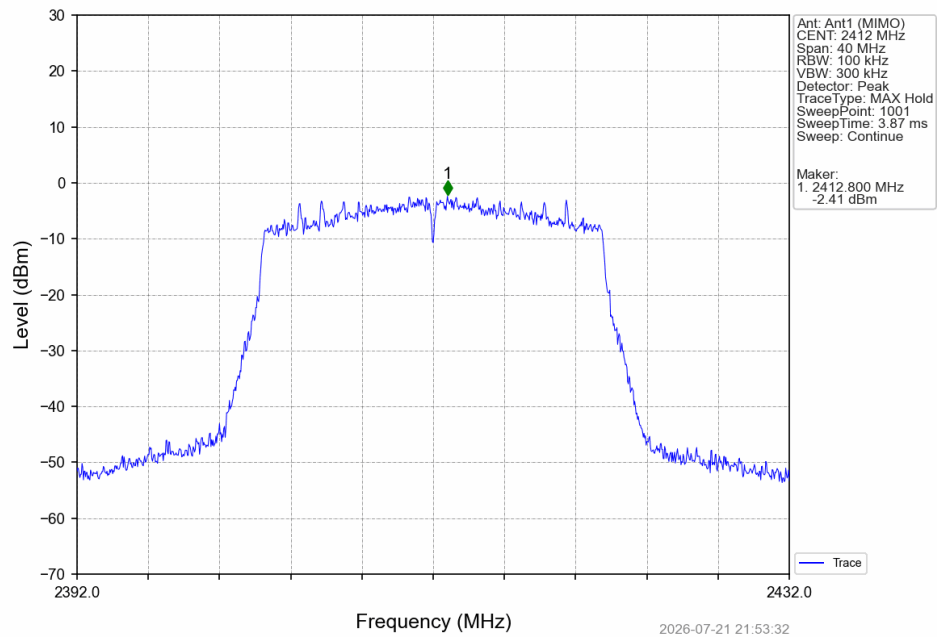
802.11n(HT20) HCH 2462MHz Ant1 (MIMO) NTNV



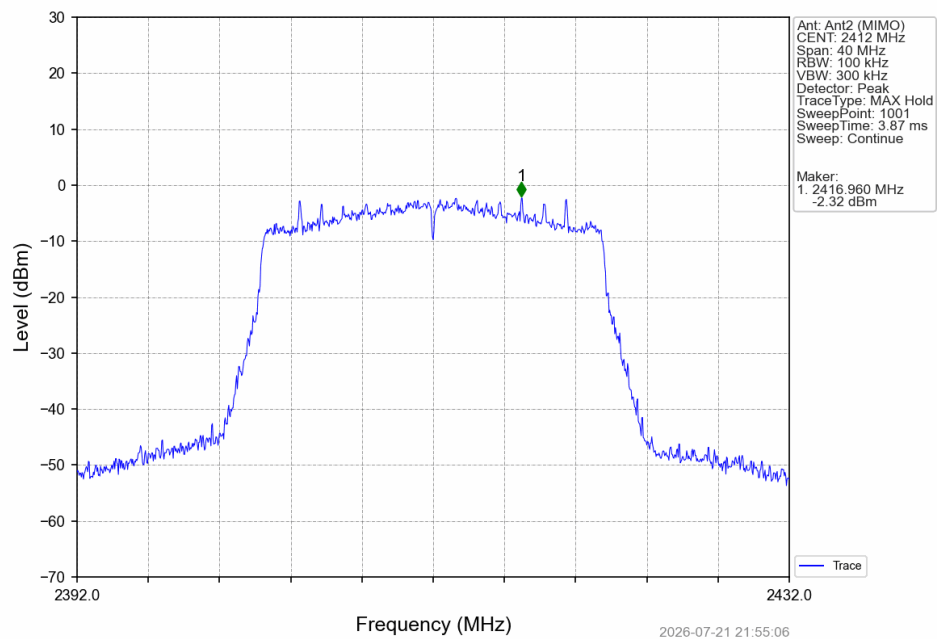
802.11n(HT20) HCH 2462MHz Ant2 (MIMO) NTNV



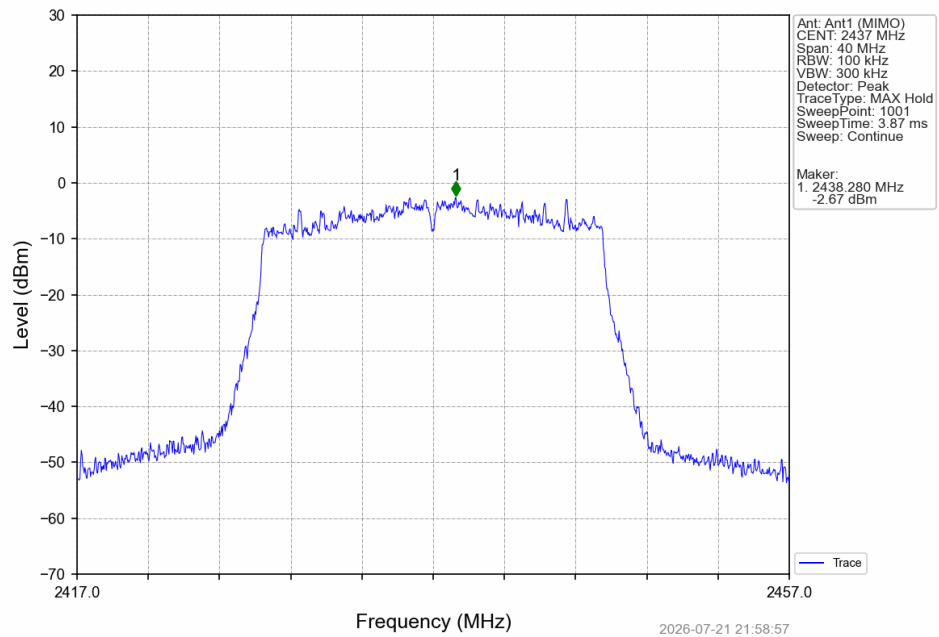
802.11ax(HEW20) LCH 2412MHz SU / Ant1 (MIMO) NTN



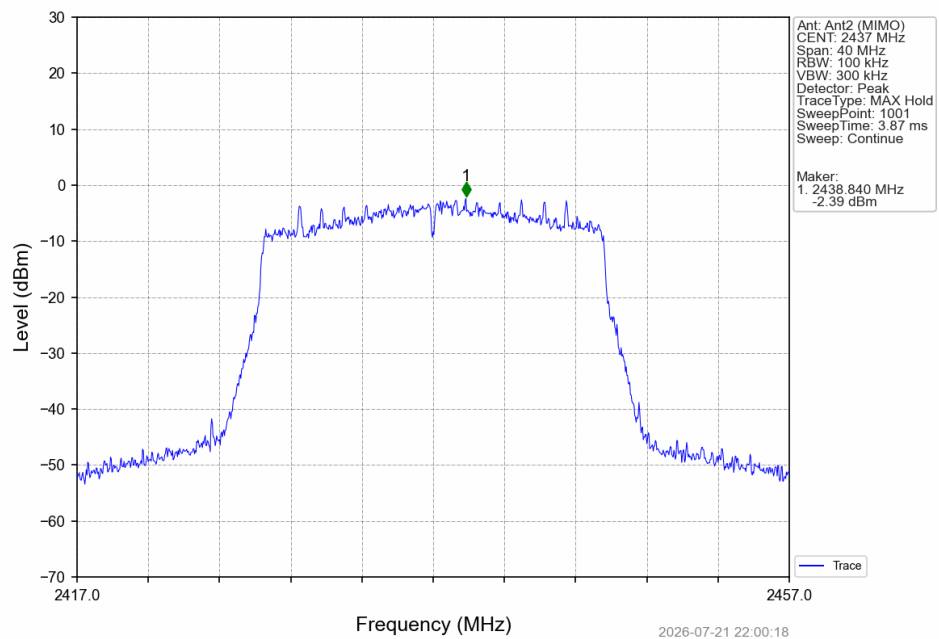
802.11ax(HEW20) LCH 2412MHz SU / Ant2 (MIMO) NTN



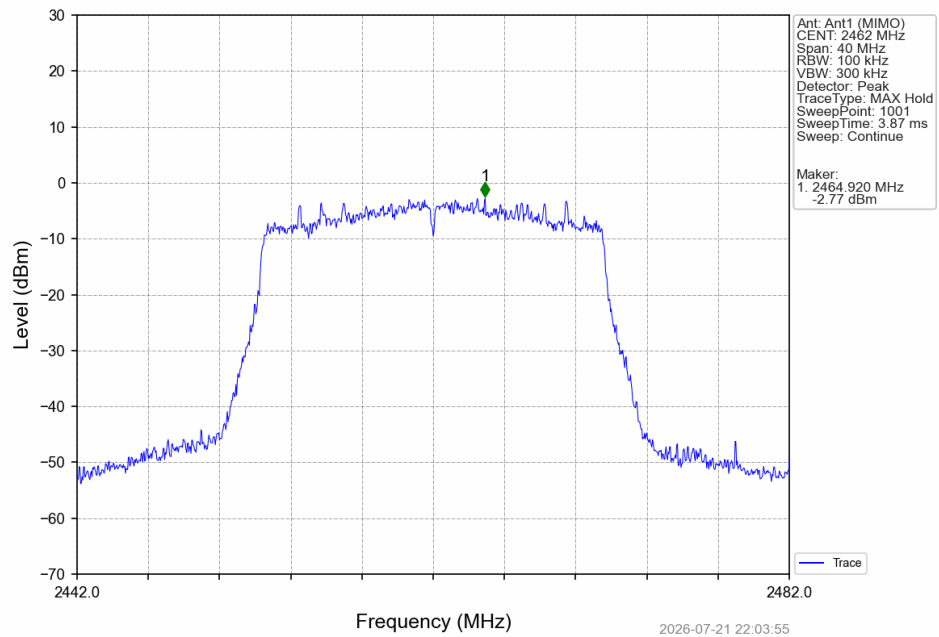
802.11ax(HEW20) MCH_2437MHz_SU / _Ant1 (MIMO) _NTNV



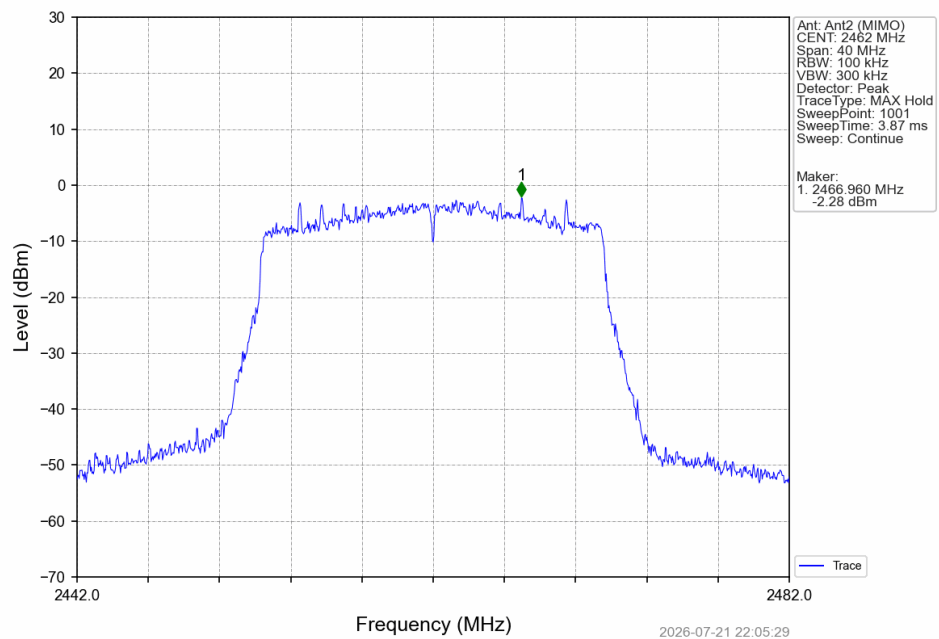
802.11ax(HEW20) MCH_2437MHz_SU / _Ant2 (MIMO) _NTNV



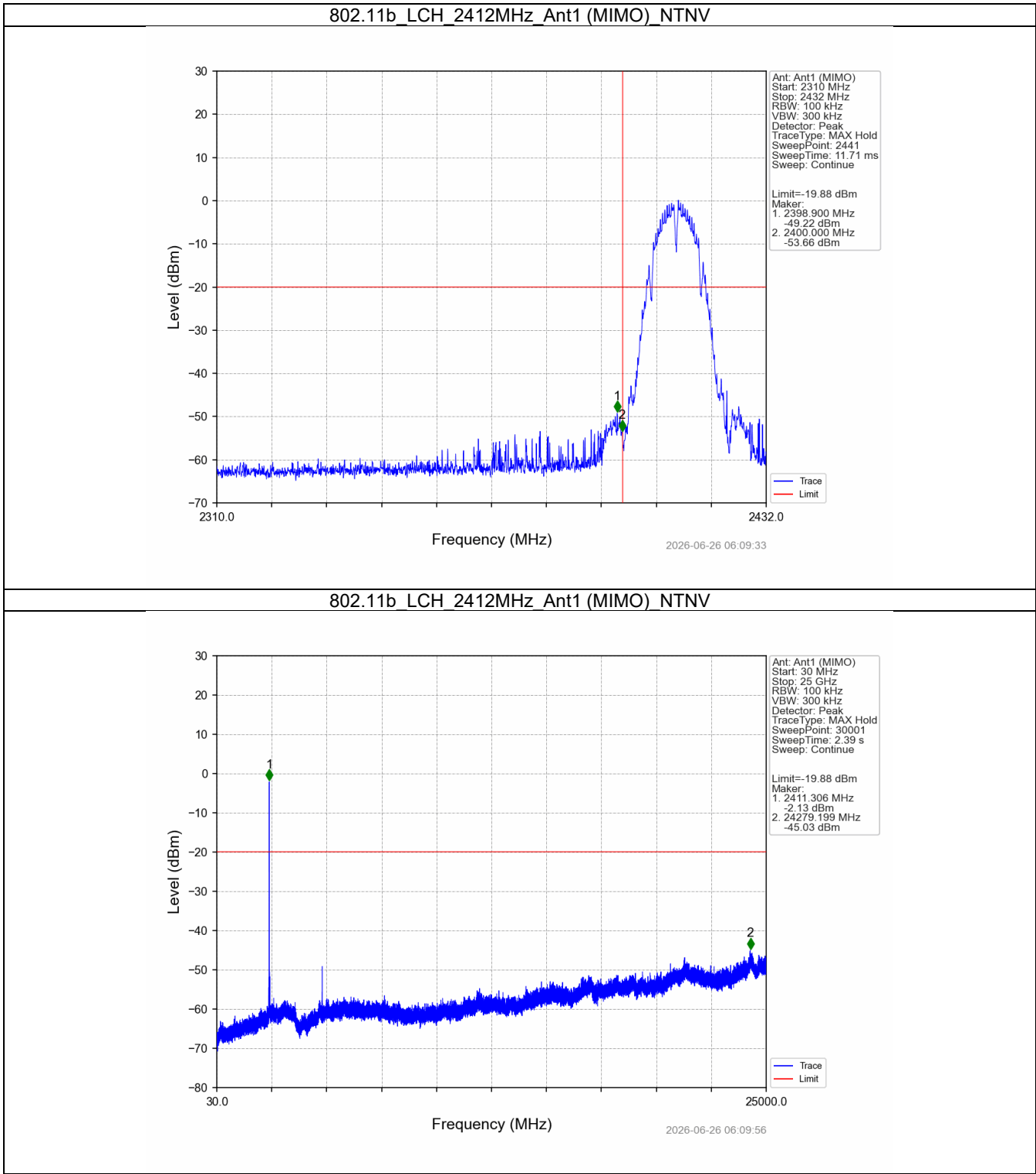
802.11ax(HEW20) HCH 2462MHz SU / Ant1 (MIMO) NTN



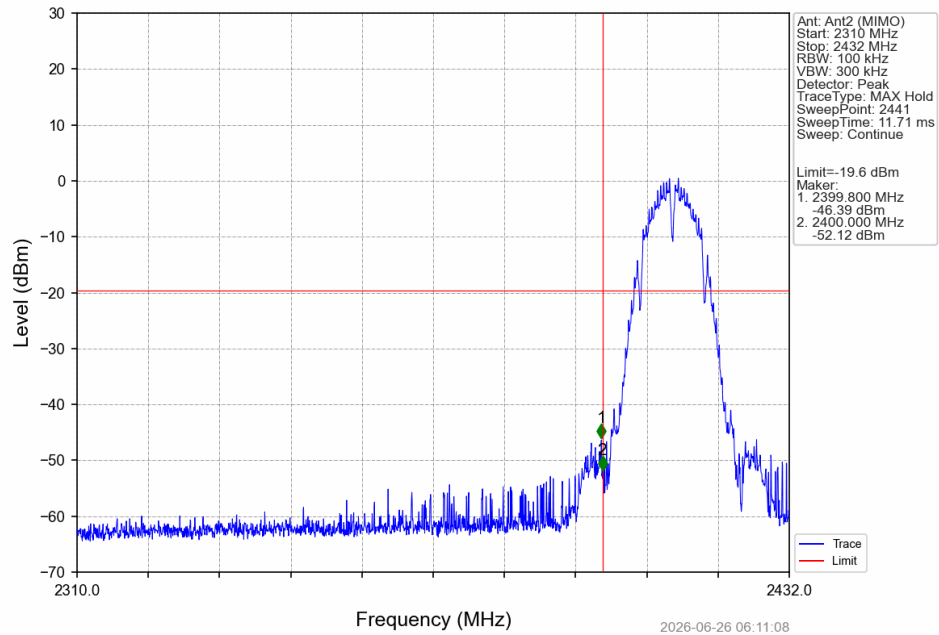
802.11ax(HEW20) HCH 2462MHz SU / Ant2 (MIMO) NTN



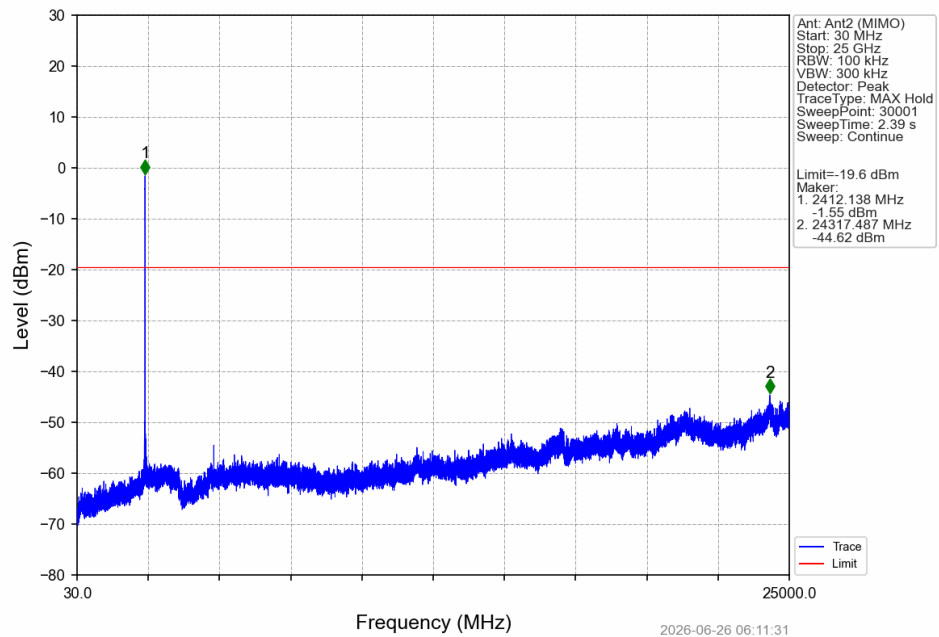
5.2.2 CSE



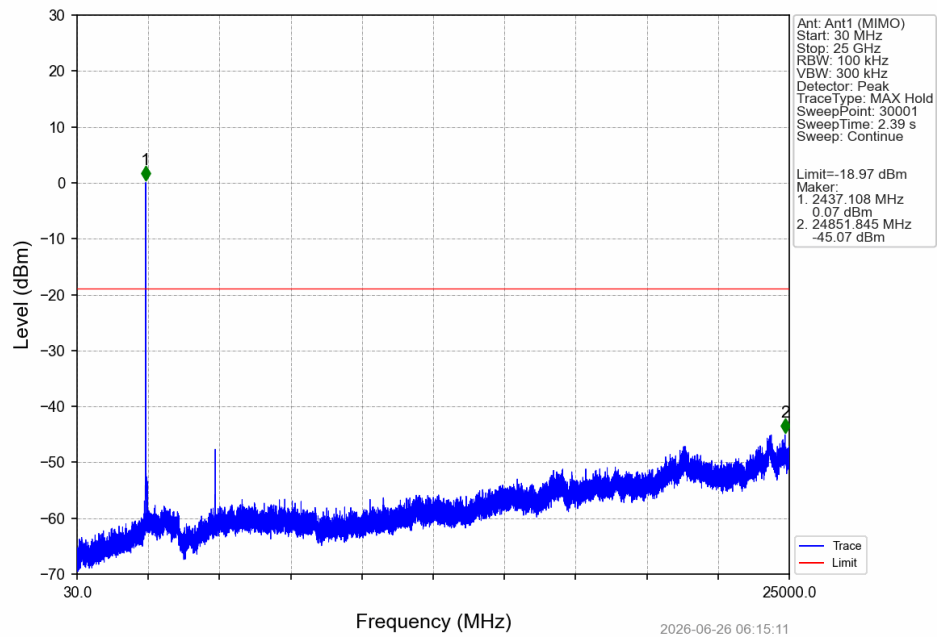
802.11b LCH 2412MHz Ant2 (MIMO) NTN



802.11b_LCH_2412MHz_Ant2 (MIMO)_NTN



802.11b MCH 2437MHz Ant1 (MIMO) NTNV



802.11b_MCH_2437MHz_Ant2 (MIMO)_NTNV

