



Appendix B

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: IoTgo Track-Solar iot

Test Model: iot

Environmental Conditions

Temperature:	23.5°C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Can Kun
Supervised by:	Nick Peng



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B.1 -6dB Bandwidth

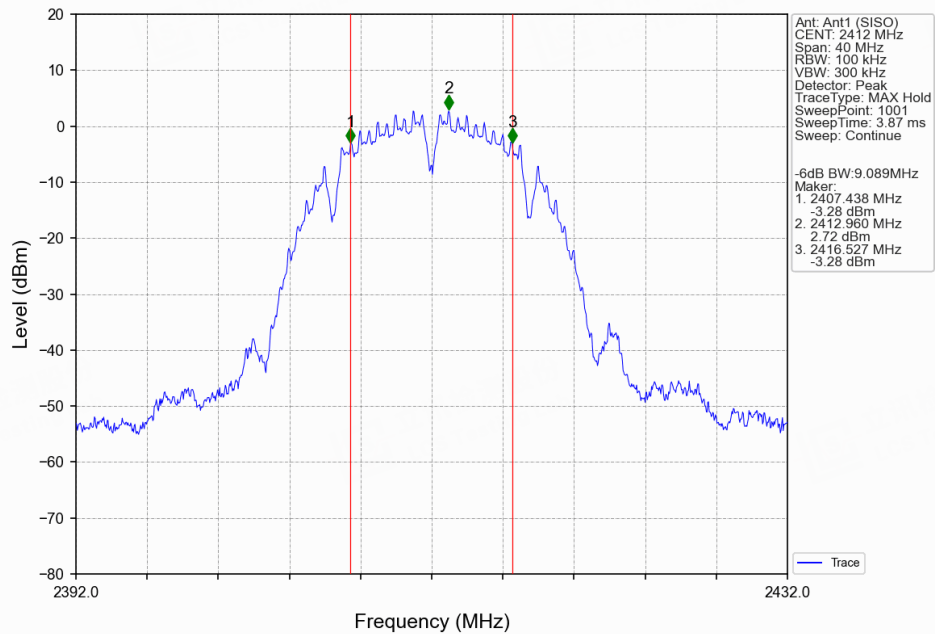
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	ANT1	9.089	≥ 0.5	Pass
		2437	ANT1	9.070	≥ 0.5	Pass
		2462	ANT1	9.551	≥ 0.5	Pass
802.11g	SISO	2412	ANT1	16.350	≥ 0.5	Pass
		2437	ANT1	16.358	≥ 0.5	Pass
		2462	ANT1	16.373	≥ 0.5	Pass
802.11n (HT20)	SISO	2412	ANT1	17.568	≥ 0.5	Pass
		2437	ANT1	17.602	≥ 0.5	Pass
		2462	ANT1	17.592	≥ 0.5	Pass
802.11n (HT40)	SISO	2422	ANT1	35.776	≥ 0.5	Pass
		2437	ANT1	35.780	≥ 0.5	Pass
		2452	ANT1	35.962	≥ 0.5	Pass



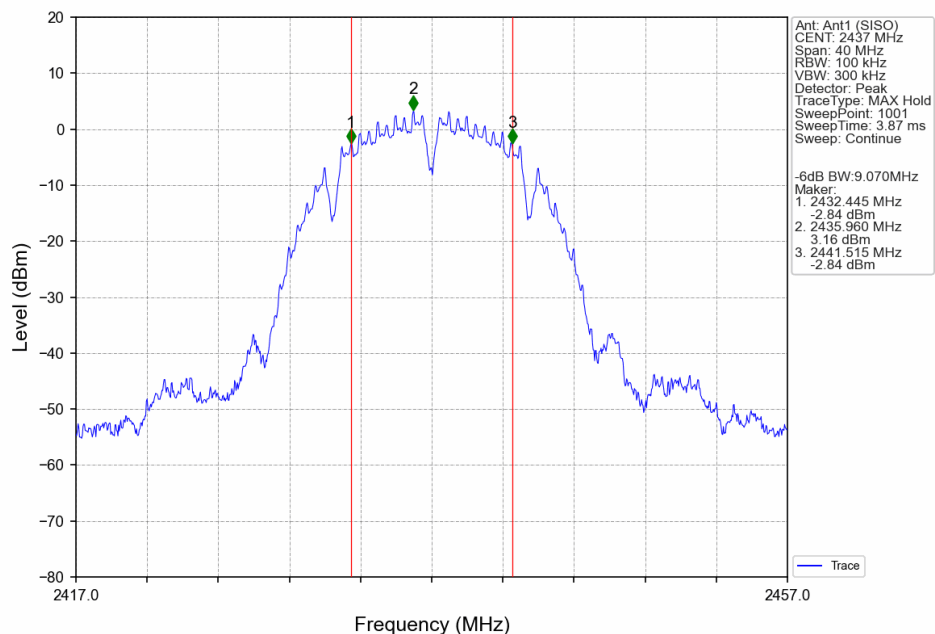
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802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV

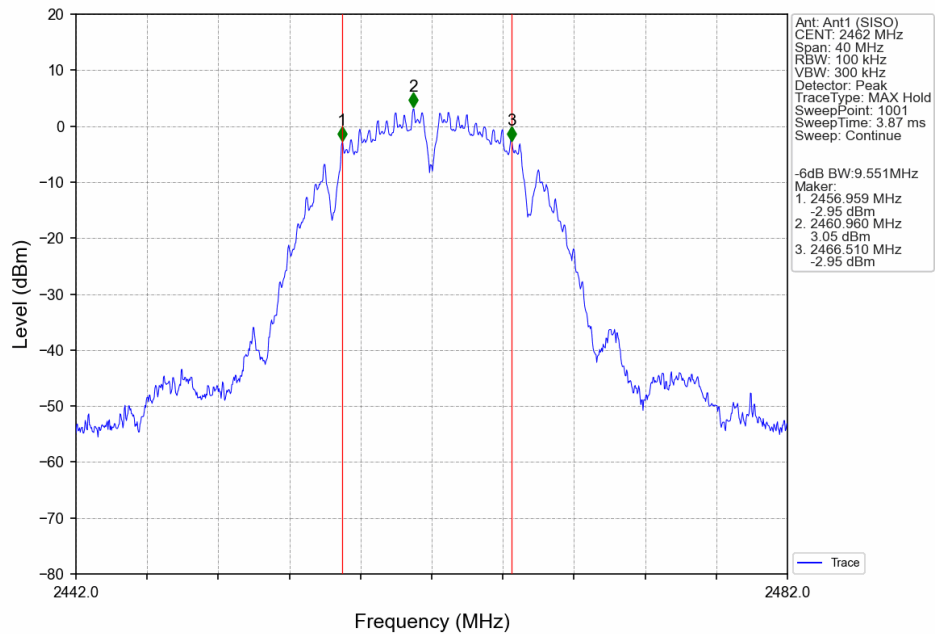


802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV

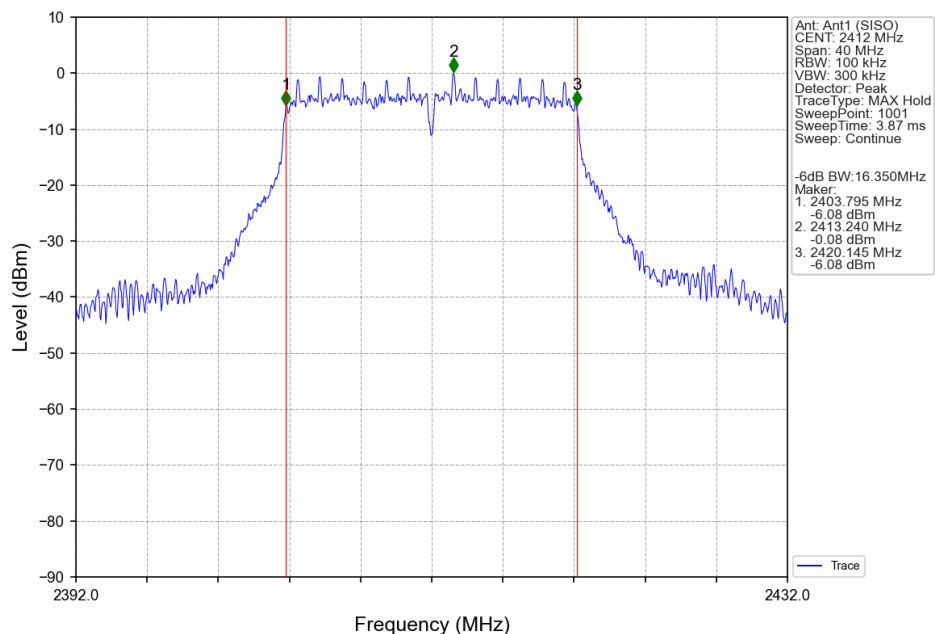


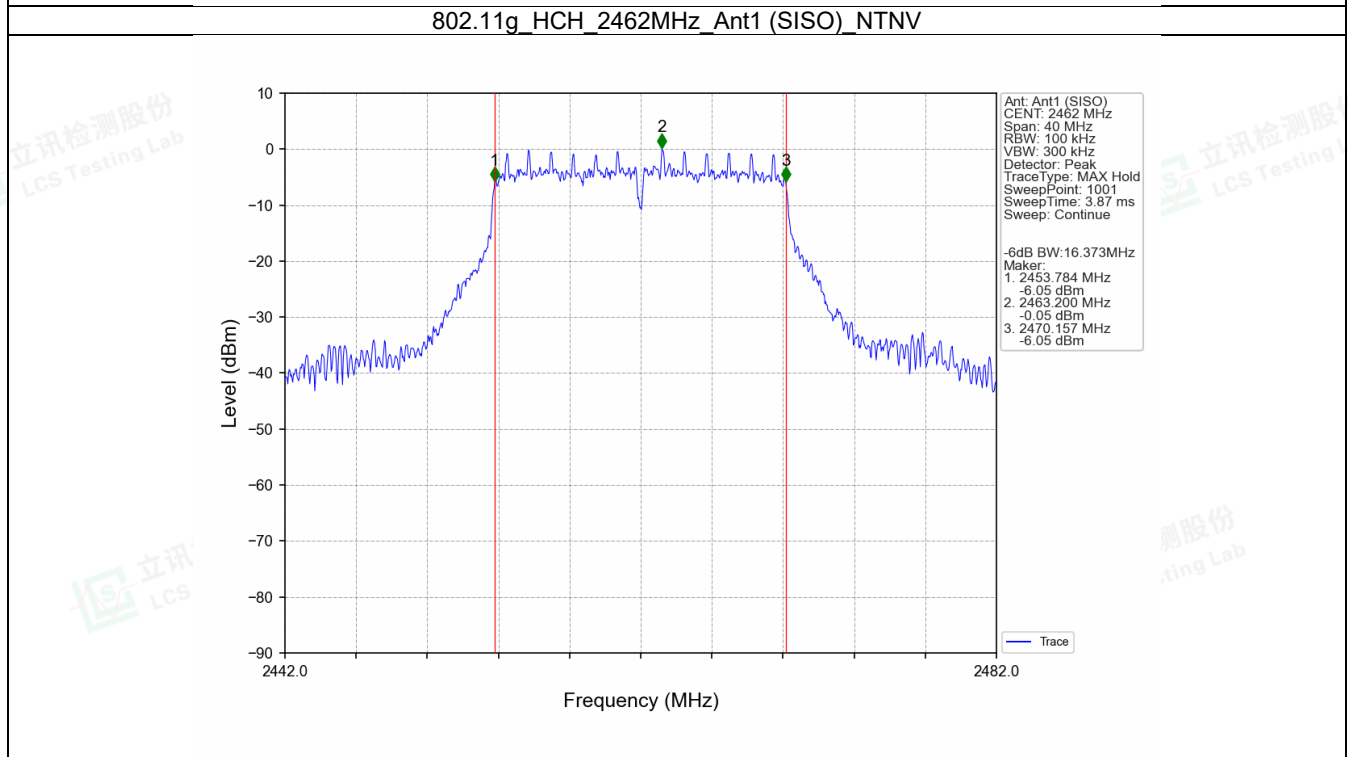
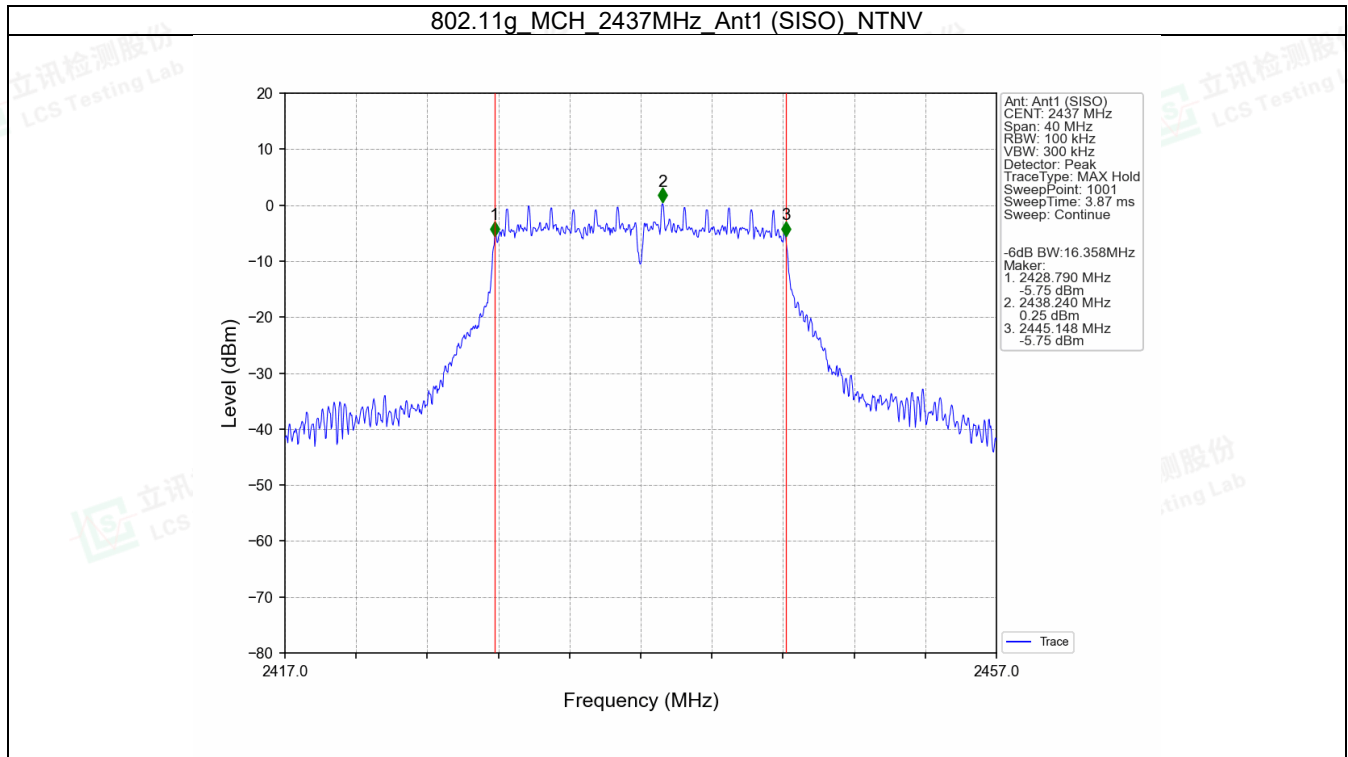


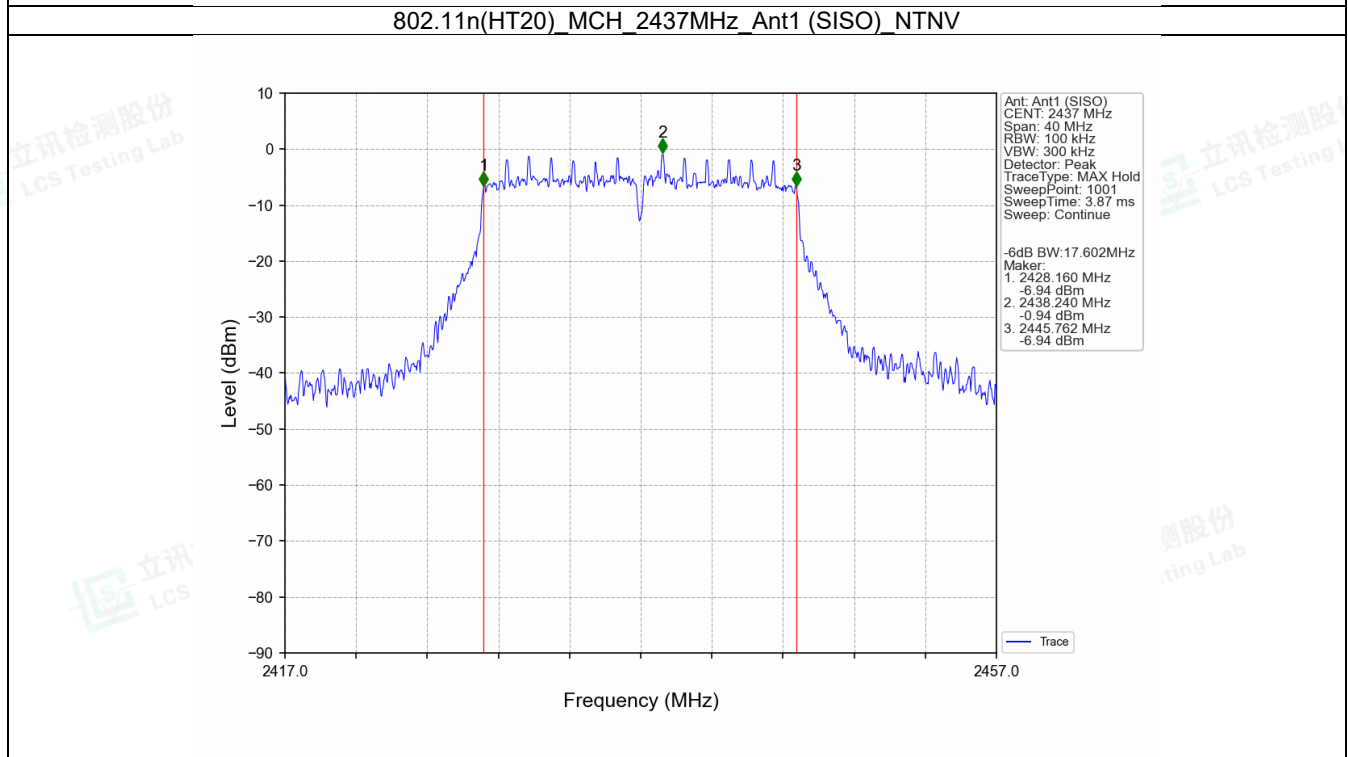
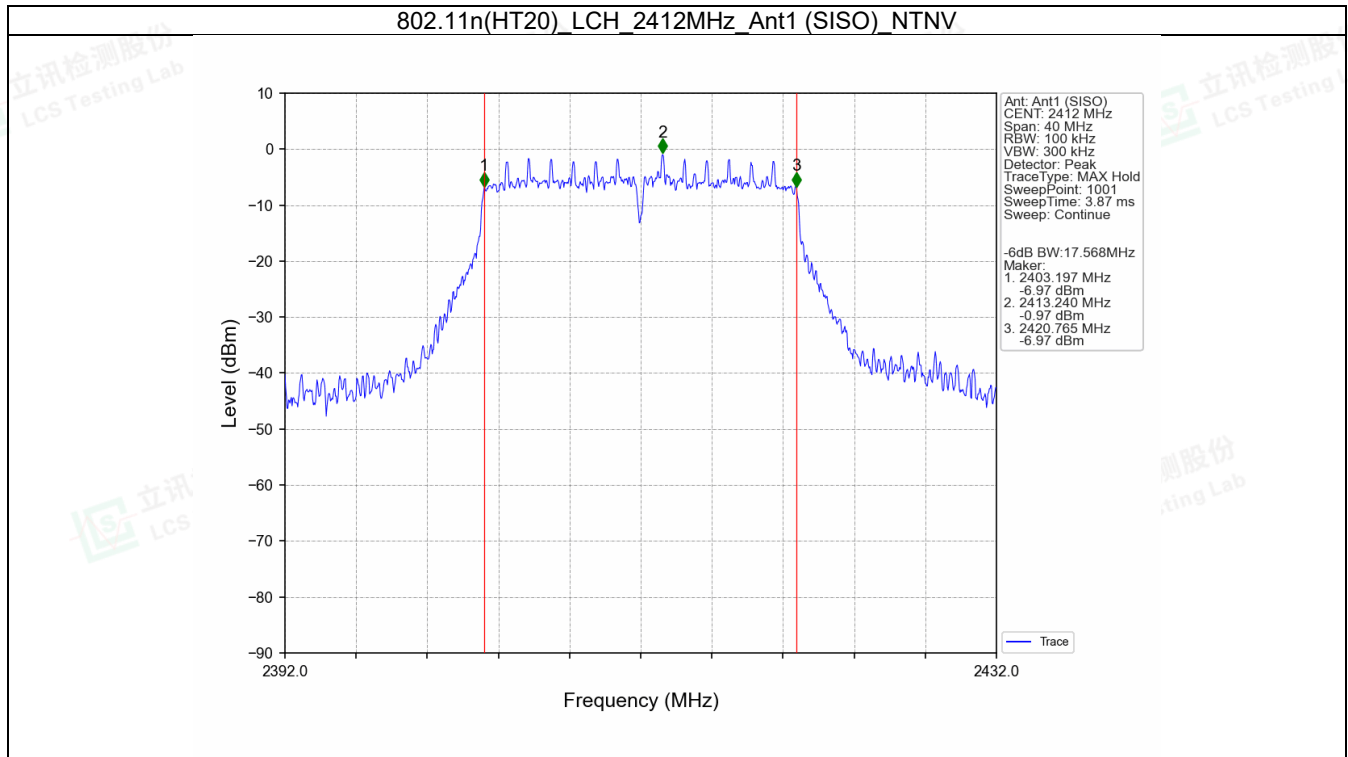
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

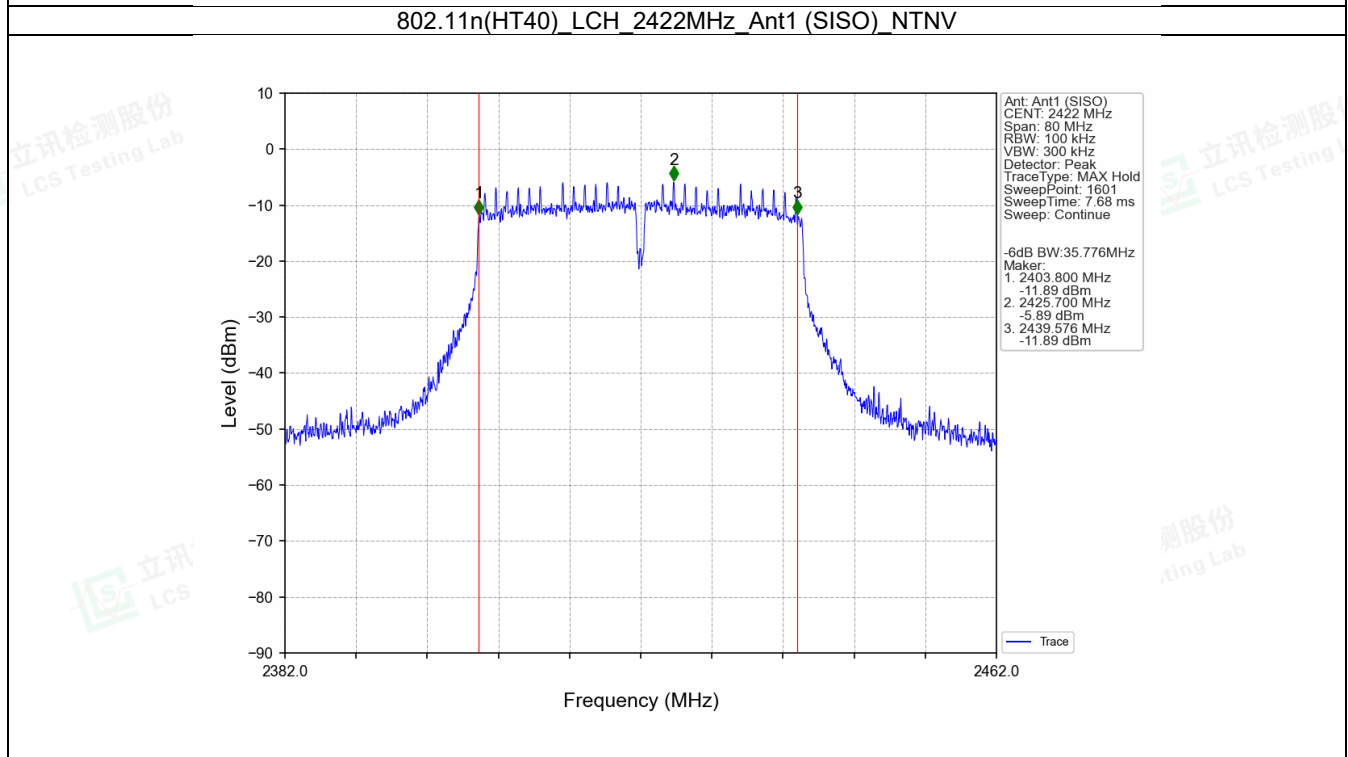
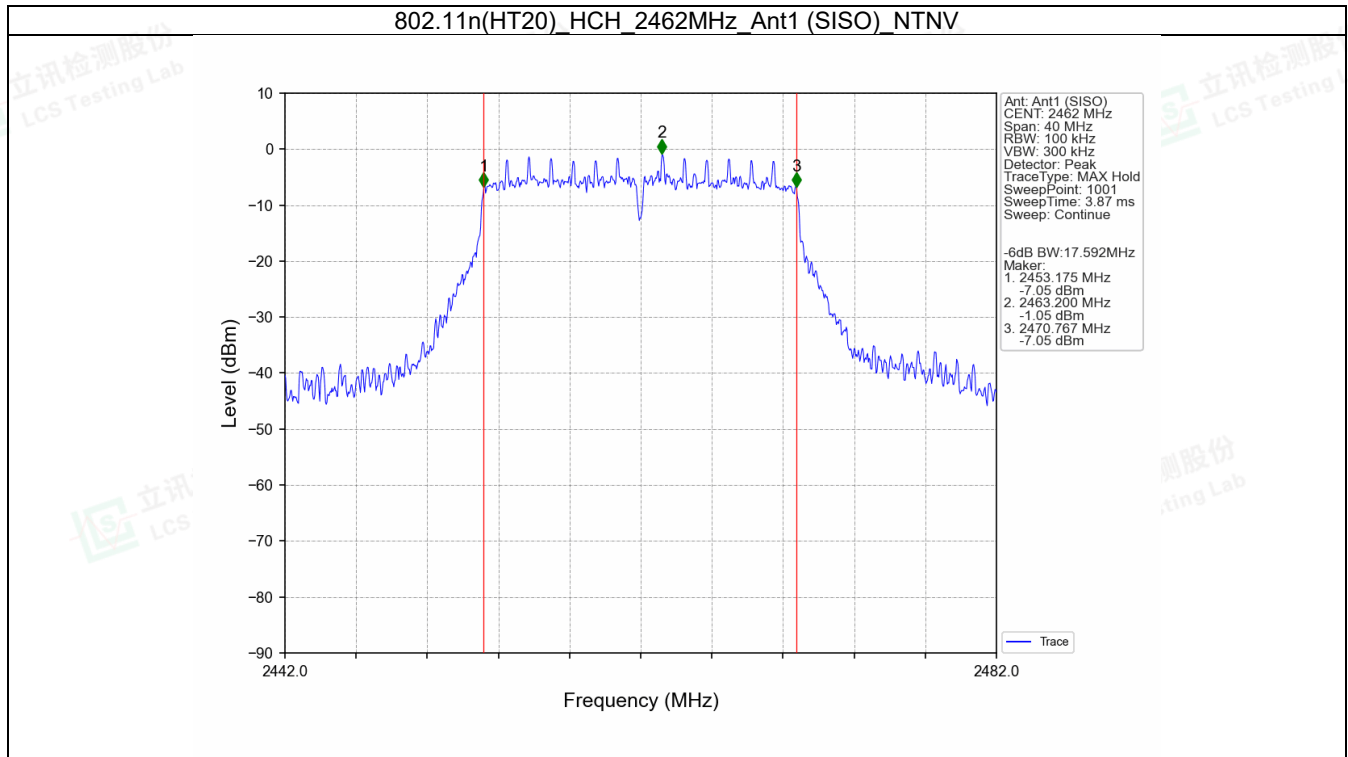


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



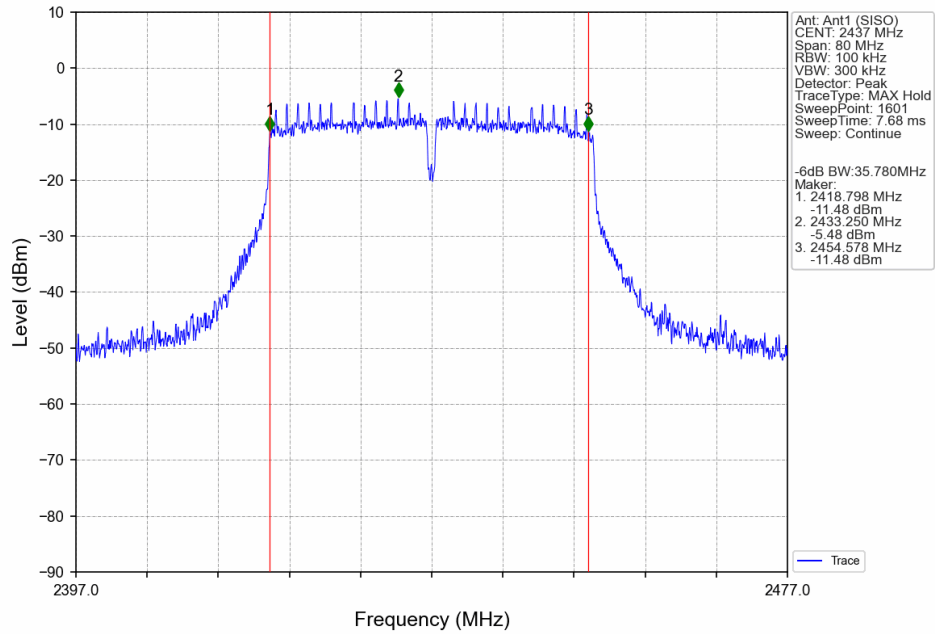




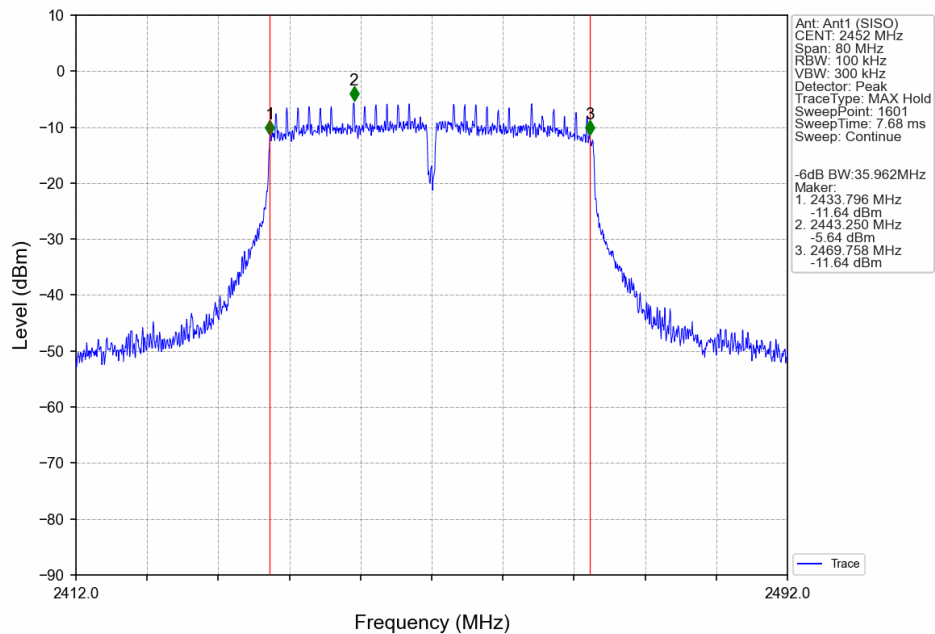




802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV





B.2 Maximum Peak Conducted Output Power

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	14.14	<=30	Pass
		2437	14.36	<=30	Pass
		2462	14.38	<=30	Pass
802.11g	SISO	2412	18.33	<=30	Pass
		2437	18.66	<=30	Pass
		2462	18.60	<=30	Pass
802.11n (HT20)	SISO	2412	17.46	<=30	Pass
		2437	17.63	<=30	Pass
		2462	17.53	<=30	Pass
802.11n (HT40)	SISO	2422	15.74	<=30	Pass
		2437	16.21	<=30	Pass
		2452	16.15	<=30	Pass



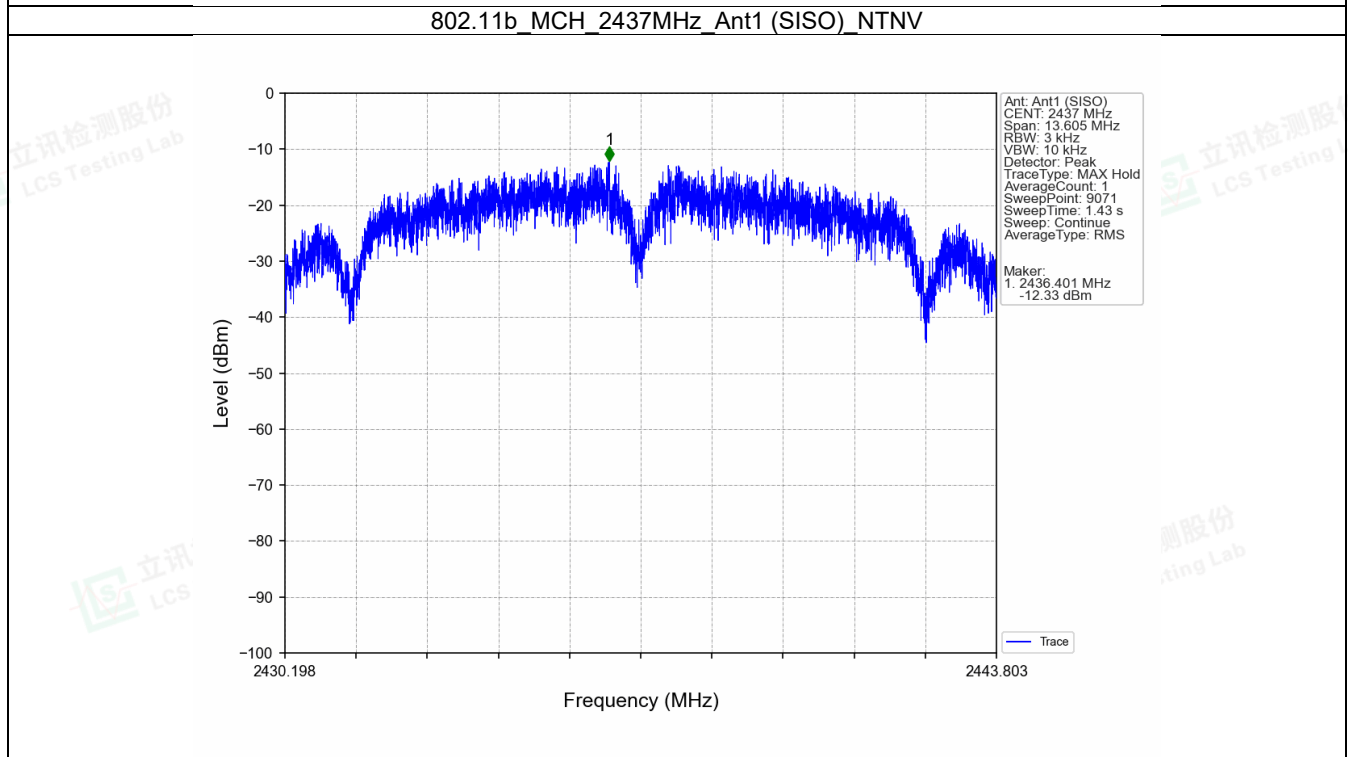
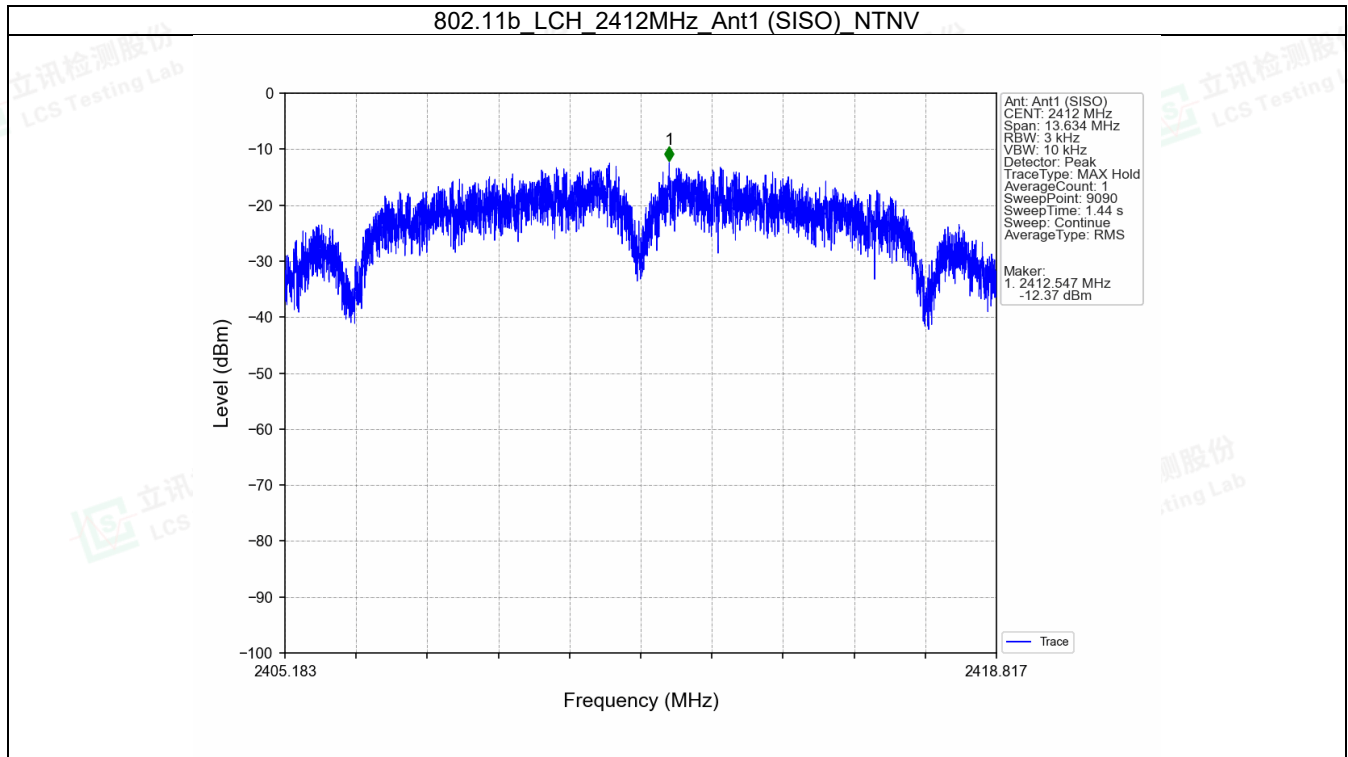
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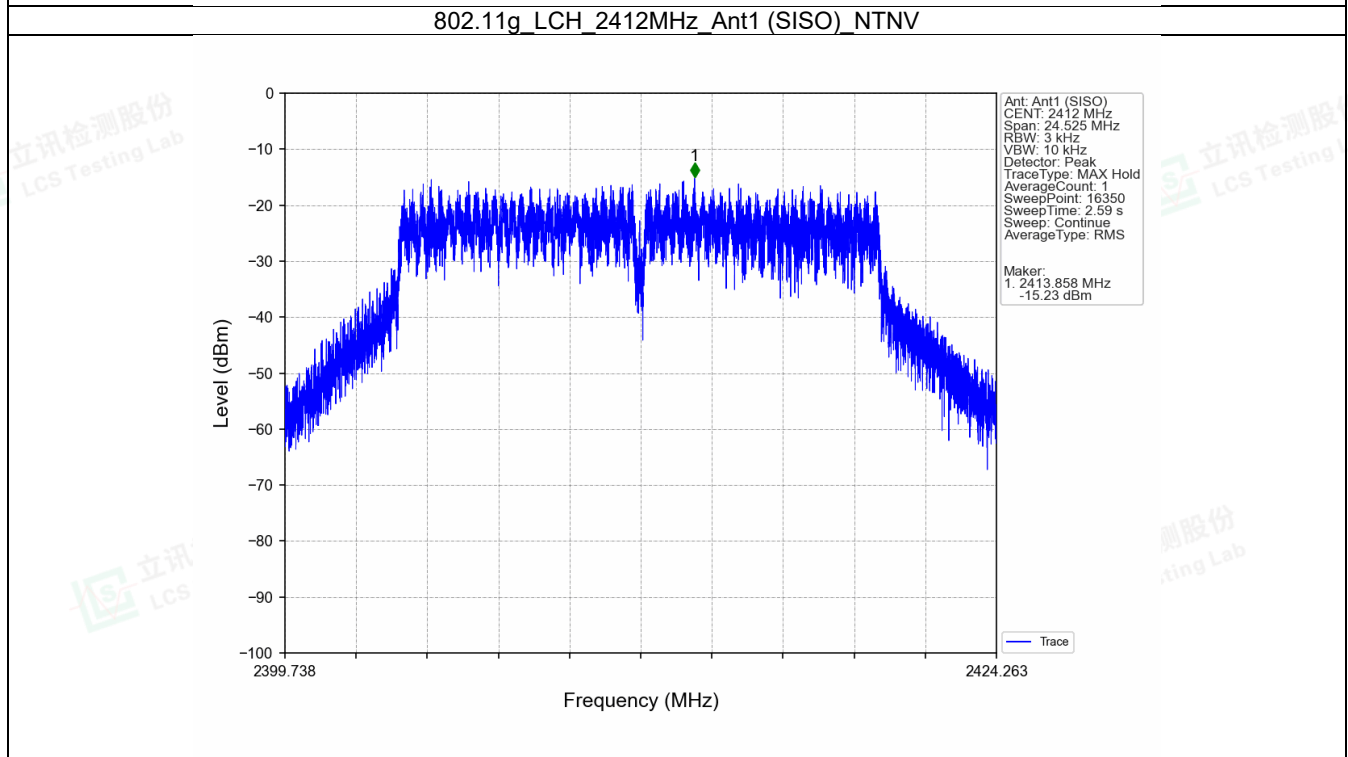
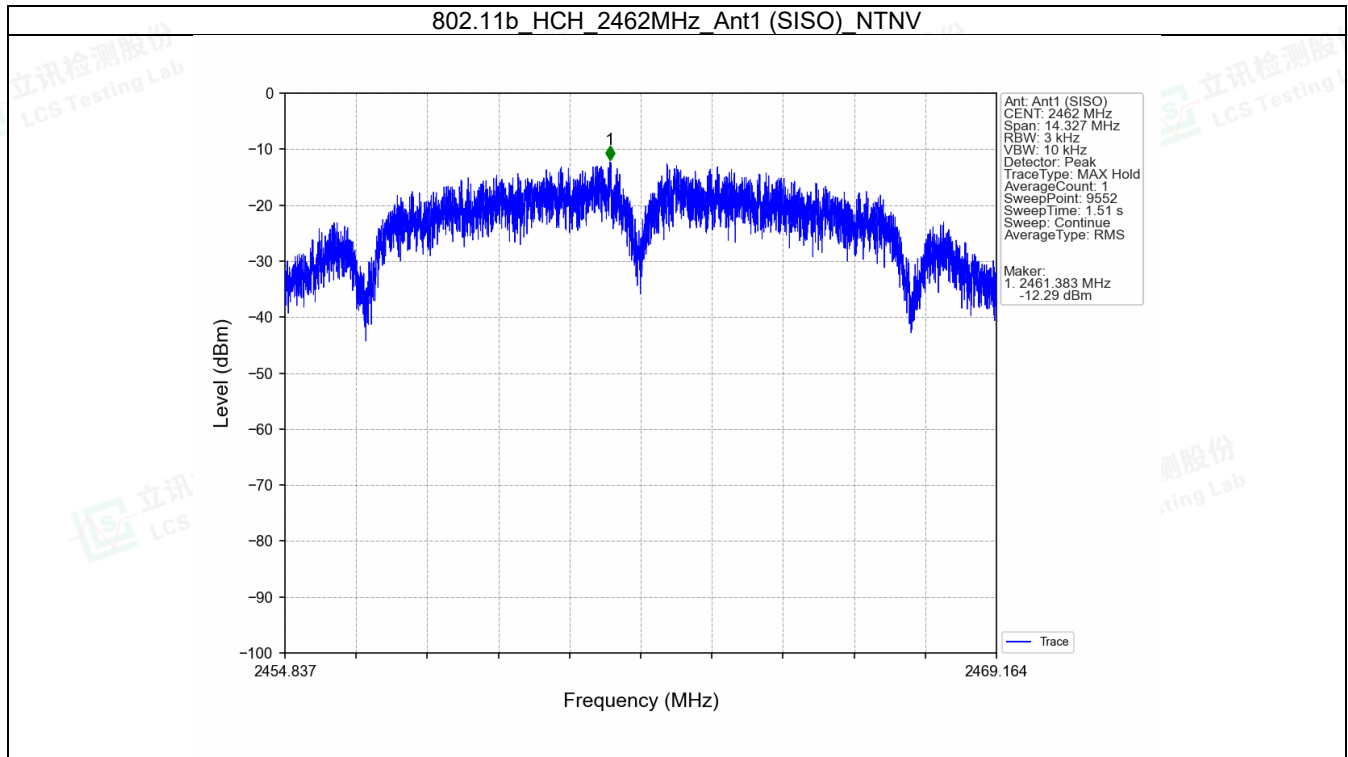


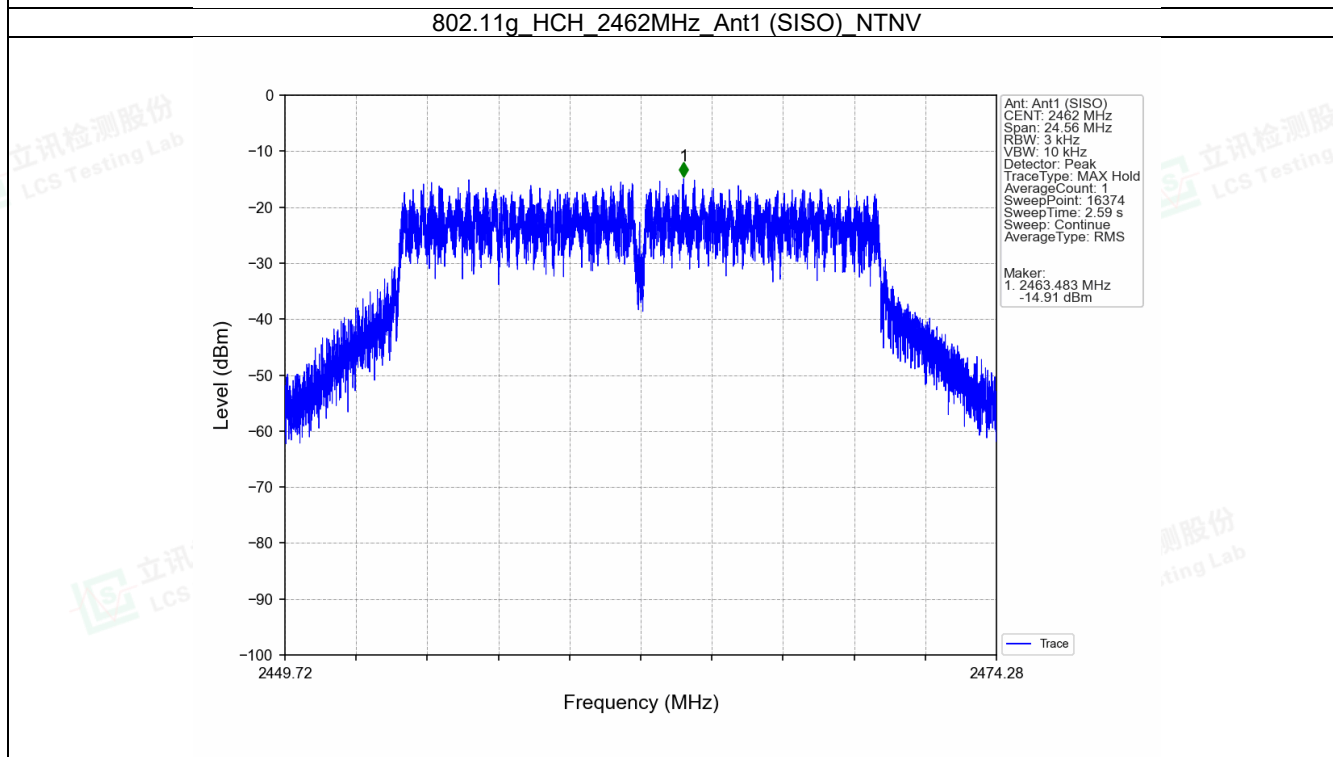
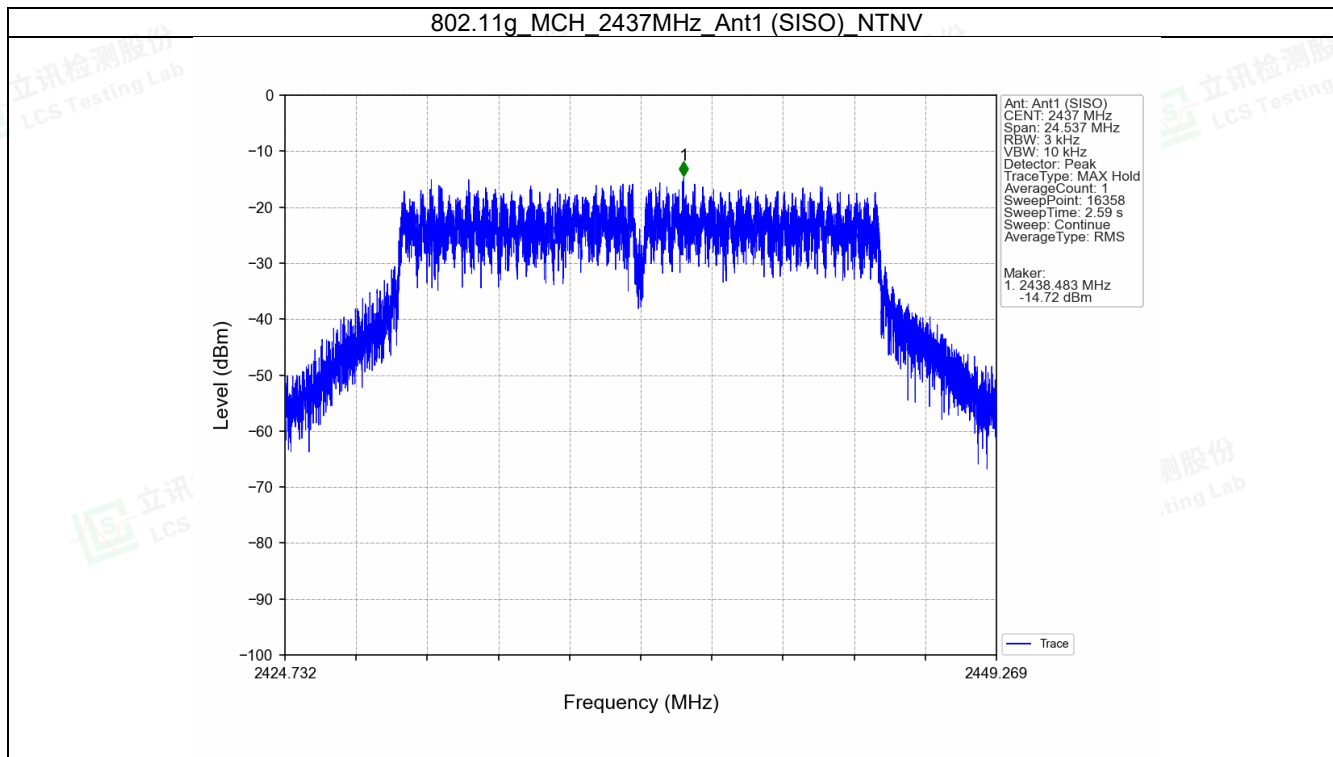
B.3 Maximum Power Spectral Density

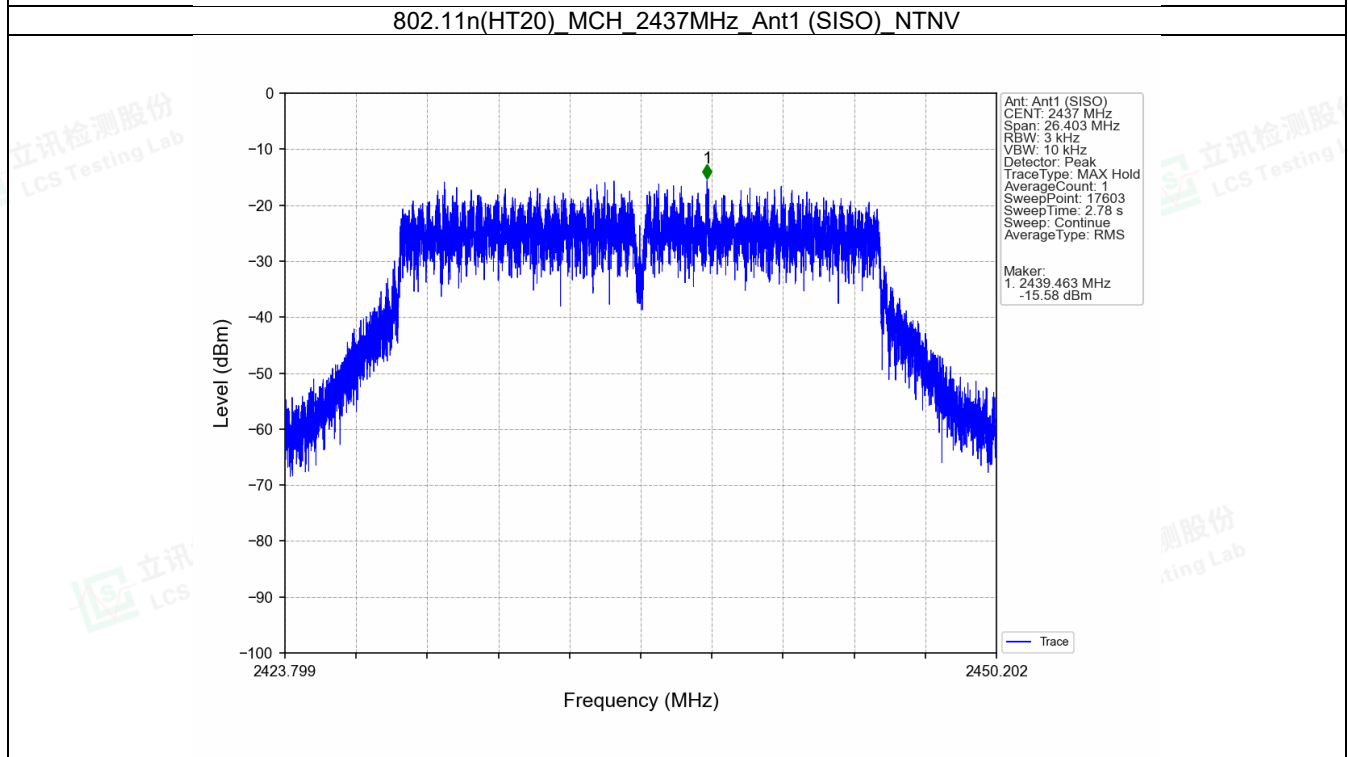
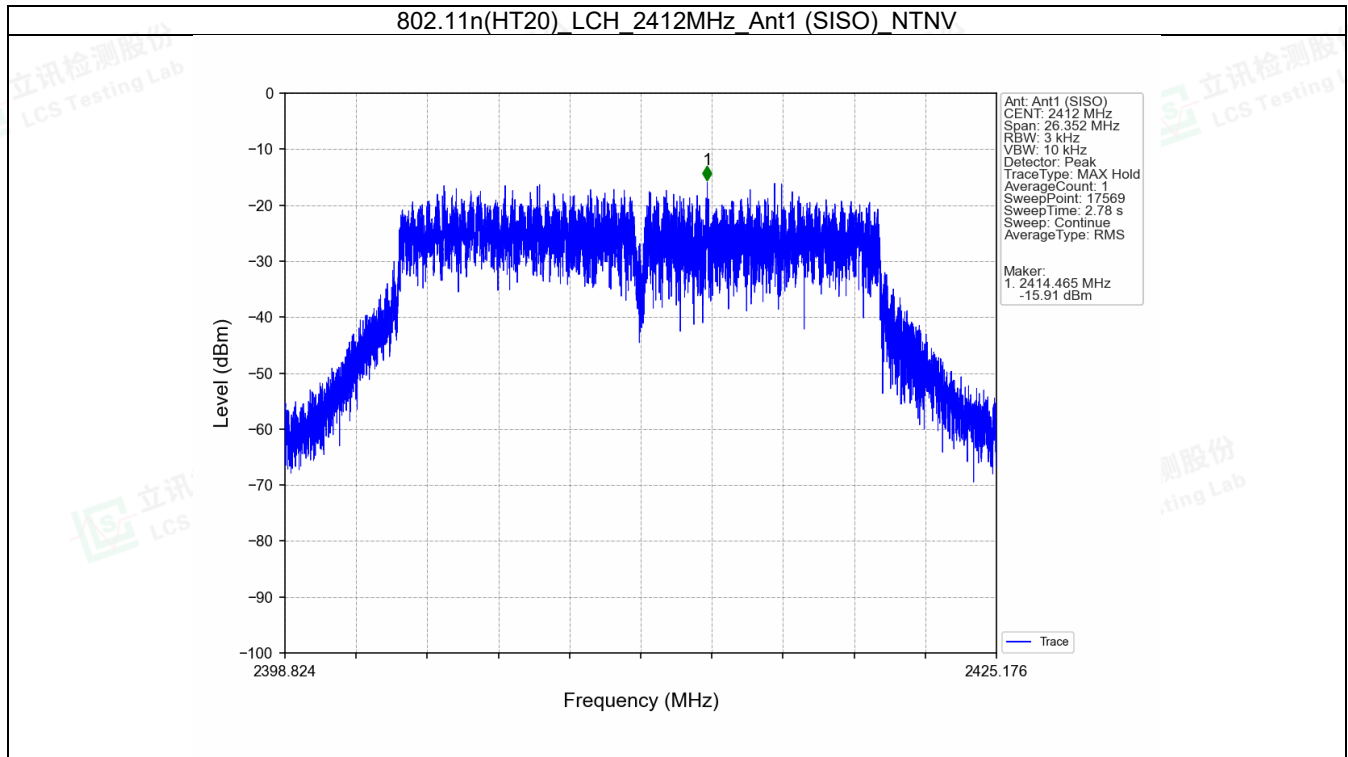
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	-12.37	<=8	Pass
		2437	-12.33	<=8	Pass
		2462	-12.29	<=8	Pass
802.11g	SISO	2412	-15.23	<=8	Pass
		2437	-14.72	<=8	Pass
		2462	-14.91	<=8	Pass
802.11n (HT20)	SISO	2412	-15.91	<=8	Pass
		2437	-15.58	<=8	Pass
		2462	-15.38	<=8	Pass
802.11n (HT40)	SISO	2422	-18.81	<=8	Pass
		2437	-20.22	<=8	Pass
		2452	-18.47	<=8	Pass

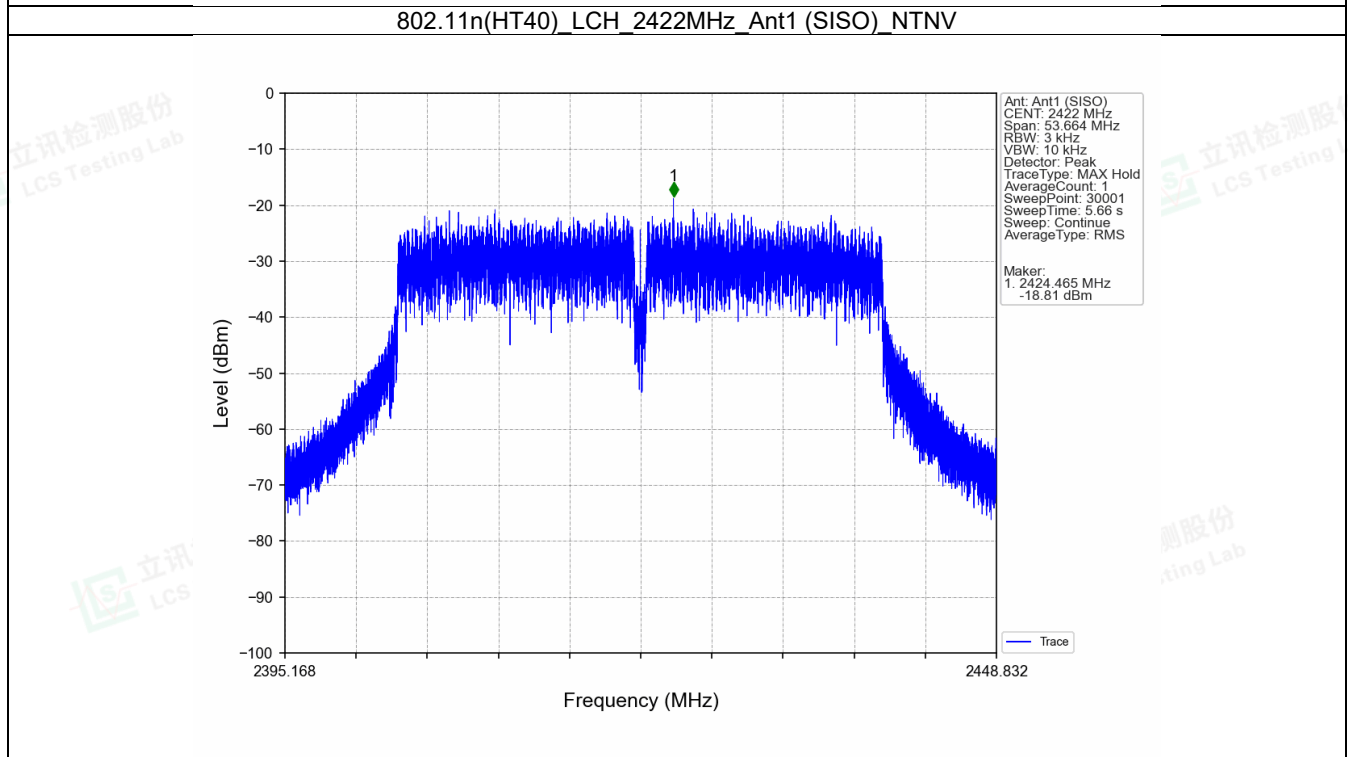
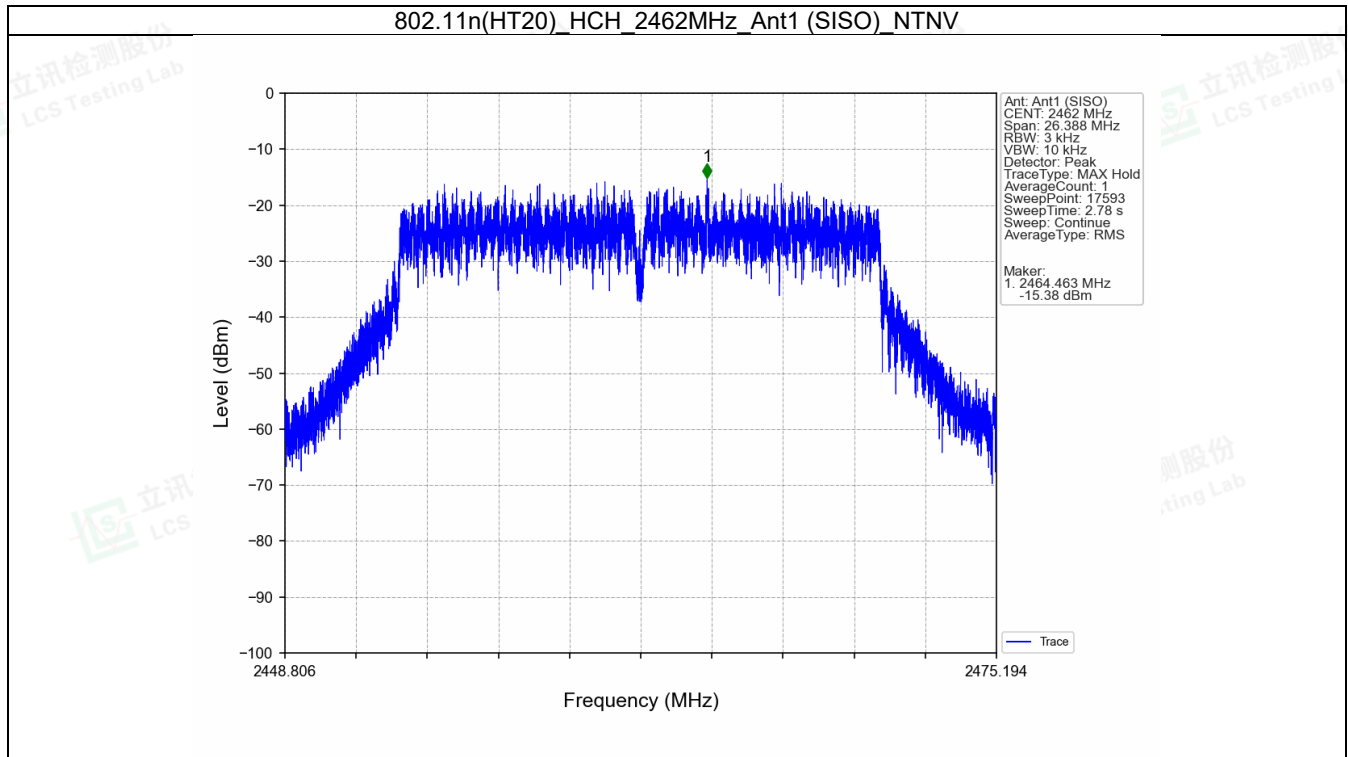




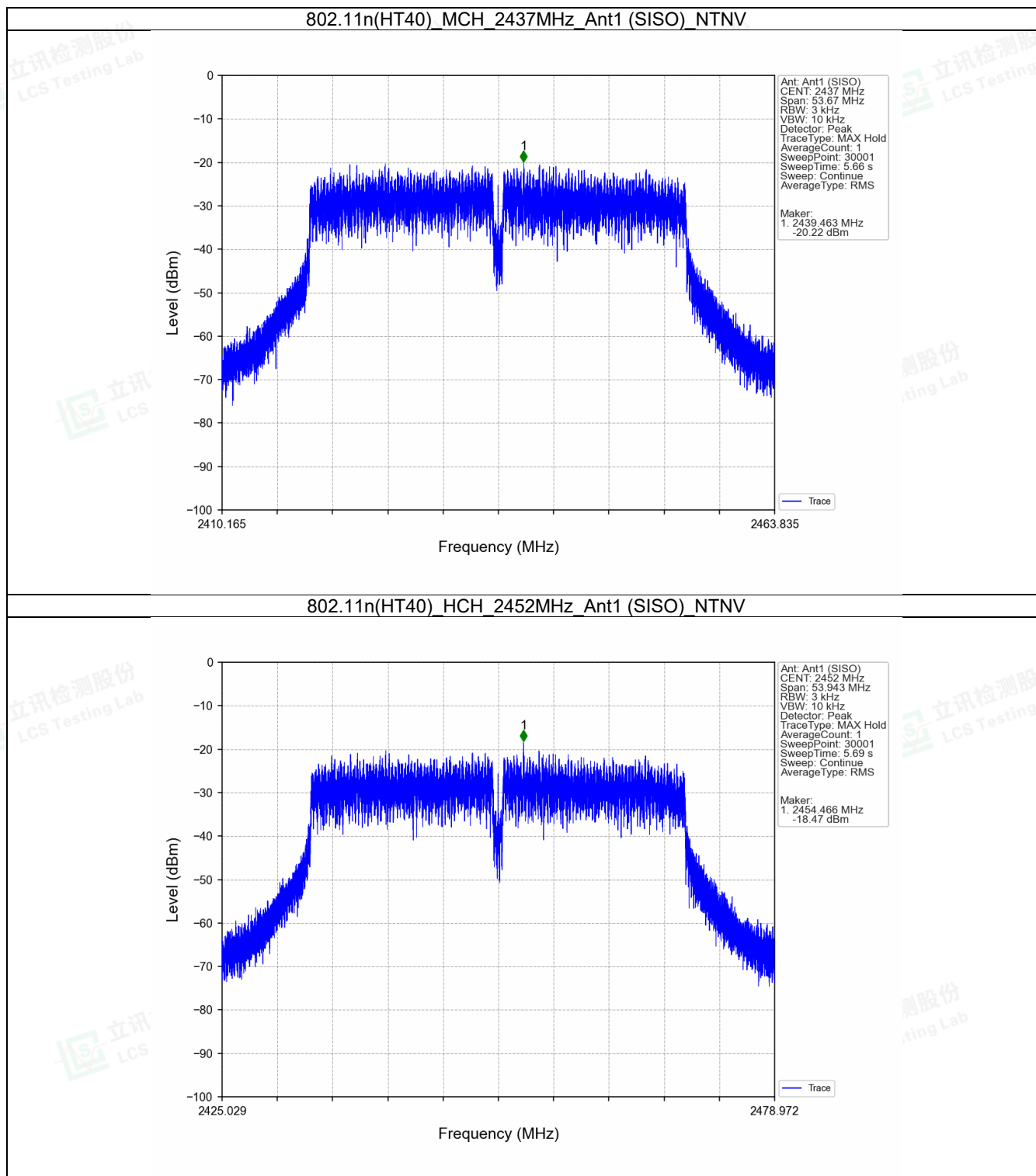








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B.4 Band Edge

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	3.16	-16.84	Pass
		2437	1	3.16	-16.84	Pass
		2462	1	3.16	-16.84	Pass
802.11g	SISO	2412	1	0.34	-19.66	Pass
		2437	1	0.34	-19.66	Pass
		2462	1	0.34	-19.66	Pass
802.11n (HT20)	SISO	2412	1	-0.82	-20.82	Pass
		2437	1	-0.82	-20.82	Pass
		2462	1	-0.82	-20.82	Pass
802.11n (HT40)	SISO	2422	1	-5.43	-25.43	Pass
		2437	1	-5.43	-25.43	Pass
		2452	1	-5.43	-25.43	Pass

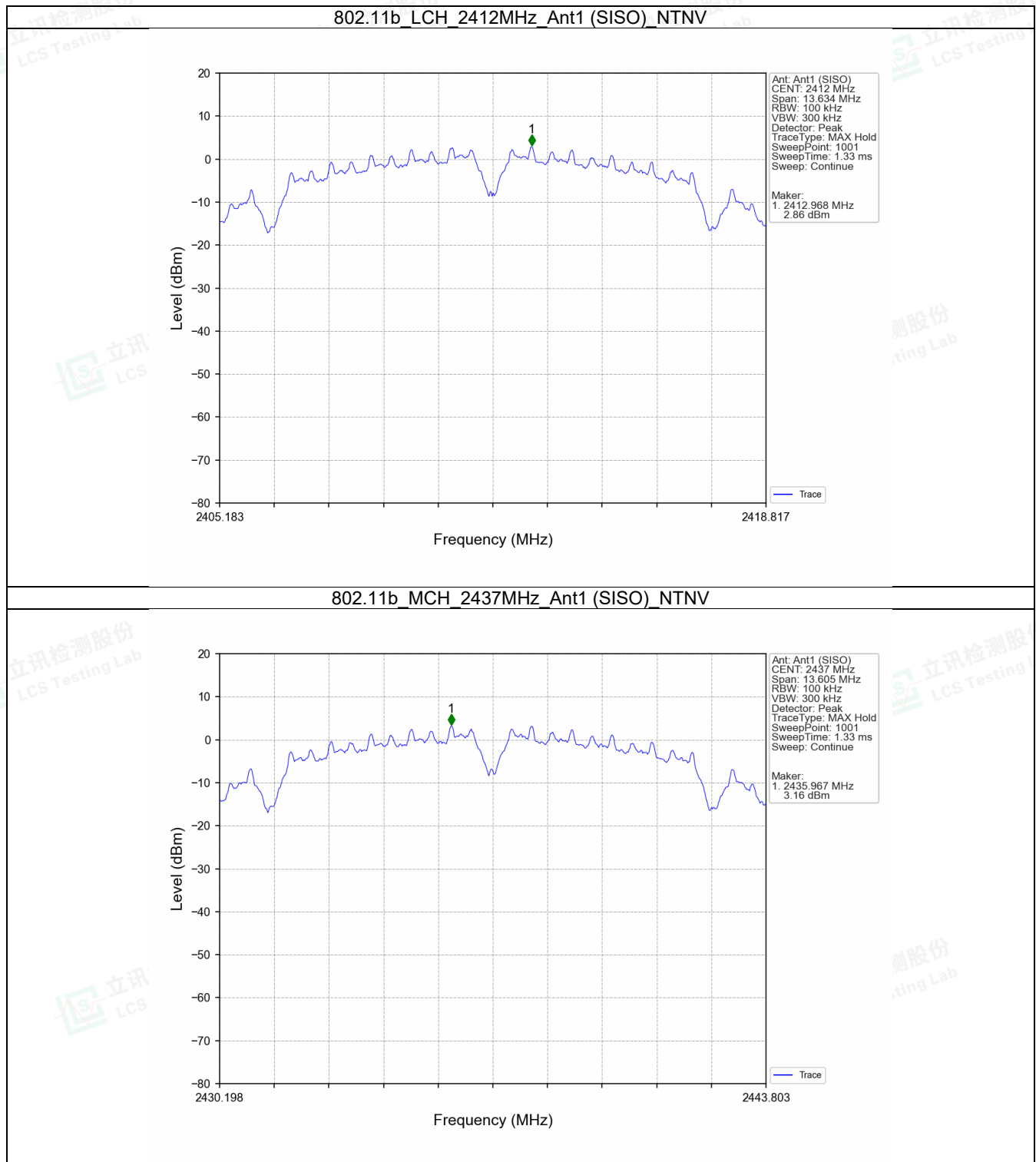
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.



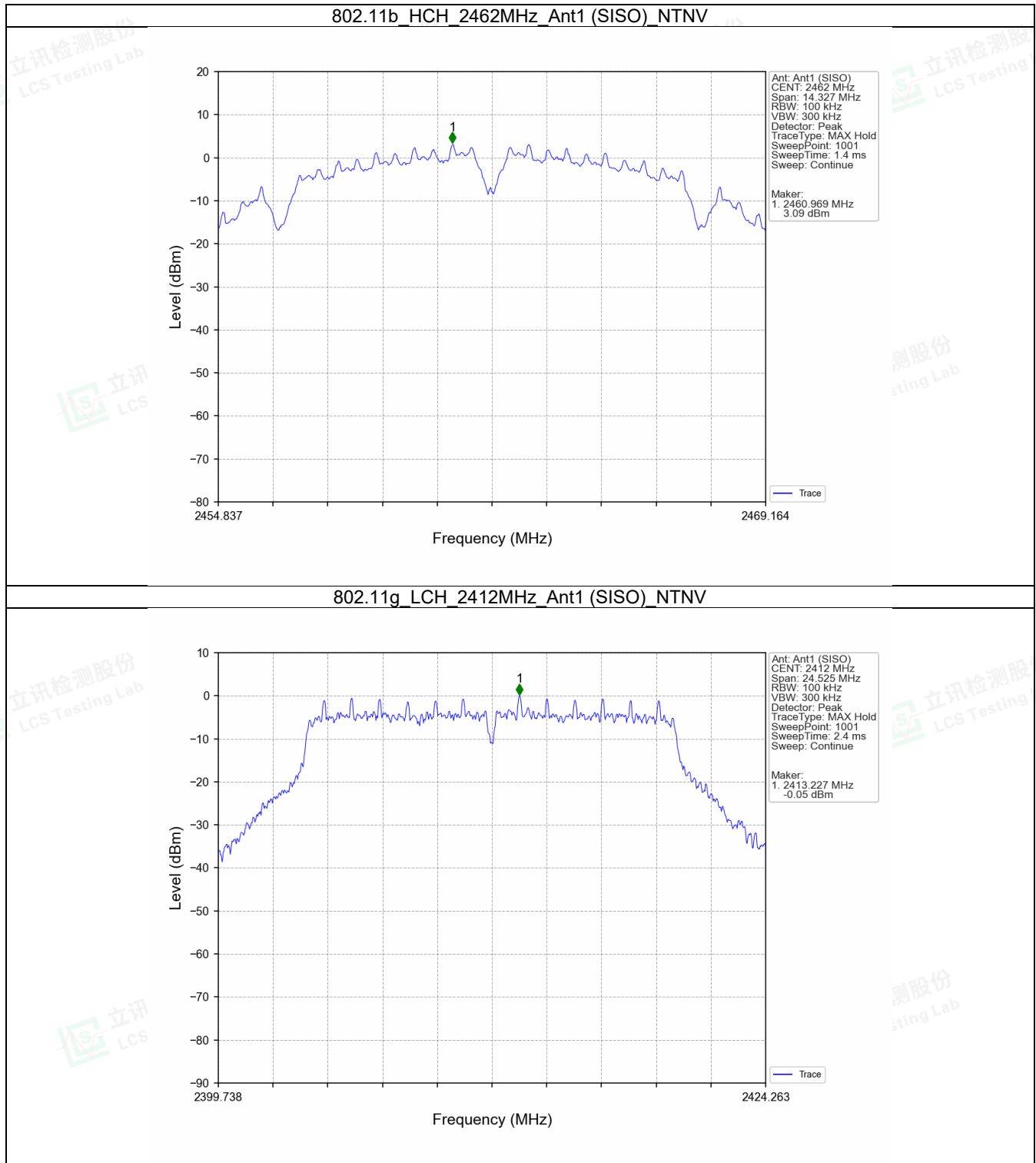
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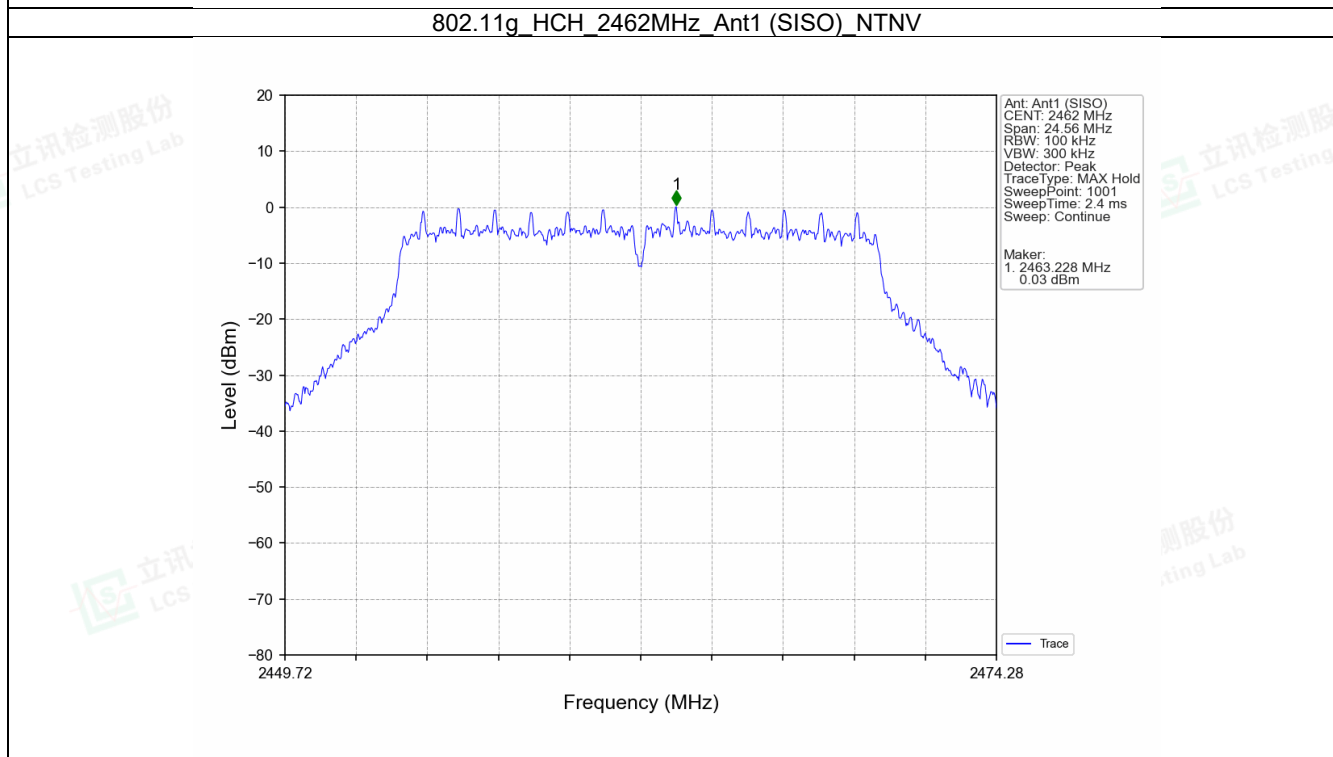
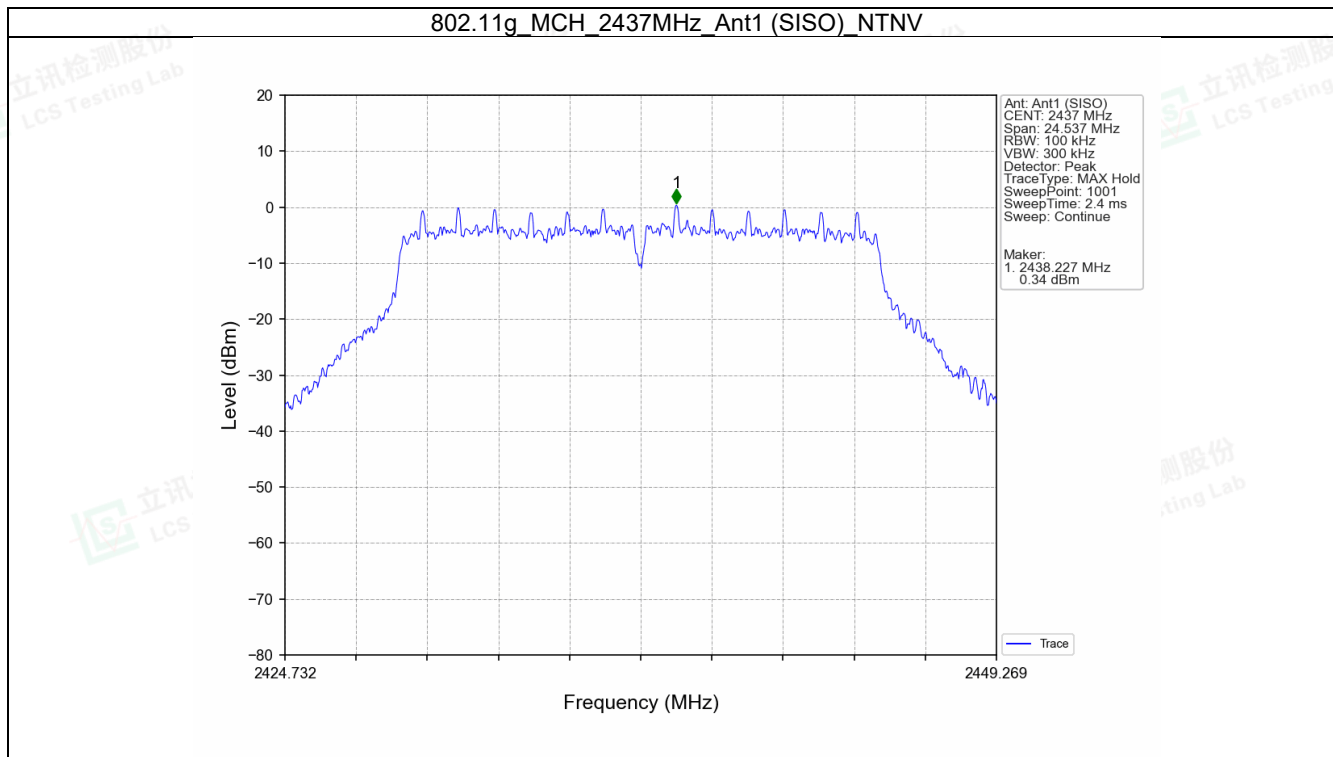


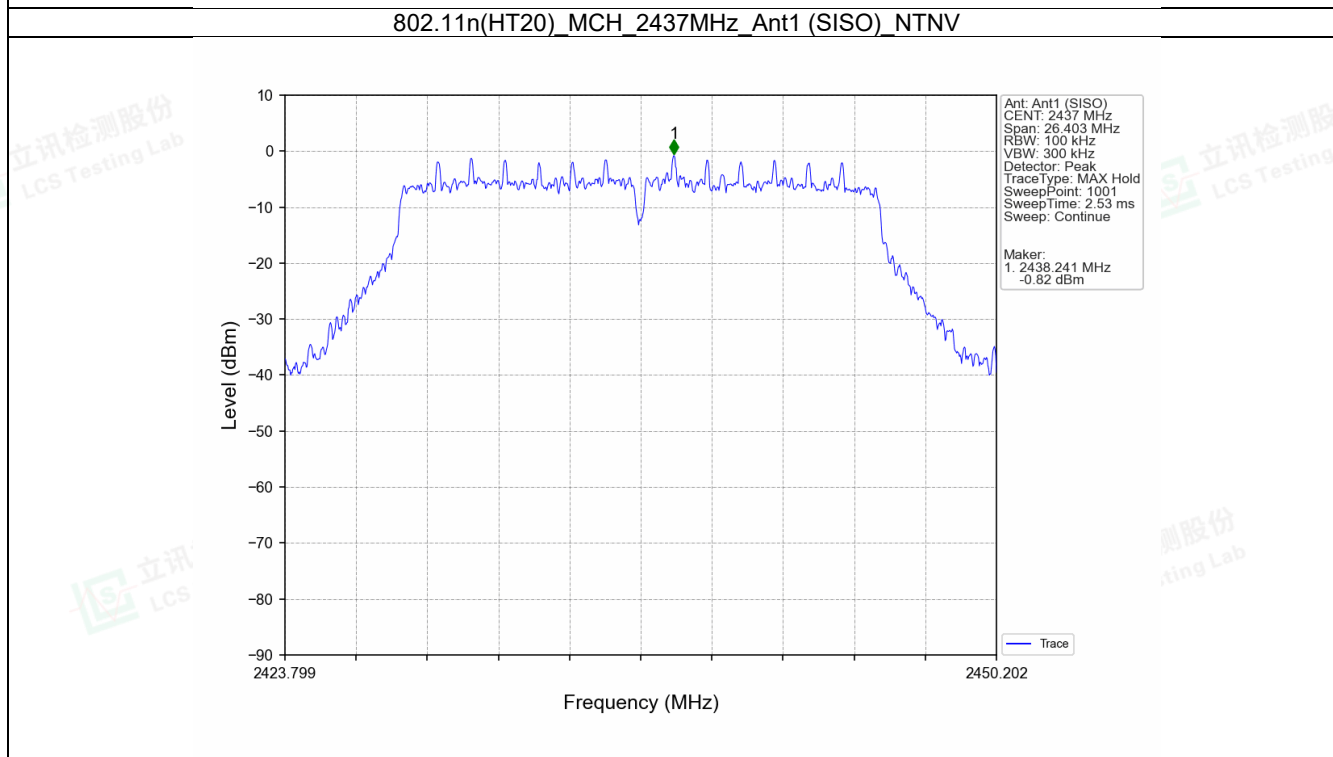
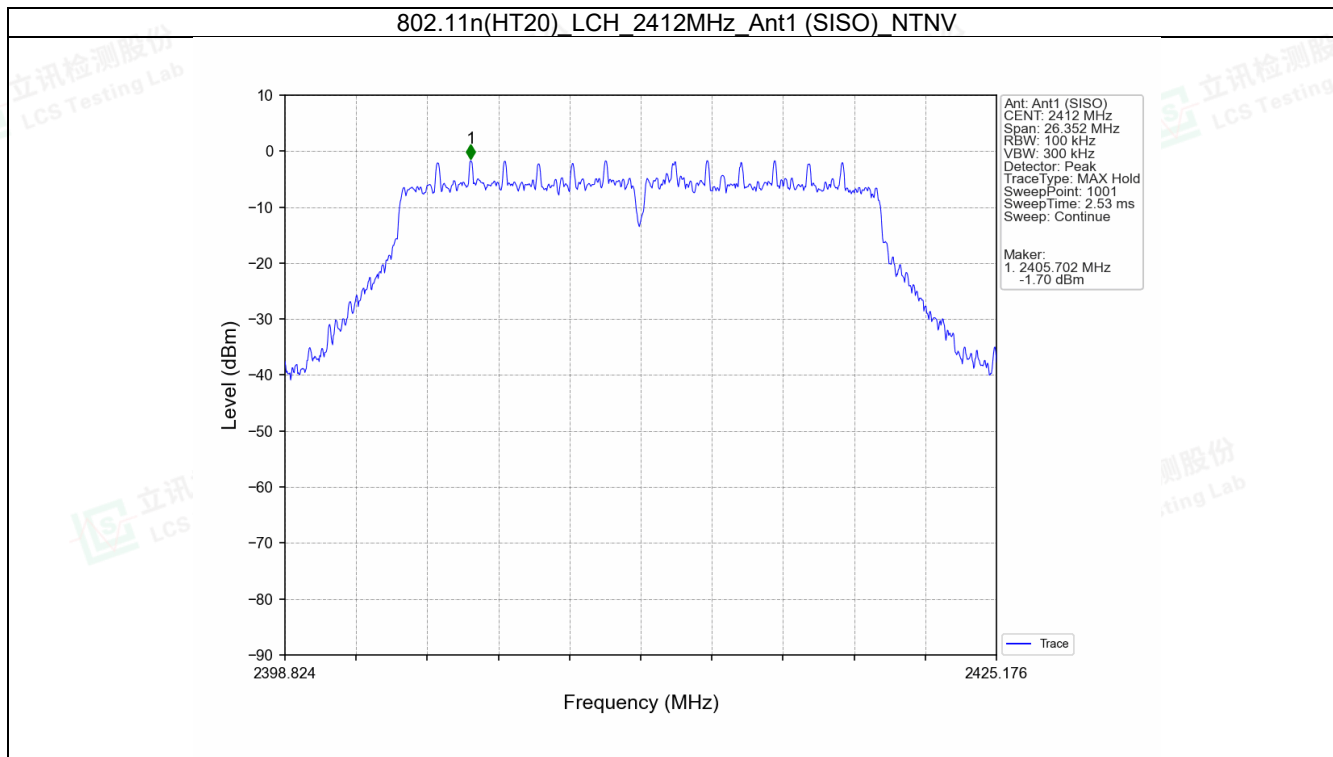
Ref



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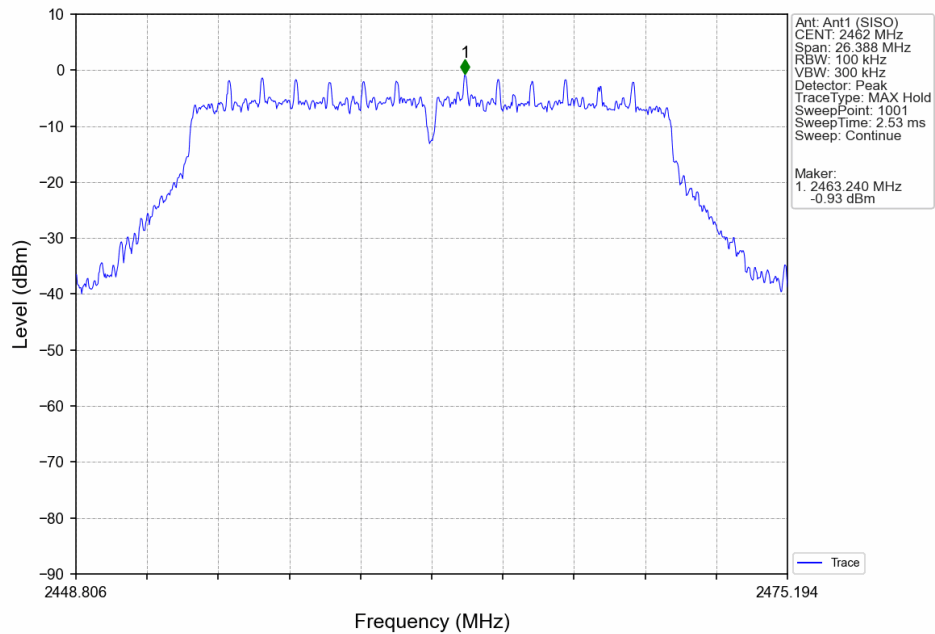




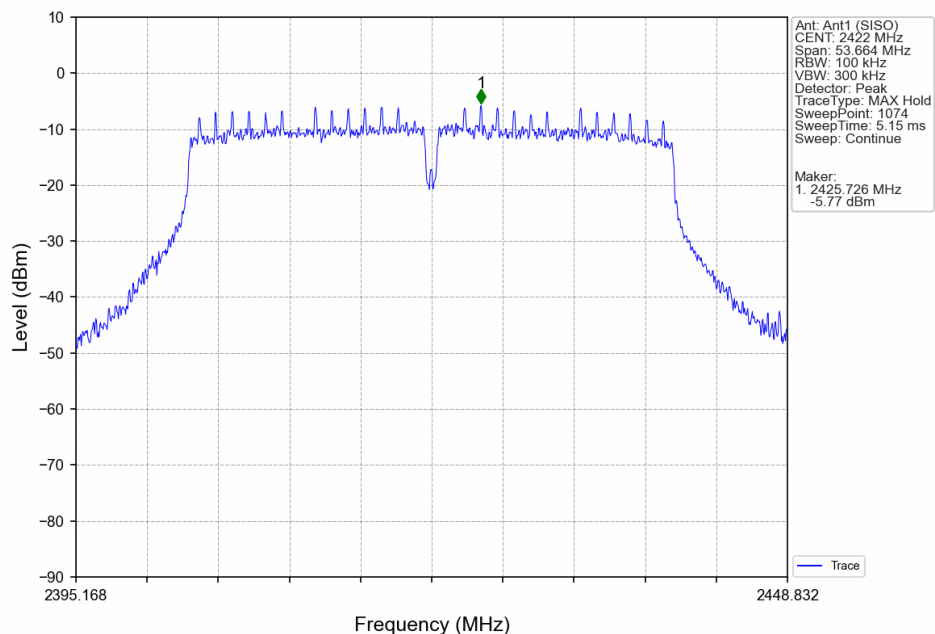


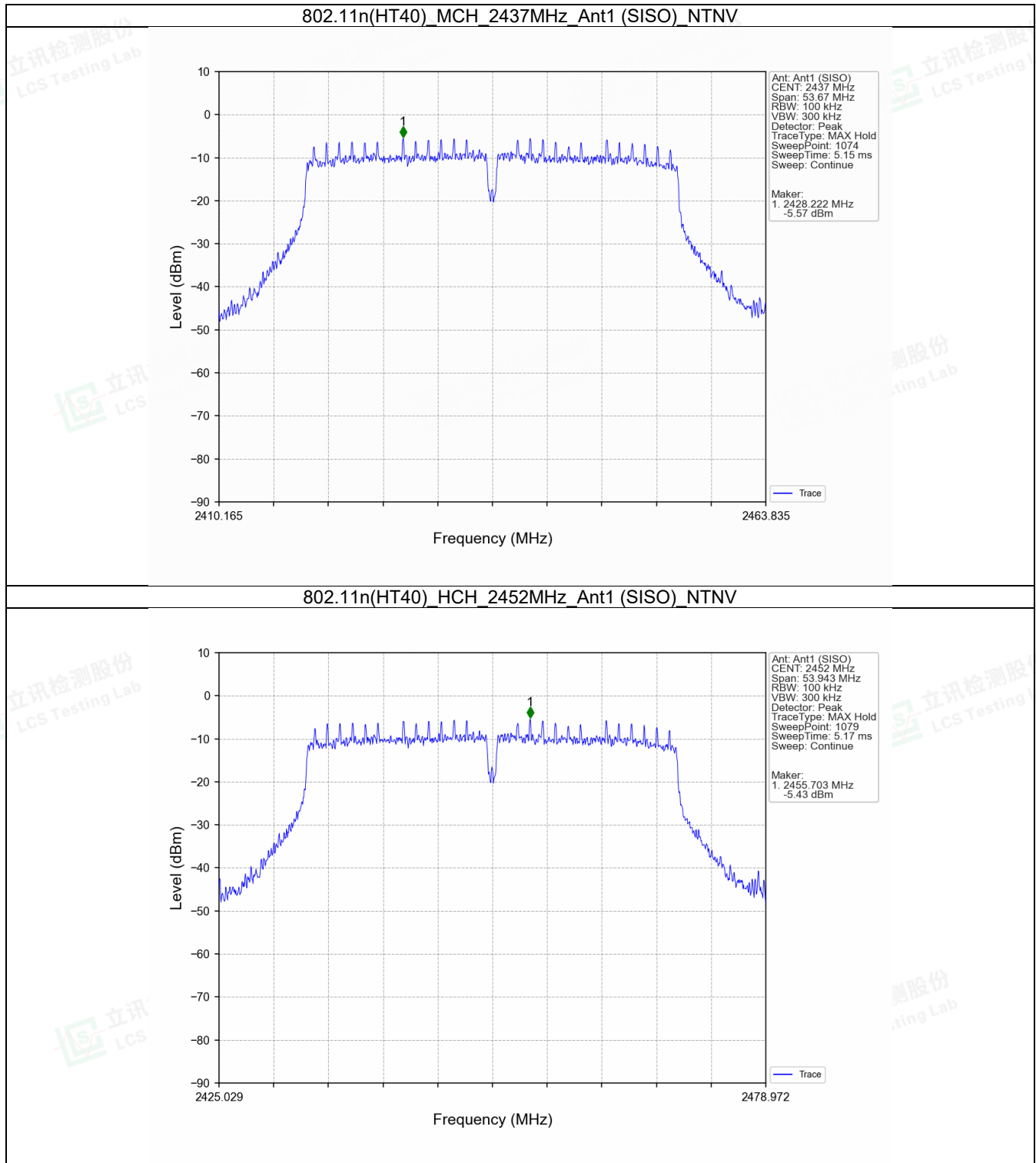


802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



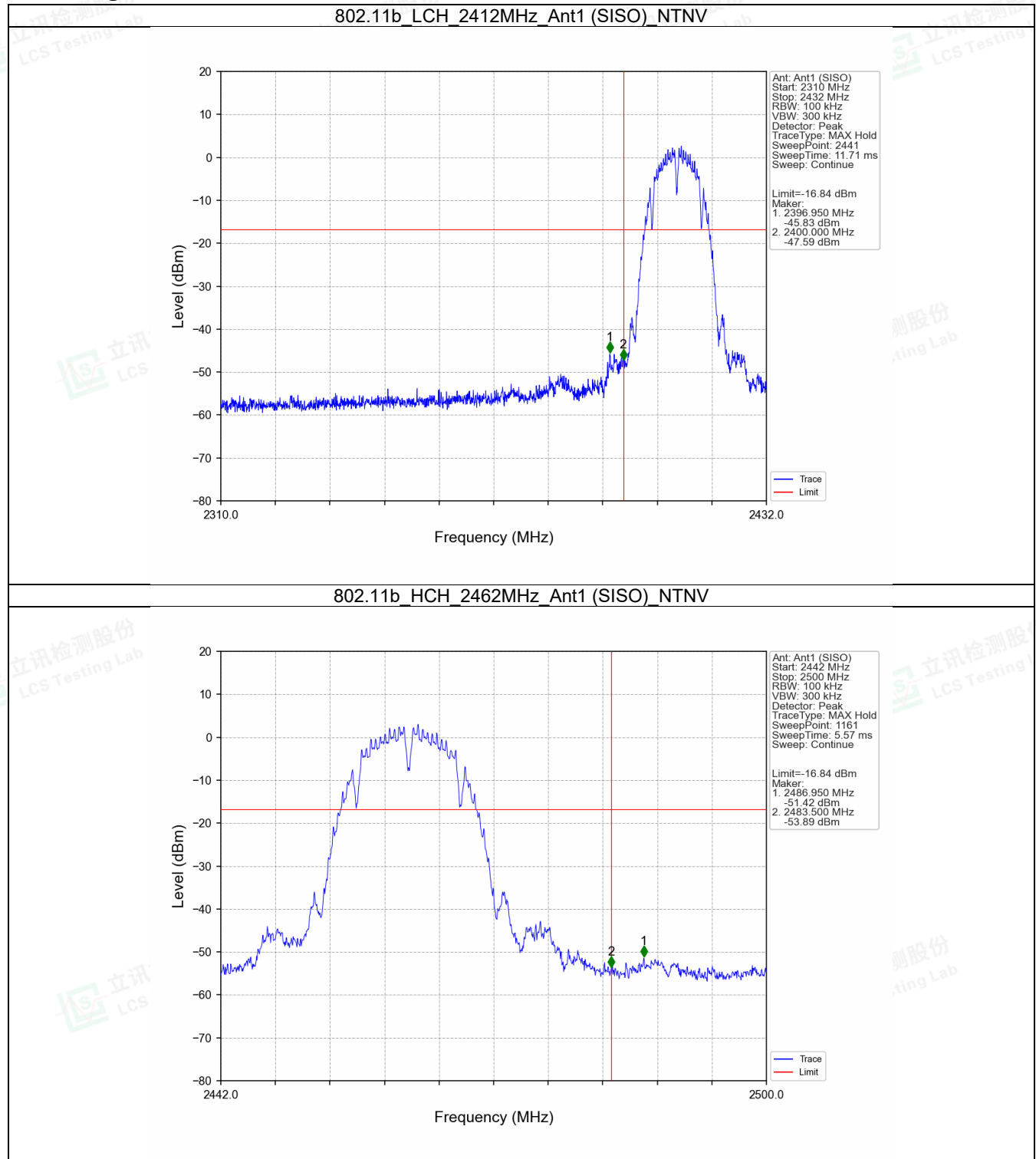
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV







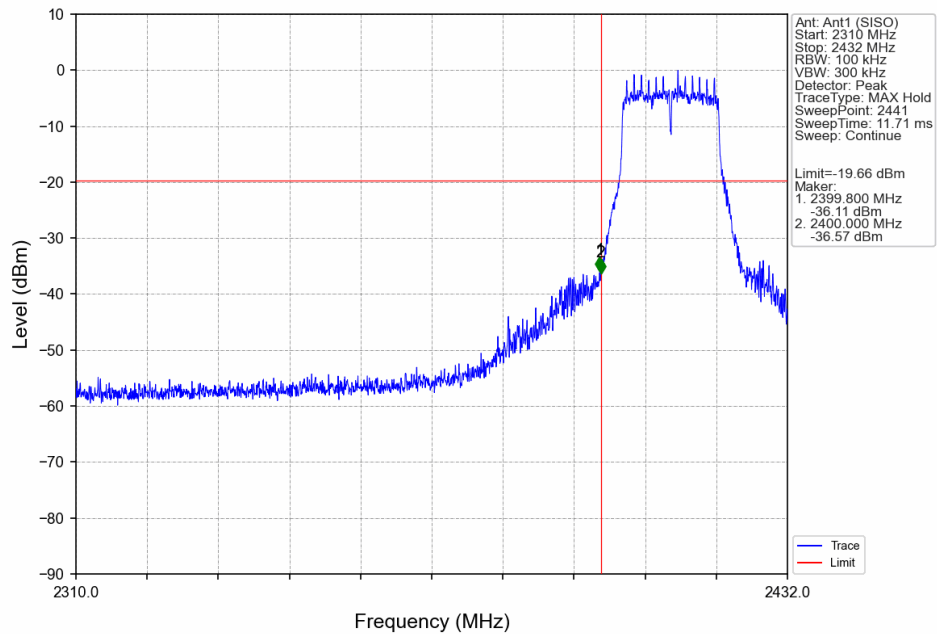
Band Edge



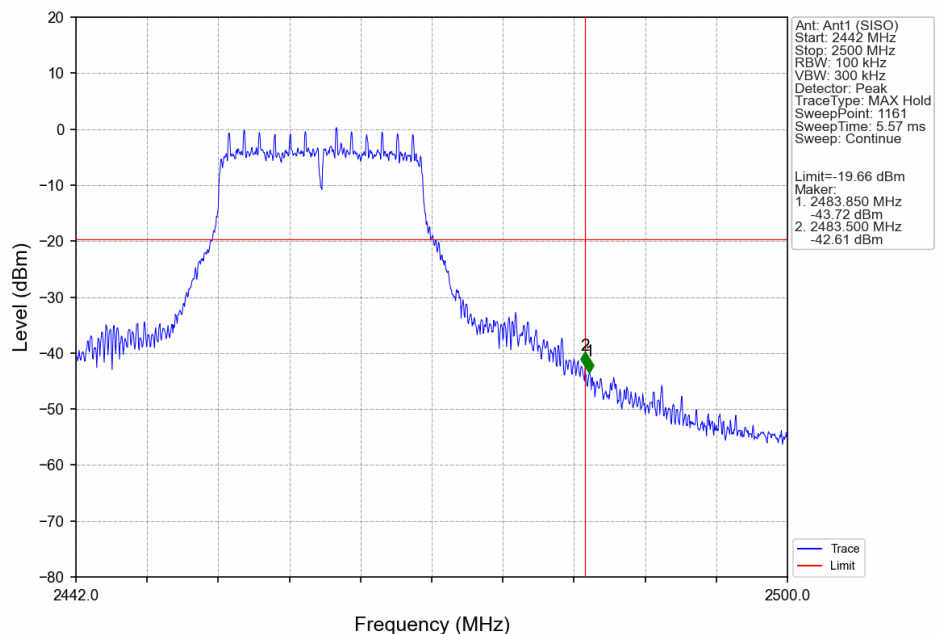
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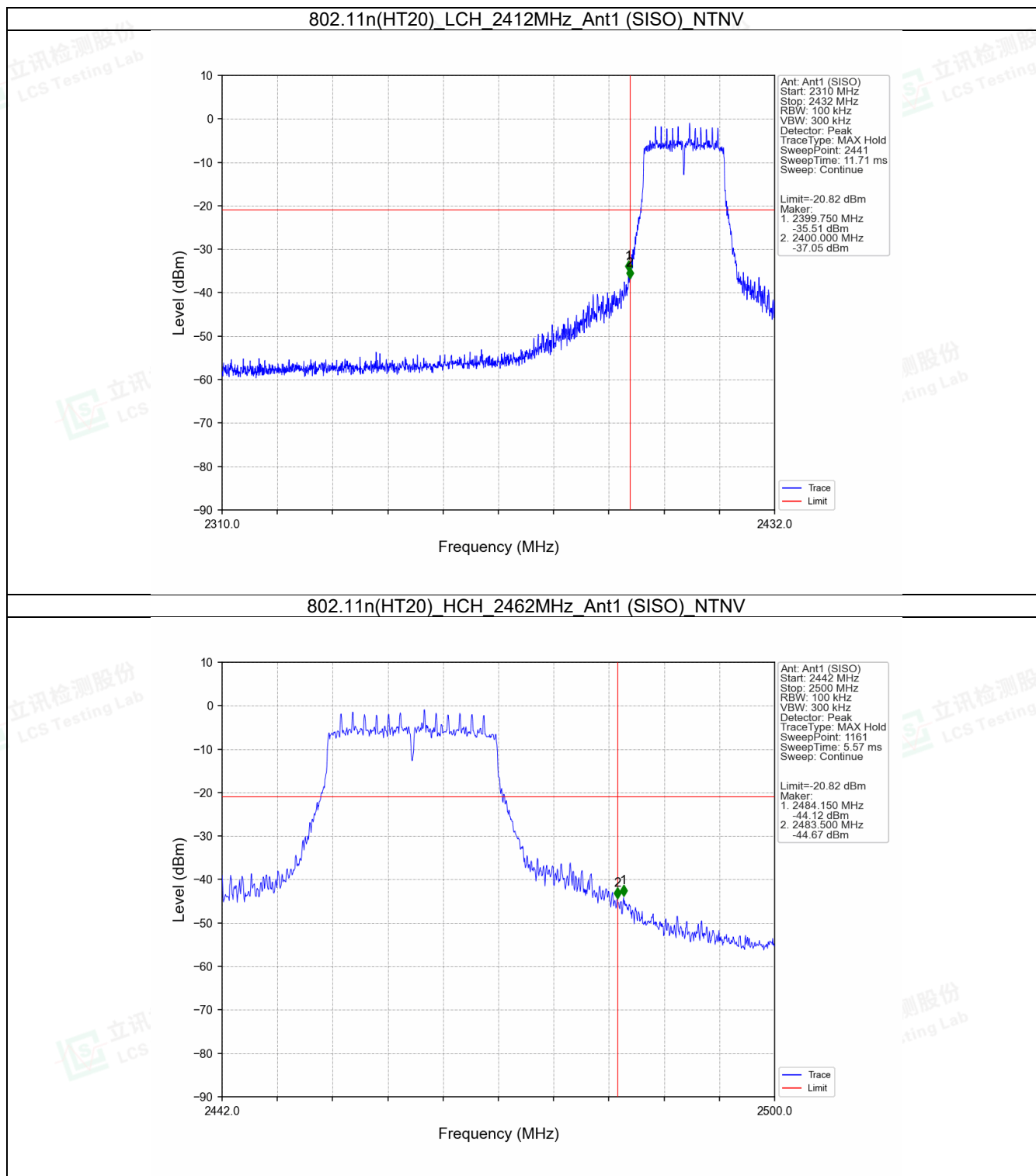


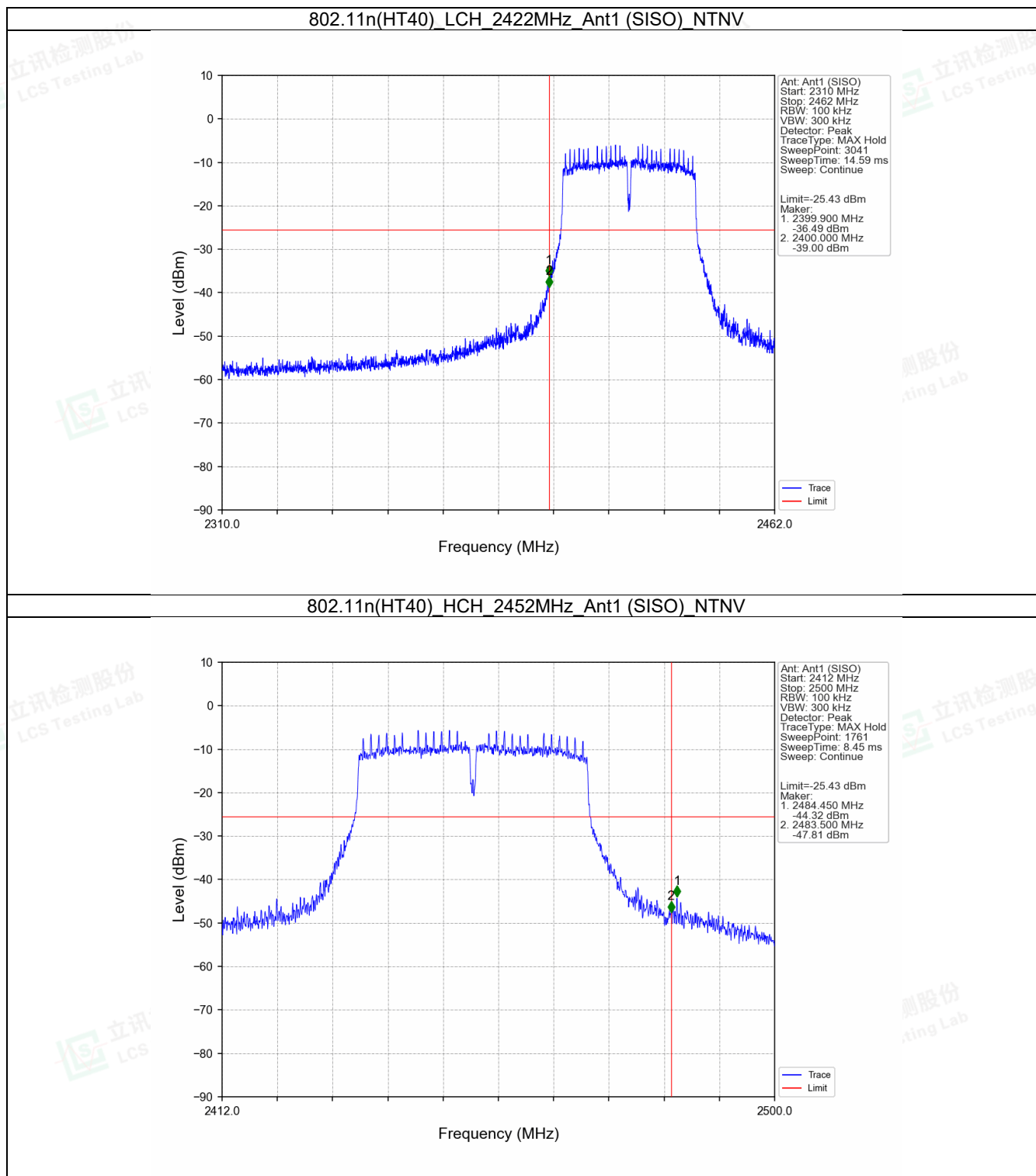
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV







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B.5 Conducted RF Spurious Emission

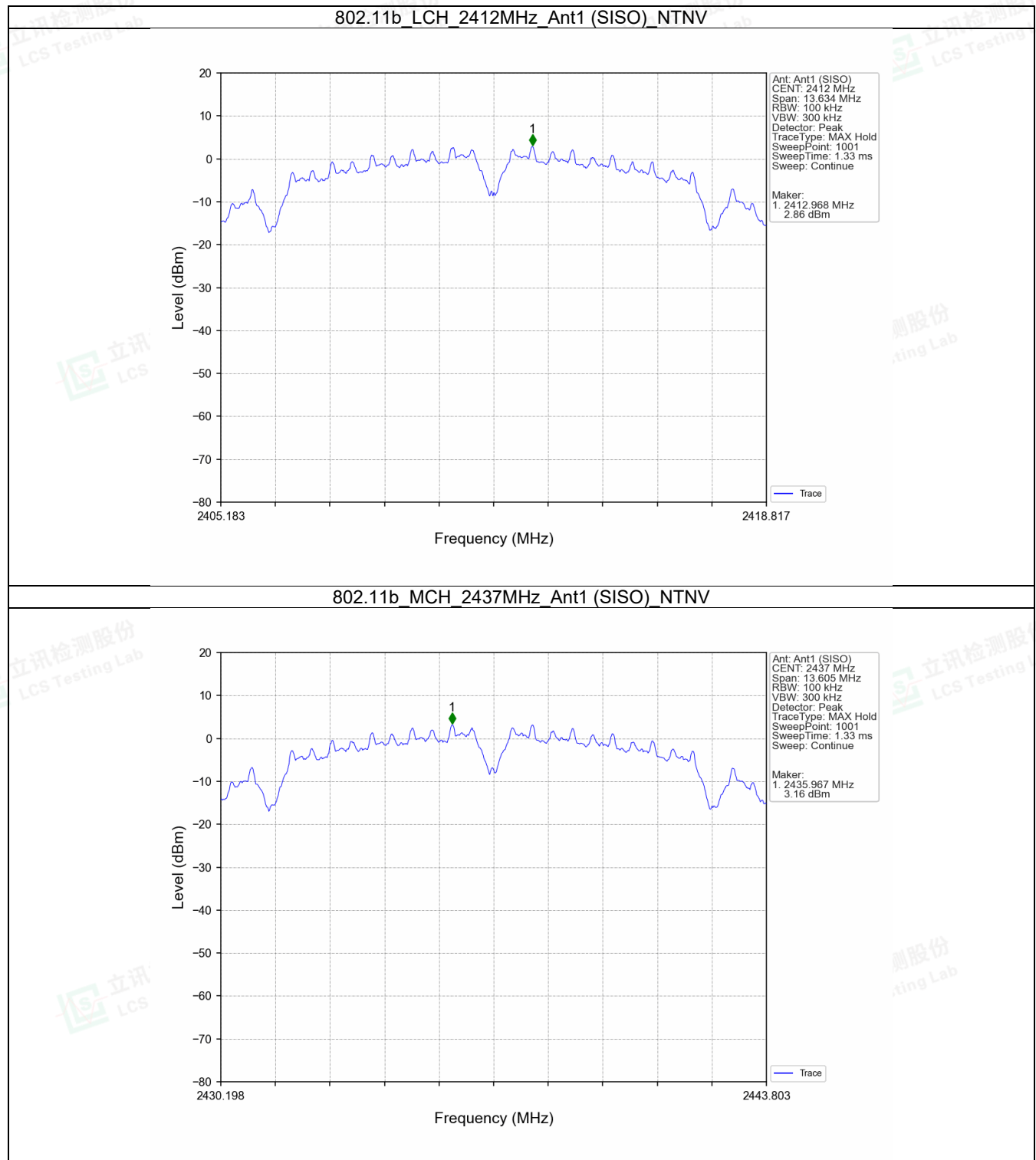
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
802.11b	SISO	2412	1	2.86
		2437	1	3.16
		2462	1	3.09
802.11g	SISO	2412	1	-0.05
		2437	1	0.34
		2462	1	0.03
802.11n (HT20)	SISO	2412	1	-1.70
		2437	1	-0.82
		2462	1	-0.93
802.11n (HT40)	SISO	2422	1	-5.77
		2437	1	-5.57
		2452	1	-5.43

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

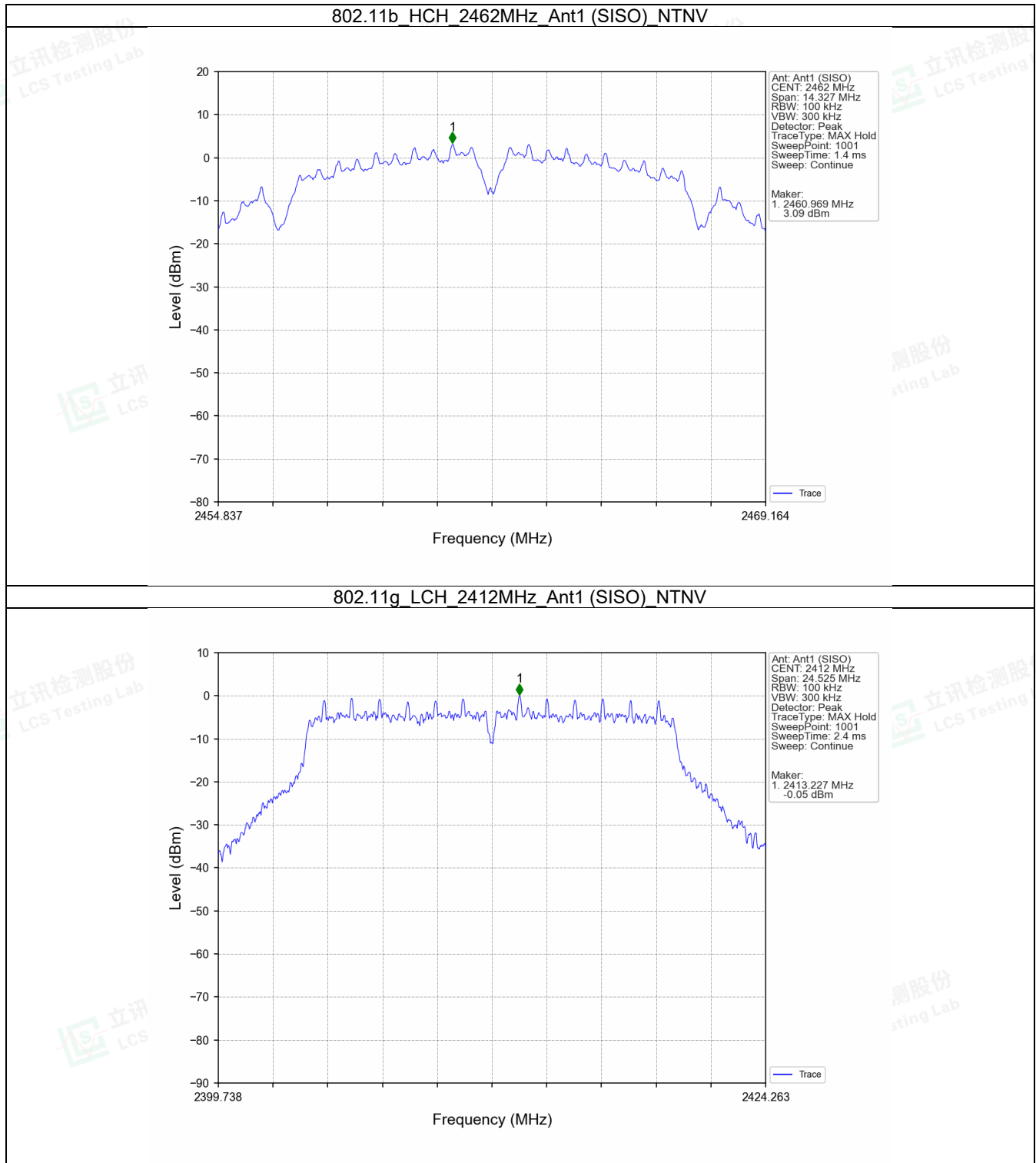


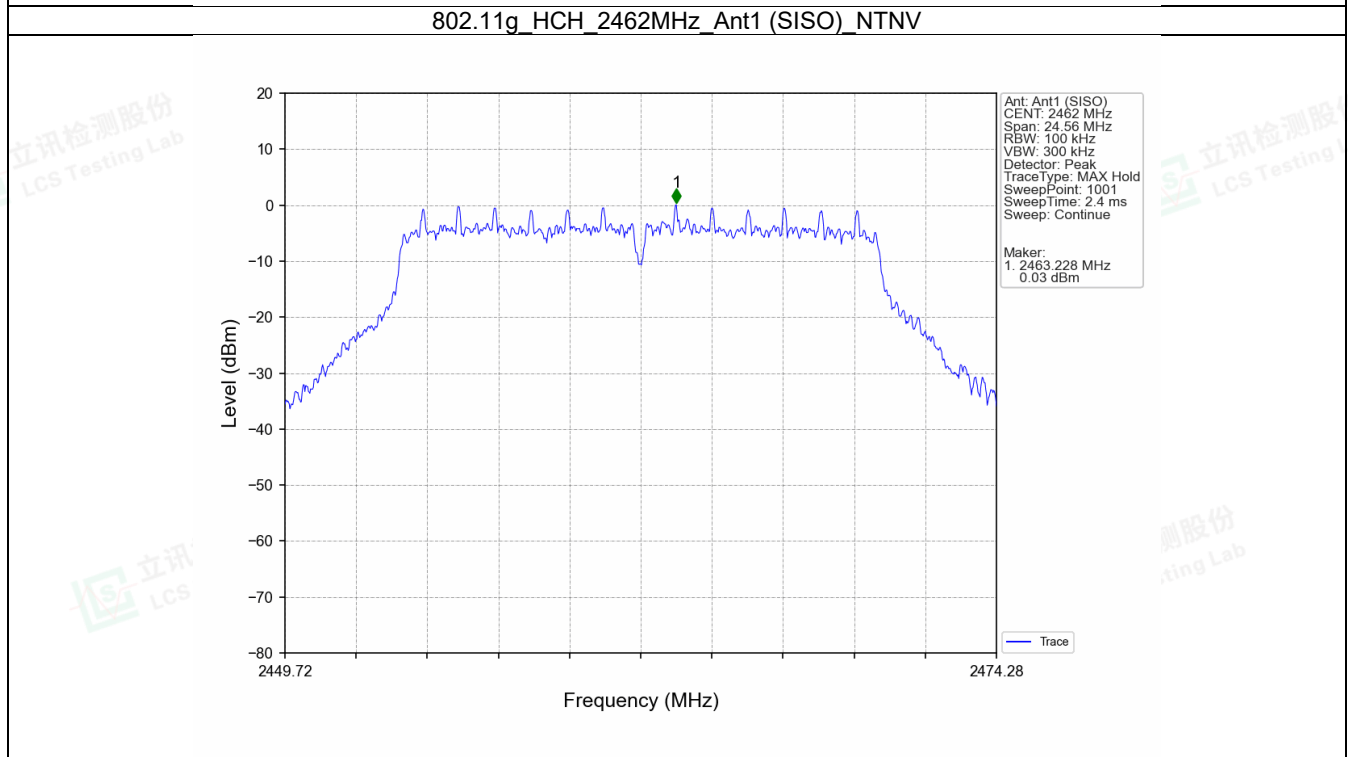
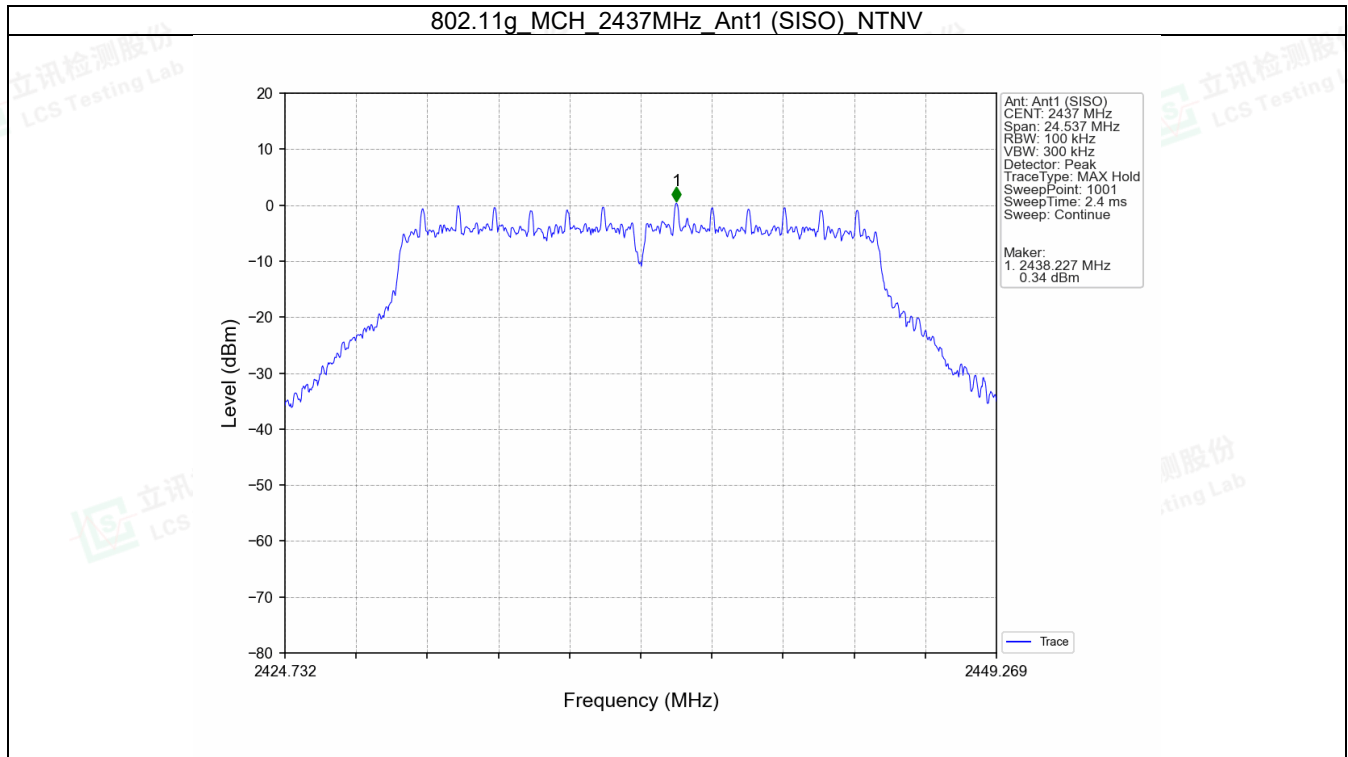


Ref



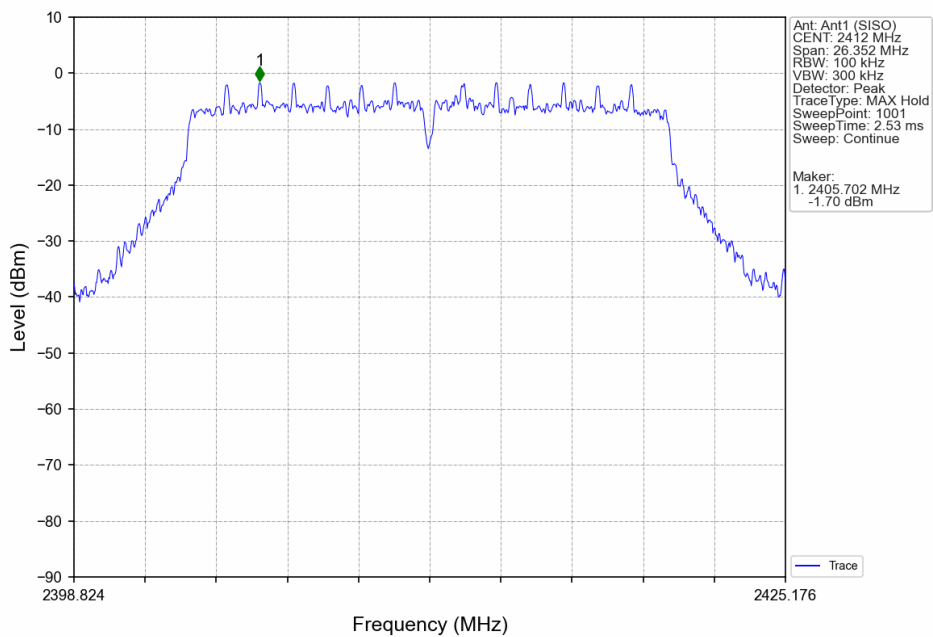
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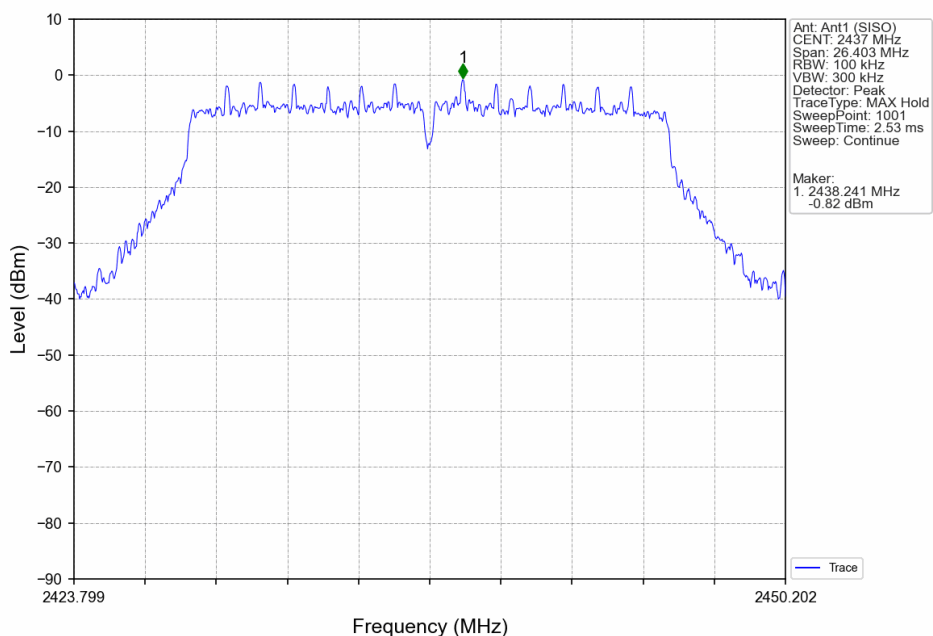


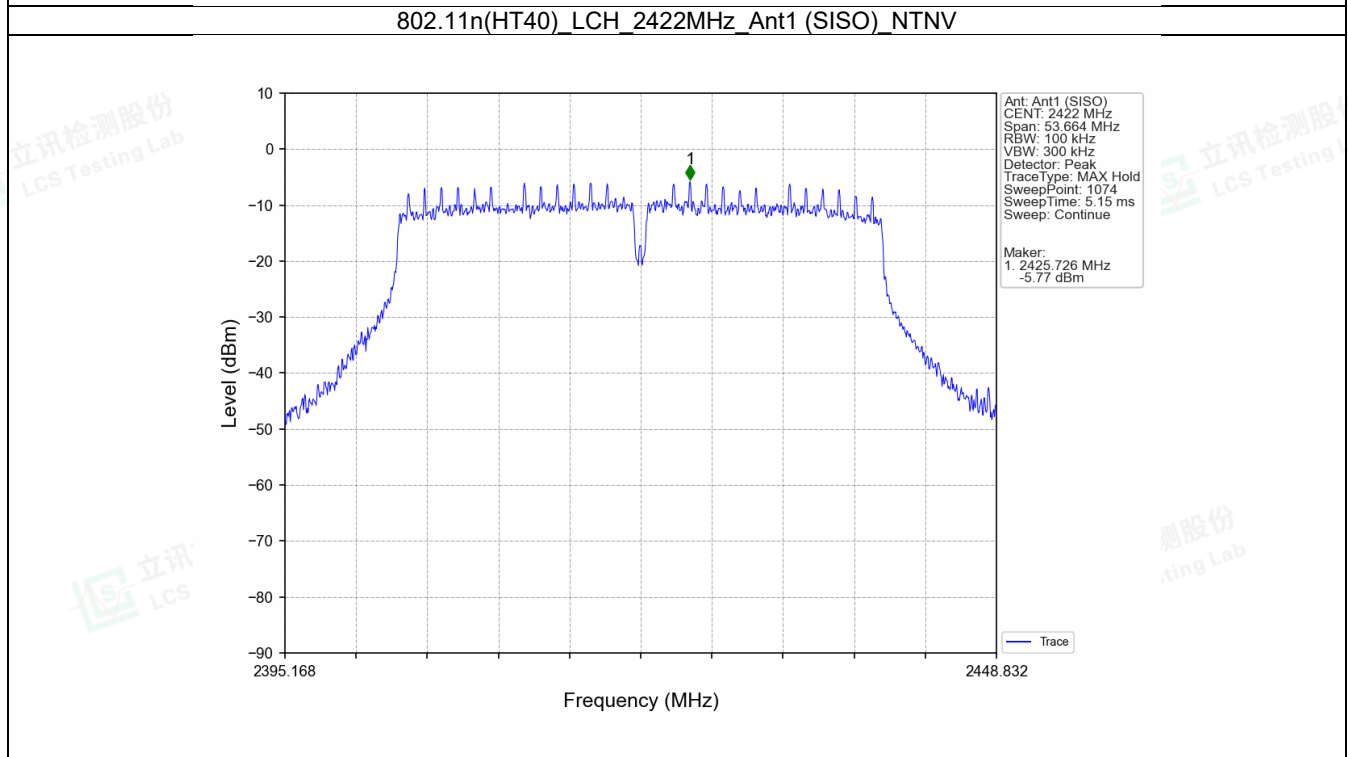
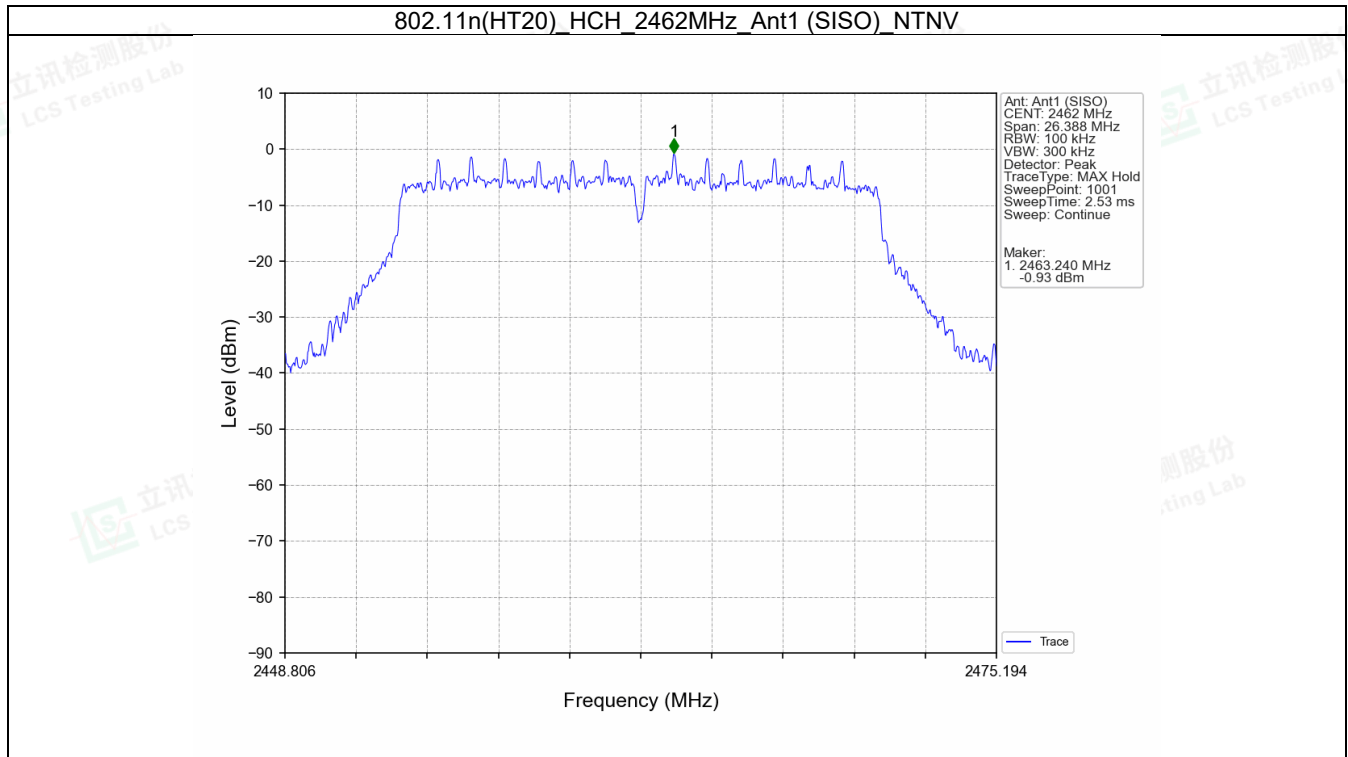


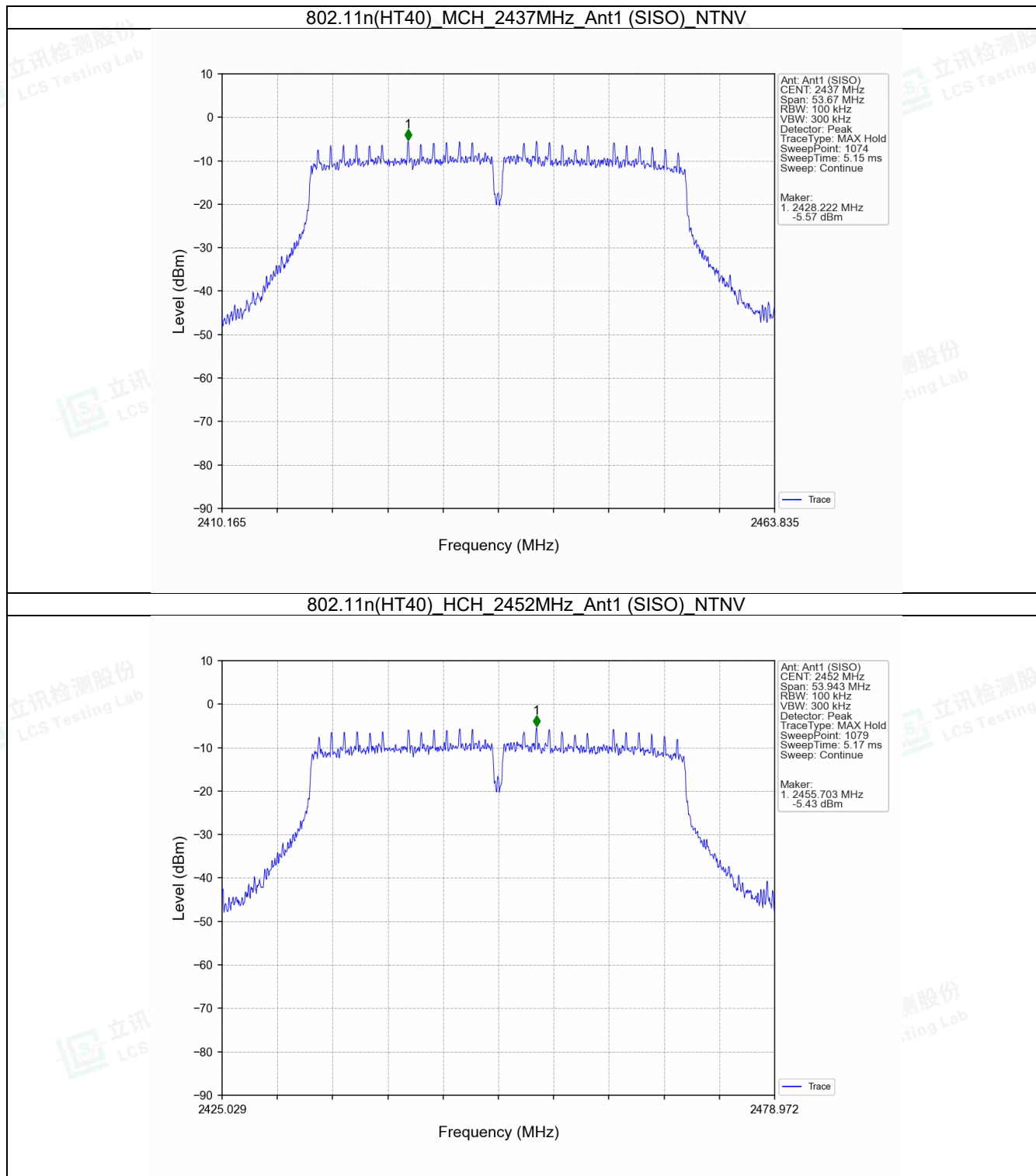
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV

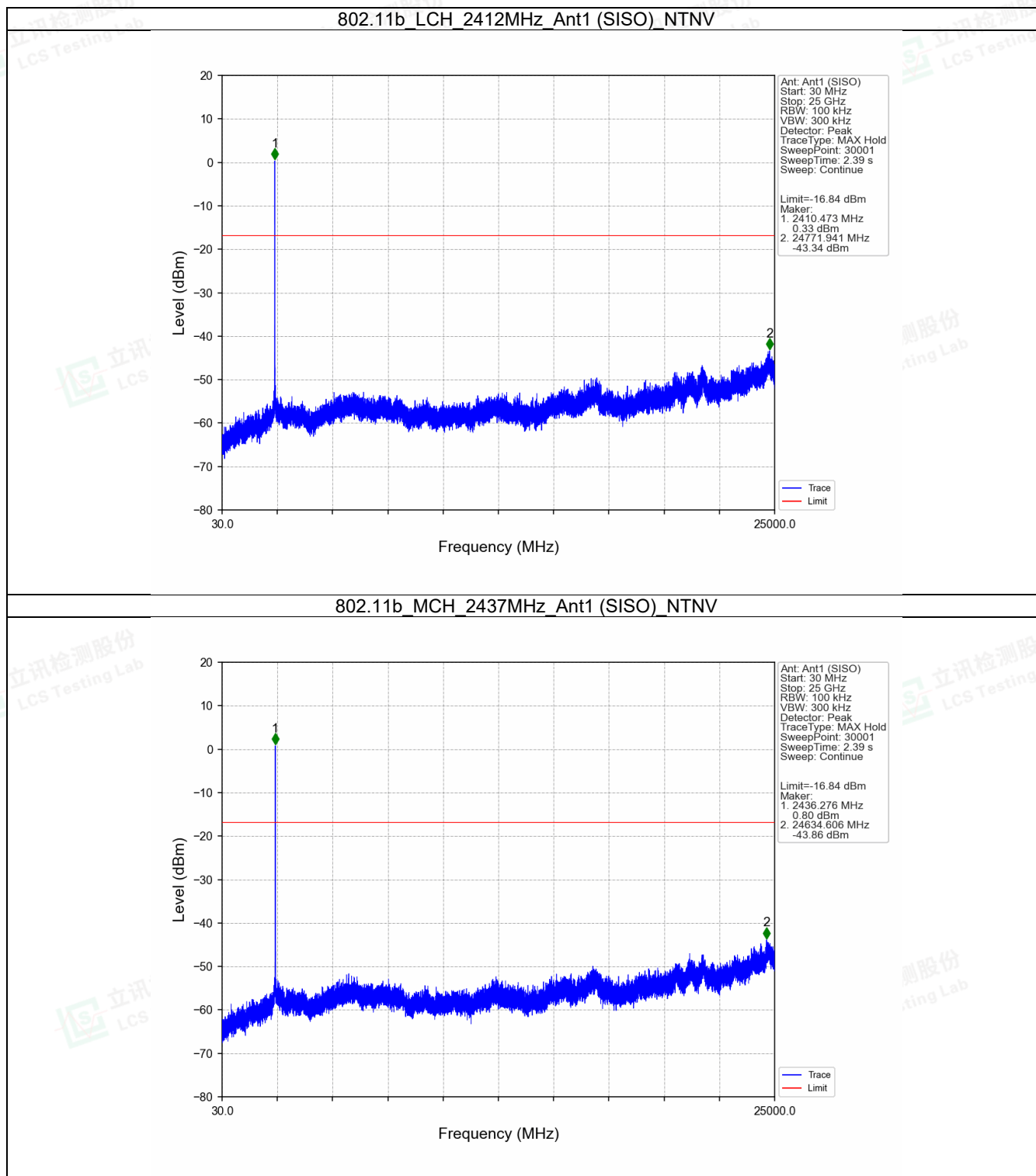








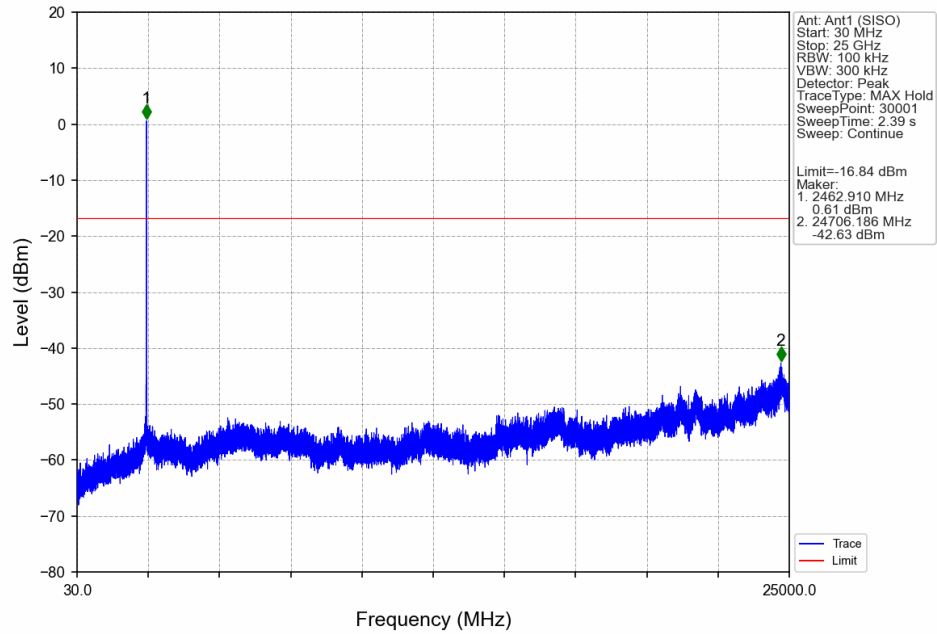
CSE



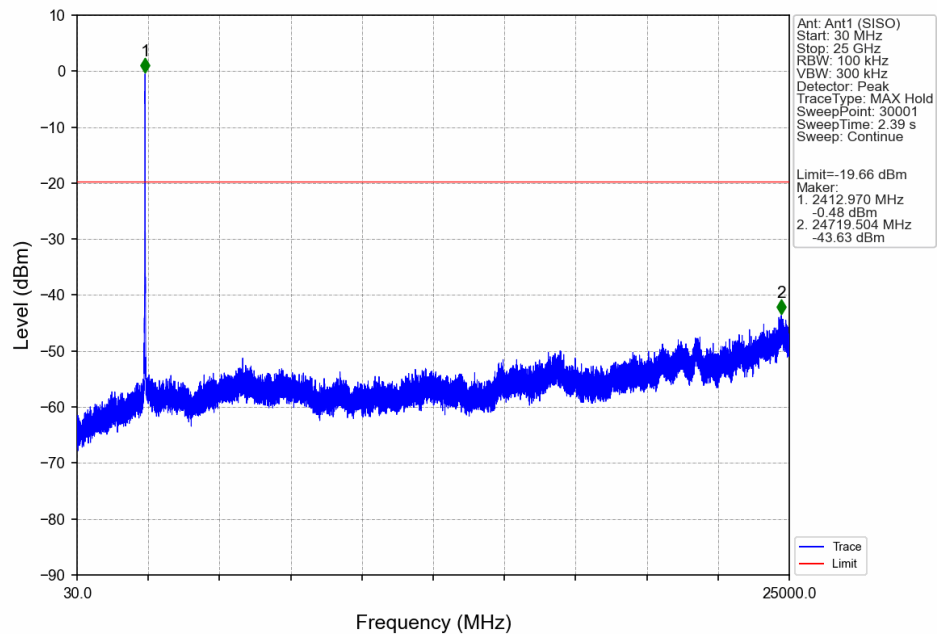
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802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

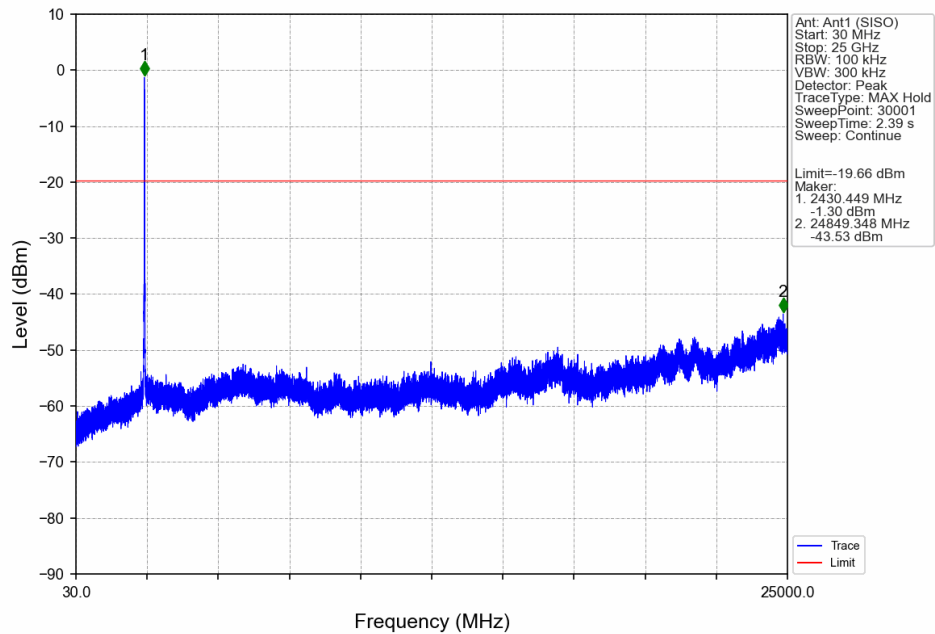


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

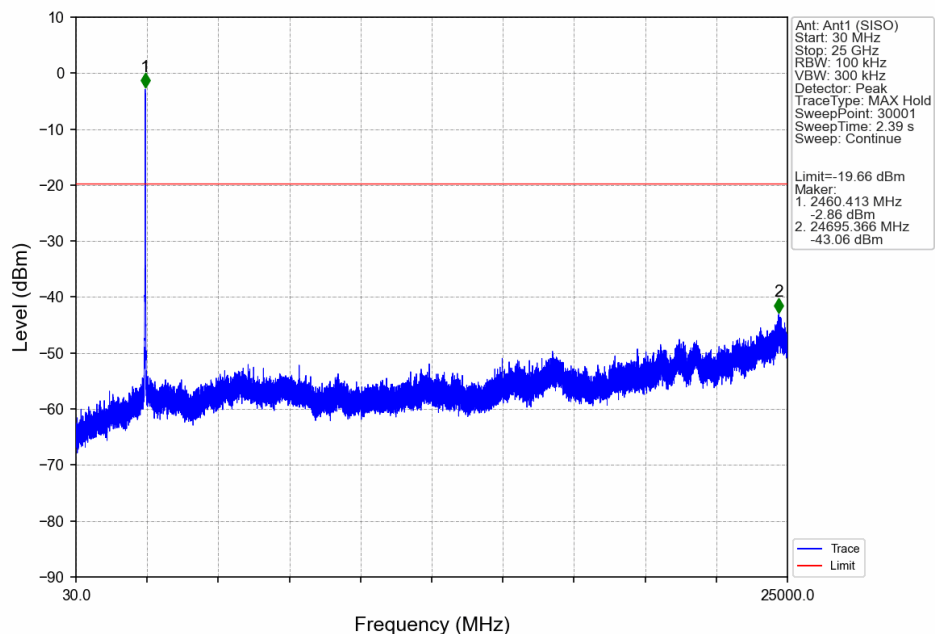


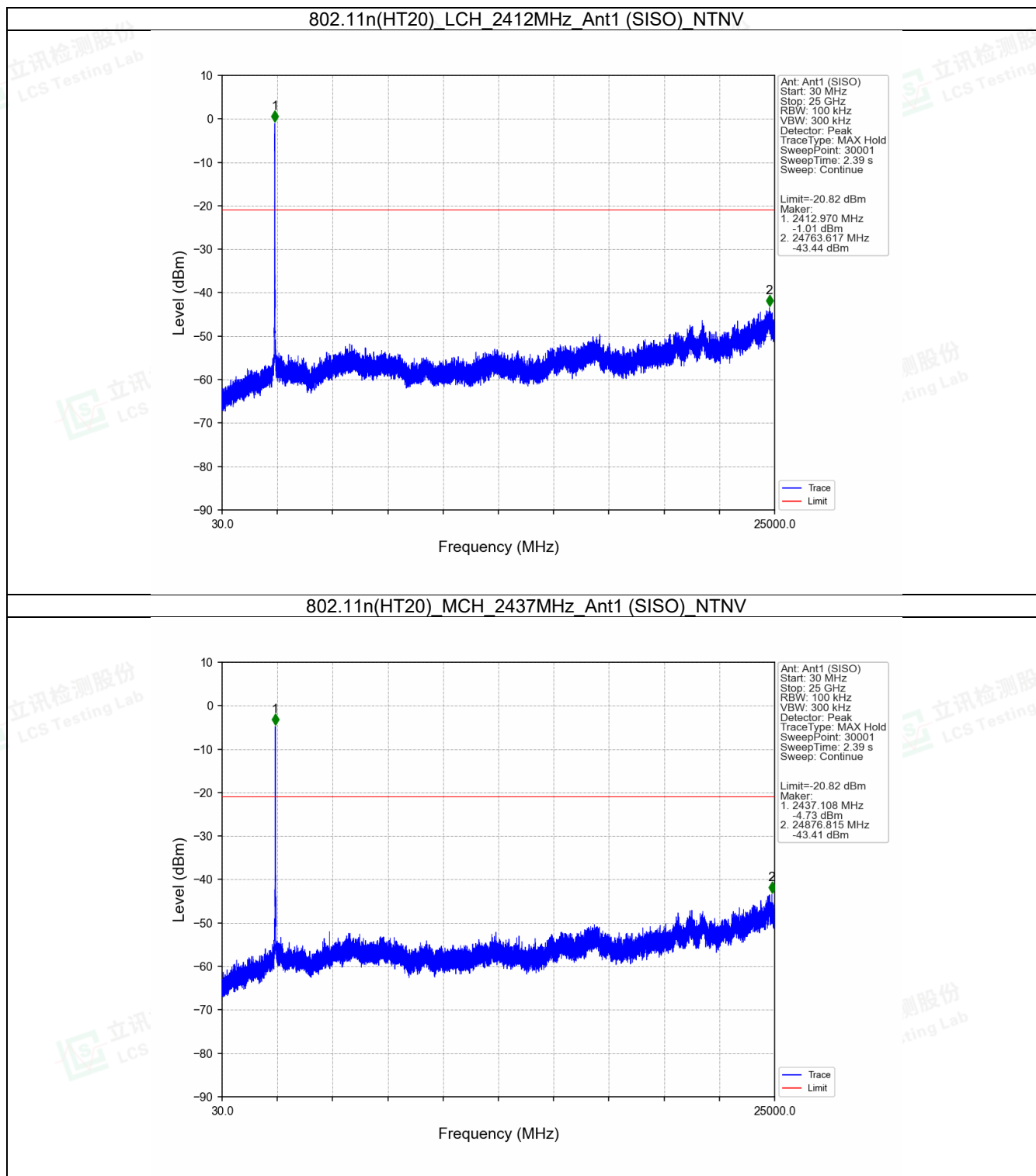


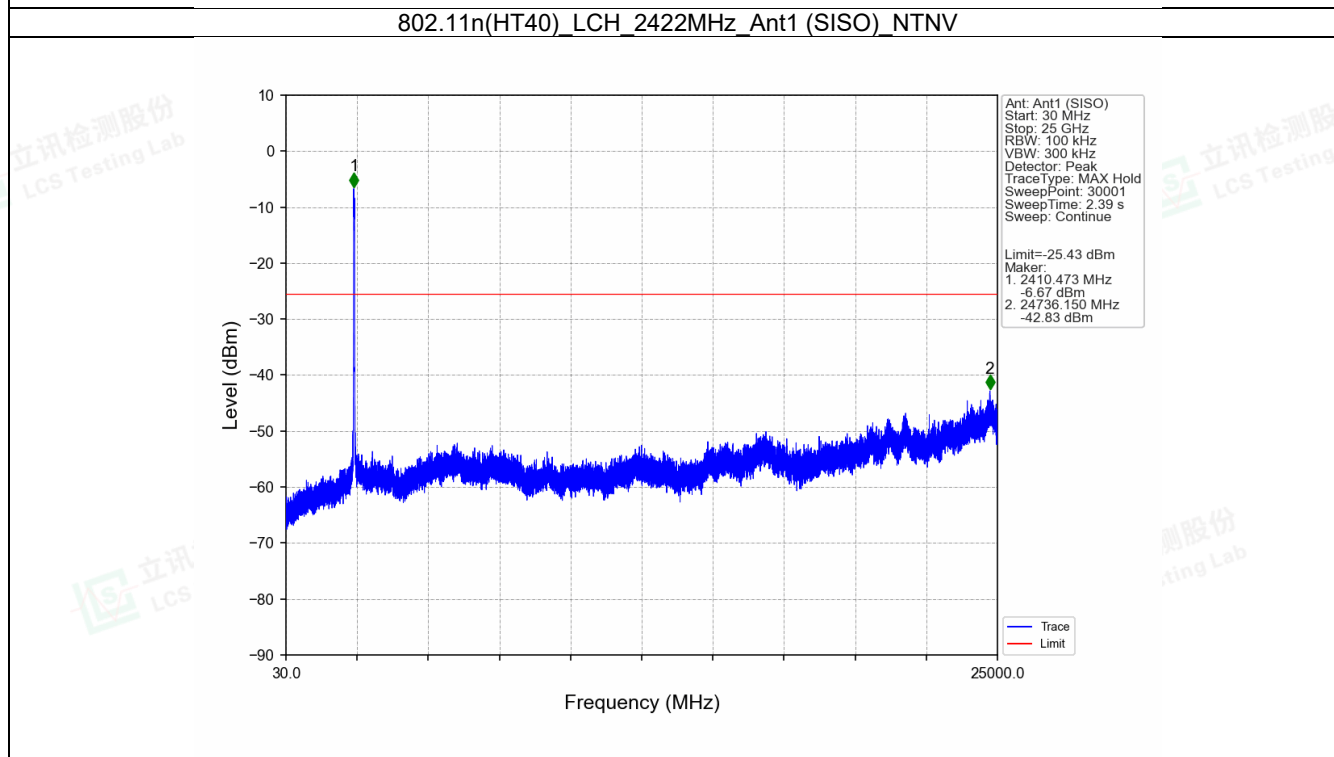
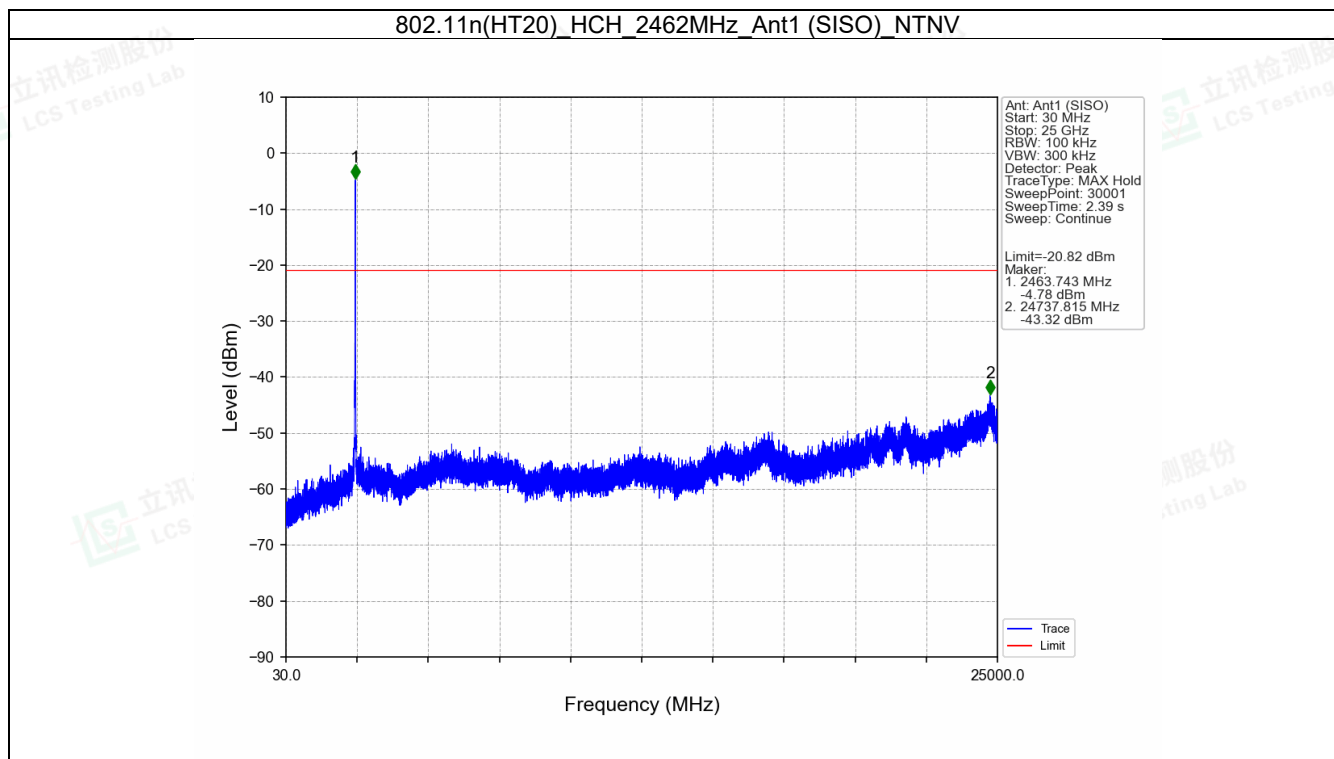
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

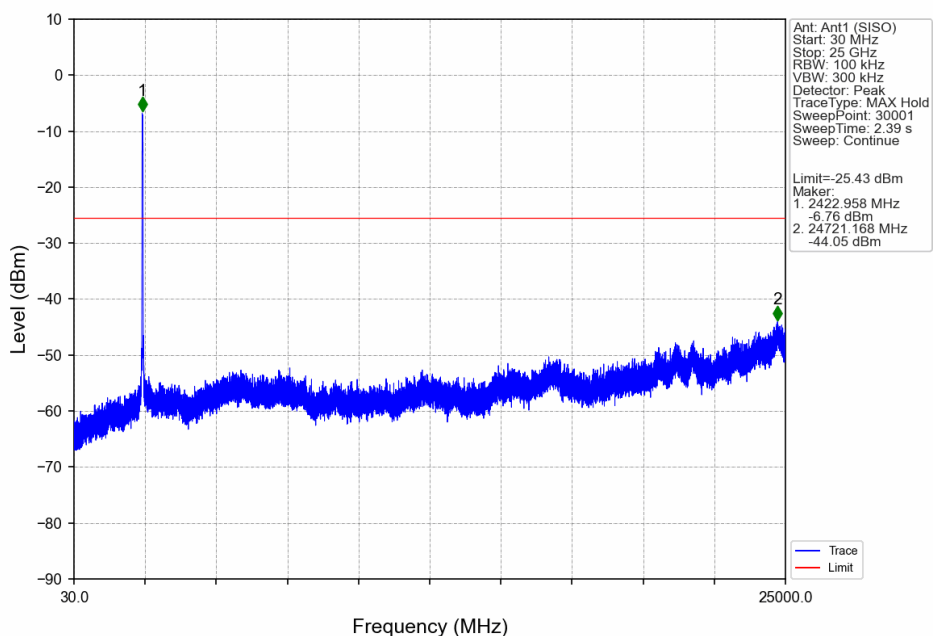




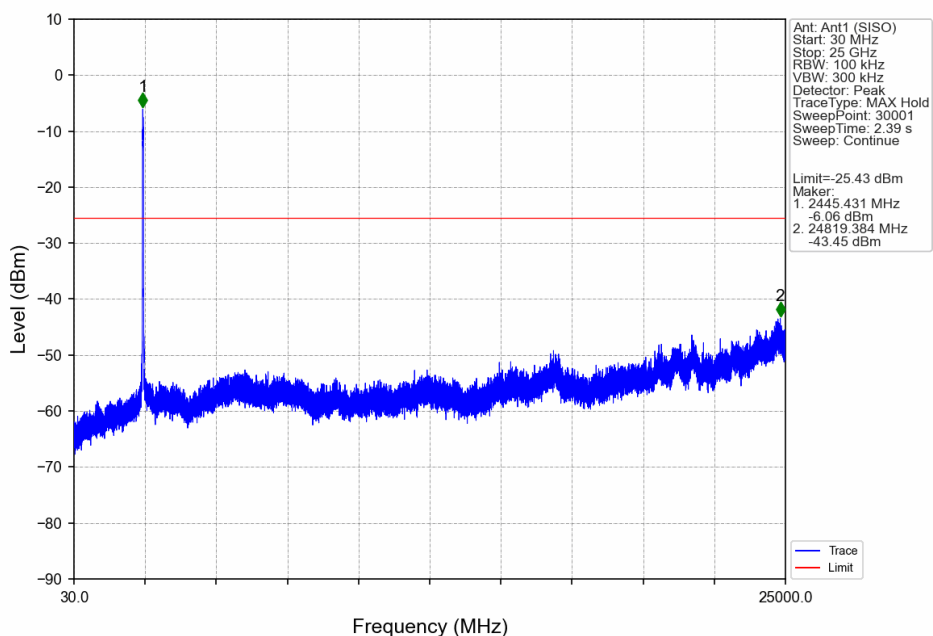




802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



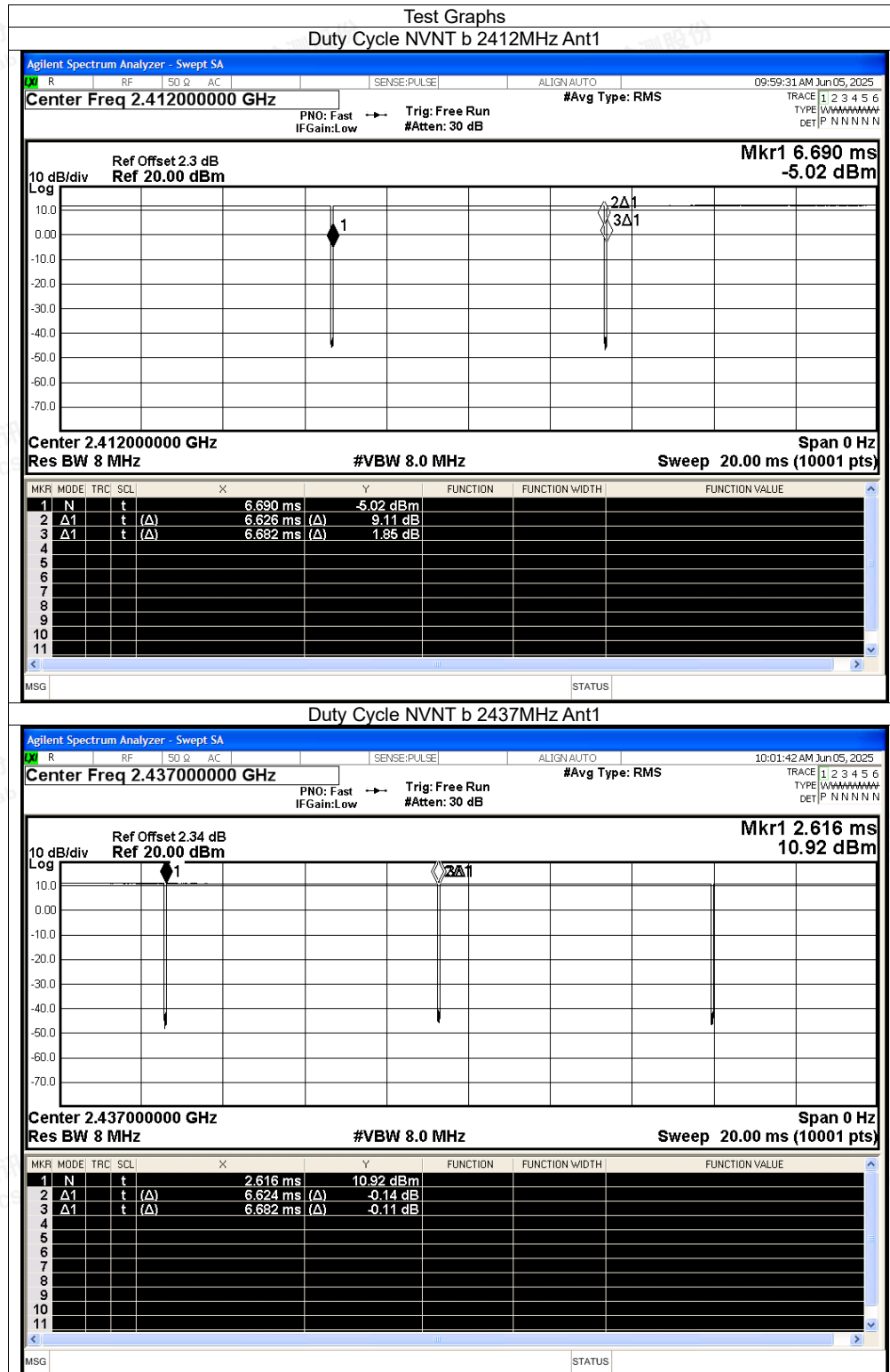


B.6 Duty Cycle

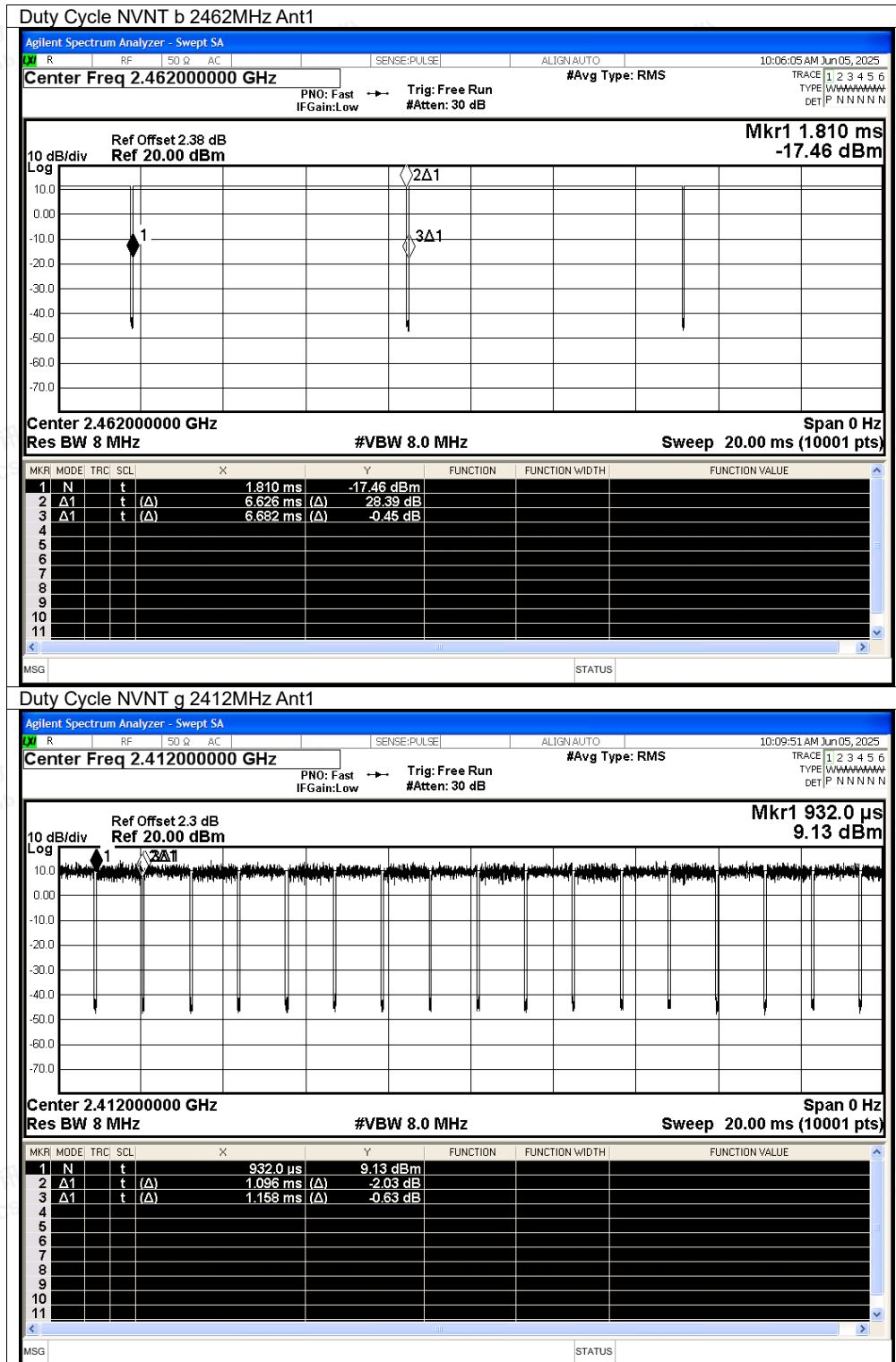
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	99.16	0	0.15
NVNT	b	2437	Ant1	99.13	0	0.15
NVNT	b	2462	Ant1	99.16	0	0.15
NVNT	g	2412	Ant1	94.65	0.24	0.91
NVNT	g	2437	Ant1	94.48	0.25	0.91
NVNT	g	2462	Ant1	94.65	0.24	0.91
NVNT	n20	2412	Ant1	93.57	0.29	1.07
NVNT	n20	2437	Ant1	93.57	0.29	1.07
NVNT	n20	2462	Ant1	93.76	0.28	1.07
NVNT	n40	2422	Ant1	87.97	0.56	2.14
NVNT	n40	2437	Ant1	88.3	0.54	2.14
NVNT	n40	2452	Ant1	87.97	0.56	2.14

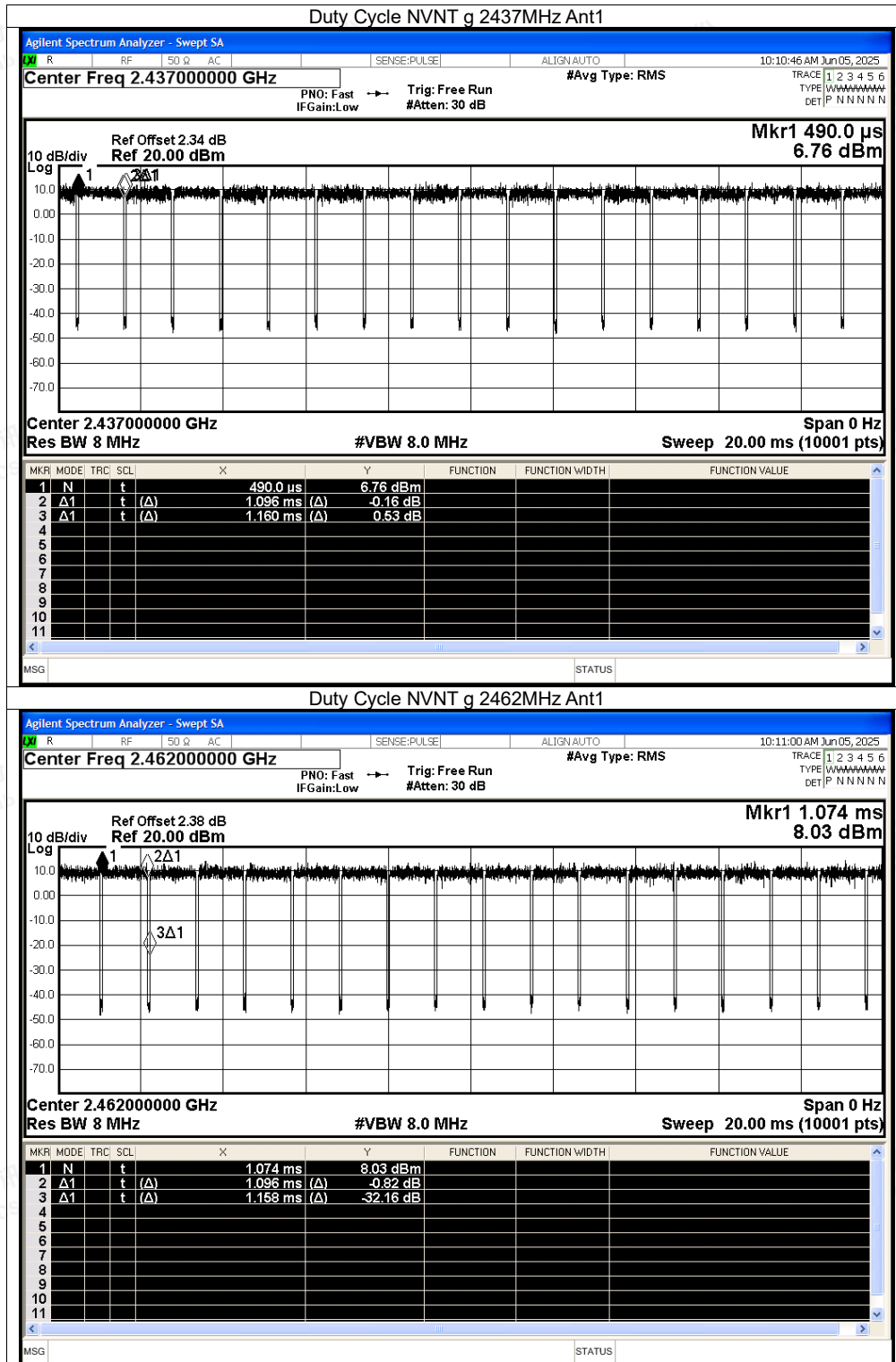


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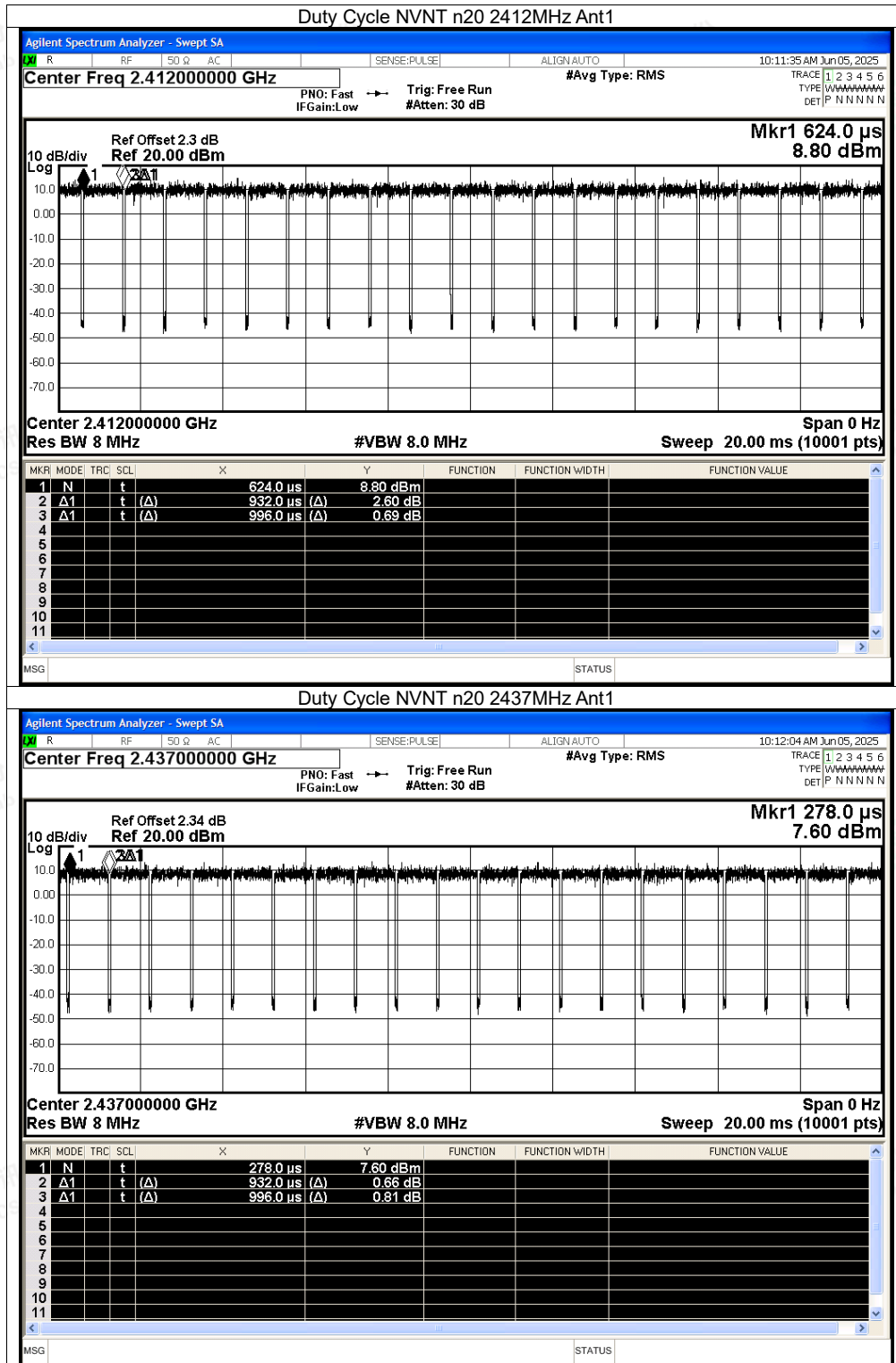


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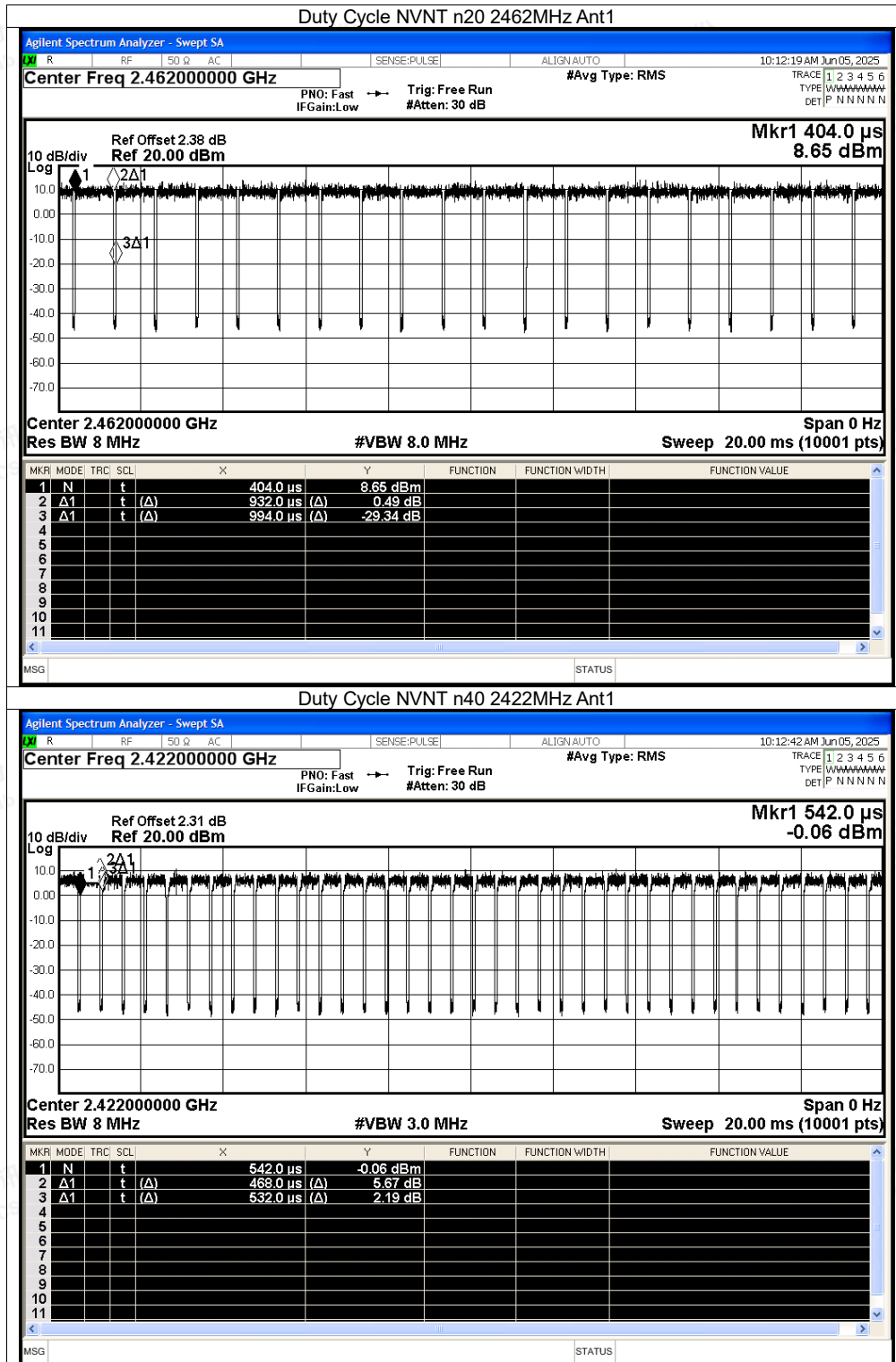




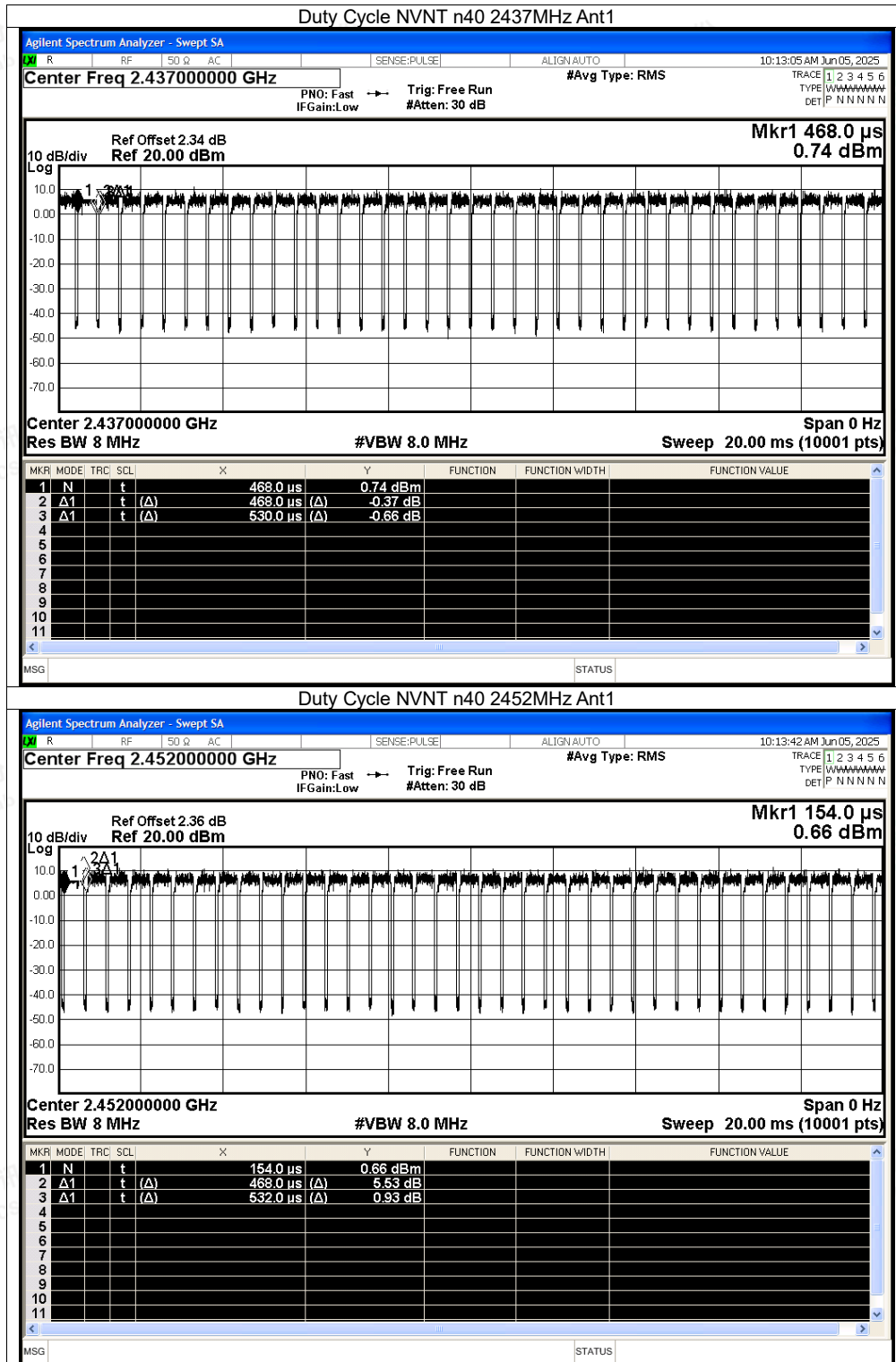
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B.7 Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	b	2412	Ant1	2310	-49.27	3	-	48.99	Peak	74	Pass
NVNT	b	2412	Ant1	2310	-58.8	3	0	39.46	Average	54	Pass
NVNT	b	2412	Ant1	2387.805	-47.05	3	-	51.21	Peak	74	Pass
NVNT	b	2412	Ant1	2389.56	-55.56	3	0	42.70	Average	54	Pass
NVNT	b	2412	Ant1	2390	-49.47	3	-	48.79	Peak	74	Pass
NVNT	b	2412	Ant1	2390	-55.86	3	0	42.40	Average	54	Pass
NVNT	b	2462	Ant1	2483.5	-48.54	3	-	49.72	Peak	74	Pass
NVNT	b	2462	Ant1	2483.5	-55.94	3	0	42.32	Average	54	Pass
NVNT	b	2462	Ant1	2489.665	-43.49	3	-	54.77	Peak	74	Pass
NVNT	b	2462	Ant1	2484.471	-55.2	3	0	43.06	Average	54	Pass
NVNT	b	2462	Ant1	2500	-50.79	3	-	47.47	Peak	74	Pass
NVNT	b	2462	Ant1	2500	-57.4	3	0	40.86	Average	54	Pass
NVNT	g	2412	Ant1	2310	-50.85	3	-	47.41	Peak	74	Pass
NVNT	g	2412	Ant1	2310	-58.25	3	0.24	40.25	Average	54	Pass
NVNT	g	2412	Ant1	2389.092	-40.19	3	-	58.07	Peak	74	Pass
NVNT	g	2412	Ant1	2389.911	-54.78	3	0.24	43.72	Average	54	Pass
NVNT	g	2412	Ant1	2390	-44.54	3	-	53.72	Peak	74	Pass
NVNT	g	2412	Ant1	2390	-54.53	3	0.24	43.97	Average	54	Pass
NVNT	g	2462	Ant1	2483.5	-37.74	3	-	60.52	Peak	74	Pass
NVNT	g	2462	Ant1	2483.5	-50.06	3	0.24	48.44	Average	54	Pass
NVNT	g	2462	Ant1	2484.259	-32.97	3	-	65.29	Peak	74	Pass
NVNT	g	2462	Ant1	2484.206	-49.94	3	0.24	48.56	Average	54	Pass
NVNT	g	2462	Ant1	2500	-49.75	3	-	48.51	Peak	74	Pass
NVNT	g	2462	Ant1	2500	-57.41	3	0.24	41.09	Average	54	Pass
NVNT	n20	2412	Ant1	2310	-49.65	3	-	48.61	Peak	74	Pass
NVNT	n20	2412	Ant1	2310	-58.44	3	0.29	40.11	Average	54	Pass
NVNT	n20	2412	Ant1	2388.624	-40.24	3	-	58.02	Peak	74	Pass
NVNT	n20	2412	Ant1	2389.794	-53.2	3	0.29	45.35	Average	54	Pass
NVNT	n20	2412	Ant1	2390	-41.21	3	-	57.05	Peak	74	Pass
NVNT	n20	2412	Ant1	2390	-53.45	3	0.29	45.10	Average	54	Pass
NVNT	n20	2462	Ant1	2483.5	-33.13	3	-	65.13	Peak	74	Pass
NVNT	n20	2462	Ant1	2483.5	-49.52	3	0.28	49.02	Average	54	Pass
NVNT	n20	2462	Ant1	2483.994	-28.53	3	-	69.73	Peak	74	Pass
NVNT	n20	2462	Ant1	2483.782	-48.28	3	0.28	50.26	Average	54	Pass
NVNT	n20	2462	Ant1	2500	-50	3	-	48.26	Peak	74	Pass
NVNT	n20	2462	Ant1	2500	-57.92	3	0.28	40.62	Average	54	Pass
NVNT	n40	2422	Ant1	2310	-50.02	3	-	48.24	Peak	74	Pass
NVNT	n40	2422	Ant1	2310	-58.69	3	0.56	40.13	Average	54	Pass
NVNT	n40	2422	Ant1	2389.804	-36.92	3	-	61.34	Peak	74	Pass
NVNT	n40	2422	Ant1	2389.662	-52.7	3	0.56	46.12	Average	54	Pass
NVNT	n40	2422	Ant1	2390	-38.95	3	-	59.31	Peak	74	Pass
NVNT	n40	2422	Ant1	2390	-53.83	3	0.56	44.99	Average	54	Pass
NVNT	n40	2452	Ant1	2483.5	-33.63	3	-	64.63	Peak	74	Pass
NVNT	n40	2452	Ant1	2483.5	-45.64	3	0.56	53.18	Average	54	Pass
NVNT	n40	2452	Ant1	2485.258	-27.38	3	-	70.88	Peak	74	Pass
NVNT	n40	2452	Ant1	2483.698	-45.9	3	0.56	52.92	Average	54	Pass
NVNT	n40	2452	Ant1	2500	-50.59	3	-	47.67	Peak	74	Pass
NVNT	n40	2452	Ant1	2500	-57.35	3	0.56	40.91	Average	54	Pass

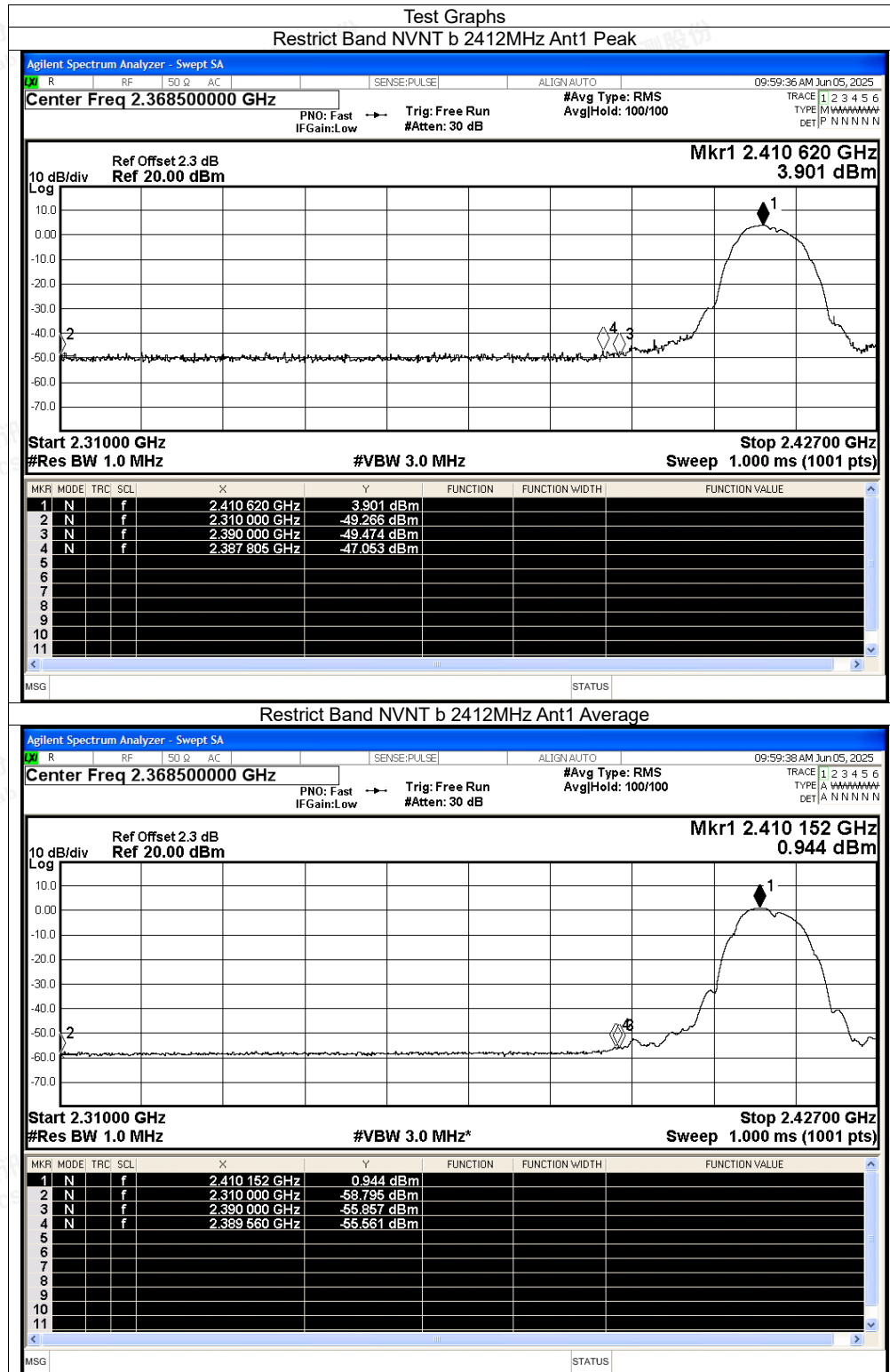


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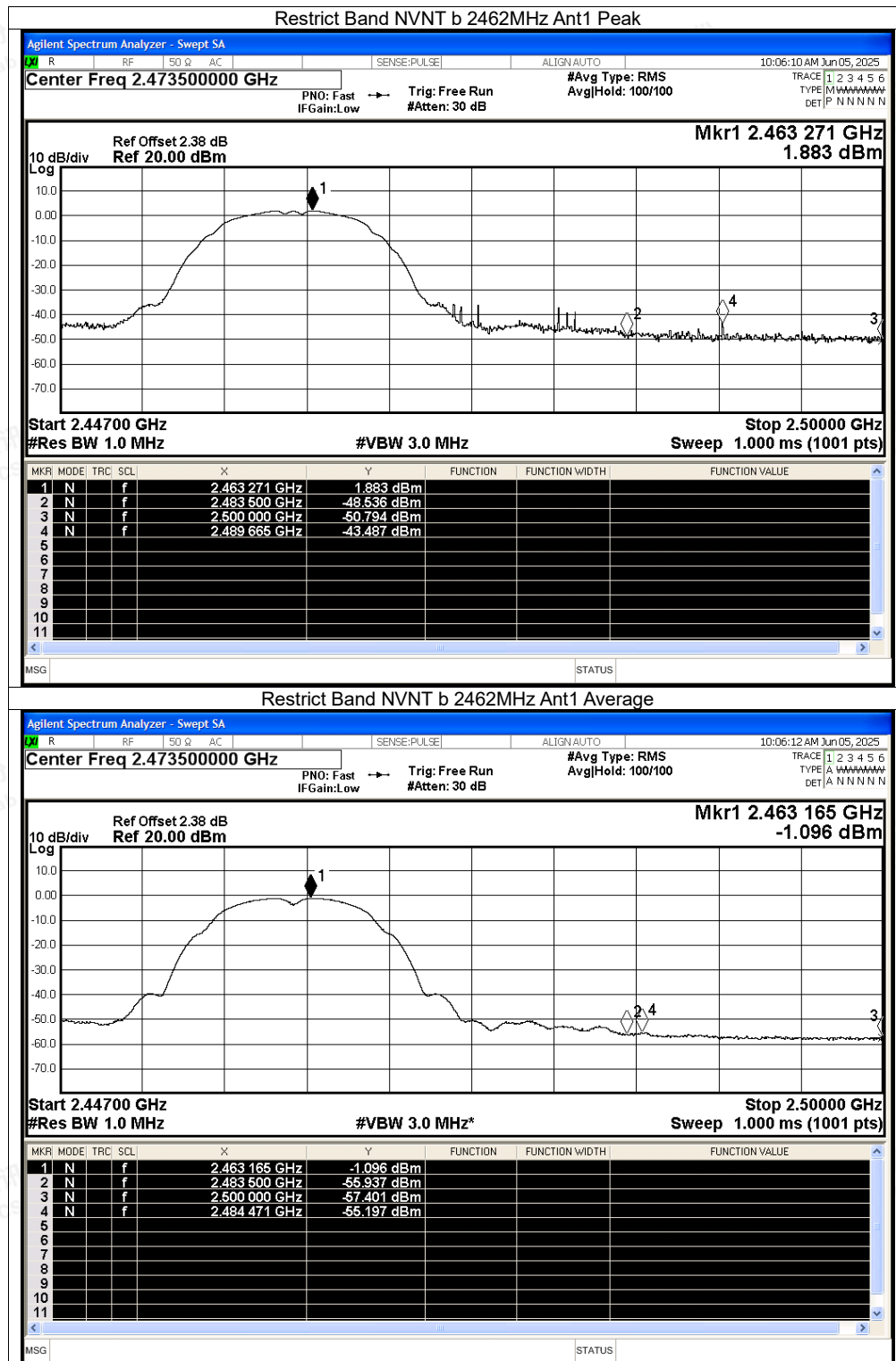
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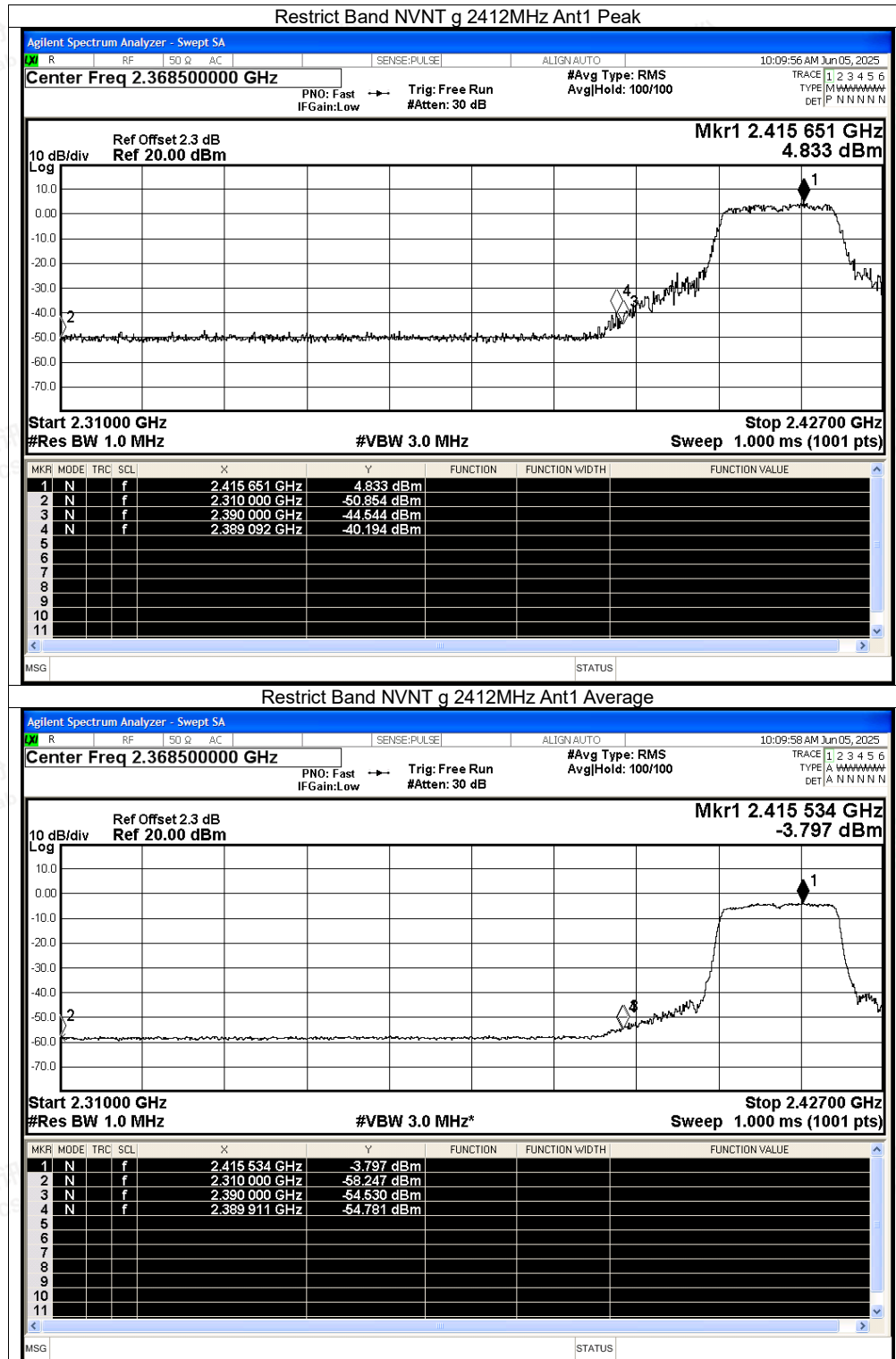
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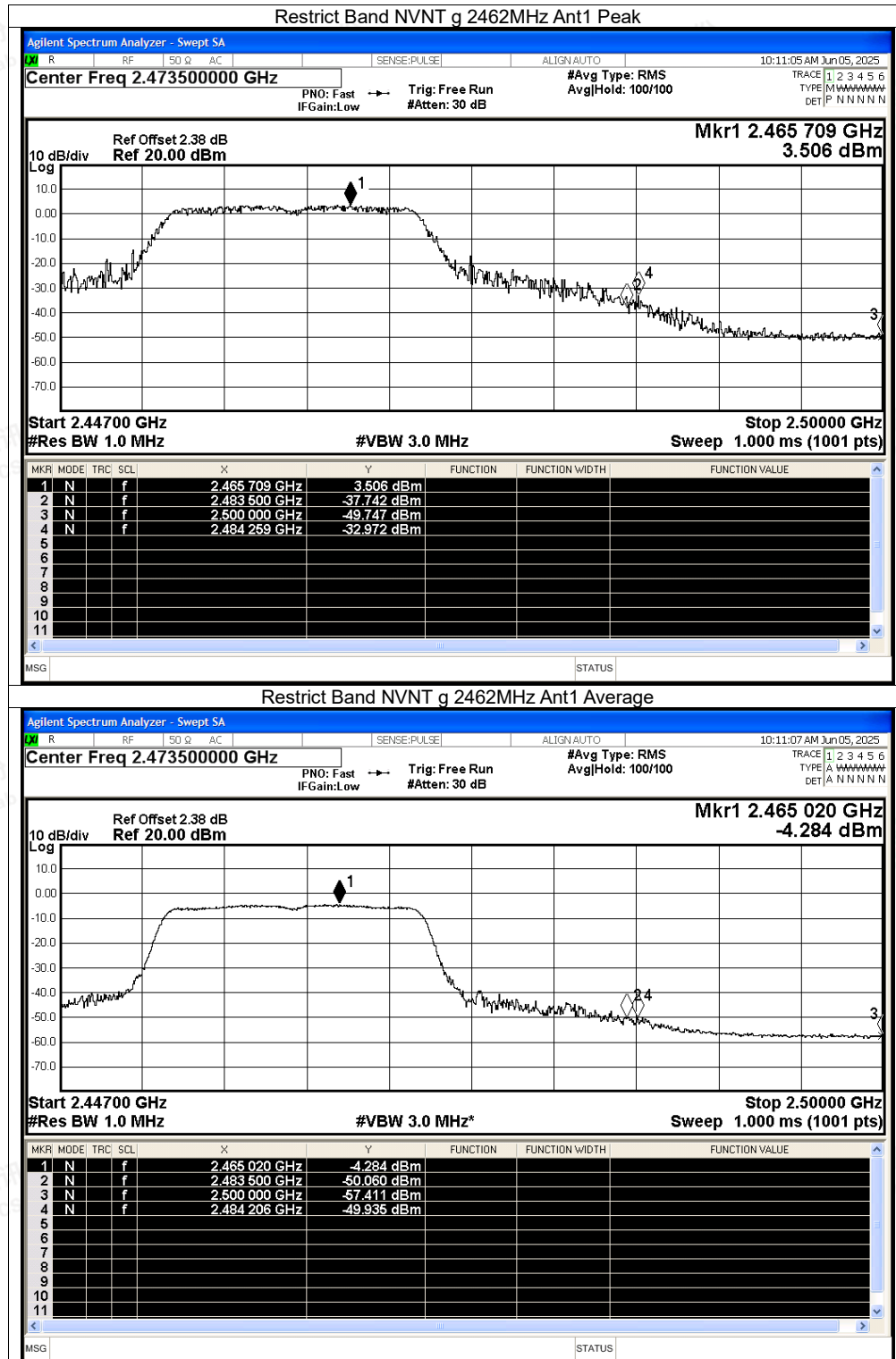
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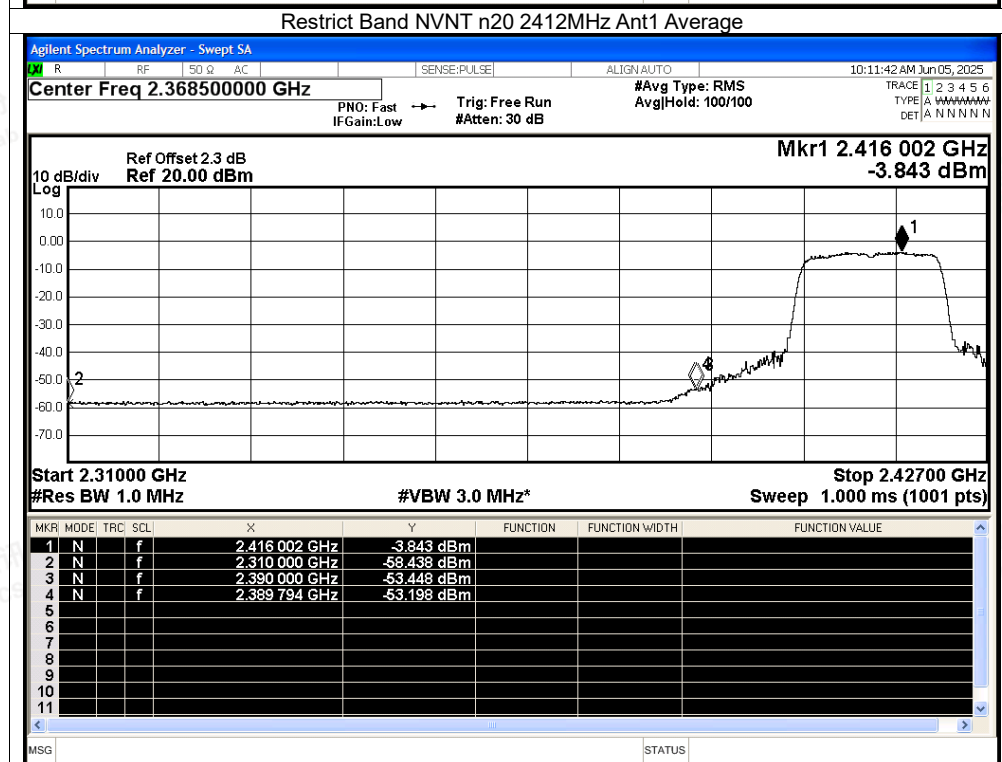
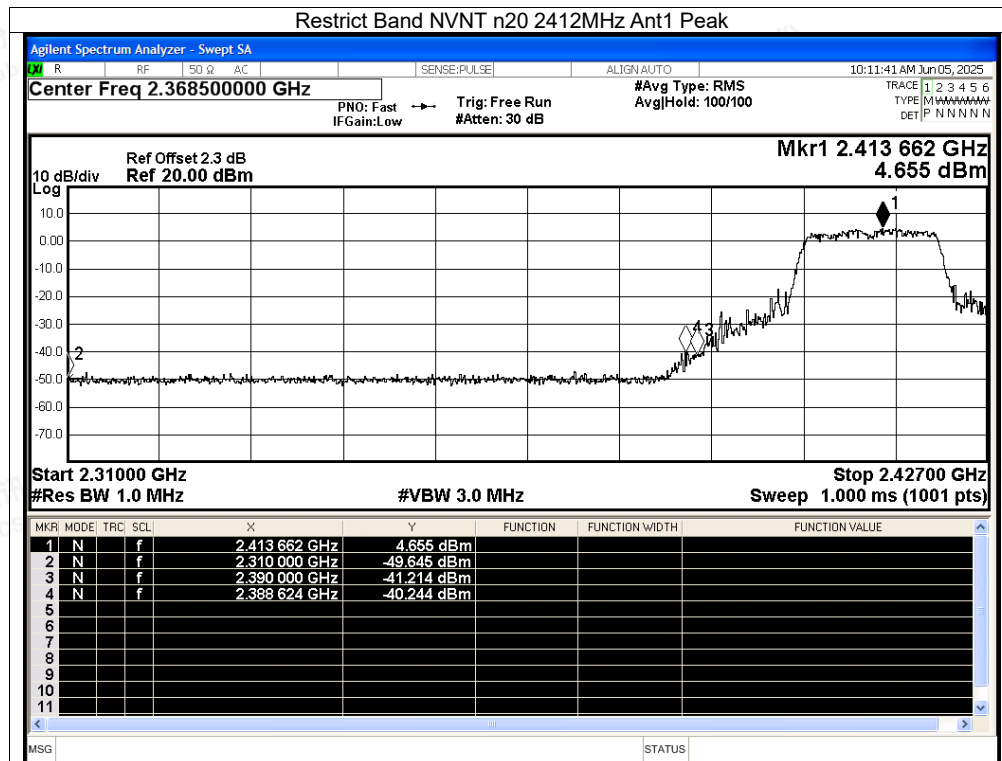
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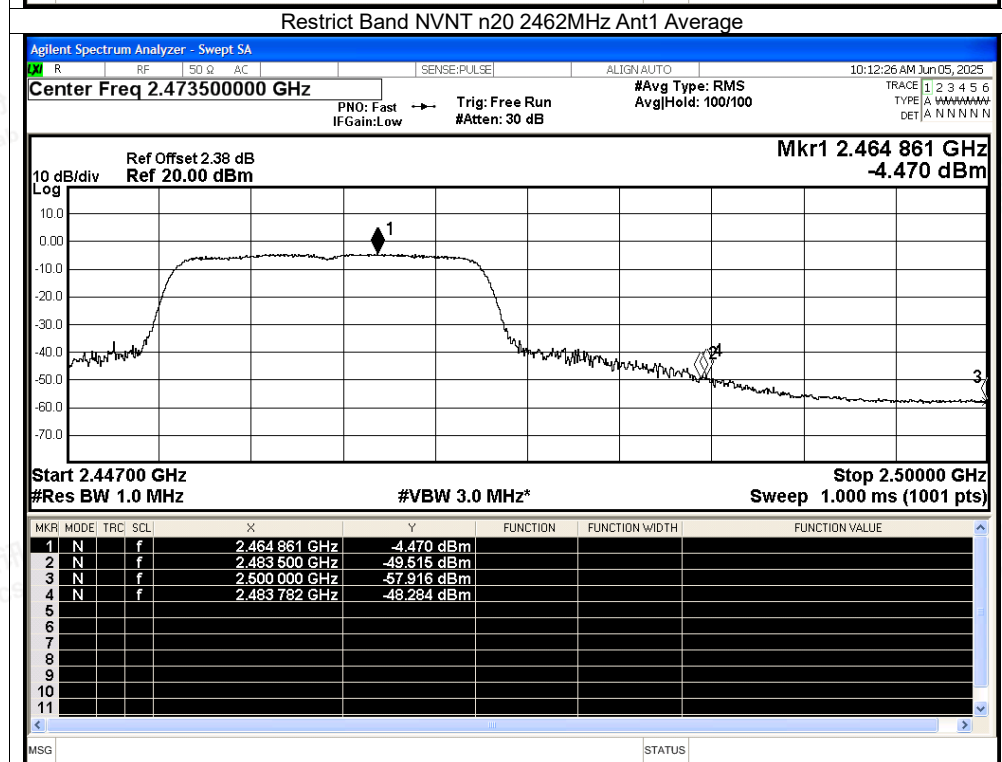
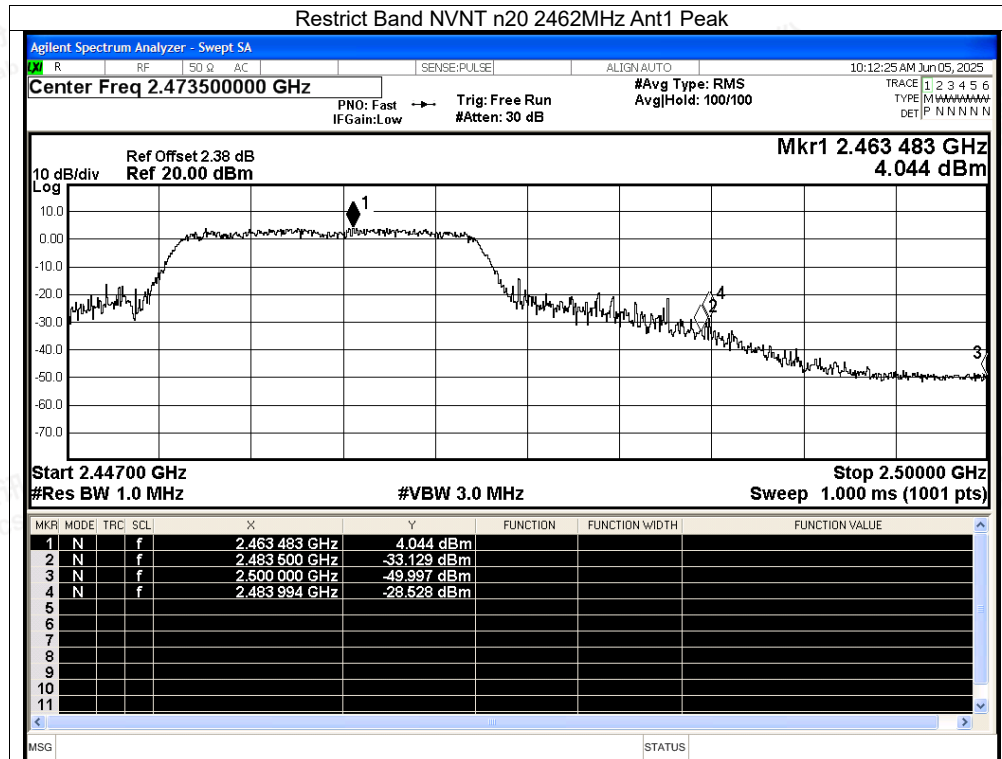


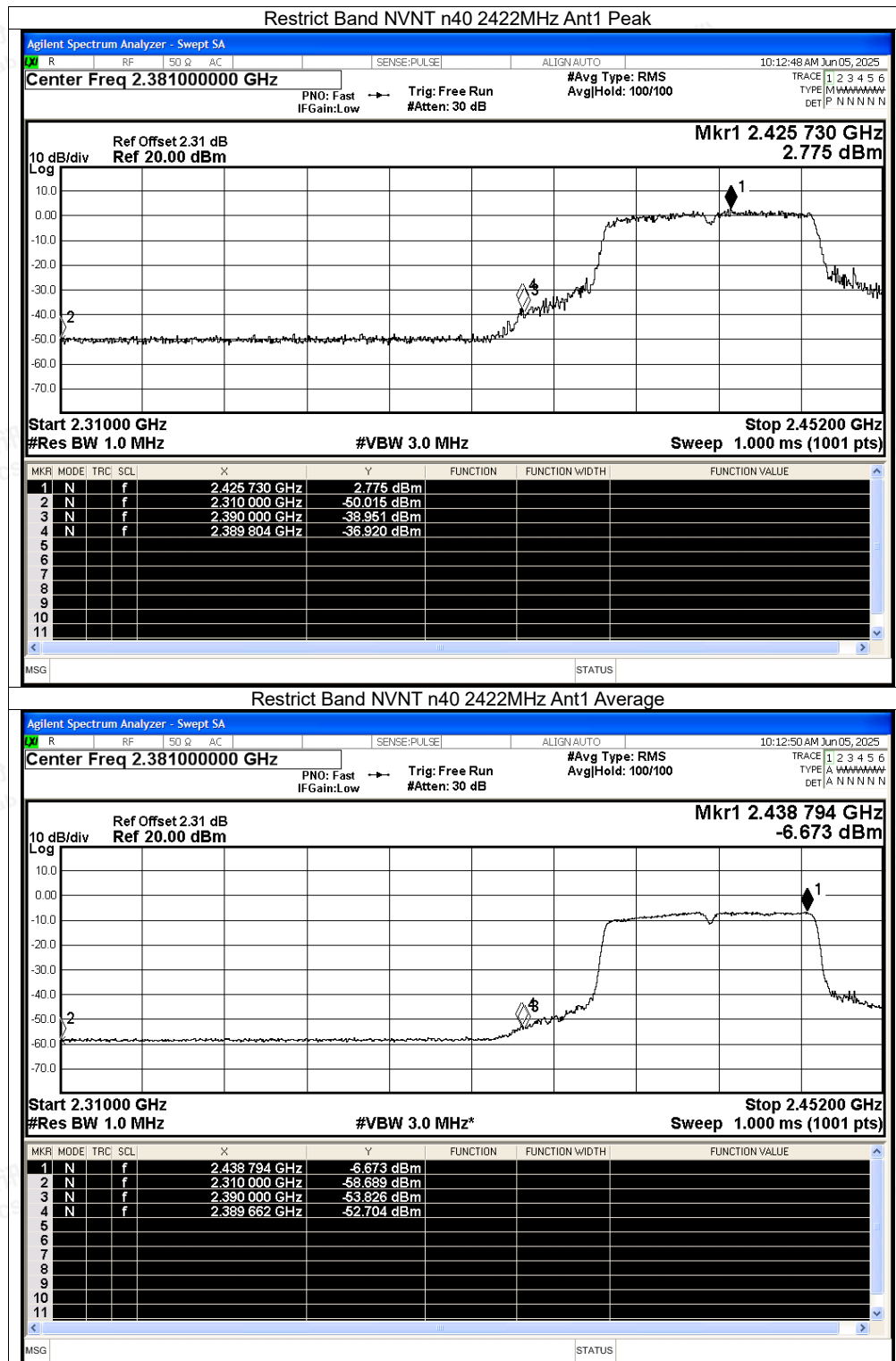
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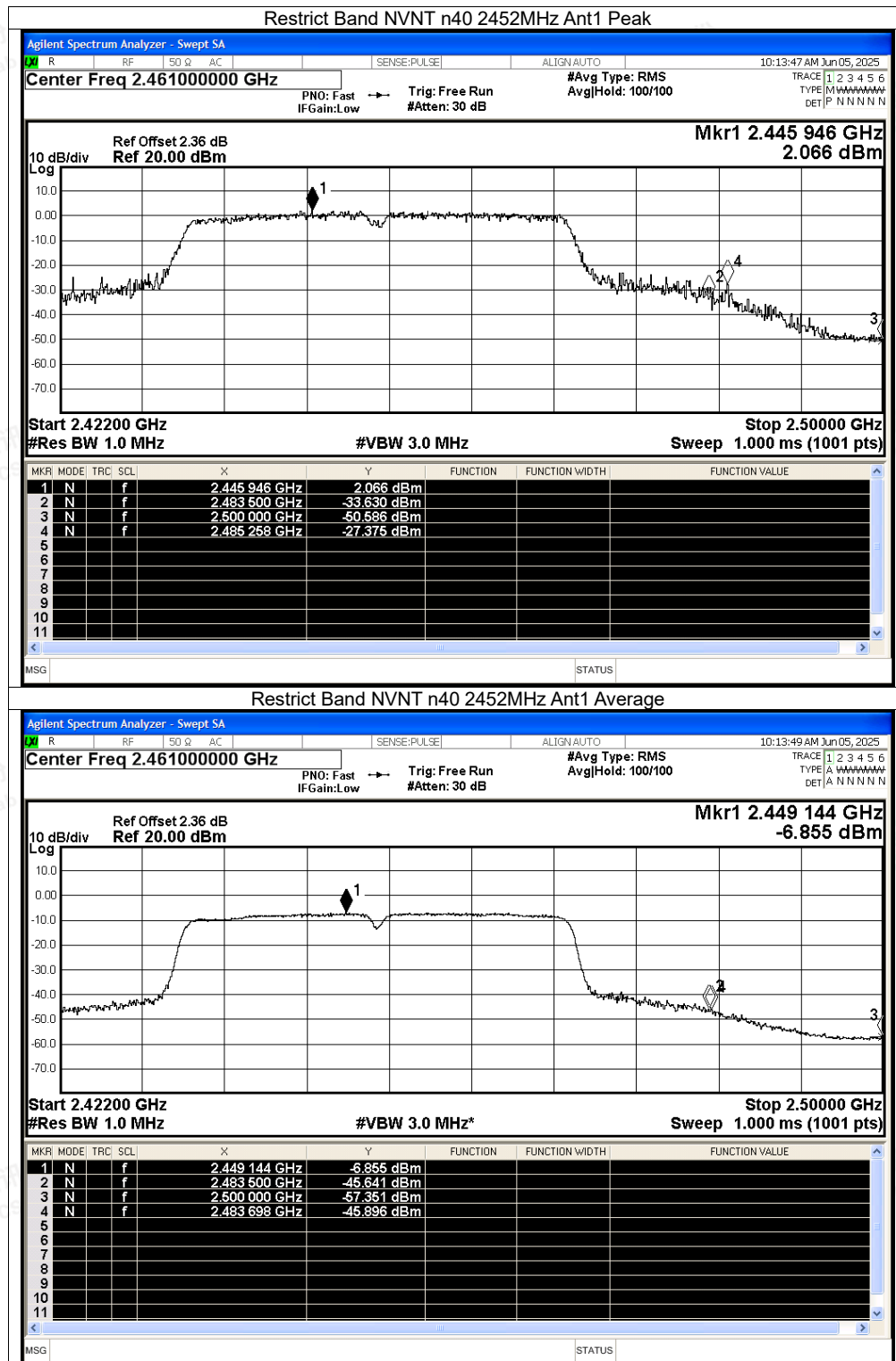
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