

Appendix A: Test Results of Bluetooth BR & EDR

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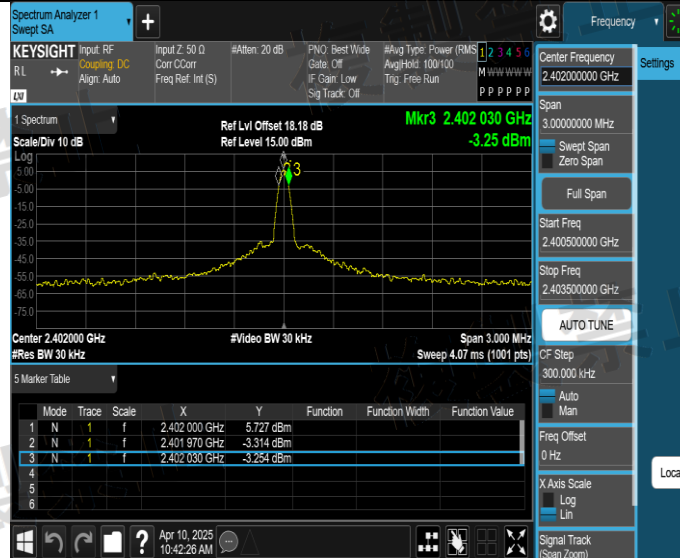
Appendix A.1: Test Results of Frequency Tolerance

Test Result

Test Condition	Test Mode	Antenna	Freq(MHz)	Result[ppm]	Limit[ppm]	Verdict
NTNV	DH5	Ant1	2402	0.00000	±50	PASS
			2441	0.00000	±50	PASS
			2480	0.00000	±50	PASS
	3DH5	Ant1	2402	0.00000	±50	PASS
			2441	0.00000	±50	PASS
			2480	0.00000	±50	PASS
NTLV	DH5	Ant1	2402	0.00000	±50	PASS
			2441	0.00000	±50	PASS
			2480	0.00000	±50	PASS
	3DH5	Ant1	2402	0.00000	±50	PASS
			2441	0.00000	±50	PASS
			2480	0.00000	±50	PASS
NTHV	DH5	Ant1	2402	0.00000	±50	PASS
			2441	0.00000	±50	PASS
			2480	0.00000	±50	PASS
	3DH5	Ant1	2402	0.00000	±50	PASS
			2441	0.00000	±50	PASS
			2480	0.00000	±50	PASS

Test Graphs

NTNV DH5 Ant1 2402

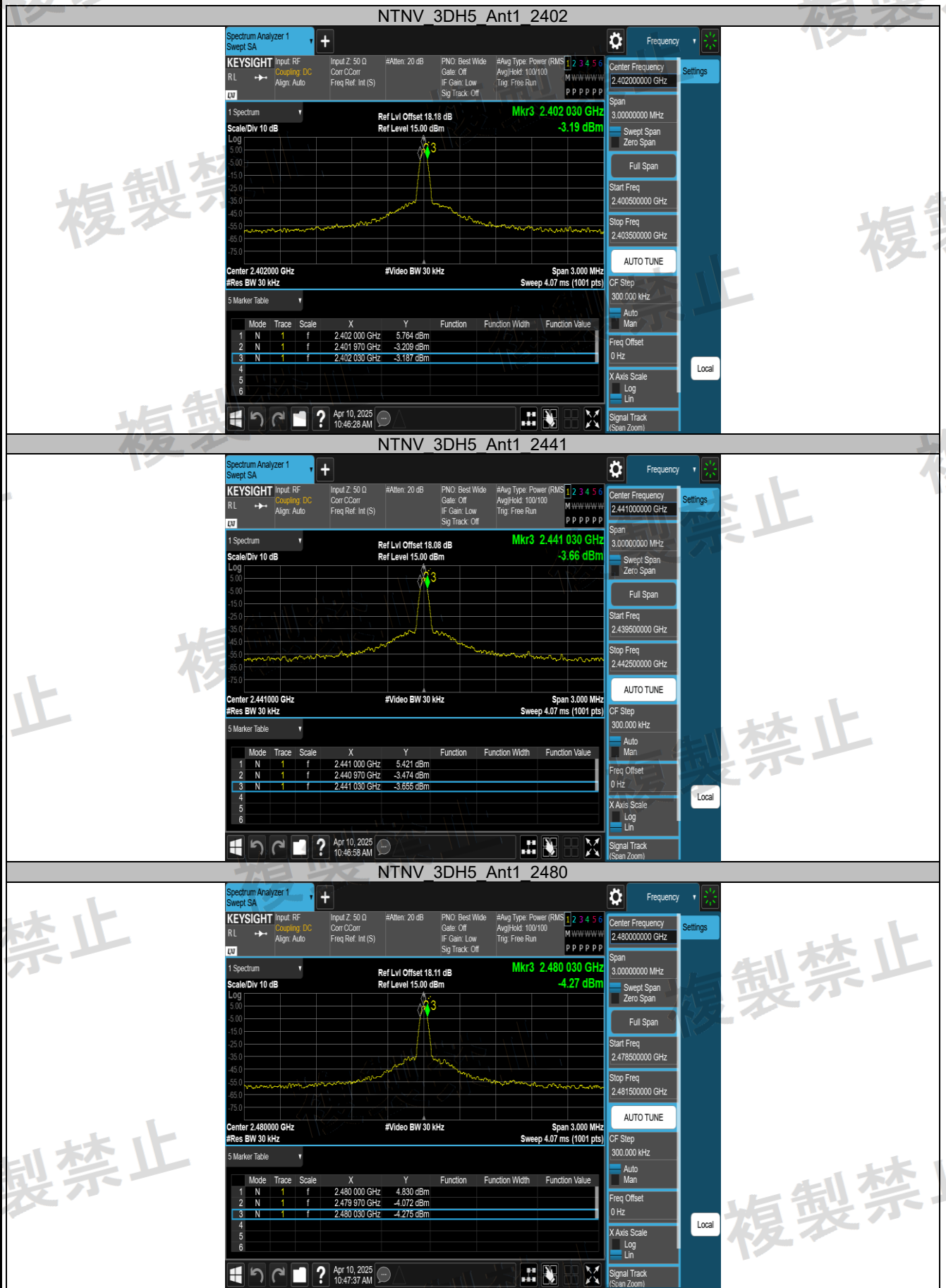


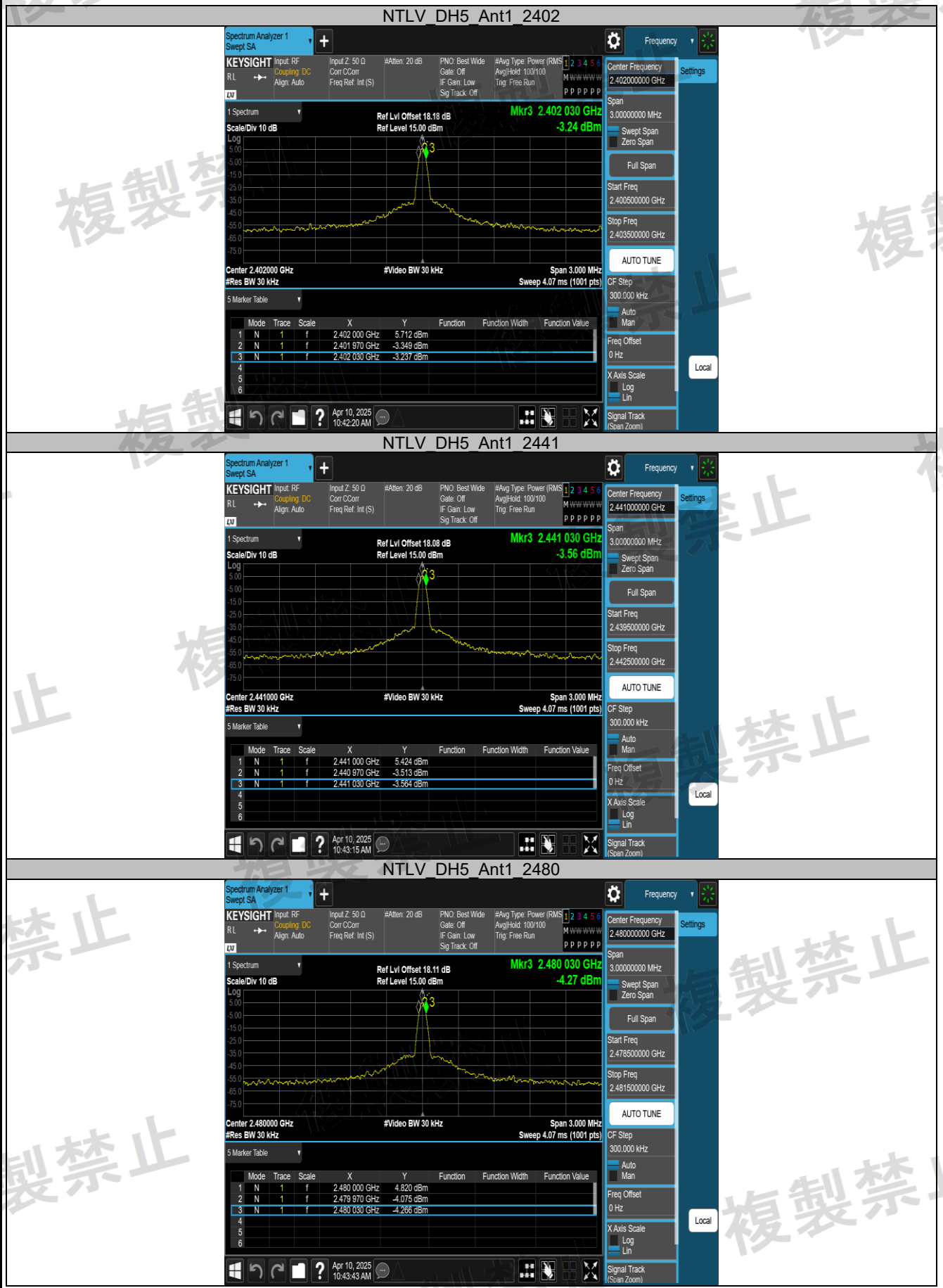
NTNV DH5 Ant1 2441



NTNV DH5 Ant1 2480

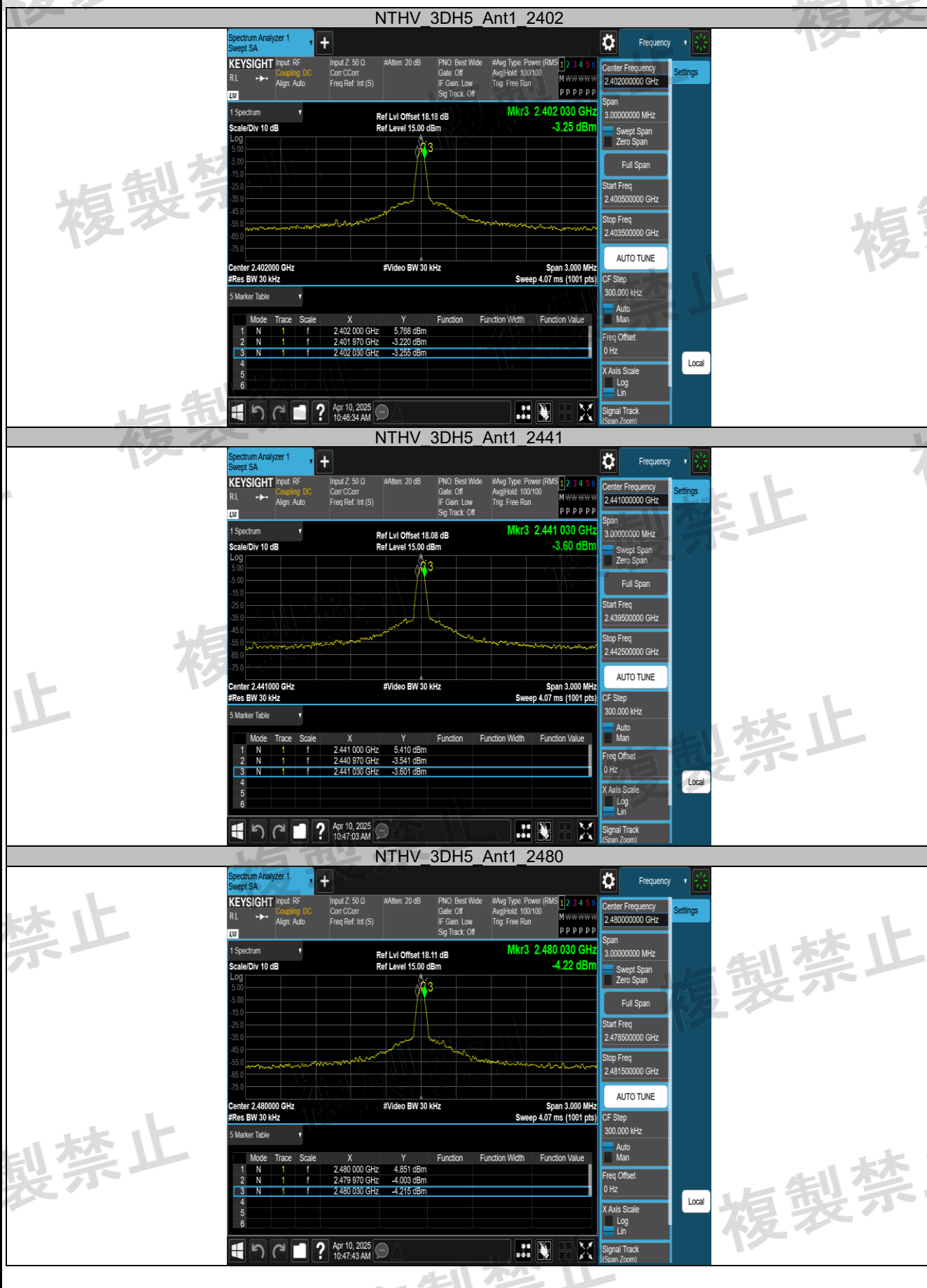












Appendix A.2: Test Results of Antenna Power

Test Result

Antenna Power									
Test Condition	TestMode	Antenna	Freq (MHz)	Result (dBm)	Result (mW)	90% BW (MHz)	Result (mW /MHz)	Limit (mW /MHz)	Verdict
NTNV	DH5	Ant1	Hop	5.92	3.9084	70.705	0.0553	≤3	PASS
	3DH5	Ant1	Hop	-2.02	0.6281	71.141	0.0088	≤3	PASS
	AFH_DH5	Ant1	Hop	5.97	3.9537	18.138	0.2180	≤3	PASS
	AFH_3DH5	Ant1	Hop	-2.14	0.6109	18.290	0.0334	≤3	PASS
NTLV	DH5	Ant1	Hop	5.98	3.9628	70.875	0.0559	≤3	PASS
	3DH5	Ant1	Hop	-1.74	0.6699	71.349	0.0094	≤3	PASS
	AFH_DH5	Ant1	Hop	5.45	3.5075	18.168	0.1931	≤3	PASS
	AFH_3DH5	Ant1	Hop	-1.97	0.6353	18.312	0.0347	≤3	PASS
NTHV	DH5	Ant1	Hop	5.76	3.7670	70.812	0.0532	≤3	PASS
	3DH5	Ant1	Hop	-1.63	0.6871	70.570	0.0097	≤3	PASS
	AFH_DH5	Ant1	Hop	5.69	3.7068	18.140	0.2043	≤3	PASS
	AFH_3DH5	Ant1	Hop	-2.16	0.6081	18.301	0.0332	≤3	PASS

Tolerance								
Test Condition	Test Mode	Antenna	Freq (MHz)	Power (mW /MHz)	RatedPower (mW /MHz)	Result (%)	Limit (%)	Verdict
NTNV	DH5	Ant1	Hop	0.0553	0.2	-72.36	-80 to +20	PASS
	3DH5	Ant1	Hop	0.0088	0.04	-77.93	-80 to +20	PASS
	AFH_DH5	Ant1	Hop	0.2180	0.8	-72.75	-80 to +20	PASS
	AFH_3DH5	Ant1	Hop	0.0334	0.15	-77.73	-80 to +20	PASS
NTLV	DH5	Ant1	Hop	0.0559	0.2	-72.04	-80 to +20	PASS
	3DH5	Ant1	Hop	0.0094	0.04	-76.53	-80 to +20	PASS
	AFH_DH5	Ant1	Hop	0.1931	0.8	-75.87	-80 to +20	PASS
	AFH_3DH5	Ant1	Hop	0.0347	0.15	-76.87	-80 to +20	PASS
NTHV	DH5	Ant1	Hop	0.0532	0.2	-73.40	-80 to +20	PASS
	3DH5	Ant1	Hop	0.0097	0.04	-75.66	-80 to +20	PASS
	AFH_DH5	Ant1	Hop	0.2043	0.8	-74.46	-80 to +20	PASS
	AFH_3DH5	Ant1	Hop	0.0332	0.15	-77.85	-80 to +20	PASS

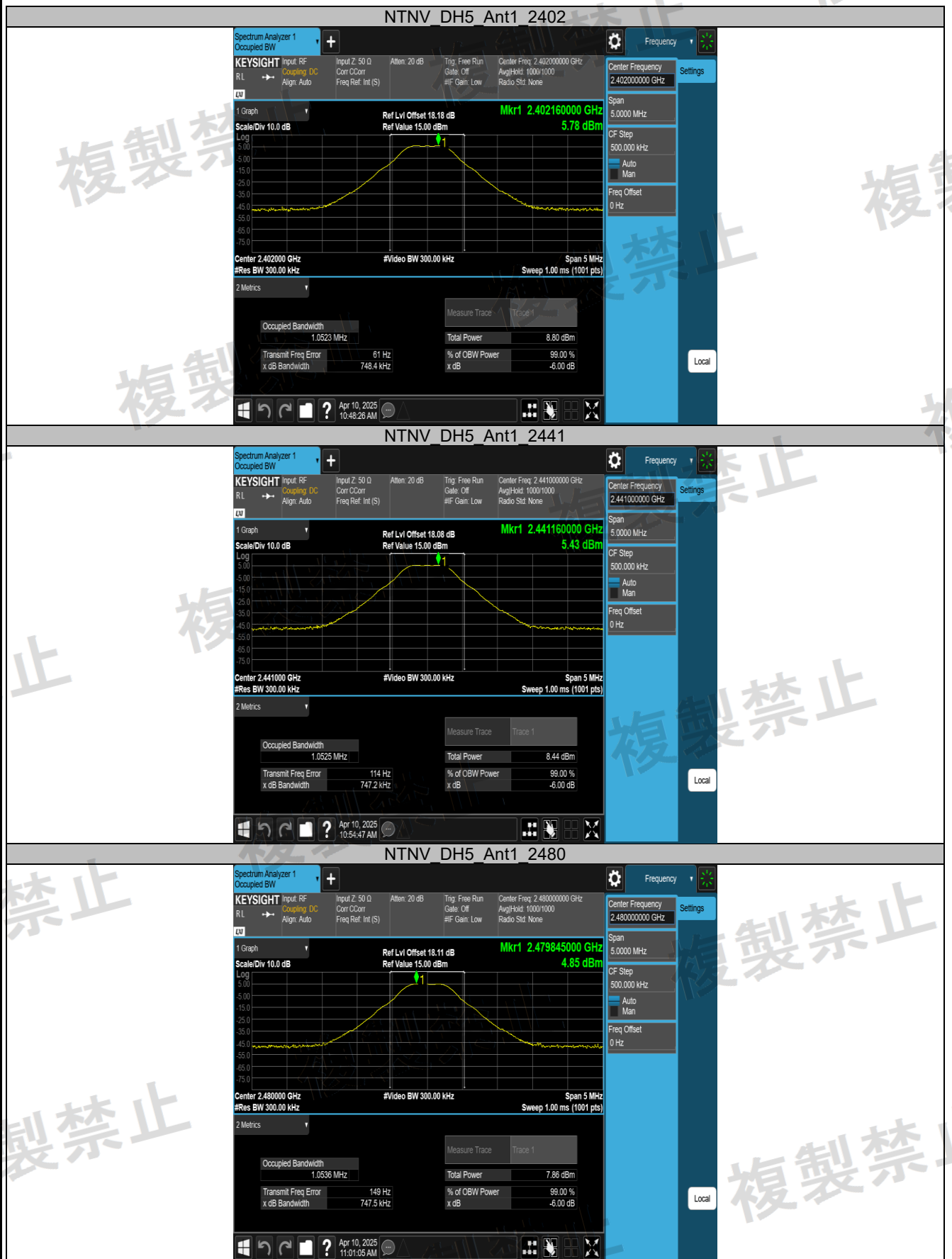
EIRP							
Test Condition	TestMode	Antenna	Freq (MHz)	Power (dBm)	EIRP(dBm)	Limit(dBm)	Verdict
NTNV	DH5	Ant1	Hop	-12.57	-8.57	≤6.91	PASS
	3DH5	Ant1	Hop	-20.54	-16.54	≤6.91	PASS
	AFH_DH5	Ant1	Hop	-6.62	-2.62	≤6.91	PASS
	AFH_3DH5	Ant1	Hop	-14.76	-10.76	≤6.91	PASS
NTLV	DH5	Ant1	Hop	-12.52	-8.52	≤6.91	PASS
	3DH5	Ant1	Hop	-20.27	-16.27	≤6.91	PASS
	AFH_DH5	Ant1	Hop	-7.14	-3.14	≤6.91	PASS
	AFH_3DH5	Ant1	Hop	-14.60	-10.60	≤6.91	PASS
NTHV	DH5	Ant1	Hop	-12.74	-8.74	≤6.91	PASS
	3DH5	Ant1	Hop	-20.12	-16.12	≤6.91	PASS
	AFH_DH5	Ant1	Hop	-6.90	-2.90	≤6.91	PASS
	AFH_3DH5	Ant1	Hop	-14.78	-10.78	≤6.91	PASS

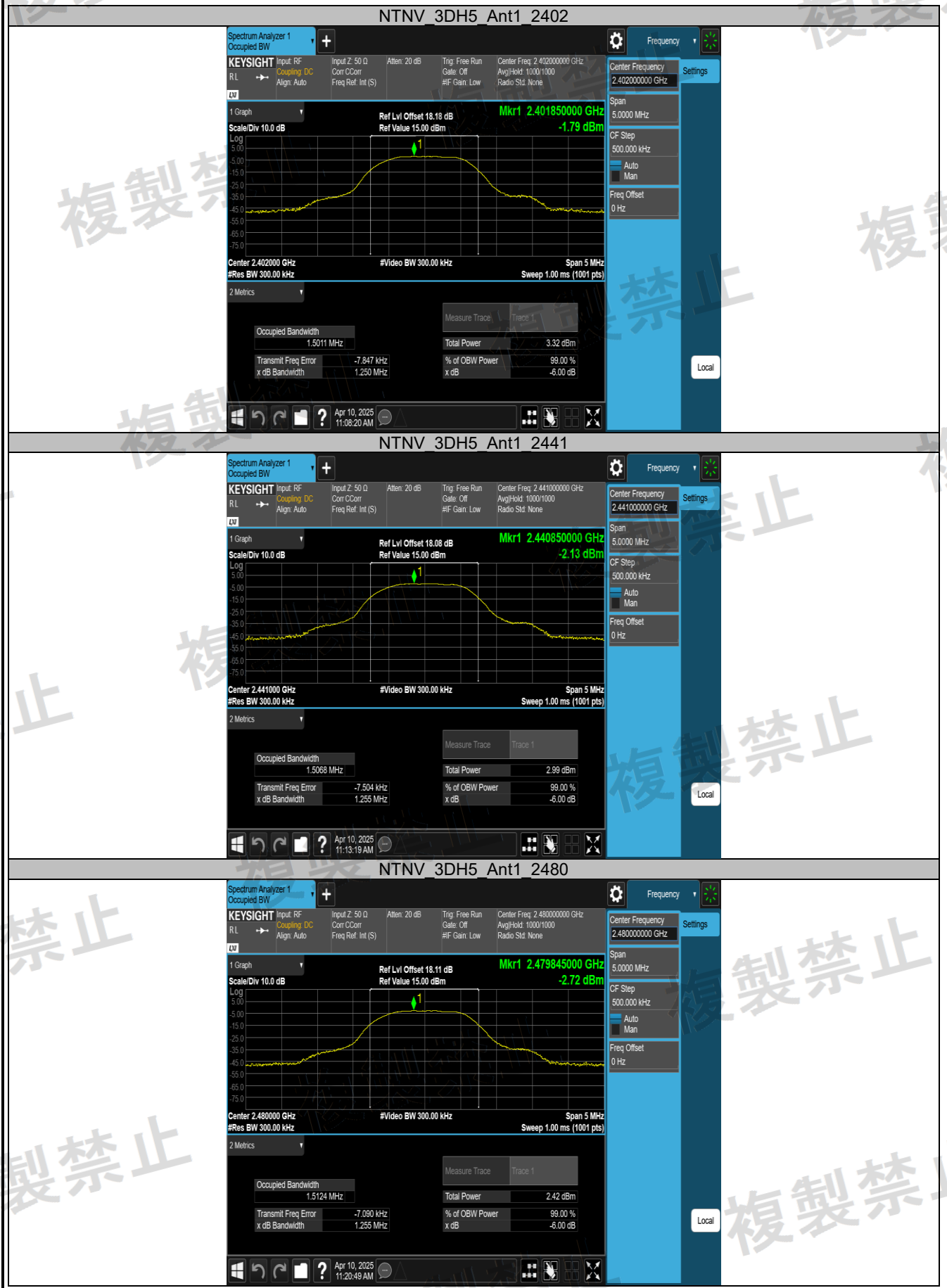
Appendix A.3: Test Results of Occupied Channel Bandwidth (99%)
Test Result

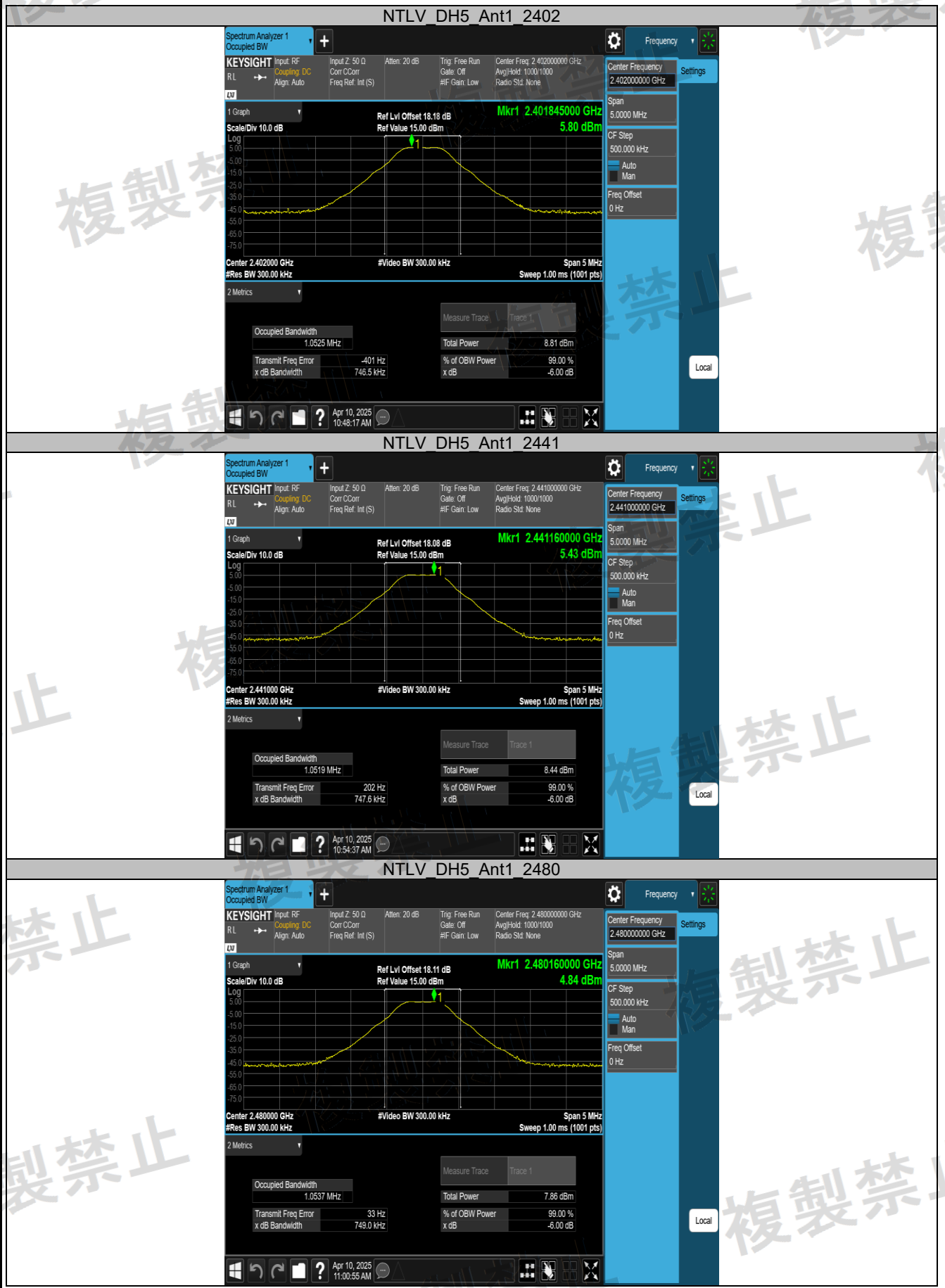
Test Condition	Test Mode	Antenna	Freq(MHz)	Result [MHz]	Limit [MHz]	Verdict
NTNV	DH5	Ant1	2402	1.052	≤83.5	PASS
			2441	1.053	≤83.5	PASS
			2480	1.054	≤83.5	PASS
	3DH5	Ant1	2402	1.501	≤83.5	PASS
			2441	1.507	≤83.5	PASS
			2480	1.512	≤83.5	PASS
NTLV	DH5	Ant1	2402	1.053	≤83.5	PASS
			2441	1.052	≤83.5	PASS
			2480	1.054	≤83.5	PASS
	3DH5	Ant1	2402	1.500	≤83.5	PASS
			2441	1.507	≤83.5	PASS
			2480	1.512	≤83.5	PASS
NTHV	DH5	Ant1	2402	1.052	≤83.5	PASS
			2441	1.053	≤83.5	PASS
			2480	1.054	≤83.5	PASS
	3DH5	Ant1	2402	1.502	≤83.5	PASS
			2441	1.507	≤83.5	PASS
			2480	1.512	≤83.5	PASS

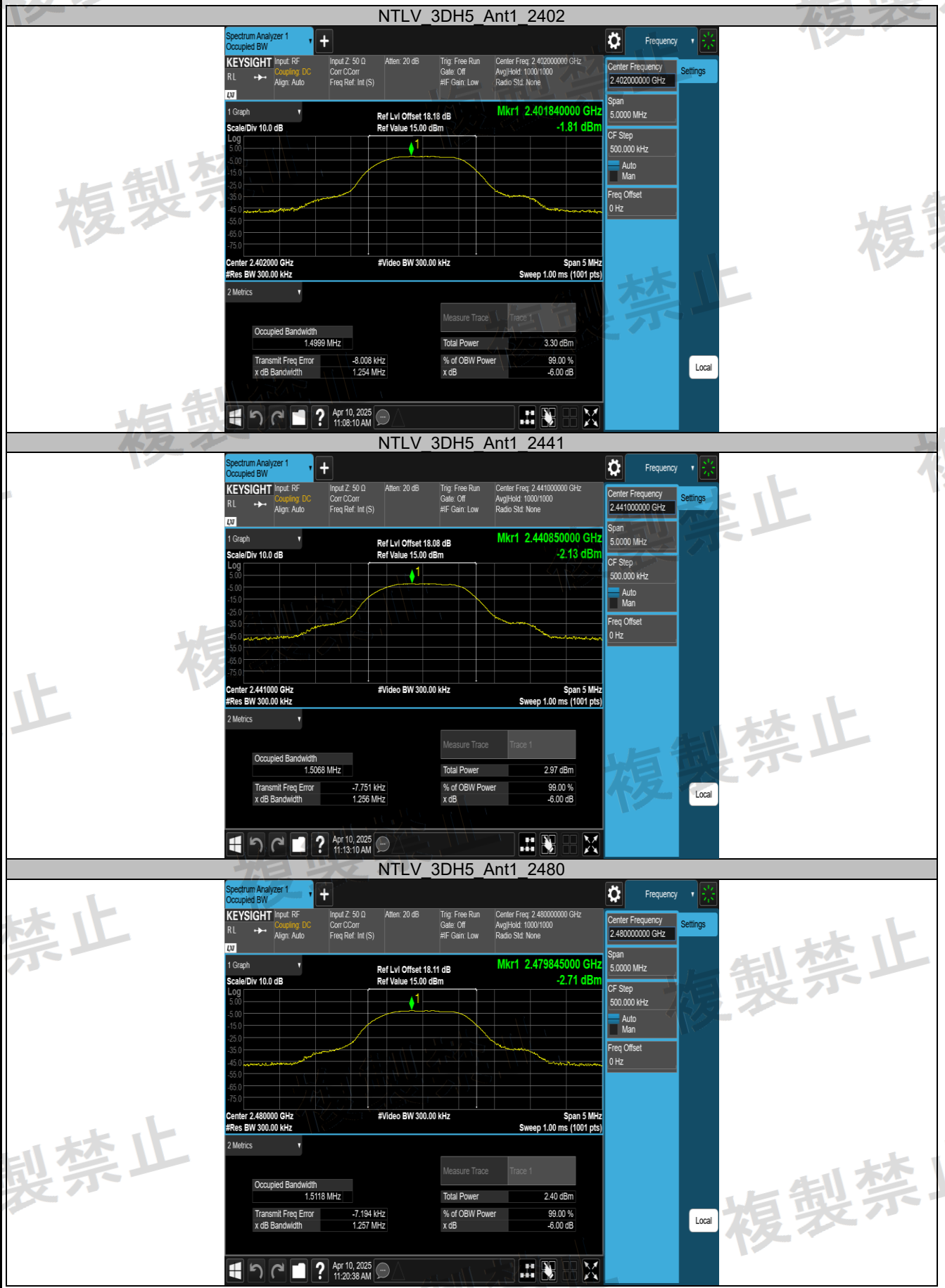
Test Condition	Test Mode	Antenna	Freq(MHz)	Result [MHz]	Limit [MHz]	Verdict
NTNV	DH5	Ant1	Hop	78.187	≤83.5	PASS
	3DH5	Ant1	Hop	78.375	≤83.5	PASS
	AFH DH5	Ant1	Hop	19.607	≤83.5	PASS
	AFH 3DH5	Ant1	Hop	20.021	≤83.5	PASS
NTLV	DH5	Ant1	Hop	78.058	≤83.5	PASS
	3DH5	Ant1	Hop	78.363	≤83.5	PASS
	AFH DH5	Ant1	Hop	19.603	≤83.5	PASS
	AFH 3DH5	Ant1	Hop	20.023	≤83.5	PASS
NTHV	DH5	Ant1	Hop	78.237	≤83.5	PASS
	3DH5	Ant1	Hop	78.270	≤83.5	PASS
	AFH DH5	Ant1	Hop	19.602	≤83.5	PASS
	AFH 3DH5	Ant1	Hop	20.020	≤83.5	PASS

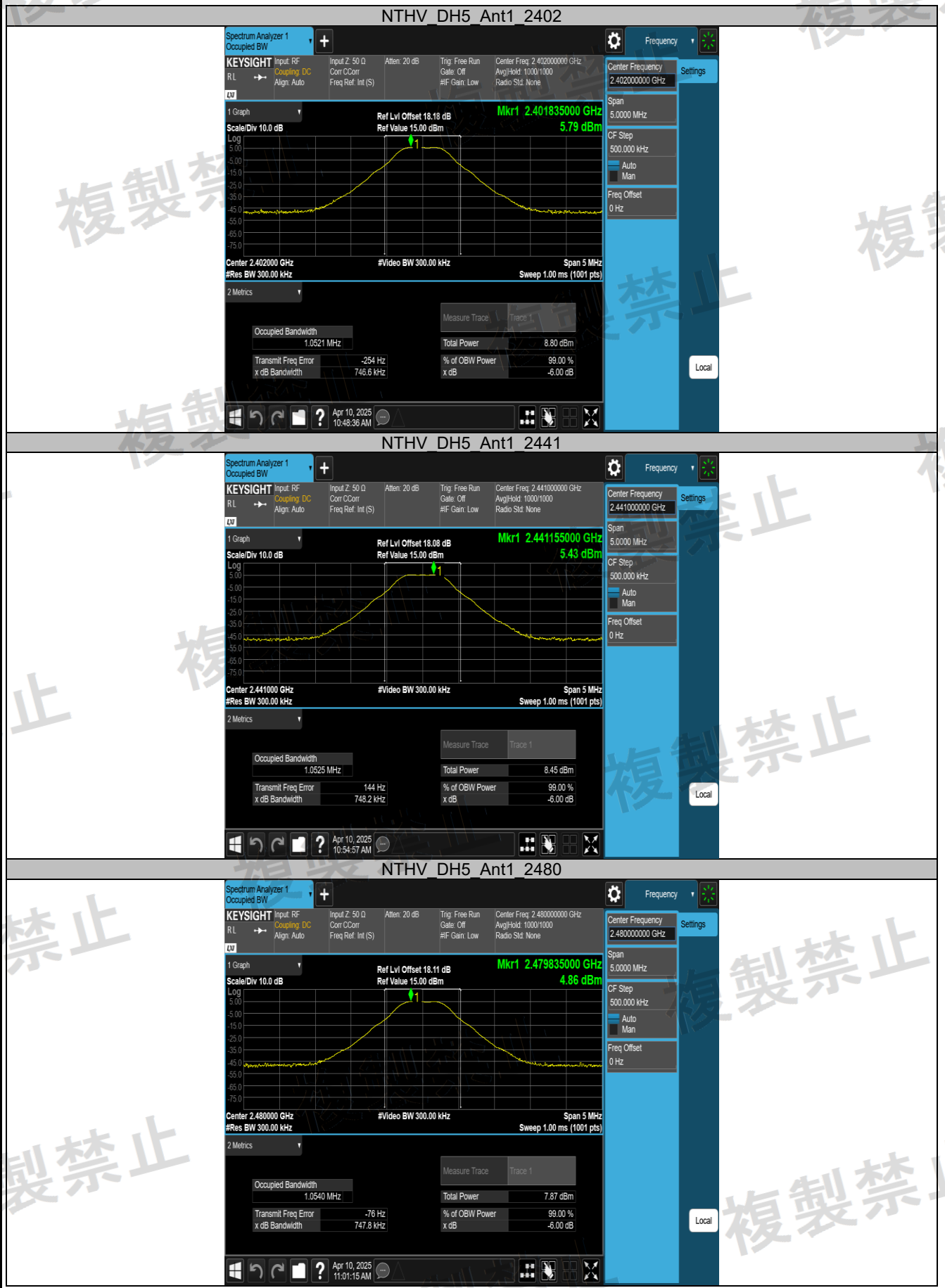
Test Graphs

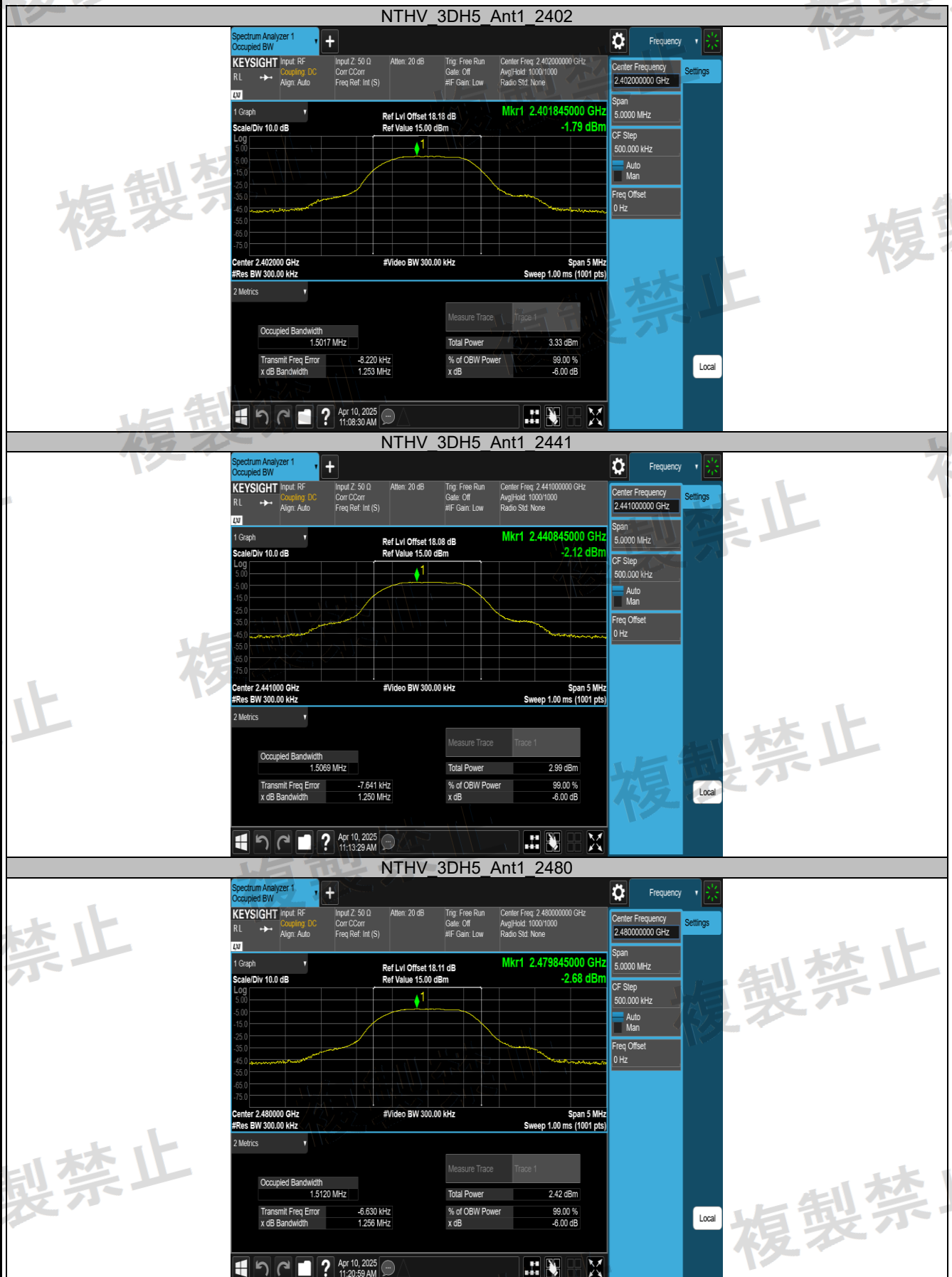


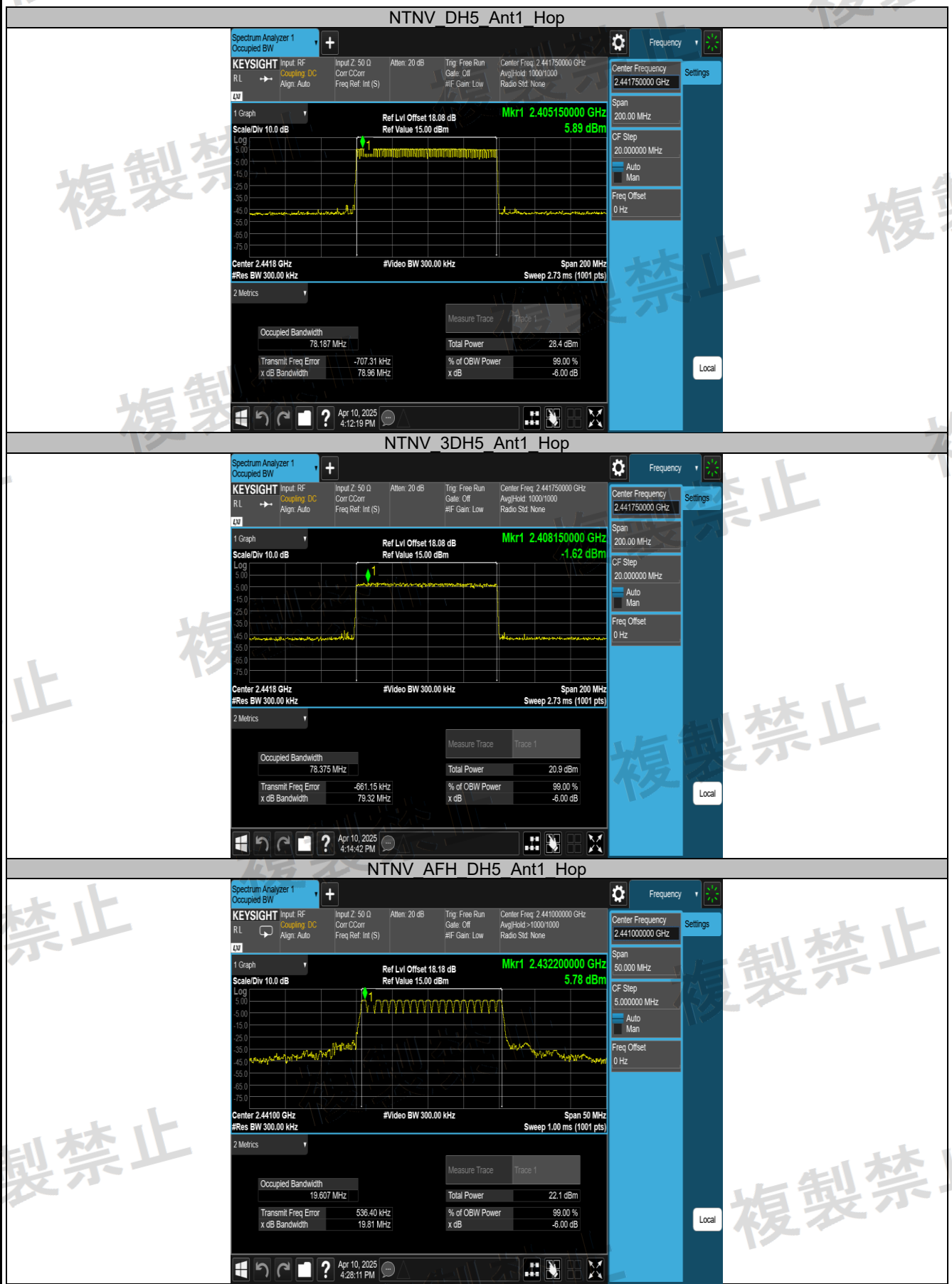


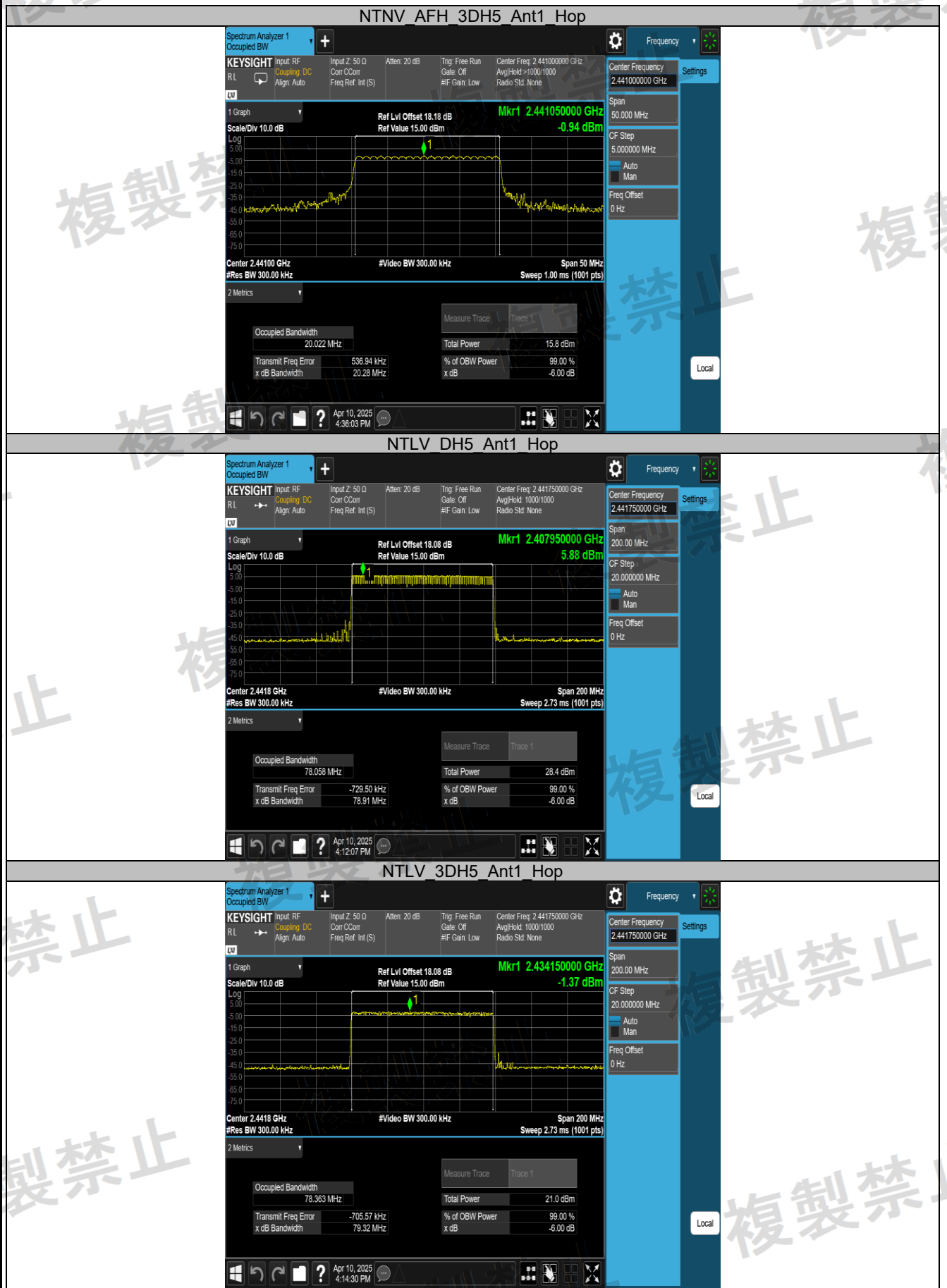












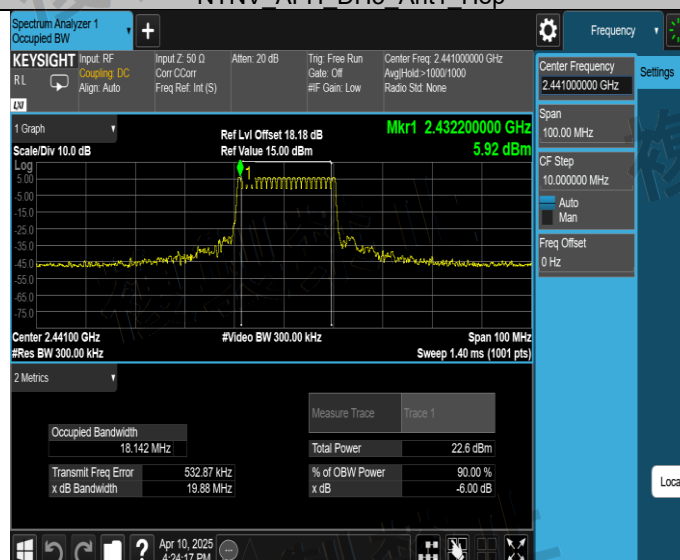
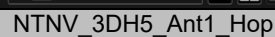




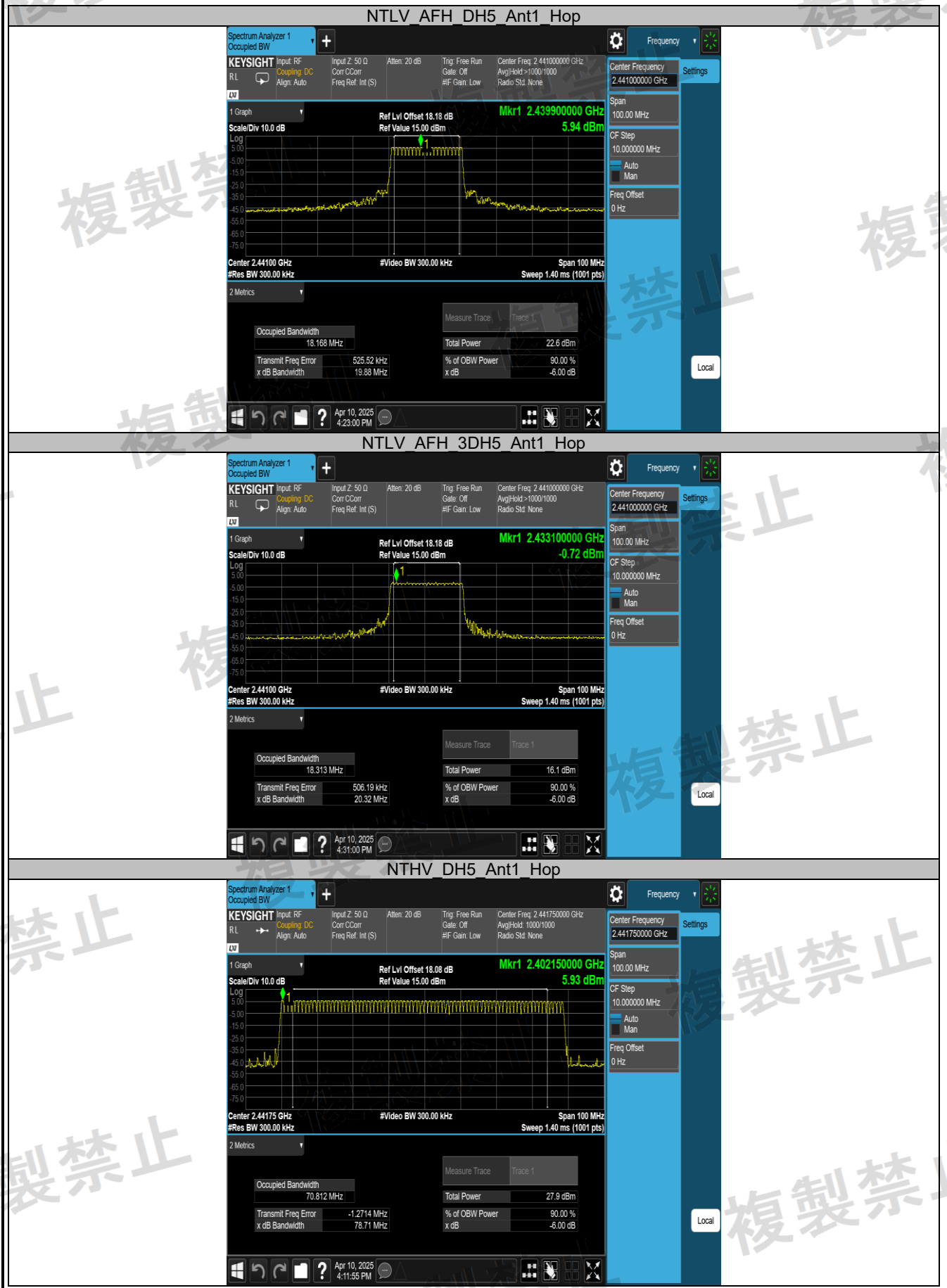
Appendix A.4: Test Results of Spread Bandwidth (90%)*Test Result*

Test Condition	Test Mode	Antenna	Freq(MHz)	Result [MHz]	Limit [MHz]	SpreadFactor	Limit	Verdict
NTNV	DH5	Ant1	Hop	70.705	≥ 0.5	70.705	>5	PASS
	3DH5	Ant1	Hop	71.141	≥ 0.5	71.141	>5	PASS
	AFH_DH5	Ant1	Hop	18.138	≥ 0.5	18.138	>5	PASS
	AFH_3DH5	Ant1	Hop	18.290	≥ 0.5	18.290	>5	PASS
NTLV	DH5	Ant1	Hop	70.875	≥ 0.5	70.875	>5	PASS
	3DH5	Ant1	Hop	71.349	≥ 0.5	71.349	>5	PASS
	AFH_DH5	Ant1	Hop	18.168	≥ 0.5	18.168	>5	PASS
	AFH_3DH5	Ant1	Hop	18.312	≥ 0.5	18.312	>5	PASS
NTHV	DH5	Ant1	Hop	70.812	≥ 0.5	70.812	>5	PASS
	3DH5	Ant1	Hop	70.570	≥ 0.5	70.570	>5	PASS
	AFH_DH5	Ant1	Hop	18.140	≥ 0.5	18.140	>5	PASS
	AFH_3DH5	Ant1	Hop	18.301	≥ 0.5	18.301	>5	PASS

NTNV_DH5_Ant1_Hop









Appendix A.5: Test Results of Spurious Emissions for Transmitter

Test Result

Test Condition	Test Mode	Antenna	Freq (MHz)	Freq.Range [MHz]	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [μW]	Limit [μW]	Verdict
NTNV	DH5	Ant1	2402	30~500	294.49	-49.51	≤-26	0.01119	≤2.5	PASS
				500~1000	956.13	-48.79	≤-26	0.01321	≤2.5	PASS
				1000~2387	2344.70	-46.16	≤-26	0.02421	≤2.5	PASS
				2387~2400	2399.99	-32.62	≤-16	0.54702	≤25	PASS
				2483.5~2496.5	2491.75	-36.00	≤-16	0.25119	≤25	PASS
				2496.5~13000	3908.17	-42.65	≤-26	0.05433	≤2.5	PASS
			2441	30~500	490.25	-49.21	≤-26	0.01199	≤2.5	PASS
				500~1000	707.75	-40.39	≤-26	0.09141	≤2.5	PASS
				1000~2387	2375.90	-46.28	≤-26	0.02355	≤2.5	PASS
				2387~2400	2388.73	-36.52	≤-16	0.22284	≤25	PASS
				2483.5~2496.5	2487.33	-35.99	≤-16	0.25177	≤25	PASS
				2496.5~13000	3765.32	-43.10	≤-26	0.04898	≤2.5	PASS
			2480	30~500	470.04	-49.61	≤-26	0.01094	≤2.5	PASS
				500~1000	712.75	-48.98	≤-26	0.01265	≤2.5	PASS
				1000~2387	2374.52	-46.97	≤-26	0.02009	≤2.5	PASS
				2387~2400	2394.75	-36.39	≤-16	0.22961	≤25	PASS
				2483.5~2496.5	2494.80	-35.83	≤-16	0.26122	≤25	PASS
				2496.5~13000	4960.10	-42.98	≤-26	0.05035	≤2.5	PASS
	3DH5	Ant1	2402	30~500	462.40	-49.73	≤-26	0.01064	≤2.5	PASS
				500~1000	868.88	-48.87	≤-26	0.01297	≤2.5	PASS
				1000~2387	2380.76	-46.37	≤-26	0.02307	≤2.5	PASS
				2387~2400	2399.99	-30.10	≤-16	0.97724	≤25	PASS
				2483.5~2496.5	2485.36	-35.41	≤-16	0.28774	≤25	PASS
				2496.5~13000	3819.94	-42.22	≤-26	0.05998	≤2.5	PASS
			2441	30~500	369.34	-49.75	≤-26	0.01059	≤2.5	PASS
				500~1000	708.63	-35.67	≤-26	0.27102	≤2.5	PASS
				1000~2387	2357.87	-46.61	≤-26	0.02183	≤2.5	PASS
				2387~2400	2393.69	-35.64	≤-16	0.27290	≤25	PASS
				2483.5~2496.5	2488.91	-35.60	≤-16	0.27542	≤25	PASS
				2496.5~13000	3804.19	-42.94	≤-26	0.05082	≤2.5	PASS
			2480	30~500	289.56	-49.92	≤-26	0.01019	≤2.5	PASS
				500~1000	704.75	-37.54	≤-26	0.17620	≤2.5	PASS
				1000~2387	2322.16	-46.74	≤-26	0.02118	≤2.5	PASS
				2387~2400	2395.46	-36.23	≤-16	0.23823	≤25	PASS
				2483.5~2496.5	2492.80	-35.63	≤-16	0.27353	≤25	PASS
				2496.5~13000	3782.13	-43.35	≤-26	0.04624	≤2.5	PASS
NTLV	DH5	Ant1	2402	30~500	464.16	-49.50	≤-26	0.01122	≤2.5	PASS
				500~1000	949.13	-48.43	≤-26	0.01435	≤2.5	PASS
				1000~2387	2322.50	-45.70	≤-26	0.02692	≤2.5	PASS
				2387~2400	2400.00	-33.00	≤-16	0.50119	≤25	PASS
				2483.5~2496.5	2488.32	-36.22	≤-16	0.23878	≤25	PASS
				2496.5~13000	3824.14	-43.34	≤-26	0.04634	≤2.5	PASS
			2441	30~500	486.49	-49.43	≤-26	0.01140	≤2.5	PASS
				500~1000	707.13	-48.70	≤-26	0.01349	≤2.5	PASS
				1000~2387	2362.03	-46.92	≤-26	0.02032	≤2.5	PASS
				2387~2400	2397.03	-36.36	≤-16	0.23121	≤25	PASS
				2483.5~2496.5	2484.64	-35.73	≤-16	0.26730	≤25	PASS
				2496.5~13000	3730.14	-42.93	≤-26	0.05093	≤2.5	PASS
			2480	30~500	476.27	-49.27	≤-26	0.01183	≤2.5	PASS
				500~1000	712.63	-39.83	≤-26	0.10399	≤2.5	PASS
				1000~2387	2363.77	-46.13	≤-26	0.02438	≤2.5	PASS
				2387~2400	2390.92	-36.18	≤-16	0.24099	≤25	PASS
				2483.5~2496.5	2486.86	-36.12	≤-16	0.24434	≤25	PASS
				2496.5~13000	3813.11	-43.12	≤-26	0.04875	≤2.5	PASS
	3DH5	Ant1	2402	30~500	481.67	-49.86	≤-26	0.01033	≤2.5	PASS
				500~1000	882.25	-47.95	≤-26	0.01603	≤2.5	PASS
				1000~2387	2385.27	-45.97	≤-26	0.02529	≤2.5	PASS

				2387~2400	2400.00	-29.66	≤-16	1.08143	≤25	PASS
				2483.5~2496.5	2492.61	-36.31	≤-16	0.23388	≤25	PASS
				2496.5~13000	3730.14	-42.45	≤-26	0.05689	≤2.5	PASS
			2441	30~500	231.04	-49.53	≤-26	0.01114	≤2.5	PASS
				500~1000	958.13	-47.63	≤-26	0.01726	≤2.5	PASS
				1000~2387	2326.67	-46.65	≤-26	0.02163	≤2.5	PASS
				2387~2400	2396.69	-36.55	≤-16	0.22131	≤25	PASS
				2483.5~2496.5	2484.12	-36.30	≤-16	0.23442	≤25	PASS
				2496.5~13000	3882.96	-43.55	≤-26	0.04416	≤2.5	PASS
			2480	30~500	453.00	-49.79	≤-26	0.01050	≤2.5	PASS
				500~1000	704.00	-38.28	≤-26	0.14859	≤2.5	PASS
				1000~2387	2301.01	-46.59	≤-26	0.02193	≤2.5	PASS
				2387~2400	2398.16	-36.34	≤-16	0.23227	≤25	PASS
				2483.5~2496.5	2492.41	-36.15	≤-16	0.24266	≤25	PASS
				2496.5~13000	3794.21	-42.88	≤-26	0.05152	≤2.5	PASS
NTHV	DH5	Ant1	2402	30~500	366.87	-49.51	≤-26	0.01119	≤2.5	PASS
				500~1000	870.63	-47.40	≤-26	0.01820	≤2.5	PASS
				1000~2387	2126.94	-46.74	≤-26	0.02118	≤2.5	PASS
				2387~2400	2399.99	-32.51	≤-16	0.56105	≤25	PASS
				2483.5~2496.5	2494.72	-35.87	≤-16	0.25882	≤25	PASS
				2496.5~13000	3774.78	-42.71	≤-26	0.05358	≤2.5	PASS
			2441	30~500	424.21	-49.85	≤-26	0.01035	≤2.5	PASS
				500~1000	828.25	-48.30	≤-26	0.01479	≤2.5	PASS
				1000~2387	2260.78	-46.81	≤-26	0.02084	≤2.5	PASS
				2387~2400	2396.50	-36.33	≤-16	0.23281	≤25	PASS
				2483.5~2496.5	2493.97	-36.33	≤-16	0.23281	≤25	PASS
				2496.5~13000	3862.48	-42.50	≤-26	0.05623	≤2.5	PASS
			2480	30~500	136.57	-49.64	≤-26	0.01086	≤2.5	PASS
				500~1000	713.00	-43.33	≤-26	0.04645	≤2.5	PASS
				1000~2387	2330.83	-46.78	≤-26	0.02099	≤2.5	PASS
				2387~2400	2390.72	-36.21	≤-16	0.23933	≤25	PASS
				2483.5~2496.5	2495.34	-36.24	≤-16	0.23768	≤25	PASS
				2496.5~13000	3720.68	-42.93	≤-26	0.05093	≤2.5	PASS
	3DH5	Ant1	2402	30~500	488.72	-49.04	≤-26	0.01247	≤2.5	PASS
				500~1000	704.13	-38.34	≤-26	0.14655	≤2.5	PASS
				1000~2387	2116.54	-47.13	≤-26	0.01936	≤2.5	PASS
				2387~2400	2399.99	-29.20	≤-16	1.20226	≤25	PASS
				2483.5~2496.5	2495.50	-36.31	≤-16	0.23388	≤25	PASS
				2496.5~13000	3805.76	-41.79	≤-26	0.06622	≤2.5	PASS
			2441	30~500	478.03	-49.44	≤-26	0.01138	≤2.5	PASS
				500~1000	983.50	-49.28	≤-26	0.01180	≤2.5	PASS
				1000~2387	2344.70	-46.83	≤-26	0.02075	≤2.5	PASS
				2387~2400	2396.99	-36.20	≤-16	0.23988	≤25	PASS
				2483.5~2496.5	2490.85	-35.96	≤-16	0.25351	≤25	PASS
				2496.5~13000	3832.02	-43.32	≤-26	0.04656	≤2.5	PASS
			2480	30~500	450.42	-49.28	≤-26	0.01180	≤2.5	PASS
				500~1000	712.75	-35.96	≤-26	0.25351	≤2.5	PASS
				1000~2387	2373.13	-46.36	≤-26	0.02312	≤2.5	PASS
				2387~2400	2387.51	-35.69	≤-16	0.26977	≤25	PASS
				2483.5~2496.5	2484.52	-35.74	≤-16	0.26669	≤25	PASS
				2496.5~13000	3819.94	-43.56	≤-26	0.04406	≤2.5	PASS



Test Graphs

