

Appendix Test Data

Report No.:	1812C50604212501-01	Test Sample No.:	1-2-2
Start Test Date:	2025-12-12	Finish Test Date:	2025-12-12
Test Engineer:	Alex Peng	Auditor:	Justin Feng
Temperature:	24.4°C	Relative Humidity:	47%
Pressure:	101kPa		
Module1:	ESP32-PICO-D4		

Appendix A: 20dB Bandwidth

Test Result

Test Mode	Antenna	Frequency [MHz]	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.948	2401.529	2402.477	---	---
DH5	Ant1	2441	0.954	2440.520	2441.474	---	---
DH5	Ant1	2480	0.951	2479.523	2480.474	---	---
2DH5	Ant1	2402	1.329	2401.322	2402.651	---	---
2DH5	Ant1	2441	1.335	2440.316	2441.651	---	---
2DH5	Ant1	2480	1.356	2479.307	2480.663	---	---
3DH5	Ant1	2402	1.317	2401.328	2402.645	---	---
3DH5	Ant1	2441	1.314	2440.328	2441.642	---	---
3DH5	Ant1	2480	1.302	2479.340	2480.642	---	---

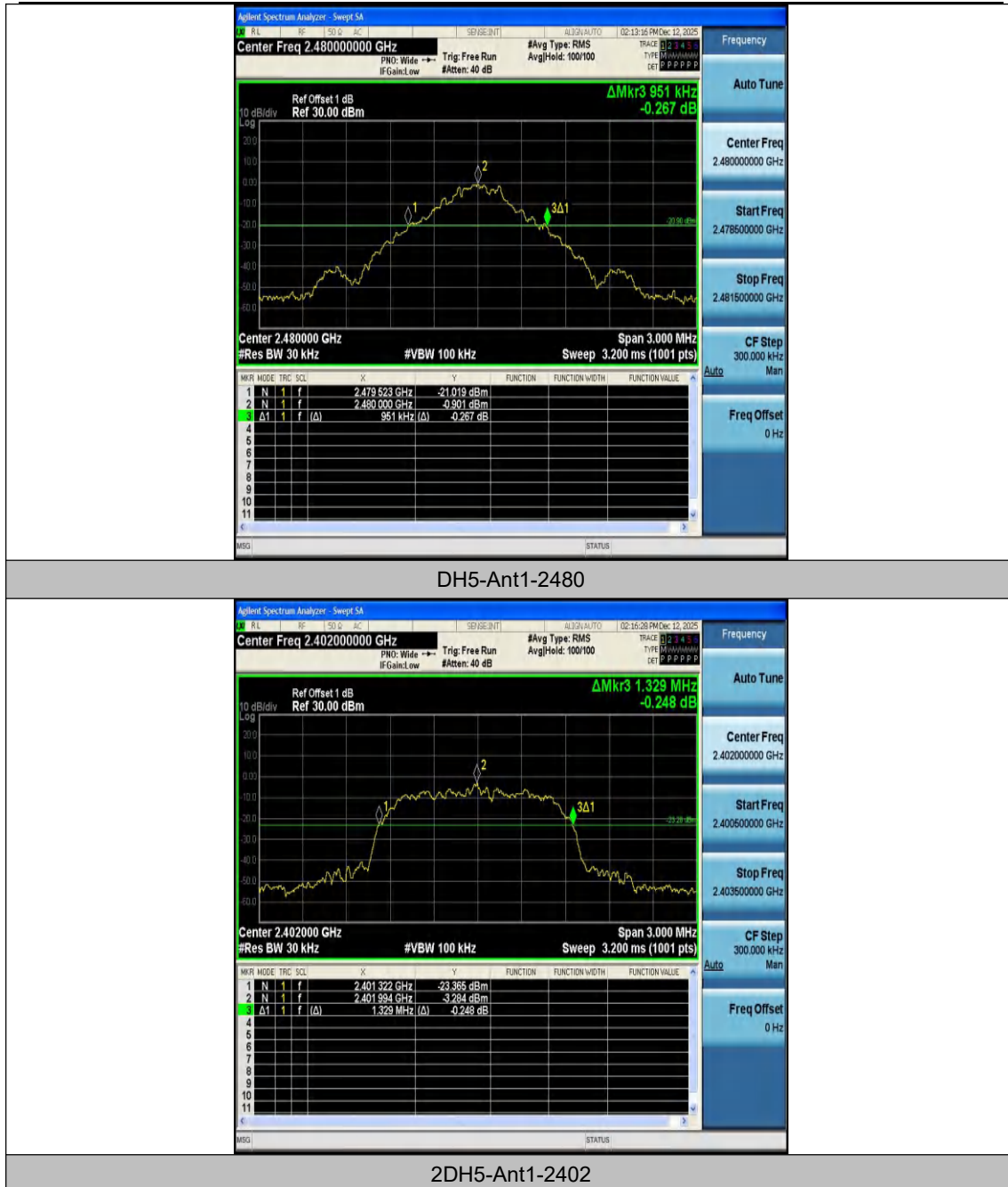
Test Graphs

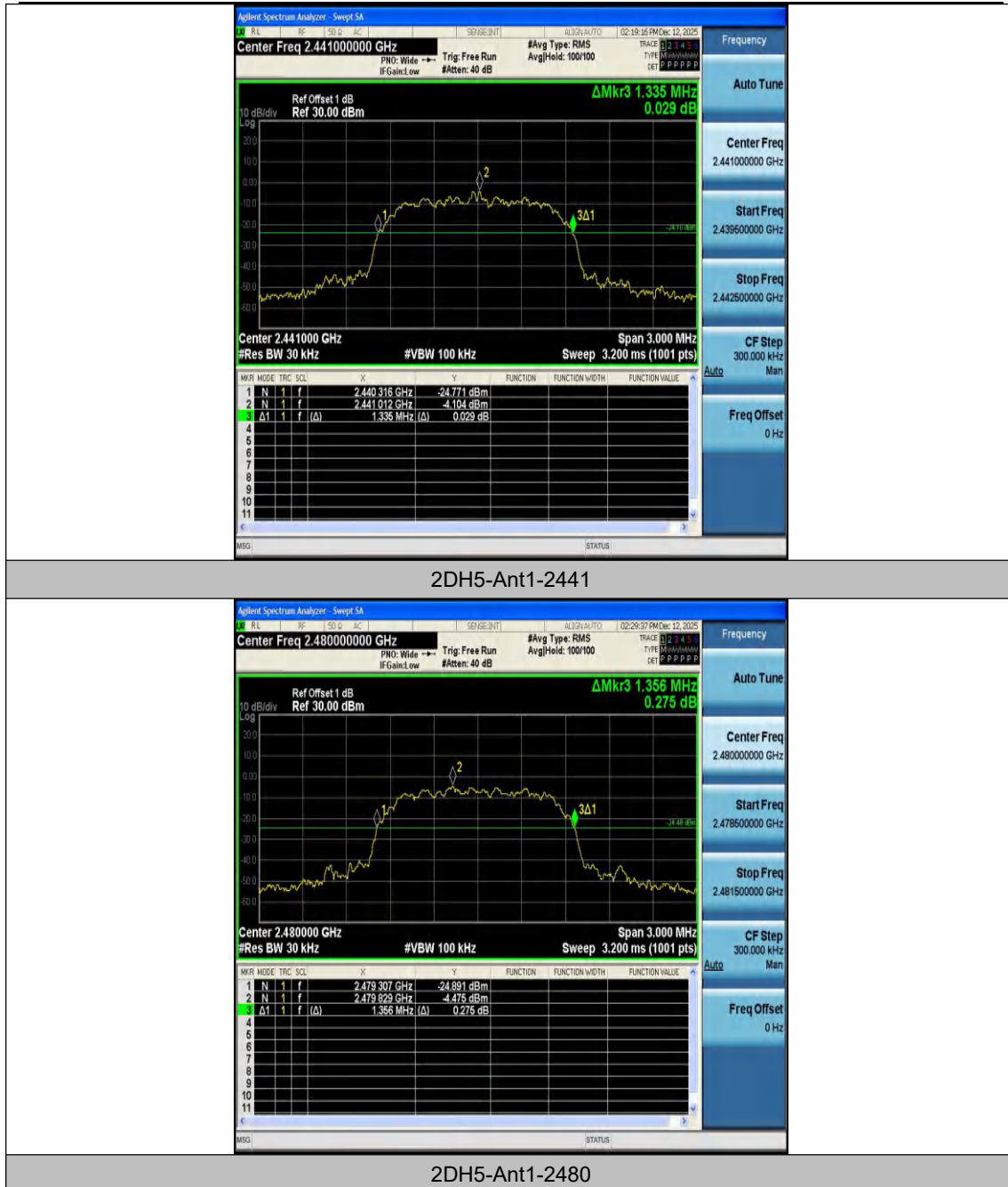


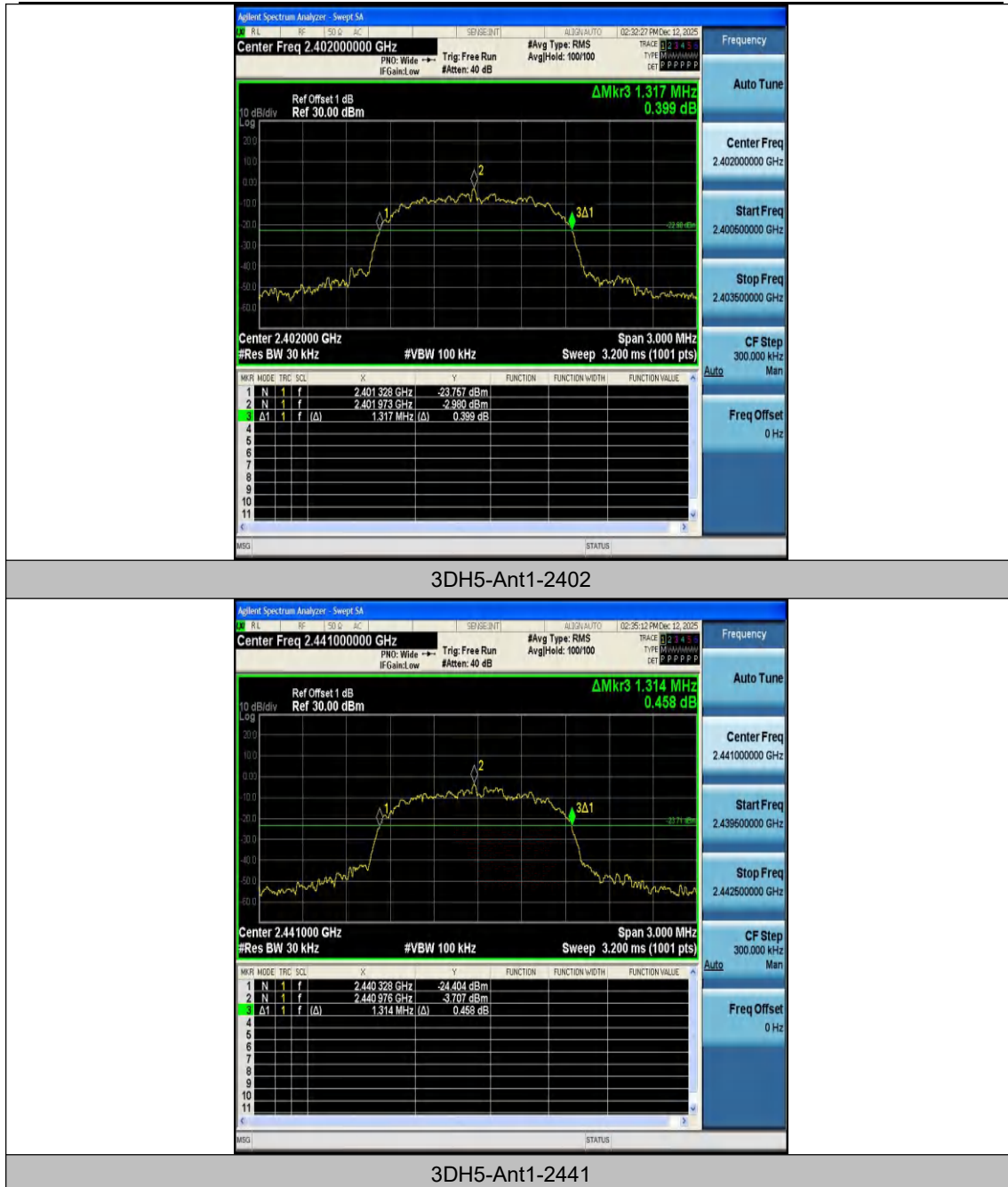
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3DH5-Ant1-2480

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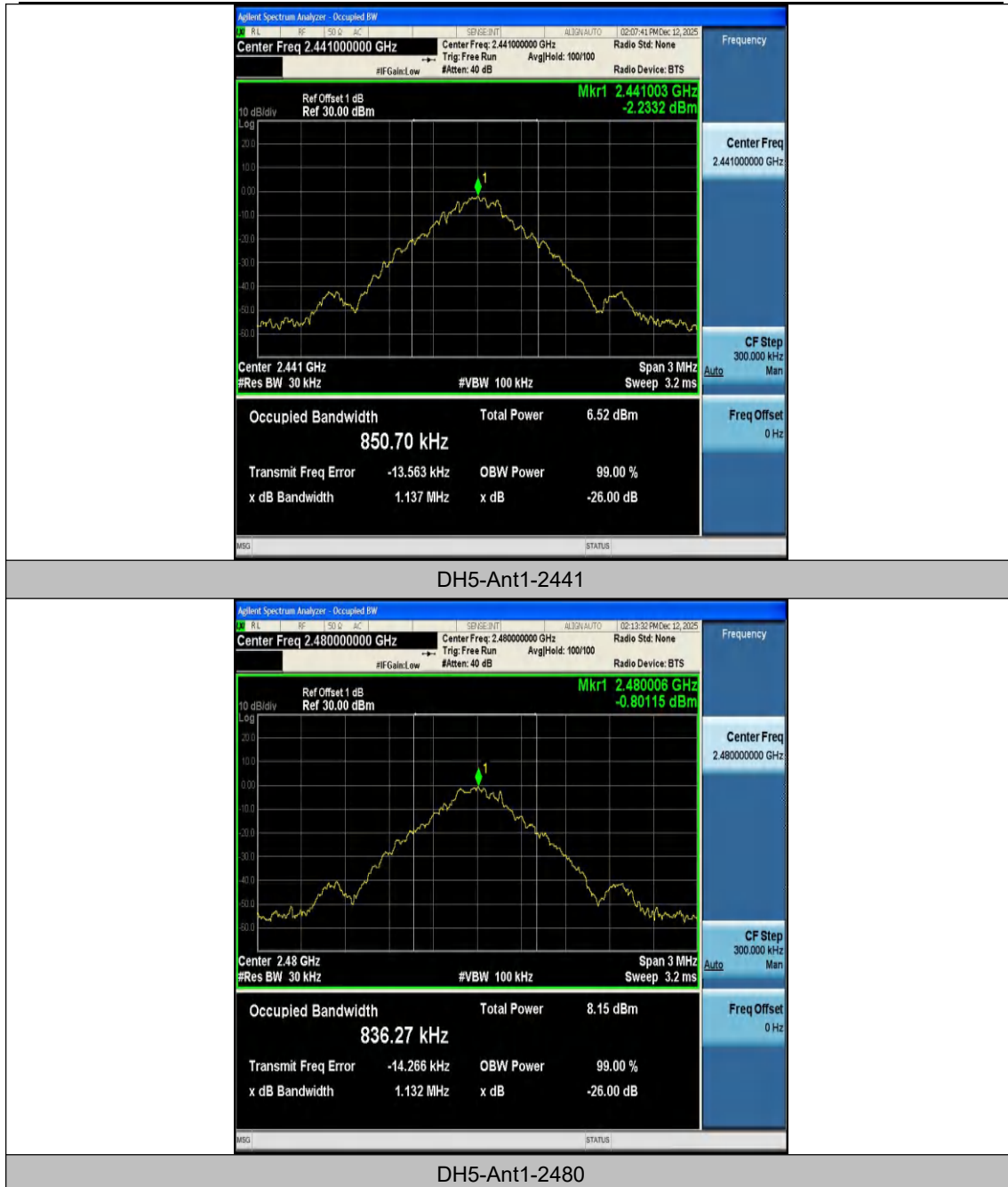
Appendix B: 99% Occupied Bandwidth

Test Result

Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.83293	2401.5743	2402.4072	---	---
DH5	Ant1	2441	0.85070	2440.5611	2441.4118	---	---
DH5	Ant1	2480	0.83627	2479.5676	2480.4039	---	---
2DH5	Ant1	2402	1.1847	2401.3937	2402.5784	---	---
2DH5	Ant1	2441	1.1781	2440.3954	2441.5735	---	---
2DH5	Ant1	2480	1.1854	2479.3935	2480.5789	---	---
3DH5	Ant1	2402	1.1807	2401.3930	2402.5737	---	---
3DH5	Ant1	2441	1.1894	2440.3925	2441.5819	---	---
3DH5	Ant1	2480	1.2002	2479.3850	2480.5852	---	---

Test Graphs

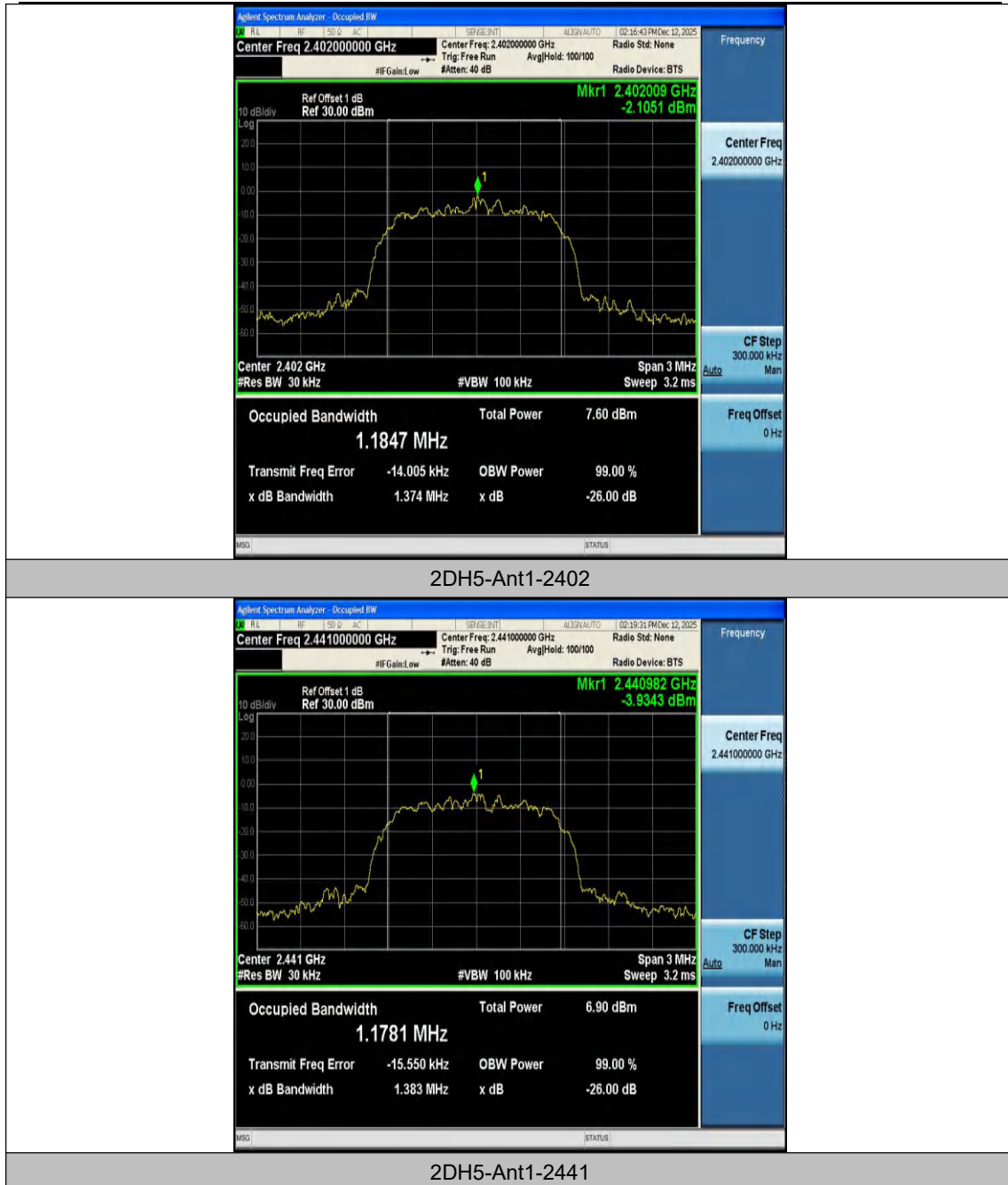




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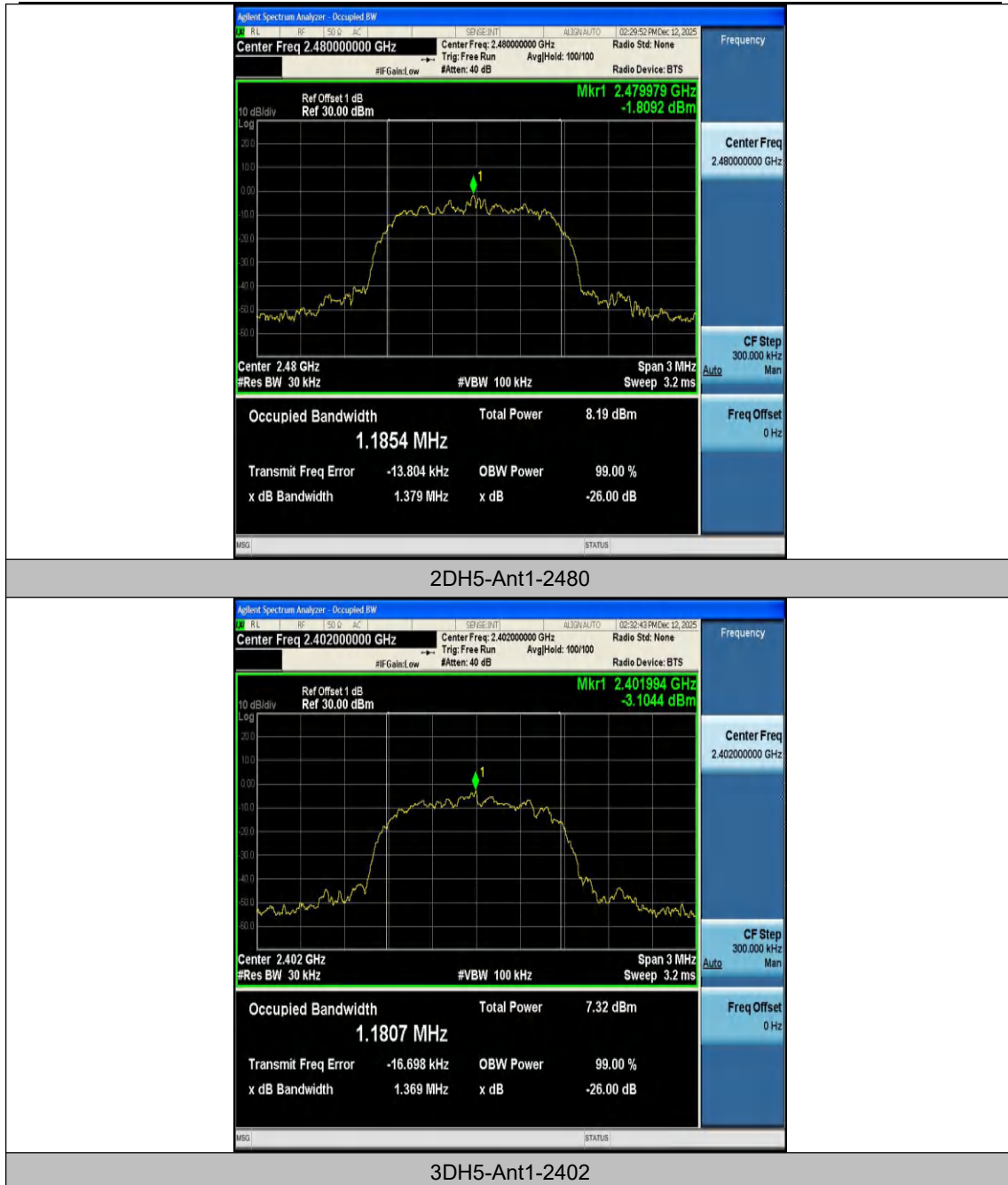
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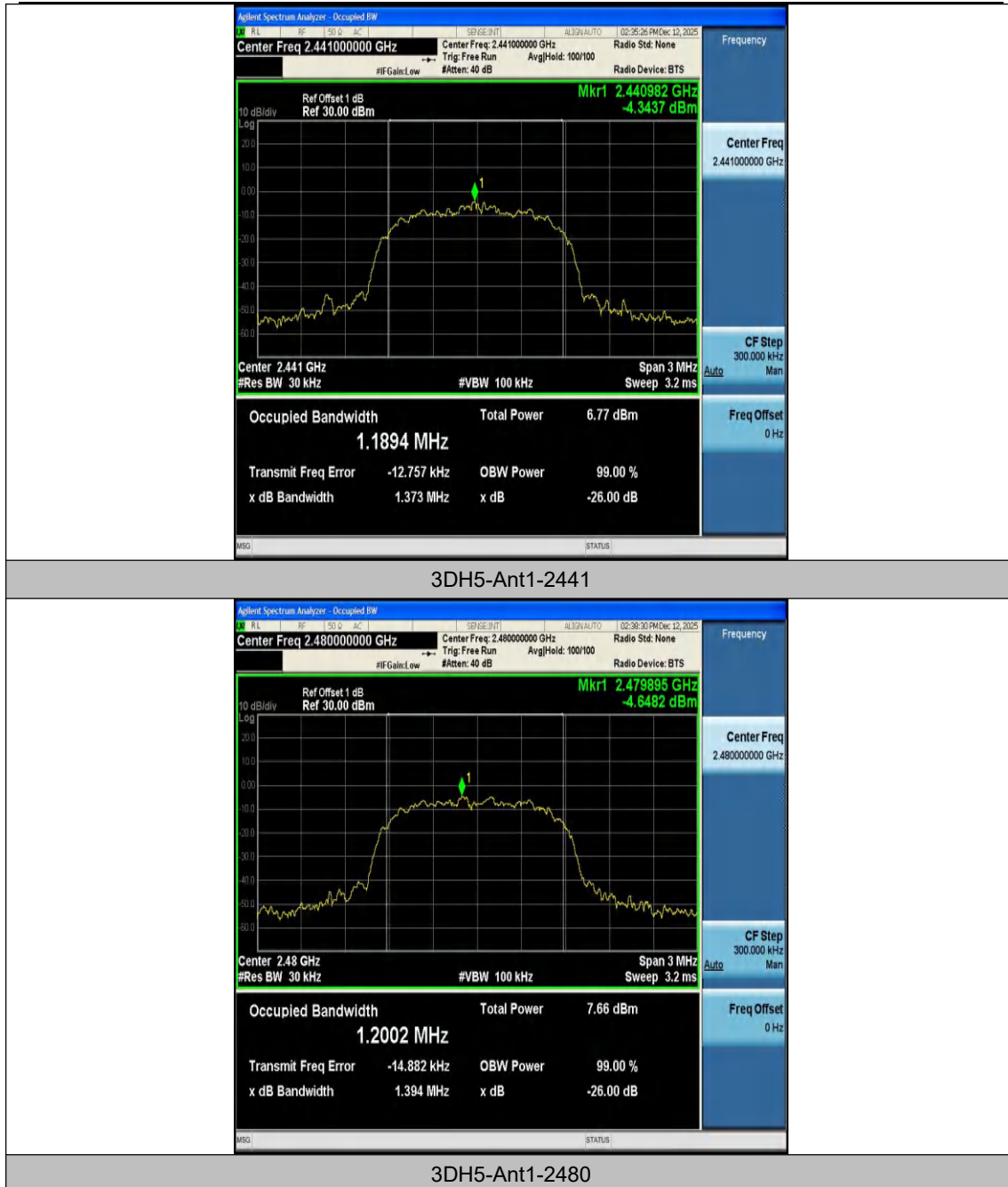


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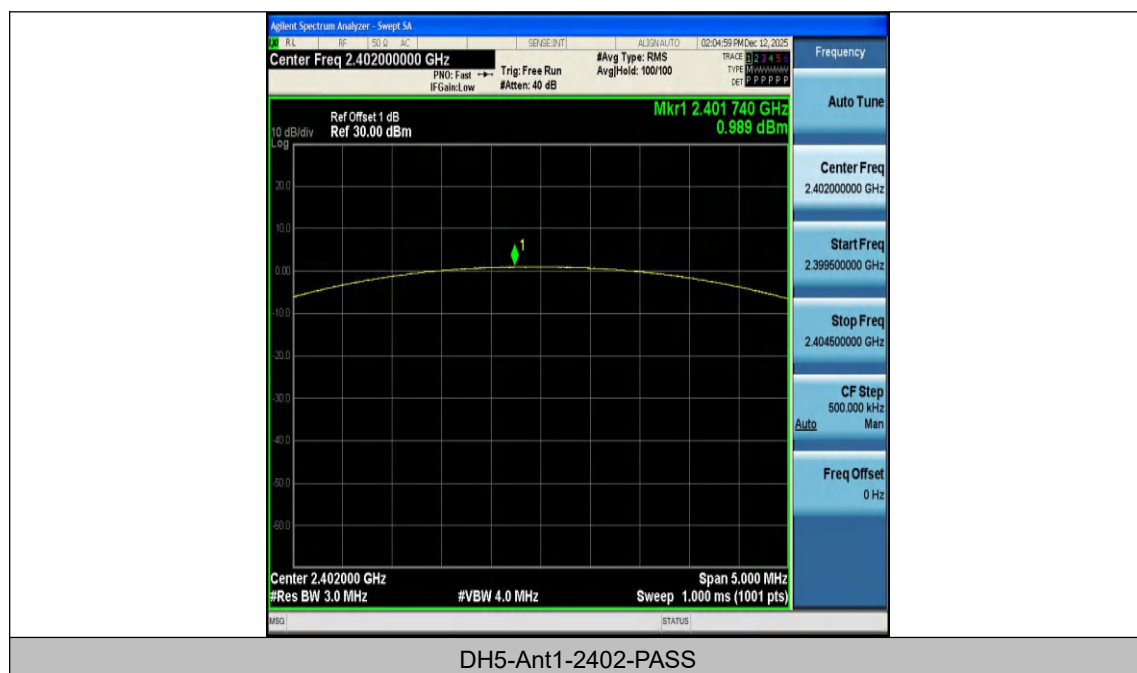
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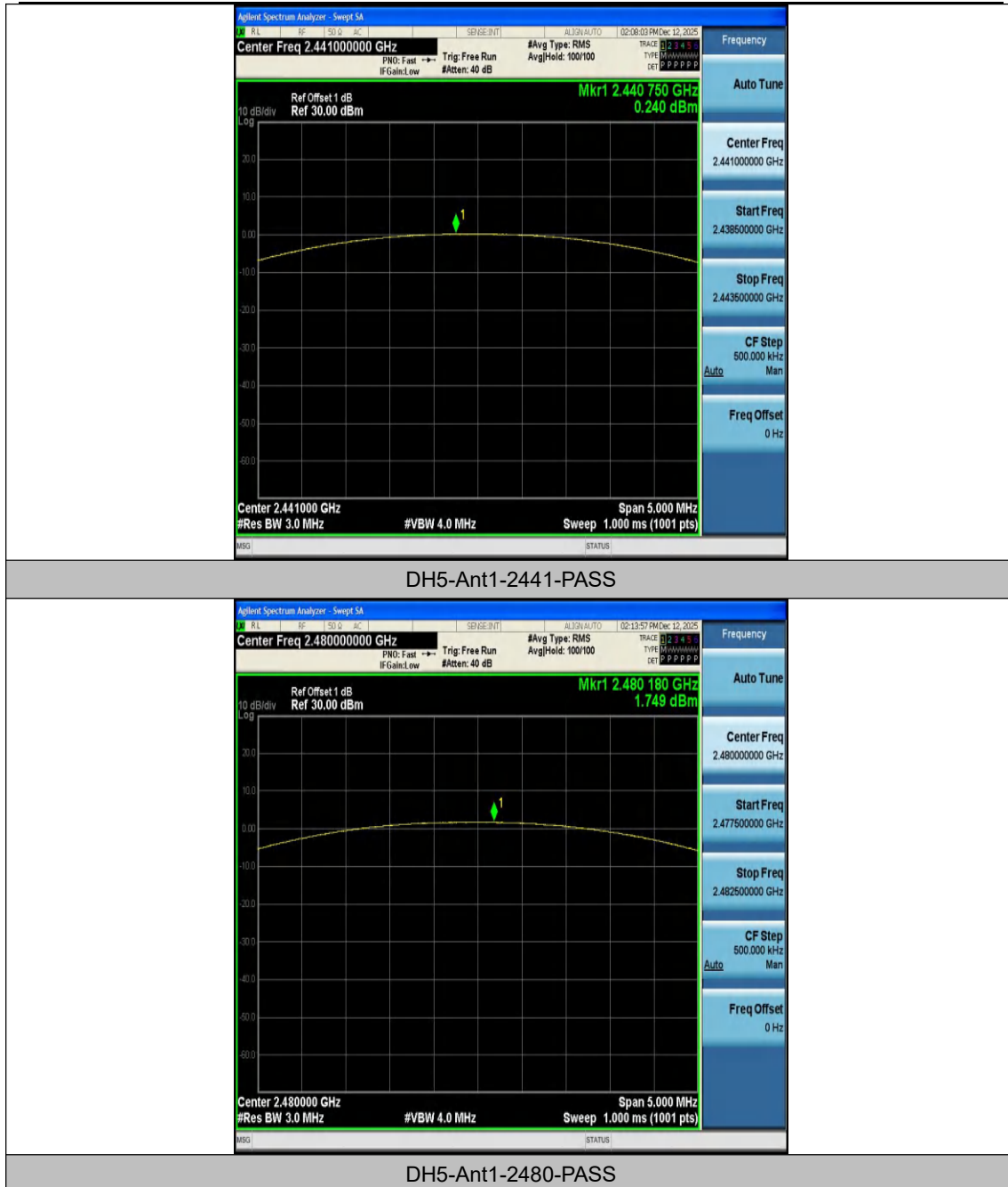
Appendix C: Maximum Conducted Output Power

Test Result Peak

Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	0.99	≤20.97	PASS
DH5	Ant1	2441	0.24	≤20.97	PASS
DH5	Ant1	2480	1.75	≤20.97	PASS
2DH5	Ant1	2402	3.30	≤20.97	PASS
2DH5	Ant1	2441	2.51	≤20.97	PASS
2DH5	Ant1	2480	3.90	≤20.97	PASS
3DH5	Ant1	2402	3.58	≤20.97	PASS
3DH5	Ant1	2441	2.81	≤20.97	PASS
3DH5	Ant1	2480	4.27	≤20.97	PASS

Test Graphs

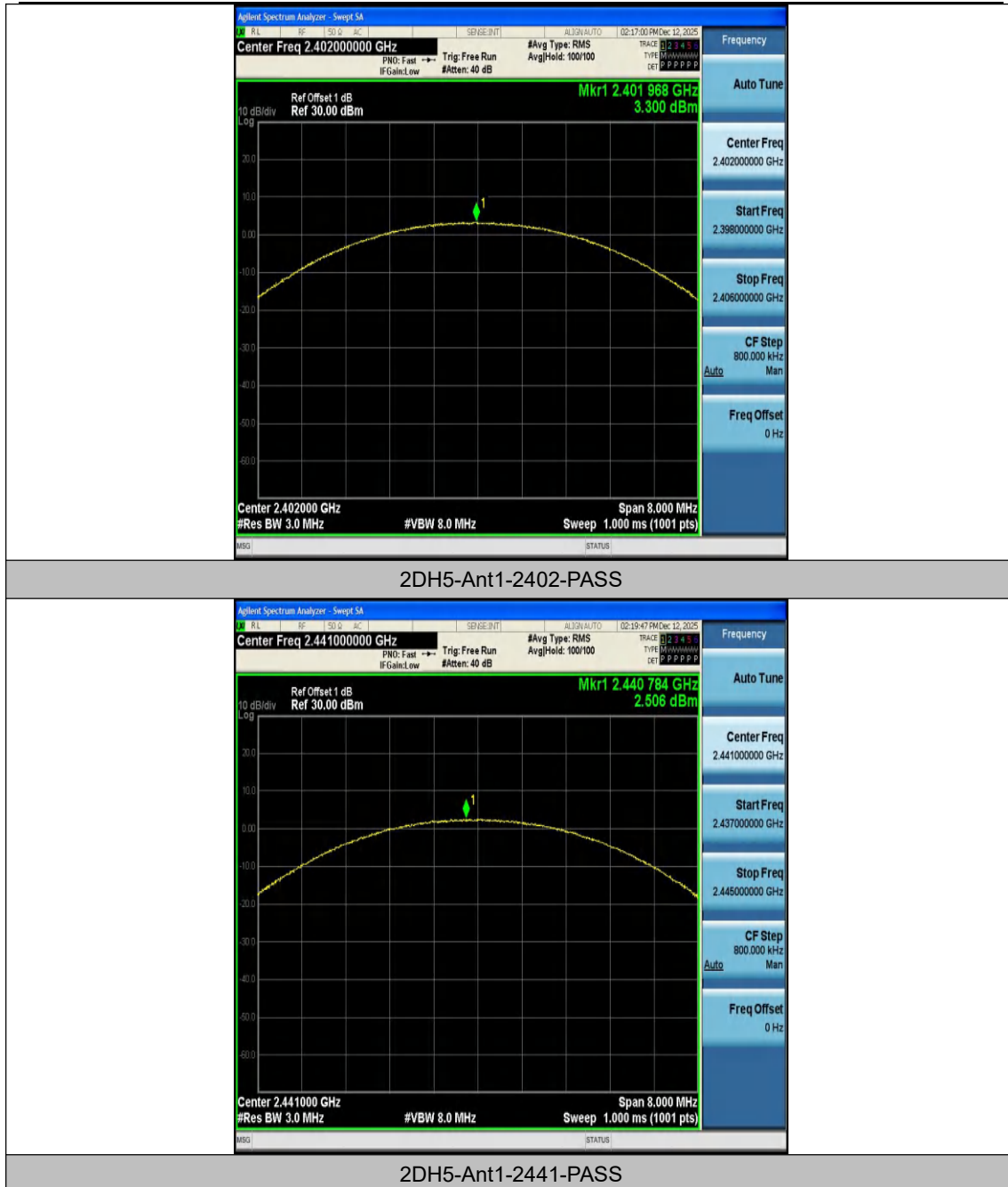




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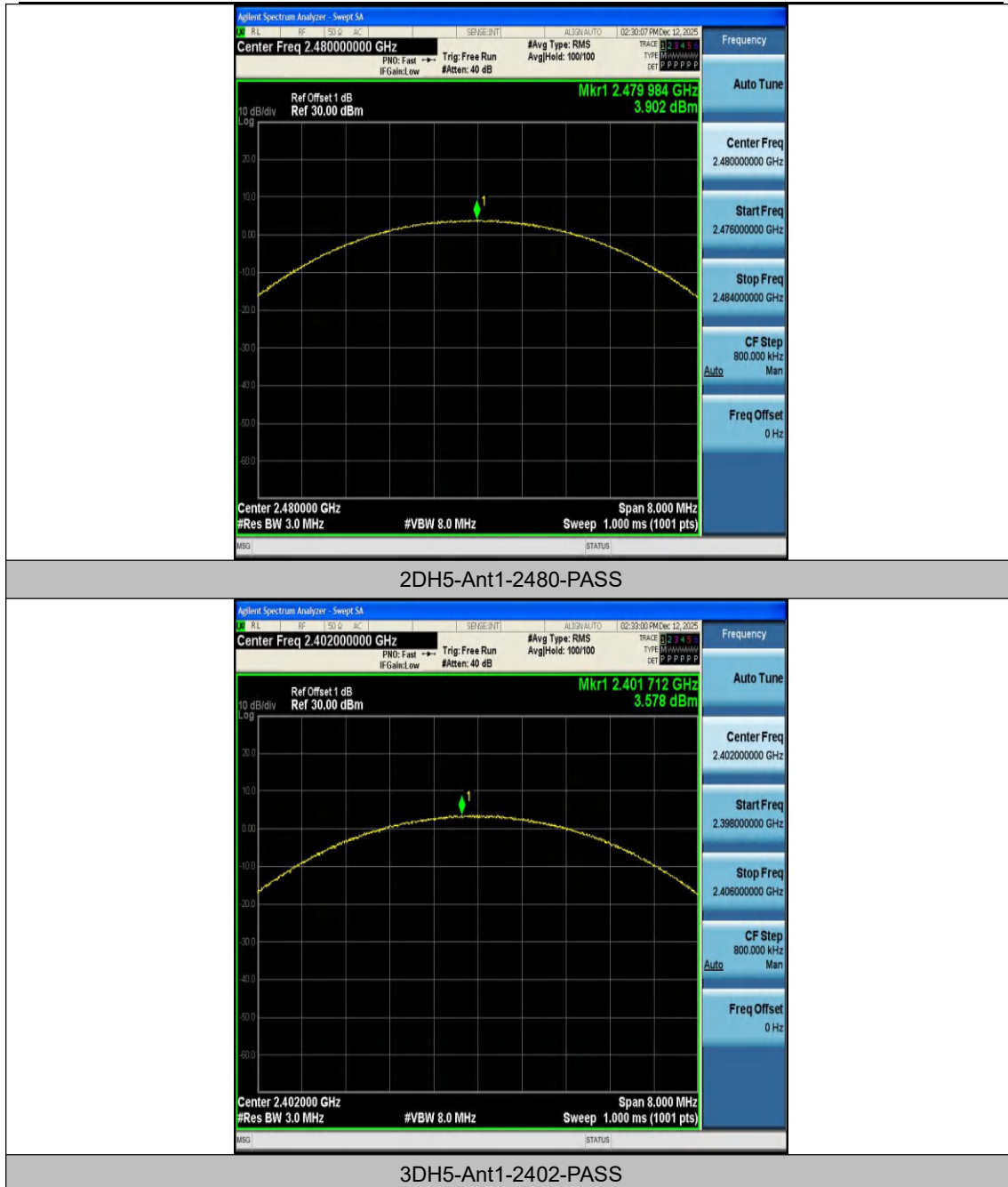
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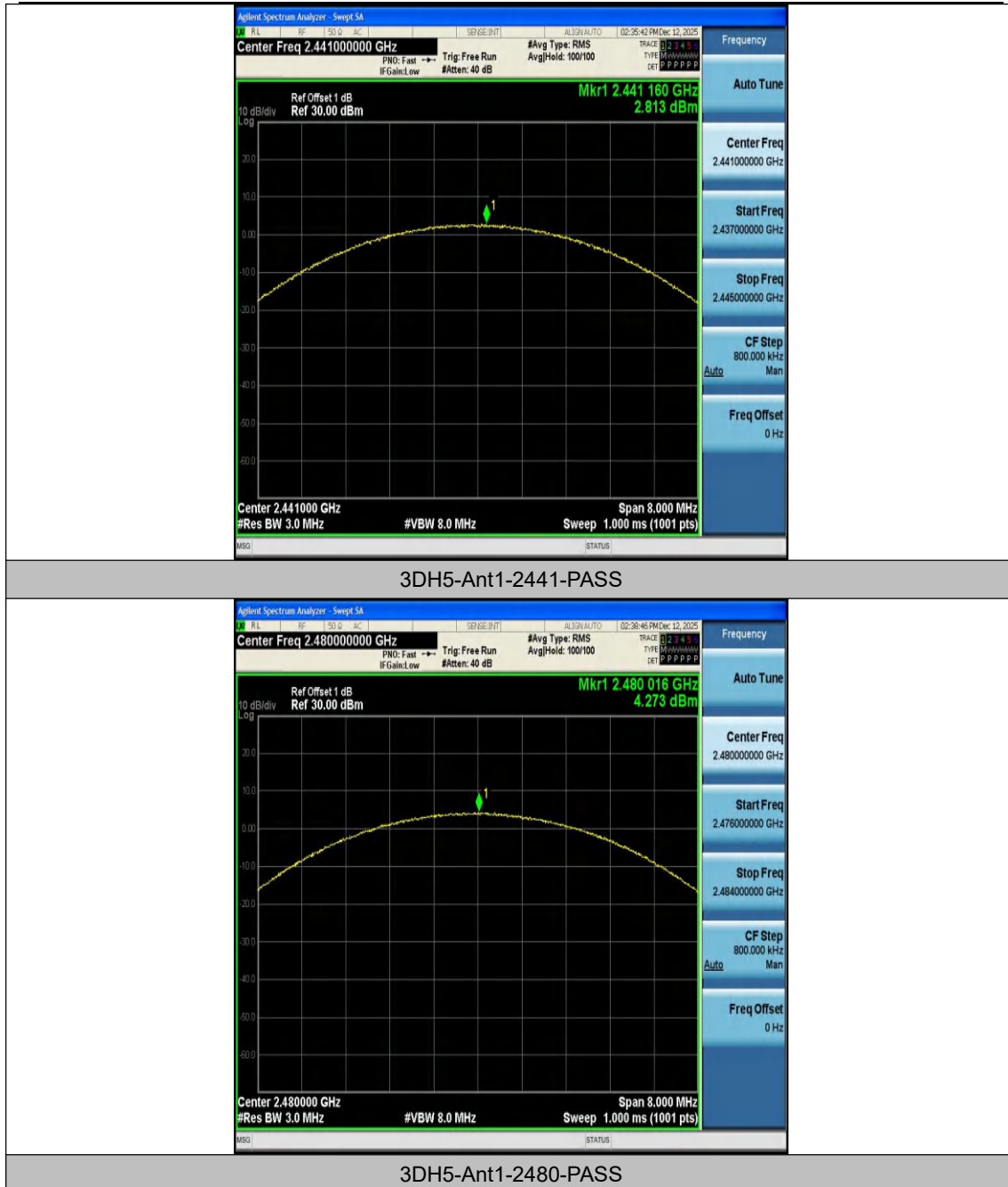
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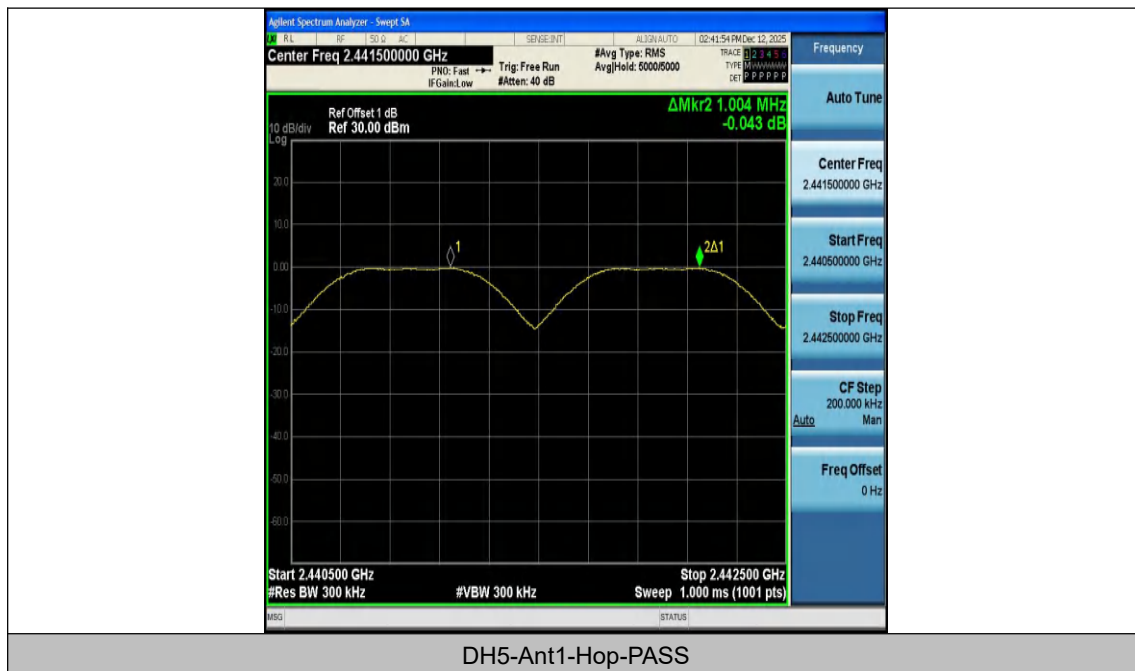
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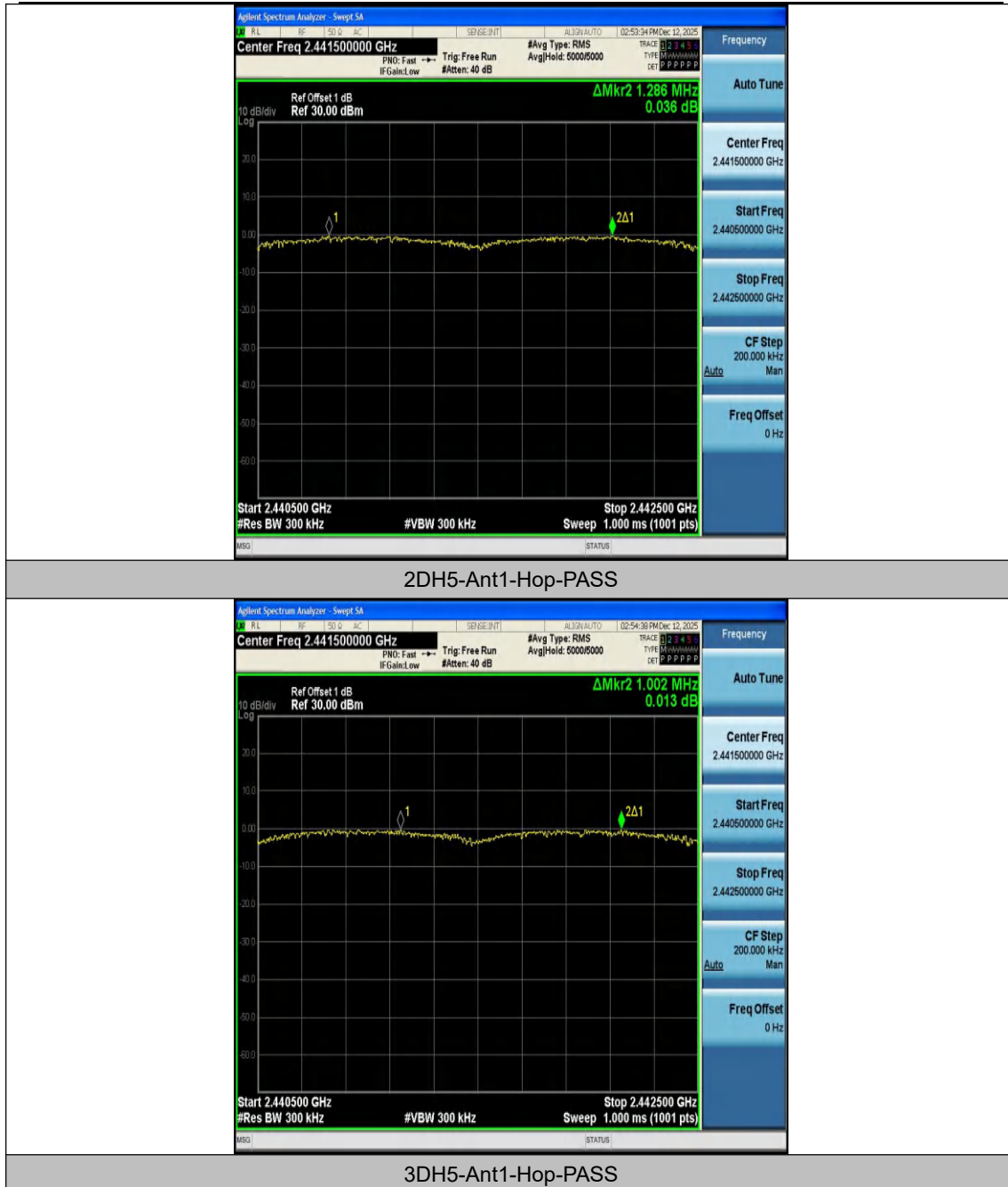
Appendix D: Carrier frequency separation

Test Result

Test Mode	Antenna	Frequency [MHz]	Result [MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.004	≥ 0.954	PASS
2DH5	Ant1	Hop	1.286	≥ 0.904	PASS
3DH5	Ant1	Hop	1.002	≥ 0.878	PASS

Test Graphs





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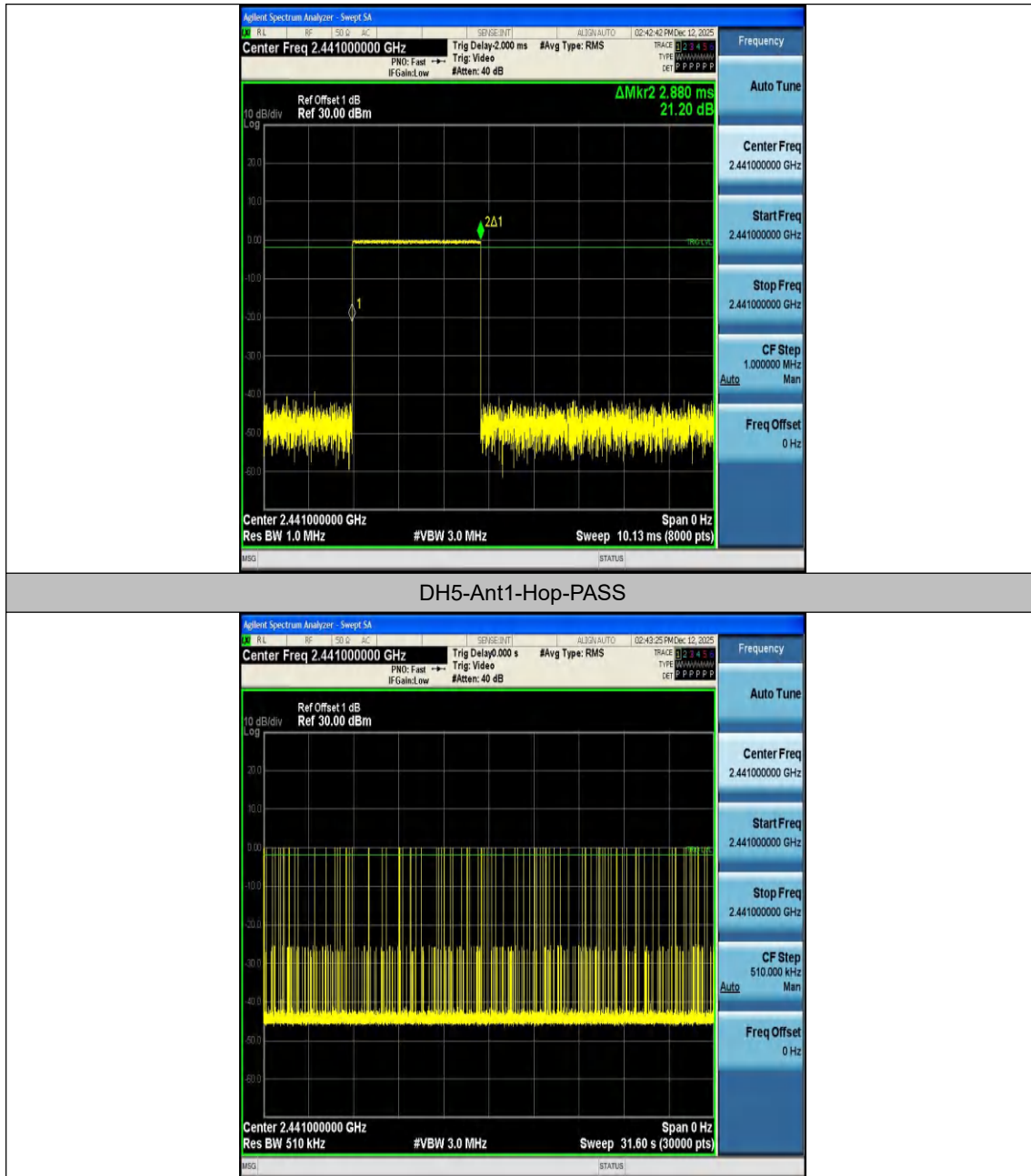
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Appendix E: Dwell Time

Test Result

Test Mode	Antenna	Frequency [MHz]	Burst Width [ms]	Total Hops [Num]	Result [s]	Limit [s]	Verdict
DH5	Ant1	Hop	2.880	95	0.274	≤0.4	PASS
2DH5	Ant1	Hop	2.887	100	0.289	≤0.4	PASS
3DH5	Ant1	Hop	2.889	108	0.312	≤0.4	PASS

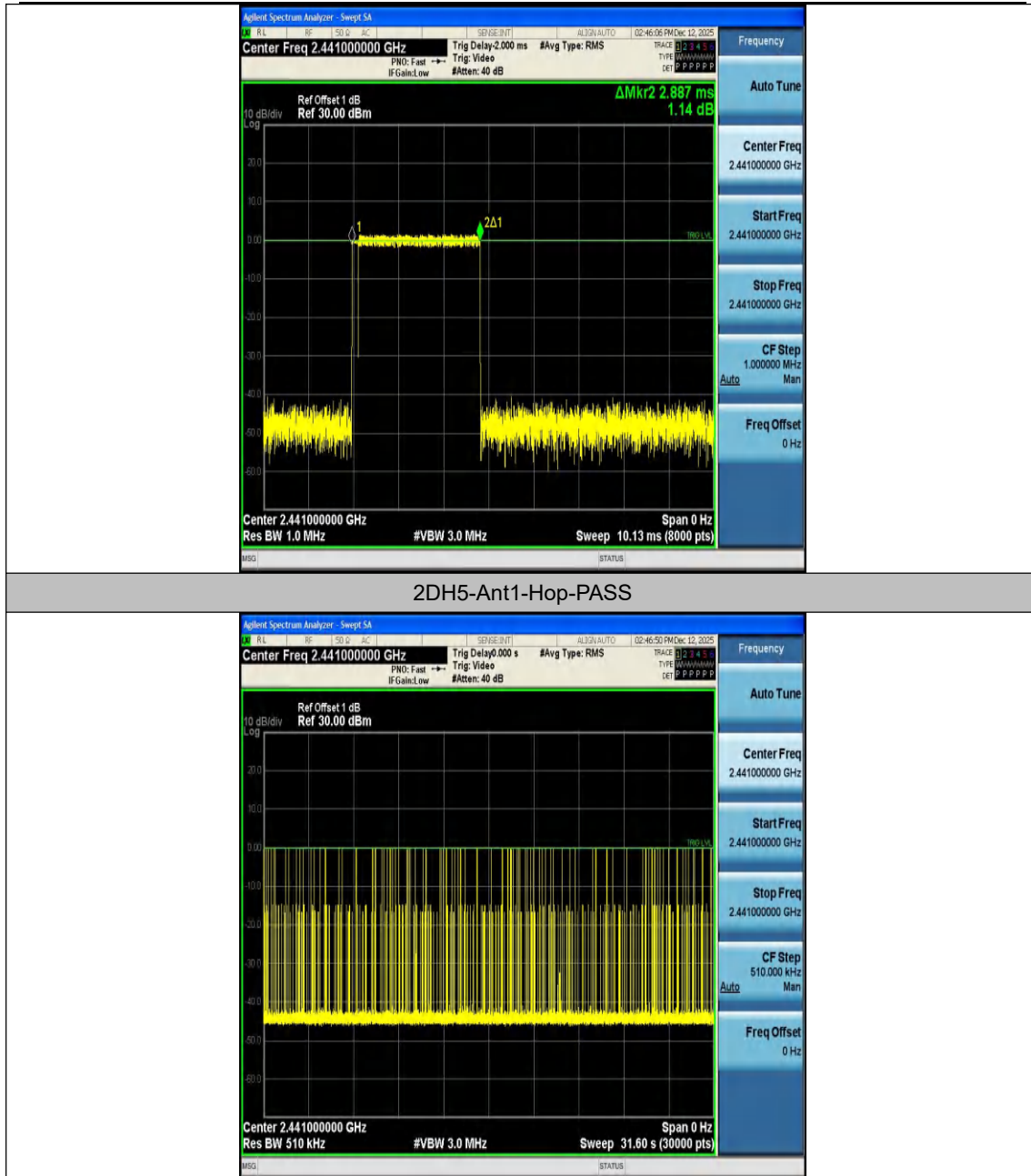
Test Graphs



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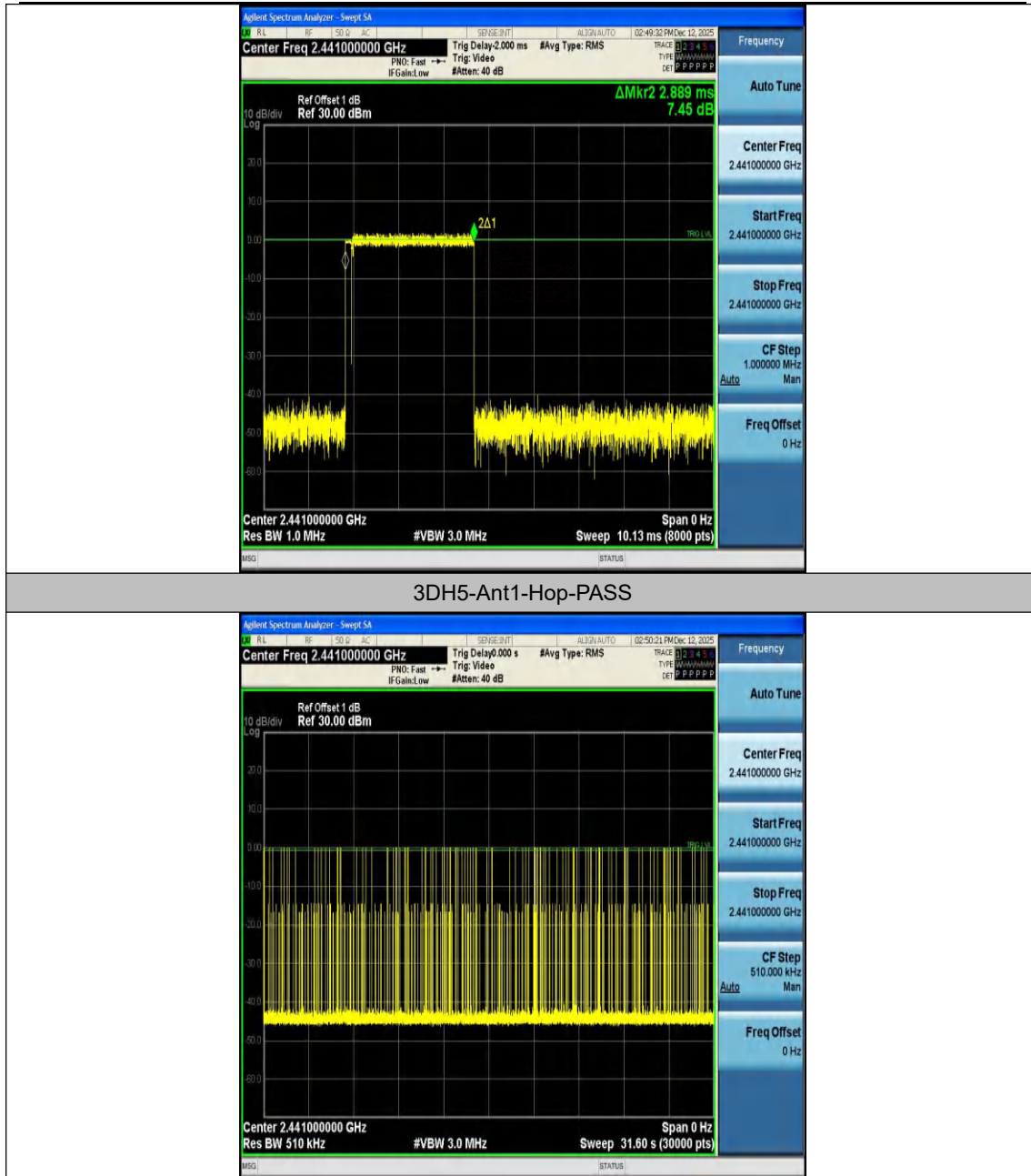
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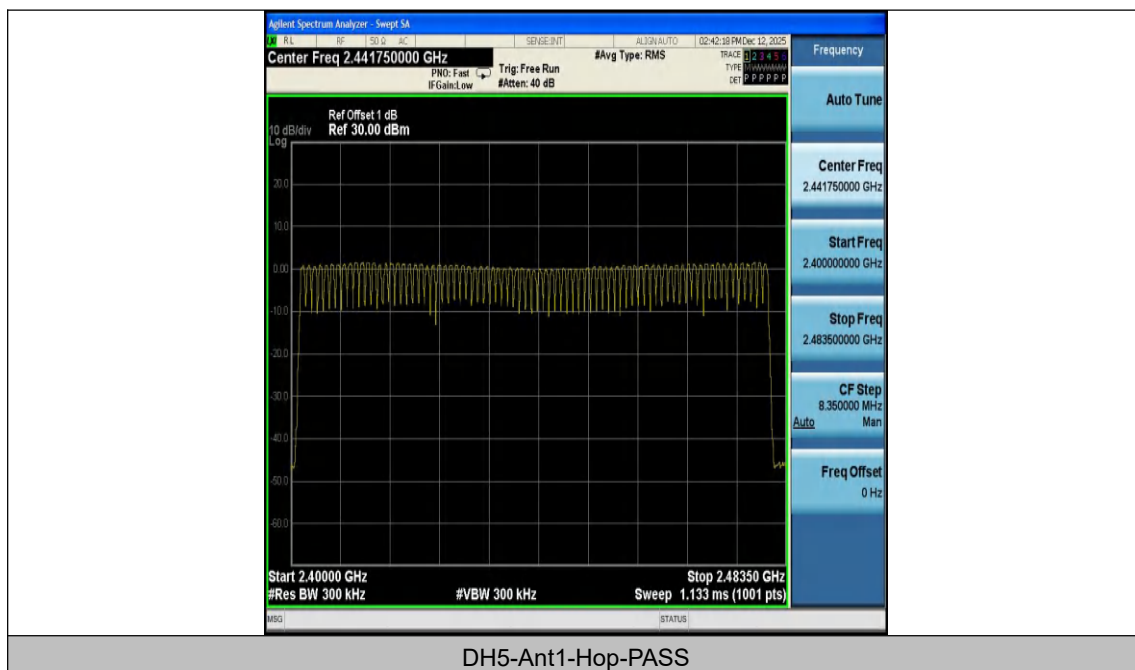
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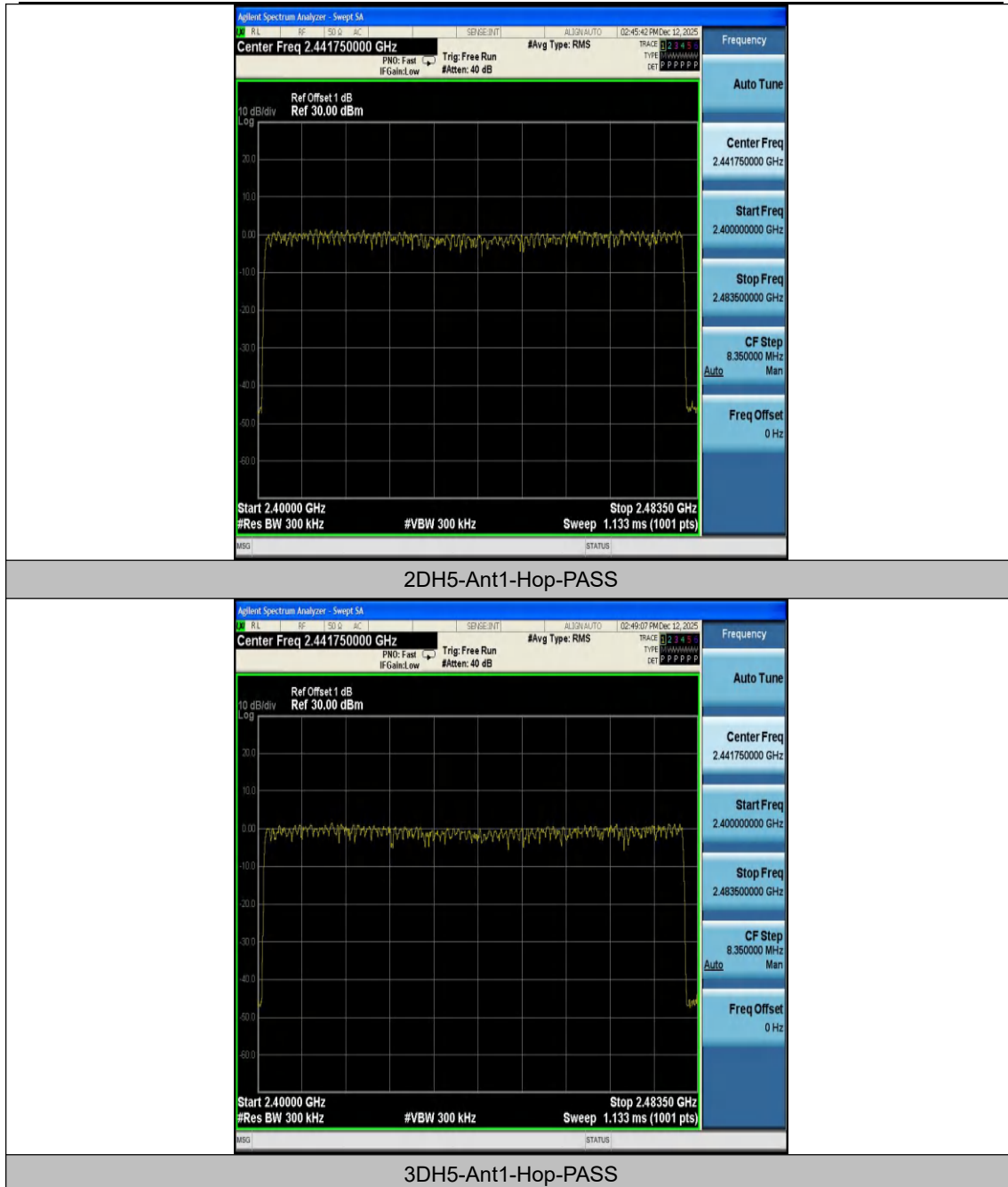
Appendix F: Number of Hopping Channel

Test Result

Test Mode	Antenna	Frequency [MHz]	Result [Num]	Limit [Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

Test Graphs





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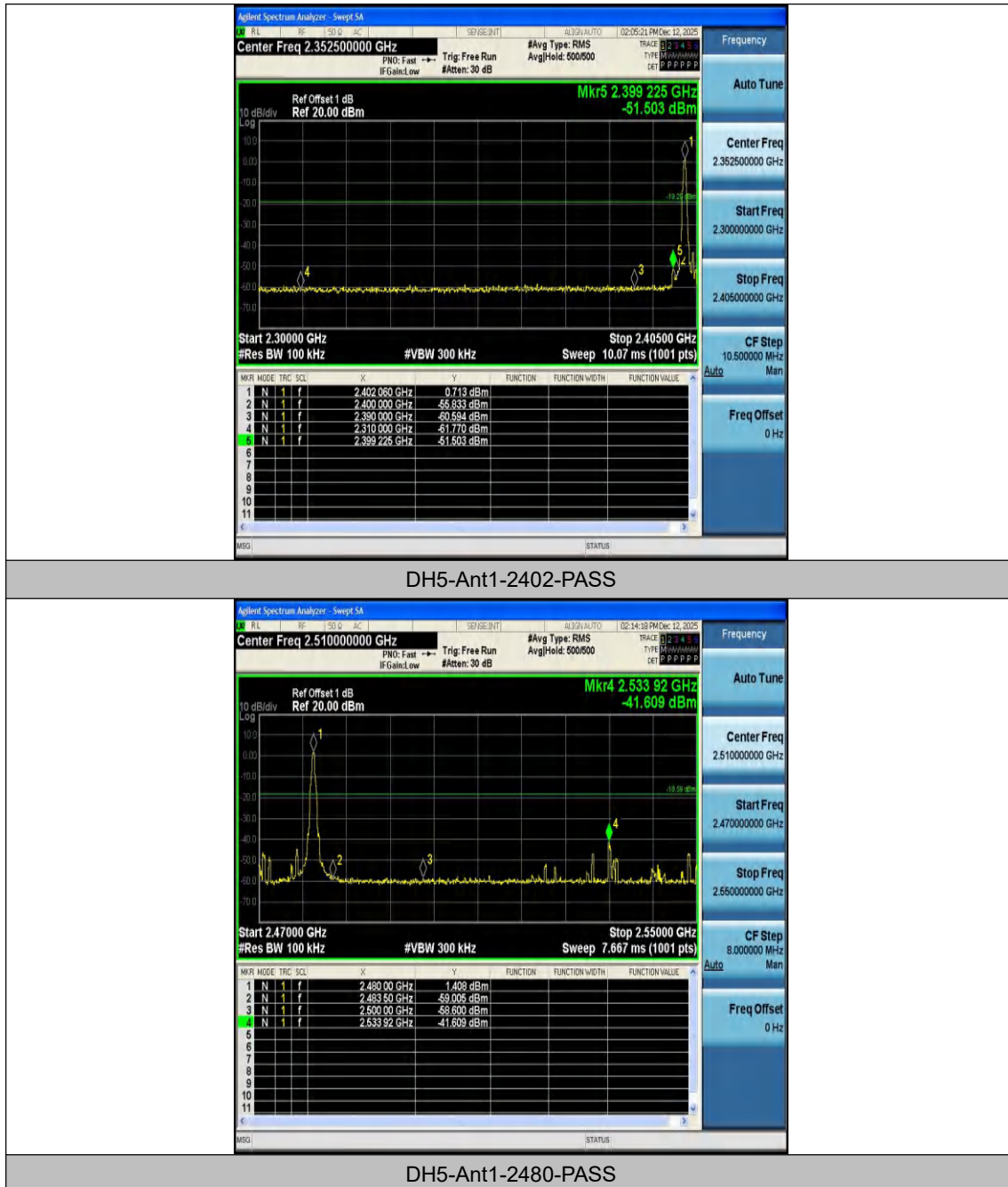
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Appendix G: Conducted Band edge

Test Result

Test Mode	Antenna	Ch. Name	Frequency [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	0.71	-51.5	≤-19.29	PASS
DH5	Ant1	High	2480	1.41	-41.61	≤-18.59	PASS
DH5	Ant1	Low	Hop_2402	-0.05	-44.99	≤-20.05	PASS
DH5	Ant1	High	Hop_2480	0.92	-56.65	≤-19.08	PASS
2DH5	Ant1	Low	2402	0.84	-53.86	≤-19.16	PASS
2DH5	Ant1	High	2480	1.42	-56.76	≤-18.59	PASS
2DH5	Ant1	Low	Hop_2402	-1.74	-58.57	≤-21.74	PASS
2DH5	Ant1	High	Hop_2480	0.99	-57.7	≤-19.01	PASS
3DH5	Ant1	Low	2402	0.82	-54.06	≤-19.18	PASS
3DH5	Ant1	High	2480	1.25	-57.37	≤-18.75	PASS
3DH5	Ant1	Low	Hop_2402	-1.98	-57.33	≤-21.98	PASS
3DH5	Ant1	High	Hop_2480	-0.39	-57.21	≤-20.39	PASS

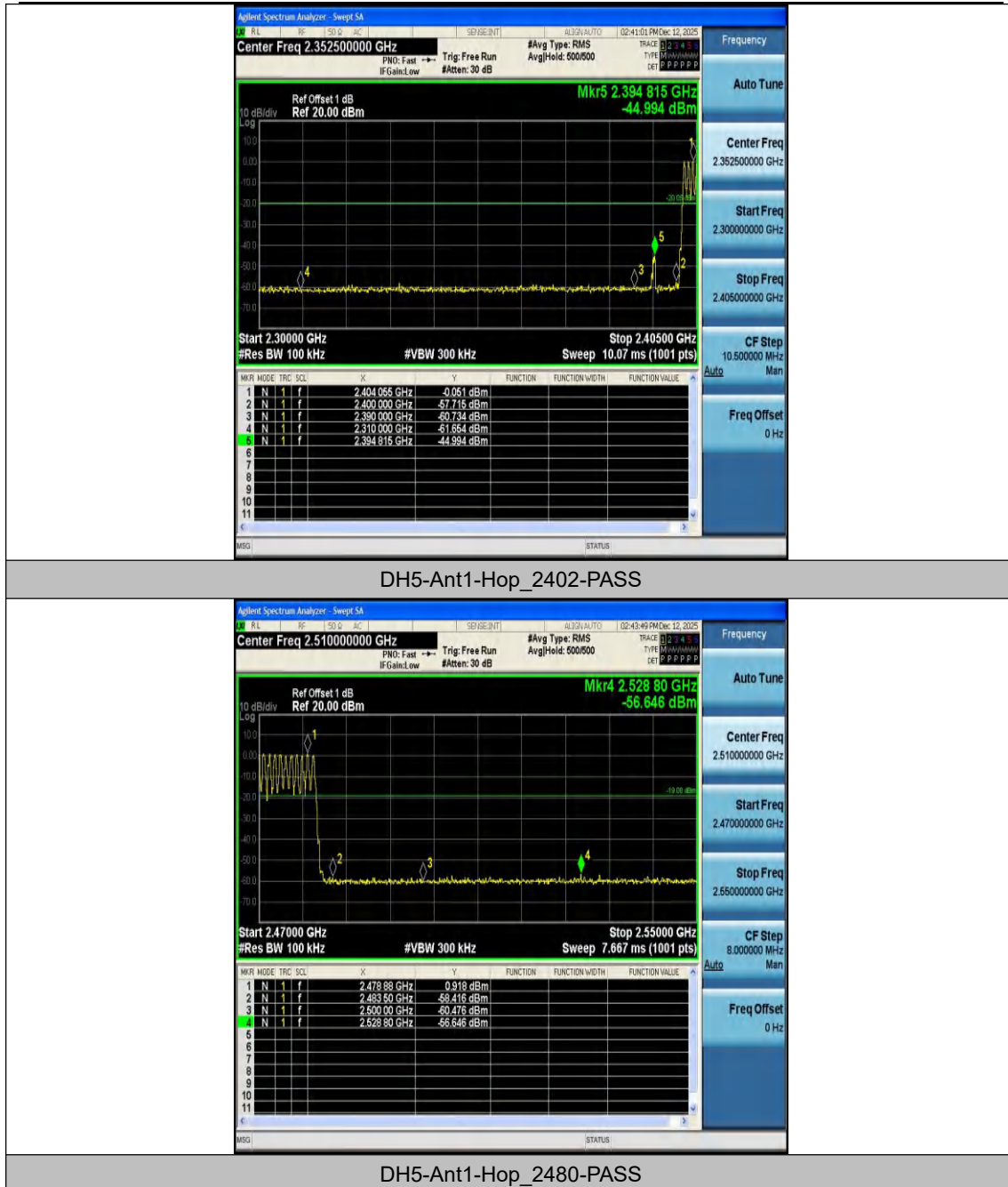
Test Graphs

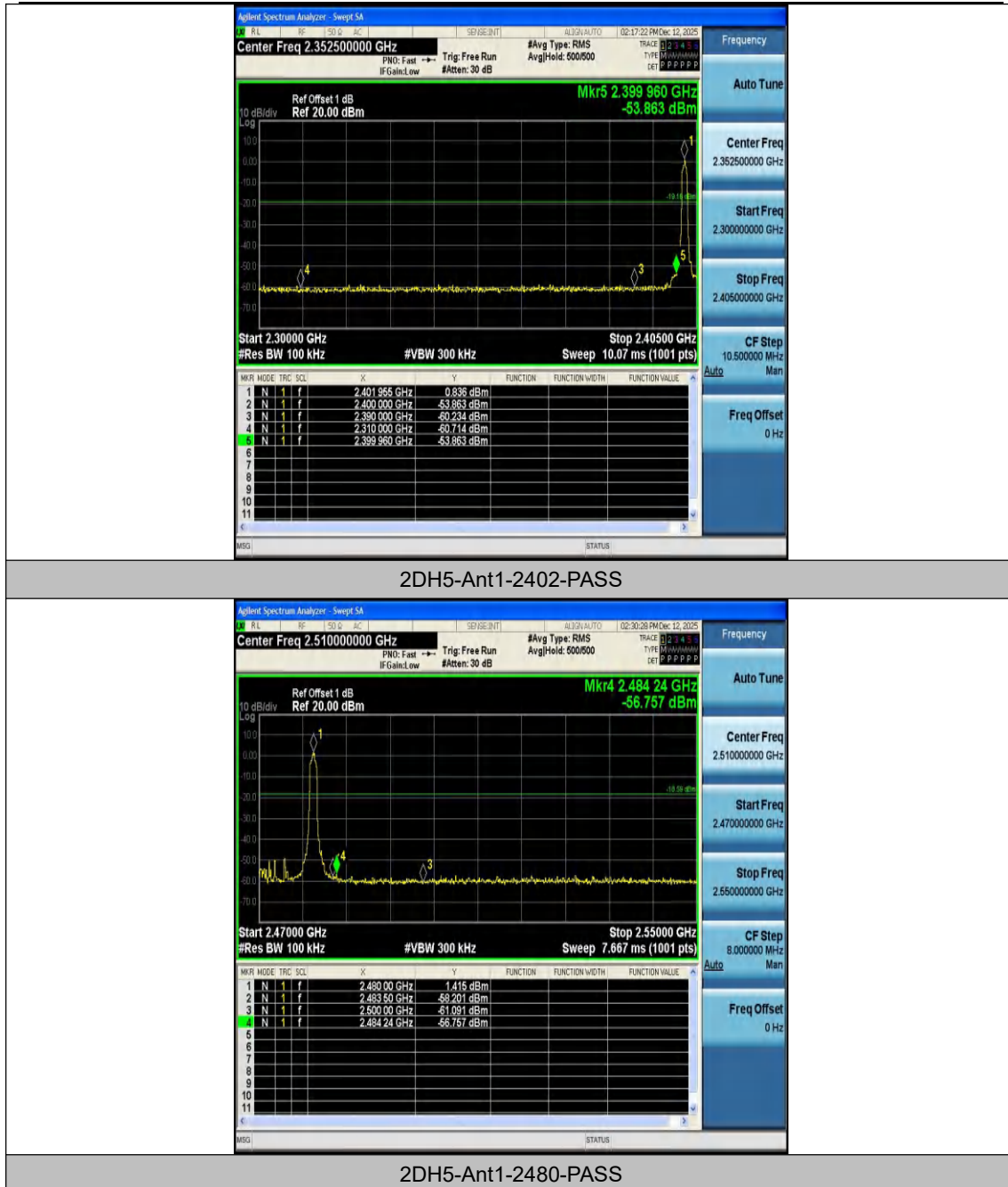


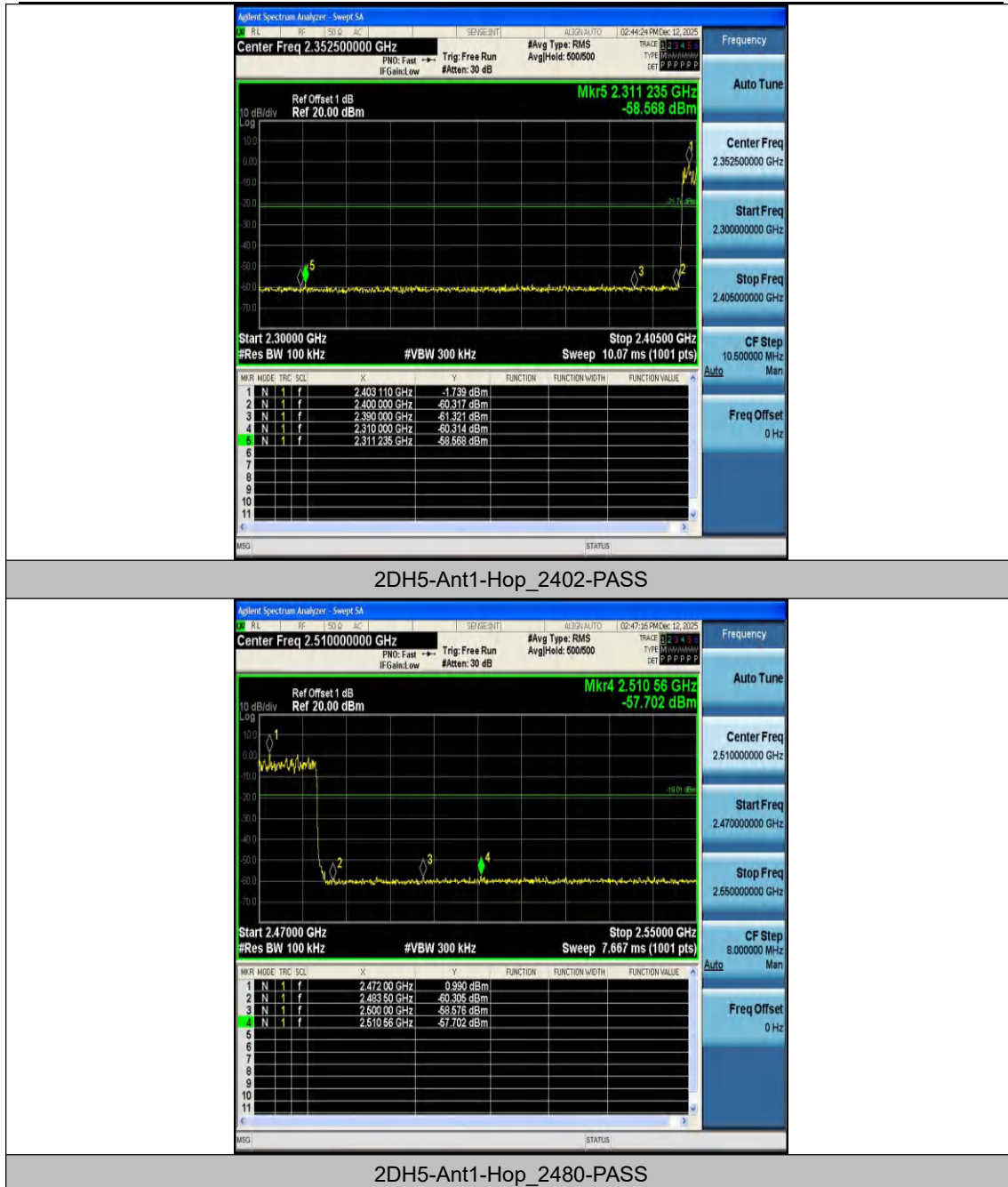
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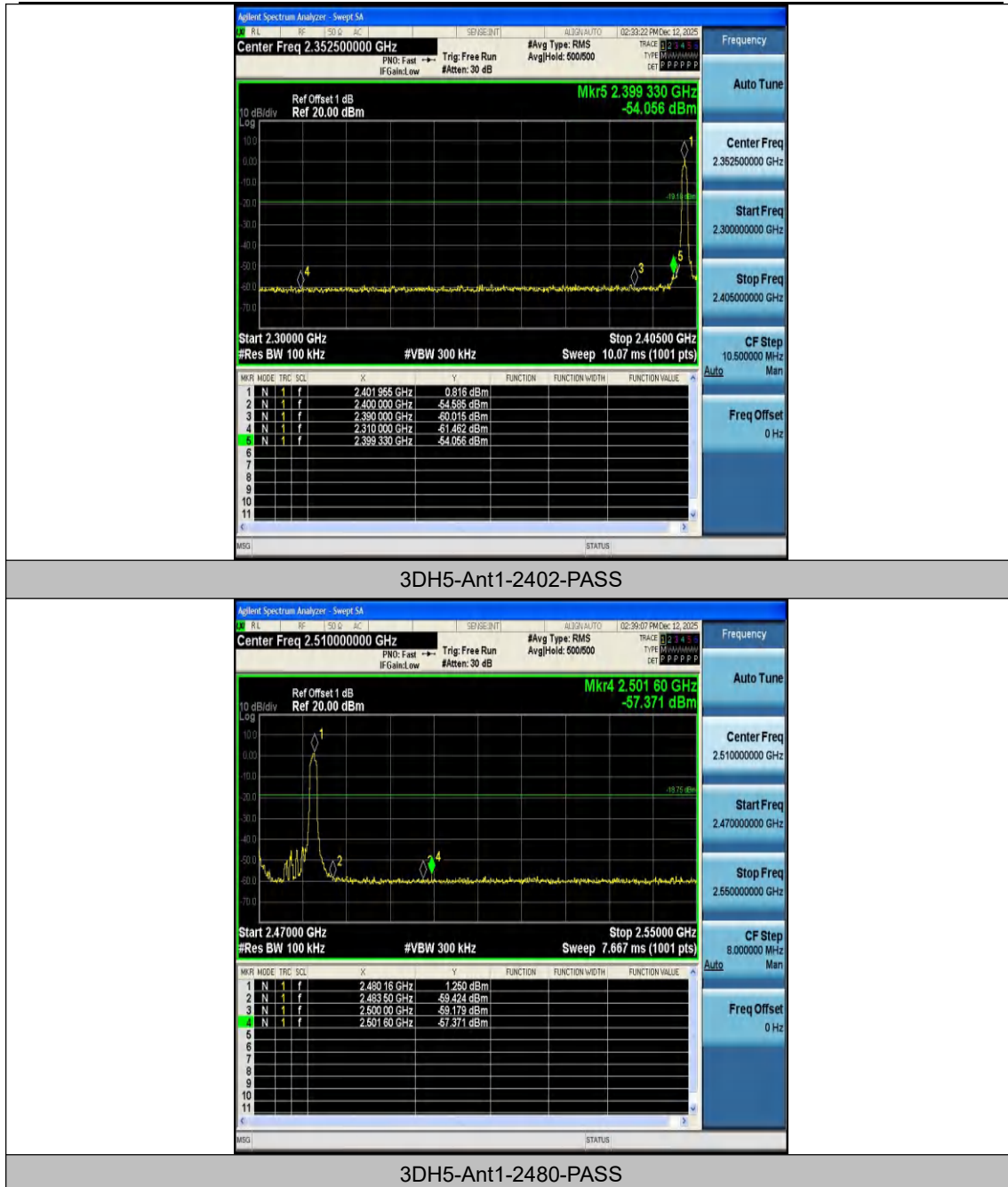
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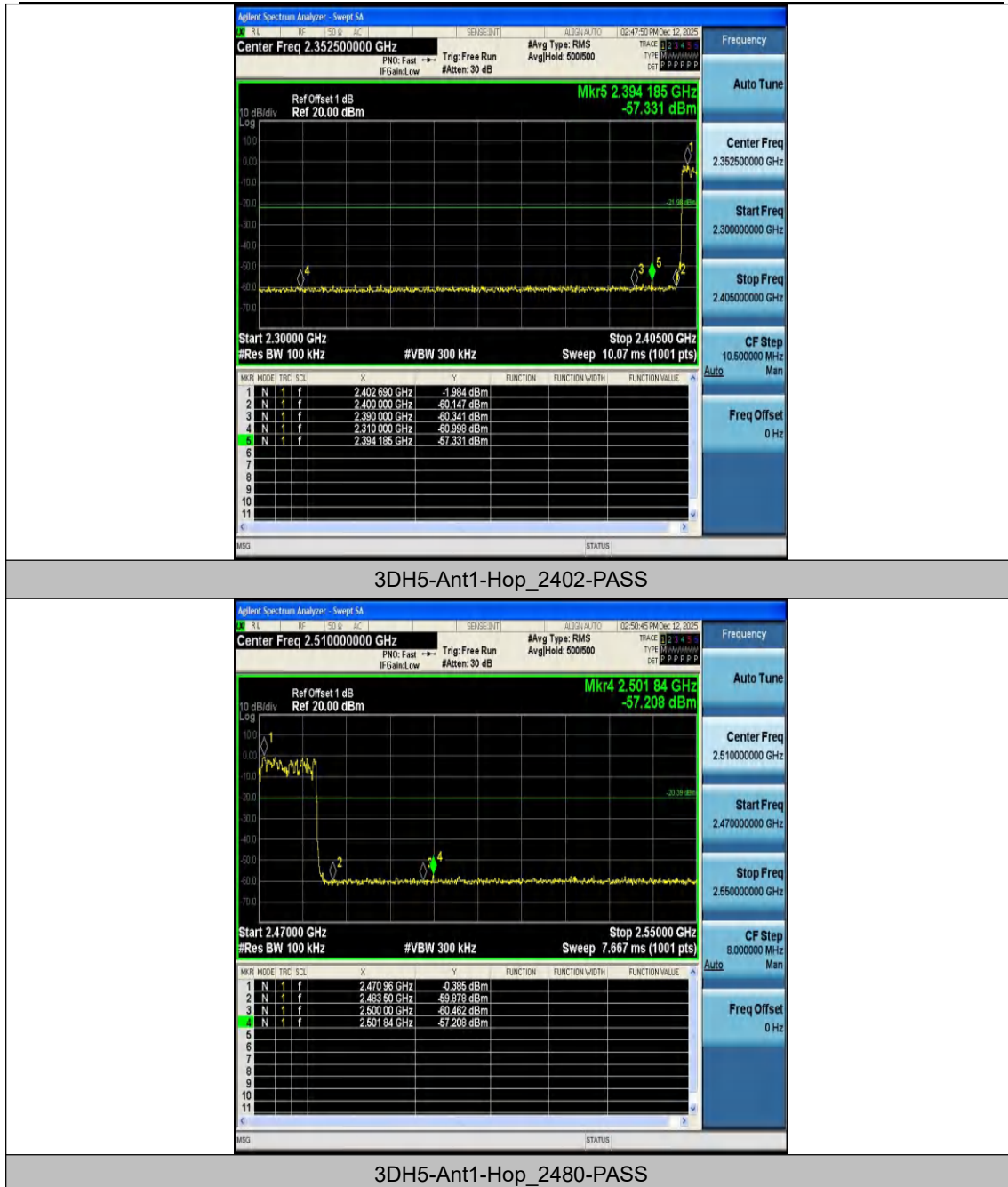
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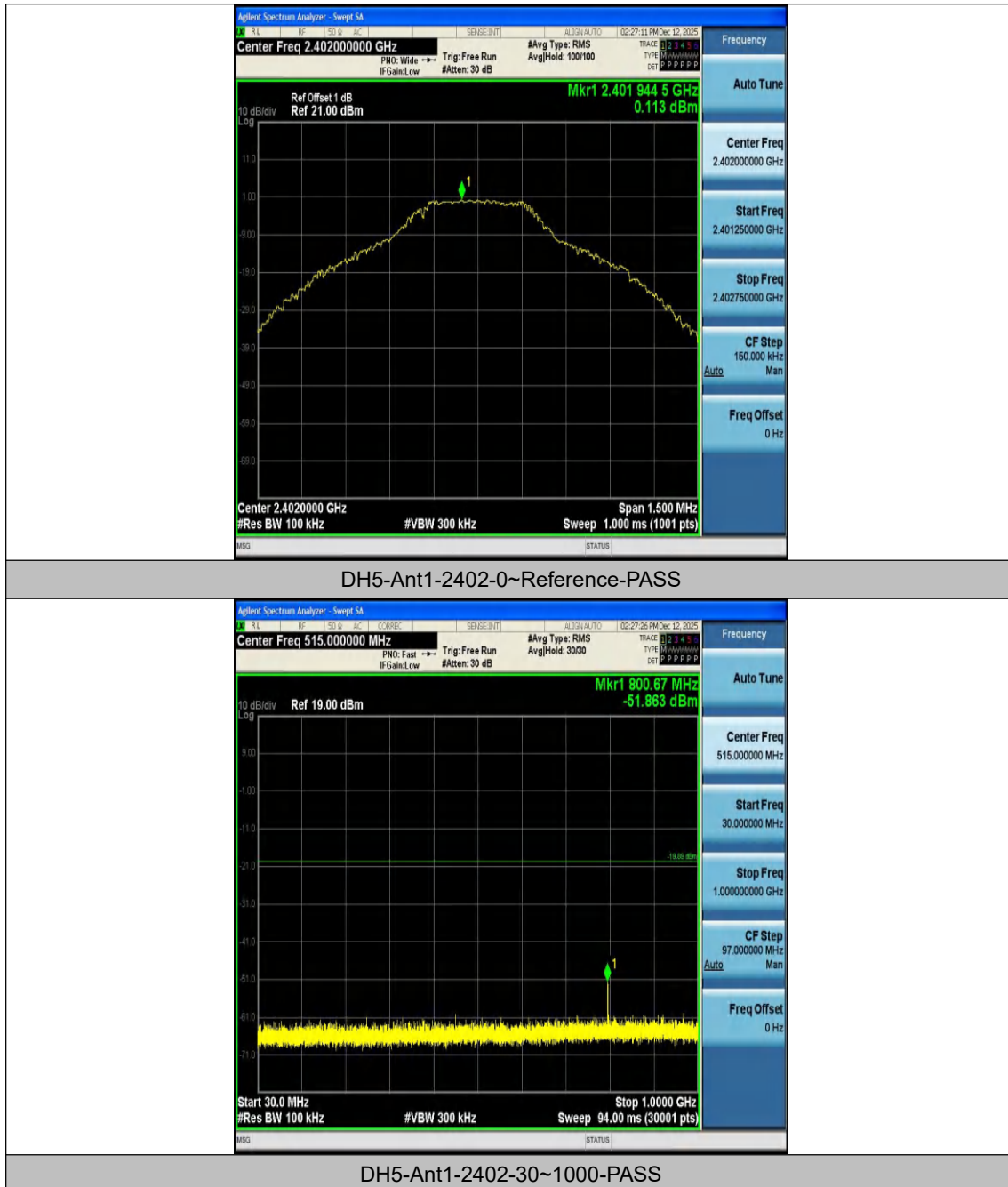
Appendix H: Conducted Spurious Emission

Test Result

Test Mode	Antenna	Frequency[MHz]	Freq. Range [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	0~Reference	0.11	0.11	---	PASS
DH5	Ant1	2402	30~1000	0.11	-51.86	≤-19.89	PASS
DH5	Ant1	2402	1000~26500	0.11	-42.34	≤-19.89	PASS
DH5	Ant1	2441	0~Reference	-0.16	-0.16	---	PASS
DH5	Ant1	2441	30~1000	-0.16	-51.76	≤-20.16	PASS
DH5	Ant1	2441	1000~26500	-0.16	-44.52	≤-20.16	PASS
DH5	Ant1	2480	0~Reference	1.41	1.41	---	PASS
DH5	Ant1	2480	30~1000	1.41	-51.55	≤-18.59	PASS
DH5	Ant1	2480	1000~26500	1.41	-28.53	≤-18.59	PASS
2DH5	Ant1	2402	0~Reference	0.55	0.55	---	PASS
2DH5	Ant1	2402	30~1000	0.55	-45.67	≤-19.45	PASS
2DH5	Ant1	2402	1000~26500	0.55	-42.2	≤-19.45	PASS
2DH5	Ant1	2441	0~Reference	-1.21	-1.21	---	PASS
2DH5	Ant1	2441	30~1000	-1.21	-53.37	≤-21.21	PASS
2DH5	Ant1	2441	1000~26500	-1.21	-44.98	≤-21.21	PASS
2DH5	Ant1	2480	0~Reference	0.92	0.92	---	PASS
2DH5	Ant1	2480	30~1000	0.92	-52.89	≤-19.08	PASS
2DH5	Ant1	2480	1000~26500	0.92	-45.42	≤-19.08	PASS
3DH5	Ant1	2402	0~Reference	0.43	0.43	---	PASS
3DH5	Ant1	2402	30~1000	0.43	-52.13	≤-19.57	PASS
3DH5	Ant1	2402	1000~26500	0.43	-41.86	≤-19.57	PASS
3DH5	Ant1	2441	0~Reference	-0.63	-0.63	---	PASS
3DH5	Ant1	2441	30~1000	-0.63	-52.63	≤-20.63	PASS
3DH5	Ant1	2441	1000~26500	-0.63	-45.13	≤-20.63	PASS
3DH5	Ant1	2480	0~Reference	1.38	1.38	---	PASS
3DH5	Ant1	2480	30~1000	1.38	-51.35	≤-18.62	PASS
3DH5	Ant1	2480	1000~26500	1.38	-41.16	≤-18.62	PASS

Remark: Regarding the spurious emissions from 30MHz to 26.5GHz, the cable loss have been set in the 'Input Correction' of the Spectrum Analyzer during the test.

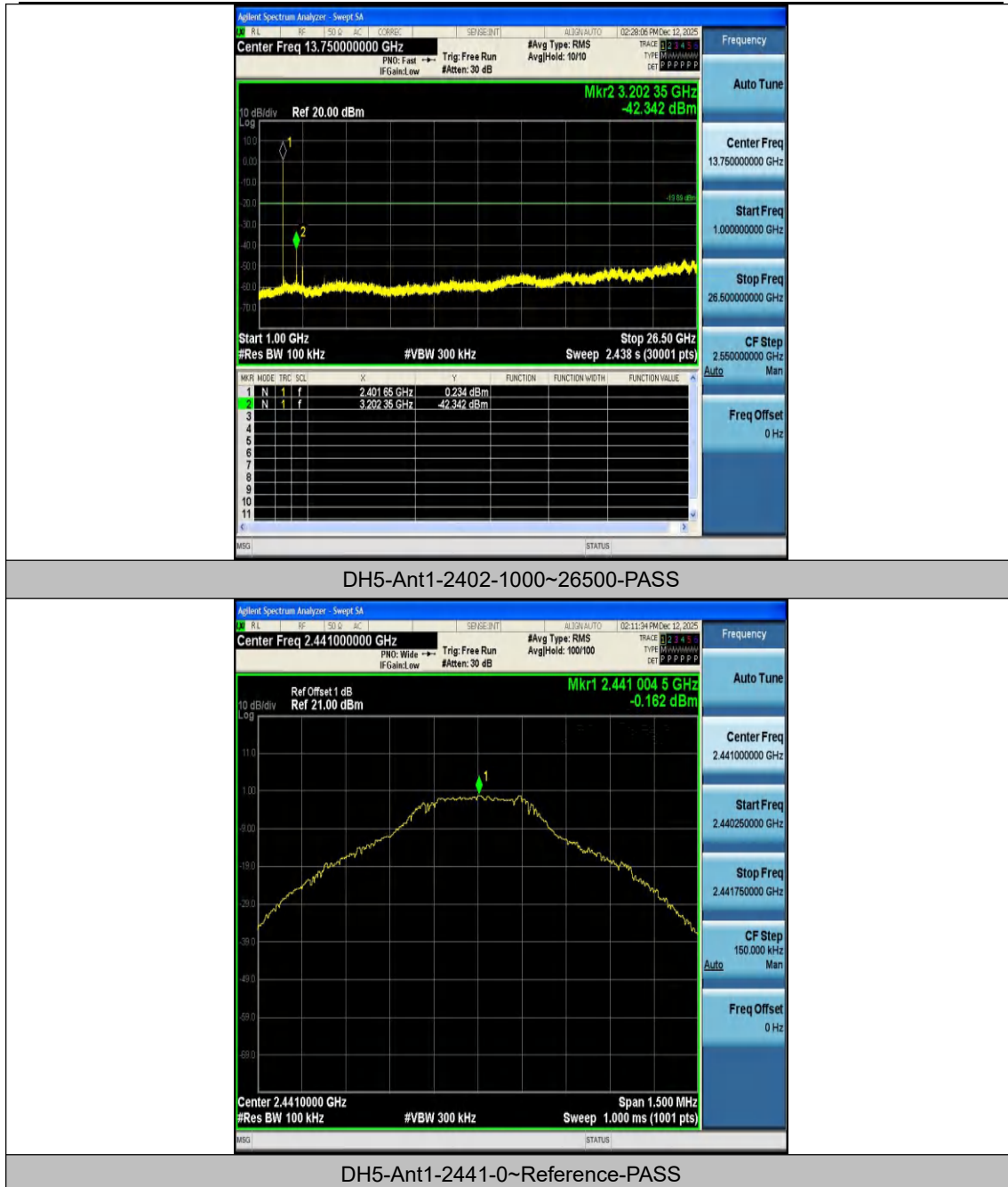
Test Graphs



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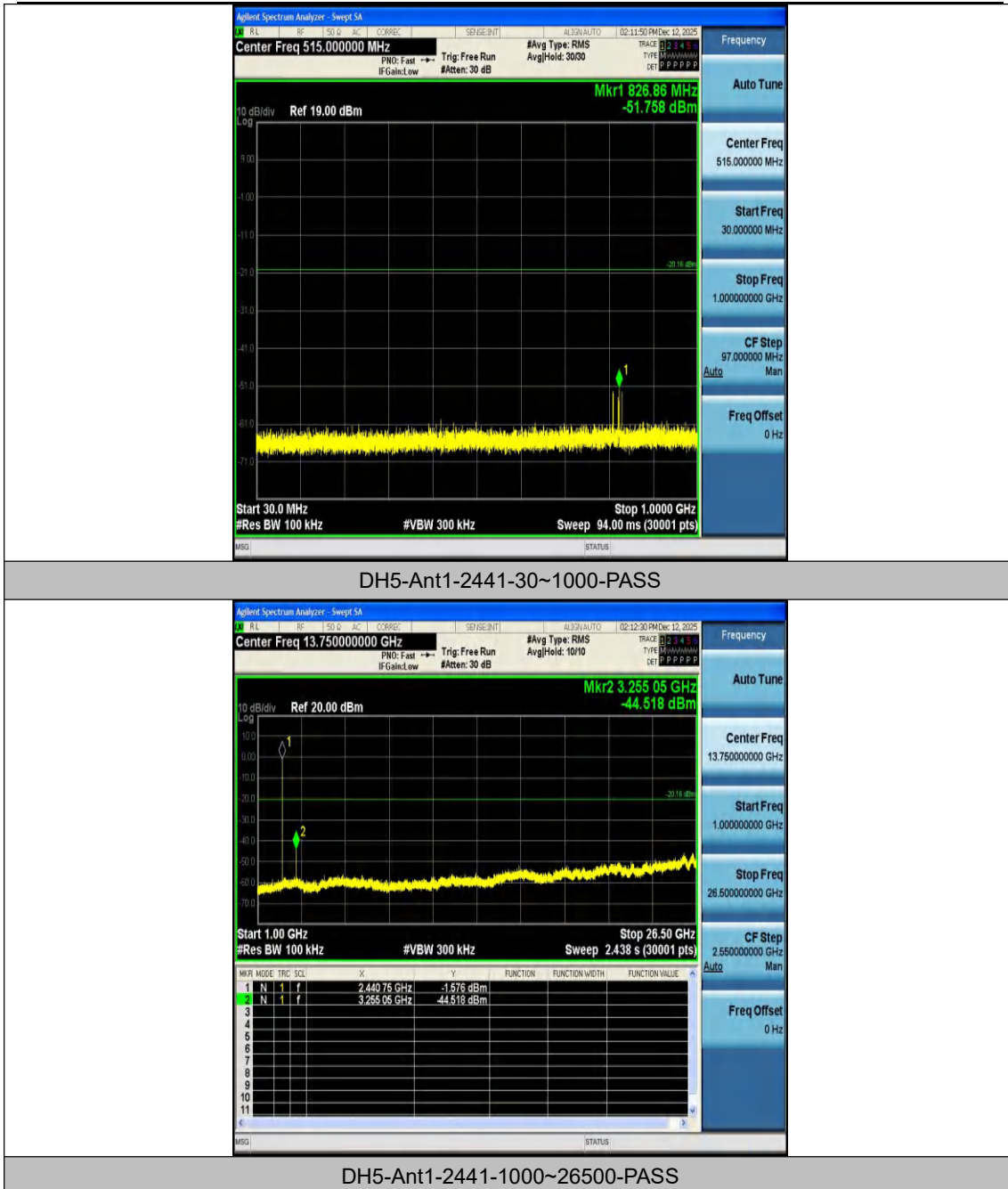
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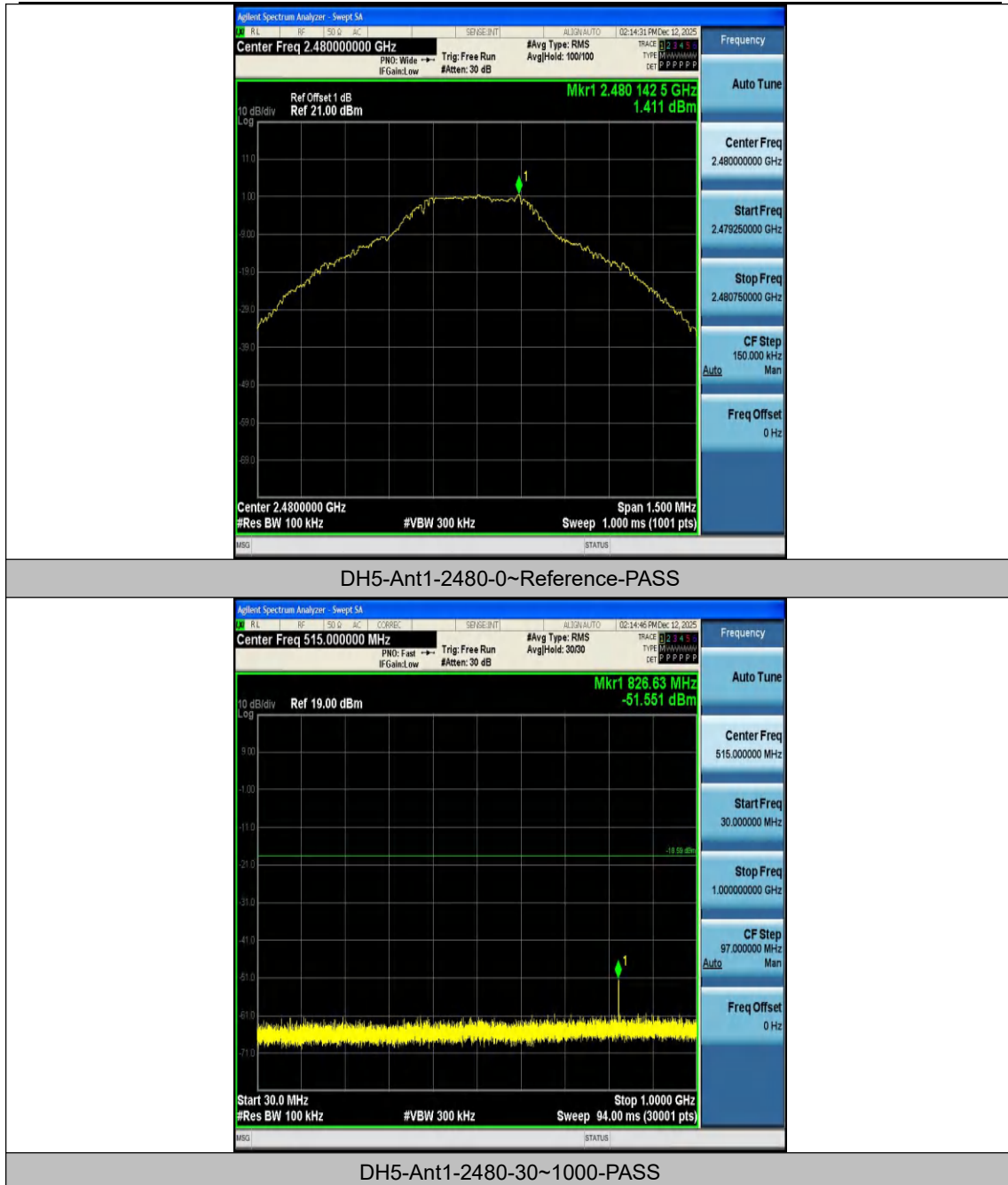
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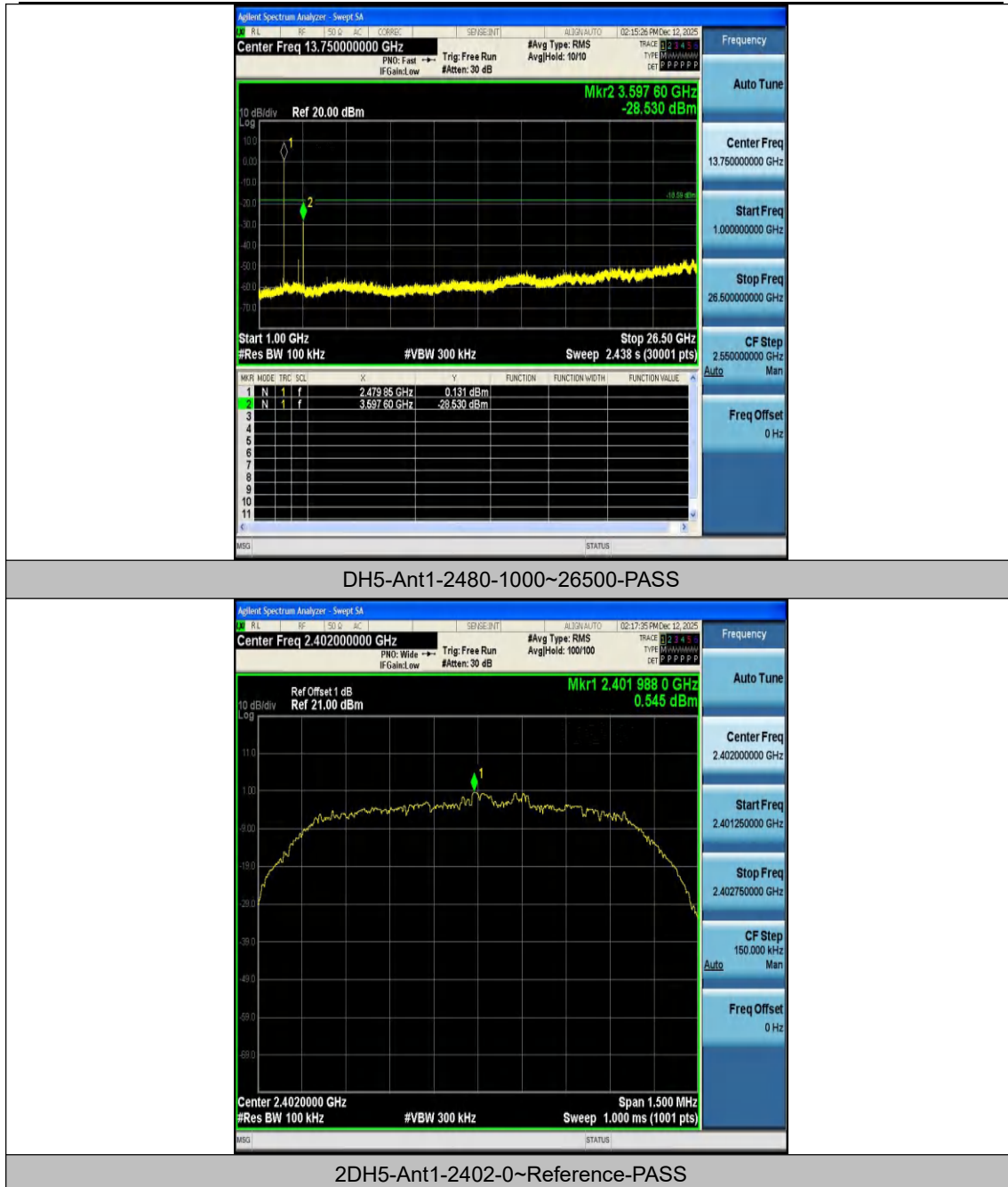
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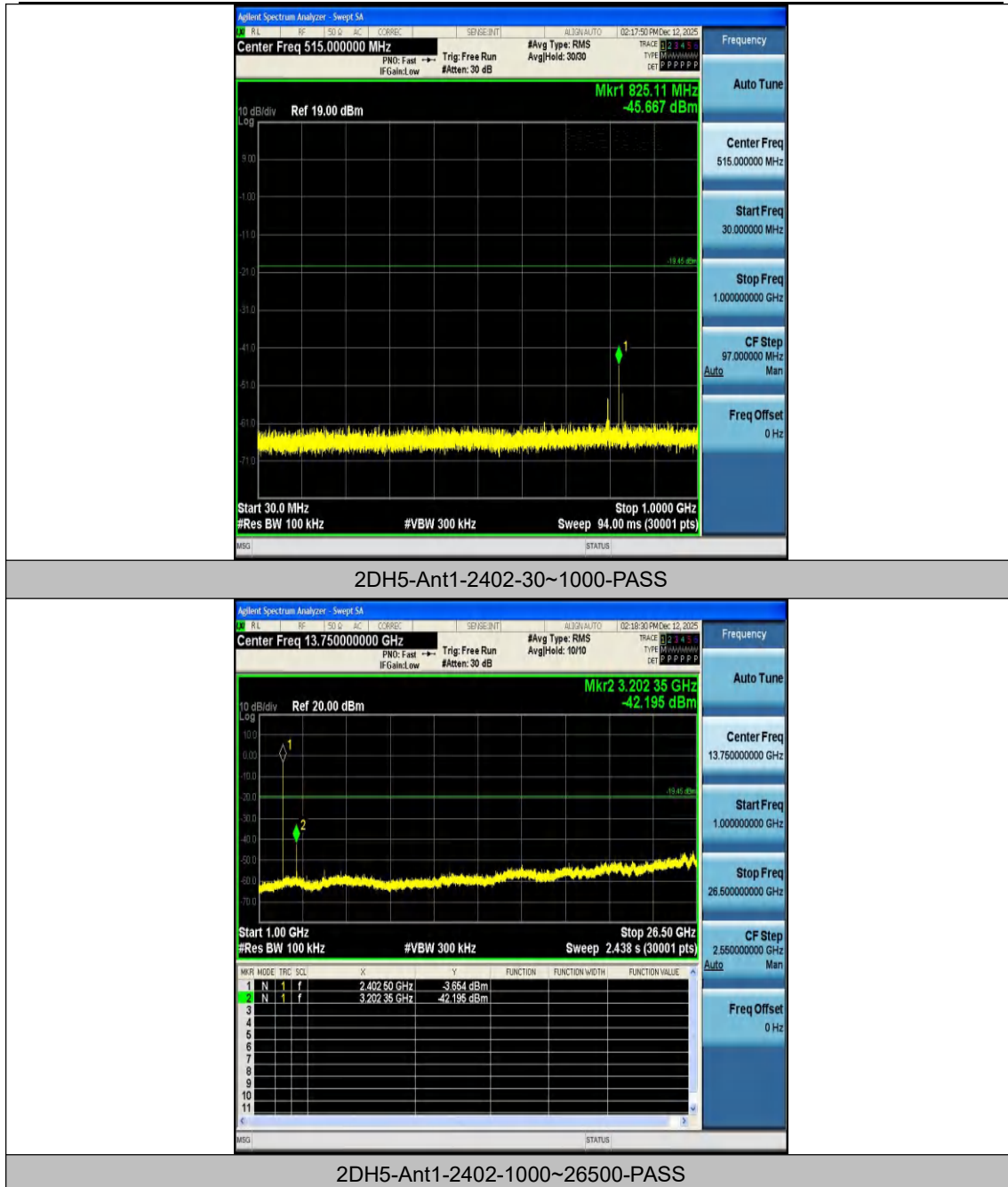


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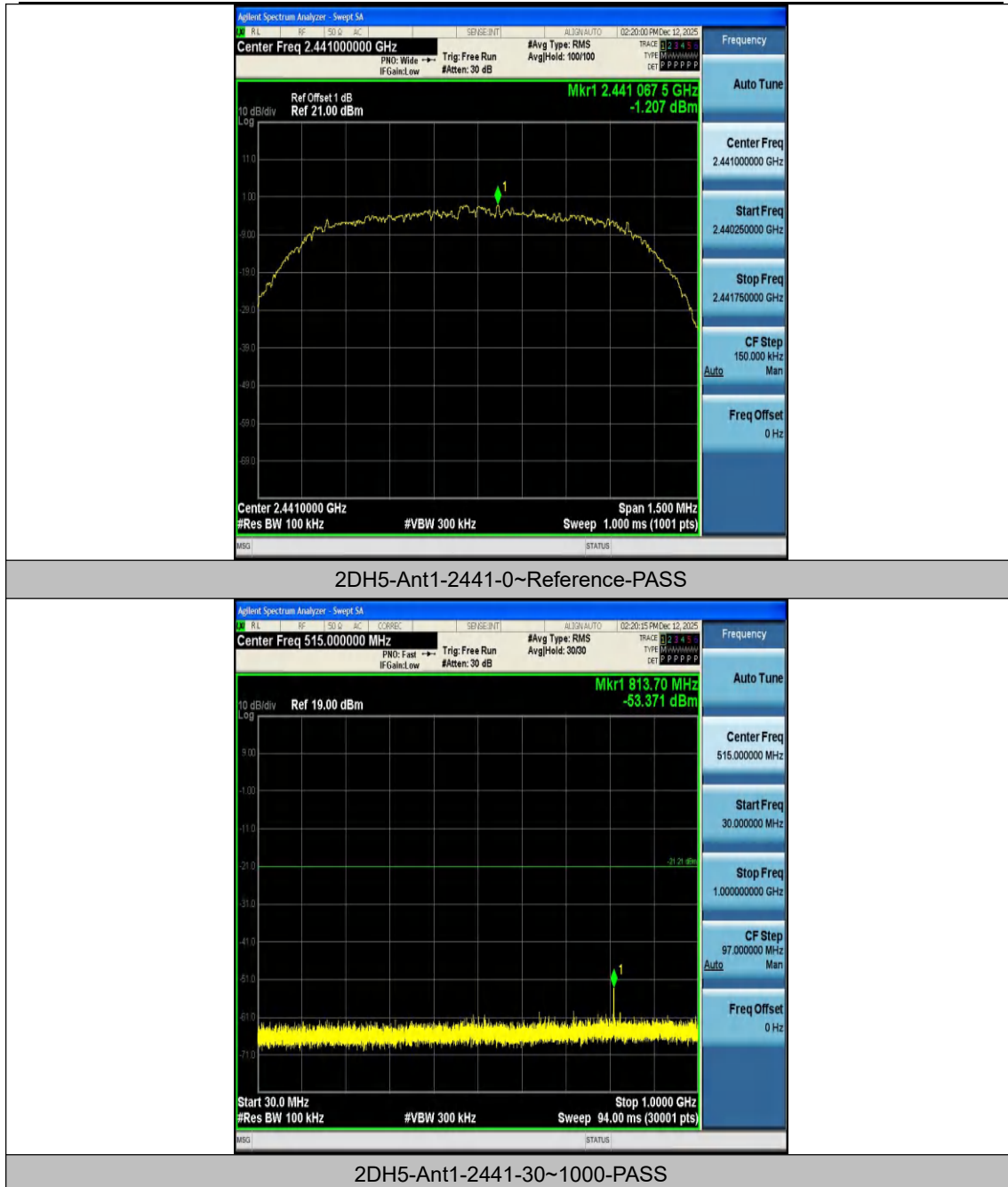




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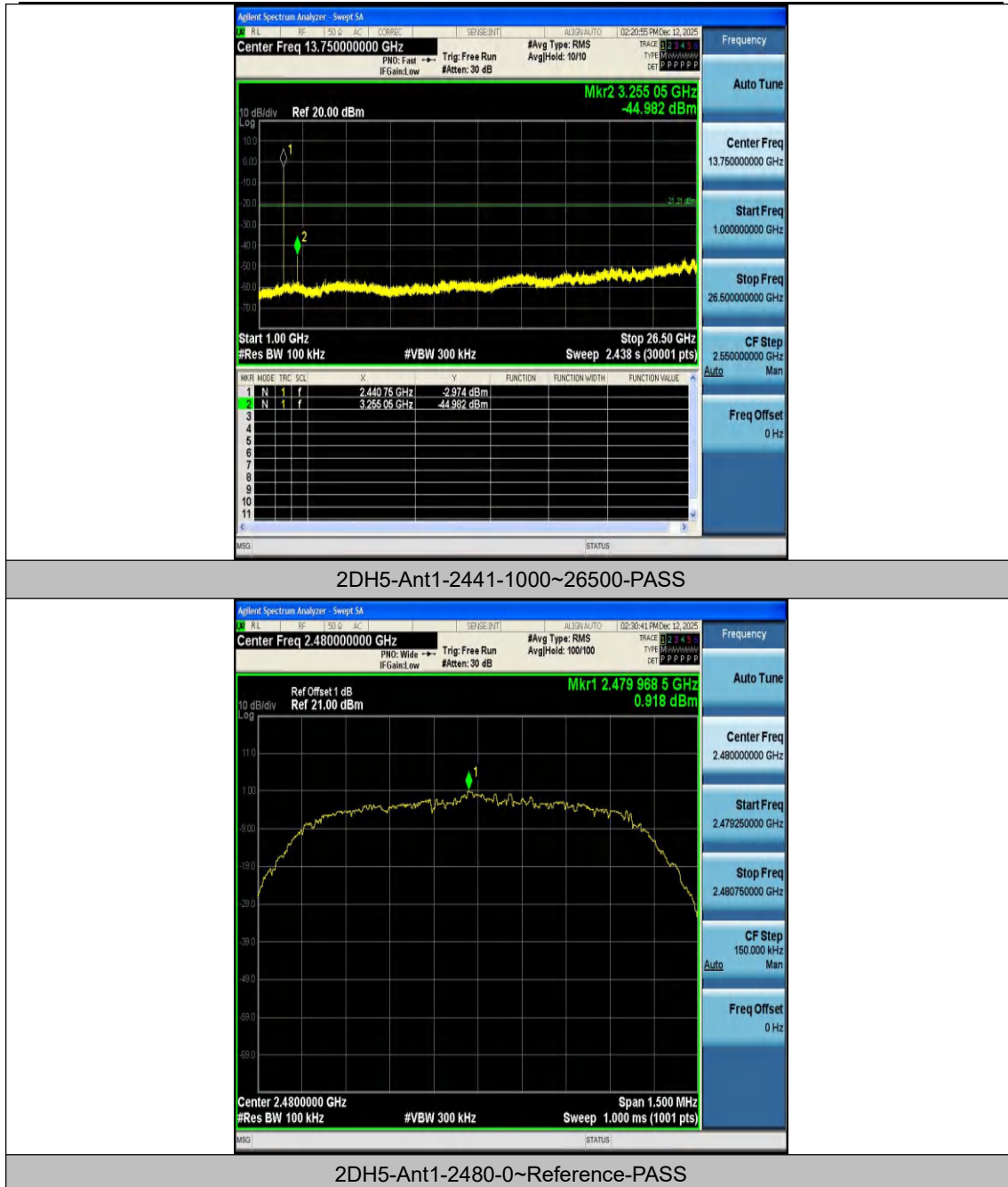
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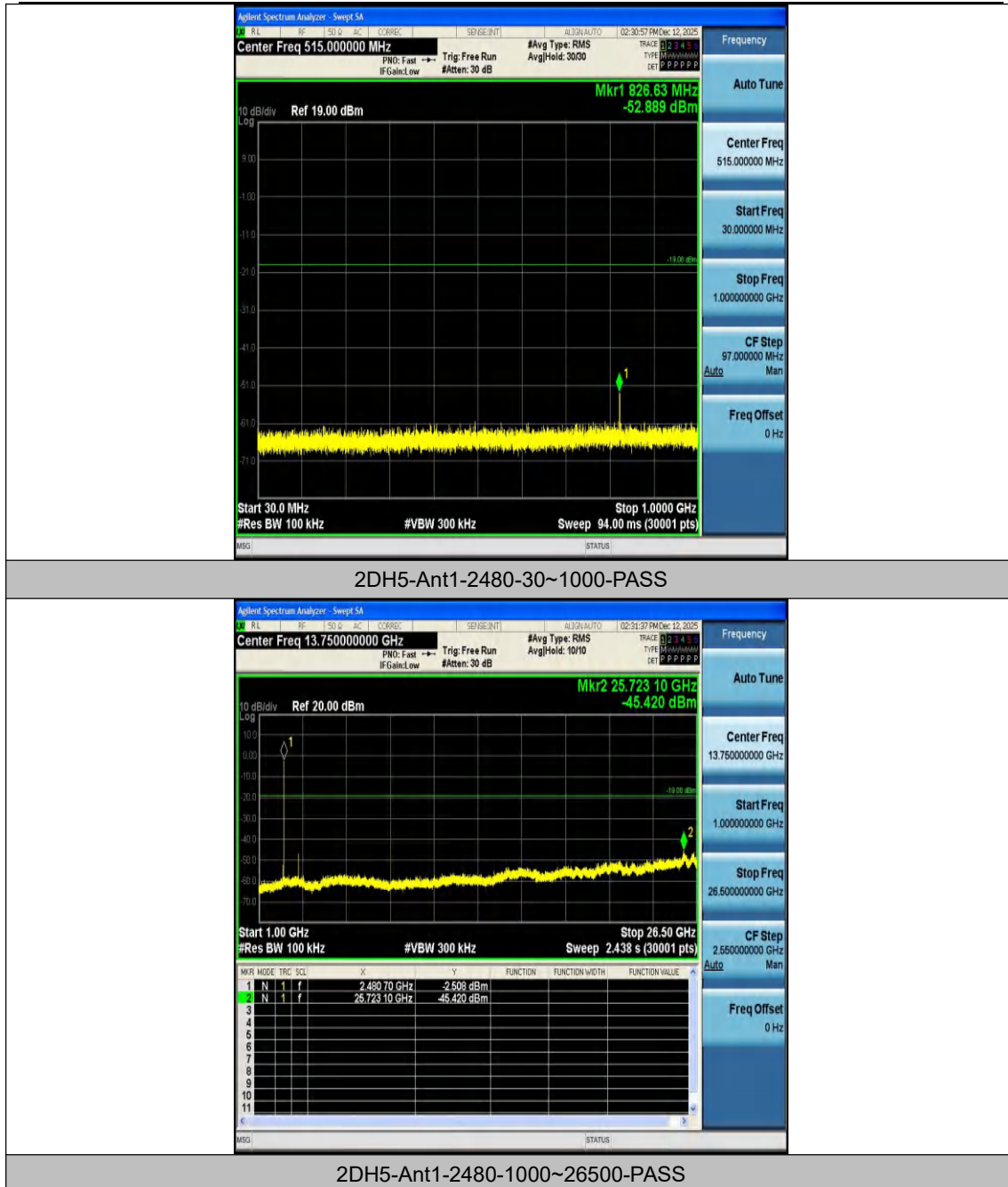
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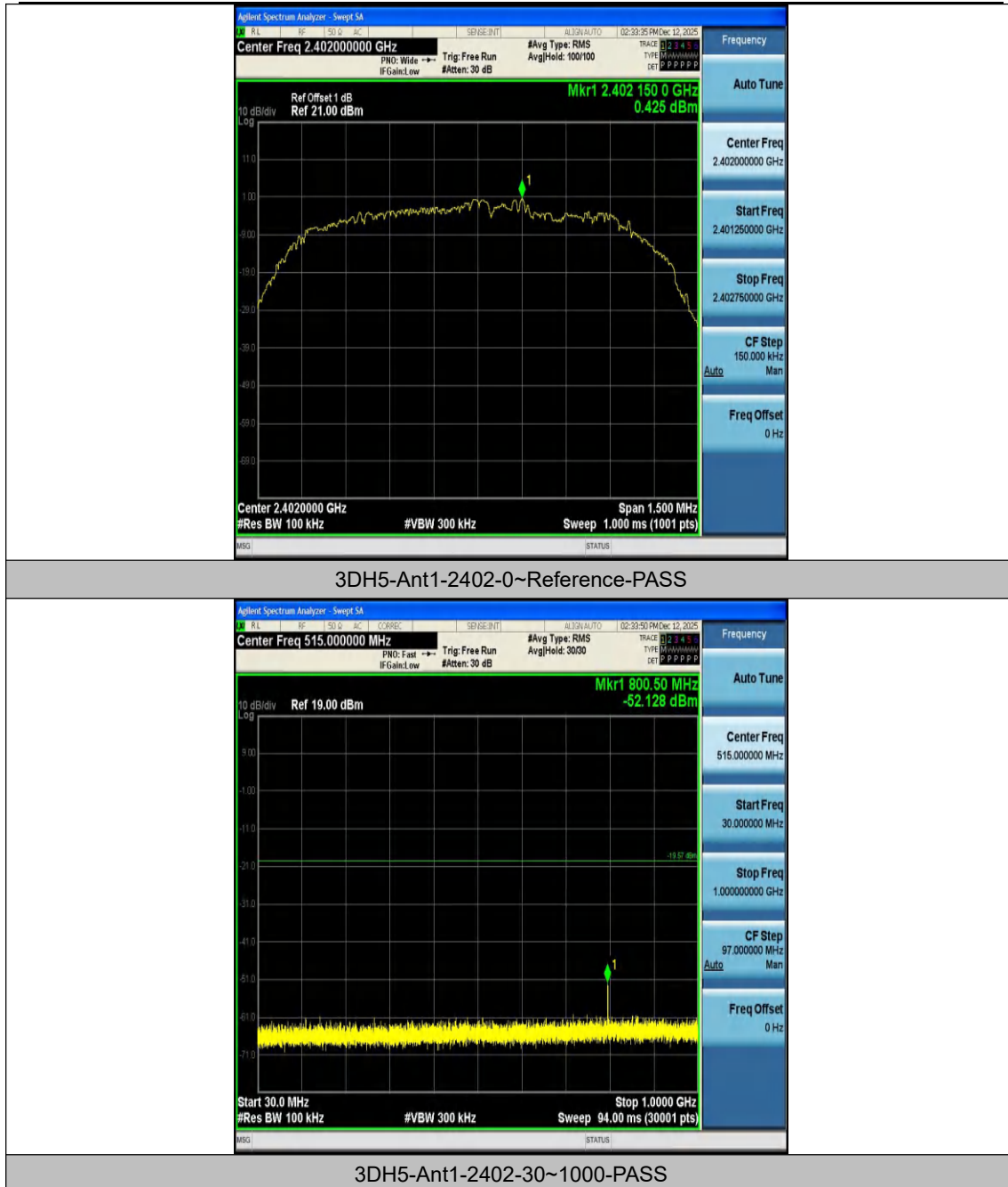


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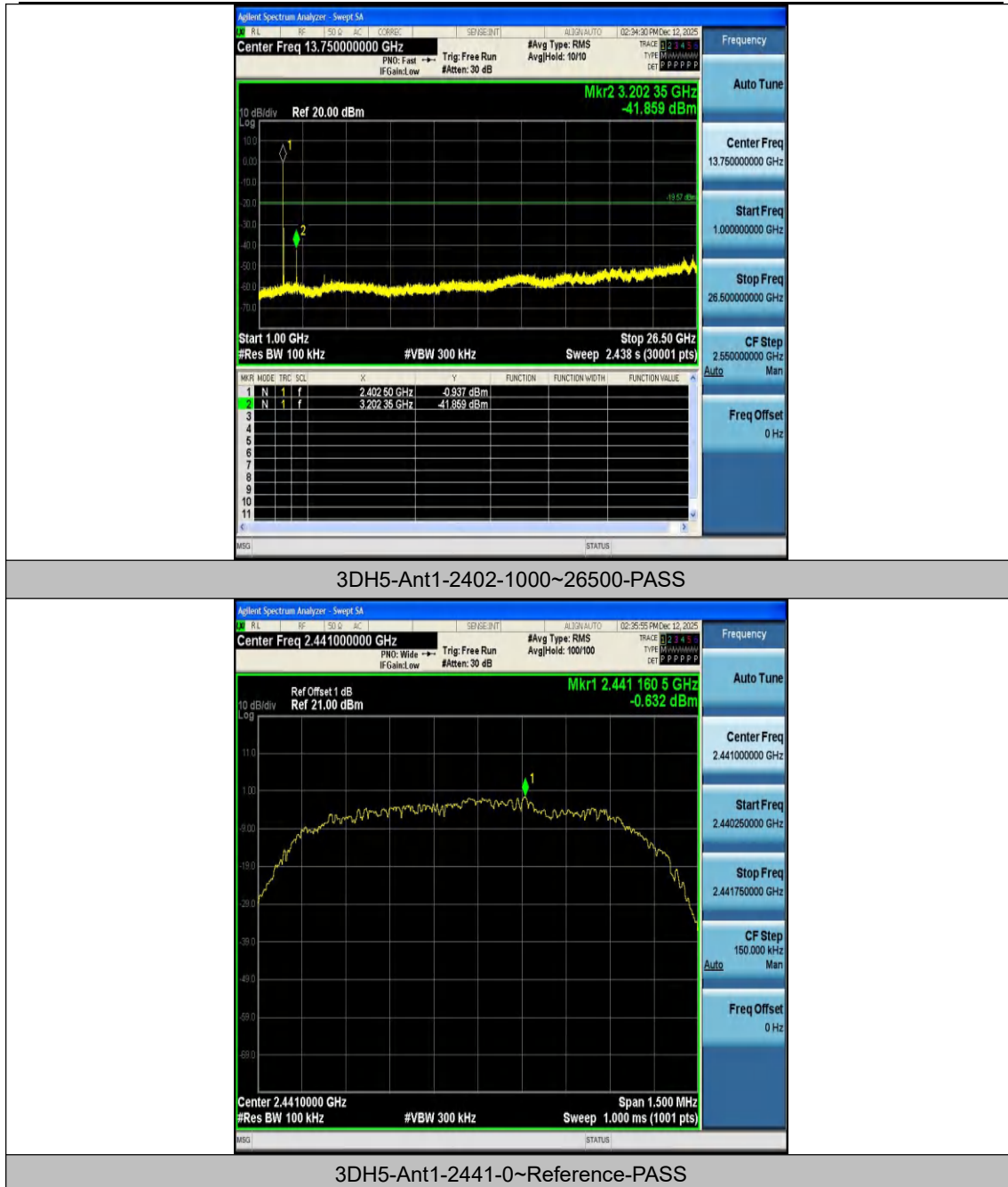




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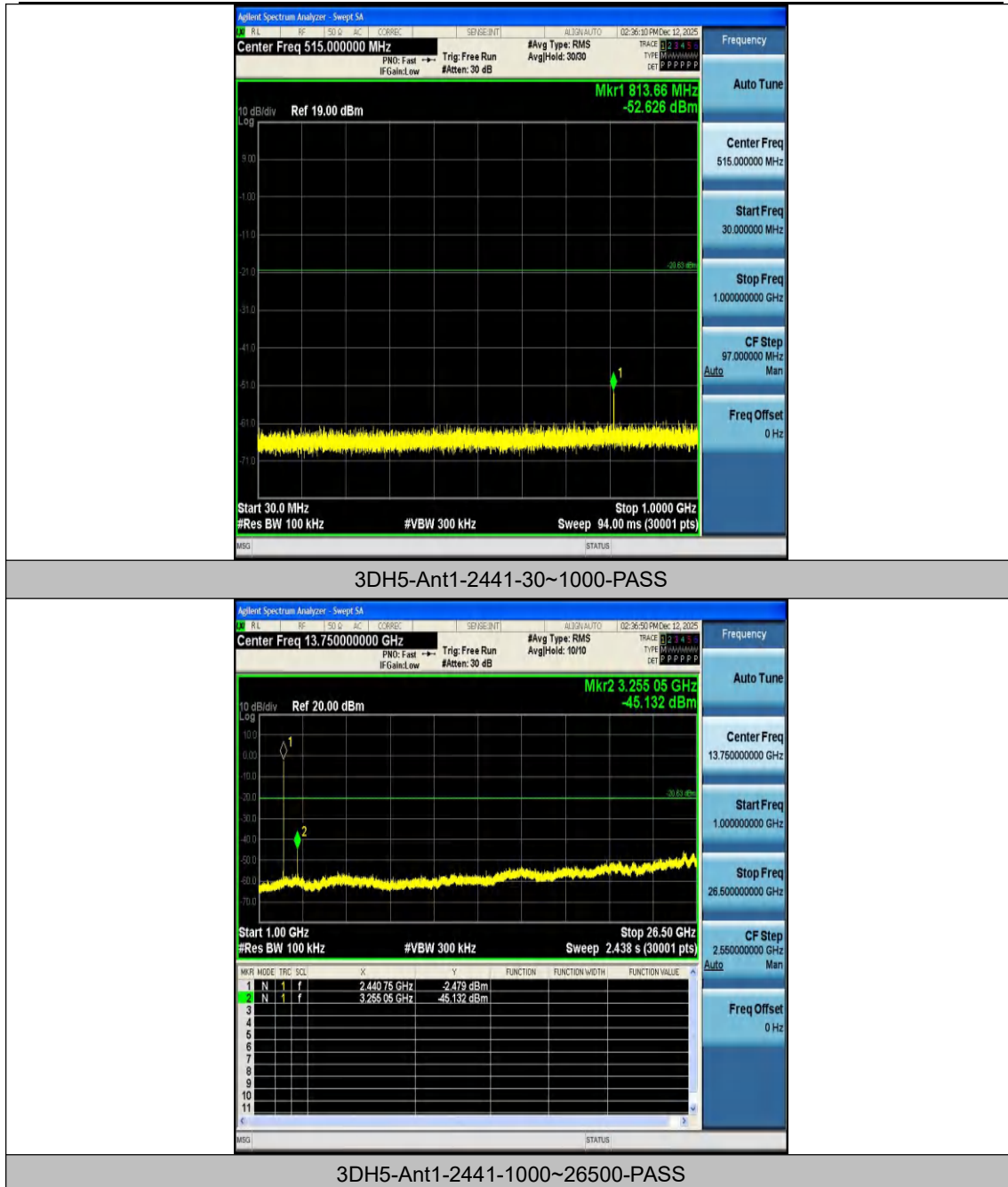
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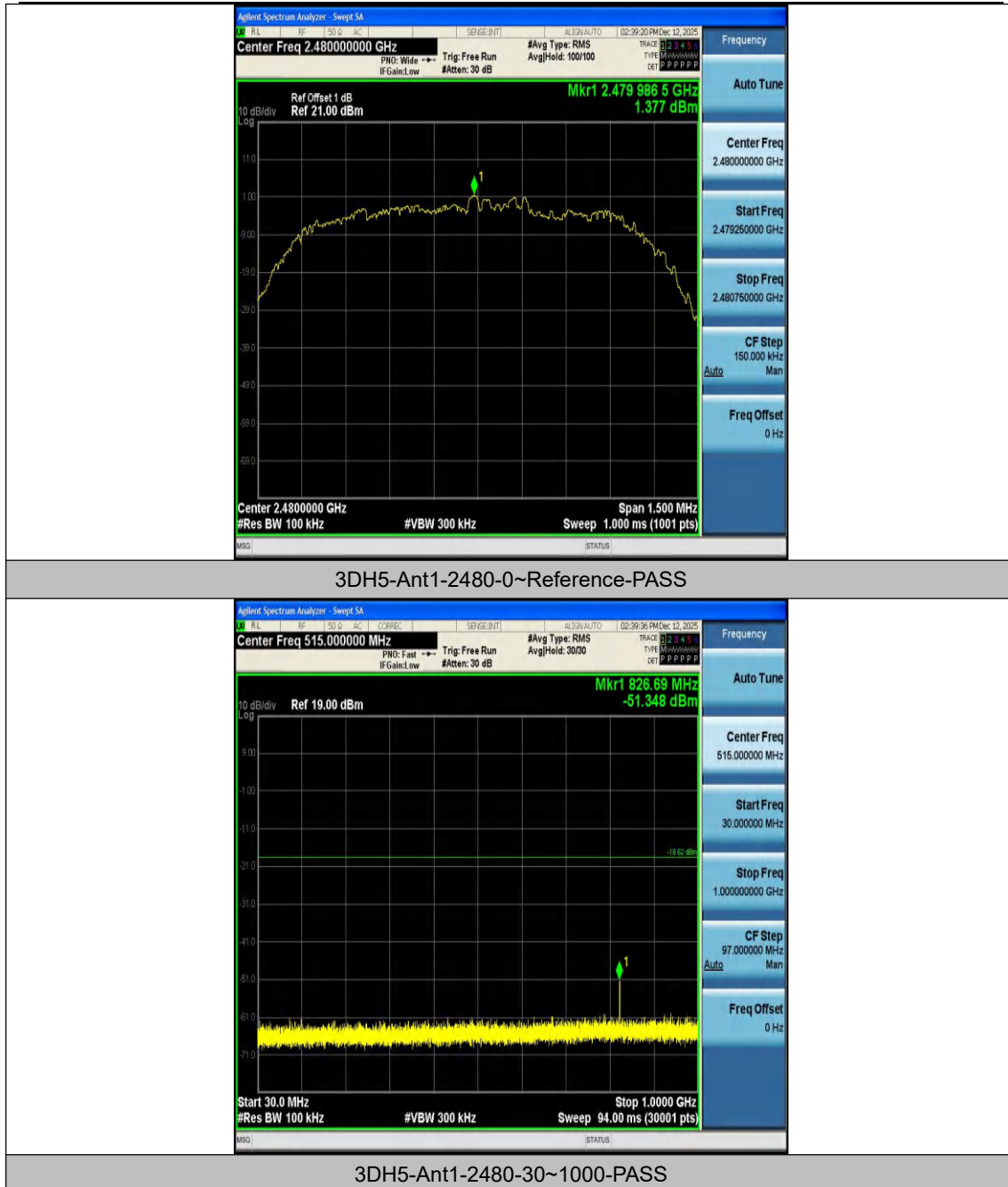


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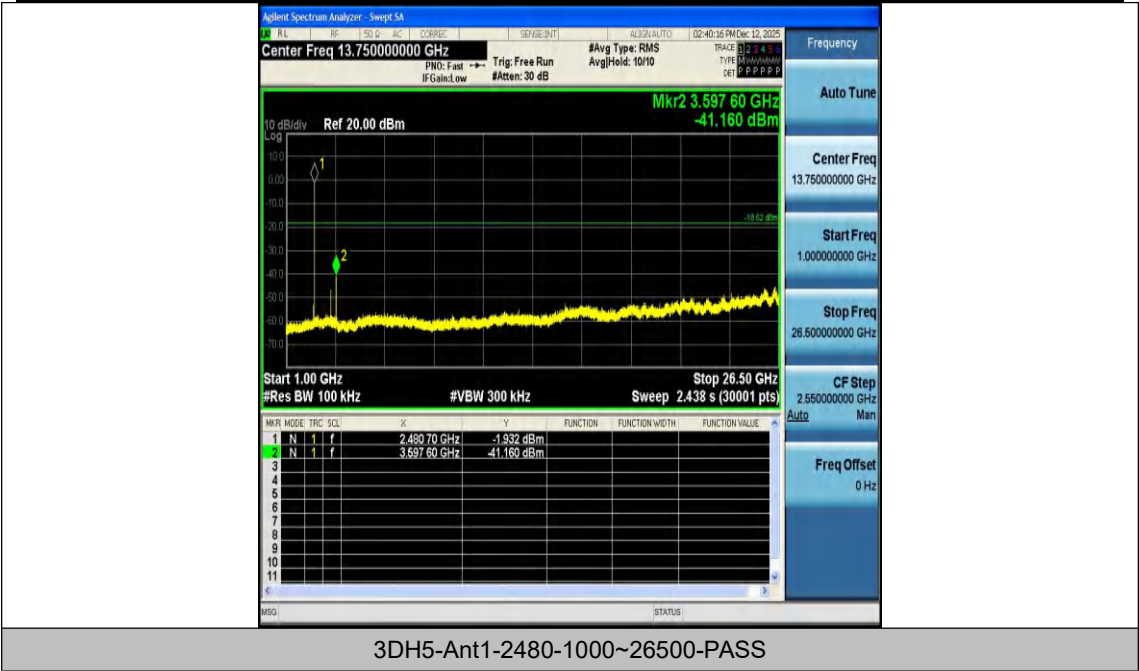




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3DH5-Ant1-2480-1000~26500-PASS

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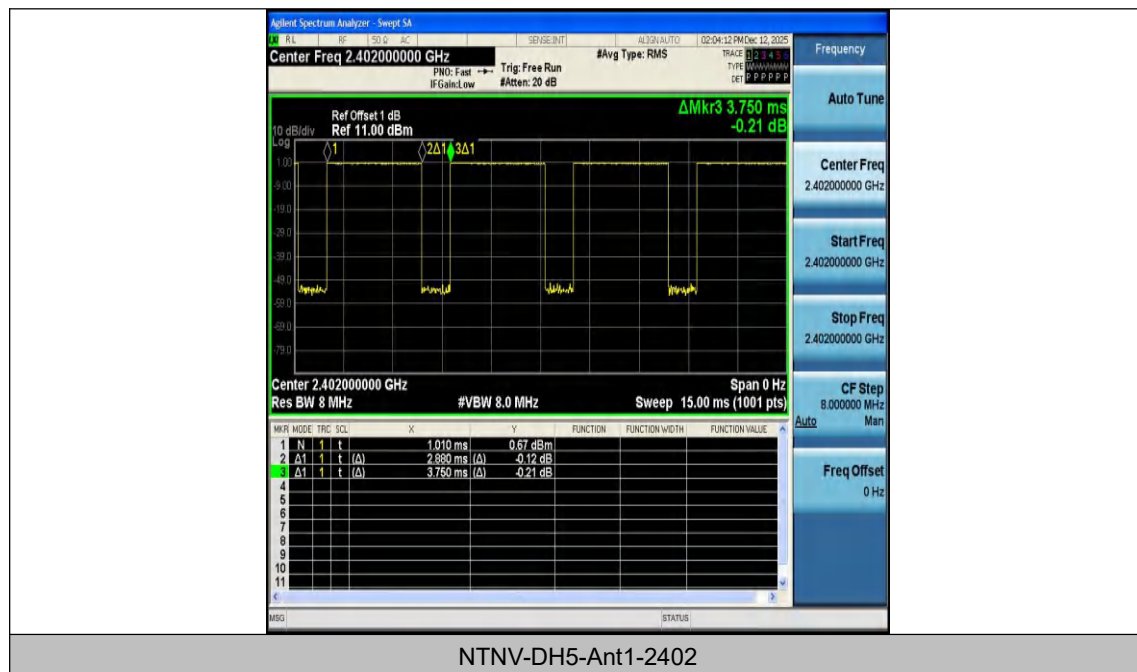
Hotline: 400-003-0500 web: www.anbotek.com E-mail: service@anbotek.com

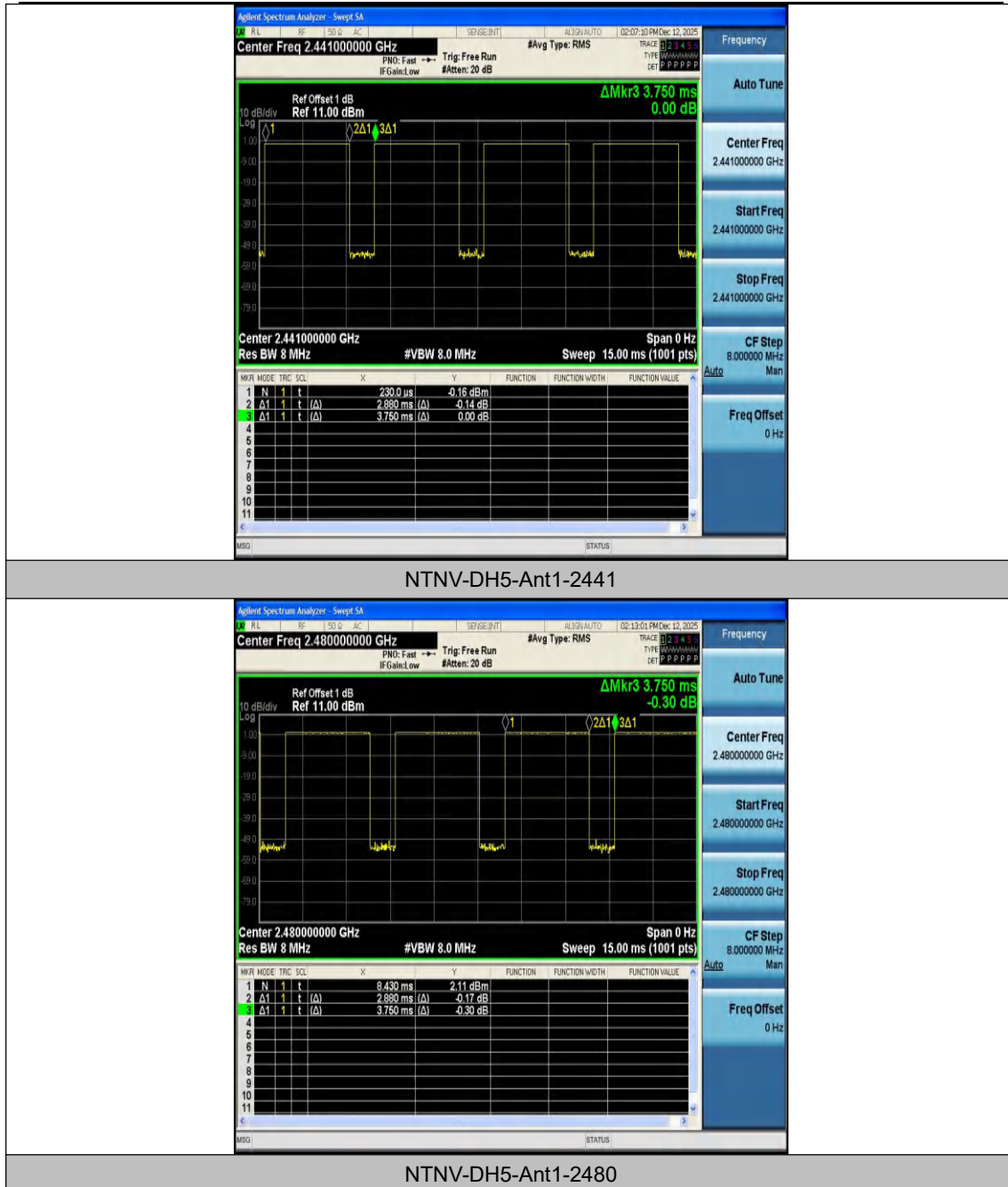
Appendix I: Duty Cycle

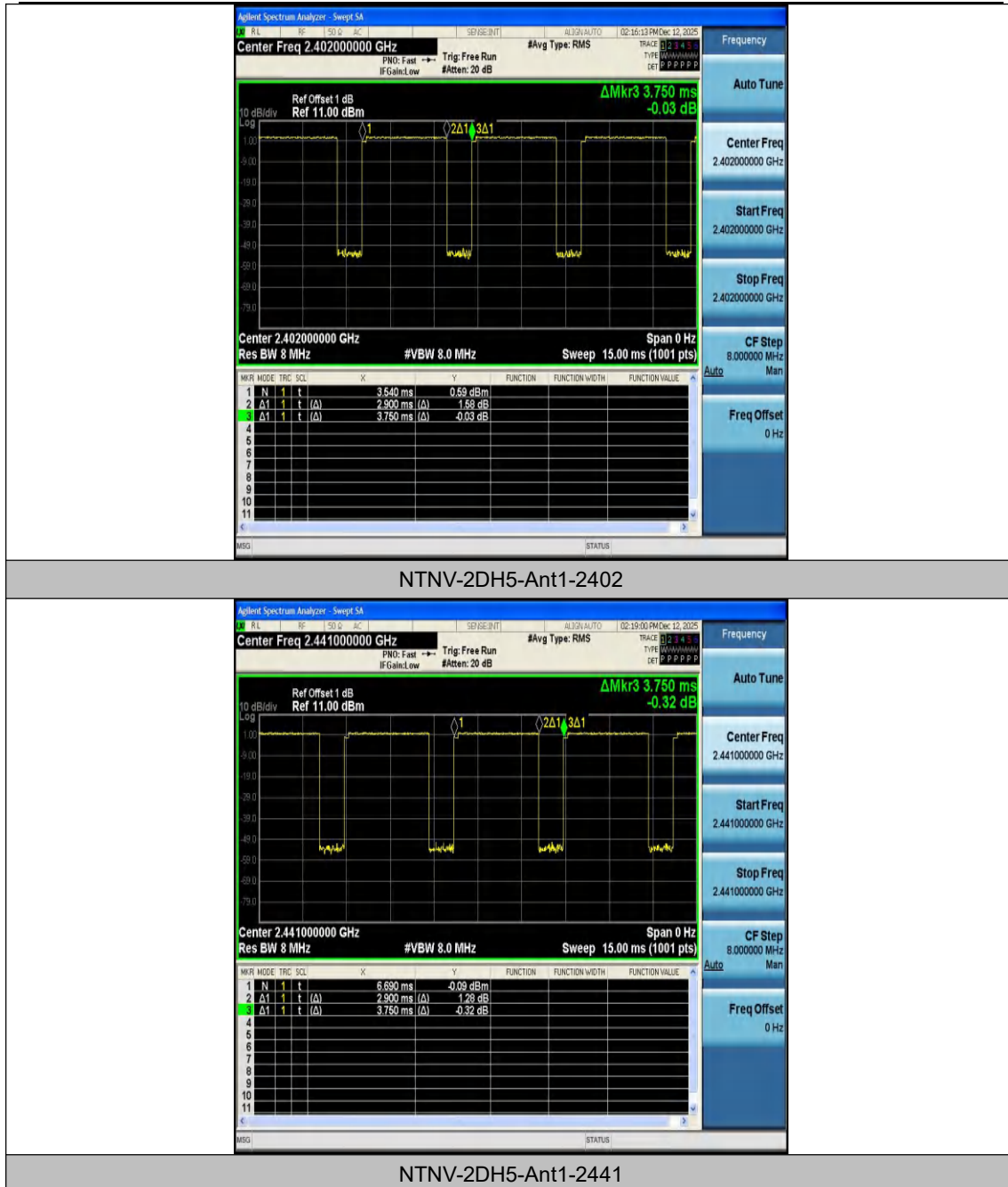
Test Result

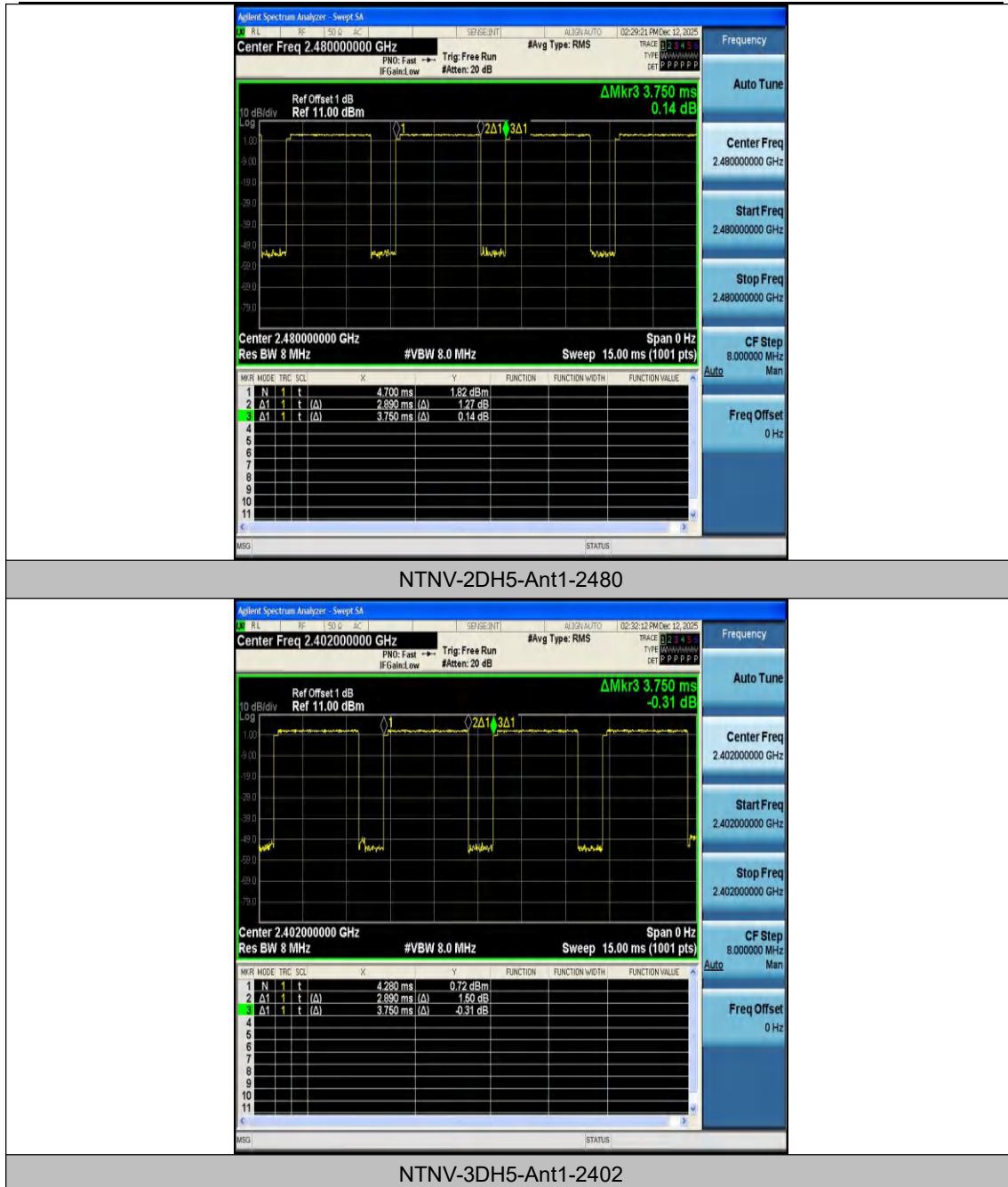
Test Mode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
DH5	Ant1	2402	2.88	3.75	76.80	1.15
DH5	Ant1	2441	2.88	3.75	76.80	1.15
DH5	Ant1	2480	2.88	3.75	76.80	1.15
2DH5	Ant1	2402	2.90	3.75	77.33	1.12
2DH5	Ant1	2441	2.90	3.75	77.33	1.12
2DH5	Ant1	2480	2.89	3.75	77.07	1.13
3DH5	Ant1	2402	2.89	3.75	77.07	1.13
3DH5	Ant1	2441	2.90	3.75	77.33	1.12
3DH5	Ant1	2480	2.88	3.75	76.80	1.15

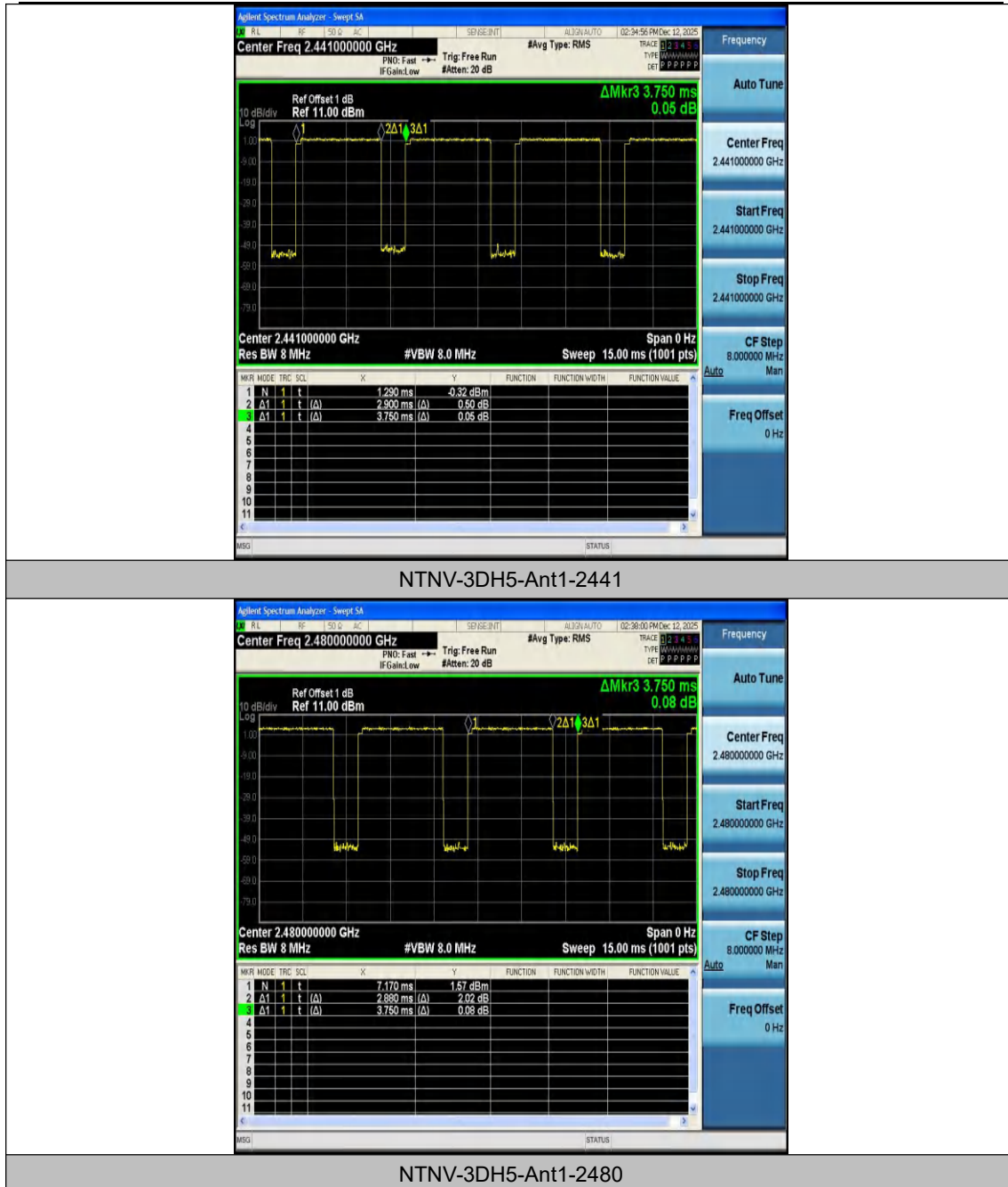
Test Graphs











---End---