

Appendix Test Data for BT(BDR/EDR) (Conducted Measurement)

Product Name: TRUE WIRELESS STEREO EARBUDS WITH LED CHARGING CASE

Trade Mark: /

Test Model: YS-TWS047

FCC ID: 2AWHS-TWS047

Environmental Conditions

Temperature:	23.5℃
Relative Humidity:	58%
ATM Pressure:	100.0 kPa
Test Engineer:	Allen Lai
Supervised by:	Max Zhang
NOTE	N/A

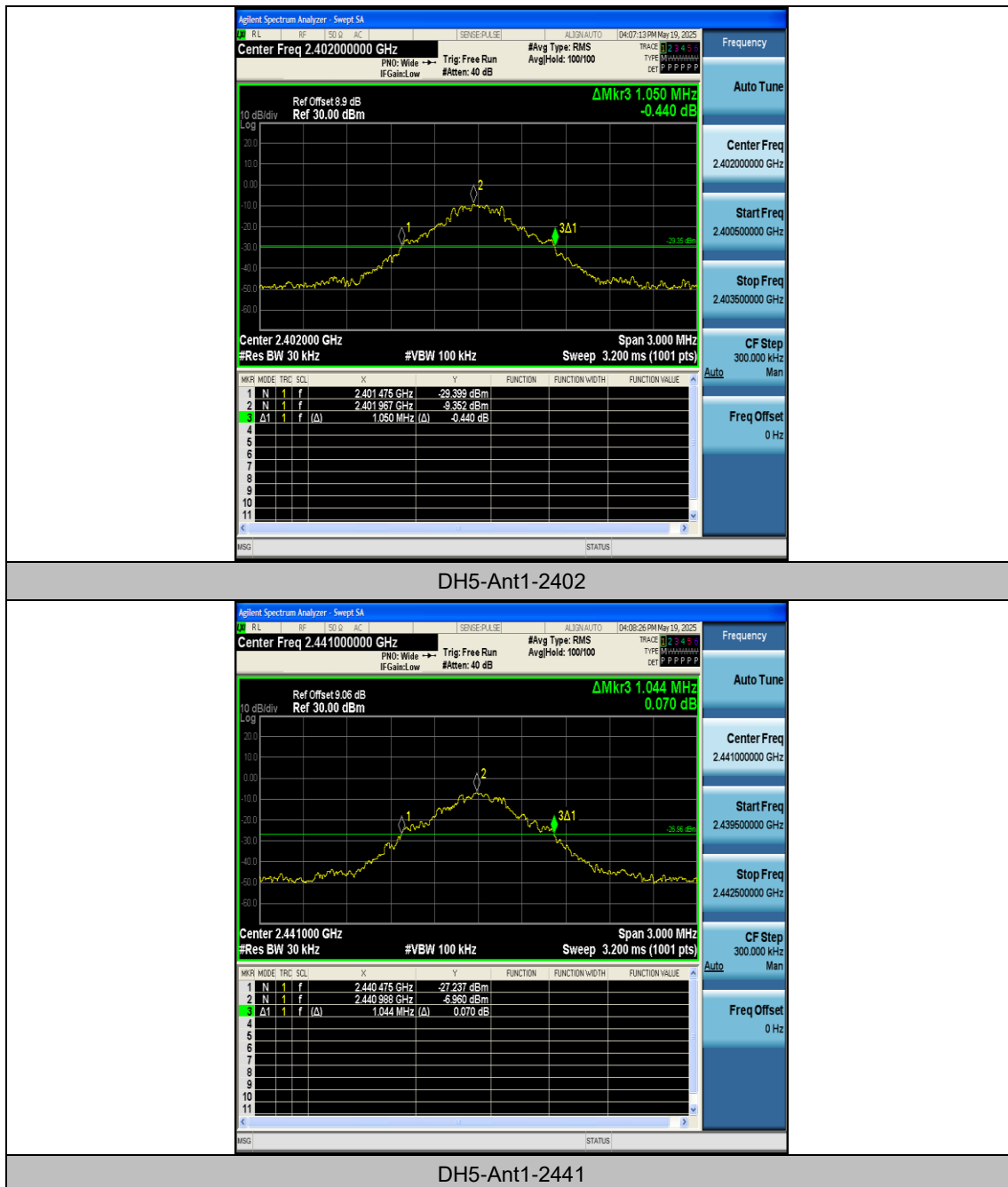
Appendix A: 20dB Emission Bandwidth

Test Result

Test Mode	Antenna	Frequency [MHz]	20db EBW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
DH5	Ant1	2402	1.050	2401.475	2402.525	---	---
DH5	Ant1	2441	1.044	2440.475	2441.519	---	---
DH5	Ant1	2480	1.044	2479.475	2480.519	---	---
2DH5	Ant1	2402	1.362	2401.322	2402.684	---	---
2DH5	Ant1	2441	1.356	2440.322	2441.678	---	---
2DH5	Ant1	2480	1.365	2479.322	2480.687	---	---

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs





DH5-Ant1-2480



2DH5-Ant1-2402



2DH5-Ant1-2441



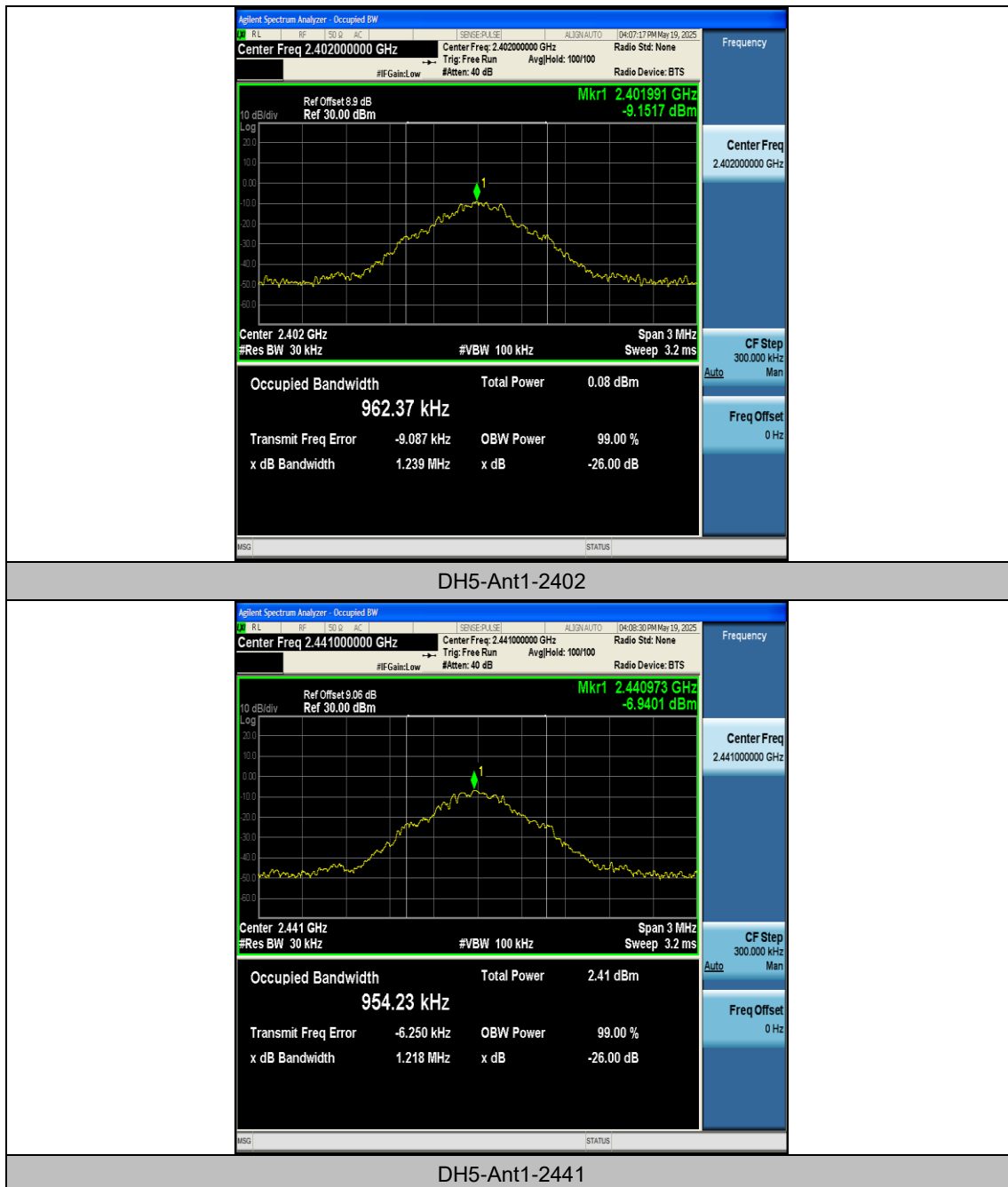
Appendix B: Occupied Channel Bandwidth

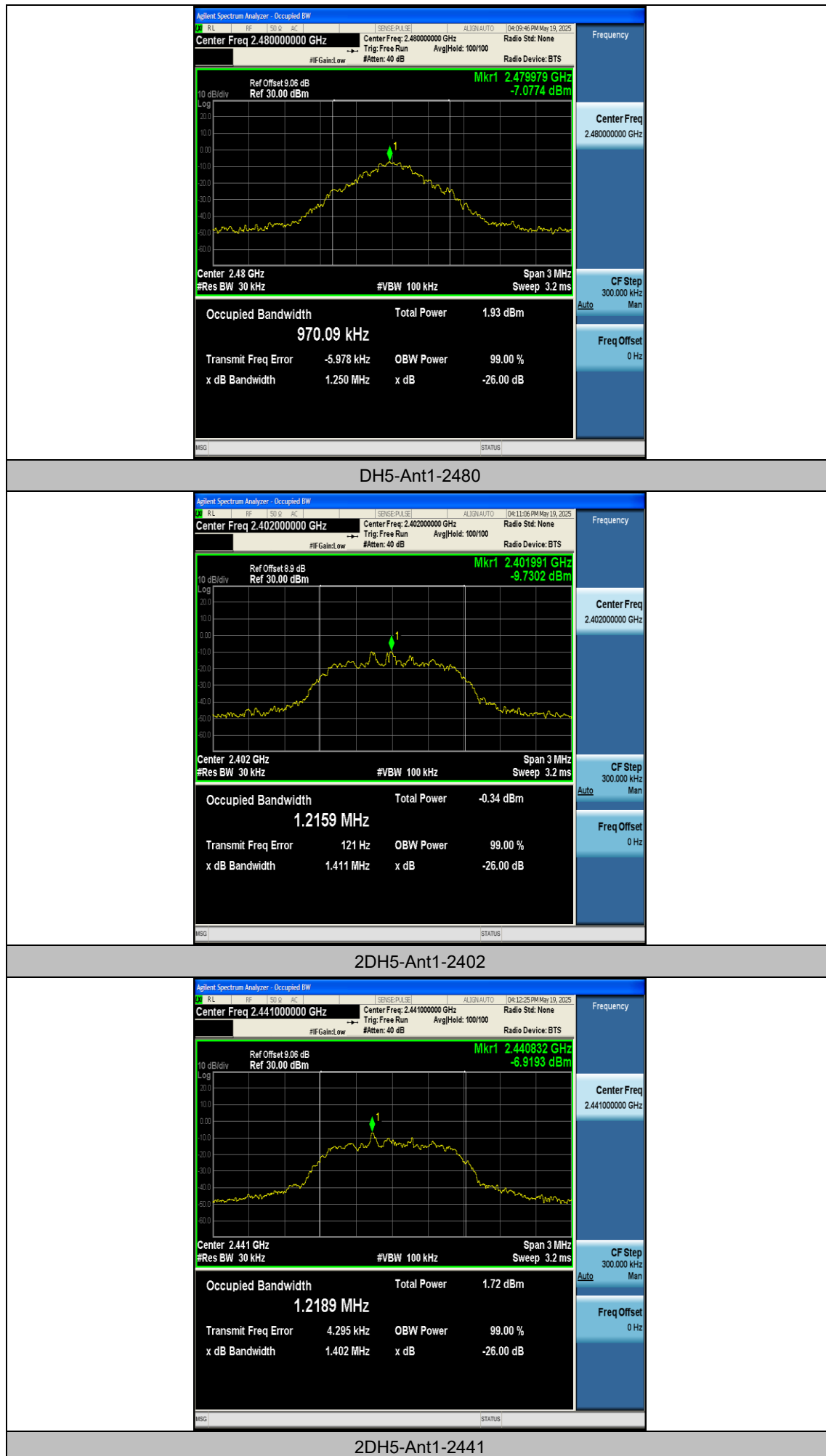
Test Result

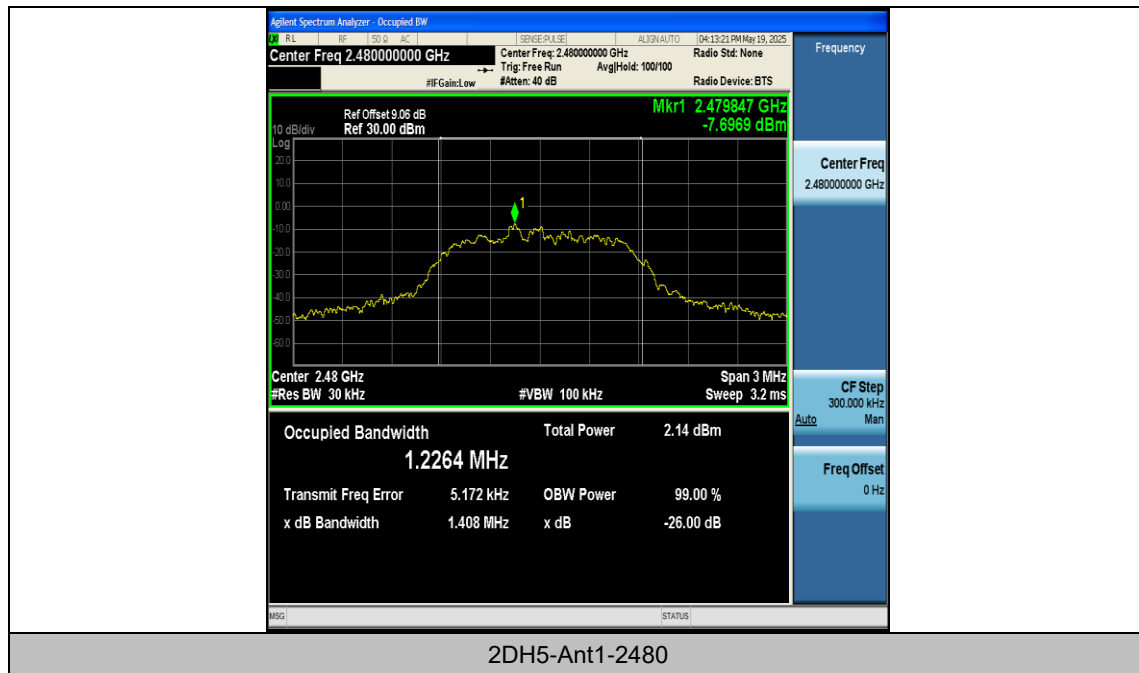
Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
DH5	Ant1	2402	0.96237	2401.5097	2402.4721	---	---
DH5	Ant1	2441	0.95423	2440.5166	2441.4709	---	---
DH5	Ant1	2480	0.97009	2479.5090	2480.4791	---	---
2DH5	Ant1	2402	1.2159	2401.3922	2402.6081	---	---
2DH5	Ant1	2441	1.2189	2440.3948	2441.6137	---	---
2DH5	Ant1	2480	1.2264	2479.3920	2480.6184	---	---

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs







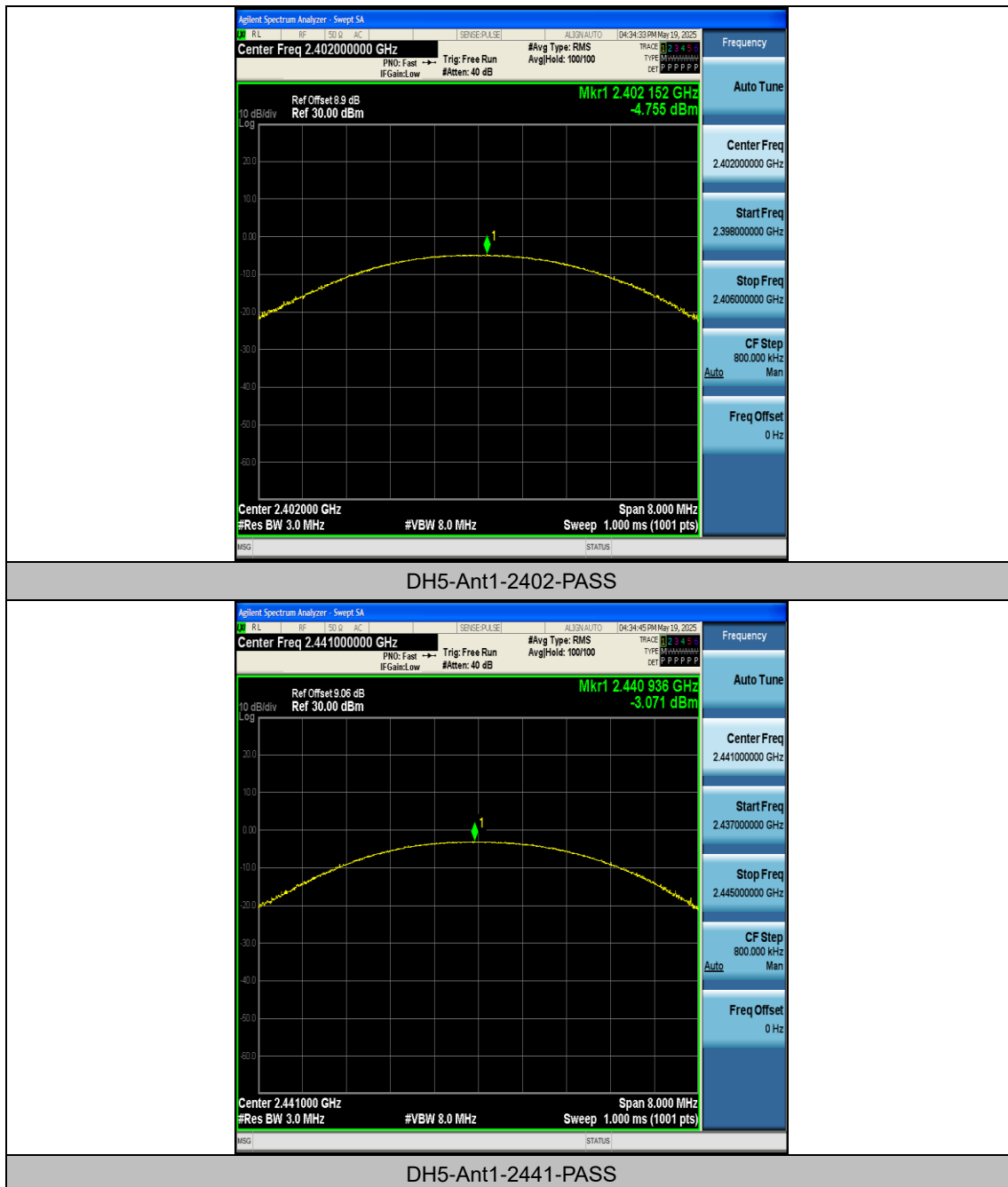
Appendix C: Maximum peak conducted output power

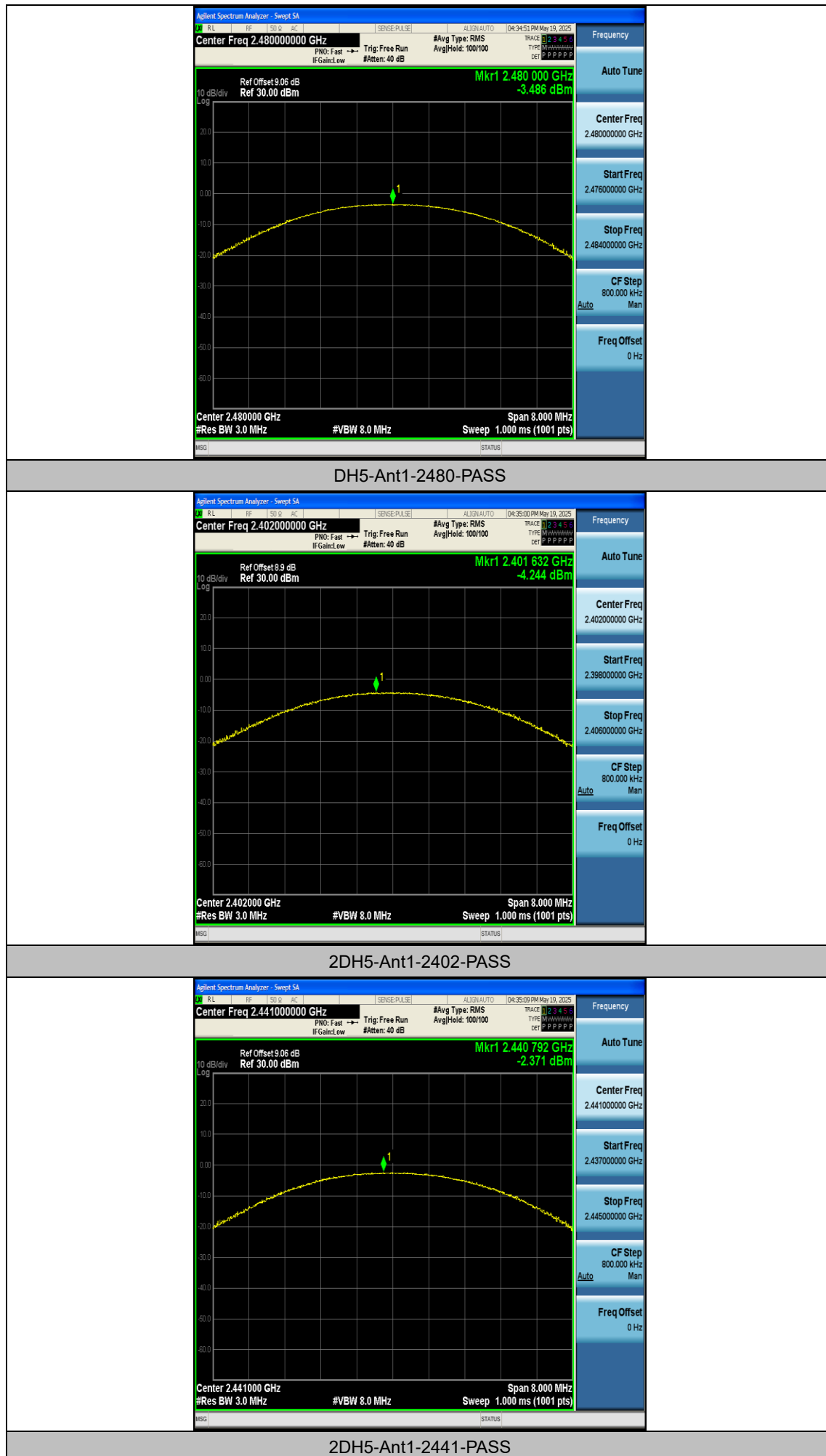
Test Result

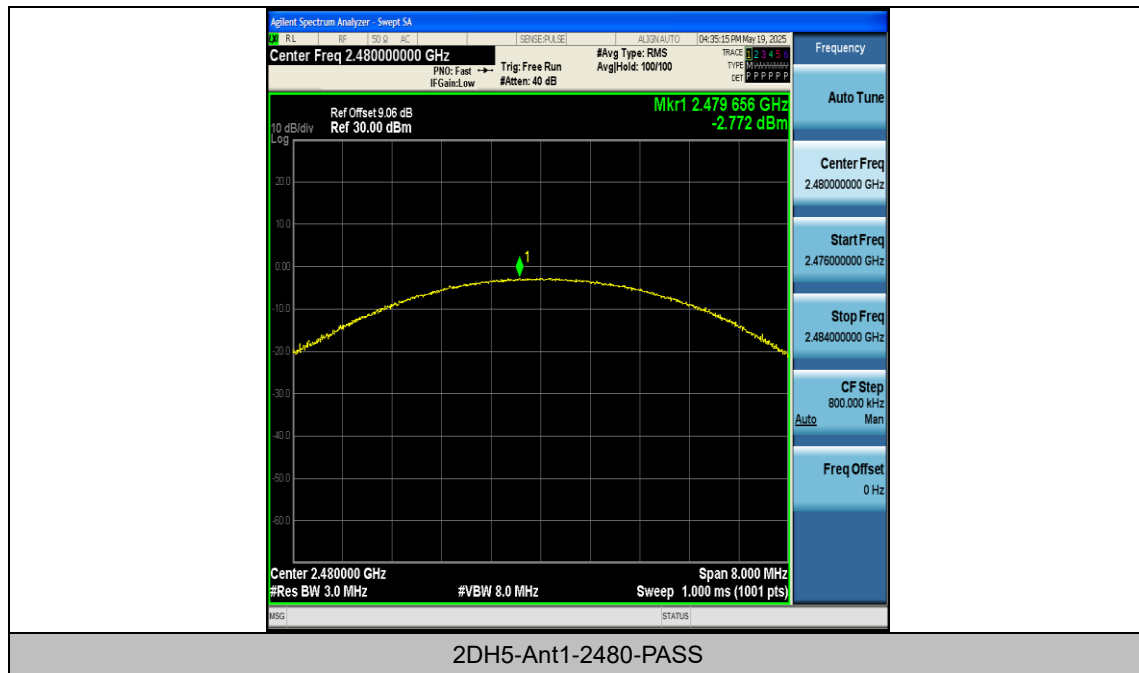
Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power [dBm]	Conducted Limit [dBm]	Verdict
DH5	Ant1	2402	-4.76	≤20.97	PASS
DH5	Ant1	2441	-3.07	≤20.97	PASS
DH5	Ant1	2480	-3.49	≤20.97	PASS
2DH5	Ant1	2402	-4.24	≤20.97	PASS
2DH5	Ant1	2441	-2.37	≤20.97	PASS
2DH5	Ant1	2480	-2.77	≤20.97	PASS

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs







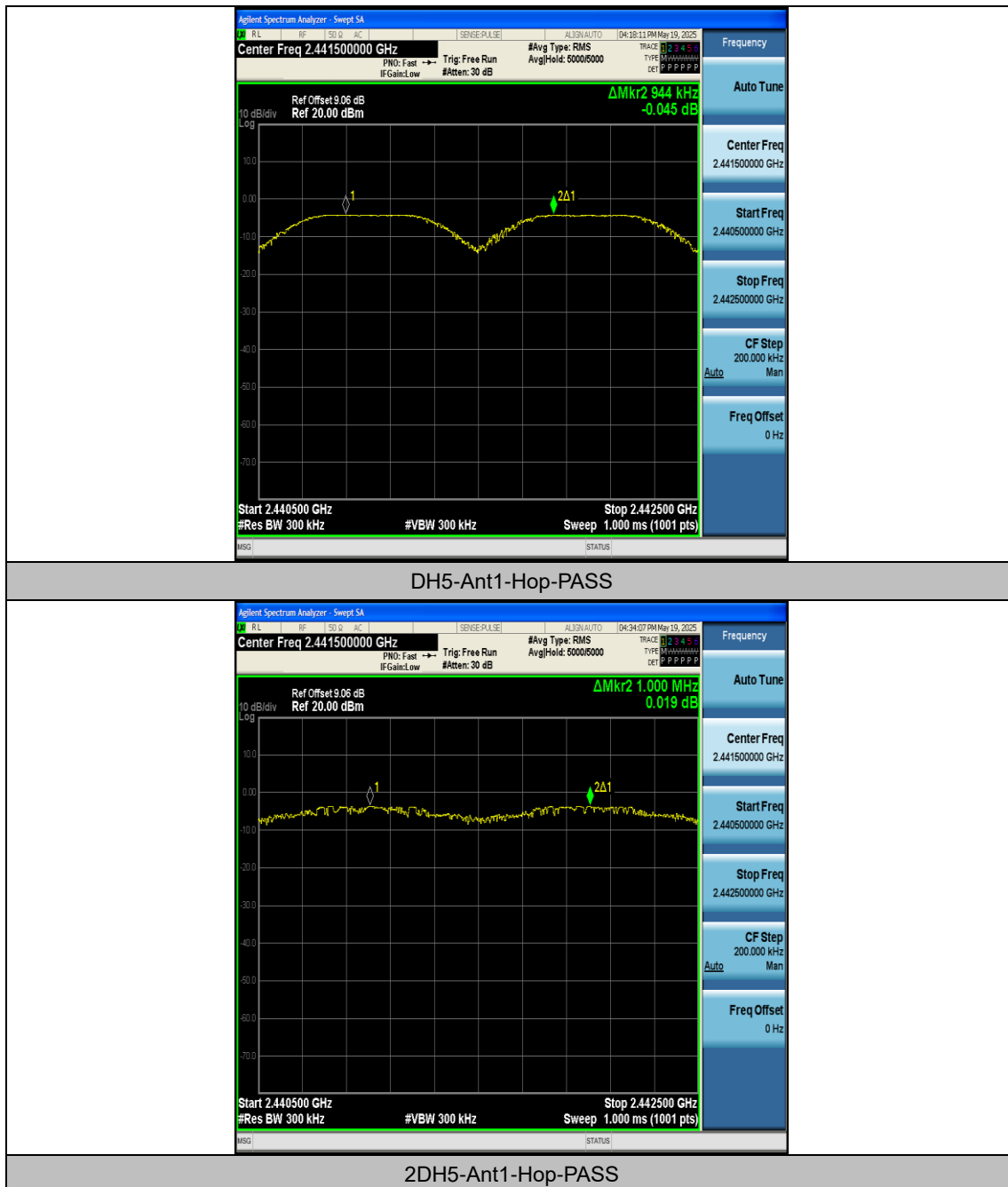
Appendix D: Carrier frequency separation

Test Result

Test Mode	Antenna	Frequency [MHz]	Result [MHz]	Limit [MHz]	Verdict
DH5	Ant1	Hop	0.944	≥ 0.700	PASS
2DH5	Ant1	Hop	1	≥ 0.910	PASS

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs

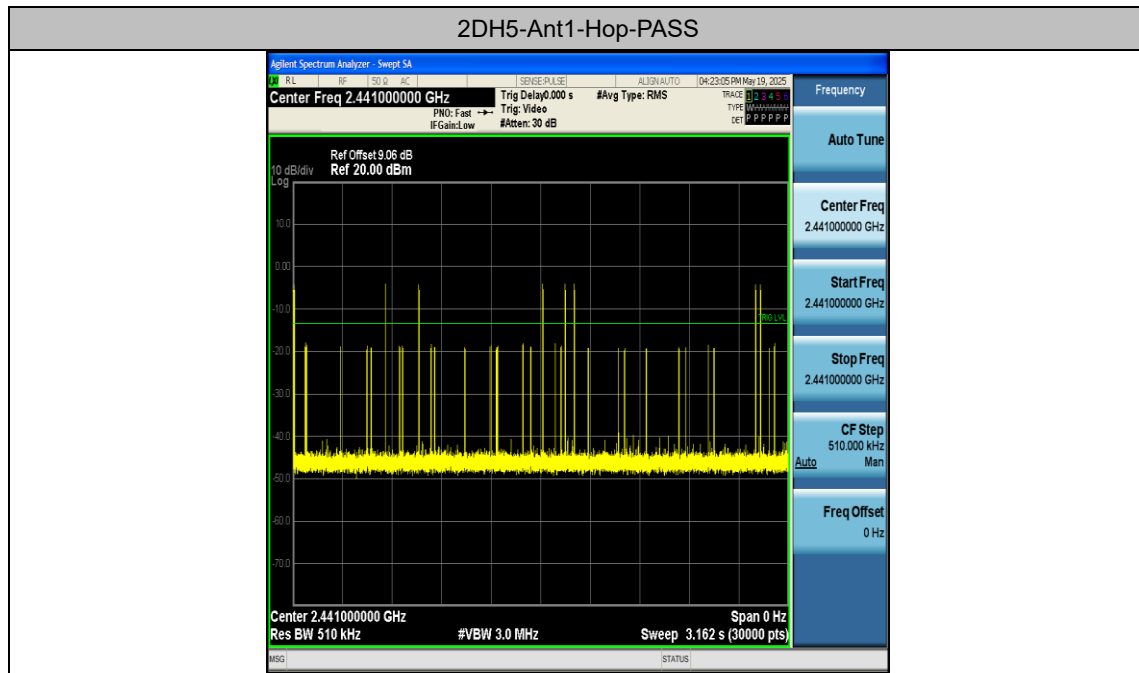


Appendix E: Time of occupancy

Test Result

Test Mode	Antenna	Frequency [MHz]	Burst Width [ms]	TotalHops [Num]	Result [s]	Limit [s]	Verdict
DH5	Ant1	Hop	2.884	100	0.288	≤0.4	PASS
2DH5	Ant1	Hop	2.889	90	0.26	≤0.4	PASS

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



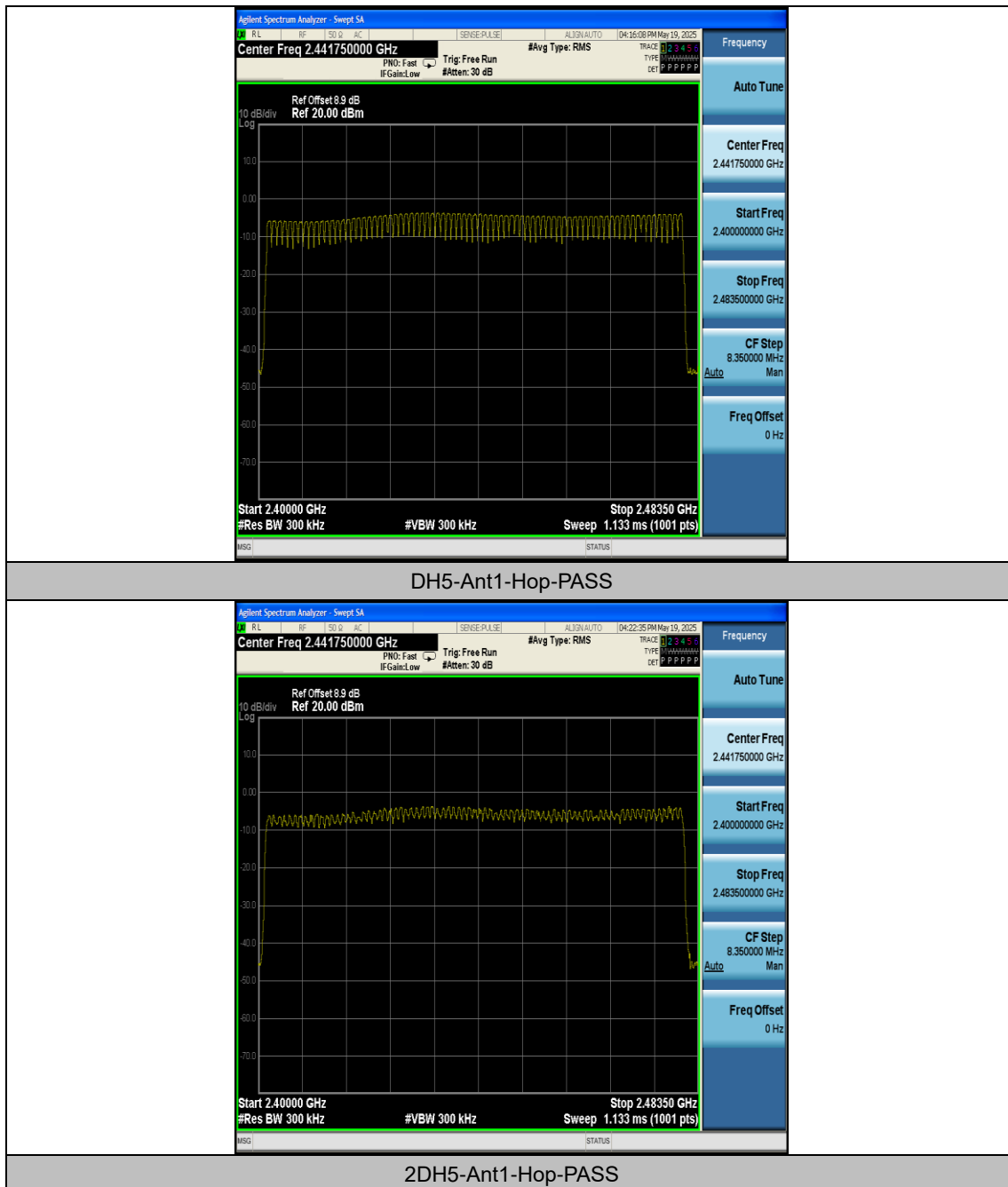
Appendix F: Number of hopping channels

Test Result

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

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs



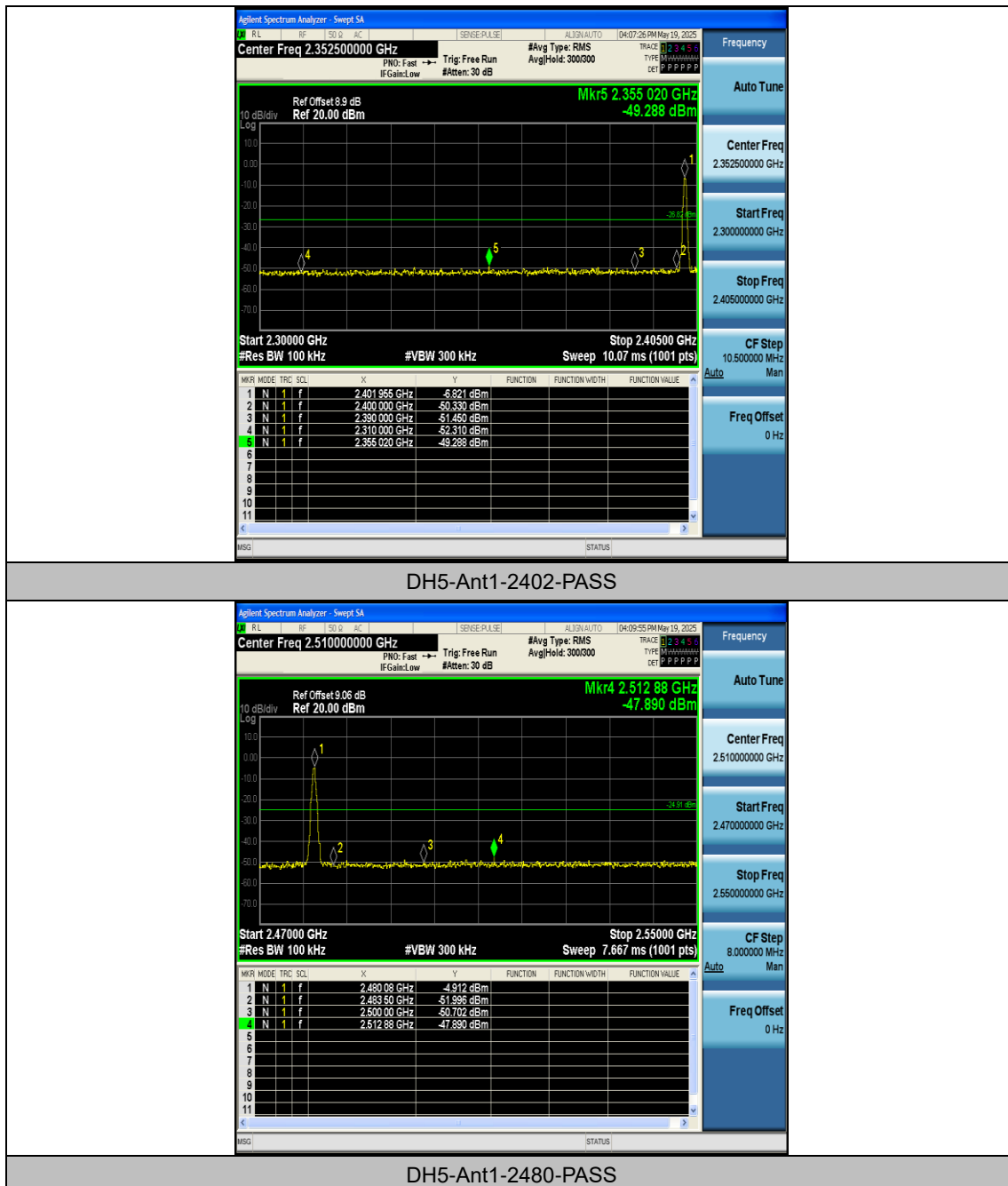
Appendix G: Band edge measurements

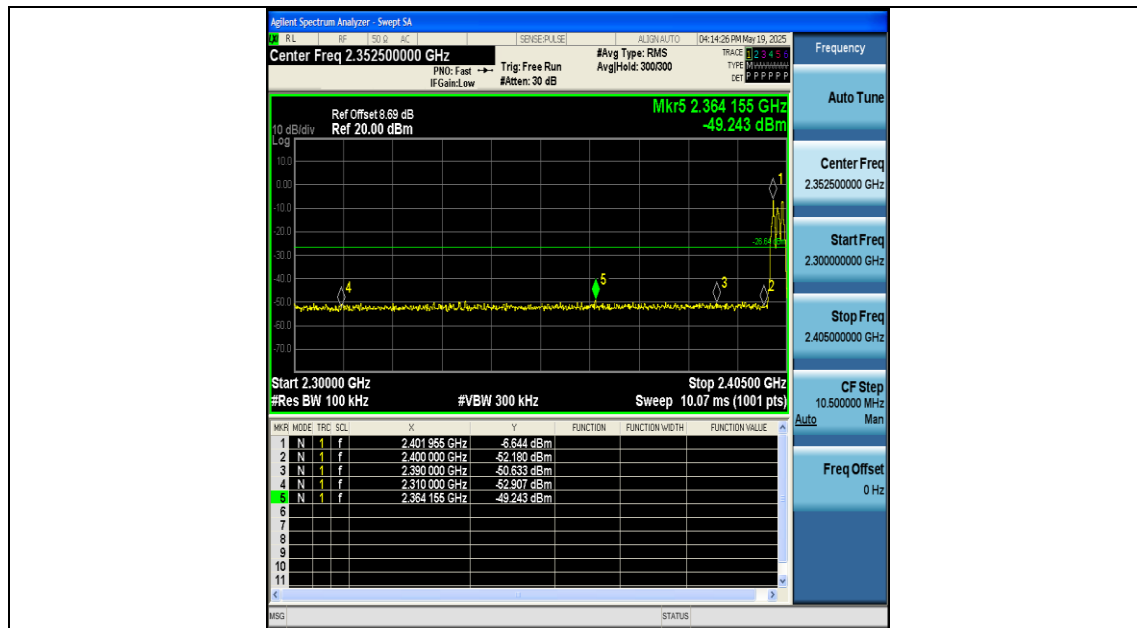
Test Result

Test Mode	Antenna	Ch.Name	Frequency [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-6.82	-49.29	≤-26.82	PASS
DH5	Ant1	High	2480	-4.91	-47.89	≤-24.91	PASS
DH5	Ant1	Low	Hop_2402	-6.64	-49.24	≤-26.64	PASS
DH5	Ant1	High	Hop_2480	-4.64	-48.55	≤-24.64	PASS
2DH5	Ant1	Low	2402	-6.90	-49.27	≤-26.9	PASS
2DH5	Ant1	High	2480	-4.33	-47.19	≤-24.33	PASS
2DH5	Ant1	Low	Hop_2402	-10.48	-48.98	≤-30.48	PASS
2DH5	Ant1	High	Hop_2480	-4.46	-48.63	≤-24.46	PASS

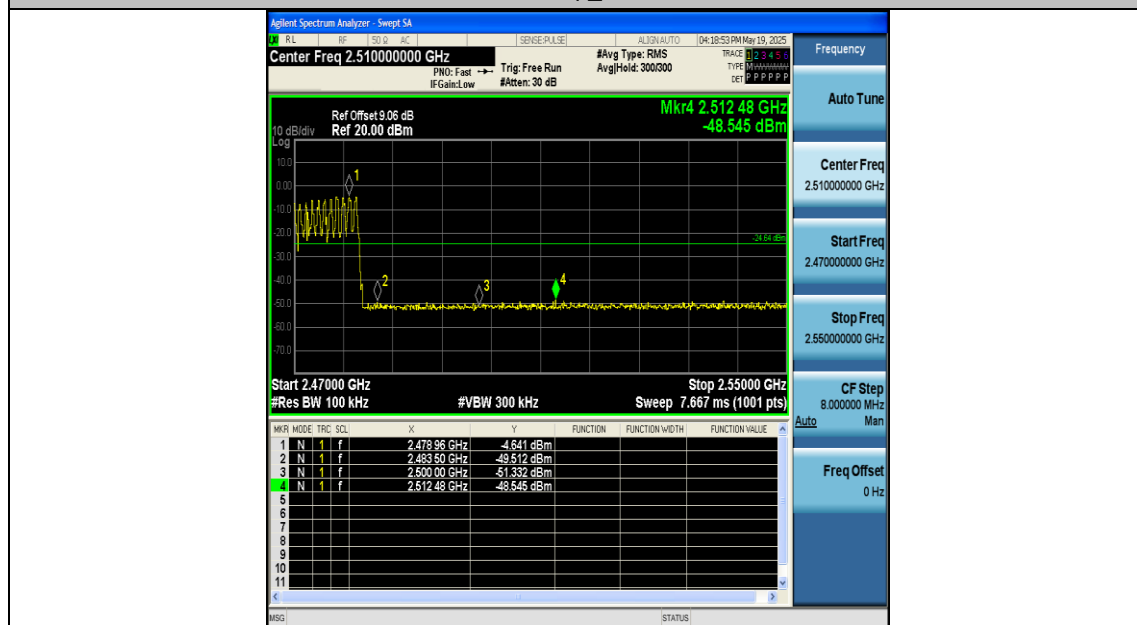
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs

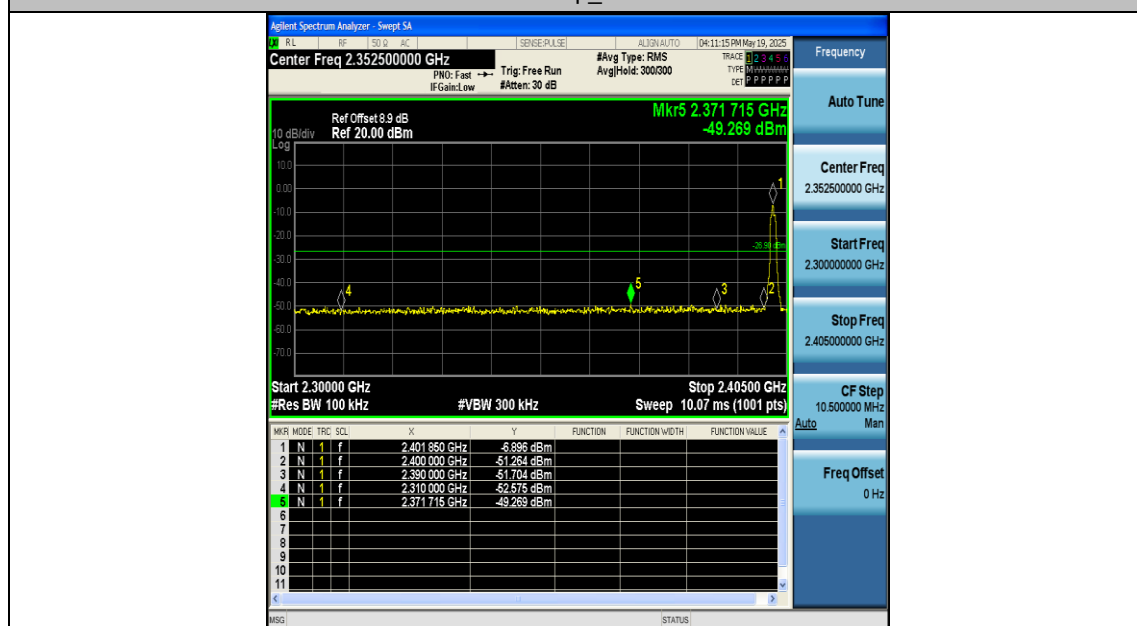




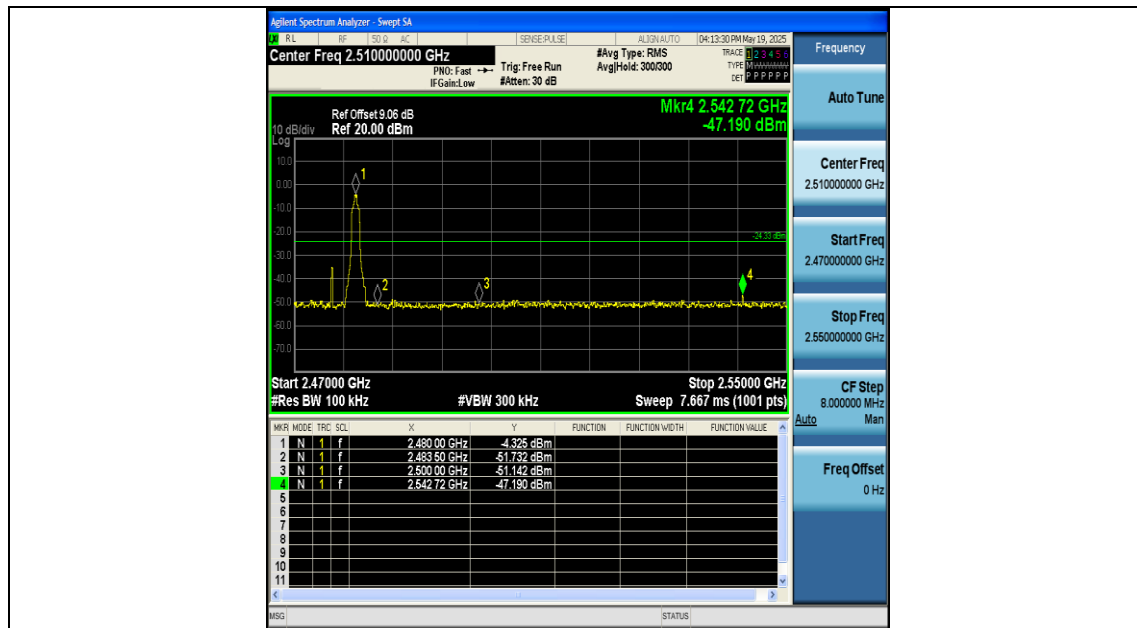
DH5-Ant1-Hop_2402-PASS



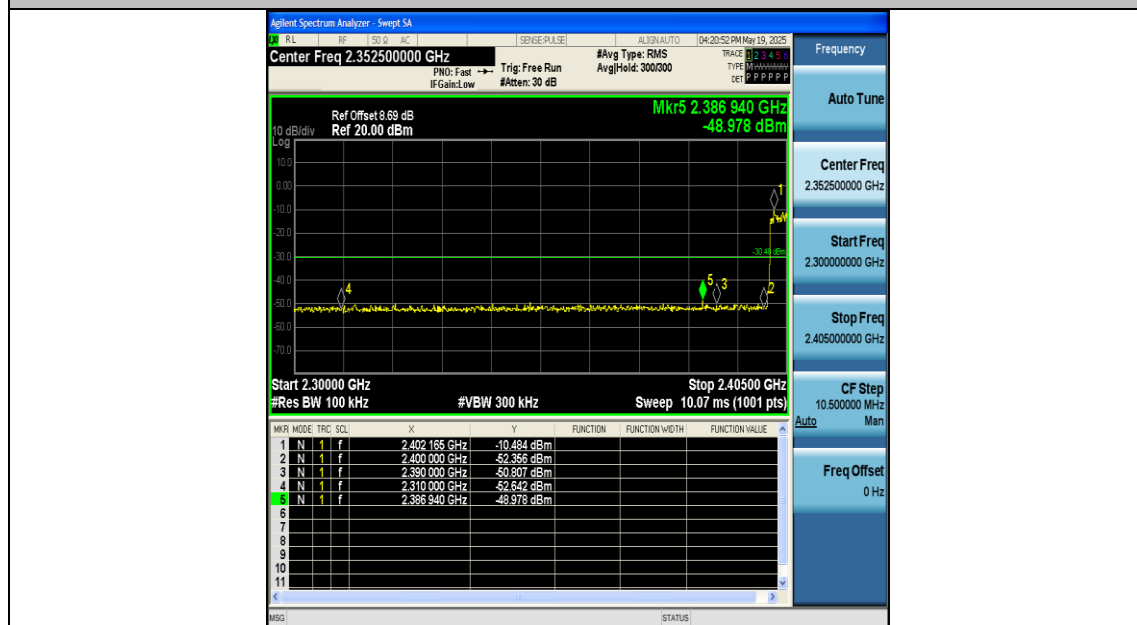
DH5-Ant1-Hop_2480-PASS



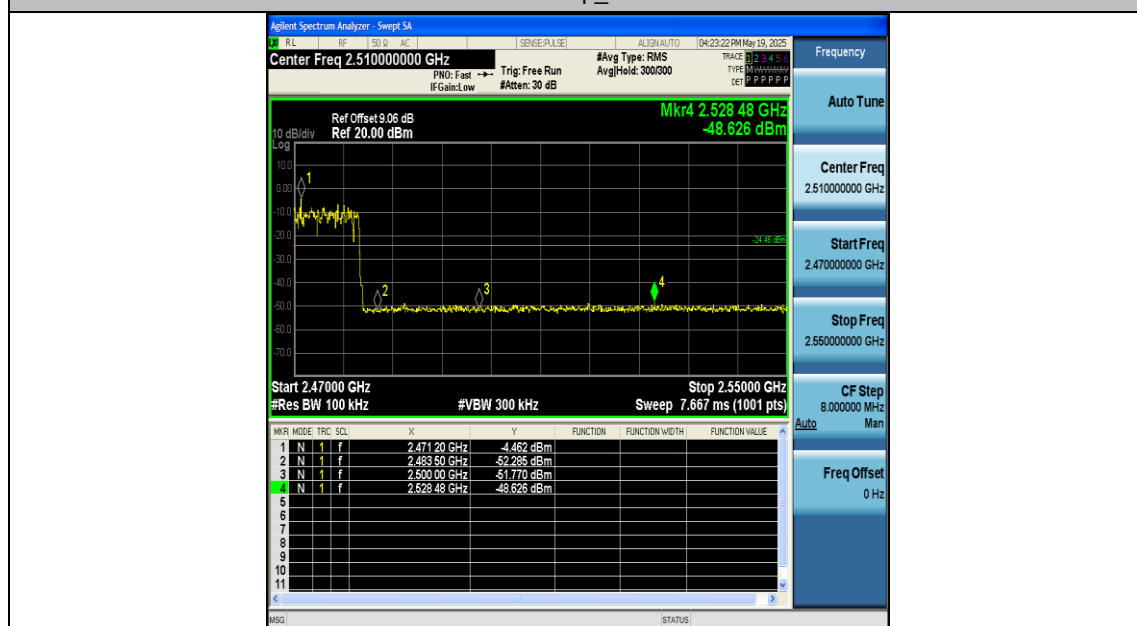
2DH5-Ant1-2402-PASS



2DH5-Ant1-2480-PASS



2DH5-Ant1-Hop_2402-PASS



2DH5-Ant1-Hop_2480-PASS

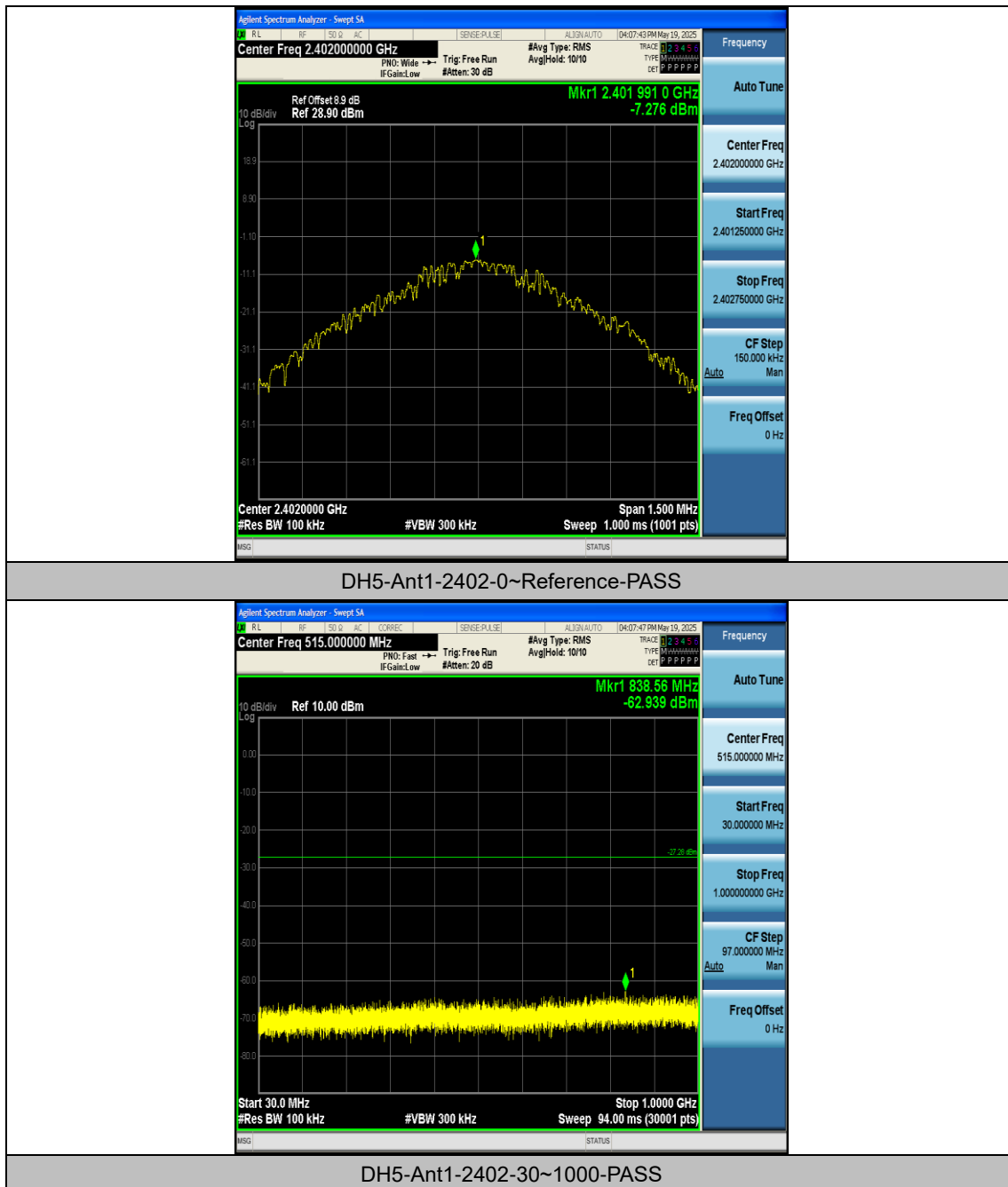
Appendix H: Conducted Spurious Emission

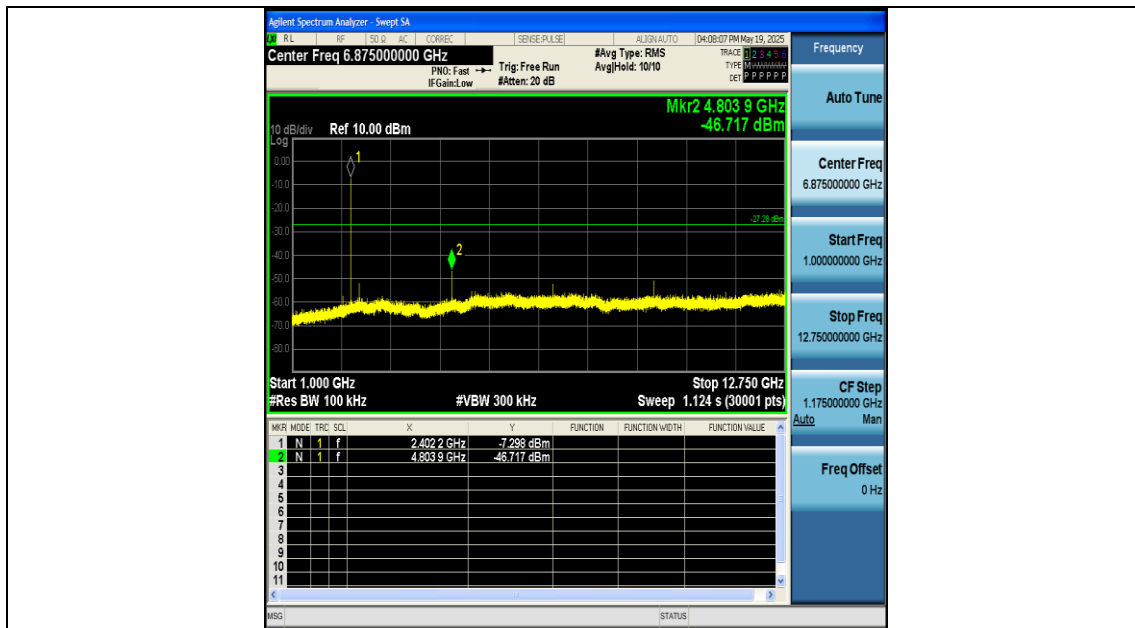
Test Result

Test Mode	Antenna	Frequency [MHz]	Freq. Range [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	0~Reference	-7.28	-7.28	---	PASS
DH5	Ant1	2402	30~1000	-7.28	-62.94	≤-27.28	PASS
DH5	Ant1	2402	1000~12750	-7.28	-46.72	≤-27.28	PASS
DH5	Ant1	2441	0~Reference	-5.22	-5.22	---	PASS
DH5	Ant1	2441	30~1000	-5.22	-62.52	≤-25.22	PASS
DH5	Ant1	2441	1000~12750	-5.22	-43.85	≤-25.22	PASS
DH5	Ant1	2480	0~Reference	-5.55	-5.55	---	PASS
DH5	Ant1	2480	30~1000	-5.55	-62.89	≤-25.55	PASS
DH5	Ant1	2480	1000~12750	-5.55	-43.71	≤-25.55	PASS
2DH5	Ant1	2402	0~Reference	-9.29	-9.29	---	PASS
2DH5	Ant1	2402	30~1000	-9.29	-62.15	≤-29.29	PASS
2DH5	Ant1	2402	1000~12750	-9.29	-48.29	≤-29.29	PASS
2DH5	Ant1	2441	0~Reference	-7.68	-7.68	---	PASS
2DH5	Ant1	2441	30~1000	-7.68	-63.2	≤-27.68	PASS
2DH5	Ant1	2441	1000~12750	-7.68	-42.48	≤-27.68	PASS
2DH5	Ant1	2480	0~Reference	-4.49	-4.49	---	PASS
2DH5	Ant1	2480	30~1000	-4.49	-62.61	≤-24.49	PASS
2DH5	Ant1	2480	1000~12750	-4.49	-45.91	≤-24.49	PASS

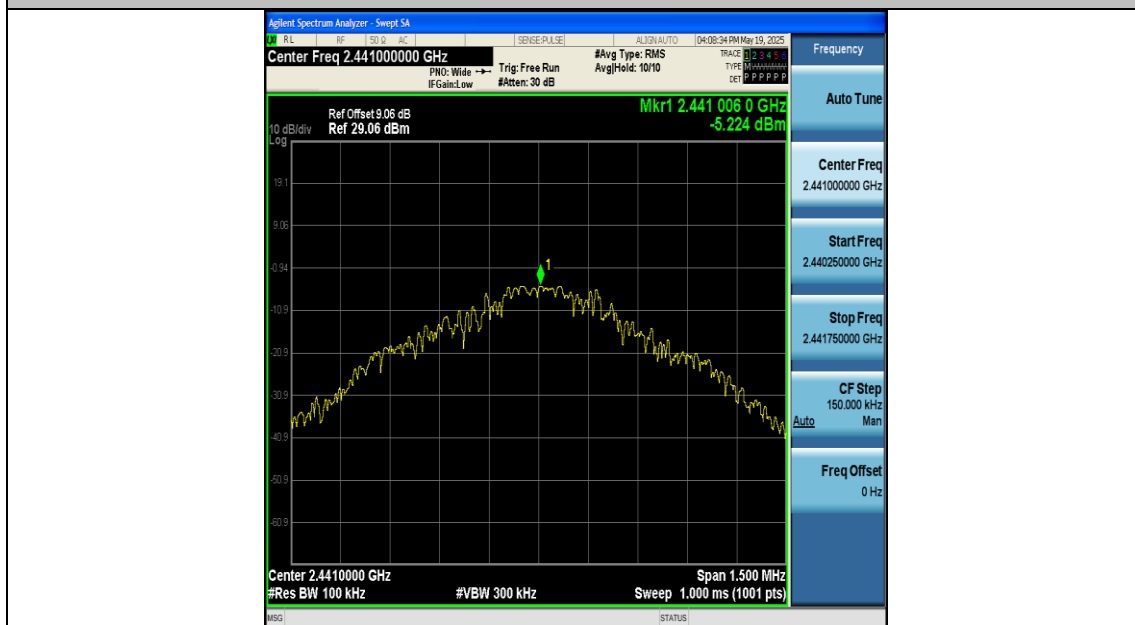
Note: offset(dB) in Reference test plots = cable loss(dB) + attenuator factor(dB); For spurious emissions plots from 30MHz to 26.5GHz, the cable loss and attenuator factors have been set in the 'Input Correction' of the Spectrum Analyzer during the test.

Test Graphs

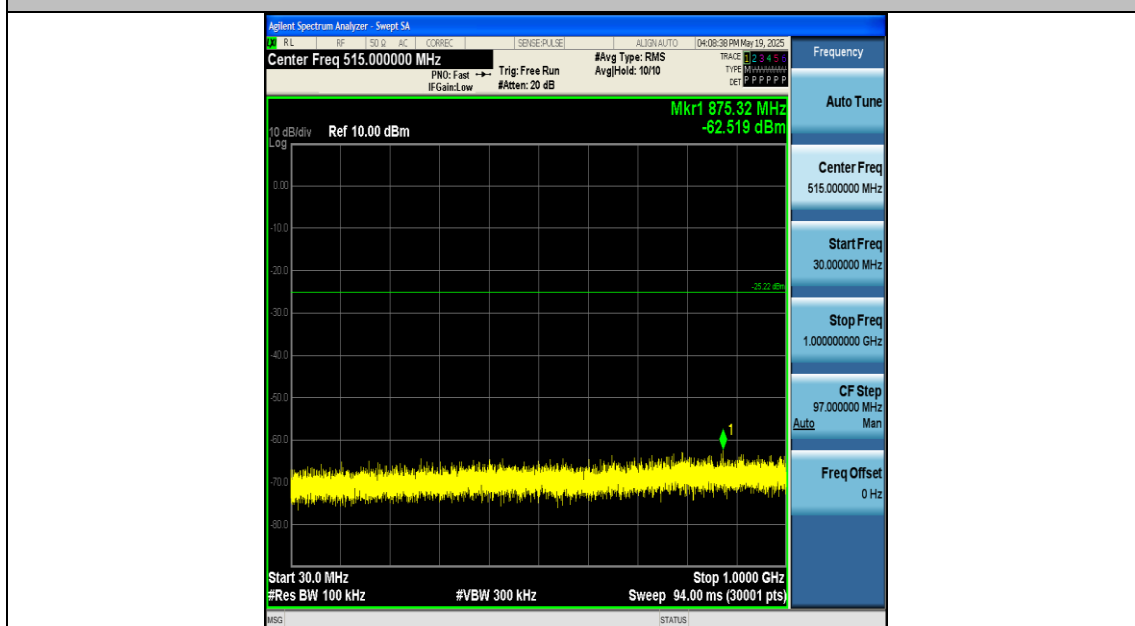




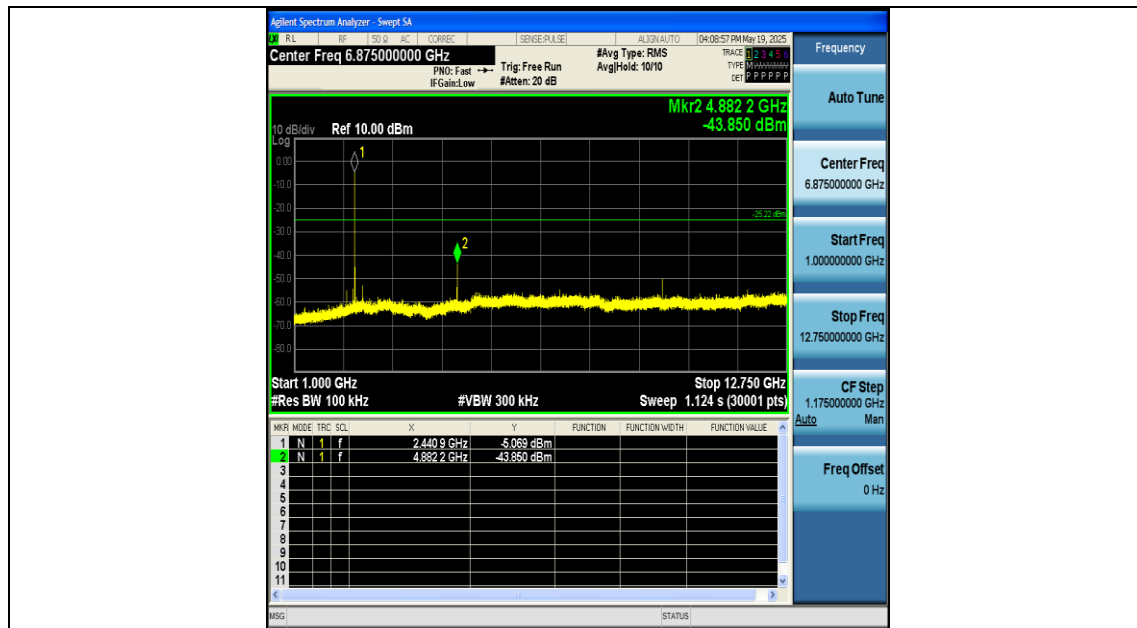
DH5-Ant1-2402-1000~12750-PASS



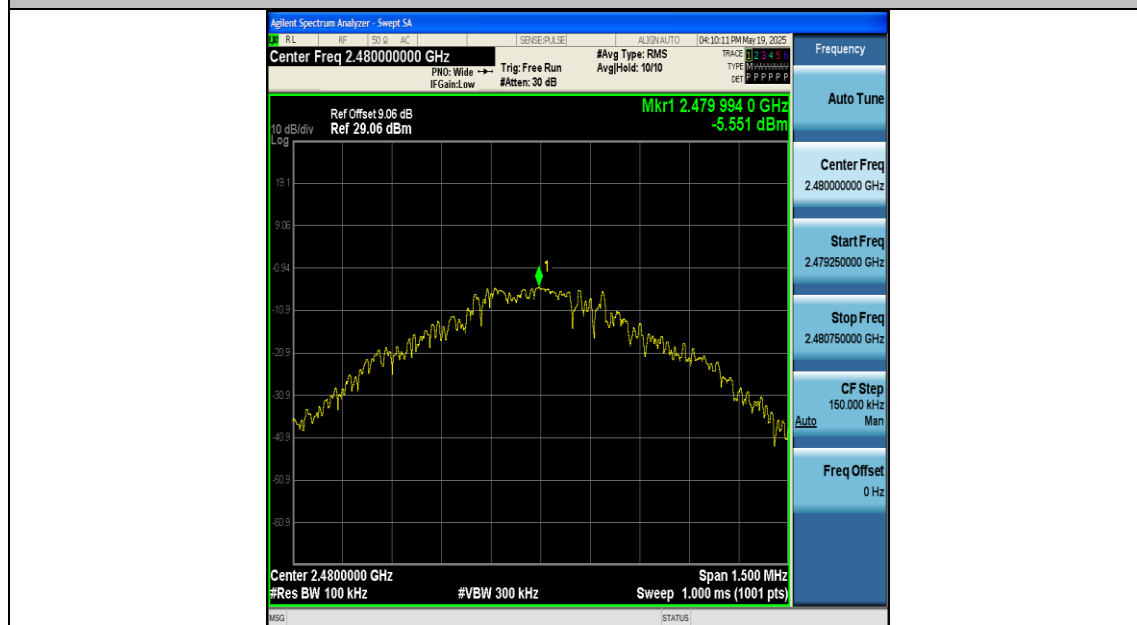
DH5-Ant1-2441-0~Reference-PASS



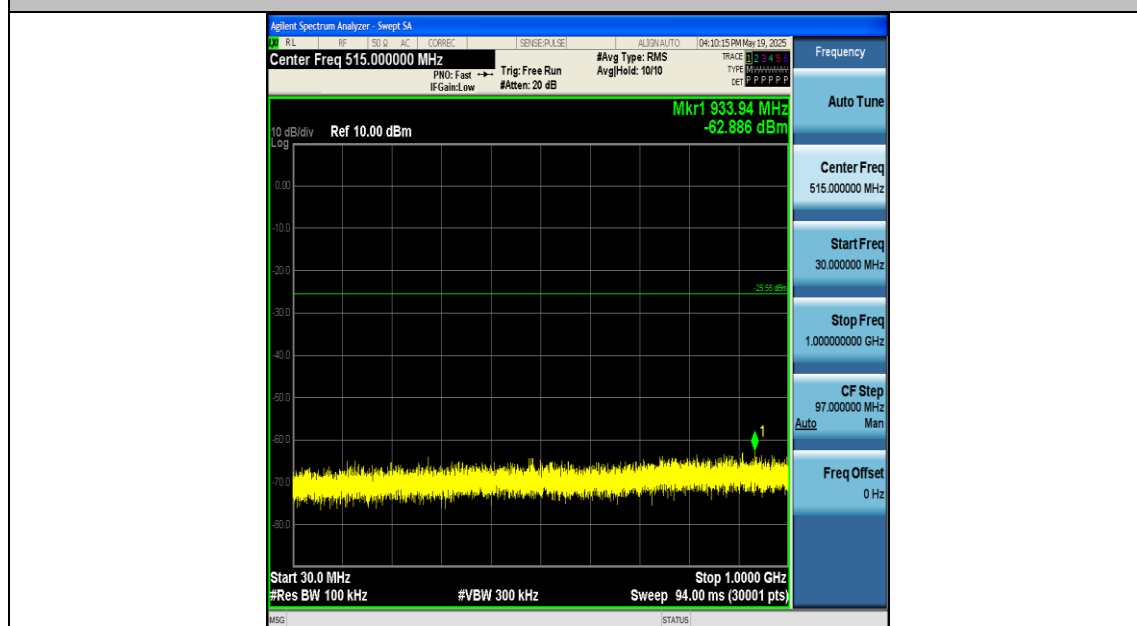
DH5-Ant1-2441-30~1000-PASS



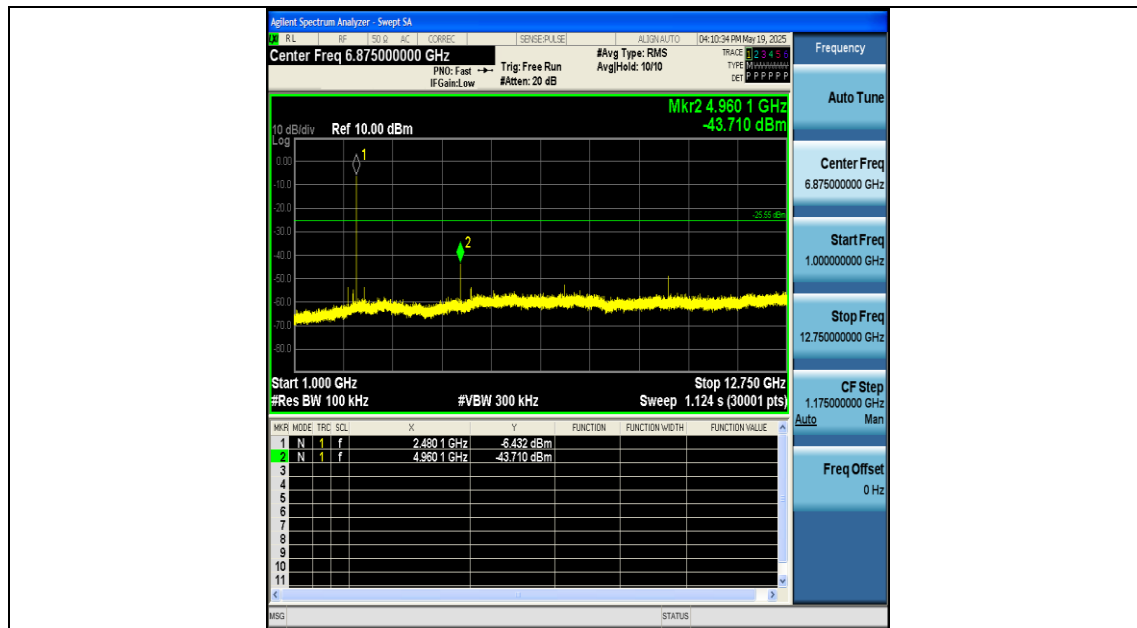
DH5-Ant1-2441-1000~12750-PASS



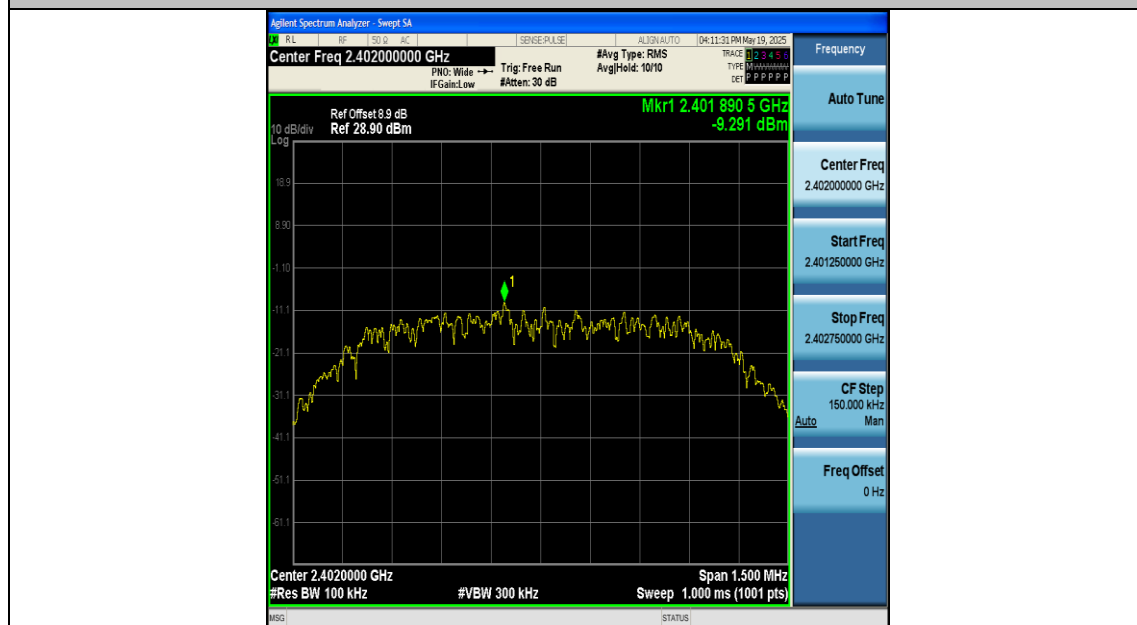
DH5-Ant1-2480-0~Reference-PASS



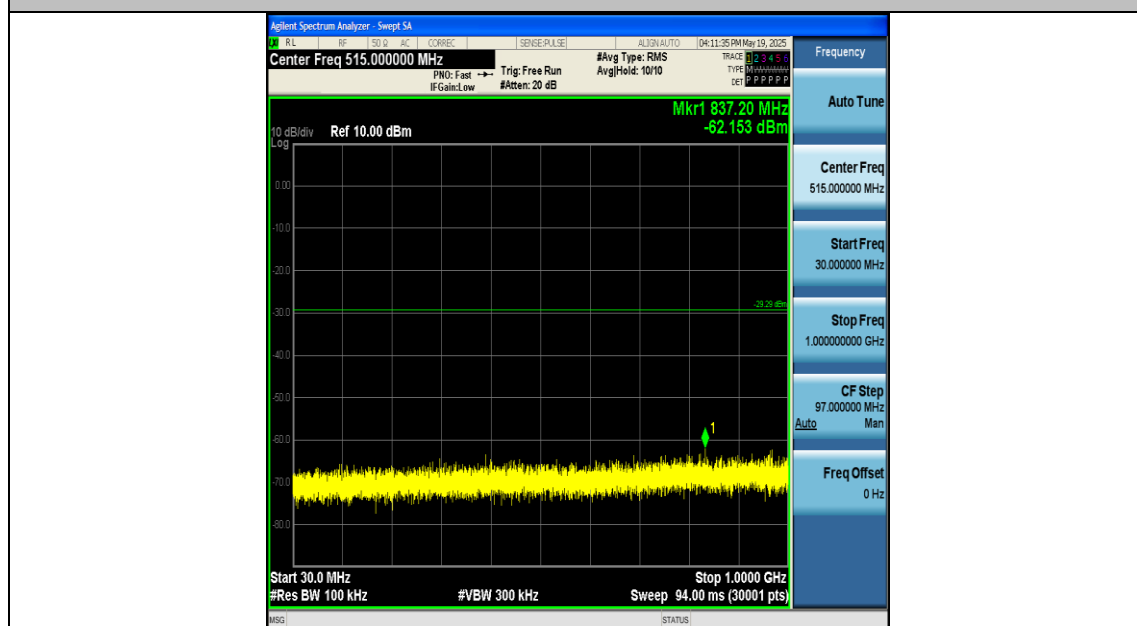
DH5-Ant1-2480-30~1000-PASS



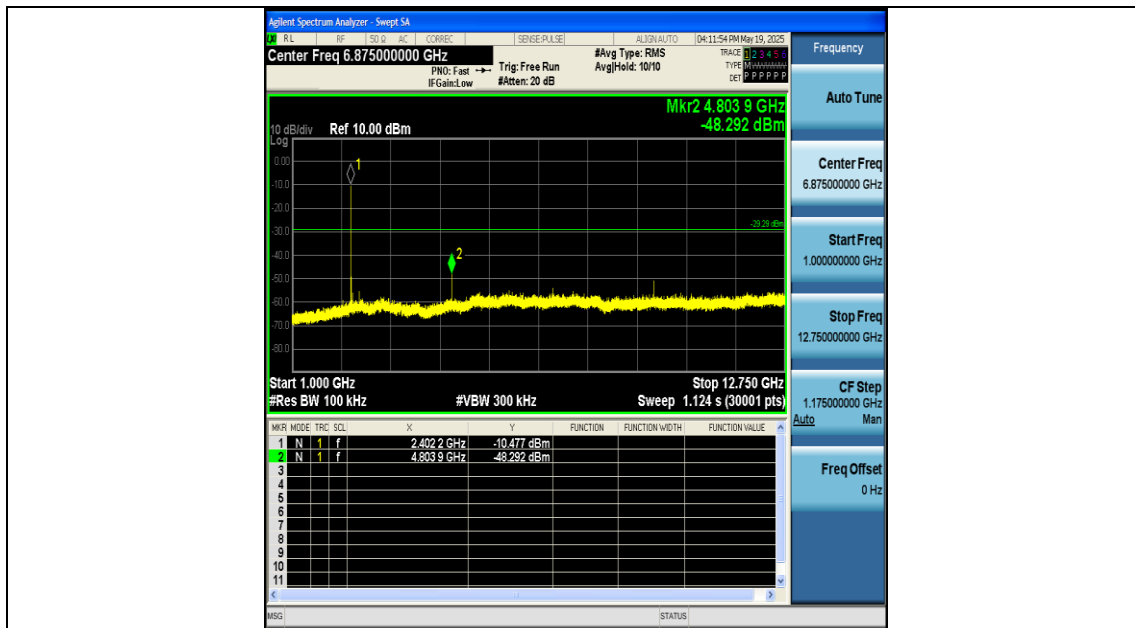
DH5-Ant1-2480-1000~12750-PASS



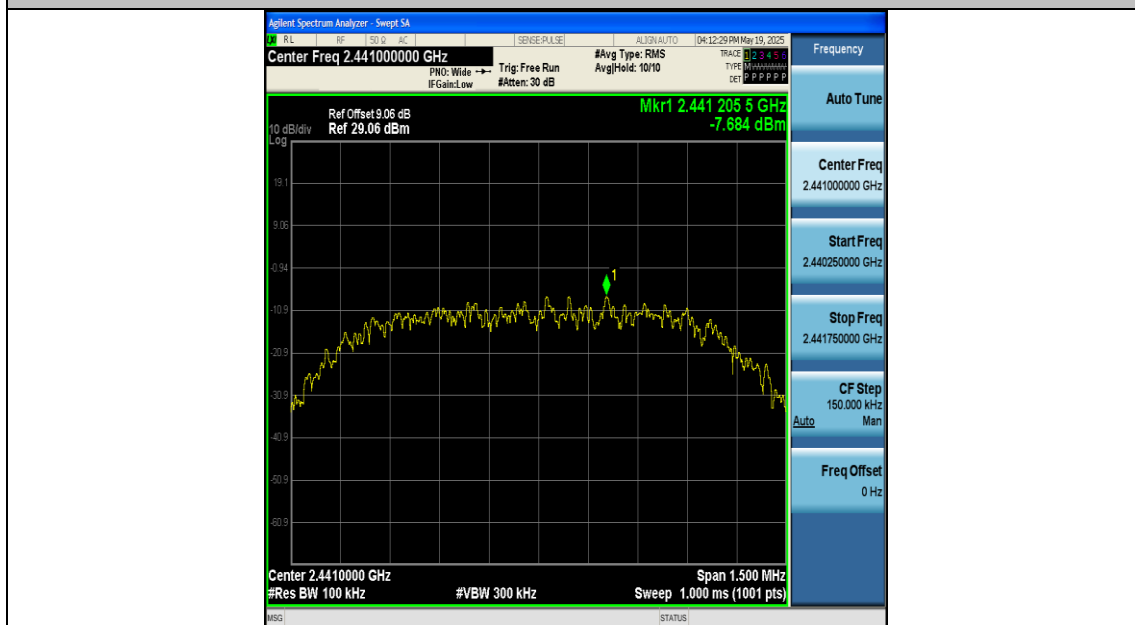
2DH5-Ant1-2402-0~Reference-PASS



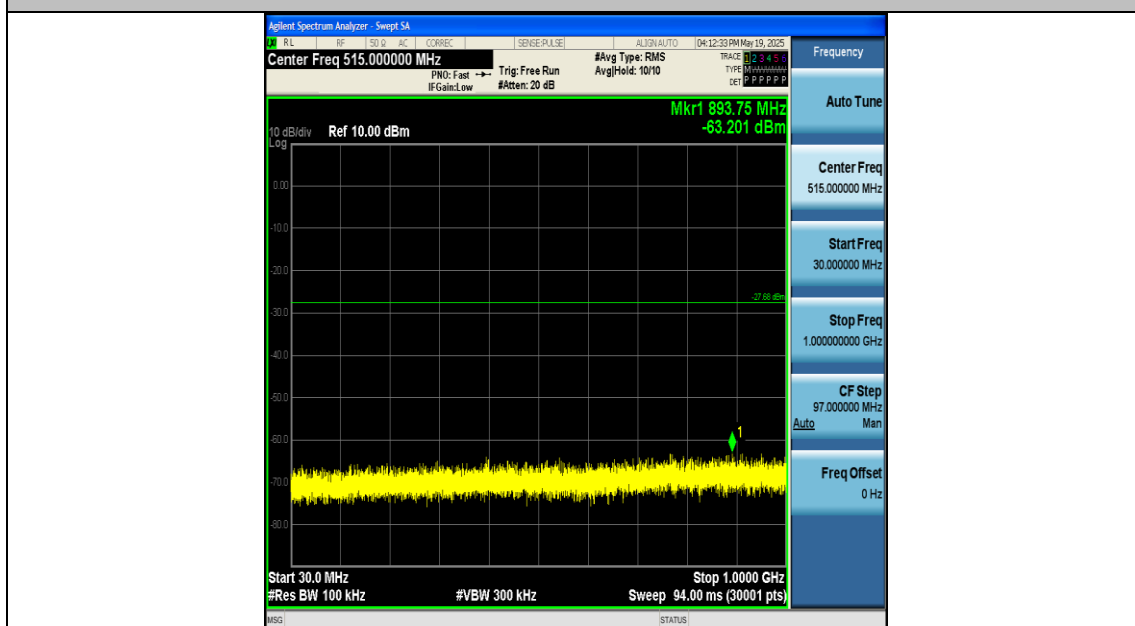
2DH5-Ant1-2402-30~1000-PASS



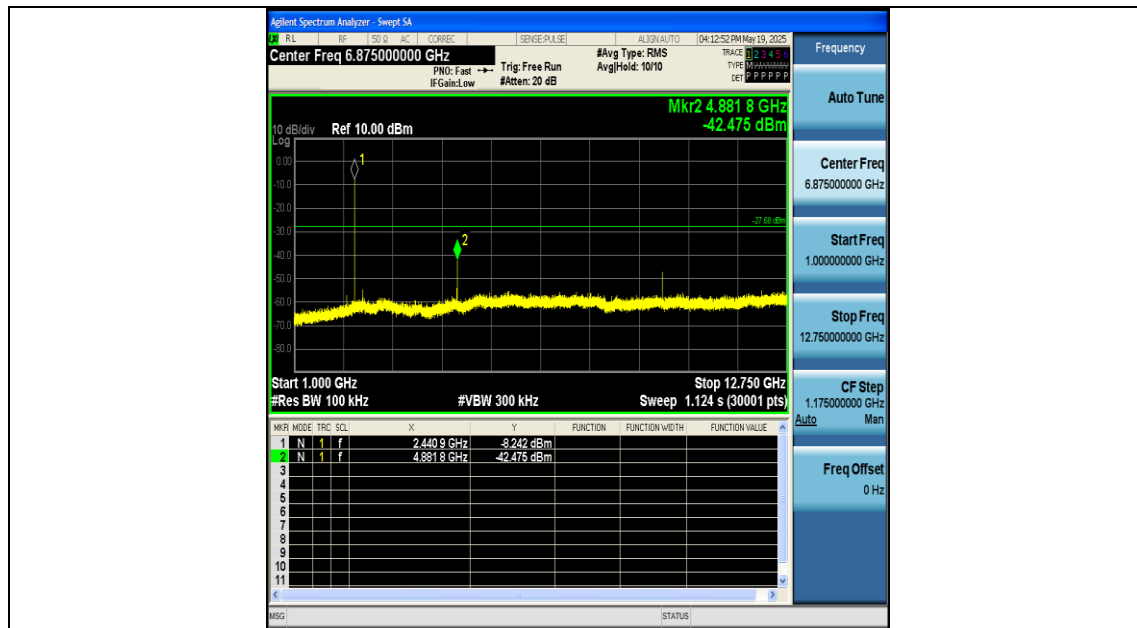
2DH5-Ant1-2402-1000~12750-PASS



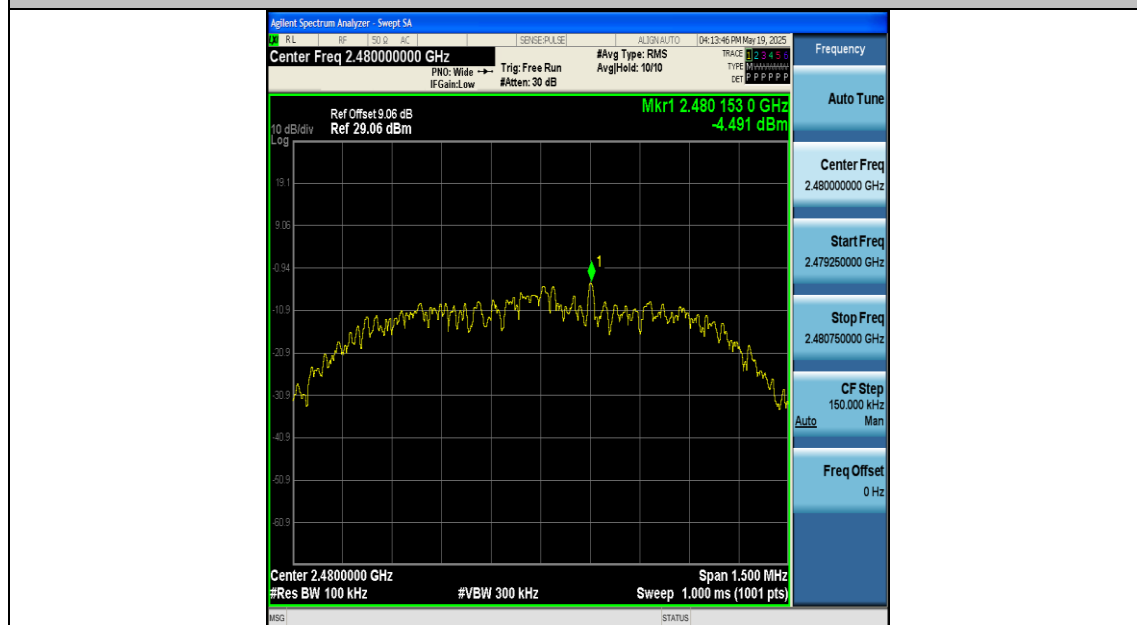
2DH5-Ant1-2441-0~Reference-PASS



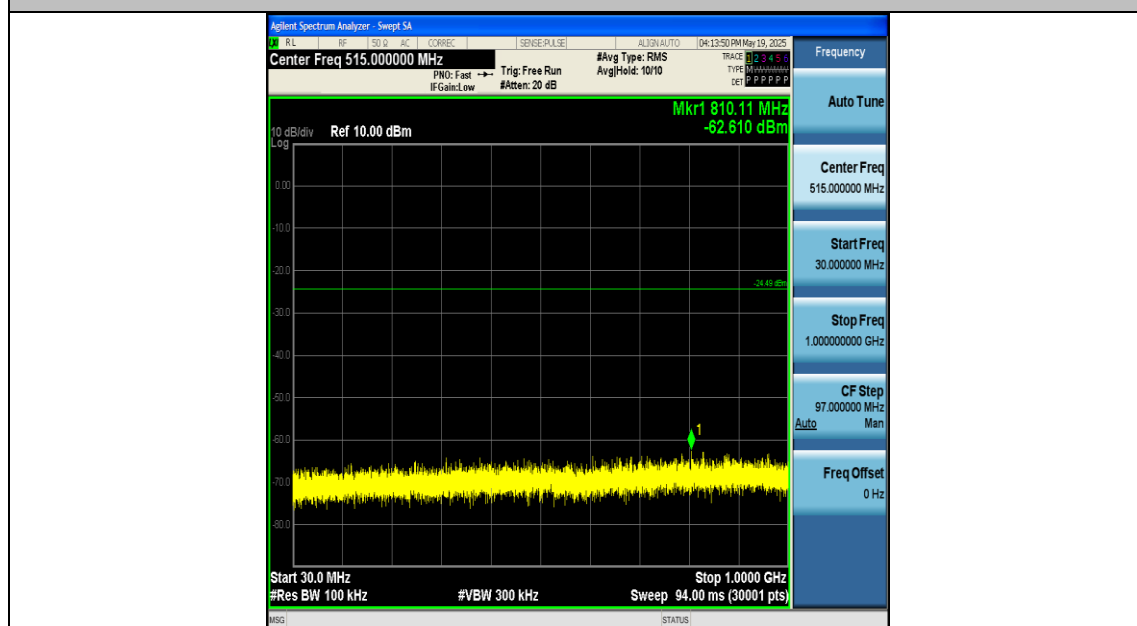
2DH5-Ant1-2441-30~1000-PASS



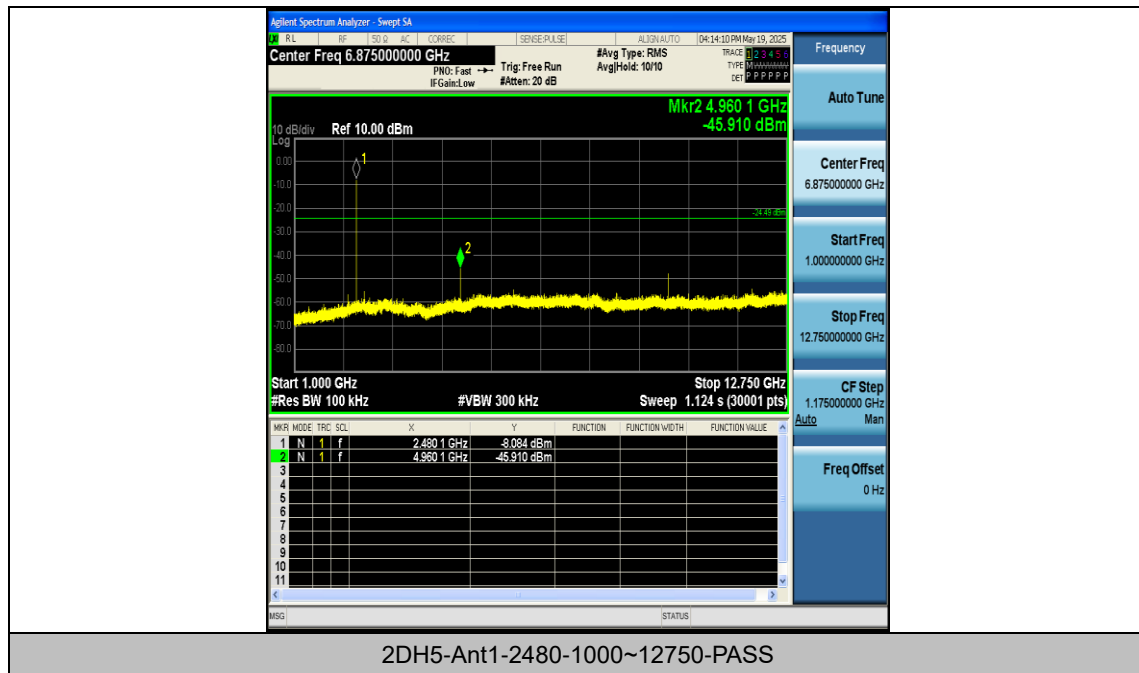
2DH5-Ant1-2441-1000~12750-PASS



2DH5-Ant1-2480-0~Reference-PASS



2DH5-Ant1-2480-30~1000-PASS



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	2.89	3.75	77.07	1.13
DH5	Ant1	2441	2.88	3.75	76.80	1.15
DH5	Ant1	2480	2.89	3.75	77.07	1.13
2DH5	Ant1	2402	2.89	3.75	77.07	1.13
2DH5	Ant1	2441	2.89	3.75	77.07	1.13
2DH5	Ant1	2480	2.89	3.75	77.07	1.13

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs

