

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

Product Name: True Wireless Earbuds

Trade Mark: /

Test Model: Fire-Boltt Aero

FCC ID: 2BRE4-FIREBOLTTAERO

Environmental Conditions

Temperature:	23.5°C
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	0.957	2401.520	2402.477	---	---
DH5	Ant1	2441	0.960	2440.517	2441.477	---	---
DH5	Ant1	2480	0.957	2479.520	2480.477	---	---
2DH5	Ant1	2402	1.281	2401.355	2402.636	---	---
2DH5	Ant1	2441	1.278	2440.355	2441.633	---	---
2DH5	Ant1	2480	1.287	2479.352	2480.639	---	---
3DH5	Ant1	2402	1.263	2401.364	2402.627	---	---
3DH5	Ant1	2441	1.293	2440.334	2441.627	---	---
3DH5	Ant1	2480	1.287	2479.343	2480.630	---	---

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

Test Graphs





DH5-Ant1-2480



2DH5-Ant1-2402



2DH5-Ant1-2441



2DH5-Ant1-2480



3DH5-Ant1-2402



3DH5-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	0.87030	2401.5512	2402.4215	---	---
DH5	Ant1	2441	0.86820	2440.5549	2441.4231	---	---
DH5	Ant1	2480	0.88083	2479.5480	2480.4289	---	---
2DH5	Ant1	2402	1.1814	2401.3933	2402.5747	---	---
2DH5	Ant1	2441	1.1703	2440.3978	2441.5681	---	---
2DH5	Ant1	2480	1.1737	2479.4000	2480.5737	---	---
3DH5	Ant1	2402	1.1753	2401.4034	2402.5787	---	---
3DH5	Ant1	2441	1.1879	2440.3930	2441.5809	---	---
3DH5	Ant1	2480	1.1778	2479.3990	2480.5768	---	---

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

Test Graphs



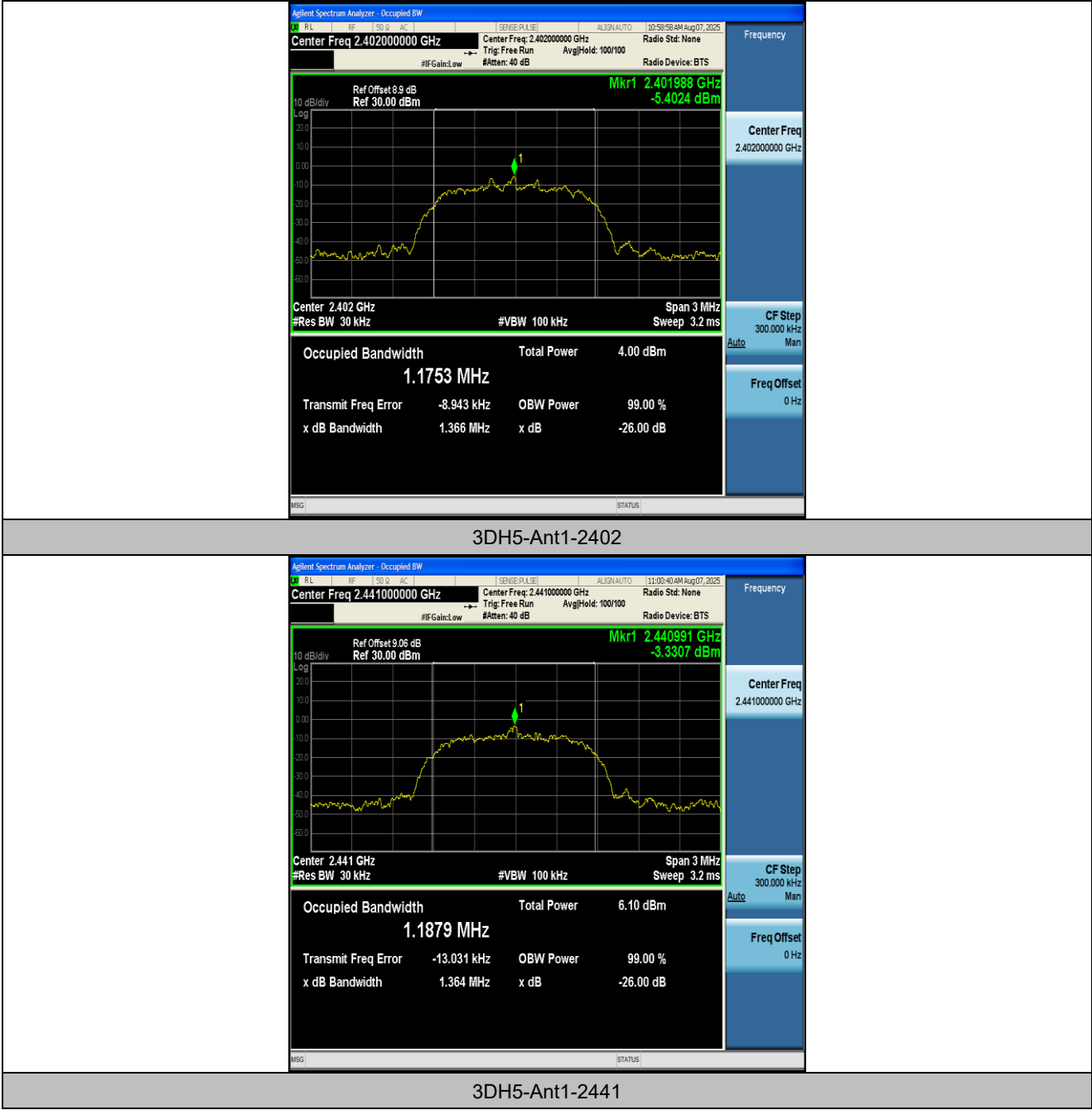


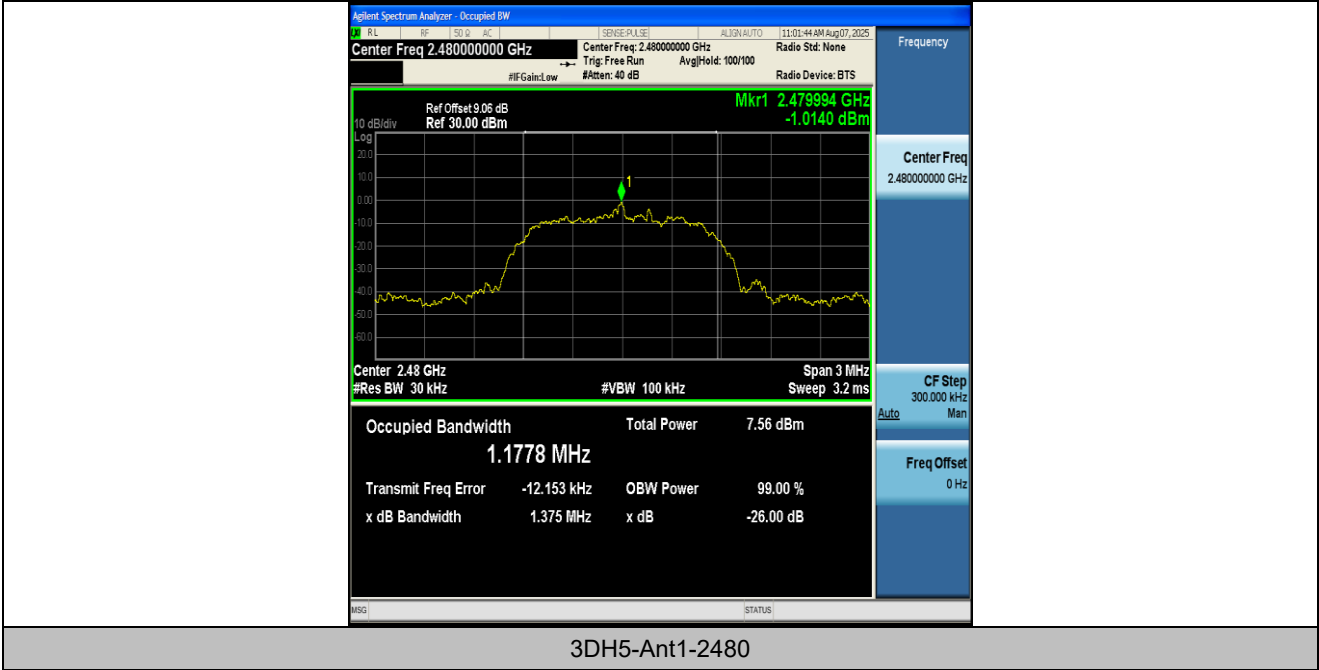


2DH5-Ant1-2441



2DH5-Ant1-2480





3DH5-Ant1-2480

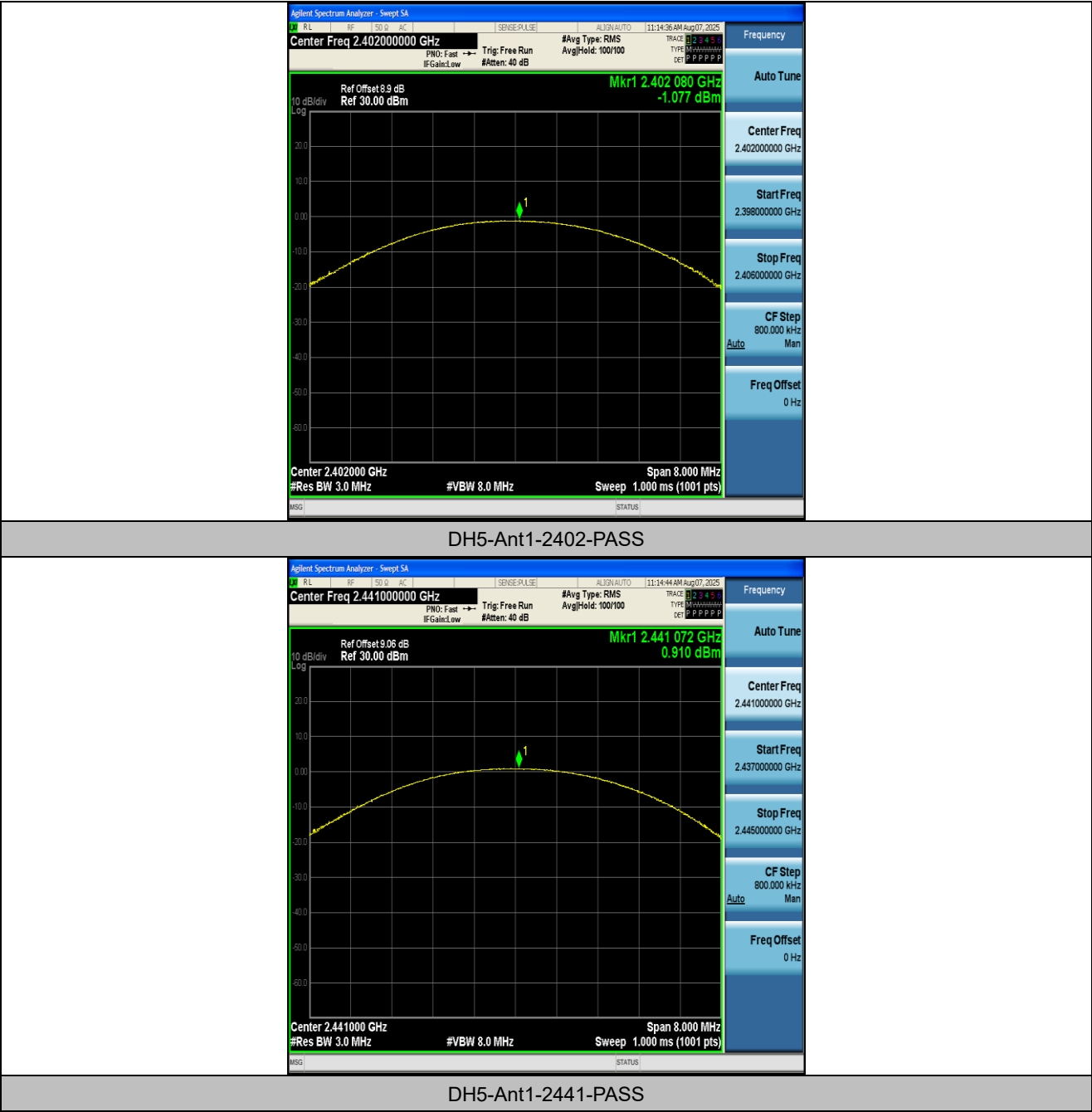
Appendix C: Maximum peak conducted output power

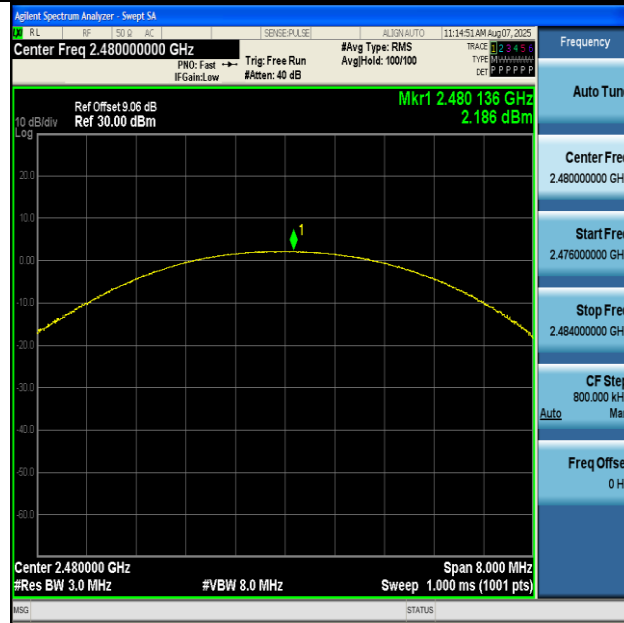
Test Result

Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power [dBm]	Conducted Limit [dBm]	Verdict
DH5	Ant1	2402	-1.08	≤30	PASS
DH5	Ant1	2441	0.91	≤30	PASS
DH5	Ant1	2480	2.19	≤30	PASS
2DH5	Ant1	2402	-0.44	≤20.97	PASS
2DH5	Ant1	2441	1.69	≤20.97	PASS
2DH5	Ant1	2480	3.01	≤20.97	PASS
3DH5	Ant1	2402	0.02	≤20.97	PASS
3DH5	Ant1	2441	2.41	≤20.97	PASS
3DH5	Ant1	2480	3.48	≤20.97	PASS

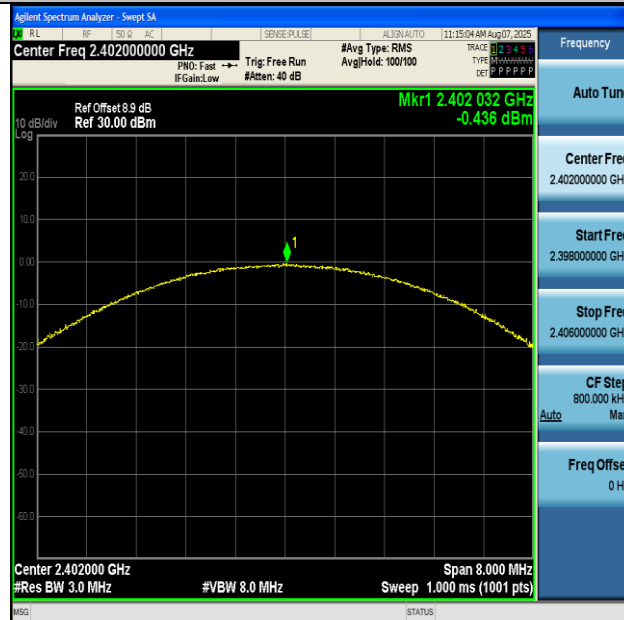
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs

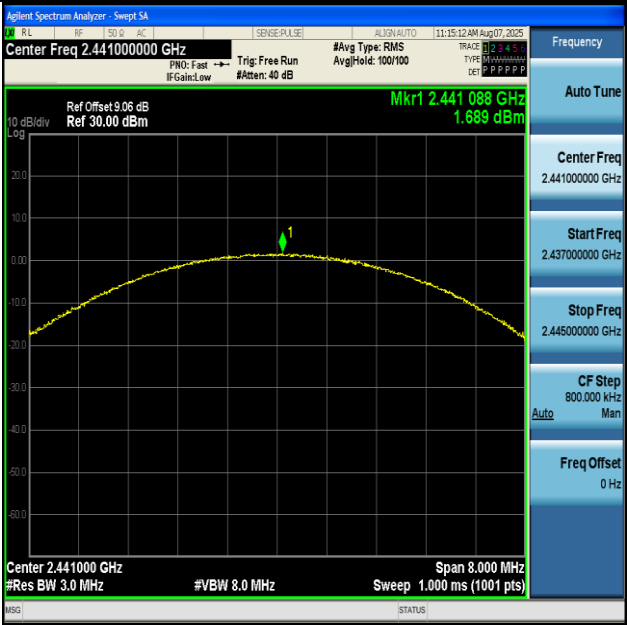




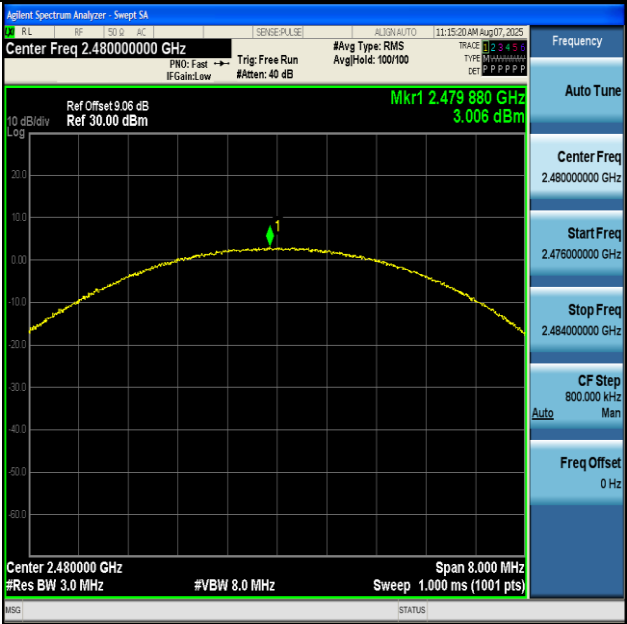
DH5-Ant1-2480-PASS



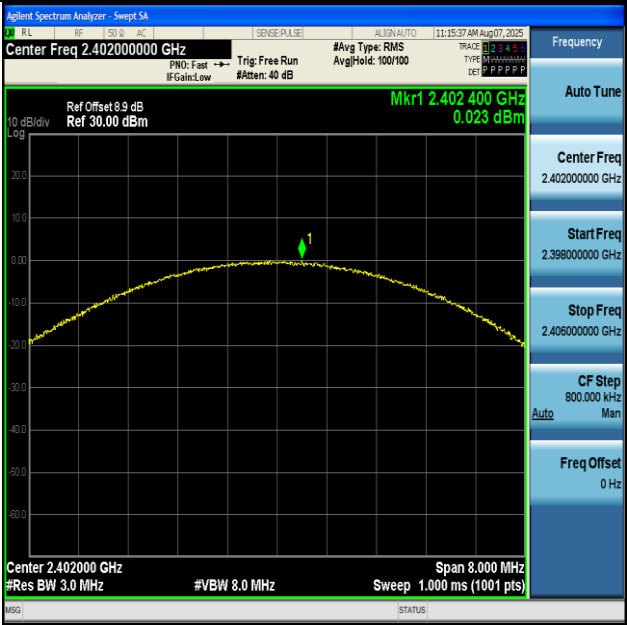
2DH5-Ant1-2402-PASS



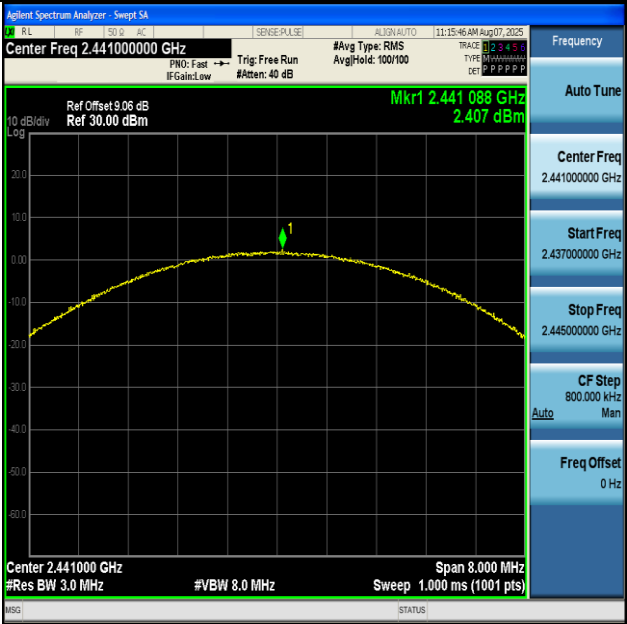
2DH5-Ant1-2441-PASS



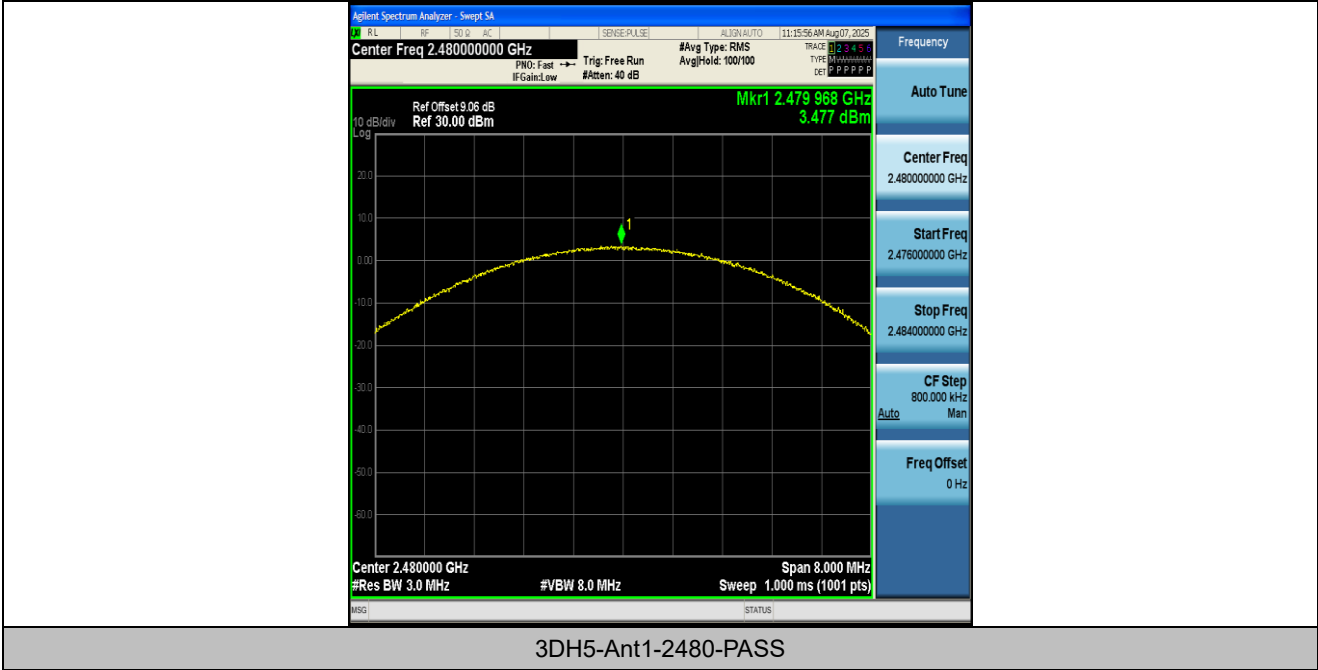
2DH5-Ant1-2480-PASS



3DH5-Ant1-2402-PASS



3DH5-Ant1-2441-PASS



Appendix D: Carrier frequency separation

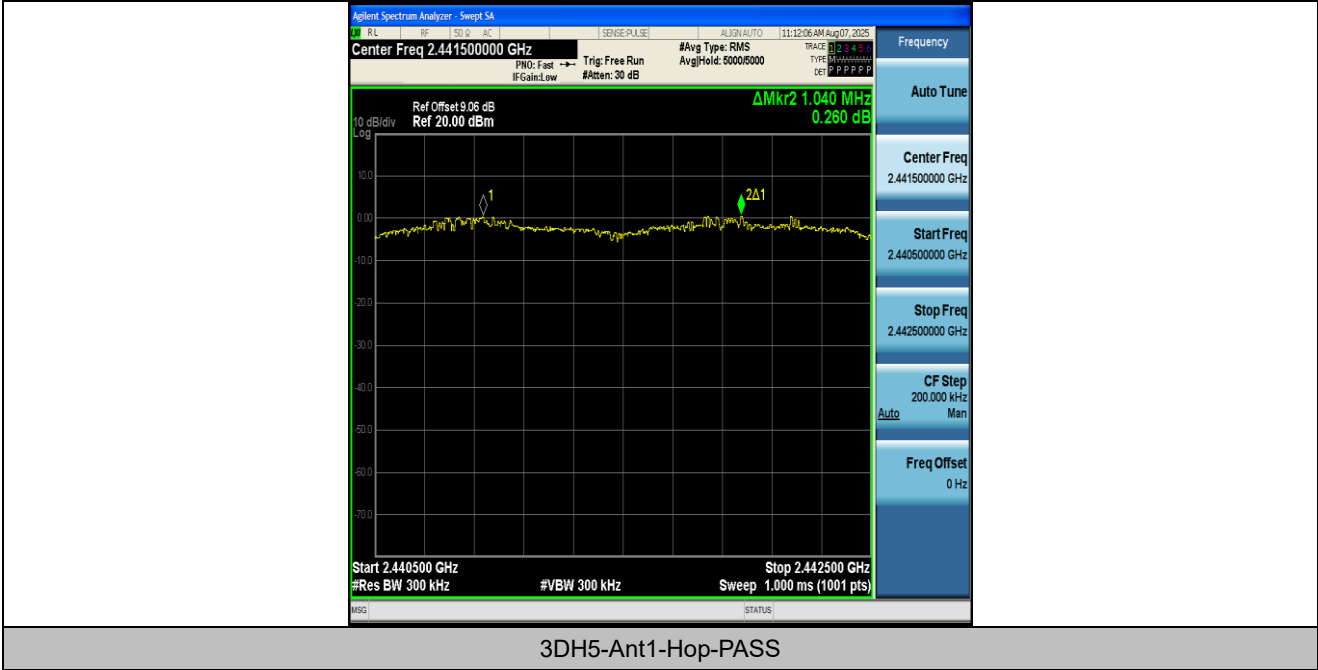
Test Result

Test Mode	Antenna	Frequency [MHz]	Result [MHz]	Limit [MHz]	Verdict
DH5	Ant1	Hop	0.97	≥0.960	PASS
2DH5	Ant1	Hop	1.006	≥0.858	PASS
3DH5	Ant1	Hop	1.04	≥0.862	PASS

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

Test Graphs





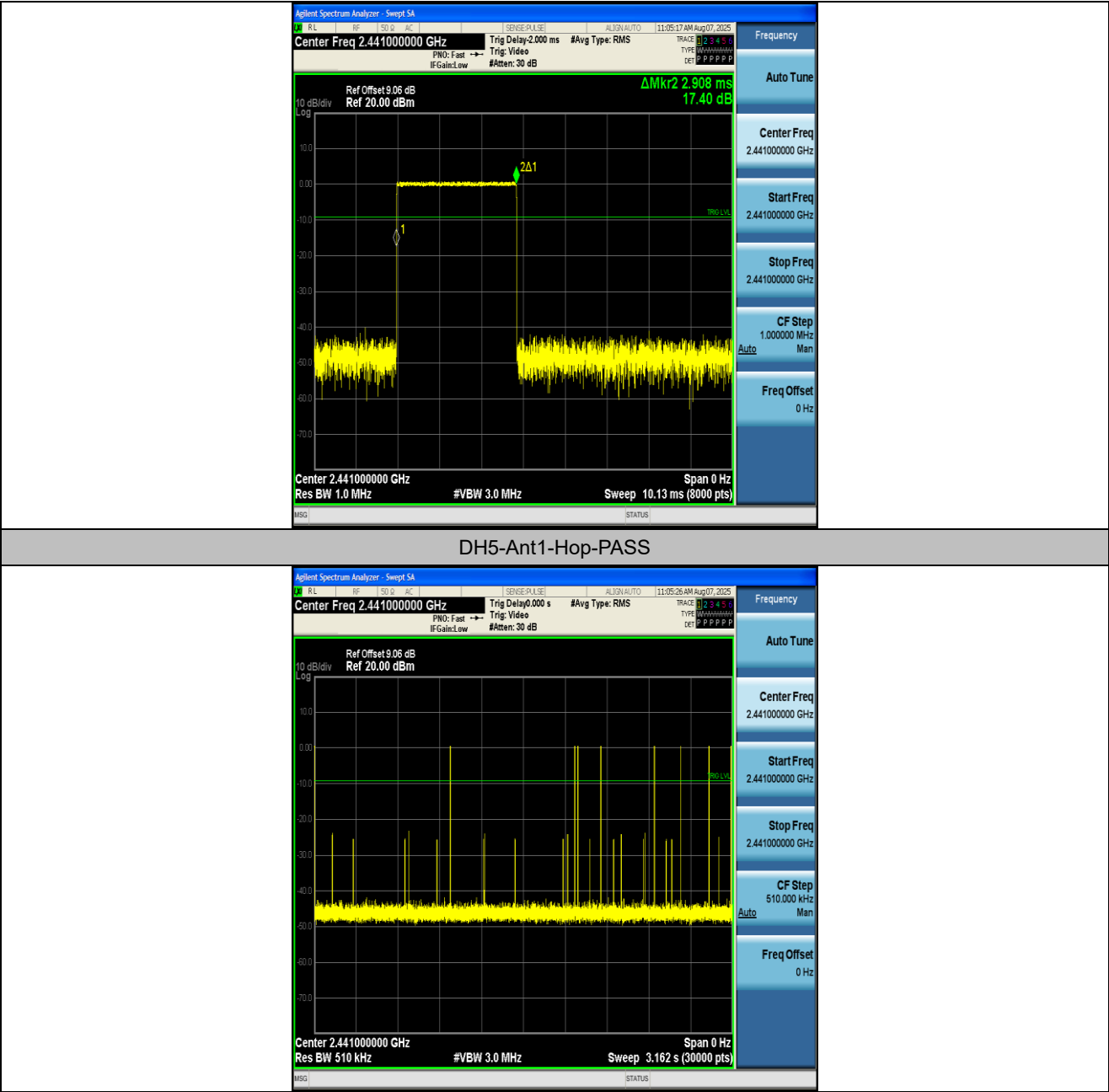
Appendix E: Time of occupancy

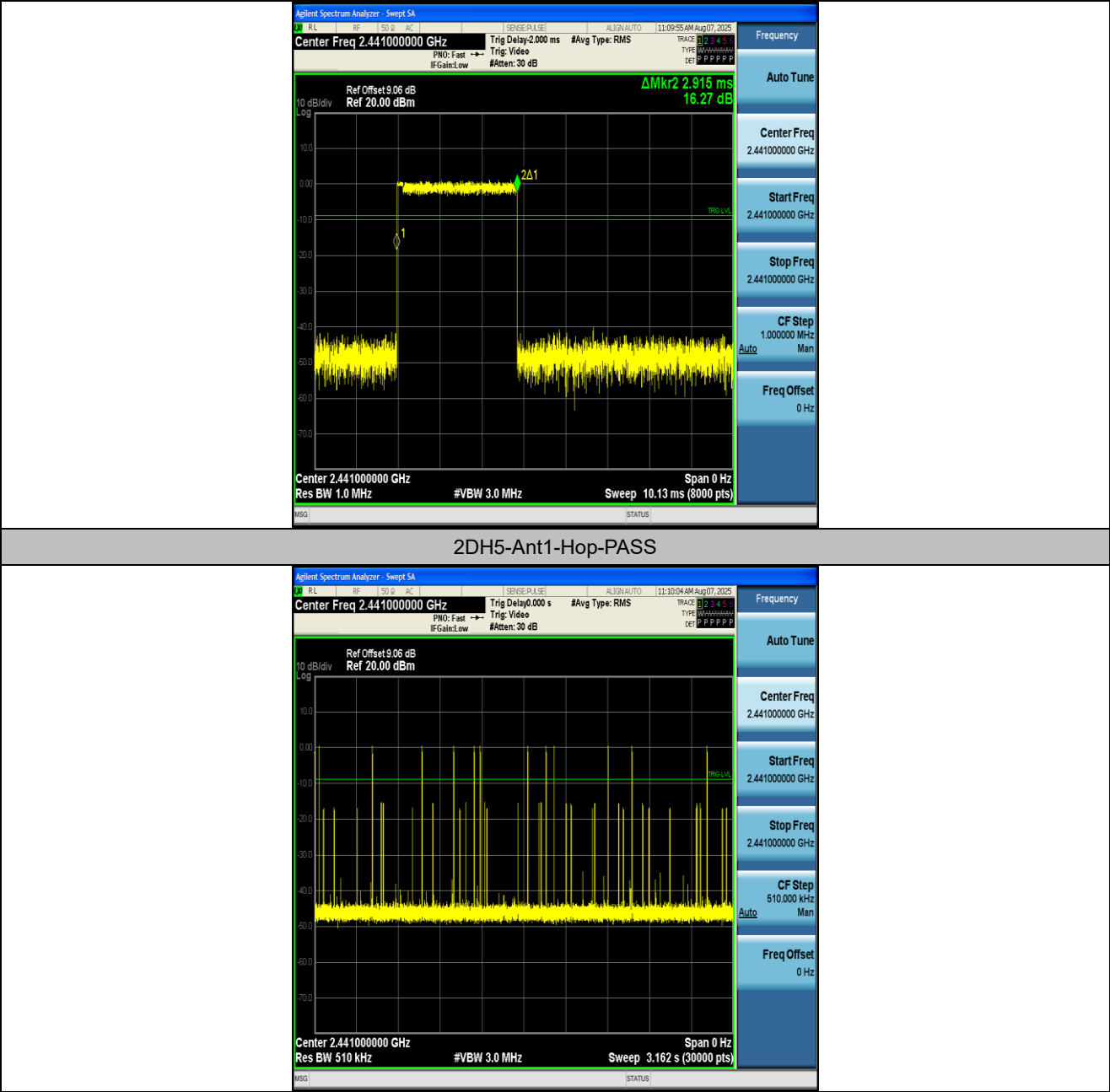
Test Result

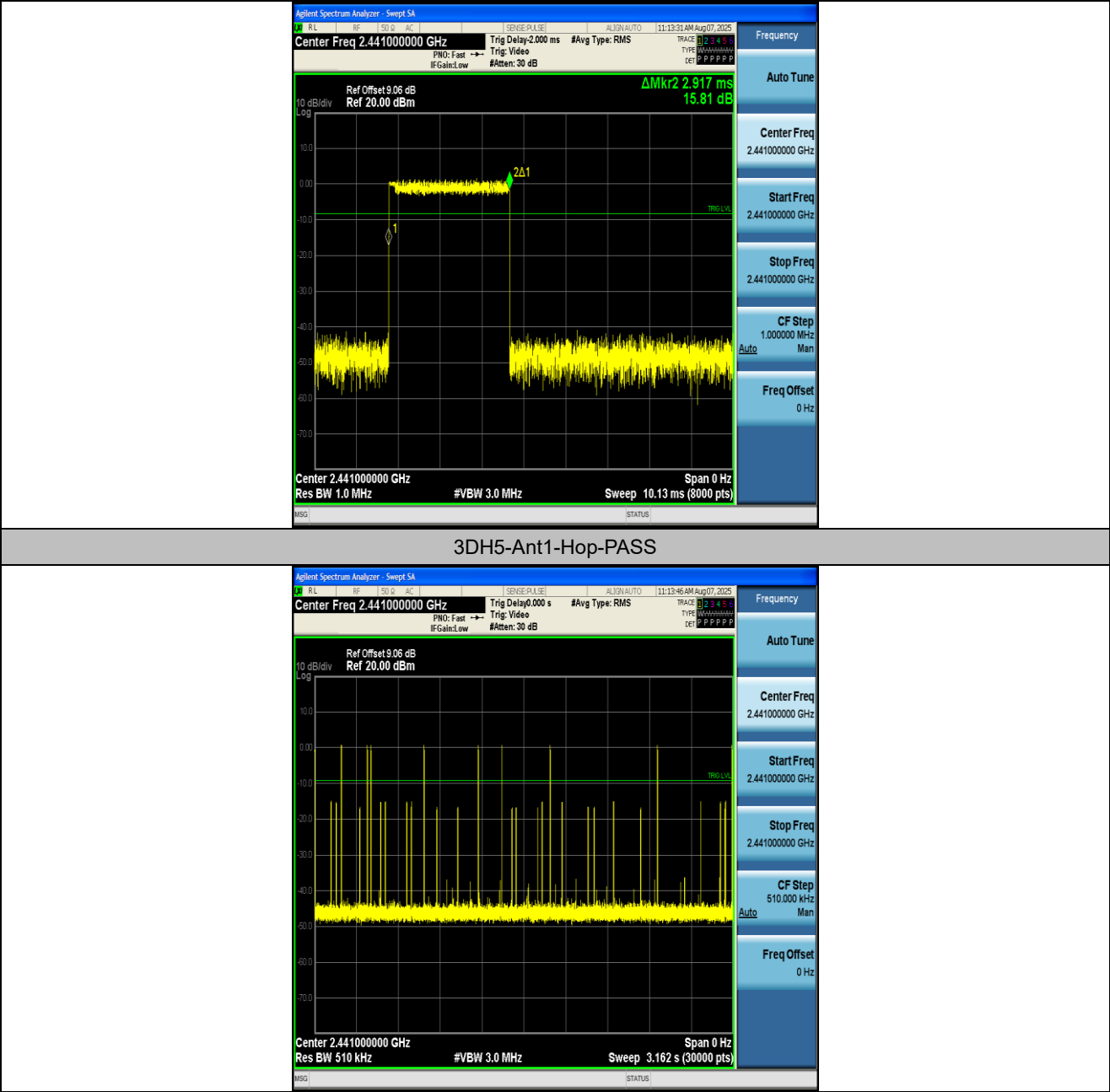
Test Mode	Antenna	Frequency [MHz]	Burst Width [ms]	TotalHops [Num]	Result [s]	Limit [s]	Verdict
DH5	Ant1	Hop	2.908	90	0.262	≤0.4	PASS
2DH5	Ant1	Hop	2.915	130	0.379	≤0.4	PASS
3DH5	Ant1	Hop	2.917	100	0.292	≤0.4	PASS

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

Test Graphs







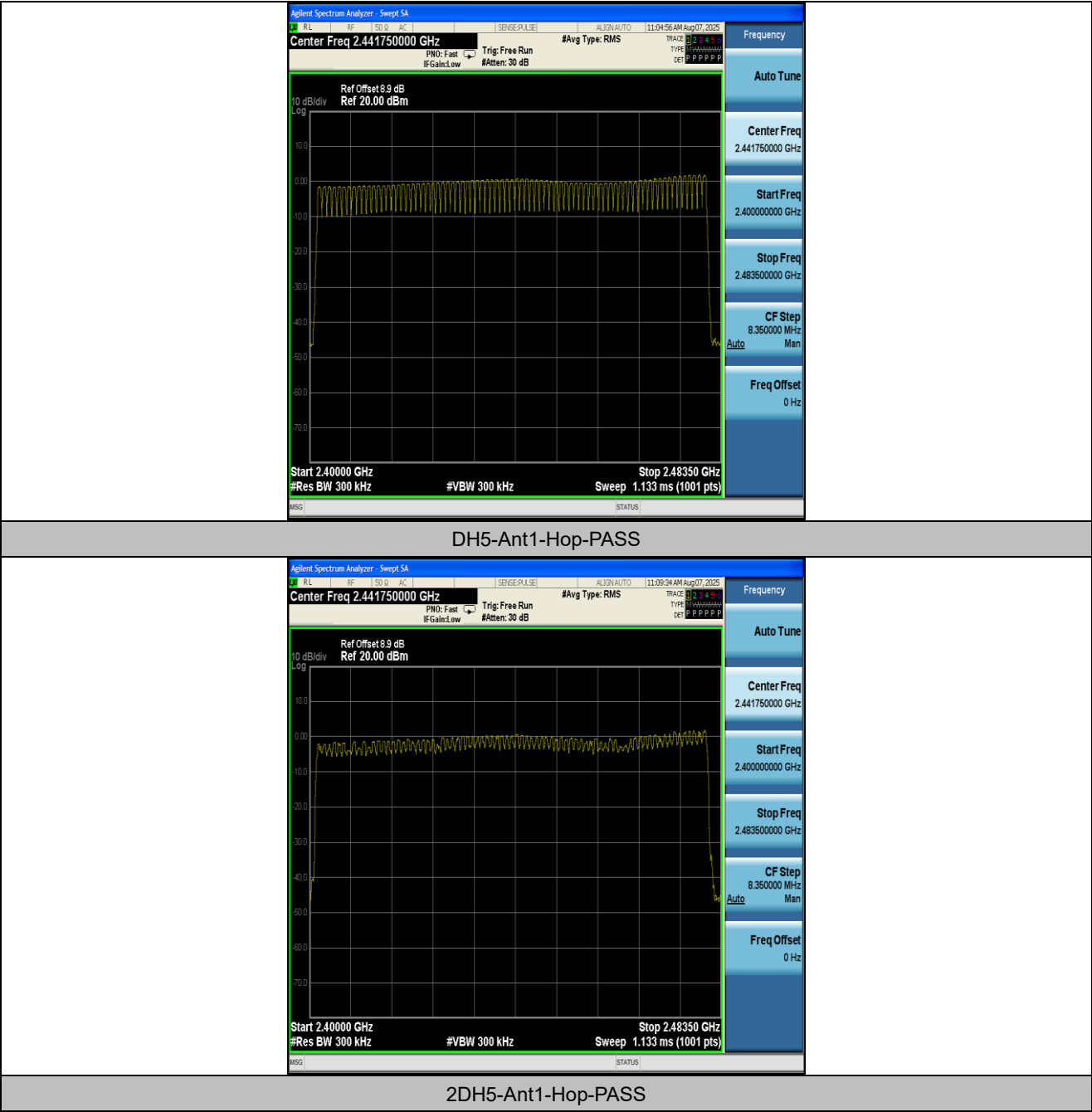
Appendix F: Number of hopping channels

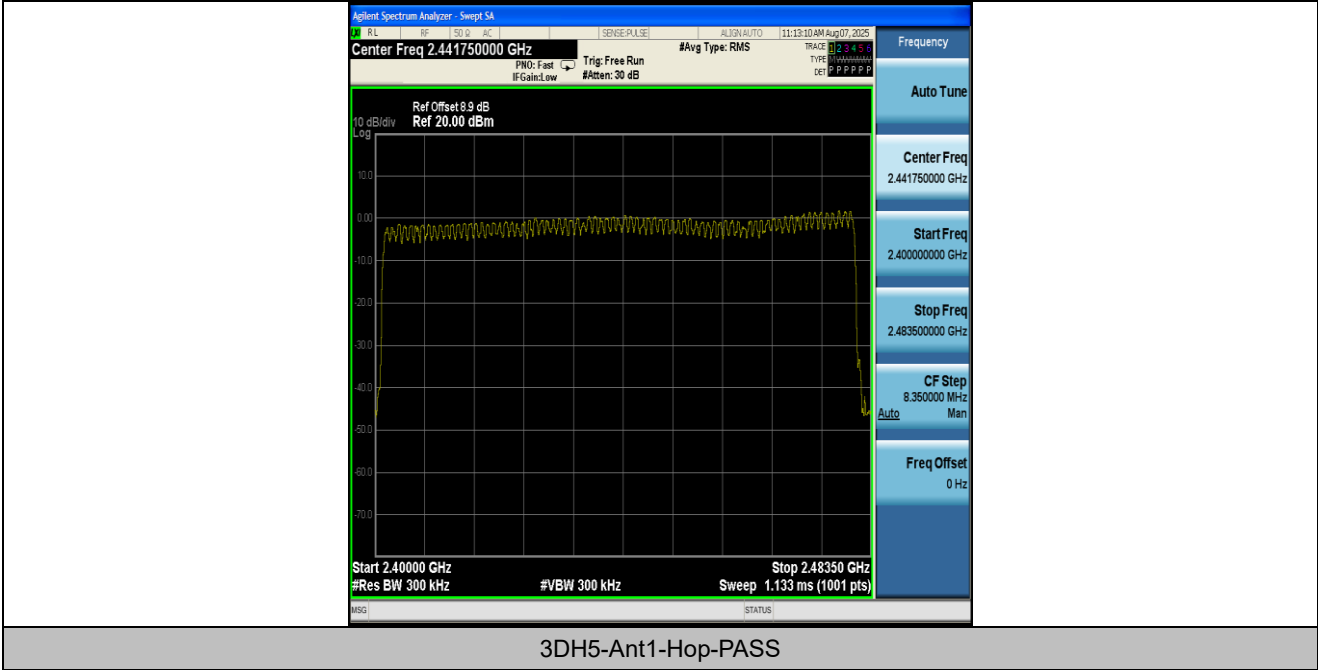
Test Result

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

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

Test Graphs





3DH5-Ant1-Hop-PASS

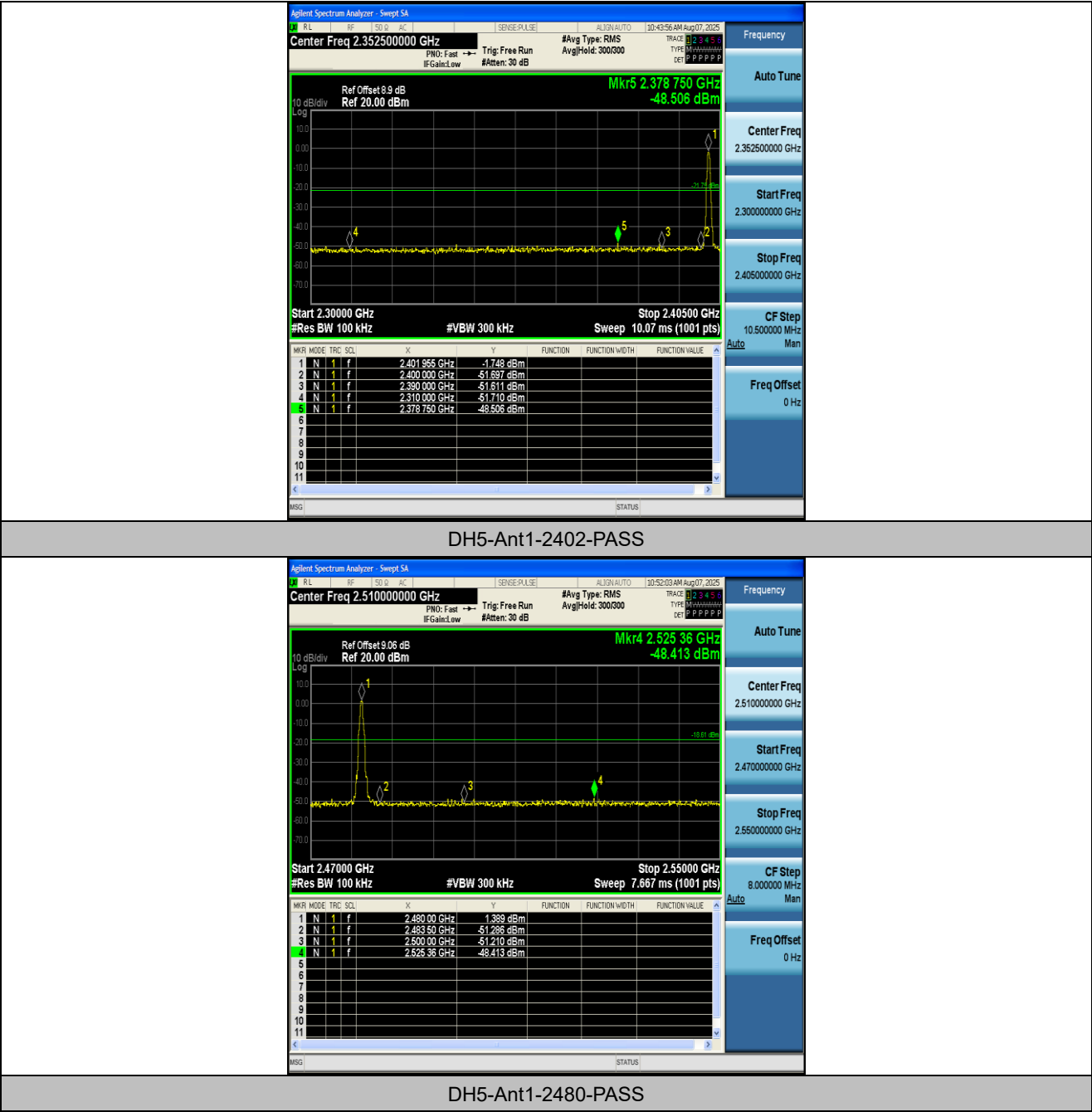
Appendix G: Band edge measurements

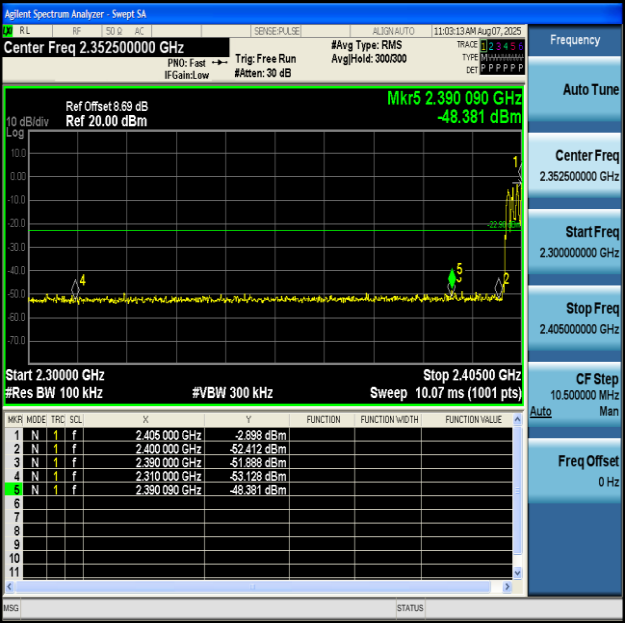
Test Result

Test Mode	Antenna	Ch.Name	Frequency [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-1.75	-48.51	≤-21.75	PASS
DH5	Ant1	High	2480	1.39	-48.41	≤-18.61	PASS
DH5	Ant1	Low	Hop_2402	-2.90	-48.38	≤-22.9	PASS
DH5	Ant1	High	Hop_2480	0.88	-48.54	≤-19.12	PASS
2DH5	Ant1	Low	2402	-1.81	-48.72	≤-21.81	PASS
2DH5	Ant1	High	2480	1.32	-48.51	≤-18.68	PASS
2DH5	Ant1	Low	Hop_2402	-5.76	-49.65	≤-25.76	PASS
2DH5	Ant1	High	Hop_2480	-1.53	-47.84	≤-21.53	PASS
3DH5	Ant1	Low	2402	-1.84	-49.23	≤-21.84	PASS
3DH5	Ant1	High	2480	1.59	-48.62	≤-18.41	PASS
3DH5	Ant1	Low	Hop_2402	-6.05	-49.85	≤-26.05	PASS
3DH5	Ant1	High	Hop_2480	0.51	-48.6	≤-19.49	PASS

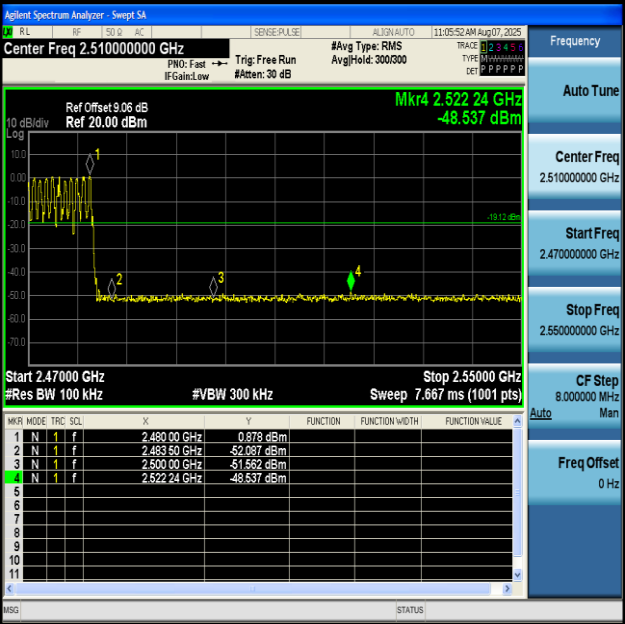
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs

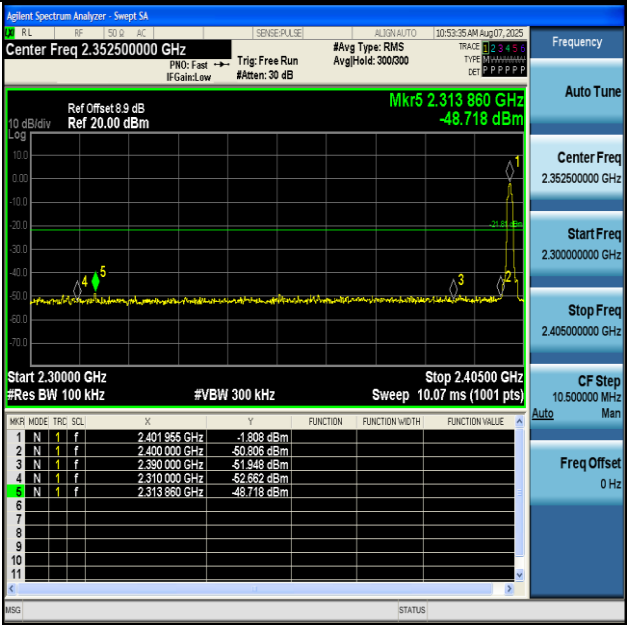




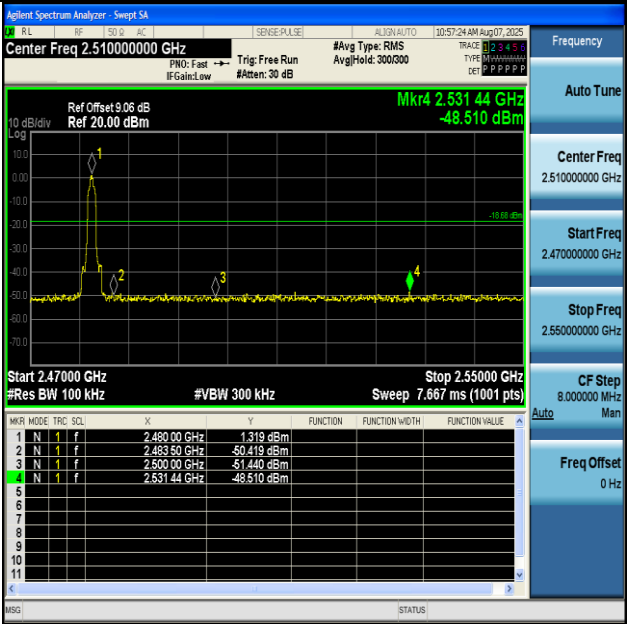
DH5-Ant1-Hop_2402-PASS



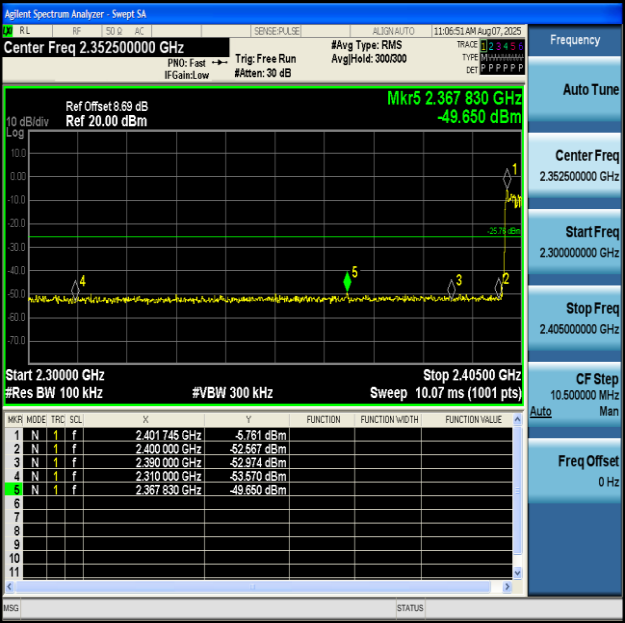
DH5-Ant1-Hop_2480-PASS



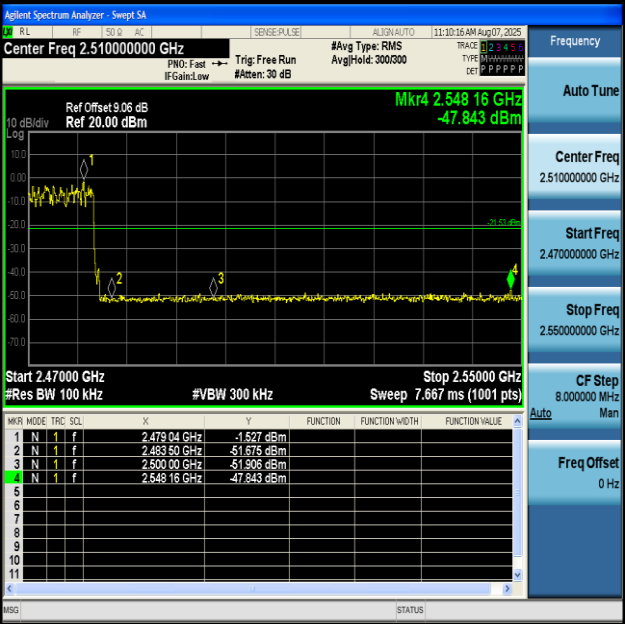
2DH5-Ant1-2402-PASS



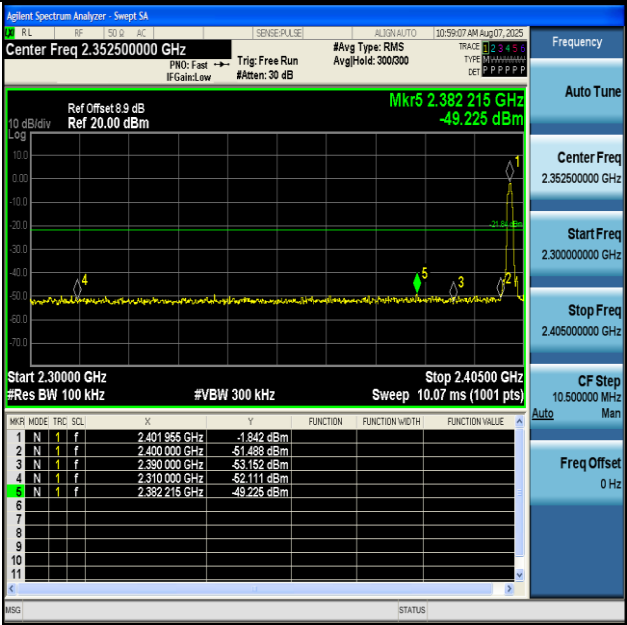
2DH5-Ant1-2480-PASS



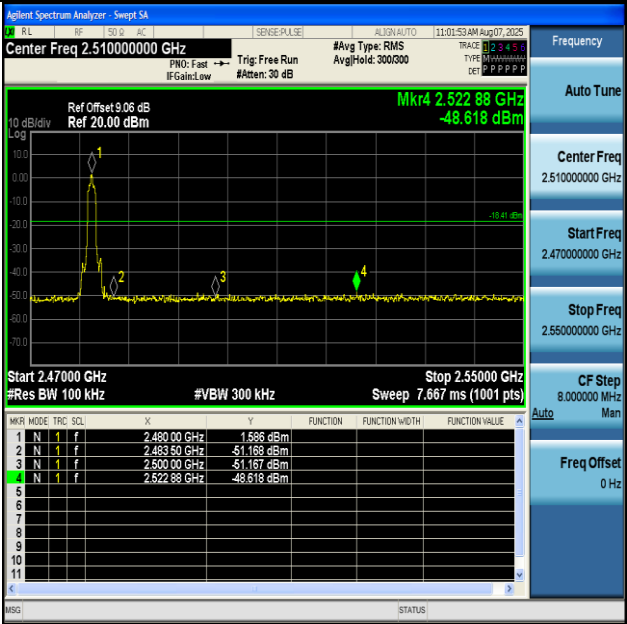
2DH5-Ant1-Hop_2402-PASS



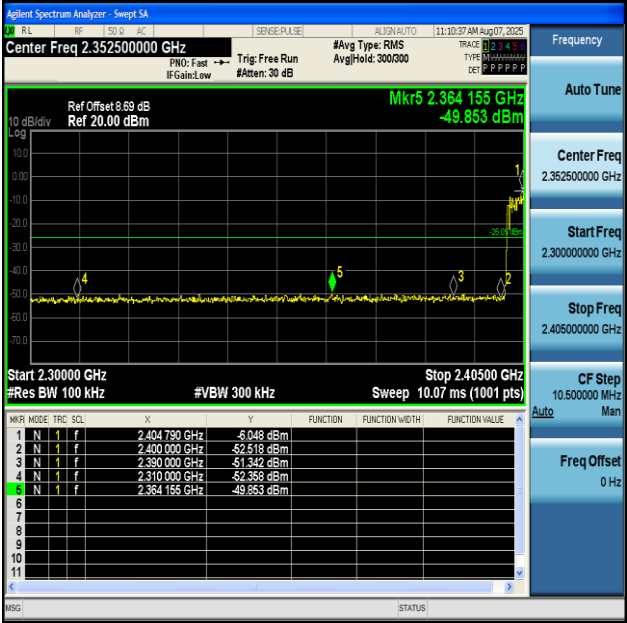
2DH5-Ant1-Hop_2480-PASS



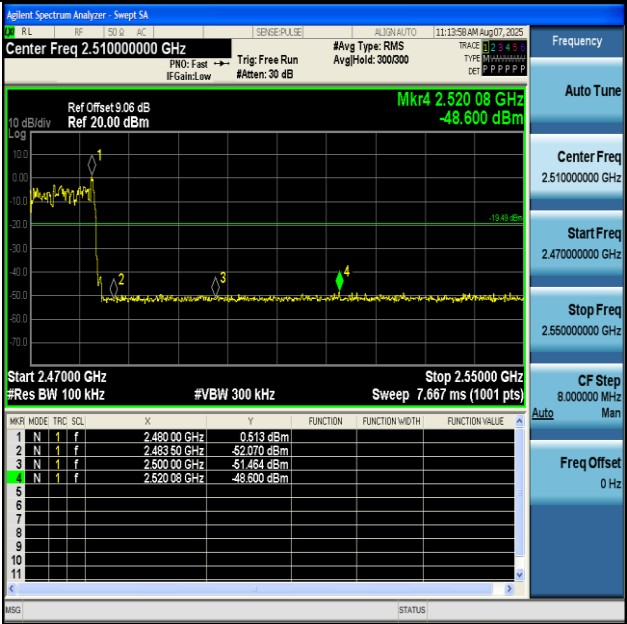
3DH5-Ant1-2402-PASS



3DH5-Ant1-2480-PASS



3DH5-Ant1-Hop_2402-PASS



3DH5-Ant1-Hop_2480-PASS

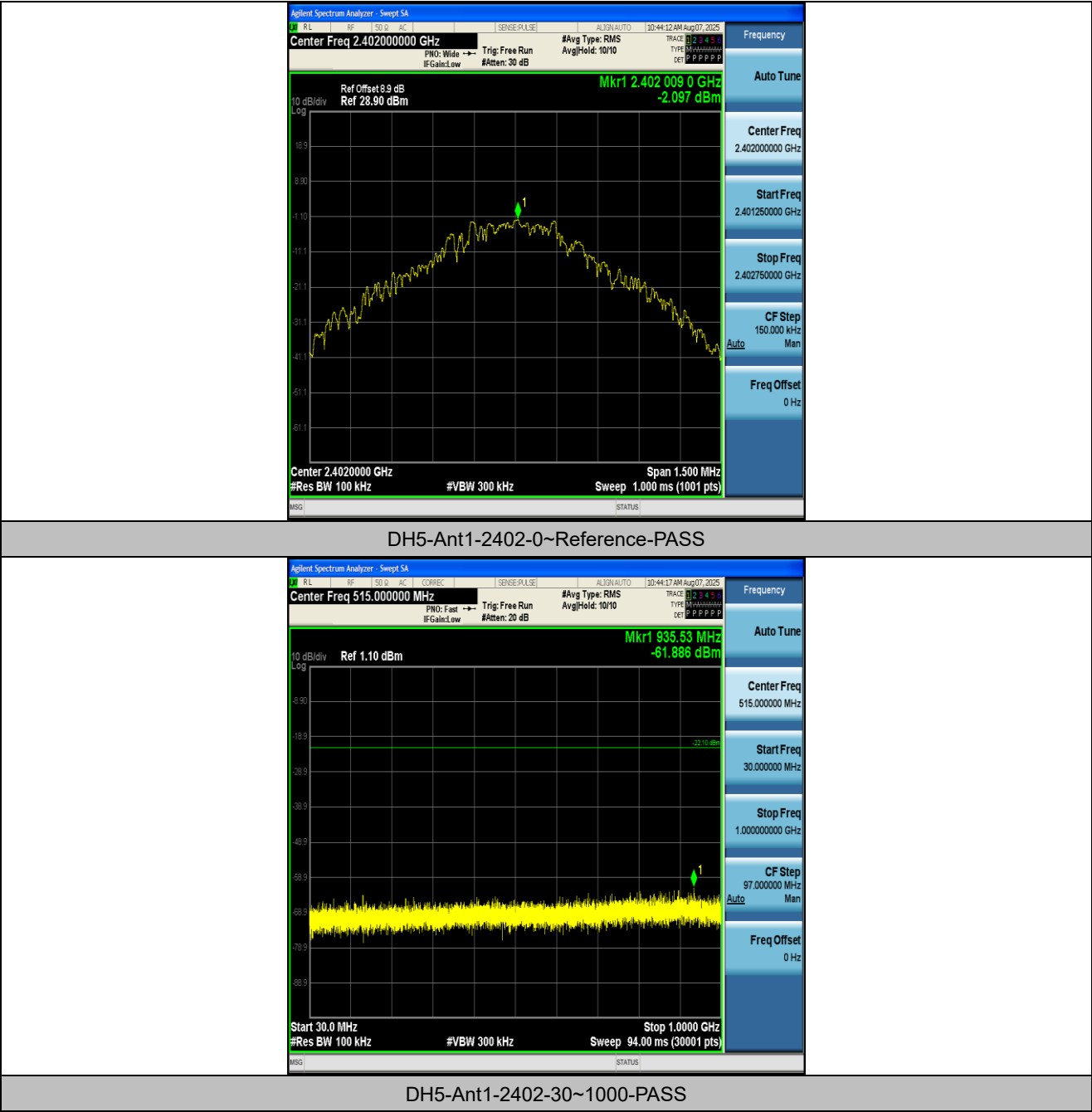
Appendix H: Conducted Spurious Emission

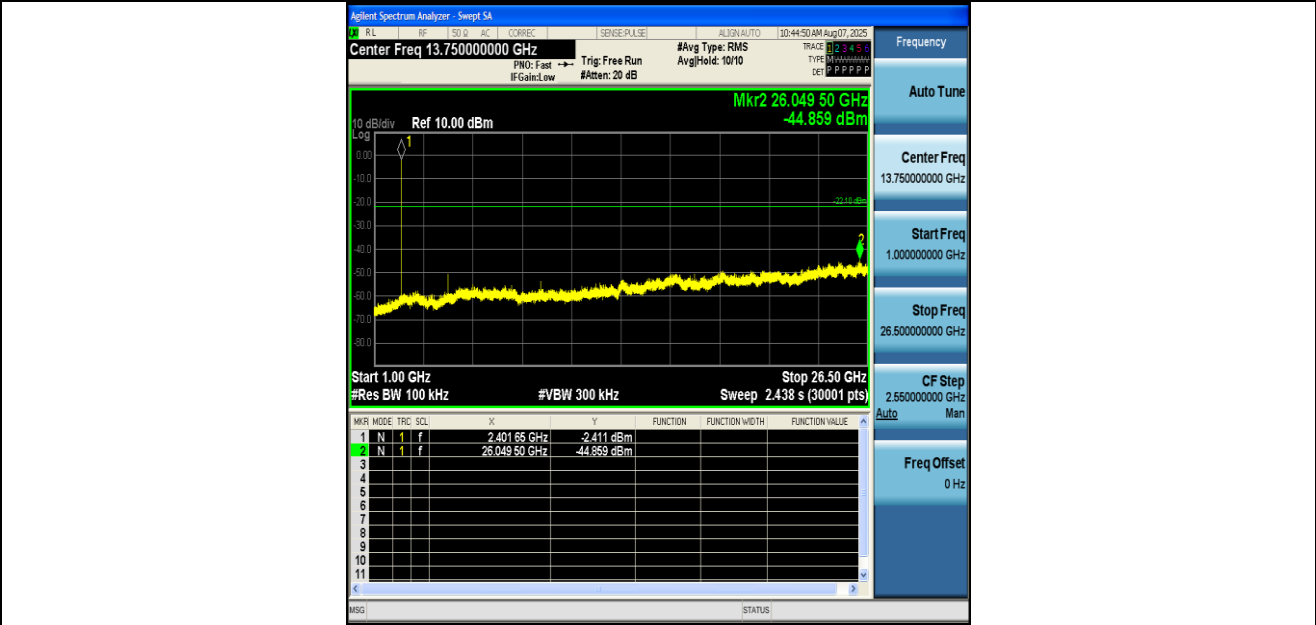
Test Result

Test Mode	Antenna	Frequency [MHz]	Freq. Range [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	0~Reference	-2.10	-2.10	---	PASS
DH5	Ant1	2402	30~1000	-2.10	-61.89	≤-22.1	PASS
DH5	Ant1	2402	1000~26500	-2.10	-44.86	≤-22.1	PASS
DH5	Ant1	2441	0~Reference	-0.22	-0.22	---	PASS
DH5	Ant1	2441	30~1000	-0.22	-62.95	≤-20.22	PASS
DH5	Ant1	2441	1000~26500	-0.22	-45.61	≤-20.22	PASS
DH5	Ant1	2480	0~Reference	1.26	1.26	---	PASS
DH5	Ant1	2480	30~1000	1.26	-63.2	≤-18.74	PASS
DH5	Ant1	2480	1000~26500	1.26	-44.05	≤-18.74	PASS
2DH5	Ant1	2402	0~Reference	-3.45	-3.45	---	PASS
2DH5	Ant1	2402	30~1000	-3.45	-62.57	≤-23.45	PASS
2DH5	Ant1	2402	1000~26500	-3.45	-45.73	≤-23.45	PASS
2DH5	Ant1	2441	0~Reference	-2.79	-2.79	---	PASS
2DH5	Ant1	2441	30~1000	-2.79	-62.83	≤-22.79	PASS
2DH5	Ant1	2441	1000~26500	-2.79	-45.08	≤-22.79	PASS
2DH5	Ant1	2480	0~Reference	-1.69	-1.69	---	PASS
2DH5	Ant1	2480	30~1000	-1.69	-62.97	≤-21.69	PASS
2DH5	Ant1	2480	1000~26500	-1.69	-45.4	≤-21.69	PASS
3DH5	Ant1	2402	0~Reference	-3.12	-3.12	---	PASS
3DH5	Ant1	2402	30~1000	-3.12	-62.56	≤-23.12	PASS
3DH5	Ant1	2402	1000~26500	-3.12	-44.8	≤-23.12	PASS
3DH5	Ant1	2441	0~Reference	-0.74	-0.74	---	PASS
3DH5	Ant1	2441	30~1000	-0.74	-63.26	≤-20.74	PASS
3DH5	Ant1	2441	1000~26500	-0.74	-45.16	≤-20.74	PASS
3DH5	Ant1	2480	0~Reference	-1.16	-1.16	---	PASS
3DH5	Ant1	2480	30~1000	-1.16	-62.66	≤-21.16	PASS
3DH5	Ant1	2480	1000~26500	-1.16	-45.42	≤-21.16	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

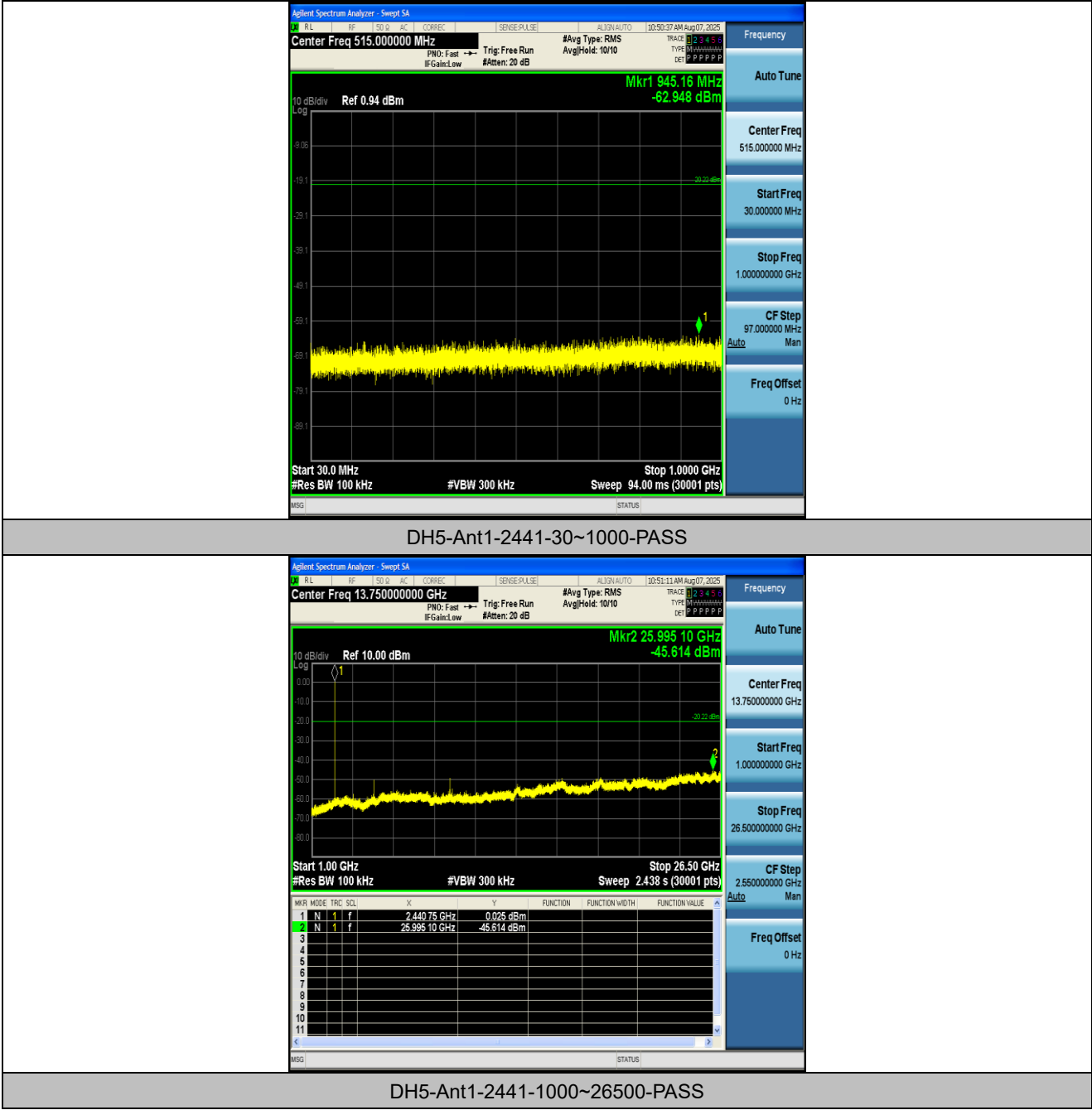




DH5-Ant1-2402-1000~26500-PASS

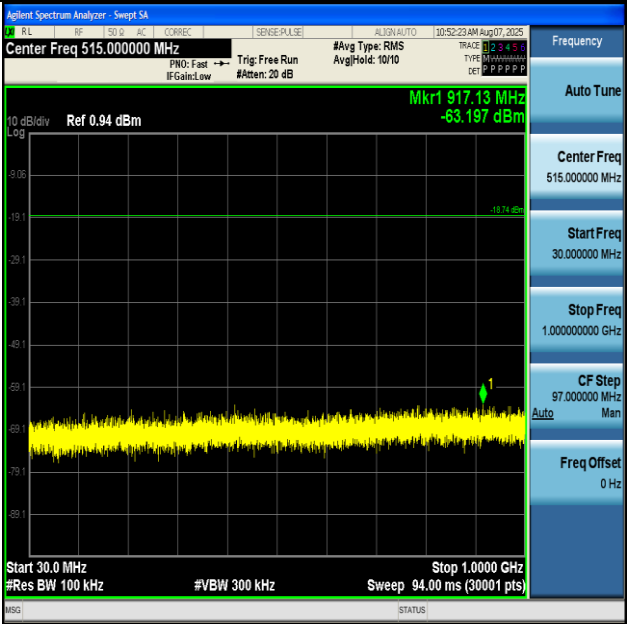


DH5-Ant1-2441-0~Reference-PASS

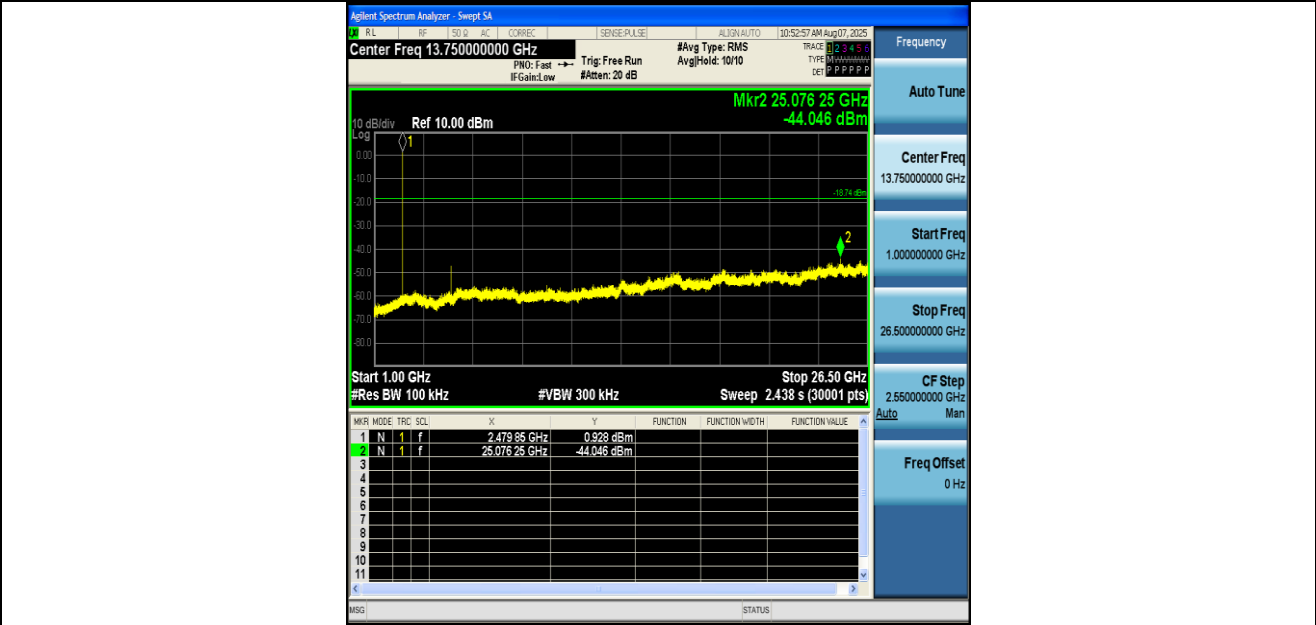




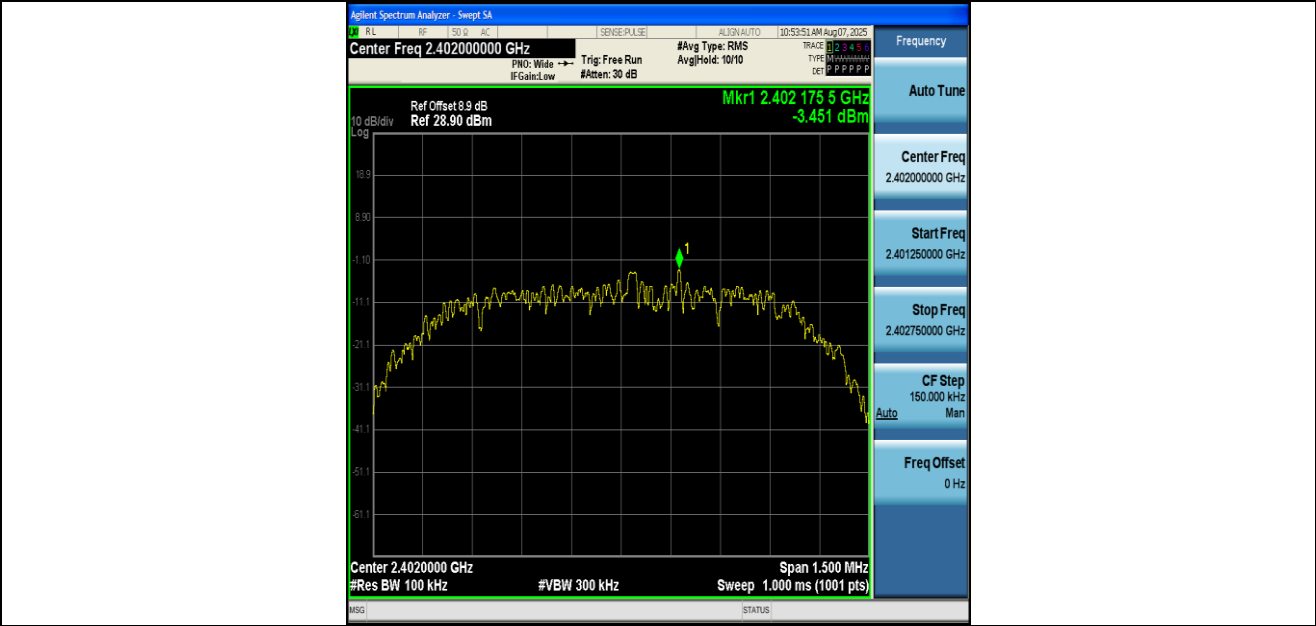
DH5-Ant1-2480-0~Reference-PASS



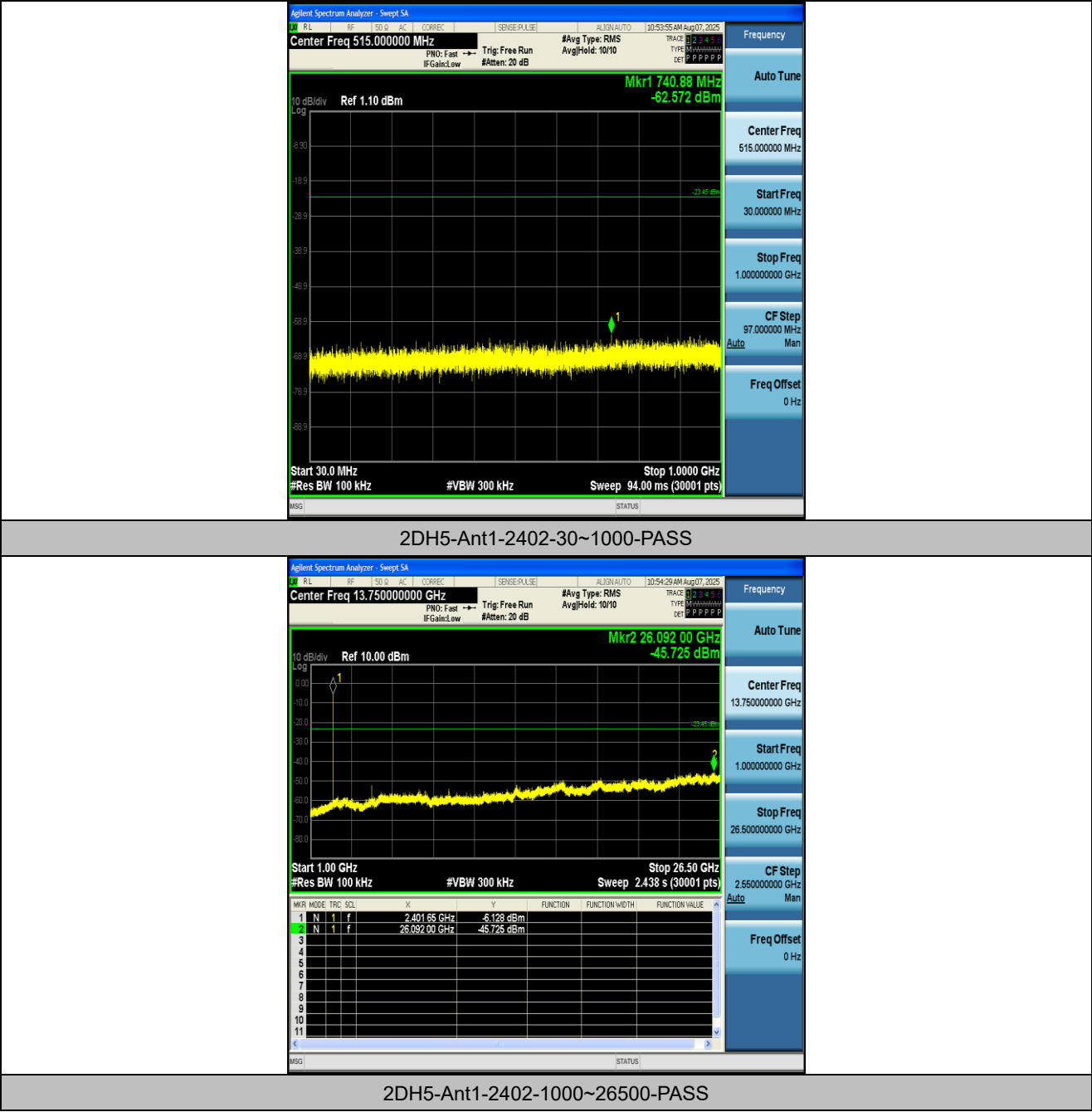
DH5-Ant1-2480-30~1000-PASS

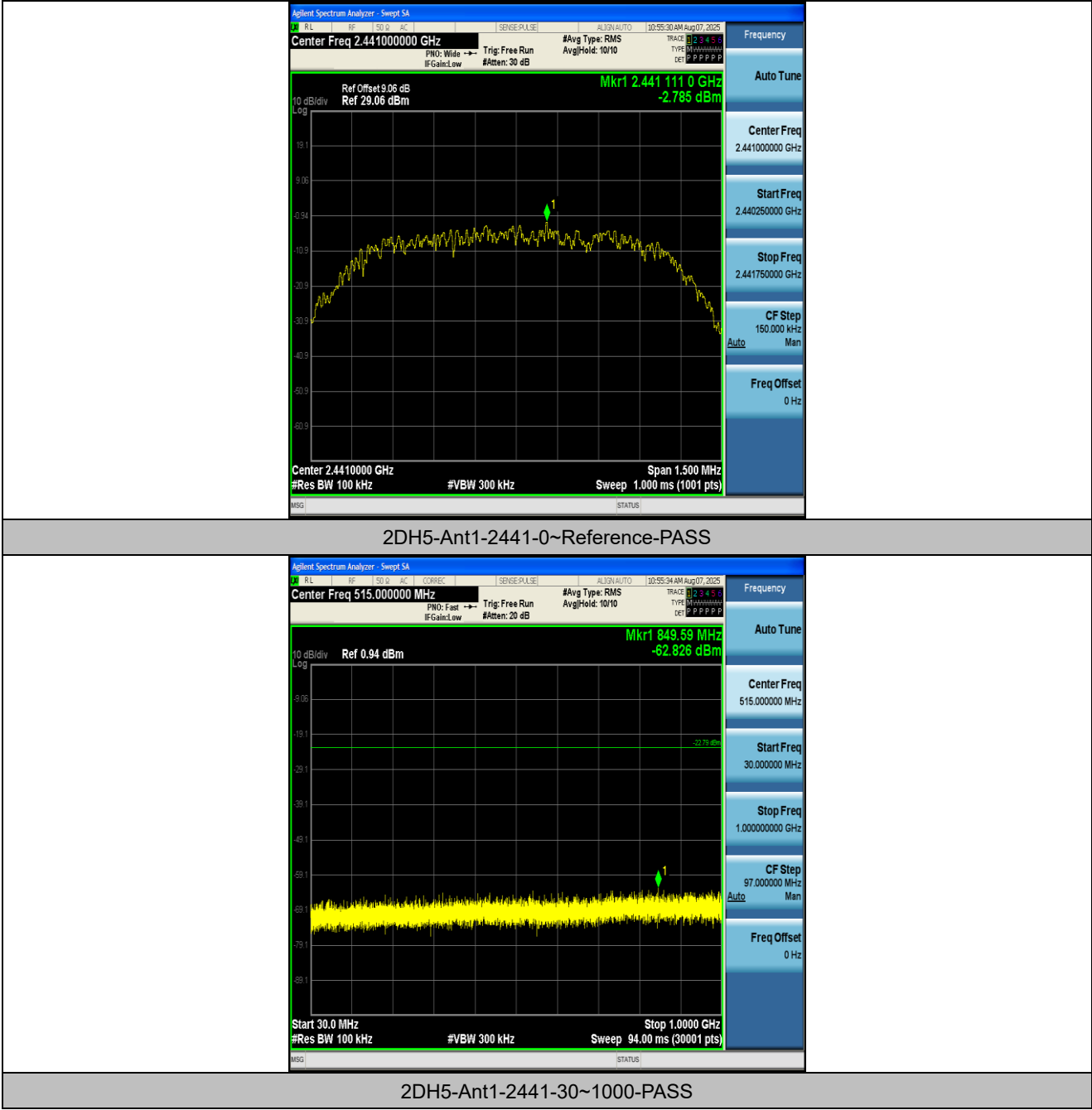


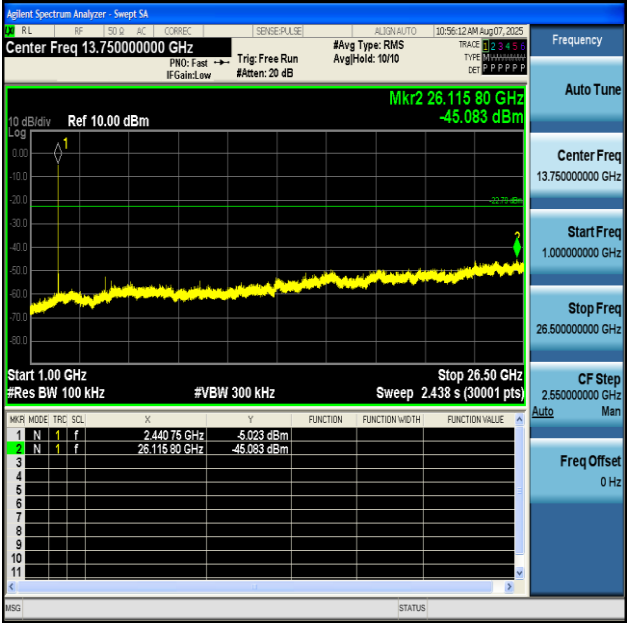
DH5-Ant1-2480-1000~26500-PASS



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



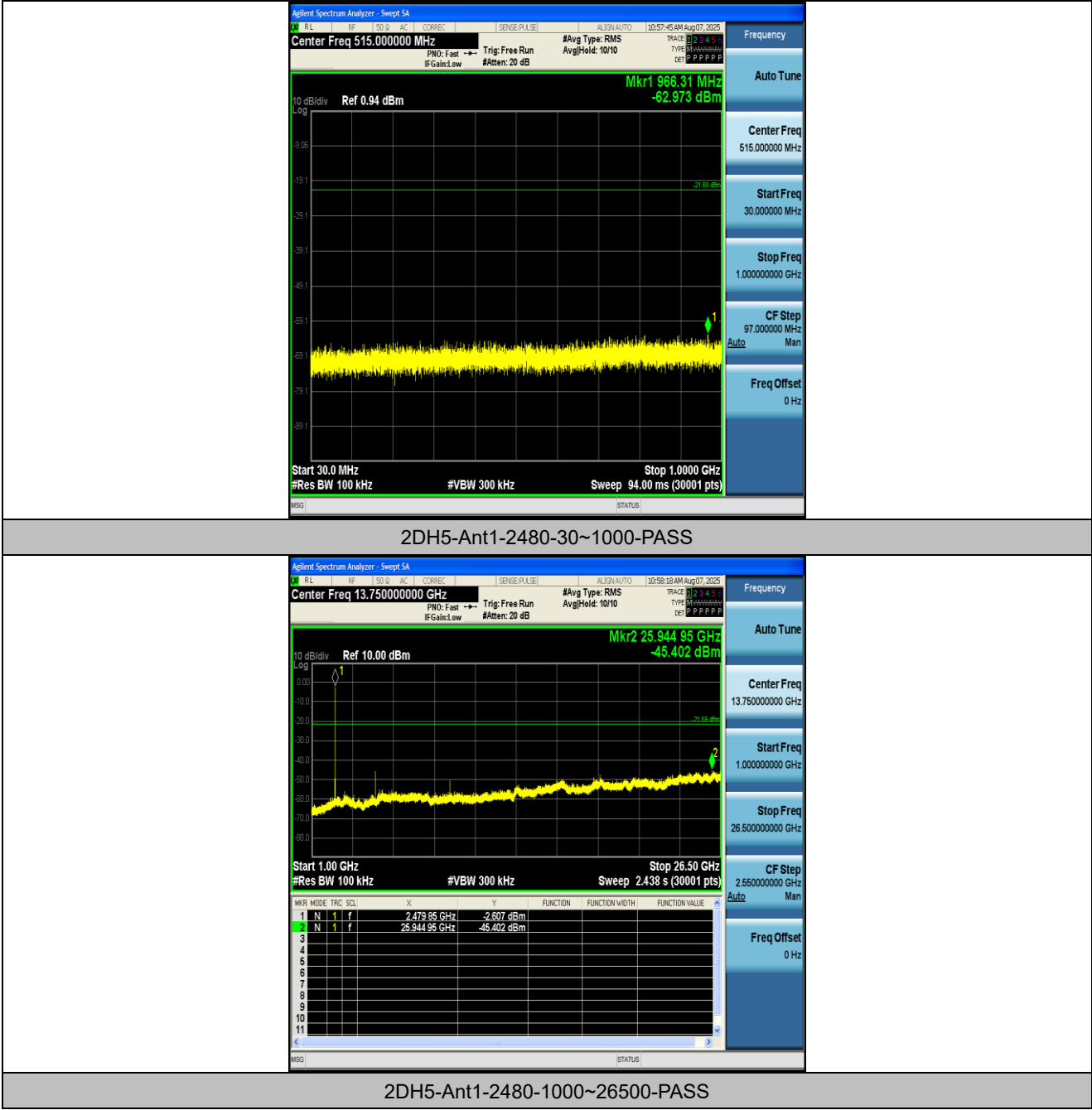


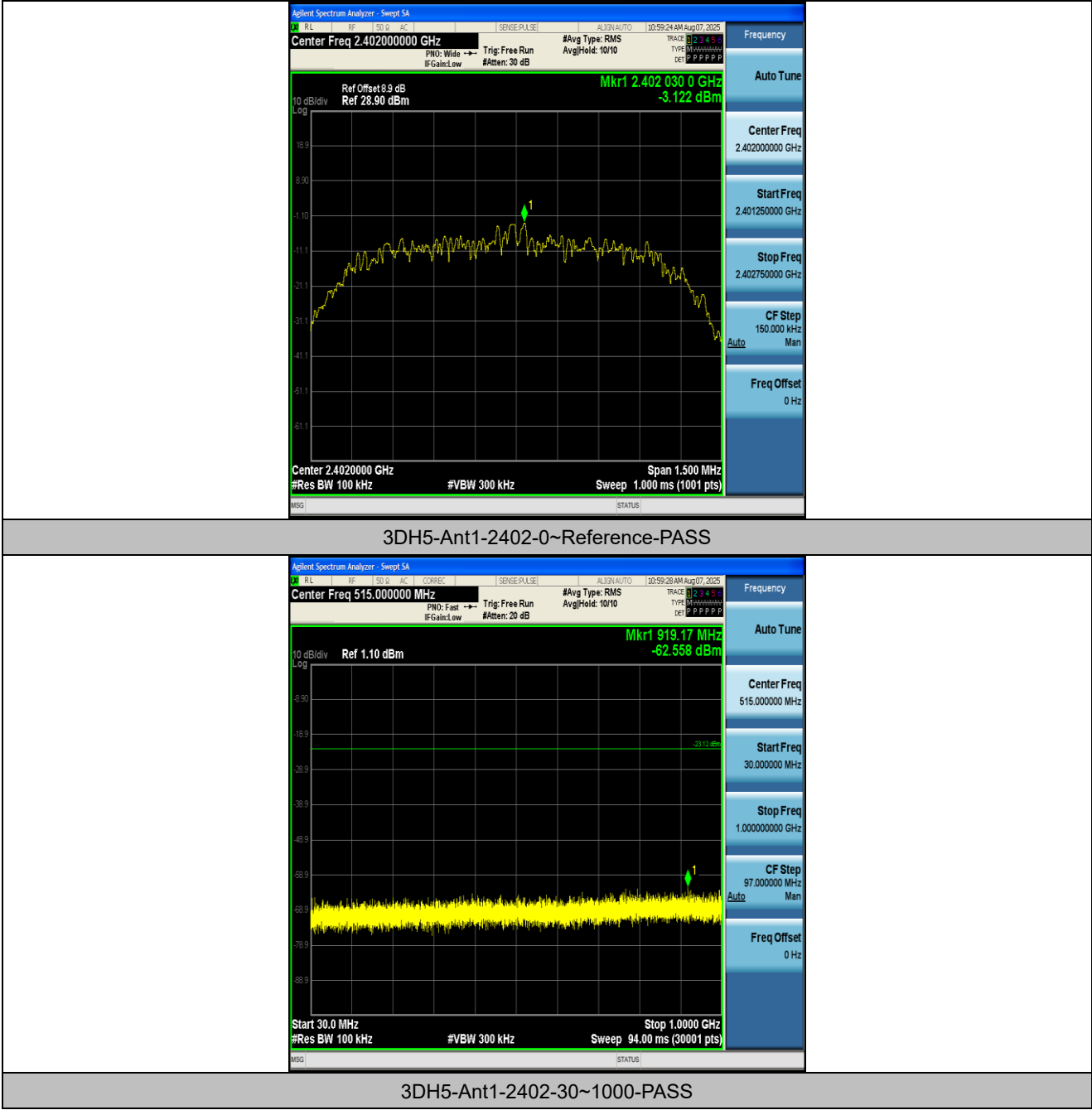


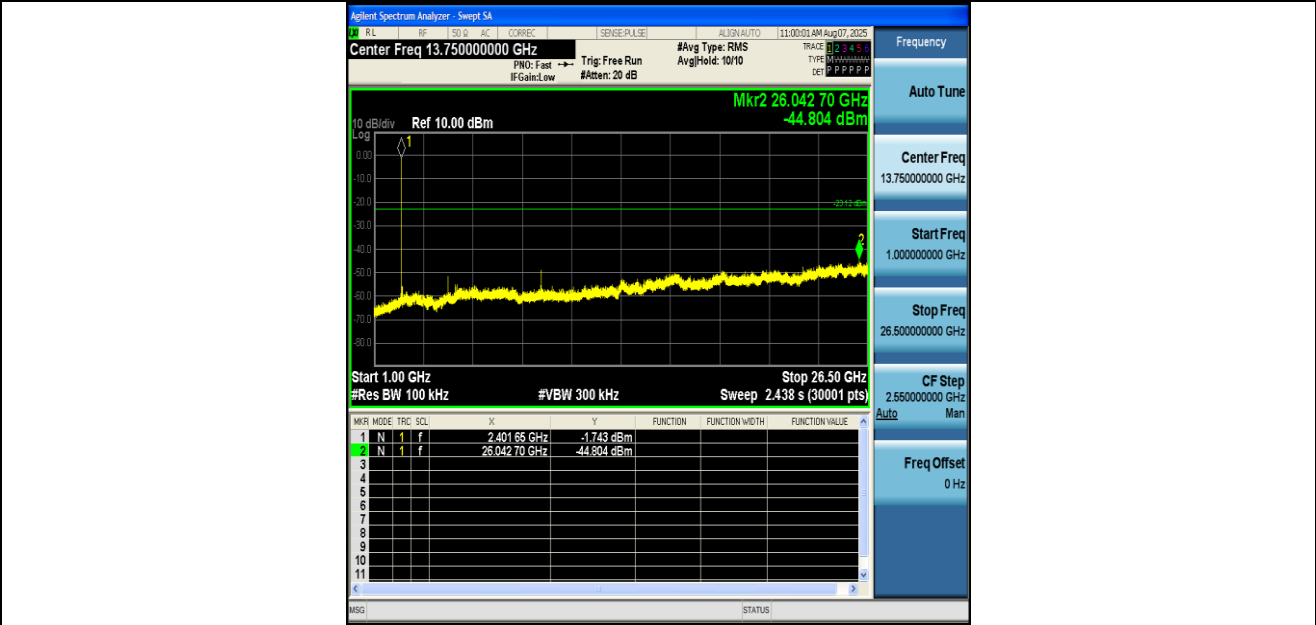
2DH5-Ant1-2441-1000~26500-PASS



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



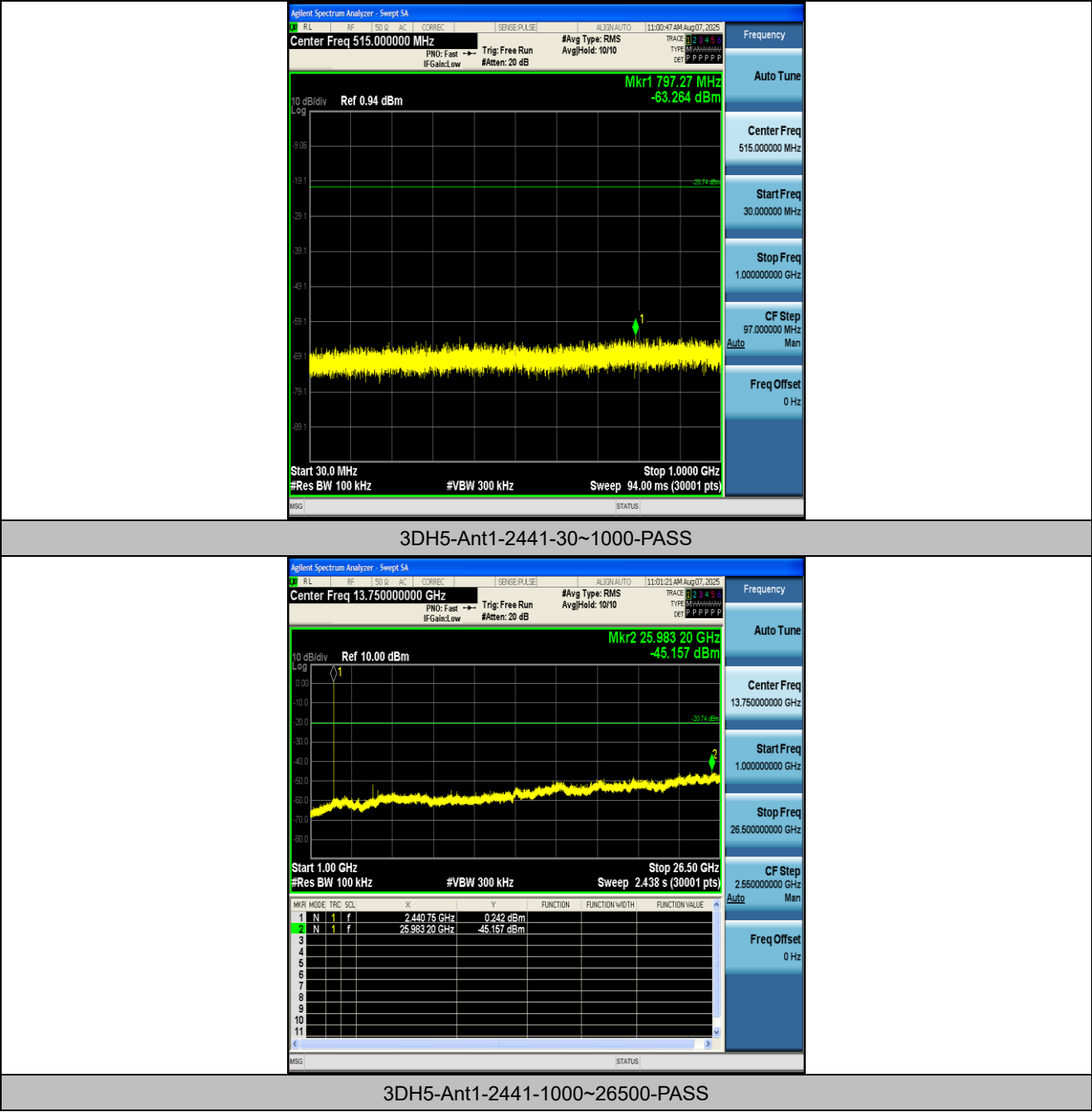


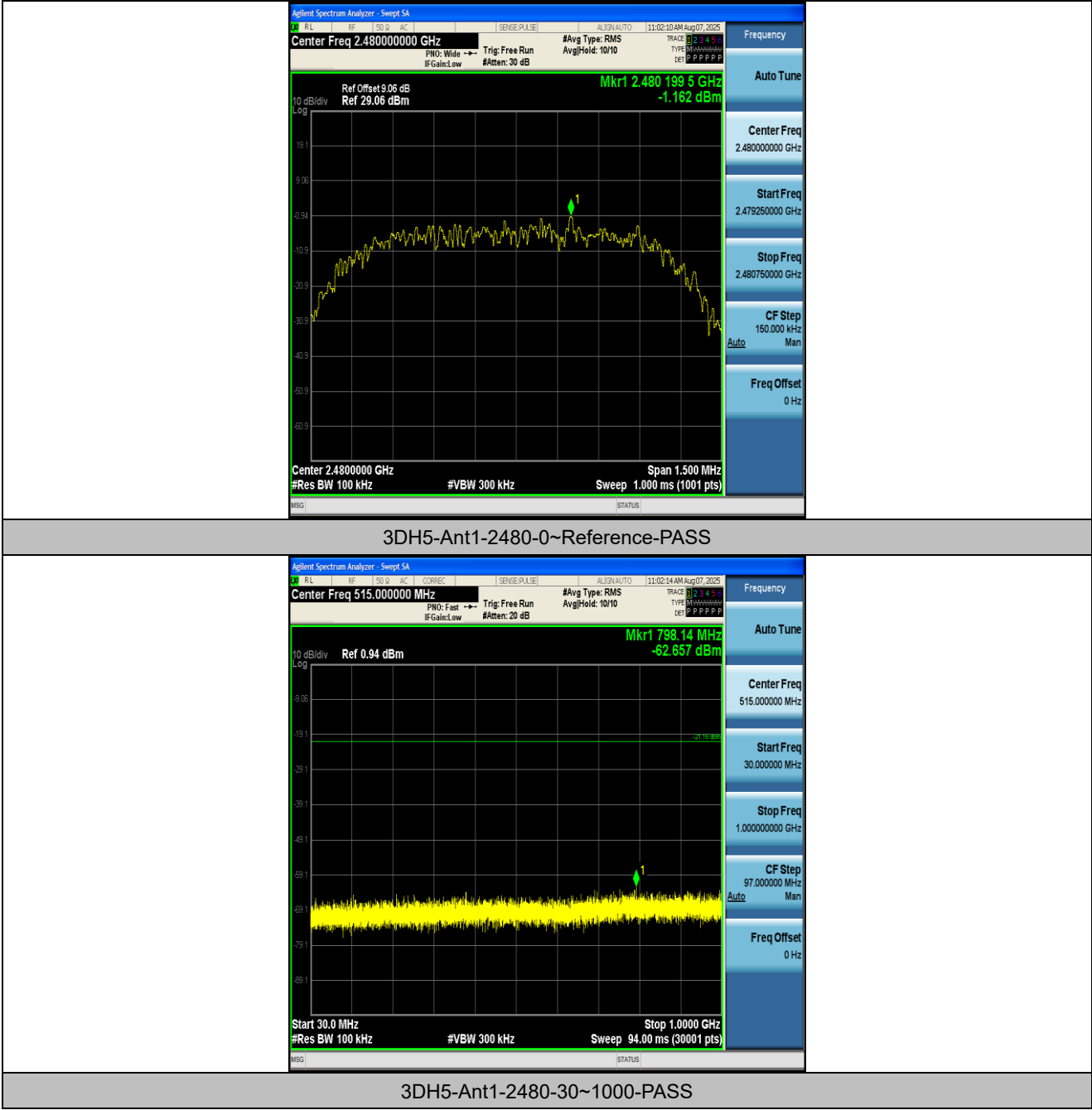


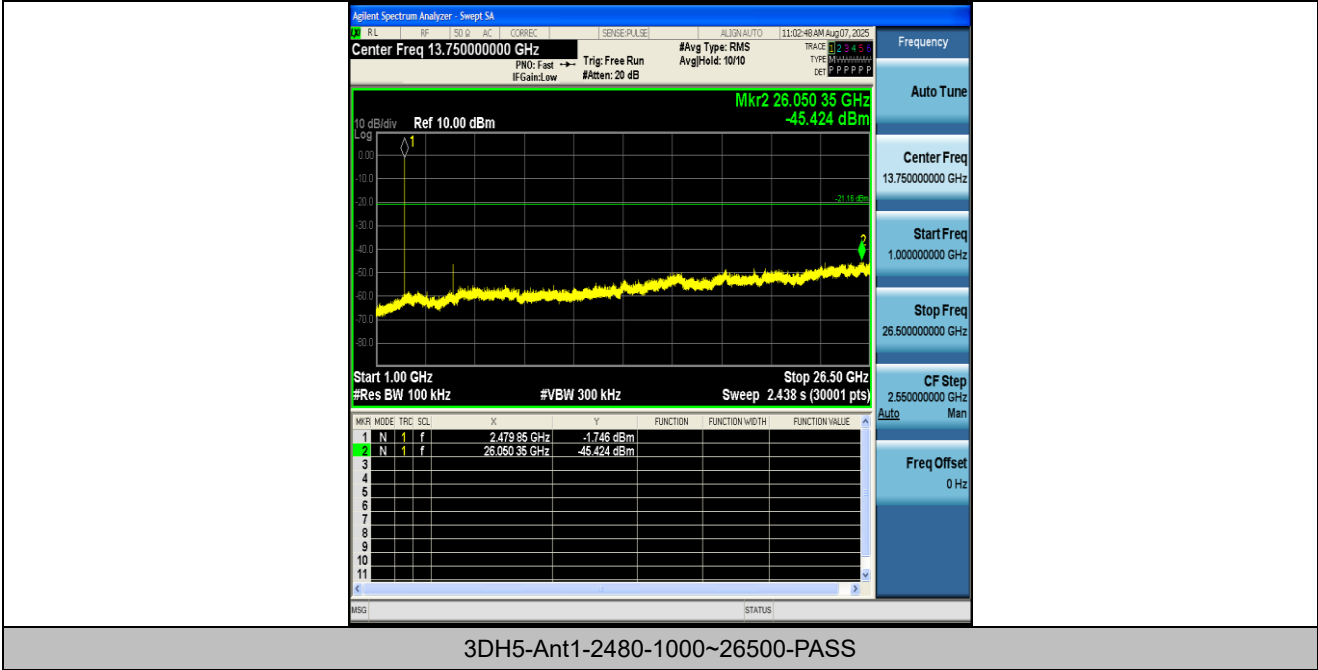
3DH5-Ant1-2402-1000~26500-PASS



3DH5-Ant1-2441-0~Reference-PASS







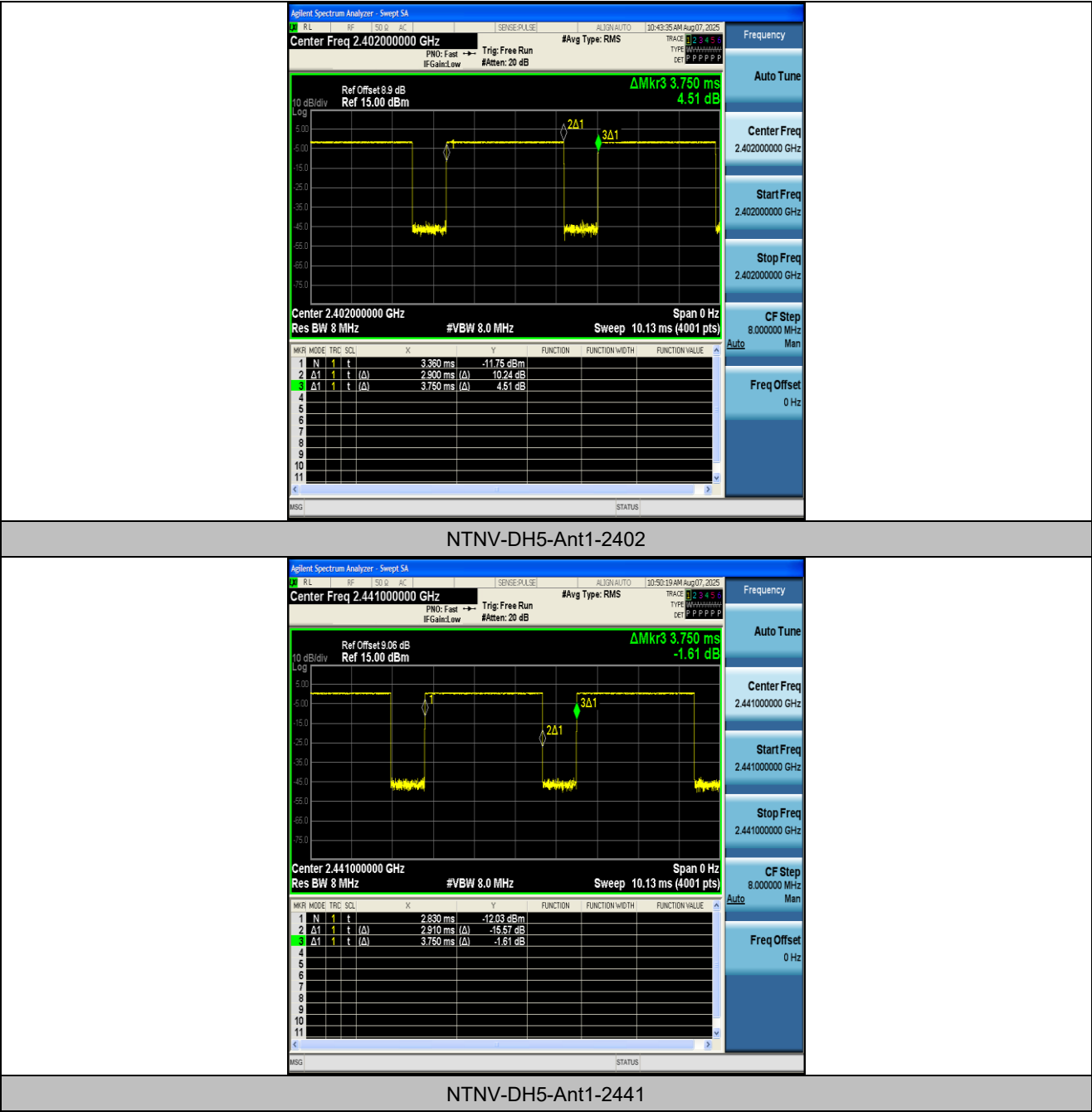
Appendix I: Duty Cycle

Test Result

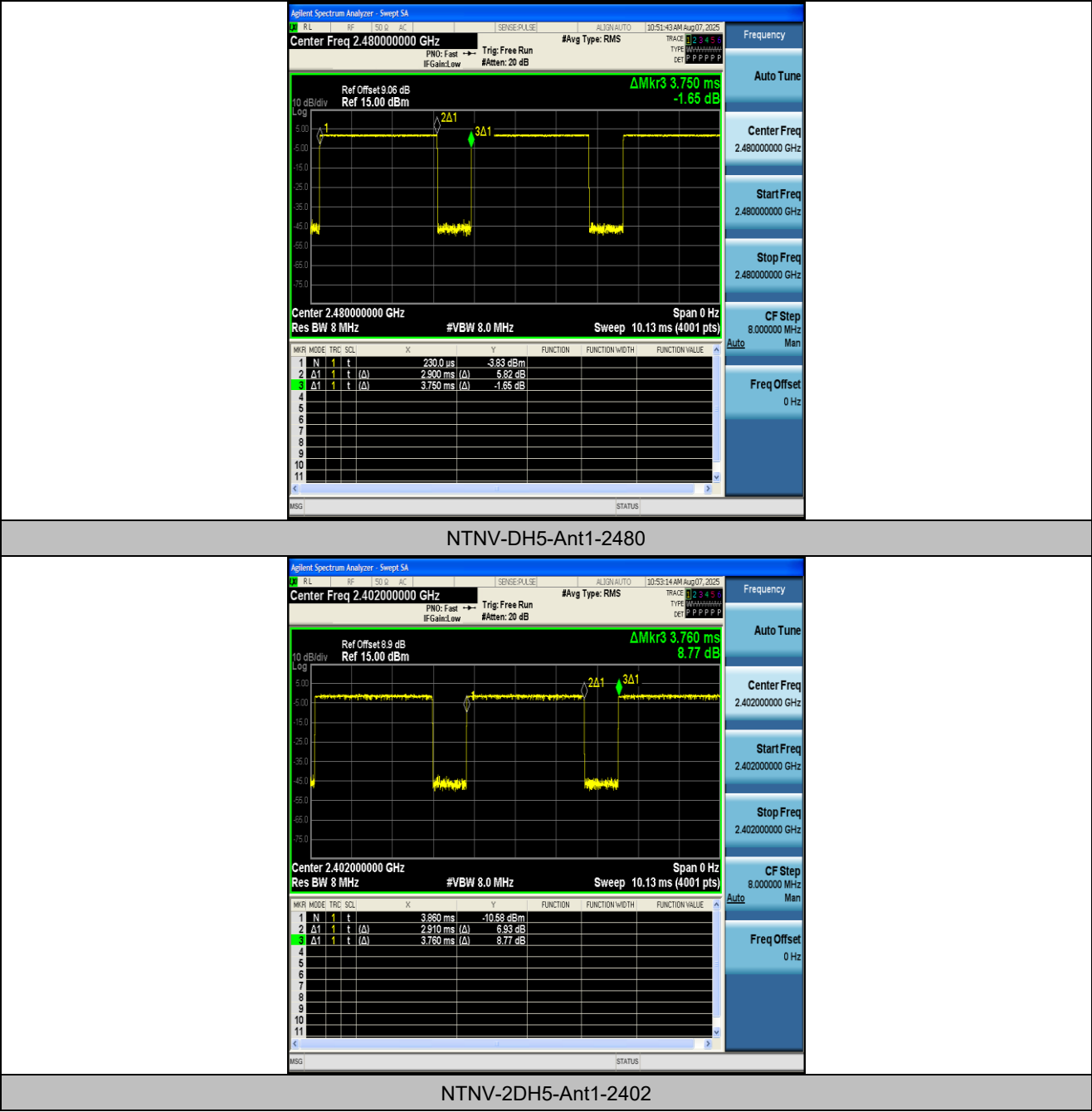
Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor [dB]
DH5	Ant1	2402	2.90	3.75	77.33	1.12
DH5	Ant1	2441	2.91	3.75	77.60	1.10
DH5	Ant1	2480	2.90	3.75	77.33	1.12
2DH5	Ant1	2402	2.91	3.76	77.39	1.11
2DH5	Ant1	2441	2.91	3.75	77.60	1.10
2DH5	Ant1	2480	2.91	3.75	77.60	1.10
3DH5	Ant1	2402	2.91	3.75	77.60	1.10
3DH5	Ant1	2441	2.92	3.75	77.87	1.09
3DH5	Ant1	2480	2.91	3.75	77.60	1.10

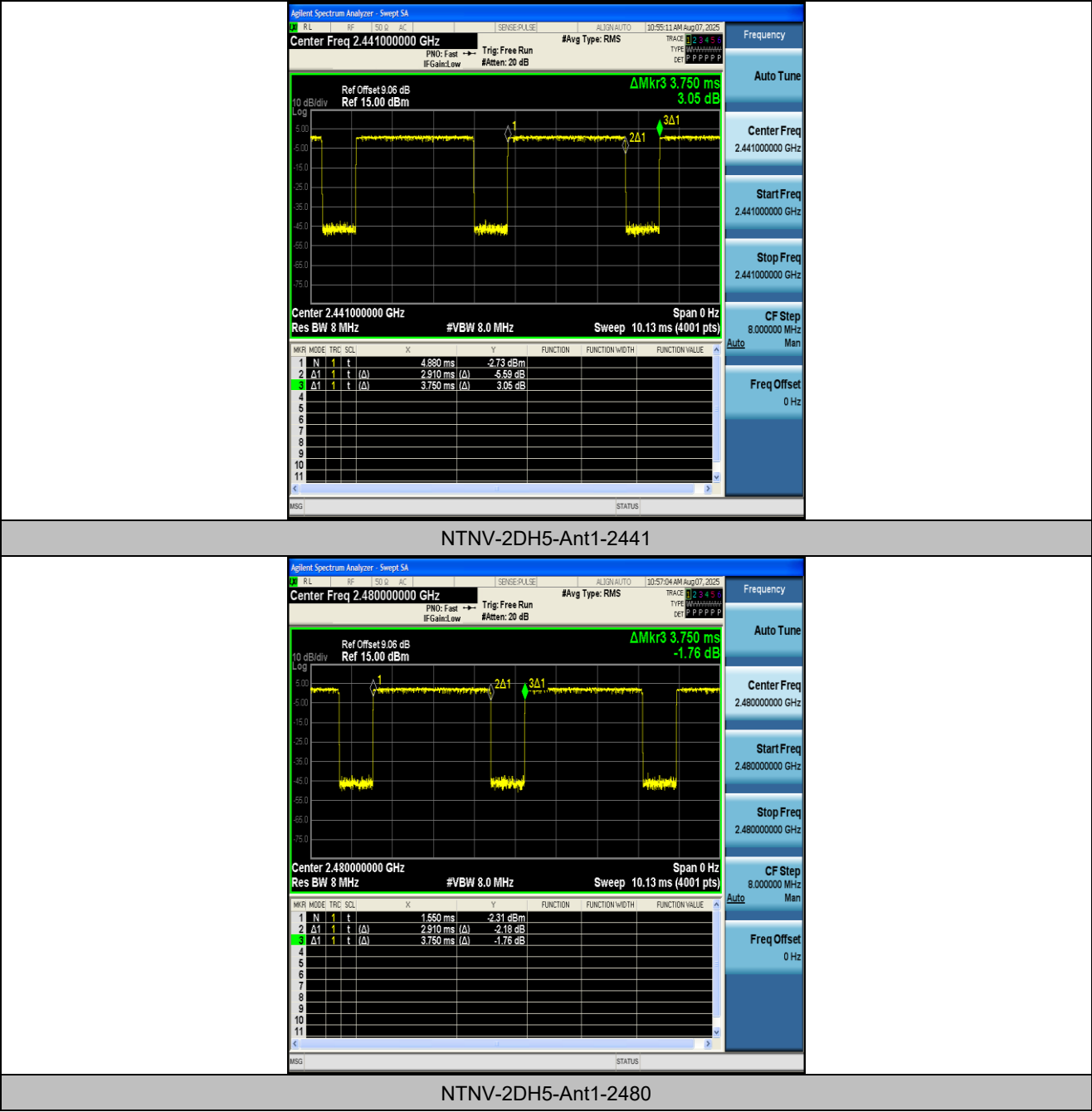
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs



NTNV-DH5-Ant1-2441





NTNV-2DH5-Ant1-2480

