



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

Product Name: ROLLING

Trade Mark: SYLVOX, ZINVAX, MISTAAD, GOTHOT, VUESTATION, KONTECH

Test Model: RL32K1A3GA

FCC ID: 2AZTZ-RL32K1A3GA

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	0.921	2401.517	2402.438	---	---
DH5	Ant1	2441	0.963	2440.508	2441.471	---	---
DH5	Ant1	2480	0.942	2479.514	2480.456	---	---
2DH5	Ant1	2402	1.287	2401.340	2402.627	---	---
2DH5	Ant1	2441	1.338	2440.307	2441.645	---	---
2DH5	Ant1	2480	1.293	2479.337	2480.630	---	---
3DH5	Ant1	2402	1.338	2401.304	2402.642	---	---
3DH5	Ant1	2441	1.305	2440.322	2441.627	---	---
3DH5	Ant1	2480	1.365	2479.292	2480.657	---	---

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





Test Graphs





DH5-Ant1-2480



2DH5-Ant1-2402



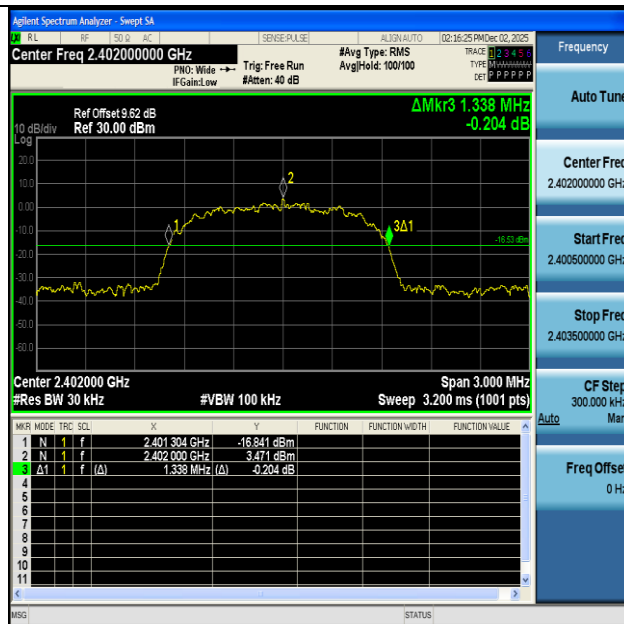


2DH5-Ant1-2441



2DH5-Ant1-2480



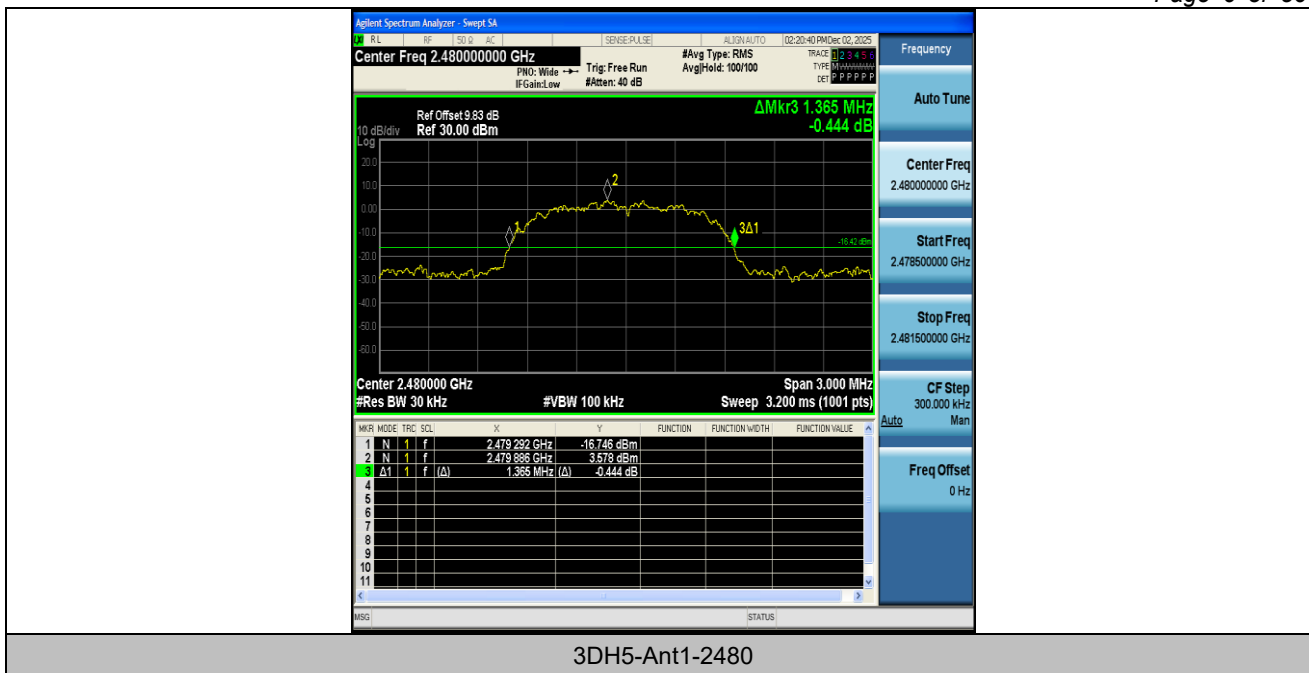


3DH5-Ant1-2402



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	0.85656	2401.5476	2402.4042	---	---
DH5	Ant1	2441	0.86755	2440.5415	2441.4091	---	---
DH5	Ant1	2480	0.86378	2479.5449	2480.4087	---	---
2DH5	Ant1	2402	1.1877	2401.3787	2402.5664	---	---
2DH5	Ant1	2441	1.2212	2440.3648	2441.5860	---	---
2DH5	Ant1	2480	1.2130	2479.3698	2480.5828	---	---
3DH5	Ant1	2402	1.1994	2401.3713	2402.5707	---	---
3DH5	Ant1	2441	1.2246	2440.3555	2441.5801	---	---
3DH5	Ant1	2480	1.2190	2479.3601	2480.5791	---	---

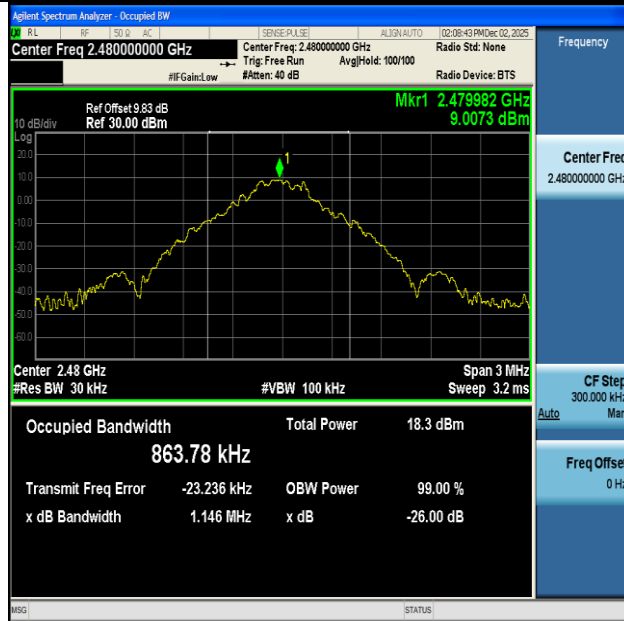
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



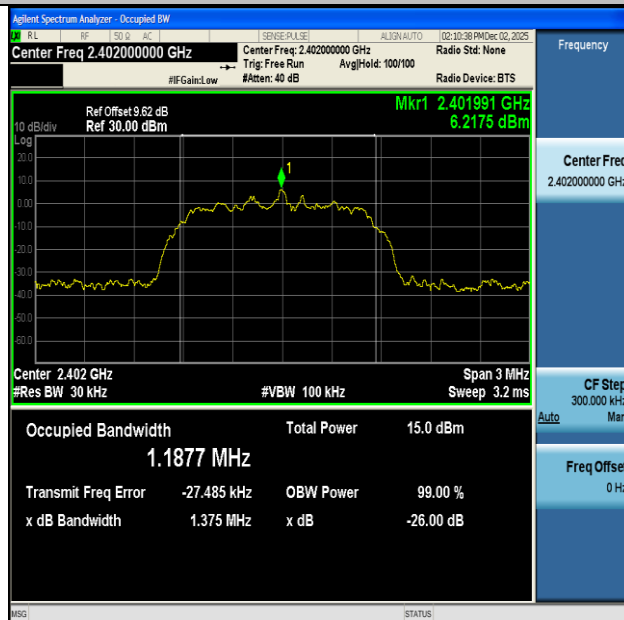


Test Graphs



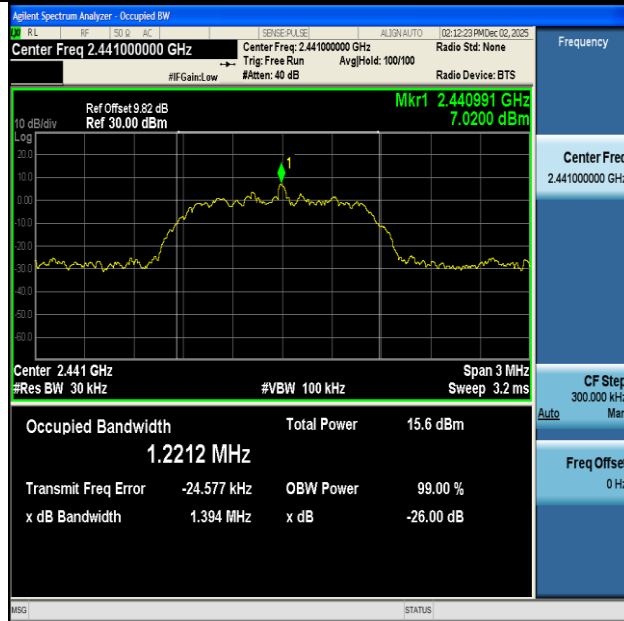


DH5-Ant1-2480



2DH5-Ant1-2402



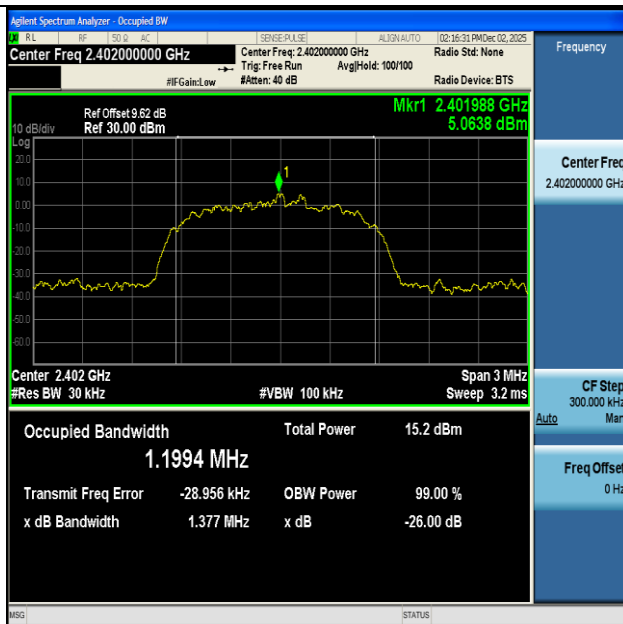


2DH5-Ant1-2441

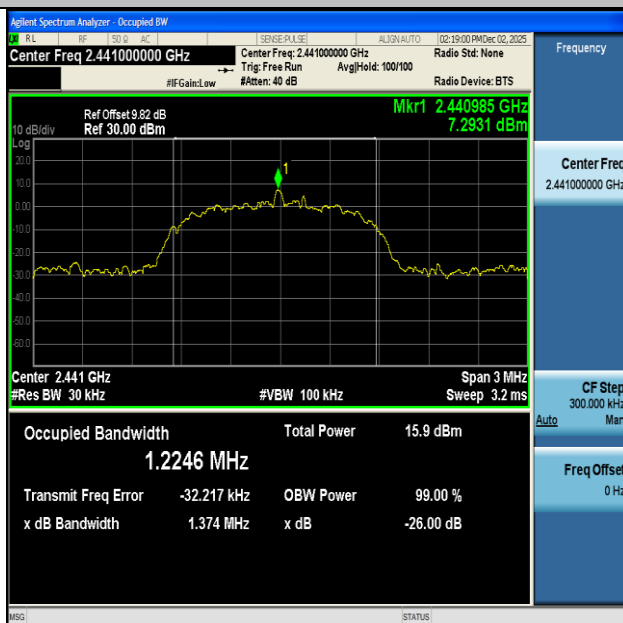


2DH5-Ant1-2480



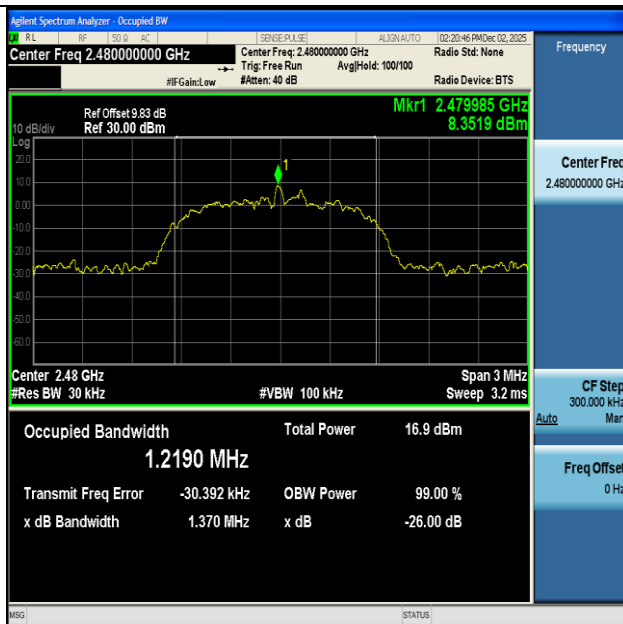


3DH5-Ant1-2402



3DH5-Ant1-2441





3DH5-Ant1-2480





Appendix C: Maximum peak conducted output power

Test Result

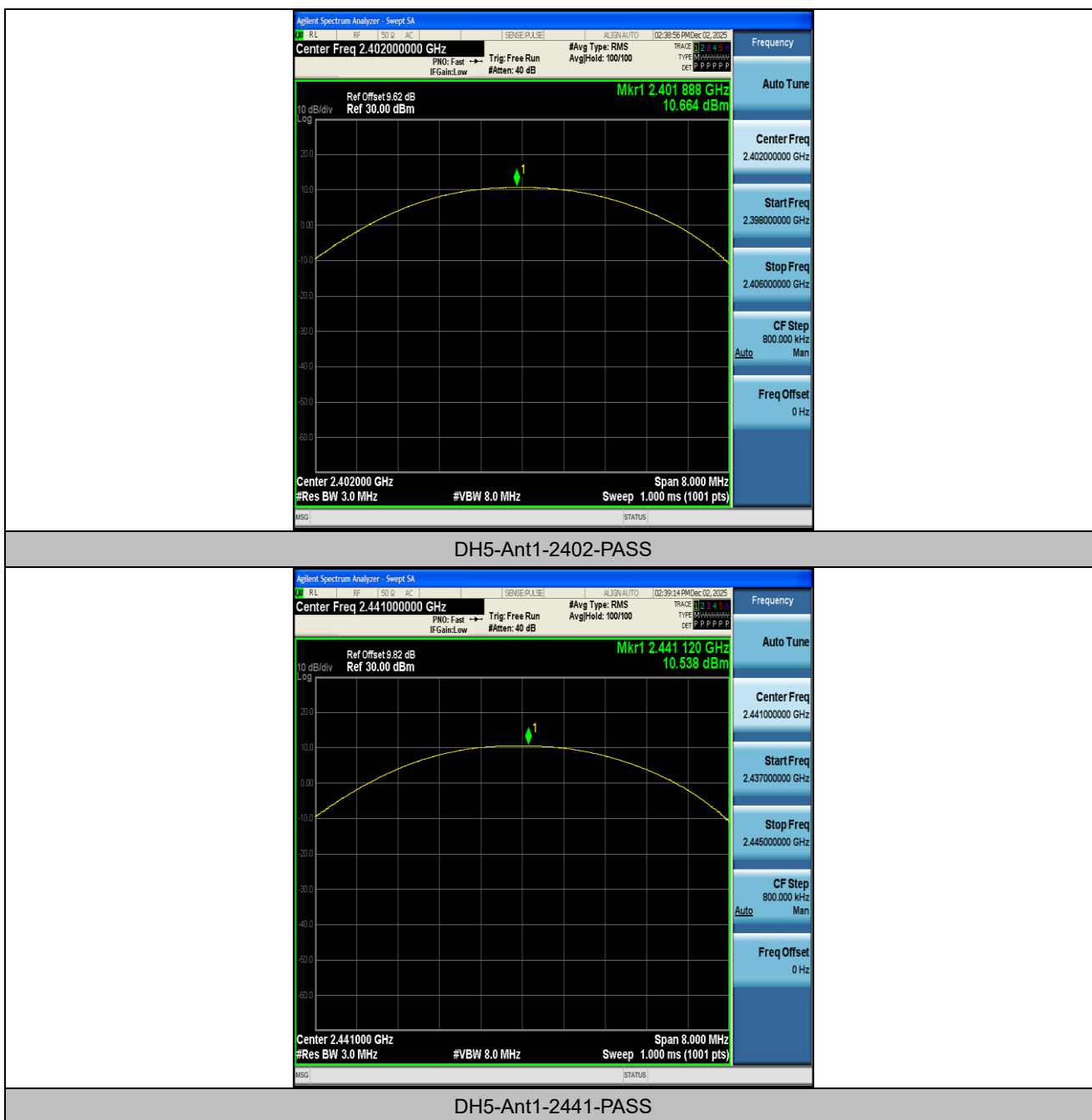
Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power [dBm]	Conducted Limit [dBm]	Verdict
DH5	Ant1	2402	10.66	≤30	PASS
DH5	Ant1	2441	10.54	≤30	PASS
DH5	Ant1	2480	11.64	≤30	PASS
2DH5	Ant1	2402	9.98	≤20.97	PASS
2DH5	Ant1	2441	10.09	≤20.97	PASS
2DH5	Ant1	2480	11.21	≤20.97	PASS
3DH5	Ant1	2402	10.03	≤20.97	PASS
3DH5	Ant1	2441	10.16	≤20.97	PASS
3DH5	Ant1	2480	11.22	≤20.97	PASS

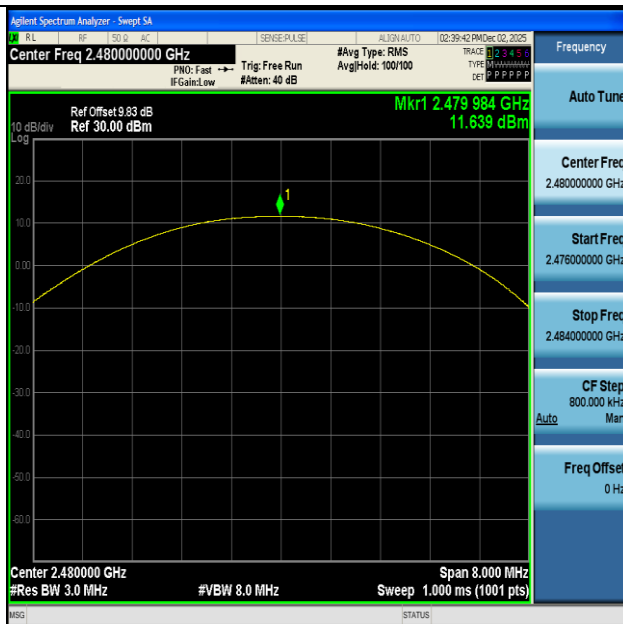
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



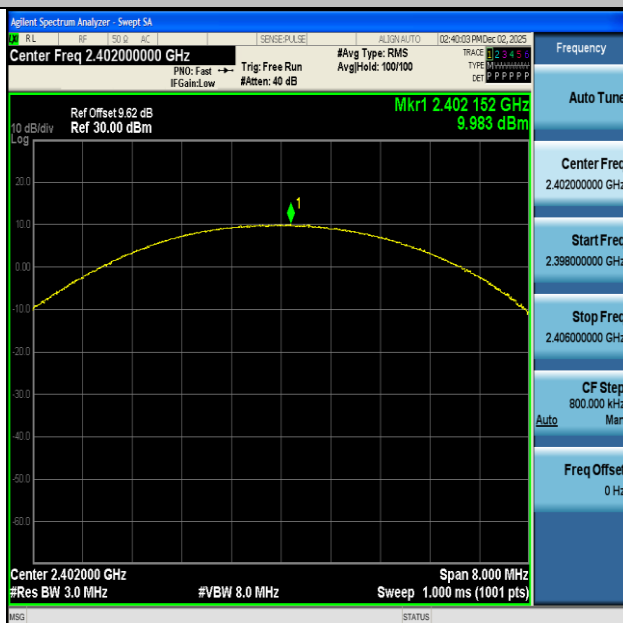


Test Graphs



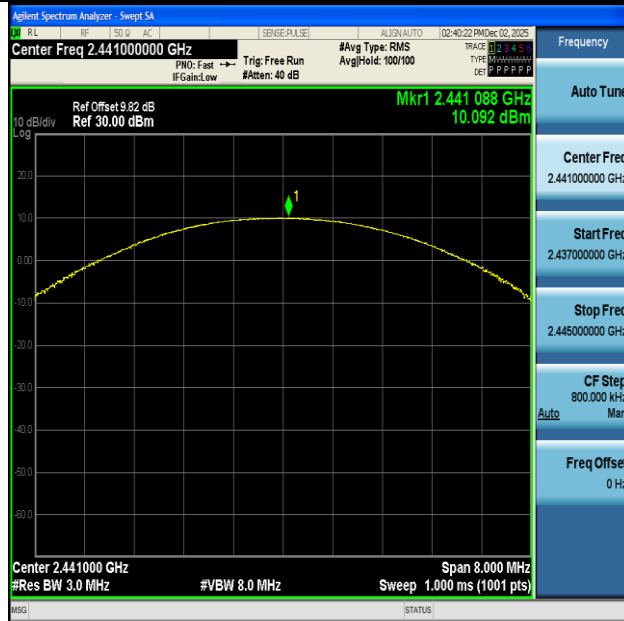


DH5-Ant1-2480-PASS



2DH5-Ant1-2402-PASS



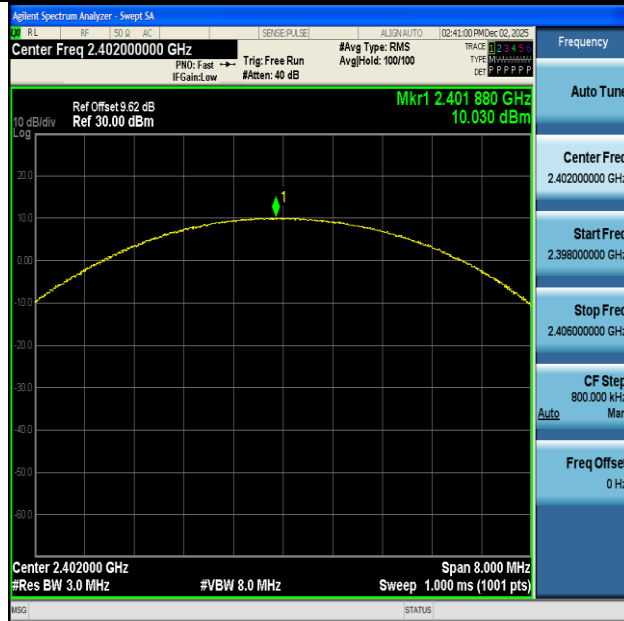


2DH5-Ant1-2441-PASS

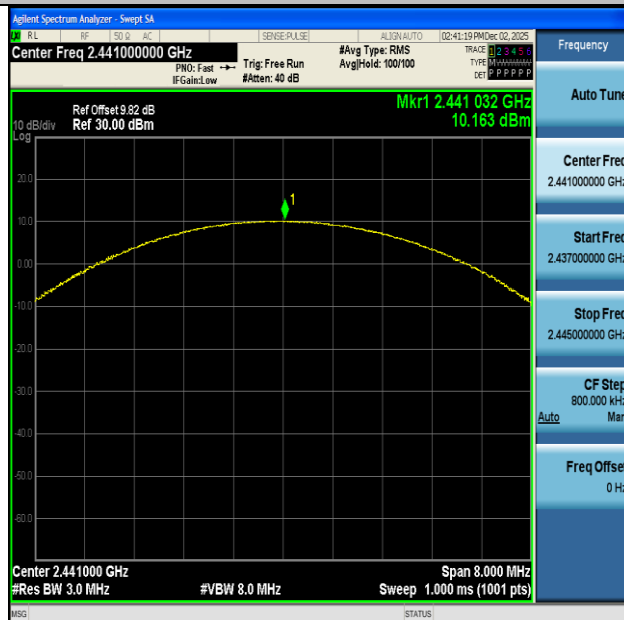


2DH5-Ant1-2480-PASS



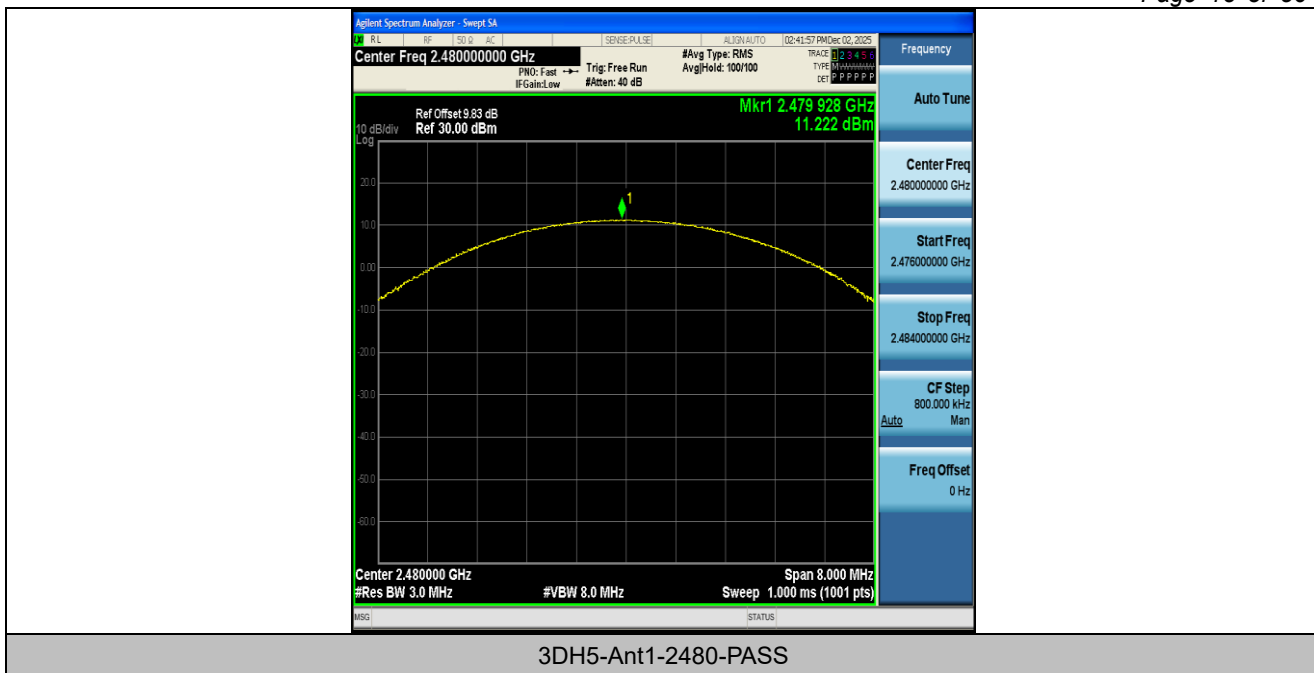


3DH5-Ant1-2402-PASS



3DH5-Ant1-2441-PASS







Appendix D: Carrier frequency separation

Test Result

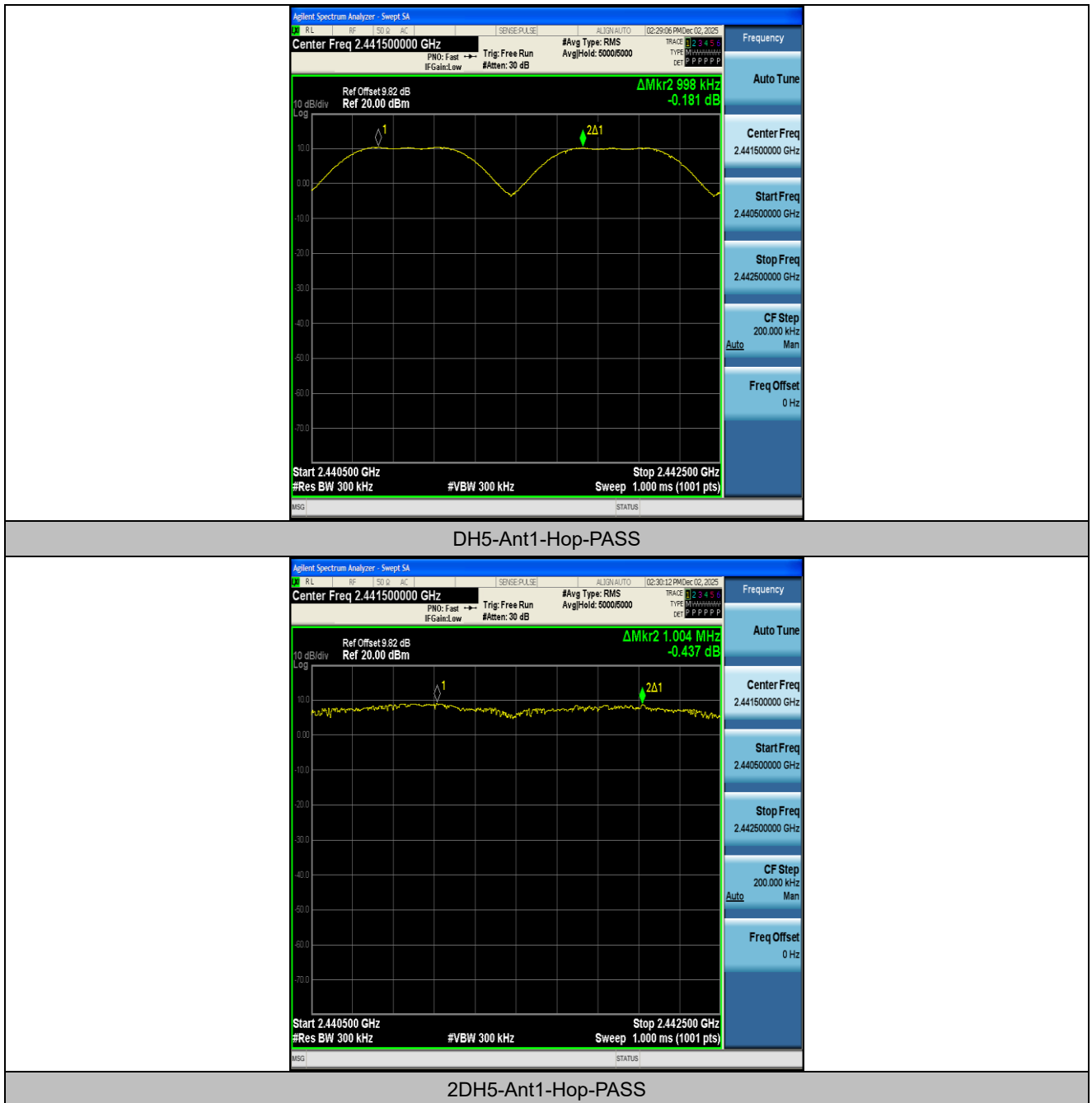
Test Mode	Antenna	Frequency [MHz]	Result [MHz]	Limit [MHz]	Verdict
DH5	Ant1	Hop	0.998	≥0.963	PASS
2DH5	Ant1	Hop	1.004	≥0.892	PASS
3DH5	Ant1	Hop	0.978	≥0.910	PASS

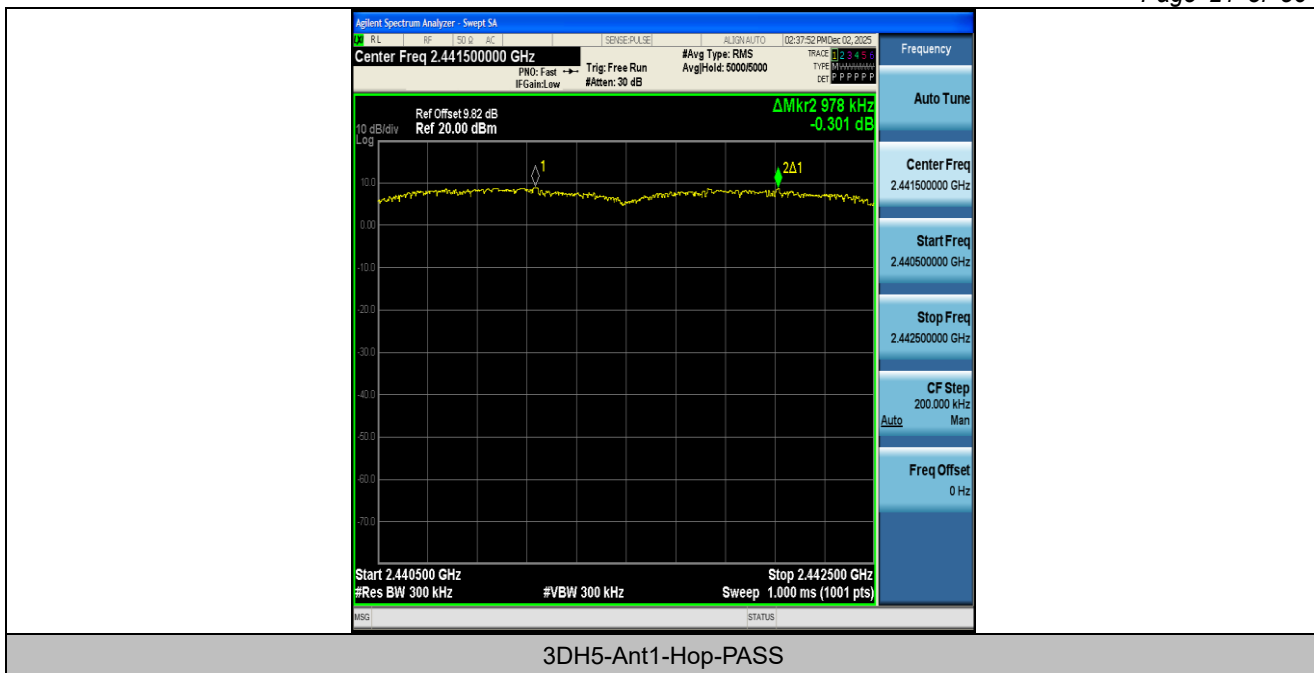
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)





Test Graphs







Appendix E: Time of occupancy

Test Result

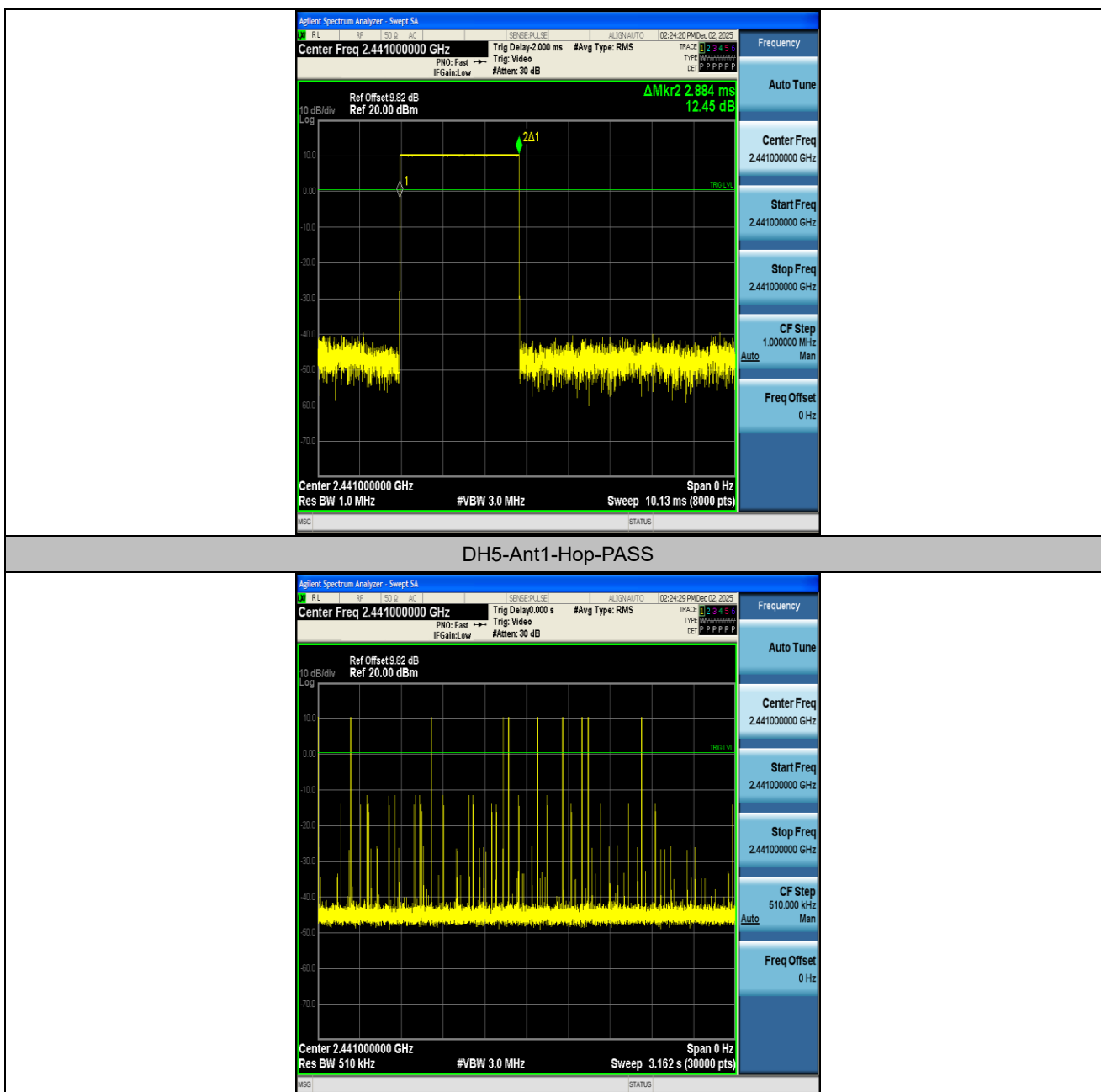
Test Mode	Antenna	Frequency [MHz]	Burst Width [ms]	TotalHops [Num]	Result [s]	Limit [s]	Verdict
DH5	Ant1	Hop	2.884	100	0.288	≤0.4	PASS
2DH5	Ant1	Hop	2.887	120	0.346	≤0.4	PASS
3DH5	Ant1	Hop	-1.431	110	-0.157	≤0.4	PASS

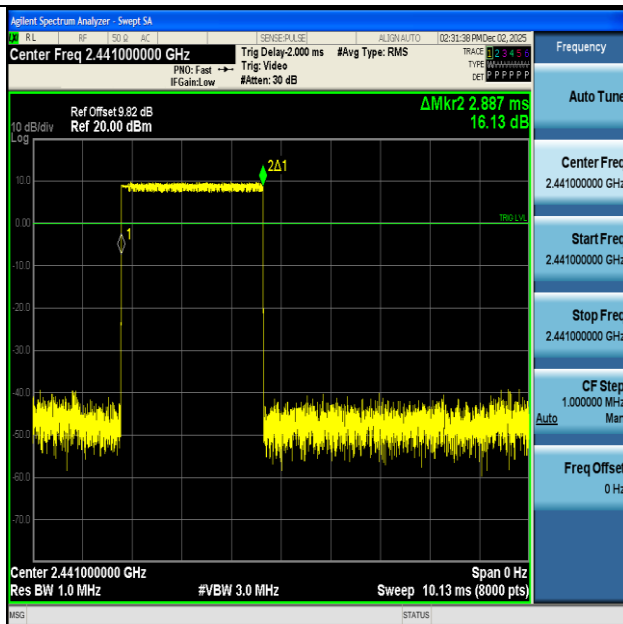
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



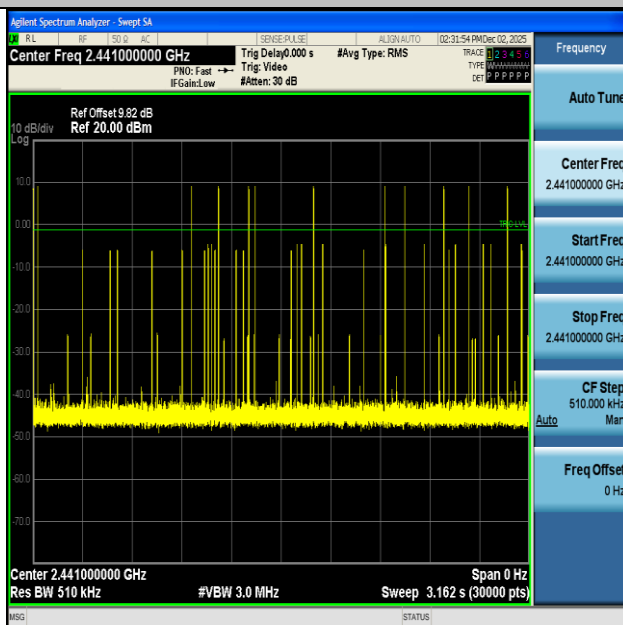


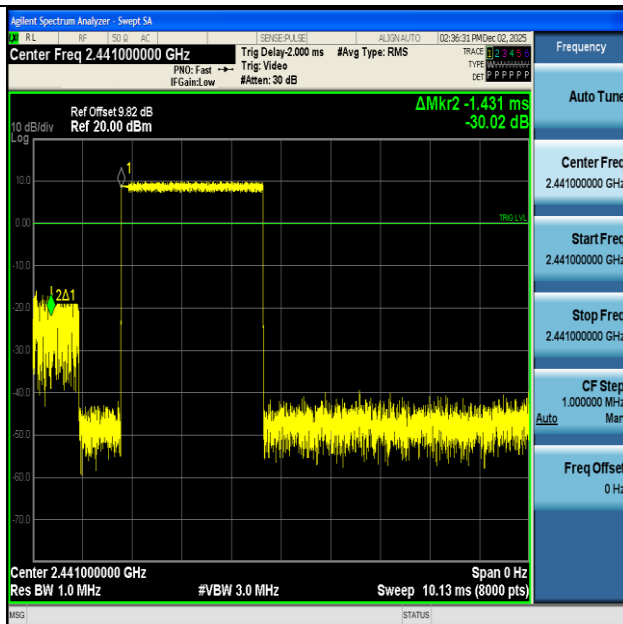
Test Graphs



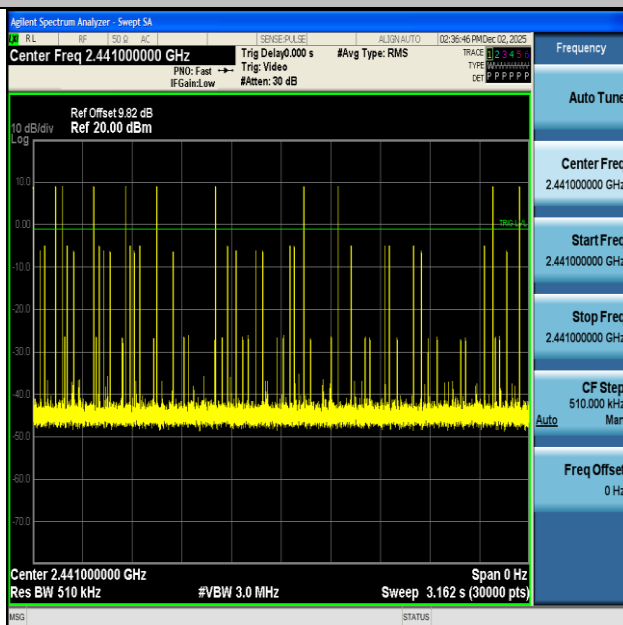


2DH5-Ant1-Hop-PASS





3DH5-Ant1-Hop-PASS





Appendix F: Number of hopping channels

Test Result

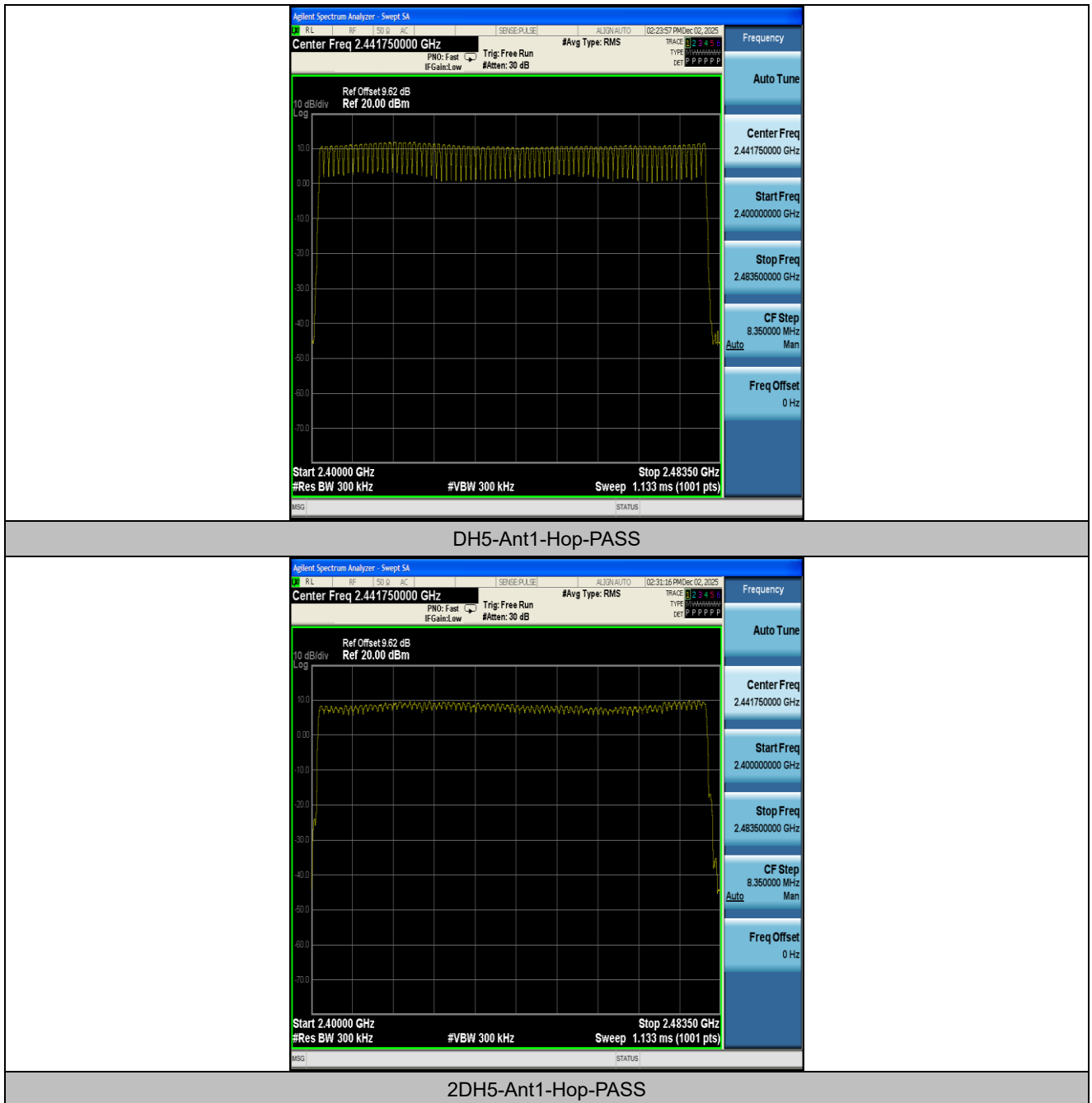
Test Mode	Antenna	Frequency [MHz]	Result [Num]	Limit [Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

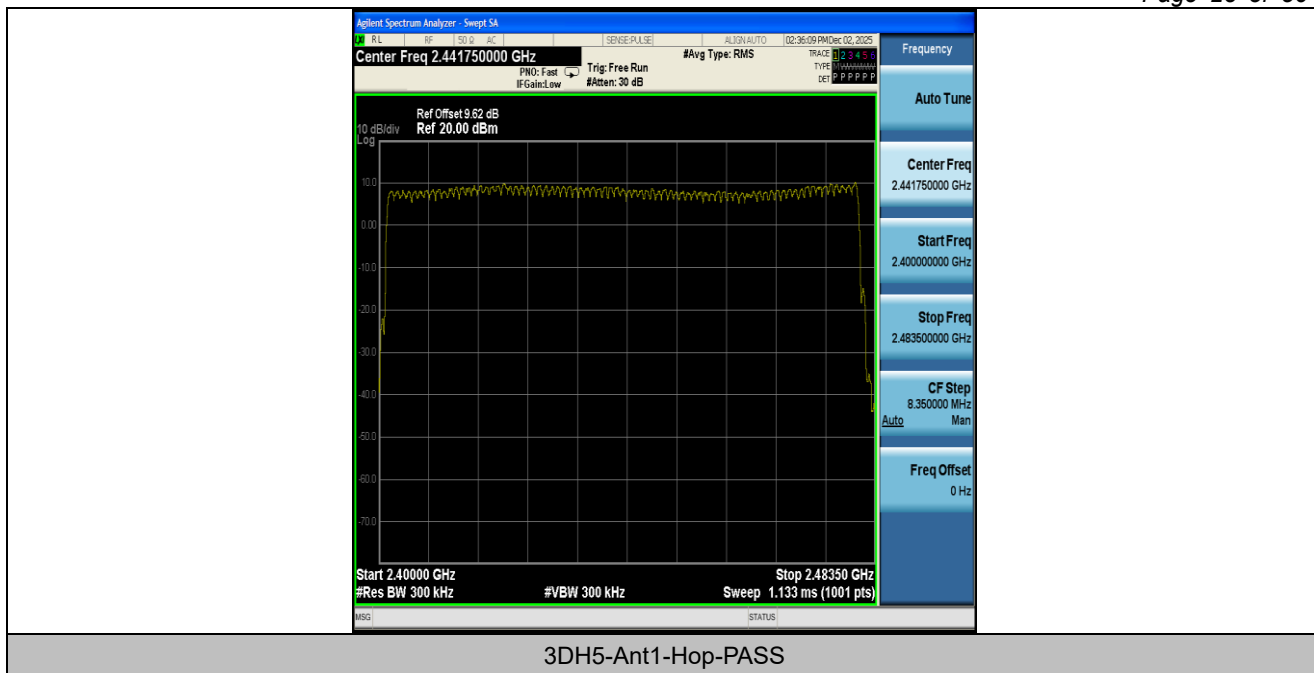
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)





Test Graphs







Appendix G: Band edge measurements

Test Result

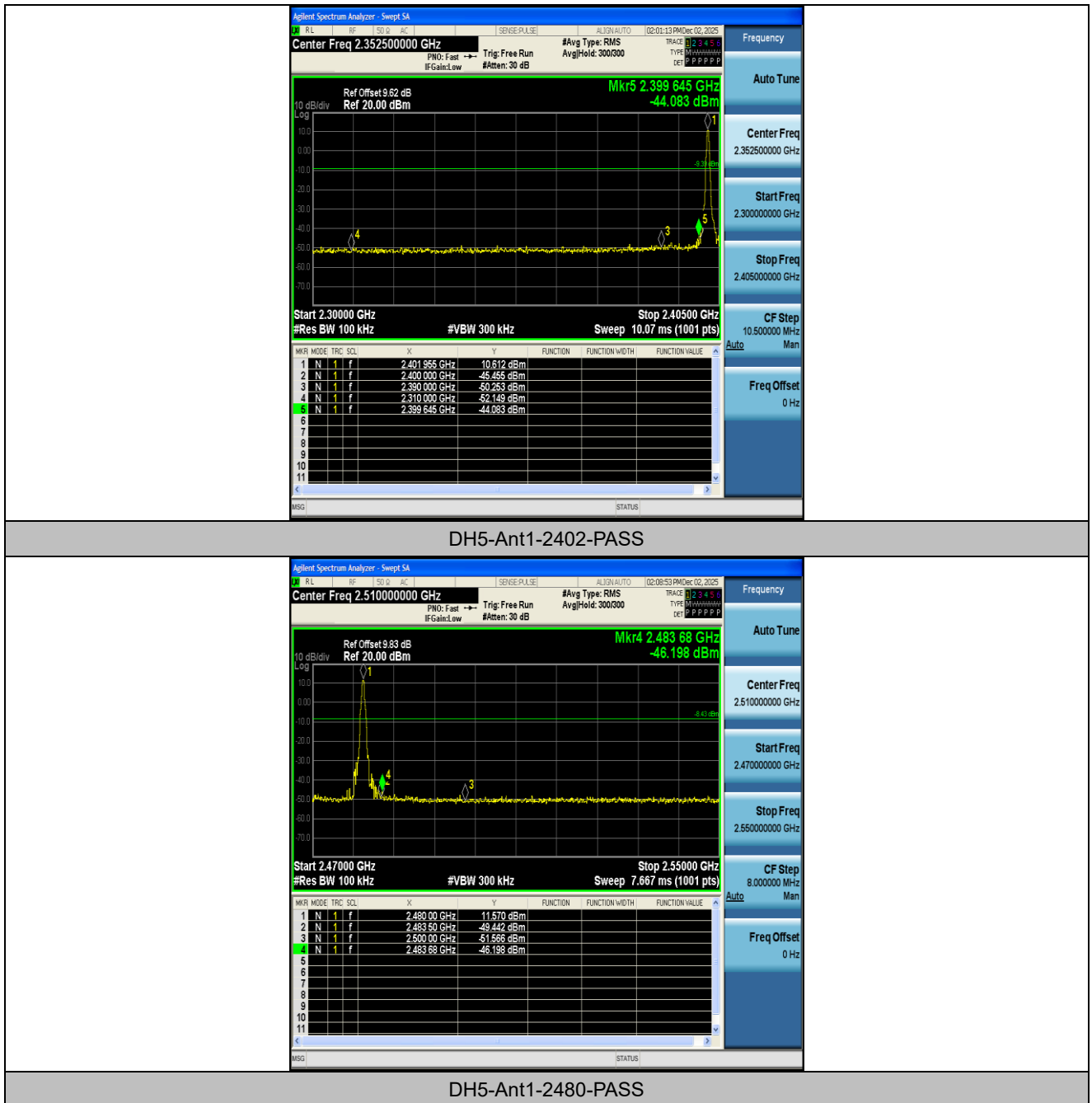
Test Mode	Antenna	Ch.Name	Frequency [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	10.61	-44.08	≤ -9.39	PASS
DH5	Ant1	High	2480	11.57	-46.2	≤ -8.43	PASS
DH5	Ant1	Low	Hop_2402	9.47	-43.17	≤ -10.53	PASS
DH5	Ant1	High	Hop_2480	11.14	-47.98	≤ -8.87	PASS
2DH5	Ant1	Low	2402	7.67	-44.33	≤ -12.33	PASS
2DH5	Ant1	High	2480	9.97	-47.7	≤ -10.03	PASS
2DH5	Ant1	Low	Hop_2402	6.28	-47.86	≤ -13.72	PASS
2DH5	Ant1	High	Hop_2480	6.04	-47.65	≤ -13.96	PASS
3DH5	Ant1	Low	2402	8.12	-39.97	≤ -11.88	PASS
3DH5	Ant1	High	2480	9.17	-47.82	≤ -10.83	PASS
3DH5	Ant1	Low	Hop_2402	5.14	-48.14	≤ -14.86	PASS
3DH5	Ant1	High	Hop_2480	7.07	-47.66	≤ -12.93	PASS

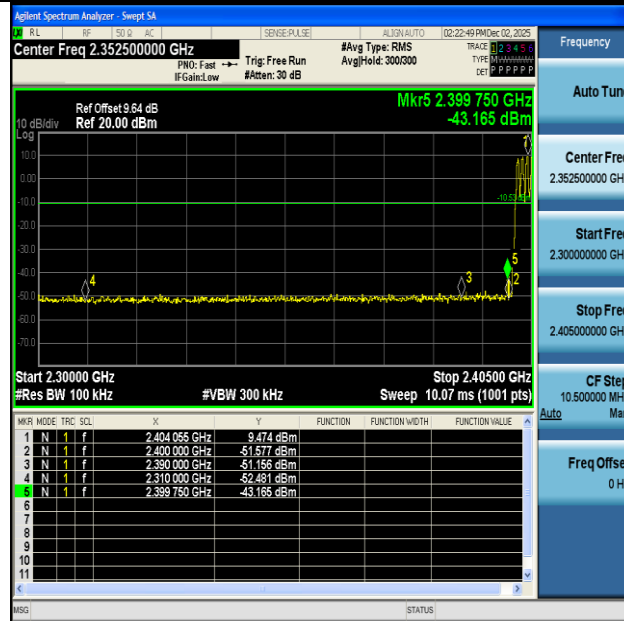
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



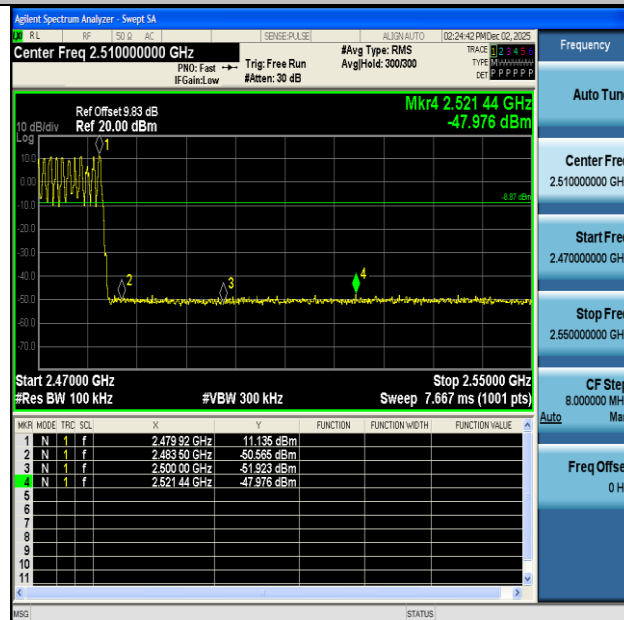


Test Graphs



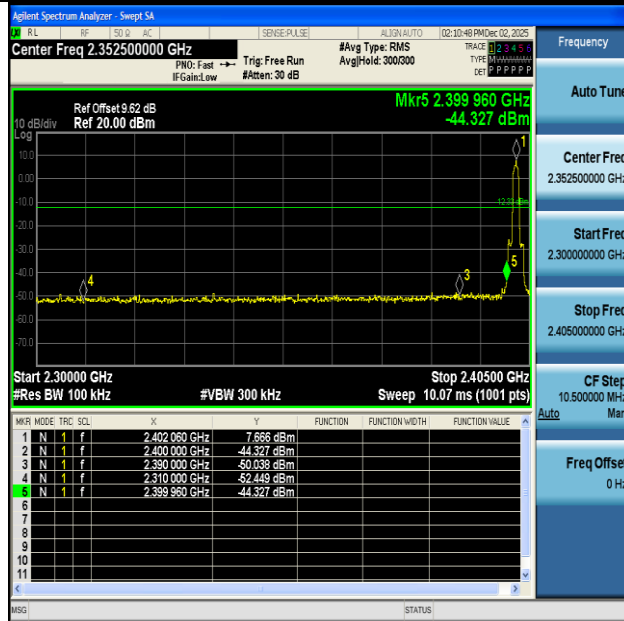


DH5-Ant1-Hop_2402-PASS

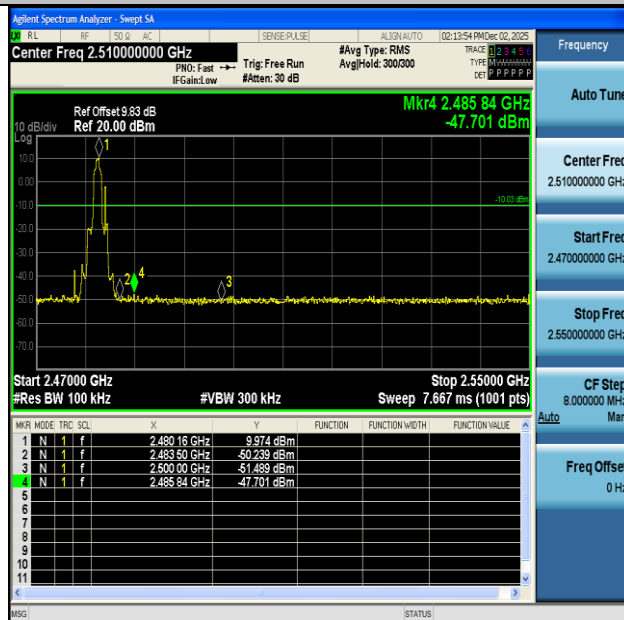


DH5-Ant1-Hop_2480-PASS



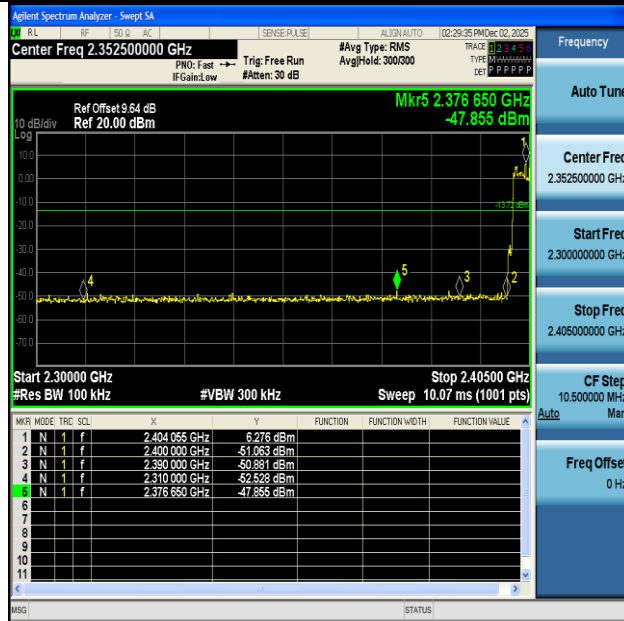


2DH5-Ant1-2402-PASS

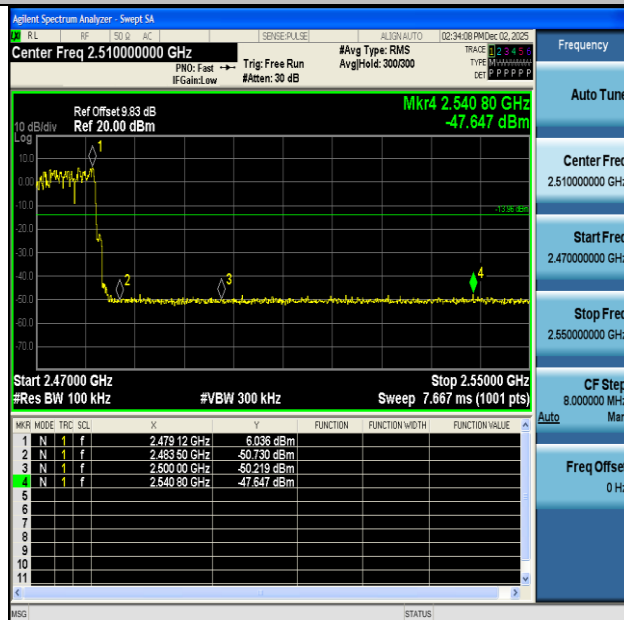


2DH5-Ant1-2480-PASS



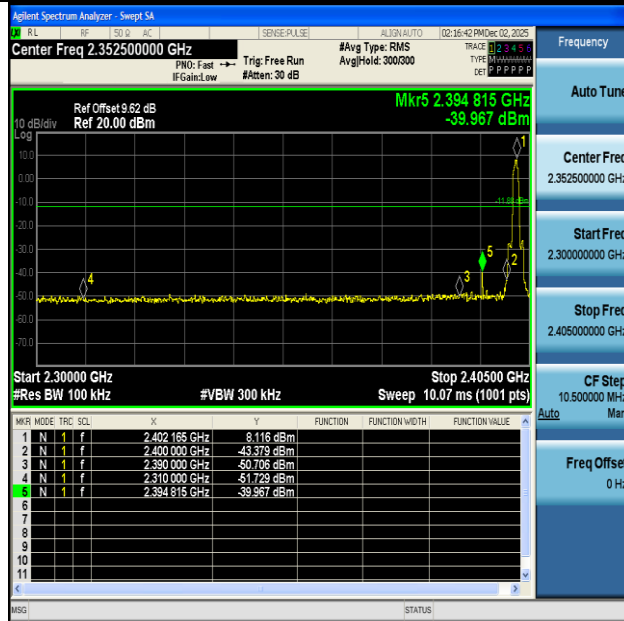


2DH5-Ant1-Hop_2402-PASS

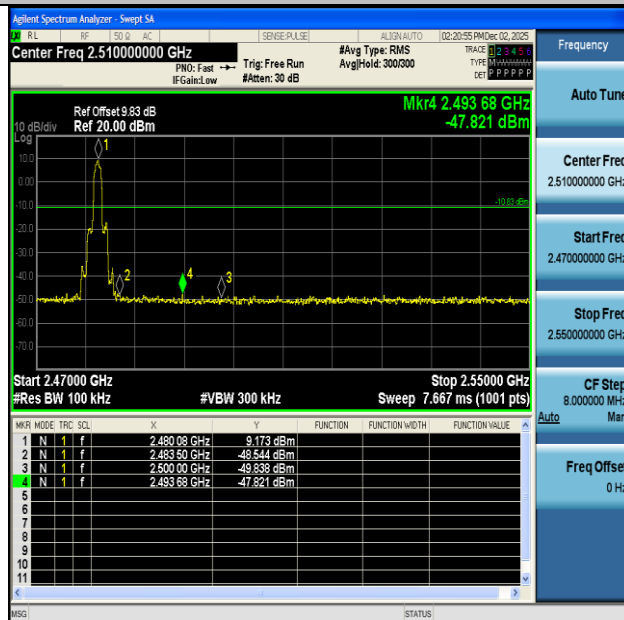


2DH5-Ant1-Hop_2480-PASS



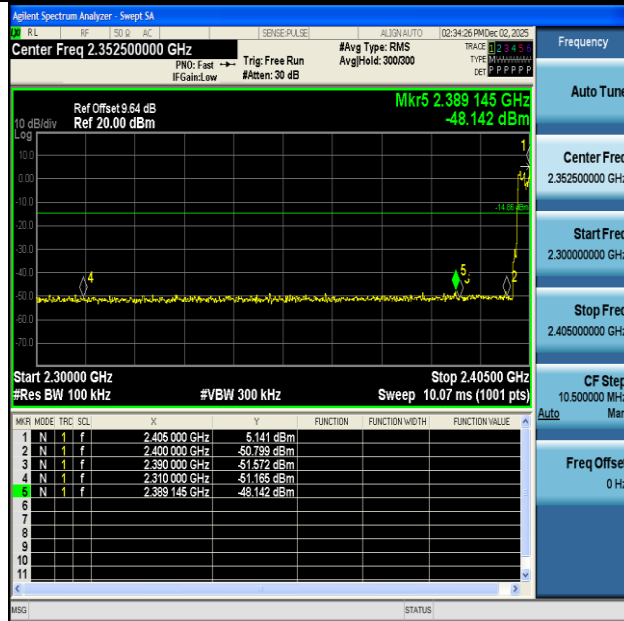


3DH5-Ant1-2402-PASS

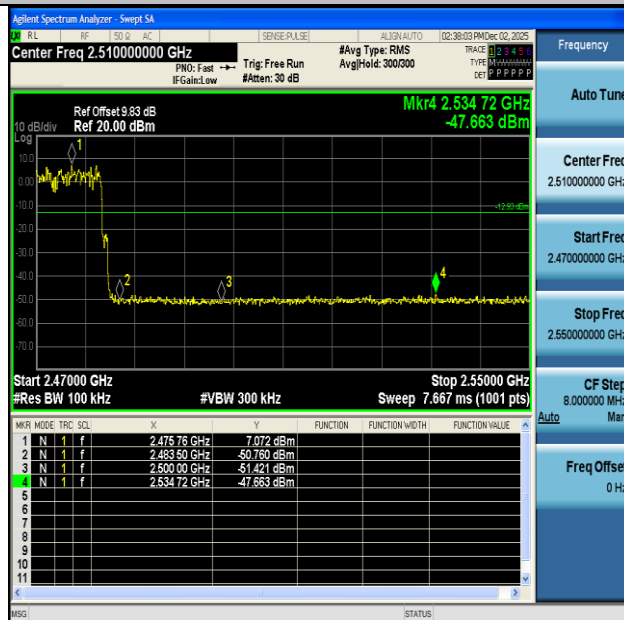


3DH5-Ant1-2480-PASS





3DH5-Ant1-Hop_2402-PASS



3DH5-Ant1-Hop_2480-PASS





Appendix H: Conducted Spurious Emission

Test Result

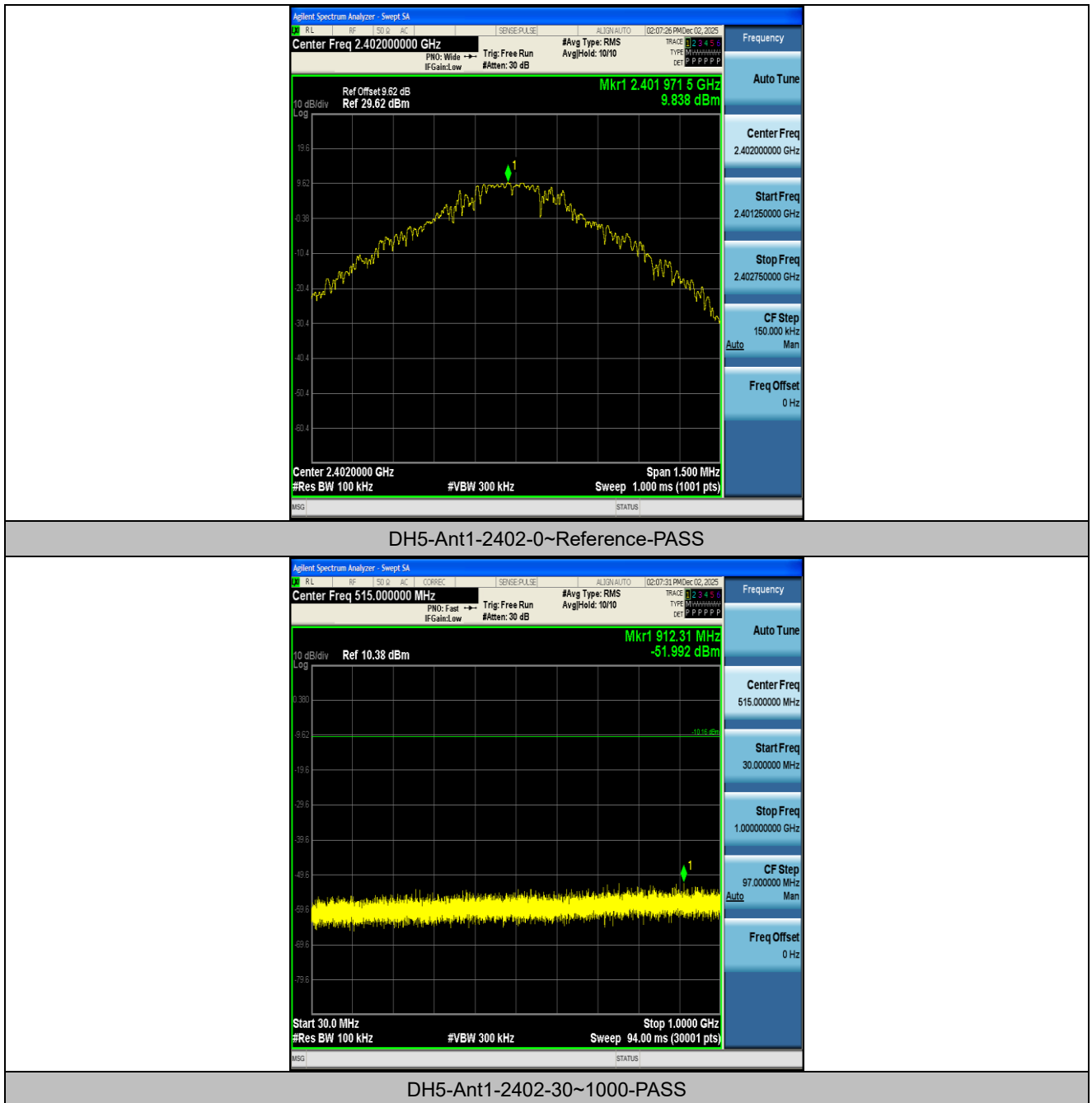
Test Mode	Antenna	Frequency [MHz]	Freq. Range [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	0~Reference	9.84	9.84	---	PASS
DH5	Ant1	2402	30~1000	9.84	-51.99	≤-10.16	PASS
DH5	Ant1	2402	1000~26500	9.84	-26.83	≤-10.16	PASS
DH5	Ant1	2441	0~Reference	9.56	9.56	---	PASS
DH5	Ant1	2441	30~1000	9.56	-51.88	≤-10.44	PASS
DH5	Ant1	2441	1000~26500	9.56	-27.1	≤-10.44	PASS
DH5	Ant1	2480	0~Reference	10.86	10.86	---	PASS
DH5	Ant1	2480	30~1000	10.86	-51.99	≤-9.14	PASS
DH5	Ant1	2480	1000~26500	10.86	-26.71	≤-9.14	PASS
2DH5	Ant1	2402	0~Reference	6.82	6.82	---	PASS
2DH5	Ant1	2402	30~1000	6.82	-52.25	≤-13.18	PASS
2DH5	Ant1	2402	1000~26500	6.82	-26.7	≤-13.18	PASS
2DH5	Ant1	2441	0~Reference	7.78	7.78	---	PASS
2DH5	Ant1	2441	30~1000	7.78	-51.24	≤-12.22	PASS
2DH5	Ant1	2441	1000~26500	7.78	-27.15	≤-12.22	PASS
2DH5	Ant1	2480	0~Reference	7.74	7.74	---	PASS
2DH5	Ant1	2480	30~1000	7.74	-52.63	≤-12.26	PASS
2DH5	Ant1	2480	1000~26500	7.74	-26.66	≤-12.26	PASS
3DH5	Ant1	2402	0~Reference	5.72	5.72	---	PASS
3DH5	Ant1	2402	30~1000	5.72	-51.72	≤-14.28	PASS
3DH5	Ant1	2402	1000~26500	5.72	-27.36	≤-14.28	PASS
3DH5	Ant1	2441	0~Reference	8.72	8.72	---	PASS
3DH5	Ant1	2441	30~1000	8.72	-52.39	≤-11.28	PASS
3DH5	Ant1	2441	1000~26500	8.72	-26.75	≤-11.28	PASS
3DH5	Ant1	2480	0~Reference	6.93	6.93	---	PASS
3DH5	Ant1	2480	30~1000	6.93	-51.99	≤-13.07	PASS
3DH5	Ant1	2480	1000~26500	6.93	-26.66	≤-13.07	PASS

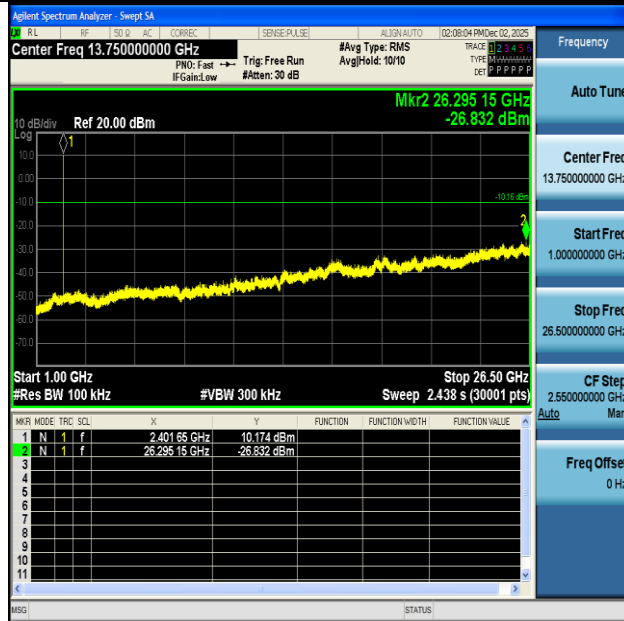
Note: offset(dB) in Reference test plots = cable loss(dB) + attenuator factor(dB); For spurious emissions plots from 30MHz to 26.5GHz, the cable loss and attenuator factors have been set in the 'Input Correction' of the Spectrum Analyzer during the test.



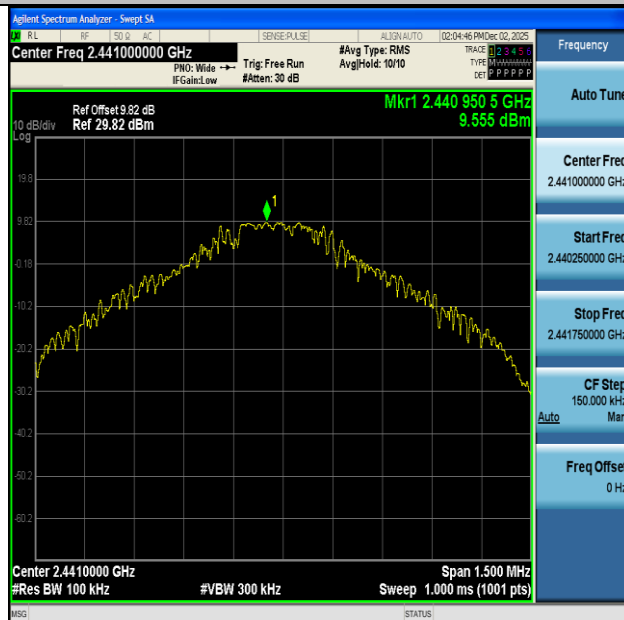


Test Graphs



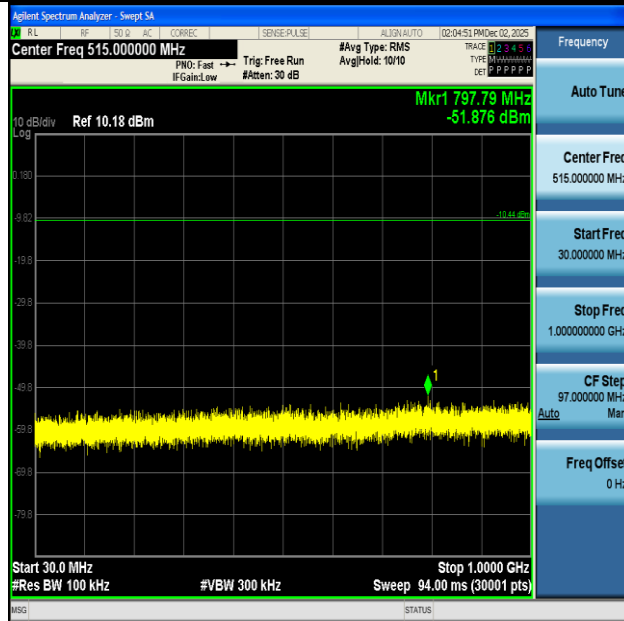


DH5-Ant1-2402-1000~26500-PASS

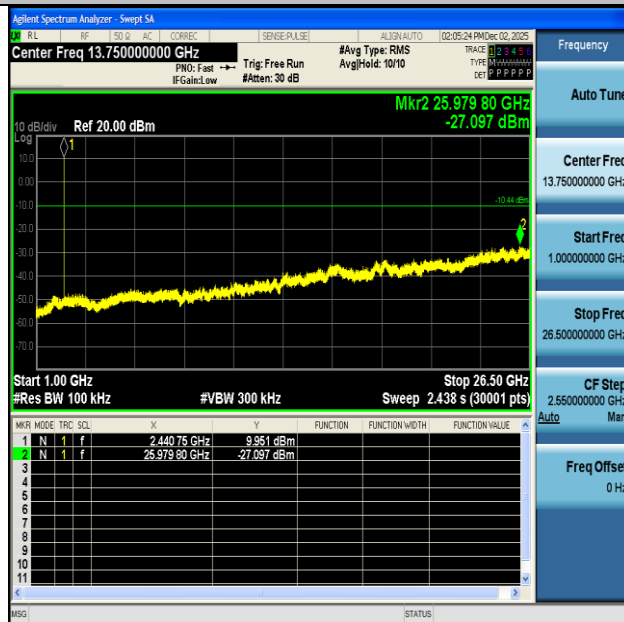


DH5-Ant1-2441-0~Reference-PASS





DH5-Ant1-2441-30~1000-PASS

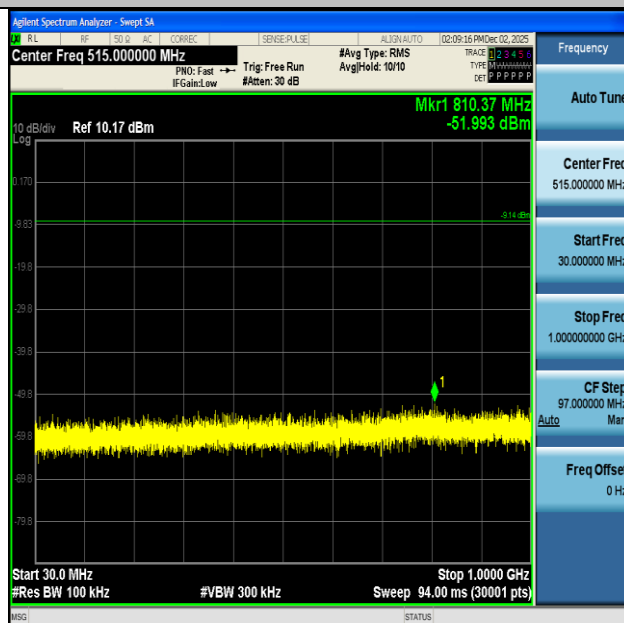


DH5-Ant1-2441-1000~26500-PASS



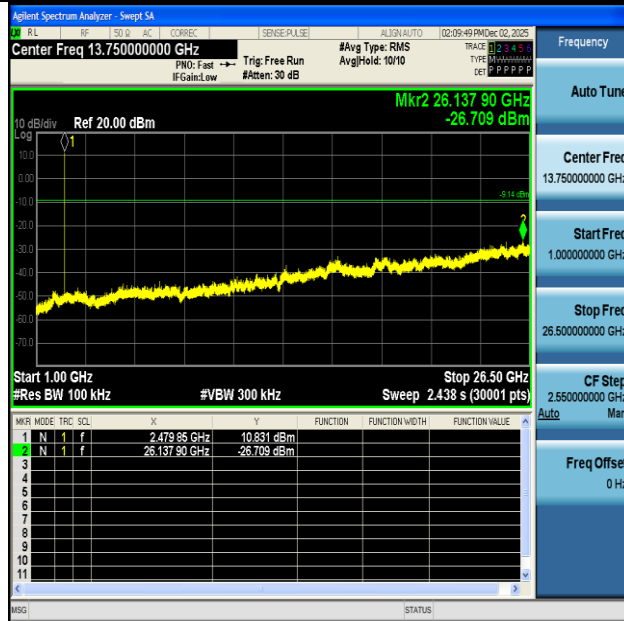


DH5-Ant1-2480-0~Reference-PASS



DH5-Ant1-2480-30~1000-PASS



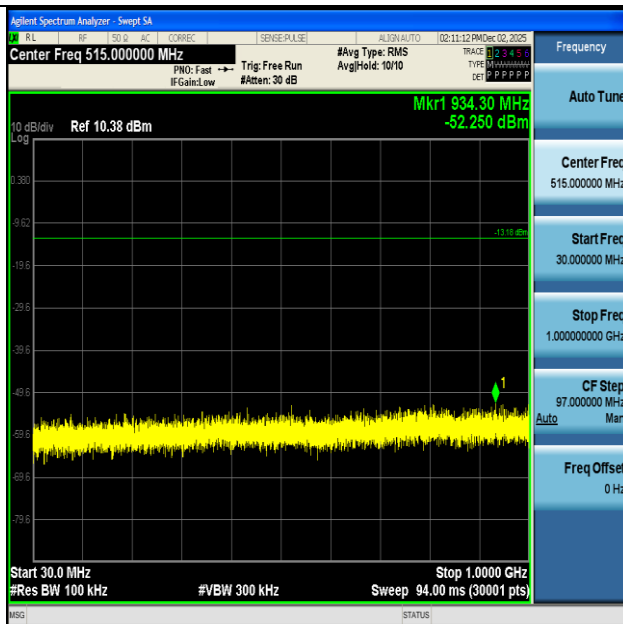


DH5-Ant1-2480-1000~26500-PASS

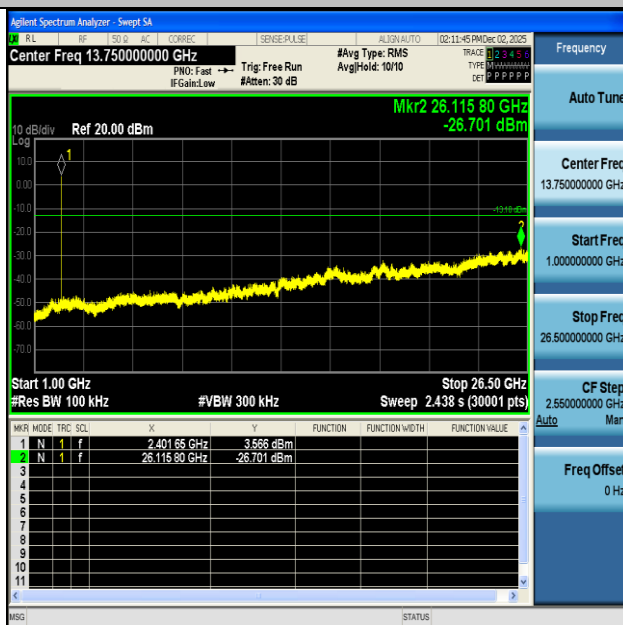


2DH5-Ant1-2402-0~Reference-PASS



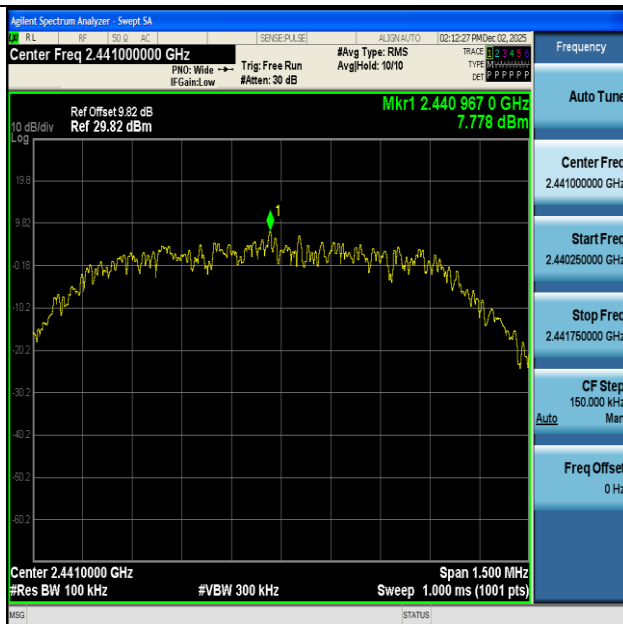


2DH5-Ant1-2402-30~1000-PASS

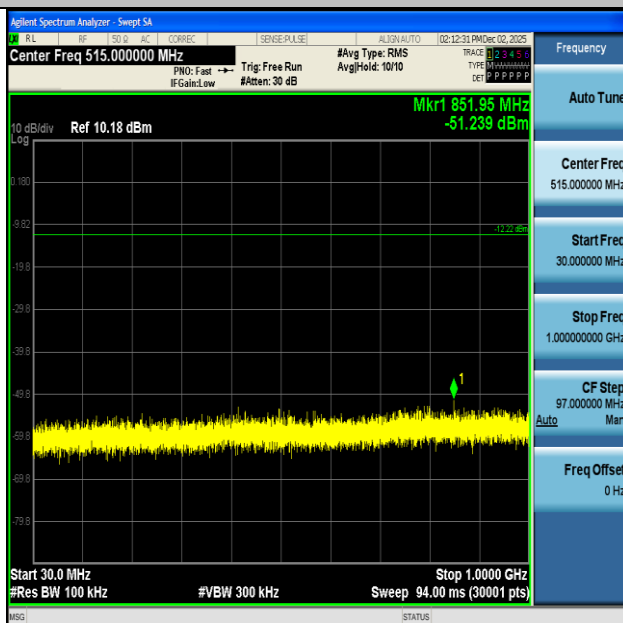


2DH5-Ant1-2402-1000~26500-PASS



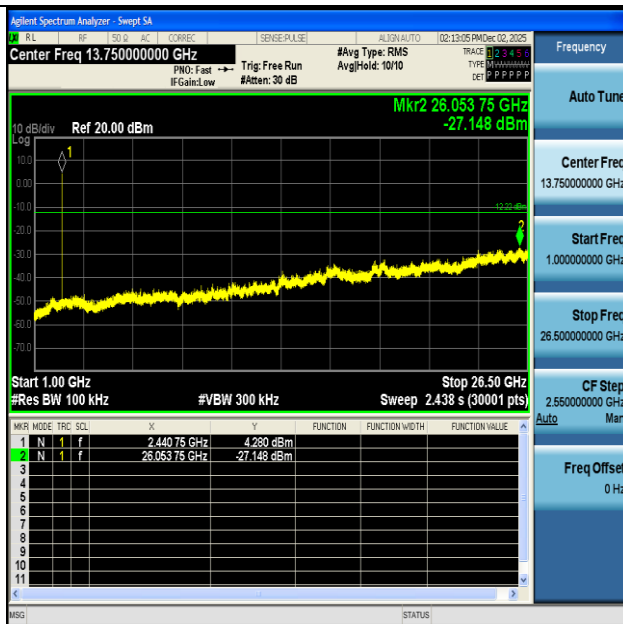


2DH5-Ant1-2441-0~Reference-PASS

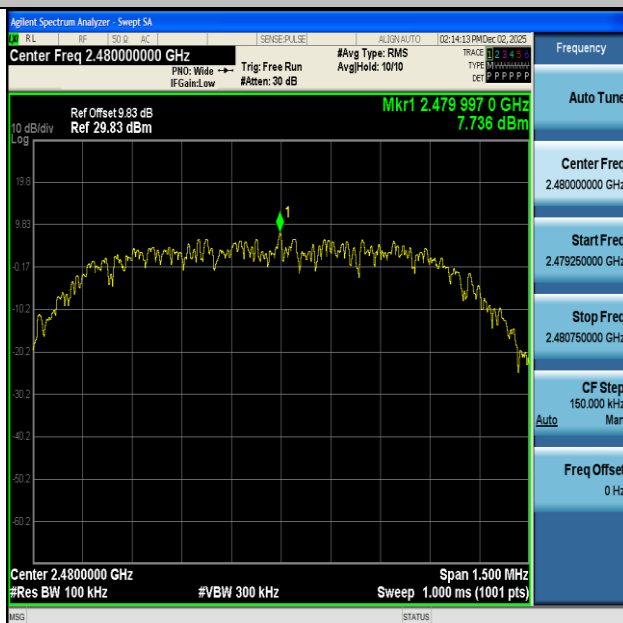


2DH5-Ant1-2441-30~1000-PASS



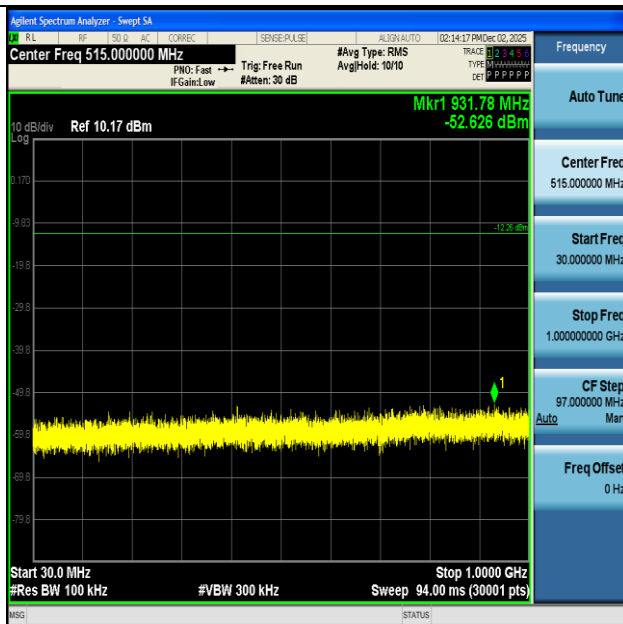


2DH5-Ant1-2441-1000~26500-PASS

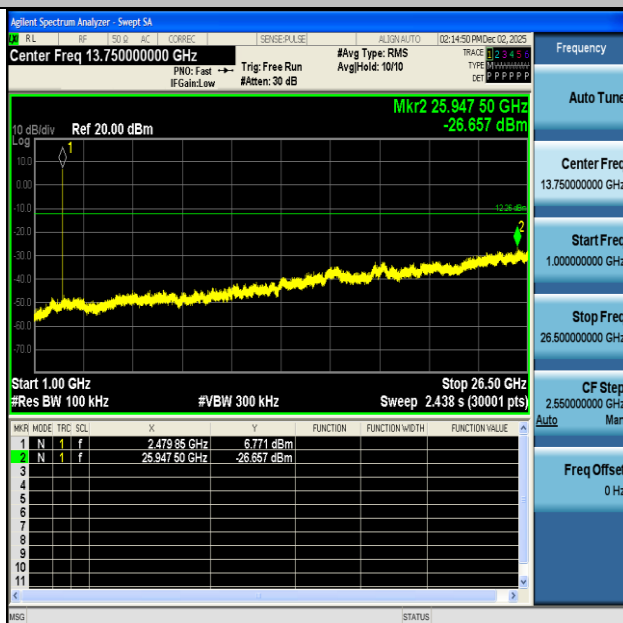


2DH5-Ant1-2480-0~Reference-PASS





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

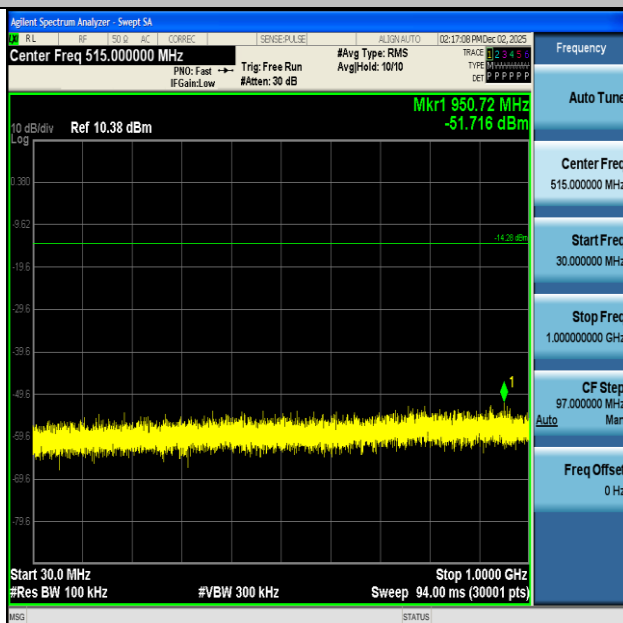


2DH5-Ant1-2480-1000~26500-PASS





3DH5-Ant1-2402-0~Reference-PASS

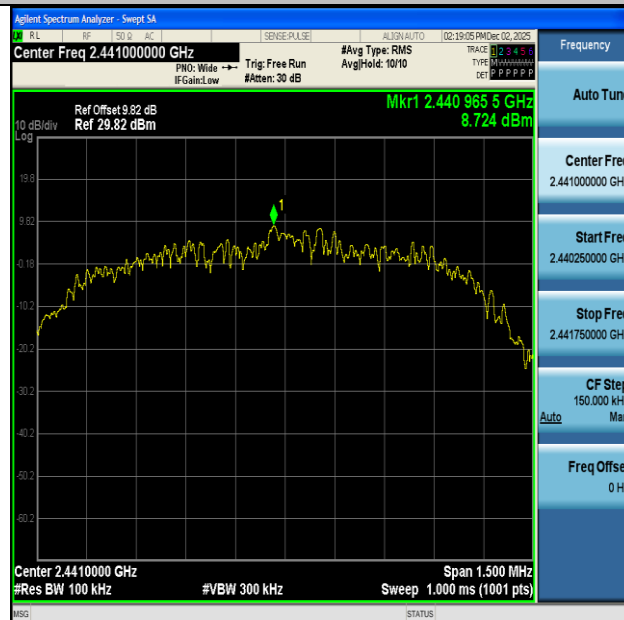


3DH5-Ant1-2402-30~1000-PASS



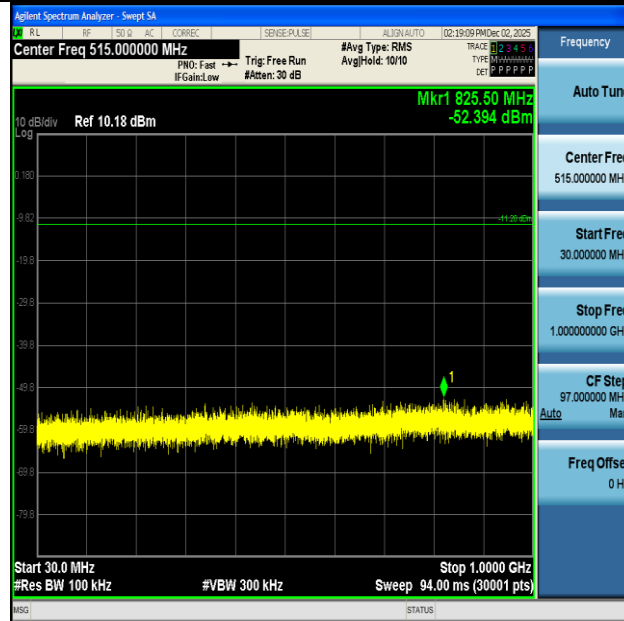


3DH5-Ant1-2402-1000~26500-PASS



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



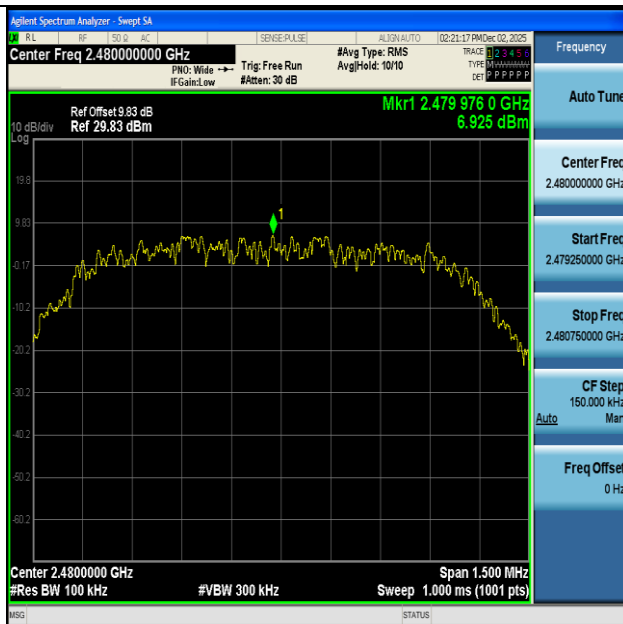


3DH5-Ant1-2441-30~1000-PASS

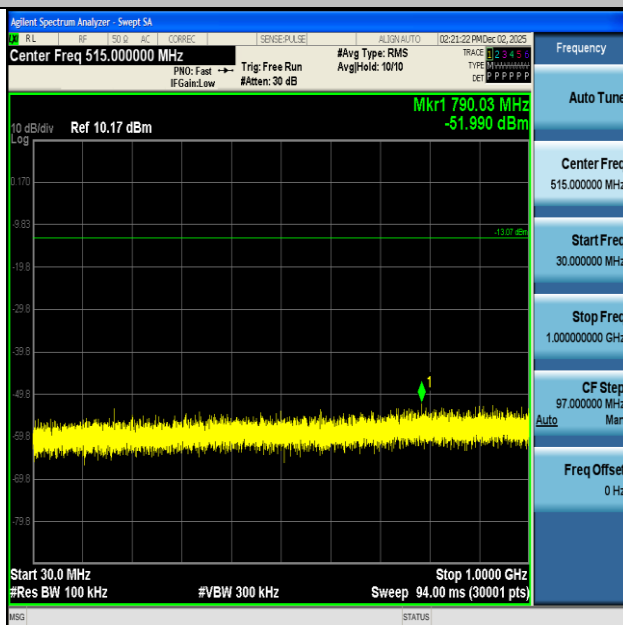


3DH5-Ant1-2441-1000~26500-PASS



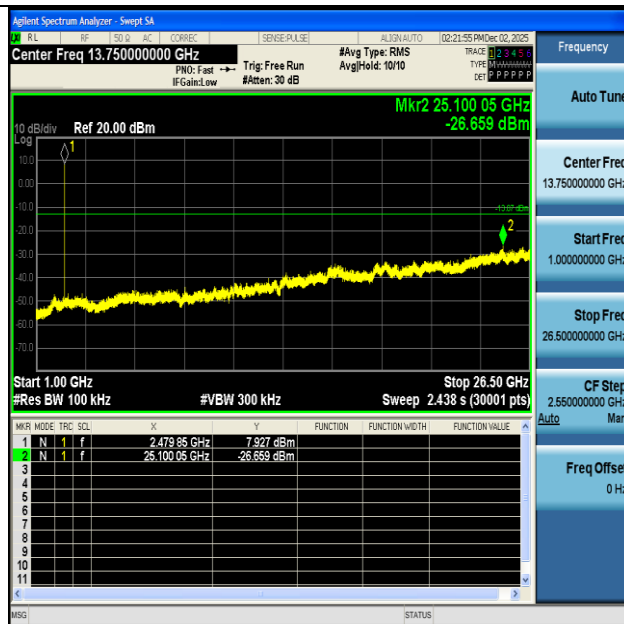


3DH5-Ant1-2480-0~Reference-PASS



3DH5-Ant1-2480-30~1000-PASS





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





Appendix I: Duty Cycle

Test Result

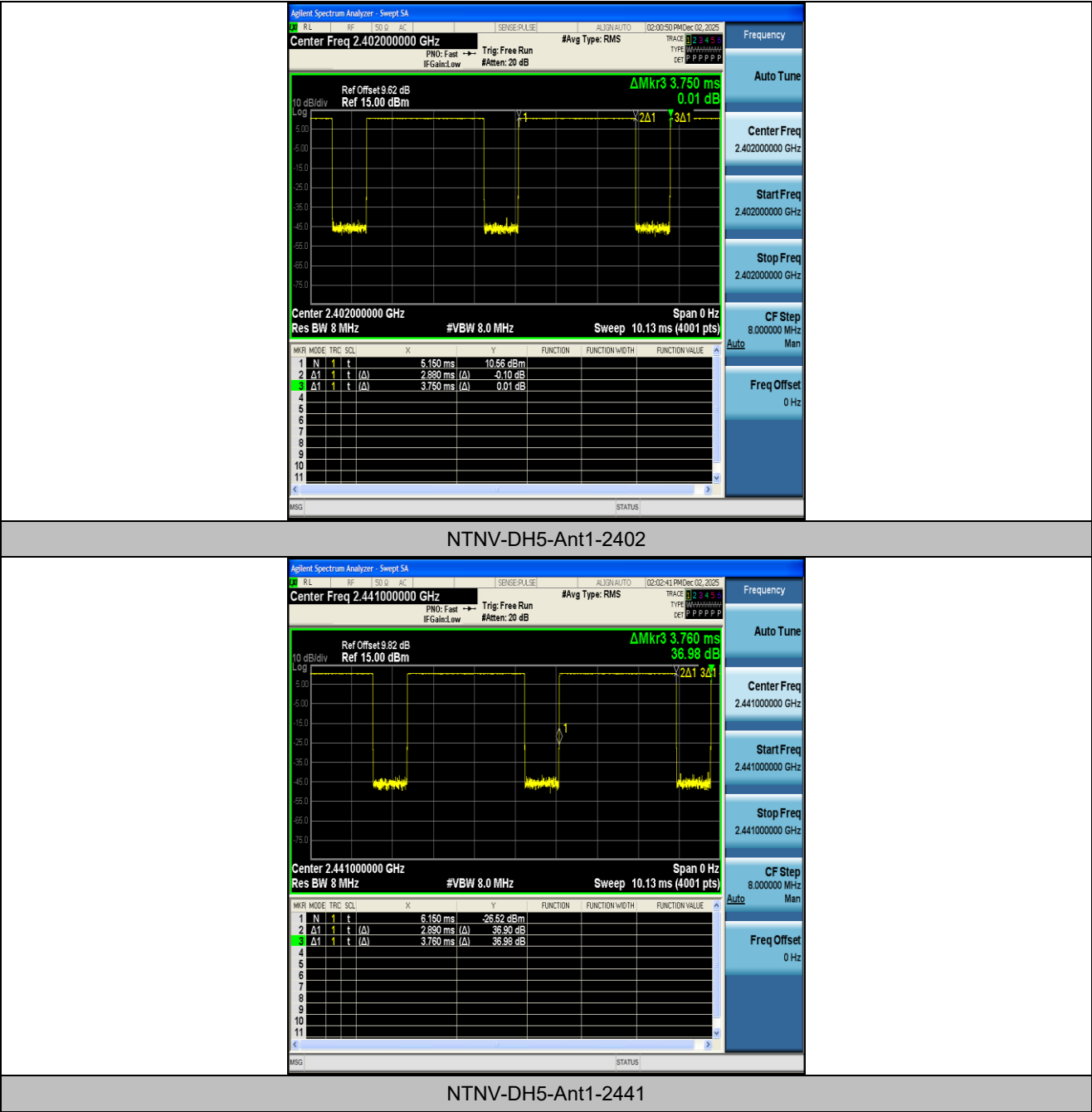
Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor [dB]
DH5	Ant1	2402	2.88	3.75	76.80	1.15
DH5	Ant1	2441	2.89	3.76	76.86	1.14
DH5	Ant1	2480	2.88	3.75	76.80	1.15
2DH5	Ant1	2402	2.89	3.75	77.07	1.13
2DH5	Ant1	2441	2.88	3.75	76.80	1.15
2DH5	Ant1	2480	2.89	3.75	77.07	1.13
3DH5	Ant1	2402	2.88	3.75	76.80	1.15
3DH5	Ant1	2441	2.89	3.75	77.07	1.13
3DH5	Ant1	2480	2.89	3.75	77.07	1.13

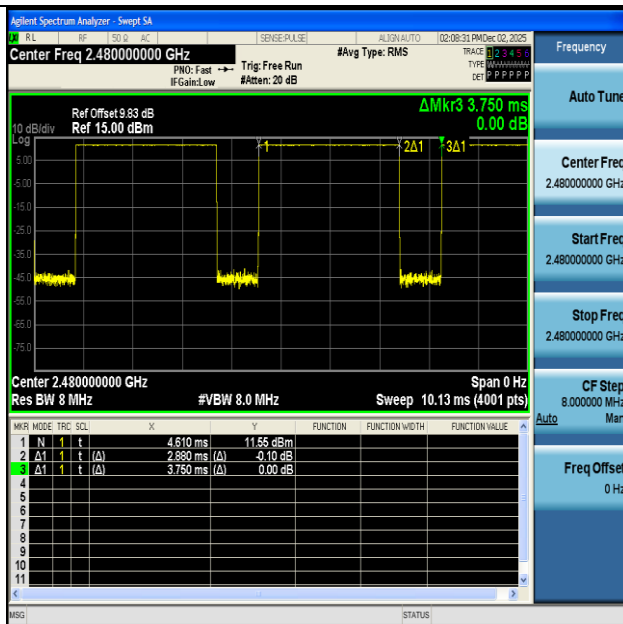
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



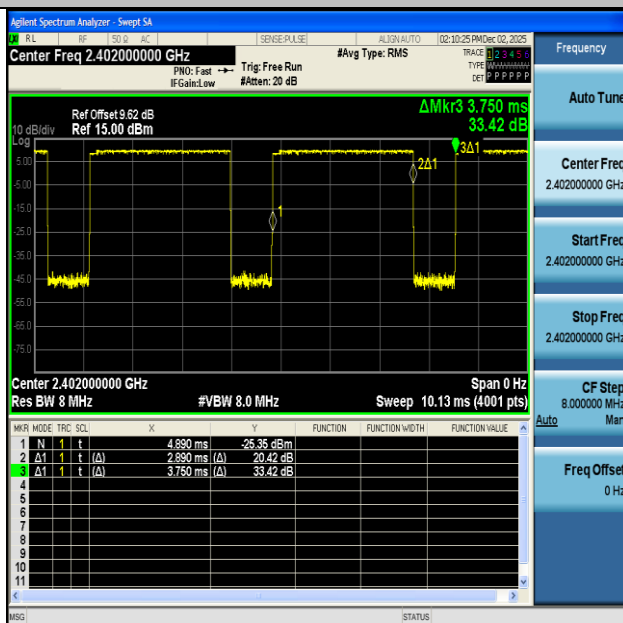


Test Graphs



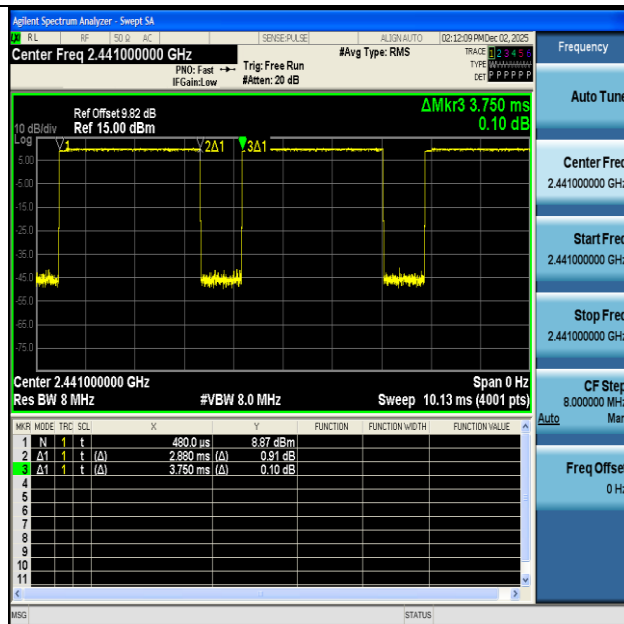


NTNV-DH5-Ant1-2480

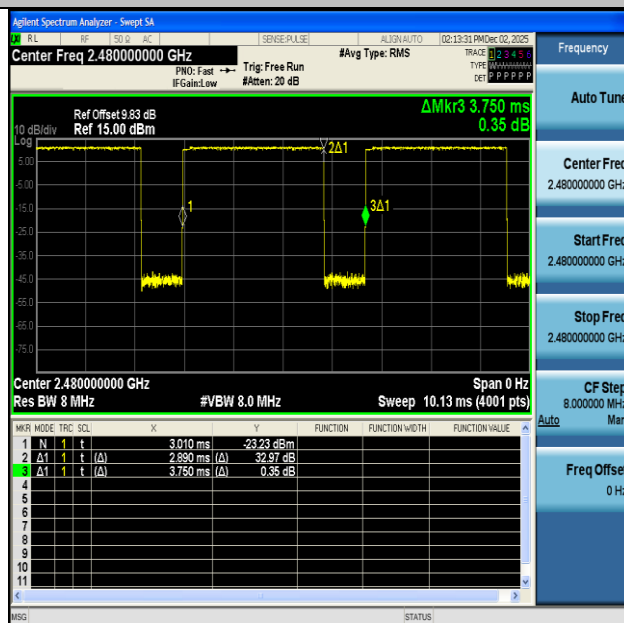


NTNV-2DH5-Ant1-2402



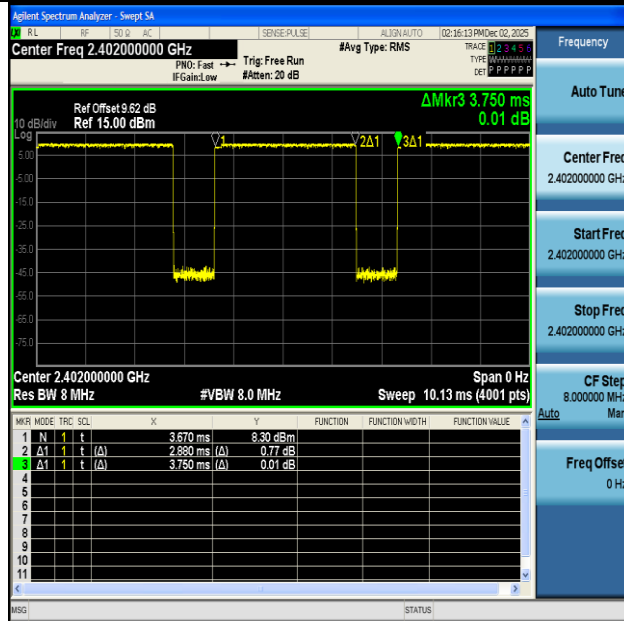


NTVN-2DH5-Ant1-2441

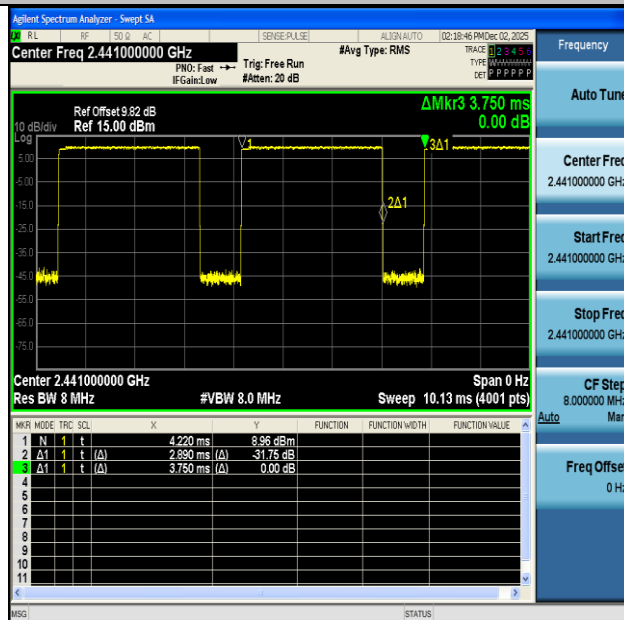


NTVN-2DH5-Ant1-2480



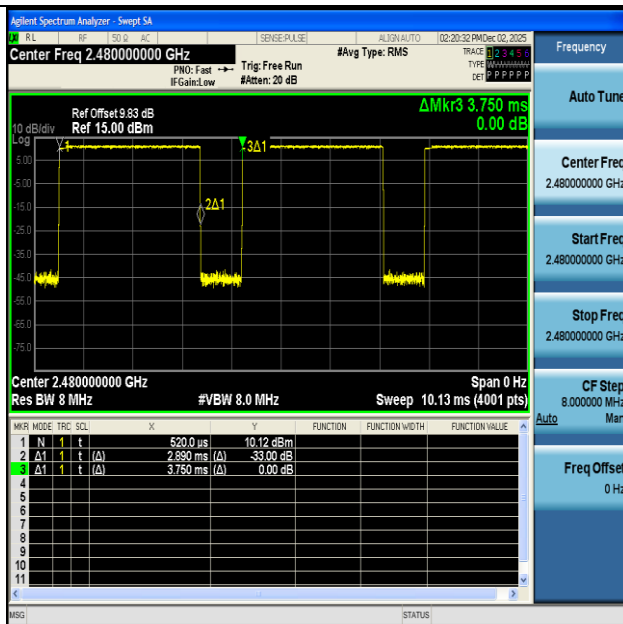


NTNV-3DH5-Ant1-2402



NTNV-3DH5-Ant1-2441





NTNV-3DH5-Ant1-2480

