



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

Product Name: Smart Projector

Trade Mark: /

Test Model: A300

FCC ID: 2BK4U-A300

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	0.954	2401.511	2402.465	---	---
DH5	Ant1	2441	0.957	2440.508	2441.465	---	---
DH5	Ant1	2480	0.951	2479.511	2480.462	---	---
2DH5	Ant1	2402	1.335	2401.301	2402.636	---	---
2DH5	Ant1	2441	1.320	2440.313	2441.633	---	---
2DH5	Ant1	2480	1.335	2479.310	2480.645	---	---
3DH5	Ant1	2402	1.305	2401.313	2402.618	---	---
3DH5	Ant1	2441	1.326	2440.310	2441.636	---	---
3DH5	Ant1	2480	1.317	2479.319	2480.636	---	---

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





Test Graphs





DH5-Ant1-2480



2DH5-Ant1-2402





2DH5-Ant1-2441



2DH5-Ant1-2480



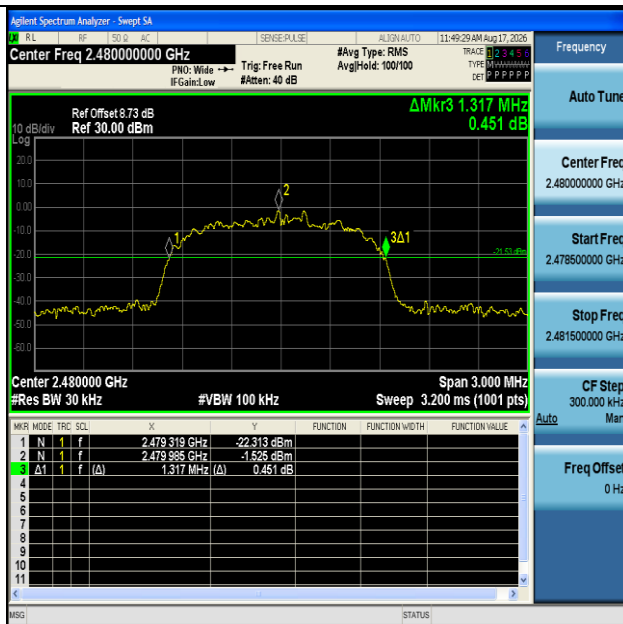


3DH5-Ant1-2402



3DH5-Ant1-2441





3DH5-Ant1-2480





Appendix B: Occupied Channel Bandwidth

Test Result

Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
DH5	Ant1	2402	0.85062	2401.5569	2402.4075	---	---
DH5	Ant1	2441	0.85311	2440.5511	2441.4042	---	---
DH5	Ant1	2480	0.84653	2479.5514	2480.3980	---	---
2DH5	Ant1	2402	1.2165	2401.3604	2402.5769	---	---
2DH5	Ant1	2441	1.2058	2440.3675	2441.5733	---	---
2DH5	Ant1	2480	1.1912	2479.3797	2480.5709	---	---
3DH5	Ant1	2402	1.2193	2401.3553	2402.5746	---	---
3DH5	Ant1	2441	1.2047	2440.3675	2441.5722	---	---
3DH5	Ant1	2480	1.1893	2479.3799	2480.5692	---	---

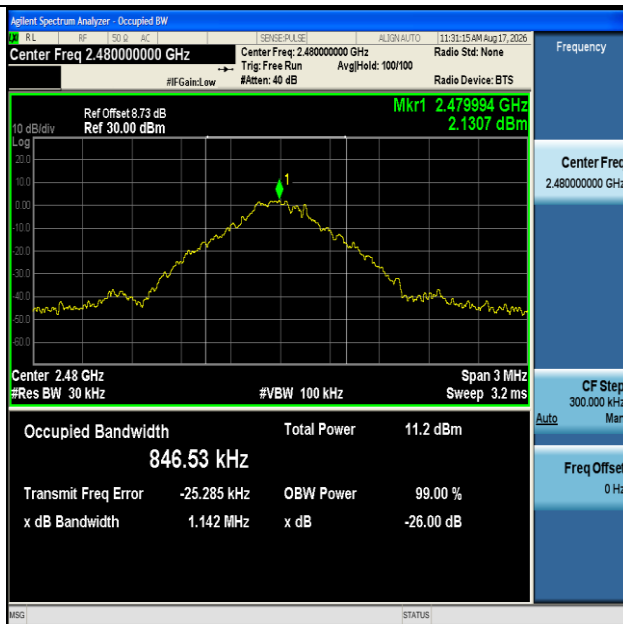
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



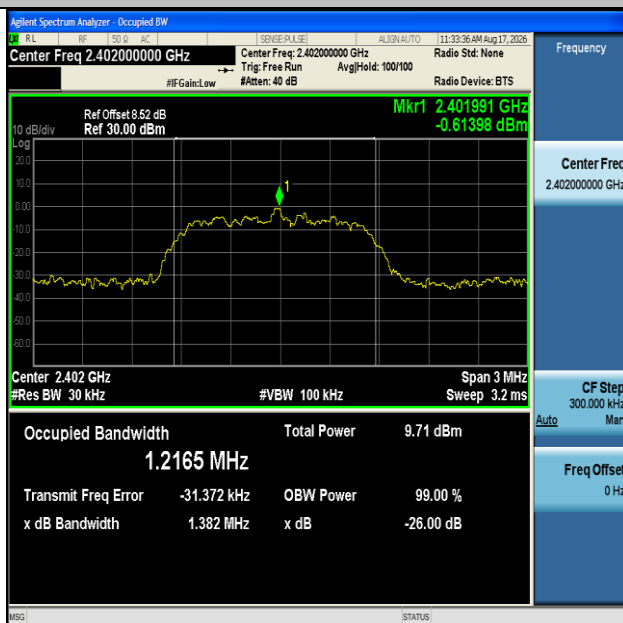


Test Graphs



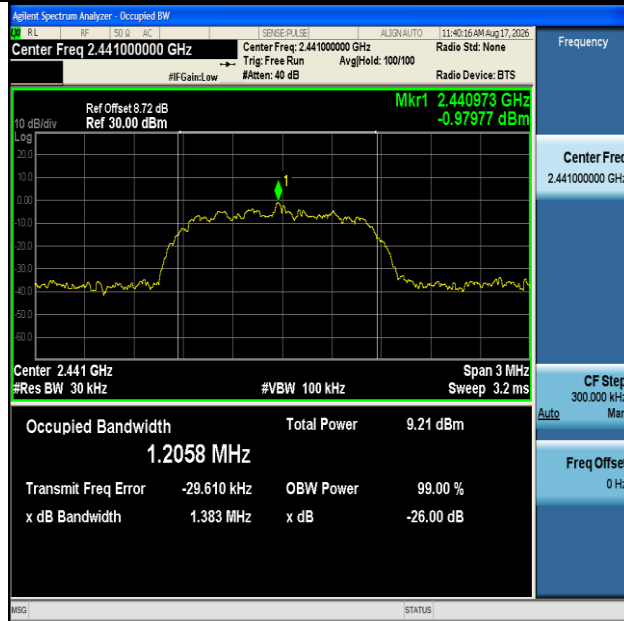


DH5-Ant1-2480



2DH5-Ant1-2402



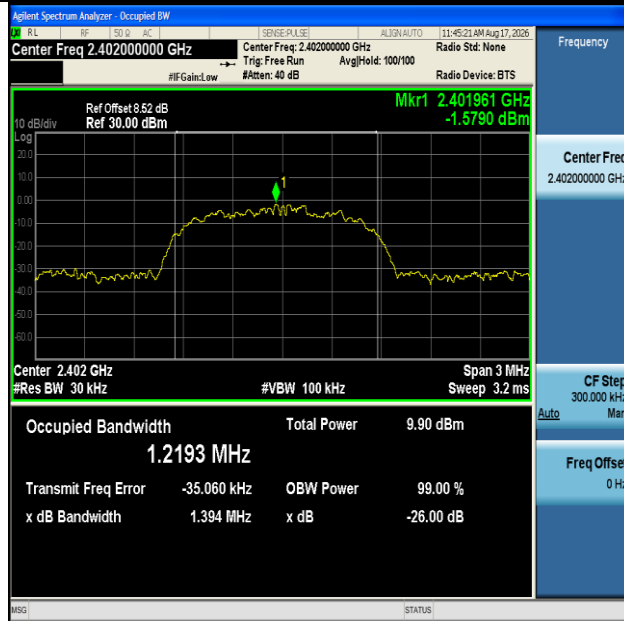


2DH5-Ant1-2441

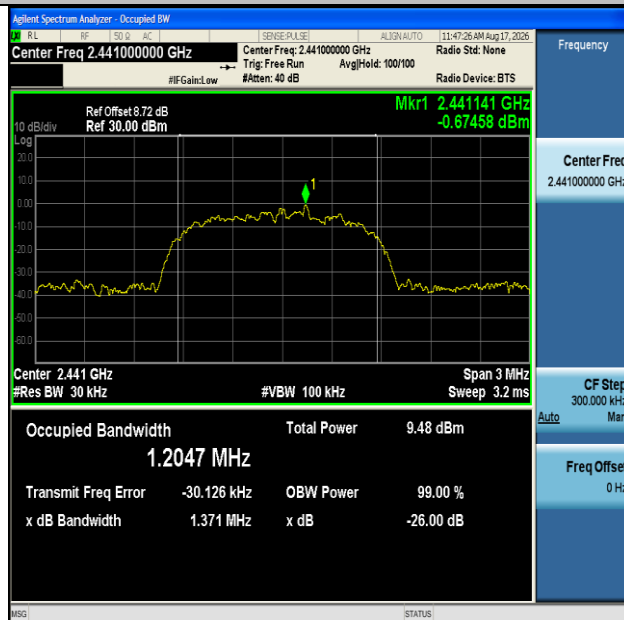


2DH5-Ant1-2480



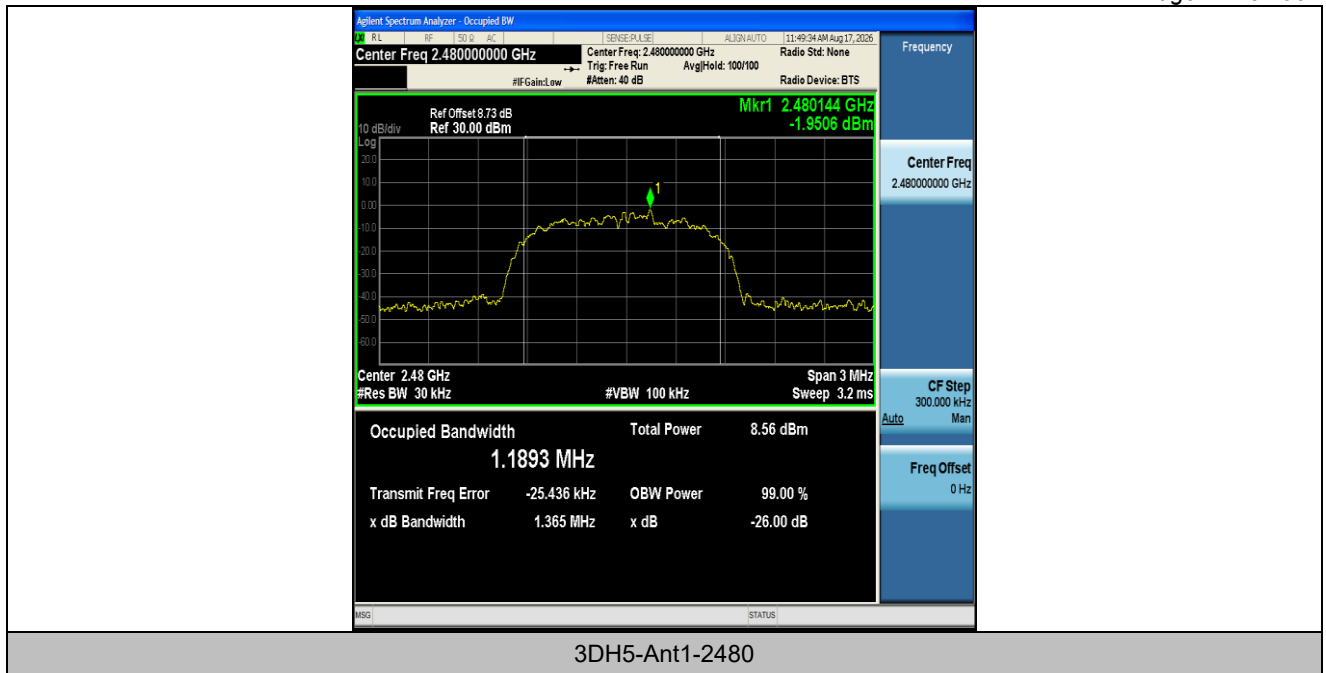


3DH5-Ant1-2402



3DH5-Ant1-2441







Appendix C: Maximum peak conducted output power

Test Result

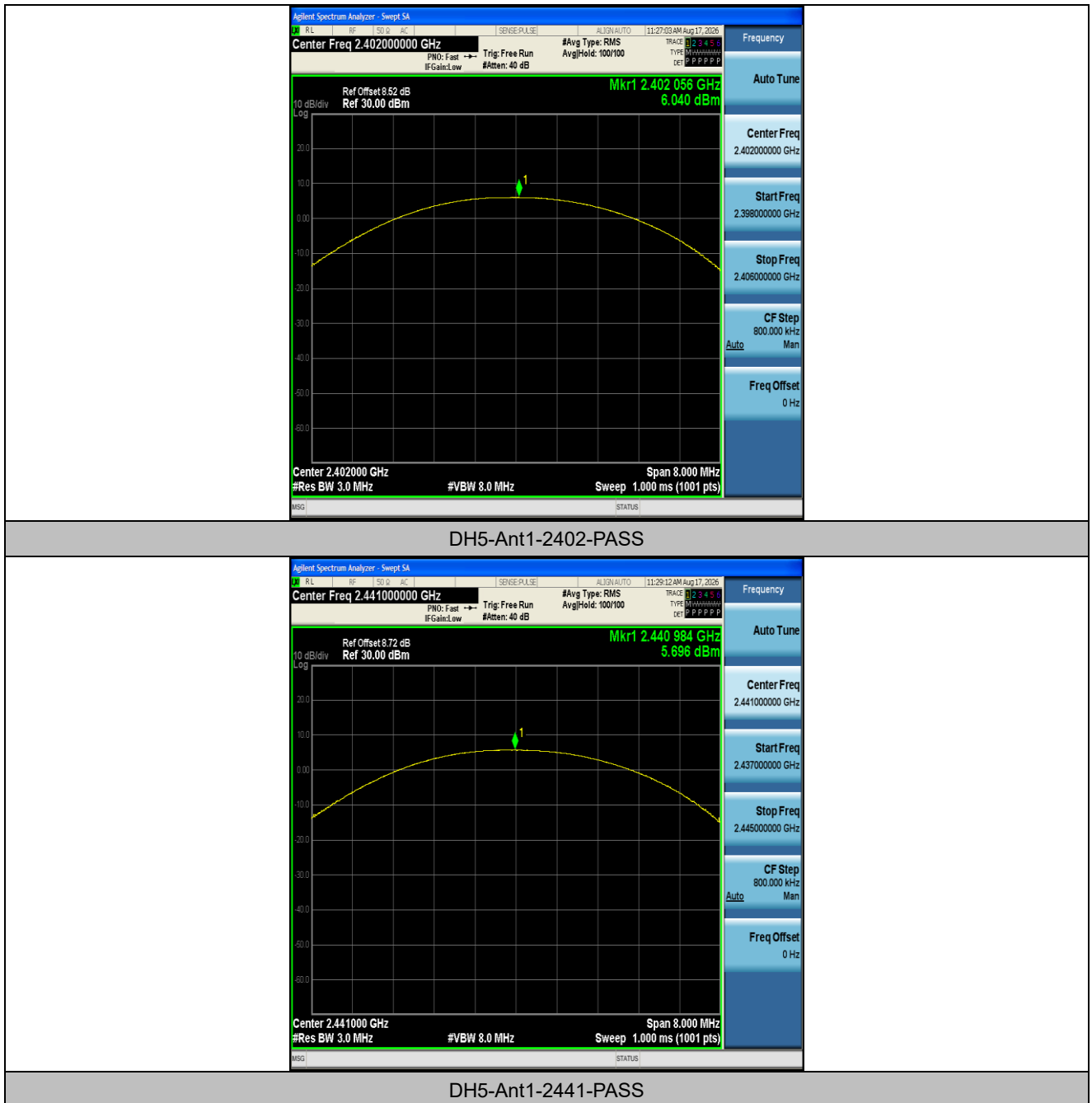
Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power [dBm]	Conducted Limit [dBm]	Verdict
DH5	Ant1	2402	6.04	≤30	PASS
DH5	Ant1	2441	5.70	≤30	PASS
DH5	Ant1	2480	4.72	≤30	PASS
2DH5	Ant1	2402	5.40	≤20.97	PASS
2DH5	Ant1	2441	5.21	≤20.97	PASS
2DH5	Ant1	2480	4.14	≤20.97	PASS
3DH5	Ant1	2402	5.67	≤20.97	PASS
3DH5	Ant1	2441	5.47	≤20.97	PASS
3DH5	Ant1	2480	4.47	≤20.97	PASS

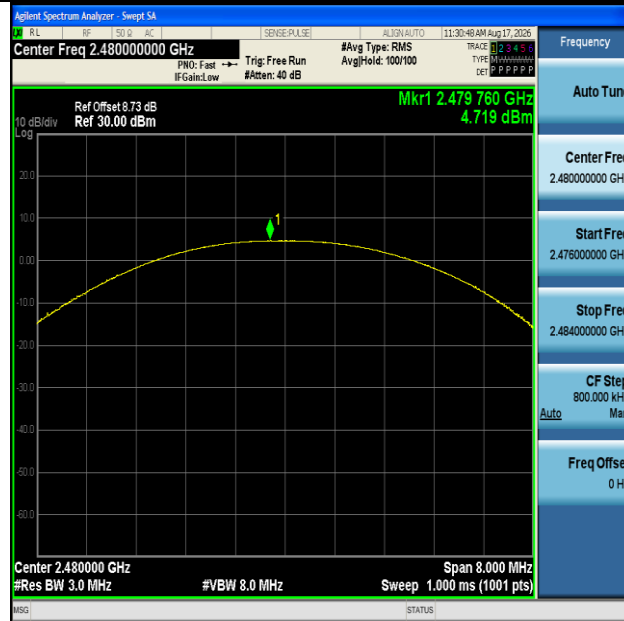
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



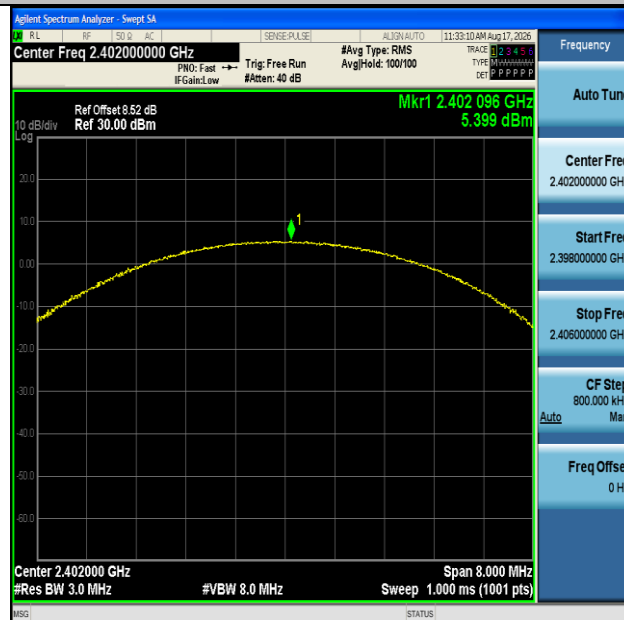


Test Graphs



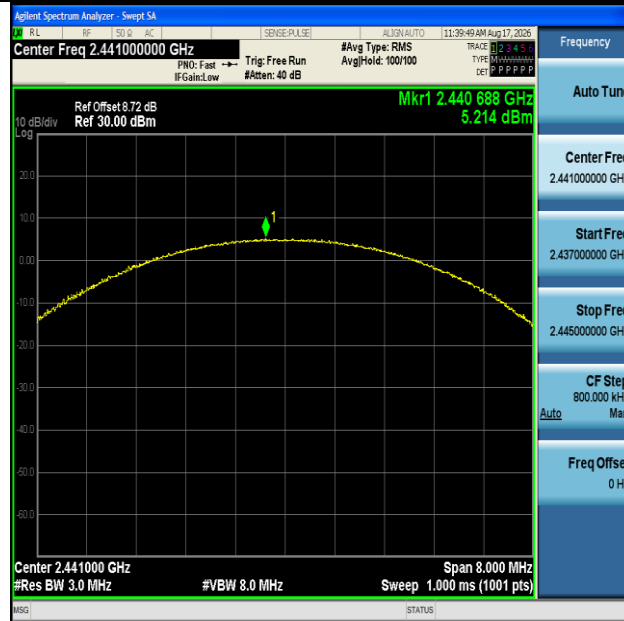


DH5-Ant1-2480-PASS

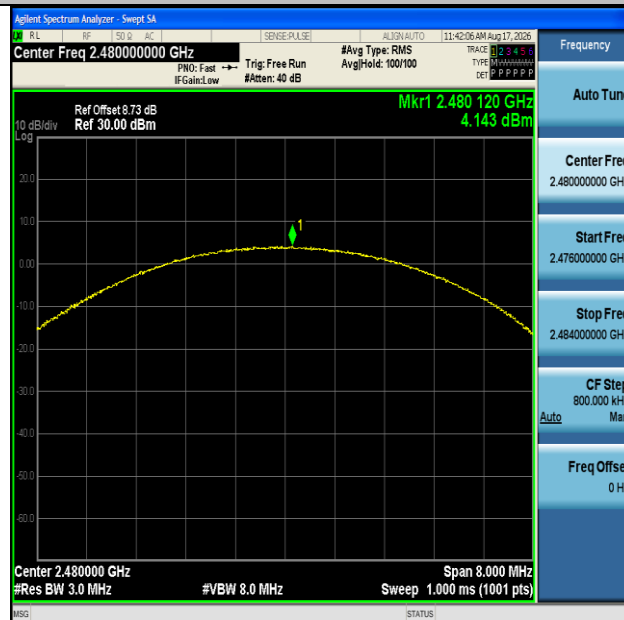


2DH5-Ant1-2402-PASS



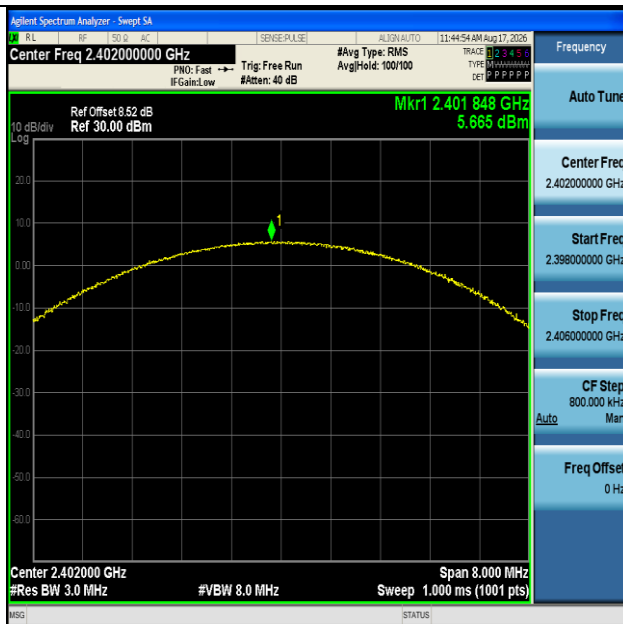


2DH5-Ant1-2441-PASS

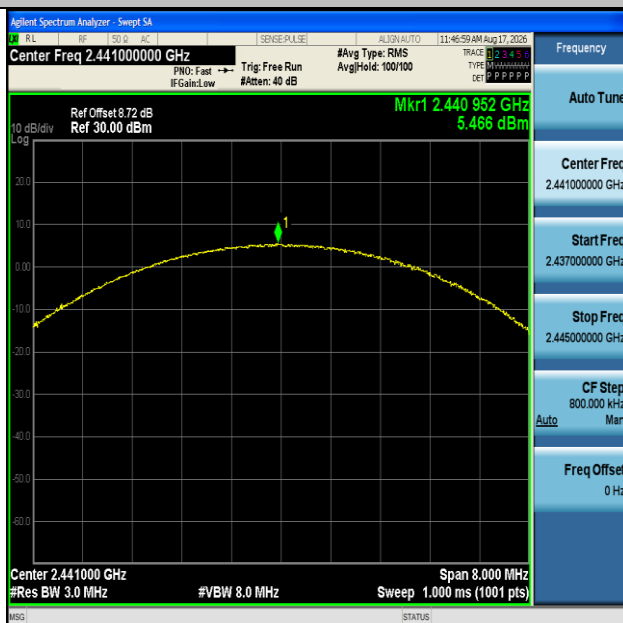


2DH5-Ant1-2480-PASS



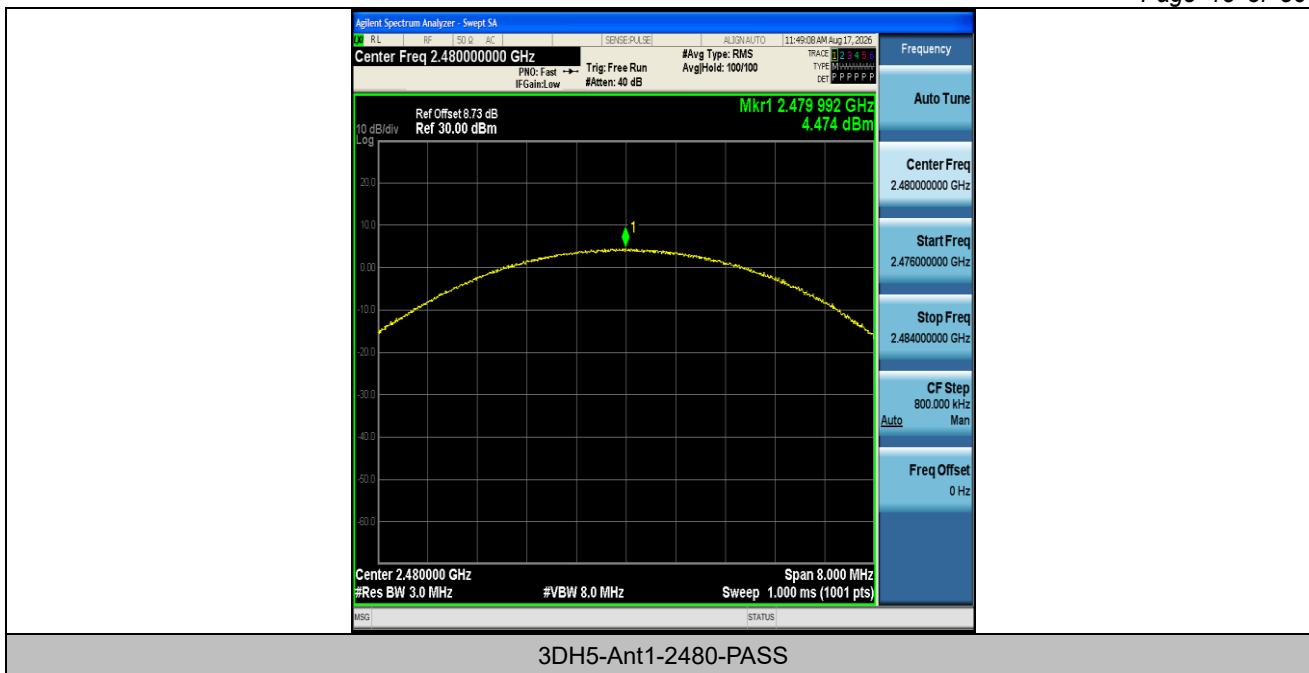


3DH5-Ant1-2402-PASS



3DH5-Ant1-2441-PASS







Appendix D: Carrier frequency separation

Test Result

Test Mode	Antenna	Frequency [MHz]	Result [MHz]	Limit [MHz]	Verdict
DH5	Ant1	Hop	0.992	≥ 0.957	PASS
2DH5	Ant1	Hop	1.026	≥ 0.890	PASS
3DH5	Ant1	Hop	0.998	≥ 0.884	PASS

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





Test Graphs





Appendix E: Time of occupancy

Test Result

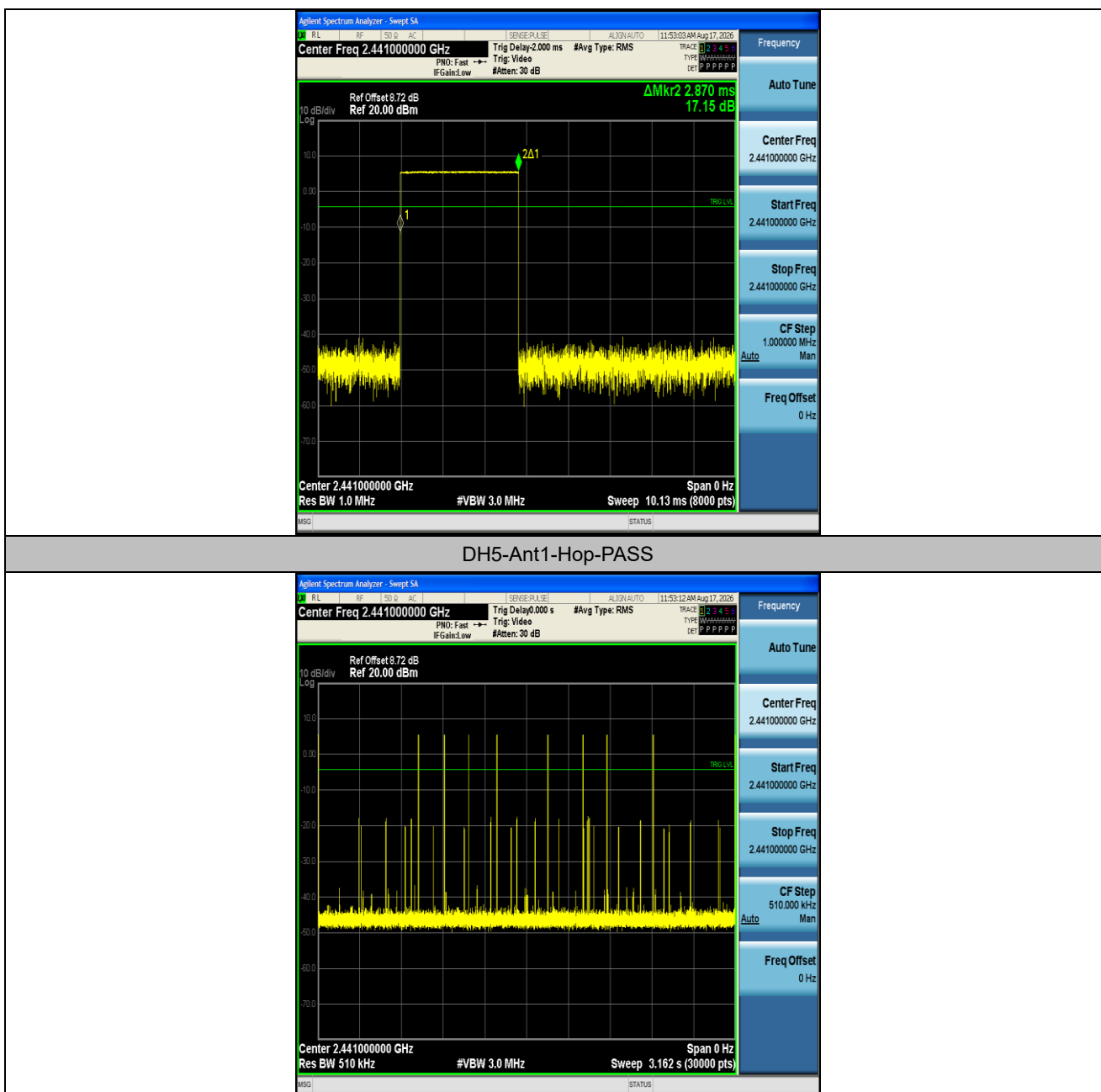
Test Mode	Antenna	Frequency [MHz]	Burst Width [ms]	TotalHops [Num]	Result [s]	Limit [s]	Verdict
DH5	Ant1	Hop	2.870	100	0.287	≤0.4	PASS
2DH5	Ant1	Hop	2.877	60	0.173	≤0.4	PASS
3DH5	Ant1	Hop	2.879	90	0.259	≤0.4	PASS

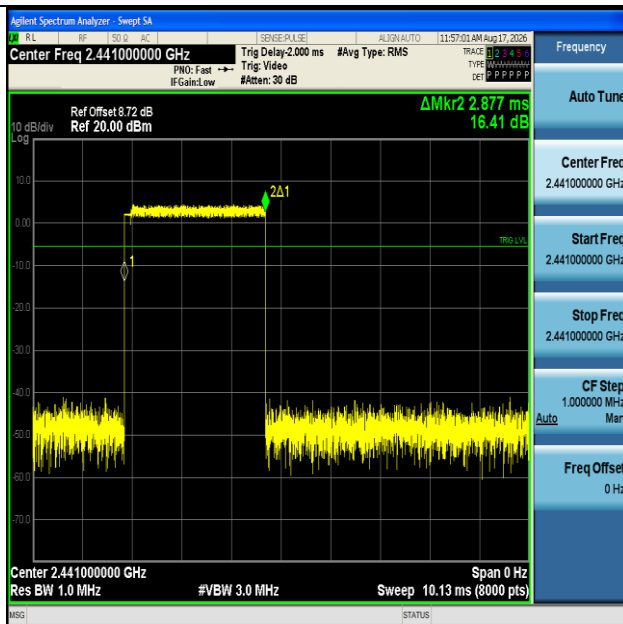
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



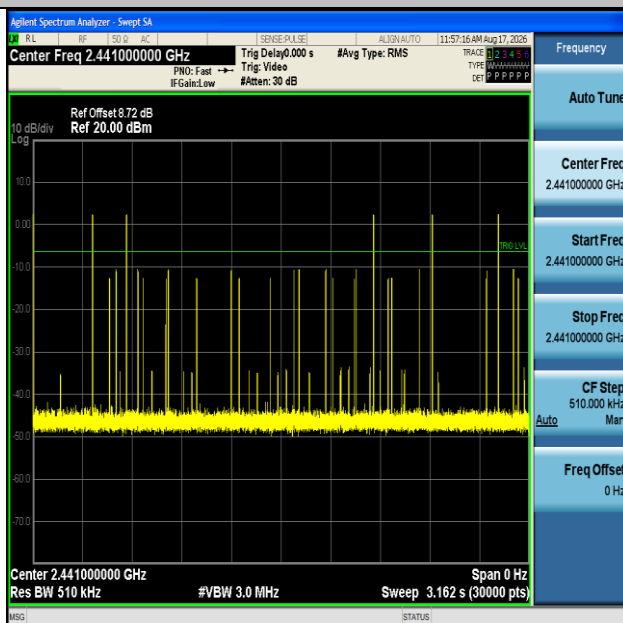


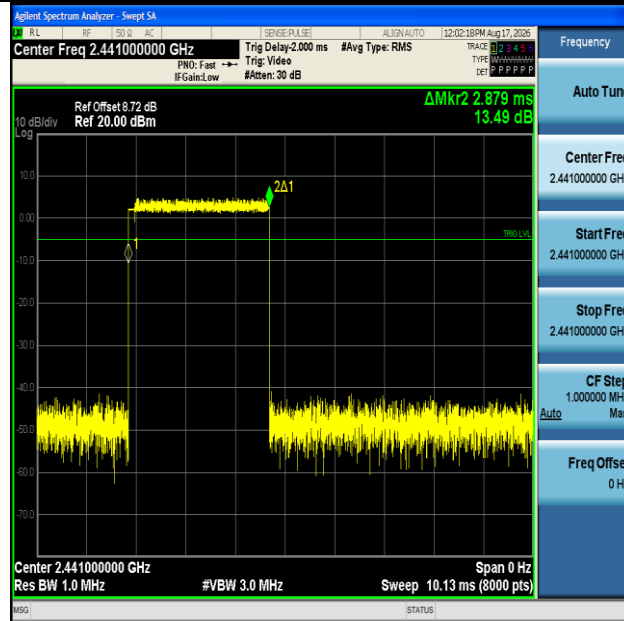
Test Graphs



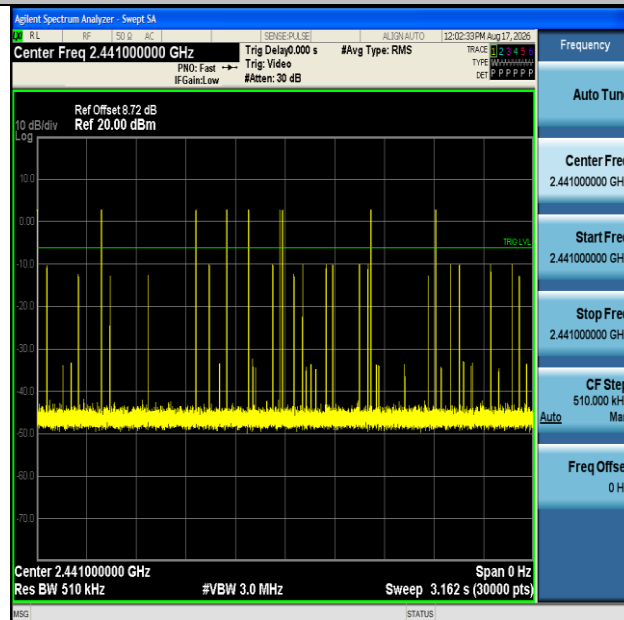


2DH5-Ant1-Hop-PASS





3DH5-Ant1-Hop-PASS





Appendix F: Number of hopping channels

Test Result

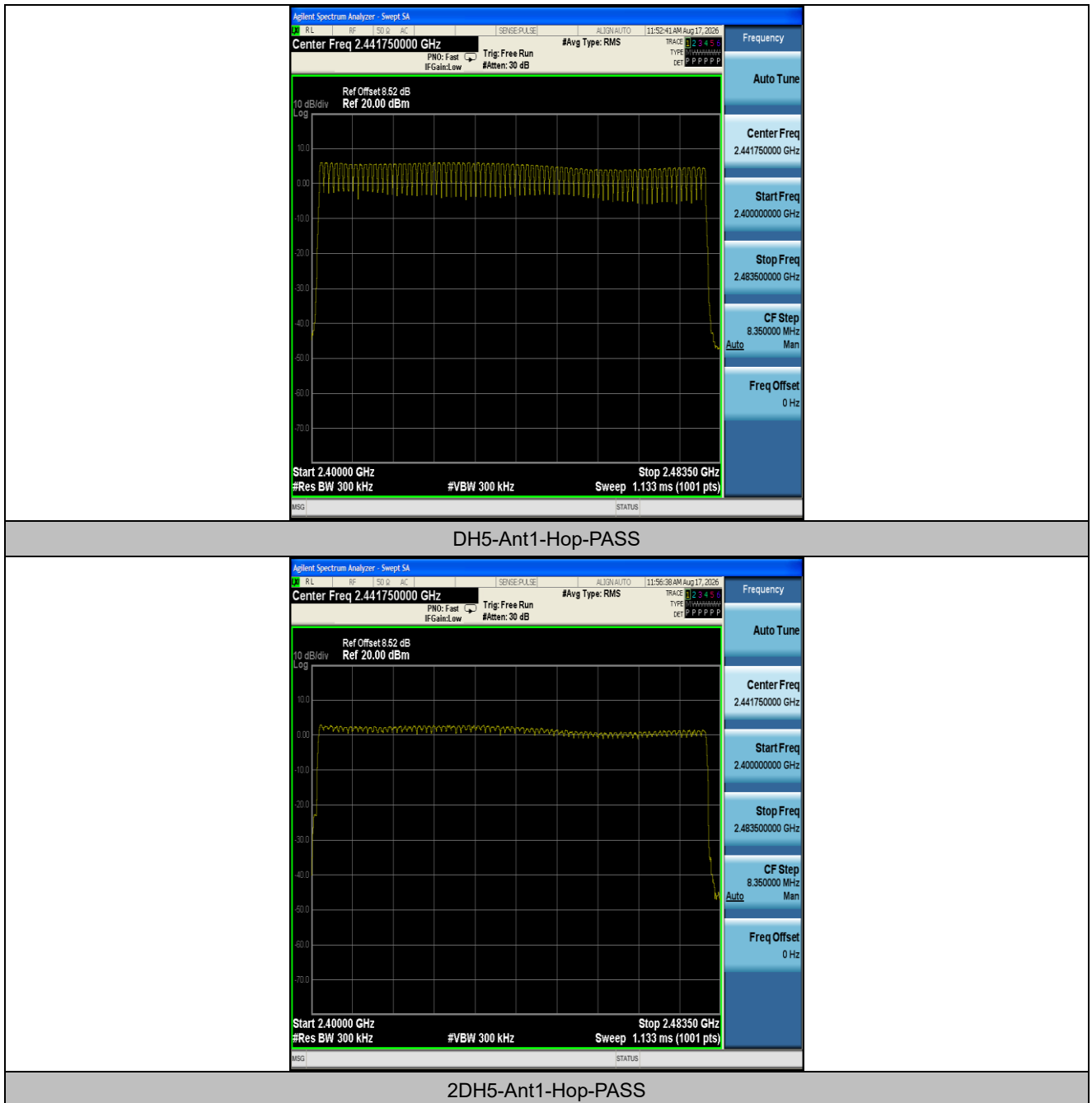
Test Mode	Antenna	Frequency [MHz]	Result [Num]	Limit [Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

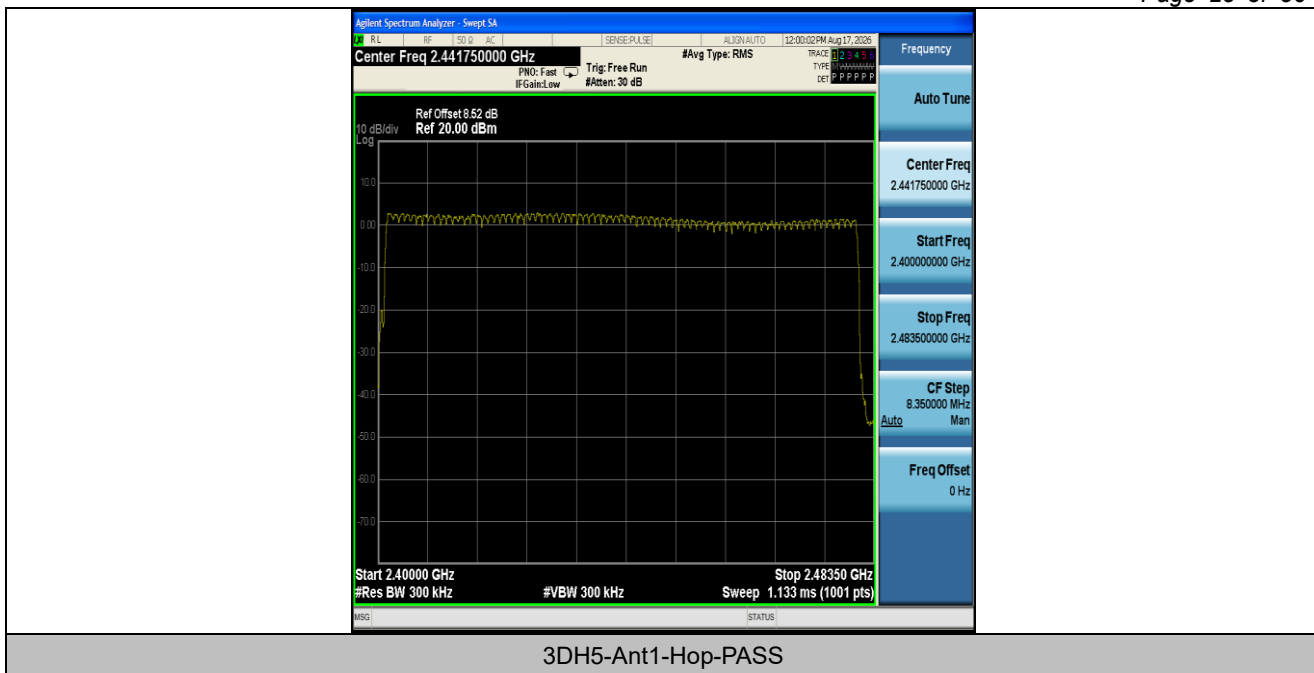
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)





Test Graphs







Appendix G: Band edge measurements

Test Result

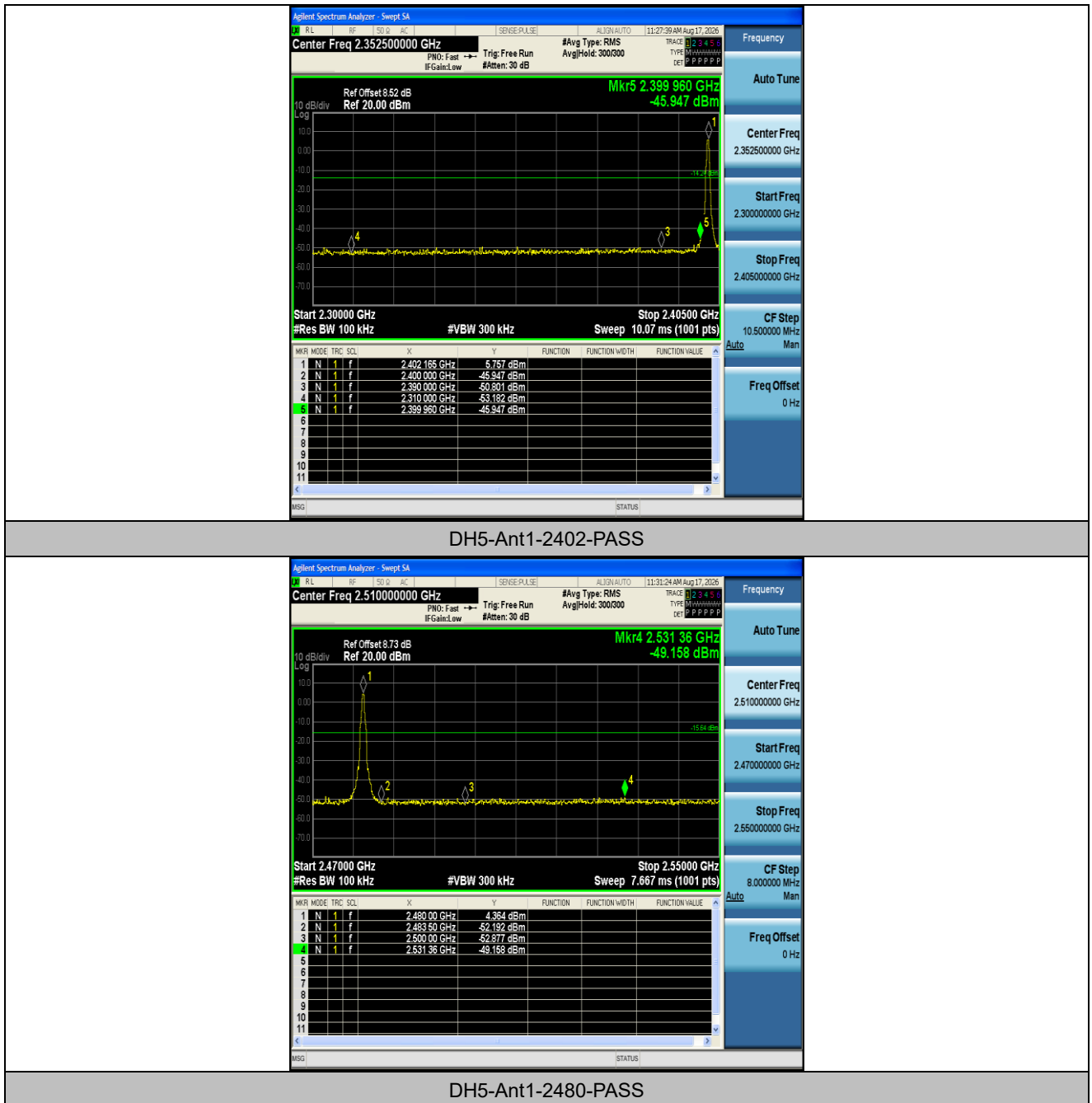
Test Mode	Antenna	Ch.Name	Frequency [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	5.76	-45.95	≤-14.24	PASS
DH5	Ant1	High	2480	4.36	-49.16	≤-15.64	PASS
DH5	Ant1	Low	Hop_2402	5.13	-49.4	≤-14.87	PASS
DH5	Ant1	High	Hop_2480	4.38	-48.62	≤-15.62	PASS
2DH5	Ant1	Low	2402	2.56	-44.82	≤-17.44	PASS
2DH5	Ant1	High	2480	1.23	-48.72	≤-18.77	PASS
2DH5	Ant1	Low	Hop_2402	0.64	-48.95	≤-19.36	PASS
2DH5	Ant1	High	Hop_2480	-0.54	-48.04	≤-20.54	PASS
3DH5	Ant1	Low	2402	2.08	-42.43	≤-17.92	PASS
3DH5	Ant1	High	2480	1.16	-48.93	≤-18.84	PASS
3DH5	Ant1	Low	Hop_2402	0.98	-46.57	≤-19.02	PASS
3DH5	Ant1	High	Hop_2480	-0.04	-48.32	≤-20.04	PASS

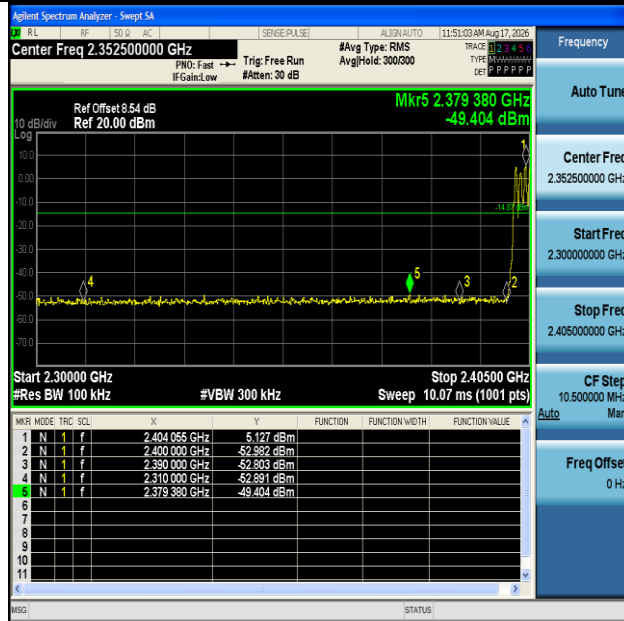
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



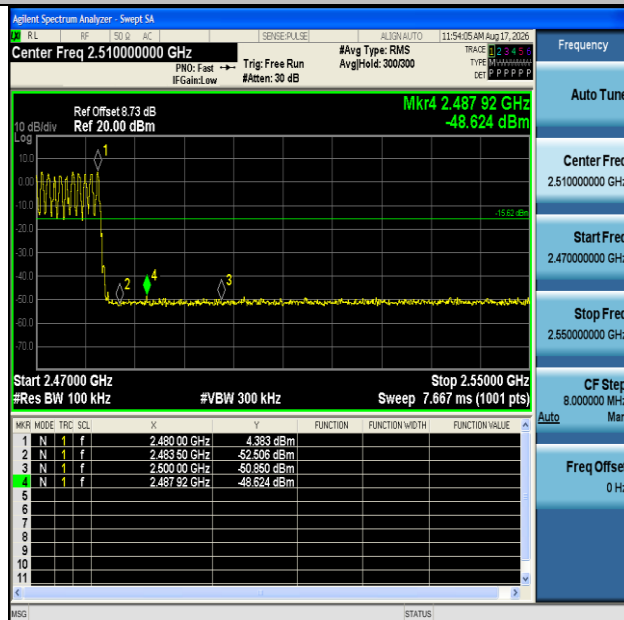


Test Graphs



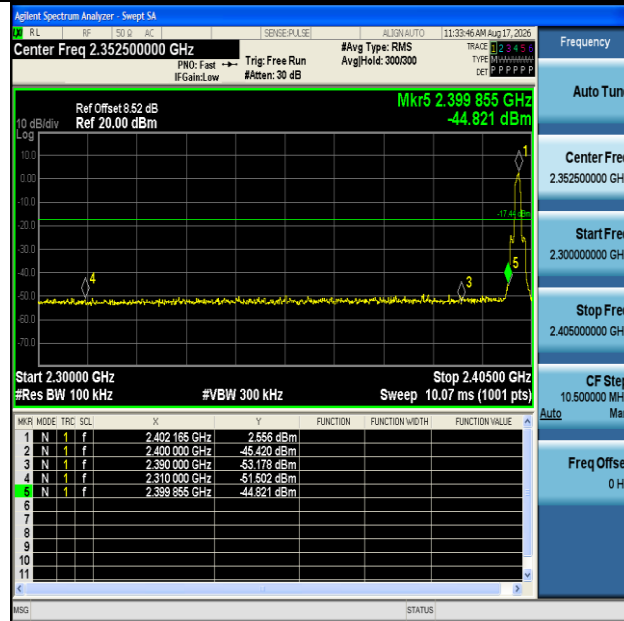


DH5-Ant1-Hop_2402-PASS

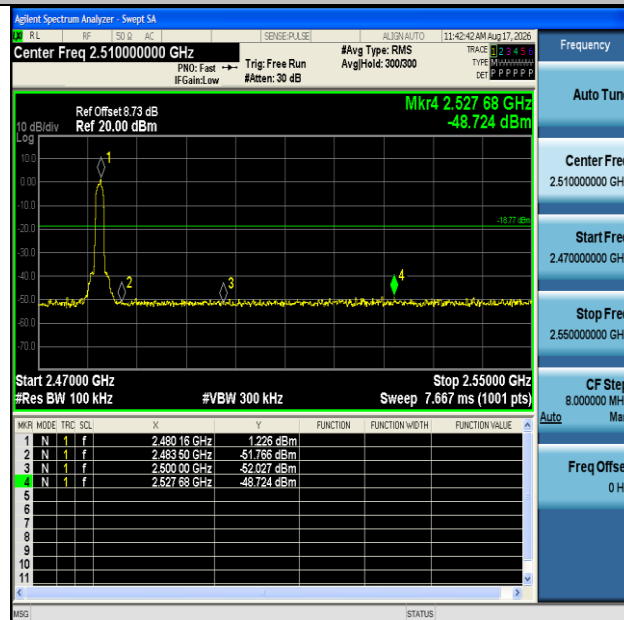


DH5-Ant1-Hop_2480-PASS



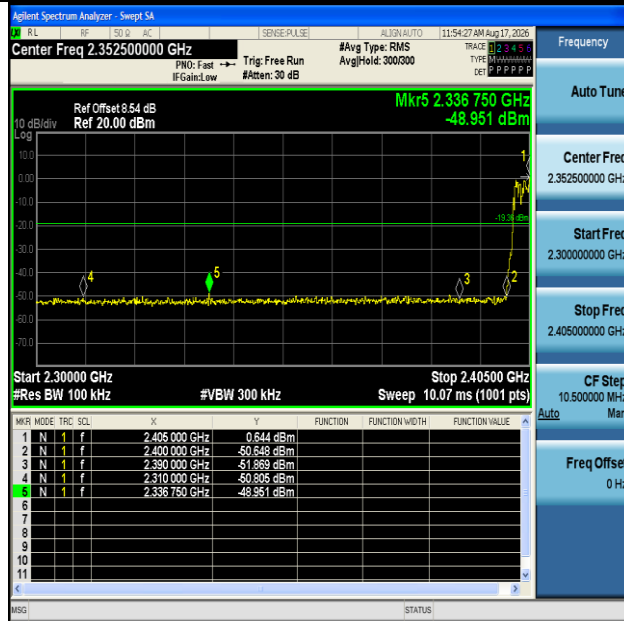


2DH5-Ant1-2402-PASS

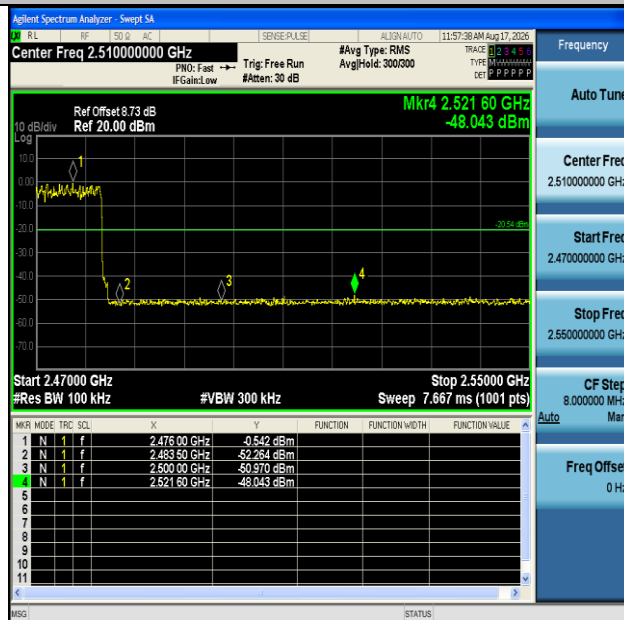


2DH5-Ant1-2480-PASS



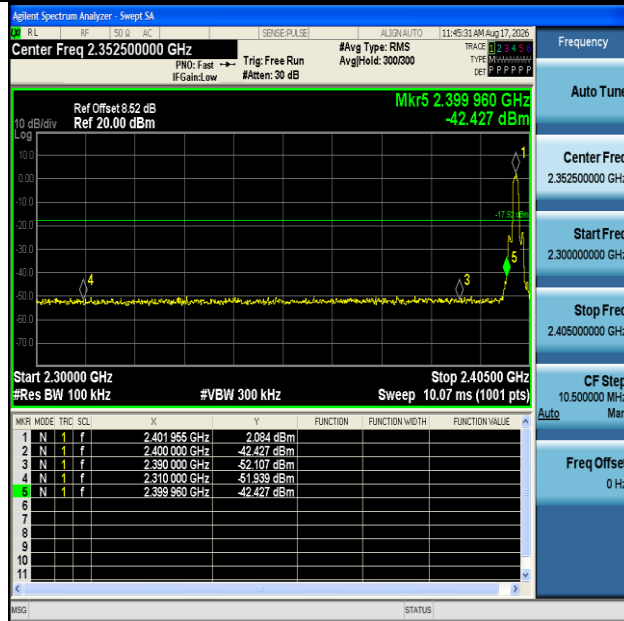


2DH5-Ant1-Hop_2402-PASS

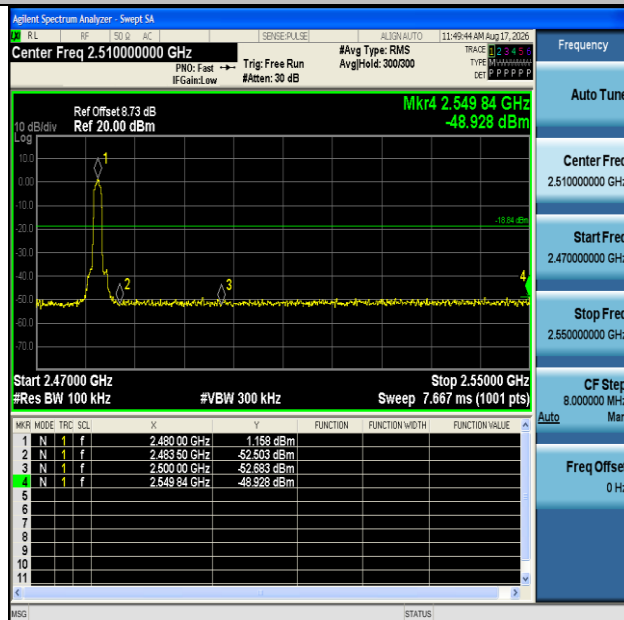


2DH5-Ant1-Hop_2480-PASS



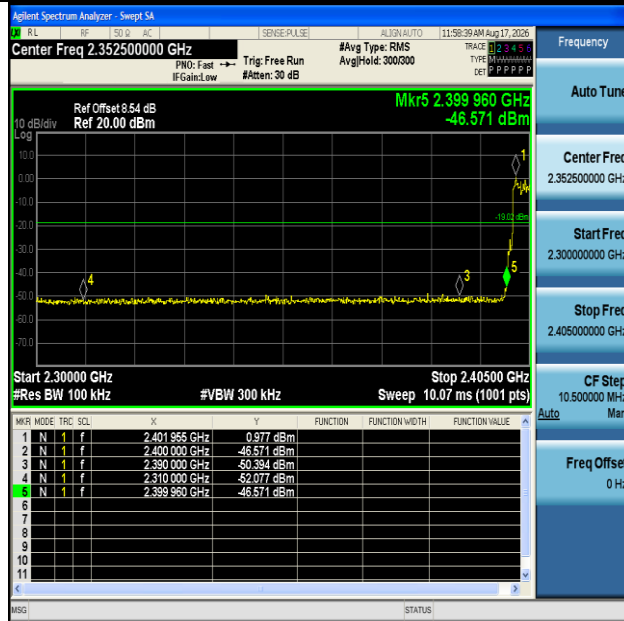


3DH5-Ant1-2402-PASS

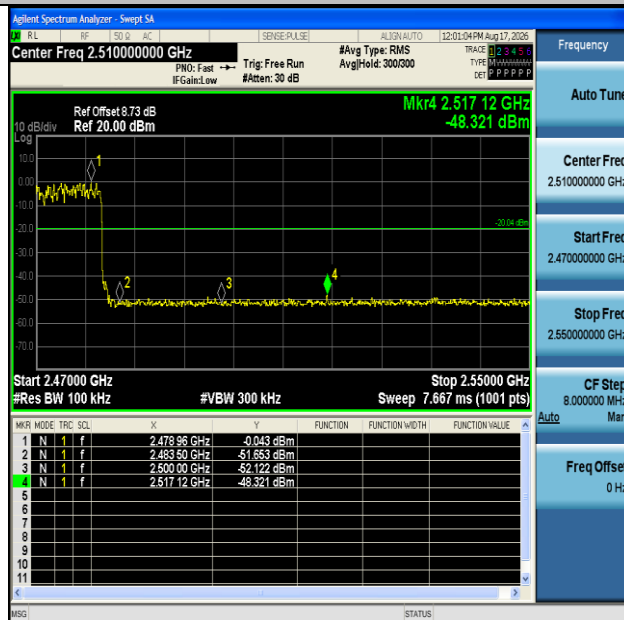


3DH5-Ant1-2480-PASS





3DH5-Ant1-Hop_2402-PASS



3DH5-Ant1-Hop_2480-PASS





Appendix H: Conducted Spurious Emission

Test Result

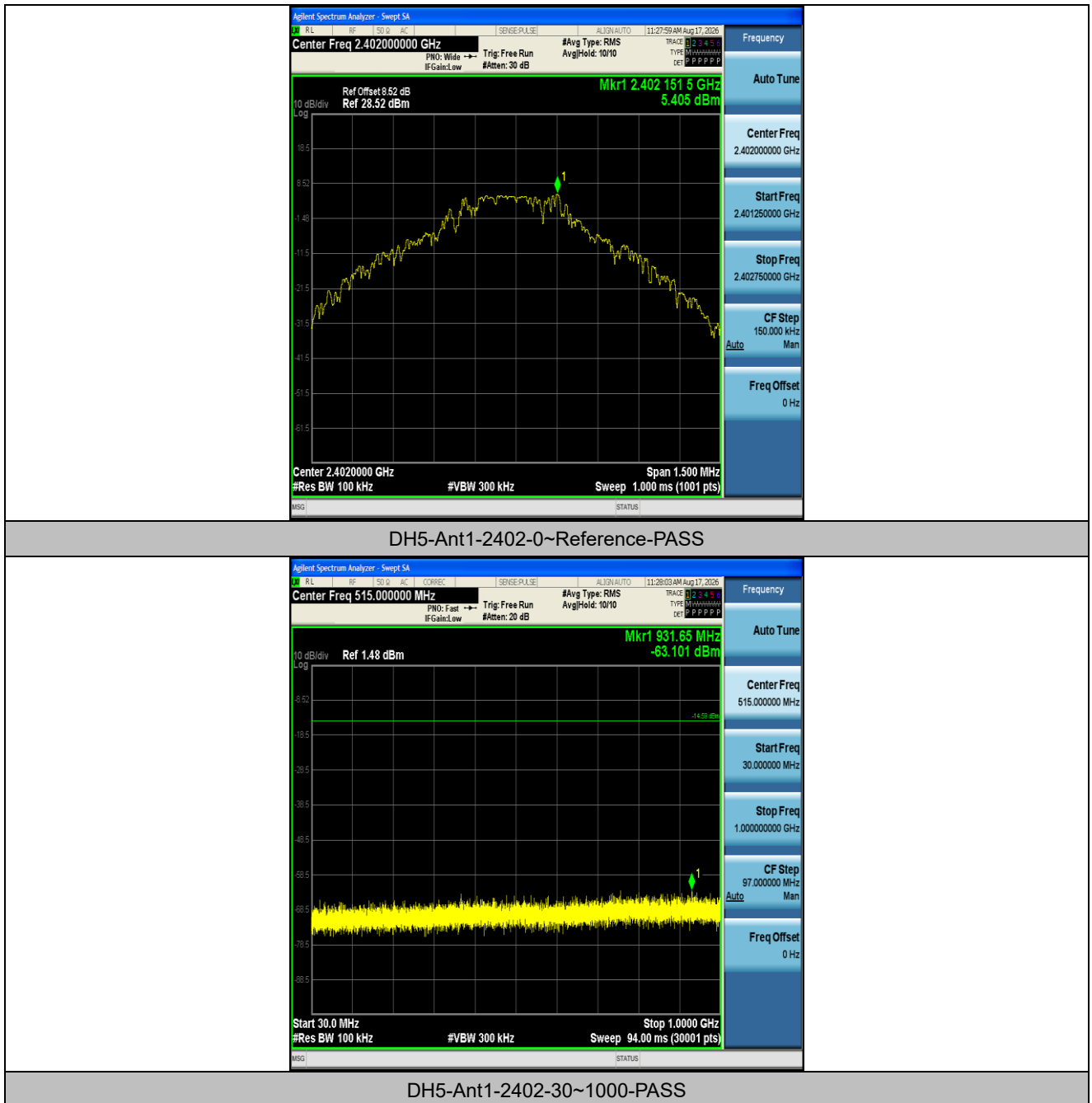
Test Mode	Antenna	Frequency [MHz]	Freq. Range [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	0~Reference	5.41	5.41	---	PASS
DH5	Ant1	2402	30~1000	5.41	-63.1	≤-14.59	PASS
DH5	Ant1	2402	1000~26500	5.41	-37.71	≤-14.59	PASS
DH5	Ant1	2441	0~Reference	4.88	4.88	---	PASS
DH5	Ant1	2441	30~1000	4.88	-62.12	≤-15.12	PASS
DH5	Ant1	2441	1000~26500	4.88	-38.33	≤-15.12	PASS
DH5	Ant1	2480	0~Reference	3.85	3.85	---	PASS
DH5	Ant1	2480	30~1000	3.85	-63.39	≤-16.15	PASS
DH5	Ant1	2480	1000~26500	3.85	-37.1	≤-16.15	PASS
2DH5	Ant1	2402	0~Reference	0.16	0.16	---	PASS
2DH5	Ant1	2402	30~1000	0.16	-63.05	≤-19.84	PASS
2DH5	Ant1	2402	1000~26500	0.16	-38.01	≤-19.84	PASS
2DH5	Ant1	2441	0~Reference	2.04	2.04	---	PASS
2DH5	Ant1	2441	30~1000	2.04	-62.27	≤-17.96	PASS
2DH5	Ant1	2441	1000~26500	2.04	-38.22	≤-17.96	PASS
2DH5	Ant1	2480	0~Reference	-0.20	-0.20	---	PASS
2DH5	Ant1	2480	30~1000	-0.20	-62.95	≤-20.2	PASS
2DH5	Ant1	2480	1000~26500	-0.20	-38.34	≤-20.2	PASS
3DH5	Ant1	2402	0~Reference	0.33	0.33	---	PASS
3DH5	Ant1	2402	30~1000	0.33	-63.25	≤-19.67	PASS
3DH5	Ant1	2402	1000~26500	0.33	-37.52	≤-19.67	PASS
3DH5	Ant1	2441	0~Reference	0.19	0.19	---	PASS
3DH5	Ant1	2441	30~1000	0.19	-62.47	≤-19.81	PASS
3DH5	Ant1	2441	1000~26500	0.19	-37.87	≤-19.81	PASS
3DH5	Ant1	2480	0~Reference	1.14	1.14	---	PASS
3DH5	Ant1	2480	30~1000	1.14	-63.19	≤-18.86	PASS
3DH5	Ant1	2480	1000~26500	1.14	-37.36	≤-18.86	PASS

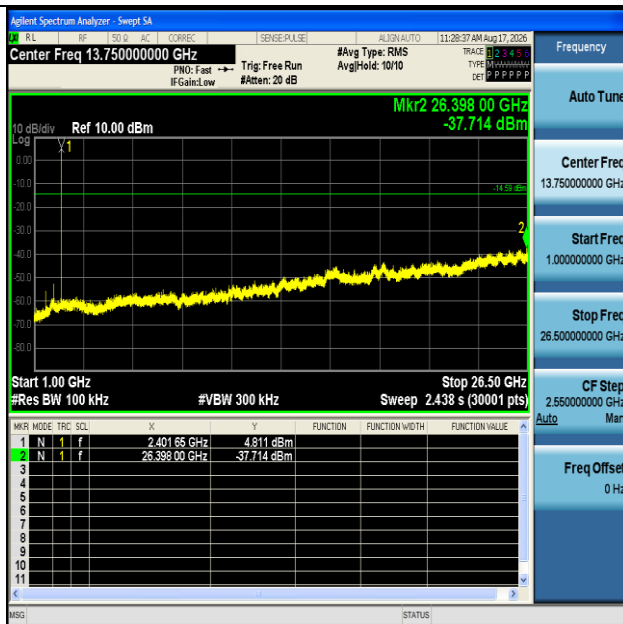
Note: offset(dB) in Reference test plots = cable loss(dB) + attenuator factor(dB); For spurious emissions plots from 30MHz to 26.5GHz, the cable loss and attenuator factors have been set in the 'Input Correction' of the Spectrum Analyzer during the test.



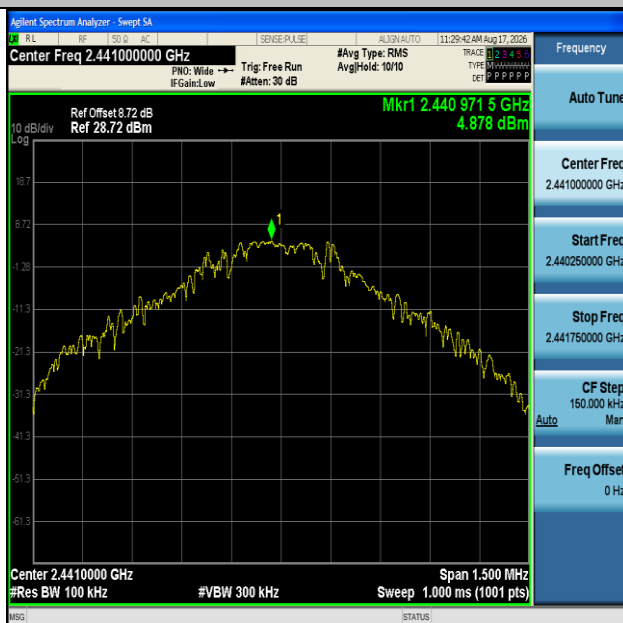


Test Graphs



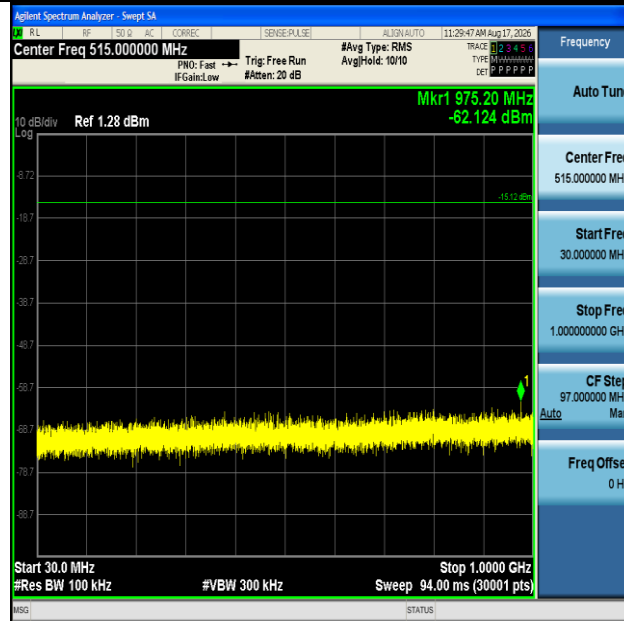


DH5-Ant1-2402-1000~26500-PASS

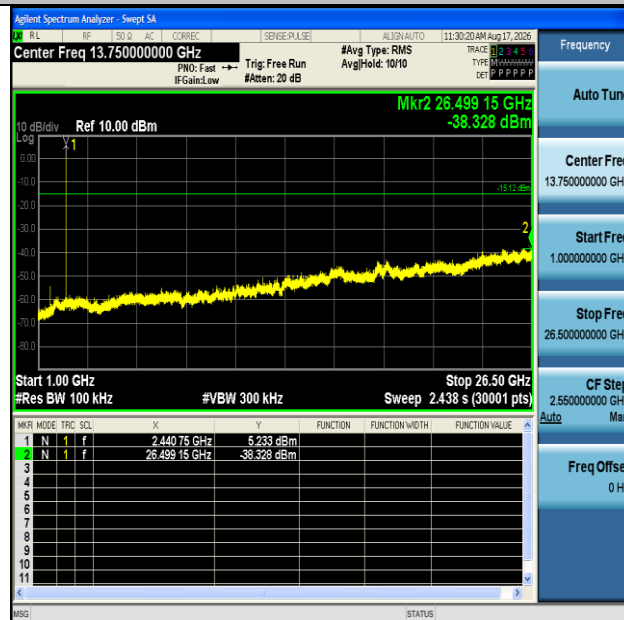


DH5-Ant1-2441-0~Reference-PASS



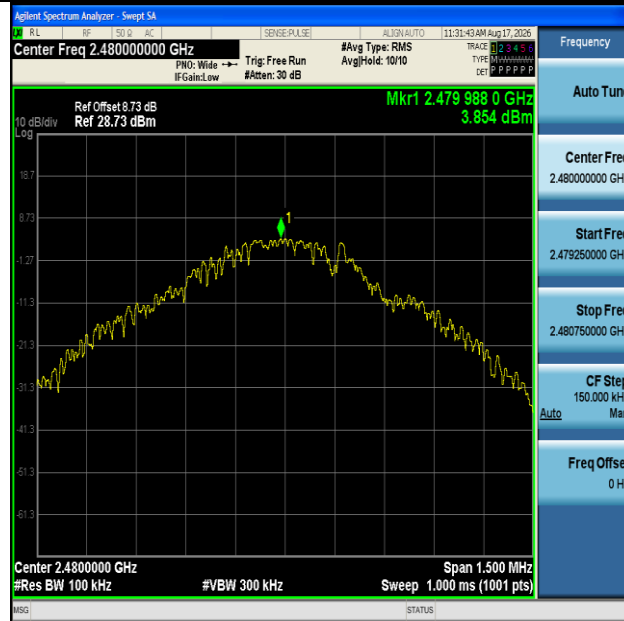


DH5-Ant1-2441-30~1000-PASS

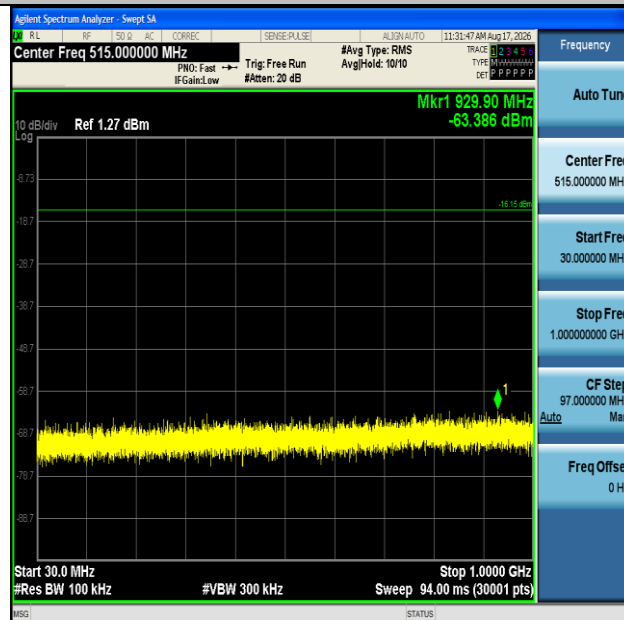


DH5-Ant1-2441-1000~26500-PASS



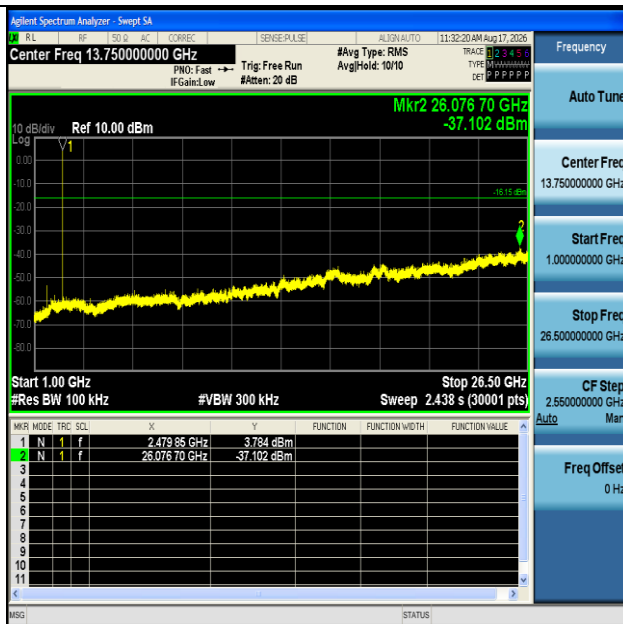


DH5-Ant1-2480-0~Reference-PASS

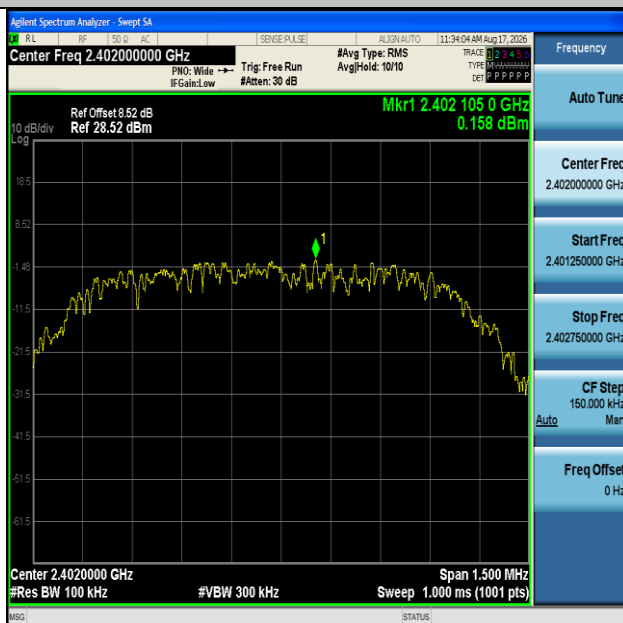


DH5-Ant1-2480-30~1000-PASS



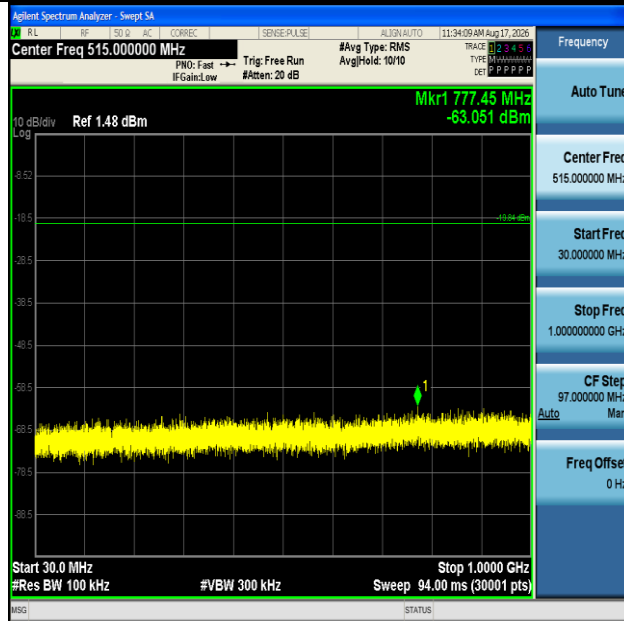


DH5-Ant1-2480-1000~26500-PASS

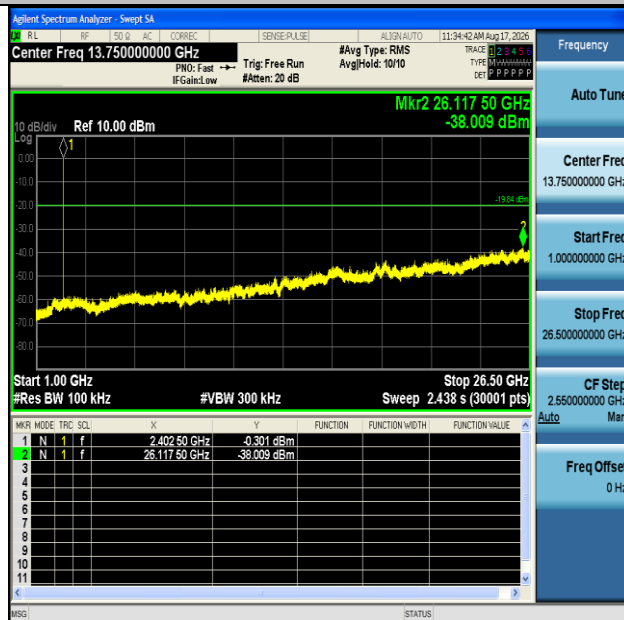


2DH5-Ant1-2402-0~Reference-PASS



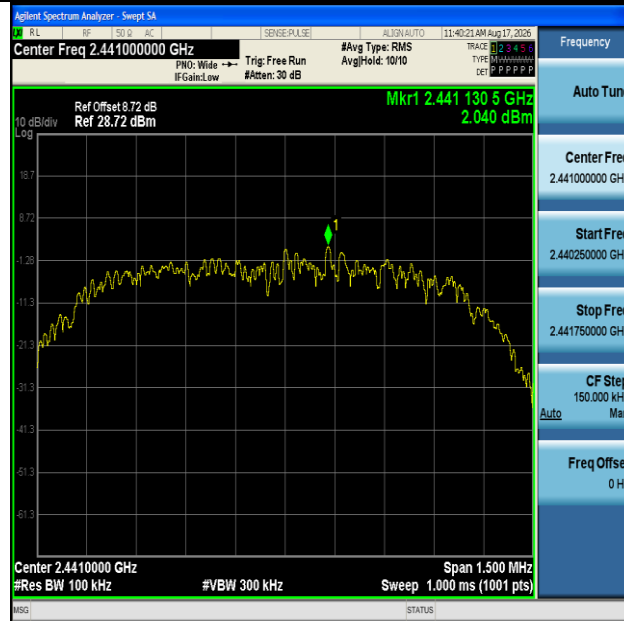


2DH5-Ant1-2402-30~1000-PASS

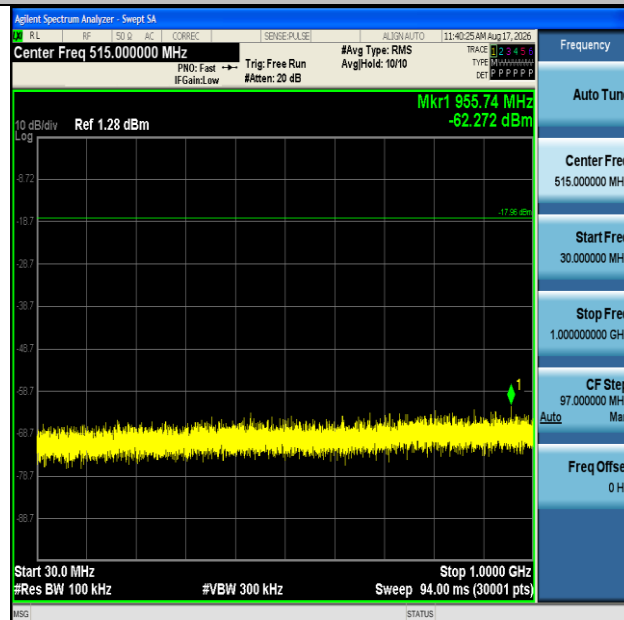


2DH5-Ant1-2402-1000~26500-PASS



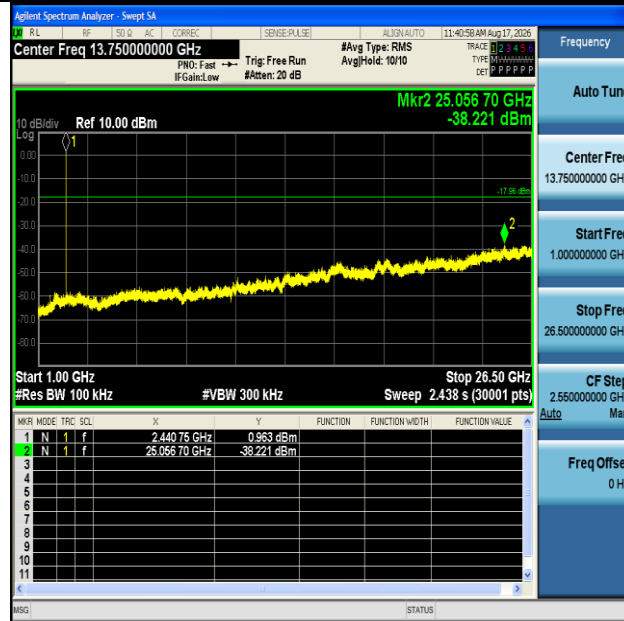


2DH5-Ant1-2441-0~Reference-PASS

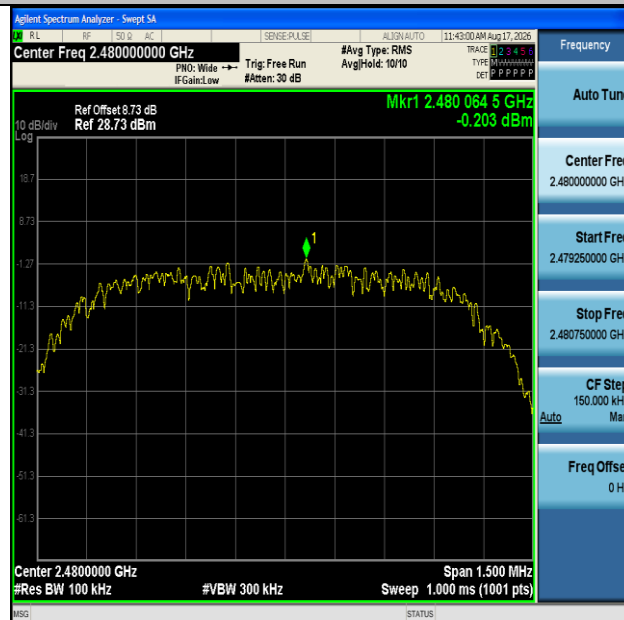


2DH5-Ant1-2441-30~1000-PASS



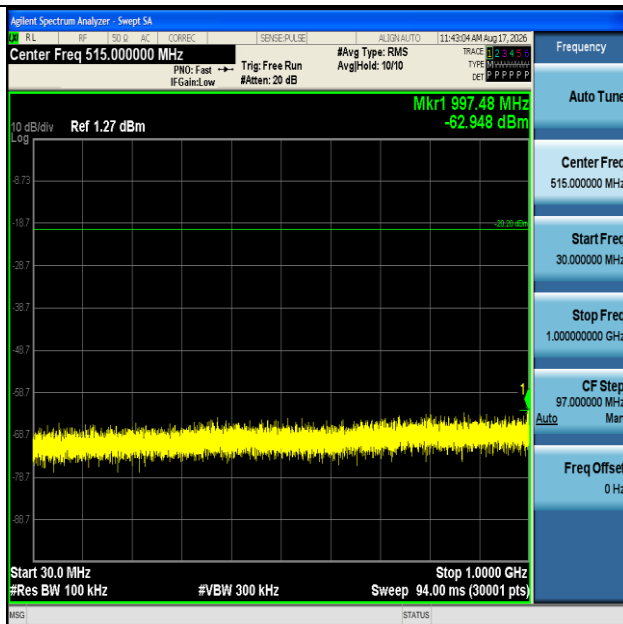


2DH5-Ant1-2441-1000~26500-PASS

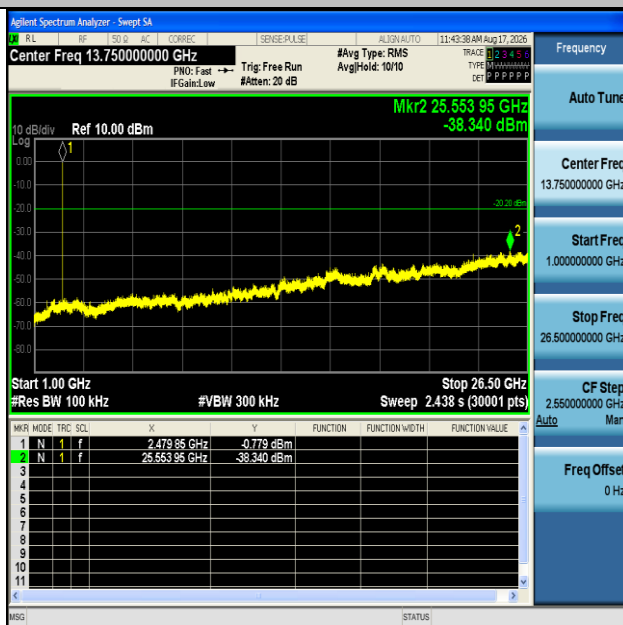


2DH5-Ant1-2480-0~Reference-PASS





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

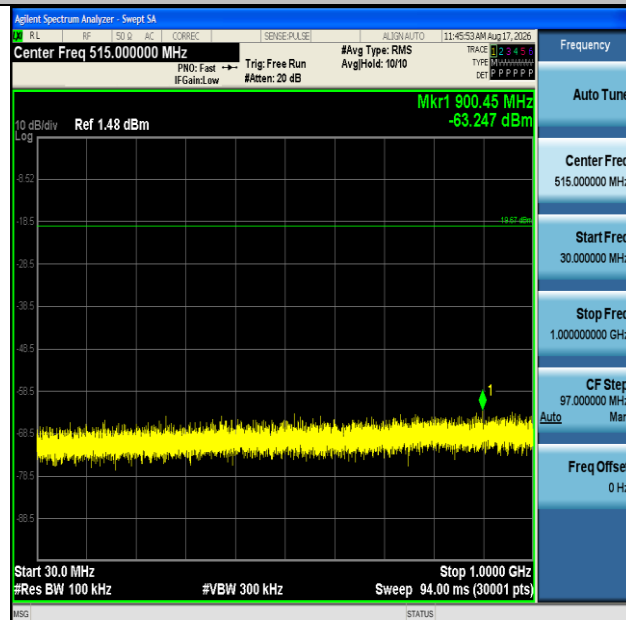


2DH5-Ant1-2480-1000~26500-PASS



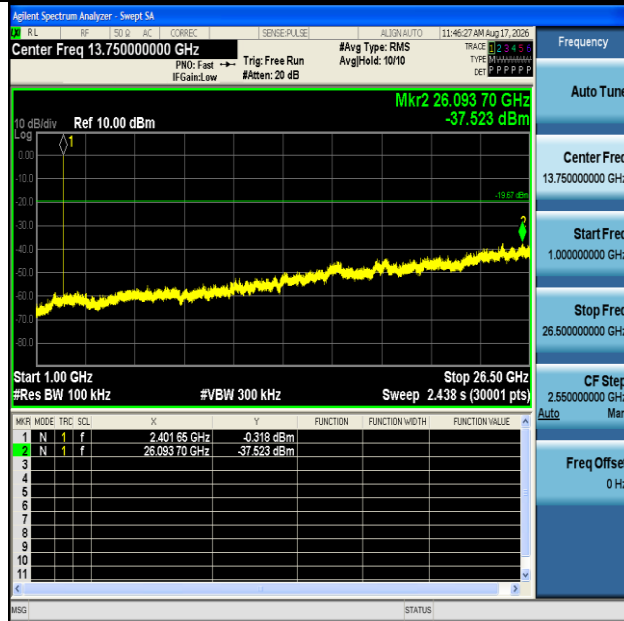


3DH5-Ant1-2402-0~Reference-PASS



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



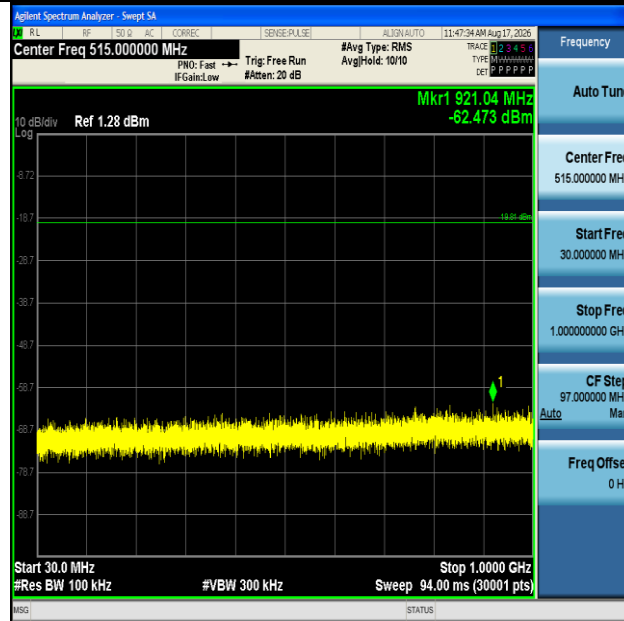


3DH5-Ant1-2402-1000~26500-PASS



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





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

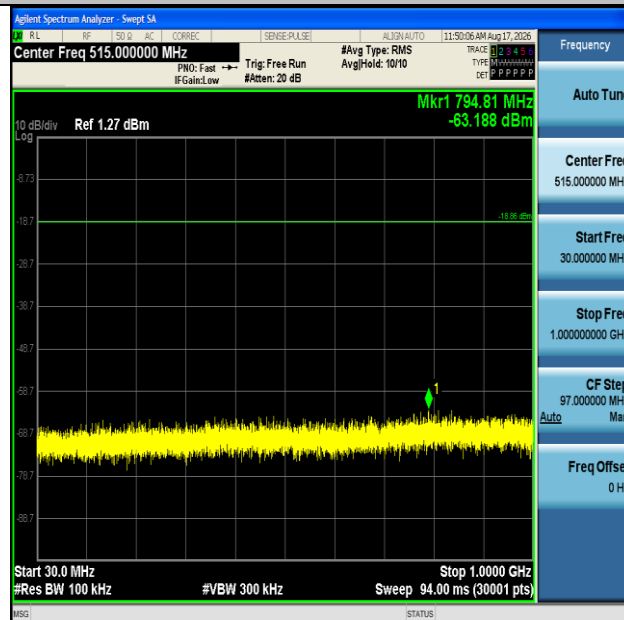


3DH5-Ant1-2441-1000~26500-PASS



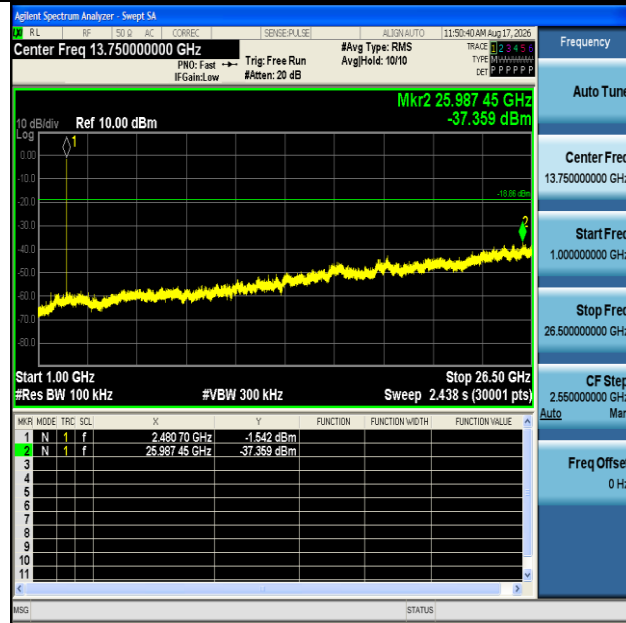


3DH5-Ant1-2480-0~Reference-PASS



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





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





Appendix I: Duty Cycle

Test Result

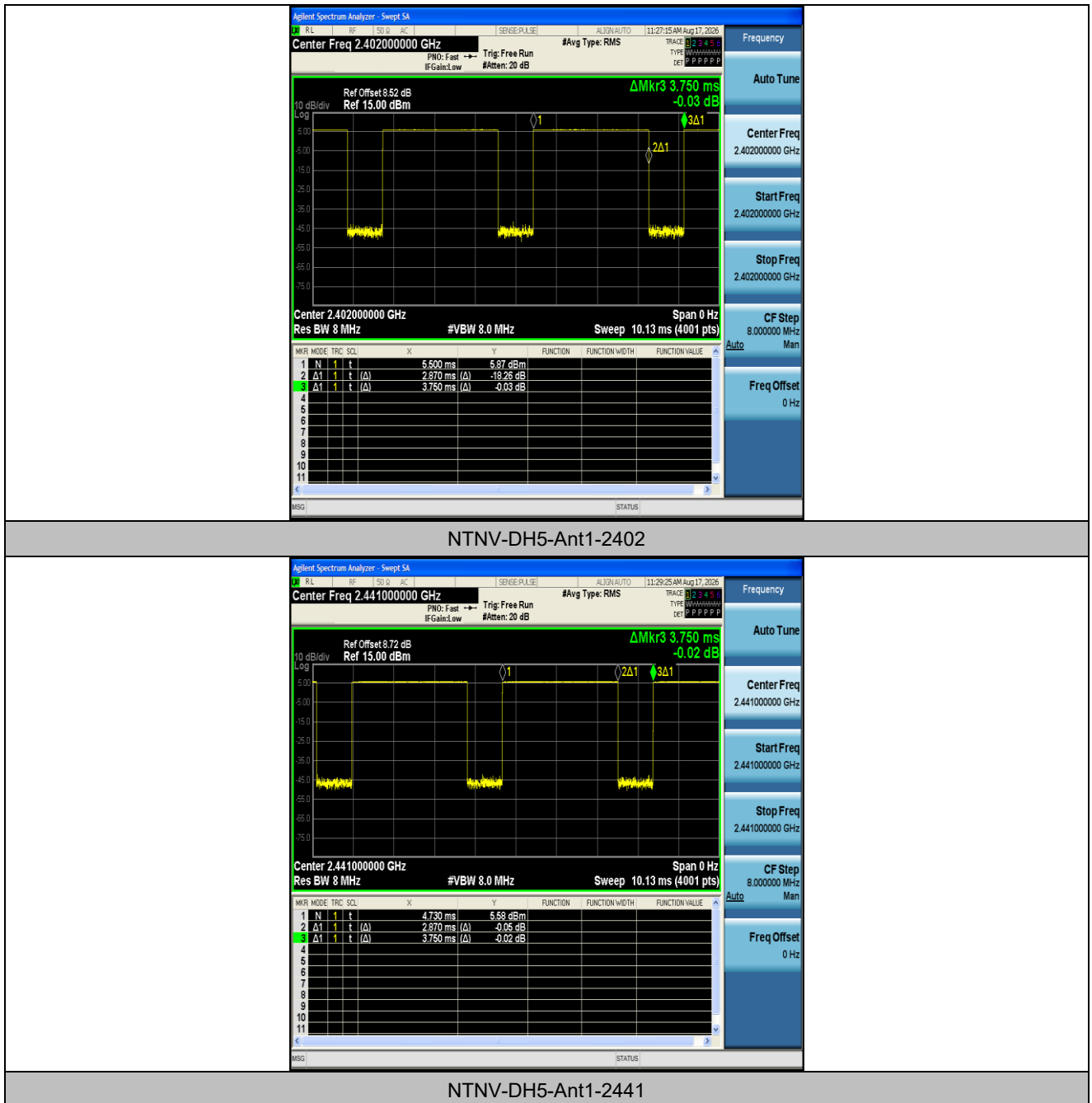
Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor [dB]
DH5	Ant1	2402	2.87	3.75	76.53	1.16
DH5	Ant1	2441	2.87	3.75	76.53	1.16
DH5	Ant1	2480	2.87	3.75	76.53	1.16
2DH5	Ant1	2402	2.88	3.75	76.80	1.15
2DH5	Ant1	2441	2.88	3.75	76.80	1.15
2DH5	Ant1	2480	2.87	3.75	76.53	1.16
3DH5	Ant1	2402	2.88	3.75	76.80	1.15
3DH5	Ant1	2441	2.87	3.75	76.53	1.16
3DH5	Ant1	2480	2.87	3.75	76.53	1.16

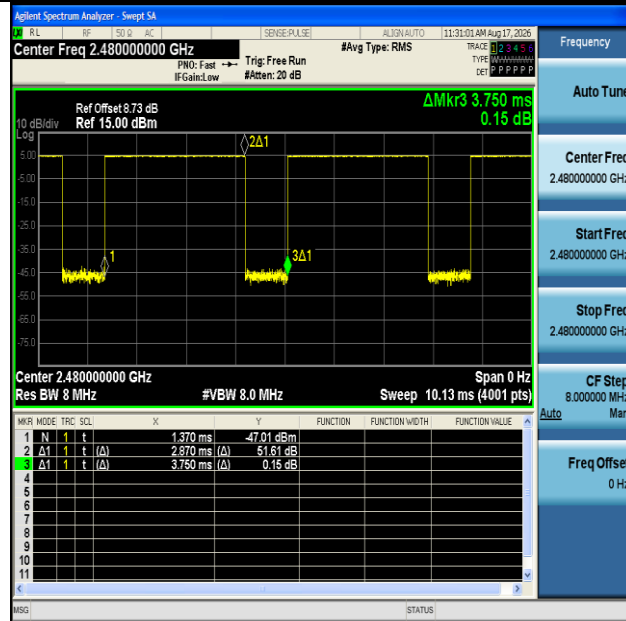
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



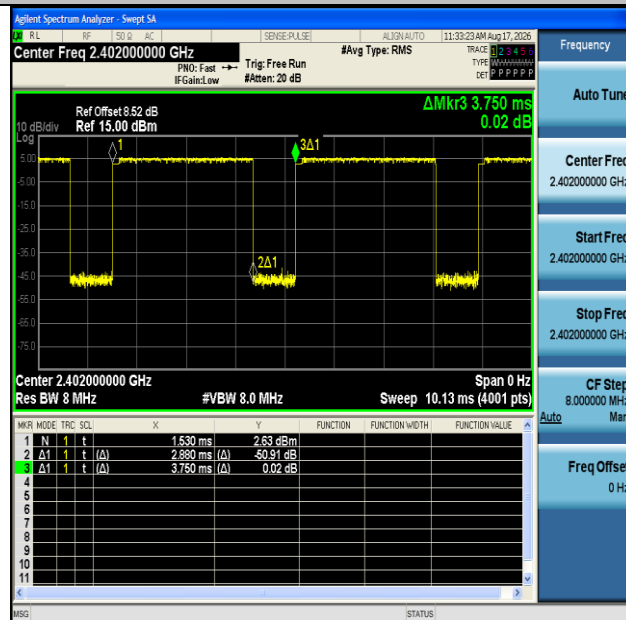


Test Graphs



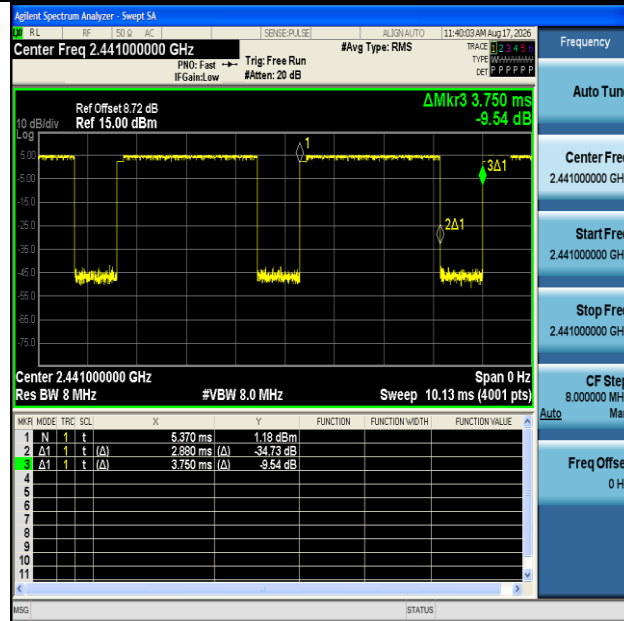


NTNV-DH5-Ant1-2480

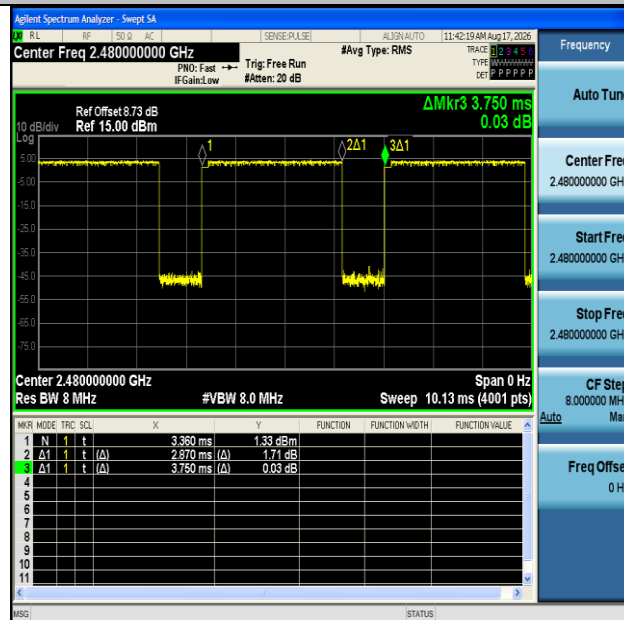


NTNV-2DH5-Ant1-2402



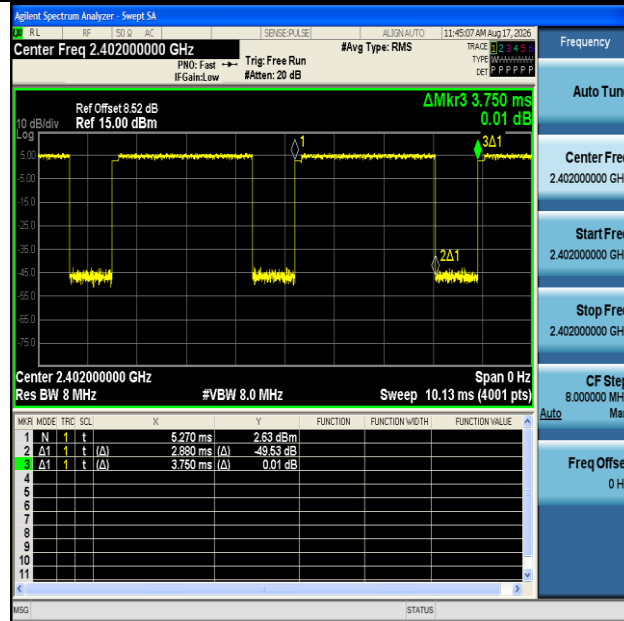


NTNV-2DH5-Ant1-2441

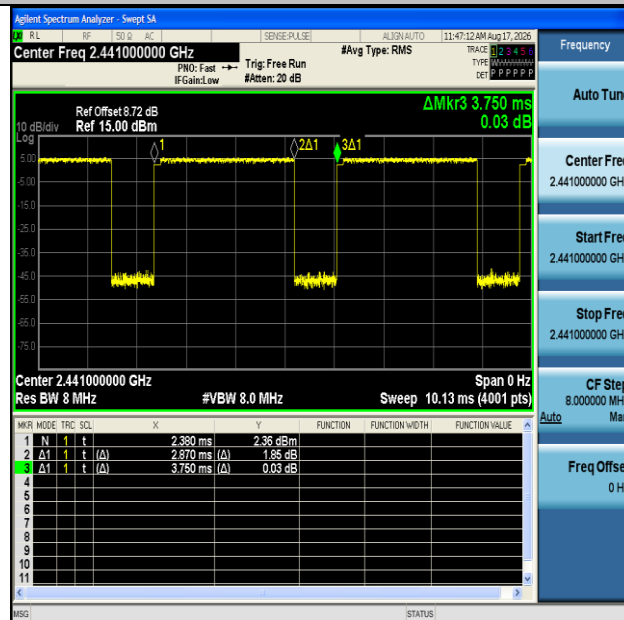


NTNV-2DH5-Ant1-2480



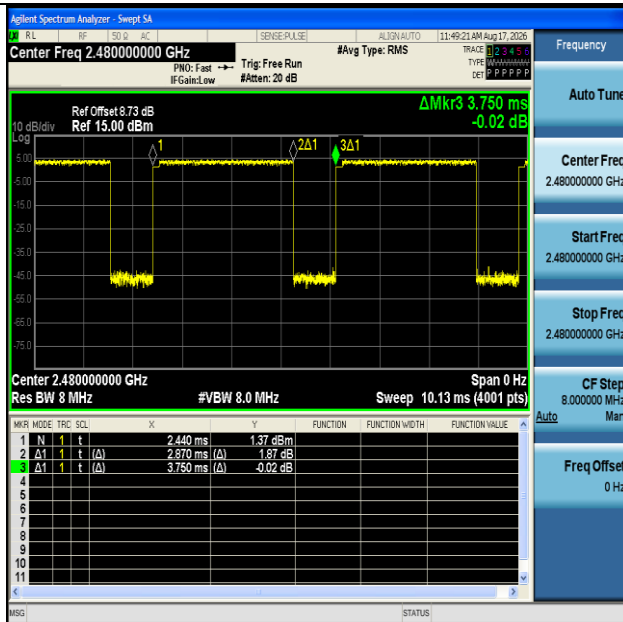


NTNV-3DH5-Ant1-2402



NTNV-3DH5-Ant1-2441





NTNV-3DH5-Ant1-2480

