



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

Product Name: Wanbo Projector

Trade Mark: wanbo

Test Model: Mozart 1S

FCC ID: 2A7PI-MOZART1S

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	0.939	2401.526	2402.465	---	---
DH5	Ant1	2441	0.939	2440.532	2441.471	---	---
DH5	Ant1	2480	0.930	2479.538	2480.468	---	---
2DH5	Ant1	2402	1.311	2401.331	2402.642	---	---
2DH5	Ant1	2441	1.338	2440.319	2441.657	---	---
2DH5	Ant1	2480	1.329	2479.325	2480.654	---	---
3DH5	Ant1	2402	1.314	2401.334	2402.648	---	---
3DH5	Ant1	2441	1.320	2440.331	2441.651	---	---
3DH5	Ant1	2480	1.308	2479.337	2480.645	---	---

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





Test Graphs



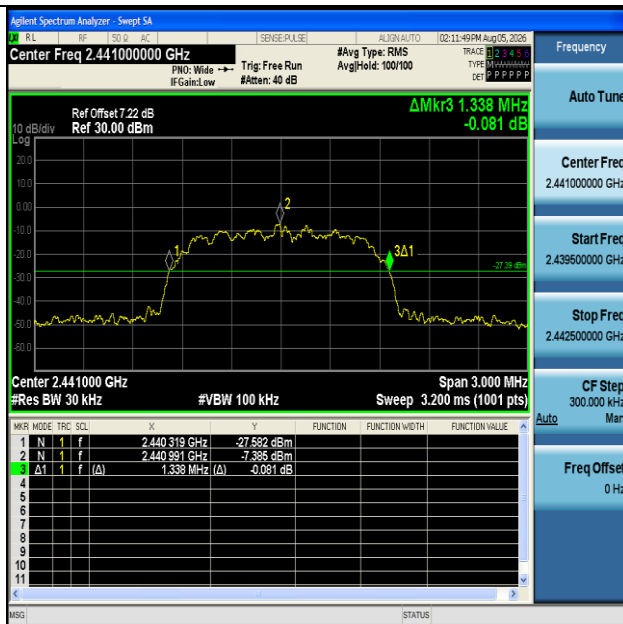


DH5-Ant1-2480

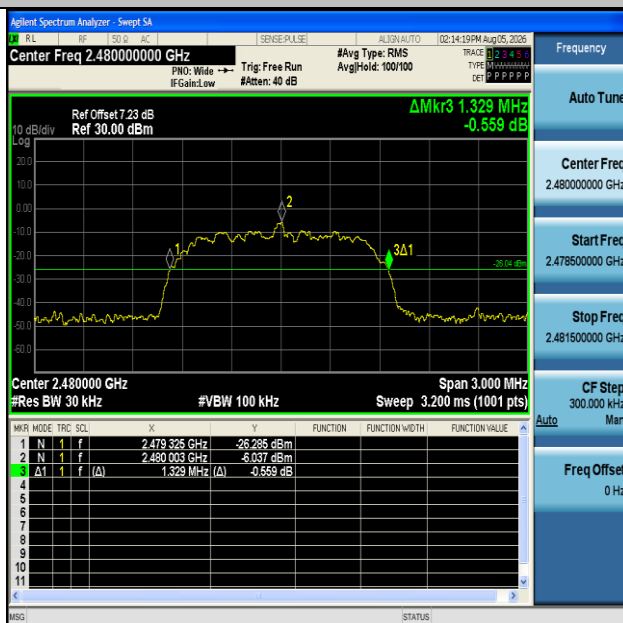


2DH5-Ant1-2402





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	0.85565	2401.5631	2402.4187	---	---
DH5	Ant1	2441	0.85499	2440.5636	2441.4186	---	---
DH5	Ant1	2480	0.82483	2479.5779	2480.4027	---	---
2DH5	Ant1	2402	1.1927	2401.3949	2402.5876	---	---
2DH5	Ant1	2441	1.1995	2440.3919	2441.5914	---	---
2DH5	Ant1	2480	1.1882	2479.3931	2480.5813	---	---
3DH5	Ant1	2402	1.2049	2401.3872	2402.5921	---	---
3DH5	Ant1	2441	1.2008	2440.3902	2441.5910	---	---
3DH5	Ant1	2480	1.1950	2479.3885	2480.5835	---	---

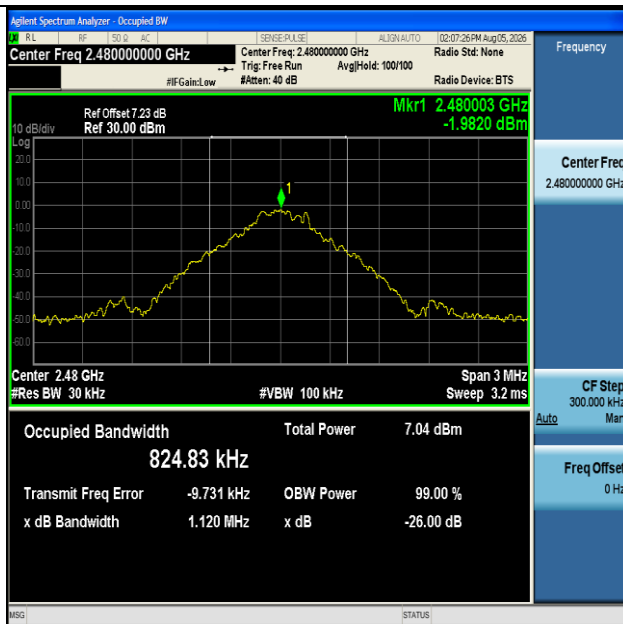
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



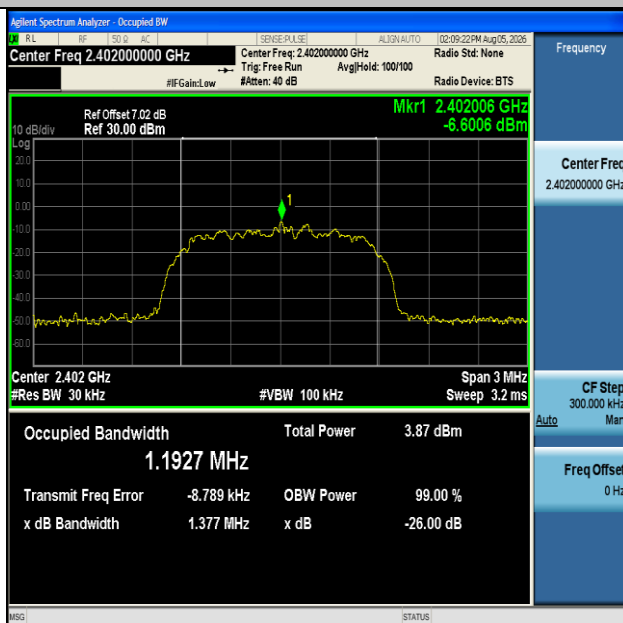


Test Graphs



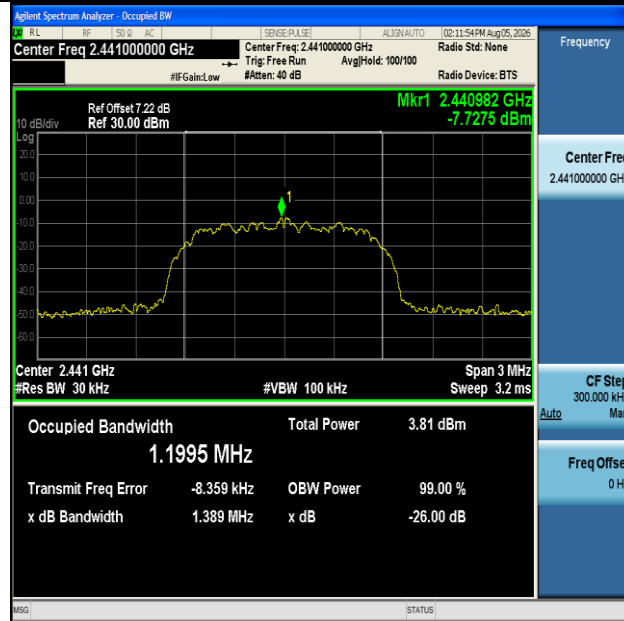


DH5-Ant1-2480

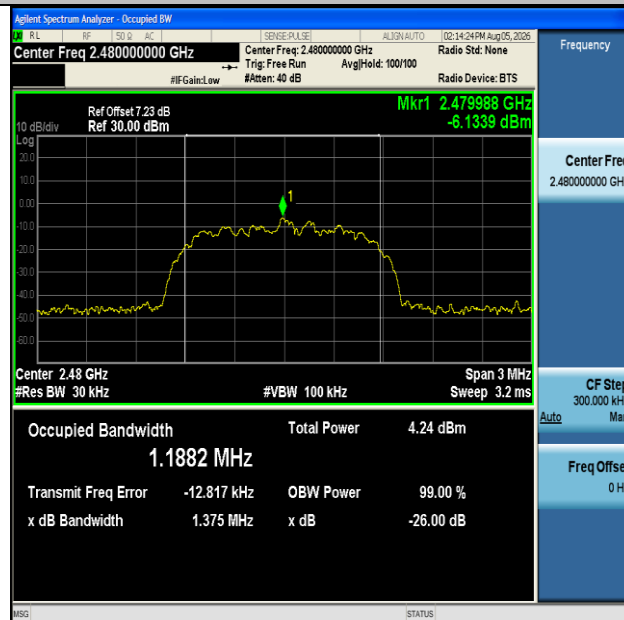


2DH5-Ant1-2402



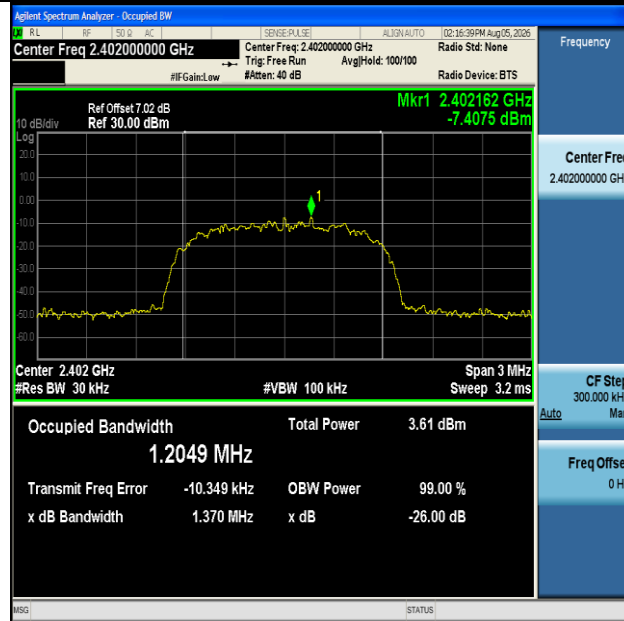


2DH5-Ant1-2441

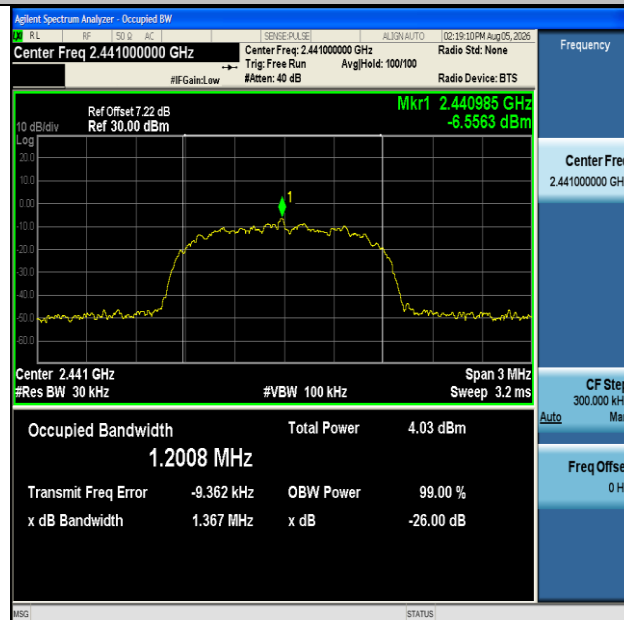


2DH5-Ant1-2480



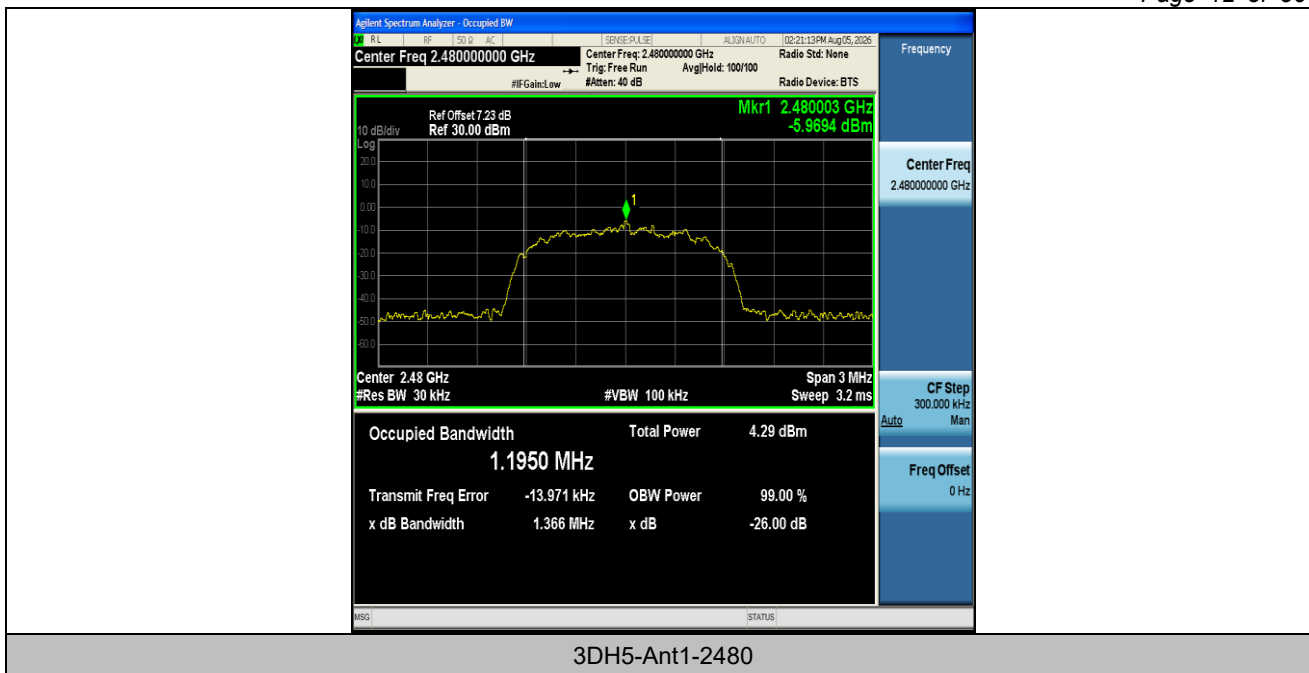


3DH5-Ant1-2402



3DH5-Ant1-2441





3DH5-Ant1-2480





Appendix C: Maximum peak conducted output power

Test Result

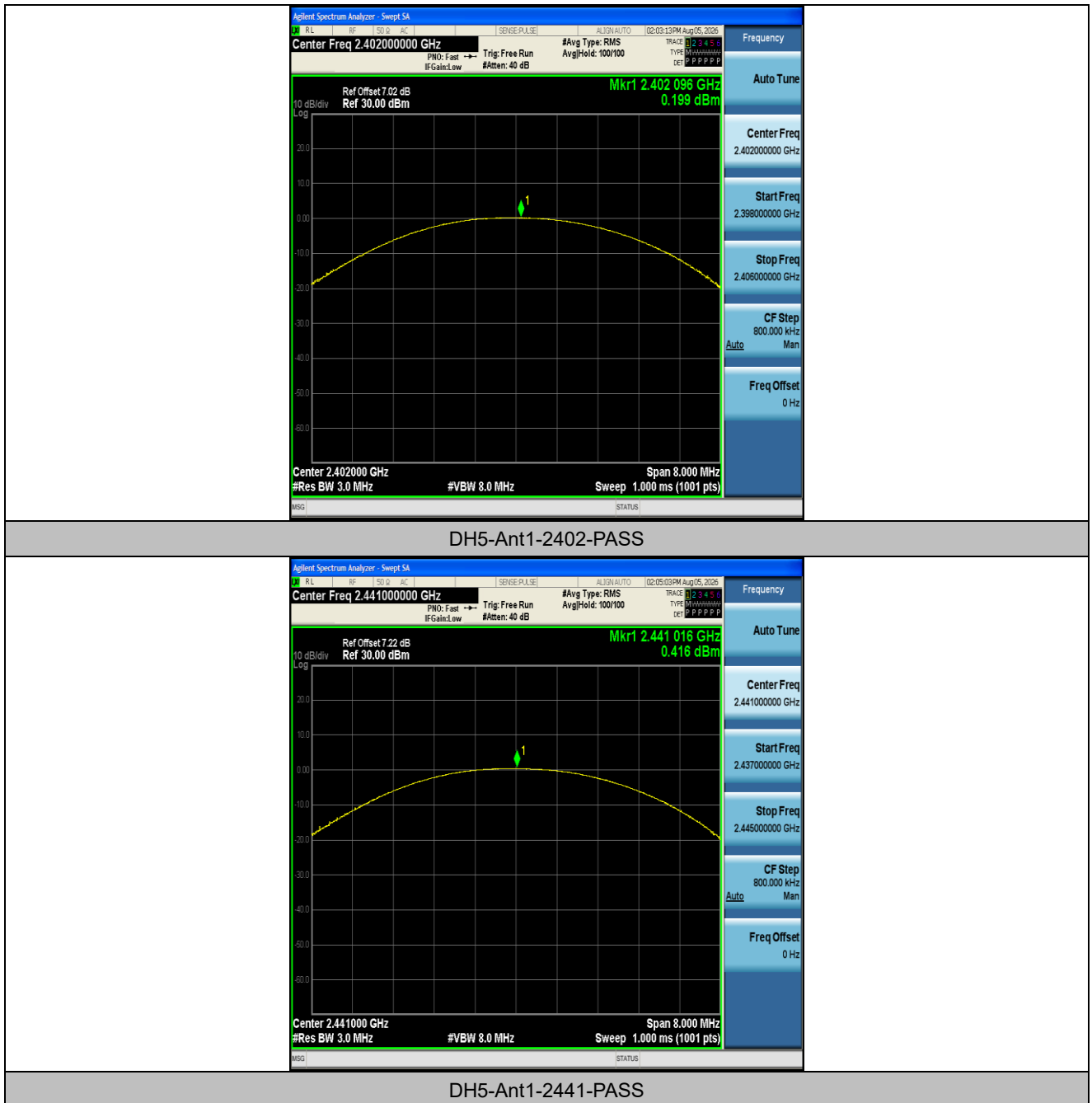
Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power [dBm]	Conducted Limit [dBm]	Verdict
DH5	Ant1	2402	0.20	≤30	PASS
DH5	Ant1	2441	0.42	≤30	PASS
DH5	Ant1	2480	0.56	≤30	PASS
2DH5	Ant1	2402	-0.23	≤20.97	PASS
2DH5	Ant1	2441	-0.22	≤20.97	PASS
2DH5	Ant1	2480	-0.13	≤20.97	PASS
3DH5	Ant1	2402	-0.01	≤20.97	PASS
3DH5	Ant1	2441	0.19	≤20.97	PASS
3DH5	Ant1	2480	0.29	≤20.97	PASS

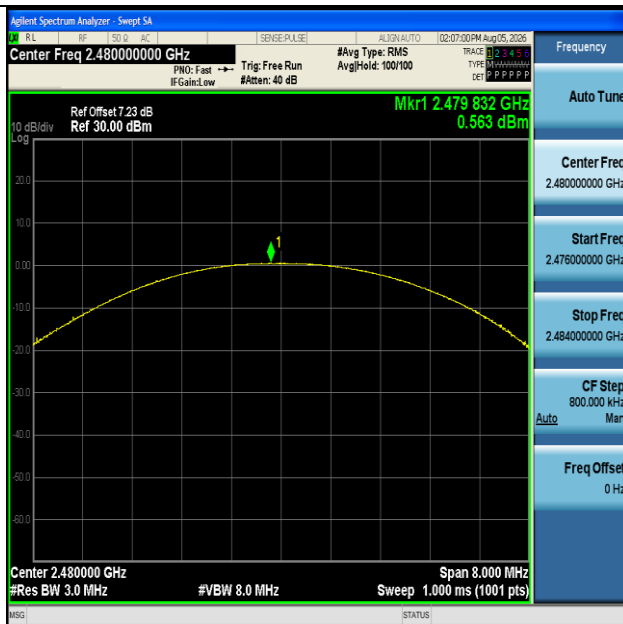
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



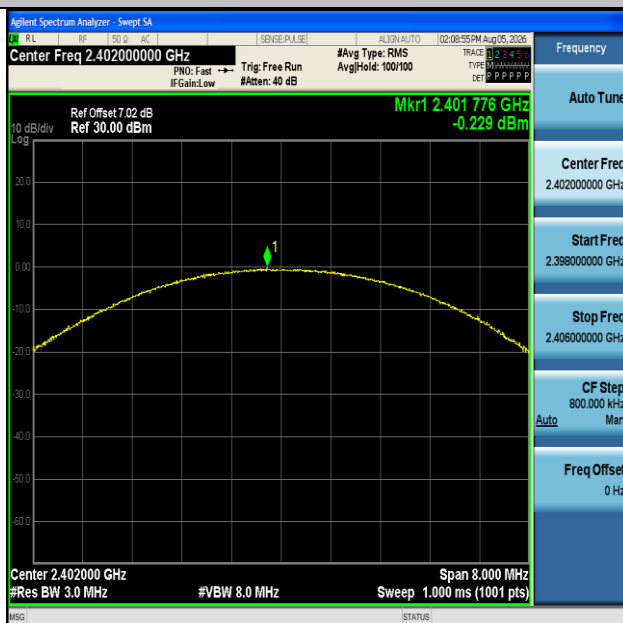


Test Graphs



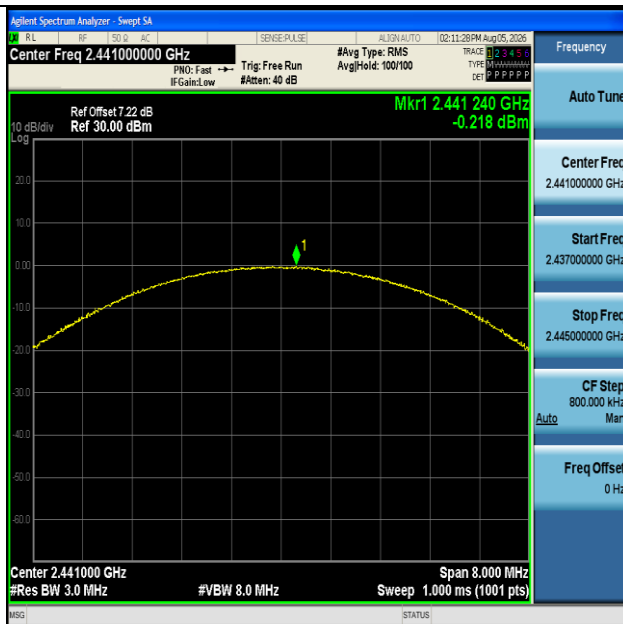


DH5-Ant1-2480-PASS

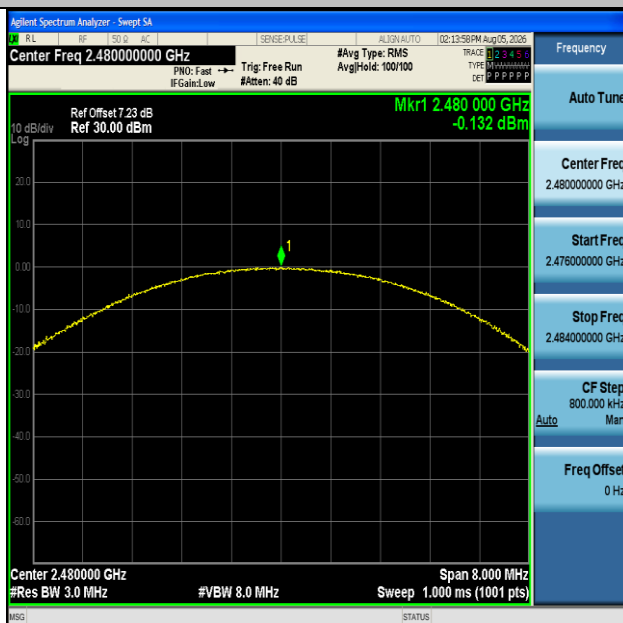


2DH5-Ant1-2402-PASS



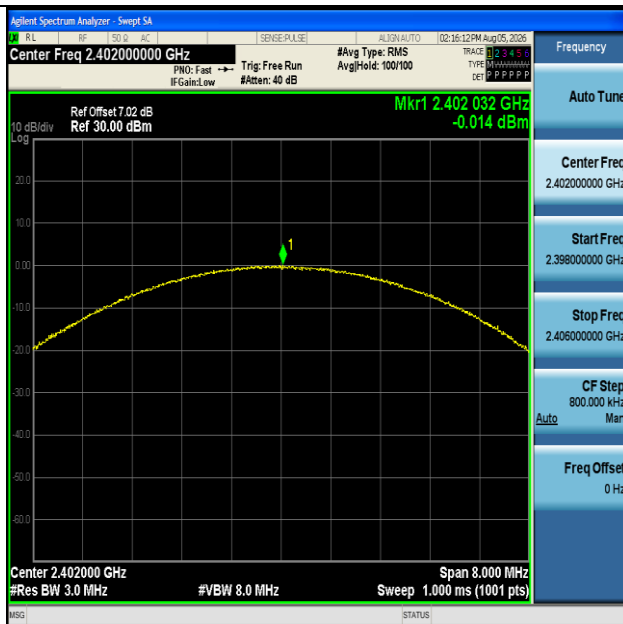


2DH5-Ant1-2441-PASS

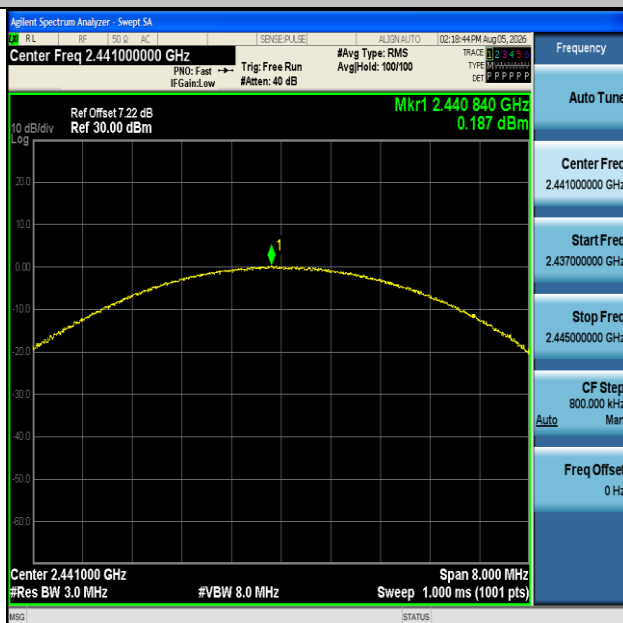


2DH5-Ant1-2480-PASS



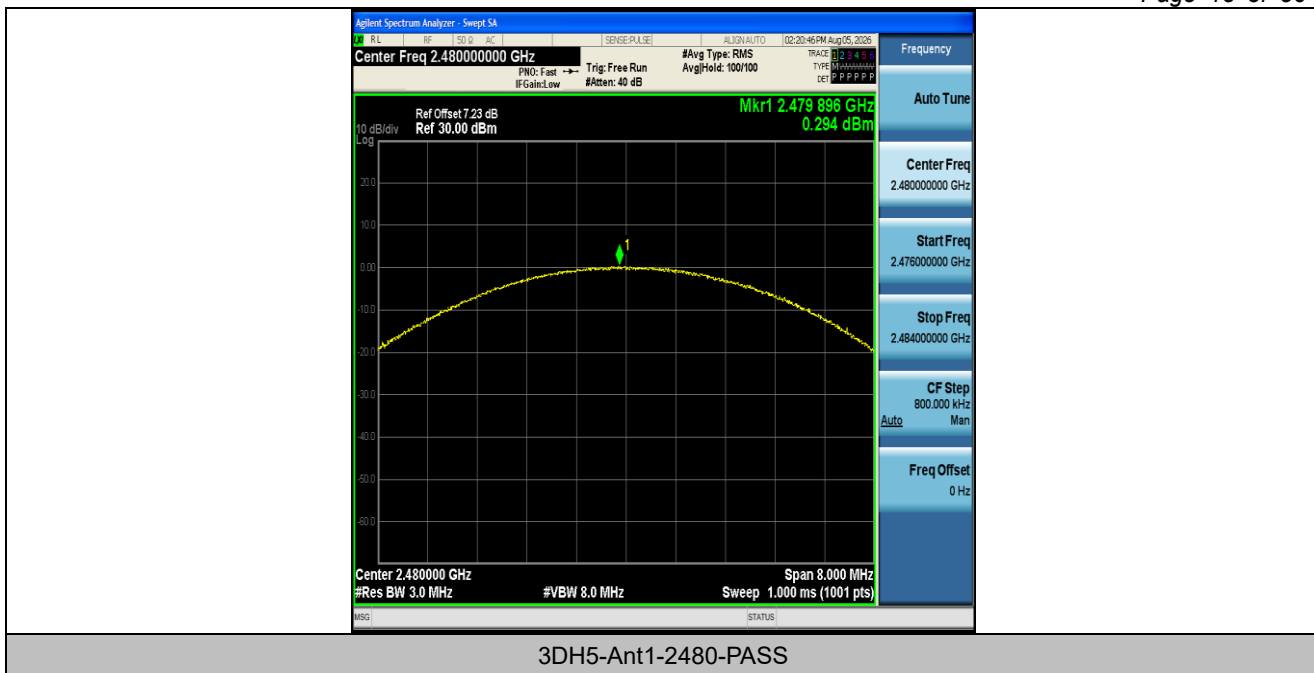


3DH5-Ant1-2402-PASS



3DH5-Ant1-2441-PASS







Appendix D: Carrier frequency separation

Test Result

Test Mode	Antenna	Frequency [MHz]	Result [MHz]	Limit [MHz]	Verdict
DH5	Ant1	Hop	0.994	≥ 0.939	PASS
2DH5	Ant1	Hop	0.982	≥ 0.892	PASS
3DH5	Ant1	Hop	1.004	≥ 0.880	PASS

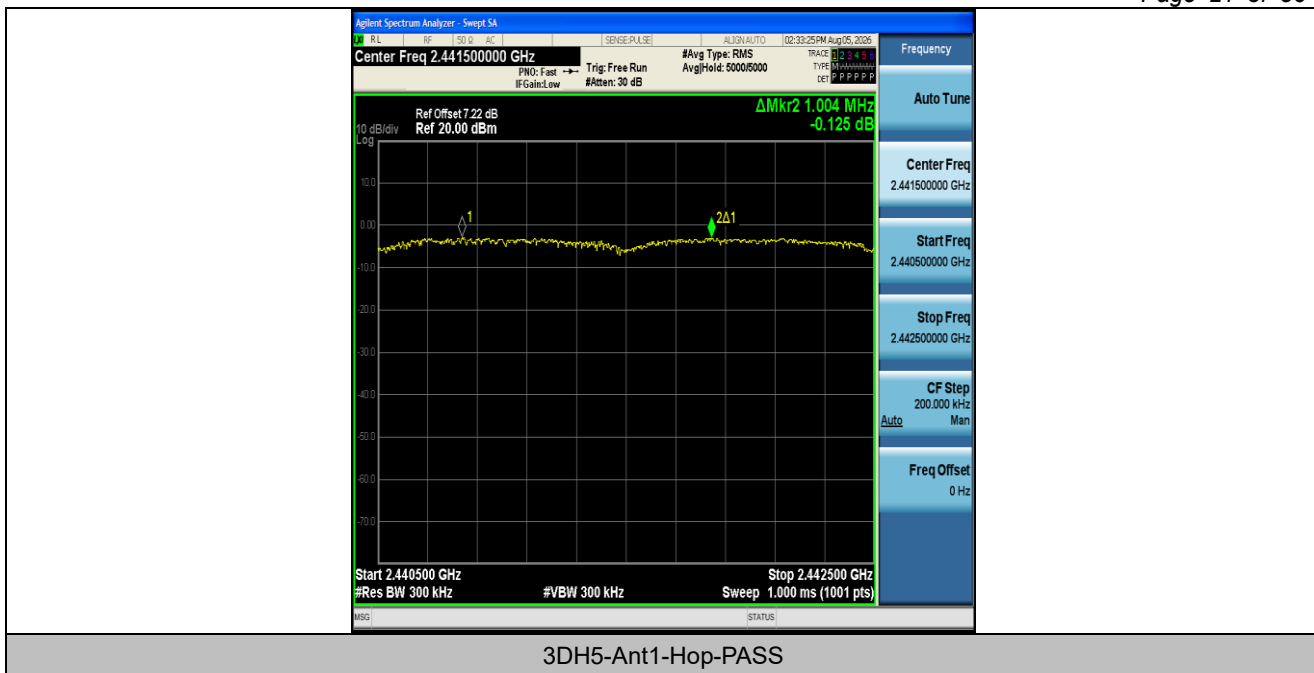
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)





Test Graphs







Appendix E: Time of occupancy

Test Result

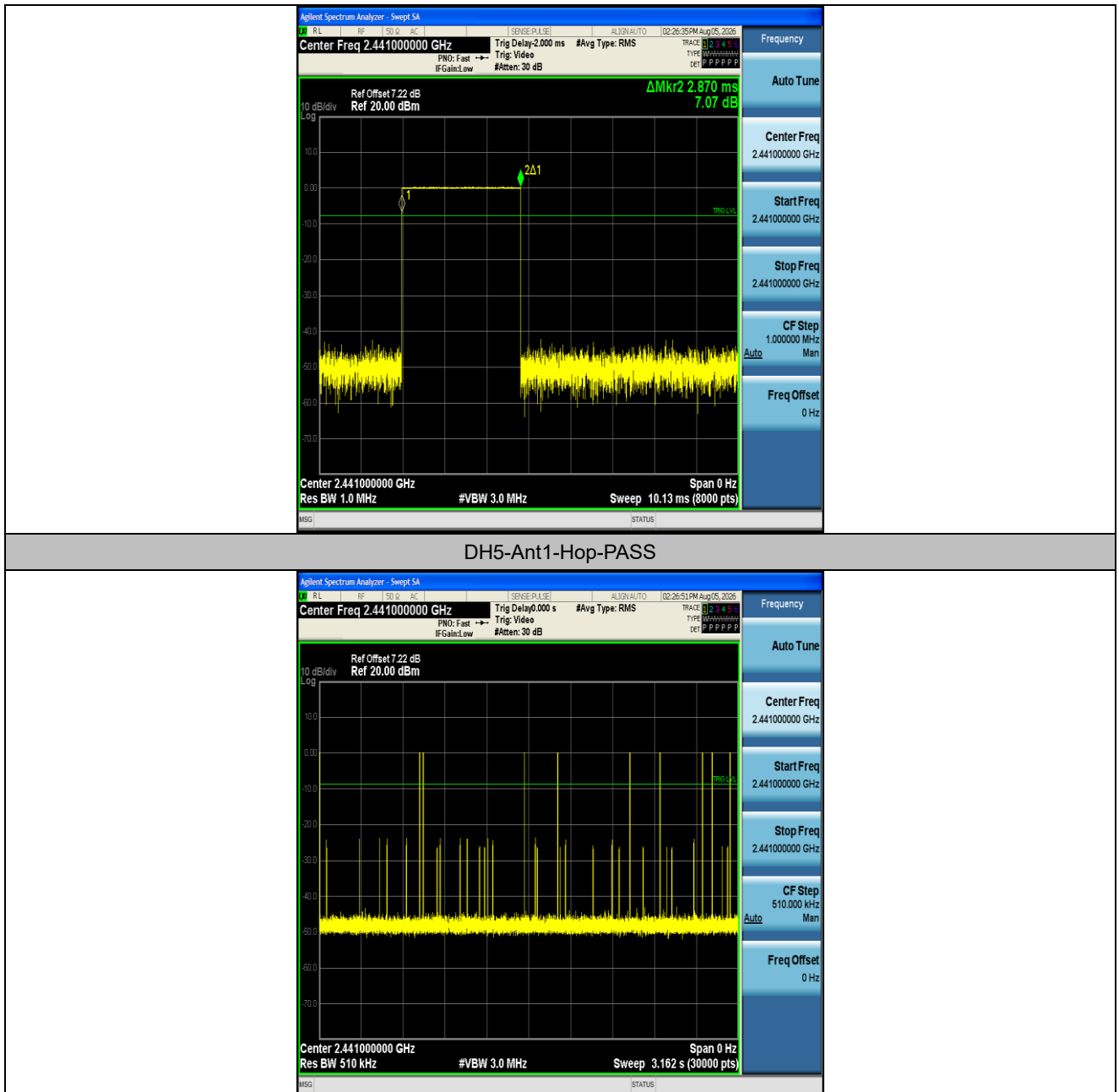
Test Mode	Antenna	Frequency [MHz]	Burst Width [ms]	TotalHops [Num]	Result [s]	Limit [s]	Verdict
DH5	Ant1	Hop	2.870	100	0.287	≤0.4	PASS
2DH5	Ant1	Hop	2.875	100	0.288	≤0.4	PASS
3DH5	Ant1	Hop	2.878	100	0.288	≤0.4	PASS

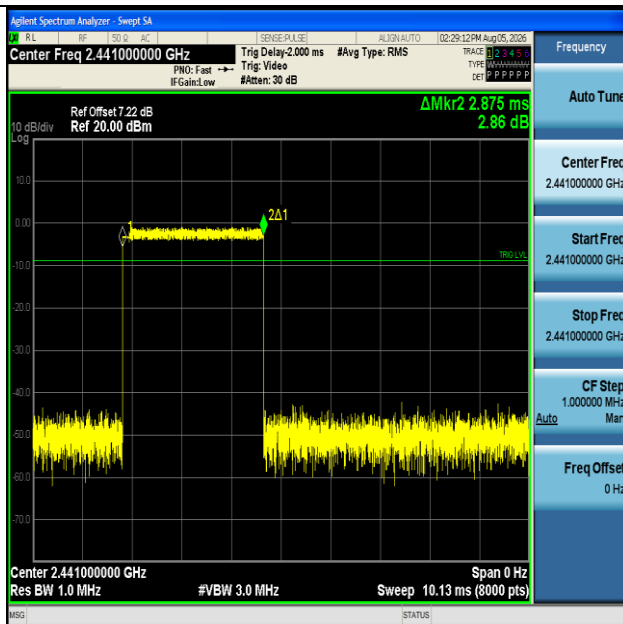
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



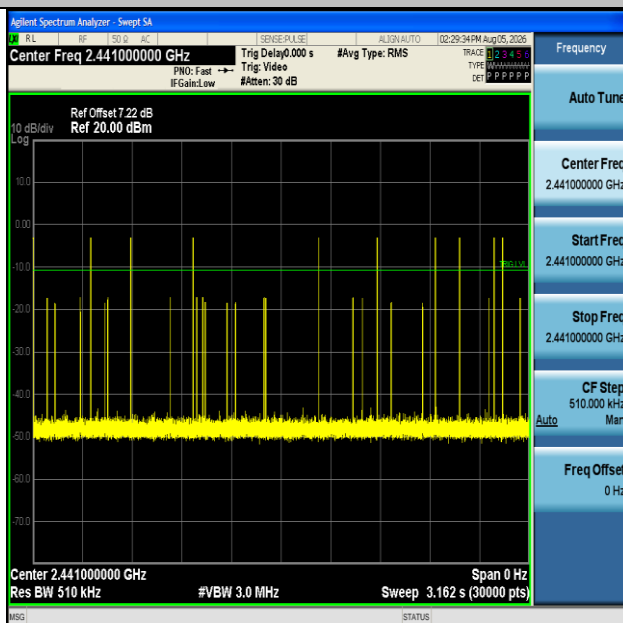


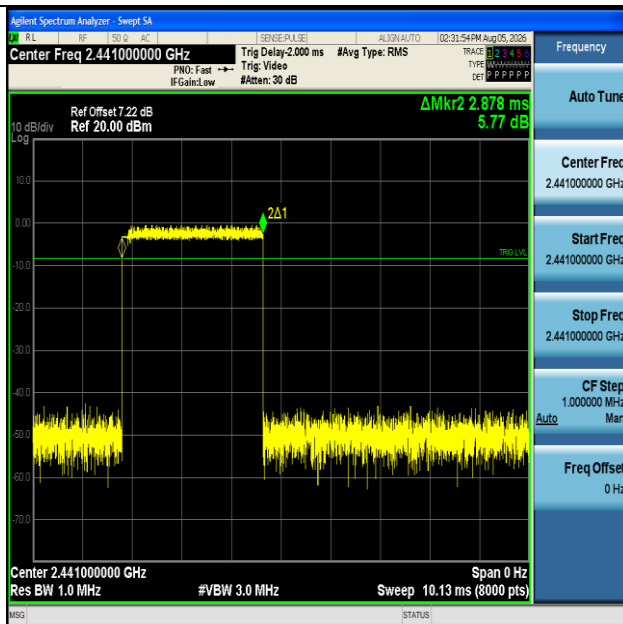
Test Graphs



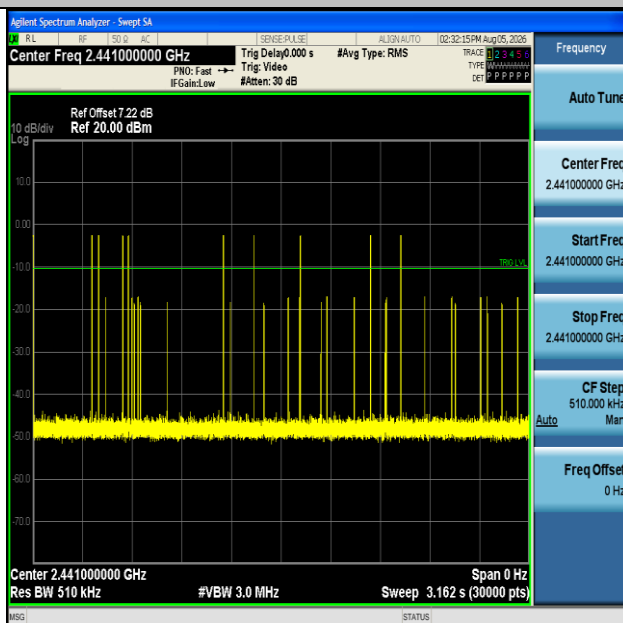


2DH5-Ant1-Hop-PASS





3DH5-Ant1-Hop-PASS





Appendix F: Number of hopping channels

Test Result

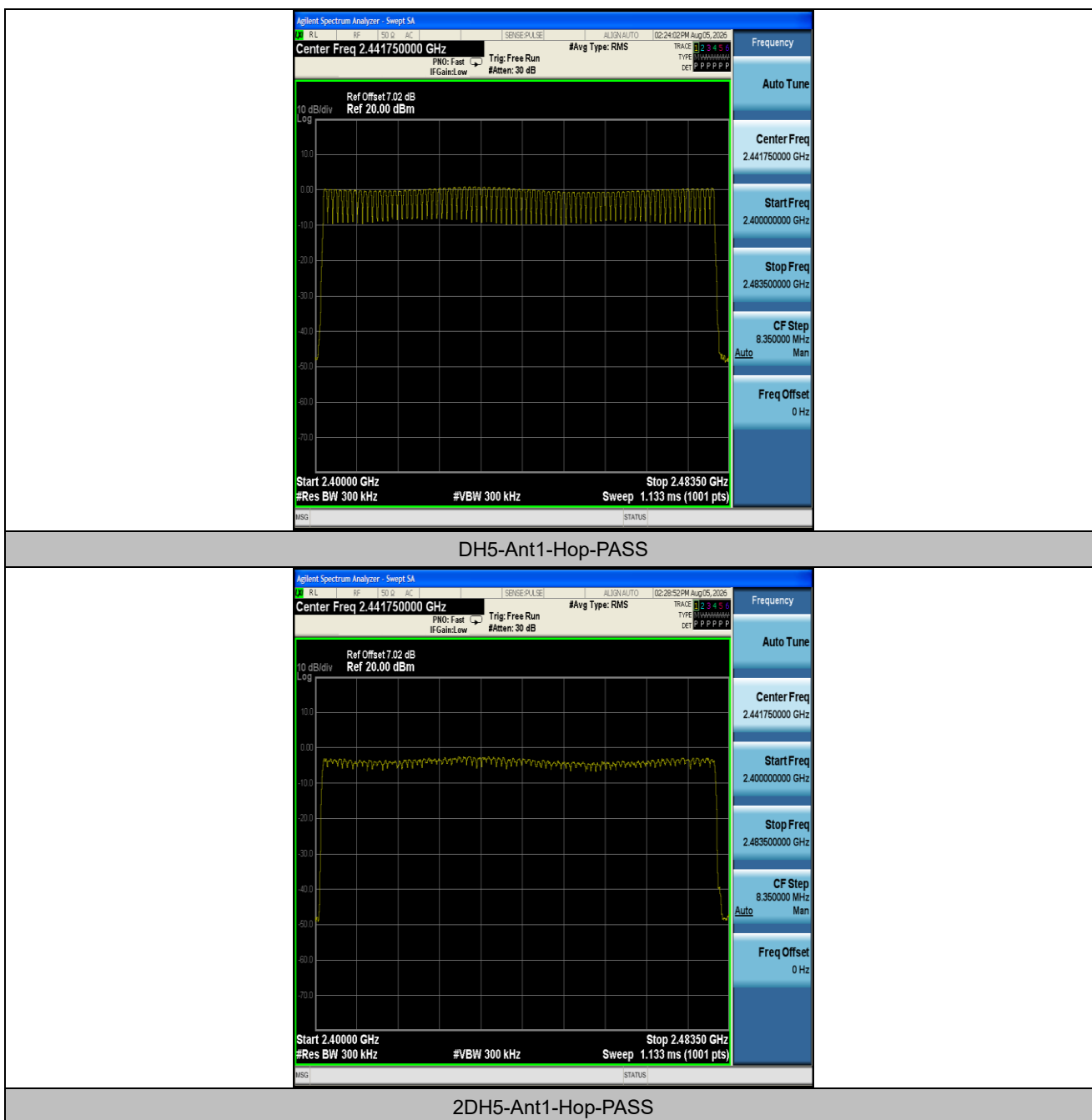
Test Mode	Antenna	Frequency [MHz]	Result [Num]	Limit [Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

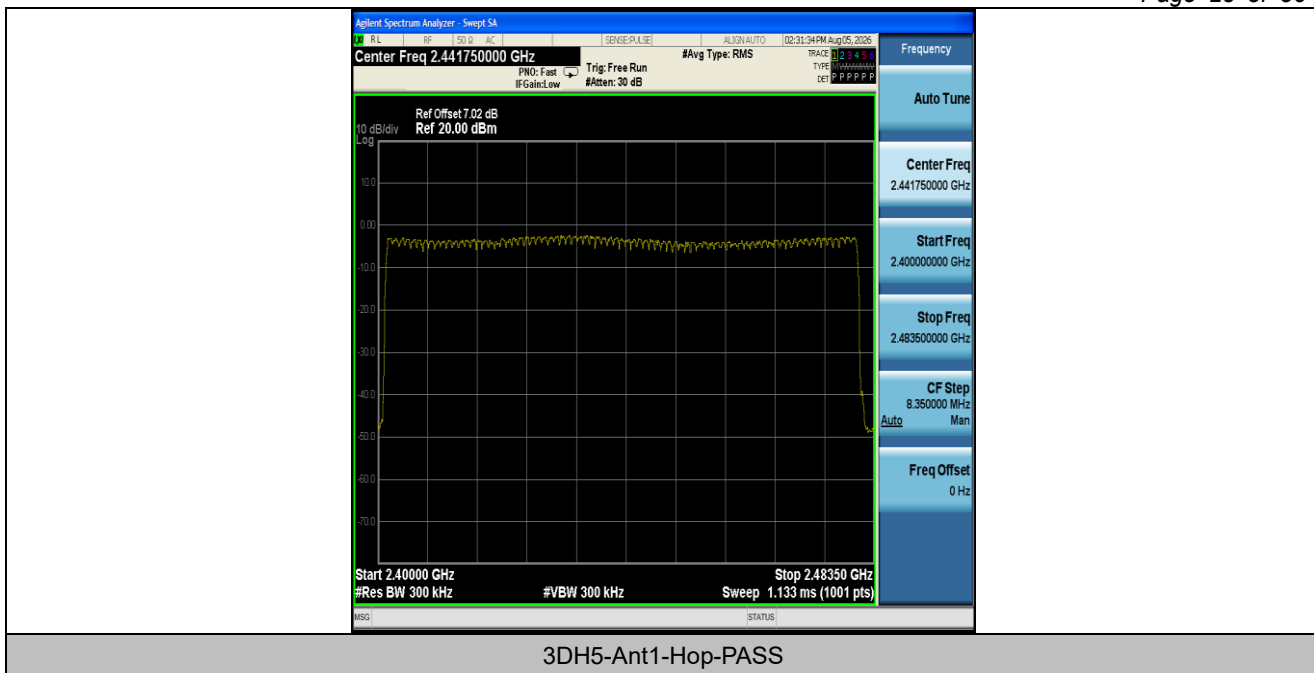
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)





Test Graphs







Appendix G: Band edge measurements

Test Result

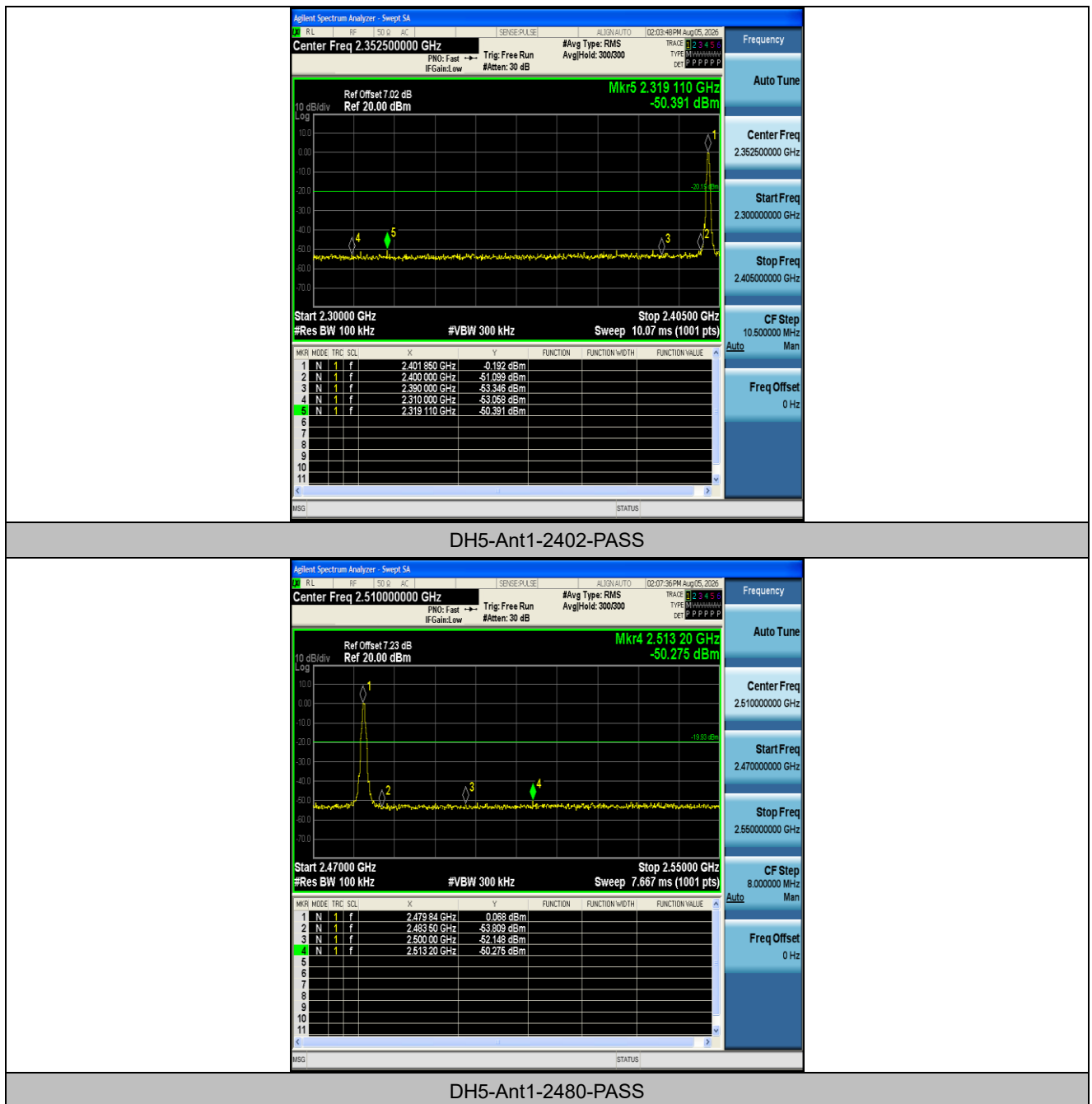
Test Mode	Antenna	Ch.Name	Frequency [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-0.19	-50.39	≤-20.19	PASS
DH5	Ant1	High	2480	0.07	-50.28	≤-19.93	PASS
DH5	Ant1	Low	Hop_2402	-0.73	-50.89	≤-20.73	PASS
DH5	Ant1	High	Hop_2480	0.07	-50.01	≤-19.93	PASS
2DH5	Ant1	Low	2402	-3.50	-51.31	≤-23.5	PASS
2DH5	Ant1	High	2480	-3.15	-50.83	≤-23.15	PASS
2DH5	Ant1	Low	Hop_2402	-6.53	-50.82	≤-26.53	PASS
2DH5	Ant1	High	Hop_2480	-3.94	-50.81	≤-23.94	PASS
3DH5	Ant1	Low	2402	-4.41	-51.65	≤-24.41	PASS
3DH5	Ant1	High	2480	-2.97	-50.46	≤-22.97	PASS
3DH5	Ant1	Low	Hop_2402	-6.56	-50.27	≤-26.56	PASS
3DH5	Ant1	High	Hop_2480	-3.18	-49.7	≤-23.18	PASS

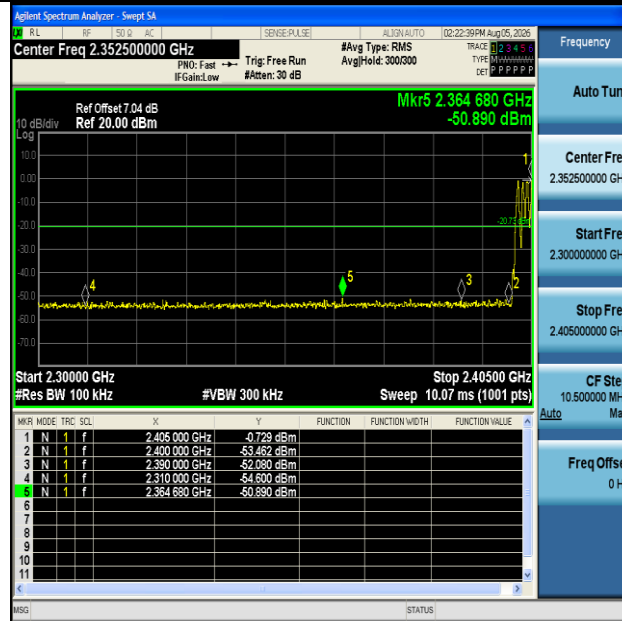
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



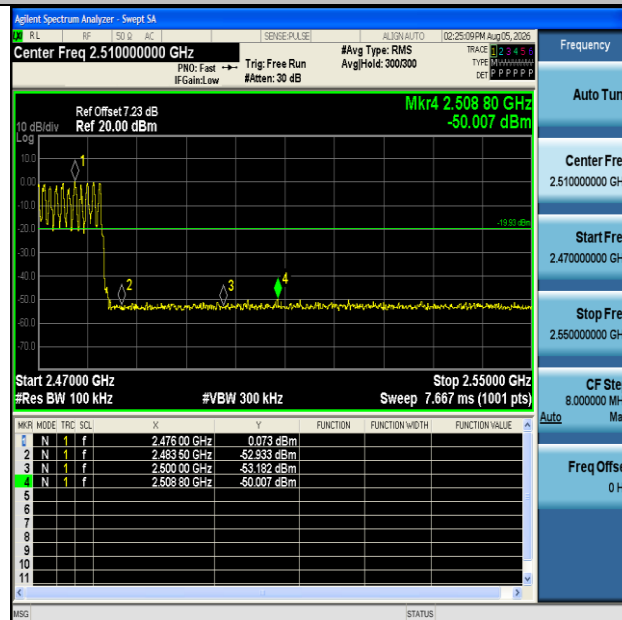


Test Graphs



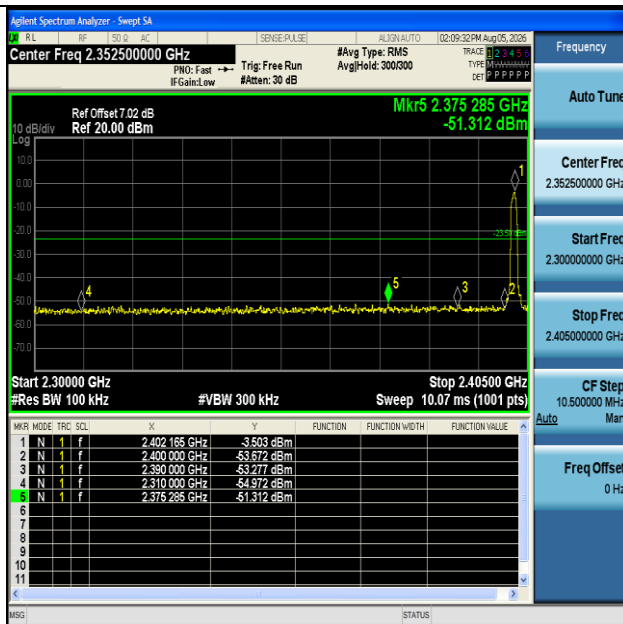


DH5-Ant1-Hop_2402-PASS

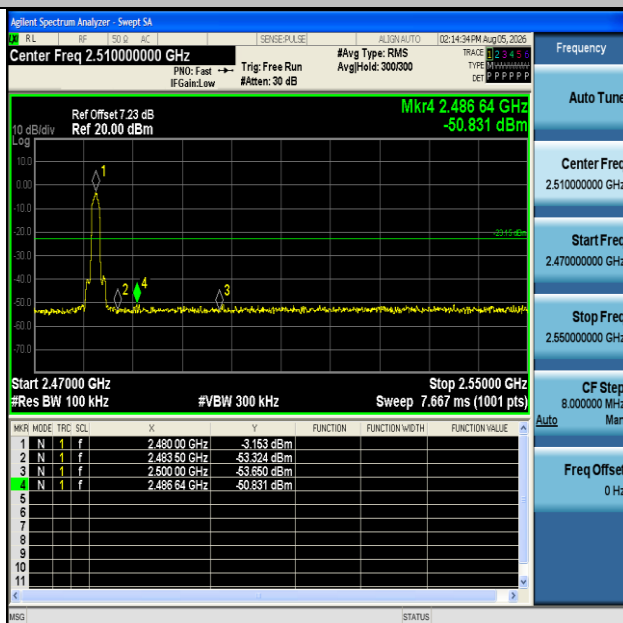


DH5-Ant1-Hop_2480-PASS



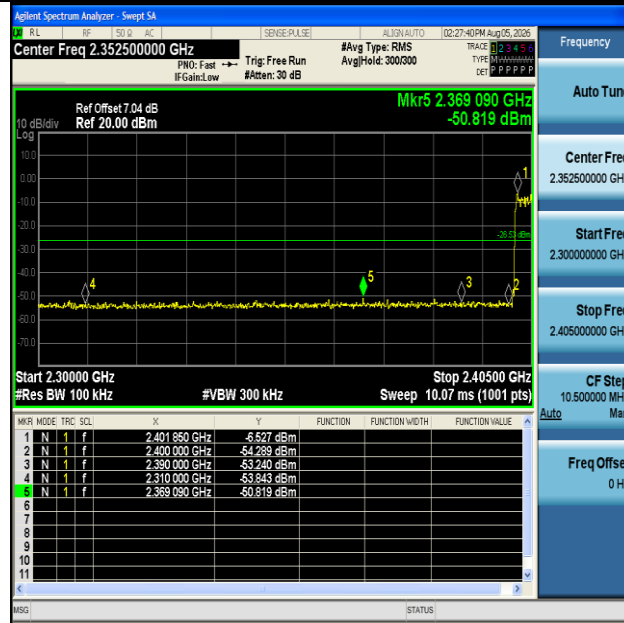


2DH5-Ant1-2402-PASS

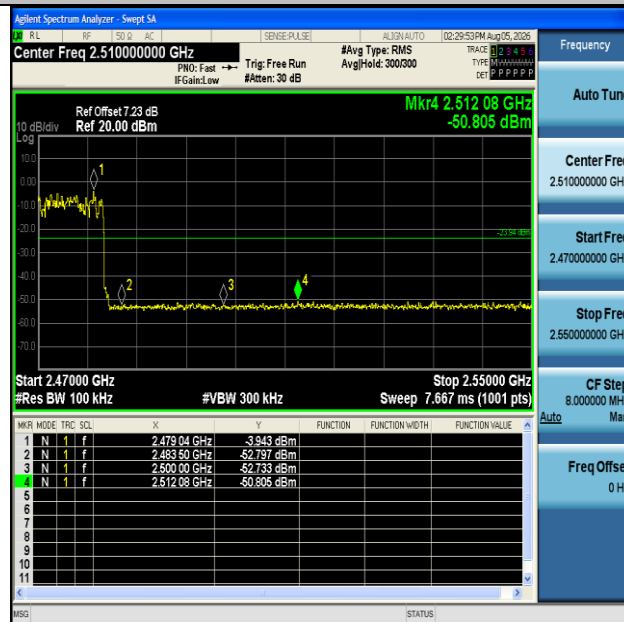


2DH5-Ant1-2480-PASS



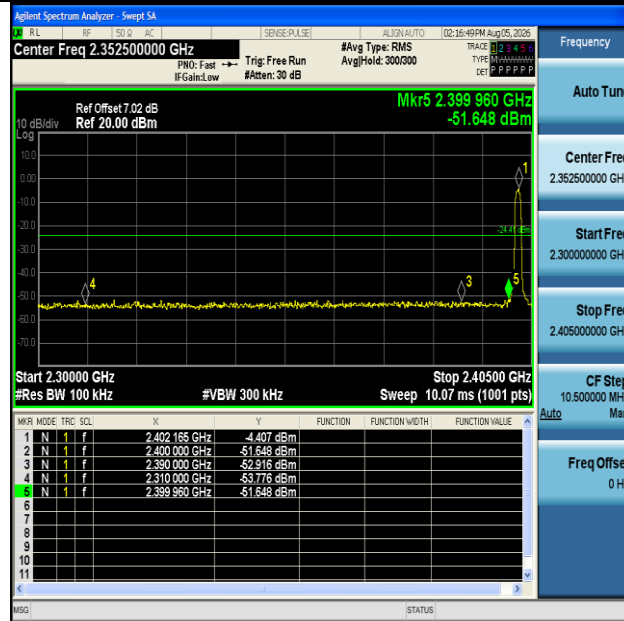


2DH5-Ant1-Hop_2402-PASS

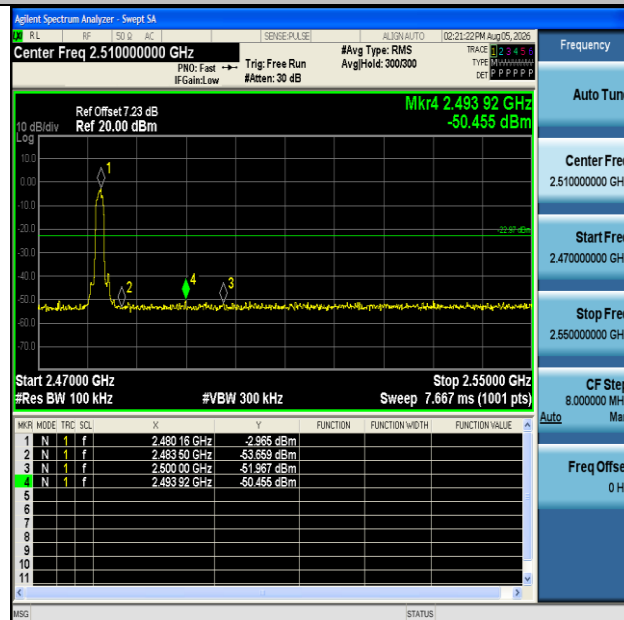


2DH5-Ant1-Hop_2480-PASS



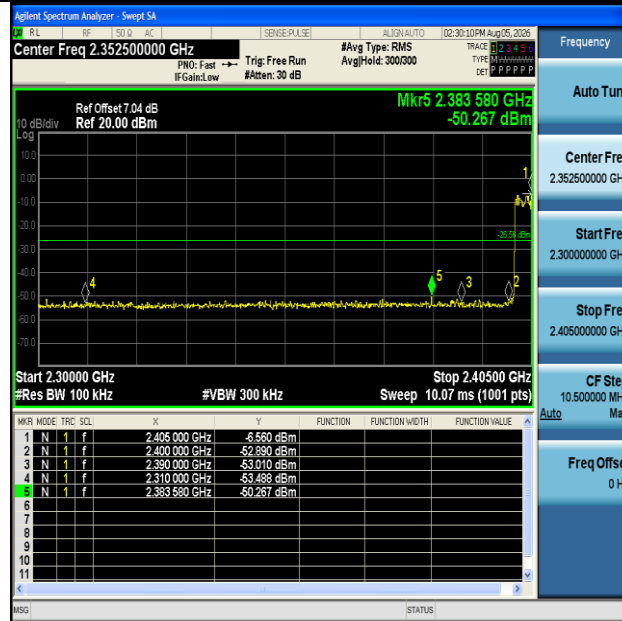


3DH5-Ant1-2402-PASS

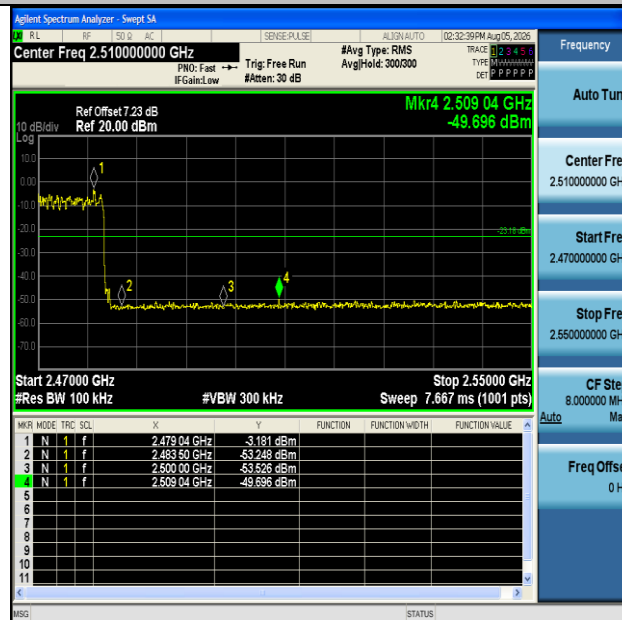


3DH5-Ant1-2480-PASS





3DH5-Ant1-Hop_2402-PASS



3DH5-Ant1-Hop_2480-PASS





Appendix H: Conducted Spurious Emission

Test Result

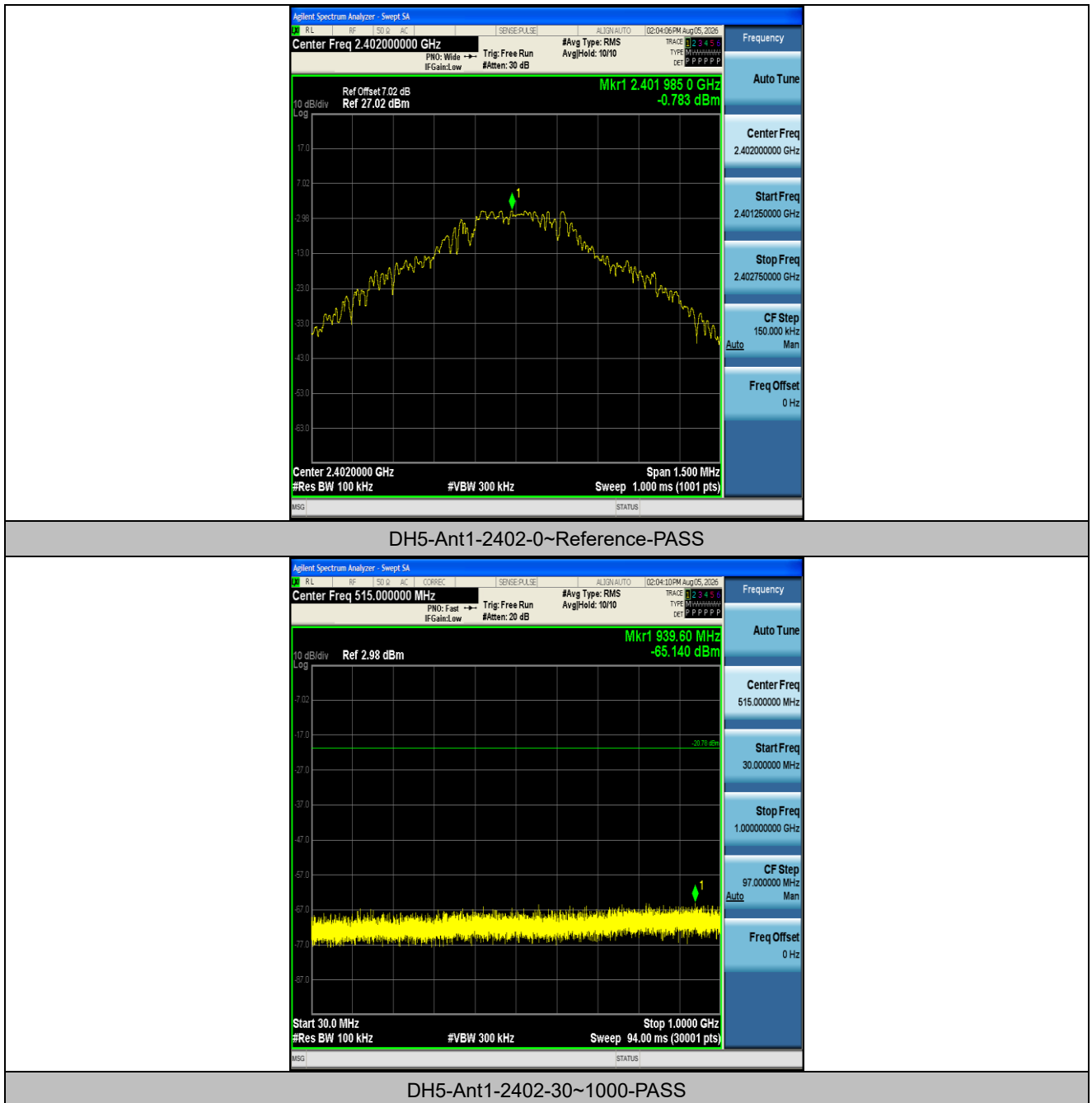
Test Mode	Antenna	Frequency [MHz]	Freq. Range [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	0~Reference	-0.78	-0.78	---	PASS
DH5	Ant1	2402	30~1000	-0.78	-65.14	≤ -20.78	PASS
DH5	Ant1	2402	1000~26500	-0.78	-39.49	≤ -20.78	PASS
DH5	Ant1	2441	0~Reference	-0.53	-0.53	---	PASS
DH5	Ant1	2441	30~1000	-0.53	-63.4	≤ -20.53	PASS
DH5	Ant1	2441	1000~26500	-0.53	-39.52	≤ -20.53	PASS
DH5	Ant1	2480	0~Reference	-0.19	-0.19	---	PASS
DH5	Ant1	2480	30~1000	-0.19	-64.89	≤ -20.19	PASS
DH5	Ant1	2480	1000~26500	-0.19	-39.62	≤ -20.19	PASS
2DH5	Ant1	2402	0~Reference	-6.00	-6.00	---	PASS
2DH5	Ant1	2402	30~1000	-6.00	-64.95	≤ -26	PASS
2DH5	Ant1	2402	1000~26500	-6.00	-39.32	≤ -26	PASS
2DH5	Ant1	2441	0~Reference	-3.41	-3.41	---	PASS
2DH5	Ant1	2441	30~1000	-3.41	-64.68	≤ -23.41	PASS
2DH5	Ant1	2441	1000~26500	-3.41	-39.17	≤ -23.41	PASS
2DH5	Ant1	2480	0~Reference	-5.17	-5.17	---	PASS
2DH5	Ant1	2480	30~1000	-5.17	-64.73	≤ -25.17	PASS
2DH5	Ant1	2480	1000~26500	-5.17	-39.64	≤ -25.17	PASS
3DH5	Ant1	2402	0~Reference	-5.73	-5.73	---	PASS
3DH5	Ant1	2402	30~1000	-5.73	-64.17	≤ -25.73	PASS
3DH5	Ant1	2402	1000~26500	-5.73	-39.99	≤ -25.73	PASS
3DH5	Ant1	2441	0~Reference	-5.06	-5.06	---	PASS
3DH5	Ant1	2441	30~1000	-5.06	-63.89	≤ -25.06	PASS
3DH5	Ant1	2441	1000~26500	-5.06	-39.61	≤ -25.06	PASS
3DH5	Ant1	2480	0~Reference	-4.65	-4.65	---	PASS
3DH5	Ant1	2480	30~1000	-4.65	-64.95	≤ -24.65	PASS
3DH5	Ant1	2480	1000~26500	-4.65	-39.3	≤ -24.65	PASS

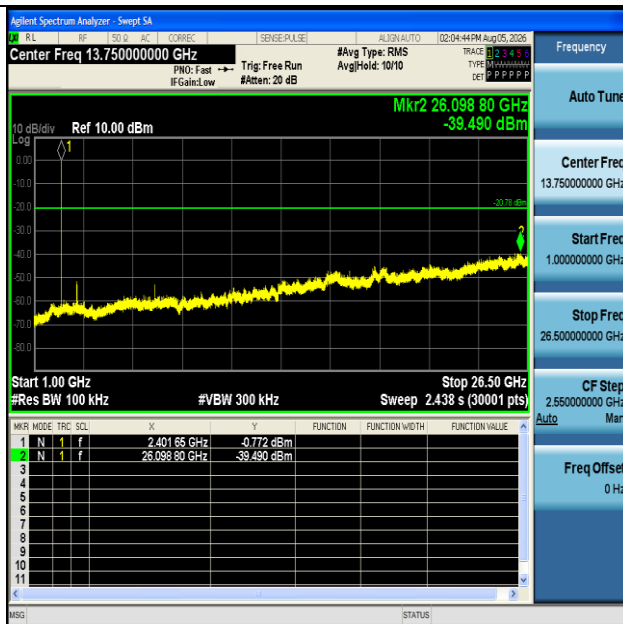
Note: offset(dB) in Reference test plots = cable loss(dB) + attenuator factor(dB); For spurious emissions plots from 30MHz to 26.5GHz, the cable loss and attenuator factors have been set in the 'Input Correction' of the Spectrum Analyzer during the test.



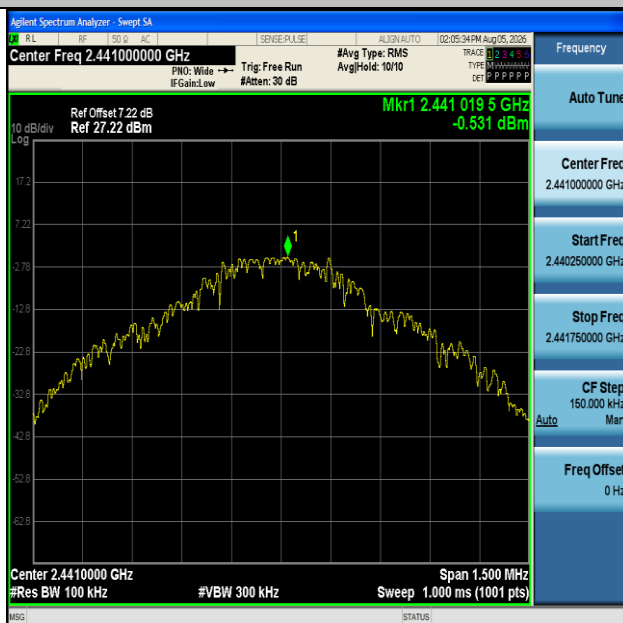


Test Graphs



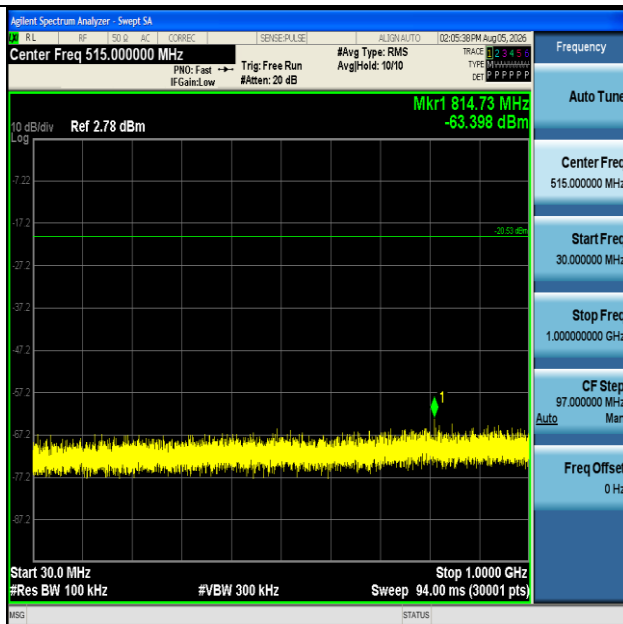


DH5-Ant1-2402-1000~26500-PASS

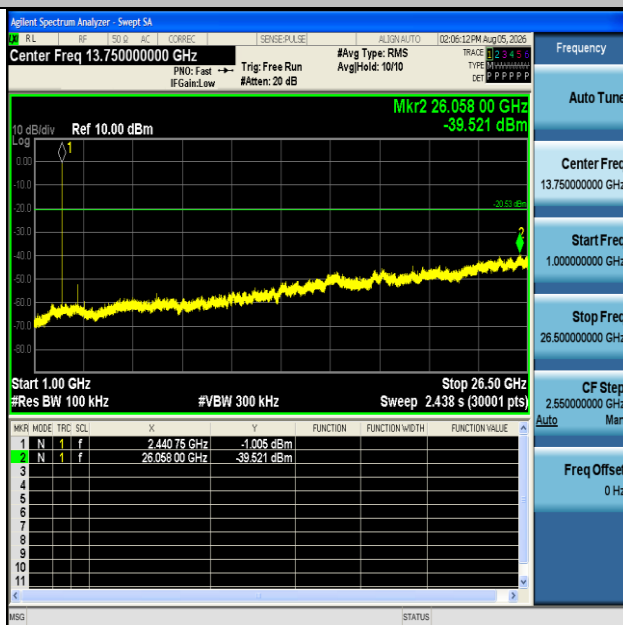


DH5-Ant1-2441-0~Reference-PASS



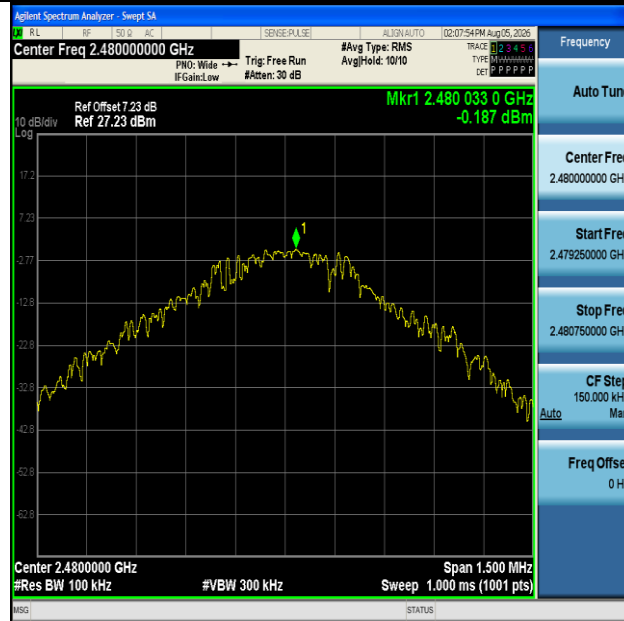


DH5-Ant1-2441-30~1000-PASS

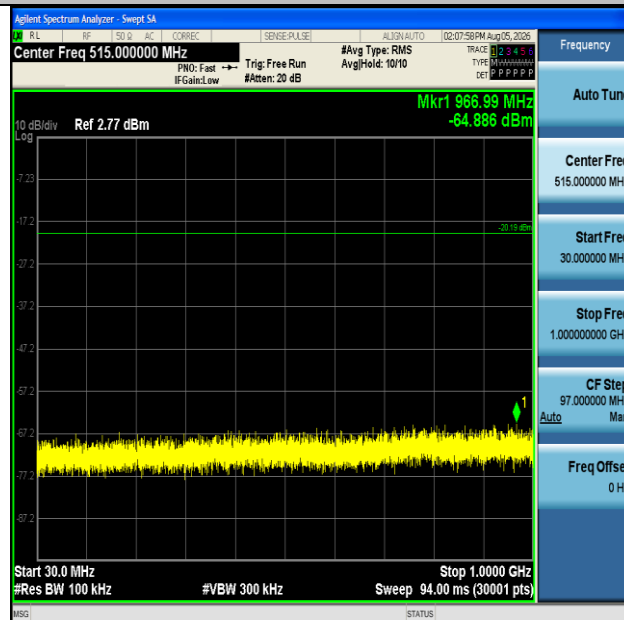


DH5-Ant1-2441-1000~26500-PASS



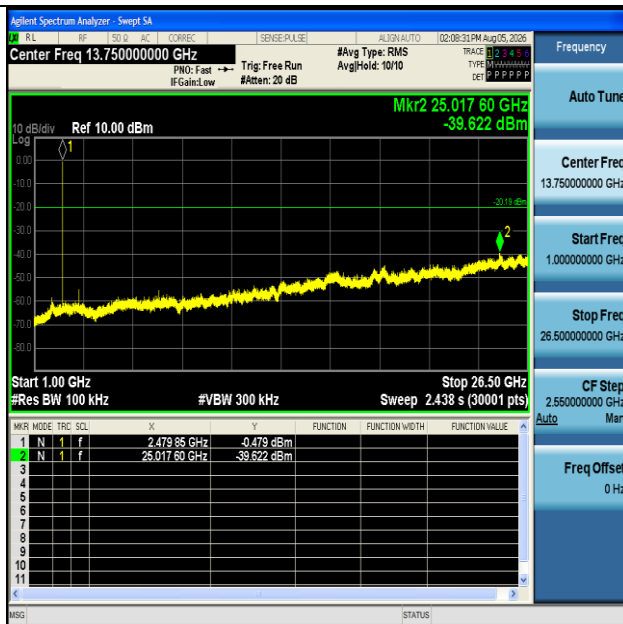


DH5-Ant1-2480-0~Reference-PASS

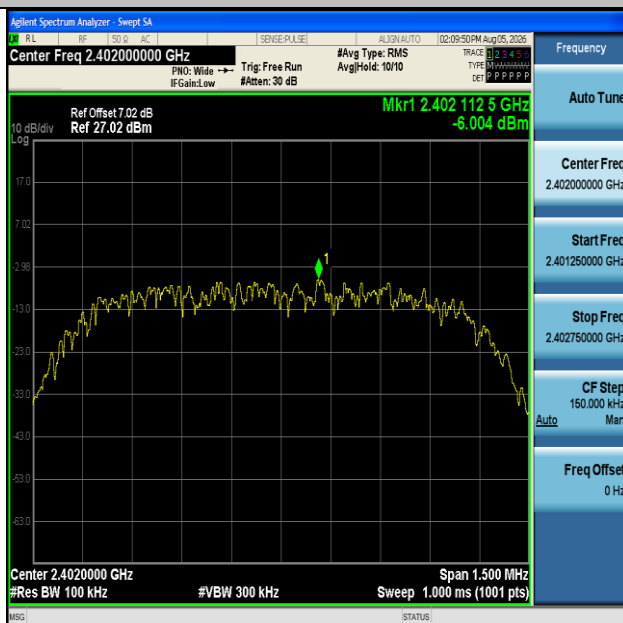


DH5-Ant1-2480-30~1000-PASS





DH5-Ant1-2480-1000~26500-PASS

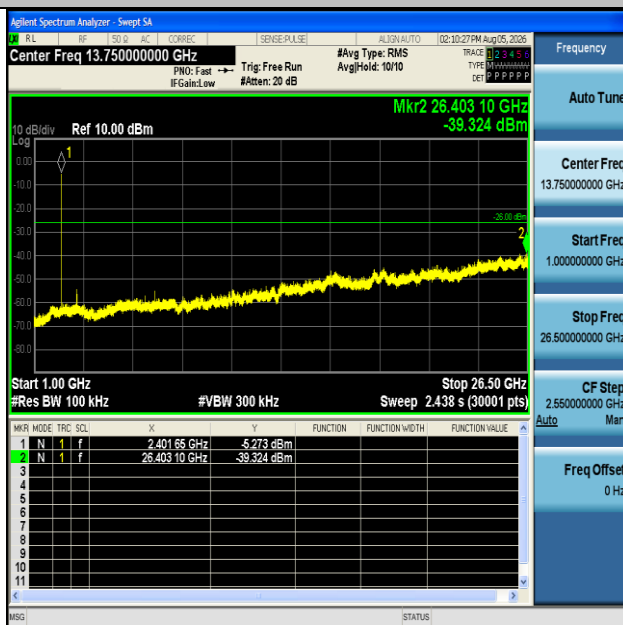


2DH5-Ant1-2402-0~Reference-PASS



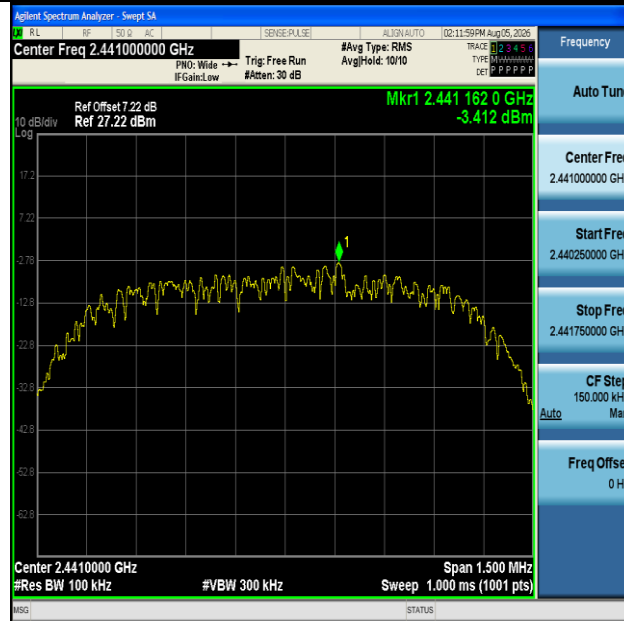


2DH5-Ant1-2402-30~1000-PASS

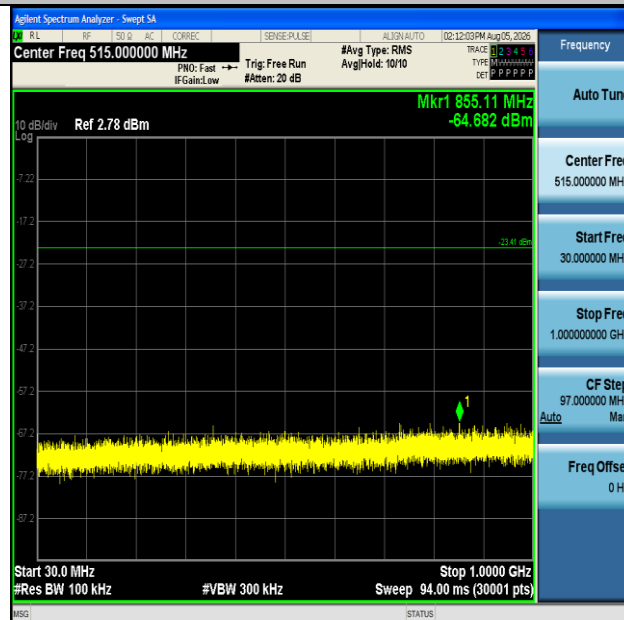


2DH5-Ant1-2402-1000~26500-PASS





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

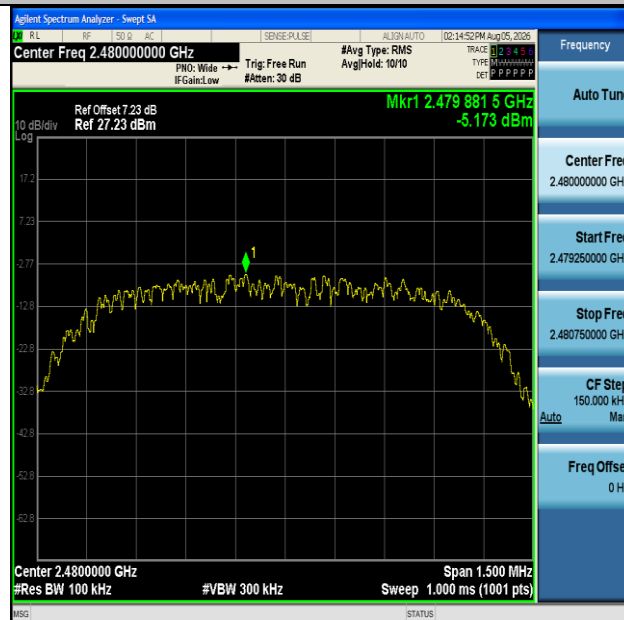


2DH5-Ant1-2441-30~1000-PASS



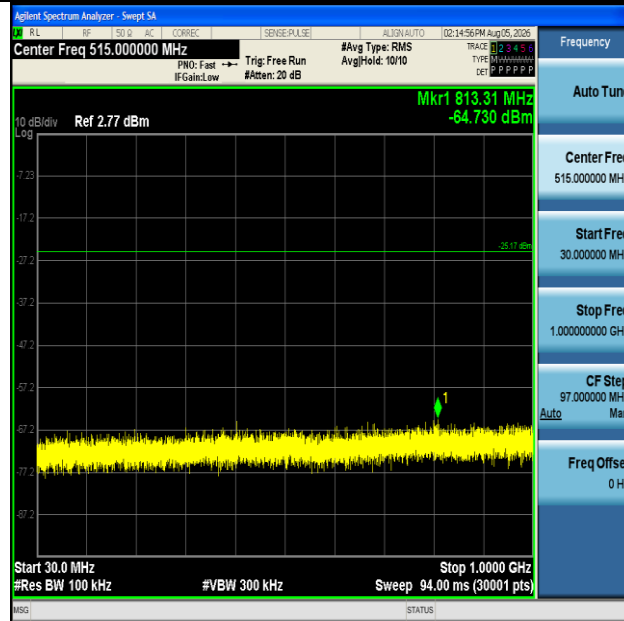


2DH5-Ant1-2441-1000~26500-PASS

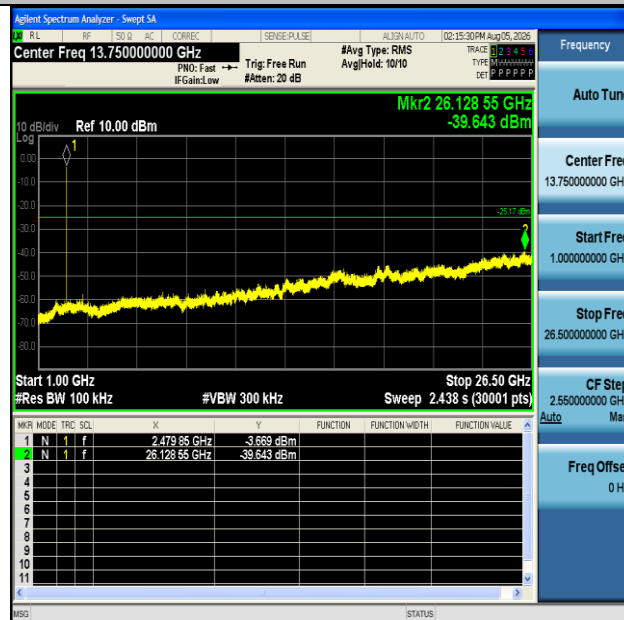


2DH5-Ant1-2480-0~Reference-PASS



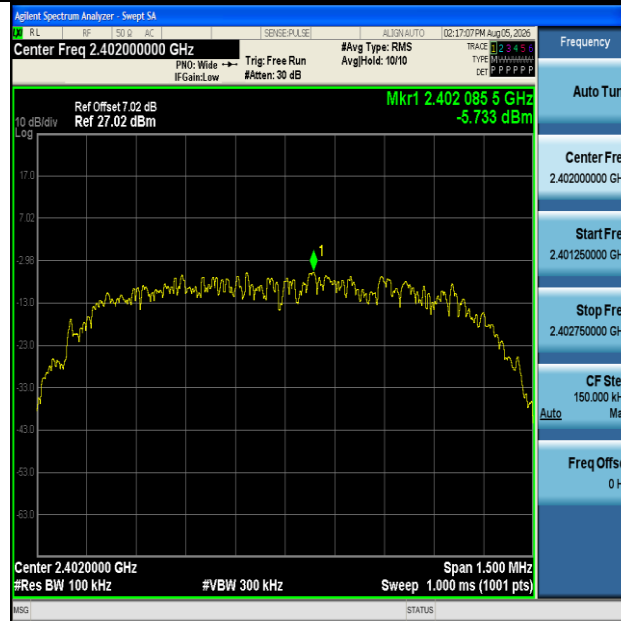


2DH5-Ant1-2480-30~1000-PASS

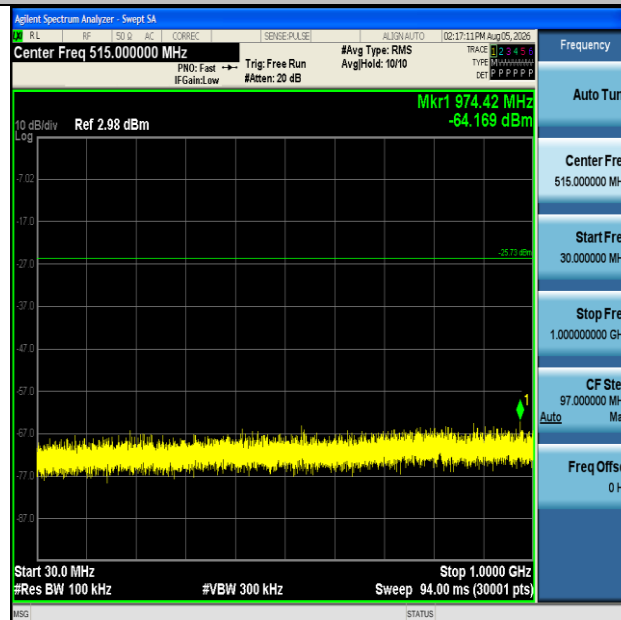


2DH5-Ant1-2480-1000~26500-PASS





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

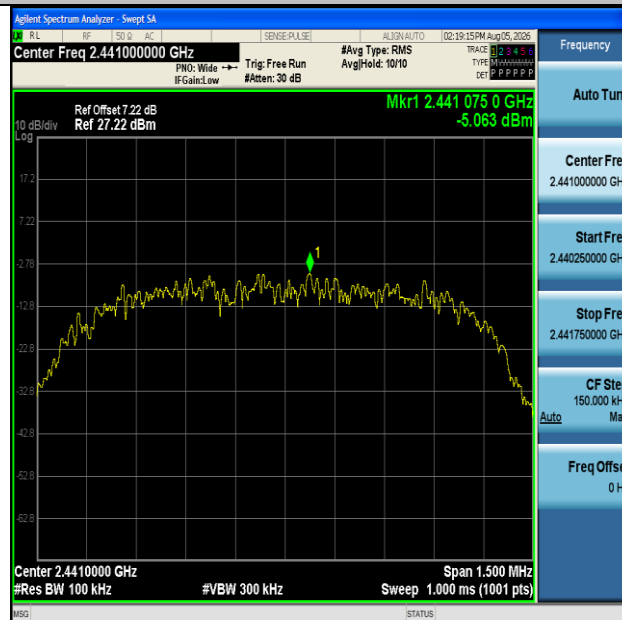


3DH5-Ant1-2402-30~1000-PASS



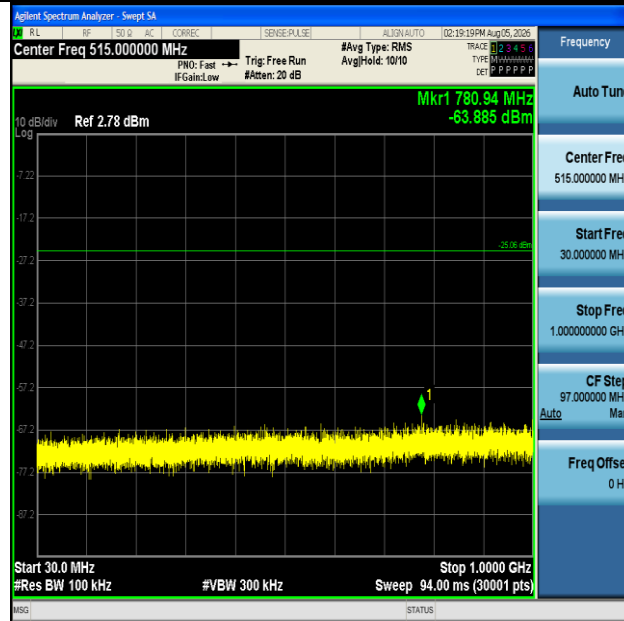


3DH5-Ant1-2402-1000~26500-PASS

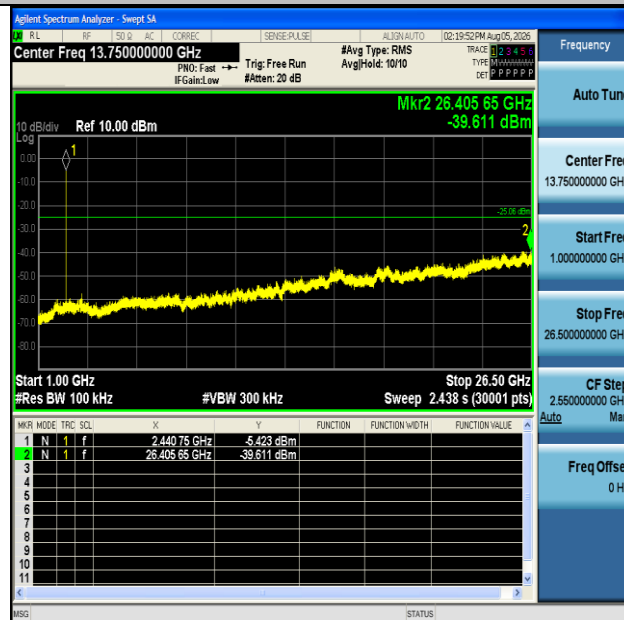


3DH5-Ant1-2441-0~Reference-PASS



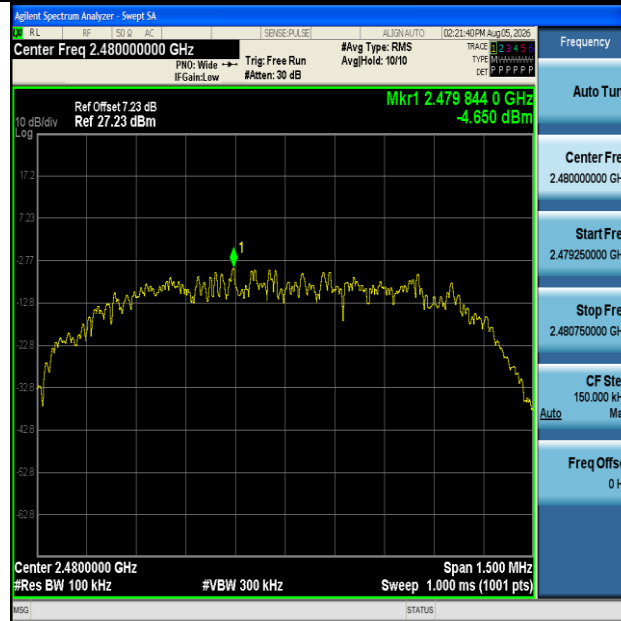


3DH5-Ant1-2441-30~1000-PASS

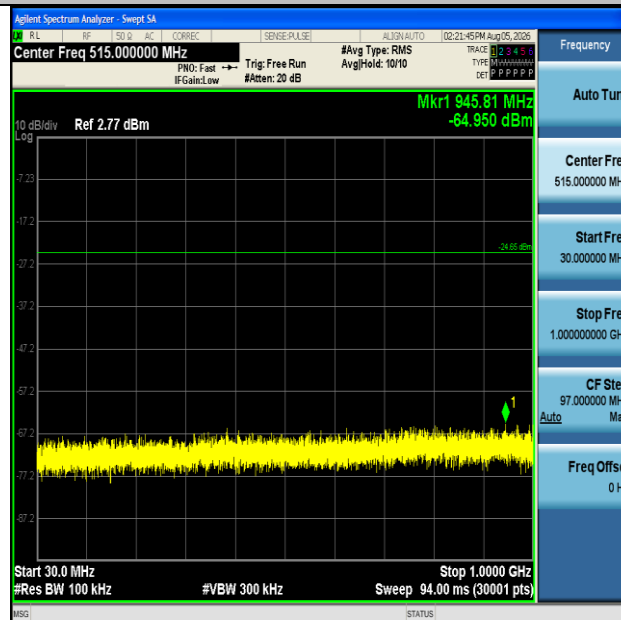


3DH5-Ant1-2441-1000~26500-PASS



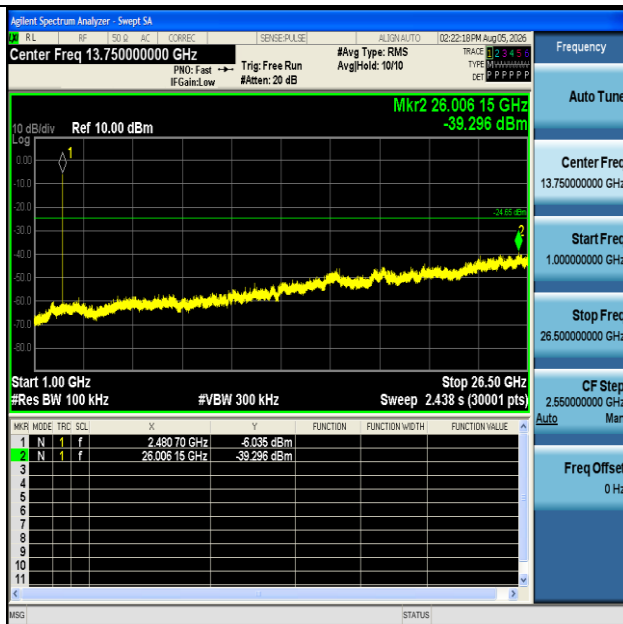


3DH5-Ant1-2480-0~Reference-PASS



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	2.87	3.75	76.53	1.16
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	2.88	3.75	76.80	1.15
3DH5	Ant1	2480	2.88	3.76	76.60	1.16

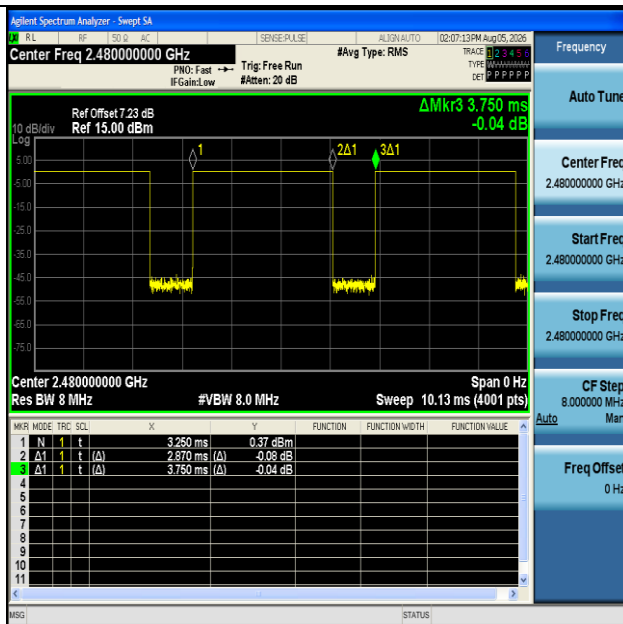
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



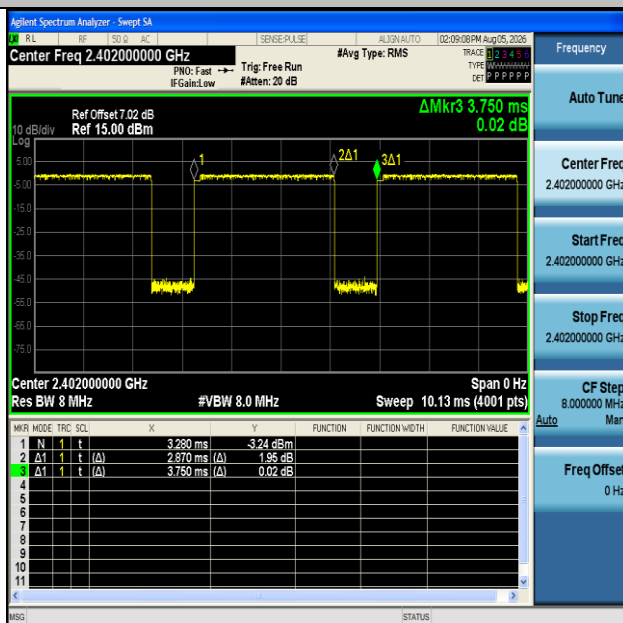


Test Graphs



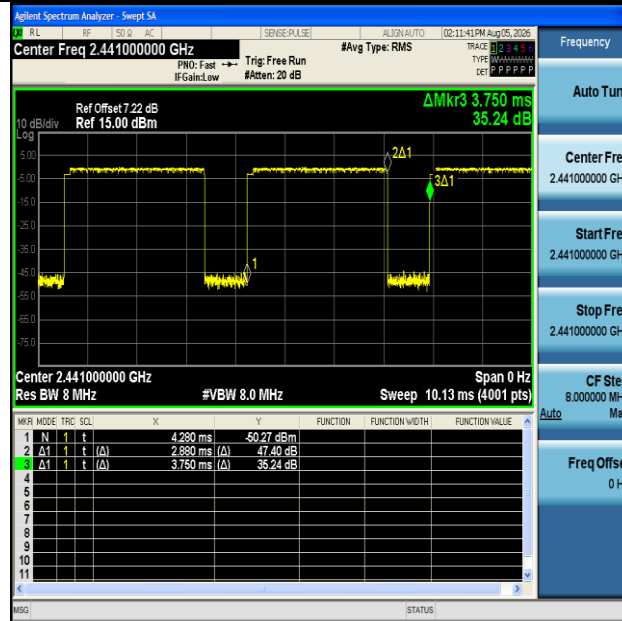


NTNV-DH5-Ant1-2480

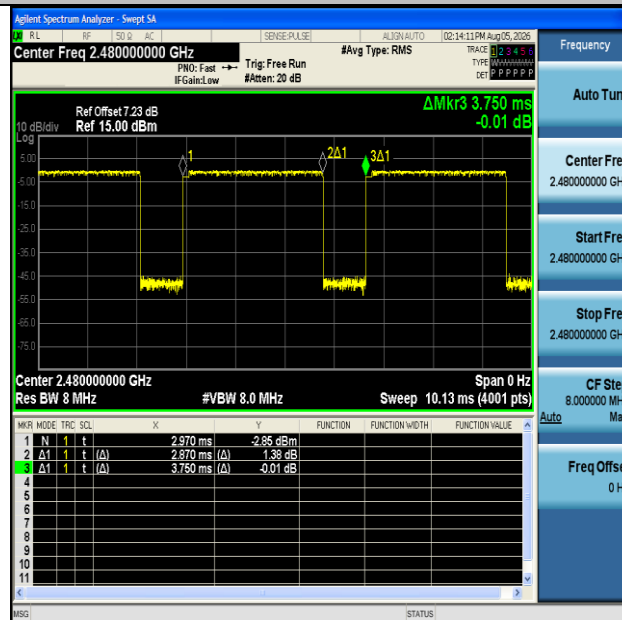


NTNV-2DH5-Ant1-2402



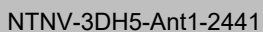
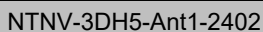


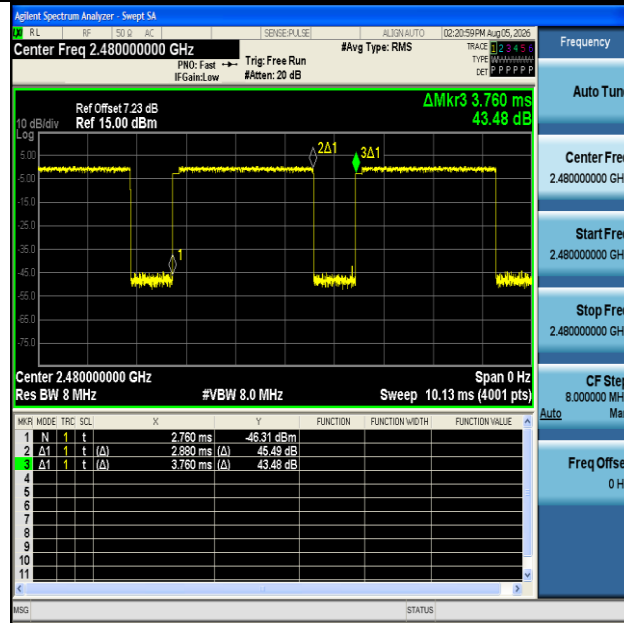
NTNV-2DH5-Ant1-2441



NTNV-2DH5-Ant1-2480







NTNV-3DH5-Ant1-2480

