



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

Product Name: Speaker

Trade Mark: W&O

Test Model: Y1 call

FCC ID: 2BOY2-Y1CALL

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	0.942	2401.553	2402.495	---	---
DH5	Ant1	2441	0.984	2440.526	2441.510	---	---
DH5	Ant1	2480	0.978	2479.529	2480.507	---	---
2DH5	Ant1	2402	1.200	2401.415	2402.615	---	---
2DH5	Ant1	2441	1.236	2440.388	2441.624	---	---
2DH5	Ant1	2480	1.227	2479.394	2480.621	---	---
3DH5	Ant1	2402	1.266	2401.379	2402.645	---	---
3DH5	Ant1	2441	1.266	2440.379	2441.645	---	---
3DH5	Ant1	2480	1.254	2479.379	2480.633	---	---

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	0.86895	2401.5834	2402.4524	---	---
DH5	Ant1	2441	0.86871	2440.5812	2441.4499	---	---
DH5	Ant1	2480	0.86037	2479.5839	2480.4443	---	---
2DH5	Ant1	2402	1.1455	2401.4421	2402.5876	---	---
2DH5	Ant1	2441	1.1612	2440.4324	2441.5936	---	---
2DH5	Ant1	2480	1.1541	2479.4381	2480.5922	---	---
3DH5	Ant1	2402	1.1537	2401.4419	2402.5956	---	---
3DH5	Ant1	2441	1.1514	2440.4410	2441.5924	---	---
3DH5	Ant1	2480	1.1486	2479.4430	2480.5916	---	---

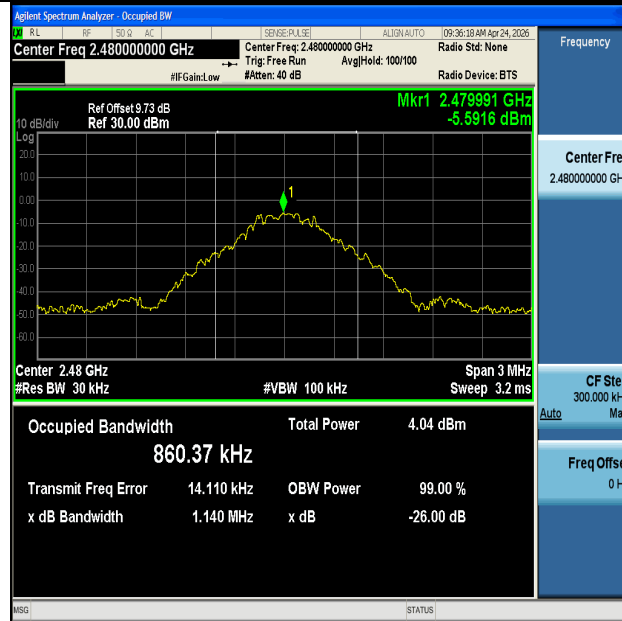
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



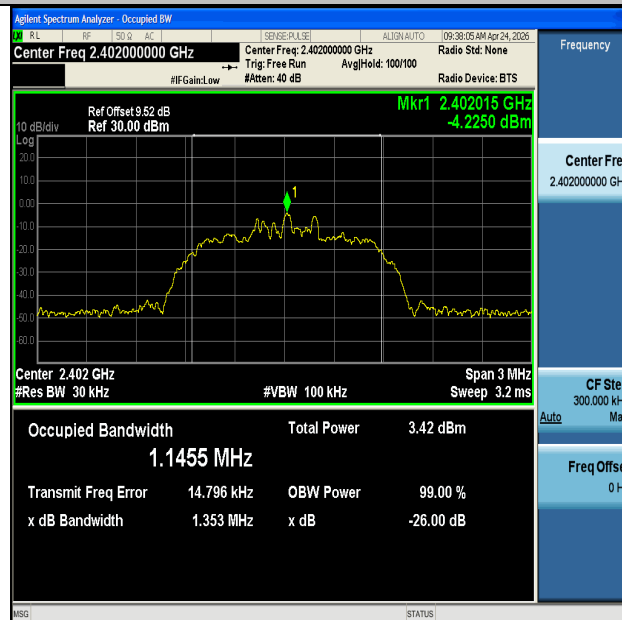


Test Graphs



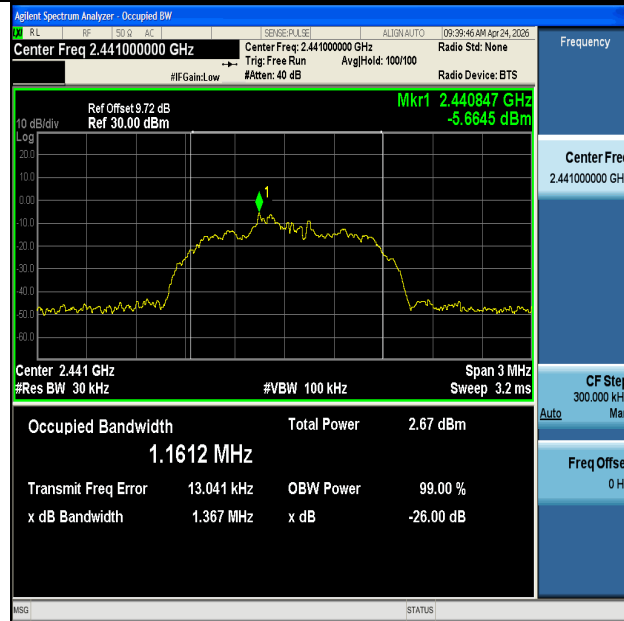


DH5-Ant1-2480



2DH5-Ant1-2402



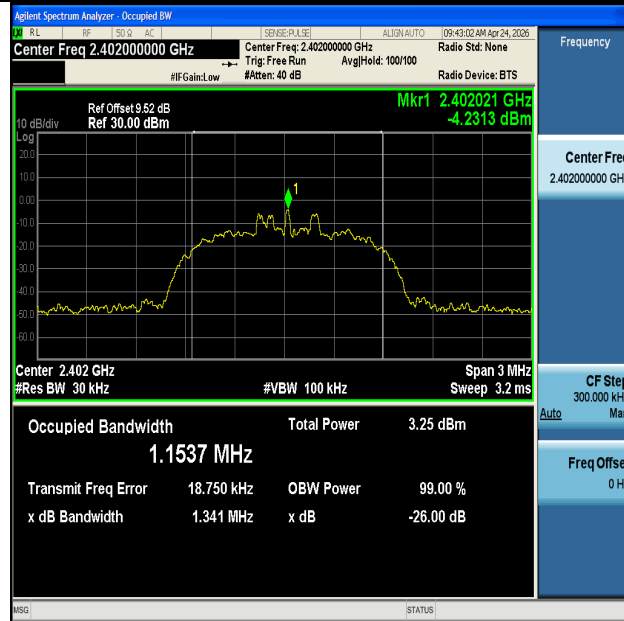


2DH5-Ant1-2441

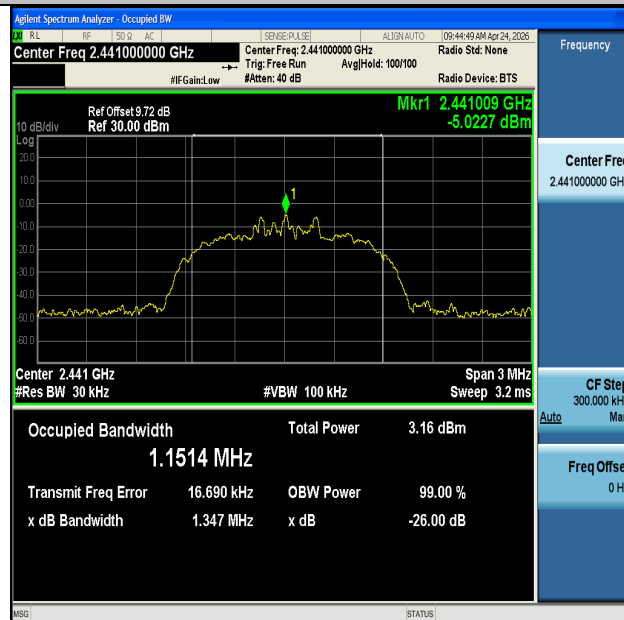


2DH5-Ant1-2480



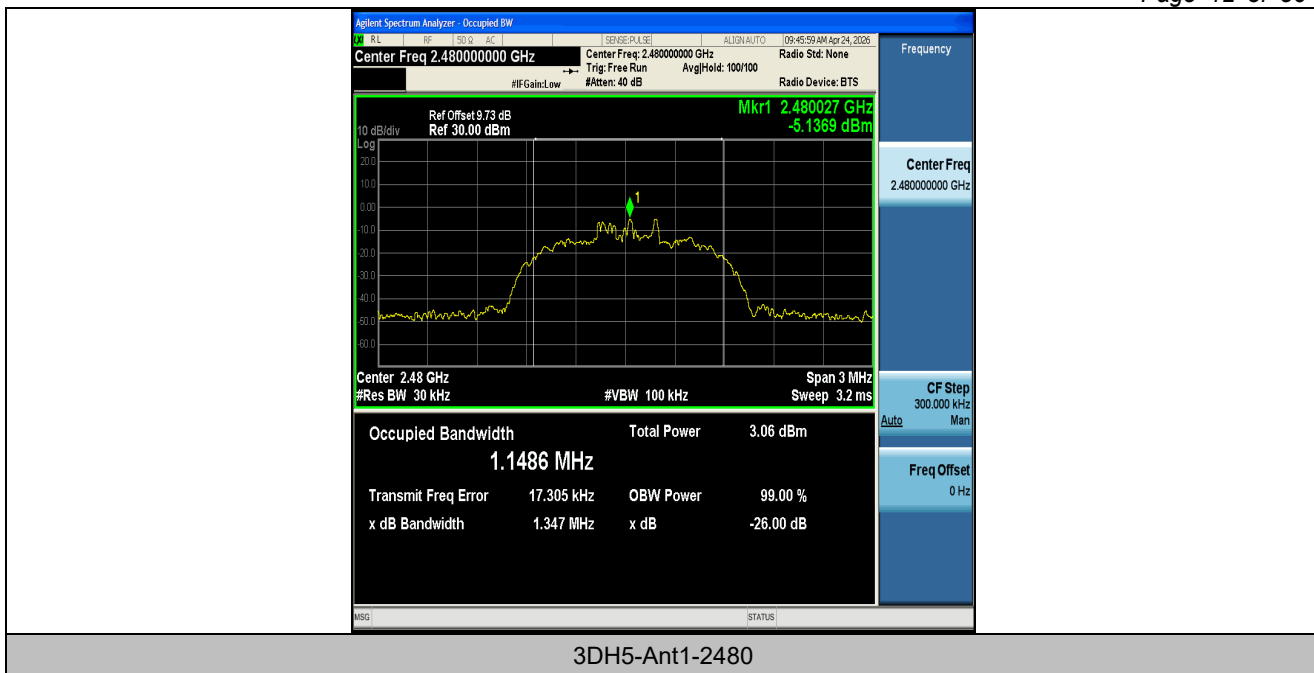


3DH5-Ant1-2402



3DH5-Ant1-2441







Appendix C: Maximum peak conducted output power

Test Result

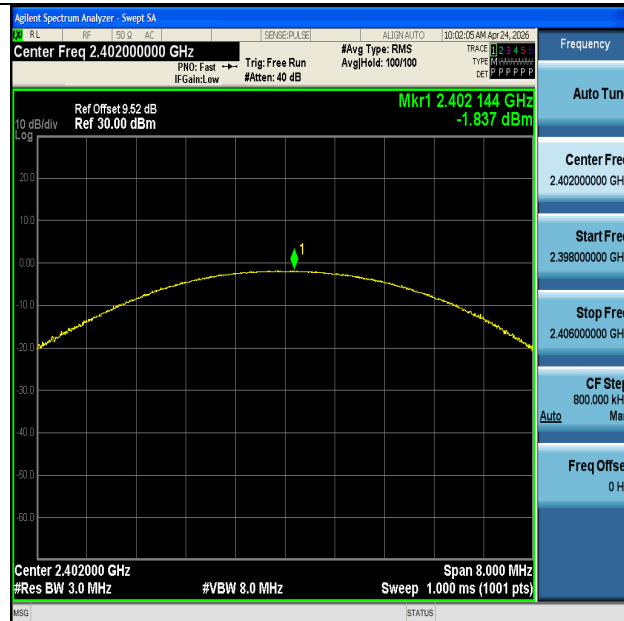
Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power [dBm]	Conducted Limit [dBm]	Verdict
DH5	Ant1	2402	-1.84	≤30	PASS
DH5	Ant1	2441	-1.95	≤30	PASS
DH5	Ant1	2480	-2.23	≤30	PASS
2DH5	Ant1	2402	-1.96	≤20.97	PASS
2DH5	Ant1	2441	-1.98	≤20.97	PASS
2DH5	Ant1	2480	-2.25	≤20.97	PASS
3DH5	Ant1	2402	-1.98	≤20.97	PASS
3DH5	Ant1	2441	-1.89	≤20.97	PASS
3DH5	Ant1	2480	-2.44	≤20.97	PASS

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

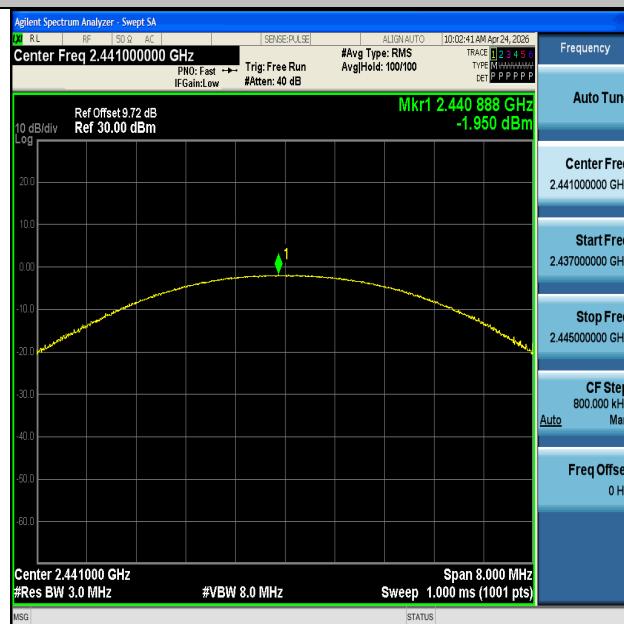




Test Graphs

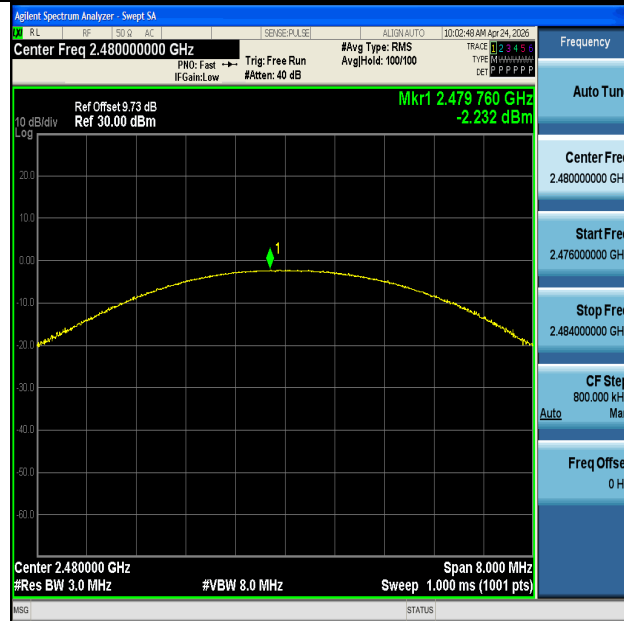


DH5-Ant1-2402-PASS



DH5-Ant1-2441-PASS



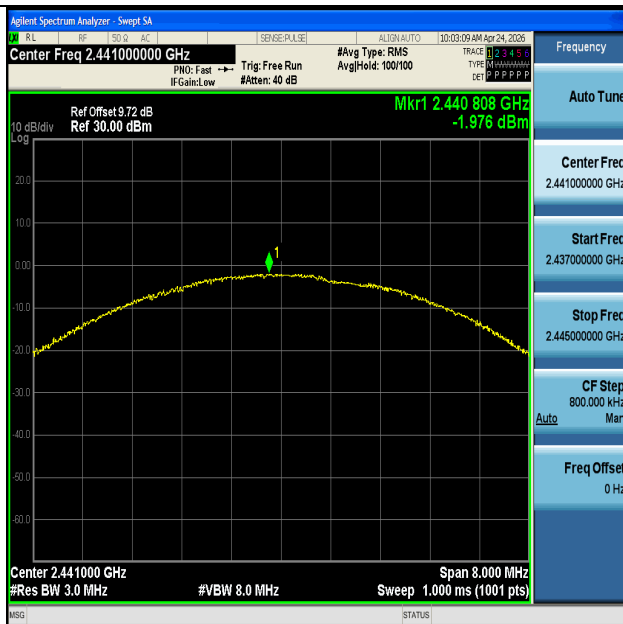


DH5-Ant1-2480-PASS

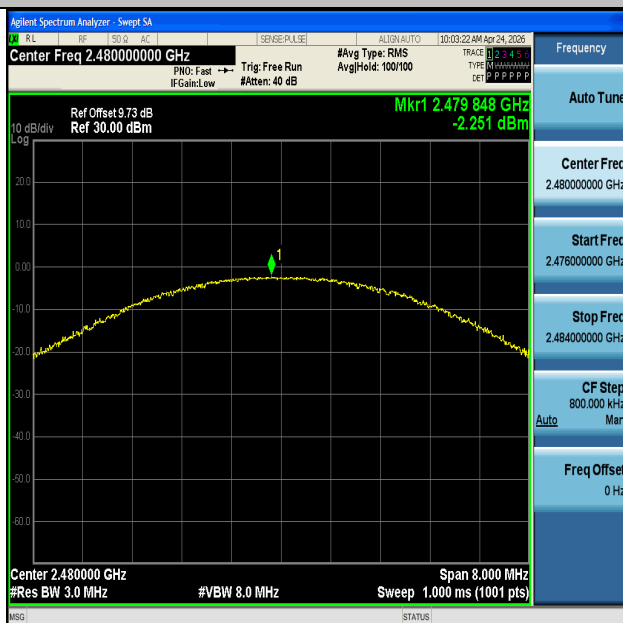


2DH5-Ant1-2402-PASS



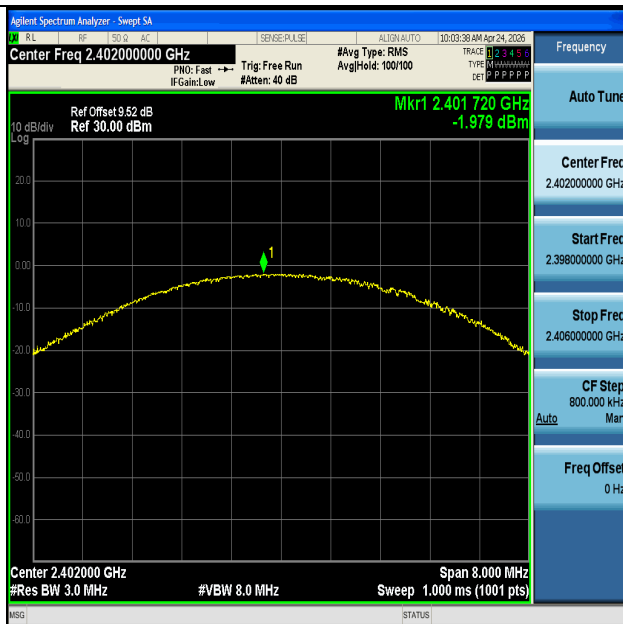


2DH5-Ant1-2441-PASS

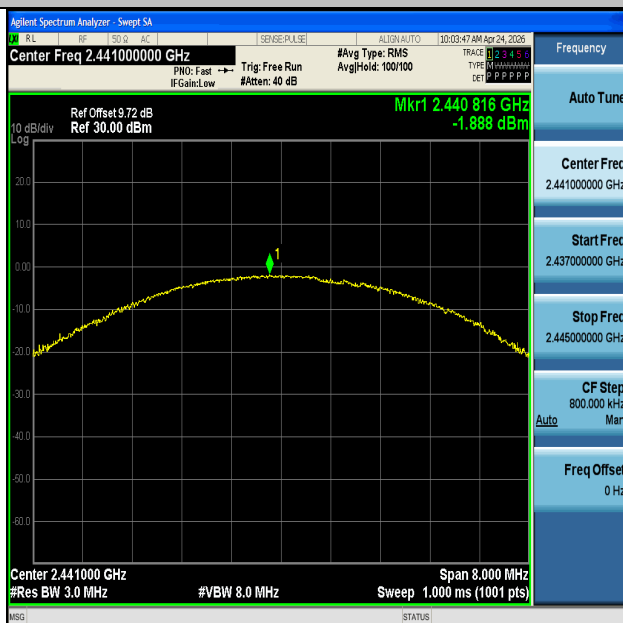


2DH5-Ant1-2480-PASS



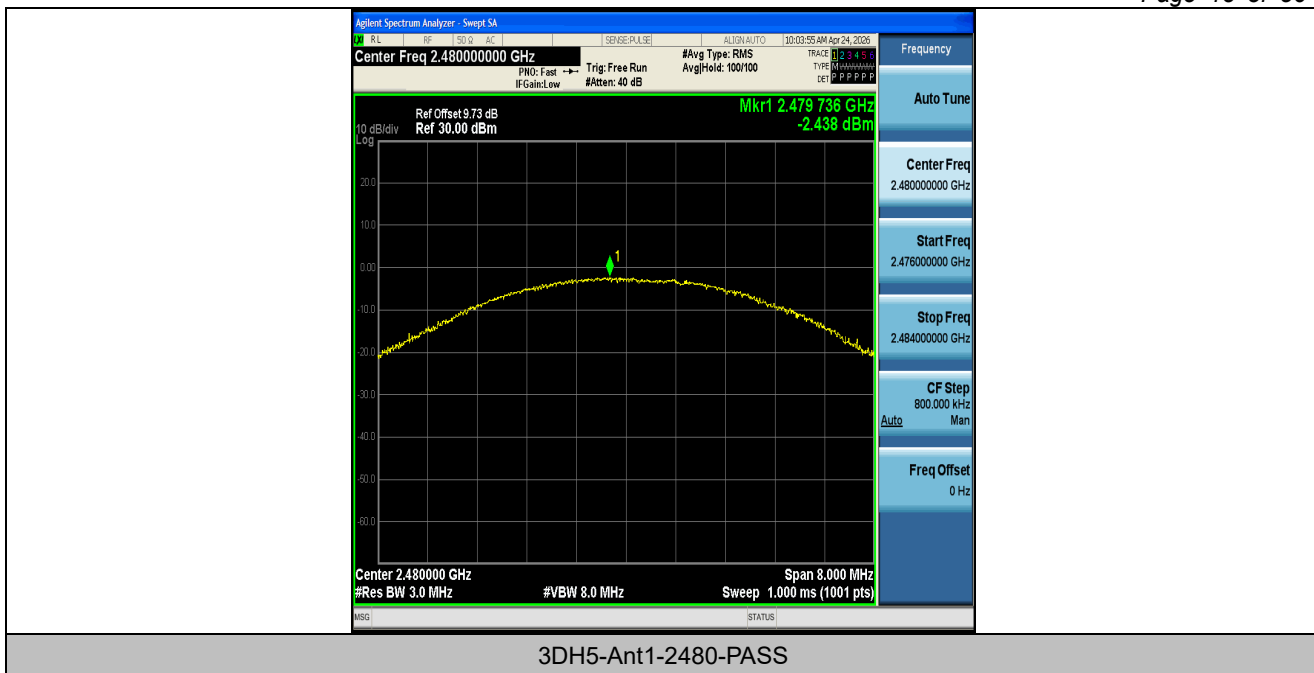


3DH5-Ant1-2402-PASS



3DH5-Ant1-2441-PASS







Appendix D: Carrier frequency separation

Test Result

Test Mode	Antenna	Frequency [MHz]	Result [MHz]	Limit [MHz]	Verdict
DH5	Ant1	Hop	1	≥0.984	PASS
2DH5	Ant1	Hop	1.006	≥0.824	PASS
3DH5	Ant1	Hop	1.01	≥0.844	PASS

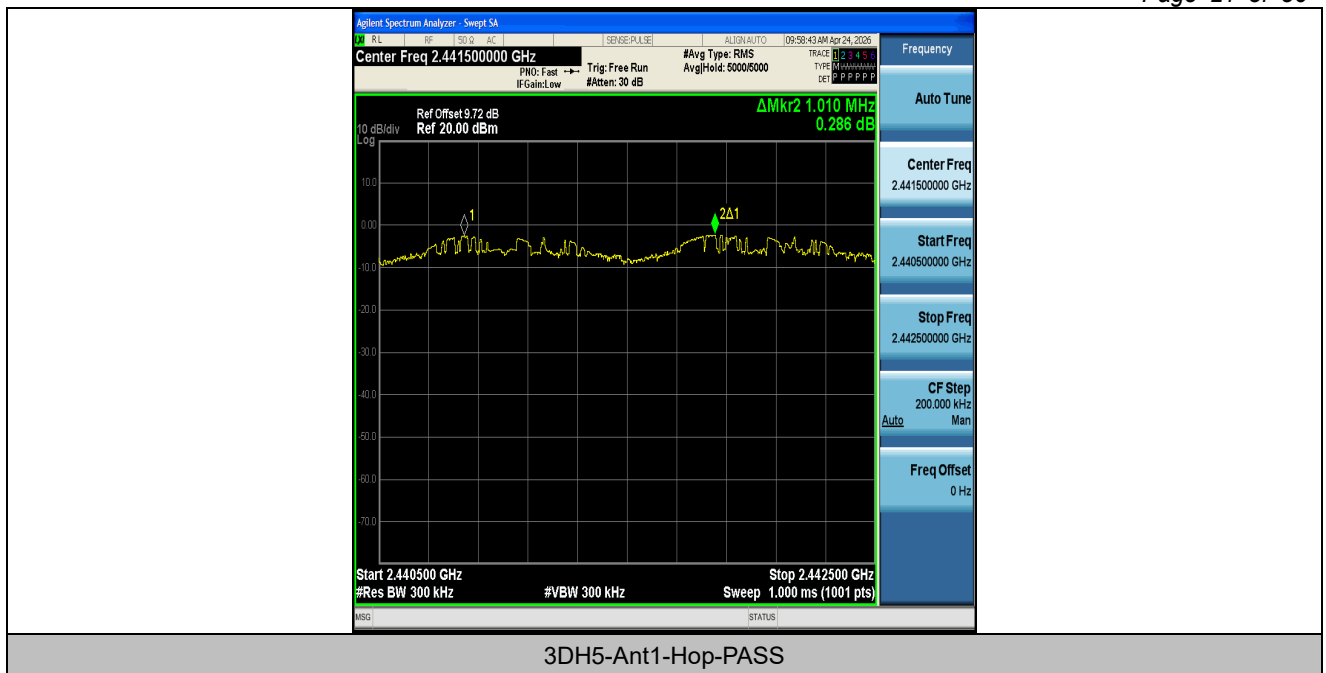
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)





Test Graphs







Appendix E: Time of occupancy

Test Result

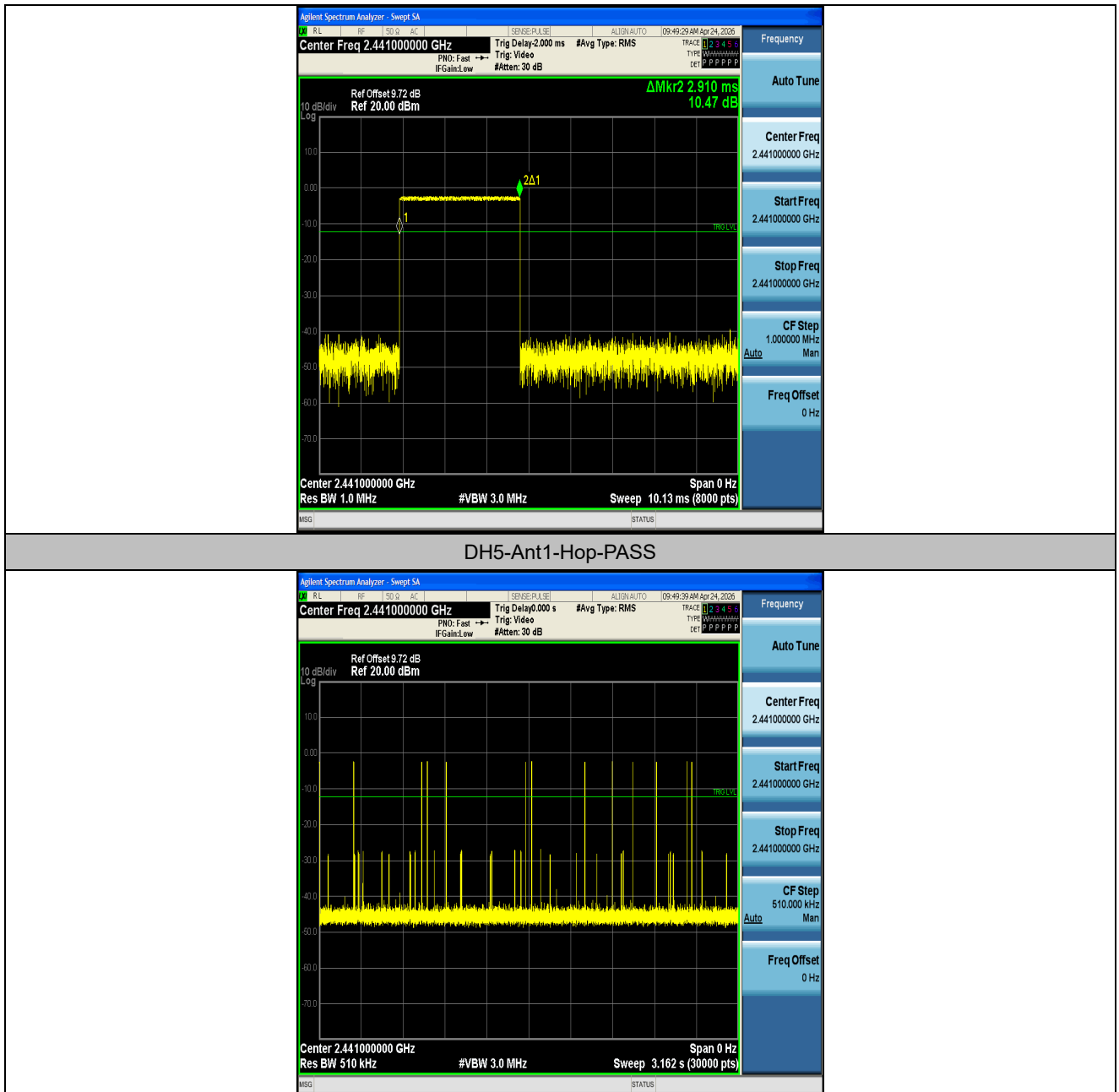
Test Mode	Antenna	Frequency [MHz]	Burst Width [ms]	TotalHops [Num]	Result [s]	Limit [s]	Verdict
DH5	Ant1	Hop	2.910	130	0.378	≤0.4	PASS
2DH5	Ant1	Hop	2.916	130	0.379	≤0.4	PASS
3DH5	Ant1	Hop	2.917	130	0.379	≤0.4	PASS

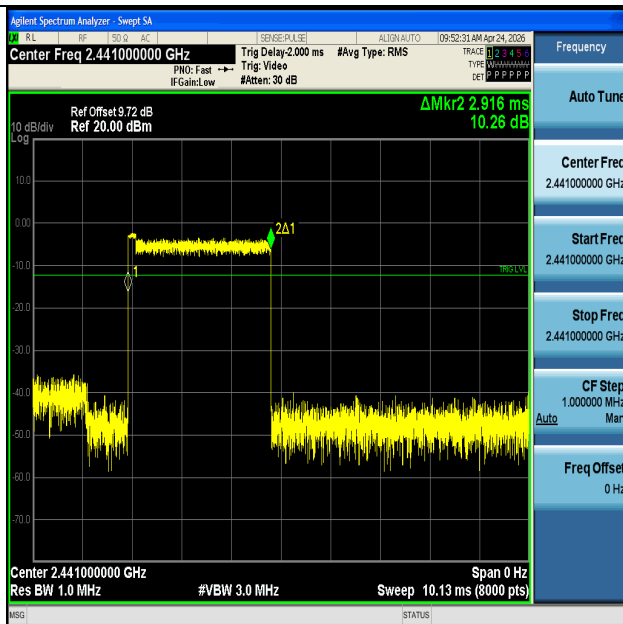
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



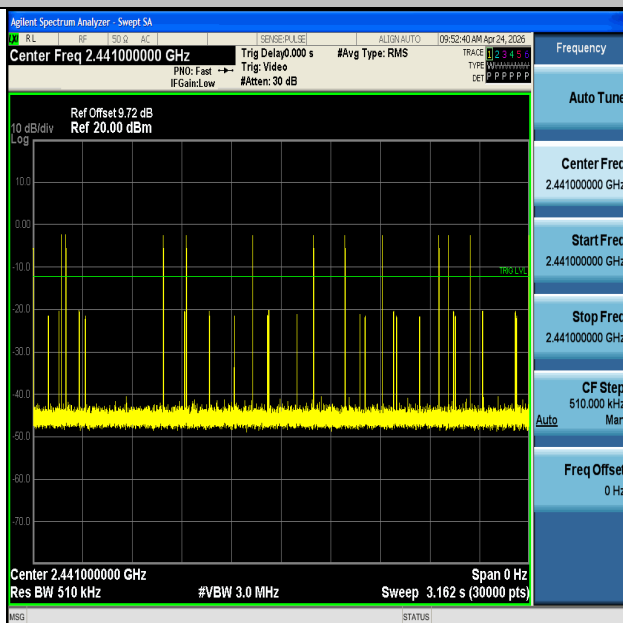


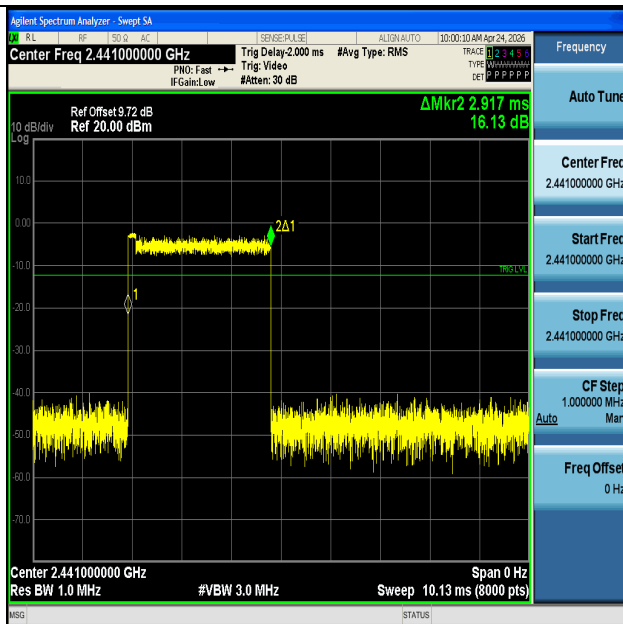
Test Graphs



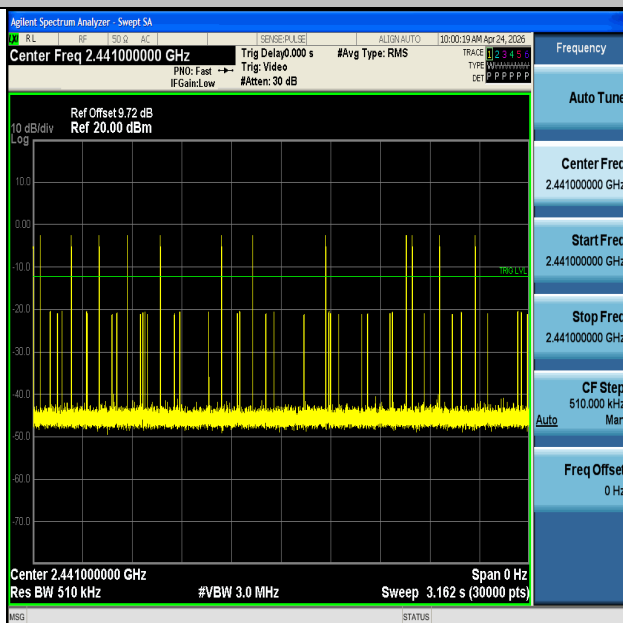


2DH5-Ant1-Hop-PASS





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

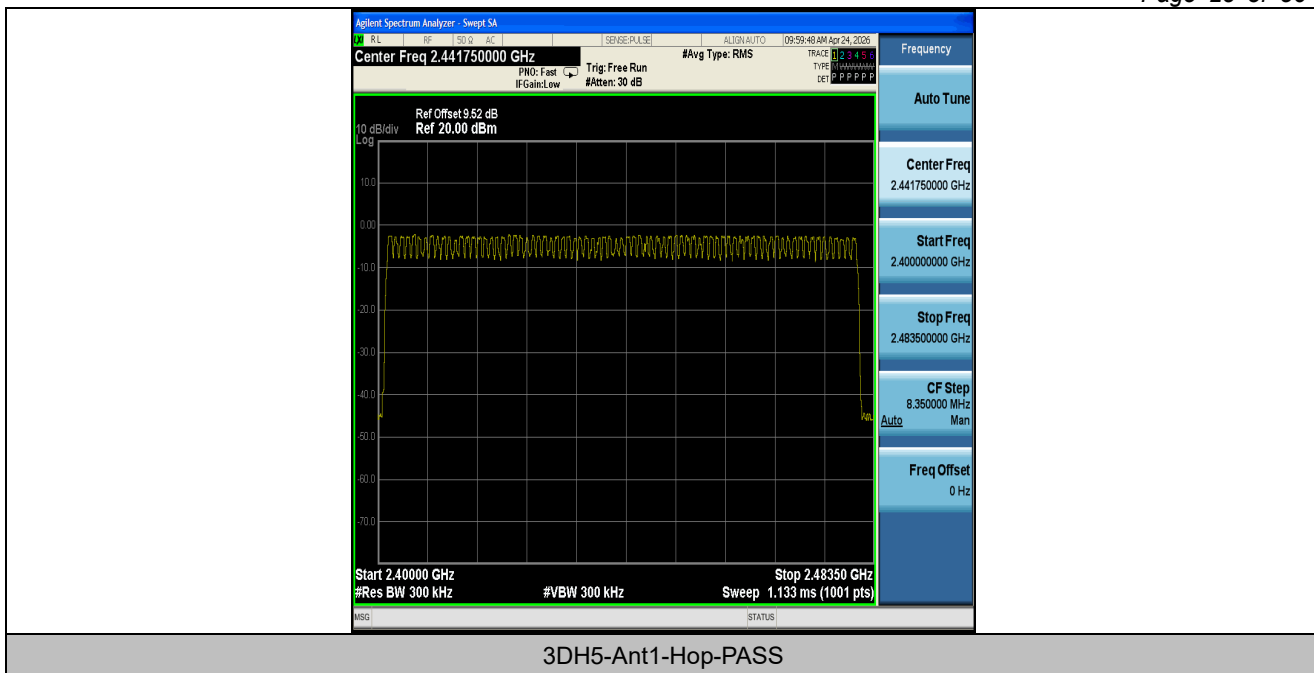
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)





Test Graphs







Appendix G: Band edge measurements

Test Result

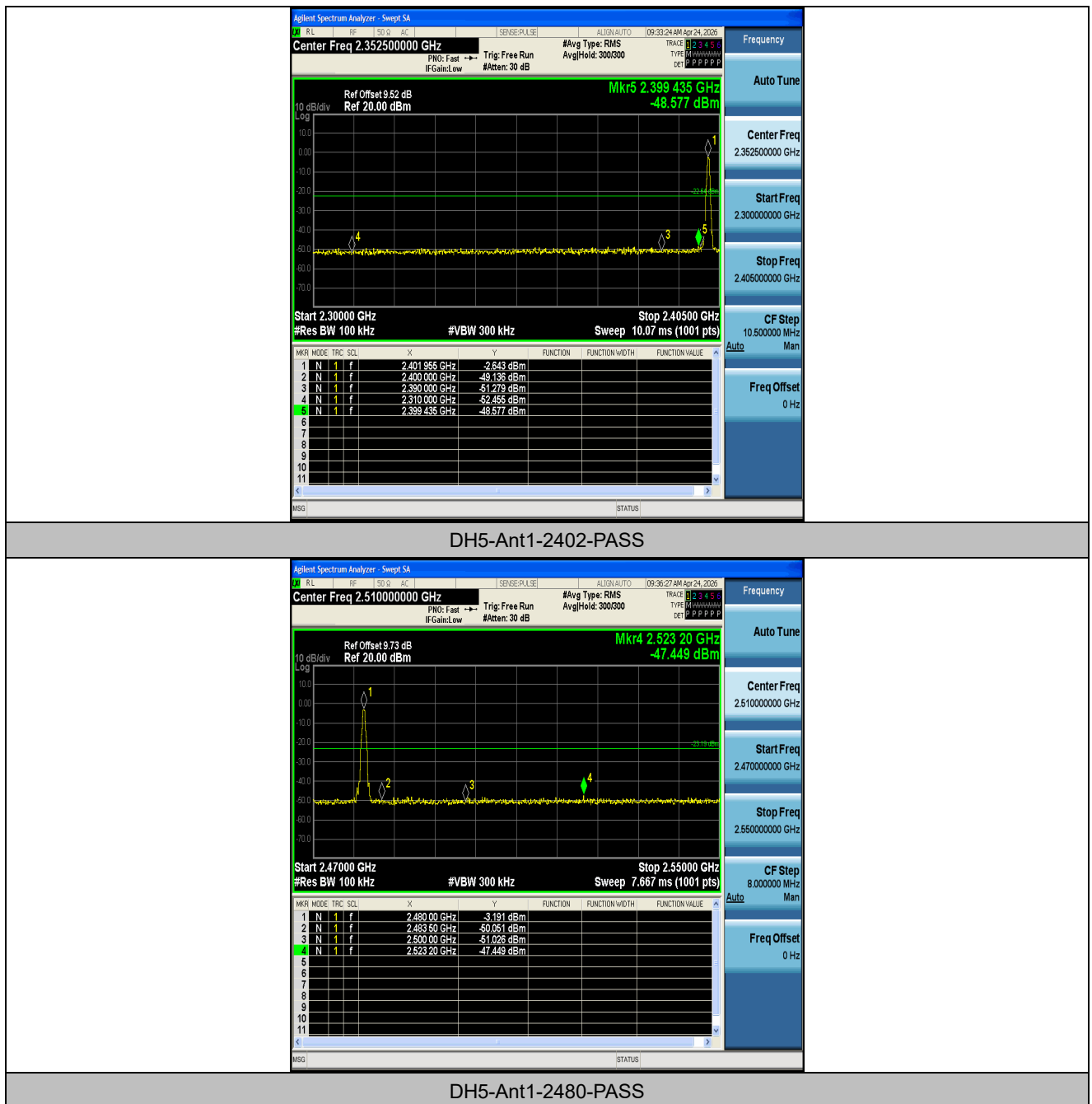
Test Mode	Antenna	Ch.Name	Frequency [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-2.64	-48.58	≤ -22.64	PASS
DH5	Ant1	High	2480	-3.19	-47.45	≤ -23.19	PASS
DH5	Ant1	Low	Hop_2402	-3.39	-48.85	≤ -23.39	PASS
DH5	Ant1	High	Hop_2480	-2.66	-47.03	≤ -22.66	PASS
2DH5	Ant1	Low	2402	-2.76	-48.55	≤ -22.76	PASS
2DH5	Ant1	High	2480	-3.11	-48.17	≤ -23.11	PASS
2DH5	Ant1	Low	Hop_2402	-3.42	-48.96	≤ -23.42	PASS
2DH5	Ant1	High	Hop_2480	-3.33	-47.75	≤ -23.33	PASS
3DH5	Ant1	Low	2402	-2.73	-48.99	≤ -22.73	PASS
3DH5	Ant1	High	2480	-3.27	-48.02	≤ -23.27	PASS
3DH5	Ant1	Low	Hop_2402	-5.69	-48.22	≤ -25.69	PASS
3DH5	Ant1	High	Hop_2480	-3.01	-48.1	≤ -23.01	PASS

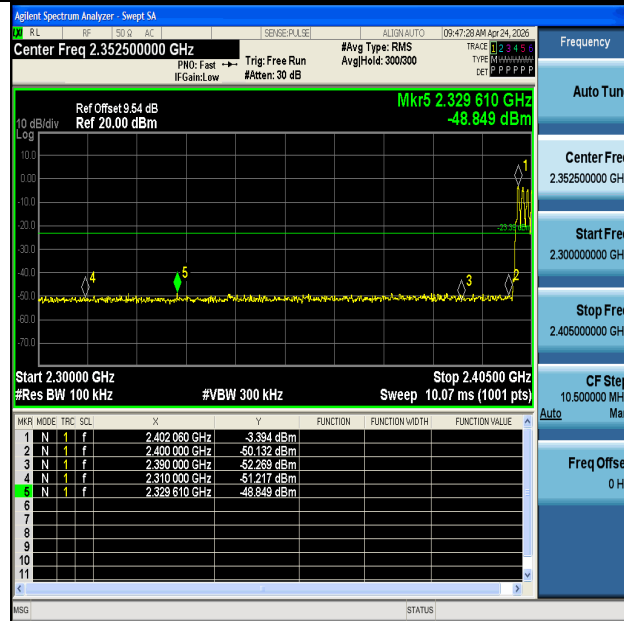
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



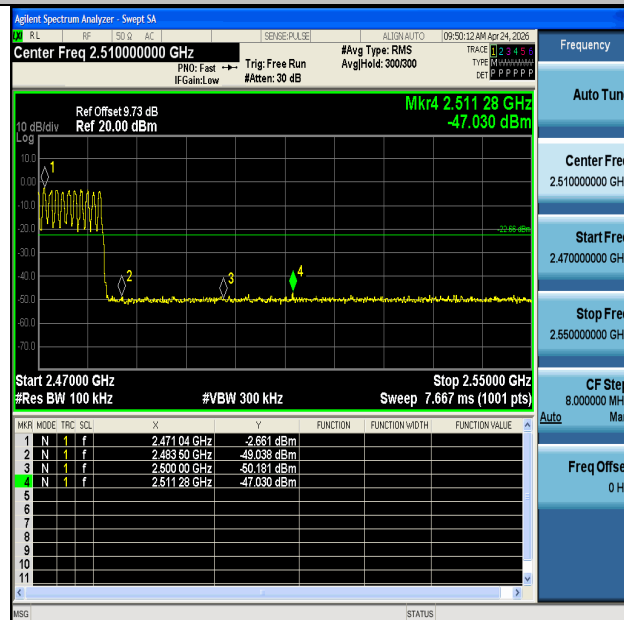


Test Graphs



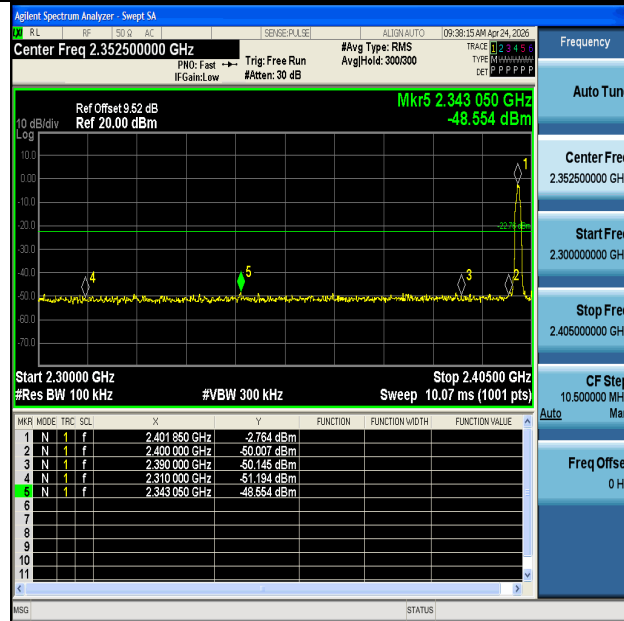


DH5-Ant1-Hop_2402-PASS

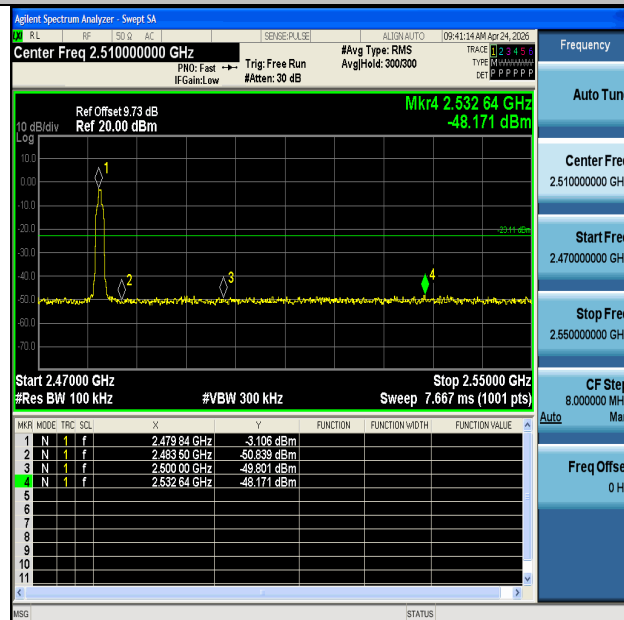


DH5-Ant1-Hop_2480-PASS



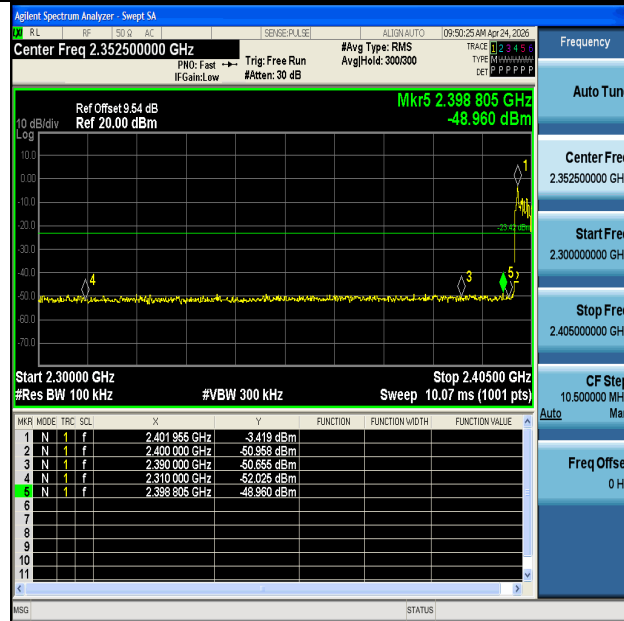


2DH5-Ant1-2402-PASS

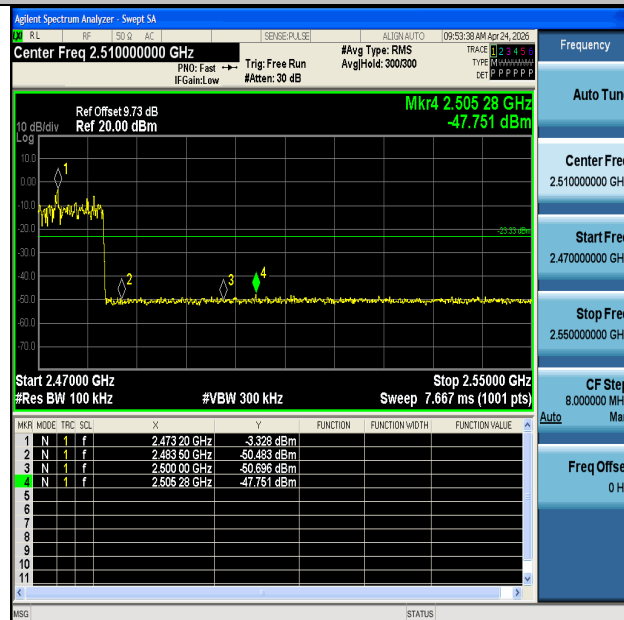


2DH5-Ant1-2480-PASS



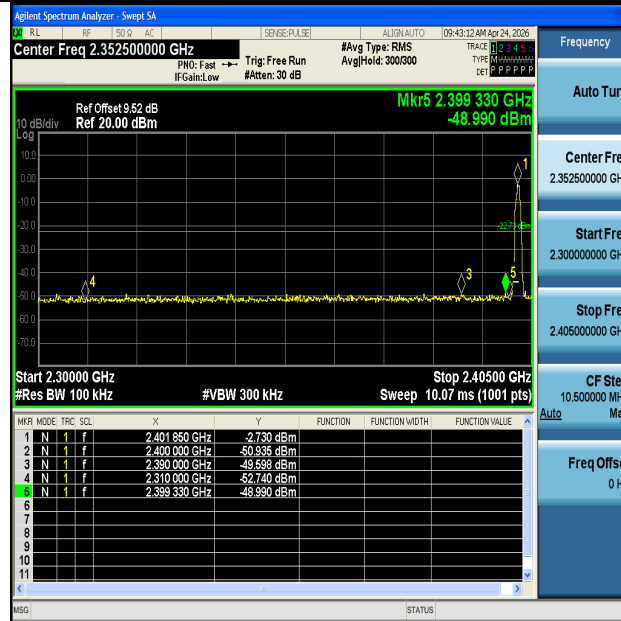


2DH5-Ant1-Hop_2402-PASS

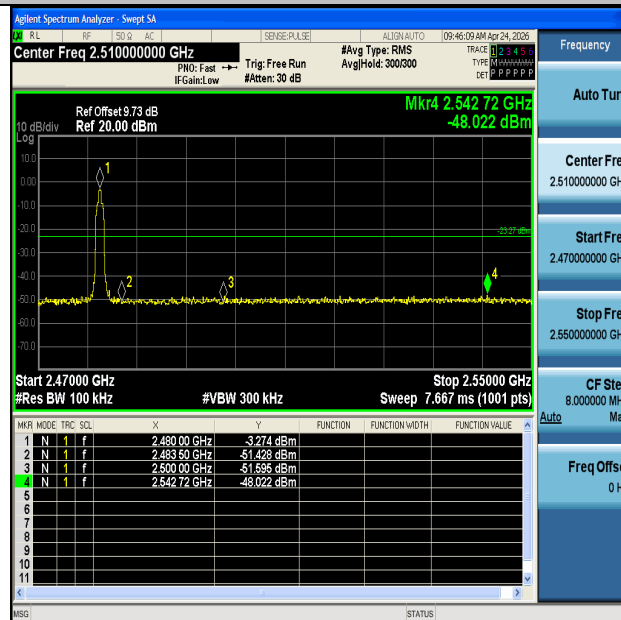


2DH5-Ant1-Hop_2480-PASS



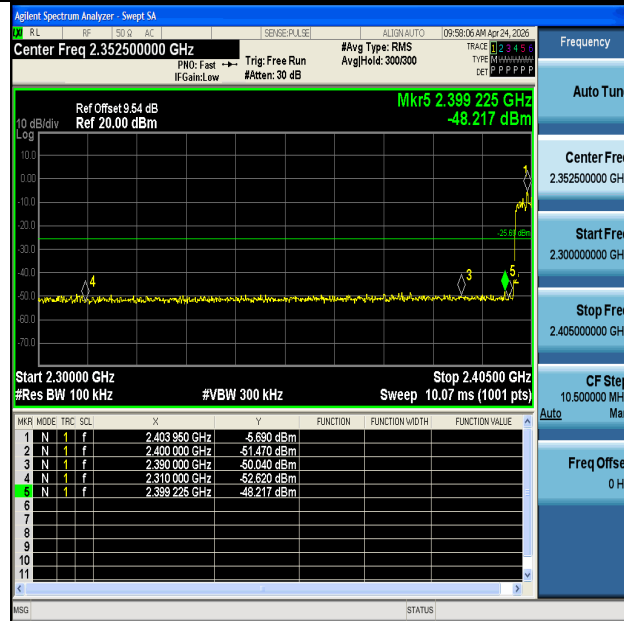


3DH5-Ant1-2402-PASS

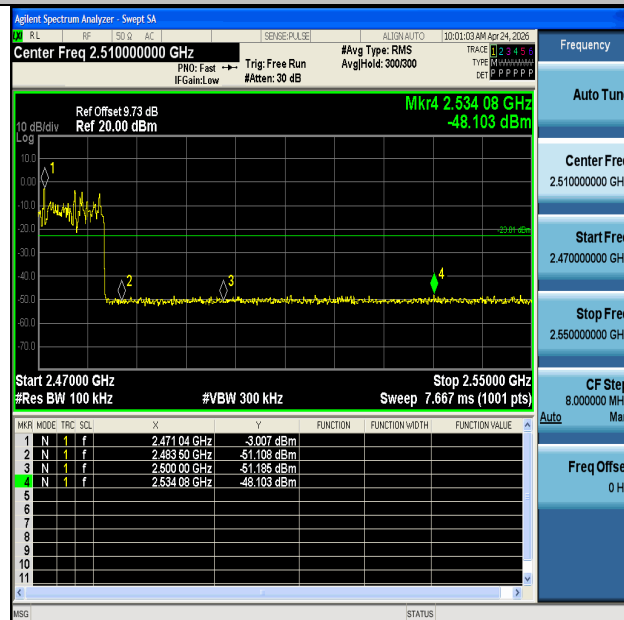


3DH5-Ant1-2480-PASS





3DH5-Ant1-Hop_2402-PASS



3DH5-Ant1-Hop_2480-PASS





Appendix H: Conducted Spurious Emission

Test Result

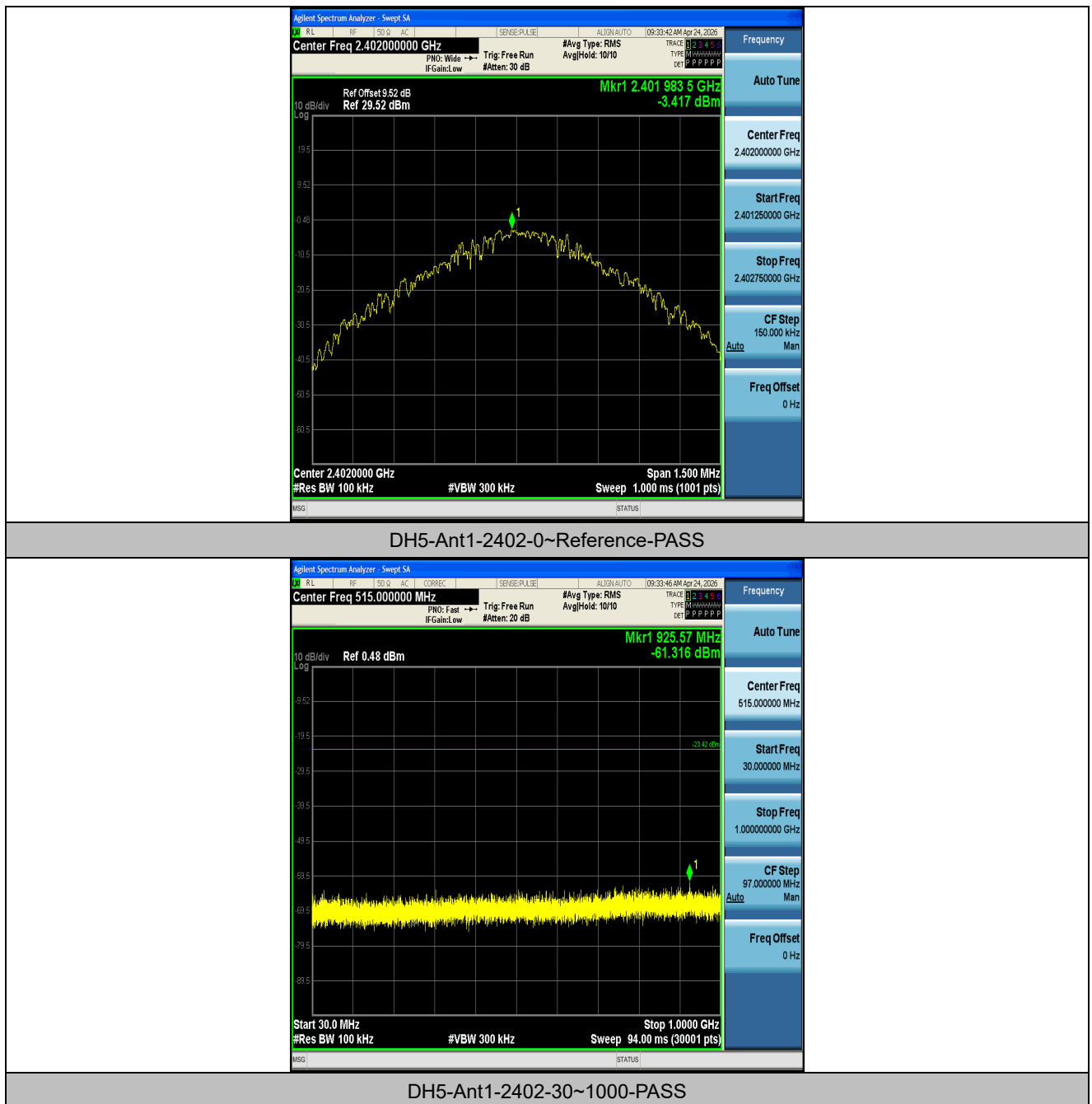
Test Mode	Antenna	Frequency [MHz]	Freq. Range [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	0~Reference	-3.42	-3.42	---	PASS
DH5	Ant1	2402	30~1000	-3.42	-61.32	≤ -23.42	PASS
DH5	Ant1	2402	1000~26500	-3.42	-37.07	≤ -23.42	PASS
DH5	Ant1	2441	0~Reference	-3.36	-3.36	---	PASS
DH5	Ant1	2441	30~1000	-3.36	-62.32	≤ -23.36	PASS
DH5	Ant1	2441	1000~26500	-3.36	-35.2	≤ -23.36	PASS
DH5	Ant1	2480	0~Reference	-3.15	-3.15	---	PASS
DH5	Ant1	2480	30~1000	-3.15	-61.82	≤ -23.15	PASS
DH5	Ant1	2480	1000~26500	-3.15	-36.34	≤ -23.15	PASS
2DH5	Ant1	2402	0~Reference	-3.02	-3.02	---	PASS
2DH5	Ant1	2402	30~1000	-3.02	-61.69	≤ -23.02	PASS
2DH5	Ant1	2402	1000~26500	-3.02	-37.45	≤ -23.02	PASS
2DH5	Ant1	2441	0~Reference	-6.89	-6.89	---	PASS
2DH5	Ant1	2441	30~1000	-6.89	-62.58	≤ -26.89	PASS
2DH5	Ant1	2441	1000~26500	-6.89	-36.47	≤ -26.89	PASS
2DH5	Ant1	2480	0~Reference	-4.72	-4.72	---	PASS
2DH5	Ant1	2480	30~1000	-4.72	-62.09	≤ -24.72	PASS
2DH5	Ant1	2480	1000~26500	-4.72	-36.95	≤ -24.72	PASS
3DH5	Ant1	2402	0~Reference	-3.02	-3.02	---	PASS
3DH5	Ant1	2402	30~1000	-3.02	-62.48	≤ -23.02	PASS
3DH5	Ant1	2402	1000~26500	-3.02	-37.24	≤ -23.02	PASS
3DH5	Ant1	2441	0~Reference	-2.93	-2.93	---	PASS
3DH5	Ant1	2441	30~1000	-2.93	-61.39	≤ -22.93	PASS
3DH5	Ant1	2441	1000~26500	-2.93	-35.99	≤ -22.93	PASS
3DH5	Ant1	2480	0~Reference	-3.58	-3.58	---	PASS
3DH5	Ant1	2480	30~1000	-3.58	-61.19	≤ -23.58	PASS
3DH5	Ant1	2480	1000~26500	-3.58	-35.09	≤ -23.58	PASS

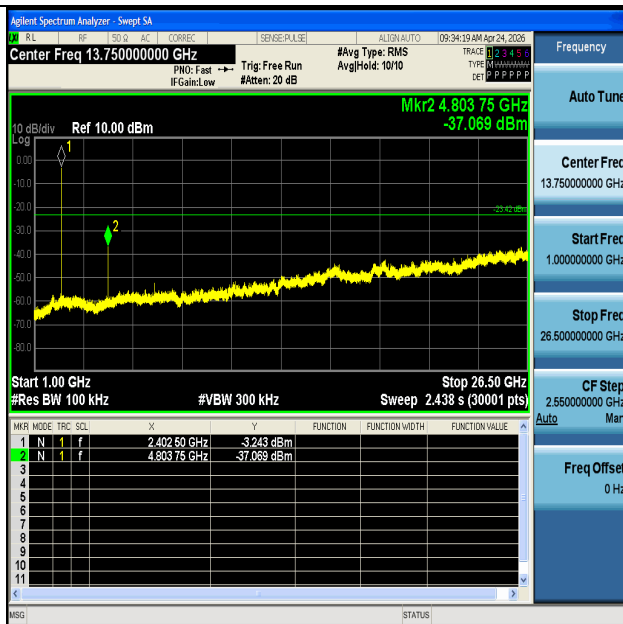
Note: offset(dB) in Reference test plots = cable loss(dB) + attenuator factor(dB); For spurious emissions plots from 30MHz to 26.5GHz, the cable loss and attenuator factors have been set in the 'Input Correction' of the Spectrum Analyzer during the test.



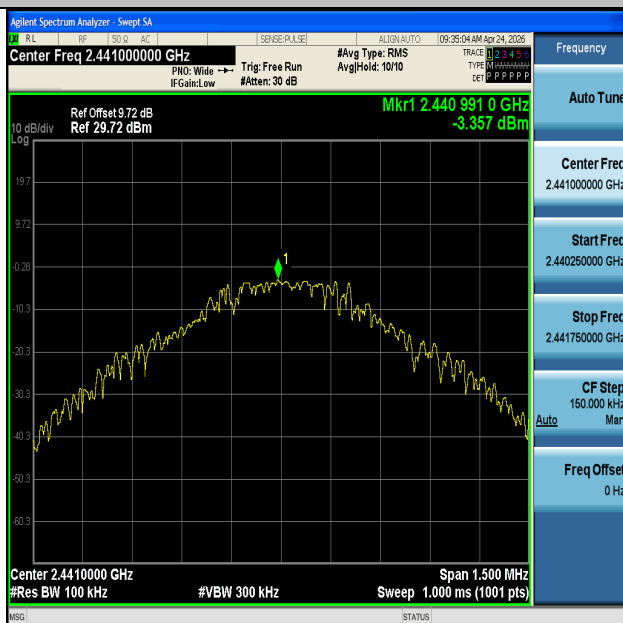


Test Graphs



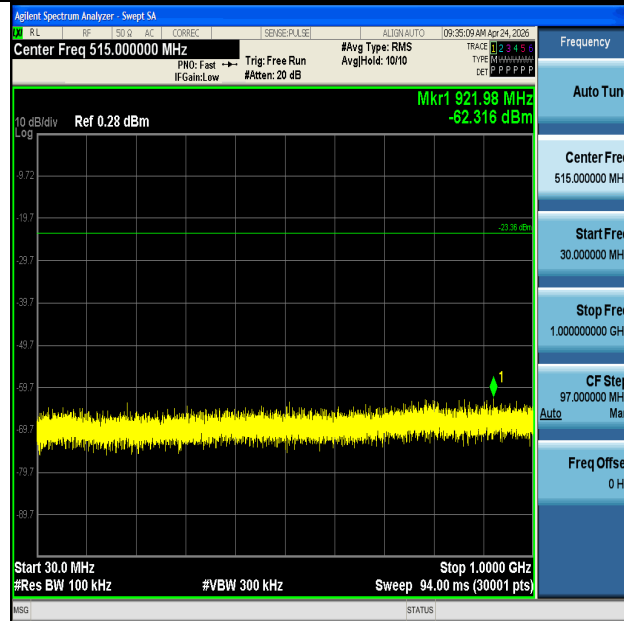


DH5-Ant1-2402-1000~26500-PASS

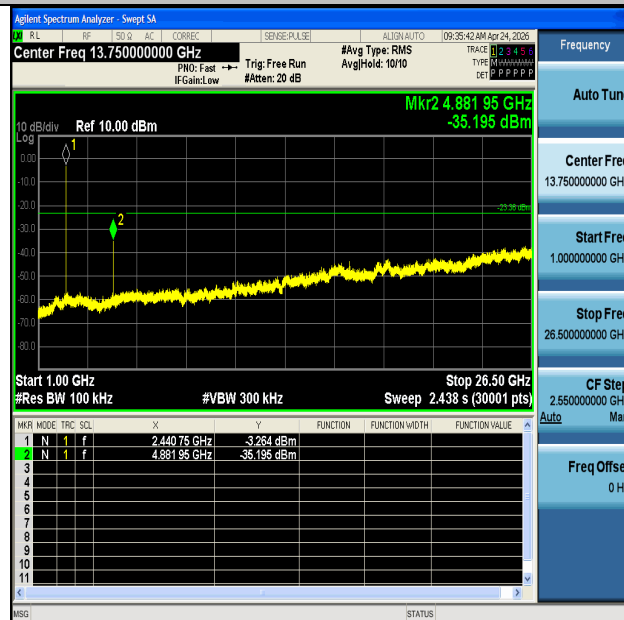


DH5-Ant1-2441-0~Reference-PASS



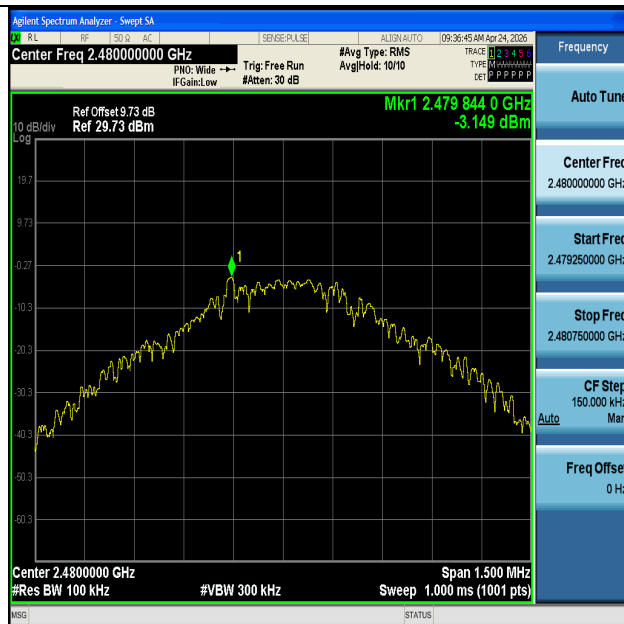


DH5-Ant1-2441-30~1000-PASS

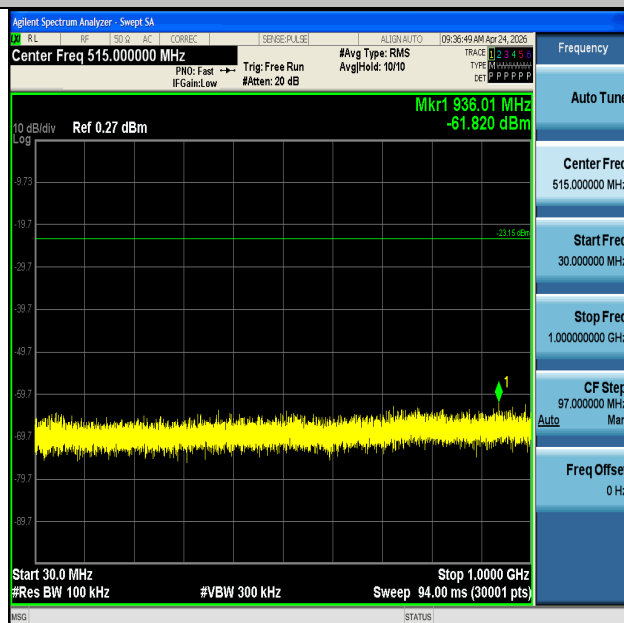


DH5-Ant1-2441-1000~26500-PASS



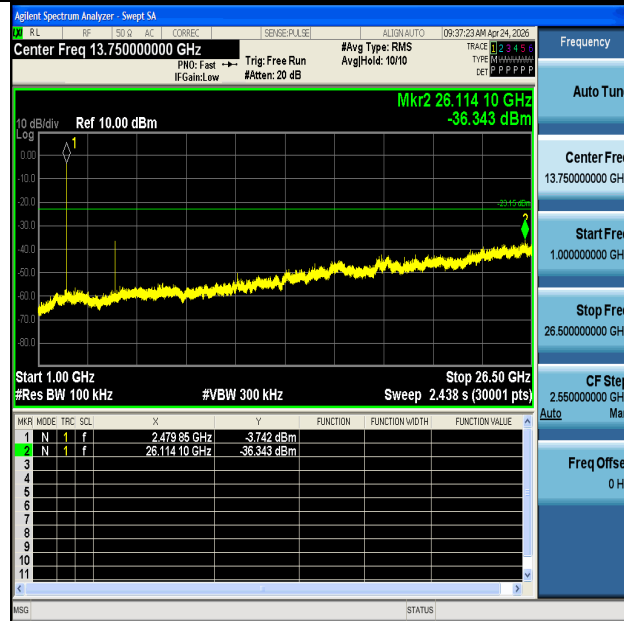


DH5-Ant1-2480-0~Reference-PASS

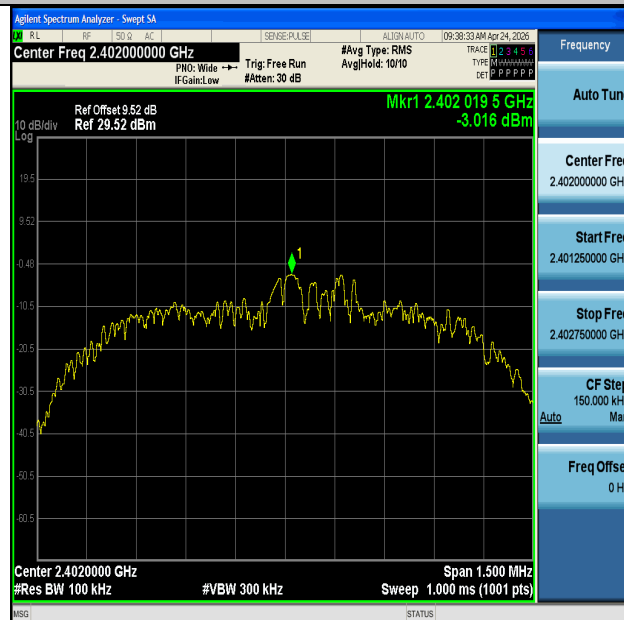


DH5-Ant1-2480-30~1000-PASS



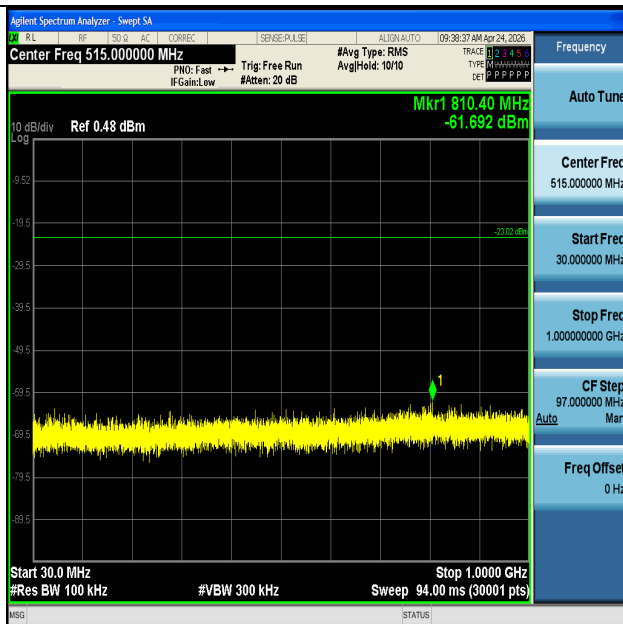


DH5-Ant1-2480-1000~26500-PASS

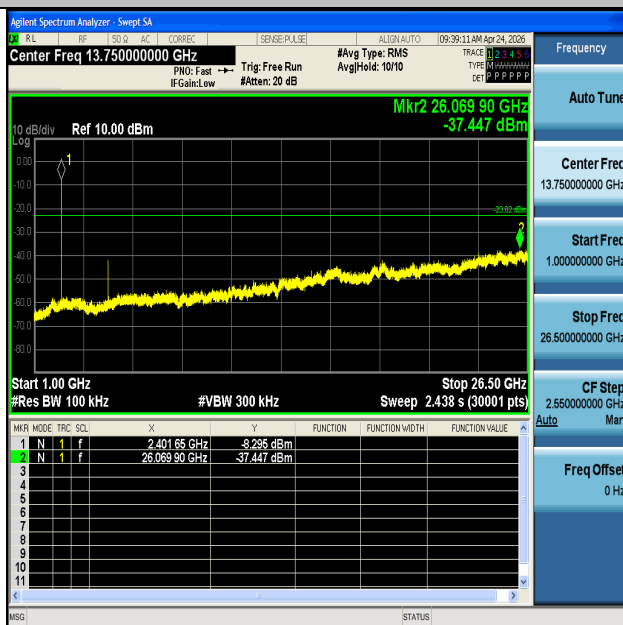


2DH5-Ant1-2402-0~Reference-PASS



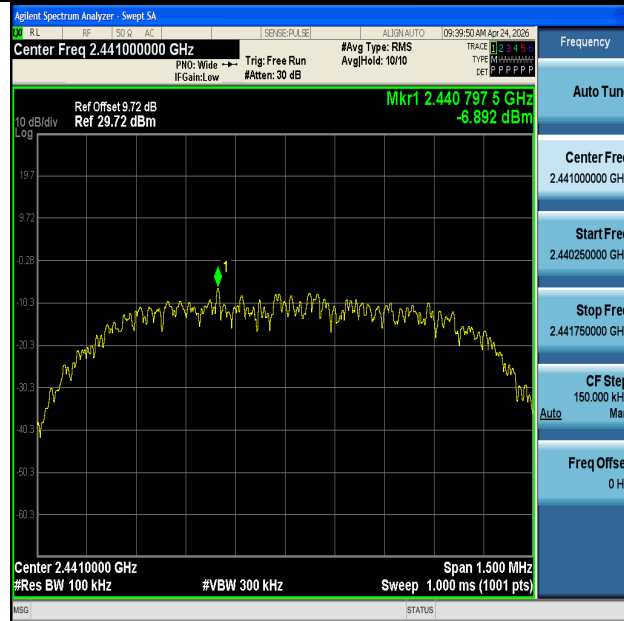


2DH5-Ant1-2402-30~1000-PASS

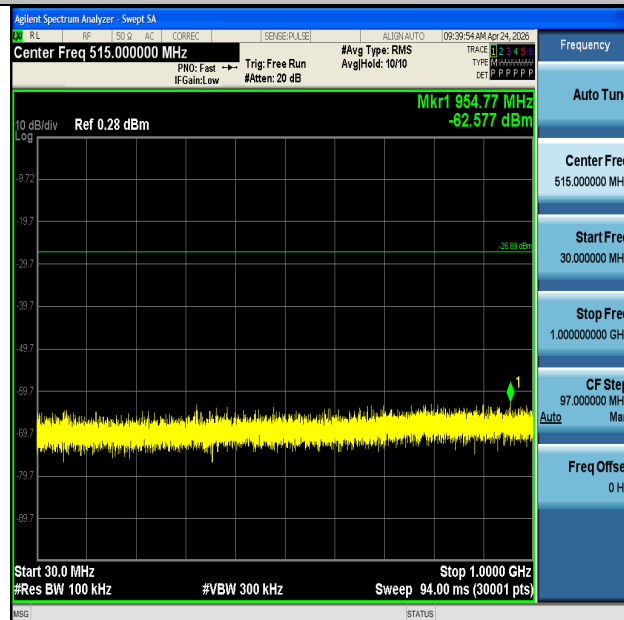


2DH5-Ant1-2402-1000~26500-PASS





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

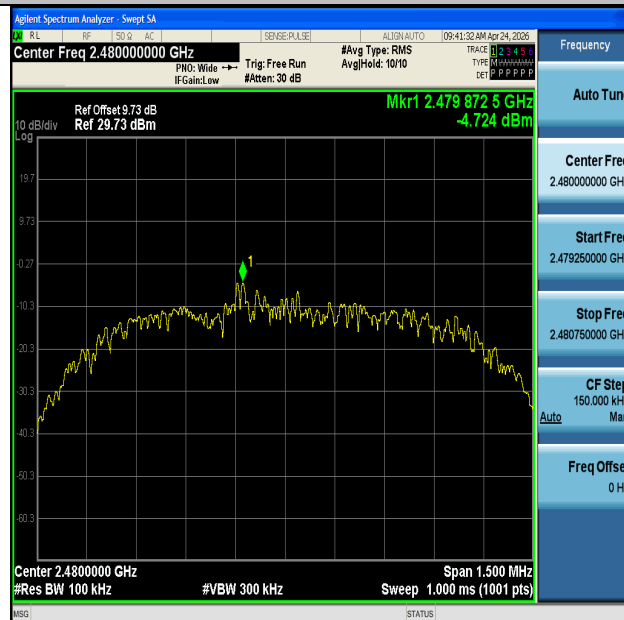


2DH5-Ant1-2441-30~1000-PASS



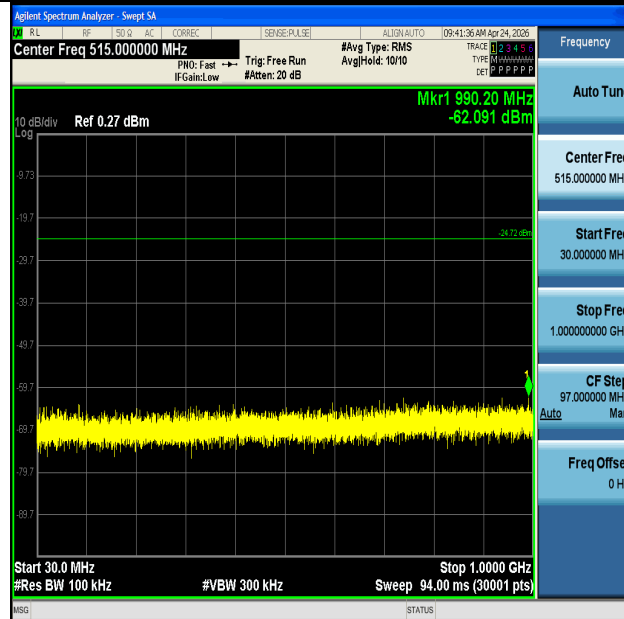


2DH5-Ant1-2441-1000~26500-PASS

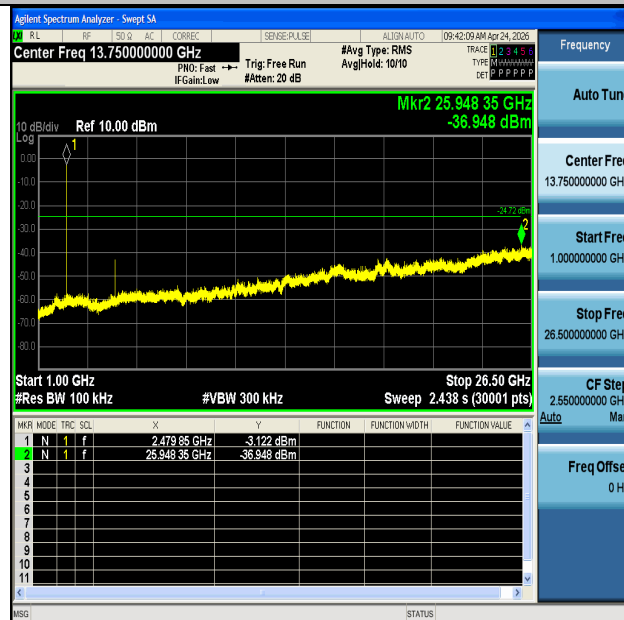


2DH5-Ant1-2480-0~Reference-PASS



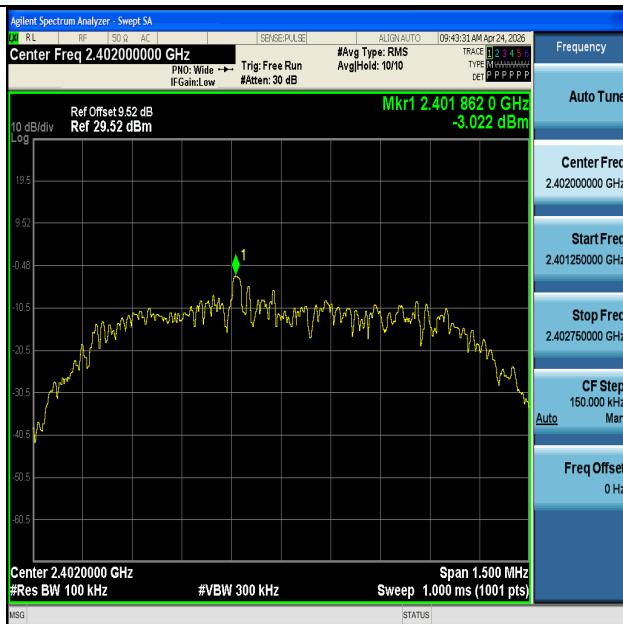


2DH5-Ant1-2480-30~1000-PASS

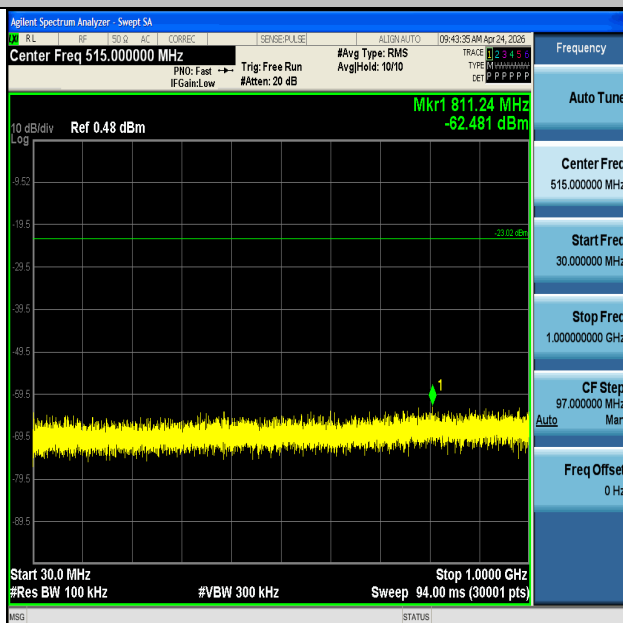


2DH5-Ant1-2480-1000~26500-PASS



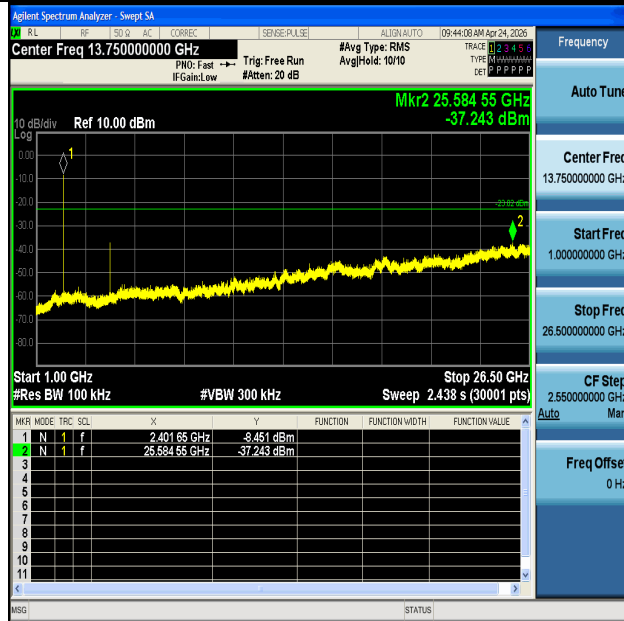


3DH5-Ant1-2402-0~Reference-PASS

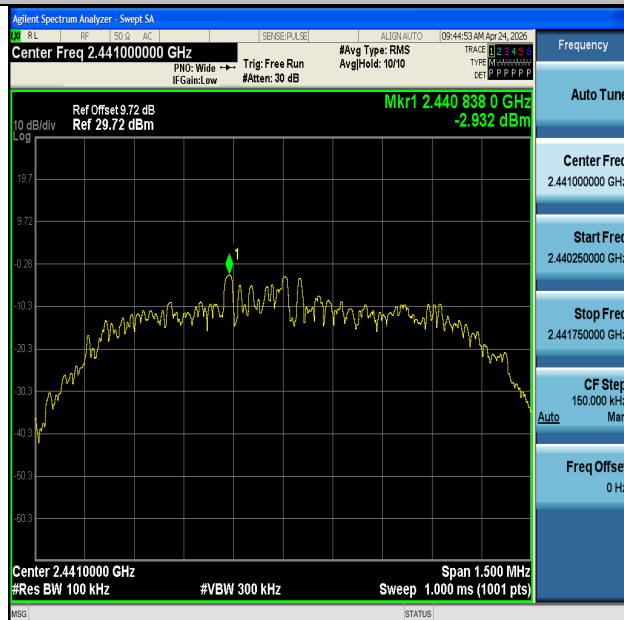


3DH5-Ant1-2402-30~1000-PASS



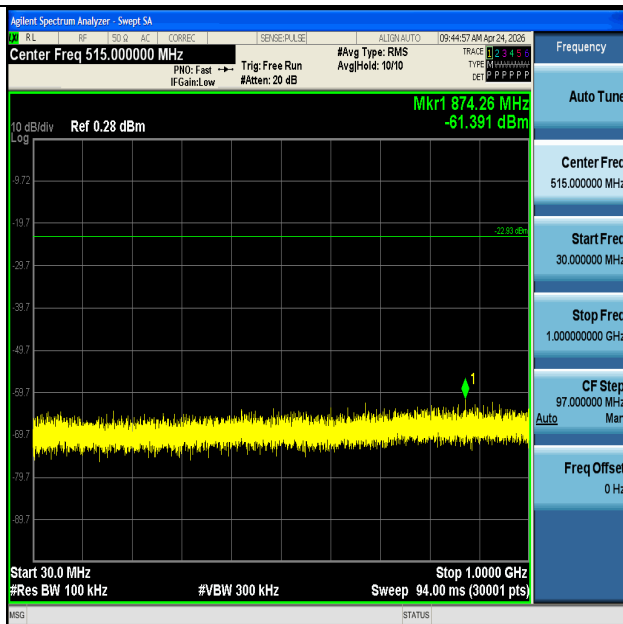


3DH5-Ant1-2402-1000~26500-PASS

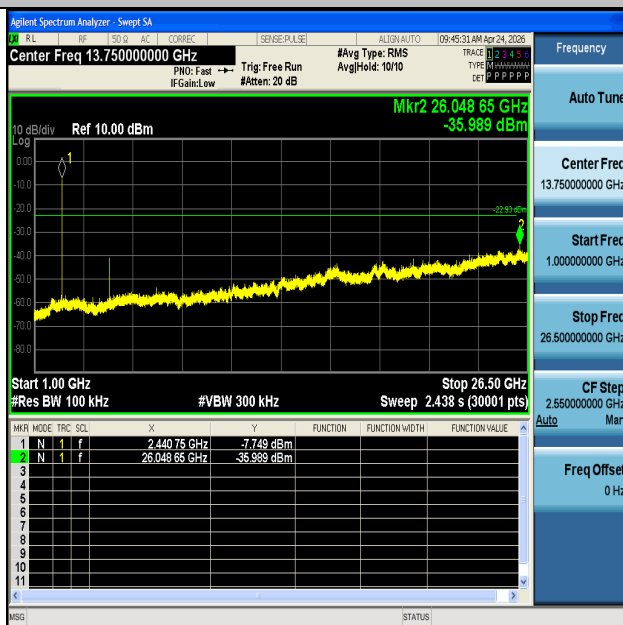


3DH5-Ant1-2441-0~Reference-PASS





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

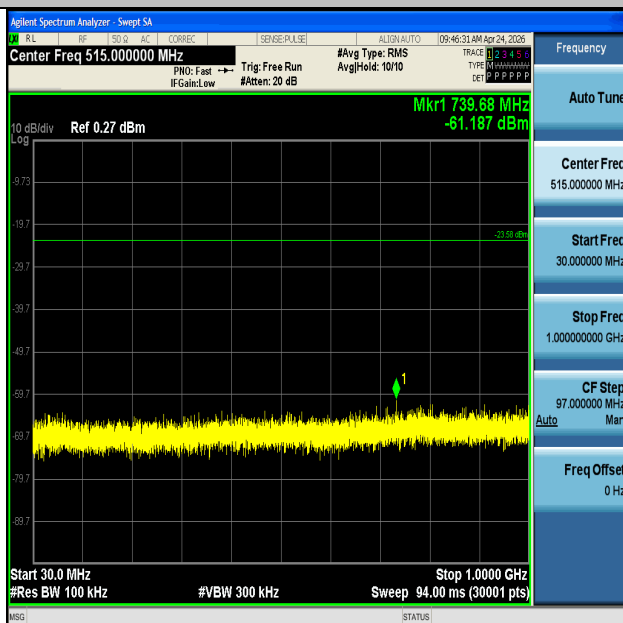


3DH5-Ant1-2441-1000~26500-PASS



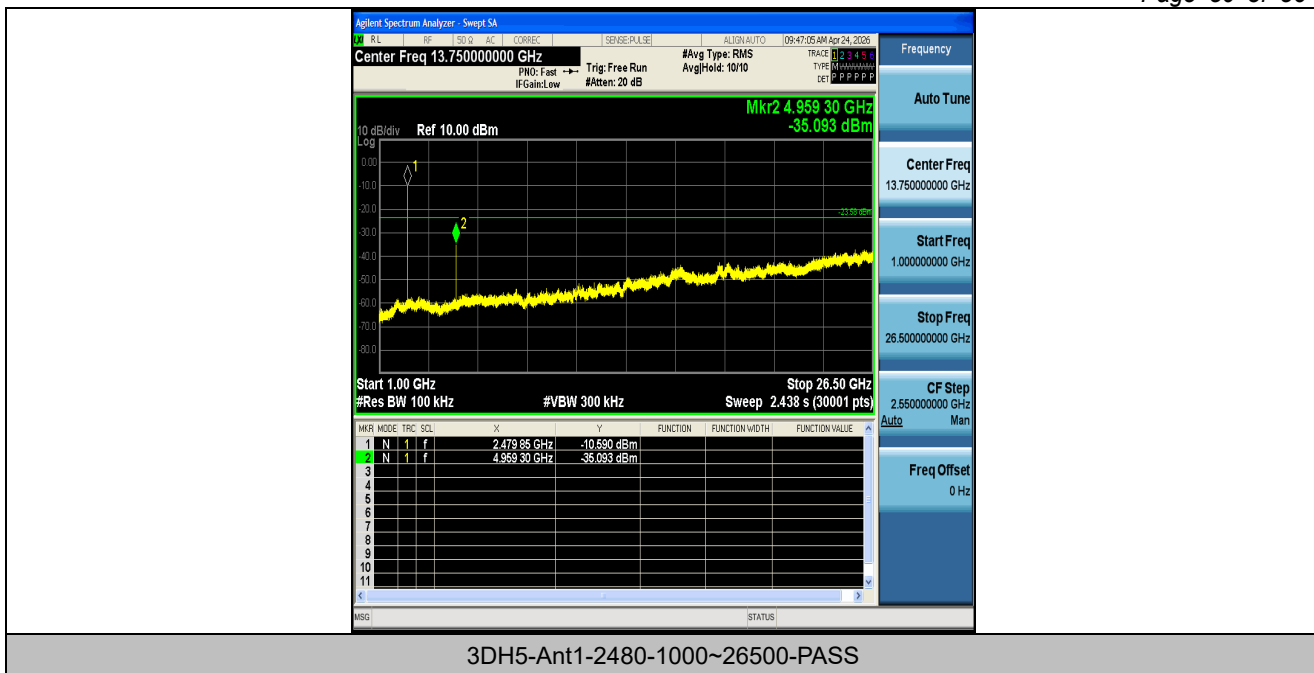


3DH5-Ant1-2480-0~Reference-PASS



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







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	2.91	3.75	77.60	1.10
DH5	Ant1	2441	2.91	3.75	77.60	1.10
DH5	Ant1	2480	2.91	3.75	77.60	1.10
2DH5	Ant1	2402	2.92	3.75	77.87	1.09
2DH5	Ant1	2441	2.91	3.75	77.60	1.10
2DH5	Ant1	2480	2.92	3.76	77.66	1.10
3DH5	Ant1	2402	2.92	3.75	77.87	1.09
3DH5	Ant1	2441	2.92	3.75	77.87	1.09
3DH5	Ant1	2480	2.91	3.75	77.60	1.10

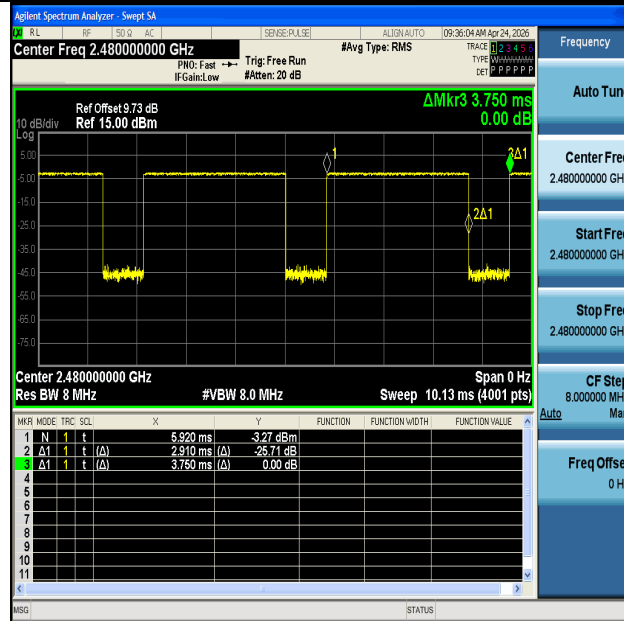
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



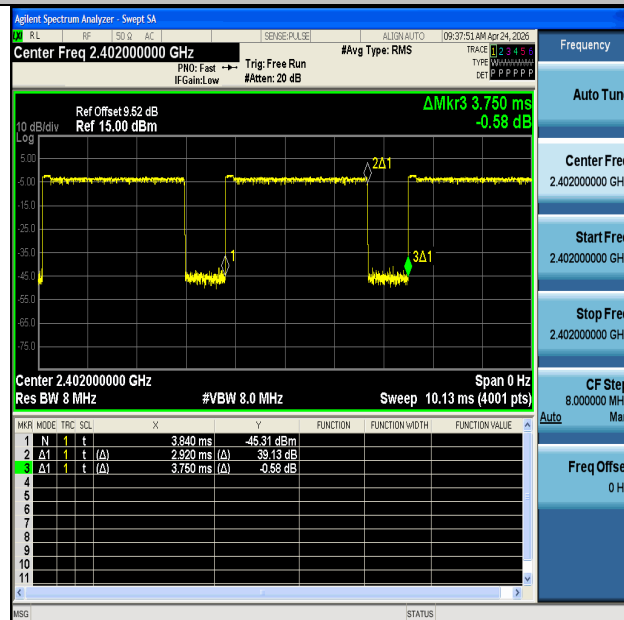


Test Graphs



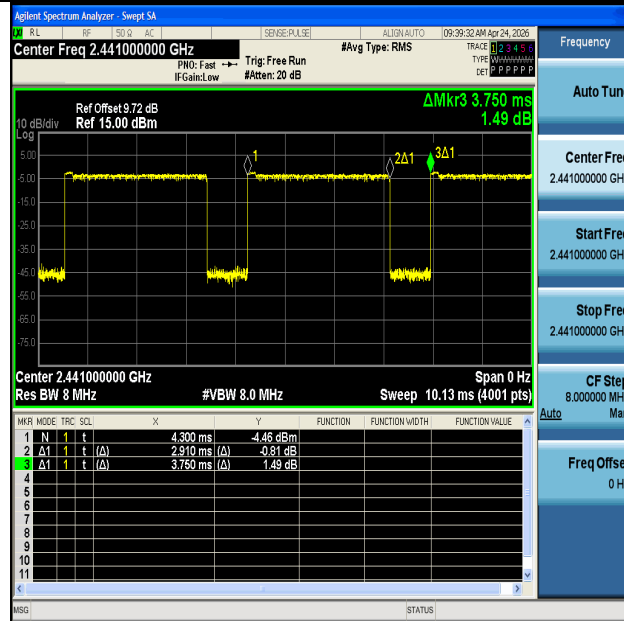


NTNV-DH5-Ant1-2480

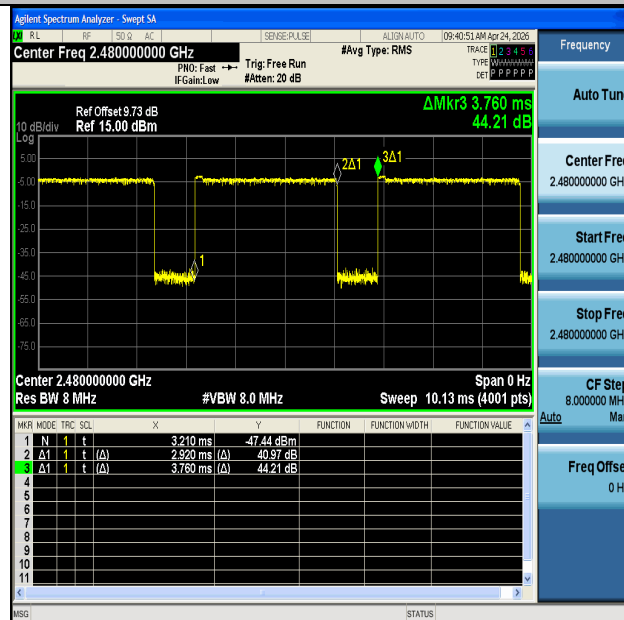


NTNV-2DH5-Ant1-2402



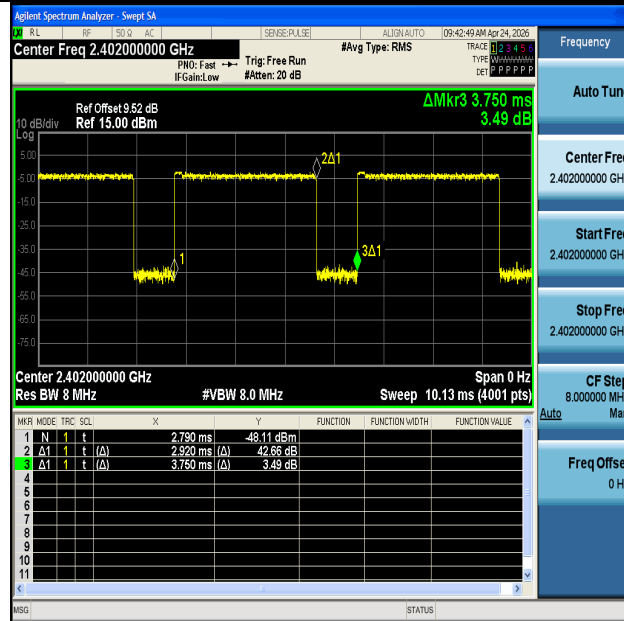


NTNV-2DH5-Ant1-2441

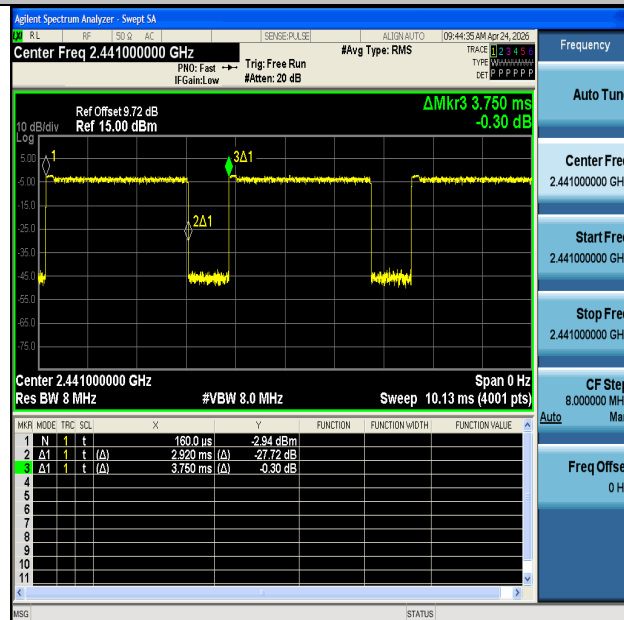


NTNV-2DH5-Ant1-2480



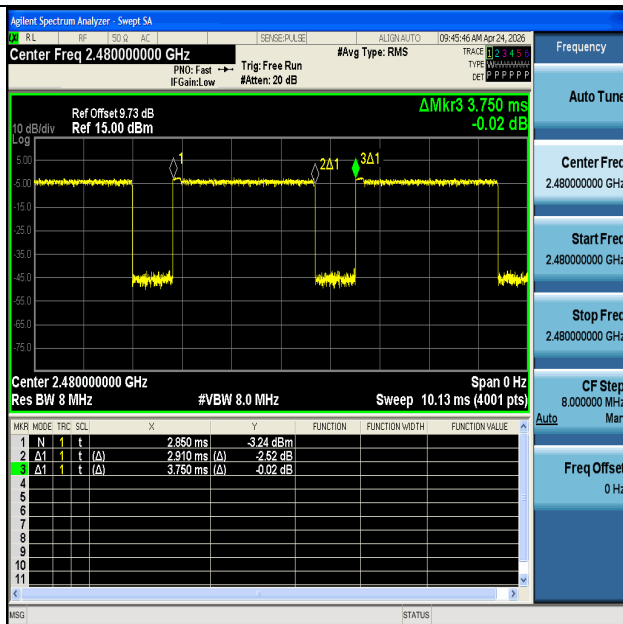


NTNV-3DH5-Ant1-2402



NTNV-3DH5-Ant1-2441





NTNV-3DH5-Ant1-2480

