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

Product Name: WIFI KARAOKE SYSTEM

Trade Mark: singing machine

Test Model: ISM9025

FCC ID: 2AAXO-ISM9025

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	0.963	2401.556	2402.519	---	---
DH5	Ant1	2441	0.978	2440.535	2441.513	---	---
DH5	Ant1	2480	0.954	2479.544	2480.498	---	---
2DH5	Ant1	2402	1.290	2401.385	2402.675	---	---
2DH5	Ant1	2441	1.278	2440.382	2441.660	---	---
2DH5	Ant1	2480	1.320	2479.358	2480.678	---	---
3DH5	Ant1	2402	1.293	2401.379	2402.672	---	---
3DH5	Ant1	2441	1.278	2440.385	2441.663	---	---
3DH5	Ant1	2480	1.299	2479.355	2480.654	---	---

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

Test Graphs

DH5-Ant1-2402

DH5-Ant1-2441

DH5-Ant1-2480

2DH5-Ant1-2402

2DH5-Ant1-2441

2DH5-Ant1-2480

3DH5-Ant1-2402

3DH5-Ant1-2441

3DH5-Ant1-2480

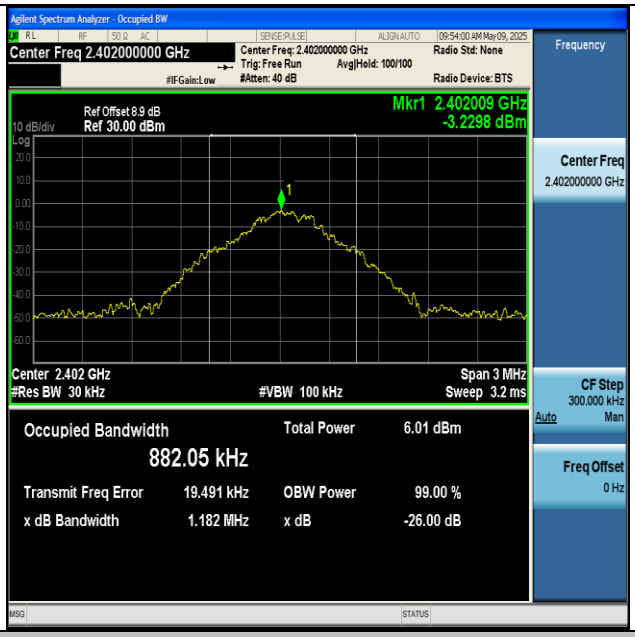
Appendix B: Occupied Channel Bandwidth

Test Result

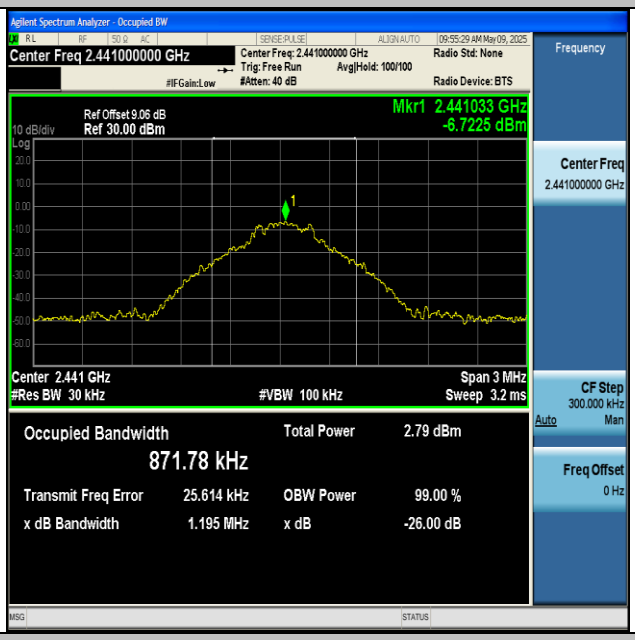
Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
DH5	Ant1	2402	0.88205	2401.5785	2402.4605	---	---
DH5	Ant1	2441	0.87178	2440.5897	2441.4615	---	---
DH5	Ant1	2480	0.87788	2479.5812	2480.4590	---	---
2DH5	Ant1	2402	1.1951	2401.4230	2402.6181	---	---
2DH5	Ant1	2441	1.1889	2440.4290	2441.6179	---	---
2DH5	Ant1	2480	1.2115	2479.4123	2480.6238	---	---
3DH5	Ant1	2402	1.1921	2401.4327	2402.6248	---	---
3DH5	Ant1	2441	1.2079	2440.4175	2441.6254	---	---
3DH5	Ant1	2480	1.2034	2479.4150	2480.6184	---	---

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

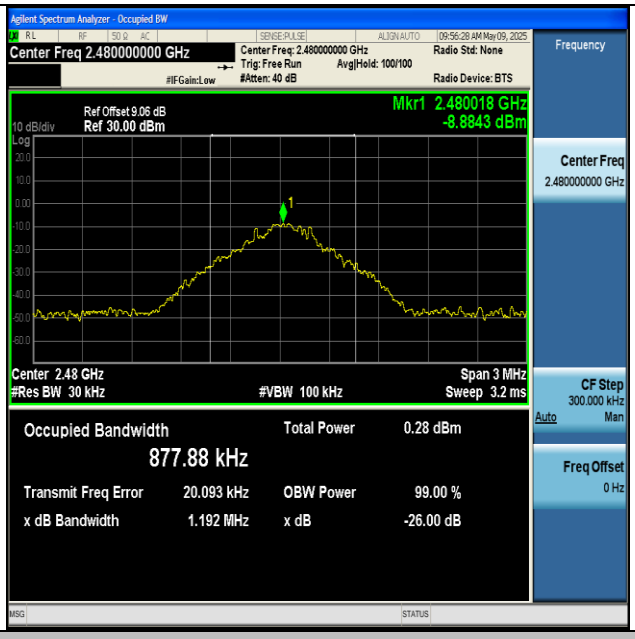
Test Graphs



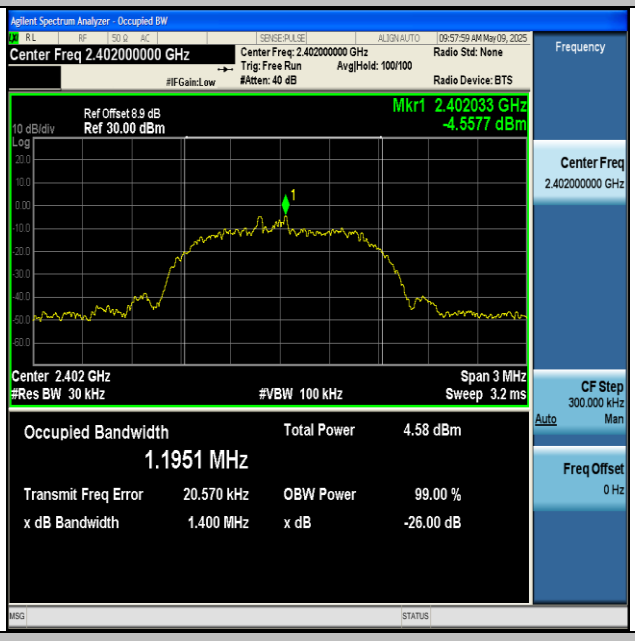
DH5-Ant1-2402



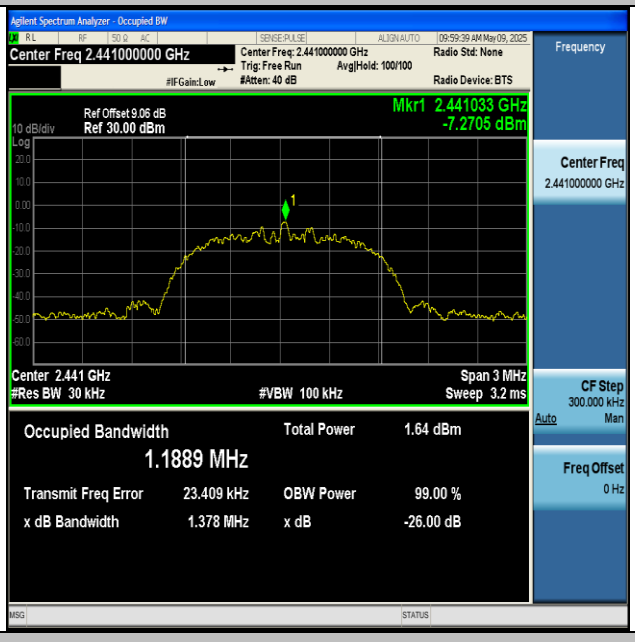
DH5-Ant1-2441



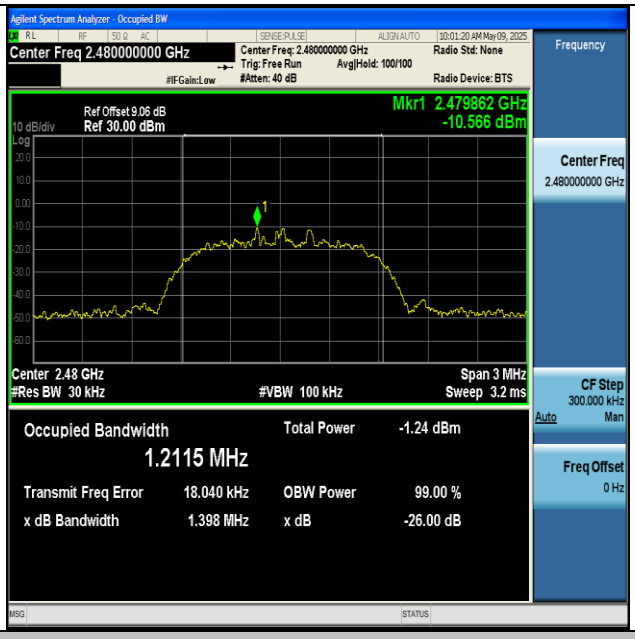
DH5-Ant1-2480



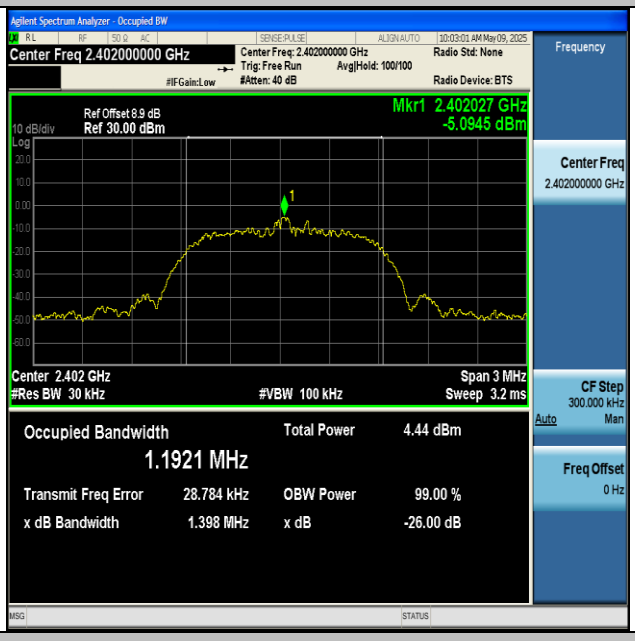
2DH5-Ant1-2402



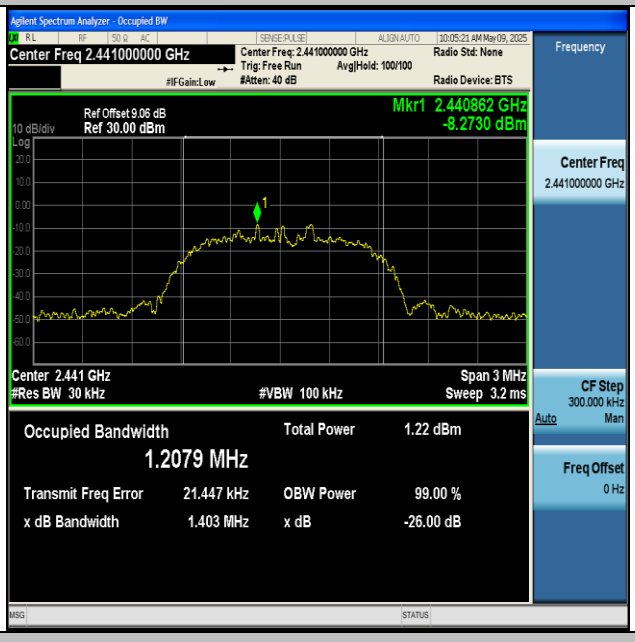
2DH5-Ant1-2441



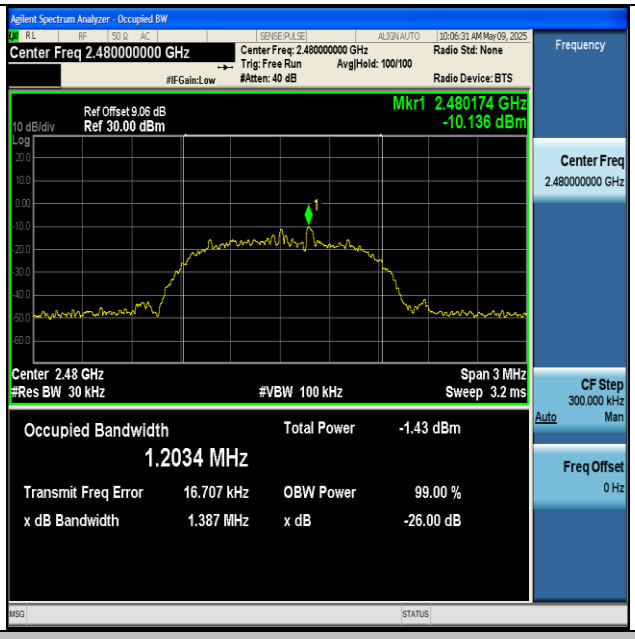
2DH5-Ant1-2480



3DH5-Ant1-2402



3DH5-Ant1-2441



3DH5-Ant1-2480

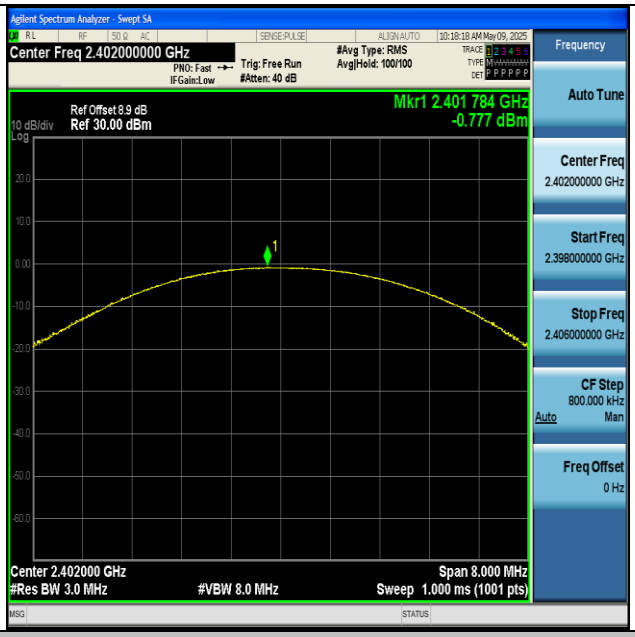
Appendix C: Maximum peak conducted output power

Test Result

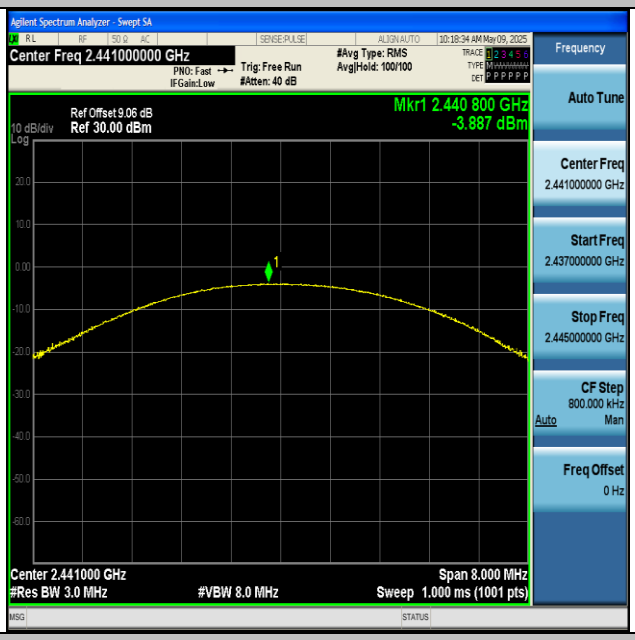
Test Mode	Antenna	Frequency [MHz]	Result [dBm]	Limit [dBm]	Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
DH5	Ant1	2402	-0.78	≤20.97	0.00	-0.78	≤36	PASS
DH5	Ant1	2441	-3.89	≤20.97	0.00	-3.89	≤36	PASS
DH5	Ant1	2480	-6.14	≤20.97	0.00	-6.14	≤36	PASS
2DH5	Ant1	2402	-0.88	≤20.97	0.00	-0.88	≤36	PASS
2DH5	Ant1	2441	-4.00	≤20.97	0.00	-4.00	≤36	PASS
2DH5	Ant1	2480	-6.35	≤20.97	0.00	-6.35	≤36	PASS
3DH5	Ant1	2402	-0.67	≤20.97	0.00	-0.67	≤36	PASS
3DH5	Ant1	2441	-3.92	≤20.97	0.00	-3.92	≤36	PASS
3DH5	Ant1	2480	-6.21	≤20.97	0.00	-6.21	≤36	PASS

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

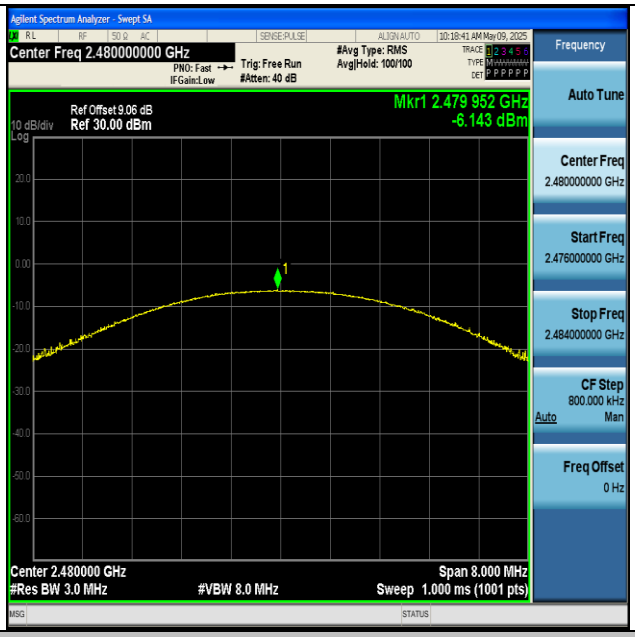
Test Graphs



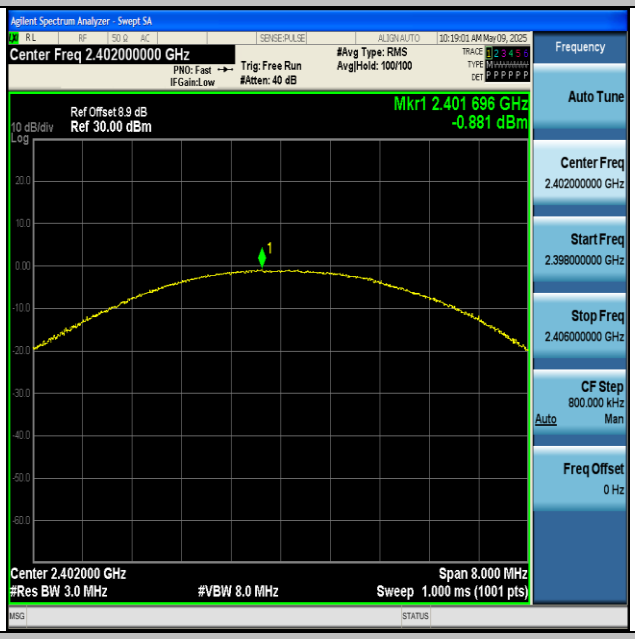
DH5-Ant1-2402-PASS



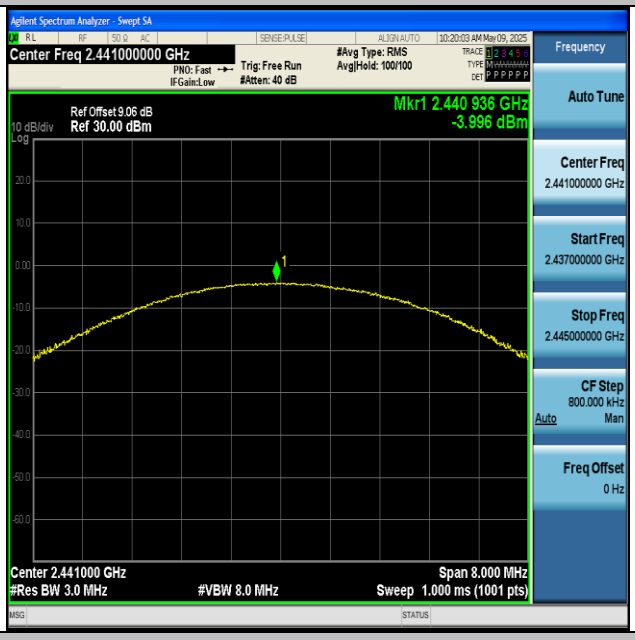
DH5-Ant1-2441-PASS



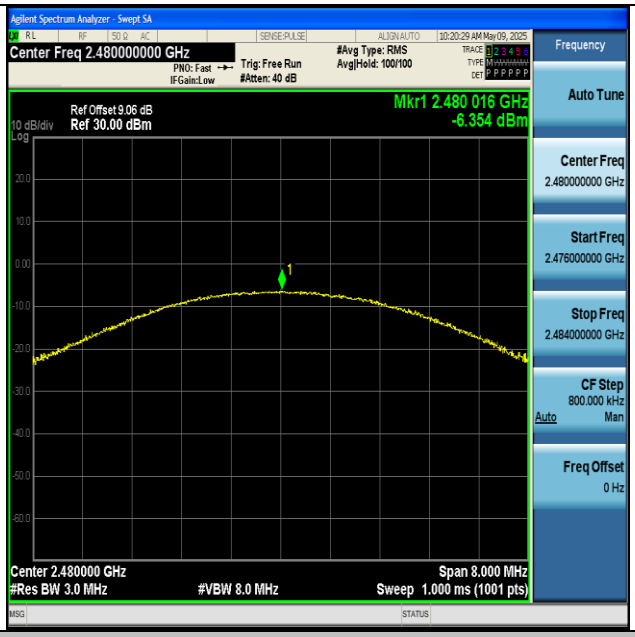
DH5-Ant1-2480-PASS



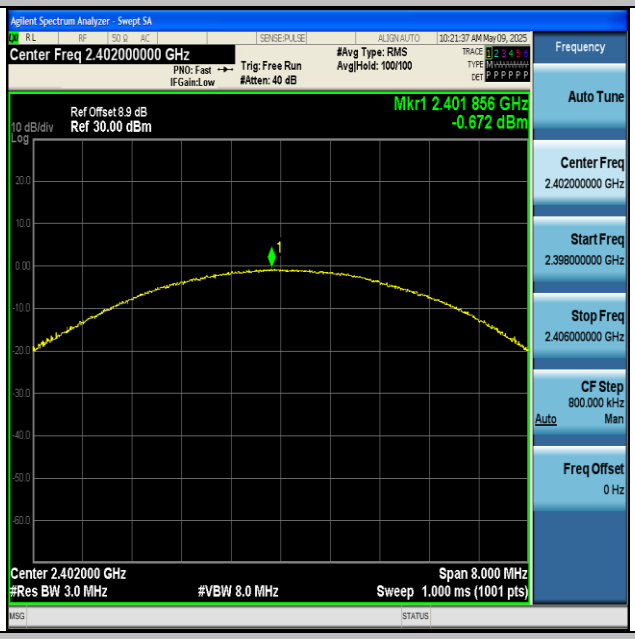
2DH5-Ant1-2402-PASS



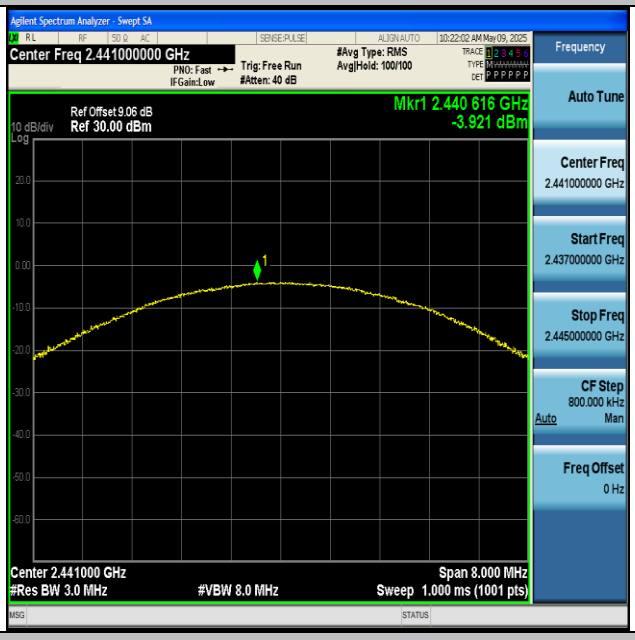
2DH5-Ant1-2441-PASS



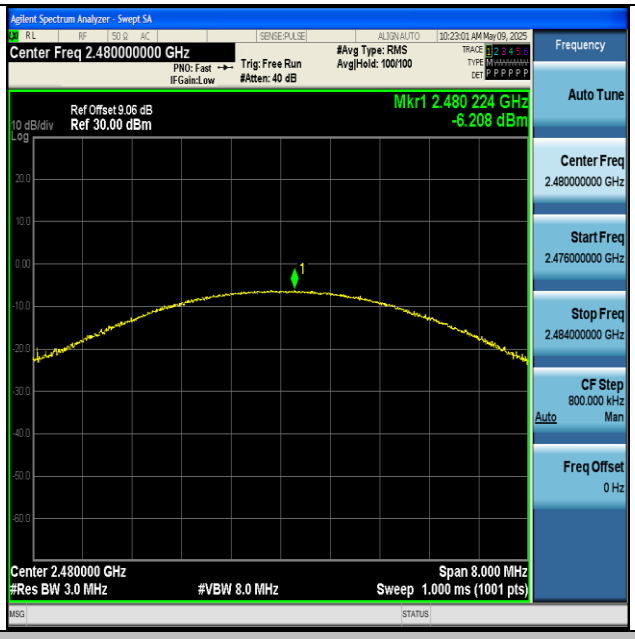
2DH5-Ant1-2480-PASS



3DH5-Ant1-2402-PASS



3DH5-Ant1-2441-PASS



3DH5-Ant1-2480-PASS

Appendix D: Carrier frequency separation

Test Result

Test Mode	Antenna	Frequency [MHz]	Result [MHz]	Limit [MHz]	Verdict
DH5	Ant1	Hop	0.976	≥0.652	PASS
2DH5	Ant1	Hop	1.004	≥0.880	PASS
3DH5	Ant1	Hop	1.004	≥0.866	PASS

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

Test Graphs

DH5-Ant1-Hop-PASS

2DH5-Ant1-Hop-PASS

3DH5-Ant1-Hop-PASS

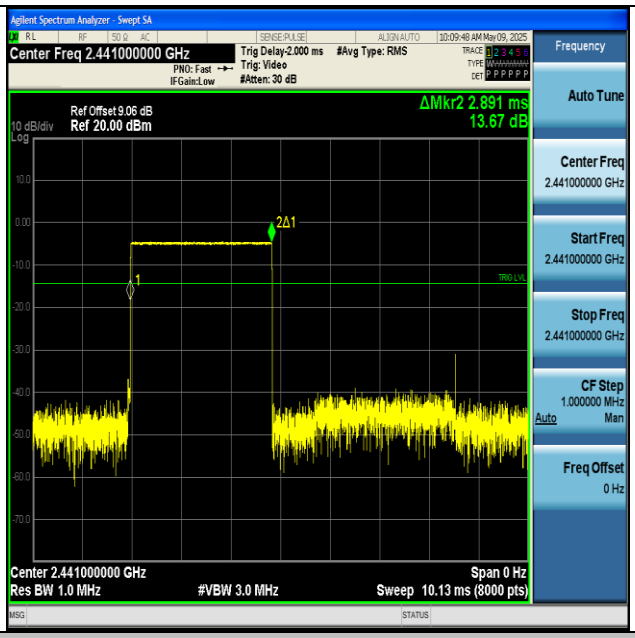
Appendix E: Time of occupancy

Test Result

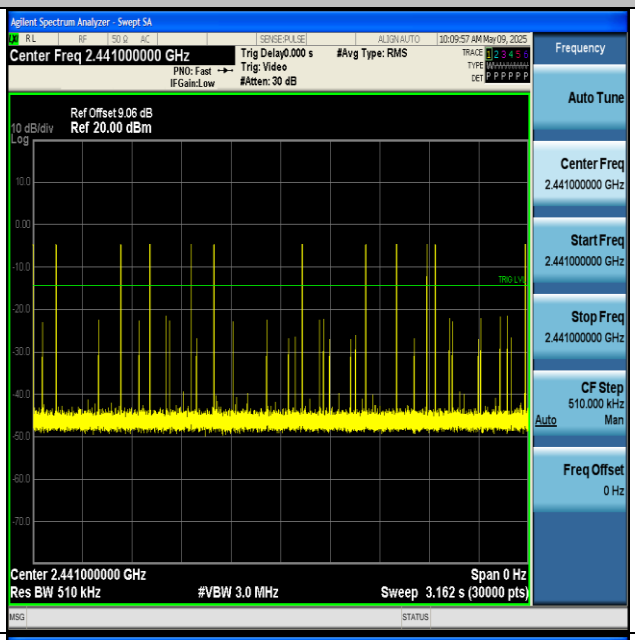
Test Mode	Antenna	Frequency [MHz]	BurstWidth [ms]	TotalHops [Num]	Result [s]	Limit [s]	Verdict
DH5	Ant1	Hop	2.891	120	0.347	≤0.4	PASS
2DH5	Ant1	Hop	2.885	120	0.346	≤0.4	PASS
3DH5	Ant1	Hop	2.887	90	0.26	≤0.4	PASS

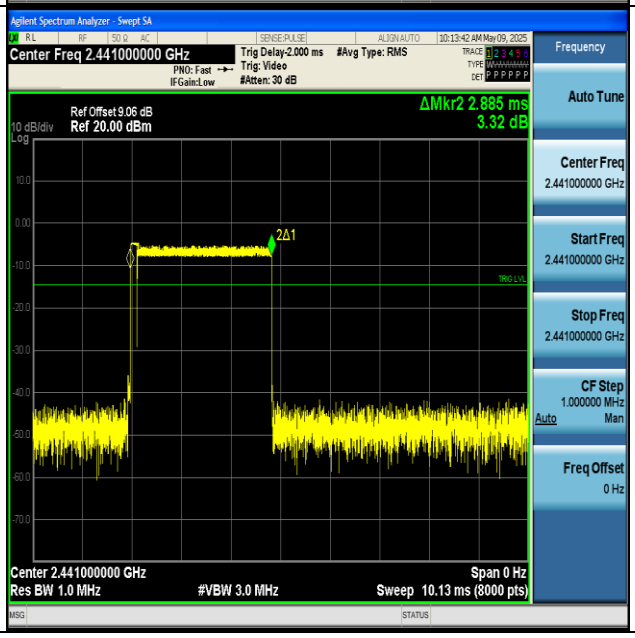
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

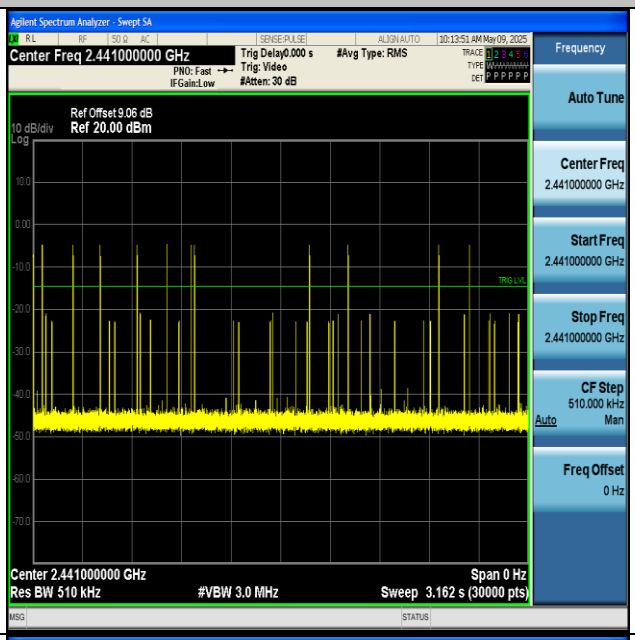
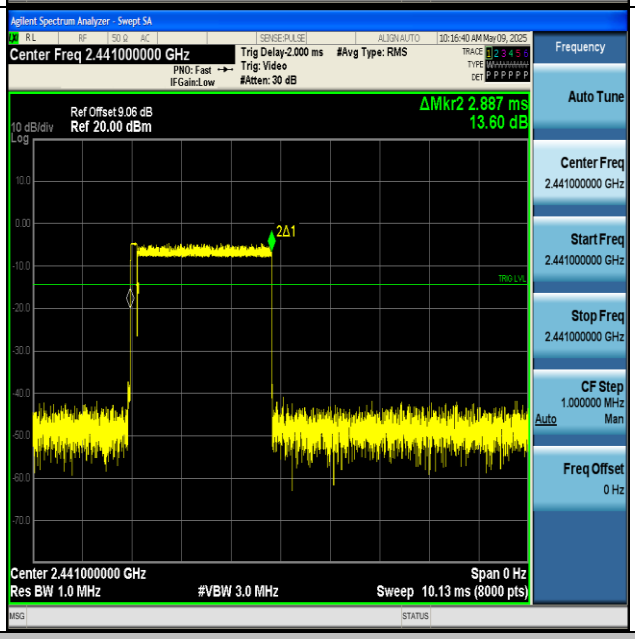
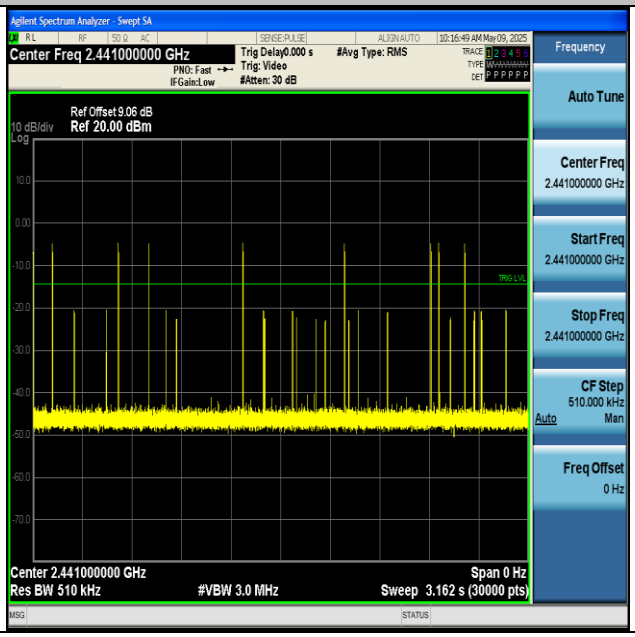
Test Graphs



DH5-Ant1-Hop-PASS





2DH5-Ant1-Hop-PASS


3DH5-Ant1-Hop-PASS


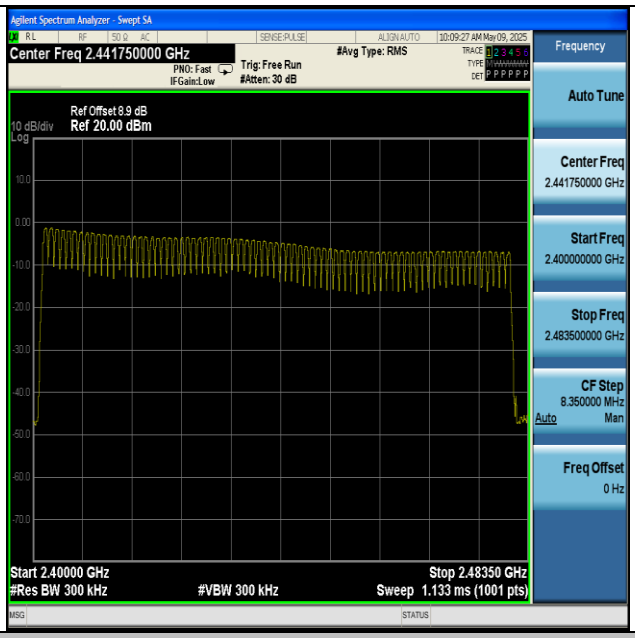
Appendix F: Number of hopping channels

Test Result

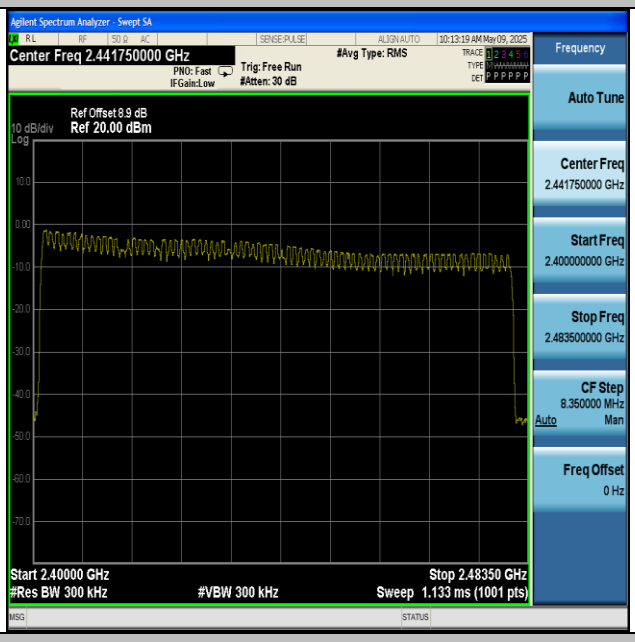
Test Mode	Antenna	Frequency [MHz]	Result [Num]	Limit [Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

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

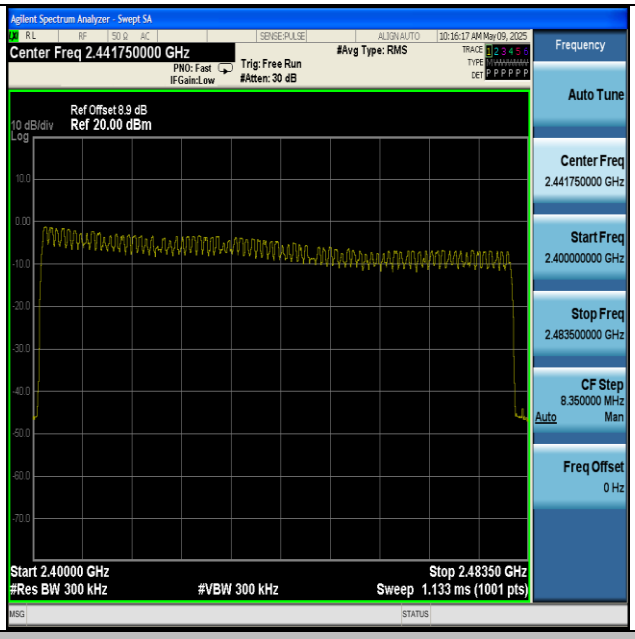
Test Graphs



DH5-Ant1-Hop-PASS



2DH5-Ant1-Hop-PASS



3DH5-Ant1-Hop-PASS

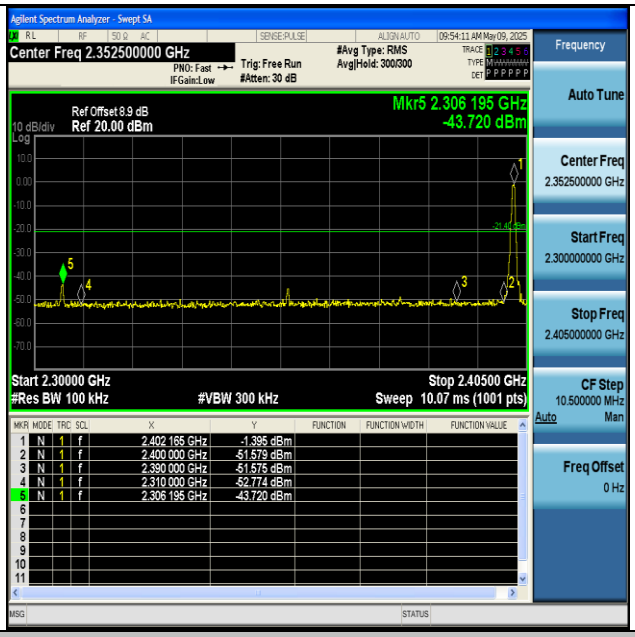
Appendix G: Band edge measurements

Test Result

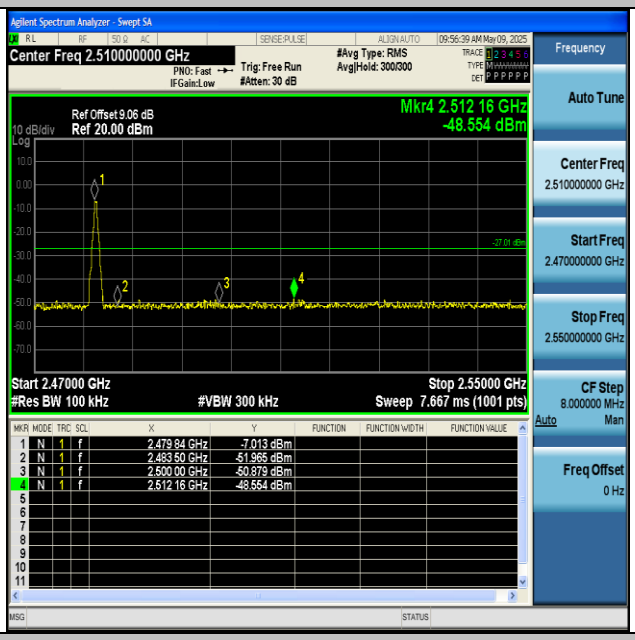
Test Mode	Antenna	Ch. Name	Frequency [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-1.40	-43.72	≤-21.4	PASS
DH5	Ant1	High	2480	-7.01	-48.55	≤-27.01	PASS
DH5	Ant1	Low	Hop_2402	-2.39	-43.97	≤-22.39	PASS
DH5	Ant1	High	Hop_2480	-7.73	-48.41	≤-27.73	PASS
2DH5	Ant1	Low	2402	-1.44	-44.95	≤-21.44	PASS
2DH5	Ant1	High	2480	-7.12	-47.81	≤-27.12	PASS
2DH5	Ant1	Low	Hop_2402	-7.86	-45.16	≤-27.86	PASS
2DH5	Ant1	High	Hop_2480	-8.25	-48.87	≤-28.25	PASS
3DH5	Ant1	Low	2402	-1.64	-46.25	≤-21.64	PASS
3DH5	Ant1	High	2480	-7.31	-48.74	≤-27.31	PASS
3DH5	Ant1	Low	Hop_2402	-4.13	-44.83	≤-24.13	PASS
3DH5	Ant1	High	Hop_2480	-7.59	-48.98	≤-27.59	PASS

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

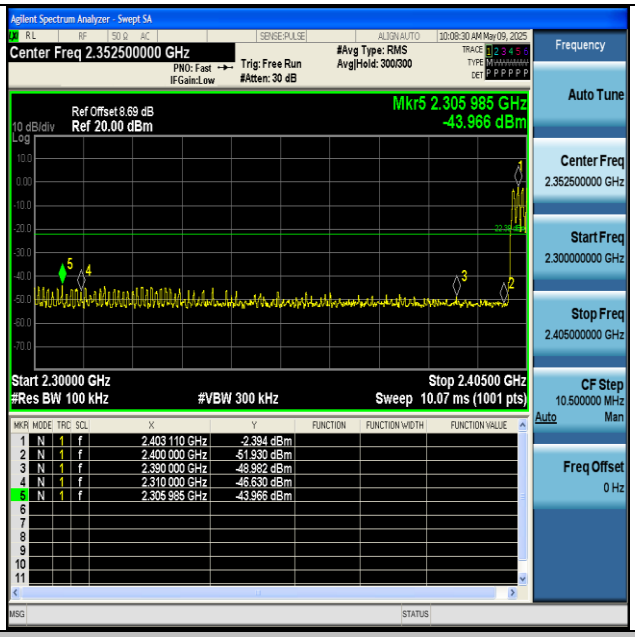
Test Graphs



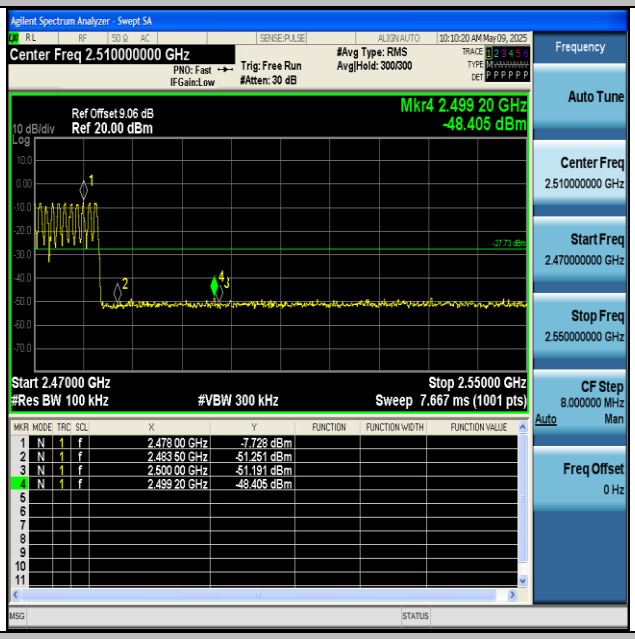
DH5-Ant1-2402-PASS



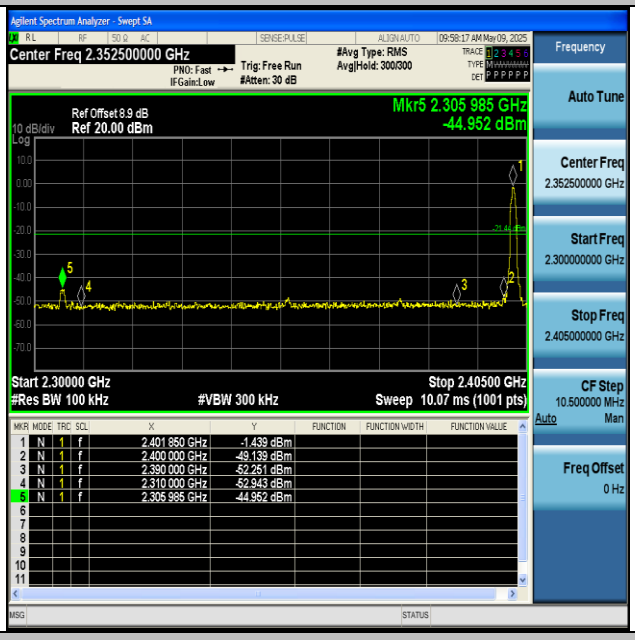
DH5-Ant1-2480-PASS



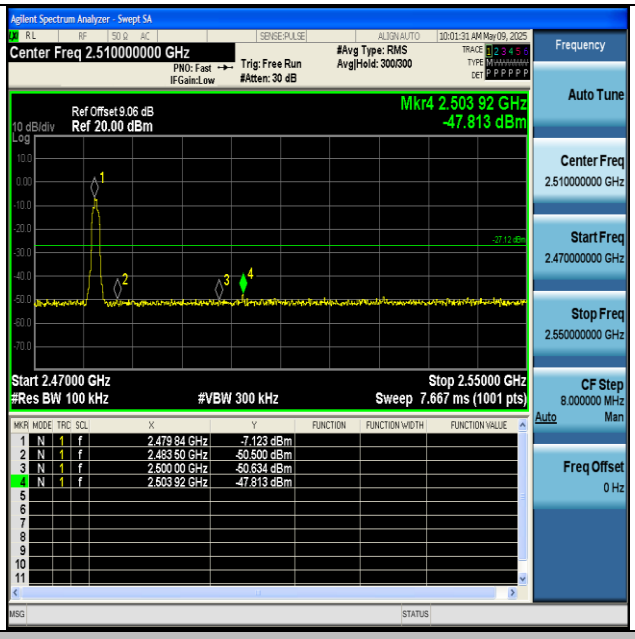
DH5-Ant1-Hop_2402-PASS



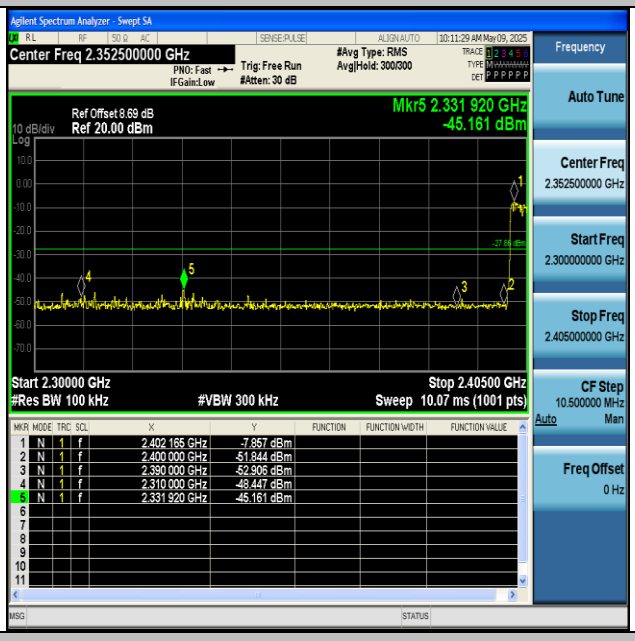
DH5-Ant1-Hop_2480-PASS



2DH5-Ant1-2402-PASS

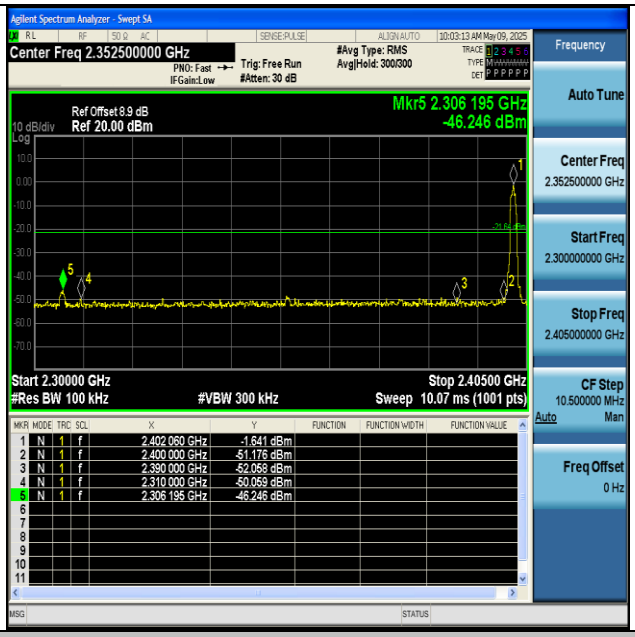


2DH5-Ant1-2480-PASS

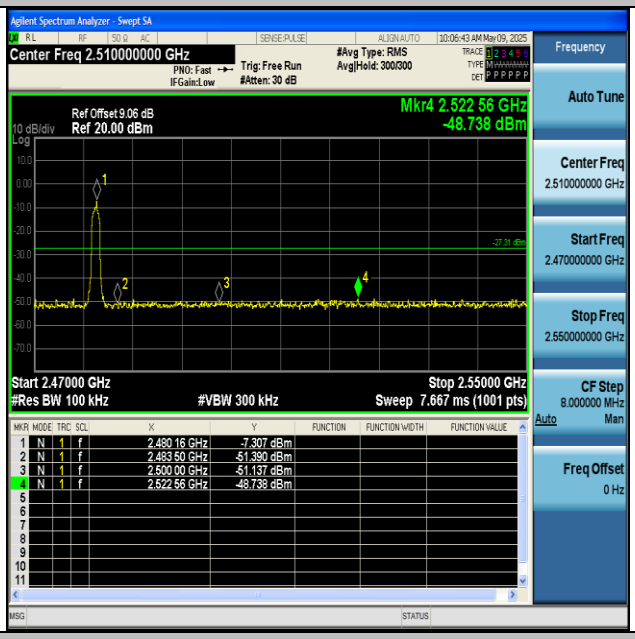


2DH5-Ant1-Hop_2402-PASS

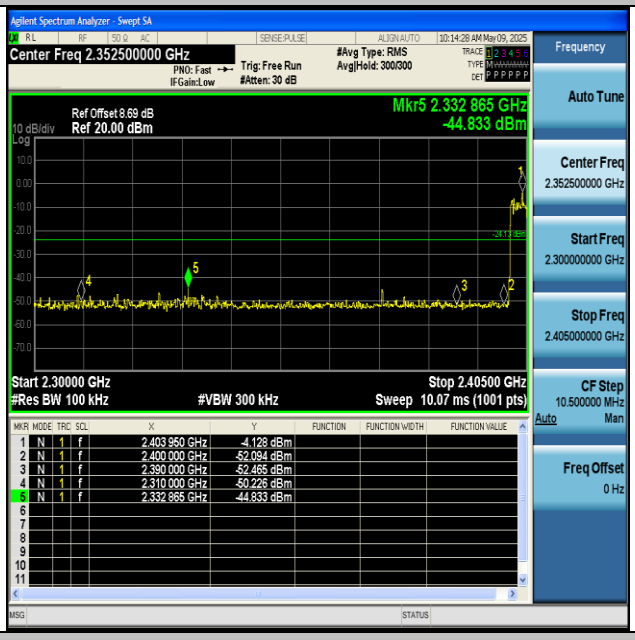
2DH5-Ant1-Hop_2480-PASS



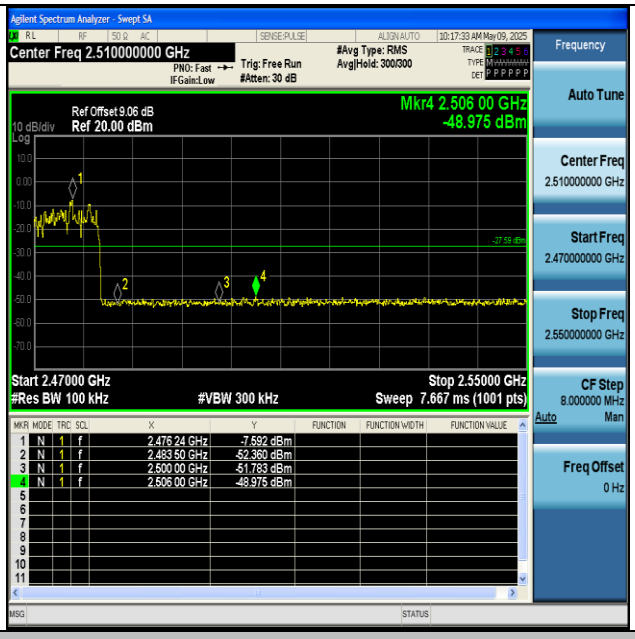
3DH5-Ant1-2402-PASS



3DH5-Ant1-2480-PASS



3DH5-Ant1-Hop_2402-PASS



3DH5-Ant1-Hop_2480-PASS

Appendix H: Conducted Spurious Emission

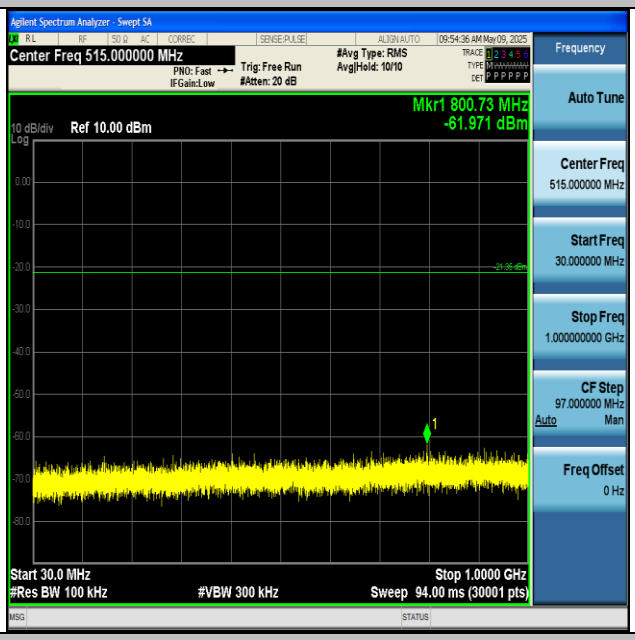
Test Result

Test Mode	Antenna	Frequency [MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	0~Reference	-1.35	-1.35	---	PASS
DH5	Ant1	2402	30~1000	-1.35	-61.97	≤-21.35	PASS
DH5	Ant1	2402	1000~12750	-1.35	-46.25	≤-21.35	PASS
DH5	Ant1	2441	0~Reference	-4.79	-4.79	---	PASS
DH5	Ant1	2441	30~1000	-4.79	-62.56	≤-24.79	PASS
DH5	Ant1	2441	1000~12750	-4.79	-44.7	≤-24.79	PASS
DH5	Ant1	2480	0~Reference	-7.09	-7.09	---	PASS
DH5	Ant1	2480	30~1000	-7.09	-62.62	≤-27.09	PASS
DH5	Ant1	2480	1000~12750	-7.09	-45.57	≤-27.09	PASS
2DH5	Ant1	2402	0~Reference	-6.13	-6.13	---	PASS
2DH5	Ant1	2402	30~1000	-6.13	-62.78	≤-26.13	PASS
2DH5	Ant1	2402	1000~12750	-6.13	-47.03	≤-26.13	PASS
2DH5	Ant1	2441	0~Reference	-5.79	-5.79	---	PASS
2DH5	Ant1	2441	30~1000	-5.79	-62.89	≤-25.79	PASS
2DH5	Ant1	2441	1000~12750	-5.79	-48.07	≤-25.79	PASS
2DH5	Ant1	2480	0~Reference	-12.14	-12.14	---	PASS
2DH5	Ant1	2480	30~1000	-12.14	-62.73	≤-32.14	PASS
2DH5	Ant1	2480	1000~12750	-12.14	-48.68	≤-32.14	PASS
3DH5	Ant1	2402	0~Reference	-4.93	-4.93	---	PASS
3DH5	Ant1	2402	30~1000	-4.93	-63.23	≤-24.93	PASS
3DH5	Ant1	2402	1000~12750	-4.93	-47	≤-24.93	PASS
3DH5	Ant1	2441	0~Reference	-10.10	-10.10	---	PASS
3DH5	Ant1	2441	30~1000	-10.10	-62.85	≤-30.1	PASS
3DH5	Ant1	2441	1000~12750	-10.10	-46.09	≤-30.1	PASS
3DH5	Ant1	2480	0~Reference	-7.29	-7.29	---	PASS
3DH5	Ant1	2480	30~1000	-7.29	-62.77	≤-27.29	PASS
3DH5	Ant1	2480	1000~12750	-7.29	-47.4	≤-27.29	PASS

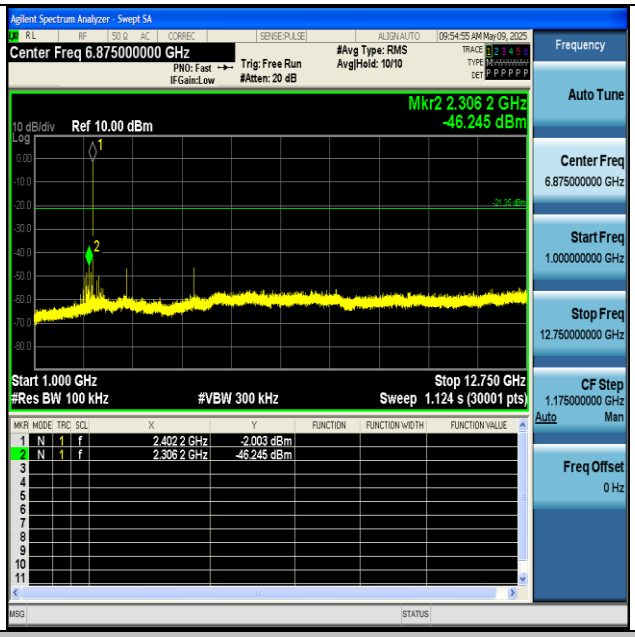
Note: offset(dB) in Reference test plots = cable loss(dB) + attenuator factor(dB); For spurious emissions plots from 30MHz to 26.5GHz, the cable loss and attenuator factors have been set in the 'Input Correction' of the Spectrum Analyzer during the test.

Test Graphs

DH5-Ant1-2402-0~Reference-PASS

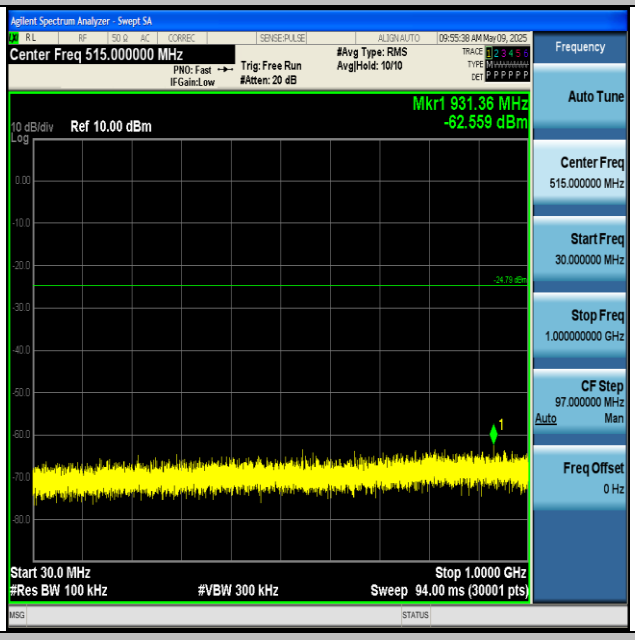


DH5-Ant1-2402-30~1000-PASS

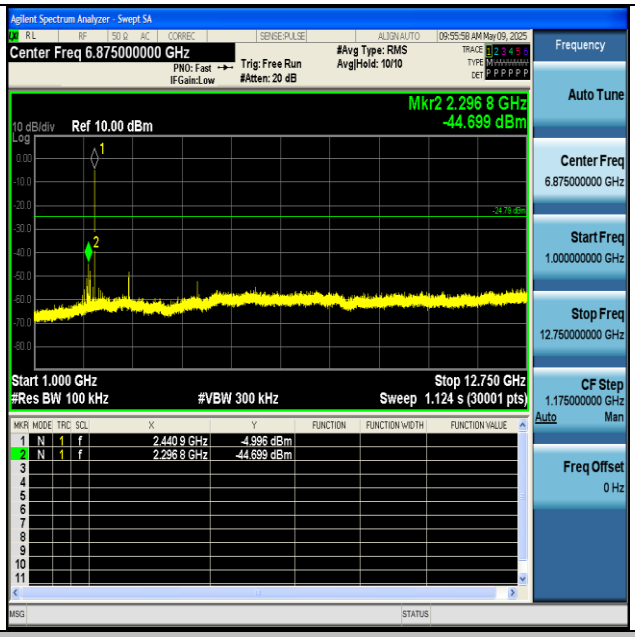


DH5-Ant1-2402-1000~12750-PASS

DH5-Ant1-2441-0~Reference-PASS

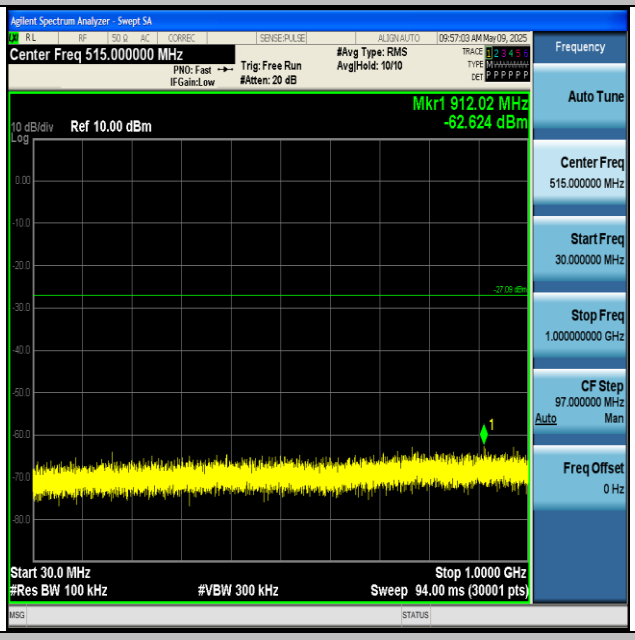


DH5-Ant1-2441-30~1000-PASS

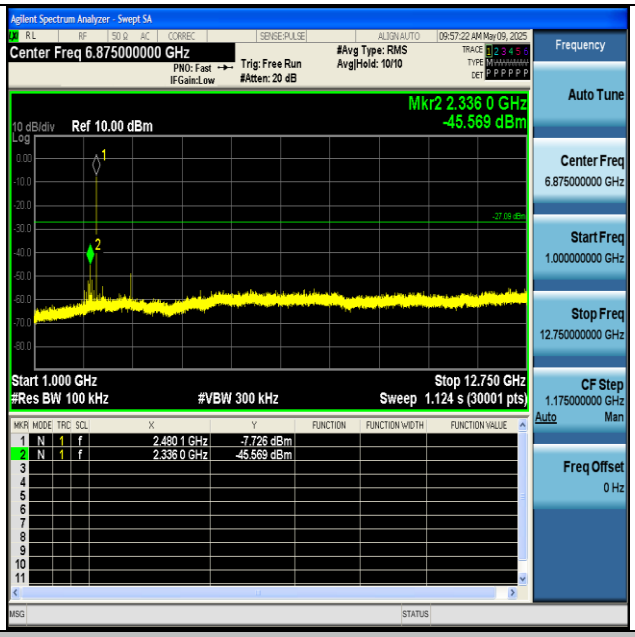


DH5-Ant1-2441-1000~12750-PASS

DH5-Ant1-2480-0~Reference-PASS

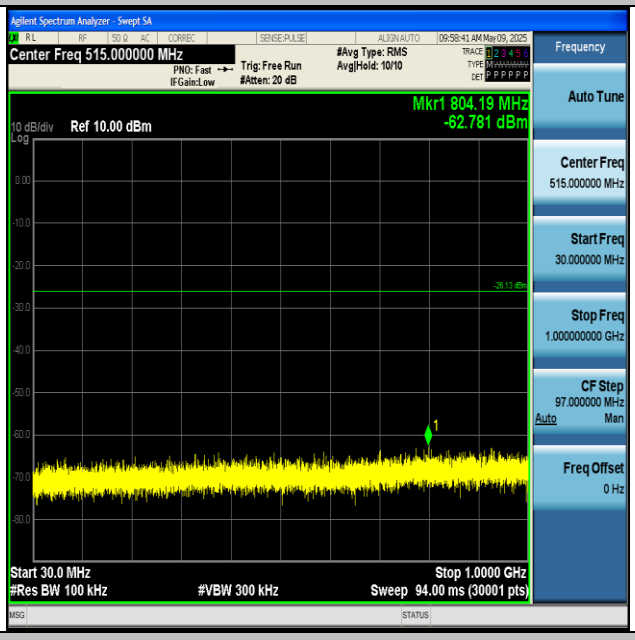


DH5-Ant1-2480-30~1000-PASS

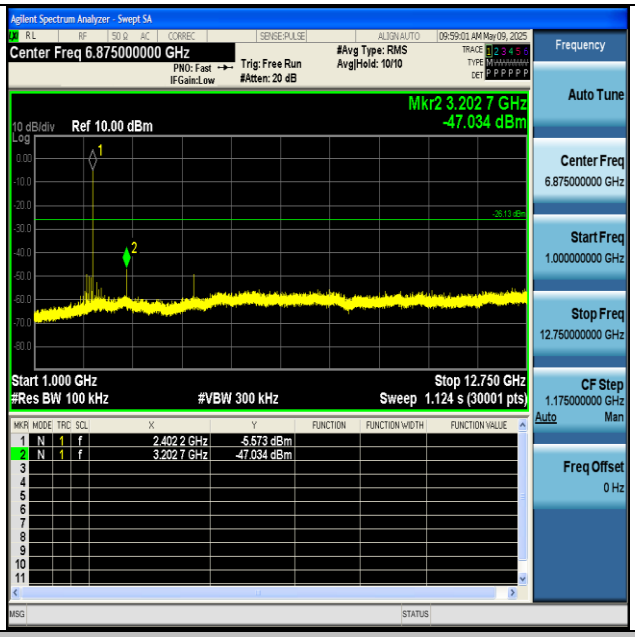


DH5-Ant1-2480-1000~12750-PASS

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

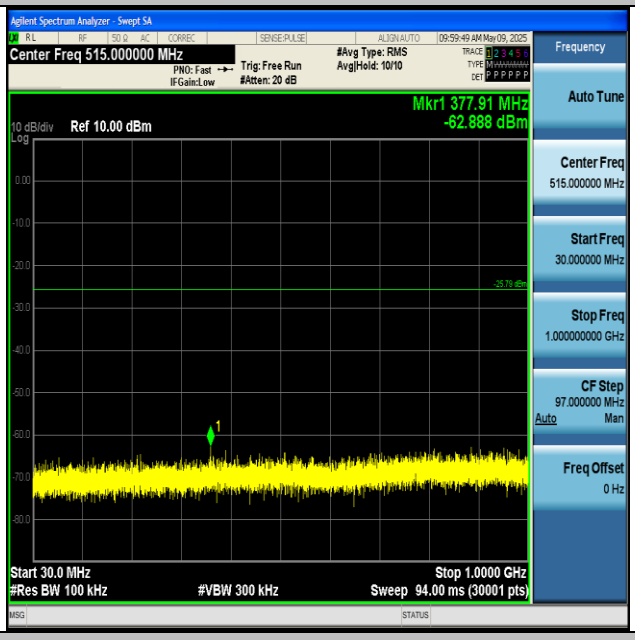


2DH5-Ant1-2402-30~1000-PASS

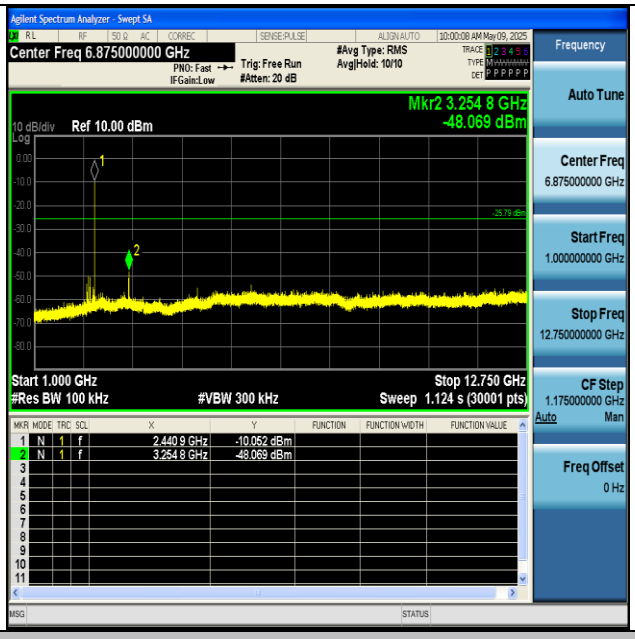


2DH5-Ant1-2402-1000~12750-PASS

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

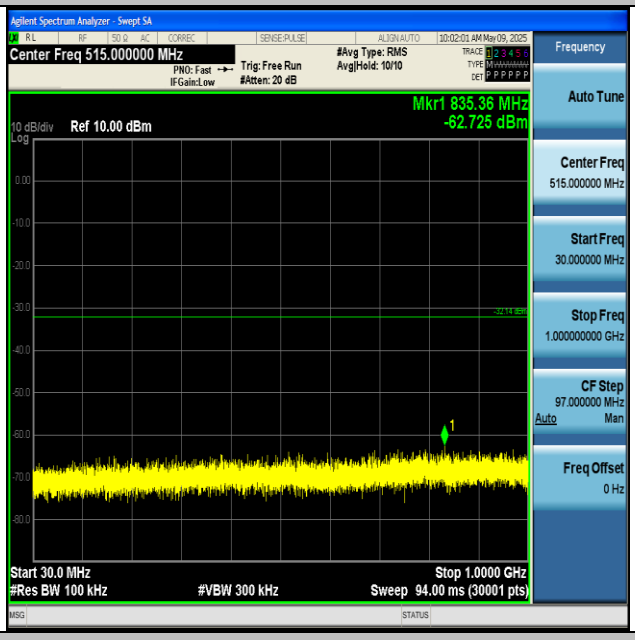


2DH5-Ant1-2441-30~1000-PASS

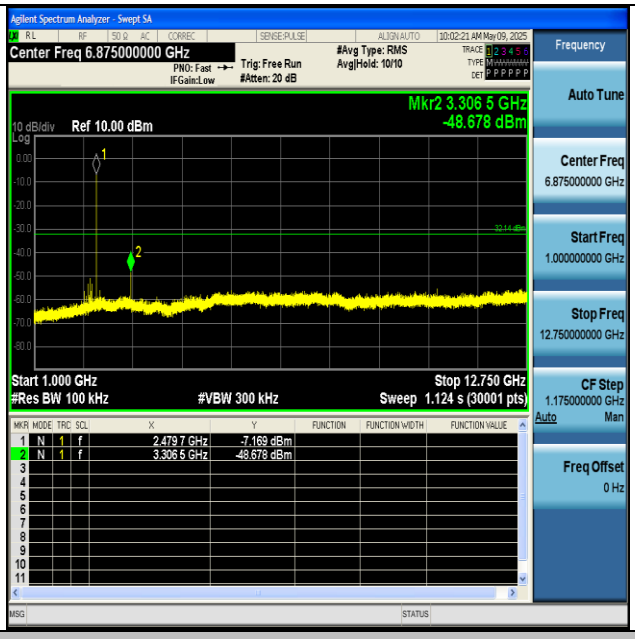


2DH5-Ant1-2441-1000~12750-PASS

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

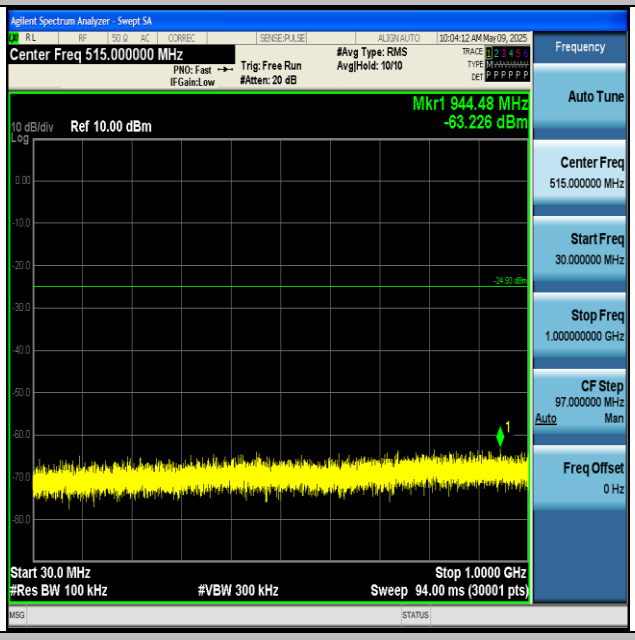


2DH5-Ant1-2480-30~1000-PASS

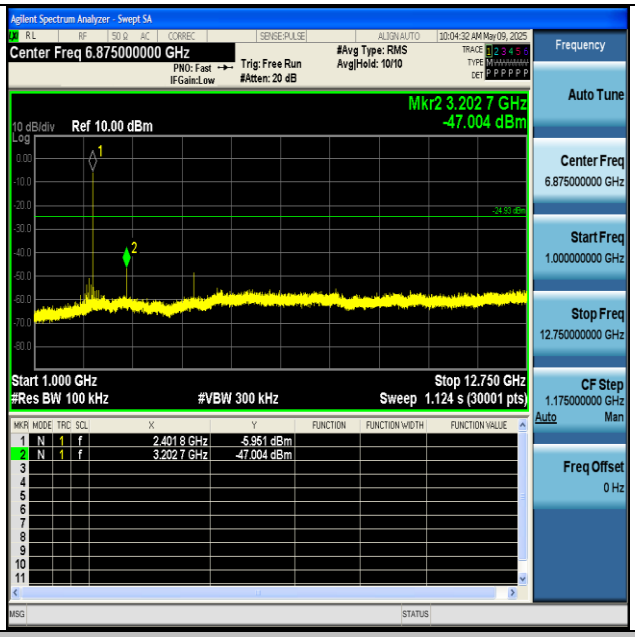


2DH5-Ant1-2480-1000~12750-PASS

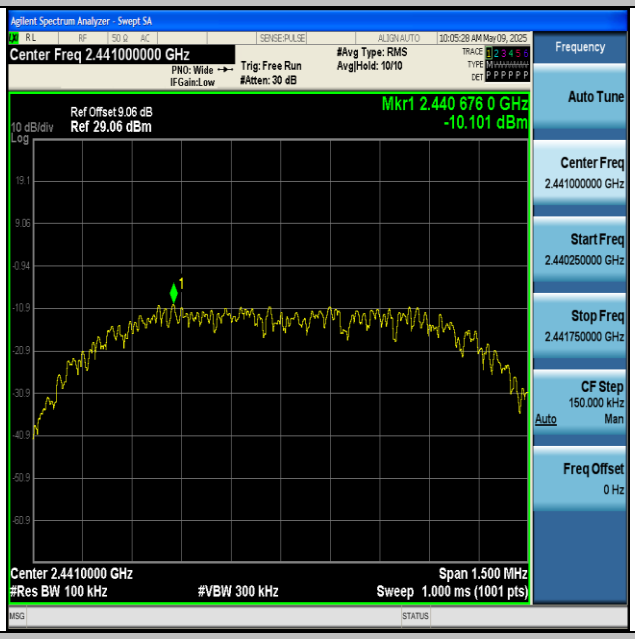
3DH5-Ant1-2402-0~Reference-PASS



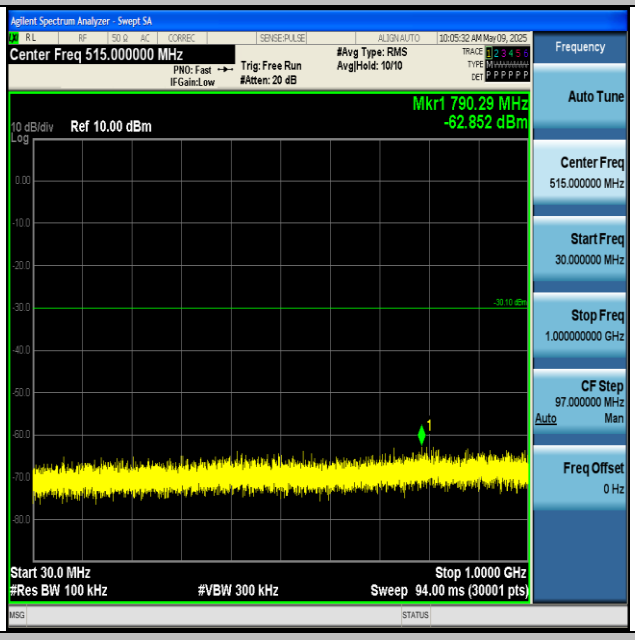
3DH5-Ant1-2402-30~1000-PASS



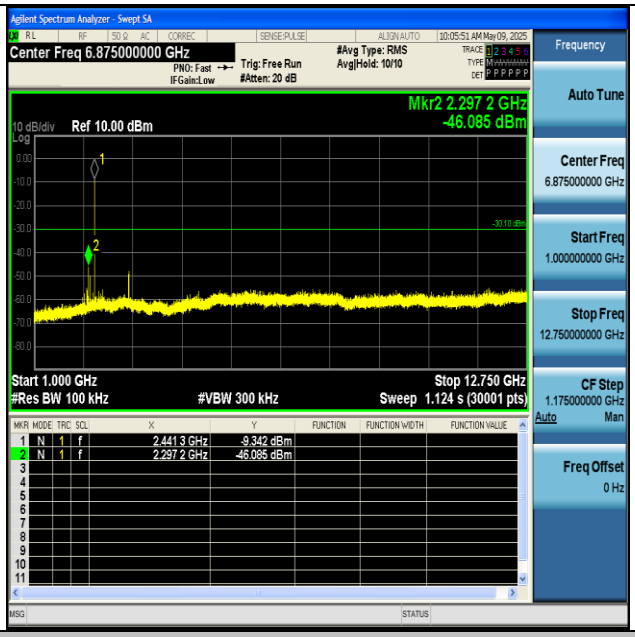
3DH5-Ant1-2402-1000~12750-PASS



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

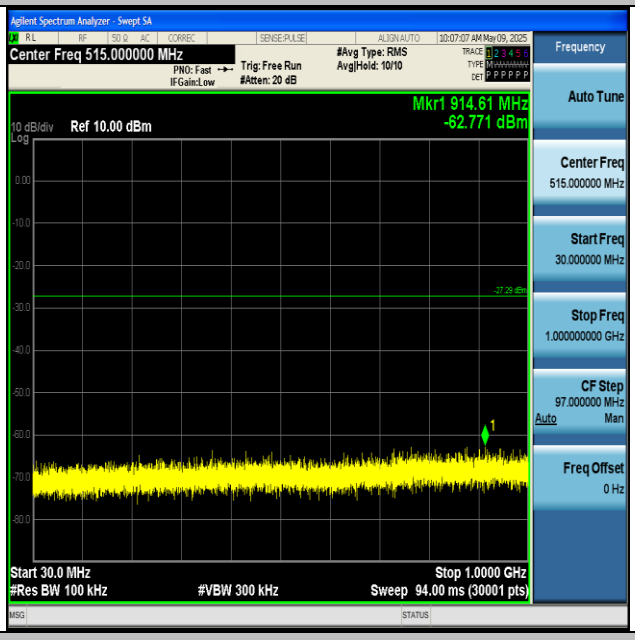


3DH5-Ant1-2441-30~1000-PASS

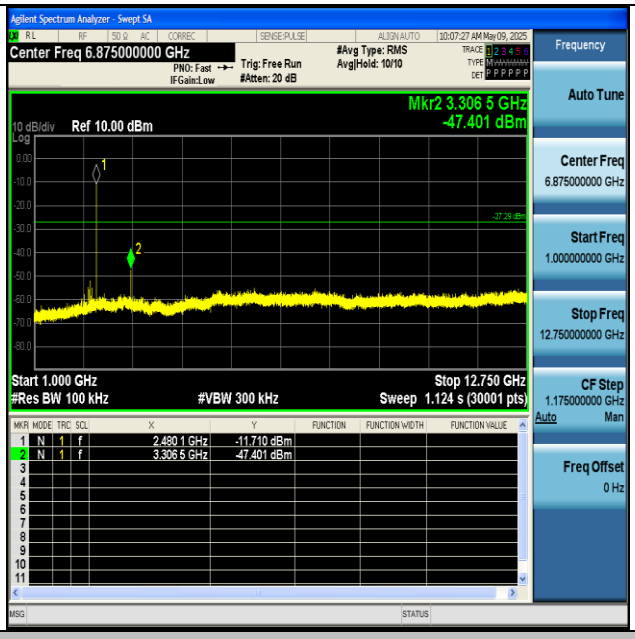


3DH5-Ant1-2441-1000~12750-PASS

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



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



3DH5-Ant1-2480-1000~12750-PASS

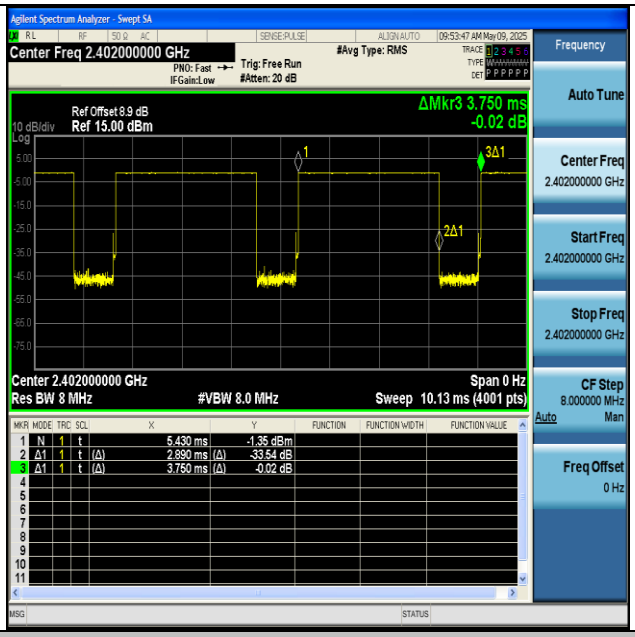
Appendix I: Duty Cycle

Test Result

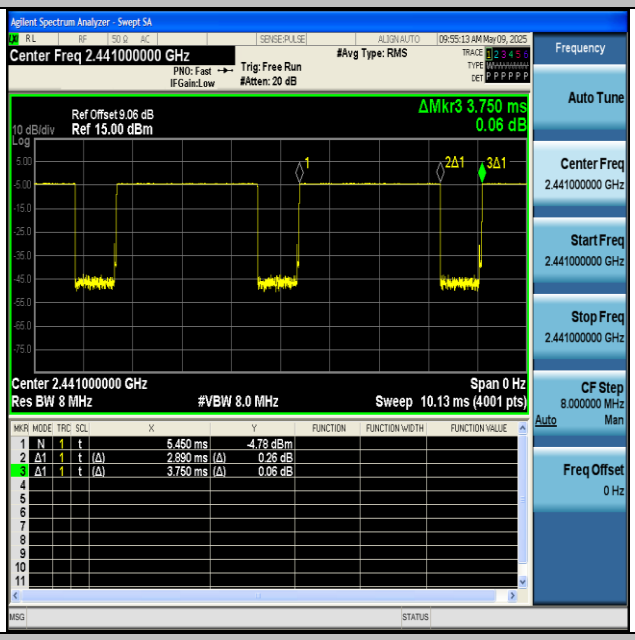
Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor [dB]
DH5	Ant1	2402	2.89	3.75	77.07	1.13
DH5	Ant1	2441	2.89	3.75	77.07	1.13
DH5	Ant1	2480	2.89	3.76	76.86	1.14
2DH5	Ant1	2402	2.89	3.75	77.07	1.13
2DH5	Ant1	2441	2.89	3.75	77.07	1.13
2DH5	Ant1	2480	2.89	3.75	77.07	1.13
3DH5	Ant1	2402	2.89	3.75	77.07	1.13
3DH5	Ant1	2441	2.75	3.61	76.18	1.18
3DH5	Ant1	2480	2.88	3.75	76.80	1.15

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

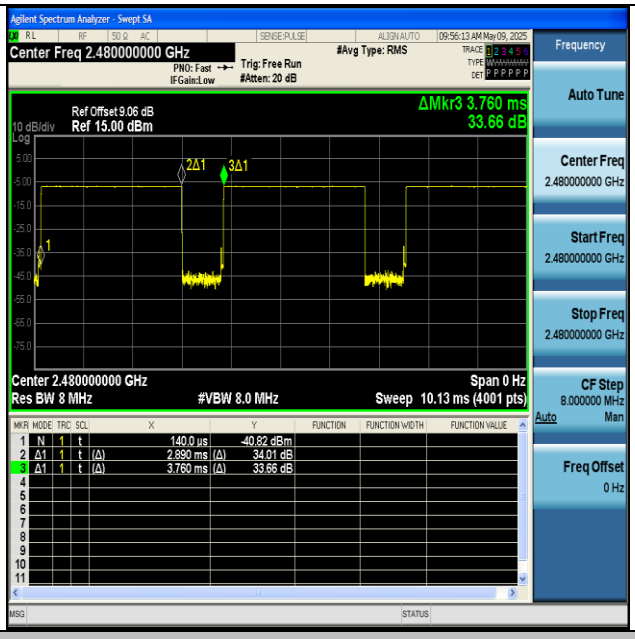
Test Graphs



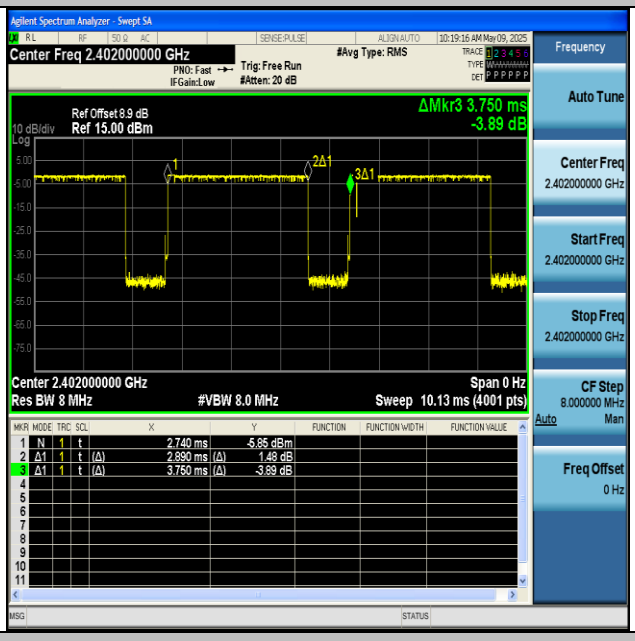
NTNV-DH5-Ant1-2402



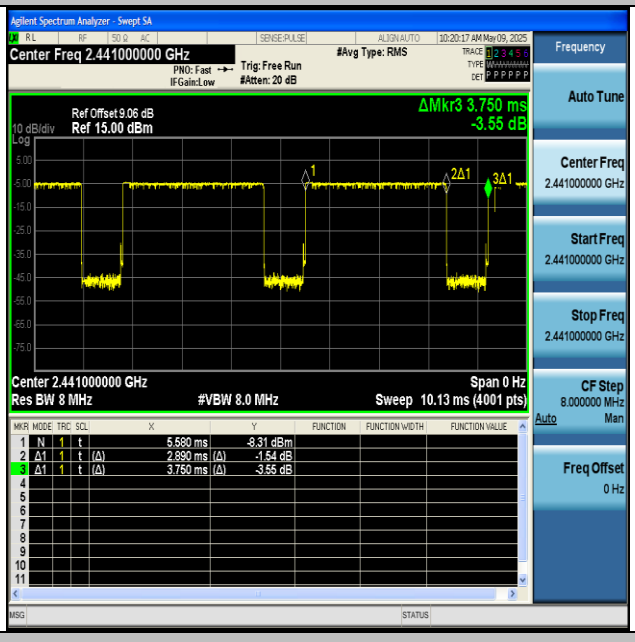
NTNV-DH5-Ant1-2441



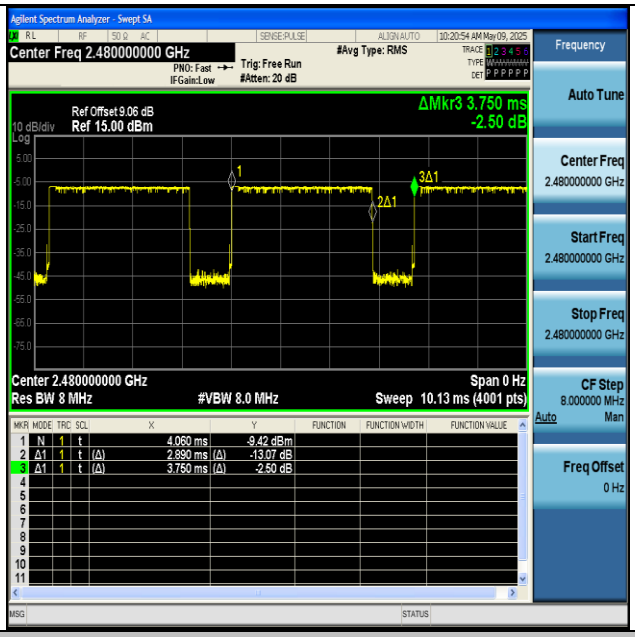
NTNV-DH5-Ant1-2480



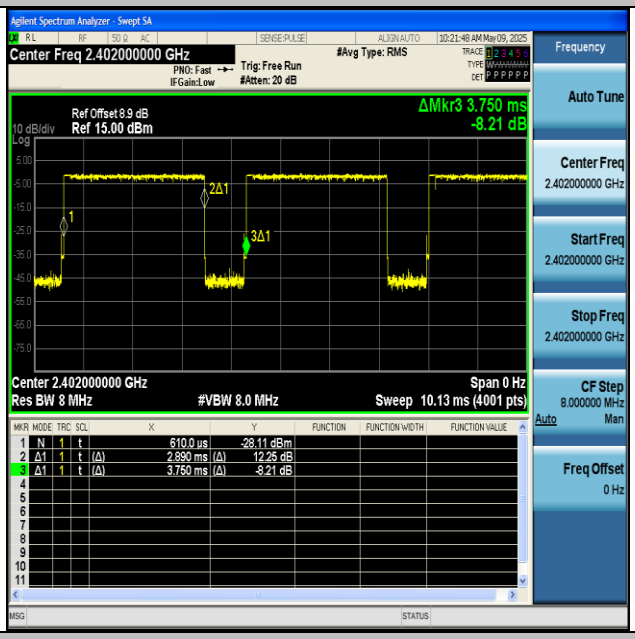
NTNV-2DH5-Ant1-2402



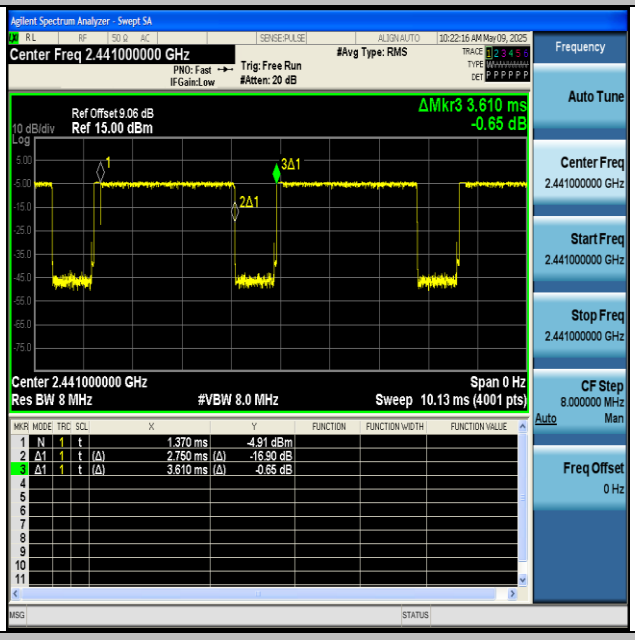
NTNV-2DH5-Ant1-2441



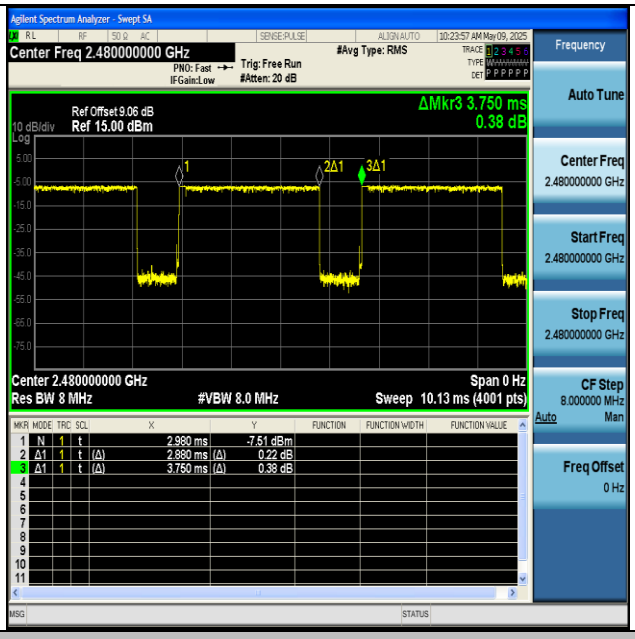
NTNV-2DH5-Ant1-2480



NTNV-3DH5-Ant1-2402



NTNV-3DH5-Ant1-2441



NTNV-3DH5-Ant1-2480