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

Product Name: SMART WACHT

Trade Mark: N/A

Test Model: ES11

FCC ID: 2A4AX-ES11

Environmental Conditions

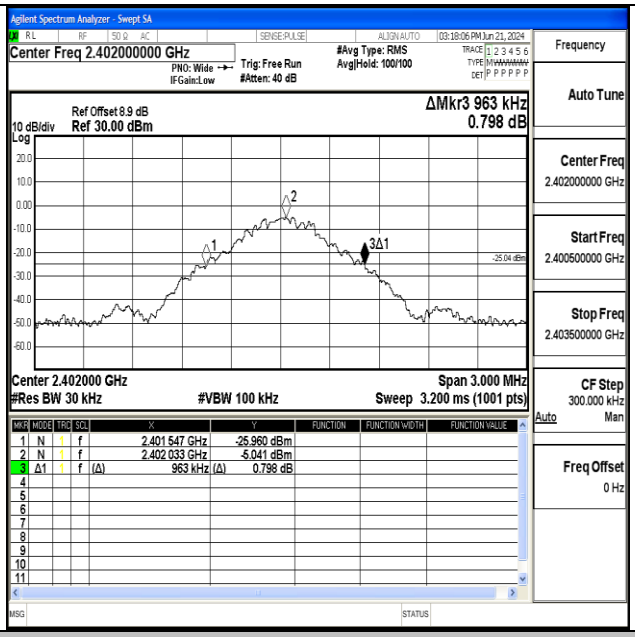
Temperature:	23.8℃
Relative Humidity:	58%
ATM Pressure:	100.0 kPa
Test Engineer:	Allen Lai
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: 20dB Emission Bandwidth

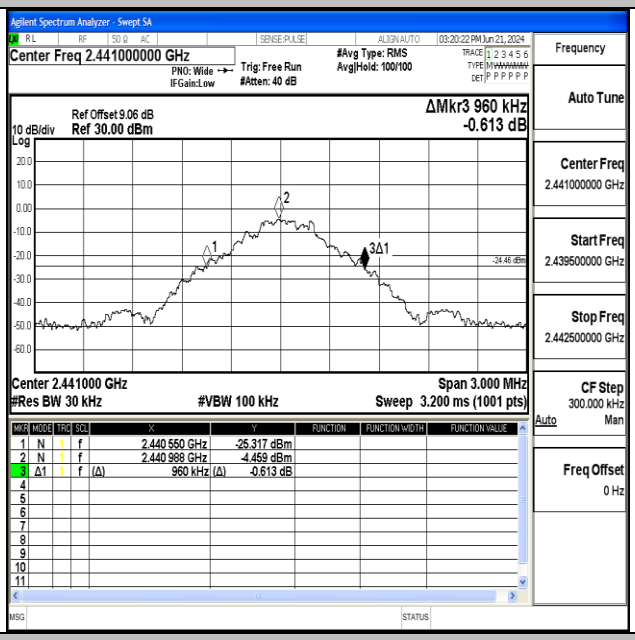
Test Result

TestMode	Antenna	Frequency[MHz]	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.963	2401.547	2402.510	---	---
DH5	Ant1	2441	0.960	2440.550	2441.510	---	---
DH5	Ant1	2480	0.963	2479.547	2480.510	---	---
2DH5	Ant1	2402	1.308	2401.364	2402.672	---	---
2DH5	Ant1	2441	1.293	2440.379	2441.672	---	---
2DH5	Ant1	2480	1.293	2479.379	2480.672	---	---
3DH5	Ant1	2402	1.308	2401.370	2402.678	---	---
3DH5	Ant1	2441	1.305	2440.367	2441.672	---	---
3DH5	Ant1	2480	1.314	2479.361	2480.675	---	---

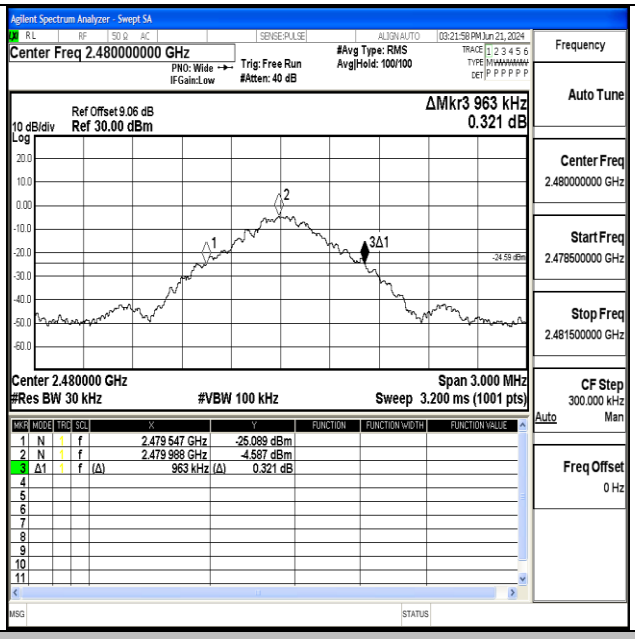
Test Graphs



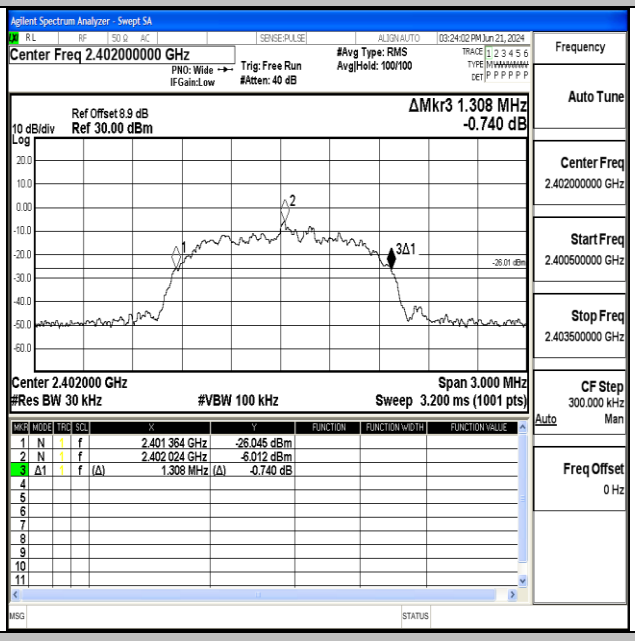
DH5-Ant1-2402



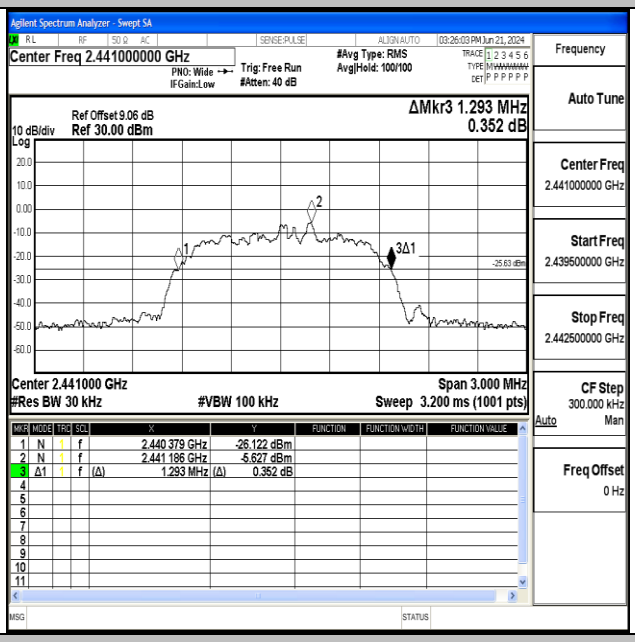
DH5-Ant1-2441



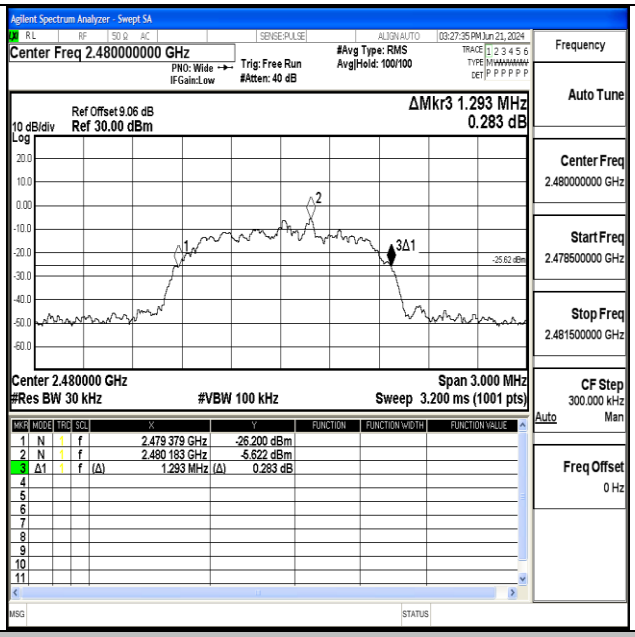
DH5-Ant1-2480



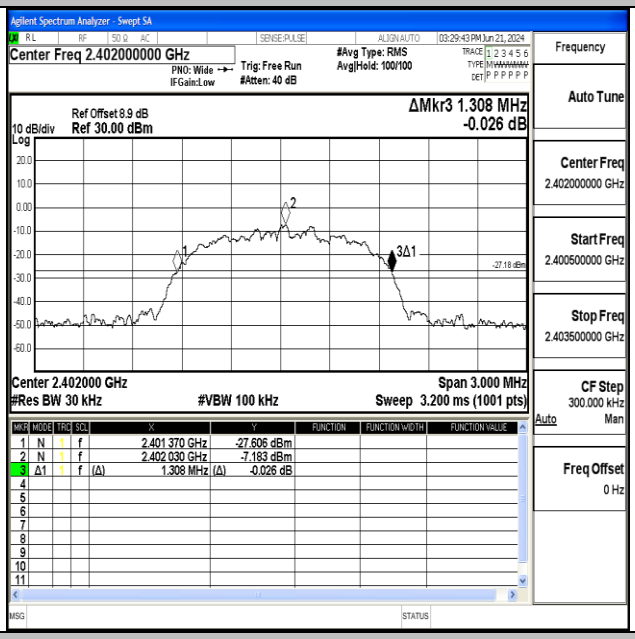
2DH5-Ant1-2402



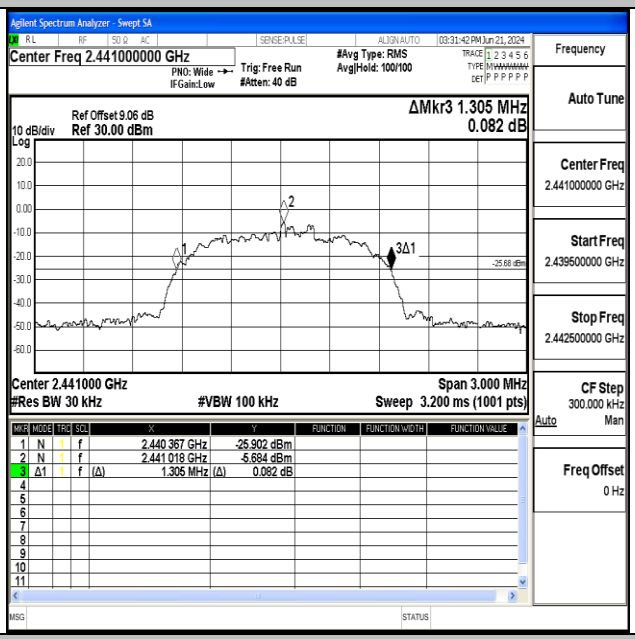
2DH5-Ant1-2441



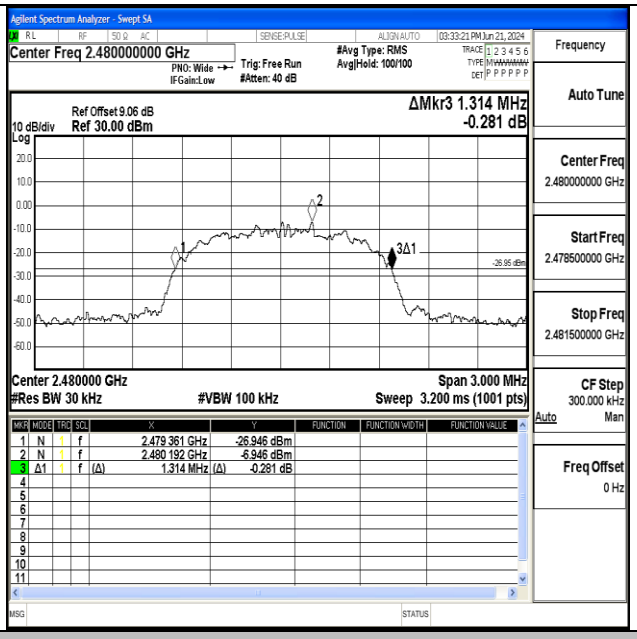
2DH5-Ant1-2480



3DH5-Ant1-2402



3DH5-Ant1-2441



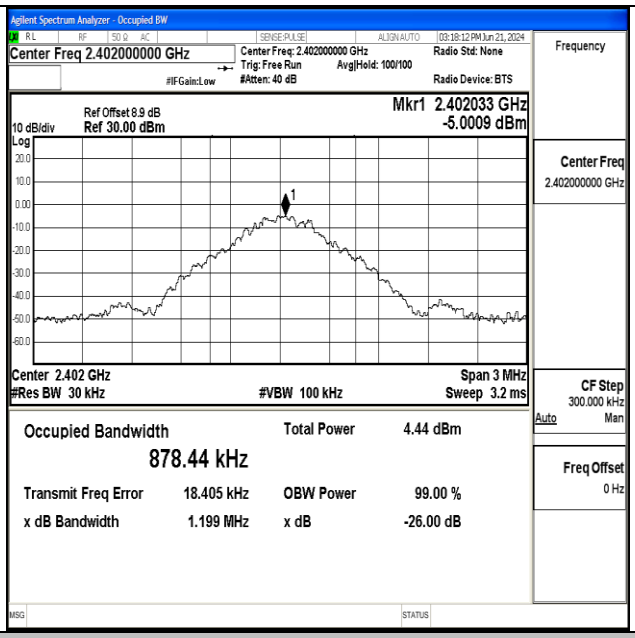
3DH5-Ant1-2480

Appendix B: Occupied Channel Bandwidth

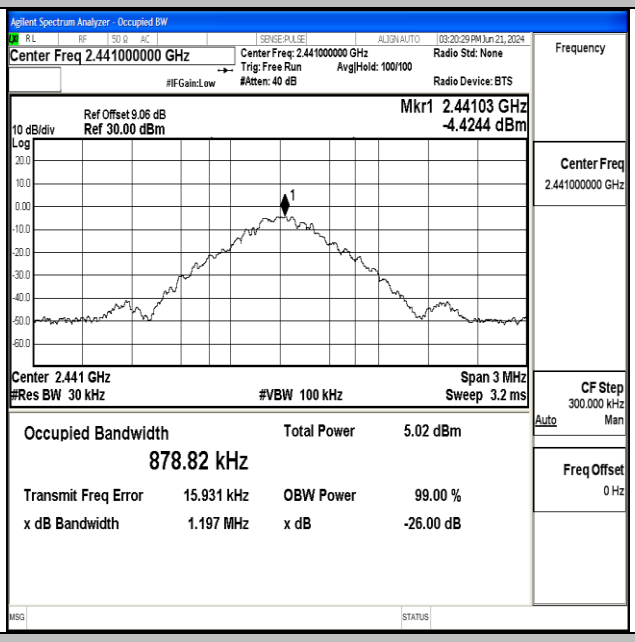
Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.87844	2401.5792	2402.4576	---	---
DH5	Ant1	2441	0.87882	2440.5765	2441.4553	---	---
DH5	Ant1	2480	0.87791	2479.5776	2480.4555	---	---
2DH5	Ant1	2402	1.1977	2401.4171	2402.6148	---	---
2DH5	Ant1	2441	1.1786	2440.4253	2441.6039	---	---
2DH5	Ant1	2480	1.1686	2479.4292	2480.5978	---	---
3DH5	Ant1	2402	1.1950	2401.4170	2402.6120	---	---
3DH5	Ant1	2441	1.1924	2440.4205	2441.6129	---	---
3DH5	Ant1	2480	1.1736	2479.4329	2480.6065	---	---

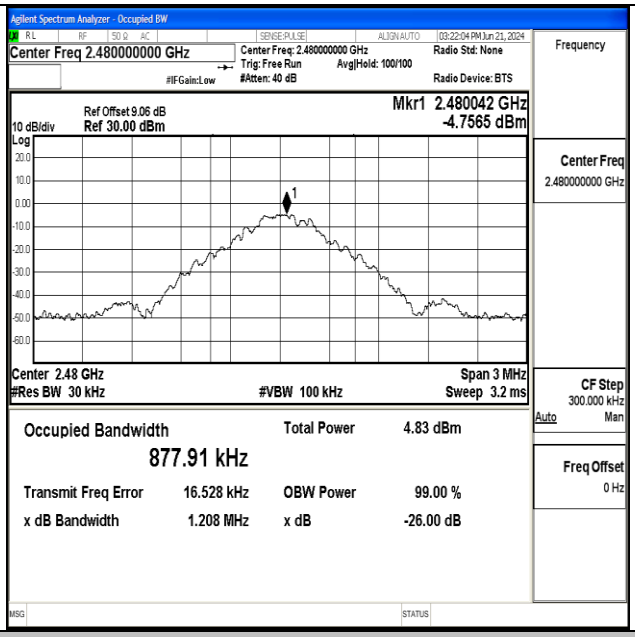
Test Graphs



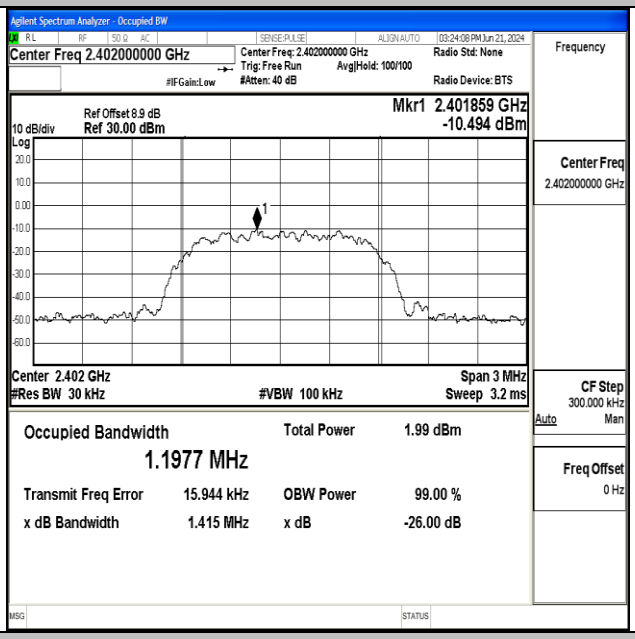
DH5-Ant1-2402



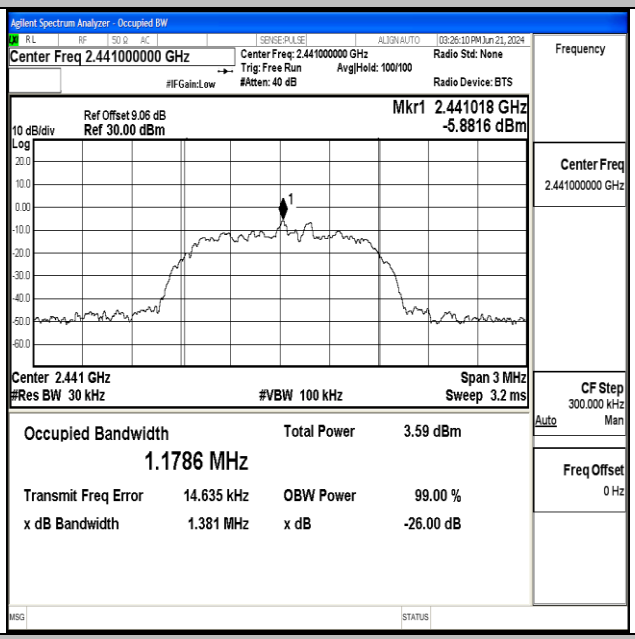
DH5-Ant1-2441



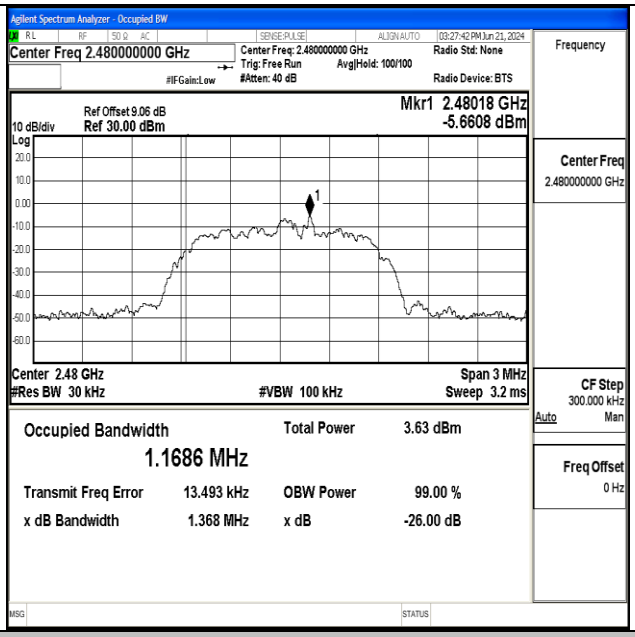
DH5-Ant1-2480



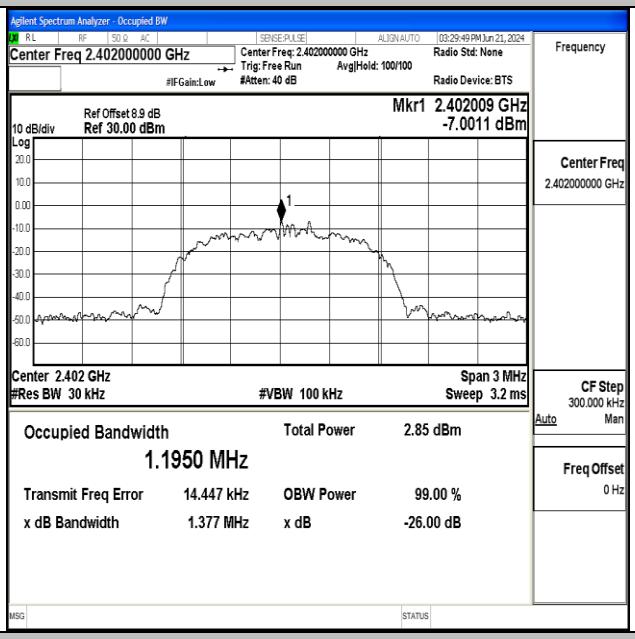
2DH5-Ant1-2402



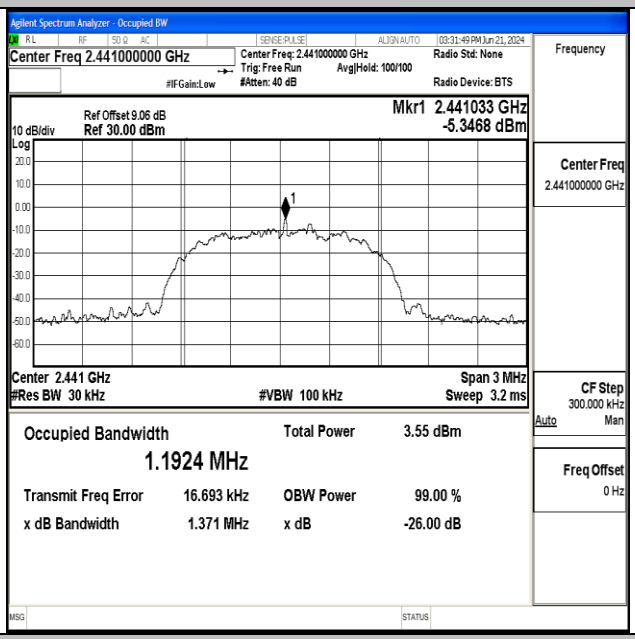
2DH5-Ant1-2441



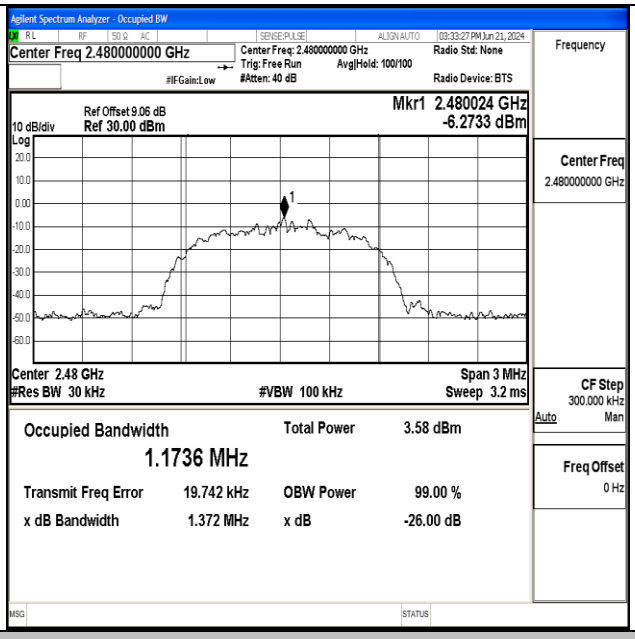
2DH5-Ant1-2480



3DH5-Ant1-2402



3DH5-Ant1-2441



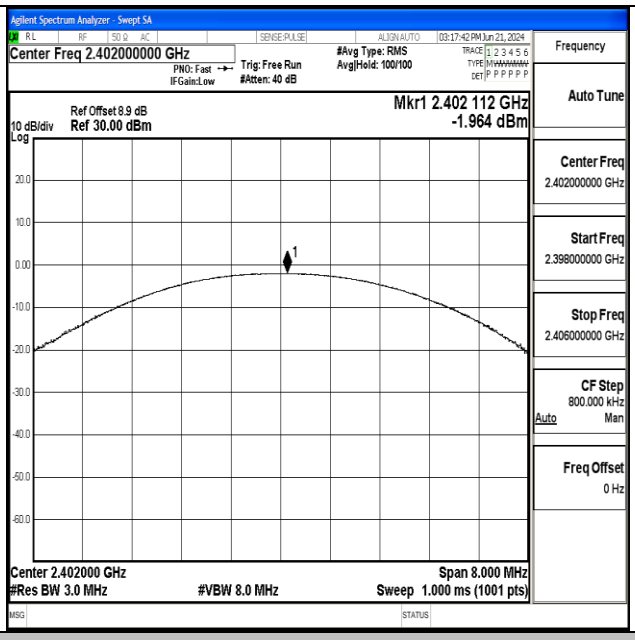
3DH5-Ant1-2480

Appendix C: Maximum peak conducted output power

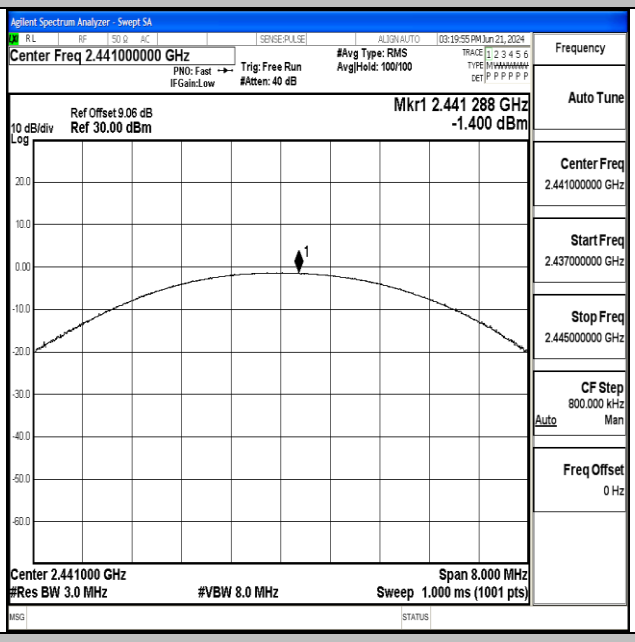
Test Result

Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	-1.96	≤30	PASS
DH5	Ant1	2441	-1.40	≤20.97	PASS
DH5	Ant1	2480	-1.61	≤20.97	PASS
2DH5	Ant1	2402	-1.66	≤30	PASS
2DH5	Ant1	2441	-1.06	≤20.97	PASS
2DH5	Ant1	2480	-1.31	≤20.97	PASS
3DH5	Ant1	2402	-1.06	≤30	PASS
3DH5	Ant1	2441	-0.53	≤20.97	PASS
3DH5	Ant1	2480	-0.71	≤20.97	PASS

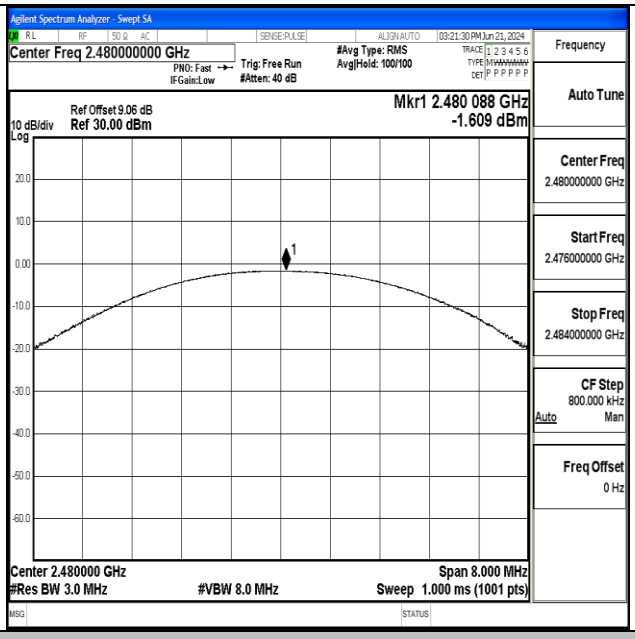
Test Graphs



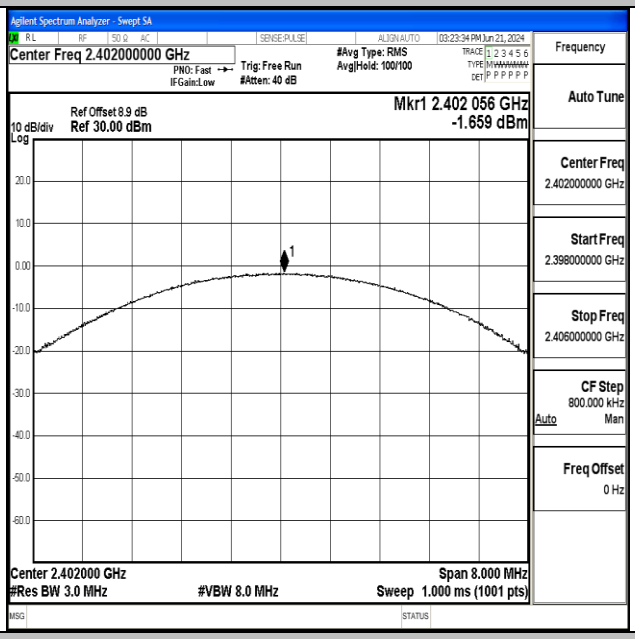
DH5-Ant1-2402-PASS



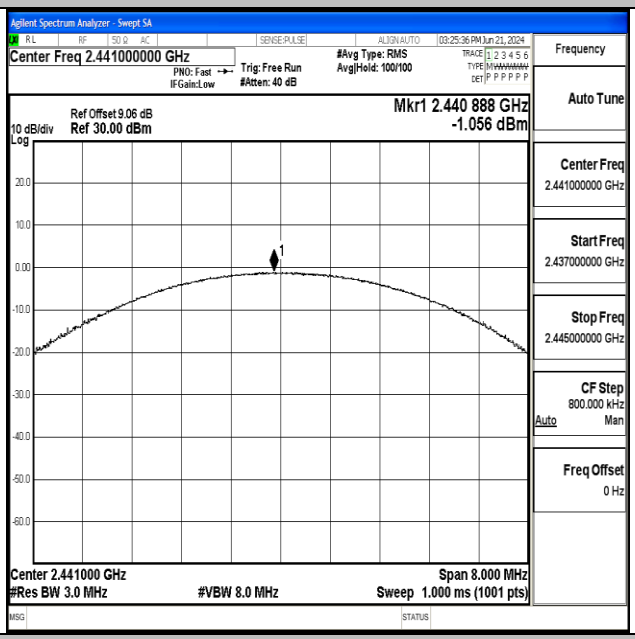
DH5-Ant1-2441-PASS



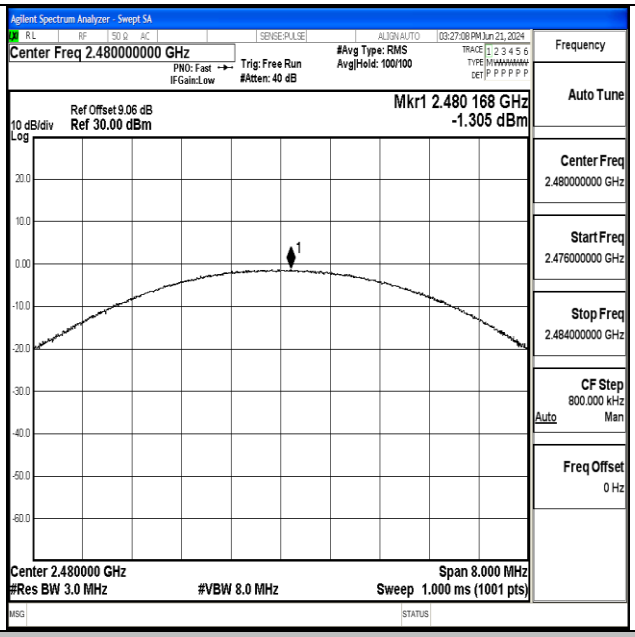
DH5-Ant1-2480-PASS



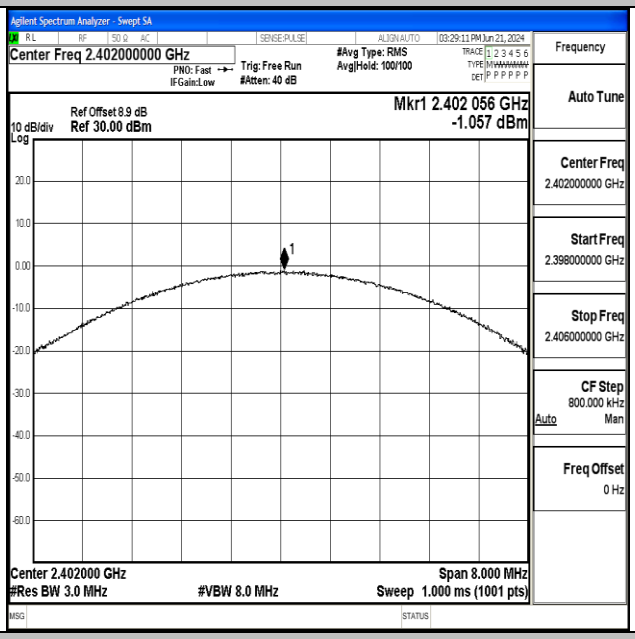
2DH5-Ant1-2402-PASS



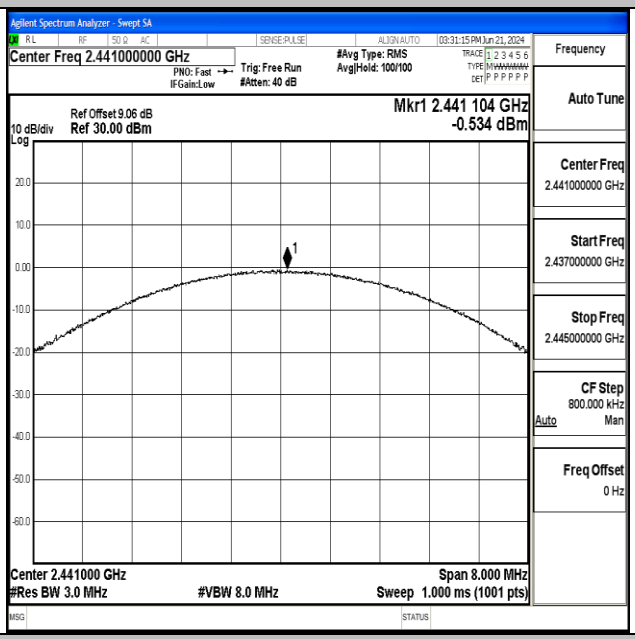
2DH5-Ant1-2441-PASS



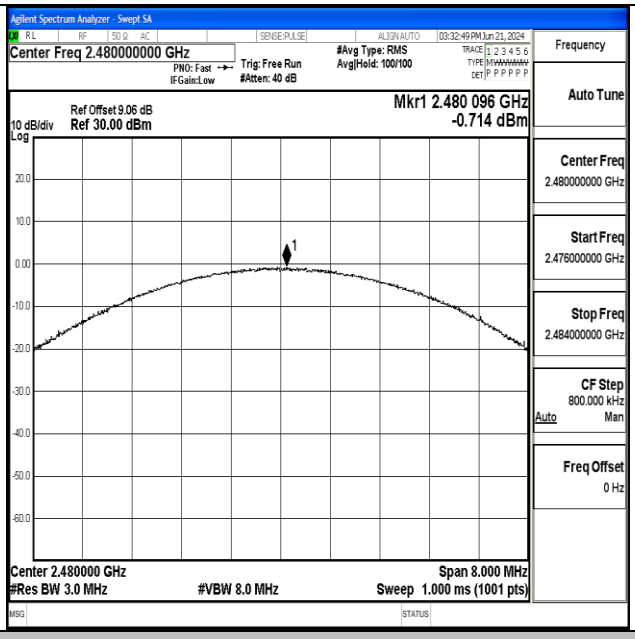
2DH5-Ant1-2480-PASS



3DH5-Ant1-2402-PASS



3DH5-Ant1-2441-PASS



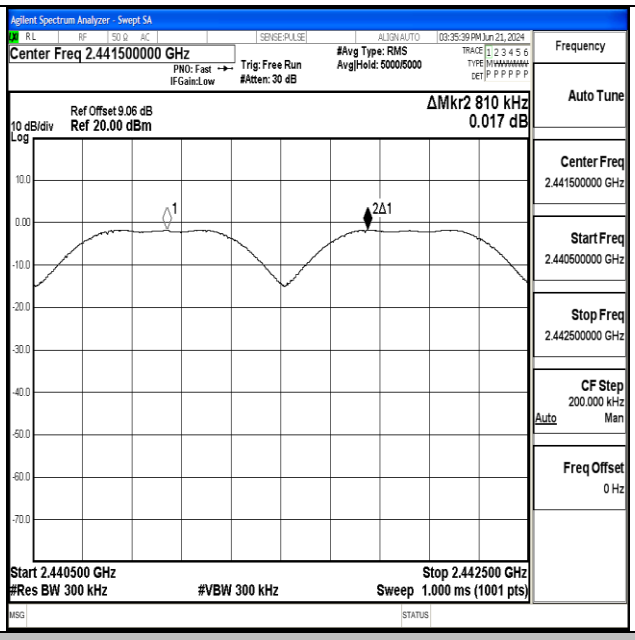
3DH5-Ant1-2480-PASS

Appendix D: Carrier frequency separation

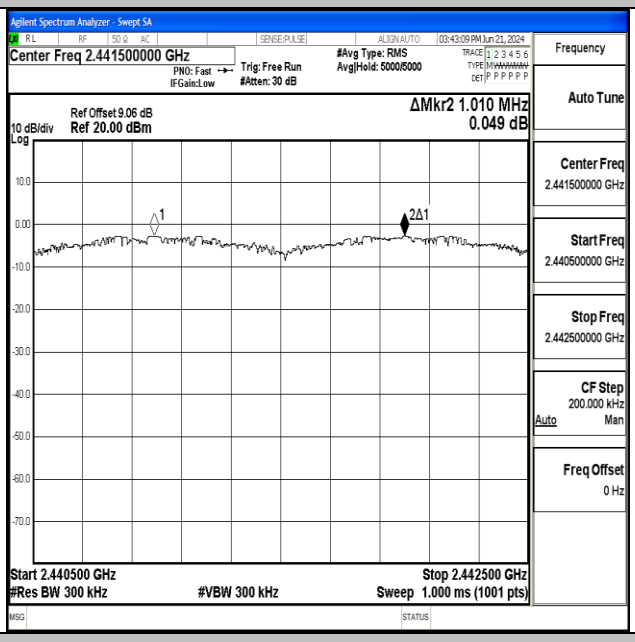
Test Result

TestMode	Antenna	Frequency[MHz]	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.81	≥0.642	PASS
2DH5	Ant1	Hop	1.01	≥0.872	PASS
3DH5	Ant1	Hop	1.34	≥1.314	PASS

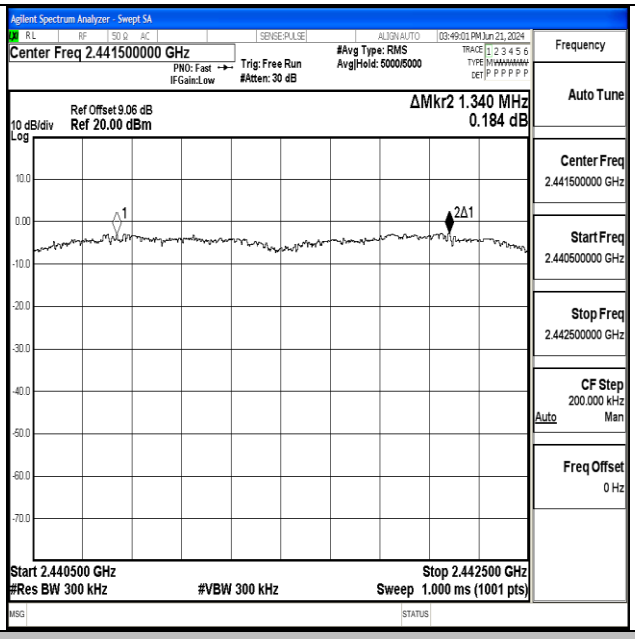
Test Graphs



DH5-Ant1-Hop-PASS



2DH5-Ant1-Hop-PASS



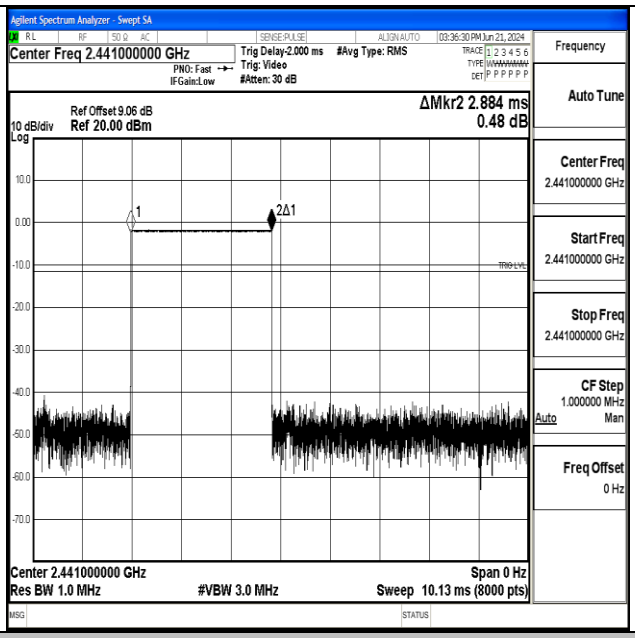
3DH5-Ant1-Hop-PASS

Appendix E: Time of occupancy

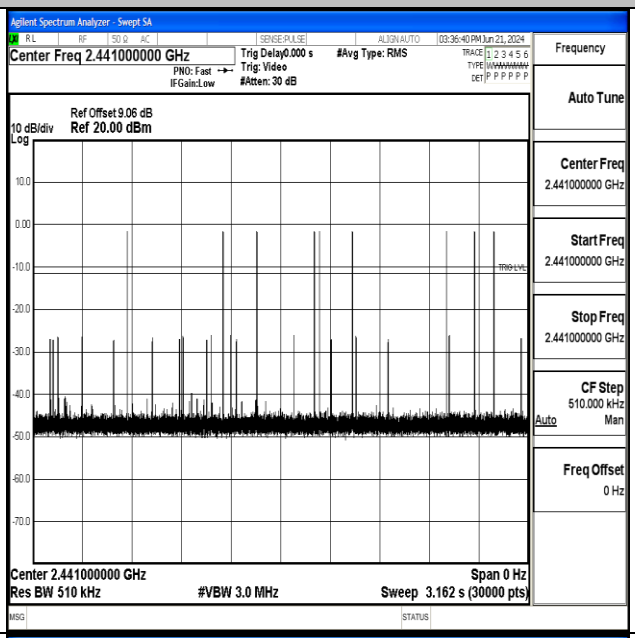
Test Result

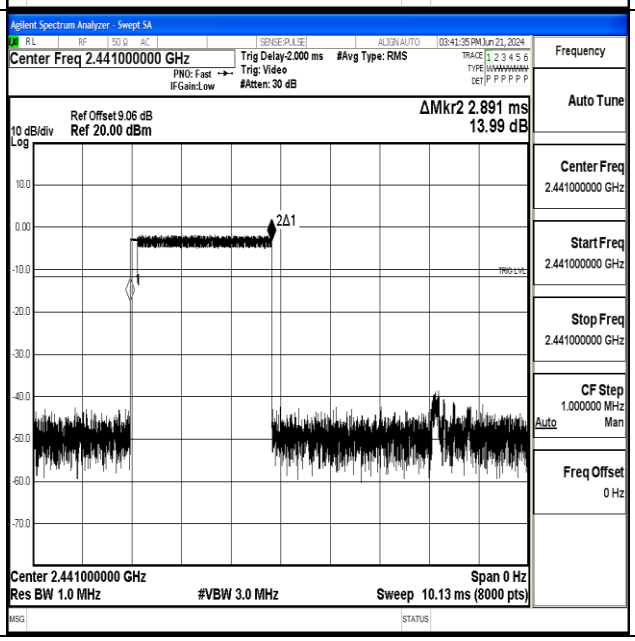
TestMode	Antenna	Frequency[MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.884	100	0.288	≤0.4	PASS
2DH5	Ant1	Hop	2.891	80	0.231	≤0.4	PASS
3DH5	Ant1	Hop	2.892	60	0.174	≤0.4	PASS

Test Graphs

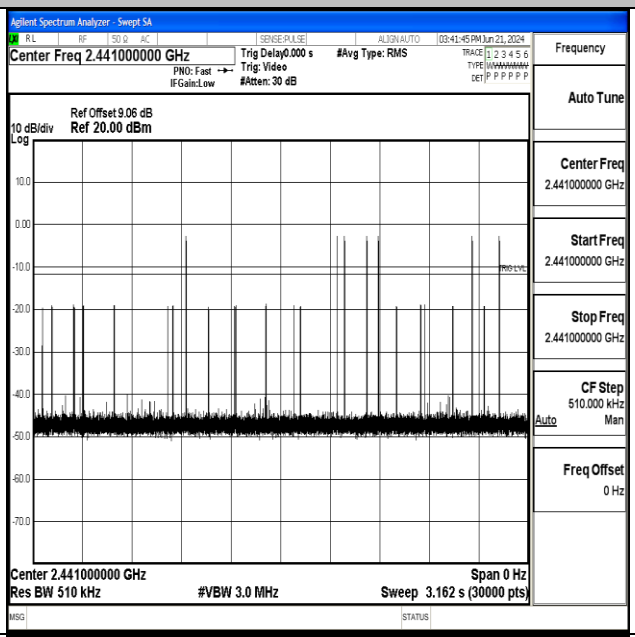


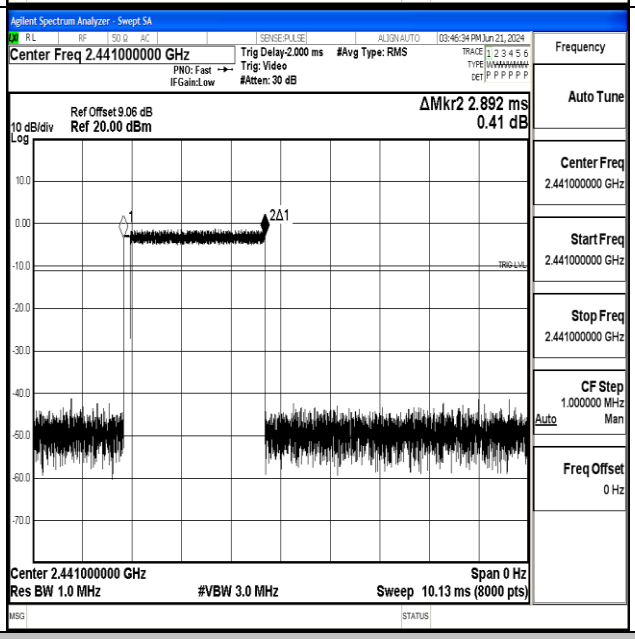
DH5-Ant1-Hop-PASS



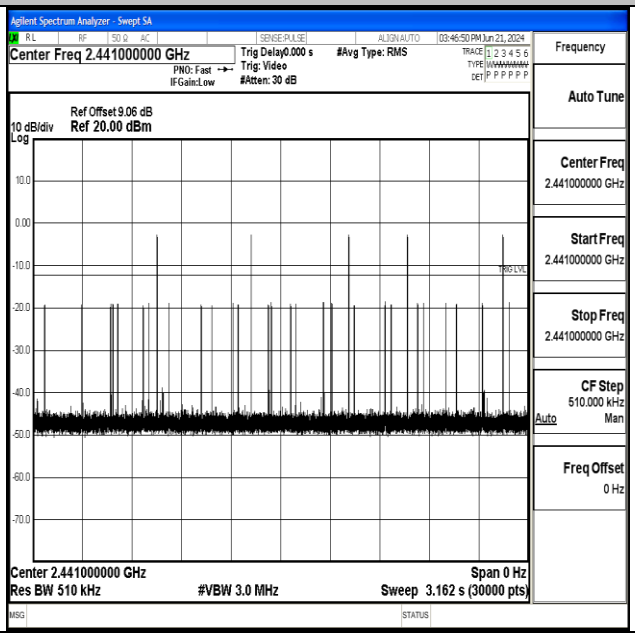


2DH5-Ant1-Hop-PASS





3DH5-Ant1-Hop-PASS

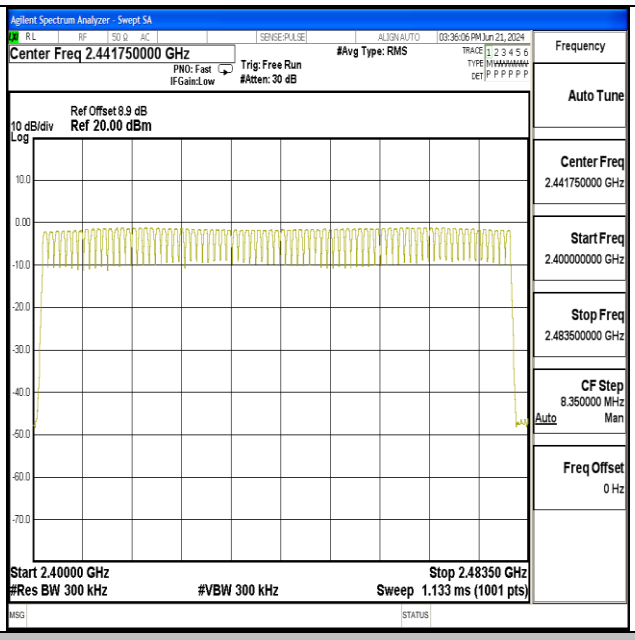


Appendix F: Number of hopping channels

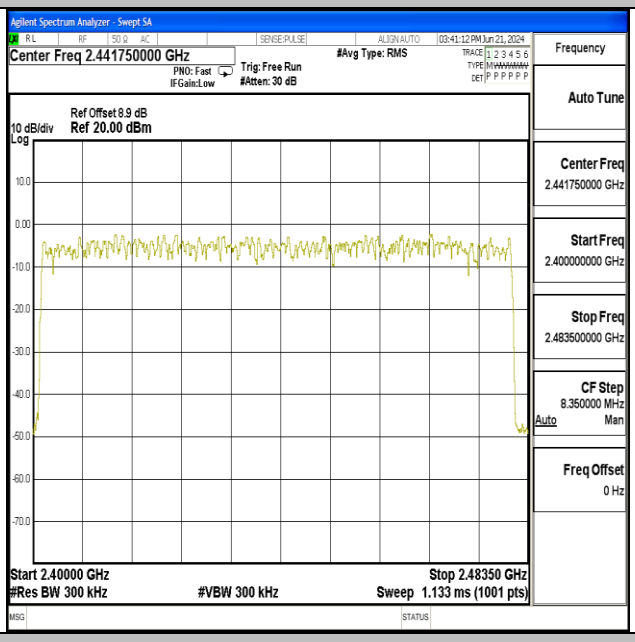
Test Result

TestMode	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

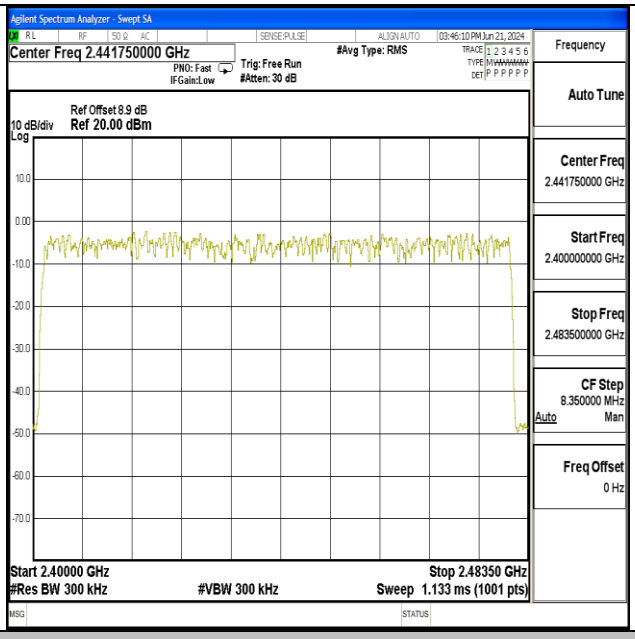
Test Graphs



DH5-Ant1-Hop-PASS



2DH5-Ant1-Hop-PASS



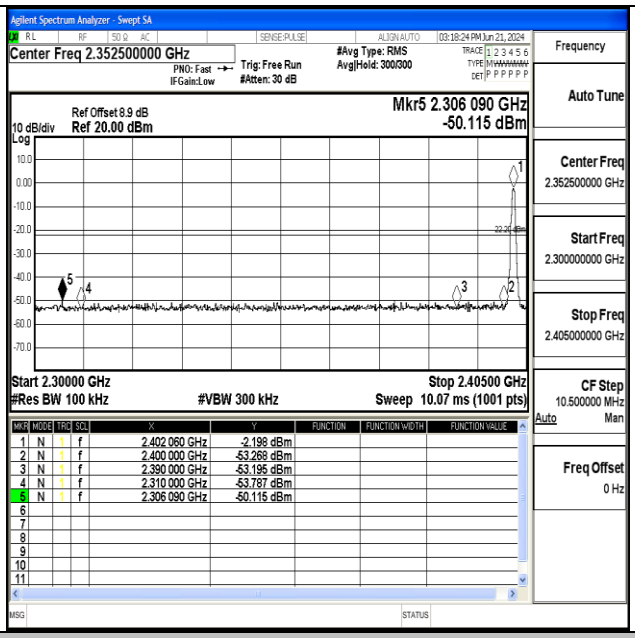
3DH5-Ant1-Hop-PASS

Appendix G: Band edge measurements

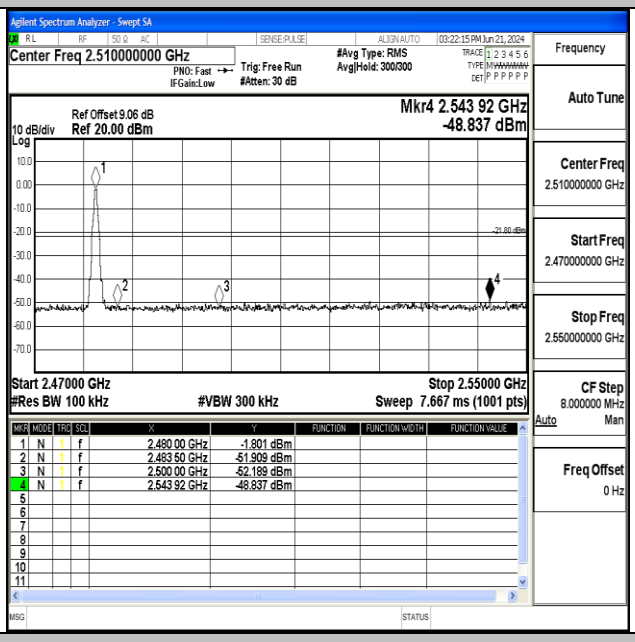
Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-2.20	-50.12	≤-22.2	PASS
DH5	Ant1	High	2480	-1.80	-48.84	≤-21.8	PASS
DH5	Ant1	Low	Hop_2402	-2.87	-50.35	≤-22.87	PASS
DH5	Ant1	High	Hop_2480	-2.16	-49.58	≤-22.16	PASS
2DH5	Ant1	Low	2402	-3.34	-49.51	≤-23.34	PASS
2DH5	Ant1	High	2480	-2.78	-49.52	≤-22.78	PASS
2DH5	Ant1	Low	Hop_2402	-7.22	-50.4	≤-27.22	PASS
2DH5	Ant1	High	Hop_2480	-2.65	-48.69	≤-22.65	PASS
3DH5	Ant1	Low	2402	-3.16	-50.07	≤-23.16	PASS
3DH5	Ant1	High	2480	-3.50	-49.55	≤-23.5	PASS
3DH5	Ant1	Low	Hop_2402	-7.80	-50.99	≤-27.8	PASS
3DH5	Ant1	High	Hop_2480	-4.99	-49.09	≤-24.99	PASS

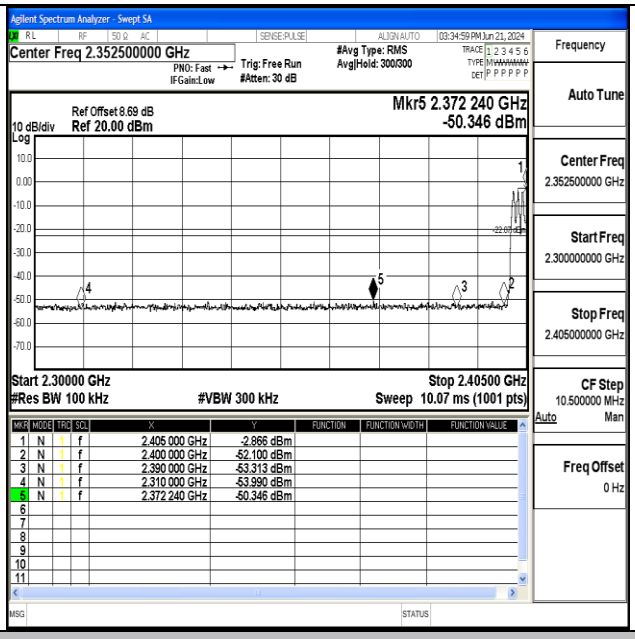
Test Graphs



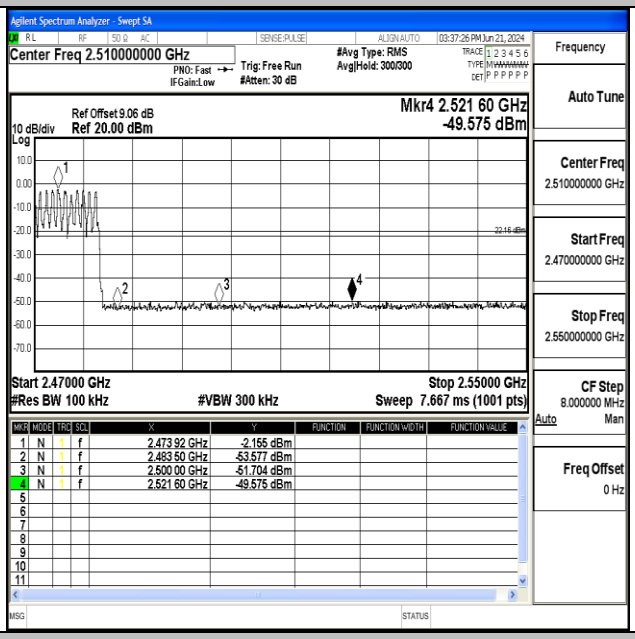
DH5-Ant1-2402-PASS



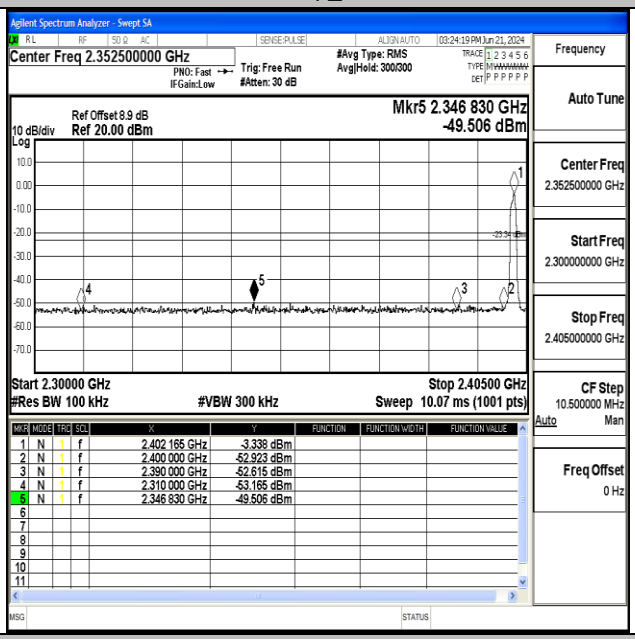
DH5-Ant1-2480-PASS



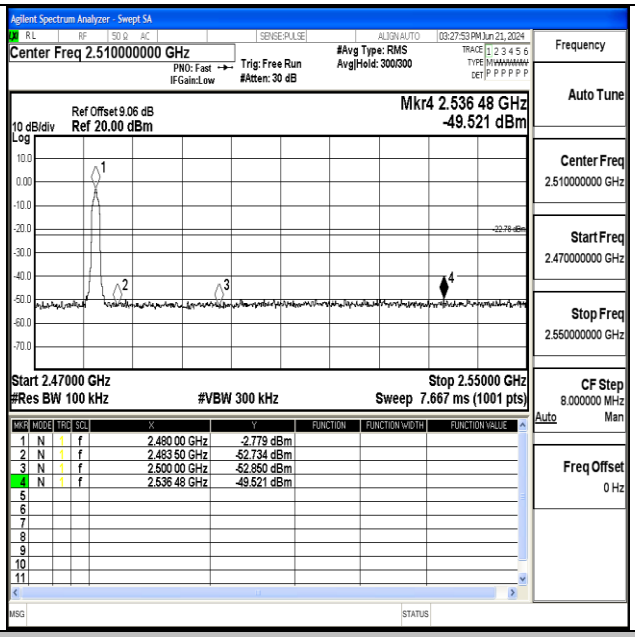
DH5-Ant1-Hop_2402-PASS



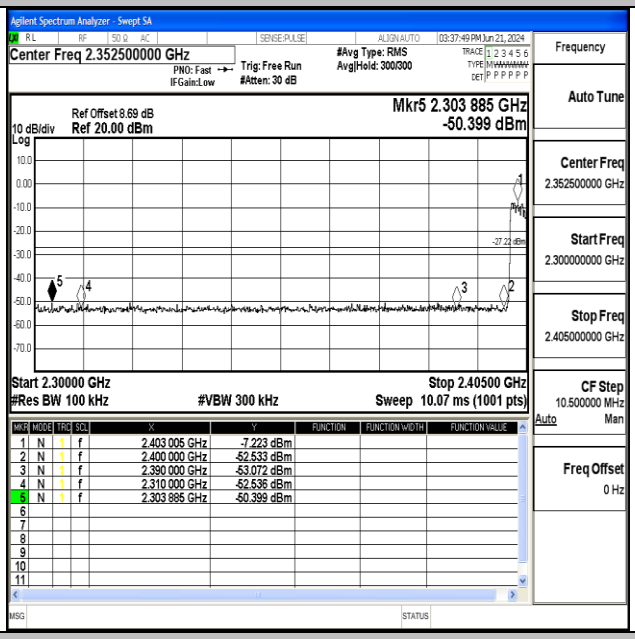
DH5-Ant1-Hop_2480-PASS



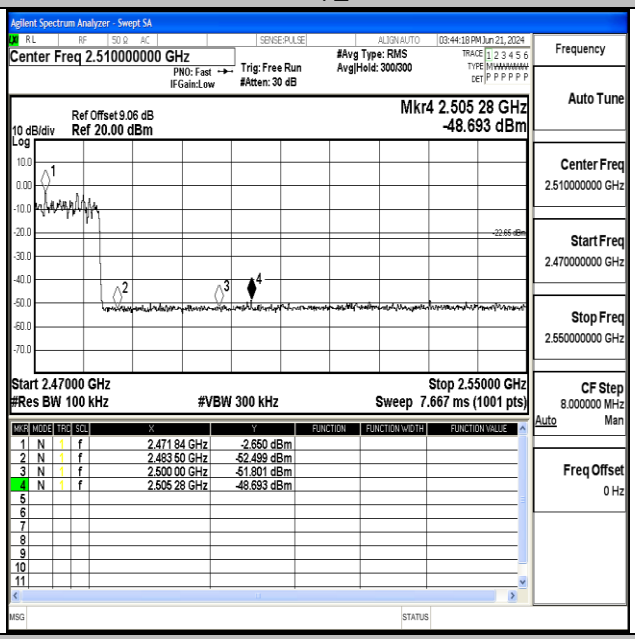
2DH5-Ant1-2402-PASS



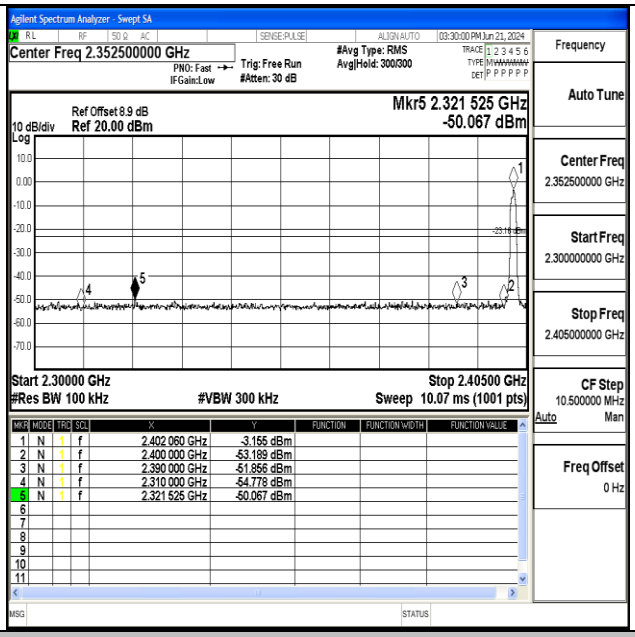
2DH5-Ant1-2480-PASS



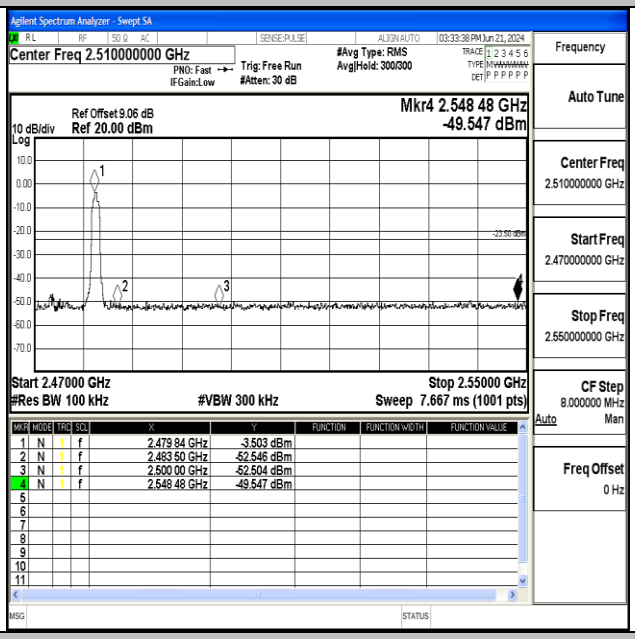
2DH5-Ant1-Hop_2402-PASS



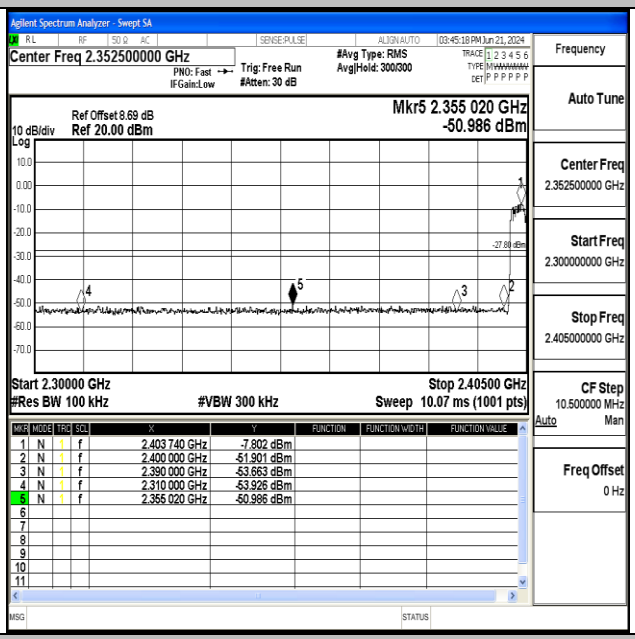
2DH5-Ant1-Hop_2480-PASS



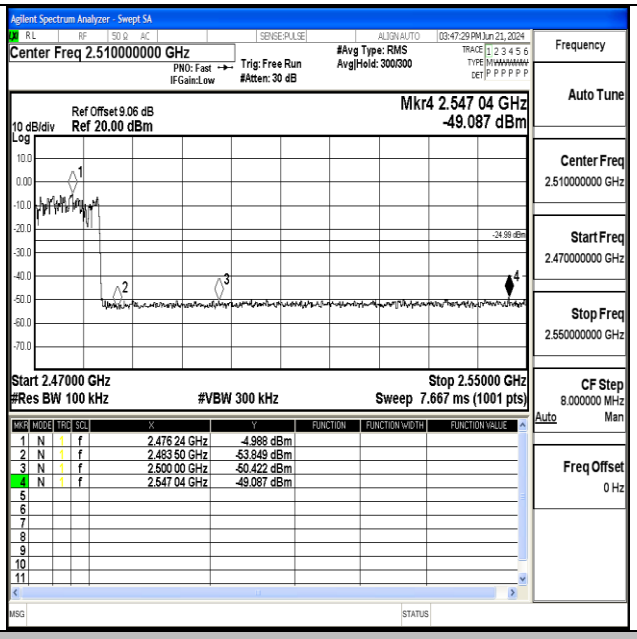
3DH5-Ant1-2402-PASS



3DH5-Ant1-2480-PASS



3DH5-Ant1-Hop_2402-PASS



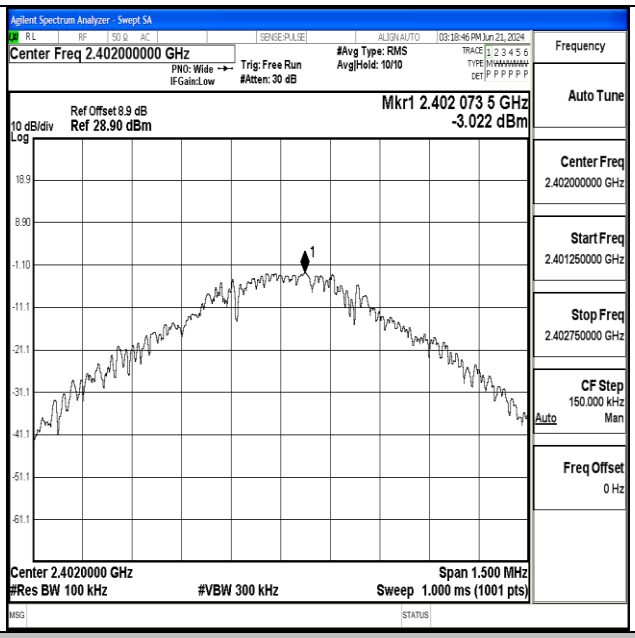
3DH5-Ant1-Hop_2480-PASS

Appendix H: Conducted Spurious Emission

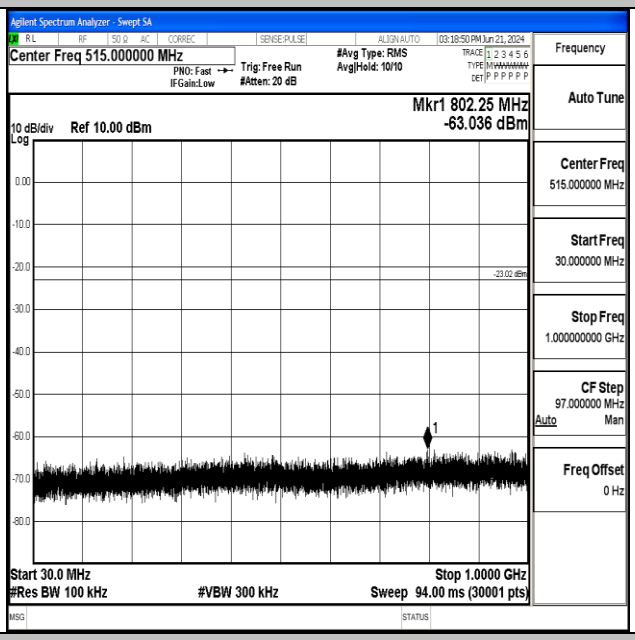
Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	0~Reference	-3.02	-3.02	---	PASS
DH5	Ant1	2402	30~1000	-3.02	-63.04	≤-23.02	PASS
DH5	Ant1	2402	1000~26500	-3.02	-50.69	≤-23.02	PASS
DH5	Ant1	2441	0~Reference	-2.51	-2.51	---	PASS
DH5	Ant1	2441	30~1000	-2.51	-62.8	≤-22.51	PASS
DH5	Ant1	2441	1000~26500	-2.51	-50.4	≤-22.51	PASS
DH5	Ant1	2480	0~Reference	-2.00	-2.00	---	PASS
DH5	Ant1	2480	30~1000	-2.00	-62.74	≤-22	PASS
DH5	Ant1	2480	1000~26500	-2.00	-50.39	≤-22	PASS
2DH5	Ant1	2402	0~Reference	-5.23	-5.23	---	PASS
2DH5	Ant1	2402	30~1000	-5.23	-63.16	≤-25.23	PASS
2DH5	Ant1	2402	1000~26500	-5.23	-50.58	≤-25.23	PASS
2DH5	Ant1	2441	0~Reference	-5.88	-5.88	---	PASS
2DH5	Ant1	2441	30~1000	-5.88	-62.69	≤-25.88	PASS
2DH5	Ant1	2441	1000~26500	-5.88	-50.18	≤-25.88	PASS
2DH5	Ant1	2480	0~Reference	-7.15	-7.15	---	PASS
2DH5	Ant1	2480	30~1000	-7.15	-62.91	≤-27.15	PASS
2DH5	Ant1	2480	1000~26500	-7.15	-50.41	≤-27.15	PASS
3DH5	Ant1	2402	0~Reference	-5.81	-5.81	---	PASS
3DH5	Ant1	2402	30~1000	-5.81	-63.17	≤-25.81	PASS
3DH5	Ant1	2402	1000~26500	-5.81	-49.42	≤-25.81	PASS
3DH5	Ant1	2441	0~Reference	-3.99	-3.99	---	PASS
3DH5	Ant1	2441	30~1000	-3.99	-62.8	≤-23.99	PASS
3DH5	Ant1	2441	1000~26500	-3.99	-49.87	≤-23.99	PASS
3DH5	Ant1	2480	0~Reference	-3.98	-3.98	---	PASS
3DH5	Ant1	2480	30~1000	-3.98	-62.39	≤-23.98	PASS
3DH5	Ant1	2480	1000~26500	-3.98	-50.16	≤-23.98	PASS

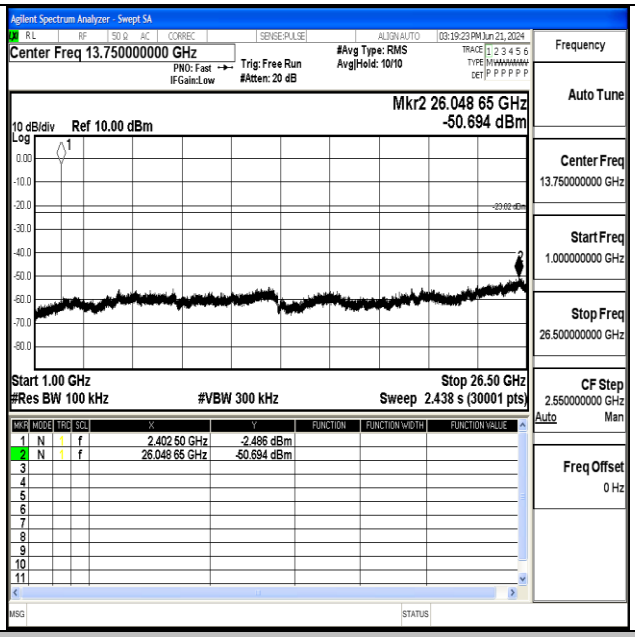
Test Graphs



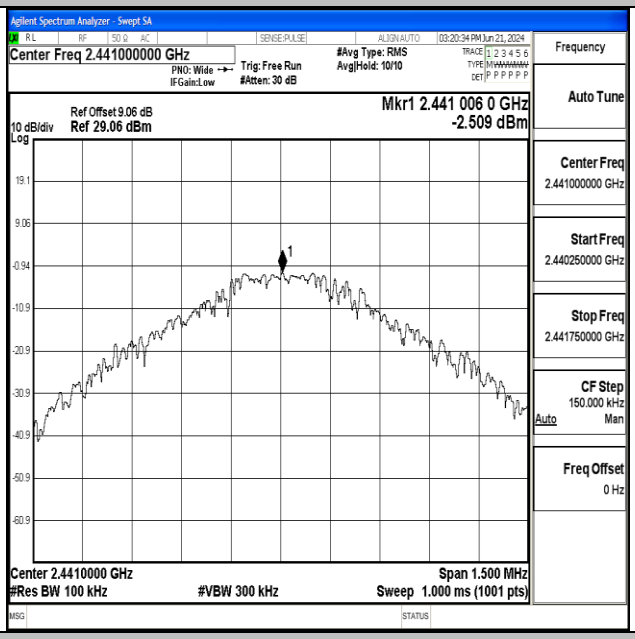
DH5-Ant1-2402-0~Reference-PASS



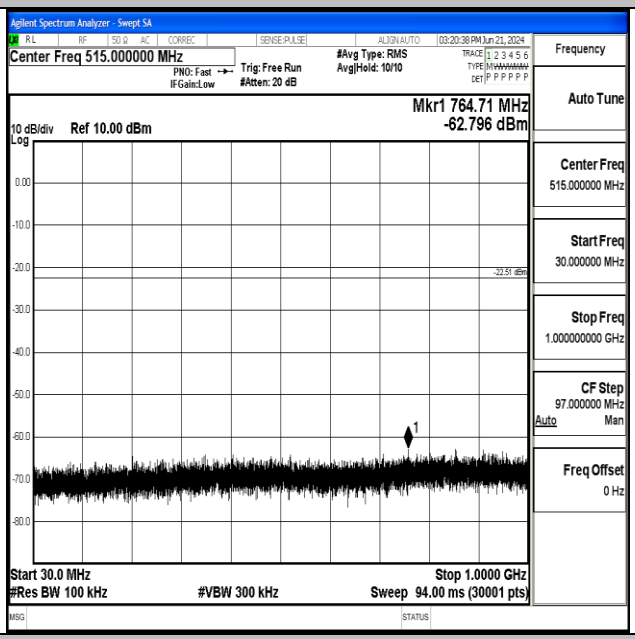
DH5-Ant1-2402-30~1000-PASS



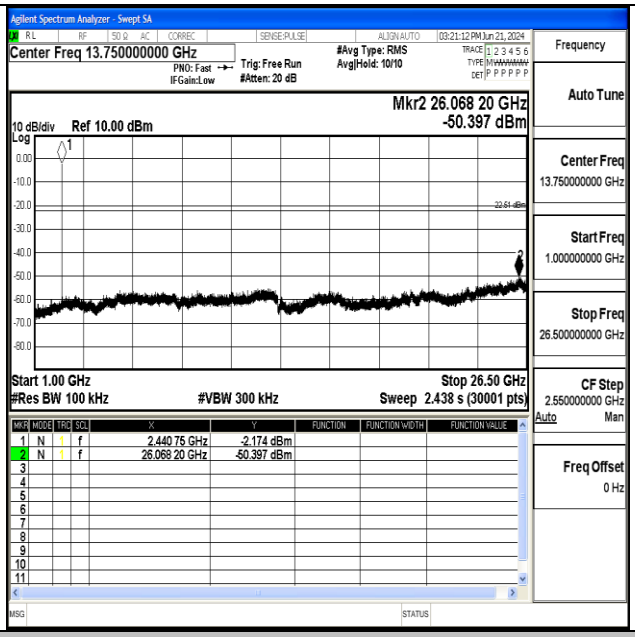
DH5-Ant1-2402-1000~26500-PASS



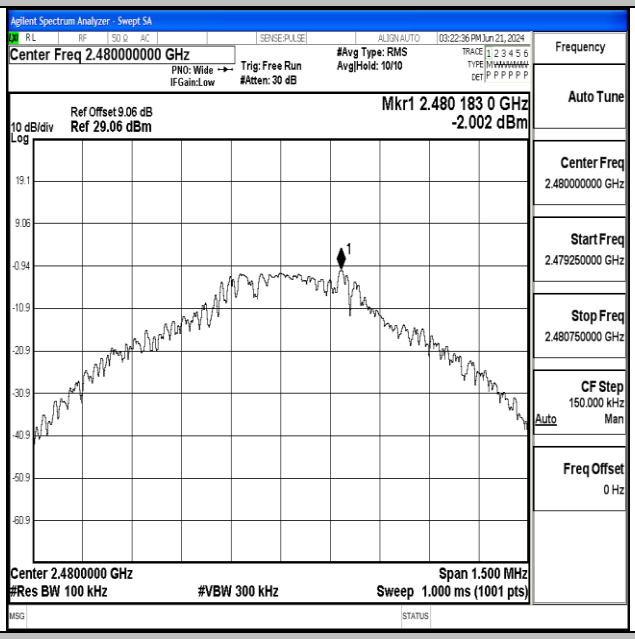
DH5-Ant1-2441-0~Reference-PASS



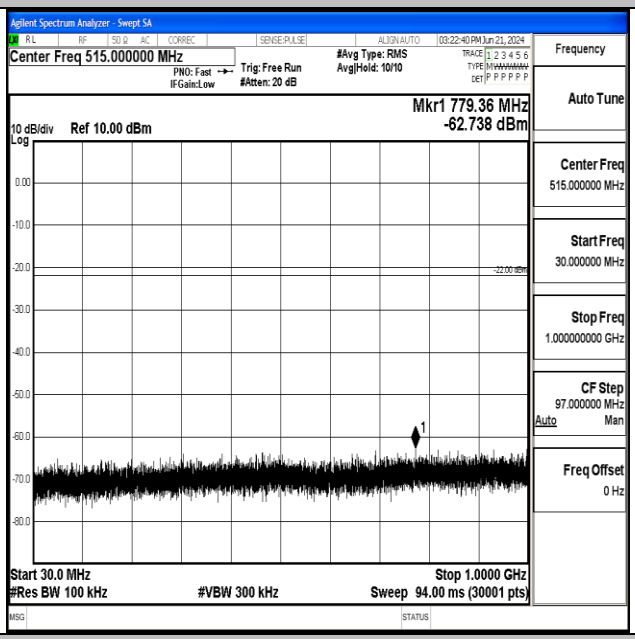
DH5-Ant1-2441-30~1000-PASS



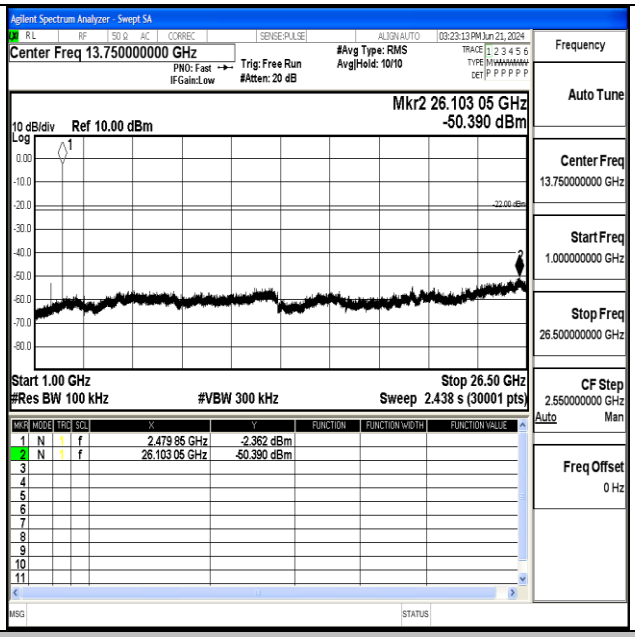
DH5-Ant1-2441-1000~26500-PASS



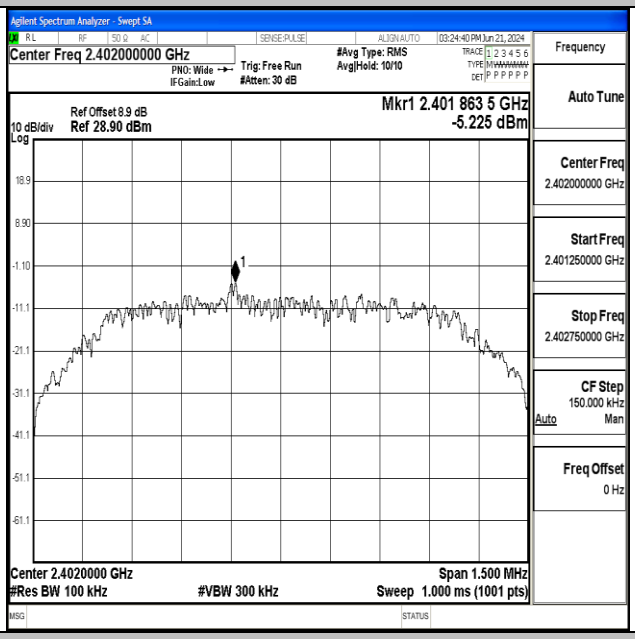
DH5-Ant1-2480-0~Reference-PASS



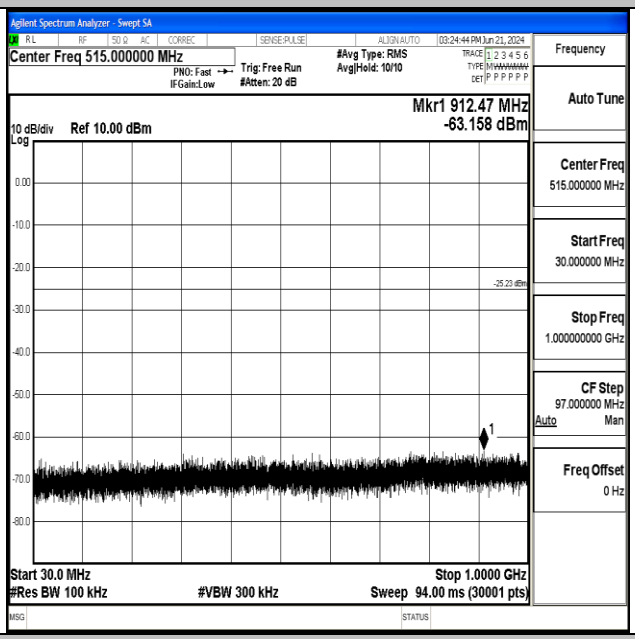
DH5-Ant1-2480-30~1000-PASS



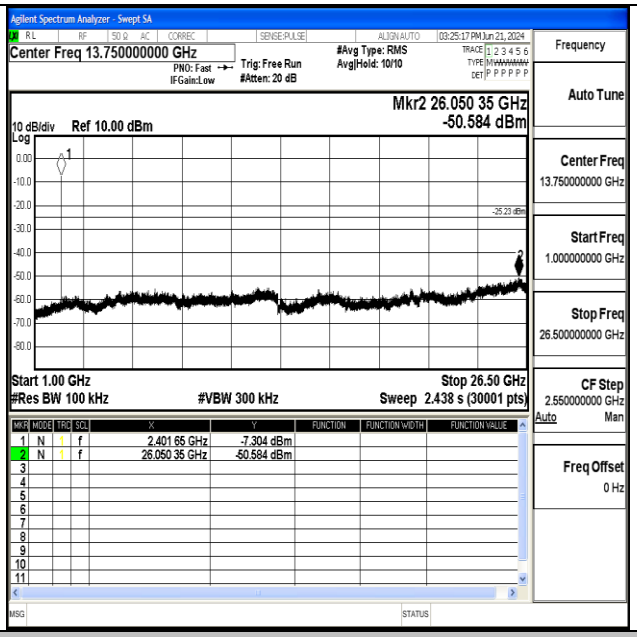
DH5-Ant1-2480-1000~26500-PASS



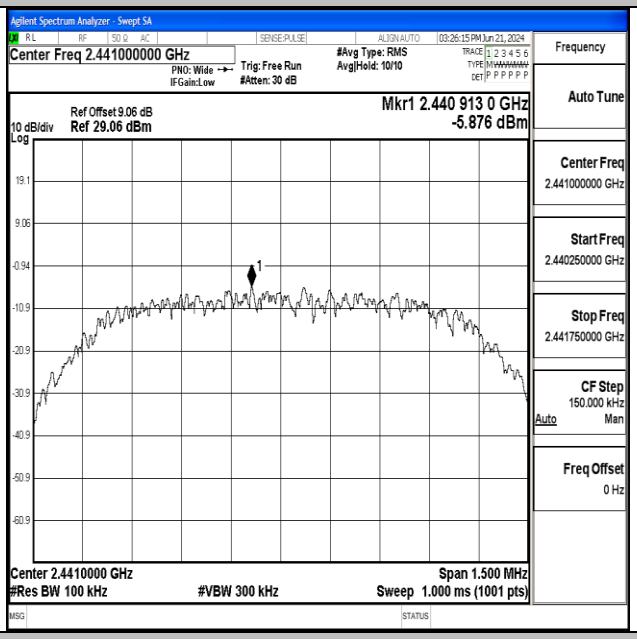
2DH5-Ant1-2402-0~Reference-PASS



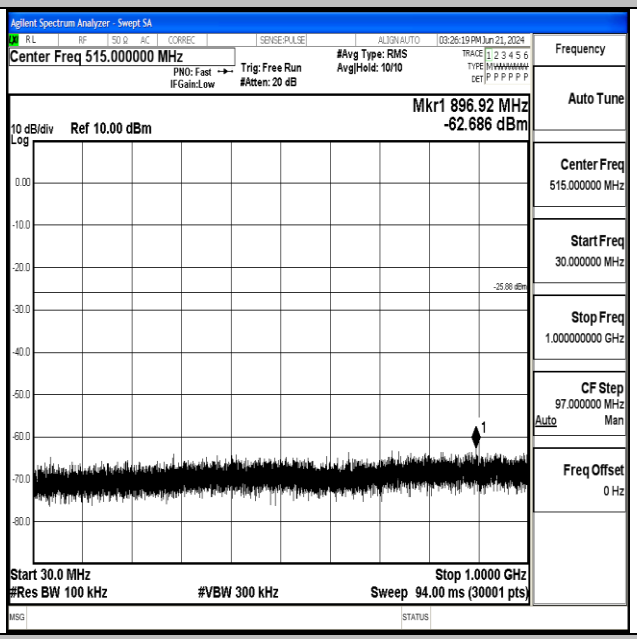
2DH5-Ant1-2402-30~1000-PASS



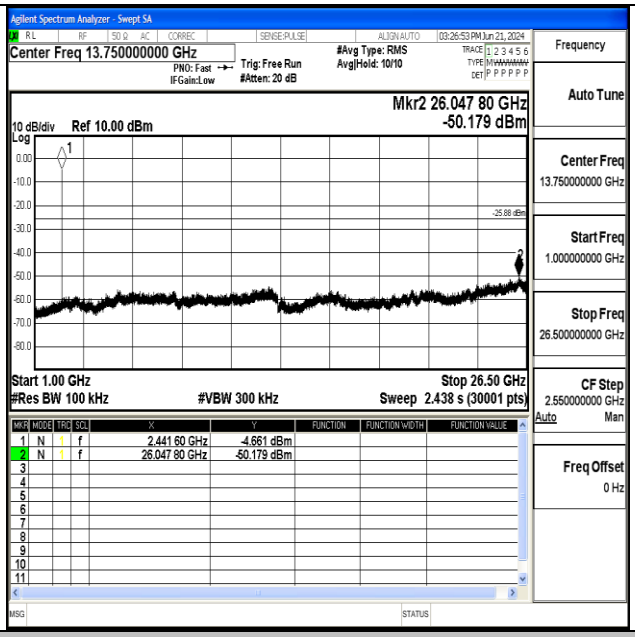
2DH5-Ant1-2402-1000~26500-PASS



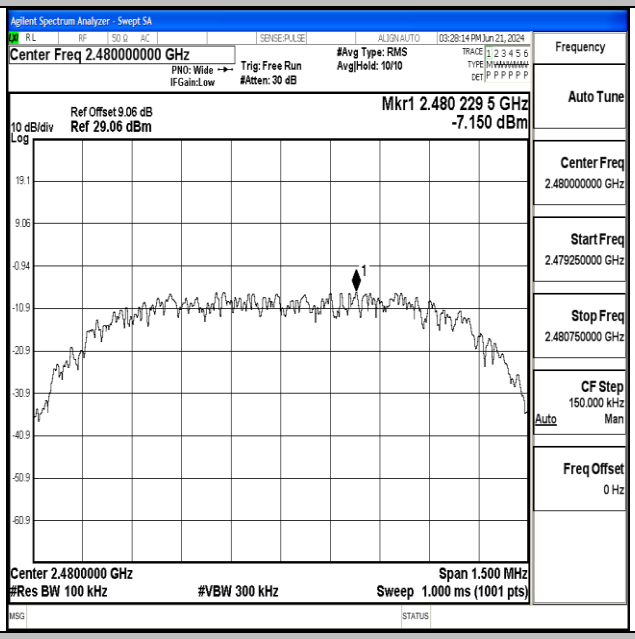
2DH5-Ant1-2441-0~Reference-PASS



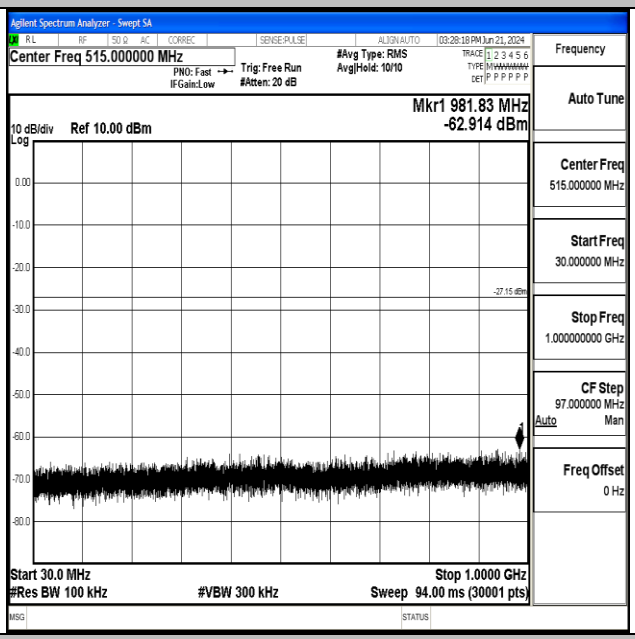
2DH5-Ant1-2441-30~1000-PASS



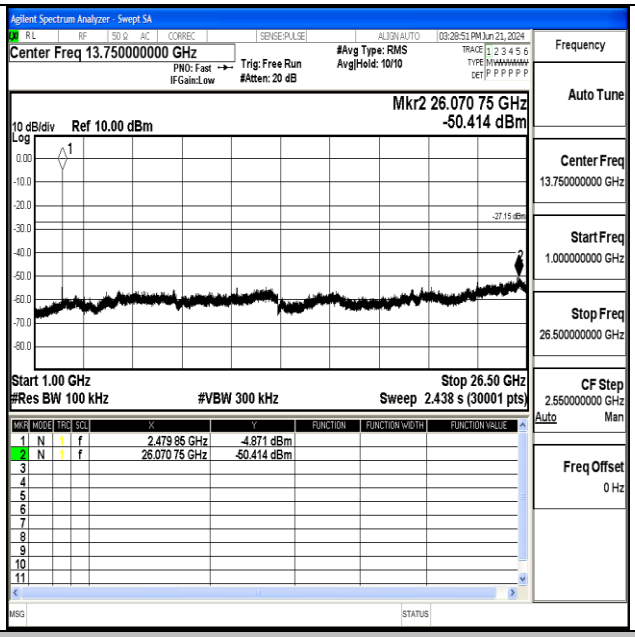
2DH5-Ant1-2441-1000~26500-PASS



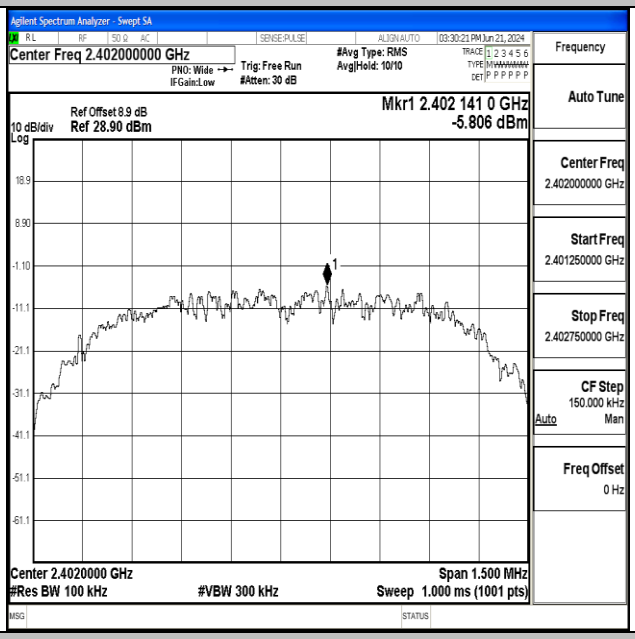
2DH5-Ant1-2480-0~Reference-PASS



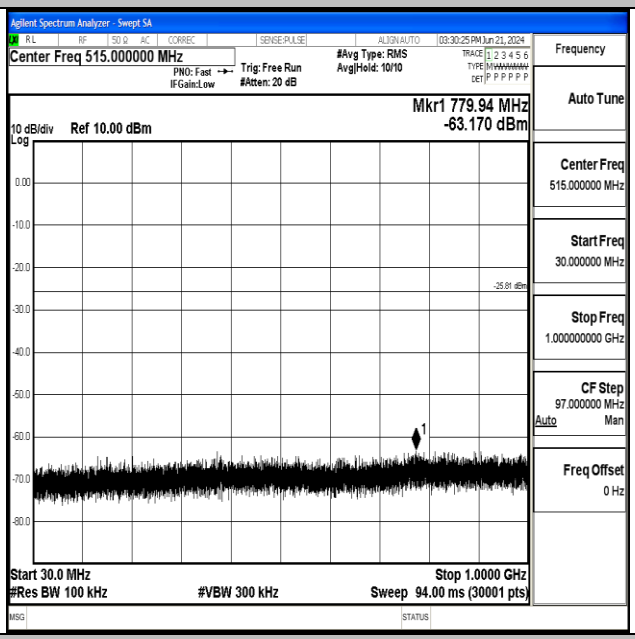
2DH5-Ant1-2480-30~1000-PASS



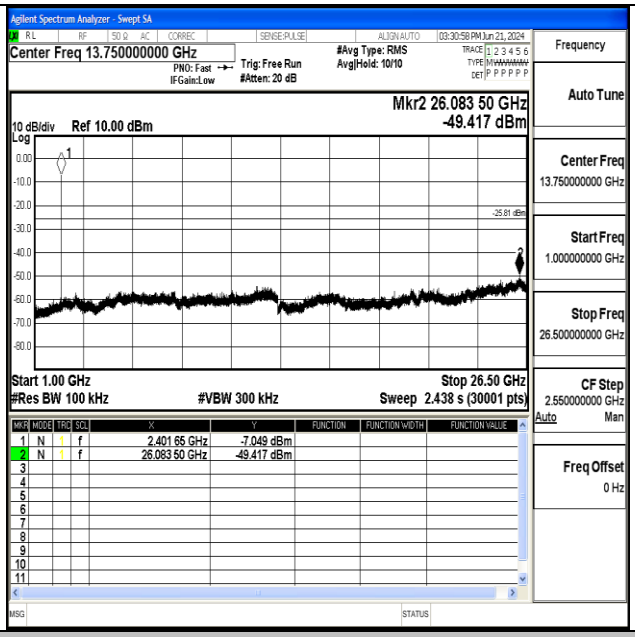
2DH5-Ant1-2480-1000~26500-PASS



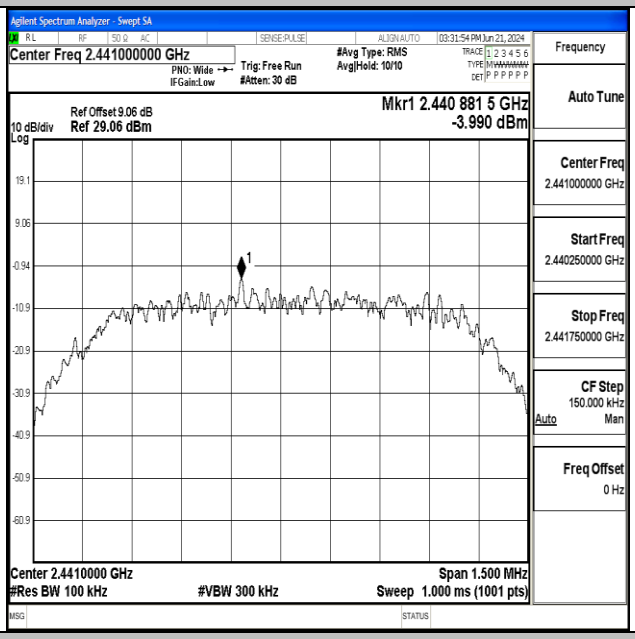
3DH5-Ant1-2402-0~Reference-PASS



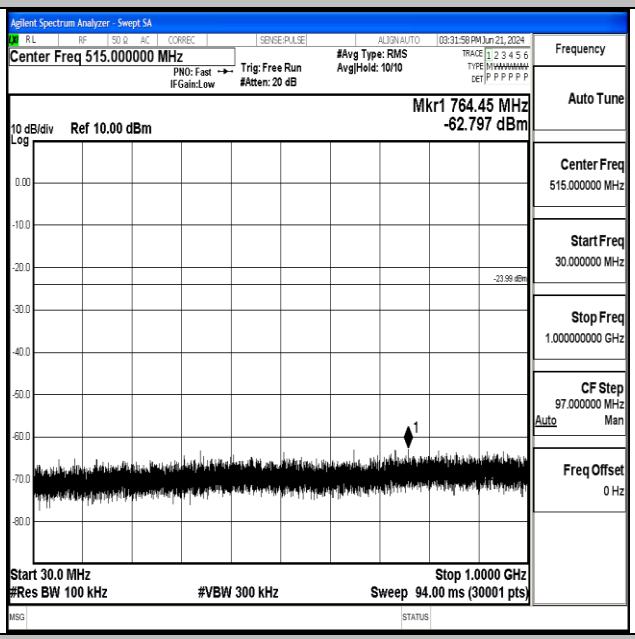
3DH5-Ant1-2402-30~1000-PASS



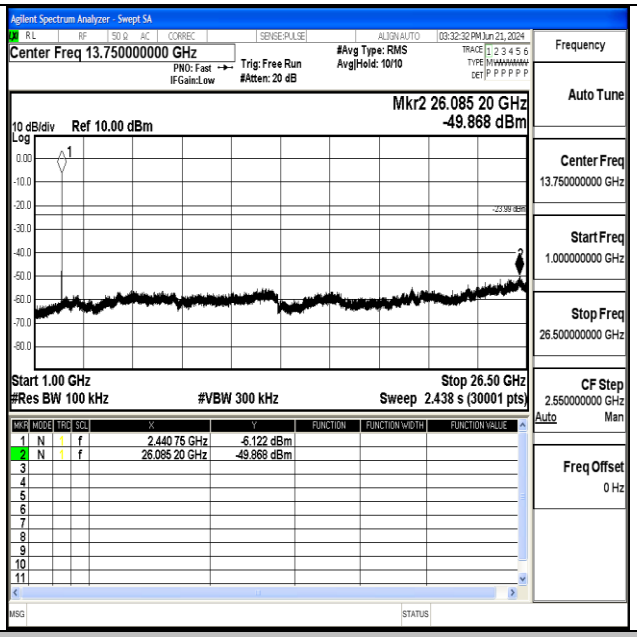
3DH5-Ant1-2402-1000~26500-PASS



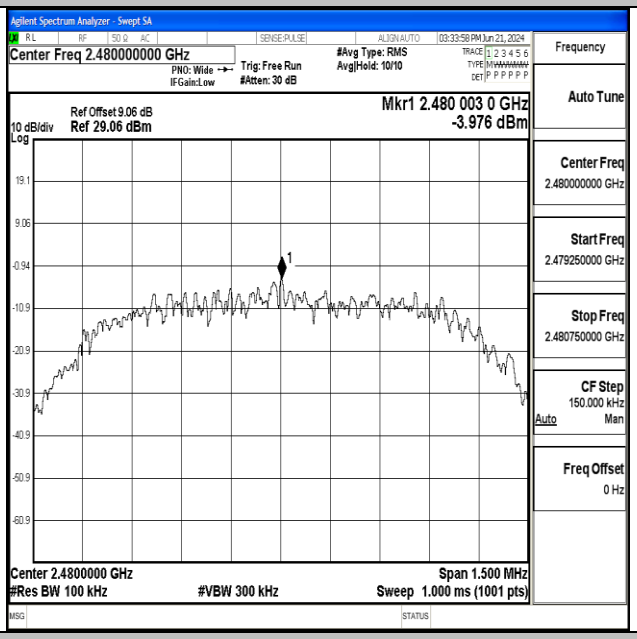
3DH5-Ant1-2441-0~Reference-PASS



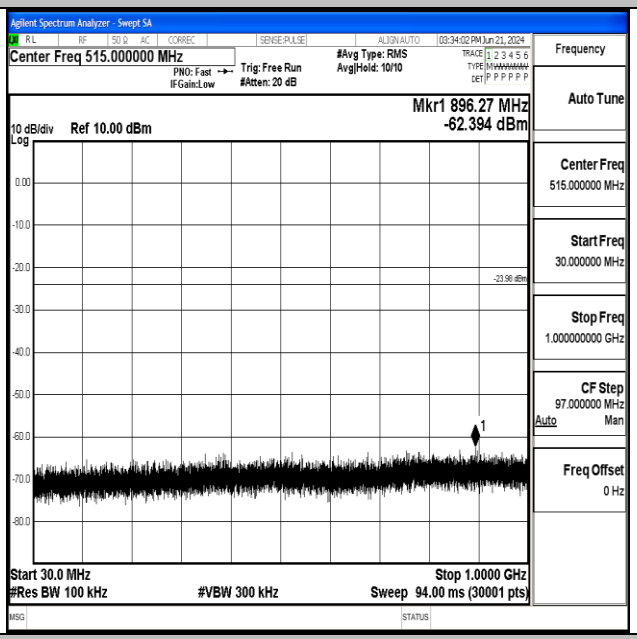
3DH5-Ant1-2441-30~1000-PASS



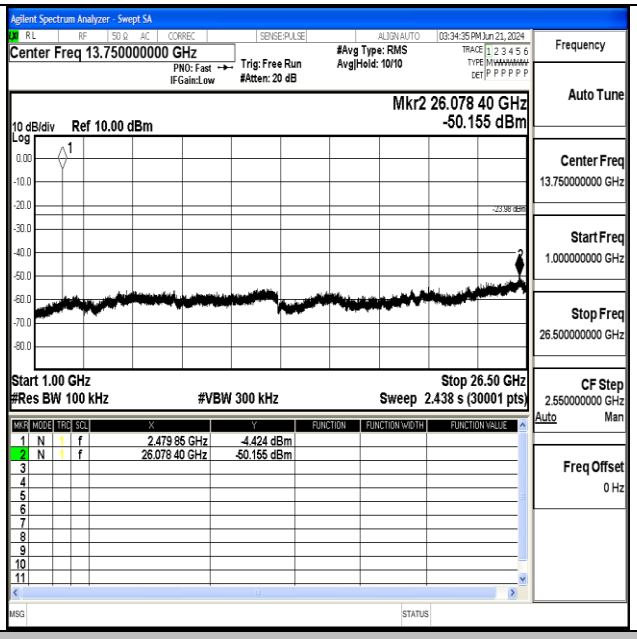
3DH5-Ant1-2441-1000~26500-PASS



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



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



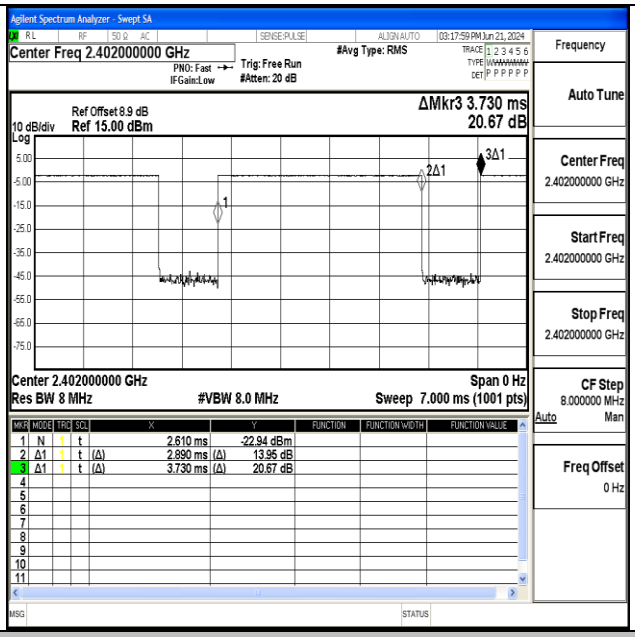
3DH5-Ant1-2480-1000~26500-PASS

Appendix I: Duty Cycle

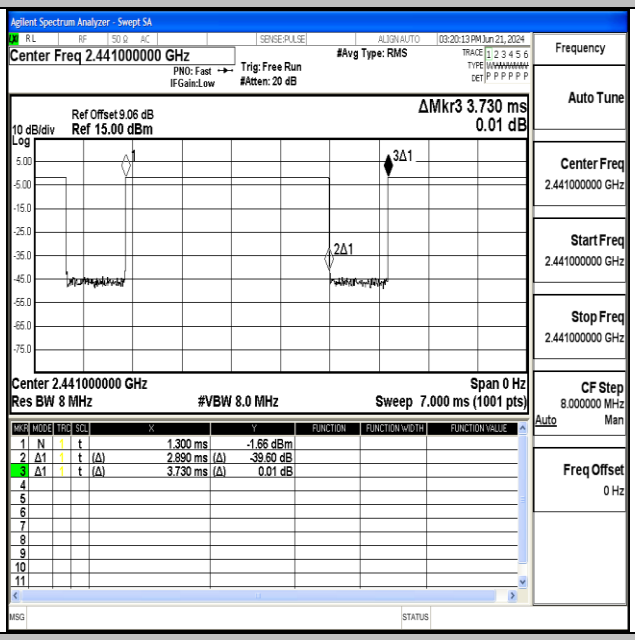
Test Result

TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
DH5	Ant1	2402	2.89	3.73	77.48	1.11
DH5	Ant1	2441	2.89	3.73	77.48	1.11
DH5	Ant1	2480	2.88	3.72	77.42	1.11
2DH5	Ant1	2402	2.89	3.74	77.27	1.12
2DH5	Ant1	2441	2.90	3.74	77.54	1.10
2DH5	Ant1	2480	2.88	3.73	77.21	1.12
3DH5	Ant1	2402	2.89	3.75	77.07	1.13
3DH5	Ant1	2441	2.89	3.74	77.27	1.12
3DH5	Ant1	2480	2.89	3.74	77.27	1.12

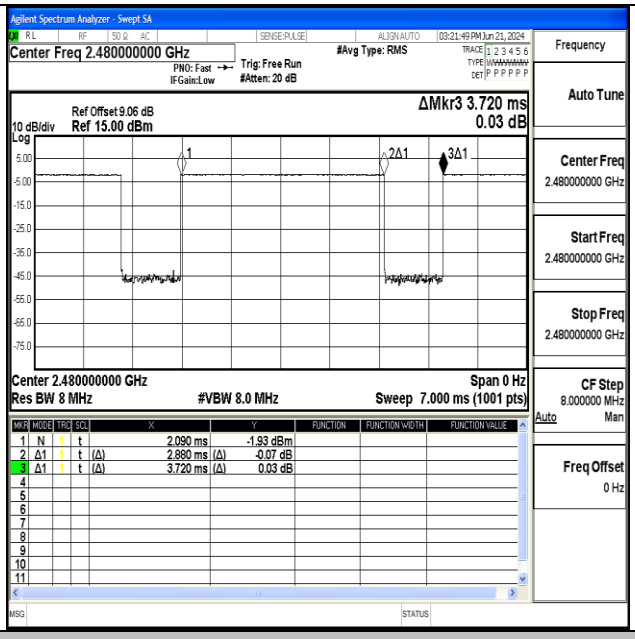
Test Graphs



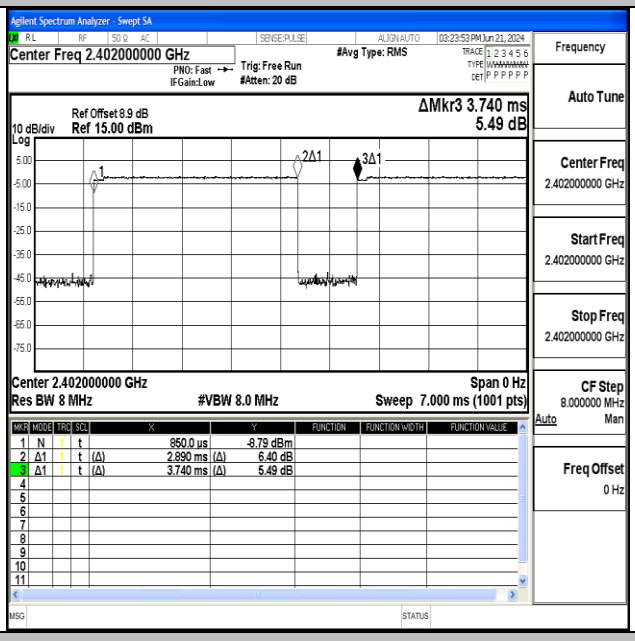
NTNV-DH5-Ant1-2402



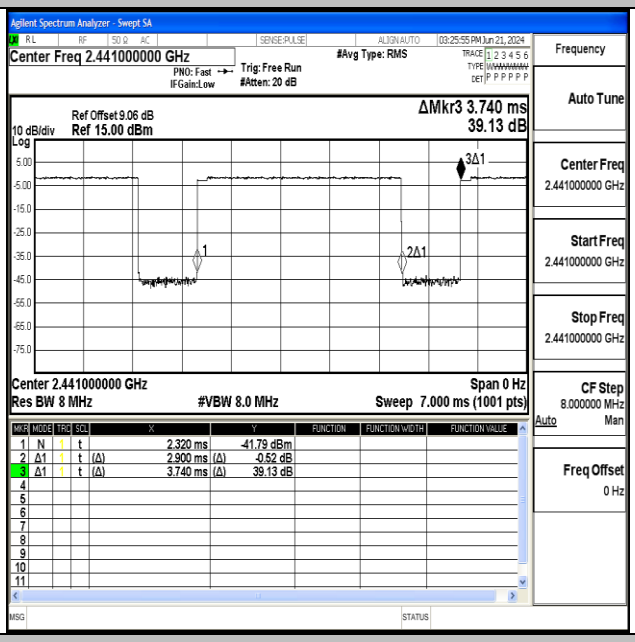
NTNV-DH5-Ant1-2441



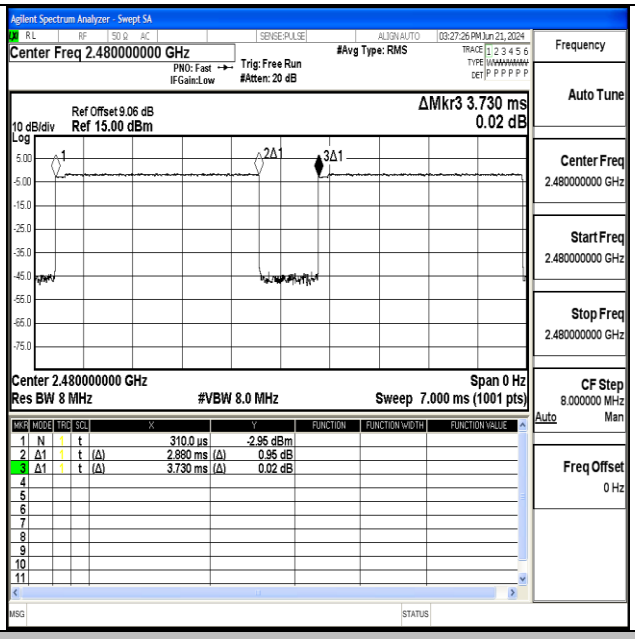
NTNV-DH5-Ant1-2480



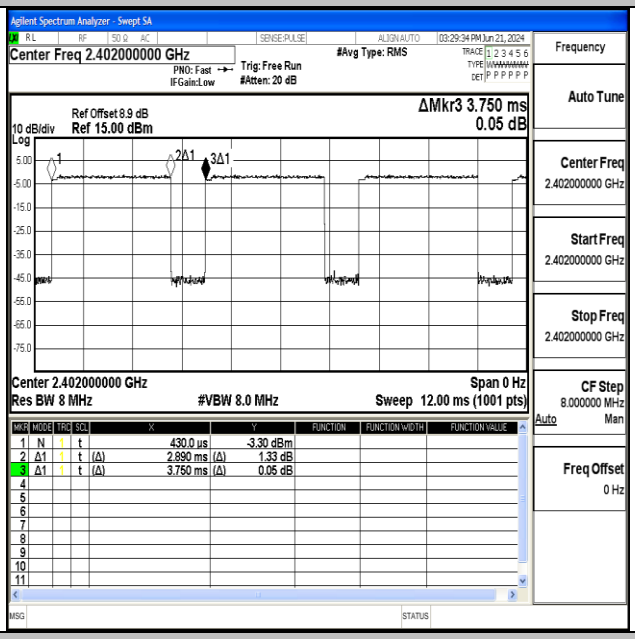
NTNV-2DH5-Ant1-2402



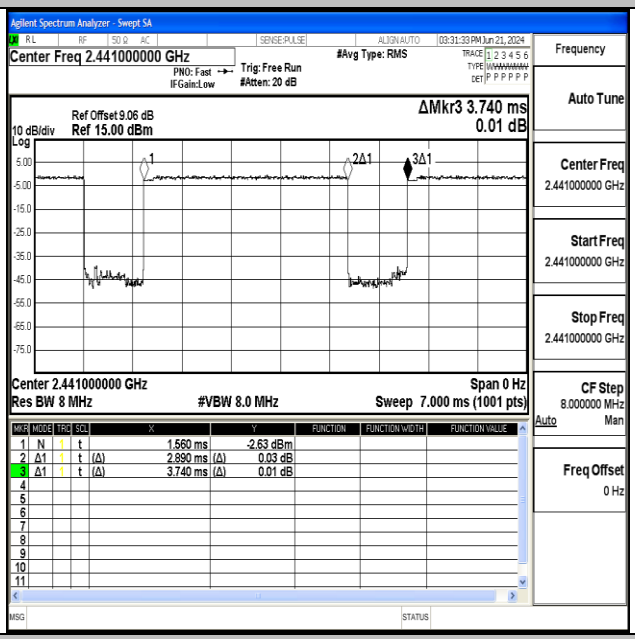
NTNV-2DH5-Ant1-2441



NTNV-2DH5-Ant1-2480



NTNV-3DH5-Ant1-2402



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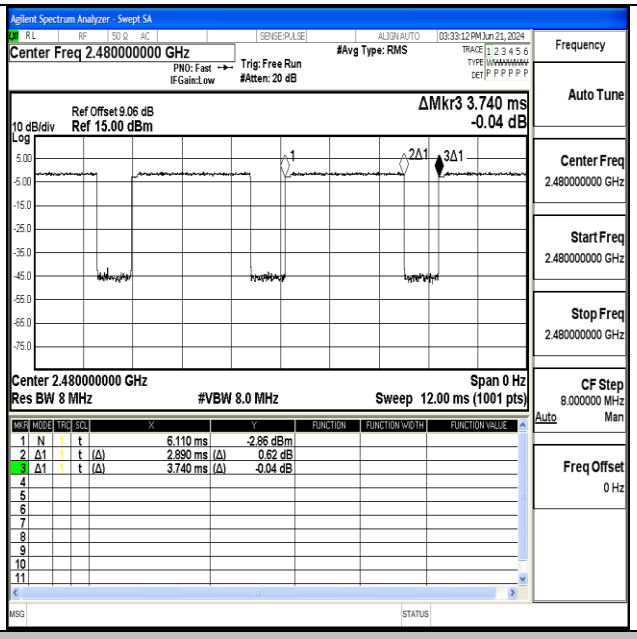

NTNV-3DH5-Ant1-2480