

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

Product Name: Portable Bluetooth Speaker

Trade Mark: MAGNAVOX, CRAIG

Test Model: MMA3998

FCC ID: 2AEDKHY80

Environmental Conditions

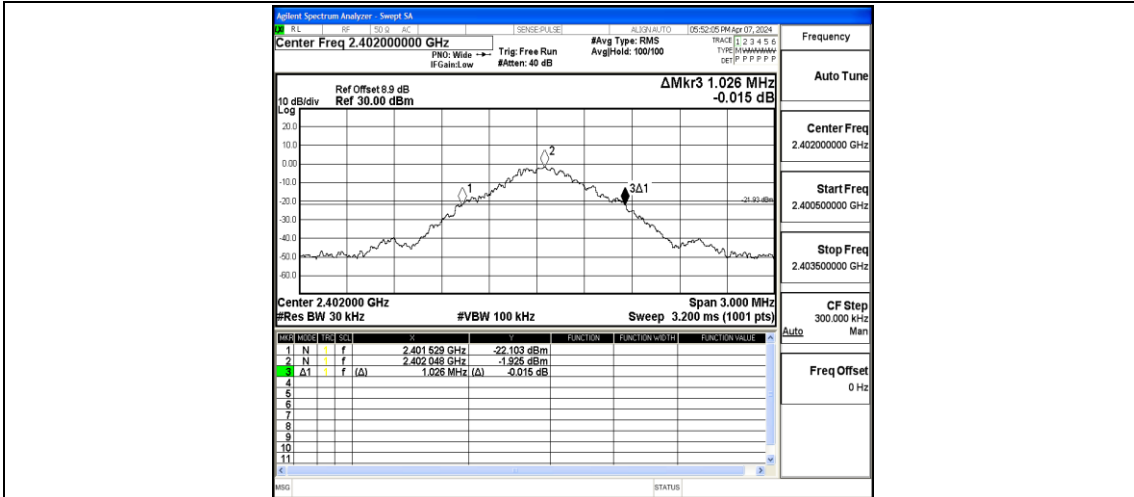
Temperature:	23.8℃
Relative Humidity:	58%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: 20dB Emission Bandwidth

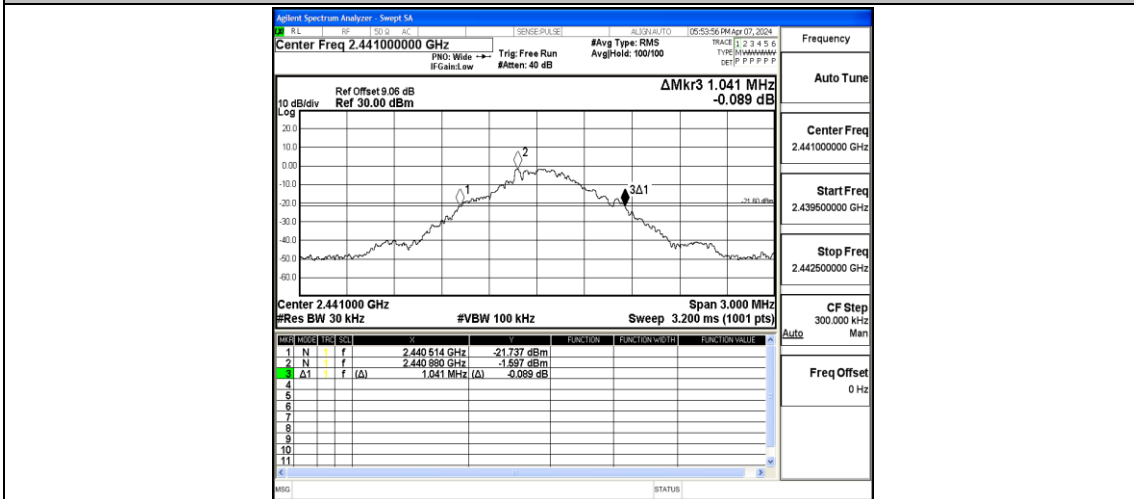
Test Result

TestMode	Antenna	Frequency[MHz]	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	1.026	2401.529	2402.555	---	---
DH5	Ant1	2441	1.041	2440.514	2441.555	---	---
DH5	Ant1	2480	1.020	2479.529	2480.549	---	---
2DH5	Ant1	2402	1.326	2401.382	2402.708	---	---
2DH5	Ant1	2441	1.353	2440.370	2441.723	---	---
2DH5	Ant1	2480	1.302	2479.403	2480.705	---	---

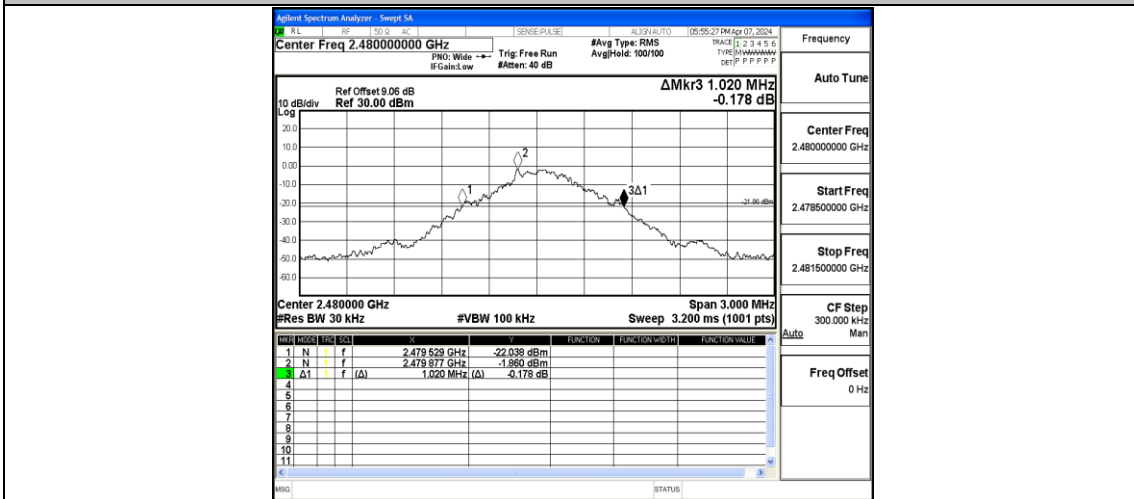
Test Graphs



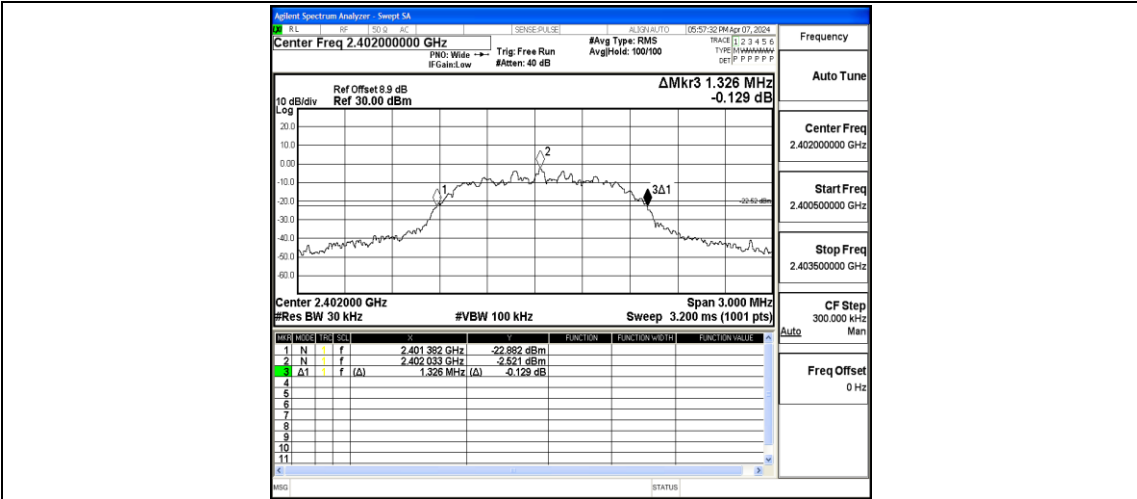
DH5-Ant1-2402



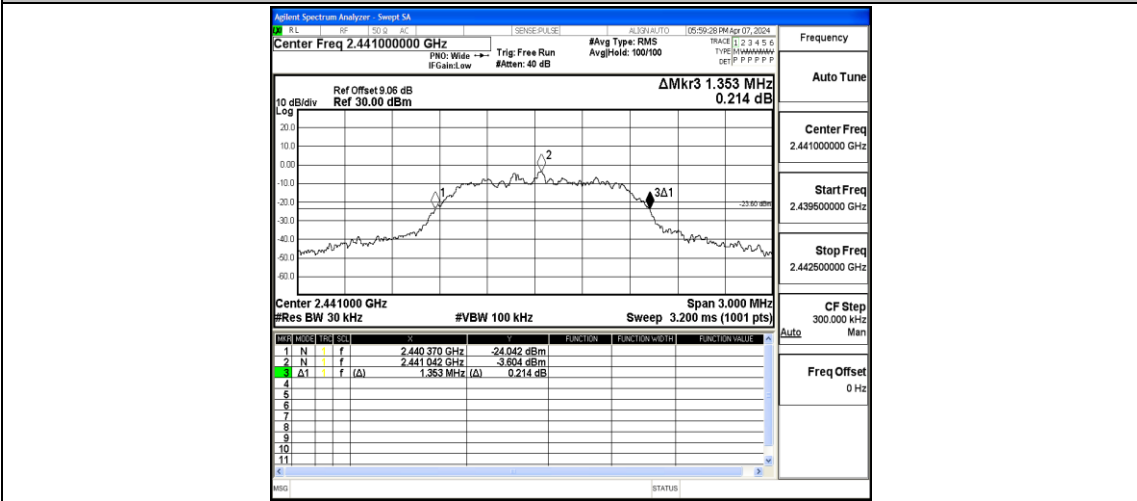
DH5-Ant1-2441



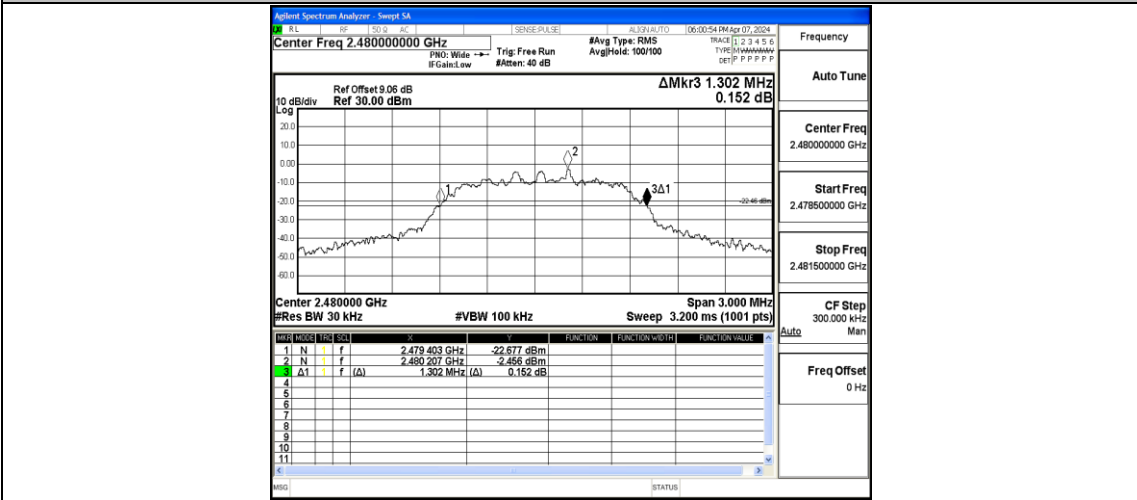
DH5-Ant1-2480



2DH5-Ant1-2402



2DH5-Ant1-2441



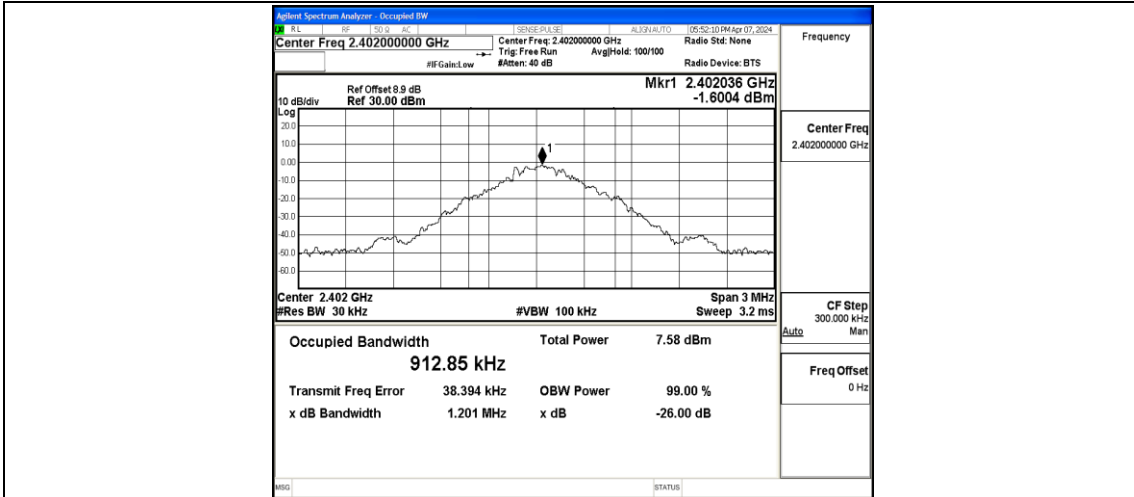
2DH5-Ant1-2480

Appendix B: Occupied Channel Bandwidth

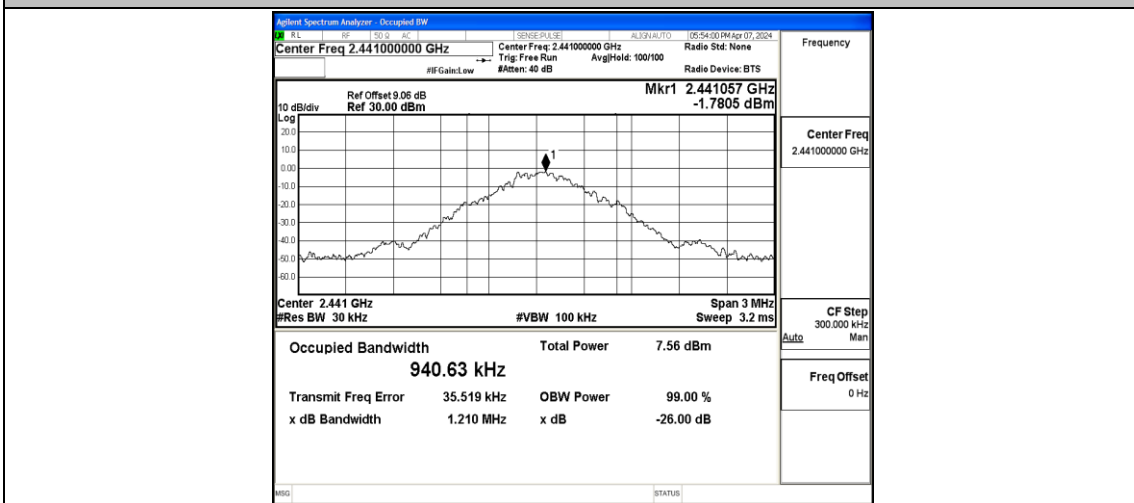
Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.91285	2401.5820	2402.4948	---	---
DH5	Ant1	2441	0.94063	2440.5652	2441.5058	---	---
DH5	Ant1	2480	0.92577	2479.5727	2480.4985	---	---
2DH5	Ant1	2402	1.2015	2401.4430	2402.6445	---	---
2DH5	Ant1	2441	1.2221	2440.4338	2441.6559	---	---
2DH5	Ant1	2480	1.2308	2479.4357	2480.6665	---	---

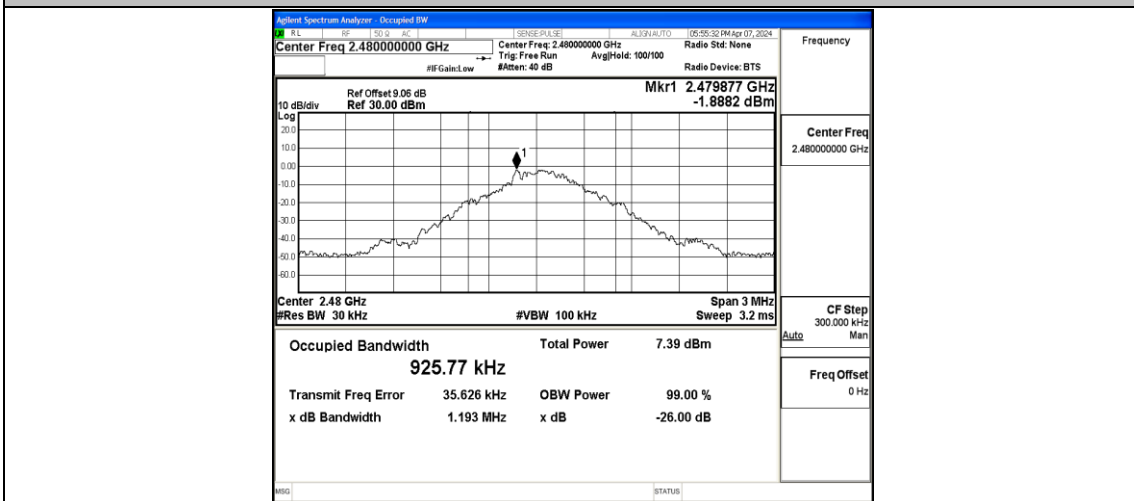
Test Graphs



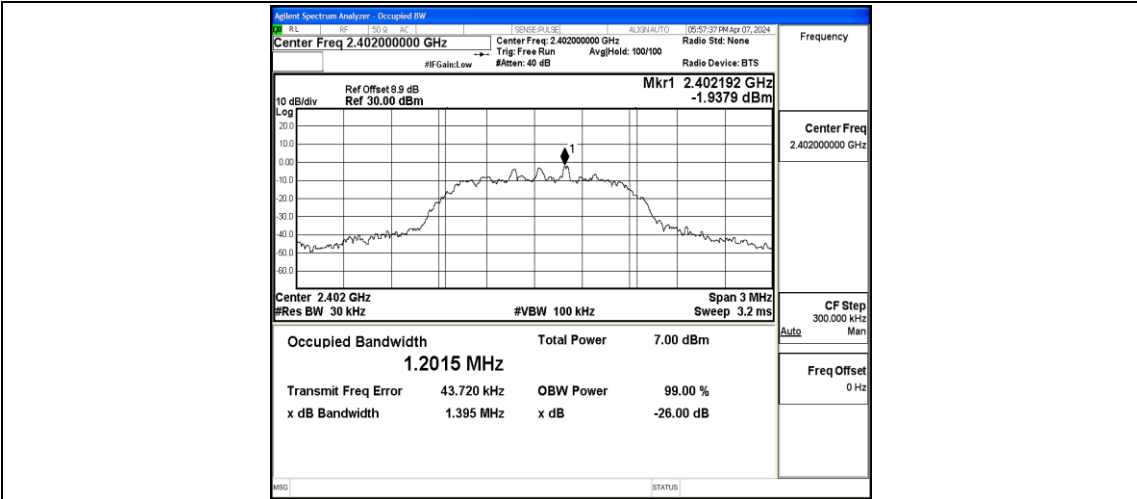
DH5-Ant1-2402



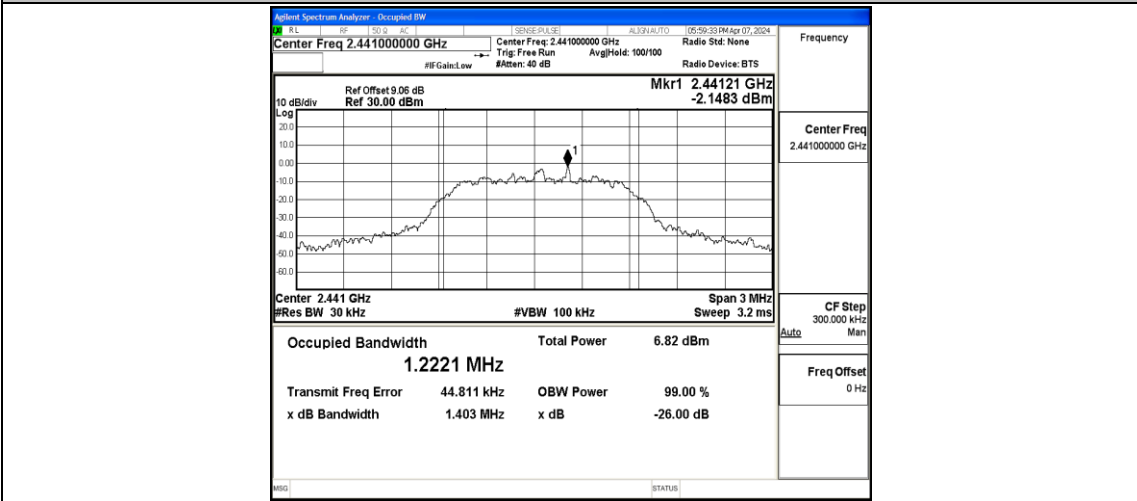
DH5-Ant1-2441



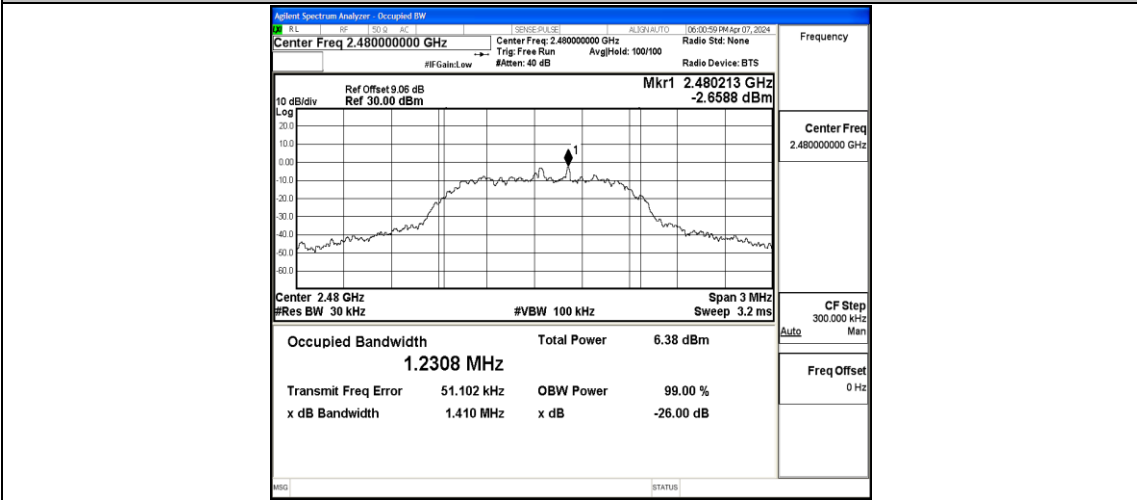
DH5-Ant1-2480



2DH5-Ant1-2402



2DH5-Ant1-2441



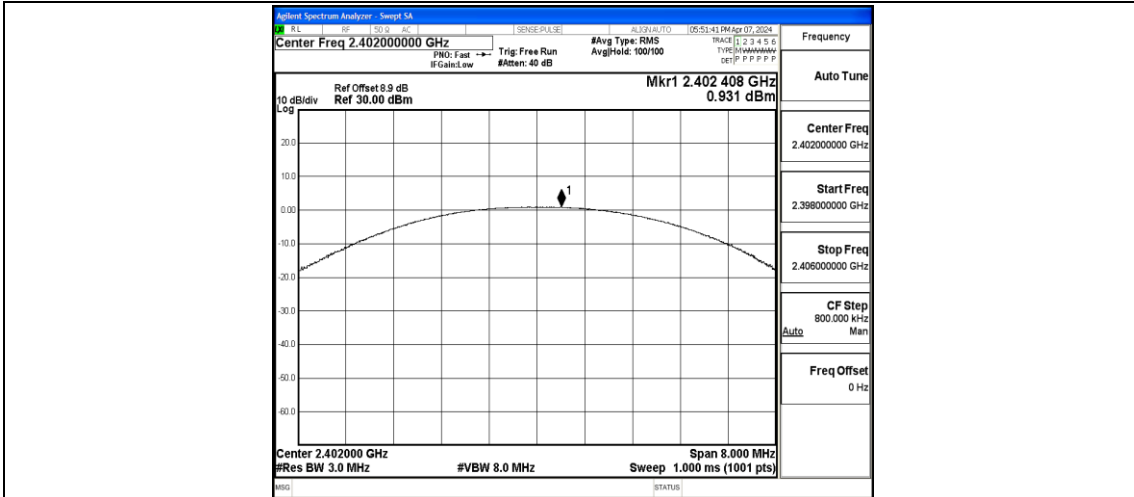
2DH5-Ant1-2480

Appendix C: Maximum peak conducted output power

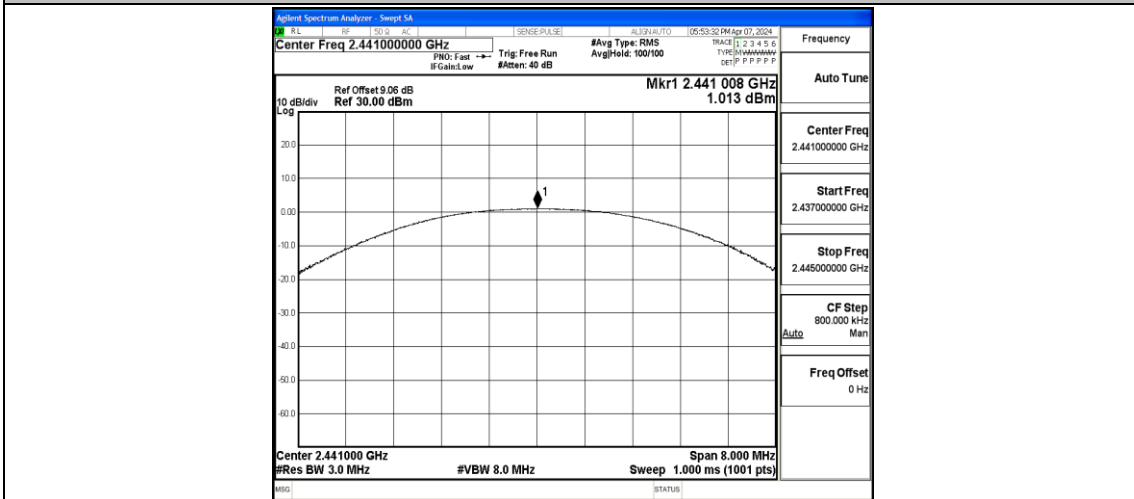
Test Result

Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	0.93	≤30	PASS
DH5	Ant1	2441	1.01	≤30	PASS
DH5	Ant1	2480	0.61	≤30	PASS
2DH5	Ant1	2402	1.61	≤20.97	PASS
2DH5	Ant1	2441	1.77	≤20.97	PASS
2DH5	Ant1	2480	1.26	≤20.97	PASS

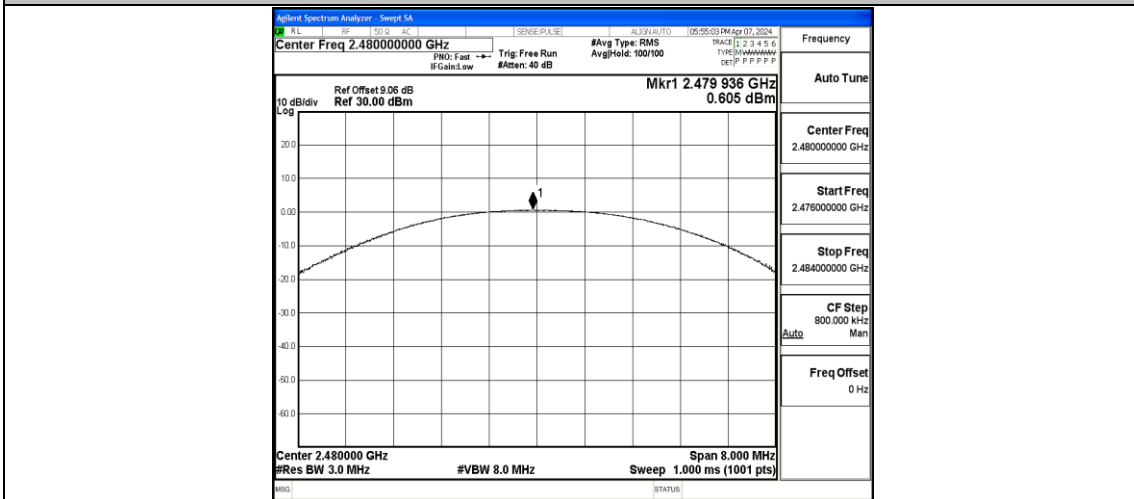
Test Graphs



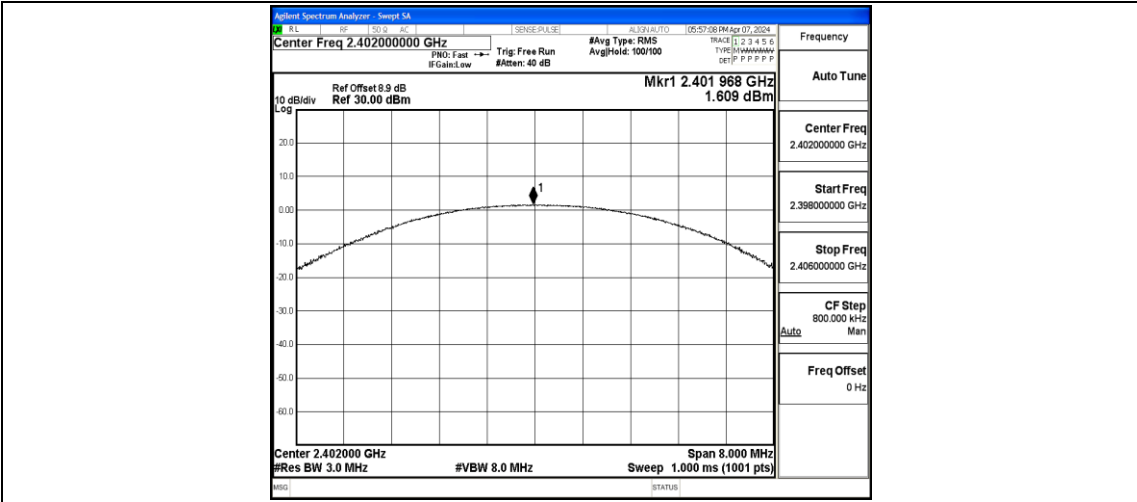
DH5-Ant1-2402-PASS



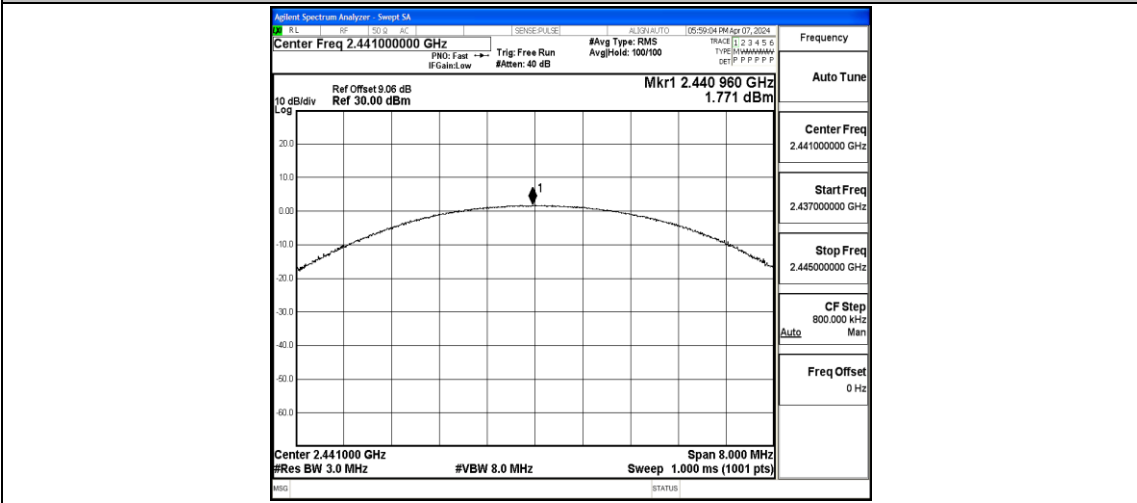
DH5-Ant1-2441-PASS



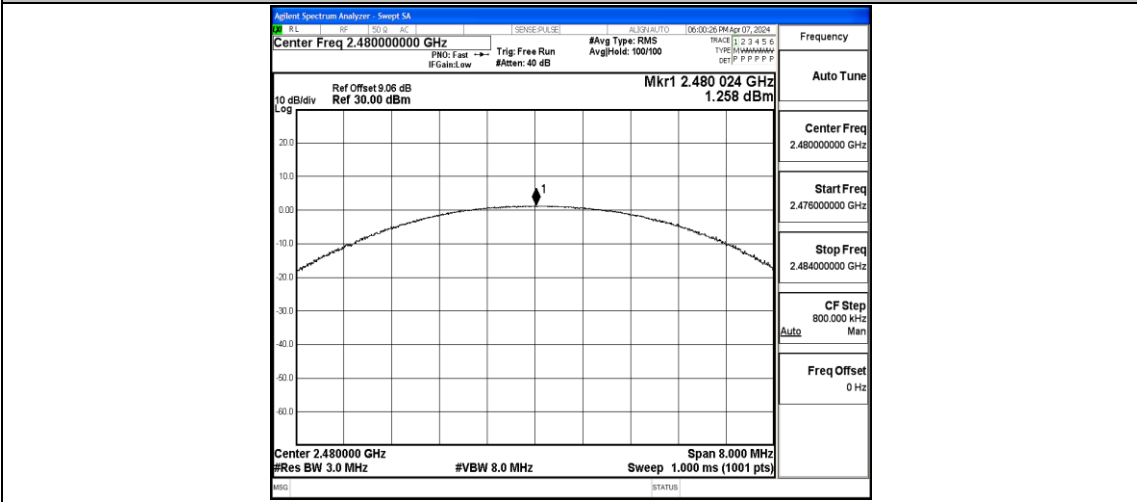
DH5-Ant1-2480-PASS



2DH5-Ant1-2402-PASS



2DH5-Ant1-2441-PASS



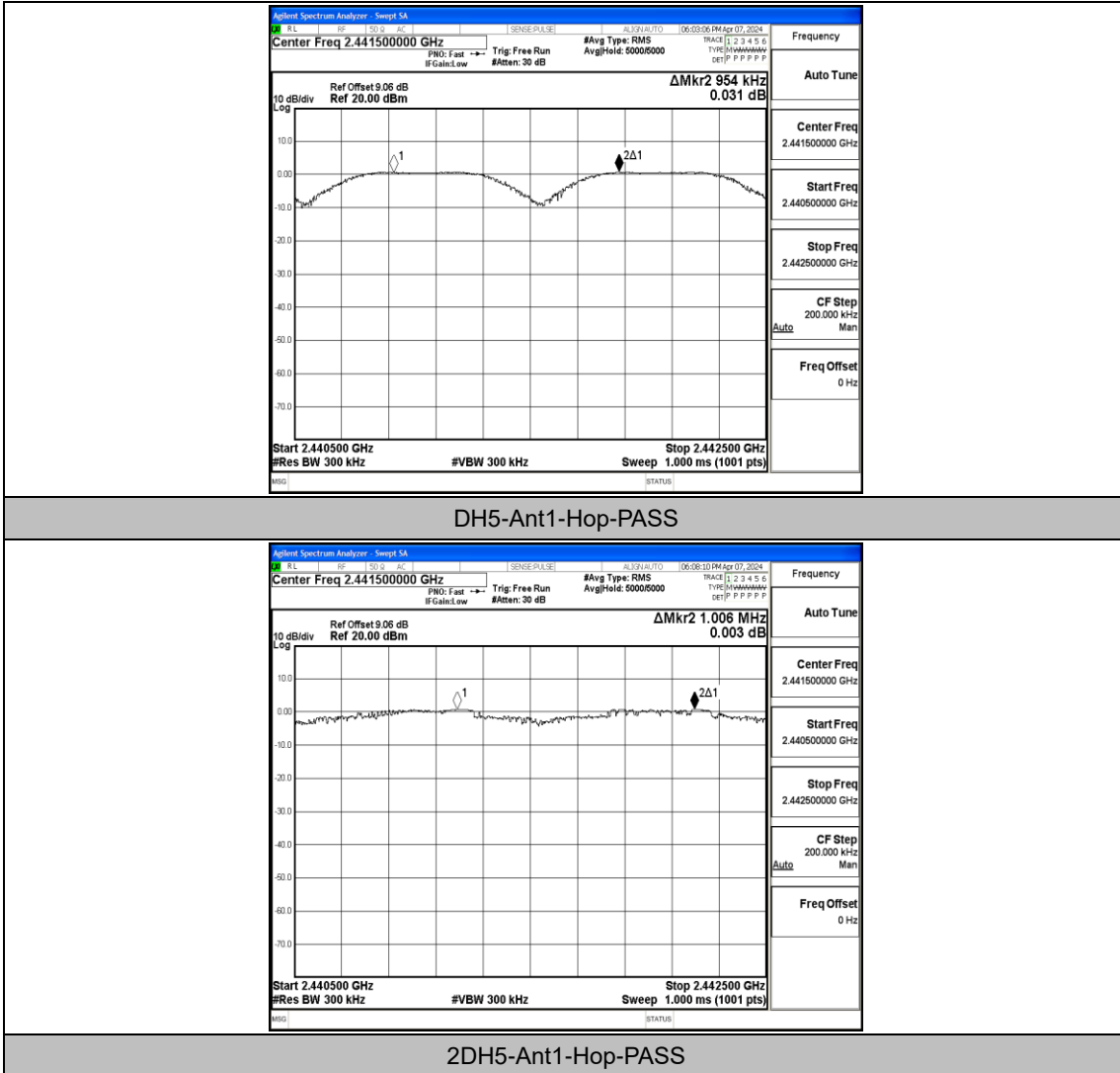
2DH5-Ant1-2480-PASS

Appendix D: Carrier frequency separation

Test Result

TestMode	Antenna	Frequency[MHz]	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.954	≥ 0.694	PASS
2DH5	Ant1	Hop	1.006	≥ 0.902	PASS

Test Graphs

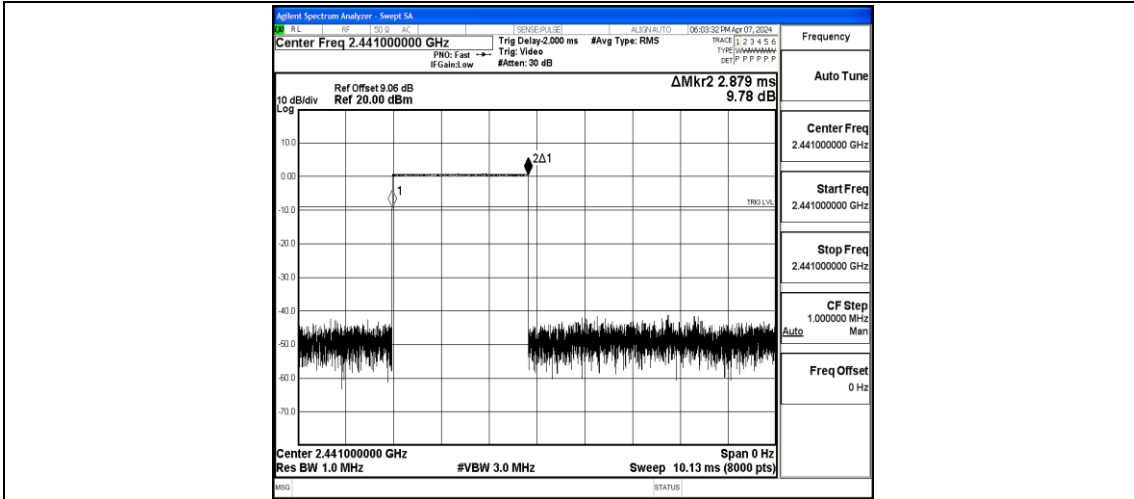


Appendix E: Time of occupancy

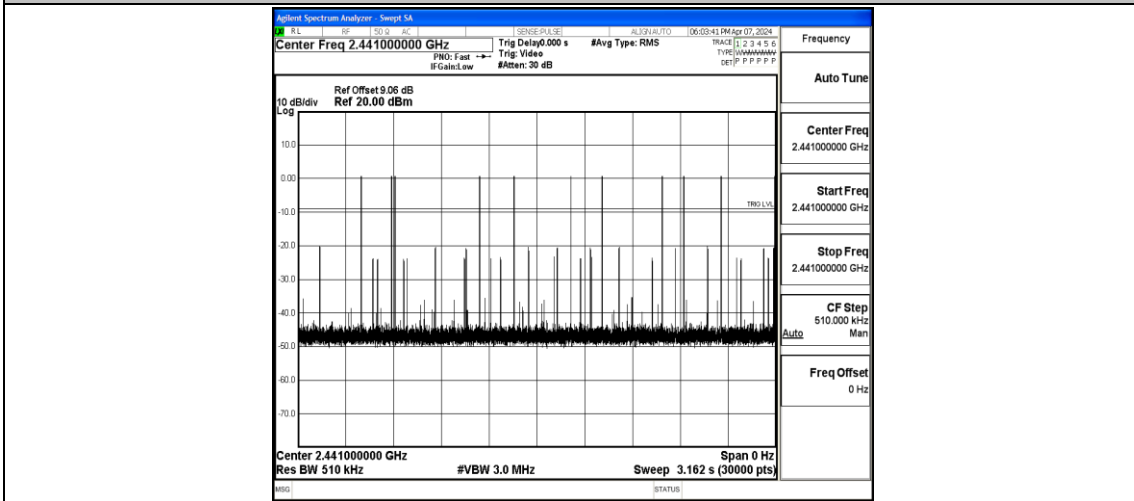
Test Result

TestMode	Antenna	Frequency[MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.879	120	0.345	≤0.4	PASS
2DH5	Ant1	Hop	2.884	120	0.346	≤0.4	PASS

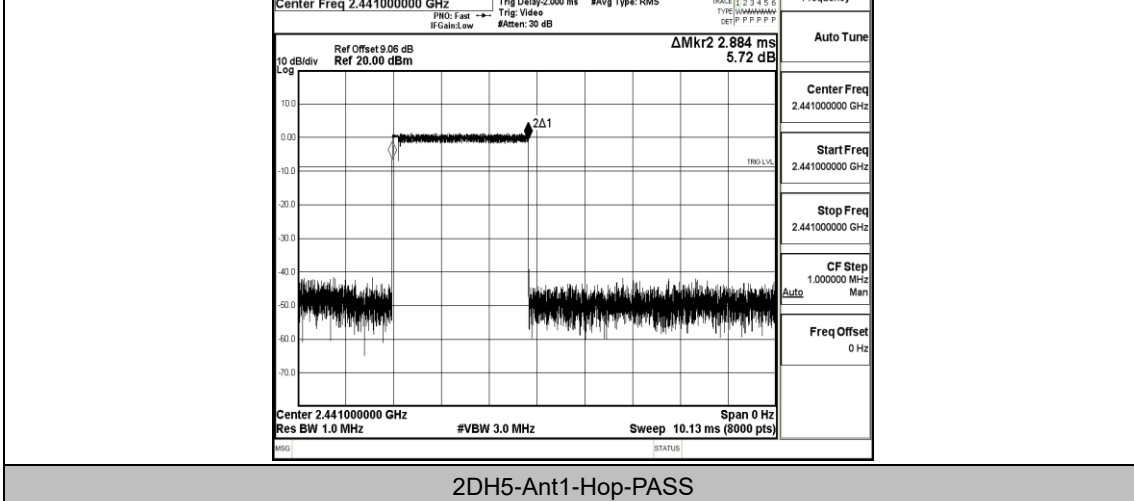
Test Graphs



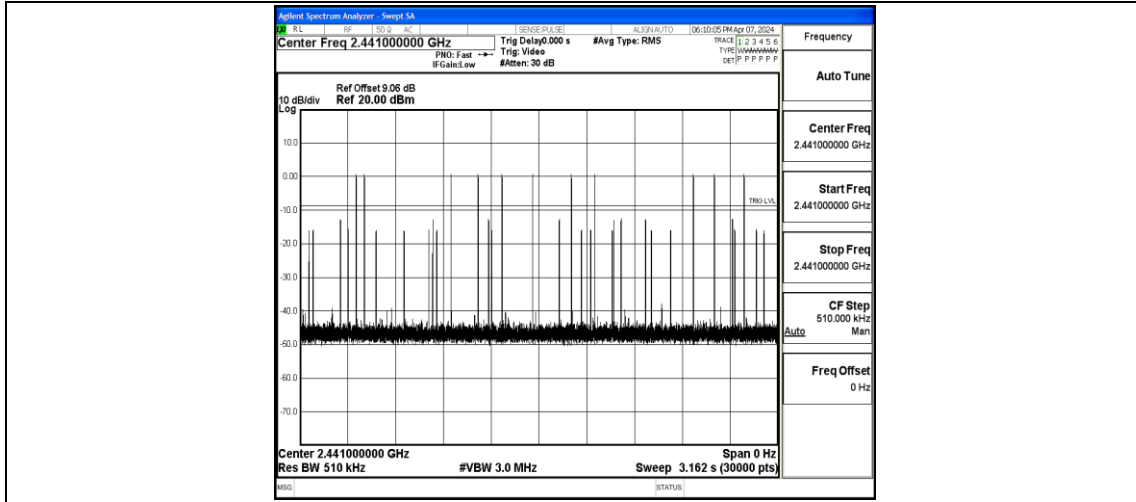
DH5-Ant1-Hop-PASS



2DH5-Ant1-Hop-PASS



2DH5-Ant1-Hop-PASS

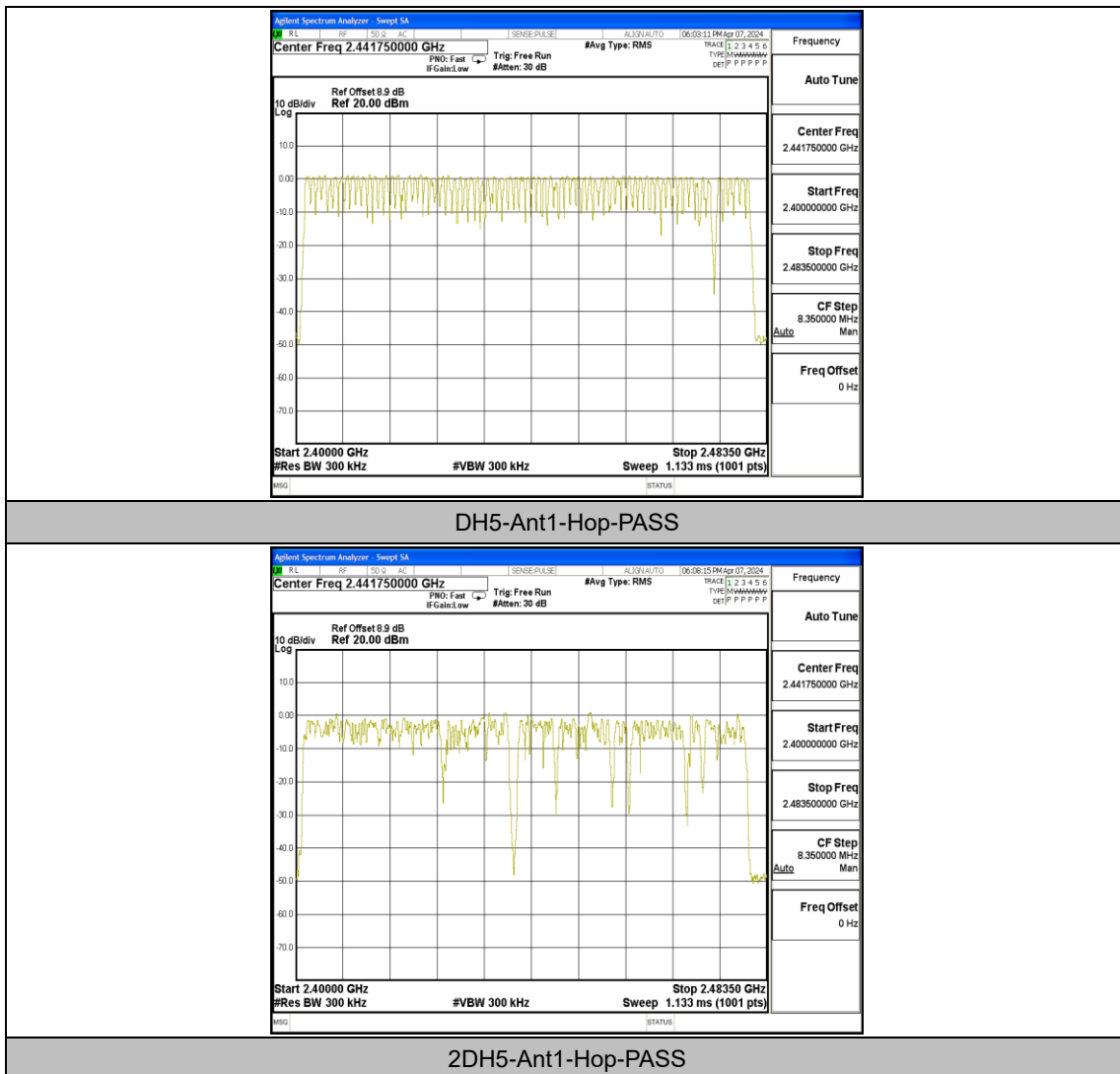


Appendix F: Number of hopping channels

Test Result

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

Test Graphs

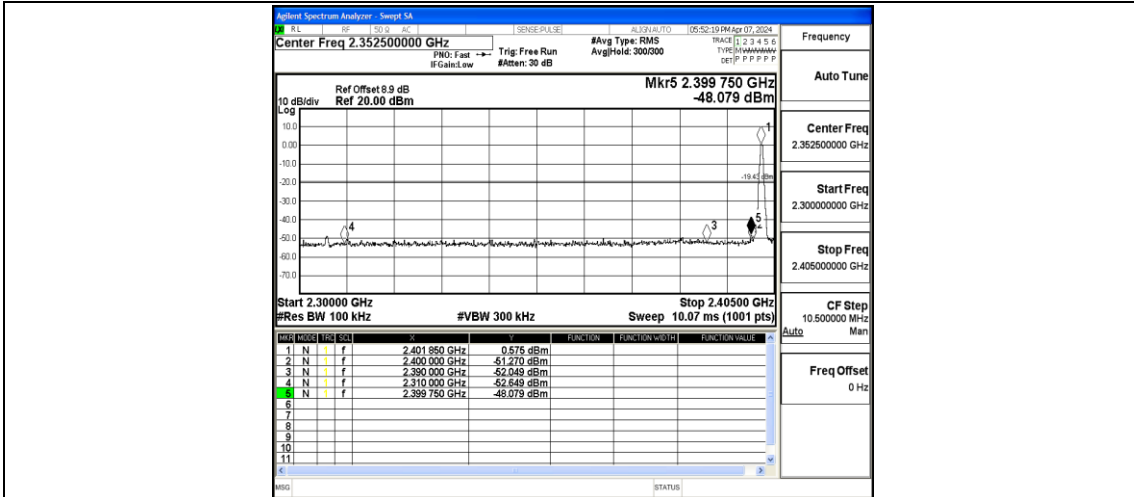


Appendix G: Band edge measurements

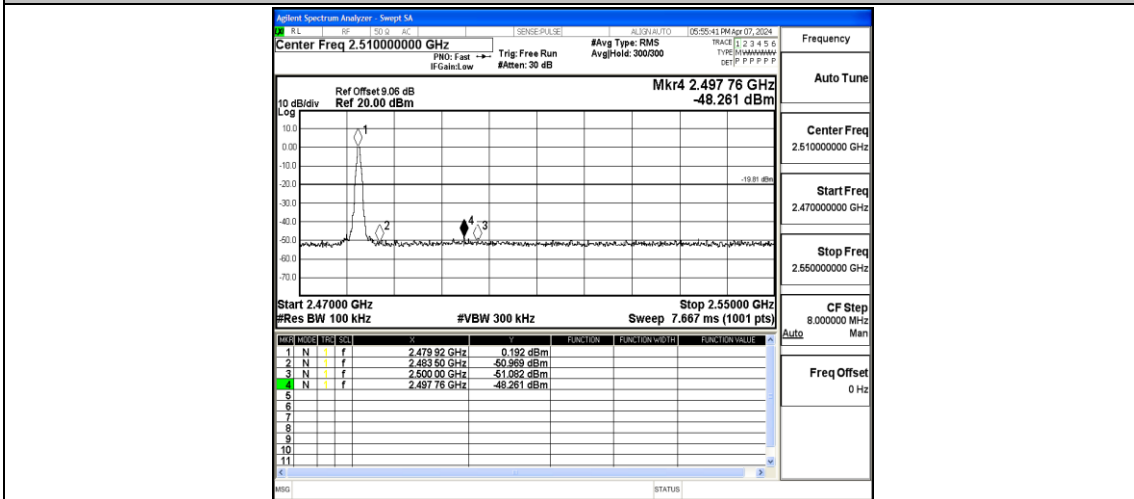
Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	0.58	-48.08	≤-19.43	PASS
DH5	Ant1	High	2480	0.19	-48.26	≤-19.81	PASS
DH5	Ant1	Low	Hop_2402	-0.96	-47.89	≤-20.96	PASS
DH5	Ant1	High	Hop_2480	0.02	-44.93	≤-19.98	PASS
2DH5	Ant1	Low	2402	-0.17	-49.51	≤-20.17	PASS
2DH5	Ant1	High	2480	0.23	-47.95	≤-19.77	PASS
2DH5	Ant1	Low	Hop_2402	0.34	-49.53	≤-19.66	PASS
2DH5	Ant1	High	Hop_2480	-3.36	-44.64	≤-23.36	PASS

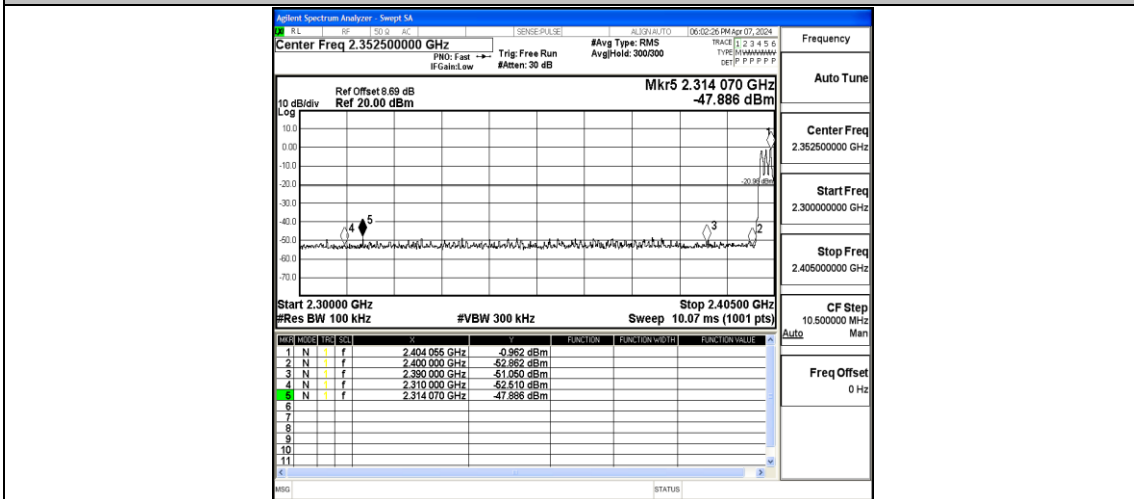
Test Graphs



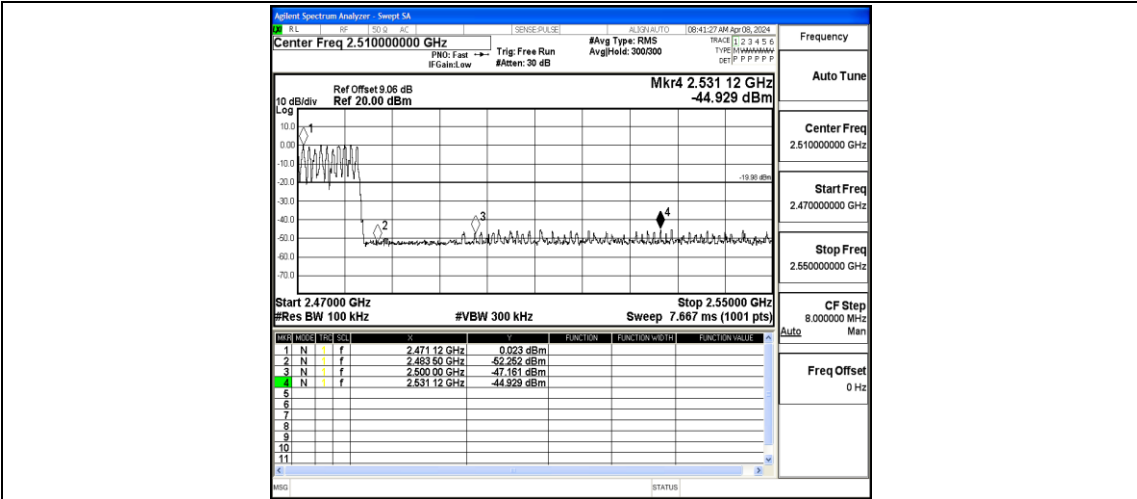
DH5-Ant1-2402-PASS



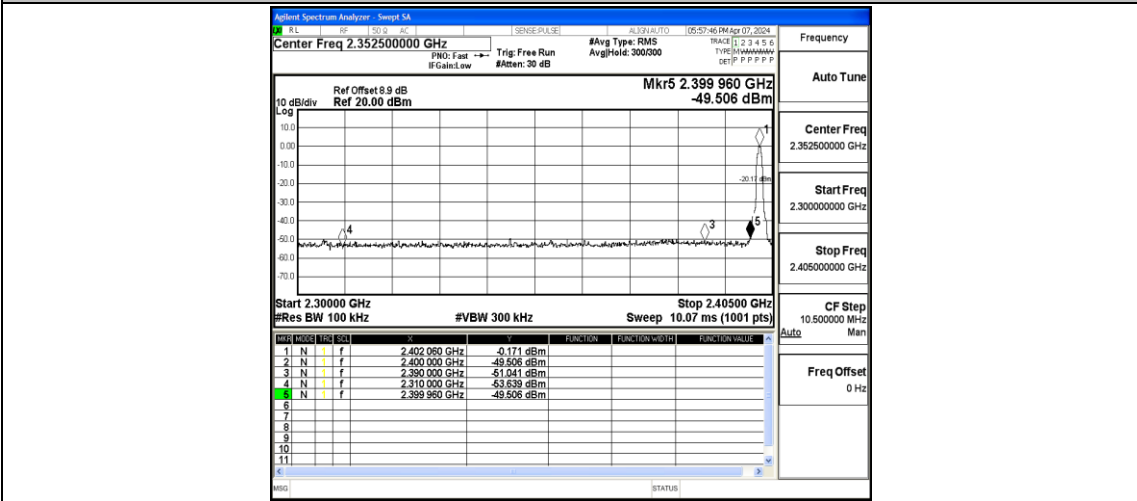
DH5-Ant1-2480-PASS



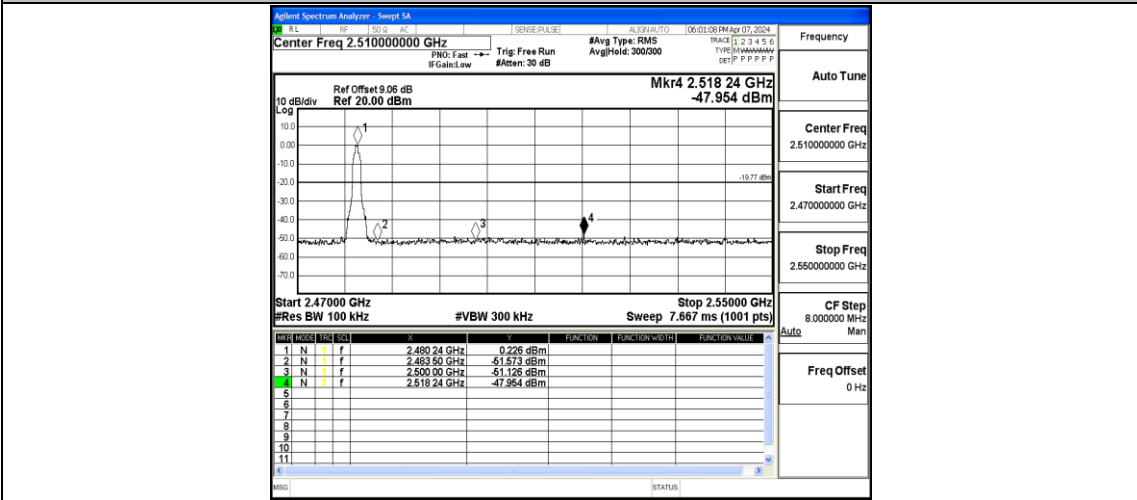
DH5-Ant1-Hop_2402-PASS



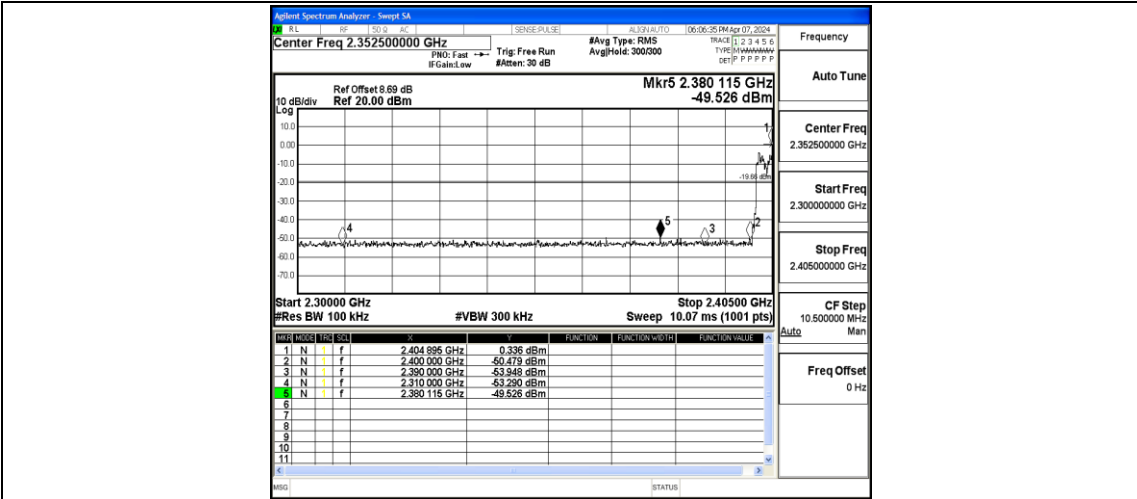
DH5-Ant1-Hop_2480-PASS



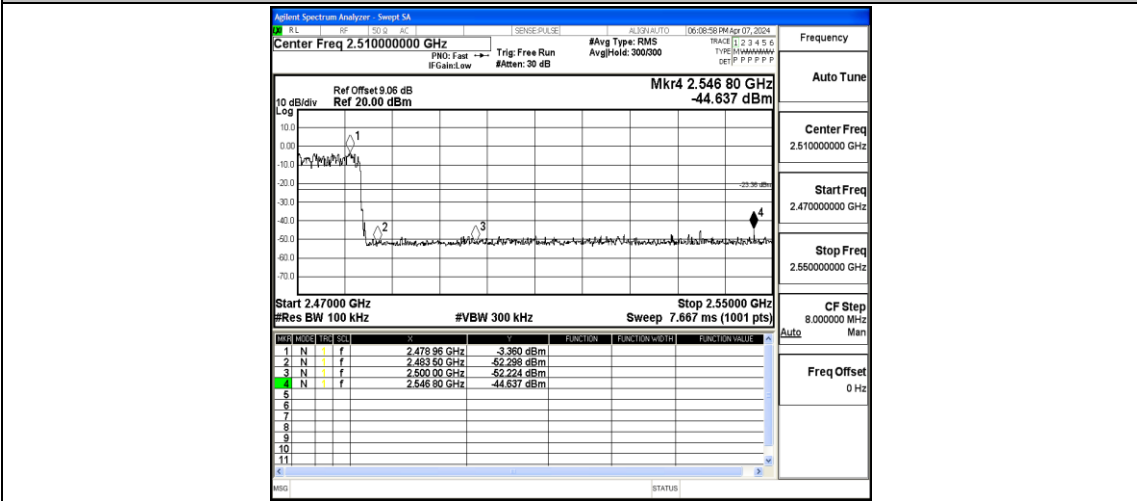
2DH5-Ant1-2402-PASS



2DH5-Ant1-2480-PASS



2DH5-Ant1-Hop_2402-PASS



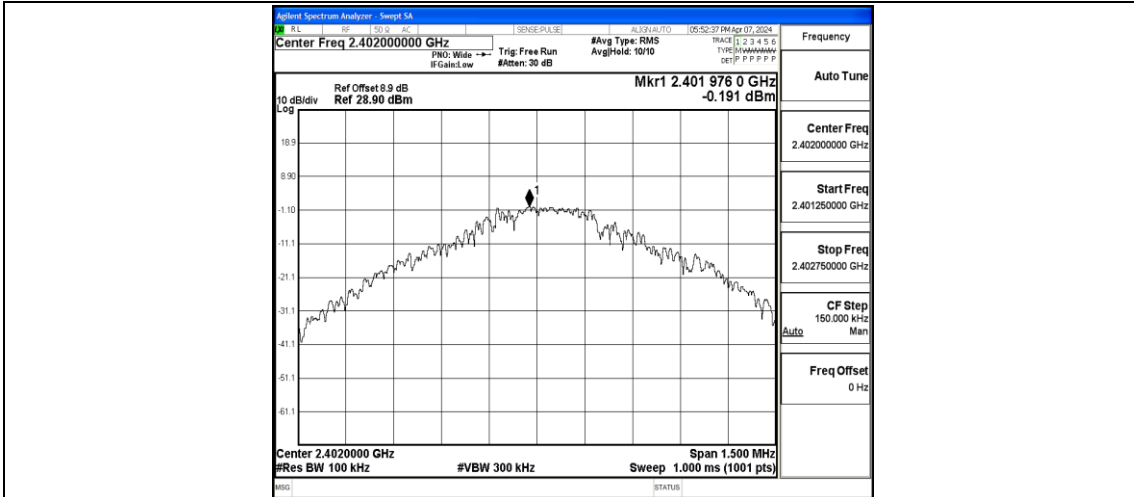
2DH5-Ant1-Hop_2480-PASS

Appendix H: Conducted Spurious Emission

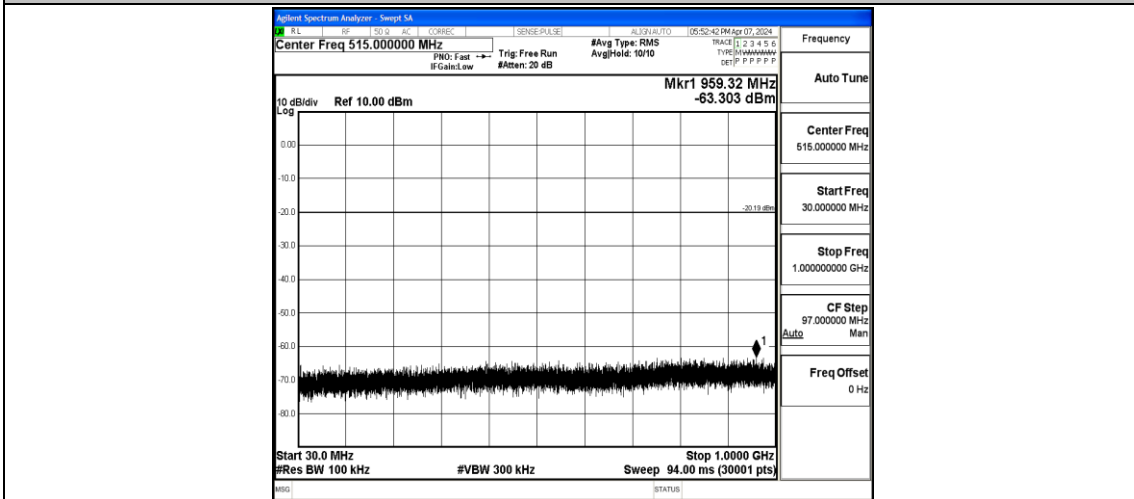
Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	0~Reference	-0.19	-0.19	---	PASS
DH5	Ant1	2402	30~1000	-0.19	-63.3	≤-20.19	PASS
DH5	Ant1	2402	1000~26500	-0.19	-42.66	≤-20.19	PASS
DH5	Ant1	2441	0~Reference	0.07	0.07	---	PASS
DH5	Ant1	2441	30~1000	0.07	-62.7	≤-19.93	PASS
DH5	Ant1	2441	1000~26500	0.07	-42.91	≤-19.93	PASS
DH5	Ant1	2480	0~Reference	0.16	0.16	---	PASS
DH5	Ant1	2480	30~1000	0.16	-62.96	≤-19.84	PASS
DH5	Ant1	2480	1000~26500	0.16	-44.45	≤-19.84	PASS
2DH5	Ant1	2402	0~Reference	0.53	0.53	---	PASS
2DH5	Ant1	2402	30~1000	0.53	-63.13	≤-19.47	PASS
2DH5	Ant1	2402	1000~26500	0.53	-43.19	≤-19.47	PASS
2DH5	Ant1	2441	0~Reference	-2.12	-2.12	---	PASS
2DH5	Ant1	2441	30~1000	-2.12	-62.14	≤-22.12	PASS
2DH5	Ant1	2441	1000~26500	-2.12	-43.51	≤-22.12	PASS
2DH5	Ant1	2480	0~Reference	-1.19	-1.19	---	PASS
2DH5	Ant1	2480	30~1000	-1.19	-62.3	≤-21.19	PASS
2DH5	Ant1	2480	1000~26500	-1.19	-44.31	≤-21.19	PASS

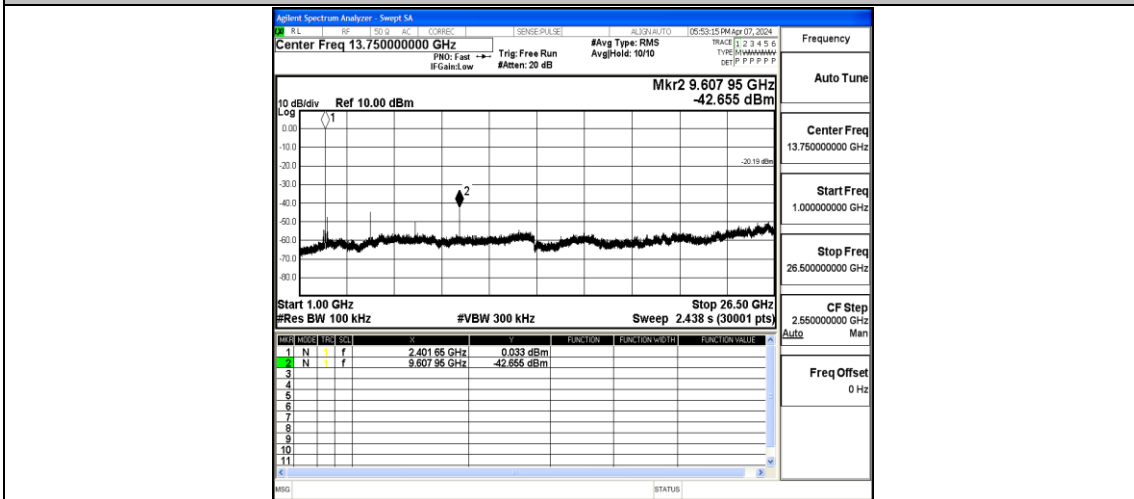
Test Graphs



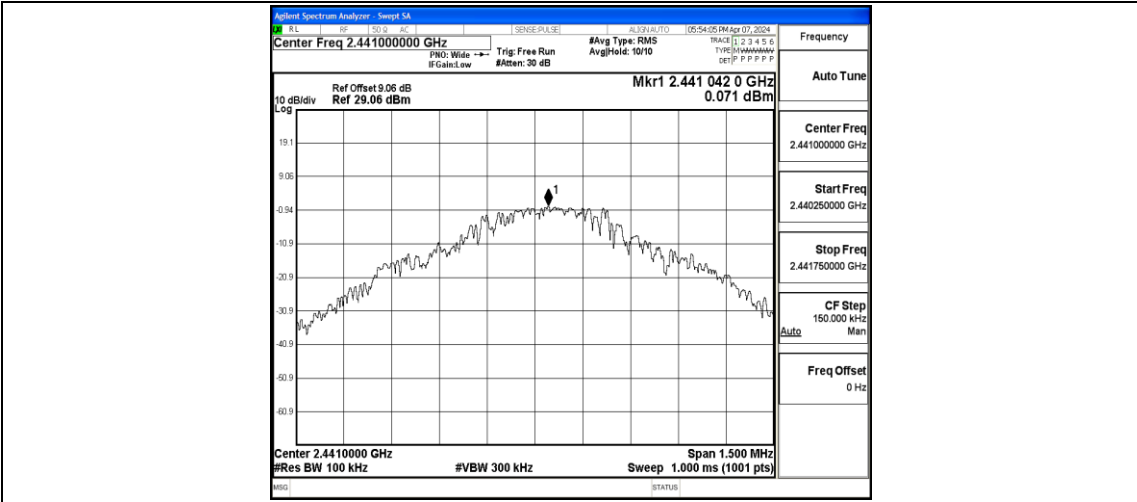
DH5-Ant1-2402-0~Reference-PASS



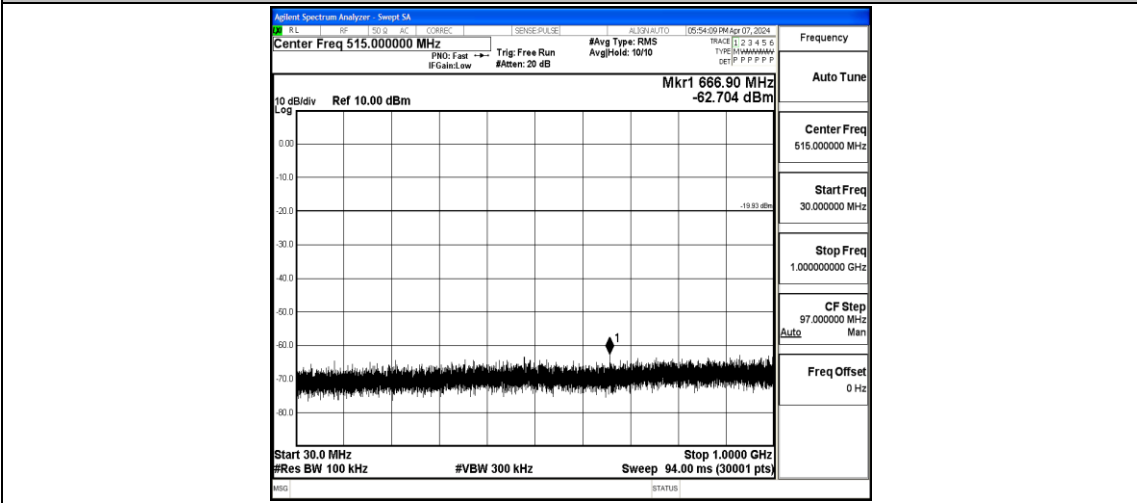
DH5-Ant1-2402-30~1000-PASS



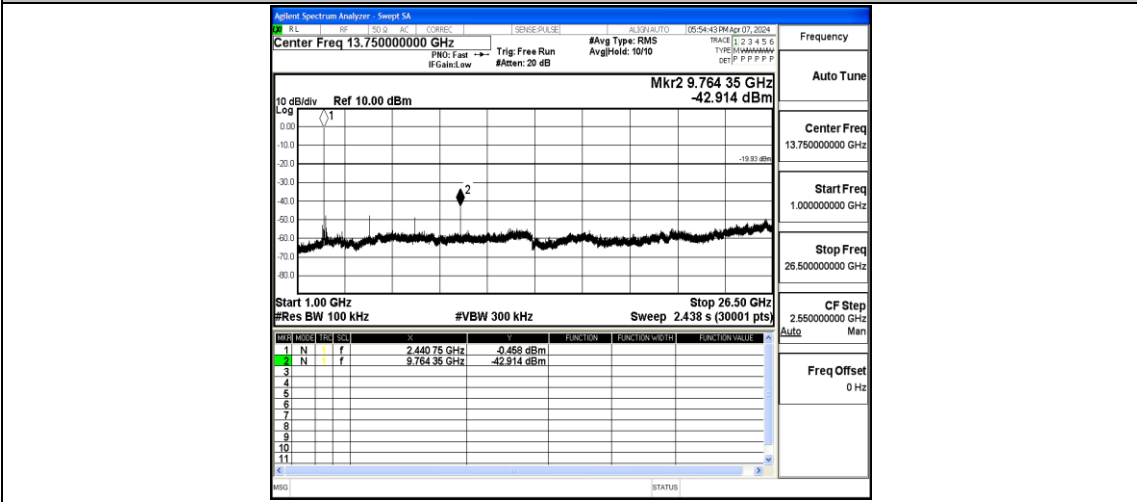
DH5-Ant1-2402-1000~26500-PASS



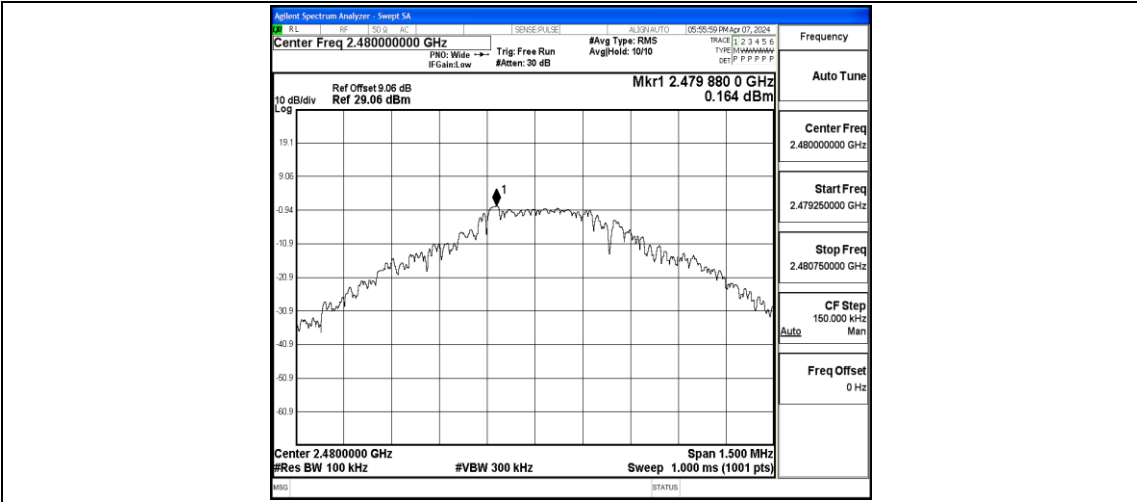
DH5-Ant1-2441-0~Reference-PASS



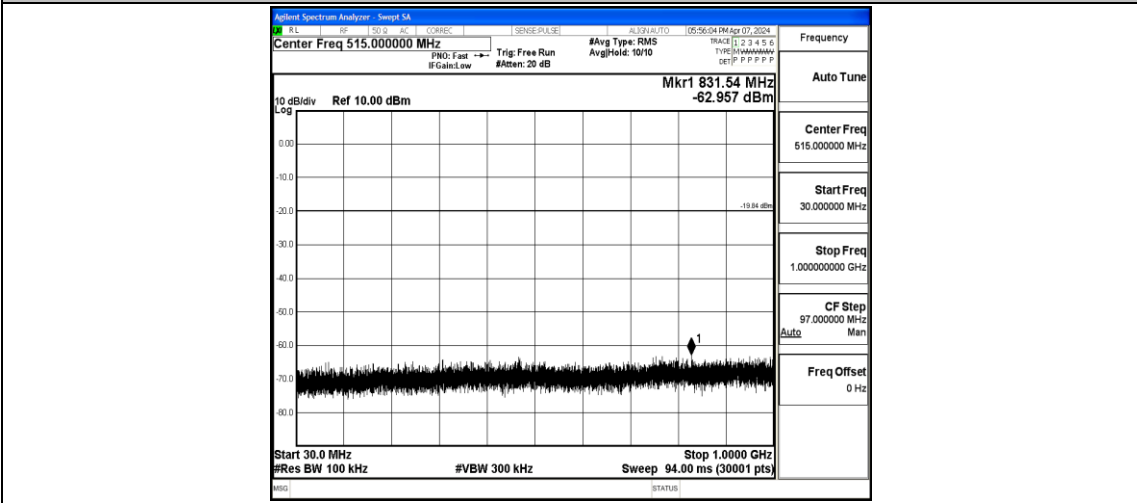
DH5-Ant1-2441-30~1000-PASS



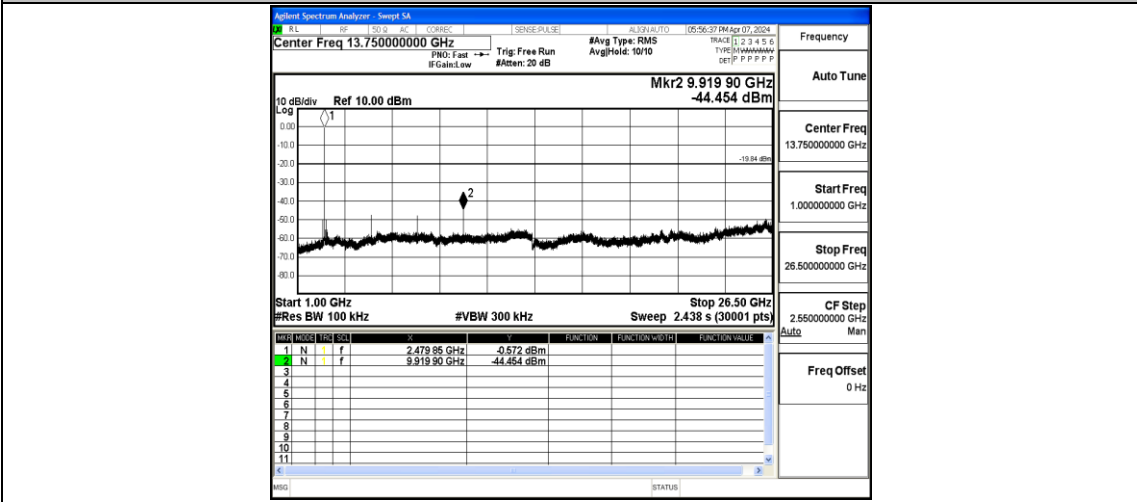
DH5-Ant1-2441-1000~26500-PASS



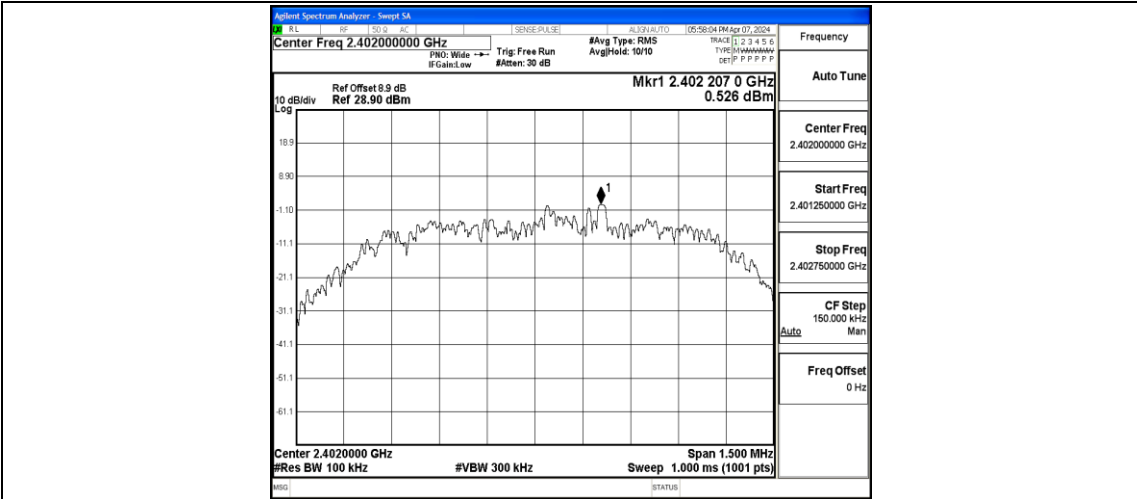
DH5-Ant1-2480-0~Reference-PASS



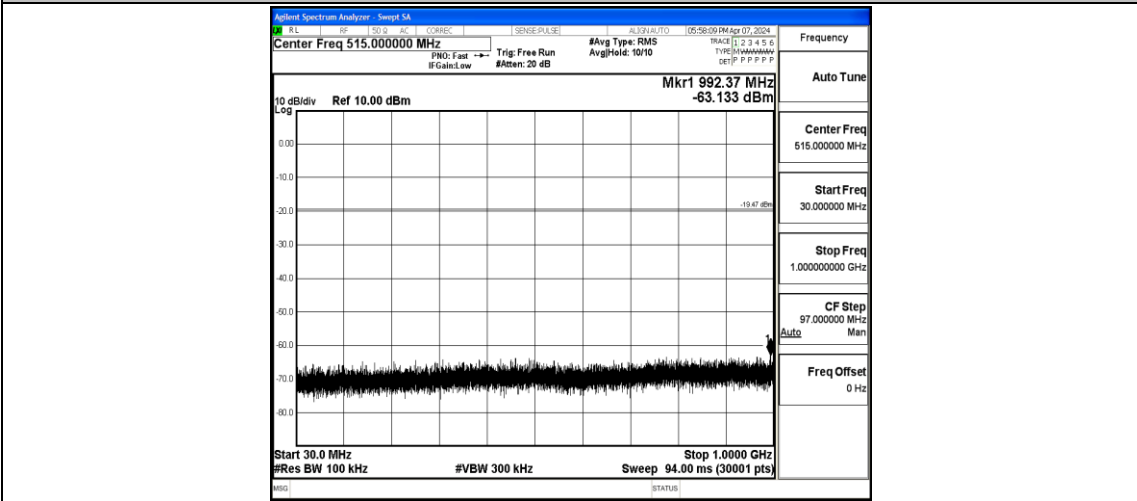
DH5-Ant1-2480-30~1000-PASS



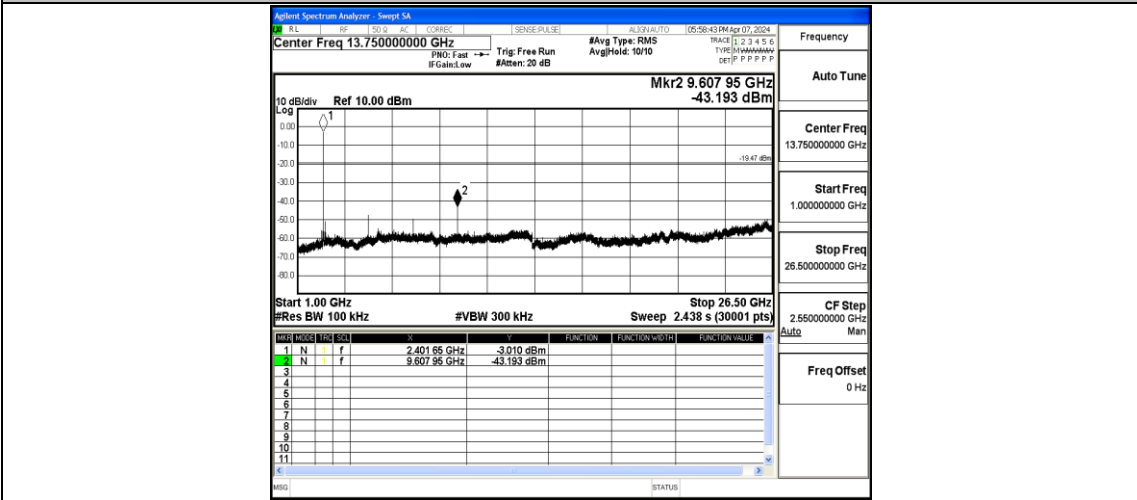
DH5-Ant1-2480-1000~26500-PASS



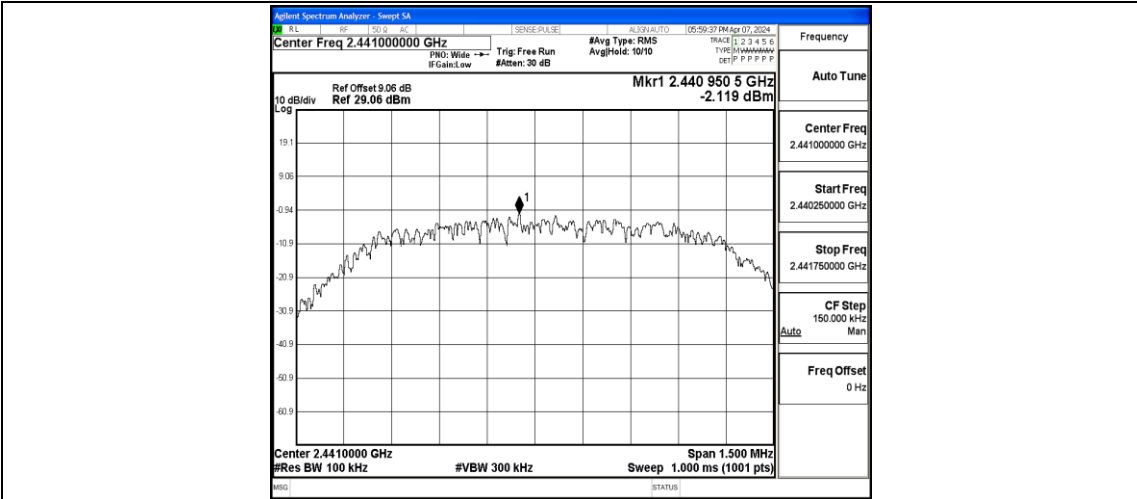
2DH5-Ant1-2402-0~Reference-PASS



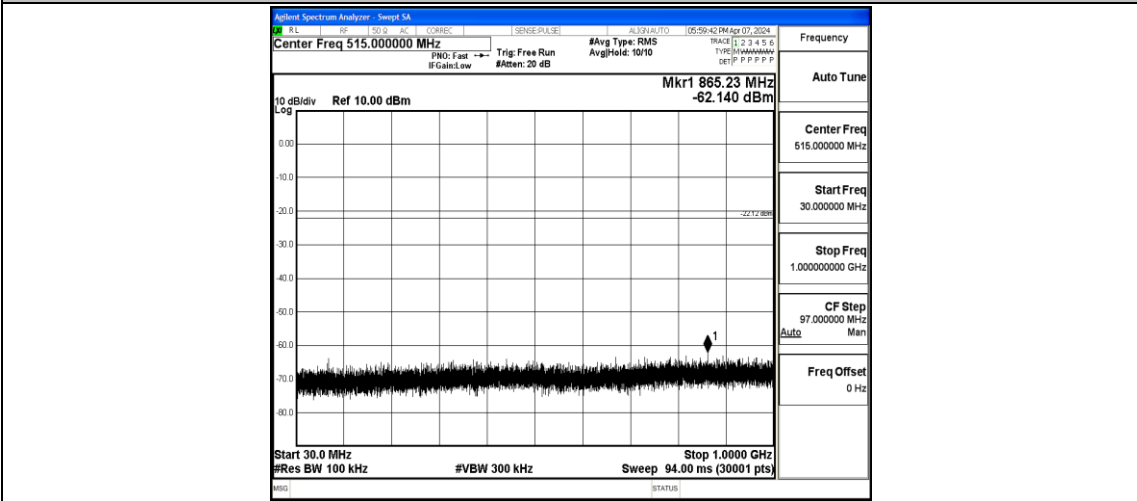
2DH5-Ant1-2402-30~1000-PASS



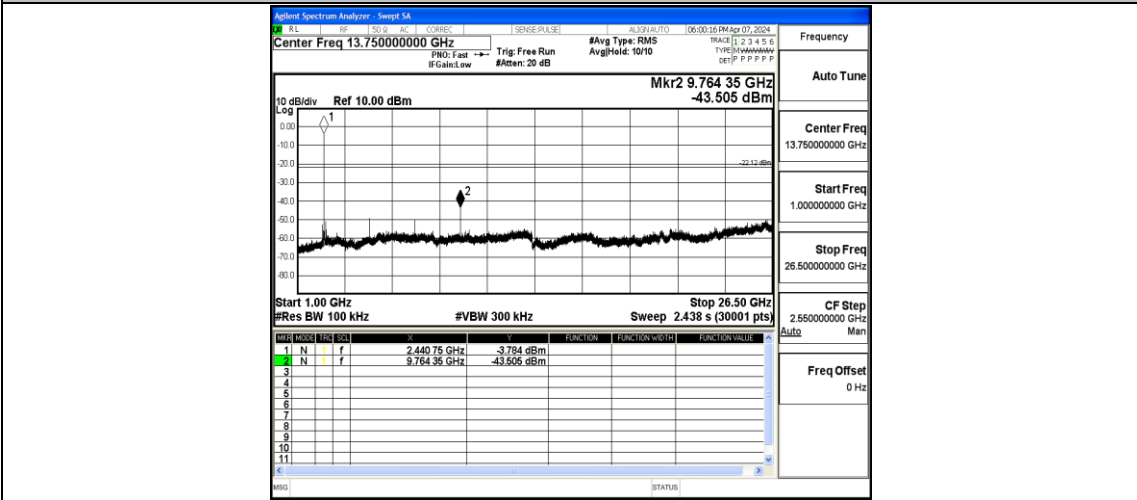
2DH5-Ant1-2402-1000~26500-PASS



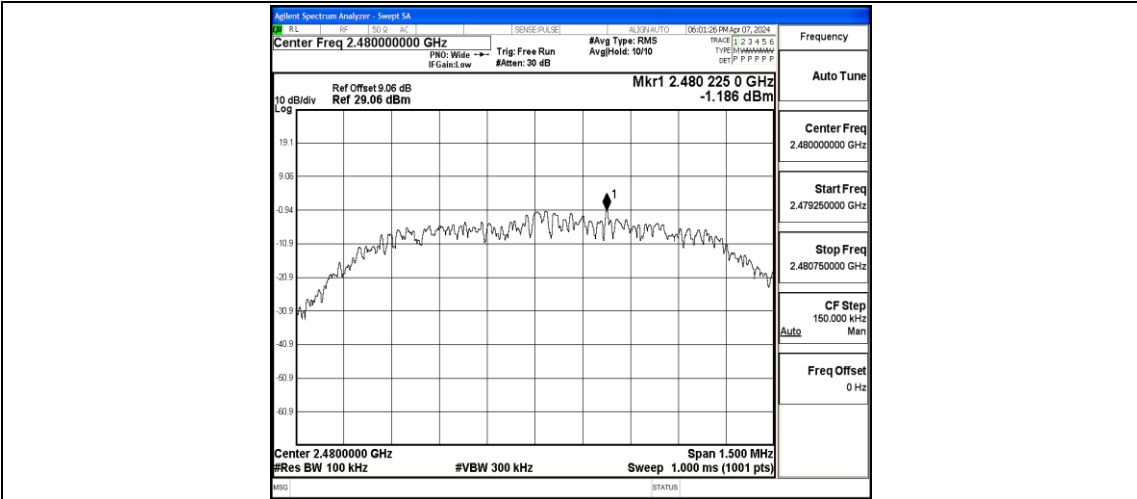
2DH5-Ant1-2441-0~Reference-PASS



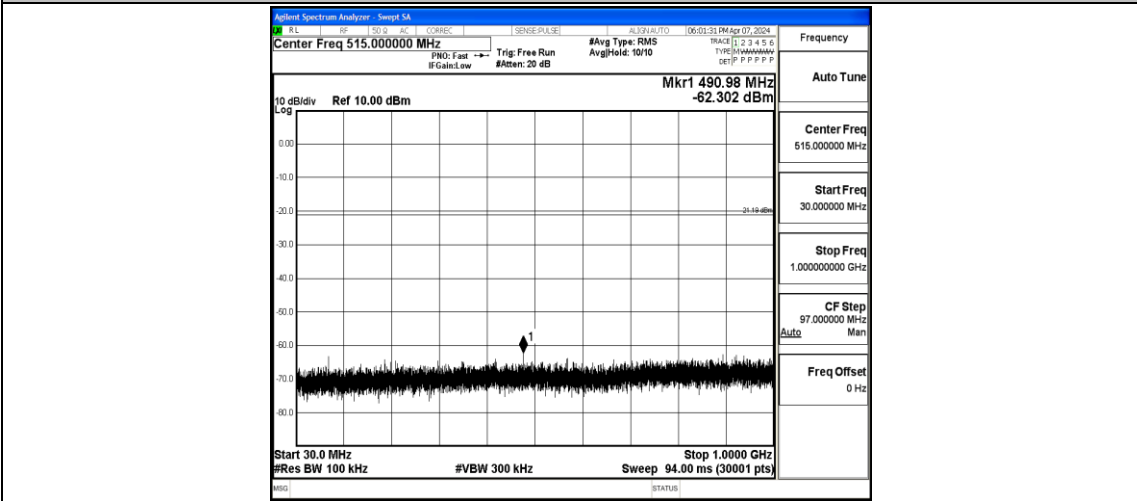
2DH5-Ant1-2441-30~1000-PASS



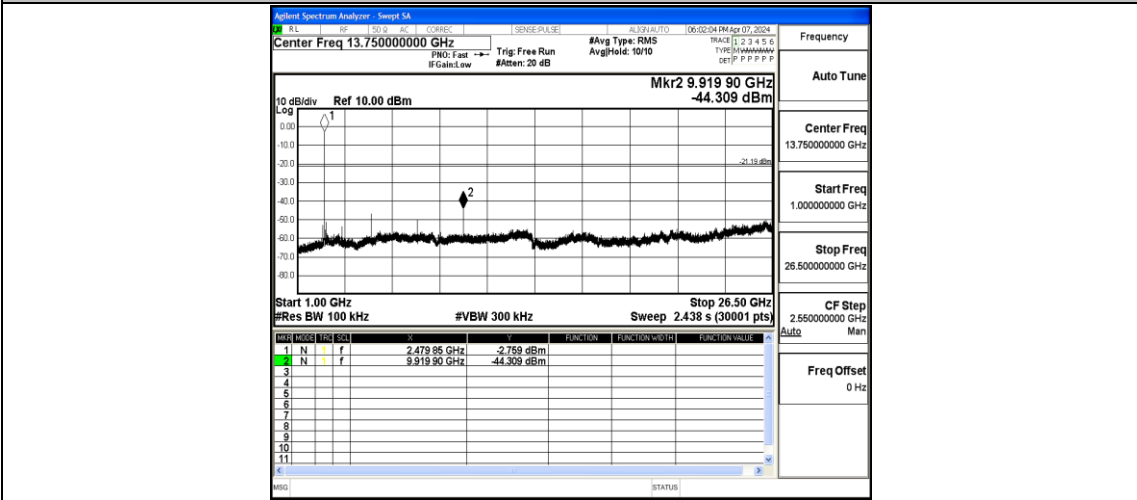
2DH5-Ant1-2441-1000~26500-PASS



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



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



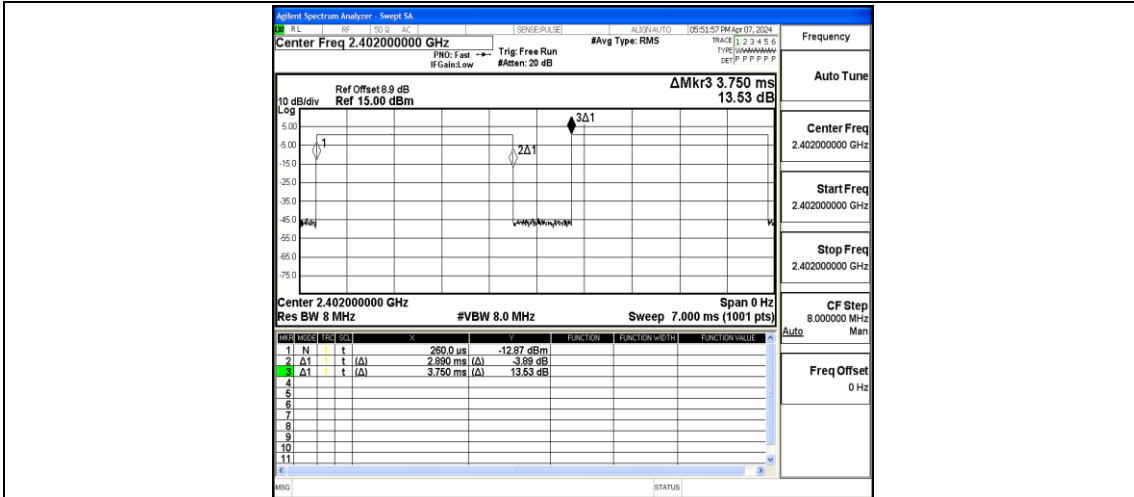
2DH5-Ant1-2480-1000~26500-PASS

Appendix I: Duty Cycle

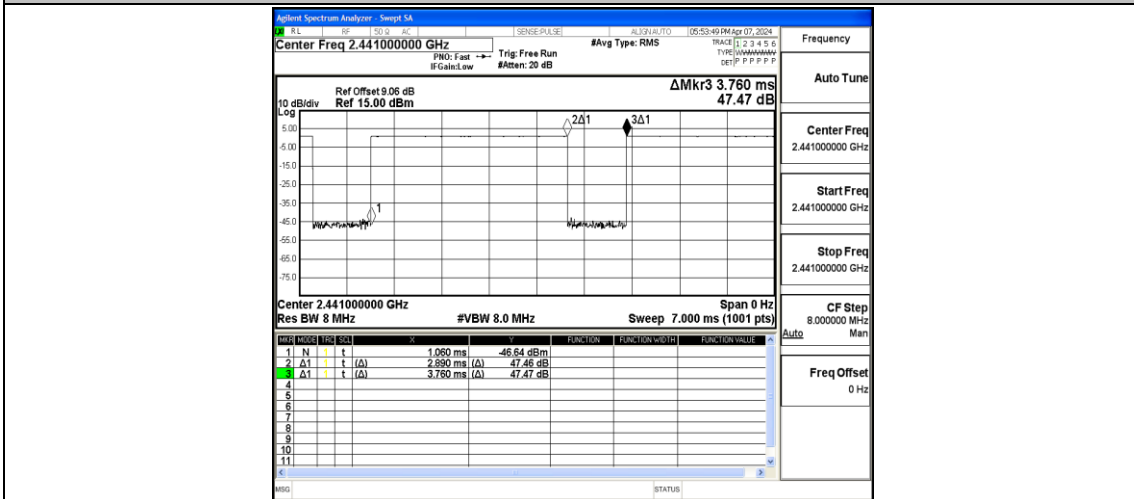
Test Result

TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
DH5	Ant1	2402	2.89	3.75	77.07	1.13
DH5	Ant1	2441	2.89	3.76	76.86	1.14
DH5	Ant1	2480	2.89	3.75	77.07	1.13
2DH5	Ant1	2402	2.90	3.76	77.13	1.13
2DH5	Ant1	2441	2.89	3.75	77.07	1.13
2DH5	Ant1	2480	2.88	3.74	77.01	1.13

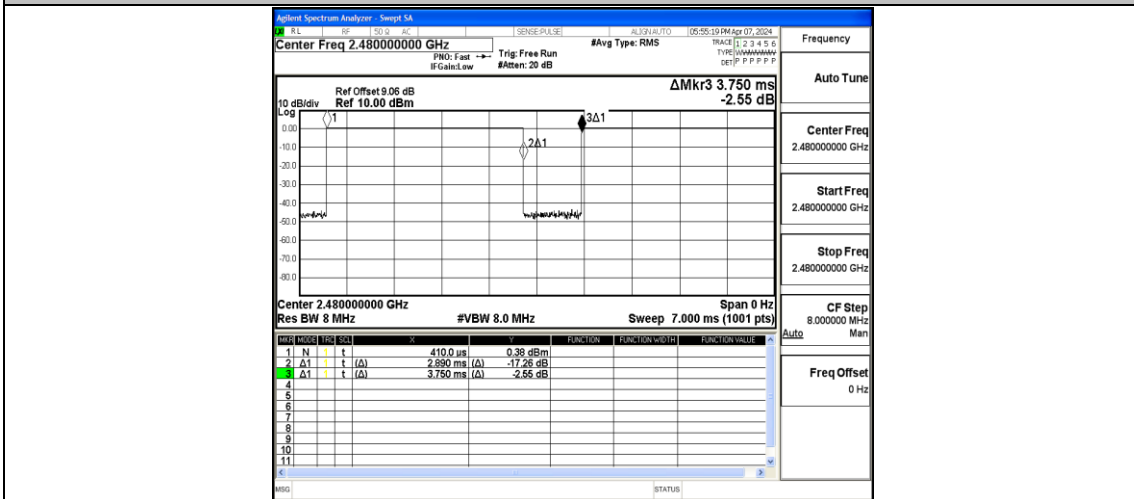
Test Graphs



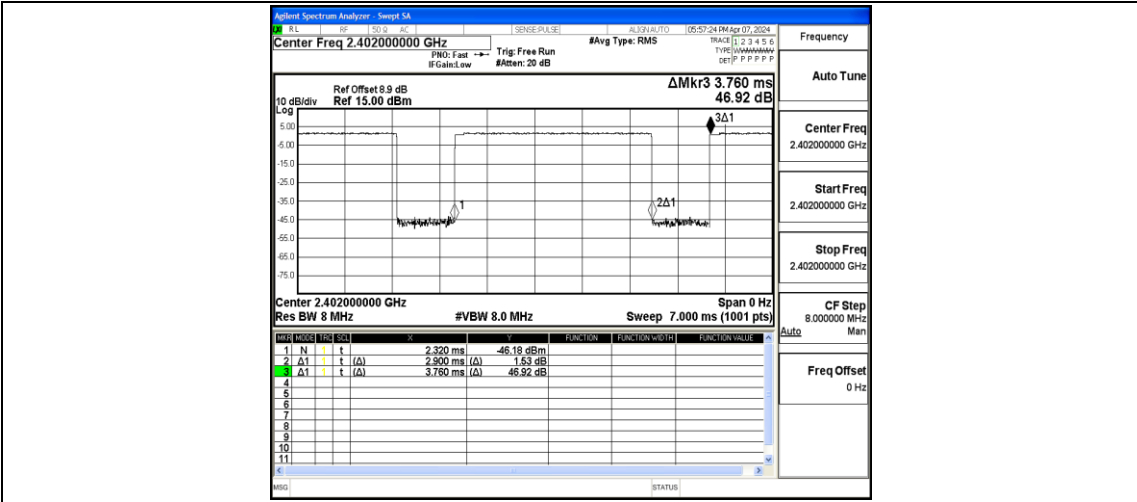
NTVN-DH5-Ant1-2402



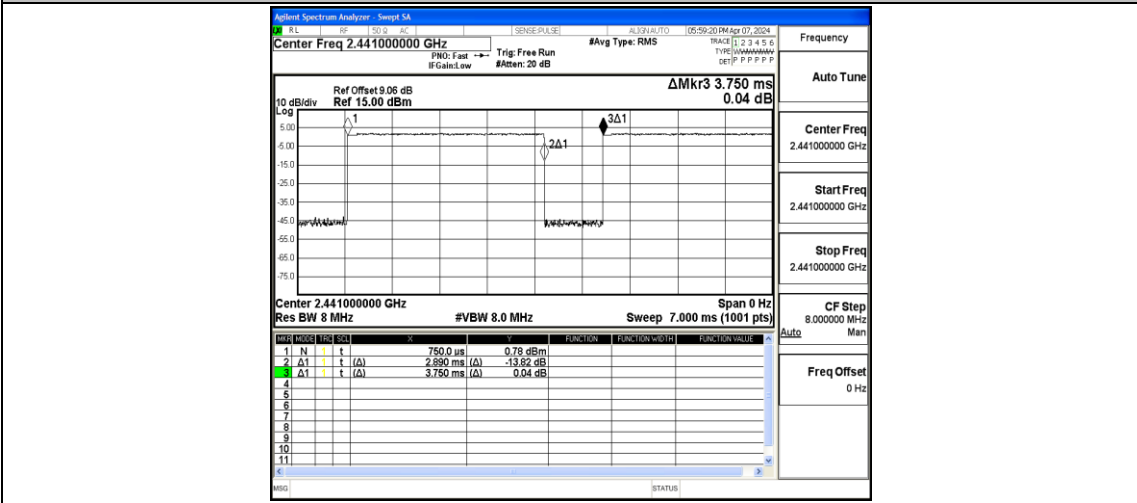
NTVN-DH5-Ant1-2441



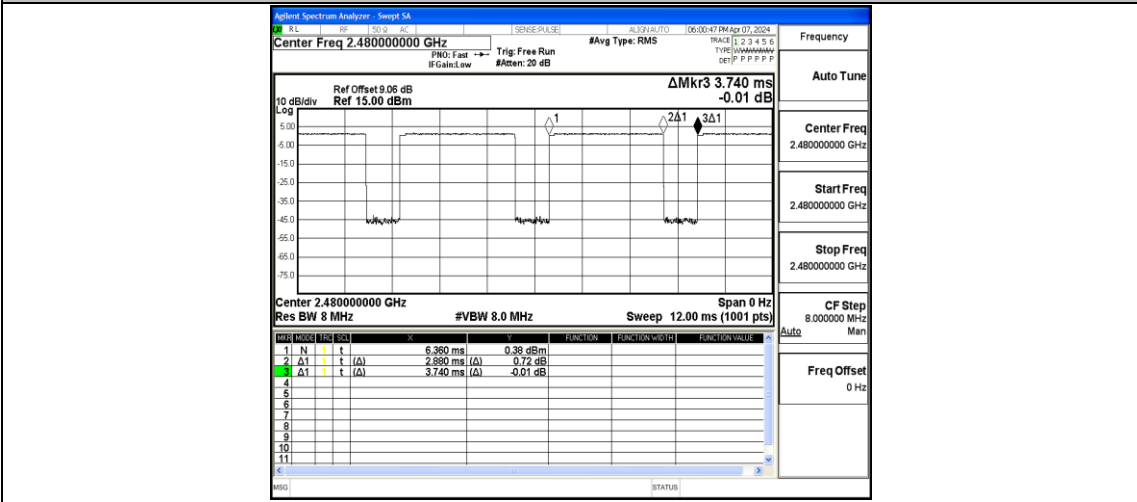
NTVN-DH5-Ant1-2480



NTNV-2DH5-Ant1-2402



NTNV-2DH5-Ant1-2441



NTNV-2DH5-Ant1-2480

Appendix J: Emissions in Restricted Bands

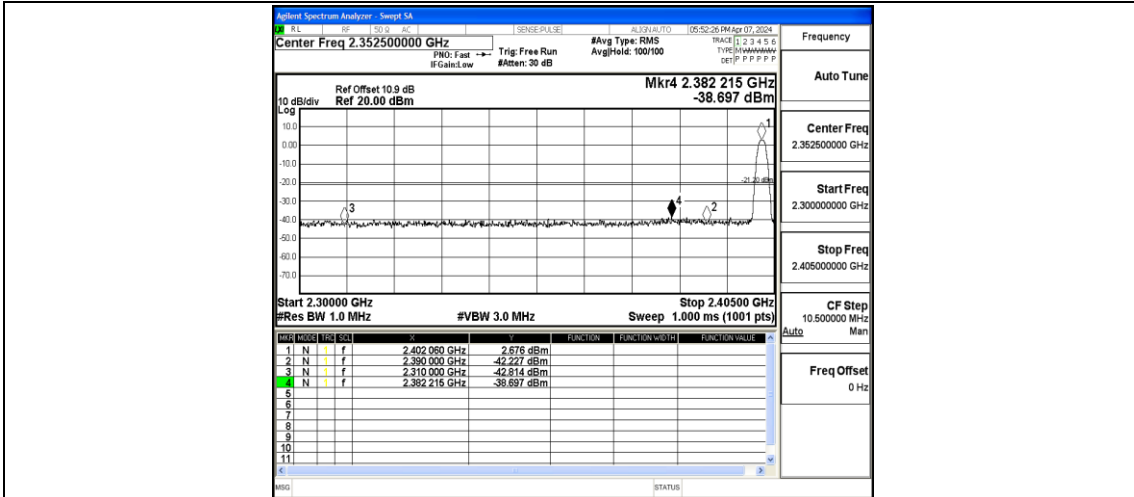
Test Result

TestMode	Antenna	ChName	Frequency [MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH5	Ant1	Low	2402	Peak	2390.000	-42.23	≤-21.20	52.97	≤74	PASS
DH5	Ant1	Low	2402	Peak	2310.000	-42.81	≤-21.20	52.39	≤74	PASS
DH5	Ant1	Low	2402	Peak	2382.215	-38.7	≤-21.20	56.50	≤74	PASS
DH5	Ant1	Low	2402	AV	2390.000	-48.11	≤-41.20	47.09	≤54	PASS
DH5	Ant1	Low	2402	AV	2310.000	-49.64	≤-41.20	45.56	≤54	PASS
DH5	Ant1	Low	2402	AV	2382.530	-47.39	≤-41.20	47.81	≤54	PASS
DH5	Ant1	High	2480	Peak	2483.500	-40.97	≤-21.20	54.23	≤74	PASS
DH5	Ant1	High	2480	Peak	2500.000	-40.87	≤-21.20	54.33	≤74	PASS
DH5	Ant1	High	2480	Peak	2497.600	-37.61	≤-21.20	57.59	≤74	PASS
DH5	Ant1	High	2480	AV	2483.500	-47.74	≤-41.20	47.46	≤54	PASS
DH5	Ant1	High	2480	AV	2500.000	-47.4	≤-41.20	47.80	≤54	PASS
DH5	Ant1	High	2480	AV	2496.400	-46.81	≤-41.20	48.39	≤54	PASS
2DH5	Ant1	Low	2402	Peak	2390.000	-41.63	≤-21.20	53.57	≤74	PASS
2DH5	Ant1	Low	2402	Peak	2310.000	-42.65	≤-21.20	52.55	≤74	PASS
2DH5	Ant1	Low	2402	Peak	2376.755	-37.82	≤-21.20	57.38	≤74	PASS
2DH5	Ant1	Low	2402	AV	2390.000	-48.31	≤-41.20	46.89	≤54	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-49.22	≤-41.20	45.98	≤54	PASS
2DH5	Ant1	Low	2402	AV	2383.790	-47.23	≤-41.20	47.97	≤54	PASS
2DH5	Ant1	High	2480	Peak	2483.500	-41.64	≤-21.20	53.56	≤74	PASS
2DH5	Ant1	High	2480	Peak	2500.000	-39.43	≤-21.20	55.77	≤74	PASS
2DH5	Ant1	High	2480	Peak	2495.120	-37.77	≤-21.20	57.43	≤74	PASS
2DH5	Ant1	High	2480	AV	2483.500	-47.4	≤-41.20	47.80	≤54	PASS
2DH5	Ant1	High	2480	AV	2500.000	-47.52	≤-41.20	47.68	≤54	PASS
2DH5	Ant1	High	2480	AV	2498.080	-46.66	≤-41.20	48.54	≤54	PASS

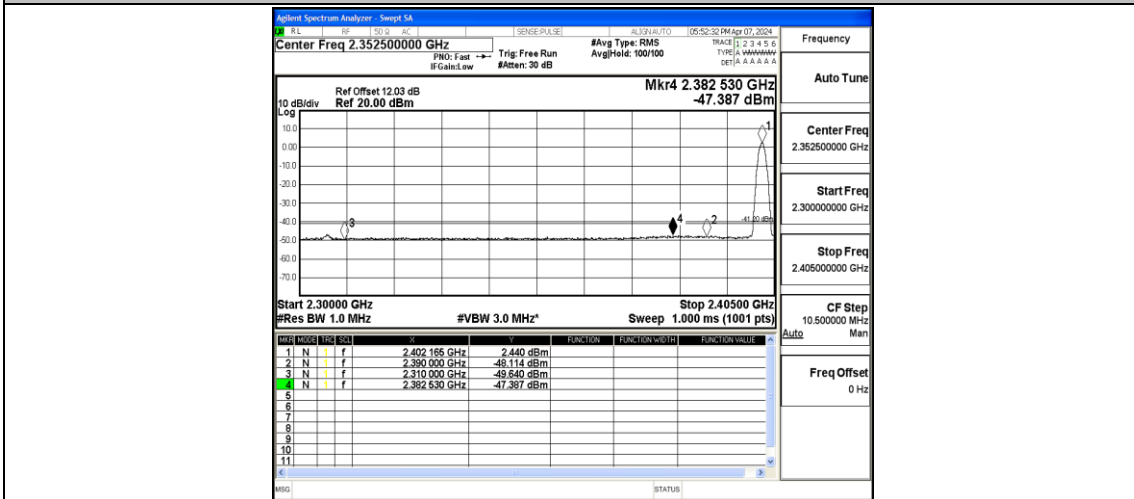
Note:

1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

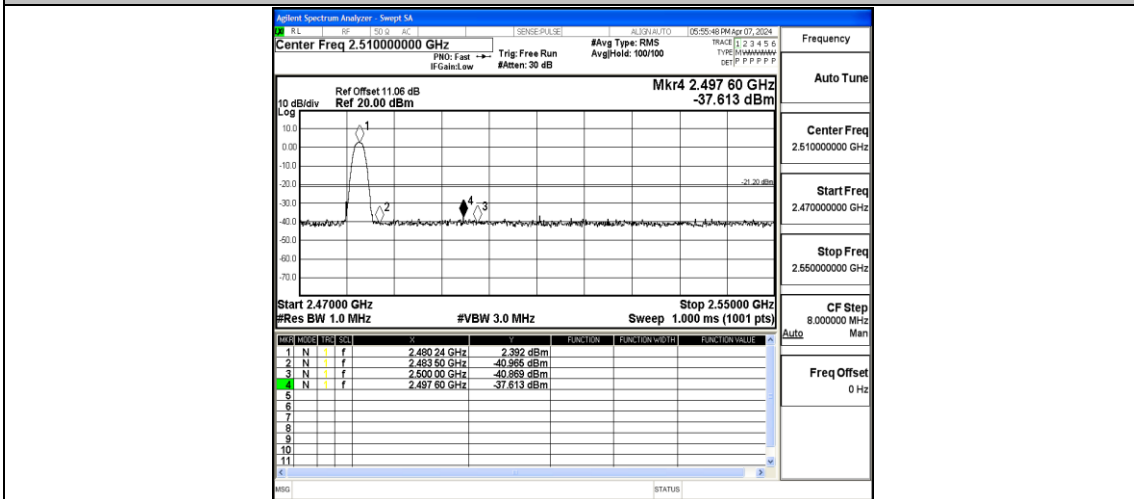
Test Graphs



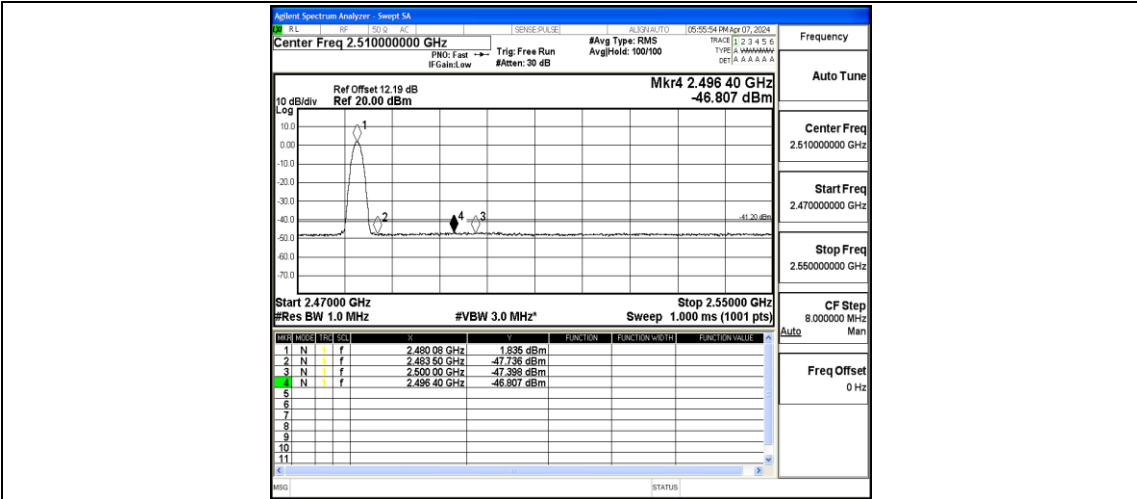
DH5-Ant1-2402-PASS



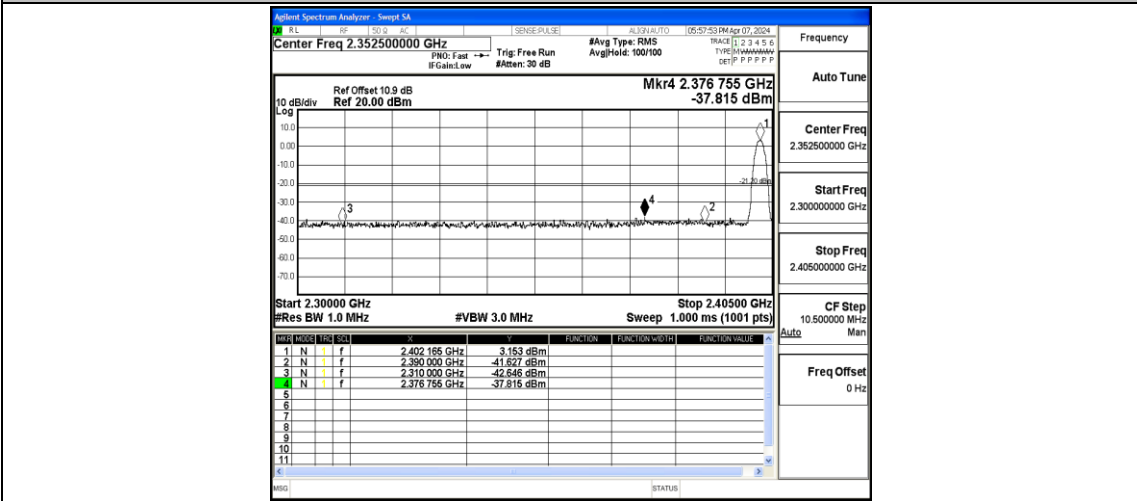
DH5-Ant1-2402-PASS



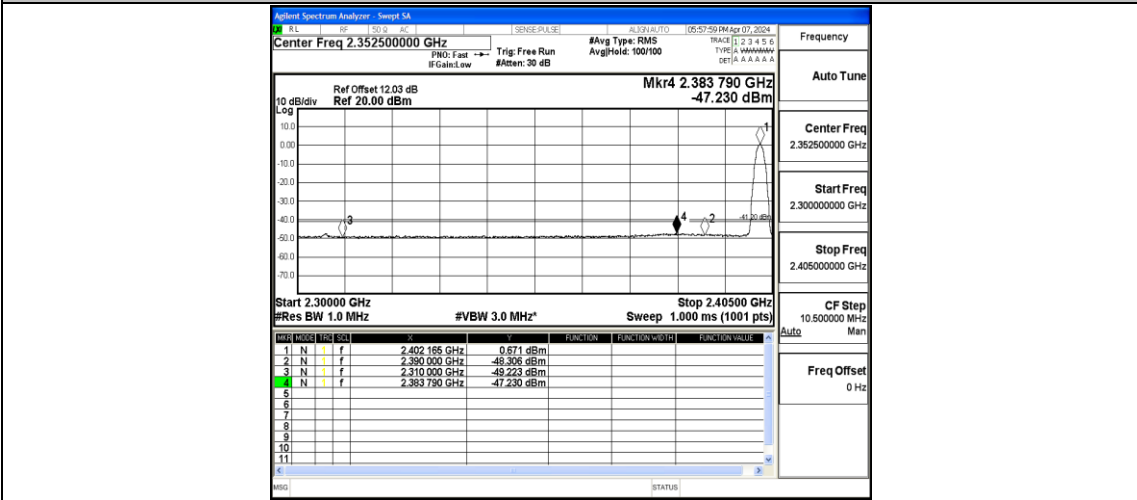
DH5-Ant1-2480-PASS



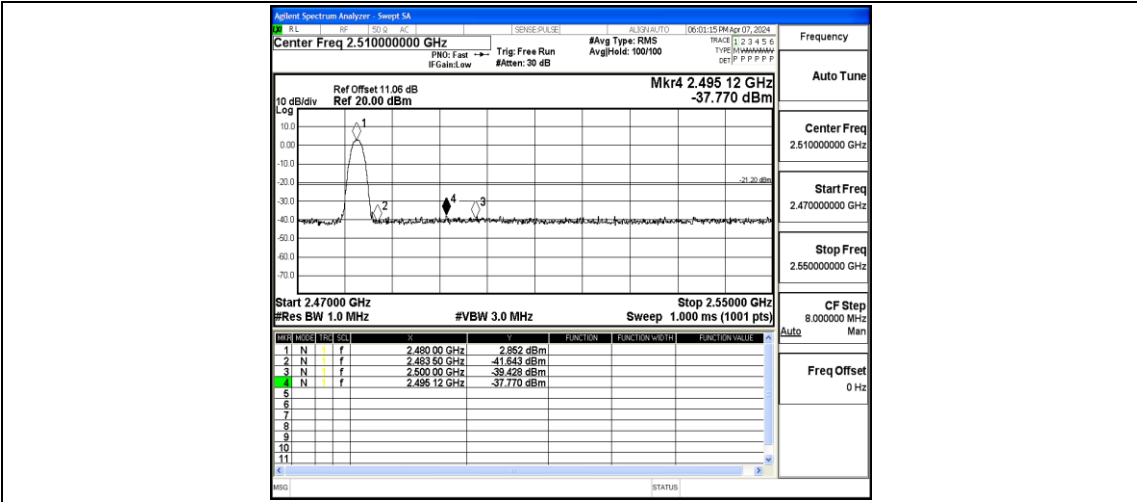
DH5-Ant1-2480-PASS



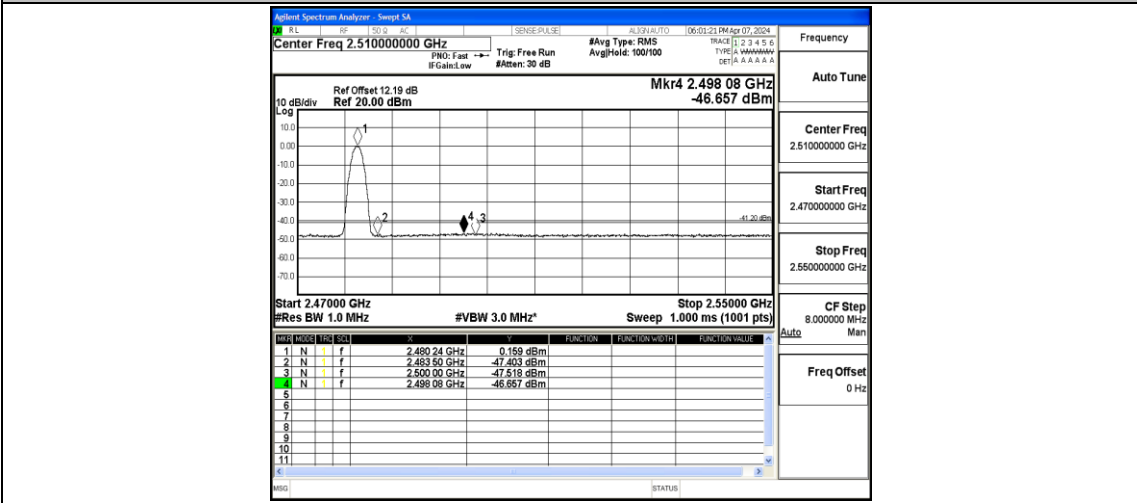
2DH5-Ant1-2402-PASS



2DH5-Ant1-2402-PASS



2DH5-Ant1-2480-PASS



2DH5-Ant1-2480-PASS