

Appendix Test Data for BT(BDR/EDR) (Conducted Measurement)**Product Name: TWS earbuds****Trade Mark: N/A****Test Model: SORB-TWS3****FCC ID: 2AO47-SORB-TWS3****Environmental Conditions**

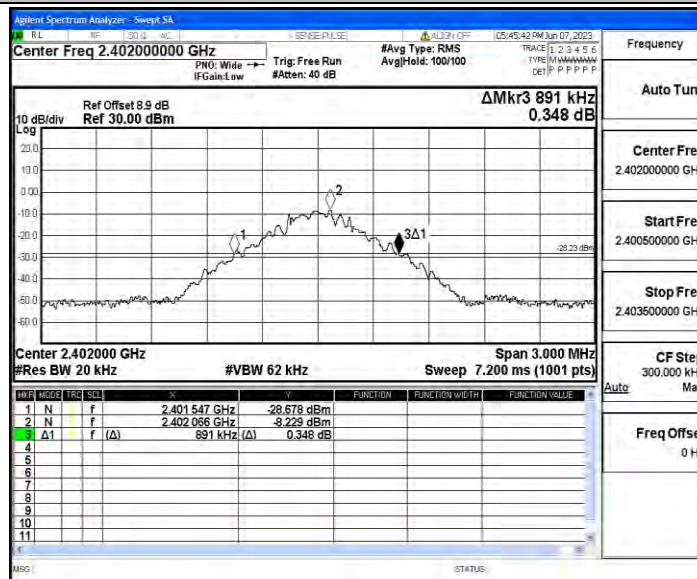
Temperature:	25.5°C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: 20dB Emission Bandwidth**Test Result**

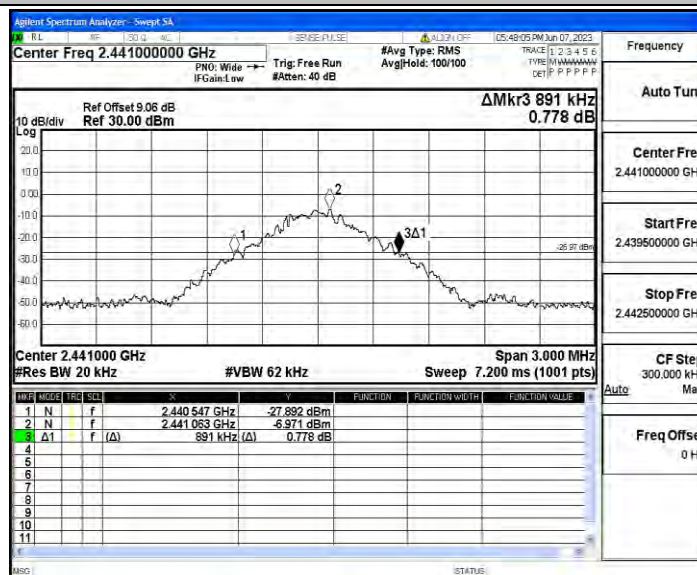
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.891	2401.547	2402.438	---	---
		2441	0.891	2440.547	2441.438	---	---
		2480	0.864	2479.550	2480.414	---	---
2DH5	Ant1	2402	1.305	2401.352	2402.657	---	---
		2441	1.308	2440.355	2441.663	---	---
		2480	1.314	2479.349	2480.663	---	---
3DH5	Ant1	2402	1.290	2401.358	2402.648	---	---
		2441	1.302	2440.355	2441.657	---	---
		2480	1.290	2479.364	2480.654	---	---

Test Graphs

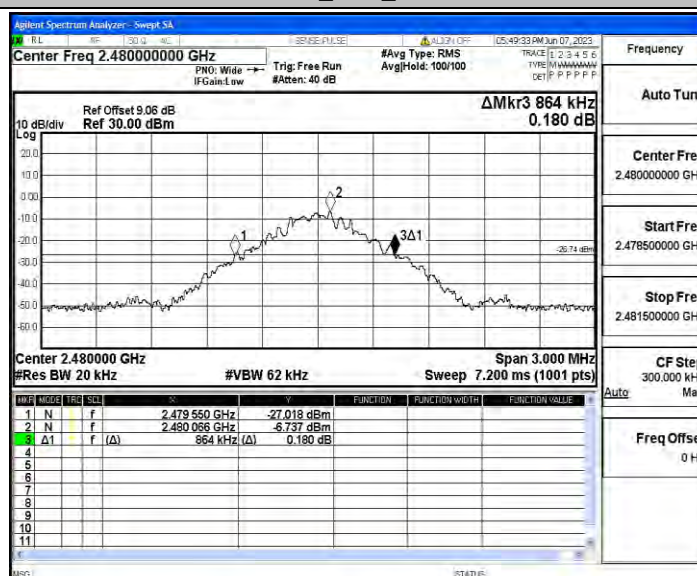
DH5_Ant1_2402



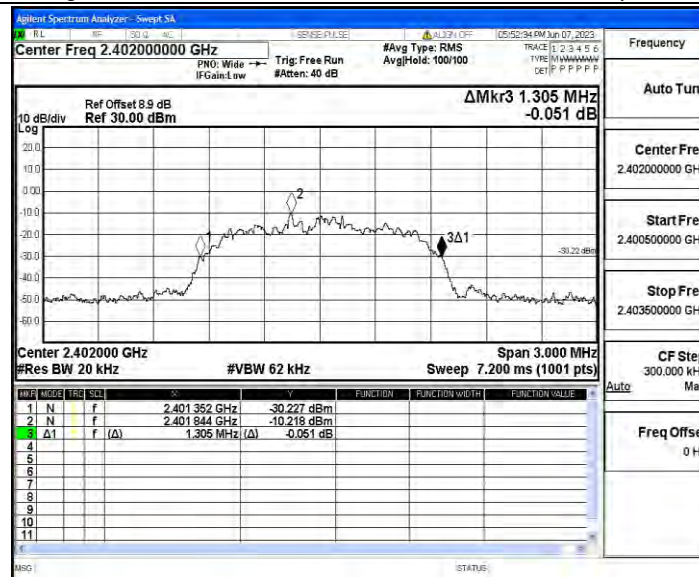
DH5_Ant1_2441



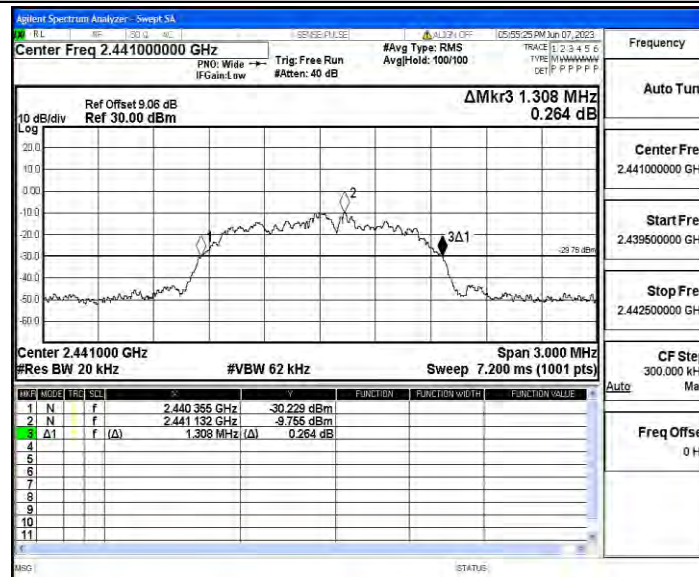
DH5_Ant1_2480



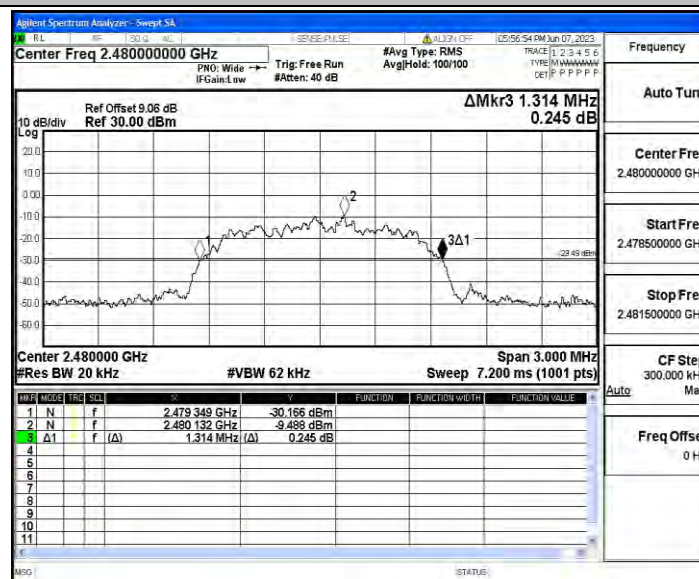
2DH5_Ant1_2402



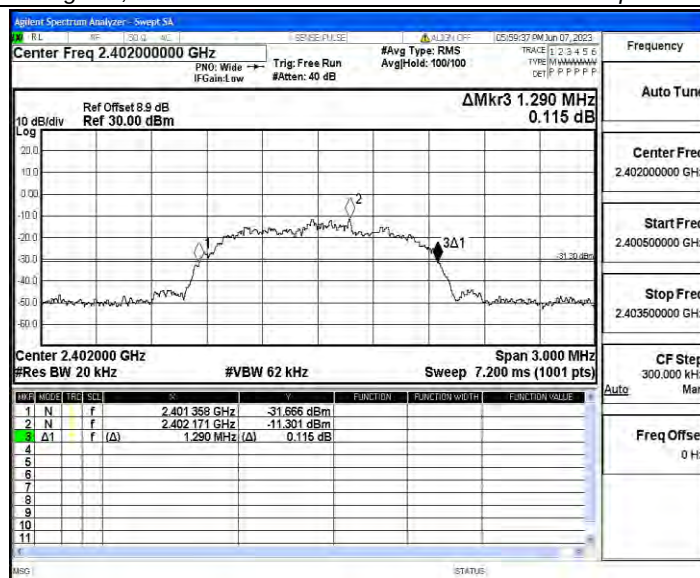
2DH5_Ant1_2441



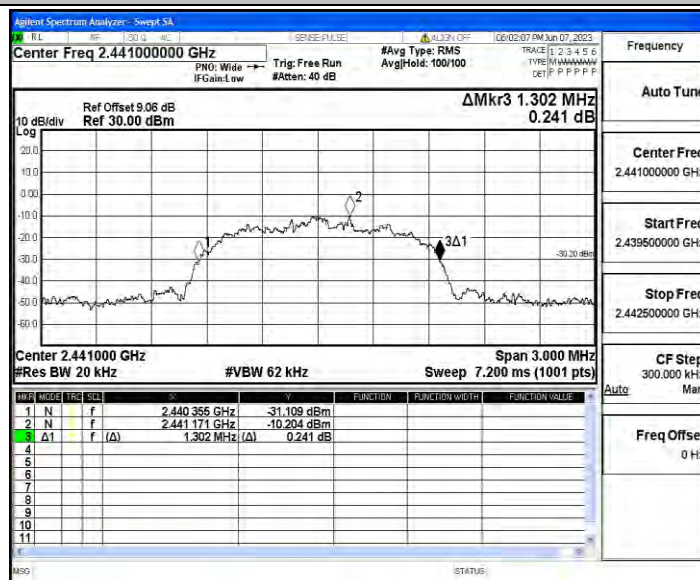
2DH5_Ant1_2480



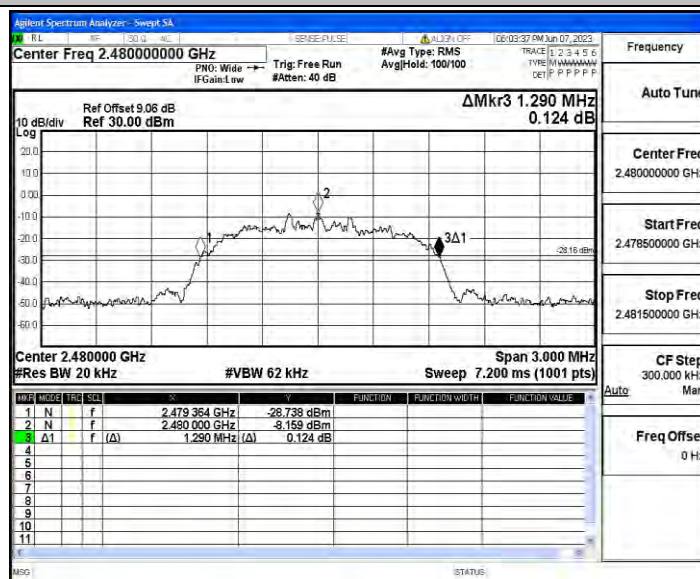
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



Appendix B: Occupied Channel Bandwidth

Test Result

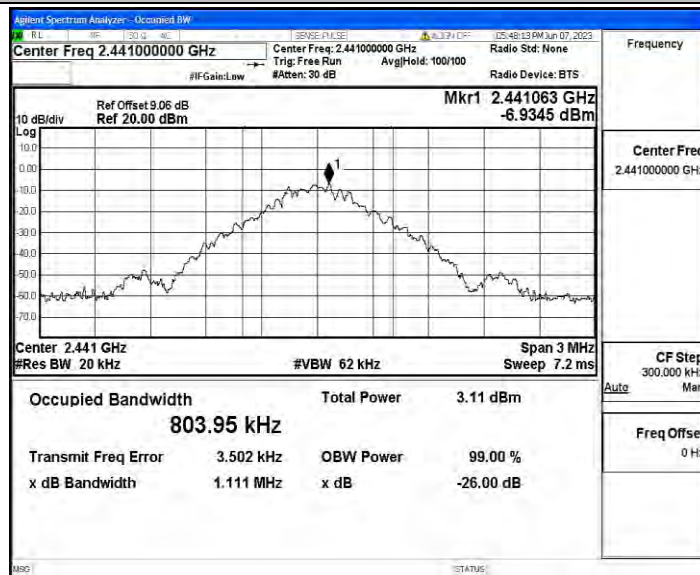
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.80119	2401.6051	2402.4063	---	---
		2441	0.80395	2440.6015	2441.4055	---	---
		2480	0.80663	2479.6018	2480.4084	---	---
2DH5	Ant1	2402	1.1588	2401.4248	2402.5836	---	---
		2441	1.1636	2440.4229	2441.5865	---	---
		2480	1.1575	2479.4249	2480.5824	---	---
3DH5	Ant1	2402	1.1713	2401.4269	2402.5982	---	---
		2441	1.1598	2440.4288	2441.5886	---	---
		2480	1.1690	2479.4291	2480.5981	---	---

Test Graphs

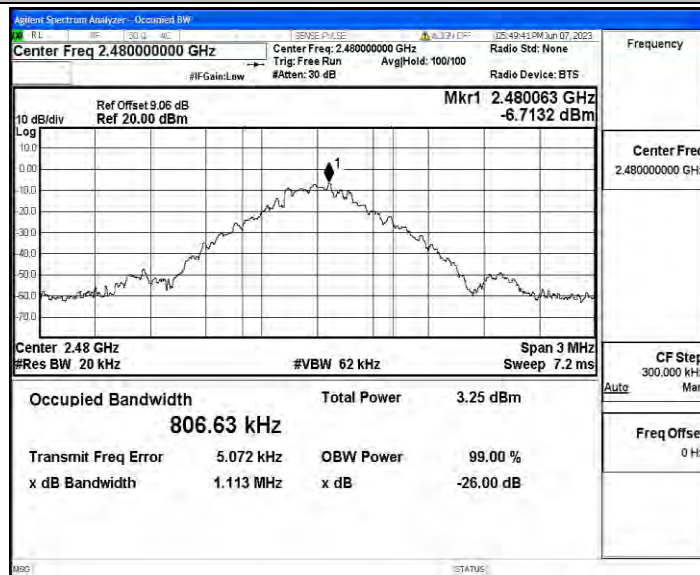
DH5_Ant1_2402



DH5_Ant1_2441



DH5_Ant1_2480



2DH5_Ant1_2402



2DH5_Ant1_2441



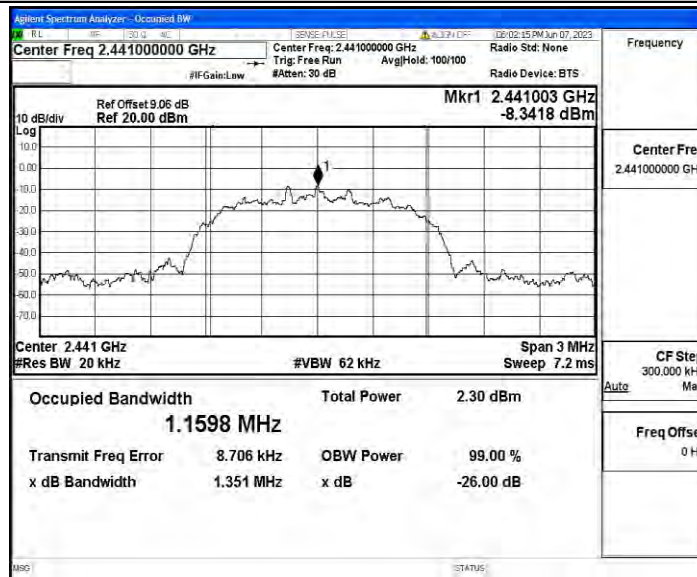
2DH5_Ant1_2480



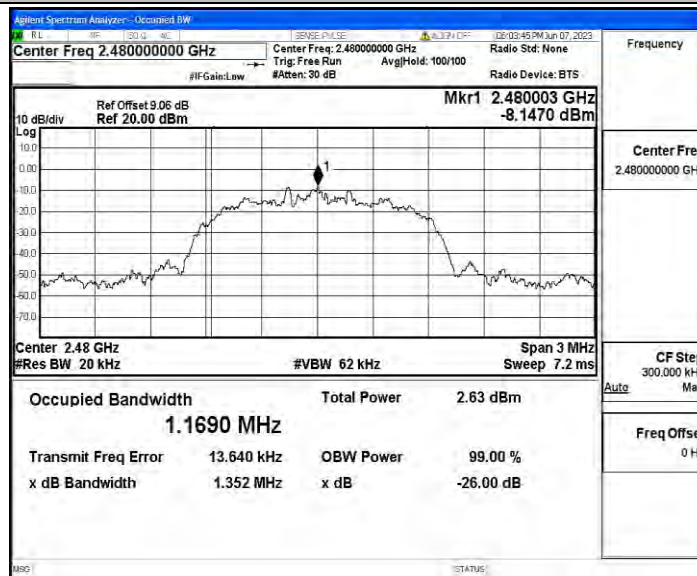
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



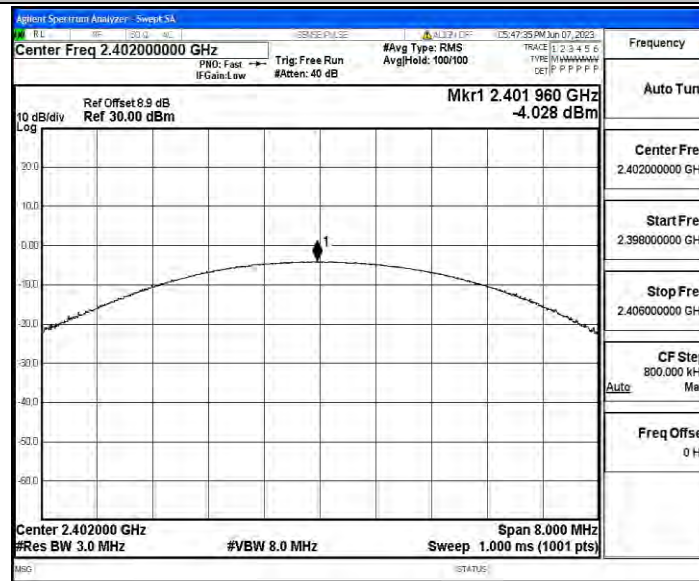
Appendix C: Maximum Peak conducted output power

Test Result

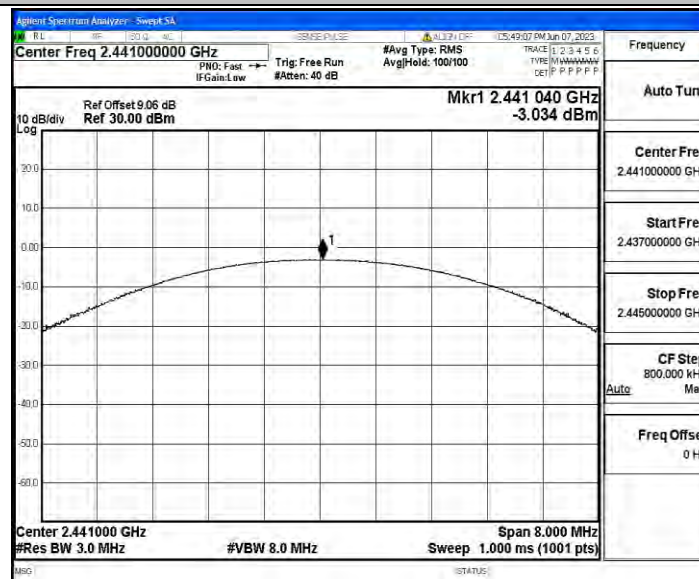
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	-4.03	≤30	PASS
		2441	-3.03	≤30	PASS
		2480	-2.83	≤30	PASS
2DH5	Ant1	2402	-3.48	≤20.97	PASS
		2441	-2.33	≤20.97	PASS
		2480	-2.14	≤20.97	PASS
3DH5	Ant1	2402	-2.79	≤20.97	PASS
		2441	-1.6	≤20.97	PASS
		2480	-1.44	≤20.97	PASS

Test Graphs

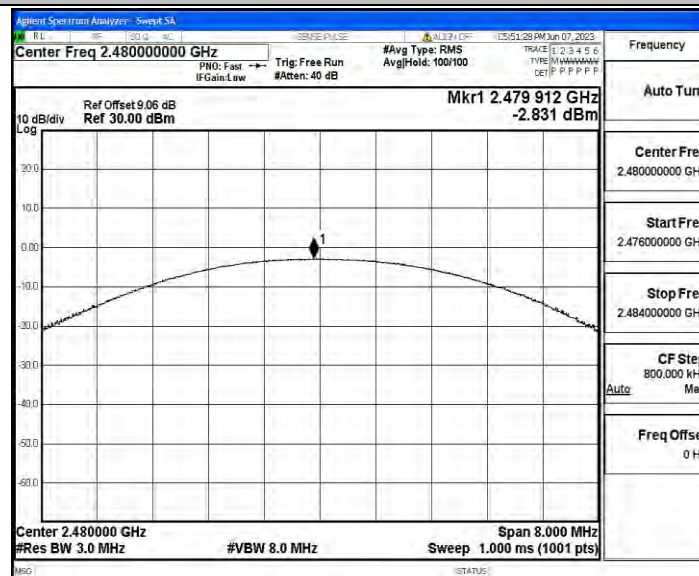
DH5_Ant1_2402



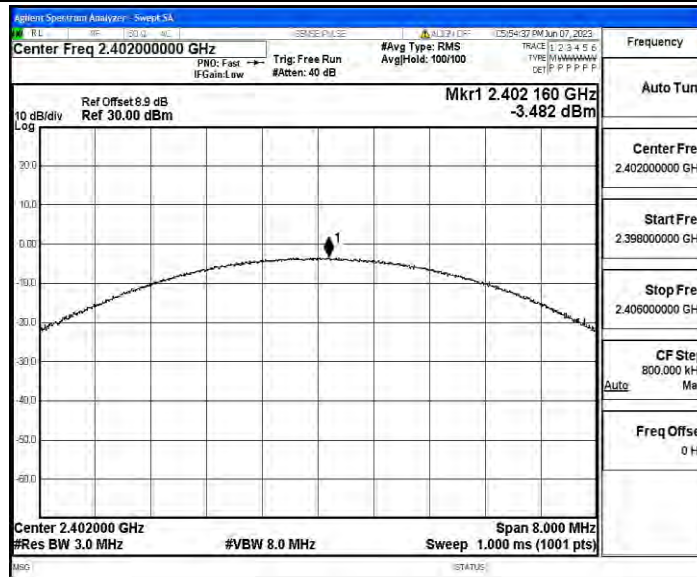
DH5_Ant1_2441



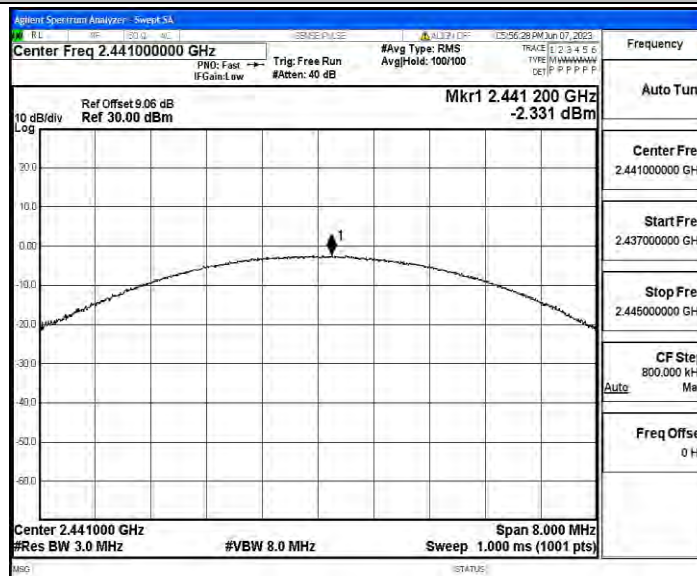
DH5_Ant1_2480



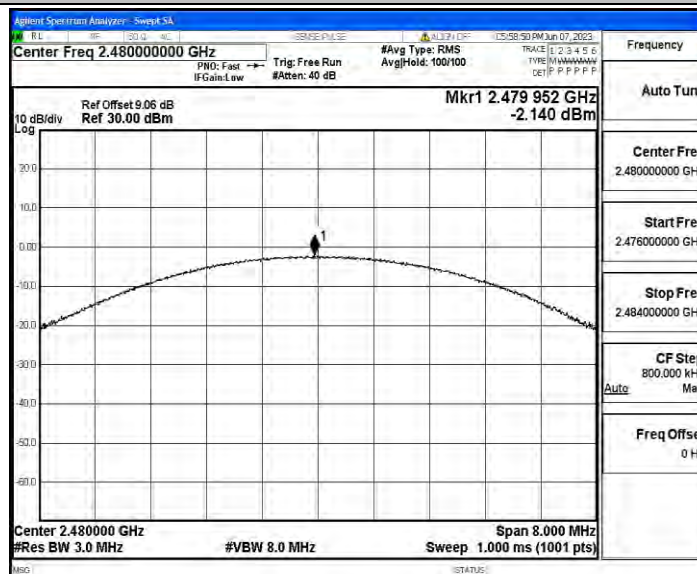
2DH5_Ant1_2402



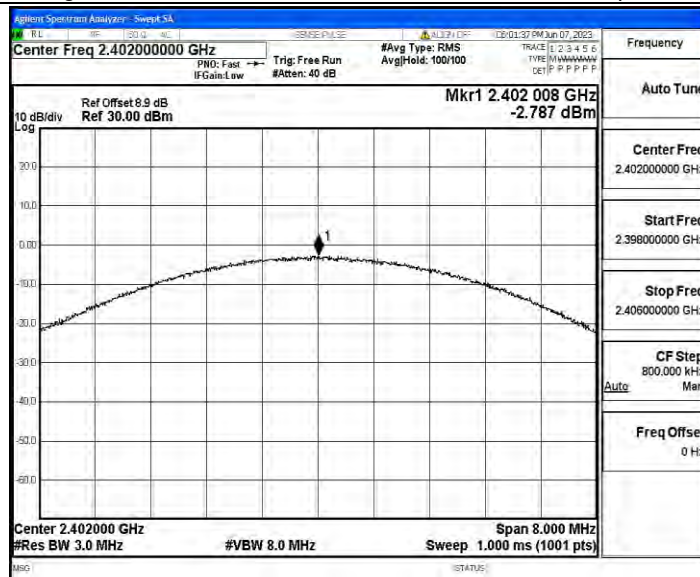
2DH5_Ant1_2441



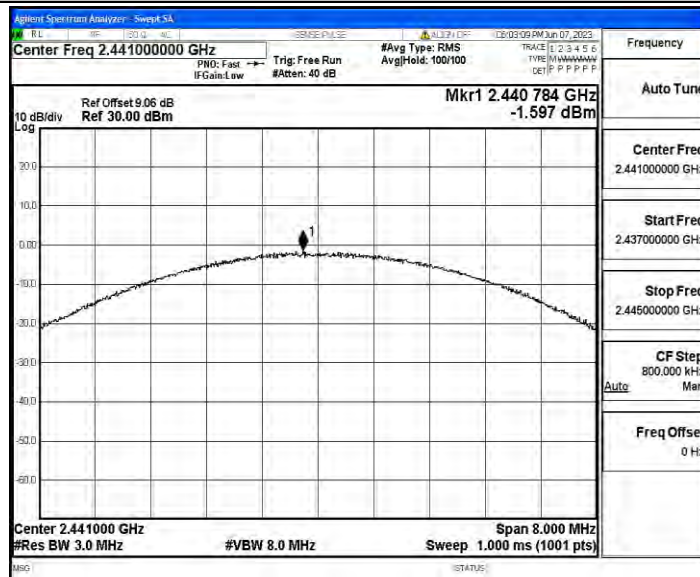
2DH5_Ant1_2480



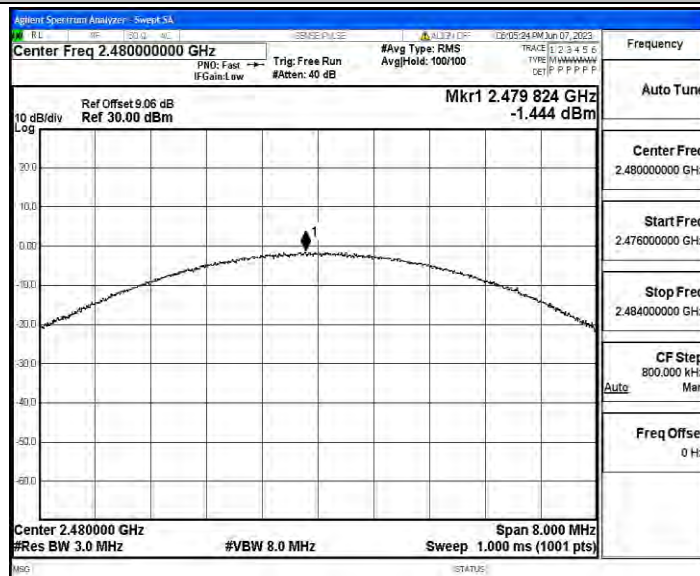
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

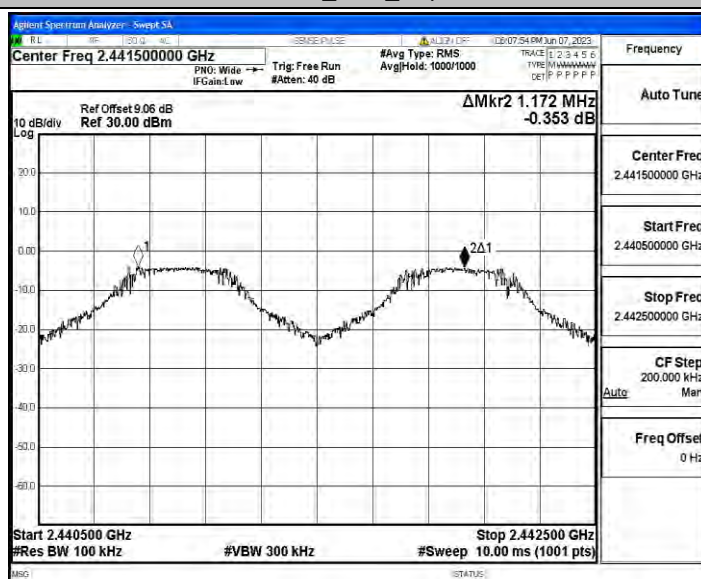


Appendix D: Carrier frequency separation

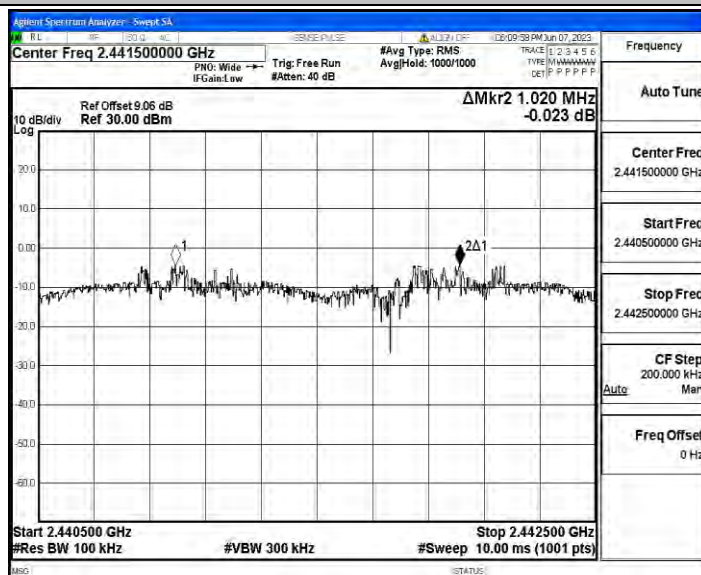
Test Result

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.172	≥ 0.891	PASS
2DH5	Ant1	Hop	1.02	≥ 0.876	PASS
3DH5	Ant1	Hop	1.004	≥ 0.868	PASS

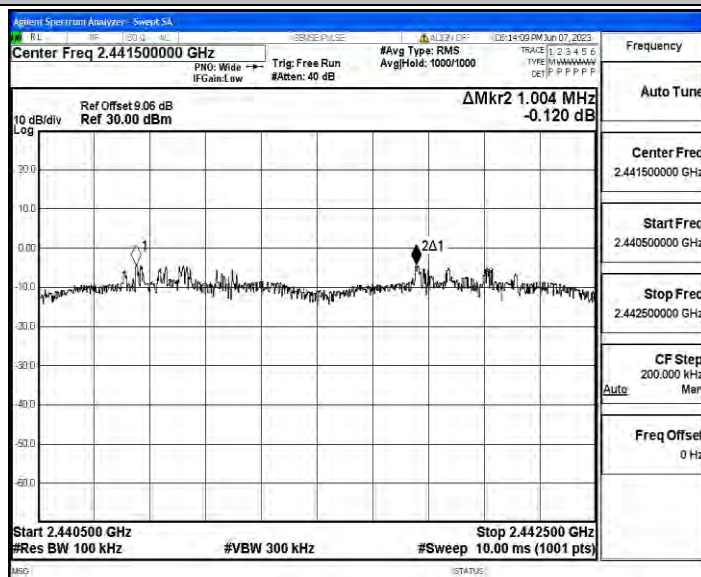
DH5 Ant1 Hop



2DH5 Ant1 Hop



3DH5 Ant1 Hop

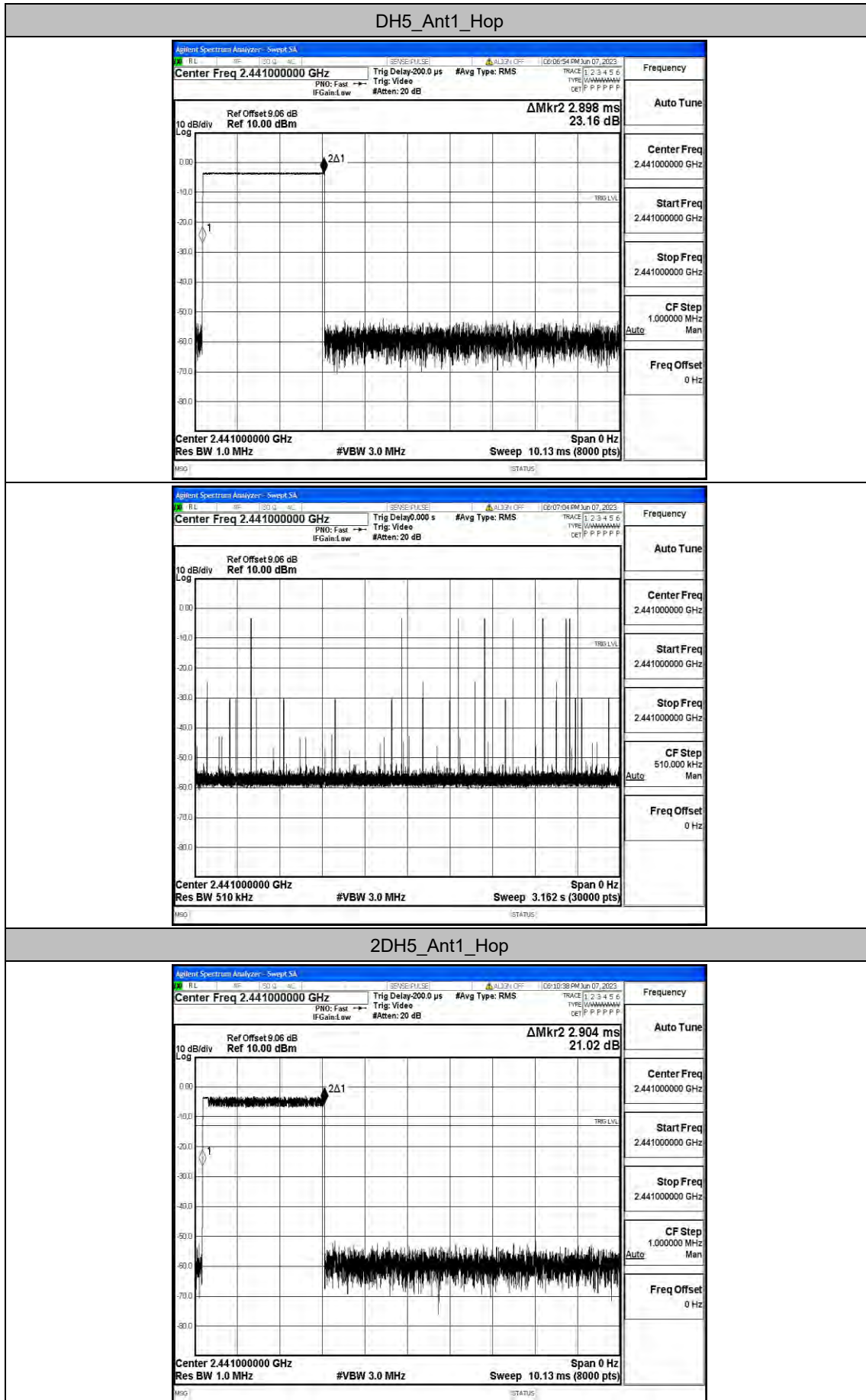


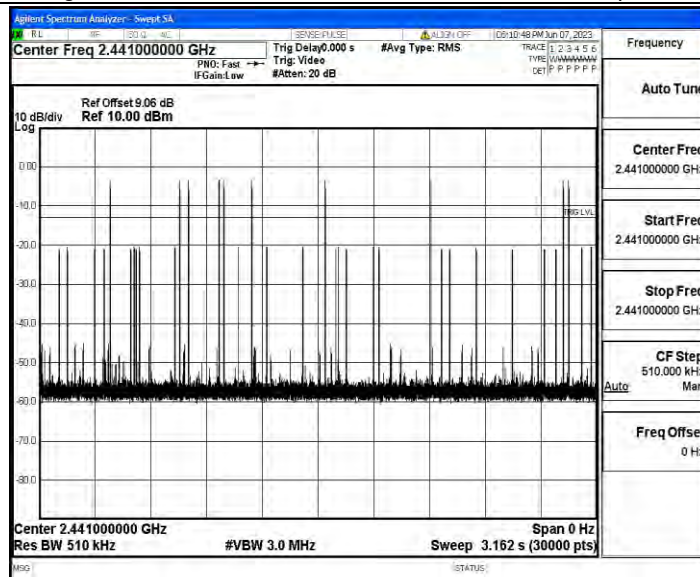
Appendix E: Time of occupancy

Test Result

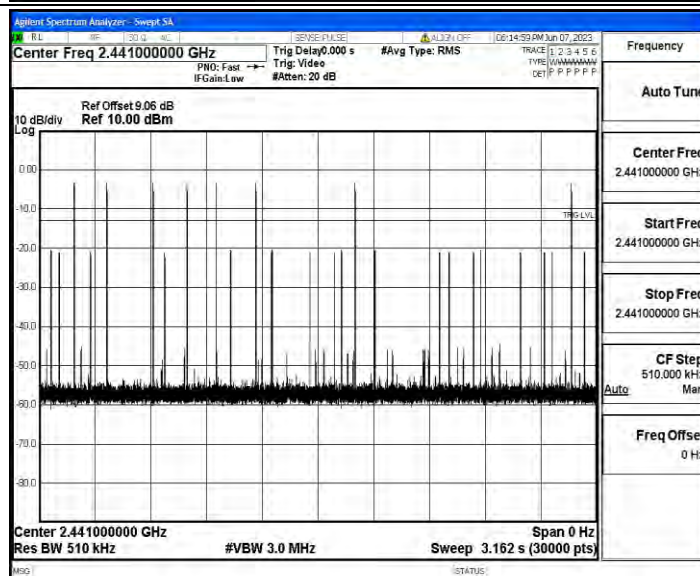
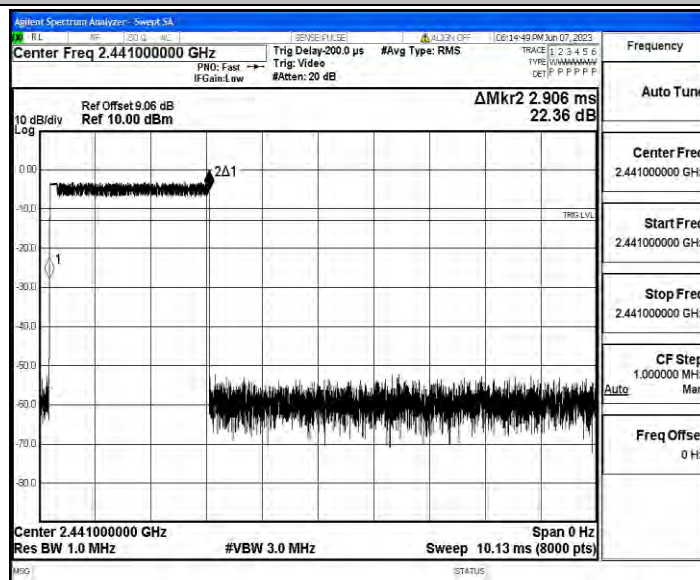
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.898	90	0.261	≤0.4	PASS
2DH5	Ant1	Hop	2.904	110	0.319	≤0.4	PASS
3DH5	Ant1	Hop	2.906	90	0.262	≤0.4	PASS

Test Graphs





3DH5_Ant1_Hop



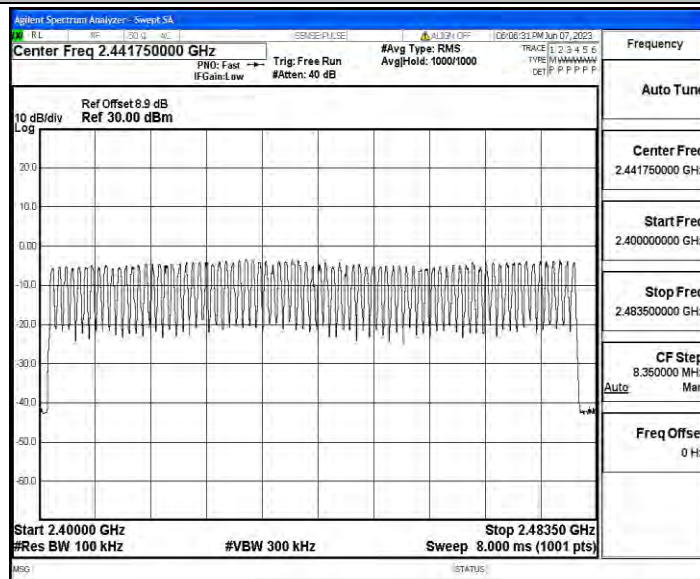
Appendix F: Number of hopping channels

Test Result

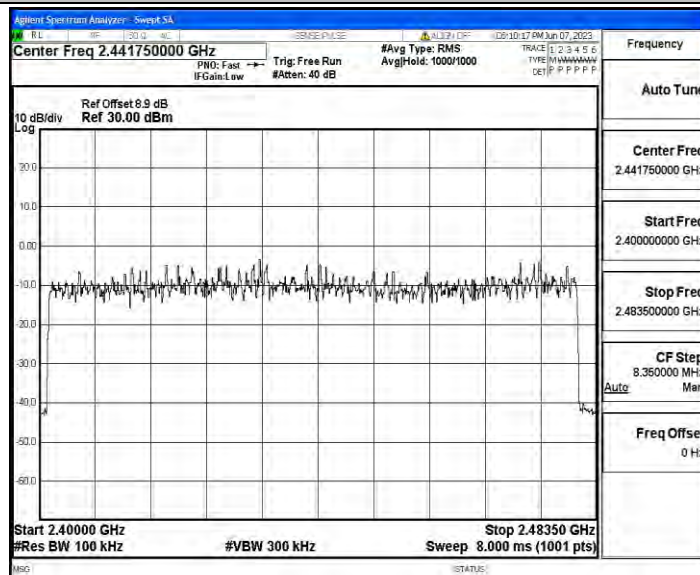
TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

Test Graphs

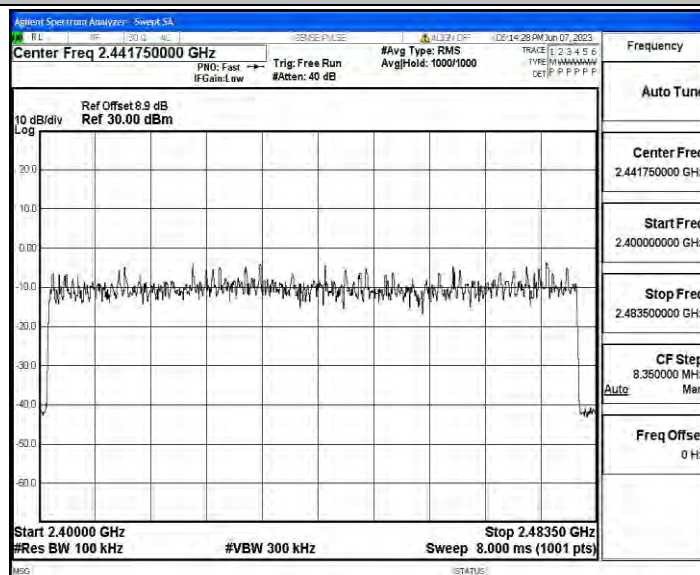
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop



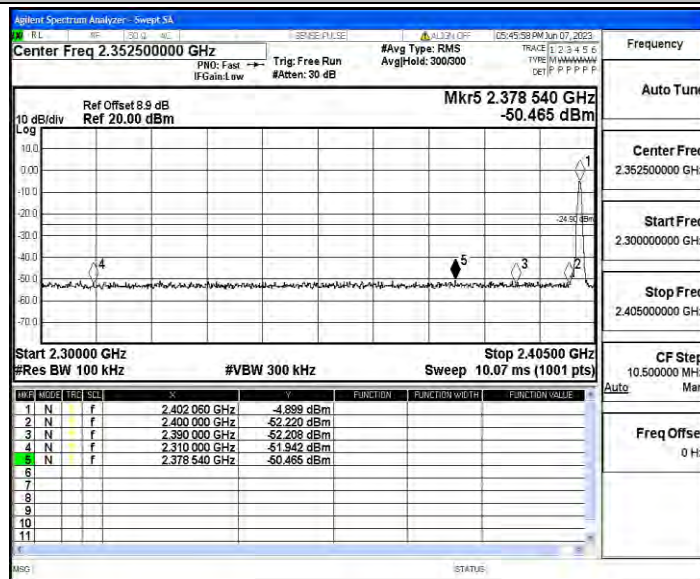
Appendix G: Band edge measurements

Test Result

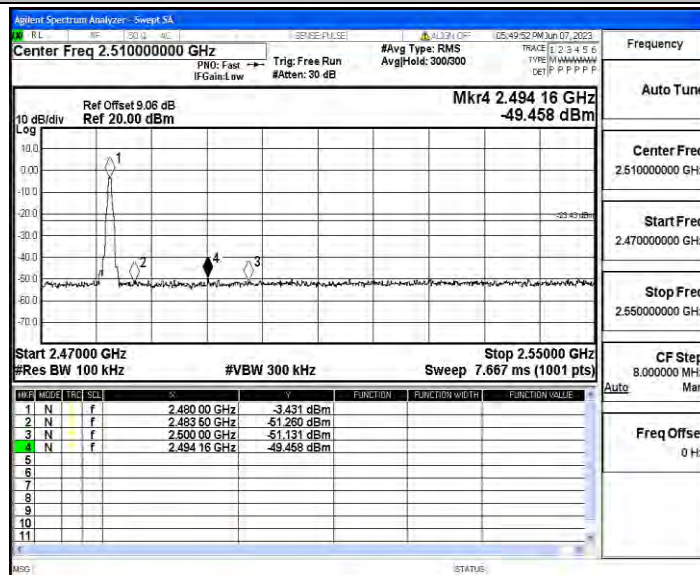
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-4.90	-50.47	≤-24.9	PASS
		High	2480	-3.43	-49.46	≤-23.43	PASS
		Low	Hop_2402	-5.56	-50.47	≤-25.56	PASS
		High	Hop_2480	-3.79	-49.5	≤-23.79	PASS
2DH5	Ant1	Low	2402	-4.79	-49.54	≤-24.79	PASS
		High	2480	-4.08	-48.16	≤-24.08	PASS
		Low	Hop_2402	-6.31	-50.39	≤-26.31	PASS
		High	Hop_2480	-7.25	-49.51	≤-27.25	PASS
3DH5	Ant1	Low	2402	-4.76	-50.32	≤-24.76	PASS
		High	2480	-3.49	-49.14	≤-23.49	PASS
		Low	Hop_2402	-10.12	-50.27	≤-30.12	PASS
		High	Hop_2480	-4.23	-49.72	≤-24.23	PASS

Test Graphs

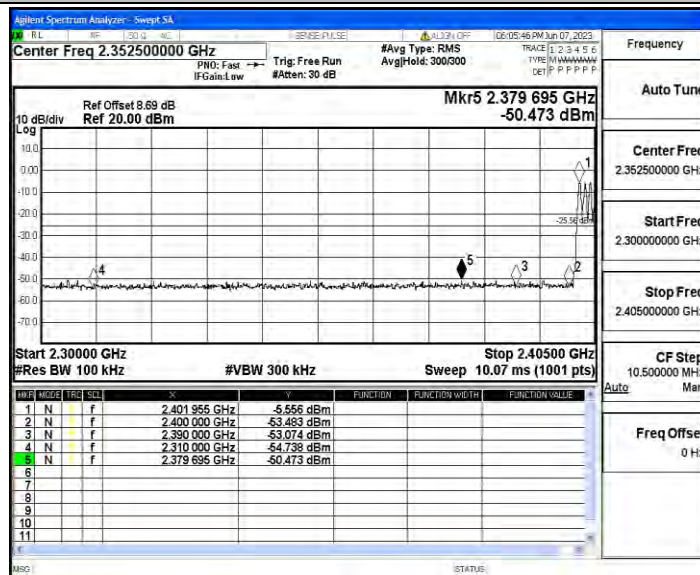
DH5_Ant1_Low_2402



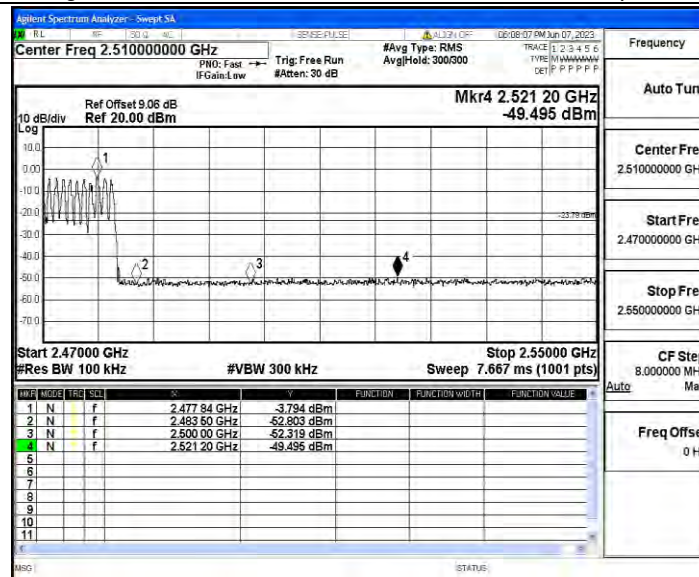
DH5_Ant1_High_2480



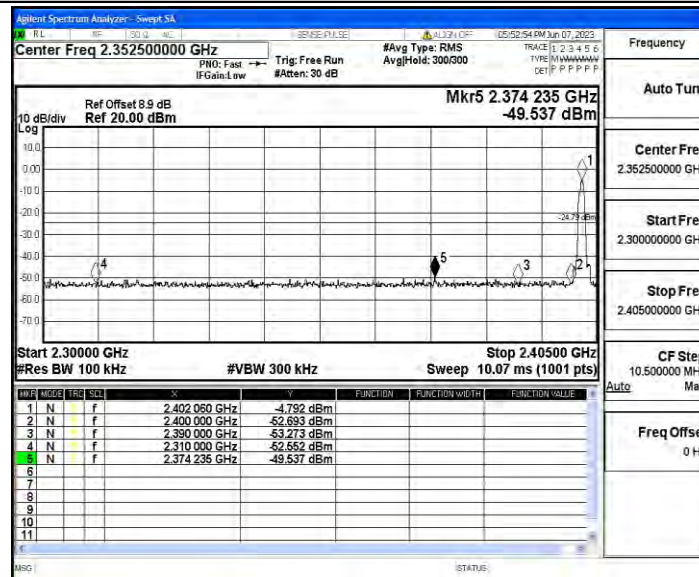
DH5_Ant1_Low_Hop_2402



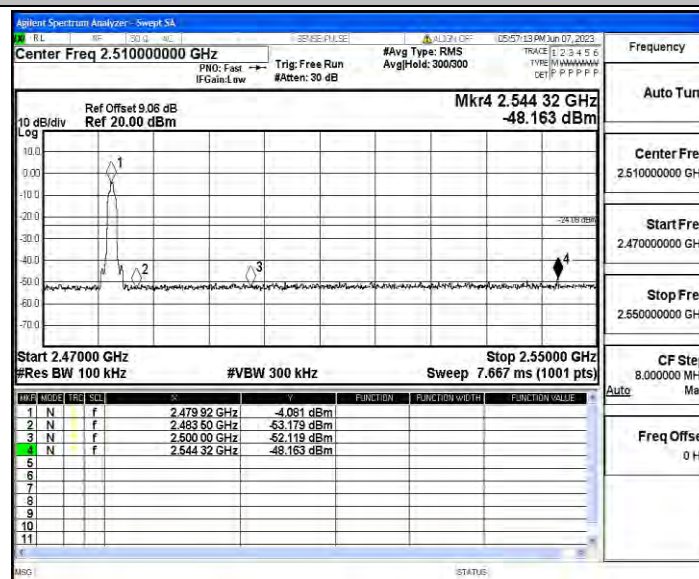
DH5_Ant1_High_Hop_2480



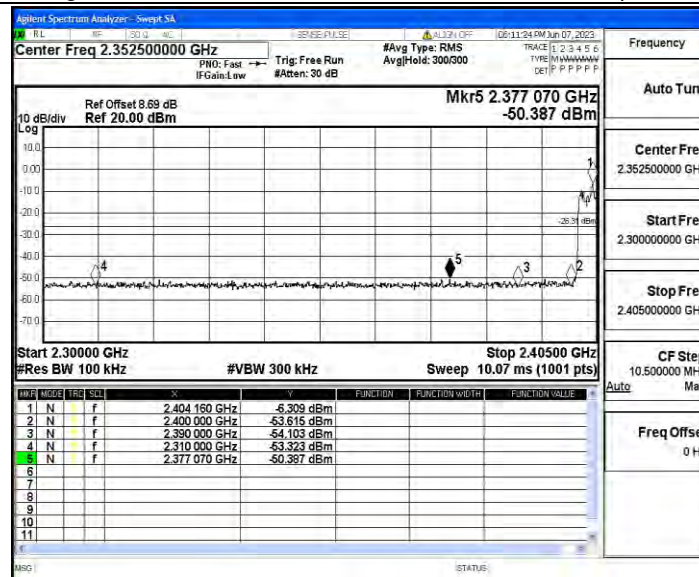
2DH5_Ant1_Low_2402



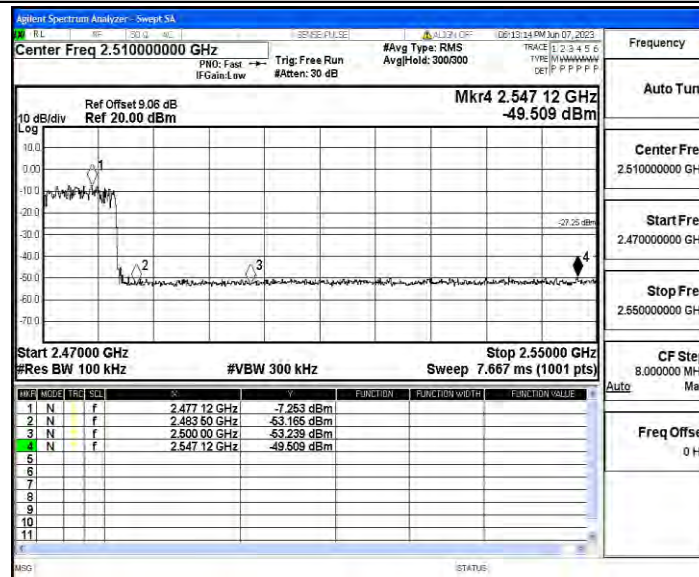
2DH5_Ant1_High_2480



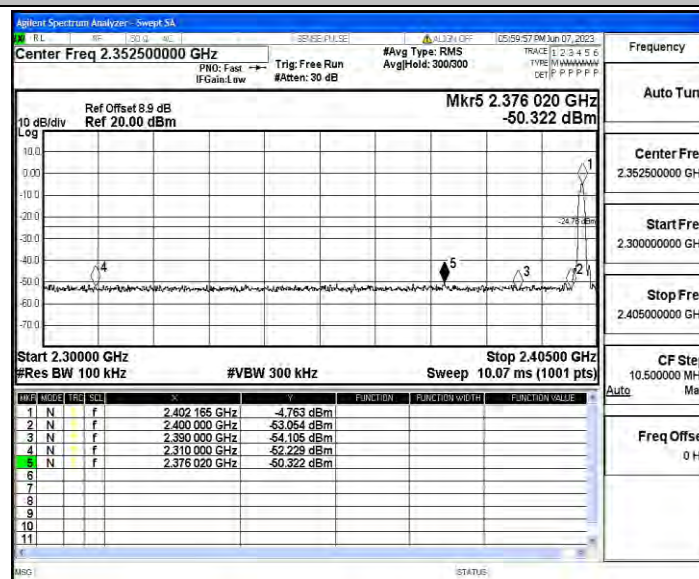
2DH5_Ant1_Low_Hop_2402



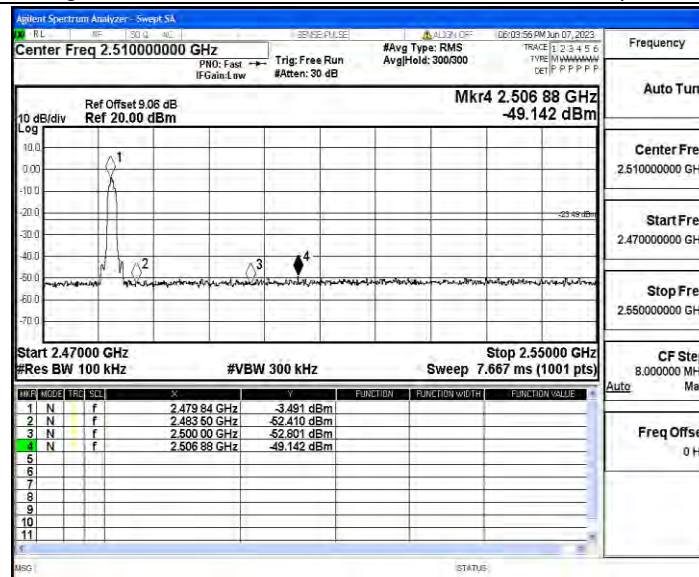
2DH5_Ant1_High_Hop_2480



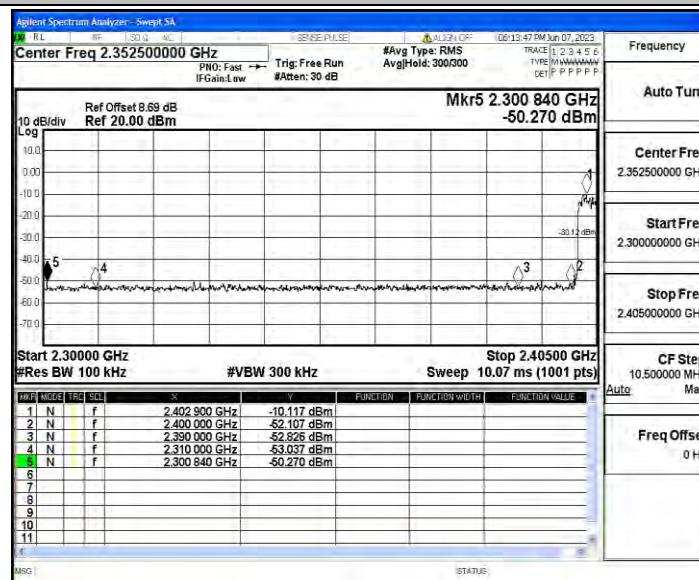
3DH5_Ant1_Low_2402



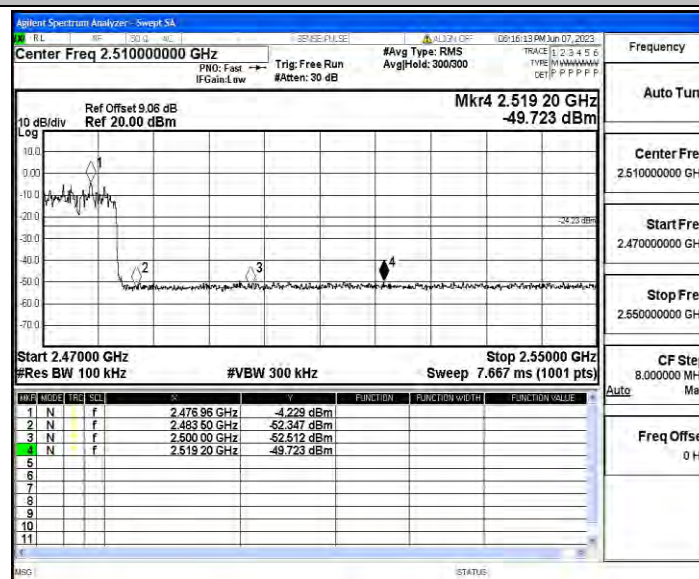
3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480



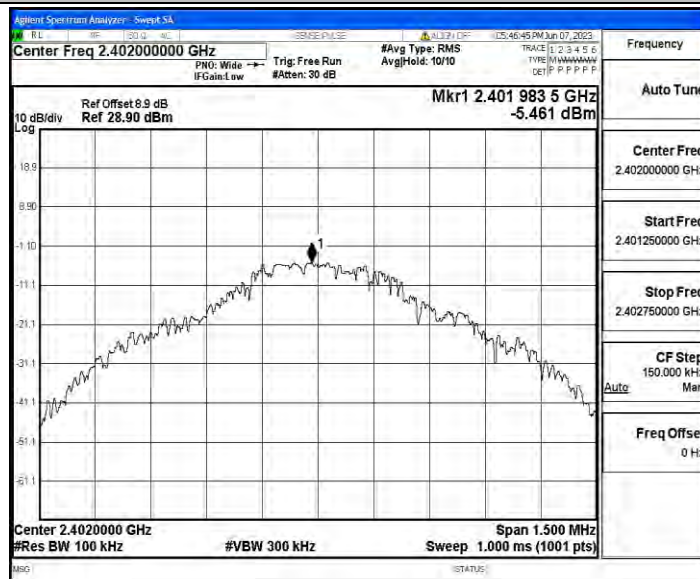
Appendix H: Conducted Spurious Emission

Test Result

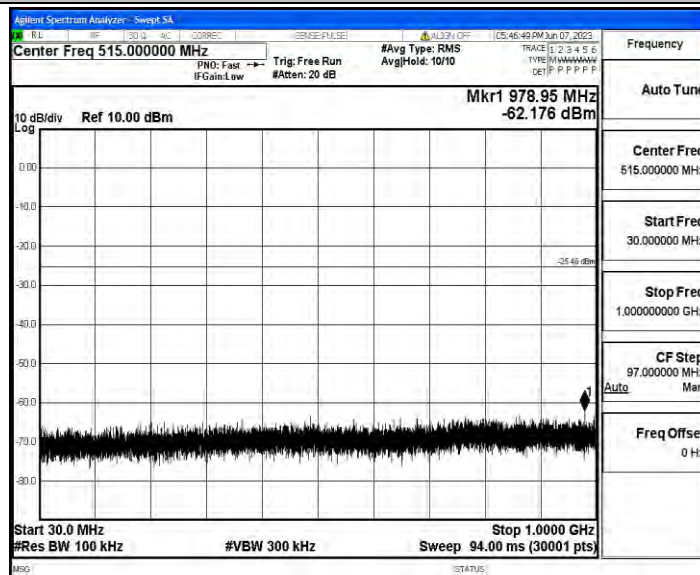
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	-5.46	-5.46	---	PASS
			30~1000	-5.46	-62.18	≤-25.46	PASS
			1000~26500	-5.46	-45.15	≤-25.46	PASS
		2441	Reference	-4.17	-4.17	---	PASS
			30~1000	-4.17	-63.07	≤-24.17	PASS
			1000~26500	-4.17	-43.78	≤-24.17	PASS
		2480	Reference	-4.10	-4.10	---	PASS
			30~1000	-4.10	-62.65	≤-24.1	PASS
			1000~26500	-4.10	-46.01	≤-24.1	PASS
2DH5	Ant1	2402	Reference	-8.85	-8.85	---	PASS
			30~1000	-8.85	-62.13	≤-28.85	PASS
			1000~26500	-8.85	-45.57	≤-28.85	PASS
		2441	Reference	-6.82	-6.82	---	PASS
			30~1000	-6.82	-62.85	≤-26.82	PASS
			1000~26500	-6.82	-44.39	≤-26.82	PASS
		2480	Reference	-7.04	-7.04	---	PASS
			30~1000	-7.04	-63.08	≤-27.04	PASS
			1000~26500	-7.04	-46.3	≤-27.04	PASS
3DH5	Ant1	2402	Reference	-6.26	-6.26	---	PASS
			30~1000	-6.26	-62.06	≤-26.26	PASS
			1000~26500	-6.26	-45.17	≤-26.26	PASS
		2441	Reference	-3.83	-3.83	---	PASS
			30~1000	-3.83	-62	≤-23.83	PASS
			1000~26500	-3.83	-44.68	≤-23.83	PASS
		2480	Reference	-3.60	-3.60	---	PASS
			30~1000	-3.60	-63.24	≤-23.6	PASS
			1000~26500	-3.60	-46.71	≤-23.6	PASS

Test Graphs

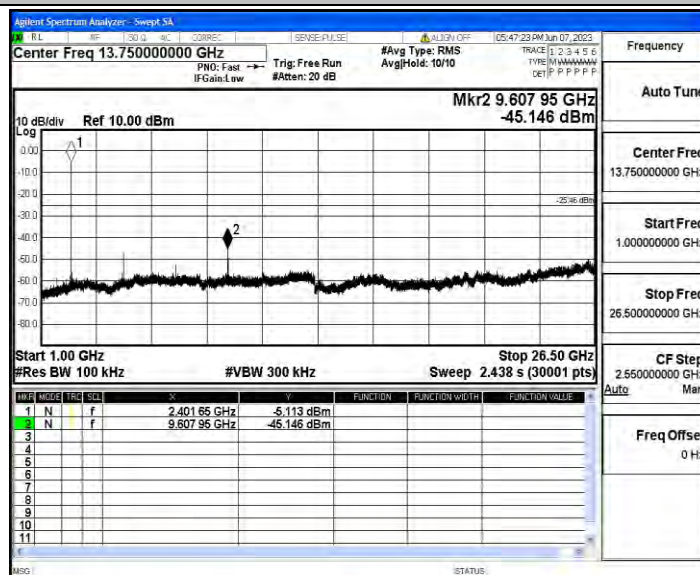
DH5_Ant1_2402_0~Reference



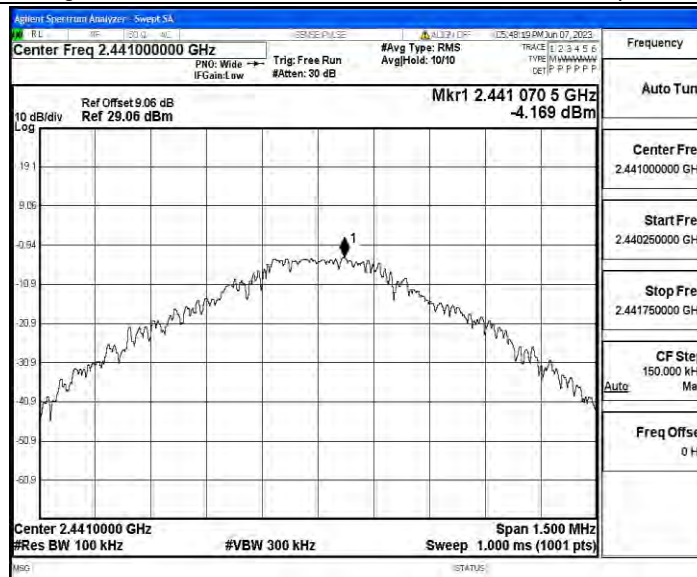
DH5_Ant1_2402_30~1000



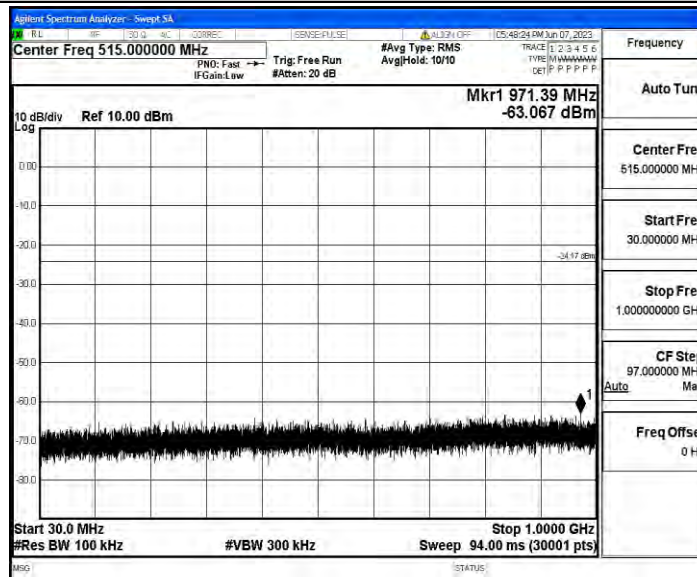
DH5_Ant1_2402_1000~26500



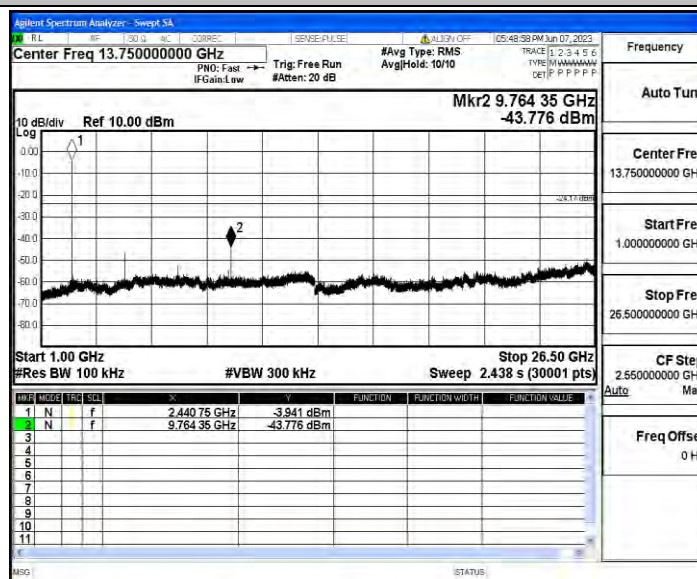
DH5_Ant1_2441_0~Reference



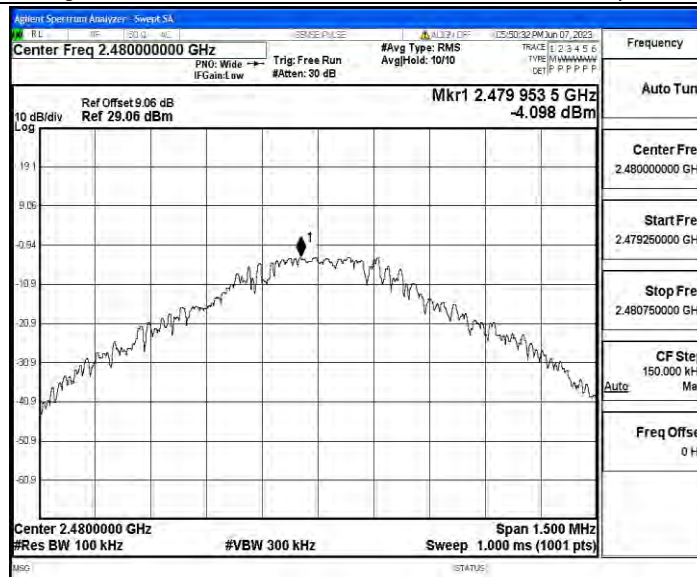
DH5_Ant1_2441_30~1000



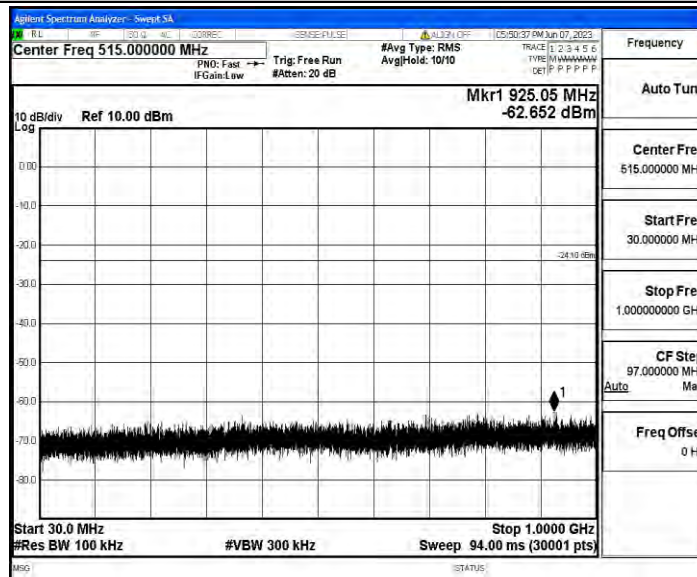
DH5_Ant1_2441_1000~26500



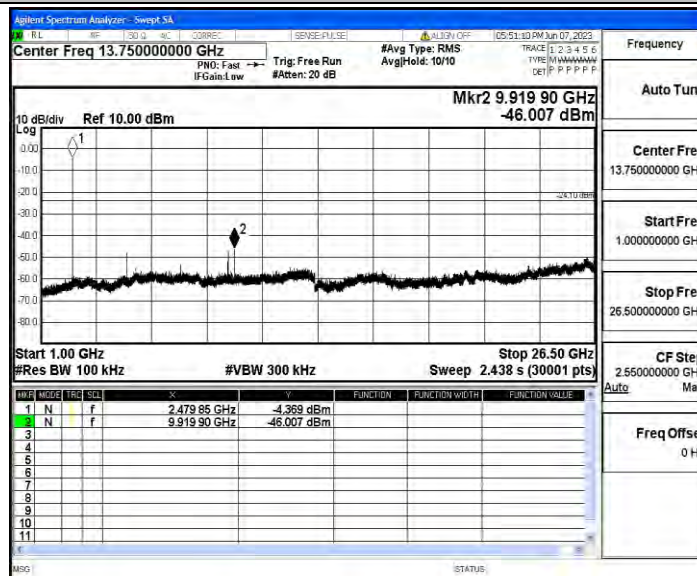
DH5_Ant1_2480_0~Reference



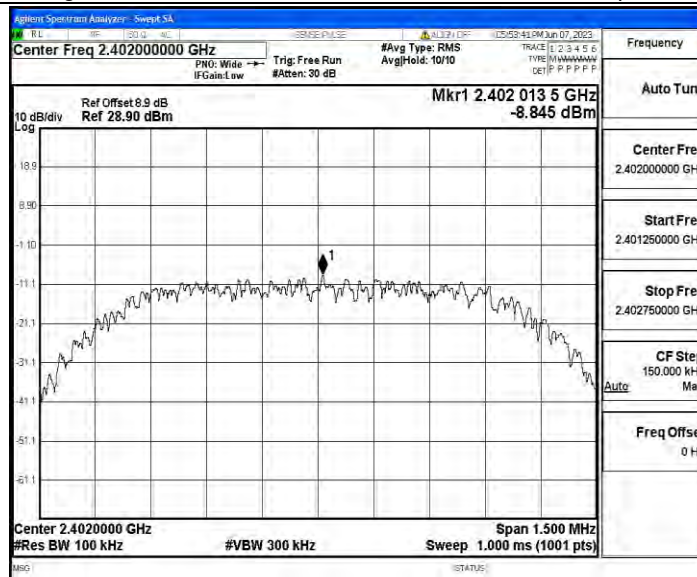
DH5_Ant1_2480_30~1000



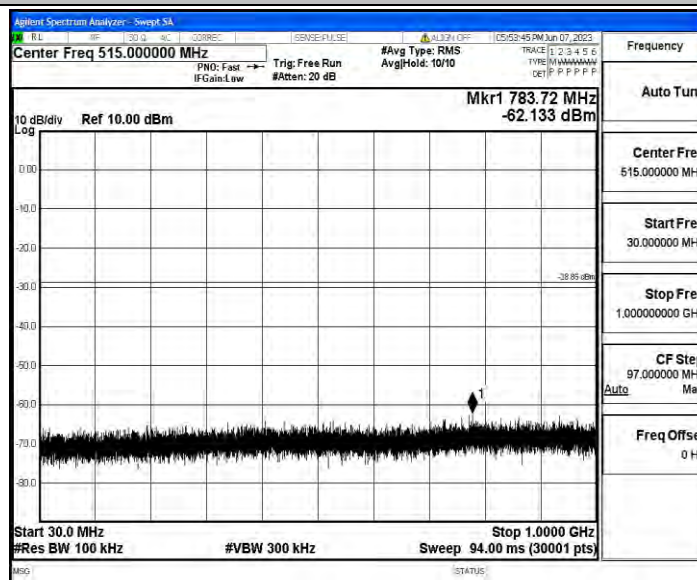
DH5_Ant1_2480_1000~26500



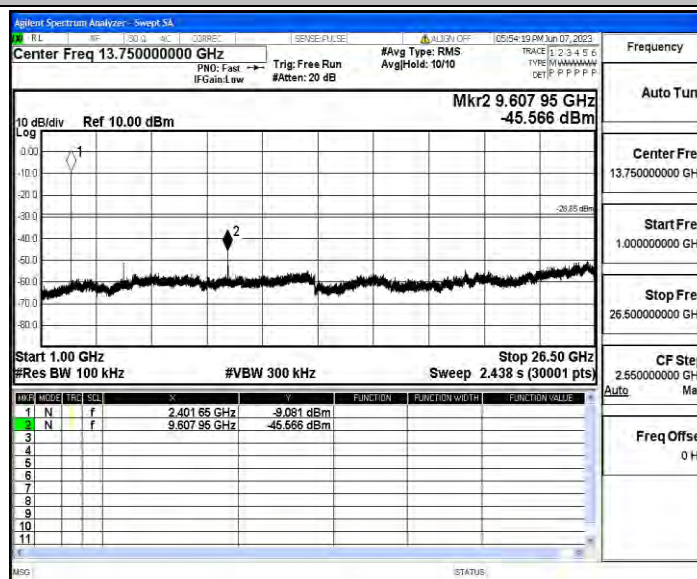
2DH5_Ant1_2402_0~Reference



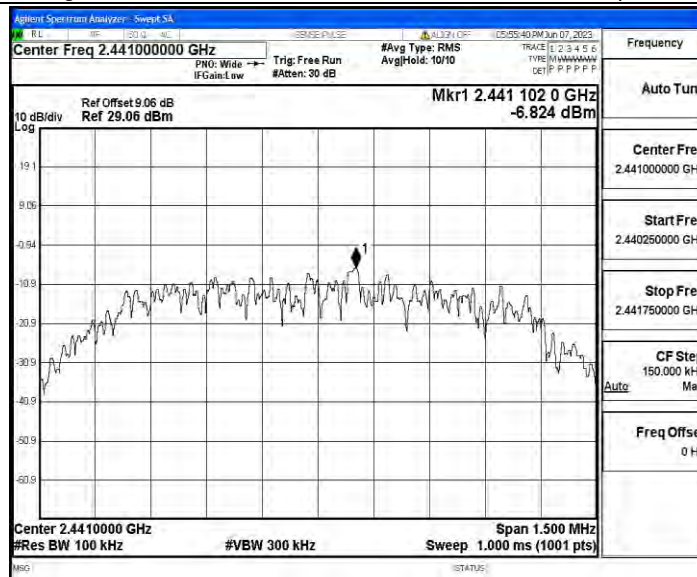
2DH5_Ant1_2402_30~1000



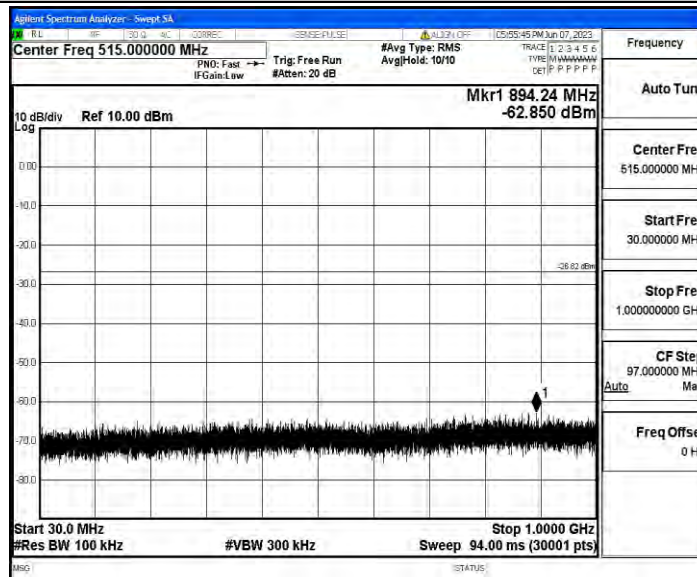
2DH5_Ant1_2402_1000~26500



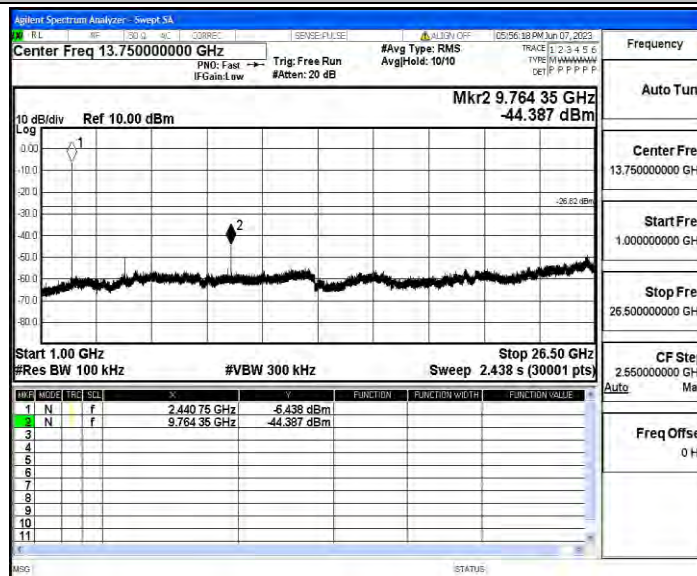
2DH5_Ant1_2441_0~Reference



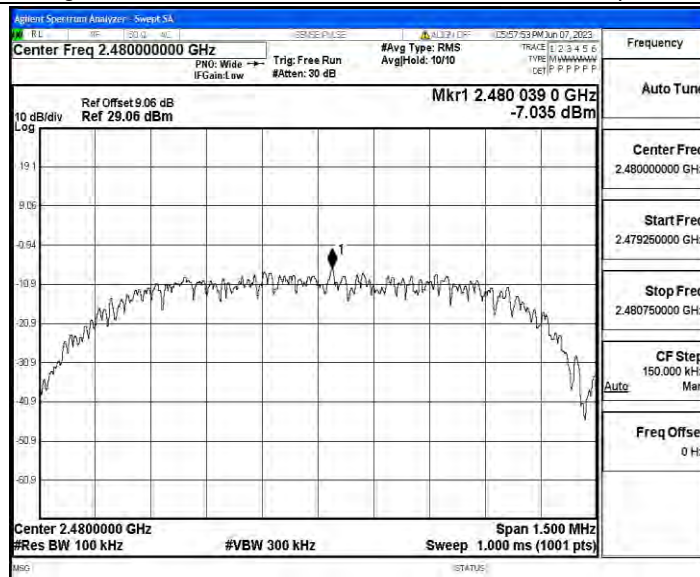
2DH5_Ant1_2441_30~1000



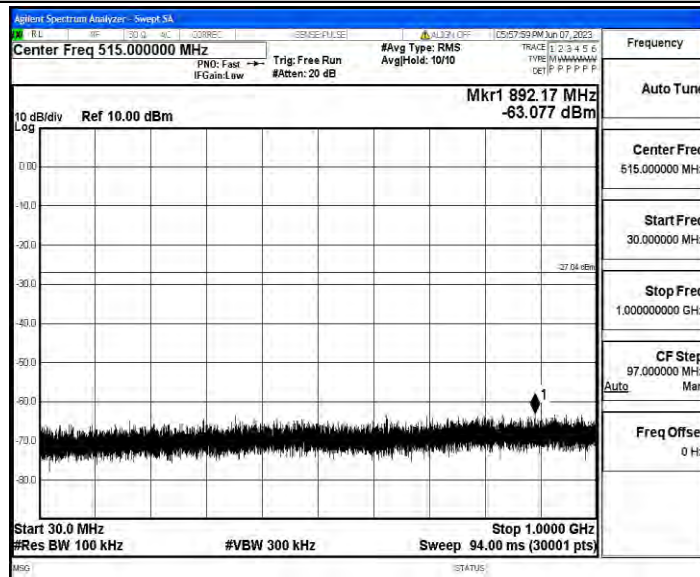
2DH5_Ant1_2441_1000~26500



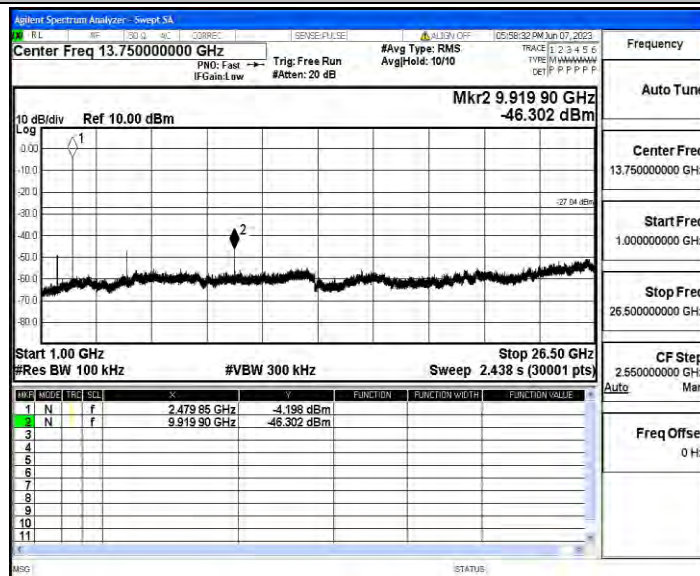
2DH5_Ant1_2480_0~Reference



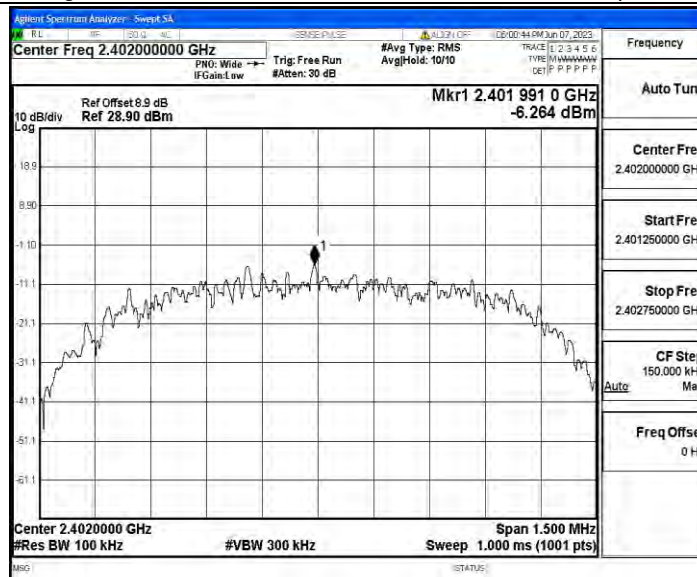
2DH5_Ant1_2480_30~1000



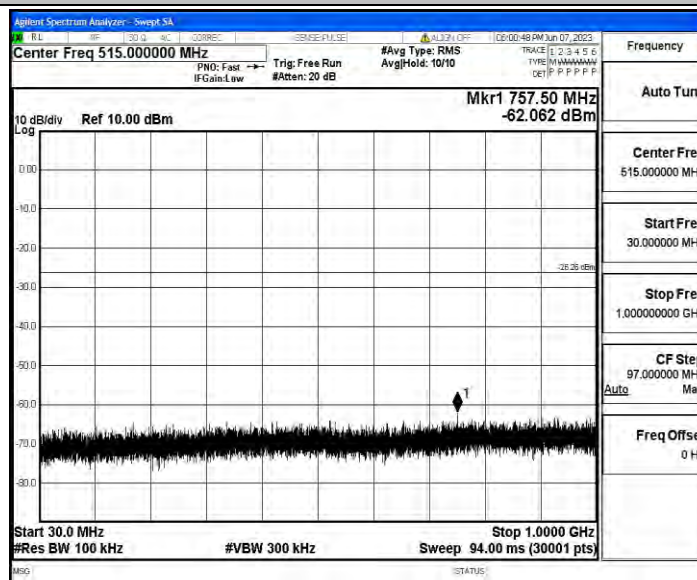
2DH5_Ant1_2480_1000~26500



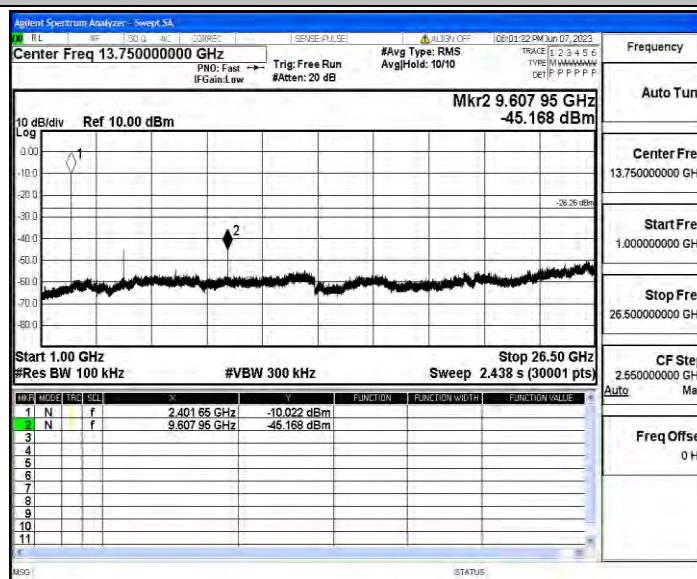
3DH5_Ant1_2402_0~Reference



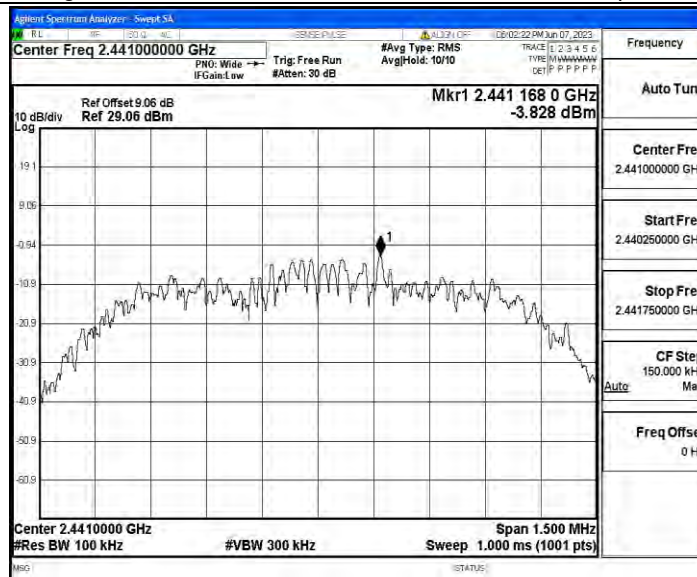
3DH5_Ant1_2402_30~1000



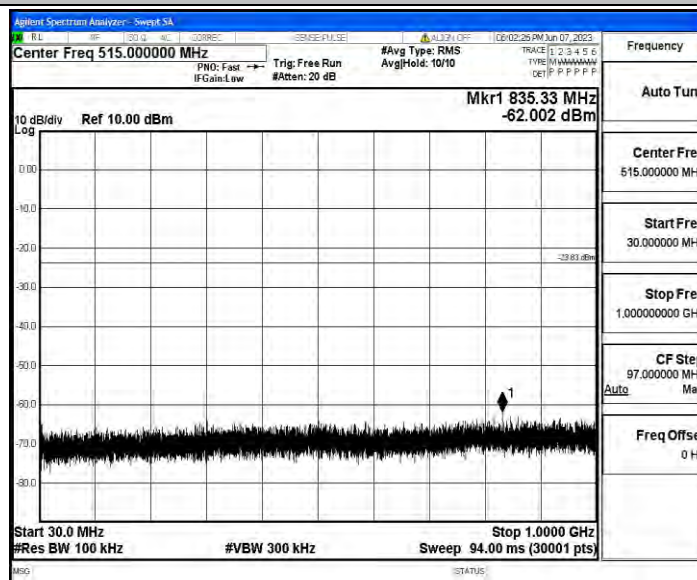
3DH5_Ant1_2402_1000~26500



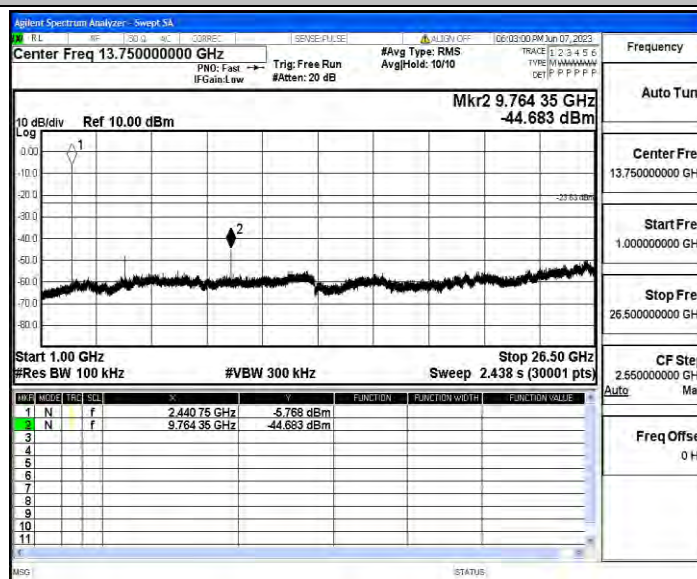
3DH5_Ant1_2441_0~Reference



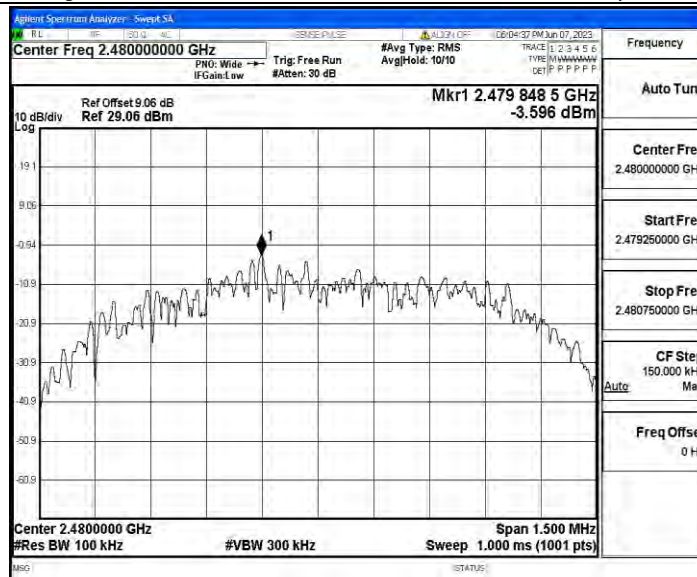
3DH5_Ant1_2441_30~1000



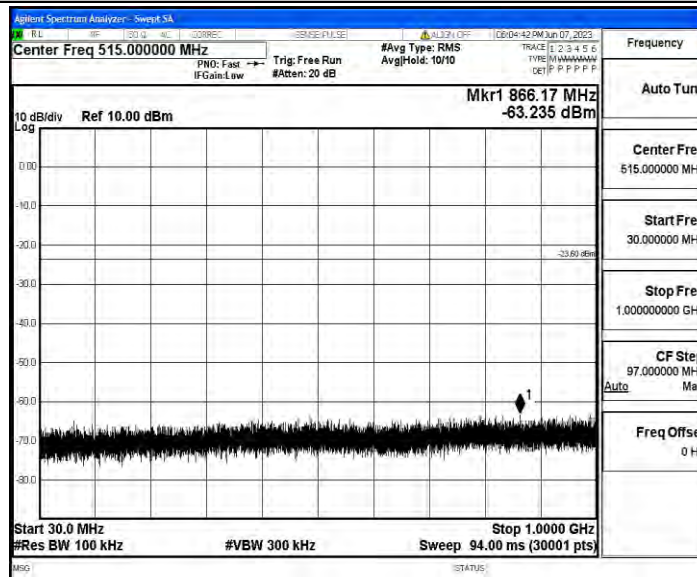
3DH5_Ant1_2441_1000~26500



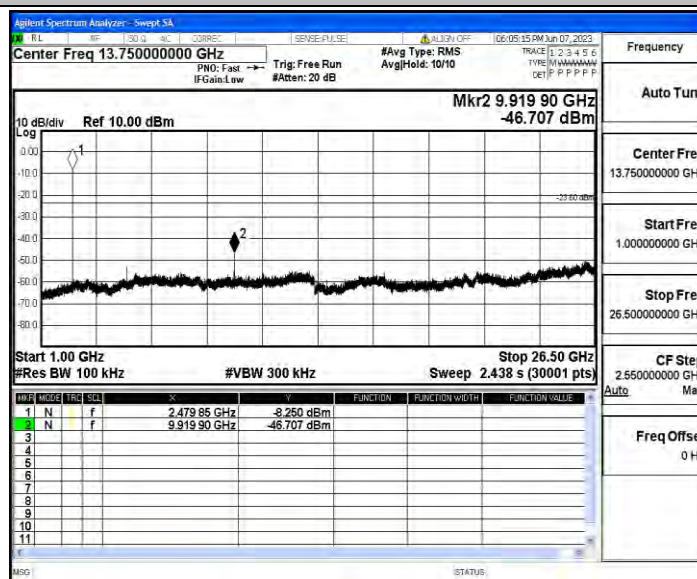
3DH5_Ant1_2480_0~Reference



3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000~26500



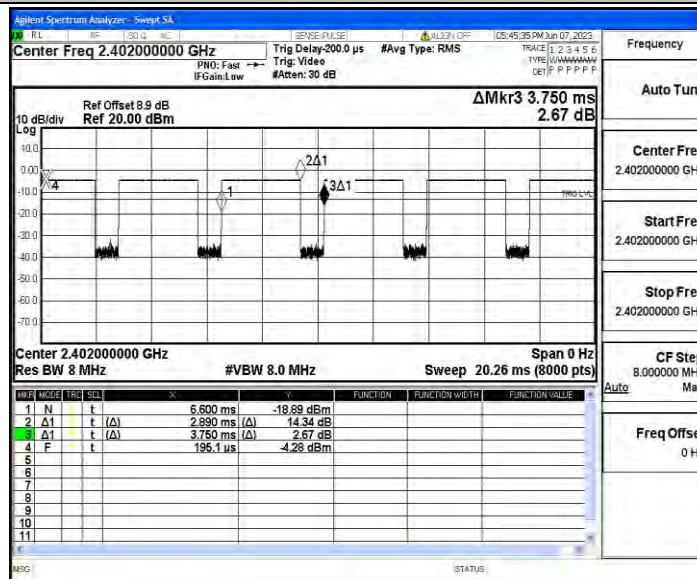
Appendix I: Duty Cycle

Test Result

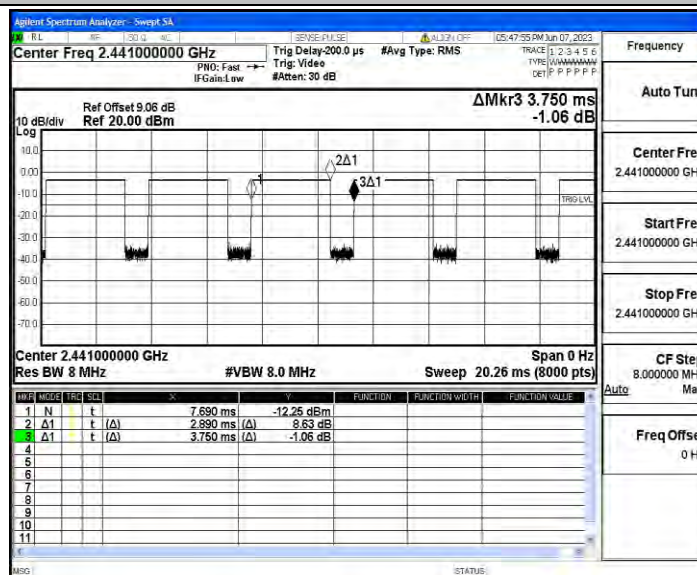
TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T[kHz]
DH5	Ant1	2402	2.89	3.75	77.07	0.35
		2441	2.89	3.75	77.07	0.35
		2480	2.90	3.76	77.13	0.34
2DH5	Ant1	2402	2.90	3.75	77.33	0.34
		2441	2.90	3.75	77.33	0.34
		2480	2.90	3.75	77.33	0.34
3DH5	Ant1	2402	2.91	3.75	77.60	0.34
		2441	2.91	3.75	77.60	0.34
		2480	2.90	3.75	77.33	0.34

Test Graphs

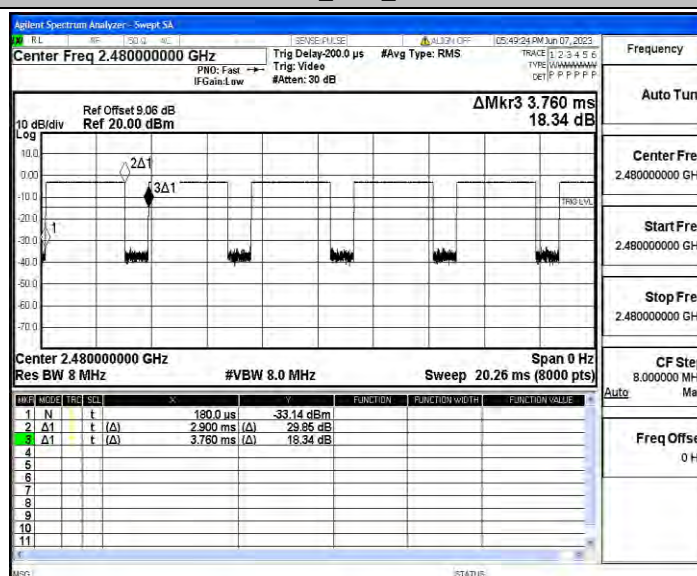
DH5_Ant1_2402



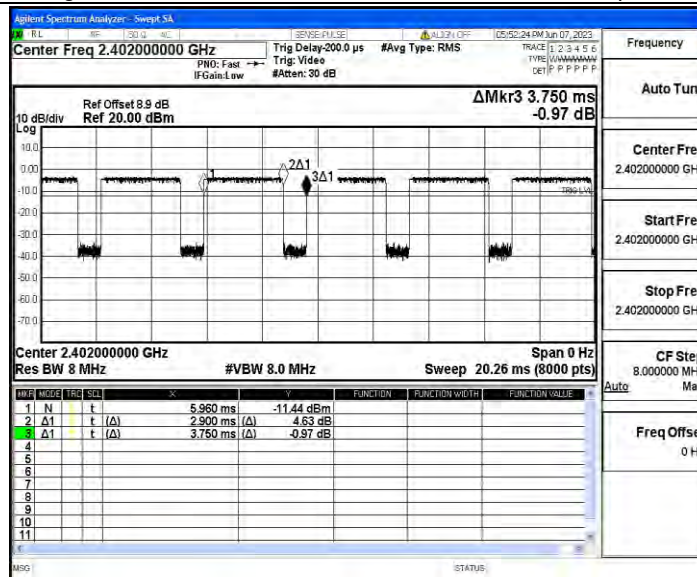
DH5_Ant1_2441



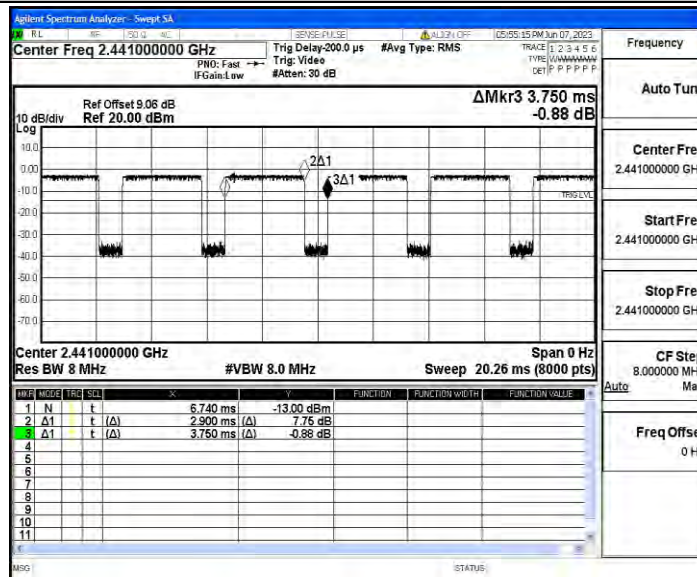
DH5_Ant1_2480



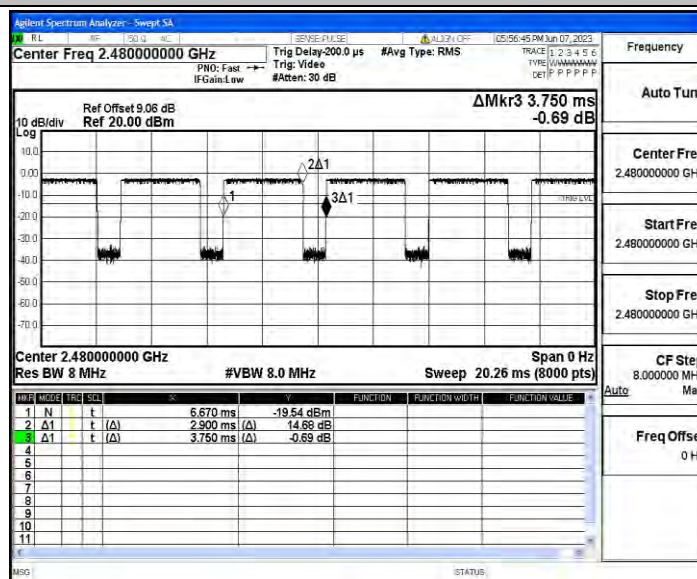
2DH5_Ant1_2402



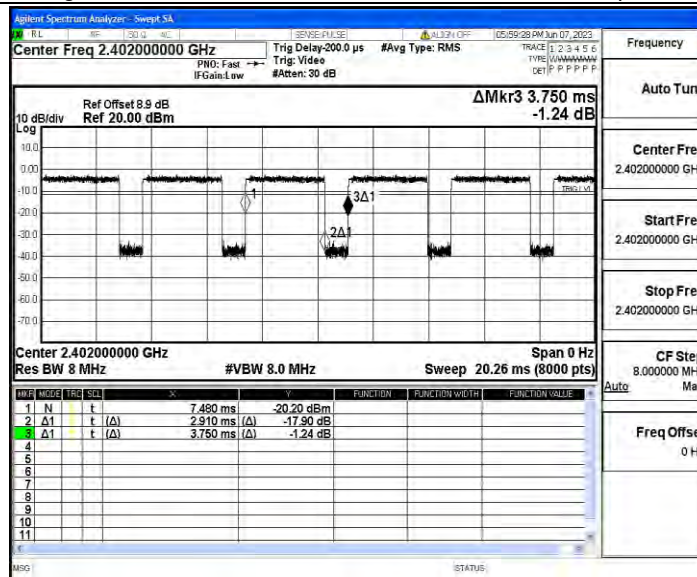
2DH5_Ant1_2441



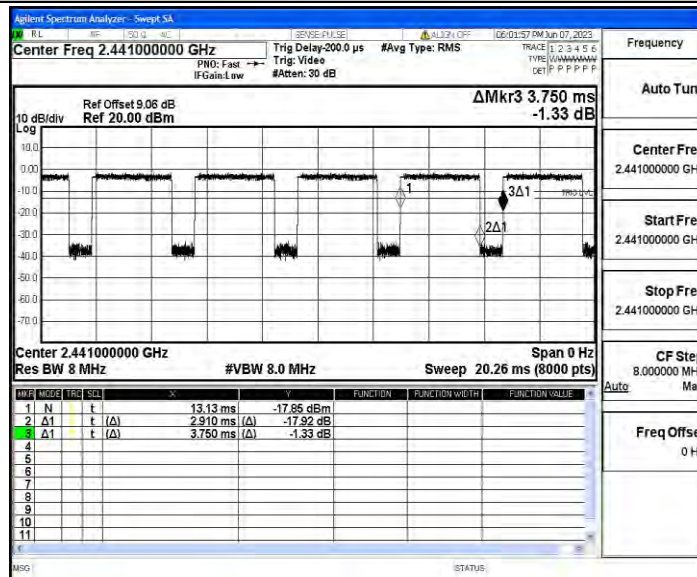
2DH5_Ant1_2480



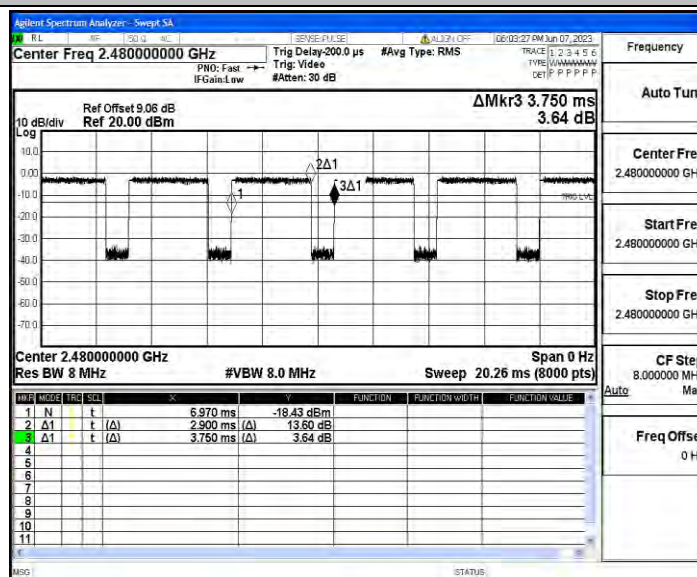
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



Appendix J: Emissions in Restricted Bands

Test Result

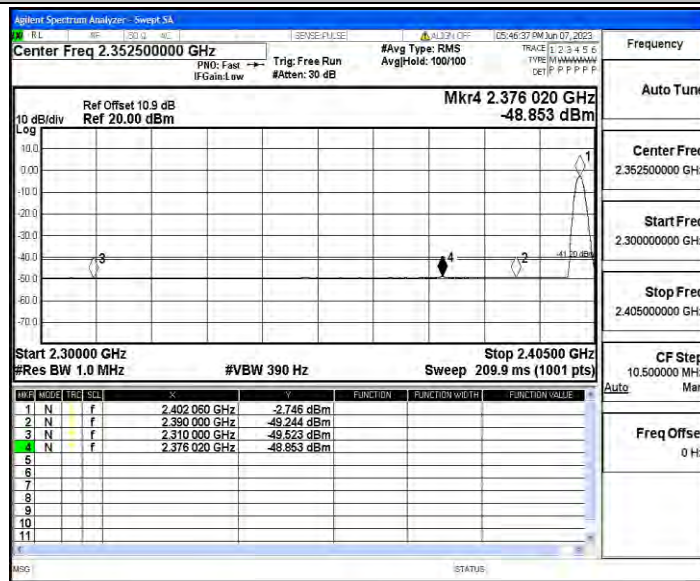
TestMode	Antenna	ChName	Channel	Detector	Freq(MHz)	Result(dBm)	Limit(dBm)	Verdict
DH5	Ant1	Low	2402	AV	2310.000	-49.52	≤-41.20	PASS
				AV	2376.020	-48.85	≤-41.20	PASS
				AV	2390.000	-49.24	≤-41.20	PASS
				Peak	2310.000	-42.62	≤-21.20	PASS
				Peak	2367.095	-38.23	≤-21.20	PASS
				Peak	2390.000	-42.63	≤-21.20	PASS
		High	2480	AV	2483.500	-48.59	≤-41.20	PASS
				AV	2499.840	-48.46	≤-41.20	PASS
				AV	2500.000	-48.46	≤-41.20	PASS
				Peak	2483.500	-41.96	≤-21.20	PASS
				Peak	2495.600	-39.3	≤-21.20	PASS
				Peak	2500.000	-42.77	≤-21.20	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-49.53	≤-41.20	PASS
				AV	2376.230	-48.89	≤-41.20	PASS
				AV	2390.000	-49.23	≤-41.20	PASS
				Peak	2310.000	-42.63	≤-21.20	PASS
				Peak	2388.515	-38.91	≤-21.20	PASS
				Peak	2390.000	-41.04	≤-21.20	PASS
		High	2480	AV	2483.500	-48.56	≤-41.20	PASS
				AV	2494.560	-48.49	≤-41.20	PASS
				AV	2500.000	-48.56	≤-41.20	PASS
				Peak	2483.500	-42.25	≤-21.20	PASS
				Peak	2485.680	-38.89	≤-21.20	PASS
				Peak	2500.000	-41.44	≤-21.20	PASS
3DH5	Ant1	Low	2402	AV	2310.000	-49.54	≤-41.20	PASS
				AV	2375.915	-49.01	≤-41.20	PASS
				AV	2390.000	-49.21	≤-41.20	PASS
				Peak	2310.000	-42.56	≤-21.20	PASS
				Peak	2339.165	-39.54	≤-21.20	PASS
				Peak	2390.000	-42.73	≤-21.20	PASS
		High	2480	AV	2483.500	-48.57	≤-41.20	PASS
				AV	2499.920	-48.36	≤-41.20	PASS
				AV	2500.000	-48.34	≤-41.20	PASS
				Peak	2483.500	-41.49	≤-21.20	PASS
				Peak	2499.120	-39.46	≤-21.20	PASS
				Peak	2500.000	-39.47	≤-21.20	PASS

Note:

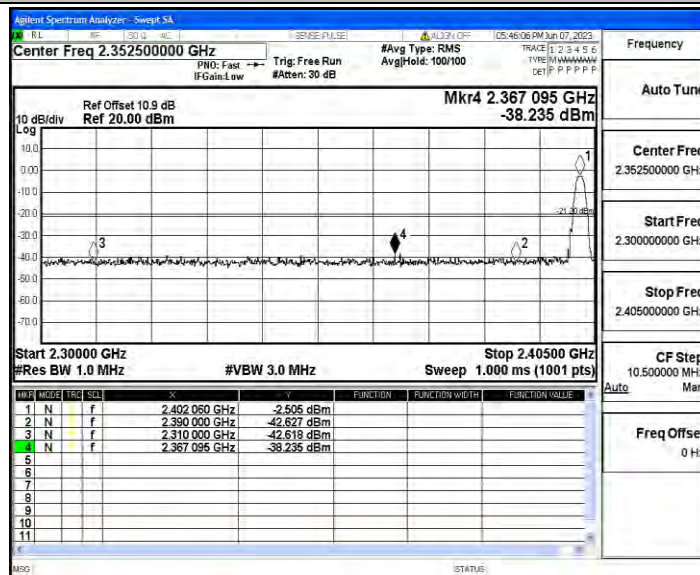
1. The Antenna Gain is compensated in the graph with 2dBi and Antenna Gain which is Higher.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

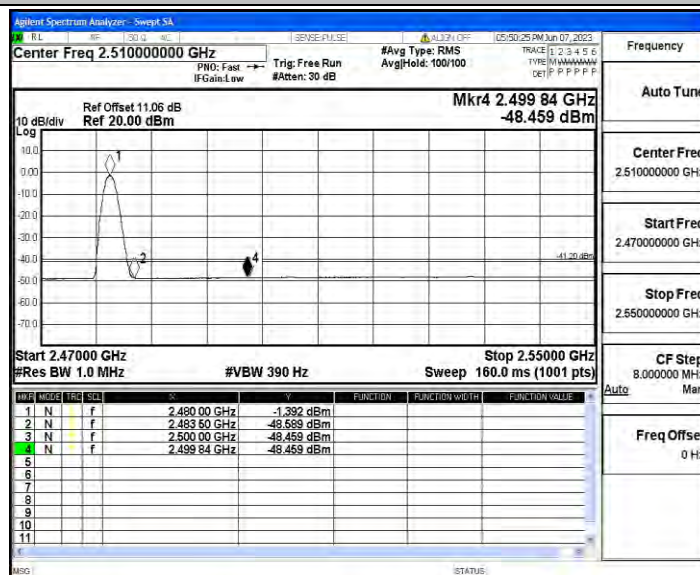
DH5_Ant1_Low_2402_AV



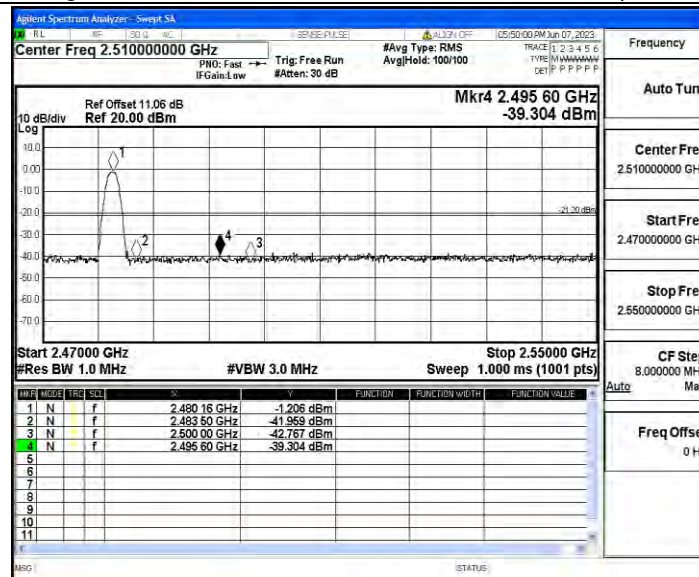
DH5_Ant1_Low_2402_Peak



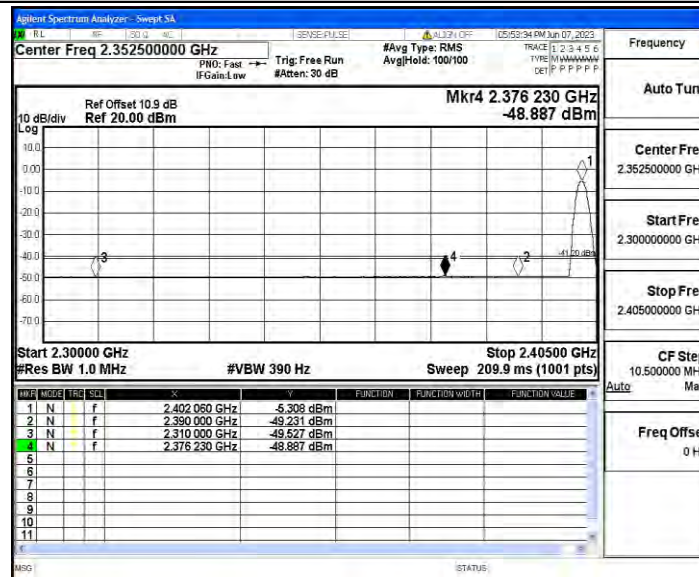
DH5_Ant1_High_2480_AV



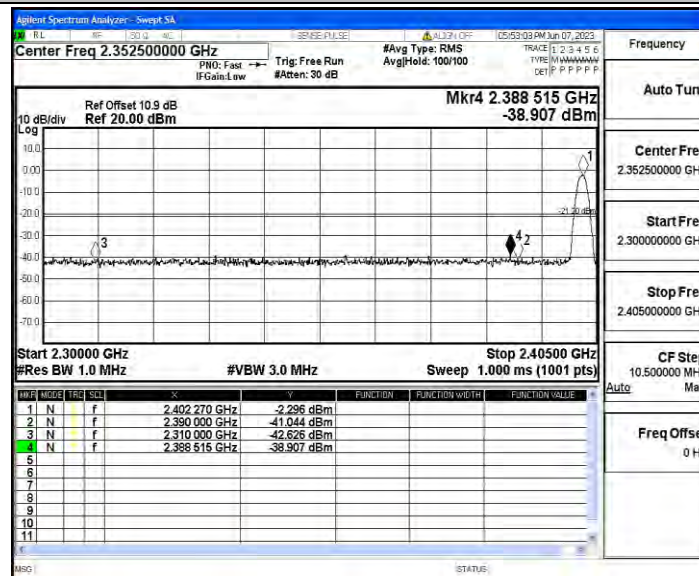
DH5_Ant1_High_2480_Peak



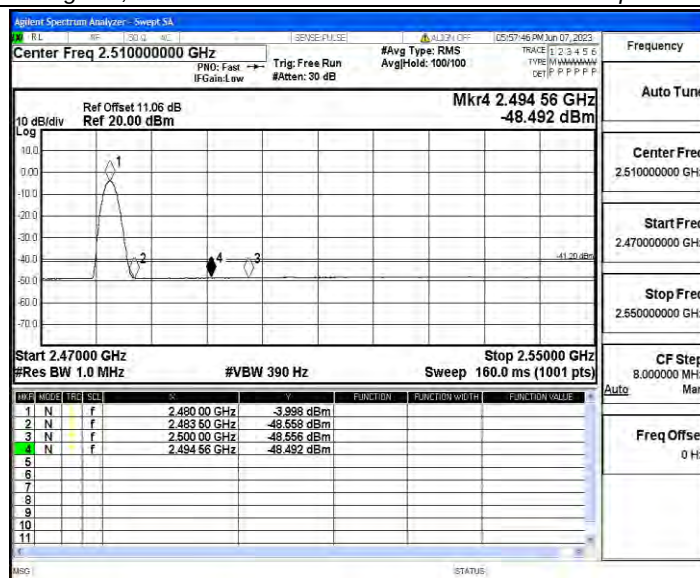
2DH5_Ant1_Low_2402_AV



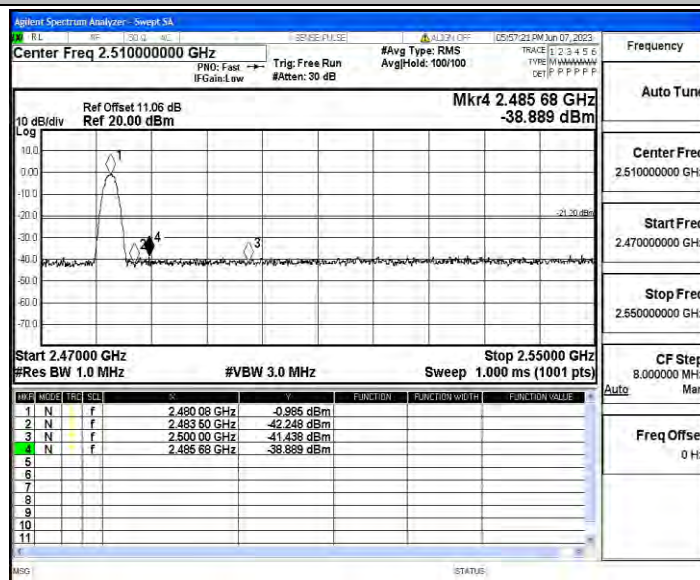
2DH5_Ant1_Low_2402_Peak



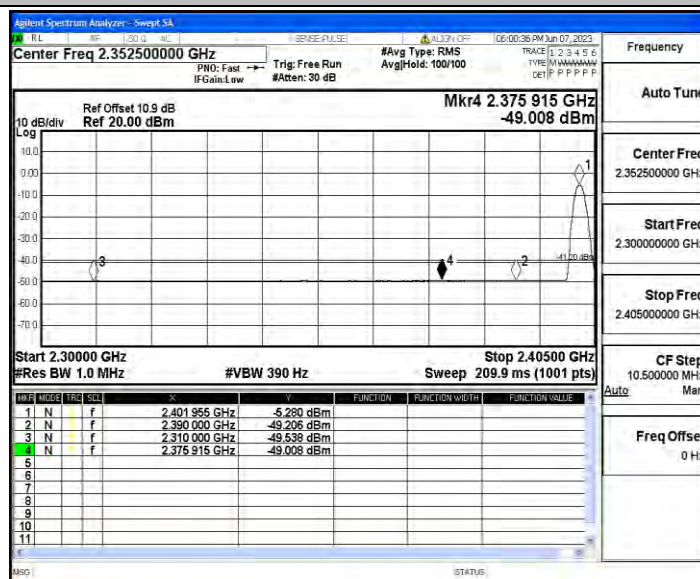
2DH5_Ant1_High_2480_AV



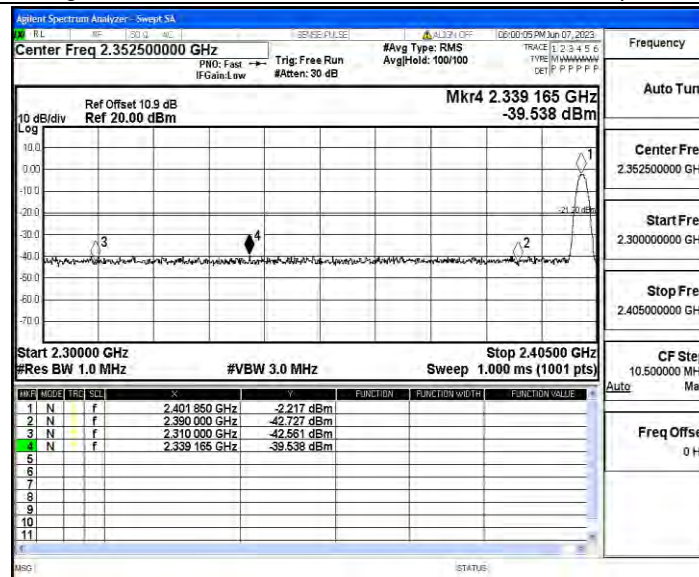
2DH5_Ant1_High_2480_Peak



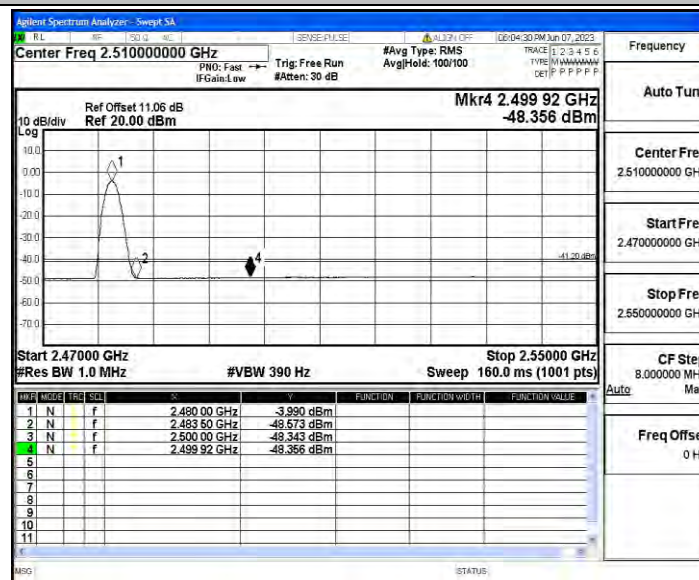
3DH5_Ant1_Low_2402_AV



3DH5_Ant1_Low_2402_Peak



3DH5_Ant1_High_2480_AV



3DH5_Ant1_High_2480_Peak

