



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Smart Watch

Test Model: TS21

Environmental Conditions

Temperature:	24.6° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Ken He
Supervised by:	Li Huan

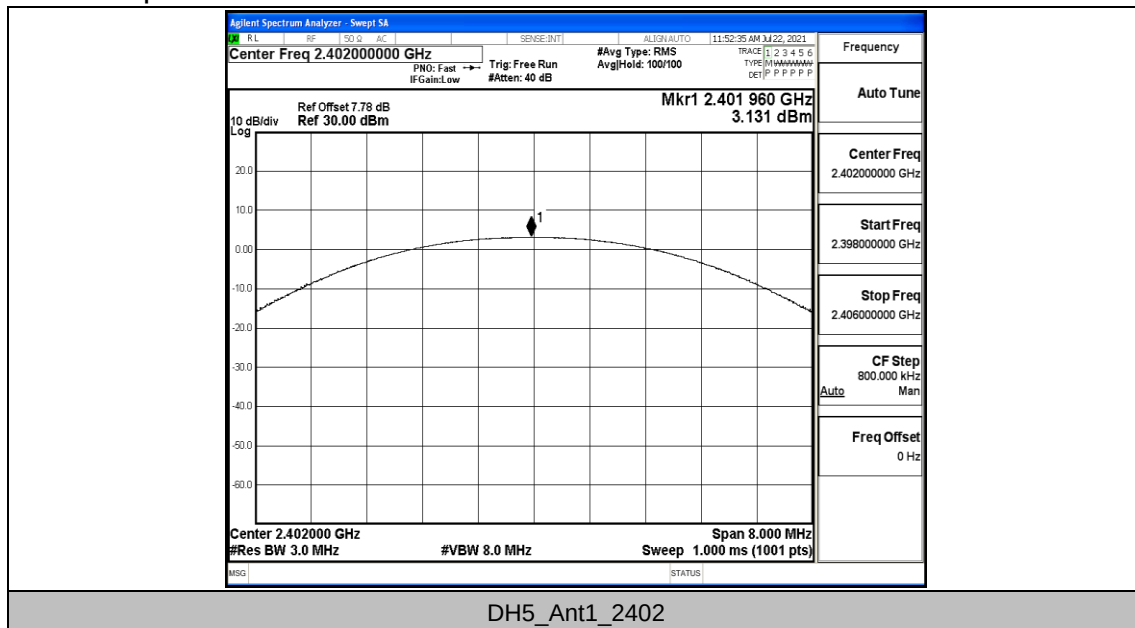


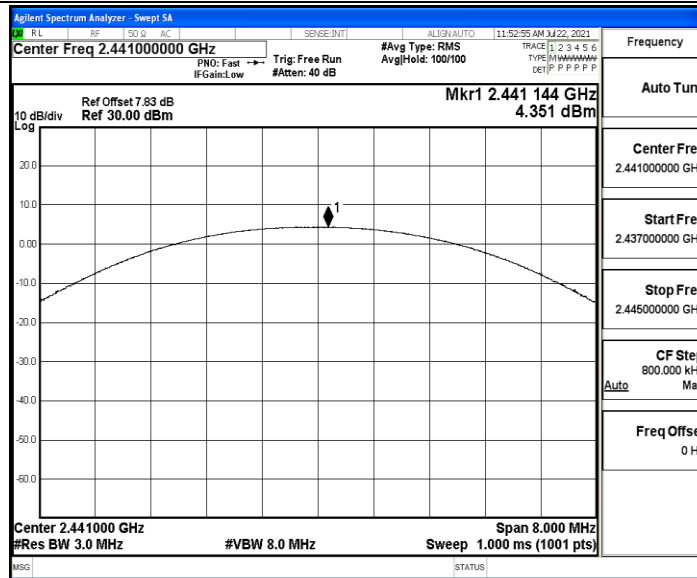
A.1 Maximum conducted output power

Test Result

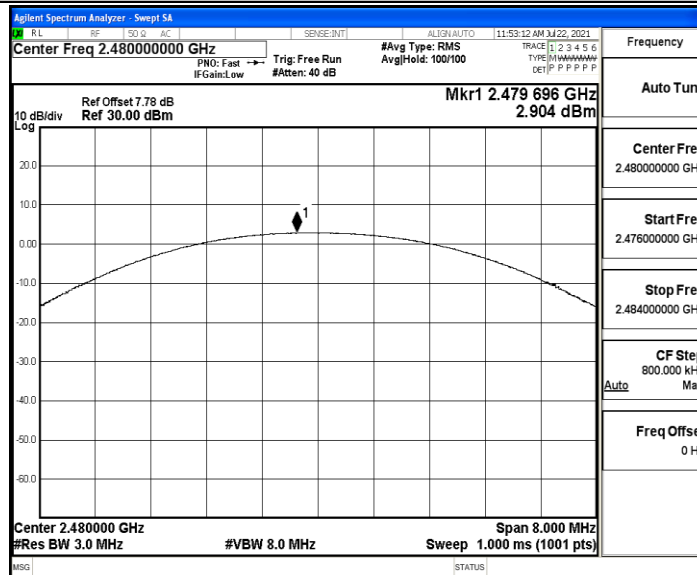
TestMode	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	2402	3.13	≤30	PASS
	2441	4.35	≤30	PASS
	2480	2.9	≤30	PASS
2DH5	2402	2.35	≤21	PASS
	2441	3.46	≤21	PASS
	2480	2.13	≤21	PASS
3DH5	2402	2.37	≤21	PASS
	2441	3.64	≤21	PASS
	2480	2.26	≤21	PASS

Test Graphs

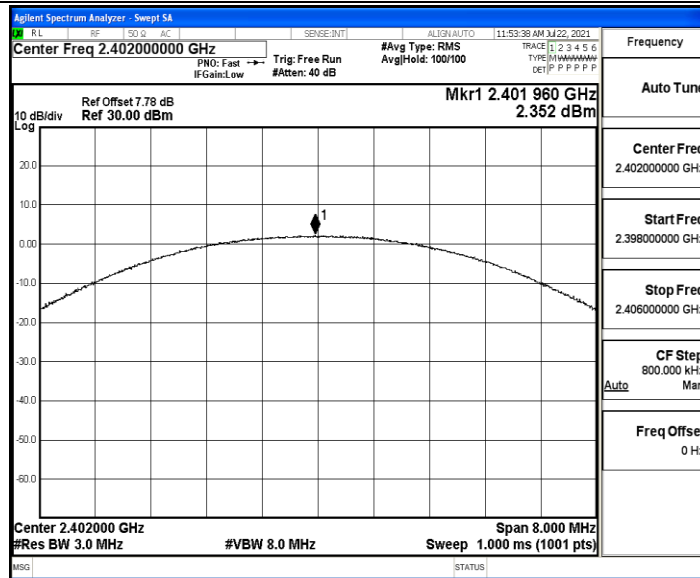




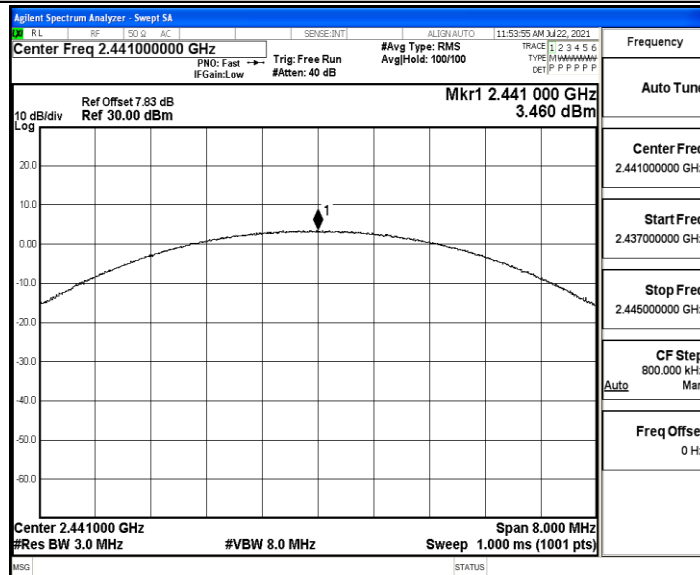
DH5_Ant1_2441



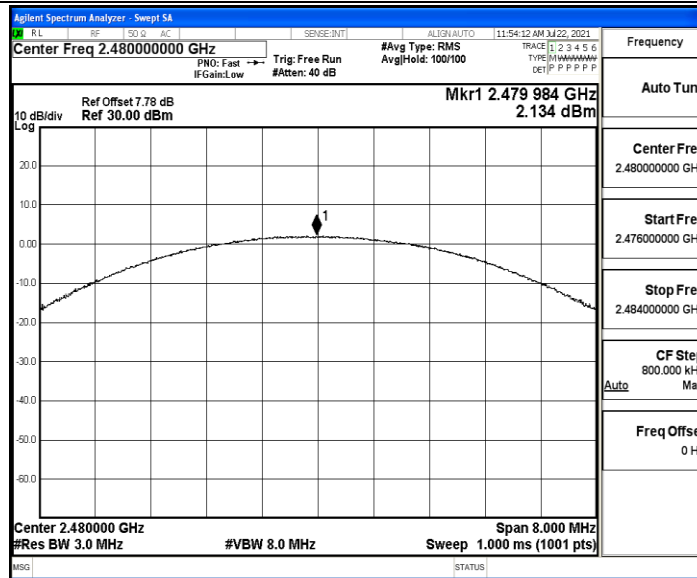
DH5_Ant1_2480



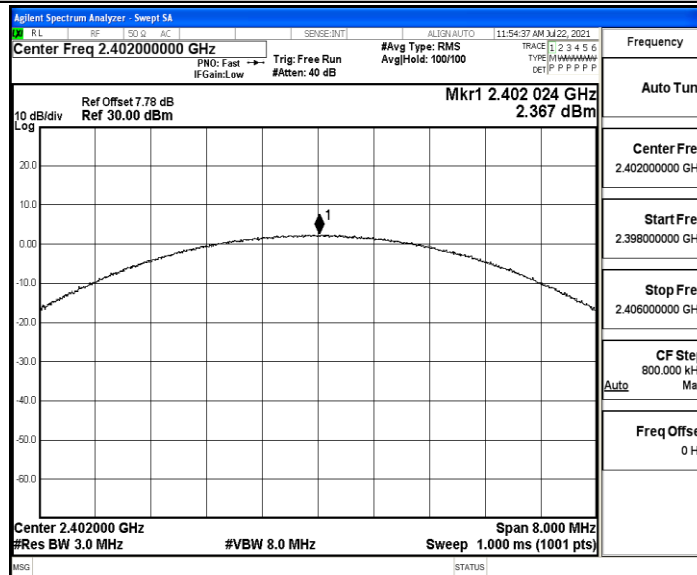
2DH5_Ant1_2402



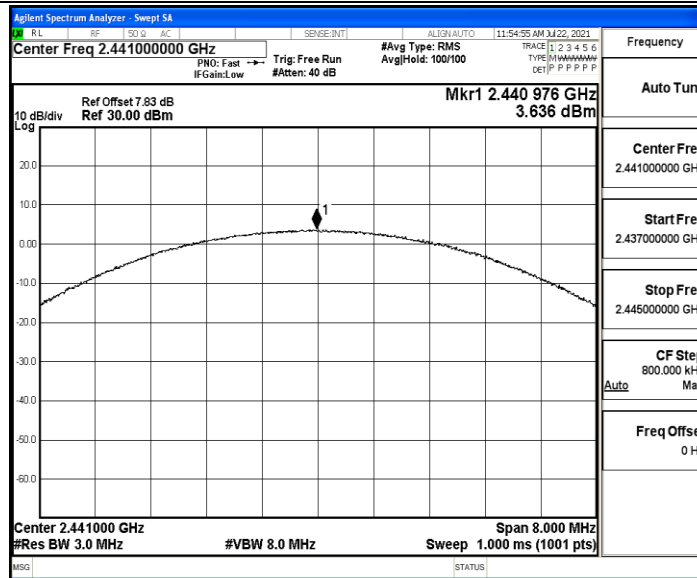
2DH5_Ant1_2441



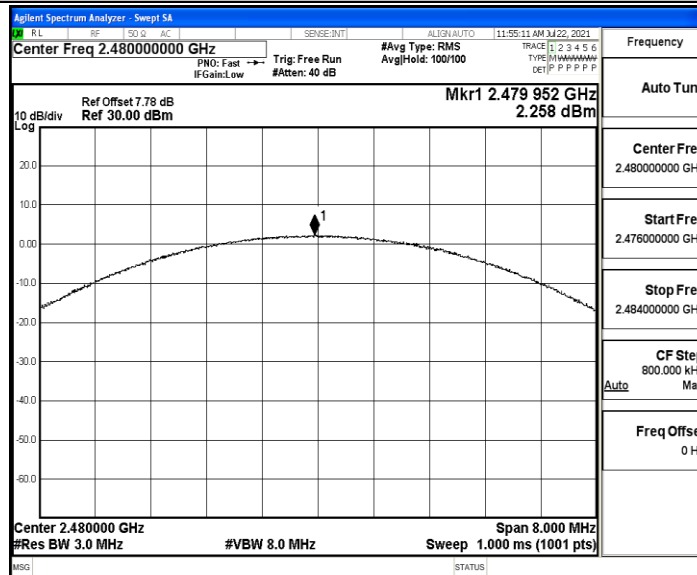
2DH5_Ant1_2480



3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

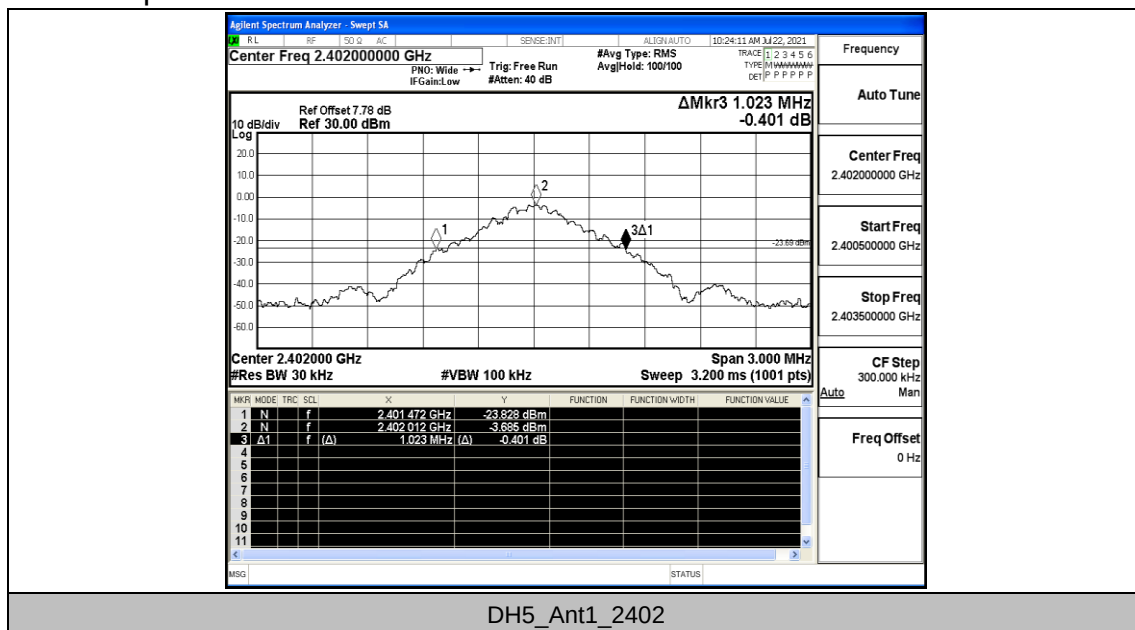


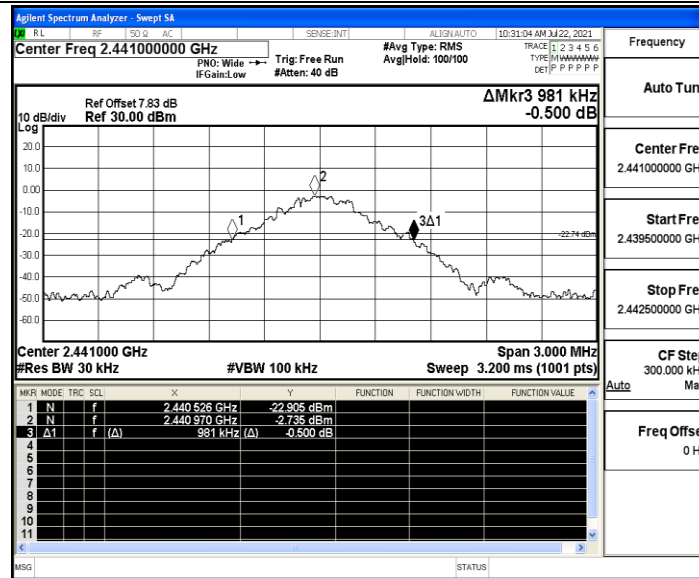
A.2 20dB Emission Bandwidth

Test Result

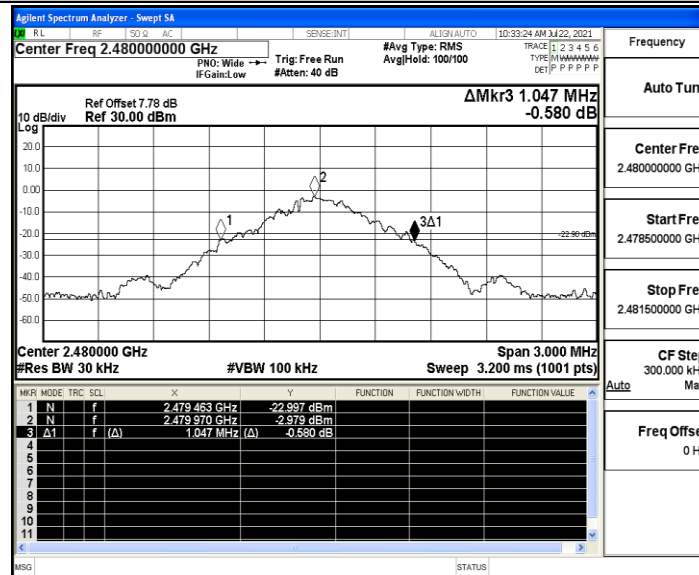
TestMode	Channel	20db EBW[MHz]	Limit[MHz]	Verdict
DH5	2402	1.023	---	PASS
	2441	0.981	---	PASS
	2480	1.047	---	PASS
2DH5	2402	1.287	---	PASS
	2441	1.329	---	PASS
	2480	1.293	---	PASS
3DH5	2402	1.341	---	PASS
	2441	1.302	---	PASS
	2480	1.314	---	PASS

Test Graphs

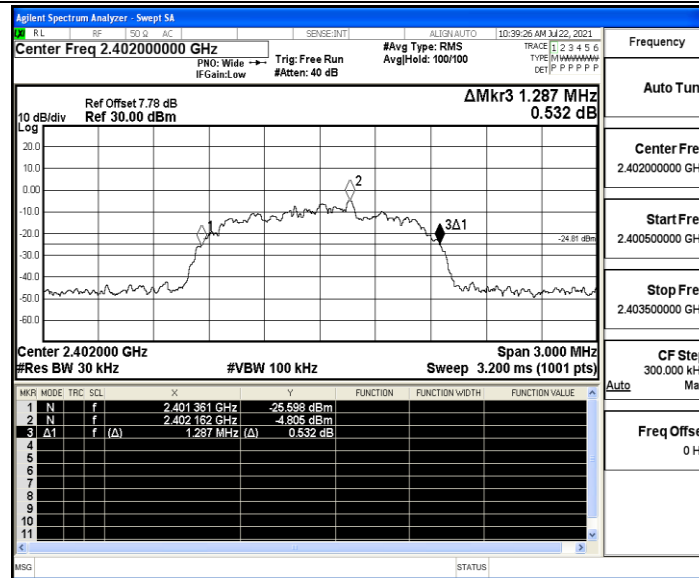




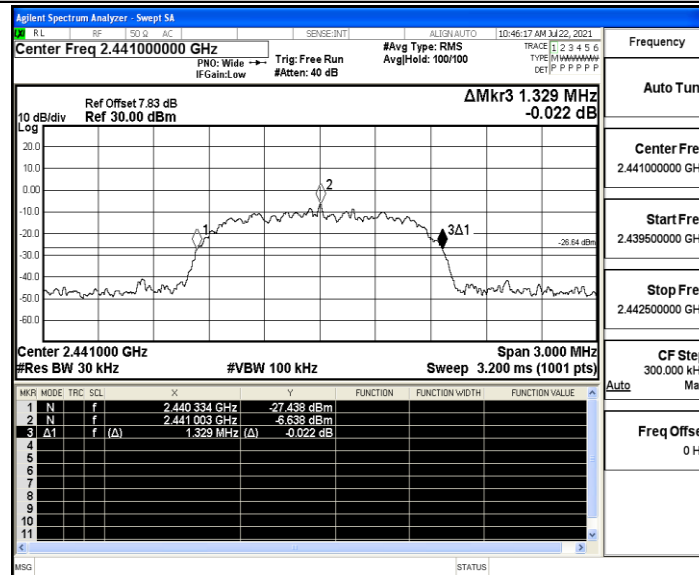
DH5_Ant1_2441



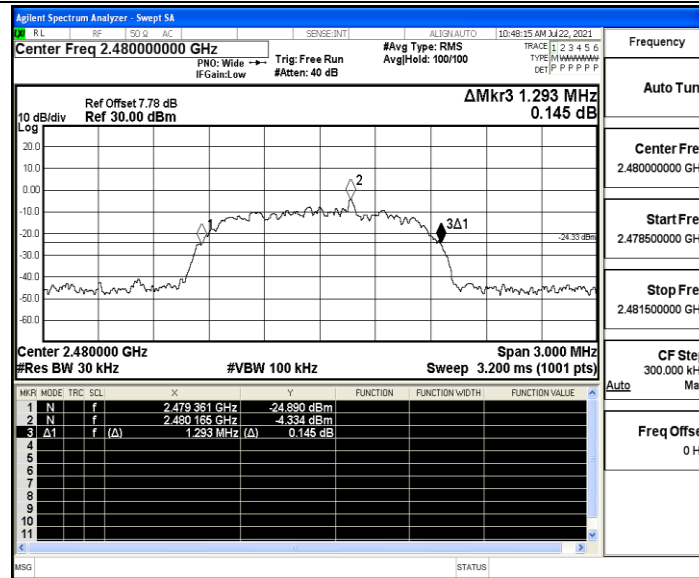
DH5_Ant1_2480



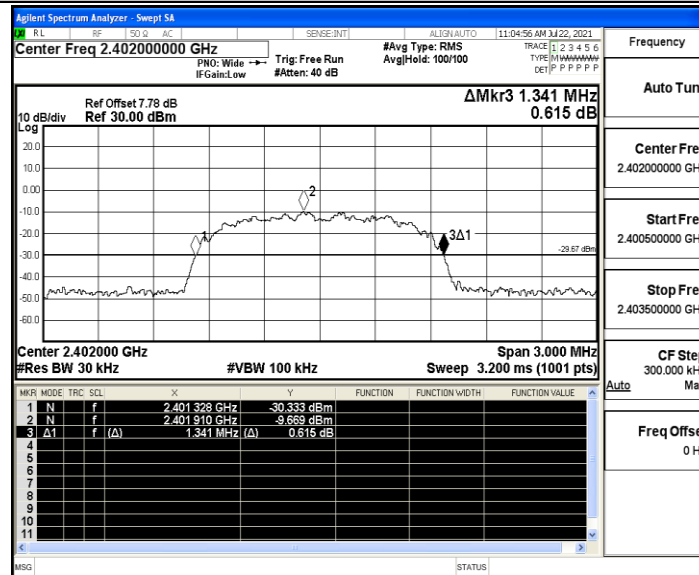
2DH5_Ant1_2402



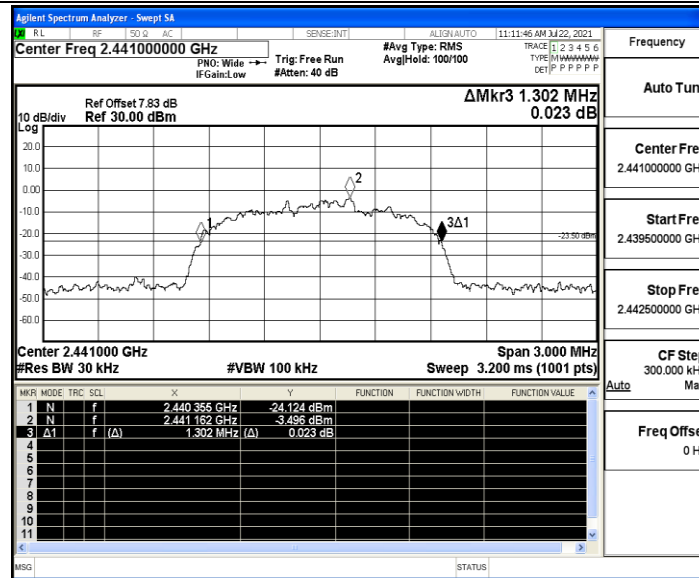
2DH5_Ant1_2441



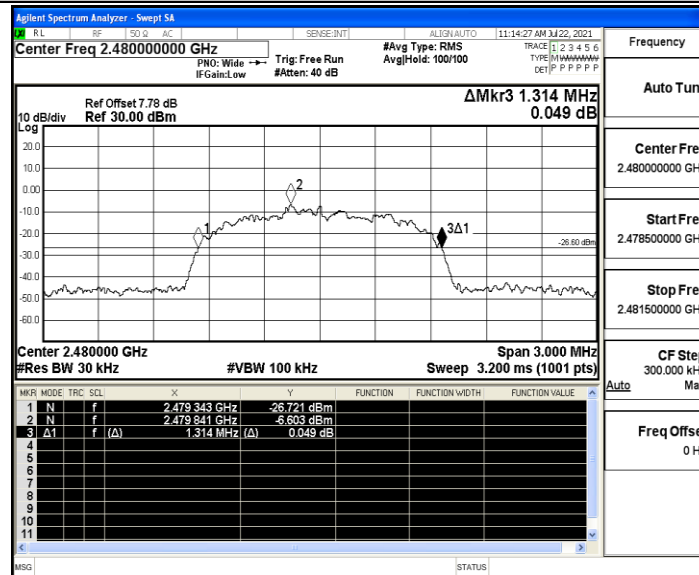
2DH5_Ant1_2480



3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

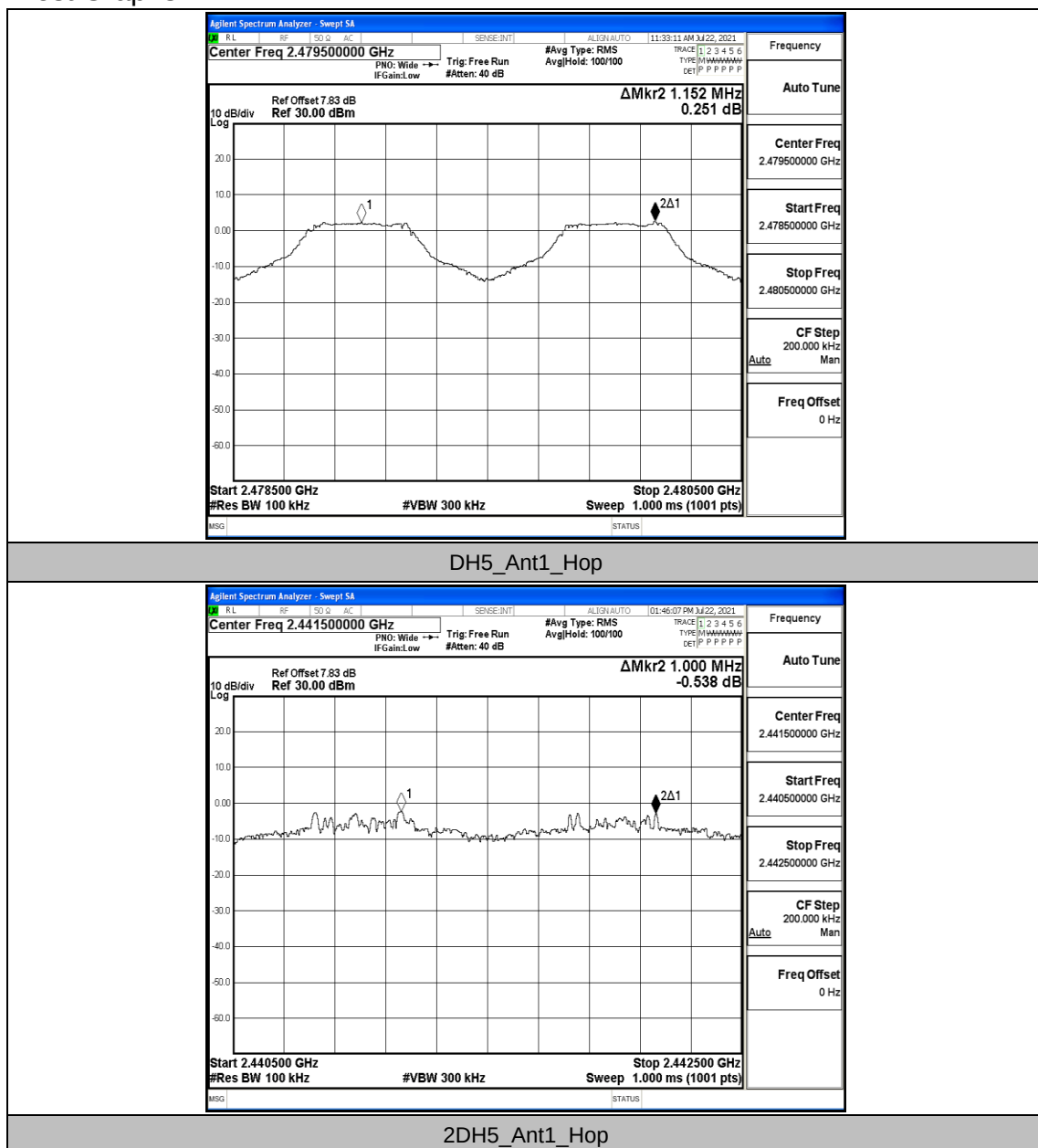


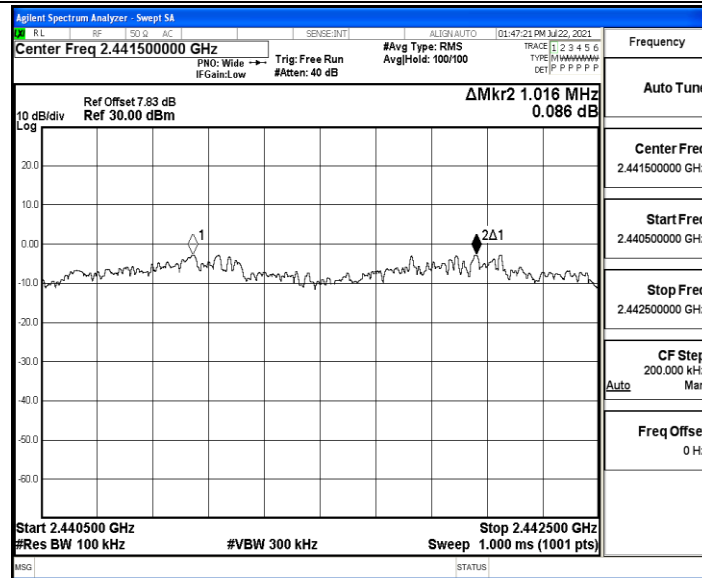
A.3 Carrier frequency separation

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	Hop	1.152	≥ 1.047	PASS
2DH5	Ant1	Hop	1.0	≥ 0.886	PASS
3DH5	Ant1	Hop	1.016	≥ 0.894	PASS

Test Graphs





3DH5_Ant1_Hop

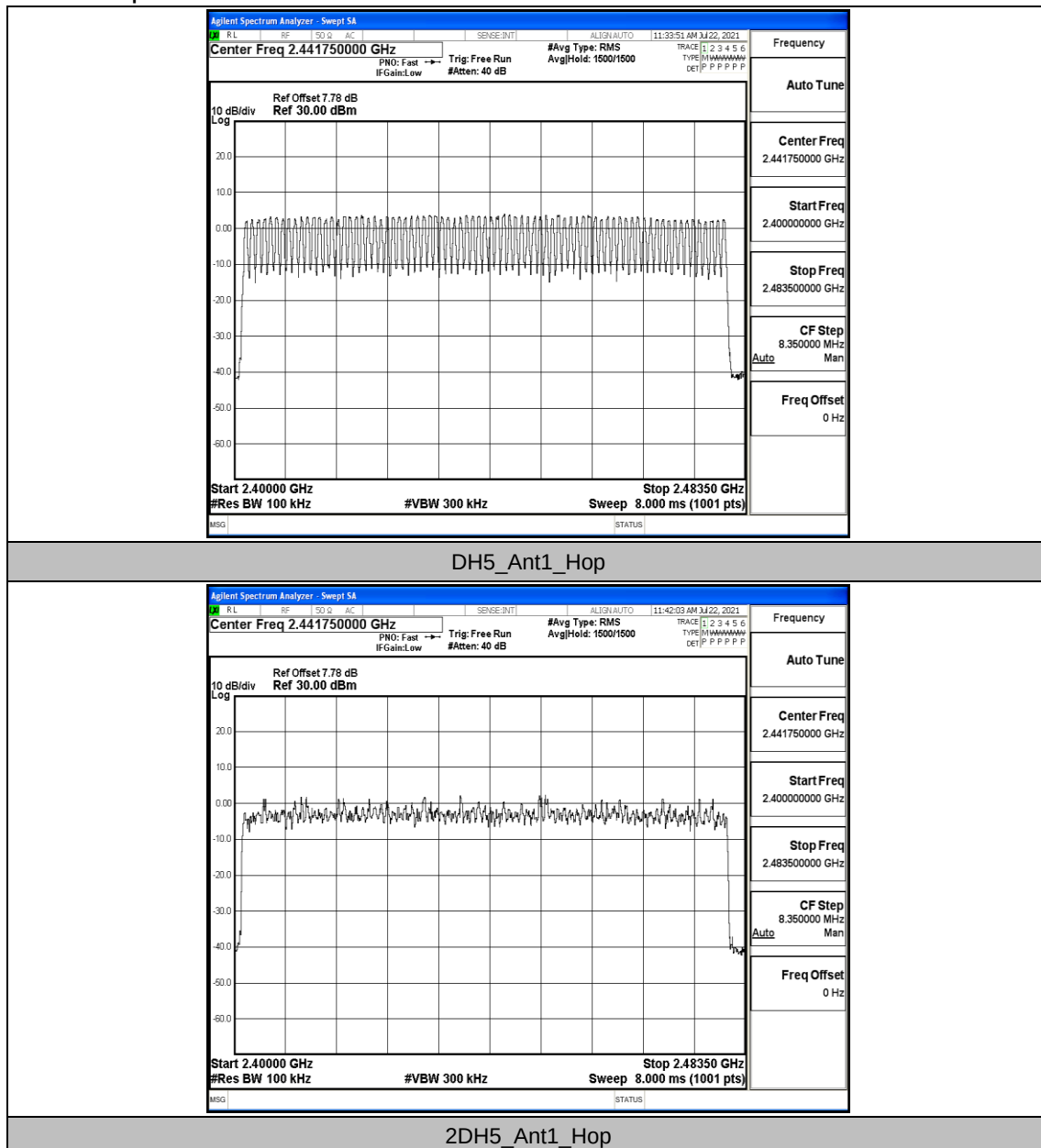


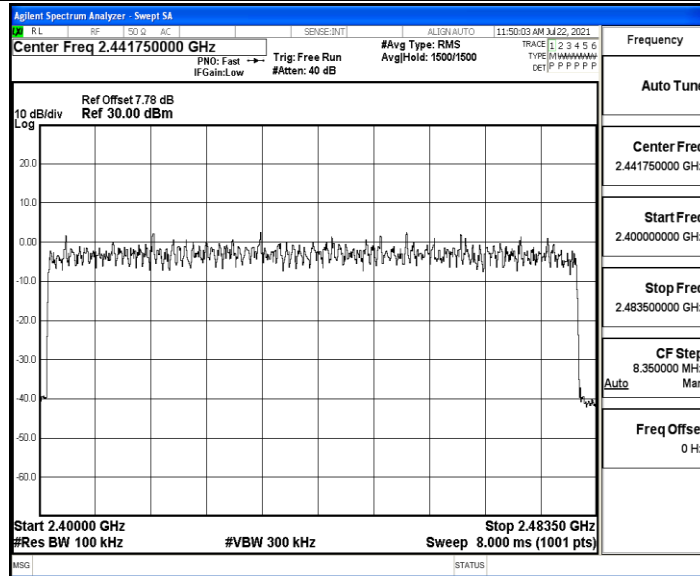
A.4 Number of hopping channels

Test Result

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

Test Graphs





3DH5_Ant1_Hop

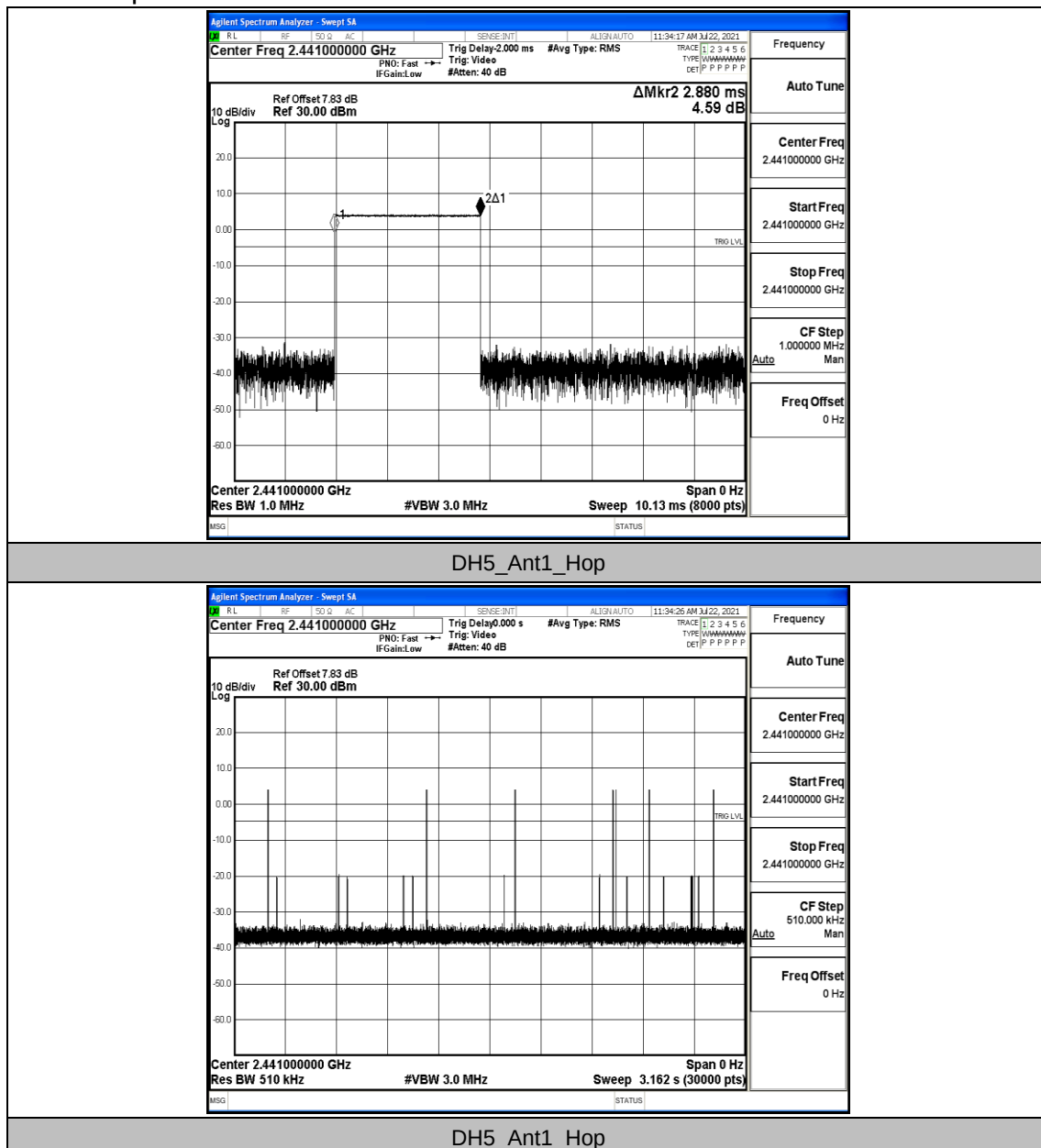


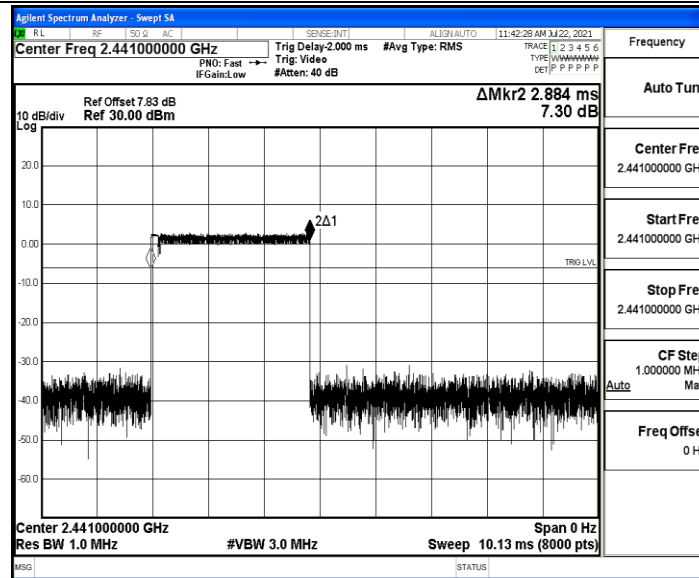
A.5 Time of occupancy

Test Result

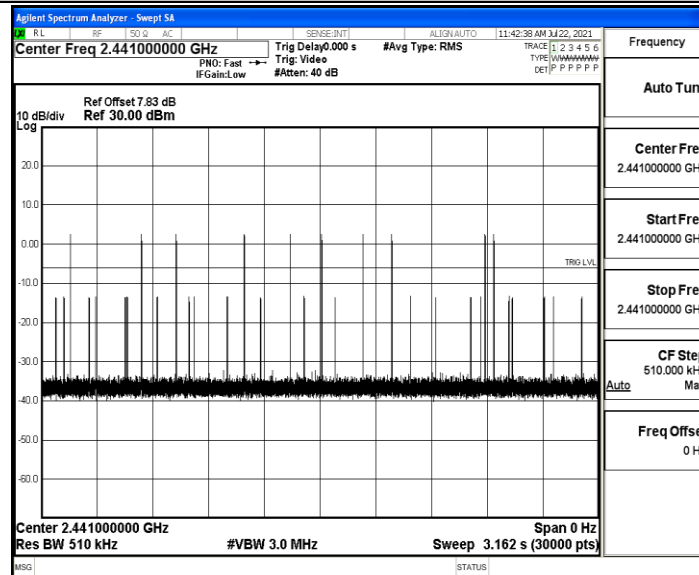
TestMode	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Hop	2.88	80	0.23	≤0.4	PASS
2DH5	Hop	2.88	110	0.317	≤0.4	PASS
3DH5	Hop	2.89	70	0.202	≤0.4	PASS

Test Graphs

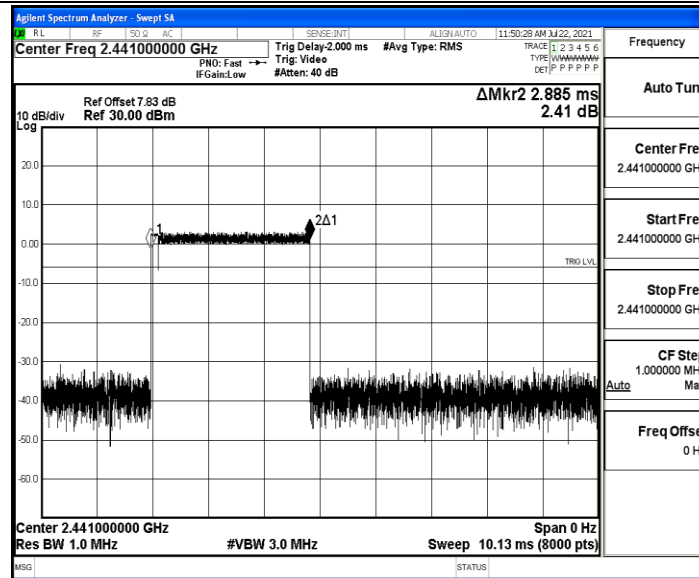




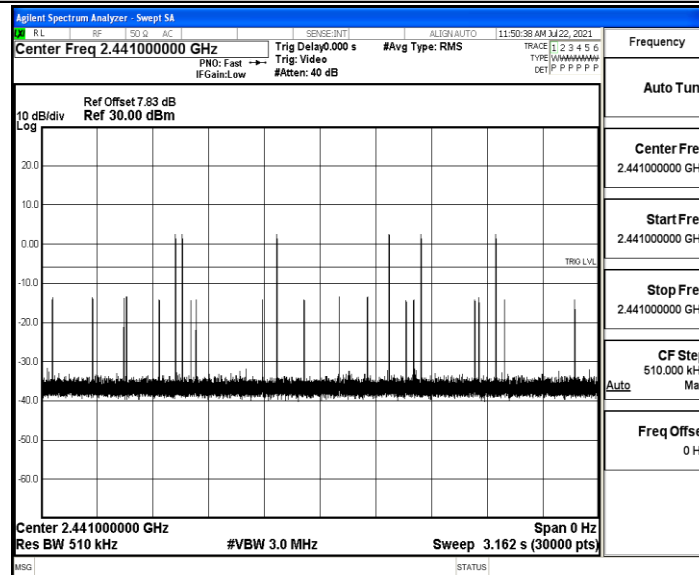
2DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop



3DH5_Ant1_Hop



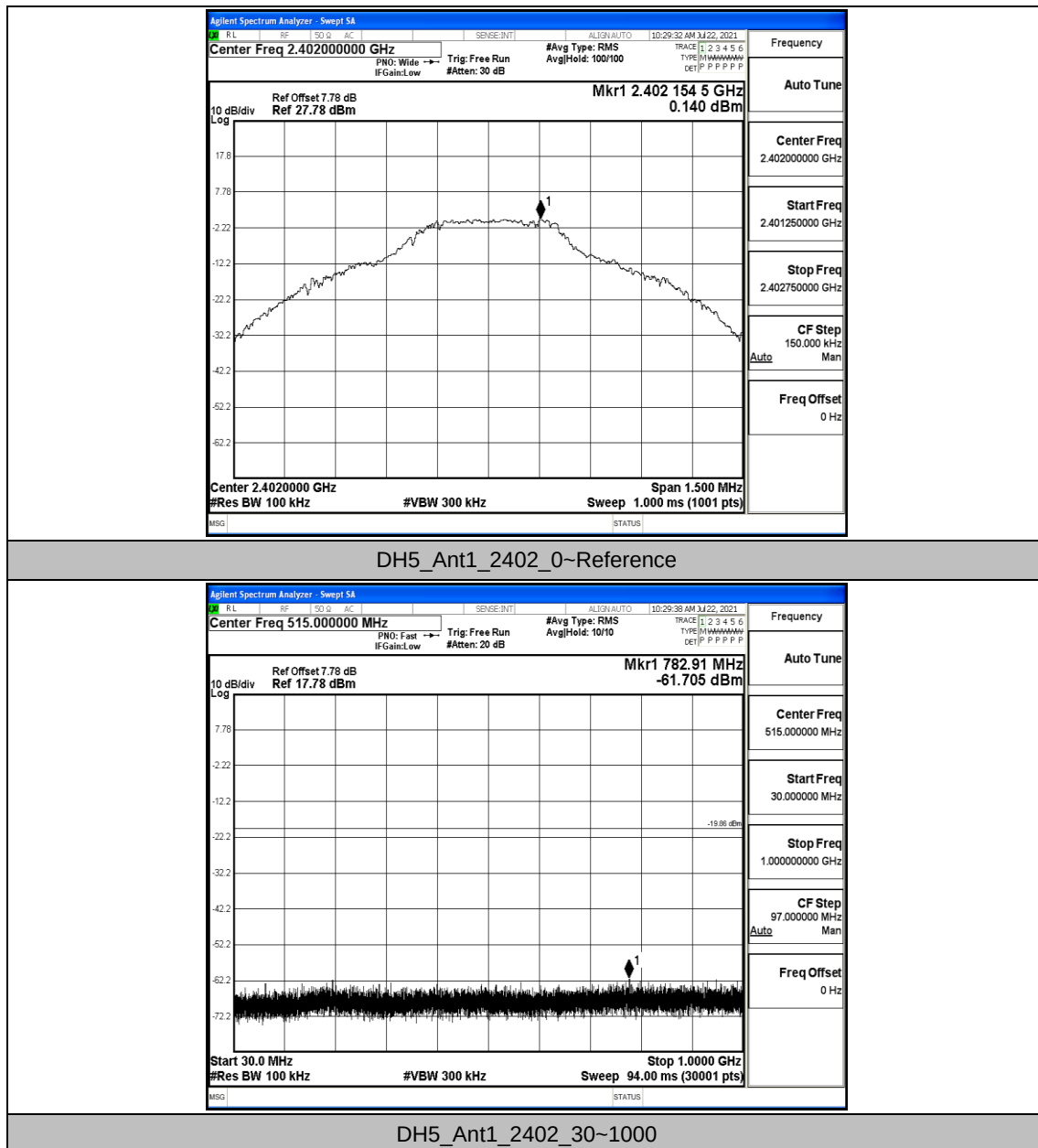
A.6 Conducted Spurious Emission

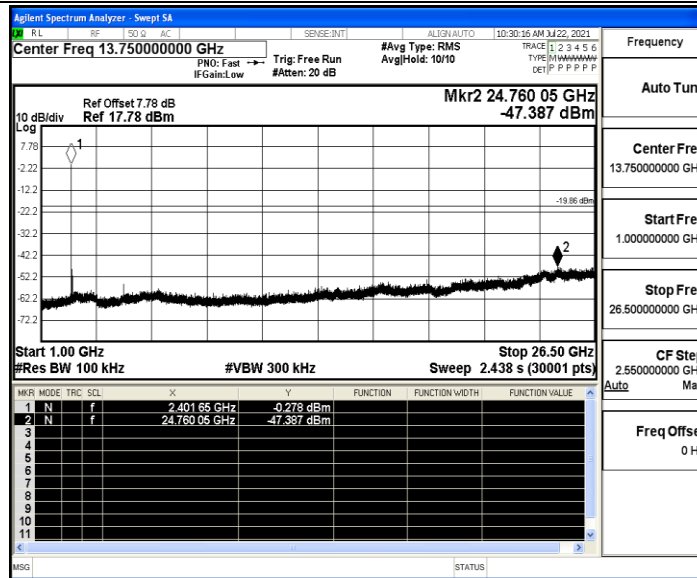
Test Result

TestMode	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	2402	Reference	0.14	0.14	---	PASS
		30~1000	0.14	-61.71	≤ -19.86	PASS
		1000~26500	0.14	-47.39	≤ -19.86	PASS
	2441	Reference	-0.14	-0.14	---	PASS
		30~1000	-0.14	-62.24	≤ -20.14	PASS
		1000~26500	-0.14	-46.63	≤ -20.14	PASS
	2480	Reference	-0.94	-0.94	---	PASS
		30~1000	-0.94	-61.79	≤ -20.94	PASS
		1000~26500	-0.94	-45.83	≤ -20.94	PASS
2DH5	2402	Reference	-2.37	-2.37	---	PASS
		30~1000	-2.37	-62.19	≤ -22.37	PASS
		1000~26500	-2.37	-47.28	≤ -22.37	PASS
	2441	Reference	-2.99	-2.99	---	PASS
		30~1000	-2.99	-62.23	≤ -22.99	PASS
		1000~26500	-2.99	-48.12	≤ -22.99	PASS
	2480	Reference	-3.96	-3.96	---	PASS
		30~1000	-3.96	-60.77	≤ -23.96	PASS
		1000~26500	-3.96	-47.37	≤ -23.96	PASS
3DH5	2402	Reference	-1.60	-1.60	---	PASS
		30~1000	-1.60	-61.19	≤ -21.6	PASS
		1000~26500	-1.60	-47.83	≤ -21.6	PASS
	2441	Reference	-1.07	-1.07	---	PASS
		30~1000	-1.07	-61.63	≤ -21.07	PASS
		1000~26500	-1.07	-47.58	≤ -21.07	PASS
	2480	Reference	0.08	0.08	---	PASS
		30~1000	0.08	-61.85	≤ -19.92	PASS
		1000~26500	0.08	-47.21	≤ -19.92	PASS

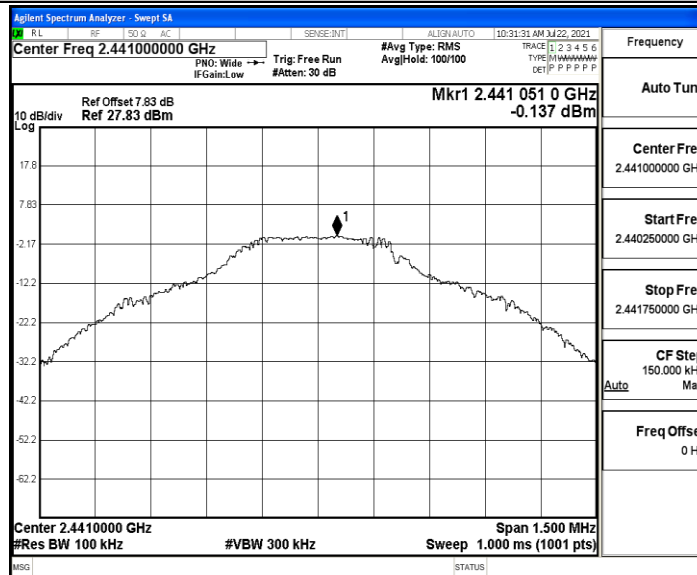


Test Graphs

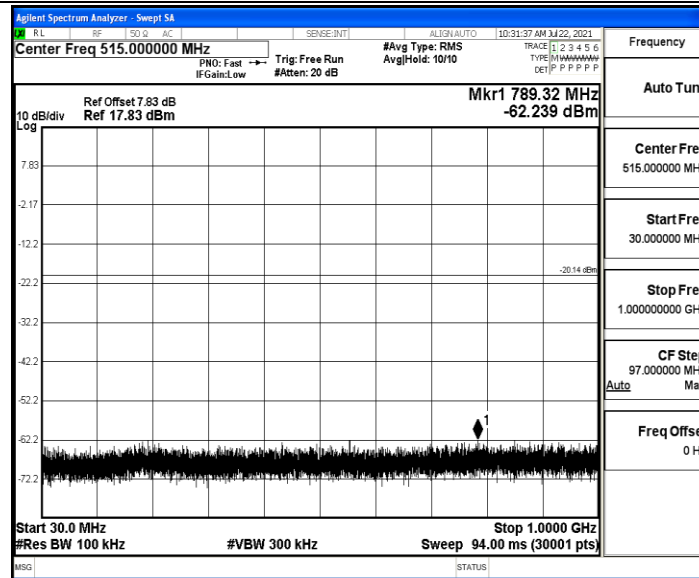




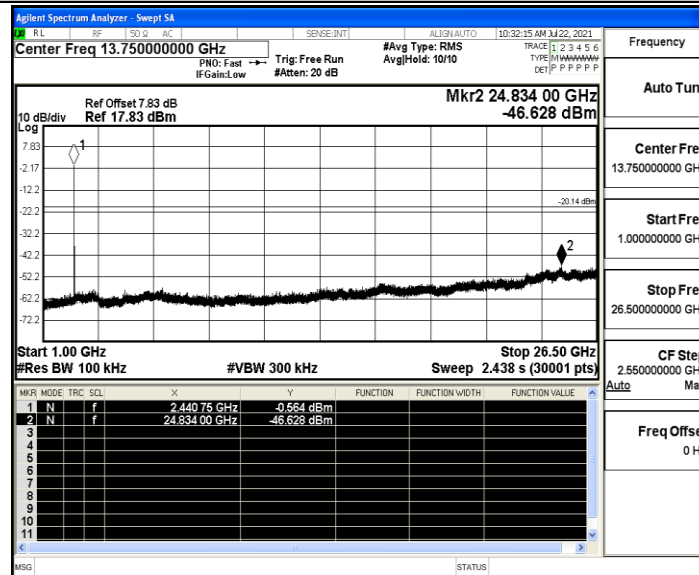
DH5_Ant1_2402_1000~26500



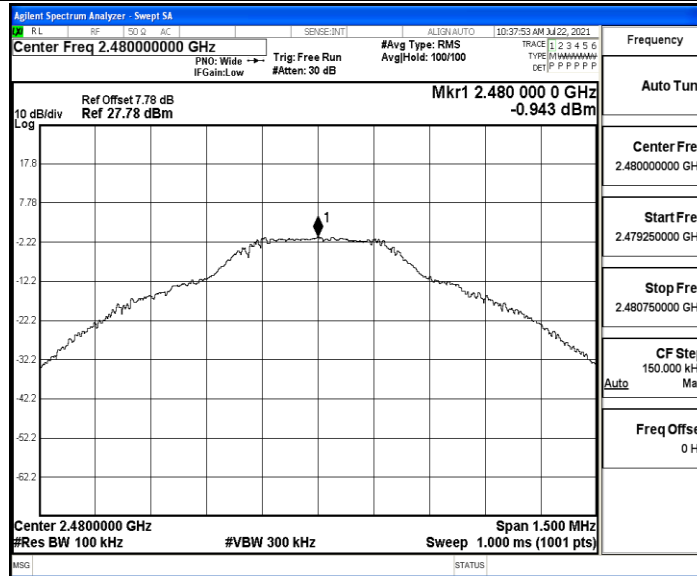
DH5_Ant1_2441_0~Reference



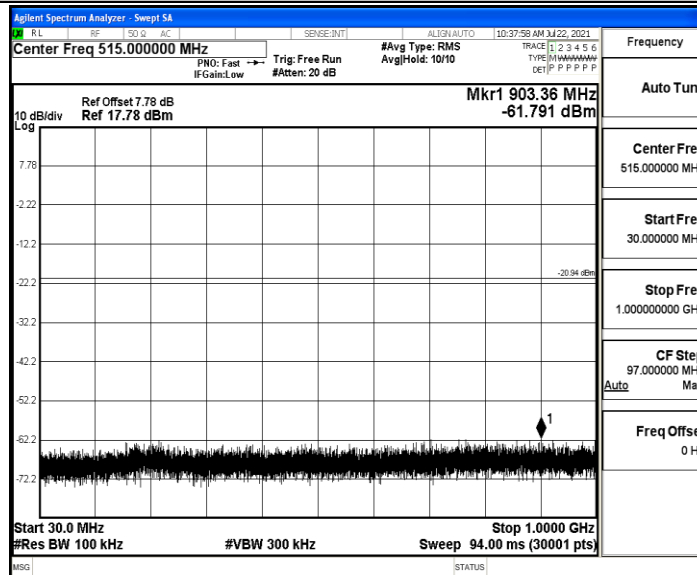
DH5_Ant1_2441_30~1000



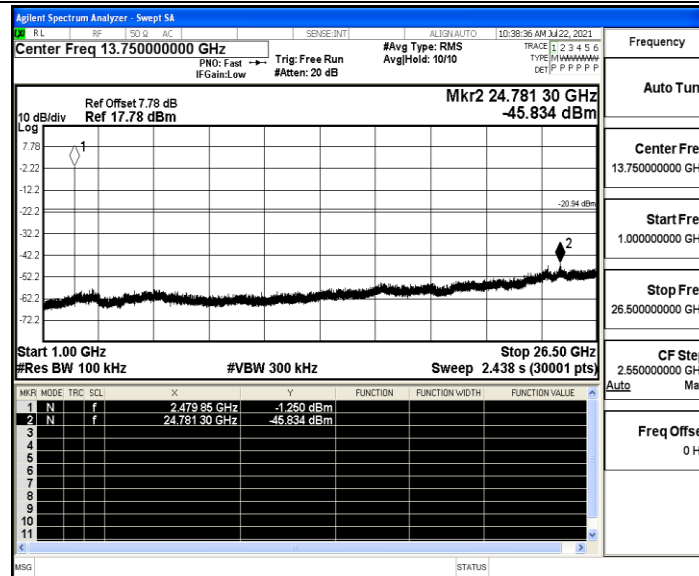
DH5_Ant1_2441_1000~26500



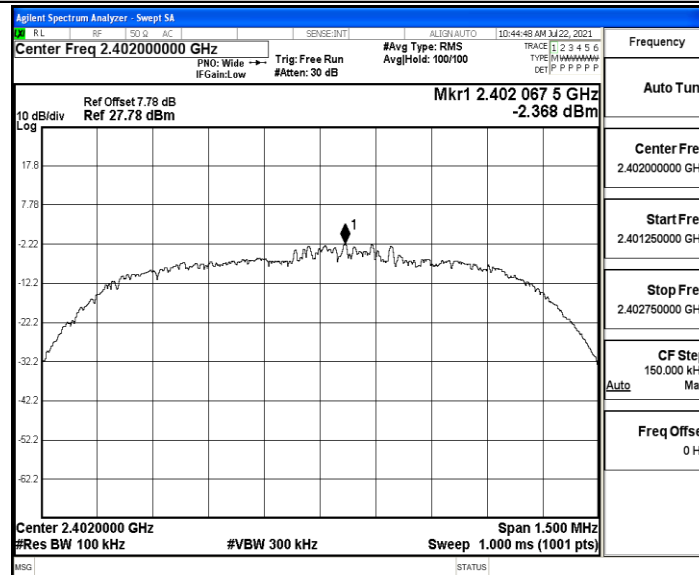
DH5_Ant1_2480_0~Reference



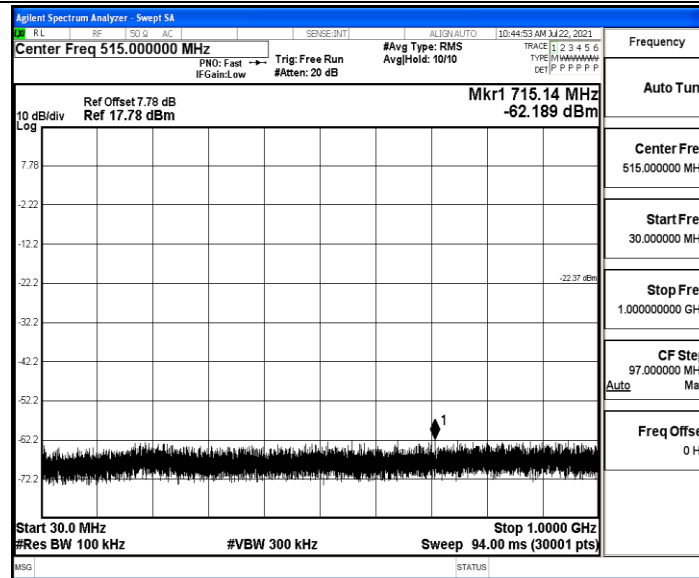
DH5_Ant1_2480_30~1000



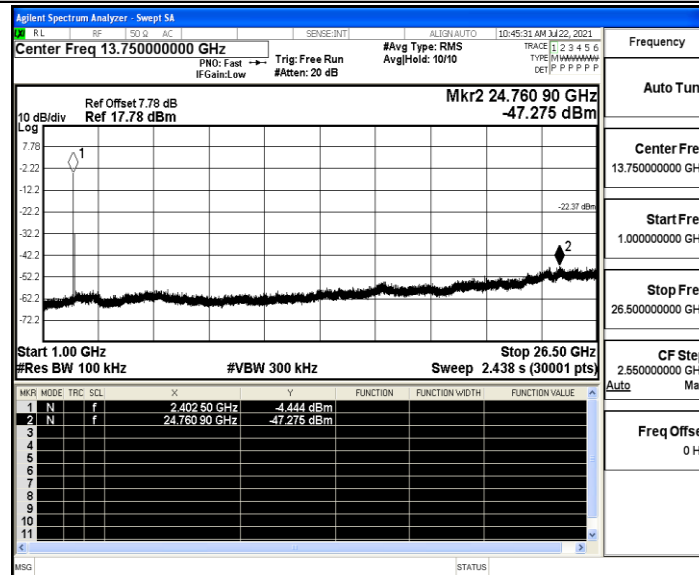
DH5_Ant1_2480_1000~26500



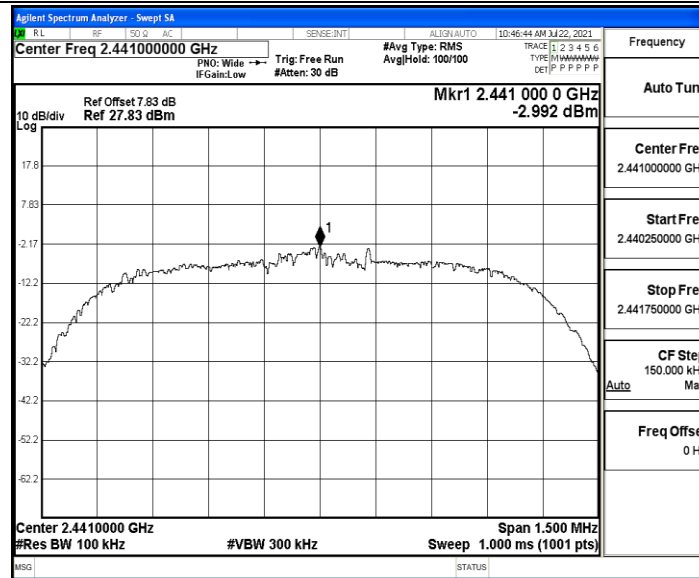
2DH5_Ant1_2402_0~Reference



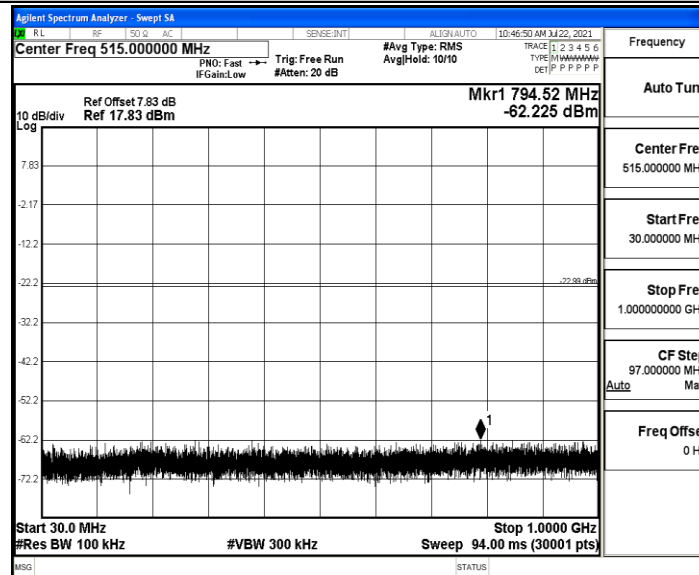
2DH5_Ant1_2402_30~1000



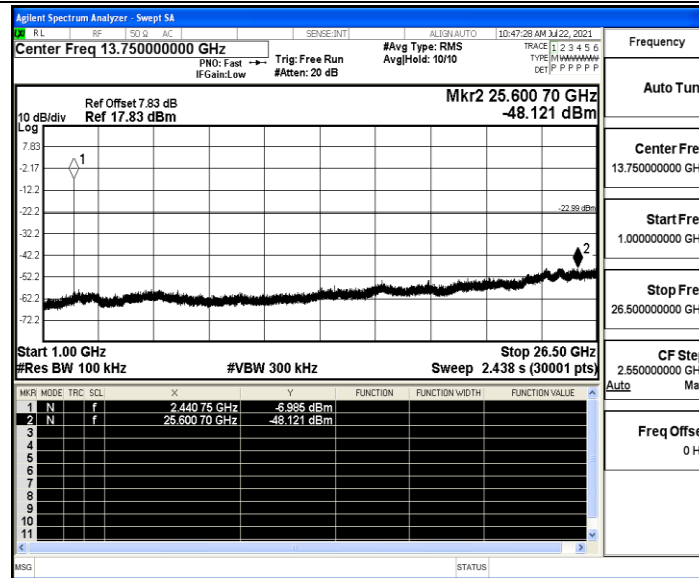
2DH5_Ant1_2402_1000~26500



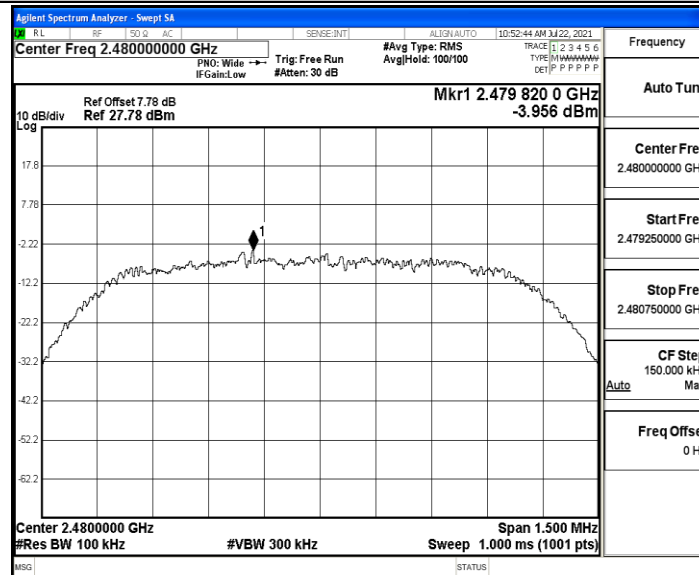
2DH5_Ant1_2441_0~Reference



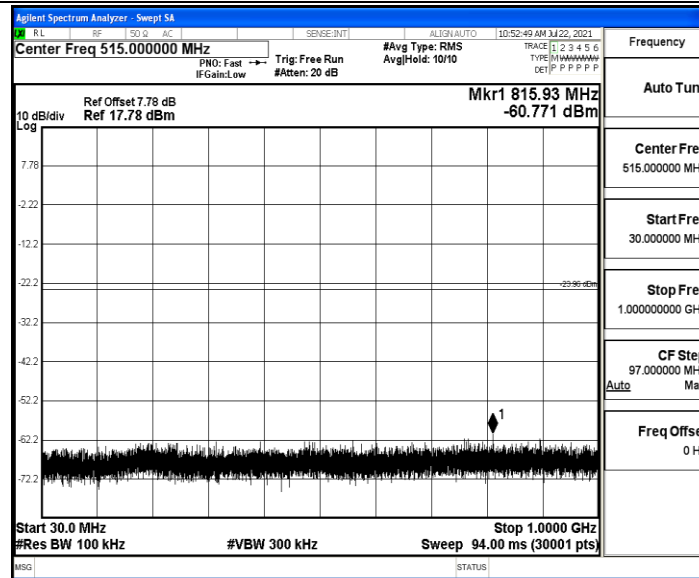
2DH5_Ant1_2441_30~1000



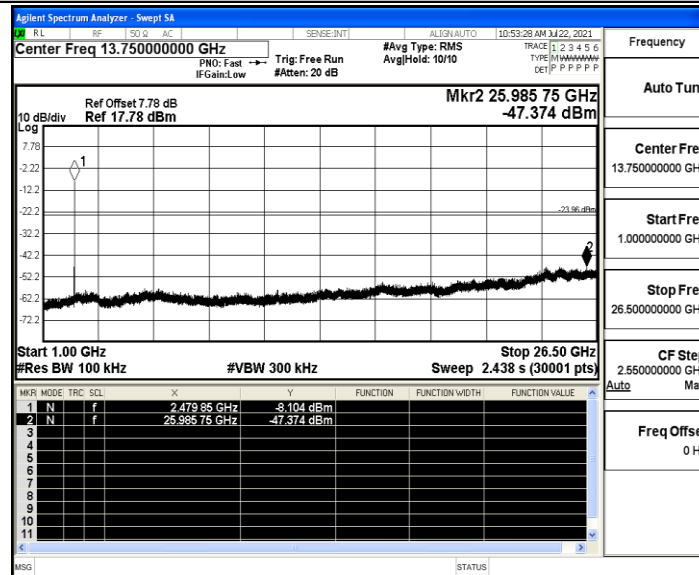
2DH5_Ant1_2441_1000~26500



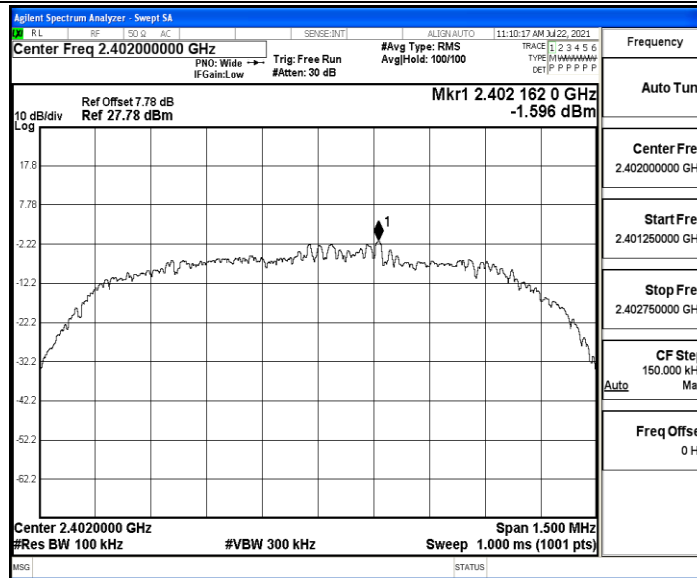
2DH5_Ant1_2480_0~Reference



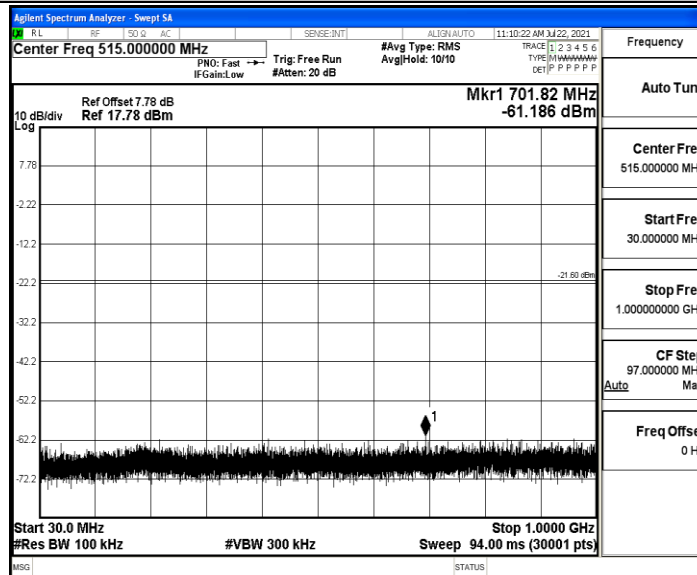
2DH5_Ant1_2480_30~1000



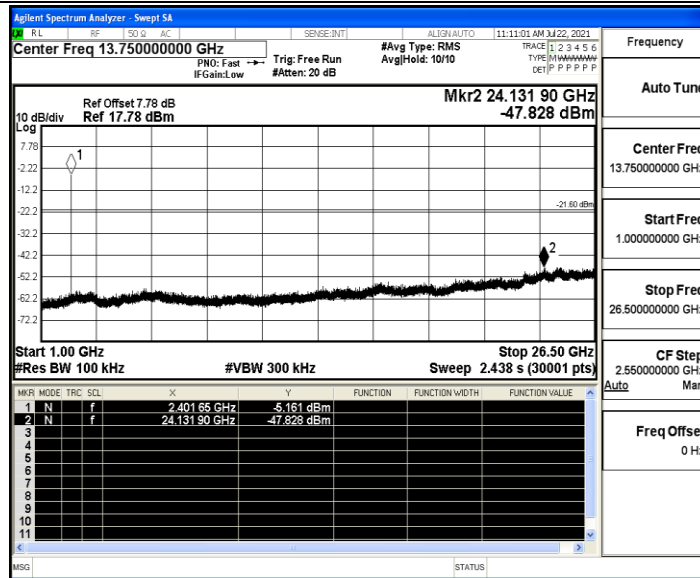
2DH5_Ant1_2480_1000~26500



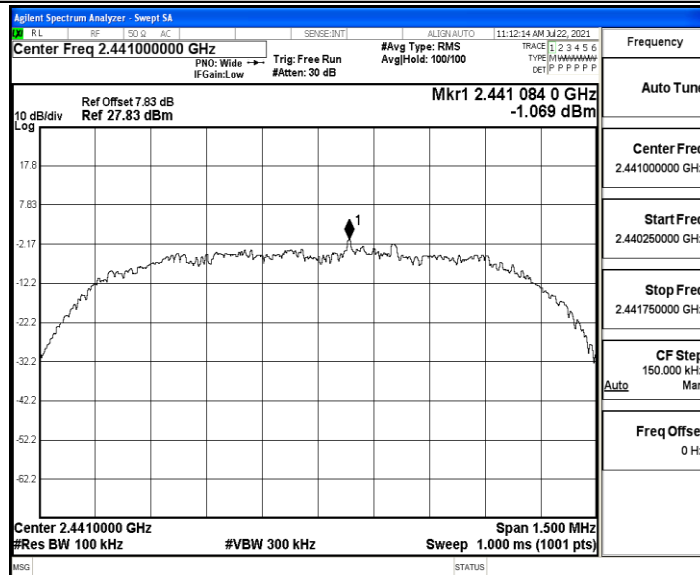
3DH5_Ant1_2402_0~Reference



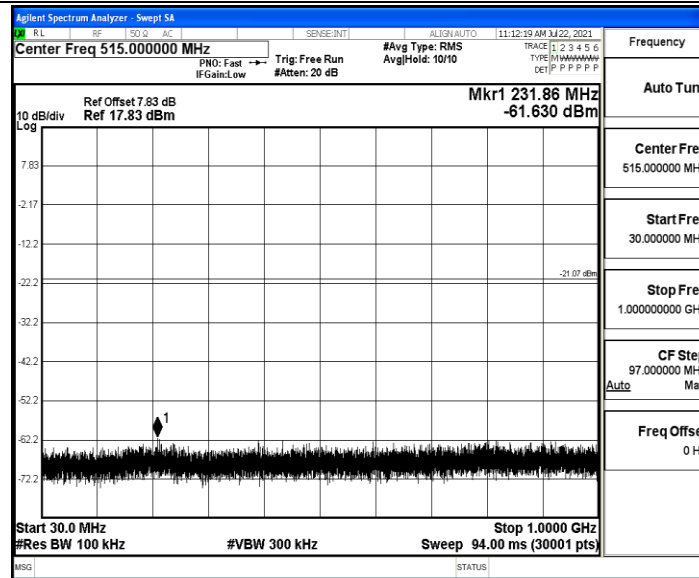
3DH5_Ant1_2402_30~1000



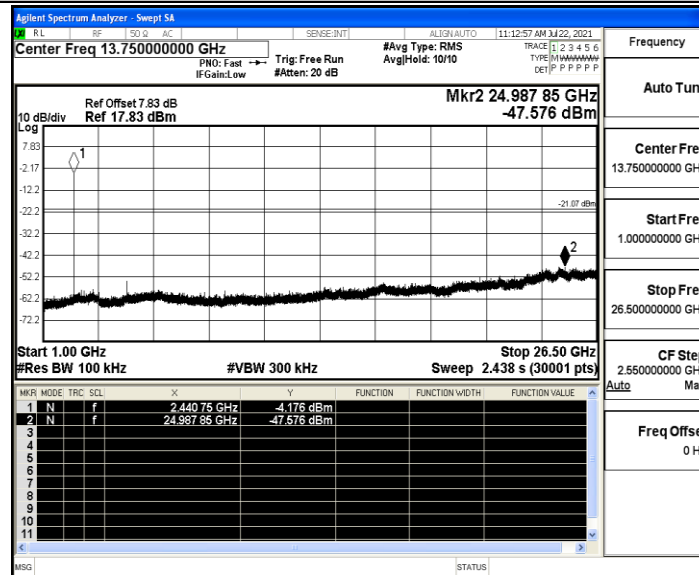
3DH5_Ant1_2402_1000~26500



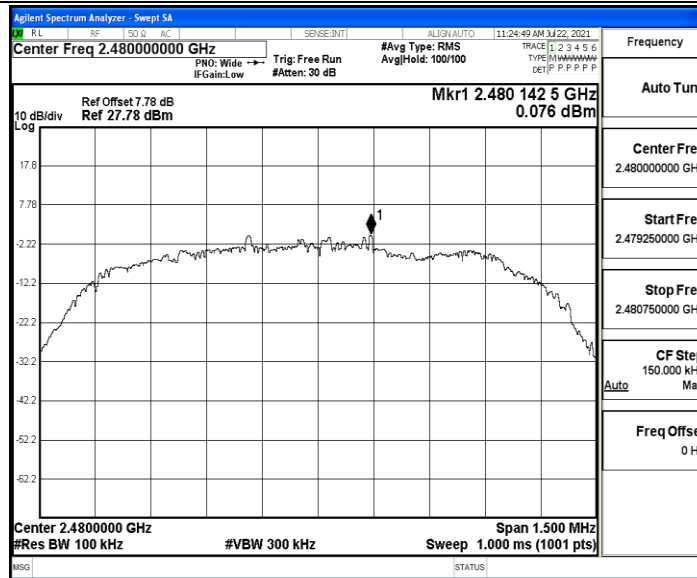
3DH5_Ant1_2441_0~Reference



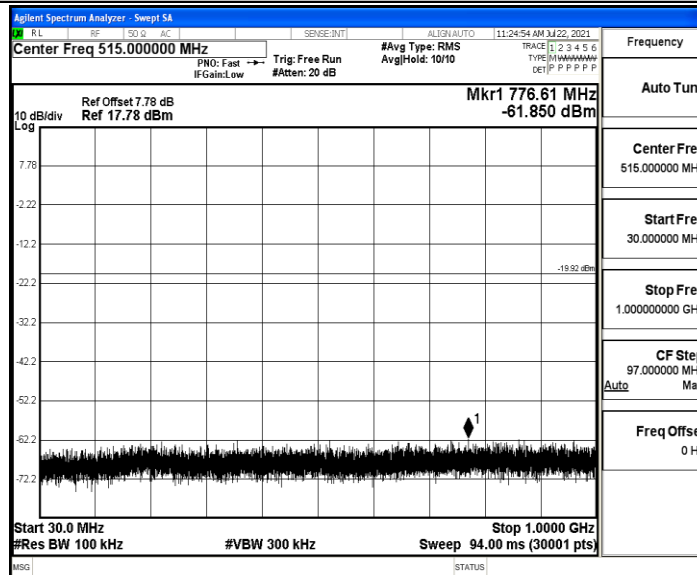
3DH5_Ant1_2441_30~1000



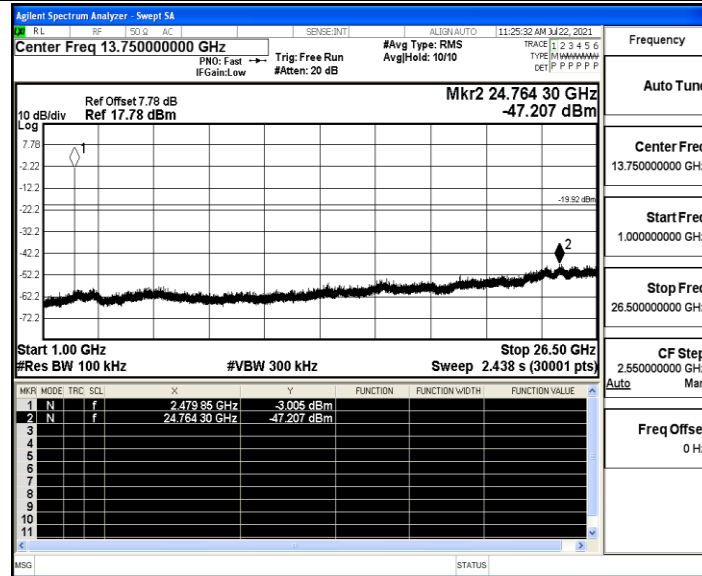
3DH5_Ant1_2441_1000~26500



3DH5_Ant1_2480_0~Reference



3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000~26500



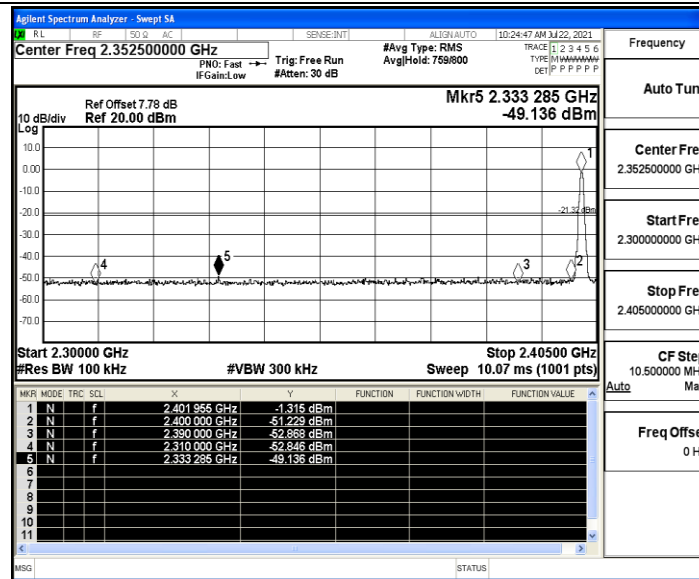
A.7 Band edge measurements

Test Result

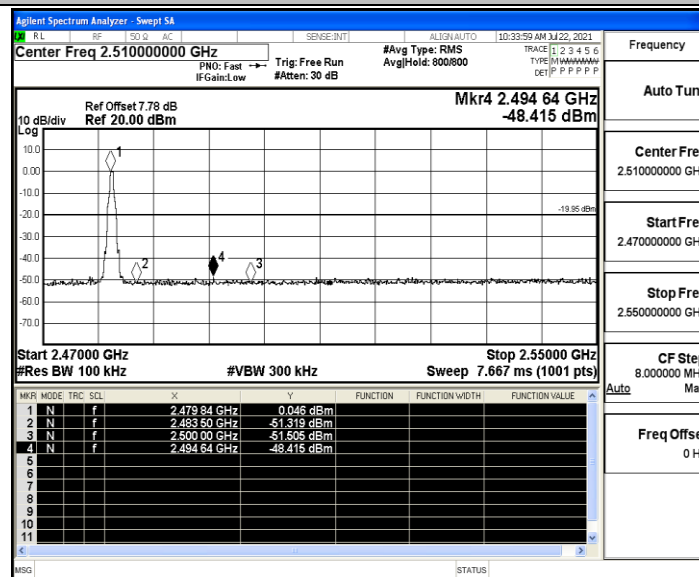
TestMode	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Low	2402	-1.32	-49.14	≤ -21.32	PASS
	High	2480	0.05	-48.42	≤ -19.95	PASS
	Low	Hop_2402	2.26	-49.73	≤ -17.74	PASS
	High	Hop_2480	2.72	-48.33	≤ -17.28	PASS
2DH5	Low	2402	-2.16	-49.23	≤ -22.16	PASS
	High	2480	-1.27	-47.3	≤ -21.27	PASS
	Low	Hop_2402	-2.35	-49.67	≤ -22.35	PASS
	High	Hop_2480	-1.10	-48.48	≤ -21.1	PASS
3DH5	Low	2402	-3.90	-49.17	≤ -23.9	PASS
	High	2480	-5.05	-48.65	≤ -25.05	PASS
	Low	Hop_2402	0.03	-49.45	≤ -19.97	PASS
	High	Hop_2480	1.15	-48.63	≤ -18.85	PASS



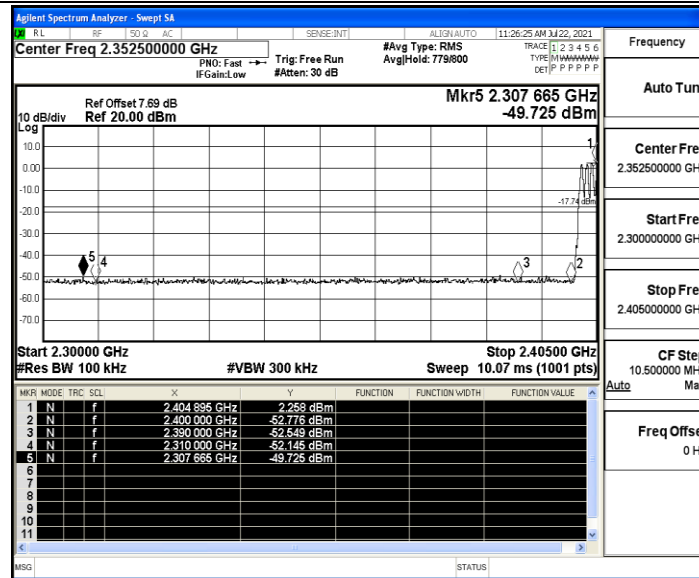
Test Graphs



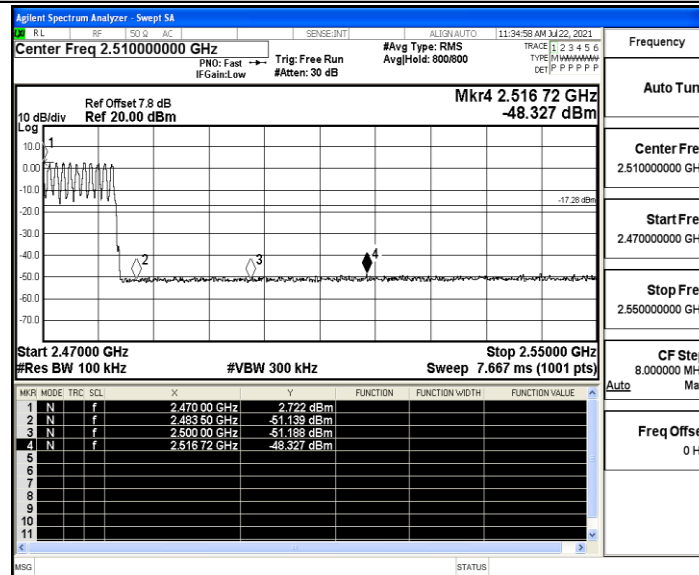
DH5_Ant1_Low_2402



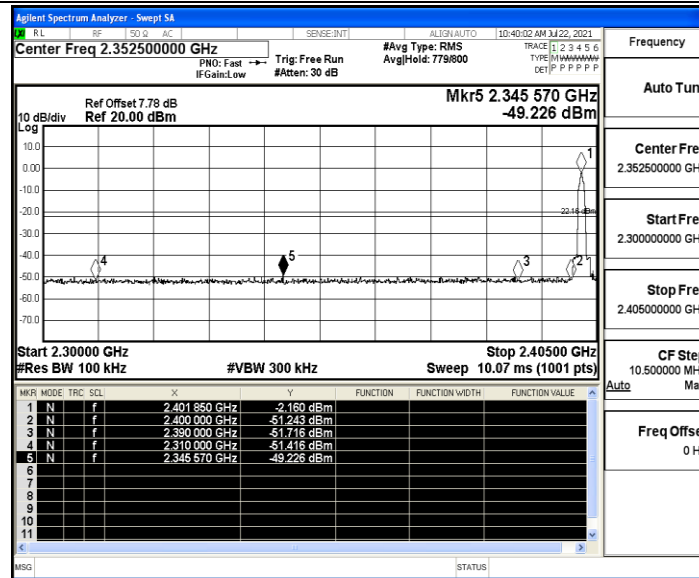
DH5_Ant1_High_2480



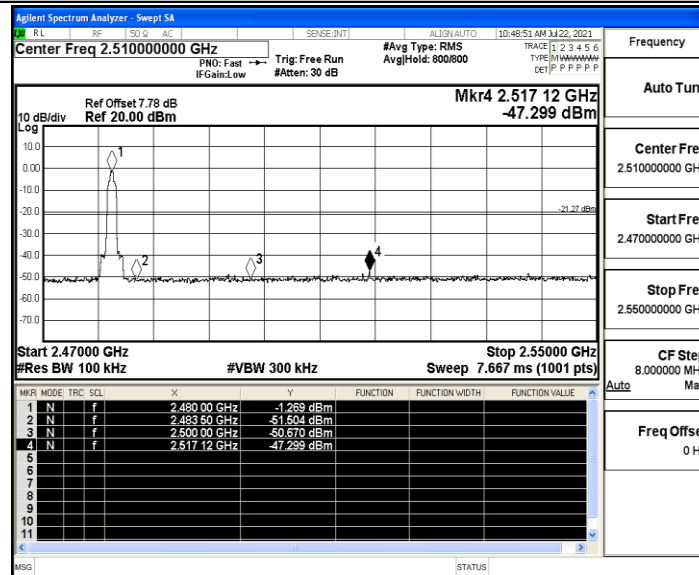
DH5_Ant1_Low_Hop_2402



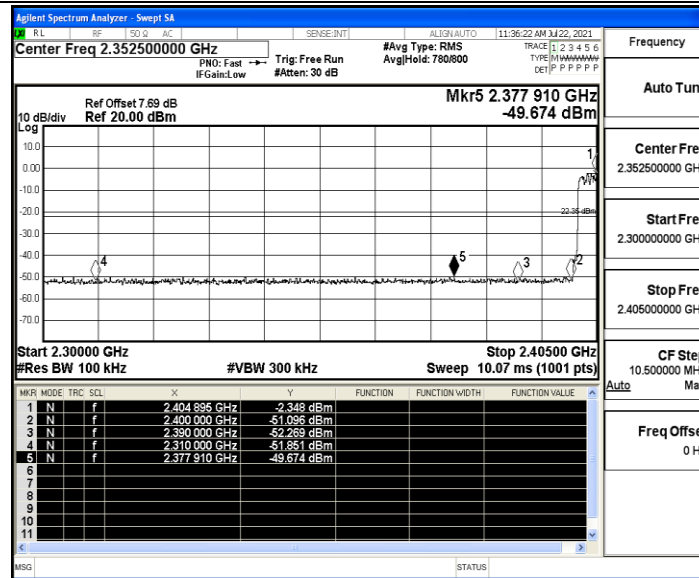
DH5_Ant1_High_Hop_2480



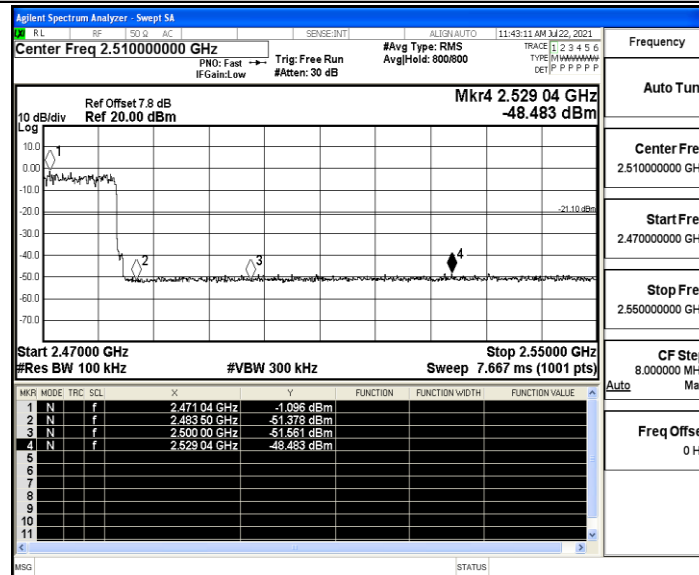
2DH5_Ant1_Low_2402



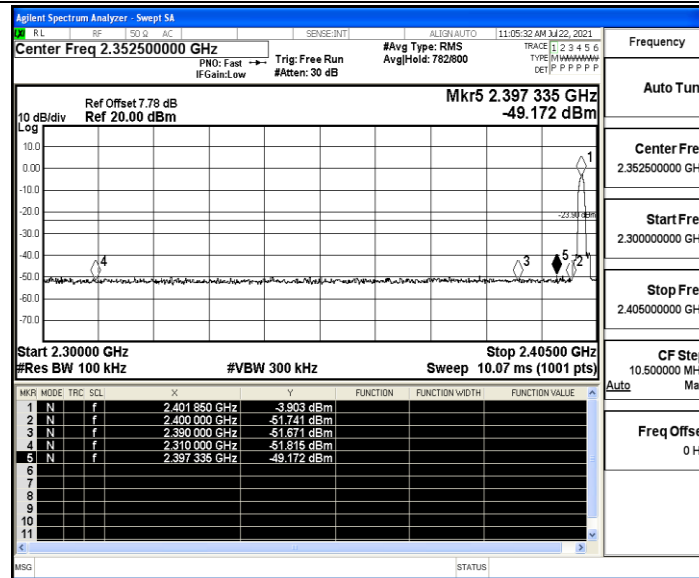
2DH5_Ant1_High_2480



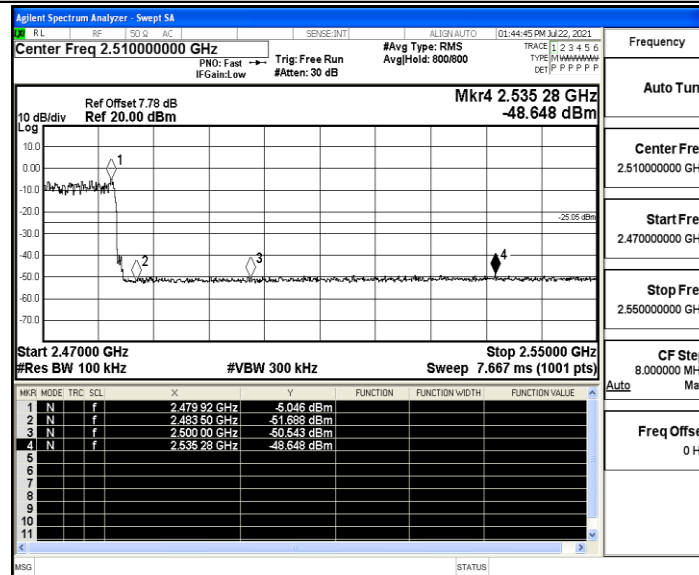
2DH5_Ant1_Low_Hop_2402



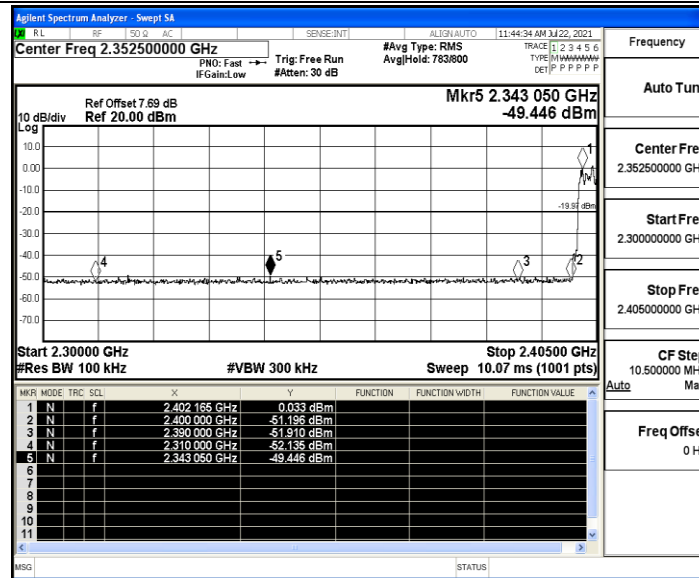
2DH5_Ant1_High_Hop_2480



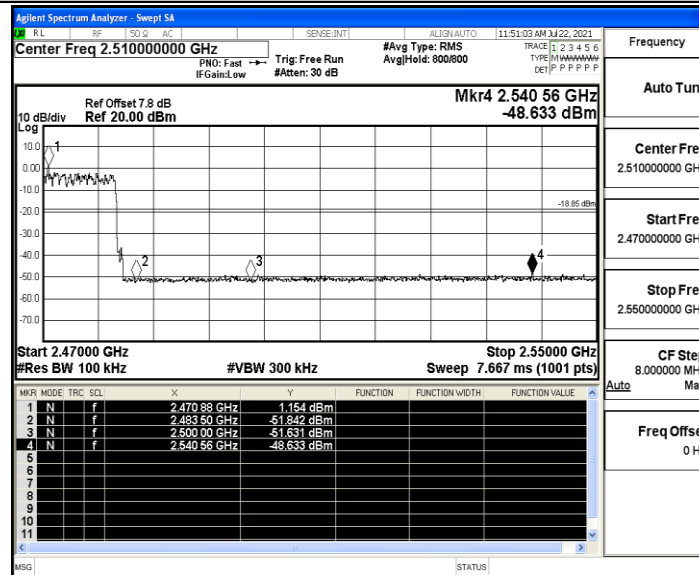
3DH5_Ant1_Low_2402



3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480



A.8 Emissions in Restricted Bands

Test Result

TestMode	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH5	2402	AV	2310.000	-49.06	≤-41.20	46.14	≤54	PASS
		AV	2384.840	-48.6	≤-41.20	46.60	≤54	PASS
		AV	2390.000	-48.69	≤-41.20	46.51	≤54	PASS
		Peak	2310.000	-40.92	≤-21.20	54.28	≤74	PASS
		Peak	2358.695	-38.25	≤-21.20	56.95	≤74	PASS
		Peak	2390.000	-40.85	≤-21.20	54.35	≤74	PASS
	2480	AV	2483.500	-47.92	≤-41.20	47.28	≤54	PASS
		AV	2493.680	-47.87	≤-41.20	47.33	≤54	PASS
		AV	2500.000	-47.99	≤-41.20	47.21	≤54	PASS
		Peak	2483.500	-39.67	≤-21.20	55.53	≤74	PASS
		Peak	2493.040	-37.31	≤-21.20	57.89	≤74	PASS
		Peak	2500.000	-40	≤-21.20	55.20	≤74	PASS
	Hop_2402	Peak	2310.000	-40.89	≤-21.20	54.31	≤74	PASS
		Peak	2368.670	-37.74	≤-21.20	57.46	≤74	PASS
		Peak	2390.000	-39.71	≤-21.20	55.49	≤74	PASS
	Hop_2480	Peak	2483.500	-39.98	≤-21.20	55.22	≤74	PASS
		Peak	2488.960	-37.55	≤-21.20	57.65	≤74	PASS
		Peak	2500.000	-40.33	≤-21.20	54.87	≤74	PASS
2DH5	2402	AV	2310.000	-48.97	≤-41.20	46.23	≤54	PASS
		AV	2384.525	-48.4	≤-41.20	46.80	≤54	PASS
		AV	2390.000	-48.58	≤-41.20	46.62	≤54	PASS
		Peak	2310.000	-40.5	≤-21.20	54.70	≤74	PASS
		Peak	2343.050	-38.43	≤-21.20	56.77	≤74	PASS
		Peak	2390.000	-40.75	≤-21.20	54.45	≤74	PASS
	2480	AV	2483.500	-47.91	≤-41.20	47.29	≤54	PASS
		AV	2496.720	-47.89	≤-41.20	47.31	≤54	PASS
		AV	2500.000	-47.94	≤-41.20	47.26	≤54	PASS
		Peak	2483.500	-40.5	≤-21.20	54.70	≤74	PASS
		Peak	2485.520	-37.62	≤-21.20	57.58	≤74	PASS
		Peak	2500.000	-40.03	≤-21.20	55.17	≤74	PASS
	Hop_2402	Peak	2310.000	-40.92	≤-21.20	54.28	≤74	PASS
		Peak	2325.515	-37.47	≤-21.20	57.73	≤74	PASS
		Peak	2390.000	-40.54	≤-21.20	54.66	≤74	PASS
	Hop_2480	Peak	2483.500	-39.53	≤-21.20	55.67	≤74	PASS
		Peak	2485.920	-38.44	≤-21.20	56.76	≤74	PASS
		Peak	2500.000	-39.76	≤-21.20	55.44	≤74	PASS



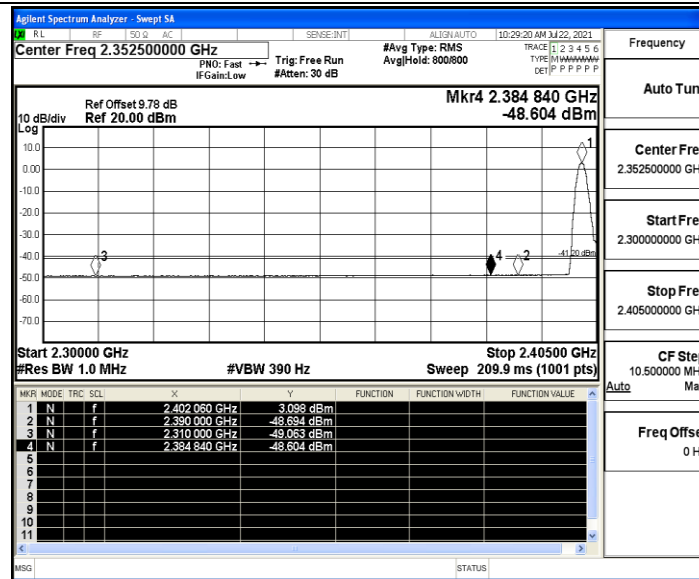
3DH5	2402	AV	2310.000	-48.93	≤ -41.20	46.27	≤ 54	PASS
		AV	2378.960	-48.43	≤ -41.20	46.77	≤ 54	PASS
		AV	2390.000	-48.57	≤ -41.20	46.63	≤ 54	PASS
		Peak	2310.000	-41.09	≤ -21.20	54.11	≤ 74	PASS
		Peak	2360.060	-38.08	≤ -21.20	57.12	≤ 74	PASS
		Peak	2390.000	-40.03	≤ -21.20	55.17	≤ 74	PASS
	2480	AV	2483.500	-47.74	≤ -41.20	47.46	≤ 54	PASS
		AV	2483.520	-47.74	≤ -41.20	47.46	≤ 54	PASS
		AV	2500.000	-47.95	≤ -41.20	47.25	≤ 54	PASS
		Peak	2483.500	-38.9	≤ -21.20	56.30	≤ 74	PASS
		Peak	2484.560	-37.68	≤ -21.20	57.52	≤ 74	PASS
		Peak	2500.000	-39.54	≤ -21.20	55.66	≤ 74	PASS
	Hop_2402	Peak	2310.000	-40.55	≤ -21.20	54.65	≤ 74	PASS
		Peak	2389.775	-38.34	≤ -21.20	56.86	≤ 74	PASS
		Peak	2390.000	-40.92	≤ -21.20	54.28	≤ 74	PASS
	Hop_2480	Peak	2483.500	-39.48	≤ -21.20	55.72	≤ 74	PASS
		Peak	2494.320	-37.81	≤ -21.20	57.39	≤ 74	PASS
		Peak	2500.000	-39.06	≤ -21.20	56.14	≤ 74	PASS

Note:

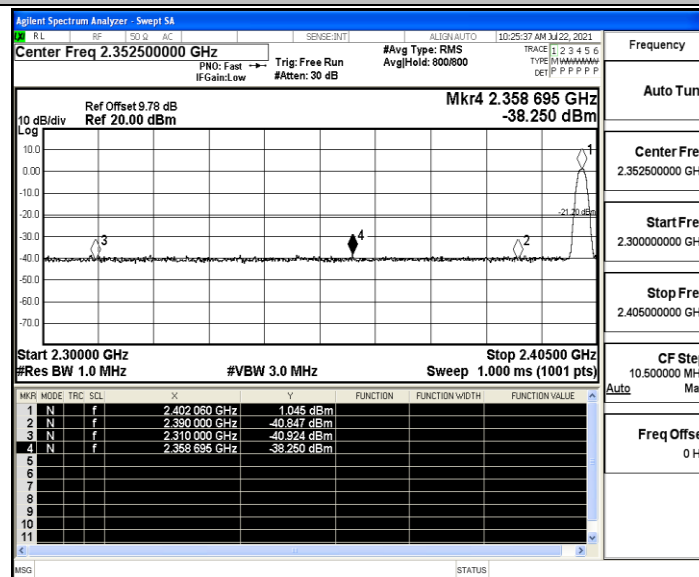
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



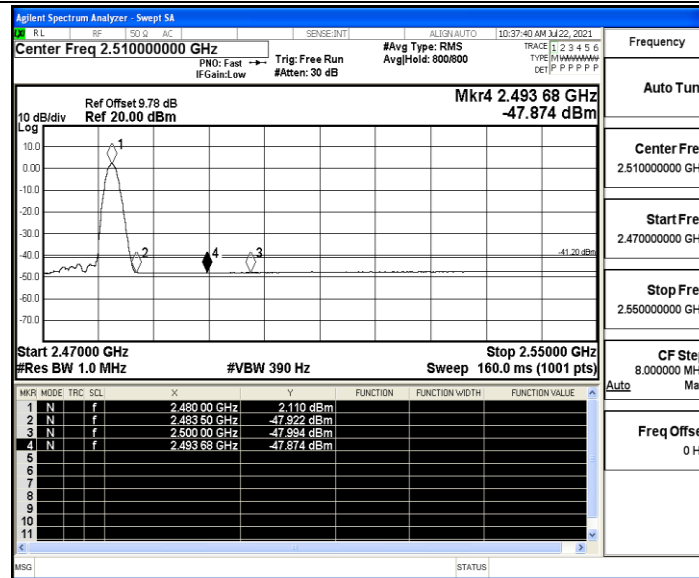
Test Graphs



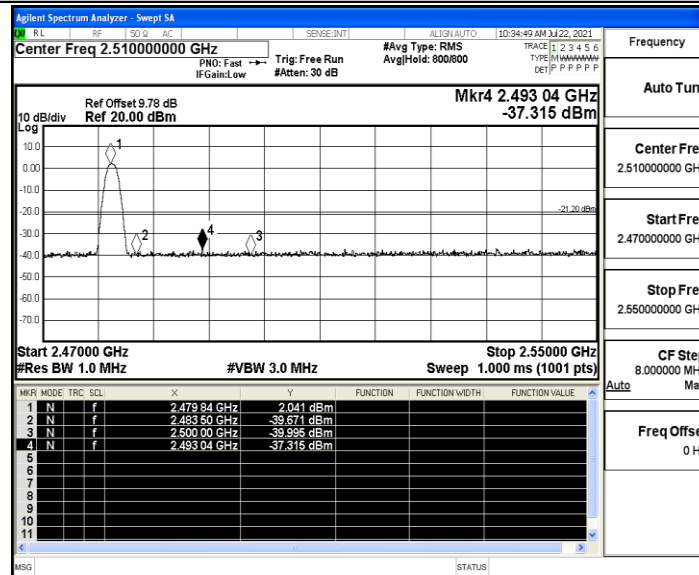
DH5_Ant1_Low_2402_AV



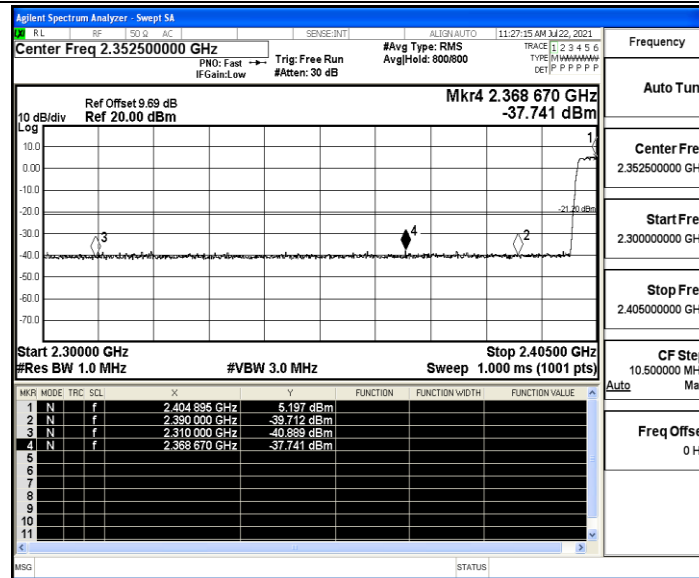
DH5_Ant1_Low_2402_Peak



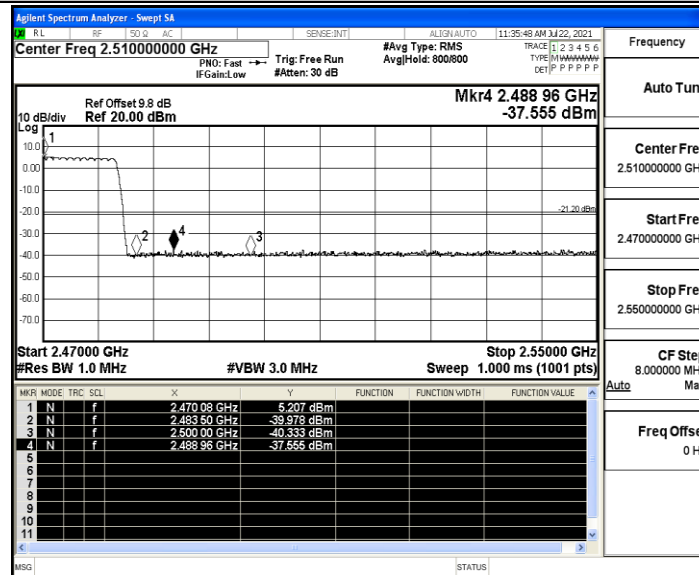
DH5_Ant1_High_2480_AV



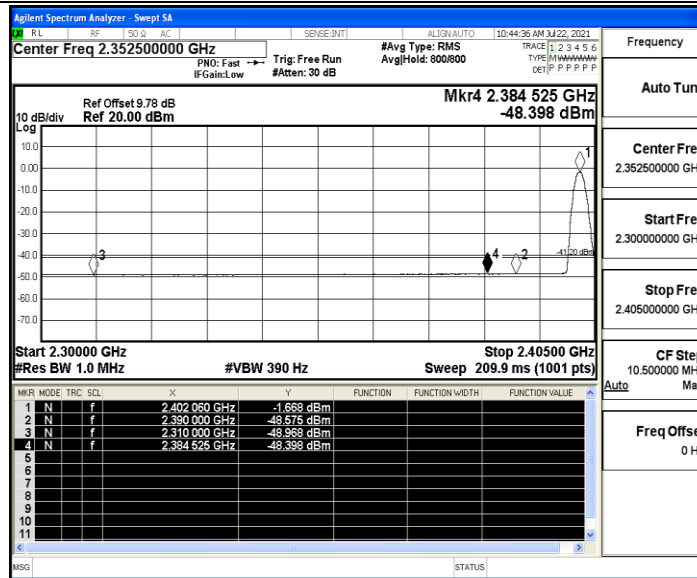
DH5_Ant1_High_2480_Peak



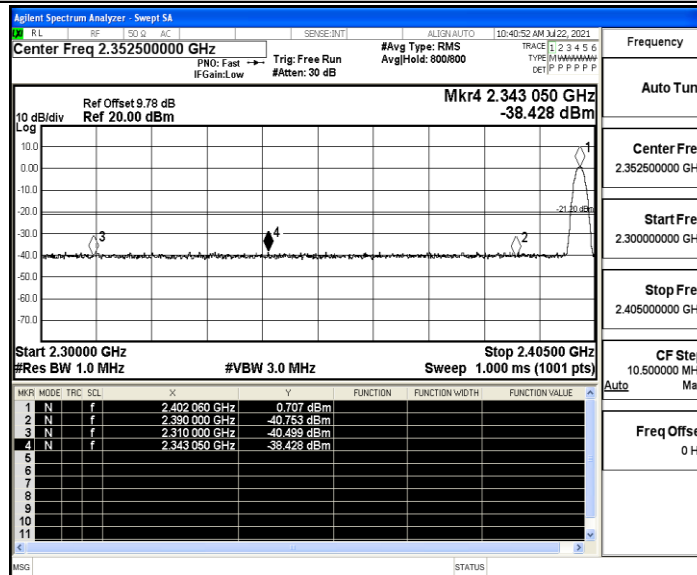
DH5_Ant1_Low_Hop_2402_Peak



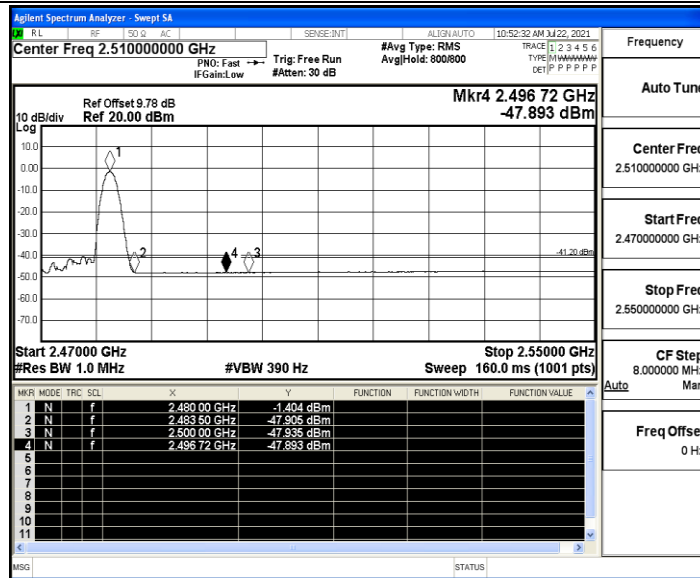
DH5_Ant1_High_Hop_2480_Peak



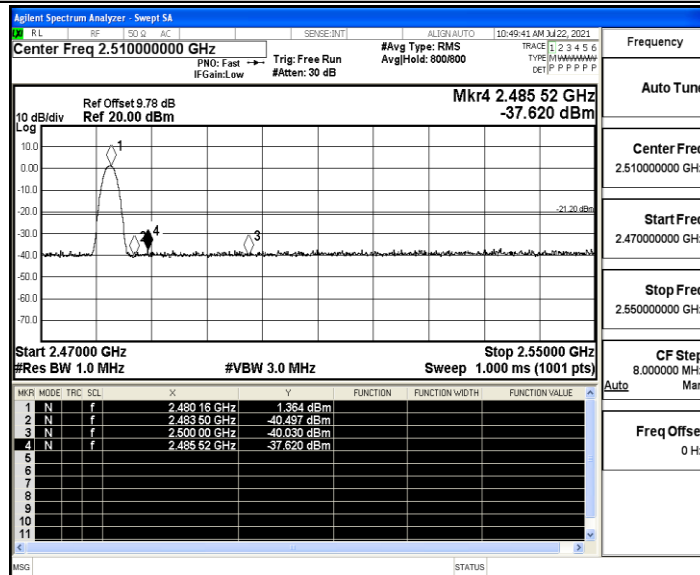
2DH5_Ant1_Low_2402_AV



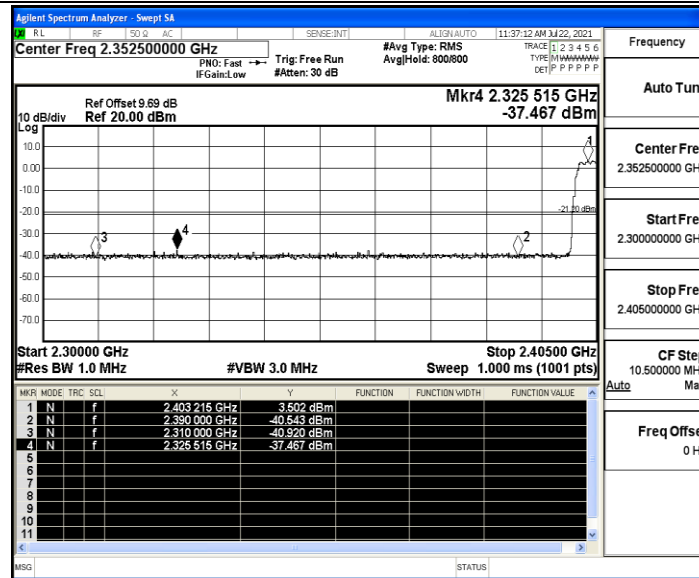
2DH5_Ant1_Low_2402_Peak



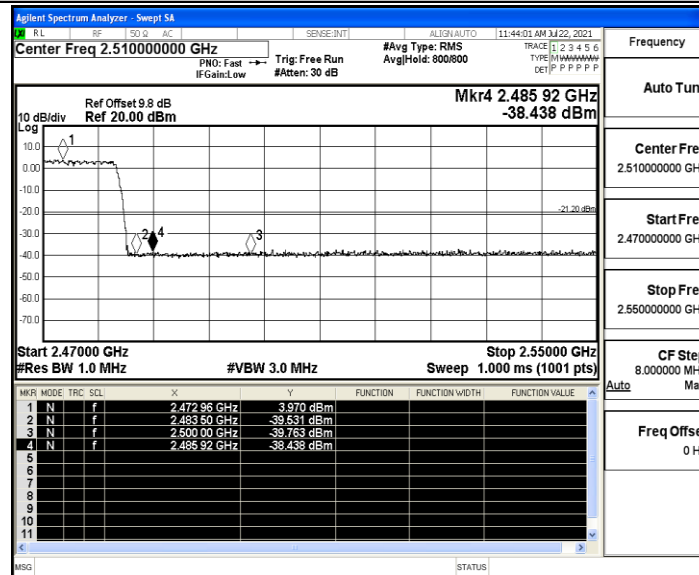
2DH5_Ant1_High_2480_AV



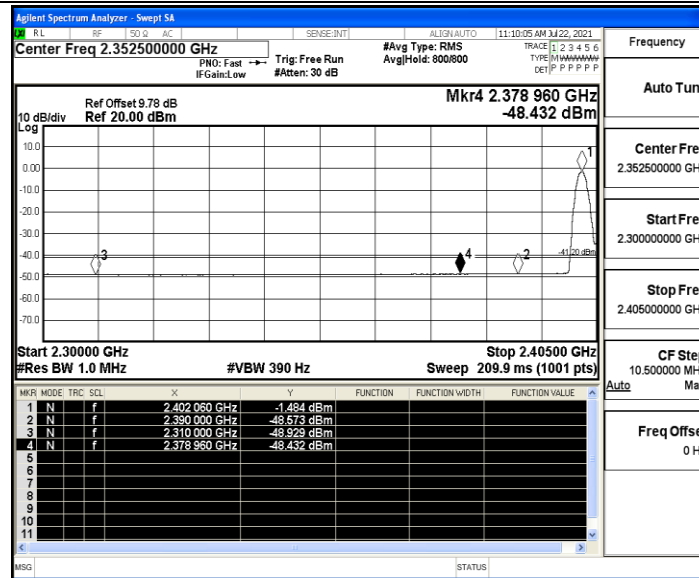
2DH5_Ant1_High_2480_Peak



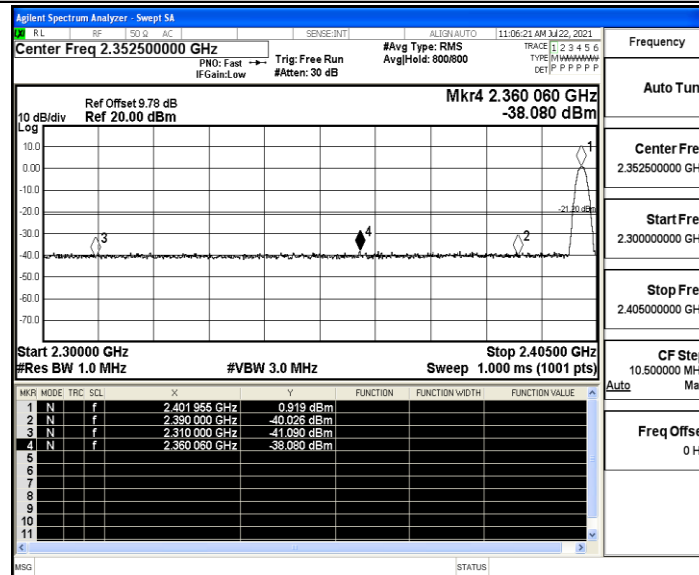
2DH5_Ant1_Low_Hop_2402_Peak



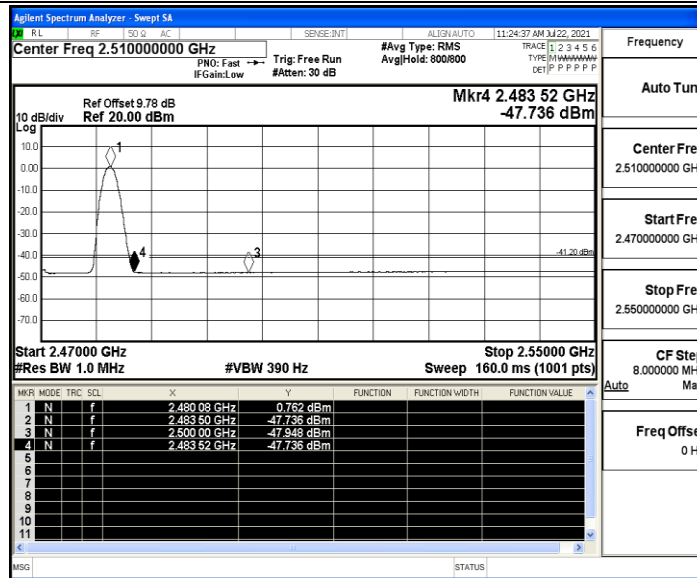
2DH5_Ant1_High_Hop_2480_Peak



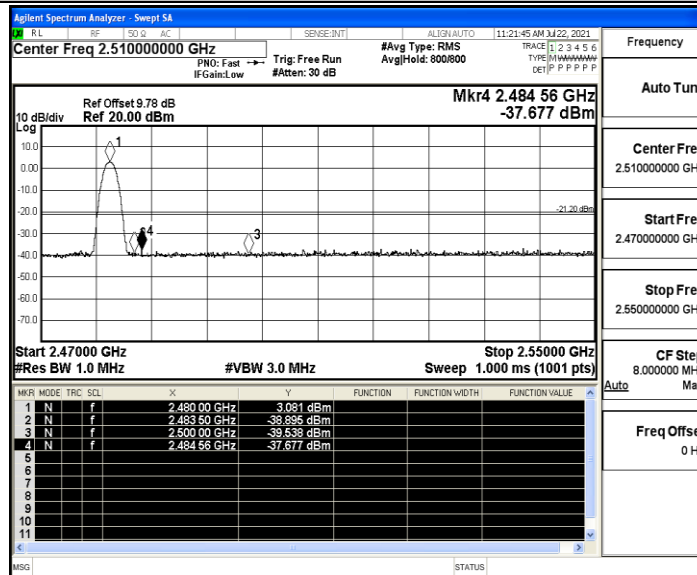
3DH5_Ant1_Low_2402_AV



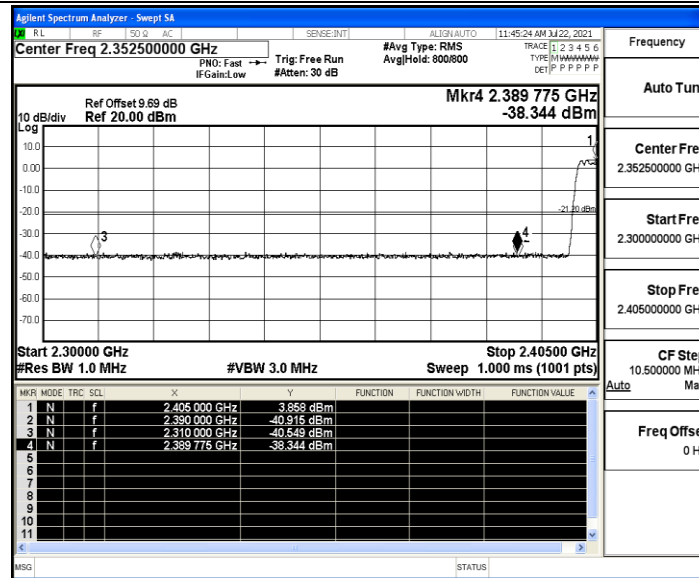
3DH5_Ant1_Low_2402_Peak



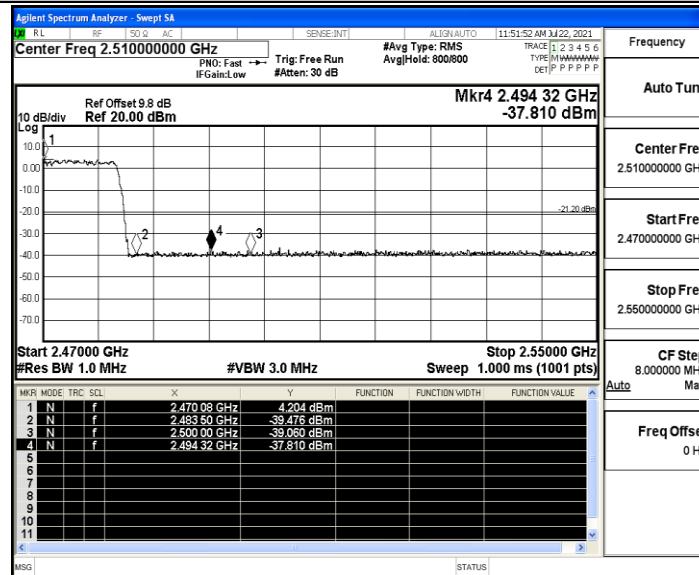
3DH5_Ant1_High_2480_AV



3DH5_Ant1_High_2480_Peak



3DH5_Ant1_Low_Hop_2402_Peak



3DH5_Ant1_High_Hop_2480_Peak