



Appendix A

RF Test Data for BT V5.0(BDR/EDR) (Conducted Measurement)

Product Name: Bluetooth Speaker

Test Model: HY-68

Environmental Conditions

Temperature:	22.1° C
Relative Humidity:	53.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Carl Fu
Supervised by:	Li Huan

A.1 Maximum conducted output power

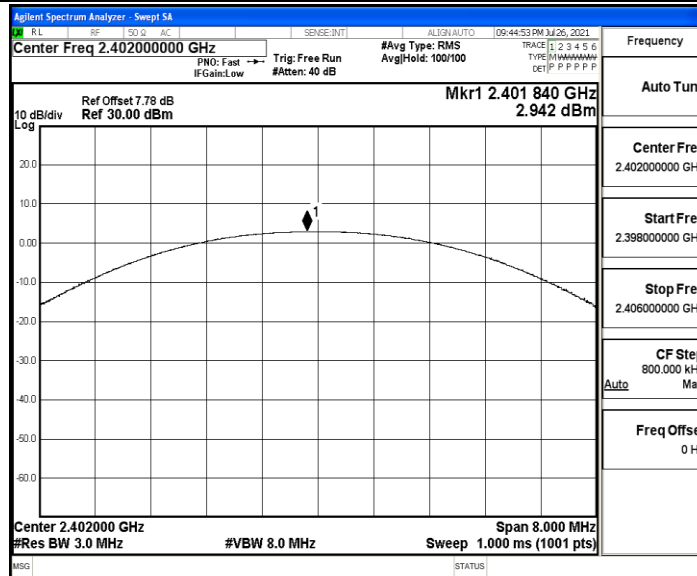
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	2.94	≤20.97	PASS
		2441	4.28	≤20.97	PASS
		2480	2.81	≤20.97	PASS
2DH5	Ant1	2402	2.15	≤20.97	PASS
		2441	3.37	≤20.97	PASS
		2480	1.9	≤20.97	PASS

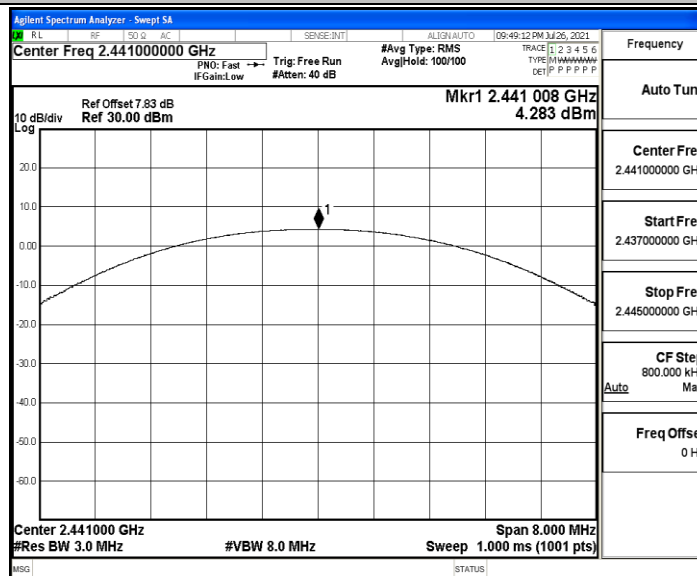


Test Graphs

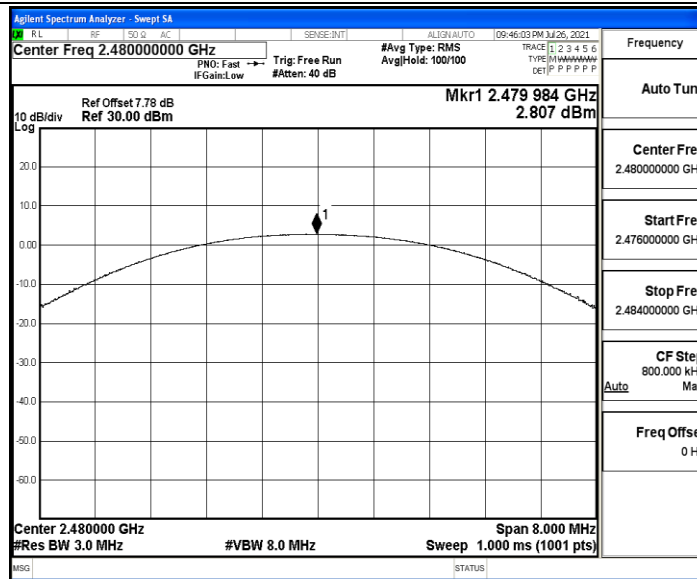
DH5_Ant1_2402



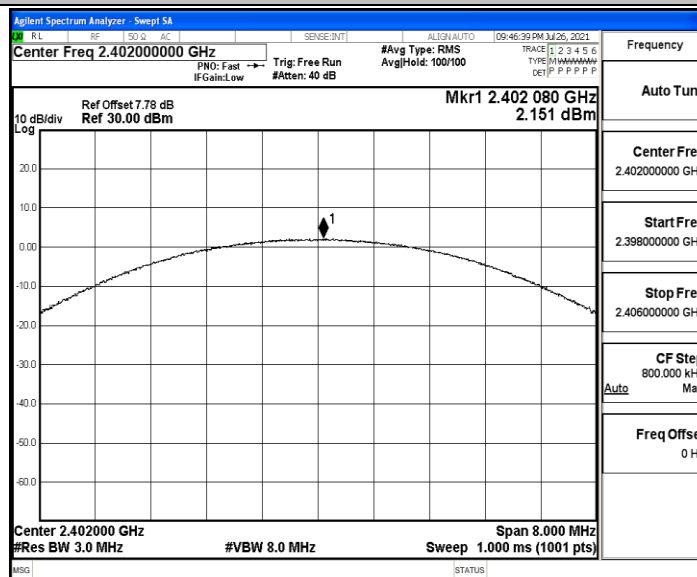
DH5_Ant1_2441



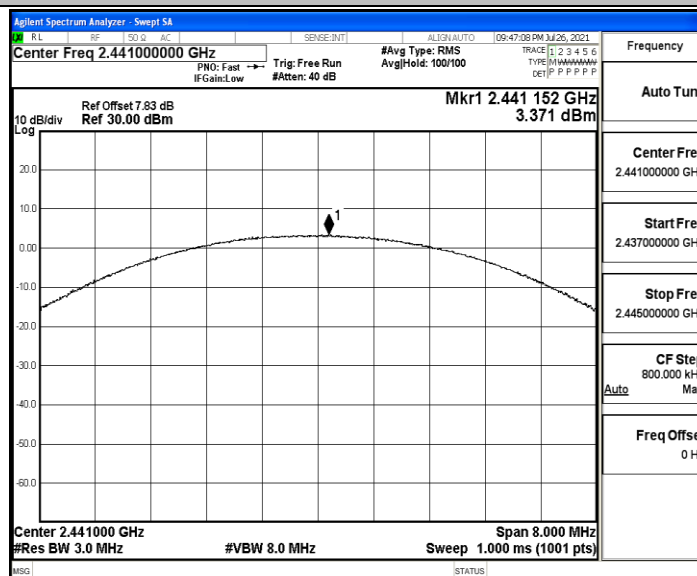
DH5_Ant1_2480



2DH5_Ant1_2402

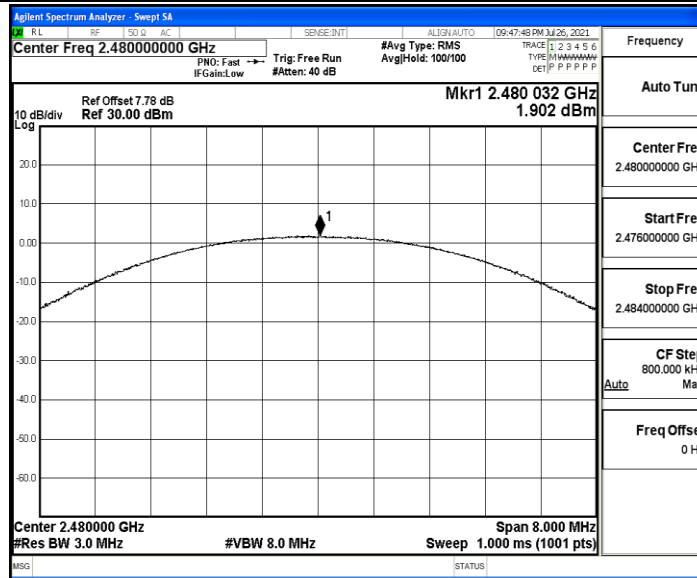


2DH5_Ant1_2441





2DH5_Ant1_2480





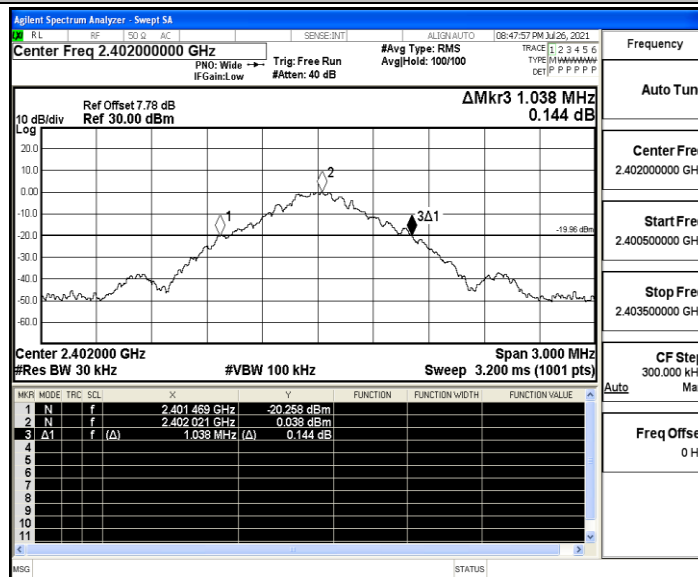
A.2 20dB Emission Bandwidth

Test Result

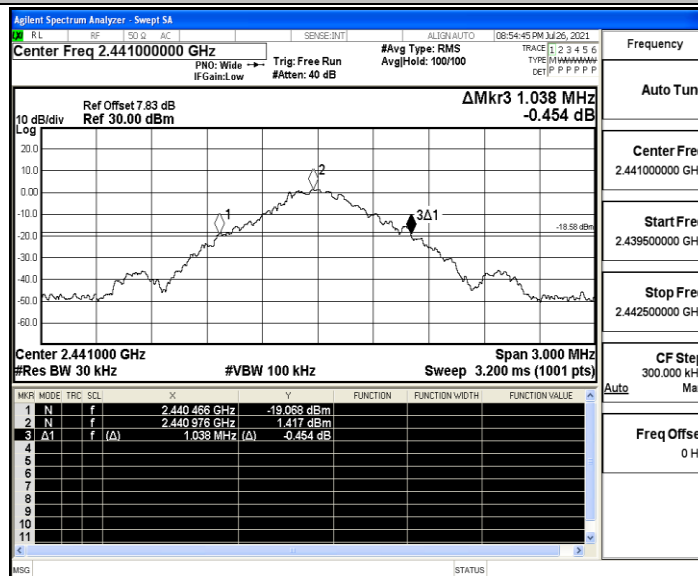
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	1.038	2401.469	2402.507	---	PASS
		2441	1.038	2440.466	2441.504	---	PASS
		2480	1.050	2479.457	2480.507	---	PASS
2DH5	Ant1	2402	1.362	2401.322	2402.684	---	PASS
		2441	1.317	2440.343	2441.660	---	PASS
		2480	1.314	2479.343	2480.657	---	PASS

Test Graphs

DH5_Ant1_2402

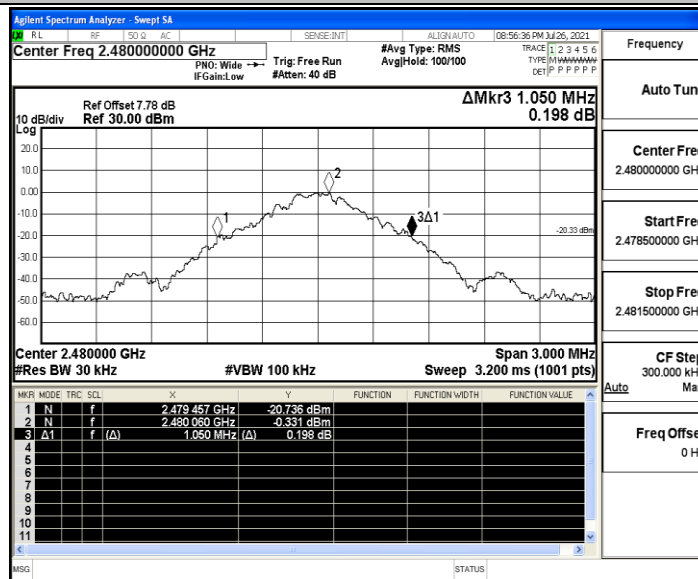


DH5_Ant1_2441

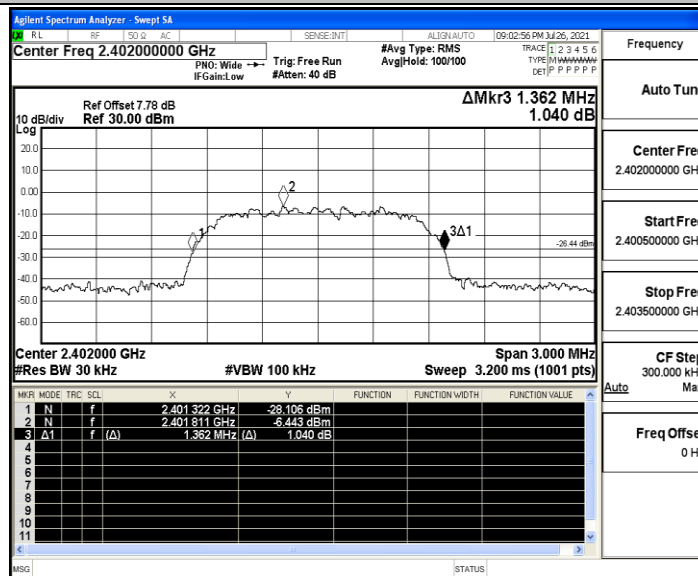




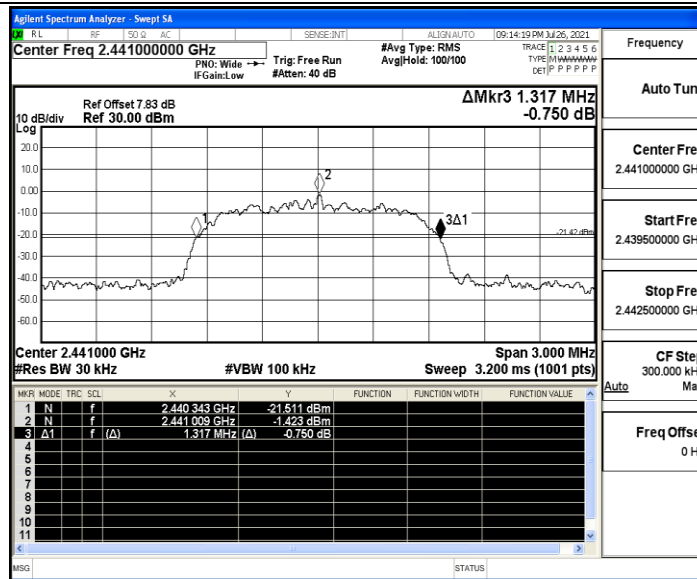
DH5_Ant1_2480



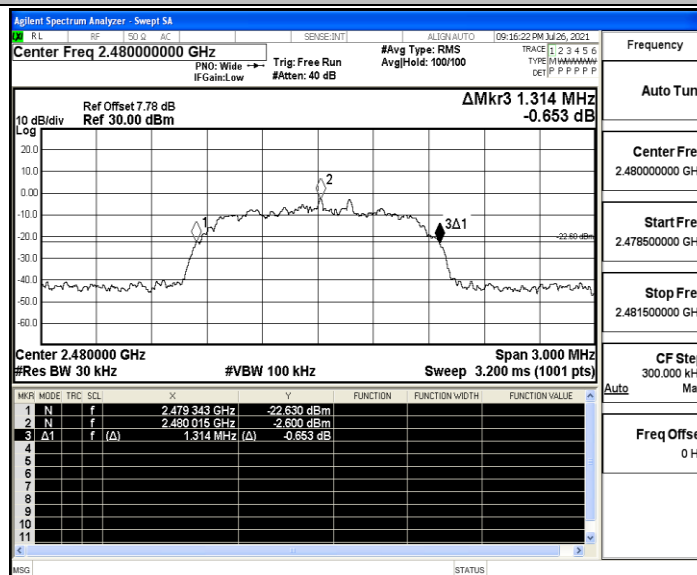
2DH5_Ant1_2402



2DH5_Ant1_2441



2DH5_Ant1_2480





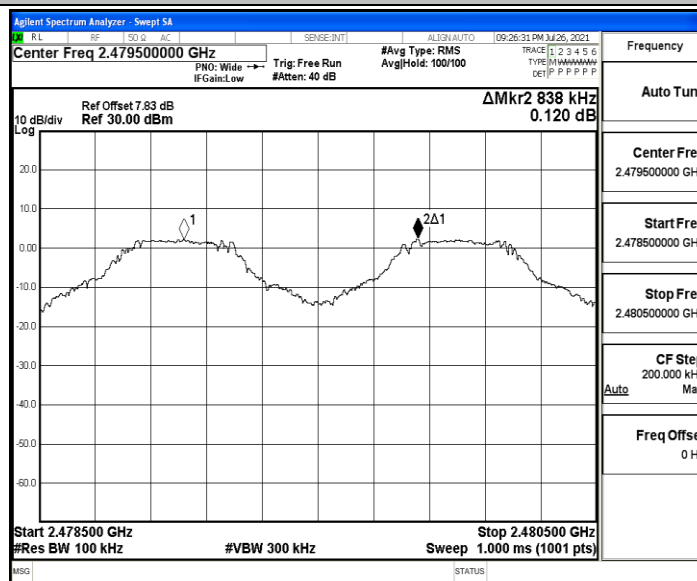
A.3 Carrier frequency separation

Test Result

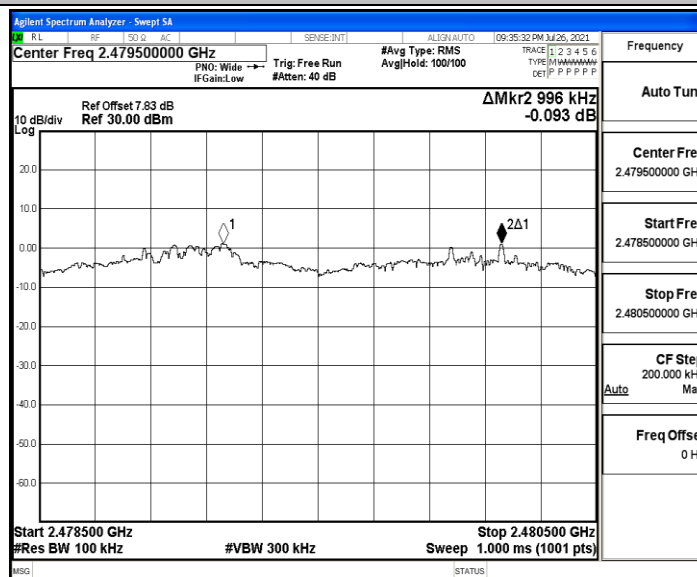
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	Hop	0.838	≥ 0.700	PASS
2DH5	Ant1	Hop	0.996	≥ 0.908	PASS

Test Graphs

DH5_Ant1_Hop



2DH5_Ant1_Hop



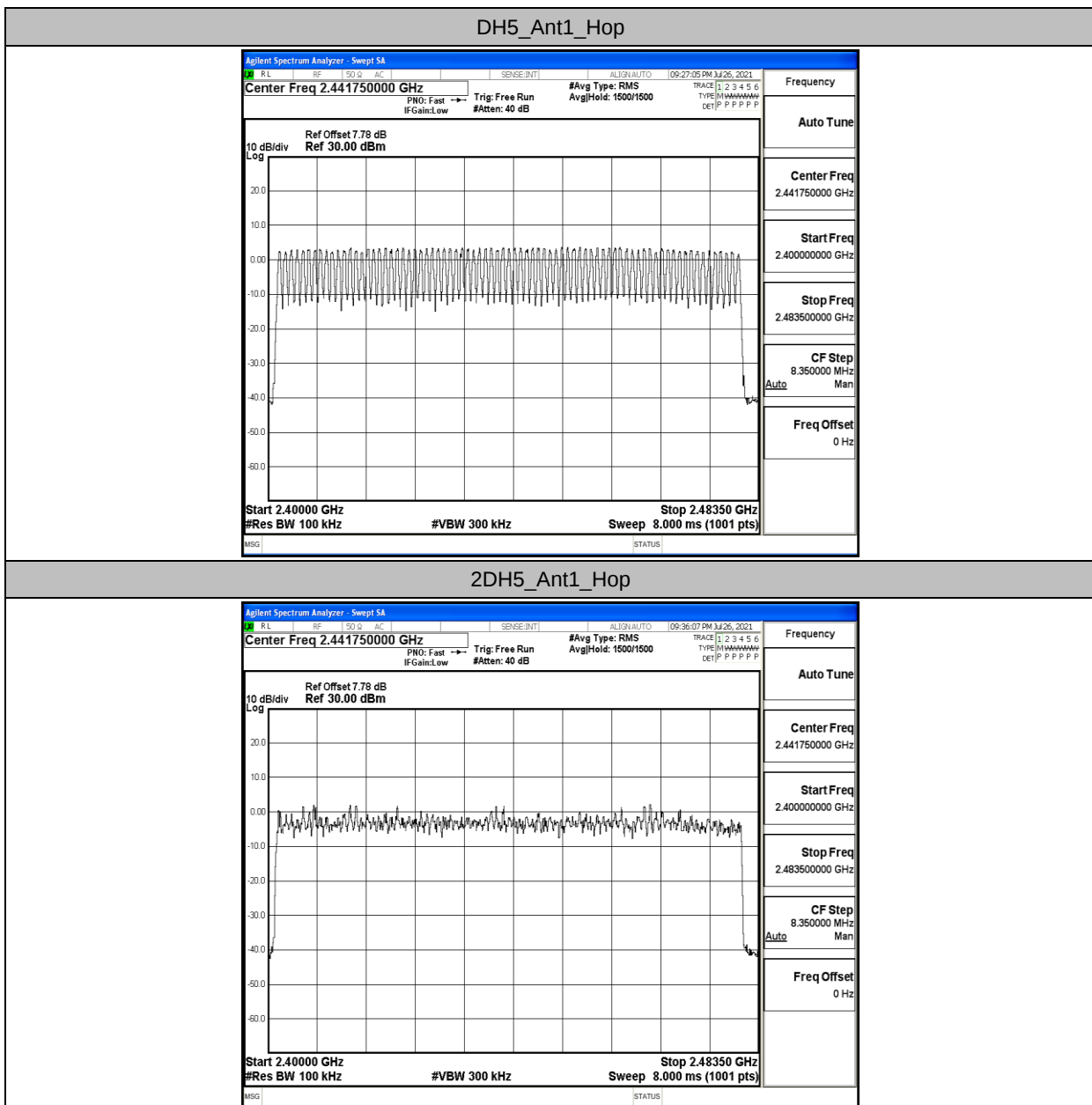


A.4 Number of hopping channels

Test Result

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

Test Graphs



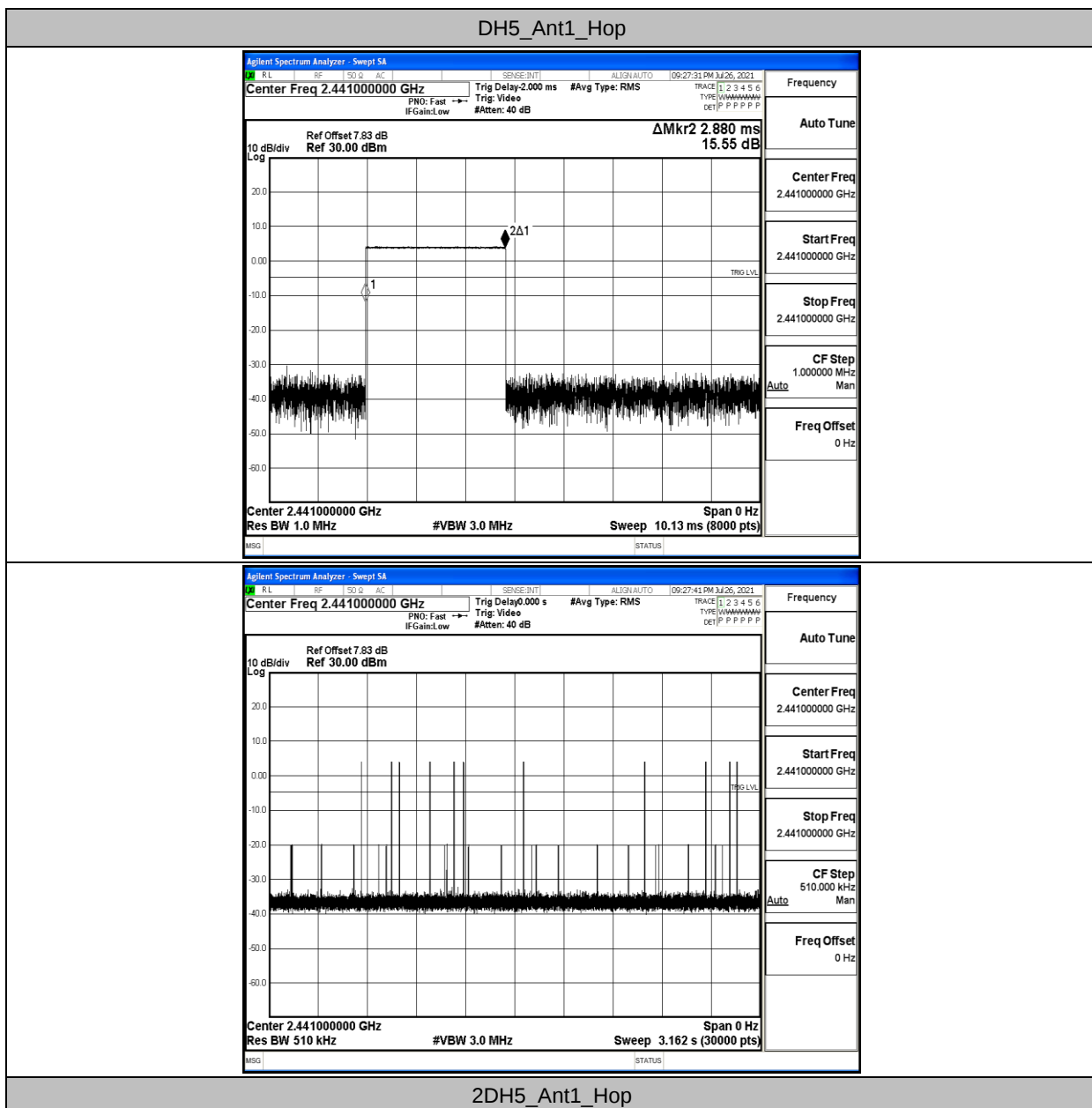


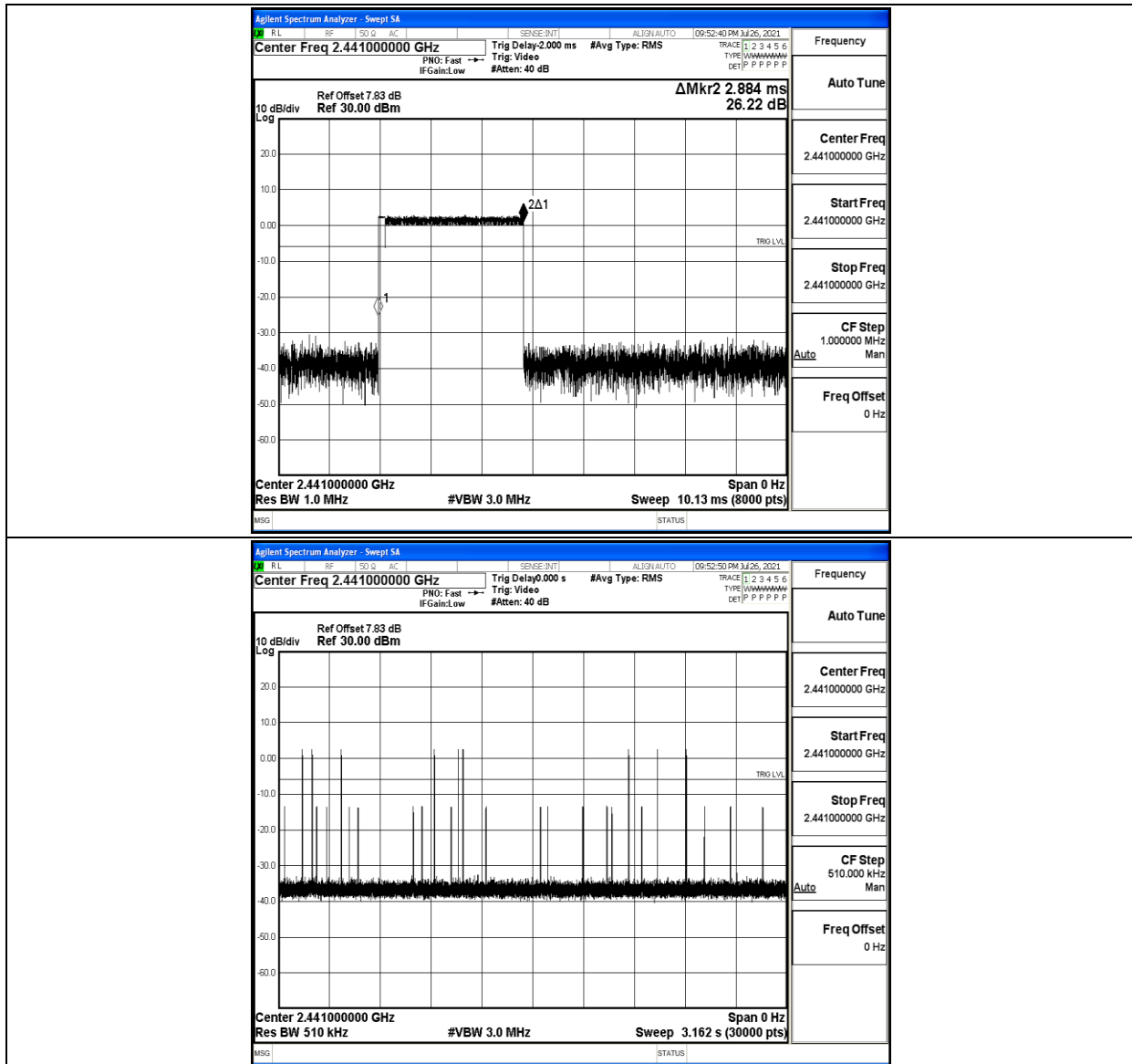
A.5 Time of occupancy

Test Result

TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.88	120	0.346	≤0.4	PASS
2DH5	Ant1	Hop	2.88	100	0.288	≤0.4	PASS

Test Graphs







A.6 Conducted Spurious Emission

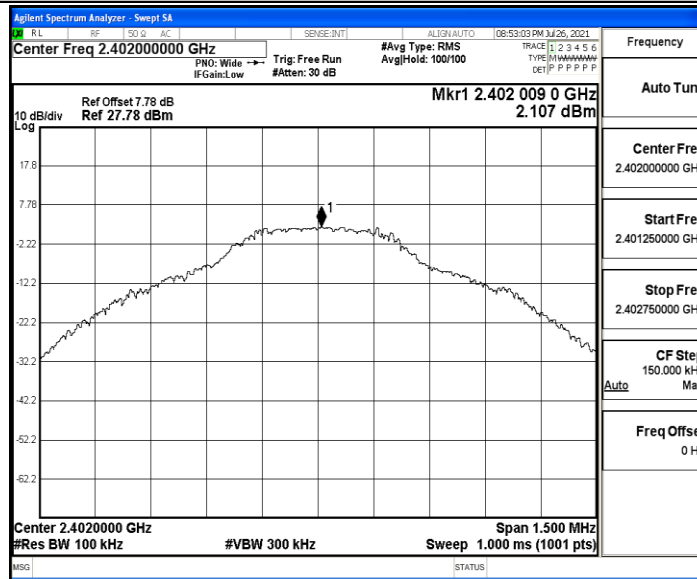
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	2.11	2.11	---	PASS
			30~1000	2.11	-60.8	≤ -17.89	PASS
			1000~26500	2.11	-47.19	≤ -17.89	PASS
		2441	Reference	3.88	3.88	---	PASS
			30~1000	3.88	-61.99	≤ -16.12	PASS
			1000~26500	3.88	-46.71	≤ -16.12	PASS
		2480	Reference	2.47	2.47	---	PASS
			30~1000	2.47	-61.95	≤ -17.53	PASS
			1000~26500	2.47	-46.77	≤ -17.53	PASS
2DH5	Ant1	2402	Reference	-1.83	-1.83	---	PASS
			30~1000	-1.83	-61.98	≤ -21.83	PASS
			1000~26500	-1.83	-46.94	≤ -21.83	PASS
		2441	Reference	-0.88	-0.88	---	PASS
			30~1000	-0.88	-62	≤ -20.88	PASS
			1000~26500	-0.88	-47.75	≤ -20.88	PASS
		2480	Reference	-2.25	-2.25	---	PASS
			30~1000	-2.25	-61.65	≤ -22.25	PASS
			1000~26500	-2.25	-47.8	≤ -22.25	PASS

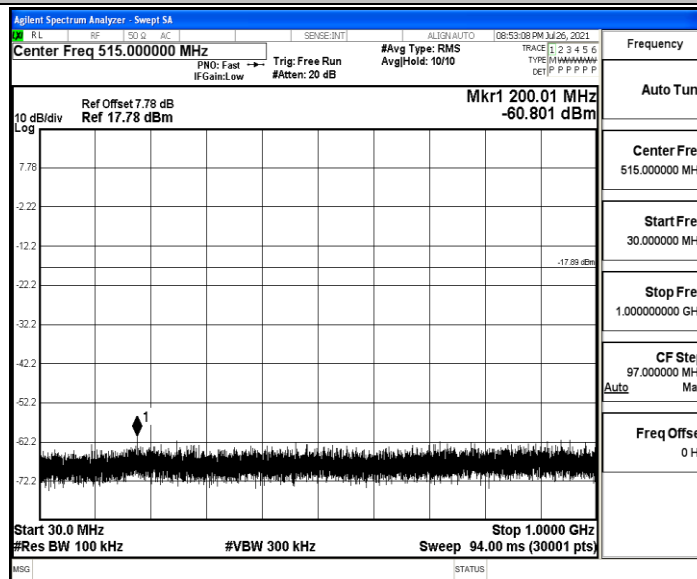


Test Graphs

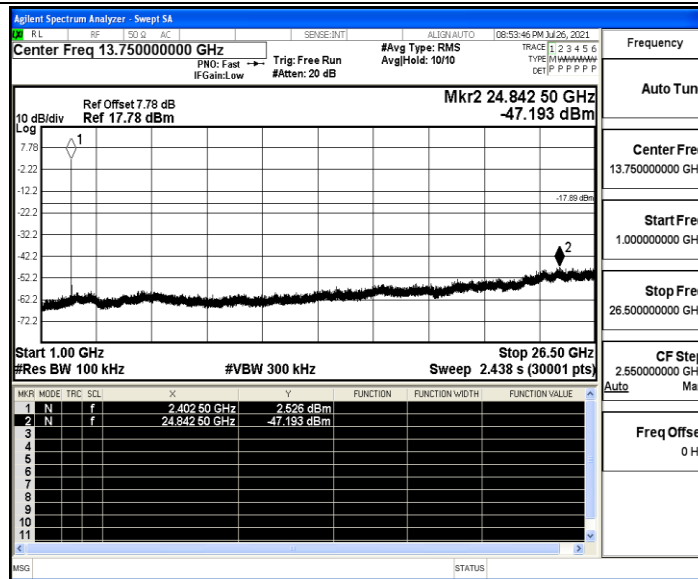
DH5_Ant1_2402_0-Reference



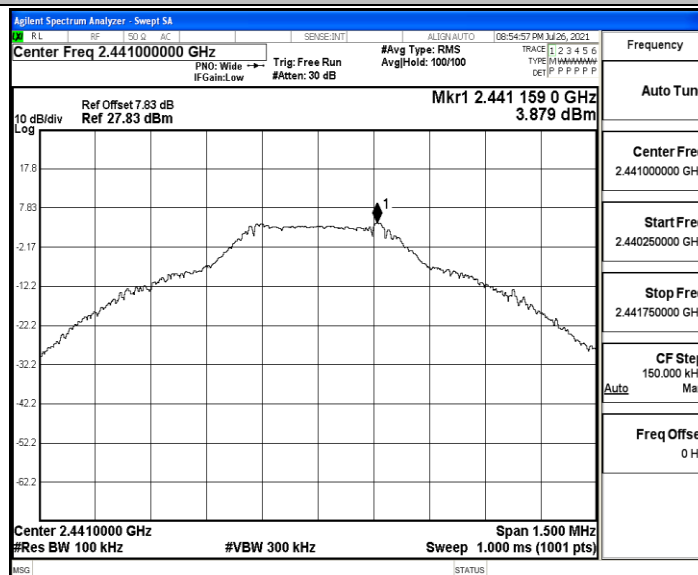
DH5_Ant1_2402_30-1000



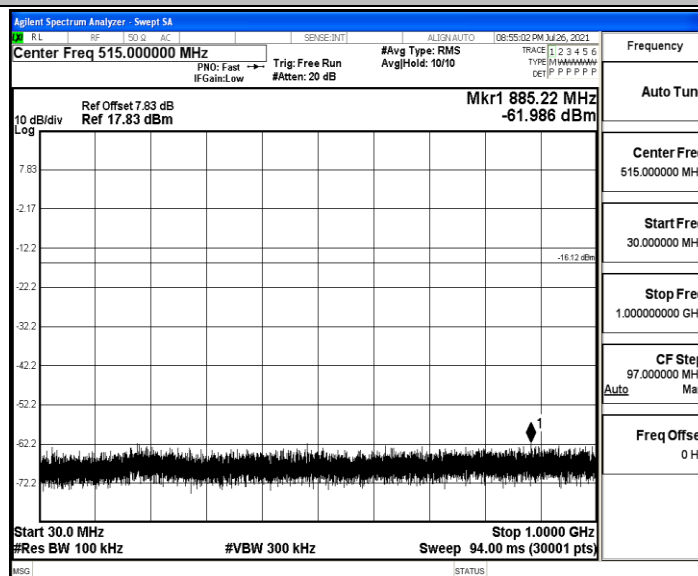
DH5_Ant1_2402_1000-26500



DH5_Ant1_2441_0~Reference

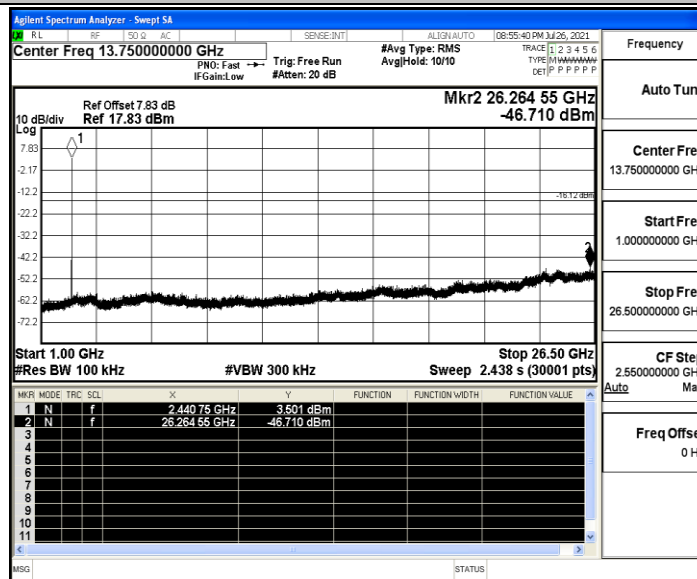


DH5_Ant1_2441_30~1000

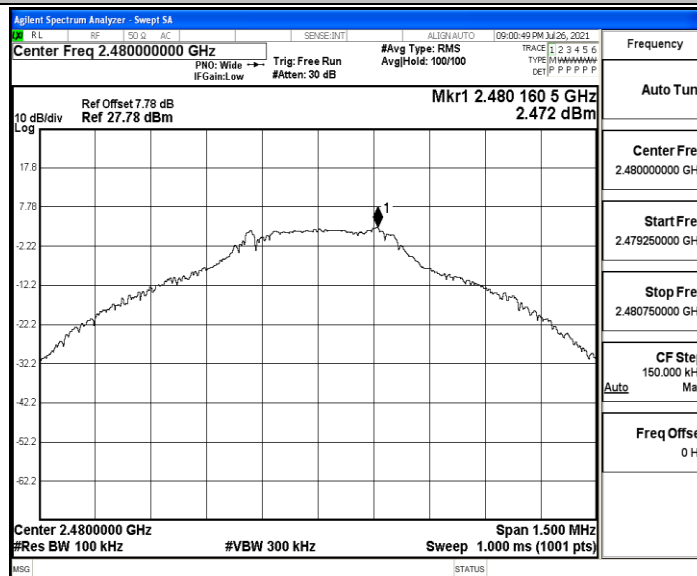




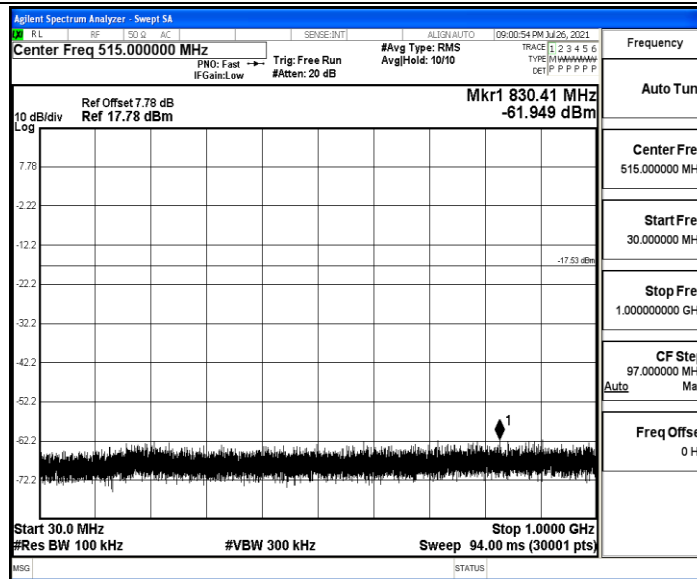
DH5_Ant1_2441_1000~26500



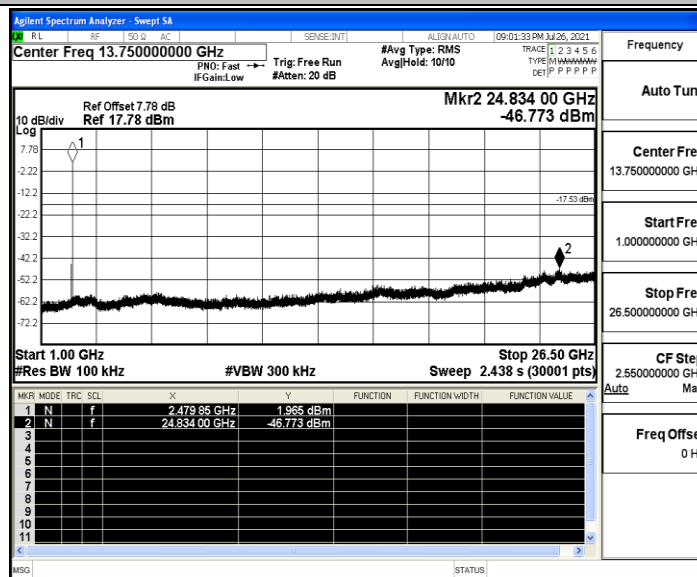
DH5_Ant1_2480_0~Reference



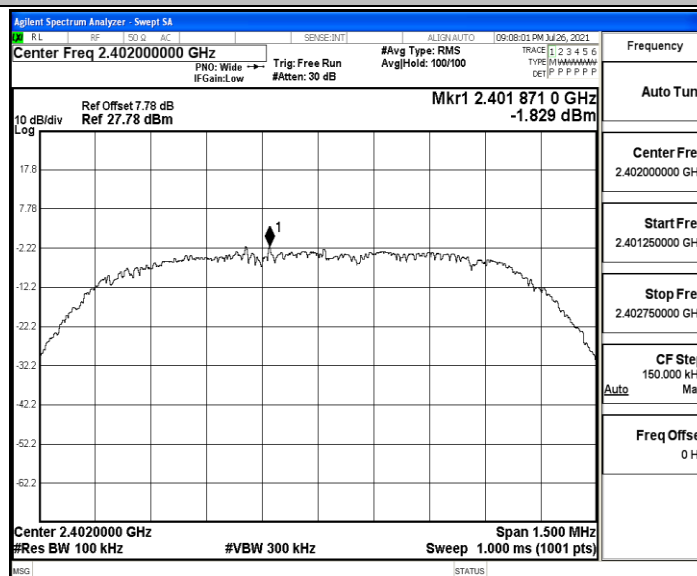
DH5_Ant1_2480_30~1000



DH5_Ant1_2480_1000~26500

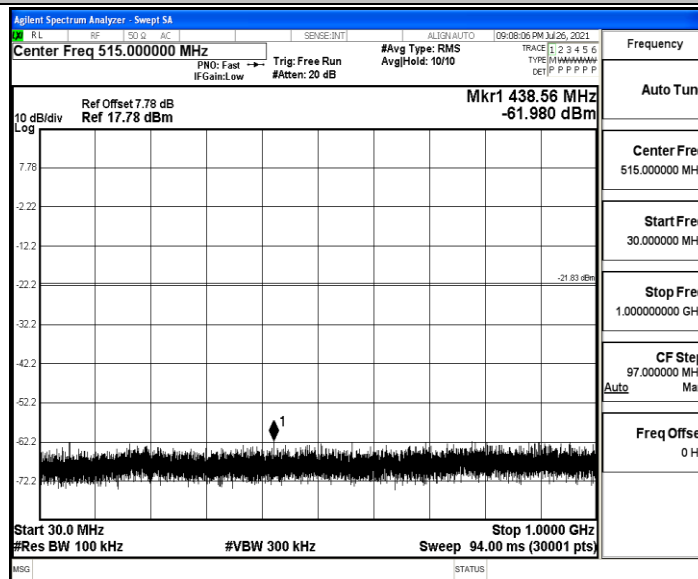


2DH5_Ant1_2402_0~Reference

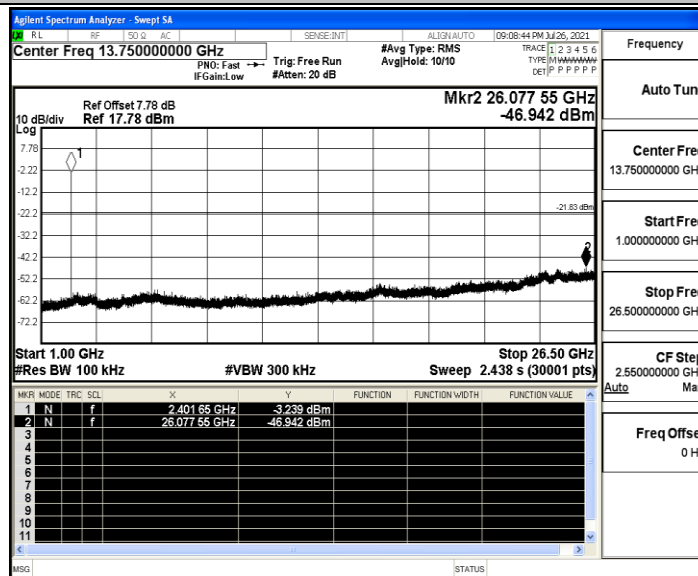




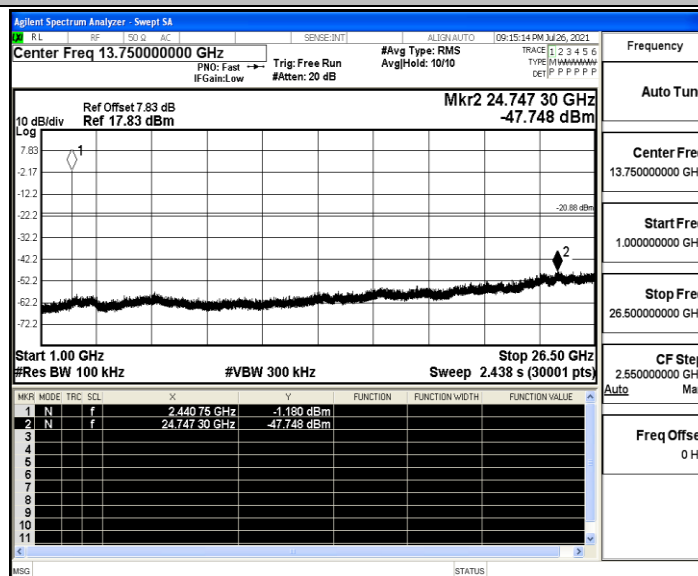
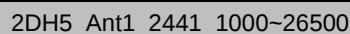
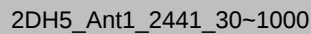
2DH5_Ant1_2402_30~1000



2DH5_Ant1_2402_1000~26500

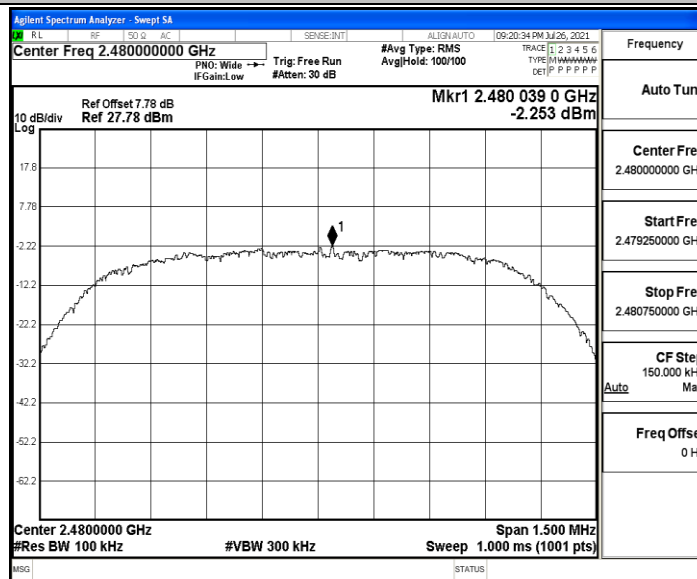


2DH5_Ant1_2441_0~Reference

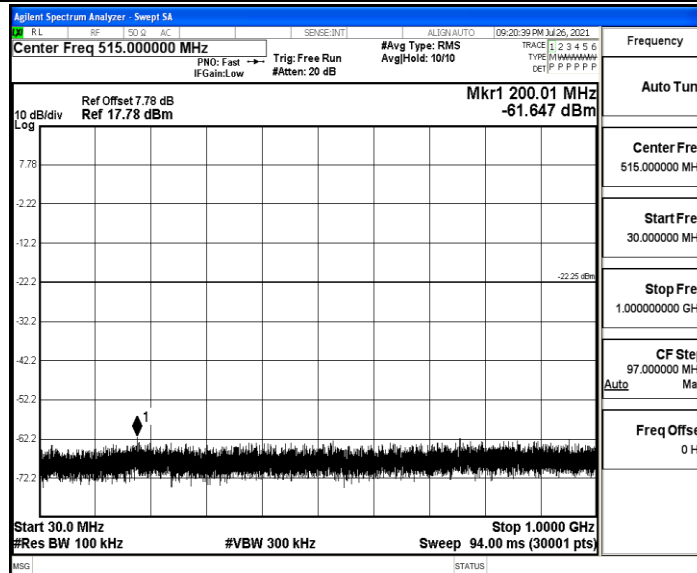




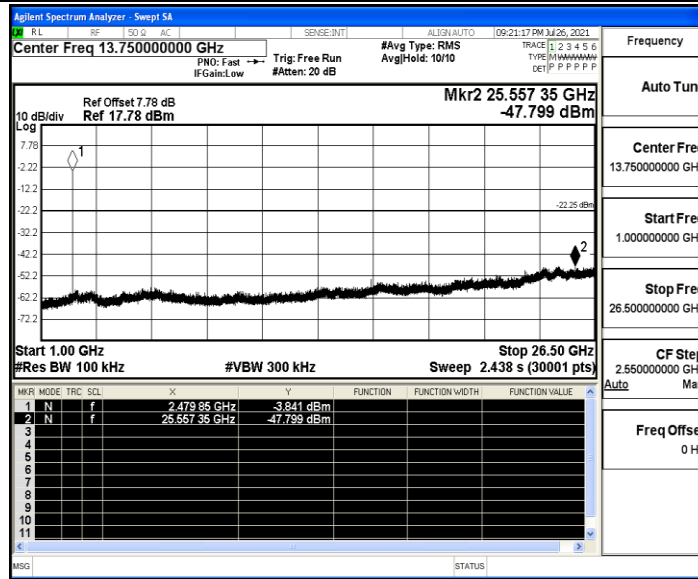
2DH5_Ant1_2480_0~Reference



2DH5_Ant1_2480_30~1000



2DH5_Ant1_2480_1000~26500



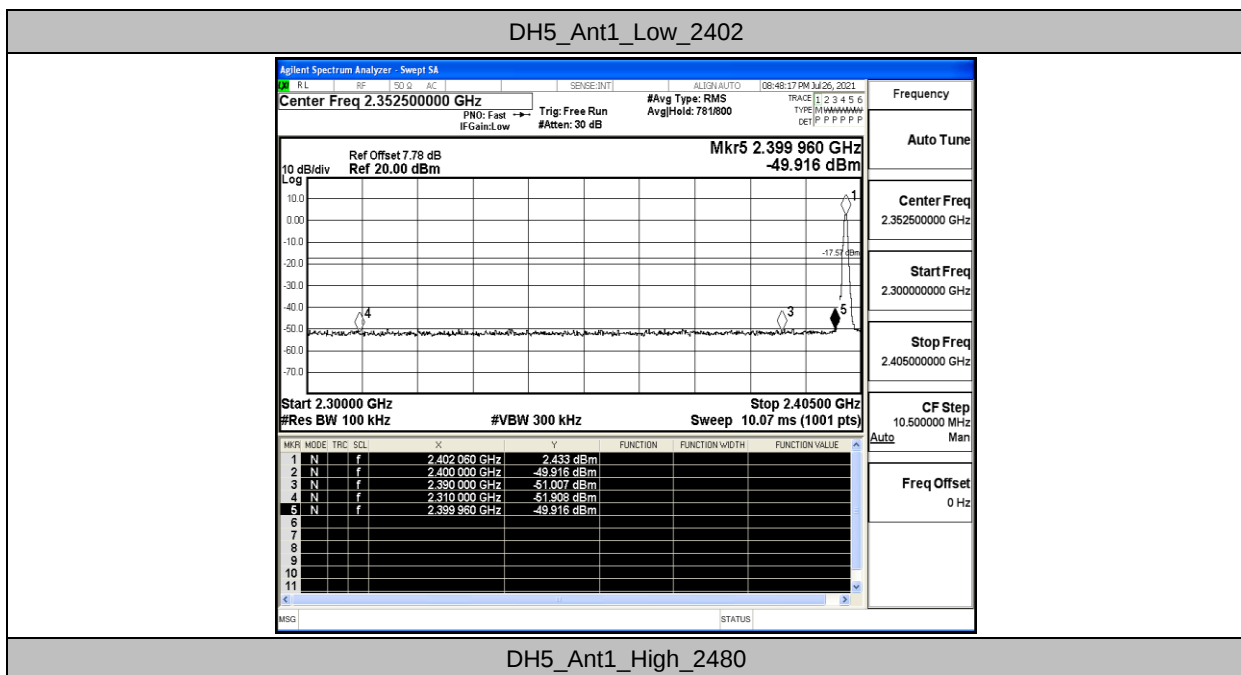


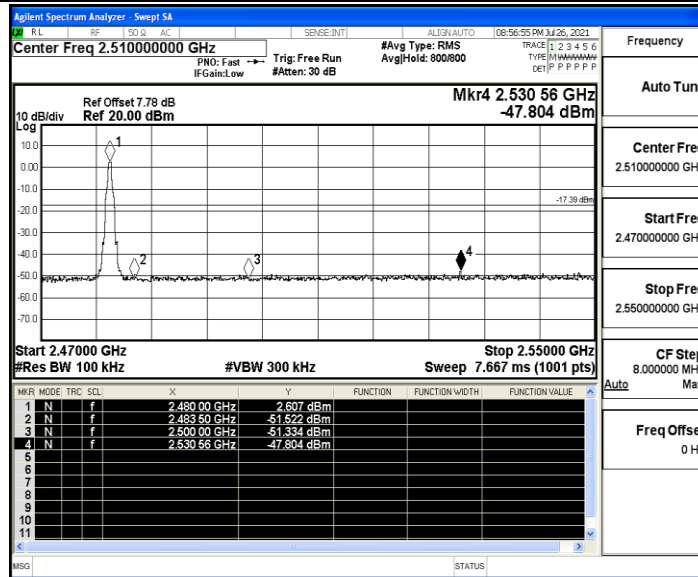
A.7 Band edge measurements

Test Result

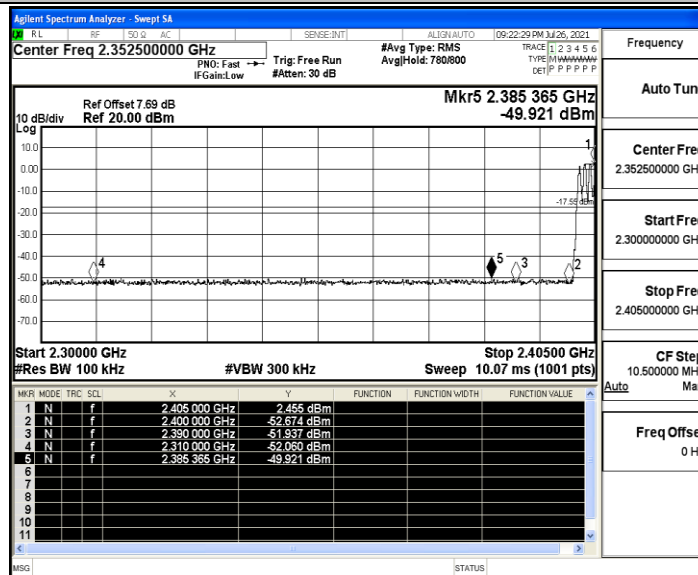
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	2.43	-49.92	≤-17.57	PASS
		High	2480	2.61	-47.8	≤-17.39	PASS
		Low	Hop_2402	2.46	-49.92	≤-17.55	PASS
		High	Hop_2480	3.08	-48.97	≤-16.92	PASS
2DH5	Ant1	Low	2402	0.74	-49.01	≤-19.26	PASS
		High	2480	1.15	-48.58	≤-18.85	PASS
		Low	Hop_2402	-1.79	-49.96	≤-21.79	PASS
		High	Hop_2480	1.16	-48.46	≤-18.84	PASS

Test Graphs

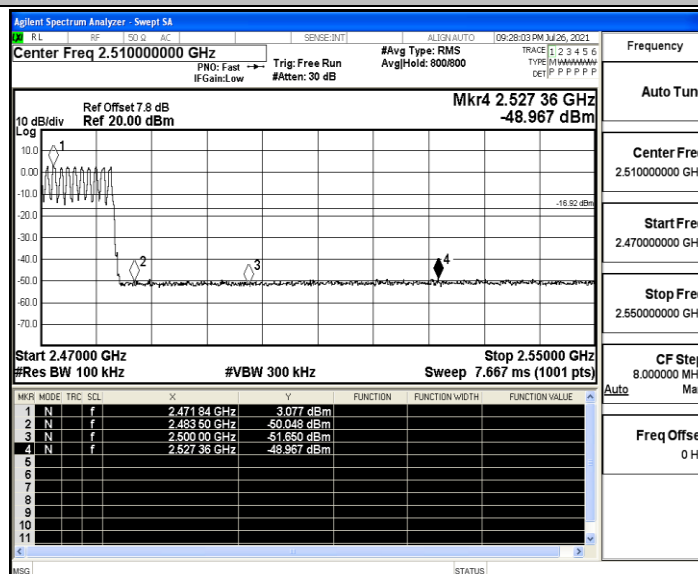




DH5_Ant1_Low_Hop_2402

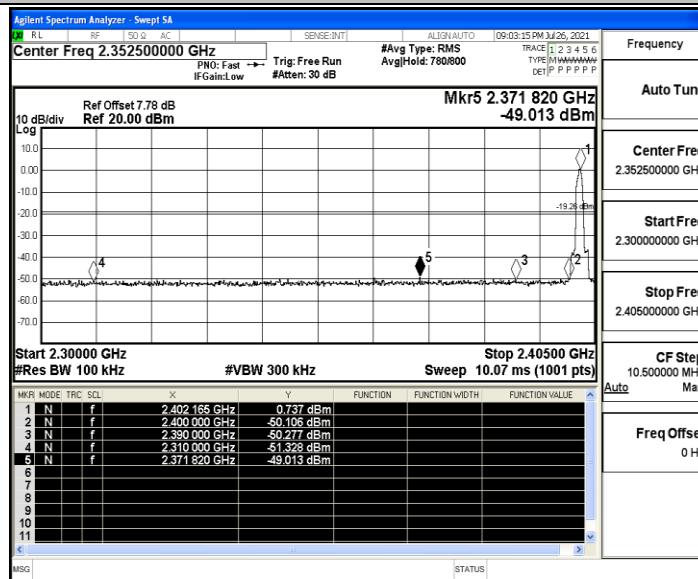


DH5_Ant1_High_Hop_2480

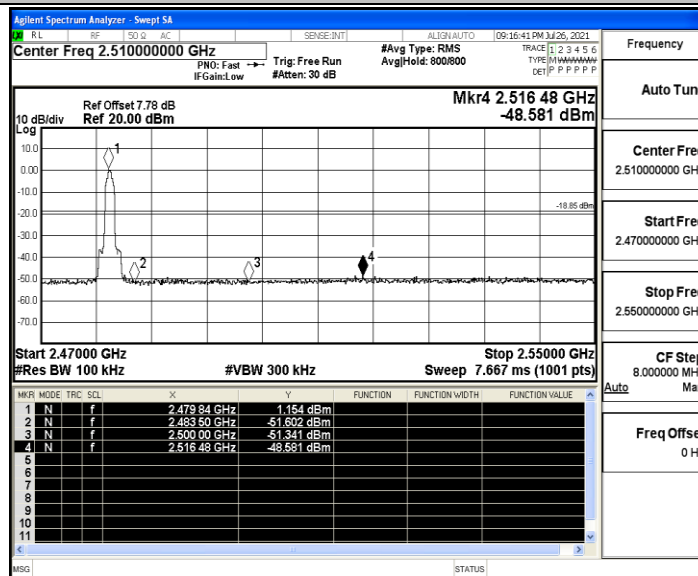




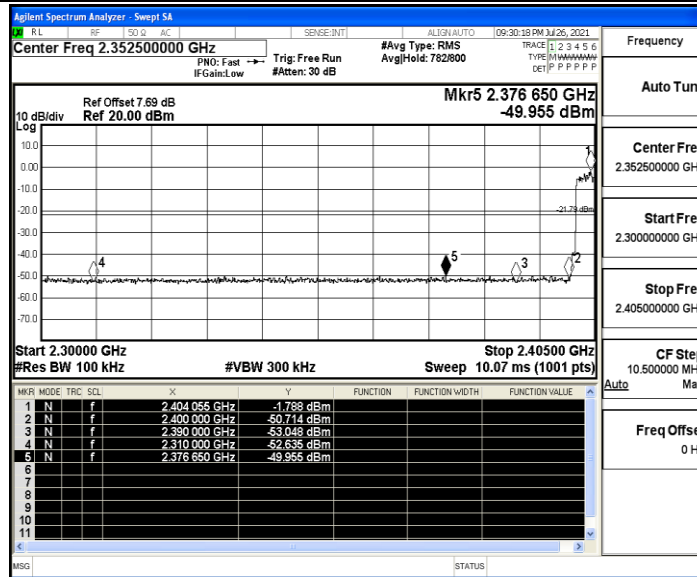
2DH5_Ant1_Low_2402



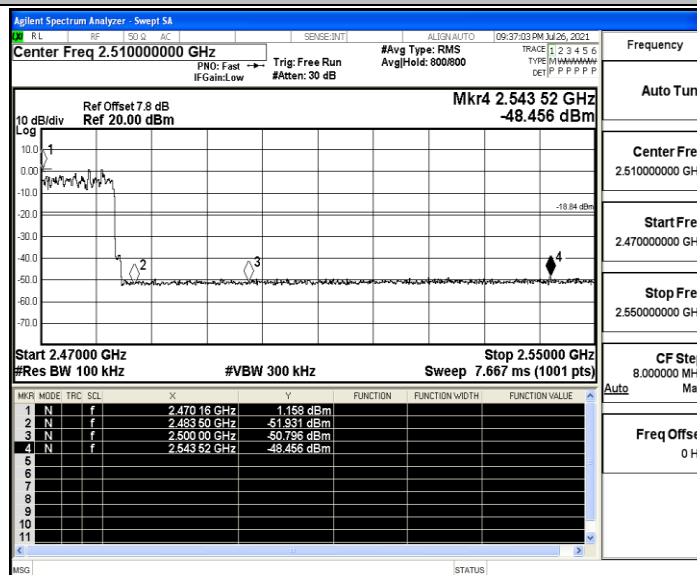
2DH5_Ant1_High_2480



2DH5_Ant1_Low_Hop_2402



2DH5_Ant1_High_Hop_2480





A.8 Emissions in Restricted Bands

Test Result

TestMode	Antenna	Channel Name	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH5	Ant1	Low	2402	AV	2310.000	-48.88	≤-41.20	46.32	≤54	PASS
				AV	2381.375	-48.48	≤-41.20	46.72	≤54	PASS
				AV	2390.000	-48.52	≤-41.20	46.68	≤54	PASS
				Peak	2310.000	-41.12	≤-21.20	54.08	≤74	PASS
				Peak	2344.100	-38.01	≤-21.20	57.19	≤74	PASS
				Peak	2390.000	-40.41	≤-21.20	54.79	≤74	PASS
		High	2480	AV	2483.500	-47.63	≤-41.20	47.57	≤54	PASS
				AV	2483.520	-47.63	≤-41.20	47.57	≤54	PASS
				AV	2500.000	-47.96	≤-41.20	47.24	≤54	PASS
				Peak	2483.500	-39.22	≤-21.20	55.98	≤74	PASS
				Peak	2496.800	-36.37	≤-21.20	58.83	≤74	PASS
				Peak	2500.000	-40.13	≤-21.20	55.07	≤74	PASS
		Low	Hop_2402	Peak	2310.000	-41.66	≤-21.20	53.54	≤74	PASS
				Peak	2377.280	-37.93	≤-21.20	57.27	≤74	PASS
				Peak	2390.000	-40.44	≤-21.20	54.76	≤74	PASS
		High	Hop_2480	Peak	2483.500	-39.93	≤-21.20	55.27	≤74	PASS
				Peak	2486.000	-37.65	≤-21.20	57.55	≤74	PASS
				Peak	2500.000	-39.78	≤-21.20	55.42	≤74	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-48.96	≤-41.20	46.24	≤54	PASS
				AV	2389.880	-48.38	≤-41.20	46.82	≤54	PASS
				AV	2390.000	-48.47	≤-41.20	46.73	≤54	PASS
				Peak	2310.000	-39.35	≤-21.20	55.85	≤74	PASS
				Peak	2323.310	-38.19	≤-21.20	57.01	≤74	PASS
				Peak	2390.000	-40.88	≤-21.20	54.32	≤74	PASS
		High	2480	AV	2483.500	-47.53	≤-41.20	47.67	≤54	PASS
				AV	2483.520	-47.53	≤-41.20	47.67	≤54	PASS
				AV	2500.000	-47.92	≤-41.20	47.28	≤54	PASS
				Peak	2483.500	-39.68	≤-21.20	55.52	≤74	PASS
				Peak	2495.440	-37.54	≤-21.20	57.66	≤74	PASS
				Peak	2500.000	-39.15	≤-21.20	56.05	≤74	PASS
		Low	Hop_2402	Peak	2310.000	-40.28	≤-21.20	54.92	≤74	PASS
				Peak	2366.465	-38.47	≤-21.20	56.73	≤74	PASS
				Peak	2390.000	-39.6	≤-21.20	55.60	≤74	PASS
		High	Hop_2480	Peak	2483.500	-40.8	≤-21.20	54.40	≤74	PASS
				Peak	2485.200	-37.45	≤-21.20	57.75	≤74	PASS



				Peak	2500.000	-38.89	≤ -21.20	56.31	≤ 74	PASS
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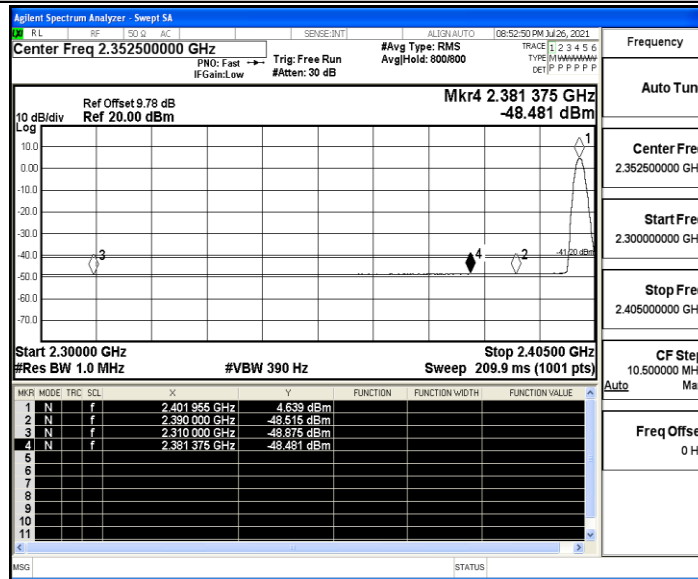
Note:

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.

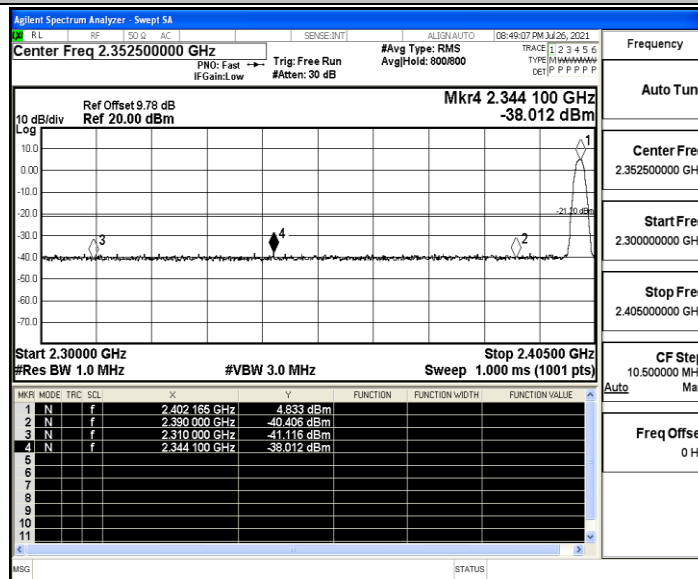


Test Graphs

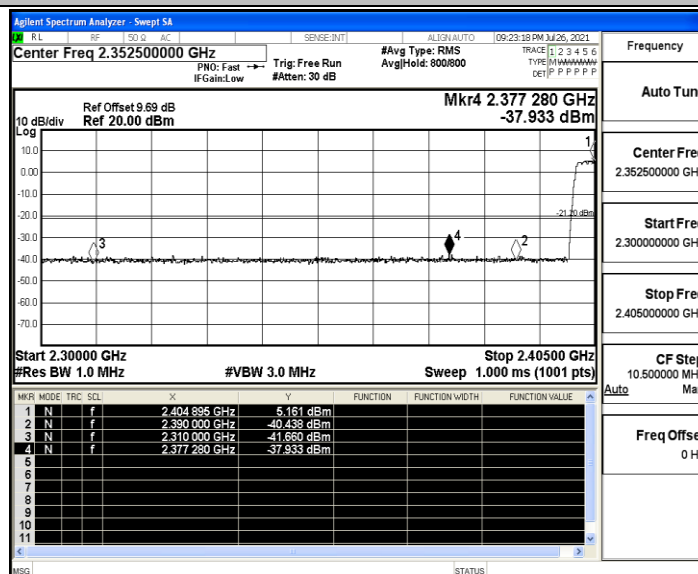
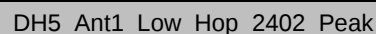
DH5_Ant1_Low_2402_AV



DH5_Ant1_Low_2402_Peak

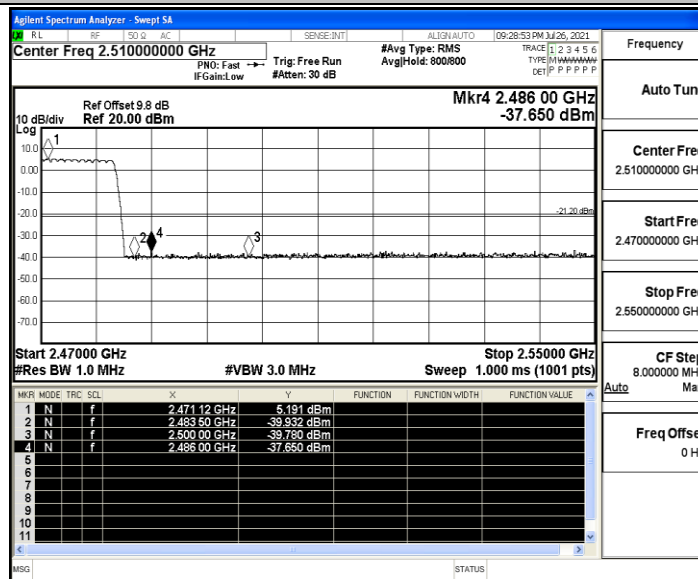


DH5_Ant1_High_2480_AV

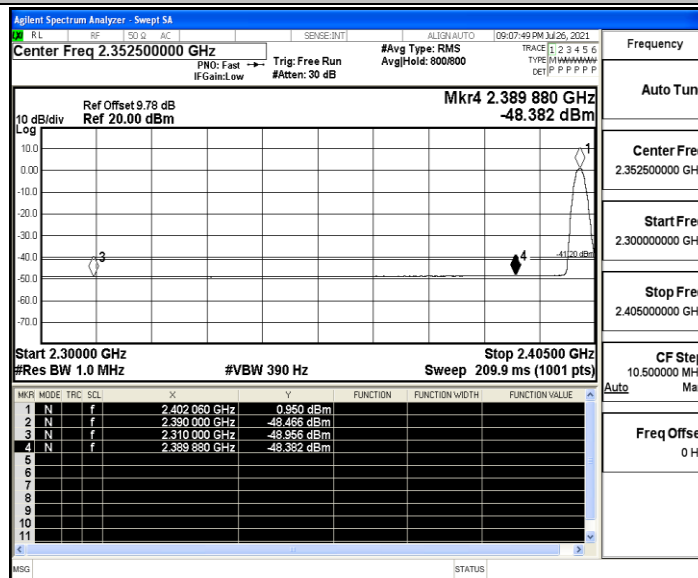




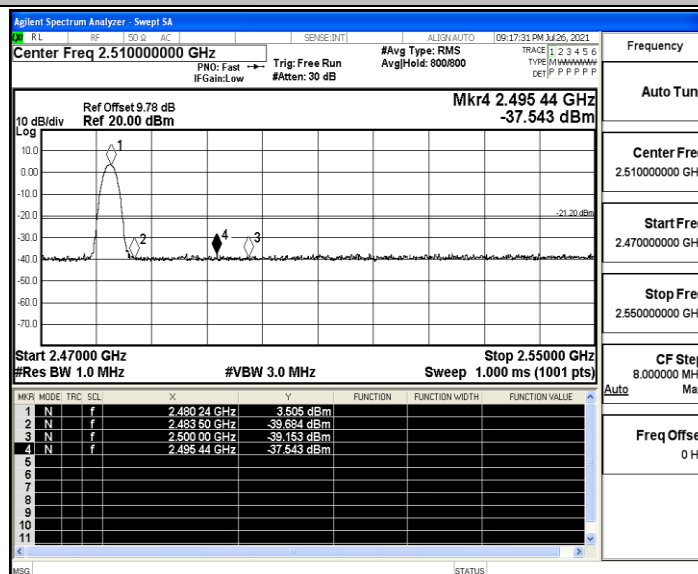
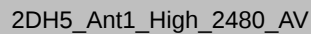
DH5_Ant1_High_Hop_2480_Peak



2DH5_Ant1_Low_2402_AV

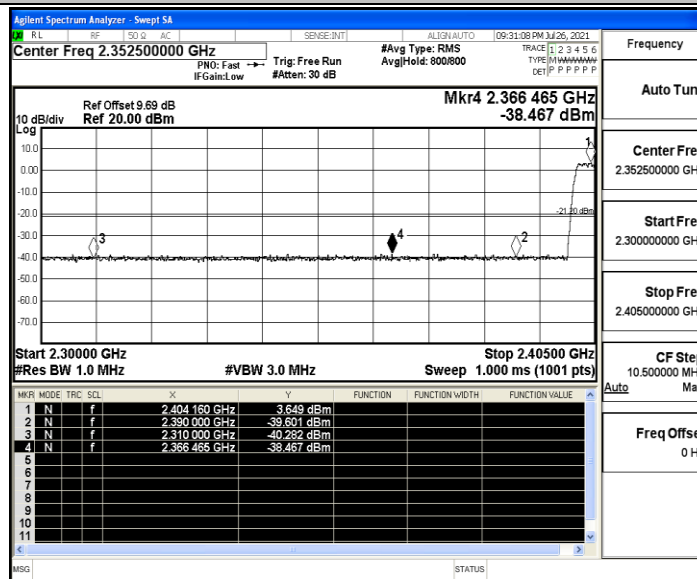


2DH5_Ant1_Low_2402_Peak





2DH5_Ant1_Low_Hop_2402_Peak



2DH5_Ant1_High_Hop_2480_Peak

