



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Bluetooth speaker

Test Model: FLS-190

Environmental Conditions

Temperature:	22.5° C
Relative Humidity:	53.5%
ATM Pressure:	100.0 kPa
Test Engineer:	Ling Zhu
Supervised by:	Li Huan

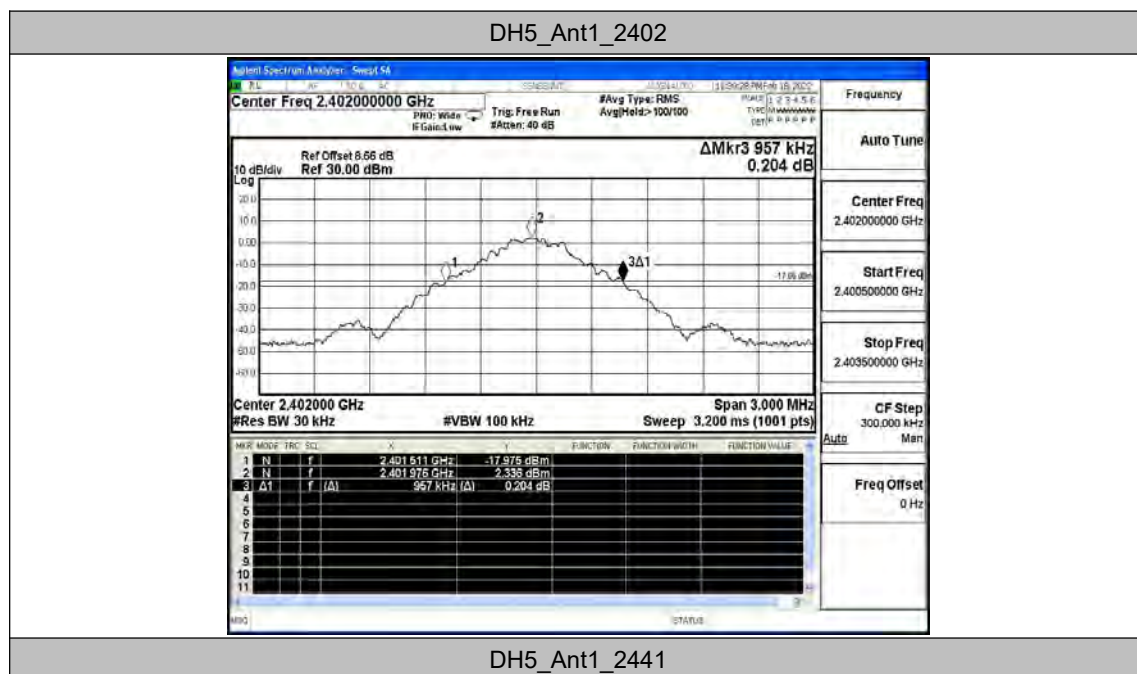


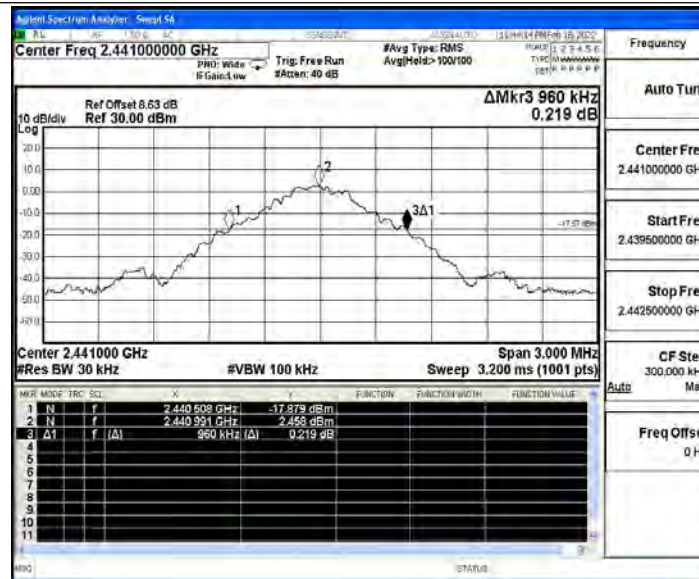
A.1 20dB Emission Bandwidth

Test Result

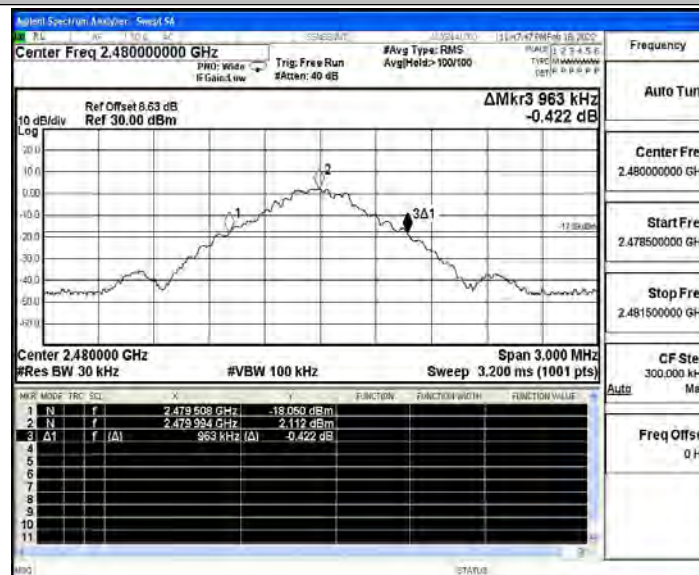
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.957	2401.511	2402.468	---	---
		2441	0.960	2440.508	2441.468	---	---
		2480	0.963	2479.508	2480.471	---	---
2DH5	Ant1	2402	1.323	2401.313	2402.636	---	---
		2441	1.350	2440.304	2441.654	---	---
		2480	1.317	2479.313	2480.630	---	---

Test Graphs

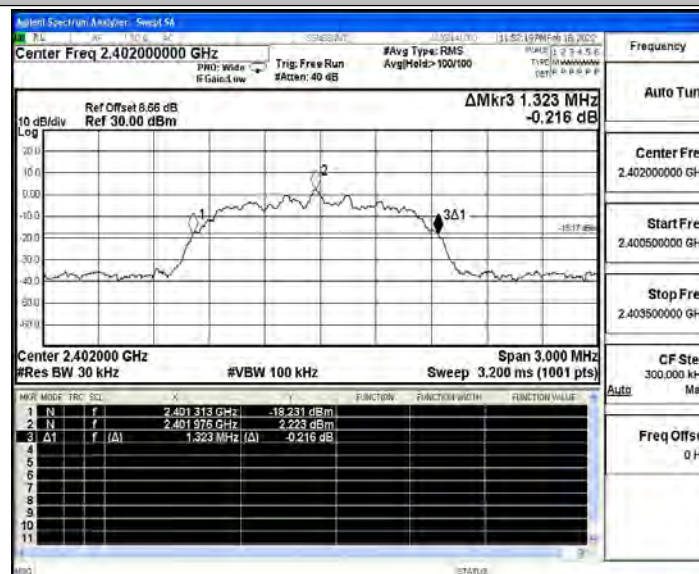




DH5_Ant1_2480

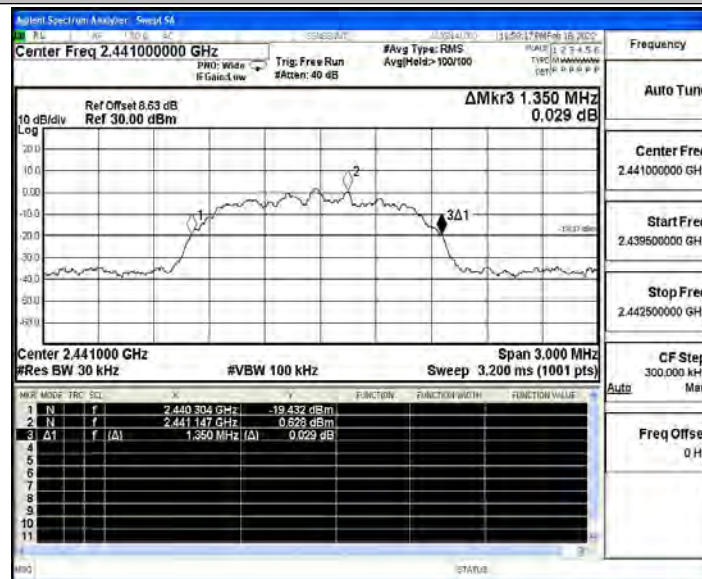


2DH5_Ant1_2402

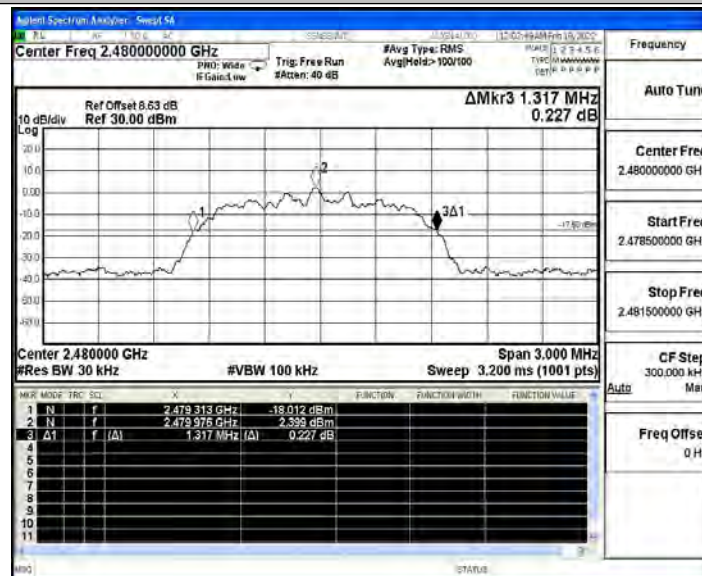




2DH5_Ant1_2441



2DH5_Ant1_2480



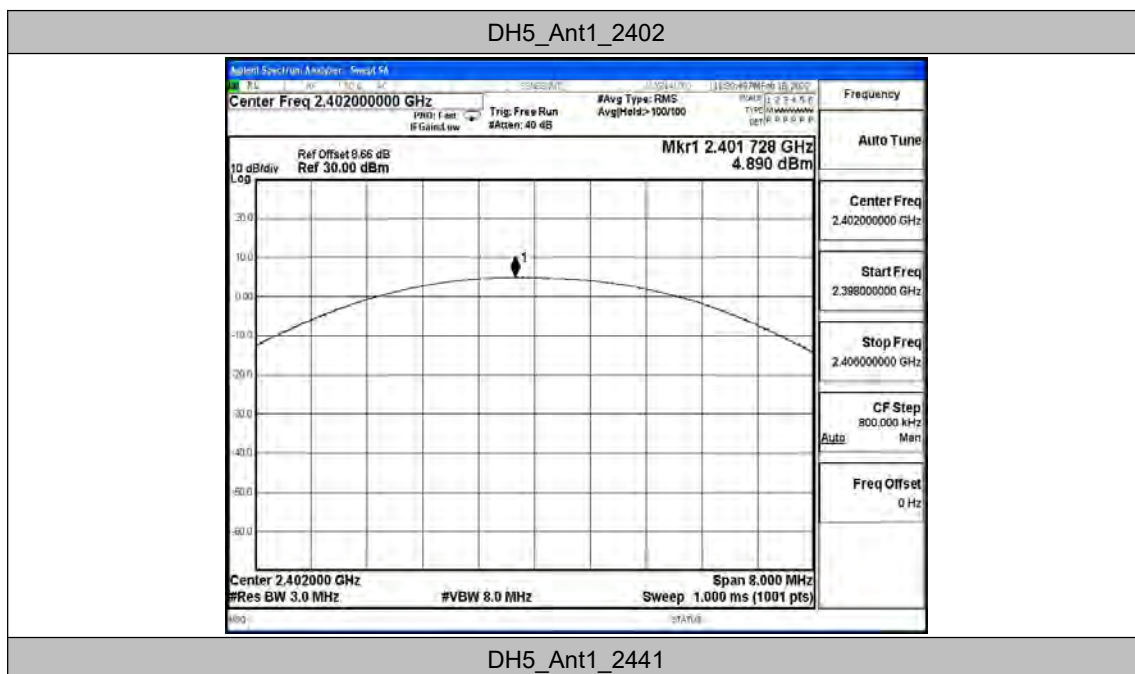


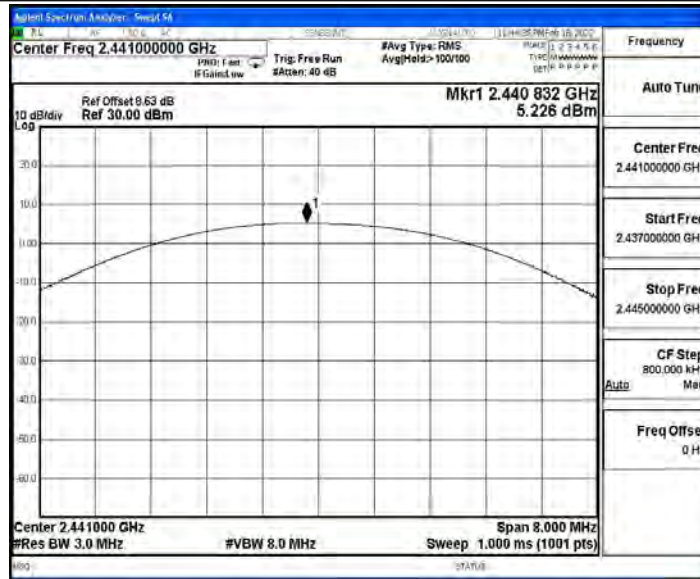
A.2 Maximum conducted output power

Test Result

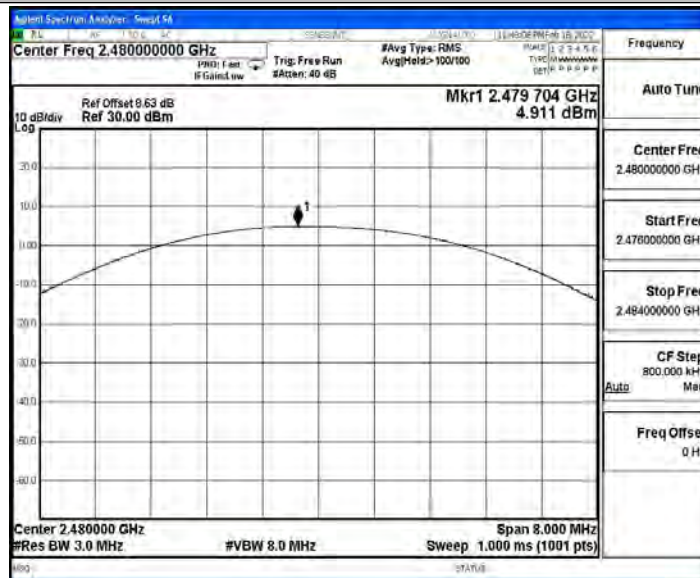
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	4.89	≤20.97	PASS
		2441	5.23	≤20.97	PASS
		2480	4.91	≤20.97	PASS
2DH5	Ant1	2402	5.55	≤20.97	PASS
		2441	5.87	≤20.97	PASS
		2480	5.59	≤20.97	PASS

Test Graphs

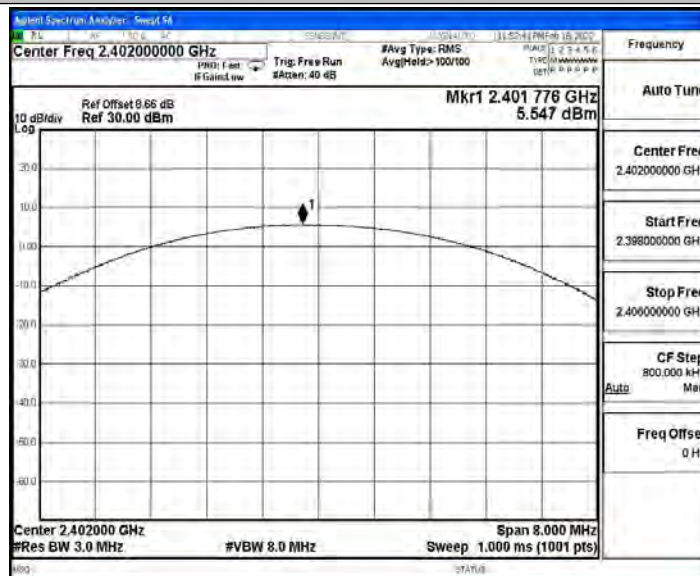




DH5_Ant1_2480

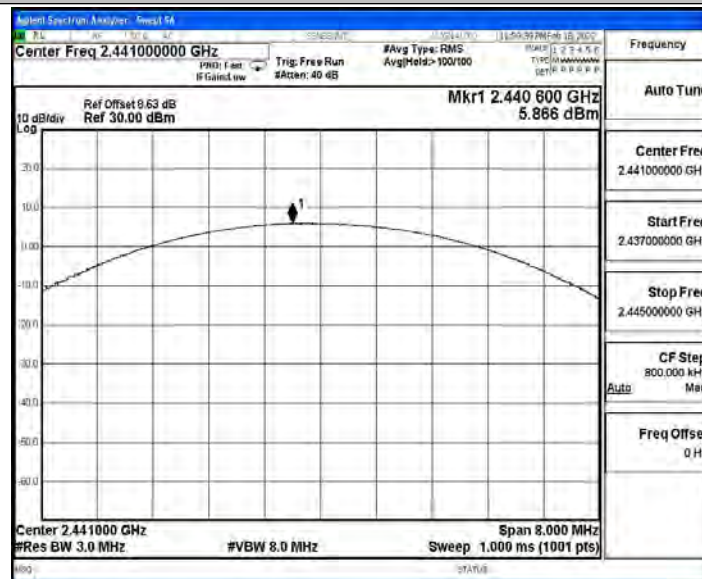


2DH5_Ant1_2402

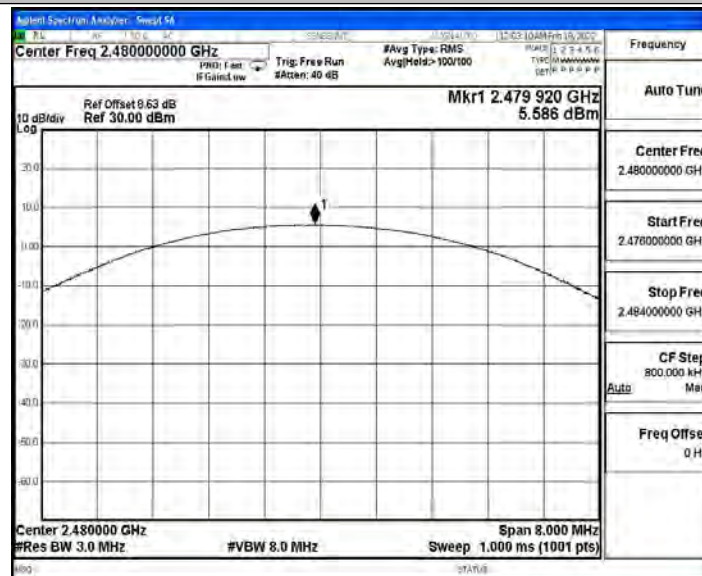




2DH5_Ant1_2441



2DH5_Ant1_2480





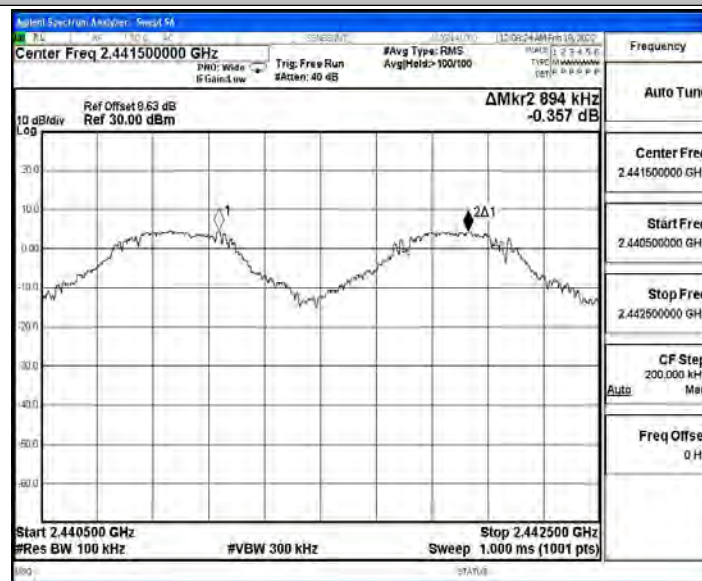
A.3 Carrier frequency separation

Test Result

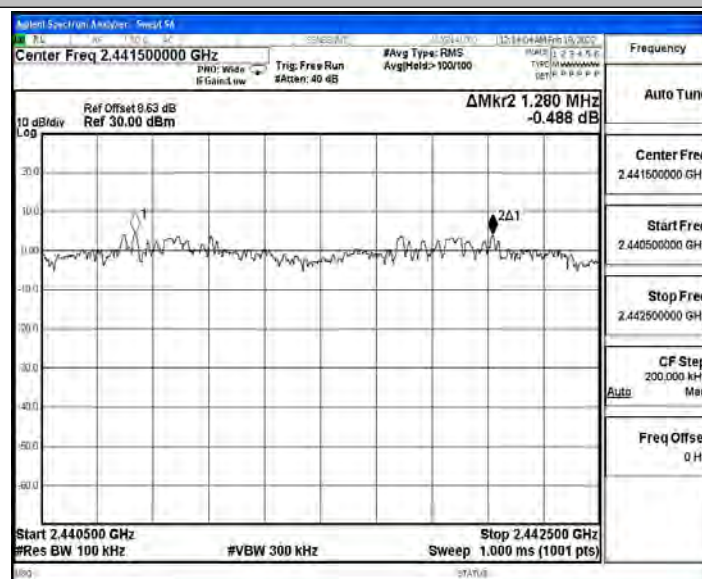
TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.894	≥ 0.642	PASS
2DH5	Ant1	Hop	1.28	≥ 0.900	PASS

Test Graphs

DH5_Ant1_Hop



2DH5_Ant1_Hop





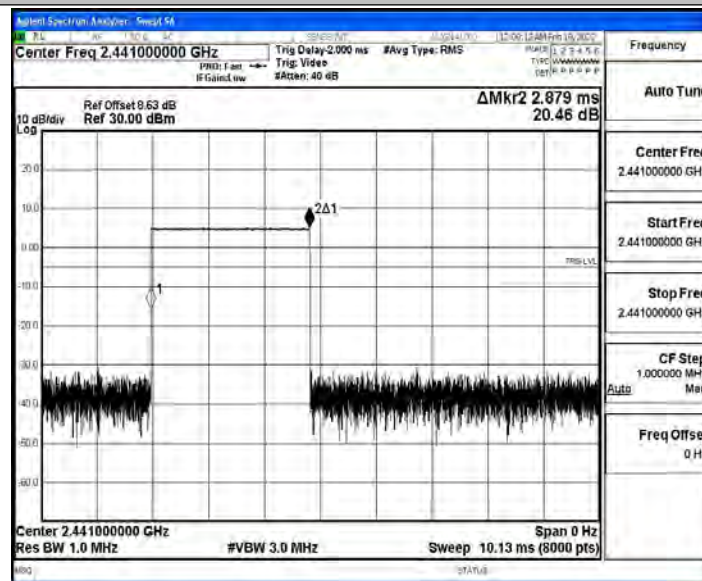
A.4 Time of occupancy

Test Result

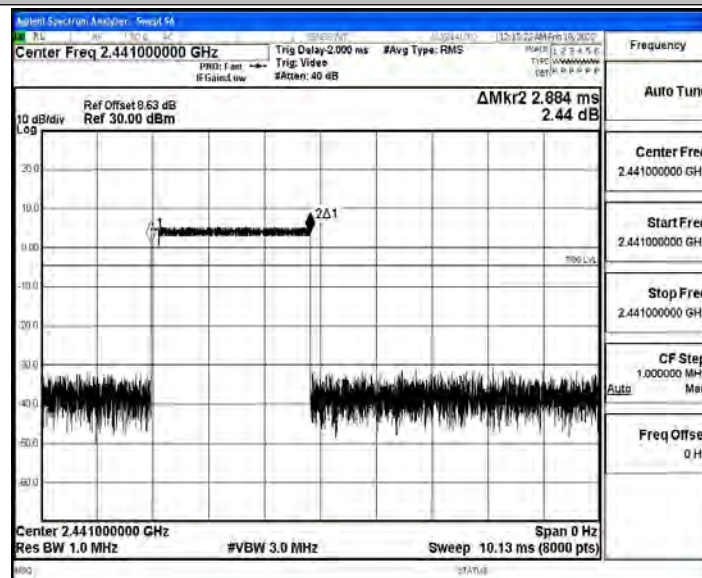
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.88	106.67	0.307	≤0.4	PASS
2DH5	Ant1	Hop	2.88	106.67	0.308	≤0.4	PASS

Test Graphs

DH5_Ant1_Hop



2DH5_Ant1_Hop



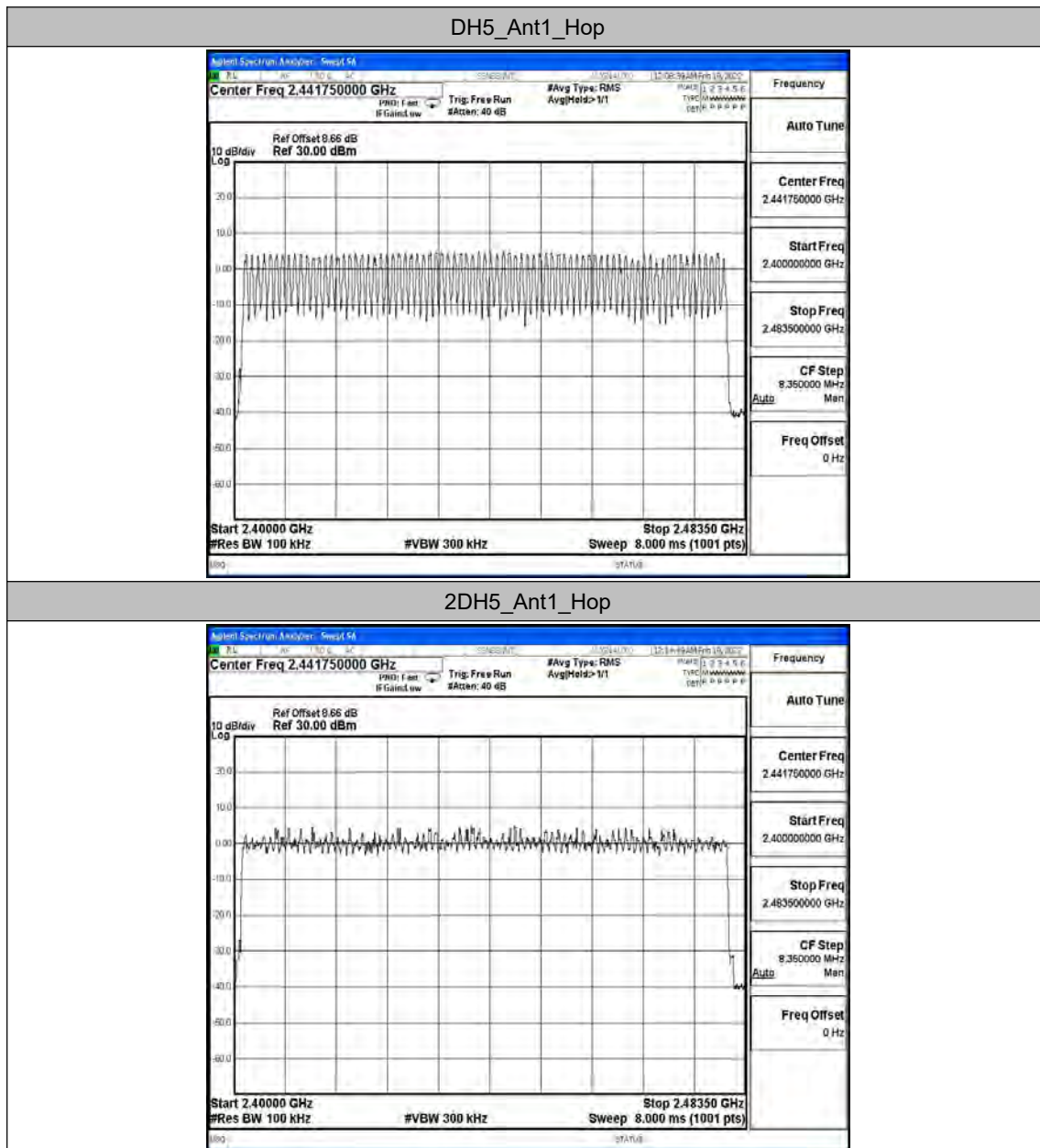


A.5 Number of hopping channels

Test Result

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

Test Graphs



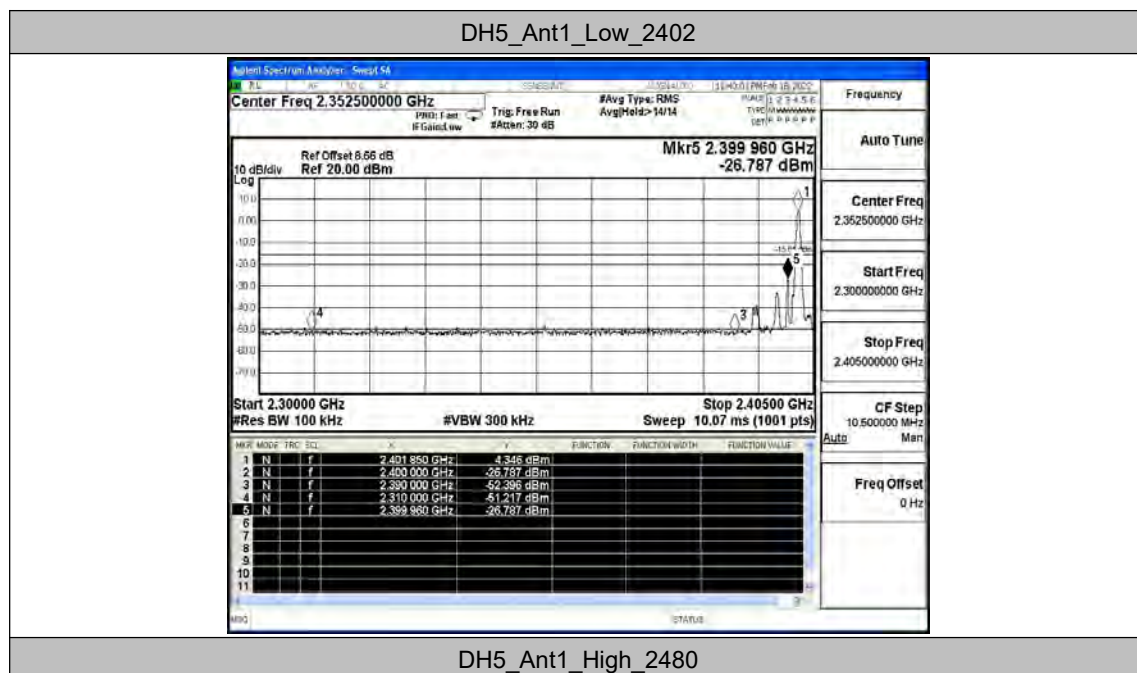


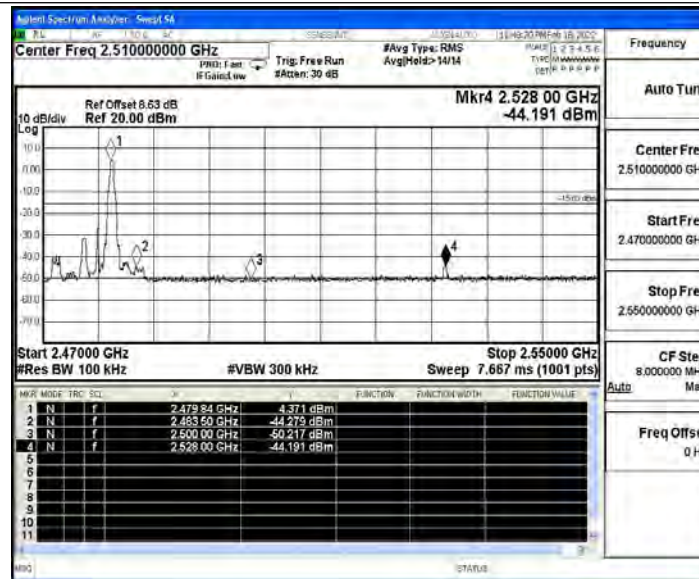
A.6 Band edge measurements

Test Result

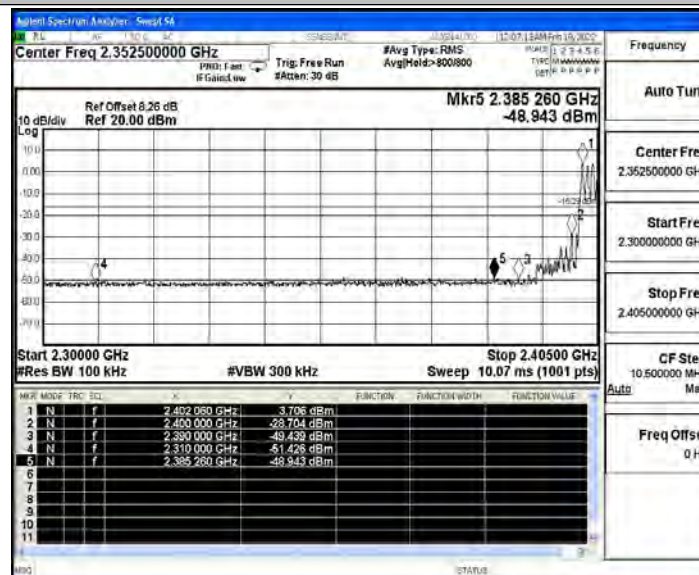
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	4.35	-26.79	≤-15.65	PASS
		High	2480	4.37	-44.19	≤-15.63	PASS
		Low	Hop_2402	3.71	-48.94	≤-16.29	PASS
		High	Hop_2480	4.32	-43.97	≤-15.68	PASS
2DH5	Ant1	Low	2402	4.34	-26.72	≤-15.66	PASS
		High	2480	4.51	-44.03	≤-15.49	PASS
		Low	Hop_2402	1.28	-49.21	≤-18.72	PASS
		High	Hop_2480	2.97	-46.27	≤-17.03	PASS

Test Graphs

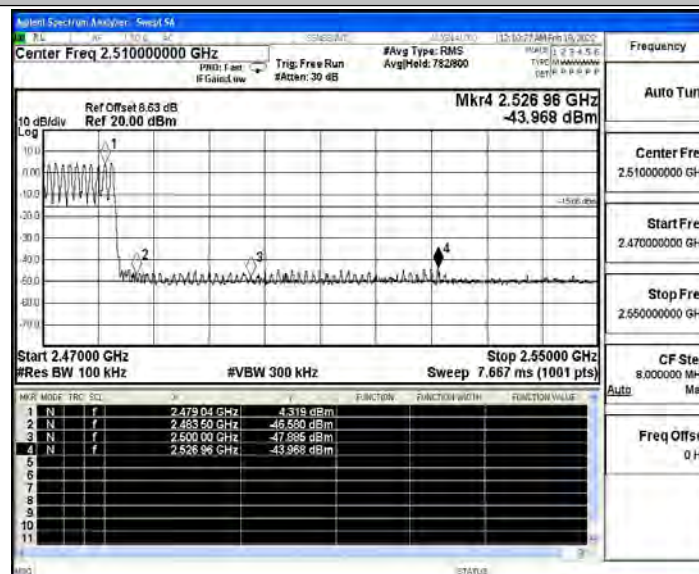




DH5_Ant1_Low_Hop_2402

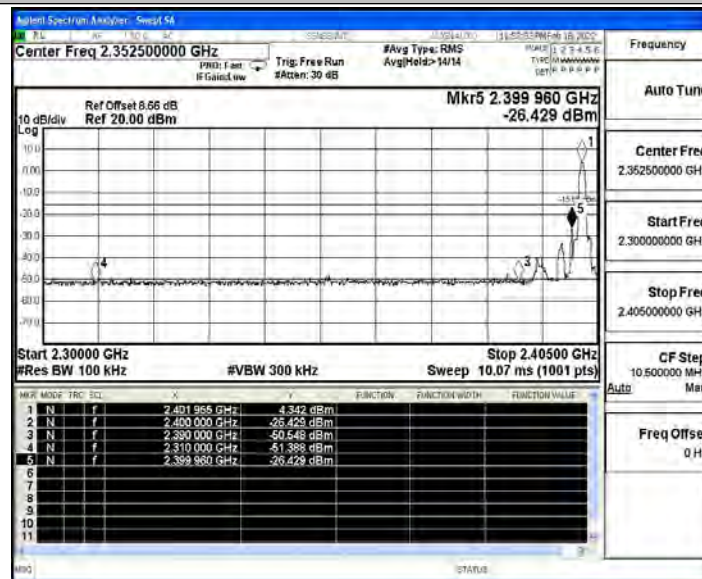


DH5_Ant1_High_Hop_2480

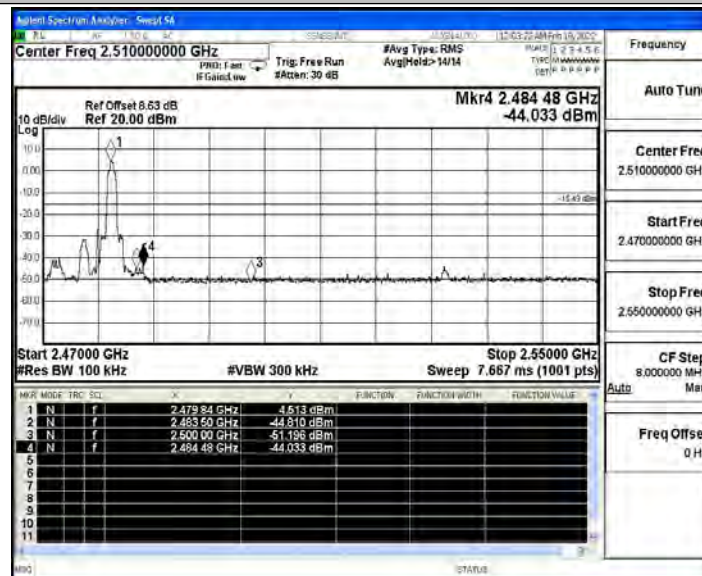




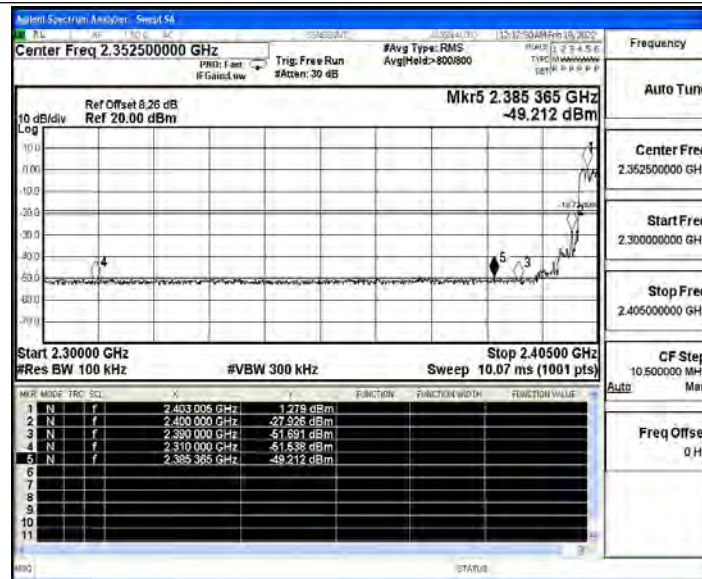
2DH5_Ant1_Low_2402



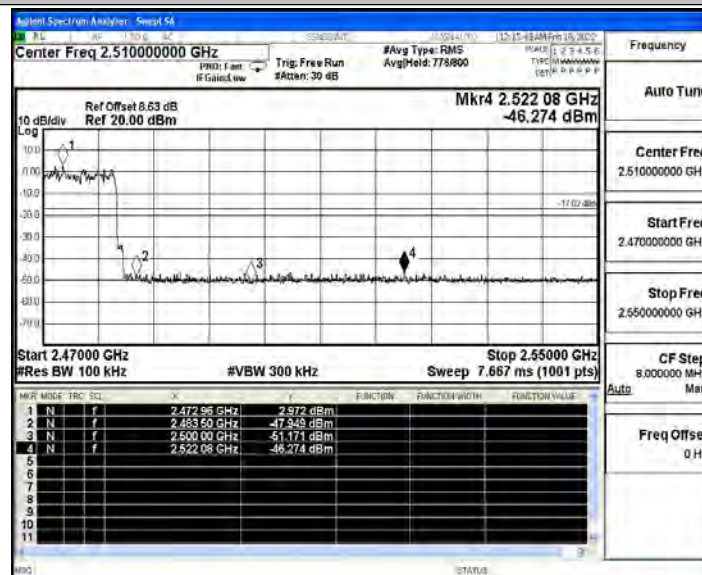
2DH5_Ant1_High_2480



2DH5_Ant1_Low_Hop_2402



2DH5_Ant1_High_Hop_2480





A.7 Conducted Spurious Emission

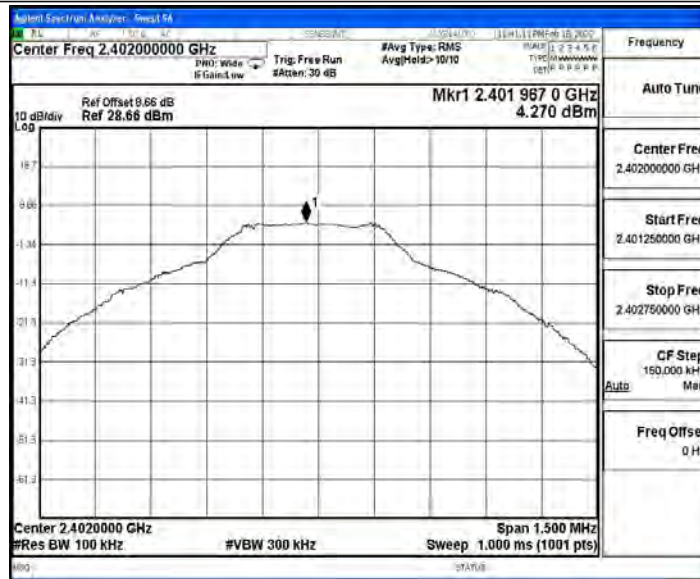
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	4.27	4.27	---	PASS
			30~1000	4.27	-54.45	≤ -15.73	PASS
			1000~26500	4.27	-35.99	≤ -15.73	PASS
		2441	Reference	4.62	4.62	---	PASS
			30~1000	4.62	-51.93	≤ -15.38	PASS
			1000~26500	4.62	-35.77	≤ -15.38	PASS
		2480	Reference	4.27	4.27	---	PASS
			30~1000	4.27	-52.86	≤ -15.73	PASS
			1000~26500	4.27	-35.76	≤ -15.73	PASS
2DH5	Ant1	2402	Reference	4.33	4.33	---	PASS
			30~1000	4.33	-54.11	≤ -15.67	PASS
			1000~26500	4.33	-37.02	≤ -15.67	PASS
		2441	Reference	4.79	4.79	---	PASS
			30~1000	4.79	-52.21	≤ -15.21	PASS
			1000~26500	4.79	-34.39	≤ -15.21	PASS
		2480	Reference	4.51	4.51	---	PASS
			30~1000	4.51	-52.26	≤ -15.49	PASS
			1000~26500	4.51	-38.24	≤ -15.49	PASS

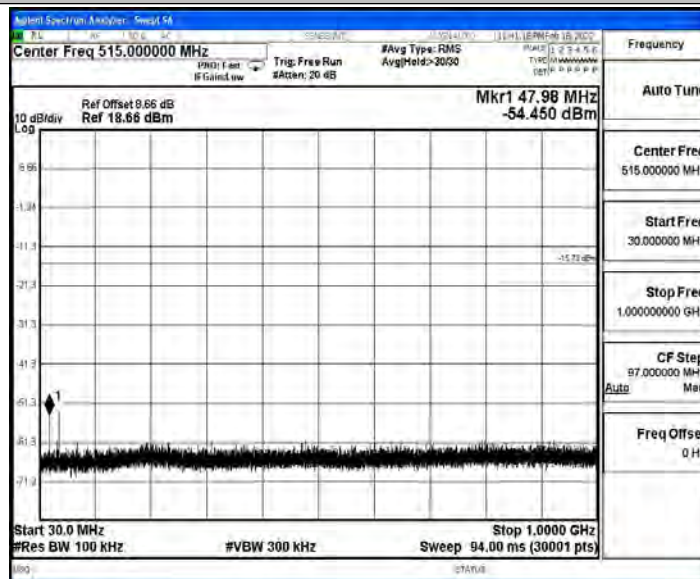


Test Graphs

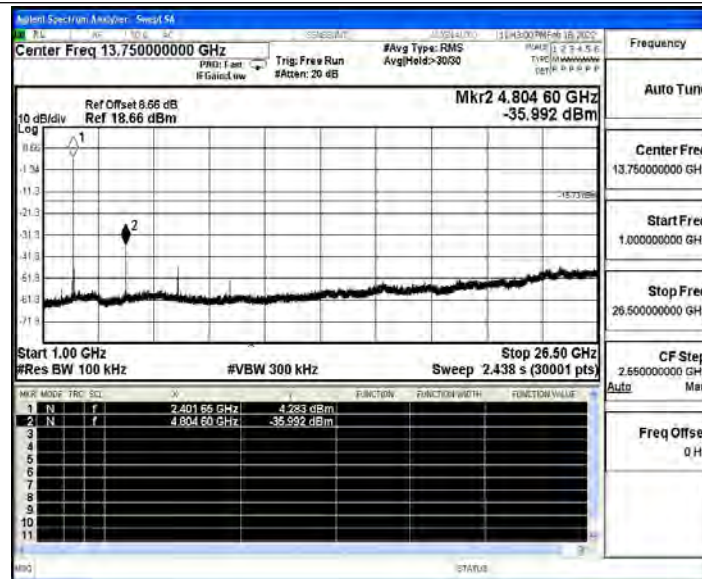
DH5_Ant1_2402_0~Reference



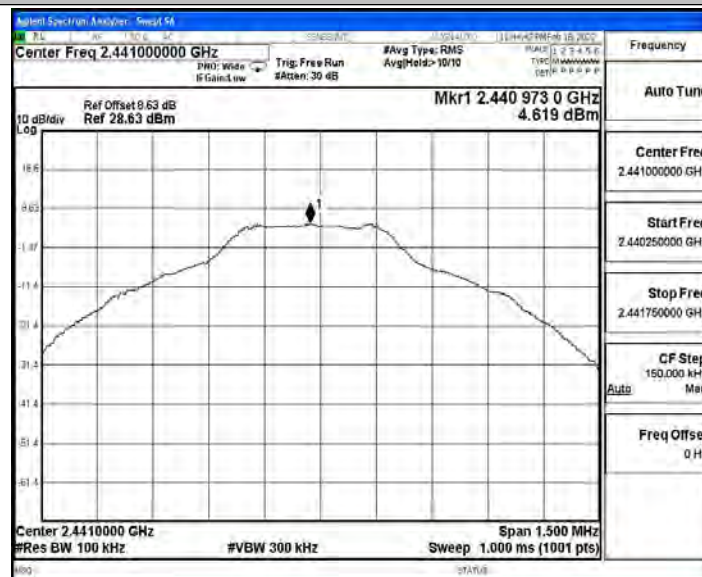
DH5_Ant1_2402_30~1000



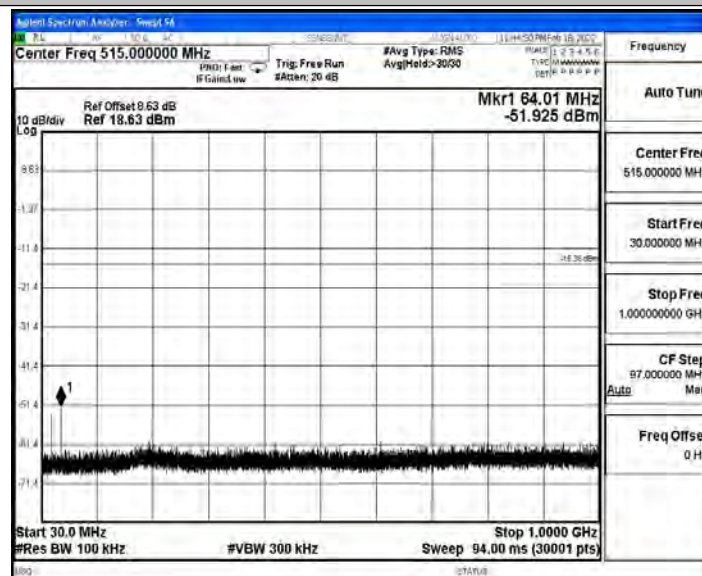
DH5_Ant1_2402_1000~26500



DH5_Ant1_2441_0~Reference

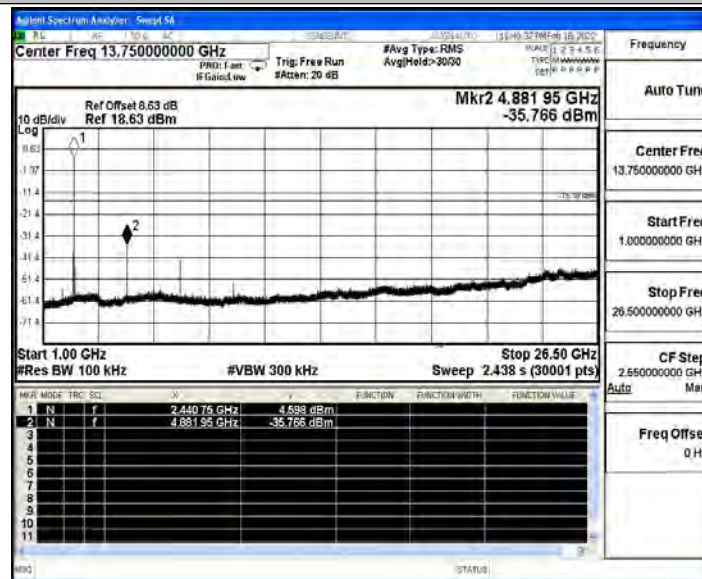


DH5_Ant1_2441_30~1000

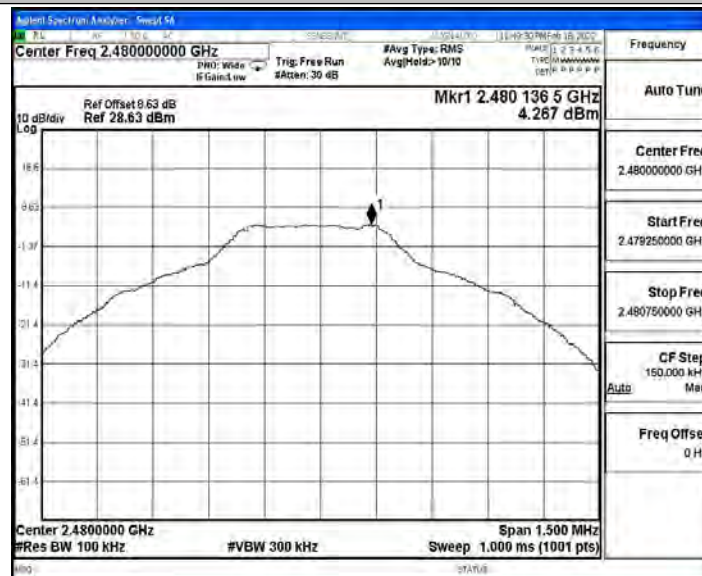




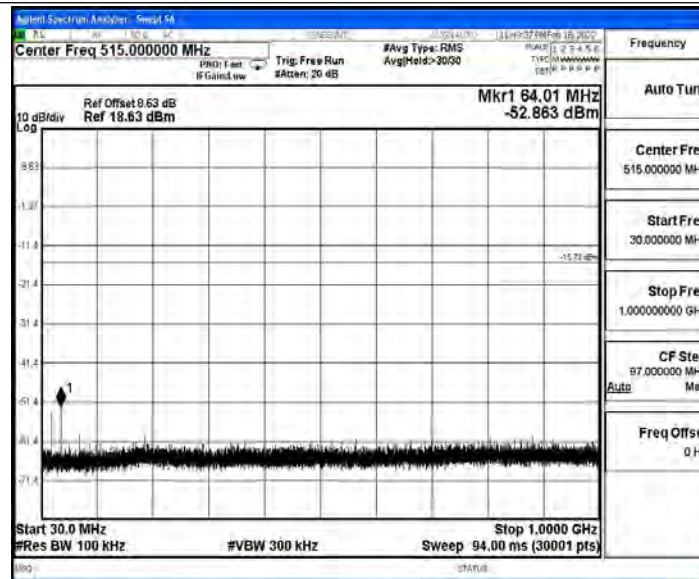
DH5_Ant1_2441_1000~26500



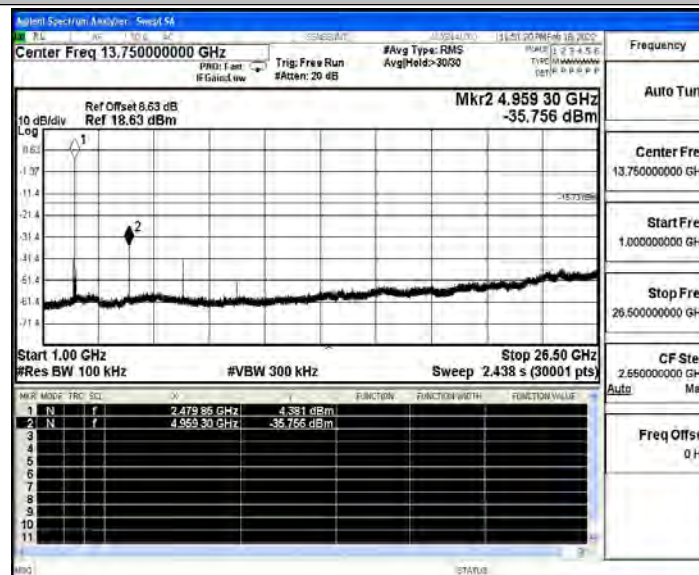
DH5_Ant1_2480_0~Reference



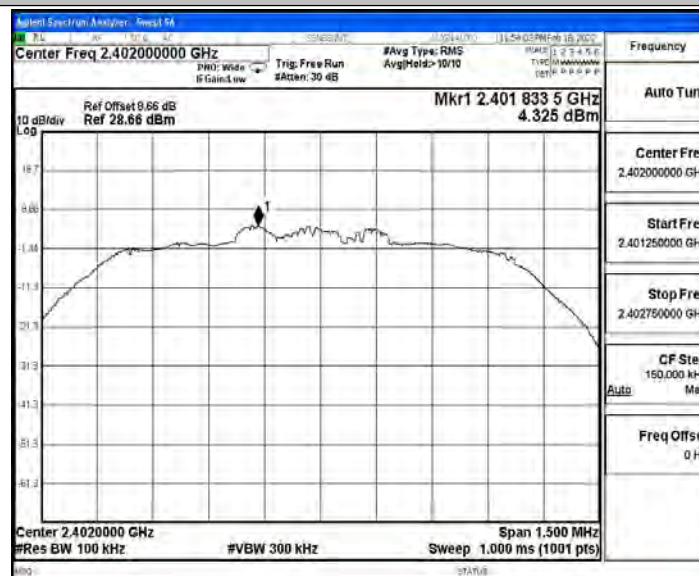
DH5_Ant1_2480_30~1000



DH5_Ant1_2480_1000~26500

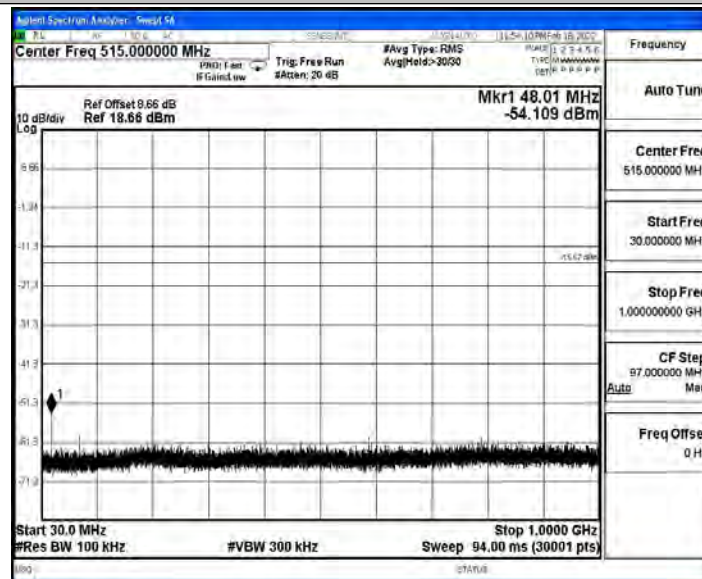


2DH5_Ant1_2402_0~Reference

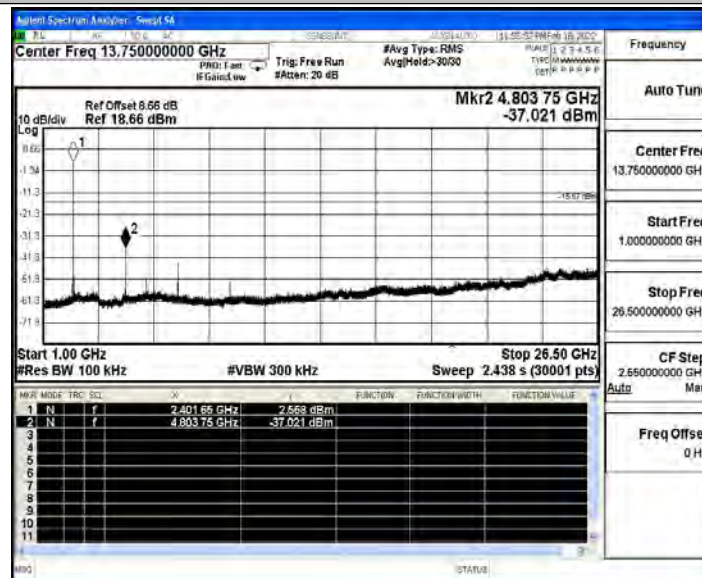




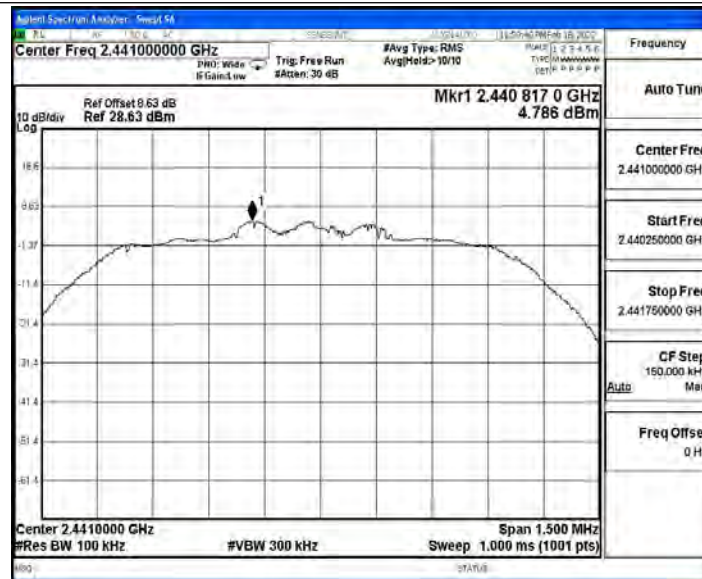
2DH5_Ant1_2402_30~1000



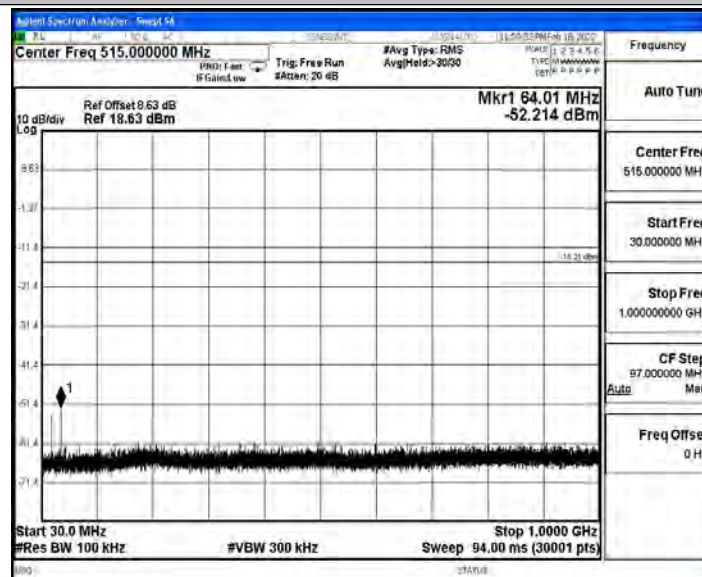
2DH5_Ant1_2402_1000~26500



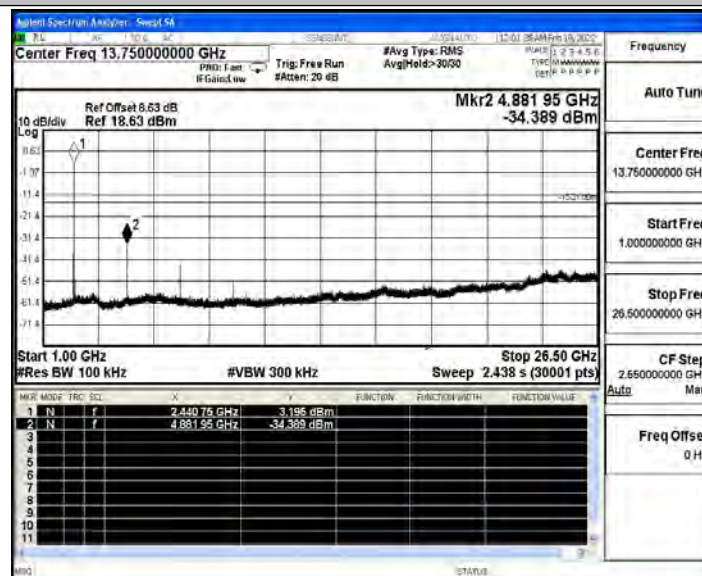
2DH5_Ant1_2441_0~Reference



2DH5_Ant1_2441_30~1000

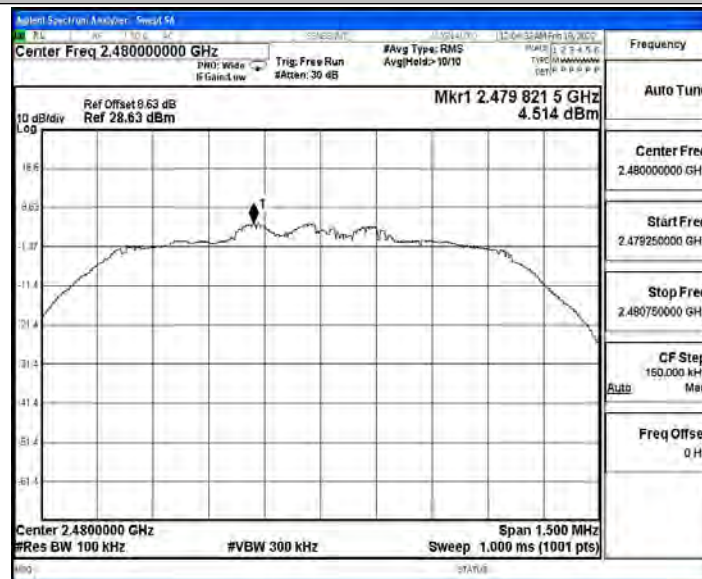


2DH5_Ant1_2441_1000~26500

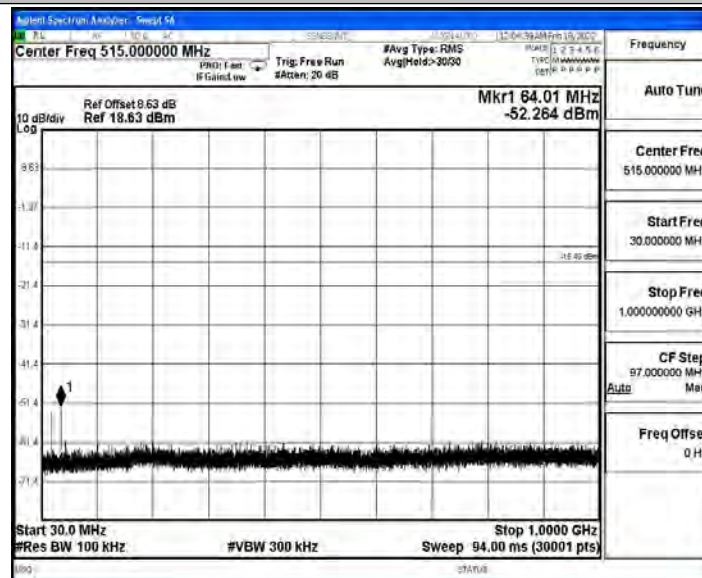




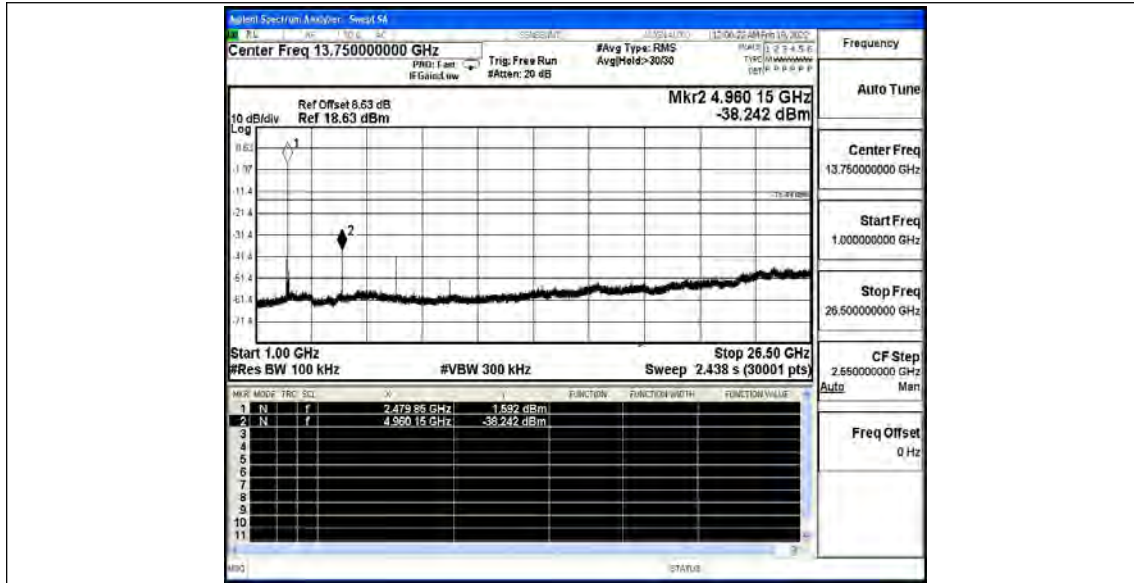
2DH5_Ant1_2480_0~Reference



2DH5_Ant1_2480_30~1000



2DH5_Ant1_2480_1000~26500





A.8 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH5	Ant1	Low	2402	AV	2310.000	-48.27	≤-41.20	46.93	≤54	PASS
				AV	2353.970	-46.33	≤-41.20	48.87	≤54	PASS
				AV	2390.000	-47.85	≤-41.20	47.35	≤54	PASS
				Peak	2310.000	-39.37	≤-21.20	55.83	≤74	PASS
				Peak	2341.475	-35.75	≤-21.20	59.45	≤74	PASS
				Peak	2390.000	-38.5	≤-21.20	56.70	≤74	PASS
		High	2480	AV	2483.500	-42.37	≤-41.20	52.83	≤54	PASS
				AV	2483.760	-42.19	≤-41.20	53.01	≤54	PASS
				AV	2500.000	-47.28	≤-41.20	47.92	≤54	PASS
				Peak	2483.500	-34.5	≤-21.20	60.70	≤74	PASS
				Peak	2483.840	-33.8	≤-21.20	61.40	≤74	PASS
				Peak	2500.000	-38.14	≤-21.20	57.06	≤74	PASS
		Low	Hop_24 02	Peak	2310.000	-39.15	≤-21.20	56.05	≤74	PASS
				Peak	2389.040	-36.83	≤-21.20	58.37	≤74	PASS
				Peak	2390.000	-39.29	≤-21.20	55.91	≤74	PASS
		High	Hop_24 80	Peak	2483.500	-36.31	≤-21.20	58.89	≤74	PASS
				Peak	2494.080	-34.78	≤-21.20	60.42	≤74	PASS
				Peak	2500.000	-37.34	≤-21.20	57.86	≤74	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-48.31	≤-41.20	46.89	≤54	PASS
				AV	2353.760	-46.78	≤-41.20	48.42	≤54	PASS
				AV	2390.000	-47.69	≤-41.20	47.51	≤54	PASS
				Peak	2310.000	-38.66	≤-21.20	56.54	≤74	PASS
				Peak	2353.865	-35.54	≤-21.20	59.66	≤74	PASS
				Peak	2390.000	-38.24	≤-21.20	56.96	≤74	PASS
		High	2480	AV	2483.500	-43.52	≤-41.20	51.68	≤54	PASS
				AV	2483.520	-43.52	≤-41.20	51.68	≤54	PASS
				AV	2500.000	-47.19	≤-41.20	48.01	≤54	PASS
				Peak	2483.500	-35.07	≤-21.20	60.13	≤74	PASS
				Peak	2484.480	-33.55	≤-21.20	61.65	≤74	PASS
				Peak	2500.000	-37.75	≤-21.20	57.45	≤74	PASS
		Low	Hop_24 02	Peak	2310.000	-38.59	≤-21.20	56.61	≤74	PASS
				Peak	2336.435	-37.05	≤-21.20	58.15	≤74	PASS
				Peak	2390.000	-38.23	≤-21.20	56.97	≤74	PASS
		High	Hop_24 80	Peak	2483.500	-35.73	≤-21.20	59.47	≤74	PASS
				Peak	2484.320	-35.5	≤-21.20	59.70	≤74	PASS
				Peak	2500.000	-37.56	≤-21.20	57.64	≤74	PASS

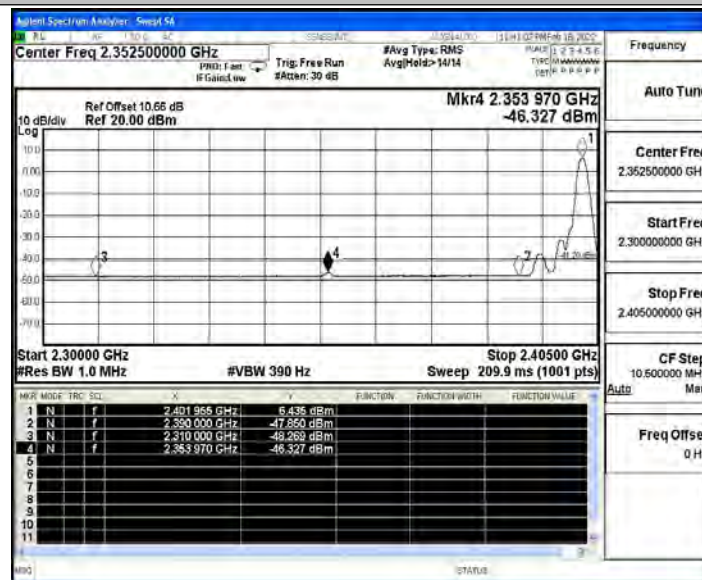


Note:

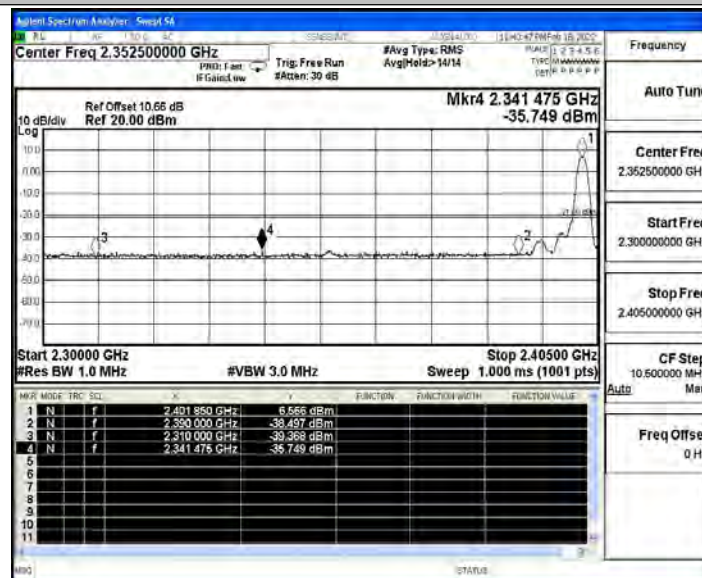
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

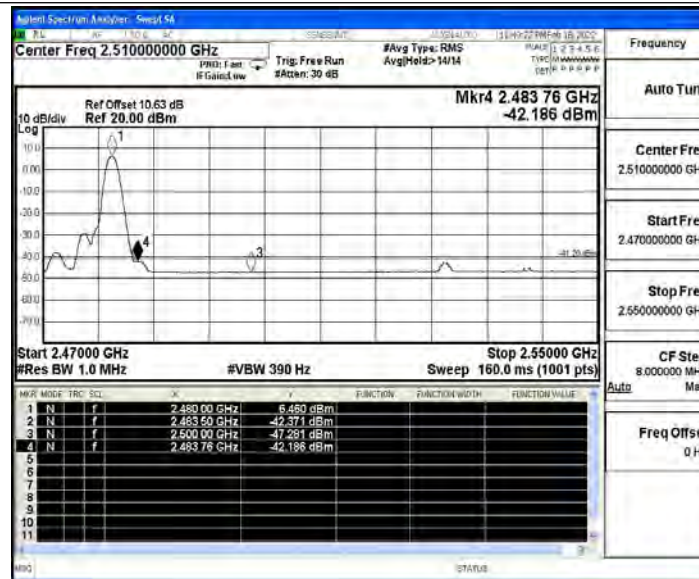
DH5_Ant1_Low_2402_AV



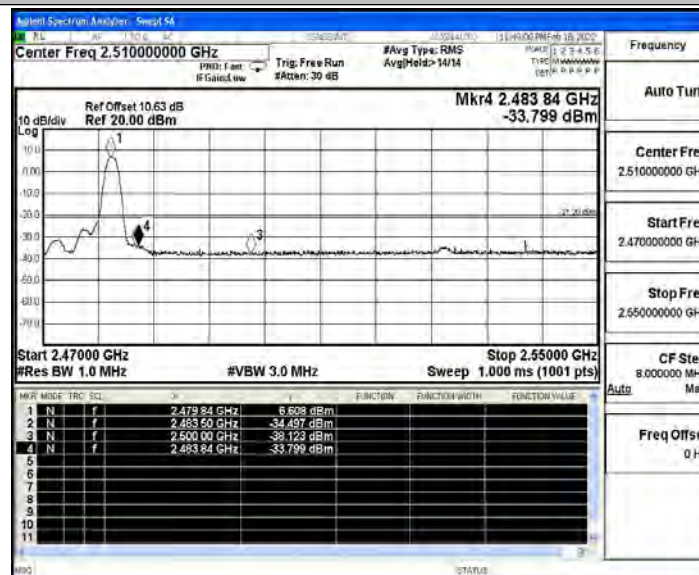
DH5_Ant1_Low_2402_Peak



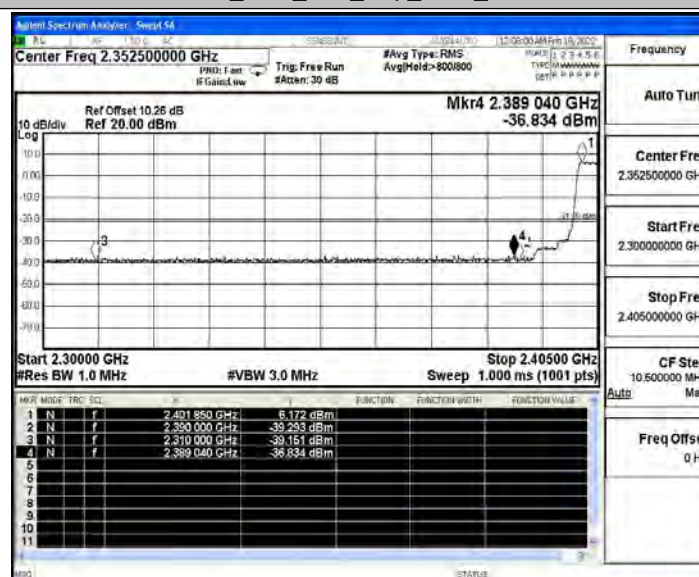
DH5_Ant1_High_2480_AV



DH5_Ant1_High_2480_Peak

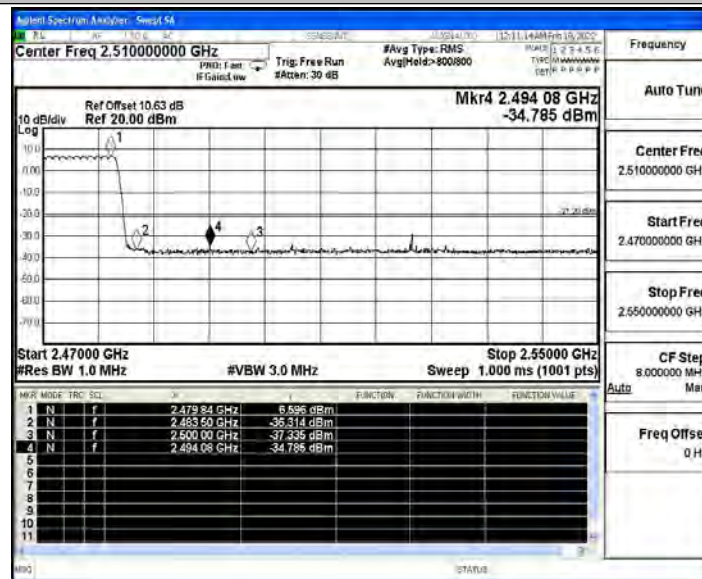


DH5_Ant1_Low_Hop_2402_Peak

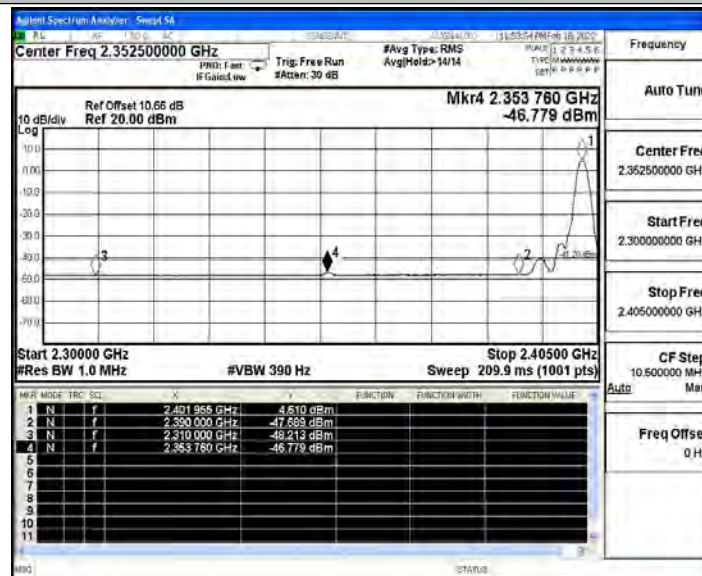




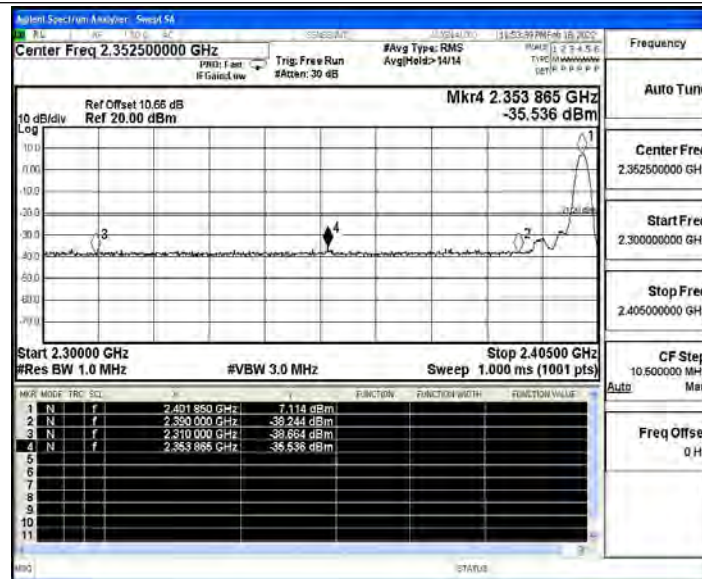
DH5_Ant1_High_Hop_2480_Peak



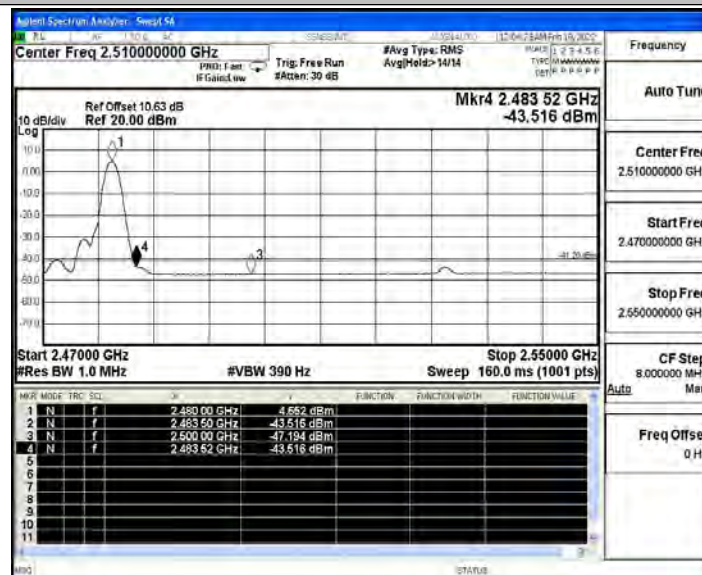
2DH5_Ant1_Low_2402_AV



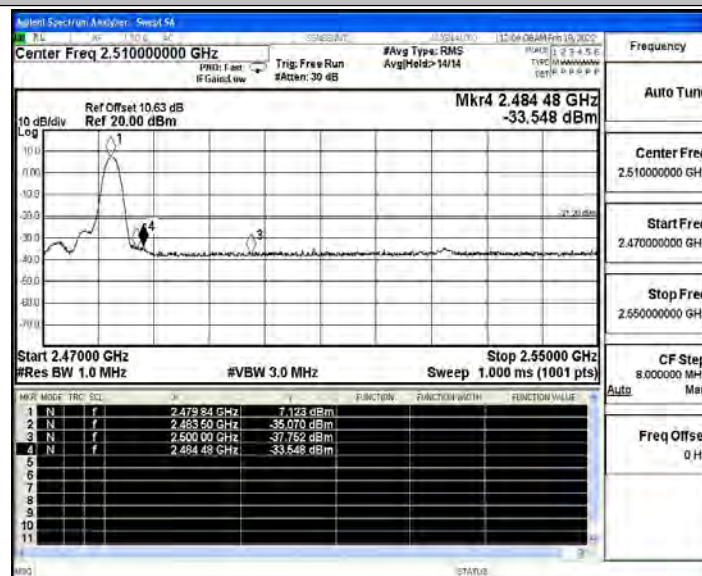
2DH5_Ant1_Low_2402_Peak



2DH5_Ant1_High_2480_AV

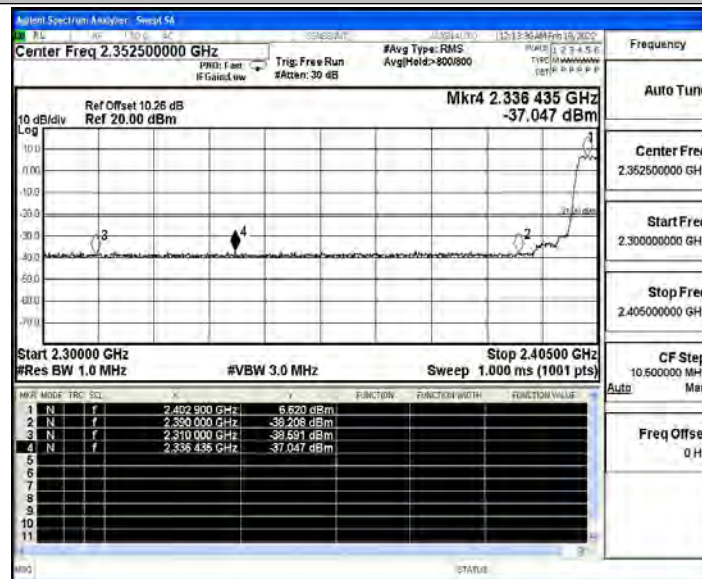


2DH5_Ant1_High_2480_Peak





2DH5_Ant1_Low_Hop_2402_Peak



2DH5_Ant1_High_Hop_2480_Peak

