



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: TOPONE

Trade Mark: BAMiNi

Test Model: TOP-ONE

Environmental Conditions

Temperature:	23.6 ° C
Relative Humidity:	54%
ATM Pressure:	100.0 kPa
Test Engineer:	Bill Zhu
Supervised by:	Li Huan



Appendix A.1: Maximum conducted output power

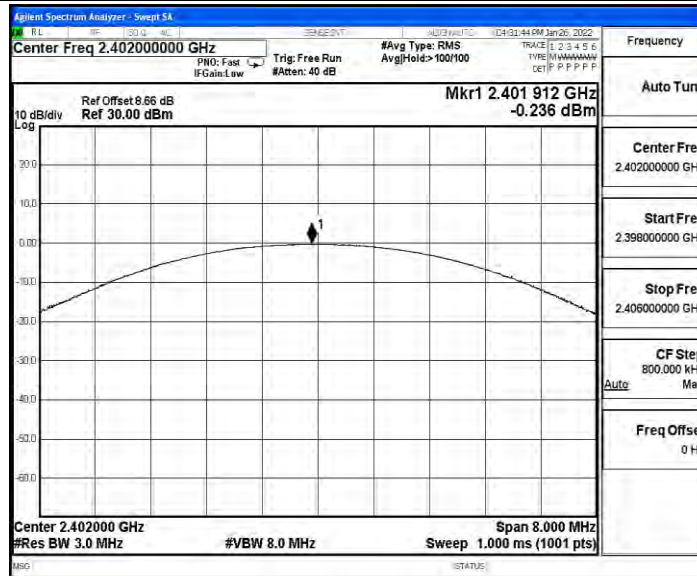
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	-0.24	≤20.97	PASS
		2441	0.2	≤20.97	PASS
		2480	-0.02	≤20.97	PASS
2DH5	Ant1	2402	-0.59	≤20.97	PASS
		2441	-0.14	≤20.97	PASS
		2480	-0.45	≤20.97	PASS
3DH5	Ant1	2402	-0.51	≤20.97	PASS
		2441	-0.06	≤20.97	PASS
		2480	-0.27	≤20.97	PASS

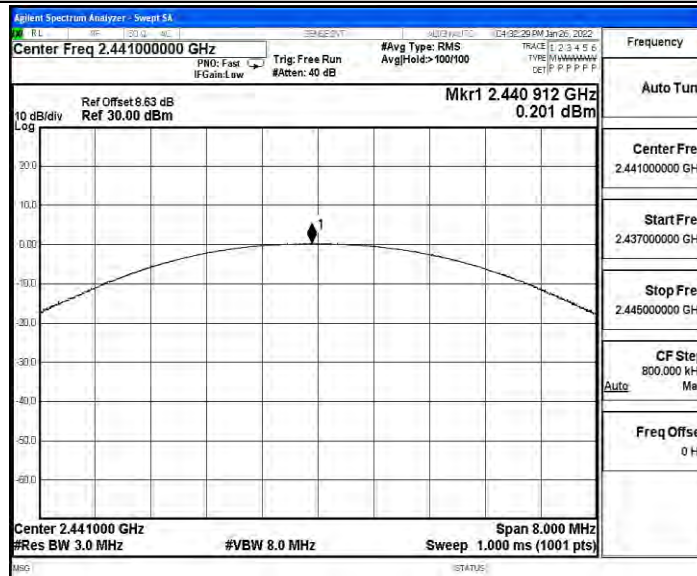


Test Graphs

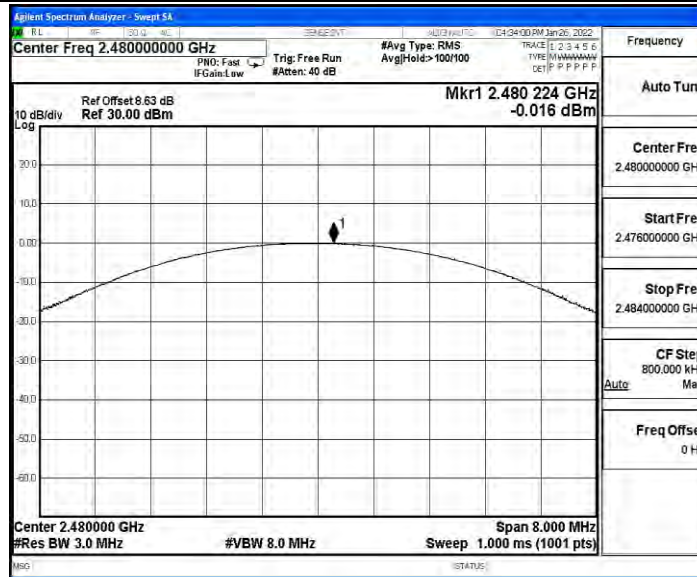
DH5_Ant1_2402



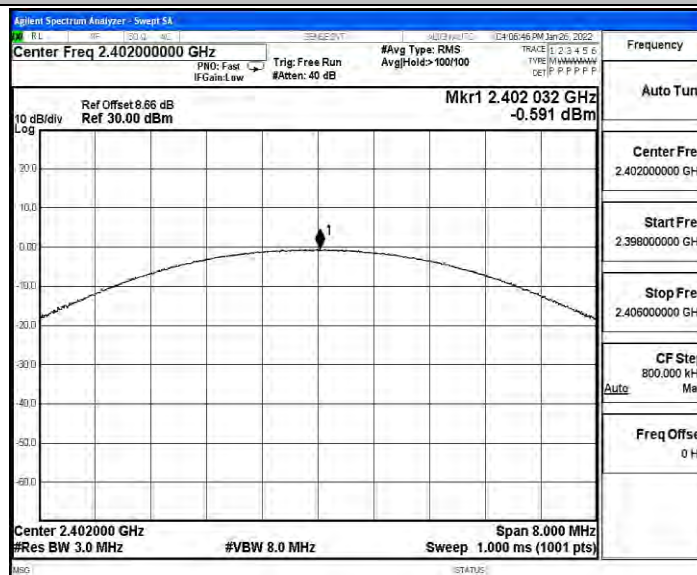
DH5_Ant1_2441



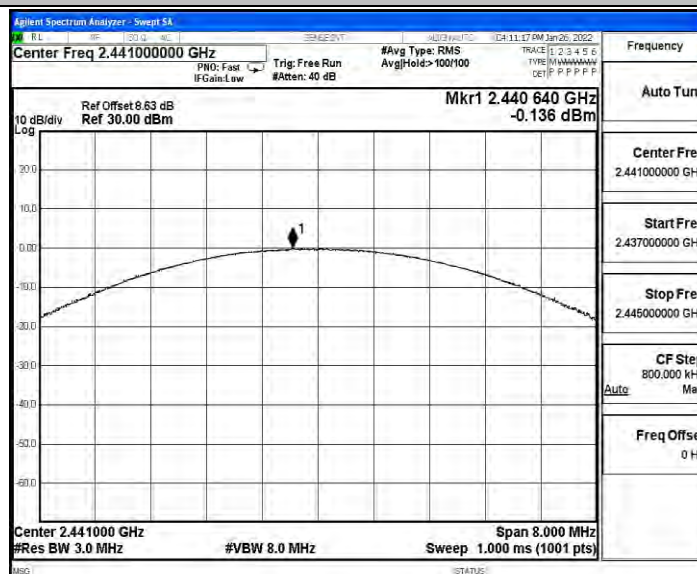
DH5_Ant1_2480



2DH5_Ant1_2402

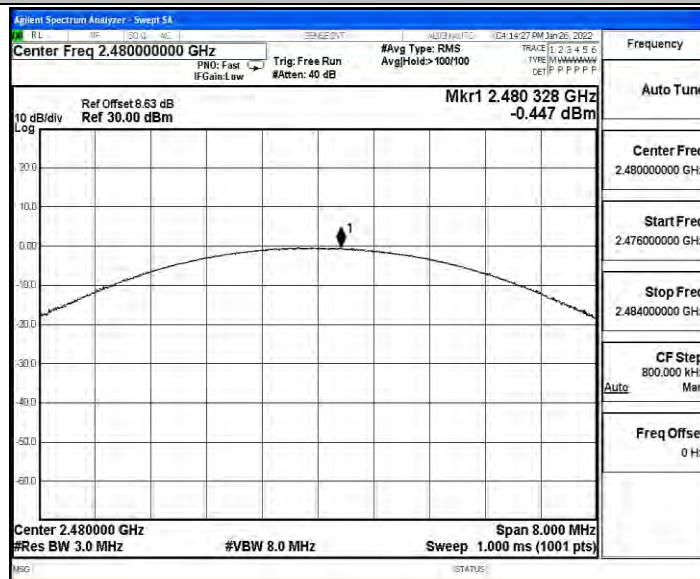


2DH5_Ant1_2441

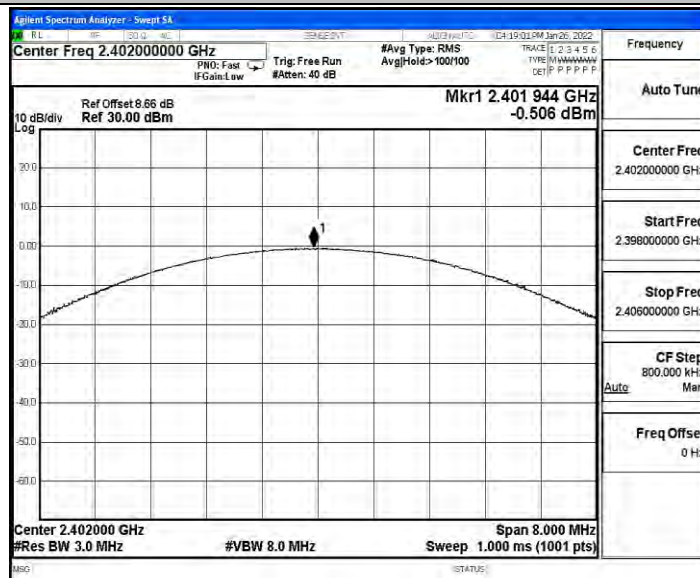




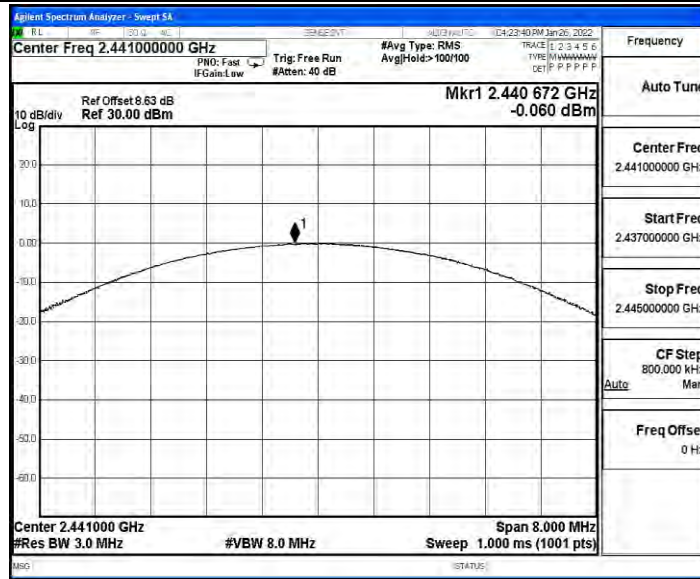
2DH5_Ant1_2480



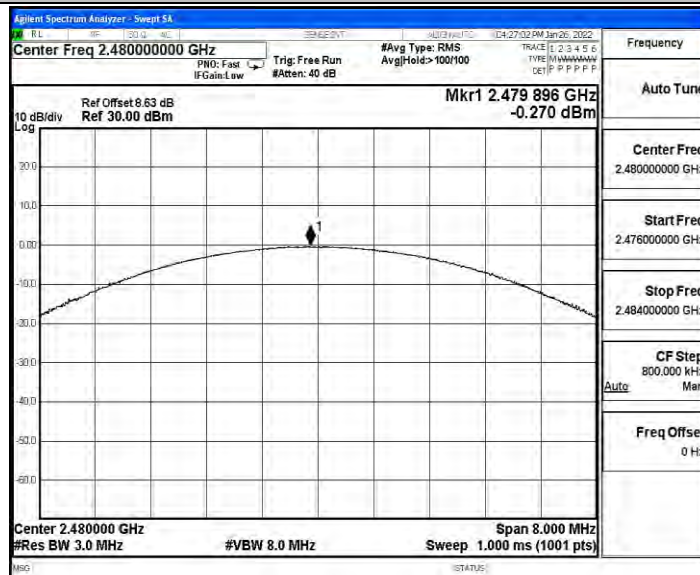
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480





Appendix A.2.1: 20dB Emission Bandwidth

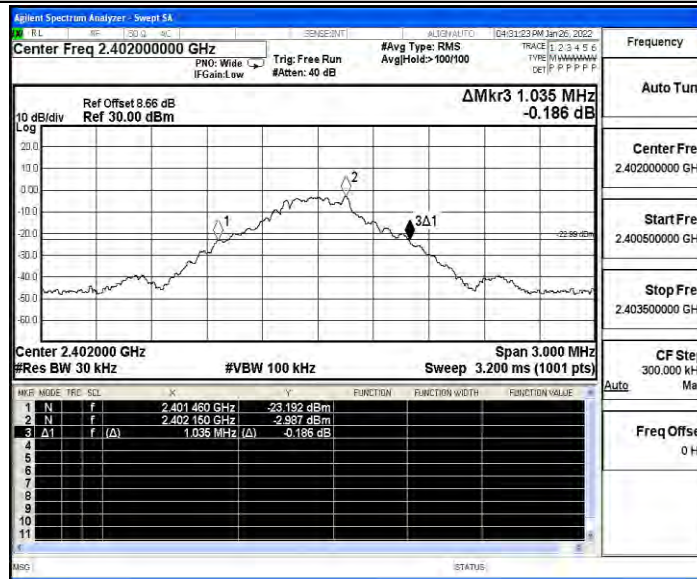
Test Result

TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	1.035	2401.460	2402.495	---	---
		2441	1.044	2440.451	2441.495	---	---
		2480	1.047	2479.451	2480.498	---	---
2DH5	Ant1	2402	1.296	2401.352	2402.648	---	---
		2441	1.320	2440.328	2441.648	---	---
		2480	1.293	2479.352	2480.645	---	---
3DH5	Ant1	2402	1.290	2401.343	2402.633	---	---
		2441	1.290	2440.343	2441.633	---	---
		2480	1.293	2479.340	2480.633	---	---

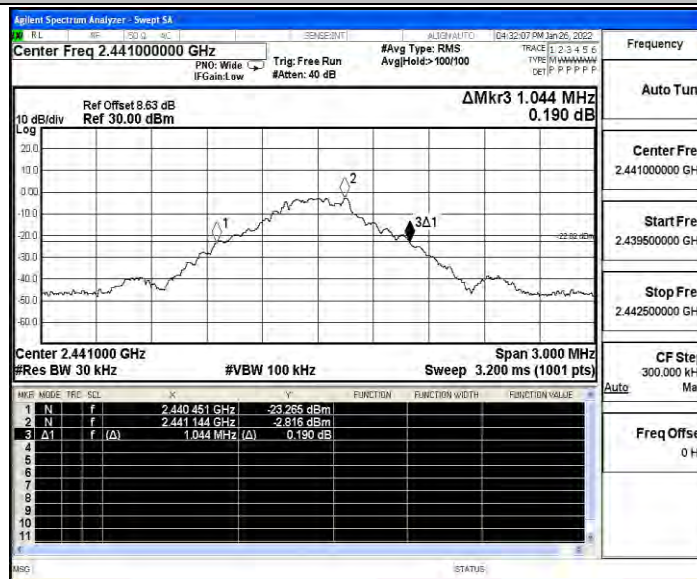


Test Graphs

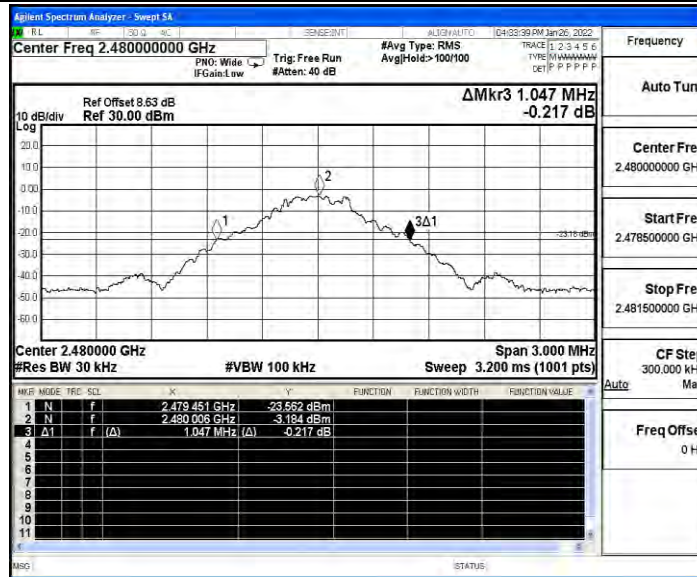
DH5_Ant1_2402



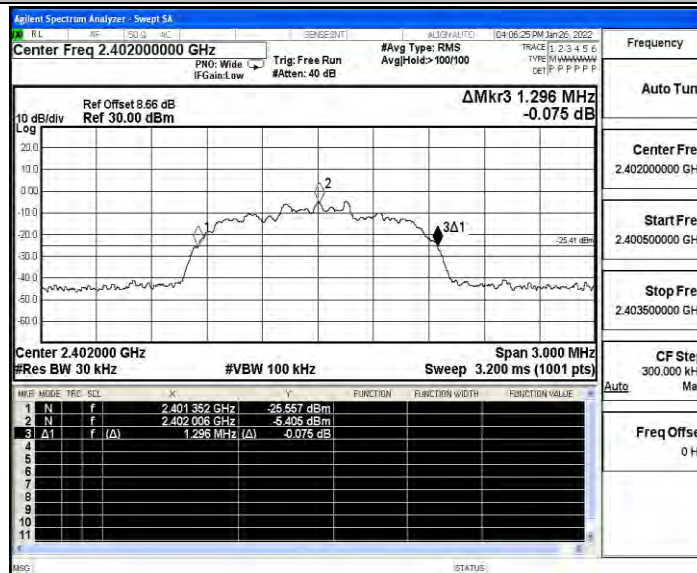
DH5_Ant1_2441



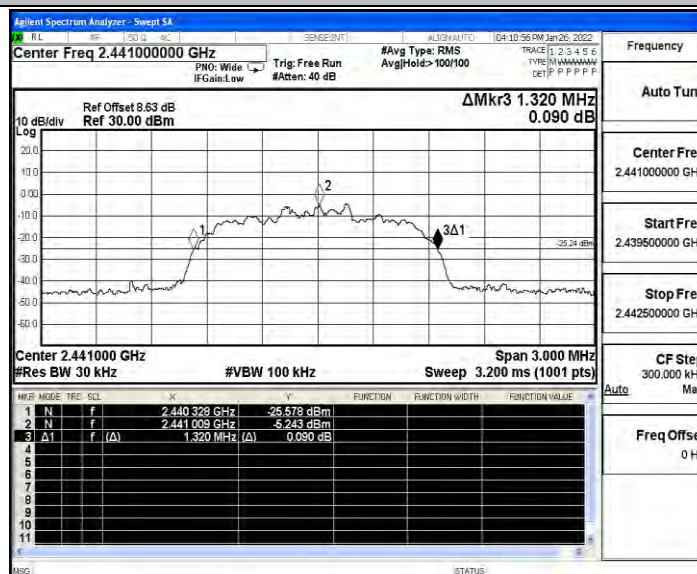
DH5_Ant1_2480



2DH5_Ant1_2402

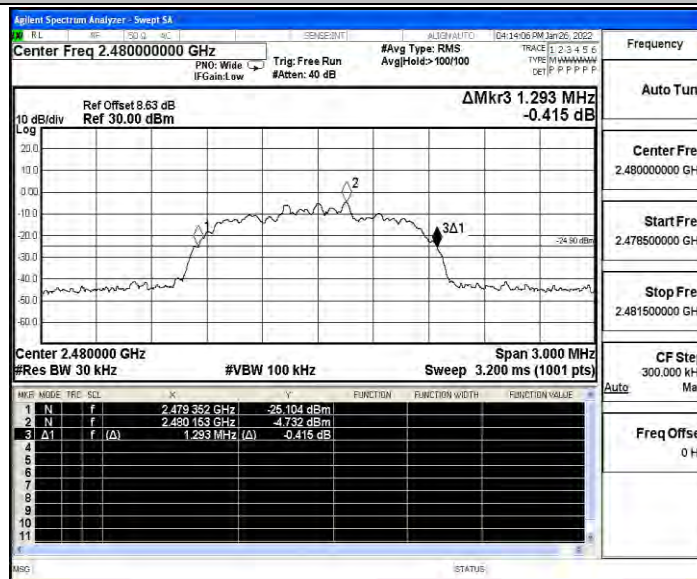


2DH5_Ant1_2441

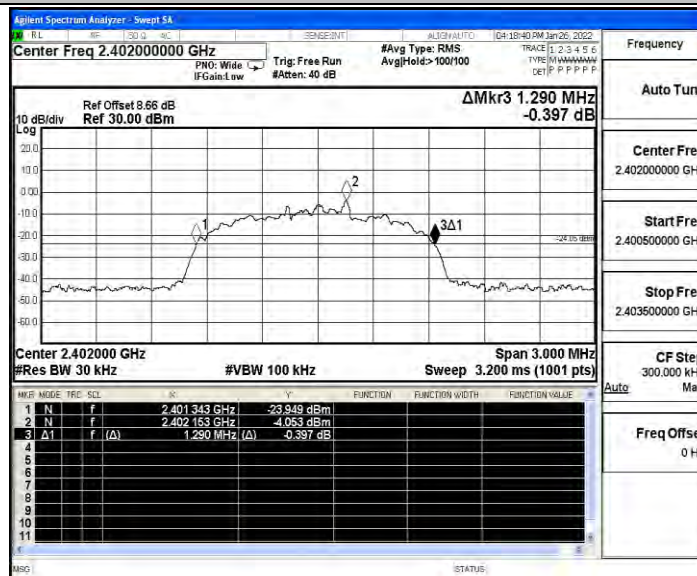




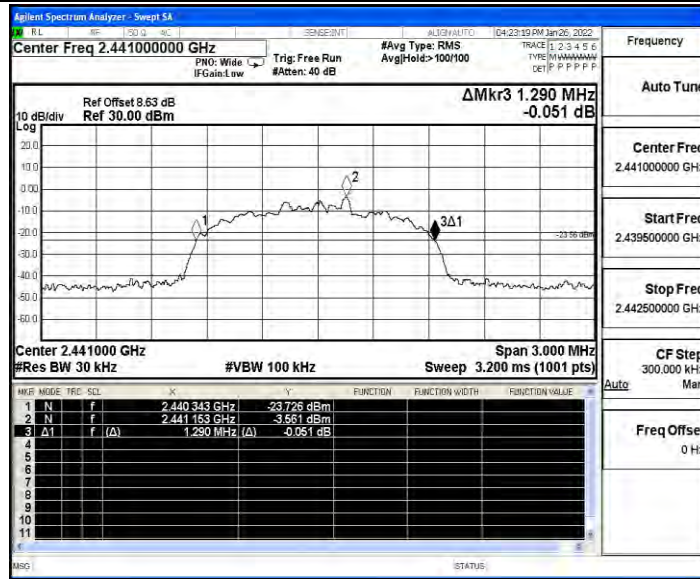
2DH5_Ant1_2480



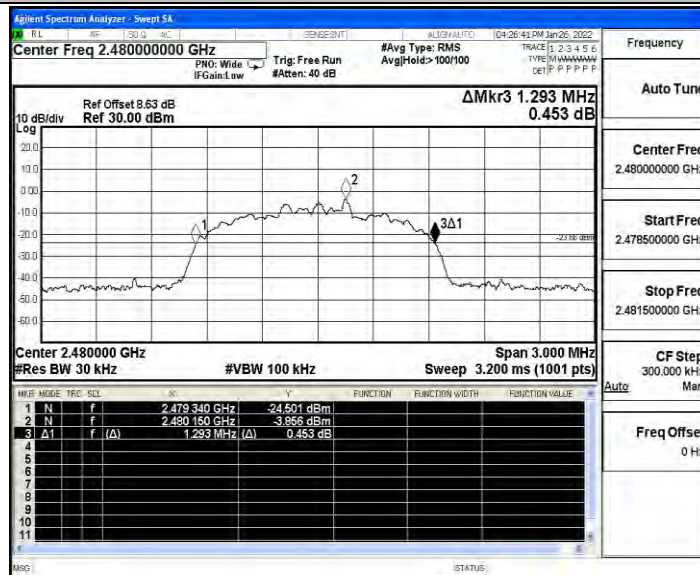
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480





Appendix A.2.2: Occupied Channel Bandwidth

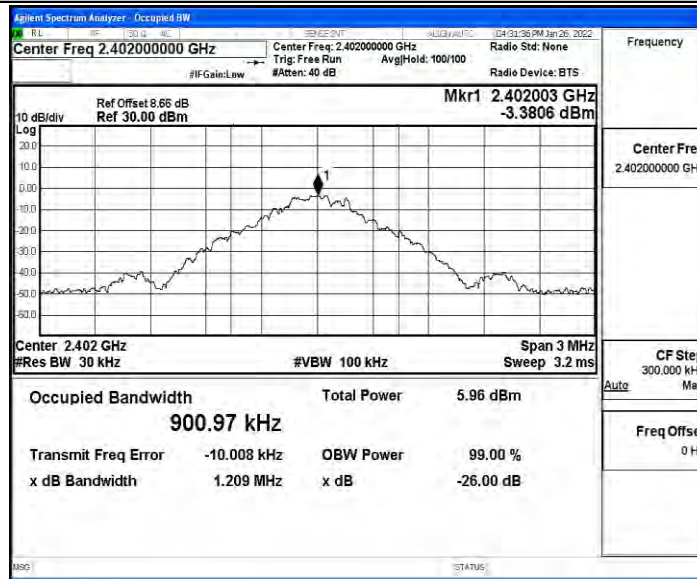
Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.90097	2401.540	2402.440	---	---
		2441	0.90700	2440.540	2441.447	---	---
		2480	0.90481	2479.539	2480.444	---	---
2DH5	Ant1	2402	1.1932	2401.394	2402.587	---	---
		2441	1.1808	2440.400	2441.580	---	---
		2480	1.1749	2479.399	2480.574	---	---
3DH5	Ant1	2402	1.1826	2401.401	2402.584	---	---
		2441	1.1919	2440.394	2441.586	---	---
		2480	1.1877	2479.396	2480.584	---	---

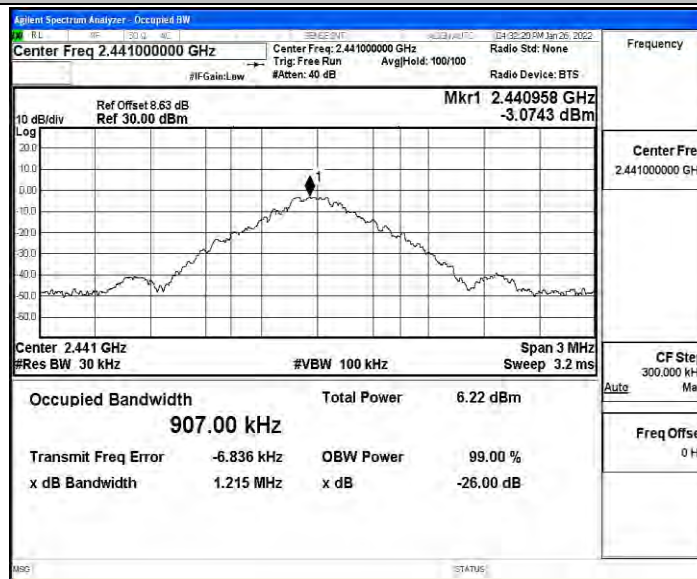


Test Graphs

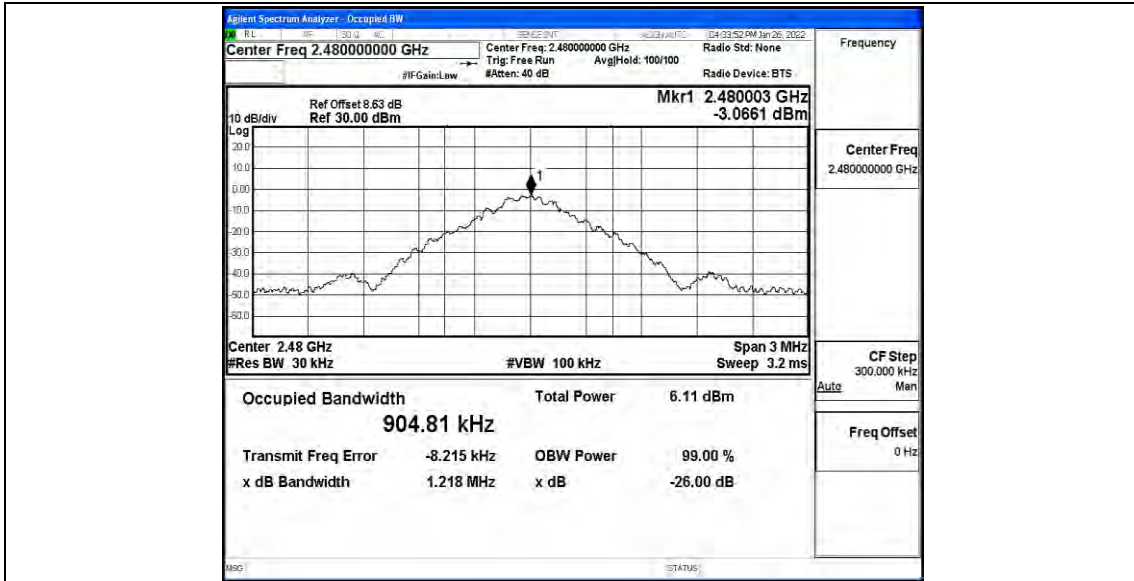
DH5_Ant1_2402



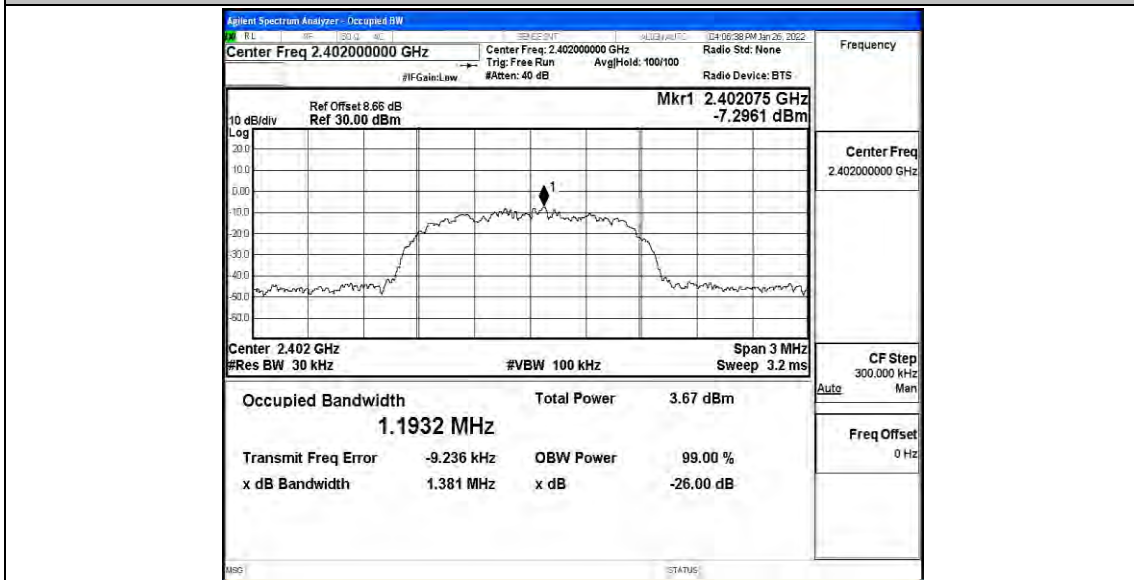
DH5_Ant1_2441



DH5_Ant1_2480



2DH5_Ant1_2402

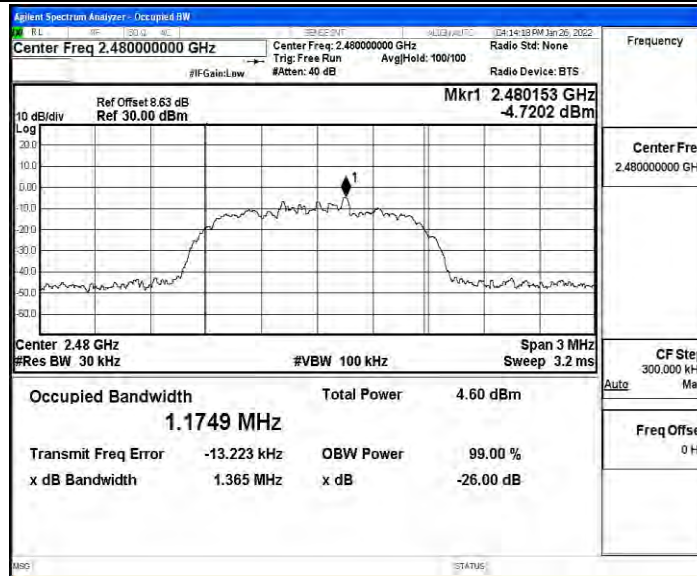


2DH5_Ant1_2441

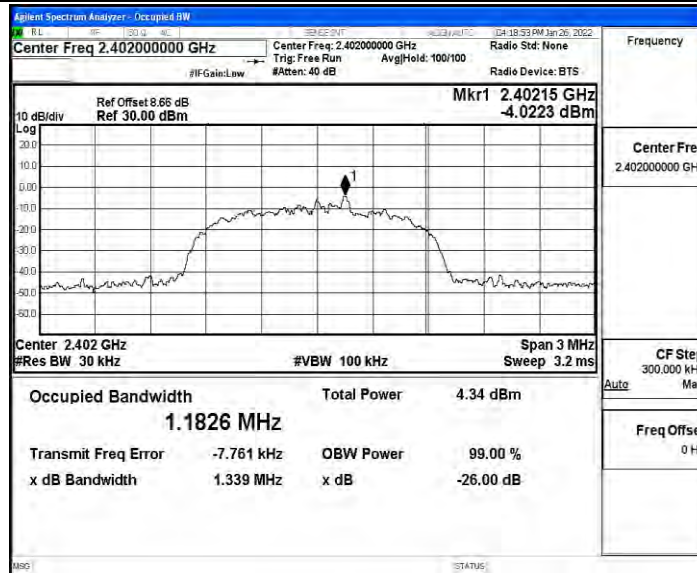




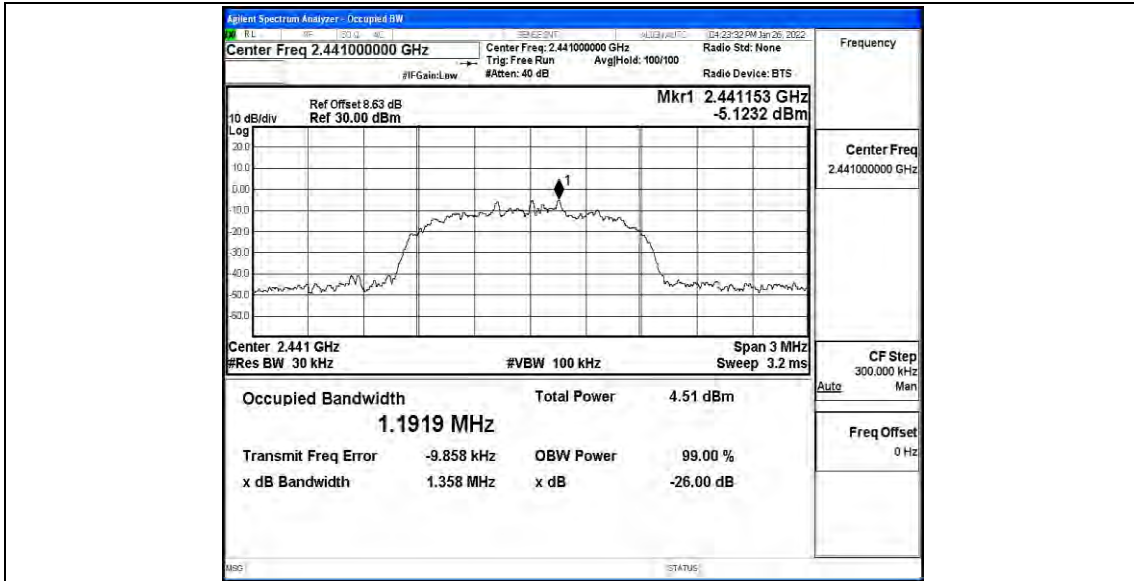
2DH5_Ant1_2480



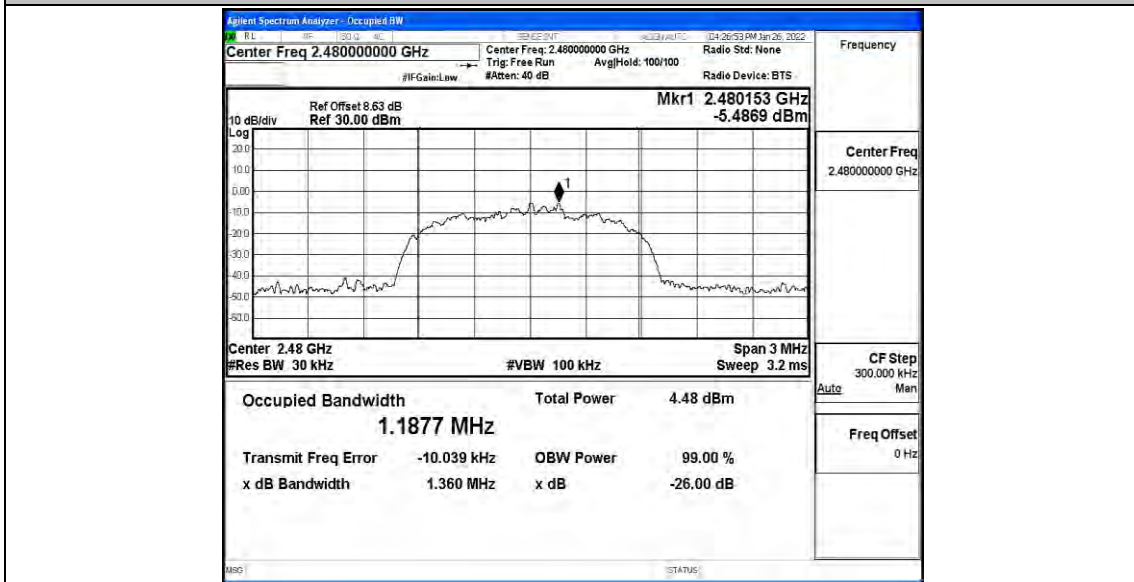
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480





Appendix A.3: Carrier frequency separation

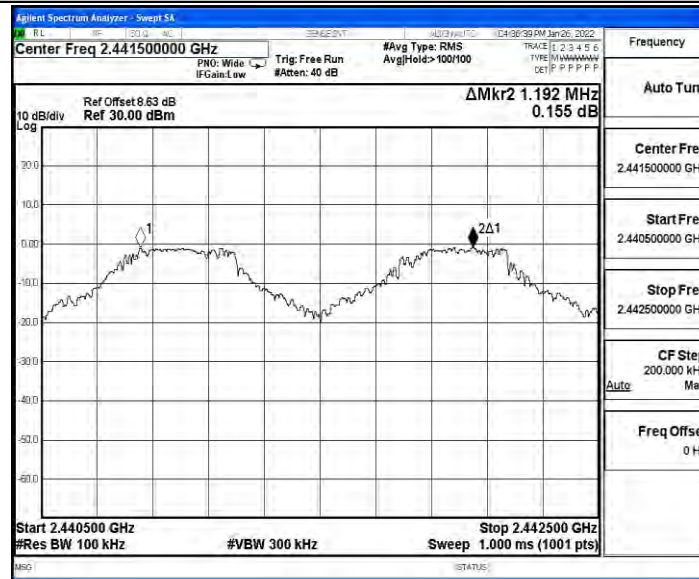
Test Result

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.192	≥ 0.698	PASS
2DH5	Ant1	Hop	1.312	≥ 0.880	PASS
3DH5	Ant1	Hop	1.03	≥ 0.862	PASS

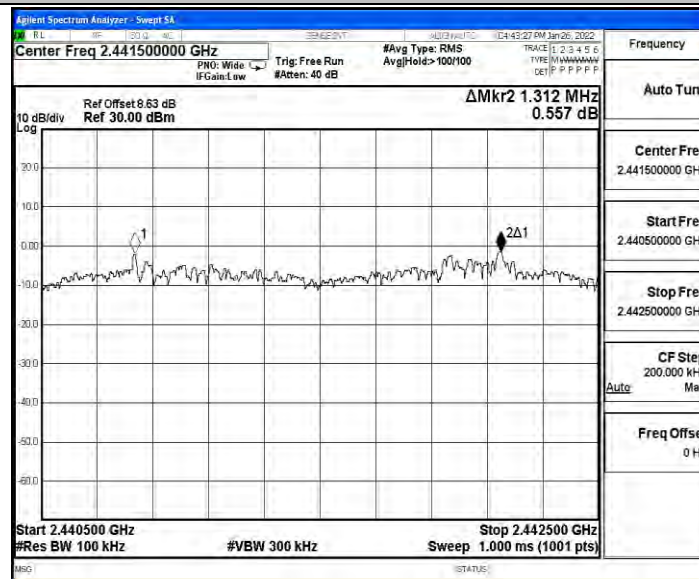


Test Graphs

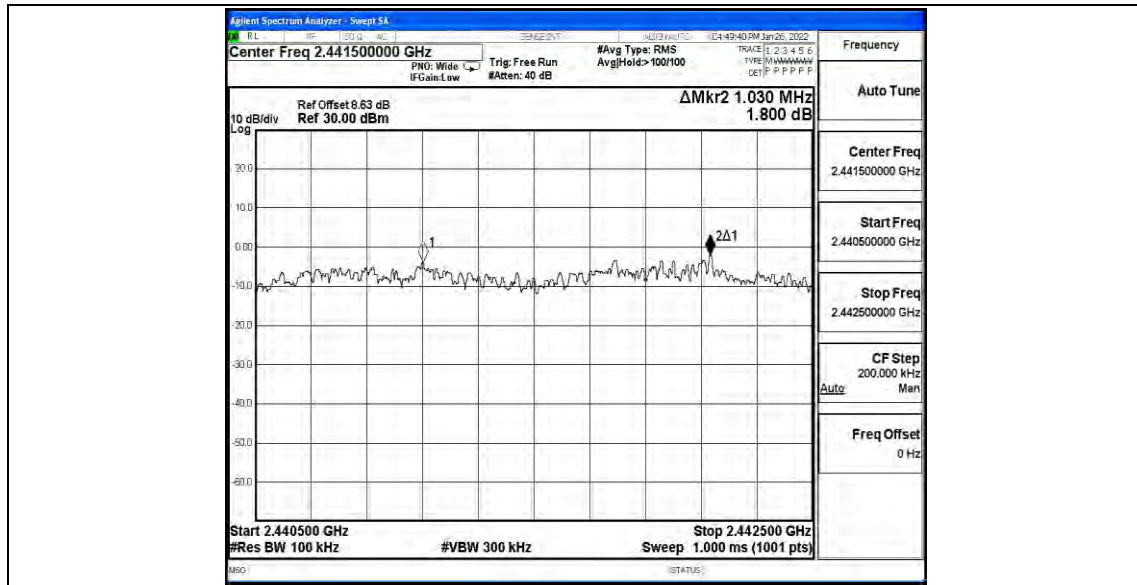
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop





Appendix A.4: Number of hopping channels

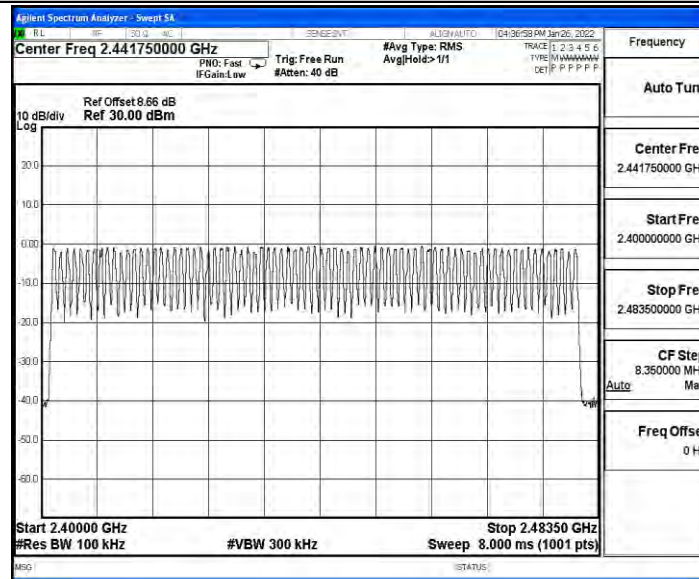
Test Result

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

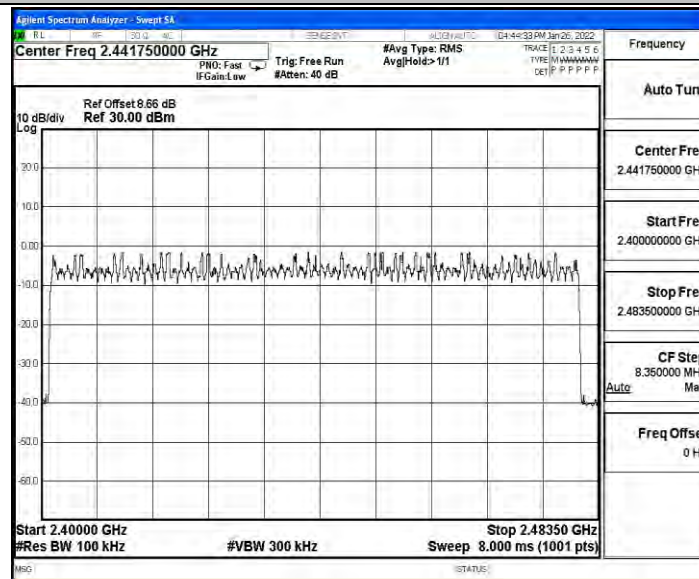


Test Graphs

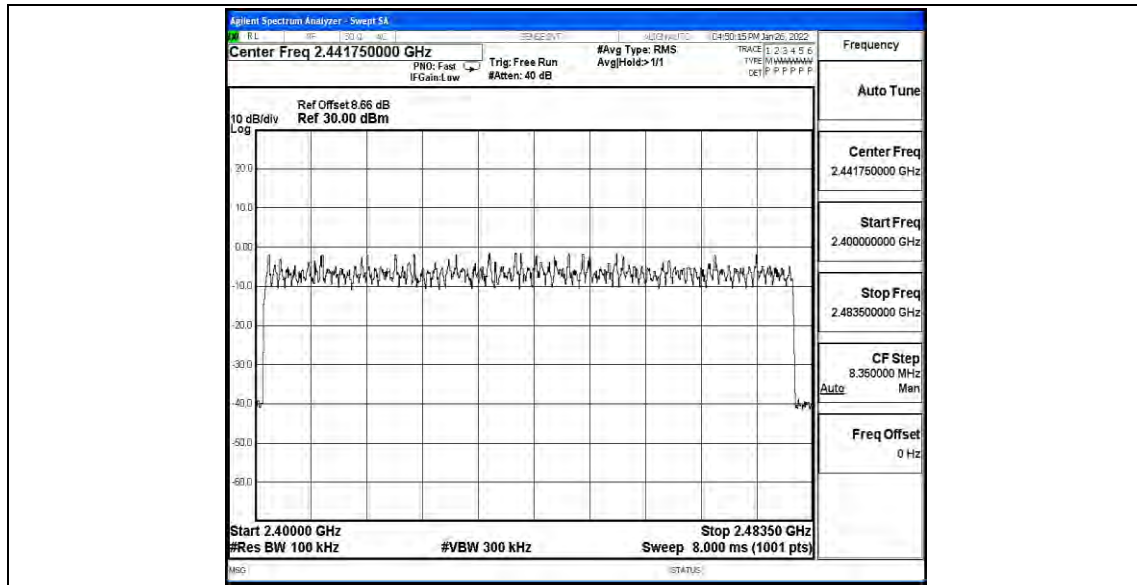
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop





Appendix A.5.1: Time of occupancy

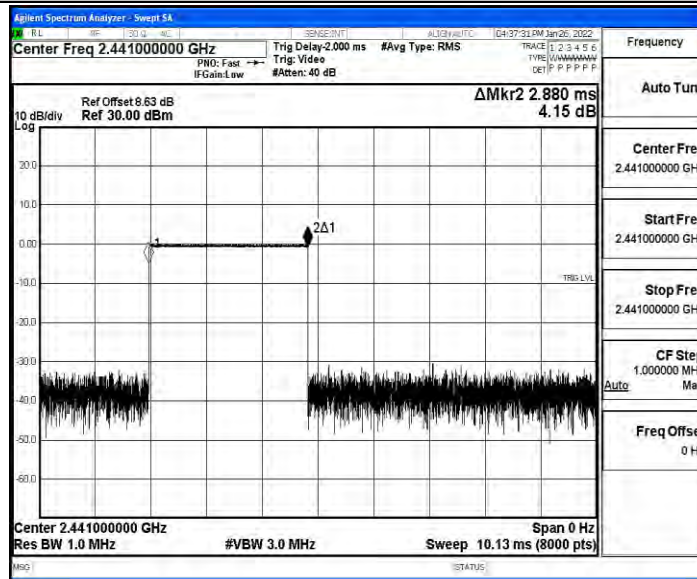
Test Result

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
3DH5	Ant1	Hop	2.89	106.67	0.308	≤0.4	PASS

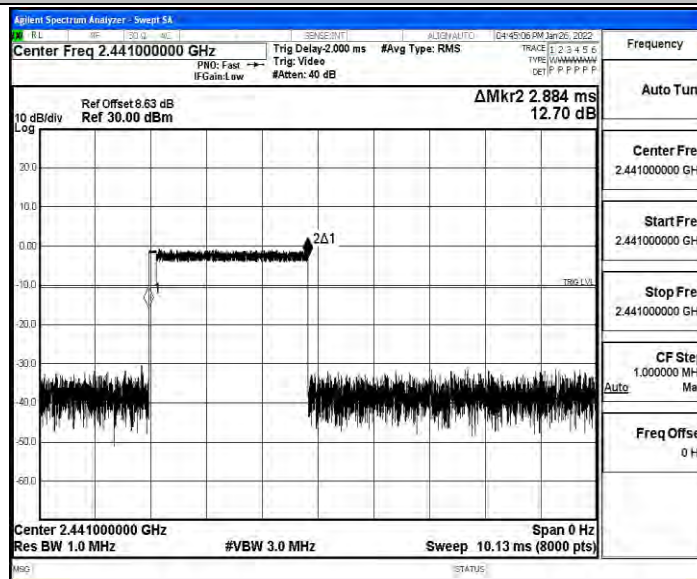


Test Graphs

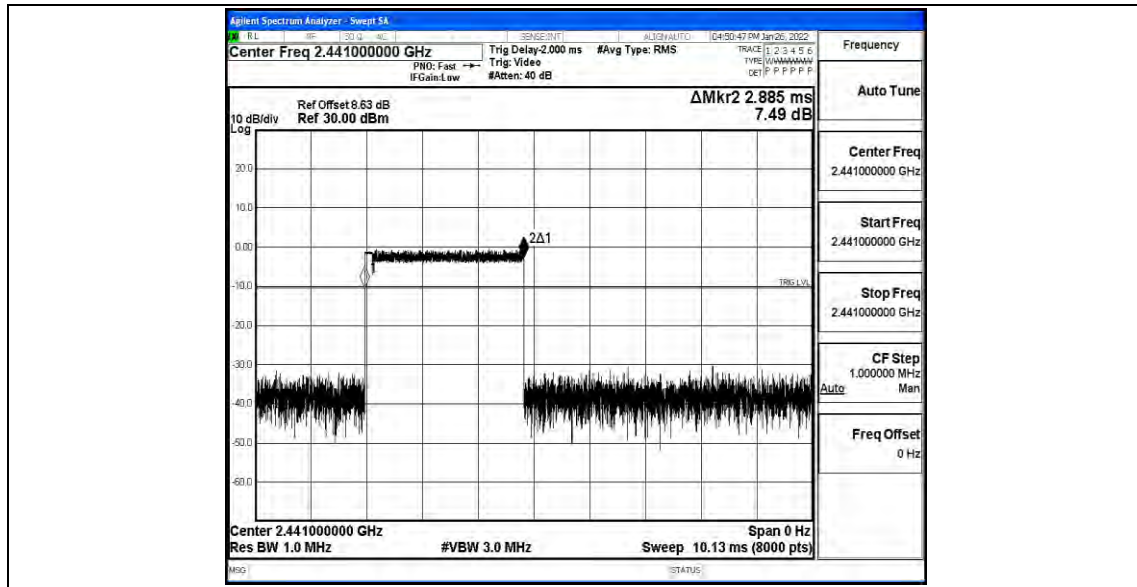
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop





Appendix A.5.2: Duty Cycle

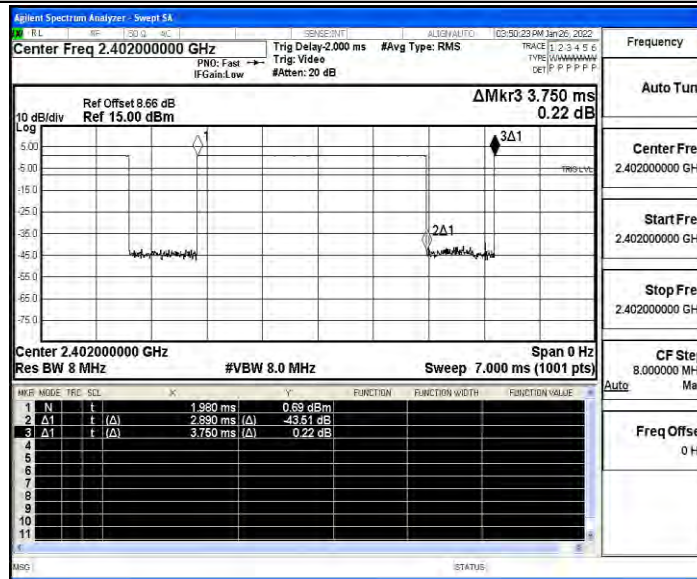
Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
DH5	Ant1	2402	2.89	3.75	0.7707	77.07	1.13	---	---
		2441	2.89	3.75	0.7707	77.07	1.13	---	---
		2480	2.89	3.76	0.7686	76.86	1.14	---	---
2DH5	Ant1	2402	2.88	3.75	0.7680	76.80	1.15	---	---
		2441	2.89	3.75	0.7707	77.07	1.13	---	---
		2480	2.89	3.76	0.7686	76.86	1.14	---	---
3DH5	Ant1	2402	2.89	3.76	0.7686	76.86	1.14	---	---
		2441	2.90	3.76	0.7713	77.13	1.13	---	---
		2480	2.89	3.75	0.7707	77.07	1.13	---	---

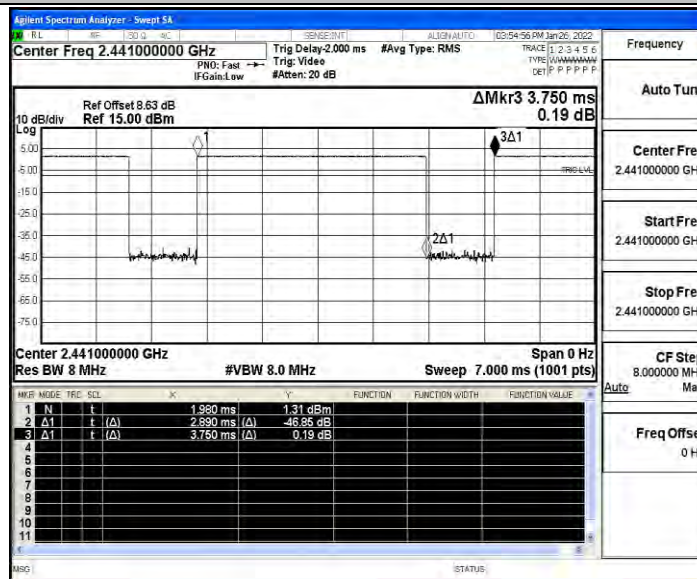


Test Graphs

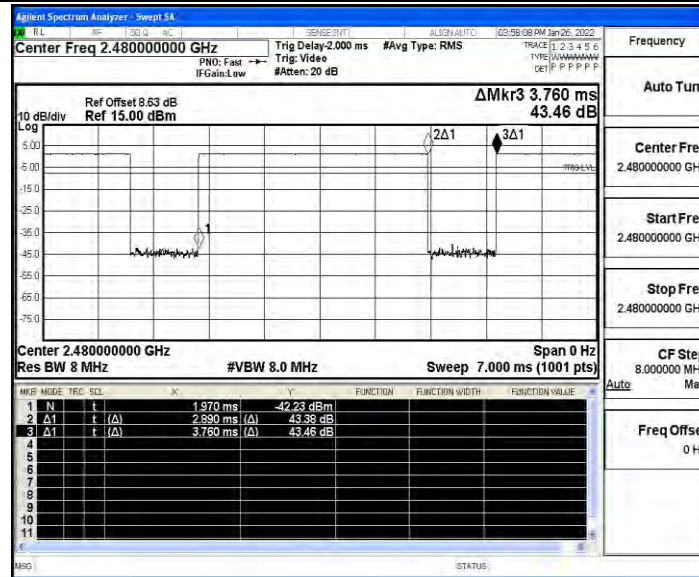
DH5_Ant1_2402



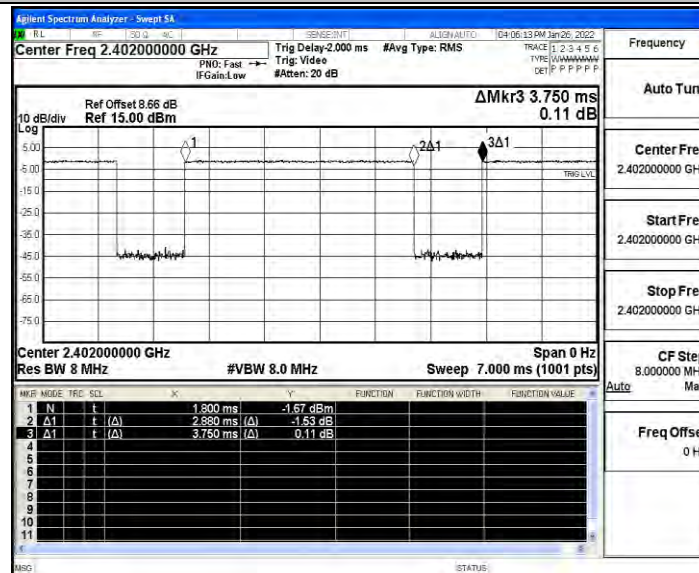
DH5_Ant1_2441



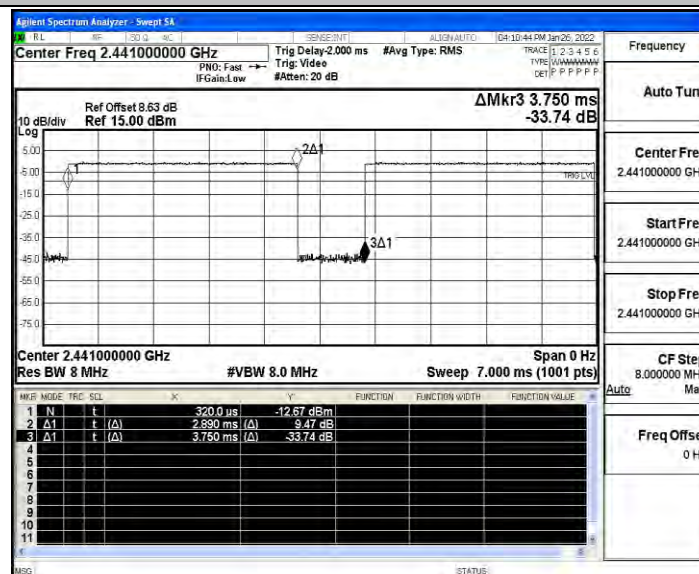
DH5_Ant1_2480



2DH5_Ant1_2402

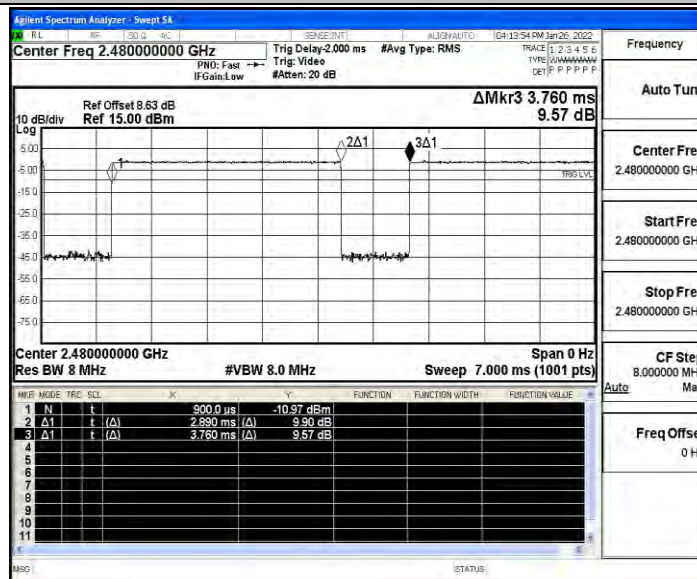


2DH5_Ant1_2441

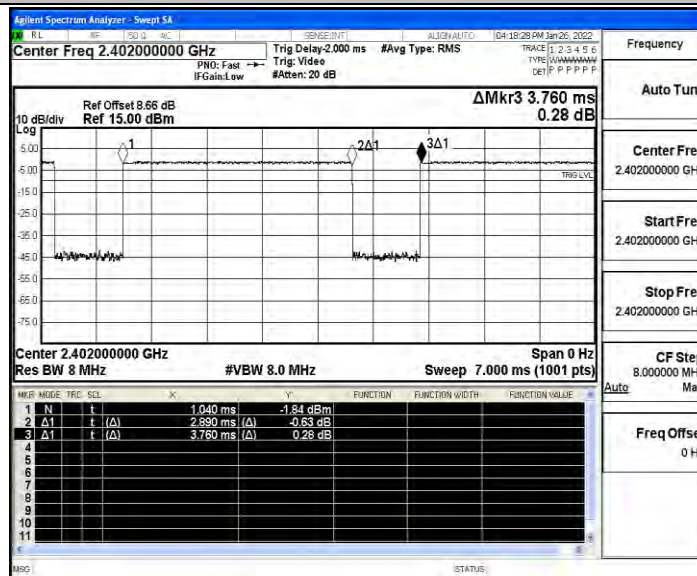




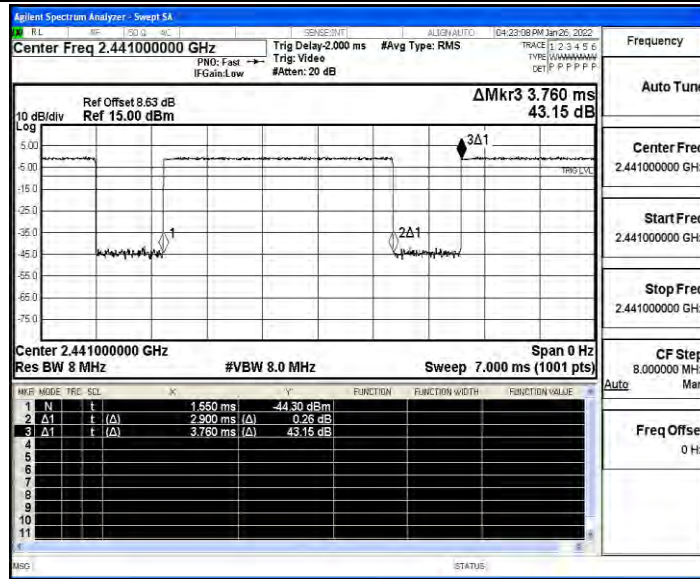
2DH5_Ant1_2480



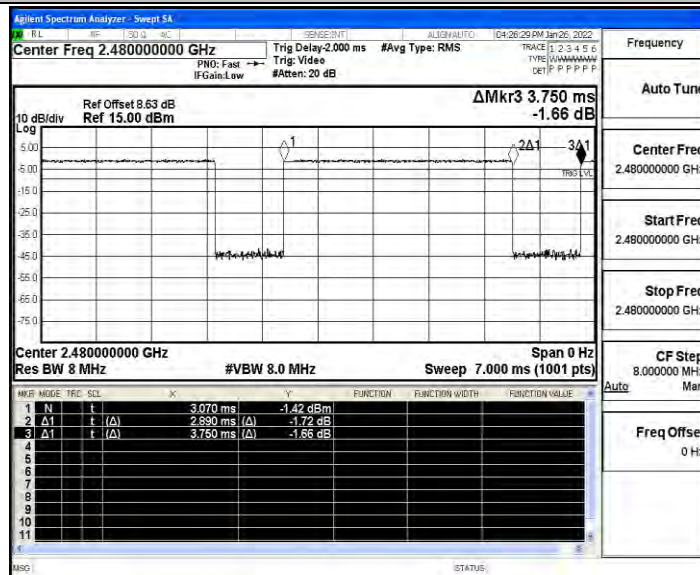
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480





Appendix A.6: Conducted Spurious Emission

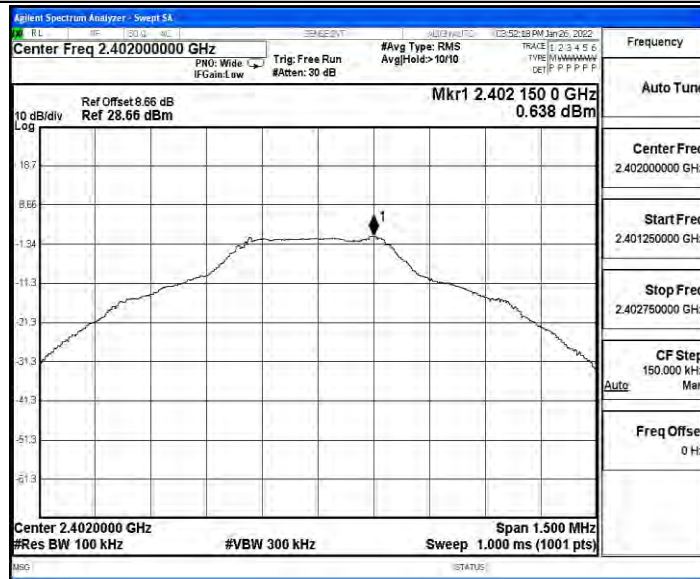
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	0.64	0.64	---	PASS
			30~1000	0.64	-60.37	≤-19.36	PASS
			1000~26500	0.64	-46.65	≤-19.36	PASS
		2441	Reference	1.22	1.22	---	PASS
			30~1000	1.22	-59.65	≤-18.78	PASS
			1000~26500	1.22	-46.18	≤-18.78	PASS
		2480	Reference	0.98	0.98	---	PASS
			30~1000	0.98	-60.79	≤-19.02	PASS
			1000~26500	0.98	-44.67	≤-19.02	PASS
2DH5	Ant1	2402	Reference	-2.07	-2.07	---	PASS
			30~1000	-2.07	-60.12	≤-22.07	PASS
			1000~26500	-2.07	-46.2	≤-22.07	PASS
		2441	Reference	-1.90	-1.90	---	PASS
			30~1000	-1.90	-59.87	≤-21.9	PASS
			1000~26500	-1.90	-46.12	≤-21.9	PASS
		2480	Reference	-1.80	-1.80	---	PASS
			30~1000	-1.80	-60.44	≤-21.8	PASS
			1000~26500	-1.80	-45.57	≤-21.8	PASS
3DH5	Ant1	2402	Reference	-1.99	-1.99	---	PASS
			30~1000	-1.99	-60.49	≤-21.99	PASS
			1000~26500	-1.99	-46.27	≤-21.99	PASS
		2441	Reference	-1.52	-1.52	---	PASS
			30~1000	-1.52	-60.37	≤-21.52	PASS
			1000~26500	-1.52	-46.65	≤-21.52	PASS
		2480	Reference	-1.75	-1.75	---	PASS
			30~1000	-1.75	-60.33	≤-21.75	PASS
			1000~26500	-1.75	-46.19	≤-21.75	PASS

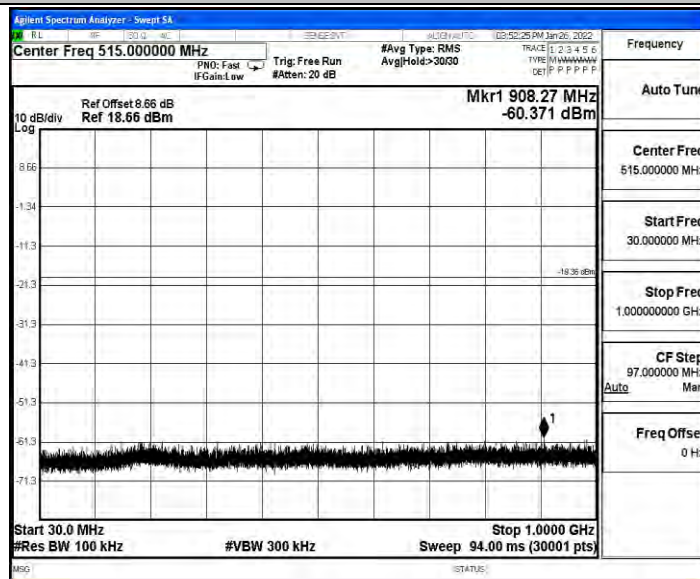


Test Graphs

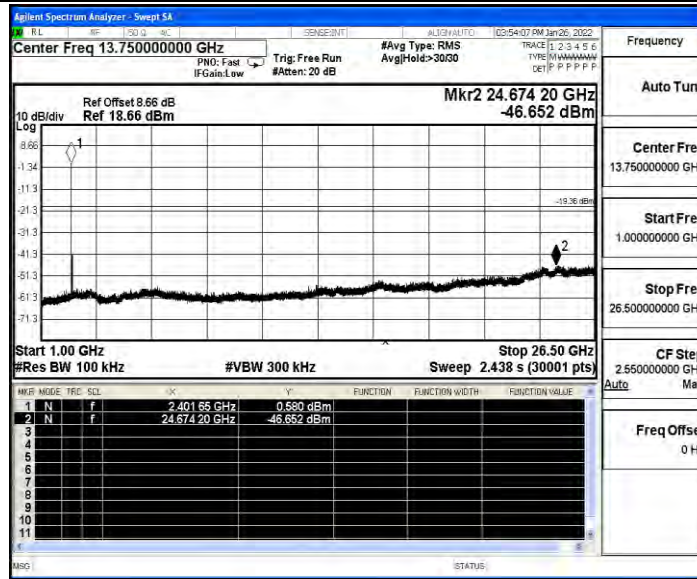
DH5_Ant1_2402_0~Reference



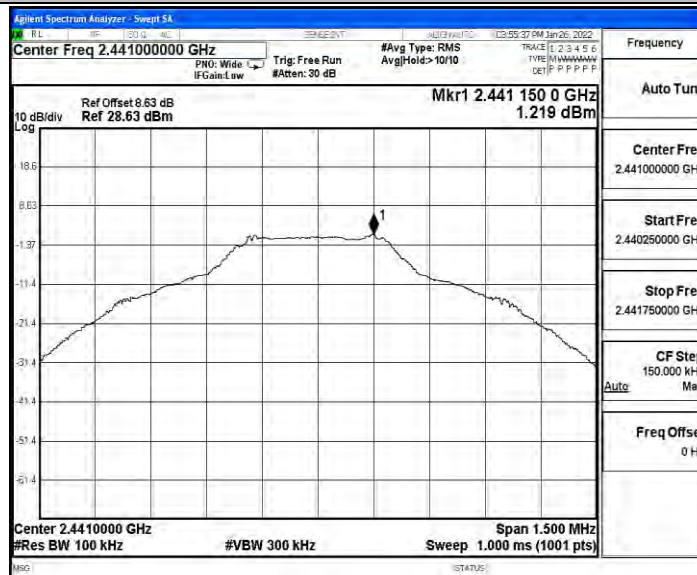
DH5_Ant1_2402_30~1000



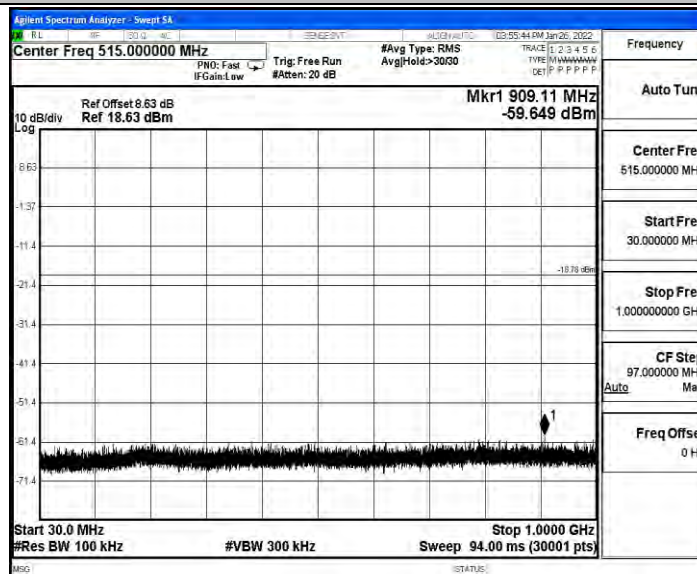
DH5_Ant1_2402_1000~26500



DH5_Ant1_2441_0~Reference

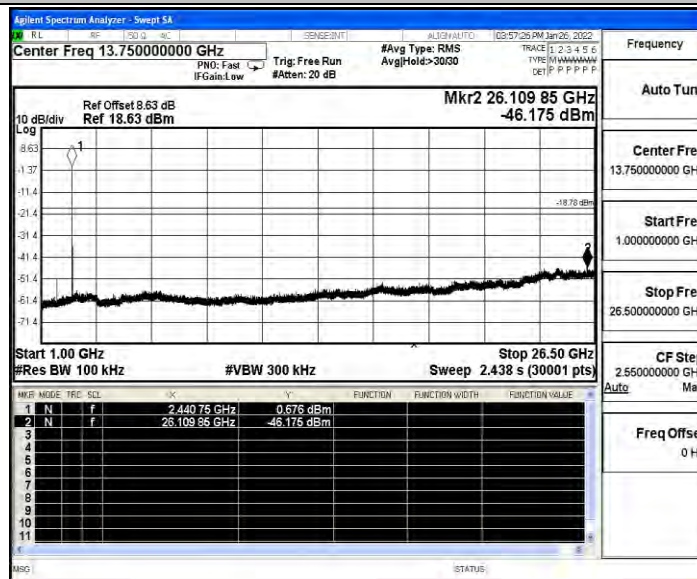


DH5_Ant1_2441_30~1000

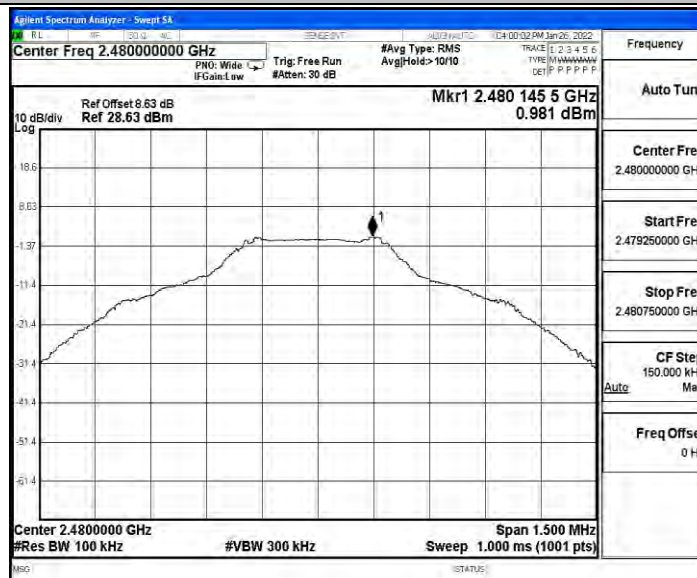




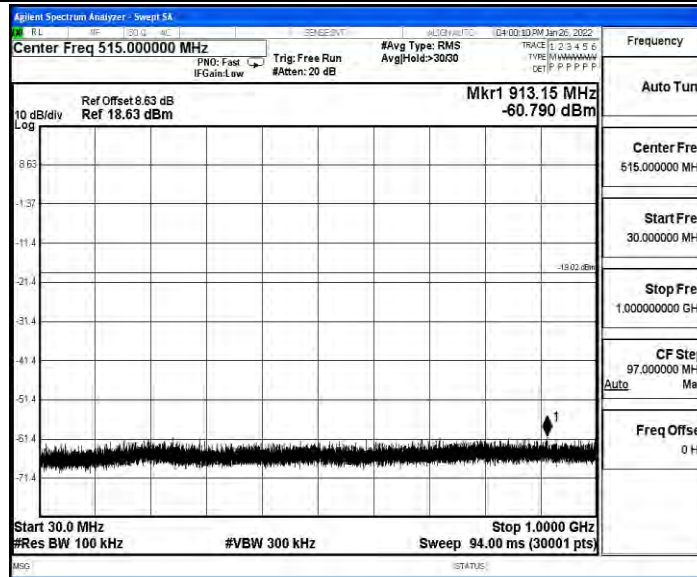
DH5_Ant1_2441_1000~26500



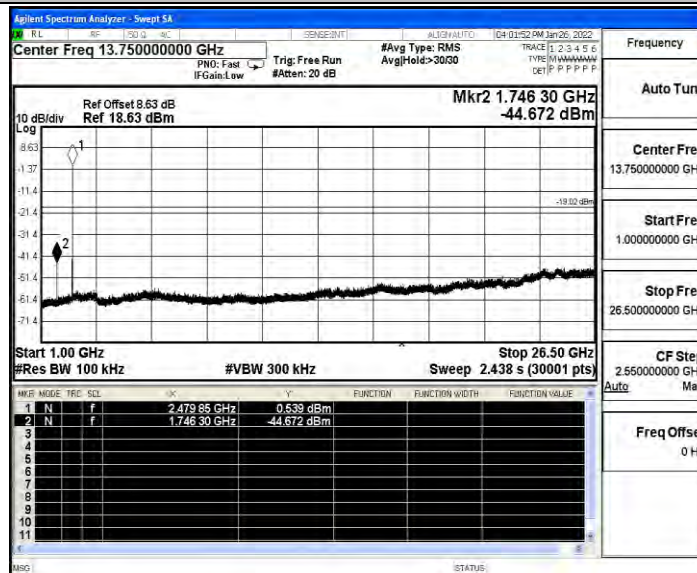
DH5_Ant1_2480_0~Reference



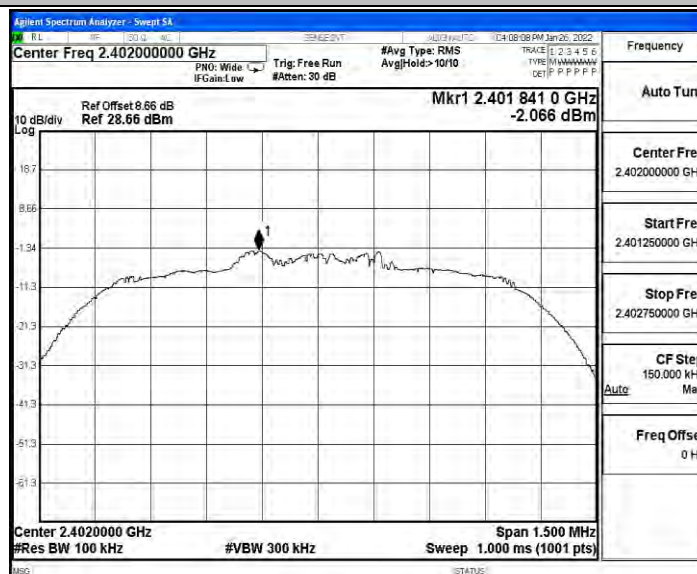
DH5_Ant1_2480_30~1000



DH5_Ant1_2480_1000~26500

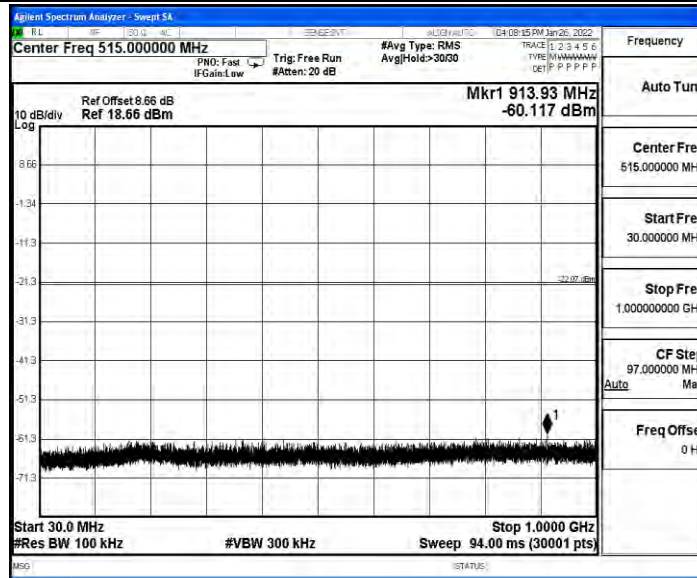


2DH5_Ant1_2402_0~Reference

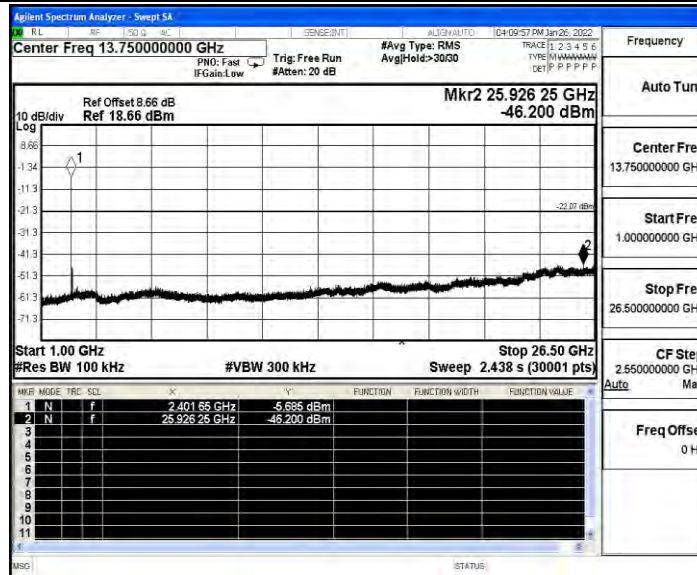




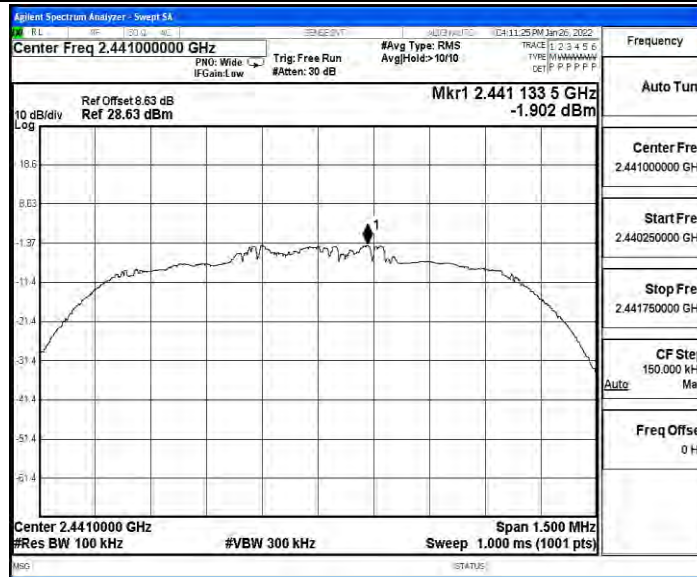
2DH5_Ant1_2402_30~1000



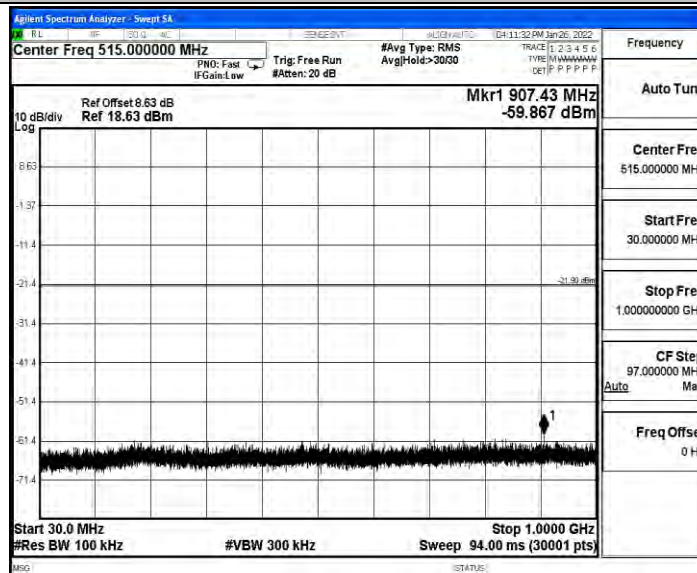
2DH5_Ant1_2402_1000~26500



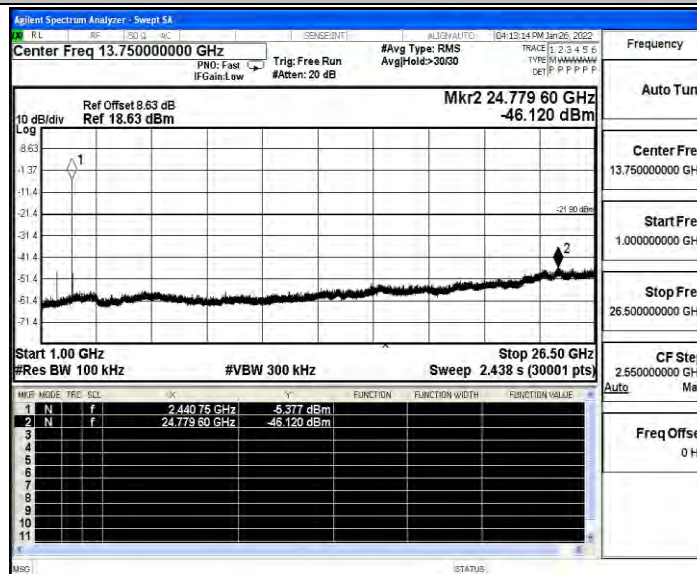
2DH5_Ant1_2441_0~Reference



2DH5_Ant1_2441_30~1000

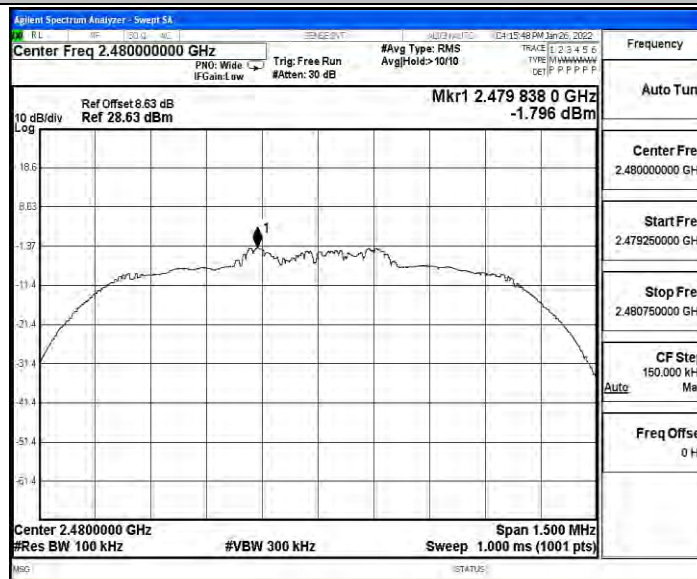


2DH5_Ant1_2441_1000~26500

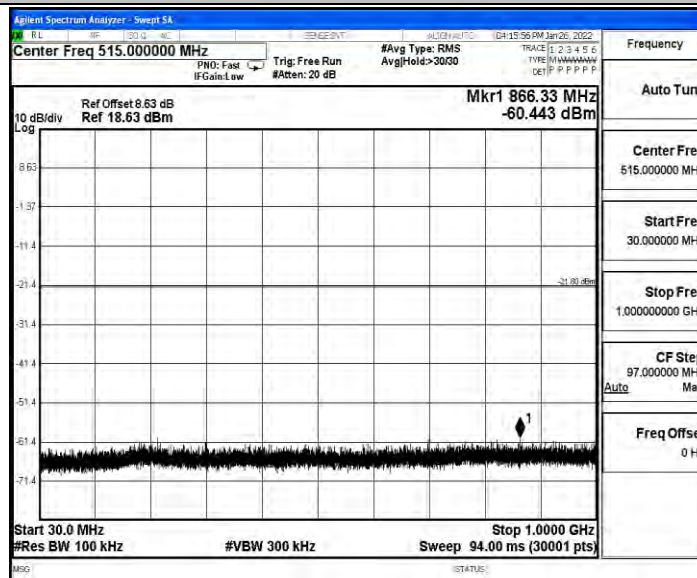




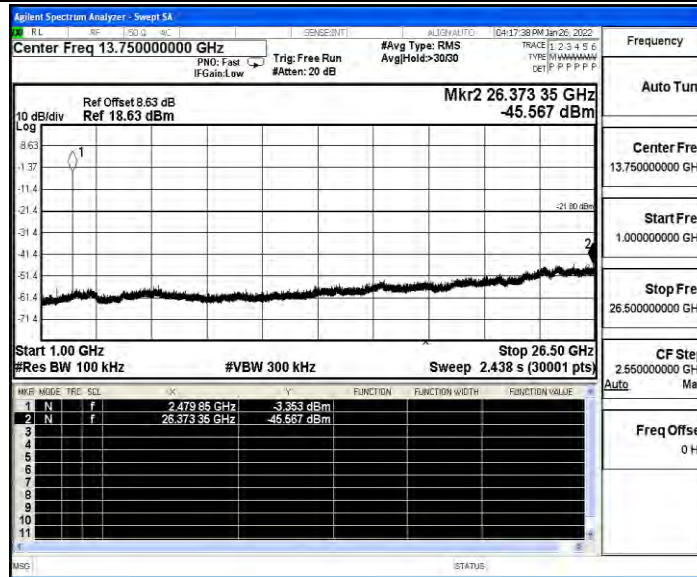
2DH5_Ant1_2480_0~Reference



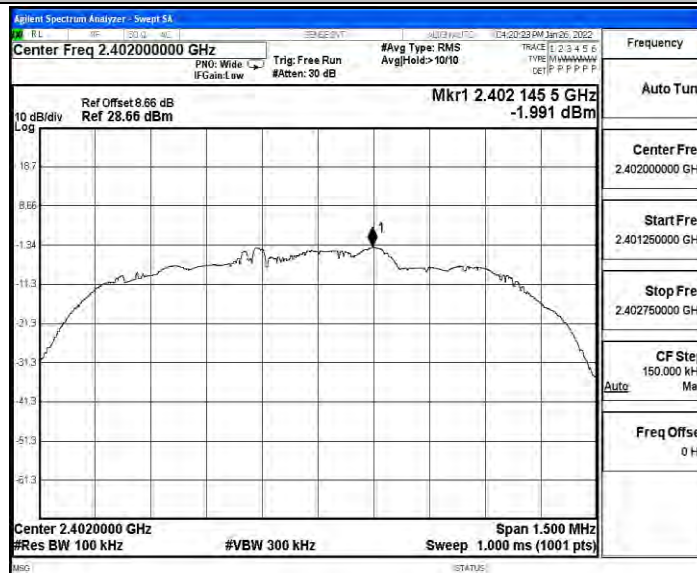
2DH5_Ant1_2480_30~1000



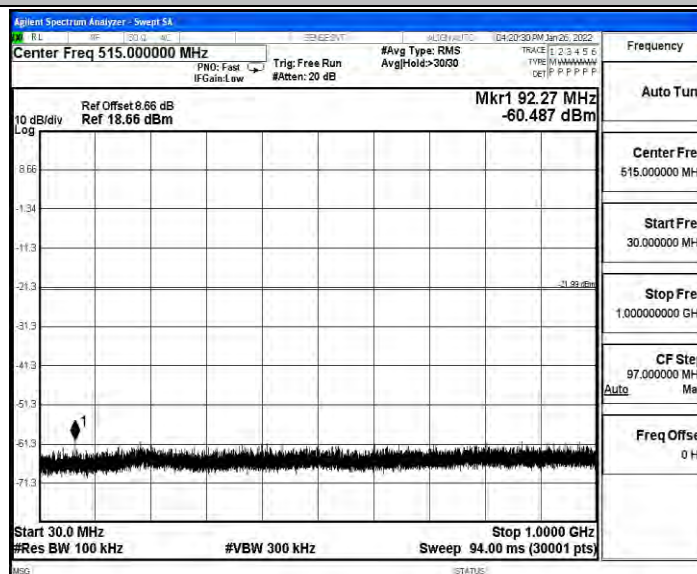
2DH5_Ant1_2480_1000~26500



3DH5_Ant1_2402_0~Reference

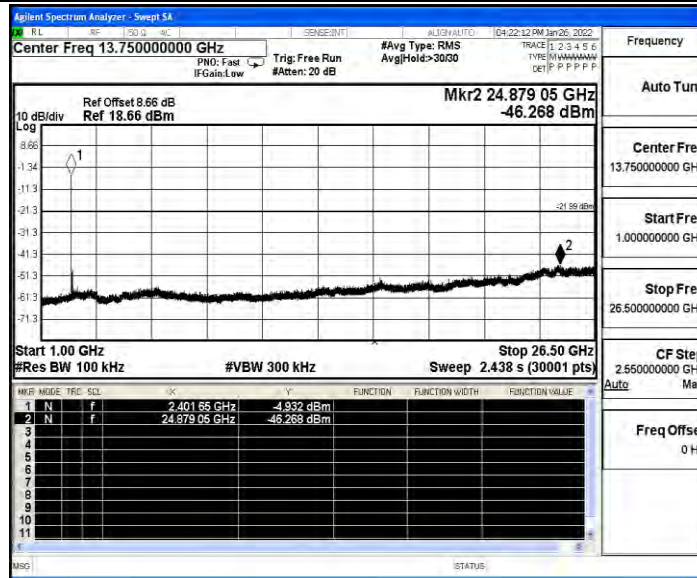


3DH5_Ant1_2402_30~1000

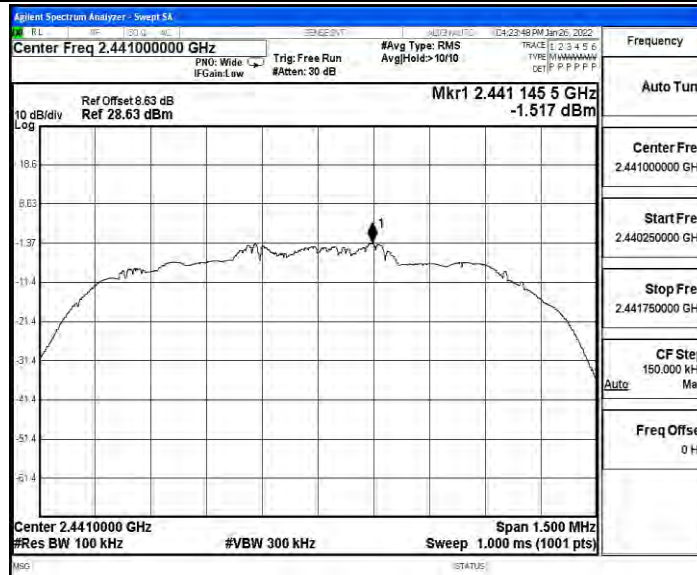




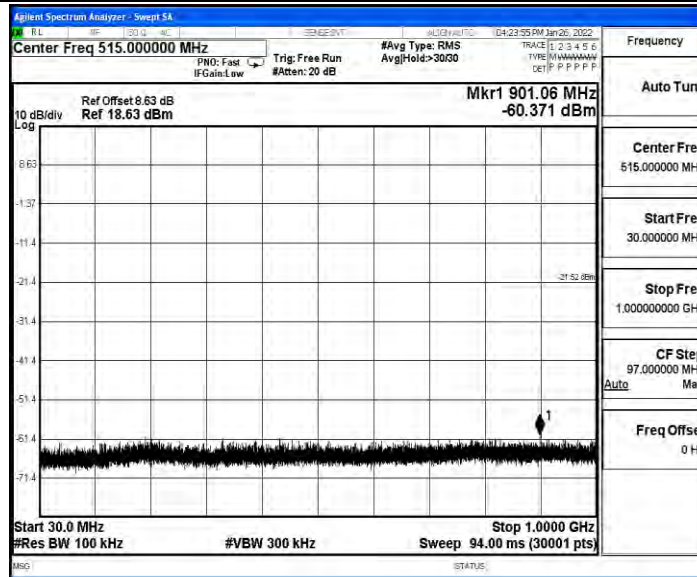
3DH5_Ant1_2402_1000~26500



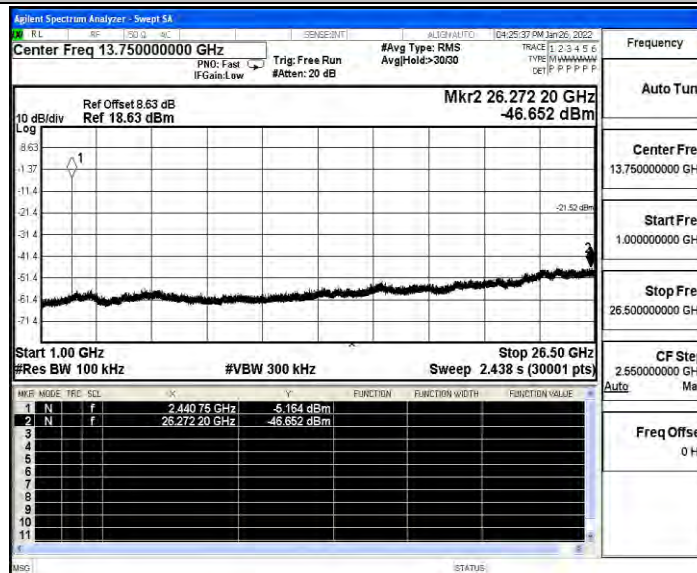
3DH5_Ant1_2441_0~Reference



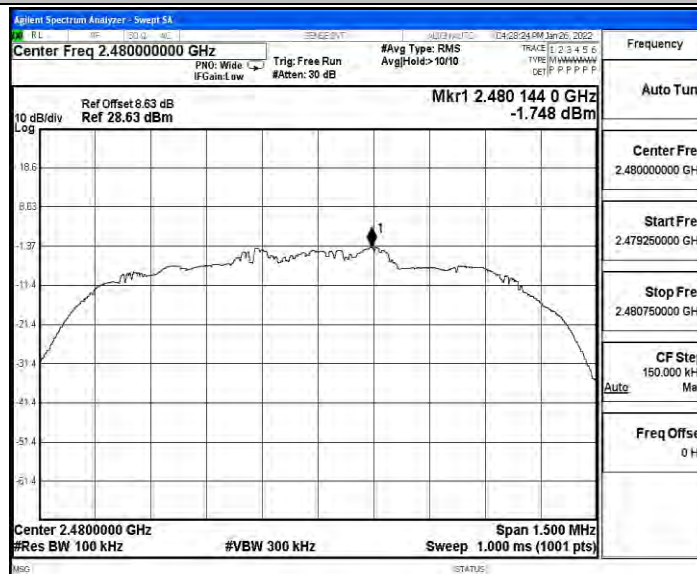
3DH5_Ant1_2441_30~1000



3DH5_Ant1_2441_1000~26500

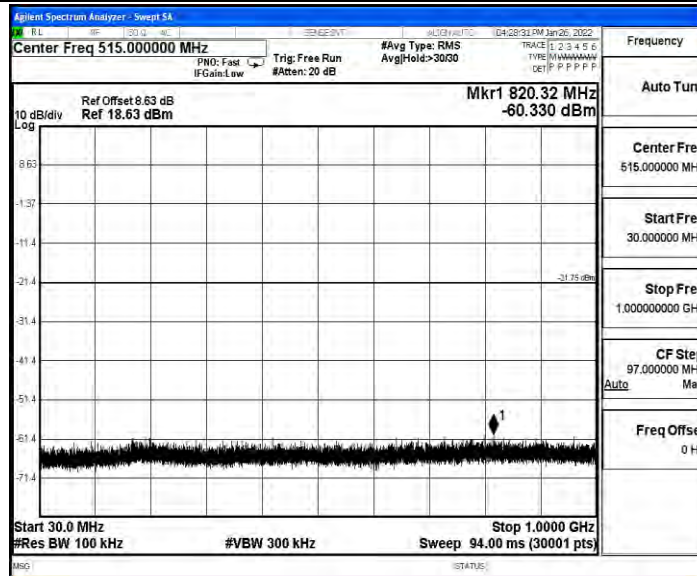


3DH5_Ant1_2480_0~Reference

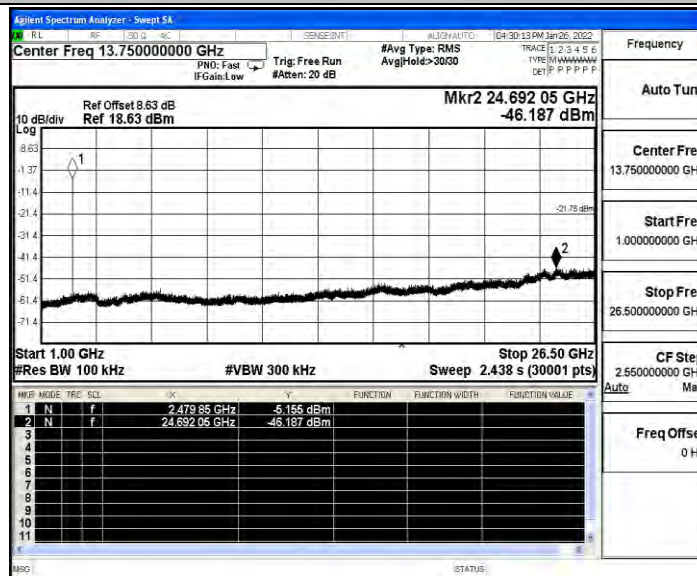




3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000~26500





Appendix A.7: Band edge measurements

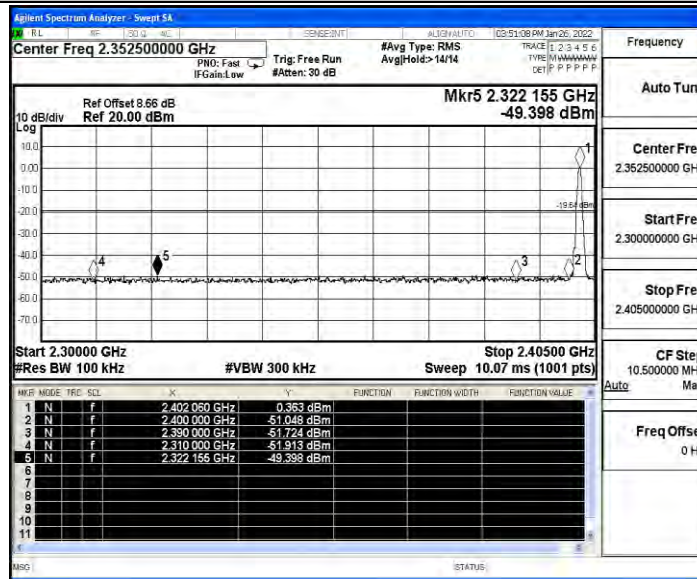
Test Result

TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	0.36	-49.4	≤ -19.64	PASS
		High	2480	0.89	-47.95	≤ -19.11	PASS
		Low	Hop_2402	-1.58	-48.91	≤ -21.58	PASS
		High	Hop_2480	-0.69	-47.95	≤ -20.69	PASS
2DH5	Ant1	Low	2402	-3.17	-48.65	≤ -23.17	PASS
		High	2480	-2.14	-47.56	≤ -22.14	PASS
		Low	Hop_2402	-3.15	-49.23	≤ -23.15	PASS
		High	Hop_2480	-2.14	-47.38	≤ -22.14	PASS
3DH5	Ant1	Low	2402	-1.92	-48.84	≤ -21.92	PASS
		High	2480	-1.59	-47.13	≤ -21.59	PASS
		Low	Hop_2402	-5.85	-49.12	≤ -25.85	PASS
		High	Hop_2480	-1.74	-47.69	≤ -21.74	PASS

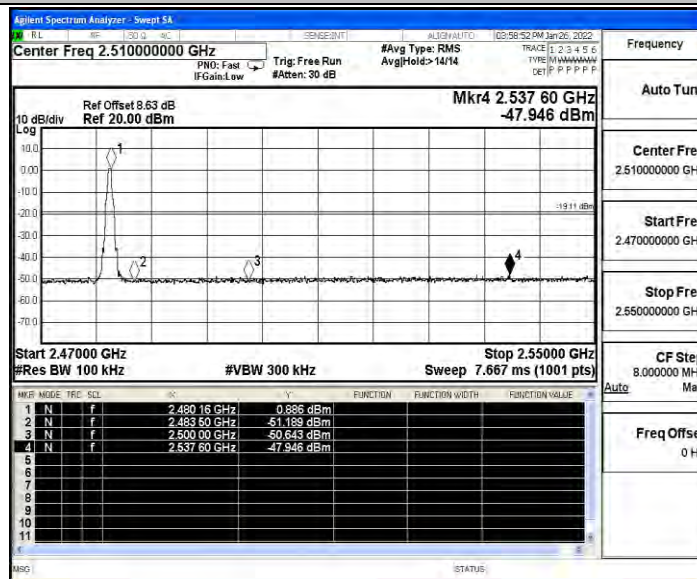


Test Graphs

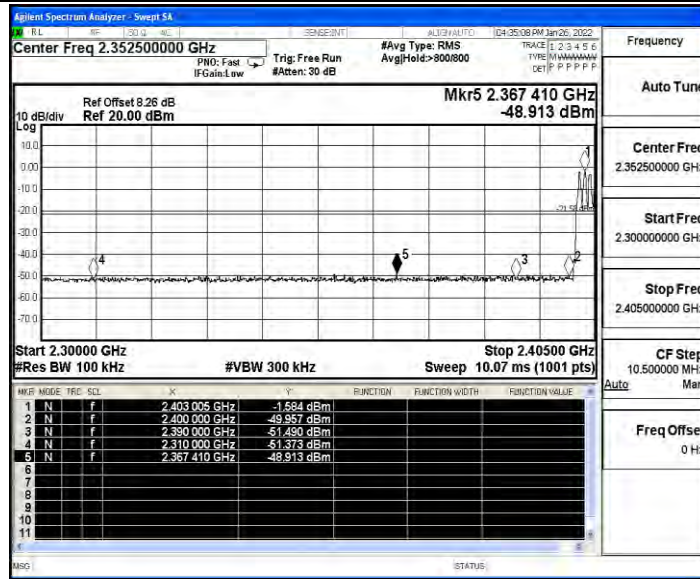
DH5_Ant1_Low_2402



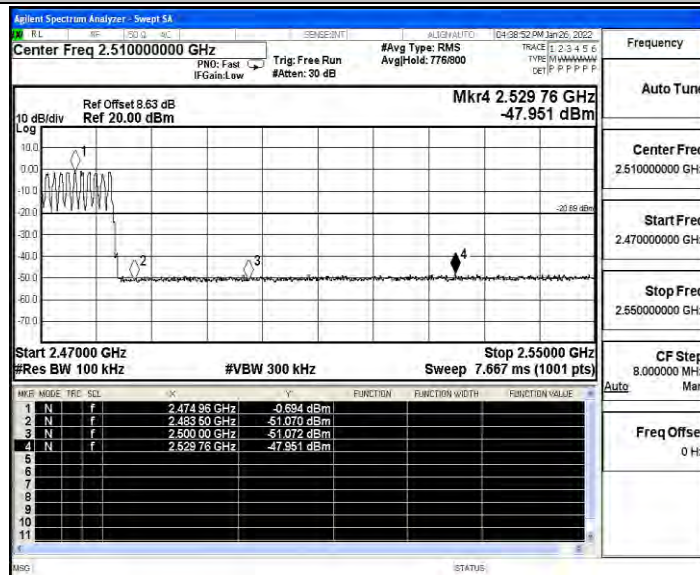
DH5_Ant1_High_2480



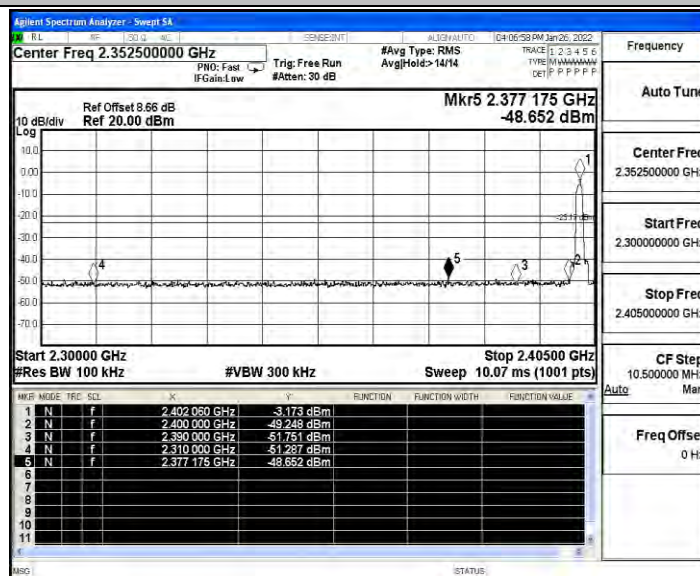
DH5_Ant1_Low_Hop_2402



DH5_Ant1_High_Hop_2480

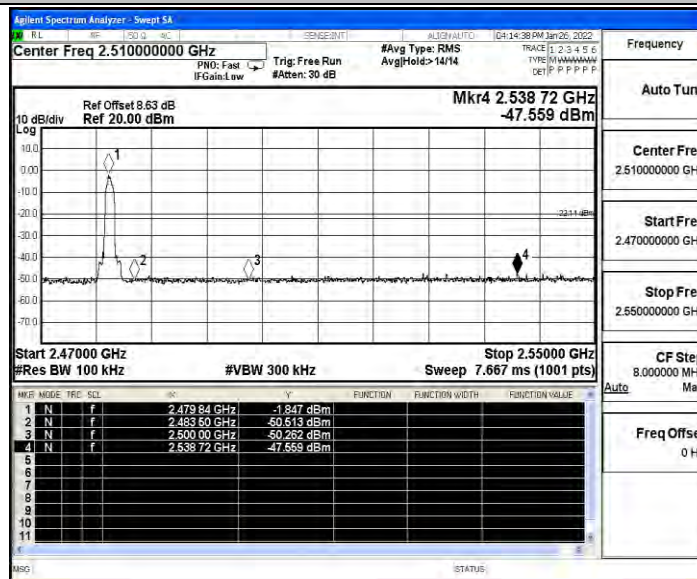


2DH5_Ant1_Low_2402

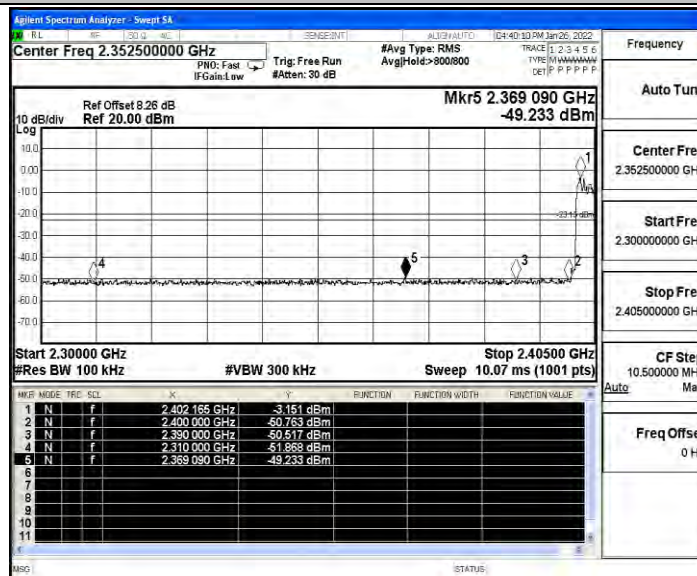




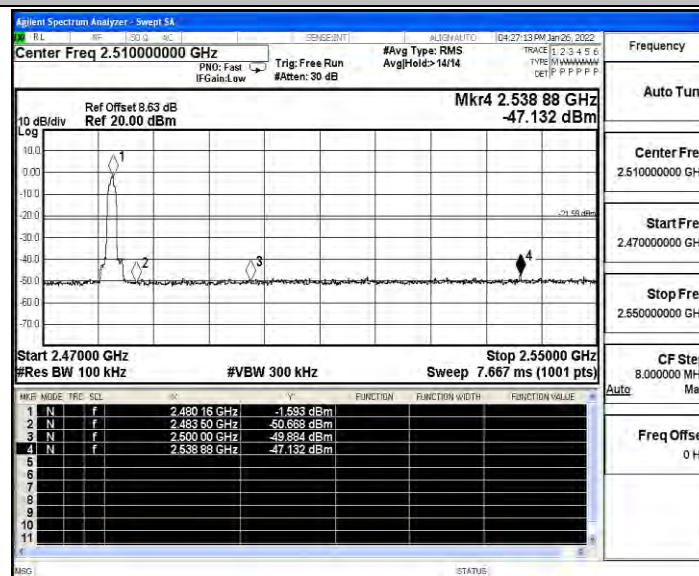
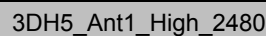
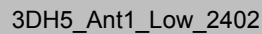
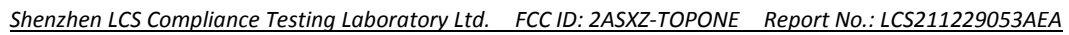
2DH5_Ant1_High_2480



2DH5_Ant1_Low_Hop_2402

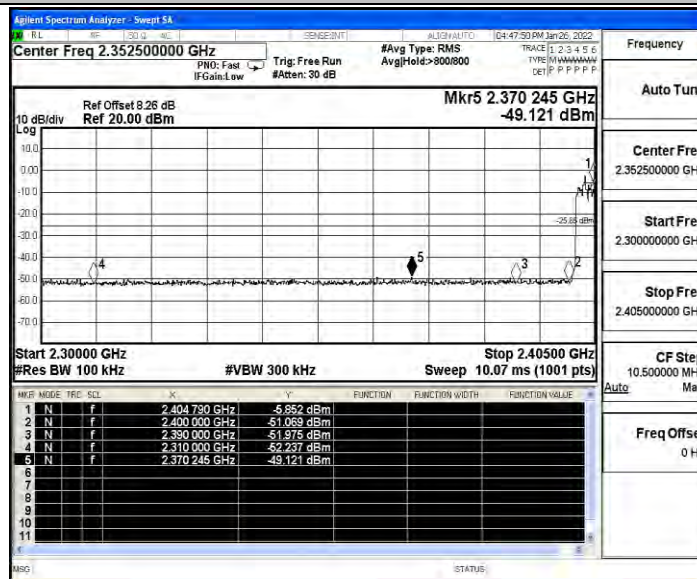


2DH5_Ant1_High_Hop_2480

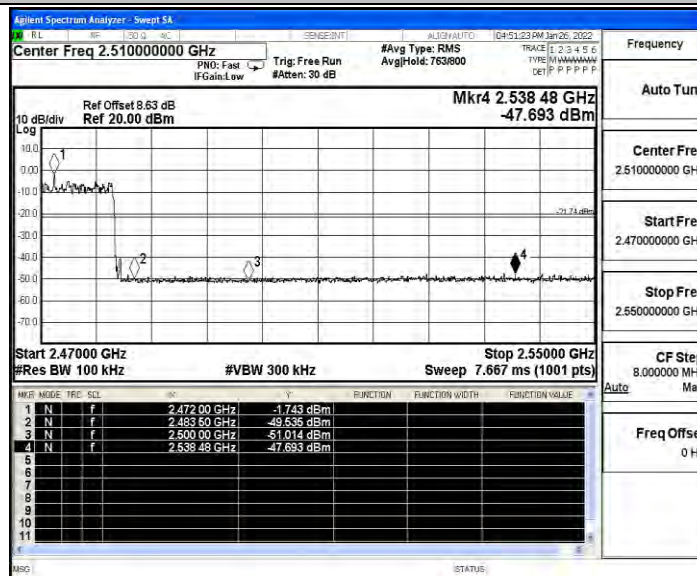




3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480





Appendix 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	-48.36	≤-41.20	46.84	≤54	PASS
				AV	2388.305	-47.84	≤-41.20	47.36	≤54	PASS
				AV	2390.000	-47.89	≤-41.20	47.31	≤54	PASS
				Peak	2310.000	-37.6	≤-21.20	57.60	≤74	PASS
				Peak	2367.410	-36.73	≤-21.20	58.47	≤74	PASS
				Peak	2390.000	-38.28	≤-21.20	56.92	≤74	PASS
		High	2480	AV	2483.500	-47.35	≤-41.20	47.85	≤54	PASS
				AV	2491.360	-47.31	≤-41.20	47.89	≤54	PASS
				AV	2500.000	-47.42	≤-41.20	47.78	≤54	PASS
				Peak	2483.500	-37.93	≤-21.20	57.27	≤74	PASS
				Peak	2498.160	-36.51	≤-21.20	58.69	≤74	PASS
				Peak	2500.000	-38.96	≤-21.20	56.24	≤74	PASS
		Low	Hop_24 02	Peak	2310.000	-38.55	≤-21.20	56.65	≤74	PASS
				Peak	2350.190	-36.63	≤-21.20	58.57	≤74	PASS
				Peak	2390.000	-39.22	≤-21.20	55.98	≤74	PASS
		High	Hop_24 80	Peak	2483.500	-37.97	≤-21.20	57.23	≤74	PASS
				Peak	2498.800	-36.63	≤-21.20	58.57	≤74	PASS
				Peak	2500.000	-37.42	≤-21.20	57.78	≤74	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-48.24	≤-41.20	46.96	≤54	PASS
				AV	2388.830	-47.87	≤-41.20	47.33	≤54	PASS
				AV	2390.000	-47.94	≤-41.20	47.26	≤54	PASS
				Peak	2310.000	-39.31	≤-21.20	55.89	≤74	PASS
				Peak	2357.960	-36.73	≤-21.20	58.47	≤74	PASS
				Peak	2390.000	-38.71	≤-21.20	56.49	≤74	PASS
		High	2480	AV	2483.500	-47.41	≤-41.20	47.79	≤54	PASS
				AV	2497.760	-47.19	≤-41.20	48.01	≤54	PASS
				AV	2500.000	-47.3	≤-41.20	47.90	≤54	PASS
				Peak	2483.500	-38.4	≤-21.20	56.80	≤74	PASS
				Peak	2490.240	-36.17	≤-21.20	59.03	≤74	PASS
				Peak	2500.000	-38.53	≤-21.20	56.67	≤74	PASS
		Low	Hop_24 02	Peak	2310.000	-39.28	≤-21.20	55.92	≤74	PASS
				Peak	2384.210	-36.26	≤-21.20	58.94	≤74	PASS
				Peak	2390.000	-38.01	≤-21.20	57.19	≤74	PASS
		High	Hop_24 80	Peak	2483.500	-38.41	≤-21.20	56.79	≤74	PASS
				Peak	2491.840	-36.35	≤-21.20	58.85	≤74	PASS
				Peak	2500.000	-38.47	≤-21.20	56.73	≤74	PASS
3DH5	Ant1	Low	2402	AV	2310.000	-48.3	≤-41.20	46.90	≤54	PASS



				AV	2380.955	-47.86	≤ -41.20	47.34	≤ 54	PASS
				AV	2390.000	-47.95	≤ -41.20	47.25	≤ 54	PASS
				Peak	2310.000	-38.26	≤ -21.20	56.94	≤ 74	PASS
				Peak	2381.165	-36.25	≤ -21.20	58.95	≤ 74	PASS
				Peak	2390.000	-38.28	≤ -21.20	56.92	≤ 74	PASS
		High	2480	AV	2483.500	-47.4	≤ -41.20	47.80	≤ 54	PASS
				AV	2498.880	-47.28	≤ -41.20	47.92	≤ 54	PASS
				AV	2500.000	-47.34	≤ -41.20	47.86	≤ 54	PASS
				Peak	2483.500	-37.91	≤ -21.20	57.29	≤ 74	PASS
				Peak	2483.920	-36.12	≤ -21.20	59.08	≤ 74	PASS
				Peak	2500.000	-37.06	≤ -21.20	58.14	≤ 74	PASS
		Low	Hop_24 02	Peak	2310.000	-39.53	≤ -21.20	55.67	≤ 74	PASS
				Peak	2311.130	-37.51	≤ -21.20	57.69	≤ 74	PASS
				Peak	2390.000	-38.26	≤ -21.20	56.94	≤ 74	PASS
		High	Hop_24 80	Peak	2483.500	-37.9	≤ -21.20	57.30	≤ 74	PASS
				Peak	2497.280	-36.24	≤ -21.20	58.96	≤ 74	PASS
				Peak	2500.000	-38	≤ -21.20	57.20	≤ 74	PASS

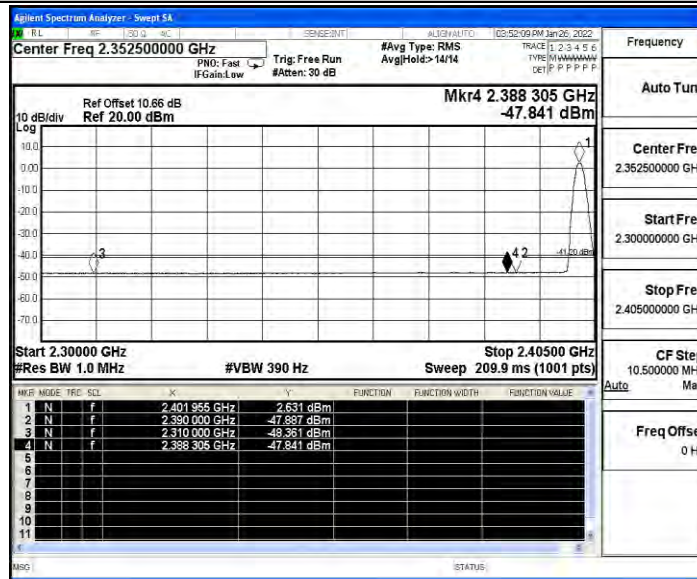
Note:

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.

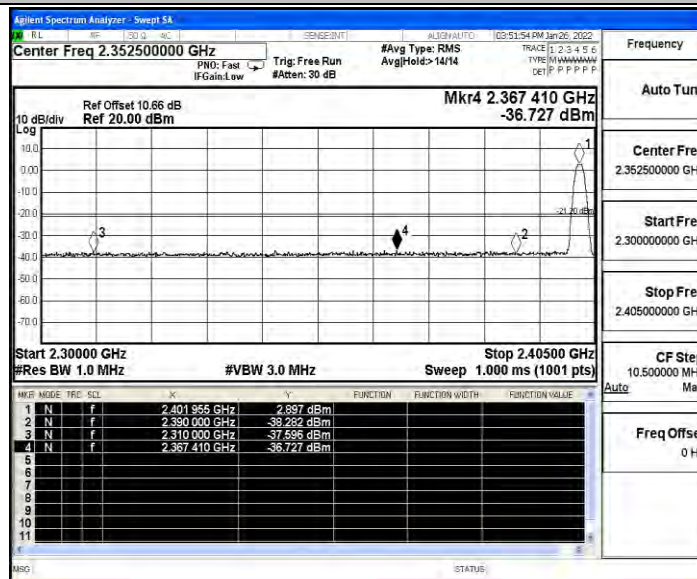


Test Graphs

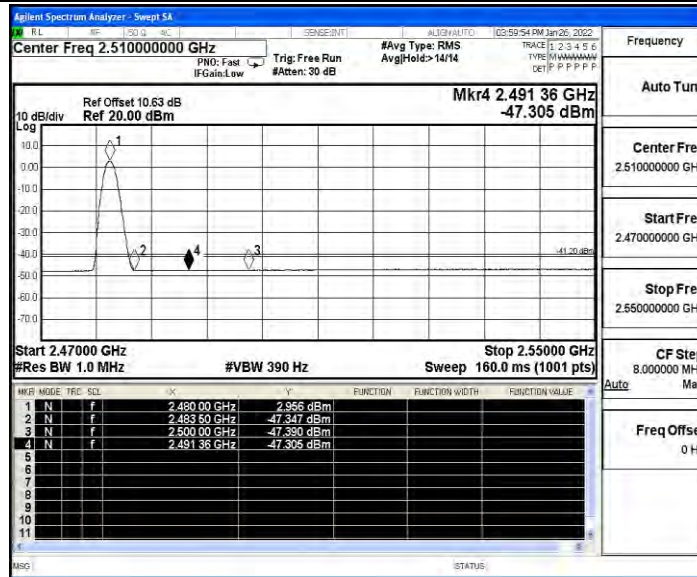
DH5_Ant1_Low_2402_AV



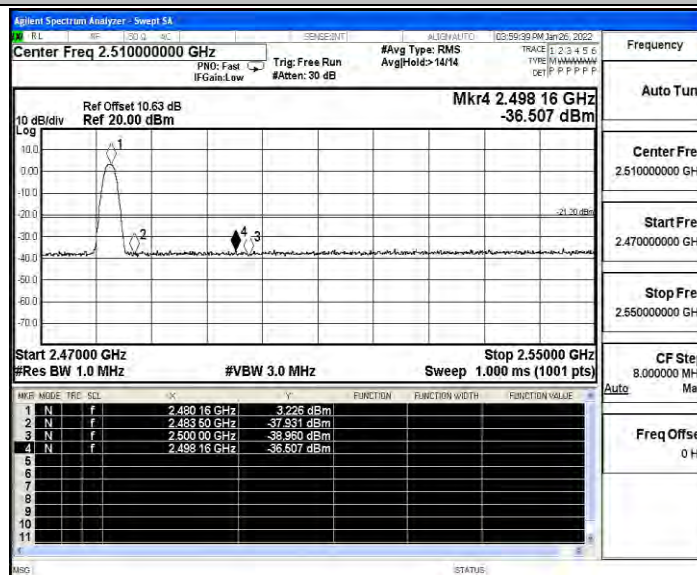
DH5_Ant1_Low_2402_Peak



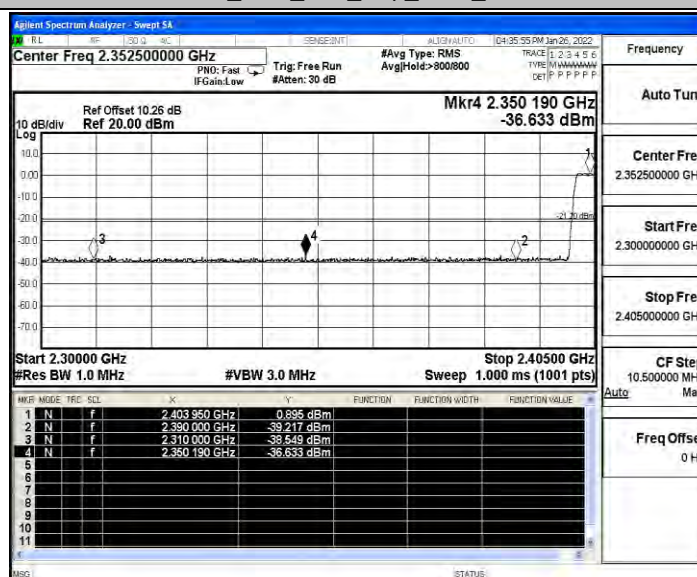
DH5_Ant1_High_2480_AV



DH5_Ant1_High_2480_Peak

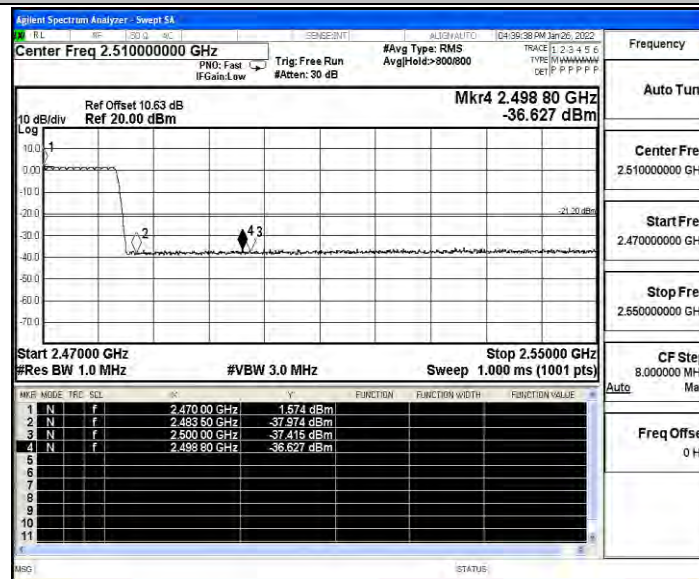


DH5_Ant1_Low_Hop_2402_Peak

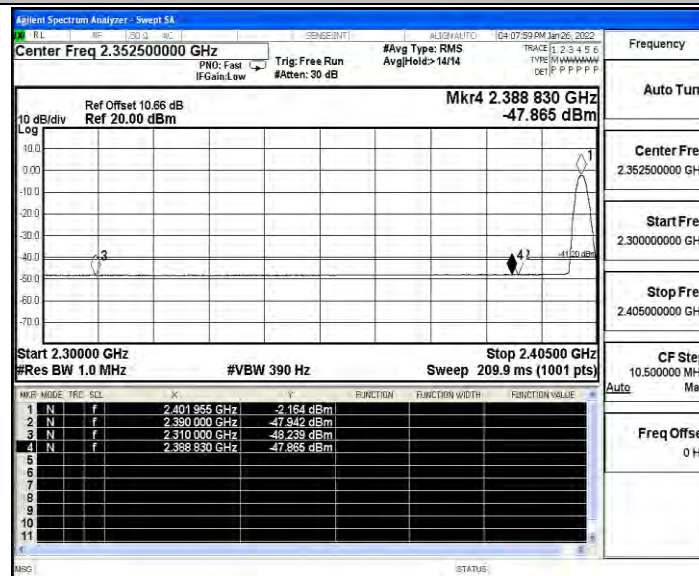




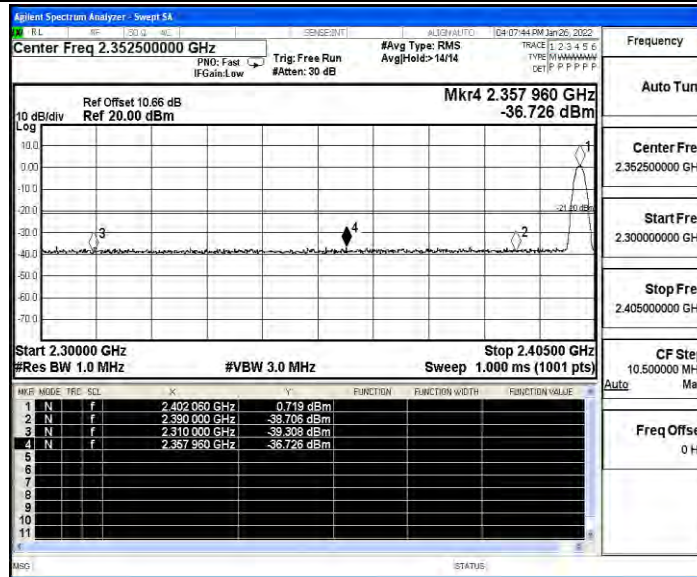
DH5_Ant1_High_Hop_2480_Peak



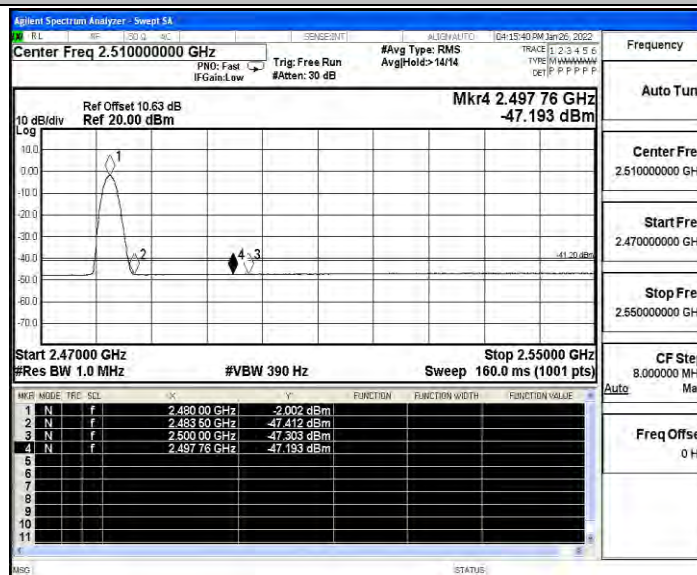
2DH5_Ant1_Low_2402_AV



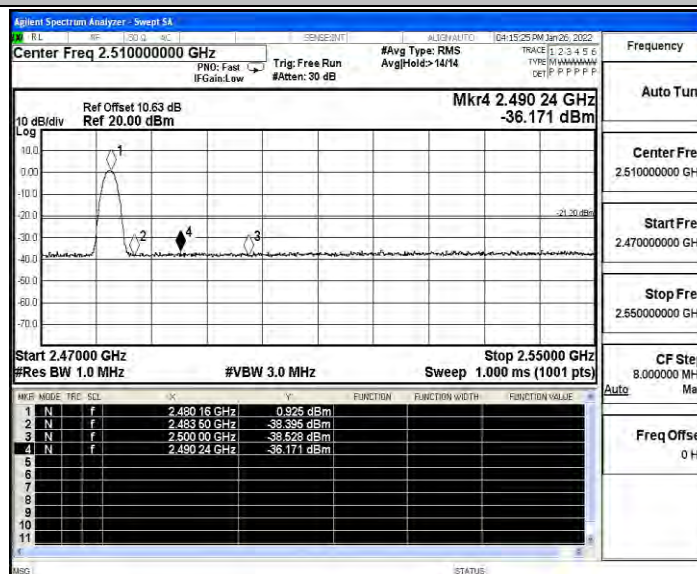
2DH5_Ant1_Low_2402_Peak



2DH5_Ant1_High_2480_AV

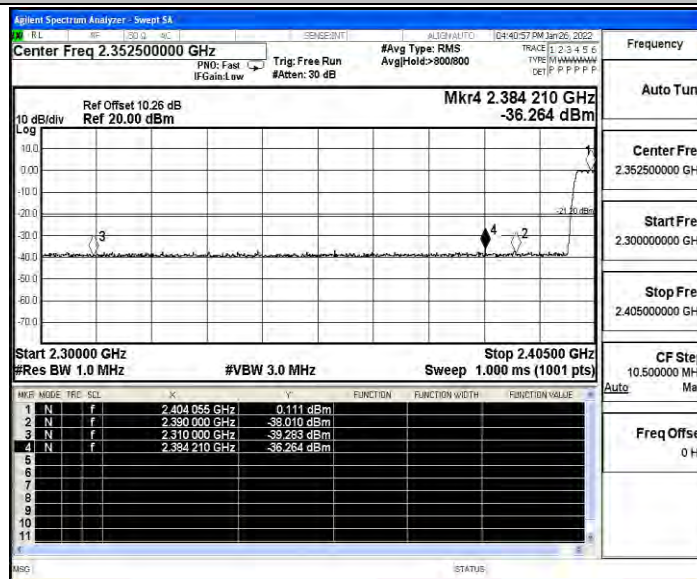


2DH5_Ant1_High_2480_Peak

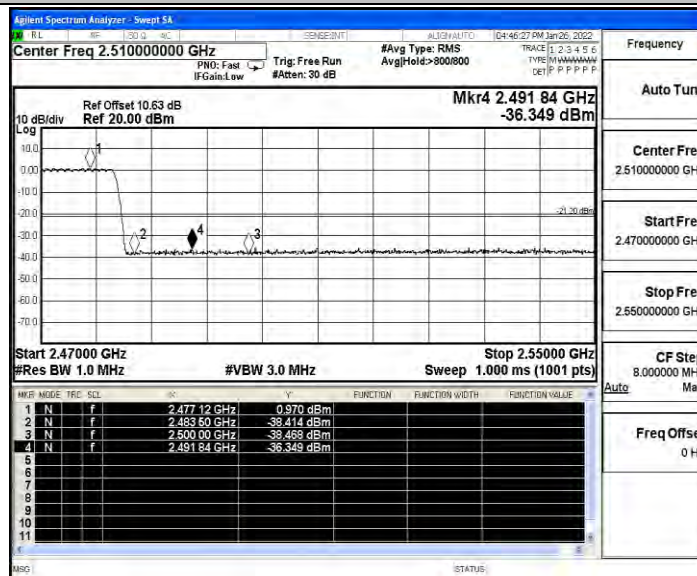




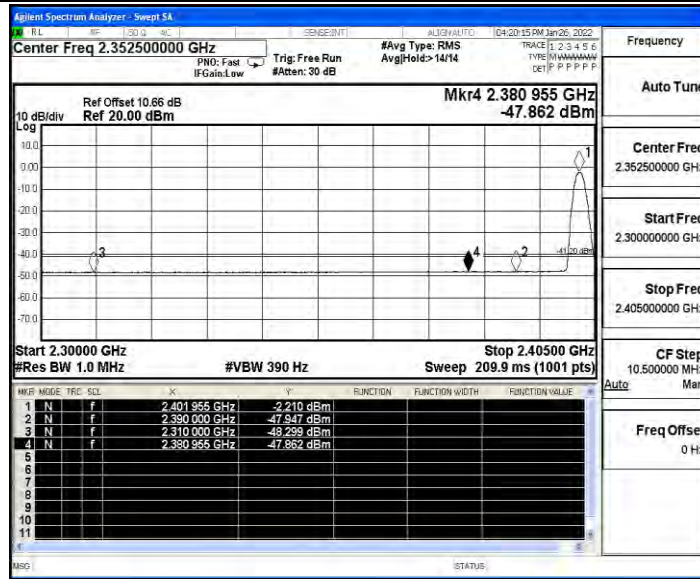
2DH5_Ant1_Low_Hop_2402_Peak



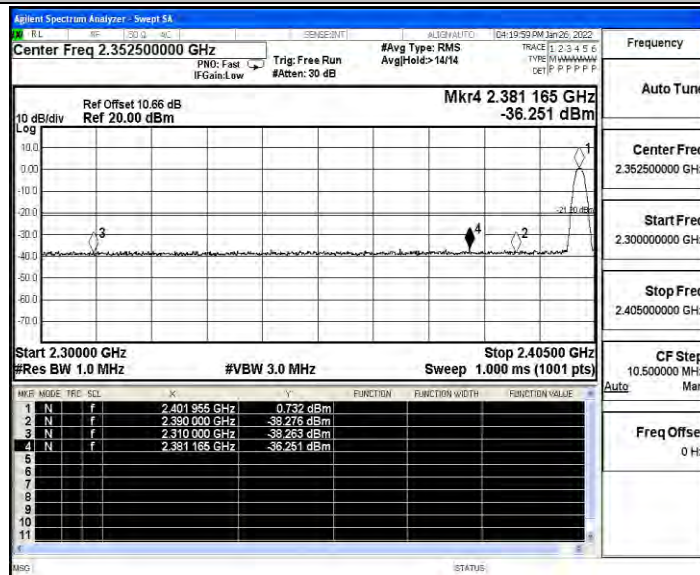
2DH5_Ant1_High_Hop_2480_Peak



3DH5_Ant1_Low_2402_AV



3DH5_Ant1_Low_2402_Peak



3DH5_Ant1_High_2480_AV

