



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: ECOROAM 30

Test Model: GDI-EXRMS300

HVIN: GDI-EXRMS300

Environmental Conditions

Temperature:	23.5℃
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	 Kay Hu
Supervised by:	 Li Huan



A.1 20dB Emission Bandwidth

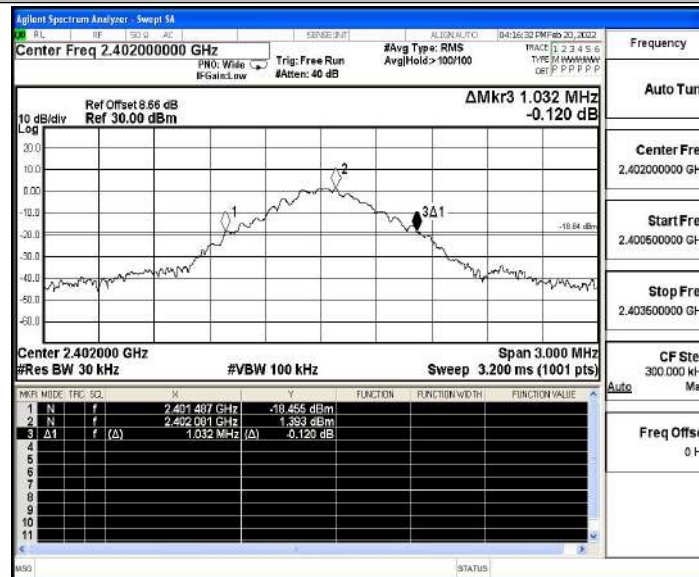
Test Result

TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	1.032	2401.487	2402.519	---	---
		2441	1.029	2440.493	2441.522	---	---
		2480	1.029	2479.493	2480.522	---	---
2DH5	Ant1	2402	1.368	2401.340	2402.708	---	---
		2441	1.368	2440.340	2441.708	---	---
		2480	1.368	2479.340	2480.708	---	---
3DH5	Ant1	2402	1.350	2401.343	2402.693	---	---
		2441	1.350	2440.346	2441.696	---	---
		2480	1.347	2479.346	2480.693	---	---

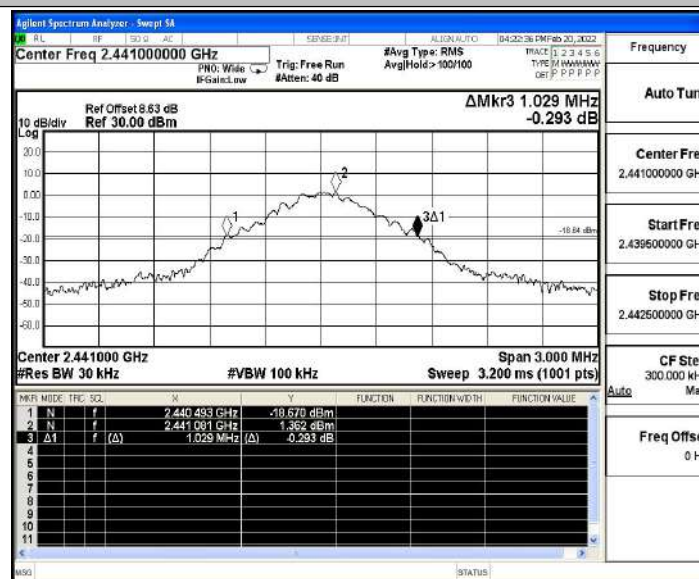


Test Graphs

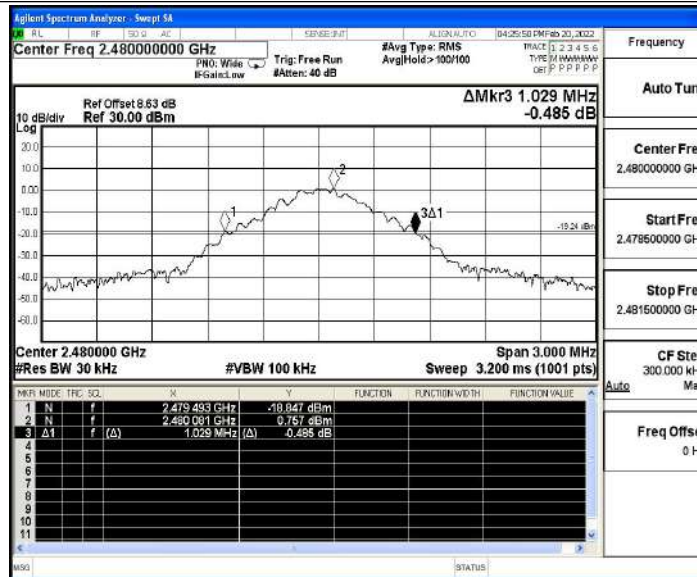
DH5_Ant1_2402



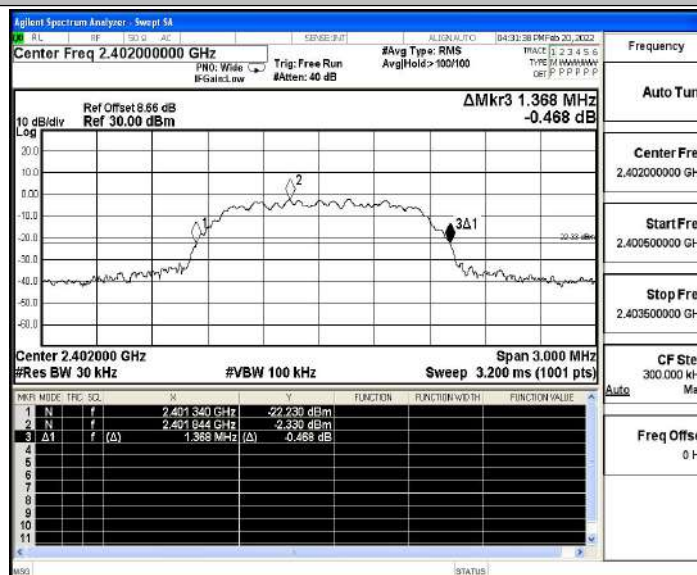
DH5_Ant1_2441



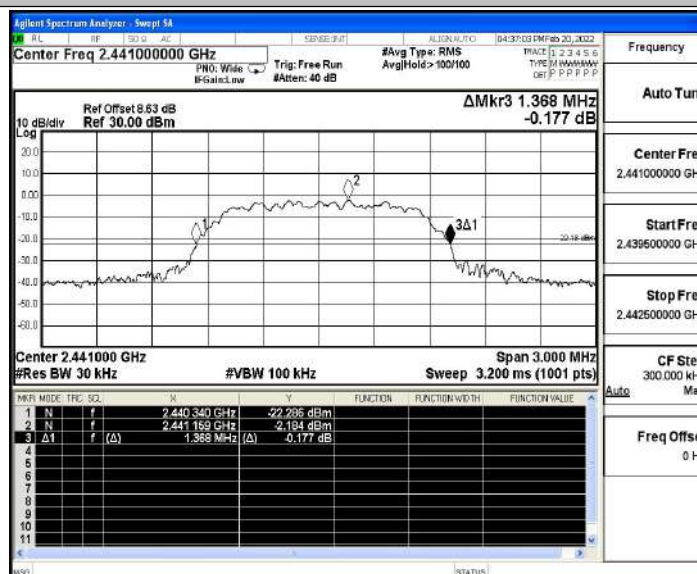
DH5_Ant1_2480



2DH5_Ant1_2402

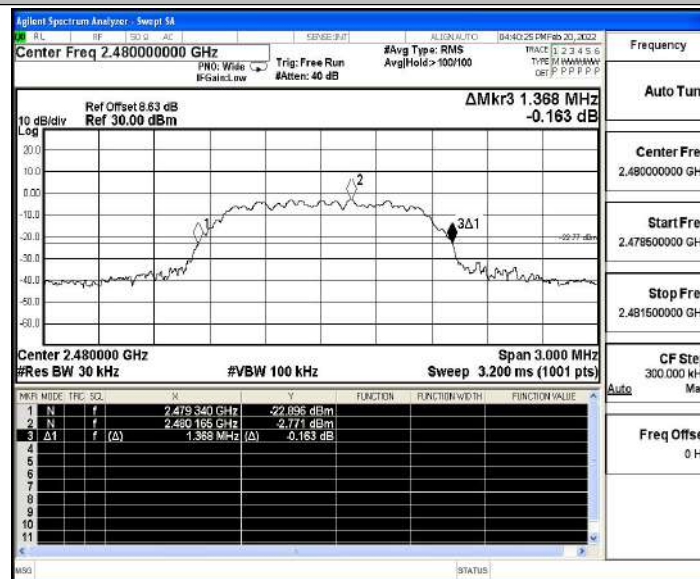


2DH5_Ant1_2441

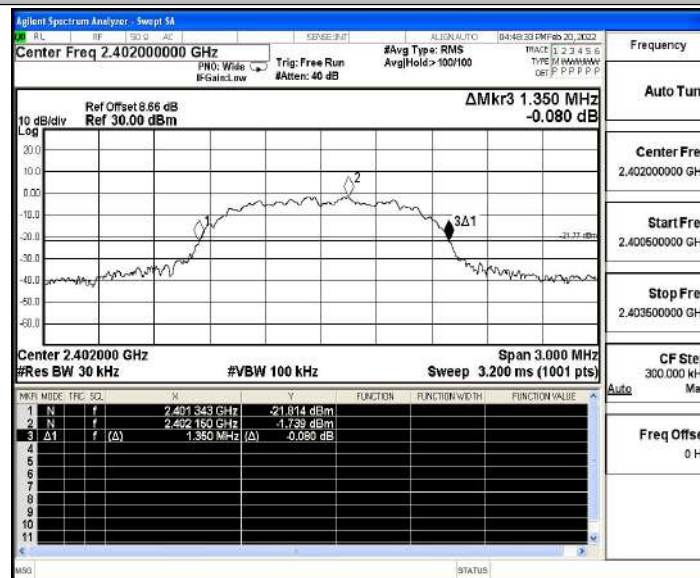




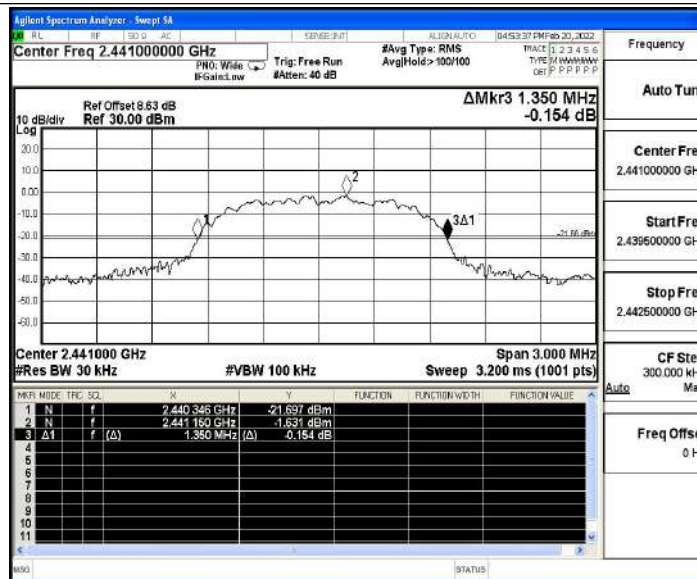
2DH5_Ant1_2480



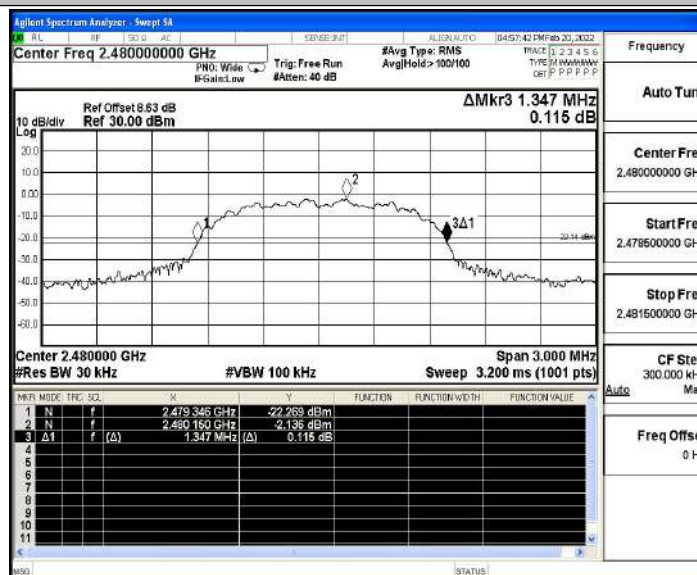
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480





A.2 Occupied Channel Bandwidth

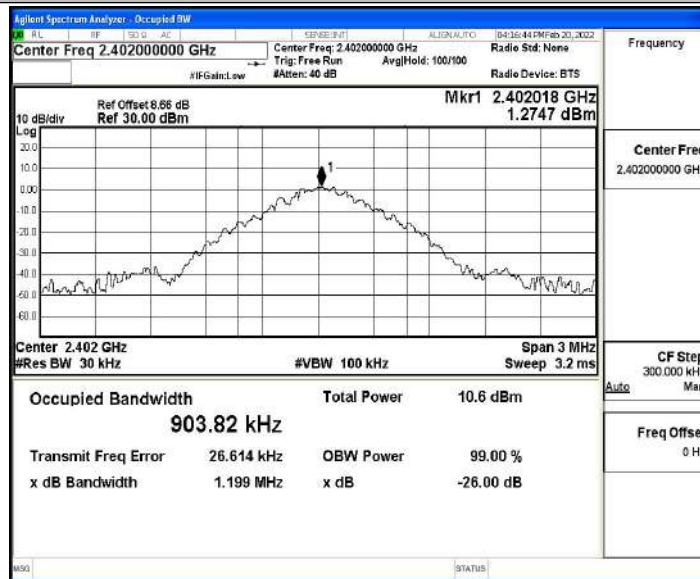
Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.90382	2401.575	2402.479	---	---
		2441	0.89971	2440.574	2441.474	---	---
		2480	0.91038	2479.570	2480.480	---	---
2DH5	Ant1	2402	1.1937	2401.425	2402.618	---	---
		2441	1.1975	2440.421	2441.619	---	---
		2480	1.1944	2479.424	2480.619	---	---
3DH5	Ant1	2402	1.2065	2401.415	2402.621	---	---
		2441	1.2037	2440.418	2441.622	---	---
		2480	1.2075	2479.414	2480.621	---	---

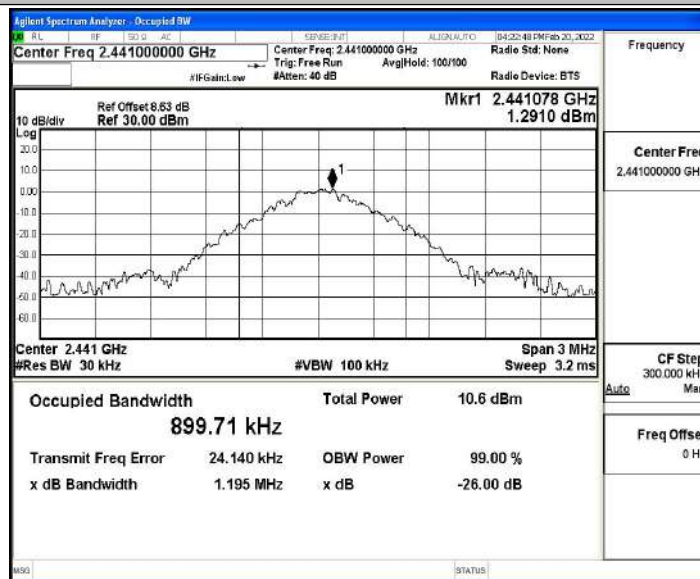


Test Graphs

DH5_Ant1_2402



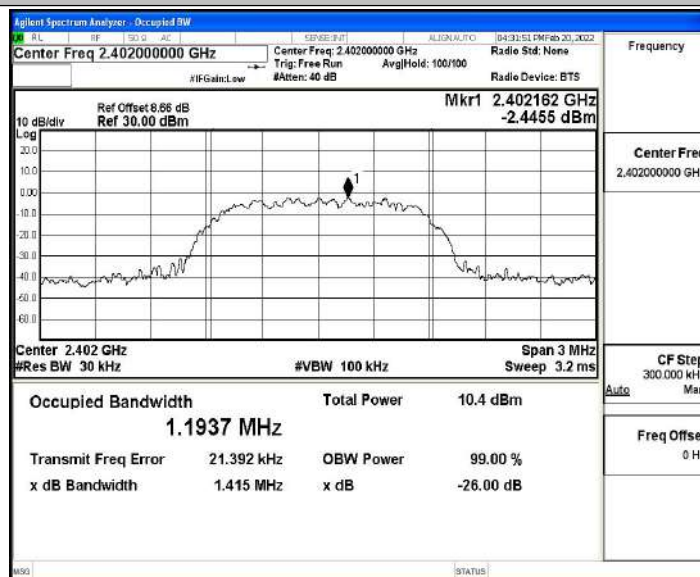
DH5_Ant1_2441



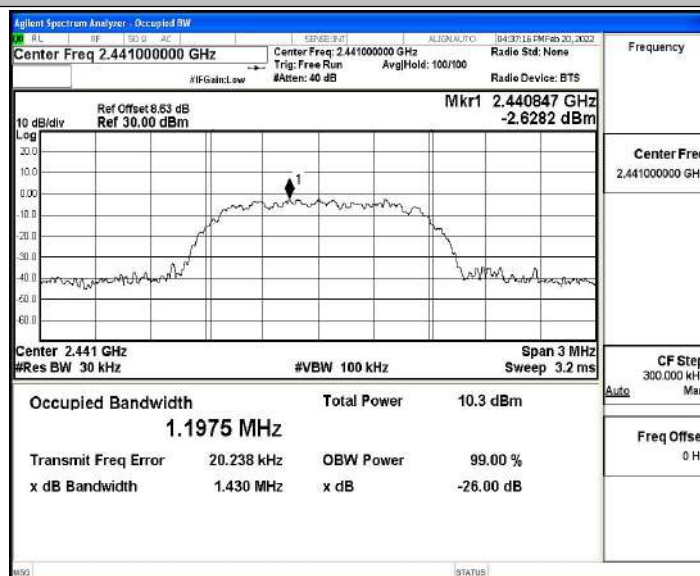
DH5_Ant1_2480



2DH5_Ant1_2402

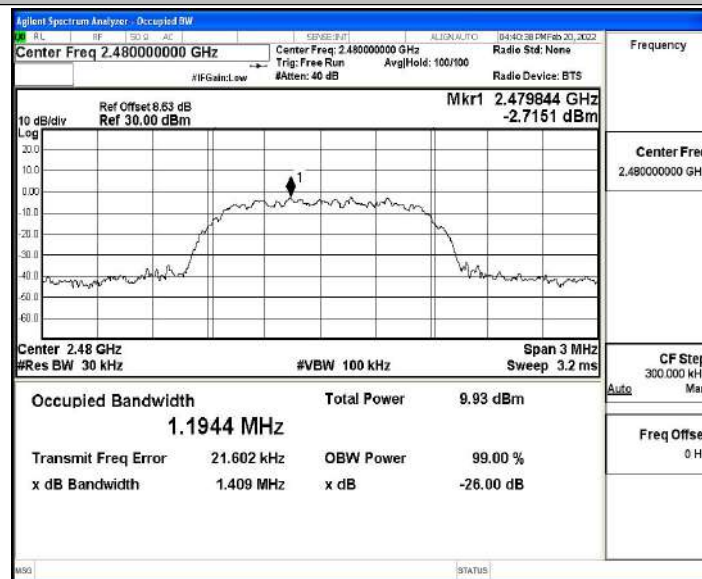


2DH5_Ant1_2441

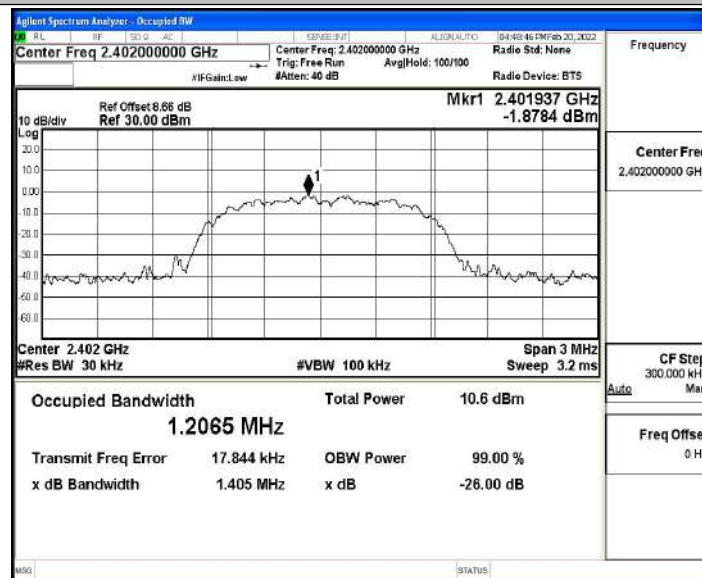




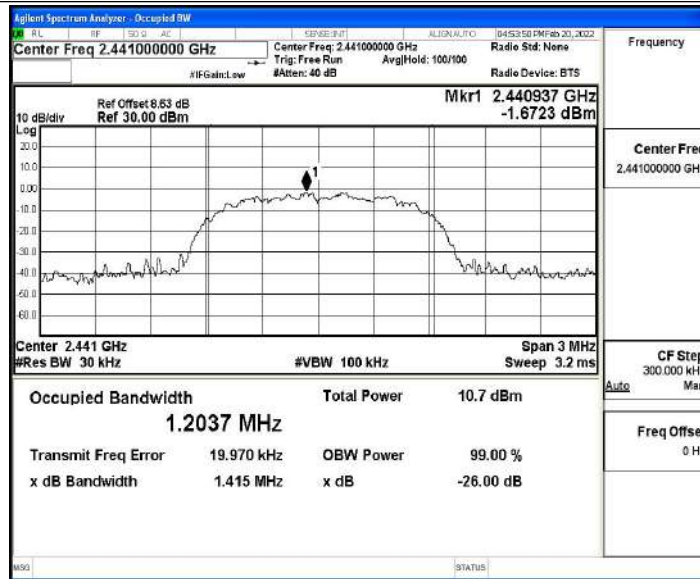
2DH5_Ant1_2480



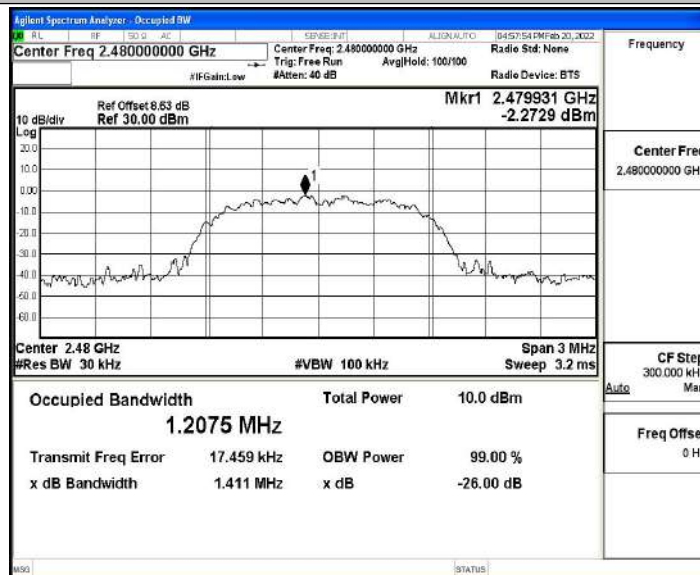
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480





A.3 Maximum Peak conducted output power

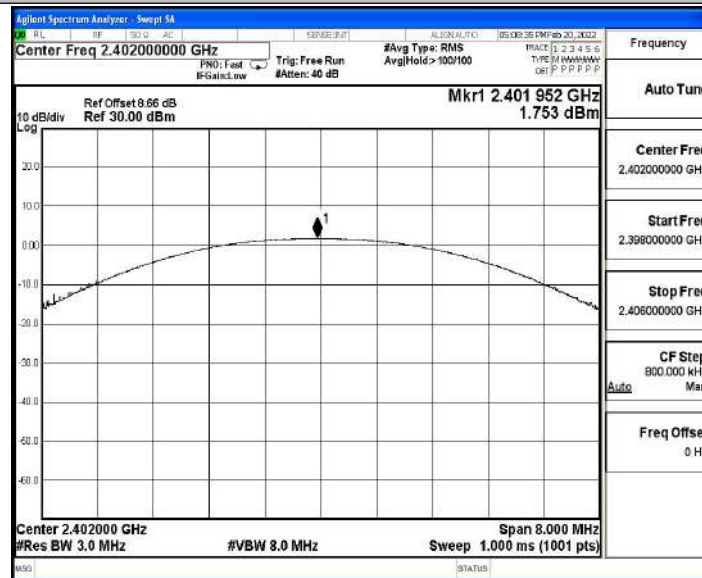
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	1.75	≤20.97	PASS
		2441	2.55	≤20.97	PASS
		2480	2.49	≤20.97	PASS
2DH5	Ant1	2402	3.23	≤20.97	PASS
		2441	3.94	≤20.97	PASS
		2480	3.89	≤20.97	PASS
3DH5	Ant1	2402	3.54	≤20.97	PASS
		2441	4.2	≤20.97	PASS
		2480	4.14	≤20.97	PASS

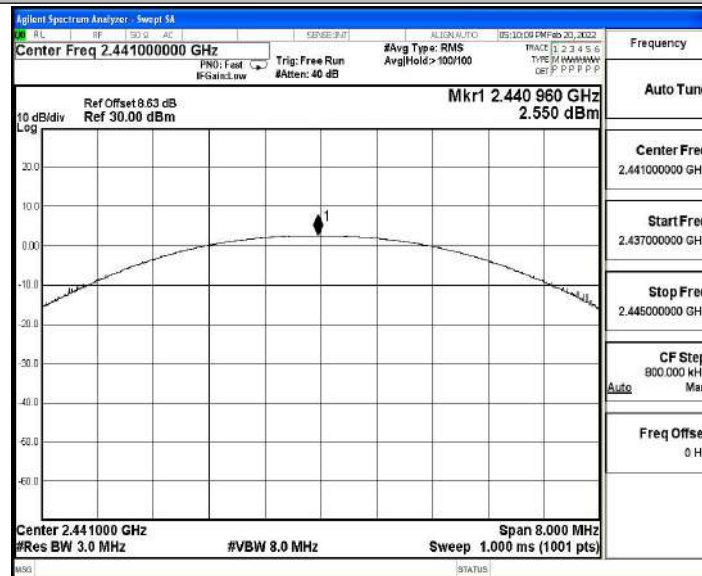


Test Graphs

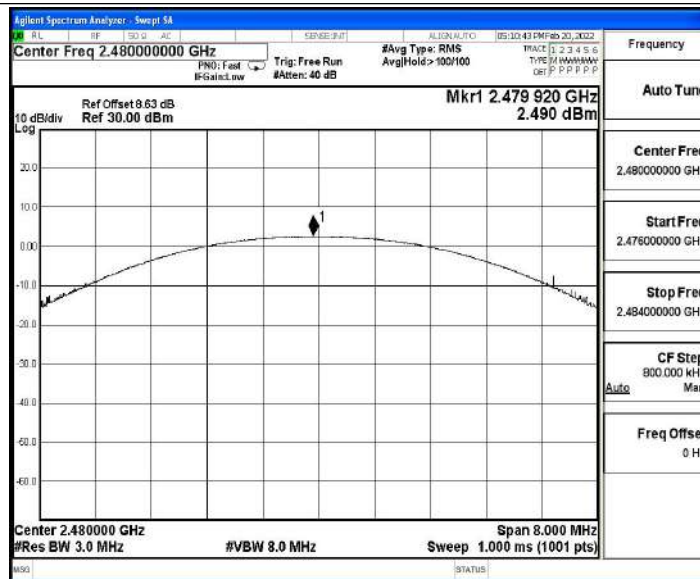
DH5_Ant1_2402



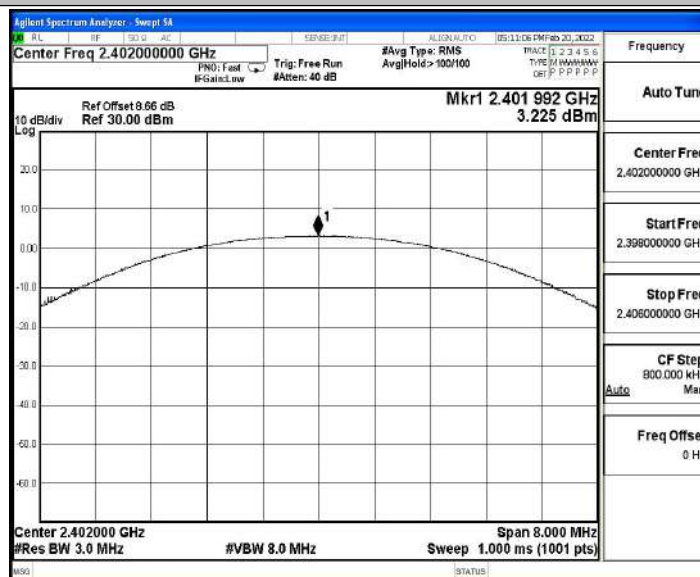
DH5_Ant1_2441



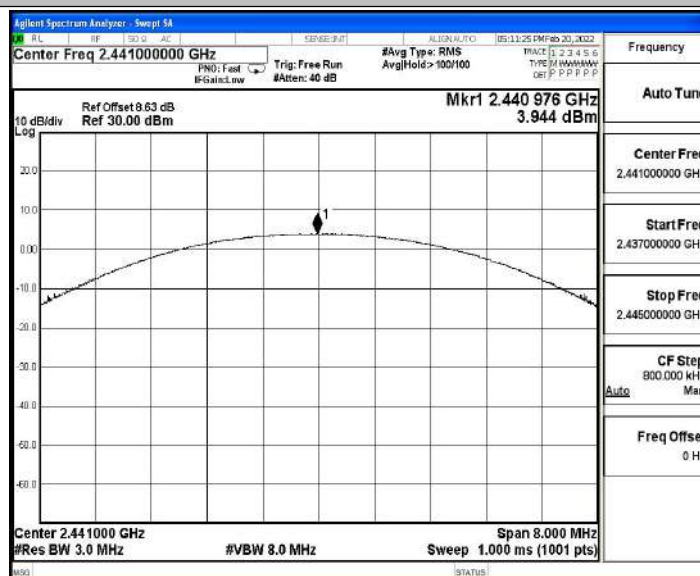
DH5_Ant1_2480



2DH5_Ant1_2402

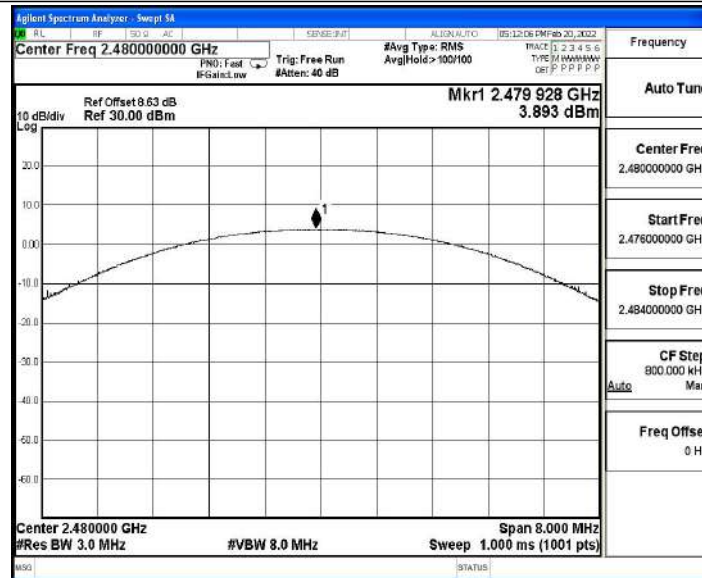


2DH5_Ant1_2441

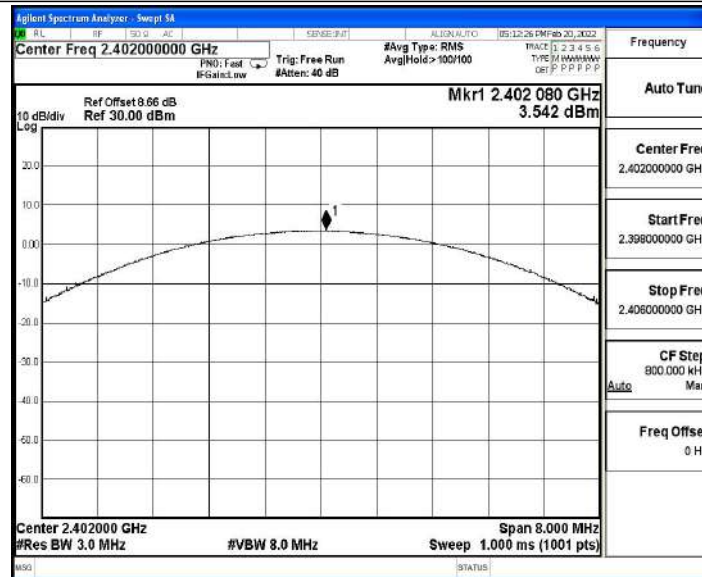




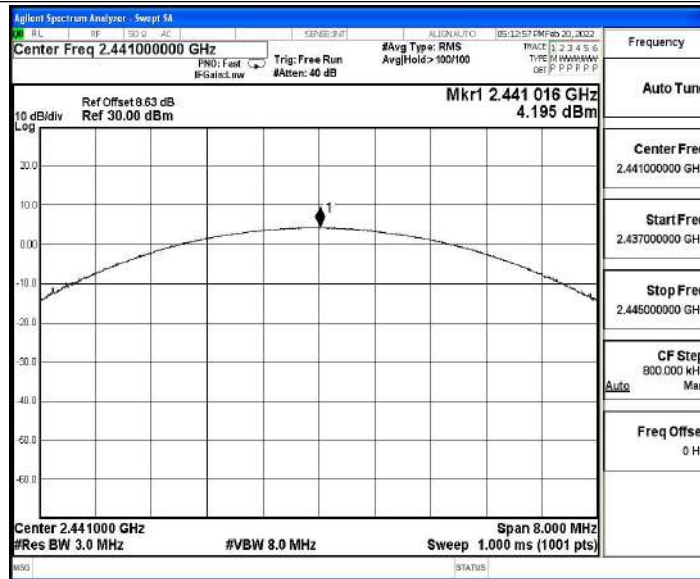
2DH5_Ant1_2480



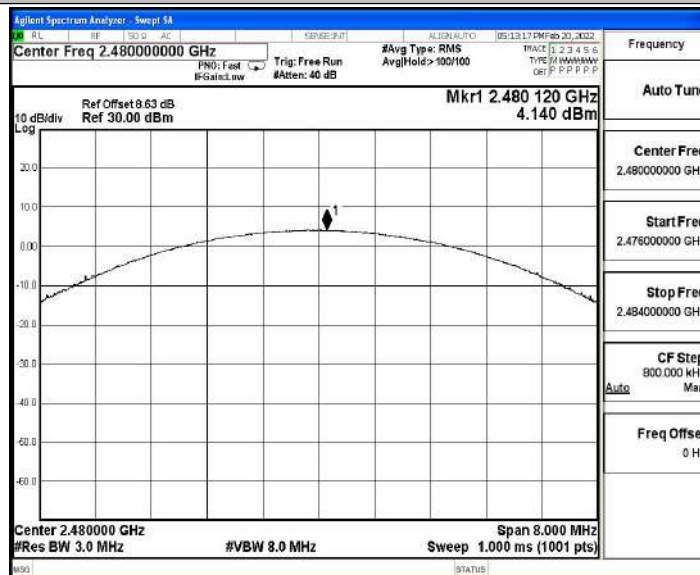
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480





A.4 Carrier frequency separation

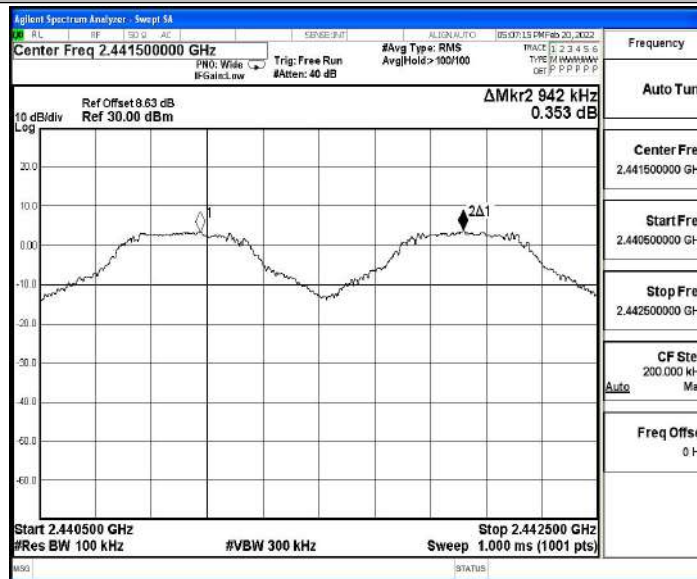
Test Result

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.942	≥ 0.688	PASS
2DH5	Ant1	Hop	0.986	≥ 0.912	PASS
3DH5	Ant1	Hop	1.124	≥ 0.900	PASS

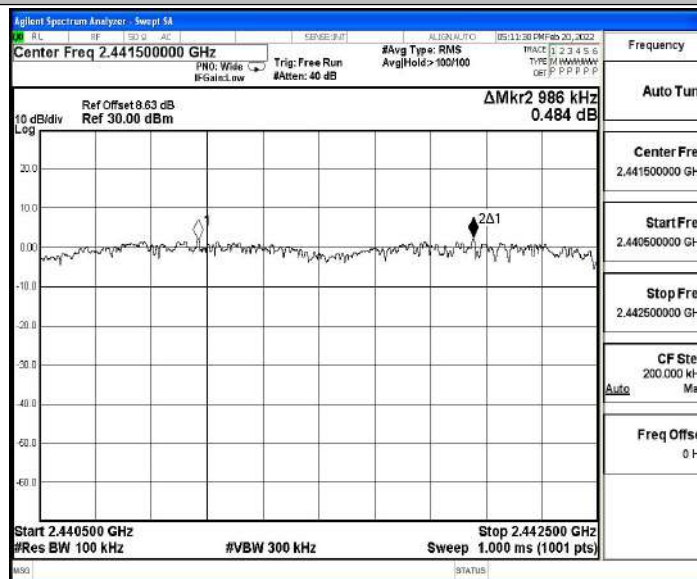


Test Graphs

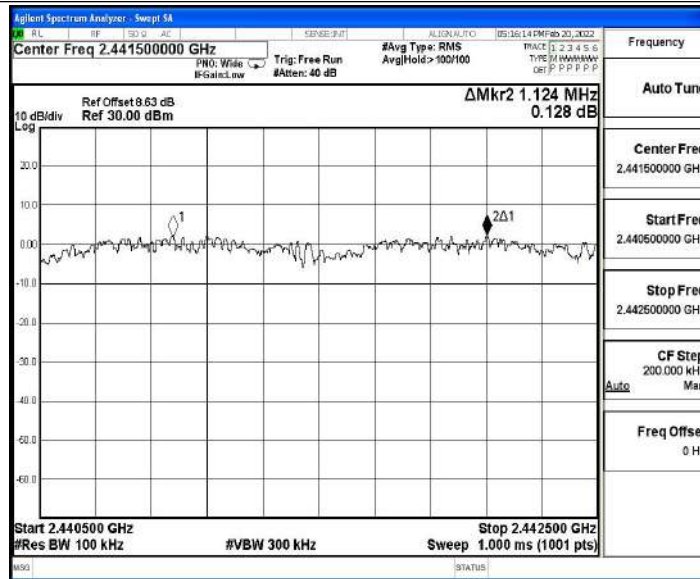
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop



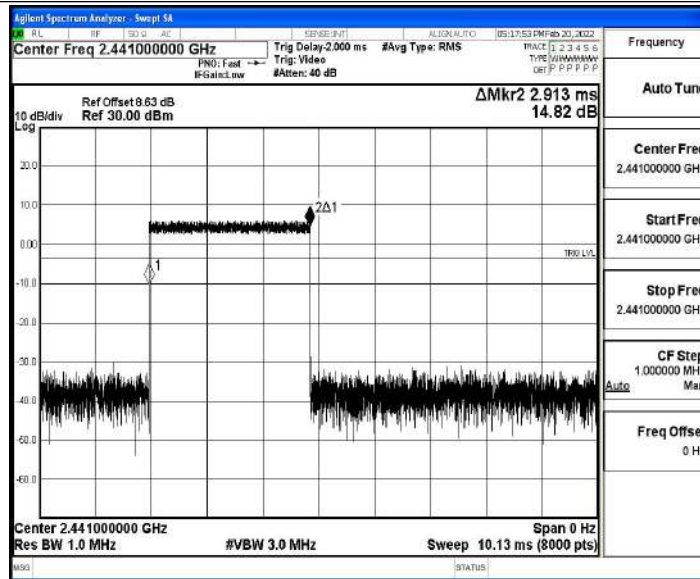


A.5 Time of occupancy

Test Result

TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.92	106.67	0.312	≤0.4	PASS
2DH5	Ant1	Hop	2.92	106.67	0.312	≤0.4	PASS
3DH5	Ant1	Hop	2.91	106.67	0.311	≤0.4	PASS







A.6 Number of hopping channels

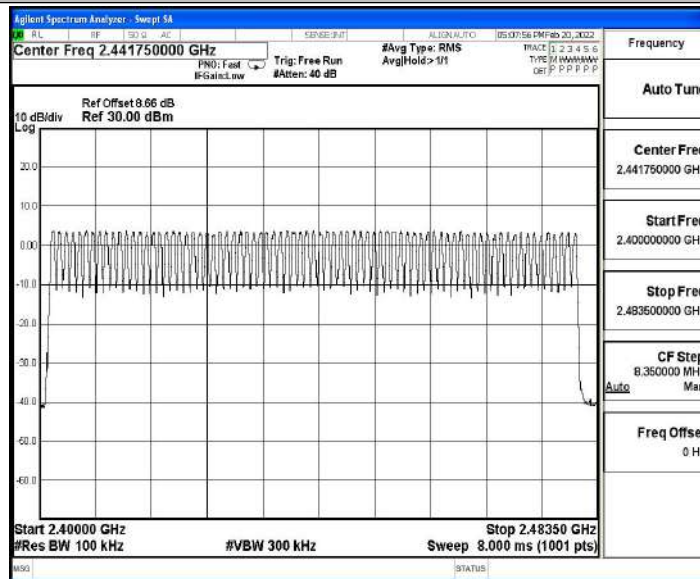
Test Result

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

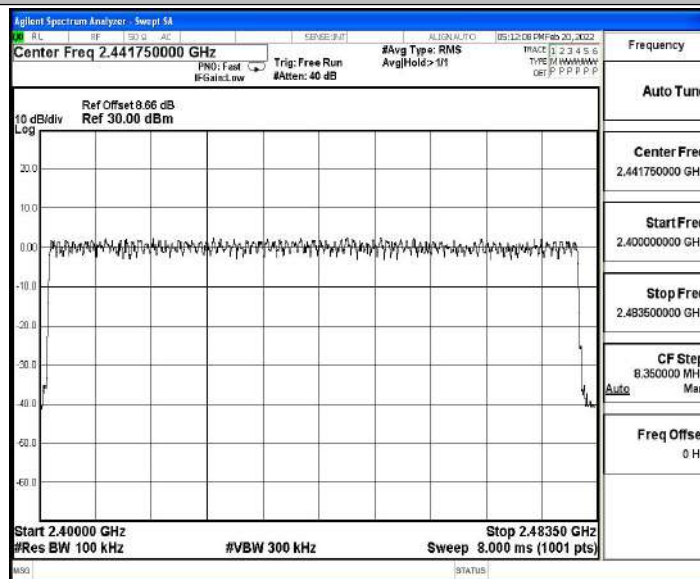


Test Graphs

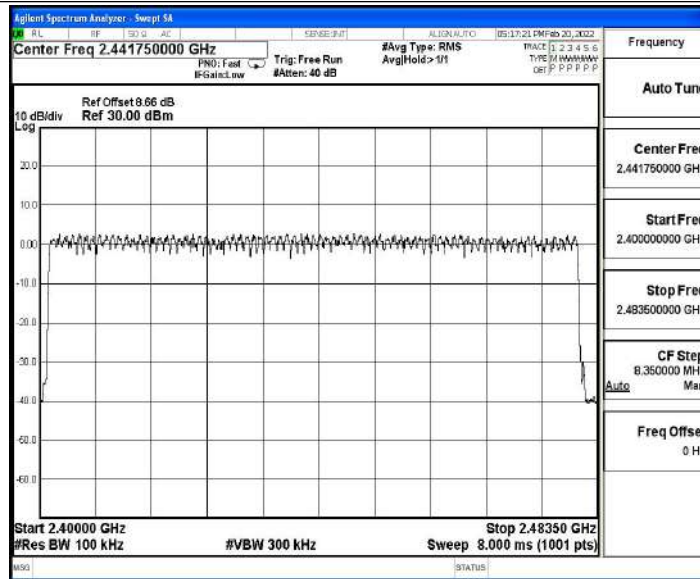
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop





A.7 Band edge measurements

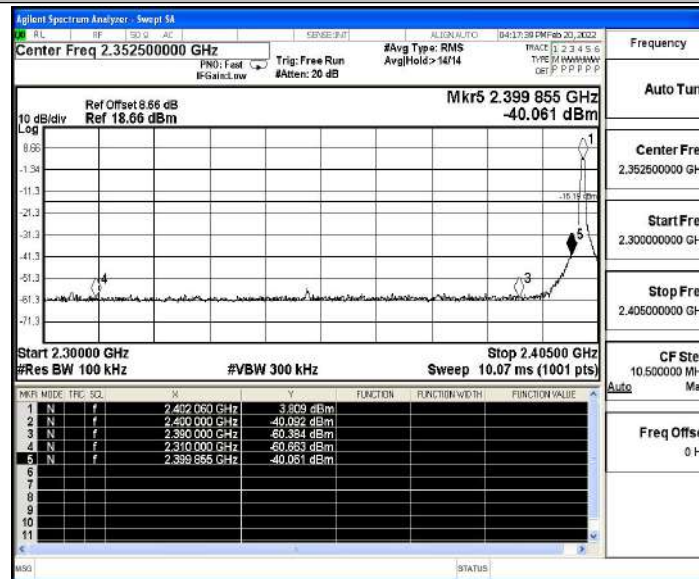
Test Result

TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	3.81	-40.06	≤ -16.19	PASS
		High	2480	3.26	-46.84	≤ -16.74	PASS
		Low	Hop_2402	3.08	-57.66	≤ -16.92	PASS
		High	Hop_2480	3.16	-54.99	≤ -16.84	PASS
2DH5	Ant1	Low	2402	2.61	-38.53	≤ -17.39	PASS
		High	2480	2.02	-46.85	≤ -17.98	PASS
		Low	Hop_2402	1.38	-57.81	≤ -18.62	PASS
		High	Hop_2480	2.04	-54.36	≤ -17.96	PASS
3DH5	Ant1	Low	2402	2.56	-39.42	≤ -17.44	PASS
		High	2480	2.16	-45.34	≤ -17.84	PASS
		Low	Hop_2402	1.06	-56.99	≤ -18.94	PASS
		High	Hop_2480	1.59	-55.95	≤ -18.42	PASS

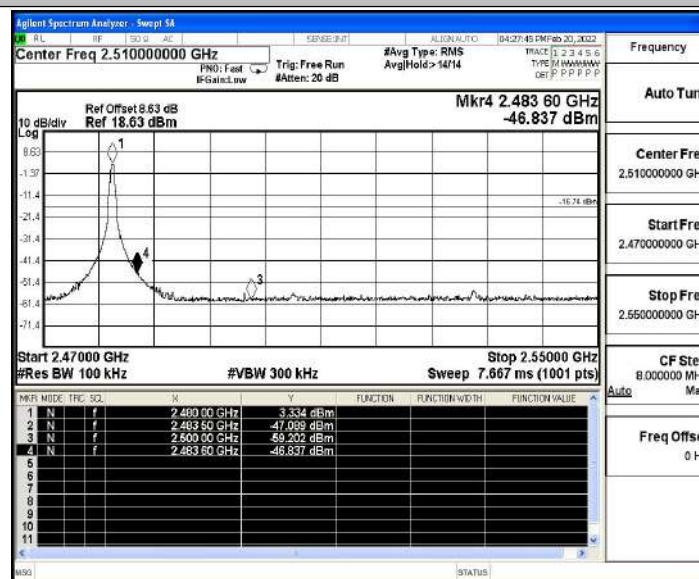


Test Graphs

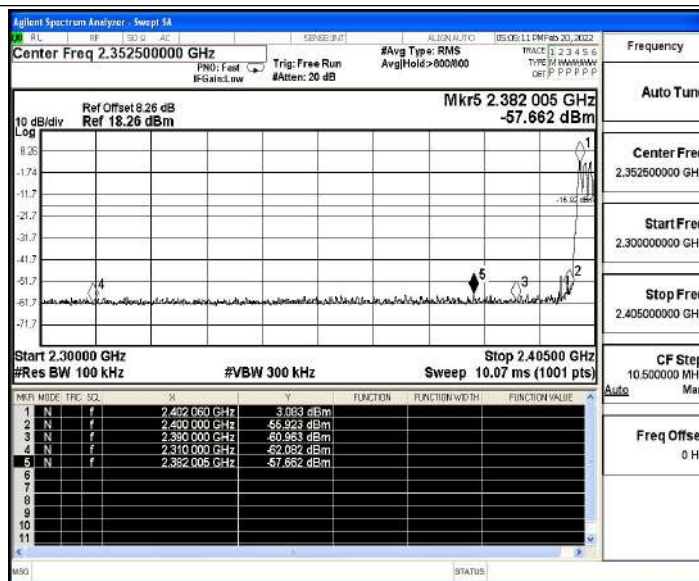
DH5_Ant1_Low_2402



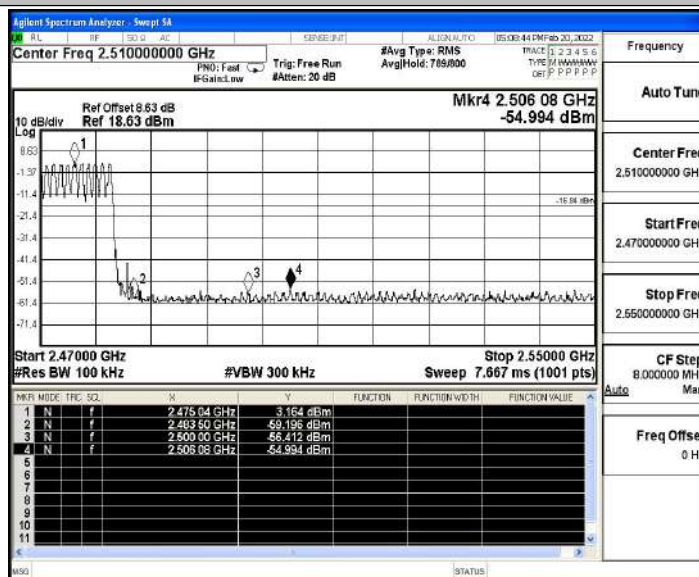
DH5_Ant1_High_2480



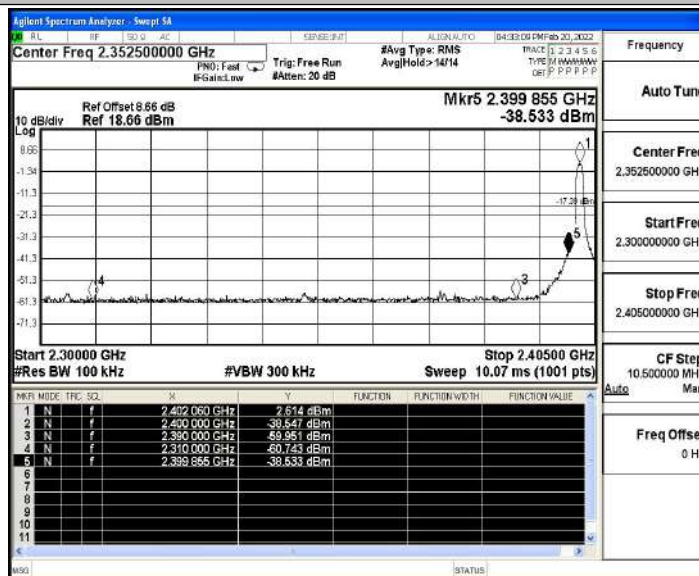
DH5_Ant1_Low_Hop_2402



DH5_Ant1_High_Hop_2480

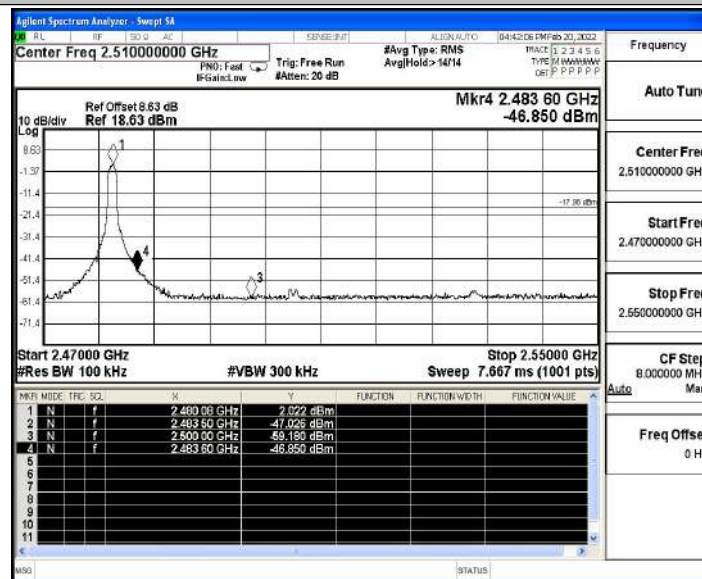


2DH5_Ant1_Low_2402

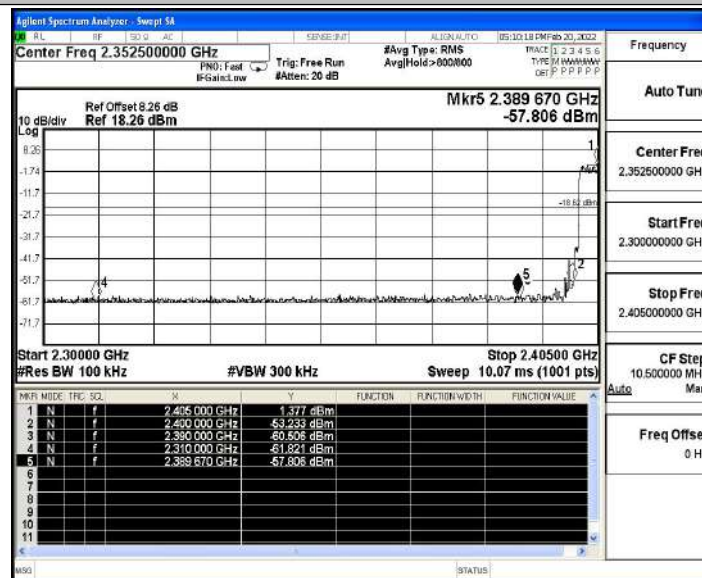




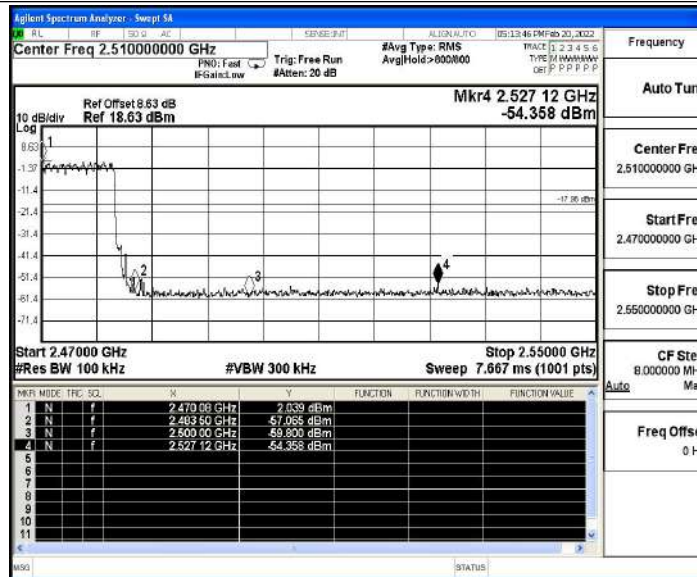
2DH5_Ant1_High_2480



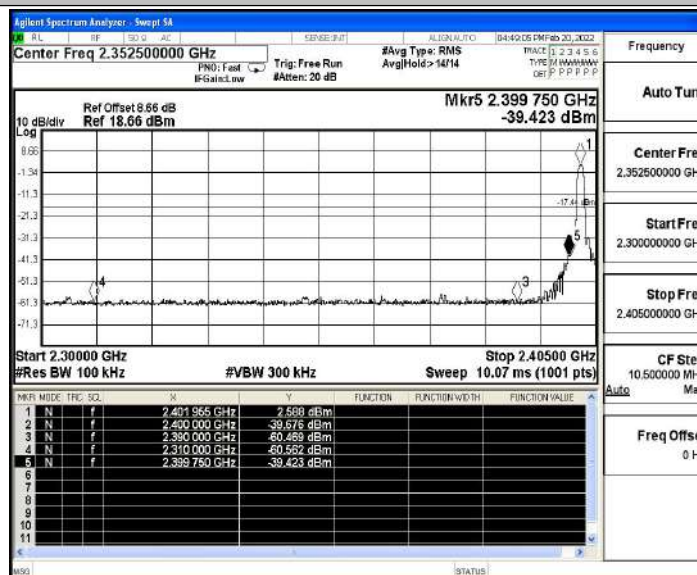
2DH5_Ant1_Low_Hop_2402



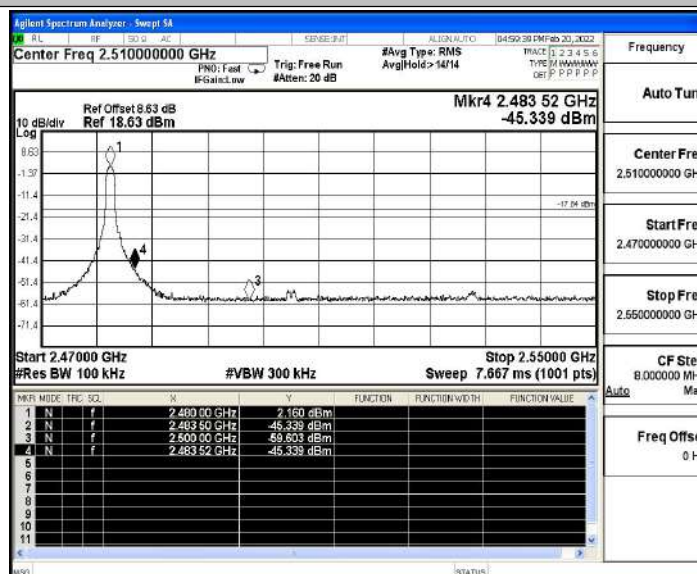
2DH5_Ant1_High_Hop_2480



3DH5_Ant1_Low_2402

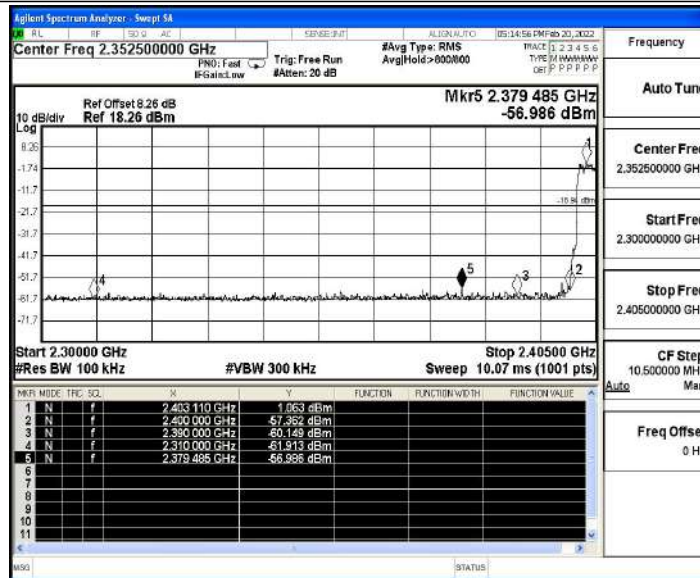


3DH5_Ant1_High_2480

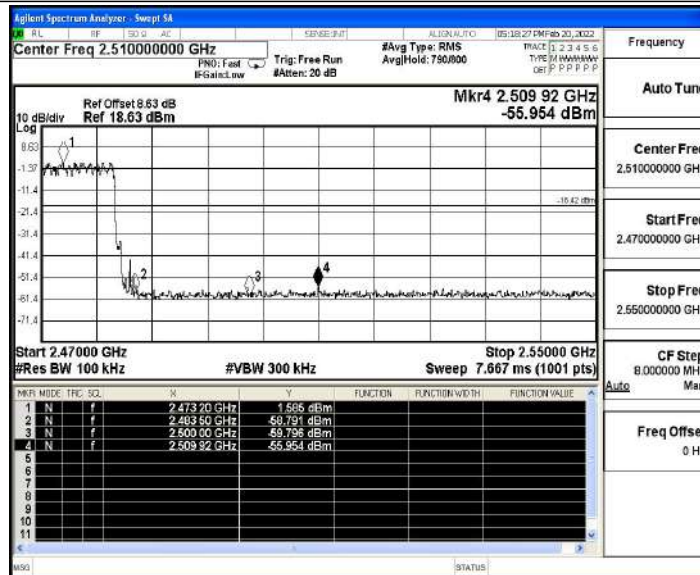




3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480





A.8 Conducted Spurious Emission

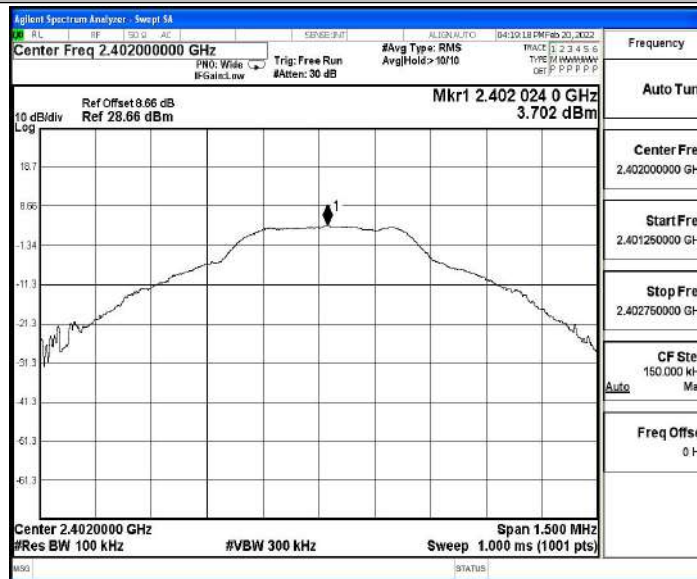
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	3.70	3.70	---	PASS
			30~1000	3.70	-57.48	≤ -16.3	PASS
			1000~26500	3.70	-35.64	≤ -16.3	PASS
		2441	Reference	3.70	3.70	---	PASS
			30~1000	3.70	-57.9	≤ -16.3	PASS
			1000~26500	3.70	-36.21	≤ -16.3	PASS
		2480	Reference	3.17	3.17	---	PASS
			30~1000	3.17	-58.08	≤ -16.83	PASS
			1000~26500	3.17	-37.95	≤ -16.83	PASS
2DH5	Ant1	2402	Reference	2.30	2.30	---	PASS
			30~1000	2.30	-59.61	≤ -17.7	PASS
			1000~26500	2.30	-35.22	≤ -17.7	PASS
		2441	Reference	2.21	2.21	---	PASS
			30~1000	2.21	-59.68	≤ -17.79	PASS
			1000~26500	2.21	-36.52	≤ -17.79	PASS
		2480	Reference	1.70	1.70	---	PASS
			30~1000	1.70	-58.82	≤ -18.3	PASS
			1000~26500	1.70	-39.62	≤ -18.3	PASS
3DH5	Ant1	2402	Reference	2.22	2.22	---	PASS
			30~1000	2.22	-59.04	≤ -17.78	PASS
			1000~26500	2.22	-36.85	≤ -17.78	PASS
		2441	Reference	2.28	2.28	---	PASS
			30~1000	2.28	-59.05	≤ -17.72	PASS
			1000~26500	2.28	-38.15	≤ -17.72	PASS
		2480	Reference	1.73	1.73	---	PASS
			30~1000	1.73	-59.74	≤ -18.27	PASS
			1000~26500	1.73	-40.49	≤ -18.27	PASS

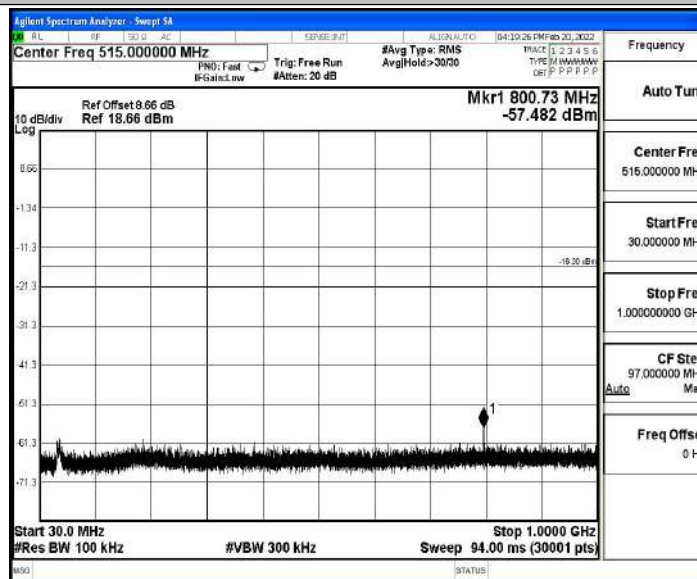


Test Graphs

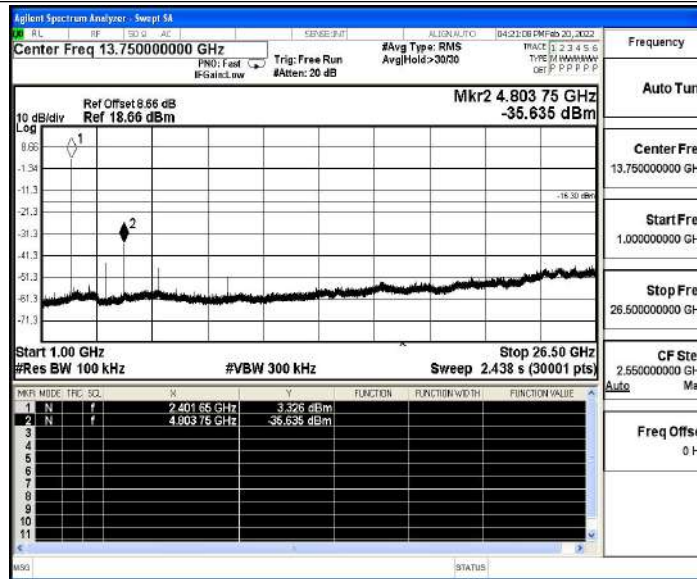
DH5_Ant1_2402_0~Reference



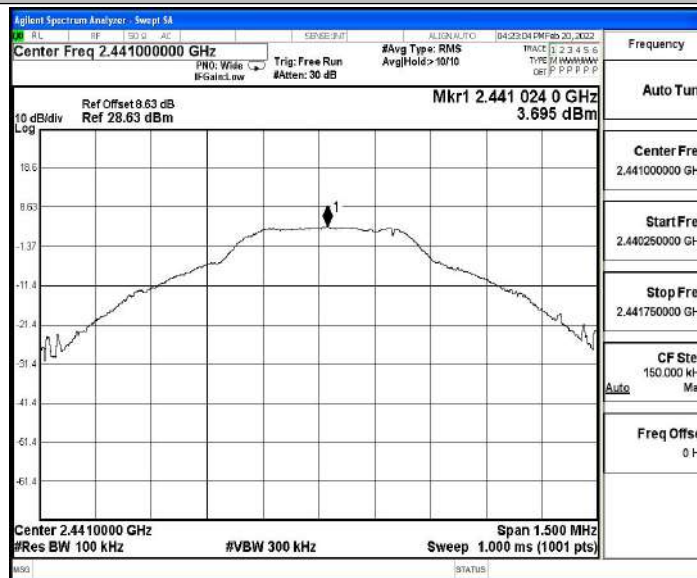
DH5_Ant1_2402_30~1000



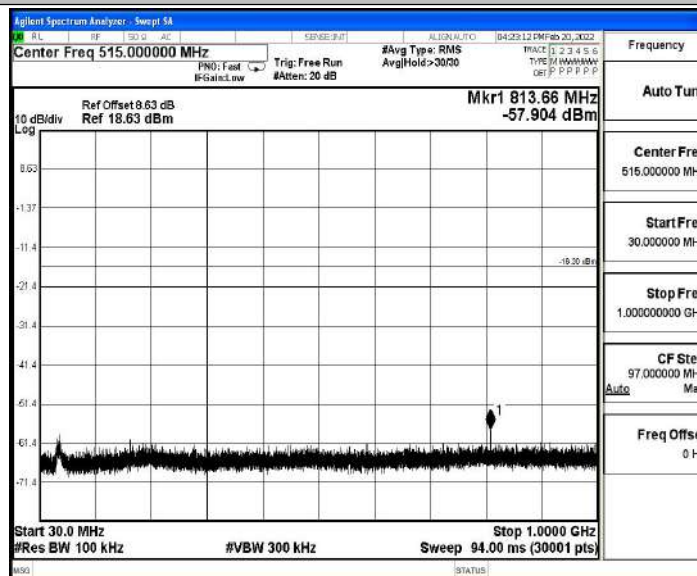
DH5_Ant1_2402_1000~26500



DH5_Ant1_2441_0~Reference

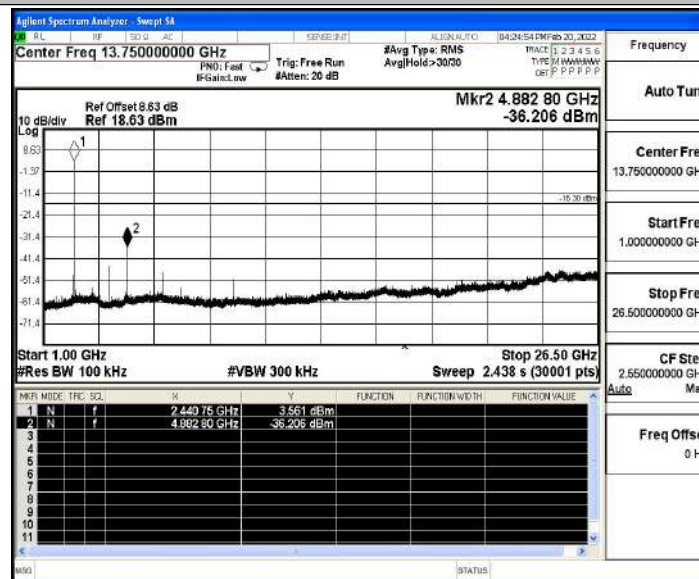


DH5_Ant1_2441_30~1000

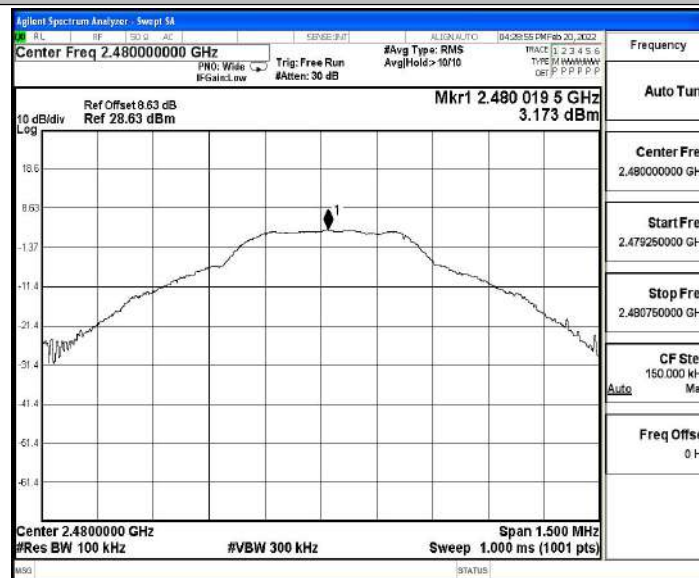




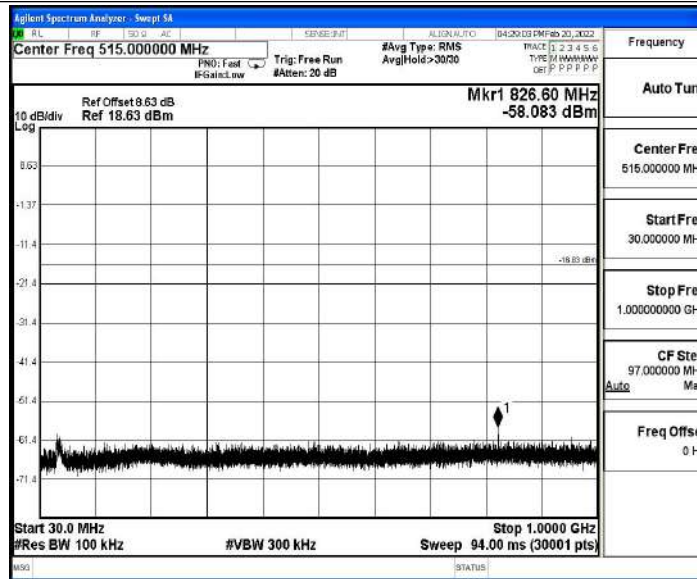
DH5_Ant1_2441_1000~26500



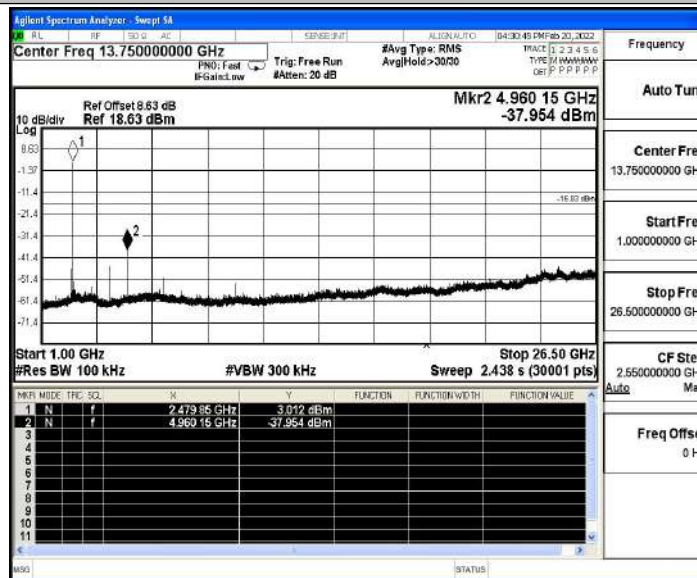
DH5_Ant1_2480_0~Reference



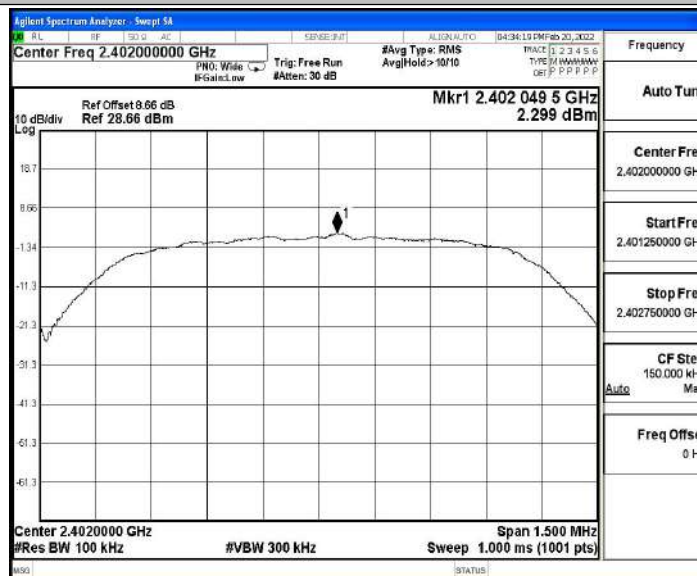
DH5_Ant1_2480_30~1000



DH5_Ant1_2480_1000~26500

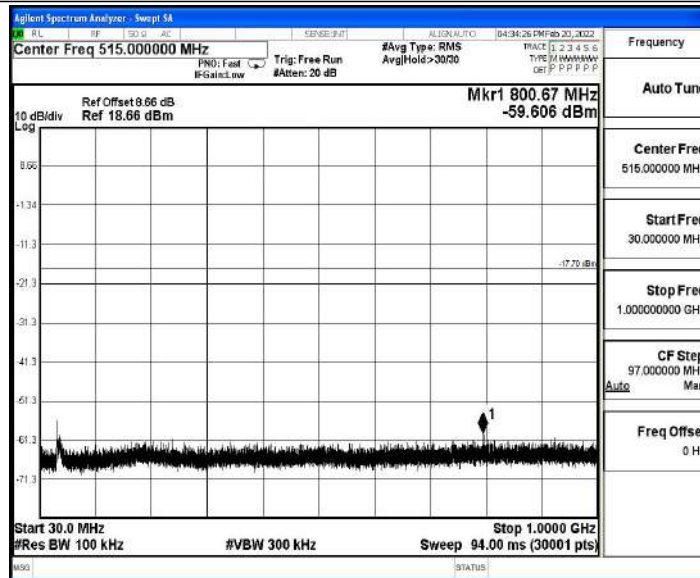


2DH5_Ant1_2402_0~Reference

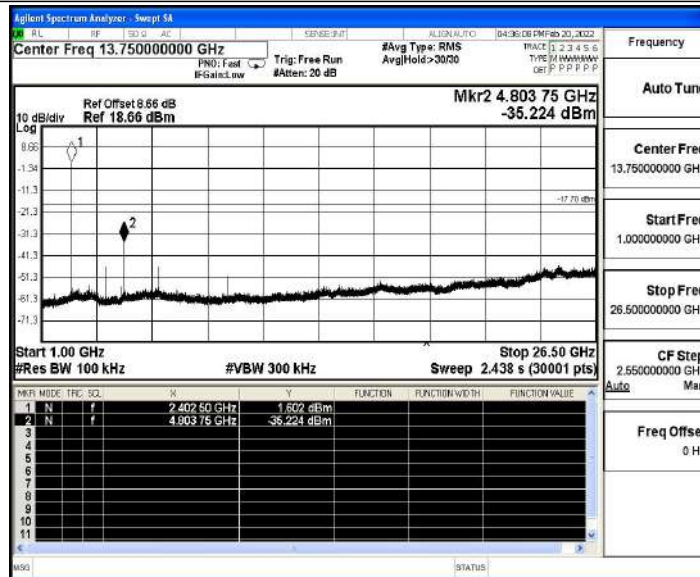




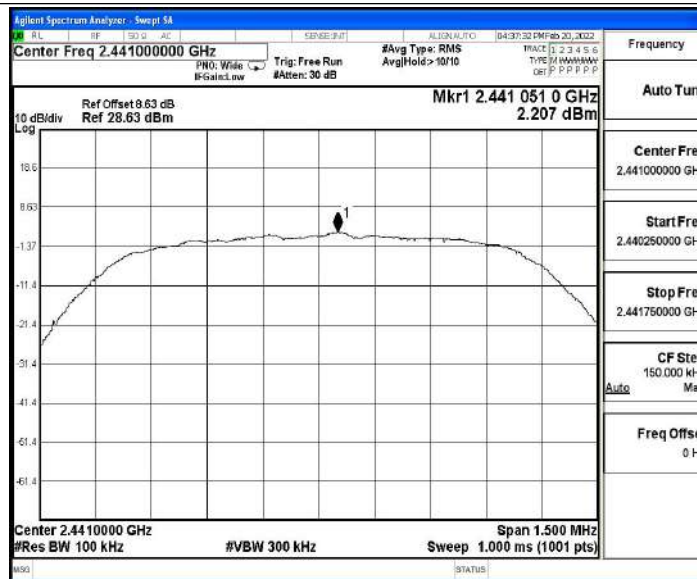
2DH5_Ant1_2402_30~1000



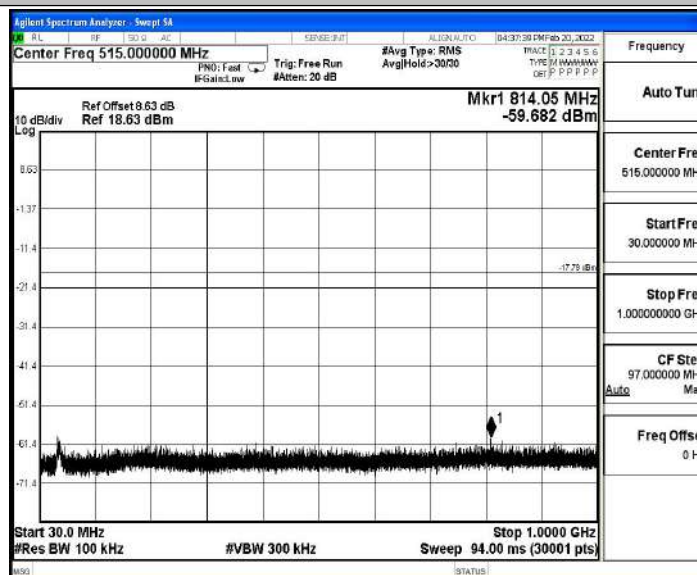
2DH5_Ant1_2402_1000~26500



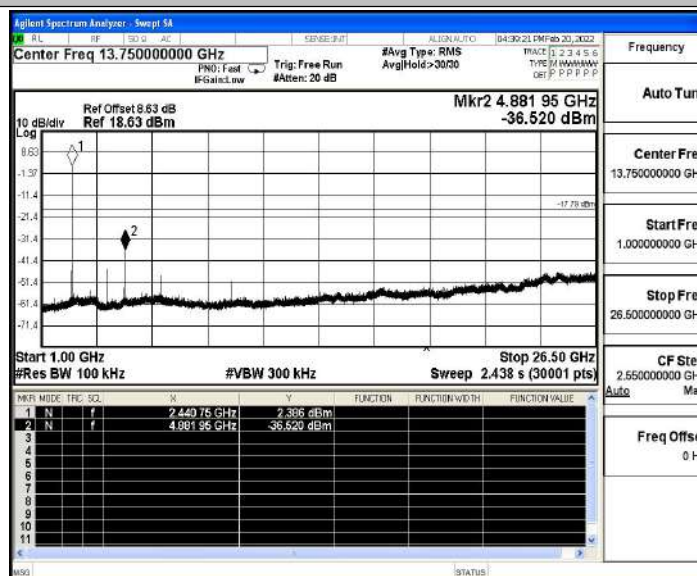
2DH5_Ant1_2441_0~Reference



2DH5_Ant1_2441_30~1000

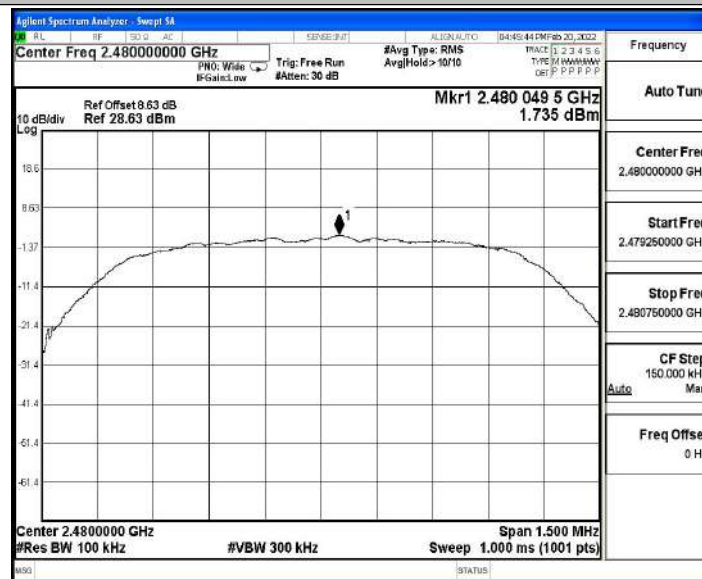


2DH5_Ant1_2441_1000~26500

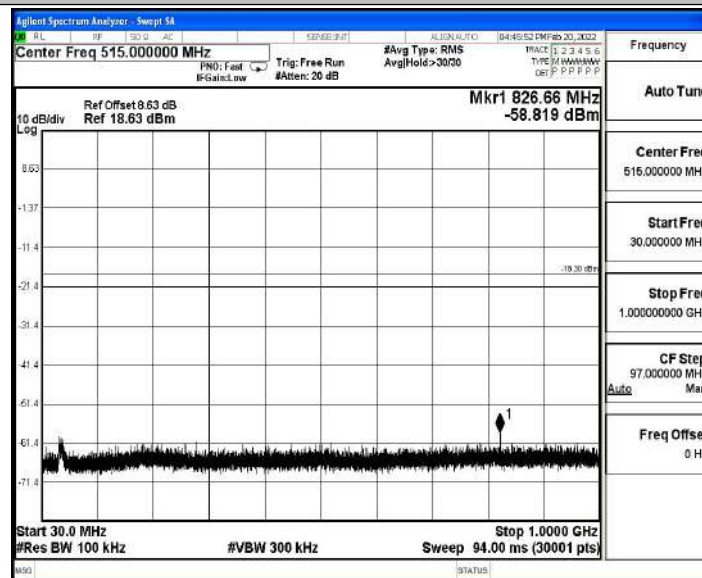




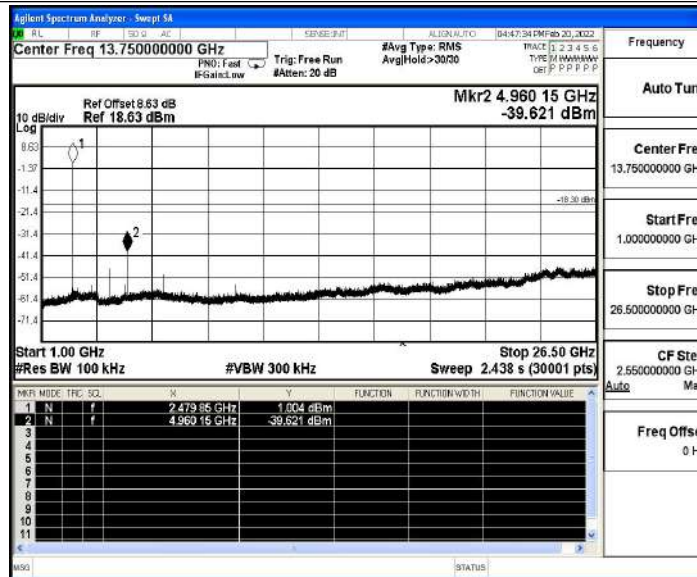
2DH5_Ant1_2480_0~Reference



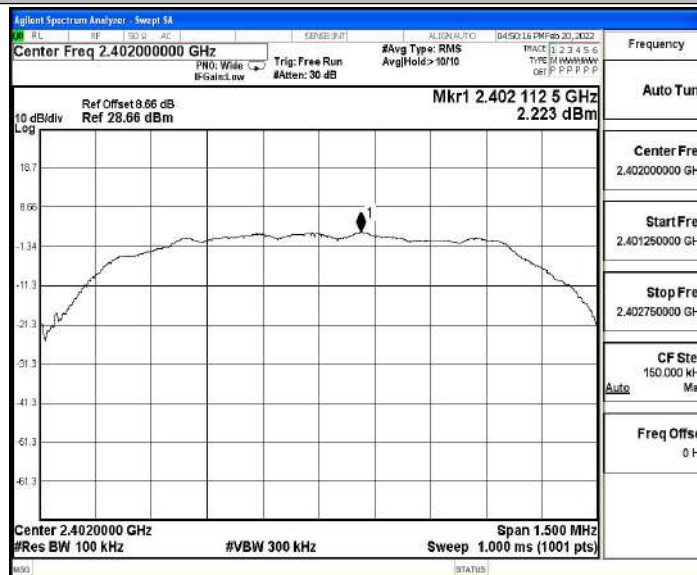
2DH5_Ant1_2480_30~1000



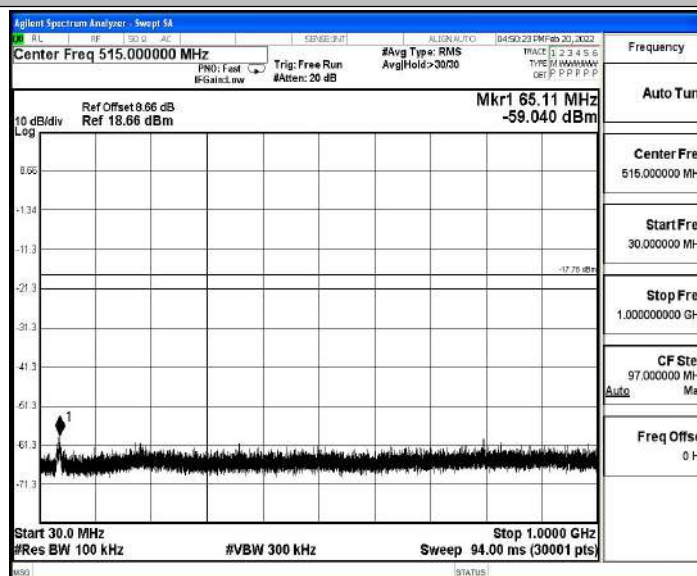
2DH5_Ant1_2480_1000~26500



3DH5_Ant1_2402_0~Reference

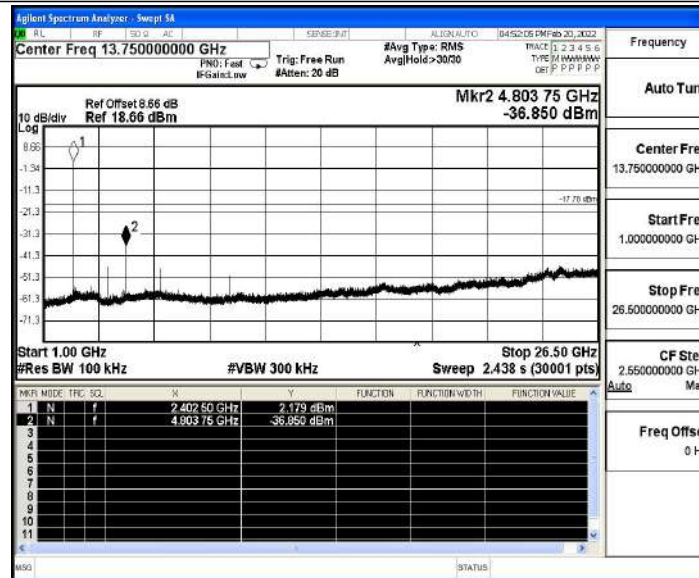


3DH5_Ant1_2402_30~1000

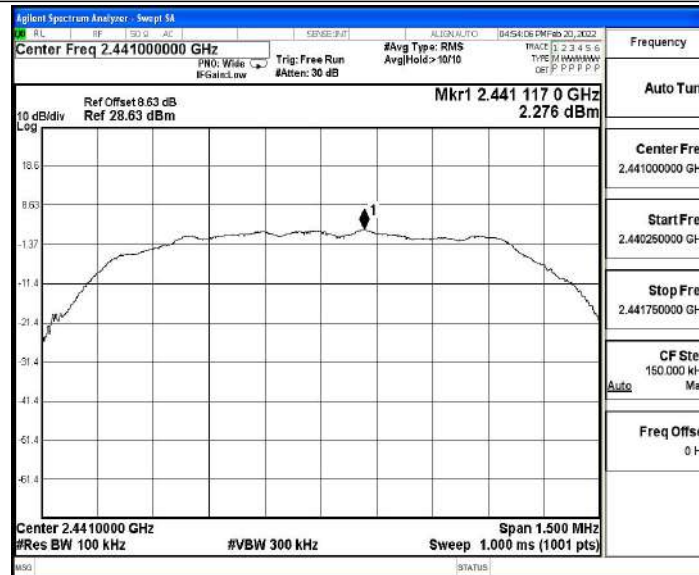




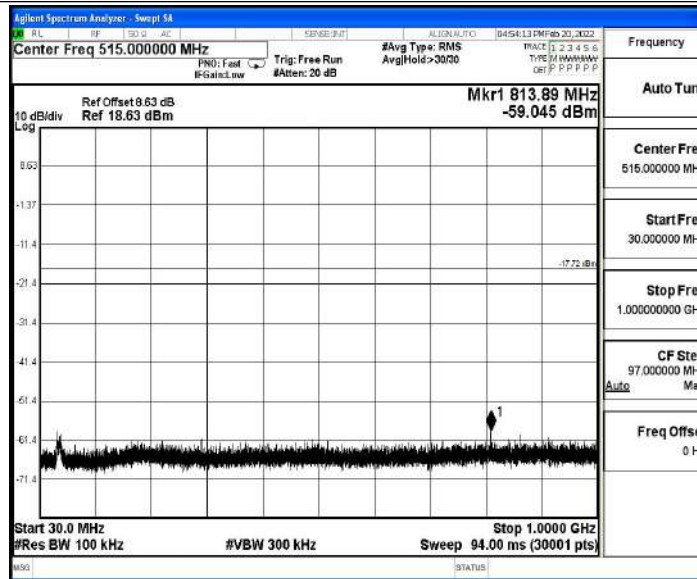
3DH5_Ant1_2402_1000~26500



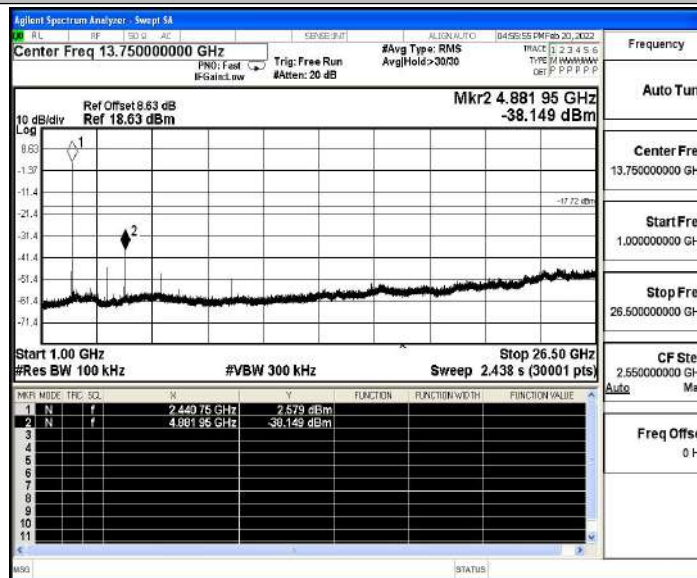
3DH5_Ant1_2441_0~Reference



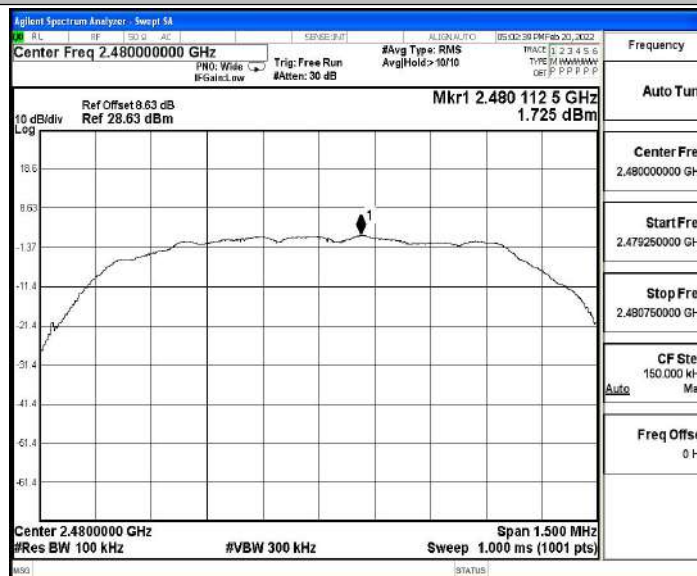
3DH5_Ant1_2441_30~1000



3DH5_Ant1_2441_1000~26500

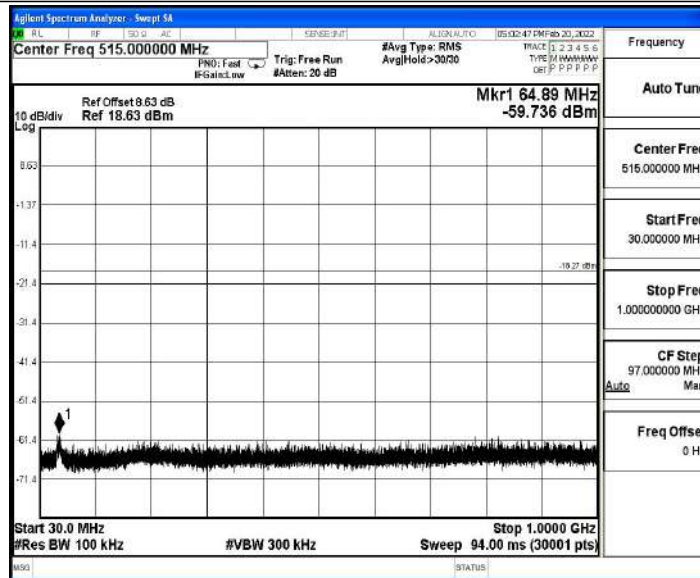


3DH5_Ant1_2480_0~Reference

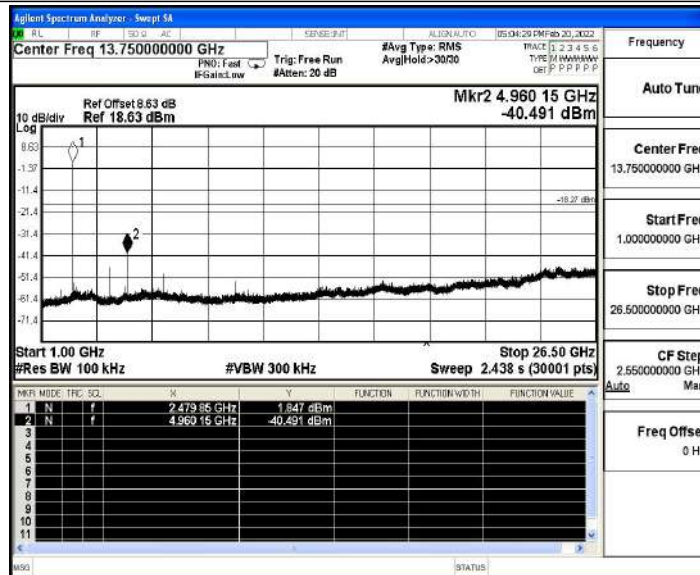




3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000~26500





A.9 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	-58.15	≤-41.20	37.05	≤54	PASS
				AV	2349.980	-55.56	≤-41.20	39.64	≤54	PASS
				AV	2390.000	-57.43	≤-41.20	37.77	≤54	PASS
				Peak	2310.000	-48.08	≤-21.20	47.12	≤74	PASS
				Peak	2389.460	-44.66	≤-21.20	50.54	≤74	PASS
				Peak	2390.000	-47.62	≤-21.20	47.58	≤74	PASS
		High	2480	AV	2483.500	-50.13	≤-41.20	45.07	≤54	PASS
				AV	2483.760	-49.31	≤-41.20	45.89	≤54	PASS
				AV	2500.000	-56.99	≤-41.20	38.21	≤54	PASS
				Peak	2483.500	-25.26	≤-21.20	69.94	≤74	PASS
				Peak	2483.600	-25.21	≤-21.20	69.99	≤74	PASS
				Peak	2500.000	-47.89	≤-21.20	47.31	≤74	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-58.1	≤-41.20	37.10	≤54	PASS
				AV	2375.810	-55.56	≤-41.20	39.64	≤54	PASS
				AV	2390.000	-57.3	≤-41.20	37.90	≤54	PASS
				Peak	2310.000	-48.54	≤-21.20	46.66	≤74	PASS
				Peak	2389.985	-45.01	≤-21.20	50.19	≤74	PASS
				Peak	2390.000	-45.01	≤-21.20	50.19	≤74	PASS
		High	2480	AV	2483.500	-48.78	≤-41.20	46.42	≤54	PASS
				AV	2483.520	-48.77	≤-41.20	46.43	≤54	PASS
				AV	2500.000	-56.96	≤-41.20	38.24	≤54	PASS
				Peak	2483.500	-23.12	≤-21.20	72.08	≤74	PASS
				Peak	2483.520	-23.12	≤-21.20	72.08	≤74	PASS
				Peak	2500.000	-47.04	≤-21.20	48.16	≤74	PASS
3DH5	Ant1	Low	2402	AV	2310.000	-58.13	≤-41.20	37.07	≤54	PASS
				AV	2375.705	-55.58	≤-41.20	39.62	≤54	PASS
				AV	2390.000	-57.25	≤-41.20	37.95	≤54	PASS
				Peak	2310.000	-47.85	≤-21.20	47.35	≤74	PASS
				Peak	2375.705	-46.01	≤-21.20	49.19	≤74	PASS
				Peak	2390.000	-47.47	≤-21.20	47.73	≤74	PASS
		High	2480	AV	2483.500	-48.18	≤-41.20	47.02	≤54	PASS
				AV	2483.600	-46.45	≤-41.20	48.75	≤54	PASS
				AV	2500.000	-57.04	≤-41.20	38.16	≤54	PASS
				Peak	2483.500	-23.17	≤-21.20	72.03	≤74	PASS
				Peak	2483.520	-23.17	≤-21.20	72.03	≤74	PASS
				Peak	2500.000	-47.27	≤-21.20	47.93	≤74	PASS



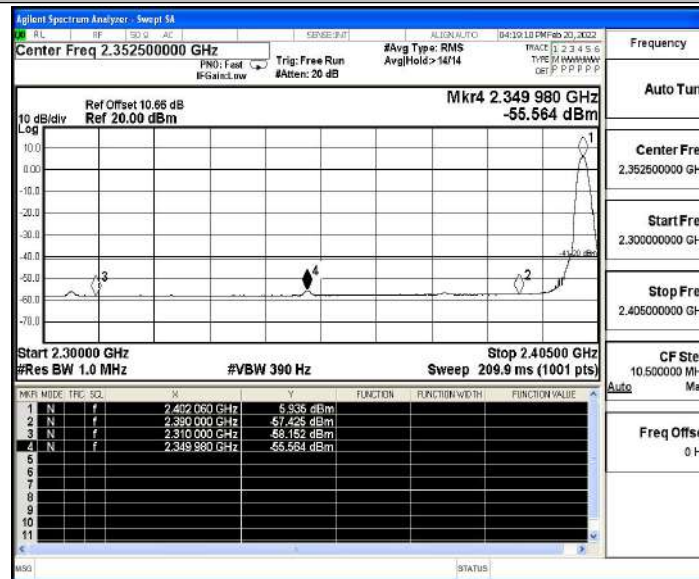
Note:

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.

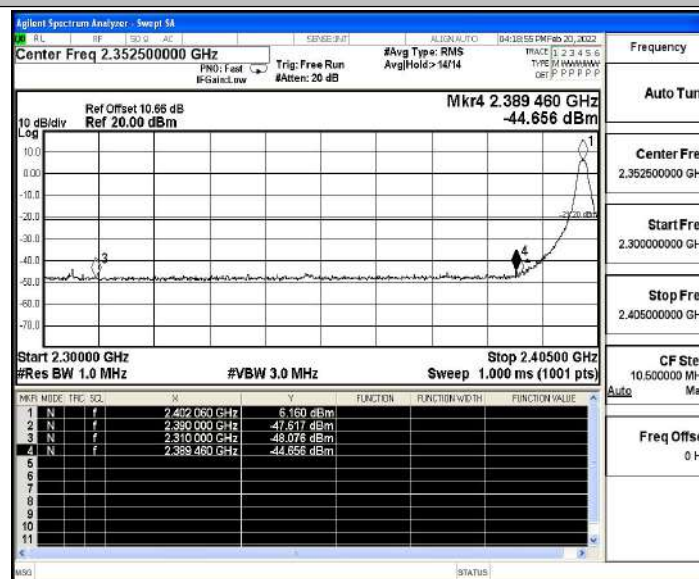


Test Graphs

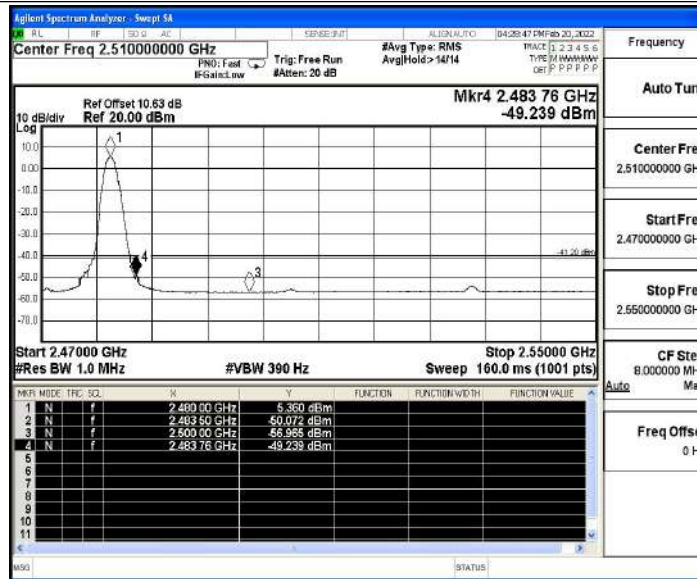
DH5_Ant1_Low_2402_AV



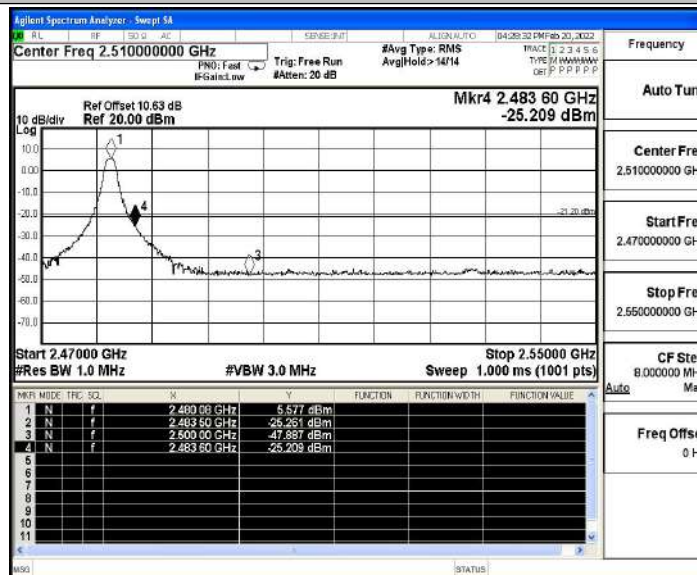
DH5_Ant1_Low_2402_Peak



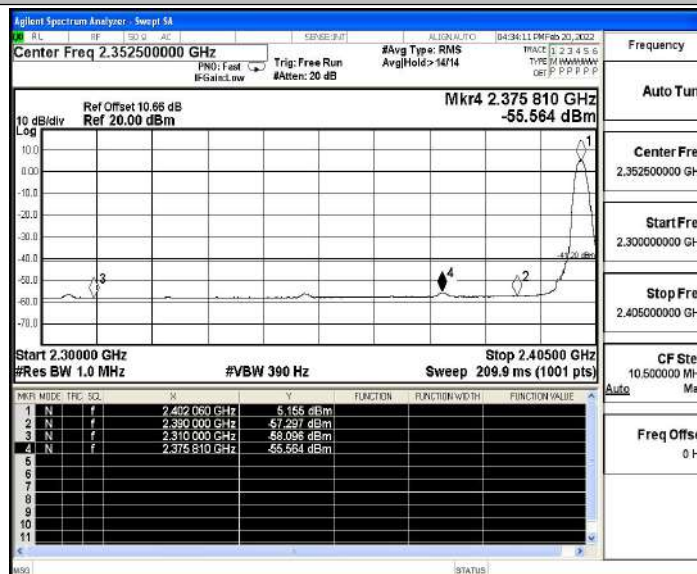
DH5_Ant1_High_2480_AV



DH5_Ant1_High_2480_Peak

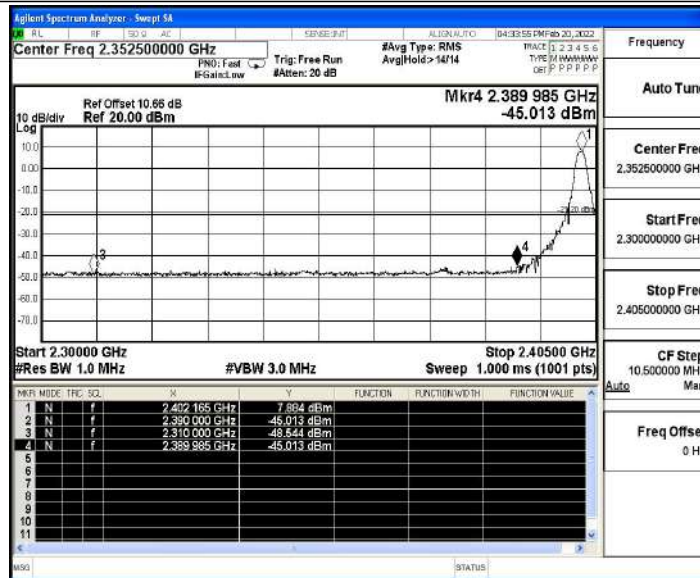


2DH5_Ant1_Low_2402_AV

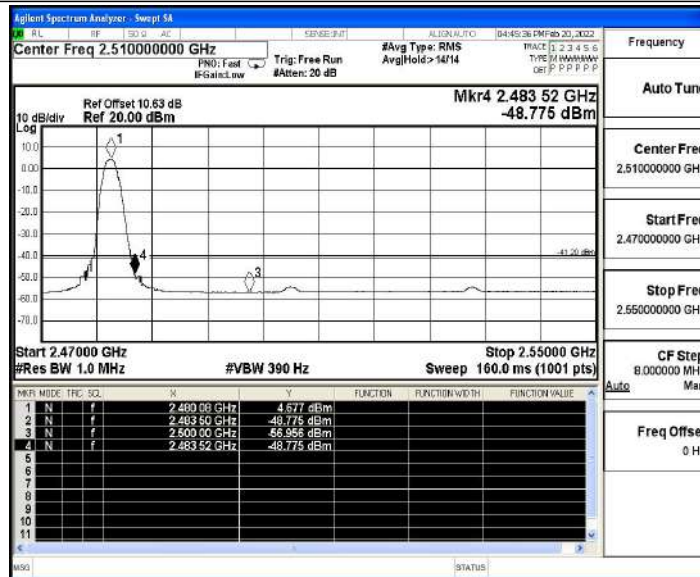




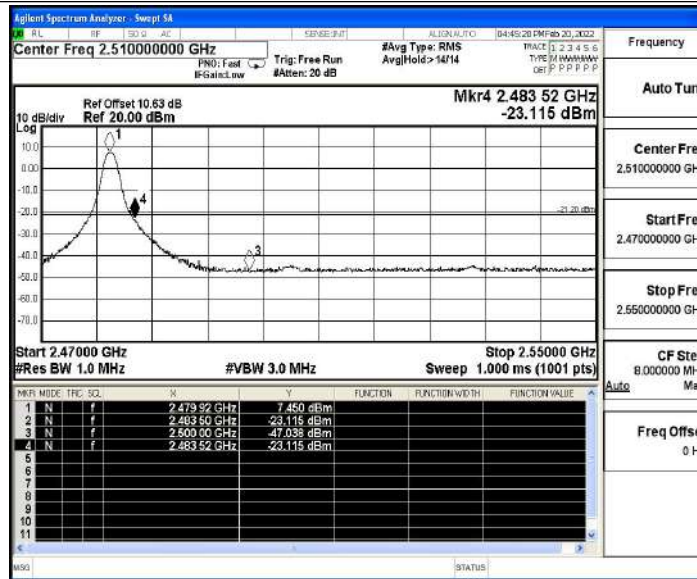
2DH5_Ant1_Low_2402_Peak



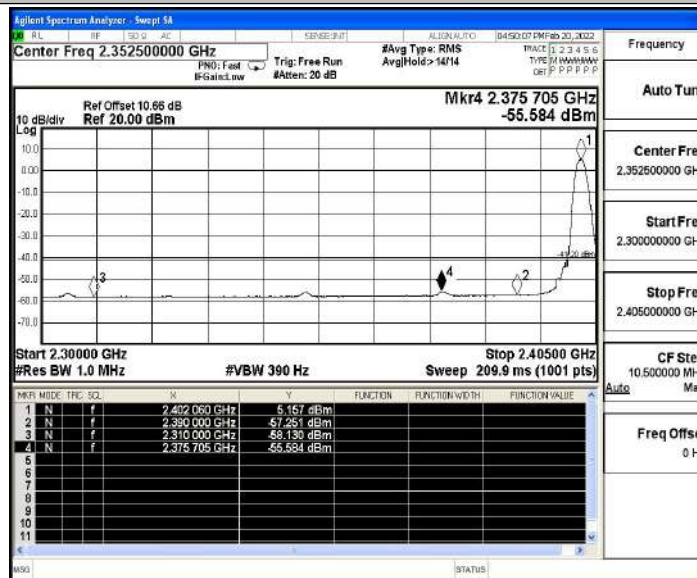
2DH5_Ant1_High_2480_AV



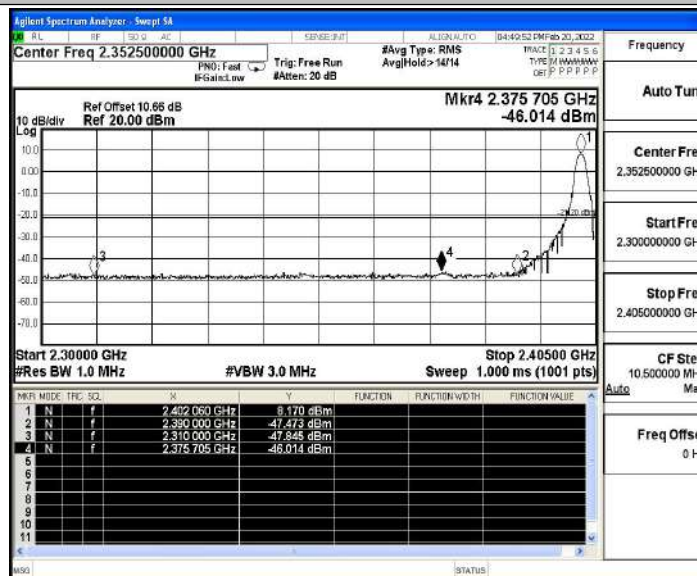
2DH5_Ant1_High_2480_Peak



3DH5_Ant1_Low_2402_AV

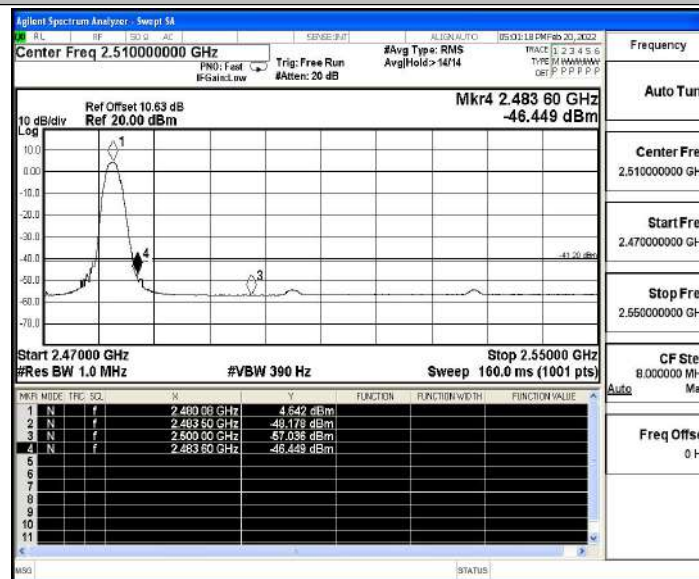


3DH5_Ant1_Low_2402_Peak





3DH5_Ant1_High_2480_AV



3DH5_Ant1_High_2480_Peak

