



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Sweep the pen.Dictionary pen

Trade Mark: N/A

Test Model: S7

Environmental Conditions

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



A.1 20dB Emission Bandwidth

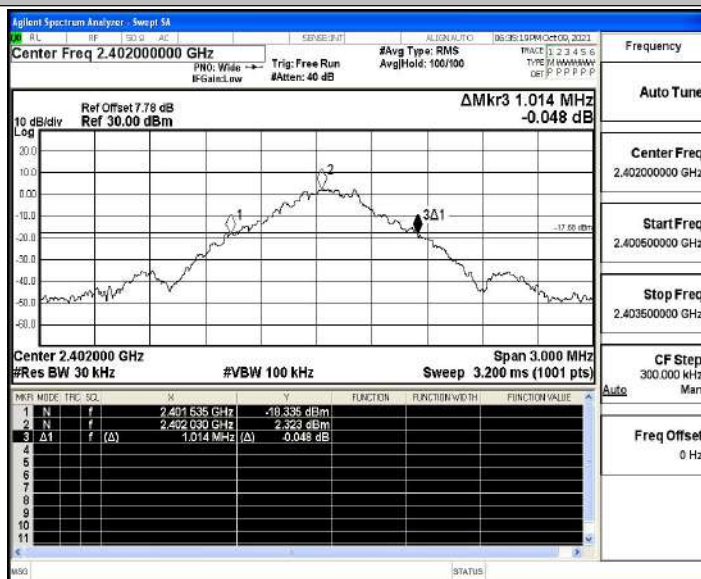
Test Result

TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	1.014	2401.535	2402.549	---	PASS
		2441	1.026	2440.523	2441.549	---	PASS
		2480	1.023	2479.526	2480.549	---	PASS
2DH5	Ant1	2402	1.293	2401.415	2402.708	---	PASS
		2441	1.323	2440.385	2441.708	---	PASS
		2480	1.323	2479.391	2480.714	---	PASS
3DH5	Ant1	2402	1.311	2401.397	2402.708	---	PASS
		2441	1.329	2440.391	2441.720	---	PASS
		2480	1.320	2479.397	2480.717	---	PASS

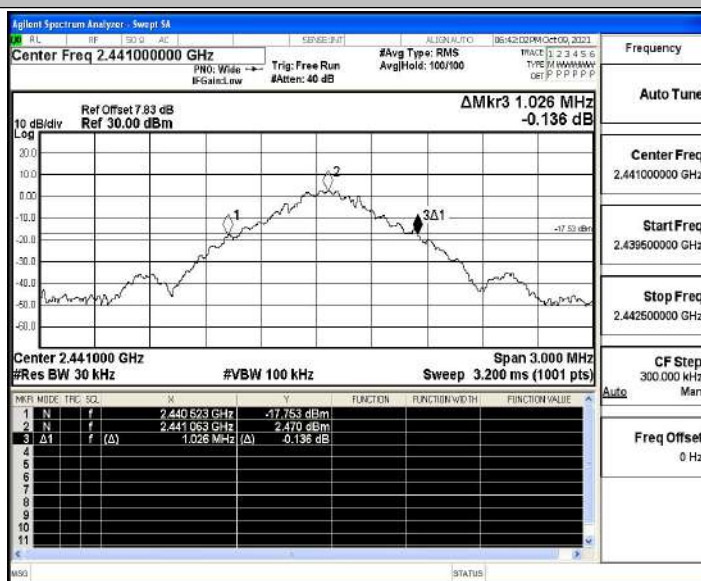


Test Graphs

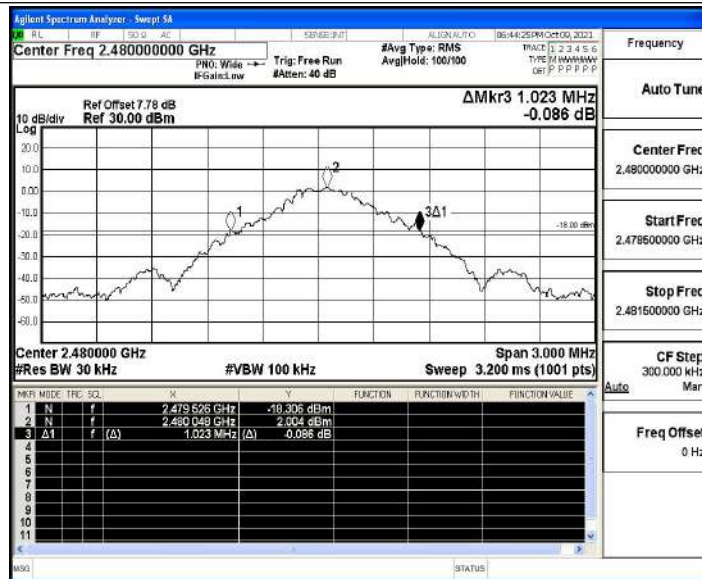
DH5_Ant1_2402



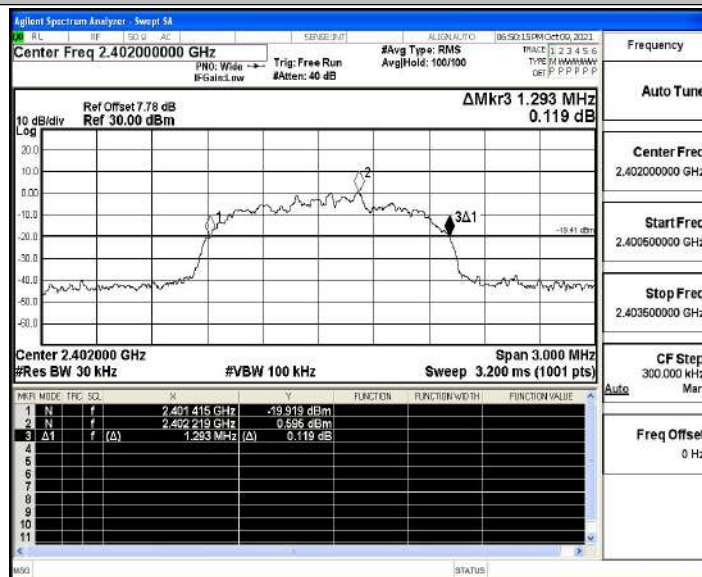
DH5_Ant1_2441



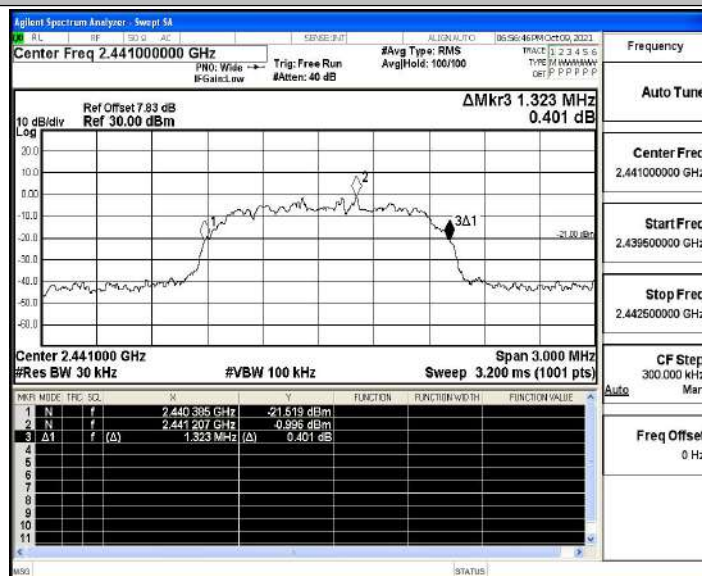
DH5_Ant1_2480



2DH5_Ant1_2402

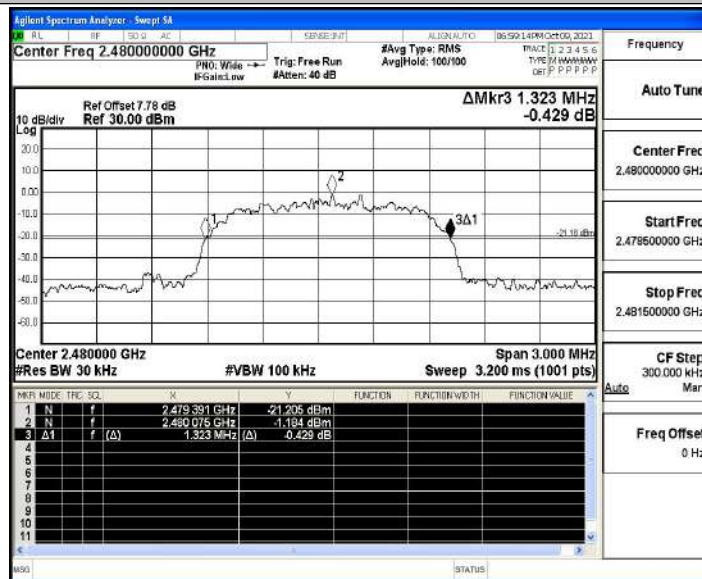


2DH5_Ant1_2441

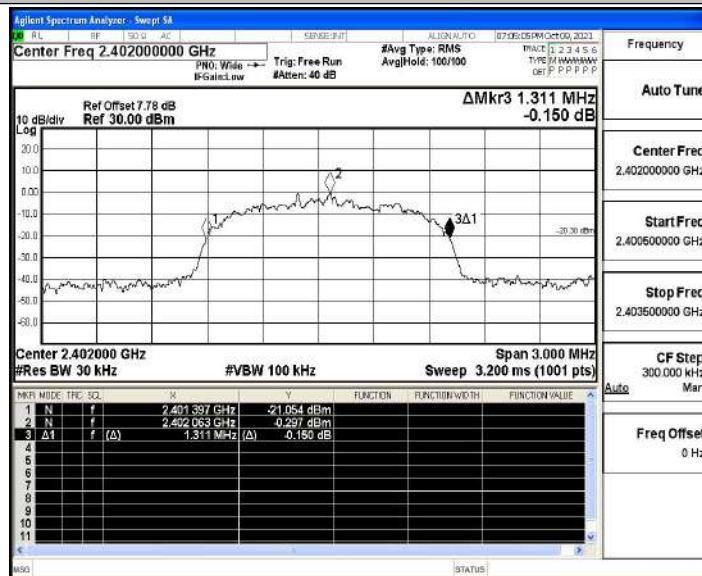




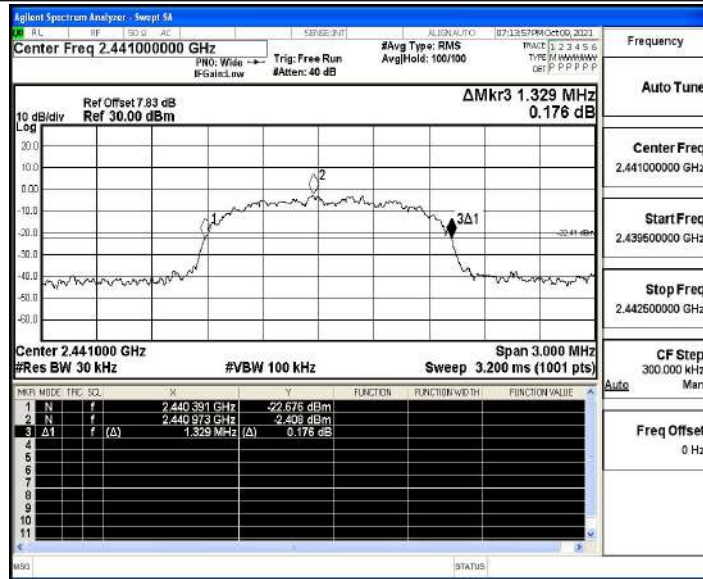
2DH5_Ant1_2480



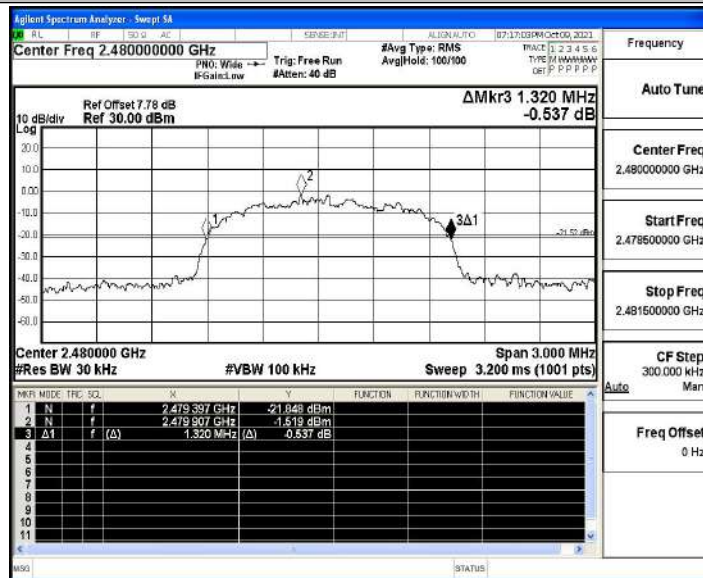
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480





A.2 Maximum conducted output power

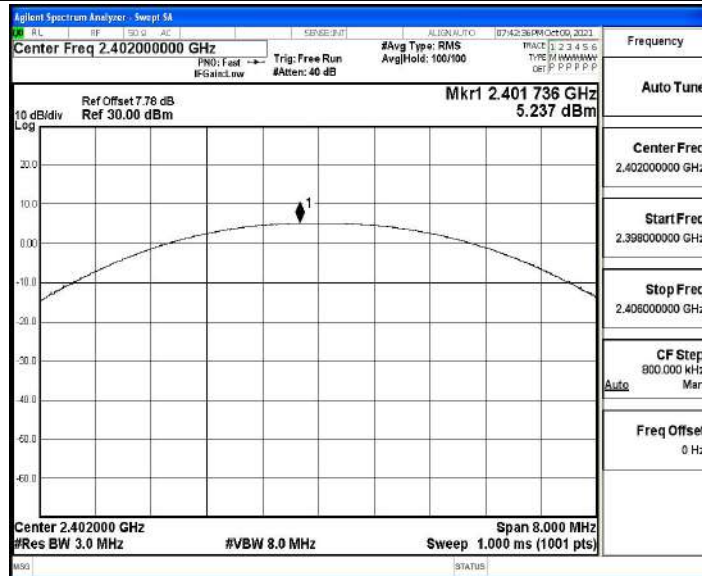
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	5.24	≤20.97	PASS
		2441	5.4	≤20.97	PASS
		2480	5.06	≤20.97	PASS
2DH5	Ant1	2402	5.32	≤20.97	PASS
		2441	5.12	≤20.97	PASS
		2480	4.73	≤20.97	PASS
3DH5	Ant1	2402	4.99	≤20.97	PASS
		2441	5.24	≤20.97	PASS
		2480	4.87	≤20.97	PASS

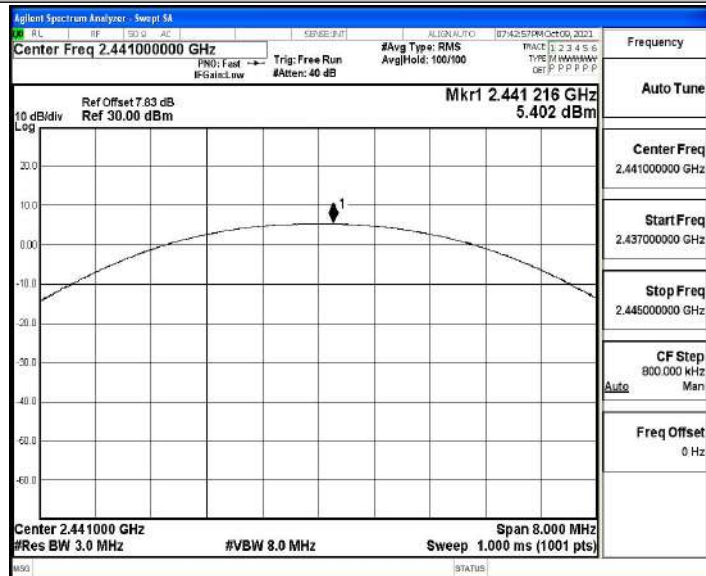


Test Graphs

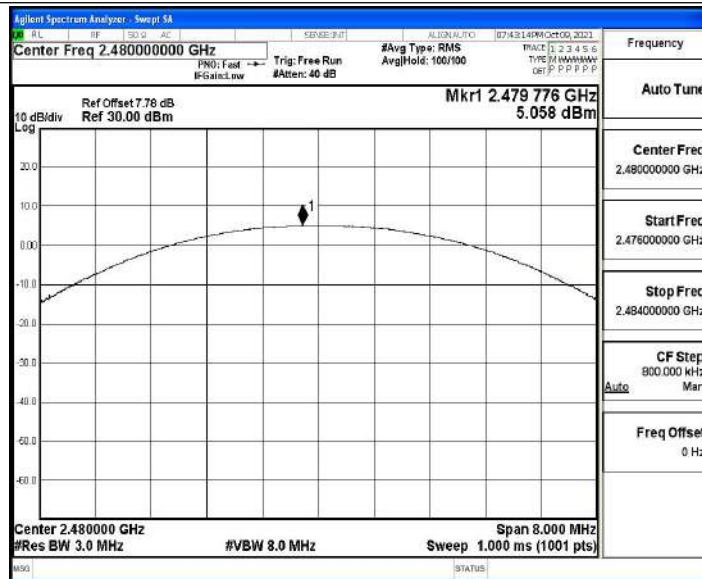
DH5_Ant1_2402



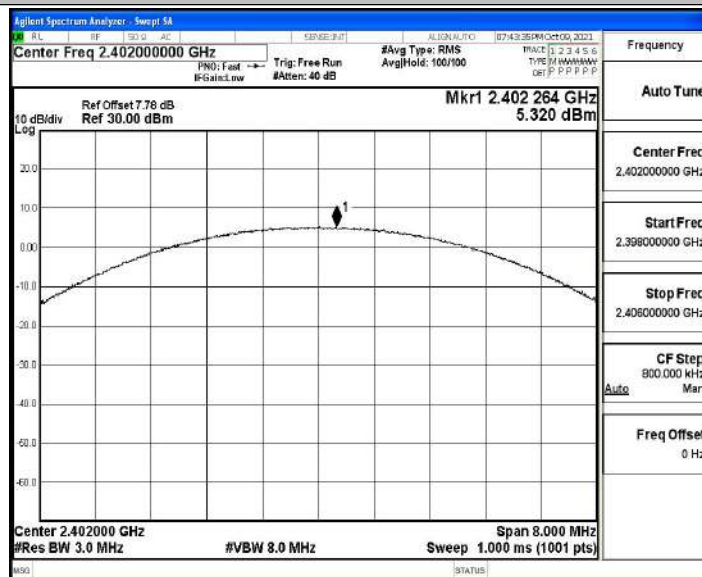
DH5_Ant1_2441



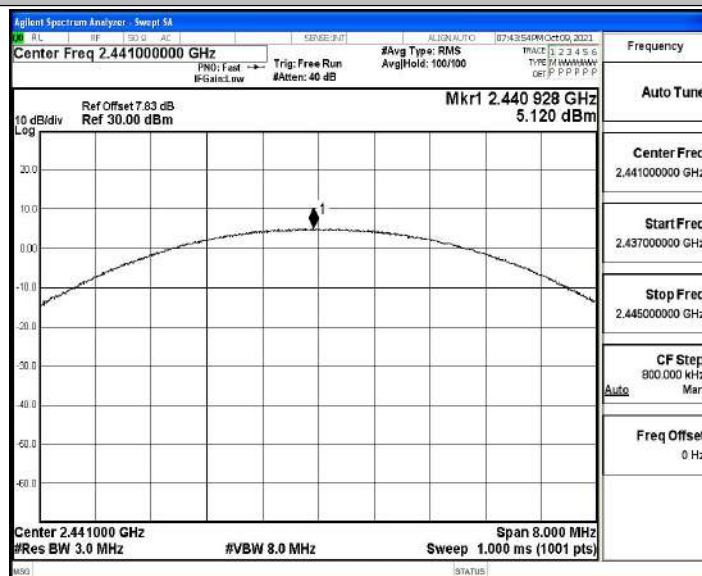
DH5_Ant1_2480



2DH5_Ant1_2402

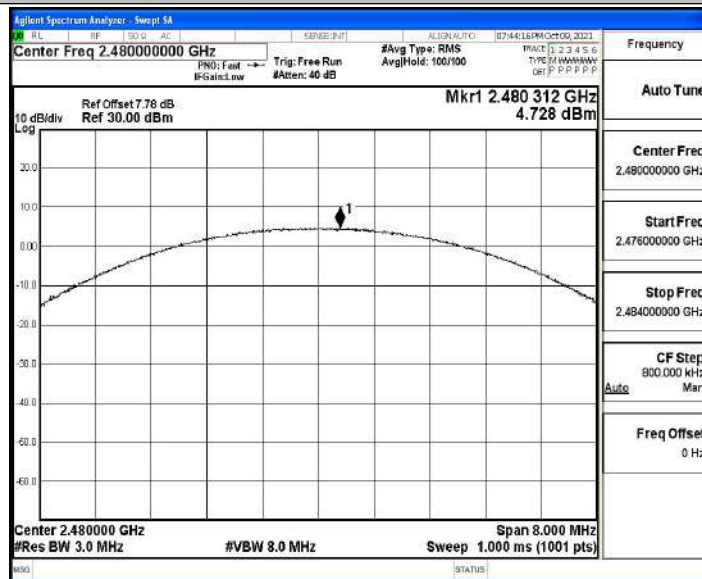


2DH5_Ant1_2441

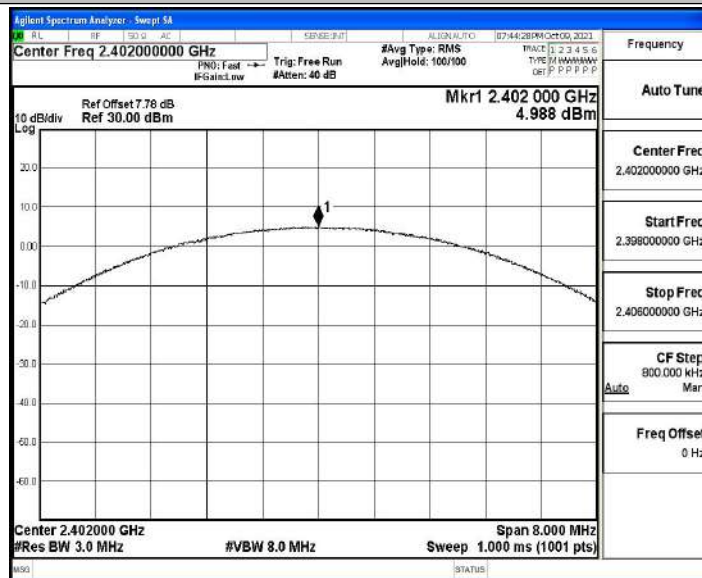




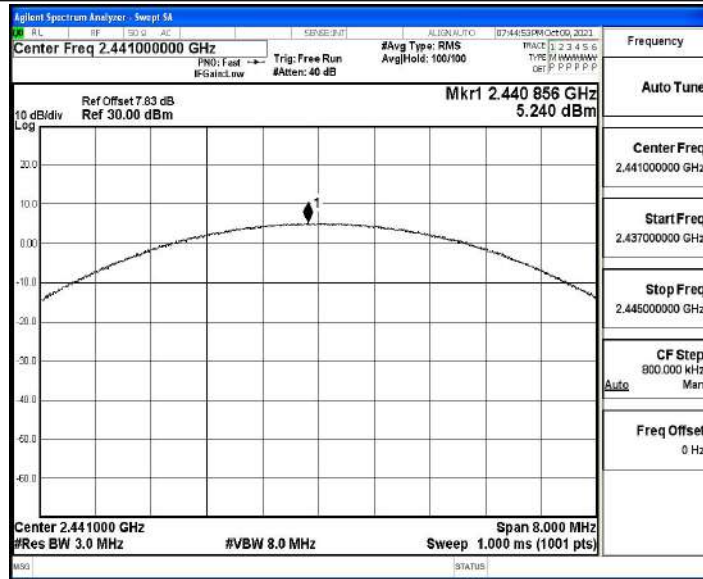
2DH5_Ant1_2480



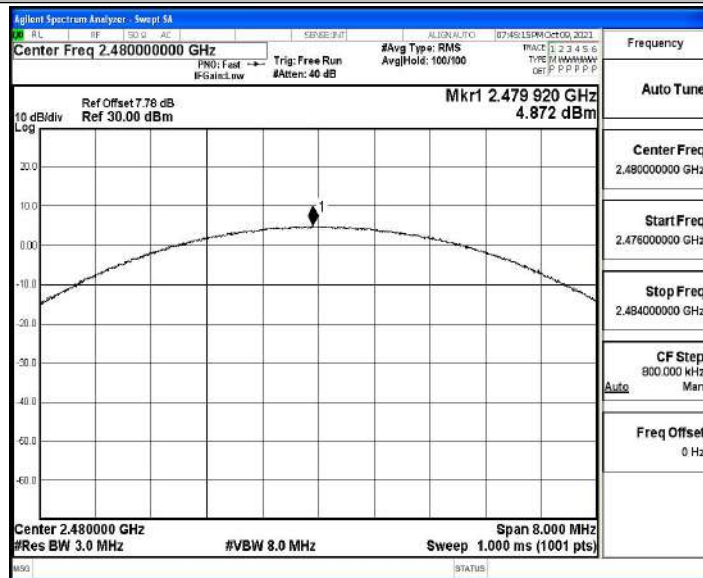
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480





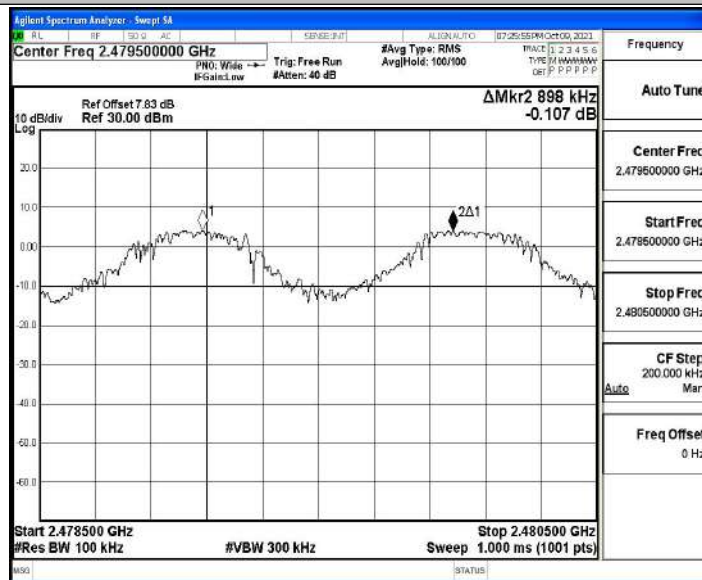
A.3 Carrier frequency separation

Test Result

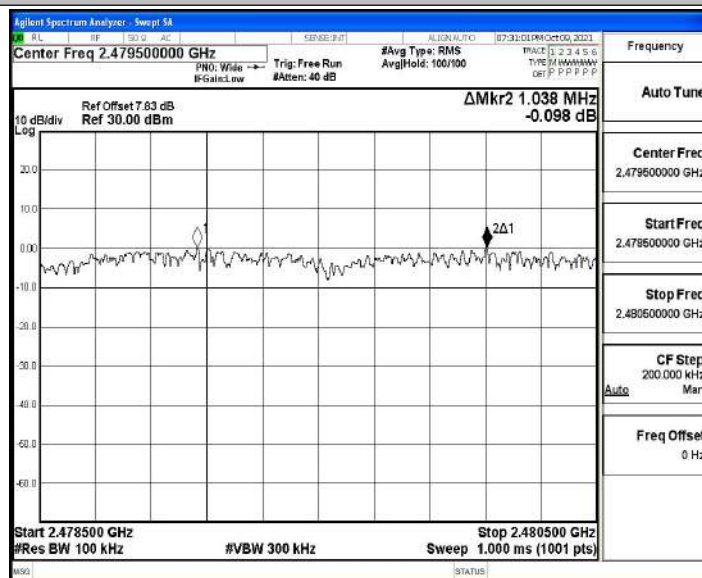
TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.898	≥0.684	PASS
2DH5	Ant1	Hop	1.038	≥0.882	PASS
3DH5	Ant1	Hop	0.948	≥0.886	PASS

Test Graphs

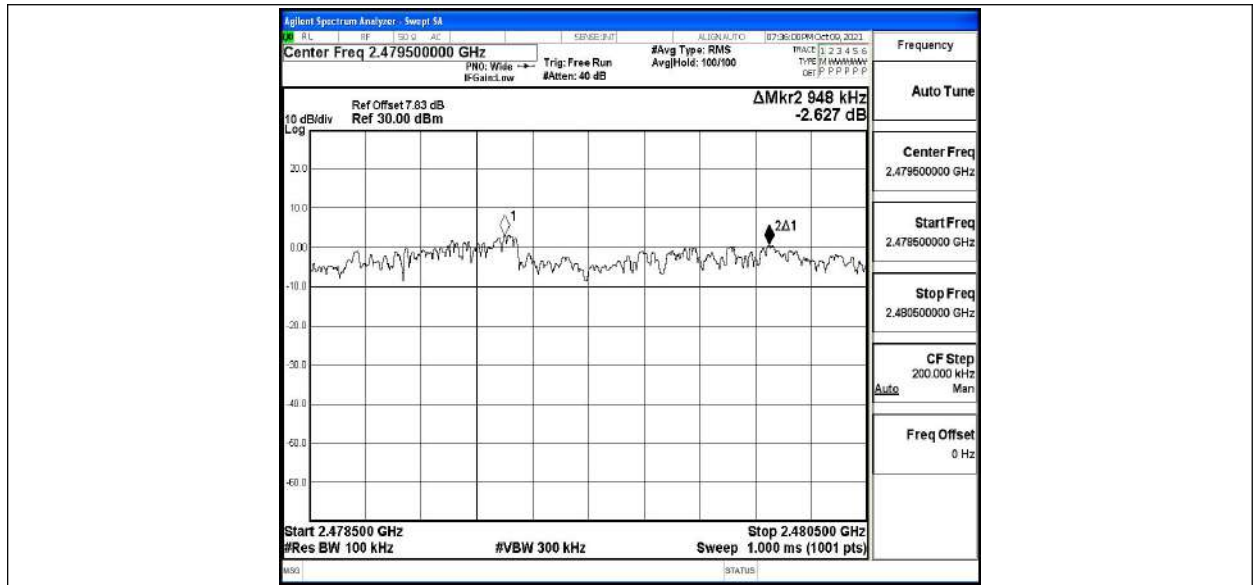
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop



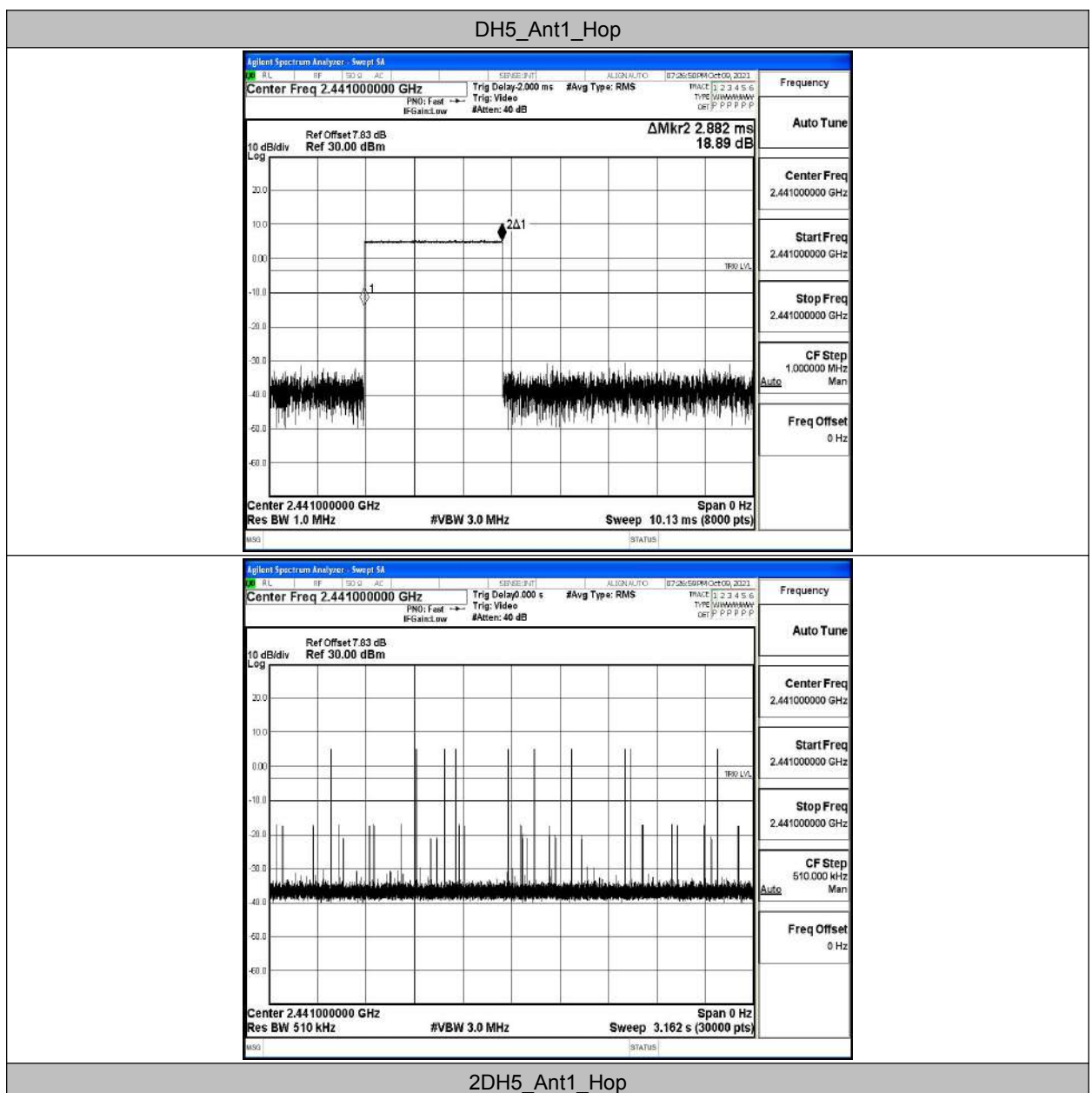


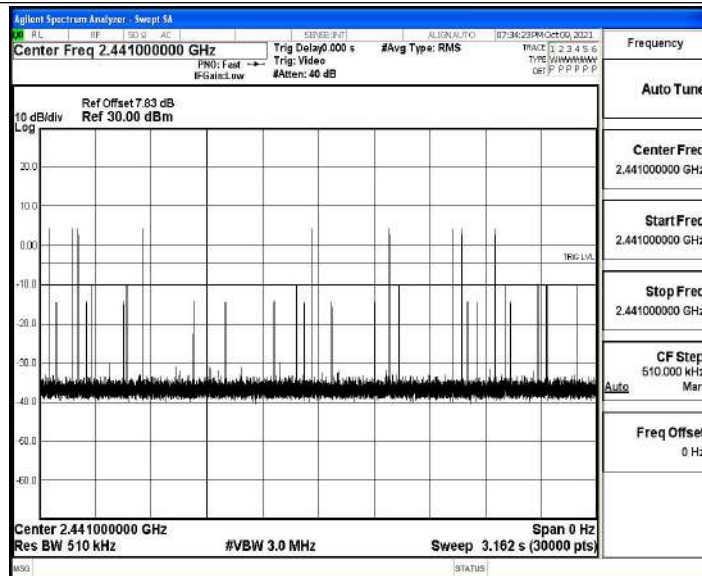
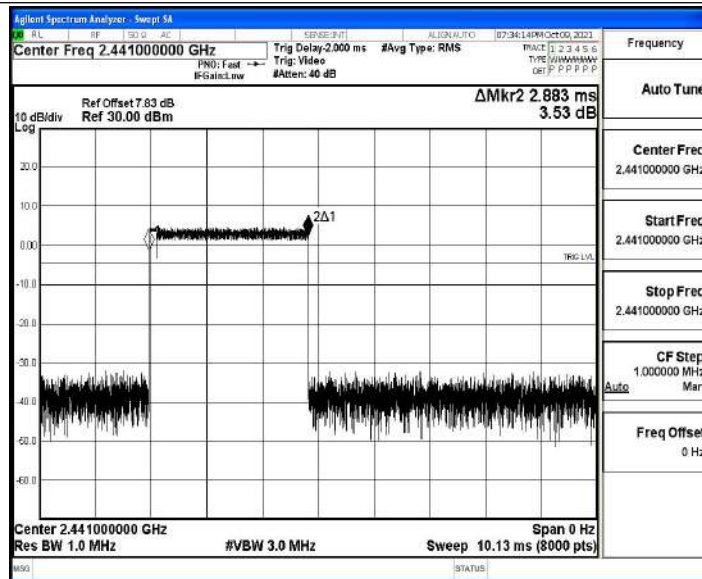
A.4 Time of occupancy

Test Result

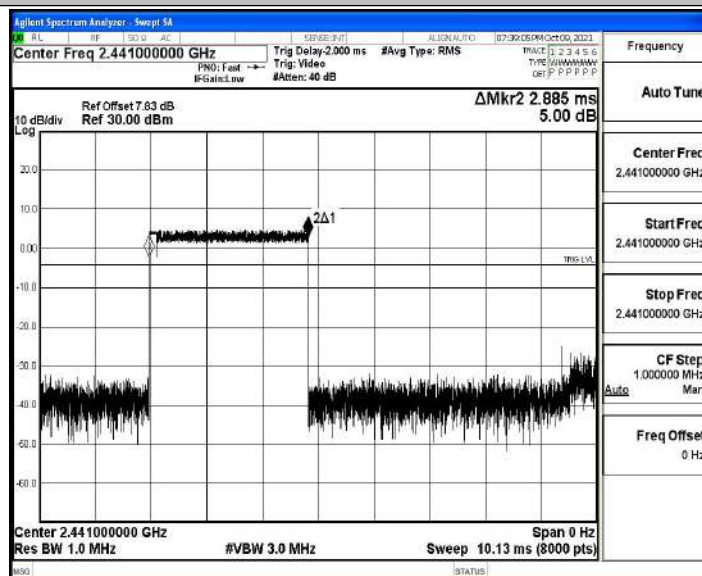
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.88	110	0.317	≤0.4	PASS
2DH5	Ant1	Hop	2.88	100	0.288	≤0.4	PASS
3DH5	Ant1	Hop	2.89	100	0.289	≤0.4	PASS

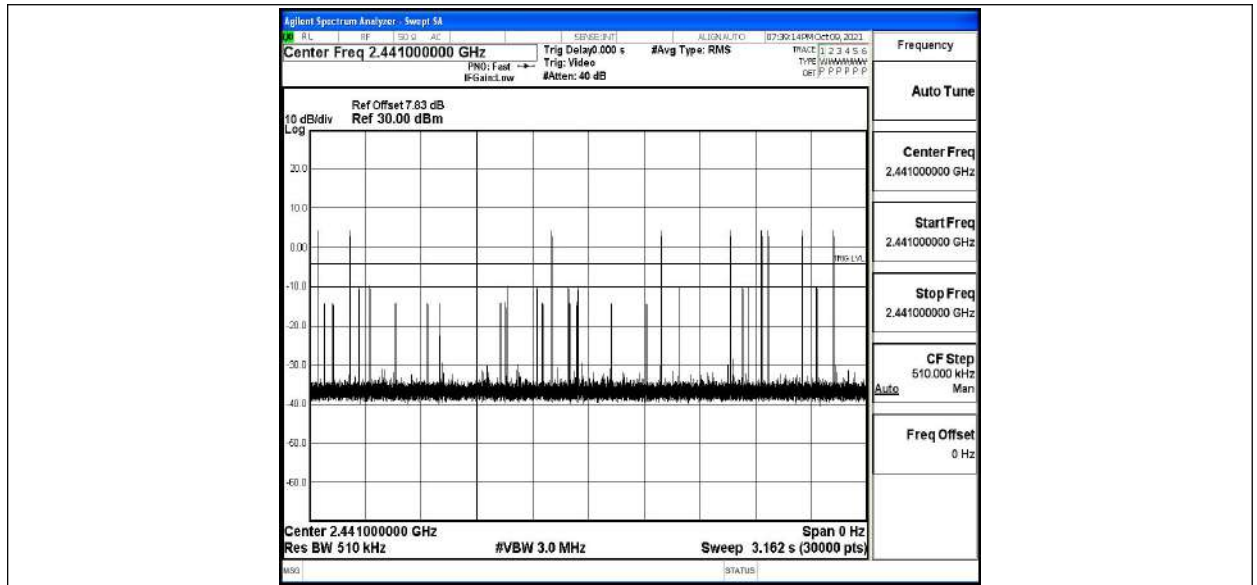
Test Graphs





3DH5_Ant1_Hop







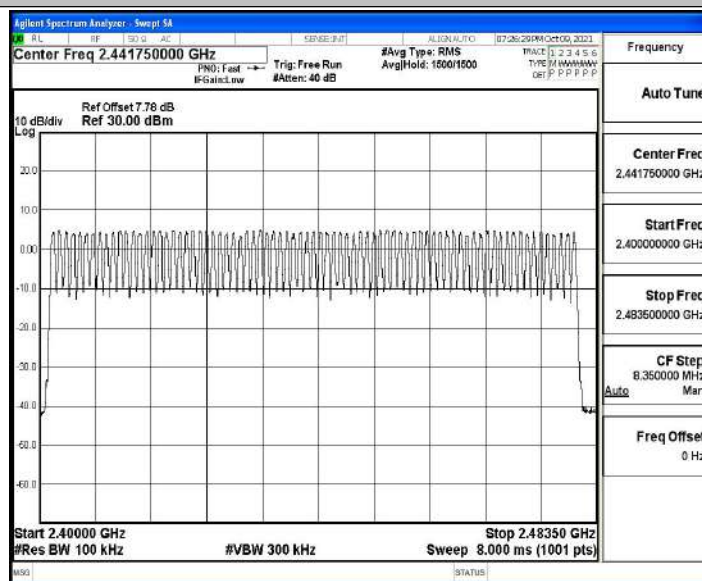
A.5 Number of hopping channels

Test Result

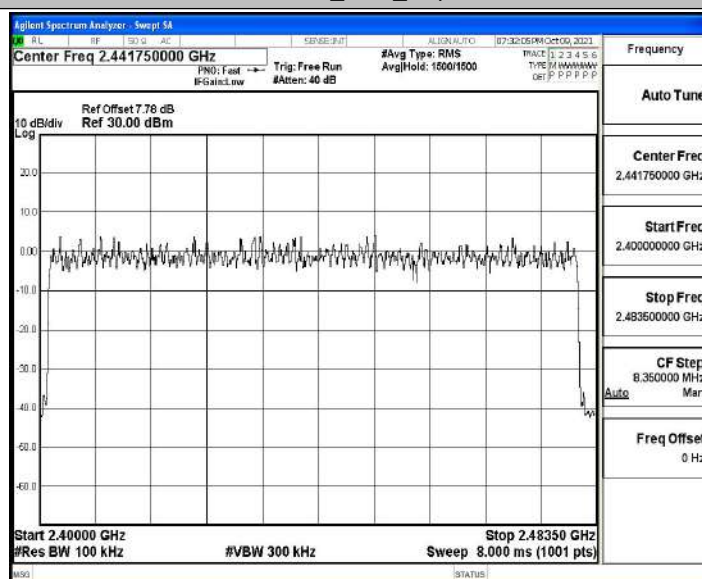
TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

Test Graphs

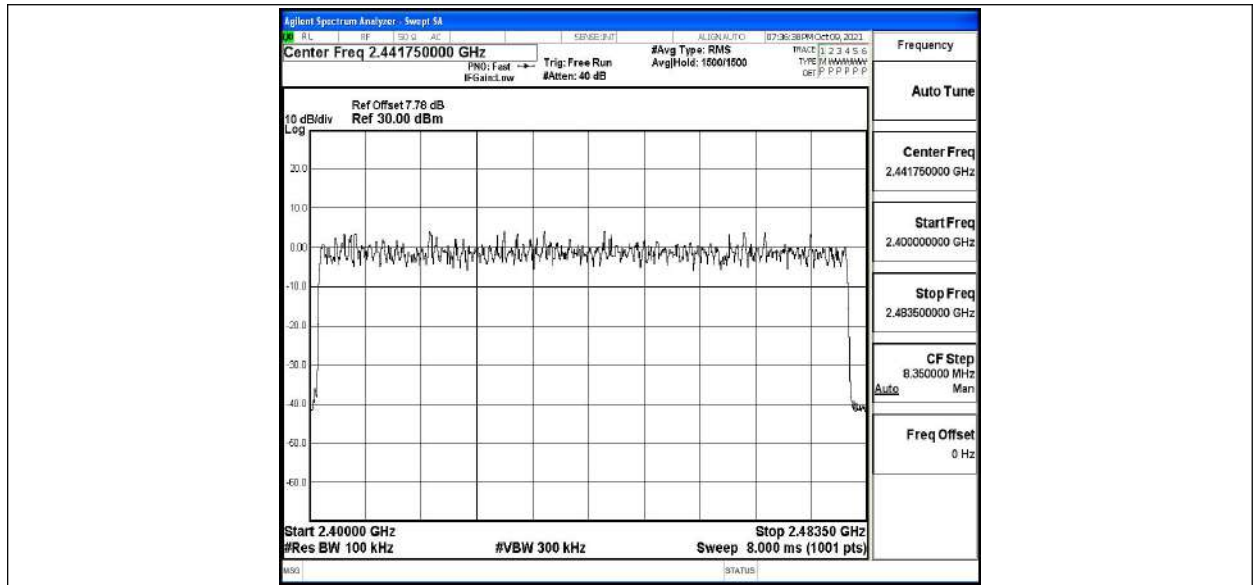
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop



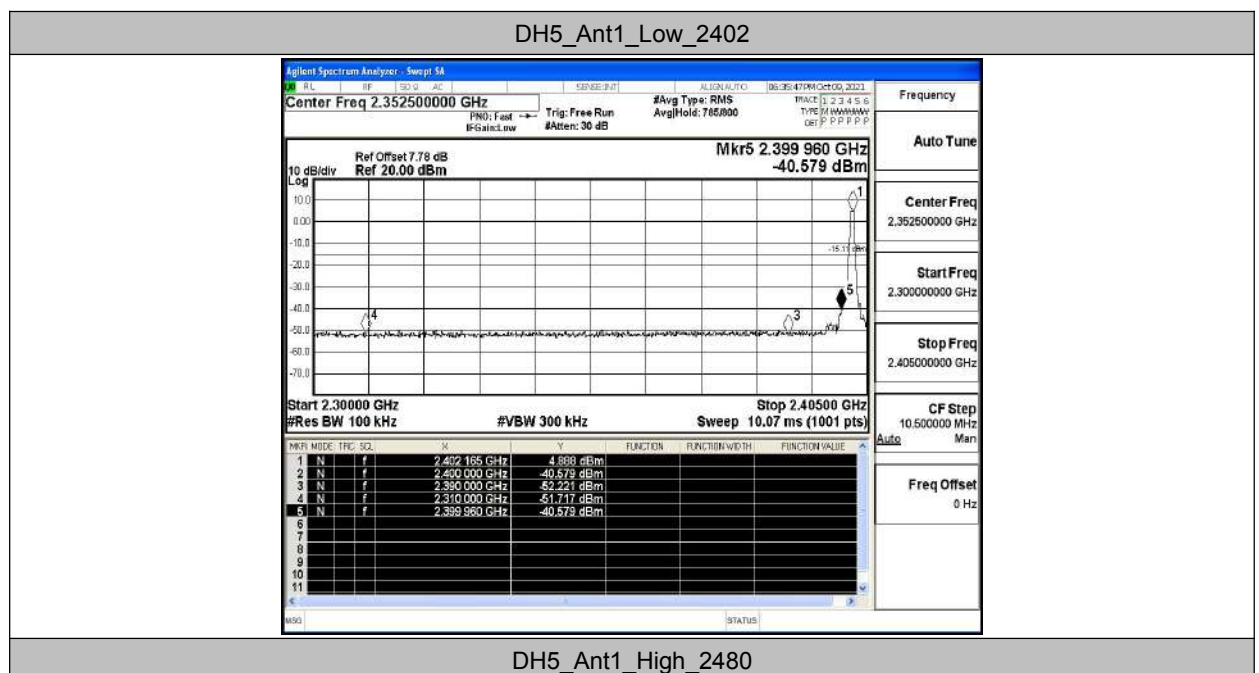


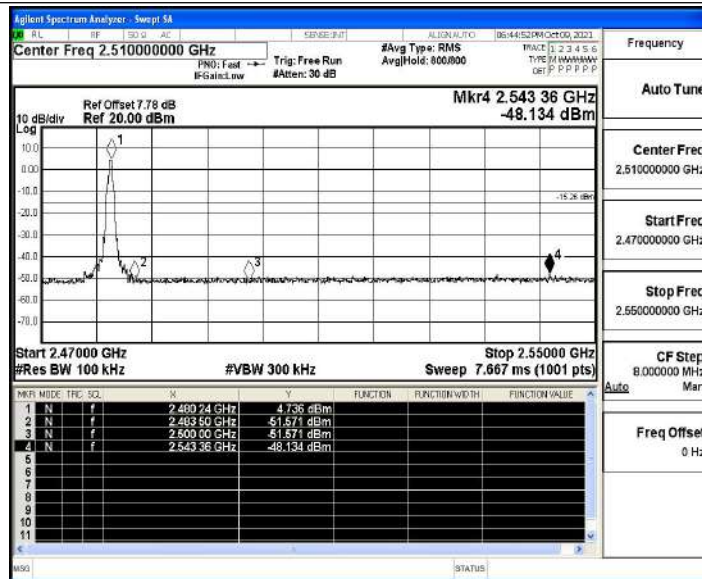
A.6 Band edge measurements

Test Result

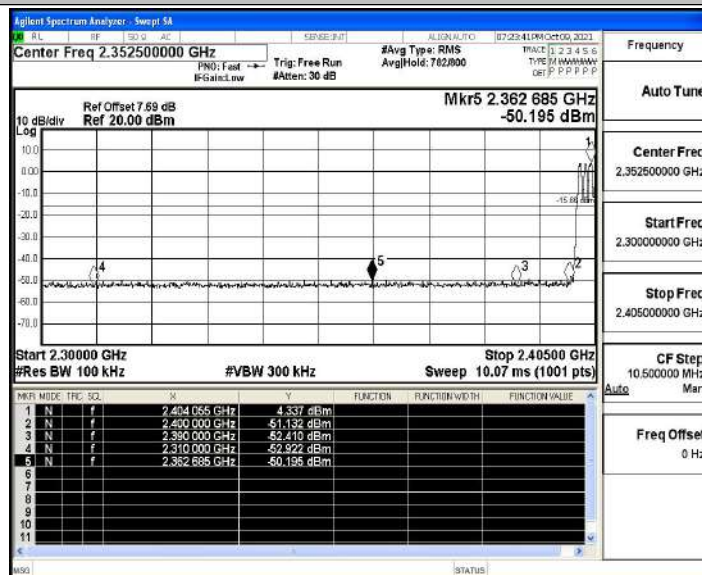
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	4.89	-40.58	≤ -15.11	PASS
		High	2480	4.74	-48.13	≤ -15.26	PASS
		Low	Hop_2402	4.34	-50.2	≤ -15.66	PASS
		High	Hop_2480	4.78	-47.83	≤ -15.22	PASS
2DH5	Ant1	Low	2402	3.77	-46.81	≤ -16.23	PASS
		High	2480	3.77	-48.53	≤ -16.23	PASS
		Low	Hop_2402	-0.38	-49.7	≤ -20.38	PASS
		High	Hop_2480	3.24	-47.79	≤ -16.76	PASS
3DH5	Ant1	Low	2402	3.85	-48.85	≤ -16.15	PASS
		High	2480	3.81	-48.71	≤ -16.19	PASS
			Hop_2480	3.77	-48.8	≤ -16.23	PASS

Test Graphs

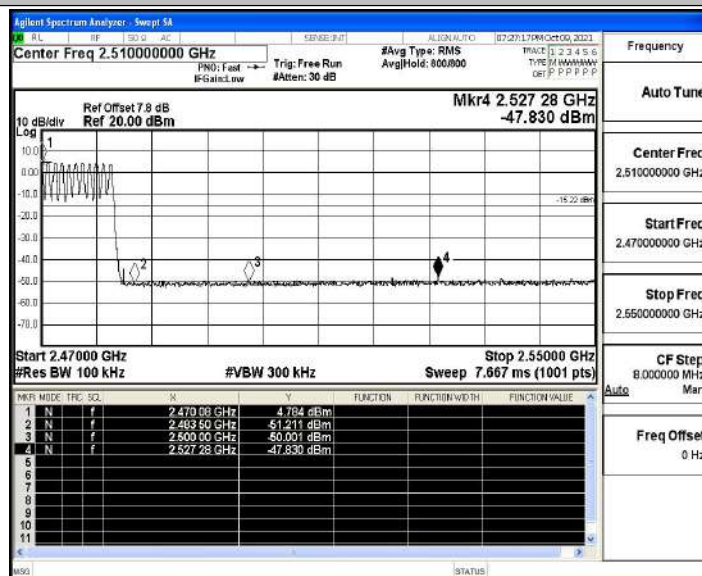




DH5_Ant1_Low_Hop_2402

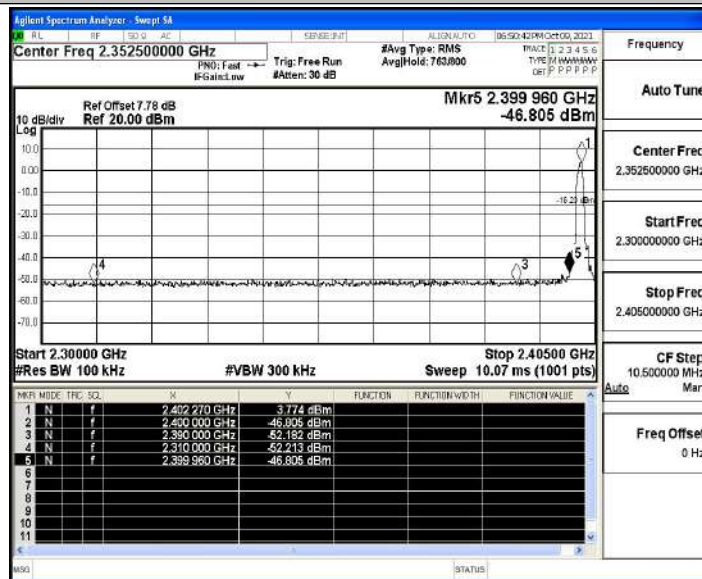


DH5_Ant1_High_Hop_2480

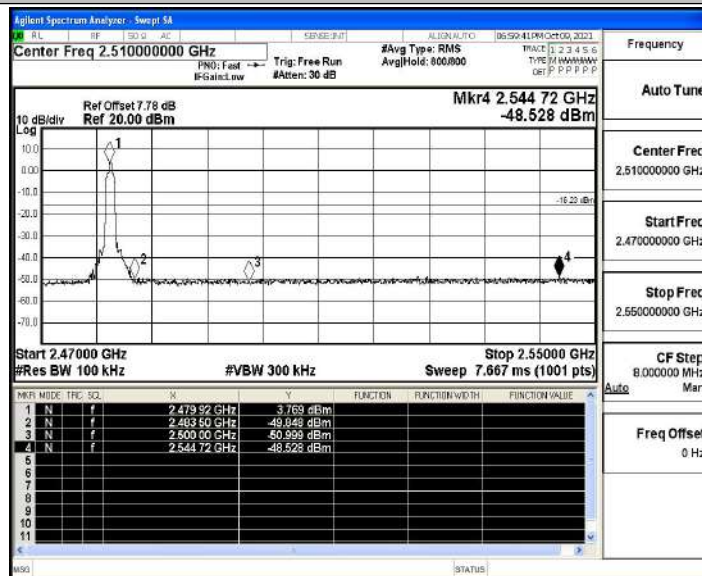




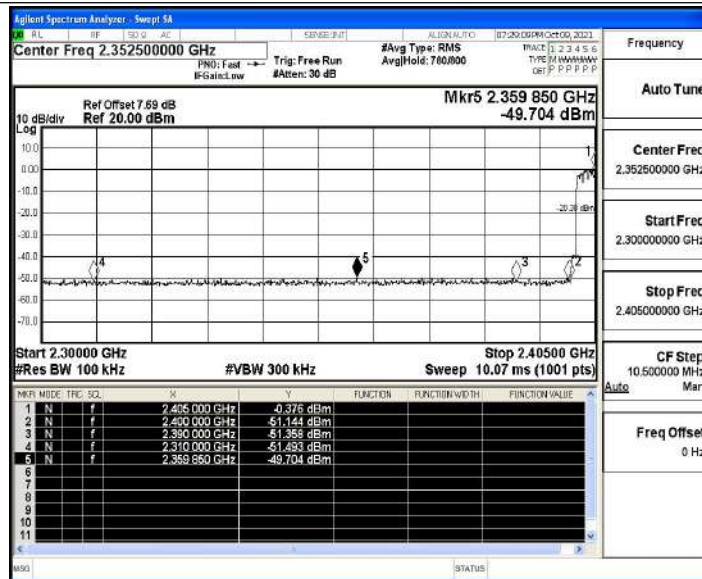
2DH5_Ant1_Low_2402



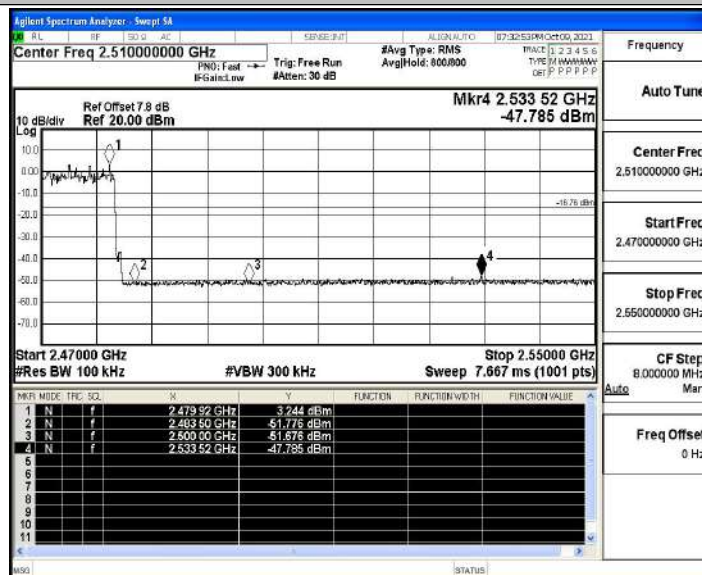
2DH5_Ant1_High_2480



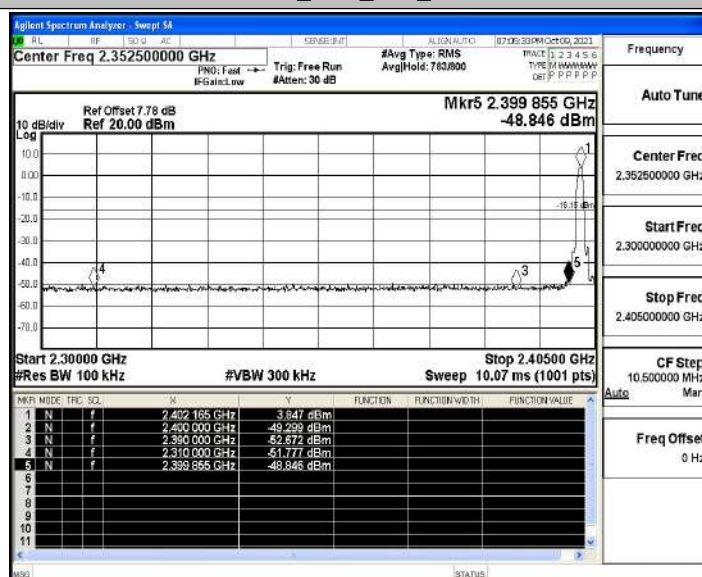
2DH5_Ant1_Low_Hop_2402



2DH5_Ant1_High_Hop_2480

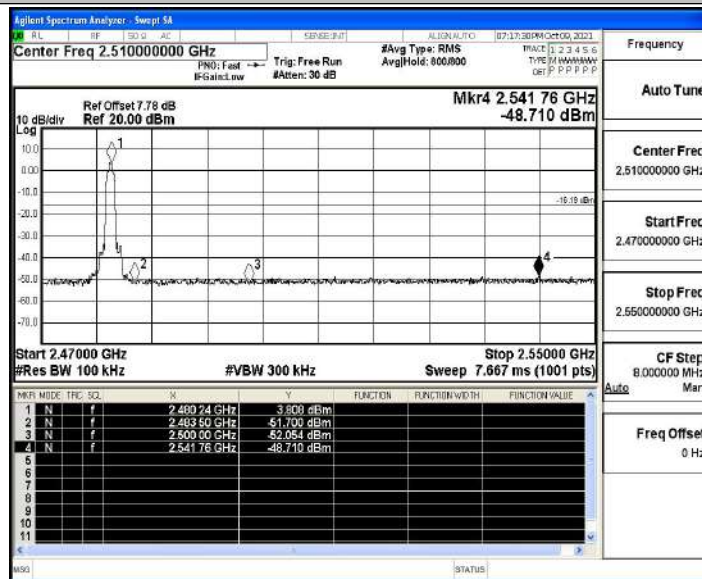


3DH5_Ant1_Low_2402

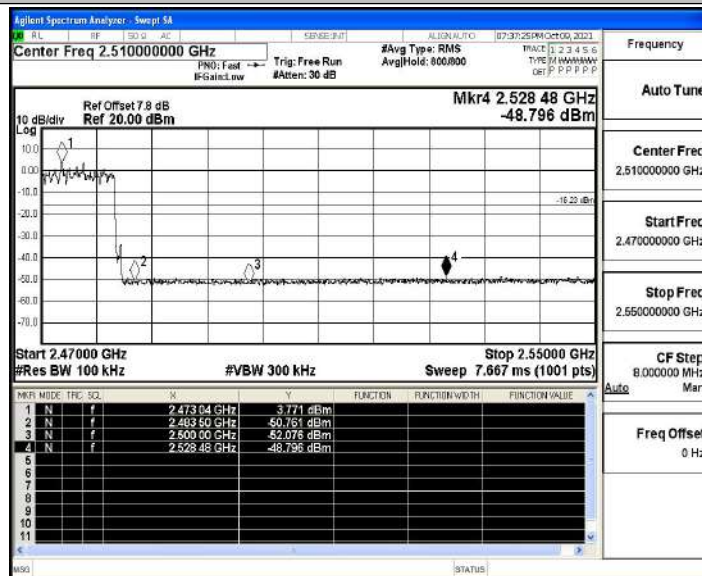




3DH5_Ant1_High_2480



3DH5_Ant1_High_Hop_2480





A.7 Conducted Spurious Emission

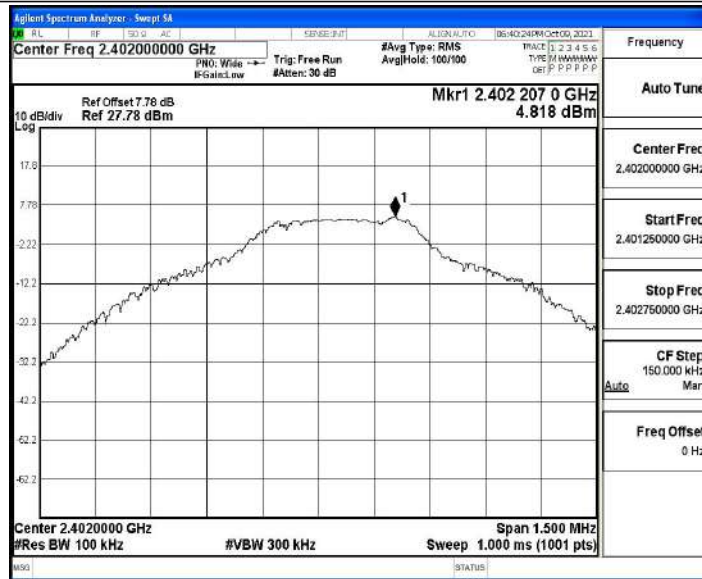
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	4.82	4.82	---	PASS
			30~1000	4.82	-61.48	≤ -15.18	PASS
			1000~26500	4.82	-46.93	≤ -15.18	PASS
		2441	Reference	4.85	4.85	---	PASS
			30~1000	4.85	-60.1	≤ -15.15	PASS
			1000~26500	4.85	-47.33	≤ -15.15	PASS
		2480	Reference	4.63	4.63	---	PASS
			30~1000	4.63	-61.29	≤ -15.37	PASS
			1000~26500	4.63	-47.72	≤ -15.37	PASS
2DH5	Ant1	2402	Reference	3.43	3.43	---	PASS
			30~1000	3.43	-61.49	≤ -16.57	PASS
			1000~26500	3.43	-47.18	≤ -16.57	PASS
		2441	Reference	1.48	1.48	---	PASS
			30~1000	1.48	-60.62	≤ -18.52	PASS
			1000~26500	1.48	-47.52	≤ -18.52	PASS
		2480	Reference	3.74	3.74	---	PASS
			30~1000	3.74	-59.91	≤ -16.26	PASS
			1000~26500	3.74	-48.13	≤ -16.26	PASS
3DH5	Ant1	2402	Reference	0.79	0.79	---	PASS
			30~1000	0.79	-60.62	≤ -19.21	PASS
			1000~26500	0.79	-46.92	≤ -19.21	PASS
		2441	Reference	0.99	0.99	---	PASS
			30~1000	0.99	-59.85	≤ -19.01	PASS
			1000~26500	0.99	-47.06	≤ -19.01	PASS
		2480	Reference	3.68	3.68	---	PASS
			30~1000	3.68	-57.71	≤ -16.32	PASS
			1000~26500	3.68	-47.59	≤ -16.32	PASS

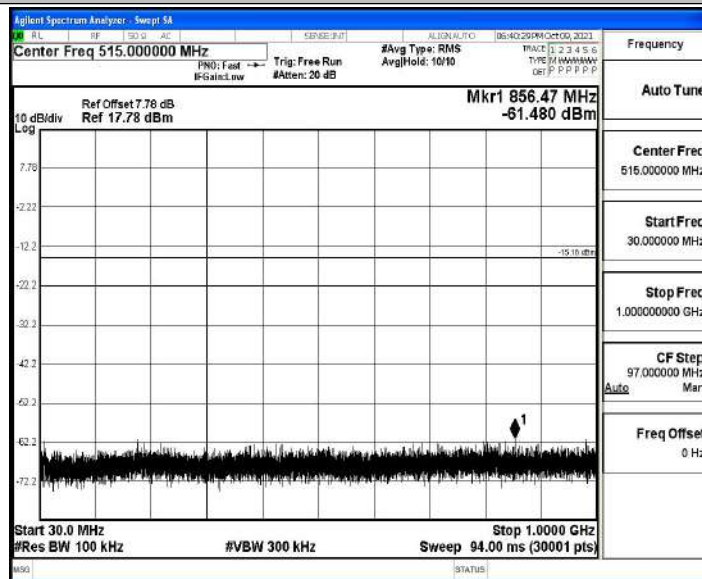


Test Graphs

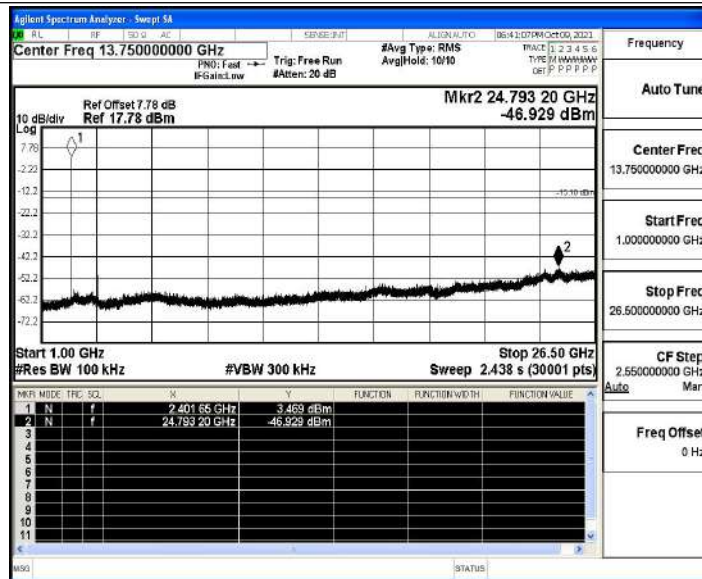
DH5_Ant1_2402_0~Reference



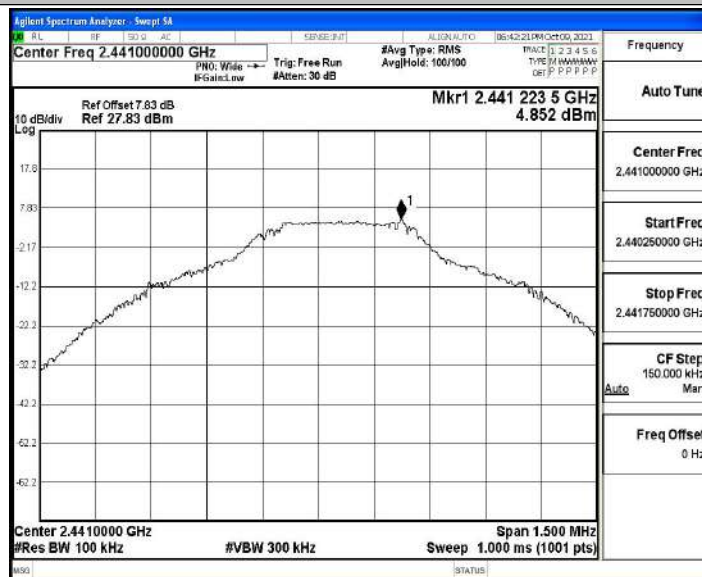
DH5_Ant1_2402_30~1000



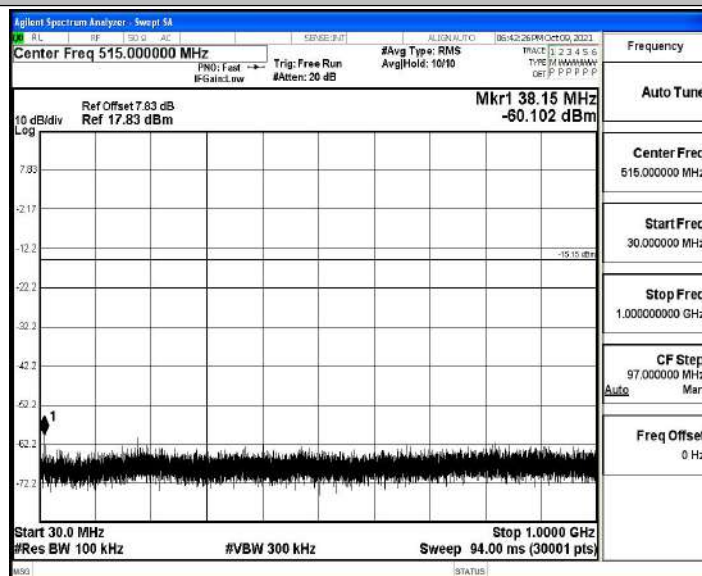
DH5_Ant1_2402_1000~26500



DH5_Ant1_2441_0~Reference

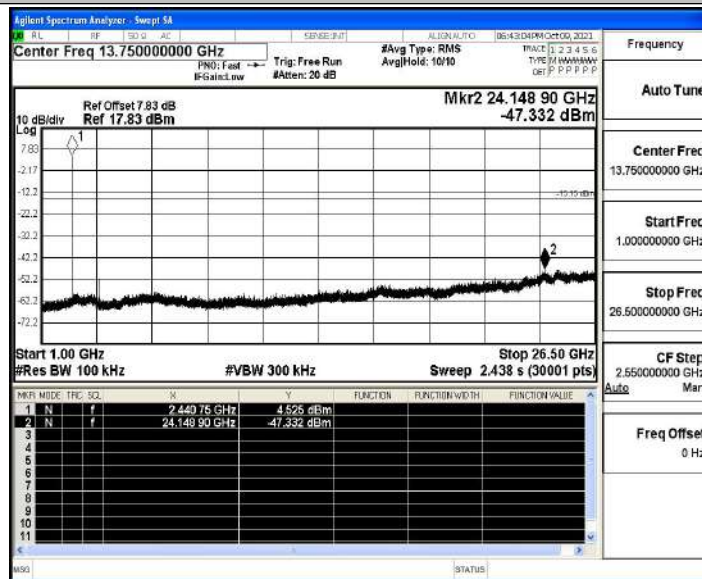


DH5_Ant1_2441_30~1000

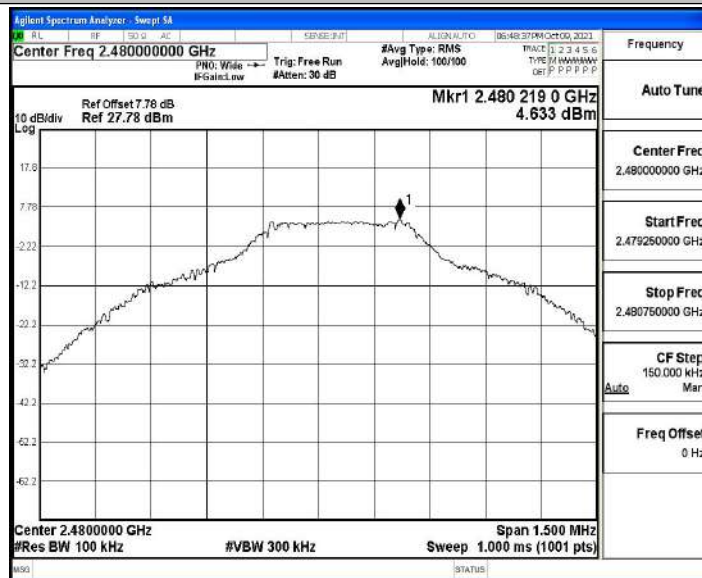




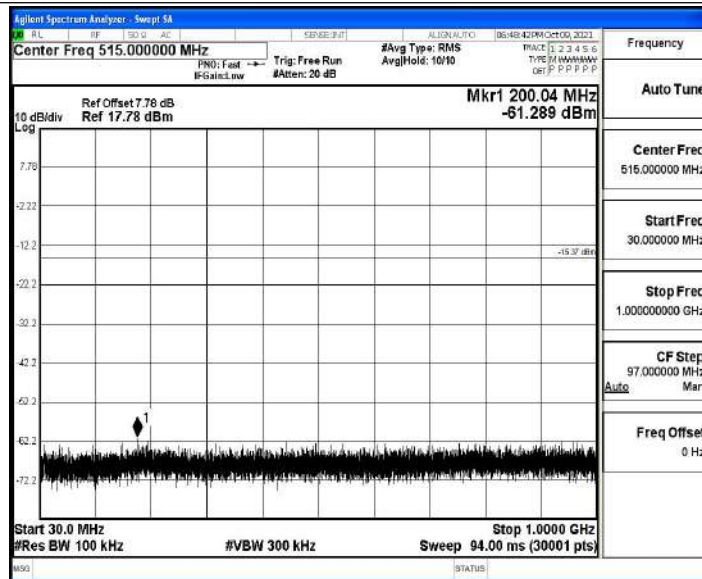
DH5_Ant1_2441_1000~26500



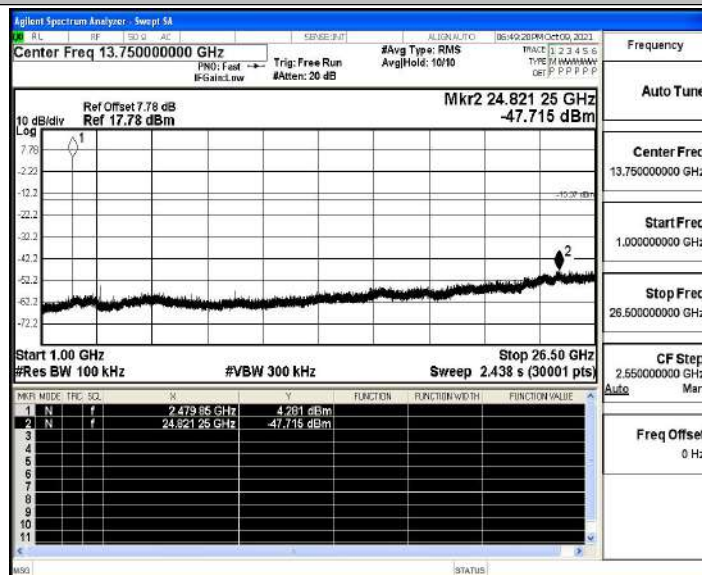
DH5_Ant1_2480_0~Reference



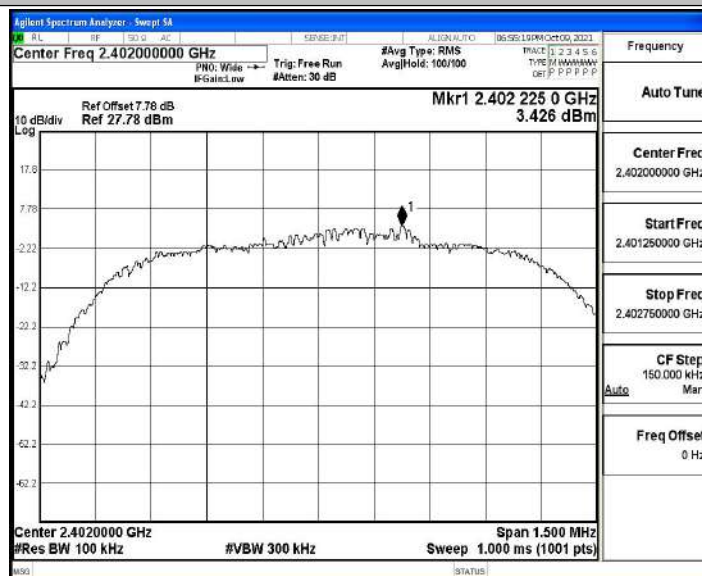
DH5_Ant1_2480_30~1000



DH5_Ant1_2480_1000~26500

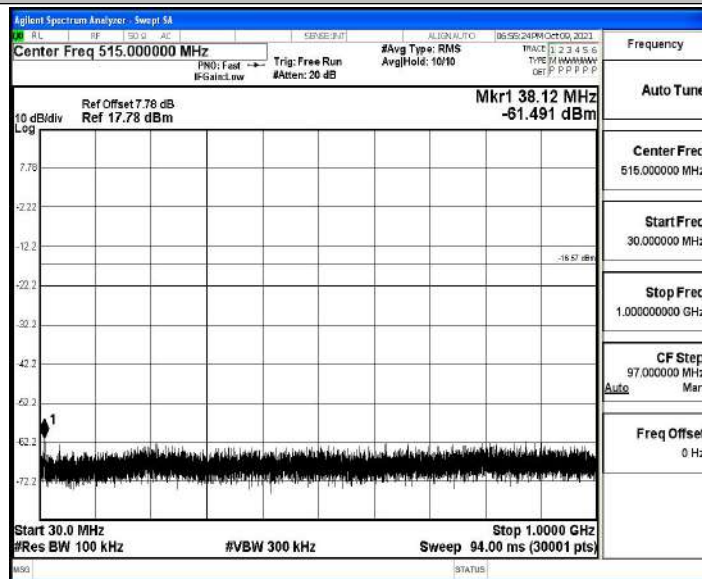


2DH5_Ant1_2402_0~Reference

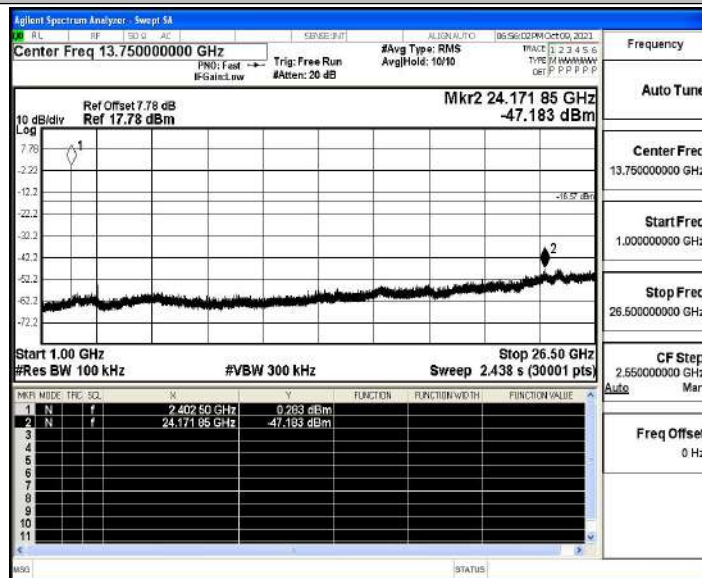




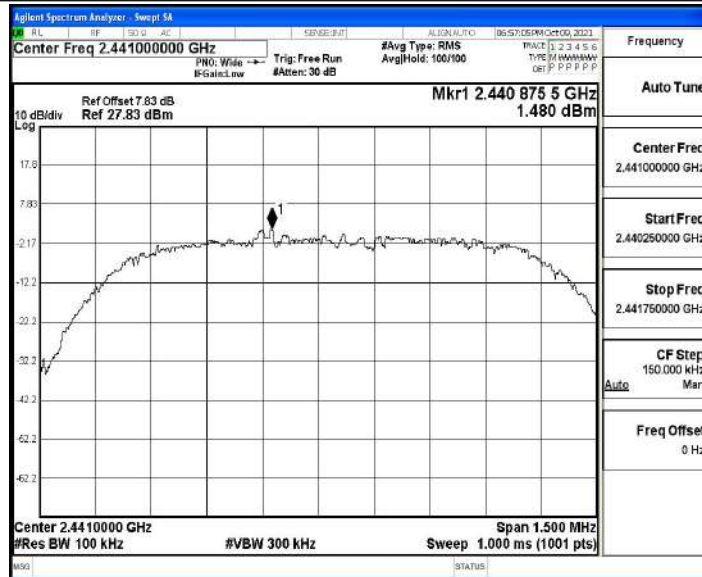
2DH5_Ant1_2402_30~1000



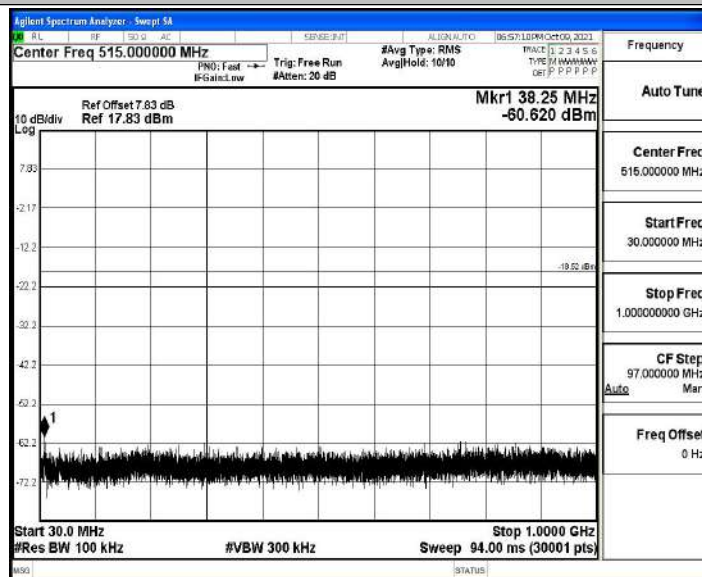
2DH5_Ant1_2402_1000~26500



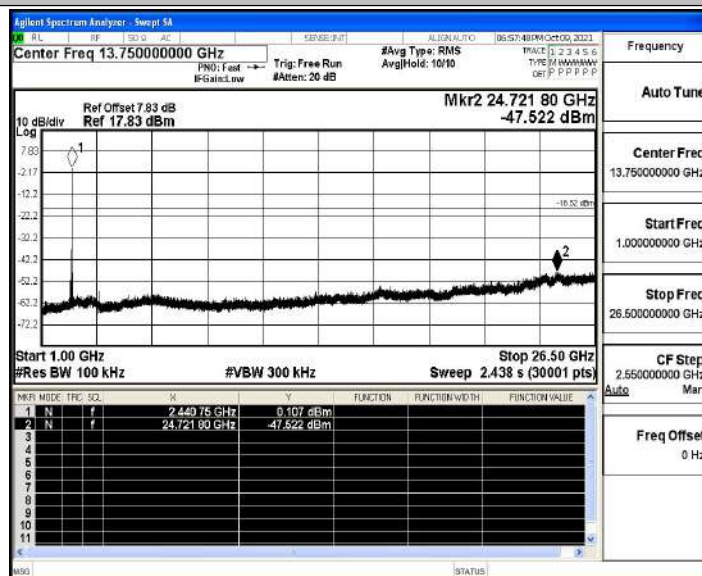
2DH5_Ant1_2441_0~Reference



2DH5_Ant1_2441_30~1000

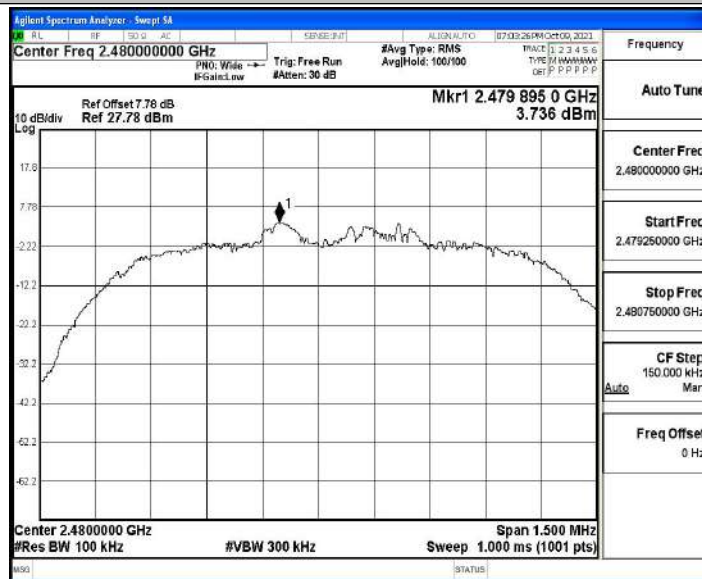


2DH5_Ant1_2441_1000~26500

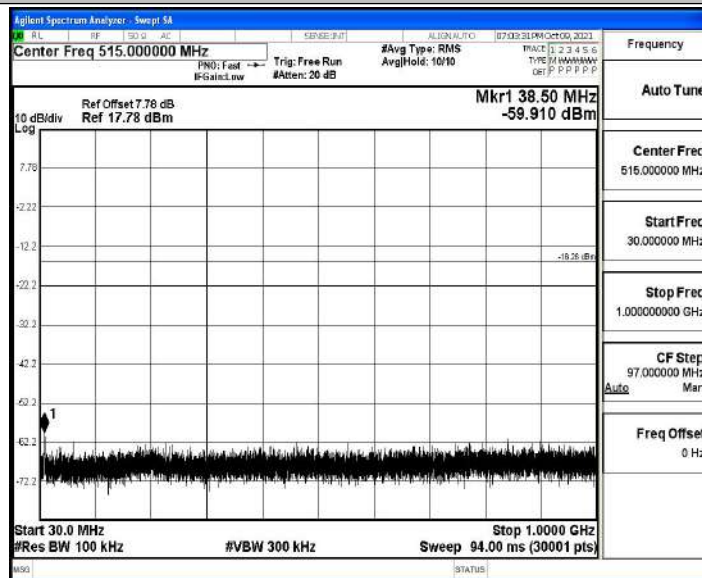




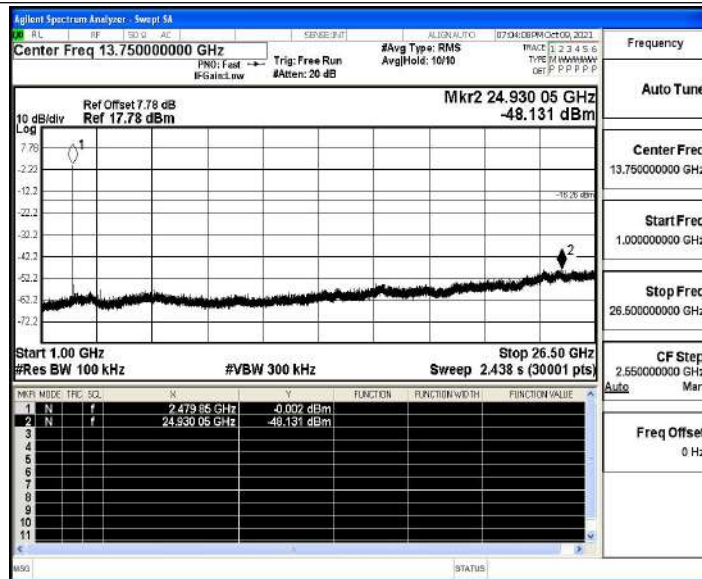
2DH5_Ant1_2480_0~Reference



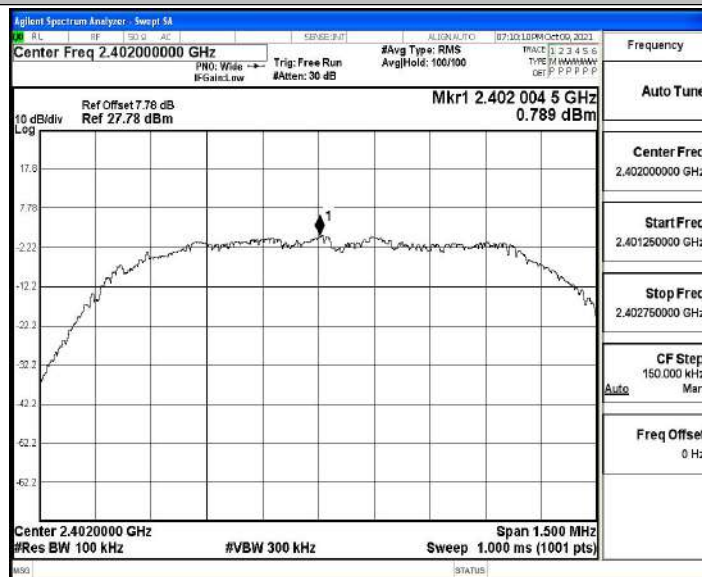
2DH5_Ant1_2480_30~1000



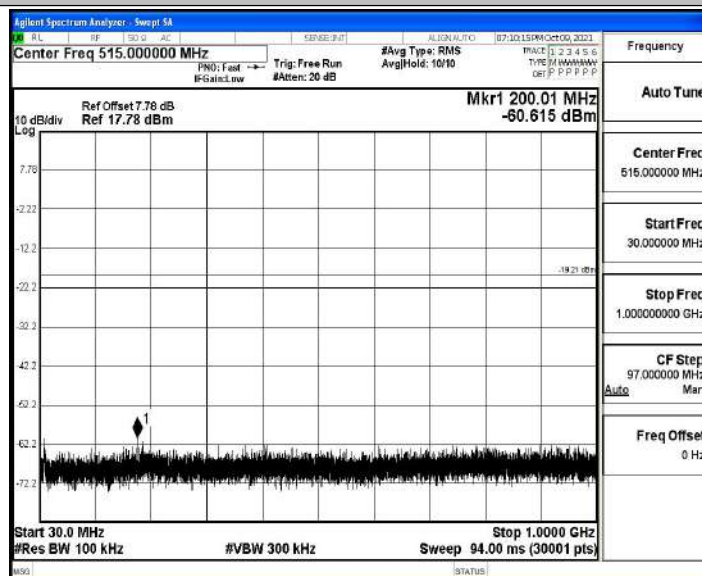
2DH5_Ant1_2480_1000~26500



3DH5_Ant1_2402_0~Reference

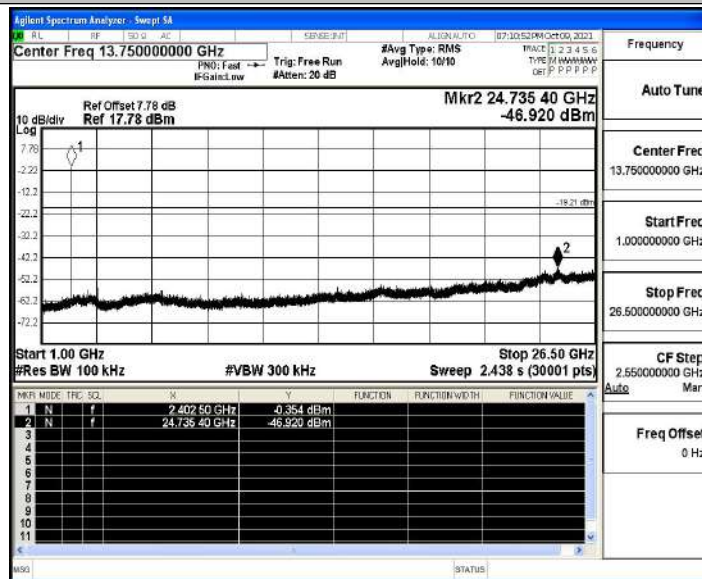


3DH5_Ant1_2402_30~1000

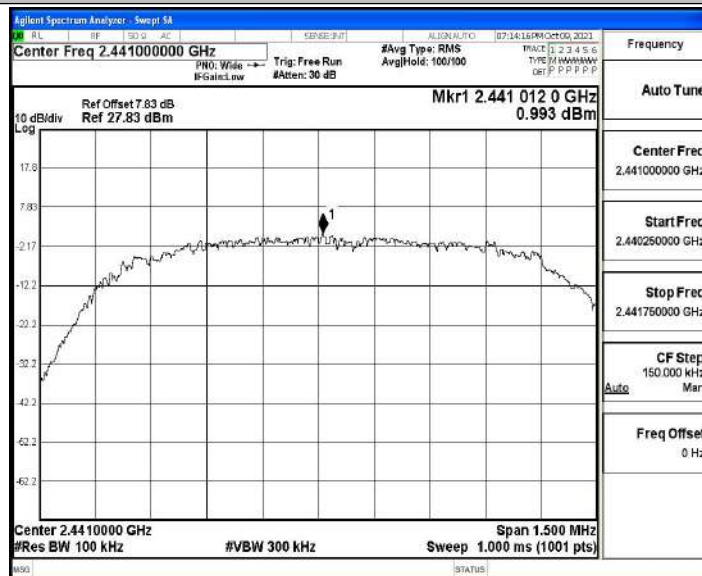




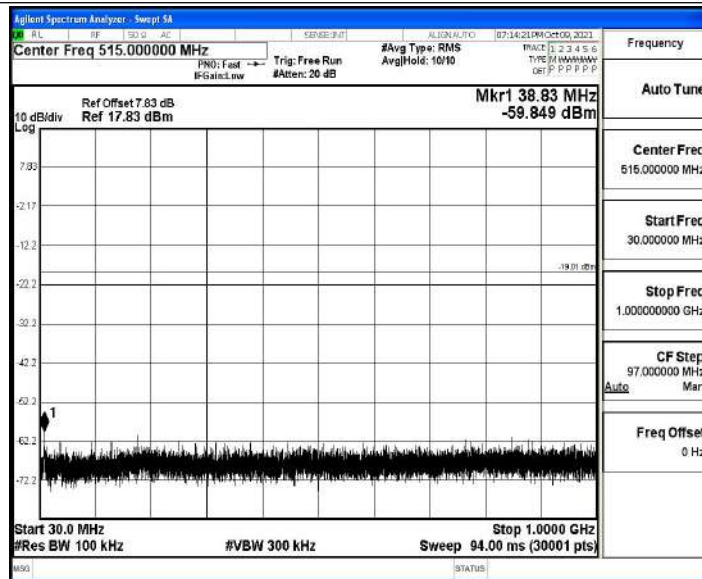
3DH5_Ant1_2402_1000~26500



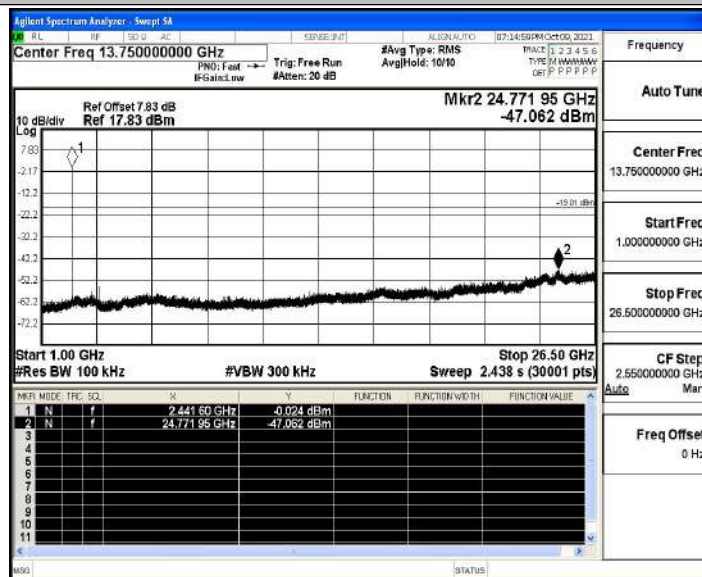
3DH5_Ant1_2441_0~Reference



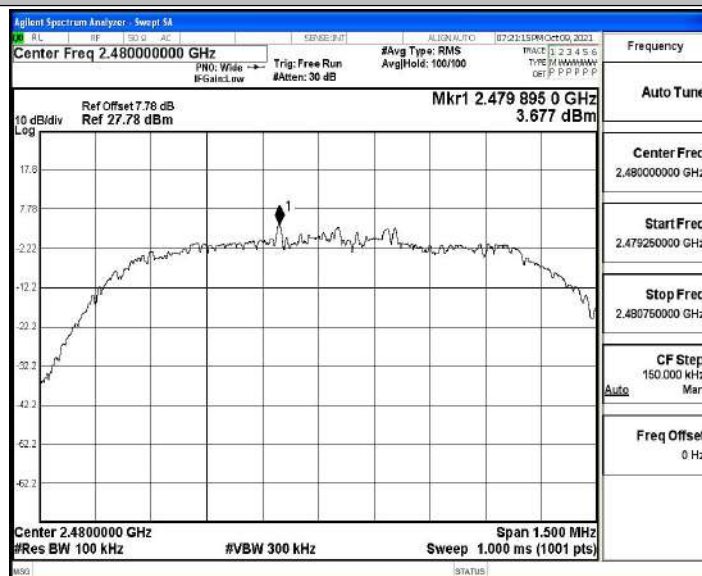
3DH5_Ant1_2441_30~1000



3DH5_Ant1_2441_1000~26500

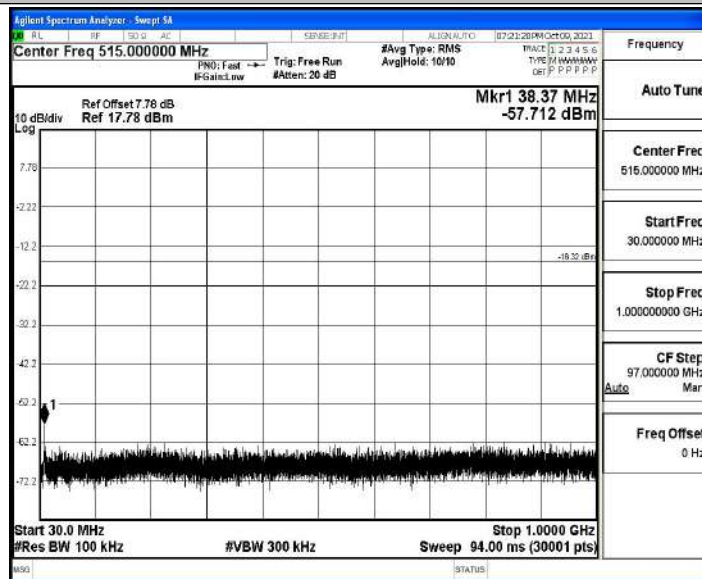


3DH5_Ant1_2480_0~Reference

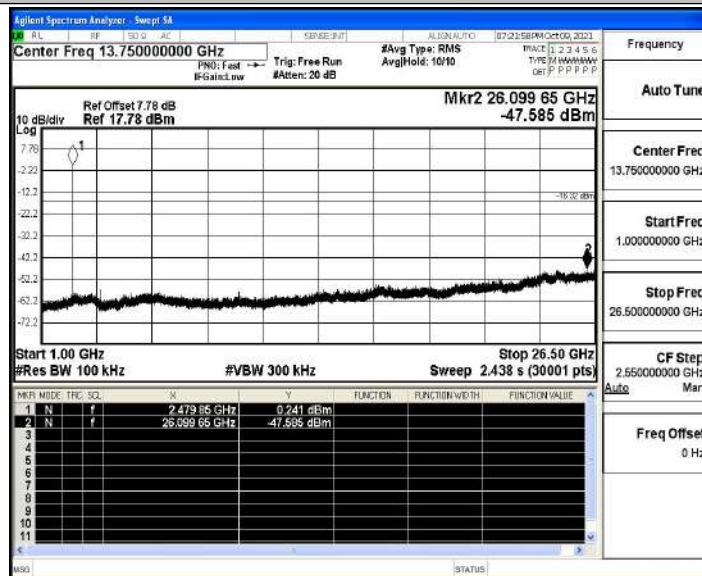




3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000~26500





A.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	-48.86	≤-41.20	46.34	≤54	PASS
				AV	2383.475	-48.35	≤-41.20	46.85	≤54	PASS
				AV	2390.000	-48.44	≤-41.20	46.76	≤54	PASS
				Peak	2310.000	-40.77	≤-21.20	54.43	≤74	PASS
				Peak	2349.875	-37.61	≤-21.20	57.59	≤74	PASS
				Peak	2390.000	-41.04	≤-21.20	54.16	≤74	PASS
		High	2480	AV	2483.500	-46.94	≤-41.20	48.26	≤54	PASS
				AV	2483.520	-46.93	≤-41.20	48.27	≤54	PASS
				AV	2500.000	-47.94	≤-41.20	47.26	≤54	PASS
				Peak	2483.500	-30.36	≤-21.20	64.84	≤74	PASS
				Peak	2484.000	-30.33	≤-21.20	64.87	≤74	PASS
				Peak	2500.000	-40.47	≤-21.20	54.73	≤74	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-49.05	≤-41.20	46.15	≤54	PASS
				AV	2383.580	-48.28	≤-41.20	46.92	≤54	PASS
				AV	2390.000	-48.49	≤-41.20	46.71	≤54	PASS
				Peak	2310.000	-40.87	≤-21.20	54.33	≤74	PASS
				Peak	2372.765	-37.9	≤-21.20	57.30	≤74	PASS
				Peak	2390.000	-40.51	≤-21.20	54.69	≤74	PASS
		High	2480	AV	2483.500	-46.86	≤-41.20	48.34	≤54	PASS
				AV	2499.360	-46.12	≤-41.20	49.08	≤54	PASS
				AV	2500.000	-47.84	≤-41.20	47.36	≤54	PASS
				Peak	2483.500	-31.93	≤-21.20	63.27	≤74	PASS
				Peak	2484.320	-30.81	≤-21.20	64.39	≤74	PASS
				Peak	2500.000	-39.71	≤-21.20	55.49	≤74	PASS
3DH5	Ant1	Low	2402	AV	2310.000	-49.01	≤-41.20	46.19	≤54	PASS
				AV	2383.055	-48.4	≤-41.20	46.80	≤54	PASS
				AV	2390.000	-48.54	≤-41.20	46.66	≤54	PASS
				Peak	2310.000	-41.54	≤-21.20	53.66	≤74	PASS
				Peak	2384.525	-38.13	≤-21.20	57.07	≤74	PASS
				Peak	2390.000	-39.76	≤-21.20	55.44	≤74	PASS
		High	2480	AV	2483.500	-46.88	≤-41.20	48.32	≤54	PASS
				AV	2483.520	-46.88	≤-41.20	48.32	≤54	PASS
				AV	2500.000	-47.97	≤-41.20	47.23	≤54	PASS
				Peak	2483.500	-40.04	≤-21.20	55.16	≤74	PASS
				Peak	2484.000	-34.54	≤-21.20	60.66	≤74	PASS
				Peak	2500.000	-40.22	≤-21.20	54.98	≤74	PASS



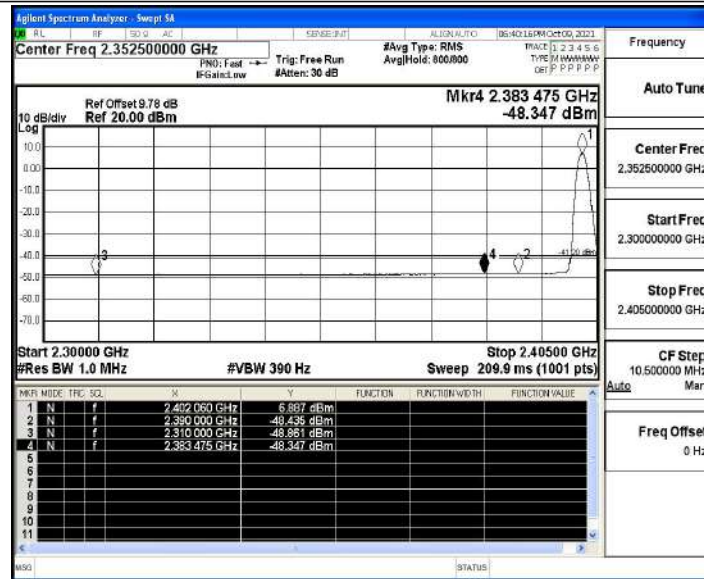
Note:

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.

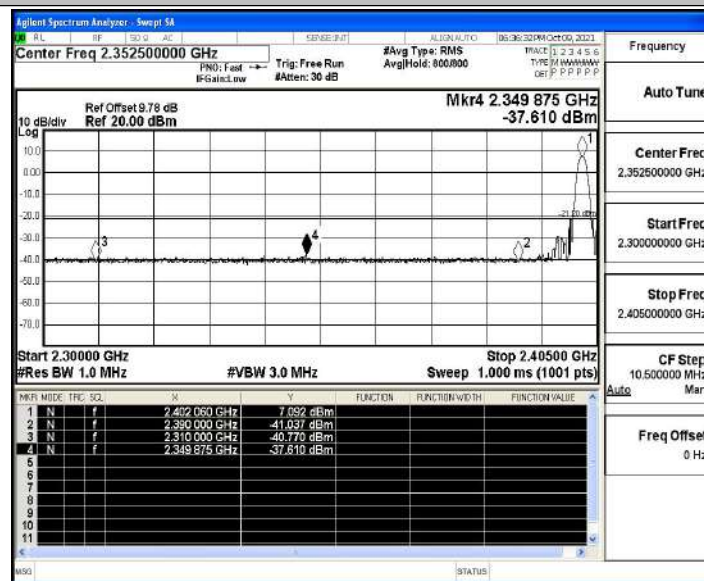


Test Graphs

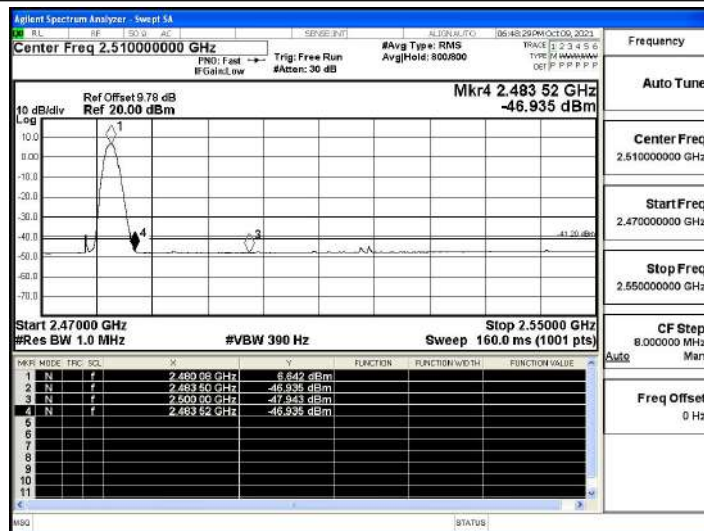
DH5_Ant1_Low_2402_AV



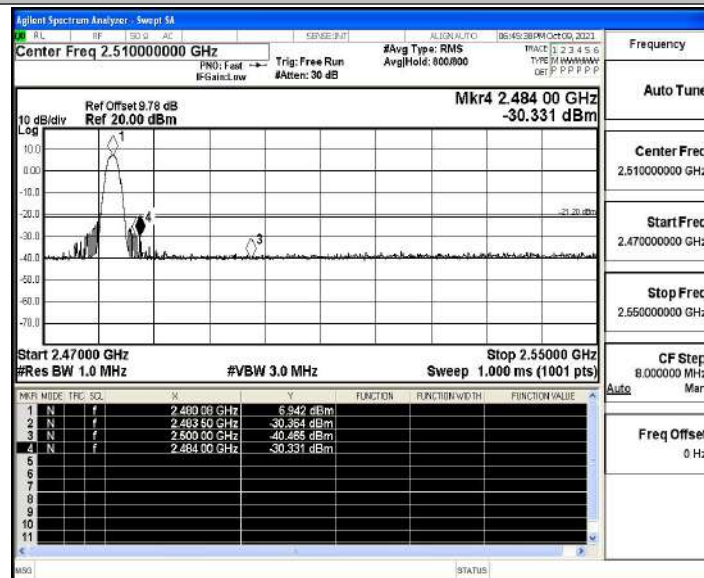
DH5_Ant1_Low_2402_Peak



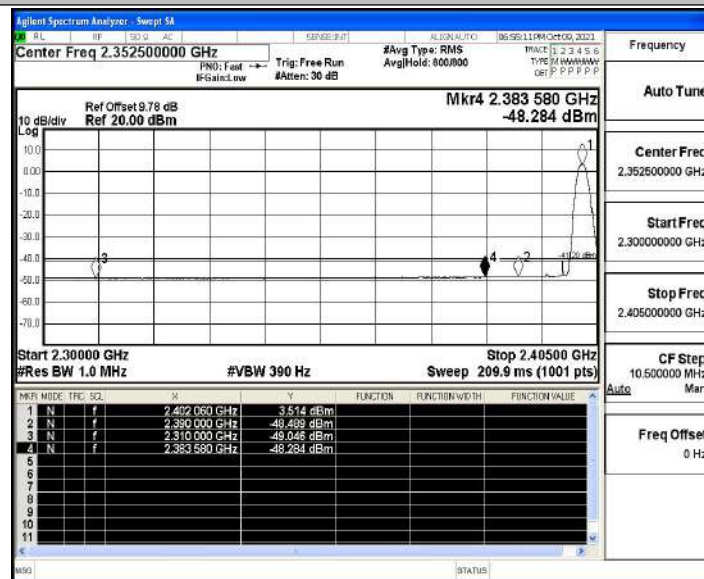
DH5_Ant1_High_2480_AV



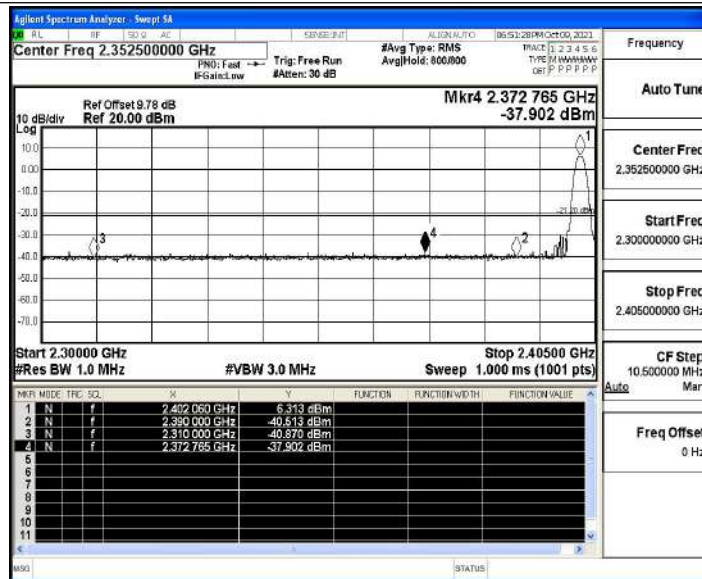
DH5_Ant1_High_2480_Peak



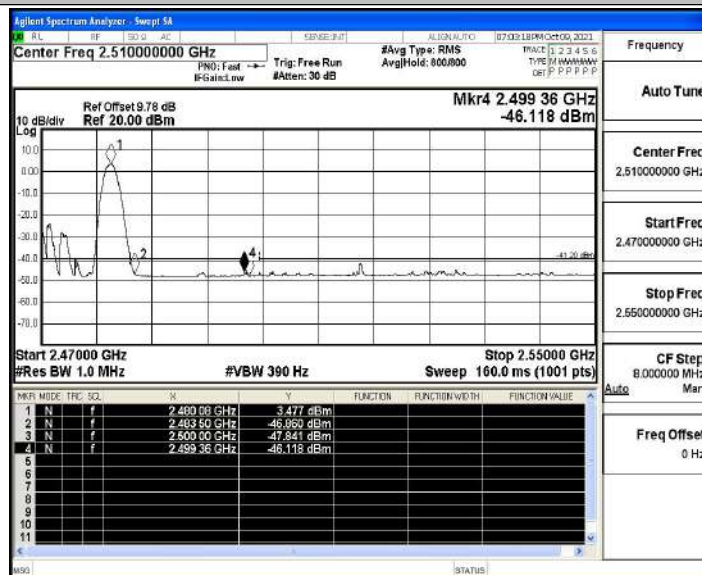
2DH5_Ant1_Low_2402_AV



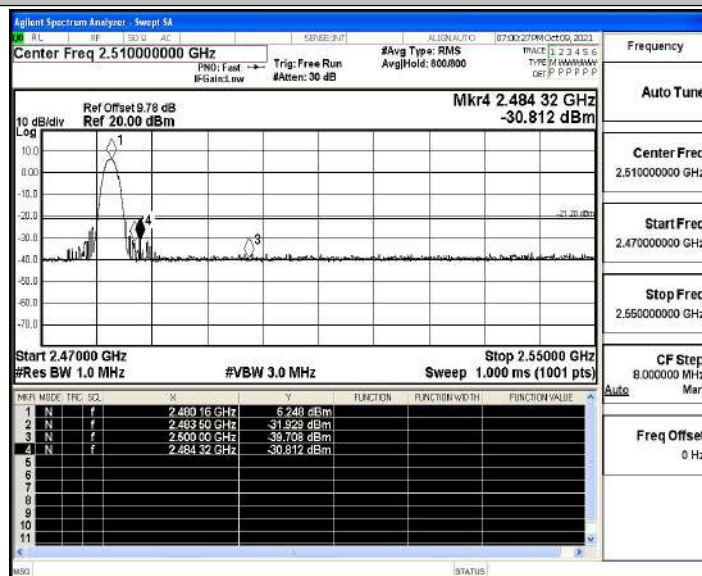
2DH5_Ant1_Low_2402_Peak



2DH5_Ant1_High_2480_AV

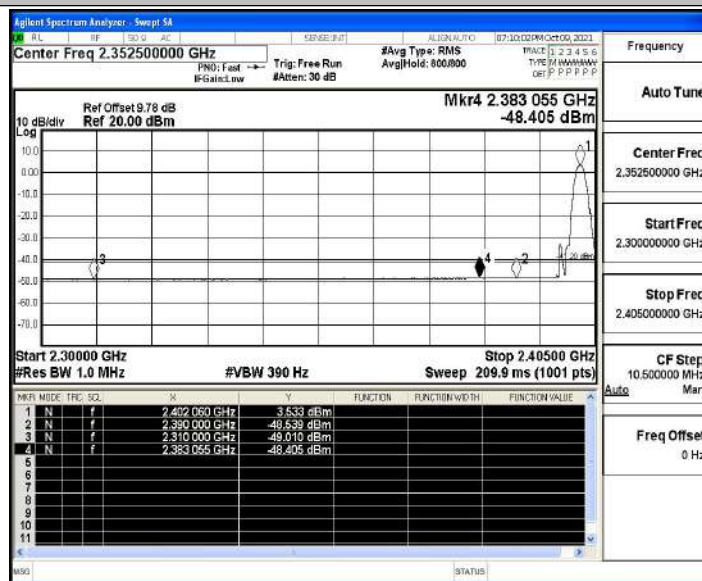


2DH5_Ant1_High_2480_Peak

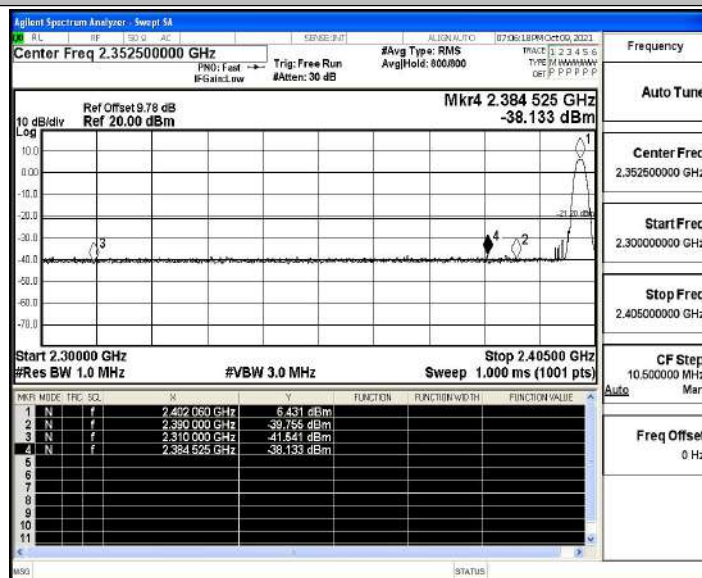




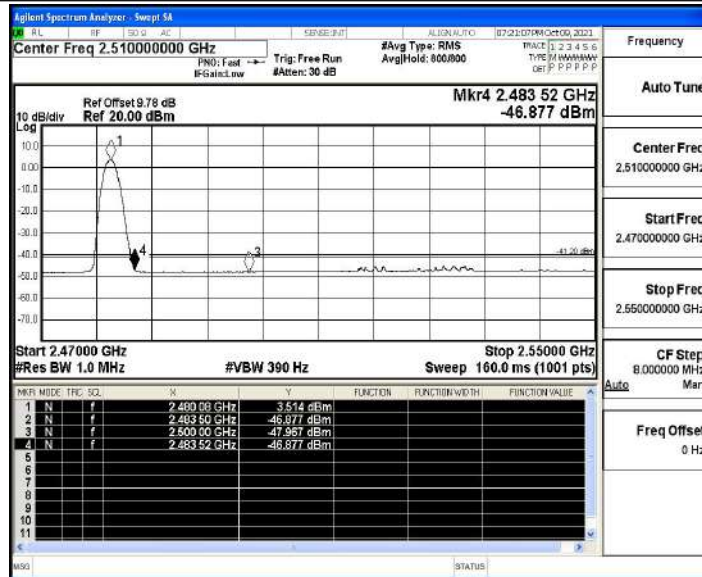
3DH5_Ant1_Low_2402_AV



3DH5_Ant1_Low_2402_Peak



3DH5_Ant1_High_2480_AV



3DH5_Ant1_High_2480_Peak

