



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: OF2021 Control Center

Test Model: UR200878-CB

Environmental Conditions

Temperature:	21.1° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Carl Fu
Supervised by:	Li Huan

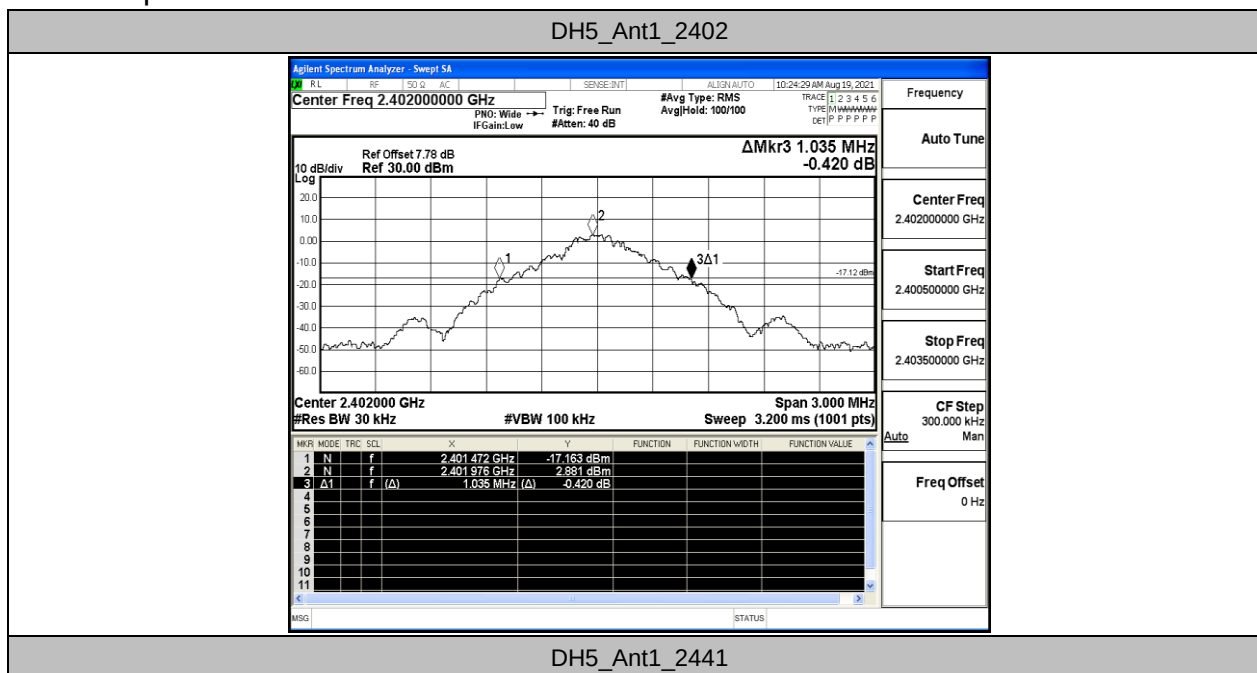


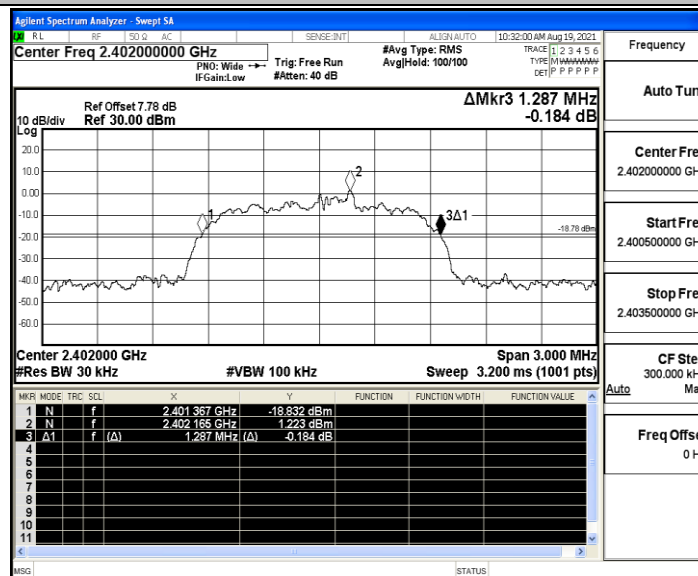
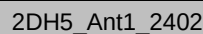
A.1 20dB Emission Bandwidth

Test Result

TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	1.035	2401.472	2402.507	---	PASS
		2441	1.041	2440.463	2441.504	---	PASS
		2480	1.023	2479.469	2480.492	---	PASS
2DH5	Ant1	2402	1.287	2401.367	2402.654	---	PASS
		2441	1.356	2440.325	2441.681	---	PASS
		2480	1.362	2479.322	2480.684	---	PASS
3DH5	Ant1	2402	1.305	2401.346	2402.651	---	PASS
		2441	1.311	2440.346	2441.657	---	PASS
		2480	1.308	2479.346	2480.654	---	PASS

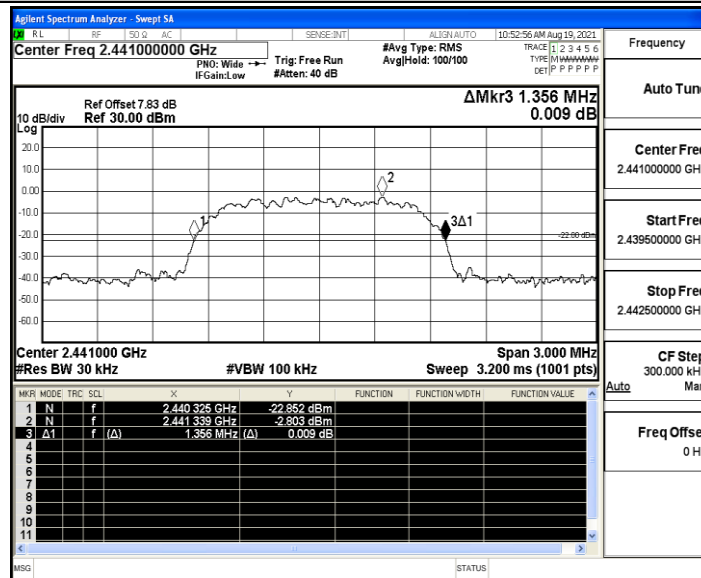
Test Graphs



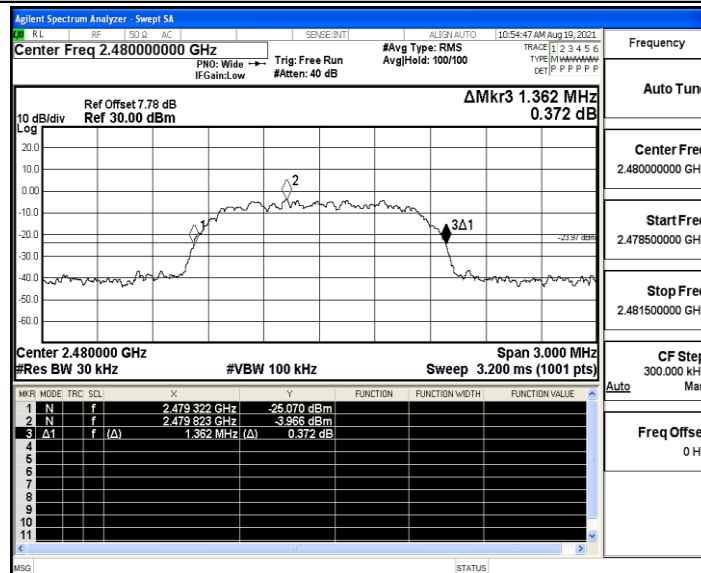




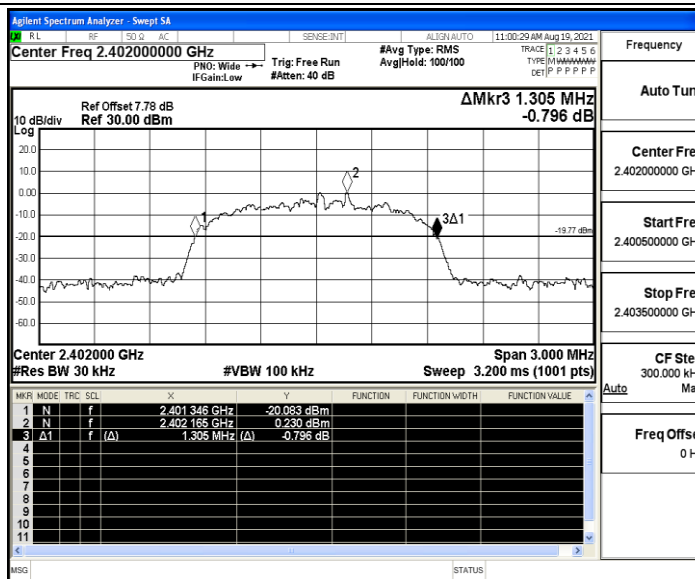
2DH5_Ant1_2441



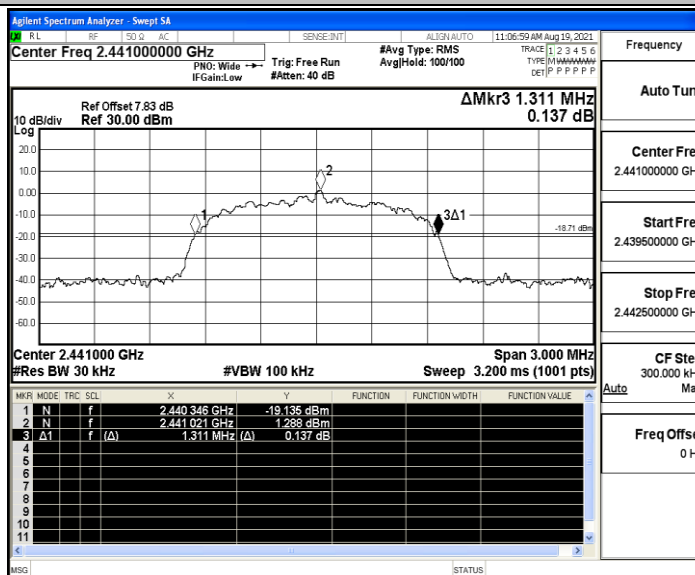
2DH5_Ant1_2480



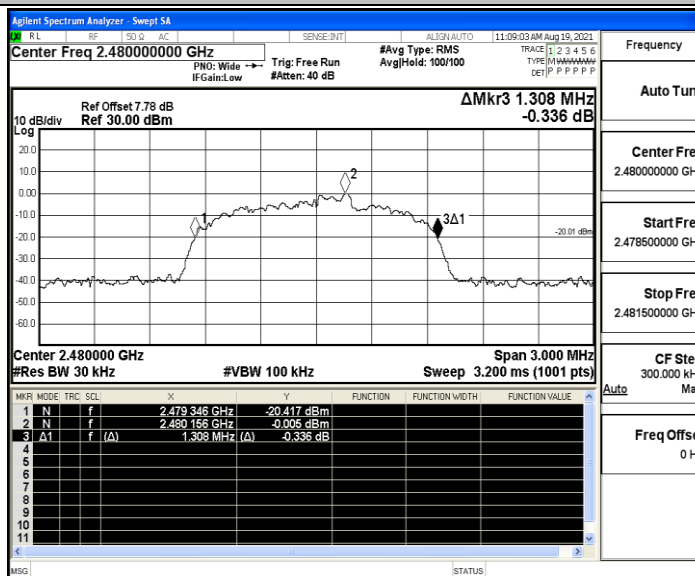
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



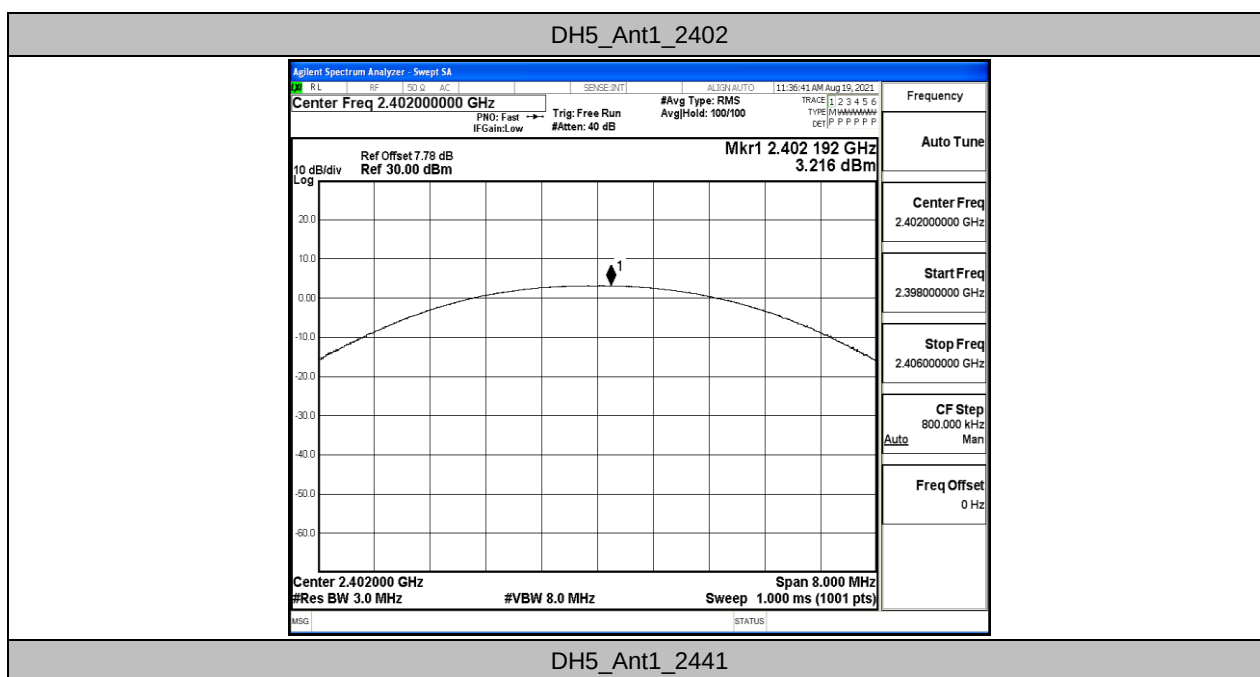


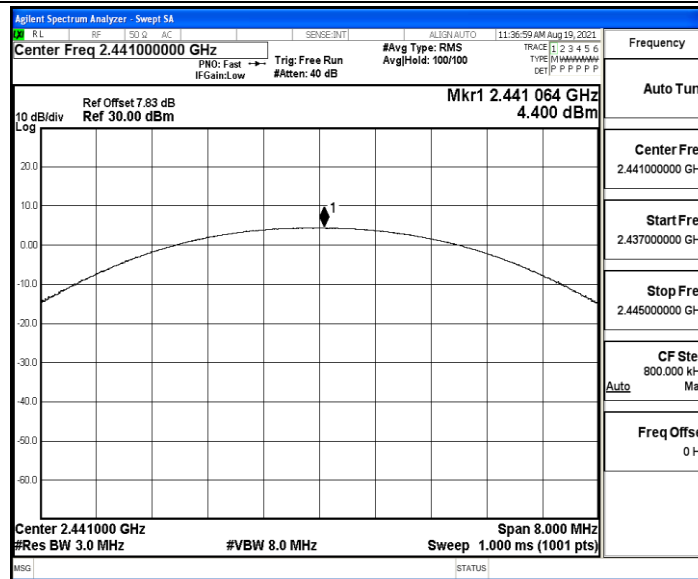
A.2 Maximum conducted output power

Test Result

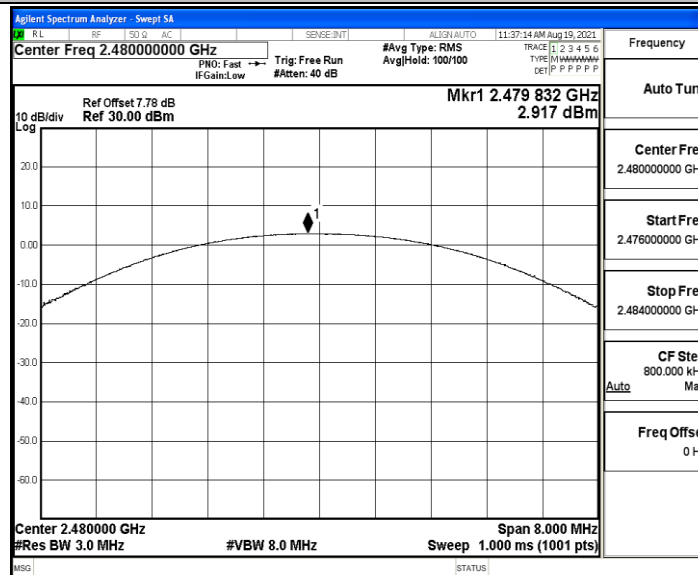
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	3.22	≤20.97	PASS
		2441	4.4	≤20.97	PASS
		2480	2.92	≤20.97	PASS
2DH5	Ant1	2402	2.25	≤20.97	PASS
		2441	3.52	≤20.97	PASS
		2480	2.01	≤20.97	PASS
3DH5	Ant1	2402	2.42	≤20.97	PASS
		2441	3.61	≤20.97	PASS
		2480	2.18	≤20.97	PASS

Test Graphs

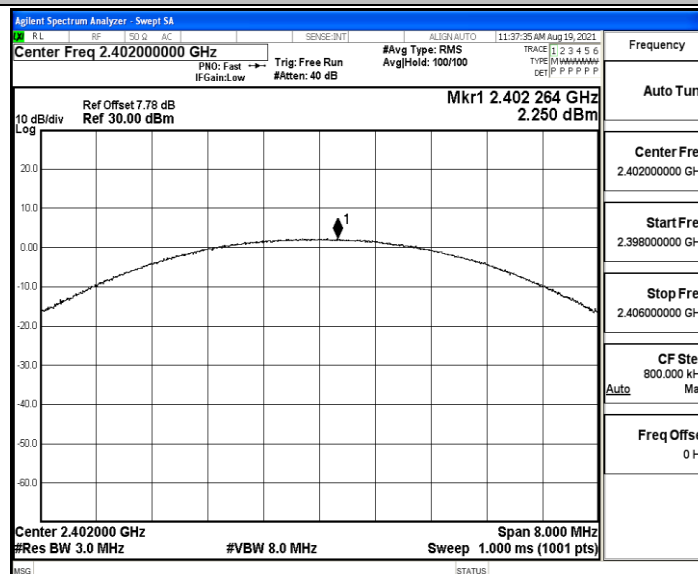




DH5_Ant1_2480

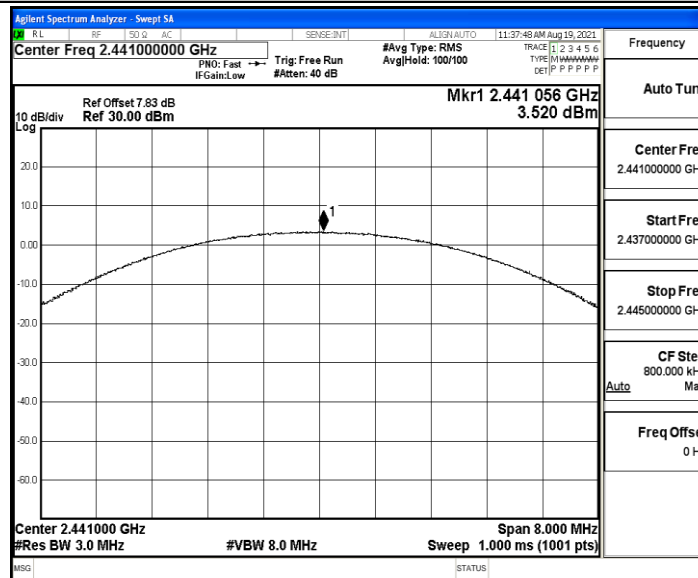


2DH5_Ant1_2402

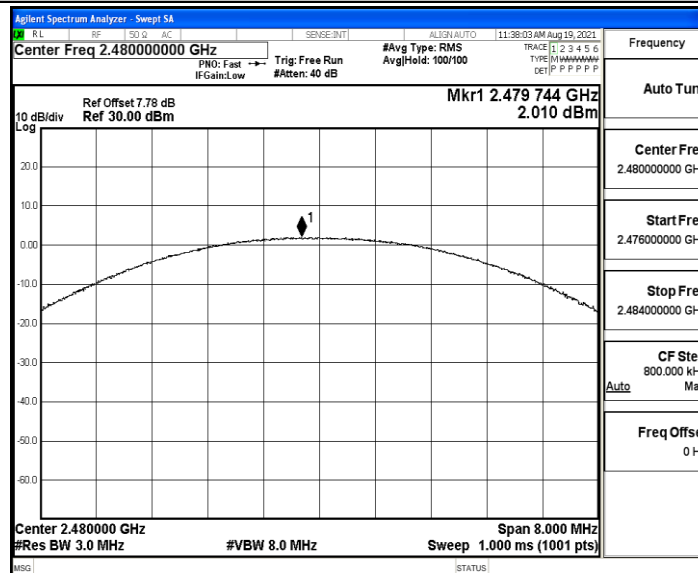




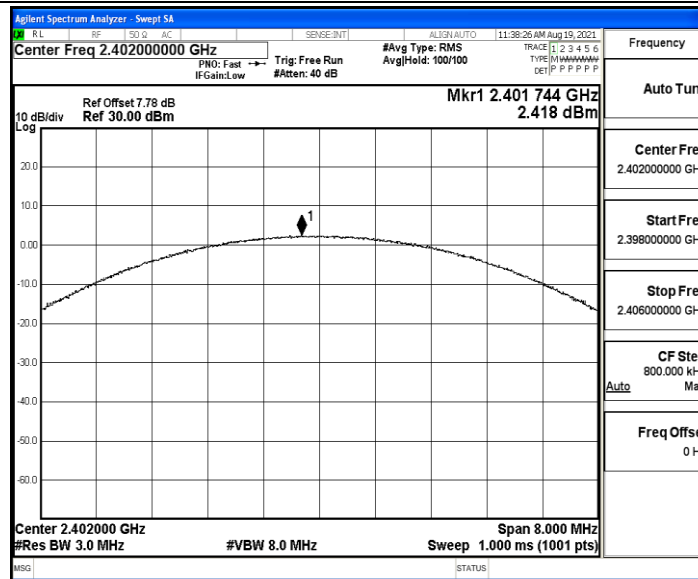
2DH5_Ant1_2441



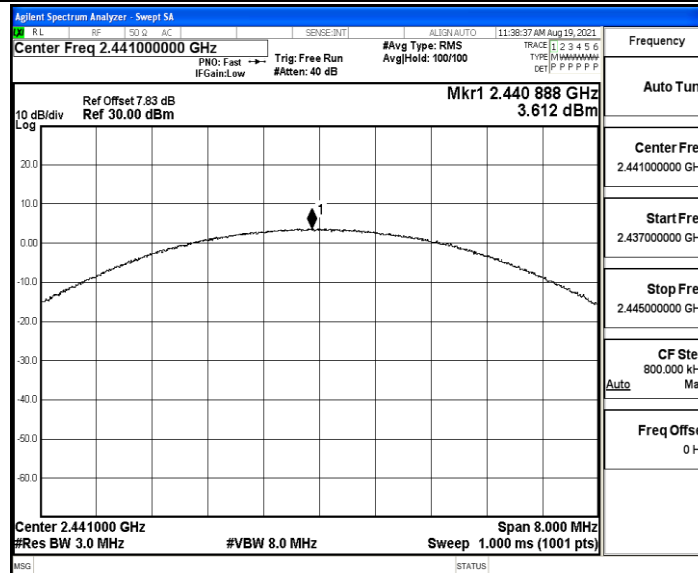
2DH5_Ant1_2480



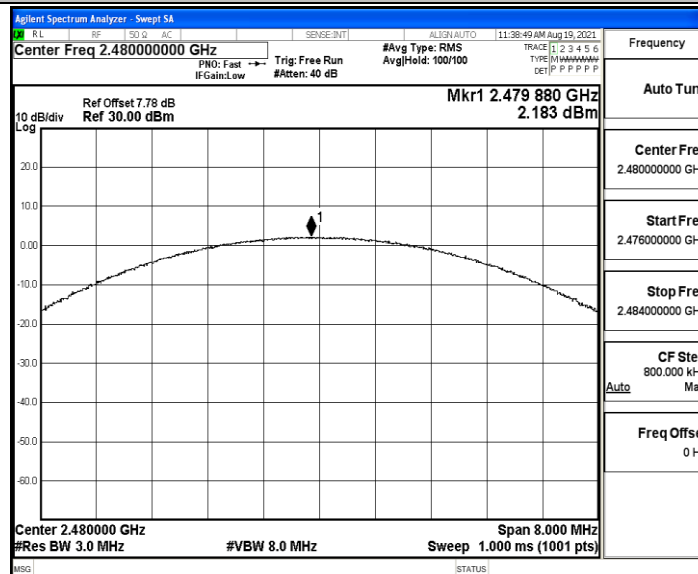
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

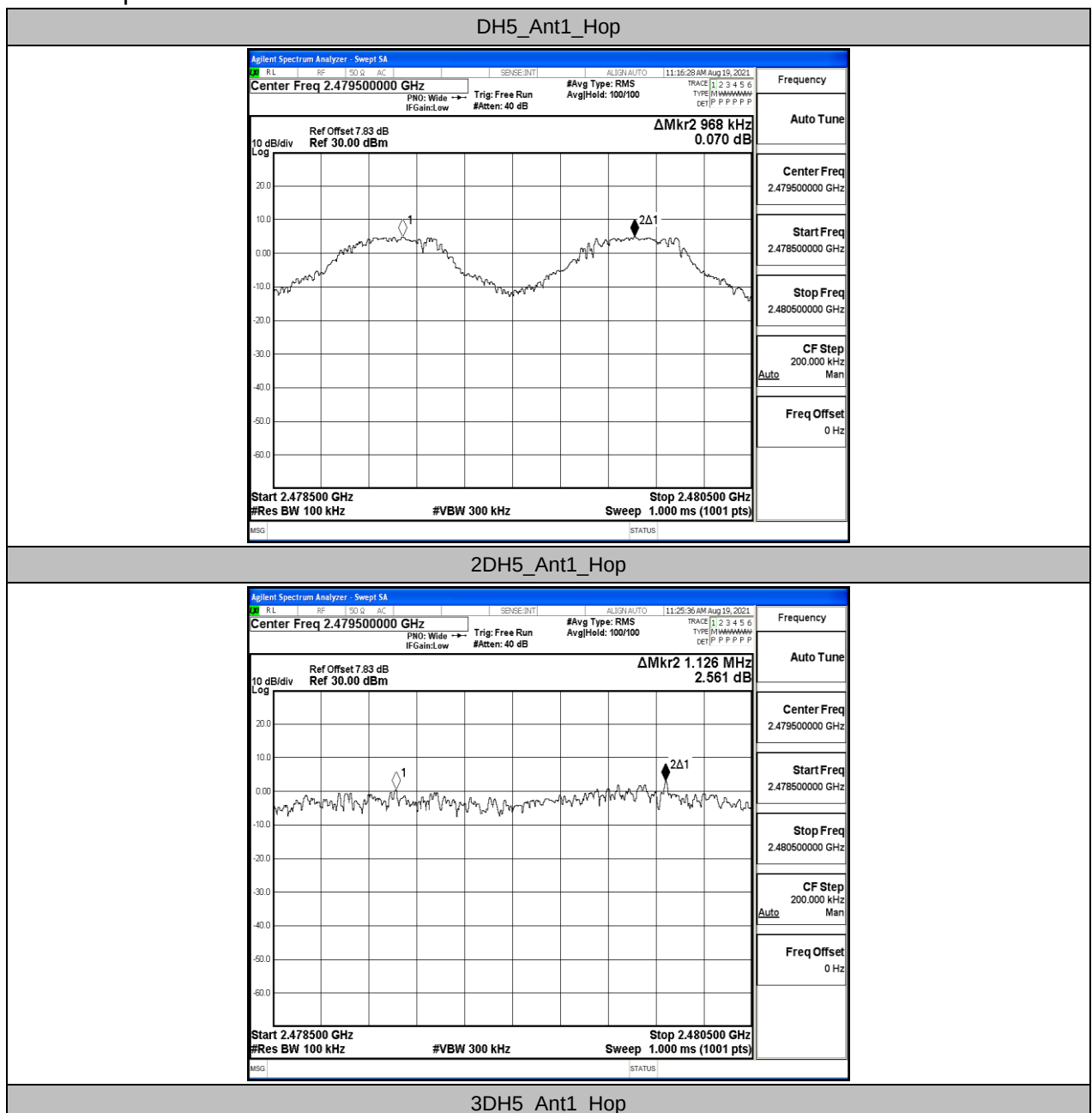


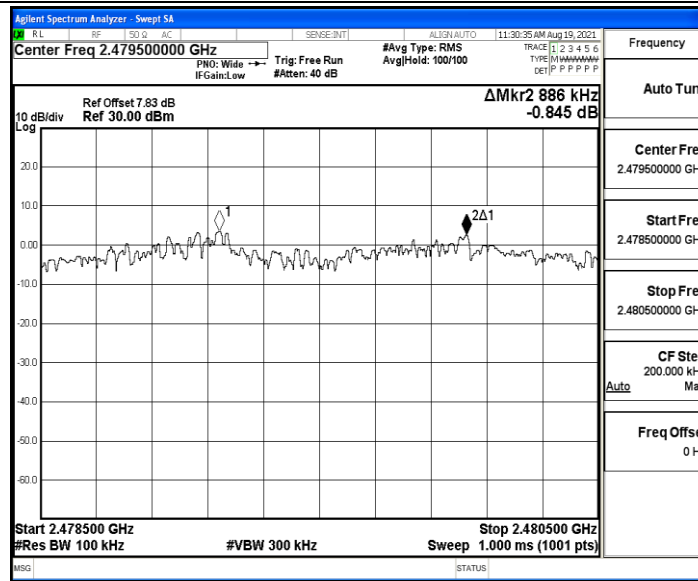
A.3 Carrier frequency separation

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	Hop	0.968	≥0.694	PASS
2DH5	Ant1	Hop	1.126	≥0.908	PASS
3DH5	Ant1	Hop	0.886	≥0.874	PASS

Test Graphs





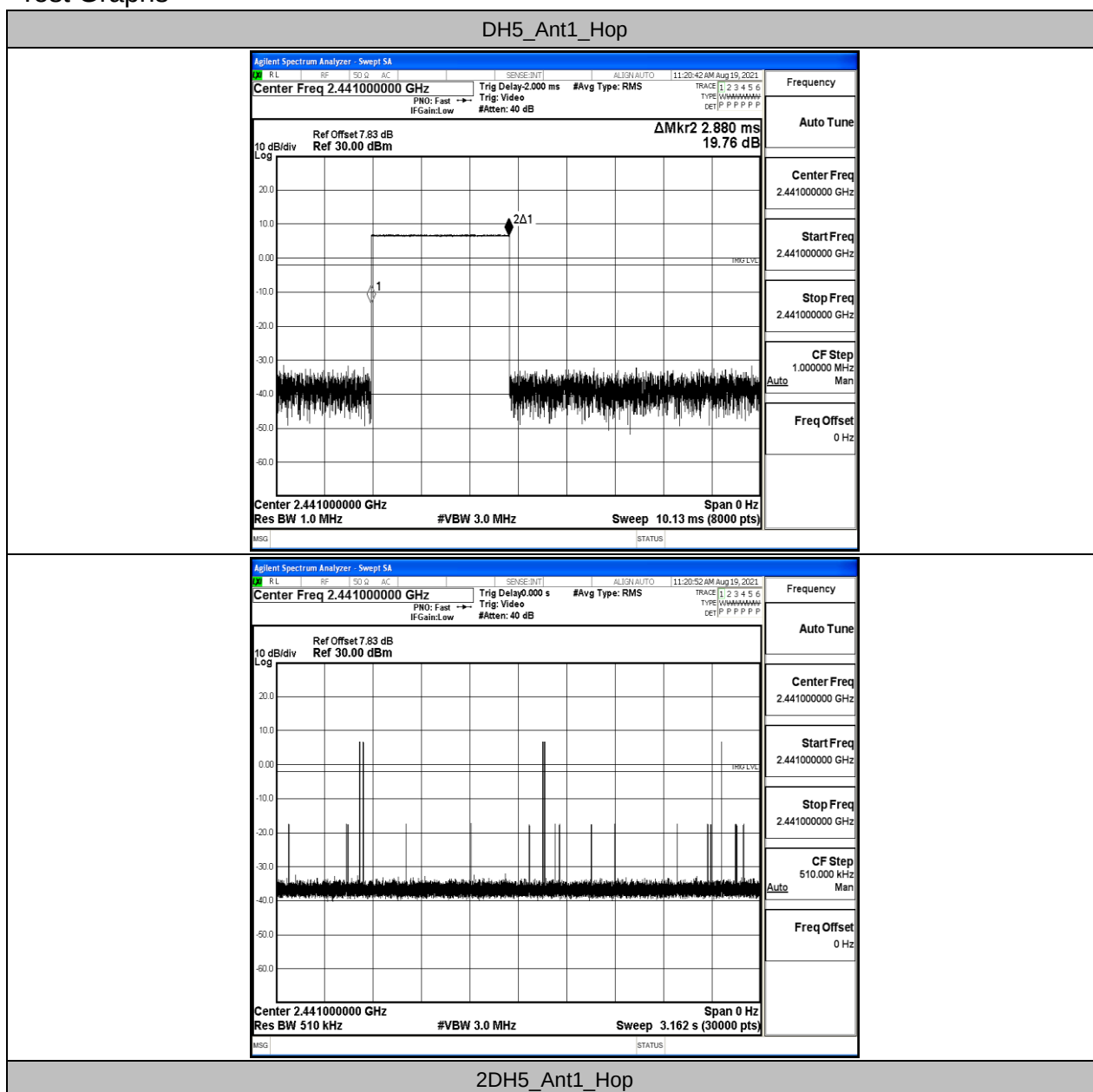


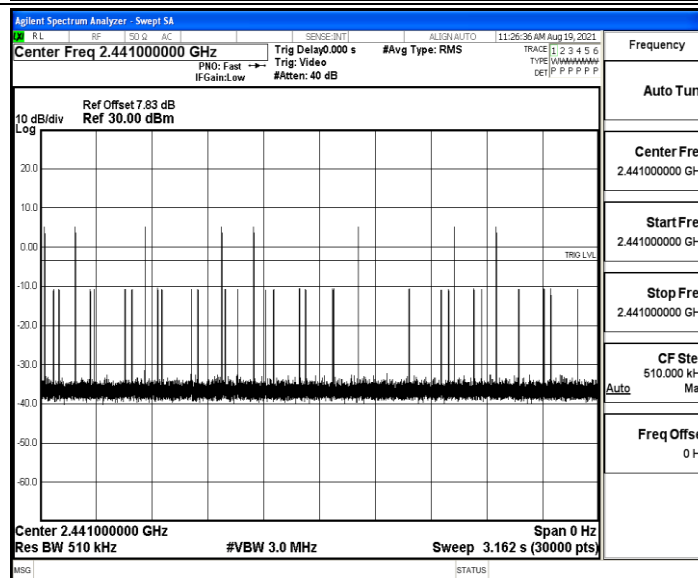
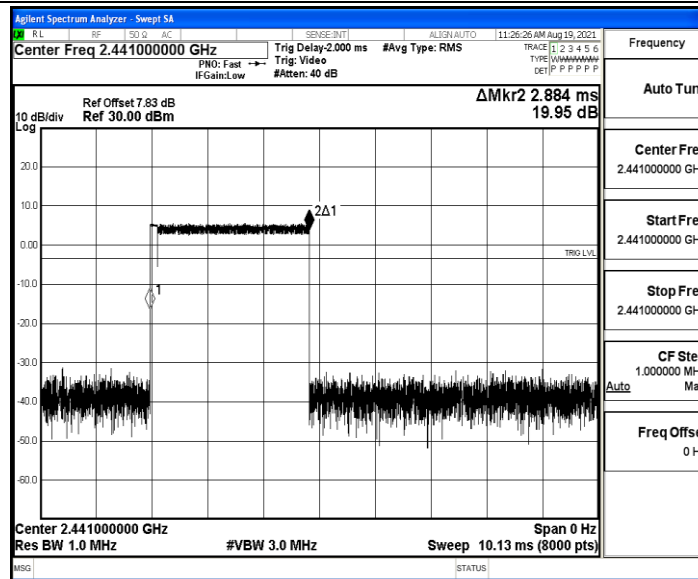
A.4 Time of occupancy

Test Result

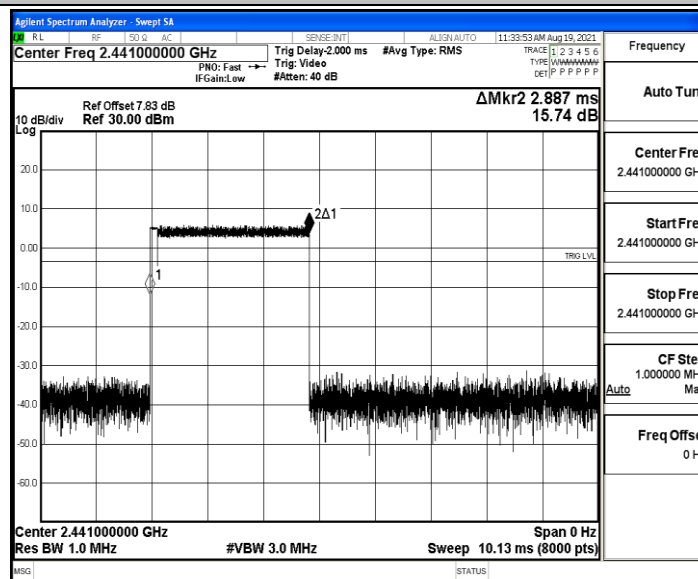
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.88	60	0.173	≤0.4	PASS
2DH5	Ant1	Hop	2.88	90	0.26	≤0.4	PASS
3DH5	Ant1	Hop	2.89	100	0.289	≤0.4	PASS

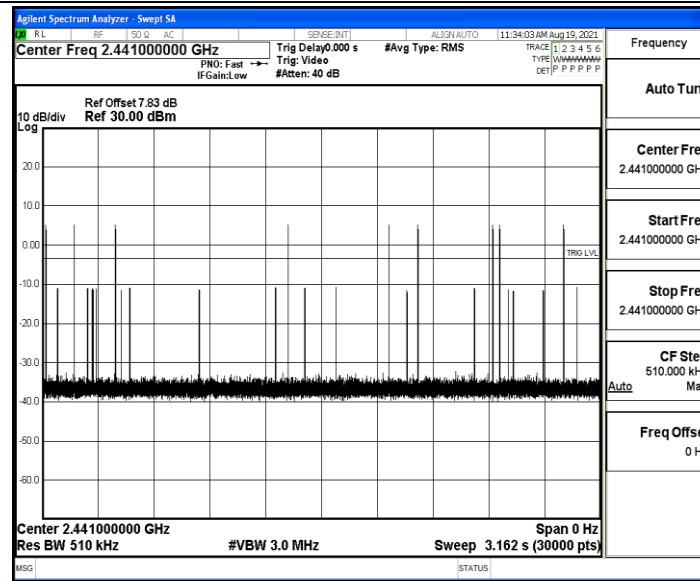
Test Graphs





3DH5_Ant1_Hop







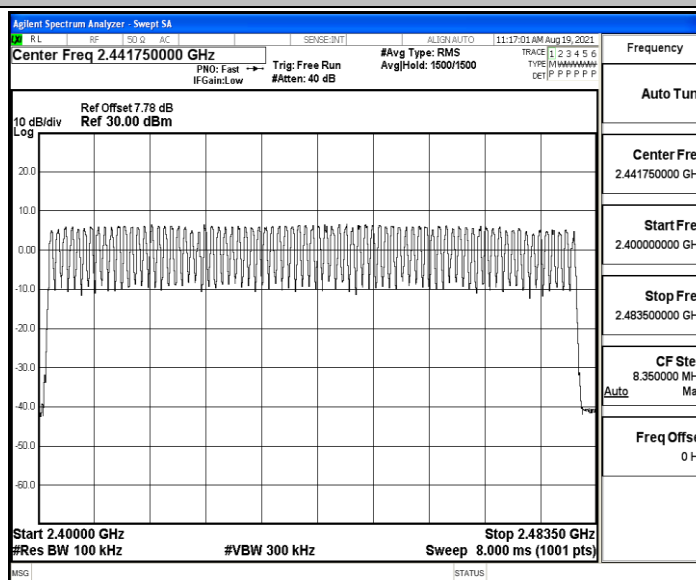
A.5 Number of hopping channels

Test Result

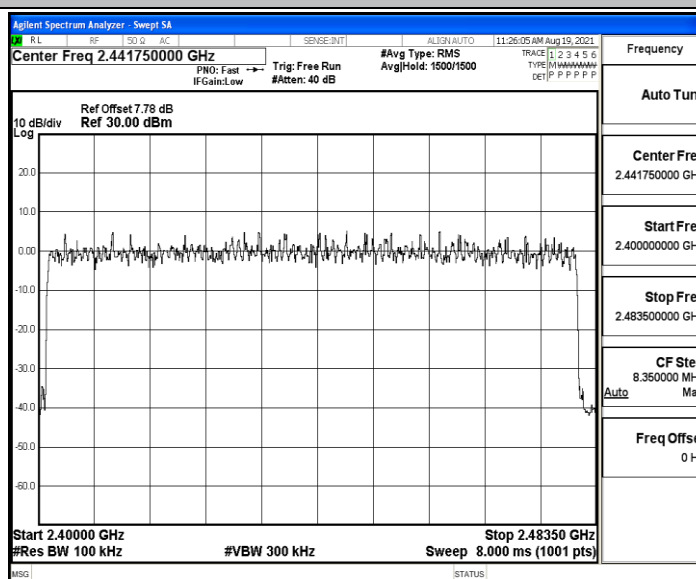
TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

Test Graphs

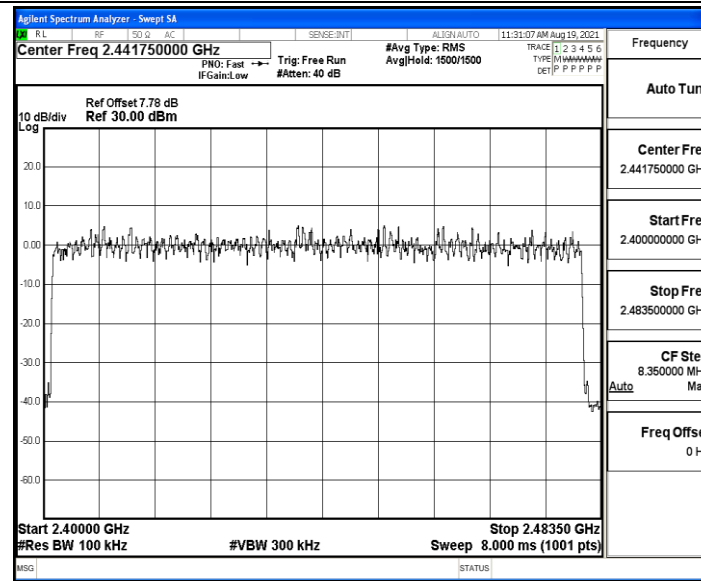
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop



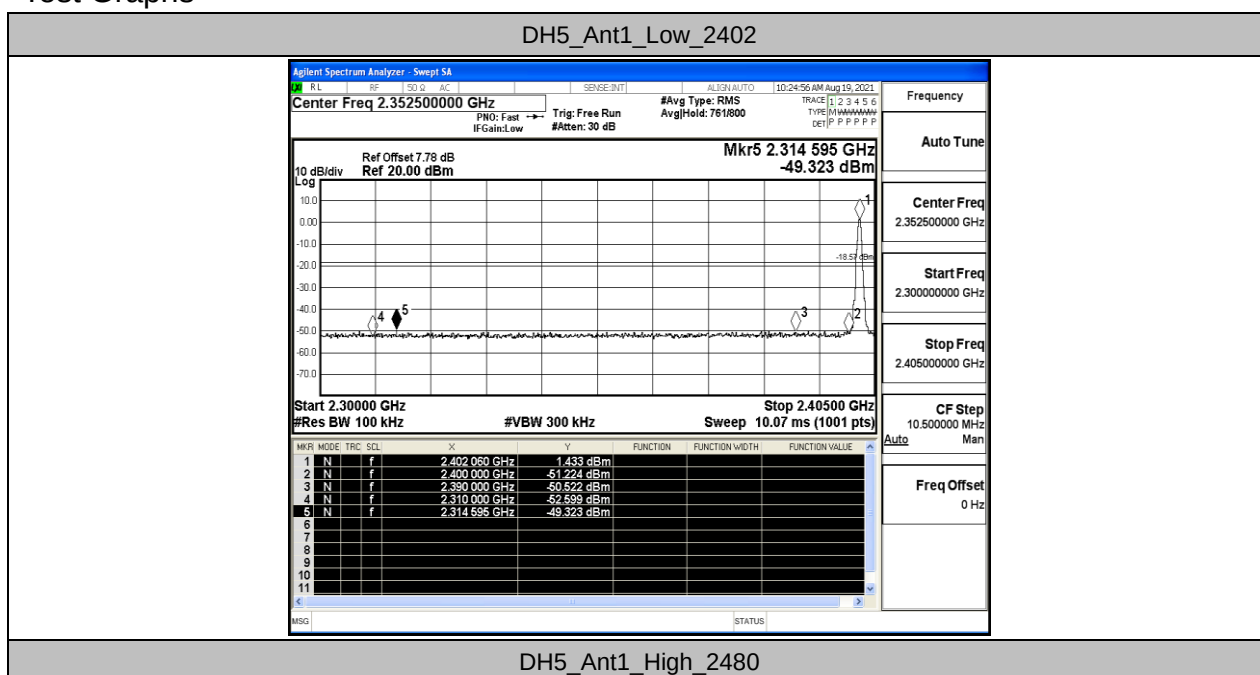


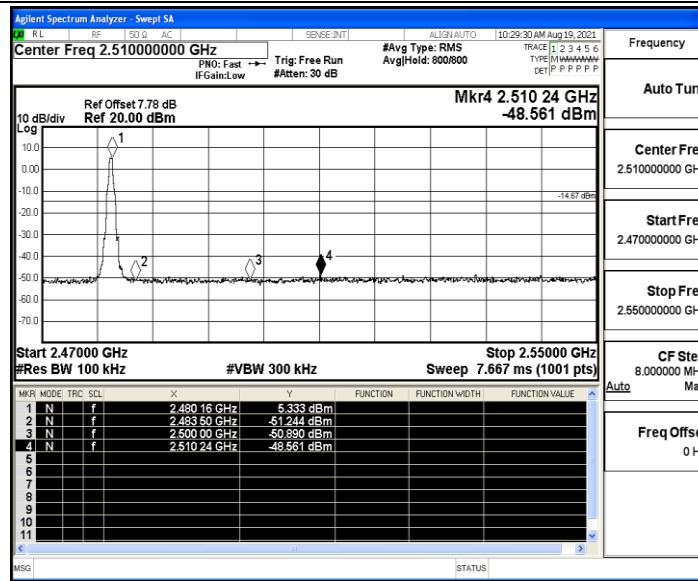
A.6 Band edge measurements

Test Result

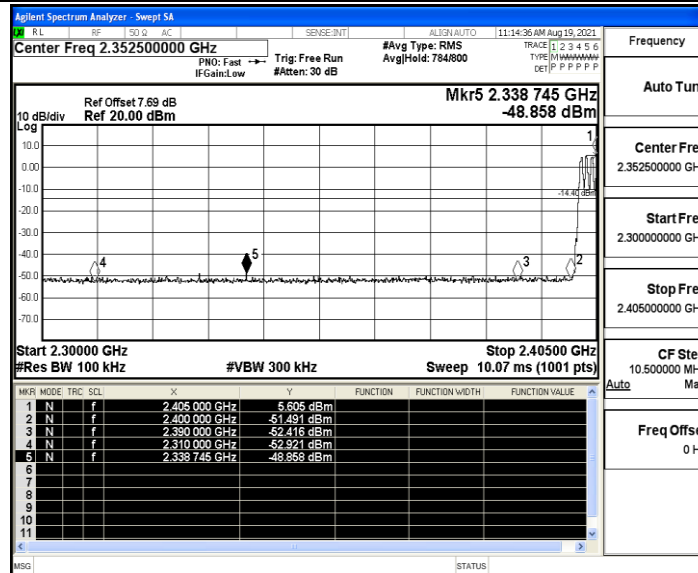
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	1.43	-49.32	≤ -18.57	PASS
		High	2480	5.33	-48.56	≤ -14.67	PASS
		Low	Hop_2402	5.61	-48.86	≤ -14.4	PASS
		High	Hop_2480	5.63	-47.79	≤ -14.37	PASS
2DH5	Ant1	Low	2402	3.63	-49.29	≤ -16.37	PASS
		High	2480	3.84	-48.51	≤ -16.16	PASS
		Low	Hop_2402	1.43	-49.56	≤ -18.58	PASS
		High	Hop_2480	3.30	-48.39	≤ -16.7	PASS
3DH5	Ant1	Low	2402	3.27	-49.3	≤ -16.73	PASS
		High	2480	3.94	-47.99	≤ -16.06	PASS
		Low	Hop_2402	0.74	-49.77	≤ -19.26	PASS
		High	Hop_2480	2.04	-48.73	≤ -17.96	PASS

Test Graphs

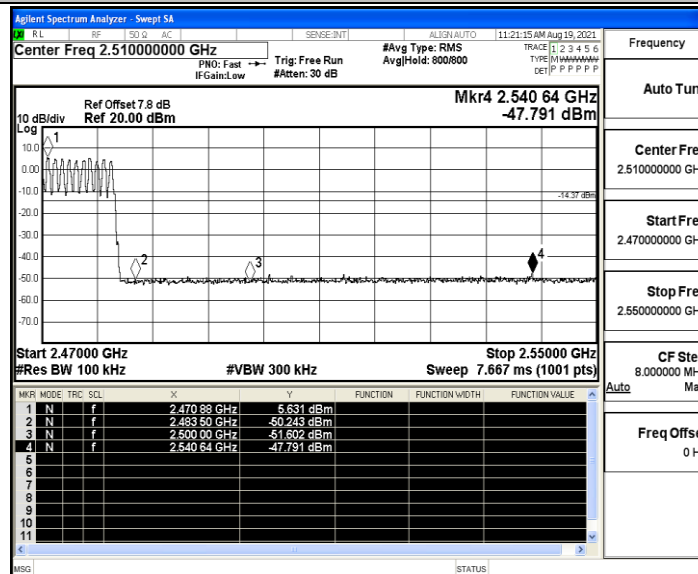




DH5_Ant1_Low_Hop_2402

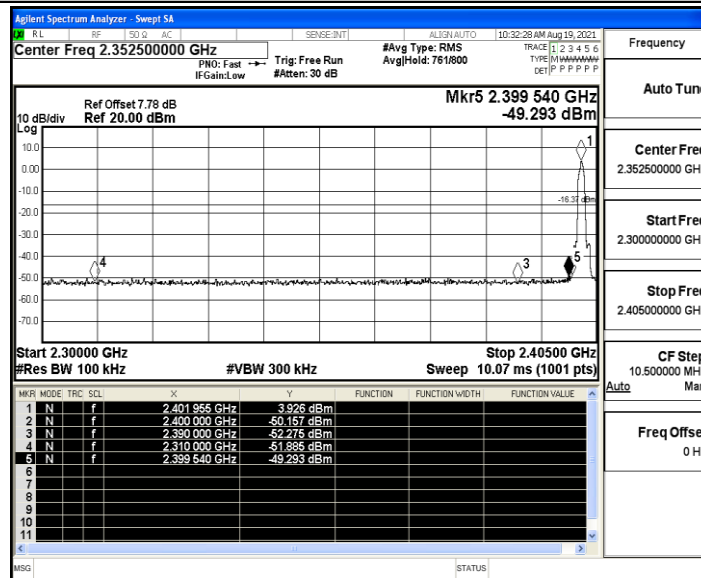


DH5_Ant1_High_Hop_2480

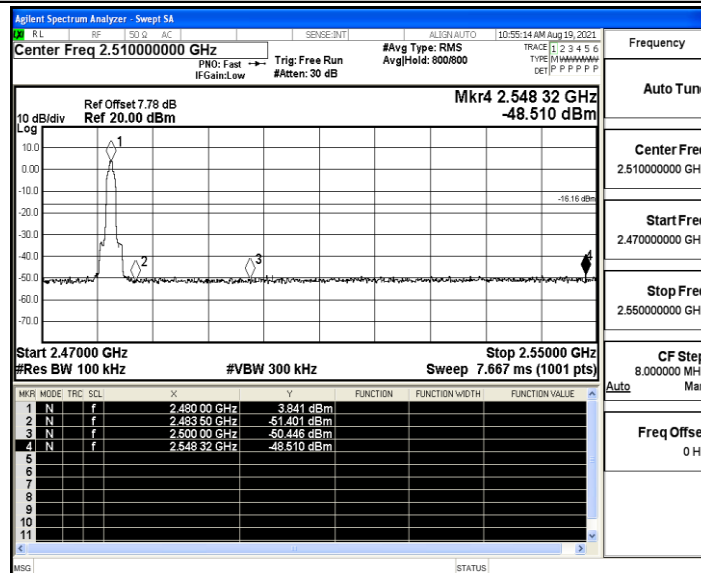




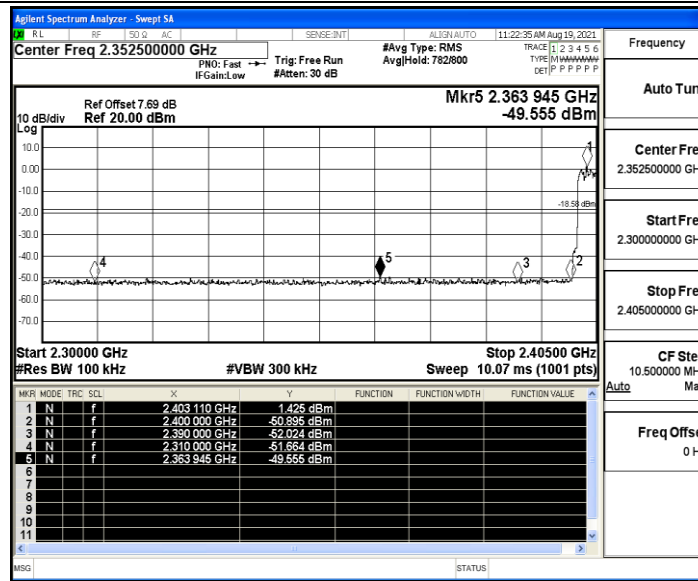
2DH5_Ant1_Low_2402



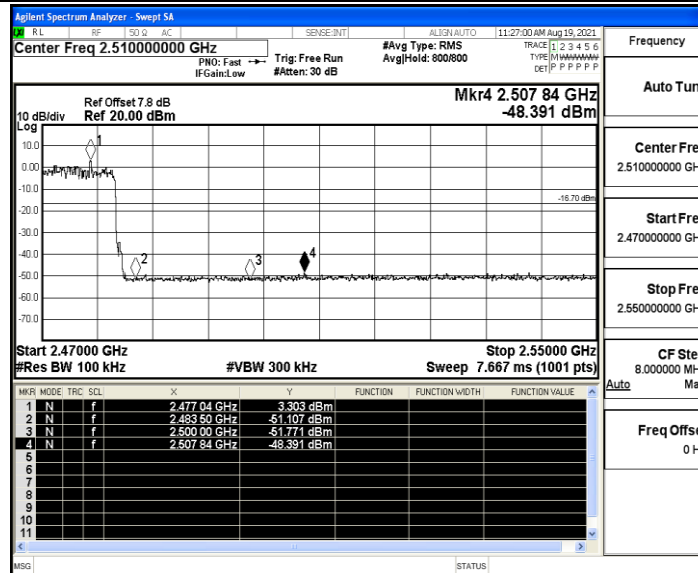
2DH5_Ant1_High_2480



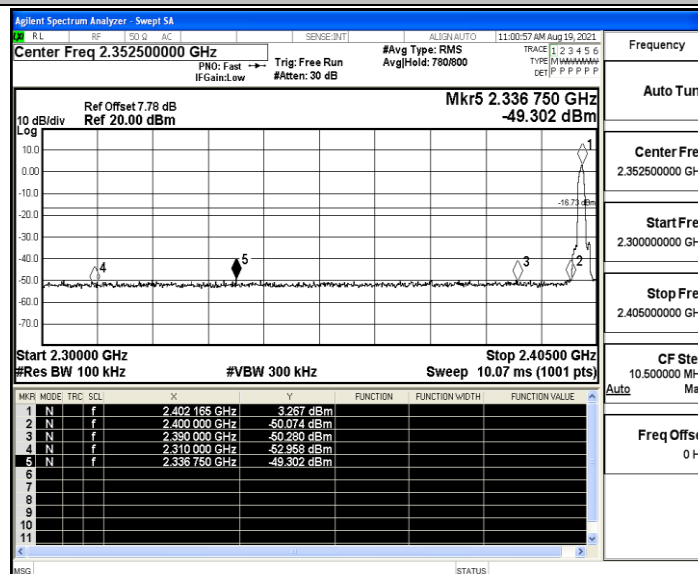
2DH5_Ant1_Low_Hop_2402



2DH5_Ant1_High_Hop_2480

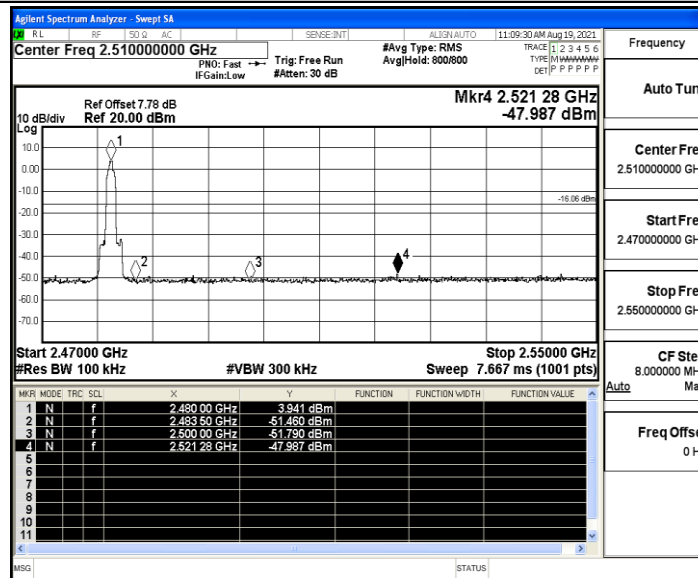


3DH5_Ant1_Low_2402

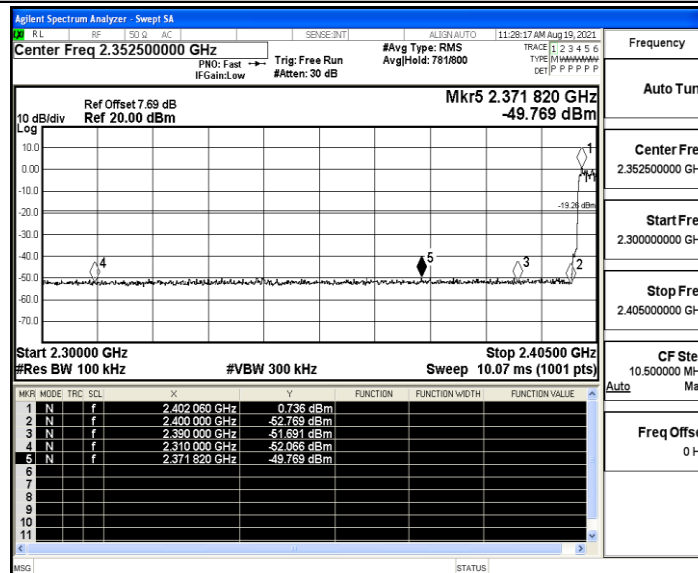




3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480



A.7 Conducted Spurious Emission

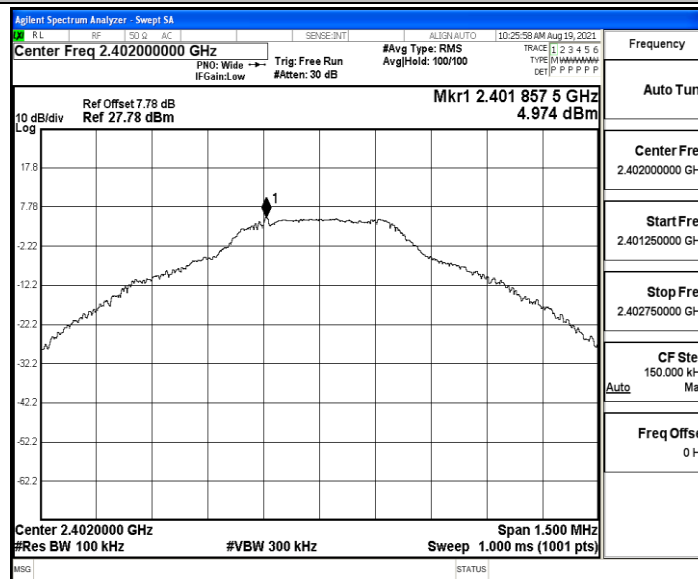
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	4.97	4.97	---	PASS
			30~1000	4.97	-61.3	≤ -15.03	PASS
			1000~26500	4.97	-47.38	≤ -15.03	PASS
		2441	Reference	6.51	6.51	---	PASS
			30~1000	6.51	-61.9	≤ -13.49	PASS
			1000~26500	6.51	-47.56	≤ -13.49	PASS
		2480	Reference	5.03	5.03	---	PASS
			30~1000	5.03	-62.17	≤ -14.97	PASS
			1000~26500	5.03	-47.81	≤ -14.97	PASS
2DH5	Ant1	2402	Reference	3.78	3.78	---	PASS
			30~1000	3.78	-62.02	≤ -16.22	PASS
			1000~26500	3.78	-47.62	≤ -16.22	PASS
		2441	Reference	1.84	1.84	---	PASS
			30~1000	1.84	-61.45	≤ -18.17	PASS
			1000~26500	1.84	-48.04	≤ -18.17	PASS
		2480	Reference	2.19	2.19	---	PASS
			30~1000	2.19	-61.31	≤ -17.81	PASS
			1000~26500	2.19	-47.86	≤ -17.81	PASS
3DH5	Ant1	2402	Reference	3.90	3.90	---	PASS
			30~1000	3.90	-62.1	≤ -16.11	PASS
			1000~26500	3.90	-47.56	≤ -16.11	PASS
		2441	Reference	4.38	4.38	---	PASS
			30~1000	4.38	-61.56	≤ -15.62	PASS
			1000~26500	4.38	-46.96	≤ -15.62	PASS
		2480	Reference	3.80	3.80	---	PASS
			30~1000	3.80	-60.65	≤ -16.2	PASS
			1000~26500	3.80	-47.4	≤ -16.2	PASS

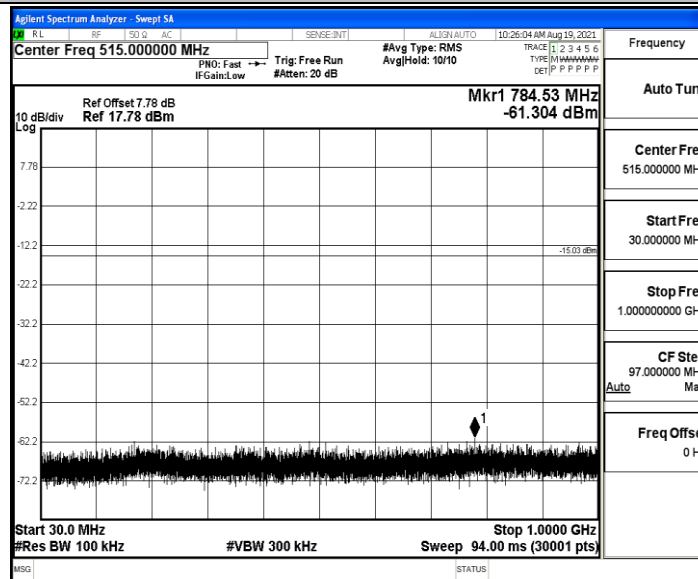


Test Graphs

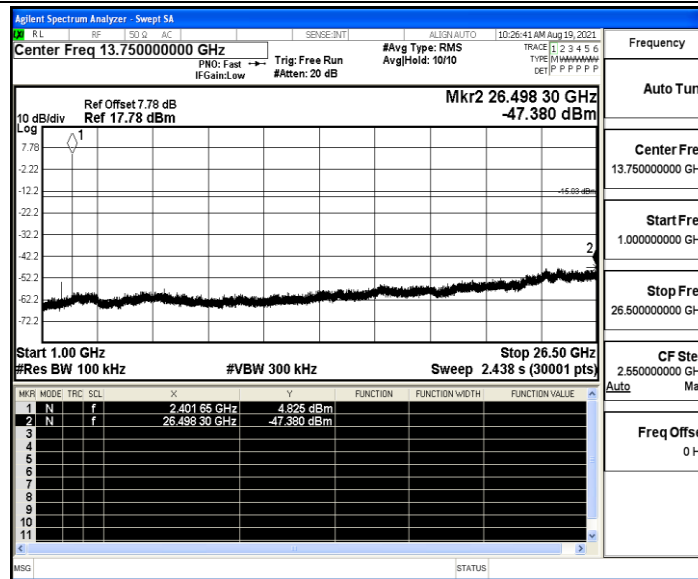
DH5_Ant1_2402_0~Reference



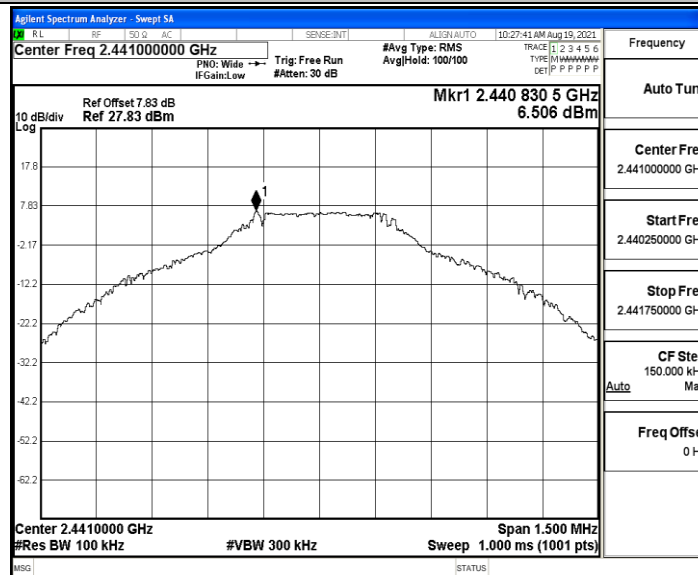
DH5_Ant1_2402_30~1000



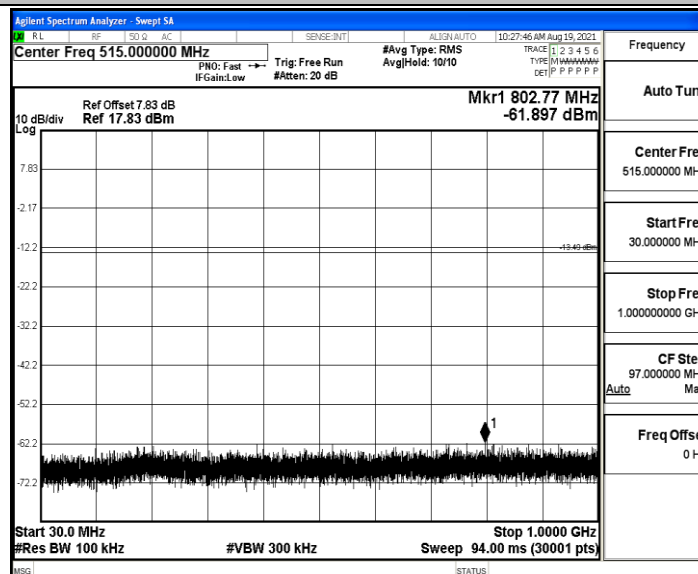
DH5_Ant1_2402_1000~26500



DH5_Ant1_2441_0~Reference

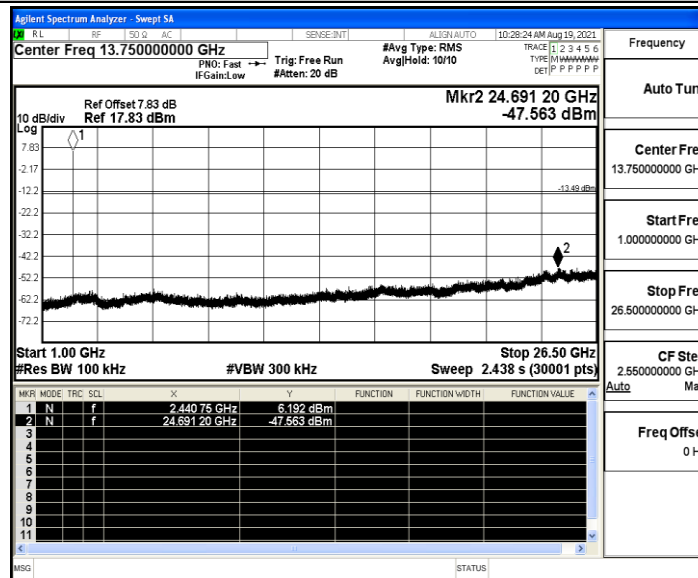


DH5_Ant1_2441_30~1000

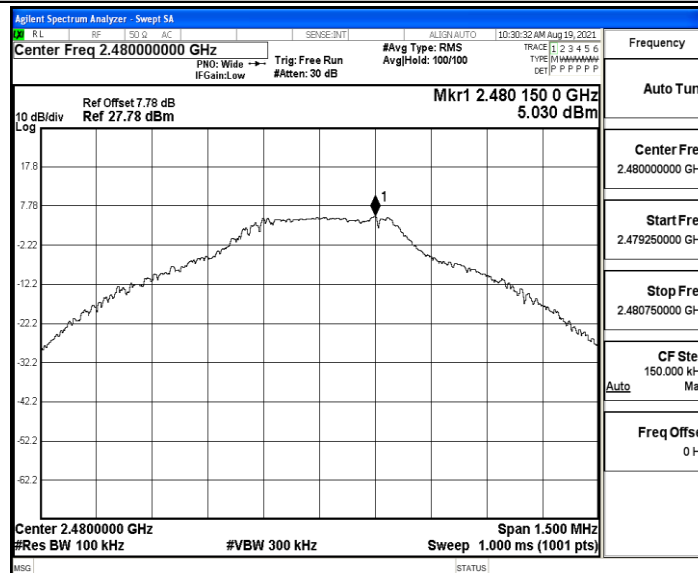




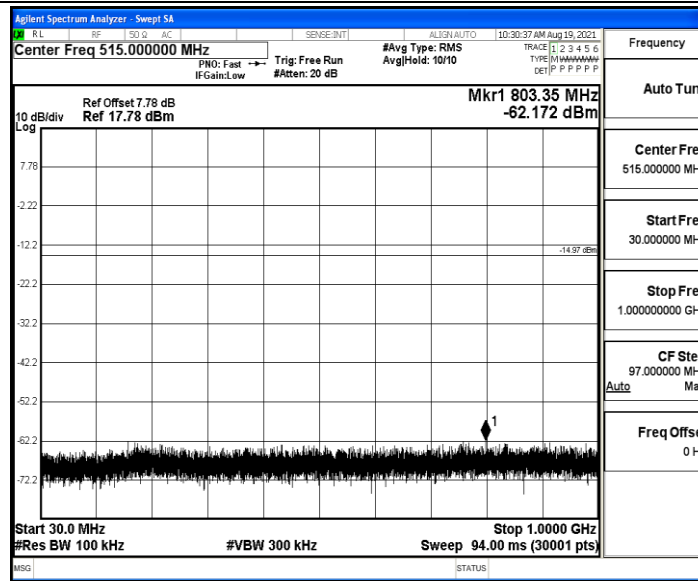
DH5_Ant1_2441_1000~26500



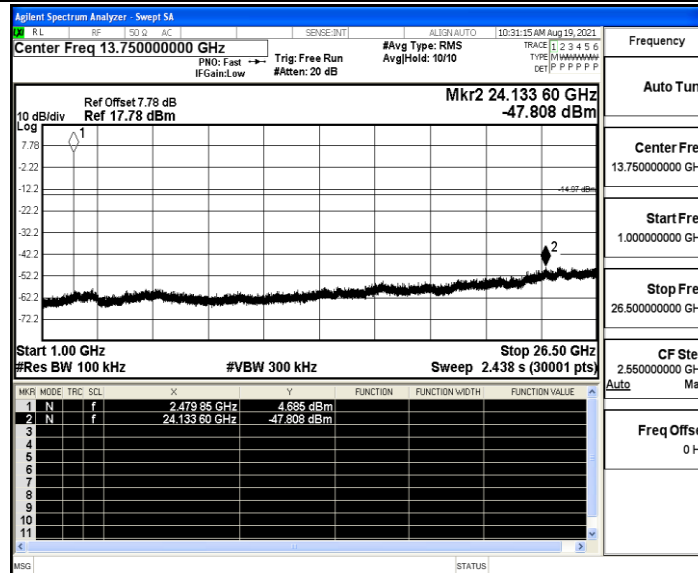
DH5_Ant1_2480_0~Reference



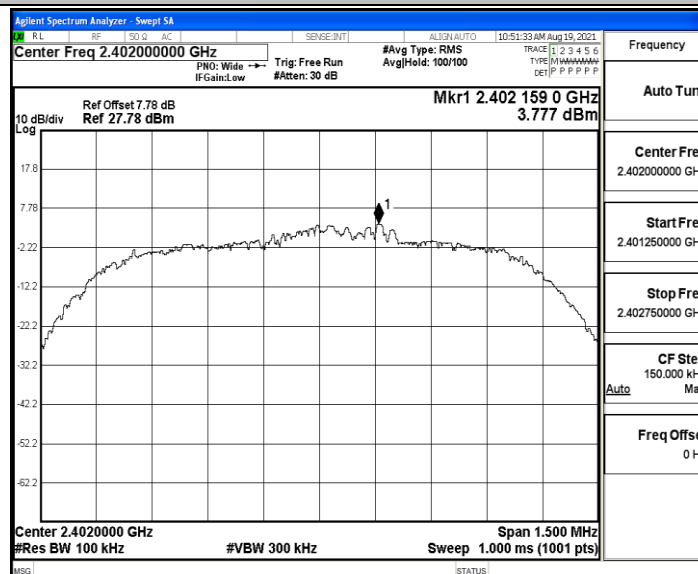
DH5_Ant1_2480_30~1000



DH5_Ant1_2480_1000~26500

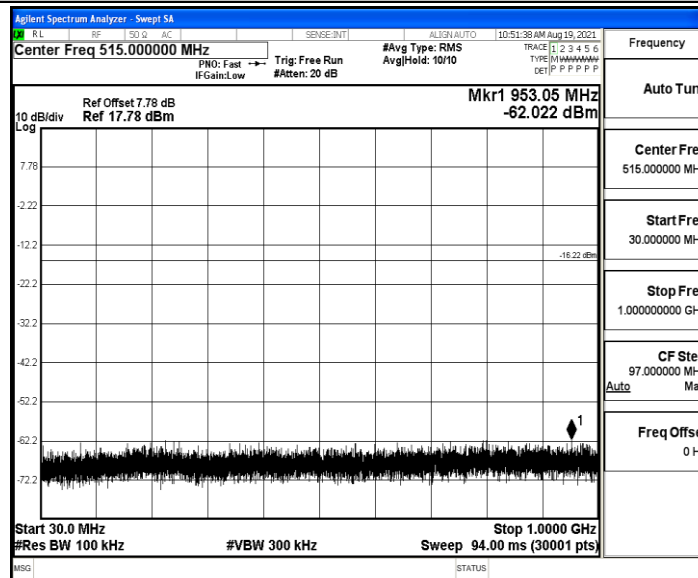


2DH5_Ant1_2402_0~Reference

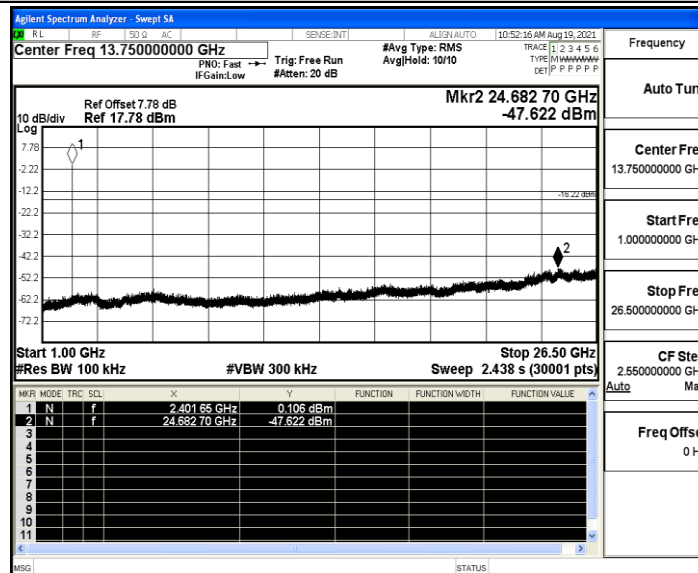




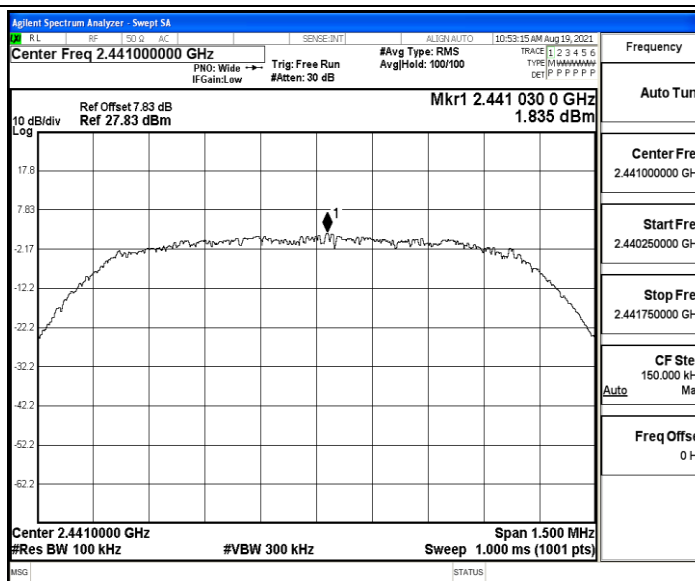
2DH5_Ant1_2402_30~1000



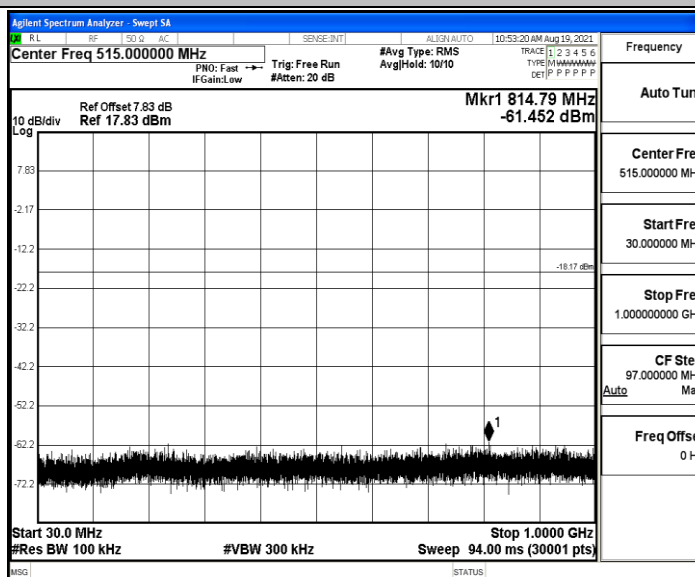
2DH5_Ant1_2402_1000~26500



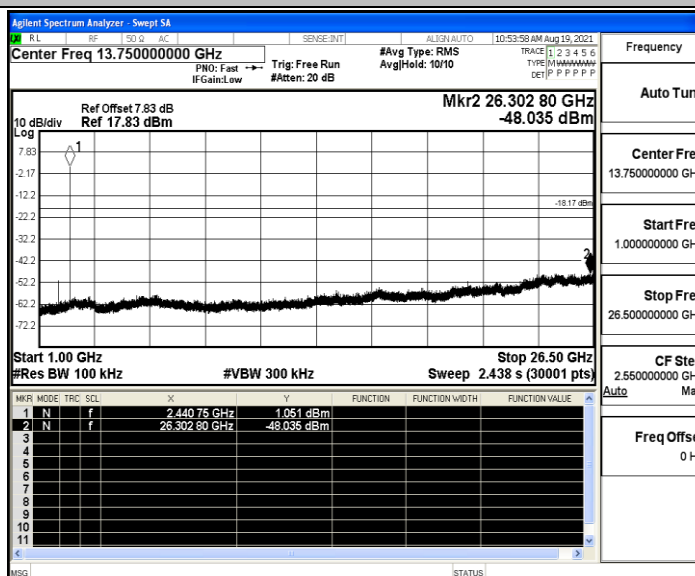
2DH5_Ant1_2441_0~Reference



2DH5 Ant1 2441 30~1000

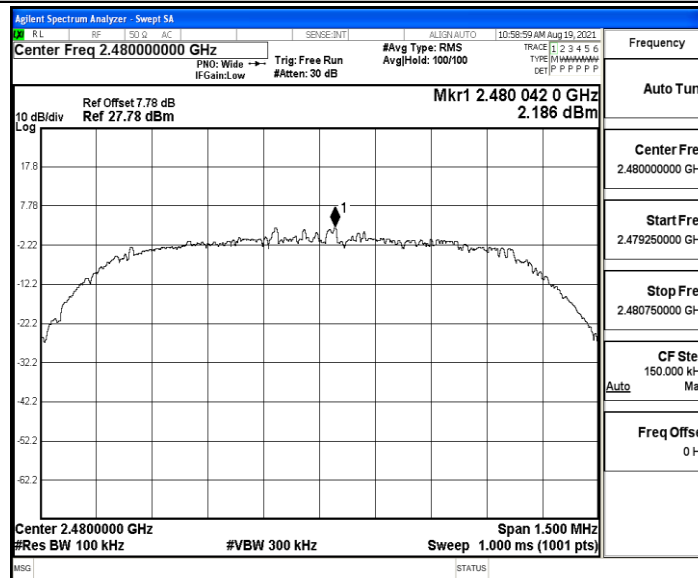


2DH5 Ant1 2441 1000~26500

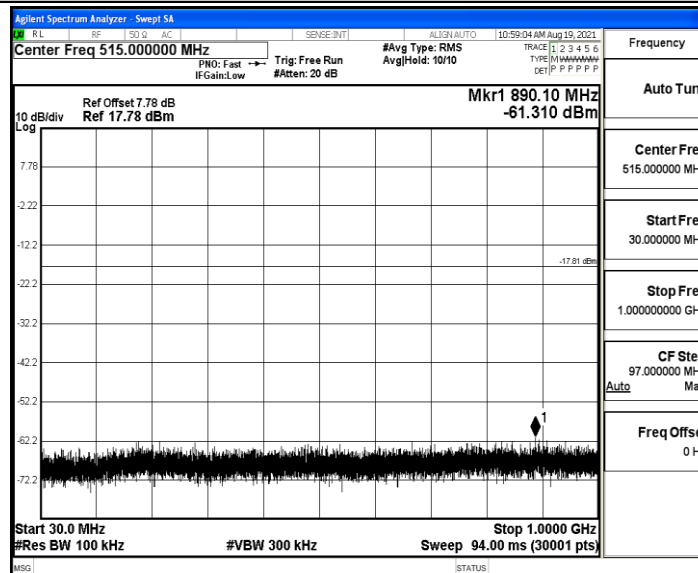




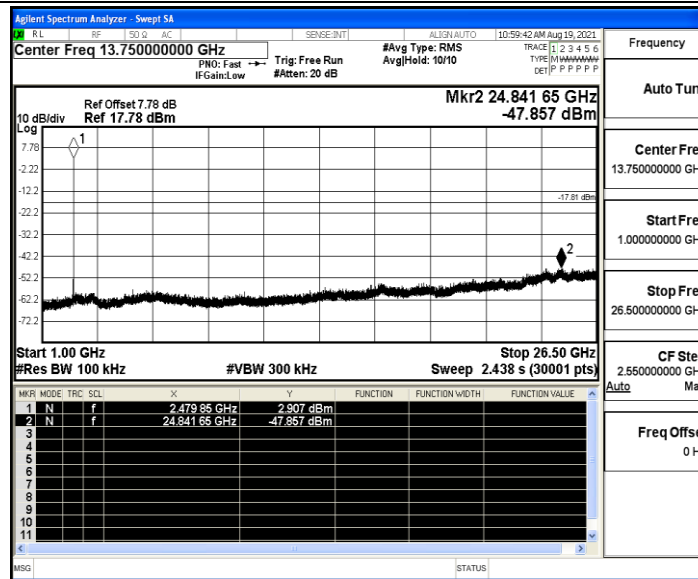
2DH5_Ant1_2480_0~Reference



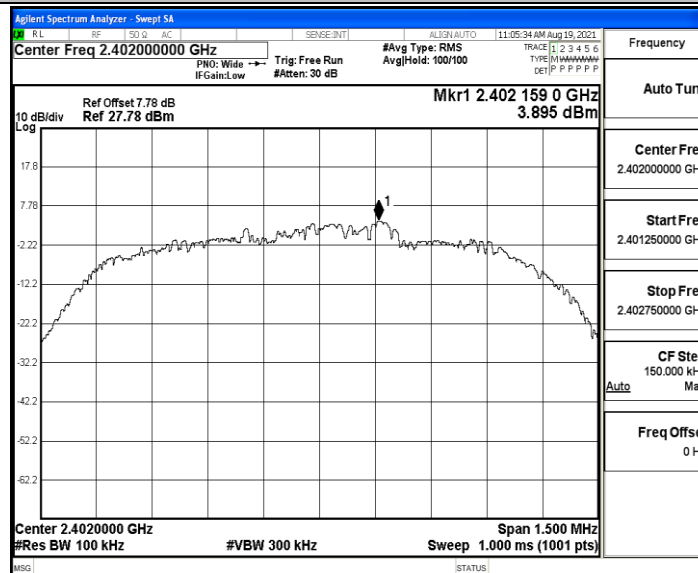
2DH5_Ant1_2480_30~1000



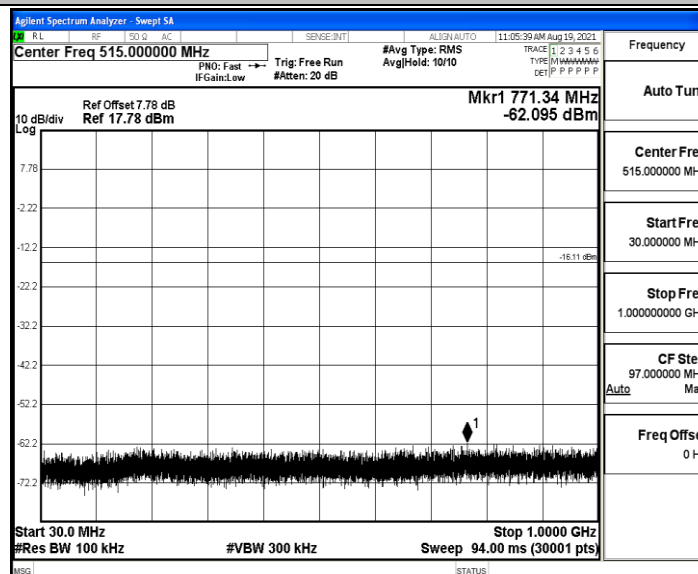
2DH5_Ant1_2480_1000~26500



3DH5_Ant1_2402_0~Reference

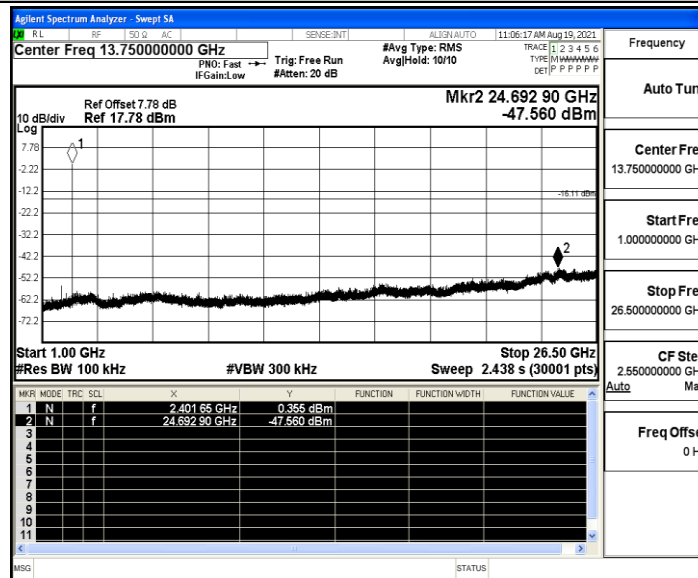


3DH5_Ant1_2402_30~1000

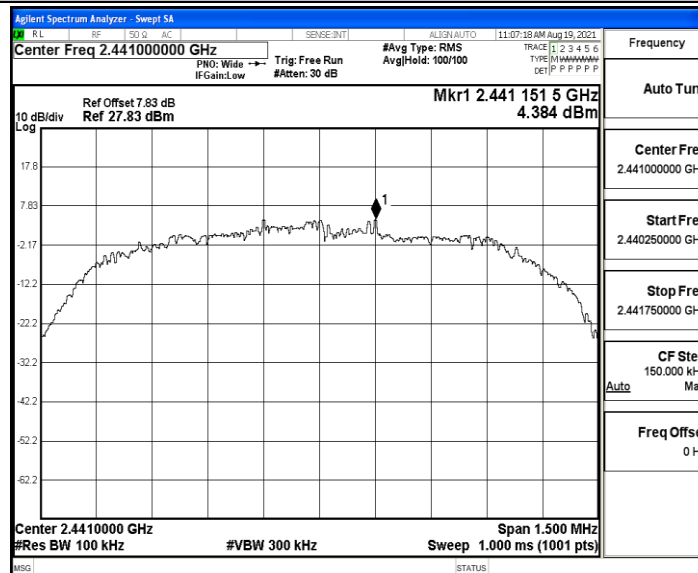




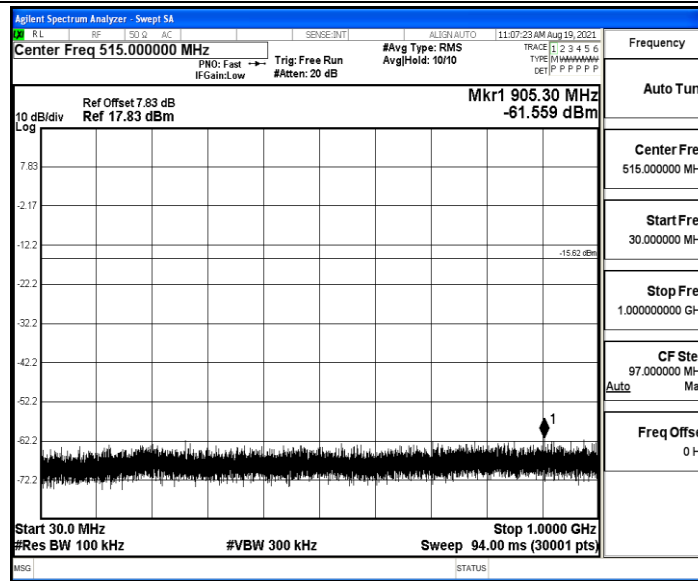
3DH5_Ant1_2402_1000~26500



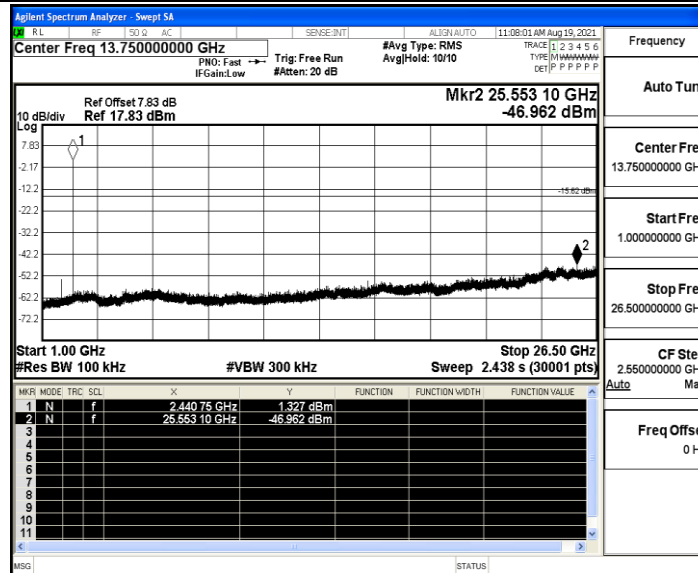
3DH5_Ant1_2441_0~Reference



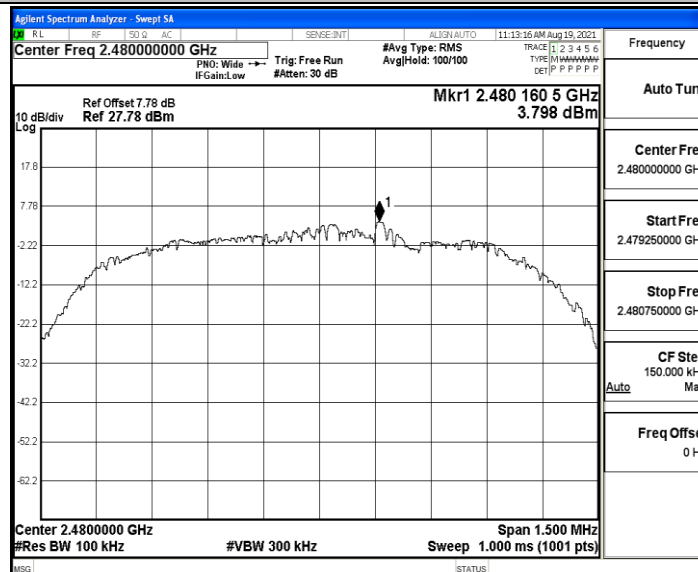
3DH5_Ant1_2441_30~1000



3DH5_Ant1_2441_1000~26500

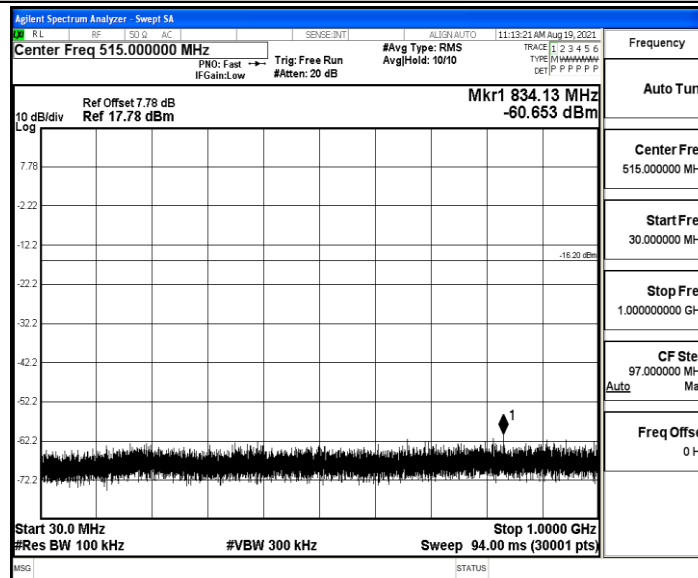


3DH5_Ant1_2480_0~Reference

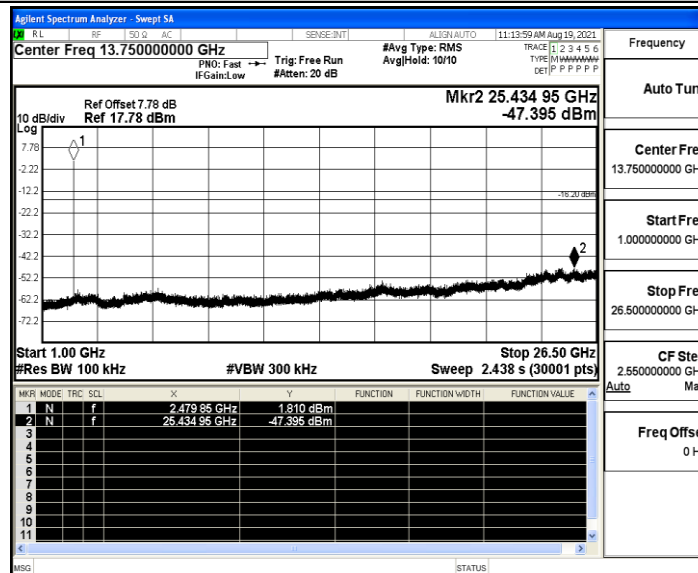




3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000~26500



MR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	f		2.479 85 GHz	1.810 dBm			
2	N	f		25.434 95 GHz	-47.395 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								



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	-48.99	≤-41.20	46.21	≤54	PASS
				AV	2389.775	-48.48	≤-41.20	46.72	≤54	PASS
				AV	2390.000	-48.7	≤-41.20	46.50	≤54	PASS
				Peak	2310.000	-41.61	≤-21.20	53.59	≤74	PASS
				Peak	2372.555	-37.84	≤-21.20	57.36	≤74	PASS
				Peak	2390.000	-39.27	≤-21.20	55.93	≤74	PASS
		High	2480	AV	2483.500	-47.14	≤-41.20	48.06	≤54	PASS
				AV	2483.520	-47.14	≤-41.20	48.06	≤54	PASS
				AV	2500.000	-47.95	≤-41.20	47.25	≤54	PASS
				Peak	2483.500	-39.8	≤-21.20	55.40	≤74	PASS
				Peak	2495.520	-37.84	≤-21.20	57.36	≤74	PASS
				Peak	2500.000	-39.54	≤-21.20	55.66	≤74	PASS
		Low	Hop_2402	Peak	2310.000	-39.7	≤-21.20	55.50	≤74	PASS
				Peak	2320.265	-37.86	≤-21.20	57.34	≤74	PASS
				Peak	2390.000	-40.29	≤-21.20	54.91	≤74	PASS
		High	Hop_2480	Peak	2483.500	-40.35	≤-21.20	54.85	≤74	PASS
				Peak	2494.000	-37.61	≤-21.20	57.59	≤74	PASS
				Peak	2500.000	-40.55	≤-21.20	54.65	≤74	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-48.94	≤-41.20	46.26	≤54	PASS
				AV	2383.265	-48.47	≤-41.20	46.73	≤54	PASS
				AV	2390.000	-48.61	≤-41.20	46.59	≤54	PASS
				Peak	2310.000	-41.18	≤-21.20	54.02	≤74	PASS
				Peak	2381.690	-37.19	≤-21.20	58.01	≤74	PASS
				Peak	2390.000	-40.61	≤-21.20	54.59	≤74	PASS
		High	2480	AV	2483.500	-47.27	≤-41.20	47.93	≤54	PASS
				AV	2483.520	-47.27	≤-41.20	47.93	≤54	PASS
				AV	2500.000	-48.04	≤-41.20	47.16	≤54	PASS
				Peak	2483.500	-40.17	≤-21.20	55.03	≤74	PASS
				Peak	2486.320	-36.61	≤-21.20	58.59	≤74	PASS
				Peak	2500.000	-40.45	≤-21.20	54.75	≤74	PASS
		Low	Hop_2402	Peak	2310.000	-41.31	≤-21.20	53.89	≤74	PASS
				Peak	2310.185	-38.17	≤-21.20	57.03	≤74	PASS
				Peak	2390.000	-40.87	≤-21.20	54.33	≤74	PASS
		High	Hop_2480	Peak	2483.500	-40.19	≤-21.20	55.01	≤74	PASS
				Peak	2489.120	-37.16	≤-21.20	58.04	≤74	PASS
				Peak	2500.000	-39.12	≤-21.20	56.08	≤74	PASS
3DH5	Ant1	Low	2402	AV	2310.000	-49.06	≤-41.20	46.14	≤54	PASS



				AV	2379.800	-48.49	≤-41.20	46.71	≤54	PASS
				AV	2390.000	-48.56	≤-41.20	46.64	≤54	PASS
				Peak	2310.000	-39.49	≤-21.20	55.71	≤74	PASS
				Peak	2337.065	-37.1	≤-21.20	58.10	≤74	PASS
				Peak	2390.000	-39.11	≤-21.20	56.09	≤74	PASS
				AV	2483.500	-47.01	≤-41.20	48.19	≤54	PASS
				AV	2483.520	-47.01	≤-41.20	48.19	≤54	PASS
				AV	2500.000	-47.92	≤-41.20	47.28	≤54	PASS
				Peak	2483.500	-37.26	≤-21.20	57.94	≤74	PASS
				Peak	2483.520	-37.26	≤-21.20	57.94	≤74	PASS
		High	2480	Peak	2500.000	-38.78	≤-21.20	56.42	≤74	PASS
				Peak	2310.000	-41.71	≤-21.20	53.49	≤74	PASS
				Peak	2384.630	-37.66	≤-21.20	57.54	≤74	PASS
				Peak	2390.000	-40.82	≤-21.20	54.38	≤74	PASS
				Peak	2483.500	-40.58	≤-21.20	54.62	≤74	PASS
				Peak	2498.800	-37.46	≤-21.20	57.74	≤74	PASS
				Peak	2500.000	-40.4	≤-21.20	54.80	≤74	PASS
		Low	Hop_2402							
		High	Hop_2480							

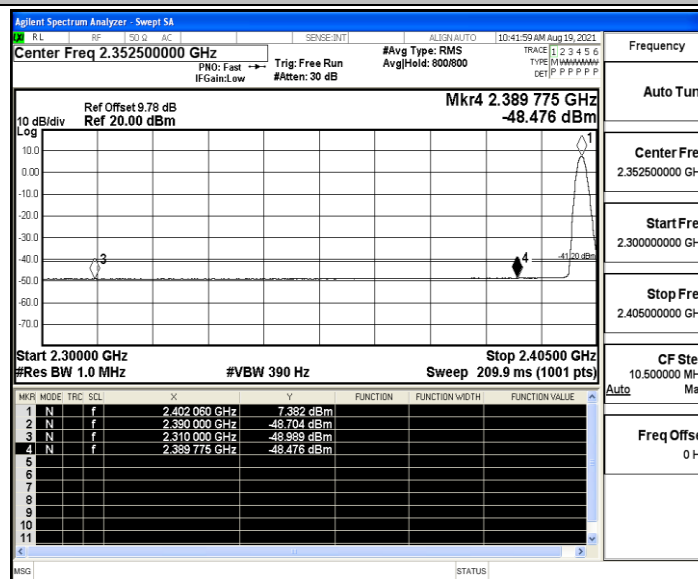
Note:

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.

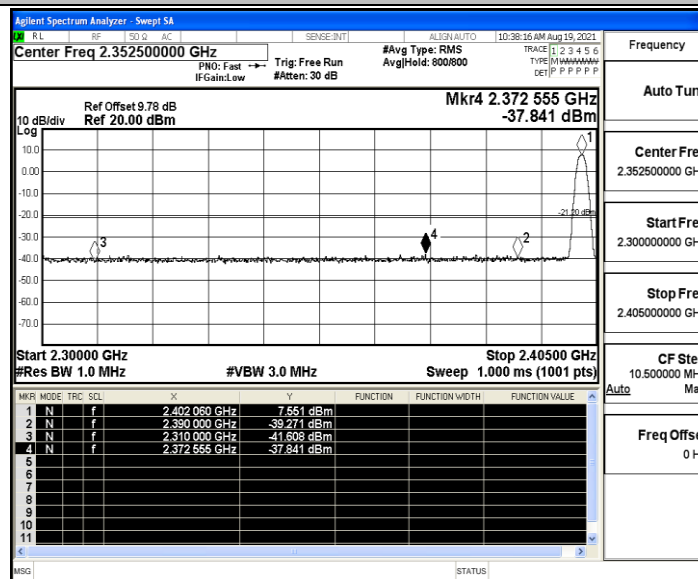


Test Graphs

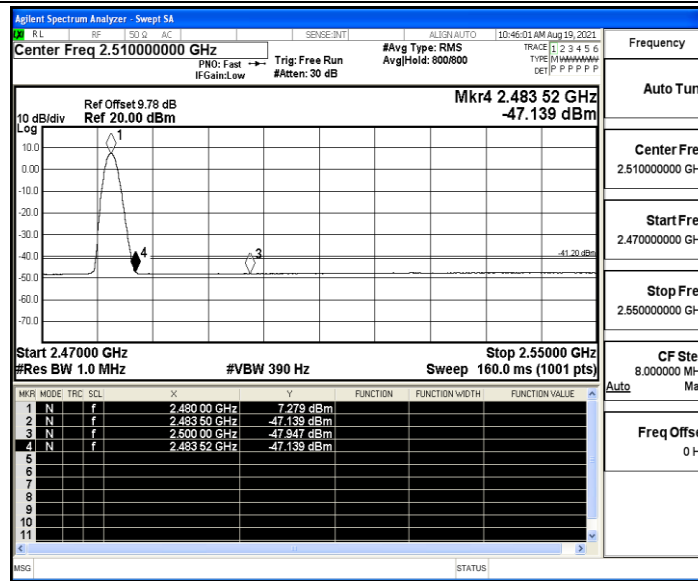
DH5_Ant1_Low_2402_AV



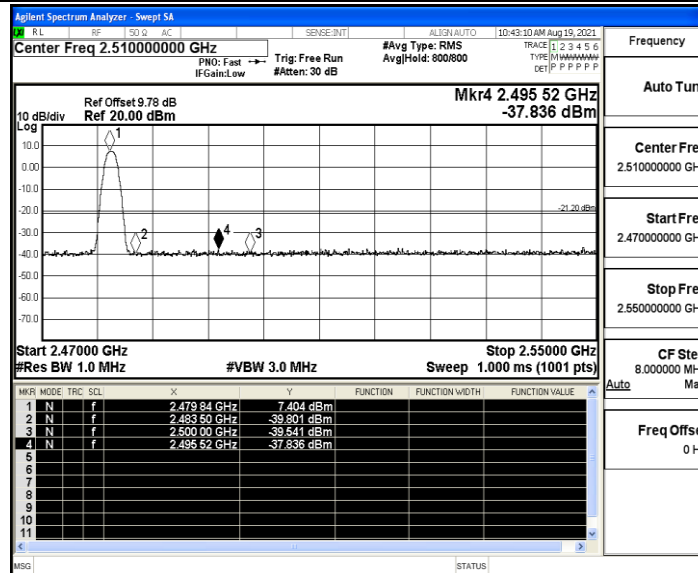
DH5_Ant1_Low_2402_Peak



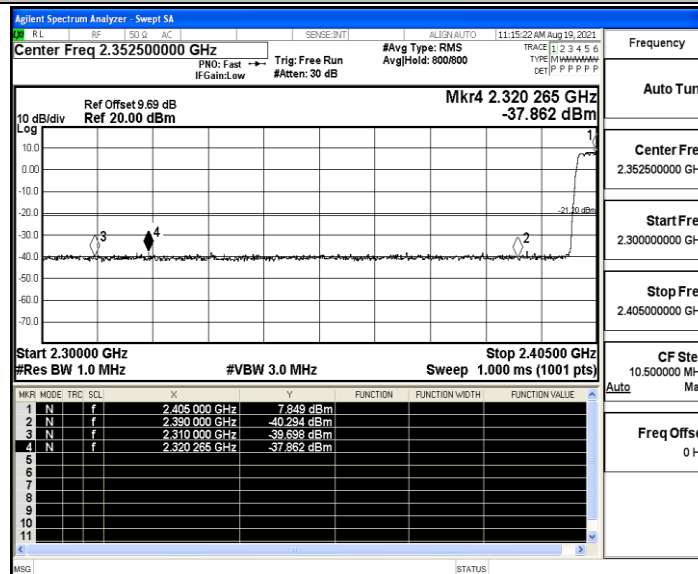
DH5_Ant1_High_2480_AV



DH5_Ant1_High_2480_Peak

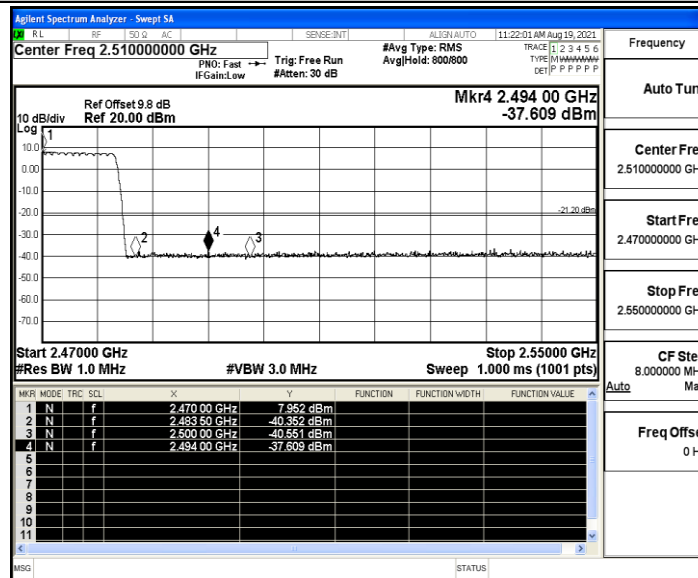


DH5_Ant1_Low_Hop_2402_Peak

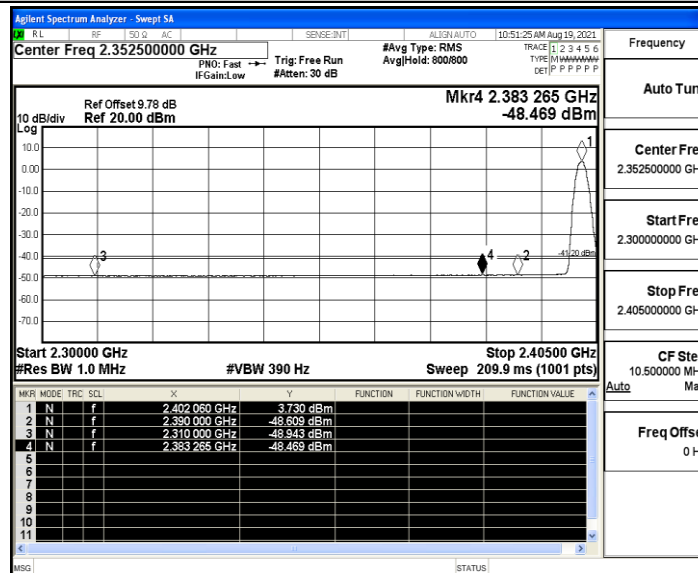




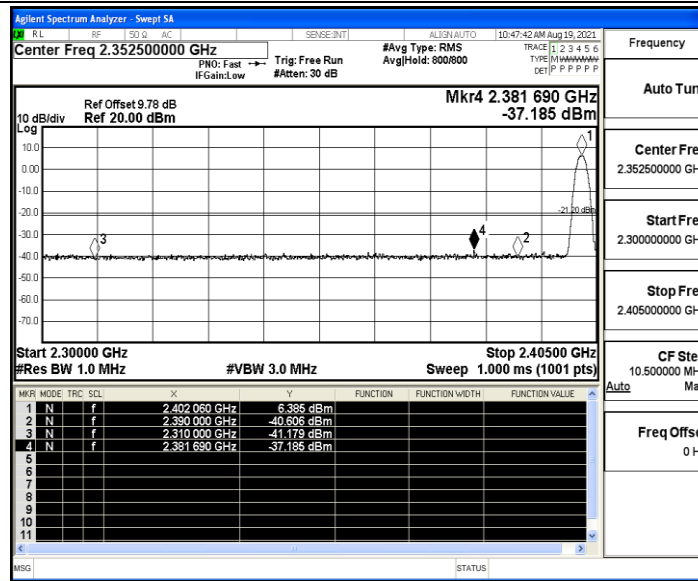
DH5_Ant1_High_Hop_2480_Peak



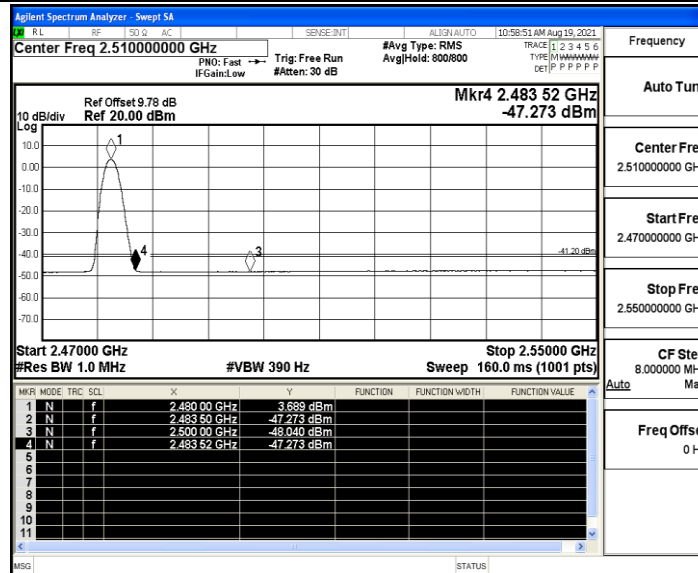
2DH5_Ant1_Low_2402_AV



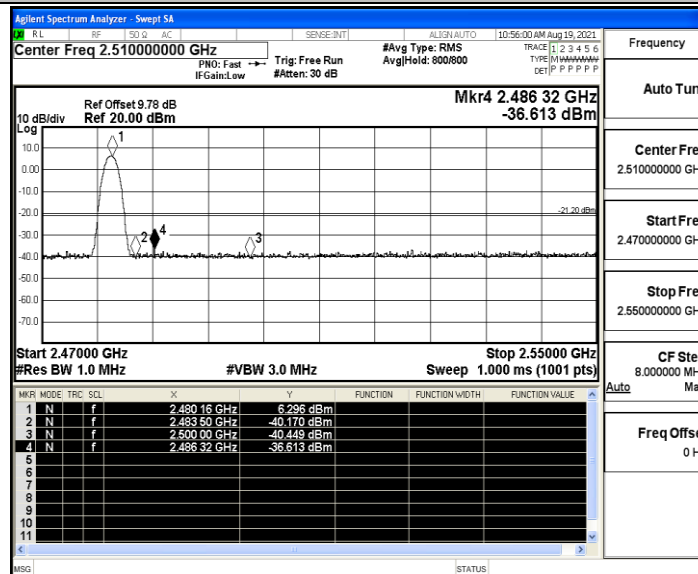
2DH5_Ant1_Low_2402_Peak



2DH5_Ant1_High_2480_AV

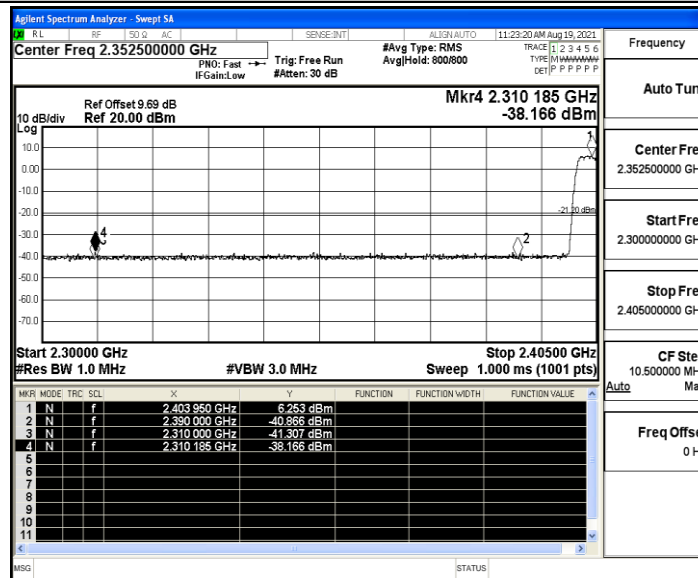


2DH5_Ant1_High_2480_Peak

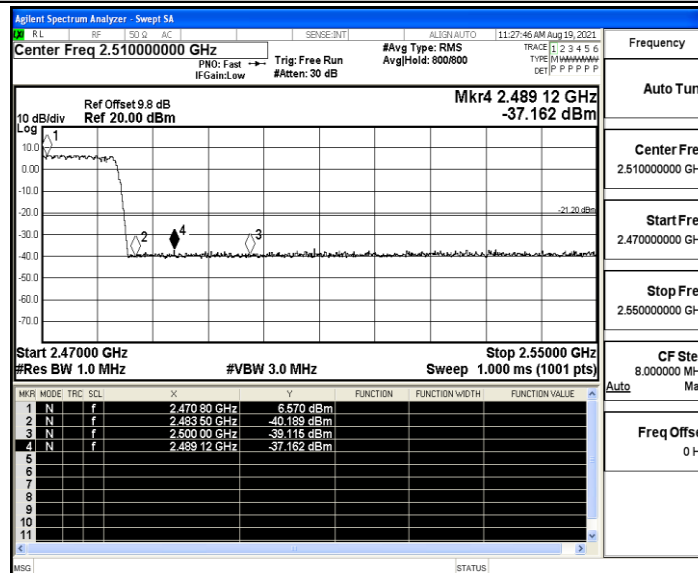




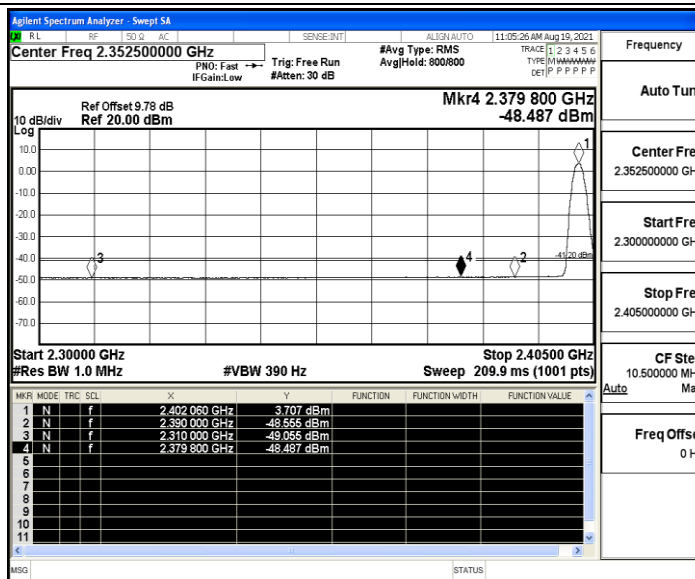
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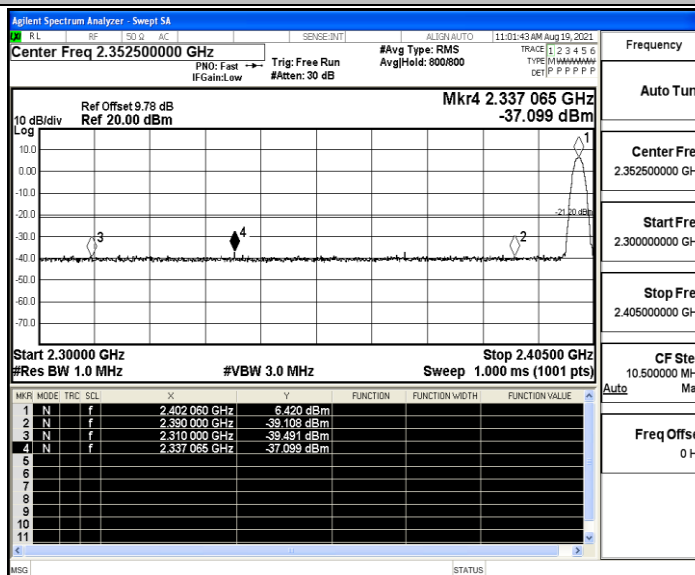
2DH5_Ant1_High_Hop_2480_Peak



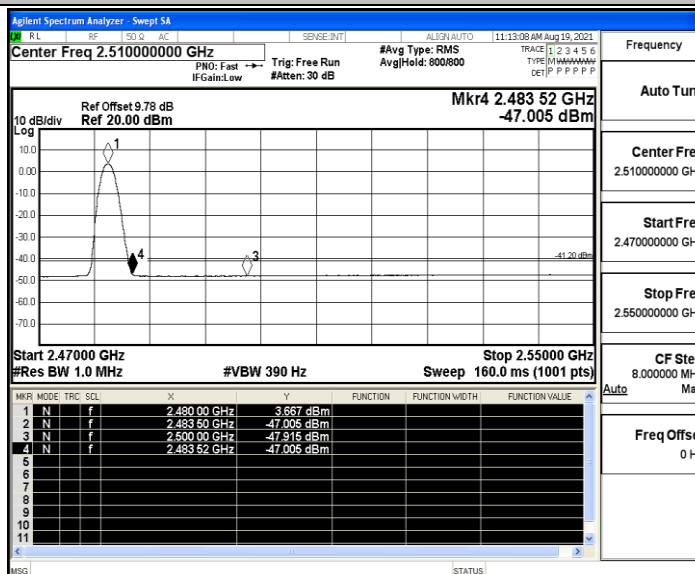
3DH5_Ant1_Low_2402_AV



3DH5_Ant1_Low_2402_Peak

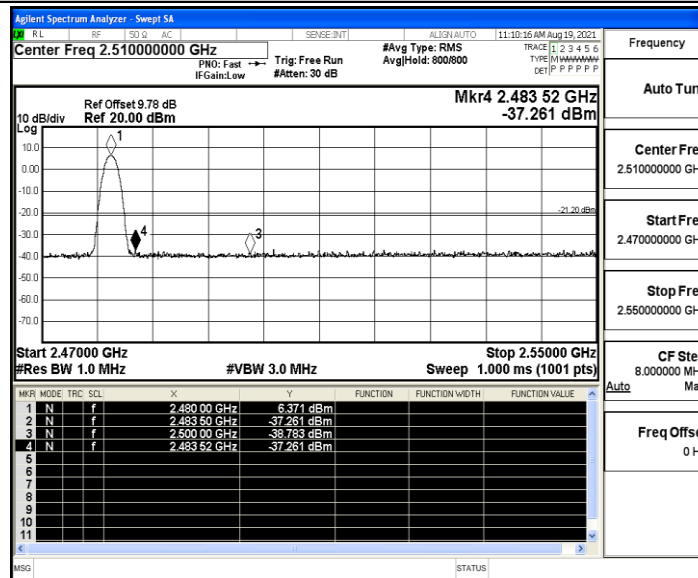


3DH5_Ant1_High_2480_AV

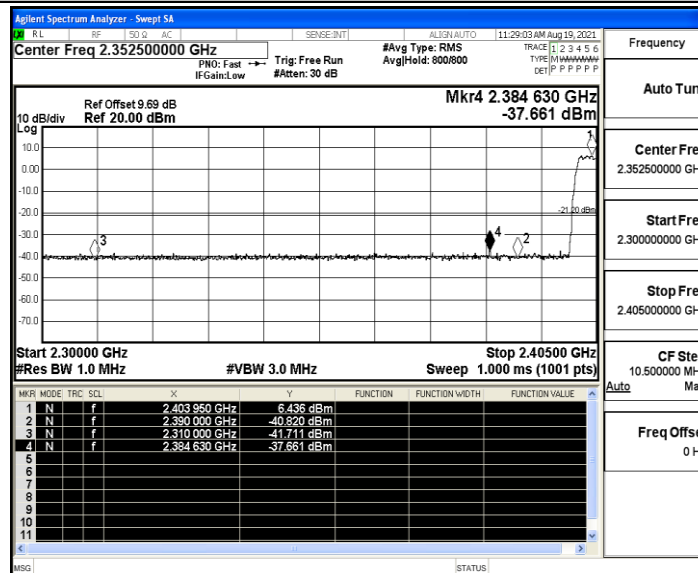




3DH5_Ant1_High_2480_Peak



3DH5_Ant1_Low_Hop_2402_Peak



3DH5_Ant1_High_Hop_2480_Peak

