



Appendix A

RF Test Data for BT V5.0(DSS) (Conducted Measurement)

Product Name: RK3399 R Pro Player

Trade Mark: SCALA

Test Model: SMPRP

Environmental Conditions

Temperature:	21.5℃
Relative Humidity:	52.7%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Li
Supervised by:	Li Huan



Appendix A.1: 20dB Emission Bandwidth

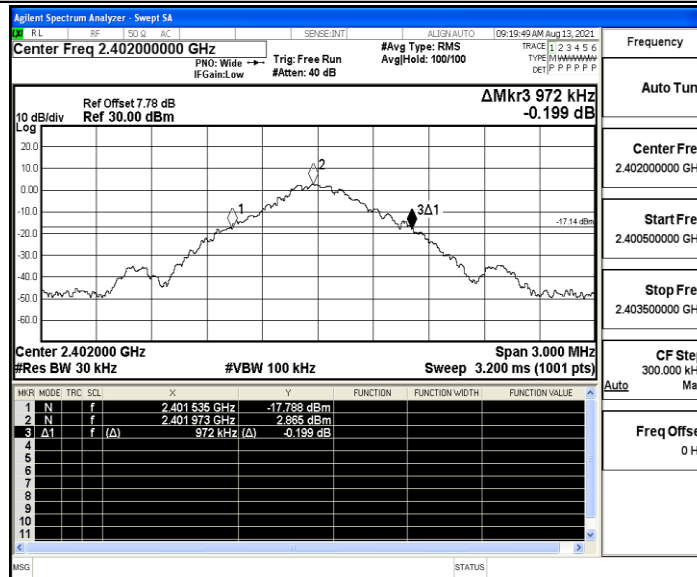
Test Result

TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.972	2401.535	2402.507	---	PASS
		2441	0.975	2440.529	2441.504	---	PASS
		2480	1.005	2479.475	2480.480	---	PASS
2DH5	Ant1	2402	1.293	2401.364	2402.657	---	PASS
		2441	1.317	2440.340	2441.657	---	PASS
		2480	1.332	2479.334	2480.666	---	PASS
3DH5	Ant1	2402	1.320	2401.343	2402.663	---	PASS
		2441	1.290	2440.355	2441.645	---	PASS
		2480	1.272	2479.355	2480.627	---	PASS

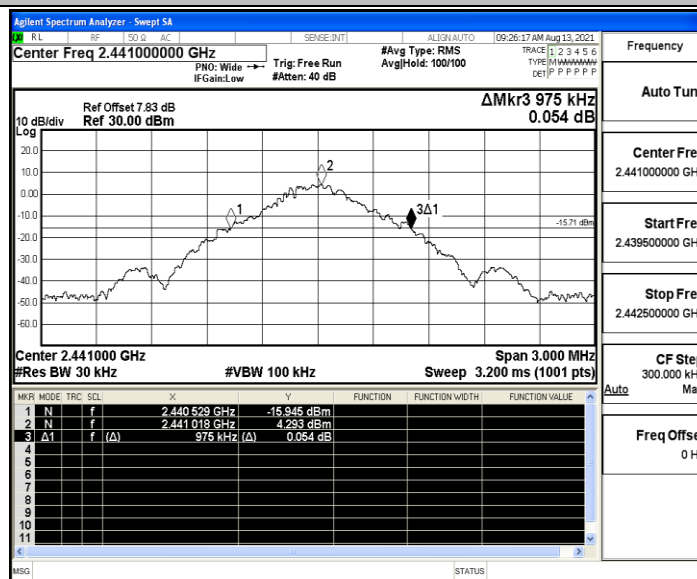


Test Graphs

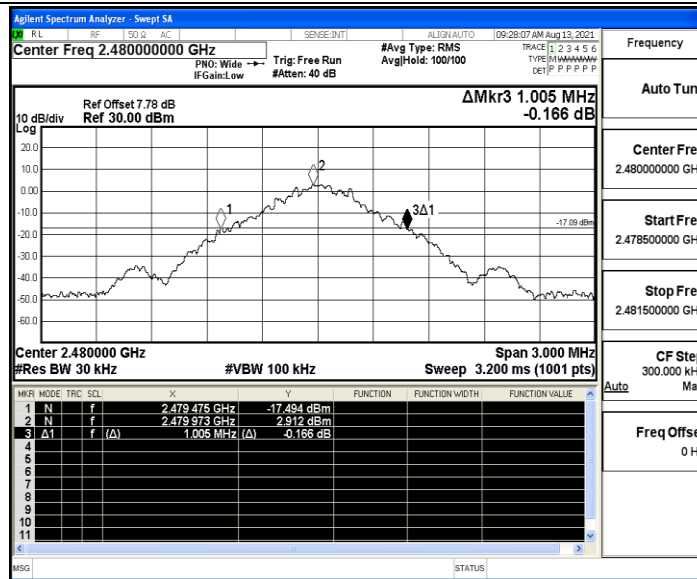
DH5_Ant1_2402



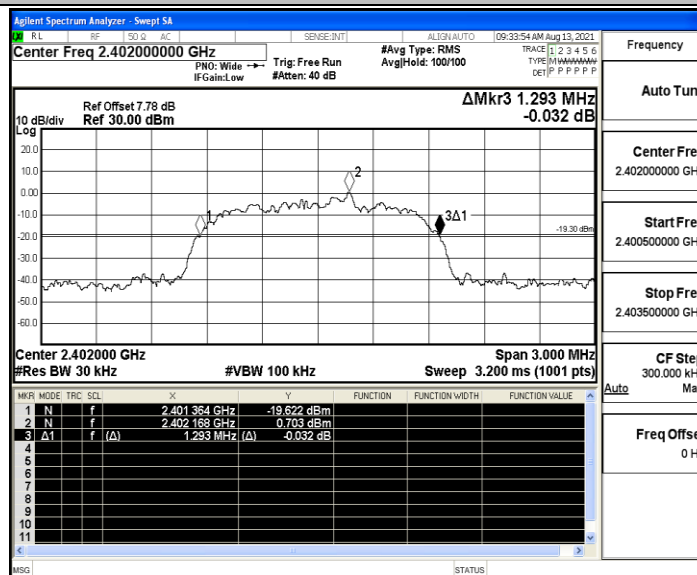
DH5_Ant1_2441



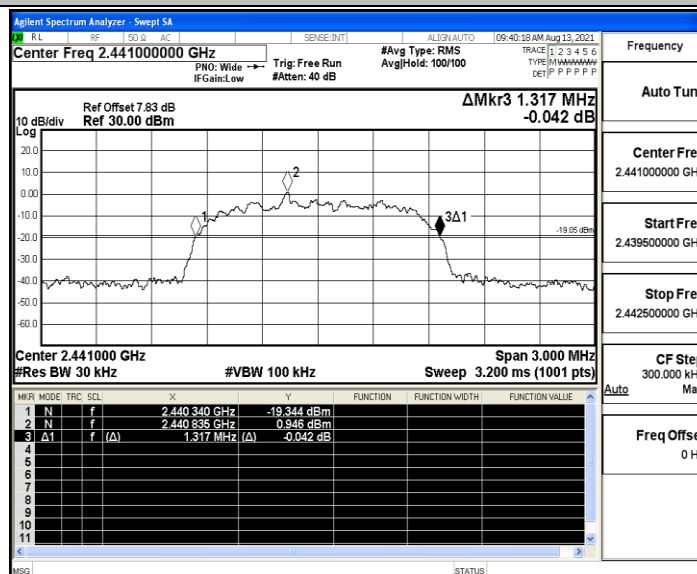
DH5_Ant1_2480



2DH5_Ant1_2402

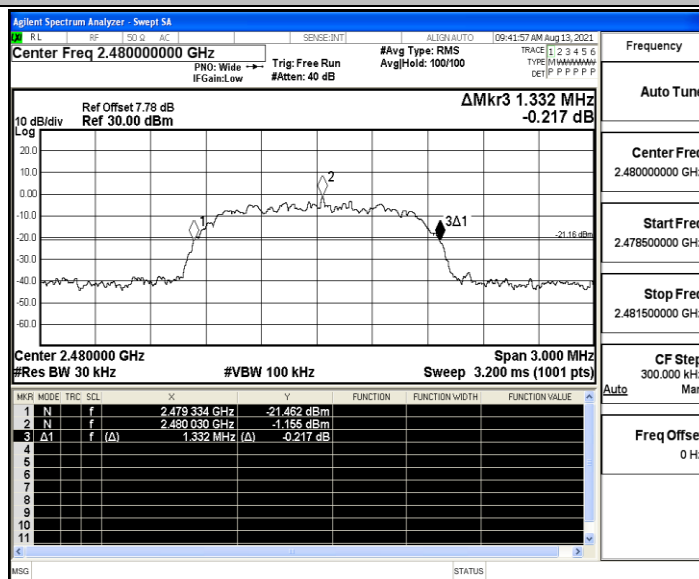


2DH5_Ant1_2441

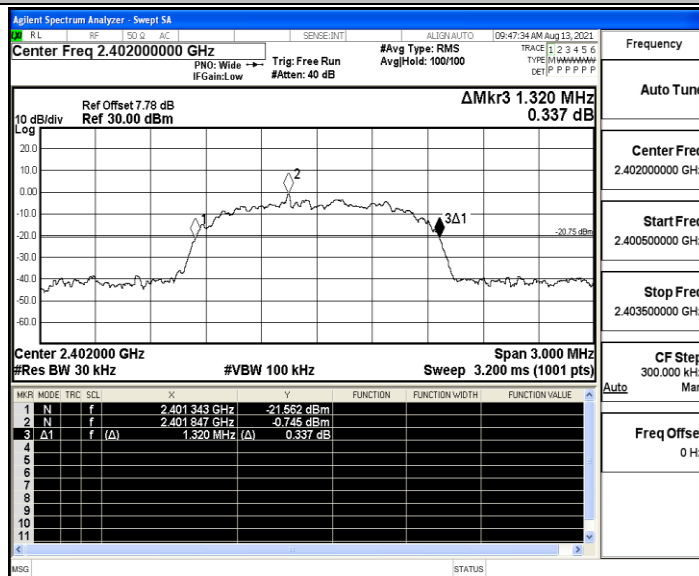




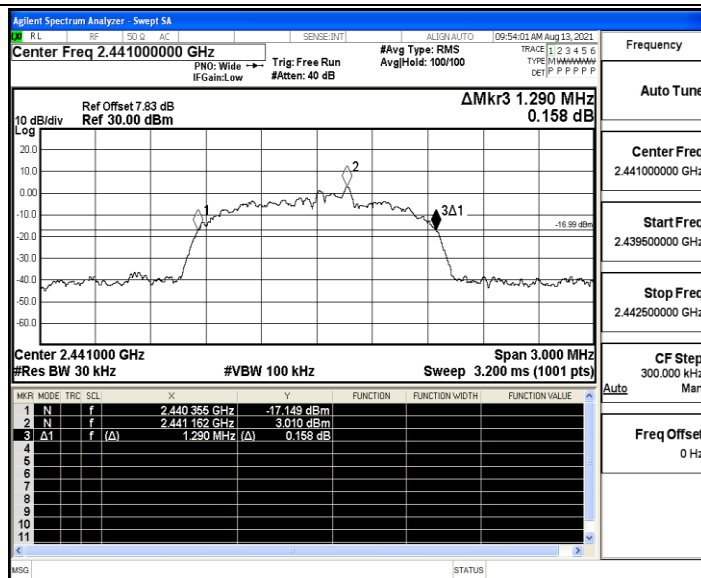
2DH5_Ant1_2480



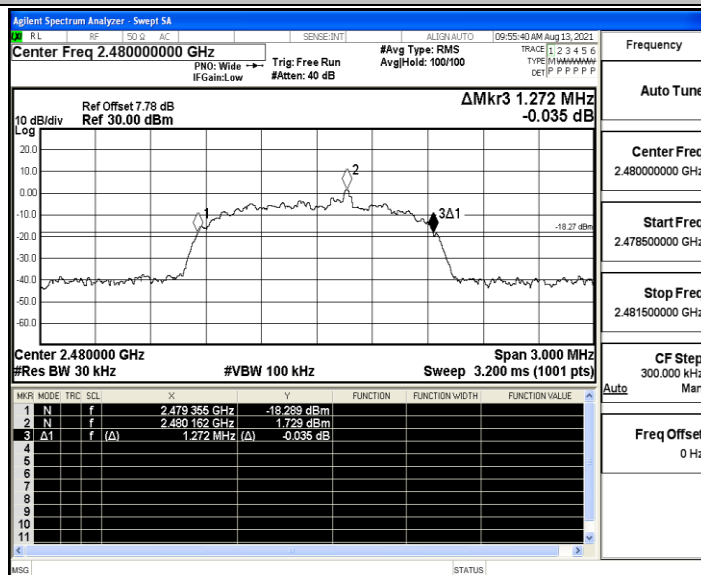
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480





Appendix A.2: Maximum peak conducted output power

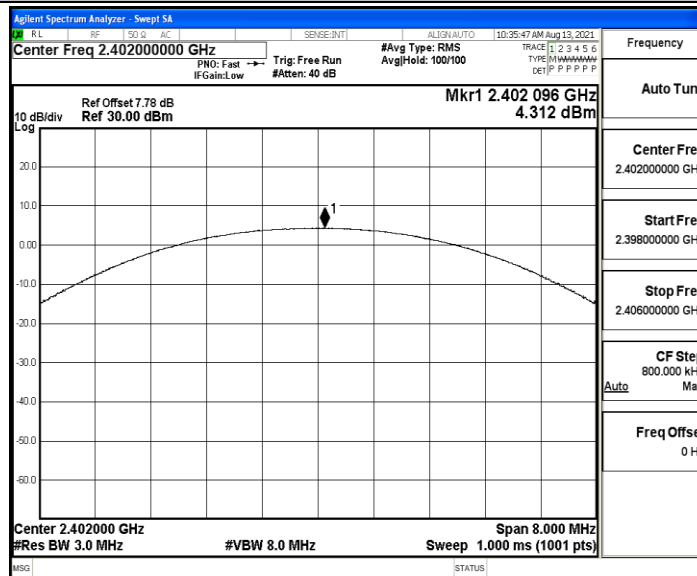
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	4.31	≤20.97	PASS
		2441	4.73	≤20.97	PASS
		2480	3.43	≤20.97	PASS
2DH5	Ant1	2402	2.11	≤20.97	PASS
		2441	3.25	≤20.97	PASS
		2480	2.8	≤20.97	PASS
3DH5	Ant1	2402	2.44	≤20.97	PASS
		2441	3.21	≤20.97	PASS
		2480	3.12	≤20.97	PASS

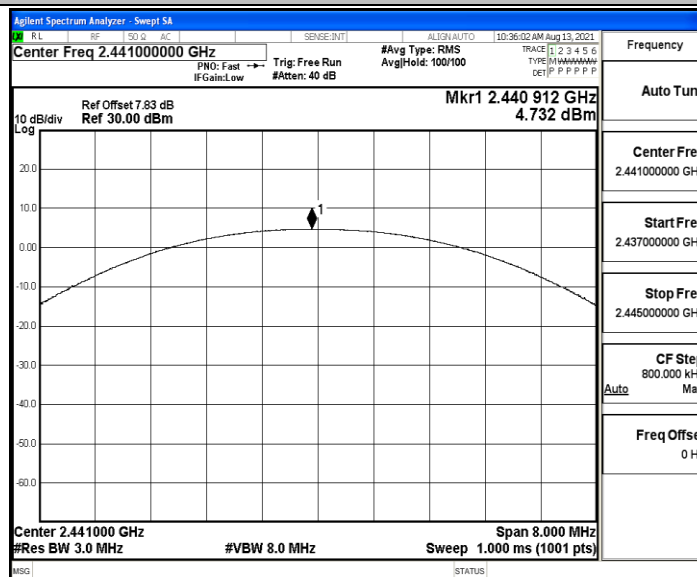


Test Graphs

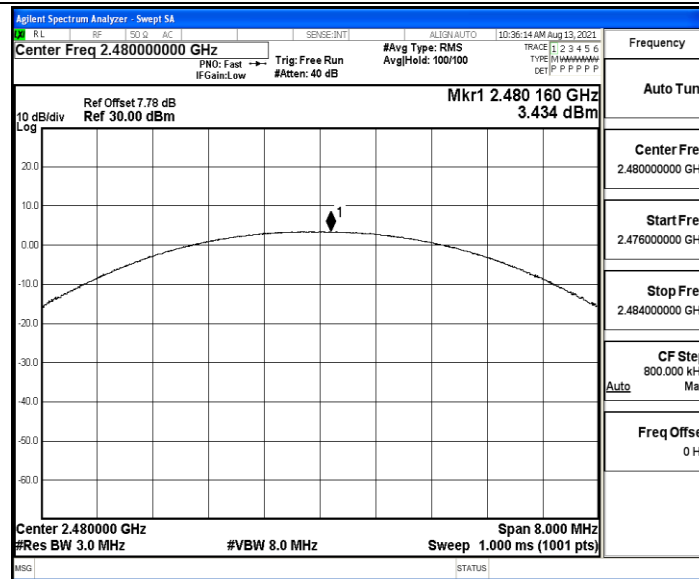
DH5_Ant1_2402



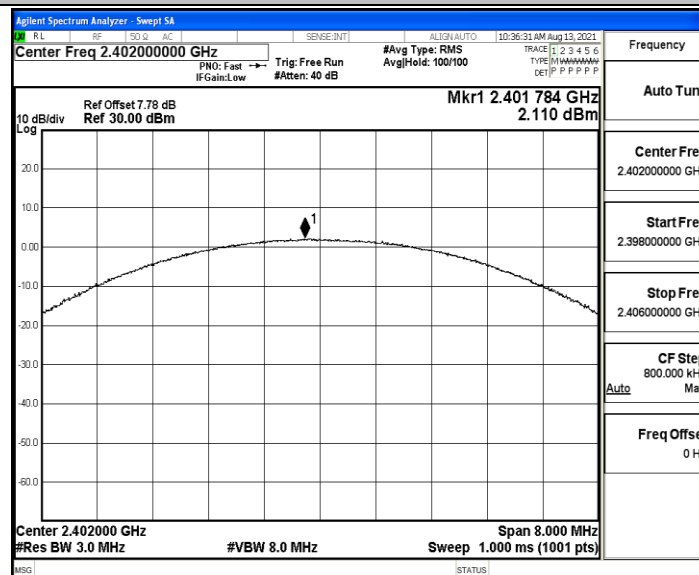
DH5_Ant1_2441



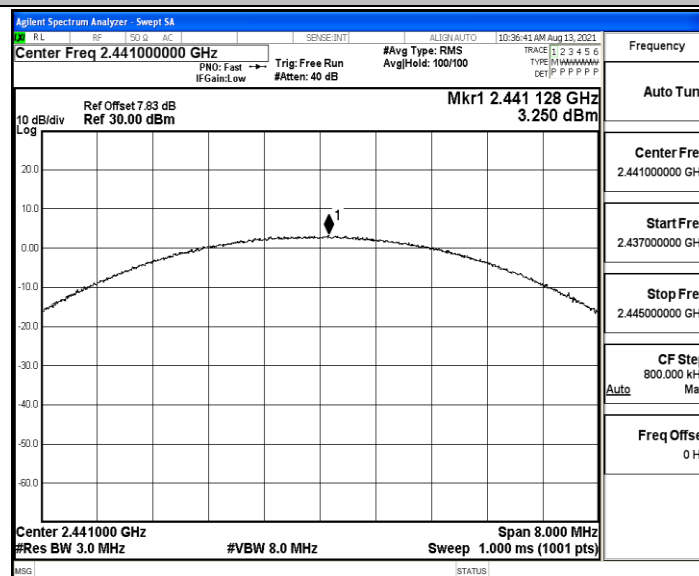
DH5_Ant1_2480



2DH5_Ant1_2402

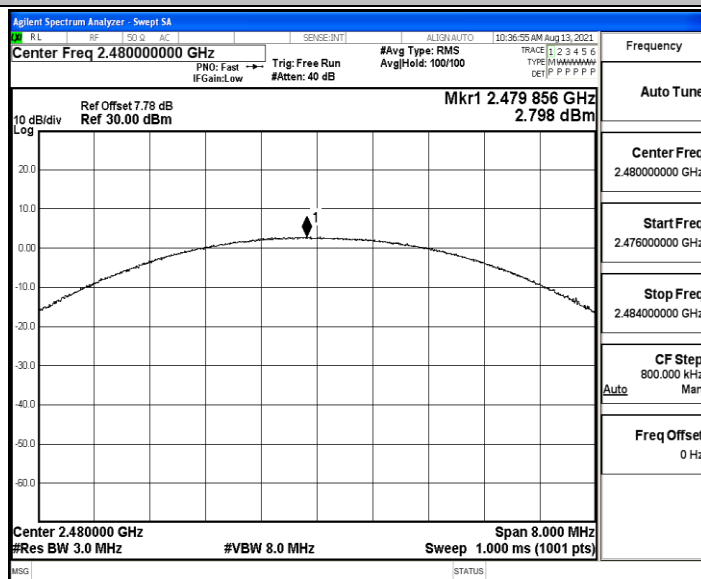


2DH5_Ant1_2441

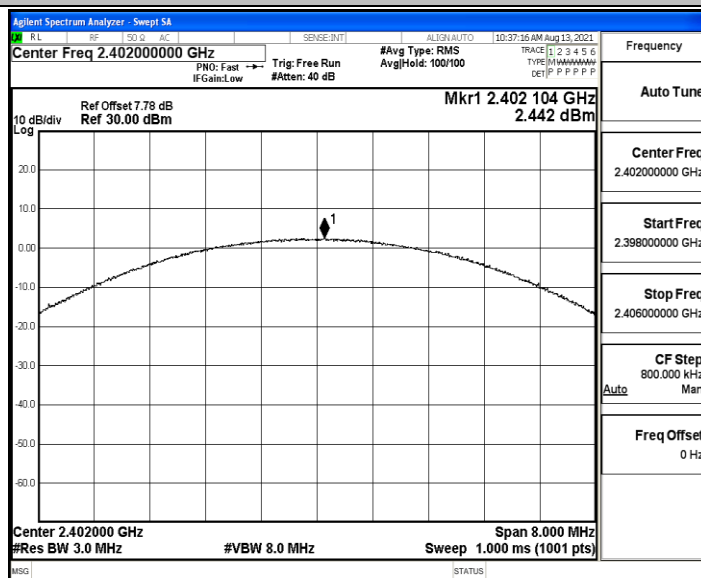




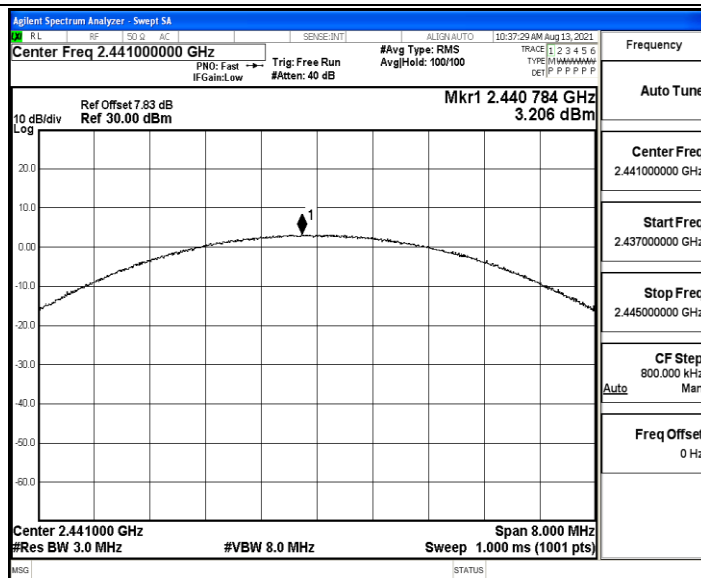
2DH5_Ant1_2480



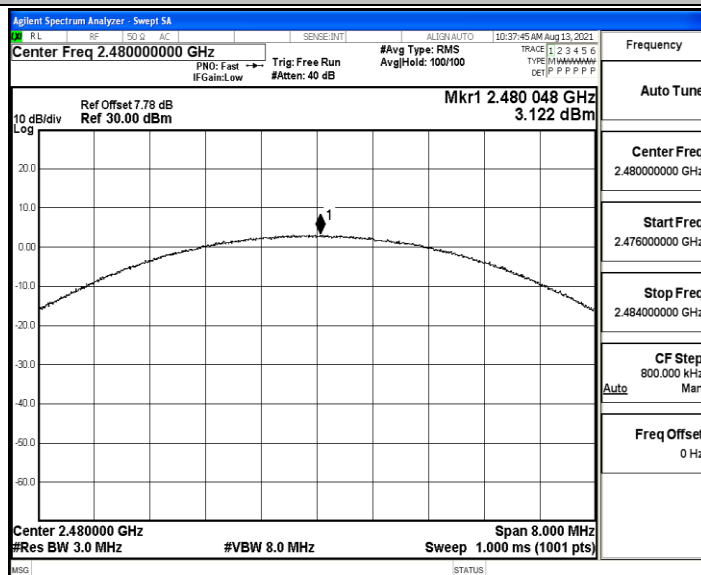
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480





Appendix A.3: Carrier frequency separation

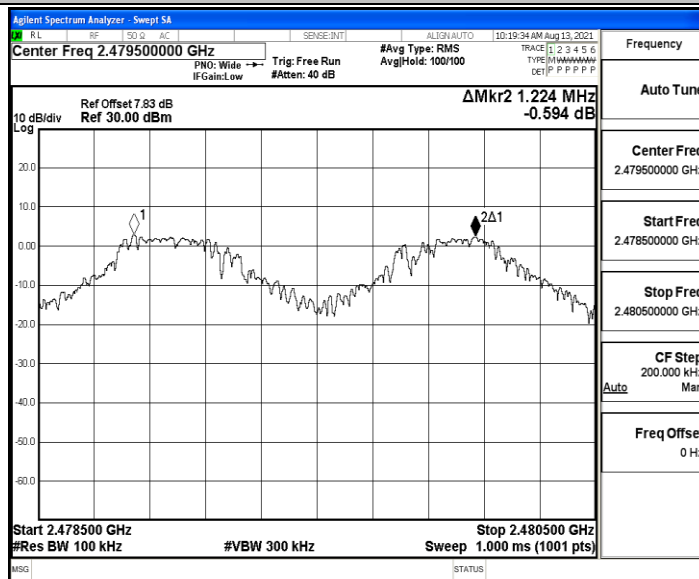
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	Hop	1.224	≥ 1.005	PASS
2DH5	Ant1	Hop	1.184	≥ 0.888	PASS
3DH5	Ant1	Hop	1.008	≥ 0.880	PASS

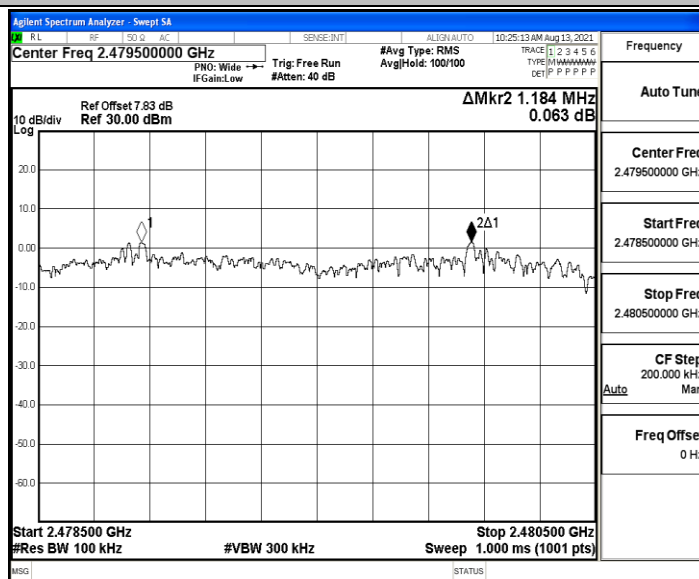


Test Graphs

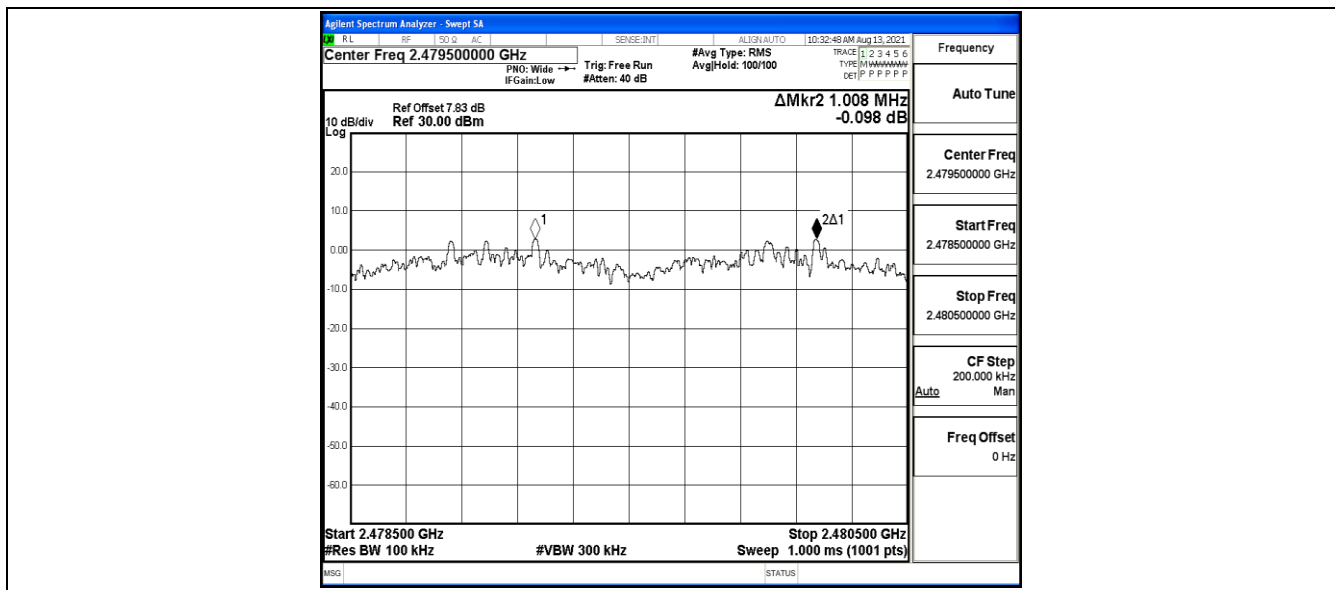
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop





Appendix A.4: Time of occupancy

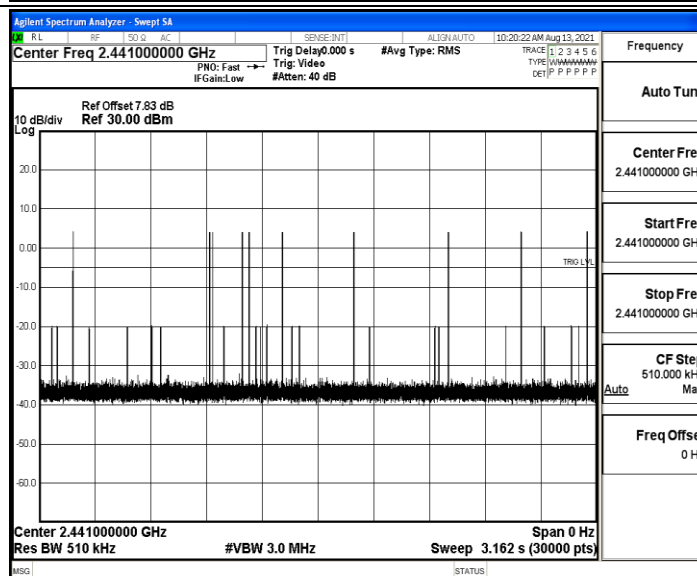
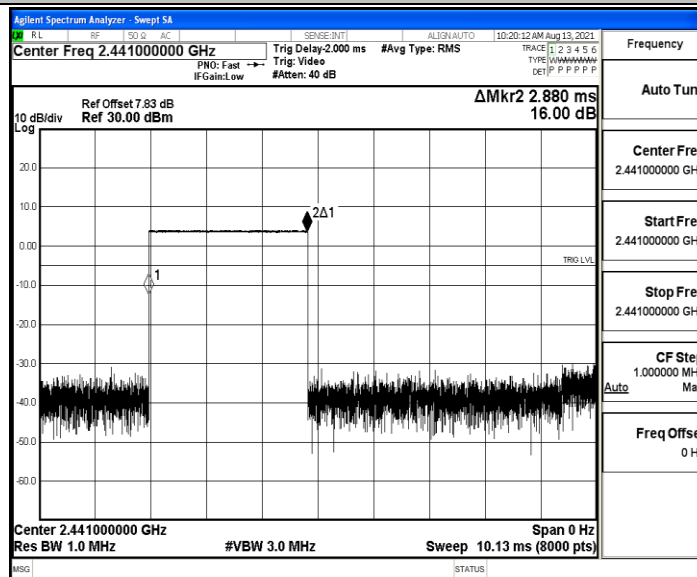
Test Result

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	80	0.231	≤0.4	PASS
3DH5	Ant1	Hop	2.89	110	0.318	≤0.4	PASS

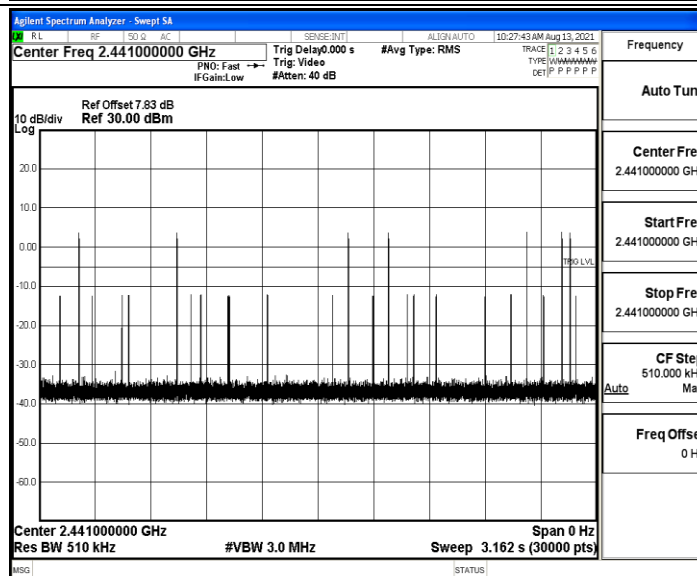
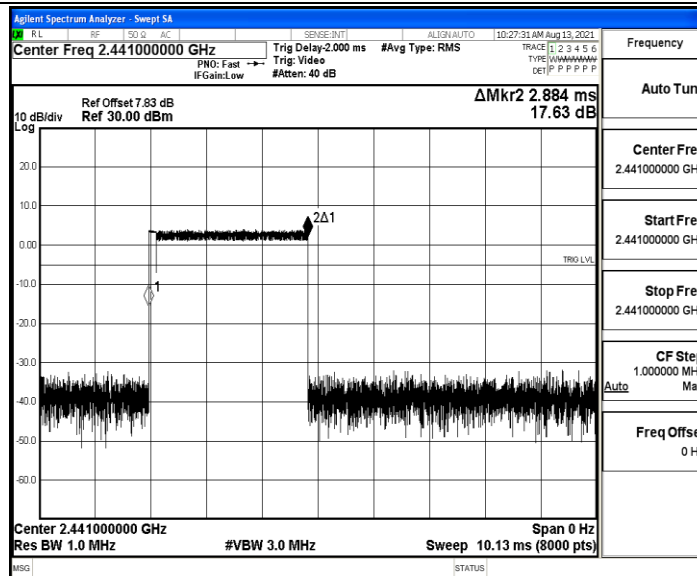


Test Graphs

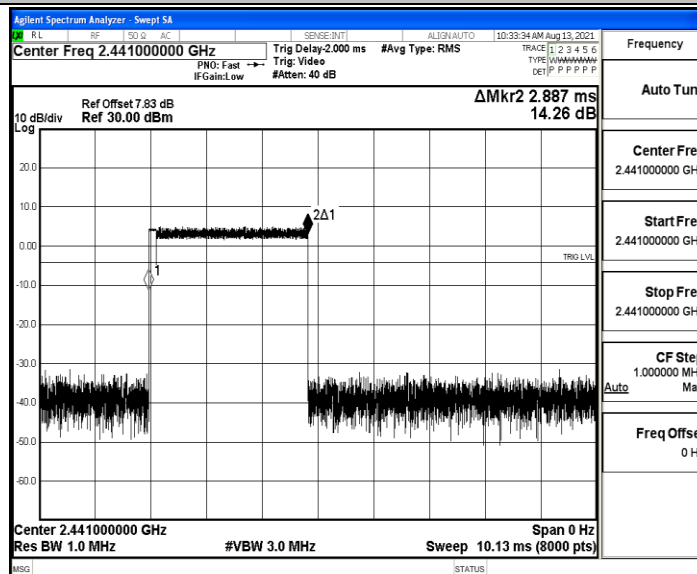
DH5_Ant1_Hop

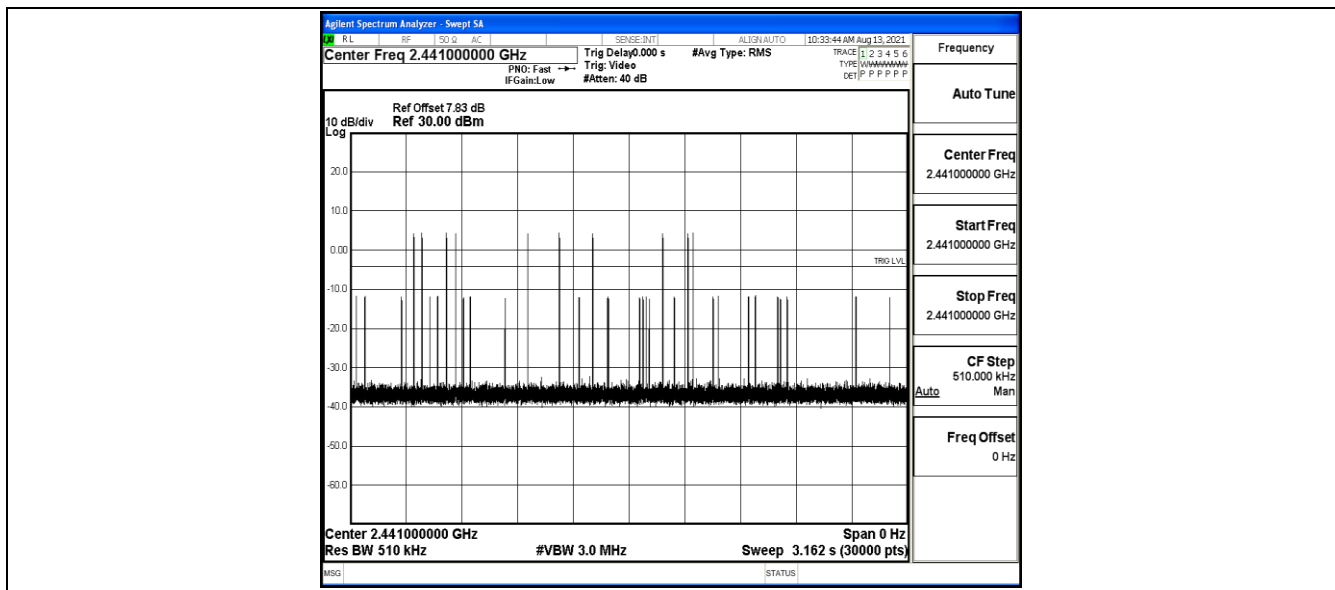


2DH5_Ant1_Hop



3DH5_Ant1_Hop







Appendix A.5: Number of hopping channels

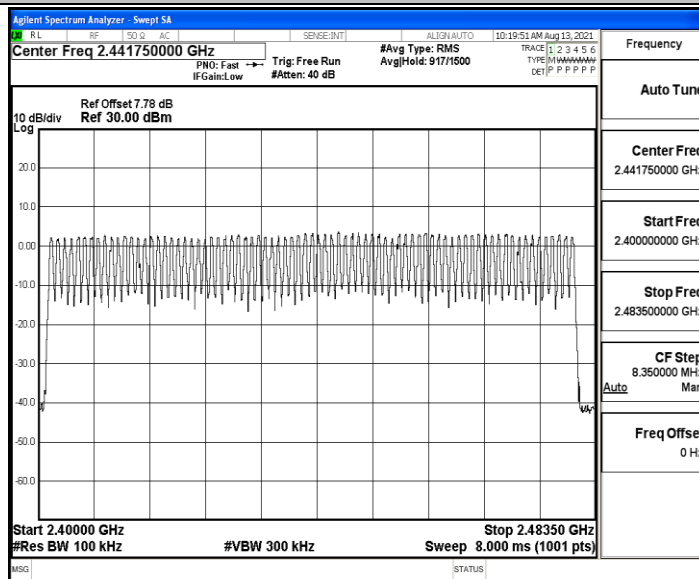
Test Result

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

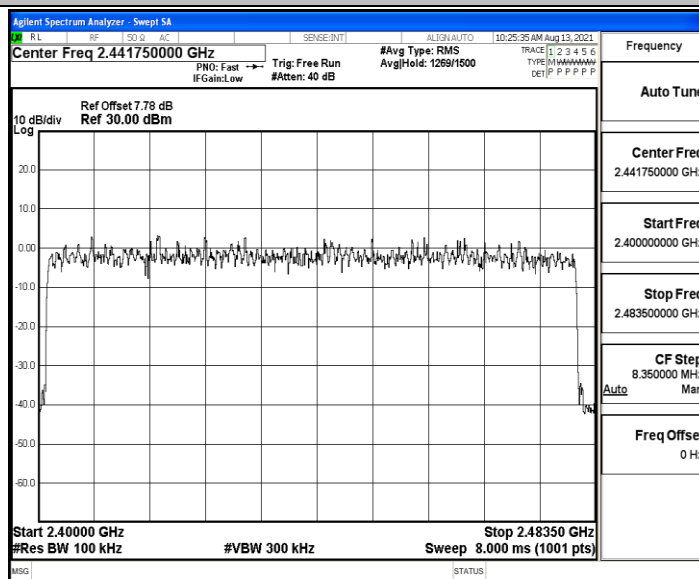


Test Graphs

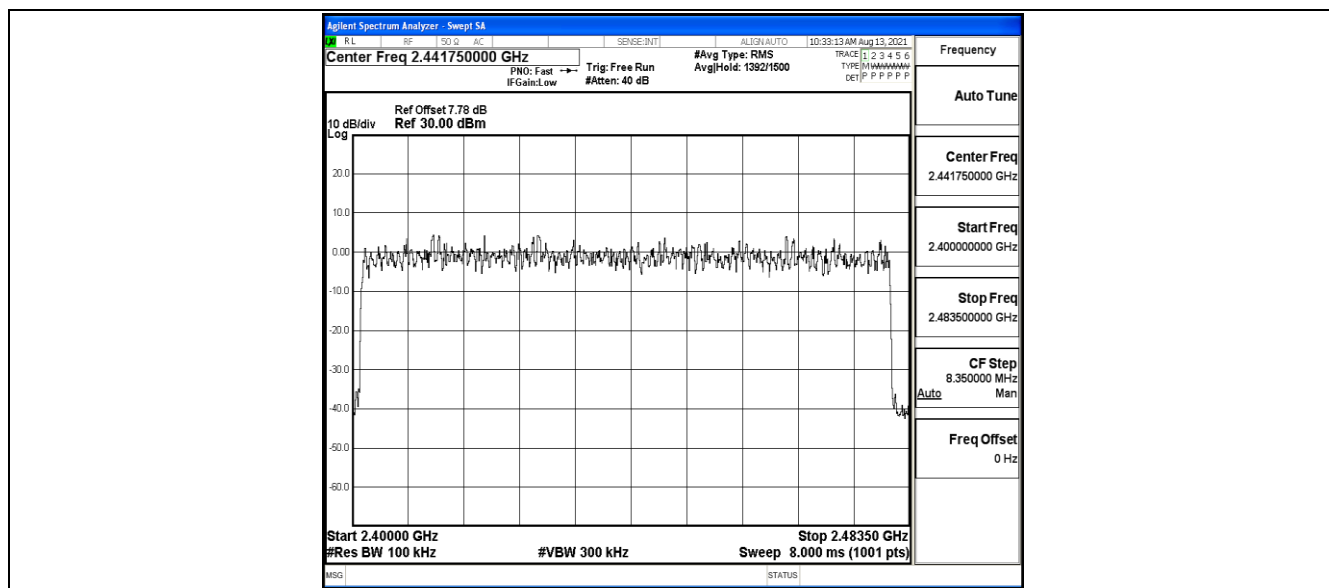
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop





Appendix A.6: Band edge measurements

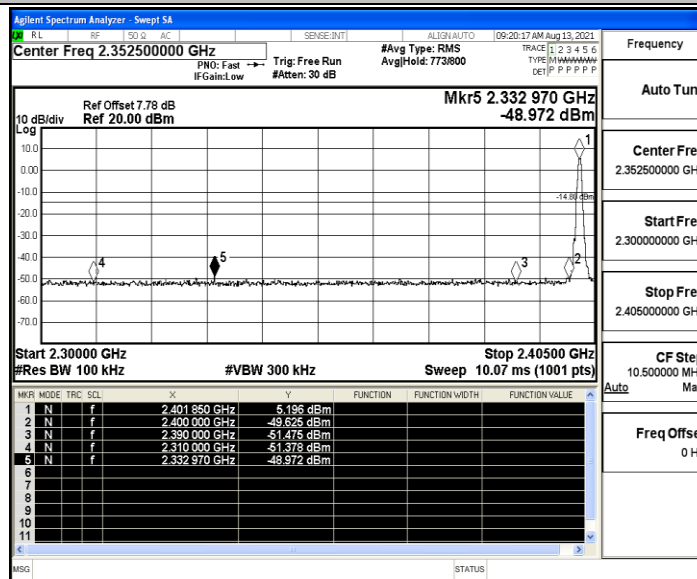
Test Result

TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	5.20	-48.97	≤ -14.8	PASS
		High	2480	5.49	-48.09	≤ -14.51	PASS
		Low	Hop_2402	2.48	-49.5	≤ -17.52	PASS
		High	Hop_2480	3.42	-49	≤ -16.58	PASS
2DH5	Ant1	Low	2402	3.96	-48.75	≤ -16.04	PASS
		High	2480	3.65	-48.83	≤ -16.35	PASS
		Low	Hop_2402	1.76	-49.5	≤ -18.24	PASS
		High	Hop_2480	2.09	-46.94	≤ -17.91	PASS
3DH5	Ant1	Low	2402	2.03	-49.25	≤ -17.97	PASS
		High	2480	3.90	-48.81	≤ -16.1	PASS
		Low	Hop_2402	-1.03	-49.62	≤ -21.03	PASS
		High	Hop_2480	1.96	-48.62	≤ -18.04	PASS

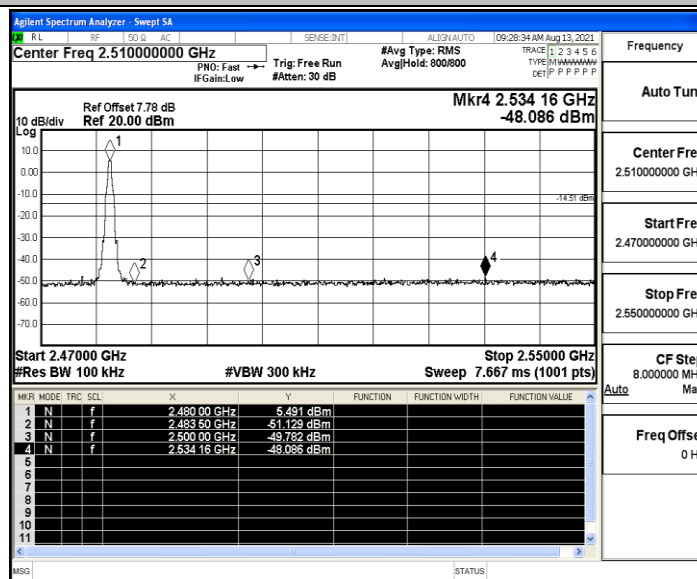


Test Graphs

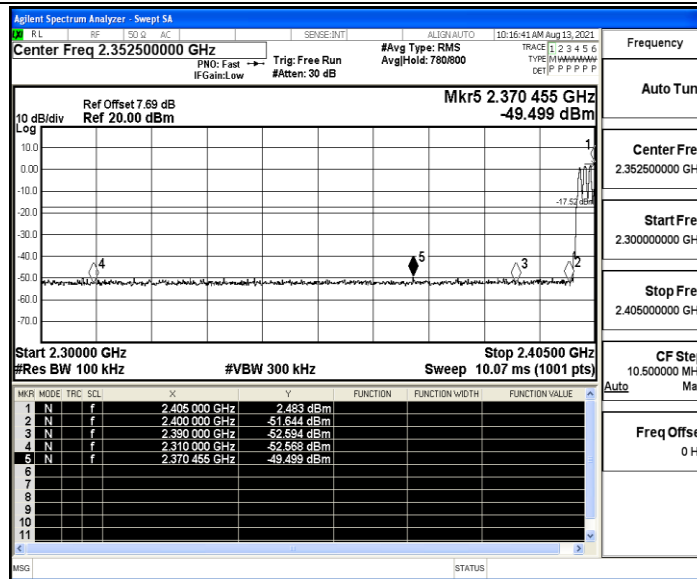
DH5_Ant1_Low_2402



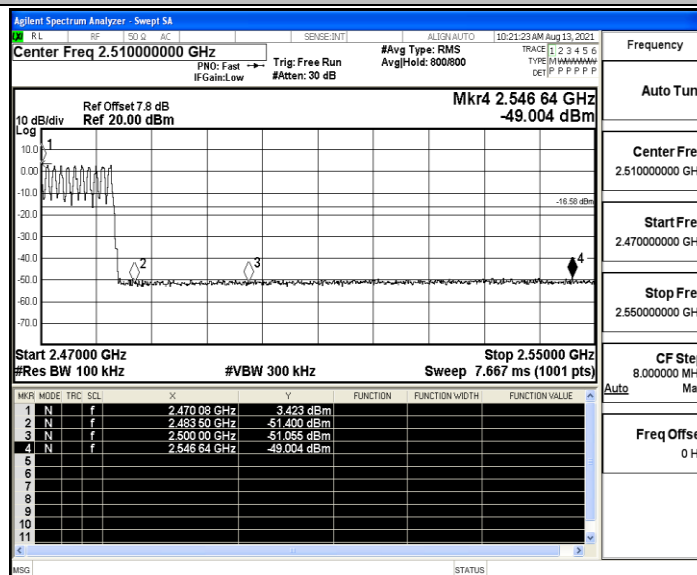
DH5_Ant1_High_2480



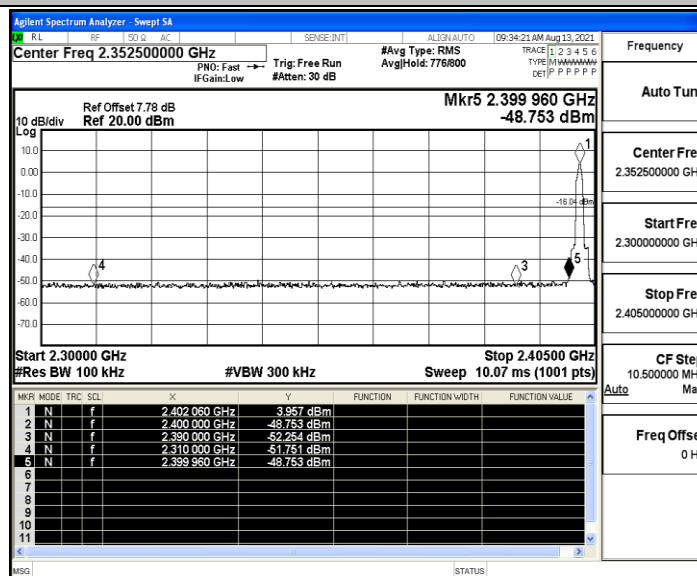
DH5_Ant1_Low_Hop_2402



DH5_Ant1_High_Hop_2480

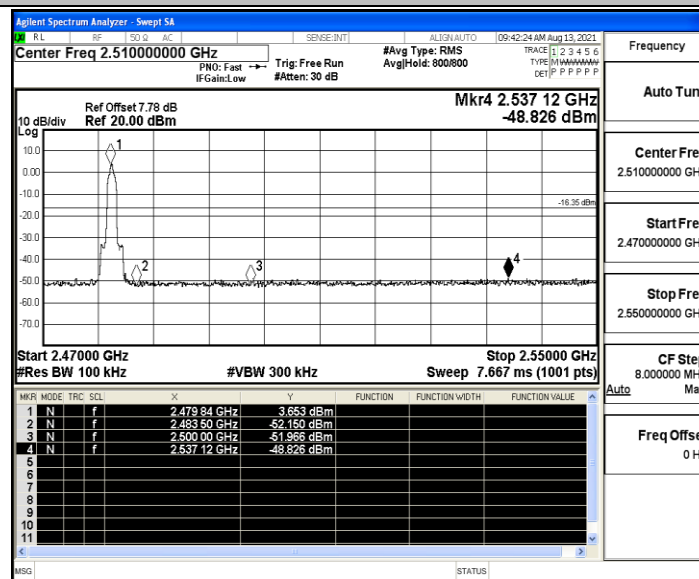


2DH5_Ant1_Low_2402

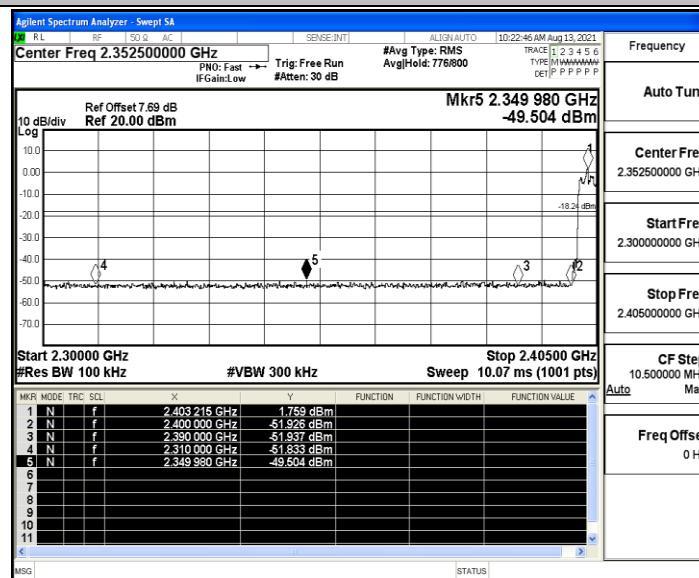




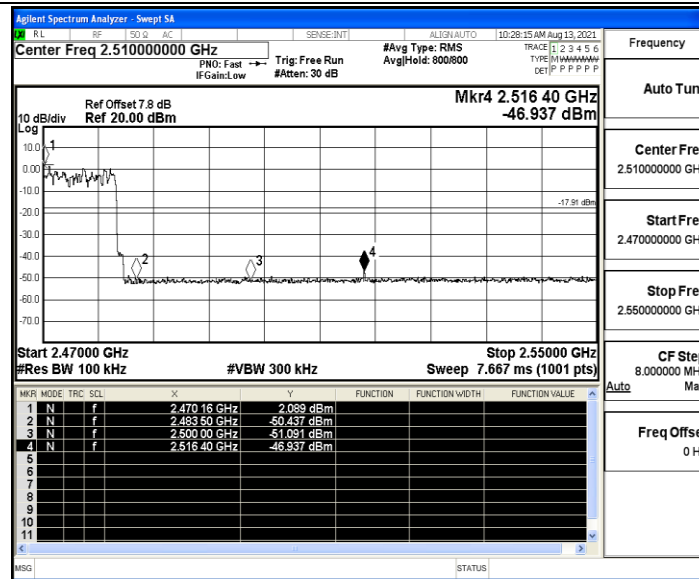
2DH5_Ant1_High_2480



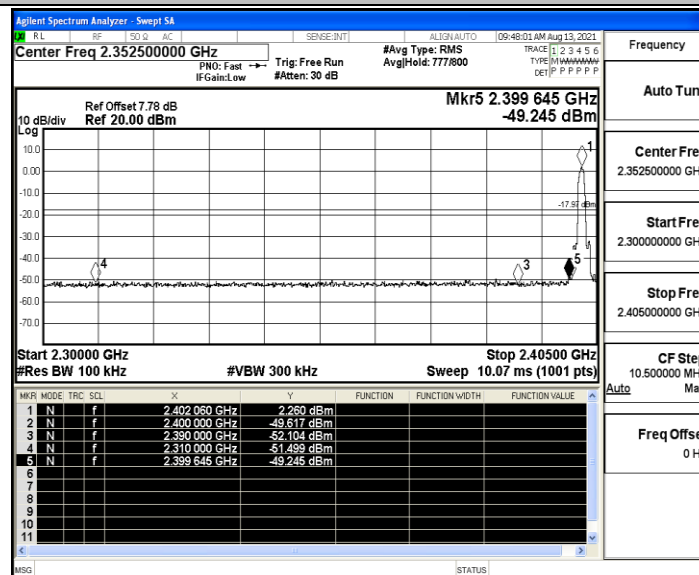
2DH5_Ant1_Low_Hop_2402



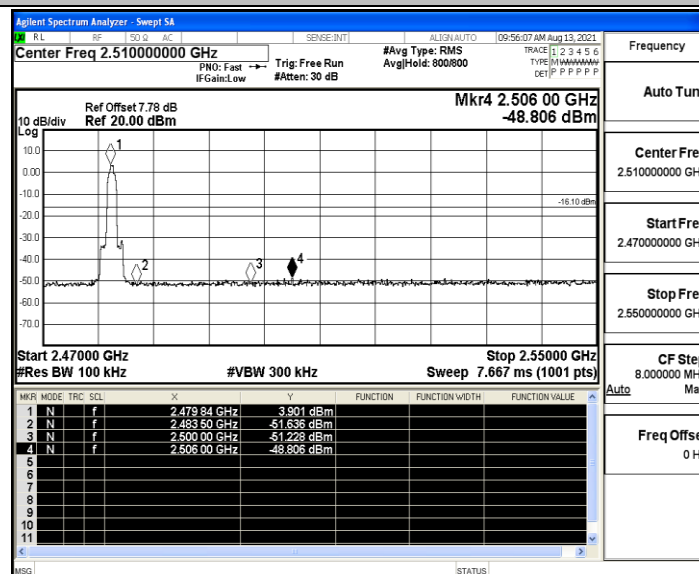
2DH5_Ant1_High_Hop_2480



3DH5_Ant1_Low_2402

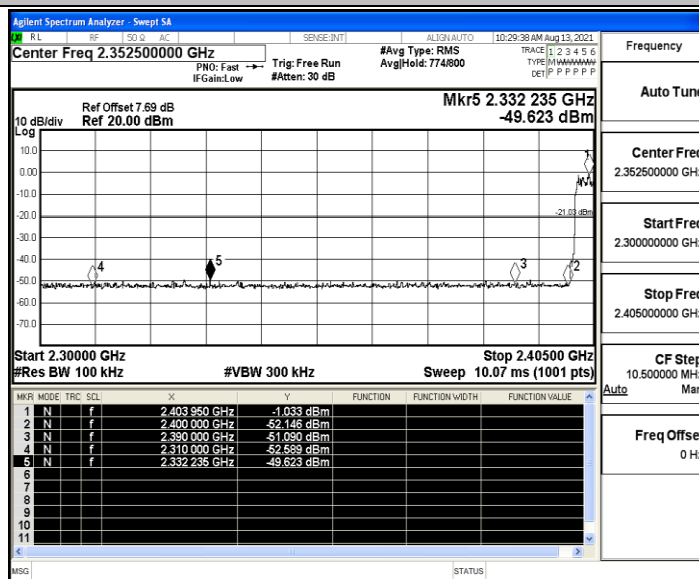


3DH5_Ant1_High_2480

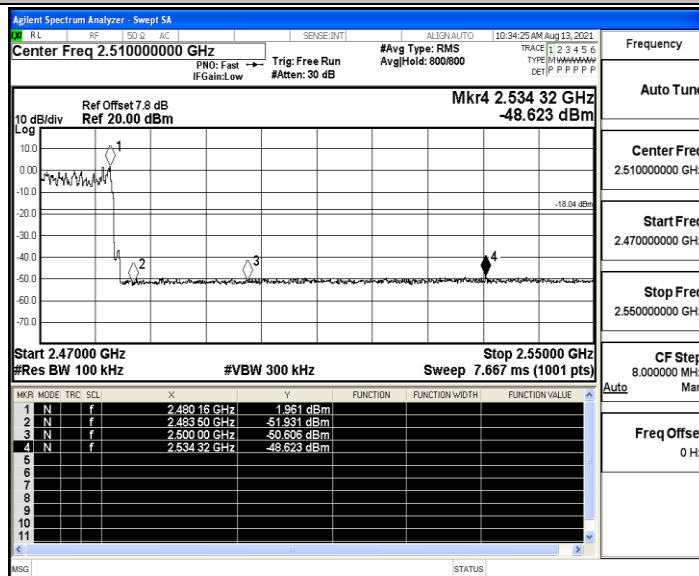




3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480





Appendix A.7: Conducted Spurious Emission

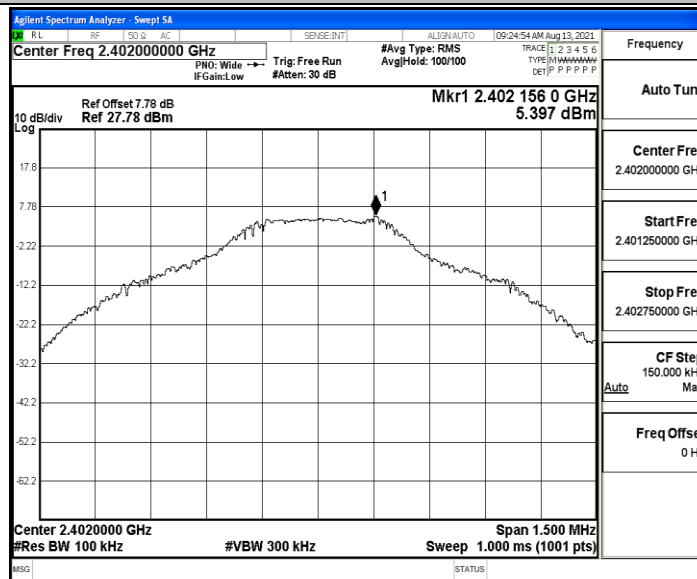
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	5.40	5.40	---	PASS
			30~1000	5.40	-61.73	≤ -14.6	PASS
			1000~26500	5.40	-47.09	≤ -14.6	PASS
		2441	Reference	6.09	6.09	---	PASS
			30~1000	6.09	-60.73	≤ -13.91	PASS
			1000~26500	6.09	-47.21	≤ -13.91	PASS
		2480	Reference	4.77	4.77	---	PASS
			30~1000	4.77	-61.01	≤ -15.24	PASS
			1000~26500	4.77	-47.13	≤ -15.24	PASS
2DH5	Ant1	2402	Reference	3.79	3.79	---	PASS
			30~1000	3.79	-61.93	≤ -16.21	PASS
			1000~26500	3.79	-47.87	≤ -16.21	PASS
		2441	Reference	4.13	4.13	---	PASS
			30~1000	4.13	-61.14	≤ -15.87	PASS
			1000~26500	4.13	-47.32	≤ -15.87	PASS
		2480	Reference	0.85	0.85	---	PASS
			30~1000	0.85	-61.76	≤ -19.15	PASS
			1000~26500	0.85	-47.18	≤ -19.15	PASS
3DH5	Ant1	2402	Reference	3.65	3.65	---	PASS
			30~1000	3.65	-61.96	≤ -16.35	PASS
			1000~26500	3.65	-47.8	≤ -16.35	PASS
		2441	Reference	4.00	4.00	---	PASS
			30~1000	4.00	-61.64	≤ -16	PASS
			1000~26500	4.00	-47.76	≤ -16	PASS
		2480	Reference	3.86	3.86	---	PASS
			30~1000	3.86	-62	≤ -16.14	PASS
			1000~26500	3.86	-47.59	≤ -16.14	PASS

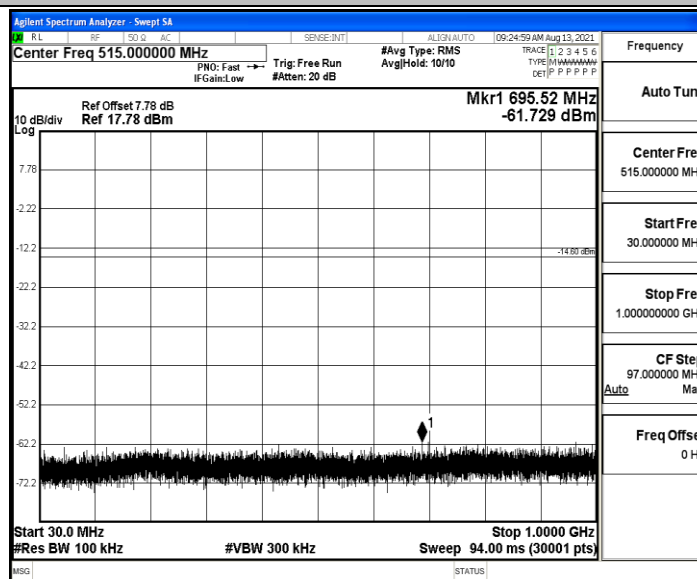


Test Graphs

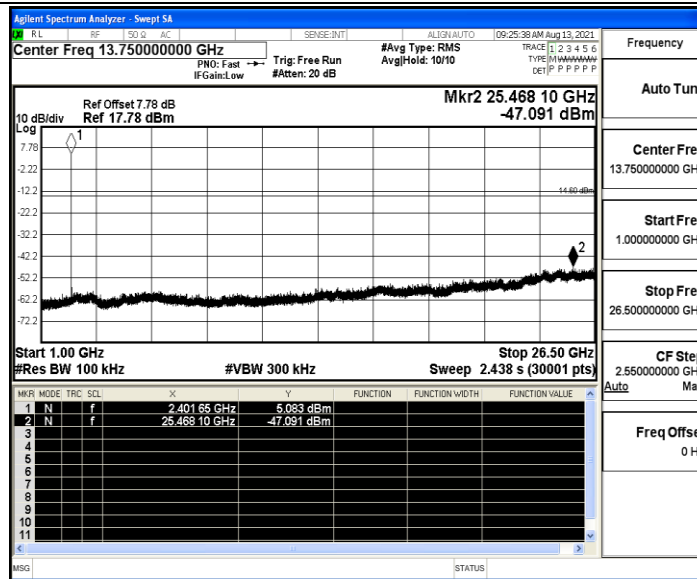
DH5_Ant1_2402_0-Reference



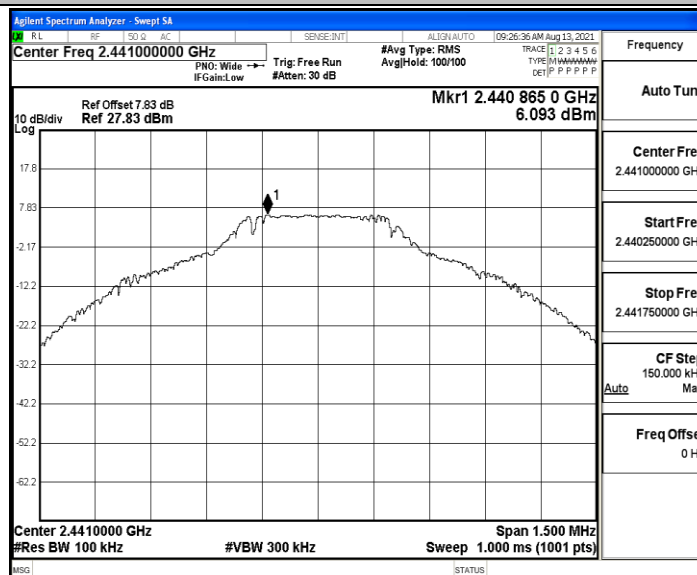
DH5_Ant1_2402_30~1000



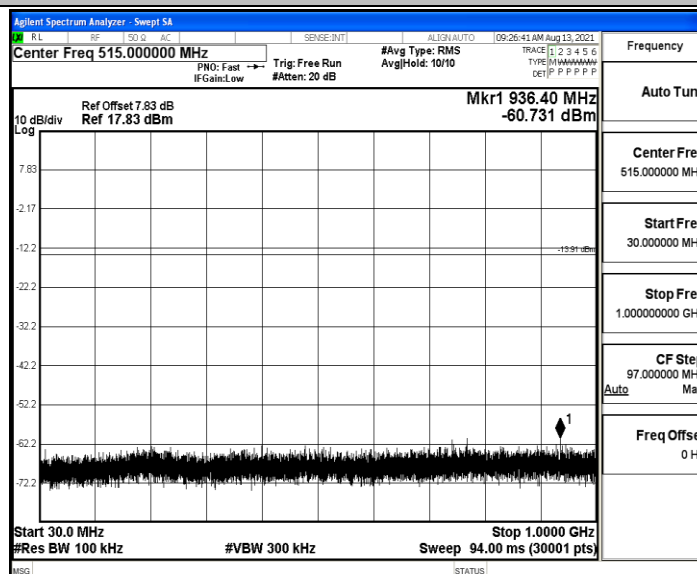
DH5_Ant1_2402_1000~26500



DH5_Ant1_2441_0-Reference

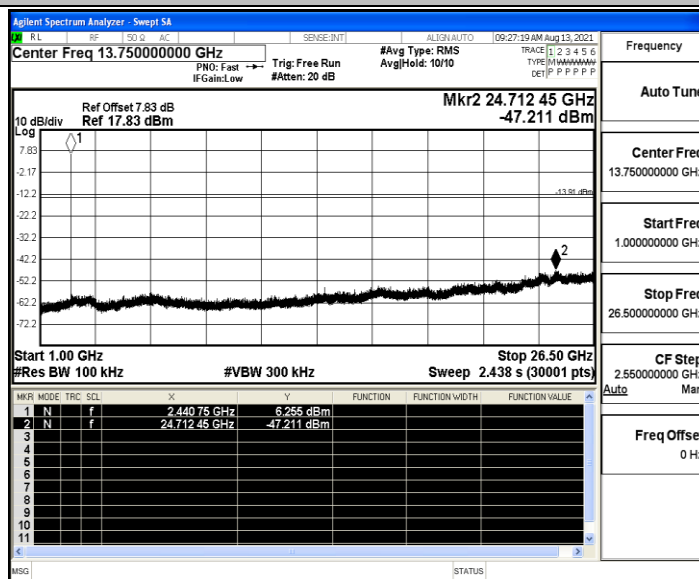


DH5_Ant1_2441_30~1000

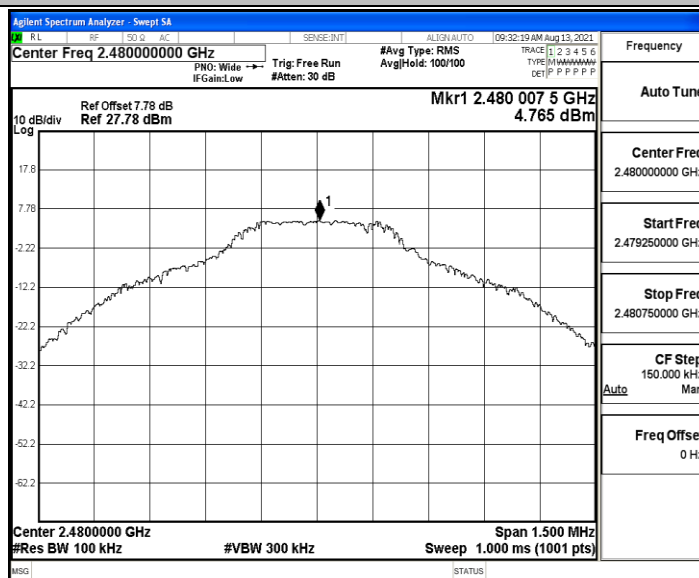




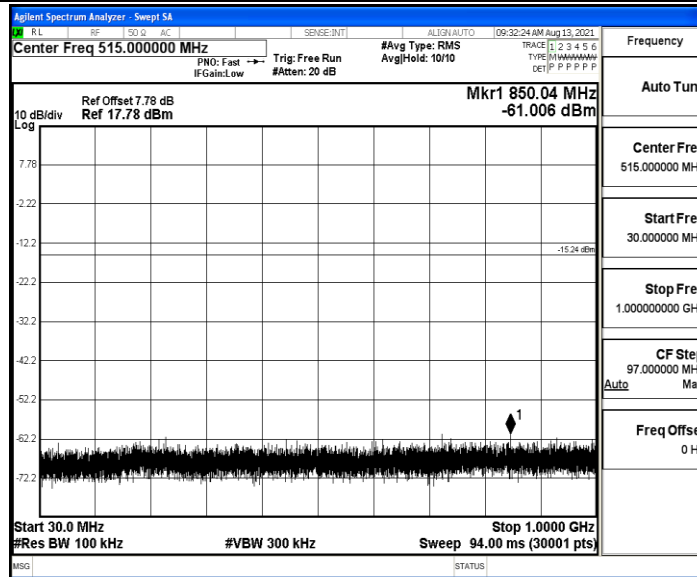
DH5_Ant1_2441_1000~26500



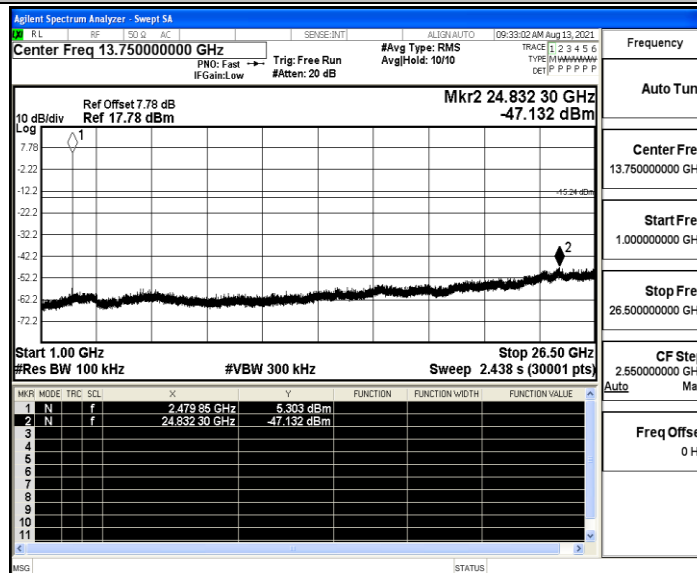
DH5_Ant1_2480_0~Reference



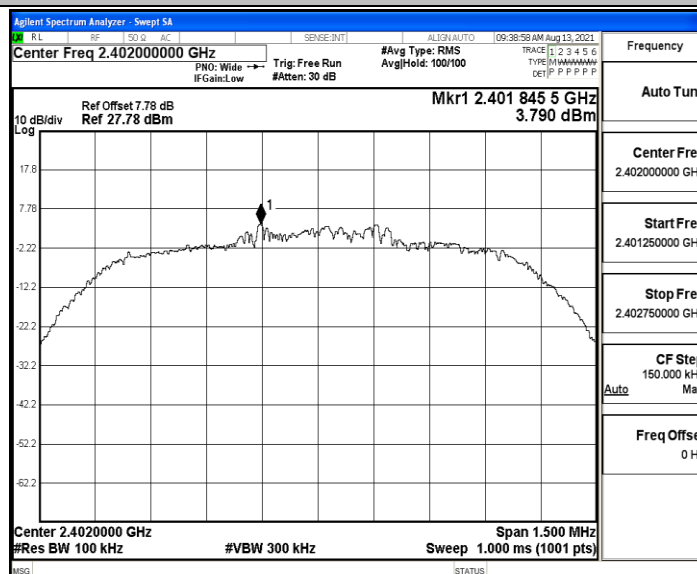
DH5_Ant1_2480_30~1000



DH5_Ant1_2480_1000~26500

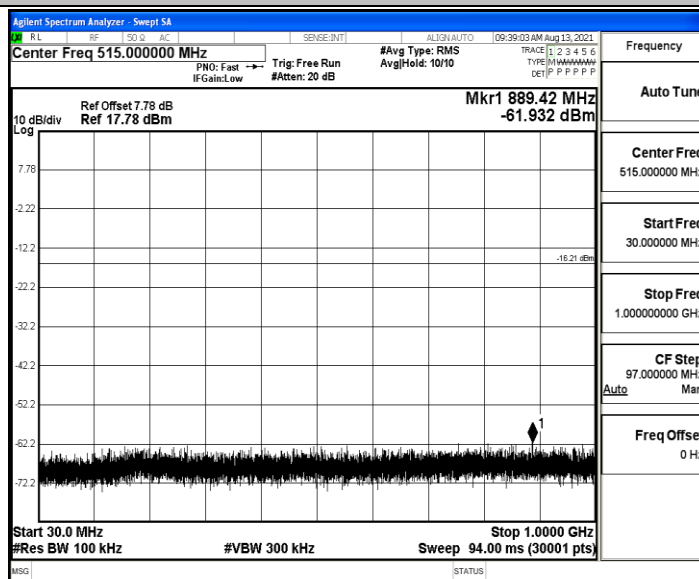


2DH5_Ant1_2402_0~Reference

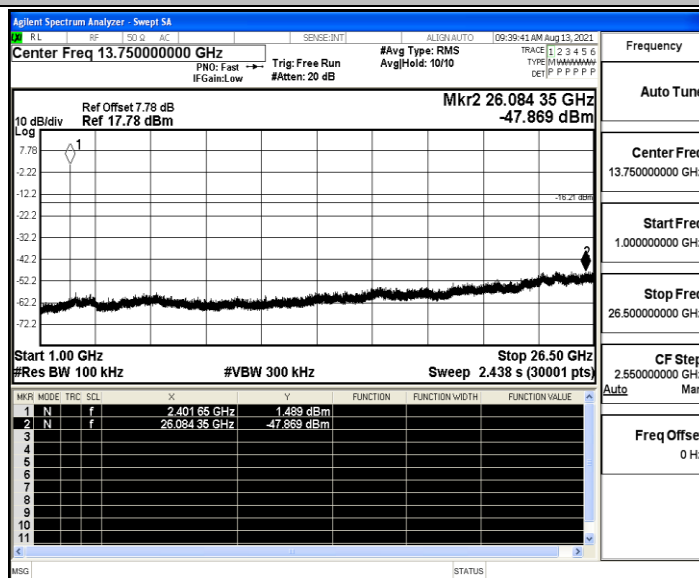




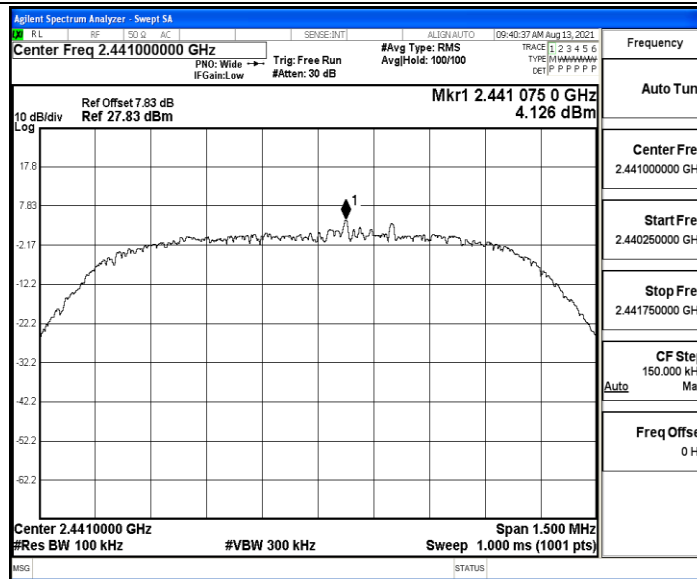
2DH5_Ant1_2402_30~1000



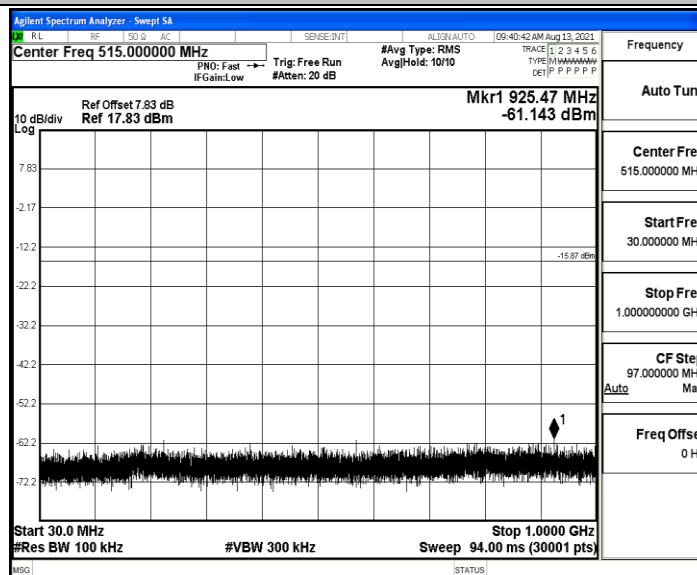
2DH5_Ant1_2402_1000~26500



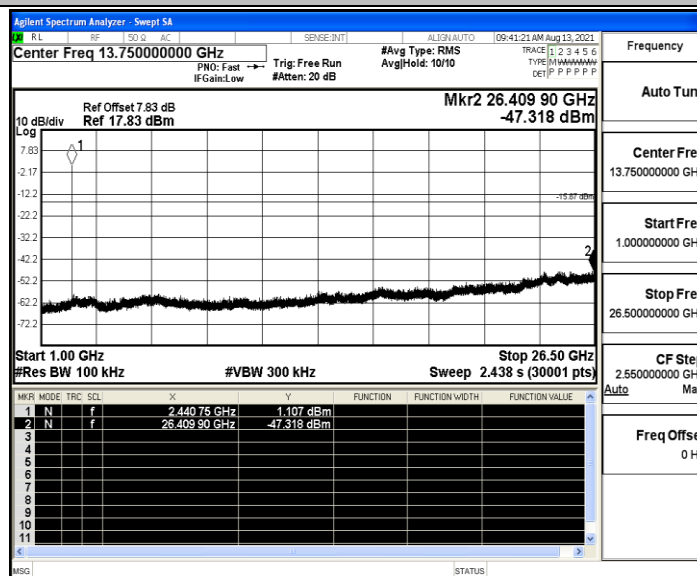
2DH5_Ant1_2441_0~Reference



2DH5_Ant1_2441_30~1000

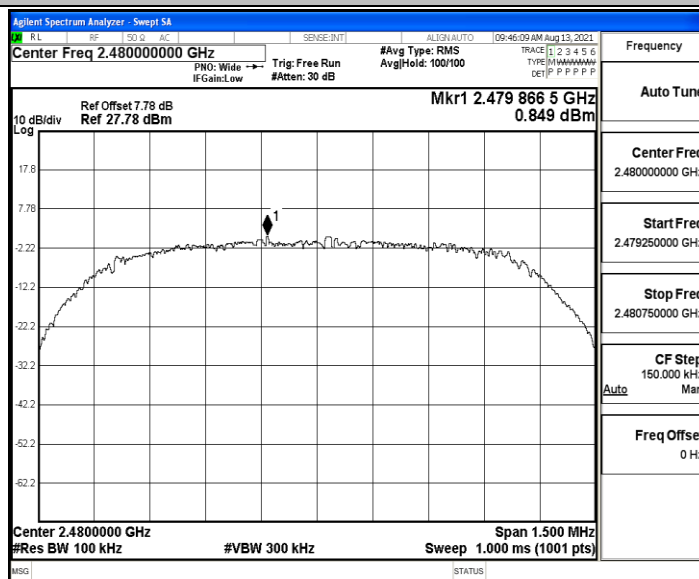


2DH5_Ant1_2441_1000~26500

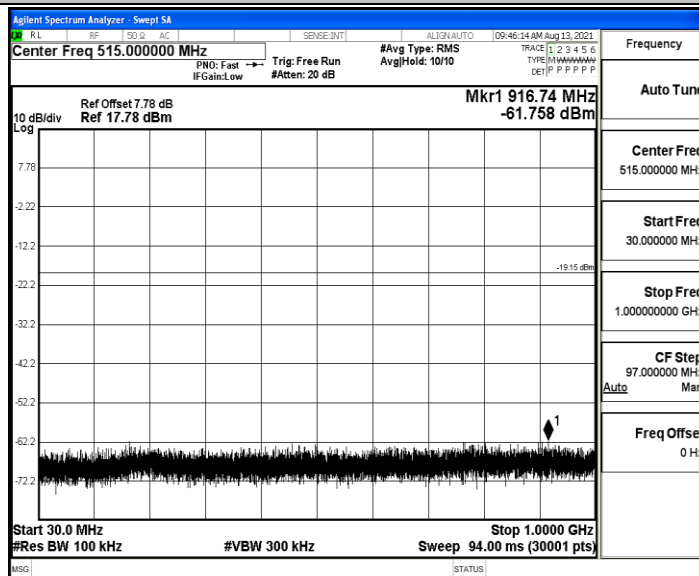




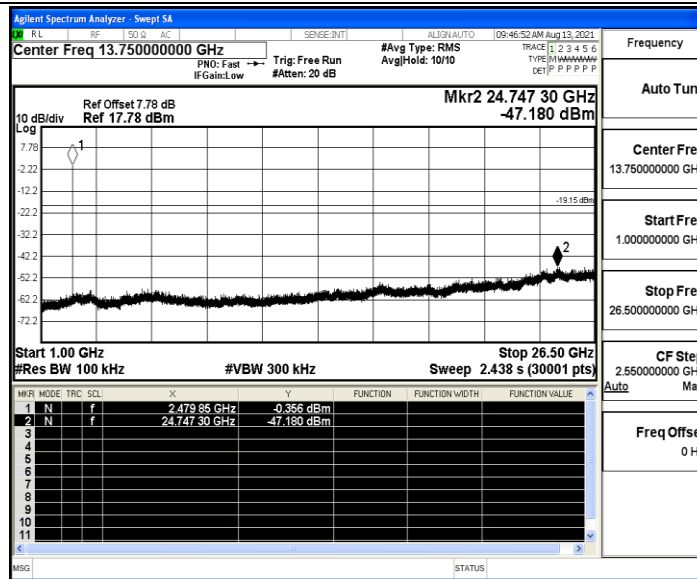
2DH5_Ant1_2480_0~Reference



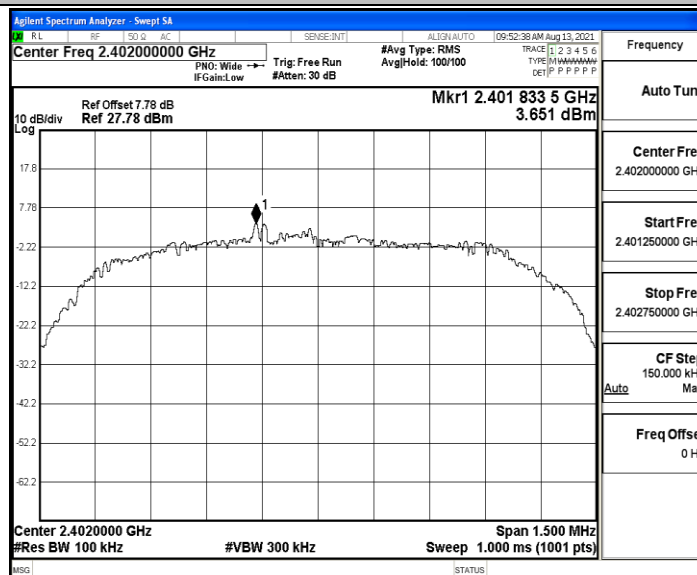
2DH5_Ant1_2480_30~1000



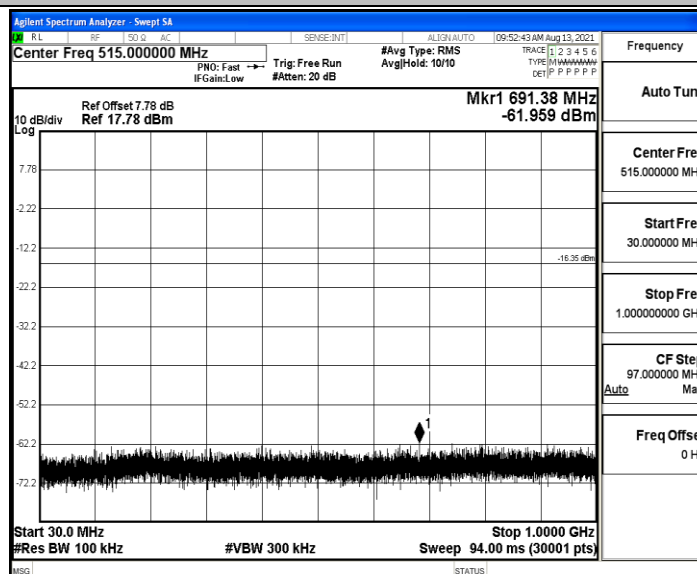
2DH5_Ant1_2480_1000~26500



3DH5_Ant1_2402_0~Reference

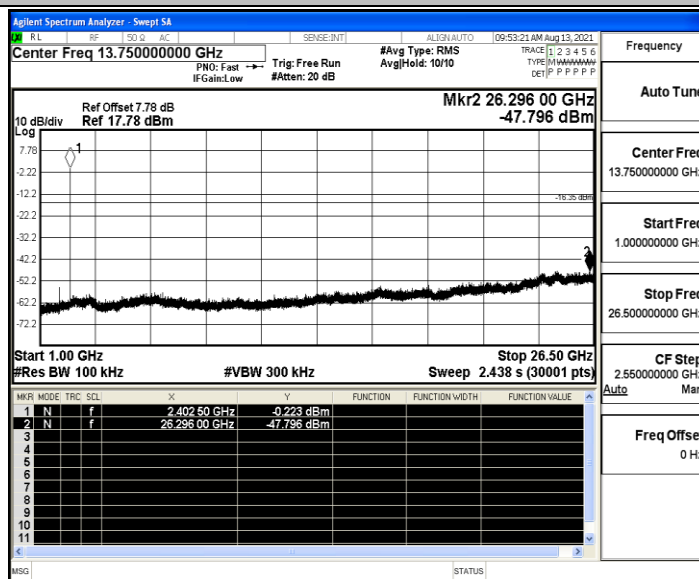


3DH5_Ant1_2402_30~1000

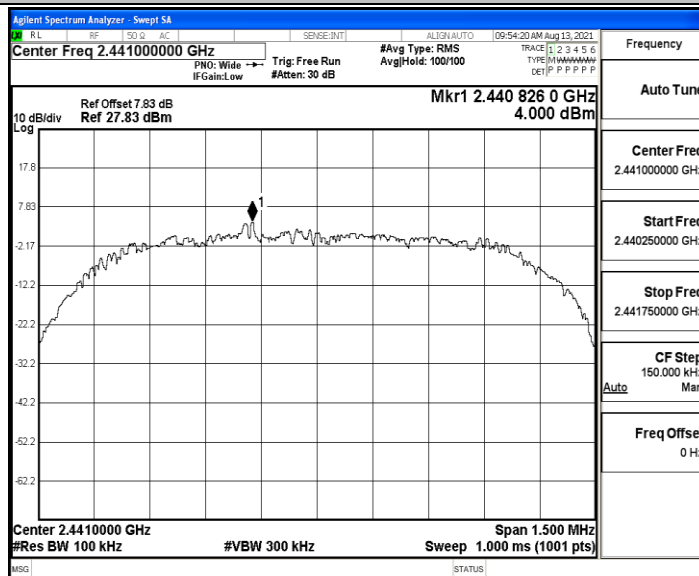




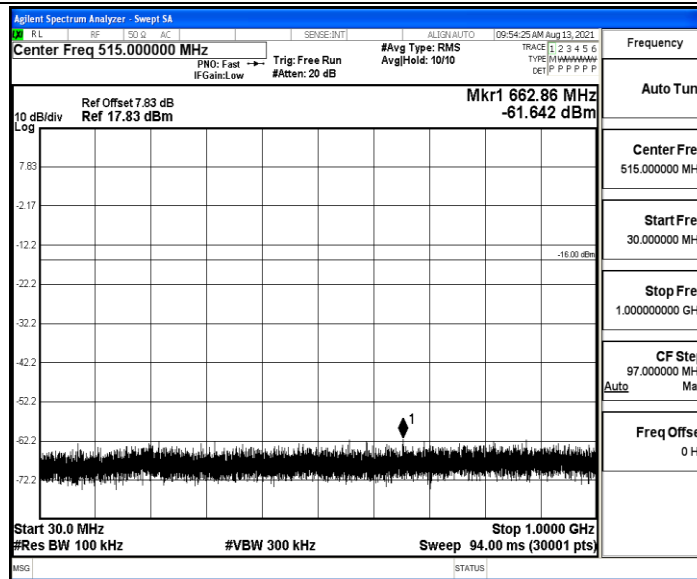
3DH5_Ant1_2402_1000~26500



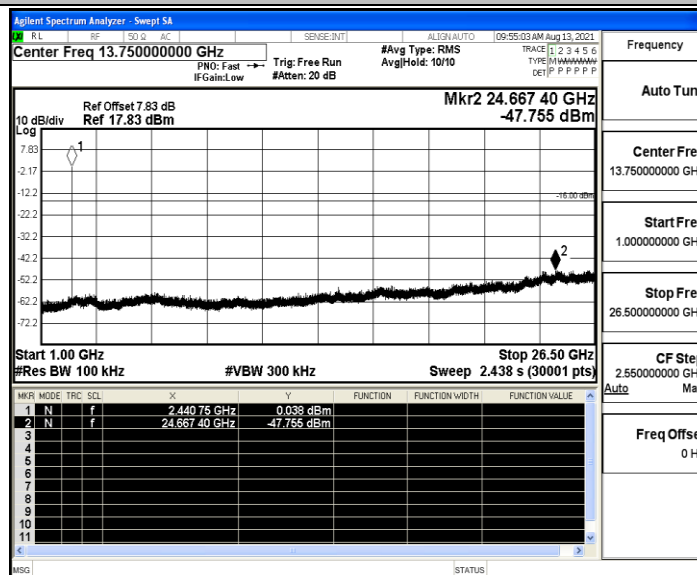
3DH5_Ant1_2441_0~Reference



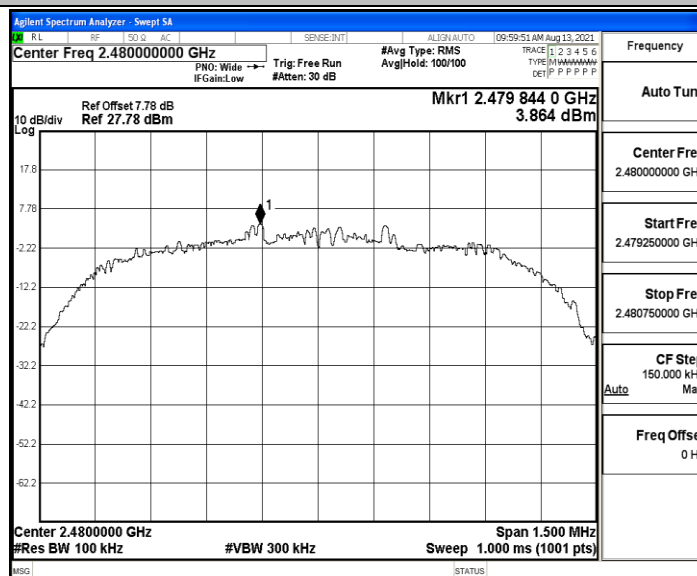
3DH5_Ant1_2441_30~1000



3DH5_Ant1_2441_1000~26500

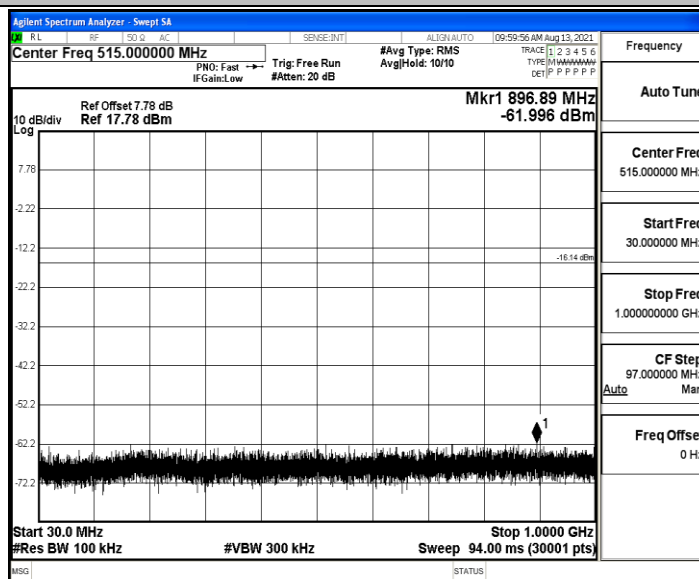


3DH5_Ant1_2480_0~Reference

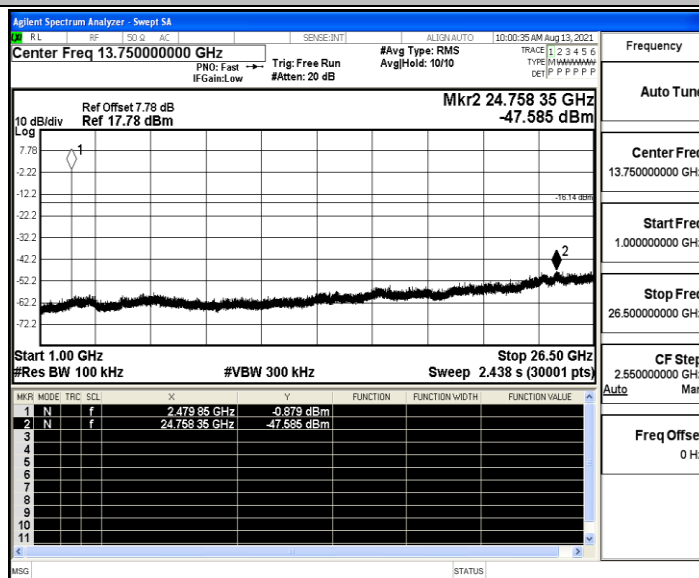




3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000~26500





Appendix A.8: Emissions in Restricted Bands

Test Result

TestMod e	Antenn a	ChNam e	Chann el	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/ m]	Limit [dBuV/ m]	Verdict
DH5	Ant1	Low	2402	AV	2310.000	-48.87	≤-41.20	46.33	≤54	PASS
				AV	2389.040	-48.38	≤-41.20	46.82	≤54	PASS
				AV	2390.000	-48.54	≤-41.20	46.66	≤54	PASS
				Peak	2310.000	-40.77	≤-21.20	54.43	≤74	PASS
				Peak	2346.725	-37.85	≤-21.20	57.35	≤74	PASS
				Peak	2390.000	-40.52	≤-21.20	54.68	≤74	PASS
		High	2480	AV	2483.500	-46.98	≤-41.20	48.22	≤54	PASS
				AV	2483.520	-46.98	≤-41.20	48.22	≤54	PASS
				AV	2500.000	-47.89	≤-41.20	47.31	≤54	PASS
				Peak	2483.500	-38.77	≤-21.20	56.43	≤74	PASS
				Peak	2494.640	-36.63	≤-21.20	58.57	≤74	PASS
				Peak	2500.000	-38.91	≤-21.20	56.29	≤74	PASS
		Low	Hop_2 402	Peak	2310.000	-40.93	≤-21.20	54.27	≤74	PASS
				Peak	2376.020	-38.15	≤-21.20	57.05	≤74	PASS
				Peak	2390.000	-40.69	≤-21.20	54.51	≤74	PASS
		High	Hop_2 480	Peak	2483.500	-40	≤-21.20	55.20	≤74	PASS
				Peak	2489.200	-37.23	≤-21.20	57.97	≤74	PASS
				Peak	2500.000	-40	≤-21.20	55.20	≤74	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-49.01	≤-41.20	46.19	≤54	PASS
				AV	2388.515	-48.53	≤-41.20	46.67	≤54	PASS
				AV	2390.000	-48.63	≤-41.20	46.57	≤54	PASS
				Peak	2310.000	-40.7	≤-21.20	54.50	≤74	PASS
				Peak	2368.670	-37.98	≤-21.20	57.22	≤74	PASS
				Peak	2390.000	-39.94	≤-21.20	55.26	≤74	PASS
		High	2480	AV	2483.500	-47.11	≤-41.20	48.09	≤54	PASS
				AV	2483.520	-47.11	≤-41.20	48.09	≤54	PASS
				AV	2500.000	-48.01	≤-41.20	47.19	≤54	PASS
				Peak	2483.500	-38.87	≤-21.20	56.33	≤74	PASS
				Peak	2488.000	-37.67	≤-21.20	57.53	≤74	PASS
				Peak	2500.000	-39.68	≤-21.20	55.52	≤74	PASS
		Low	Hop_2 402	Peak	2310.000	-41.24	≤-21.20	53.96	≤74	PASS
				Peak	2355.440	-38.85	≤-21.20	56.35	≤74	PASS
				Peak	2390.000	-39.9	≤-21.20	55.30	≤74	PASS
		High	Hop_2 480	Peak	2483.500	-40.77	≤-21.20	54.43	≤74	PASS
				Peak	2497.280	-37.62	≤-21.20	57.58	≤74	PASS
				Peak	2500.000	-40.05	≤-21.20	55.15	≤74	PASS



3DH5	Ant1	Low	2402	AV	2310.000	-49.03	≤-41.20	46.17	≤54	PASS
				AV	2389.985	-48.54	≤-41.20	46.66	≤54	PASS
				AV	2390.000	-48.54	≤-41.20	46.66	≤54	PASS
				Peak	2310.000	-39.94	≤-21.20	55.26	≤74	PASS
				Peak	2355.650	-38.08	≤-21.20	57.12	≤74	PASS
				Peak	2390.000	-40.89	≤-21.20	54.31	≤74	PASS
		High	2480	AV	2483.500	-47.16	≤-41.20	48.04	≤54	PASS
				AV	2483.520	-47.15	≤-41.20	48.05	≤54	PASS
				AV	2500.000	-48.04	≤-41.20	47.16	≤54	PASS
				Peak	2483.500	-40.29	≤-21.20	54.91	≤74	PASS
				Peak	2488.240	-37.47	≤-21.20	57.73	≤74	PASS
				Peak	2500.000	-40.55	≤-21.20	54.65	≤74	PASS
		Low	Hop_2 402	Peak	2310.000	-40.73	≤-21.20	54.47	≤74	PASS
				Peak	2368.145	-37.87	≤-21.20	57.33	≤74	PASS
				Peak	2390.000	-40.49	≤-21.20	54.71	≤74	PASS
		High	Hop_2 480	Peak	2483.500	-40.19	≤-21.20	55.01	≤74	PASS
				Peak	2485.280	-38.36	≤-21.20	56.84	≤74	PASS
				Peak	2500.000	-39.25	≤-21.20	55.95	≤74	PASS

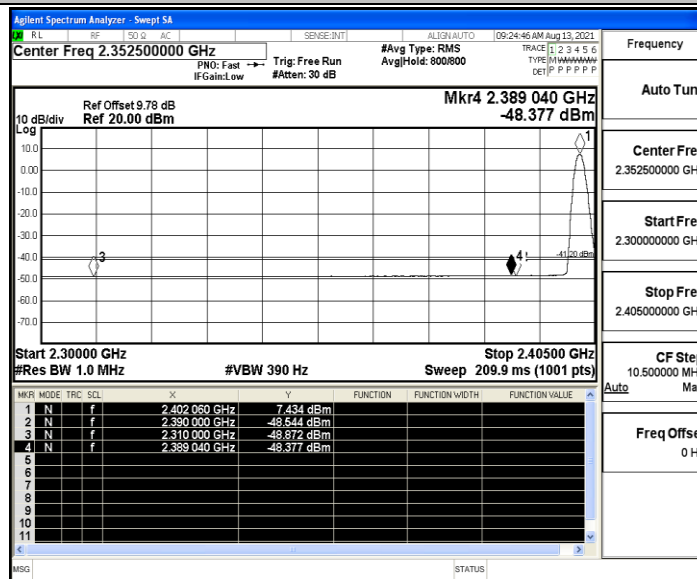
Note:

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.

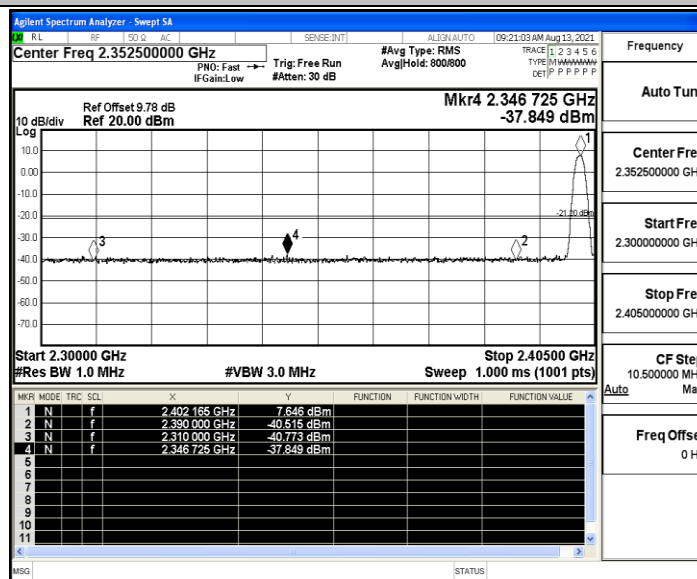


Test Graphs

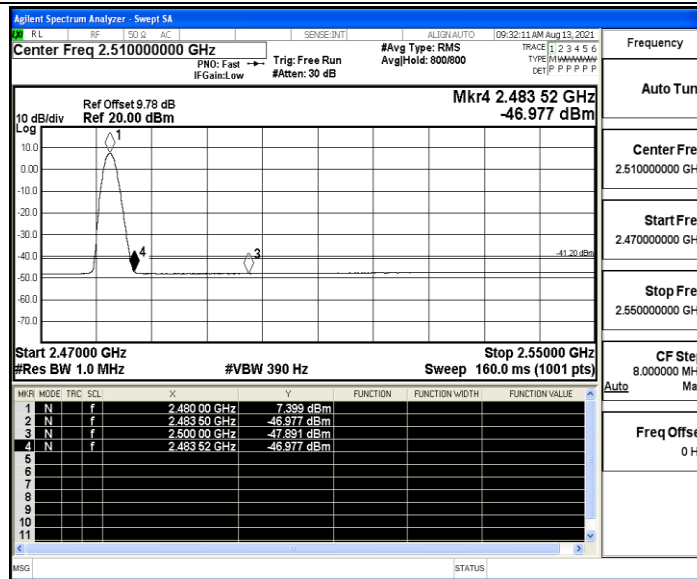
DH5_Ant1_Low_2402_AV



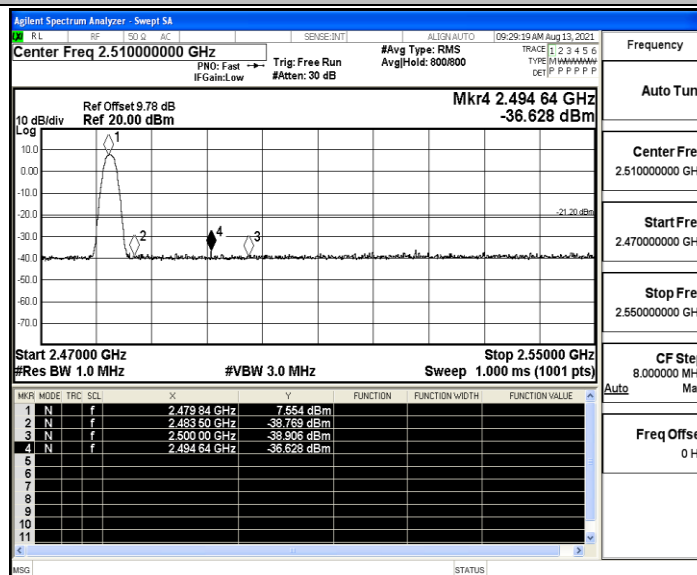
DH5_Ant1_Low_2402_Peak



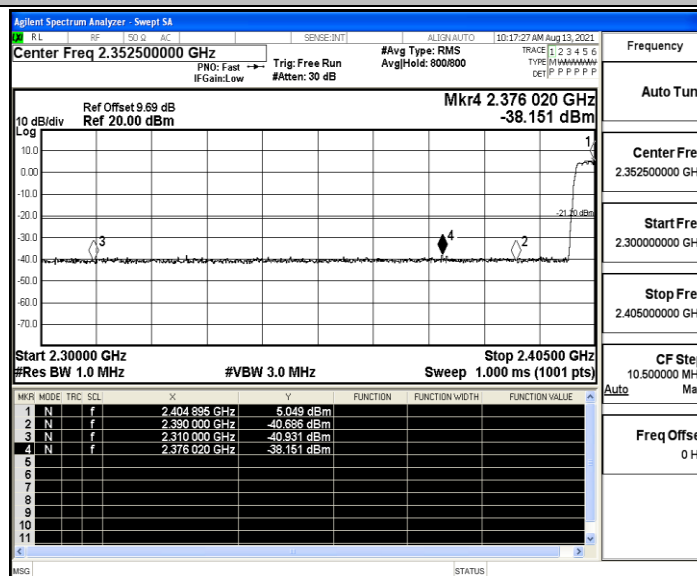
DH5_Ant1_High_2480_AV



DH5_Ant1_High_2480_Peak

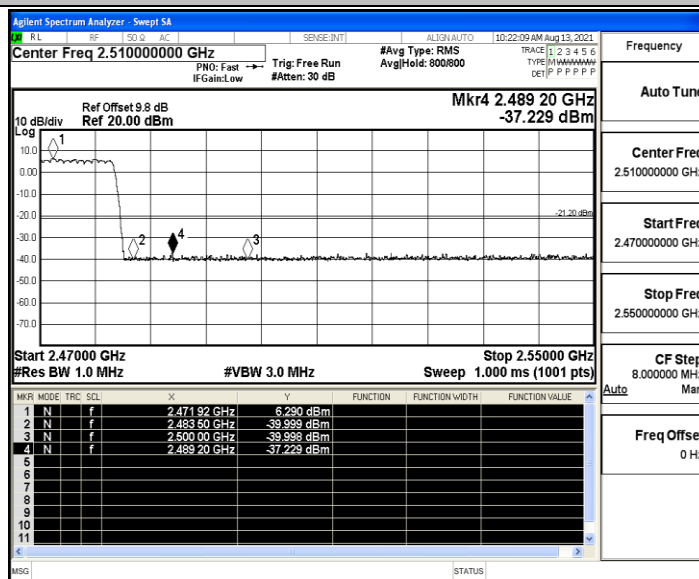


DH5_Ant1_Low_Hop_2402_Peak

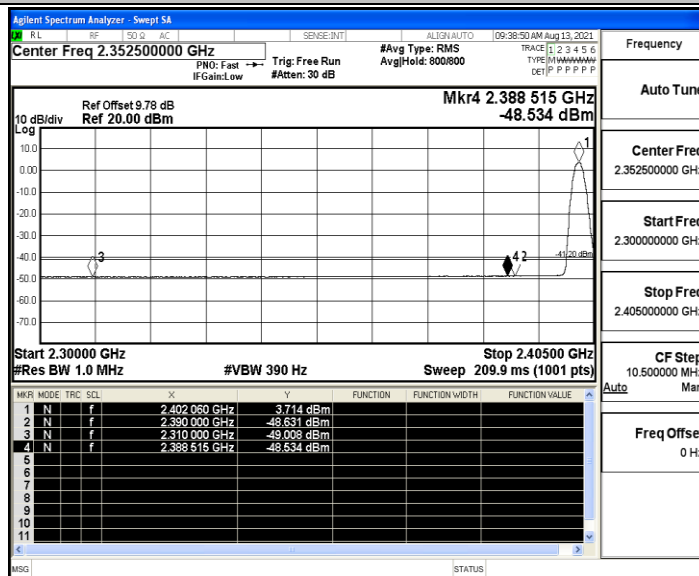




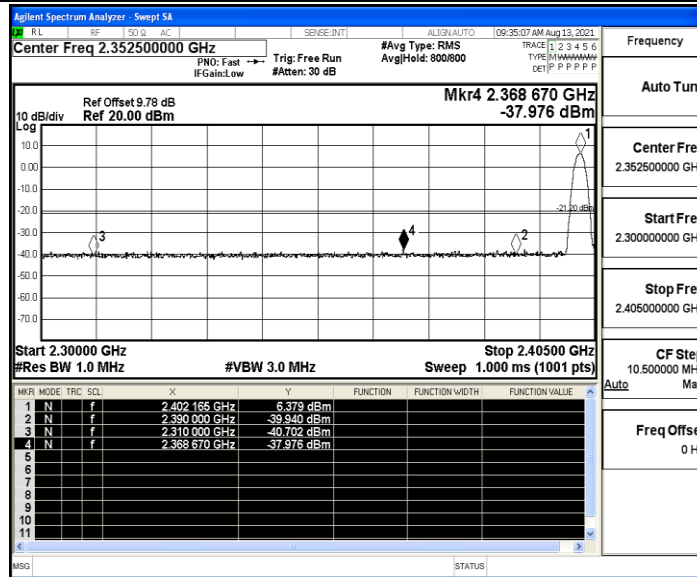
DH5_Ant1_High_Hop_2480_Peak



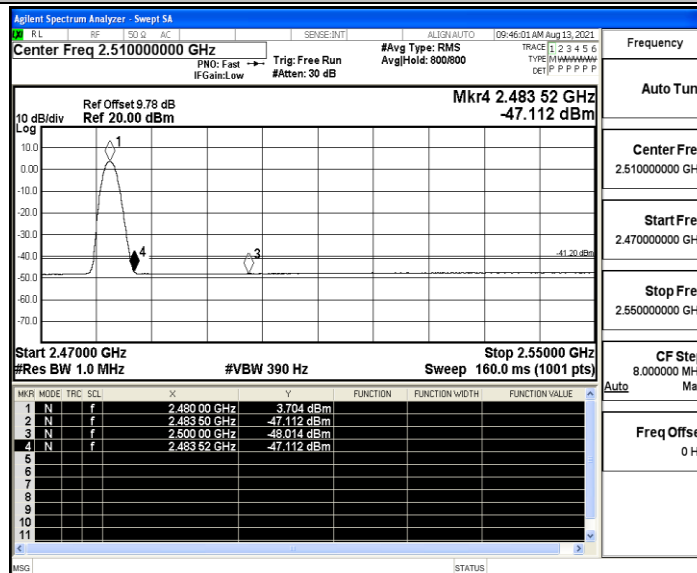
2DH5_Ant1_Low_2402_AV



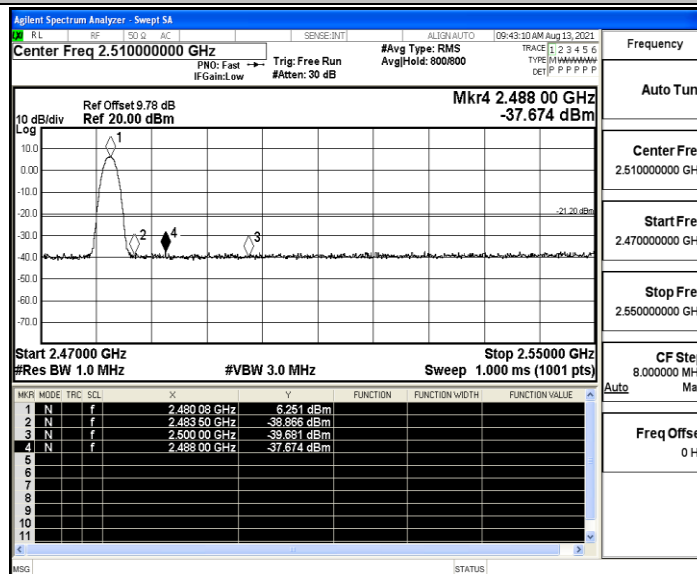
2DH5_Ant1_Low_2402_Peak



2DH5_Ant1_High_2480_AV

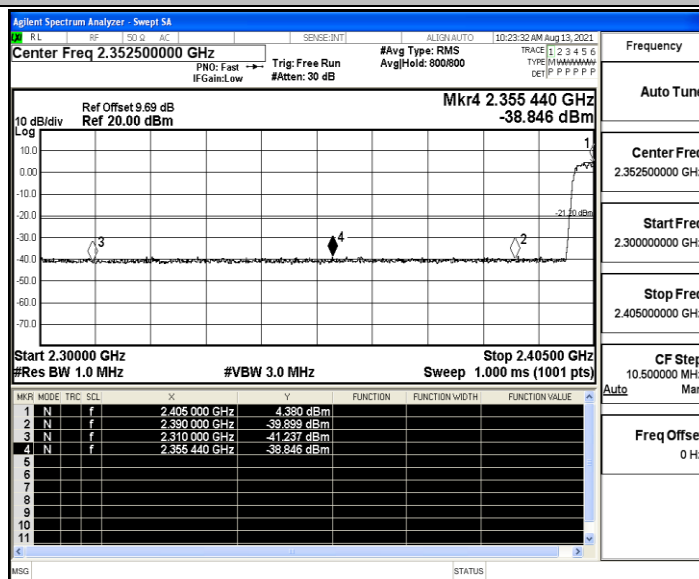


2DH5_Ant1_High_2480_Peak

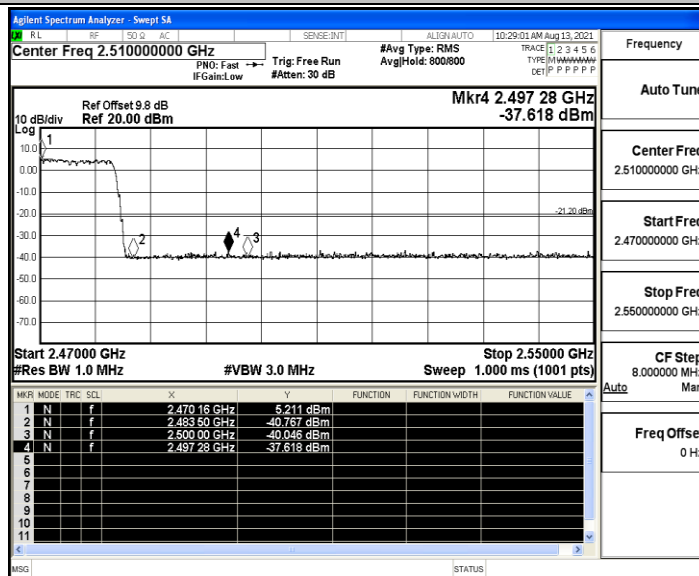




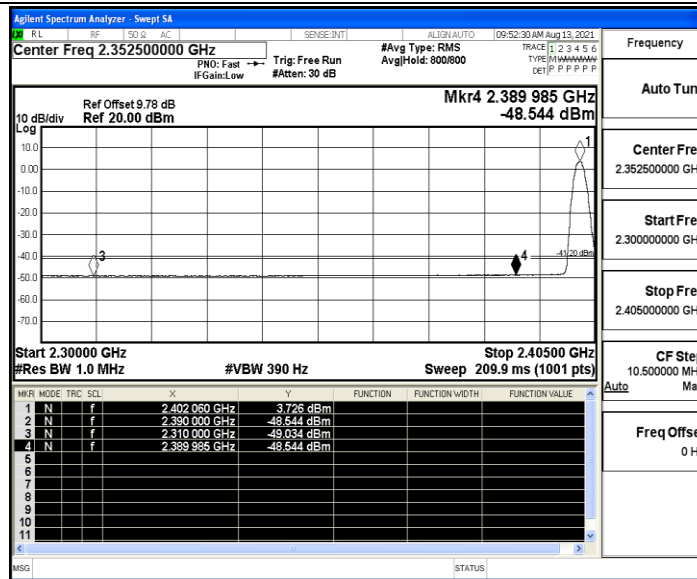
2DH5_Ant1_Low_Hop_2402_Peak



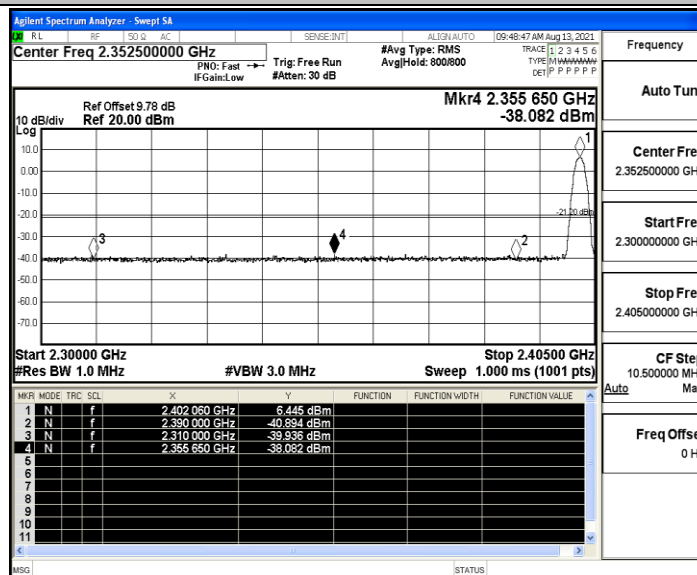
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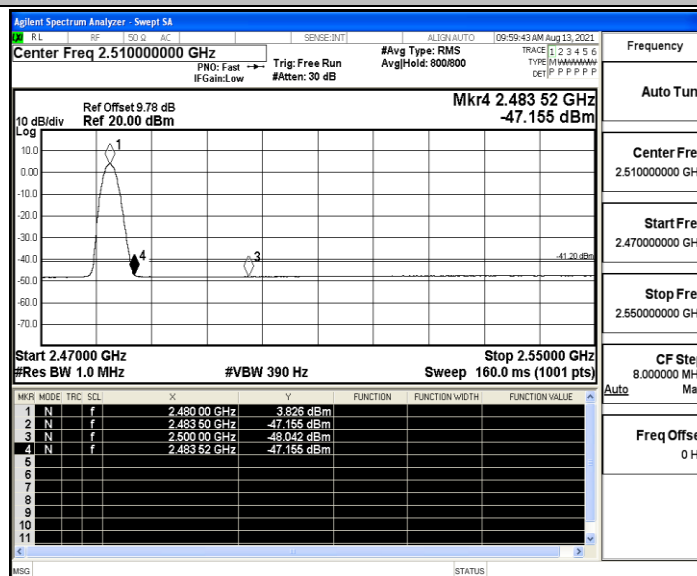
3DH5_Ant1_Low_2402_AV



3DH5_Ant1_Low_2402_Peak

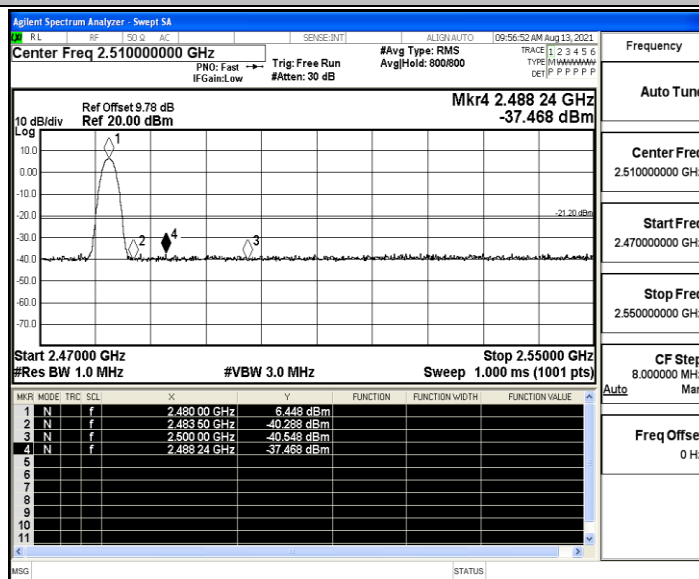


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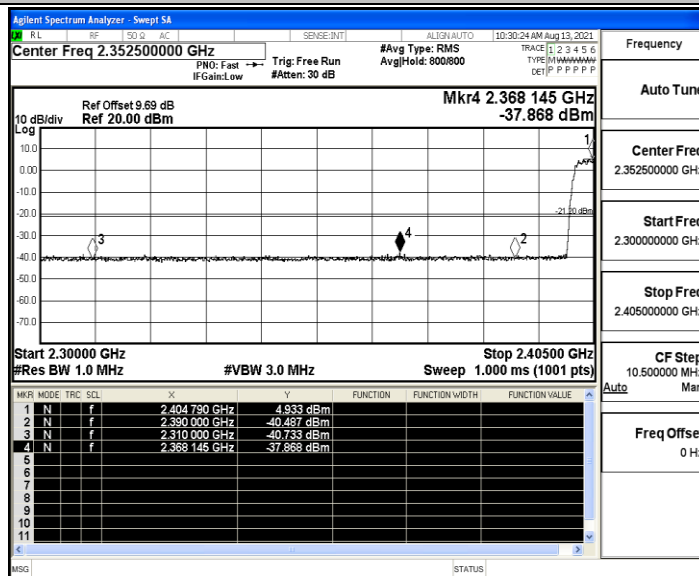




3DH5_Ant1_High_2480_Peak



3DH5_Ant1_Low_Hop_2402_Peak



3DH5_Ant1_High_Hop_2480_Peak

