



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Laser Projection TV

Test Model: MaxAngel M1

Environmental Conditions

Temperature:	22.7°C
Relative Humidity:	53.8%
ATM Pressure:	100.0 kPa
Test Engineer:	 Bill Zhu
Supervised by:	 Li Huan



A.1 20dB Emission Bandwidth

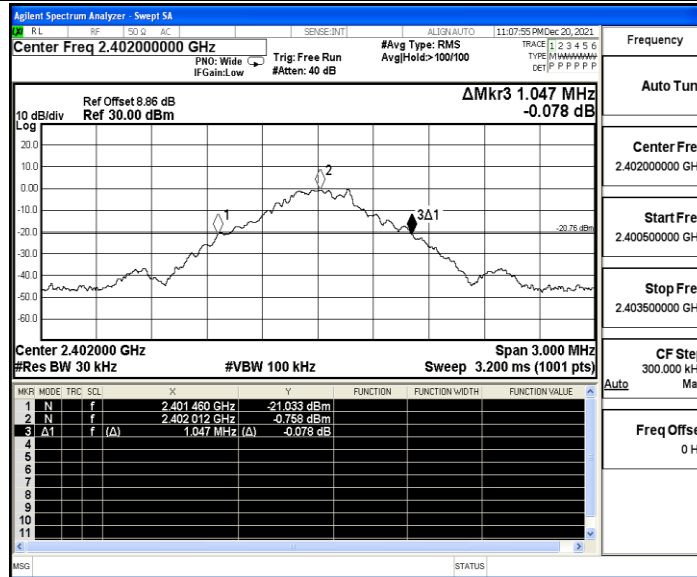
Test Result

TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	BT ANT	2402	1.047	2401.460	2402.507	---	---
		2441	1.035	2440.466	2441.501	---	---
		2480	1.041	2479.460	2480.501	---	---
2DH5	BT ANT	2402	1.314	2401.343	2402.657	---	---
		2441	1.293	2440.361	2441.654	---	---
		2480	1.290	2479.361	2480.651	---	---
3DH5	BT ANT	2402	1.308	2401.346	2402.654	---	---
		2441	1.299	2440.349	2441.648	---	---
		2480	1.299	2479.349	2480.648	---	---

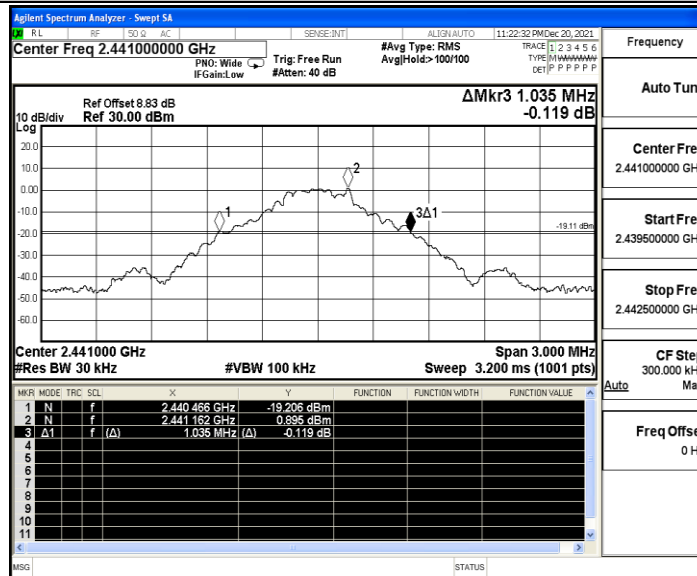


Test Graphs

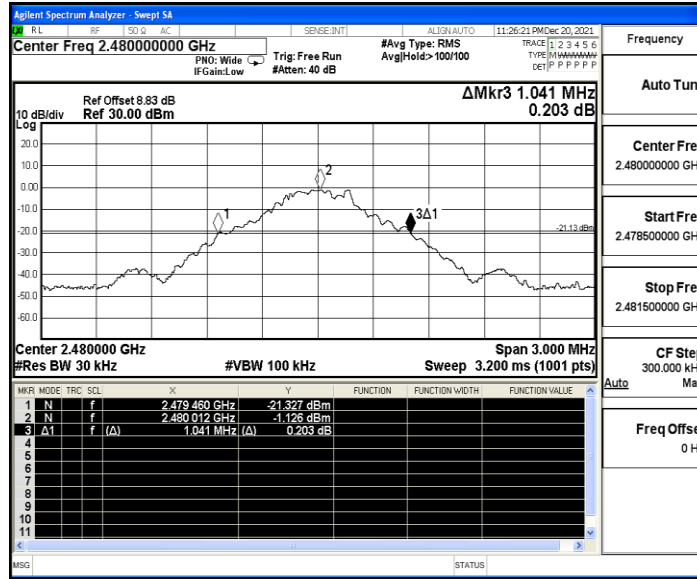
DH5_BT ANT_2402



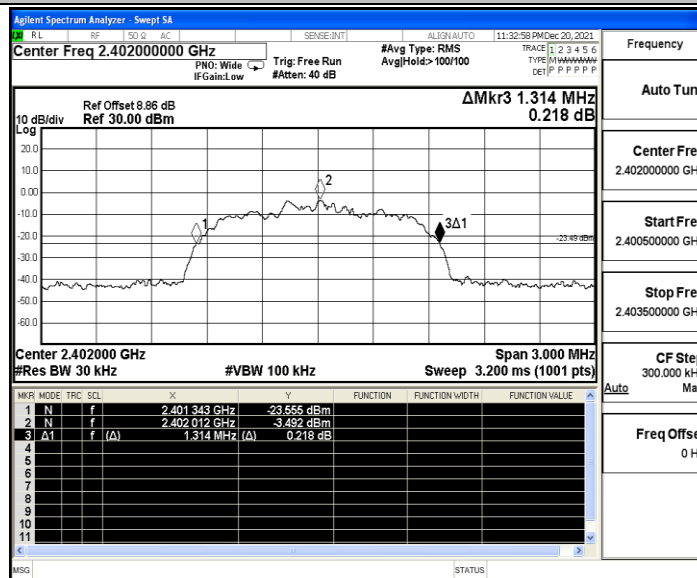
DH5_BT ANT_2441



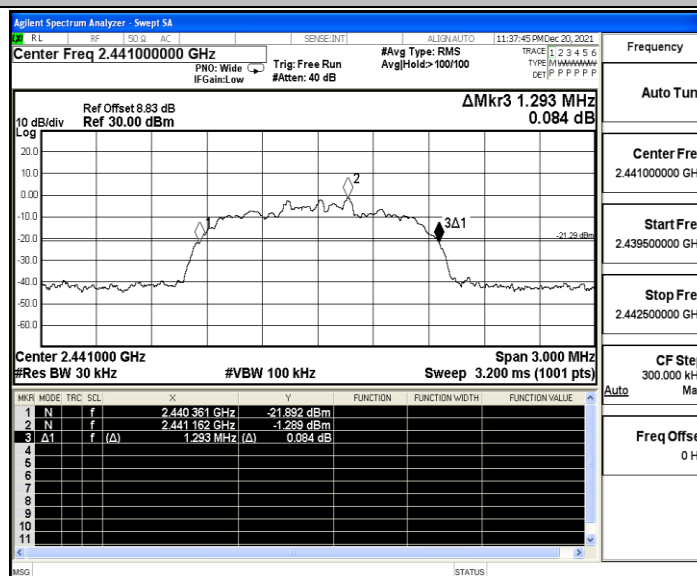
DH5_BT ANT_2480



2DH5_BT ANT_2402

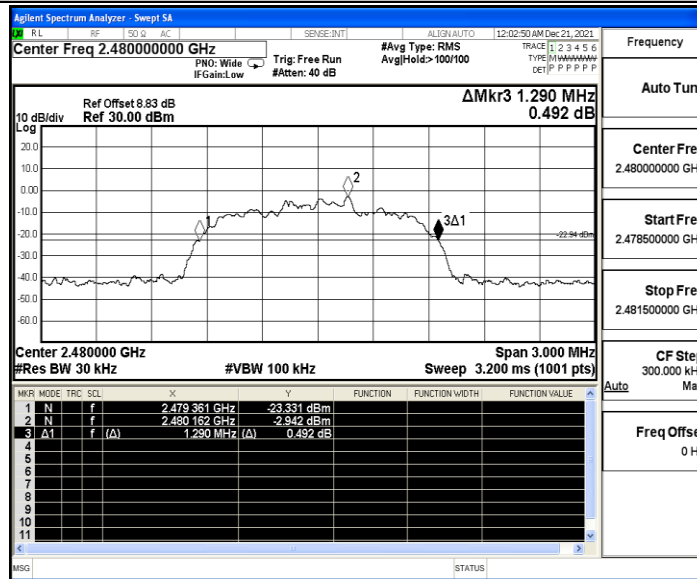


2DH5_BT ANT_2441

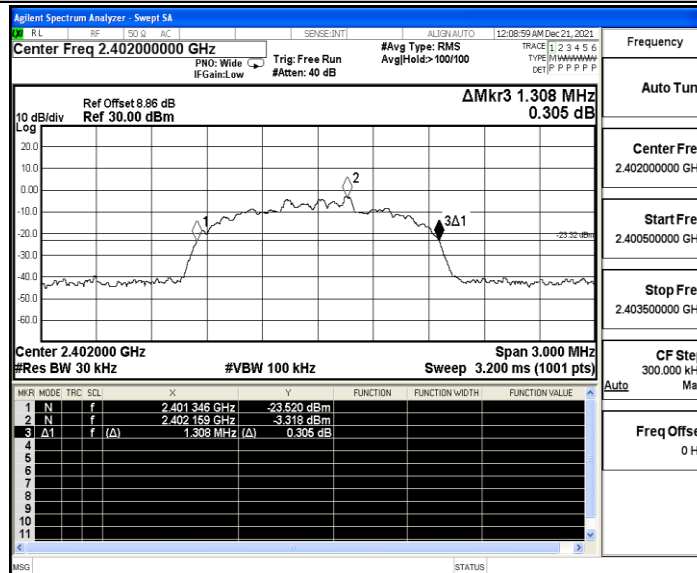




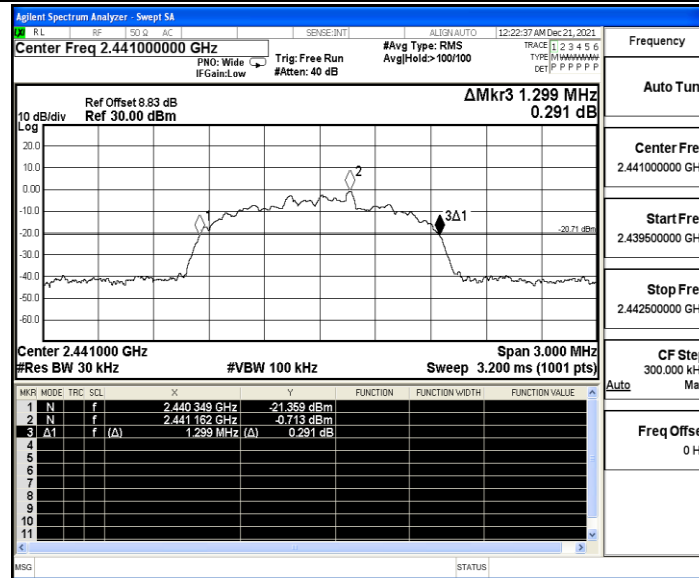
2DH5_BT ANT_2480



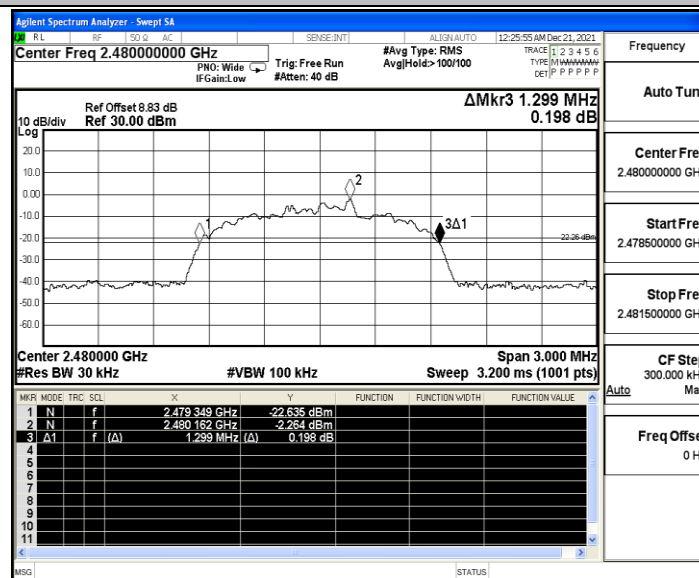
3DH5_BT ANT_2402



3DH5_BT ANT_2441



3DH5_BT ANT_2480





A.2 Maximum peak conducted output power

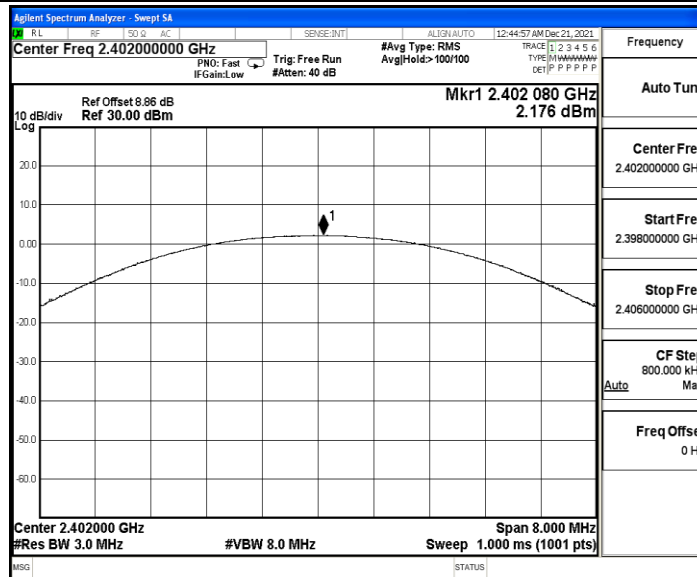
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	BT ANT	2402	2.18	≤ 20.97	PASS
		2441	3.46	≤ 20.97	PASS
		2480	1.85	≤ 20.97	PASS
2DH5	BT ANT	2402	1.27	≤ 20.97	PASS
		2441	2.55	≤ 20.97	PASS
		2480	1.00	≤ 20.97	PASS
3DH5	BT ANT	2402	1.43	≤ 20.97	PASS
		2441	2.68	≤ 20.97	PASS
		2480	1.07	≤ 20.97	PASS

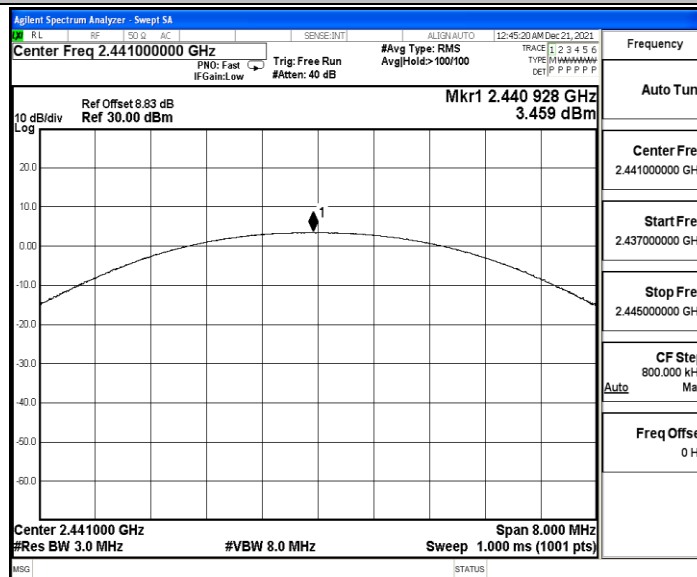


Test Graphs

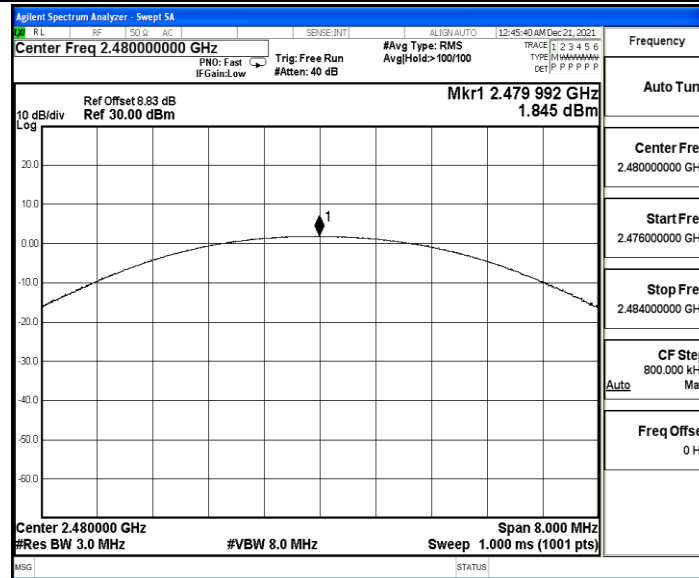
DH5_BT ANT_2402



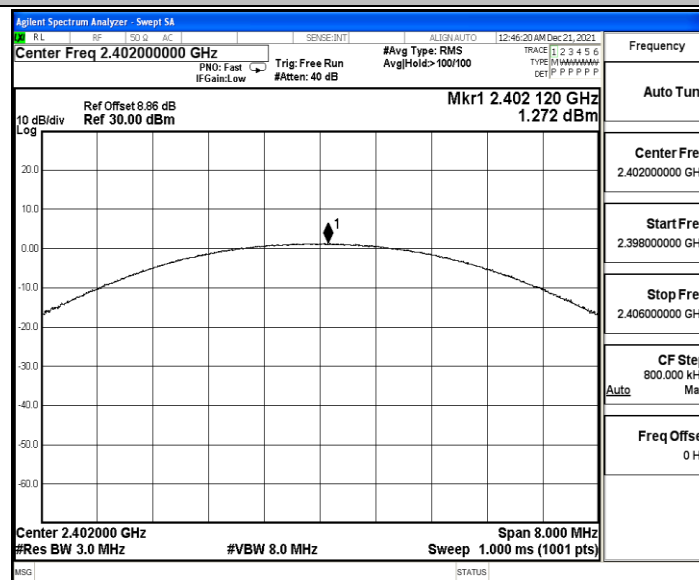
DH5_BT ANT_2441



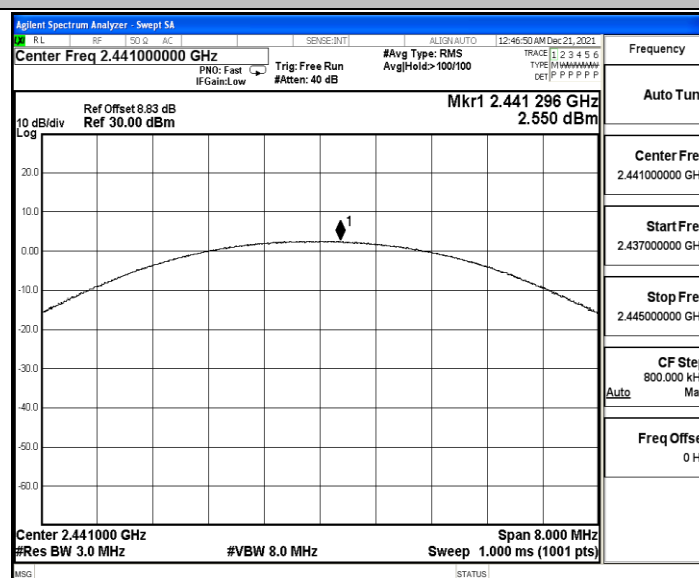
DH5_BT ANT_2480



2DH5_BT ANT_2402

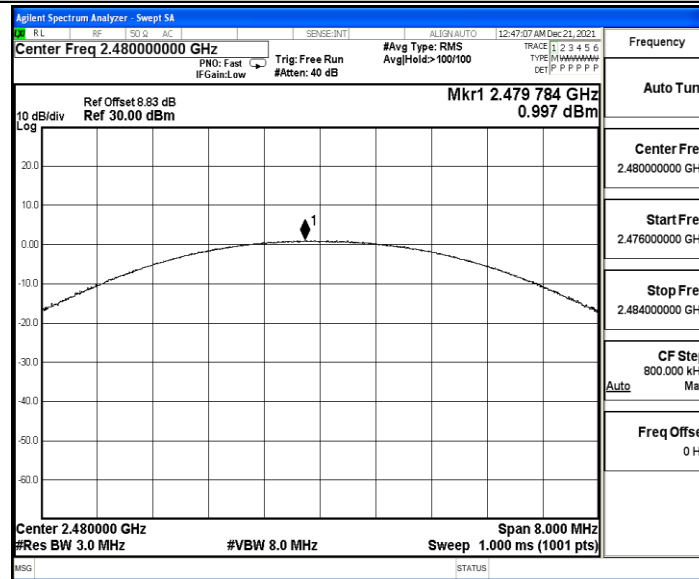


2DH5_BT ANT_2441

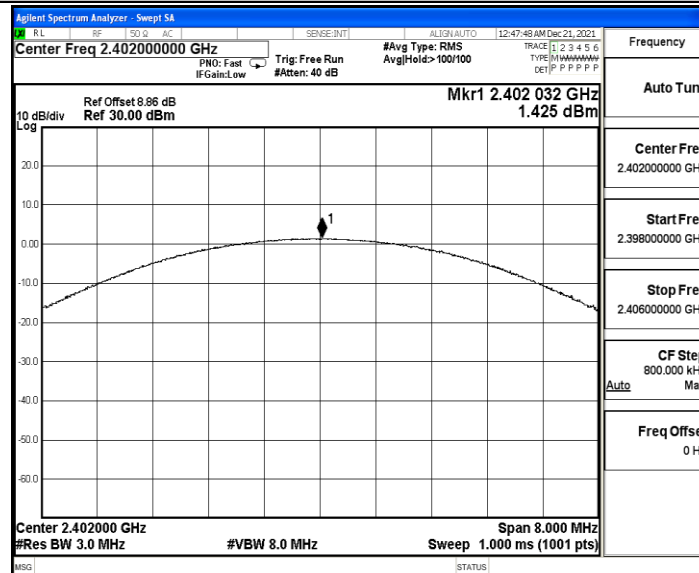




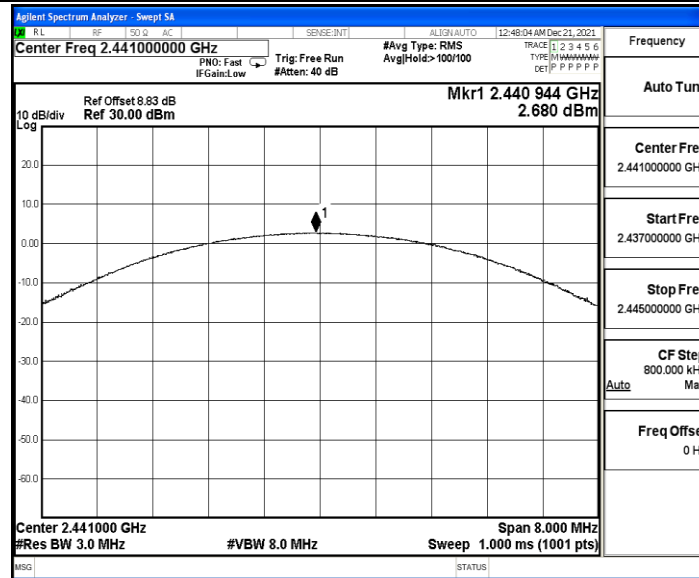
2DH5_BT ANT_2480



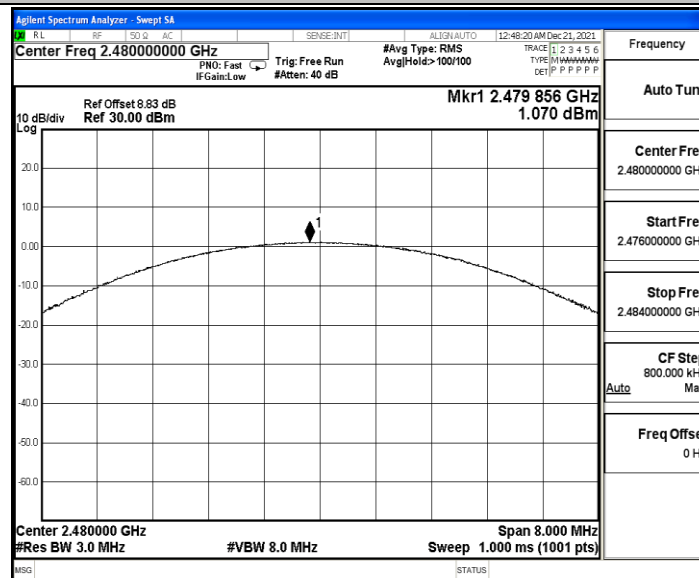
3DH5_BT ANT_2402



3DH5_BT ANT_2441



3DH5_BT ANT_2480





A.3 Carrier frequency separation

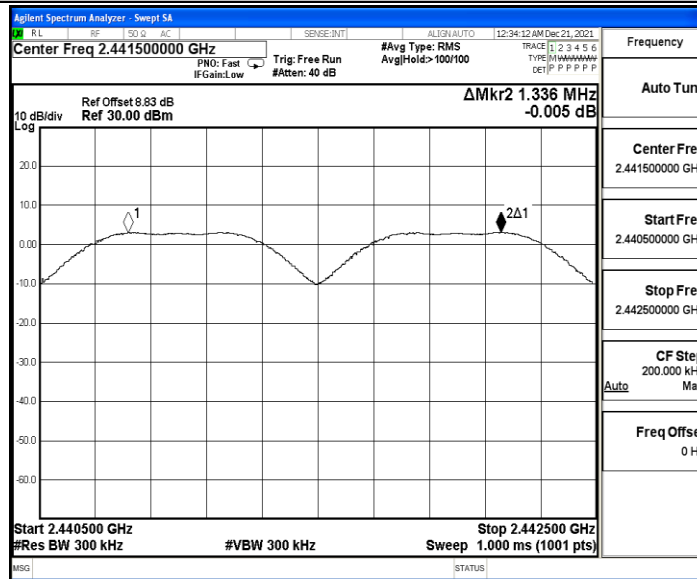
Test Result

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	BT ANT	Hop	1.336	≥ 0.698	PASS
2DH5	BT ANT	Hop	1.014	≥ 0.876	PASS
3DH5	BT ANT	Hop	0.978	≥ 0.872	PASS

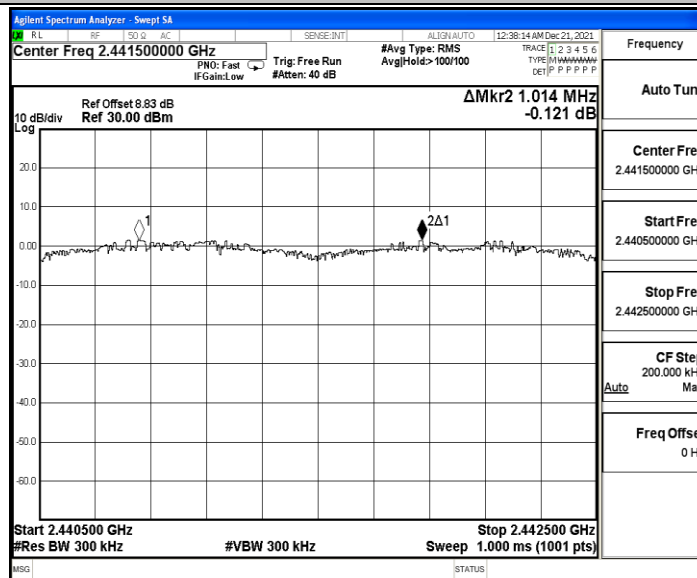


Test Graphs

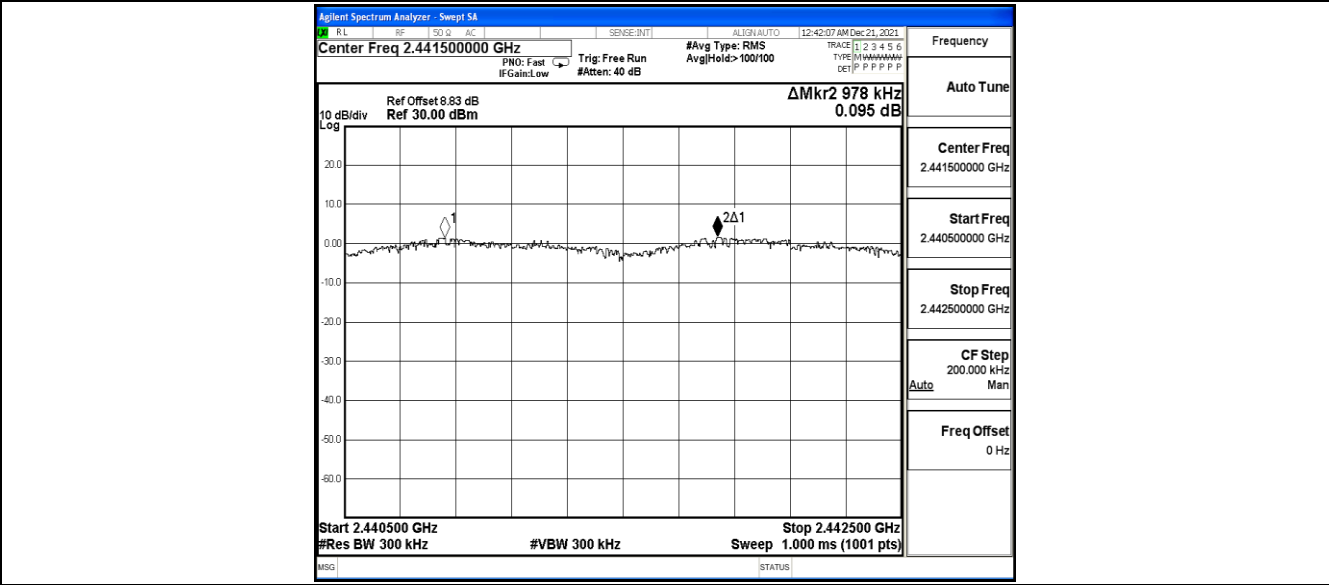
DH5_BT ANT_Hop



2DH5_BT ANT_Hop



3DH5_BT ANT_Hop





A.4 Time of occupancy

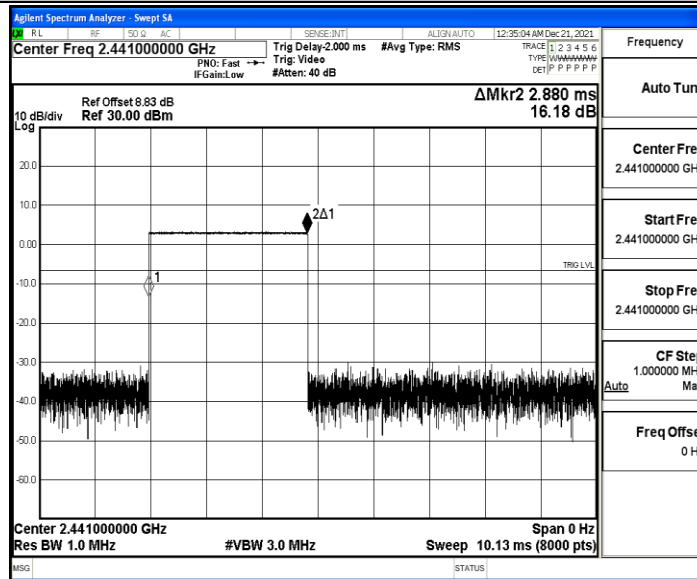
Test Result

TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	BT ANT	Hop	2.88	106.67	0.307	≤0.4	PASS
2DH5	BT ANT	Hop	2.88	106.67	0.307	≤0.4	PASS
3DH5	BT ANT	Hop	2.89	106.67	0.308	≤0.4	PASS

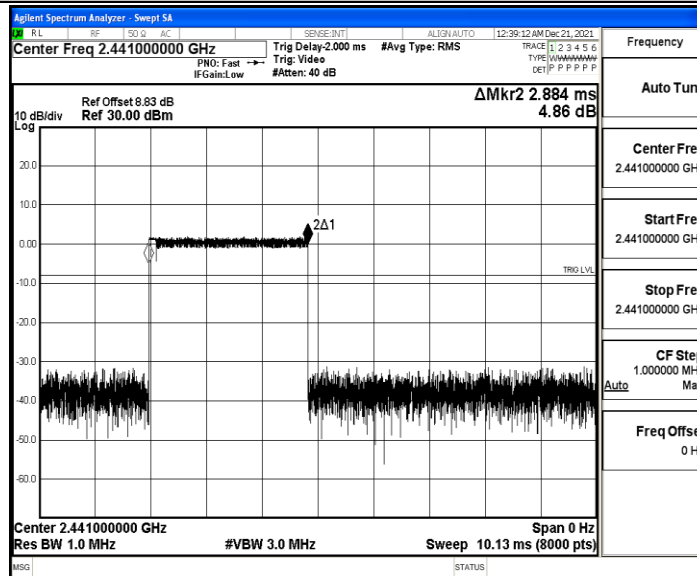


Test Graphs

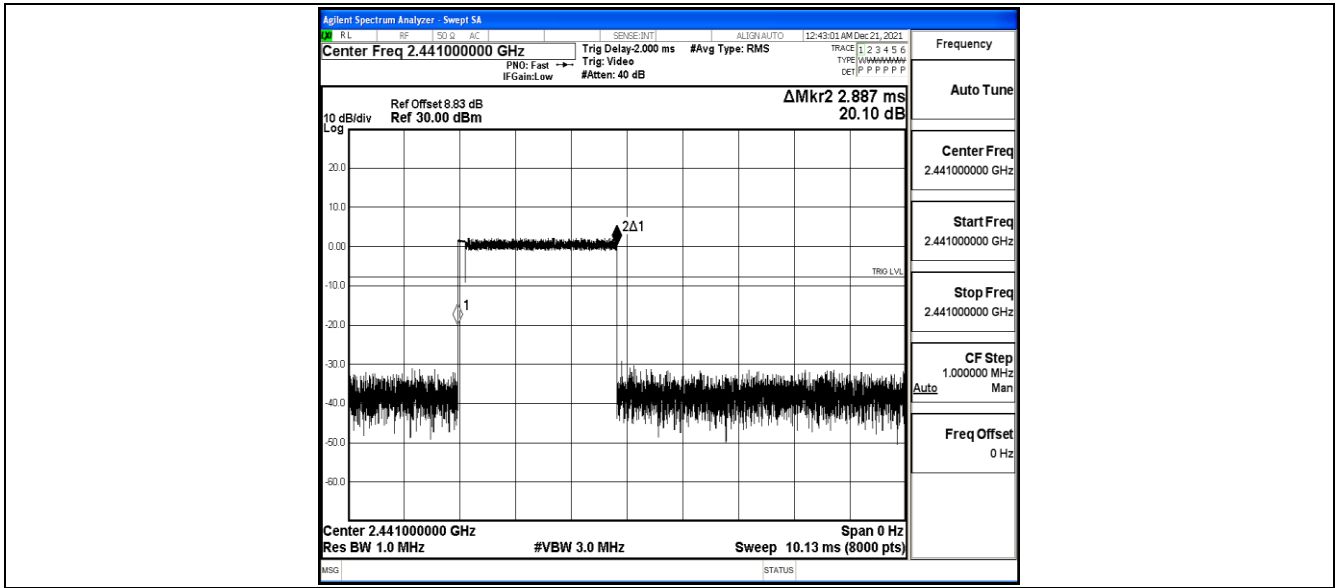
DH5_BT ANT_Hop



2DH5_BT ANT_Hop



3DH5_BT ANT_Hop





A.5 Number of hopping channels

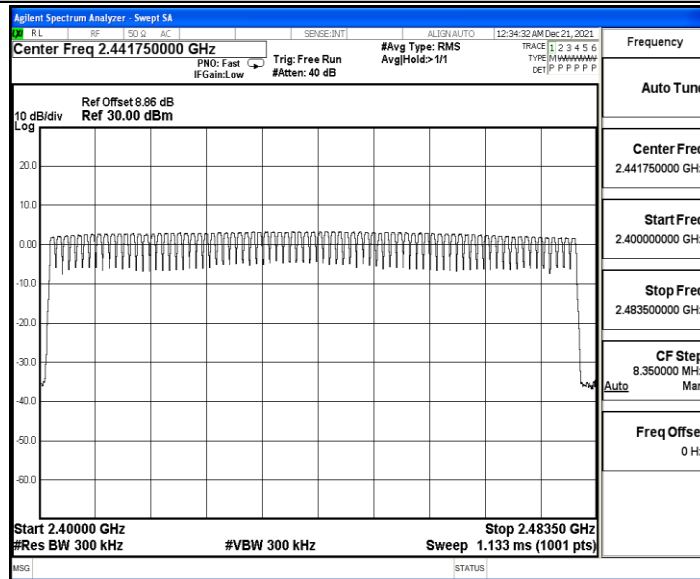
Test Result

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

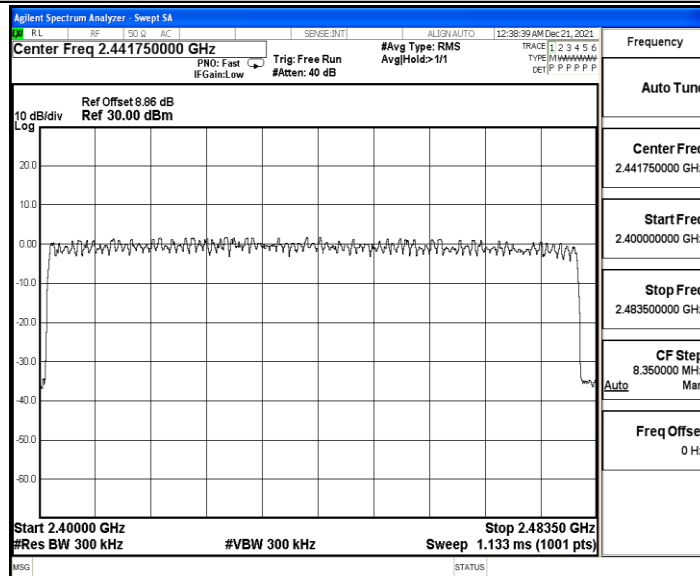


Test Graphs

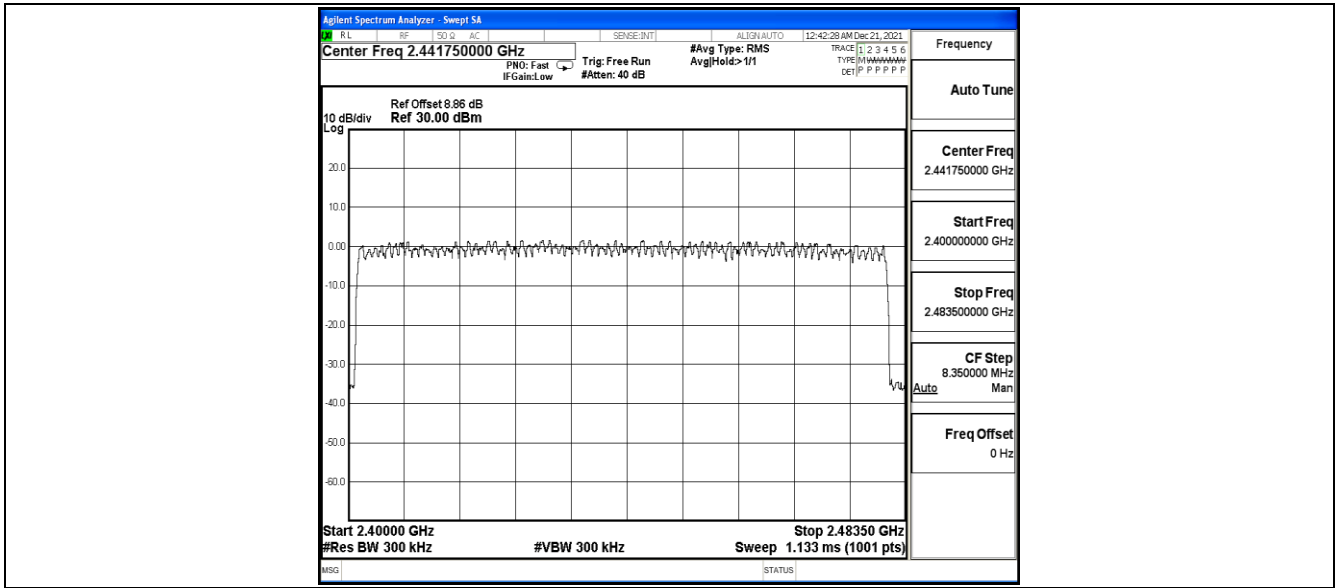
DH5_BT ANT_Hop



2DH5_BT ANT_Hop



3DH5_BT ANT_Hop





A.6 Band edge measurements

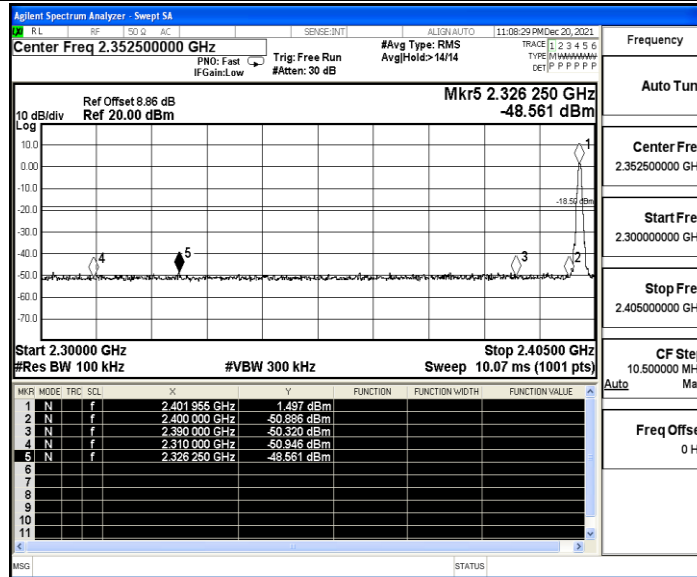
Test Result

TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	BT ANT	Low	2402	1.50	-48.56	≤ -18.5	PASS
		High	2480	1.34	-47.42	≤ -18.66	PASS
		Low	Hop_2402	0.57	-48.74	≤ -19.43	PASS
		High	Hop_2480	1.75	-47.54	≤ -18.25	PASS
2DH5	BT ANT	Low	2402	-0.41	-47.83	≤ -20.41	PASS
		High	2480	-0.61	-47.58	≤ -20.61	PASS
		Low	Hop_2402	-0.68	-48.72	≤ -20.68	PASS
		High	Hop_2480	0.30	-47.41	≤ -19.7	PASS
3DH5	BT ANT	Low	2402	0.24	-48.11	≤ -19.76	PASS
		High	2480	-0.11	-48.02	≤ -20.11	PASS
		Low	Hop_2402	-3.49	-48.43	≤ -23.49	PASS
		High	Hop_2480	0.51	-47.72	≤ -19.49	PASS

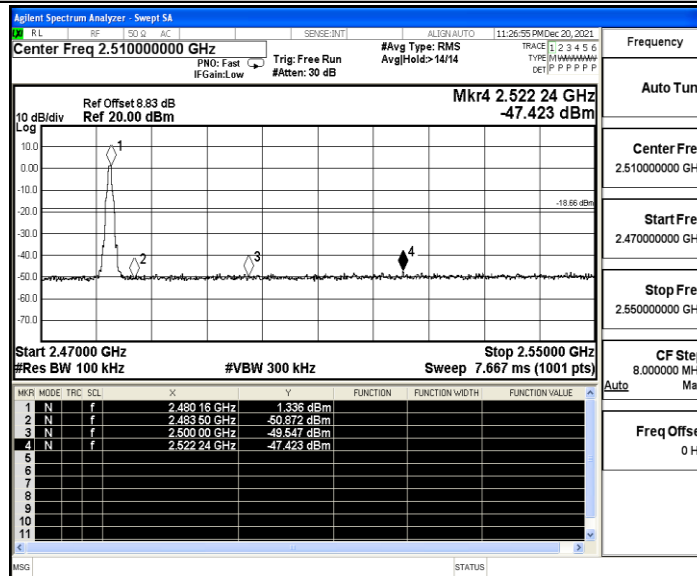


Test Graphs

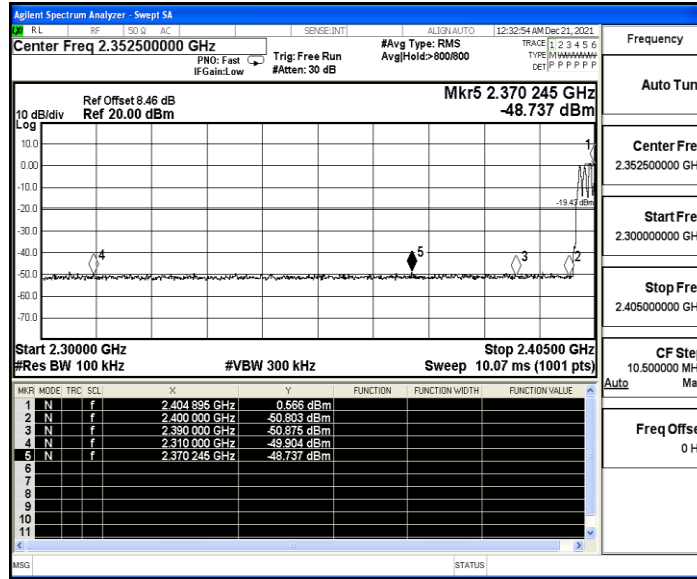
DH5_BT ANT_Low_2402



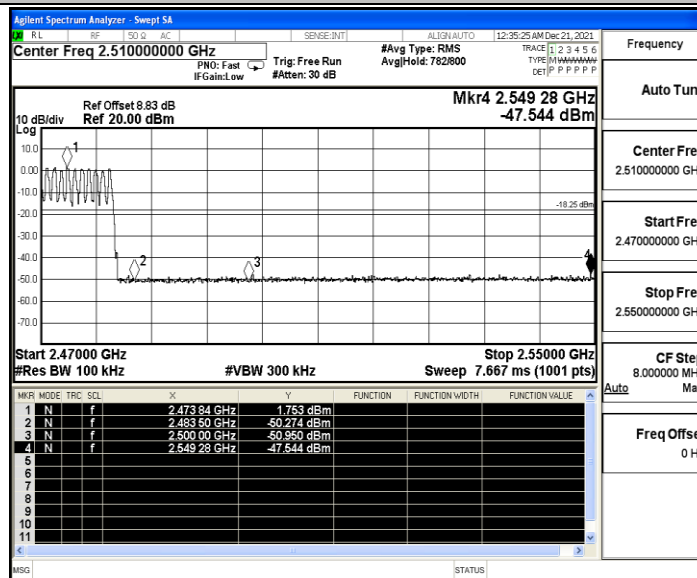
DH5_BT ANT_High_2480



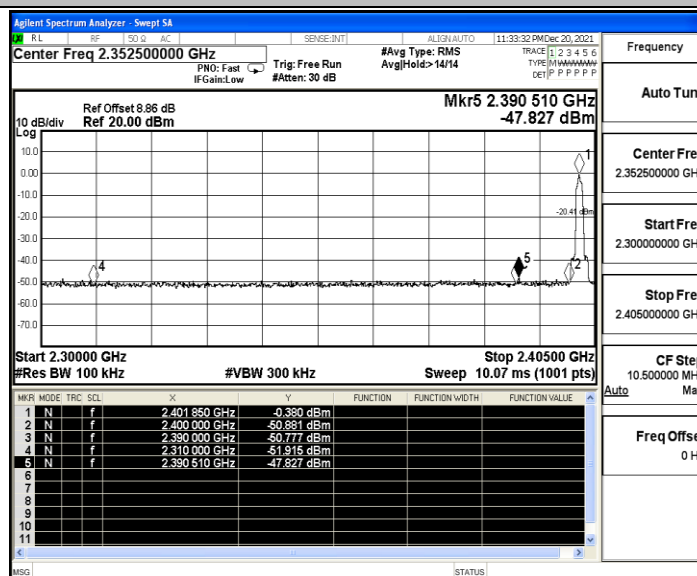
DH5_BT ANT_Low_Hop_2402



DH5_BT ANT_High_Hop_2480

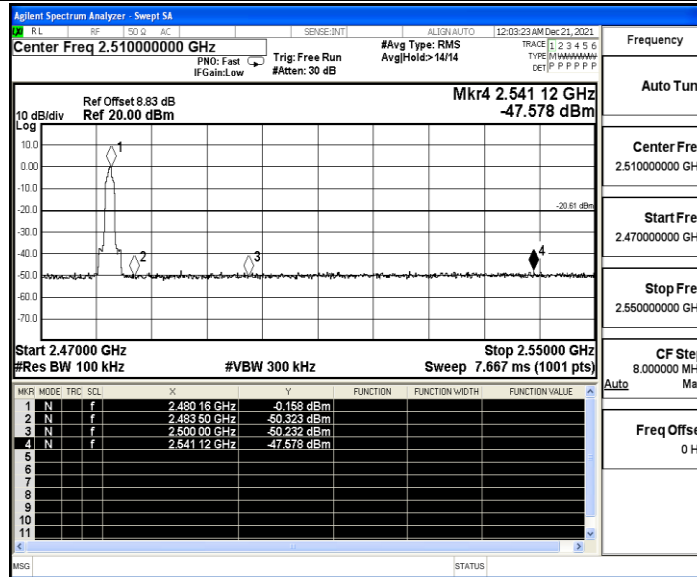


2DH5_BT ANT_Low_2402

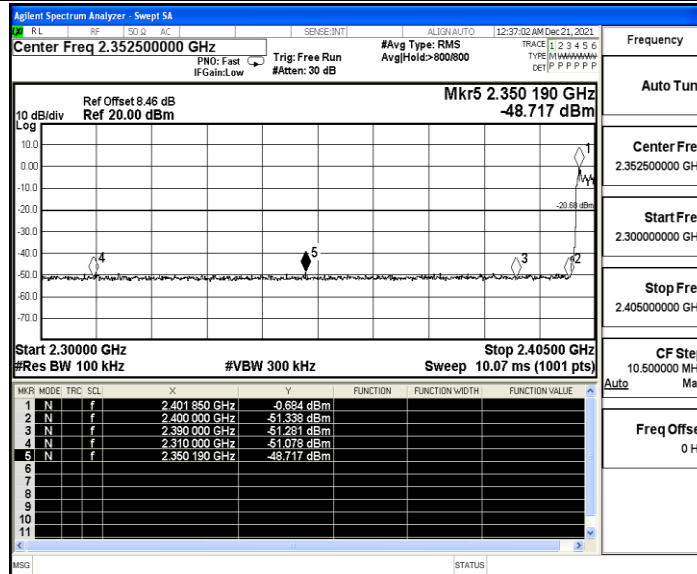




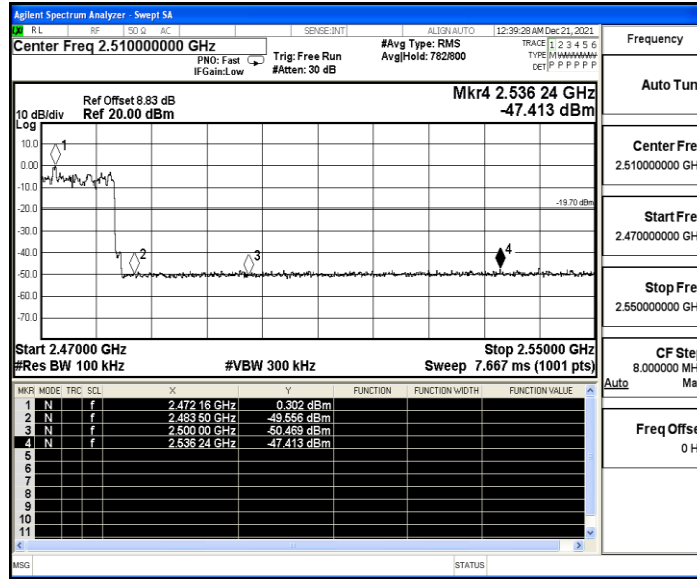
2DH5_BT ANT_High_2480



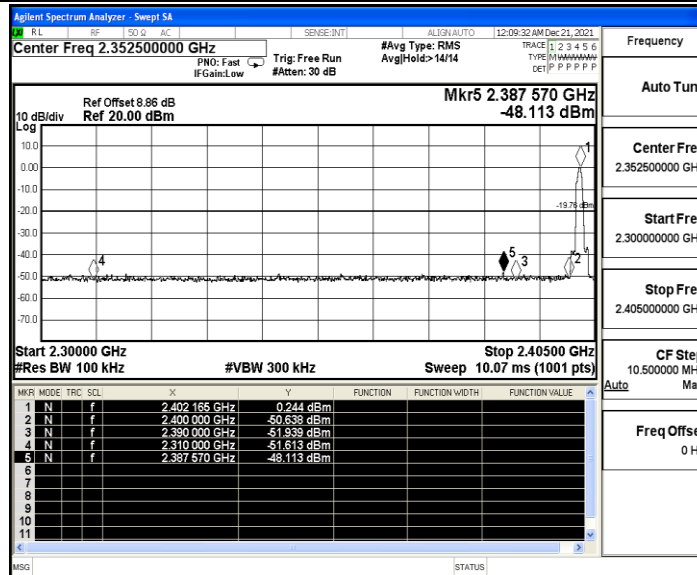
2DH5_BT ANT_Low_Hop_2402



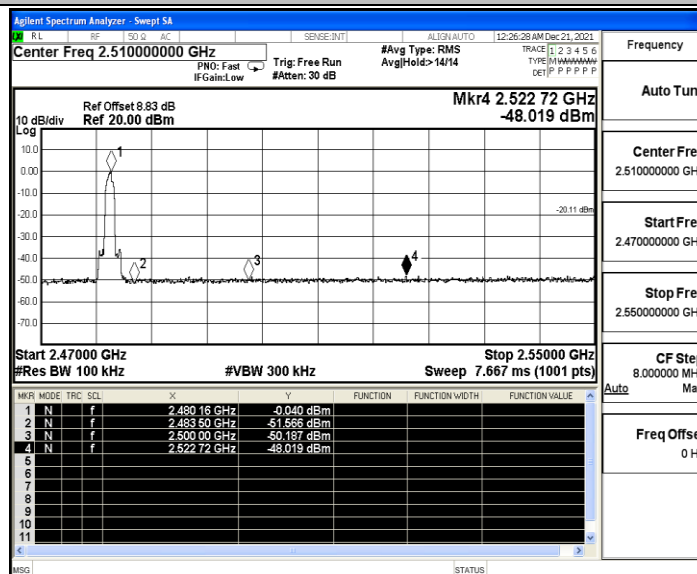
2DH5_BT ANT_High_Hop_2480



3DH5_BT ANT_Low_2402

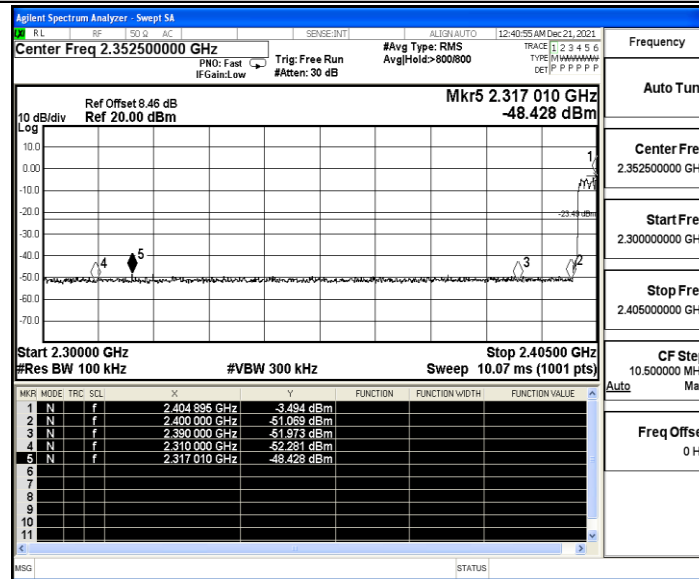


3DH5_BT ANT_High_2480

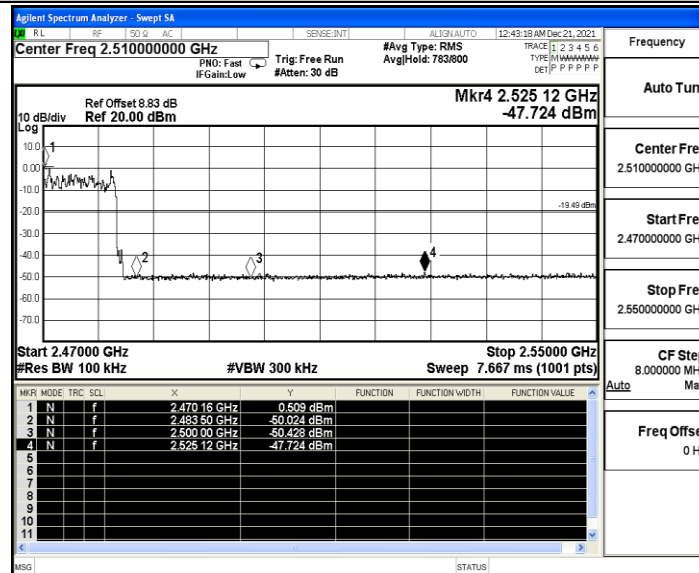




3DH5_BT ANT_Low_Hop_2402



3DH5_BT ANT_High_Hop_2480





A.7 Conducted Spurious Emission

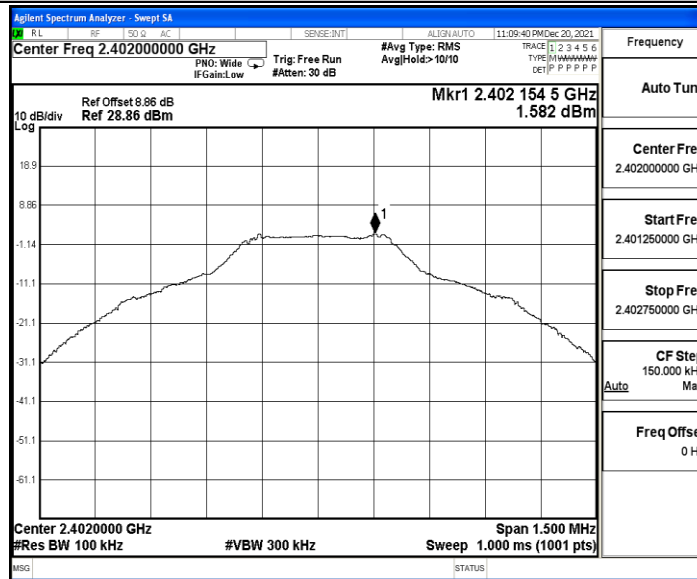
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	BT ANT	2402	Reference	1.58	1.58	---	PASS
			30~1000	1.58	-60.8	≤ -18.42	PASS
			1000~26500	1.58	-45.91	≤ -18.42	PASS
		2441	Reference	2.91	2.91	---	PASS
			30~1000	2.91	-57.81	≤ -17.09	PASS
			1000~26500	2.91	-45.62	≤ -17.09	PASS
		2480	Reference	1.25	1.25	---	PASS
			30~1000	1.25	-60.17	≤ -18.75	PASS
			1000~26500	1.25	-45.8	≤ -18.75	PASS
2DH5	BT ANT	2402	Reference	0.01	0.01	---	PASS
			30~1000	0.01	-60.2	≤ -19.99	PASS
			1000~26500	0.01	-46.02	≤ -19.99	PASS
		2441	Reference	1.28	1.28	---	PASS
			30~1000	1.28	-60.39	≤ -18.72	PASS
			1000~26500	1.28	-45.49	≤ -18.72	PASS
		2480	Reference	-0.12	-0.12	---	PASS
			30~1000	-0.12	-59.95	≤ -20.12	PASS
			1000~26500	-0.12	-46.08	≤ -20.12	PASS
3DH5	BT ANT	2402	Reference	-0.10	-0.10	---	PASS
			30~1000	-0.10	-58.76	≤ -20.1	PASS
			1000~26500	-0.10	-45.94	≤ -20.1	PASS
		2441	Reference	1.15	1.15	---	PASS
			30~1000	1.15	-60.09	≤ -18.85	PASS
			1000~26500	1.15	-45.76	≤ -18.85	PASS
		2480	Reference	-0.29	-0.29	---	PASS
			30~1000	-0.29	-59.6	≤ -20.29	PASS
			1000~26500	-0.29	-45.38	≤ -20.29	PASS

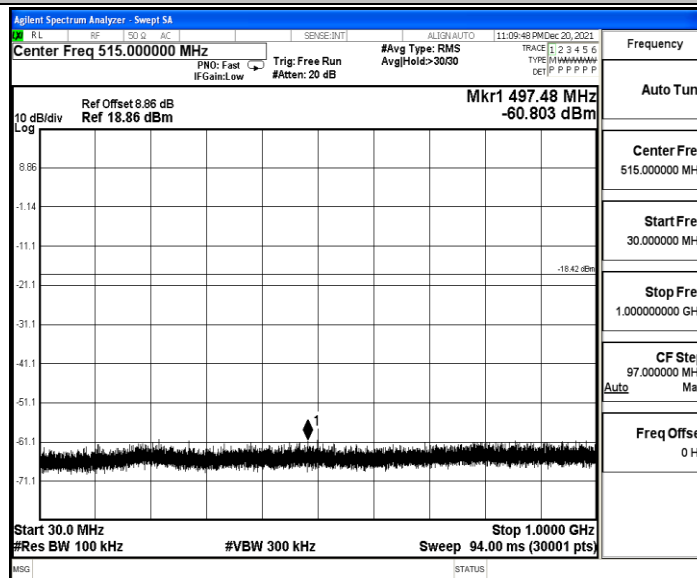


Test Graphs

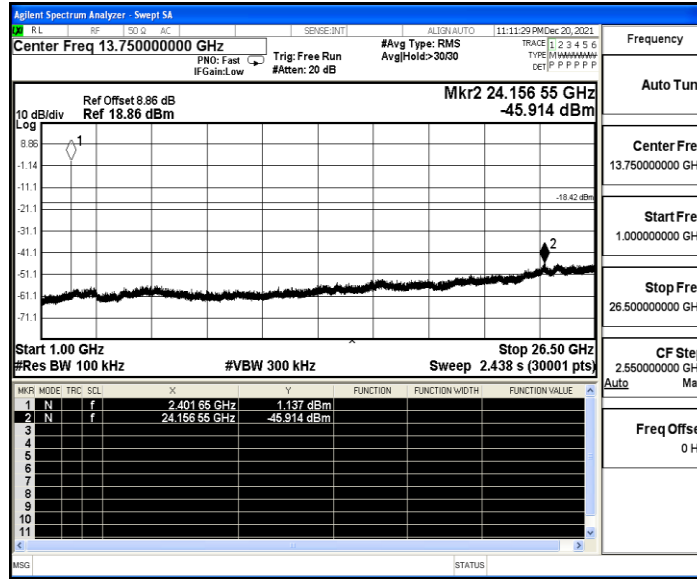
DH5_BT ANT_2402_0~Reference



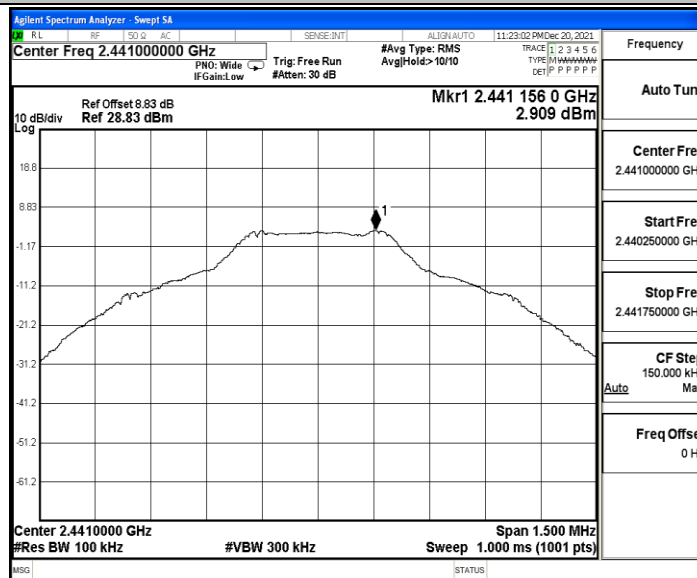
DH5_BT ANT_2402_30~1000



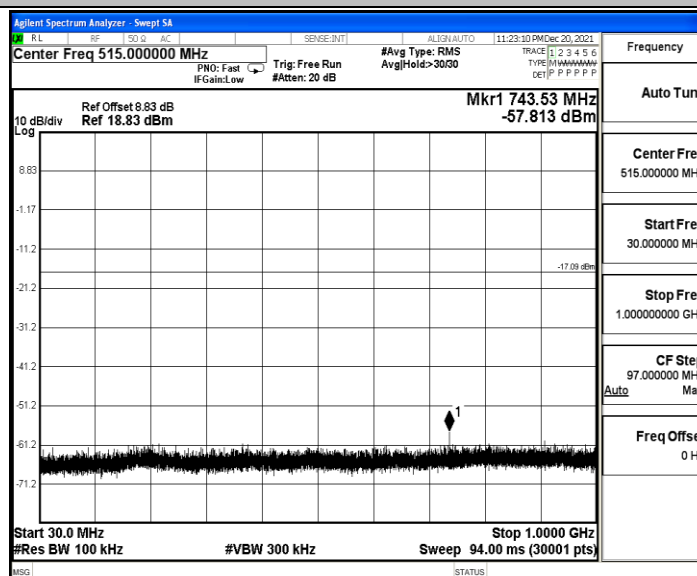
DH5_BT ANT_2402_1000~26500



DH5_BT ANT_2441_0~Reference

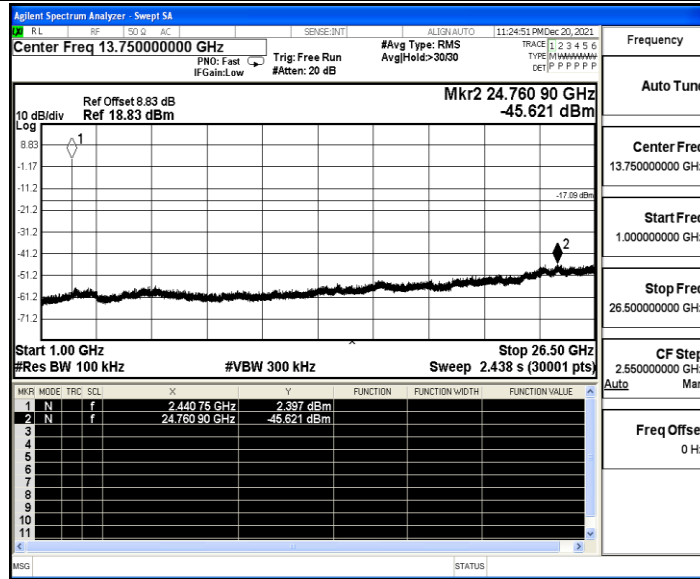


DH5_BT ANT_2441_30~1000

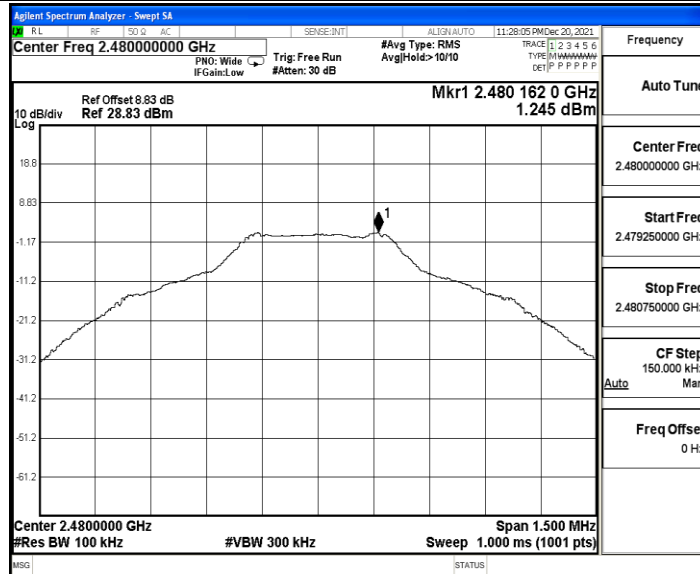




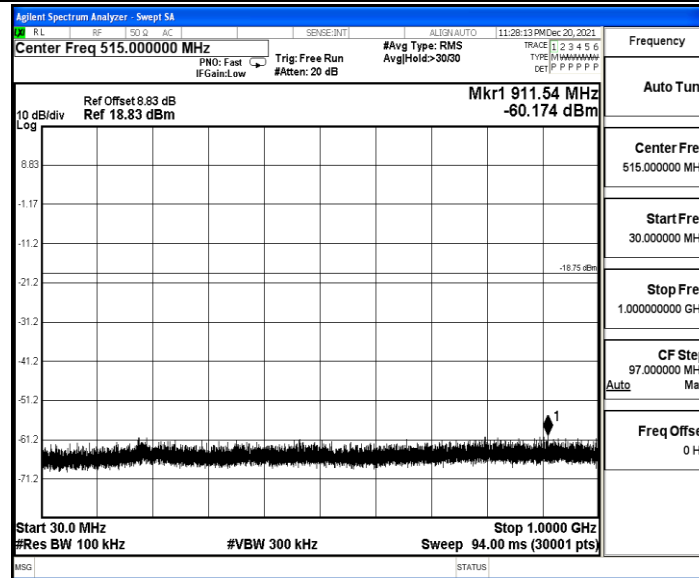
DH5_BT ANT_2441_1000~26500



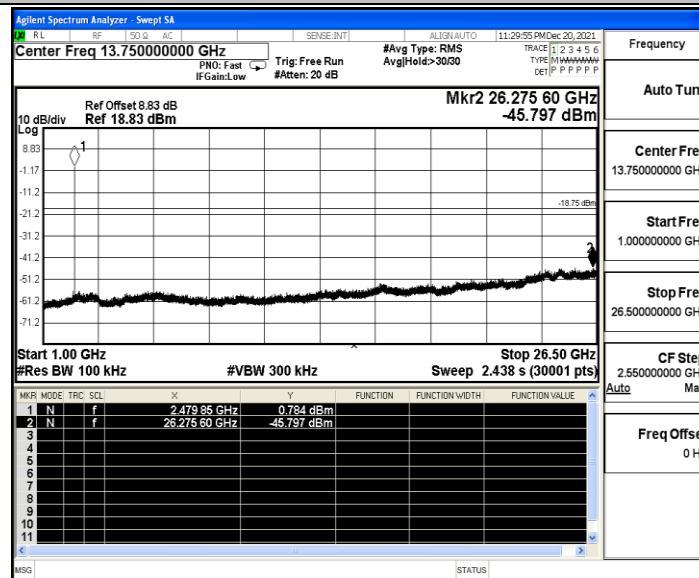
DH5_BT ANT_2480_0~Reference



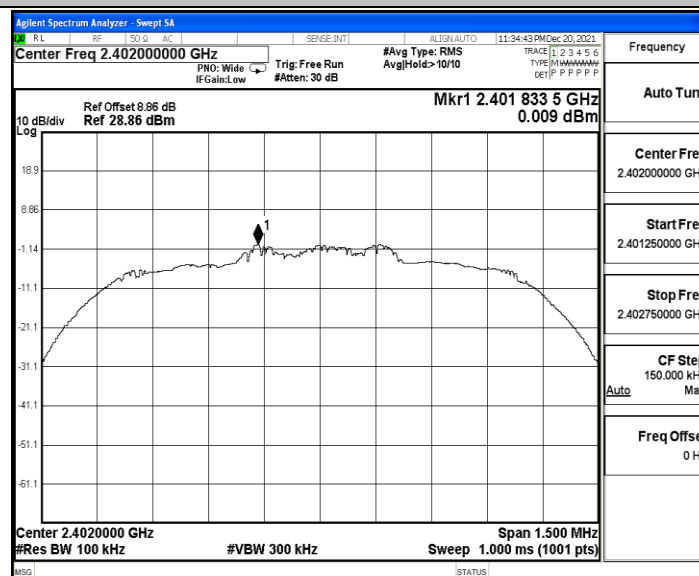
DH5_BT ANT_2480_30~1000



DH5_BT ANT_2480_1000~26500

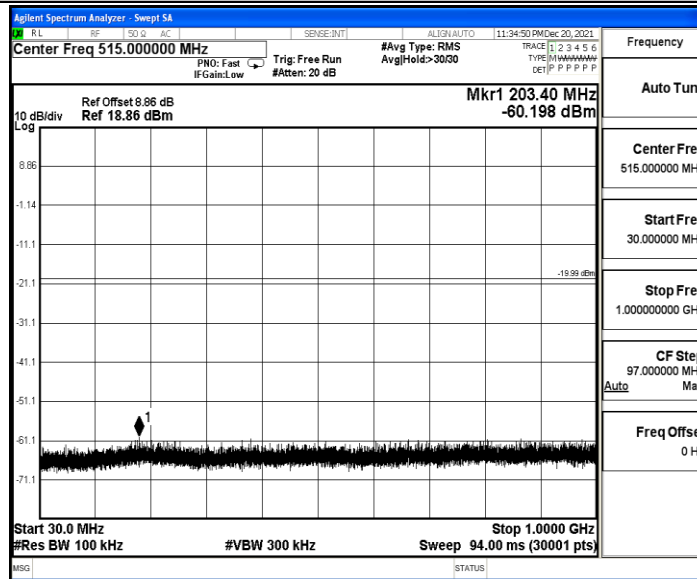


2DH5_BT ANT_2402_0~Reference

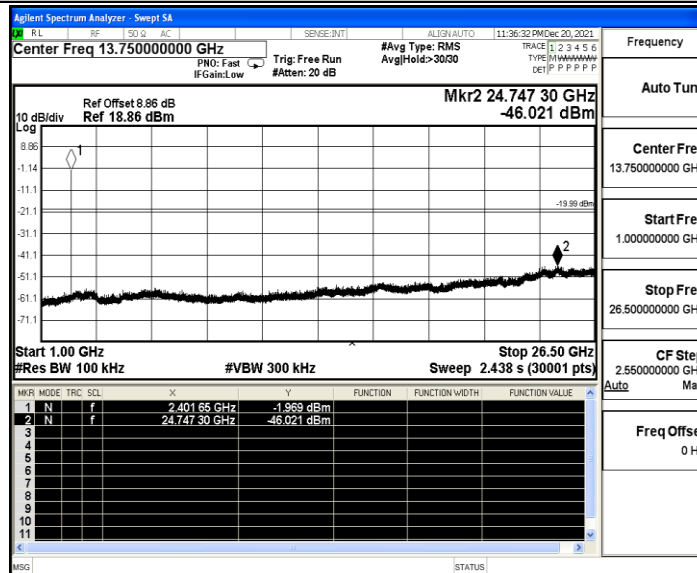




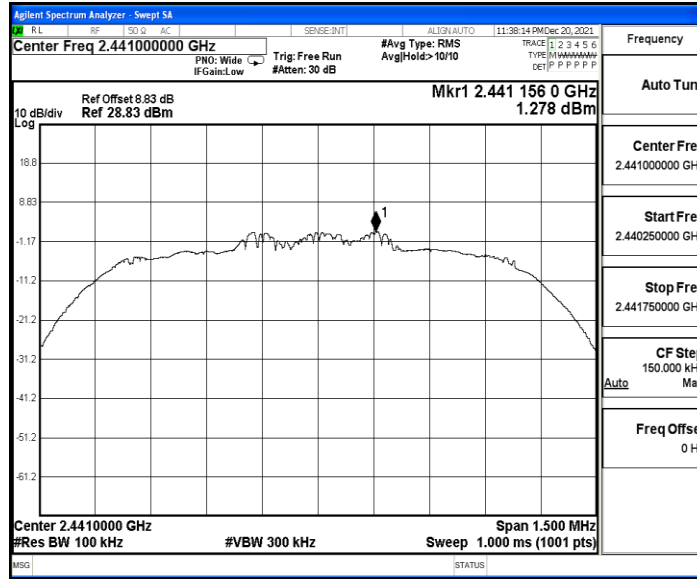
2DH5_BT ANT_2402_30~1000



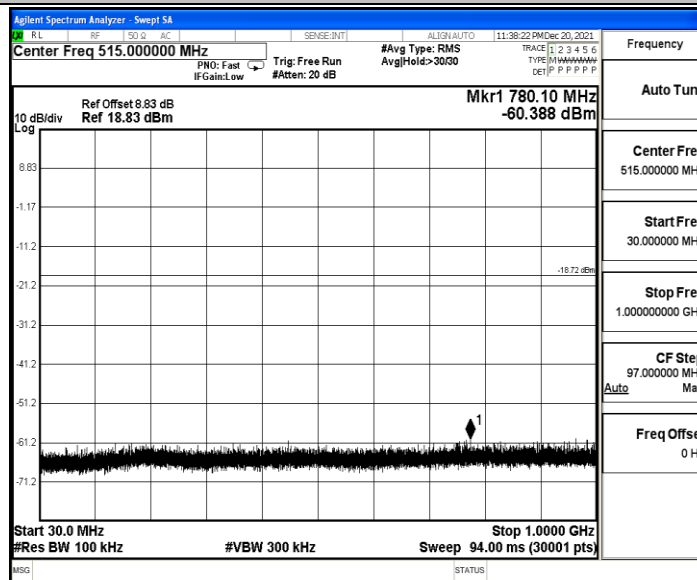
2DH5_BT ANT_2402_1000~26500



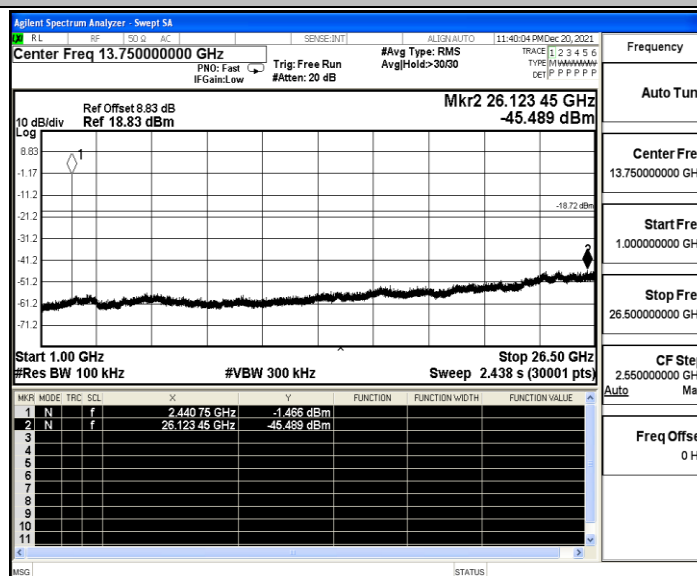
2DH5_BT ANT_2441_0~Reference



2DH5_BT ANT_2441_30~1000

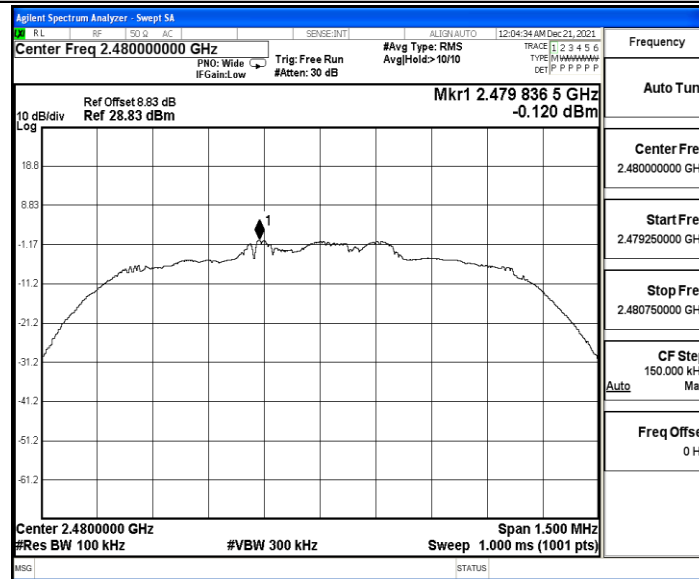


2DH5_BT ANT_2441_1000~26500

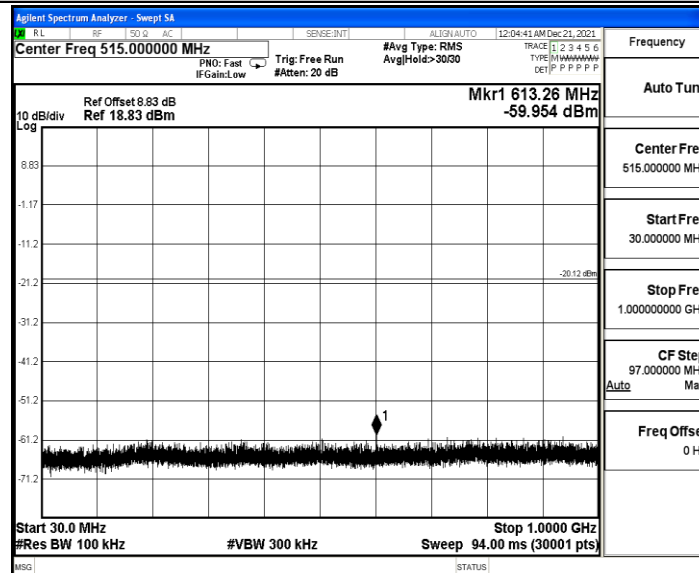




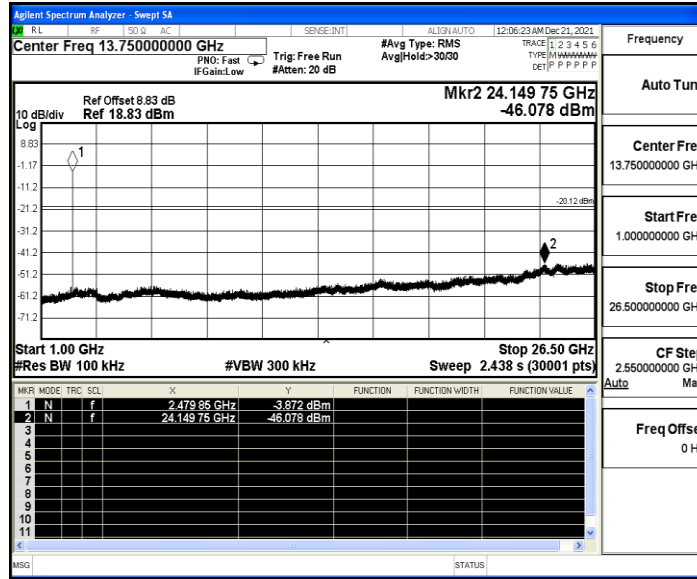
2DH5_BT ANT_2480_0~Reference



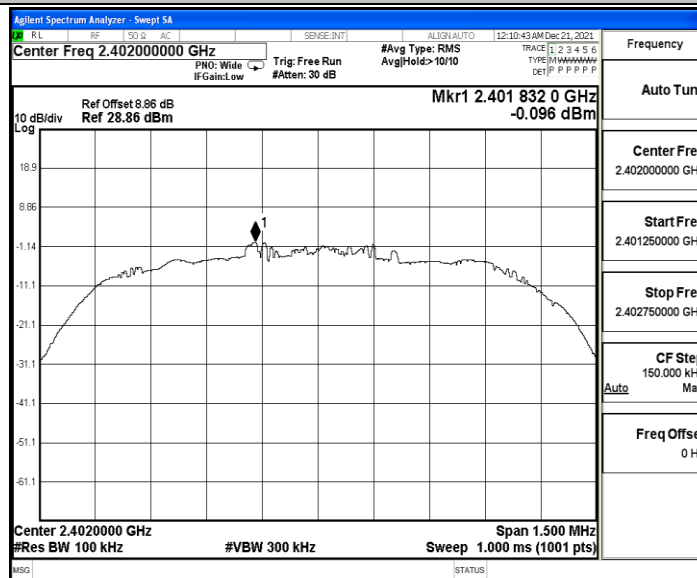
2DH5_BT ANT_2480_30~1000



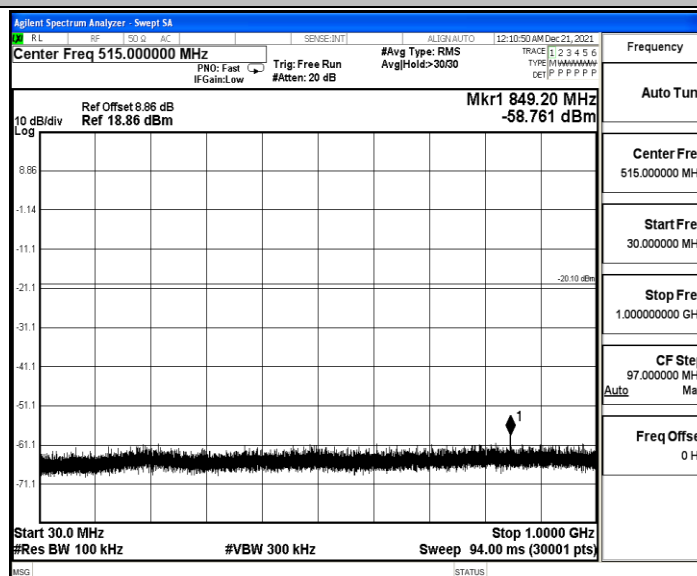
2DH5_BT ANT_2480_1000~26500



3DH5_BT ANT_2402_0~Reference

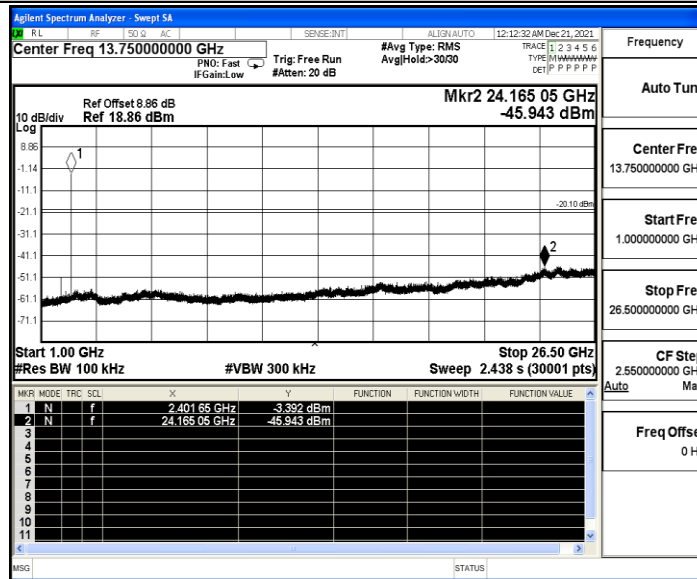


3DH5_BT ANT_2402_30~1000

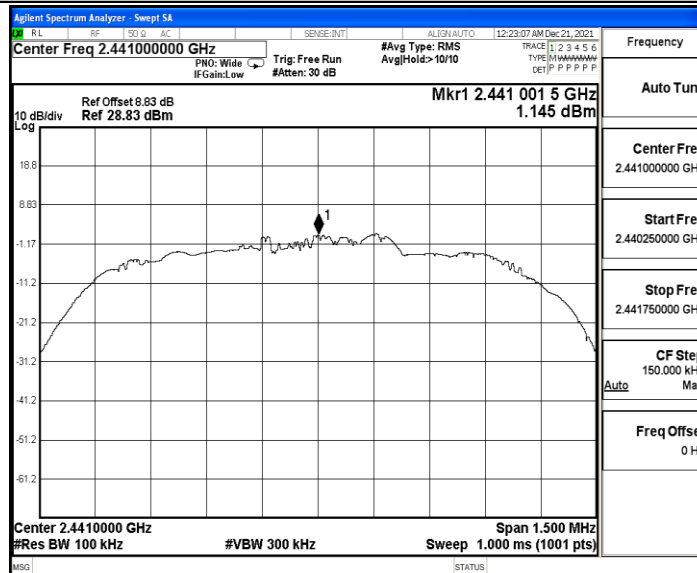




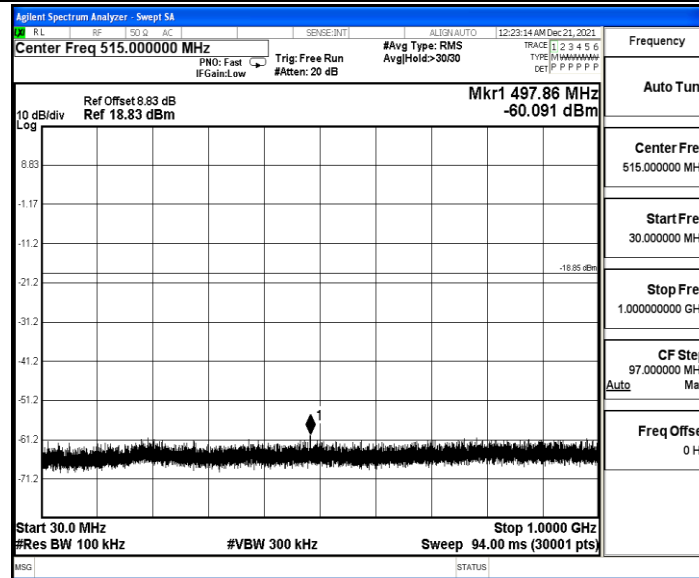
3DH5_BT ANT_2402_1000~26500



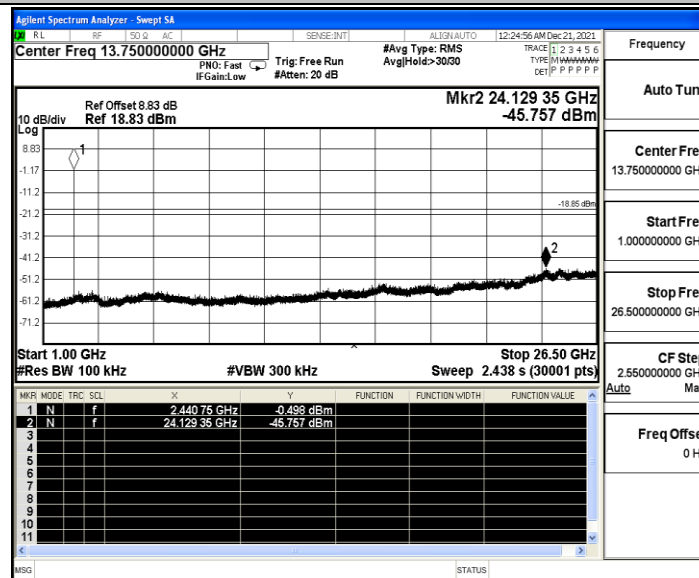
3DH5_BT ANT_2441_0~Reference



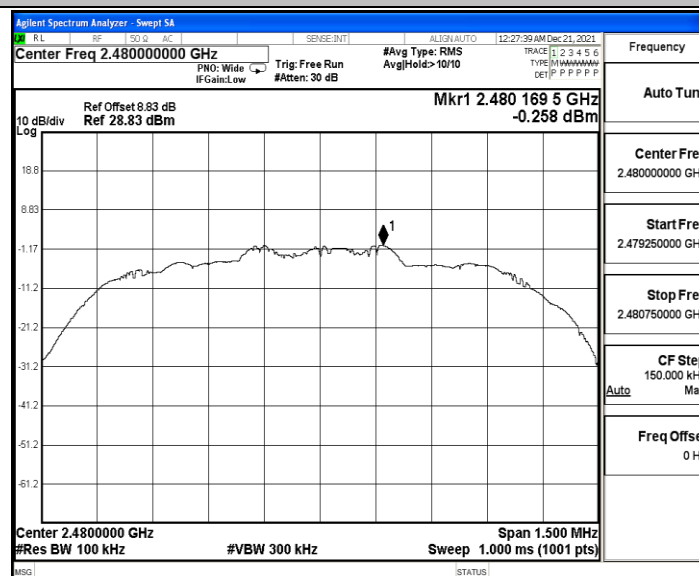
3DH5_BT ANT_2441_30~1000



3DH5_BT ANT_2441_1000~26500

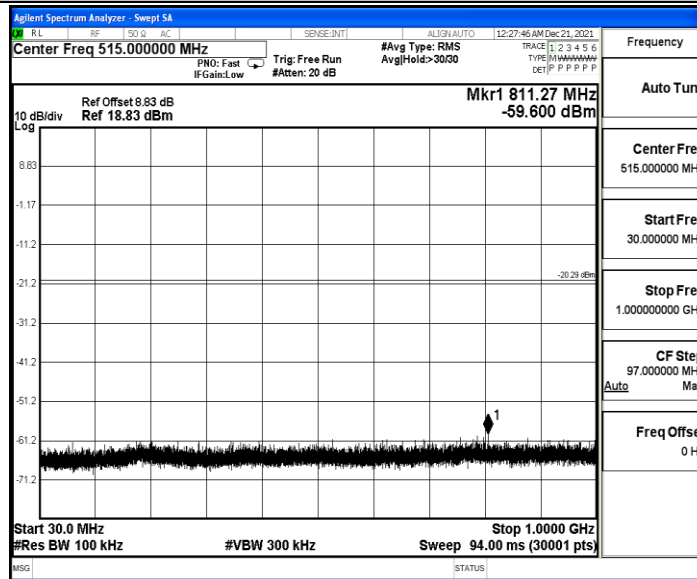


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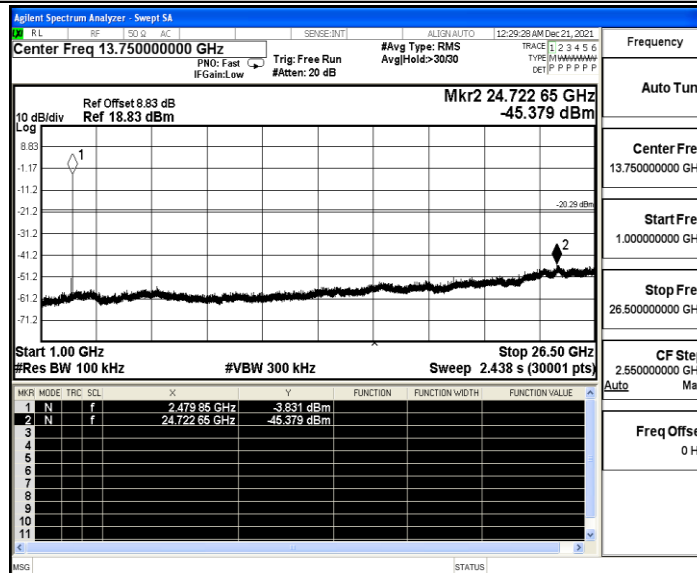




3DH5_BT ANT_2480_30~1000



3DH5_BT ANT_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	BT ANT	Low	2402	AV	2310.000	-47.95	≤-41.20	47.25	≤54	PASS
				AV	2389.670	-47.45	≤-41.20	47.75	≤54	PASS
				AV	2390.000	-47.6	≤-41.20	47.60	≤54	PASS
				Peak	2310.000	-38.54	≤-21.20	56.66	≤74	PASS
				Peak	2376.125	-34.89	≤-21.20	60.31	≤74	PASS
				Peak	2390.000	-38.54	≤-21.20	56.66	≤74	PASS
		High	2480	AV	2483.500	-46.91	≤-41.20	48.29	≤54	PASS
				AV	2499.280	-46.88	≤-41.20	48.32	≤54	PASS
				AV	2500.000	-47.08	≤-41.20	48.12	≤54	PASS
				Peak	2483.500	-37.8	≤-21.20	57.40	≤74	PASS
				Peak	2487.200	-35.5	≤-21.20	59.70	≤74	PASS
				Peak	2500.000	-38.35	≤-21.20	56.85	≤74	PASS
2DH5	BT ANT	Low	2402	AV	2310.000	-48.1	≤-41.20	47.10	≤54	PASS
				AV	2389.985	-47.46	≤-41.20	47.74	≤54	PASS
				AV	2390.000	-47.46	≤-41.20	47.74	≤54	PASS
				Peak	2310.000	-37.45	≤-21.20	57.75	≤74	PASS
				Peak	2364.155	-36.57	≤-21.20	58.63	≤74	PASS
				Peak	2390.000	-38.03	≤-21.20	57.17	≤74	PASS
		High	2480	AV	2483.500	-46.91	≤-41.20	48.29	≤54	PASS
				AV	2499.440	-46.9	≤-41.20	48.30	≤54	PASS
				AV	2500.000	-46.98	≤-41.20	48.22	≤54	PASS
				Peak	2483.500	-37.42	≤-21.20	57.78	≤74	PASS
				Peak	2498.160	-35.22	≤-21.20	59.98	≤74	PASS
				Peak	2500.000	-36.68	≤-21.20	58.52	≤74	PASS
3DH5	BT ANT	Low	2402	AV	2310.000	-48	≤-41.20	47.20	≤54	PASS
				AV	2379.485	-47.45	≤-41.20	47.75	≤54	PASS
				AV	2390.000	-47.64	≤-41.20	47.56	≤54	PASS
				Peak	2310.000	-37.3	≤-21.20	57.90	≤74	PASS
				Peak	2389.985	-36.06	≤-21.20	59.14	≤74	PASS
				Peak	2390.000	-36.06	≤-21.20	59.14	≤74	PASS
		High	2480	AV	2483.500	-46.94	≤-41.20	48.26	≤54	PASS
				AV	2497.360	-46.92	≤-41.20	48.28	≤54	PASS
				AV	2500.000	-47.08	≤-41.20	48.12	≤54	PASS
				Peak	2483.500	-38.17	≤-21.20	57.03	≤74	PASS
				Peak	2496.080	-35.9	≤-21.20	59.30	≤74	PASS
				Peak	2500.000	-37.6	≤-21.20	57.60	≤74	PASS



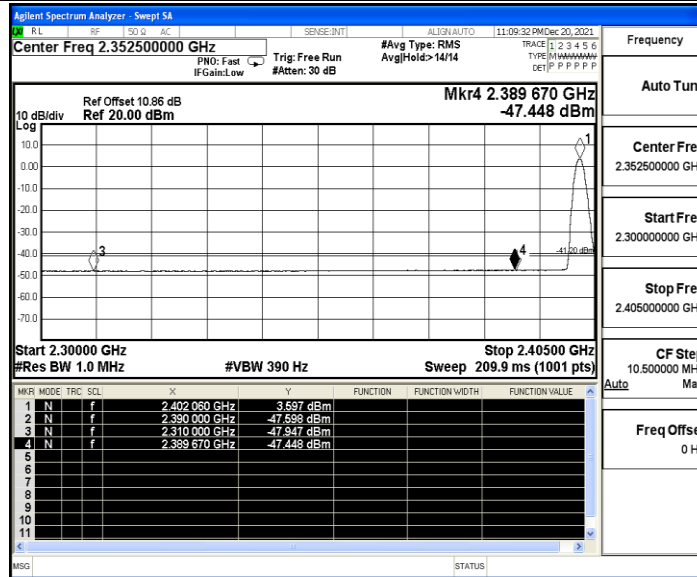
Note:

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.

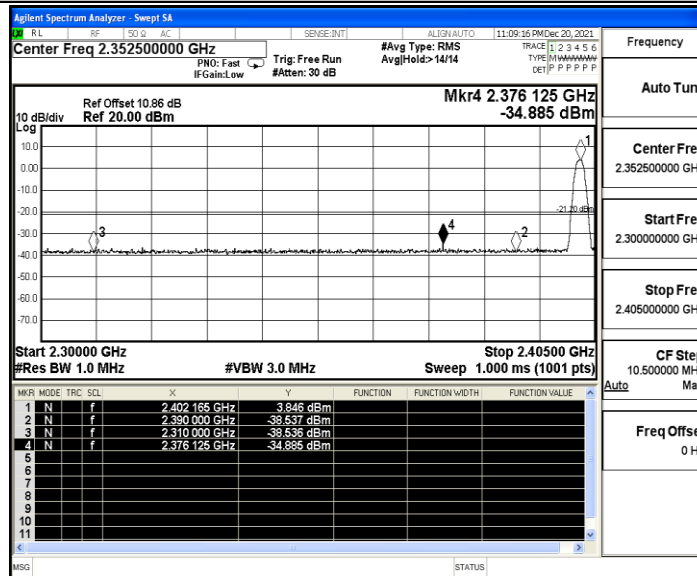


Test Graphs

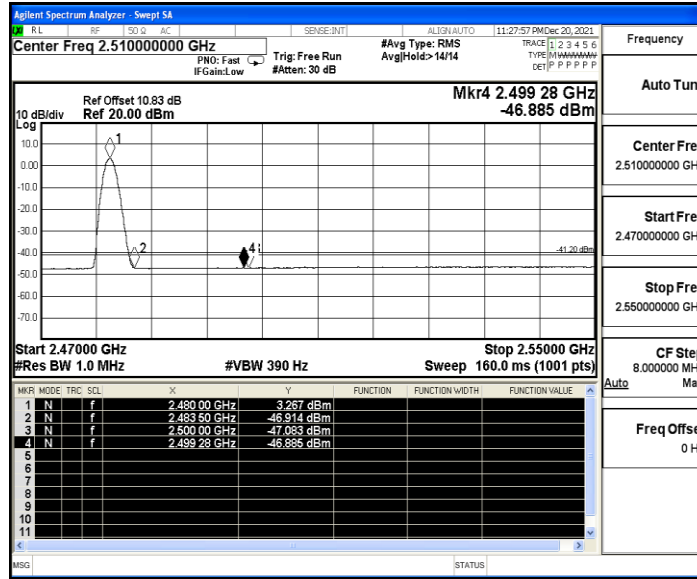
DH5_BT ANT_Low_2402_AV



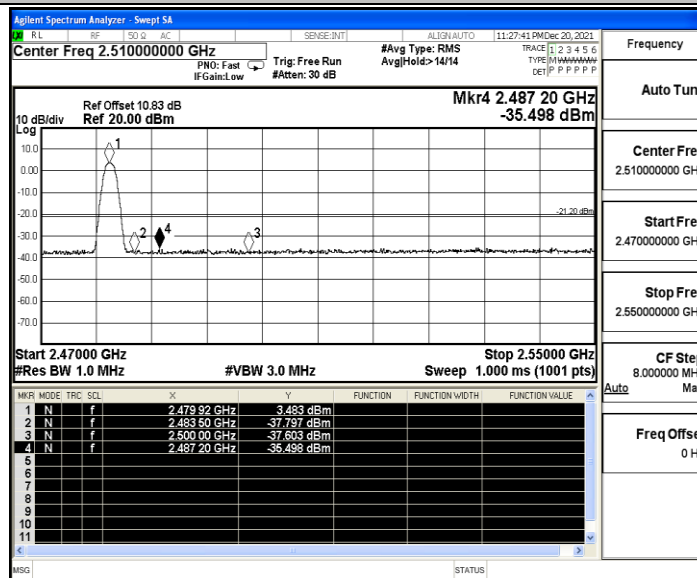
DH5_BT ANT_Low_2402_Peak



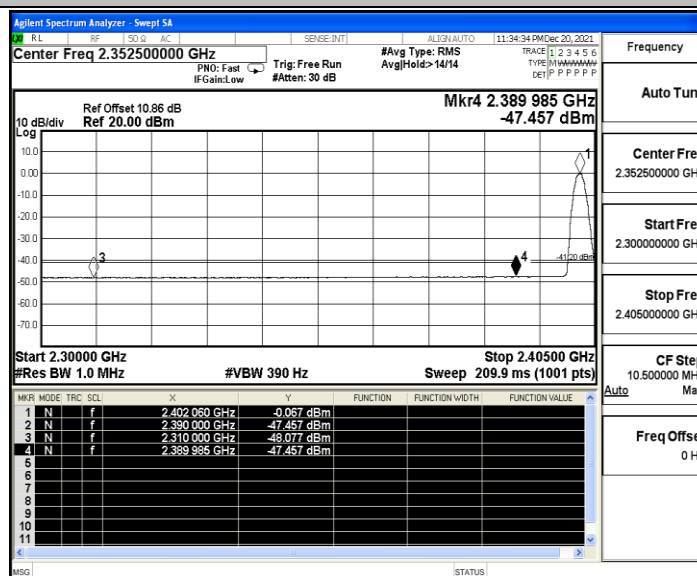
DH5_BT ANT_High_2480_AV



DH5_BT ANT_High_2480_Peak

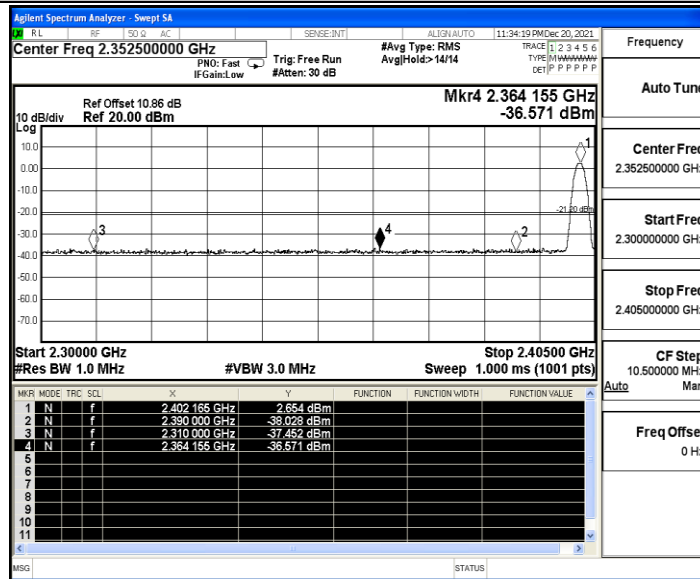


2DH5_BT ANT_Low_2402_AV

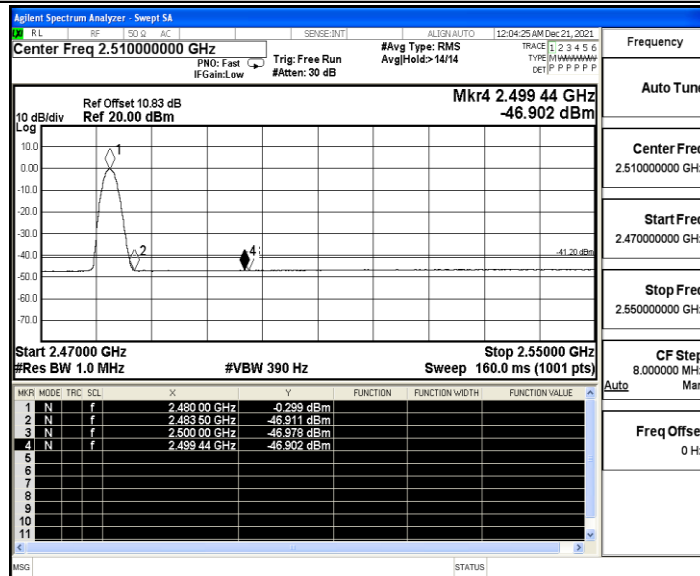




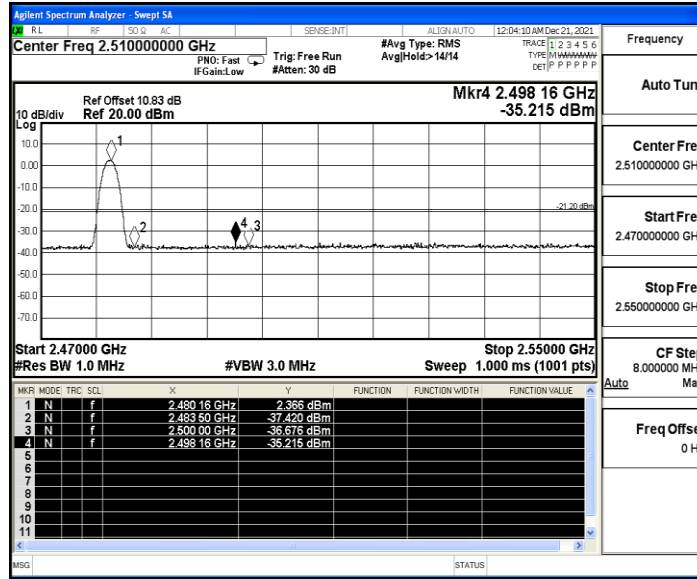
2DH5_BT ANT_Low_2402_Peak



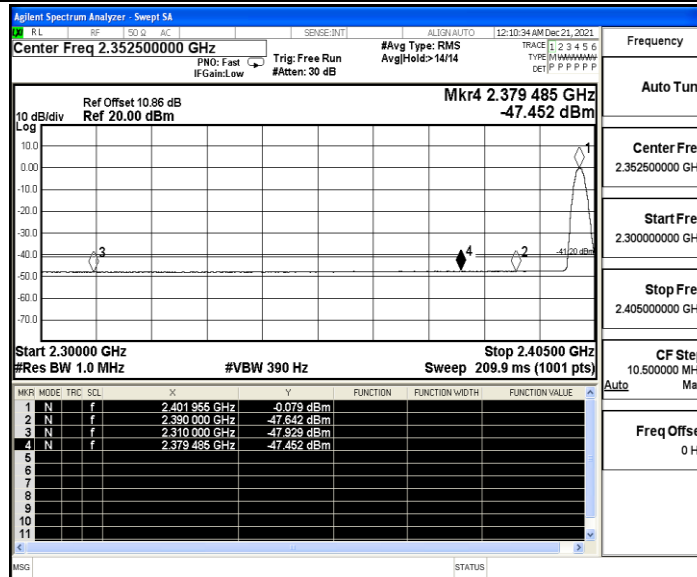
2DH5_BT ANT_High_2480_AV



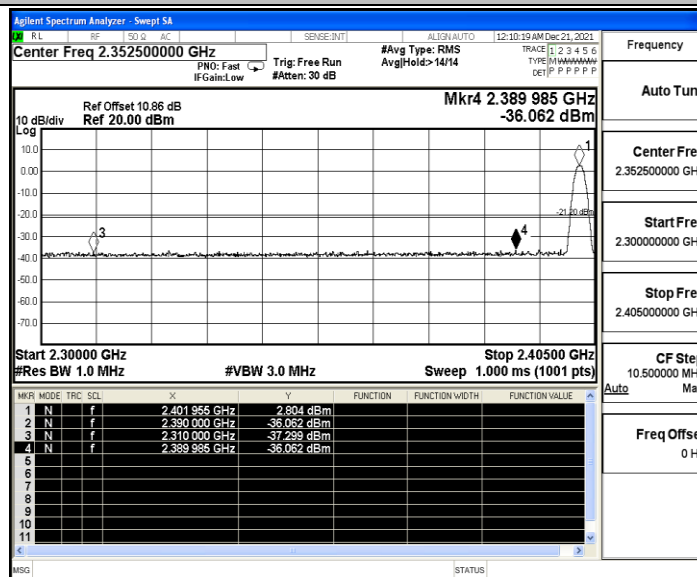
2DH5_BT ANT_High_2480_Peak



3DH5_BT ANT_Low_2402_AV

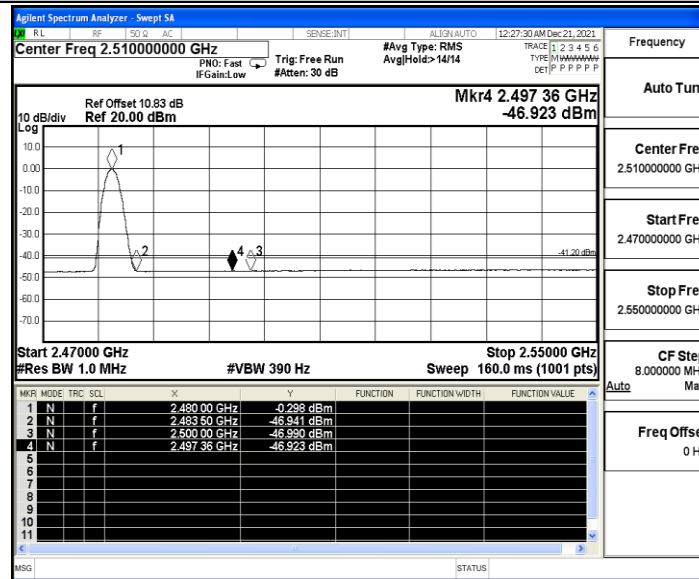


3DH5_BT ANT_Low_2402_Peak





3DH5_BT ANT_High_2480_AV



3DH5_BT ANT_High_2480_Peak

