



Appendix A

RF Test Data for BLE (Conducted Measurement)

Product Name: HeatX app controlled heating system

Test Model: HeatX button

Environmental Conditions

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

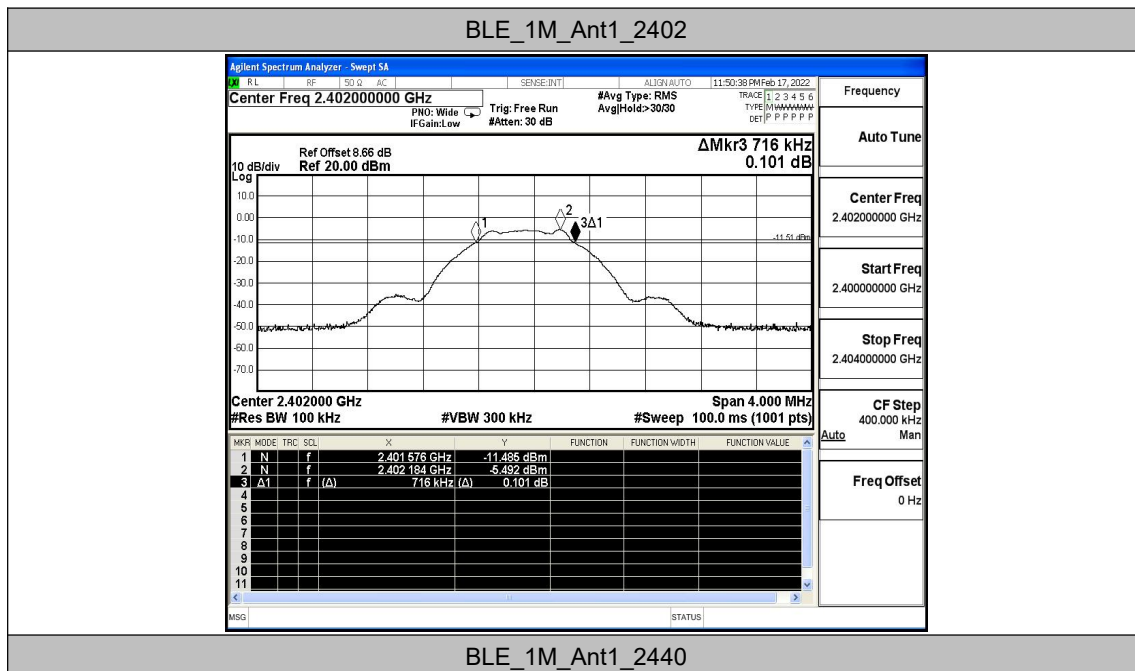


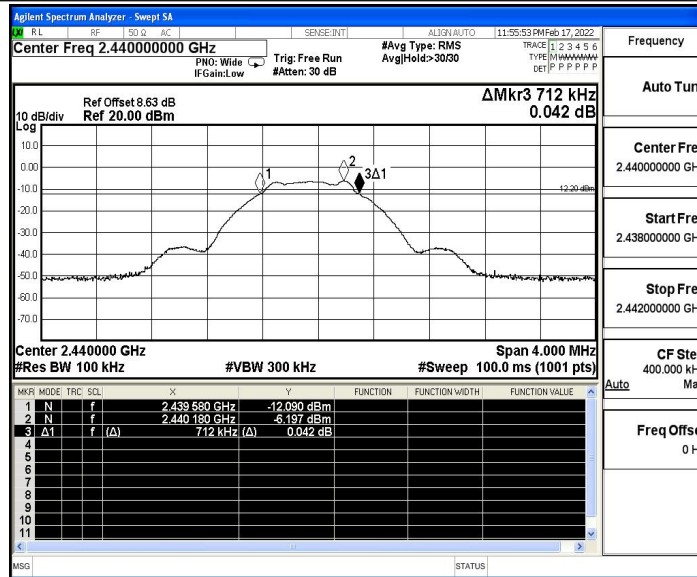
A.1 6dB Bandwidth

Test Result

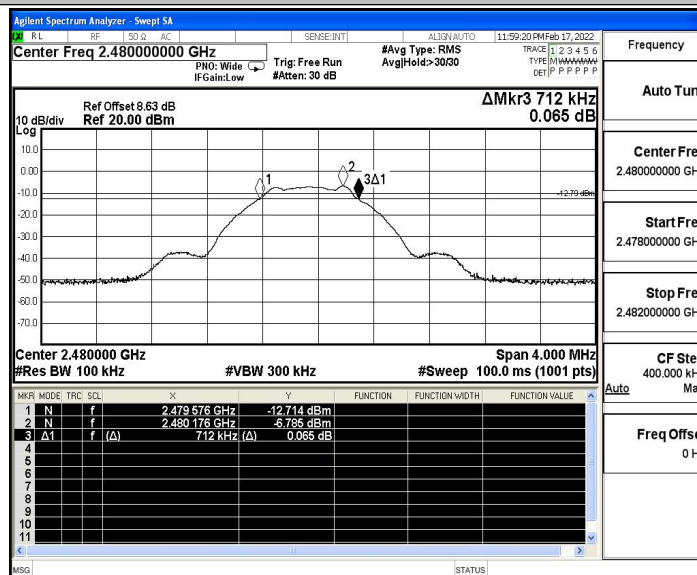
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.716	2401.576	2402.292	0.5	PASS
		2440	0.712	2439.580	2440.292	0.5	PASS
		2480	0.712	2479.576	2480.288	0.5	PASS
BLE_2M	Ant1	2402	1.248	2401.280	2402.528	0.5	PASS
		2440	1.244	2439.284	2440.528	0.5	PASS
		2480	1.248	2479.280	2480.528	0.5	PASS

Test Graphs

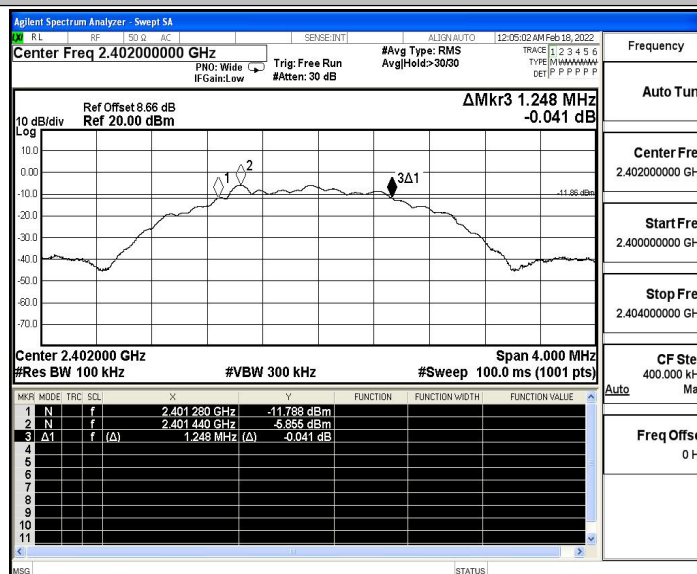




BLE_1M_Ant1_2480

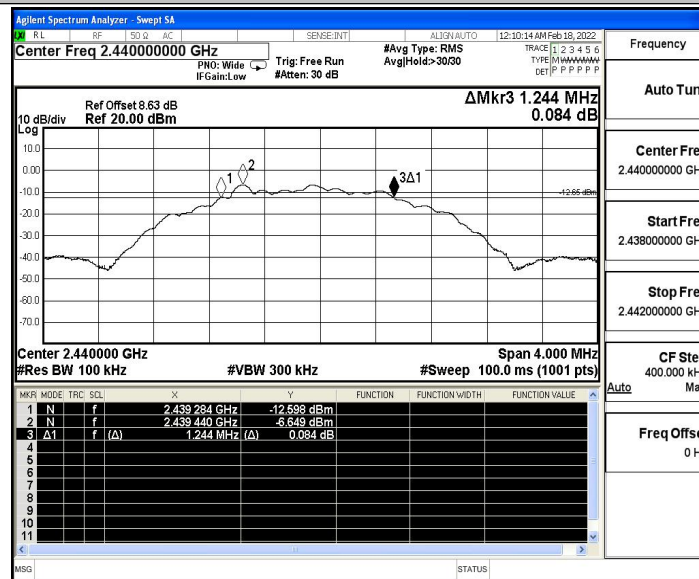


BLE_2M_Ant1_2402

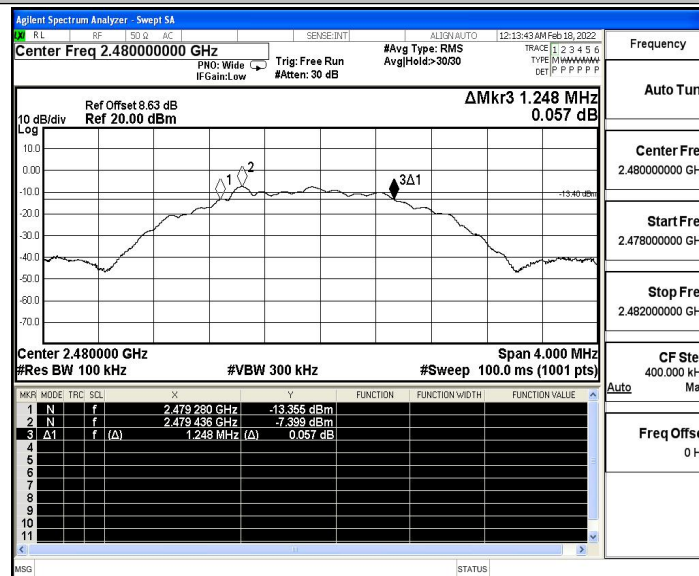




BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



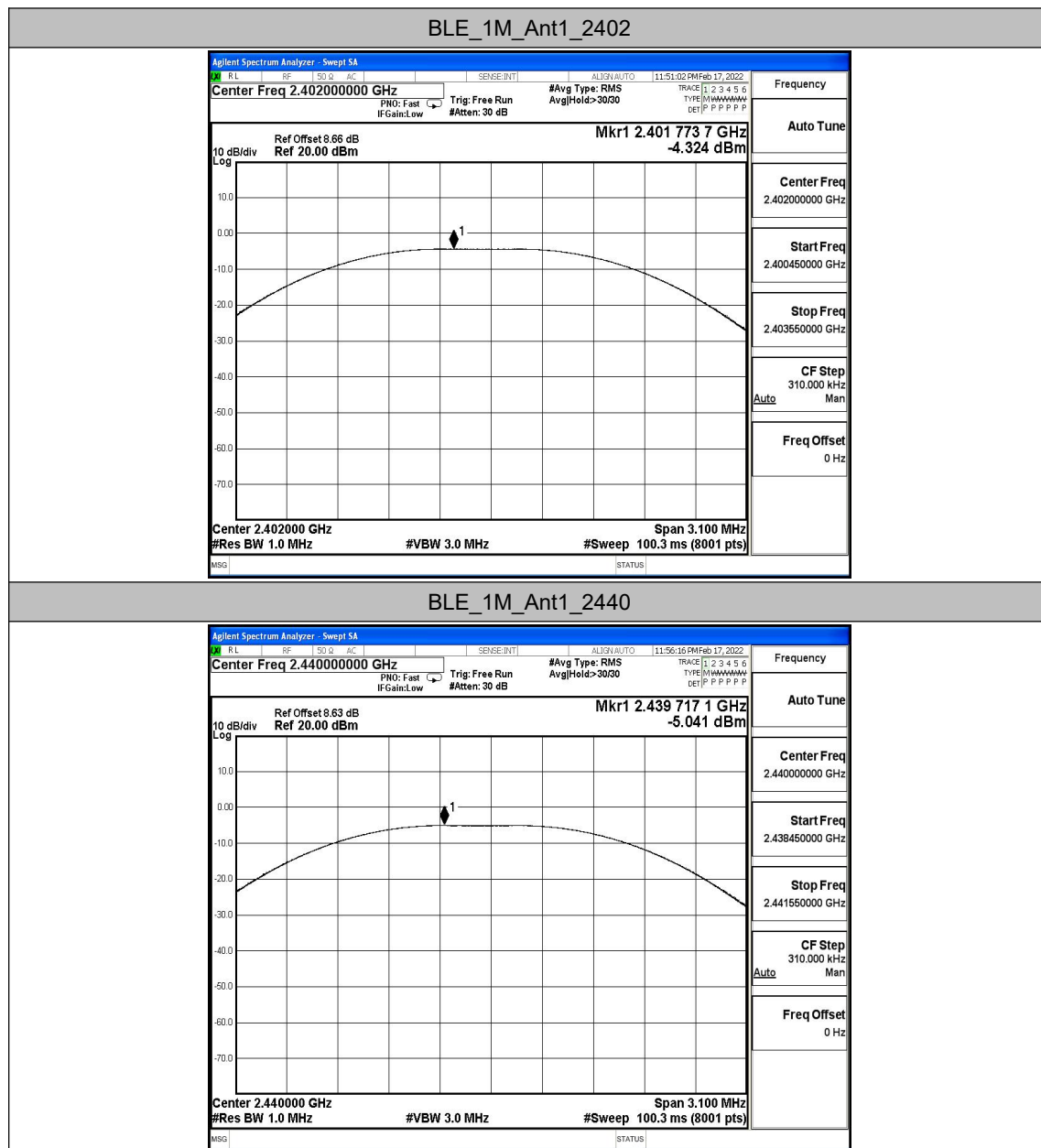


A.2 Maximum conducted output power

Test Result

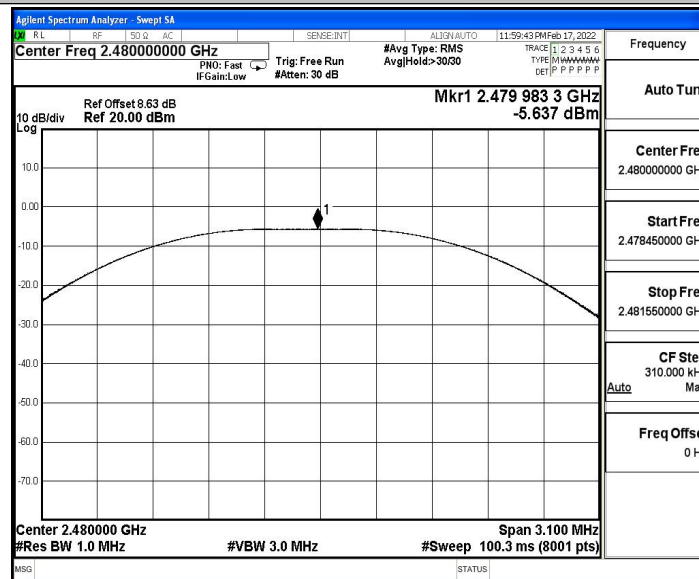
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-4.32	≤30	PASS
		2440	-5.04	≤30	PASS
		2480	-5.64	≤30	PASS
BLE_2M	Ant1	2402	-4.09	≤30	PASS
		2440	-4.84	≤30	PASS
		2480	-5.55	≤30	PASS

Test Graphs

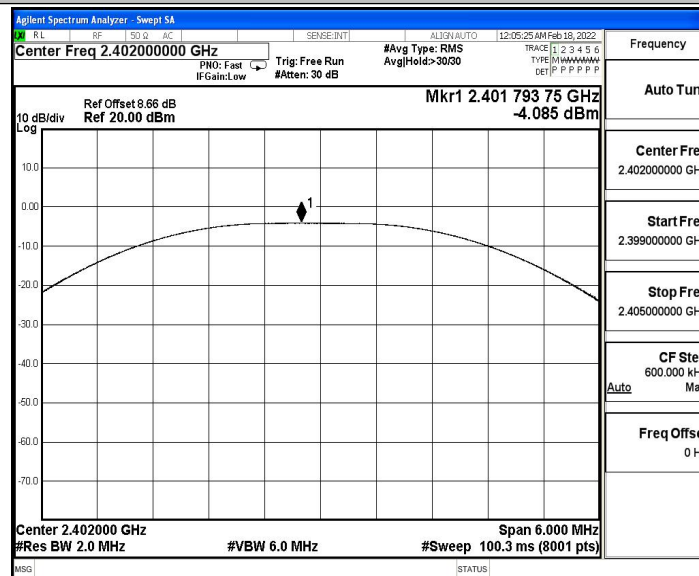




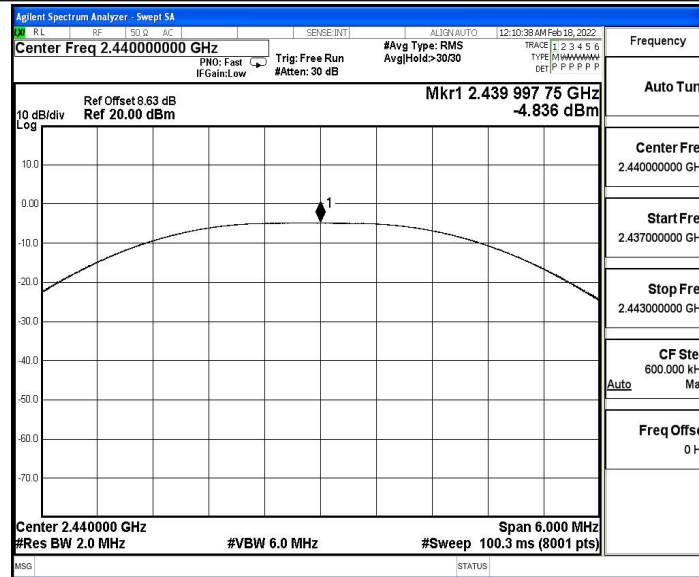
BLE_1M_Ant1_2480



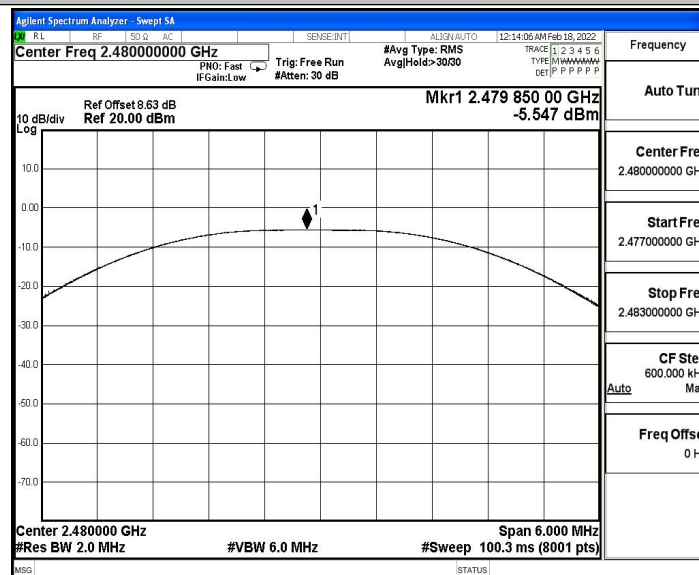
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



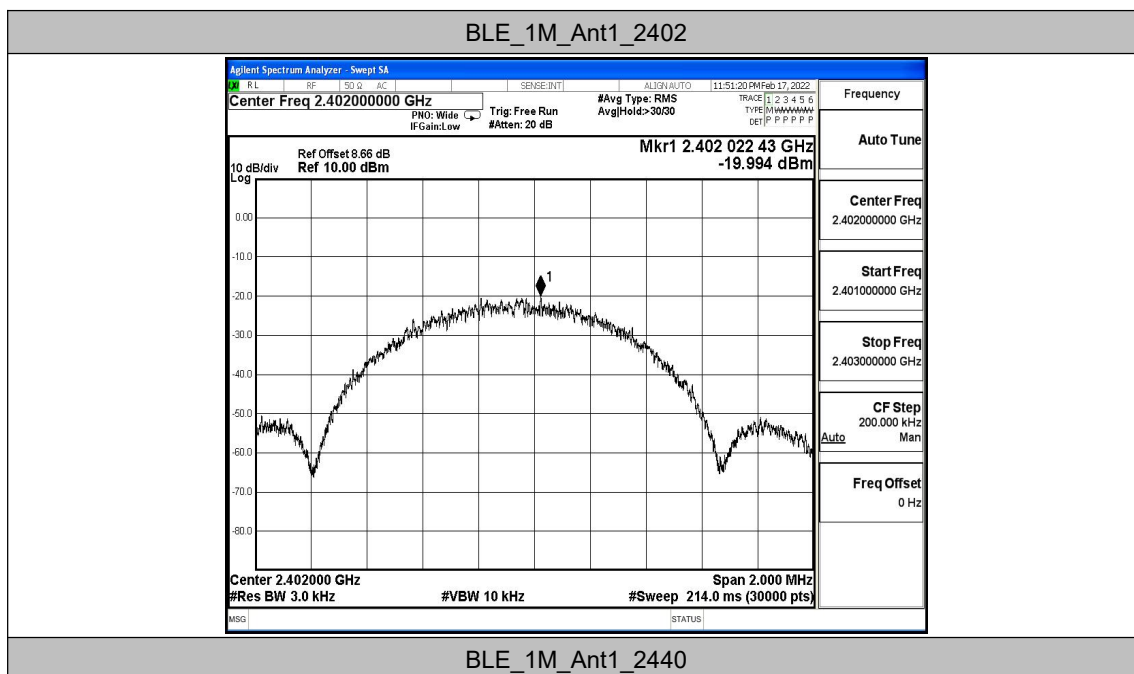


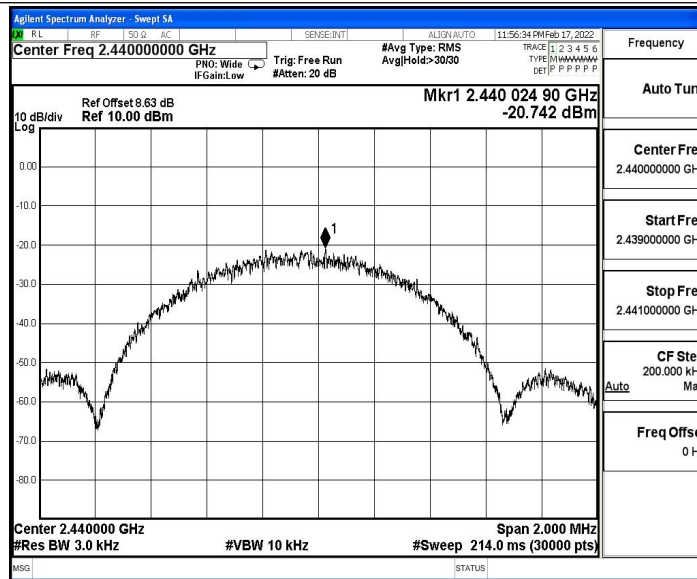
A.3 Maximum power spectral density

Test Result

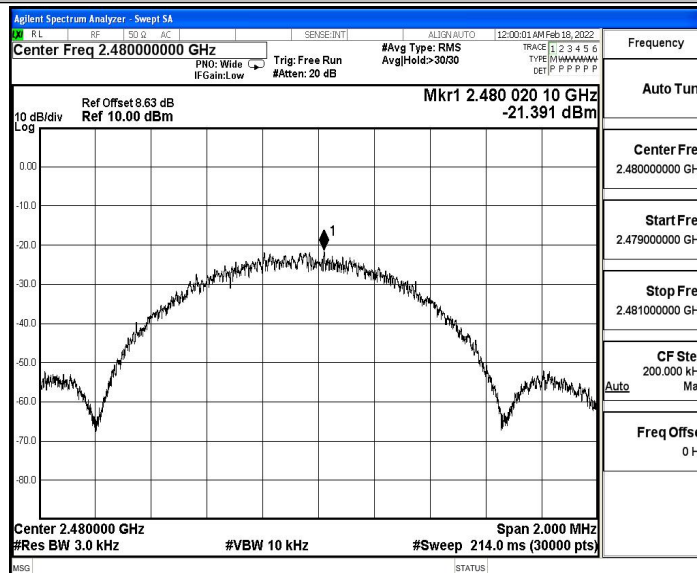
TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-19.99	≤8.00	PASS
		2440	-20.74	≤8.00	PASS
		2480	-21.39	≤8.00	PASS
BLE_2M	Ant1	2402	-23.25	≤8.00	PASS
		2440	-23.78	≤8.00	PASS
		2480	-24.37	≤8.00	PASS

Test Graphs

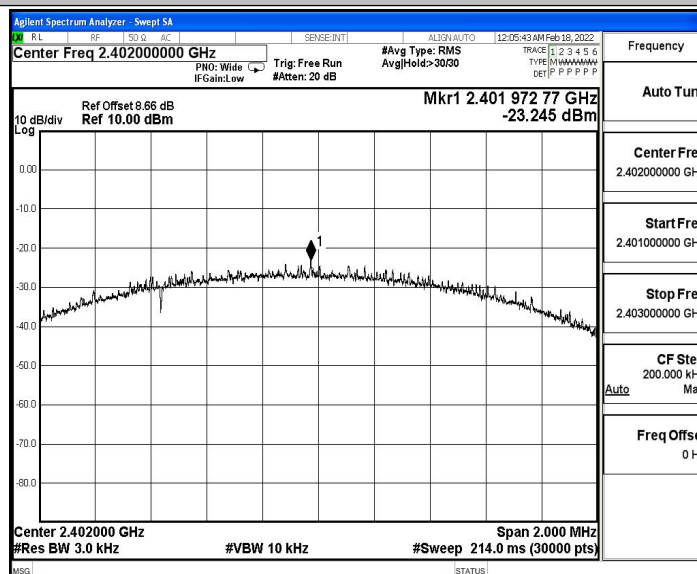




BLE_1M_Ant1_2480

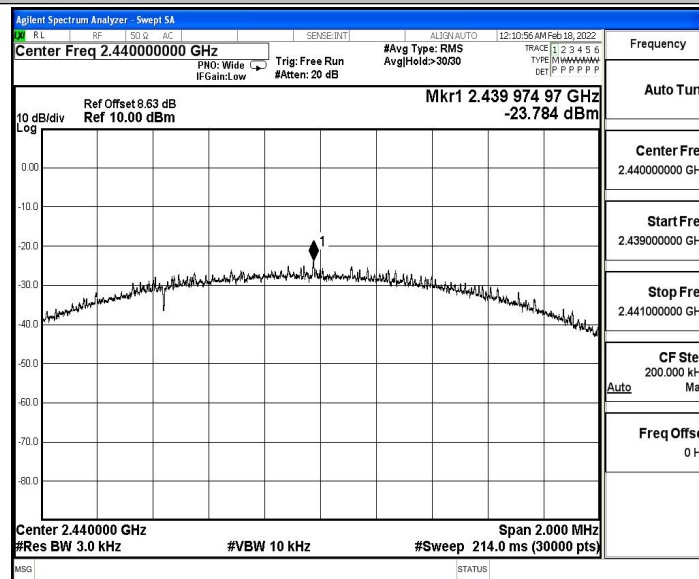


BLE_2M_Ant1_2402

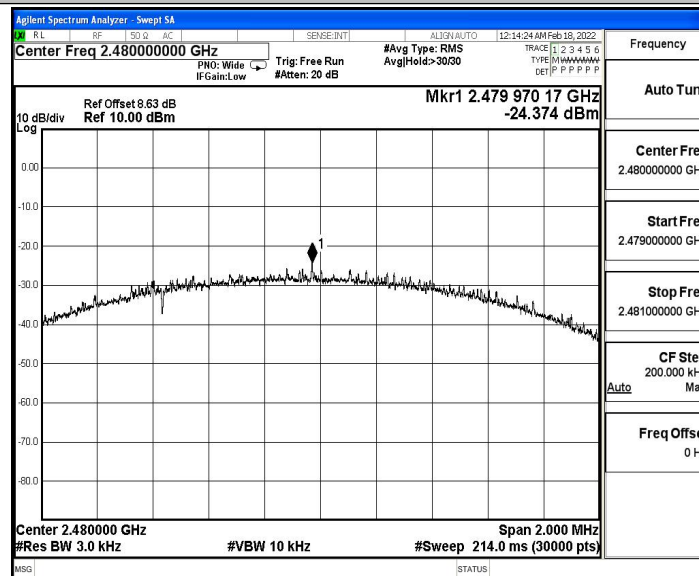




BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



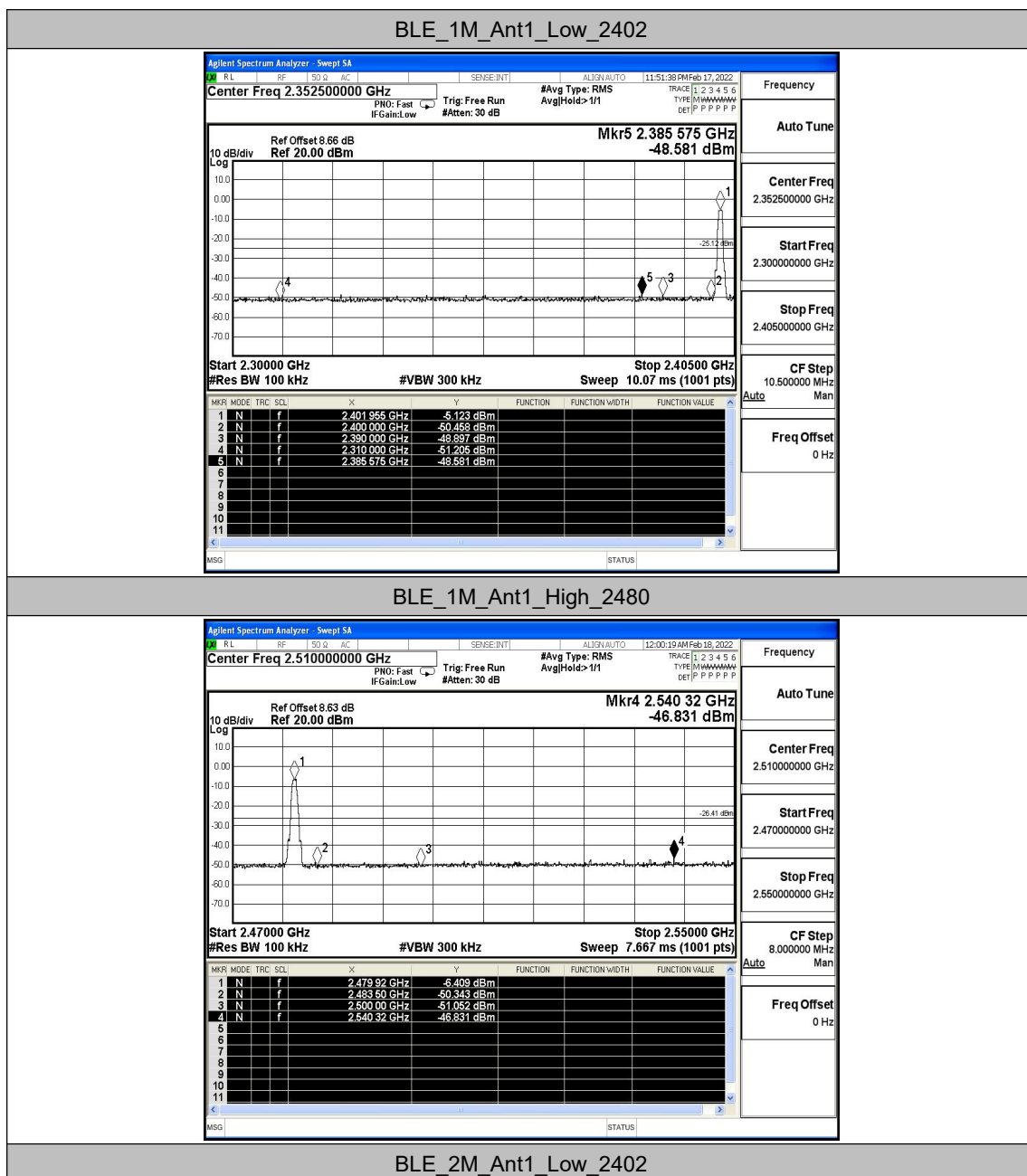


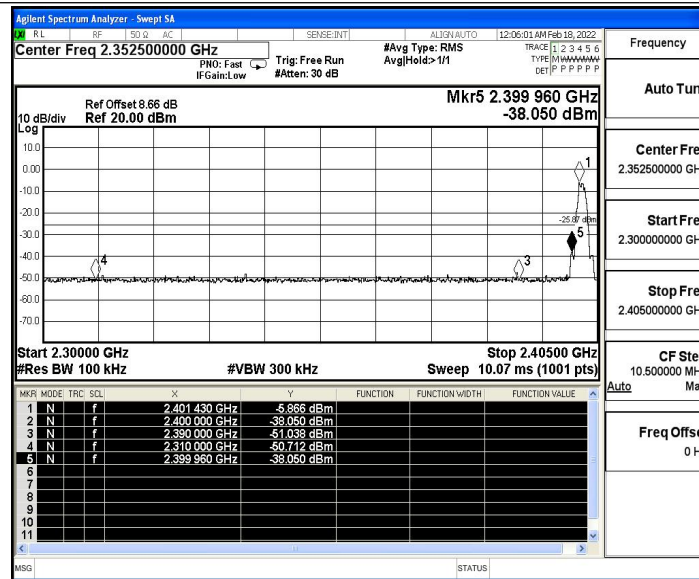
A.4 Band edge measurements

Test Result

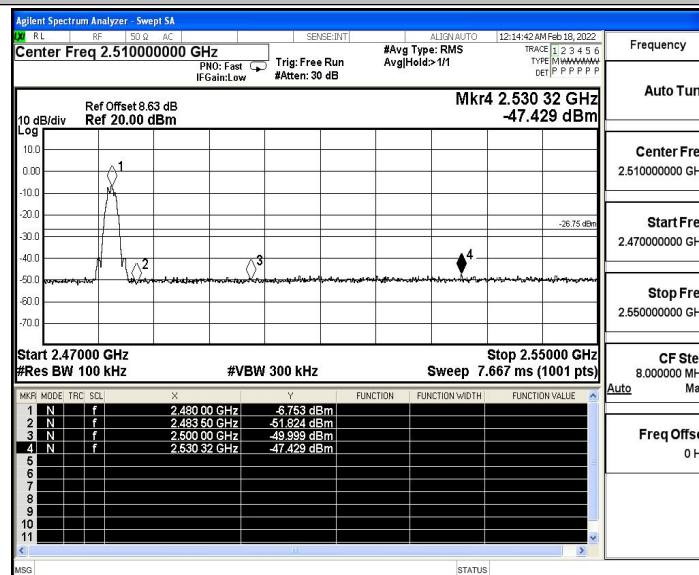
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-5.12	-48.58	≤-25.12	PASS
		High	2480	-6.41	-46.83	≤-26.41	PASS
BLE_2M	Ant1	Low	2402	-5.87	-38.05	≤-25.87	PASS
		High	2480	-6.75	-47.43	≤-26.75	PASS

Test Graphs





BLE_2M_Ant1_High_2480





A.5 Conducted Spurious Emission

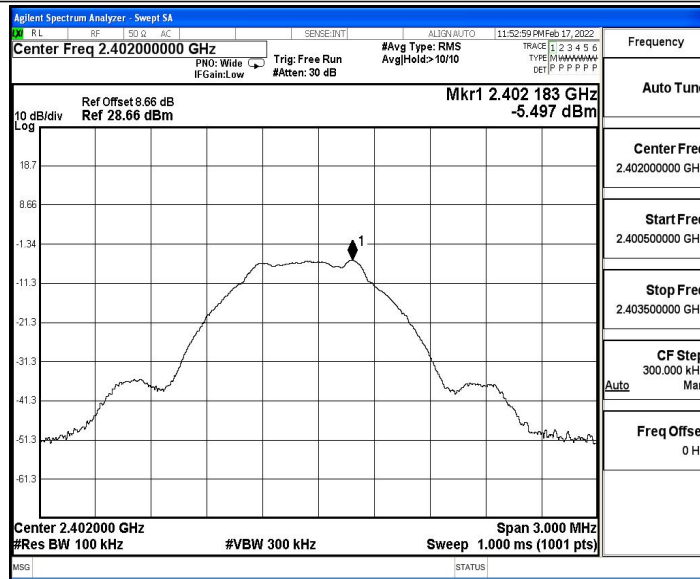
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-5.50	-5.50	---	PASS
			30~1000	-5.50	-60.56	≤ -25.5	PASS
			1000~26500	-5.50	-46.04	≤ -25.5	PASS
		2440	Reference	-6.21	-6.21	---	PASS
			30~1000	-6.21	-60.8	≤ -26.21	PASS
			1000~26500	-6.21	-46.22	≤ -26.21	PASS
		2480	Reference	-6.83	-6.83	---	PASS
			30~1000	-6.83	-60.93	≤ -26.83	PASS
			1000~26500	-6.83	-45.98	≤ -26.83	PASS
BLE_2M	Ant1	2402	Reference	-5.77	-5.77	---	PASS
			30~1000	-5.77	-60.41	≤ -25.77	PASS
			1000~26500	-5.77	-46.09	≤ -25.77	PASS
		2440	Reference	-6.57	-6.57	---	PASS
			30~1000	-6.57	-60.8	≤ -26.57	PASS
			1000~26500	-6.57	-46.34	≤ -26.57	PASS
		2480	Reference	-7.37	-7.37	---	PASS
			30~1000	-7.37	-60.1	≤ -27.37	PASS
			1000~26500	-7.37	-46.05	≤ -27.37	PASS

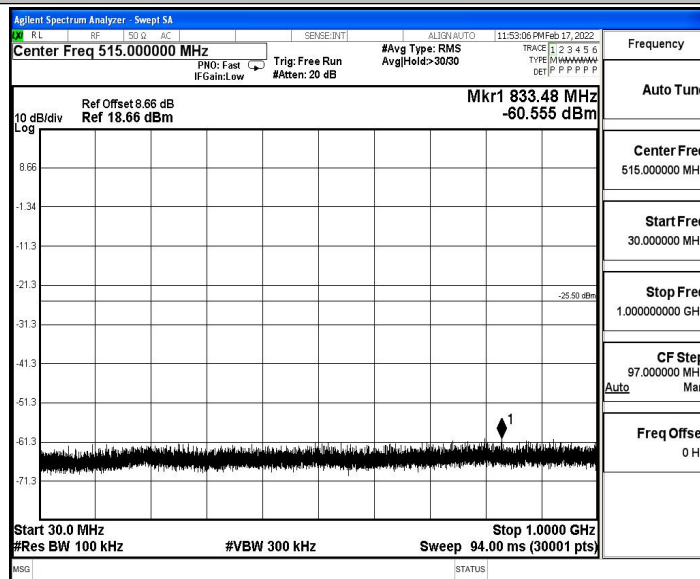


Test Graphs

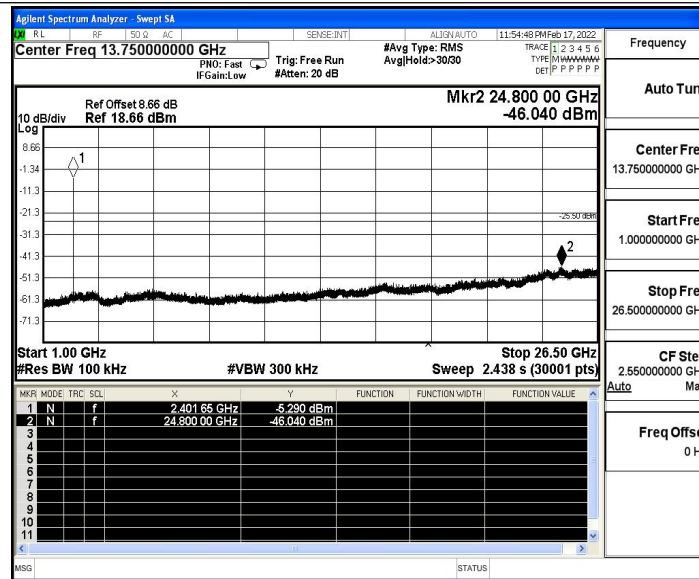
BLE_1M_Ant1_2402_0~Reference



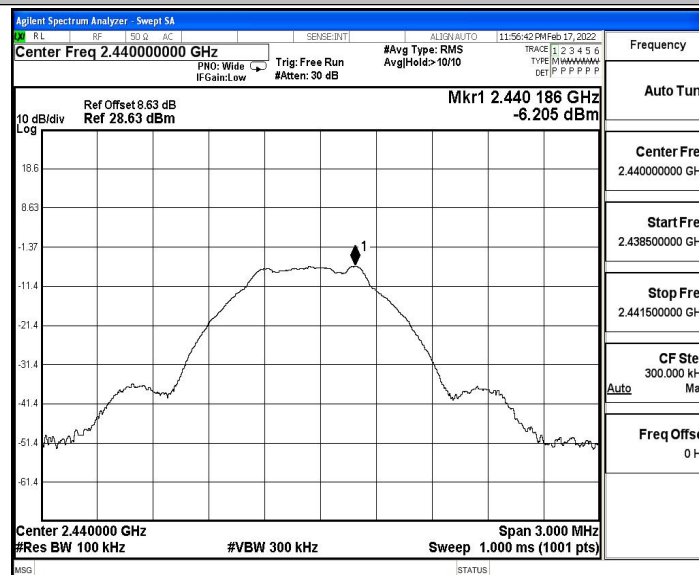
BLE_1M_Ant1_2402_30~1000



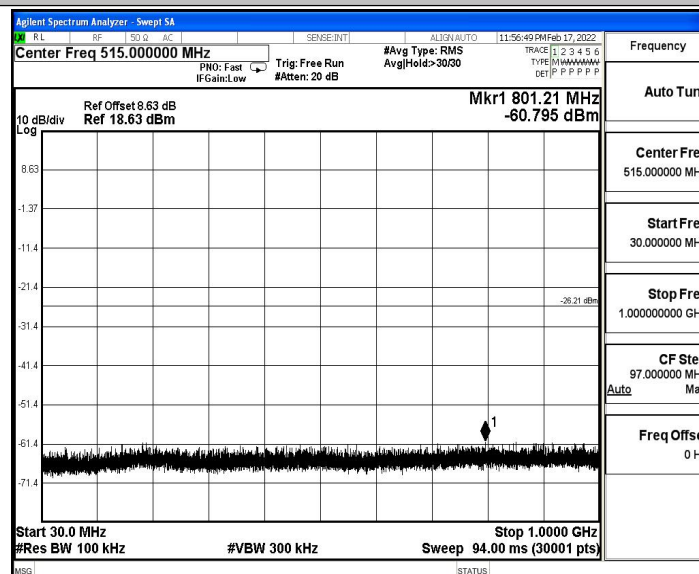
BLE_1M_Ant1_2402_1000~26500



BLE_1M_Ant1_2440_0~Reference

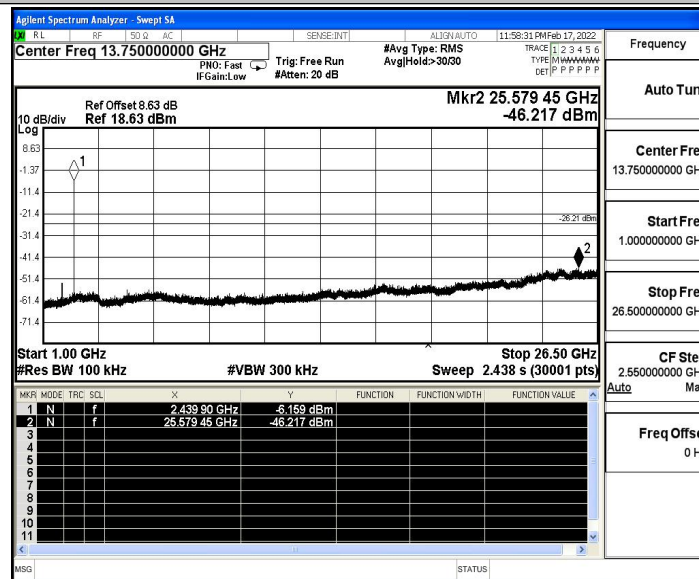


BLE_1M_Ant1_2440_30~1000

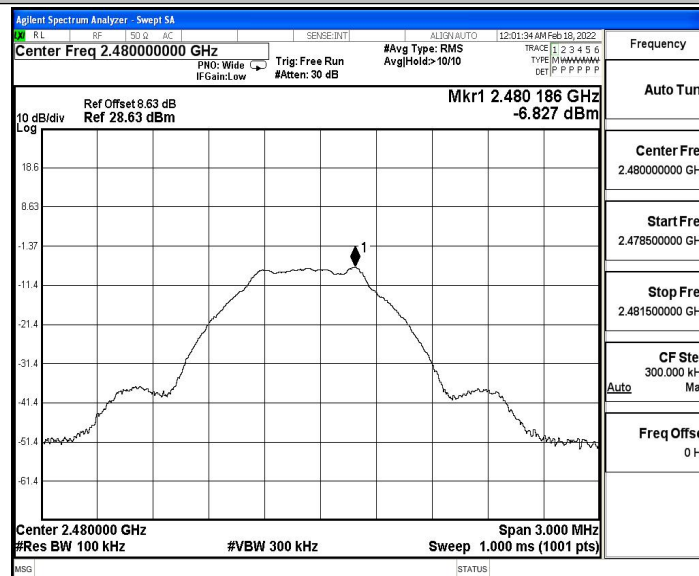




BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000