



Appendix A

RF Test Data for BT LE (Conducted Measurement)

Product Name: UVC decontamination chamber

Trade Mark: CelerPurus, Inc.

Test Model: CP101

Environmental Conditions

Temperature:	26.0 °C
Relative Humidity:	54.0%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan



Appendix A.1: DTS Bandwidth

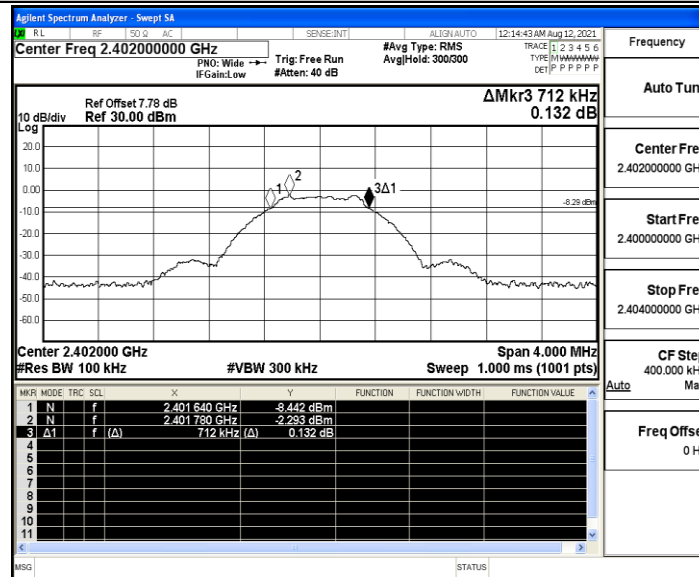
Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.712	2401.640	2402.352	≥ 0.5	PASS
		2440	0.668	2439.660	2440.328	≥ 0.5	PASS
		2480	0.668	2479.660	2480.328	≥ 0.5	PASS
BLE_2M	Ant1	2402	1.152	2401.424	2402.576	≥ 0.5	PASS
		2440	1.152	2439.432	2440.584	≥ 0.5	PASS
		2480	1.284	2479.348	2480.632	≥ 0.5	PASS

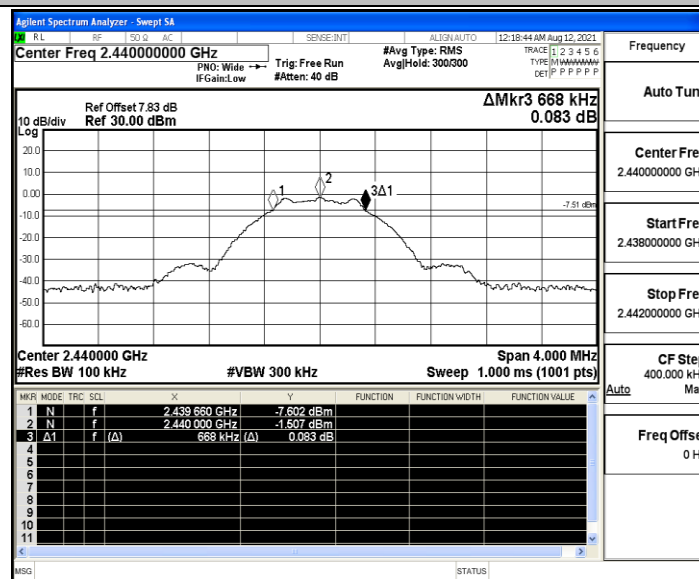


Test Graphs

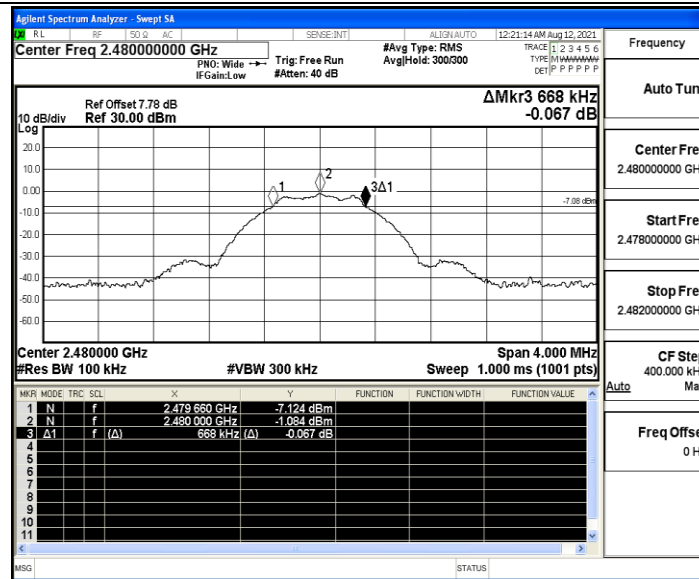
BLE_1M_Ant1_2402



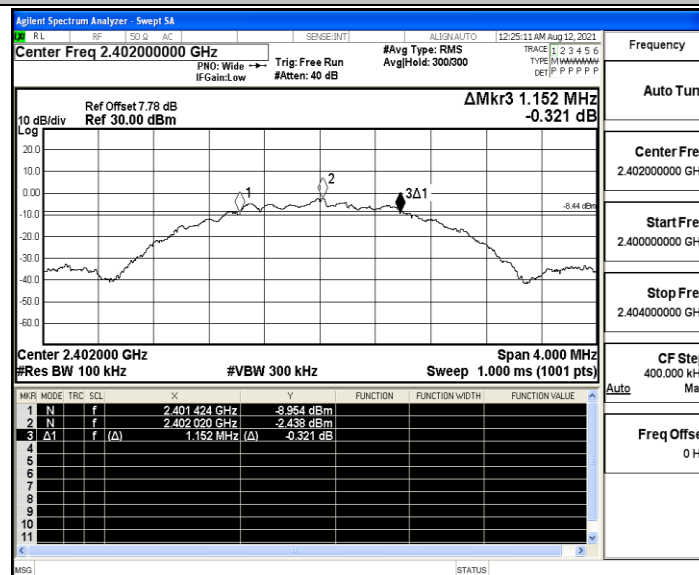
BLE_1M_Ant1_2440



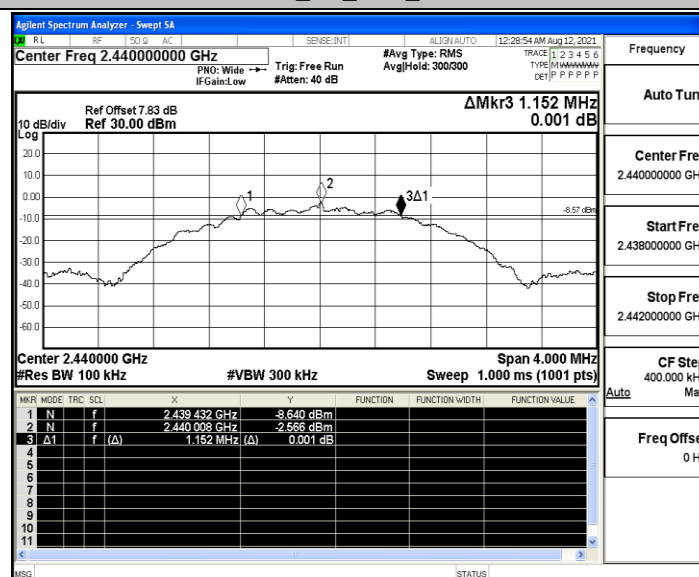
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402

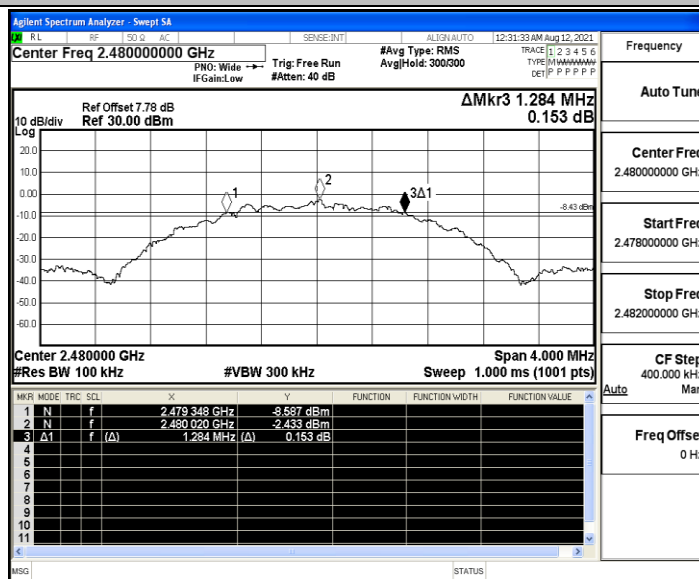


BLE_2M_Ant1_2440





BLE_2M_Ant1_2480





Appendix A.2: Maximum peak conducted output power

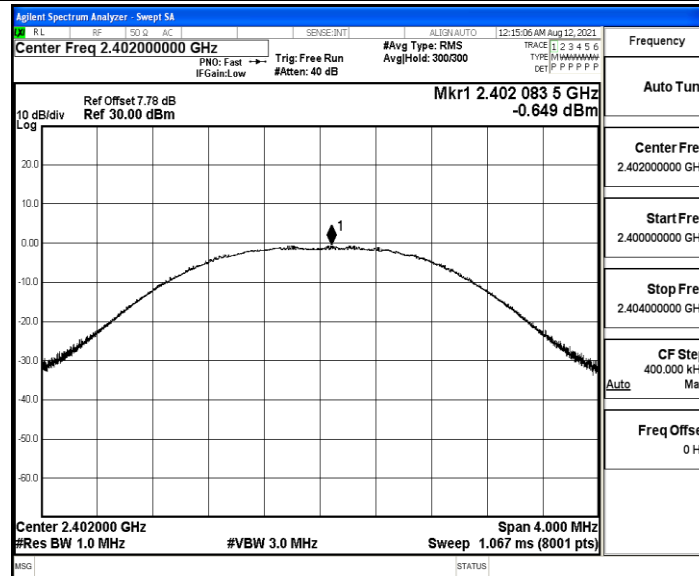
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-0.65	≤ 30	PASS
		2440	-0.90	≤ 30	PASS
		2480	-0.51	≤ 30	PASS
BLE_2M	Ant1	2402	-0.63	≤ 30	PASS
		2440	-1.15	≤ 30	PASS
		2480	-0.73	≤ 30	PASS

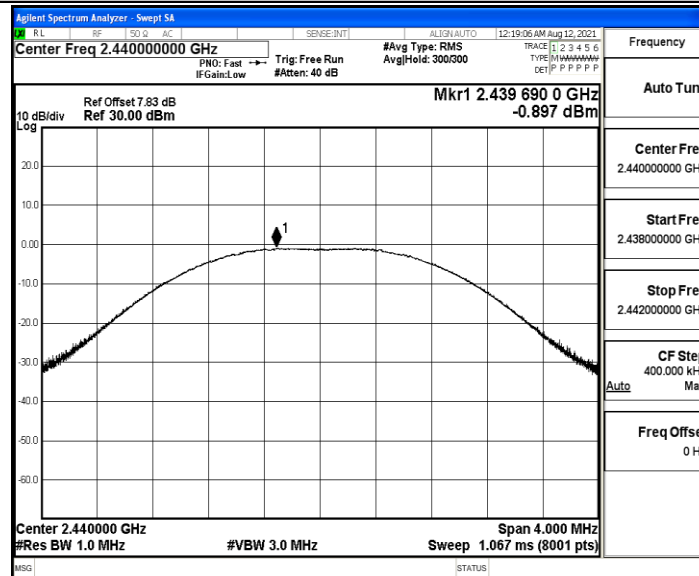


Test Graphs

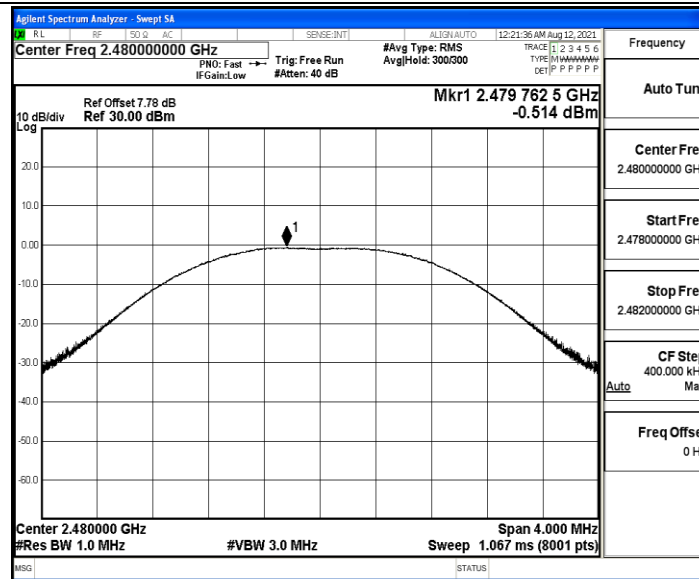
BLE_1M_Ant1_2402



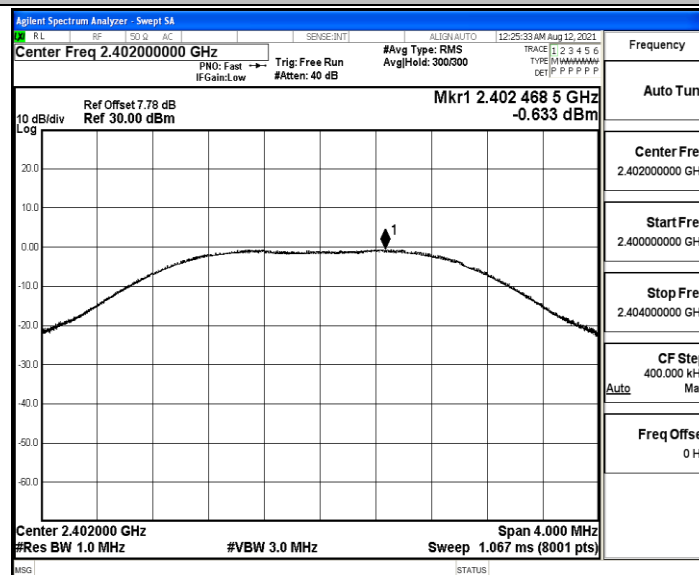
BLE_1M_Ant1_2440



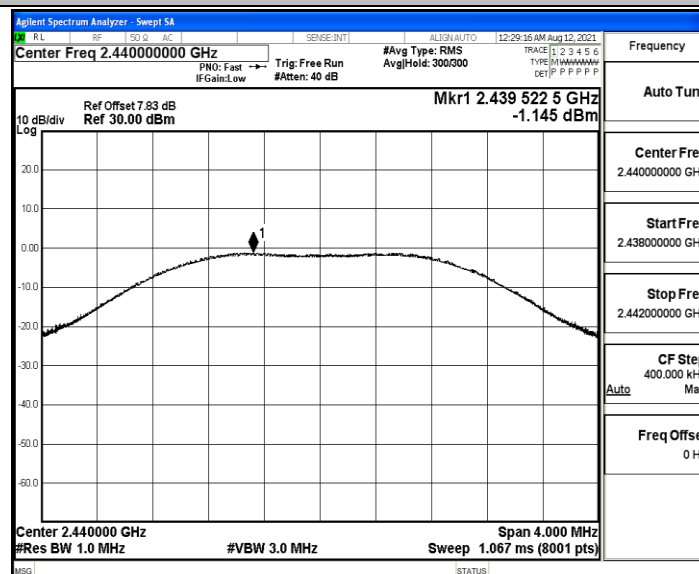
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402

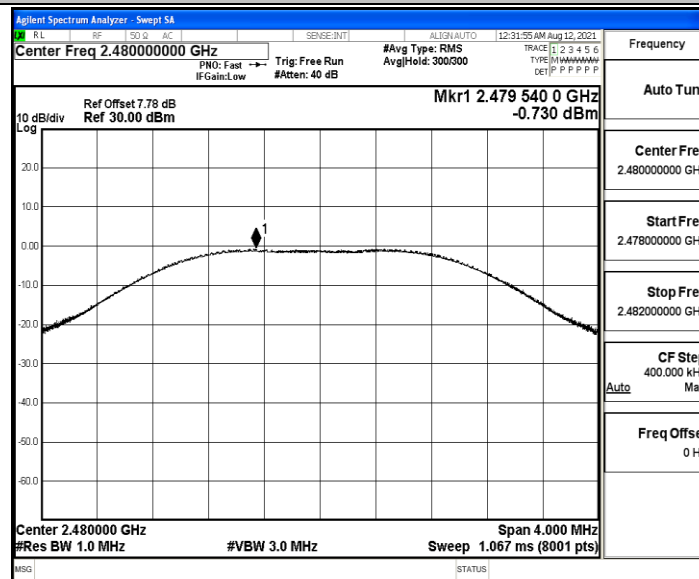


BLE_2M_Ant1_2440





BLE_2M_Ant1_2480





Appendix A.3: Maximum power spectral density

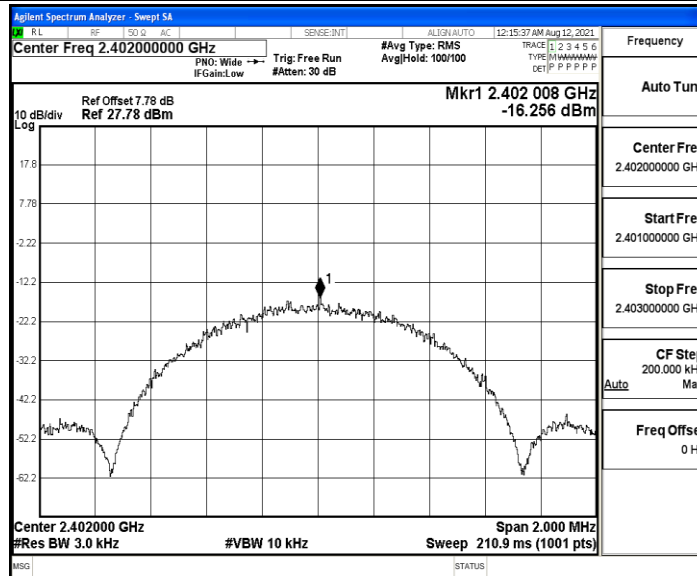
Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-16.26	≤8	PASS
		2440	-17.26	≤8	PASS
		2480	-15.81	≤8	PASS
BLE_2M	Ant1	2402	-20.17	≤8	PASS
		2440	-18.65	≤8	PASS
		2480	-20.31	≤8	PASS

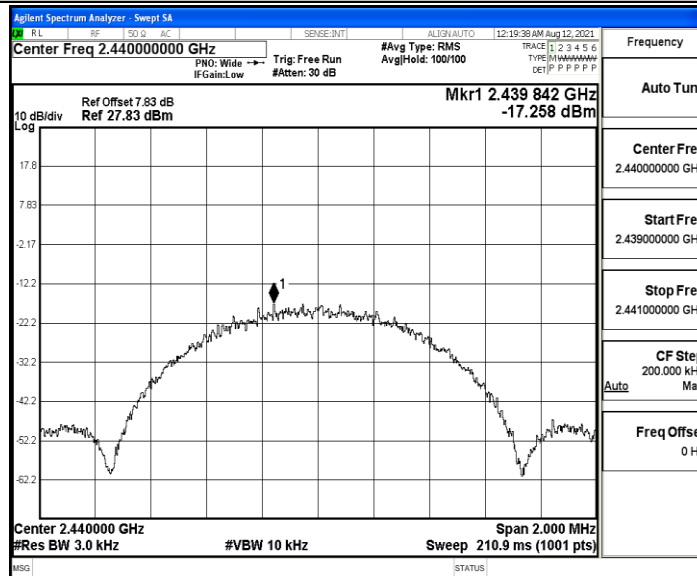


Test Graphs

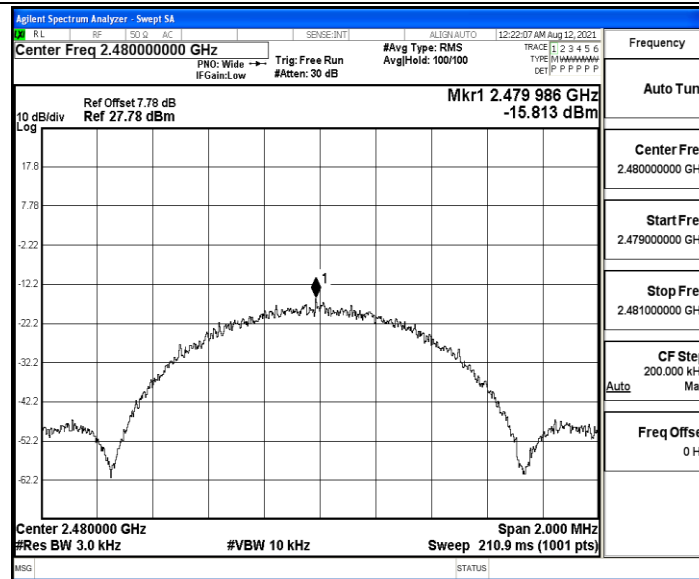
BLE_1M_Ant1_2402



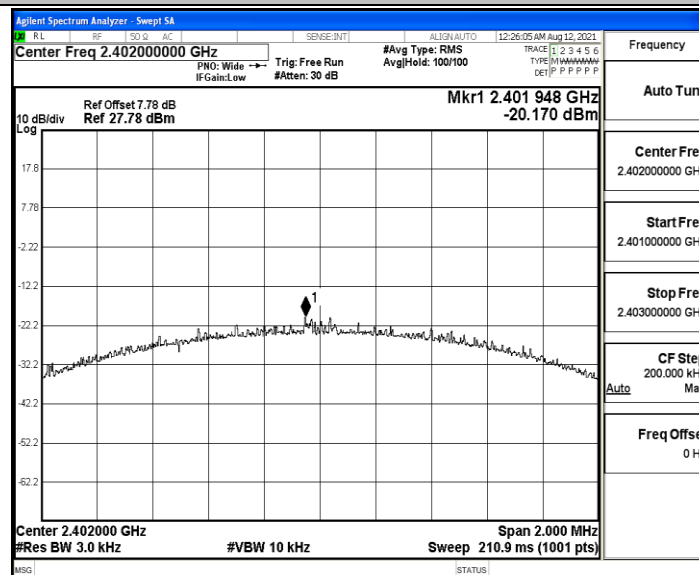
BLE_1M_Ant1_2440



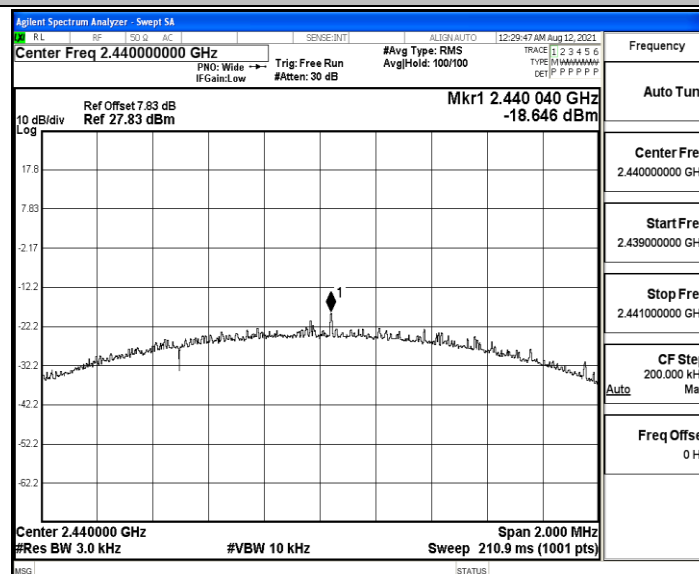
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402

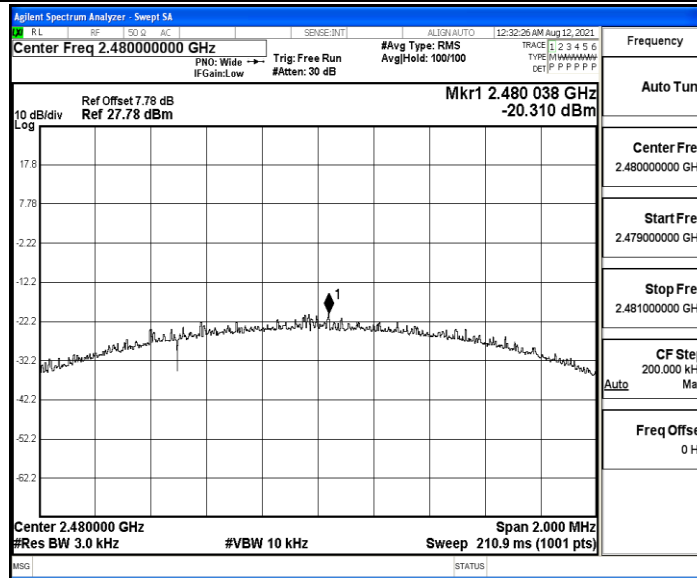


BLE_2M_Ant1_2440





BLE_2M_Ant1_2480





Appendix A.4: Band edge measurements

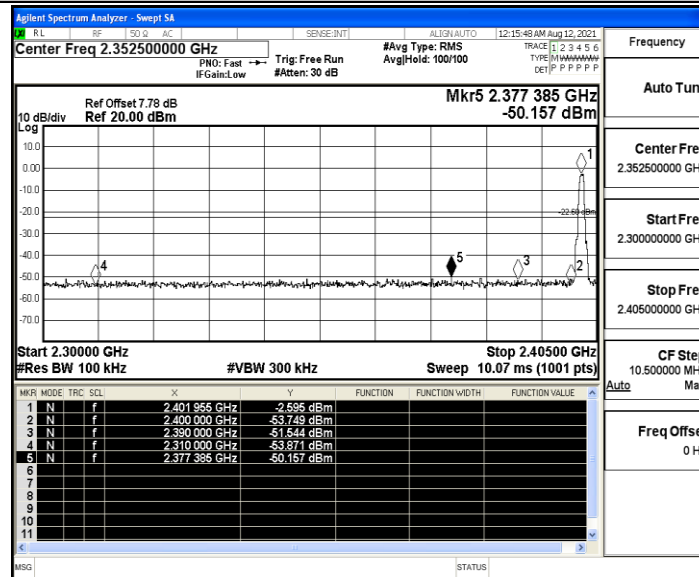
Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-2.60	-50.16	≤ -22.6	PASS
		High	2480	-2.02	-49.59	≤ -22.02	PASS
BLE_2M	Ant1	Low	2402	-4.26	-35.65	≤ -24.26	PASS
		High	2480	-2.51	-49.65	≤ -22.51	PASS

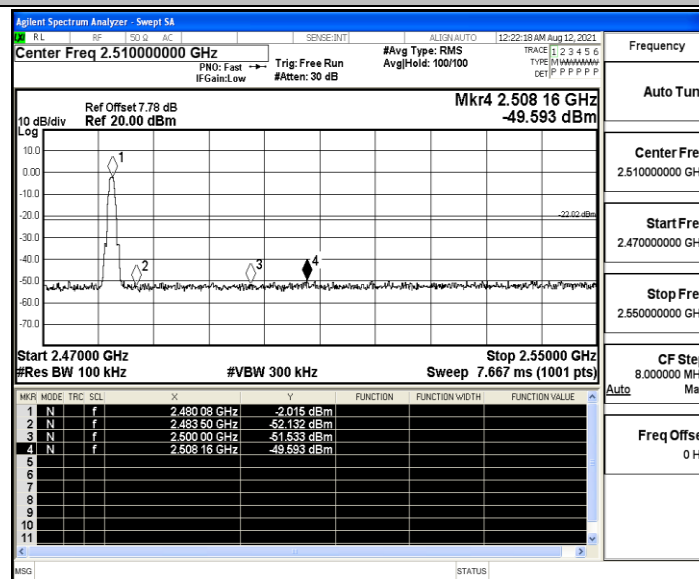


Test Graphs

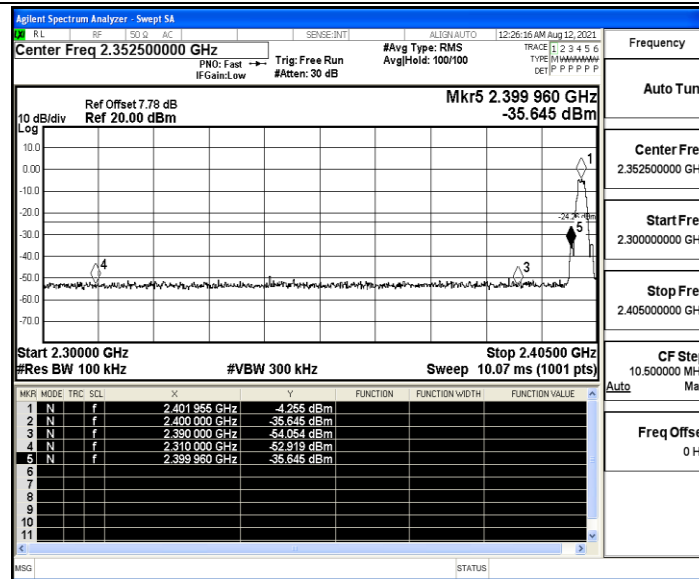
BLE_1M_Ant1_Low_2402



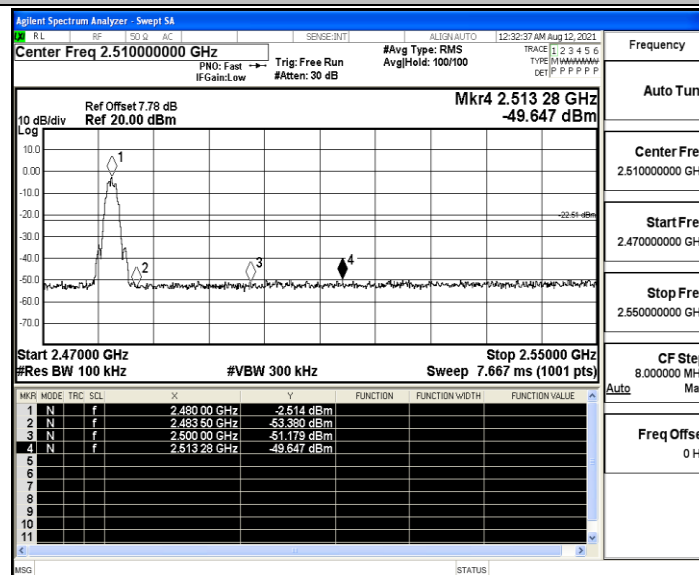
BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402



BLE_2M_Ant1_High_2480





Appendix A.5: Conducted Spurious Emission

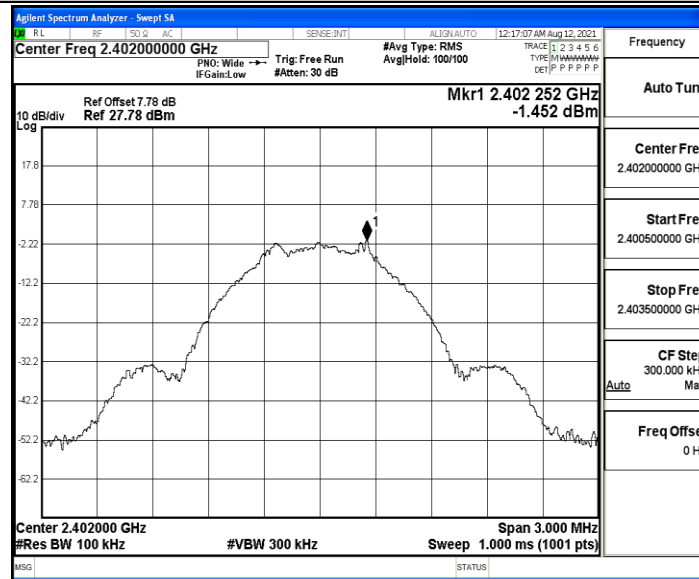
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-1.45	-1.45	---	PASS
			30~1000	-1.45	-60.7	≤ -21.45	PASS
			1000~26500	-1.45	-47.58	≤ -21.45	PASS
		2440	Reference	-1.62	-1.62	---	PASS
			30~1000	-1.62	-61.5	≤ -21.62	PASS
			1000~26500	-1.62	-47.64	≤ -21.62	PASS
		2480	Reference	-1.66	-1.66	---	PASS
			30~1000	-1.66	-62.19	≤ -21.66	PASS
			1000~26500	-1.66	-47.97	≤ -21.66	PASS
BLE_2M	Ant1	2402	Reference	-4.06	-4.06	---	PASS
			30~1000	-4.06	-59.92	≤ -24.06	PASS
			1000~26500	-4.06	-46.94	≤ -24.06	PASS
		2440	Reference	-5.09	-5.09	---	PASS
			30~1000	-5.09	-61.72	≤ -25.09	PASS
			1000~26500	-5.09	-48.03	≤ -25.09	PASS
		2480	Reference	-3.23	-3.23	---	PASS
			30~1000	-3.23	-61.19	≤ -23.23	PASS
			1000~26500	-3.23	-47.81	≤ -23.23	PASS

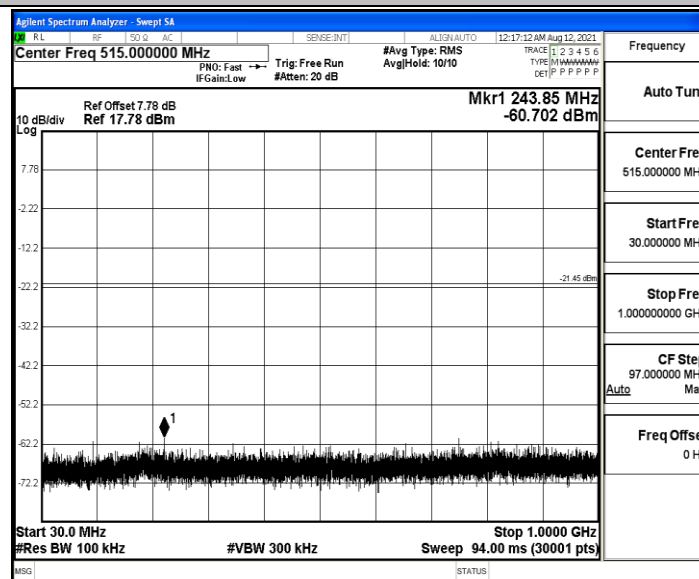


Test Graphs

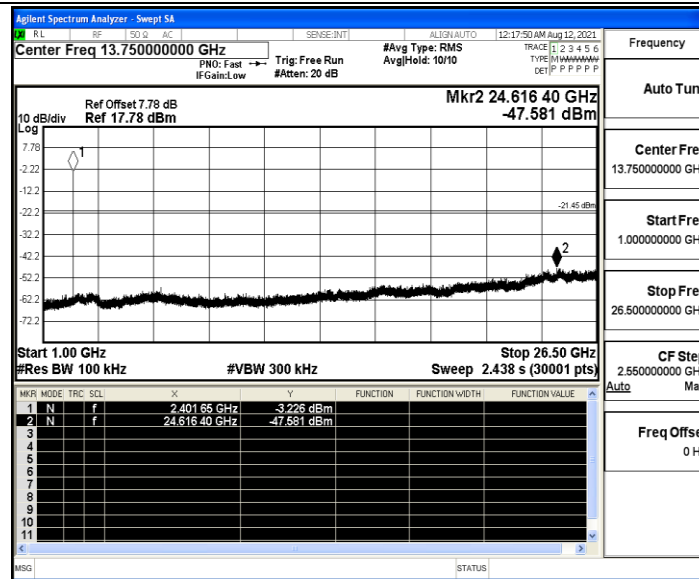
BLE_1M_Ant1_2402_0~Reference



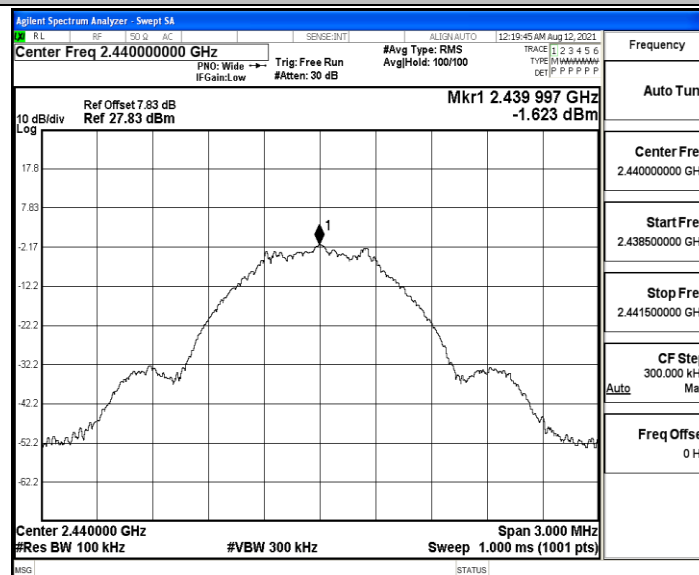
BLE_1M_Ant1_2402_30~1000



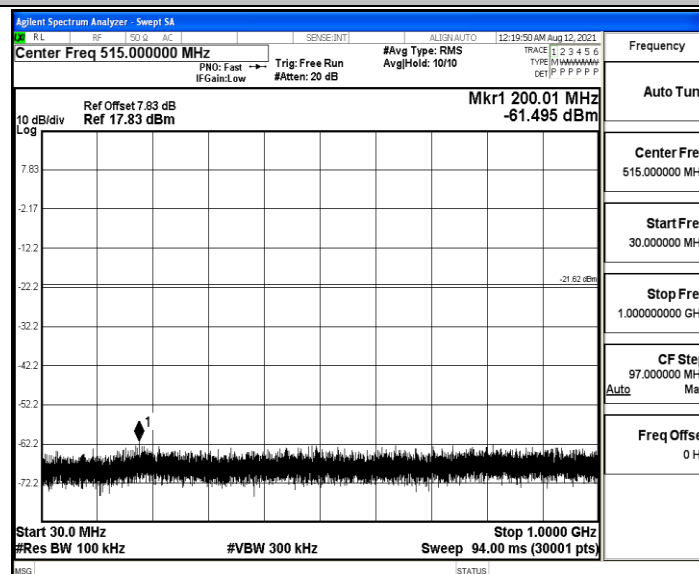
BLE_1M_Ant1_2402_1000~26500



BLE_1M_Ant1_2440_0~Reference

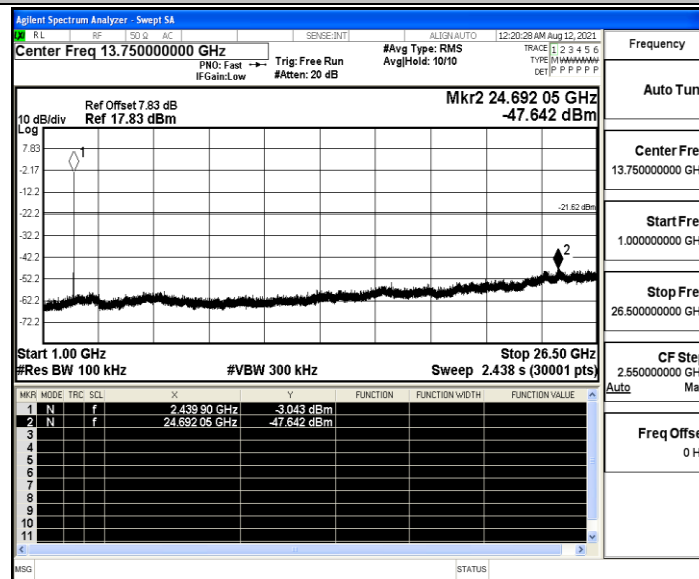


BLE_1M_Ant1_2440_30~1000

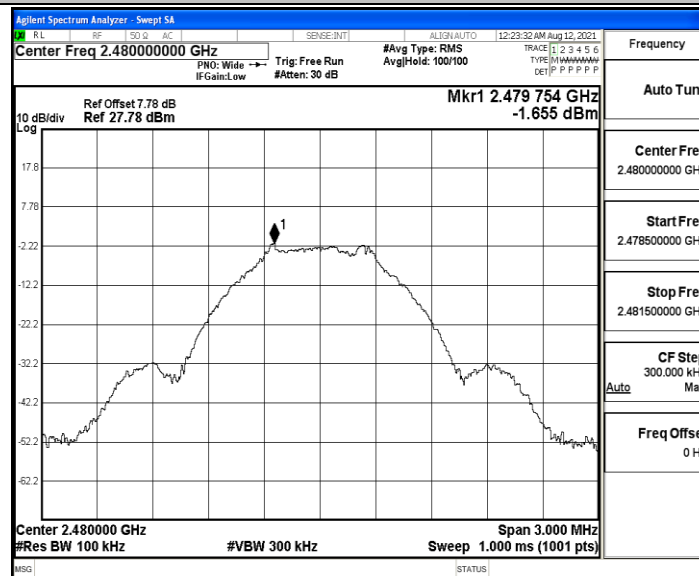




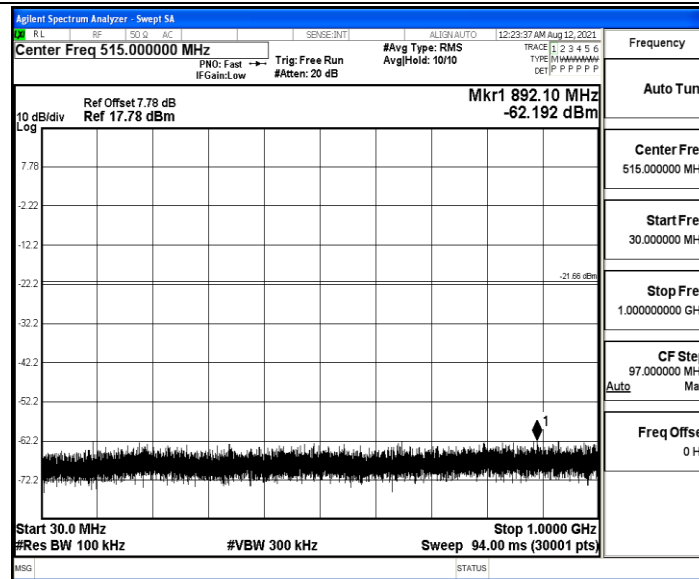
BLE_1M_Ant1_2440_1000-26500



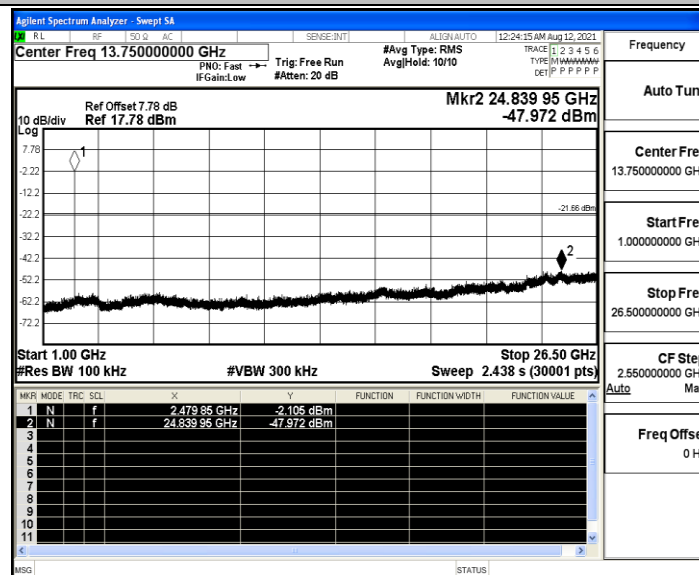
BLE_1M_Ant1_2480_0~Reference



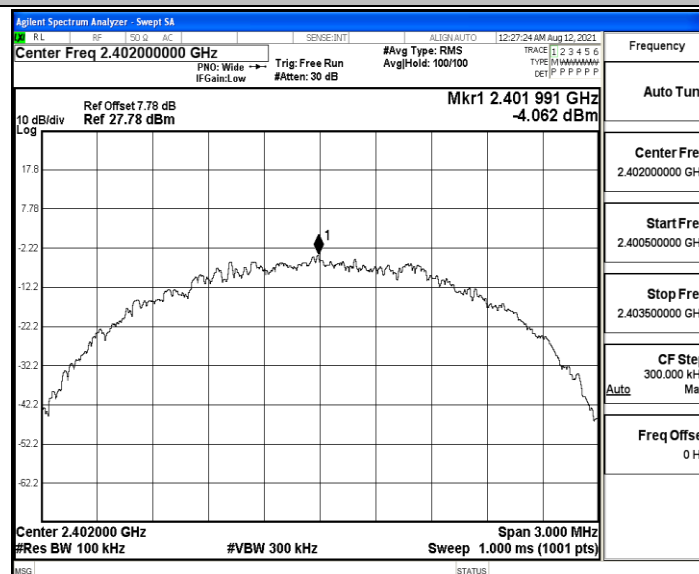
BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500

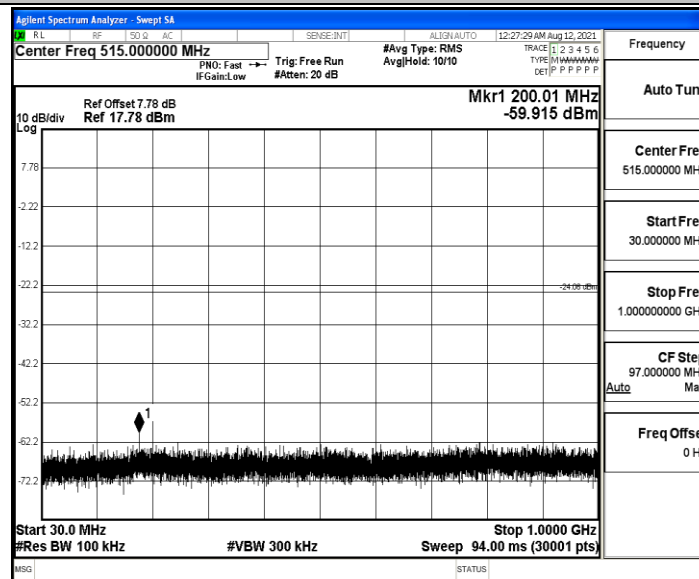


BLE_2M_Ant1_2402_0~Reference

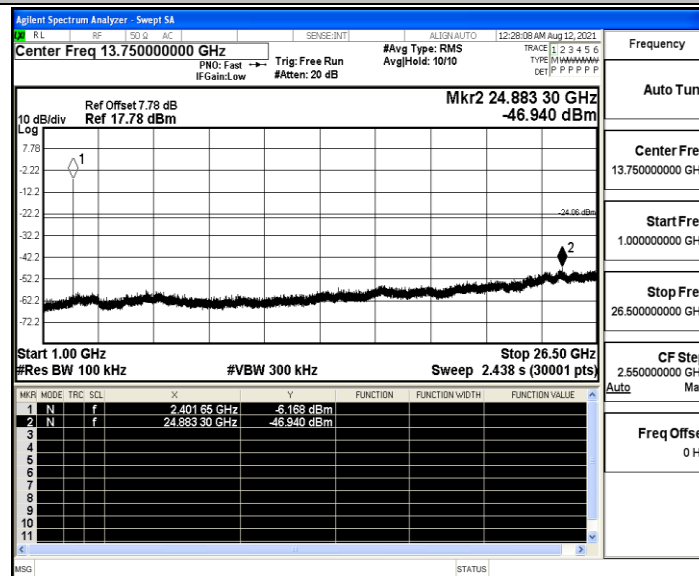




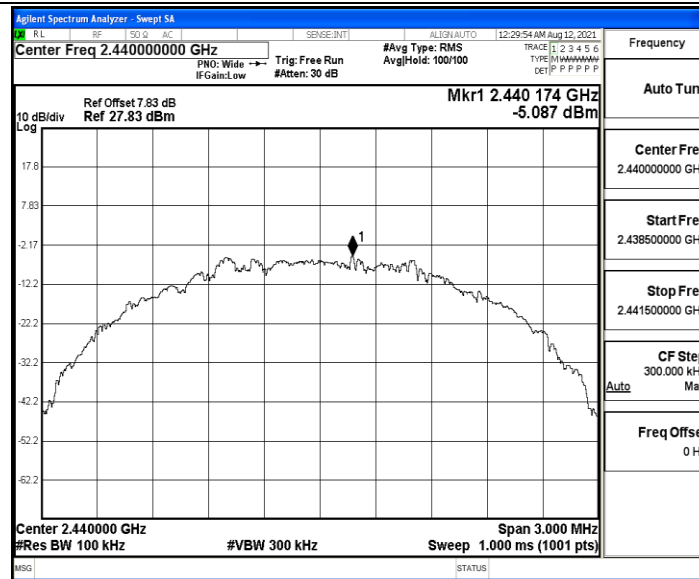
BLE_2M_Ant1_2402_30~1000



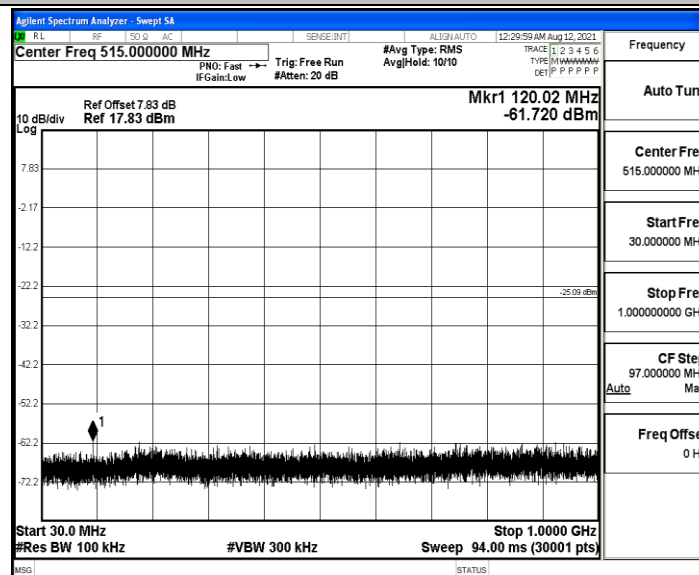
BLE_2M_Ant1_2402_1000~26500



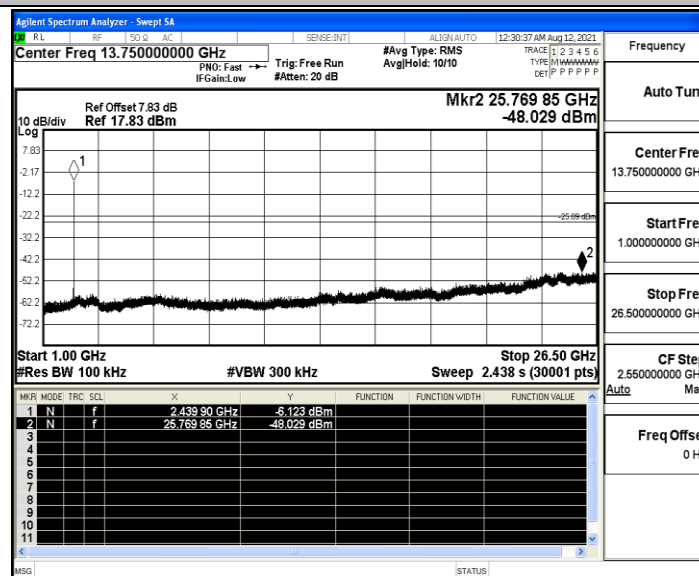
BLE_2M_Ant1_2440_0~Reference



BLE_2M_Ant1_2440_30~1000

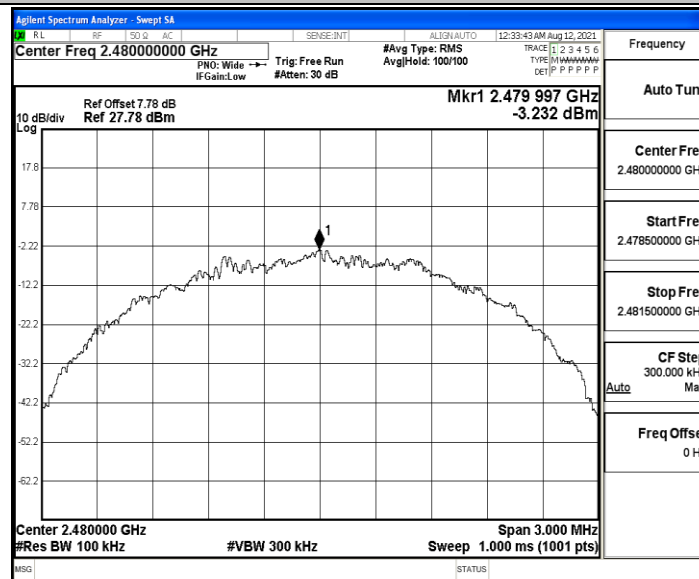


BLE_2M_Ant1_2440_1000~26500

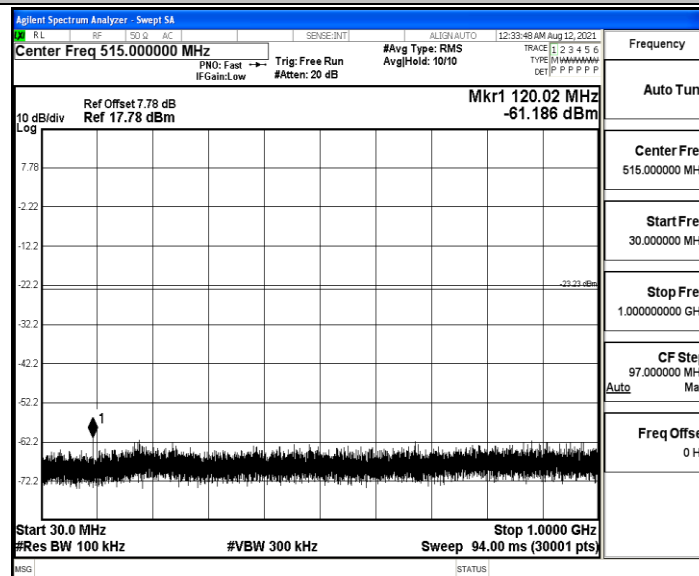




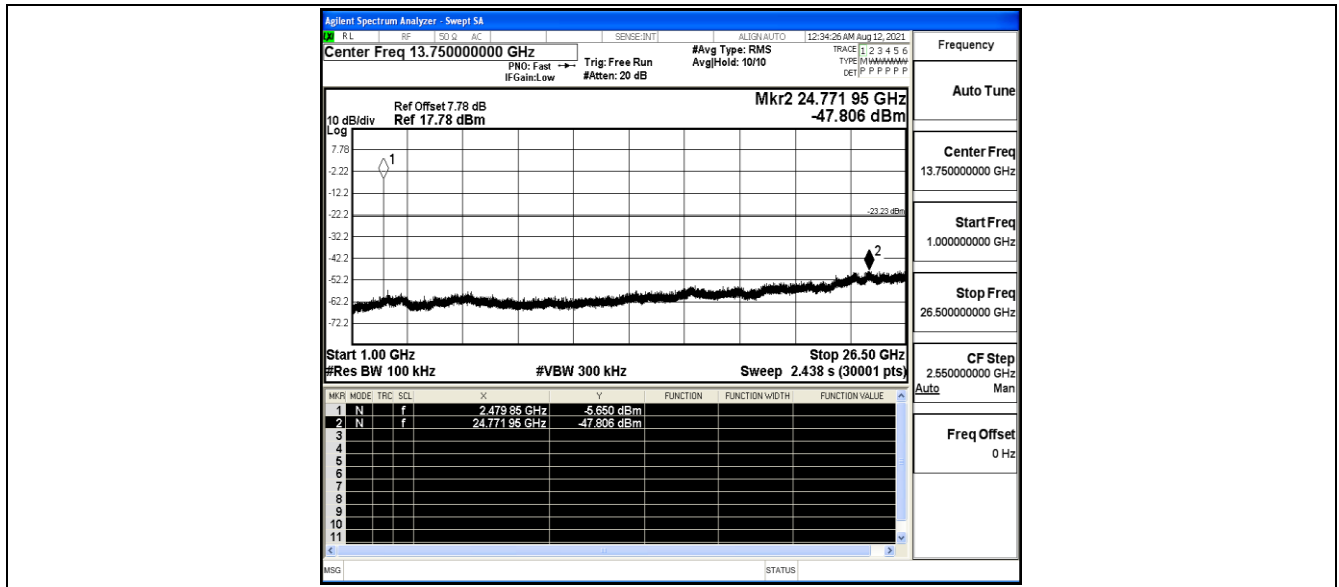
BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500





Appendix A.6: Duty Cycle

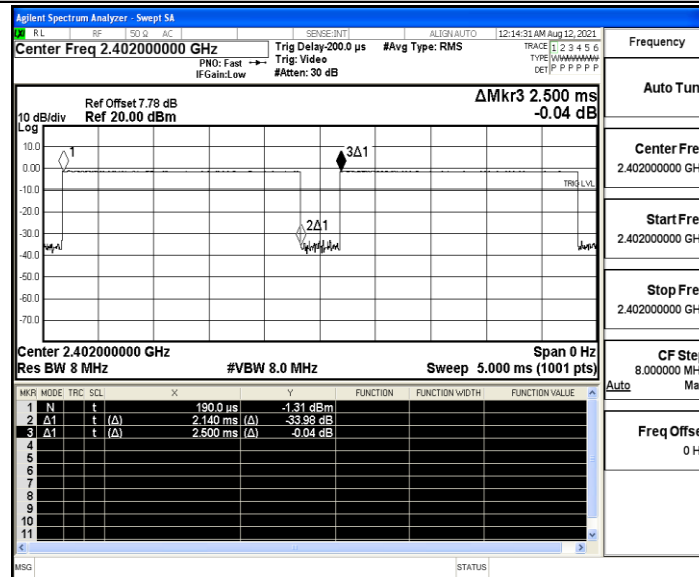
Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	2.14	2.50	0.8560	85.60	0.68	---	PASS
		2440	2.14	2.50	0.8560	85.60	0.68	---	PASS
		2480	2.14	2.50	0.8560	85.60	0.68	---	PASS
BLE_2M	Ant1	2402	1.09	1.88	0.5798	57.98	2.37	---	PASS
		2440	1.08	1.87	0.5775	57.75	2.38	---	PASS
		2480	1.08	1.87	0.5775	57.75	2.38	---	PASS

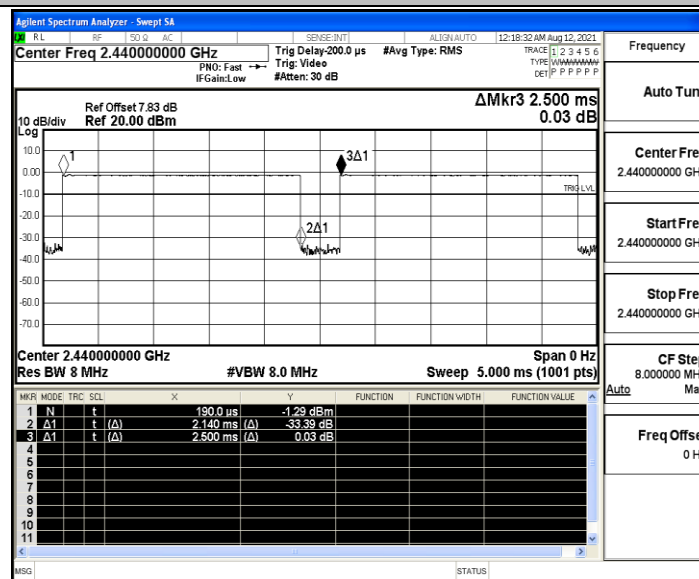


Test Graphs

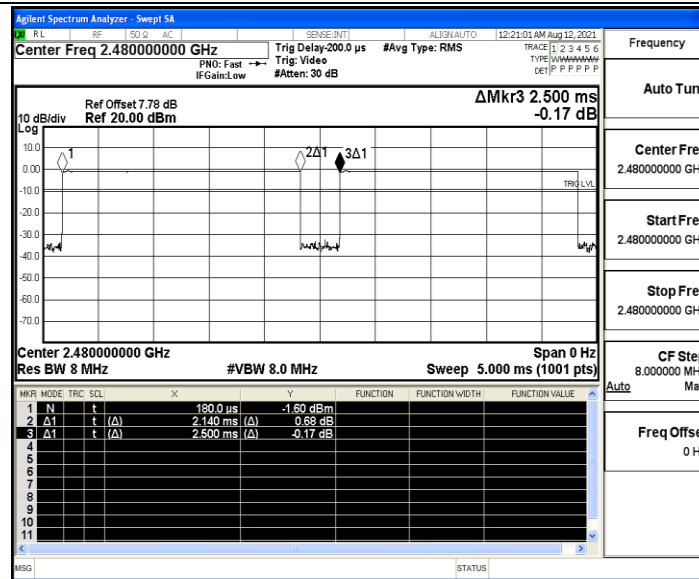
BLE_1M_Ant1_2402



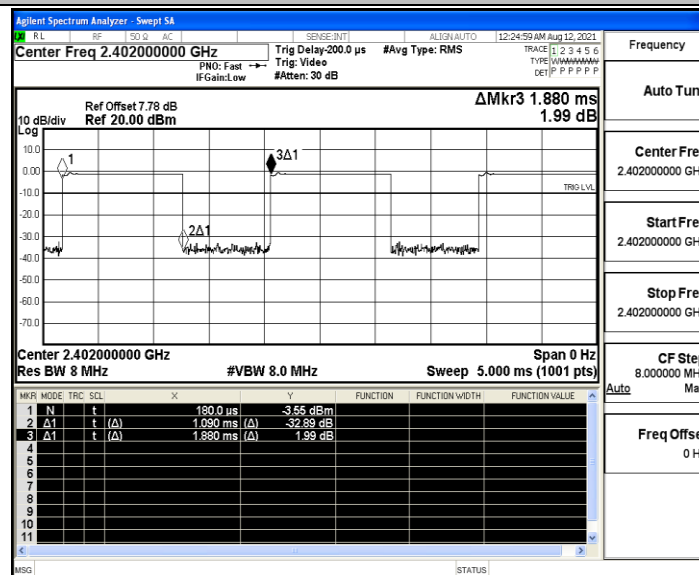
BLE_1M_Ant1_2440



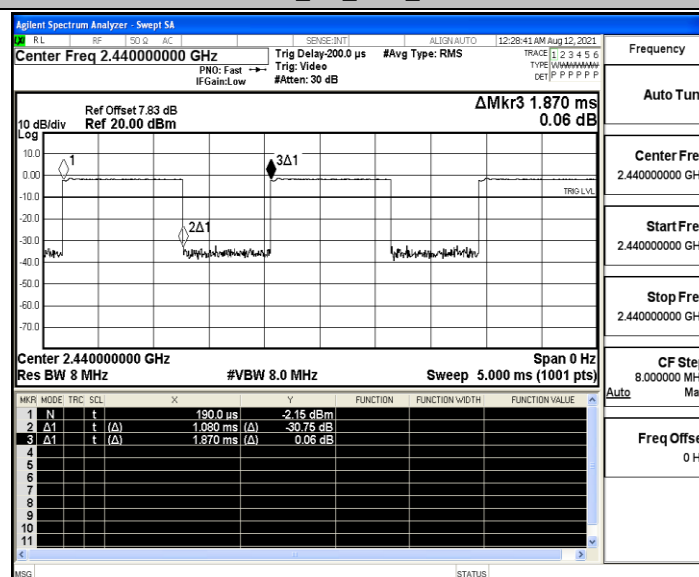
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402

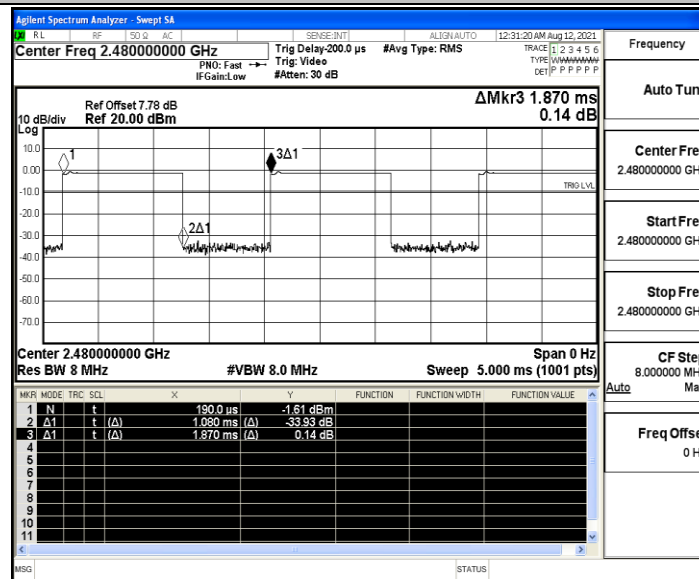


BLE_2M_Ant1_2440





BLE_2M_Ant1_2480





Appendix A.7: Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-49.11	≤-41.20	46.09	≤54	PASS
				AV	2385.155	-48.52	≤-41.20	46.68	≤54	PASS
				AV	2390.000	-48.56	≤-41.20	46.64	≤54	PASS
				Peak	2310.000	-41.31	≤-21.20	53.89	≤74	PASS
				Peak	2379.065	-38.72	≤-21.20	56.48	≤74	PASS
				Peak	2390.000	-42.3	≤-21.20	52.90	≤74	PASS
		High	2480	AV	2483.500	-47.81	≤-41.20	47.39	≤54	PASS
				AV	2483.520	-47.81	≤-41.20	47.39	≤54	PASS
				AV	2500.000	-48.2	≤-41.20	47.00	≤54	PASS
				Peak	2483.500	-40.51	≤-21.20	54.69	≤74	PASS
				Peak	2496.480	-37.5	≤-21.20	57.70	≤74	PASS
				Peak	2500.000	-40.18	≤-21.20	55.02	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-48.94	≤-41.20	46.26	≤54	PASS
				AV	2386.205	-48.16	≤-41.20	47.04	≤54	PASS
				AV	2390.000	-48.47	≤-41.20	46.73	≤54	PASS
				Peak	2310.000	-41.83	≤-21.20	53.37	≤74	PASS
				Peak	2332.025	-38.73	≤-21.20	56.47	≤74	PASS
				Peak	2390.000	-42.62	≤-21.20	52.58	≤74	PASS
		High	2480	AV	2483.500	-46.63	≤-41.20	48.57	≤54	PASS
				AV	2483.520	-46.63	≤-41.20	48.57	≤54	PASS
				AV	2500.000	-47.72	≤-41.20	47.48	≤54	PASS
				Peak	2483.500	-40.37	≤-21.20	54.83	≤74	PASS
				Peak	2496.880	-37.59	≤-21.20	57.61	≤74	PASS
				Peak	2500.000	-40.03	≤-21.20	55.17	≤74	PASS

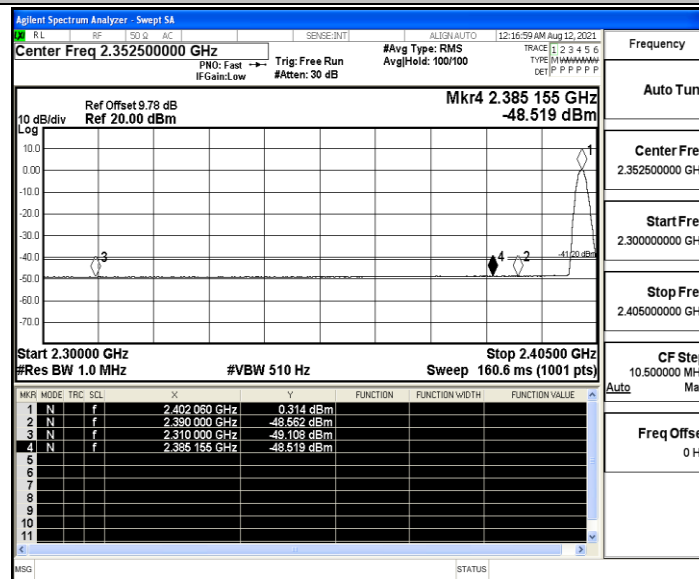
Note:

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.

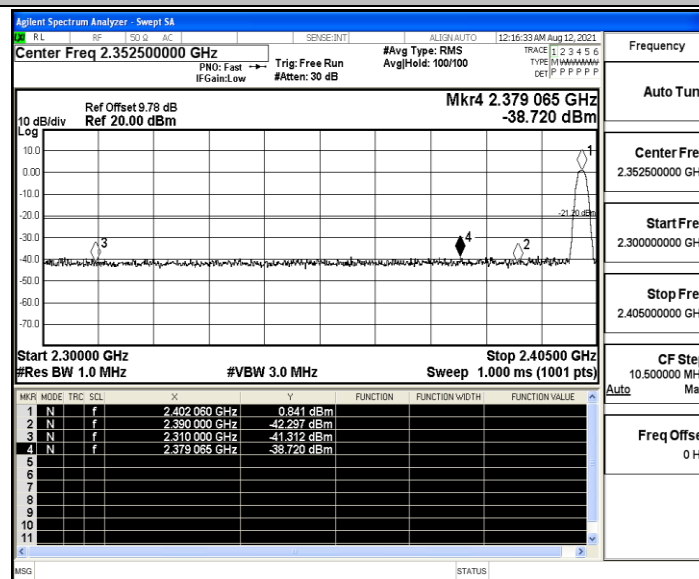


Test Graphs

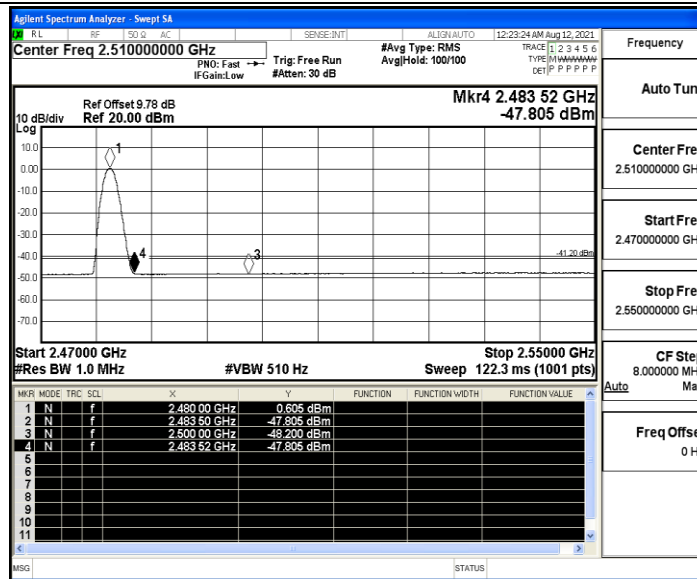
BLE_1M_Ant1_Low_2402_AV



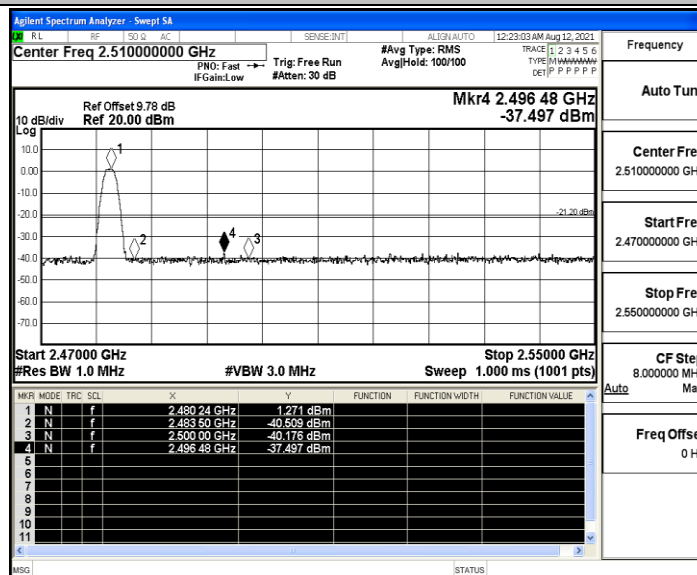
BLE_1M_Ant1_Low_2402_Peak



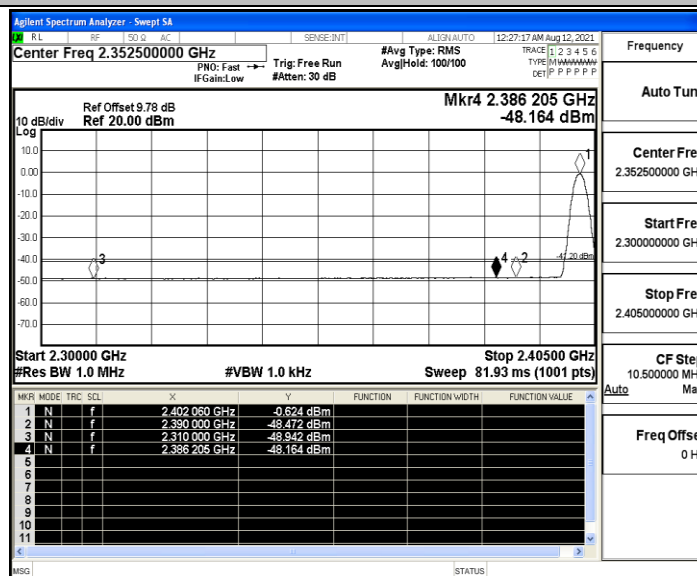
BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak

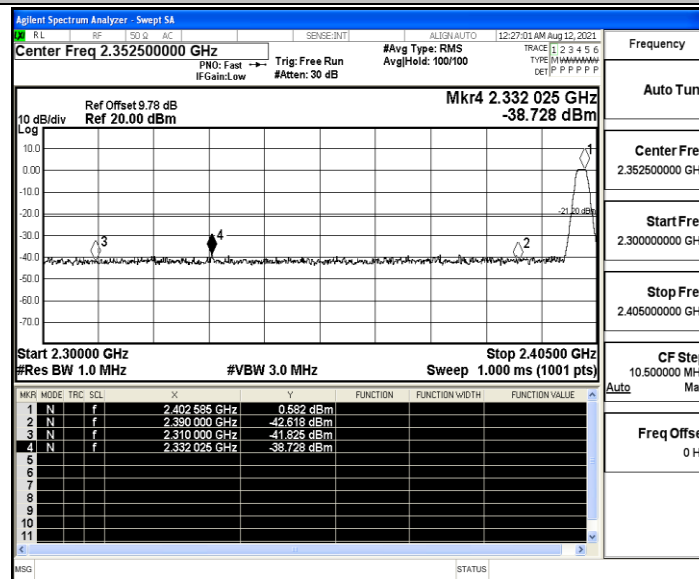


BLE_2M_Ant1_Low_2402_AV

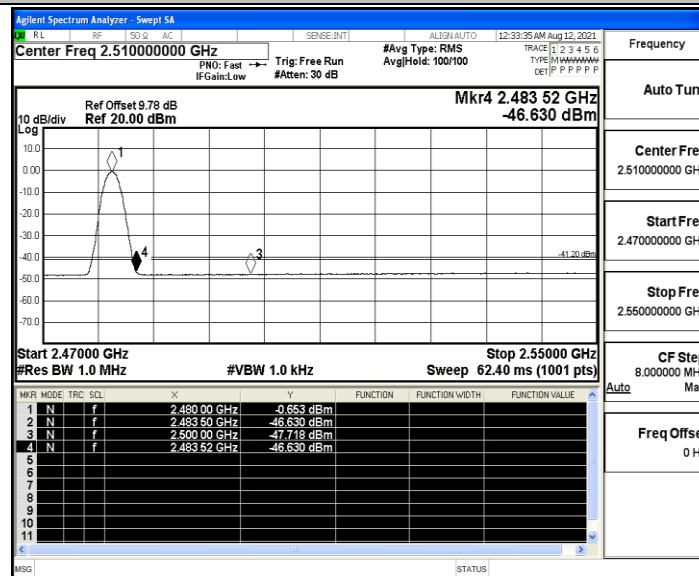




BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

