



Appendix B

RF Test Data for BLE (Conducted Measurement)

Product Name: Translator Earbuds

Test Model: M6

Environmental Conditions

Temperature:	23.7° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	monkey.Li
Supervised by:	Lihm

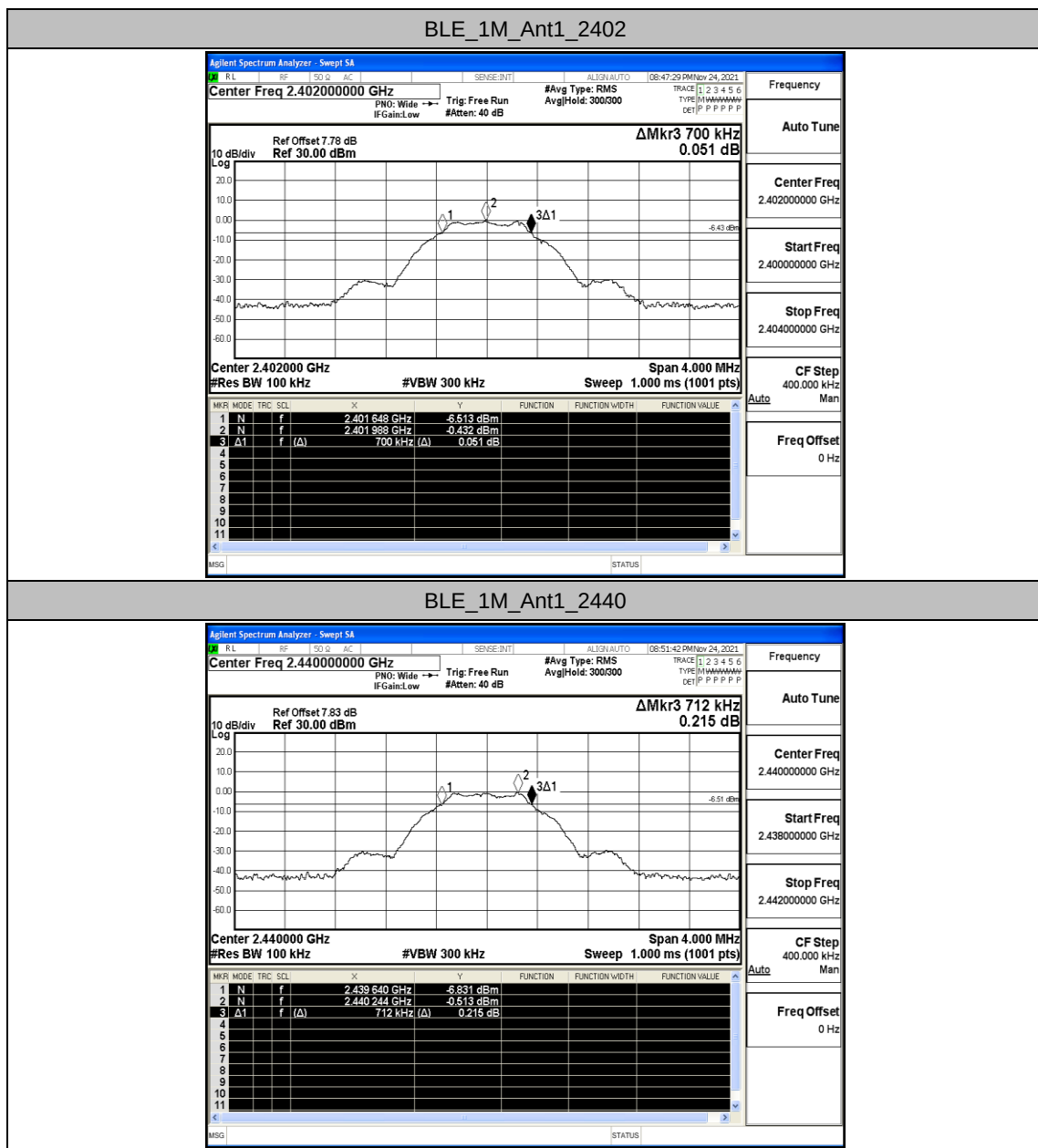


B.1 6dB Bandwidth

Test Result

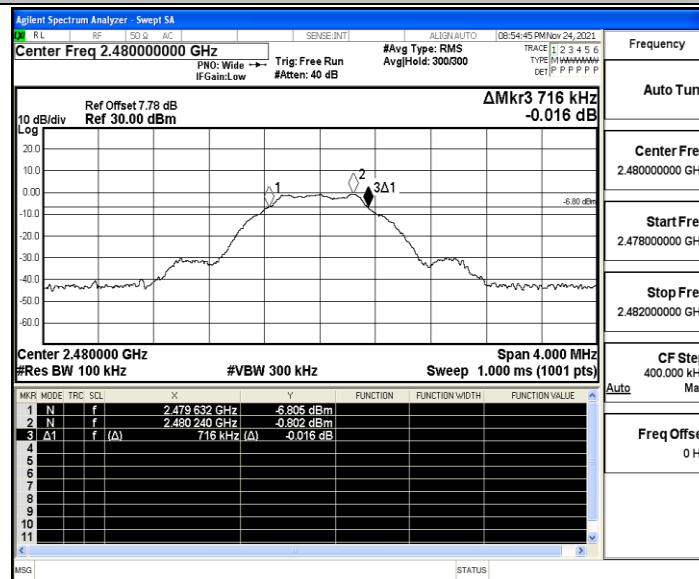
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.700	2401.648	2402.348	≥0.5	PASS
		2440	0.712	2439.640	2440.352	≥0.5	PASS
		2480	0.716	2479.632	2480.348	≥0.5	PASS
BLE_2M	Ant1	2402	1.292	2401.320	2402.612	≥0.5	PASS
		2440	1.284	2439.328	2440.612	≥0.5	PASS
		2480	1.244	2479.352	2480.596	≥0.5	PASS

Test Graphs

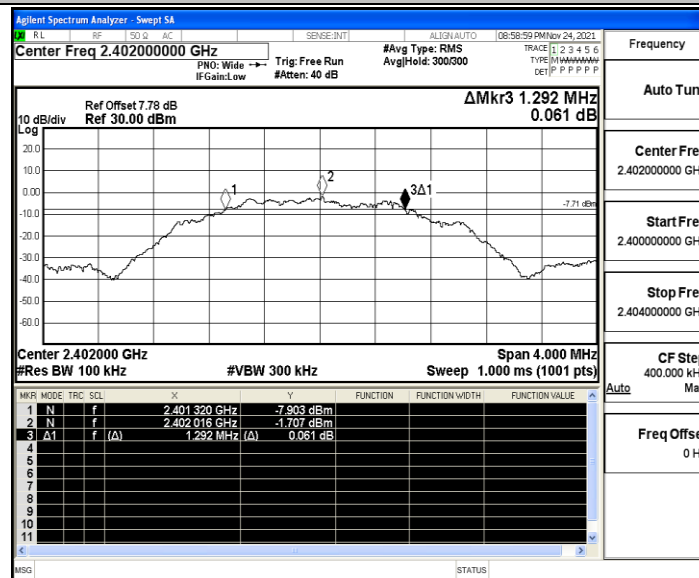




BLE_1M_Ant1_2480

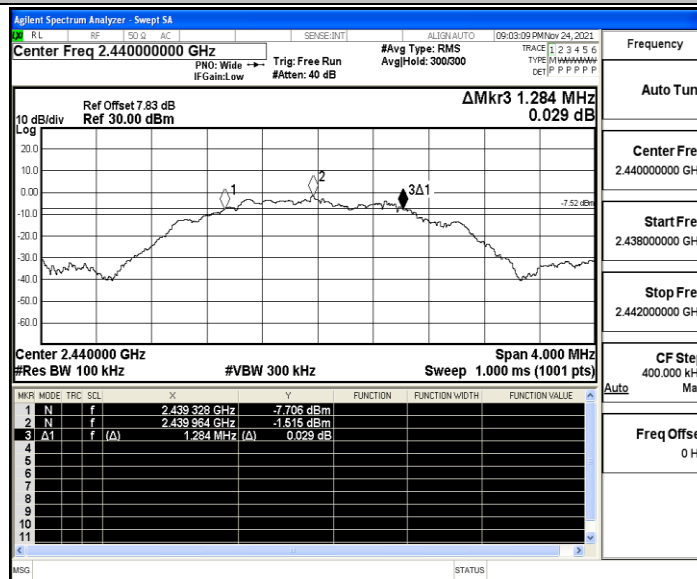


BLE_2M_Ant1_2402

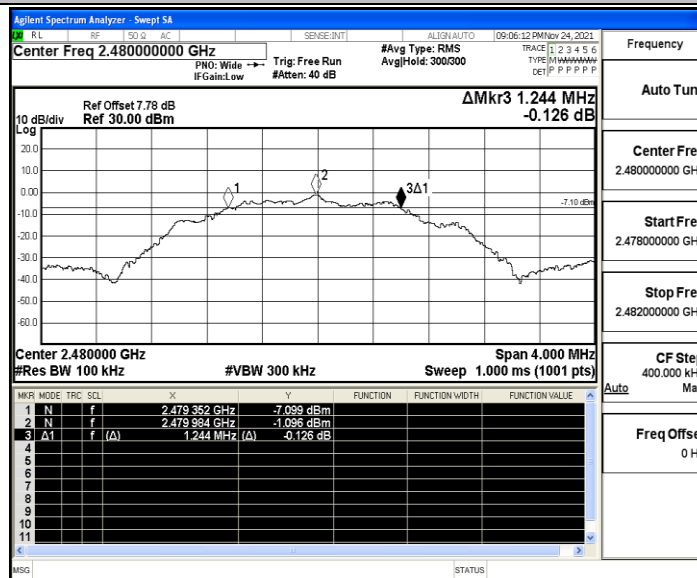




BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



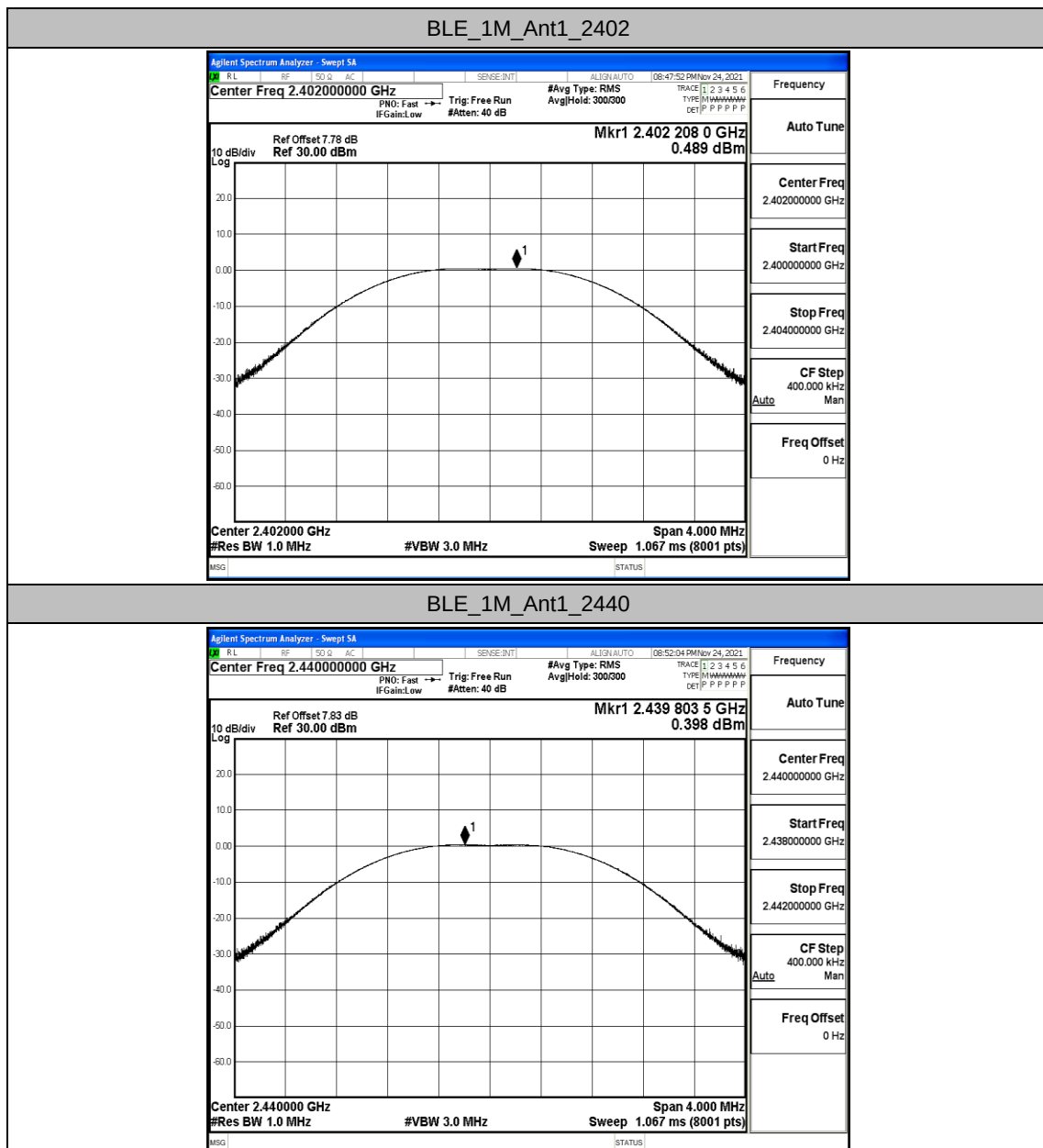


B.2 Maximum conducted output power

Test Result

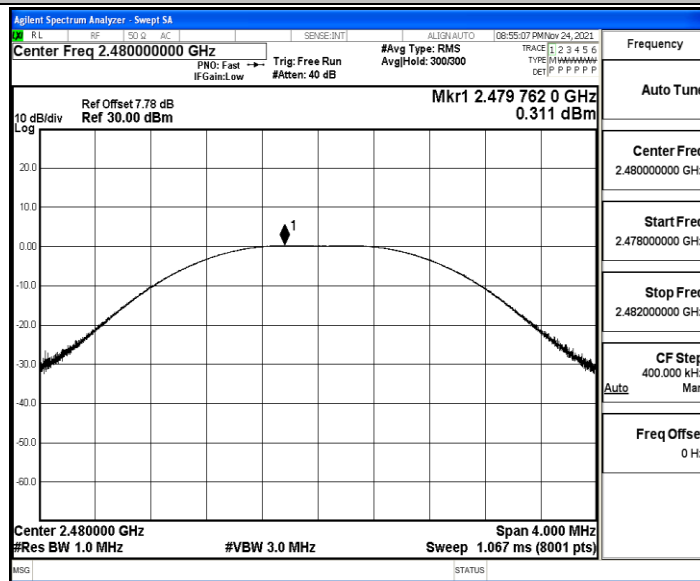
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.49	≤30	PASS
		2440	0.4	≤30	PASS
		2480	0.31	≤30	PASS
BLE_2M	Ant1	2402	-0.12	≤30	PASS
		2440	-0.02	≤30	PASS
		2480	0.25	≤30	PASS

Test Graphs

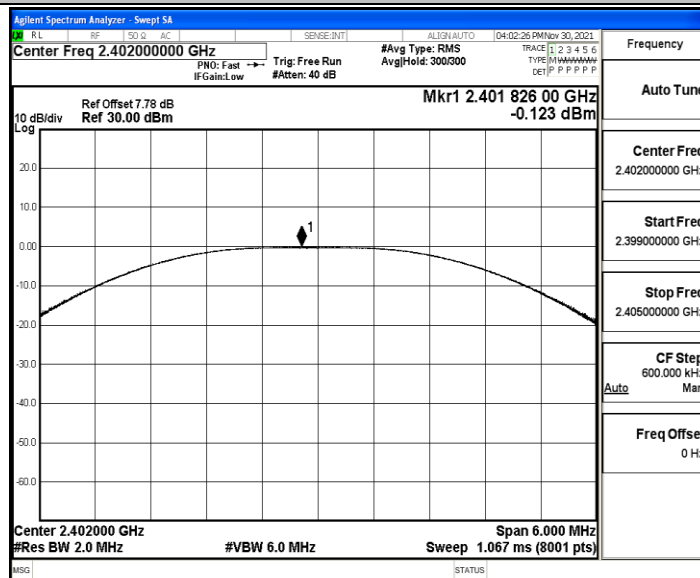




BLE_1M_Ant1_2480

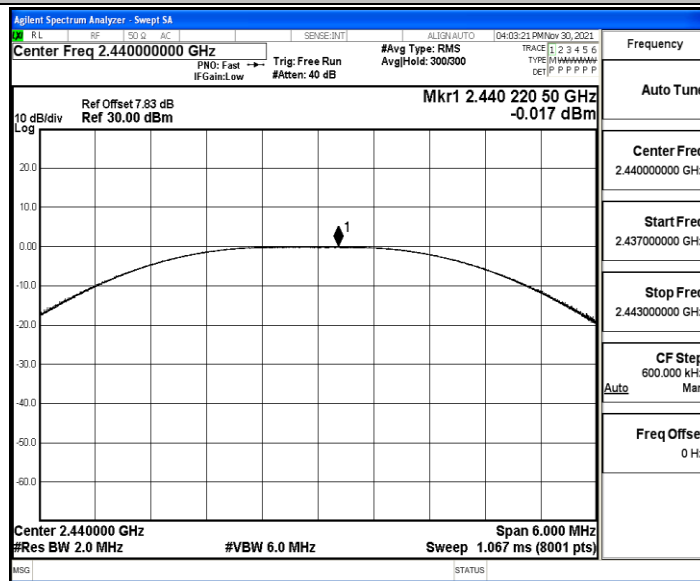


BLE_2M_Ant1_2402

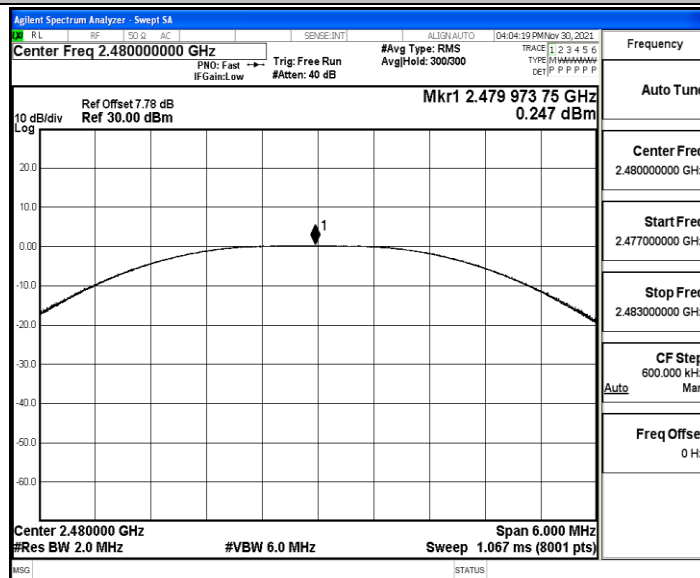




BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



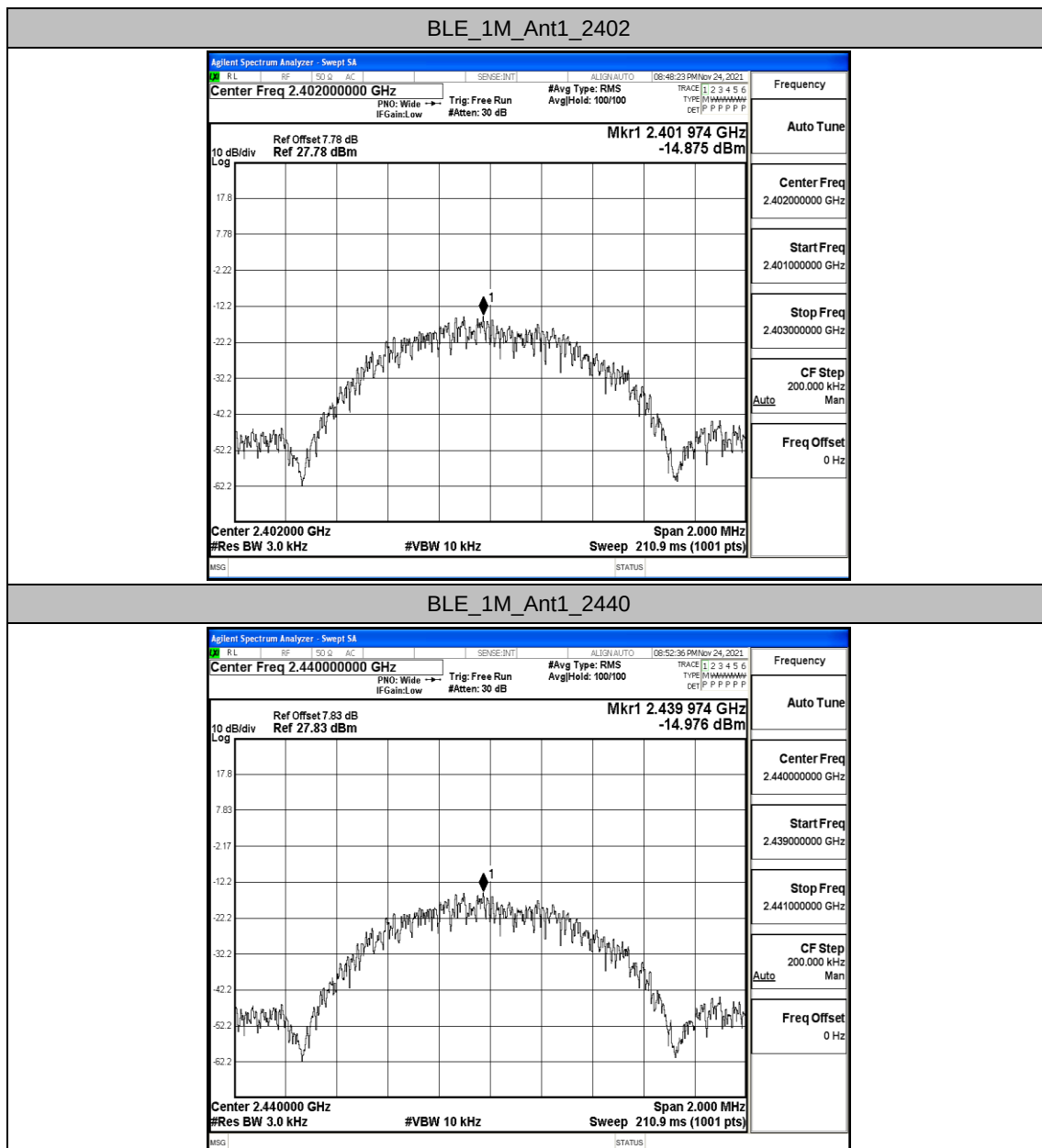


B.3 Maximum power spectral density

Test Result

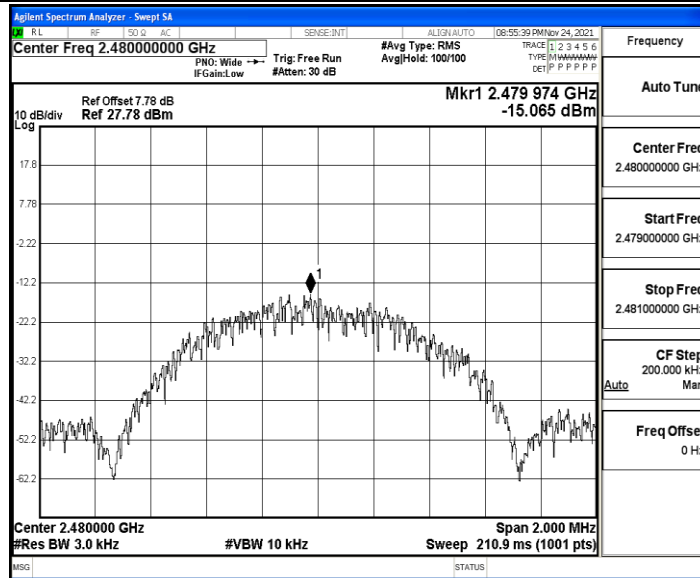
TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.88	≤8	PASS
		2440	-14.98	≤8	PASS
		2480	-15.07	≤8	PASS
BLE_2M	Ant1	2402	-17.14	≤8	PASS
		2440	-17.17	≤8	PASS
		2480	-17.29	≤8	PASS

Test Graphs

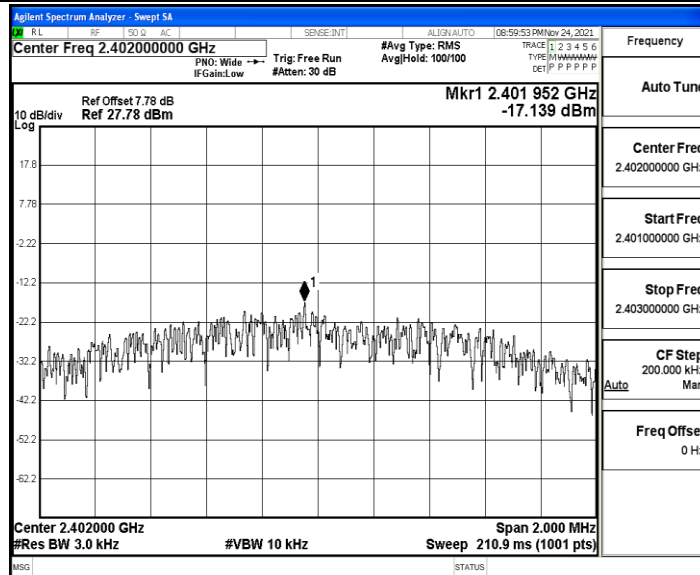




BLE_1M_Ant1_2480

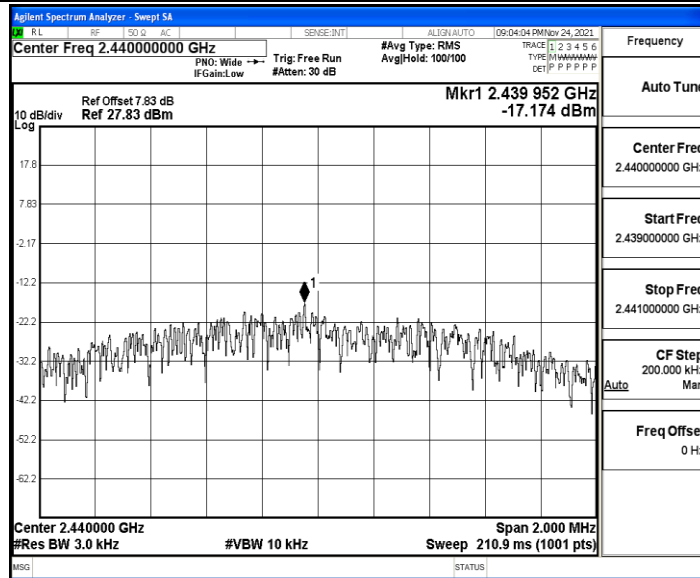


BLE_2M_Ant1_2402

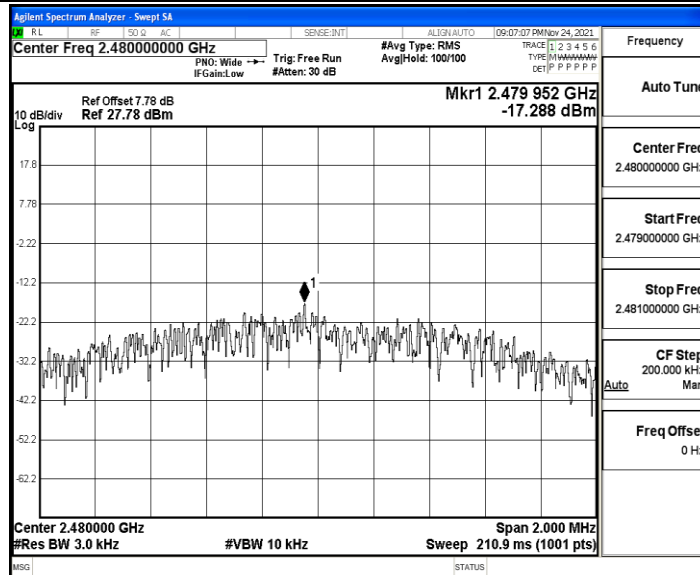




BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



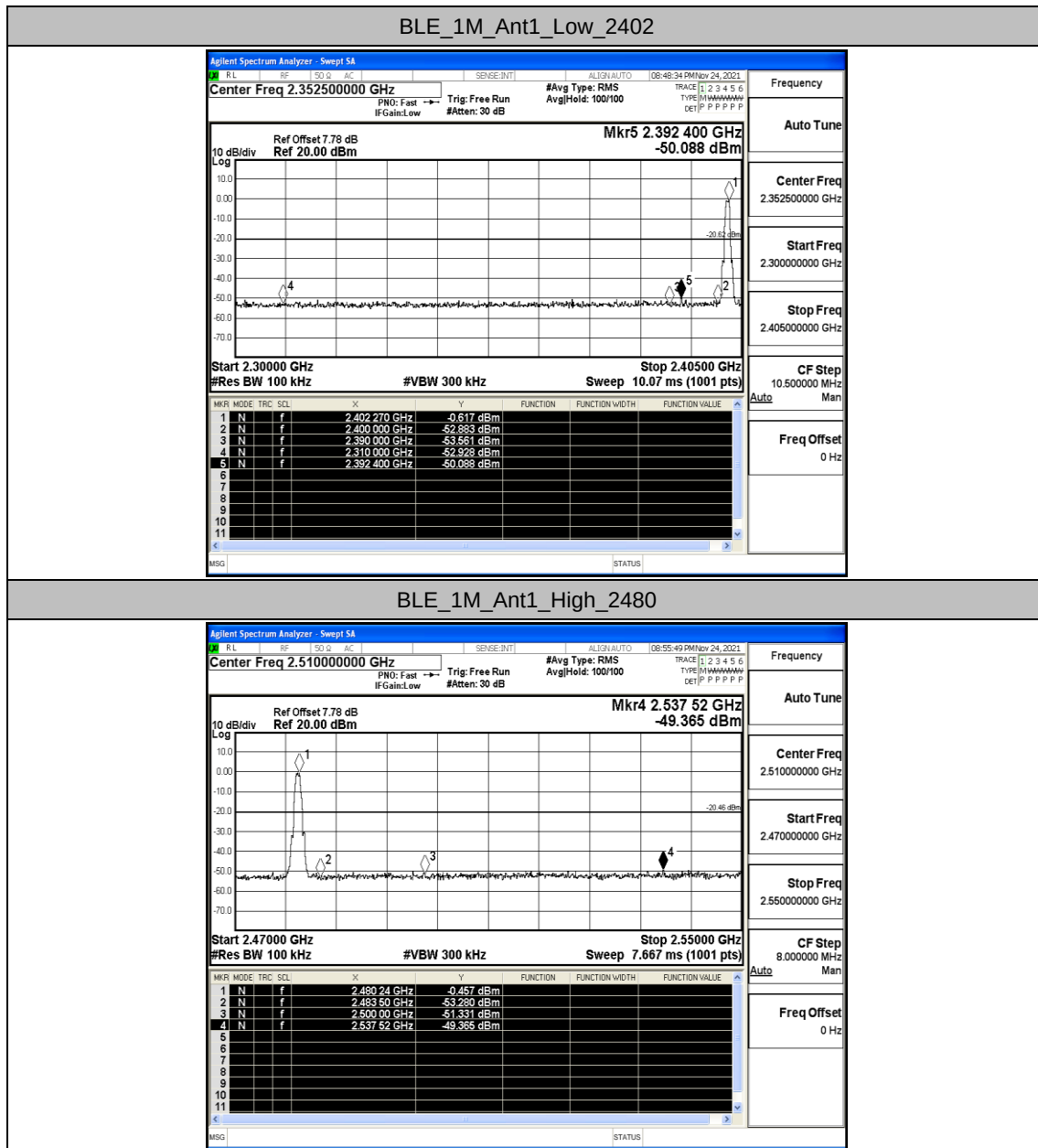


B.4 Band edge measurements

Test Result

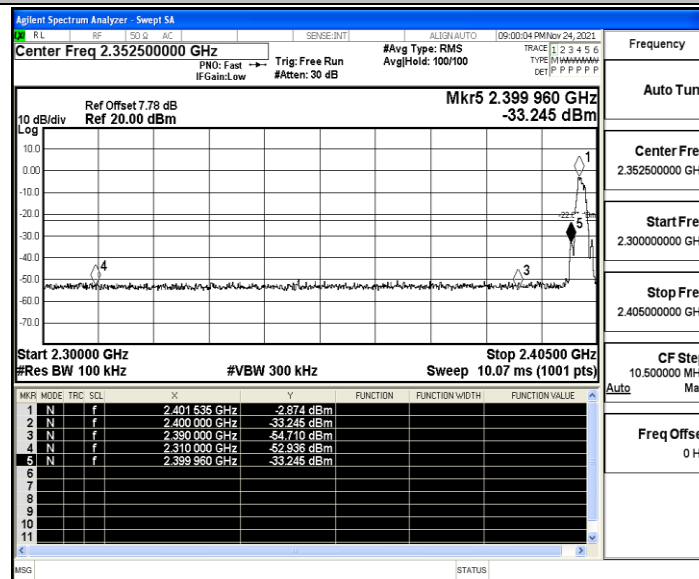
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.62	-50.09	≤-20.62	PASS
		High	2480	-0.46	-49.37	≤-20.46	PASS
BLE_2M	Ant1	Low	2402	-2.87	-33.25	≤-22.87	PASS
		High	2480	-1.08	-48.45	≤-21.08	PASS

Test Graphs

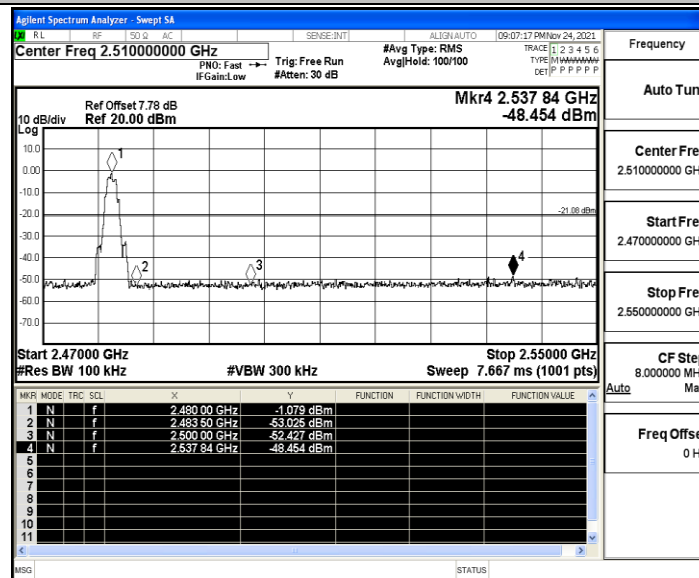




BLE_2M_Ant1_Low_2402



BLE_2M_Ant1_High_2480





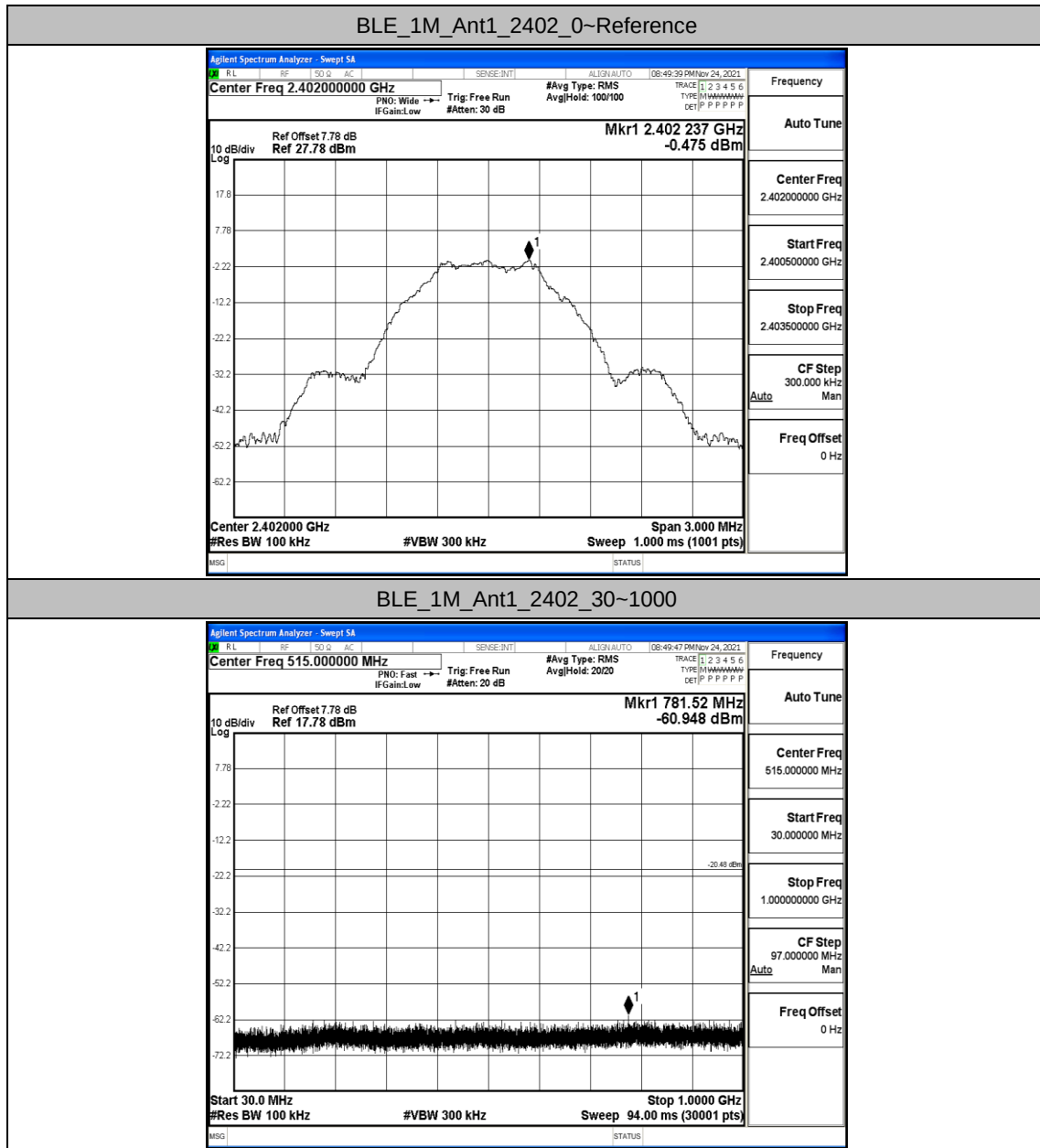
B.5 Conducted Spurious Emission

Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-0.48	-0.48	---	PASS
			30~1000	-0.48	-60.95	≤ -20.48	PASS
			1000~26500	-0.48	-47.14	≤ -20.48	PASS
		2440	Reference	-0.58	-0.58	---	PASS
			30~1000	-0.58	-61.47	≤ -20.58	PASS
			1000~26500	-0.58	-46.69	≤ -20.58	PASS
		2480	Reference	-0.70	-0.70	---	PASS
			30~1000	-0.70	-61.46	≤ -20.7	PASS
			1000~26500	-0.70	-46.73	≤ -20.7	PASS
BLE_2M	Ant1	2402	Reference	-0.92	-0.92	---	PASS
			30~1000	-0.92	-61.2	≤ -20.92	PASS
			1000~26500	-0.92	-45.64	≤ -20.92	PASS
		2440	Reference	-0.96	-0.96	---	PASS
			30~1000	-0.96	-60.78	≤ -20.96	PASS
			1000~26500	-0.96	-47.54	≤ -20.96	PASS
		2480	Reference	-1.09	-1.09	---	PASS
			30~1000	-1.09	-61.32	≤ -21.09	PASS
			1000~26500	-1.09	-46.7	≤ -21.09	PASS

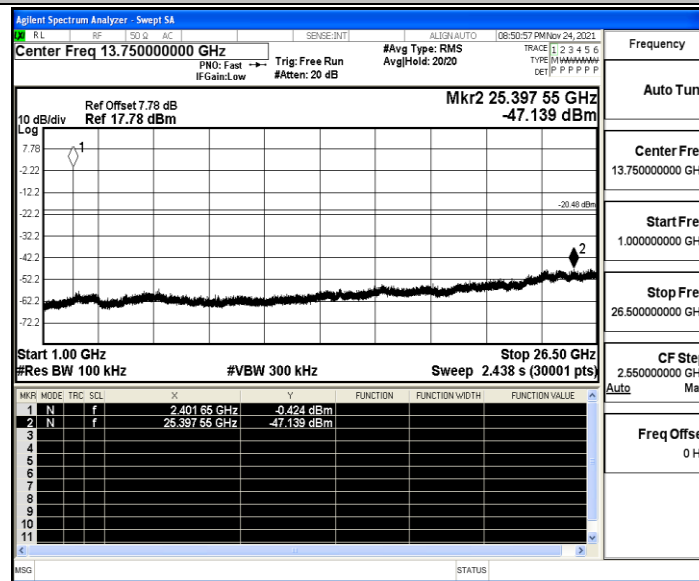


Test Graphs

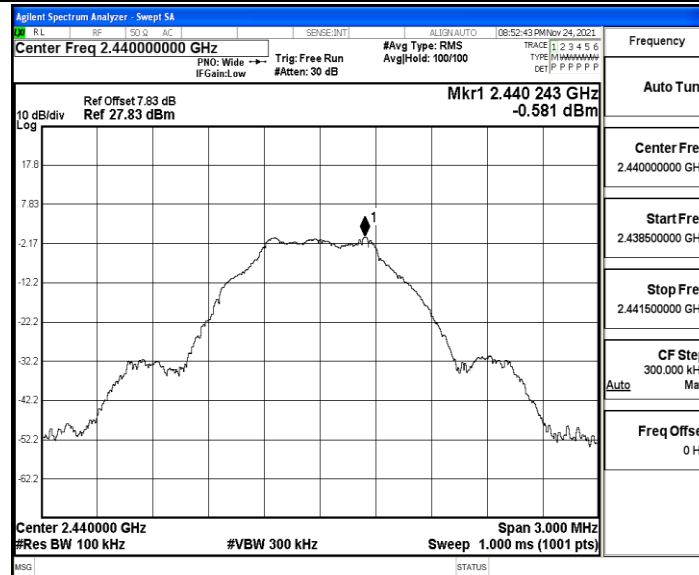




BLE_1M_Ant1_2402_1000~26500

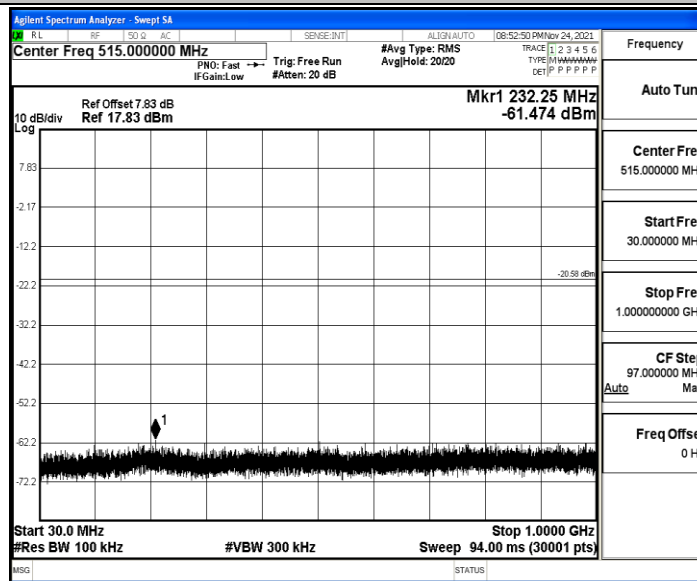


BLE_1M_Ant1_2440_0~Reference

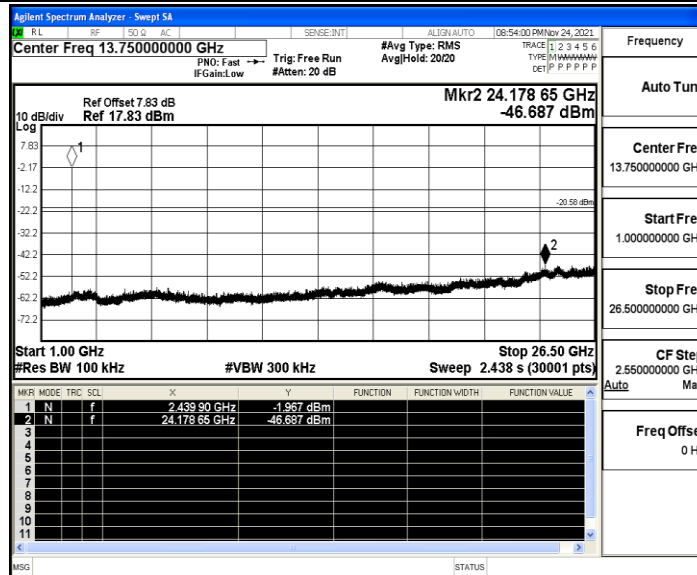




BLE_1M_Ant1_2440_30~1000

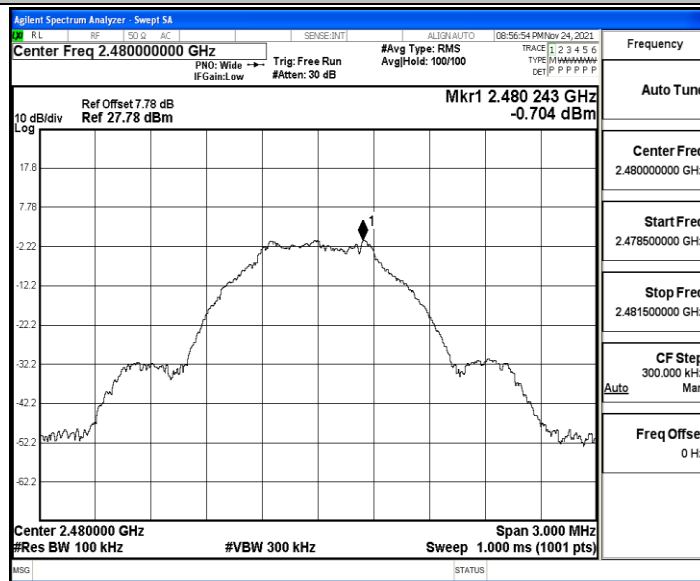


BLE_1M_Ant1_2440_1000~26500

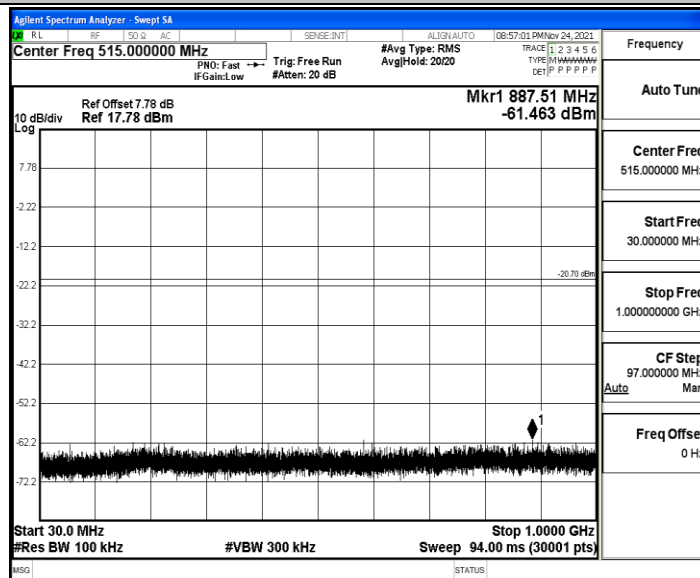




BLE_1M_Ant1_2480_0~Reference

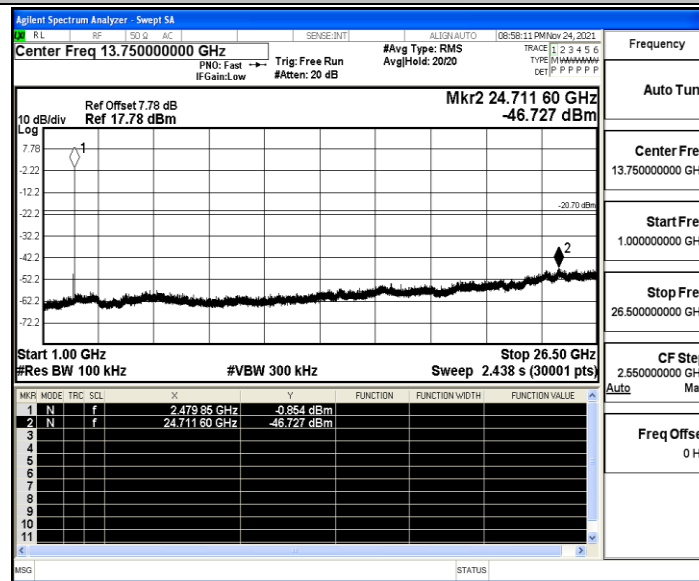


BLE_1M_Ant1_2480_30~1000

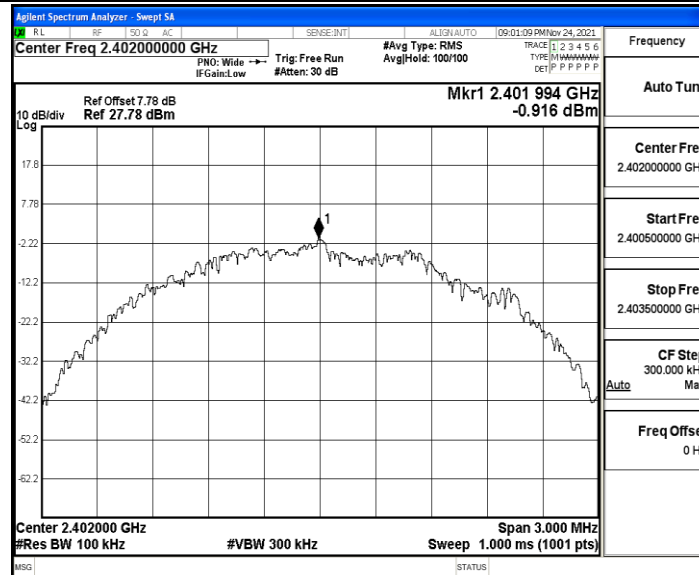




BLE_1M_Ant1_2480_1000~26500

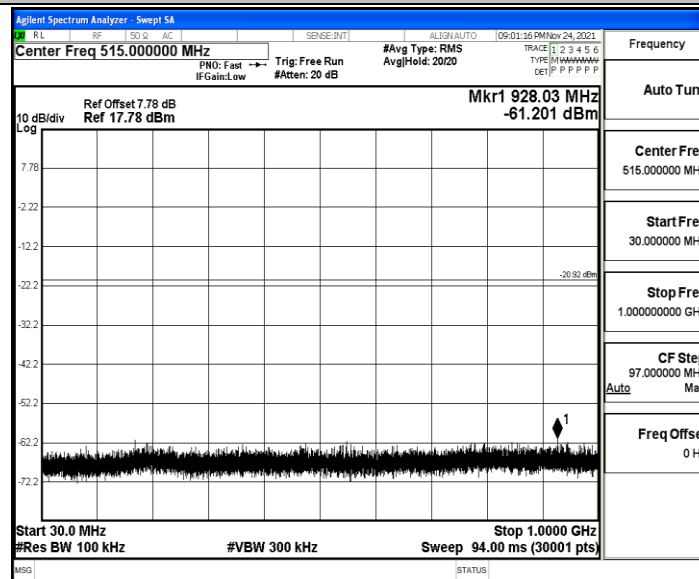


BLE_2M_Ant1_2402_0~Reference

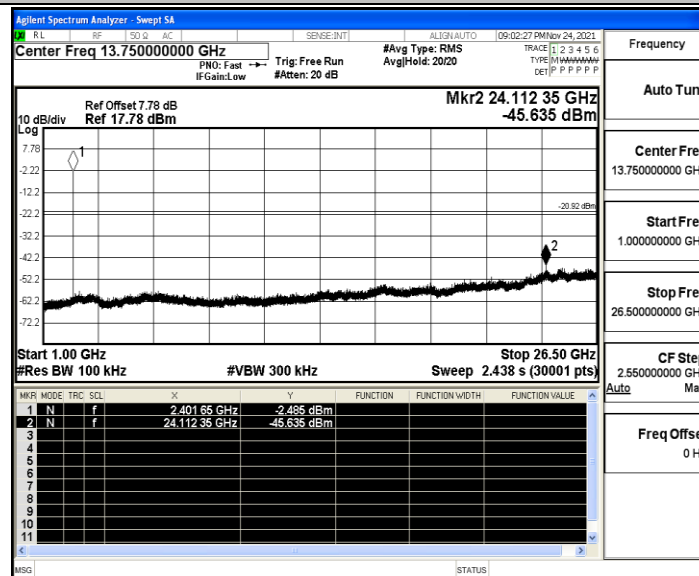




BLE_2M_Ant1_2402_30~1000

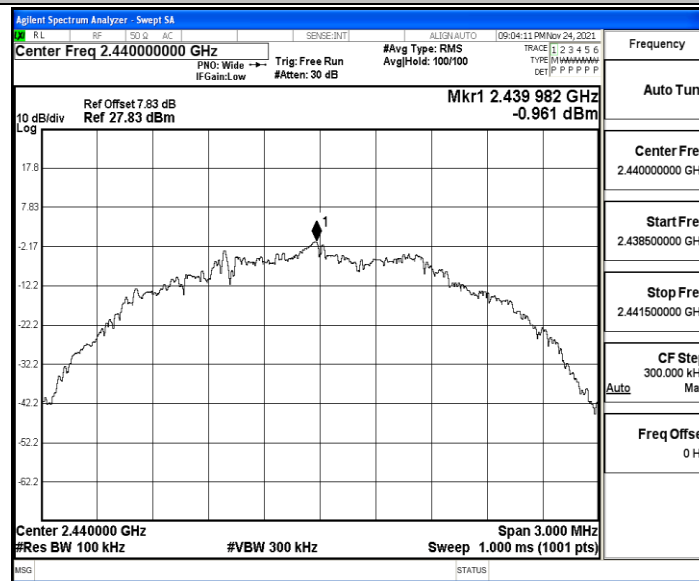


BLE_2M_Ant1_2402_1000~26500

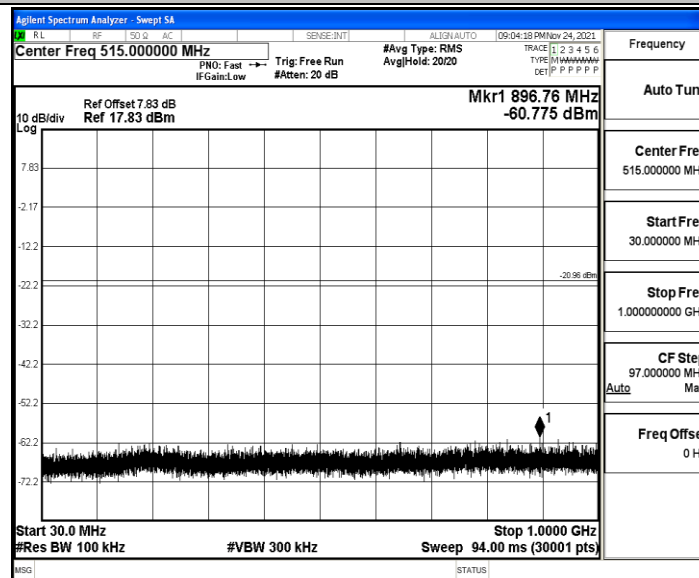




BLE_2M_Ant1_2440_0~Reference

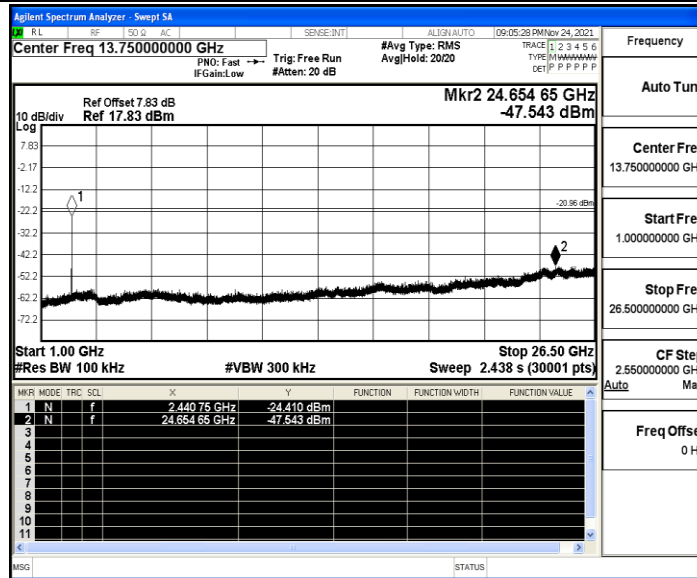


BLE_2M_Ant1_2440_30~1000

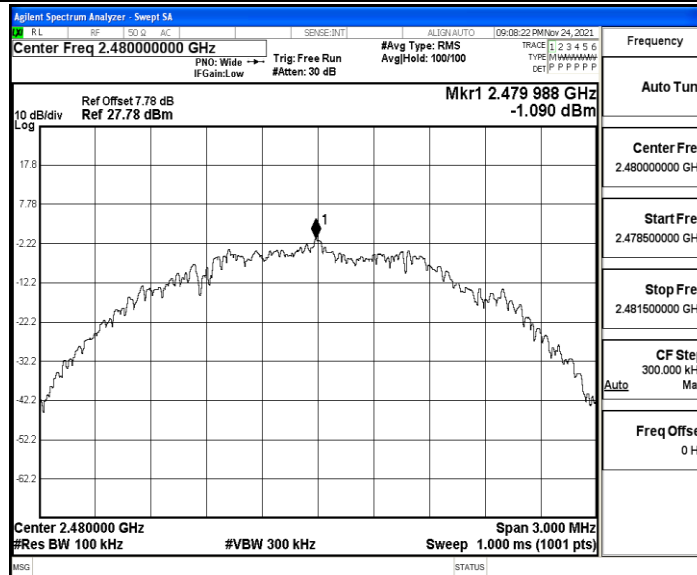




BLE_2M_Ant1_2440_1000~26500

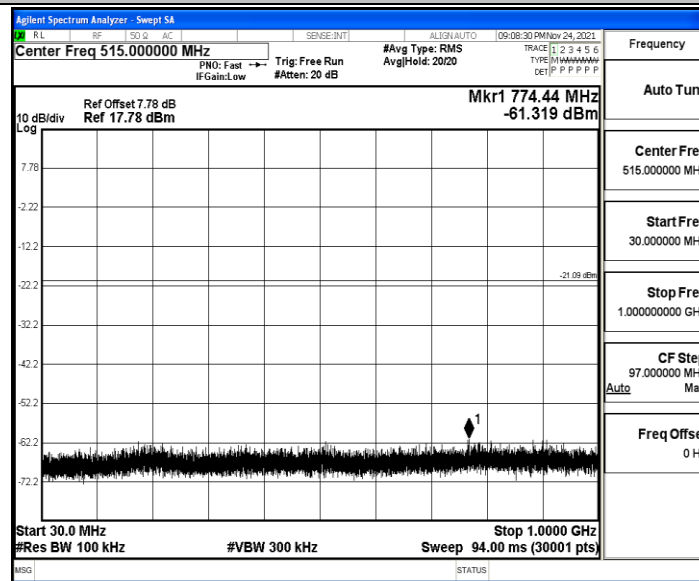


BLE_2M_Ant1_2480_0~Reference

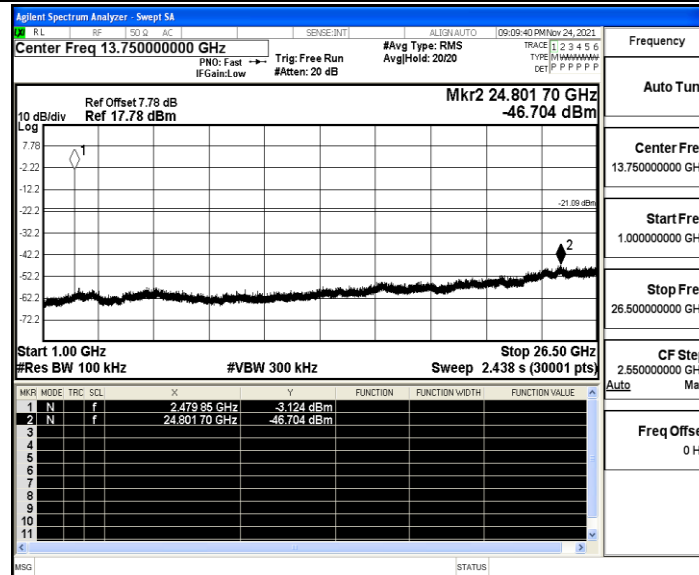




BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500





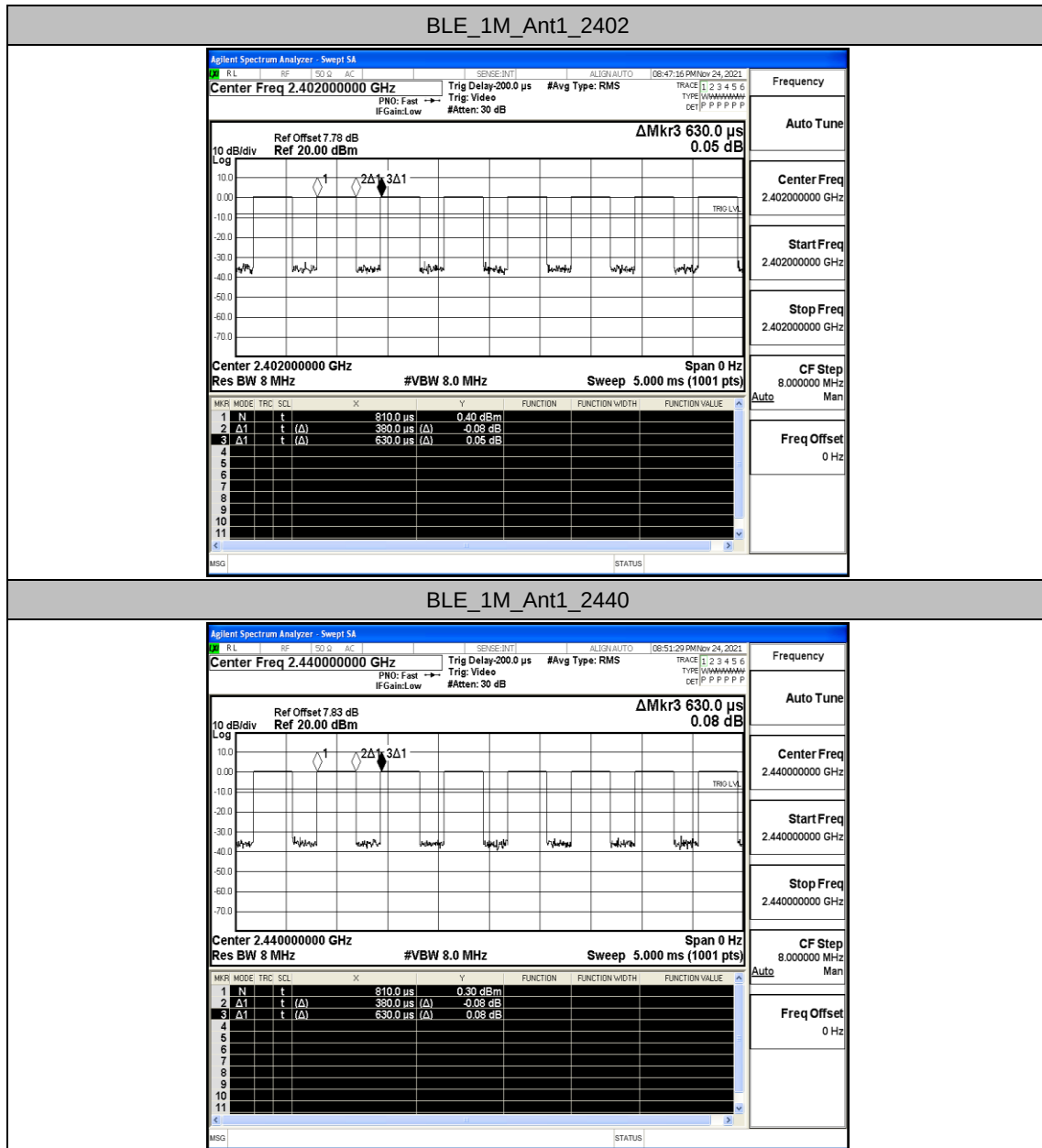
B.6 Duty Cycle

Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	0.38	0.63	0.6032	60.32	2.20	---	PASS
		2440	0.38	0.63	0.6032	60.32	2.20	---	PASS
		2480	0.38	0.62	0.6129	61.29	2.13	---	PASS
BLE_2M	Ant1	2402	0.19	0.62	0.3065	30.65	5.14	---	PASS
		2440	0.19	0.62	0.3065	30.65	5.14	---	PASS
		2480	0.19	0.62	0.3065	30.65	5.14	---	PASS

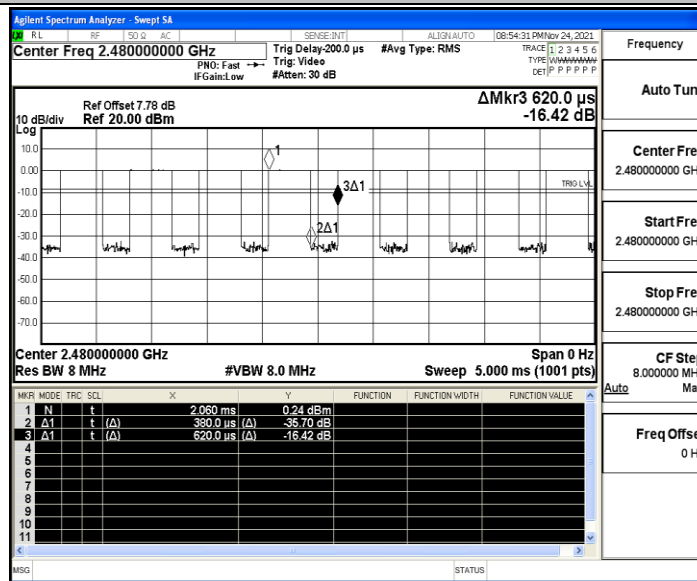


Test Graphs

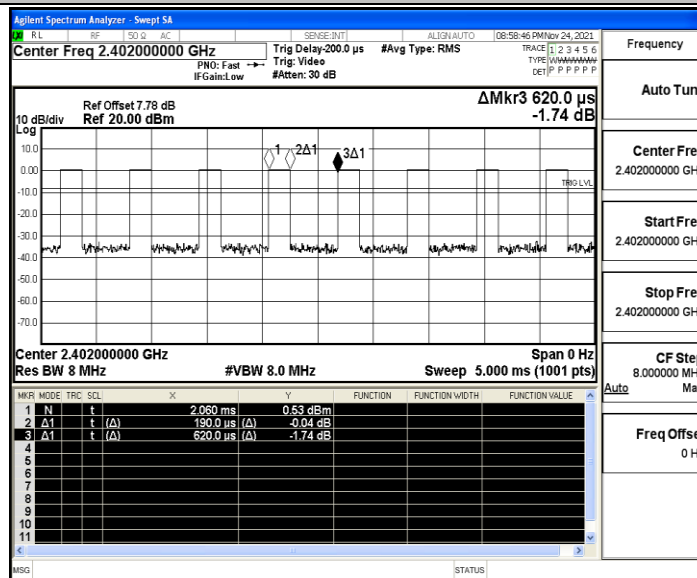




BLE_1M_Ant1_2480

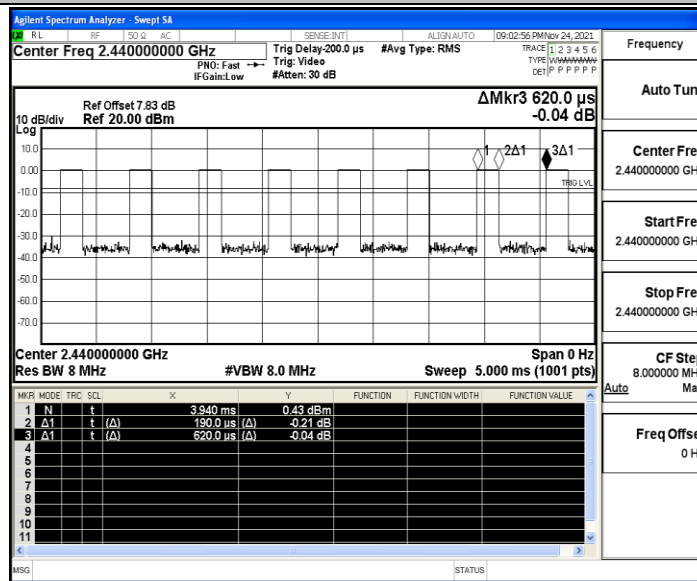


BLE_2M_Ant1_2402

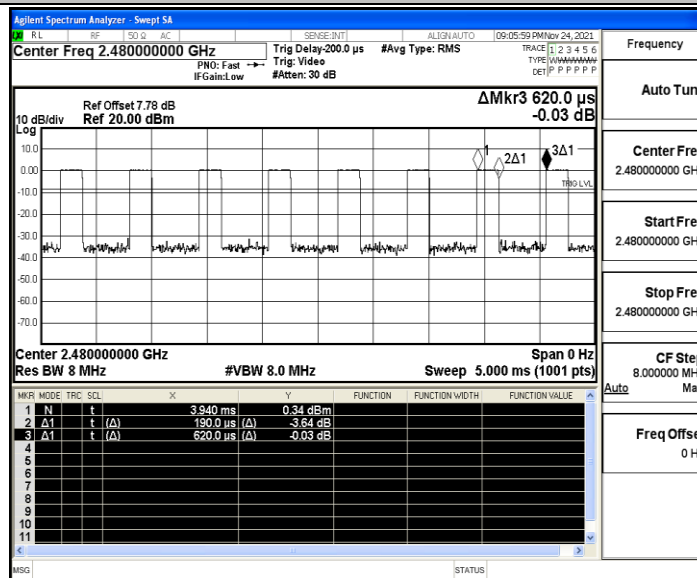




BLE_2M_Ant1_2440



BLE_2M_Ant1_2480





B.7 Emissions in Restricted Bands

Test Result

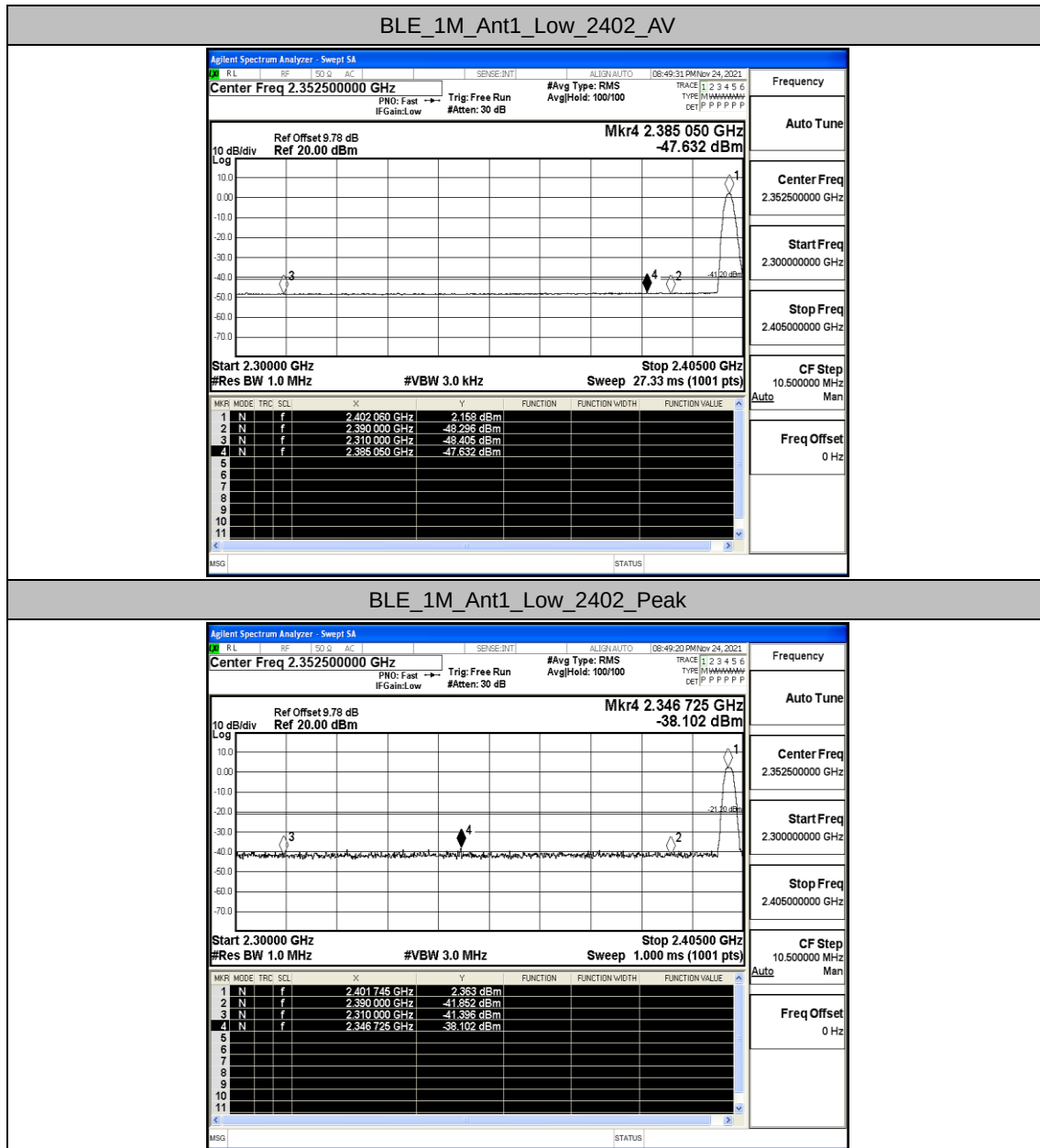
TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-48.41	≤-41.20	46.79	≤54	PASS
				AV	2385.050	-47.63	≤-41.20	47.57	≤54	PASS
				AV	2390.000	-48.3	≤-41.20	46.90	≤54	PASS
				Peak	2310.000	-41.4	≤-21.20	53.80	≤74	PASS
				Peak	2346.725	-38.1	≤-21.20	57.10	≤74	PASS
				Peak	2390.000	-41.85	≤-21.20	53.35	≤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	-47.43	≤-41.20	47.77	≤54	PASS
				Peak	2483.500	-39.5	≤-21.20	55.70	≤74	PASS
				Peak	2497.280	-38.71	≤-21.20	56.49	≤74	PASS
				Peak	2500.000	-40.08	≤-21.20	55.12	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-47.59	≤-41.20	47.61	≤54	PASS
				AV	2384.315	-46.78	≤-41.20	48.42	≤54	PASS
				AV	2390.000	-47.43	≤-41.20	47.77	≤54	PASS
				Peak	2310.000	-40.51	≤-21.20	54.69	≤74	PASS
				Peak	2357.855	-38.48	≤-21.20	56.72	≤74	PASS
				Peak	2390.000	-41.03	≤-21.20	54.17	≤74	PASS
		High	2480	AV	2483.500	-46.43	≤-41.20	48.77	≤54	PASS
				AV	2483.520	-46.42	≤-41.20	48.78	≤54	PASS
				AV	2500.000	-47	≤-41.20	48.20	≤54	PASS
				Peak	2483.500	-39.16	≤-21.20	56.04	≤74	PASS
				Peak	2496.960	-37.57	≤-21.20	57.63	≤74	PASS
				Peak	2500.000	-40.64	≤-21.20	54.56	≤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.

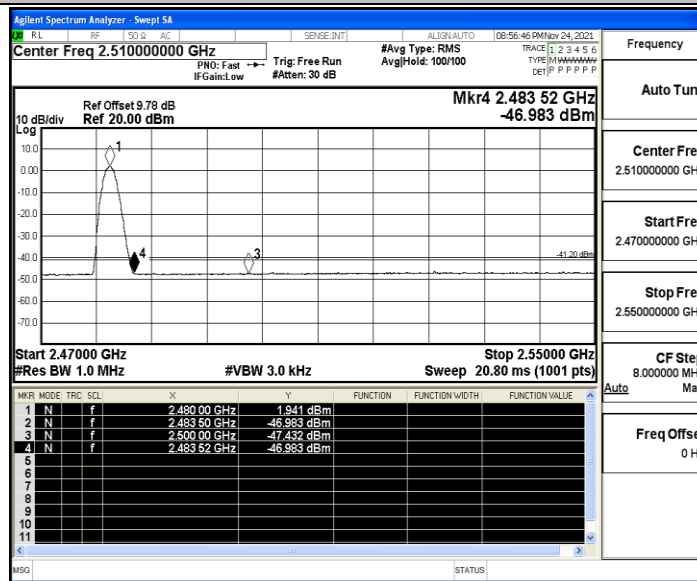


Test Graphs

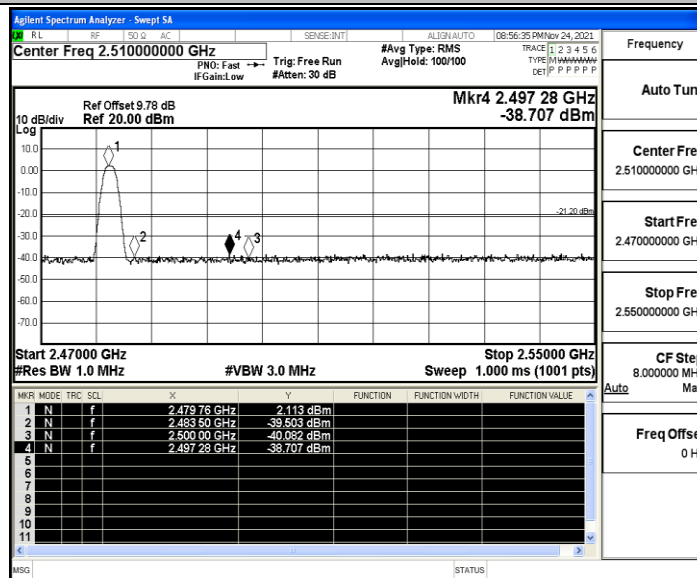




BLE_1M_Ant1_High_2480_AV

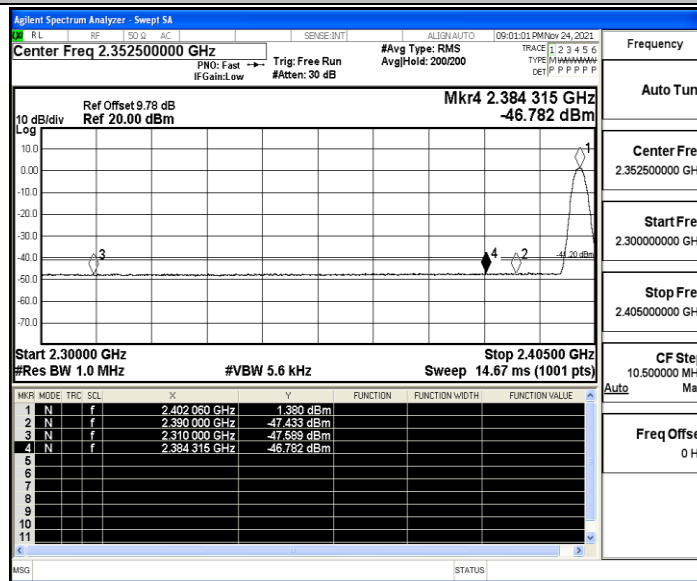


BLE_1M_Ant1_High_2480_Peak

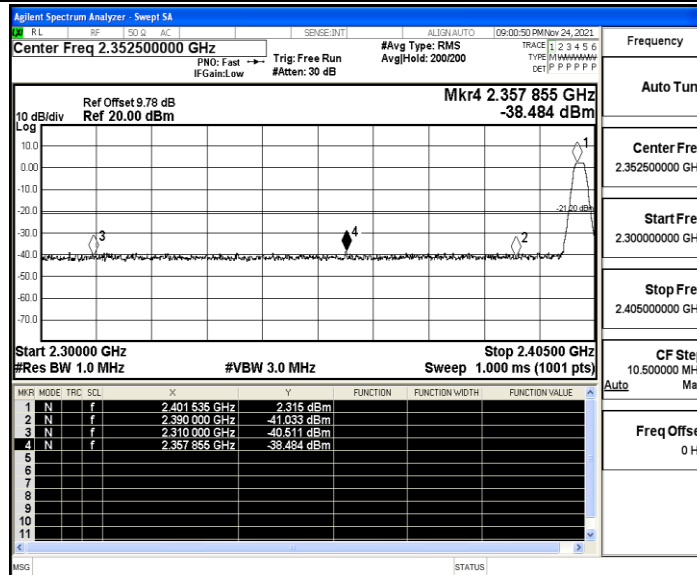




BLE_2M_Ant1_Low_2402_AV

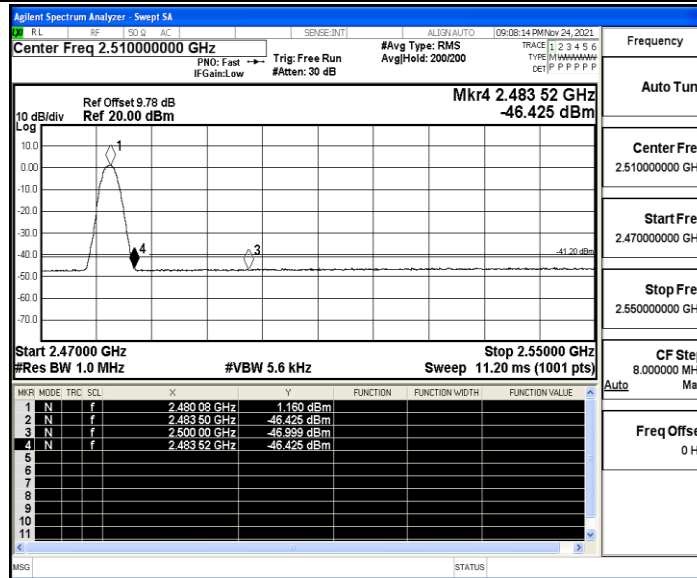


BLE_2M_Ant1_Low_2402_Peak





BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

