



Appendix A

RF Test Data for BLE (Conducted Measurement)

Product Name: LED Bulb
Test Model: XQP009Y4C4001A

Environmental Conditions

Temperature:	24.3° C
Relative Humidity:	51.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan

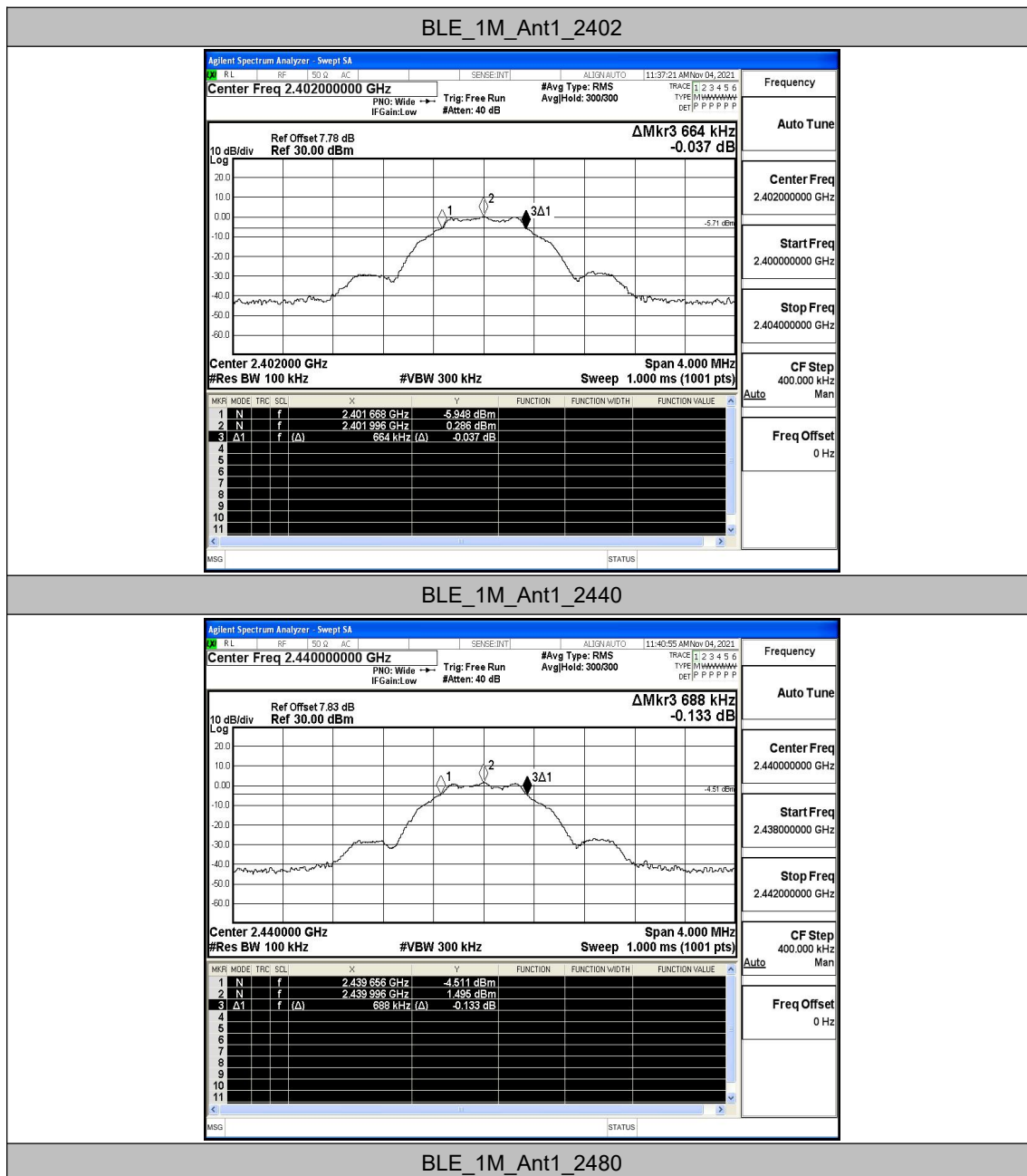


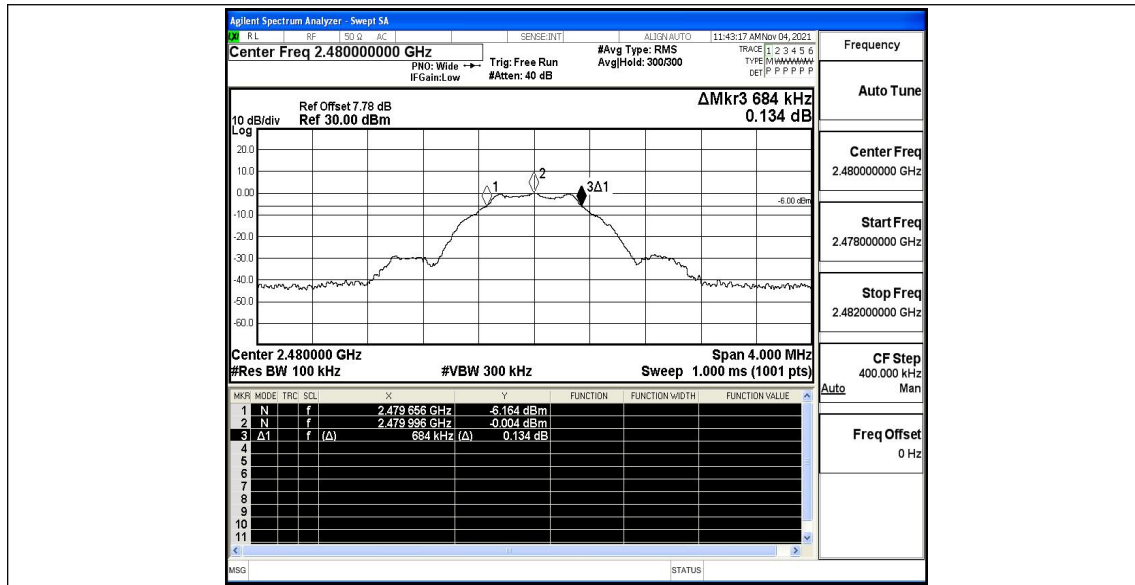
A.1 6dB Bandwidth

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.664	2401.668	2402.332	≥ 0.5	PASS
		2440	0.688	2439.656	2440.344	≥ 0.5	PASS
		2480	0.684	2479.656	2480.340	≥ 0.5	PASS

Test Graphs





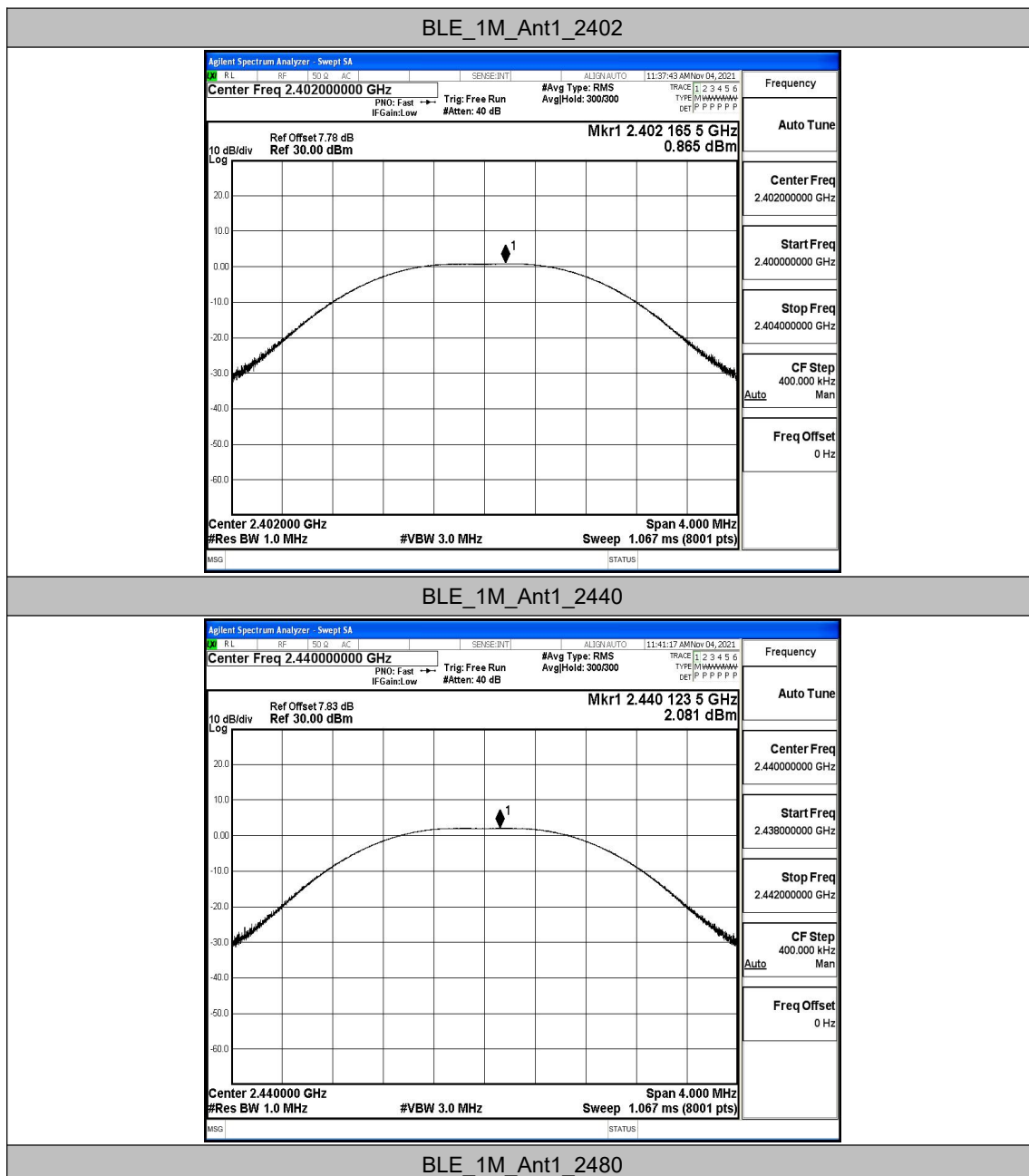


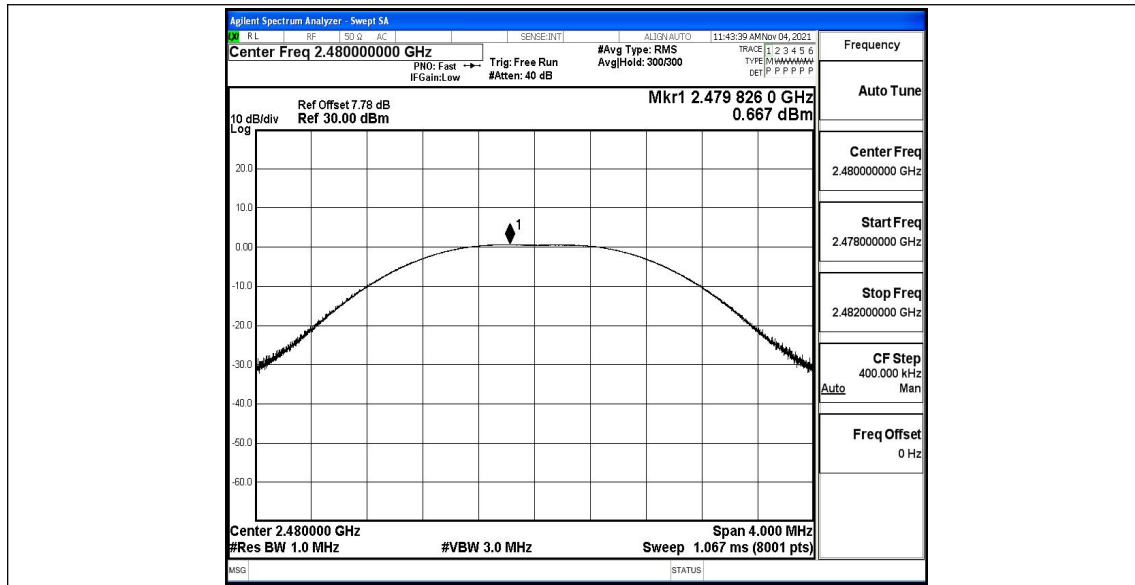
A.2 Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.87	≤30	PASS
		2440	2.08	≤30	PASS
		2480	0.67	≤30	PASS

Test Graphs





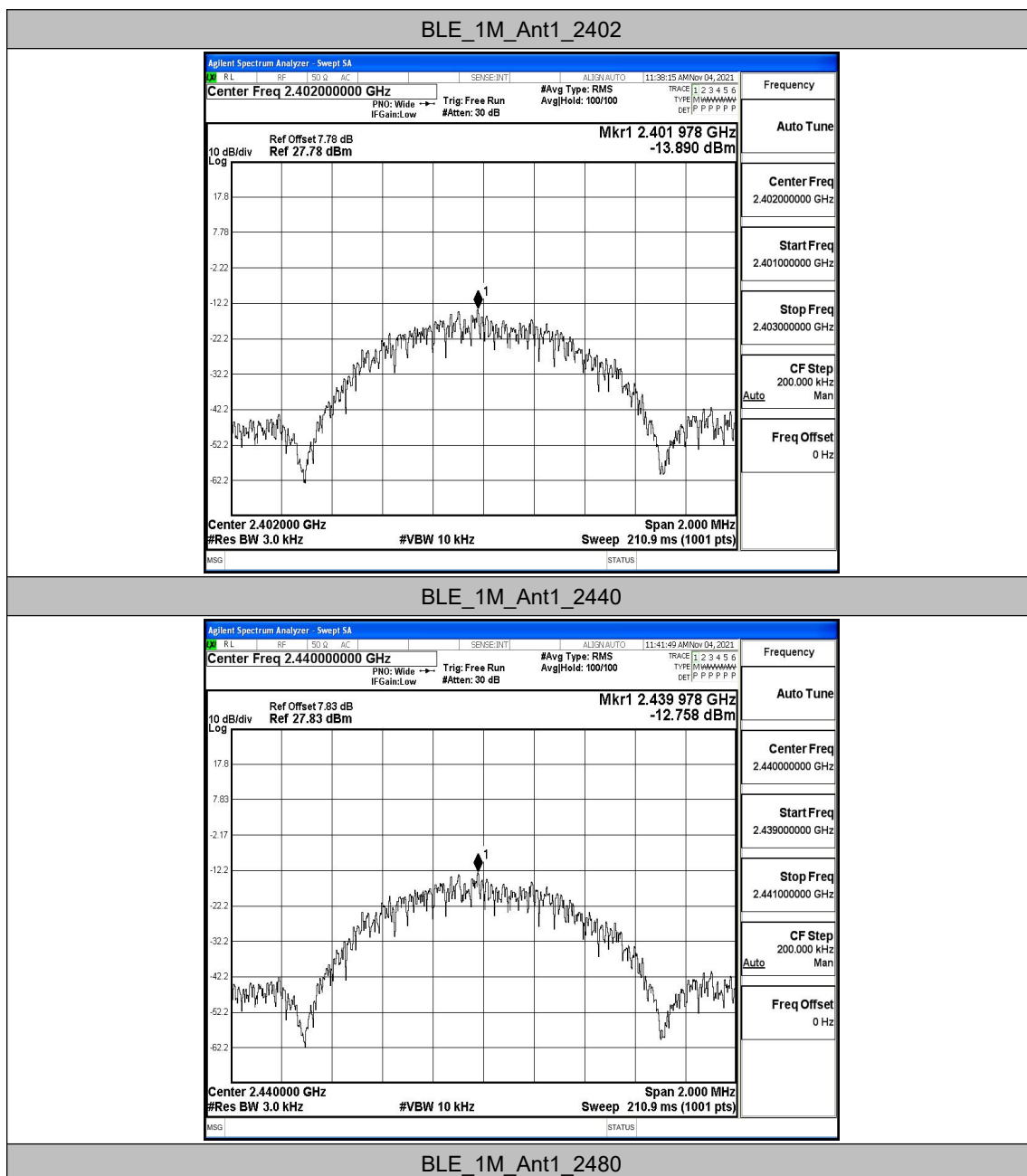


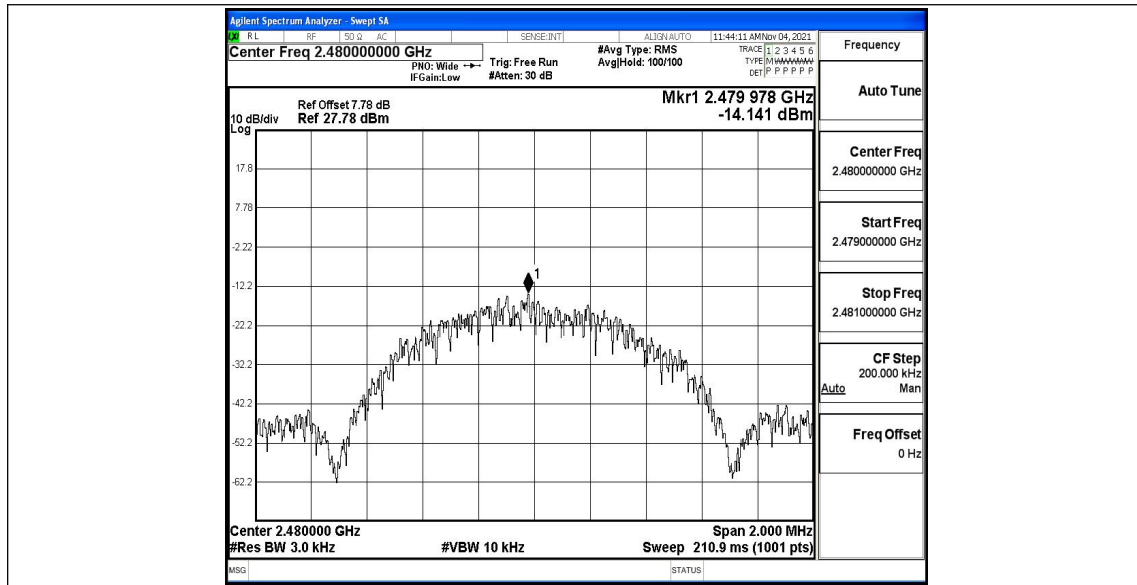
A.3 Maximum power spectral density

Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-13.89	≤8	PASS
		2440	-12.76	≤8	PASS
		2480	-14.14	≤8	PASS

Test Graphs





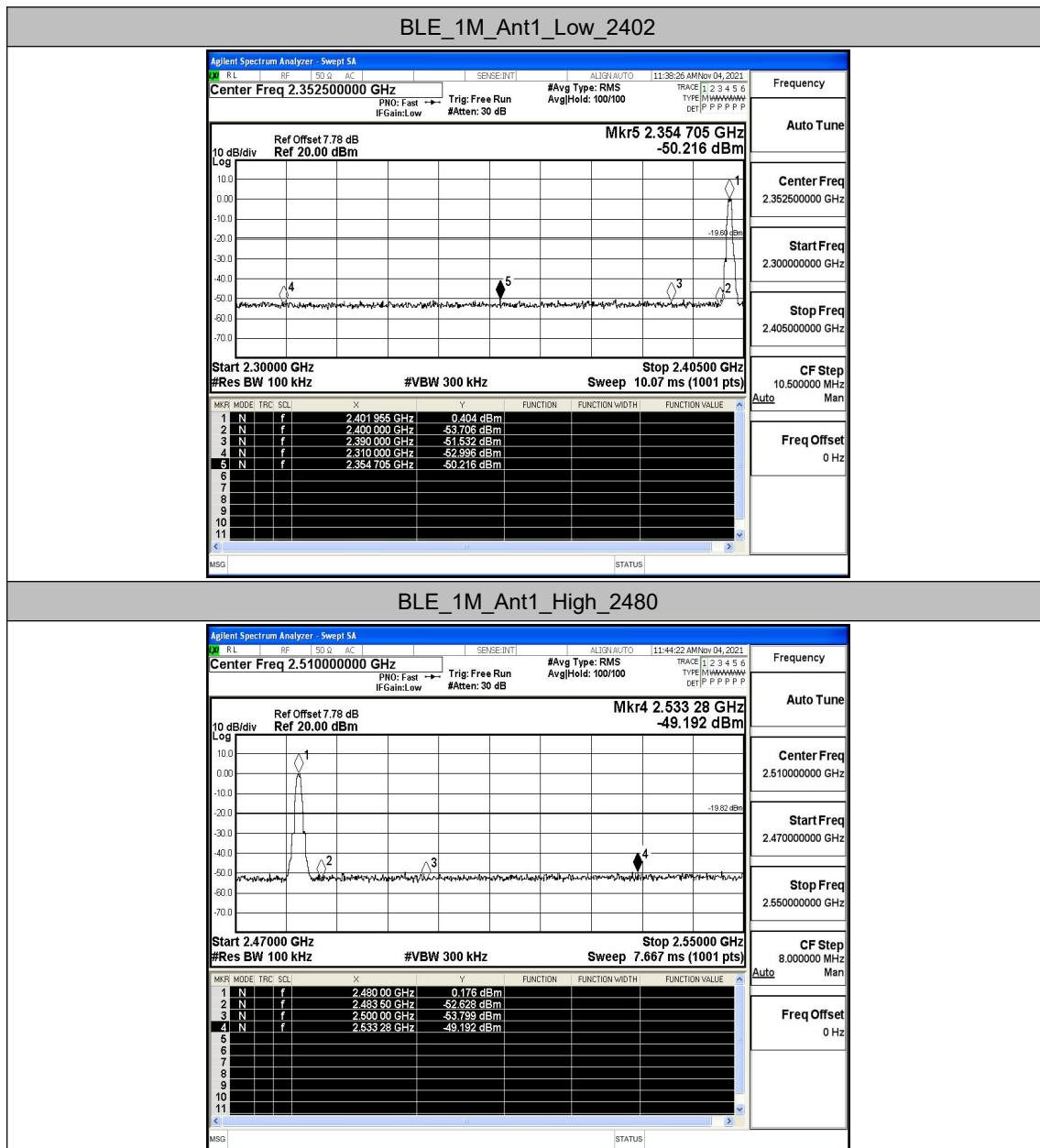


A.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	0.40	-50.22	≤-19.6	PASS
		High	2480	0.18	-49.19	≤-19.82	PASS

Test Graphs



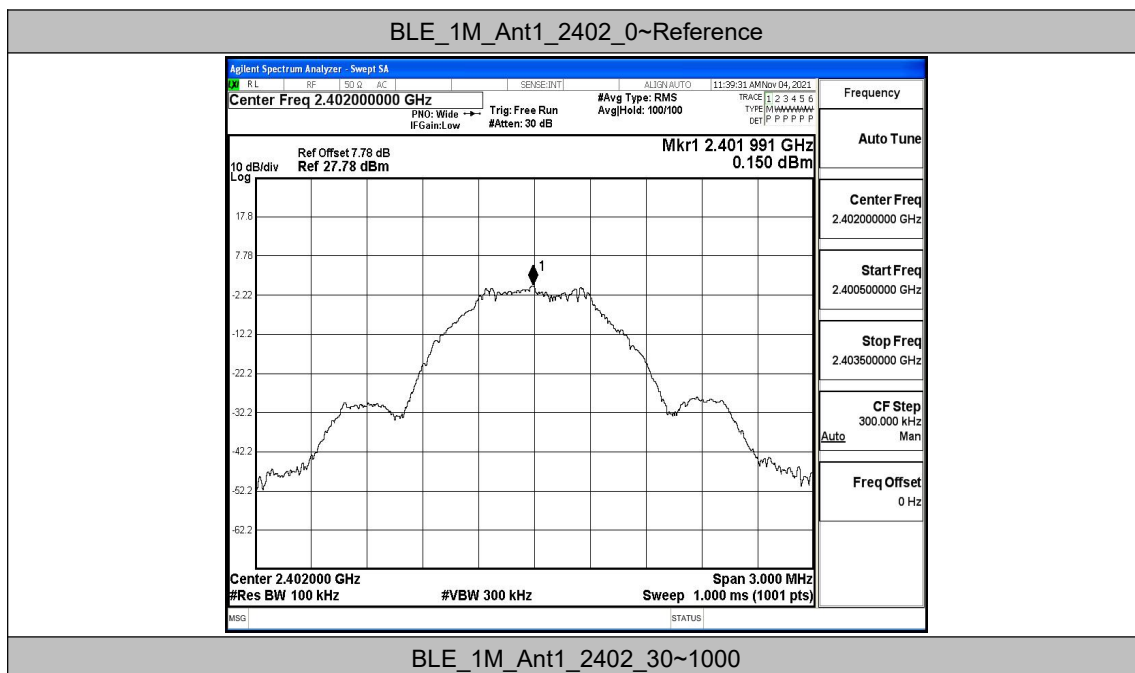


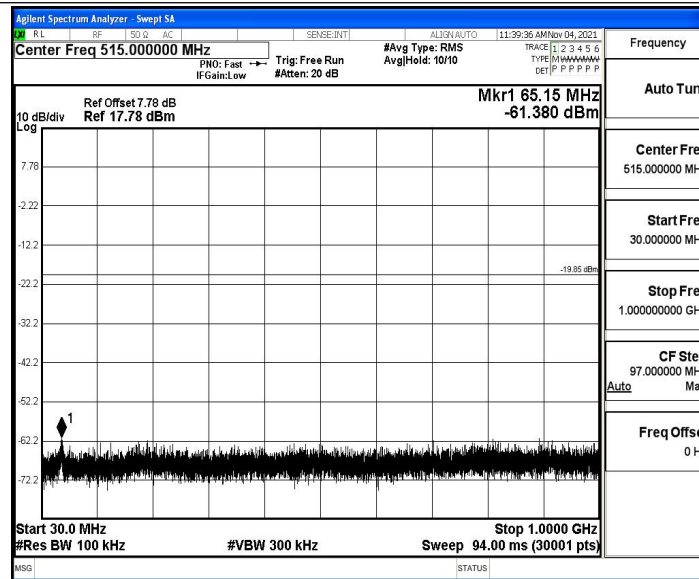
A.5 Conducted Spurious Emission

Test Result

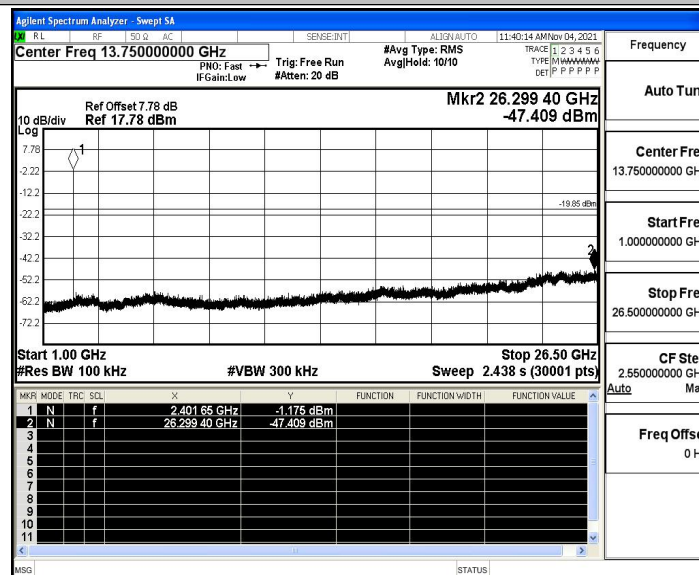
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	0.15	0.15	---	PASS
			30~1000	0.15	-61.38	≤-19.85	PASS
			1000~26500	0.15	-47.41	≤-19.85	PASS
		2440	Reference	1.43	1.43	---	PASS
			30~1000	1.43	-60.81	≤-18.57	PASS
			1000~26500	1.43	-47.11	≤-18.57	PASS
		2480	Reference	0.05	0.05	---	PASS
			30~1000	0.05	-61.33	≤-19.96	PASS
			1000~26500	0.05	-47.22	≤-19.96	PASS

Test Graphs

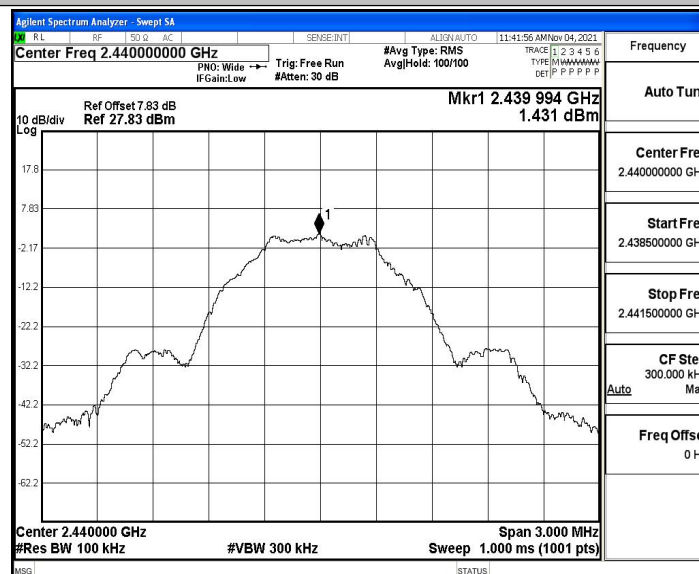




BLE_1M_Ant1_2402_1000~26500

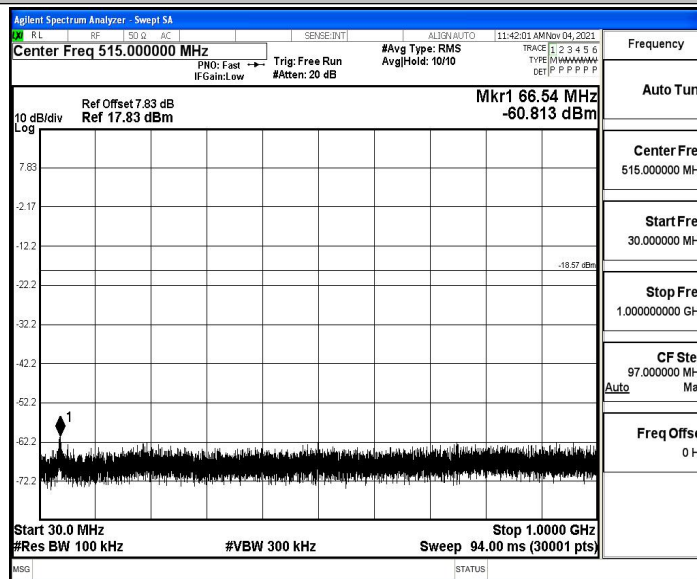


BLE_1M_Ant1_2440_0~Reference

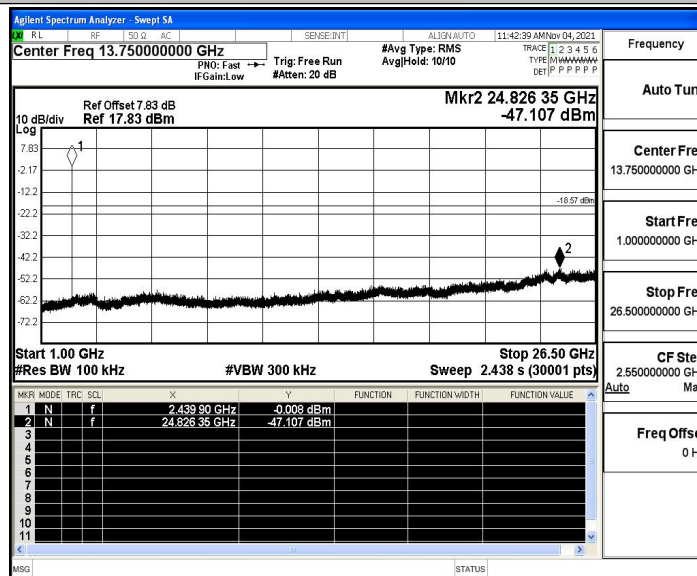




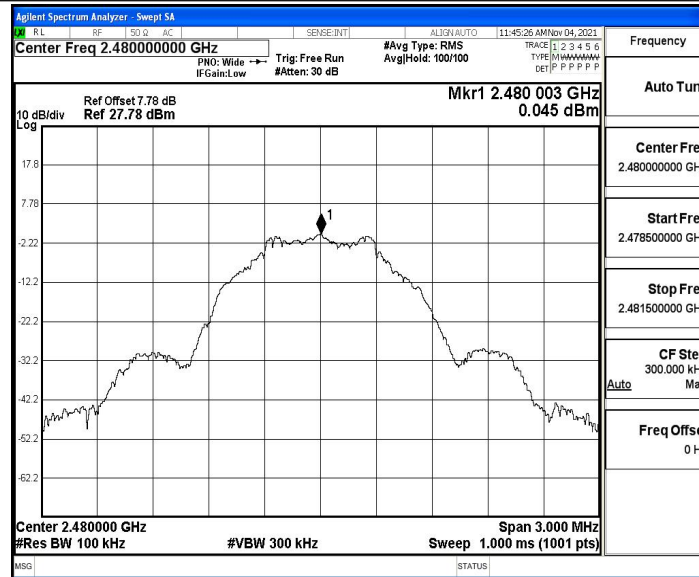
BLE_1M_Ant1_2440_30~1000



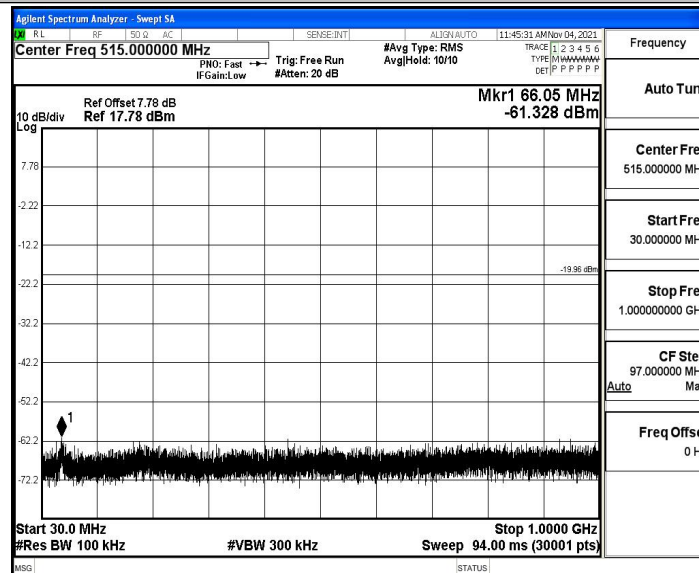
BLE_1M_Ant1_2440_1000~26500



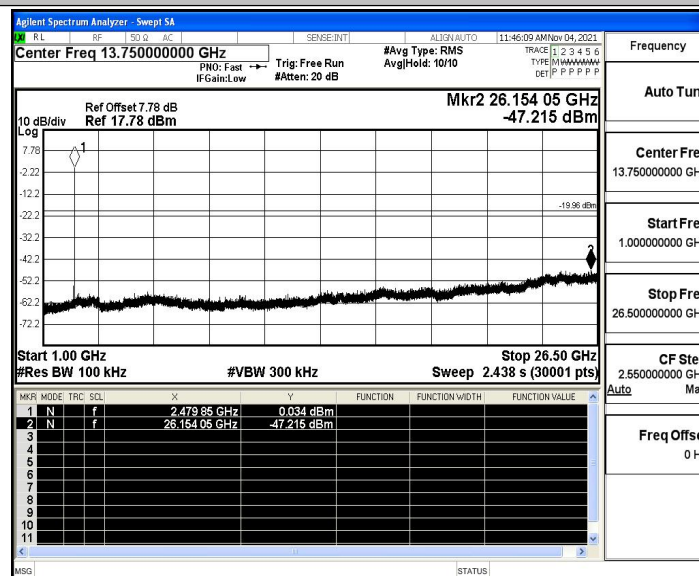
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



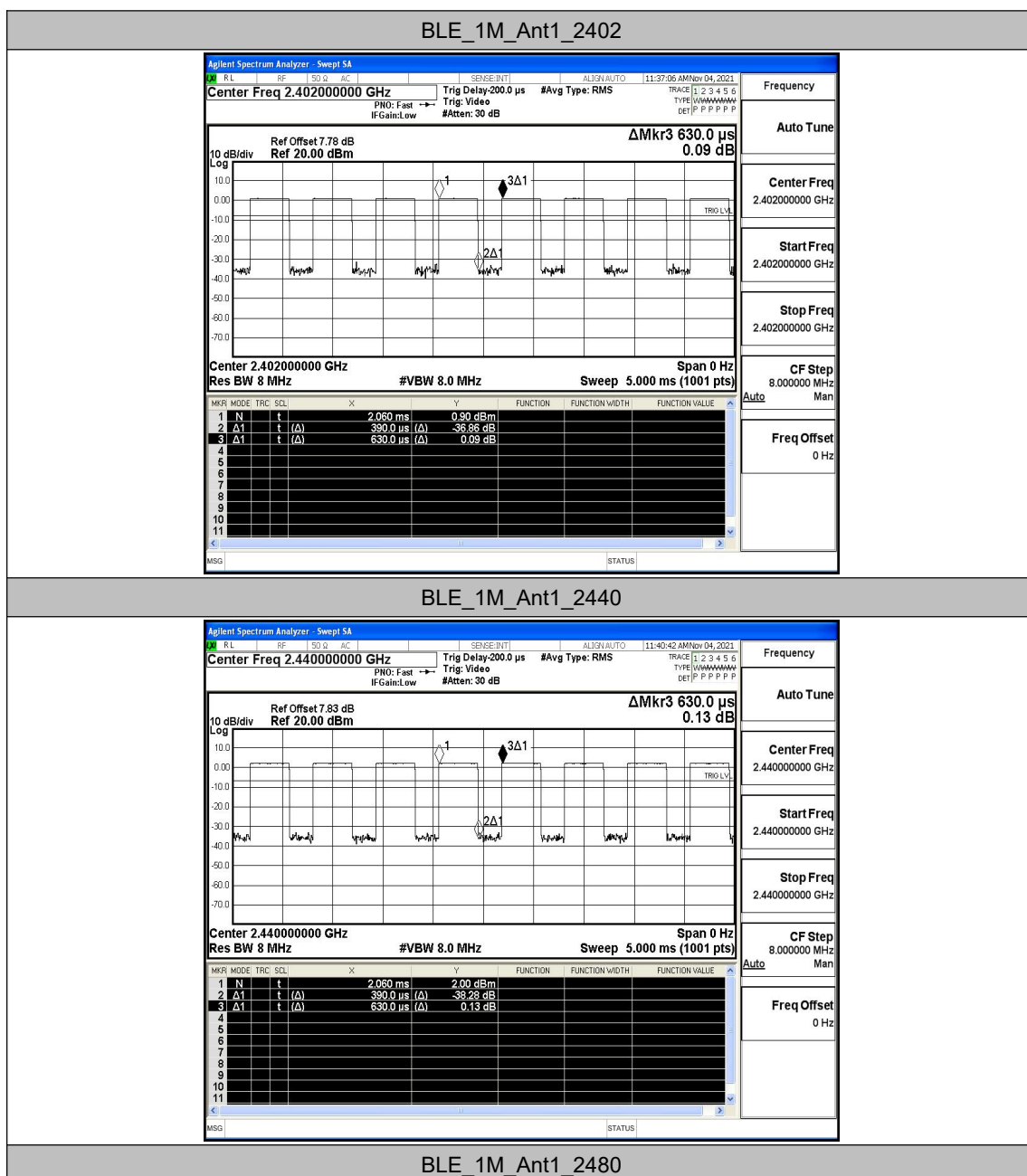


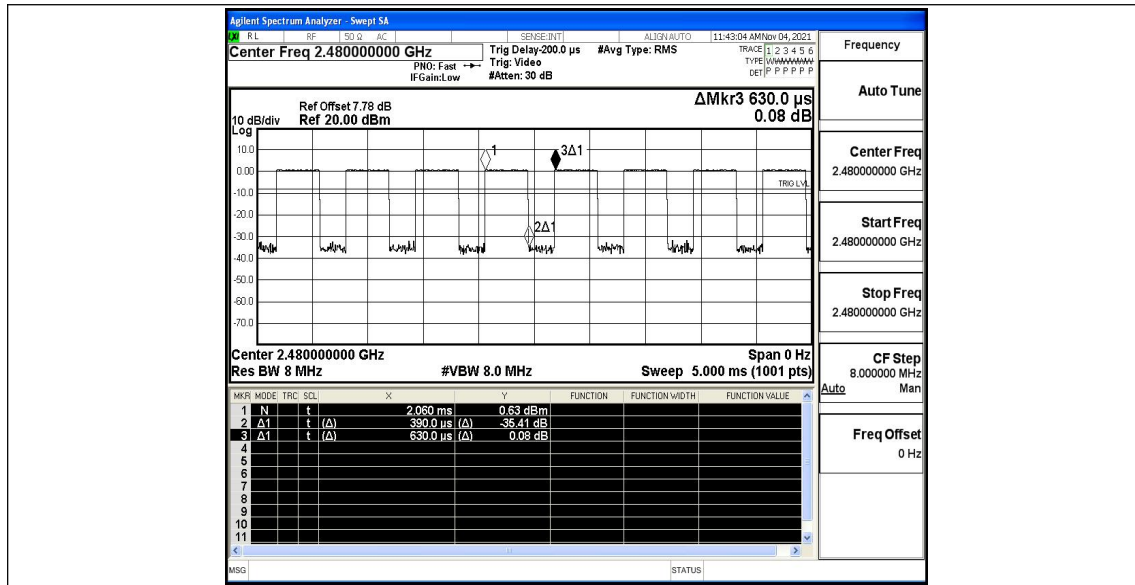
A.6 Duty Cycle

Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	0.39	0.63	0.6190	61.90	2.08	---	PASS
		2440	0.39	0.63	0.6190	61.90	2.08	---	PASS
		2480	0.39	0.63	0.6190	61.90	2.08	---	PASS

Test Graphs







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	-48.46	≤-41.20	46.74	≤54	PASS
				AV	2371.505	-47.55	≤-41.20	47.65	≤54	PASS
				AV	2390.000	-48.11	≤-41.20	47.09	≤54	PASS
				Peak	2310.000	-42.38	≤-21.20	52.82	≤74	PASS
				Peak	2353.865	-38.56	≤-21.20	56.64	≤74	PASS
				Peak	2390.000	-42.2	≤-21.20	53.00	≤74	PASS
		High	2480	AV	2483.500	-47.05	≤-41.20	48.15	≤54	PASS
				AV	2499.840	-47	≤-41.20	48.20	≤54	PASS
				AV	2500.000	-47.16	≤-41.20	48.04	≤54	PASS
				Peak	2483.500	-41.62	≤-21.20	53.58	≤74	PASS
				Peak	2496.160	-38.92	≤-21.20	56.28	≤74	PASS
				Peak	2500.000	-41.5	≤-21.20	53.70	≤74	PASS

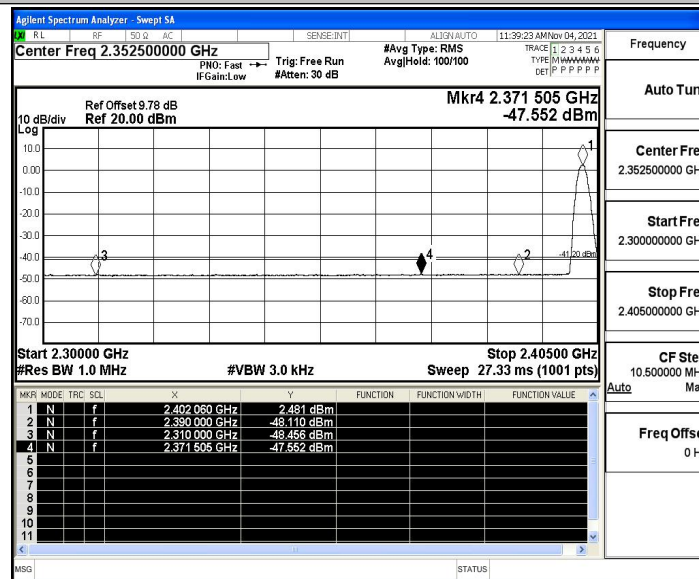
Note:

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.

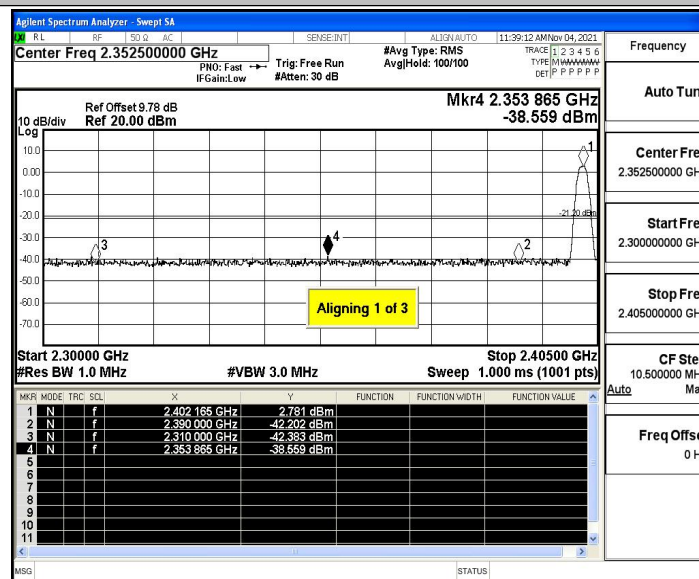


Test Graphs

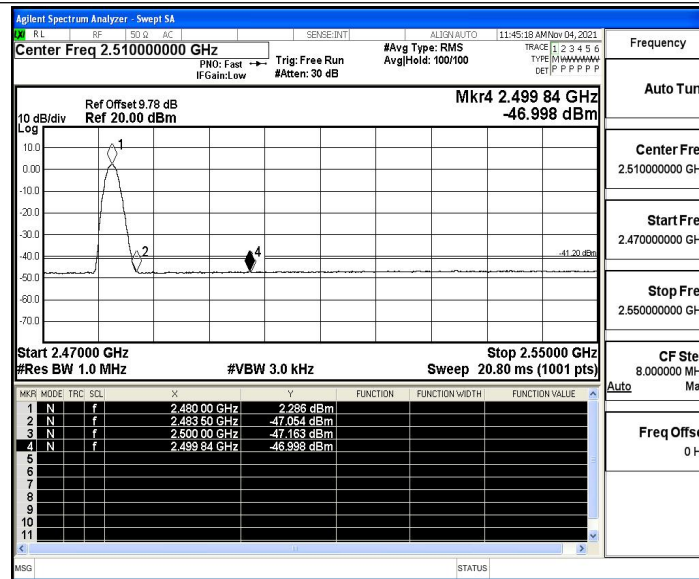
BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak

