



Appendix B

RF Test Data for BLE (Conducted Measurement)

Product Name: Speaker box

Test Model: PWRPA2A

Environmental Conditions

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

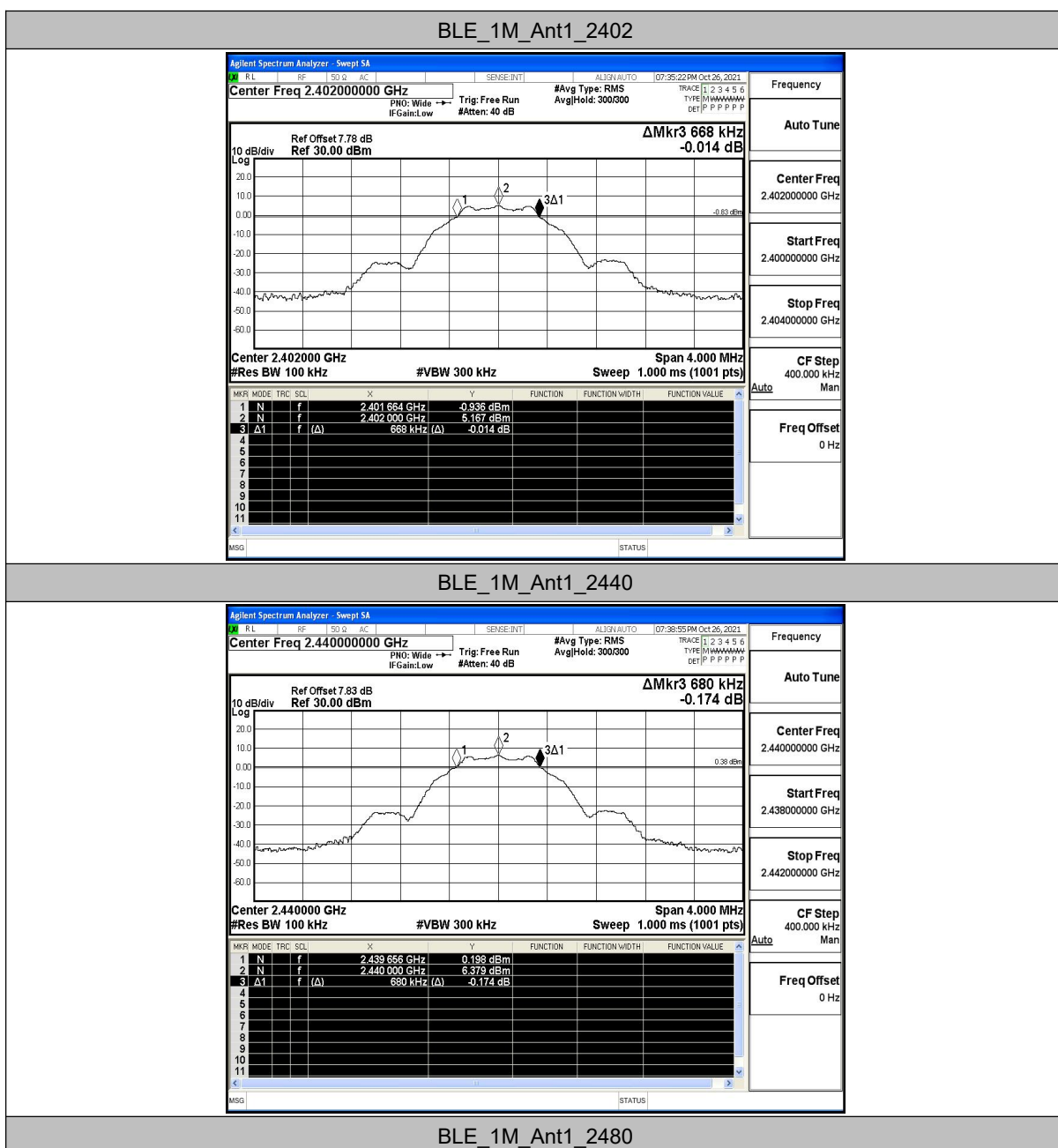


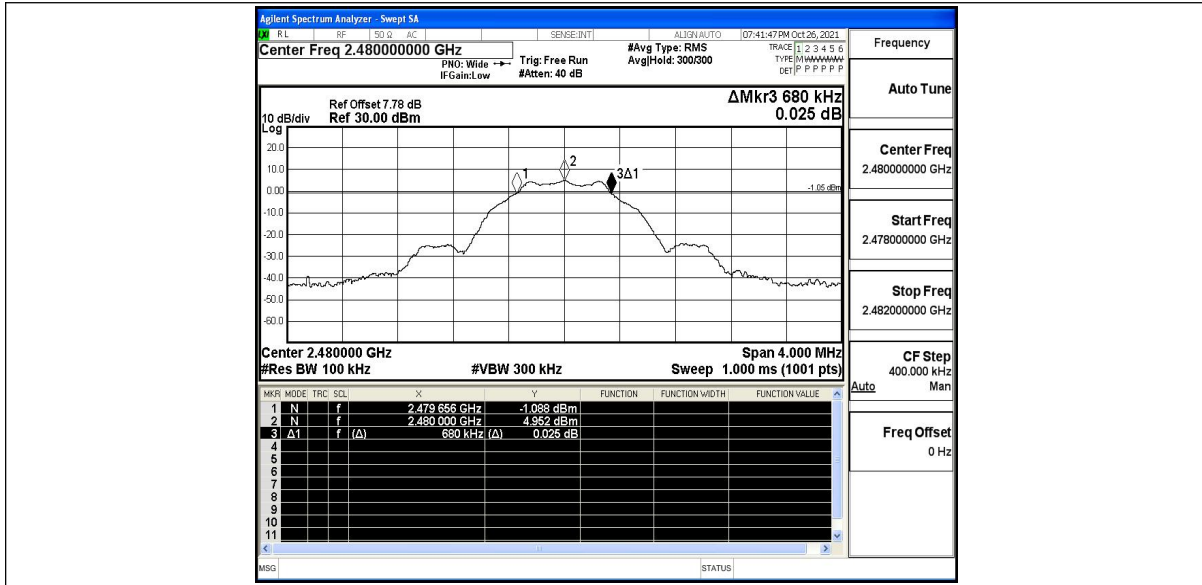
B.1 6dB Bandwidth

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.668	2401.664	2402.332	≥0.5	PASS
		2440	0.680	2439.656	2440.336	≥0.5	PASS
		2480	0.680	2479.656	2480.336	≥0.5	PASS

Test Graphs





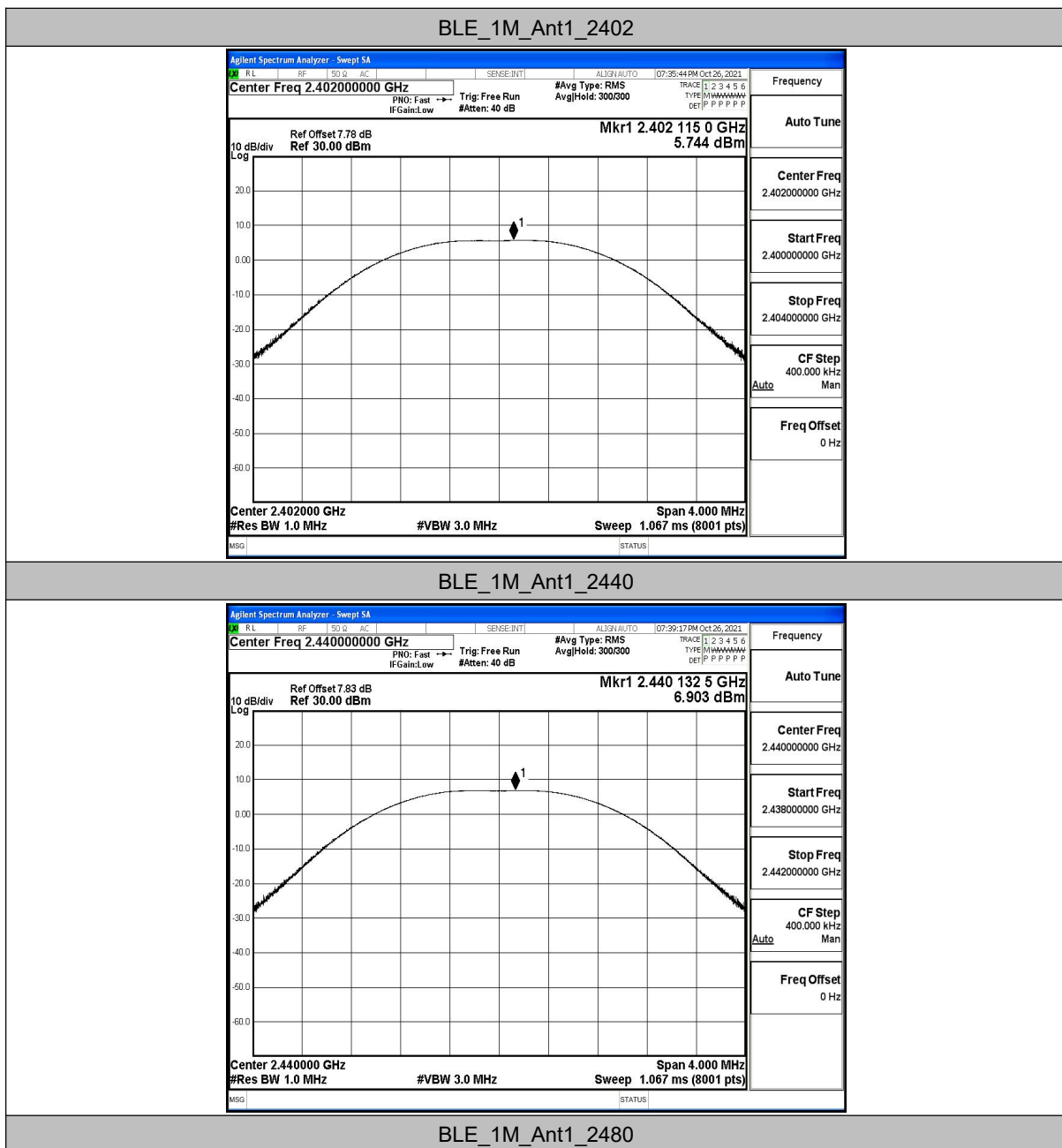


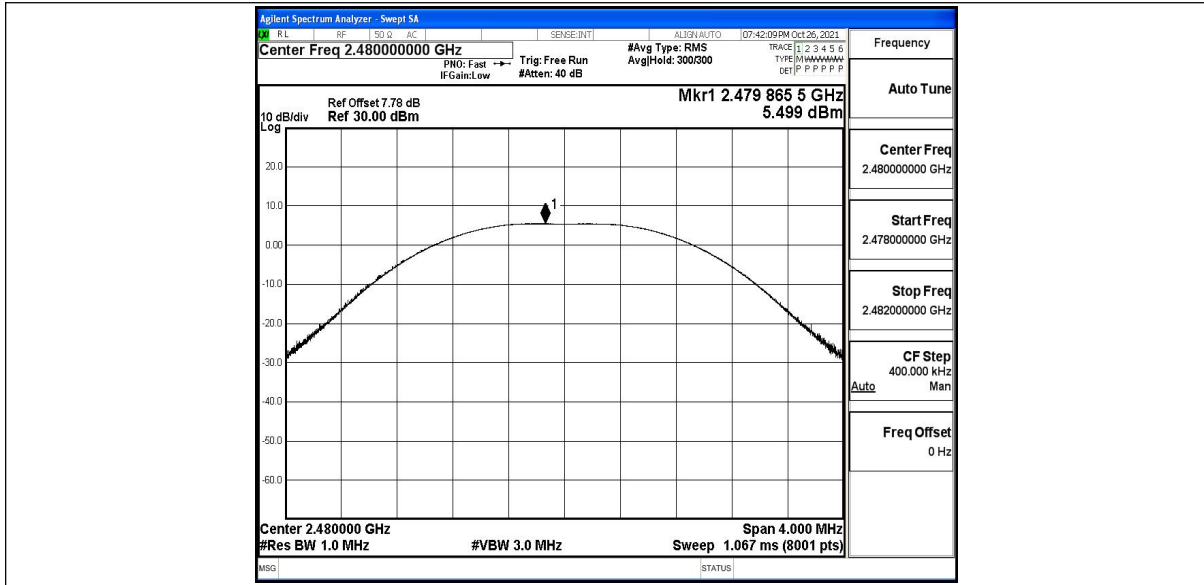
B.2 Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	5.74	≤30	PASS
		2440	6.9	≤30	PASS
		2480	5.5	≤30	PASS

Test Graphs





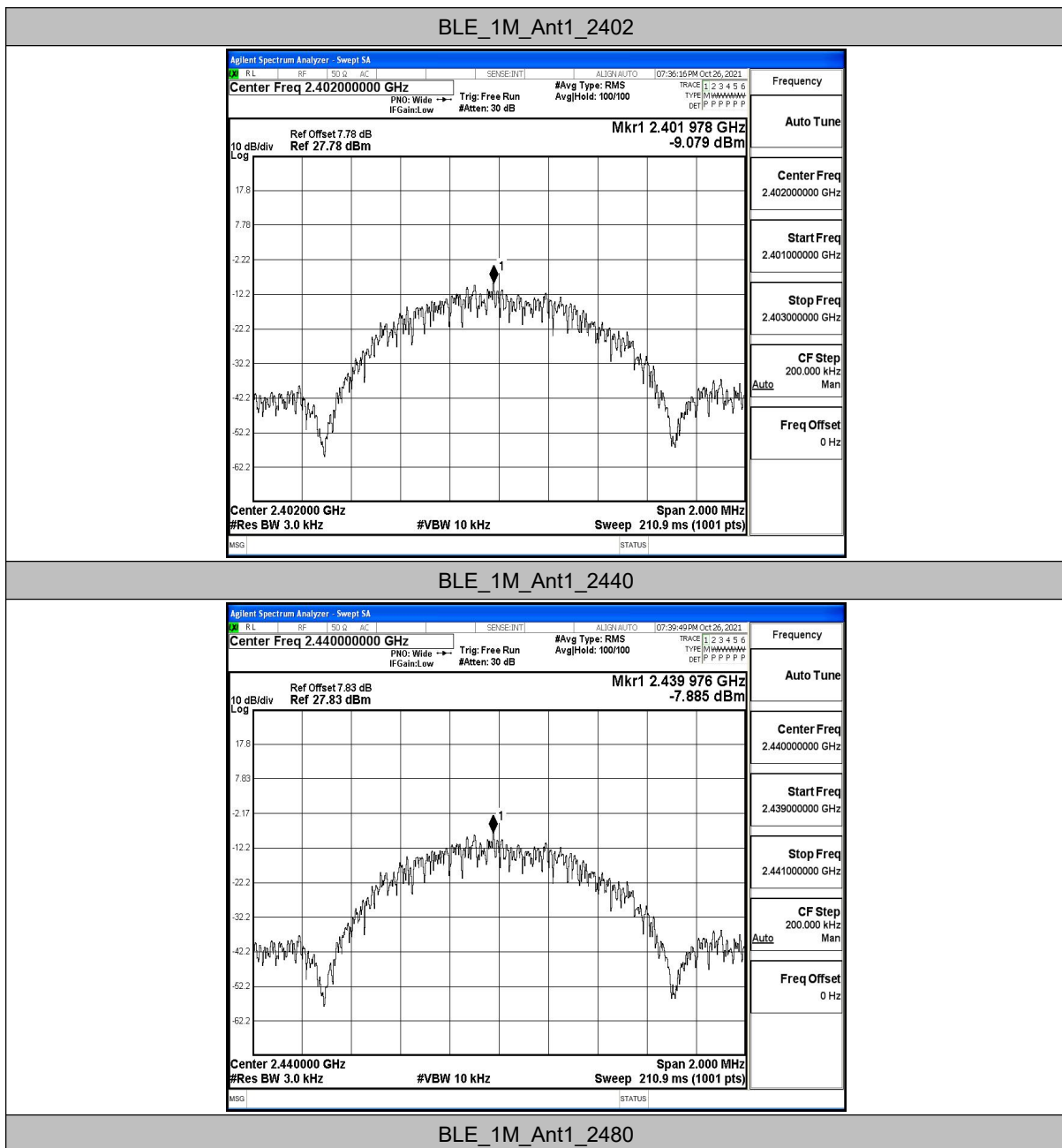


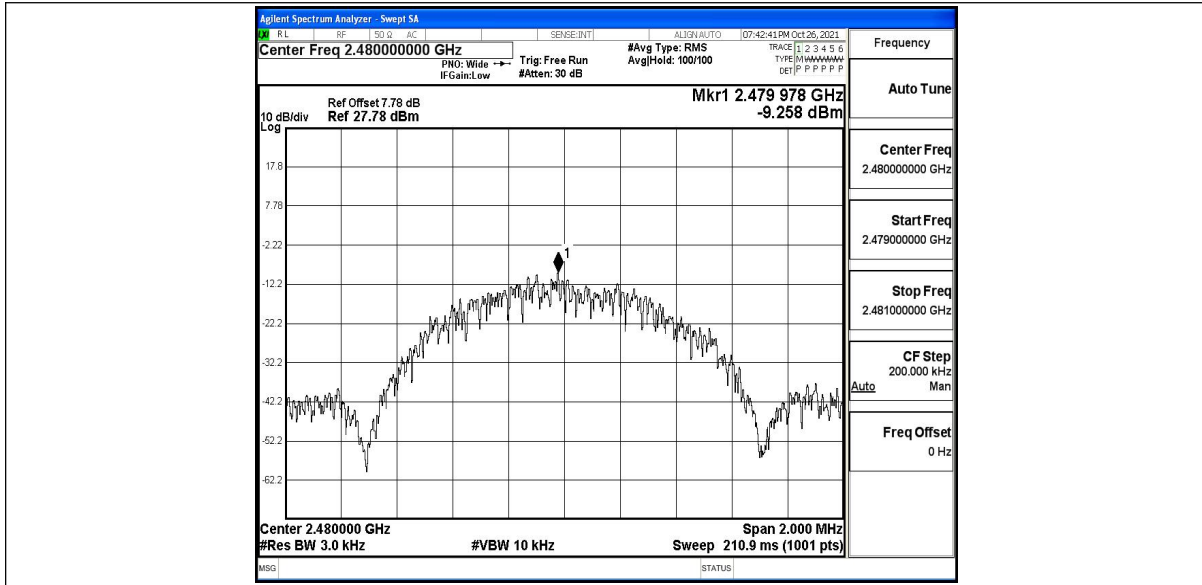
B.3 Maximum power spectral density

Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-9.08	≤8	PASS
		2440	-7.89	≤8	PASS
		2480	-9.26	≤8	PASS

Test Graphs





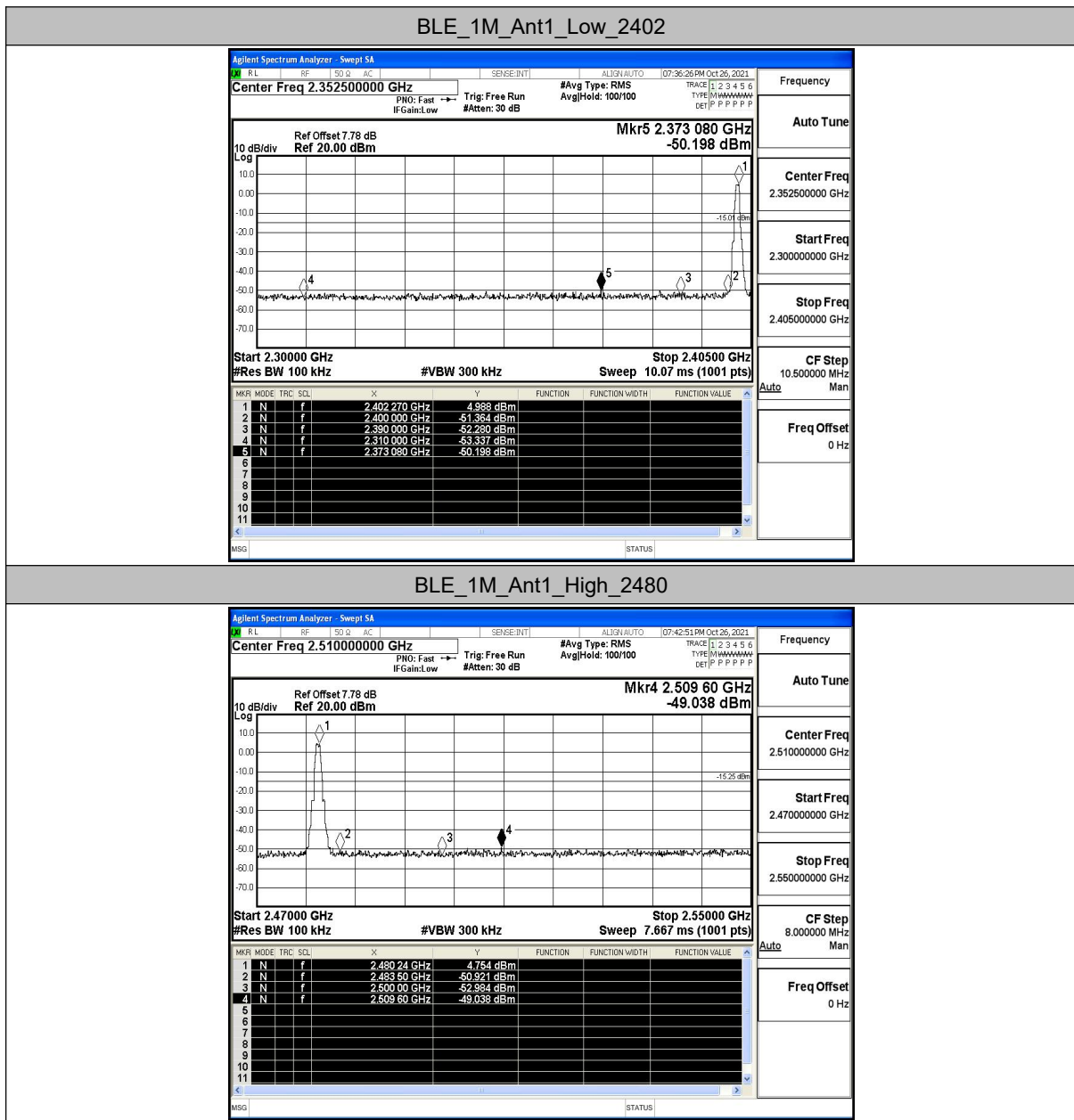


B.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	4.99	-50.2	≤-15.01	PASS
		High	2480	4.75	-49.04	≤-15.25	PASS

Test Graphs





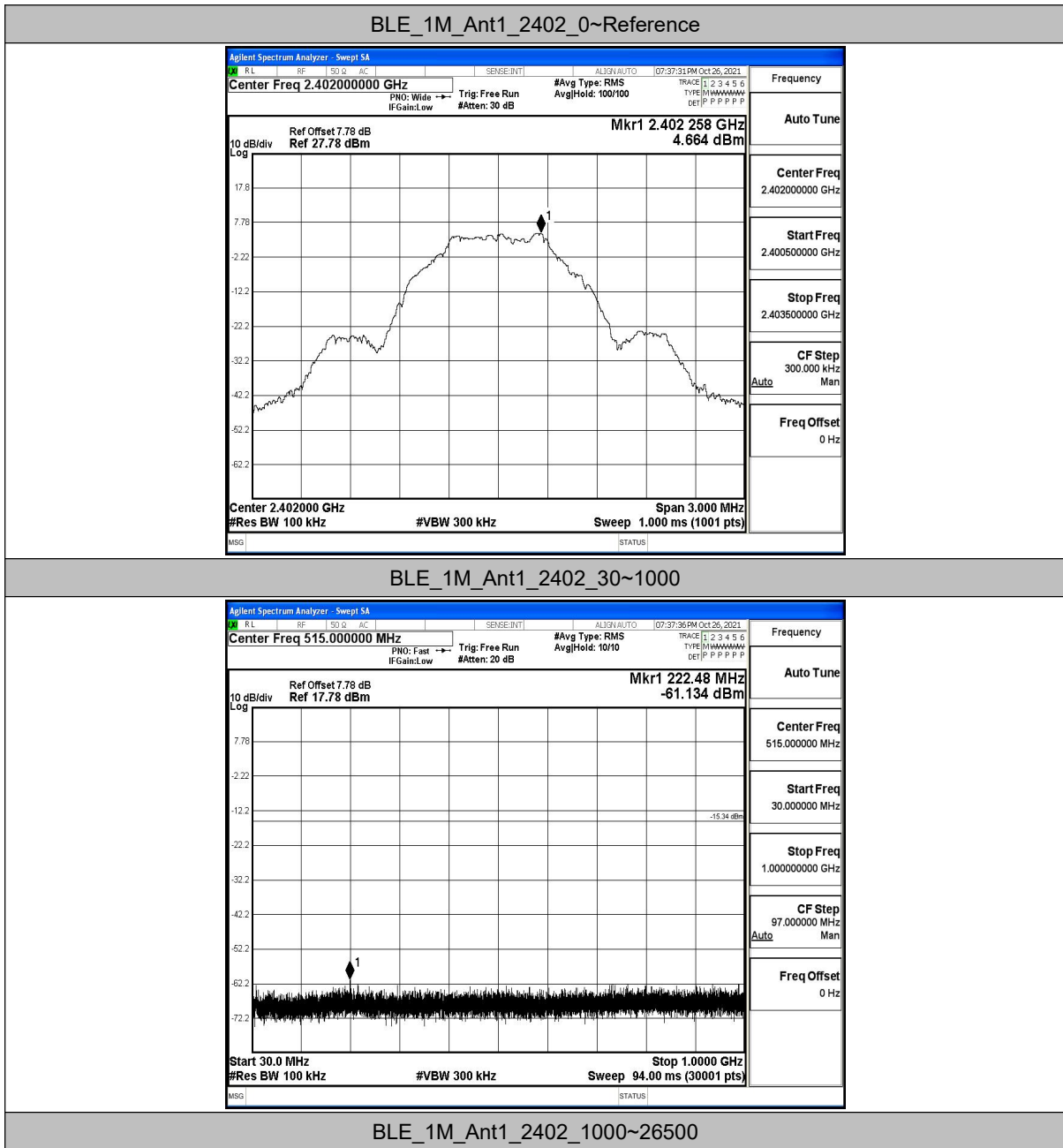
B.5 Conducted Spurious Emission

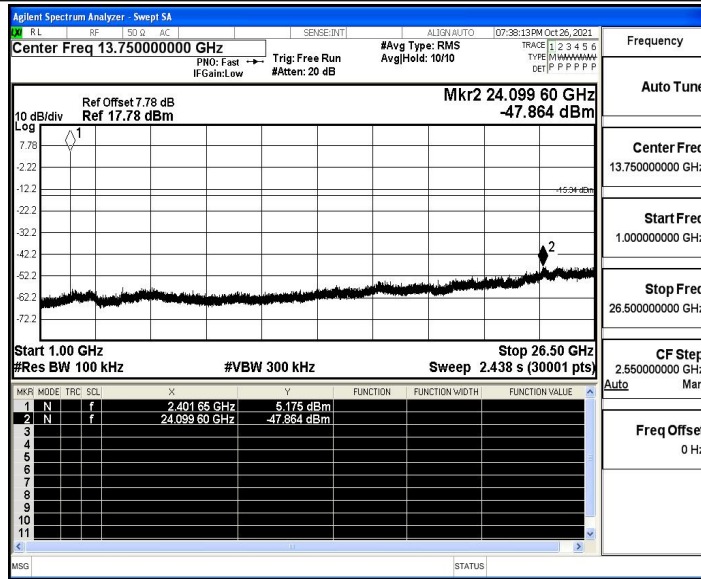
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	4.66	4.66	---	PASS
			30~1000	4.66	-61.13	≤-15.34	PASS
			1000~26500	4.66	-47.86	≤-15.34	PASS
		2440	Reference	6.33	6.33	---	PASS
			30~1000	6.33	-61.3	≤-13.68	PASS
			1000~26500	6.33	-47.63	≤-13.68	PASS
		2480	Reference	4.94	4.94	---	PASS
			30~1000	4.94	-61.59	≤-15.06	PASS
			1000~26500	4.94	-46.41	≤-15.06	PASS

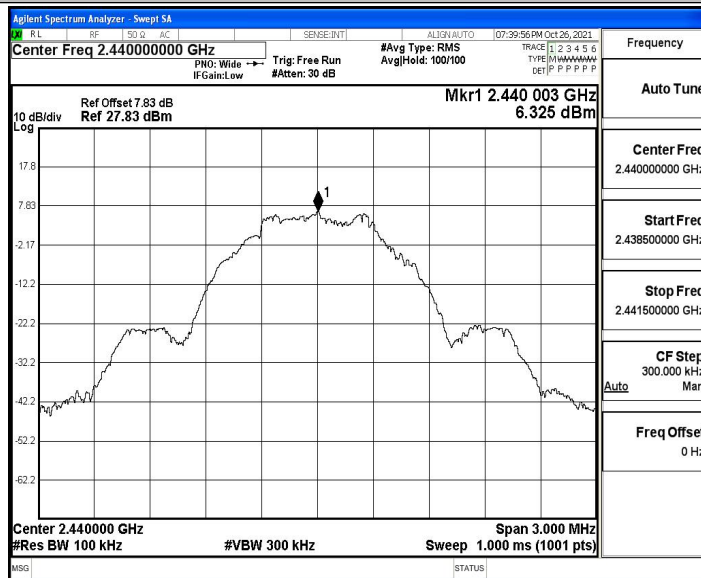


Test Graphs

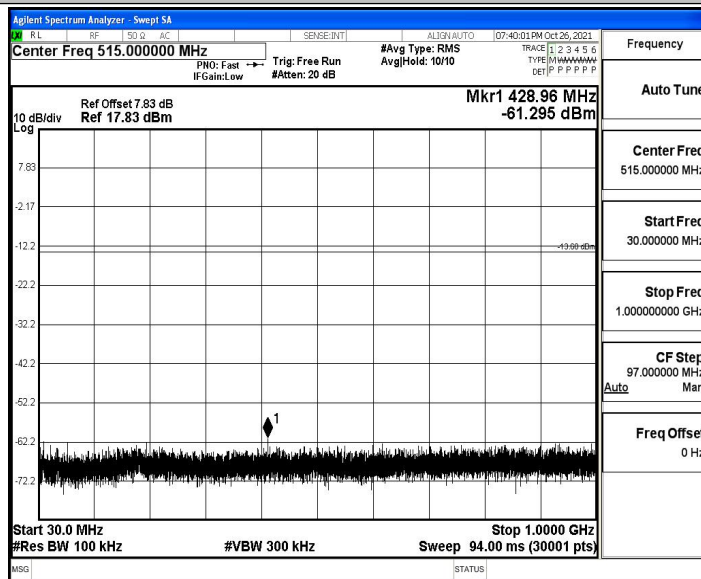




BLE_1M_Ant1_2440_0~Reference

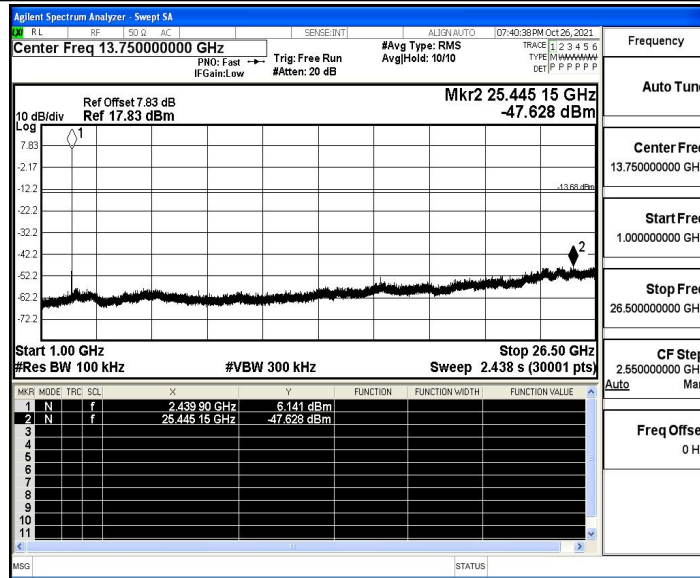


BLE_1M_Ant1_2440_30~1000

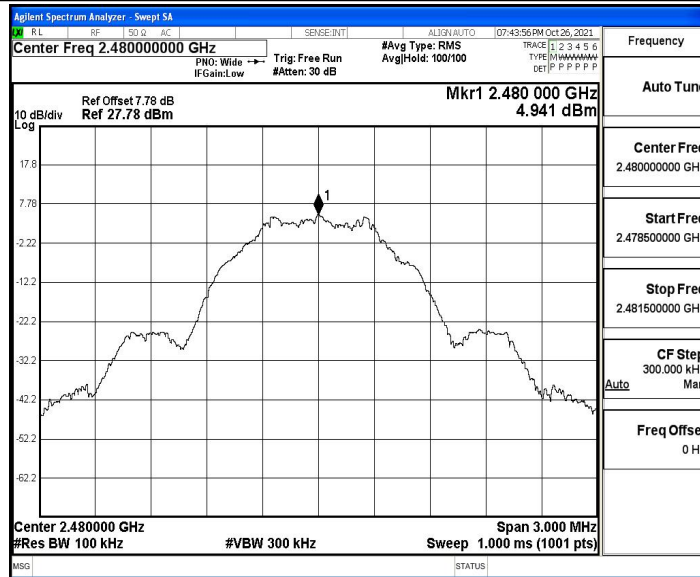




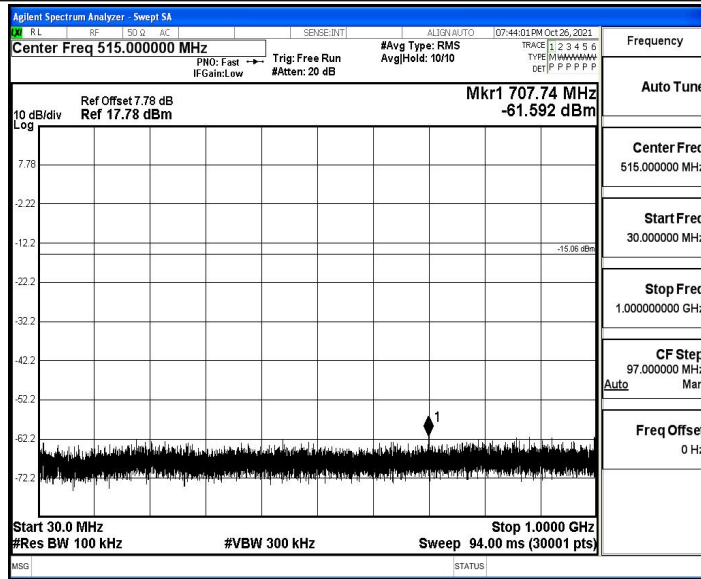
BLE_1M_Ant1_2440_1000~26500



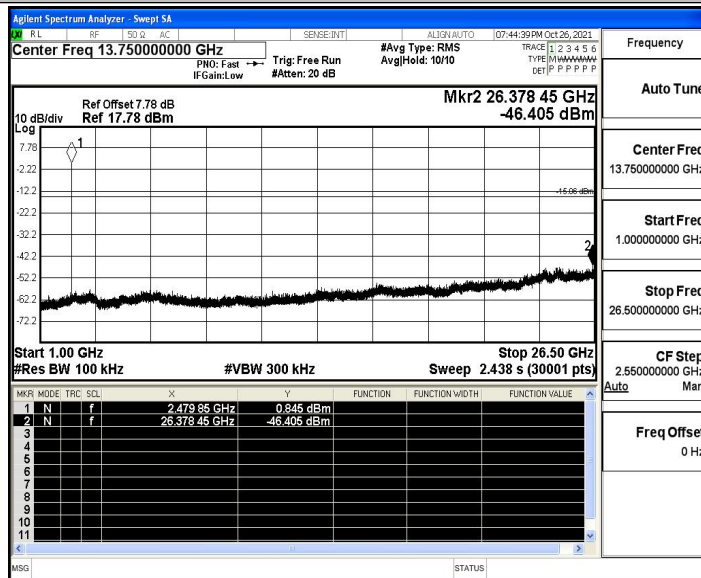
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



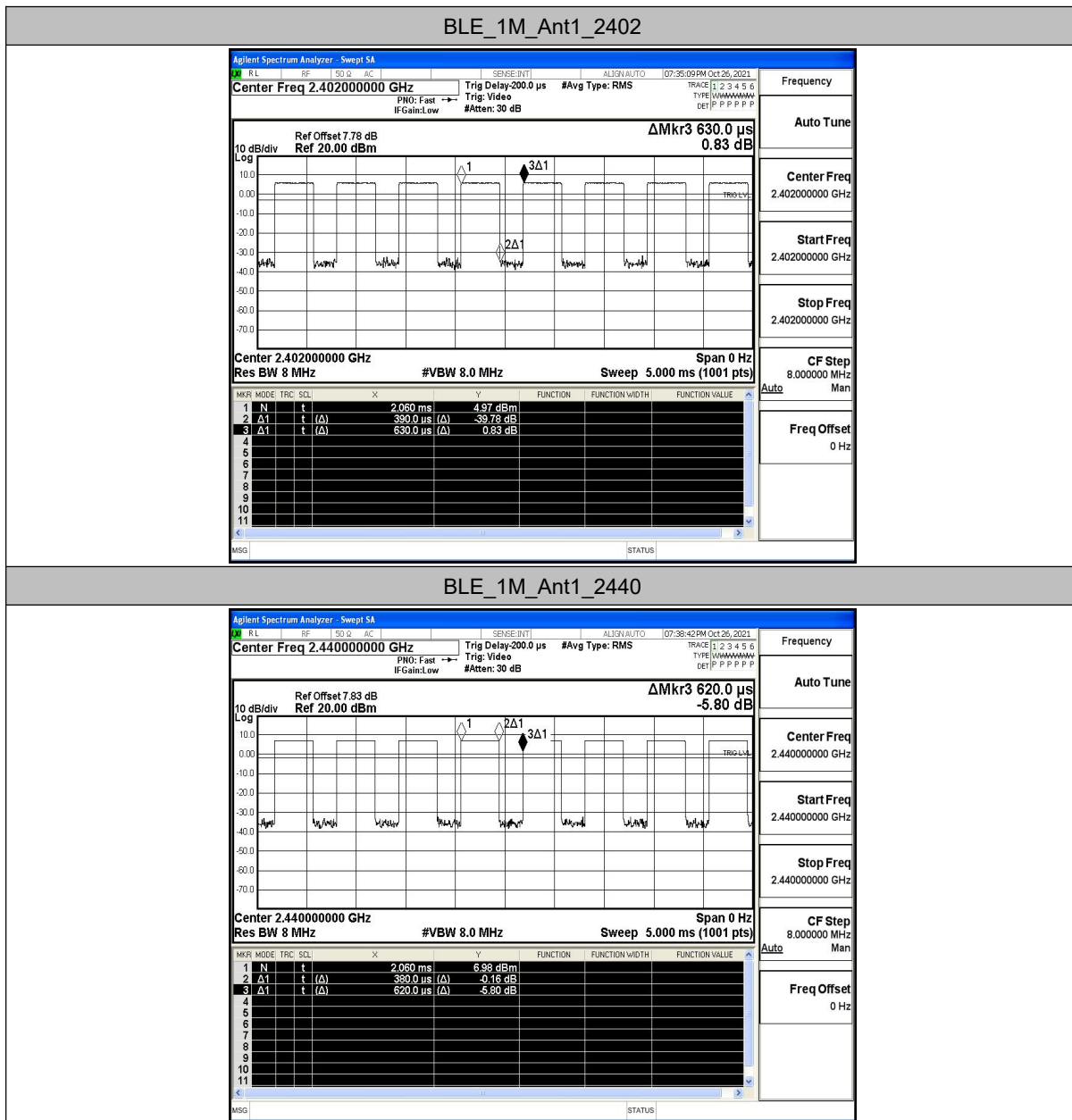


B.6 Duty Cycle

Test Result

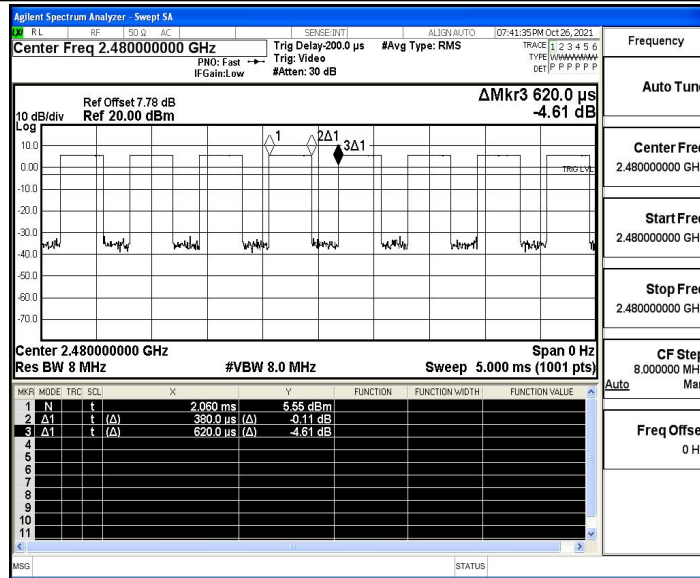
TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	0.39	0.63	0.6190	61.90	2.08	---	PASS
		2440	0.38	0.62	0.6129	61.29	2.13	---	PASS
		2480	0.38	0.62	0.6129	61.29	2.13	---	PASS

Test Graphs





BLE_1M_Ant1_2480





B.7 Emissions in Restricted Bands

Test Result

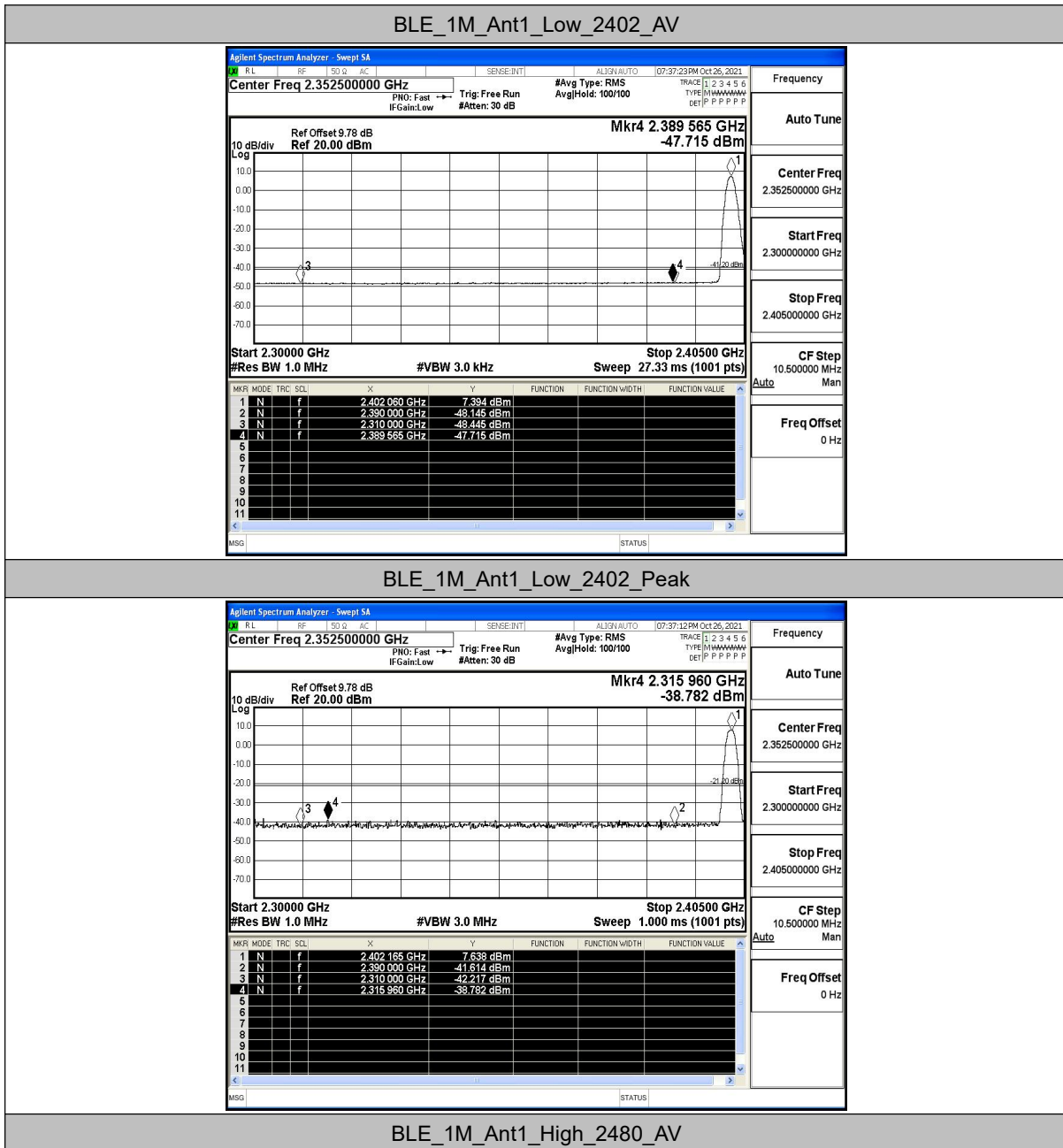
TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-48.45	≤-41.20	46.75	≤54	PASS
				AV	2389.565	-47.72	≤-41.20	47.48	≤54	PASS
				AV	2390.000	-48.15	≤-41.20	47.05	≤54	PASS
				Peak	2310.000	-42.22	≤-21.20	52.98	≤74	PASS
				Peak	2315.960	-38.78	≤-21.20	56.42	≤74	PASS
				Peak	2390.000	-41.61	≤-21.20	53.59	≤74	PASS
		High	2480	AV	2483.500	-46.18	≤-41.20	49.02	≤54	PASS
				AV	2483.520	-46.17	≤-41.20	49.03	≤54	PASS
				AV	2500.000	-47.47	≤-41.20	47.73	≤54	PASS
				Peak	2483.500	-40.62	≤-21.20	54.58	≤74	PASS
				Peak	2491.680	-38.95	≤-21.20	56.25	≤74	PASS
				Peak	2500.000	-41.81	≤-21.20	53.39	≤74	PASS

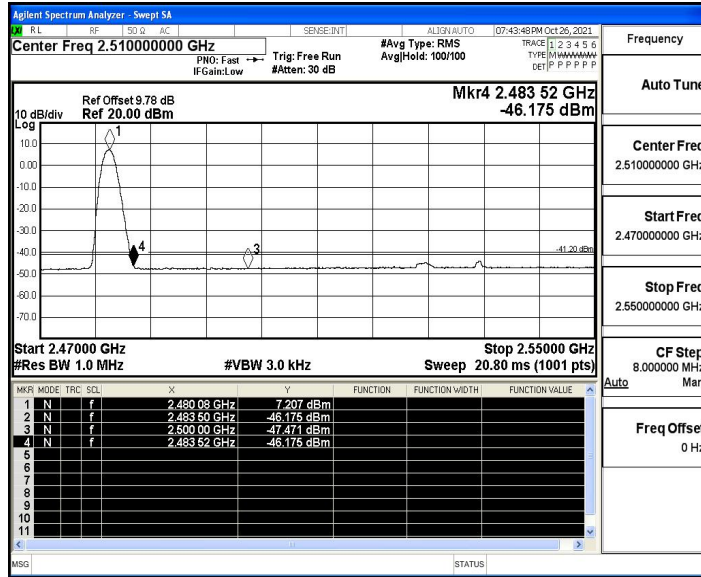
Note:

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_Peak

