



Appendix B

RF Test Data for BLE (Conducted Measurement)

Product Name: carplay box

Test Model: RK0232

Environmental Conditions

Temperature:	23.7° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Monkey Li
Supervised by:	Li Huan

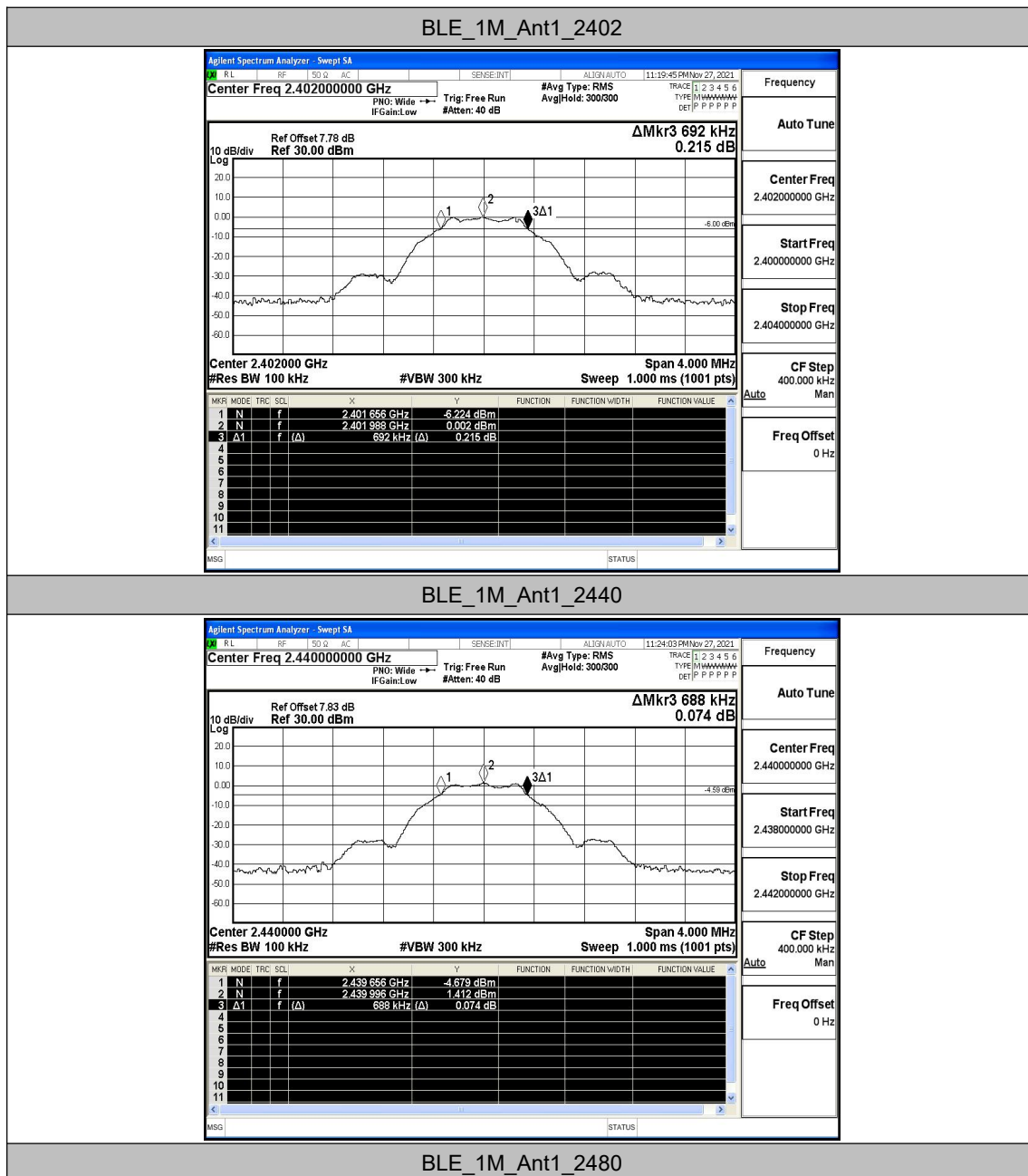


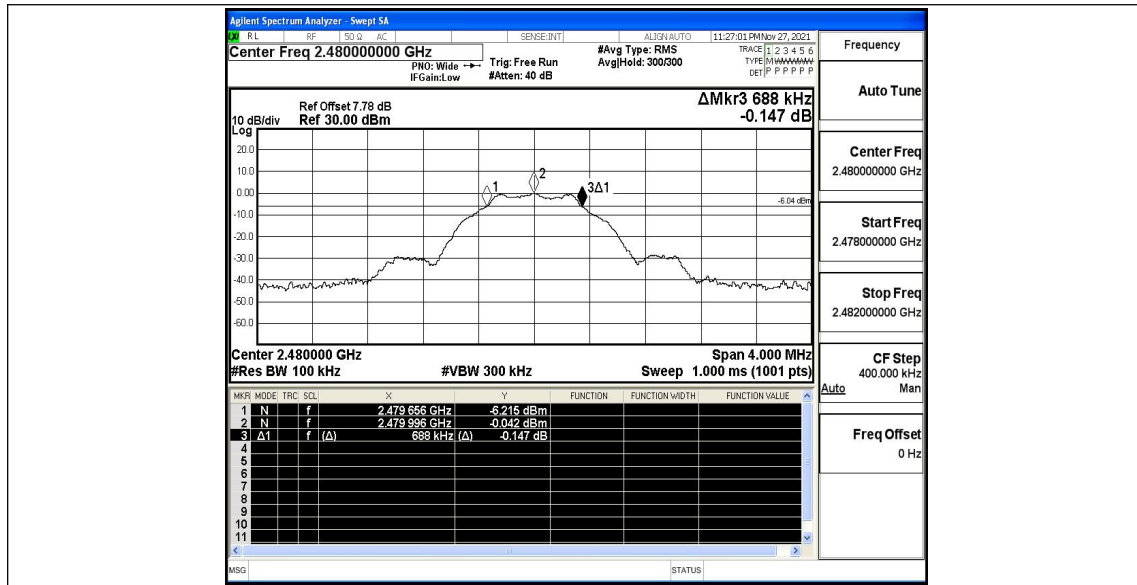
B.1 6dB Bandwidth

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.692	2401.656	2402.348	≥ 0.5	PASS
		2440	0.688	2439.656	2440.344	≥ 0.5	PASS
		2480	0.688	2479.656	2480.344	≥ 0.5	PASS

Test Graphs





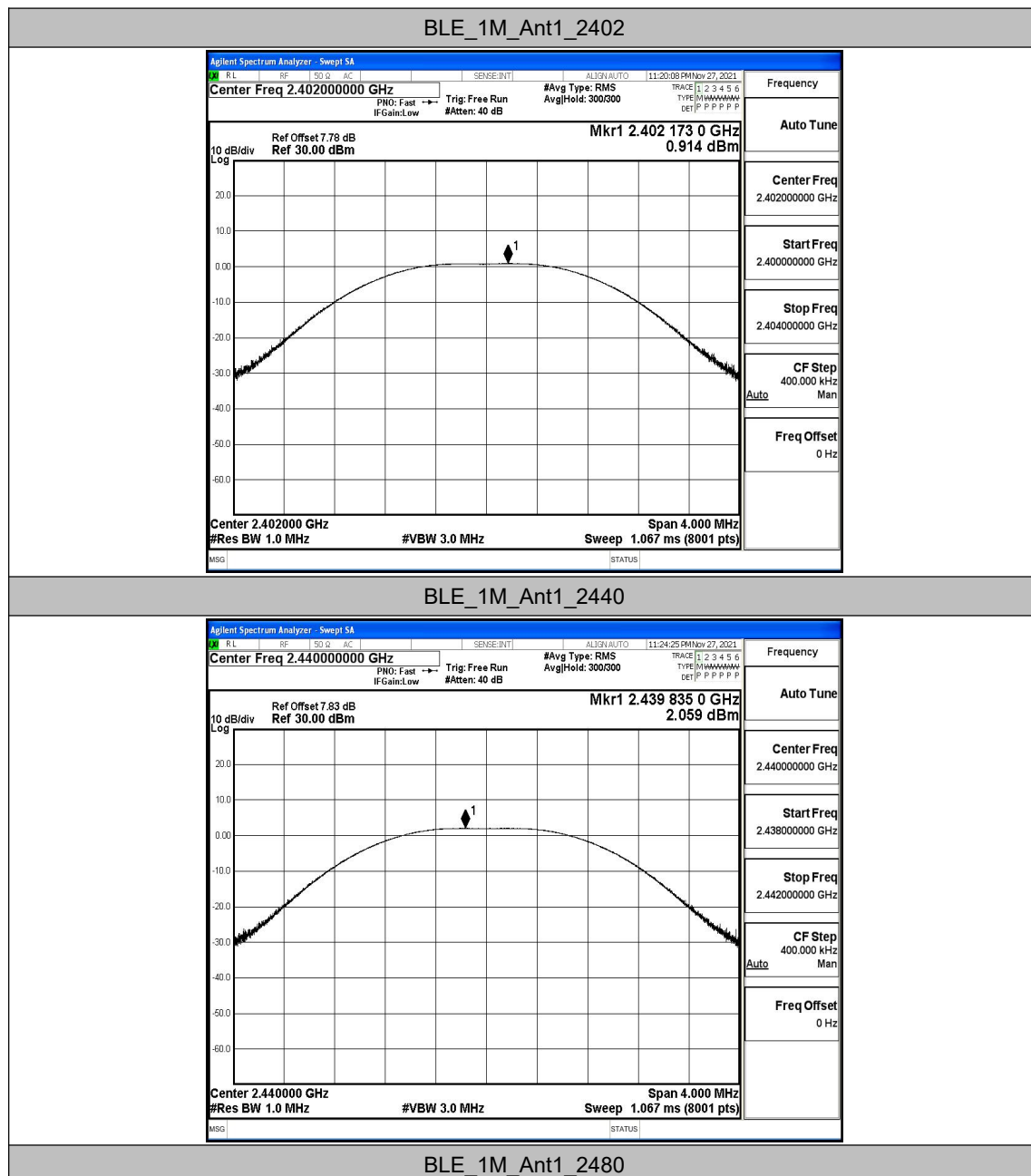


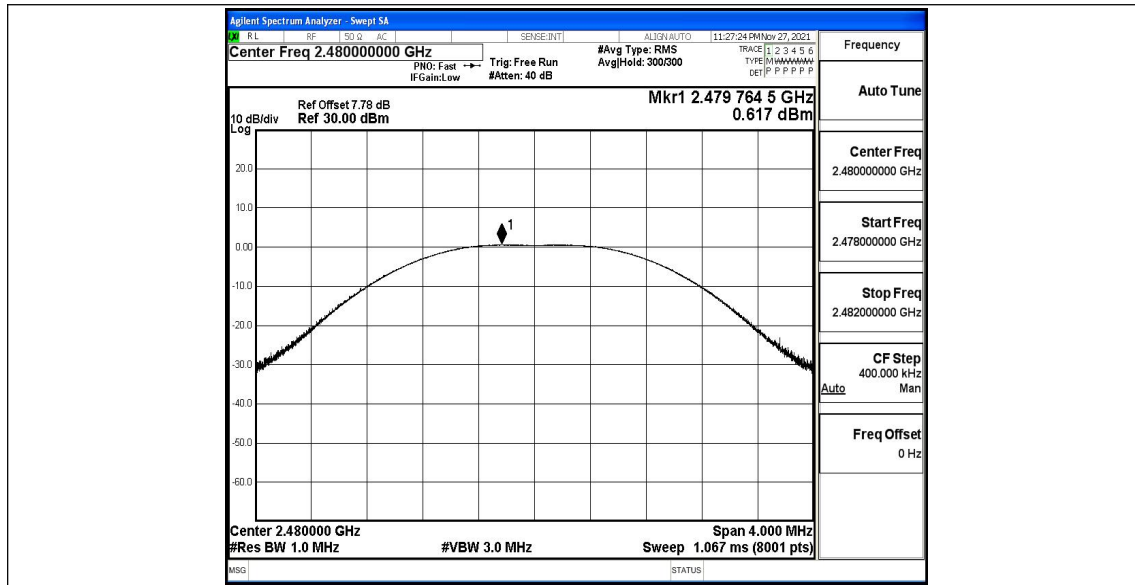
B.2 Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.91	≤30	PASS
		2440	2.06	≤30	PASS
		2480	0.62	≤30	PASS

Test Graphs





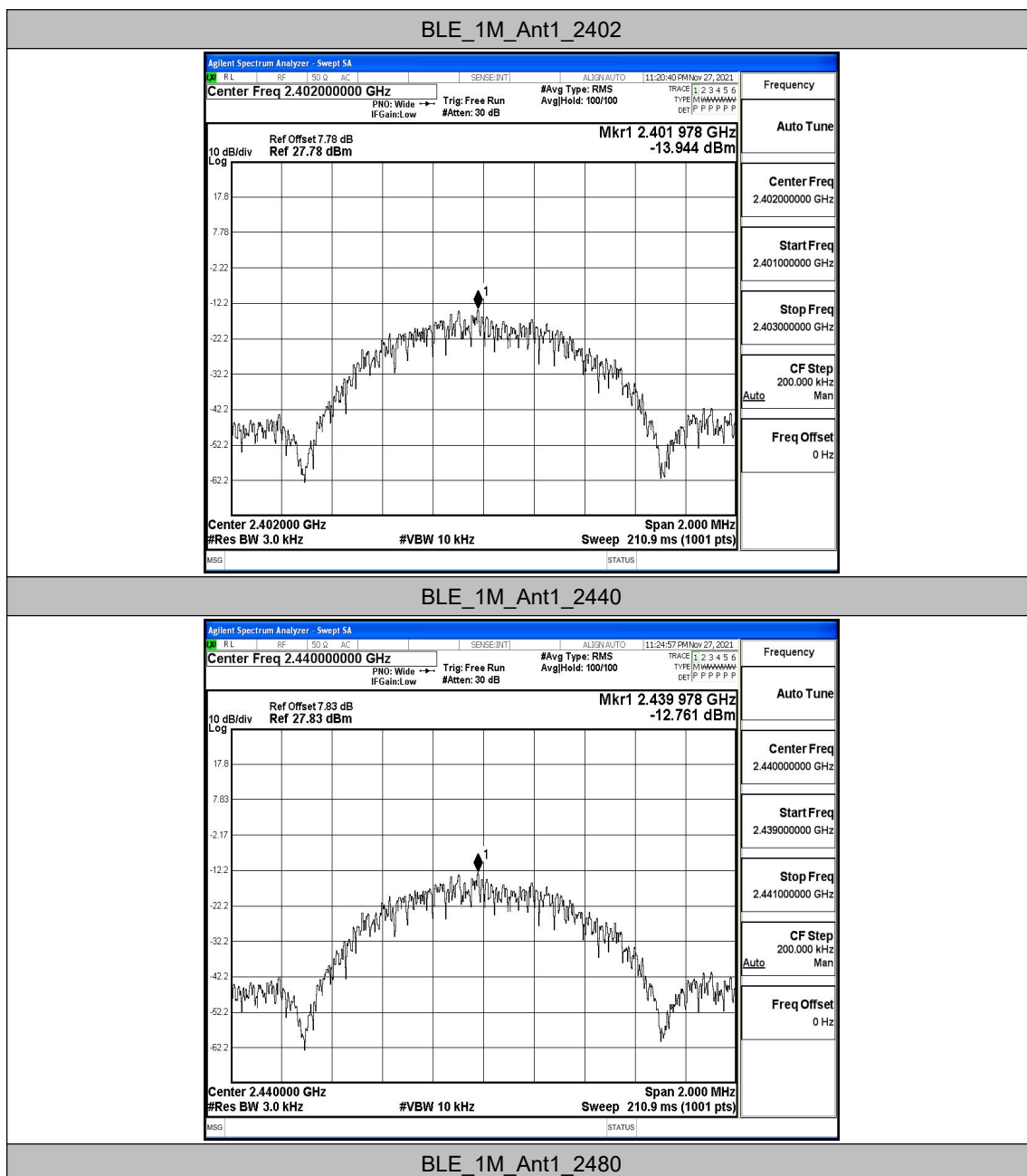


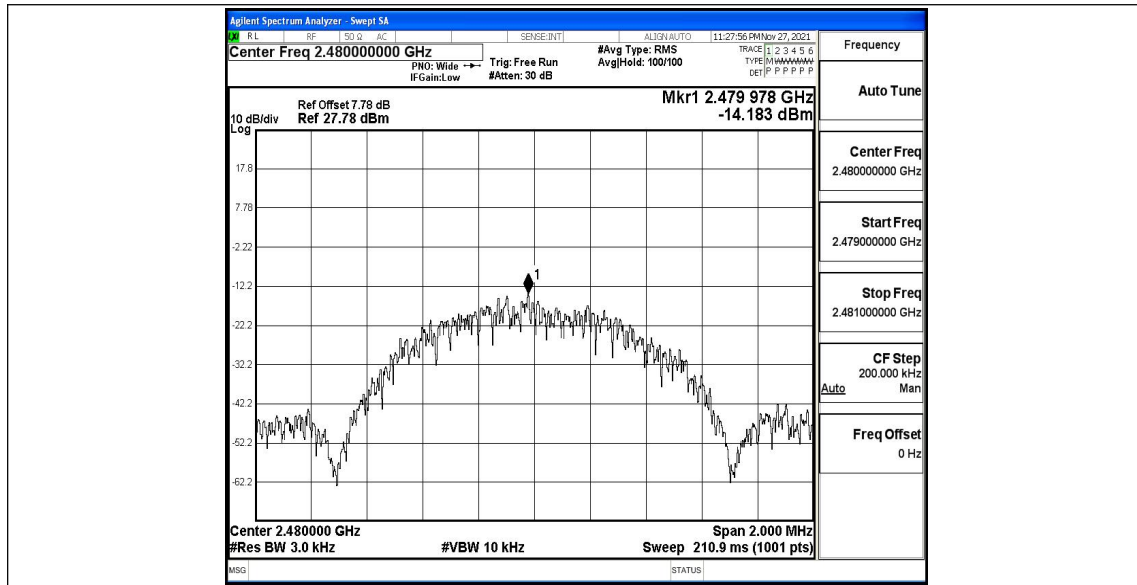
B.3 Maximum power spectral density

Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-13.94	≤8	PASS
		2440	-12.76	≤8	PASS
		2480	-14.18	≤8	PASS

Test Graphs





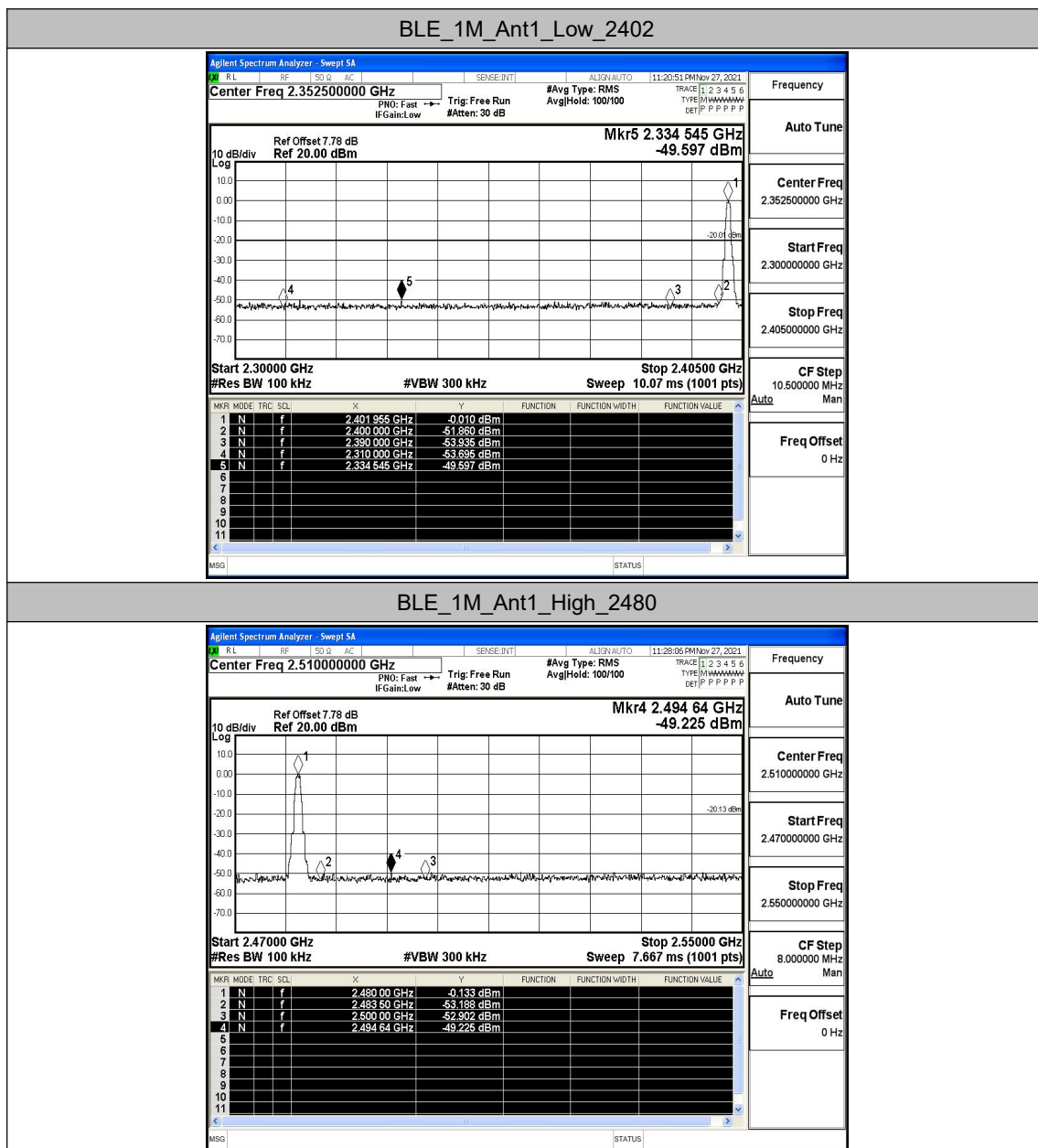


B.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.01	-49.6	≤-20.01	PASS
		High	2480	-0.13	-49.23	≤-20.13	PASS

Test Graphs



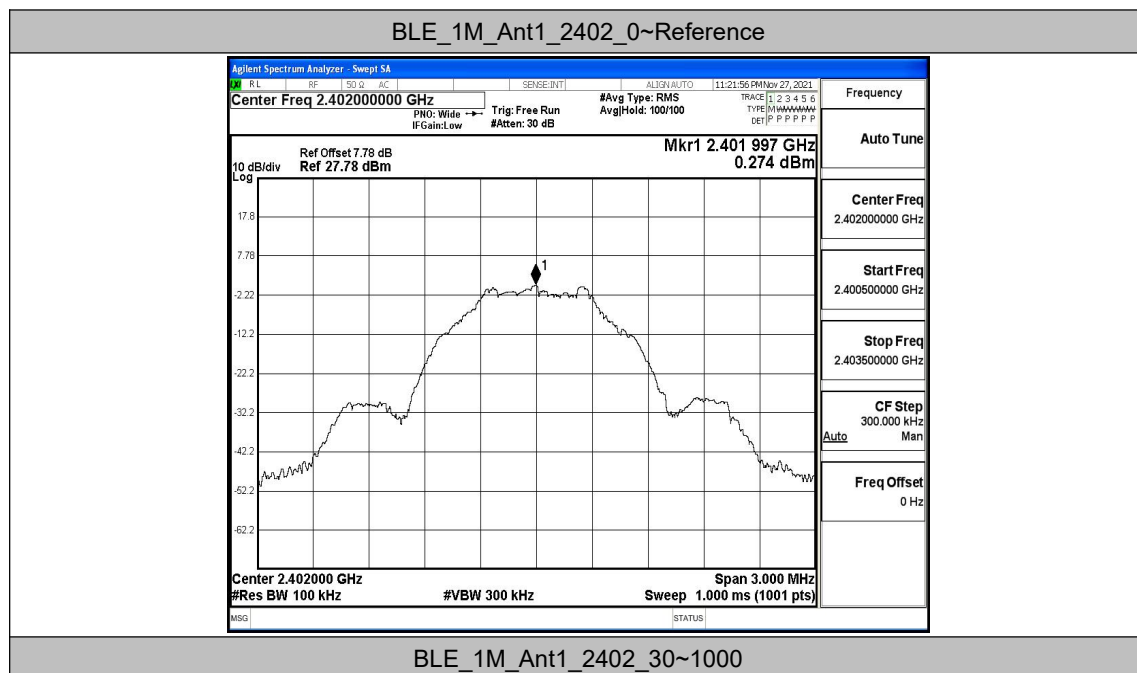


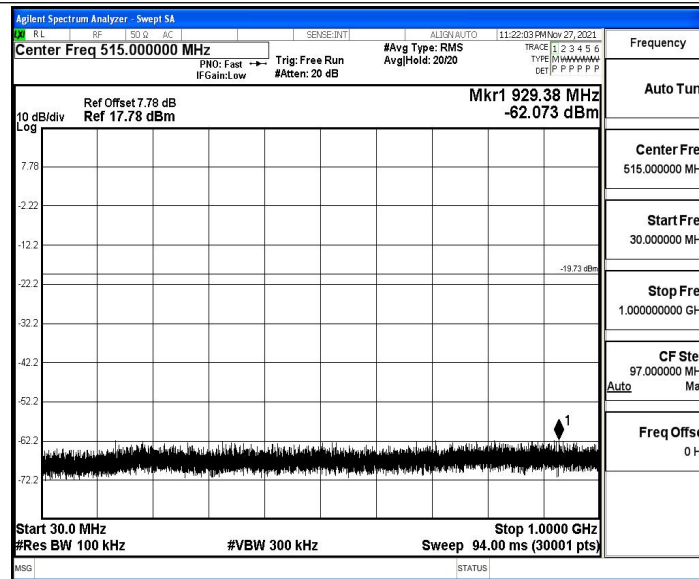
B.5 Conducted Spurious Emission

Test Result

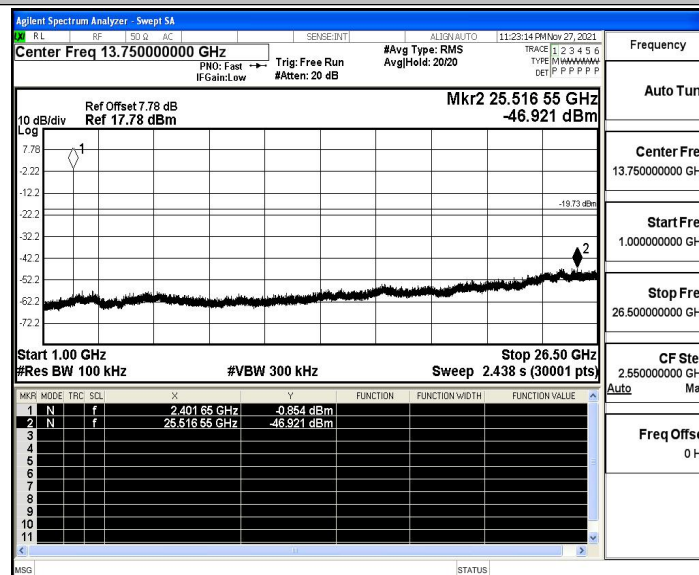
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	0.27	0.27	---	PASS
			30~1000	0.27	-62.07	≤-19.73	PASS
			1000~26500	0.27	-46.92	≤-19.73	PASS
		2440	Reference	1.26	1.26	---	PASS
			30~1000	1.26	-61.59	≤-18.74	PASS
			1000~26500	1.26	-46.92	≤-18.74	PASS
		2480	Reference	-0.09	-0.09	---	PASS
			30~1000	-0.09	-61.11	≤-20.09	PASS
			1000~26500	-0.09	-47.14	≤-20.09	PASS

Test Graphs

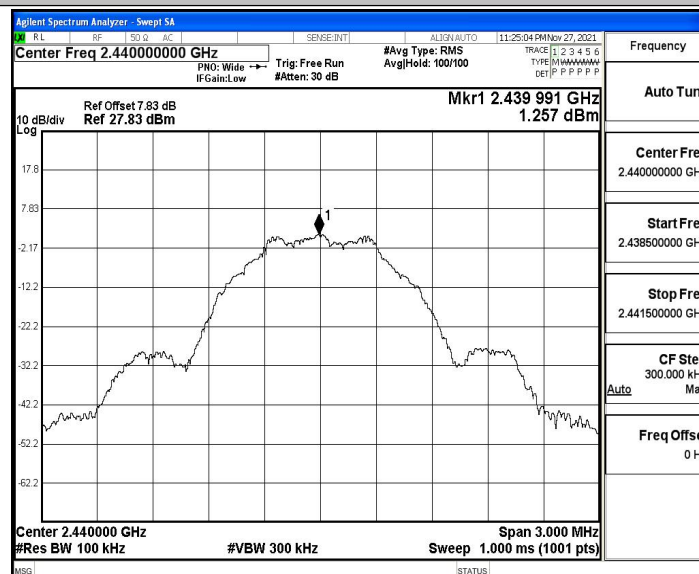




BLE_1M_Ant1_2402_1000~26500

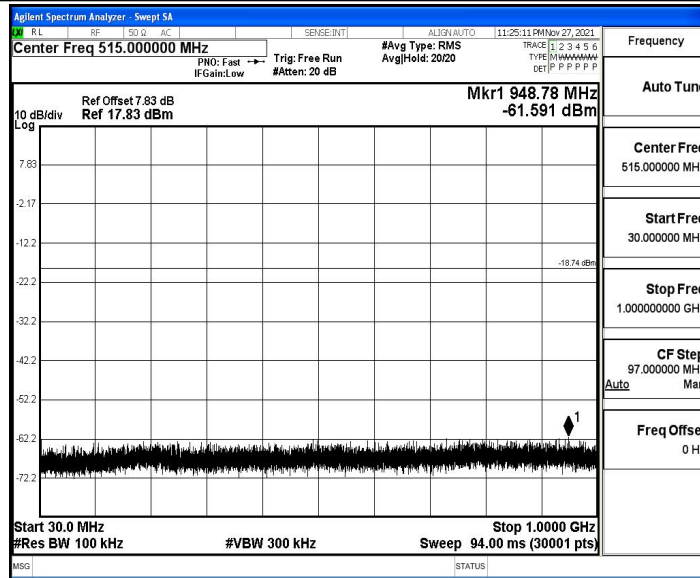


BLE_1M_Ant1_2440_0~Reference

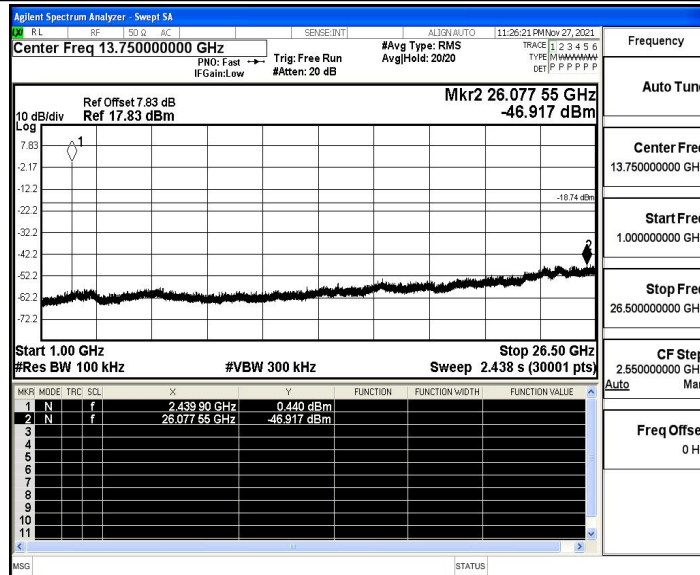




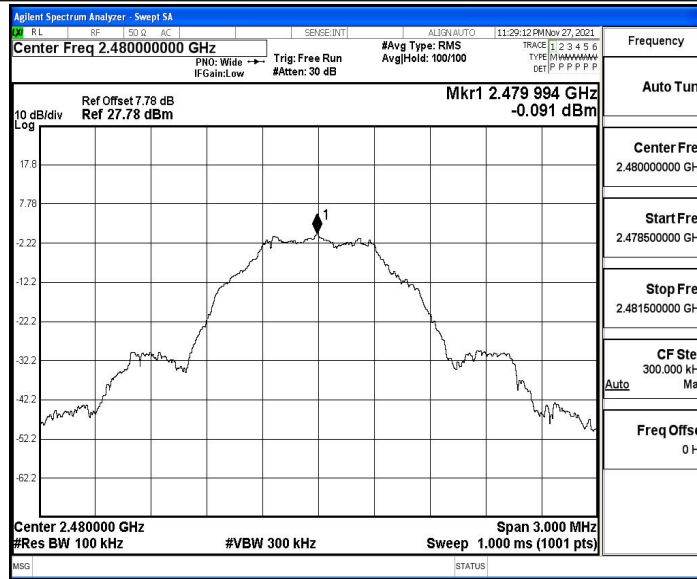
BLE_1M_Ant1_2440_30~1000



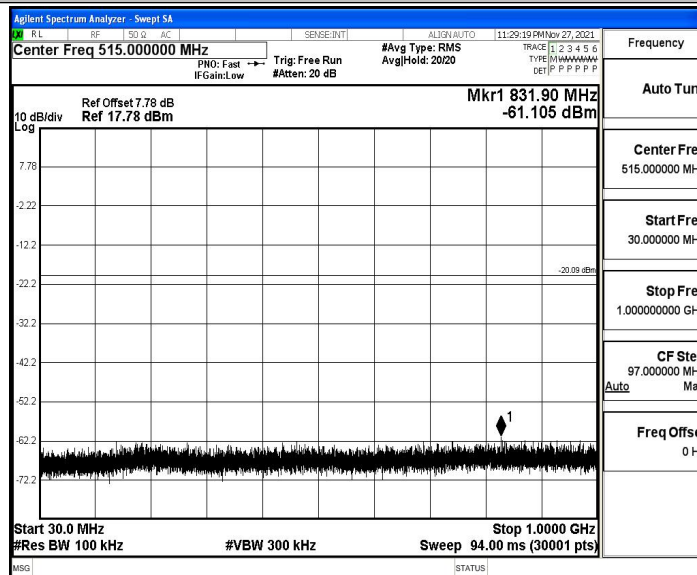
BLE_1M_Ant1_2440_1000~26500



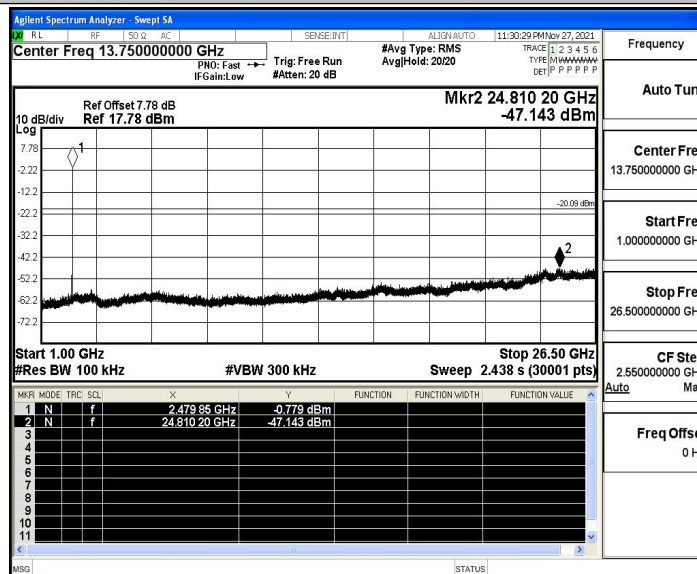
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



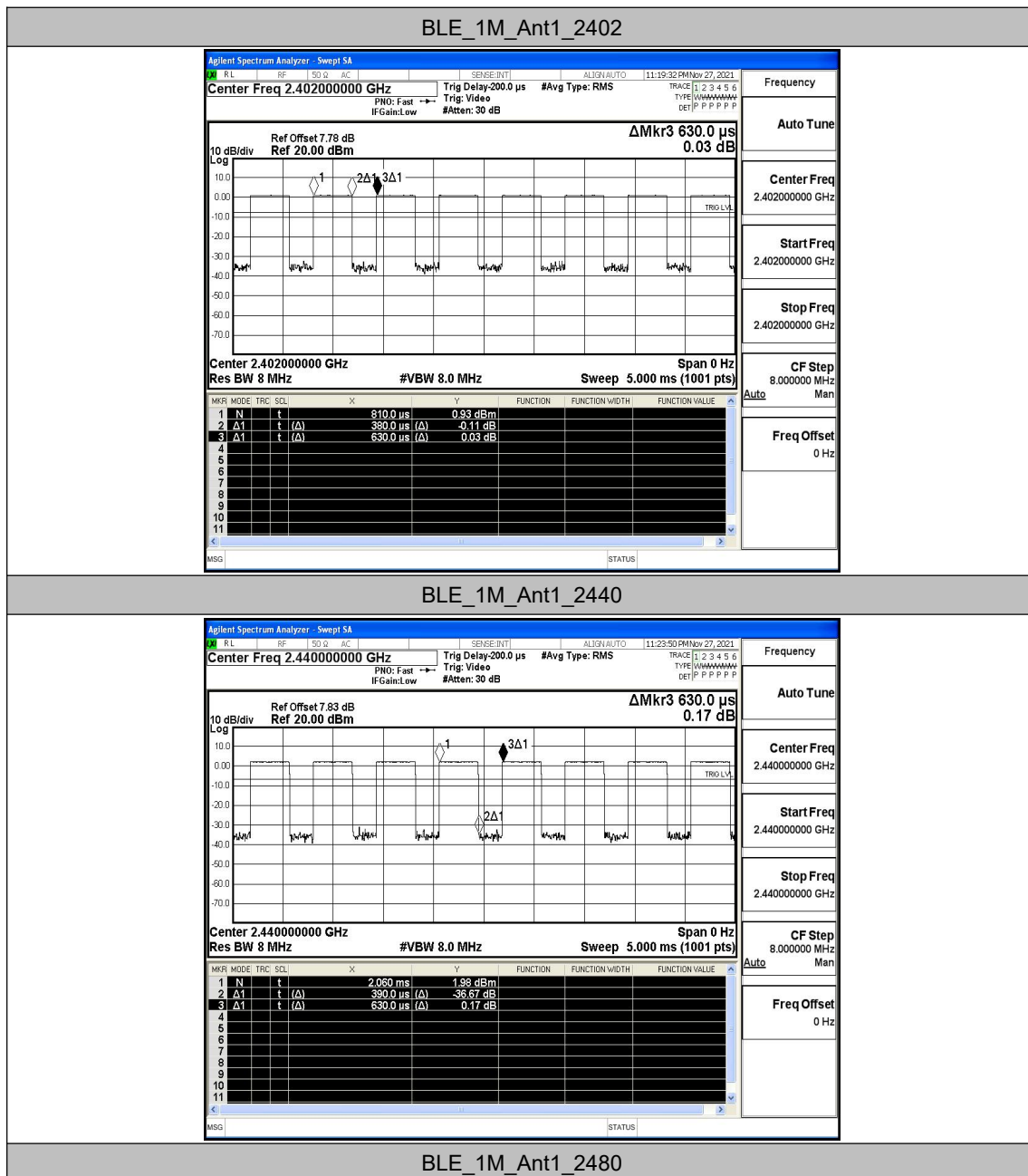


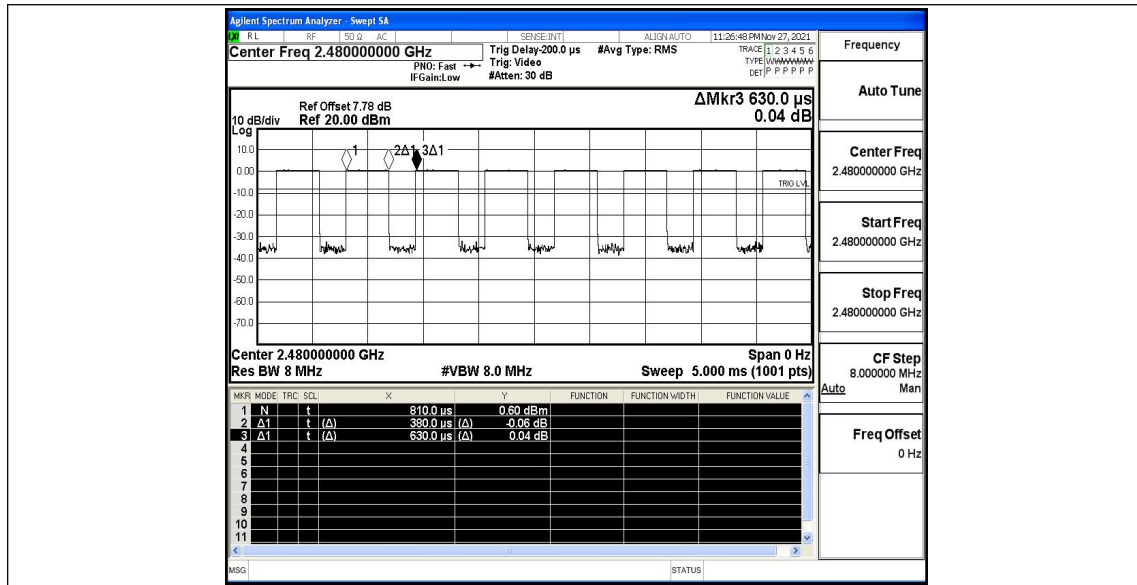
B.6 Duty Cycle

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	0.39	0.63	0.6190	61.90	2.08	---	PASS
		2480	0.38	0.63	0.6032	60.32	2.20	---	PASS

Test Graphs







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	-48.32	≤-41.20	46.88	≤54	PASS
				AV	2384.630	-47.61	≤-41.20	47.59	≤54	PASS
				AV	2390.000	-48.12	≤-41.20	47.08	≤54	PASS
				Peak	2310.000	-42	≤-21.20	53.20	≤74	PASS
				Peak	2359.010	-38.99	≤-21.20	56.21	≤74	PASS
				Peak	2390.000	-42.13	≤-21.20	53.07	≤74	PASS
		High	2480	AV	2483.500	-46.94	≤-41.20	48.26	≤54	PASS
				AV	2483.520	-46.93	≤-41.20	48.27	≤54	PASS
				AV	2500.000	-47.2	≤-41.20	48.00	≤54	PASS
				Peak	2483.500	-39.35	≤-21.20	55.85	≤74	PASS
				Peak	2499.520	-38.32	≤-21.20	56.88	≤74	PASS
				Peak	2500.000	-41.08	≤-21.20	54.12	≤74	PASS

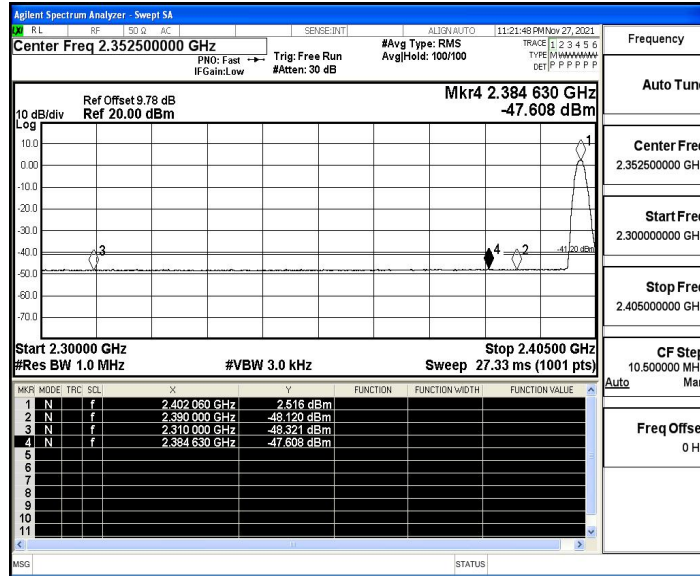
Note:

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.

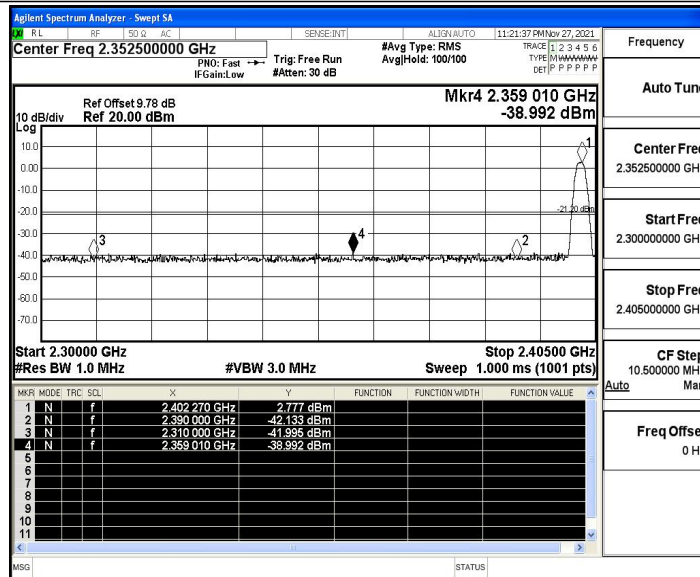


Test Graphs

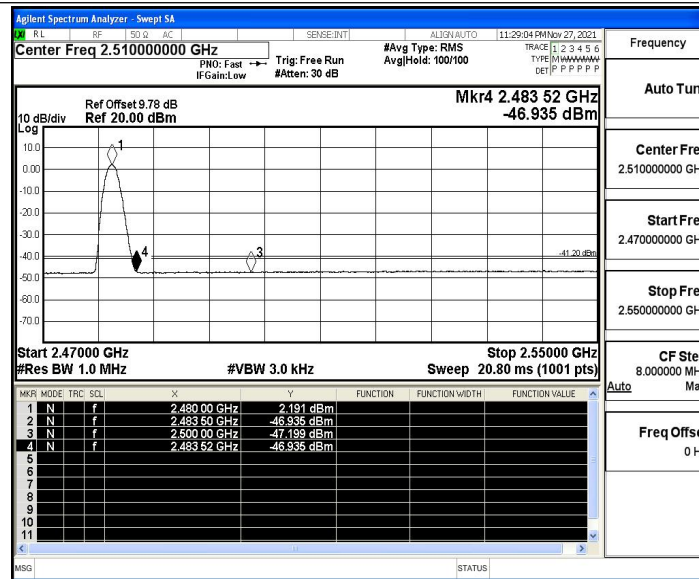
BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak

