



Appendix A

RF Test Data for BLE (Conducted Measurement)

Product Name: 3-Axis Smartphone Stabilizer

Test Model: SMART X

Environmental Conditions

Temperature:	21.1 ° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Mark Chen
Supervised by:	Libin

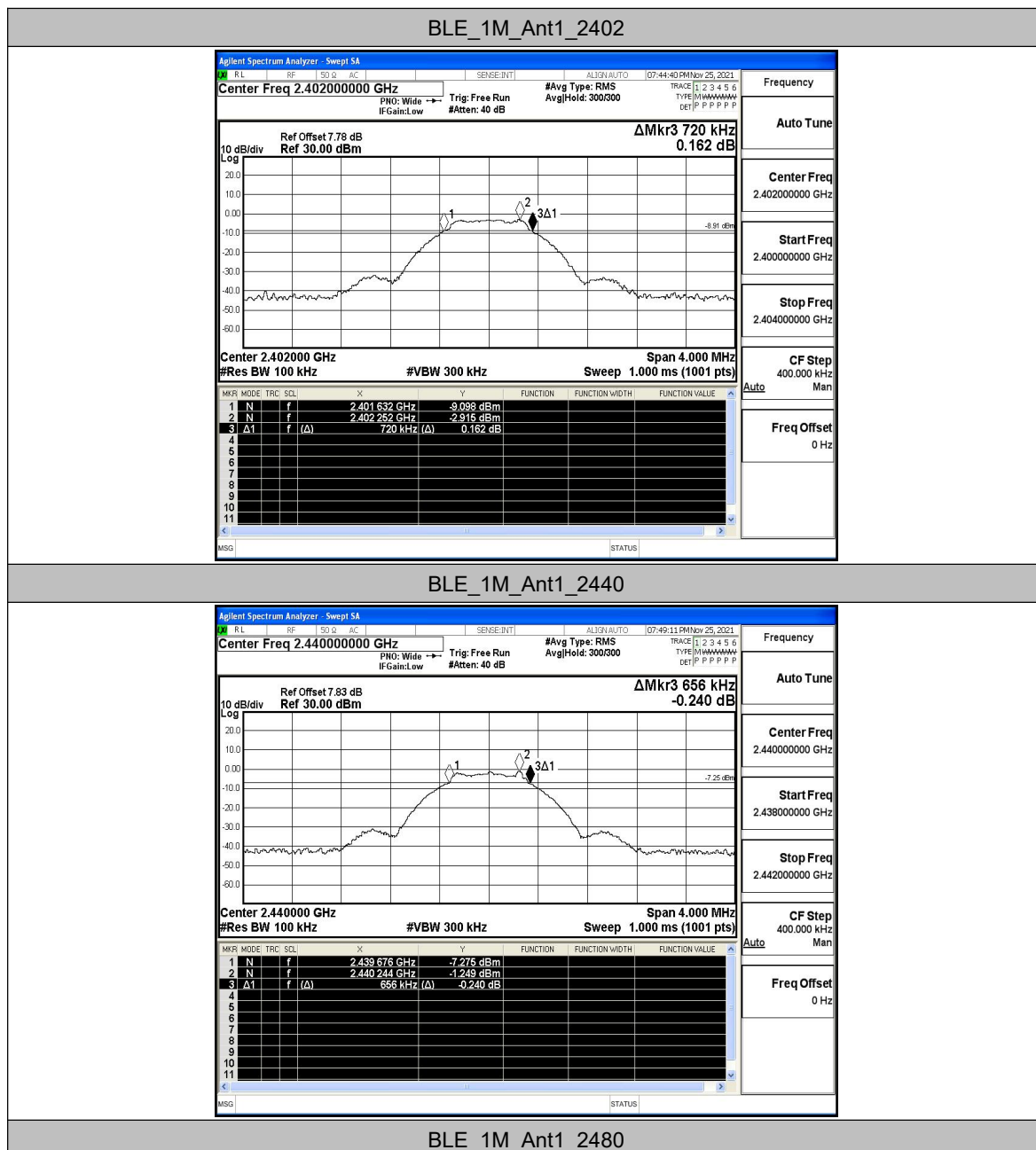


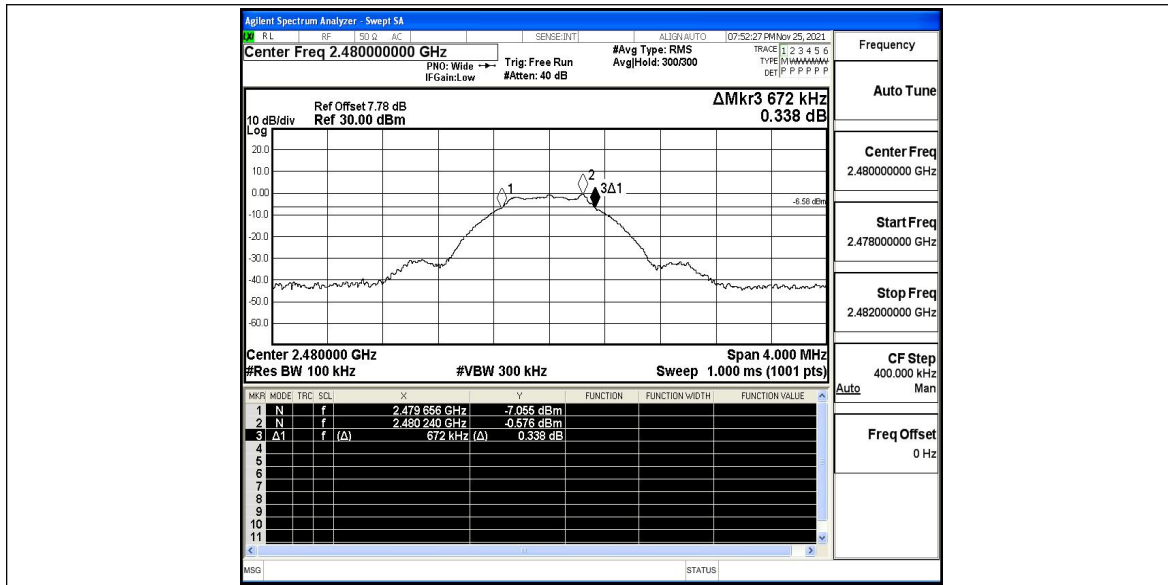
A.1 DTS Bandwidth

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.720	2401.632	2402.352	≥0.5	PASS
		2440	0.656	2439.676	2440.332	≥0.5	PASS
		2480	0.672	2479.656	2480.328	≥0.5	PASS

Test Graphs





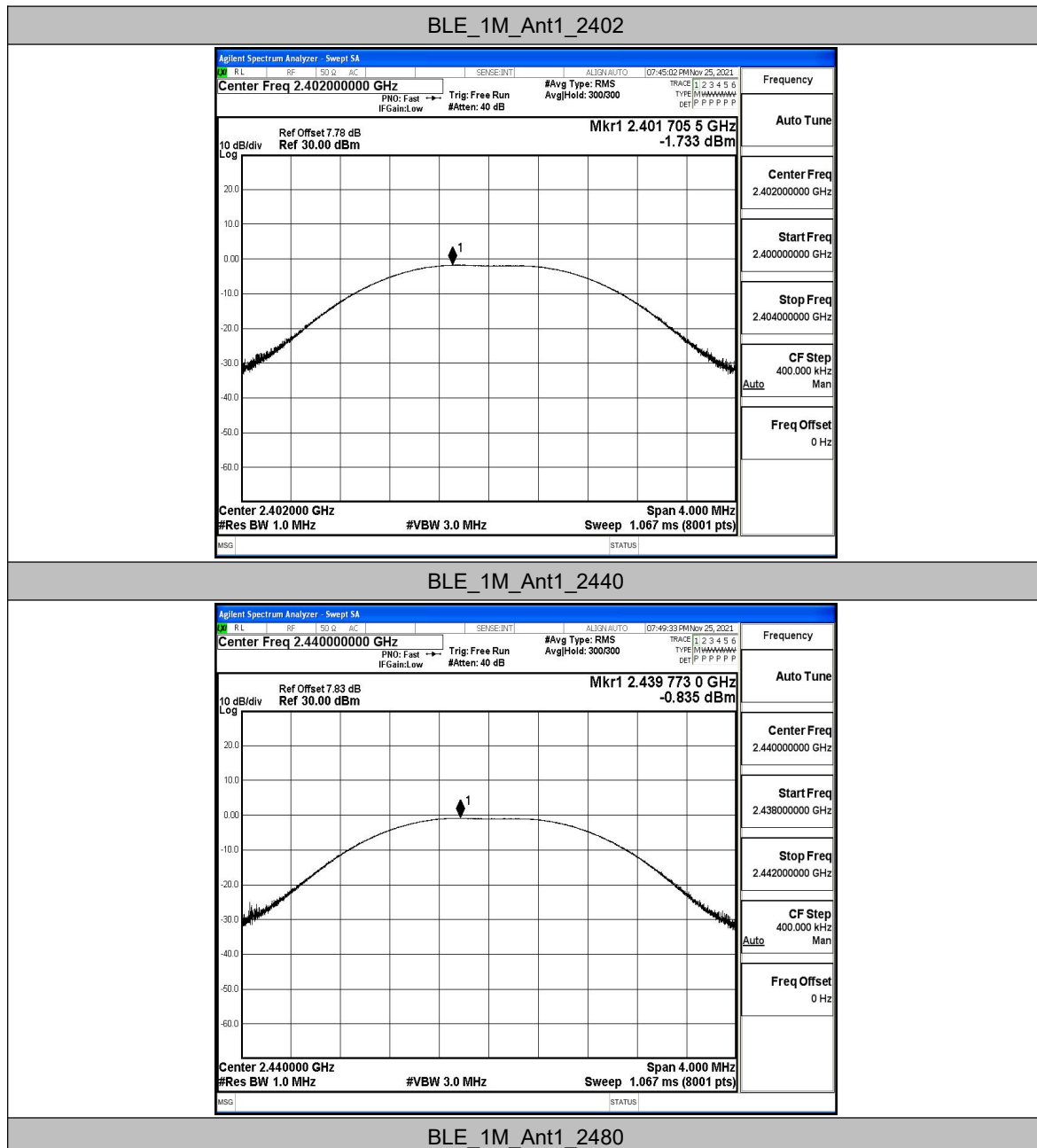


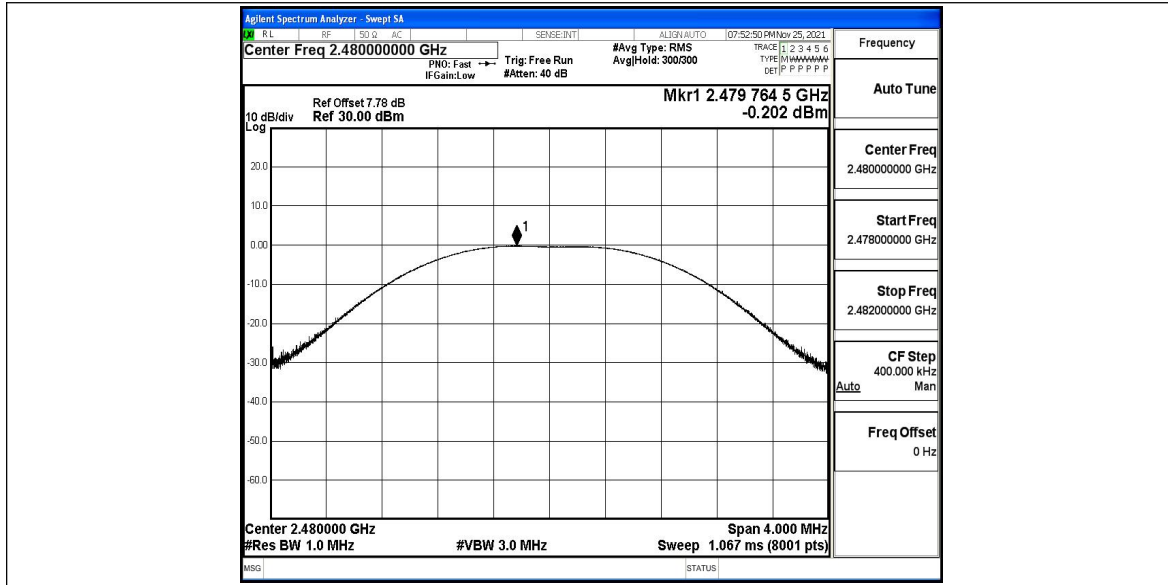
A.2 Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-1.73	≤30	PASS
		2440	-0.84	≤30	PASS
		2480	-0.2	≤30	PASS

Test Graphs





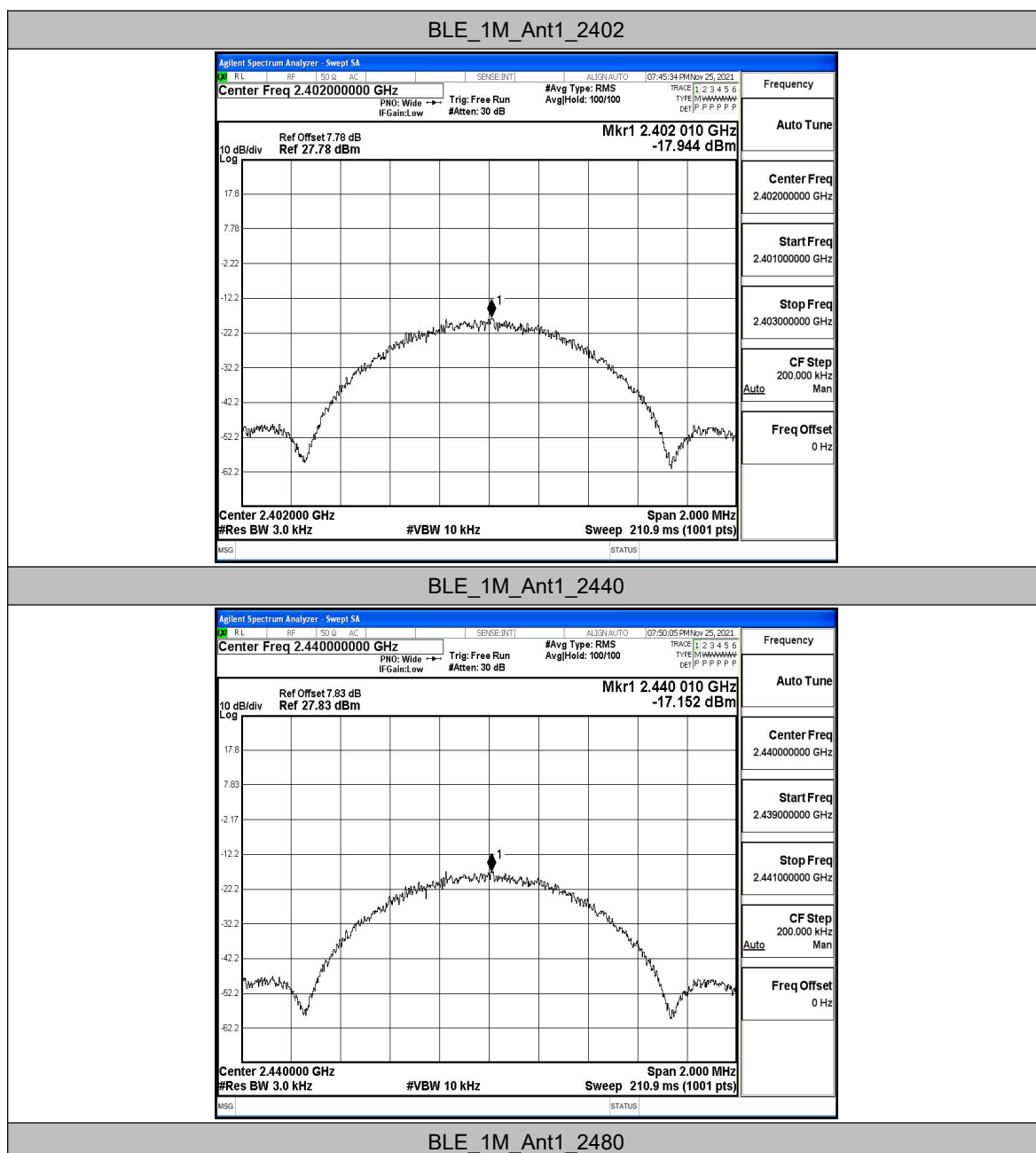


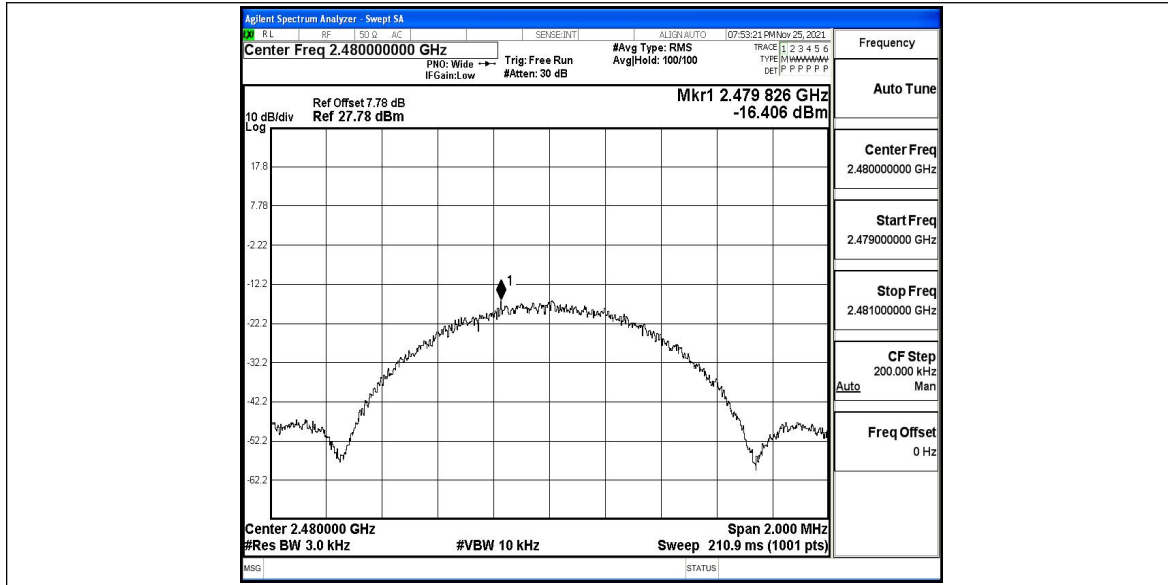
A.3 Maximum power spectral density

Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-17.94	≤8	PASS
		2440	-17.15	≤8	PASS
		2480	-16.41	≤8	PASS

Test Graphs





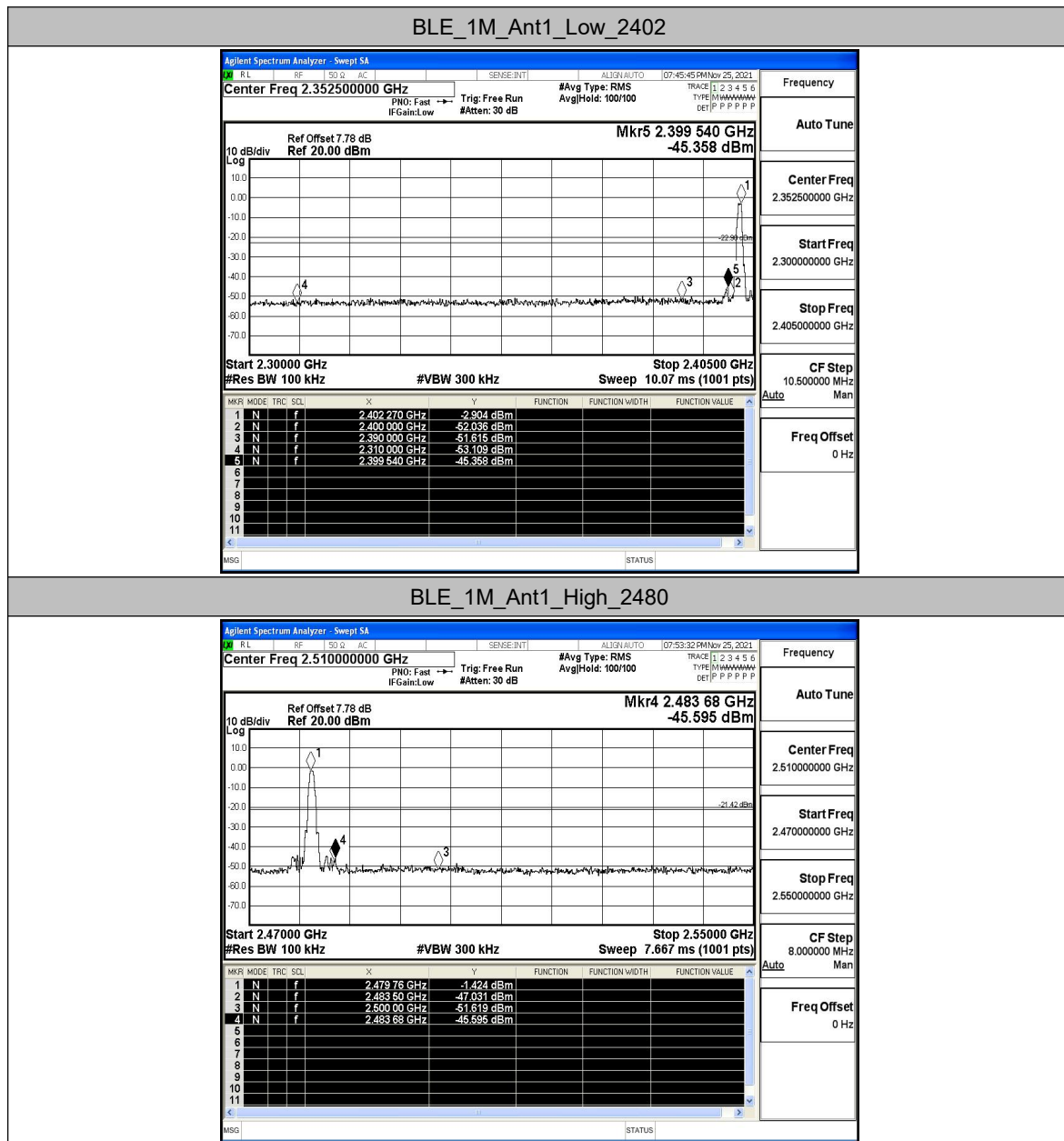


A.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-2.90	-45.36	≤-22.9	PASS
		High	2480	-1.42	-45.6	≤-21.42	PASS

Test Graphs





A.5 Conducted Spurious Emission

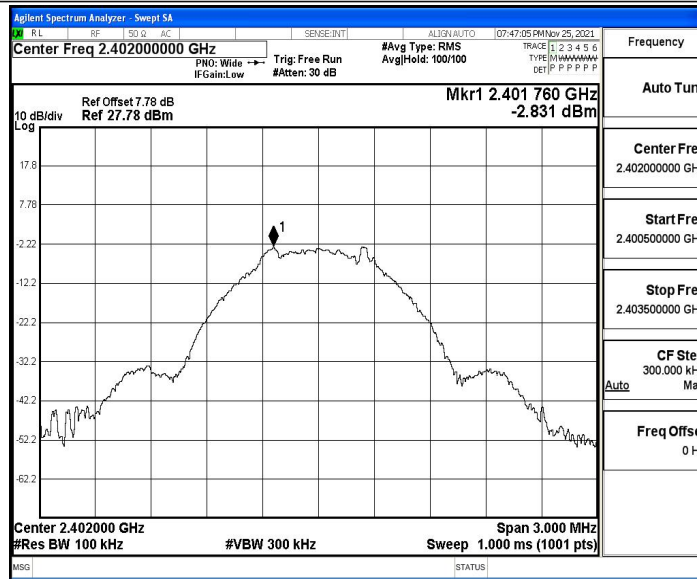
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-2.83	-2.83	---	PASS
			30~1000	-2.83	-59.74	≤-22.83	PASS
			1000~26500	-2.83	-47.11	≤-22.83	PASS
		2440	Reference	-1.79	-1.79	---	PASS
			30~1000	-1.79	-58.59	≤-21.79	PASS
			1000~26500	-1.79	-46.57	≤-21.79	PASS
		2480	Reference	-0.68	-0.68	---	PASS
			30~1000	-0.68	-59.54	≤-20.68	PASS
			1000~26500	-0.68	-47.01	≤-20.68	PASS

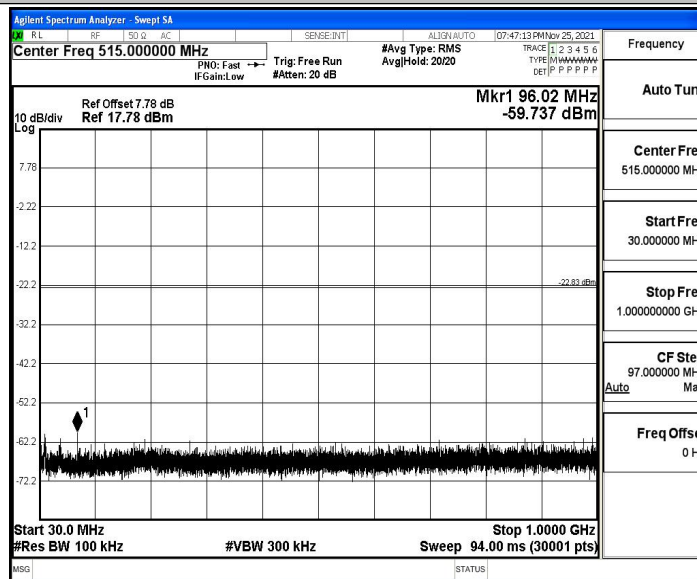


Test Graphs

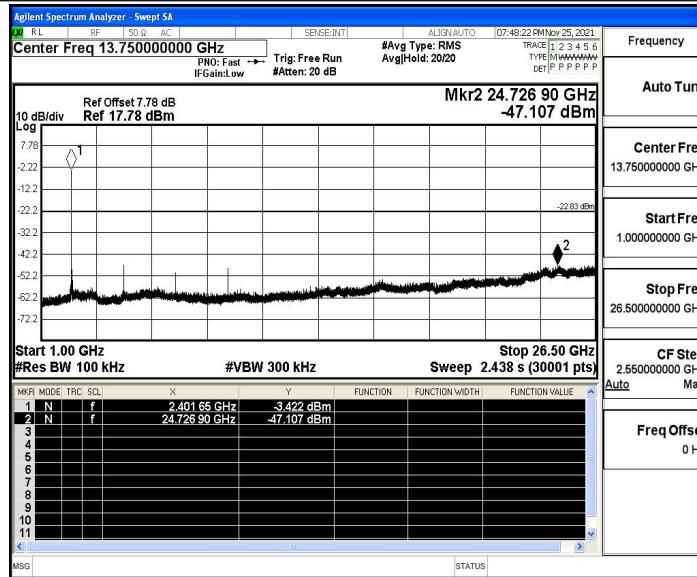
BLE_1M_Ant1_2402_0~Reference



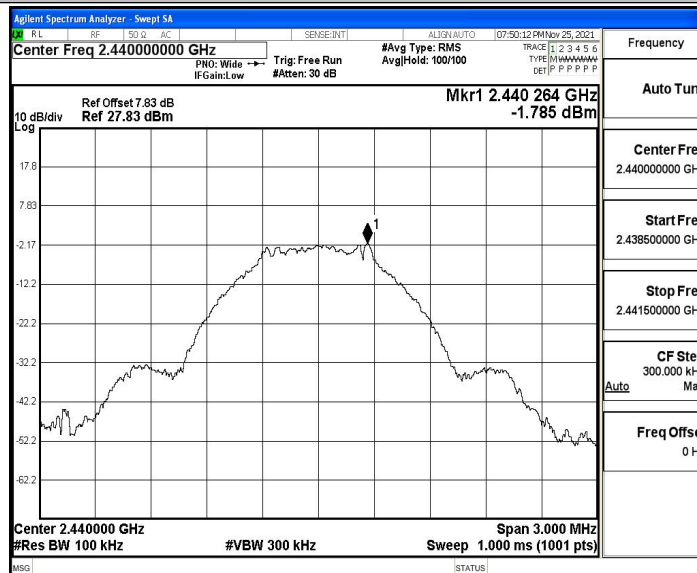
BLE_1M_Ant1_2402_30~1000



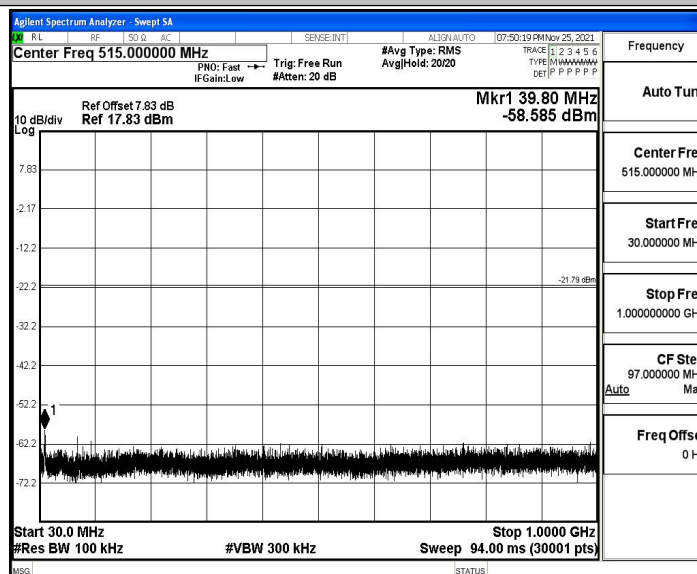
BLE_1M_Ant1_2402_1000~26500



BLE_1M_Ant1_2440_0~Reference

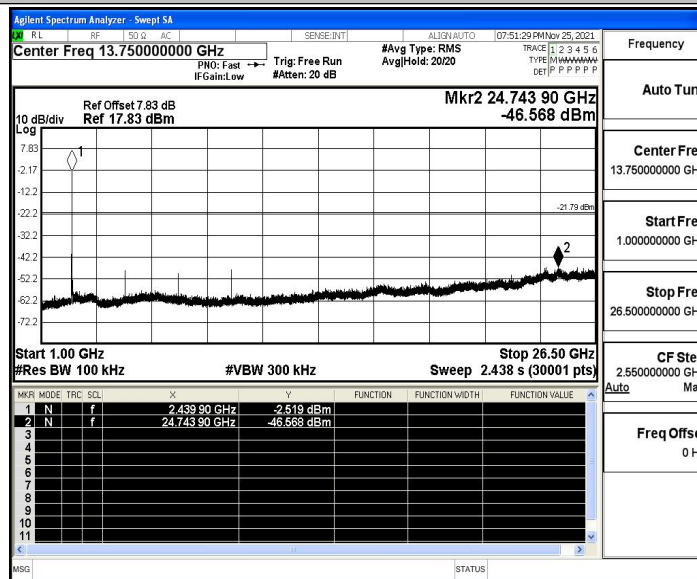


BLE_1M_Ant1_2440_30~1000

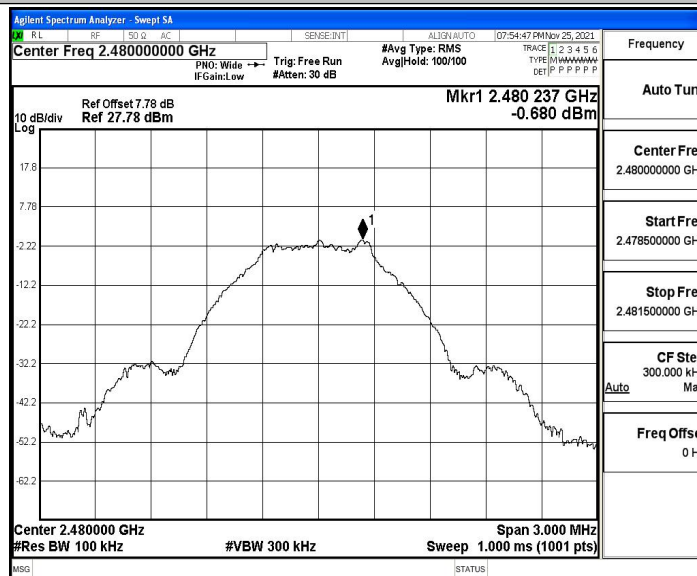




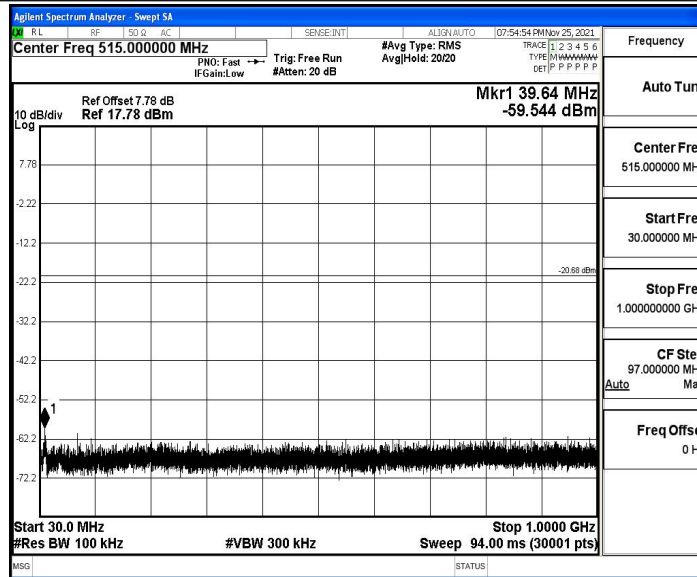
BLE_1M_Ant1_2440_1000~26500



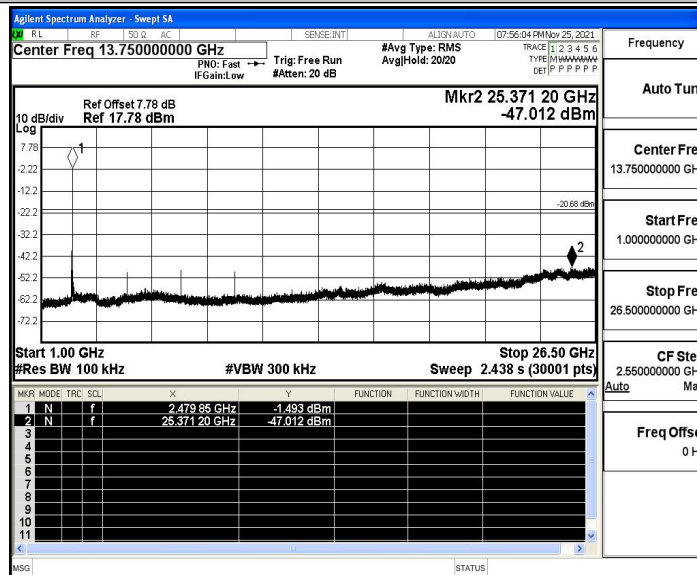
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



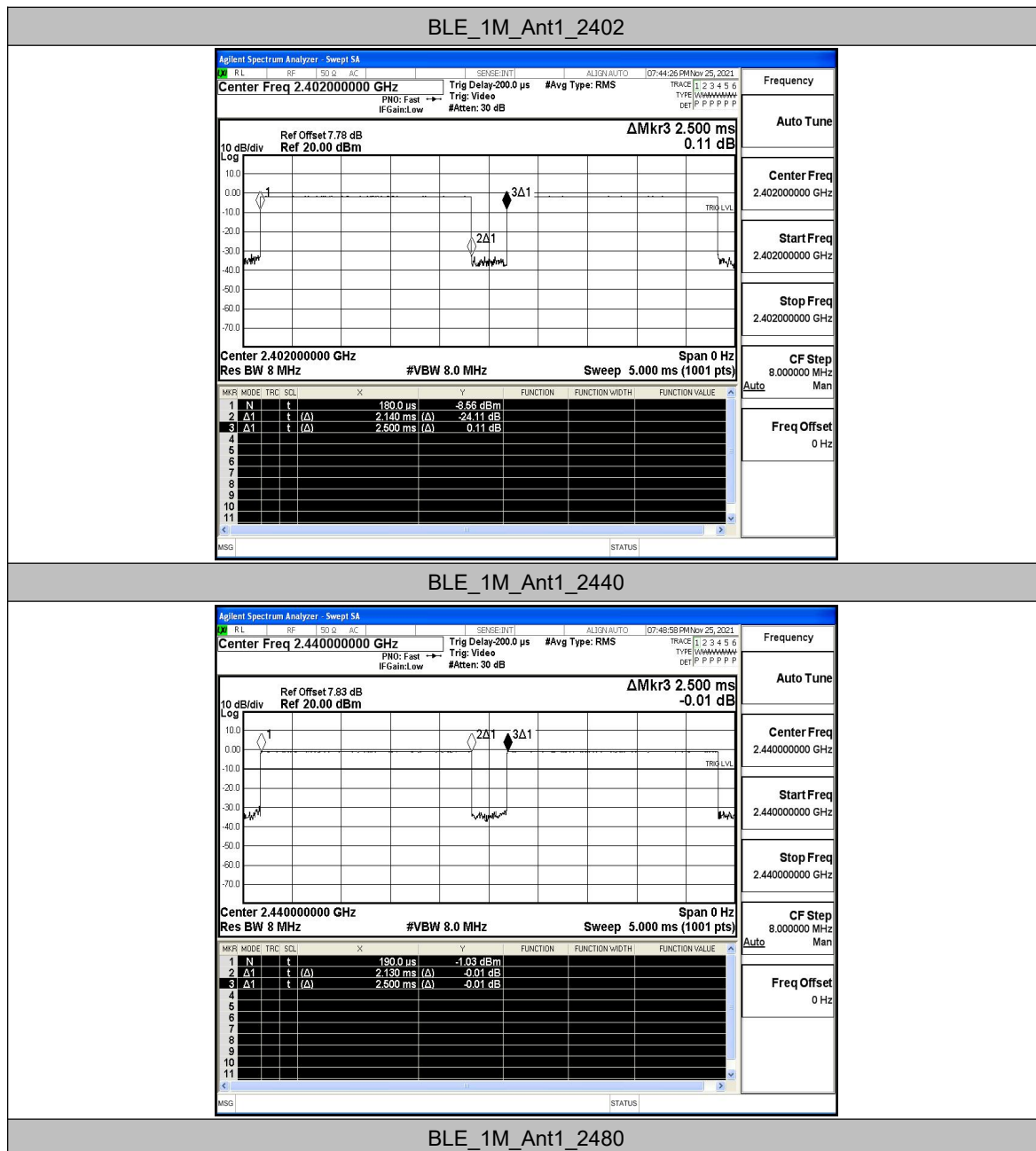


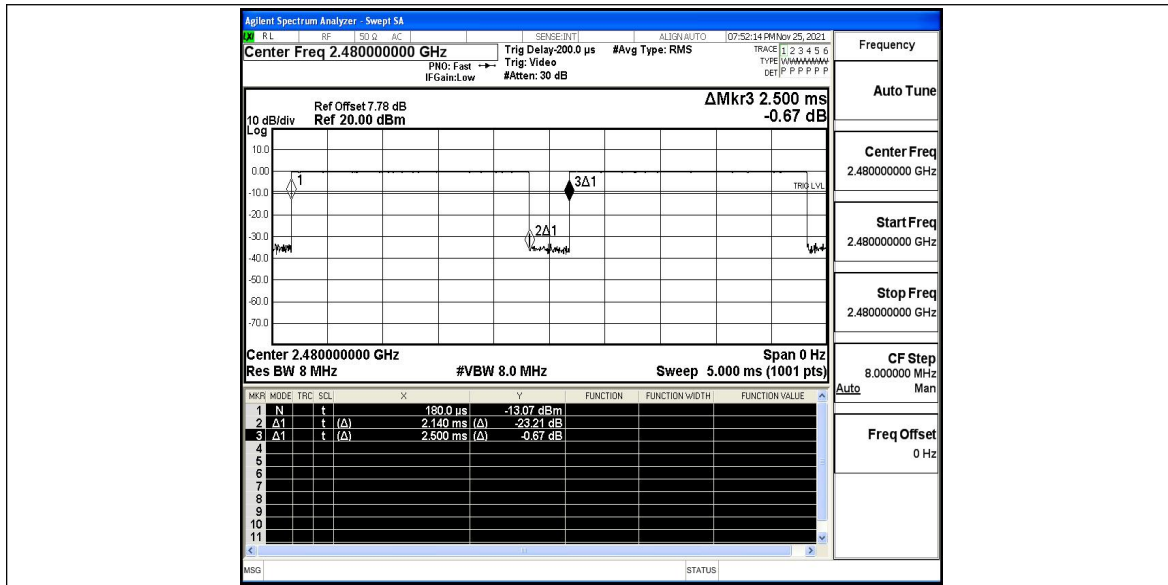
A.6 Duty Cycle

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	2.13	2.50	0.8520	85.20	0.70	---	PASS
		2480	2.14	2.50	0.8560	85.60	0.68	---	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	-48.95	≤-41.20	46.25	≤54	PASS
				AV	2381.165	-47.6	≤-41.20	47.60	≤54	PASS
				AV	2390.000	-48.08	≤-41.20	47.12	≤54	PASS
				Peak	2310.000	-42.12	≤-21.20	53.08	≤74	PASS
				Peak	2384.105	-37.86	≤-21.20	57.34	≤74	PASS
				Peak	2390.000	-41.27	≤-21.20	53.93	≤74	PASS
		High	2480	AV	2483.500	-43.98	≤-41.20	51.22	≤54	PASS
				AV	2483.520	-43.98	≤-41.20	51.22	≤54	PASS
				AV	2500.000	-46.76	≤-41.20	48.44	≤54	PASS
				Peak	2483.500	-38.1	≤-21.20	57.10	≤74	PASS
				Peak	2483.600	-36.9	≤-21.20	58.30	≤74	PASS
				Peak	2500.000	-39.05	≤-21.20	56.15	≤74	PASS

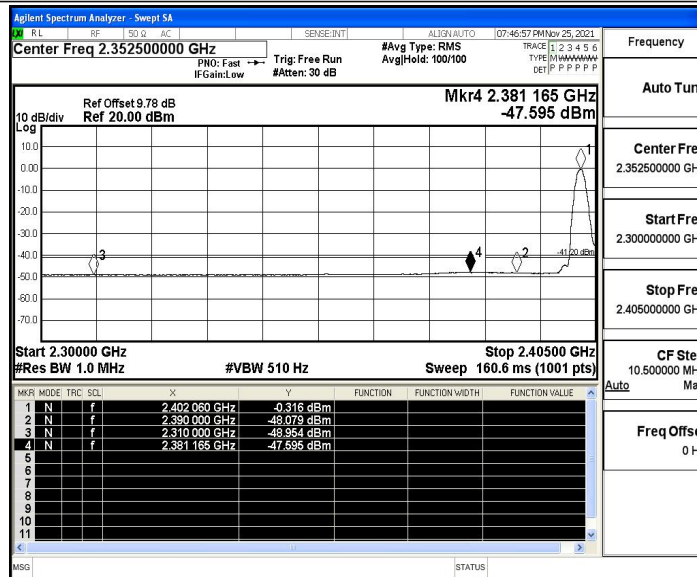
Note:

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.

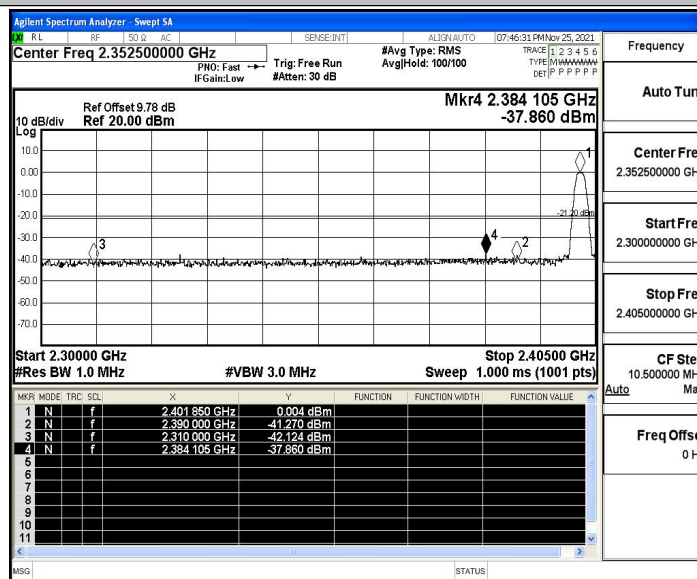


Test Graphs

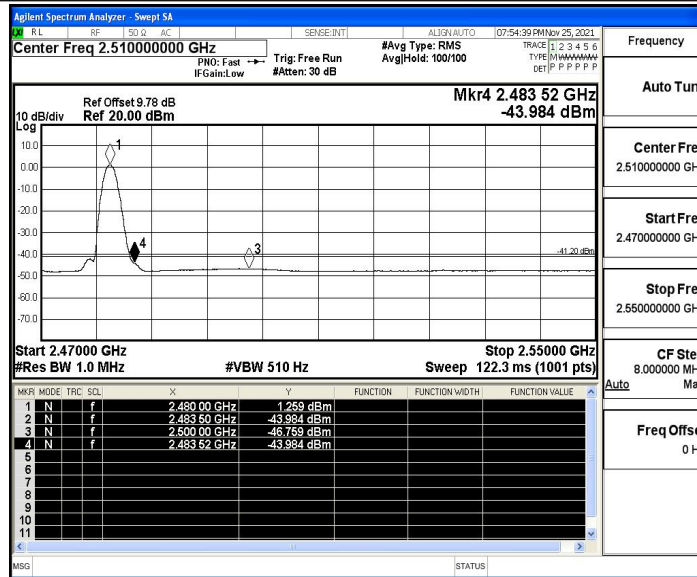
BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak

