



Appendix B

RF Test Data for BLE (Conducted Measurement)

Product Name: Sweep the pen.Dictionary pen

Trade Mark: N/A

Test Model: S7

Environmental Conditions

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

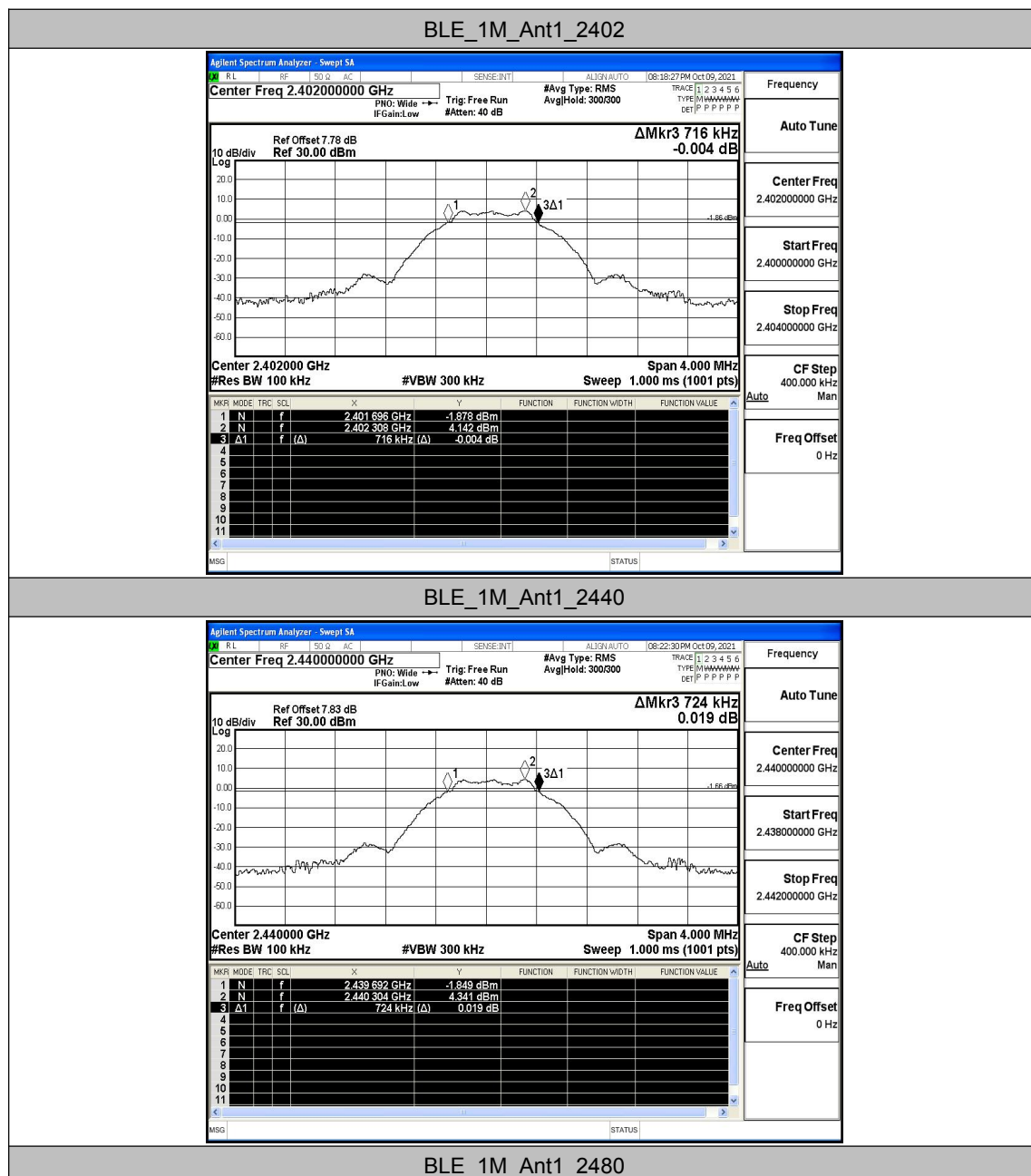


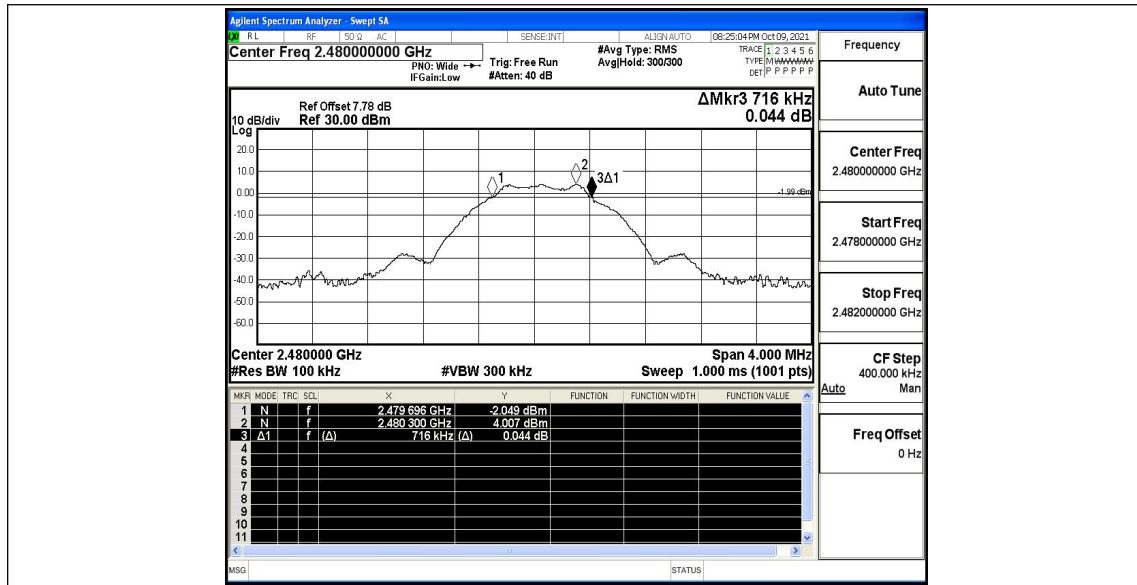
B.1 6dB Bandwidth

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.716	2401.696	2402.412	≥0.5	PASS
		2440	0.724	2439.692	2440.416	≥0.5	PASS
		2480	0.716	2479.696	2480.412	≥0.5	PASS

Test Graphs





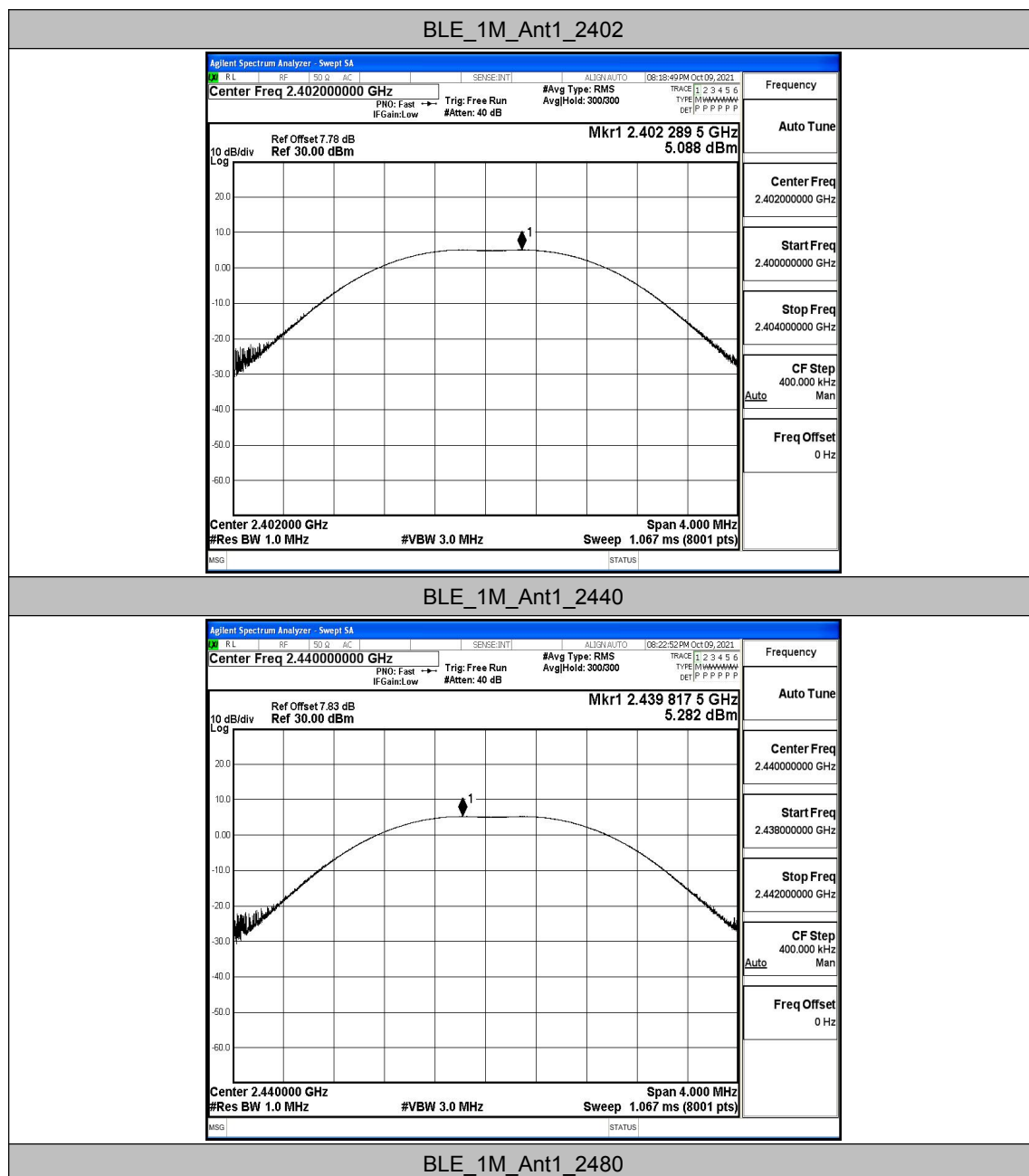


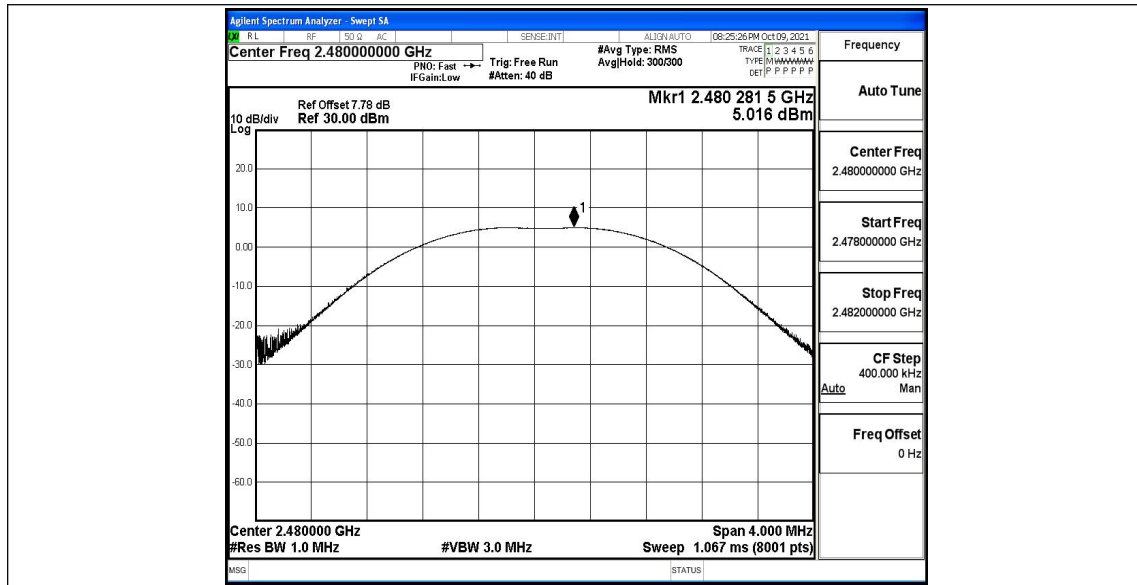
B.2 Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	5.09	≤30	PASS
		2440	5.28	≤30	PASS
		2480	5.02	≤30	PASS

Test Graphs





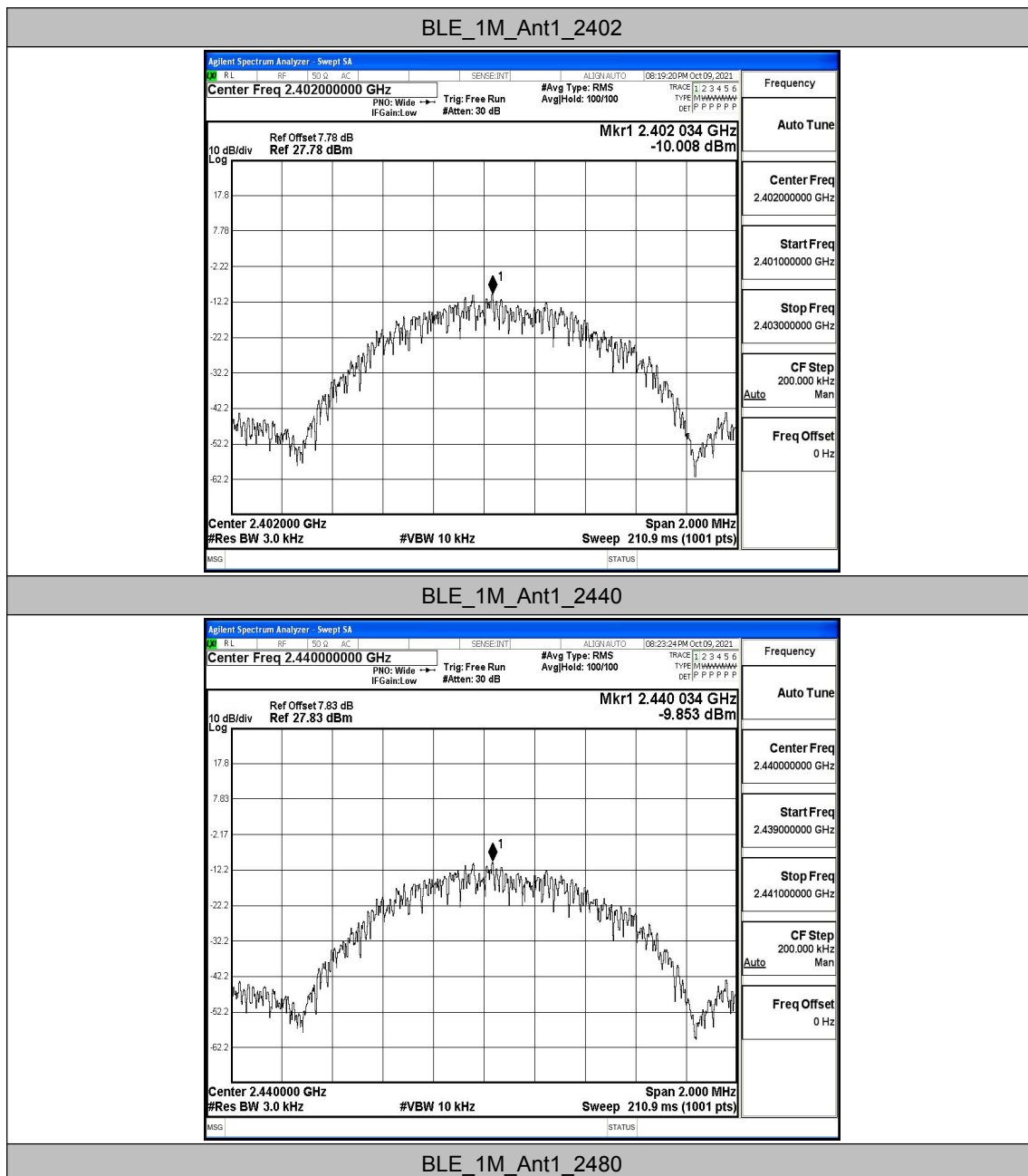


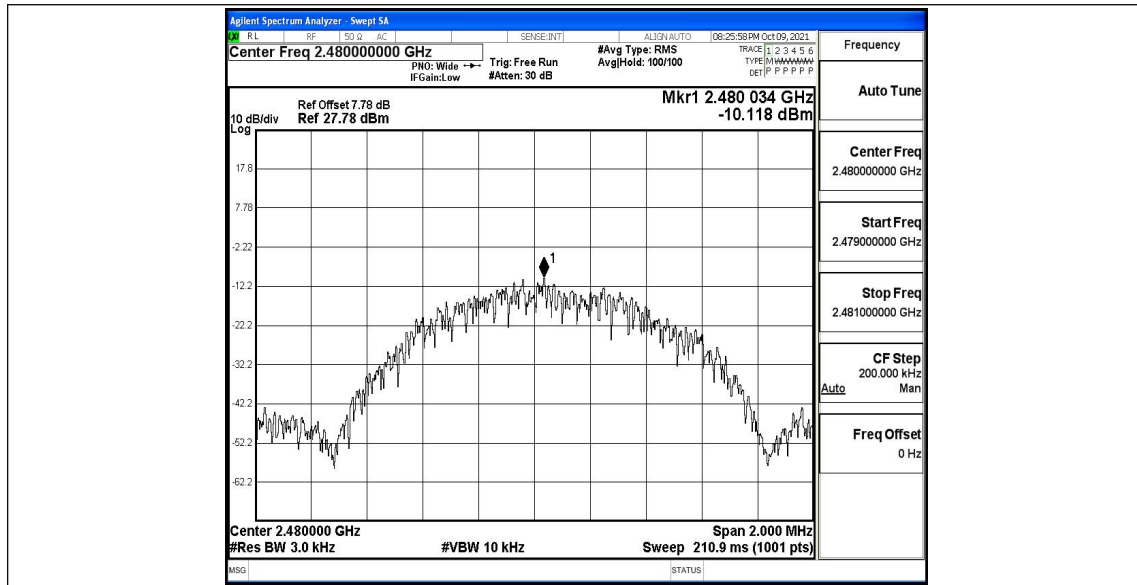
B.3 Maximum power spectral density

Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-10.01	≤8	PASS
		2440	-9.85	≤8	PASS
		2480	-10.12	≤8	PASS

Test Graphs





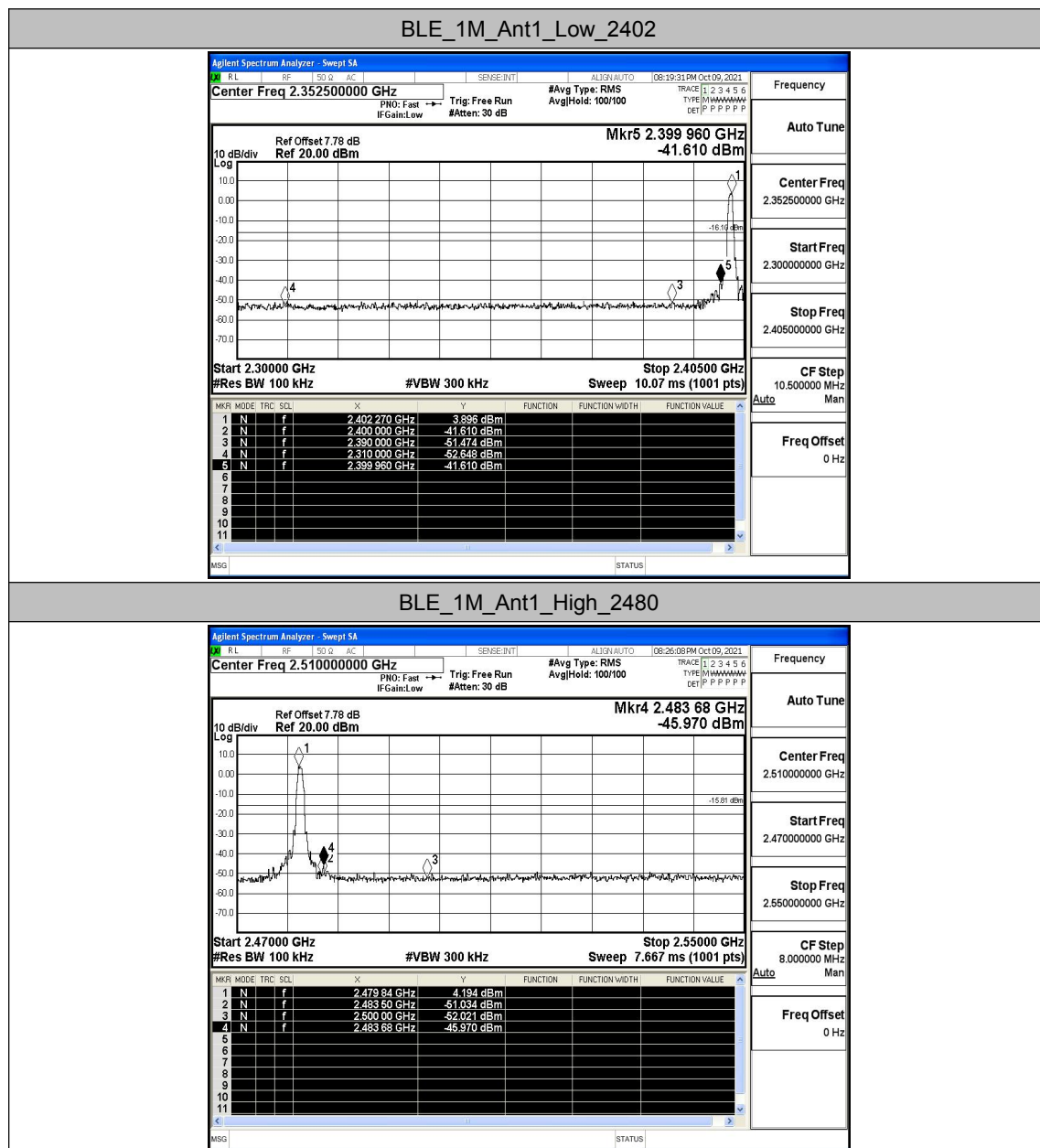


B.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	3.90	-41.61	≤-16.1	PASS
		High	2480	4.19	-45.97	≤-15.81	PASS

Test Graphs



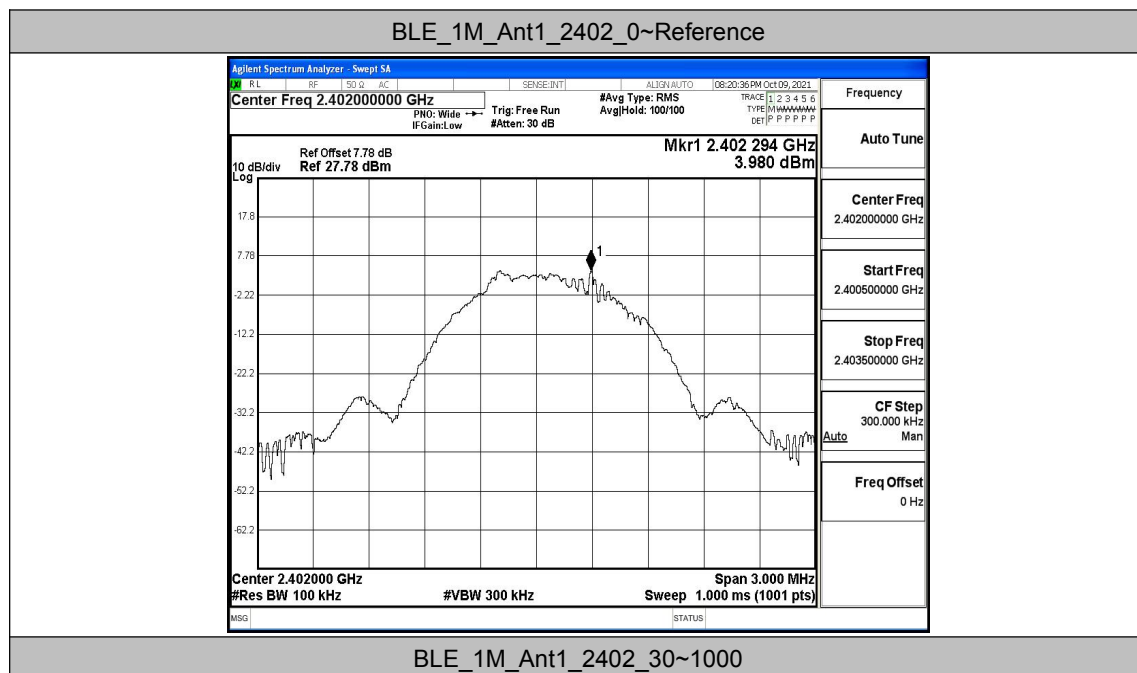


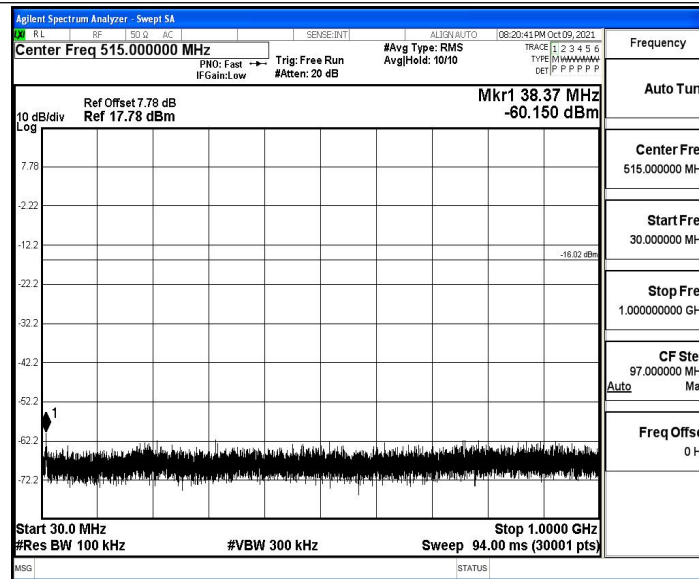
B.5 Conducted Spurious Emission

Test Result

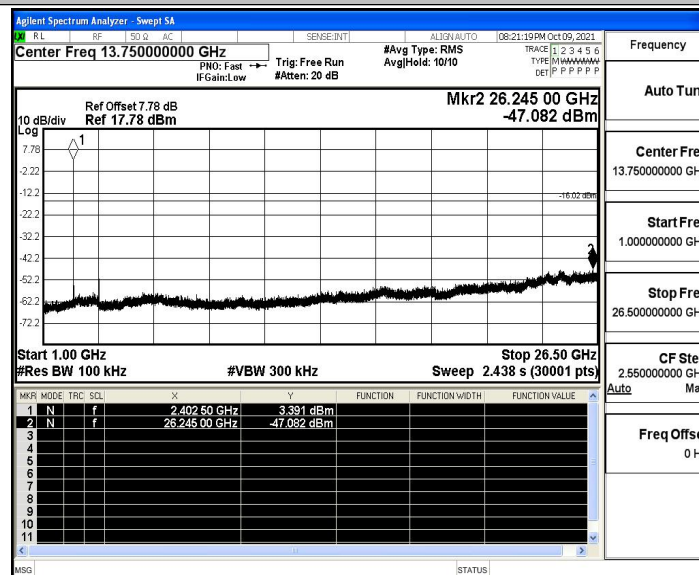
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	3.98	3.98	---	PASS
			30~1000	3.98	-60.15	≤-16.02	PASS
			1000~26500	3.98	-47.08	≤-16.02	PASS
		2440	Reference	4.29	4.29	---	PASS
			30~1000	4.29	-60.48	≤-15.71	PASS
			1000~26500	4.29	-47.04	≤-15.71	PASS
		2480	Reference	4.06	4.06	---	PASS
			30~1000	4.06	-60.26	≤-15.95	PASS
			1000~26500	4.06	-47.25	≤-15.95	PASS

Test Graphs

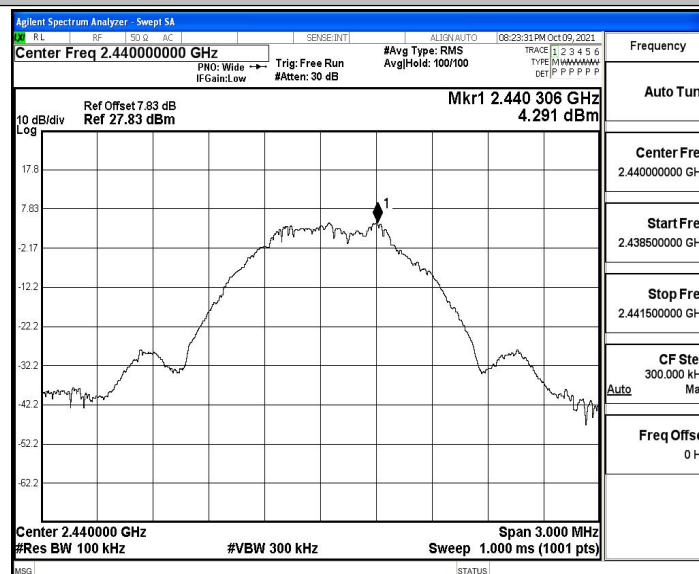




BLE_1M_Ant1_2402_1000~26500

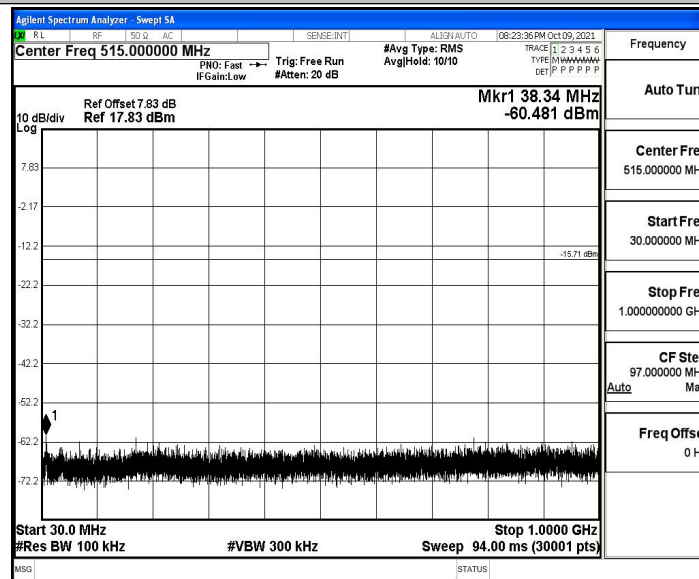


BLE_1M_Ant1_2440_0~Reference

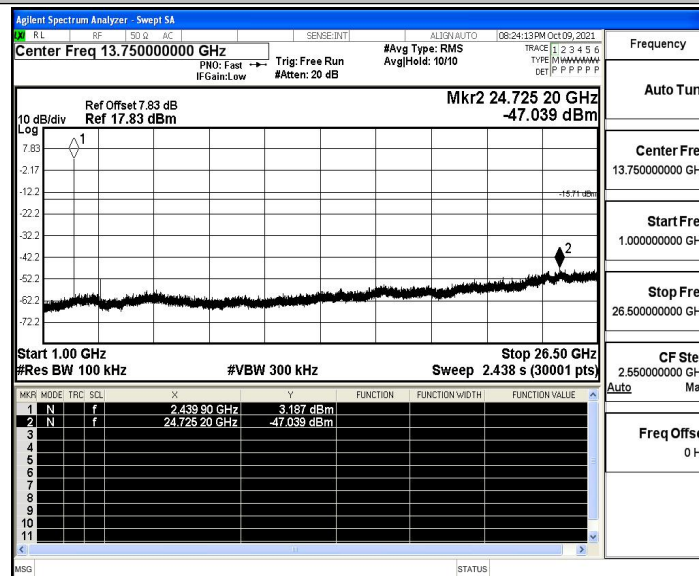




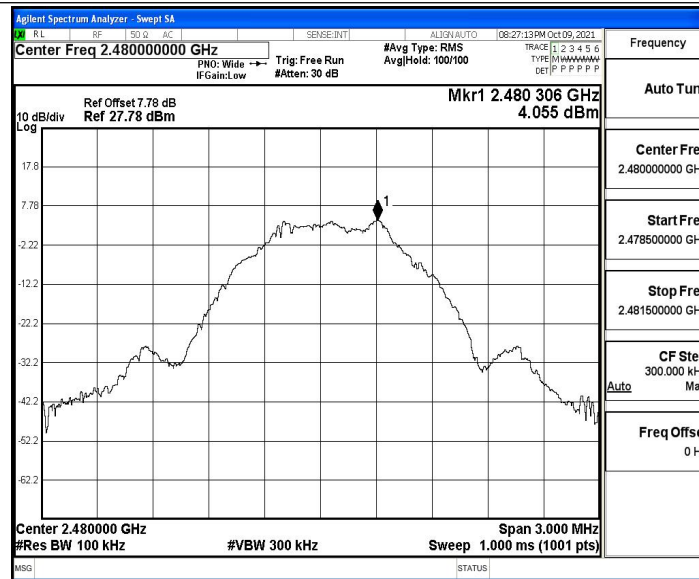
BLE_1M_Ant1_2440_30~1000



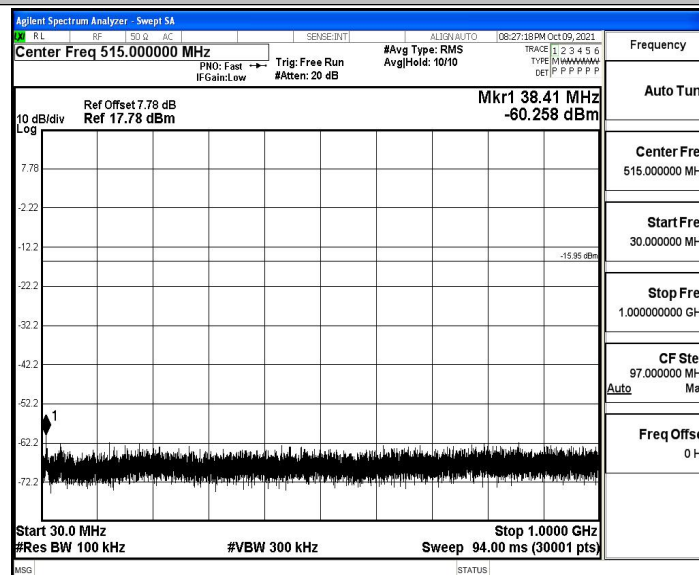
BLE_1M_Ant1_2440_1000~26500



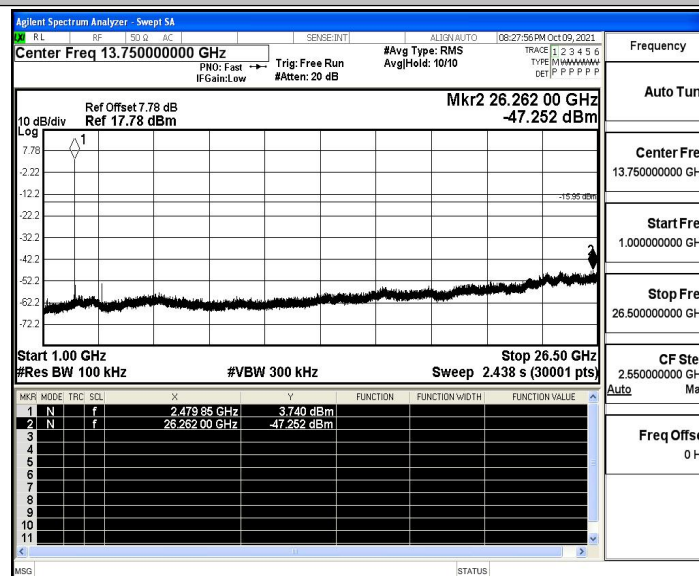
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



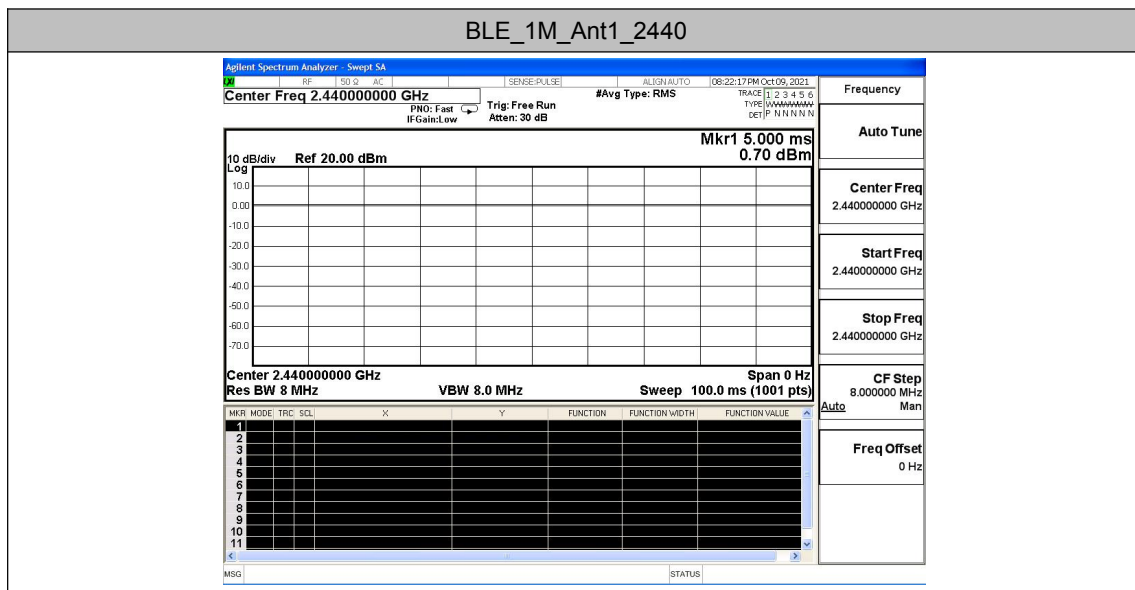


B.6 Duty Cycle

Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
		2440	100	100	1.0	100	100	---	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	-48.28	≤-41.20	46.92	≤54	PASS
				AV	2380.640	-47.43	≤-41.20	47.77	≤54	PASS
				AV	2390.000	-48.03	≤-41.20	47.17	≤54	PASS
				Peak	2310.000	-40.69	≤-21.20	54.51	≤74	PASS
				Peak	2319.845	-38.89	≤-21.20	56.31	≤74	PASS
				Peak	2390.000	-40.8	≤-21.20	54.40	≤74	PASS
		High	2480	AV	2483.500	-44.53	≤-41.20	50.67	≤54	PASS
				AV	2483.520	-44.53	≤-41.20	50.67	≤54	PASS
				AV	2500.000	-47.64	≤-41.20	47.56	≤54	PASS
				Peak	2483.500	-39.61	≤-21.20	55.59	≤74	PASS
				Peak	2483.680	-30.3	≤-21.20	64.90	≤74	PASS
				Peak	2500.000	-40.68	≤-21.20	54.52	≤74	PASS

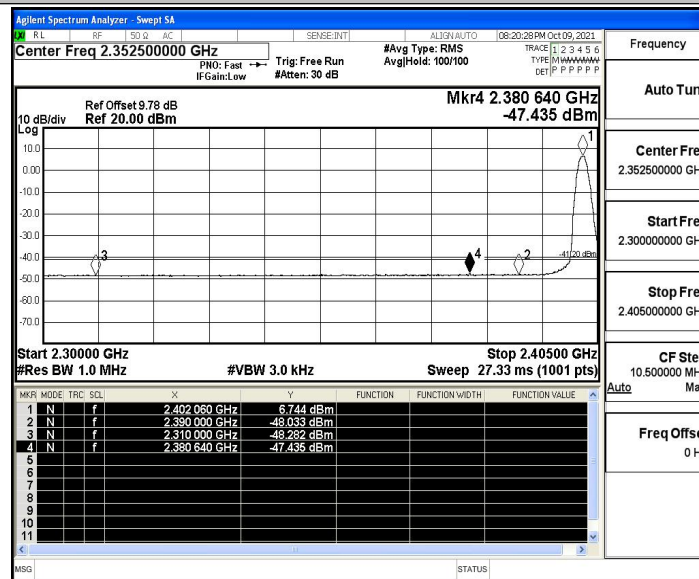
Note:

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.

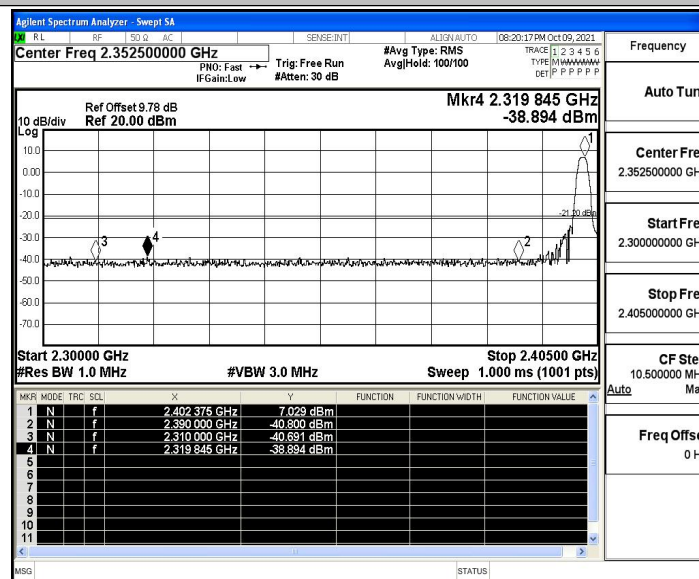


Test Graphs

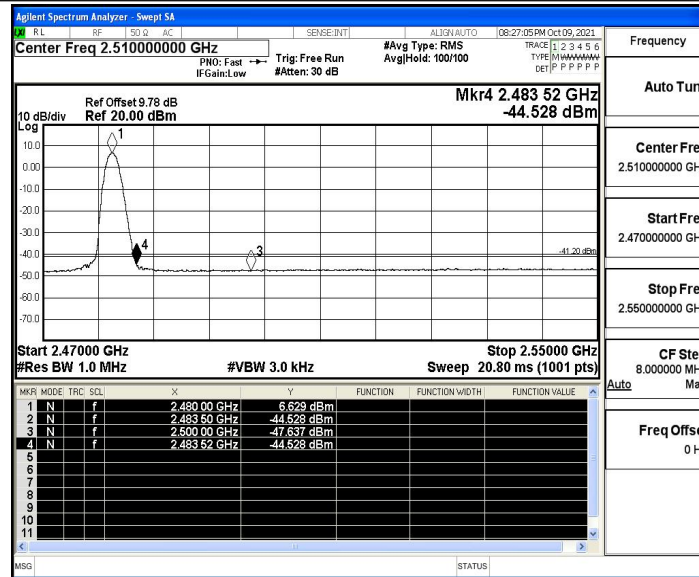
BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak

