



Appendix A

RF Test Data for BLE (Conducted Measurement)

Product Name: Bluetooth Humidity&Temperature Monitor

Test Model: TP358

Environmental Conditions

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

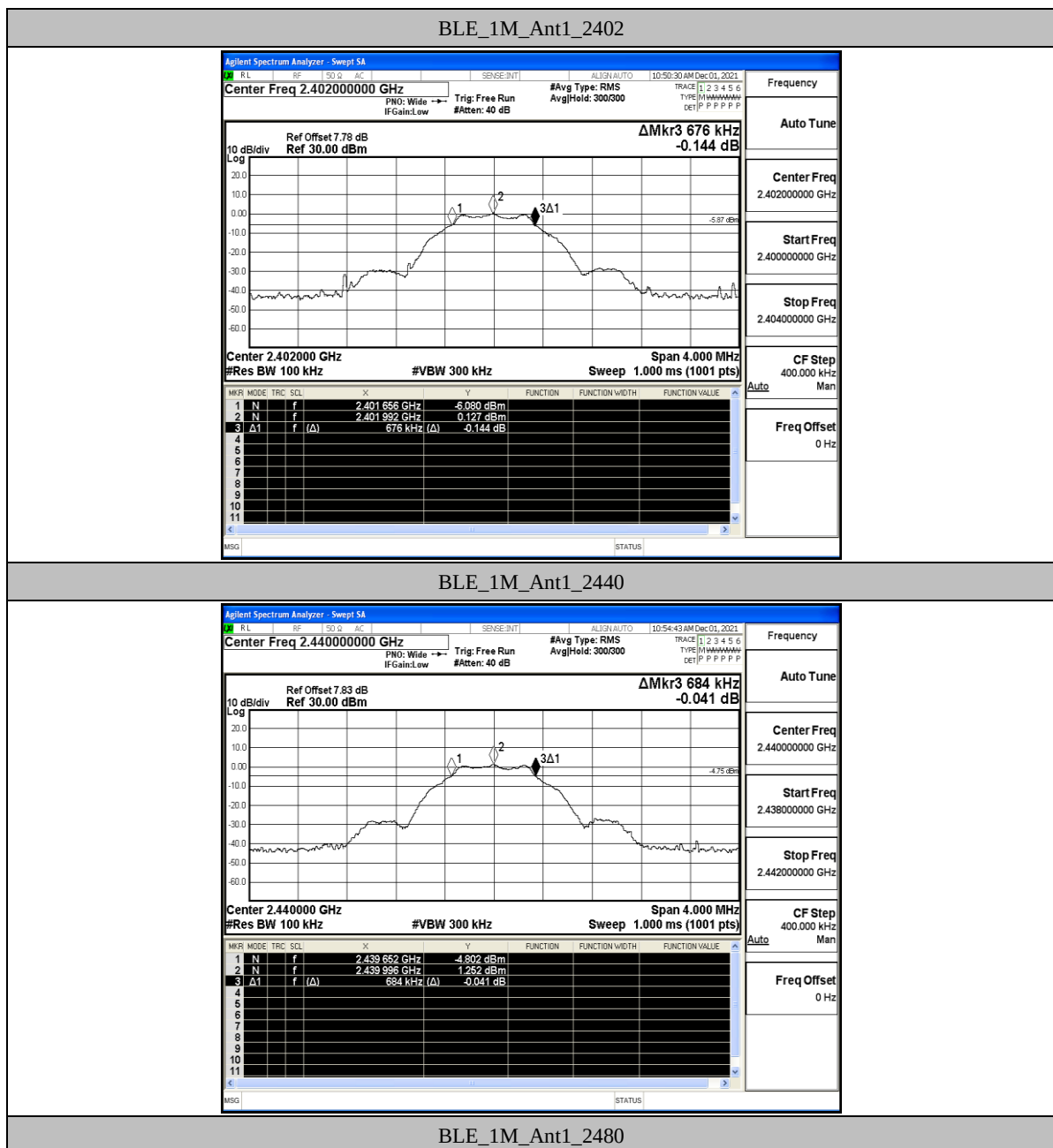


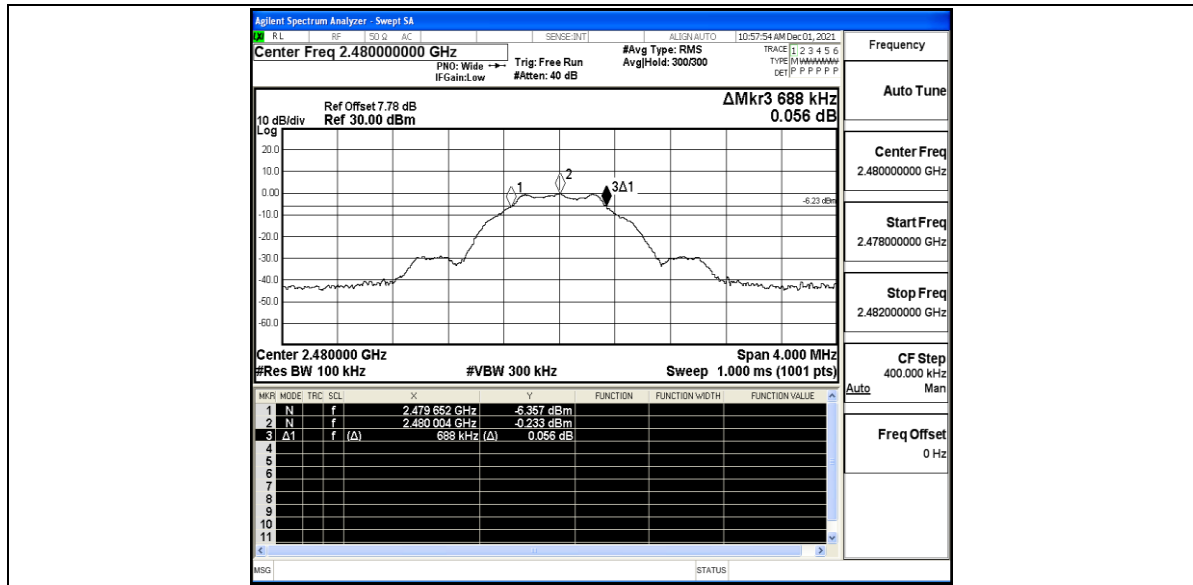
A.1 6dB Bandwidth

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.676	2401.656	2402.332	≥ 0.5	PASS
		2440	0.684	2439.652	2440.336	≥ 0.5	PASS
		2480	0.688	2479.652	2480.340	≥ 0.5	PASS

Test Graphs





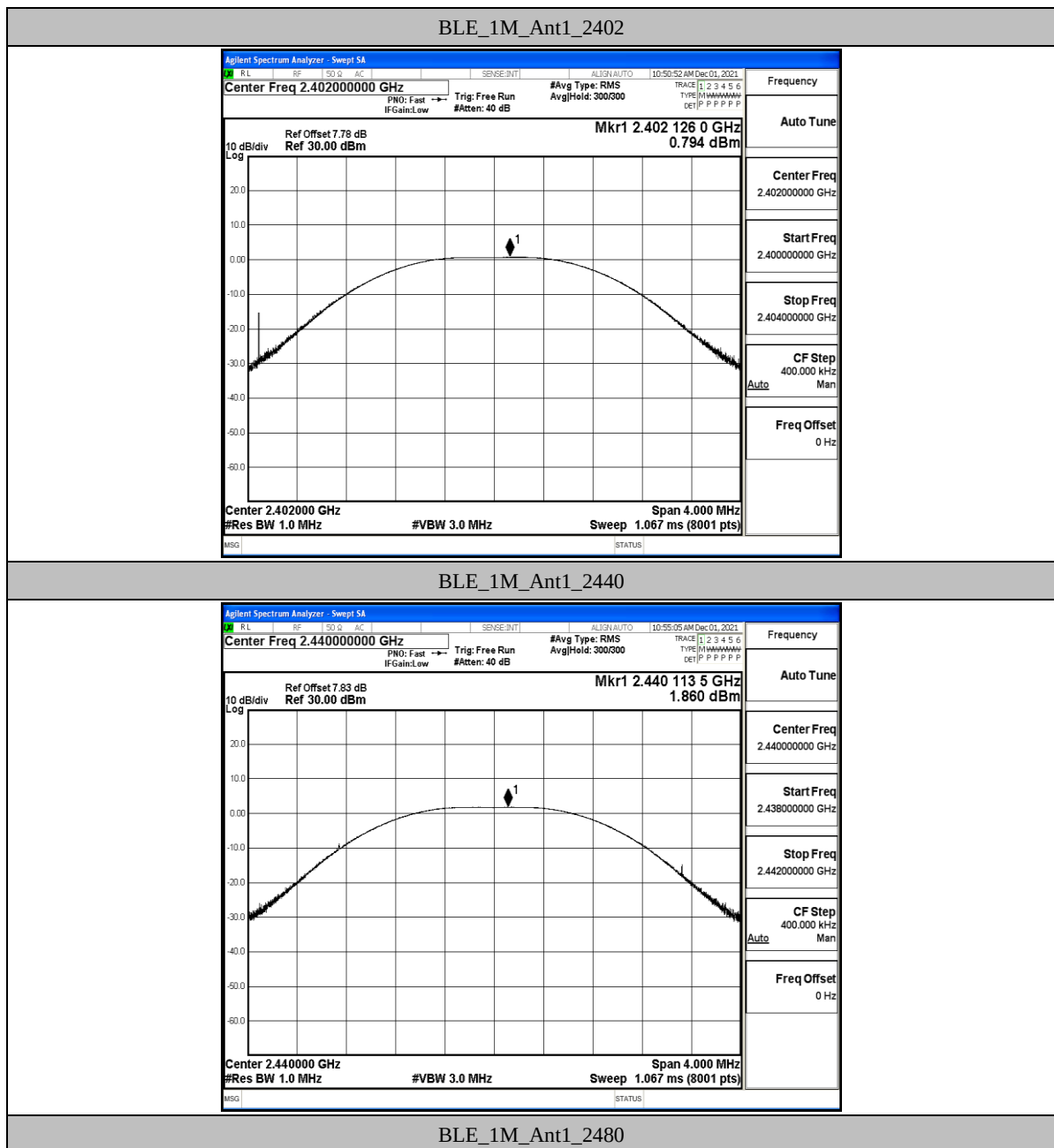


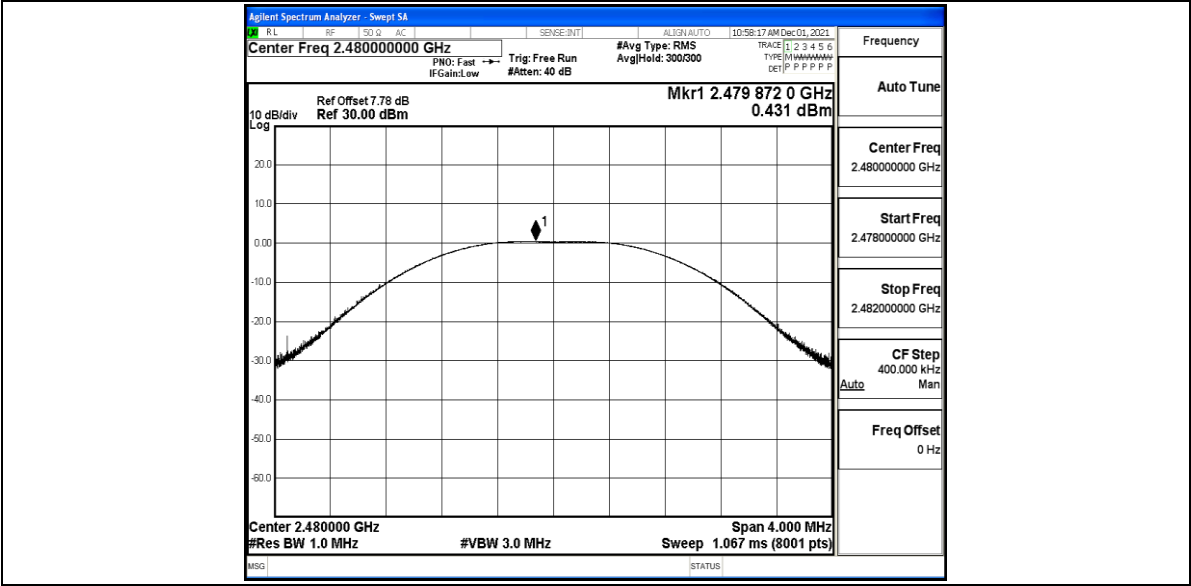
A.2 Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.79	≤ 30	PASS
		2440	1.86	≤ 30	PASS
		2480	0.43	≤ 30	PASS

Test Graphs





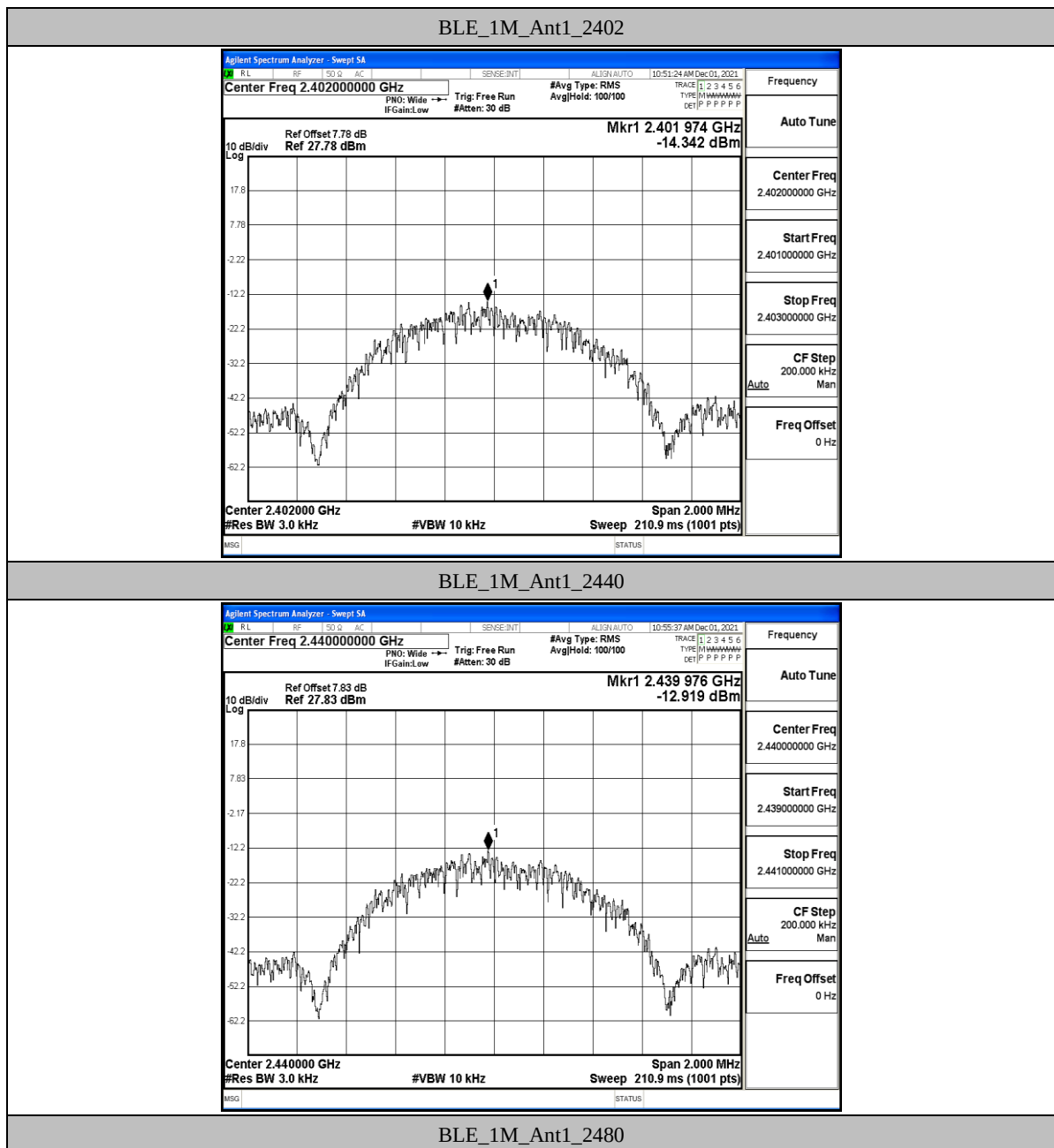


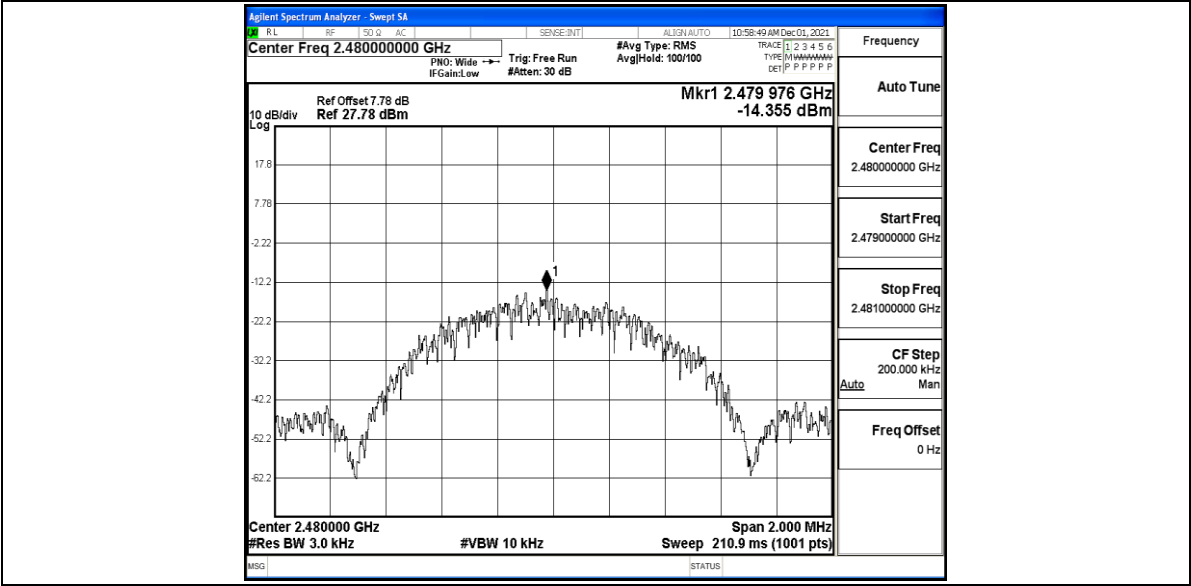
A.3 power spectral density

Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.34	≤8	PASS
		2440	-12.92	≤8	PASS
		2480	-14.36	≤8	PASS

Test Graphs





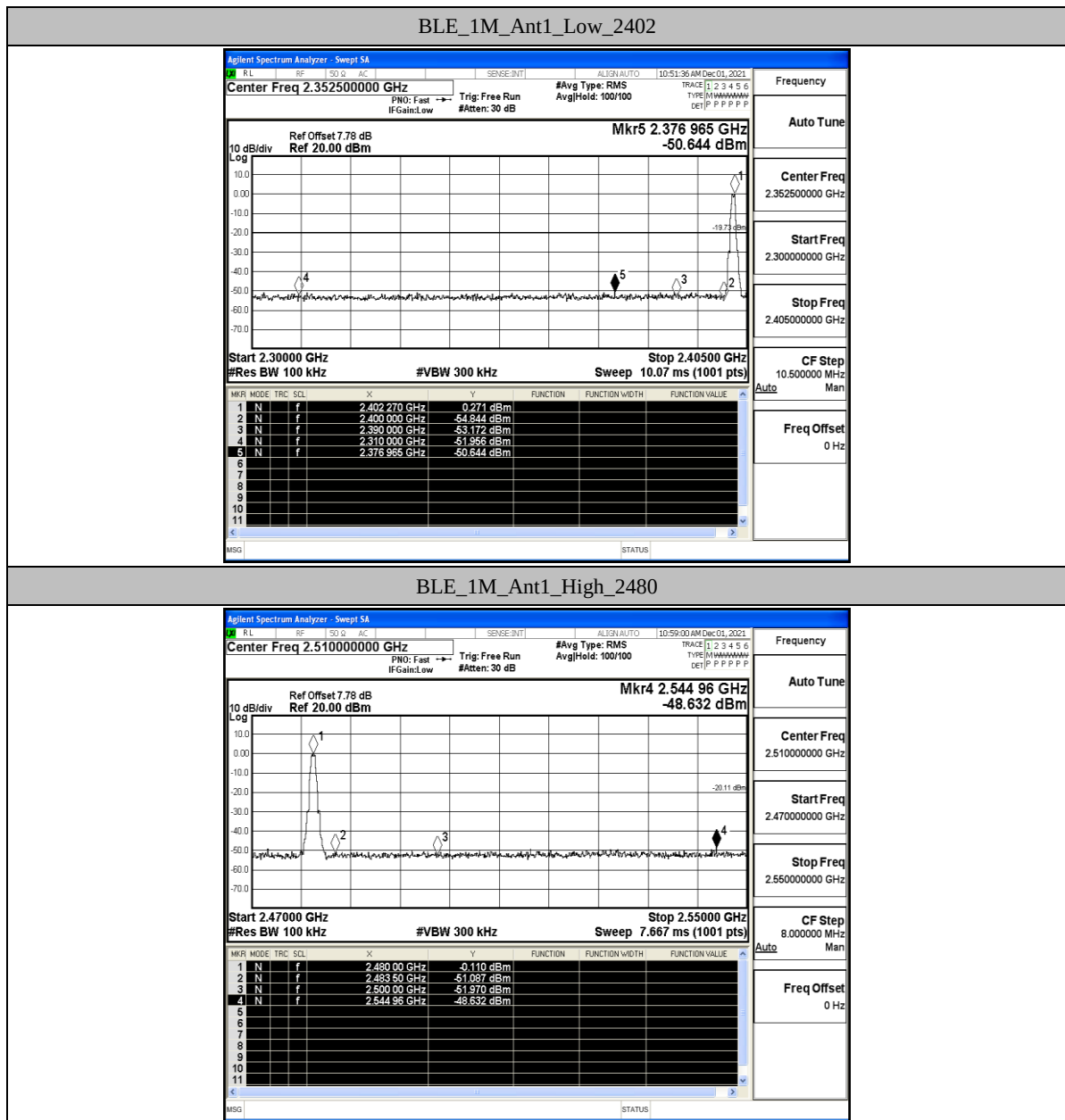


A.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	0.27	-50.64	≤ -19.73	PASS
		High	2480	-0.11	-48.63	≤ -20.11	PASS

Test Graphs



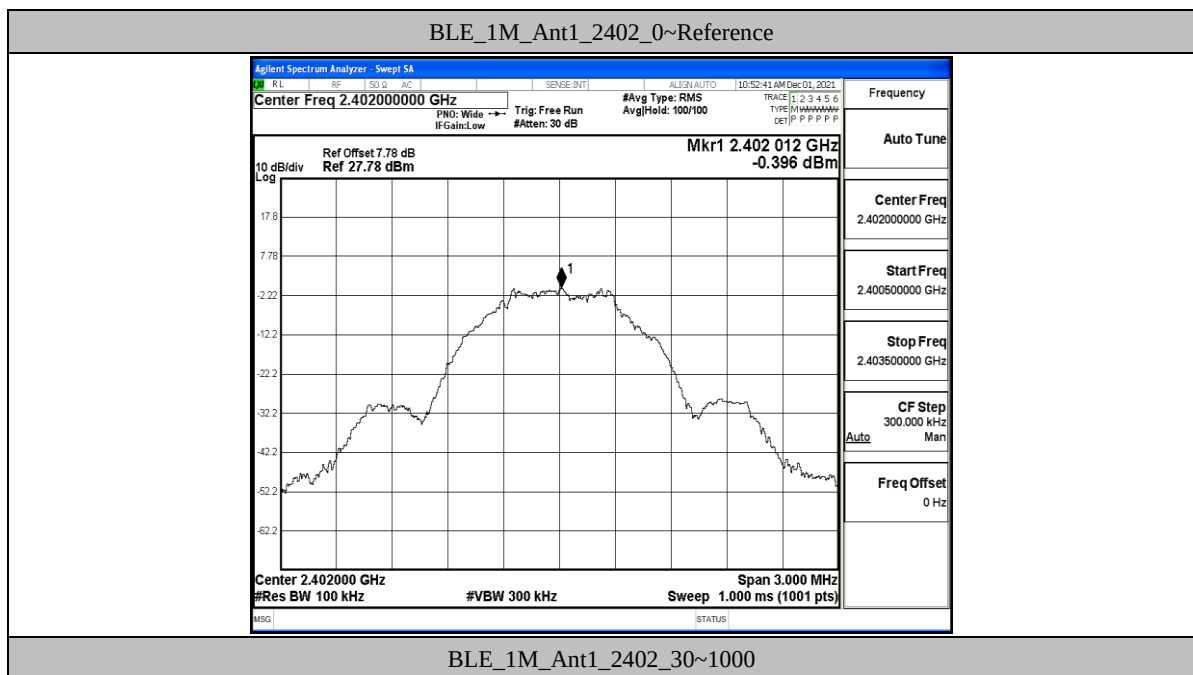


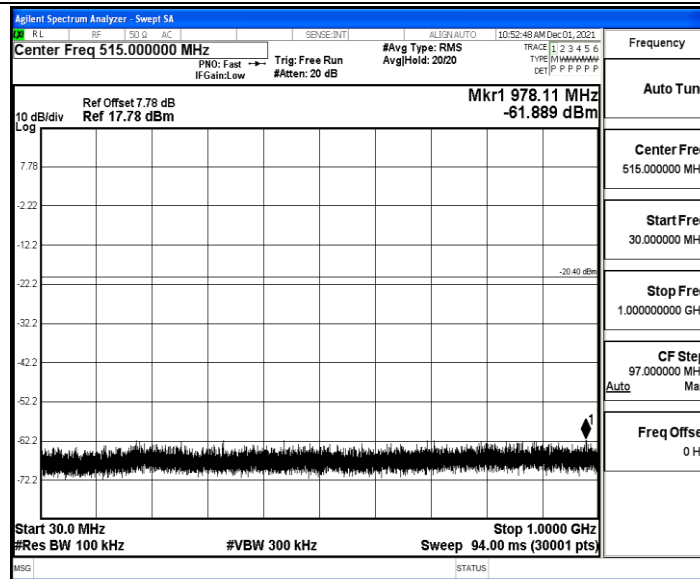
A.5 Conducted Spurious Emission

Test Result

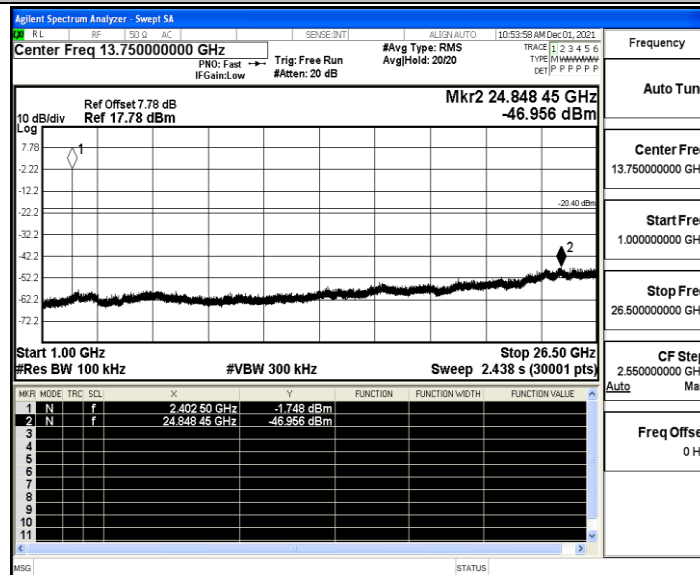
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-0.40	-0.40	---	PASS
			30~1000	-0.40	-61.89	≤ -20.4	PASS
			1000~26500	-0.40	-46.96	≤ -20.4	PASS
		2440	Reference	1.26	1.26	---	PASS
			30~1000	1.26	-61.34	≤ -18.75	PASS
			1000~26500	1.26	-46.8	≤ -18.75	PASS
		2480	Reference	-0.25	-0.25	---	PASS
			30~1000	-0.25	-59.57	≤ -20.25	PASS
			1000~26500	-0.25	-46.95	≤ -20.25	PASS

Test Graphs

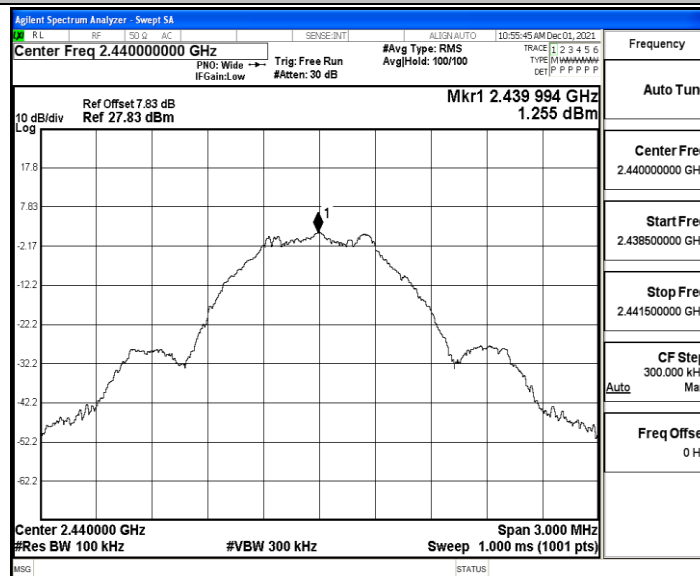




BLE_1M_Ant1_2402_1000~26500

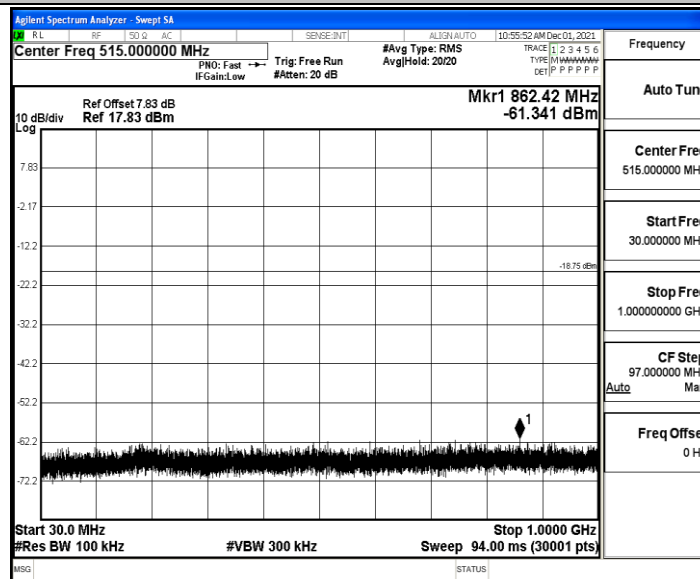


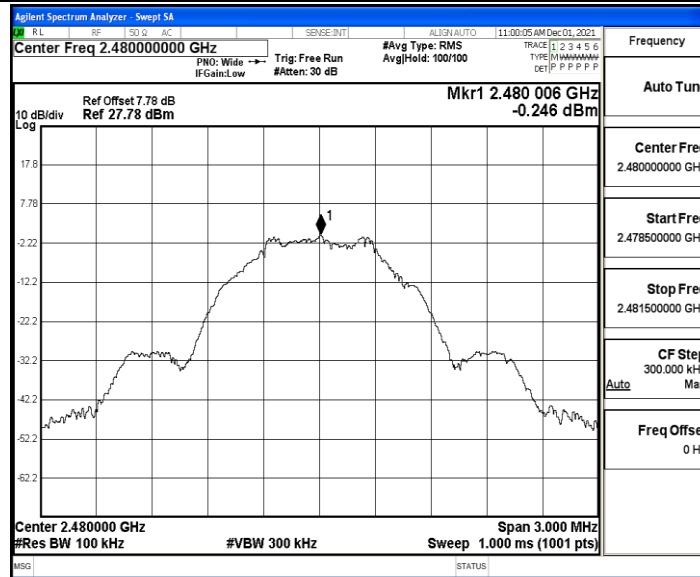
BLE_1M_Ant1_2440_0~Reference



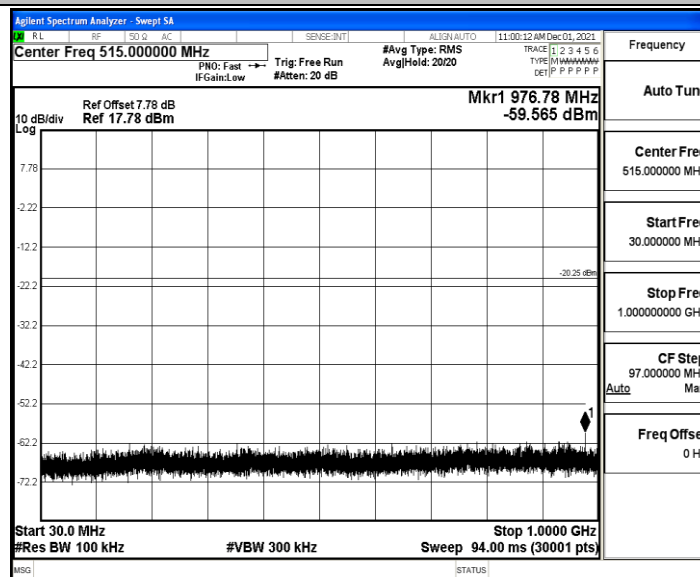


BLE_1M_Ant1_2440_30~1000

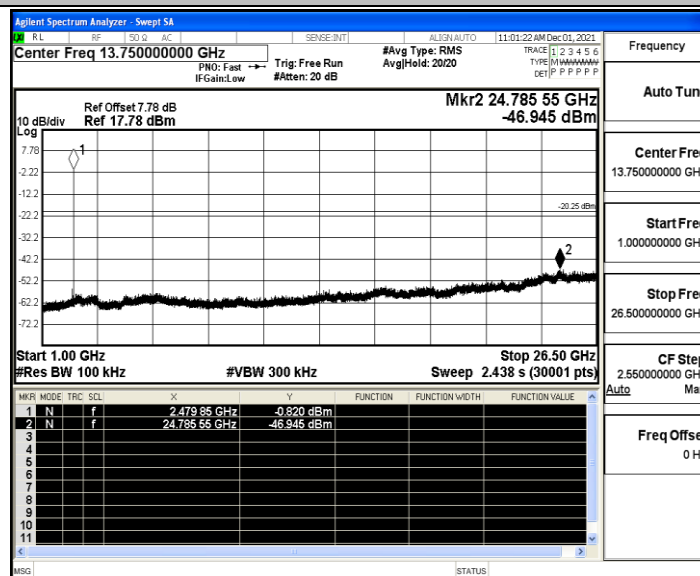




BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



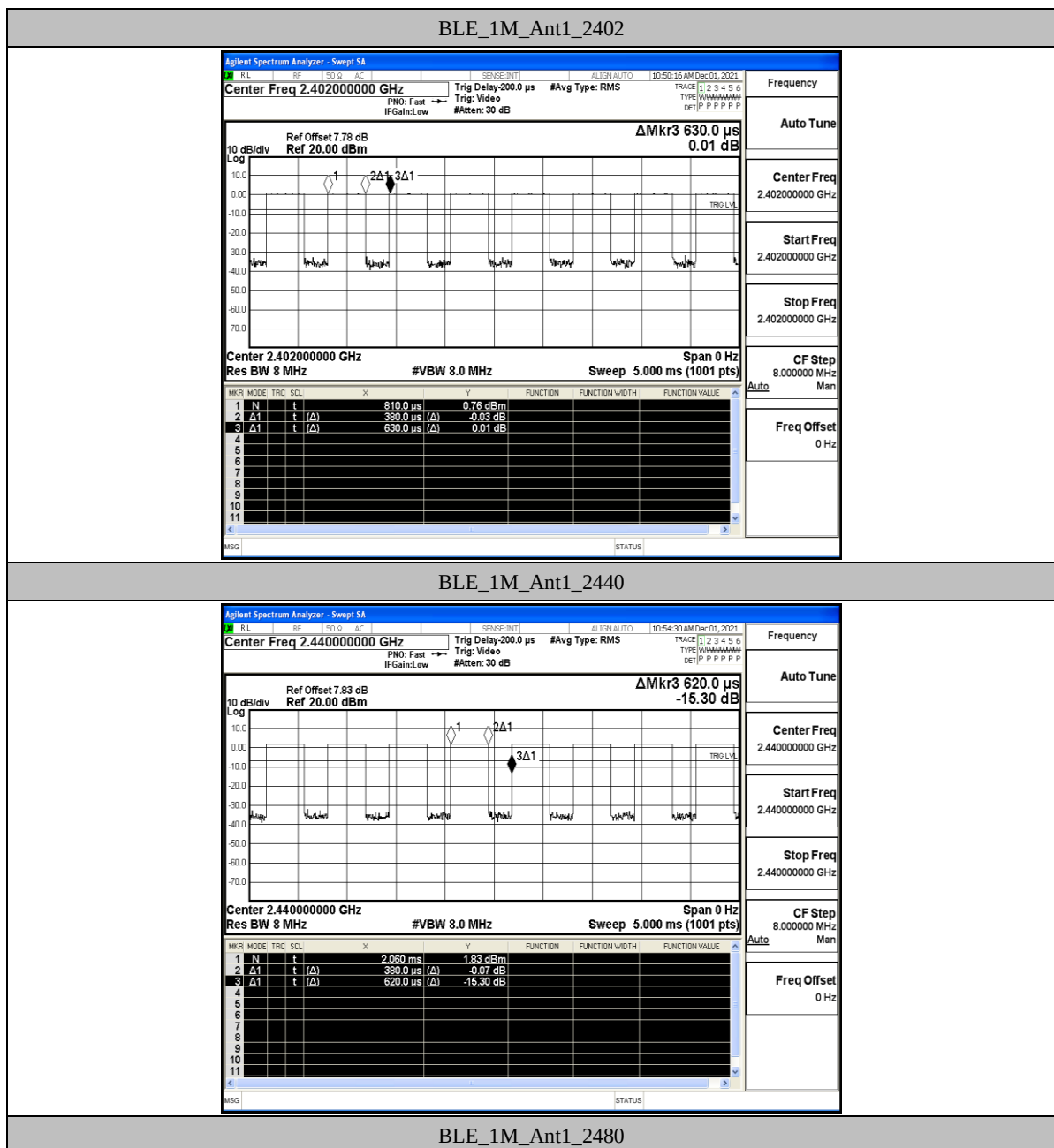


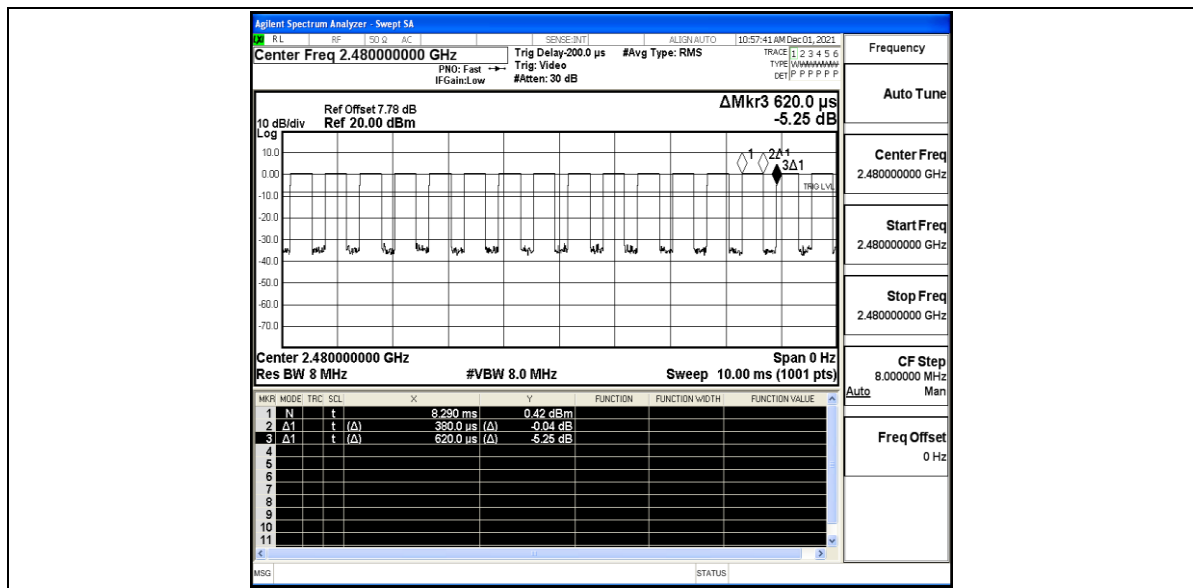
A.6 Duty Cycle

Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	0.38	0.63	0.6032	60.32	2.20	---	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







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	-48.19	≤-41.20	47.01	≤54	PASS
				AV	2384.210	-47.74	≤-41.20	47.46	≤54	PASS
				AV	2390.000	-48.1	≤-41.20	47.10	≤54	PASS
				Peak	2310.000	-43.28	≤-21.20	51.92	≤74	PASS
				Peak	2380.640	-38.5	≤-21.20	56.70	≤74	PASS
				Peak	2390.000	-42.71	≤-21.20	52.49	≤74	PASS
		High	2480	AV	2483.500	-47.11	≤-41.20	48.09	≤54	PASS
				AV	2487.280	-45.97	≤-41.20	49.23	≤54	PASS
				AV	2500.000	-47.35	≤-41.20	47.85	≤54	PASS
				Peak	2483.500	-40.06	≤-21.20	55.14	≤74	PASS
				Peak	2488.640	-39.05	≤-21.20	56.15	≤74	PASS
				Peak	2500.000	-41.58	≤-21.20	53.62	≤74	PASS

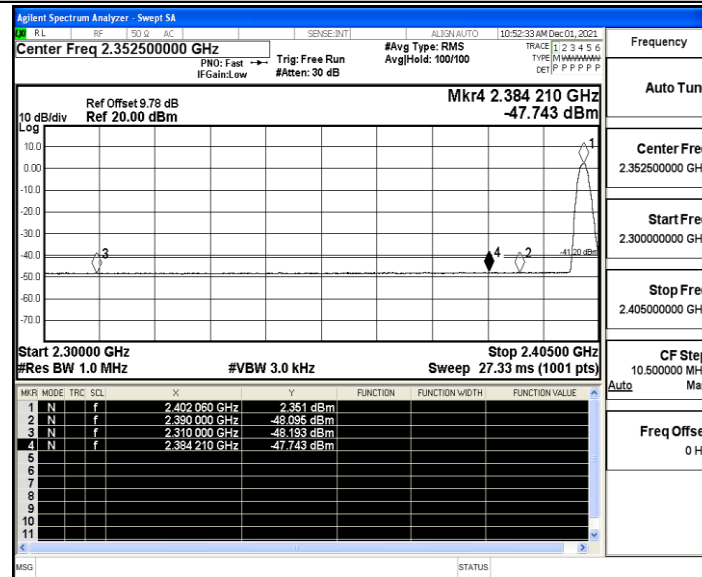
Note:

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.

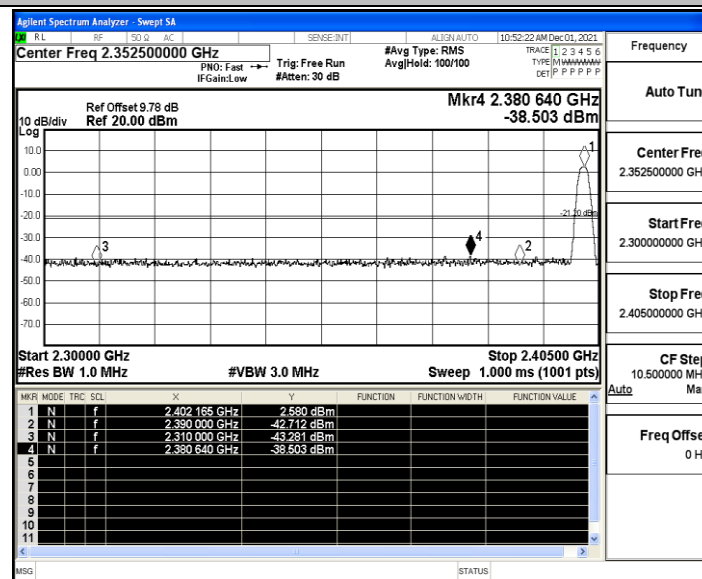


Test Graphs

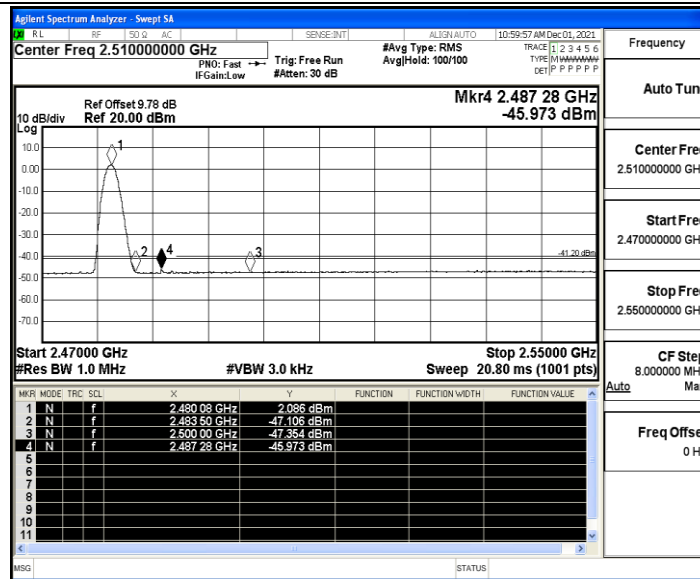
BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak

