



Appendix B

RF Test Data for BLE (Conducted Measurement)

Product Name: 4K Android TV™ Dongle

Test Model: i-217D1

Environmental Conditions

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



B.1 DTS Bandwidth

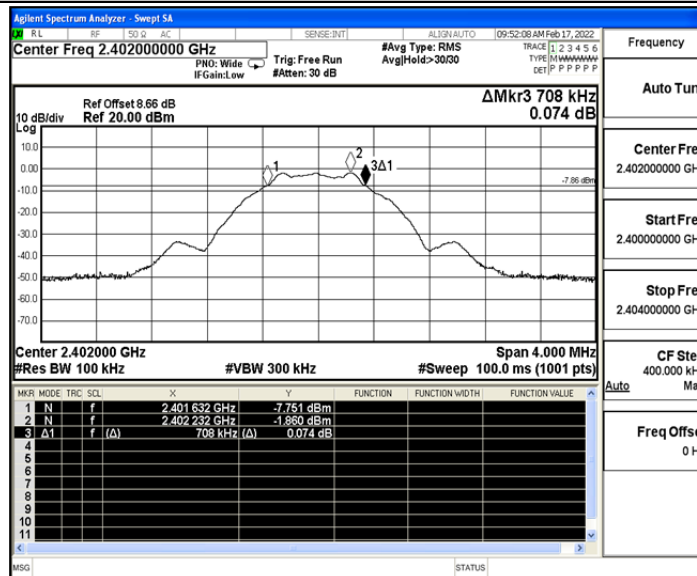
Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.708	2401.632	2402.340	0.5	PASS
		2440	0.712	2439.632	2440.344	0.5	PASS
		2480	0.712	2479.632	2480.344	0.5	PASS
BLE_2M	Ant1	2402	1.244	2401.284	2402.528	0.5	PASS
		2440	1.244	2439.288	2440.532	0.5	PASS
		2480	1.252	2479.280	2480.532	0.5	PASS

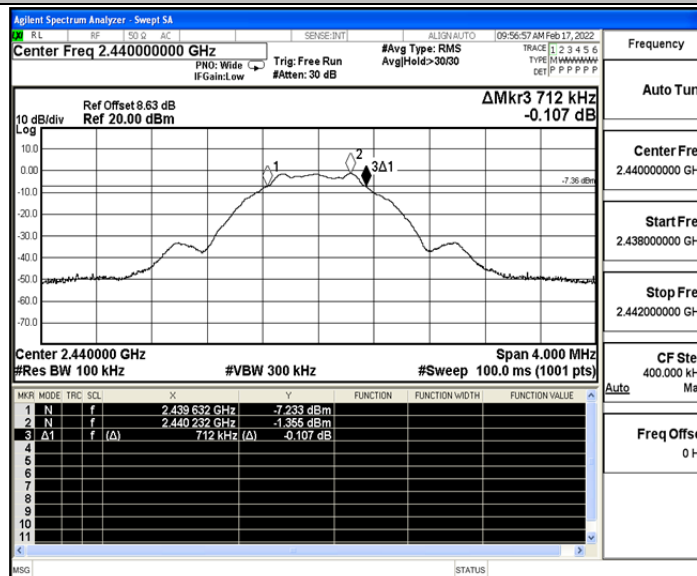


Test Graphs

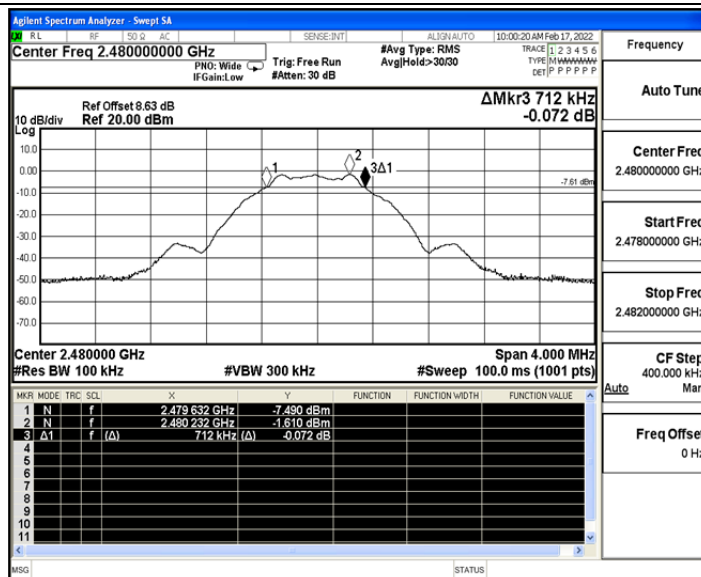
BLE_1M_Ant1_2402



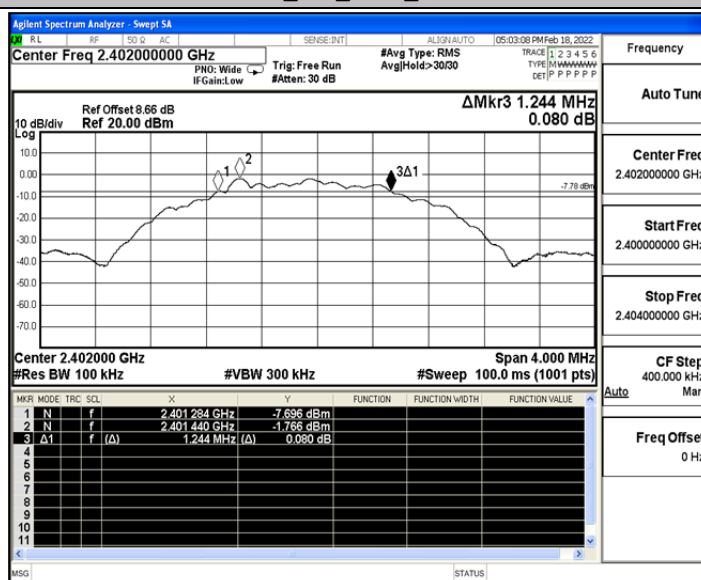
BLE_1M_Ant1_2440



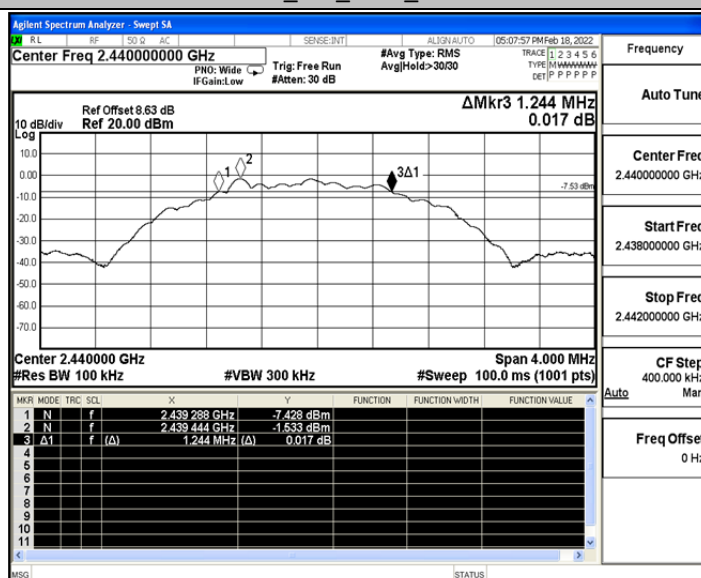
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402

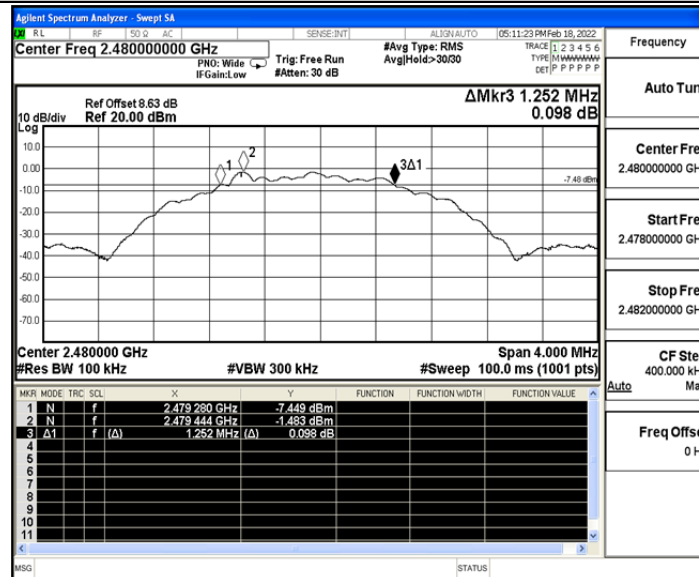


BLE_2M_Ant1_2440





BLE_2M_Ant1_2480





B.2 Maximum peak conducted output power

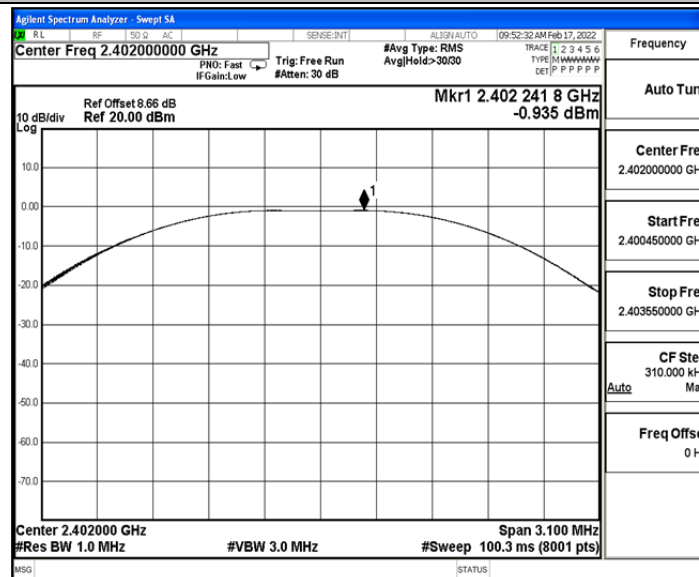
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-0.94	≤30	PASS
		2440	-0.44	≤30	PASS
		2480	-0.69	≤30	PASS
BLE_2M	Ant1	2402	-0.04	≤30	PASS
		2440	0.22	≤30	PASS
		2480	0.29	≤30	PASS

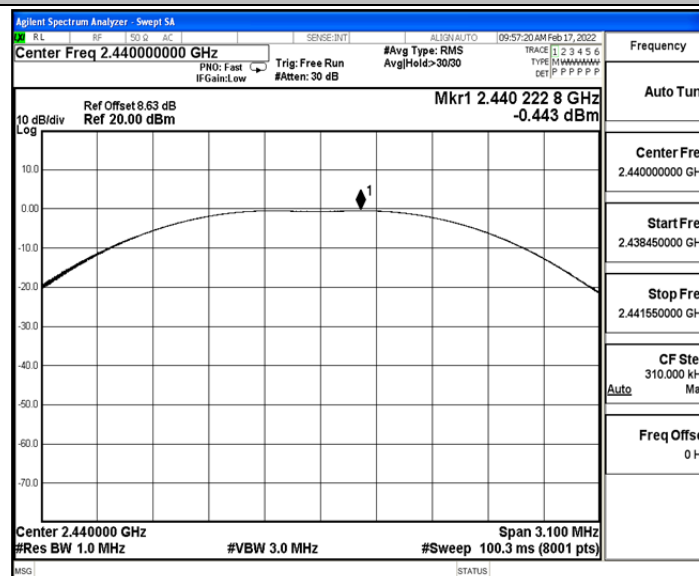


Test Graphs

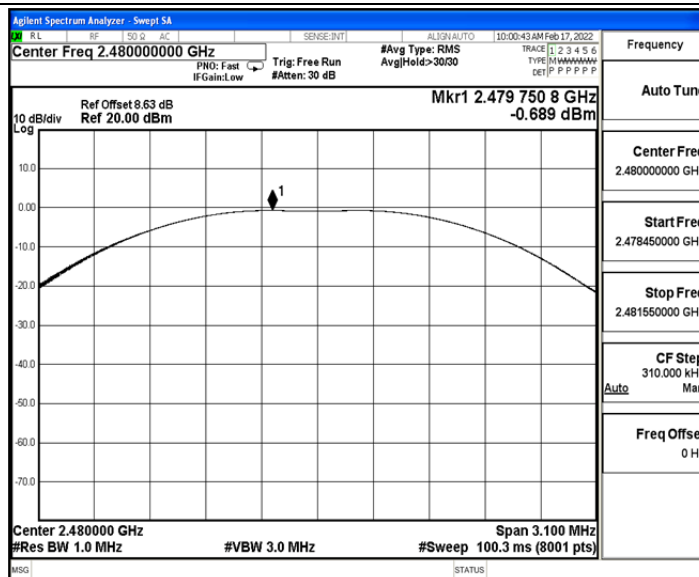
BLE_1M_Ant1_2402



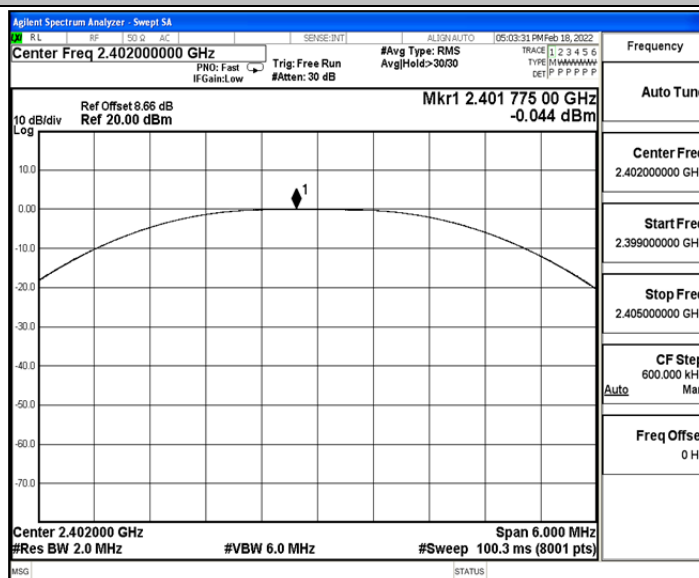
BLE_1M_Ant1_2440



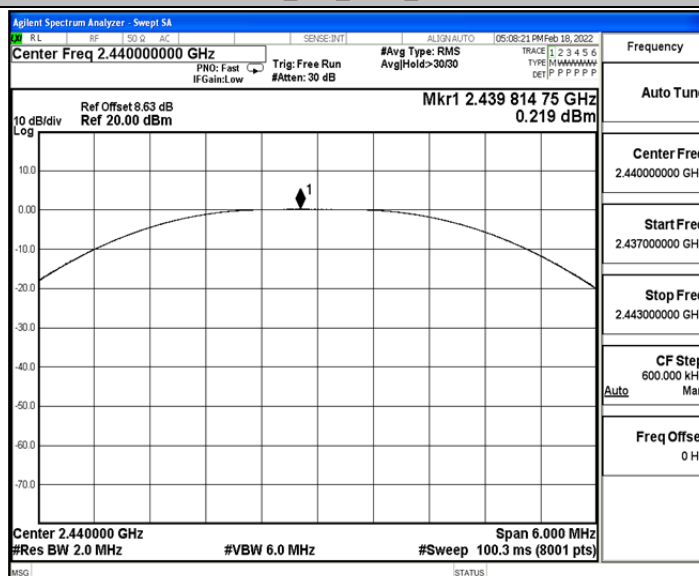
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402

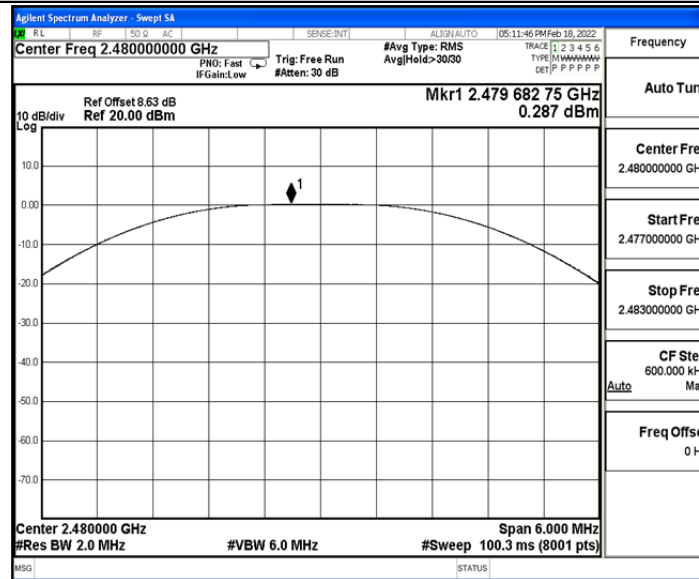


BLE_2M_Ant1_2440





BLE_2M_Ant1_2480





B.3 Maximum power spectral density

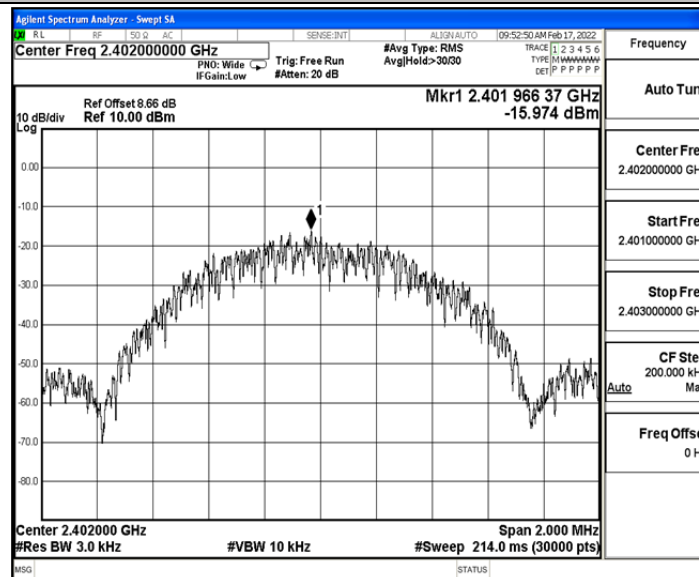
Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-15.97	≤8.00	PASS
		2440	-15.5	≤8.00	PASS
		2480	-15.78	≤8.00	PASS
BLE_2M	Ant1	2402	-18.7	≤8.00	PASS
		2440	-18.6	≤8.00	PASS
		2480	-18.49	≤8.00	PASS

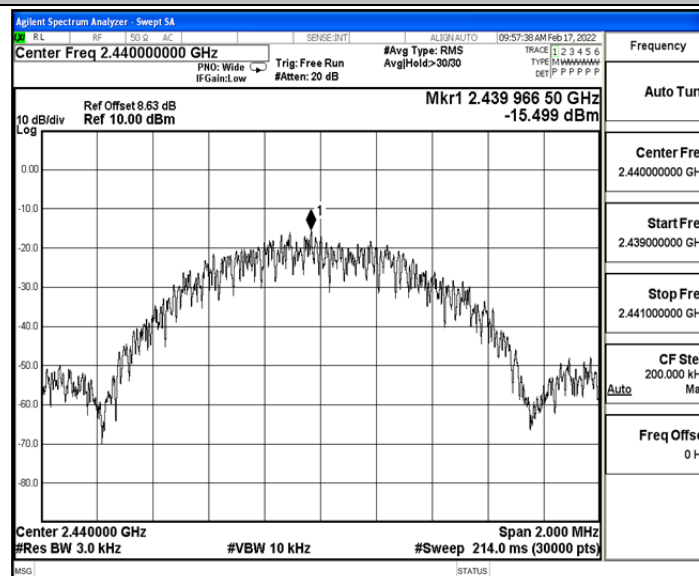


Test Graphs

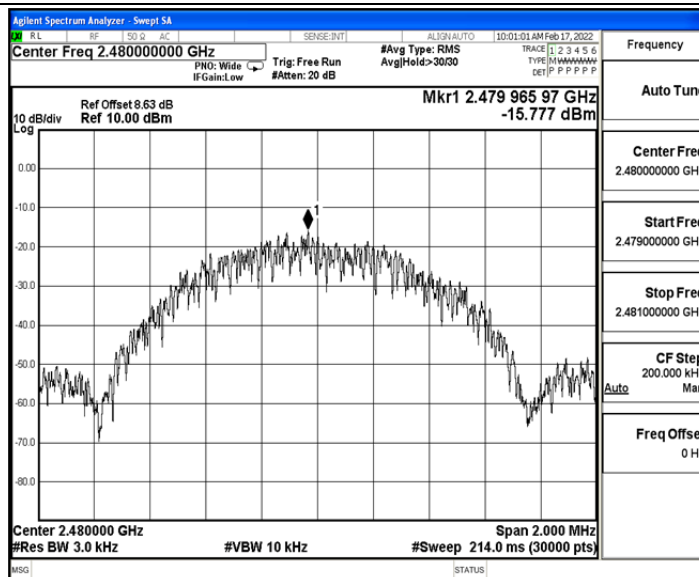
BLE_1M_Ant1_2402



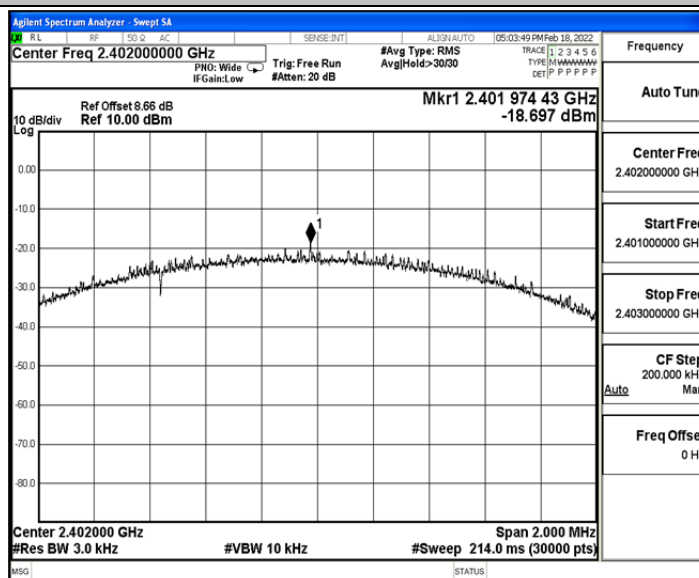
BLE_1M_Ant1_2440



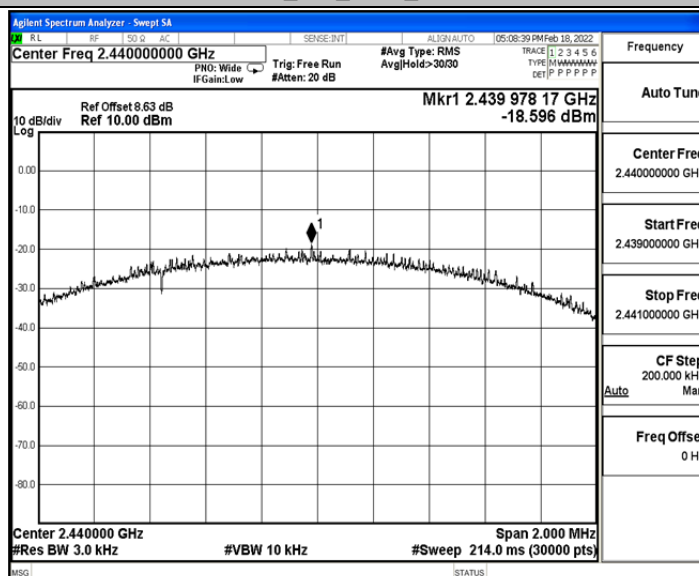
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402

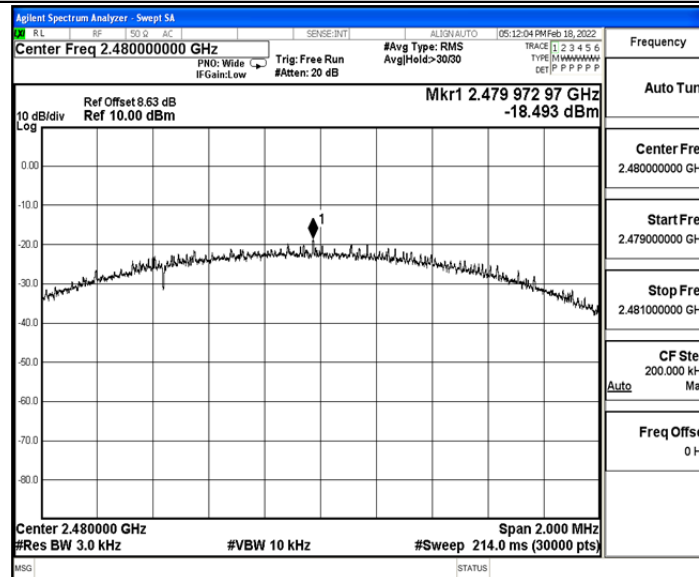


BLE_2M_Ant1_2440





BLE_2M_Ant1_2480





B.4 Band edge measurements

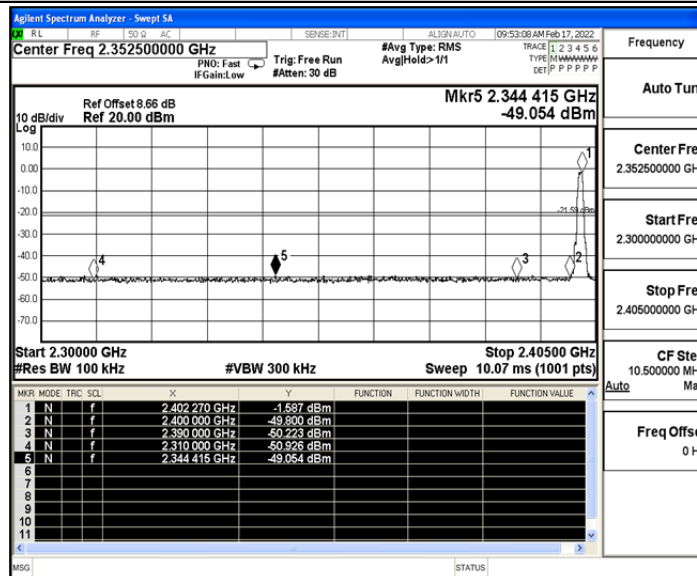
Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-1.59	-49.05	≤ -21.59	PASS
		High	2480	-1.34	-47.05	≤ -21.34	PASS
BLE_2M	Ant1	Low	2402	-1.56	-34.25	≤ -21.56	PASS
		High	2480	-0.91	-48.02	≤ -20.91	PASS

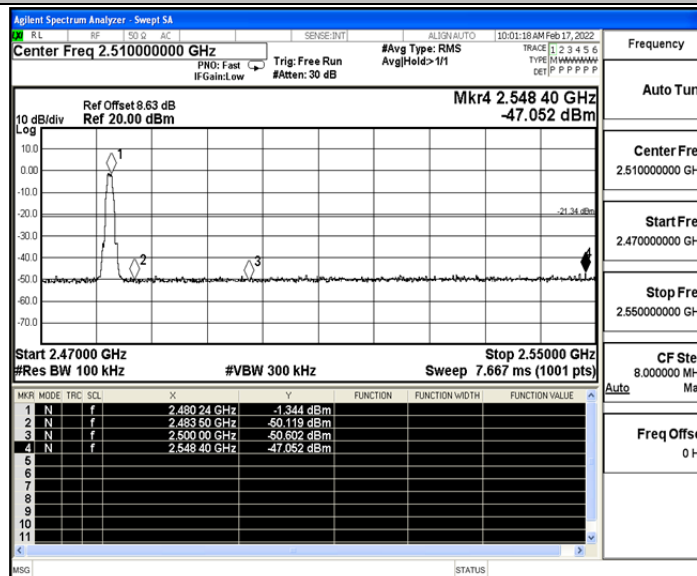


Test Graphs

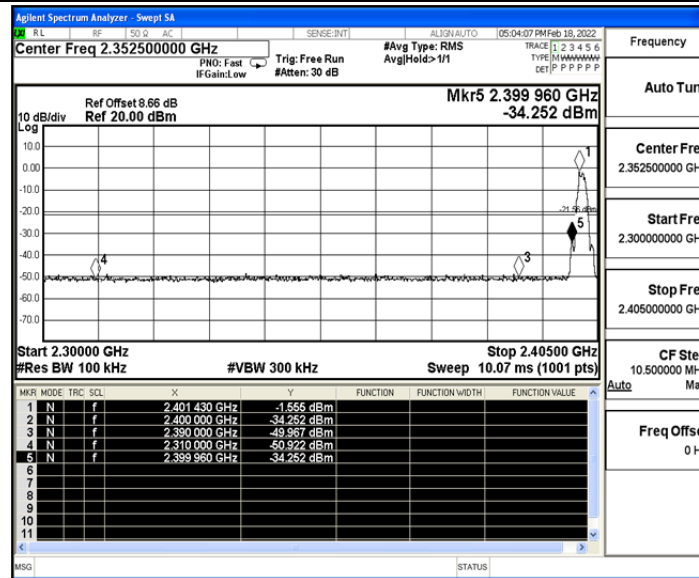
BLE_1M_Ant1_Low_2402



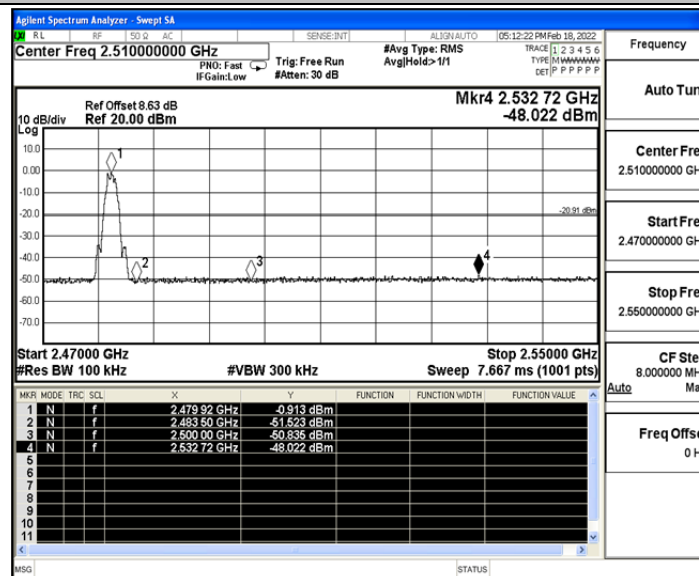
BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402



BLE_2M_Ant1_High_2480





B.5 Conducted Spurious Emission

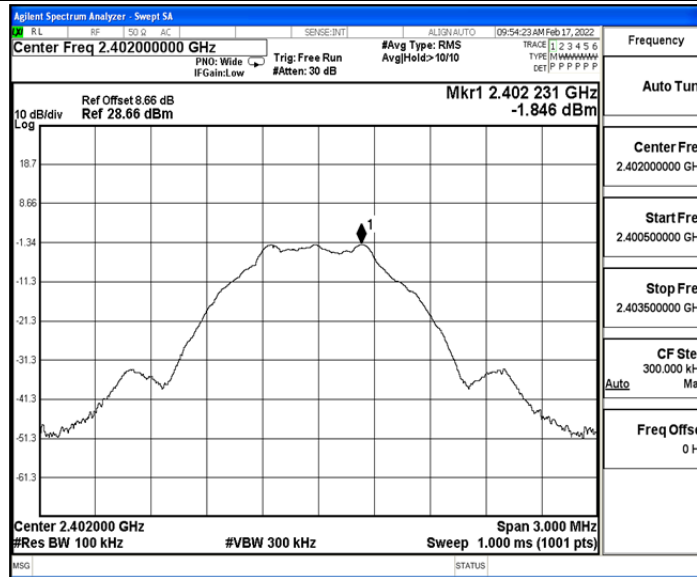
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-1.85	-1.85	---	PASS
			30~1000	-1.85	-60.84	≤ -21.85	PASS
			1000~26500	-1.85	-46.17	≤ -21.85	PASS
		2440	Reference	-1.33	-1.33	---	PASS
			30~1000	-1.33	-60.77	≤ -21.33	PASS
			1000~26500	-1.33	-46.15	≤ -21.33	PASS
		2480	Reference	-1.64	-1.64	---	PASS
			30~1000	-1.64	-60.44	≤ -21.64	PASS
			1000~26500	-1.64	-46.47	≤ -21.64	PASS
BLE_2M	Ant1	2402	Reference	-1.73	-1.73	---	PASS
			30~1000	-1.73	-50.56	≤ -21.73	PASS
			1000~26500	-1.73	-46.65	≤ -21.73	PASS
		2440	Reference	-1.57	-1.57	---	PASS
			30~1000	-1.57	-51.09	≤ -21.57	PASS
			1000~26500	-1.57	-46.78	≤ -21.57	PASS
		2480	Reference	-1.38	-1.38	---	PASS
			30~1000	-1.38	-49.17	≤ -21.38	PASS
			1000~26500	-1.38	-46.49	≤ -21.38	PASS

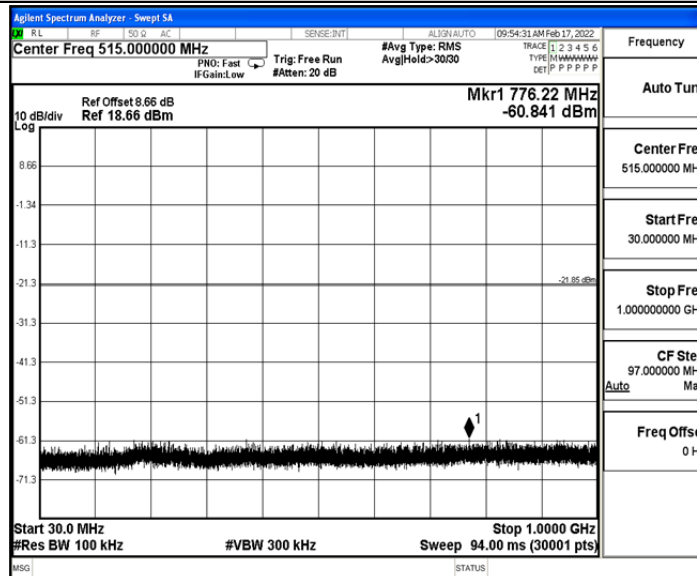


Test Graphs

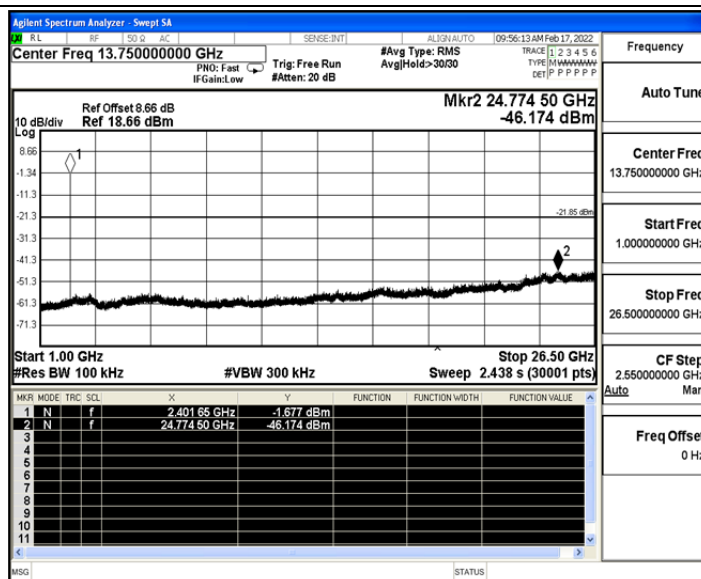
BLE_1M_Ant1_2402_0~Reference



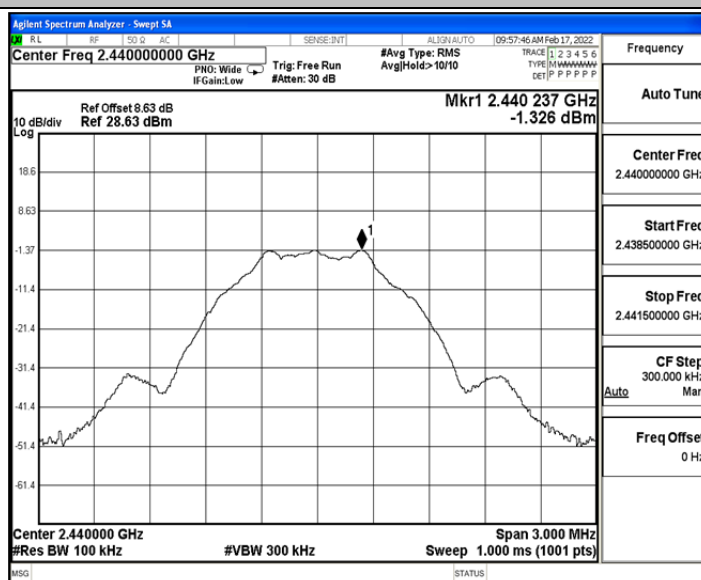
BLE_1M_Ant1_2402_30~1000



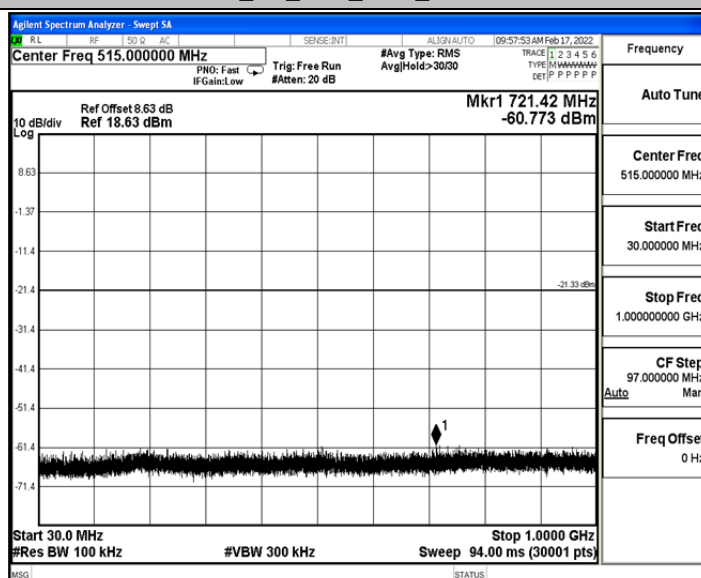
BLE_1M_Ant1_2402_1000~26500



BLE_1M_Ant1_2440_0~Reference

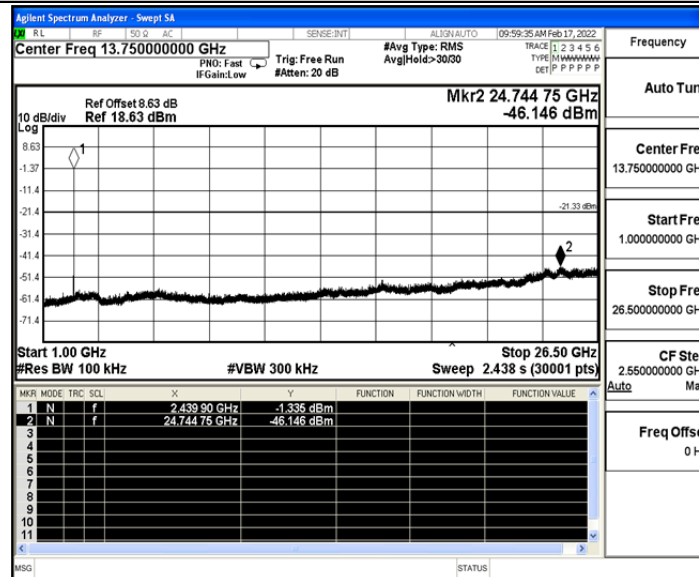


BLE_1M_Ant1_2440_30~1000

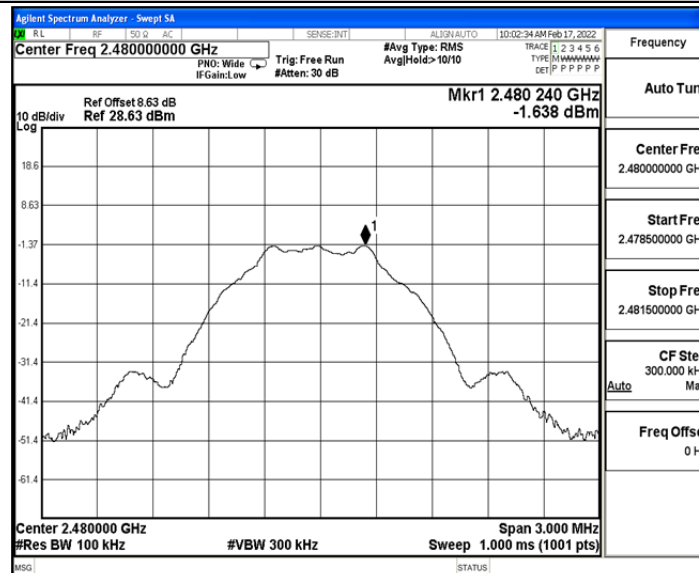




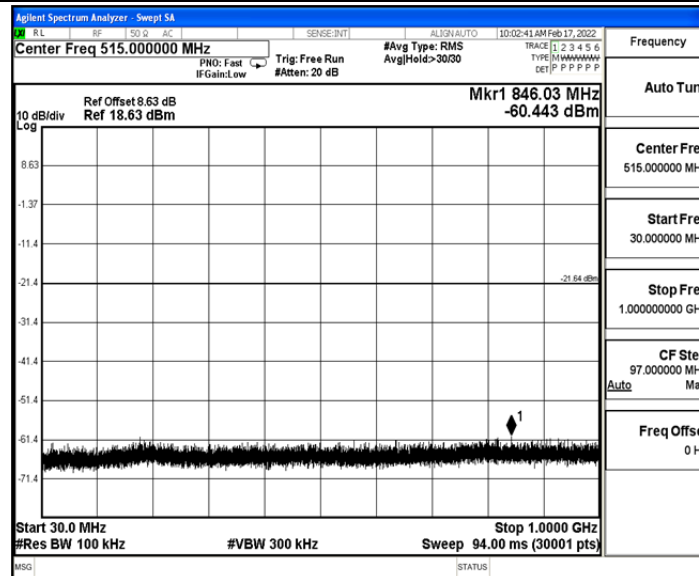
BLE_1M_Ant1_2440_1000~26500



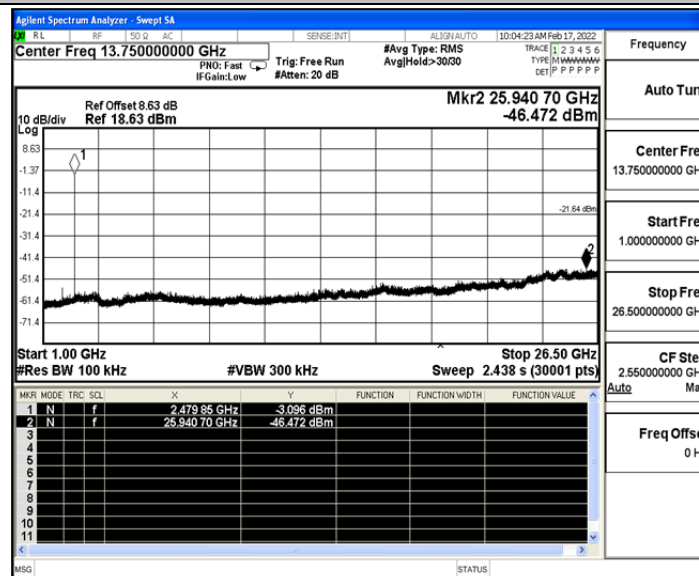
BLE_1M_Ant1_2480_0~Reference



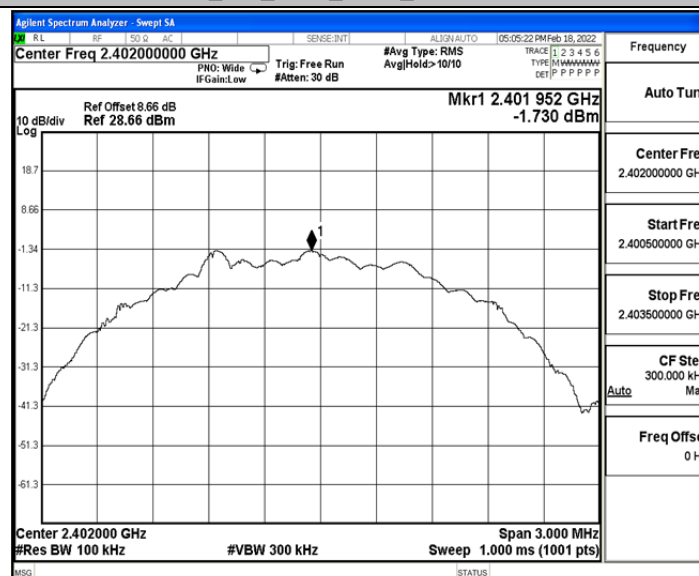
BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500

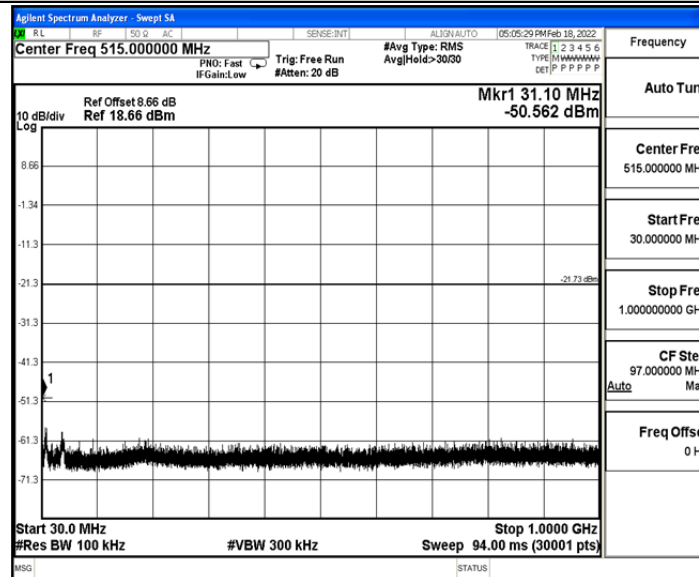


BLE_2M_Ant1_2402_0~Reference

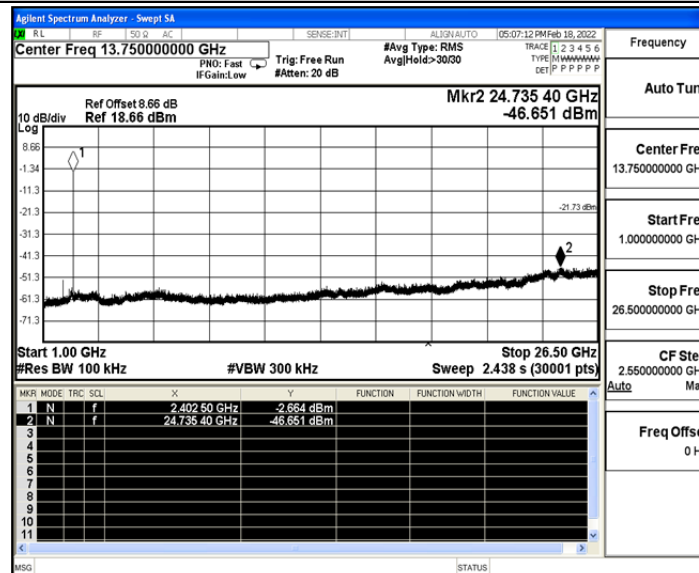




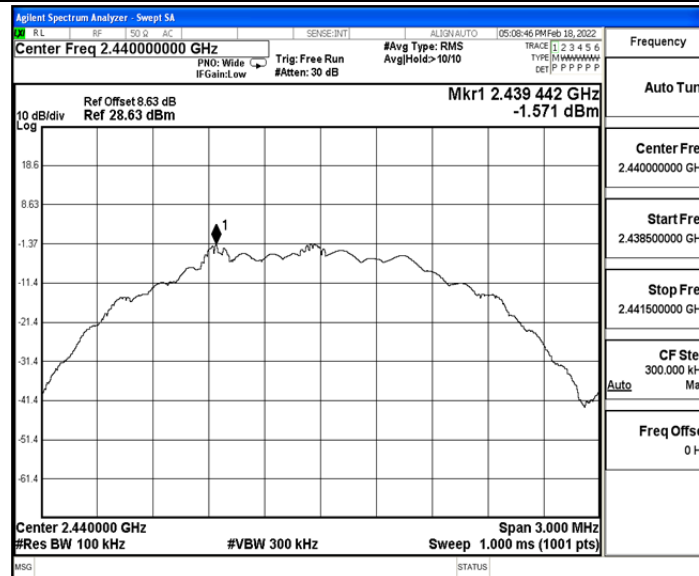
BLE_2M_Ant1_2402_30~1000



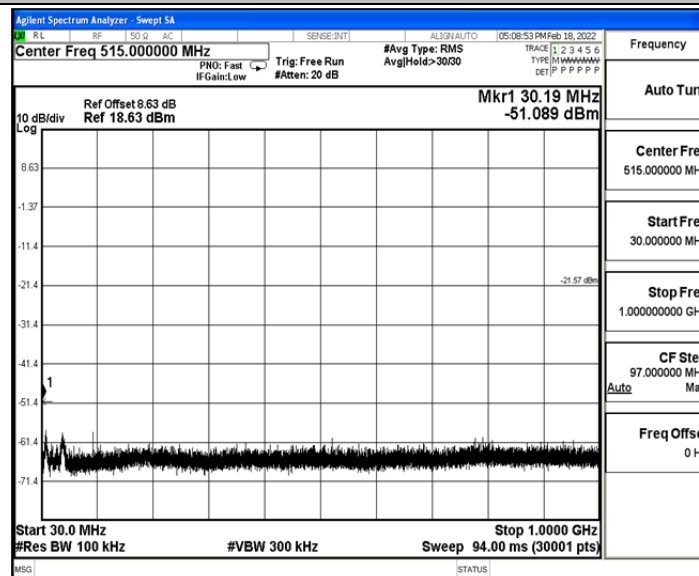
BLE_2M_Ant1_2402_1000~26500



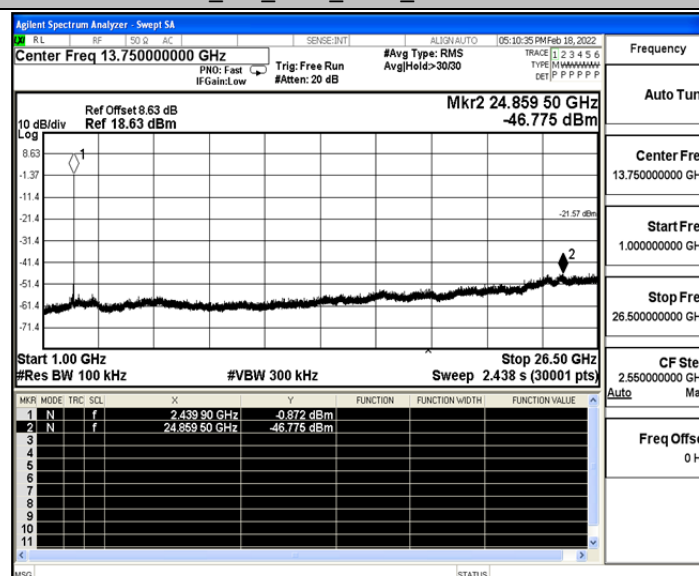
BLE_2M_Ant1_2440_0~Reference



BLE_2M_Ant1_2440_30~1000

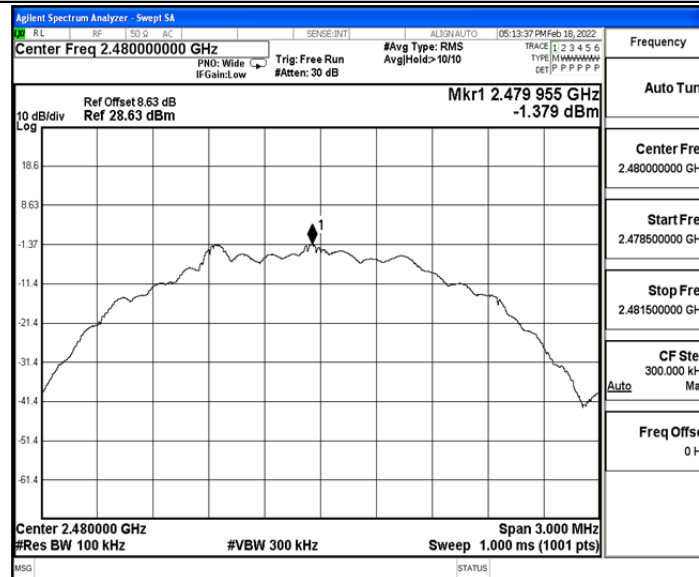


BLE_2M_Ant1_2440_1000~26500

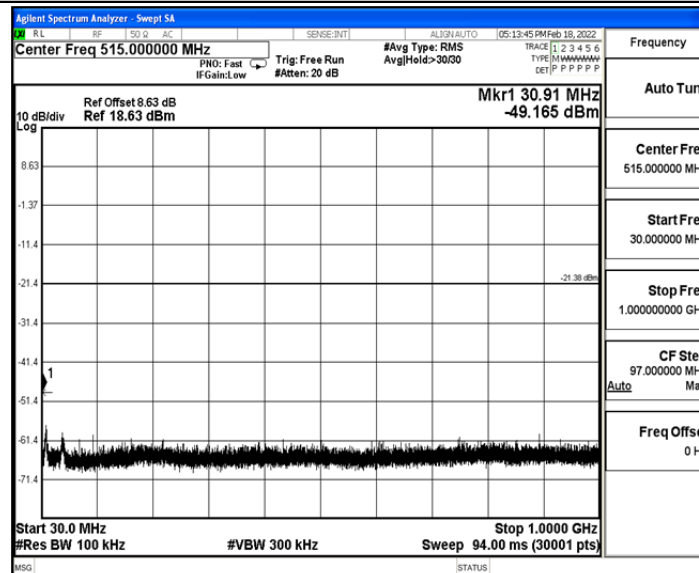




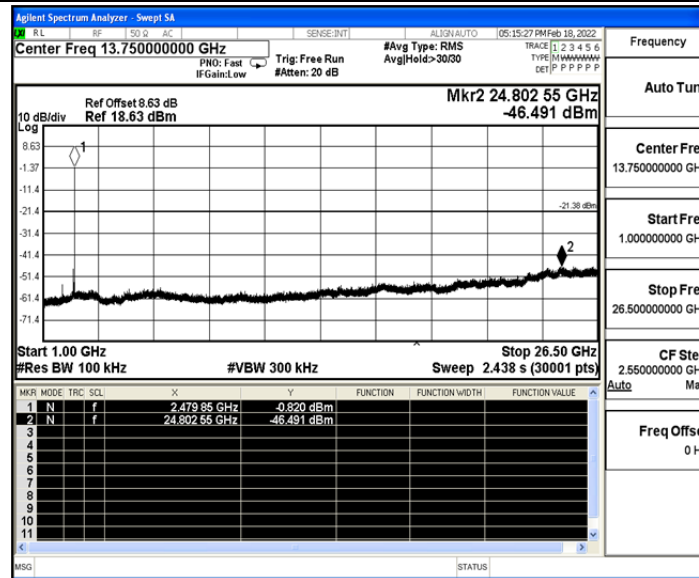
BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500





B.6 Duty Cycle

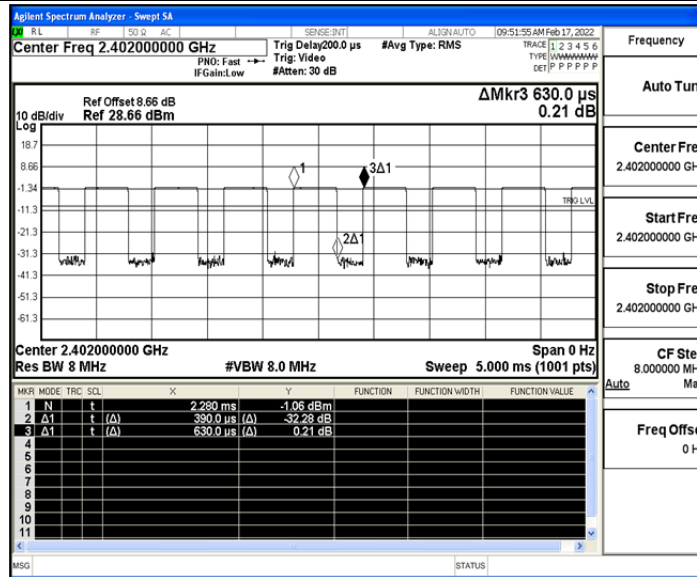
Test Result

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	---	---
		2440	0.39	0.63	0.6190	61.90	2.08	---	---
		2480	0.39	0.63	0.6190	61.90	2.08	---	---
BLE_2M	Ant1	2402	1.07	1.25	0.8560	85.60	0.68	---	---
		2440	1.08	1.25	0.8640	86.40	0.63	---	---
		2480	1.07	1.25	0.8560	85.60	0.68	---	---

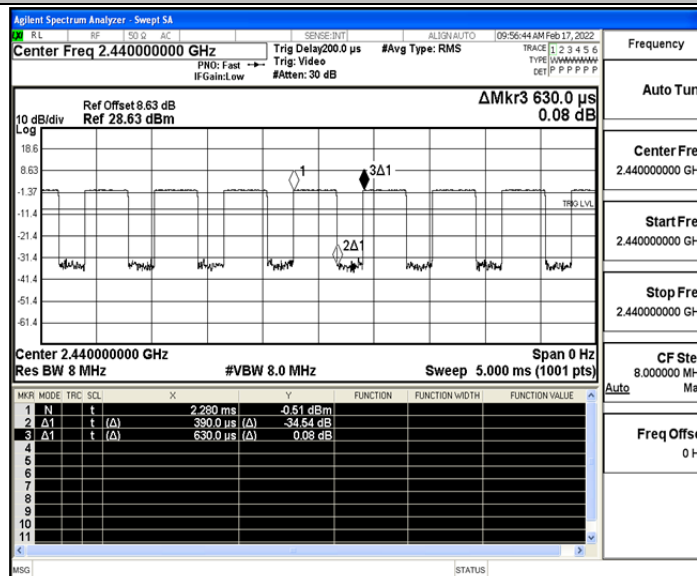


Test Graphs

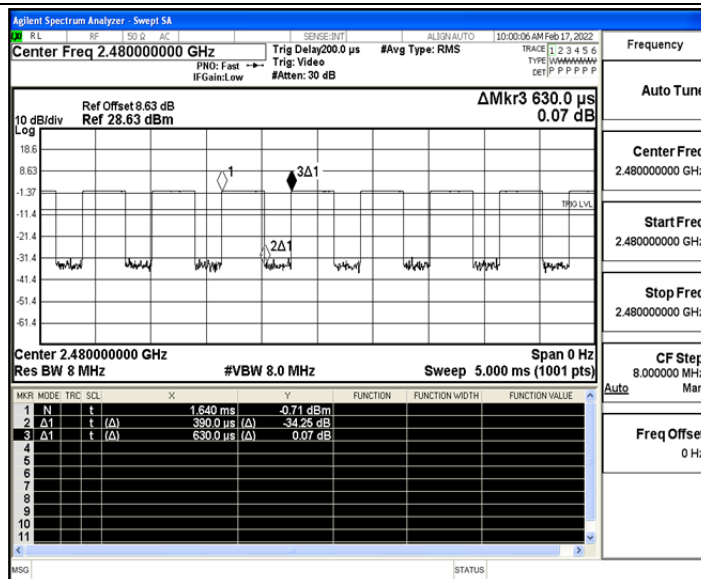
BLE_1M_Ant1_2402



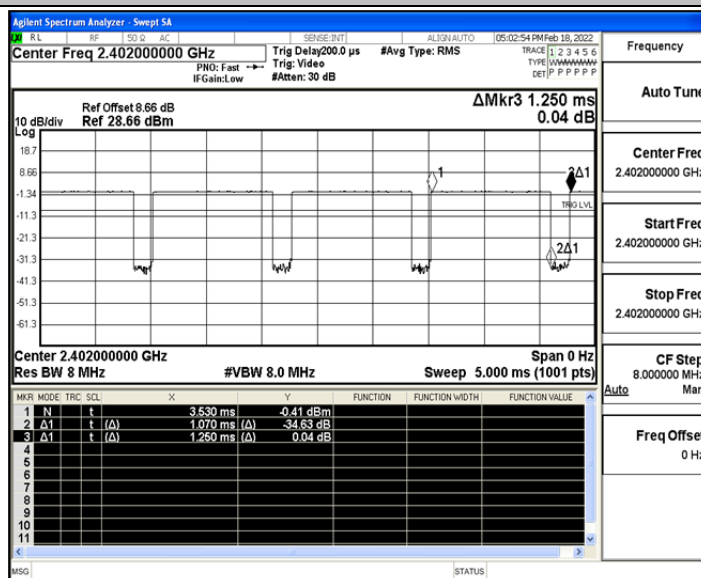
BLE_1M_Ant1_2440



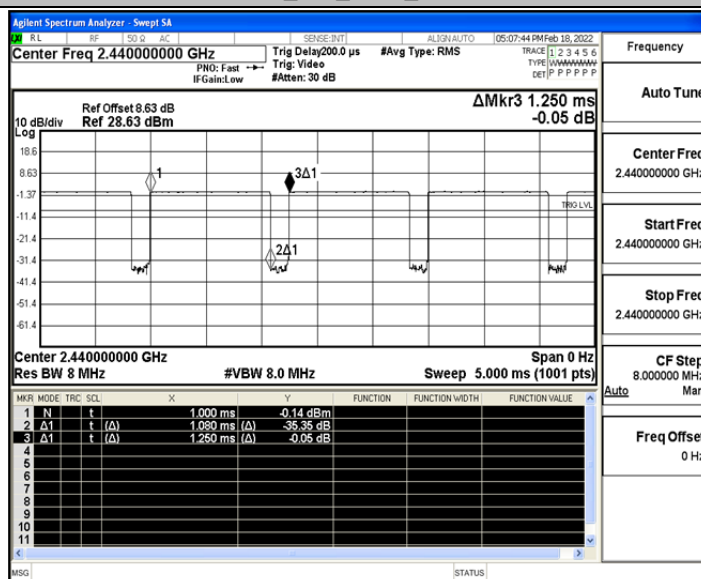
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402

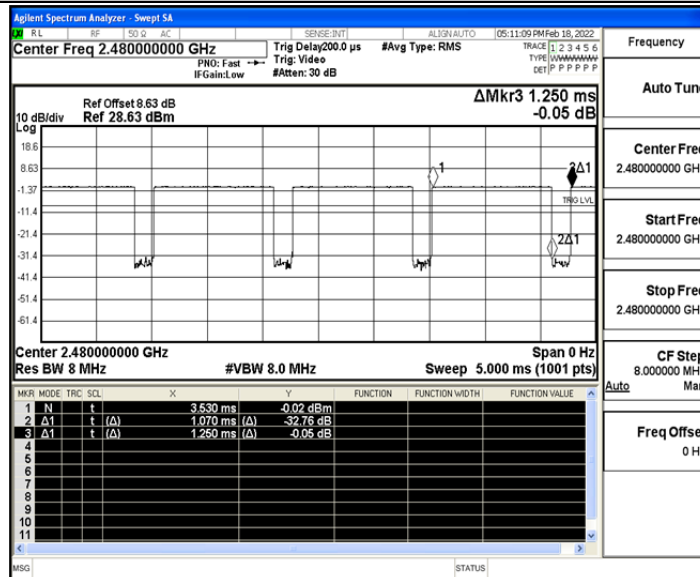


BLE_2M_Ant1_2440





BLE_2M_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	-47.35	≤-41.20	47.85	≤54	PASS
				AV	2380.640	-46.8	≤-41.20	48.40	≤54	PASS
				AV	2390.000	-47.08	≤-41.20	48.12	≤54	PASS
				Peak	2310.000	-39.25	≤-21.20	55.95	≤74	PASS
				Peak	2388.515	-36.72	≤-21.20	58.48	≤74	PASS
				Peak	2390.000	-38.56	≤-21.20	56.64	≤74	PASS
		High	2480	AV	2483.500	-46.24	≤-41.20	48.96	≤54	PASS
				AV	2499.360	-46.2	≤-41.20	49.00	≤54	PASS
				AV	2500.000	-46.53	≤-41.20	48.67	≤54	PASS
				Peak	2483.500	-38.16	≤-21.20	57.04	≤74	PASS
				Peak	2493.040	-35.98	≤-21.20	59.22	≤74	PASS
				Peak	2500.000	-38.38	≤-21.20	56.82	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-47.78	≤-41.20	47.42	≤54	PASS
				AV	2352.500	-47.17	≤-41.20	48.03	≤54	PASS
				AV	2390.000	-47.67	≤-41.20	47.53	≤54	PASS
				Peak	2310.000	-38.82	≤-21.20	56.38	≤74	PASS
				Peak	2352.920	-36.54	≤-21.20	58.66	≤74	PASS
				Peak	2390.000	-38.69	≤-21.20	56.51	≤74	PASS
		High	2480	AV	2483.500	-46.12	≤-41.20	49.08	≤54	PASS
				AV	2483.520	-46.12	≤-41.20	49.08	≤54	PASS
				AV	2500.000	-47.14	≤-41.20	48.06	≤54	PASS
				Peak	2483.500	-37.37	≤-21.20	57.83	≤74	PASS
				Peak	2491.680	-36.47	≤-21.20	58.73	≤74	PASS
				Peak	2500.000	-38.67	≤-21.20	56.53	≤74	PASS

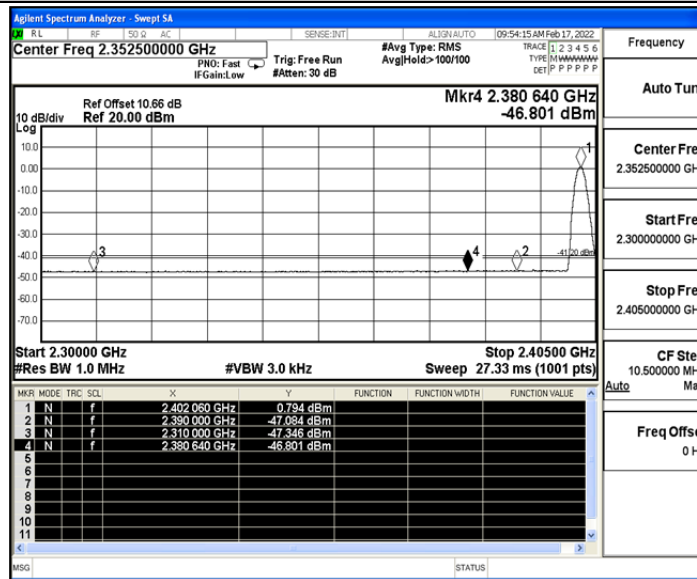
Note:

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.

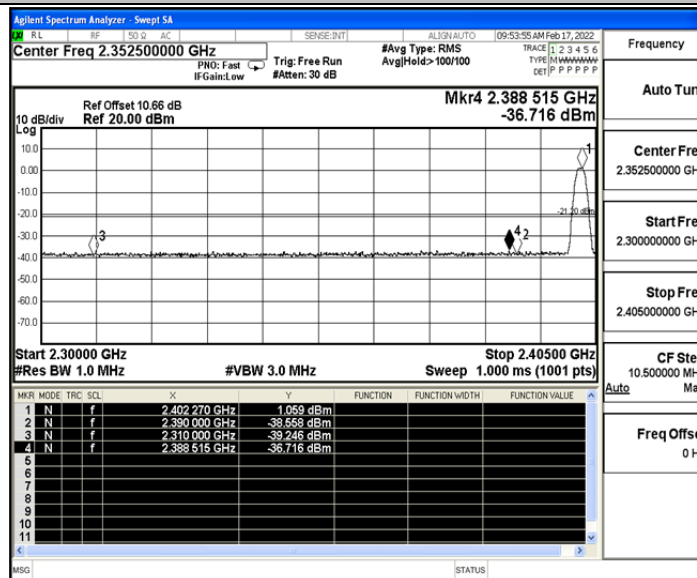


Test Graphs

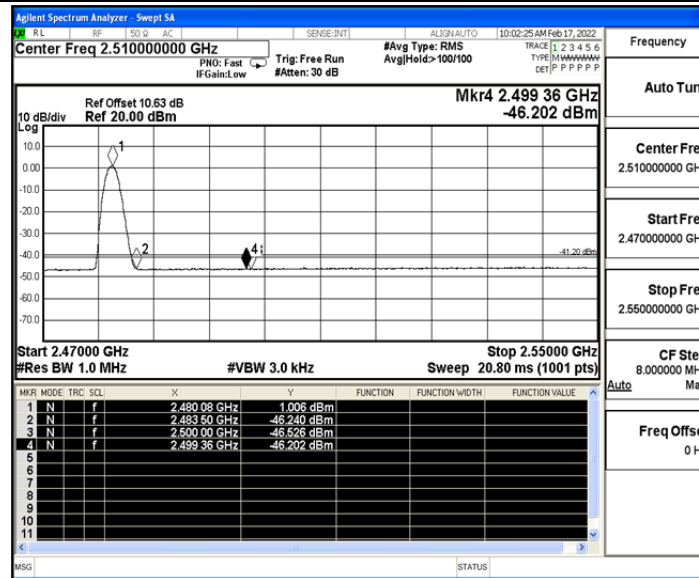
BLE_1M_Ant1_Low_2402_AV



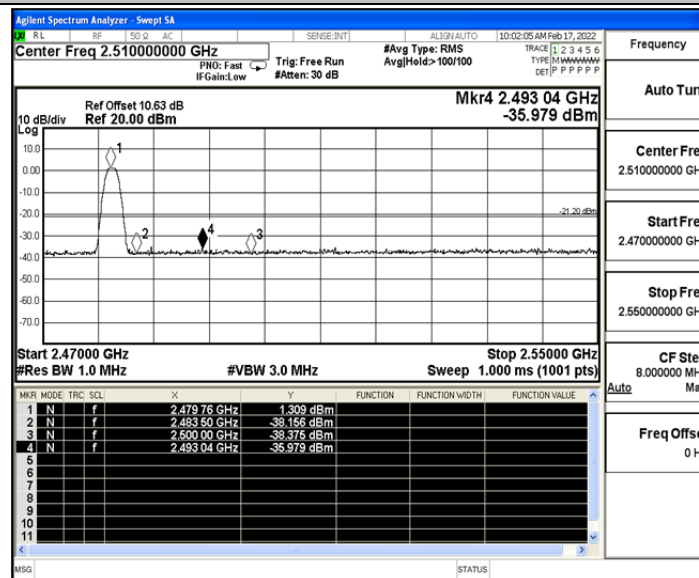
BLE_1M_Ant1_Low_2402_Peak



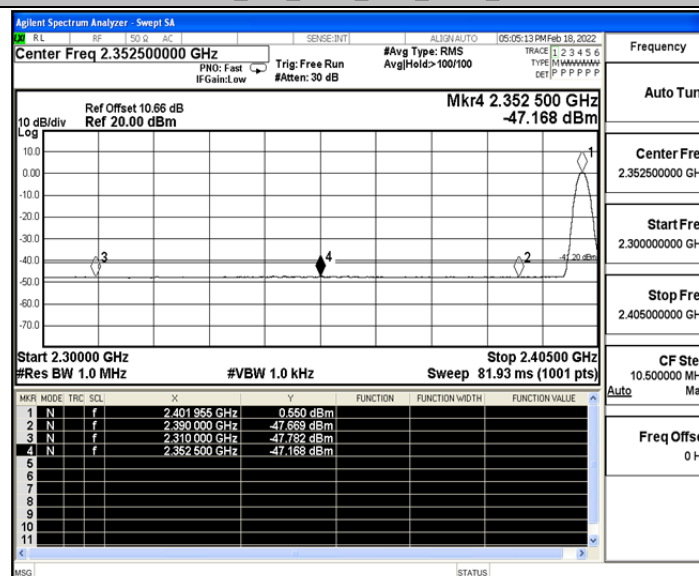
BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak

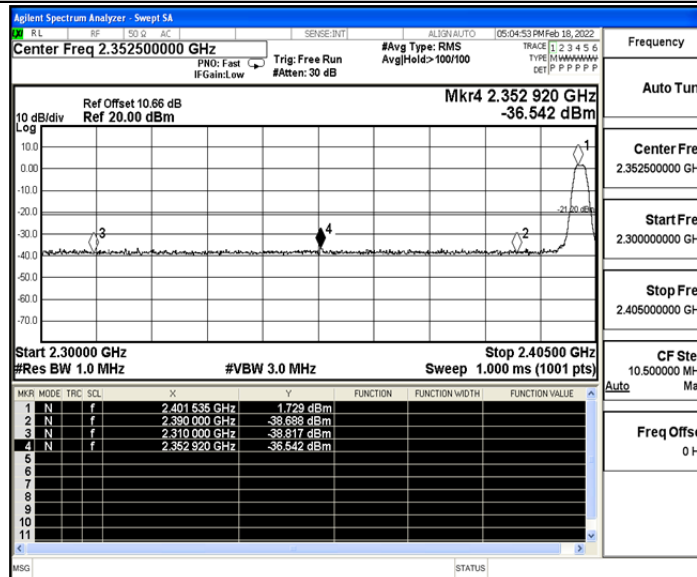


BLE_2M_Ant1_Low_2402_AV

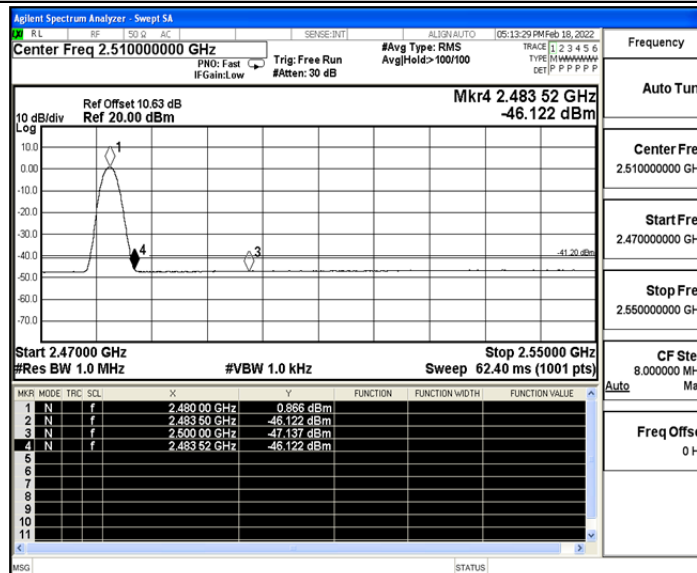




BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

