

RF Test Data for BT(BLE) (Conducted Measurement)**Product Name:** 4K Set top box**Trade Mark:** eSTREAM4K**Test Model:** IPA1114HDW-02**FCC ID:** 2AOVU-SN6BBAXS**IC:** 25669-IPA1114HDWS**Environmental Conditions**

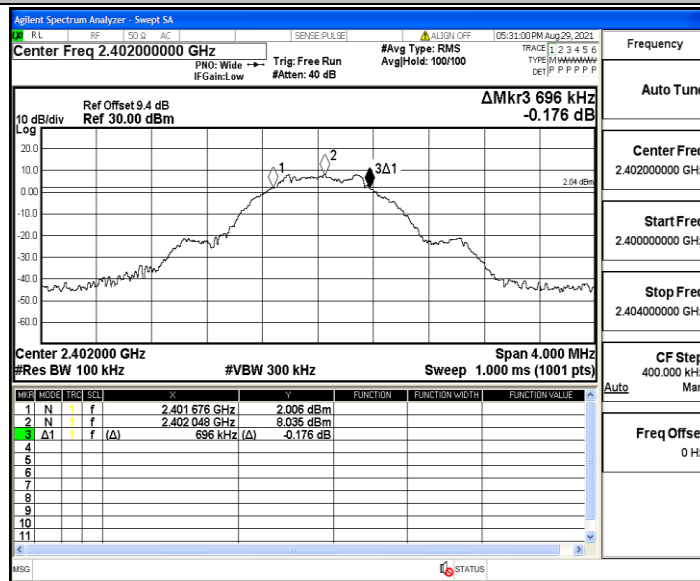
Temperature:	24.3℃
Relative Humidity:	56%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: DTS Bandwidth**Test Result**

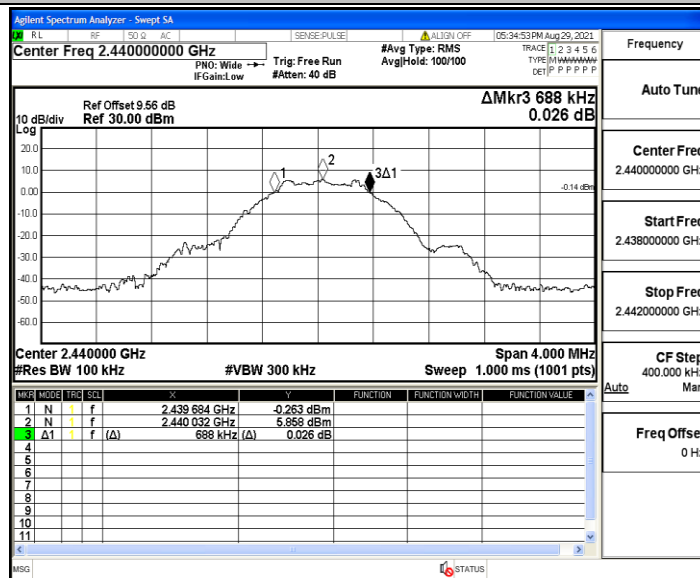
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant3	2402	0.696	2401.676	2402.372	0.5	PASS
		2440	0.688	2439.684	2440.372	0.5	PASS
		2480	0.728	2479.652	2480.380	0.5	PASS
BLE_2M	Ant3	2402	1.148	2401.484	2402.632	0.5	PASS
		2440	1.340	2439.352	2440.692	0.5	PASS
		2480	1.264	2479.360	2480.624	0.5	PASS

Test Graphs

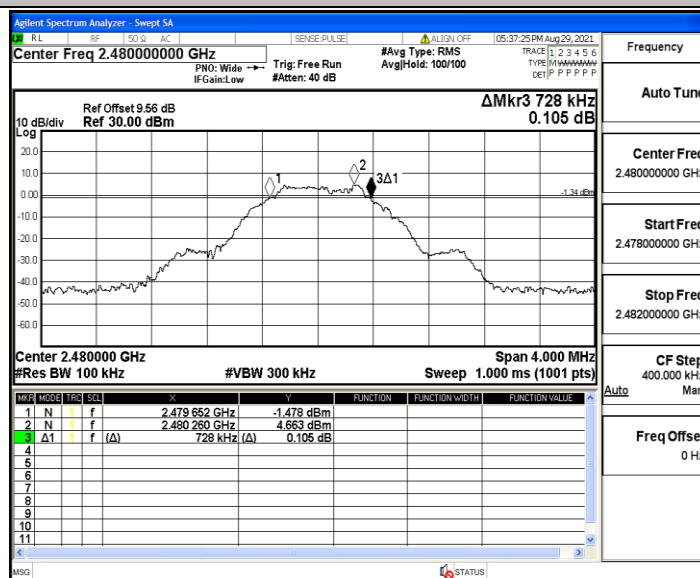
BLE_1M_Ant3_2402



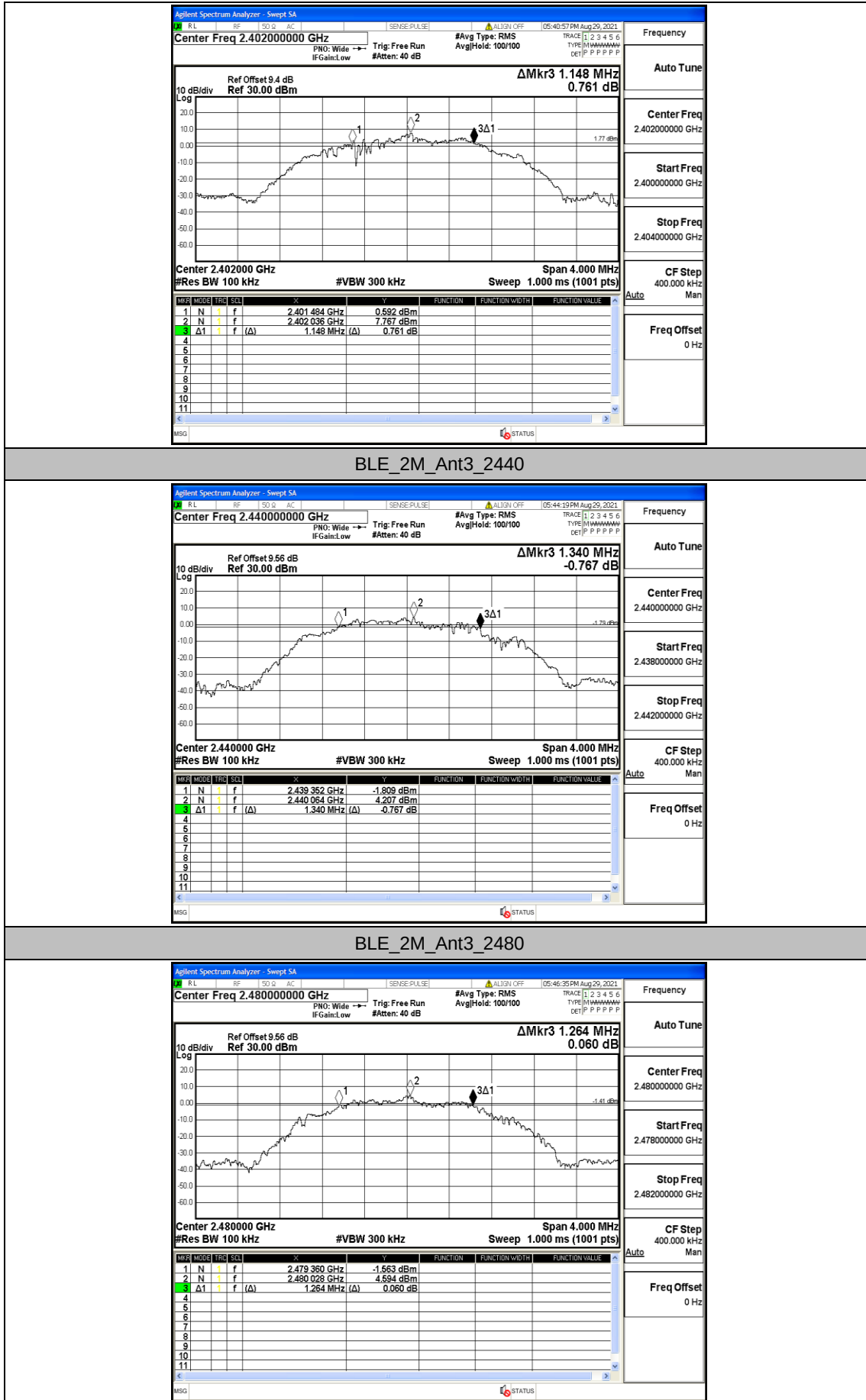
BLE_1M_Ant3_2440



BLE_1M_Ant3_2480



BLE_2M_Ant3_2402



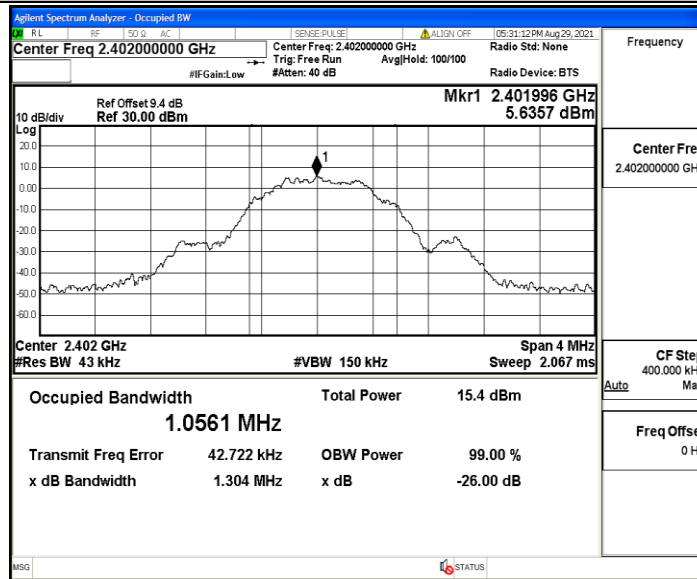
Appendix B: Occupied Channel Bandwidth

Test Result

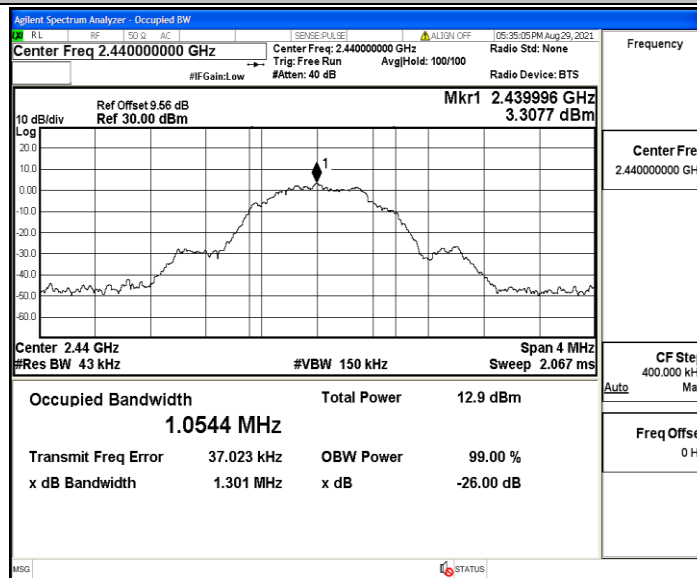
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant3	2402	1.0561	2401.515	2402.571	---	PASS
		2440	1.0544	2439.510	2440.564	---	PASS
		2480	1.0535	2479.503	2480.557	---	PASS
BLE_2M	Ant3	2402	2.0734	2401.013	2403.087	---	PASS
		2440	2.0626	2439.014	2441.076	---	PASS
		2480	2.0656	2479.002	2481.067	---	PASS

Test Graphs

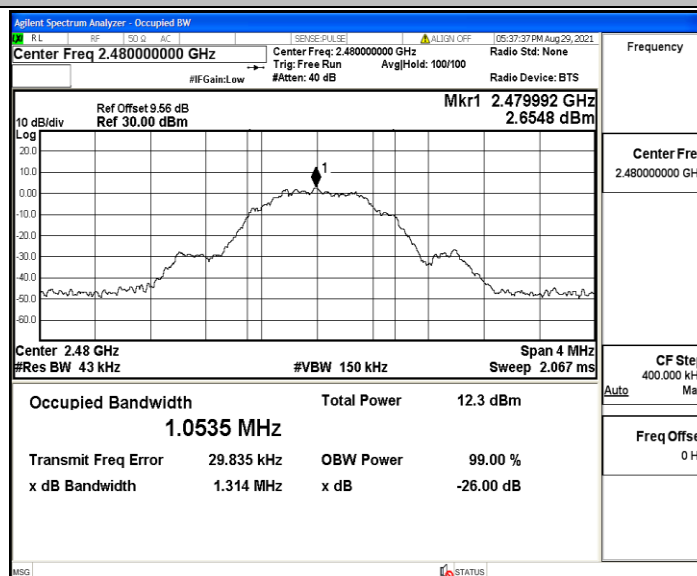
BLE_1M_Ant3_2402



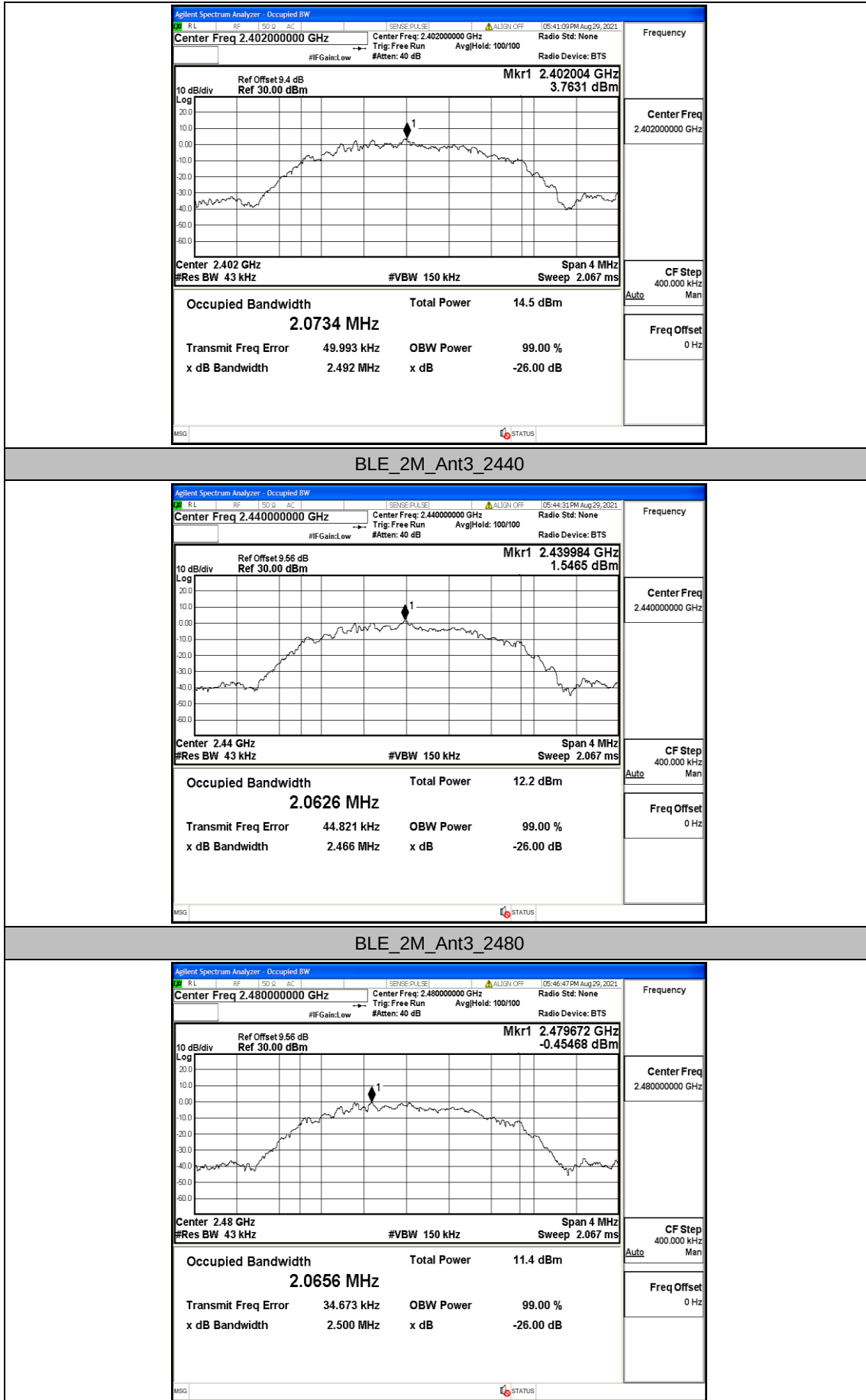
BLE_1M_Ant3_2440



BLE_1M_Ant3_2480



BLE_2M_Ant3_2402



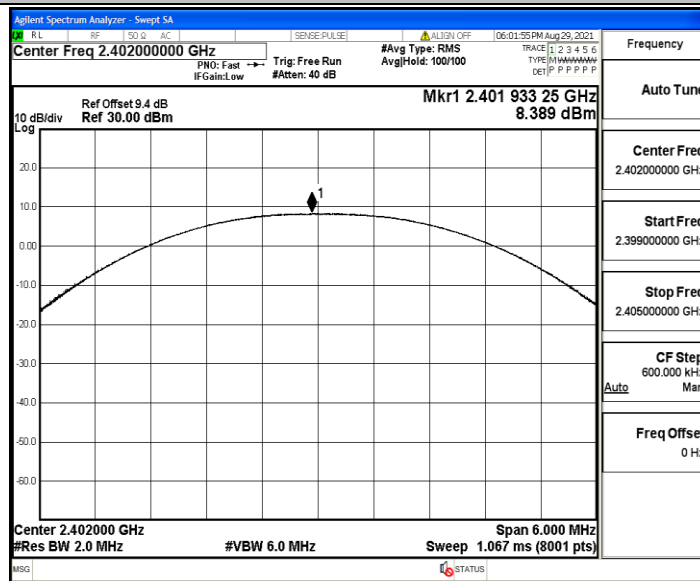
Appendix C: Maximum conducted output power

Test Result

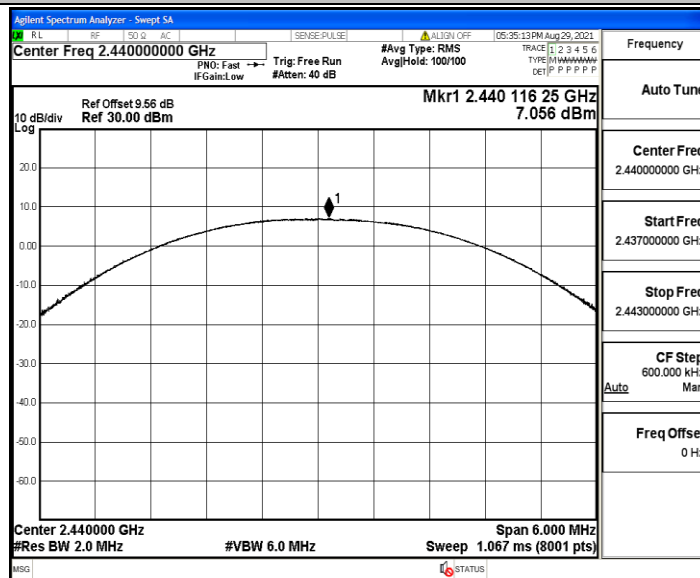
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant3	2402	8.39	≤30	PASS
		2440	7.06	≤30	PASS
		2480	6.37	≤30	PASS
BLE_2M	Ant3	2402	8.38	≤30	PASS
		2440	7.12	≤30	PASS
		2480	6.49	≤30	PASS

Test Graphs

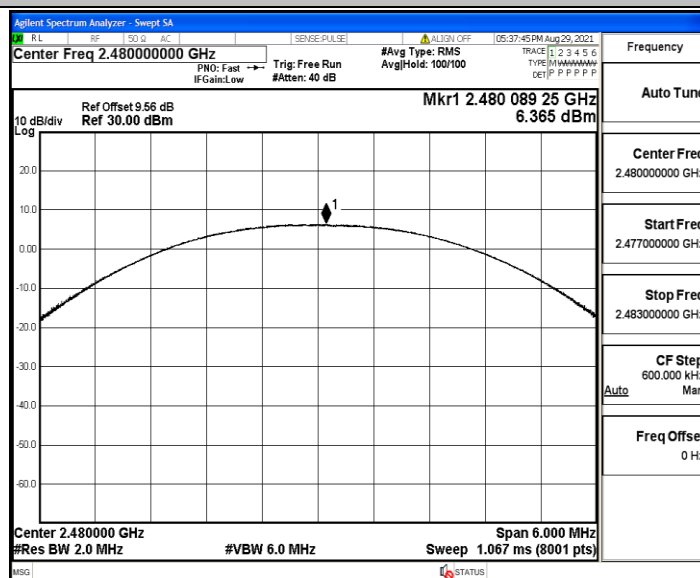
BLE_1M_Ant3_2402



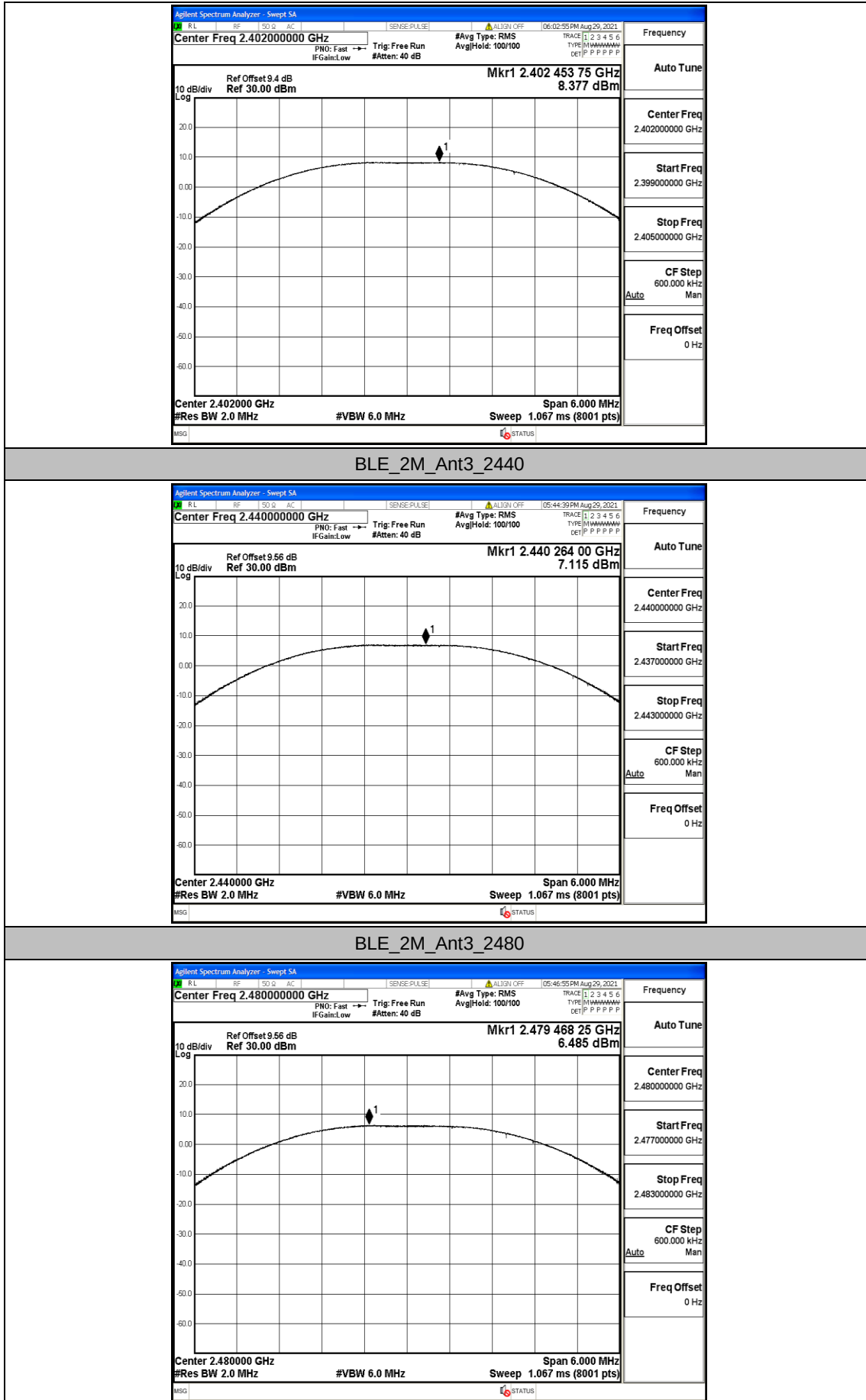
BLE_1M_Ant3_2440



BLE_1M_Ant3_2480



BLE_2M_Ant3_2402



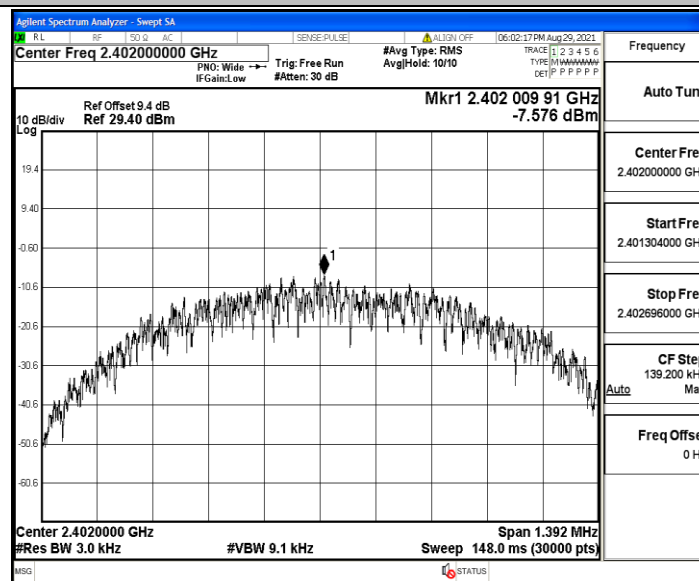
Appendix D: Maximum power spectral density

Test Result

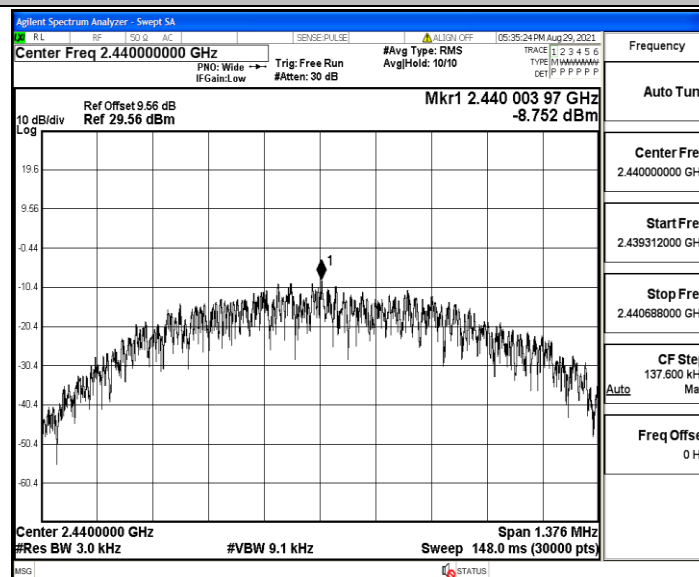
TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant3	2402	-7.58	≤8	PASS
		2440	-8.75	≤8	PASS
		2480	-9.74	≤8	PASS
BLE_2M	Ant3	2402	-9.64	≤8	PASS
		2440	-10.98	≤8	PASS
		2480	-11.75	≤8	PASS

Test Graphs

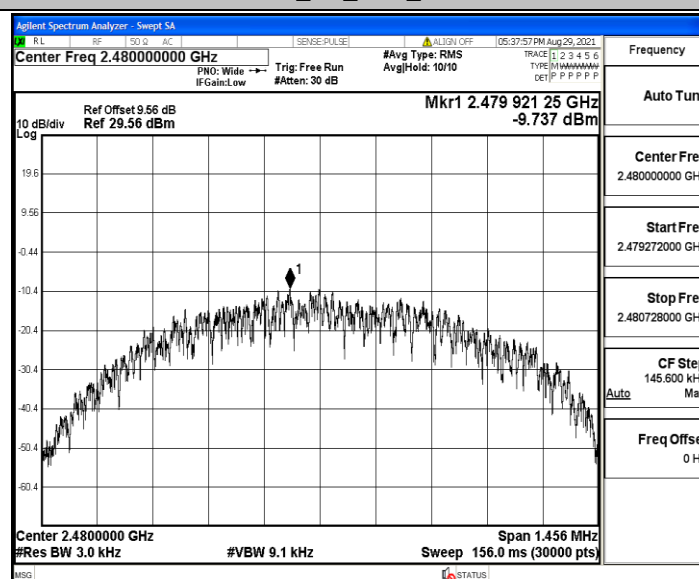
BLE_1M_Ant3_2402



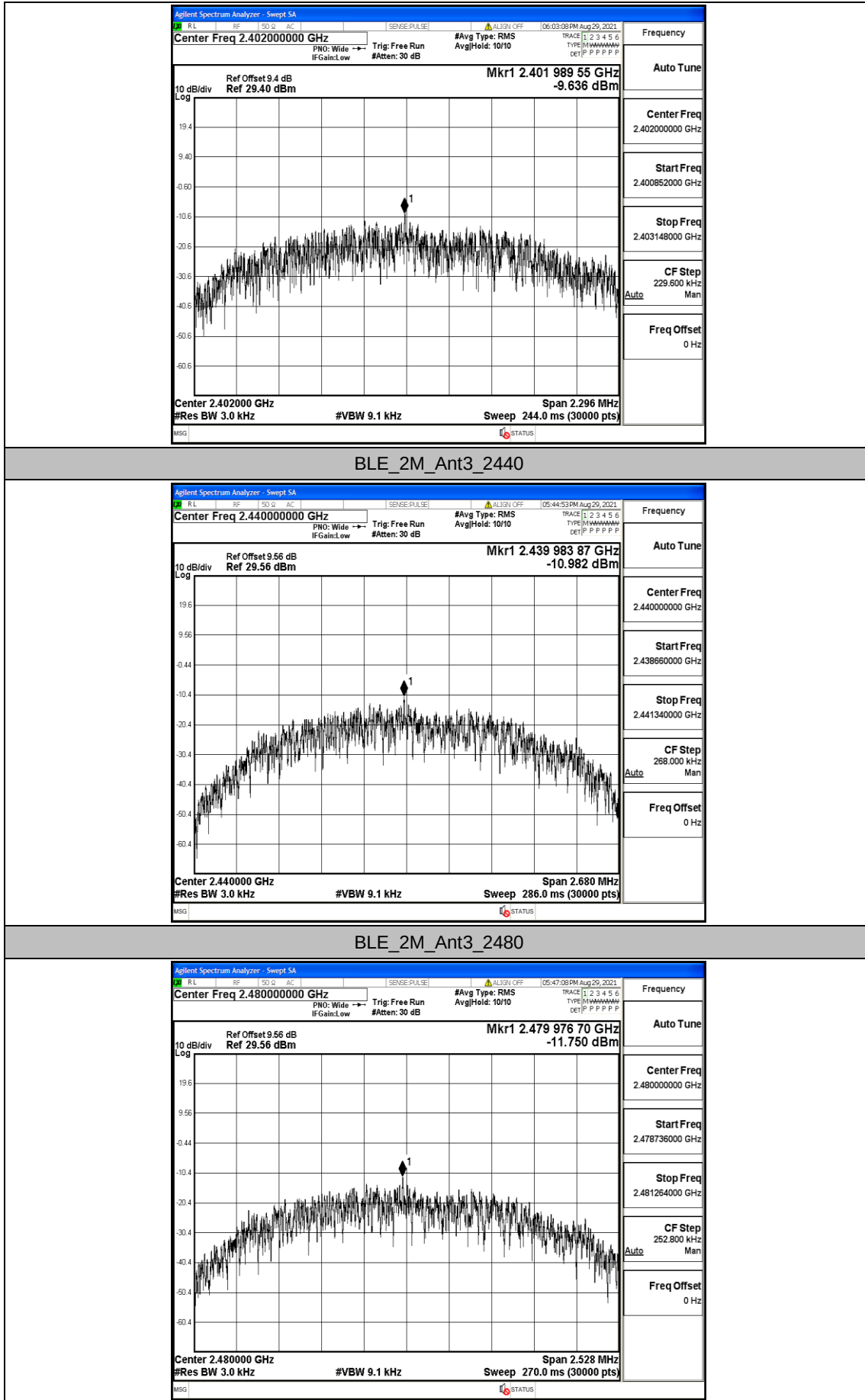
BLE_1M_Ant3_2440



BLE_1M_Ant3_2480



BLE_2M_Ant3_2402



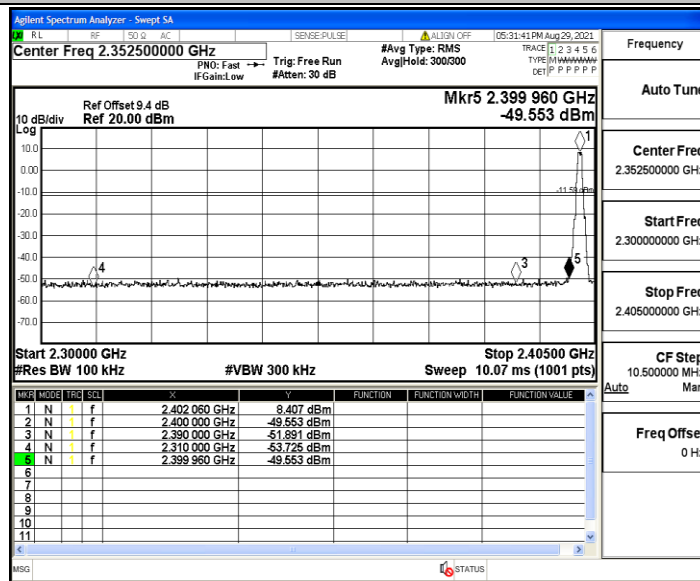
Appendix E: Band edge measurements

Test Result

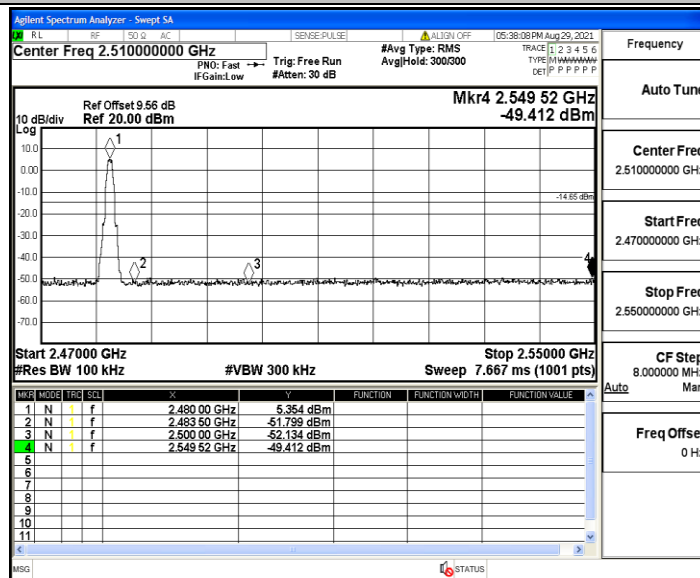
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant3	Low	2402	8.41	-49.55	≤ -11.59	PASS
		High	2480	5.35	-49.41	≤ -14.65	PASS
BLE_2M	Ant3	Low	2402	7.78	-29.41	≤ -12.22	PASS
		High	2480	4.80	-49.18	≤ -15.2	PASS

Test Graphs

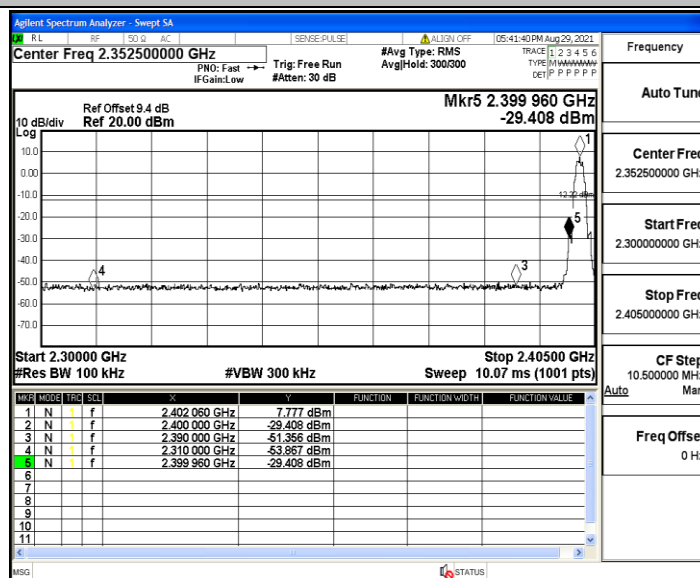
BLE_1M_Ant3_Low_2402



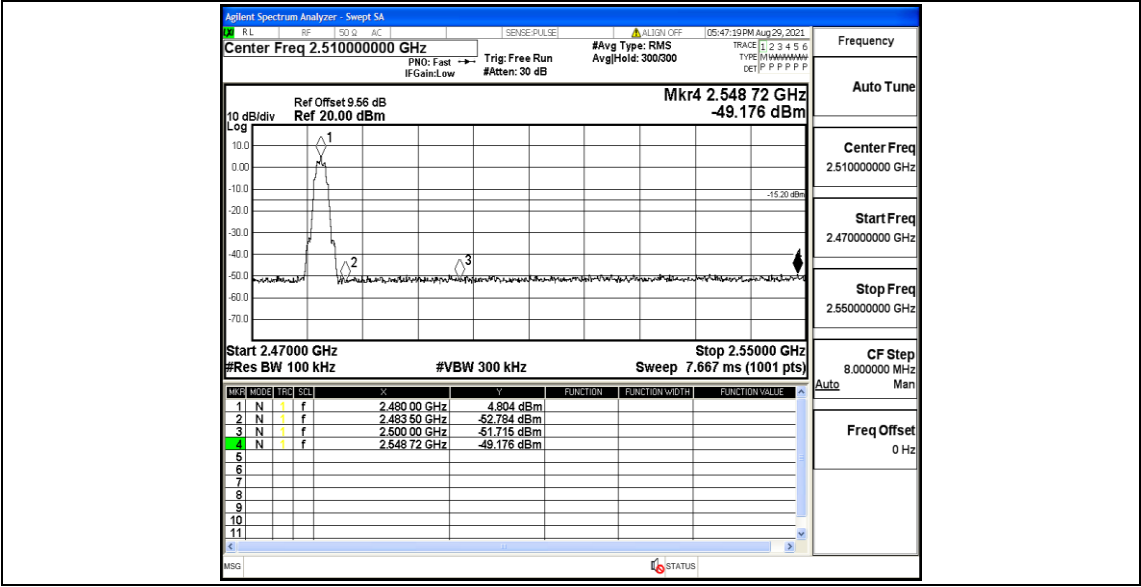
BLE_1M_Ant3_High_2480



BLE_2M_Ant3_Low_2402



BLE_2M_Ant3_High_2480

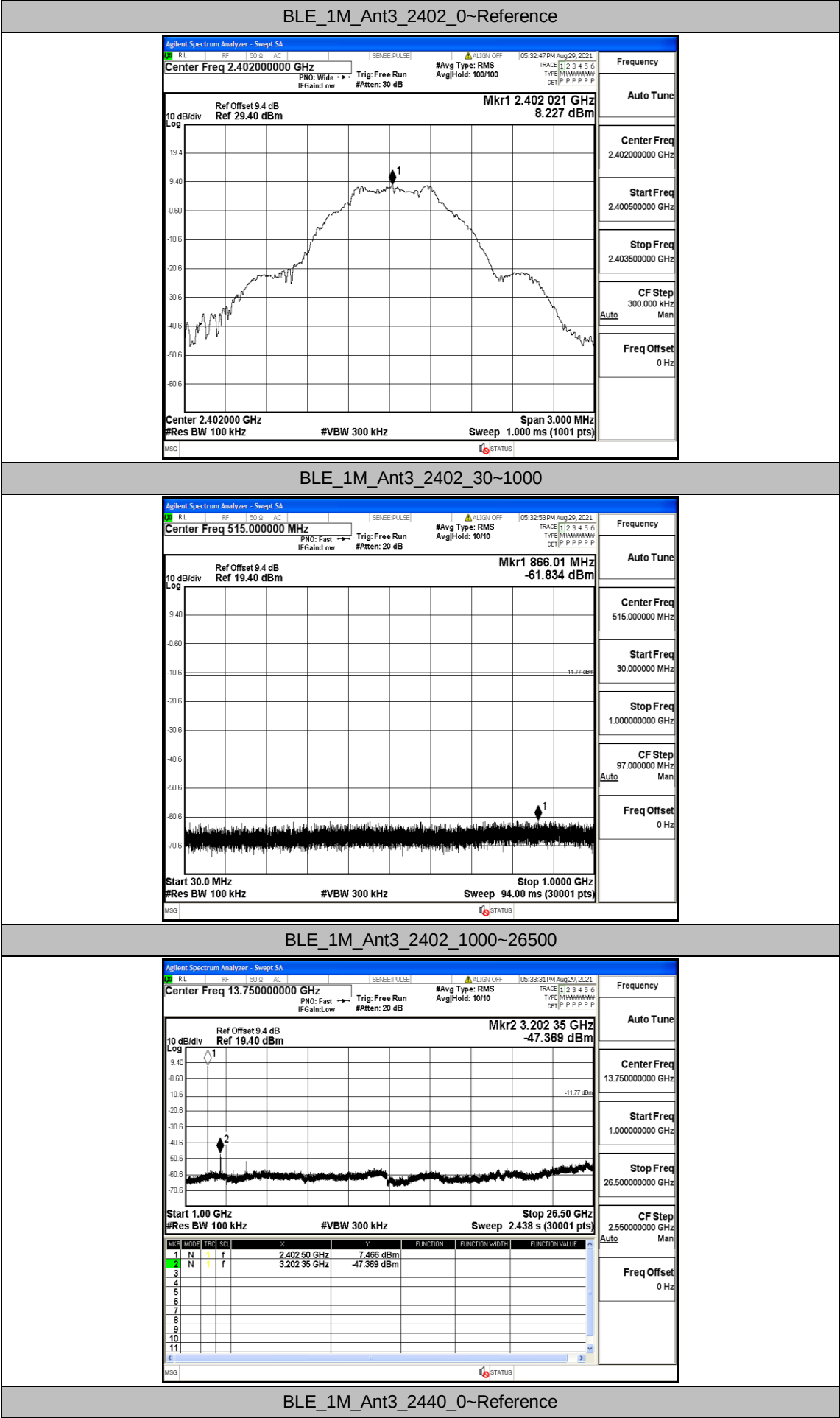


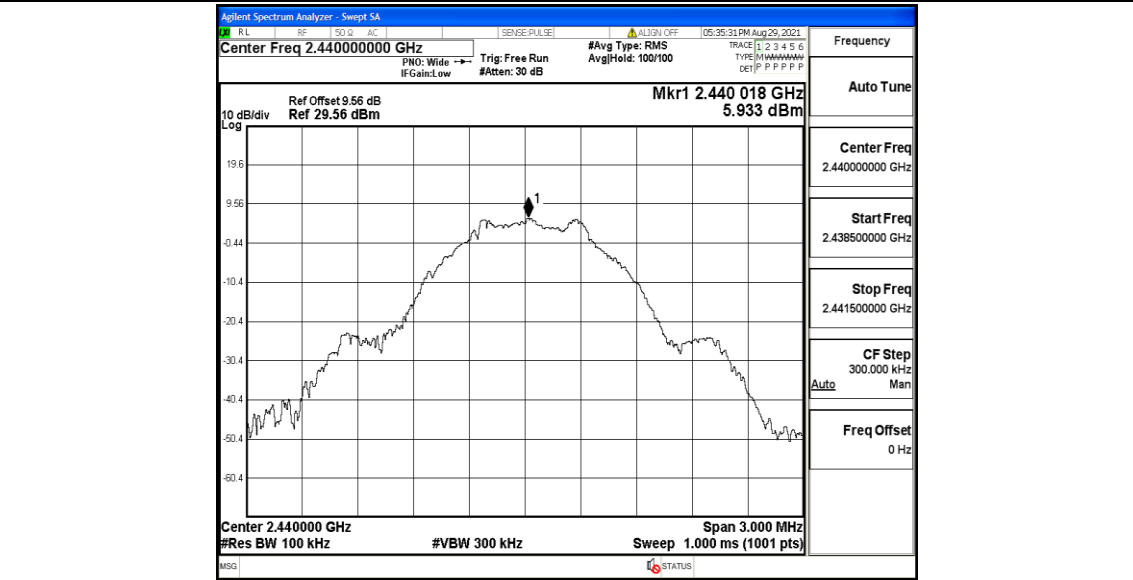
Appendix F: Conducted Spurious Emission

Test Result

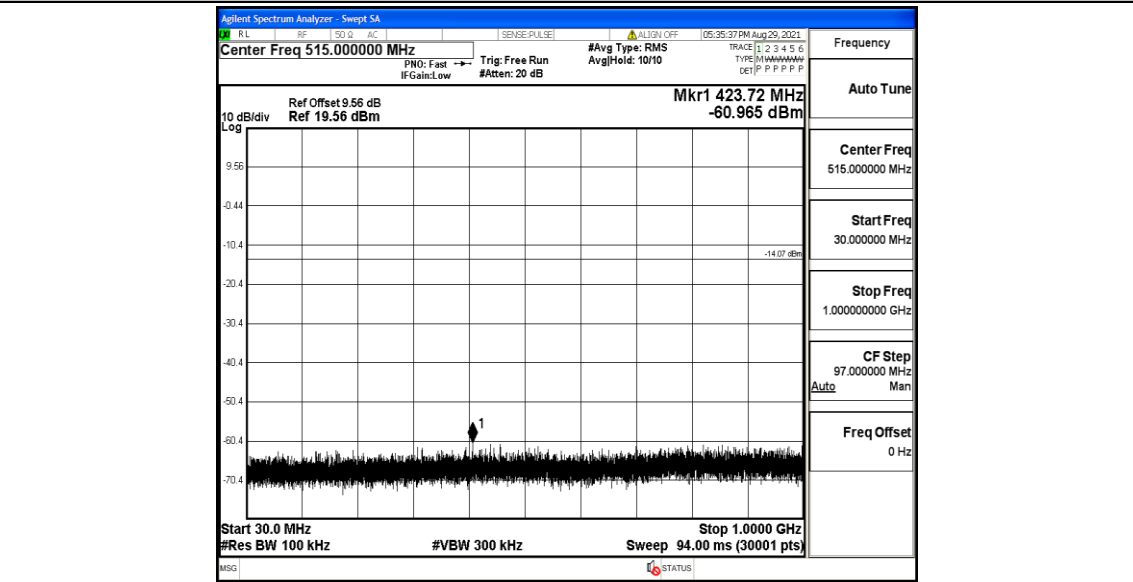
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant3	2402	Reference	8.23	8.23	---	PASS
			30~1000	8.23	-61.83	≤-11.77	PASS
			1000~26500	8.23	-47.37	≤-11.77	PASS
		2440	Reference	5.93	5.93	---	PASS
			30~1000	5.93	-60.97	≤-14.07	PASS
			1000~26500	5.93	-49.62	≤-14.07	PASS
		2480	Reference	5.19	5.19	---	PASS
			30~1000	5.19	-61.29	≤-14.81	PASS
			1000~26500	5.19	-51.66	≤-14.81	PASS
BLE_2M	Ant3	2402	Reference	6.87	6.87	---	PASS
			30~1000	6.87	-60.58	≤-13.13	PASS
			1000~26500	6.87	-47.24	≤-13.13	PASS
		2440	Reference	5.27	5.27	---	PASS
			30~1000	5.27	-61.32	≤-14.74	PASS
			1000~26500	5.27	-49.44	≤-14.74	PASS
		2480	Reference	4.76	4.76	---	PASS
			30~1000	4.76	-60.44	≤-15.24	PASS
			1000~26500	4.76	-52.14	≤-15.24	PASS

Test Graphs

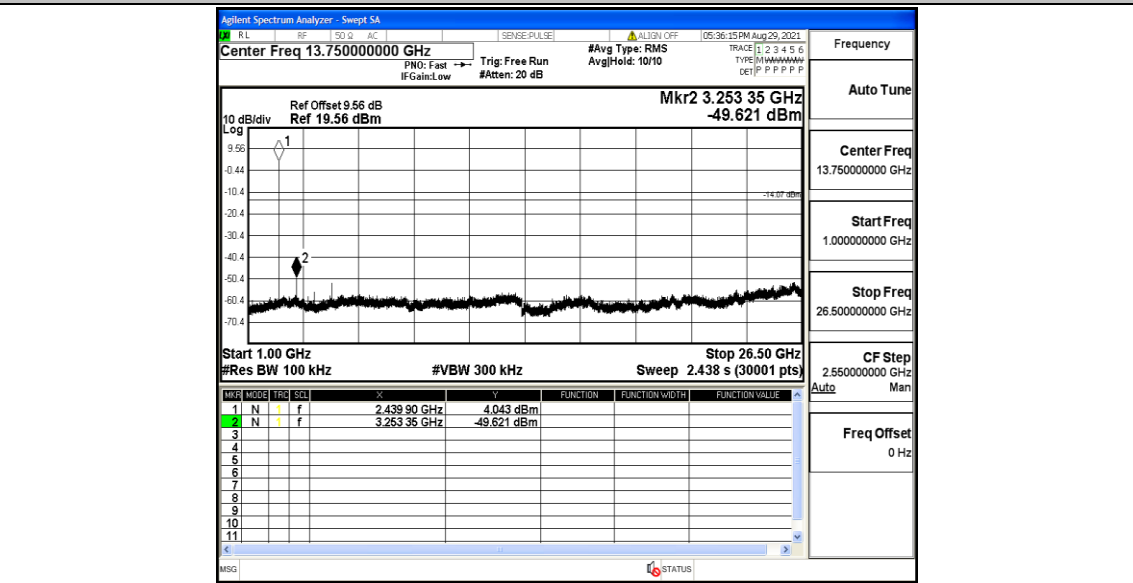




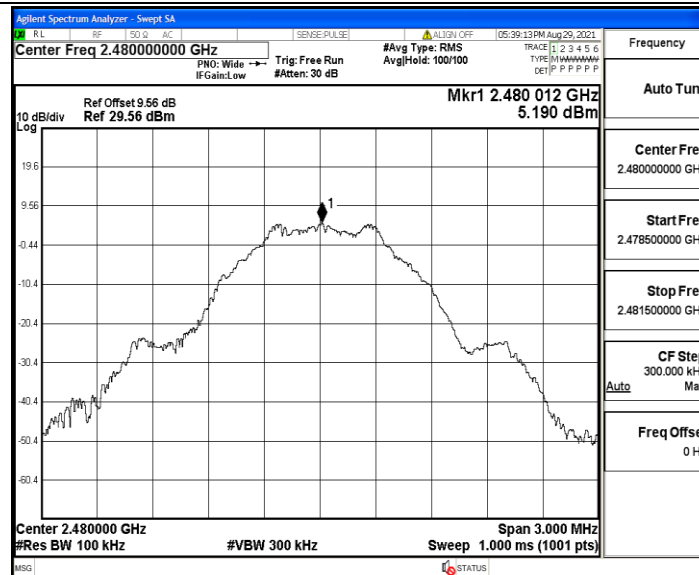
BLE_1M_Ant3_2440_30~1000



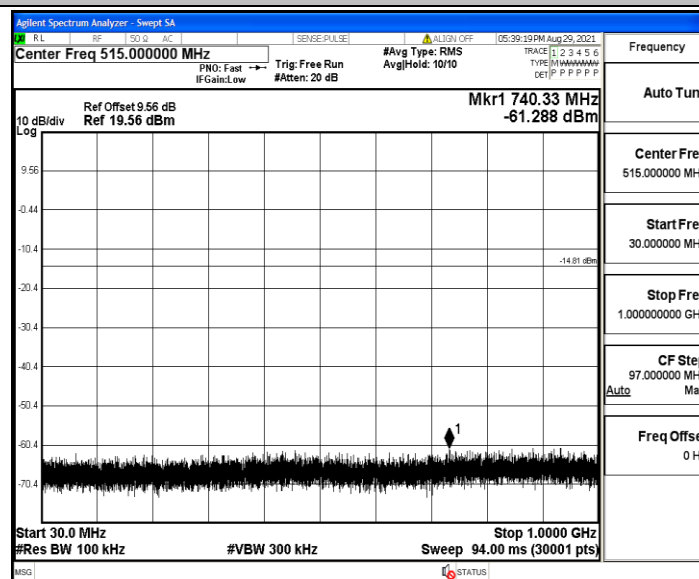
BLE_1M_Ant3_2440_1000~26500



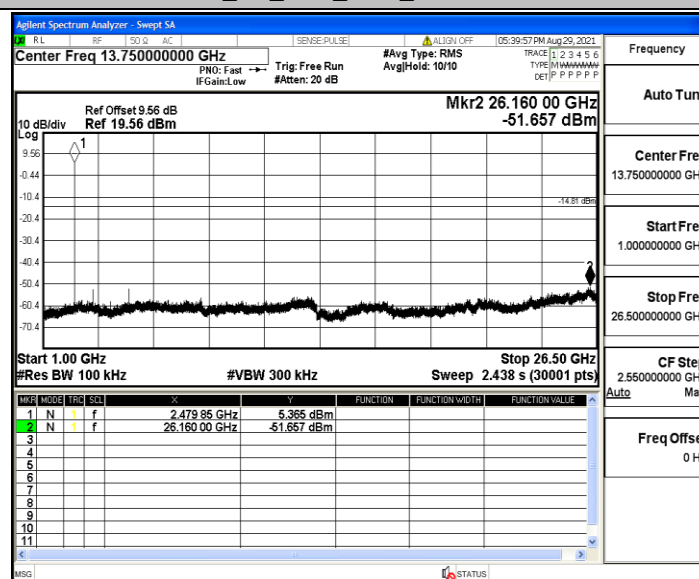
BLE_1M_Ant3_2480_0~Reference



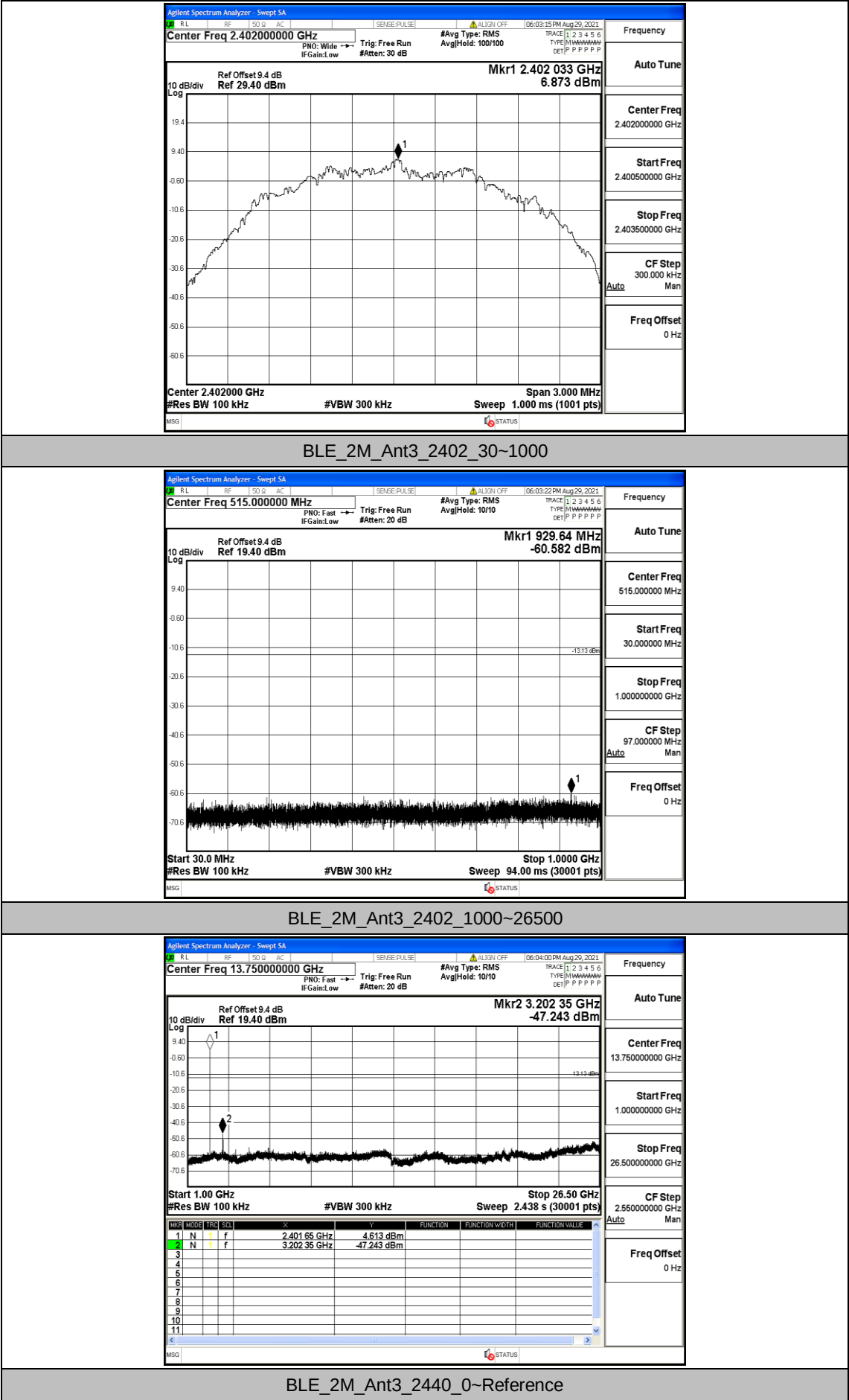
BLE_1M_Ant3_2480_30~1000

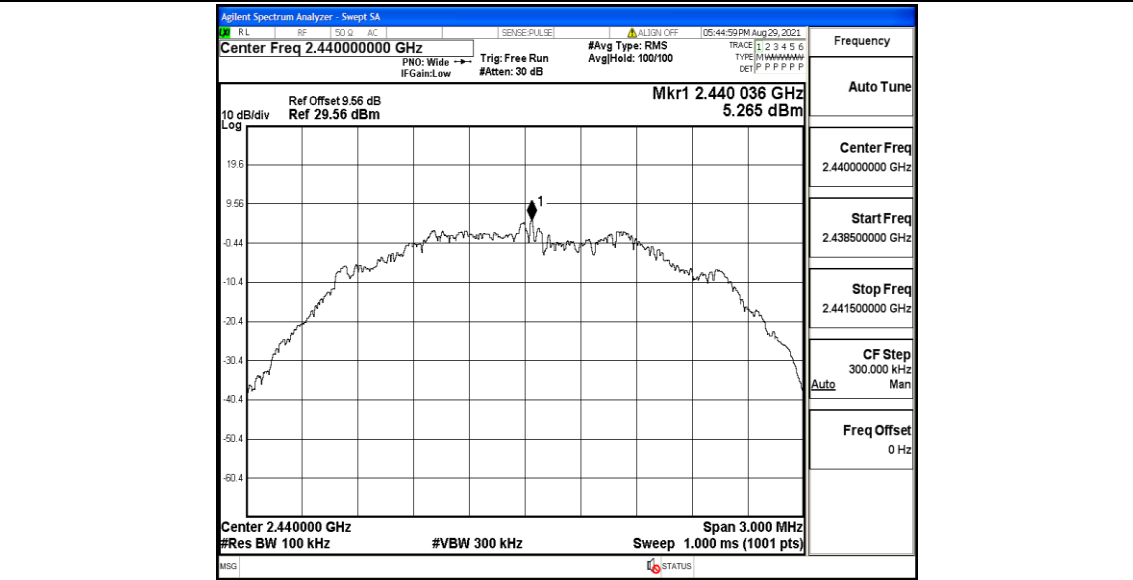


BLE_1M_Ant3_2480_1000~26500

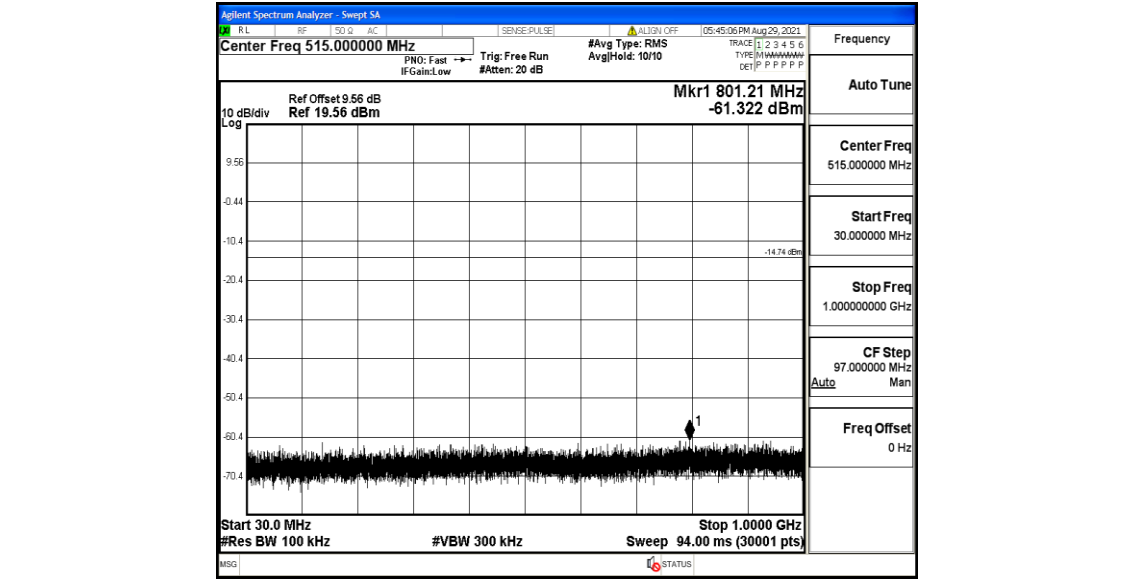


BLE_2M_Ant3_2402_0~Reference

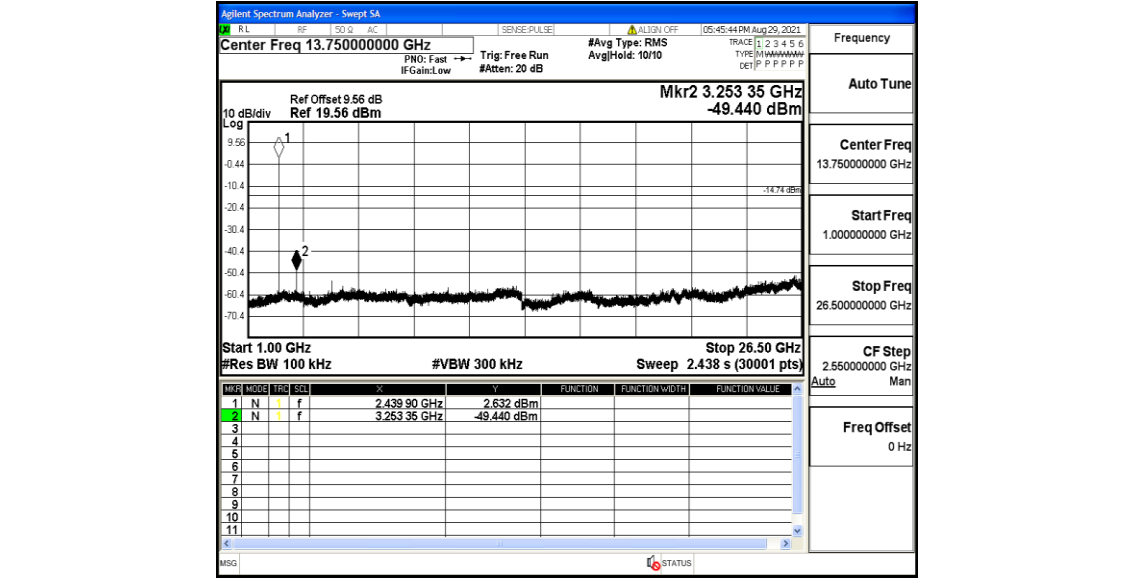




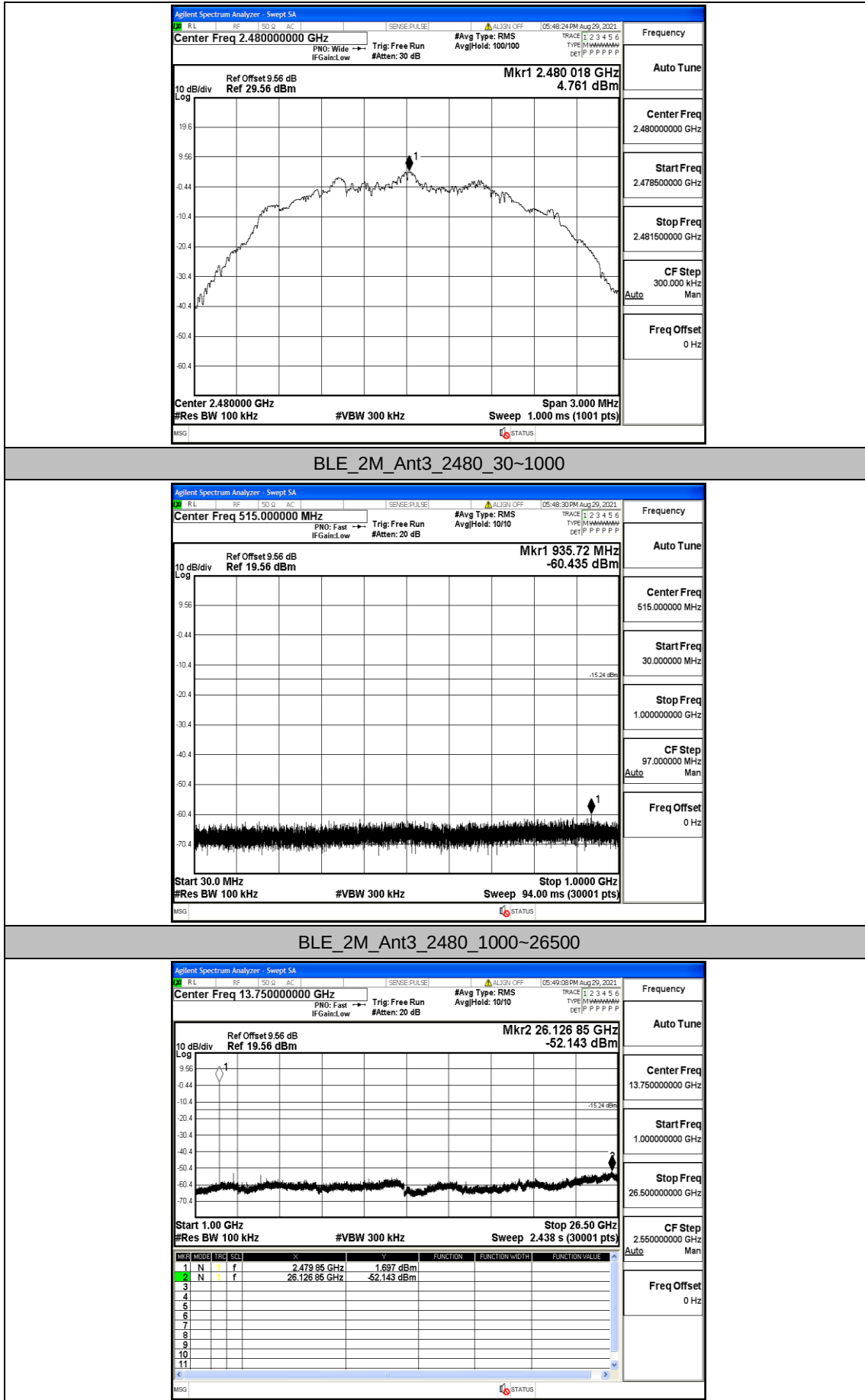
BLE_2M_Ant3_2440_30~1000



BLE_2M_Ant3_2440_1000~26500



BLE_2M_Ant3_2480_0~Reference



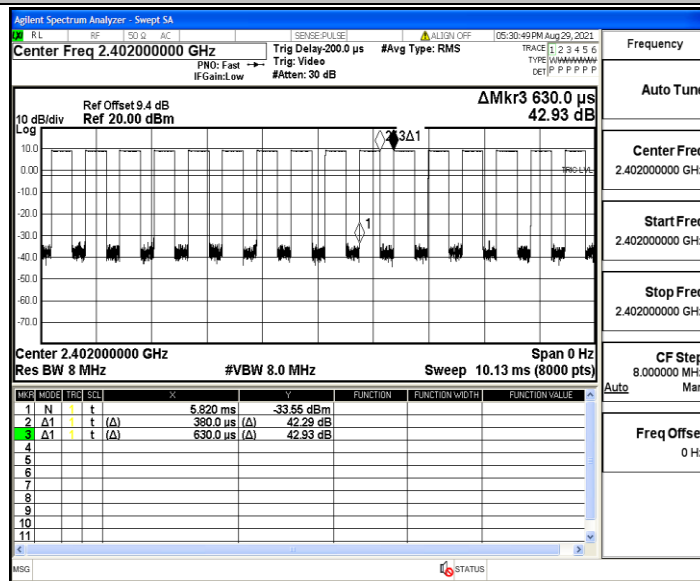
Appendix G: Duty Cycle

Test Result

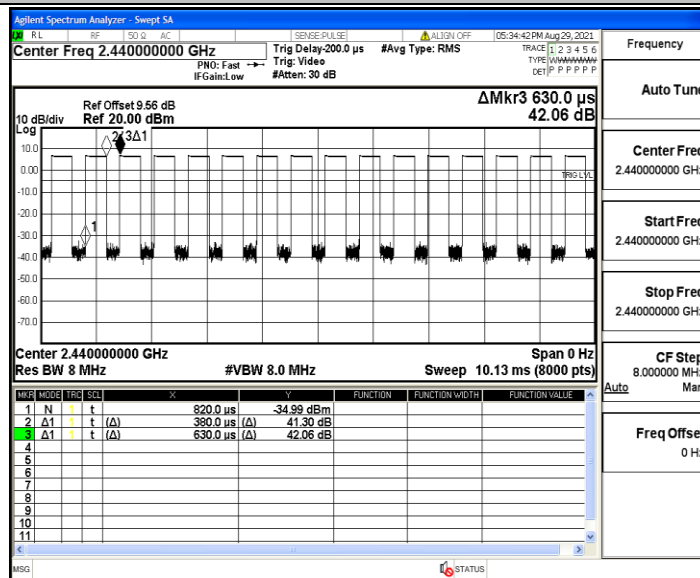
TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/B [KHz]
BLE_1M	Ant3	2402	0.38	0.63	60.32	1.6
		2440	0.38	0.63	60.32	1.6
		2480	0.38	0.62	61.29	1.6
BLE_2M	Ant3	2402	0.19	0.62	30.65	1.6
		2440	0.20	0.63	31.75	1.6
		2480	0.20	0.63	31.75	1.6

Test Graphs

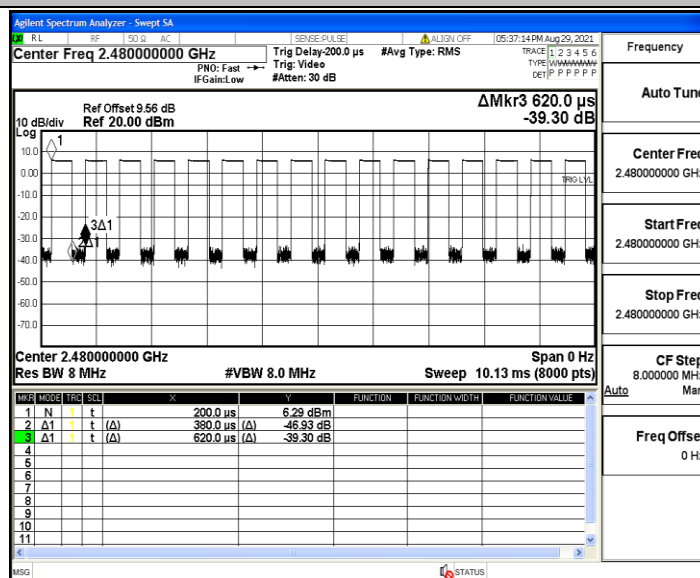
BLE_1M_Ant3_2402



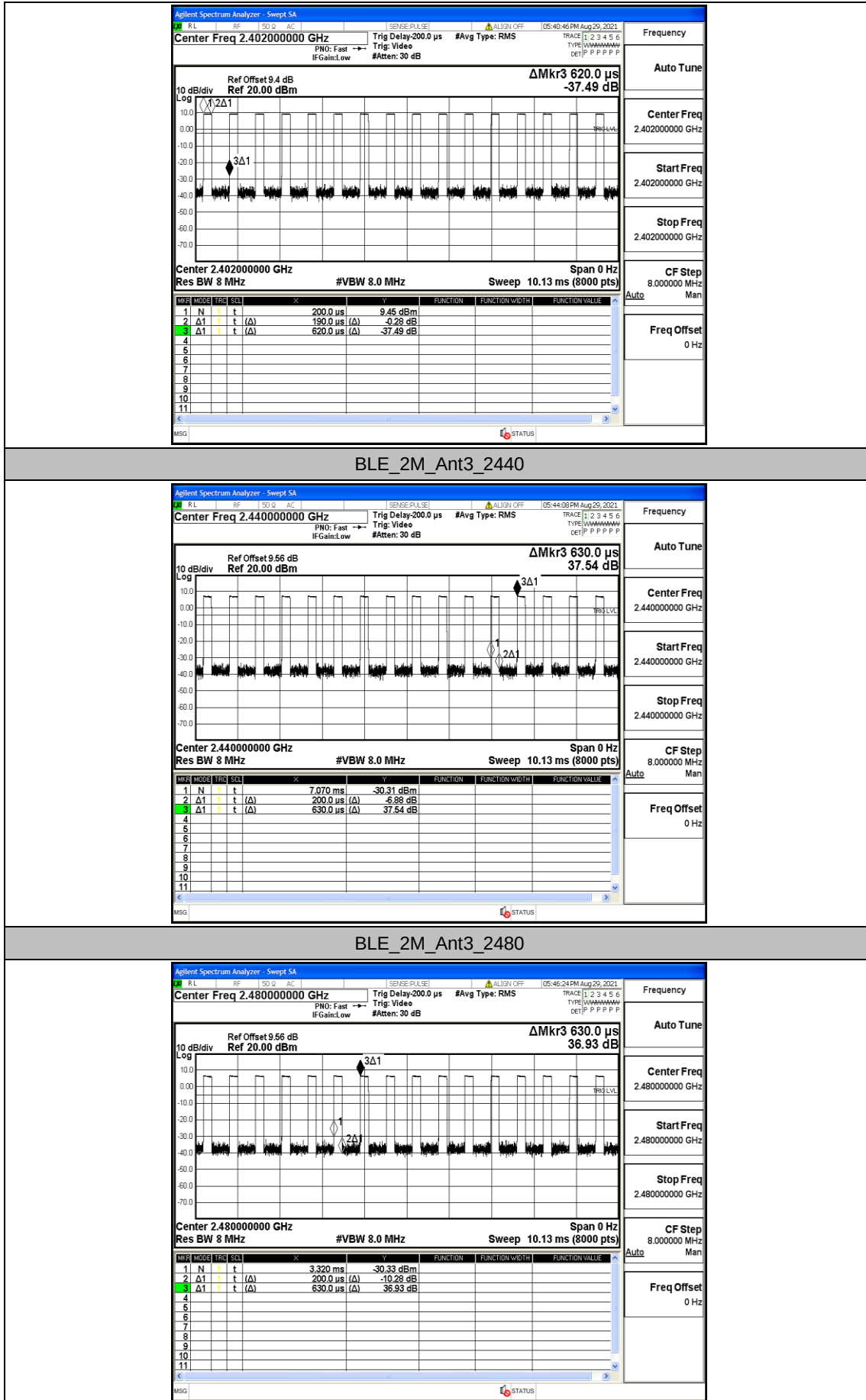
BLE_1M_Ant3_2440



BLE_1M_Ant3_2480



BLE_2M_Ant3_2402



Appendix H: Emissions in Restricted Bands

Test Result

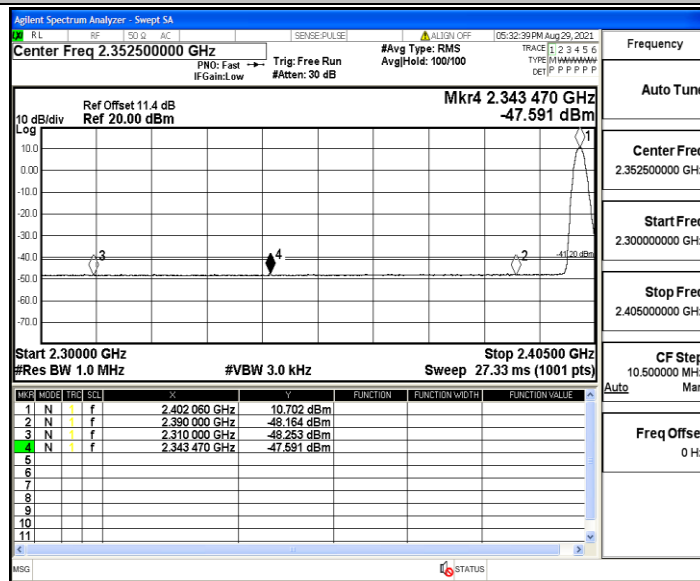
TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant3	Low	2402	AV	2310.000	-48.25	≤-41.20	PASS
				AV	2343.470	-47.59	≤-41.20	PASS
				AV	2390.000	-48.16	≤-41.20	PASS
				Peak	2310.000	-42.21	≤-21.20	PASS
				Peak	2324.150	-38.85	≤-21.20	PASS
				Peak	2390.000	-40.14	≤-21.20	PASS
		High	2480	AV	2483.500	-45.79	≤-41.20	PASS
				AV	2483.520	-45.79	≤-41.20	PASS
				AV	2500.000	-47.23	≤-41.20	PASS
				Peak	2483.500	-41.62	≤-21.20	PASS
				Peak	2494.480	-38.39	≤-21.20	PASS
				Peak	2500.000	-40.99	≤-21.20	PASS
BLE_2M	Ant3	Low	2402	AV	2310.000	-47.66	≤-41.20	PASS
				AV	2341.580	-46.88	≤-41.20	PASS
				AV	2390.000	-47.76	≤-41.20	PASS
				Peak	2310.000	-41.37	≤-21.20	PASS
				Peak	2372.135	-38.31	≤-21.20	PASS
				Peak	2390.000	-40.26	≤-21.20	PASS
		High	2480	AV	2483.500	-44.39	≤-41.20	PASS
				AV	2483.520	-44.39	≤-41.20	PASS
				AV	2500.000	-47.02	≤-41.20	PASS
				Peak	2483.500	-40.06	≤-21.20	PASS
				Peak	2490.400	-38.29	≤-21.20	PASS
				Peak	2500.000	-41.02	≤-21.20	PASS

Note:

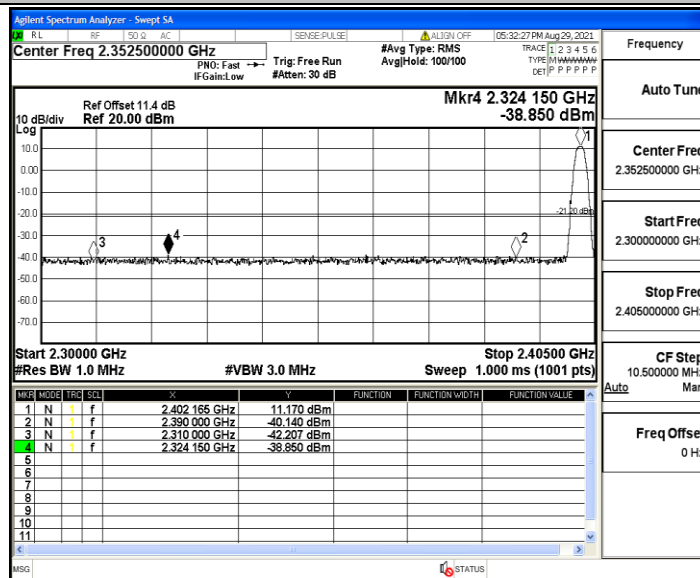
1. The Antenna Gain is compensated in the graph with 2dBi and Antenna Gain which is Higher.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

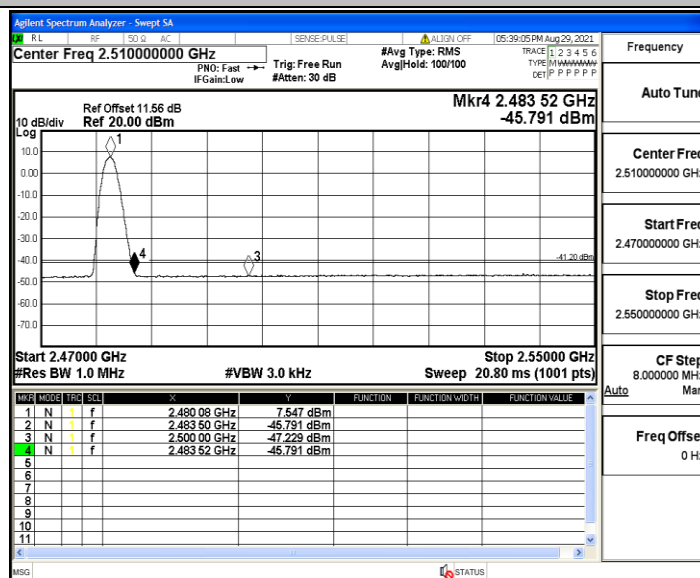
BLE_1M_Ant3_Low_2402_AV



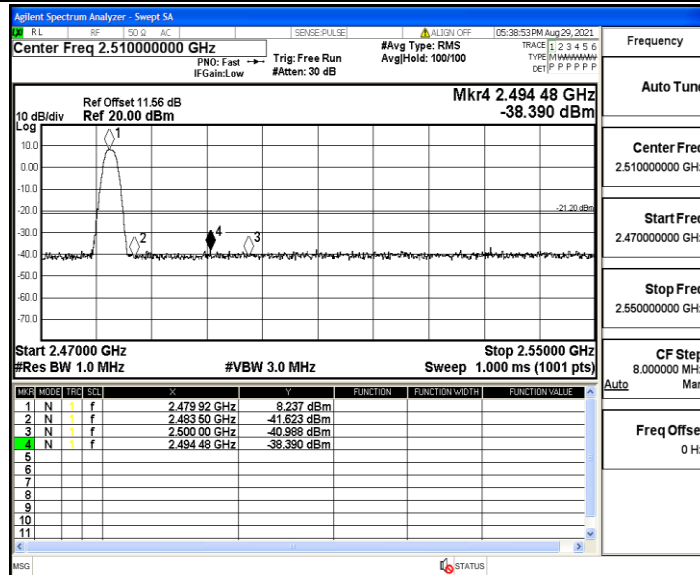
BLE_1M_Ant3_Low_2402_Peak



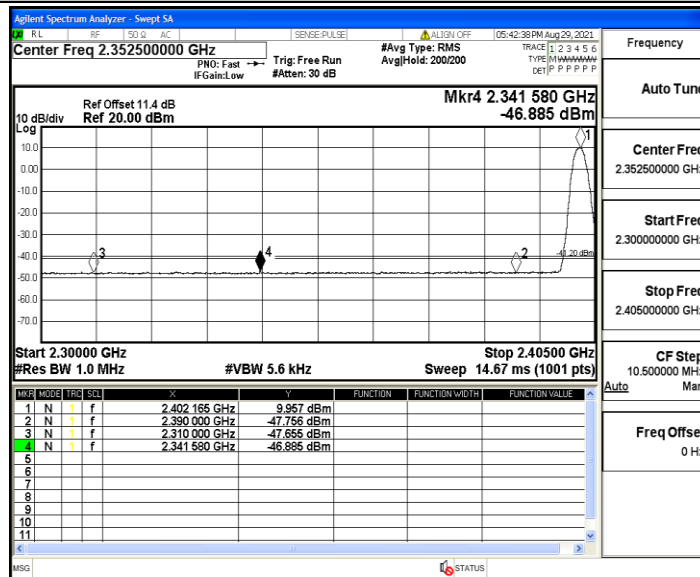
BLE_1M_Ant3_High_2480_AV



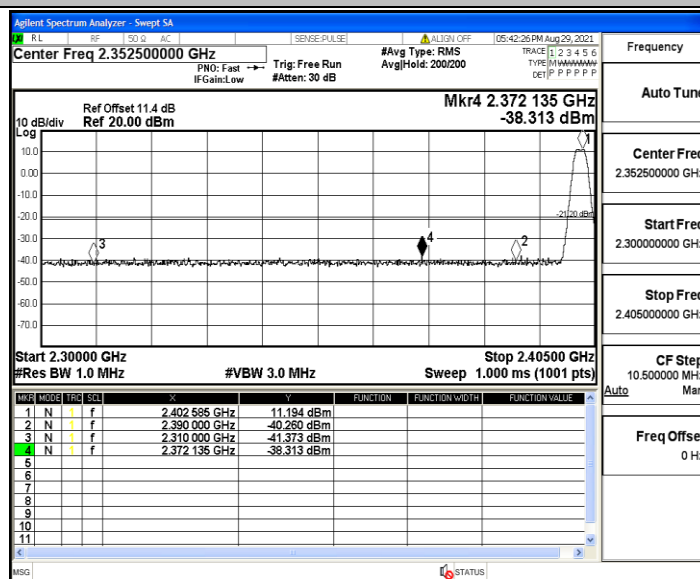
BLE_1M_Ant3_High_2480_Peak



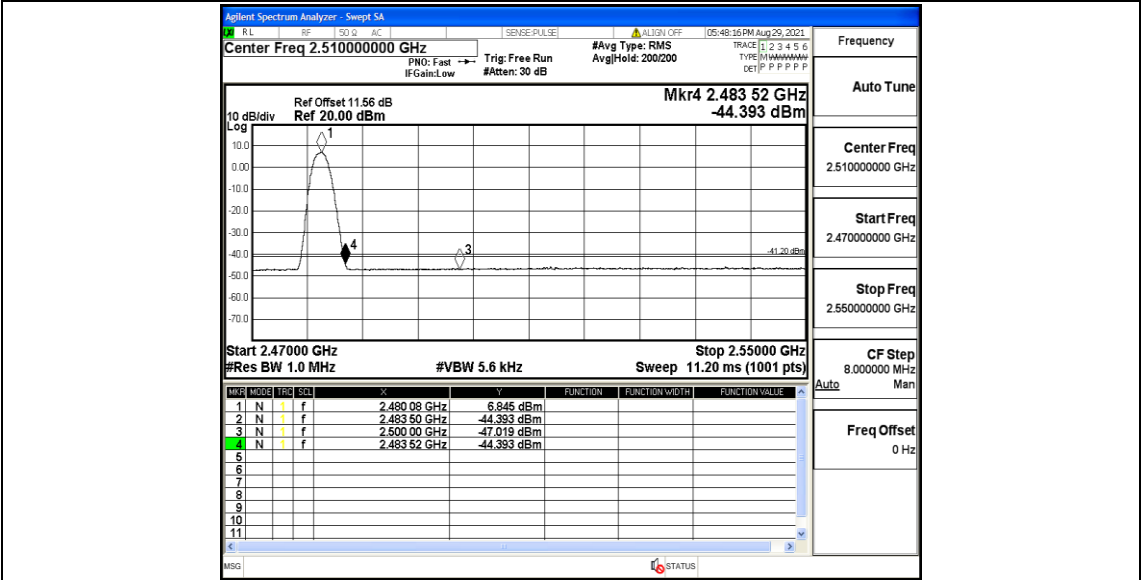
BLE_2M_Ant3_Low_2402_AV



BLE_2M_Ant3_Low_2402_Peak



BLE_2M_Ant3_High_2480_AV



BLE_2M_Ant3_High_2480_Peak

