

Case No. : <u>CTA24071501902</u>	
Ambient Condition: <u>23</u> °C, <u>51</u> %RH	
According Standard: ■RSS 247	
Test Date: <u>2024.6.20-2024.8.12</u>	Test Engineer: <u>Lushan Kong</u>

Appendix B.1: DTS Bandwidth

Test Result

Chip2: AC7066D4

BT LE

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant3	2402	0.712	2401.632	2402.344	0.5	PASS
		2440	0.660	2439.672	2440.332	0.5	PASS
		2480	0.700	2479.656	2480.356	0.5	PASS

BT 2LE

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant3	2402	1.188	2401.376	2402.564	0.5	PASS
		2440	1.256	2439.344	2440.600	0.5	PASS
		2480	1.068	2479.468	2480.536	0.5	PASS

Chip3: AC7066D4

BT LE

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant4	2402	0.640	2401.684	2402.324	0.5	PASS
		2440	0.728	2439.648	2440.376	0.5	PASS
		2480	0.664	2479.676	2480.340	0.5	PASS

BT 2LE

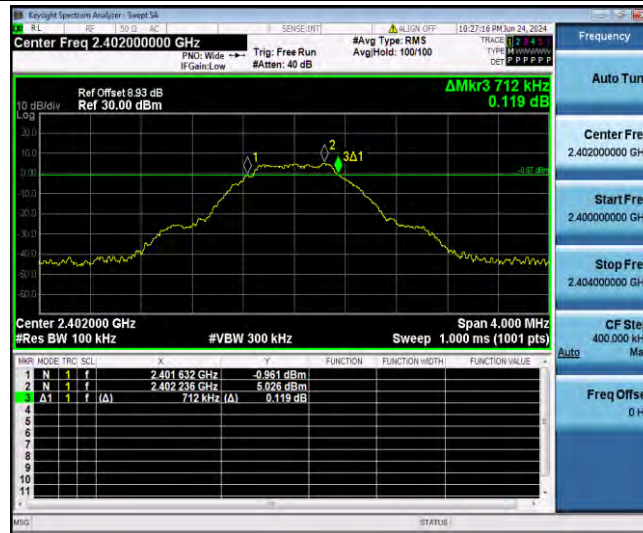
TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant4	2402	1.220	2401.356	2402.576	0.5	PASS
		2440	1.192	2439.384	2440.576	0.5	PASS
		2480	1.108	2479.464	2480.572	0.5	PASS

Test Graphs

Chip2: AC7066D4

BT LE

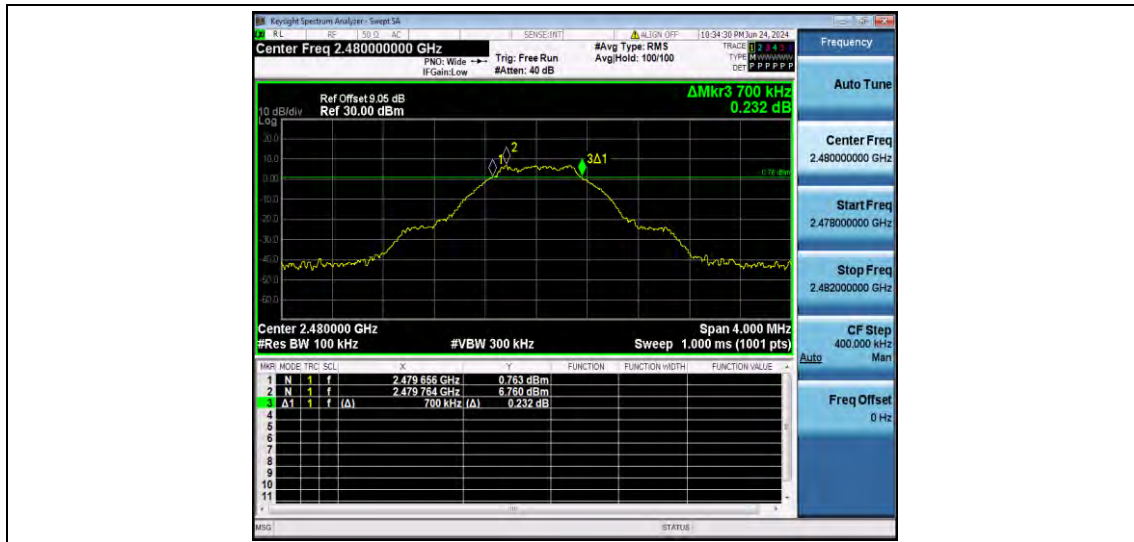
BLE_Ant_2402



BLE_Ant_2440



BLE_Ant_2480



BT 2LE

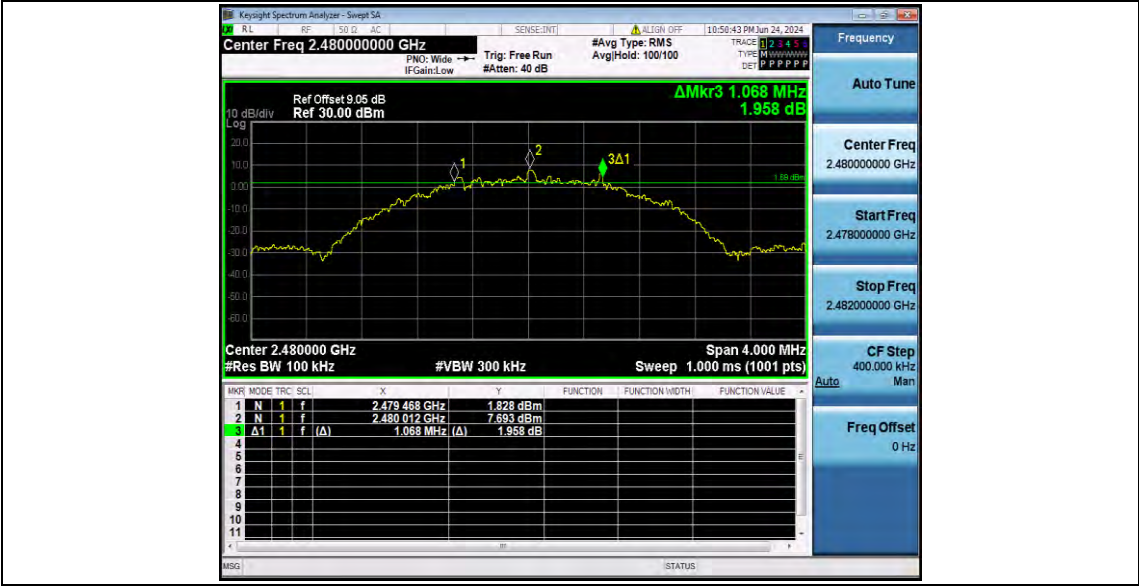
BLE_Ant_2402



BLE_Ant_2440



BLE_Ant_2480



Chip3: AC7066D4

BT LE

BLE_Ant_2402



BLE_Ant_2440



BLE_Ant_2480

BT 2LE

BLE_Ant_2402



BLE_Ant_2440



BLE_Ant_2480

Appendix B.2: Occupied Channel Bandwidth

Test Result

Chip2: AC7066D4

BT LE

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant3	2402	1.0250	2401.4953	2402.5203	---	---
		2440	1.0306	2439.4949	2440.5255	---	---
		2480	1.0463	2479.4884	2480.5347	---	---

BT 2LE

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant3	2402	2.0365	2400.9947	2403.0312	---	---
		2440	2.0530	2439.0002	2441.0532	---	---
		2480	2.0578	2478.9997	2481.0575	---	---

Chip2: AC7066D4

BT LE

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant4	2402	1.0350	2401.4931	2402.5281	---	---
		2440	1.0371	2439.4946	2440.5317	---	---
		2480	1.0430	2479.4921	2480.5351	---	---

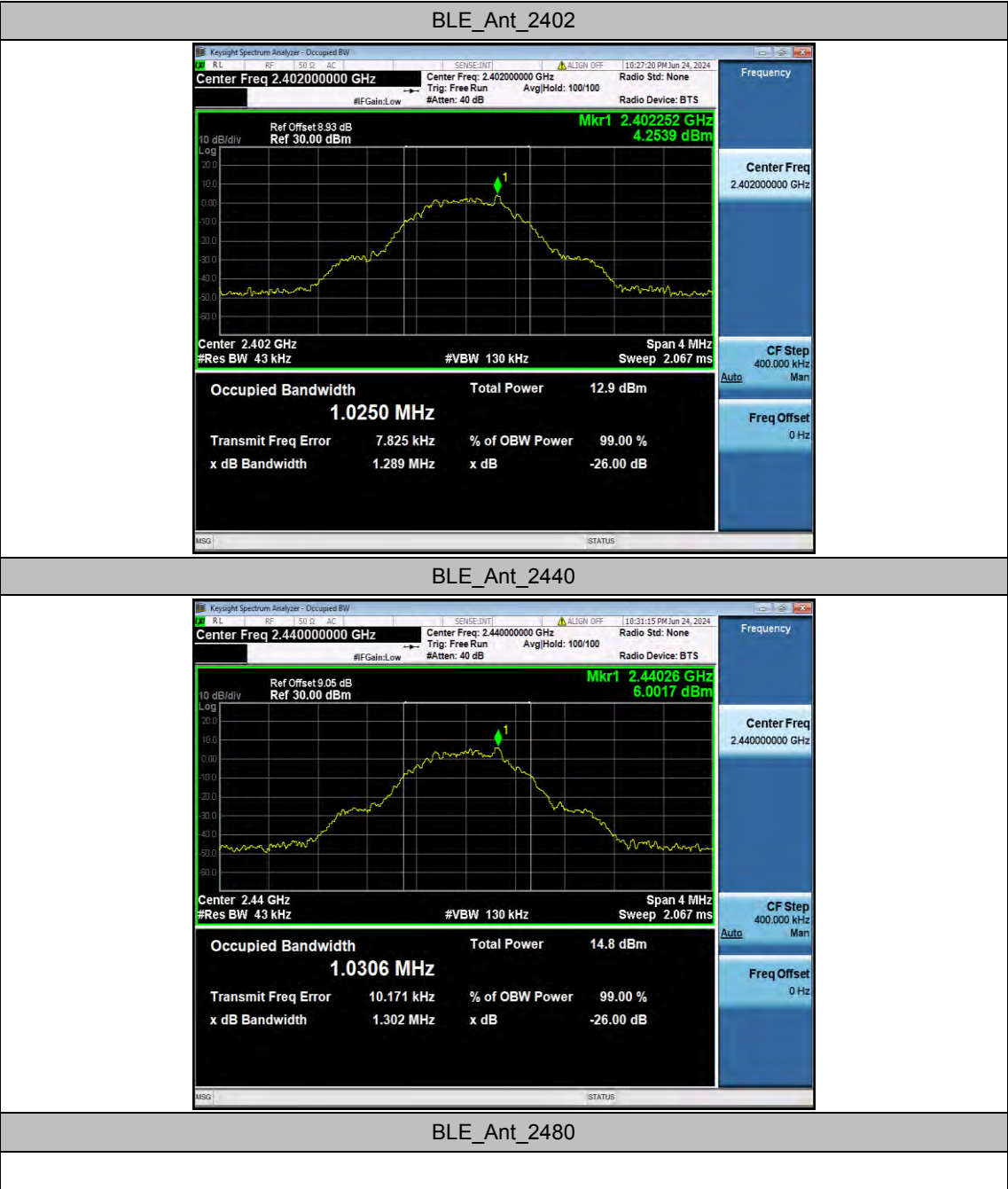
BT 2LE

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant4	2402	2.0816	2400.9885	2403.0701	---	---
		2440	2.0751	2438.9959	2441.0710	---	---
		2480	2.0579	2478.9995	2481.0574	---	---

Test Graphs

Chip2: AC7066D4

BT LE





BT 2LE

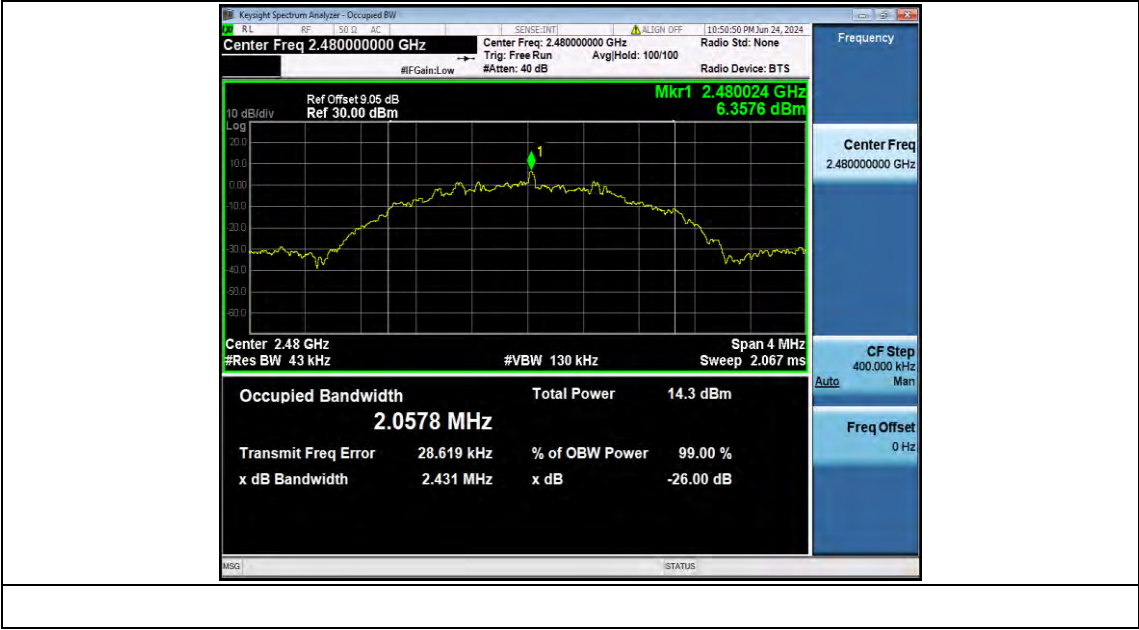
BLE_Ant_2402



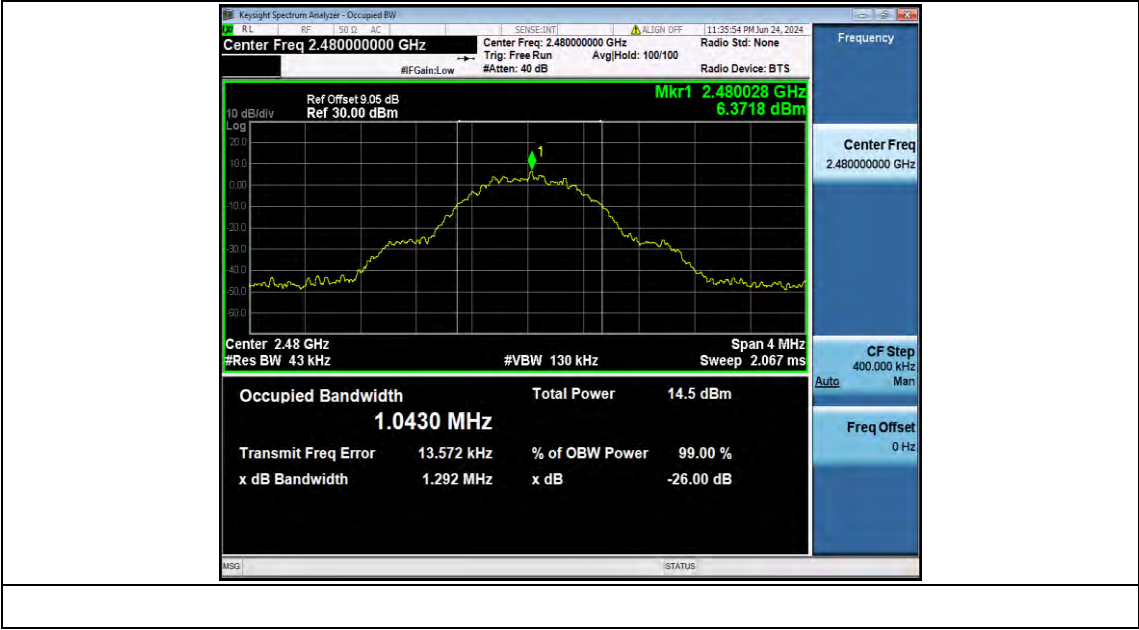
BLE_Ant_2440



BLE_Ant_2480



Chip3: AC7066D4**BT LE****BLE_Ant_2402****BLE_Ant_2440****BLE_Ant_2480**



BT 2LE

BLE_Ant_2402



BLE_Ant_2440



BLE_Ant_2480



Appendix B.3: Maximum conducted output power

Test Result Peak

Chip2: AC7066D4

BT LE

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE	Ant3	2402	6.83	≤30	PASS
		2440	8.73	≤30	PASS
		2480	8.70	≤30	PASS

BT 2LE

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE	Ant3	2402	6.97	≤30	PASS
		2440	8.87	≤30	PASS
		2480	8.86	≤30	PASS

Chip3: AC7066D4

BT LE

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE	Ant4	2402	7.13	≤30	PASS
		2440	8.89	≤30	PASS
		2480	8.84	≤30	PASS

BT 2LE

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE	Ant4	2402	7.09	≤30	PASS
		2440	8.94	≤30	PASS
		2480	8.85	≤30	PASS

Appendix B.4: Maximum power spectral density

Test Result

Chip2: AC7066D4

BT LE

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE	Ant3	2402	-10.26	≤8.00	PASS
		2440	-8.23	≤8.00	PASS
		2480	-8.23	≤8.00	PASS

BT 2LE

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE	Ant3	2402	-11.71	≤8.00	PASS
		2440	-9.69	≤8.00	PASS
		2480	-9.81	≤8.00	PASS

Chip3: AC7066D4

BT LE

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE	Ant4	2402	-10.09	≤8.00	PASS
		2440	-8.25	≤8.00	PASS
		2480	-8.35	≤8.00	PASS

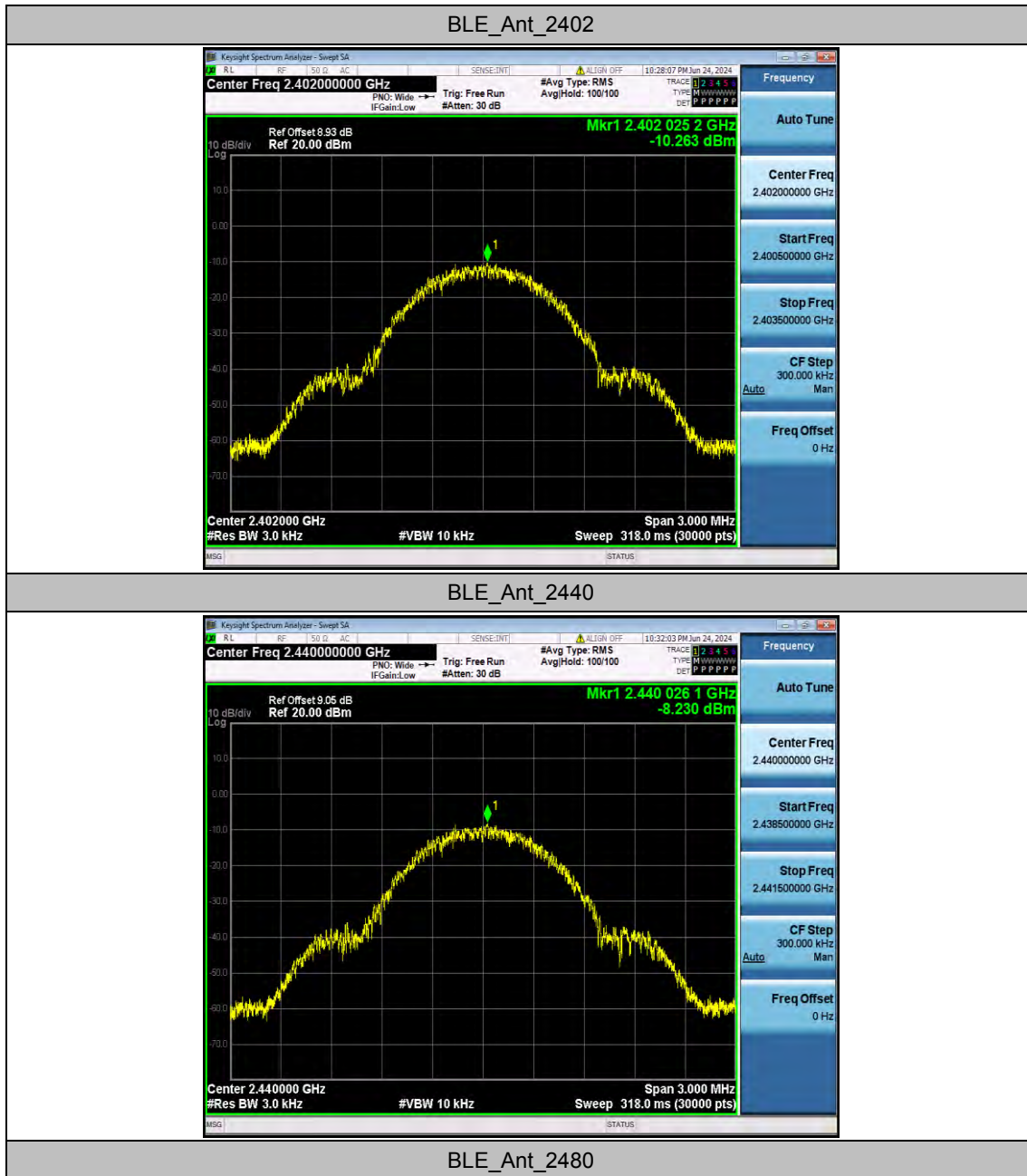
BT 2LE

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE	Ant4	2402	-11.78	≤8.00	PASS
		2440	-9.89	≤8.00	PASS
		2480	-9.94	≤8.00	PASS

Test Graphs

Chip2: AC7066D4

BT LE



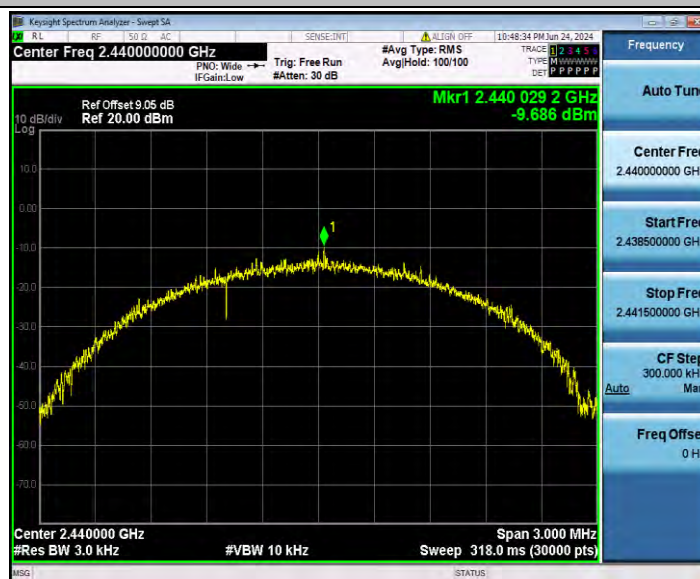


BT 2LE

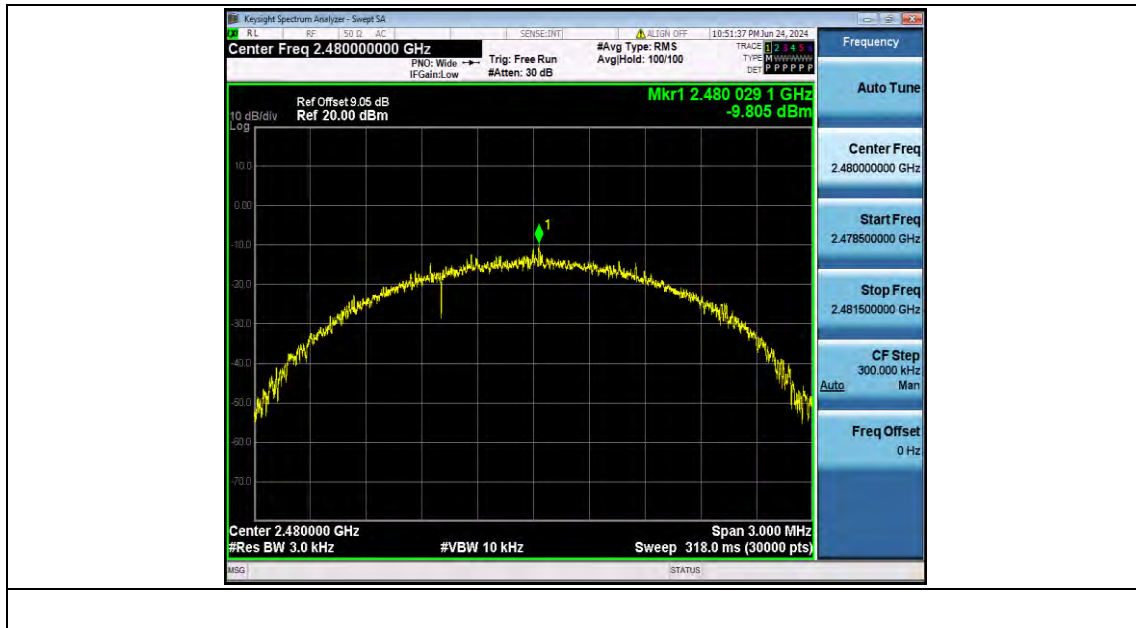
BLE_Ant_2402



BLE_Ant_2440



BLE_Ant_2480



Chip3: AC7066D4

BT LE

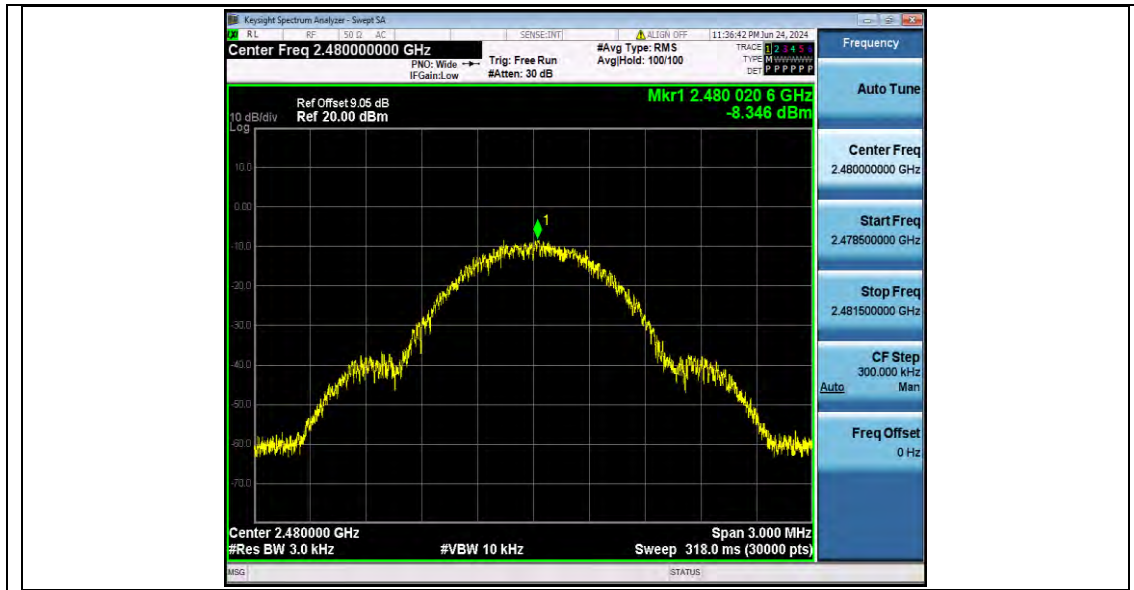
BLE_Ant_2402



BLE_Ant_2440



BLE_Ant_2480



BT 2LE

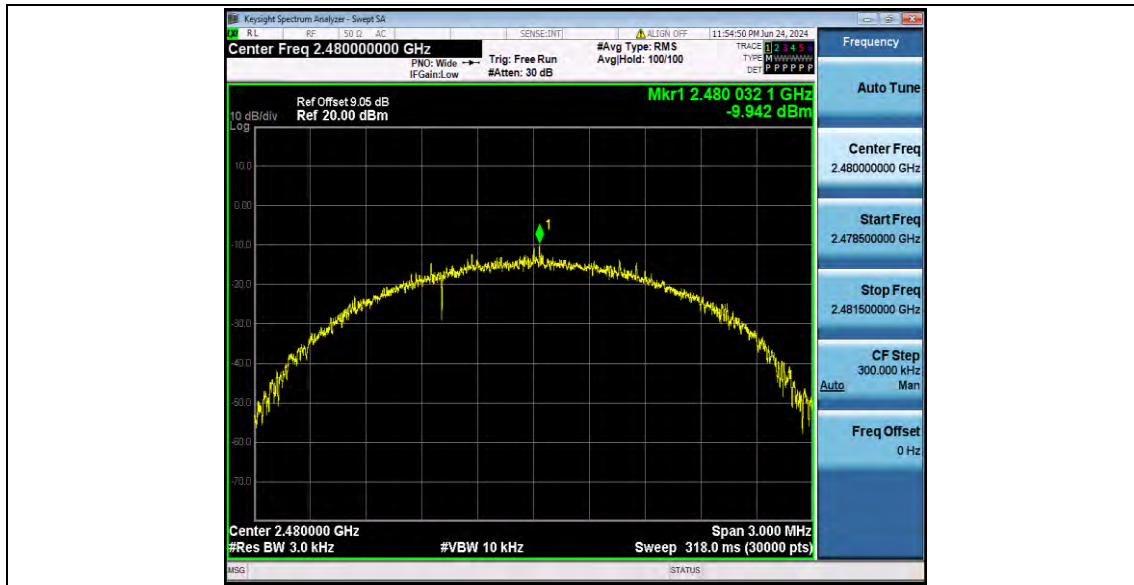
BLE_Ant_2402



BLE_Ant_2440



BLE_Ant_2480



Appendix B.5: Band edge measurements

Test Result

Chip2: AC7066D4

BT LE

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant3	Low	2402	5.79	-45.72	≤ -14.21	PASS
		High	2480	7.57	-49.24	≤ -12.43	PASS

BT 2LE

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant3	Low	2402	5.31	-28.37	≤ -14.69	PASS
		High	2480	6.98	-44.94	≤ -13.02	PASS

Chip3: AC7066D4

BT LE

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant4	Low	2402	5.89	-48.12	≤ -14.11	PASS
		High	2480	6.99	-49.31	≤ -13.01	PASS

BT 2LE

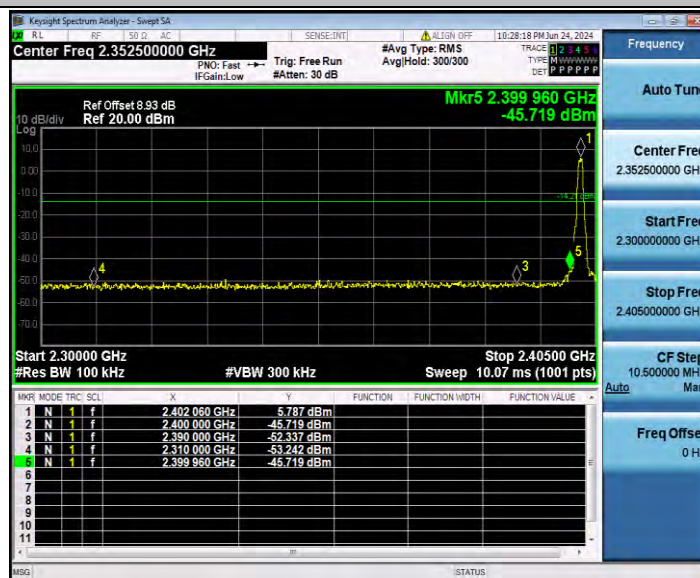
TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant4	Low	2402	5.62	-28.38	≤ -14.38	PASS
		High	2480	7.75	-44.93	≤ -12.25	PASS

Test Graphs

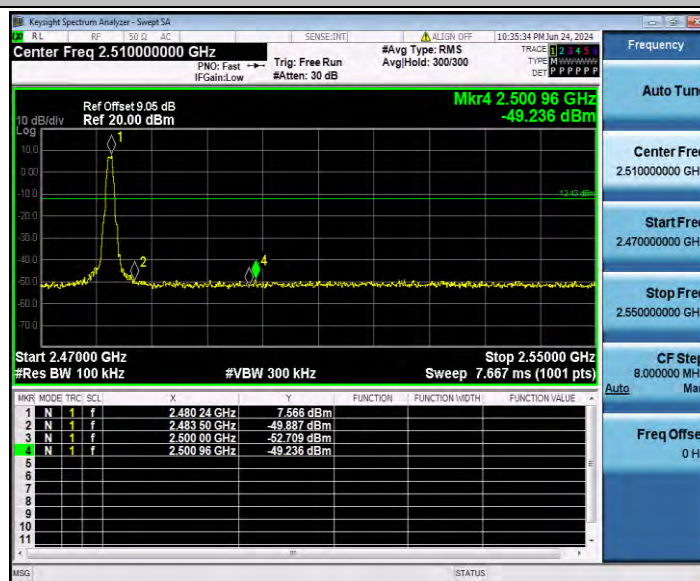
Chip2: AC7066D4

BT LE

BLE_Ant_Low_2402

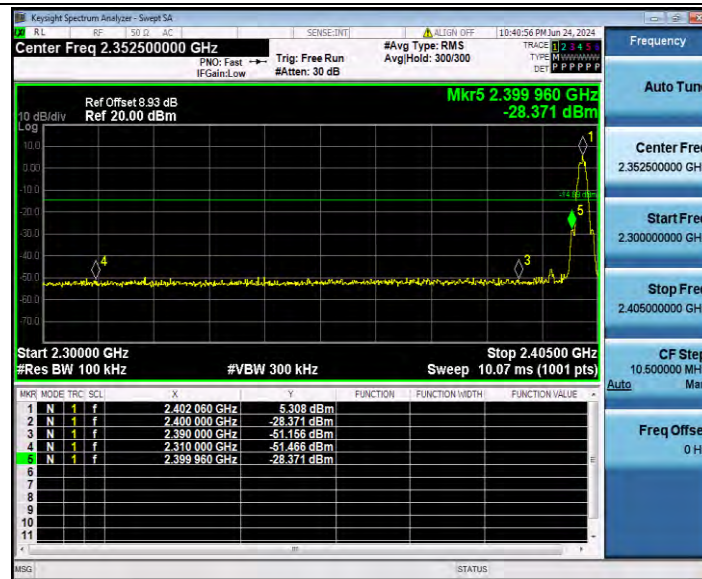


BLE_Ant_High_2480

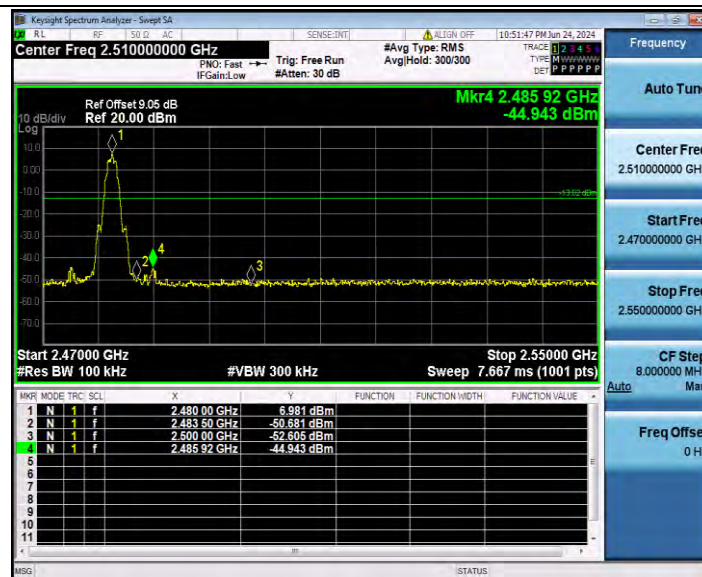


BT 2LE

BLE_Ant_Low_2402



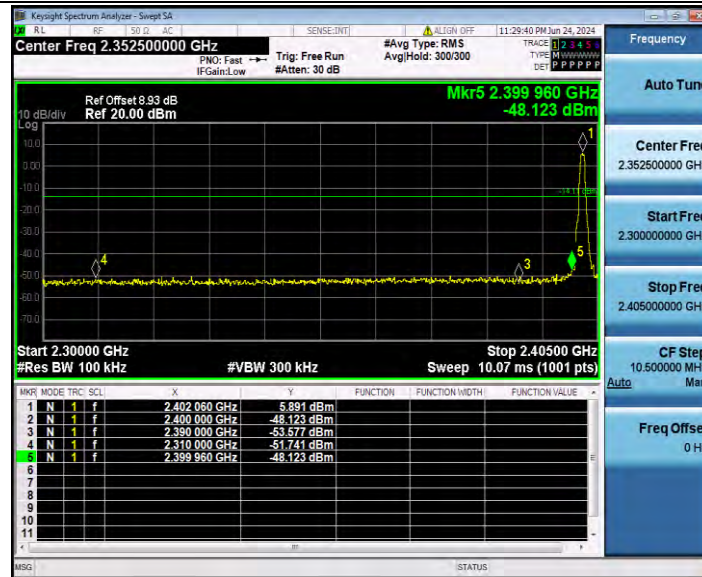
BLE_Ant_High_2480



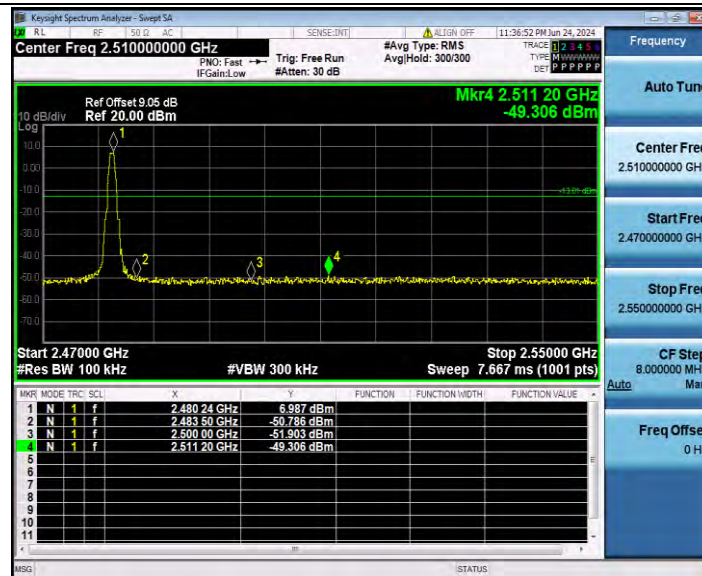
Chip3: AC7066D4

BT LE

BLE_Ant_Low_2402

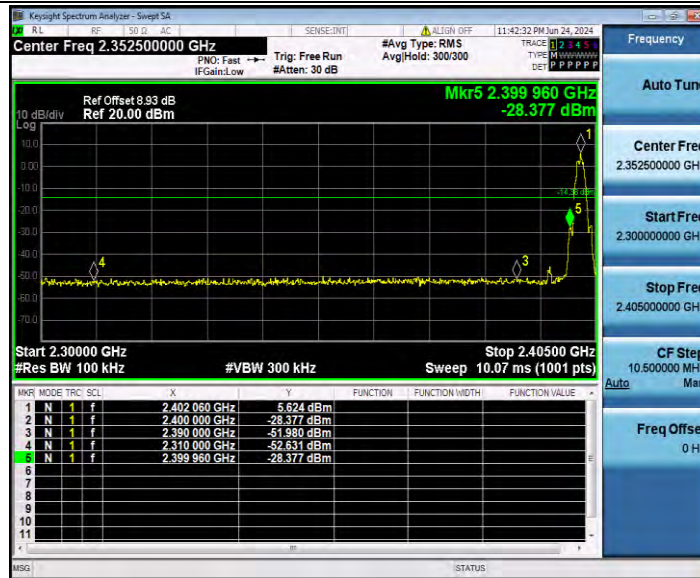


BLE_Ant_High_2480

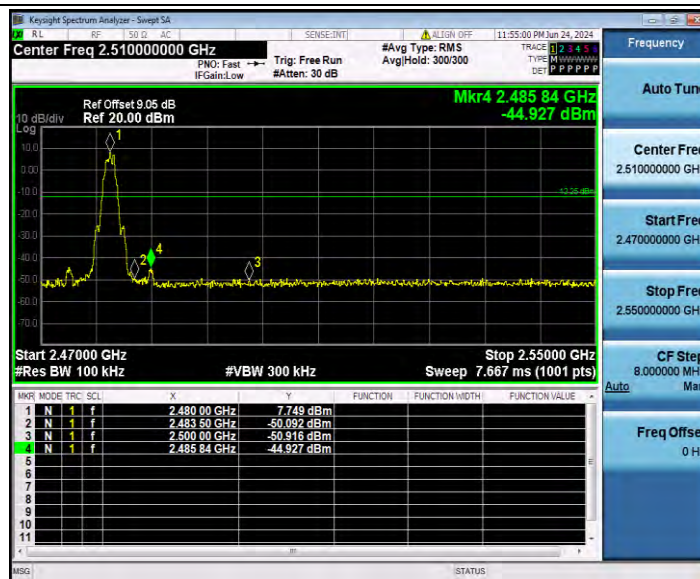


BT 2LE

BLE_Ant_Low_2402



BLE_Ant_High_2480



Appendix B.6: Conducted Spurious Emission

Test Result

Chip2: AC7066D4

BT LE

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant3	2402	Reference	4.43	4.43	---	PASS
			30~1000	4.43	-60.43	≤ -15.57	PASS
			1000~26500	4.43	-43.35	≤ -15.57	PASS
		2440	Reference	6.68	6.68	---	PASS
			30~1000	6.68	-60.2	≤ -13.32	PASS
			1000~26500	6.68	-44.65	≤ -13.32	PASS
		2480	Reference	7.37	7.37	---	PASS
			30~1000	7.37	-47.91	≤ -12.63	PASS
			1000~26500	7.37	-42.9	≤ -12.63	PASS

BT 2LE

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant3	2402	Reference	5.01	5.01	---	PASS
			30~1000	5.01	-60.75	≤ -14.99	PASS
			1000~26500	5.01	-44.26	≤ -14.99	PASS
		2440	Reference	5.85	5.85	---	PASS
			30~1000	5.85	-60.55	≤ -14.15	PASS
			1000~26500	5.85	-45.76	≤ -14.15	PASS
		2480	Reference	5.23	5.23	---	PASS
			30~1000	5.23	-60.75	≤ -14.77	PASS
			1000~26500	5.23	-41.43	≤ -14.77	PASS

Chip3: AC7066D4**BT LE**

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant4	2402	Reference	4.59	4.59	---	PASS
			30~1000	4.59	-59.58	≤ -15.41	PASS
			1000~26500	4.59	-42.67	≤ -15.41	PASS
		2440	Reference	7.69	7.69	---	PASS
			30~1000	7.69	-60.41	≤ -12.31	PASS
			1000~26500	7.69	-44.9	≤ -12.31	PASS
		2480	Reference	7.62	7.62	---	PASS
			30~1000	7.62	-60.75	≤ -12.38	PASS
			1000~26500	7.62	-41.72	≤ -12.38	PASS

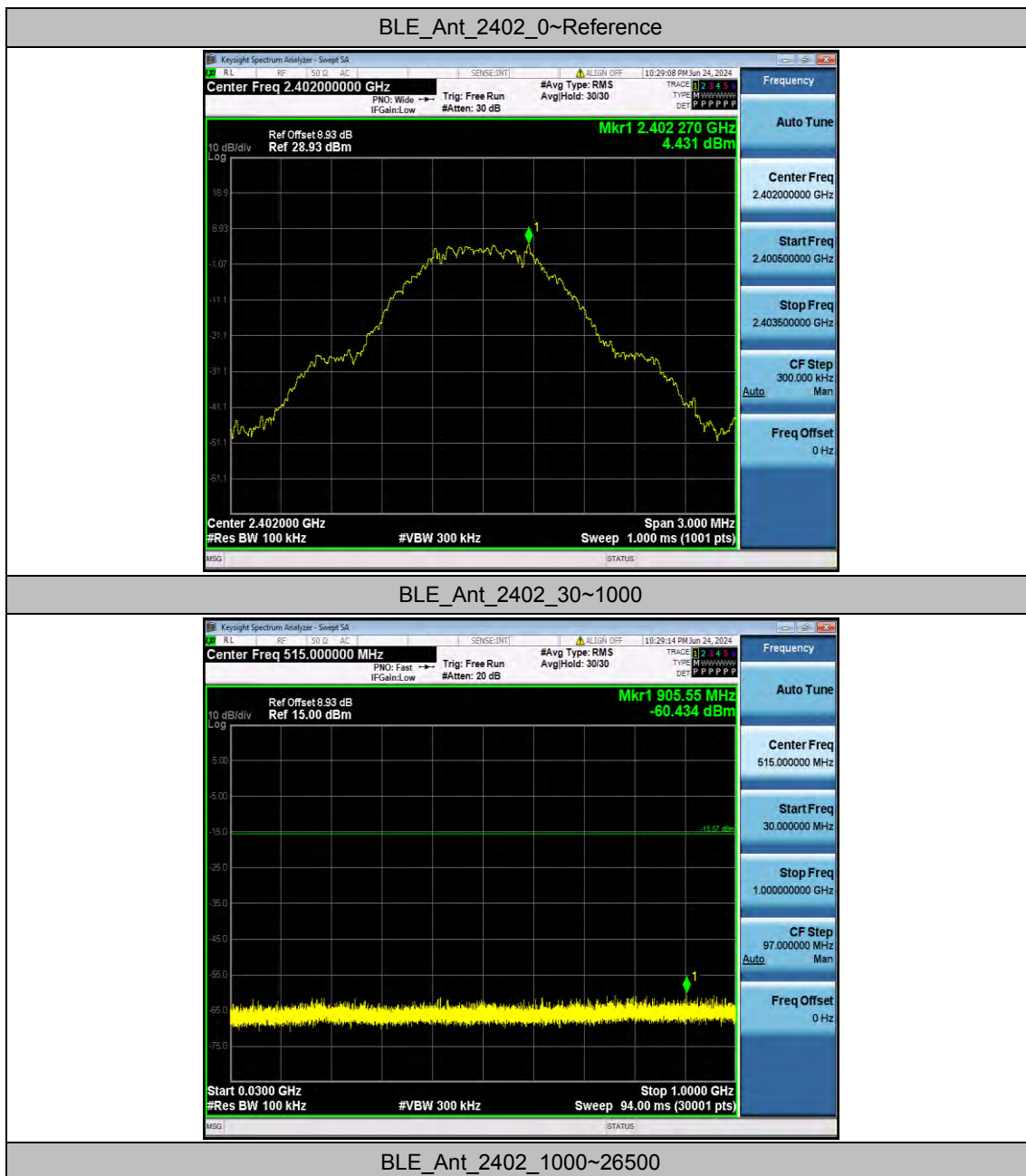
BT 2LE

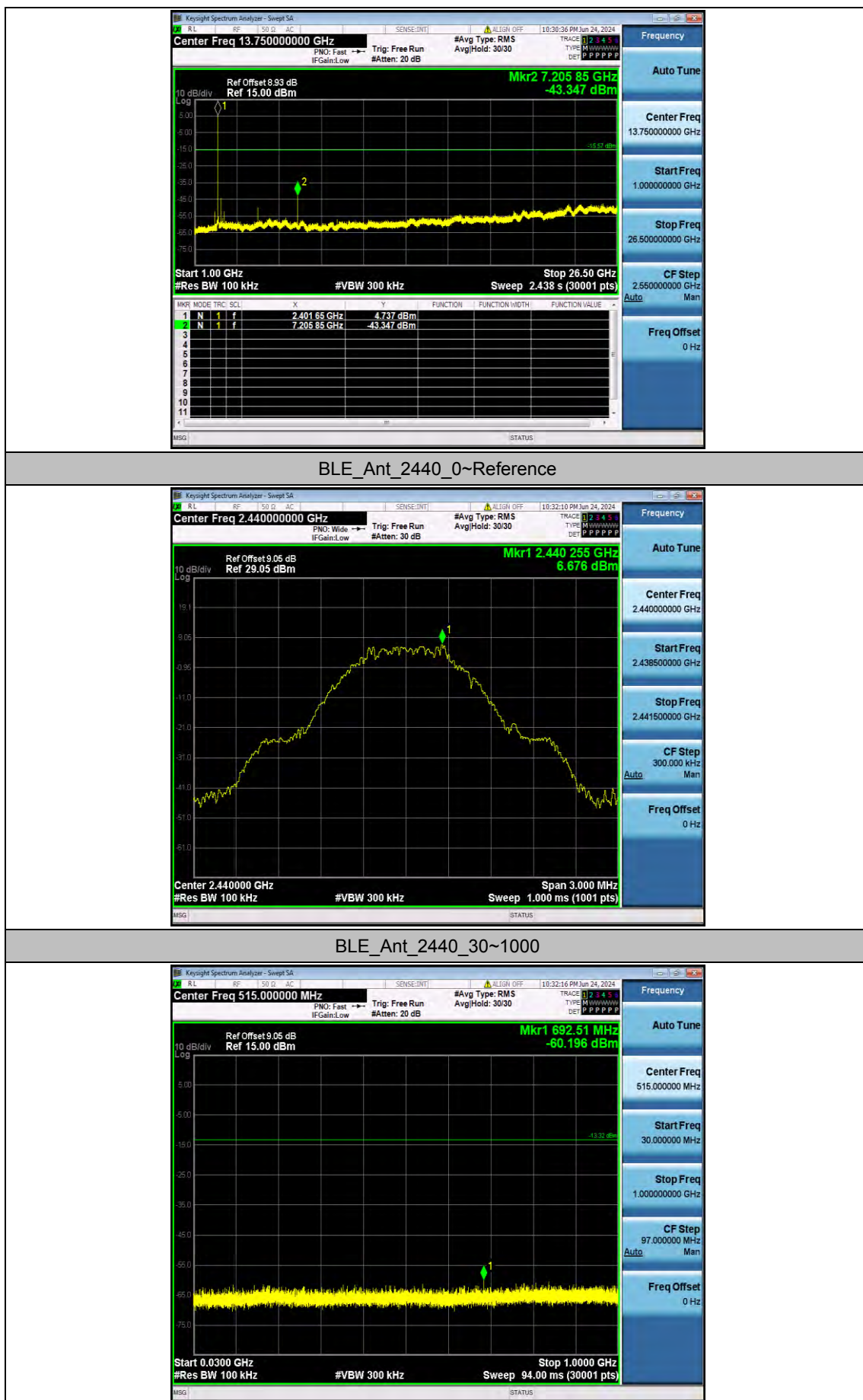
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant4	2402	Reference	4.01	4.01	---	PASS
			30~1000	4.01	-60.32	≤ -15.99	PASS
			1000~26500	4.01	-46.41	≤ -15.99	PASS
		2440	Reference	4.74	4.74	---	PASS
			30~1000	4.74	-53.56	≤ -15.26	PASS
			1000~26500	4.74	-45.8	≤ -15.26	PASS
		2480	Reference	6.54	6.54	---	PASS
			30~1000	6.54	-59.46	≤ -13.46	PASS
			1000~26500	6.54	-43.54	≤ -13.46	PASS

Test Graphs

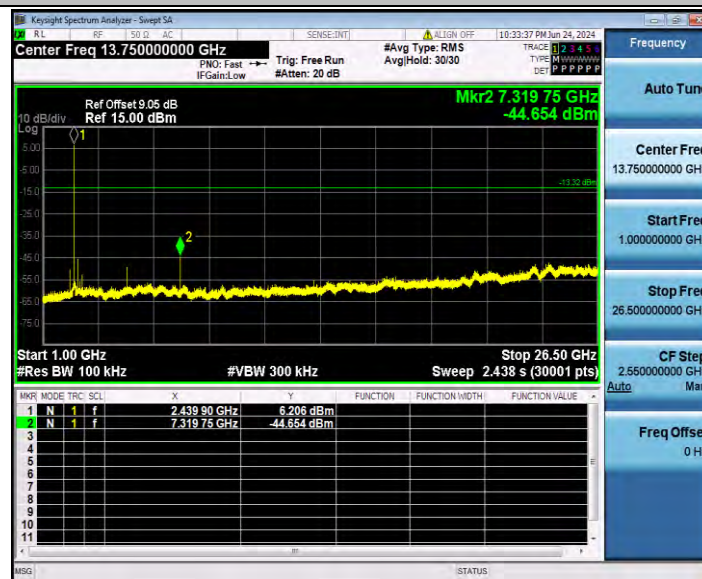
Chip2: AC7066D4

BT LE





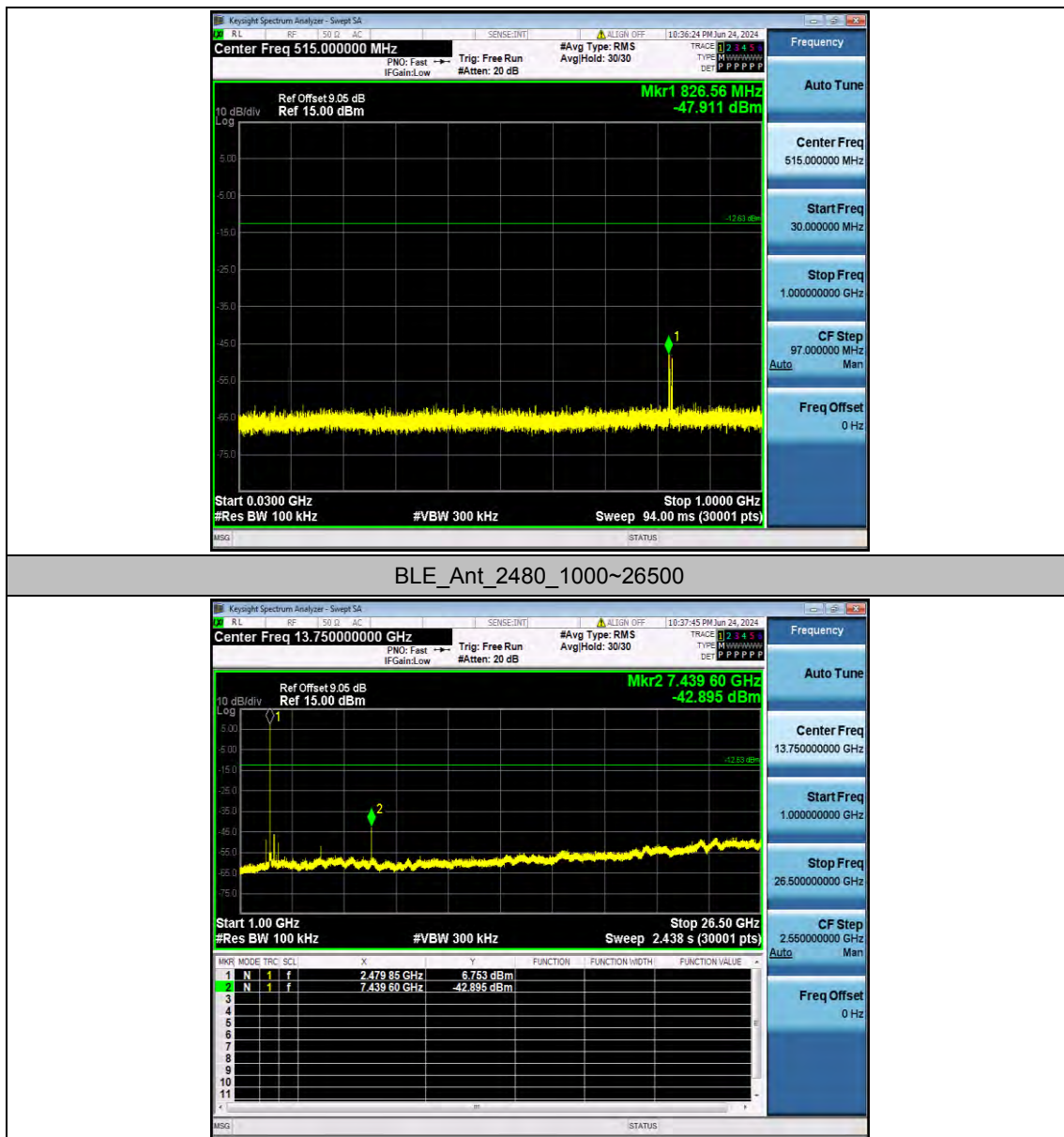
BLE_Ant_2440_1000~26500



BLE_Ant_2480_0~Reference



BLE_Ant_2480_30~1000



BT 2LE

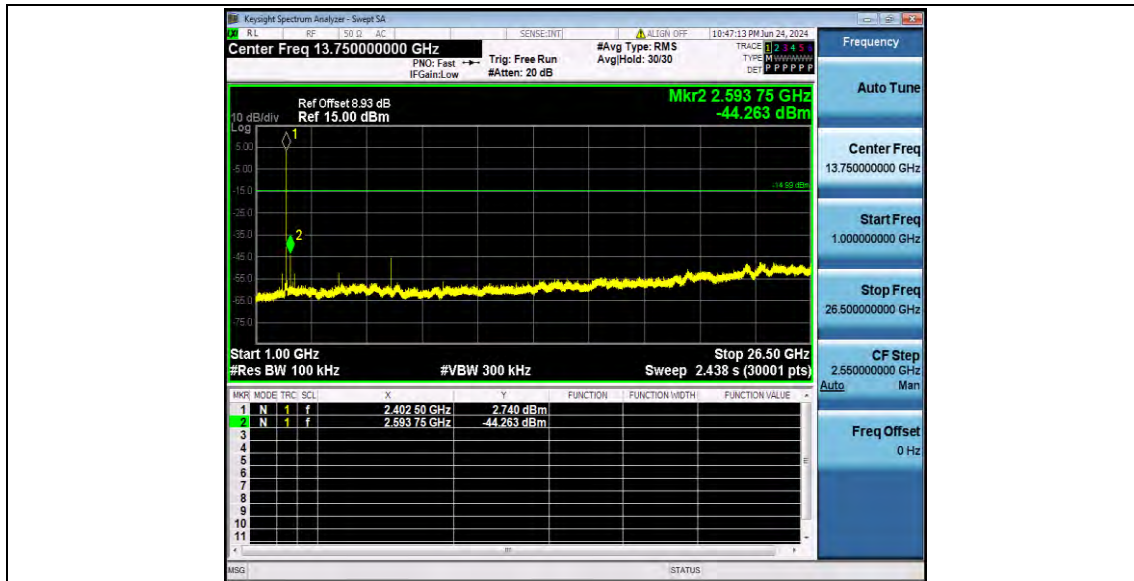
BLE_Ant_2402_0~Reference



BLE_Ant_2402_30~1000



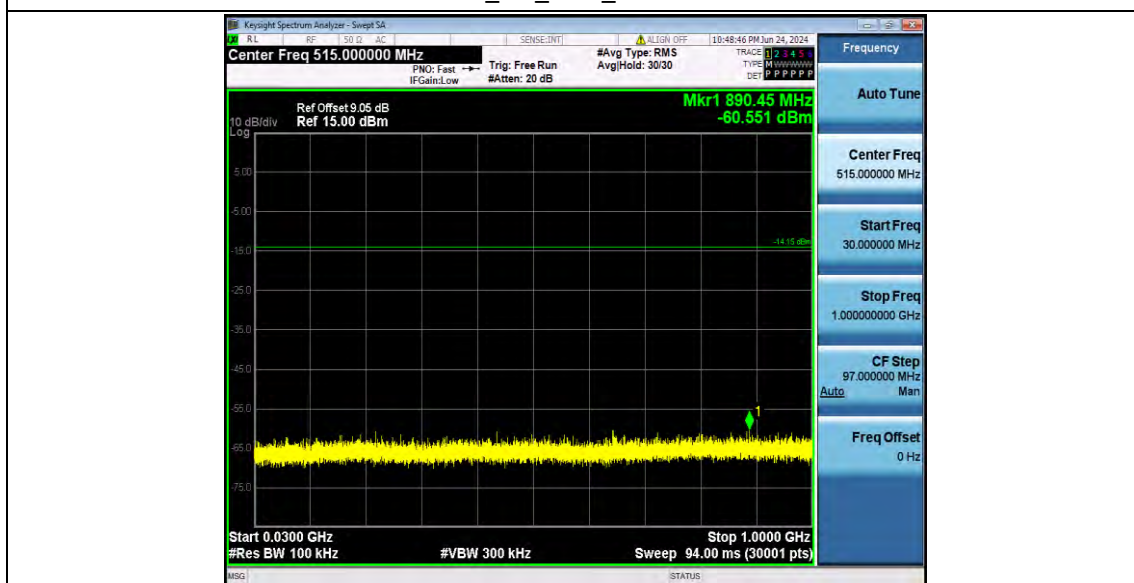
BLE_Ant_2402_1000~26500



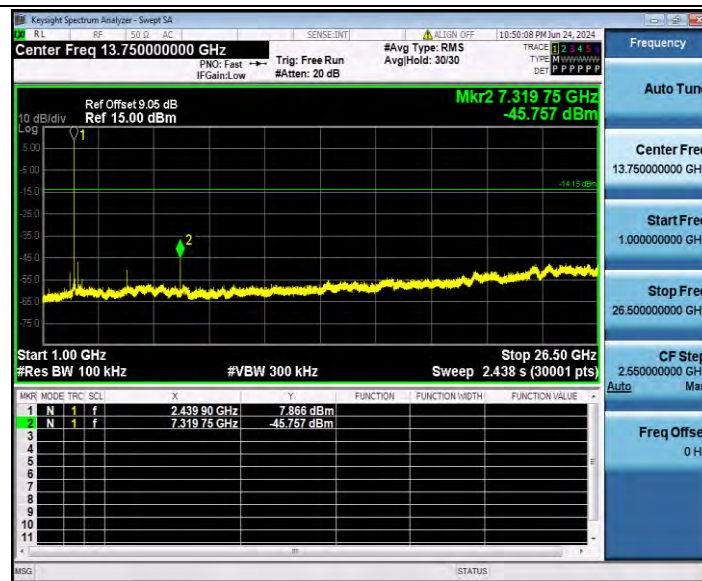
BLE_Ant_2440_0~Reference



BLE_Ant_2440_30~1000



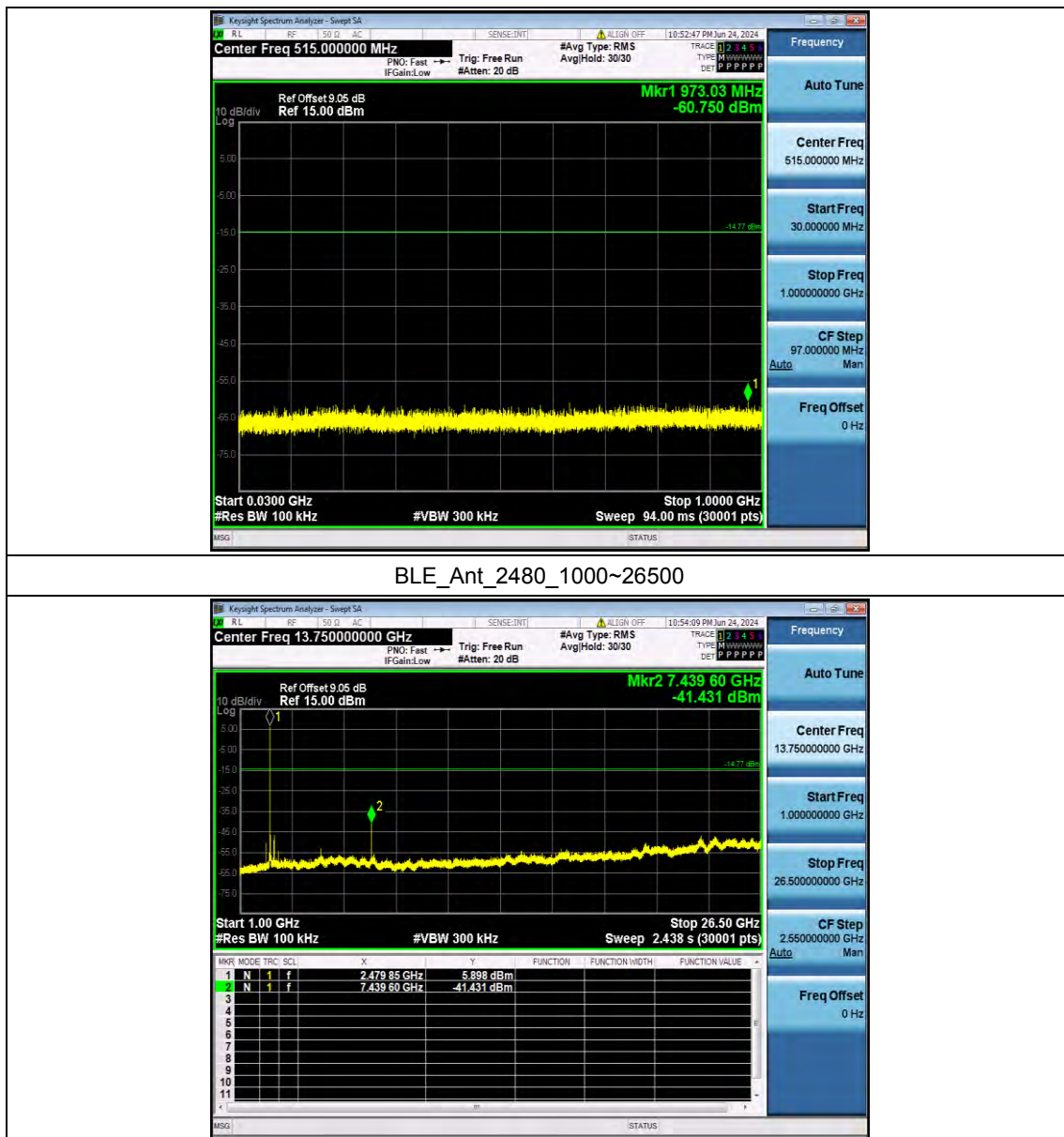
BLE_Ant_2440_1000~26500



BLE_Ant_2480_0~Reference



BLE_Ant_2480_30~1000



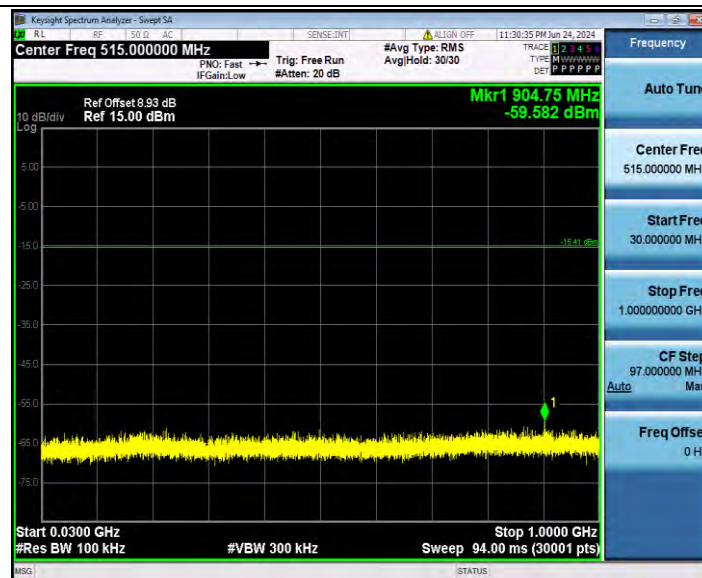
Chip3: AC7066D4

BT LE

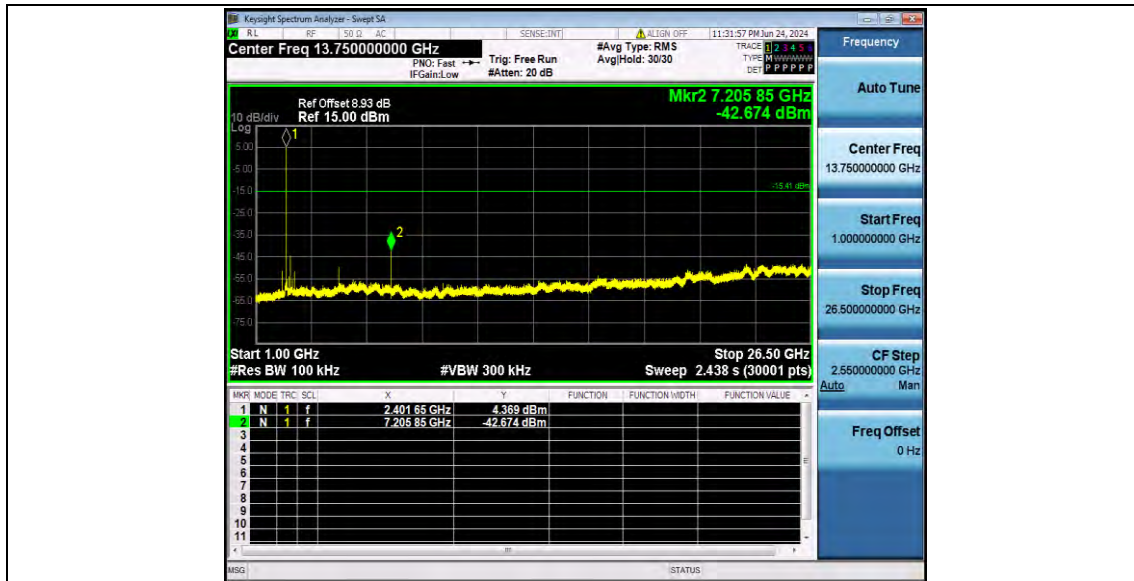
BLE_Ant_2402_0~Reference



BLE_Ant_2402_30~1000



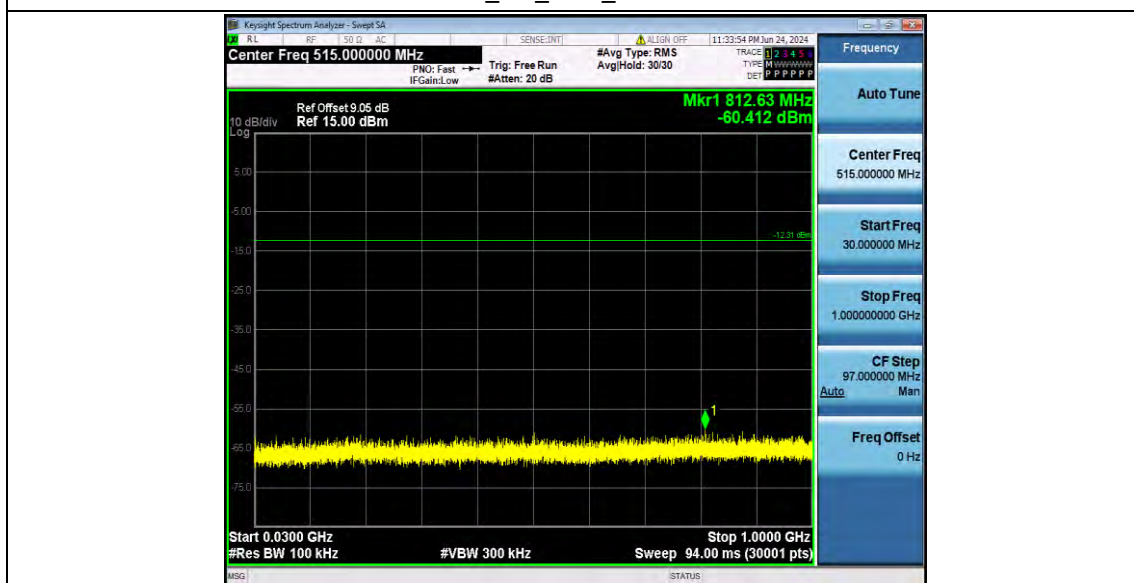
BLE_Ant_2402_1000~26500



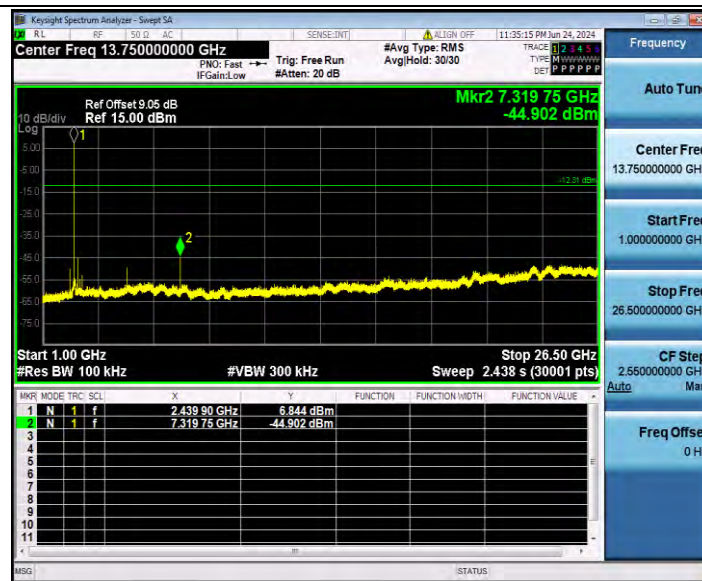
BLE_Ant_2440_0~Reference



BLE_Ant_2440_30~1000



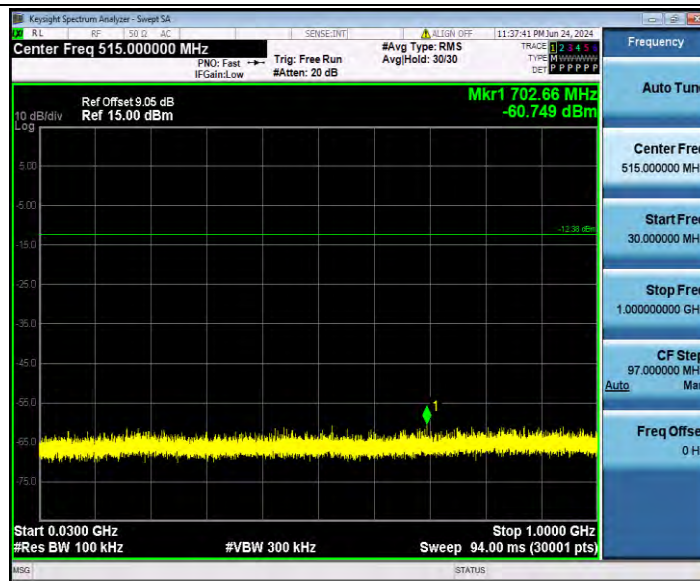
BLE_Ant_2440_1000~26500



BLE_Ant_2480_0~Reference



BLE_Ant_2480_30~1000



BLE_Ant_2480_1000~26500

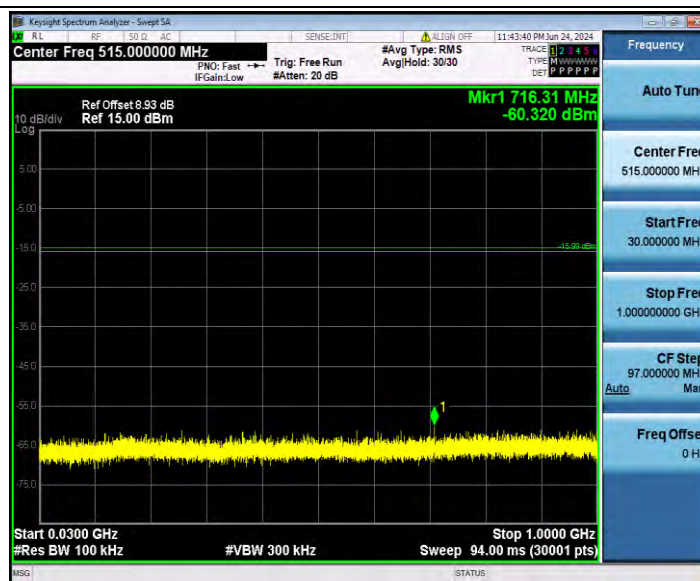


BT 2LE

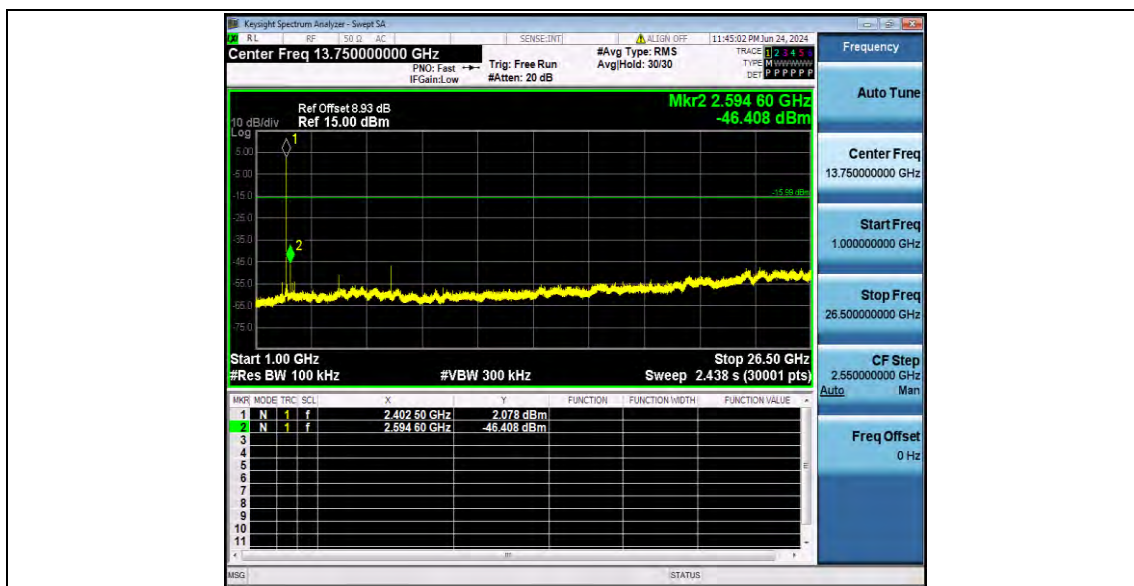
BLE_Ant_2402_0~Reference



BLE_Ant_2402_30~1000



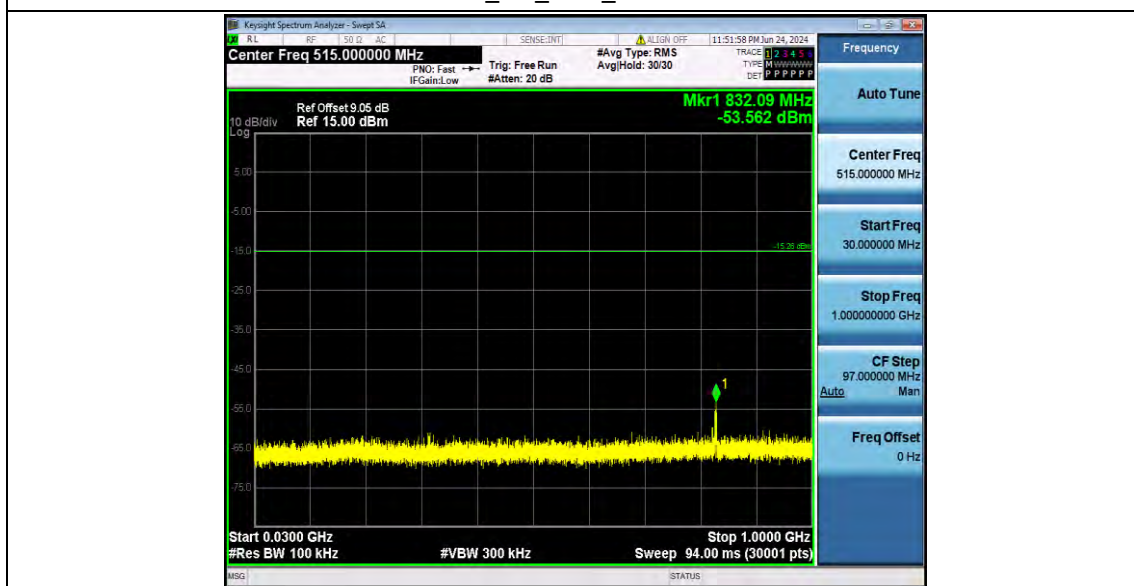
BLE_Ant_2402_1000~26500



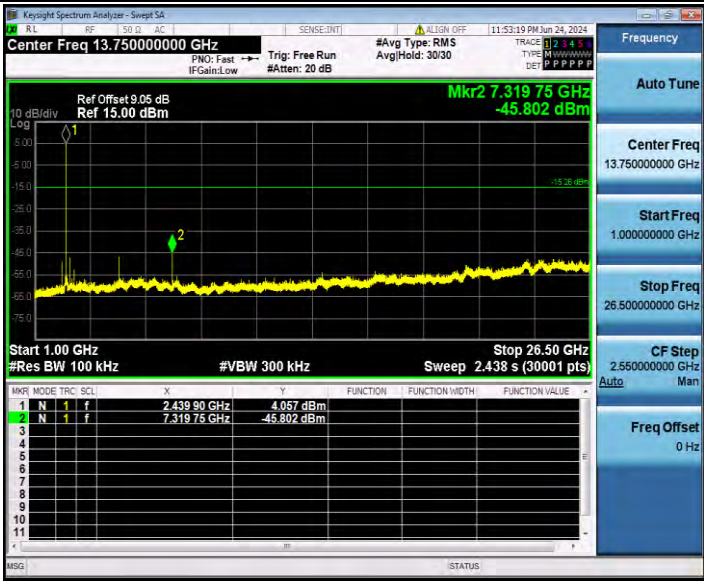
BLE_Ant_2440_0~Reference



BLE_Ant_2440_30~1000



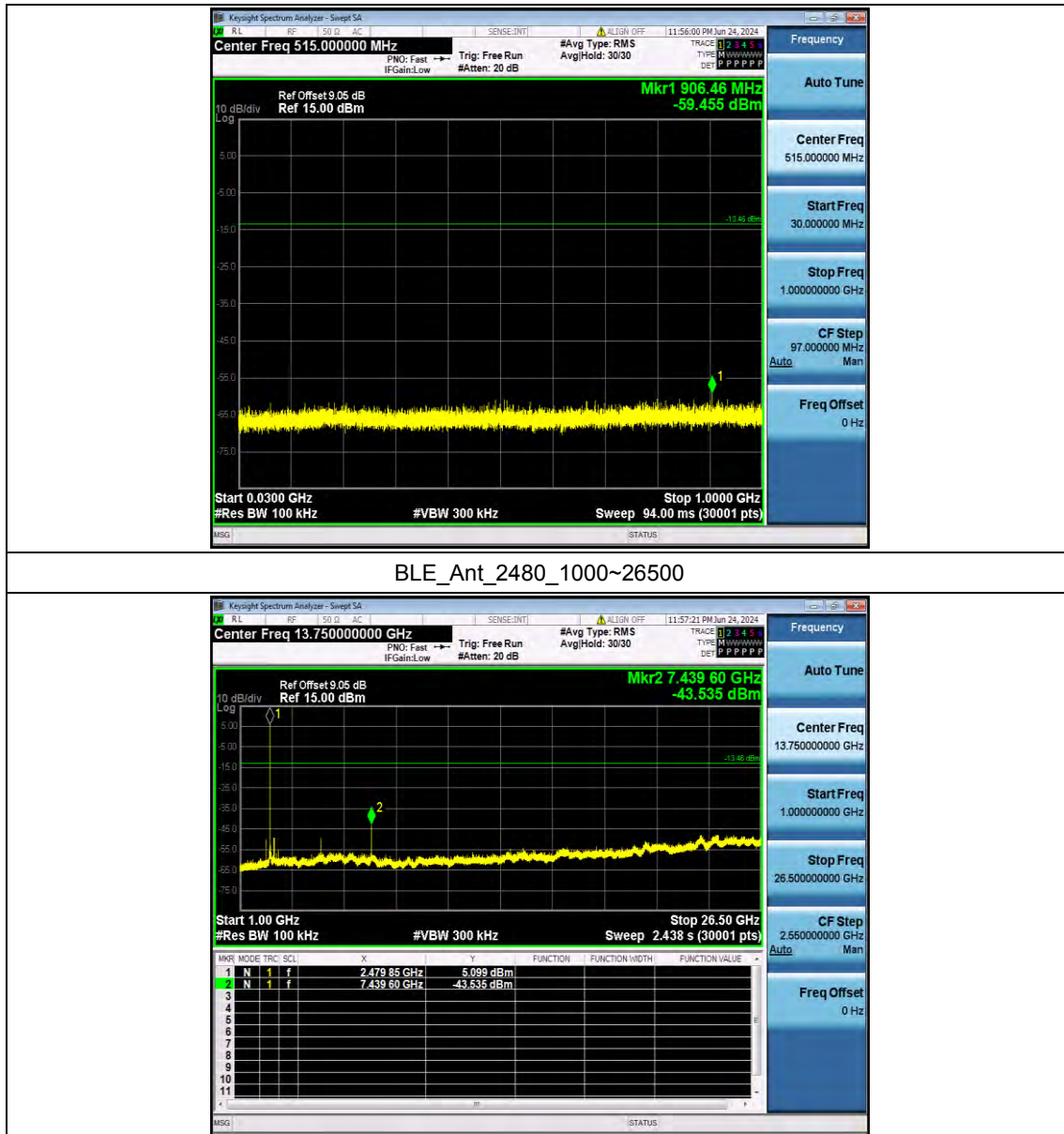
BLE_Ant_2440_1000~26500



BLE_Ant_2480_0~Reference



BLE_Ant_2480_30~1000



Appendix B.7: Emissions in Restricted Bands

Test Result

Chip2: AC7066D4

BT LE

TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE	Ant3	Low	2402	AV	2310.000	-49.1	≤-41.20	46.10	≤54	PASS
				AV	2378.330	-48.23	≤-41.20	46.97	≤54	PASS
				AV	2390.000	-48.41	≤-41.20	46.79	≤54	PASS
				Peak	2310.000	-41.41	≤-21.20	53.79	≤74	PASS
				Peak	2367.515	-38.31	≤-21.20	56.89	≤74	PASS
				Peak	2390.000	-40.79	≤-21.20	54.41	≤74	PASS
		High	2480	AV	2483.500	-44.69	≤-41.20	50.51	≤54	PASS
				AV	2483.520	-44.69	≤-41.20	50.51	≤54	PASS
				AV	2500.000	-47.87	≤-41.20	47.33	≤54	PASS
				Peak	2483.500	-39.73	≤-21.20	55.47	≤74	PASS
				Peak	2486.480	-38.08	≤-21.20	57.12	≤74	PASS
				Peak	2500.000	-40.4	≤-21.20	54.80	≤74	PASS

BT 2LE

TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE	Ant3	Low	2402	AV	2310.000	-49.07	≤-41.20	46.13	≤54	PASS
				AV	2377.700	-48.2	≤-41.20	47.00	≤54	PASS
				AV	2390.000	-48.42	≤-41.20	46.78	≤54	PASS
				Peak	2310.000	-40.31	≤-21.20	54.89	≤74	PASS
				Peak	2365.100	-38.54	≤-21.20	56.66	≤74	PASS
				Peak	2390.000	-42.01	≤-21.20	53.19	≤74	PASS
		High	2480	AV	2483.500	-41.8	≤-41.20	53.40	≤54	PASS
				AV	2483.520	-41.8	≤-41.20	53.40	≤54	PASS
				AV	2500.000	-47.91	≤-41.20	47.29	≤54	PASS
				Peak	2483.500	-37.08	≤-21.20	58.12	≤74	PASS
				Peak	2486.080	-30.35	≤-21.20	64.85	≤74	PASS
				Peak	2500.000	-40.76	≤-21.20	54.44	≤74	PASS

Chip3: AC7066D4**BT LE**

TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE	Ant4	Low	2402	AV	2310.000	-49.47	≤-41.20	45.73	≤54	PASS
				AV	2377.385	-48.46	≤-41.20	46.74	≤54	PASS
				AV	2390.000	-48.67	≤-41.20	46.53	≤54	PASS
				Peak	2310.000	-43.33	≤-21.20	51.87	≤74	PASS
				Peak	2385.995	-38.1	≤-21.20	57.10	≤74	PASS
				Peak	2390.000	-41.51	≤-21.20	53.69	≤74	PASS
		High	2480	AV	2483.500	-44.9	≤-41.20	50.30	≤54	PASS
				AV	2483.520	-44.9	≤-41.20	50.30	≤54	PASS
				AV	2500.000	-47.96	≤-41.20	47.24	≤54	PASS
				Peak	2483.500	-41.18	≤-21.20	54.02	≤74	PASS
				Peak	2485.360	-37.91	≤-21.20	57.29	≤74	PASS
				Peak	2500.000	-38.71	≤-21.20	56.49	≤74	PASS

BT 2LE

TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE	Ant4	Low	2402	AV	2310.000	-49.52	≤-41.20	45.68	≤54	PASS
				AV	2378.120	-48.5	≤-41.20	46.70	≤54	PASS
				AV	2390.000	-48.78	≤-41.20	46.42	≤54	PASS
				Peak	2310.000	-42.32	≤-21.20	52.88	≤74	PASS
				Peak	2370.560	-38.94	≤-21.20	56.26	≤74	PASS
				Peak	2390.000	-40.56	≤-21.20	54.64	≤74	PASS
		High	2480	AV	2483.500	-41.94	≤-41.20	53.26	≤54	PASS
				AV	2483.520	-41.94	≤-41.20	53.26	≤54	PASS
				AV	2500.000	-48.02	≤-41.20	47.18	≤54	PASS
				Peak	2483.500	-36.79	≤-21.20	58.41	≤74	PASS
				Peak	2485.920	-29.5	≤-21.20	65.70	≤74	PASS
				Peak	2500.000	-39.71	≤-21.20	55.49	≤74	PASS

Note:

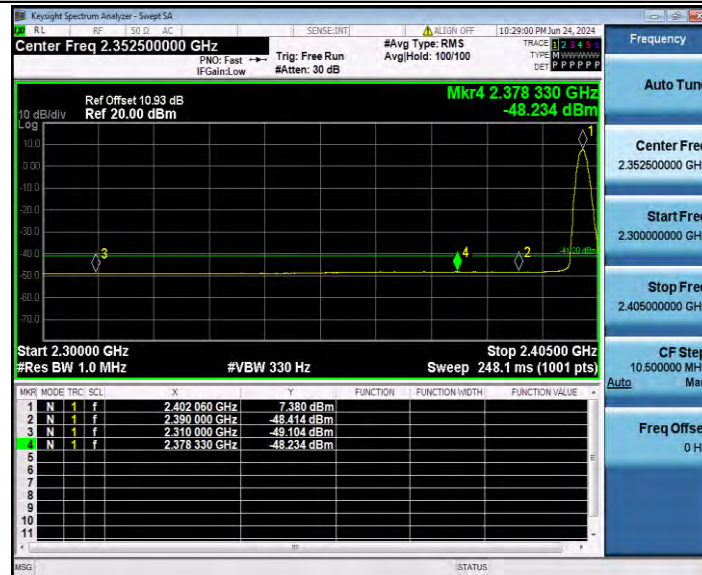
1. The Antenna Gain is compensated in the graph.
2. The Duty Cycle Factor and RBW Factor is compensated in the graph.
3. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

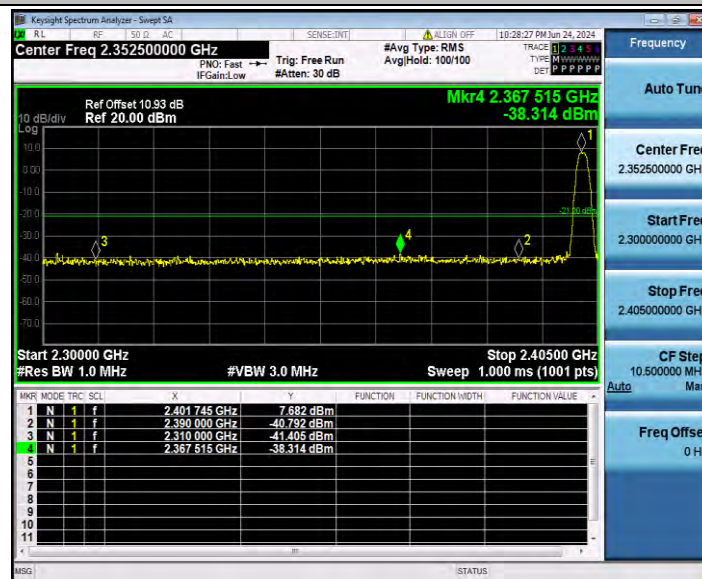
Chip2: AC7066D4

BT LE

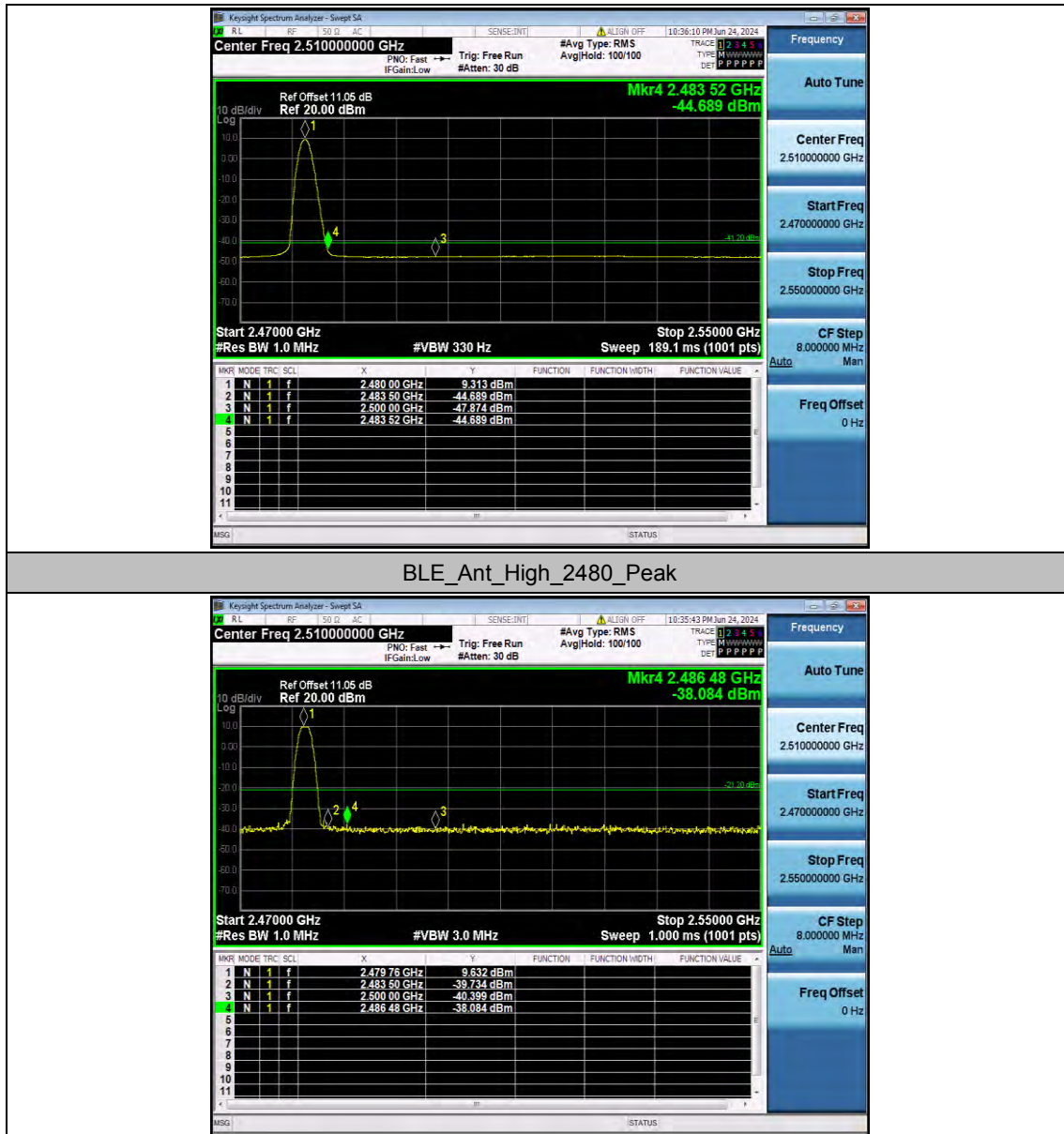
BLE_Ant_Low_2402_AV



BLE_Ant_Low_2402_Peak

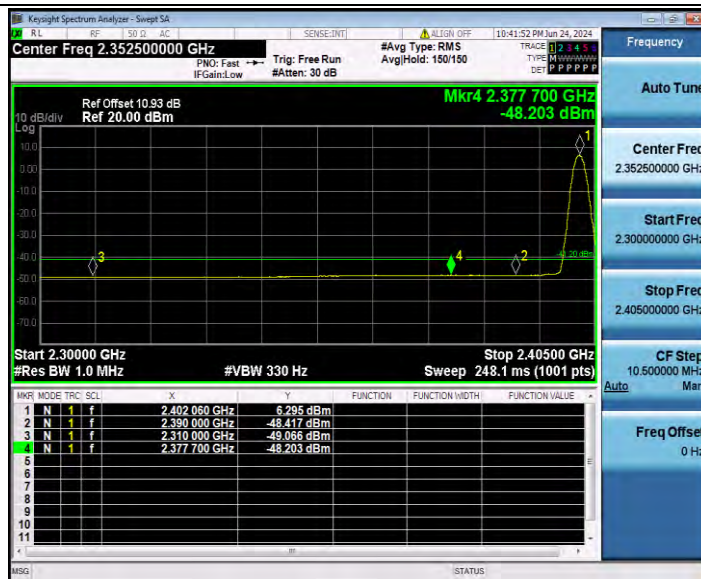


BLE_Ant_High_2480_AV

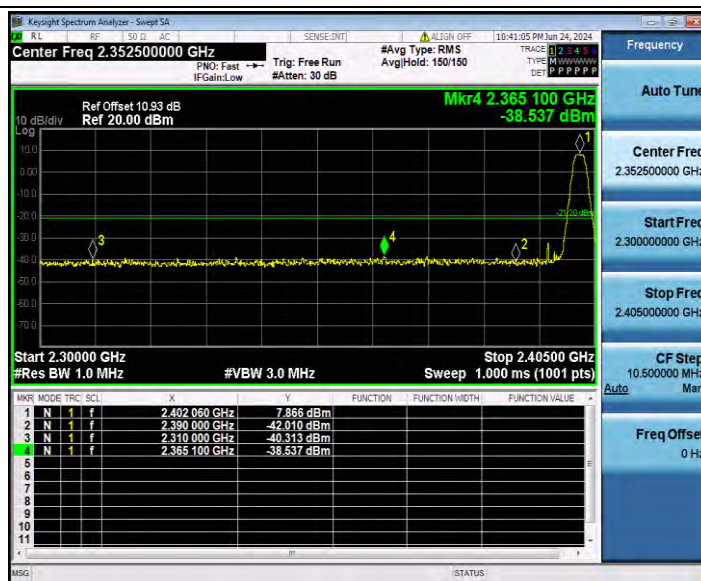


BT 2LE

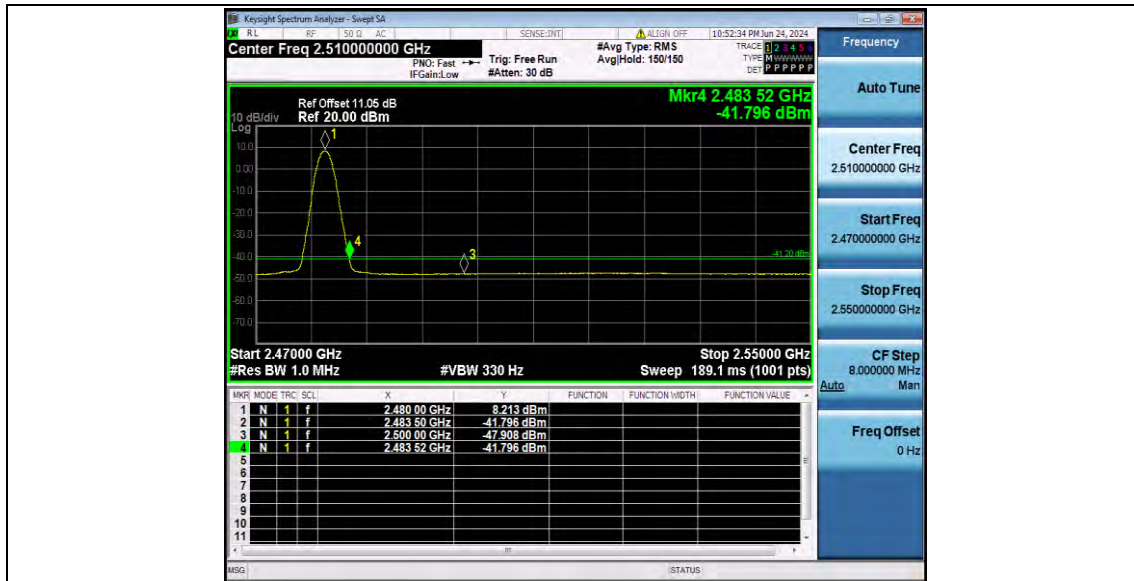
BLE_Ant_Low_2402_AV



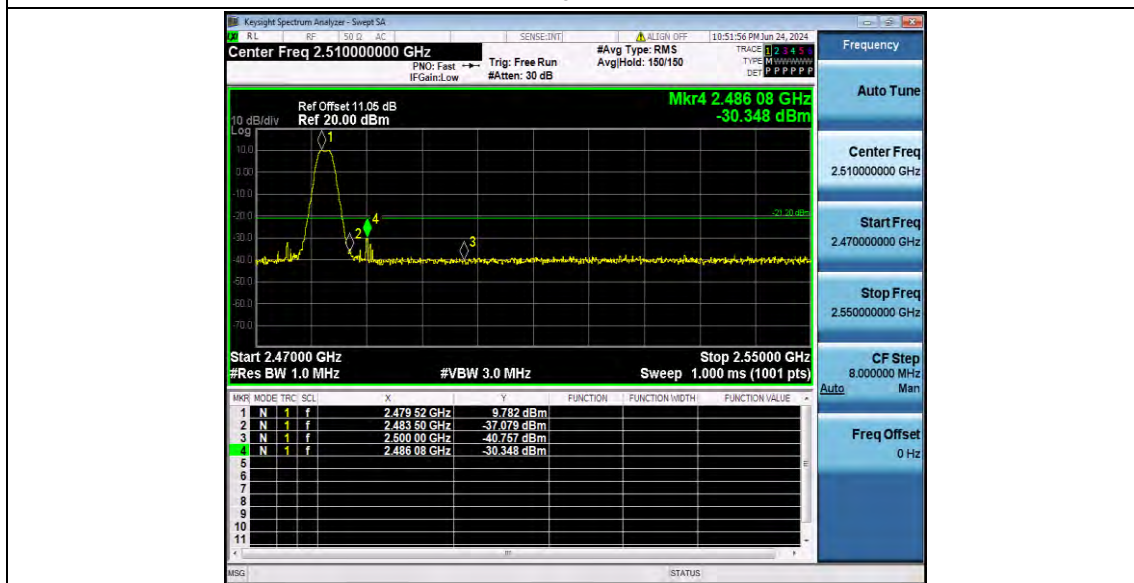
BLE_Ant_Low_2402_Peak



BLE_Ant_High_2480_AV



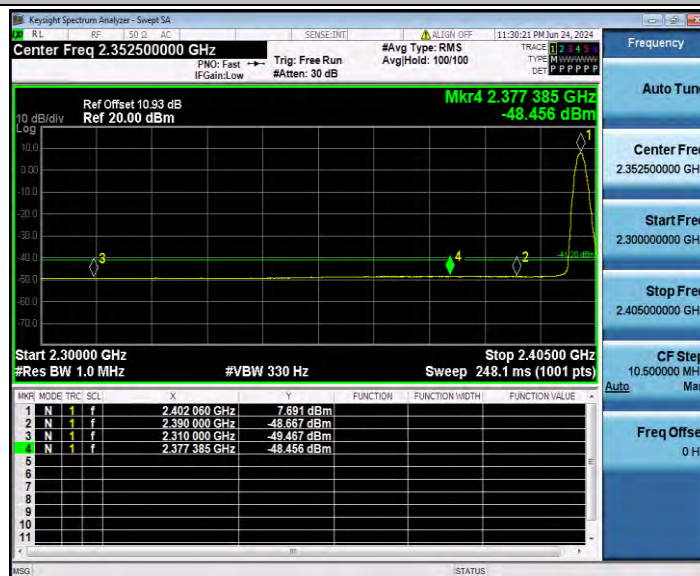
BLE_Ant_High_2480_Peak



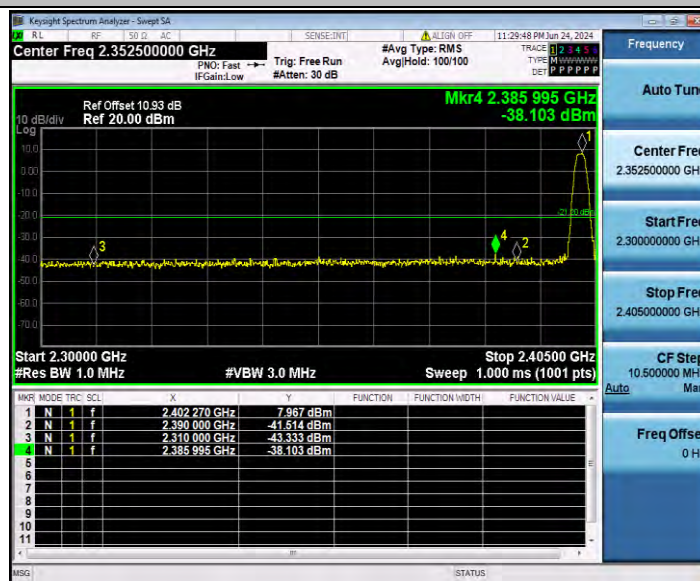
Chip3: AC7066D4

BT LE

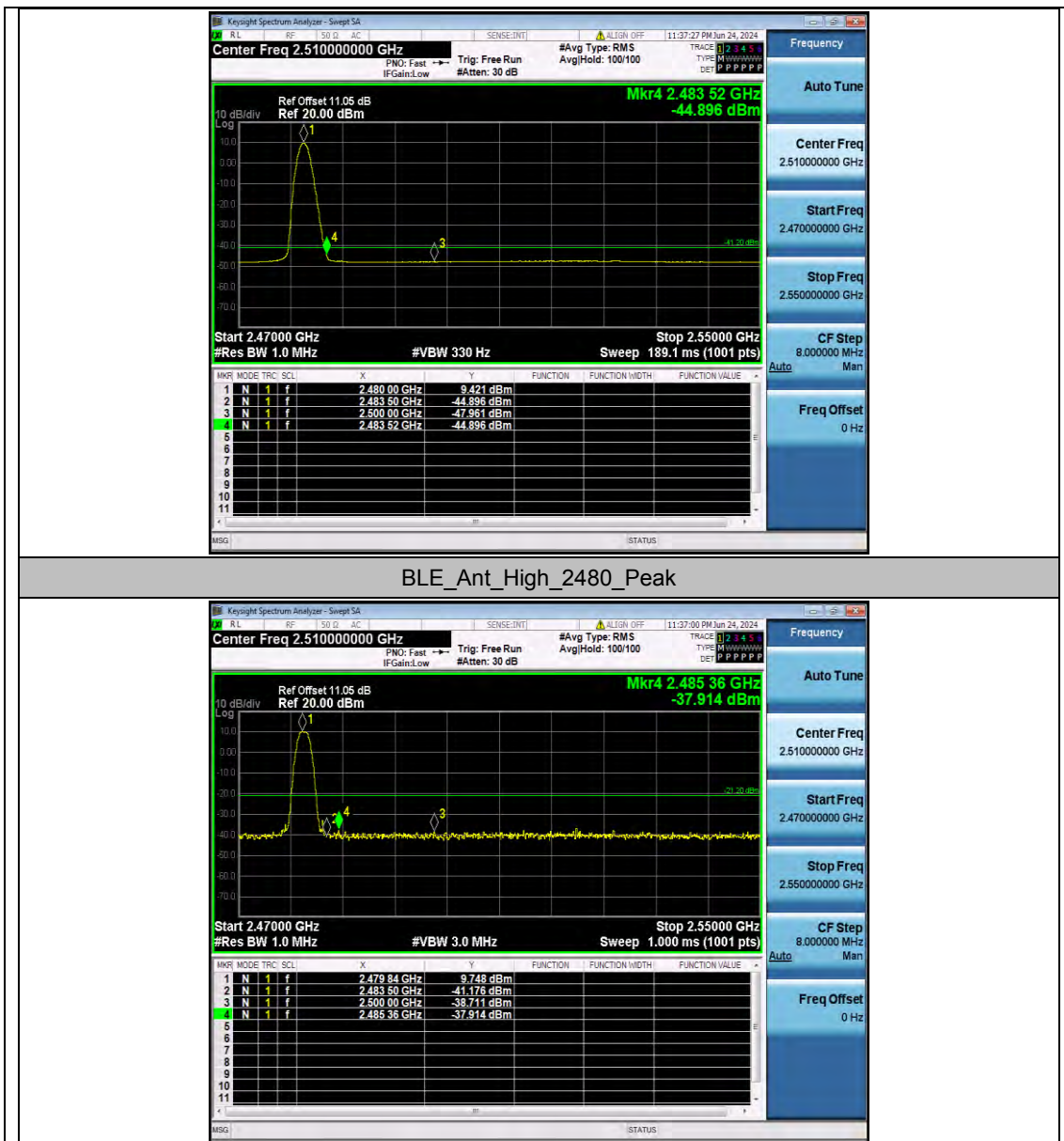
BLE_Ant_Low_2402_AV



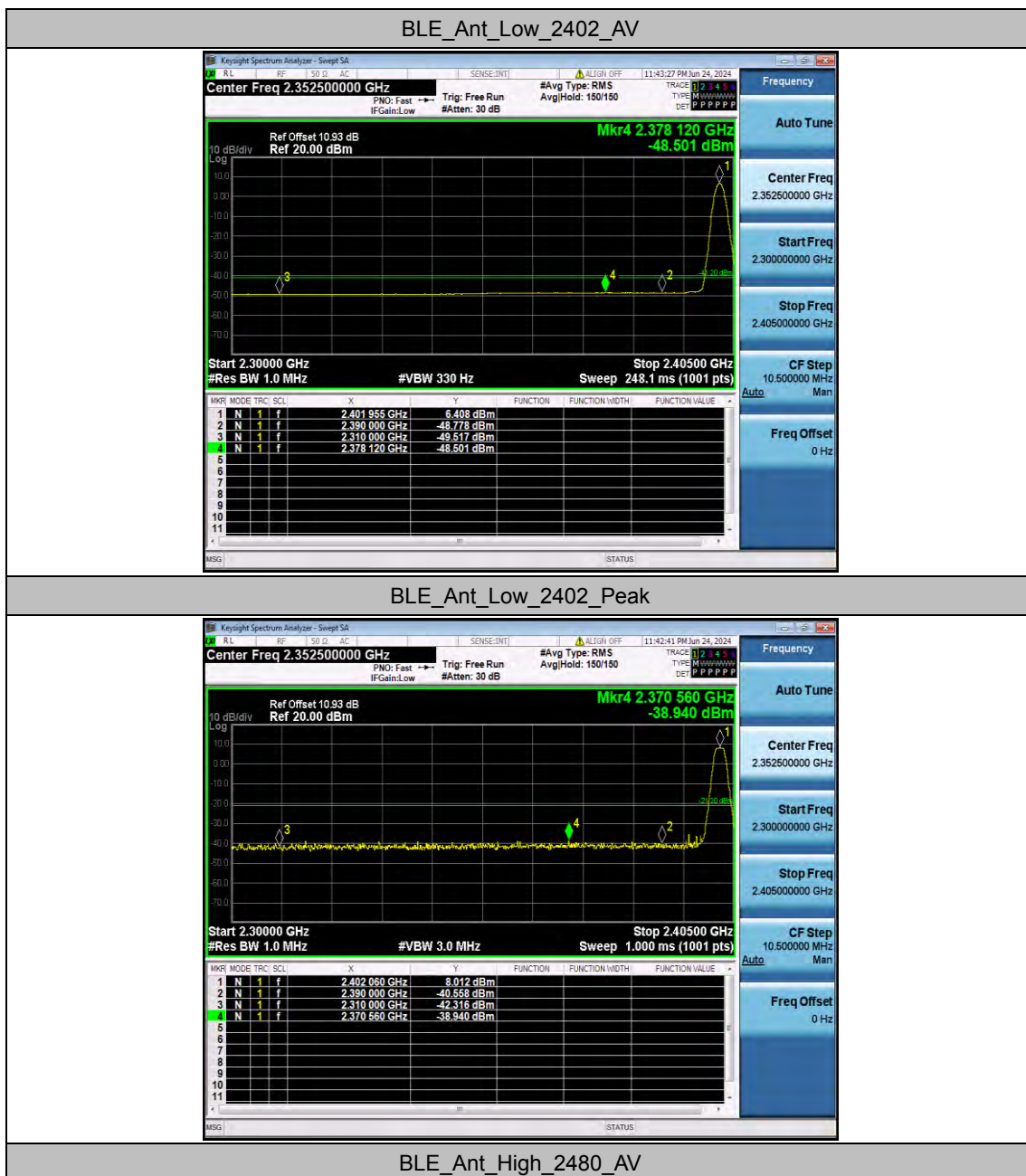
BLE_Ant_Low_2402_Peak

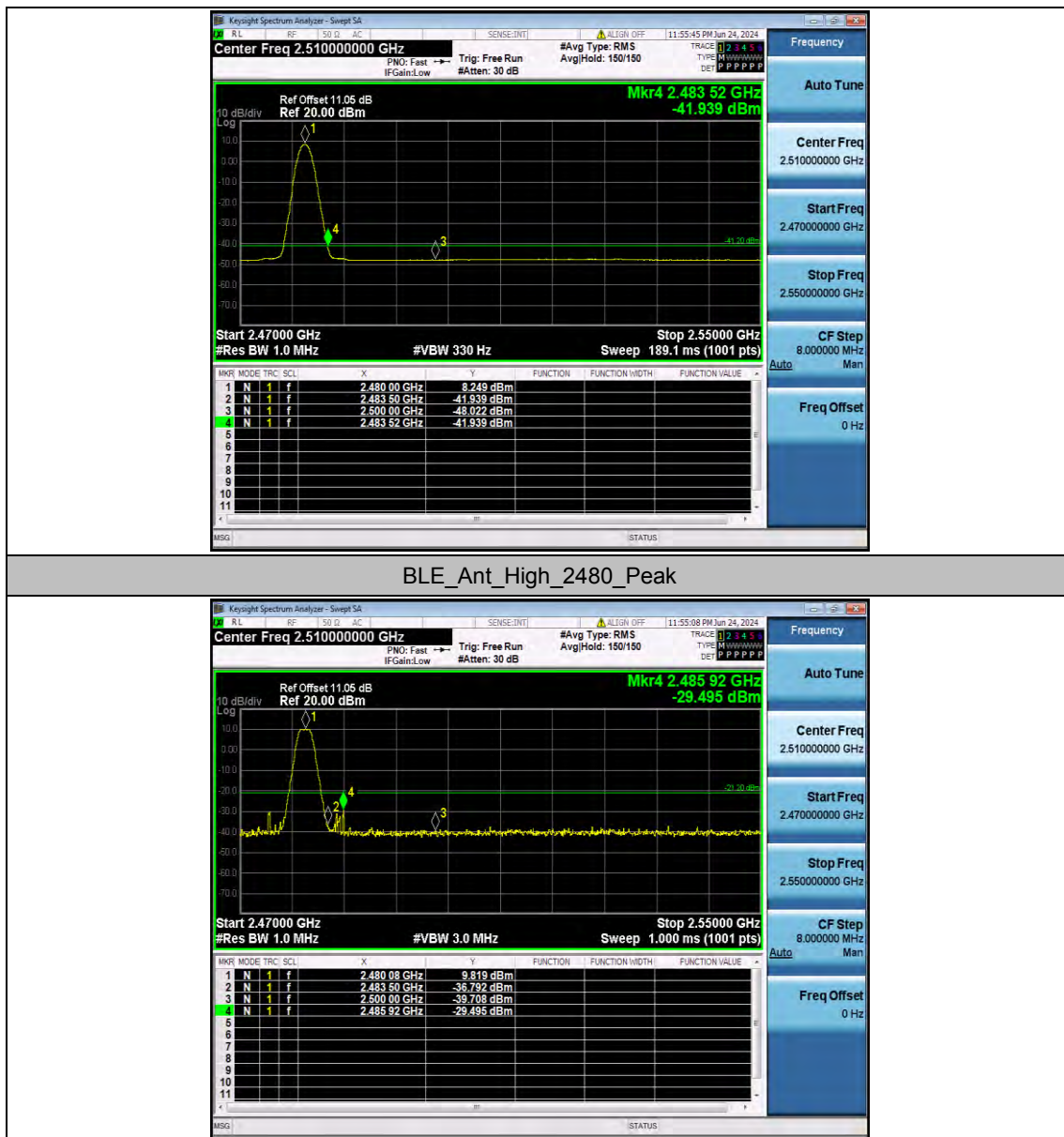


BLE_Ant_High_2480_AV



BT 2LE





Appendix B.8: Duty Cycle

Test Result

Chip2: AC7066D4

BT LE

TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	Duty Cycle Factor[dB]	1/T Factor[KHz]
BLE	Ant3	2402	2.13	2.50	0.8520	85.20	0.70	0.47
		2440	2.13	2.50	0.8520	85.20	0.70	0.47
		2480	2.13	2.50	0.8520	85.20	0.70	0.47

BT 2LE

TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	Duty Cycle Factor[dB]	1/T Factor[KHz]
BLE	Ant3	2402	1.08	2.50	0.4320	43.20	3.65	0.93
		2440	1.08	2.50	0.4320	43.20	3.65	0.93
		2480	1.08	2.50	0.4320	43.20	3.65	0.93

Chip3: AC7066D4

BT LE

TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	Duty Cycle Factor[dB]	1/T Factor[KHz]
BLE	Ant4	2402	2.13	2.50	0.8520	85.20	0.70	0.47
		2440	2.13	2.50	0.8520	85.20	0.70	0.47
		2480	2.13	2.50	0.8520	85.20	0.70	0.47

BT 2LE

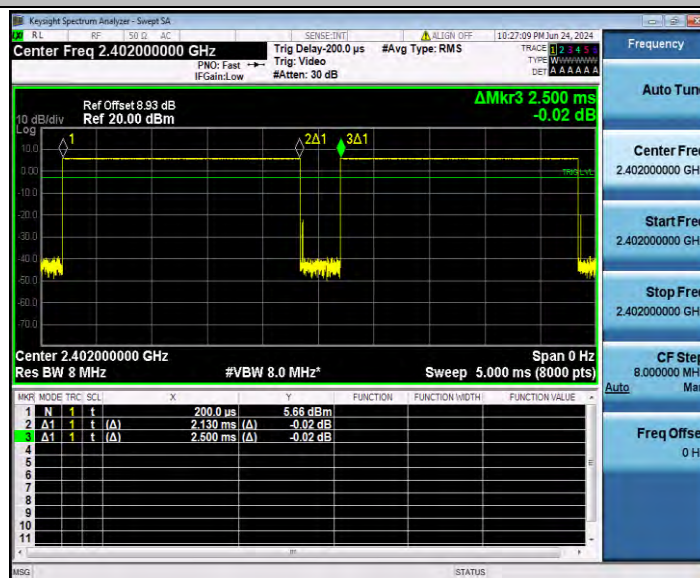
TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	Duty Cycle Factor[dB]	1/T Factor[KHz]
BLE	Ant4	2402	1.08	2.50	0.4320	43.20	3.65	0.93
		2440	1.08	2.50	0.4320	43.20	3.65	0.93
		2480	1.08	2.50	0.4320	43.20	3.65	0.93

Test Graphs

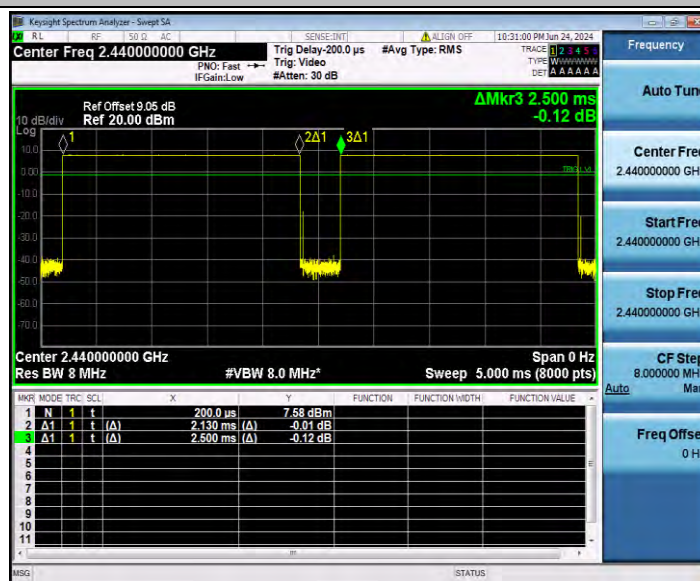
Chip2: AC7066D4

BT LE

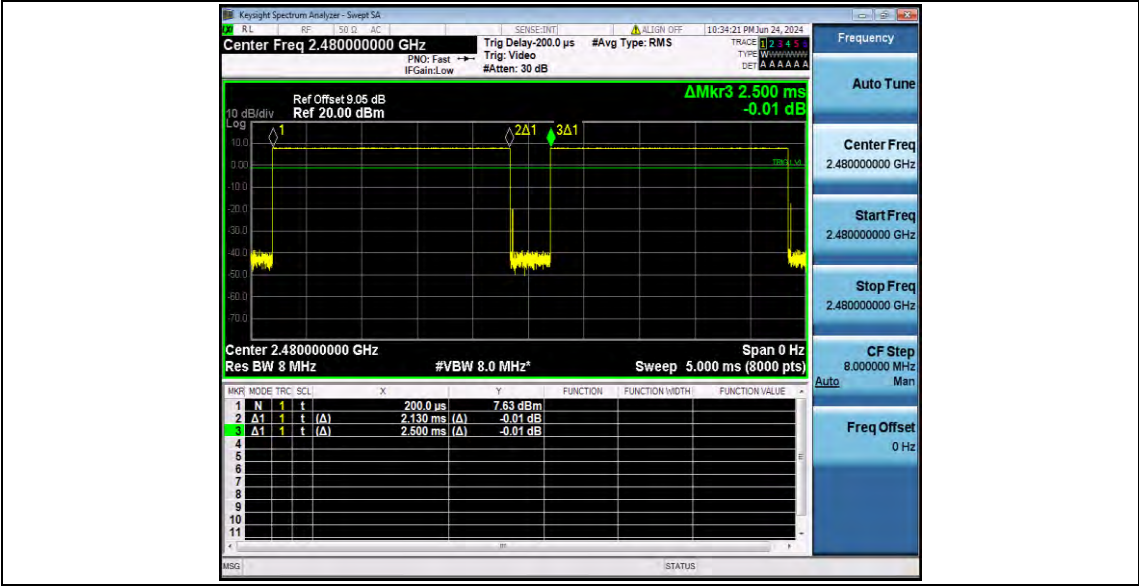
BLE_Ant_2402



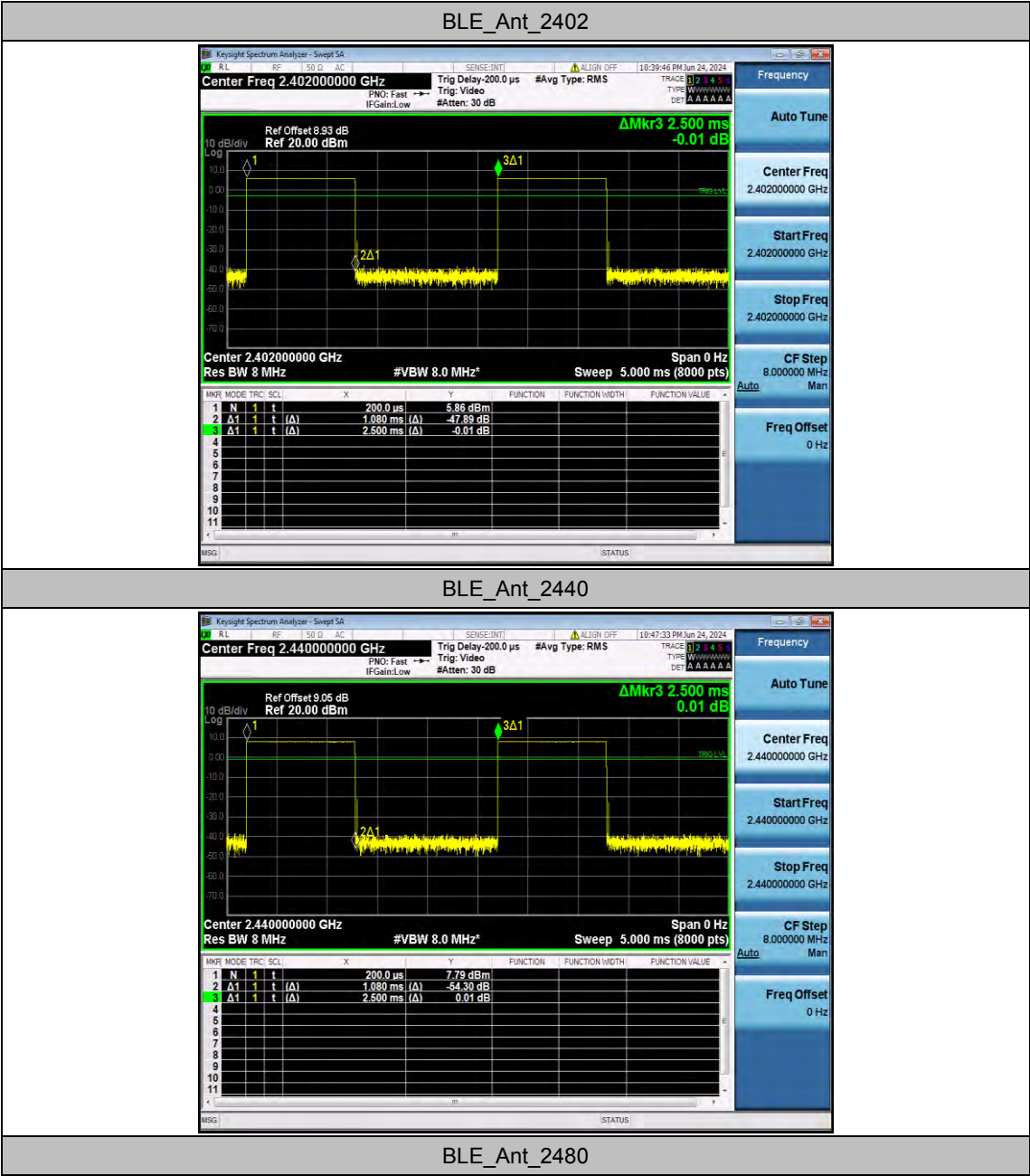
BLE_Ant_2440

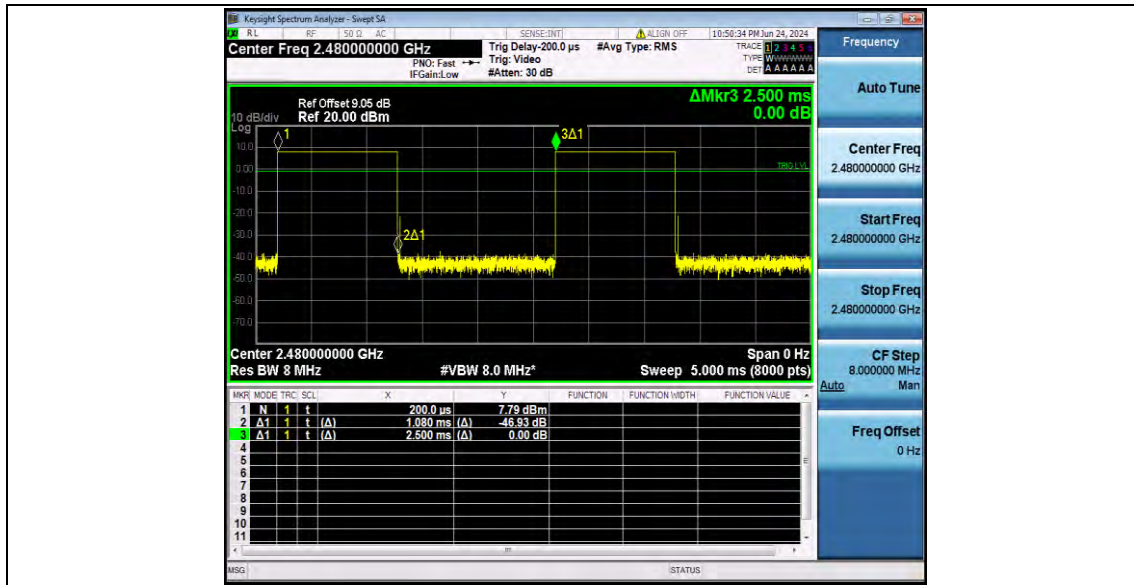


BLE_Ant_2480



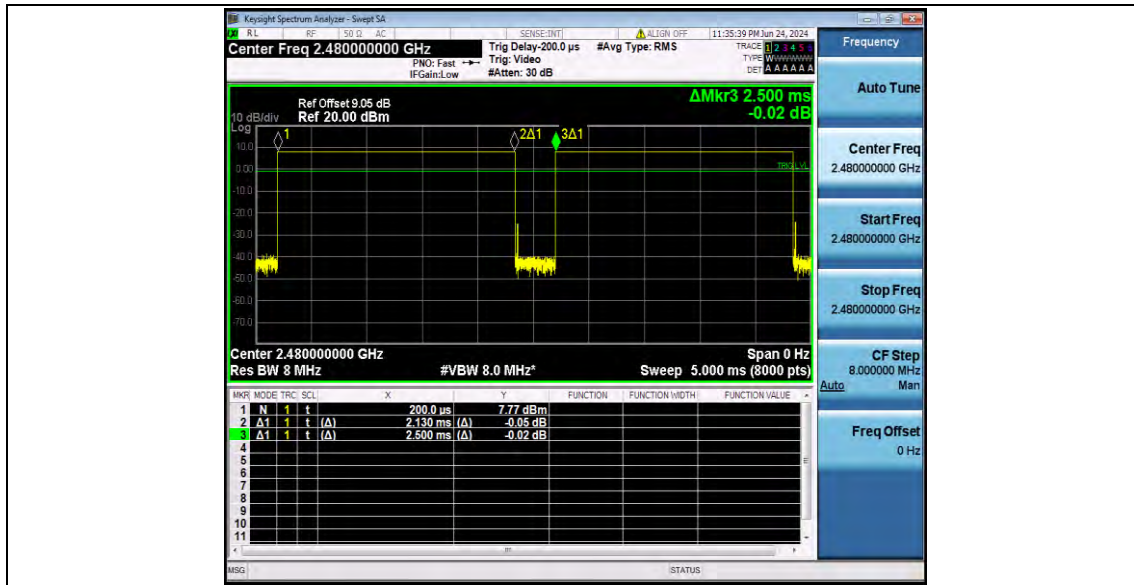
BT 2LE



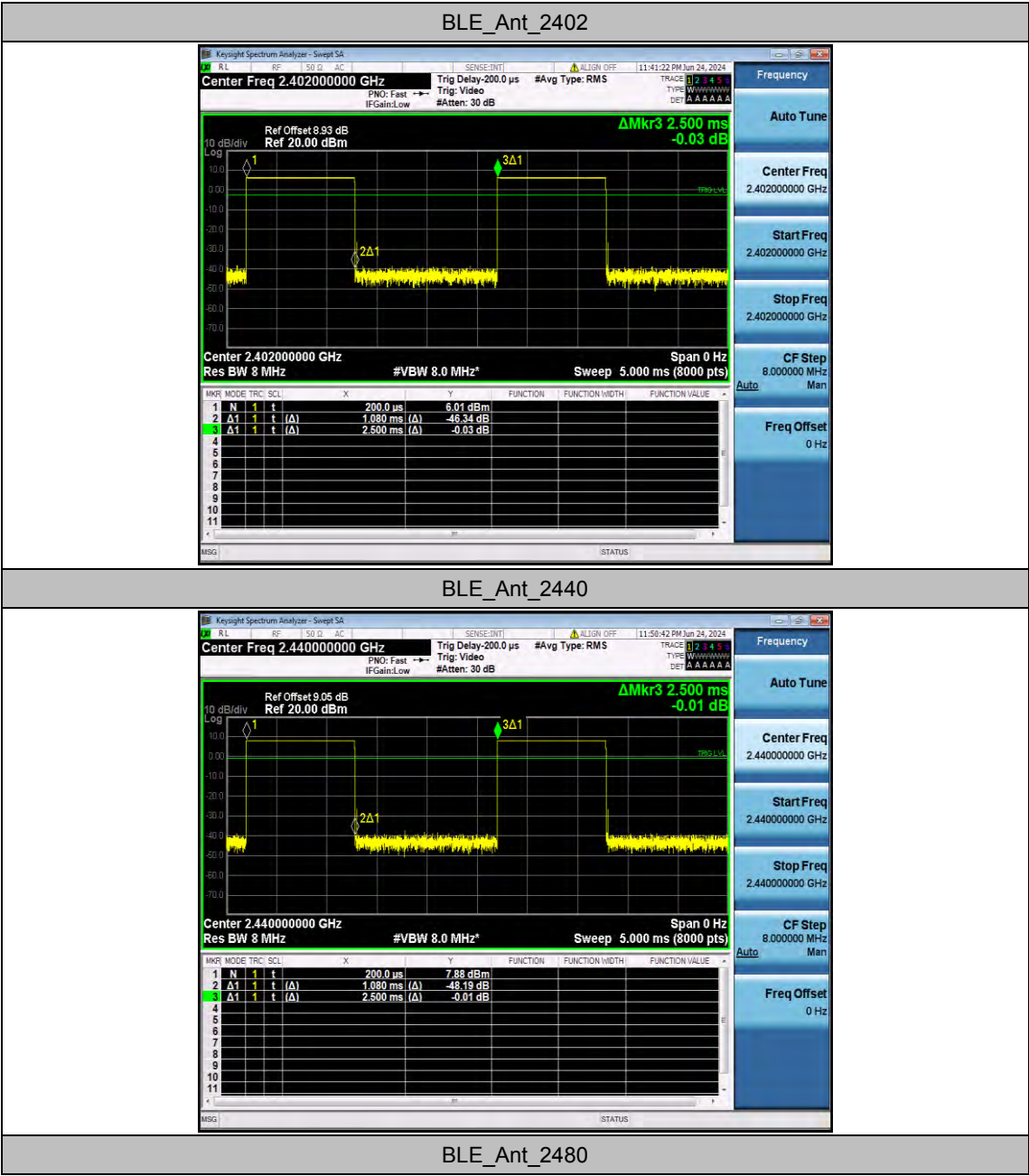


Chip3: AC7066D4
BT LE





BT 2LE



BLE_Ant_2440

Frequency

Auto Tune

Center Freq
2.440000000 GHzStart Freq
2.440000000 GHzStop Freq
2.440000000 GHzCF Step
8.000000 MHz
Auto ManFreq Offset
0 Hz

BLE_Ant_2480

