

Case No. : <u>GTS20231208004-1-36</u>	
Ambient Condition: <u>23</u> °C, <u>48</u> %RH	
According Standard: ■Part15C	
Test Date: <u>2024.2.18</u>	Test Engineer: <u>Evan ouyang</u>

Appendix B.1: DTS Bandwidth

Test Result

BT LE

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant1	2402	0.664	2401.668	2402.332	0.5	PASS
		2440	0.656	2439.676	2440.332	0.5	PASS
		2480	0.696	2479.640	2480.336	0.5	PASS

BT 2LE

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant1	2402	1.236	2401.340	2402.576	0.5	PASS
		2440	1.148	2439.432	2440.580	0.5	PASS
		2480	1.236	2479.324	2480.560	0.5	PASS

BT LE(S2)

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant1	2402	0.676	2401.652	2402.328	0.5	PASS
		2440	0.692	2439.648	2440.340	0.5	PASS
		2480	0.676	2479.652	2480.328	0.5	PASS

BT LE(S8)

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant1	2402	0.672	2401.656	2402.328	0.5	PASS
		2440	0.688	2439.644	2440.332	0.5	PASS
		2480	0.676	2479.652	2480.328	0.5	PASS

Test Graphs

BT LE

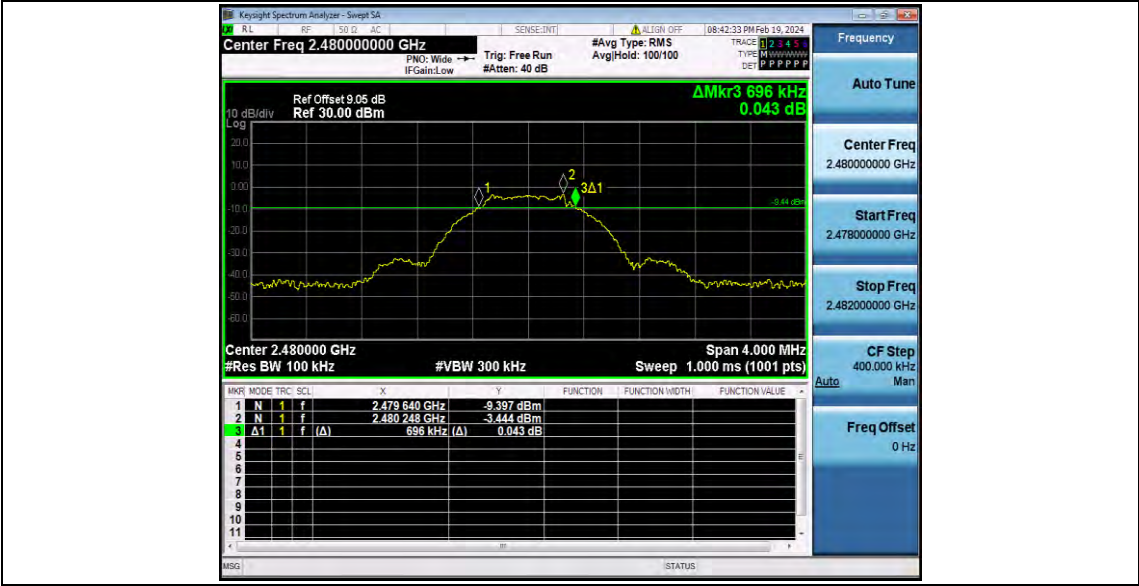
BLE_Ant1_2402



BLE_Ant1_2440



BLE_Ant1_2480



BT 2LE

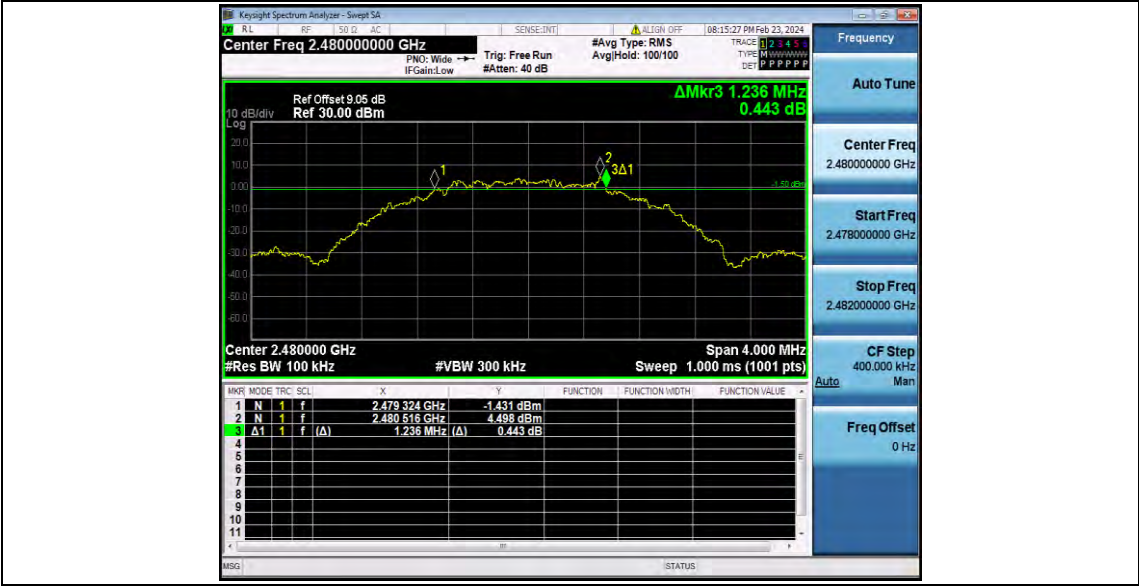
BLE_Ant1_2402



BLE_Ant1_2440



BLE_Ant1_2480



BT LE(S2)

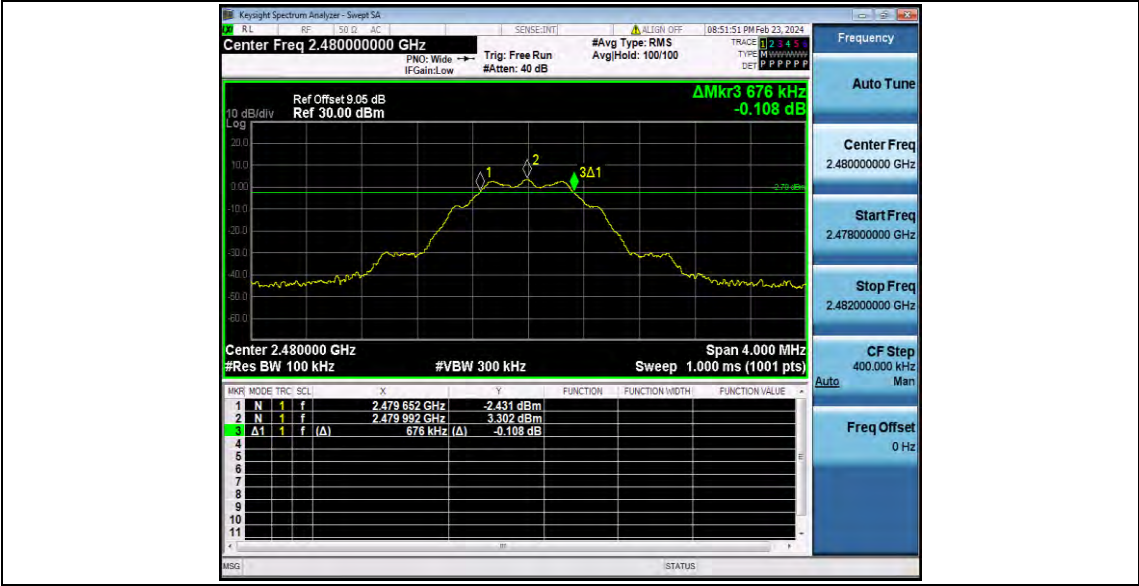
BLE_Ant1_2402



BLE_Ant1_2440



BLE_Ant1_2480



BT LE(S8)



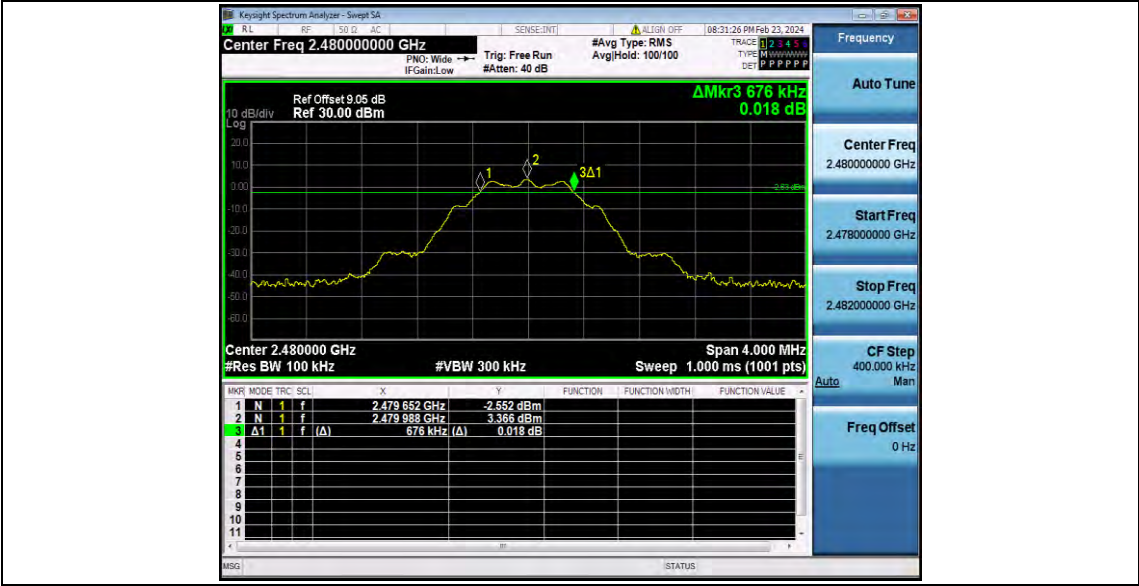
BLE_Ant1_2440

Frequency

Auto Tune

Center Freq
2.440000000 GHzStart Freq
2.438000000 GHzStop Freq
2.442000000 GHzCF Step
400.000 kHz
ManFreq Offset
0 Hz

BLE_Ant1_2480



Appendix B.2: Occupied Channel Bandwidth

Test Result

BT LE

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant1	2402	1.0475	2401.4795	2402.5270	---	---
		2440	1.0431	2439.4827	2440.5258	---	---
		2480	1.0402	2479.4829	2480.5231	---	---

BT 2LE

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant1	2402	2.0522	2400.9838	2403.0360	---	---
		2440	2.0365	2438.9852	2441.0217	---	---
		2480	2.0505	2478.9816	2481.0321	---	---

BT LE(S2)

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant1	2402	1.0511	2401.4625	2402.5136	---	---
		2440	1.0608	2439.4593	2440.5201	---	---
		2480	1.0489	2479.4622	2480.5111	---	---

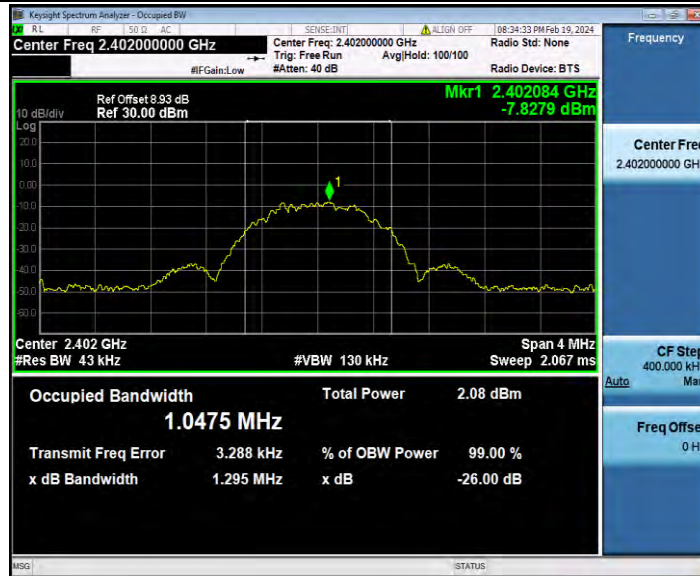
BT LE(S8)

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant1	2402	1.0505	2401.4635	2402.5140	---	---
		2440	1.0558	2439.4616	2440.5174	---	---
		2480	1.0532	2479.4617	2480.5149	---	---

Test Graphs

BT LE

BLE_Ant1_2402

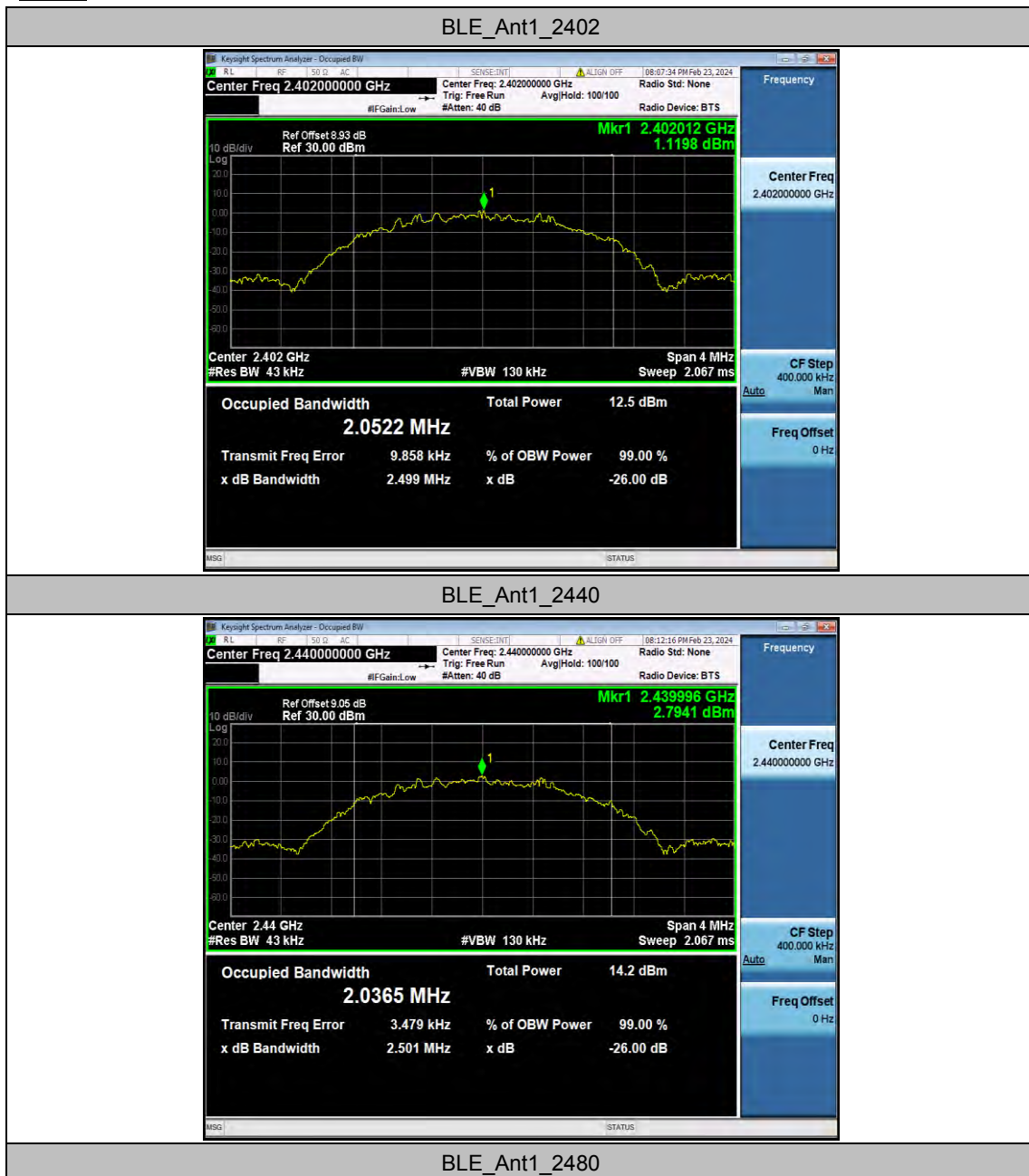


BLE_Ant1_2440



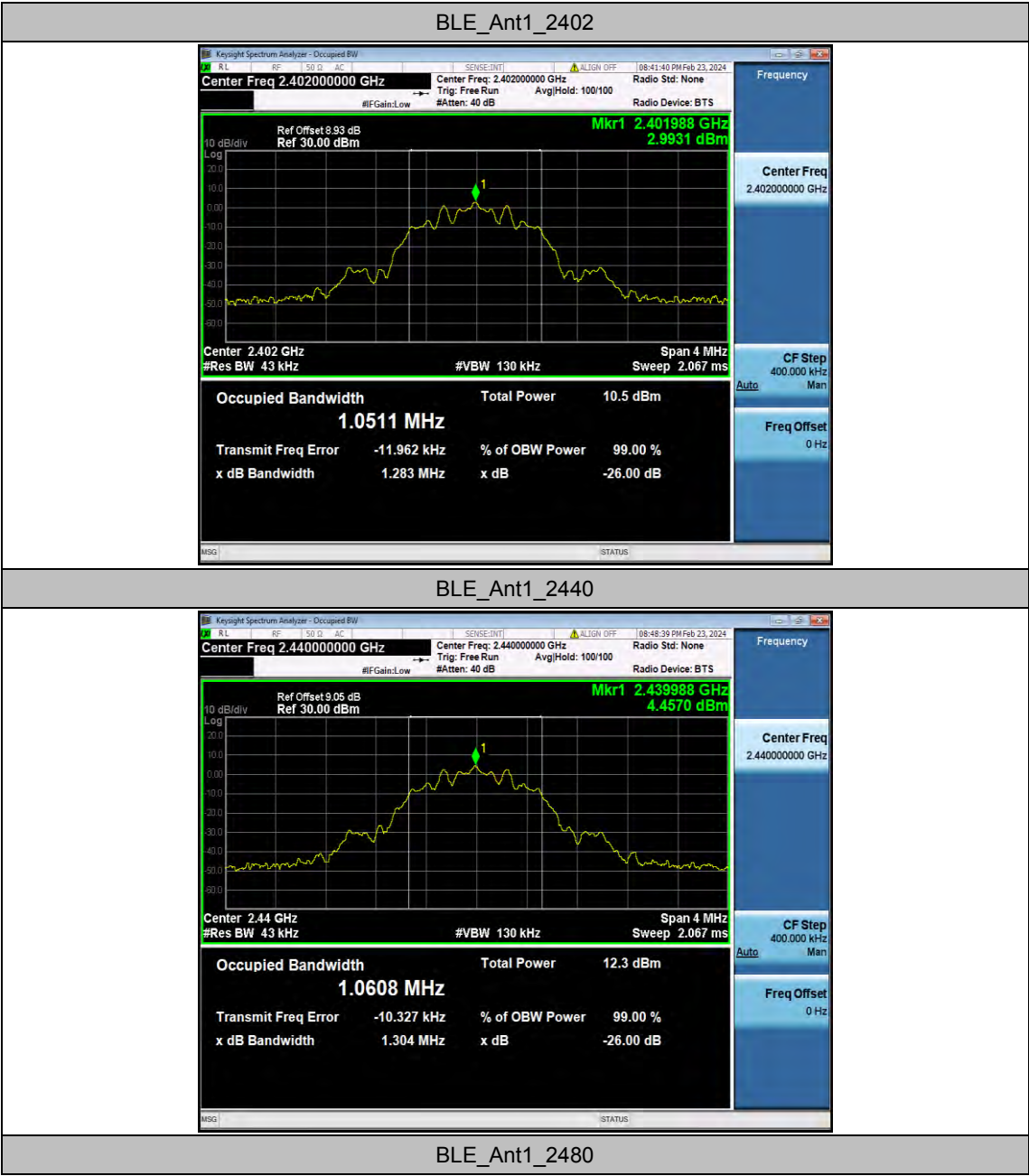
BLE_Ant1_2480



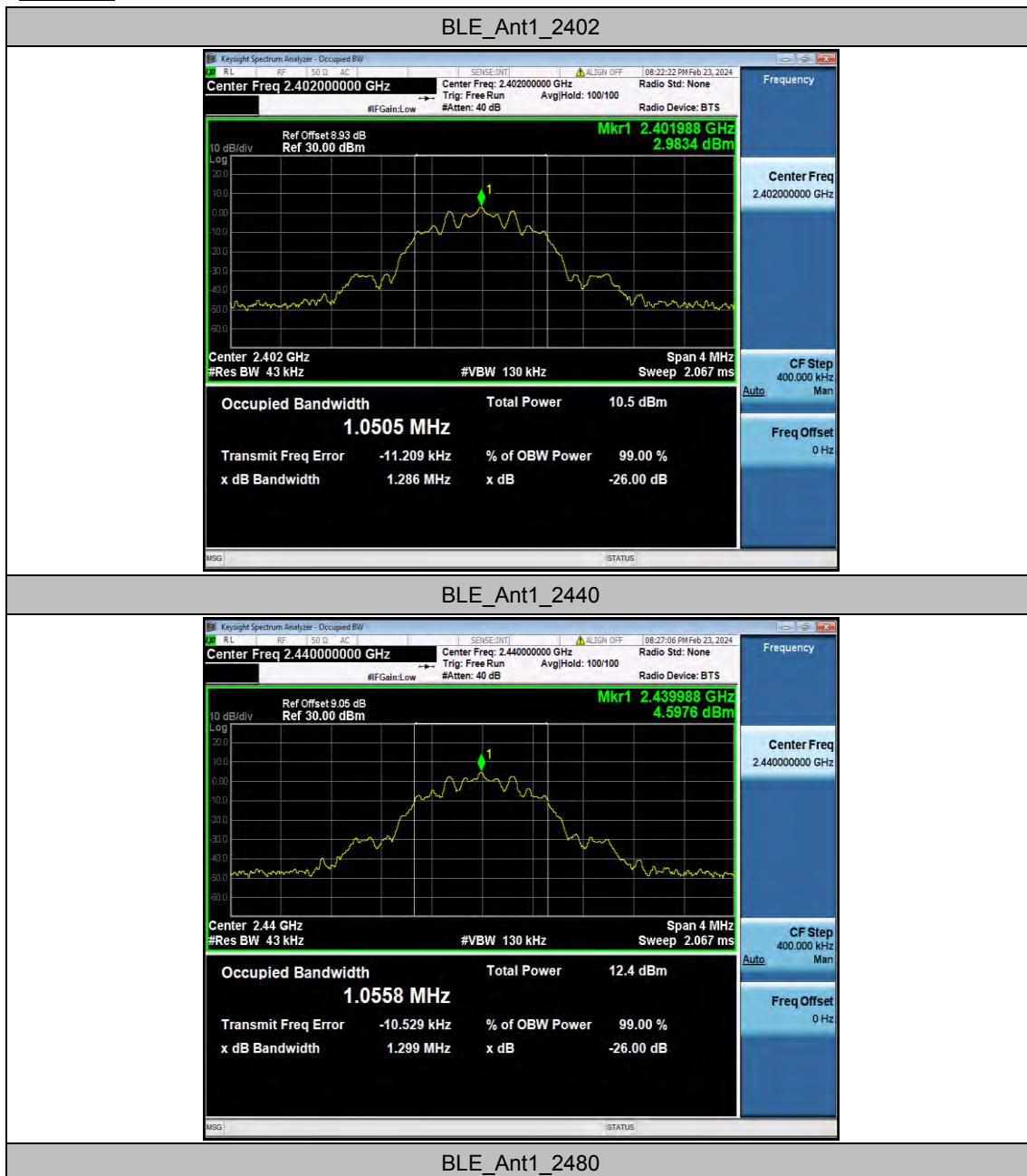
BT 2LE



BT LE(S2)





BT LE(S8)



Appendix B.3: Maximum conducted output power

Test Result

BT LE

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE	Ant1	2402	-4.06	≤30	PASS
		2440	-2.14	≤30	PASS
		2480	-2.10	≤30	PASS

BT 2LE

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE	Ant1	2402	6.44	≤30	PASS
		2440	8.05	≤30	PASS
		2480	6.62	≤30	PASS

BT LE(S2)

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE	Ant1	2402	6.45	≤30	PASS
		2440	8.00	≤30	PASS
		2480	6.59	≤30	PASS

BT LE(S8)

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE	Ant1	2402	6.52	≤30	PASS
		2440	8.08	≤30	PASS
		2480	6.63	≤30	PASS

Note:

1.The Duty Cycle Factor and RBW Factor is compensated in the data.

Appendix B.4: Maximum power spectral density

Test Result

BT LE

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE	Ant1	2402	-20.65	≤8.00	PASS
		2440	-8.23	≤8.00	PASS
		2480	-18.58	≤8.00	PASS

BT 2LE

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE	Ant1	2402	-13.09	≤8.00	PASS
		2440	-11.55	≤8.00	PASS
		2480	-12.77	≤8.00	PASS

BT LE(S2)

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE	Ant1	2402	-0.01	≤8.00	PASS
		2440	1.63	≤8.00	PASS
		2480	0.25	≤8.00	PASS

BT LE(S8)

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE	Ant1	2402	0.07	≤8.00	PASS
		2440	1.72	≤8.00	PASS
		2480	0.27	≤8.00	PASS

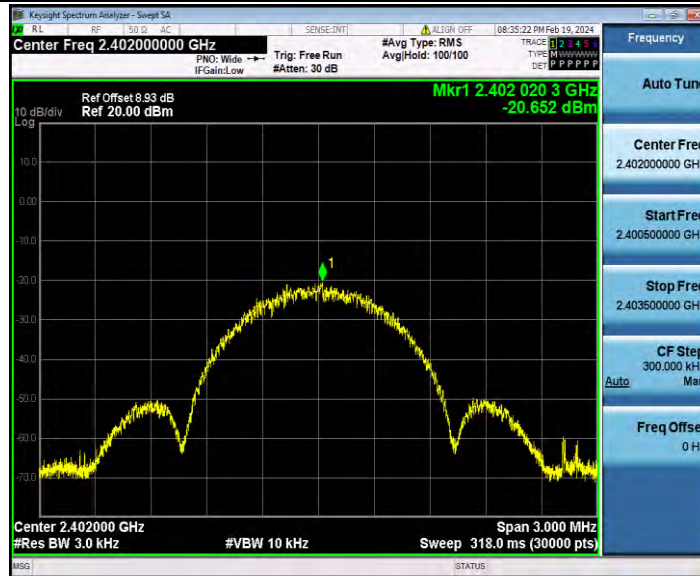
Note:

1. The Duty Cycle Factor and RBW Factor is compensated in the graph.

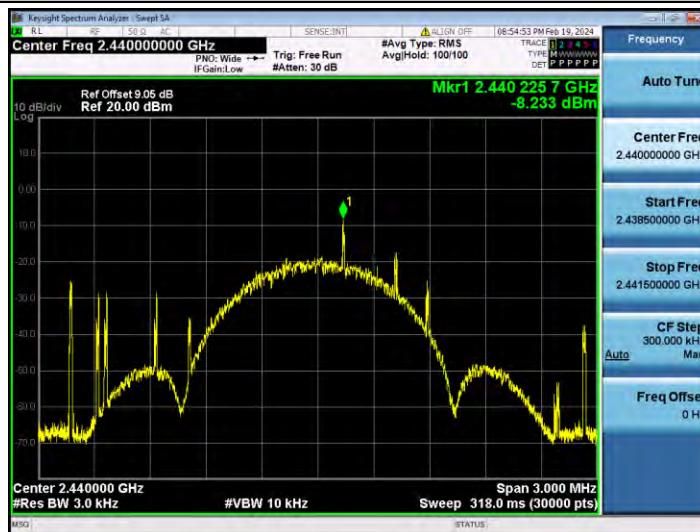
Test Graphs

BT LE

BLE_Ant1_2402

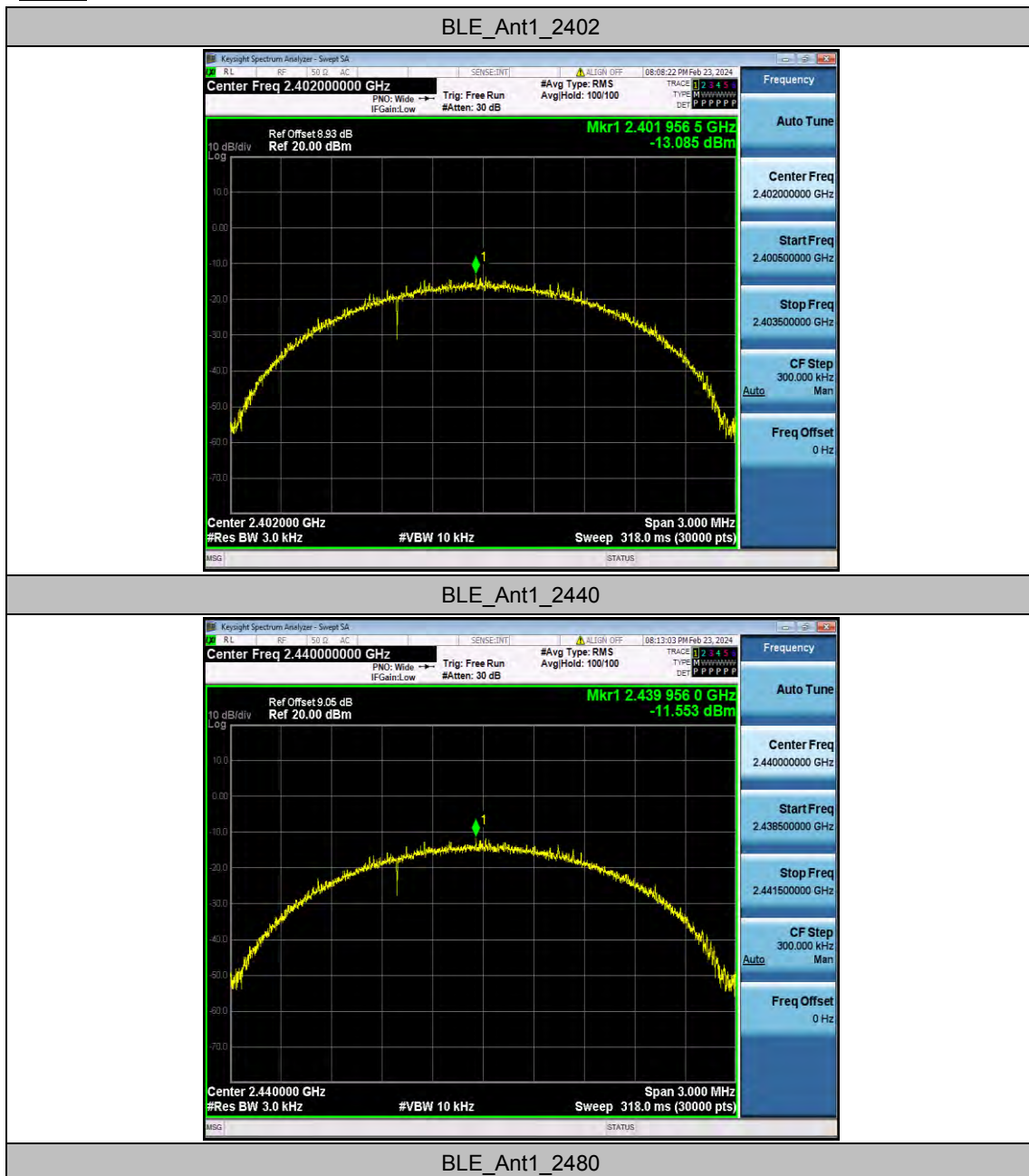


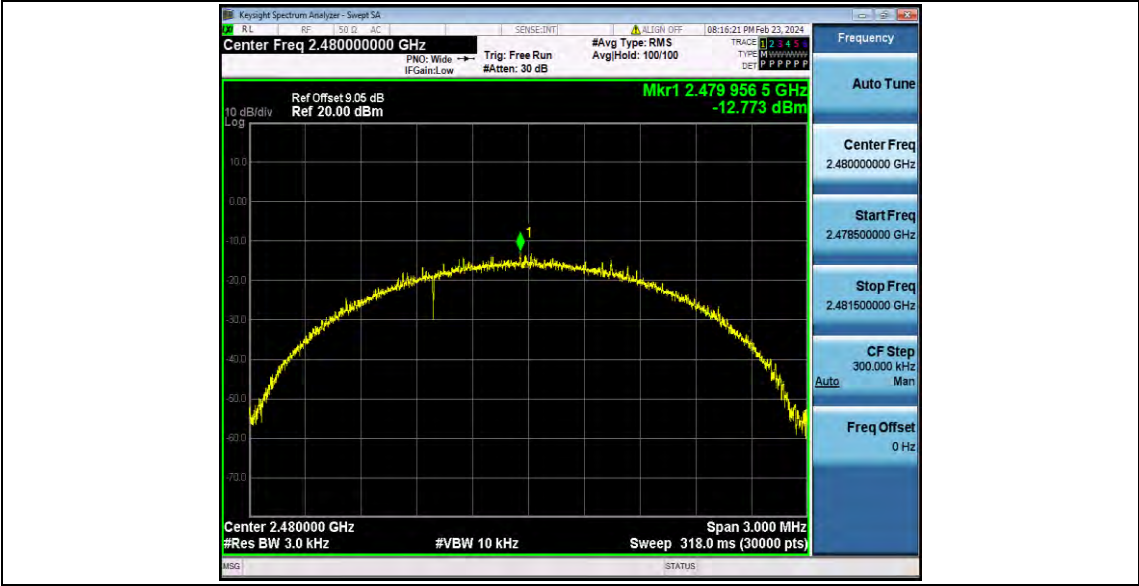
BLE_Ant1_2440



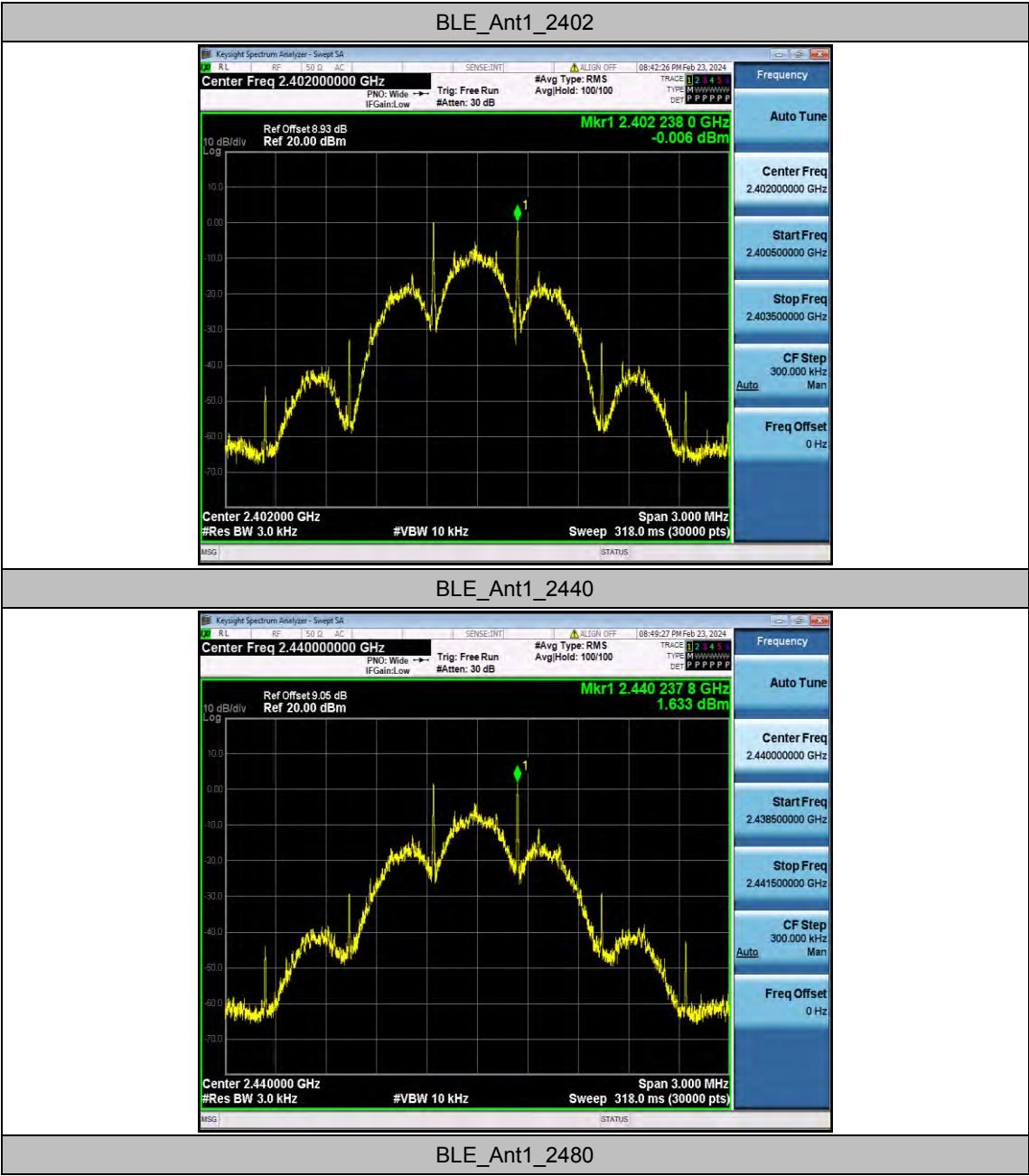
BLE_Ant1_2480



BT 2LE

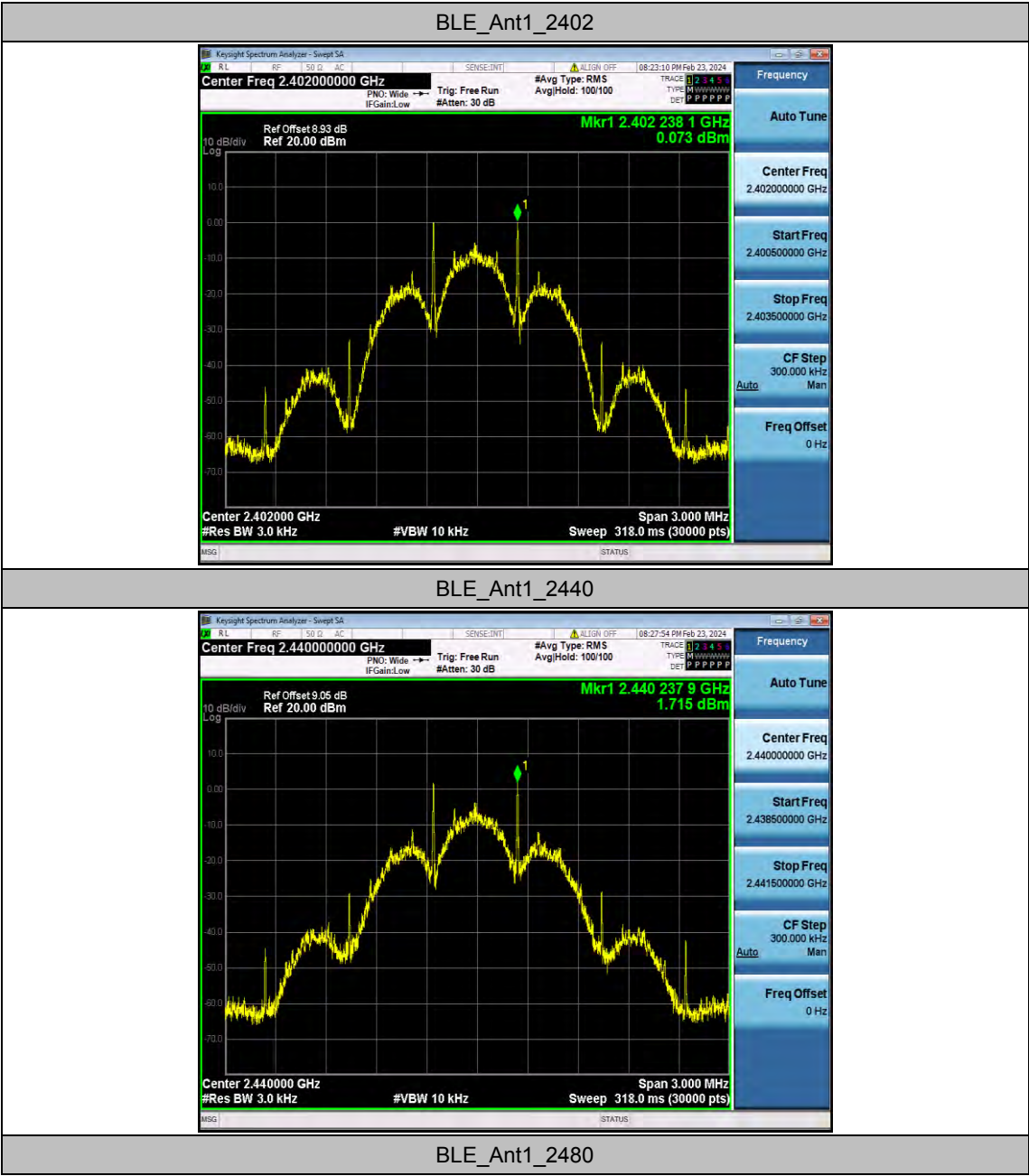


BT LE(S2)





BT LE(S8)



Appendix B.5: Band edge measurements

Test Result

BT LE

Test Mode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant1	Low	2402	-5.19	-50.28	≤-25.19	PASS
		High	2480	-2.82	-49.23	≤-22.82	PASS

BT 2LE

Test Mode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit[dBm]	Verdict
BLE	Ant1	Low	2402	4.96	-29.8	≤-15.04	PASS
		High	2480	4.94	-49.38	≤-15.06	PASS

BT LE(S2)

Test Mode	Antenna	ChName	Freq (MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE	Ant1	Low	2402	3.05	-48.79	≤-16.95	PASS
		High	2480	3.30	-48.99	≤-16.7	PASS

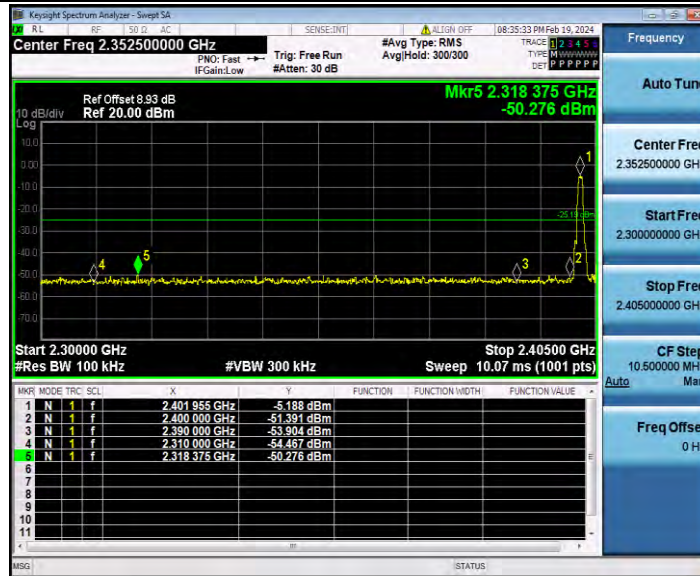
BT LE(S8)

TestMode	Antenna	ChName	Freq (MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE	Ant1	Low	2402	3.11	-49.25	≤-16.9	PASS
		High	2480	3.43	-49.4	≤-16.57	PASS

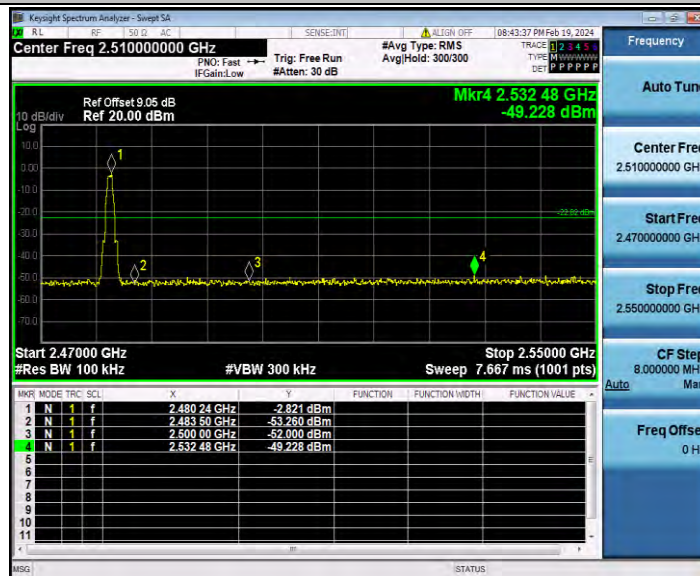
Test Graphs

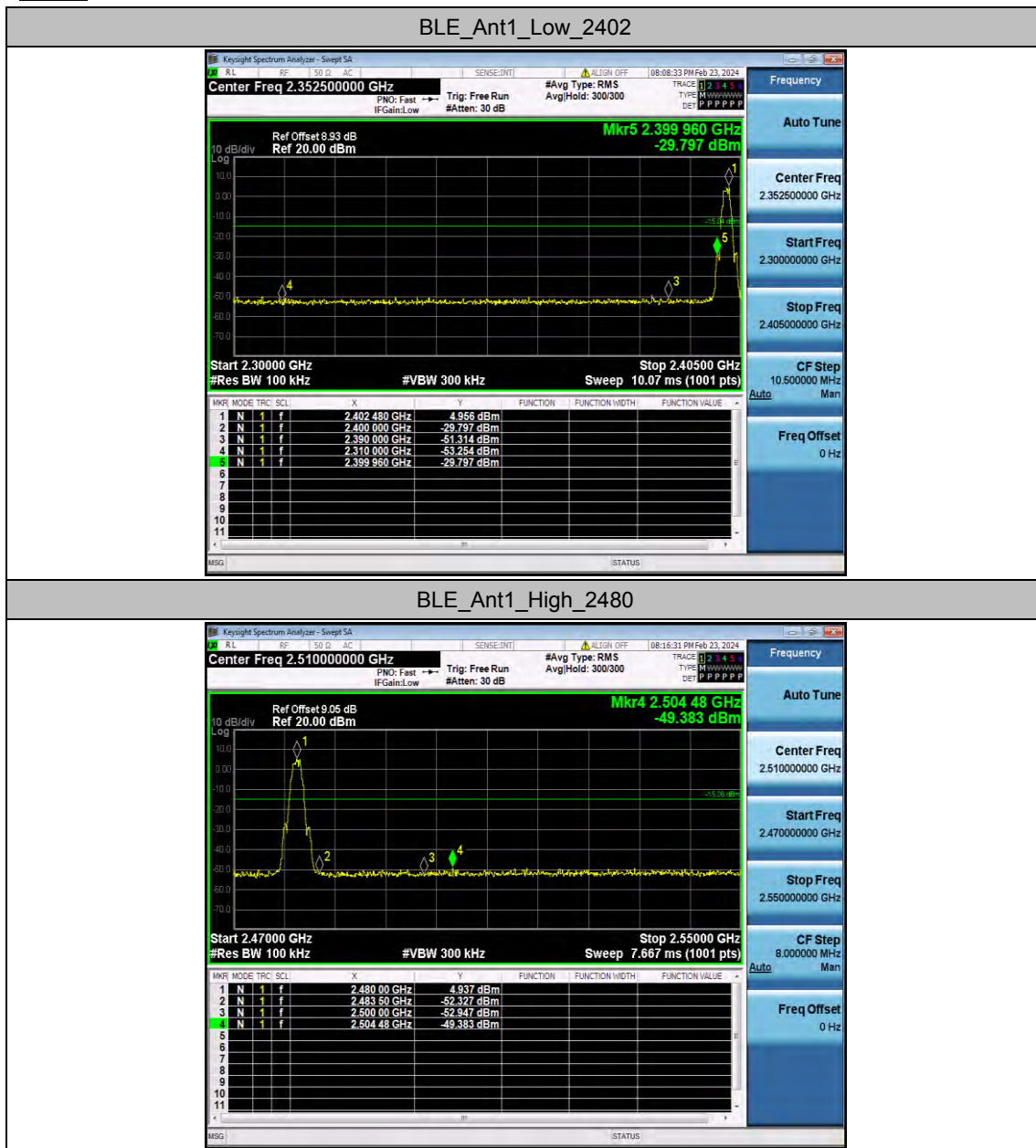
BT LE

BLE_Ant1_Low_2402

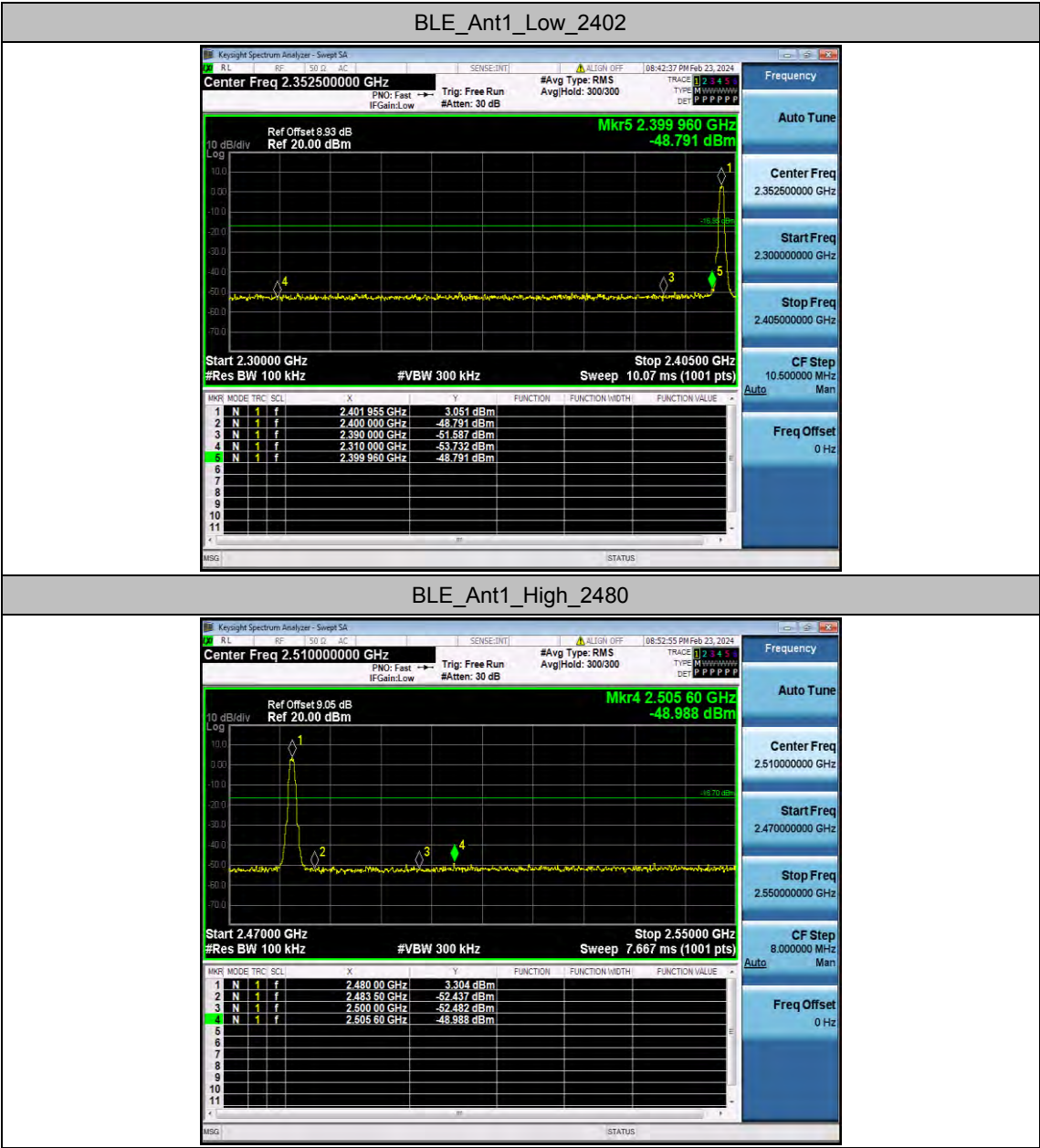


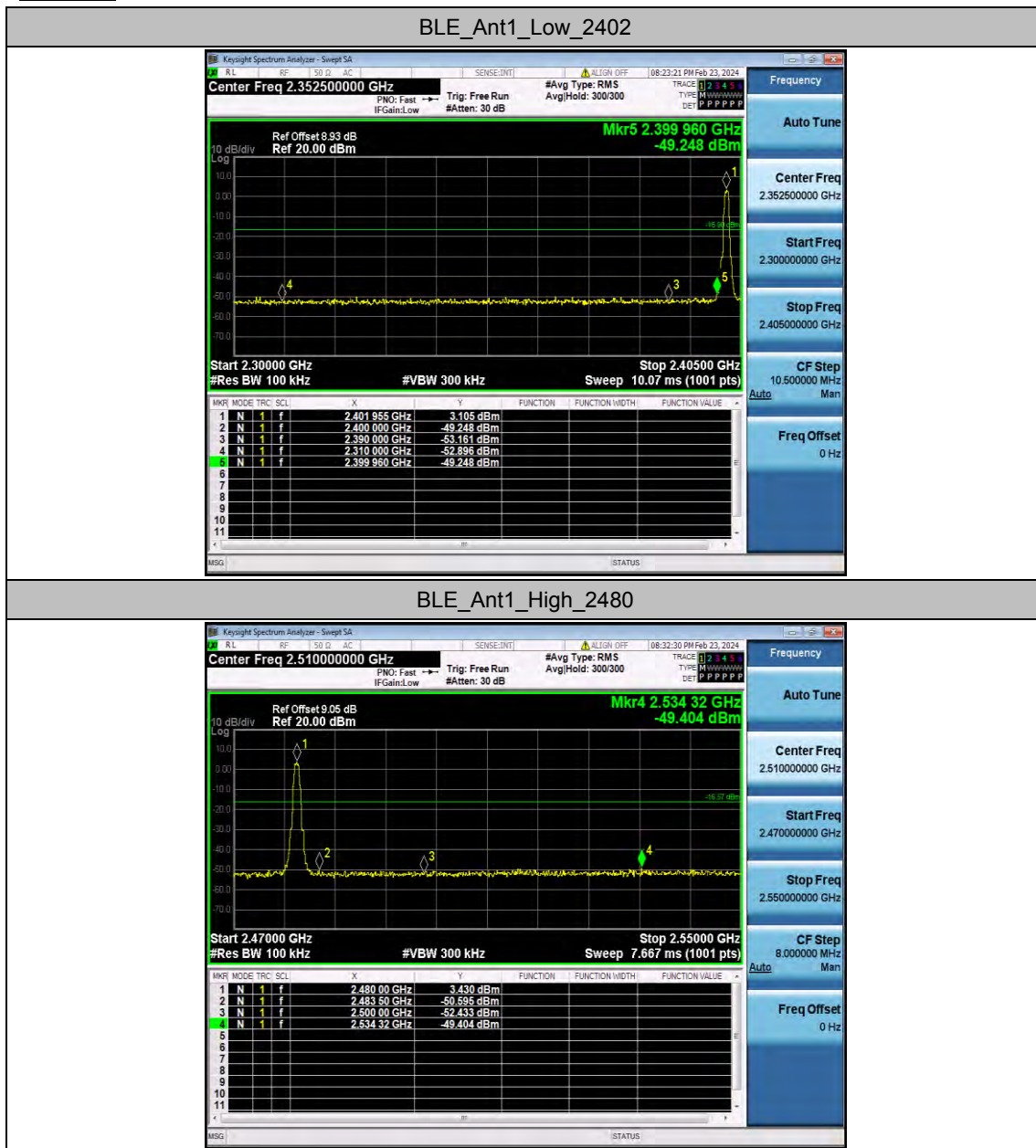
BLE_Ant1_High_2480



BT 2LE

BT LE(S2)



BT LE(S8)

Appendix B.6: Conducted Spurious Emission

Test Result

BT LE

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant1	2402	Reference	-4.74	-4.74	---	PASS
			30~1000	-4.74	-60.55	≤ -24.74	PASS
			1000~26500	-4.74	-47.43	≤ -24.74	PASS
		2440	Reference	-4.17	-4.17	---	PASS
			30~1000	-4.17	-60.02	≤ -24.17	PASS
			1000~26500	-4.17	-47.43	≤ -24.17	PASS
		2480	Reference	-2.65	-2.65	---	PASS
			30~1000	-2.65	-60.64	≤ -22.65	PASS
			1000~26500	-2.65	-47.21	≤ -22.65	PASS

BT 2LE

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant1	2402	Reference	4.64	4.64	---	PASS
			30~1000	4.64	-59.35	≤ -15.36	PASS
			1000~26500	4.64	-47.67	≤ -15.36	PASS
		2440	Reference	6.62	6.62	---	PASS
			30~1000	6.62	-60.61	≤ -13.38	PASS
			1000~26500	6.62	-46.96	≤ -13.38	PASS
		2480	Reference	3.41	3.41	---	PASS
			30~1000	3.41	-60.93	≤ -16.59	PASS
			1000~26500	3.41	-47.83	≤ -16.59	PASS

BT LE(S2)

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant1	2402	Reference	3.05	3.05	---	PASS
			30~1000	3.05	-60.84	≤-16.95	PASS
			1000~26500	3.05	-47.72	≤-16.95	PASS
		2440	Reference	4.85	4.85	---	PASS
			30~1000	4.85	-60.69	≤-15.15	PASS
			1000~26500	4.85	-47.52	≤-15.15	PASS
		2480	Reference	3.20	3.20	---	PASS
			30~1000	3.20	-60.51	≤-16.8	PASS
			1000~26500	3.20	-48.1	≤-16.8	PASS

BT LE(S8)

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant1	2402	Reference	2.95	2.95	---	PASS
			30~1000	2.95	-60.72	≤-17.05	PASS
			1000~26500	2.95	-47.59	≤-17.05	PASS
		2440	Reference	4.63	4.63	---	PASS
			30~1000	4.63	-60.13	≤-15.37	PASS
			1000~26500	4.63	-47.47	≤-15.37	PASS
		2480	Reference	3.15	3.15	---	PASS
			30~1000	3.15	-60.18	≤-16.85	PASS
			1000~26500	3.15	-47.73	≤-16.85	PASS

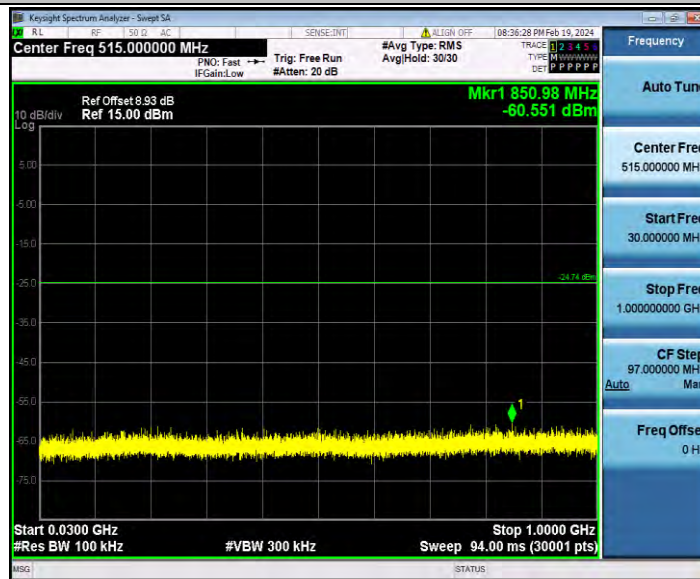
Test Graphs

BT LE

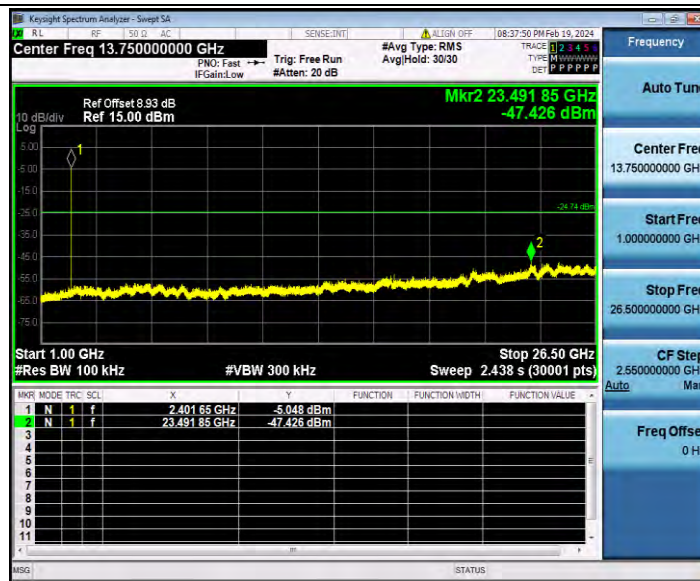
BLE_Ant1_2402_0~Reference



BLE_Ant1_2402_30~1000



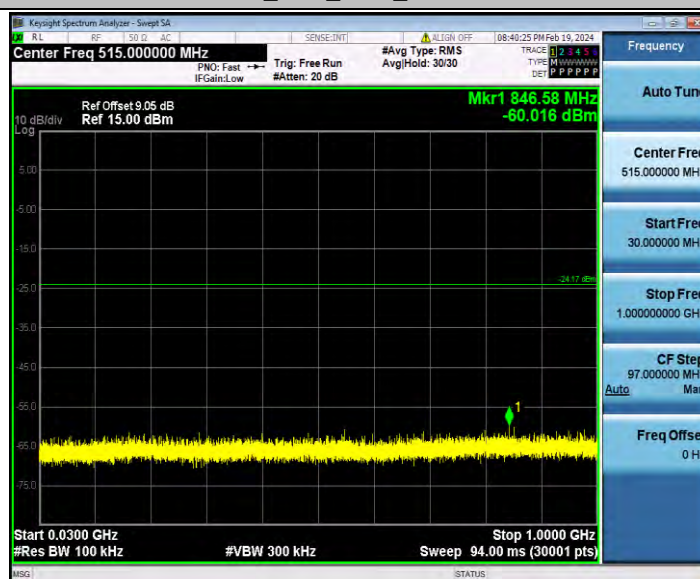
BLE_Ant1_2402_1000~26500



BLE_Ant1_2440_0~Reference



BLE_Ant1_2440_30~1000



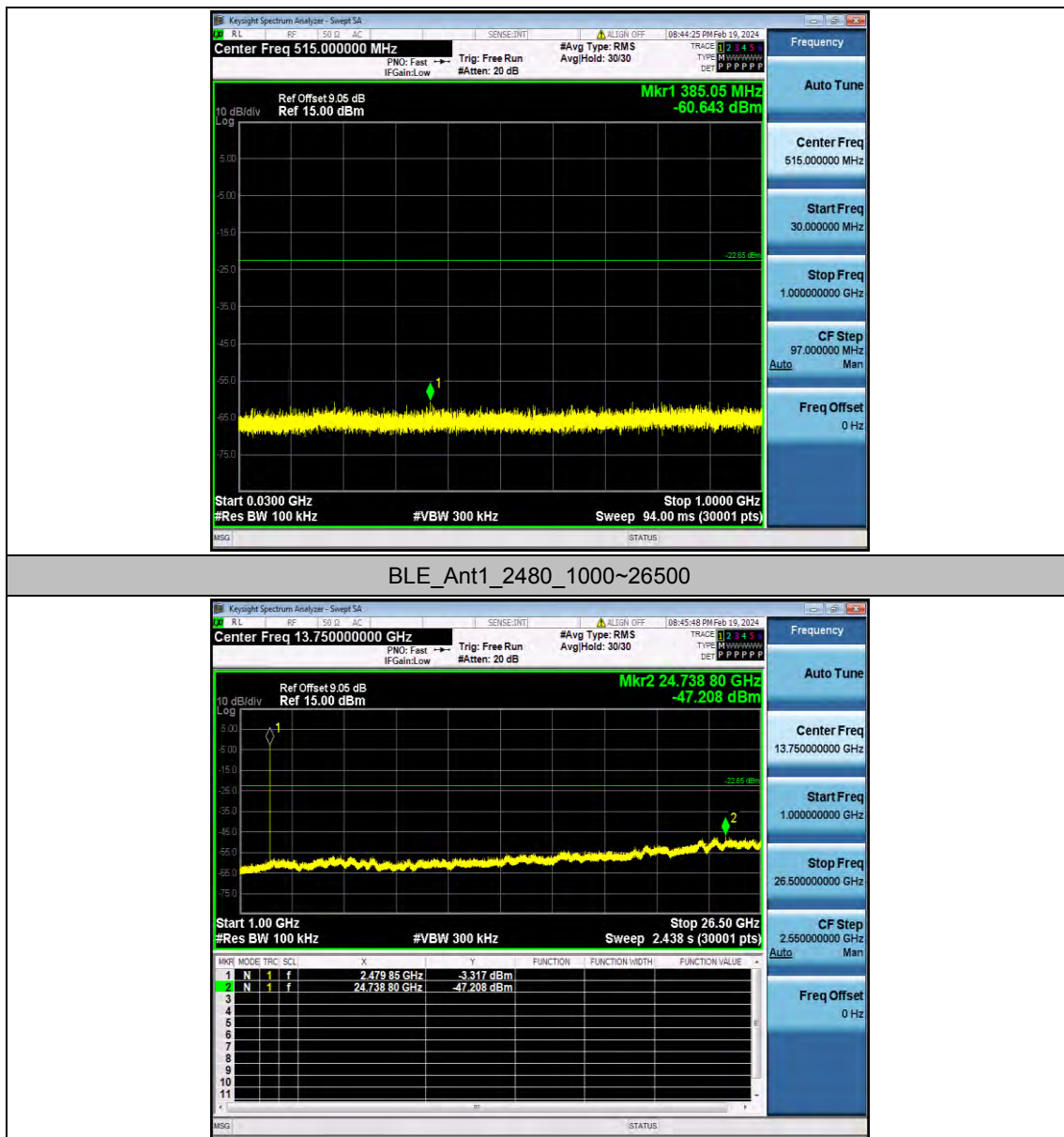
BLE_Ant1_2440_1000~26500



BLE_Ant1_2480_0~Reference



BLE_Ant1_2480_30~1000

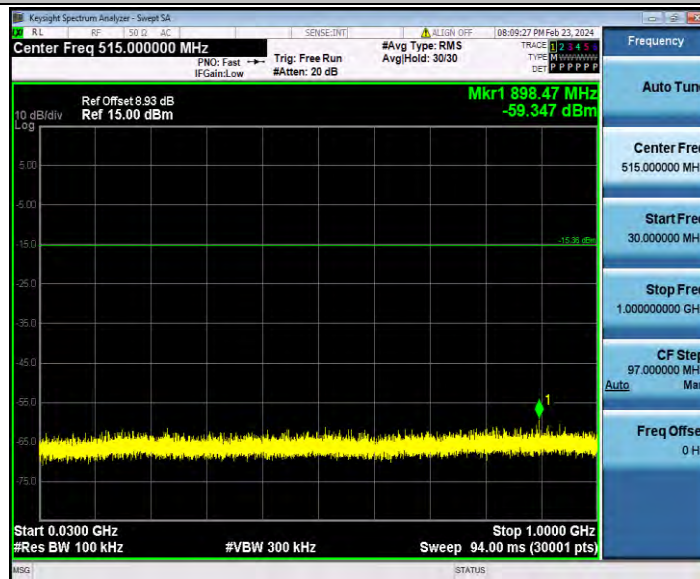


BT 2LE

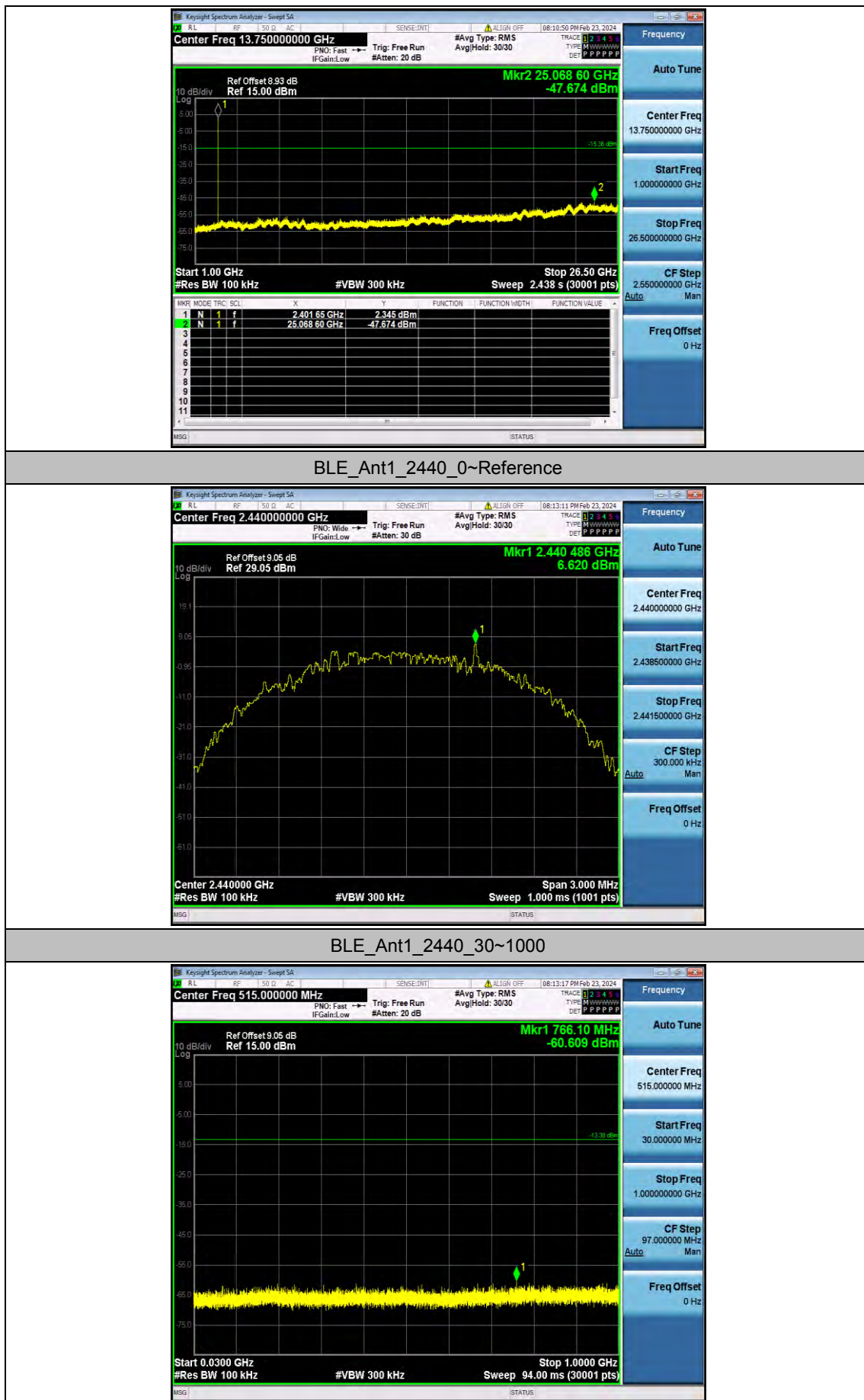
BLE_Ant1_2402_0~Reference



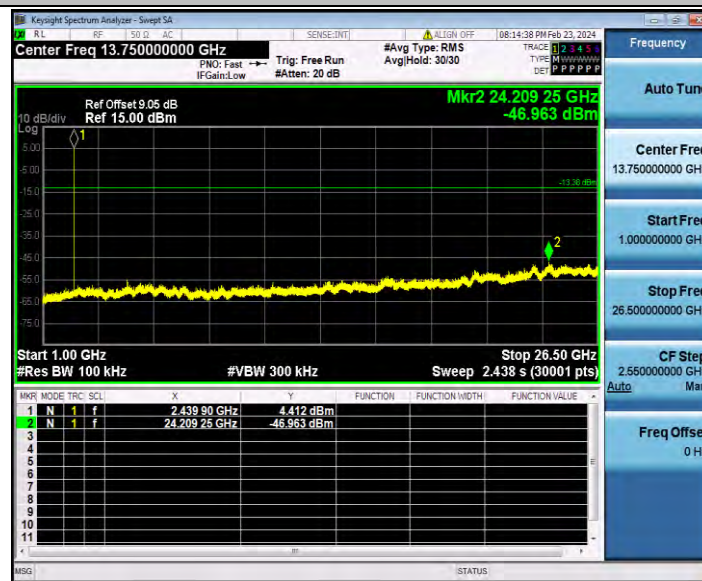
BLE_Ant1_2402_30~1000



BLE_Ant1_2402_1000~26500



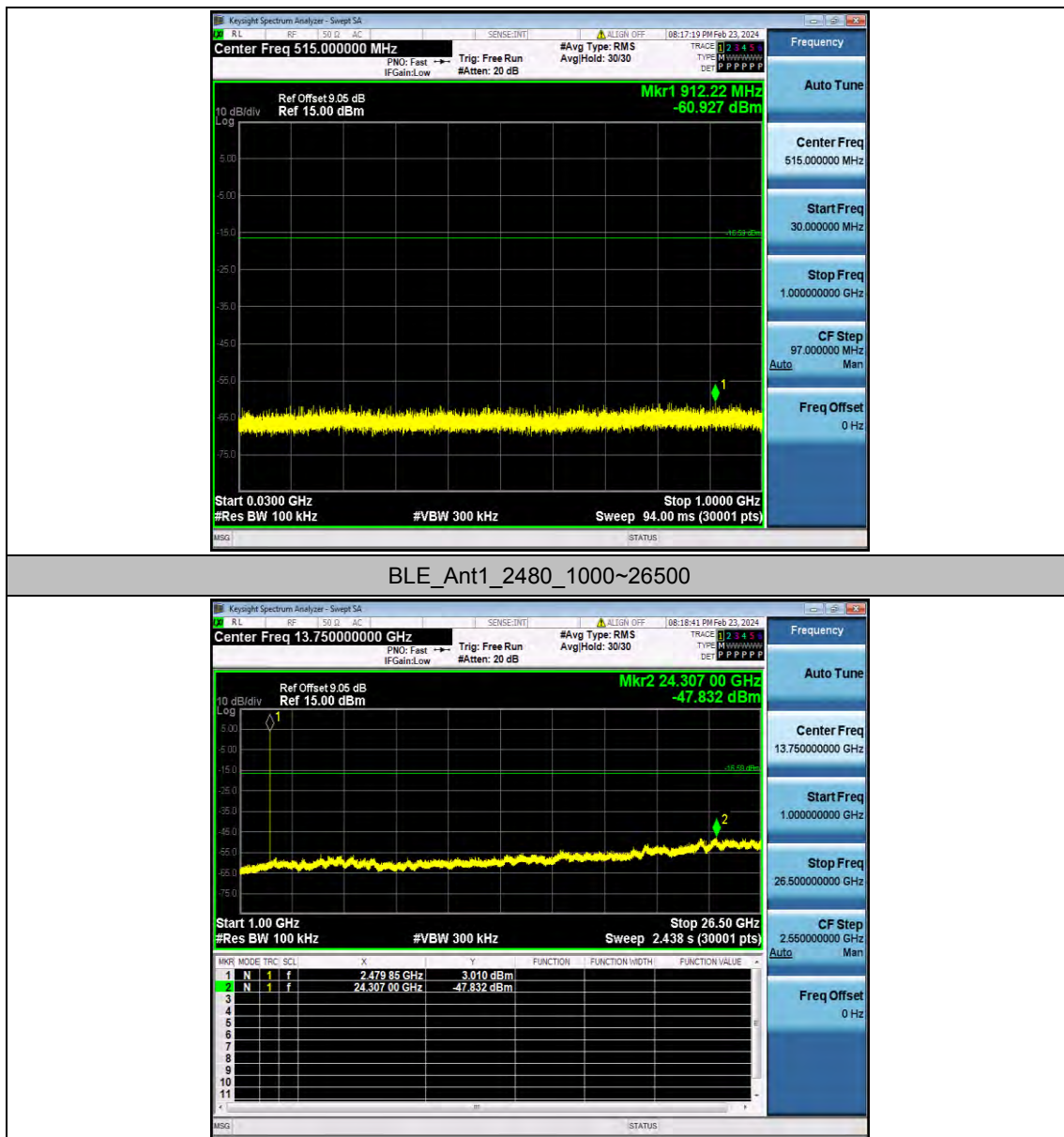
BLE_Ant1_2440_1000~26500



BLE_Ant1_2480_0~Reference



BLE_Ant1_2480_30~1000

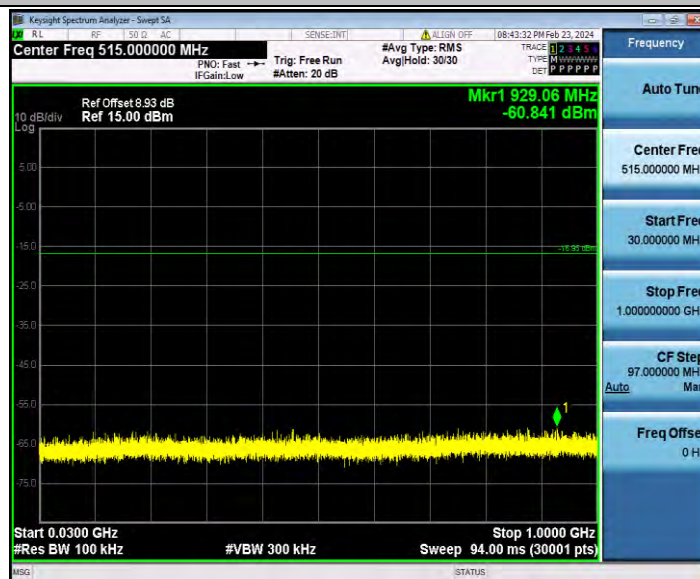


BT LE(S2)

BLE_Ant1_2402_0~Reference



BLE_Ant1_2402_30~1000



BLE_Ant1_2402_1000~26500



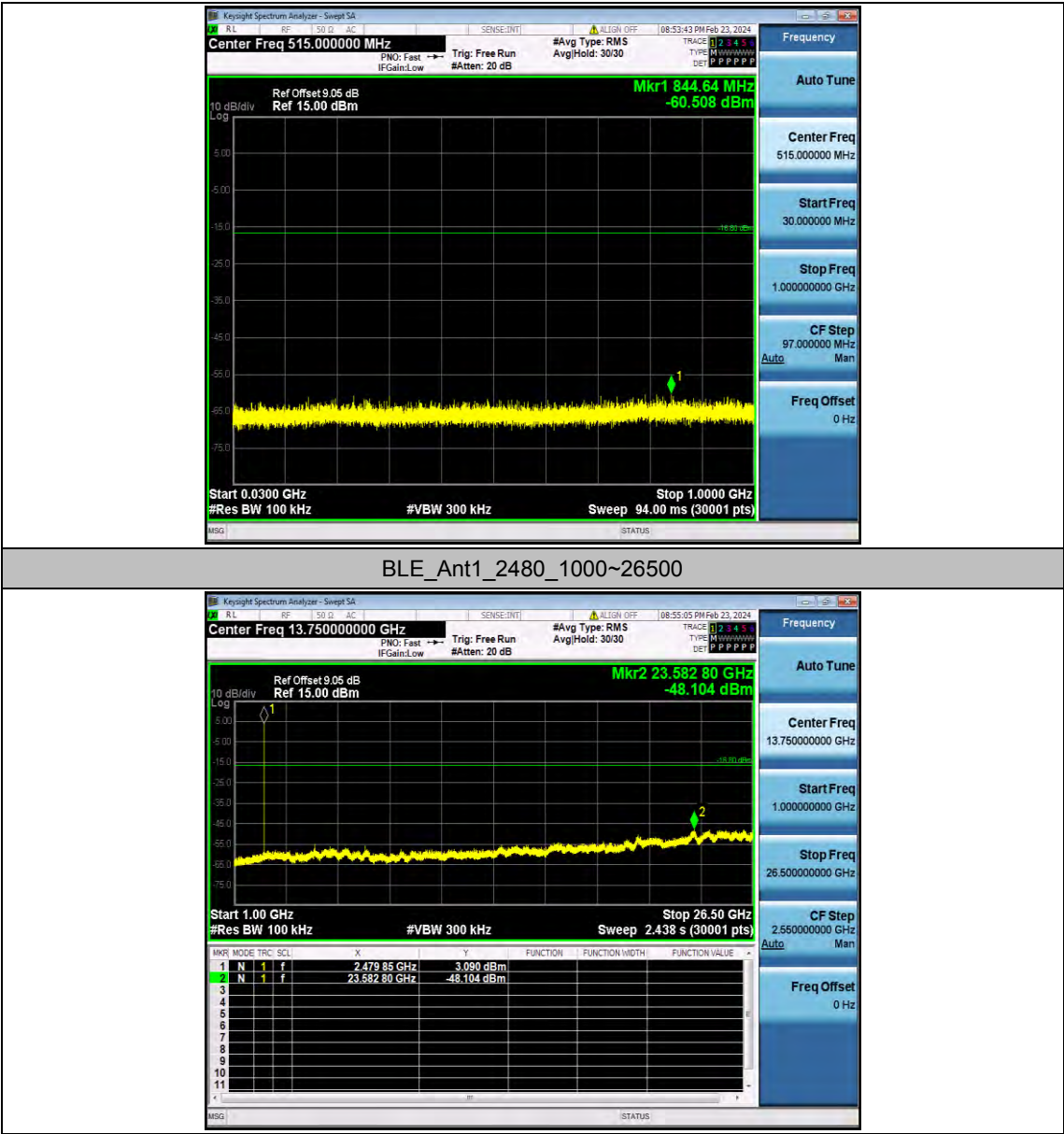
BLE_Ant1_2440_1000~26500

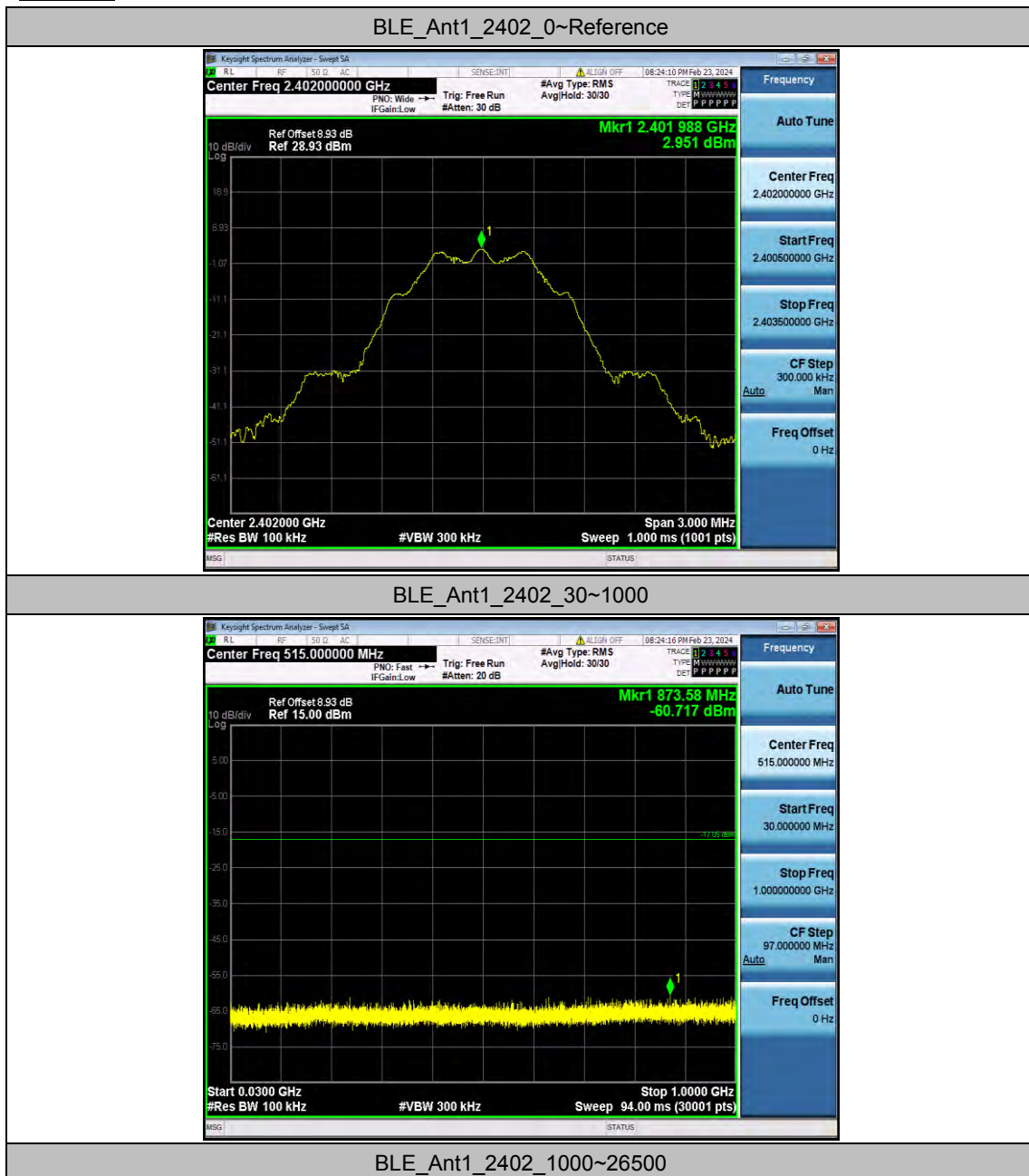


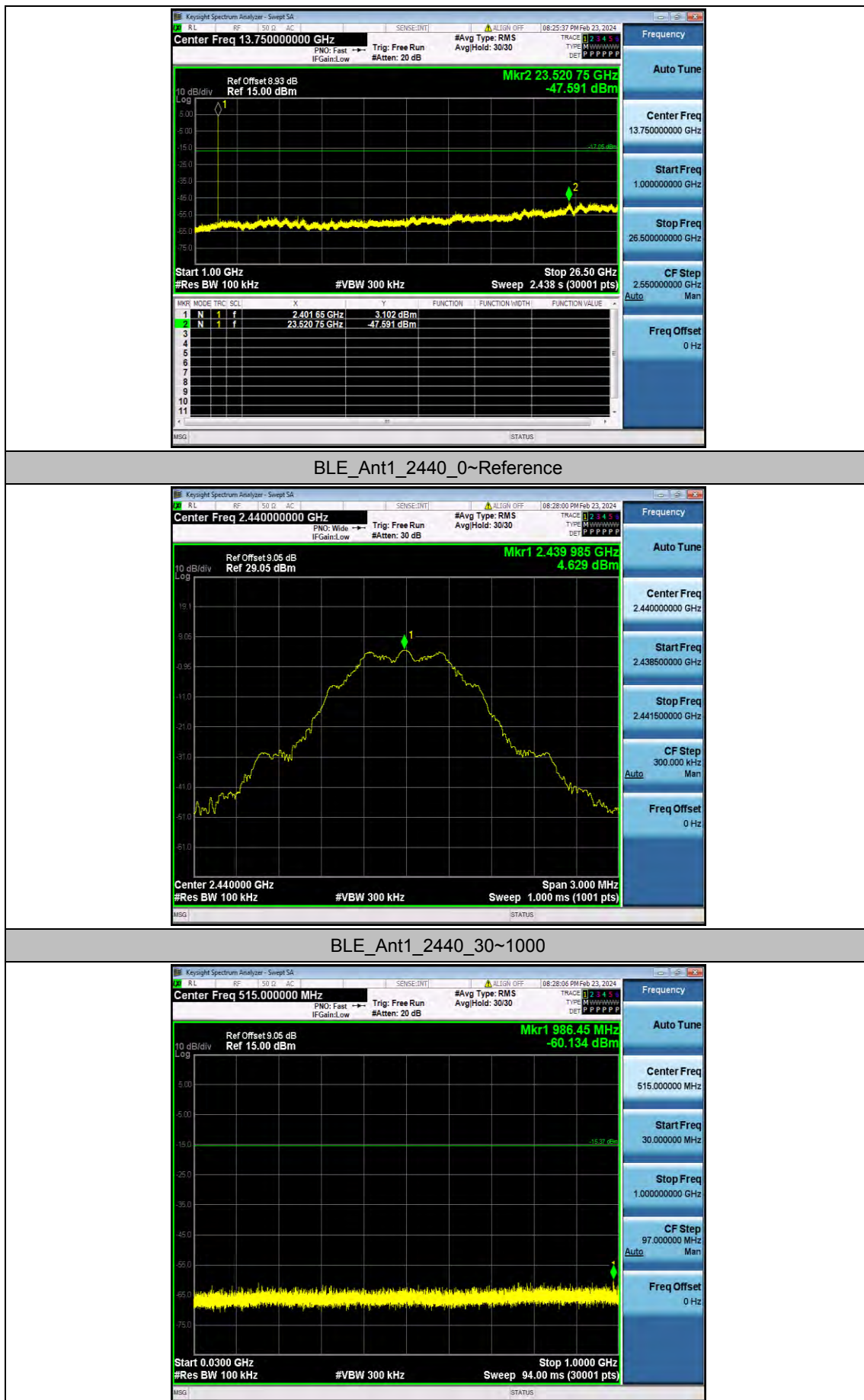
BLE_Ant1_2480_0~Reference



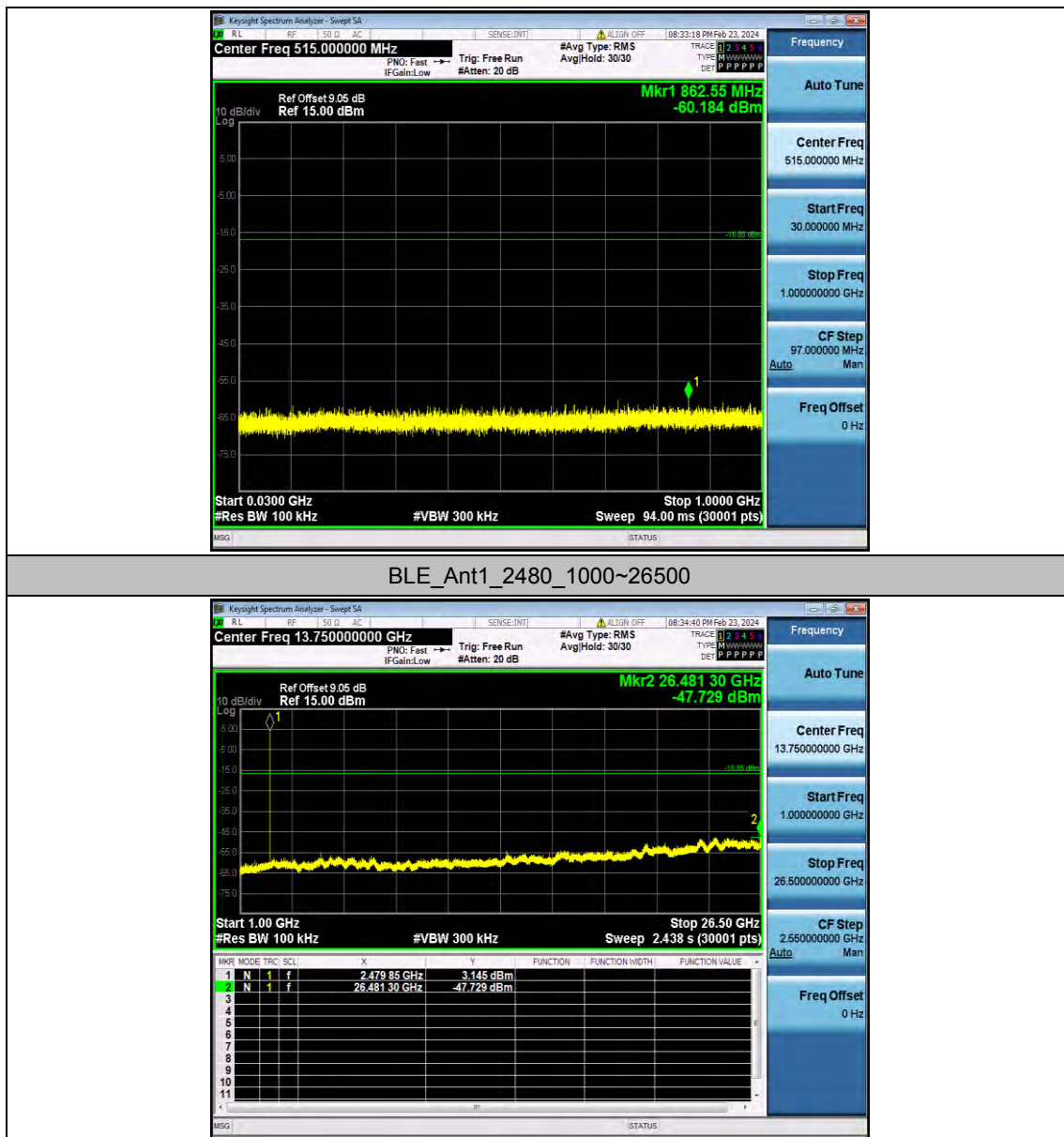
BLE_Ant1_2480_30~1000



BT LE(S8)







Appendix B.7: Emissions in Restricted Bands

Test Result

BT LE

TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE	Ant1	Low	2402	AV	2310.000	-49.48	≤-41.20	45.72	≤54	PASS
				AV	2370.455	-48.42	≤-41.20	46.78	≤54	PASS
				AV	2390.000	-48.53	≤-41.20	46.67	≤54	PASS
				Peak	2310.000	-42.64	≤-21.20	52.56	≤74	PASS
				Peak	2318.480	-39.51	≤-21.20	55.69	≤74	PASS
				Peak	2390.000	-42.39	≤-21.20	52.81	≤74	PASS
		High	2480	AV	2483.500	-48.42	≤-41.20	46.78	≤54	PASS
				AV	2489.760	-45.87	≤-41.20	49.33	≤54	PASS
				AV	2500.000	-48.56	≤-41.20	46.64	≤54	PASS
				Peak	2483.500	-40.9	≤-21.20	54.30	≤74	PASS
				Peak	2495.200	-38.71	≤-21.20	56.49	≤74	PASS
				Peak	2500.000	-41.19	≤-21.20	54.01	≤74	PASS

BT 2LE

TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE	Ant1	Low	2402	AV	2310.000	-49.31	≤-41.20	45.89	≤54	PASS
				AV	2386.520	-48.83	≤-41.20	46.37	≤54	PASS
				AV	2390.000	-48.85	≤-41.20	46.35	≤54	PASS
				Peak	2310.000	-41.92	≤-21.20	53.28	≤74	PASS
				Peak	2381.690	-38.85	≤-21.20	56.35	≤74	PASS
				Peak	2390.000	-42.14	≤-21.20	53.06	≤74	PASS
		High	2480	AV	2483.500	-43.45	≤-41.20	51.75	≤54	PASS
				AV	2483.520	-43.45	≤-41.20	51.75	≤54	PASS
				AV	2500.000	-48.69	≤-41.20	46.51	≤54	PASS
				Peak	2483.500	-39.95	≤-21.20	55.25	≤74	PASS
				Peak	2483.600	-37	≤-21.20	58.20	≤74	PASS
				Peak	2500.000	-41.5	≤-21.20	53.70	≤74	PASS

BT LE(S2)

TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE	Ant1	Low	2402	AV	2310.000	-49.19	≤-41.20	46.01	≤54	PASS
				AV	2386.310	-48.7	≤-41.20	46.50	≤54	PASS
				AV	2390.000	-48.9	≤-41.20	46.30	≤54	PASS
				Peak	2310.000	-40.88	≤-21.20	54.32	≤74	PASS
				Peak	2325.725	-39.04	≤-21.20	56.16	≤74	PASS
				Peak	2390.000	-42.9	≤-21.20	52.30	≤74	PASS
		High	2480	AV	2483.500	-46.34	≤-41.20	48.86	≤54	PASS
				AV	2483.520	-46.34	≤-41.20	48.86	≤54	PASS
				AV	2500.000	-48.64	≤-41.20	46.56	≤54	PASS
				Peak	2483.500	-43.01	≤-21.20	52.19	≤74	PASS
				Peak	2488.480	-38.46	≤-21.20	56.74	≤74	PASS
				Peak	2500.000	-41.73	≤-21.20	53.47	≤74	PASS

BT LE(S8)

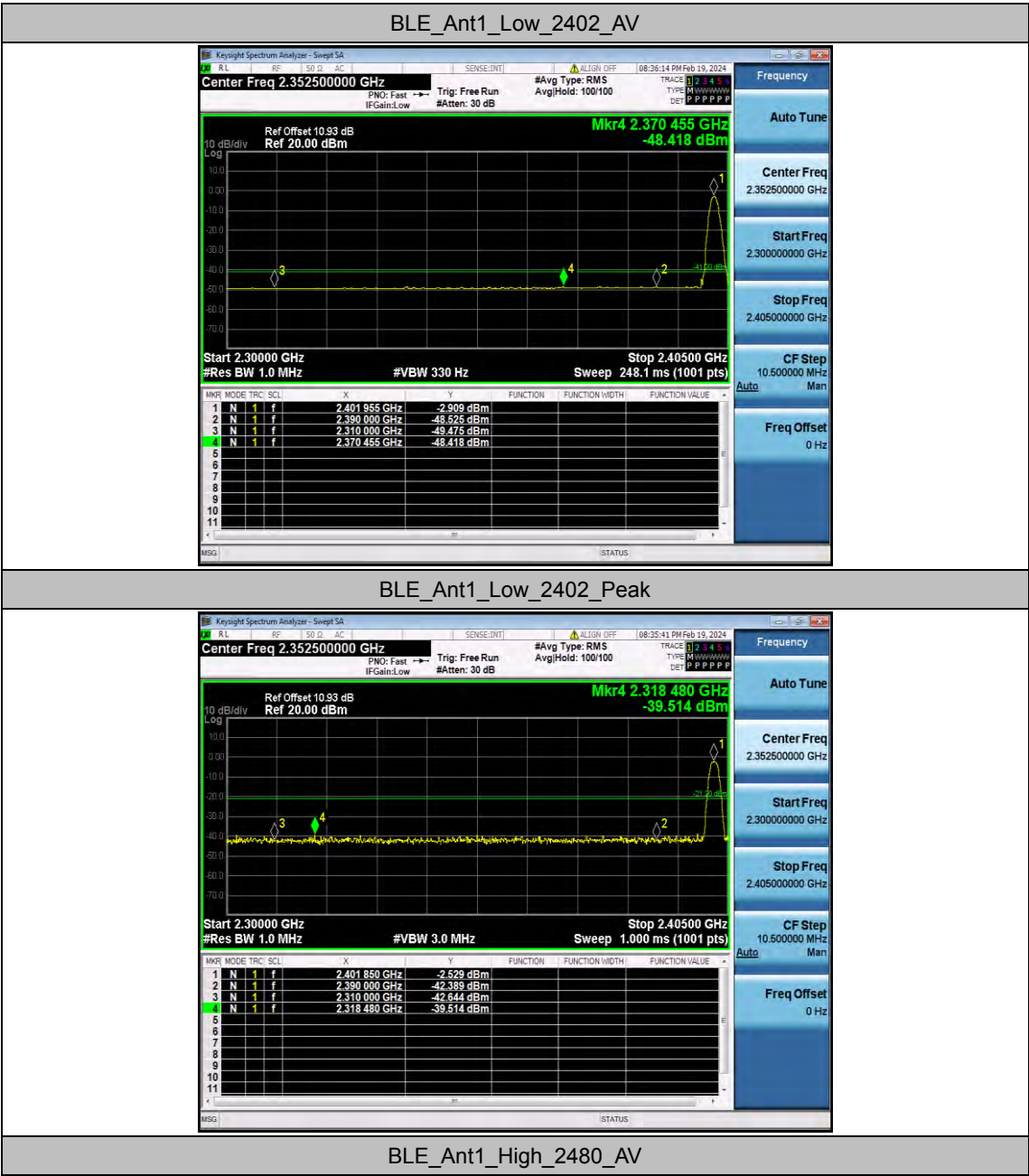
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE	Ant1	Low	2402	AV	2310.000	-49.27	≤-41.20	45.93	≤54	PASS
				AV	2389.355	-48.81	≤-41.20	46.39	≤54	PASS
				AV	2390.000	-48.83	≤-41.20	46.37	≤54	PASS
				Peak	2310.000	-42.04	≤-21.20	53.16	≤74	PASS
				Peak	2315.540	-38.49	≤-21.20	56.71	≤74	PASS
				Peak	2390.000	-42.11	≤-21.20	53.09	≤74	PASS
		High	2480	AV	2483.500	-46.3	≤-41.20	48.90	≤54	PASS
				AV	2483.520	-46.3	≤-41.20	48.90	≤54	PASS
				AV	2500.000	-48.62	≤-41.20	46.58	≤54	PASS
				Peak	2483.500	-41.82	≤-21.20	53.38	≤74	PASS
				Peak	2497.600	-38.96	≤-21.20	56.24	≤74	PASS
				Peak	2500.000	-41.07	≤-21.20	54.13	≤74	PASS

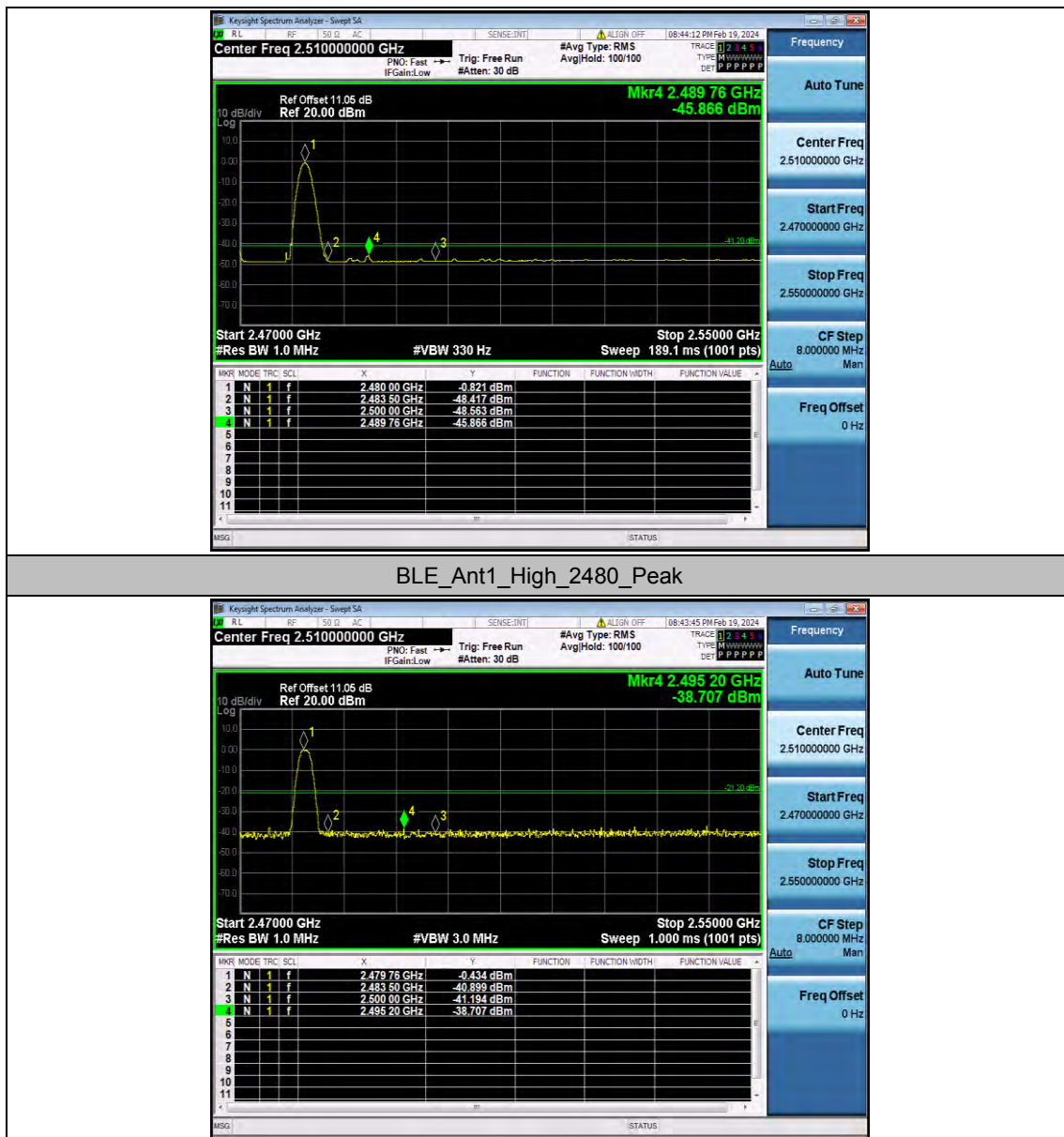
Note:

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

BT LE



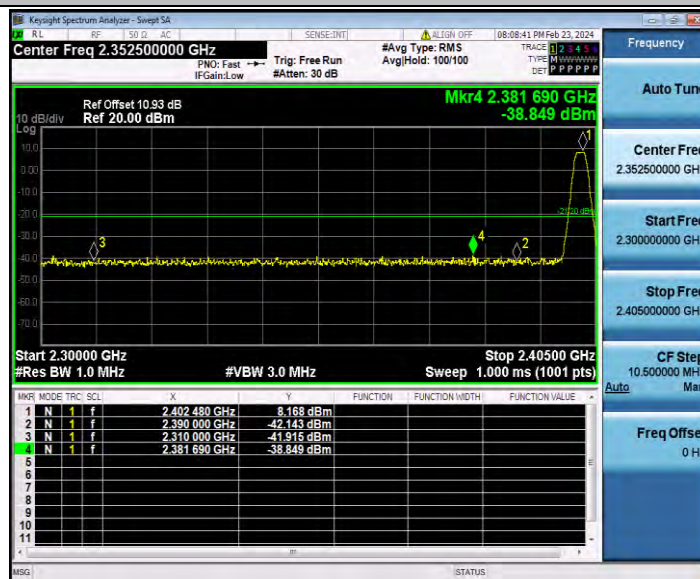


BT 2LE

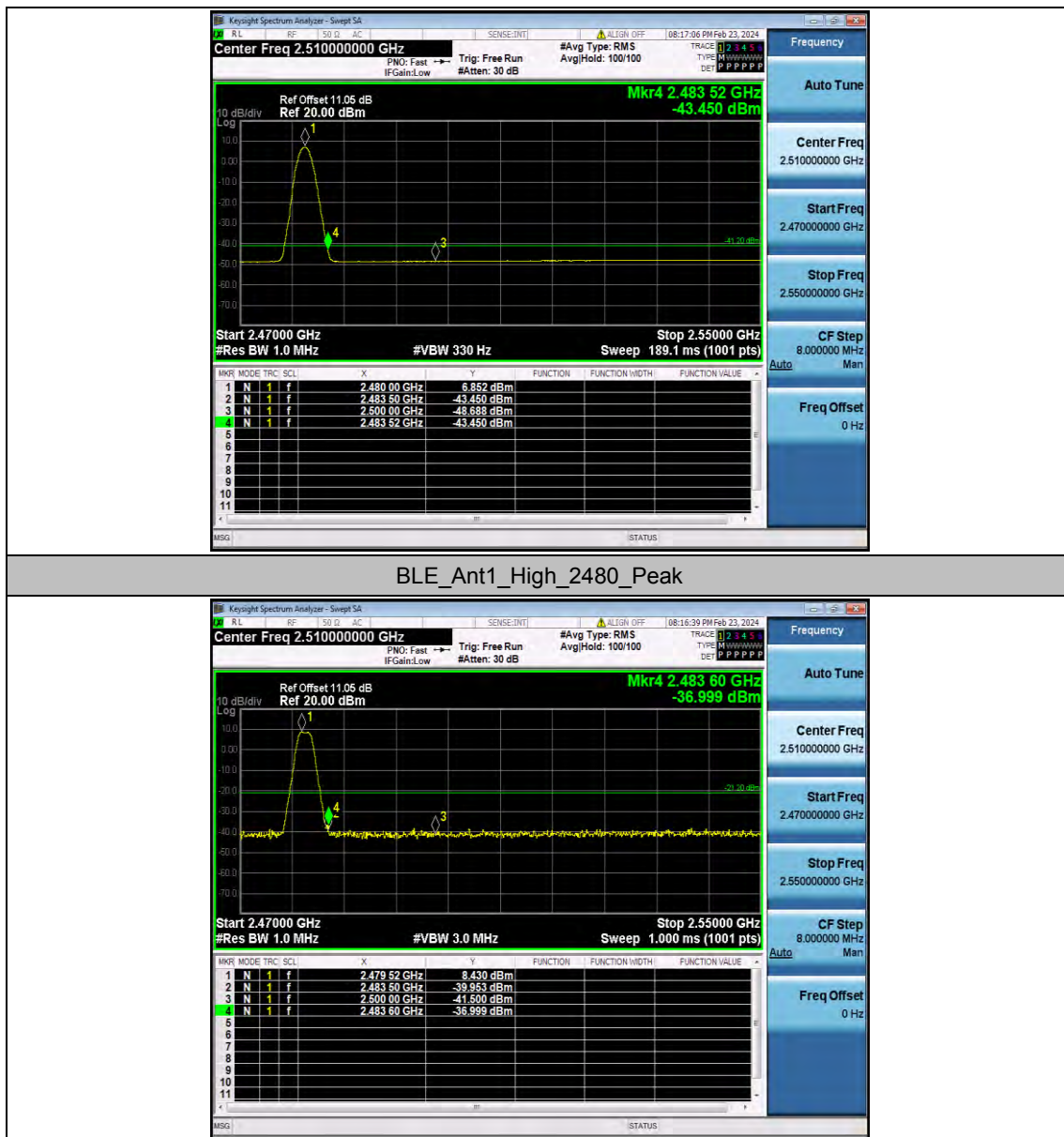
BLE_Ant1_Low_2402_AV



BLE_Ant1_Low_2402_Peak

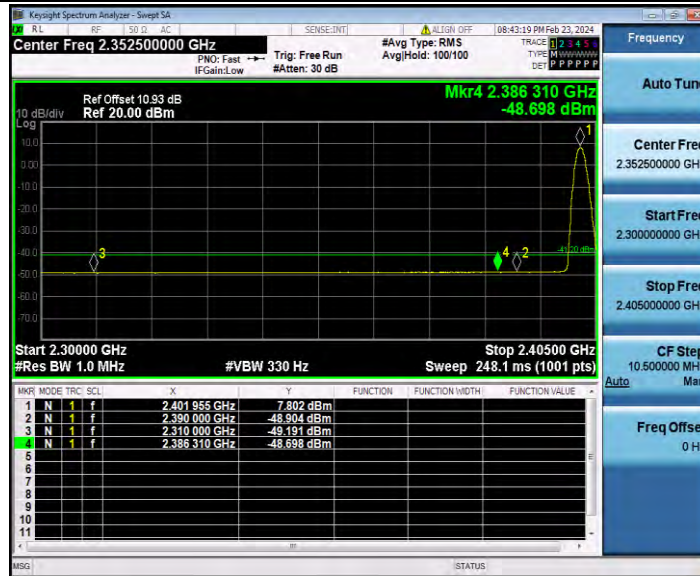


BLE_Ant1_High_2480_AV

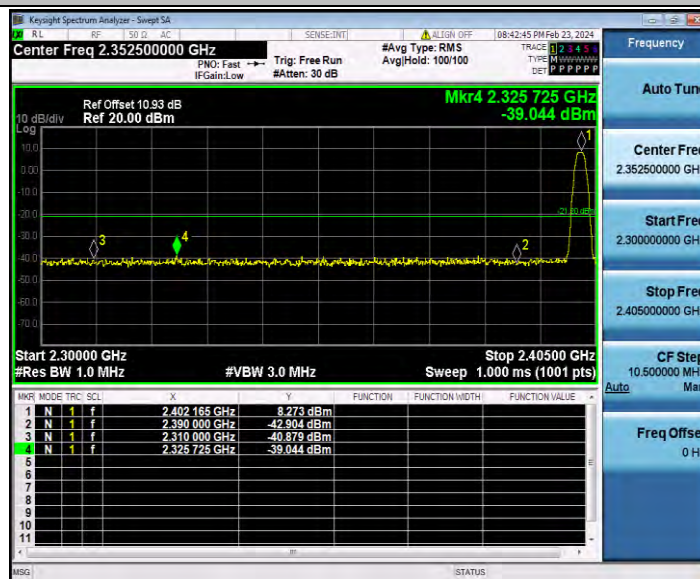


BT LE(S2)

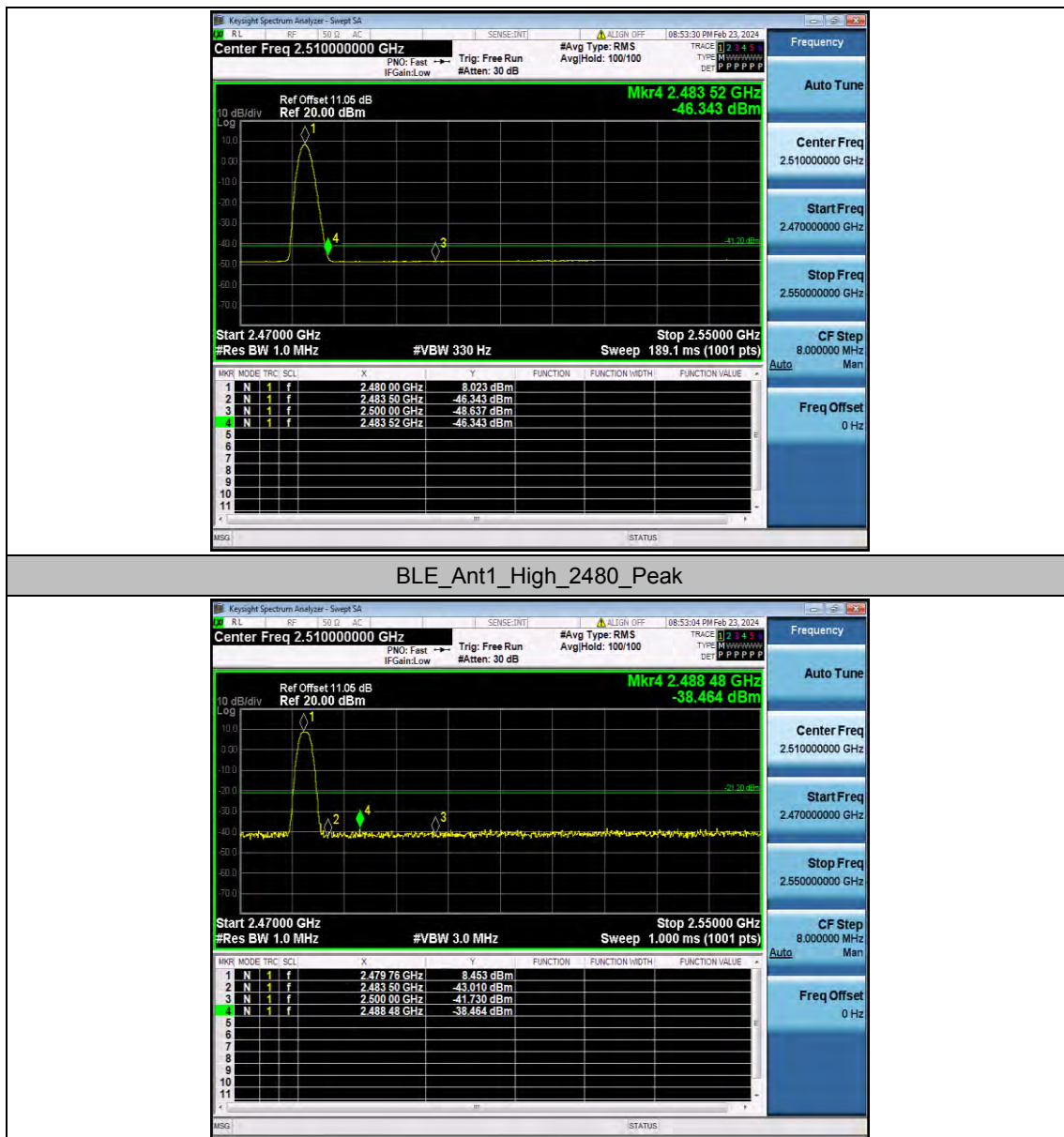
BLE_Ant1_Low_2402_AV



BLE_Ant1_Low_2402_Peak



BLE_Ant1_High_2480_AV



BT LE(S8)

