

Appendix A

RF Test Data for BT LE (Conducted Measurement)

Product Name: Refrigerator

Test Model: FC50

Environmental Conditions

Temperature:	23.8°C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

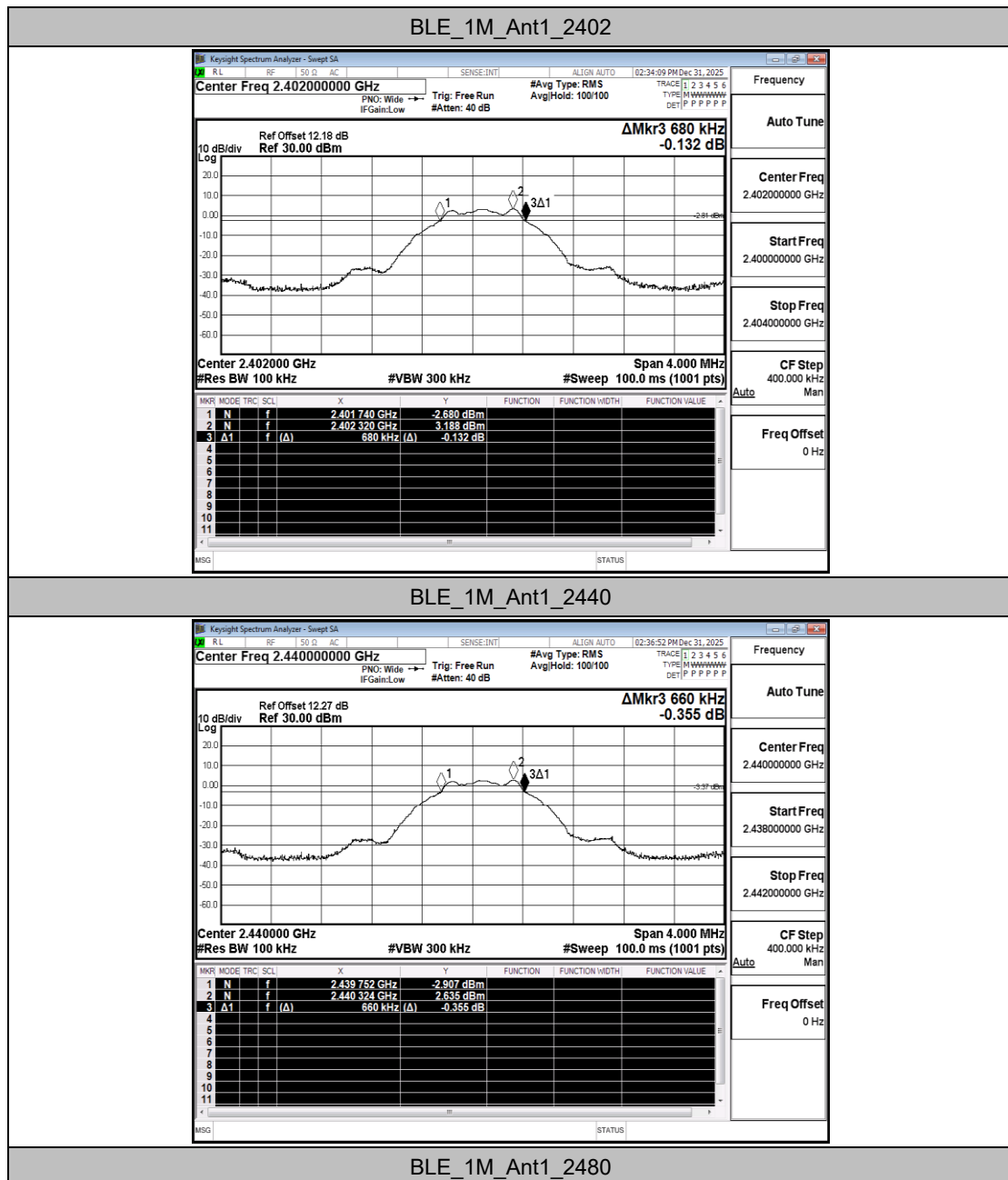
A.1 DTS Bandwidth

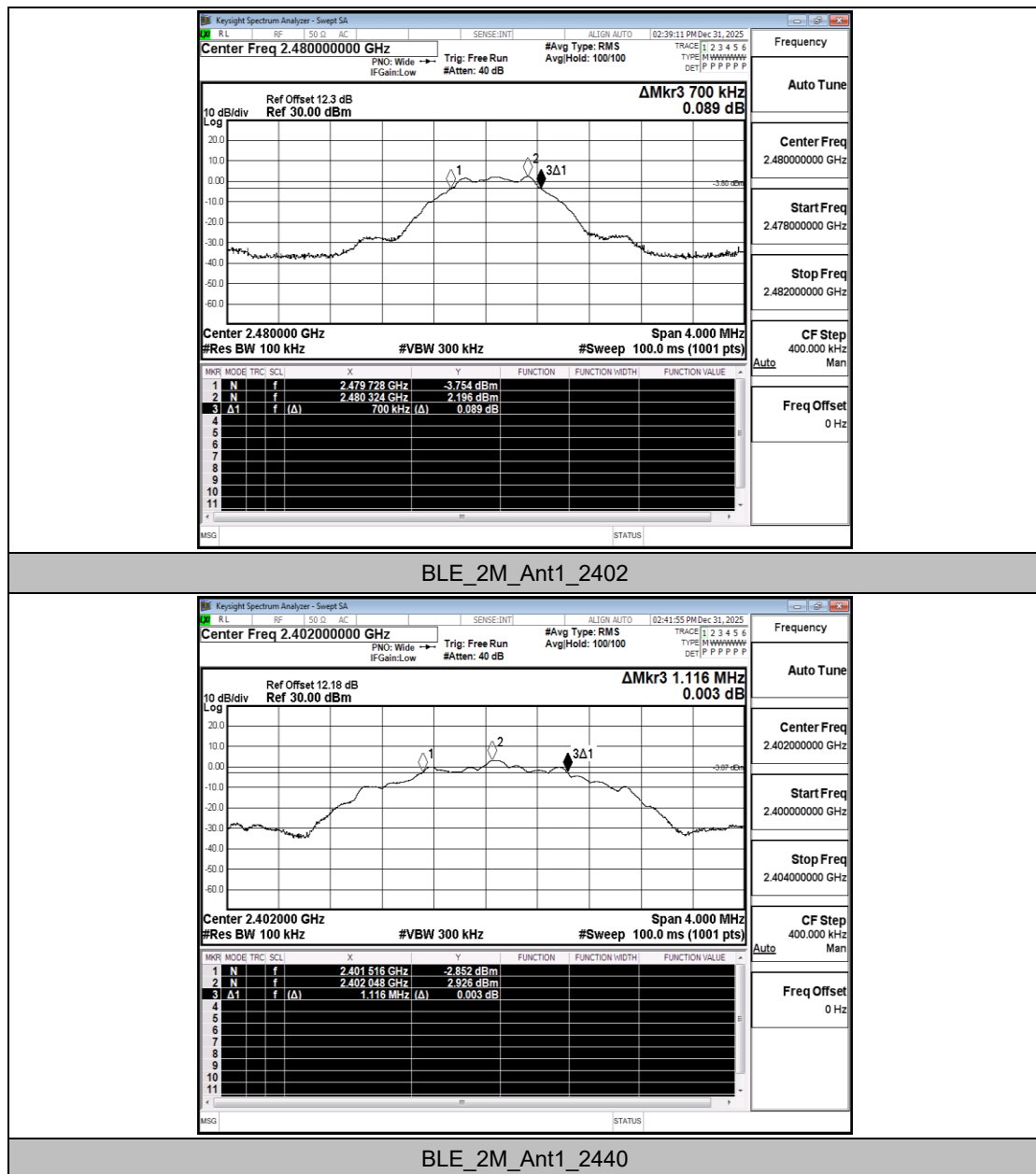
Test Result

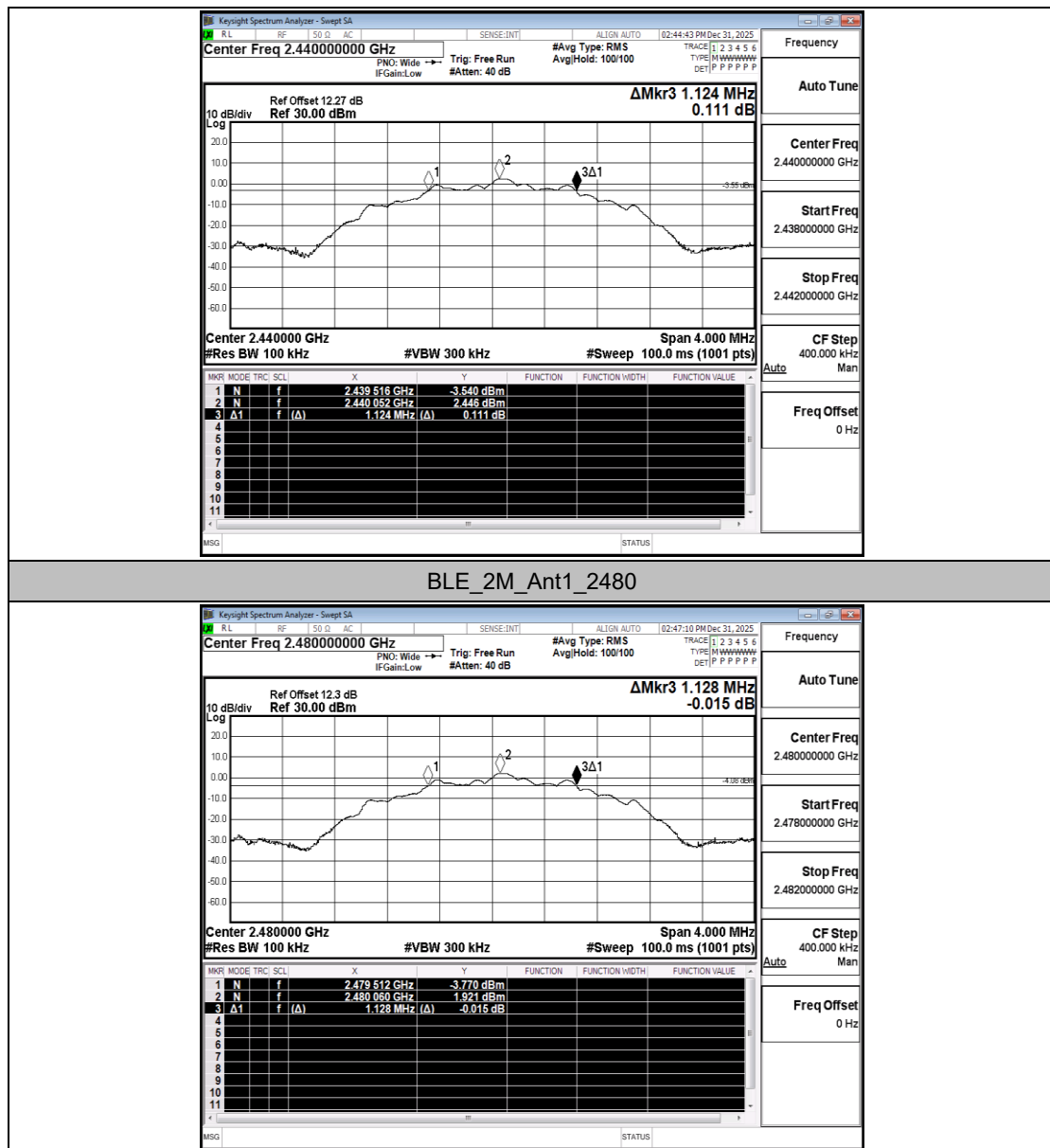
TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.680	2401.740	2402.420	0.5	PASS
		2440	0.660	2439.752	2440.412	0.5	PASS
		2480	0.700	2479.728	2480.428	0.5	PASS
BLE_2M	Ant1	2402	1.116	2401.516	2402.632	0.5	PASS
		2440	1.124	2439.516	2440.640	0.5	PASS
		2480	1.128	2479.512	2480.640	0.5	PASS

Note :offset=System attenuation +cabal loss

Test Graphs







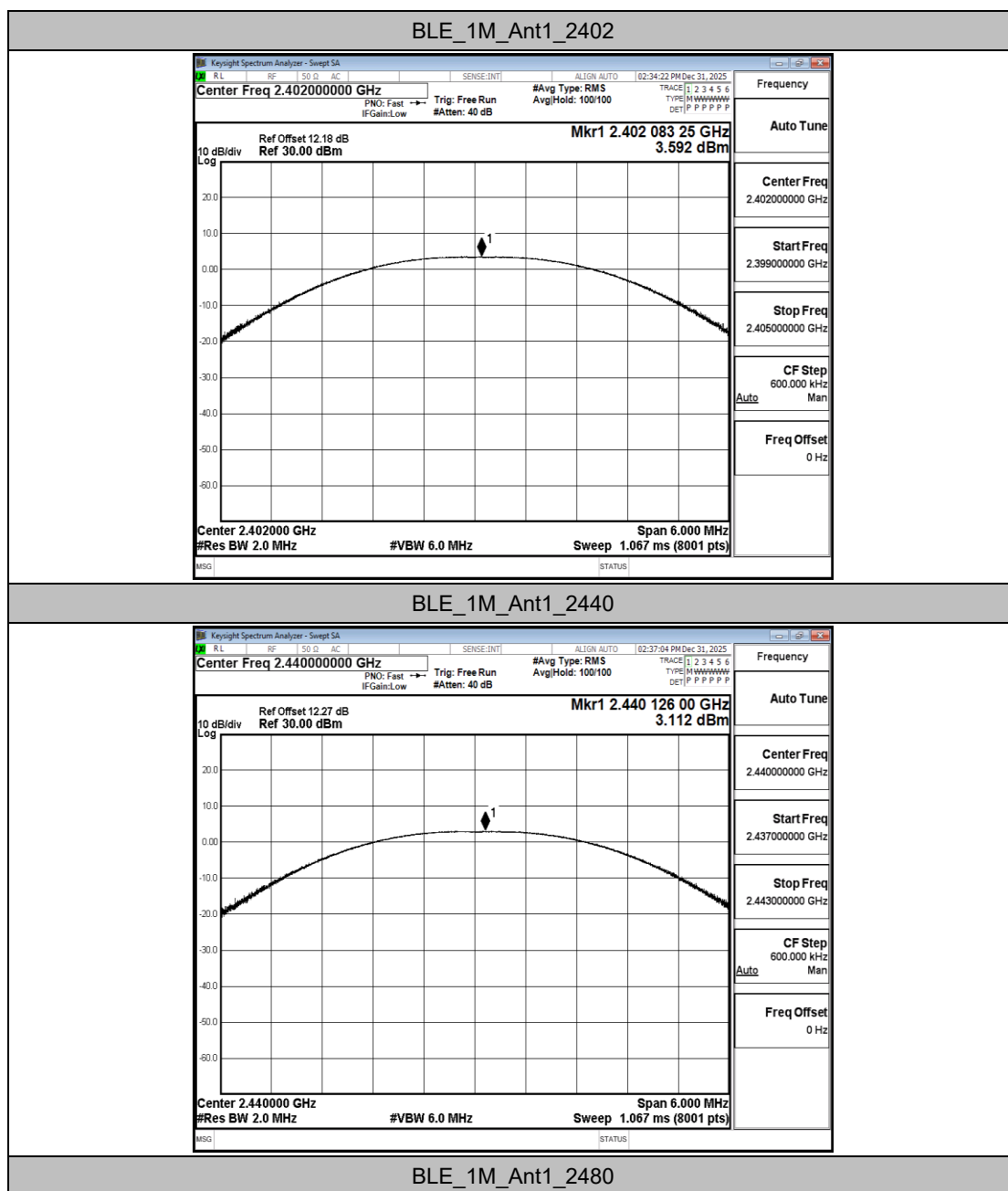
A.2 Maximum Peak conducted output power

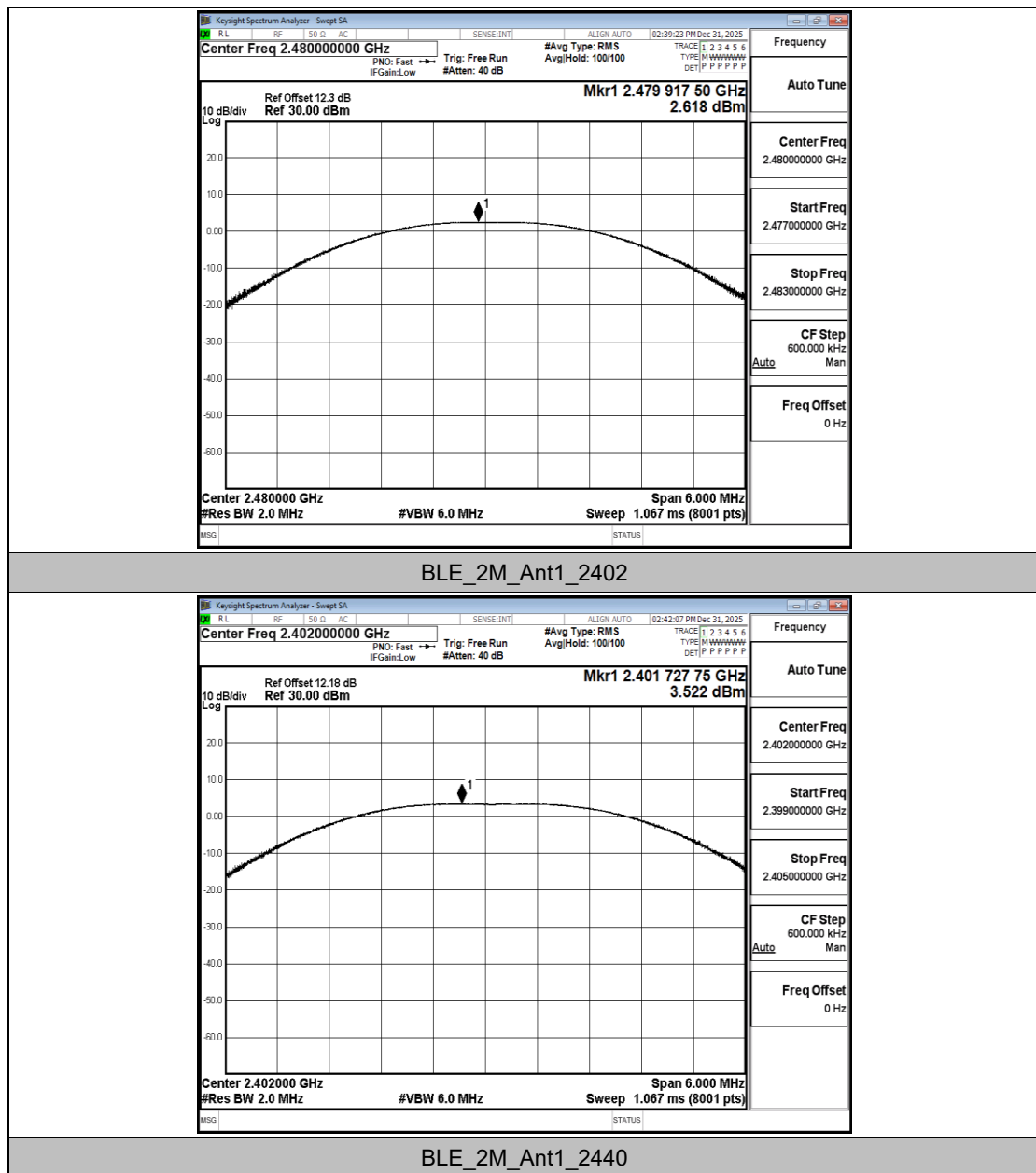
Test Result Peak

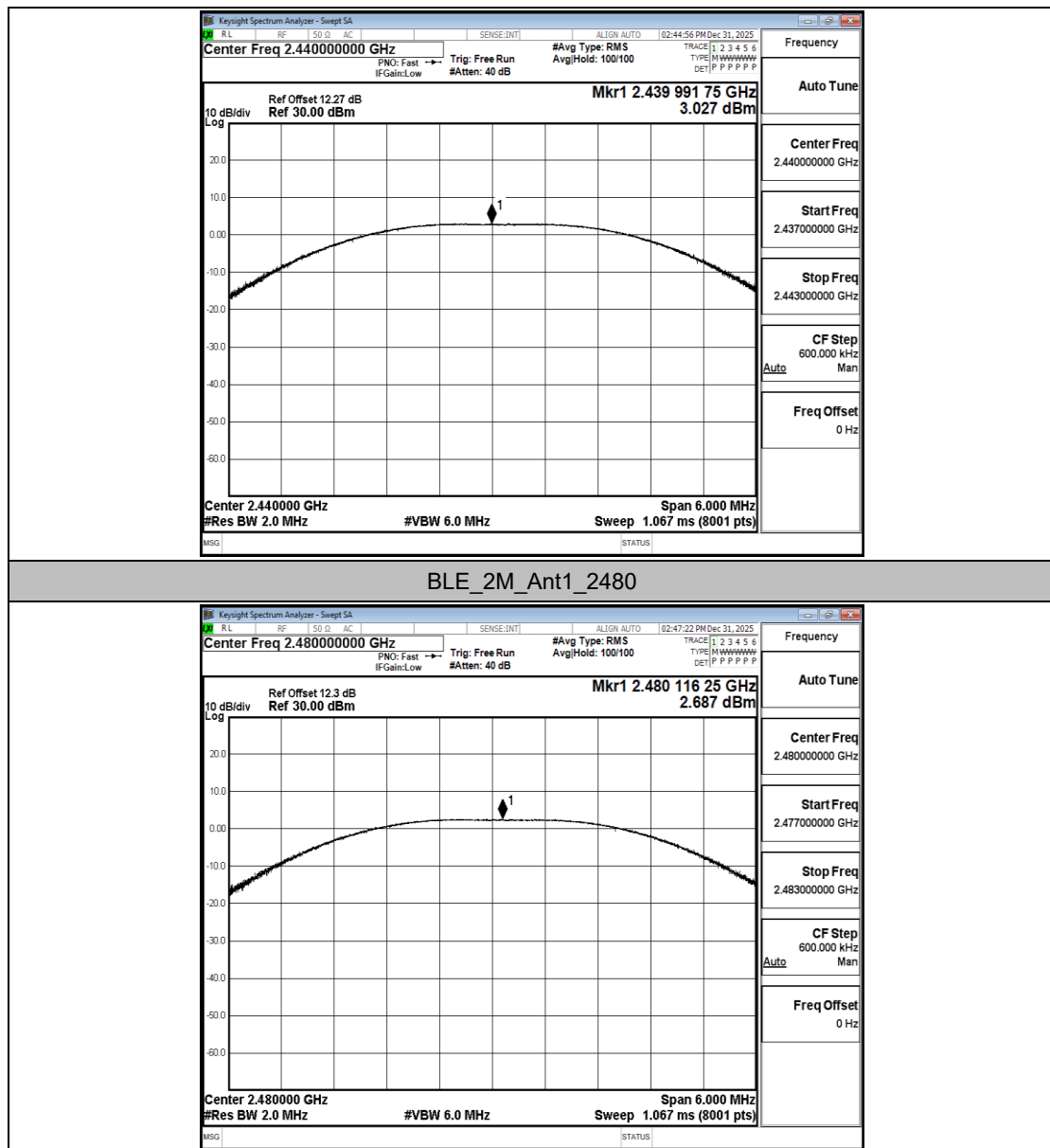
TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	3.59	≤30	PASS
		2440	3.11	≤30	PASS
		2480	2.62	≤30	PASS
BLE_2M	Ant1	2402	3.52	≤30	PASS
		2440	3.03	≤30	PASS
		2480	2.69	≤30	PASS

Note :offset=System attenuation +cabal loss

Test Graphs Peak







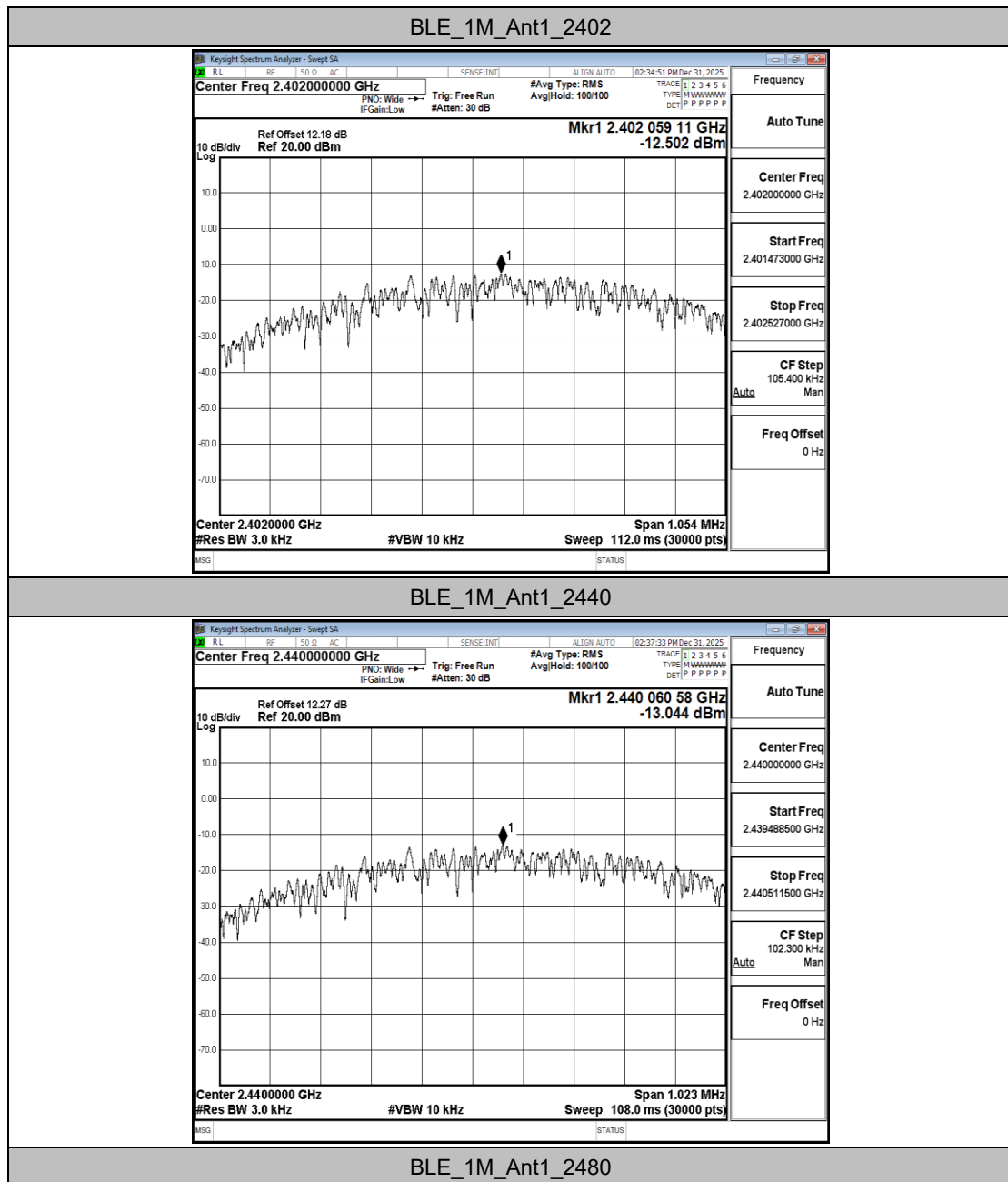
A.3 Maximum power spectral density

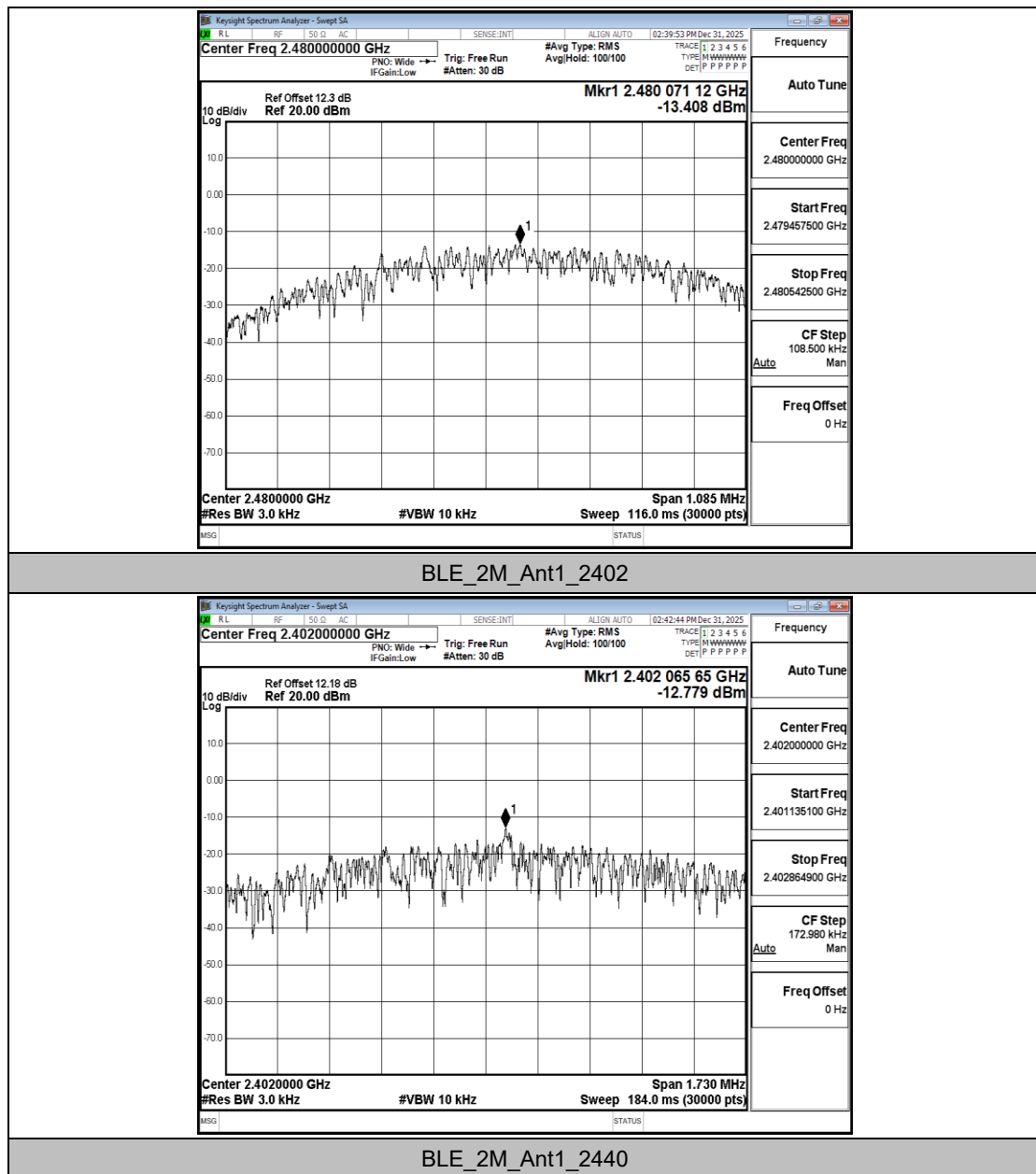
Test Result

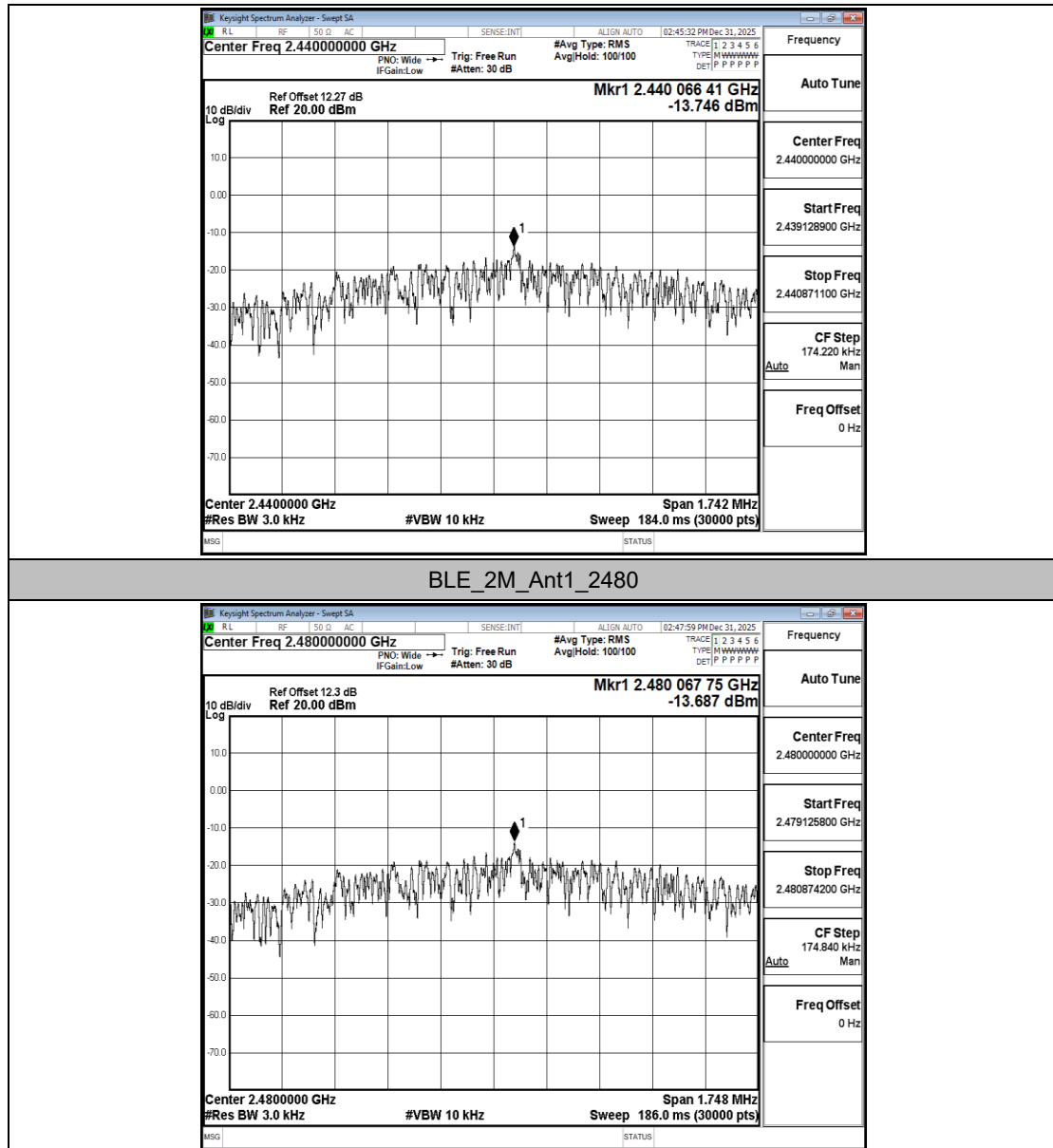
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-12.50	≤8.00	PASS
		2440	-13.04	≤8.00	PASS
		2480	-13.41	≤8.00	PASS
BLE_2M	Ant1	2402	-12.78	≤8.00	PASS
		2440	-13.75	≤8.00	PASS
		2480	-13.69	≤8.00	PASS

Note :offset=System attenuation +cable loss

Test Graphs







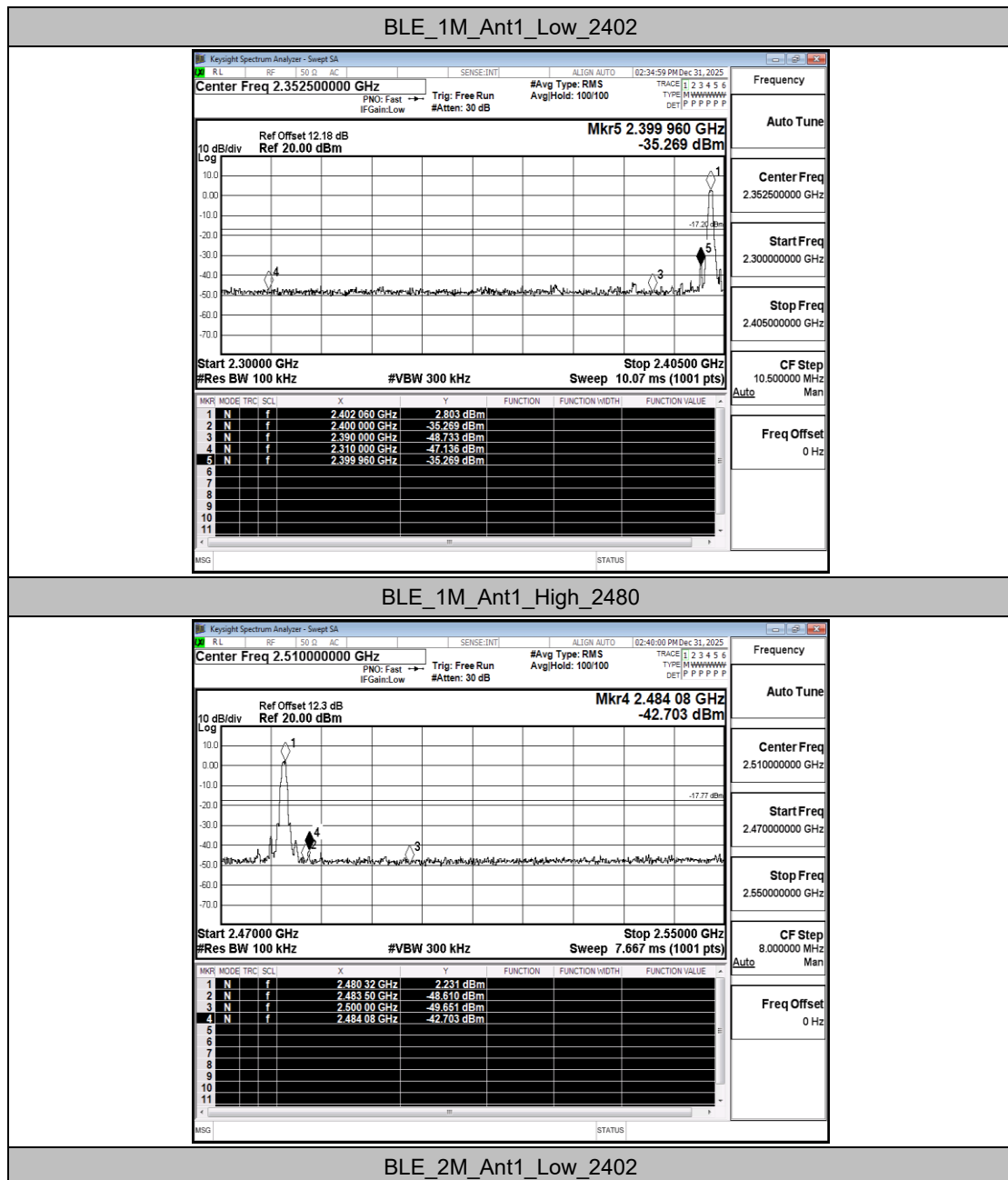
A.4 Band edge measurements

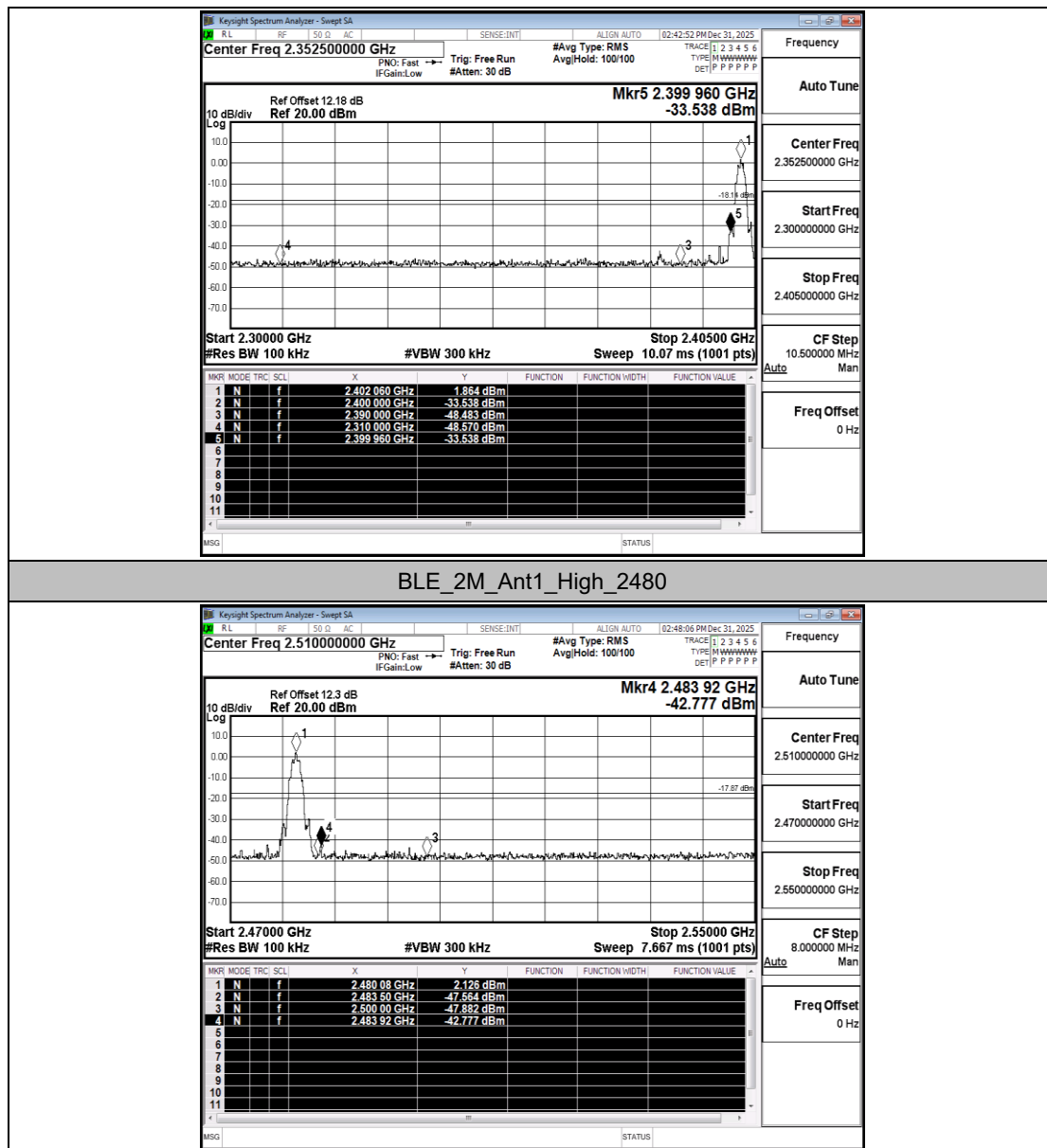
Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	2.80	-35.27	≤-17.2	PASS
		High	2480	2.23	-42.7	≤-17.77	PASS
BLE_2M	Ant1	Low	2402	1.86	-33.54	≤-18.14	PASS
		High	2480	2.13	-42.78	≤-17.87	PASS

Note :offset=System attenuation +cabal loss

Test Graphs





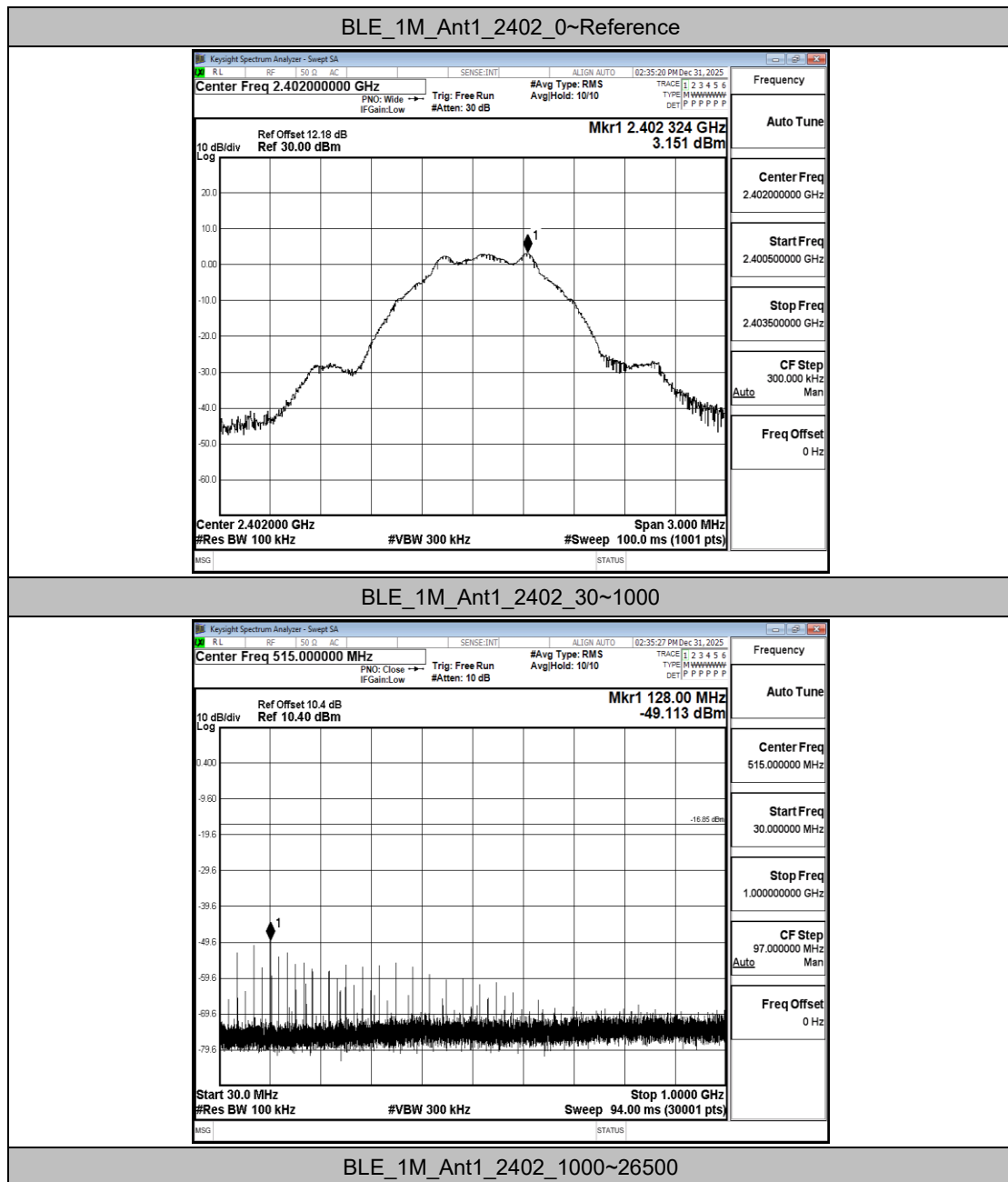
A.5 Conducted Spurious Emission

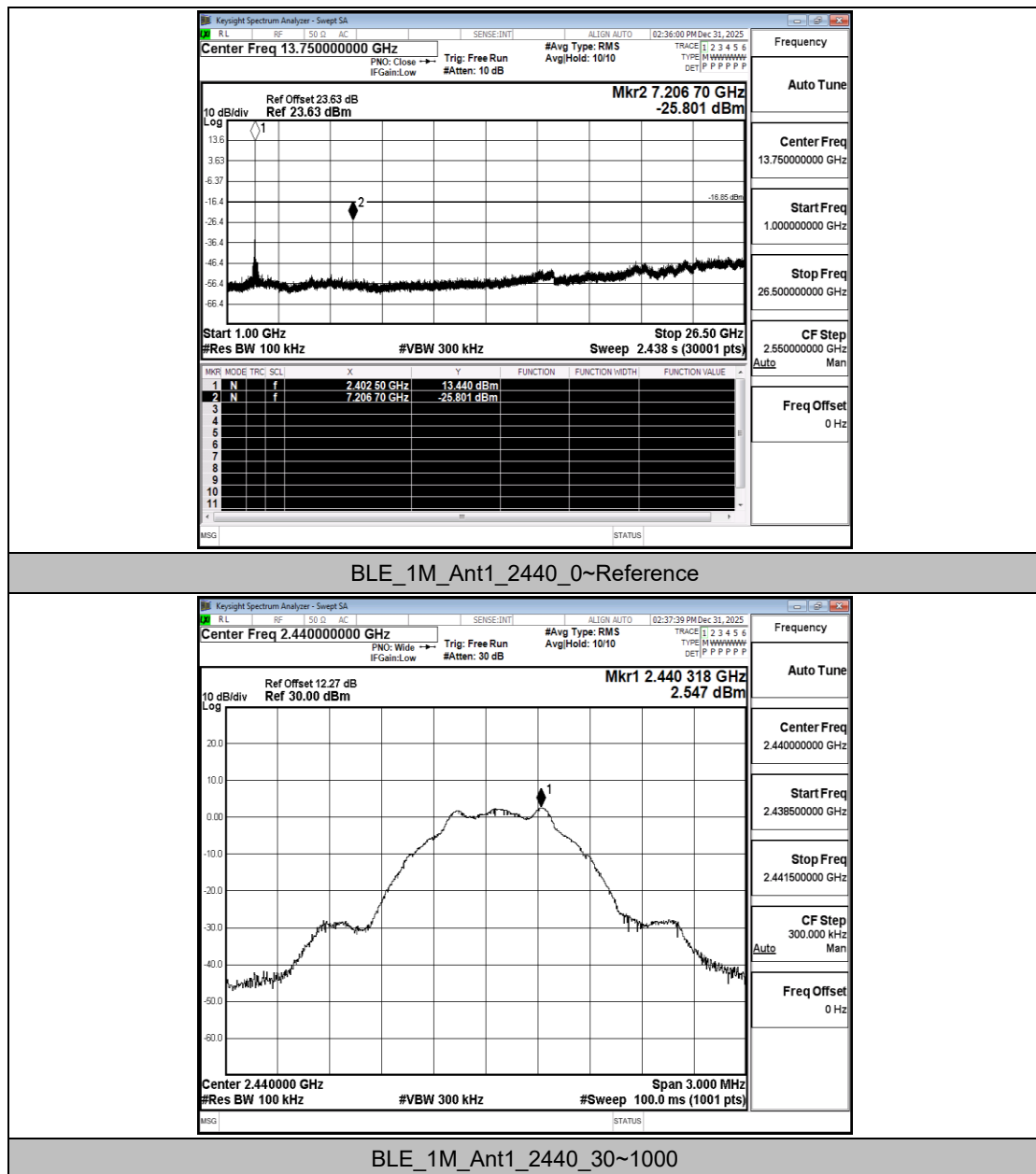
Test Result

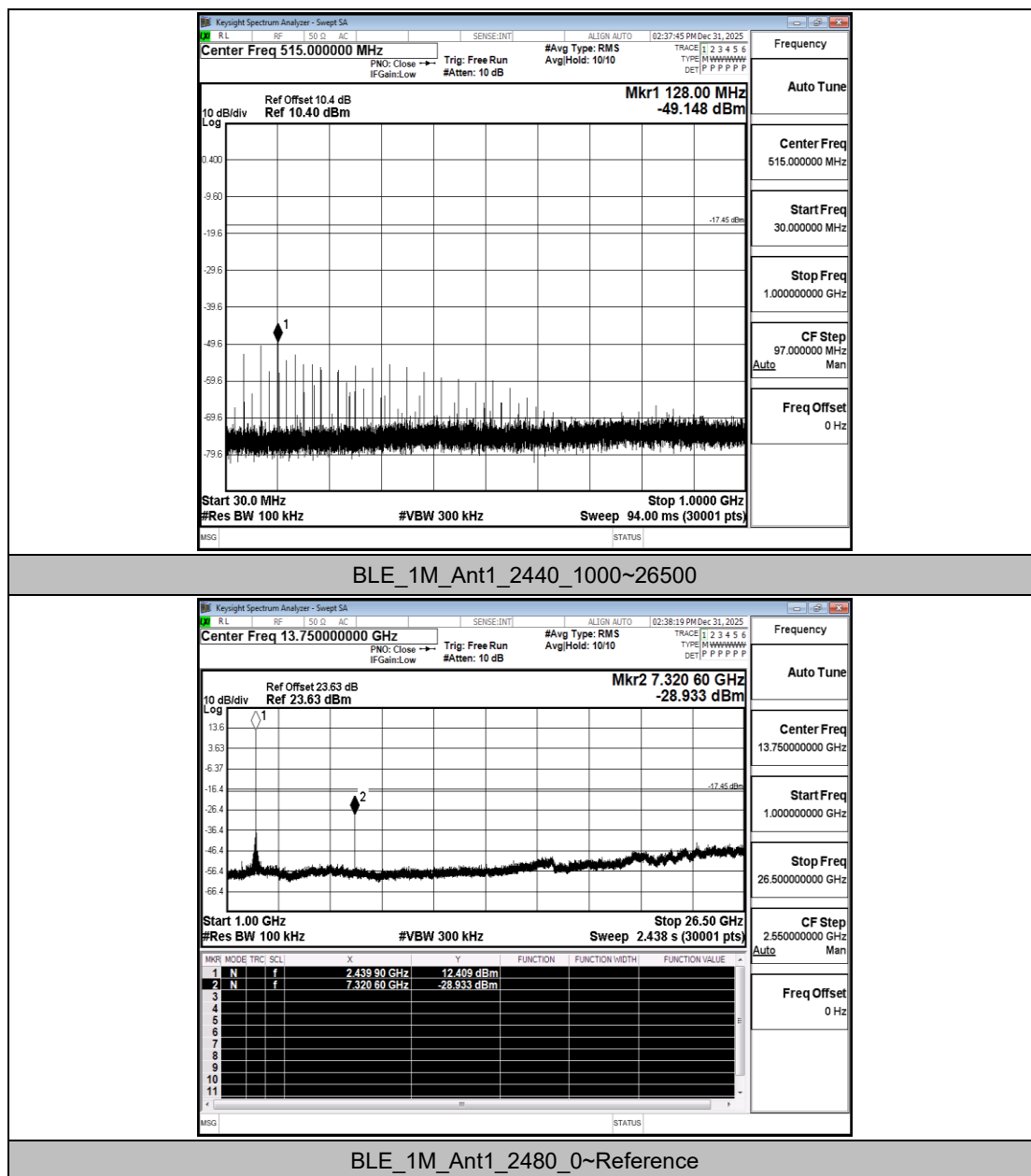
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	3.15	3.15	---	PASS
			30~1000	3.15	-49.11	≤-16.85	PASS
			1000~26500	3.15	-25.8	≤-16.85	PASS
		2440	Reference	2.55	2.55	---	PASS
			30~1000	2.55	-49.15	≤-17.45	PASS
			1000~26500	2.55	-28.93	≤-17.45	PASS
		2480	Reference	2.17	2.17	---	PASS
			30~1000	2.17	-49.06	≤-17.83	PASS
			1000~26500	2.17	-34.72	≤-17.83	PASS
BLE_2M	Ant1	2402	Reference	2.88	2.88	---	PASS
			30~1000	2.88	-48.81	≤-17.12	PASS
			1000~26500	2.88	-27.3	≤-17.12	PASS
		2440	Reference	2.27	2.27	---	PASS
			30~1000	2.27	-48.81	≤-17.73	PASS
			1000~26500	2.27	-31.4	≤-17.73	PASS
		2480	Reference	1.89	1.89	---	PASS
			30~1000	1.89	-48.89	≤-18.11	PASS
			1000~26500	1.89	-34.7	≤-18.11	PASS

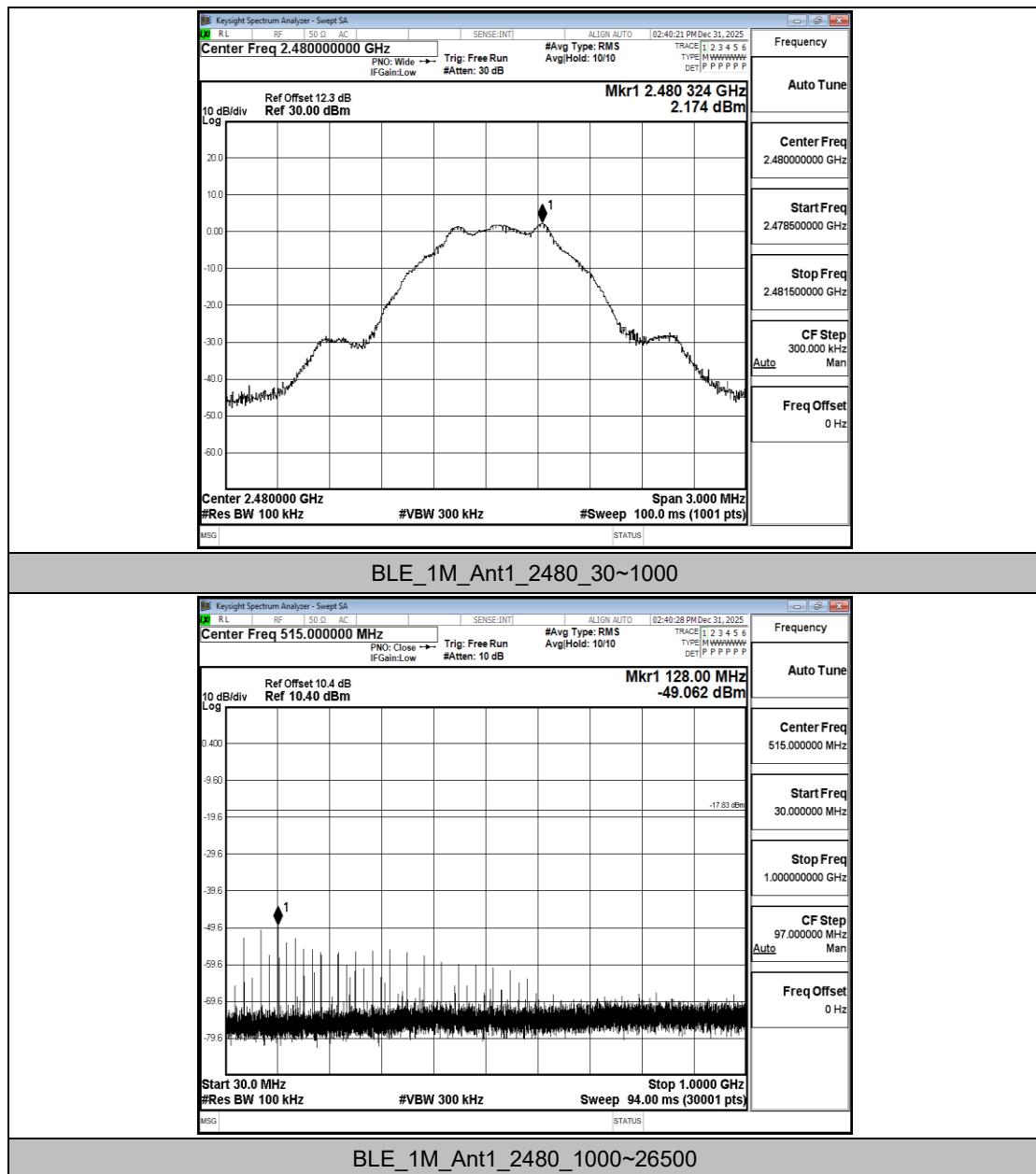
Note : Regarding the spurious emissions from 30MHz to 26.5GHz, the cable lose have been set in the CORREC' of the Spectrum Analyzer during the test.

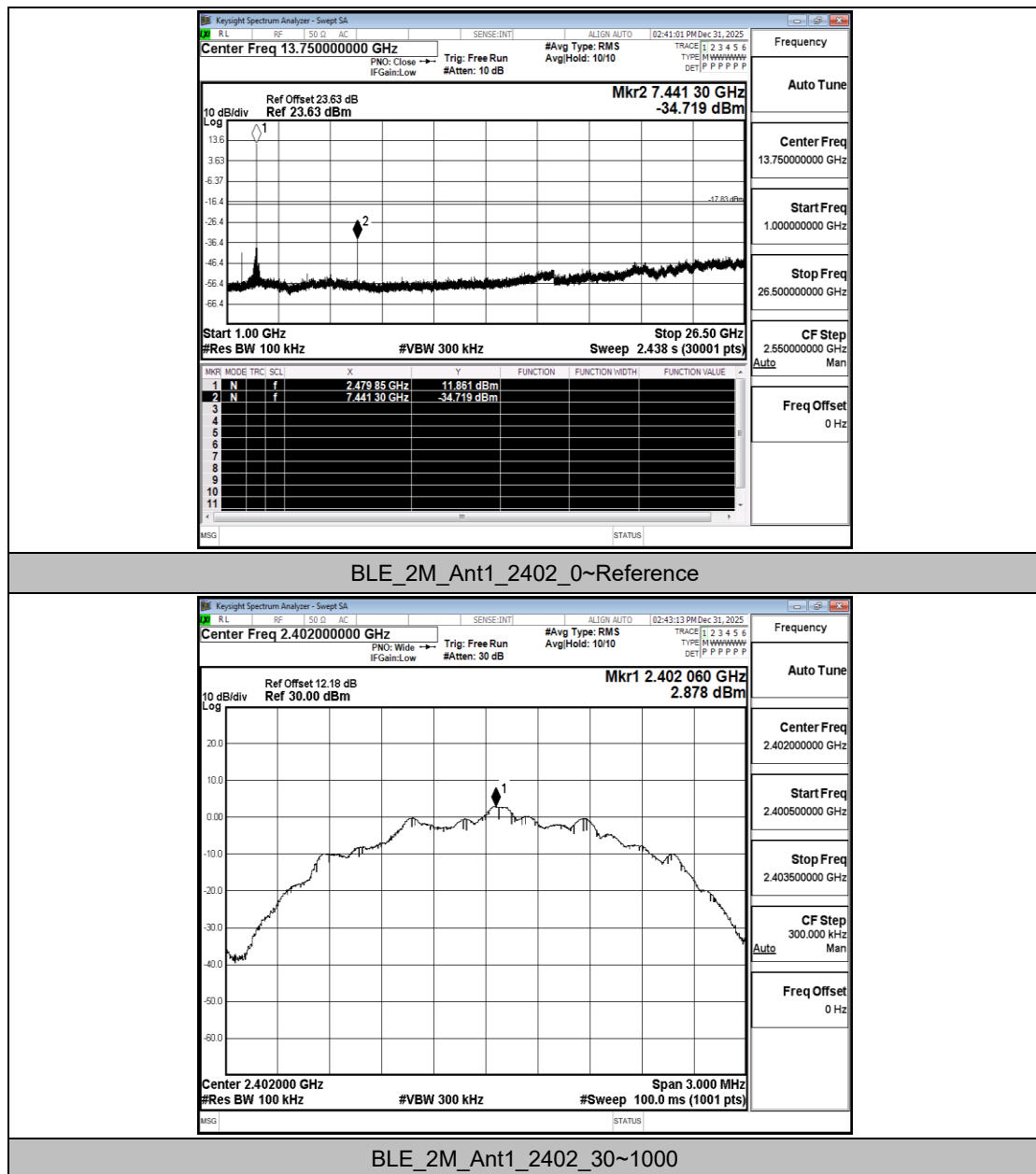
Test Graphs

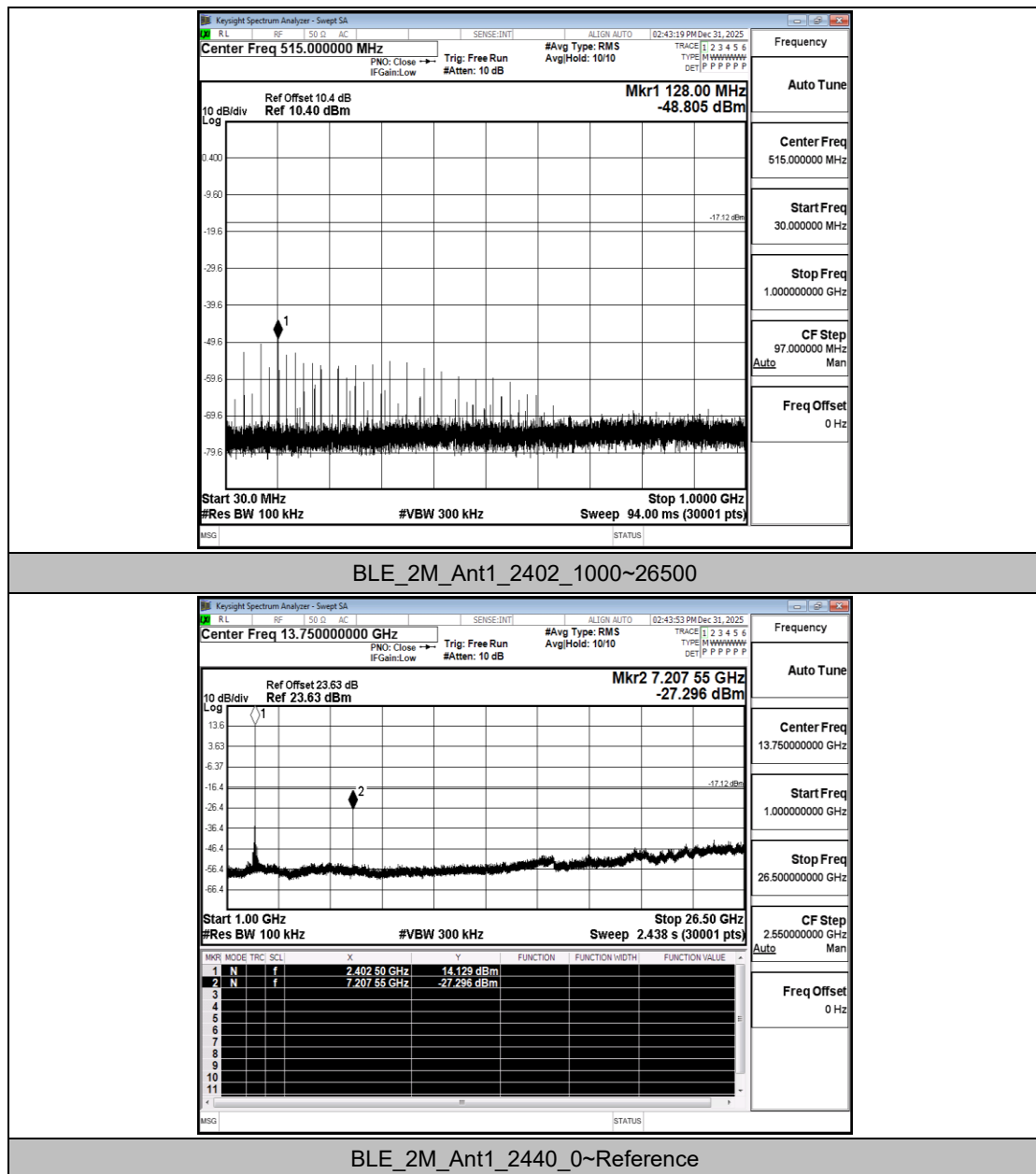


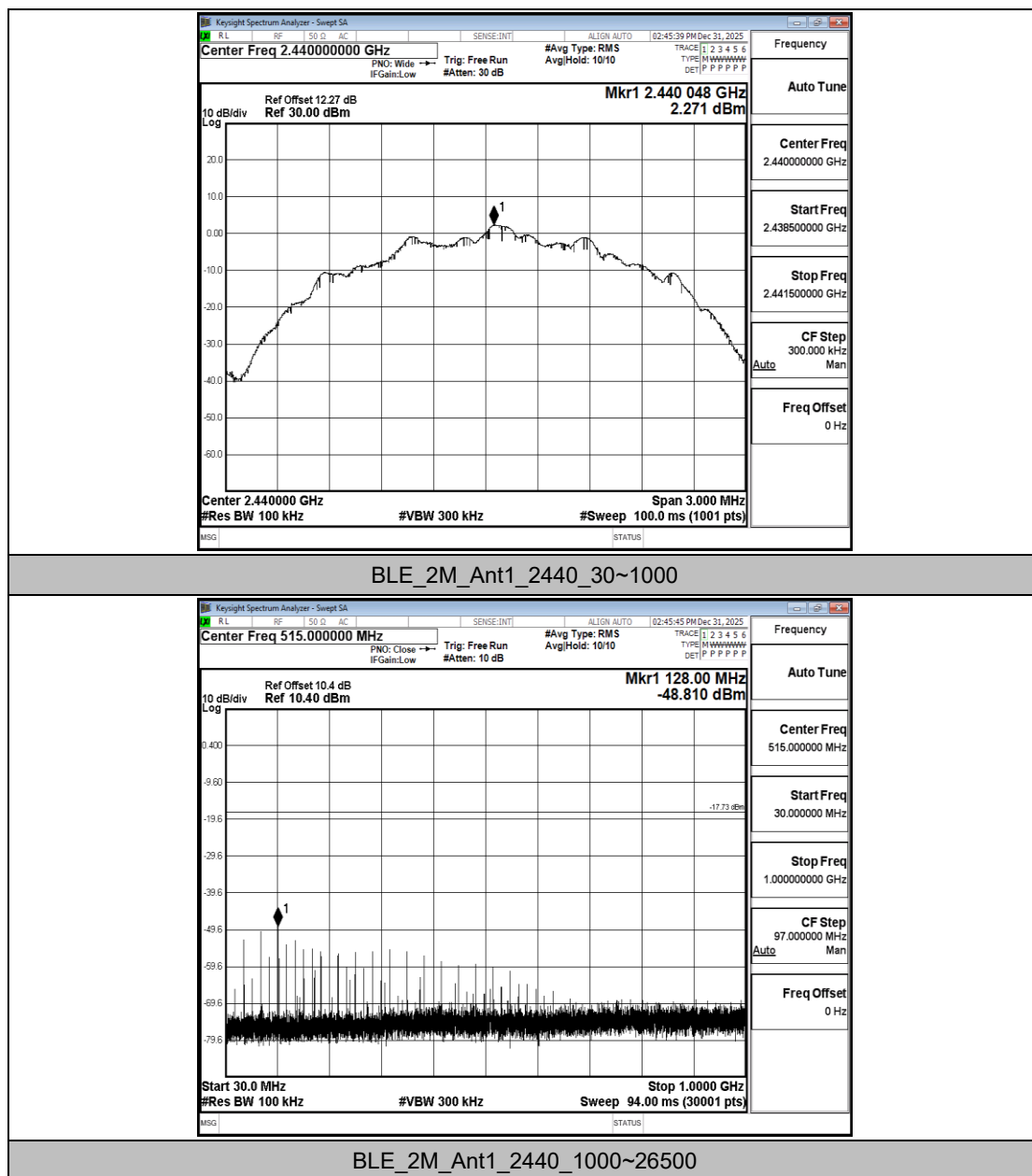


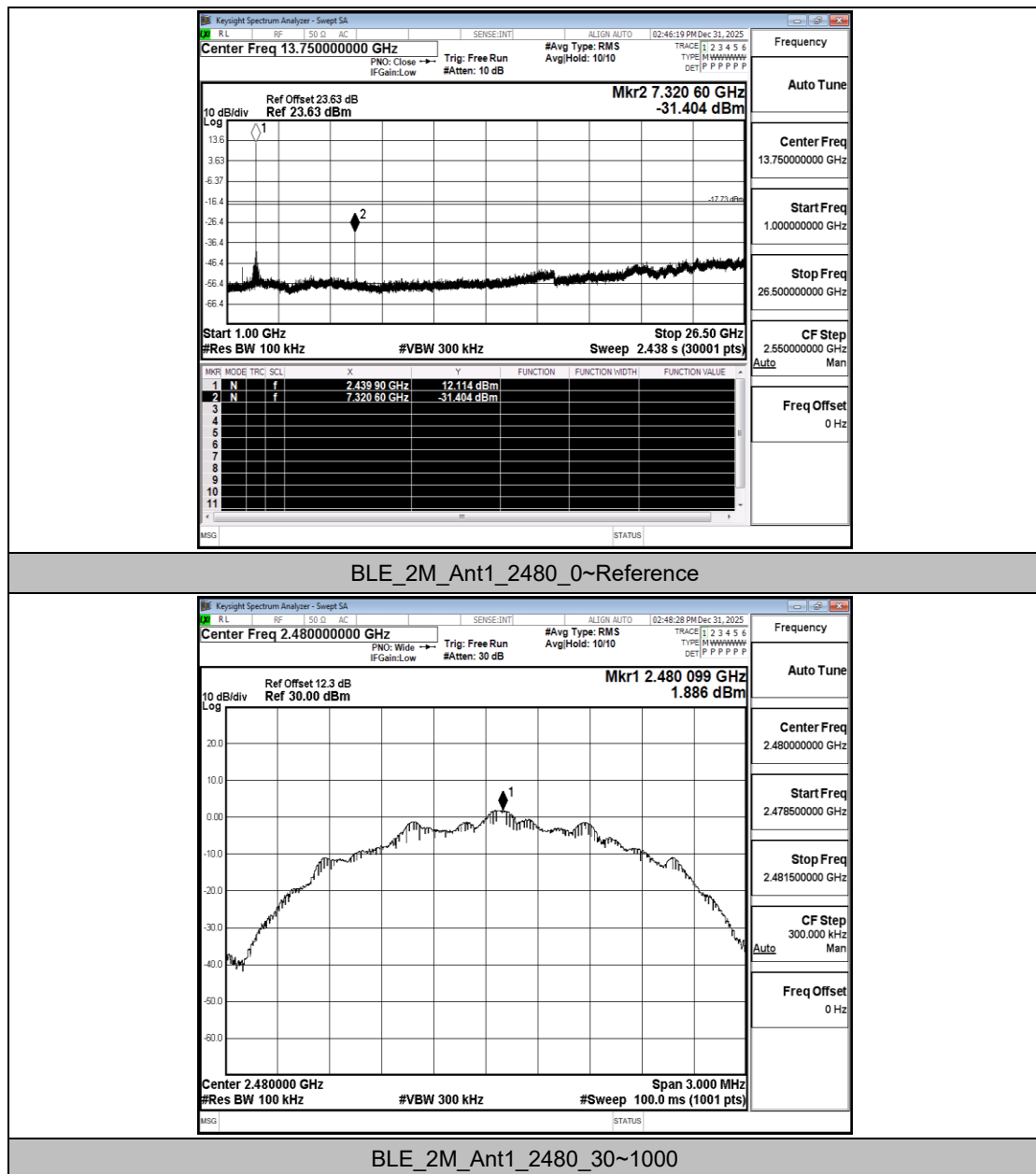


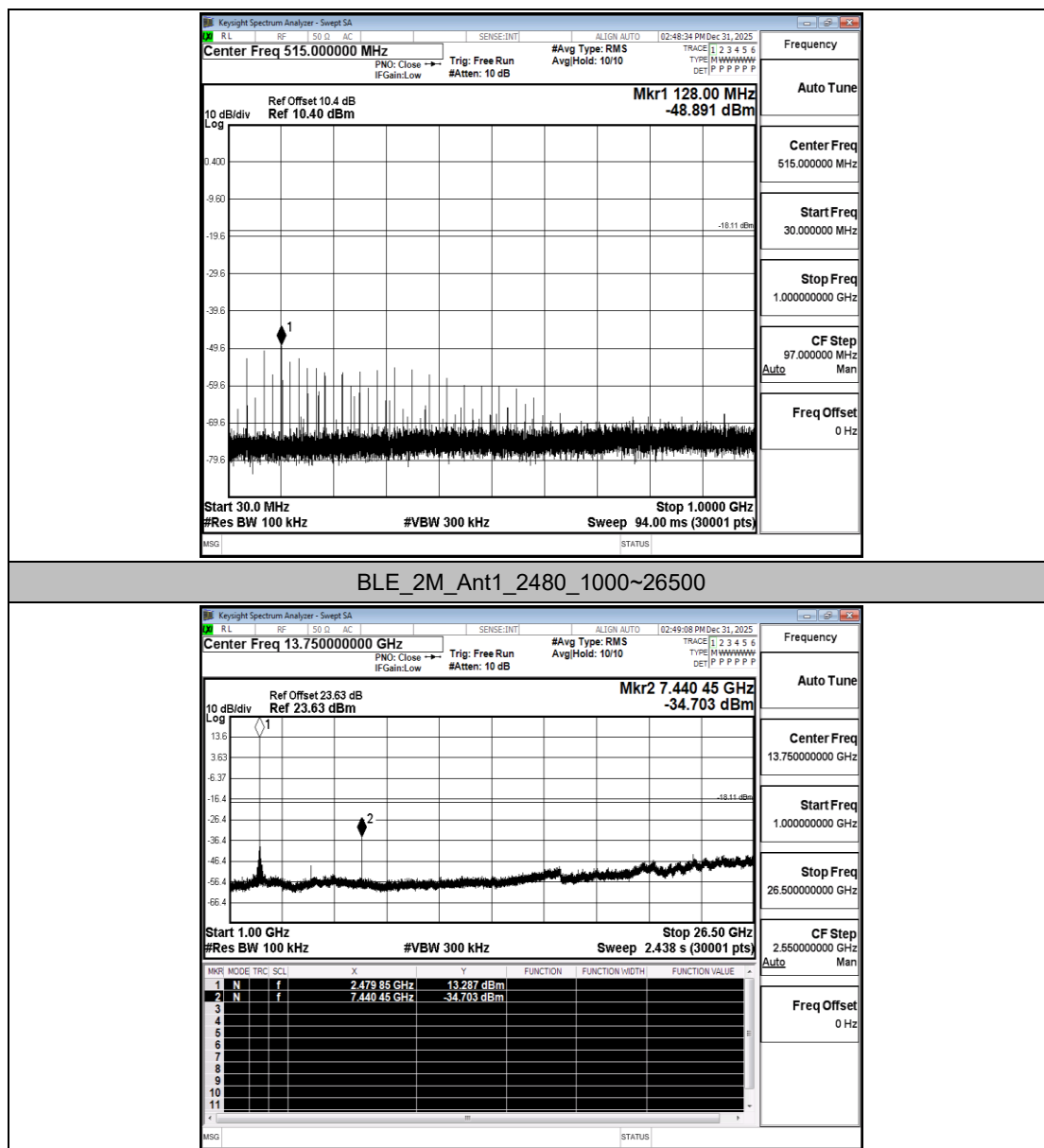












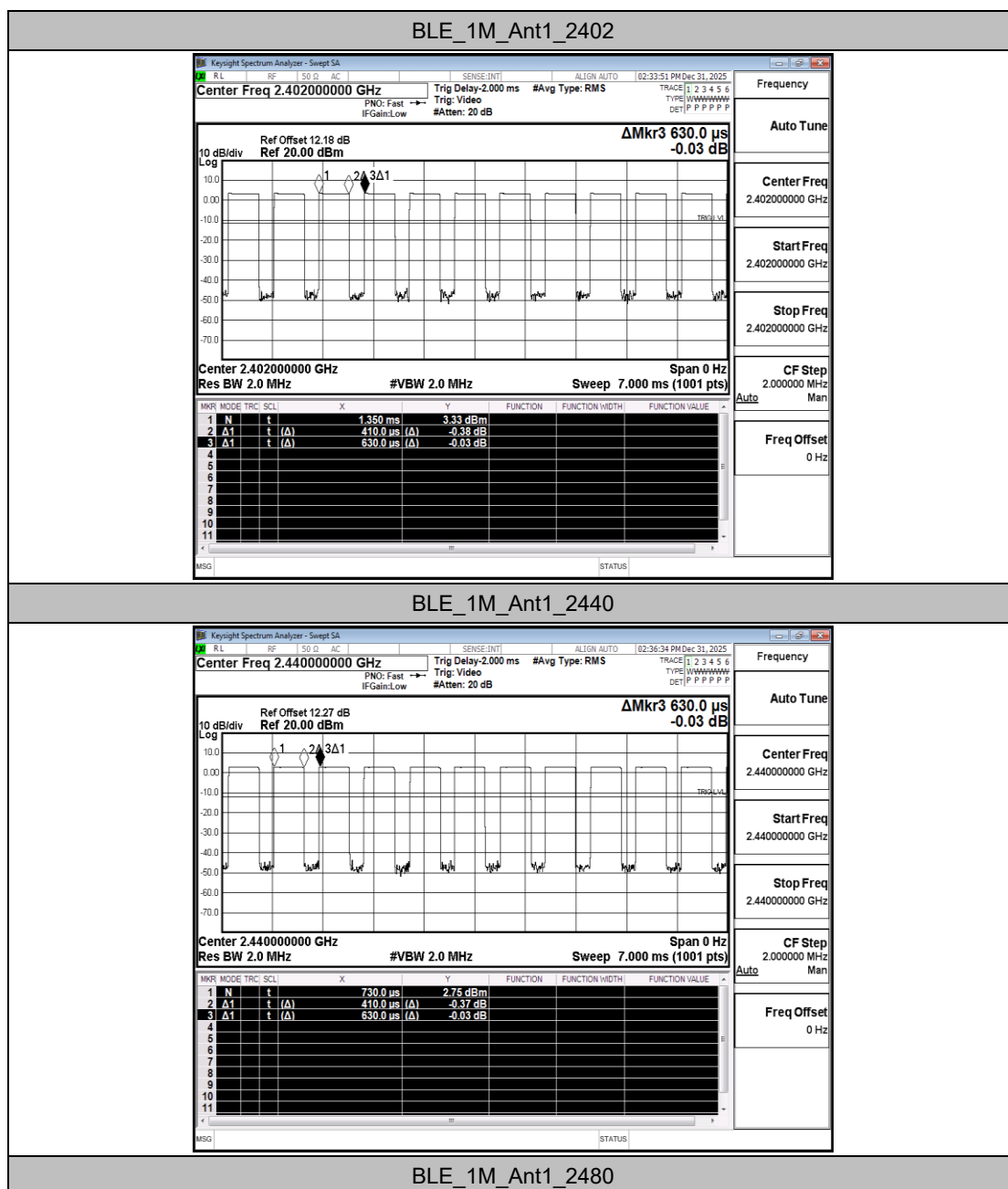
A.6 Duty Cycle

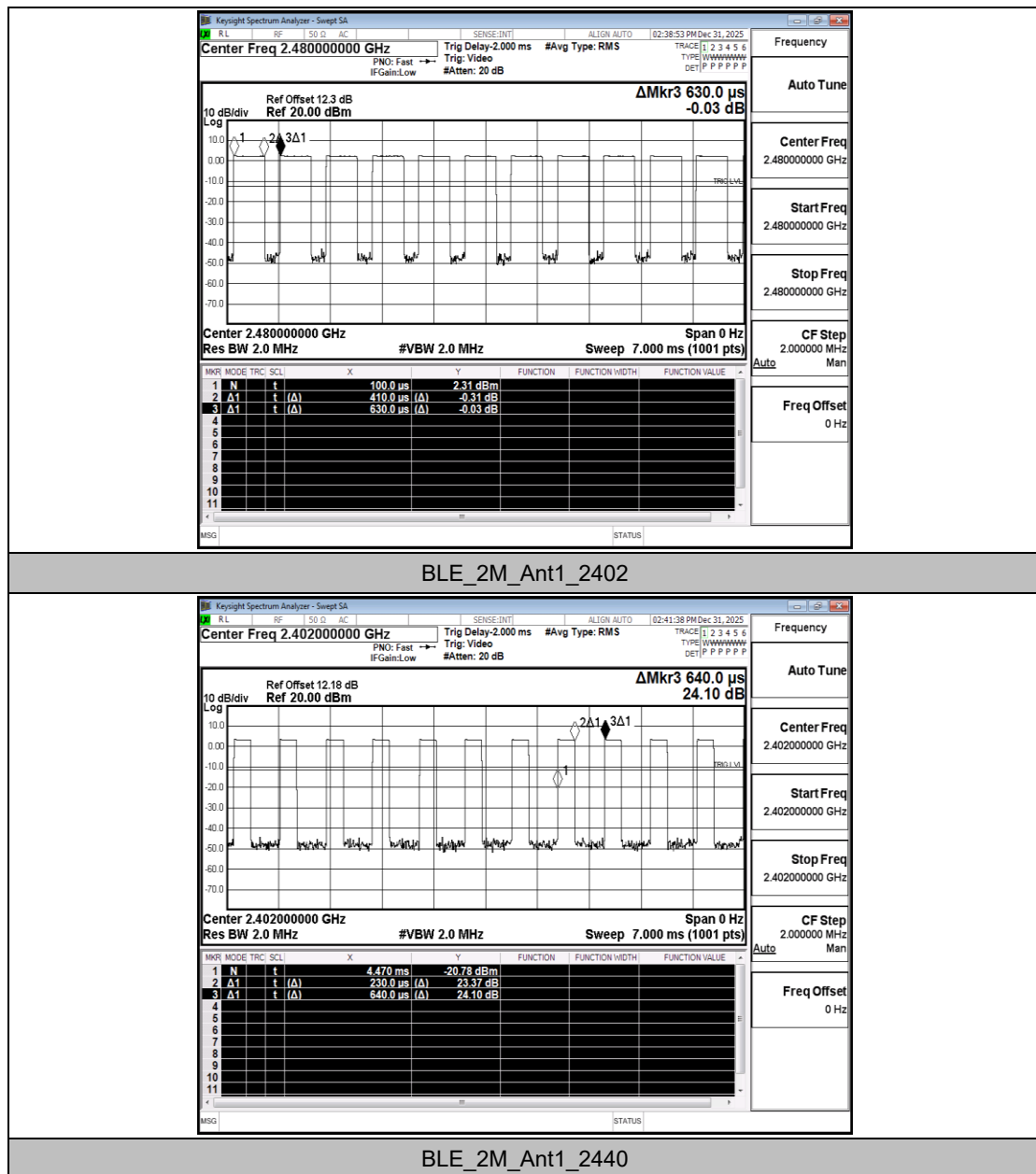
Test Result

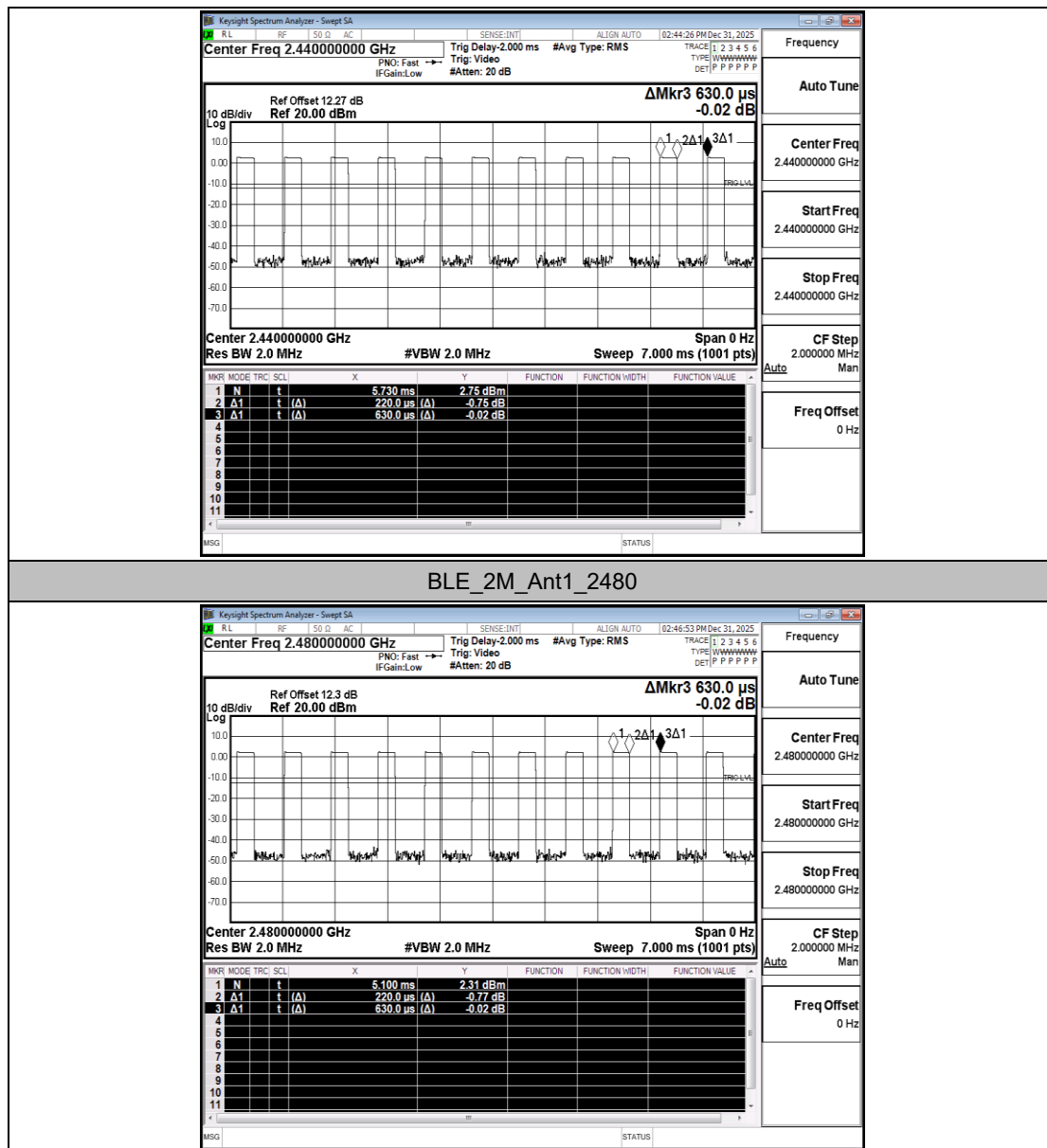
TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	0.41	0.63	0.6508	65.08	1.87	---	---
		2440	0.41	0.63	0.6508	65.08	1.87	---	---
		2480	0.41	0.63	0.6508	65.08	1.87	---	---
BLE_2M	Ant1	2402	0.23	0.64	0.3594	35.94	4.44	---	---
		2440	0.22	0.63	0.3492	34.92	4.57	---	---
		2480	0.22	0.63	0.3492	34.92	4.57	---	---

Note :offset=System attenuation +cabal loss

Test Graphs







A.7 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Gain [dBi]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-57.17	≤-45.07	2.00	1.87	41.90	≤54	PASS
				AV	2386.205	-47.25	≤-45.07	2.00	1.87	51.82	≤54	PASS
				AV	2390.000	-56.86	≤-45.07	2.00	1.87	42.21	≤54	PASS
				Peak	2310.000	-48.05	≤-23.20	2.00	0.00	49.15	≤74	PASS
				Peak	2385.785	-39.89	≤-23.20	2.00	0.00	57.31	≤74	PASS
				Peak	2390.000	-48.4	≤-23.20	2.00	0.00	48.80	≤74	PASS
		High	2480	AV	2483.500	-53.41	≤-45.07	2.00	1.87	45.66	≤54	PASS
				AV	2496.160	-50.86	≤-45.07	2.00	1.87	48.21	≤54	PASS
				AV	2500.000	-55.95	≤-45.07	2.00	1.87	43.12	≤54	PASS
				Peak	2483.500	-38.91	≤-23.20	2.00	0.00	58.29	≤74	PASS
				Peak	2483.920	-34.76	≤-23.20	2.00	0.00	62.44	≤74	PASS
				Peak	2500.000	-47.41	≤-23.20	2.00	0.00	49.79	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-57.03	≤-47.64	2.00	4.44	44.61	≤54	PASS
				AV	2385.995	-50.66	≤-47.64	2.00	4.44	50.98	≤54	PASS
				AV	2390.000	-56.84	≤-47.64	2.00	4.44	44.80	≤54	PASS
				Peak	2310.000	-48.98	≤-23.20	2.00	0.00	48.22	≤74	PASS
				Peak	2385.680	-40.06	≤-23.20	2.00	0.00	57.14	≤74	PASS
				Peak	2390.000	-48.38	≤-	2.00	0.00	48.82	≤74	PASS

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							23.20					
				AV	2483.500	-53.28	≤- 47.77	2.00	4.57	48.49	≤54	PASS
				AV	2495.840	-53.07	≤- 47.77	2.00	4.57	48.70	≤54	PASS
				AV	2500.000	-56.76	≤- 47.77	2.00	4.57	45.01	≤54	PASS
		High	2480	Peak	2483.500	-37.61	≤- 23.20	2.00	0.00	59.59	≤74	PASS
				Peak	2483.680	-33.8	≤- 23.20	2.00	0.00	63.40	≤74	PASS
				Peak	2500.000	-47.05	≤- 23.20	2.00	0.00	50.15	≤74	PASS

Note :offset=System attenuation +cabal loss

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

