

Appendix A

RF Test Data for BT LE (Conducted Measurement)

Product Name: HIGHERDOSE RED LIGHT SHOWER FILTER

Test Model: HS-01

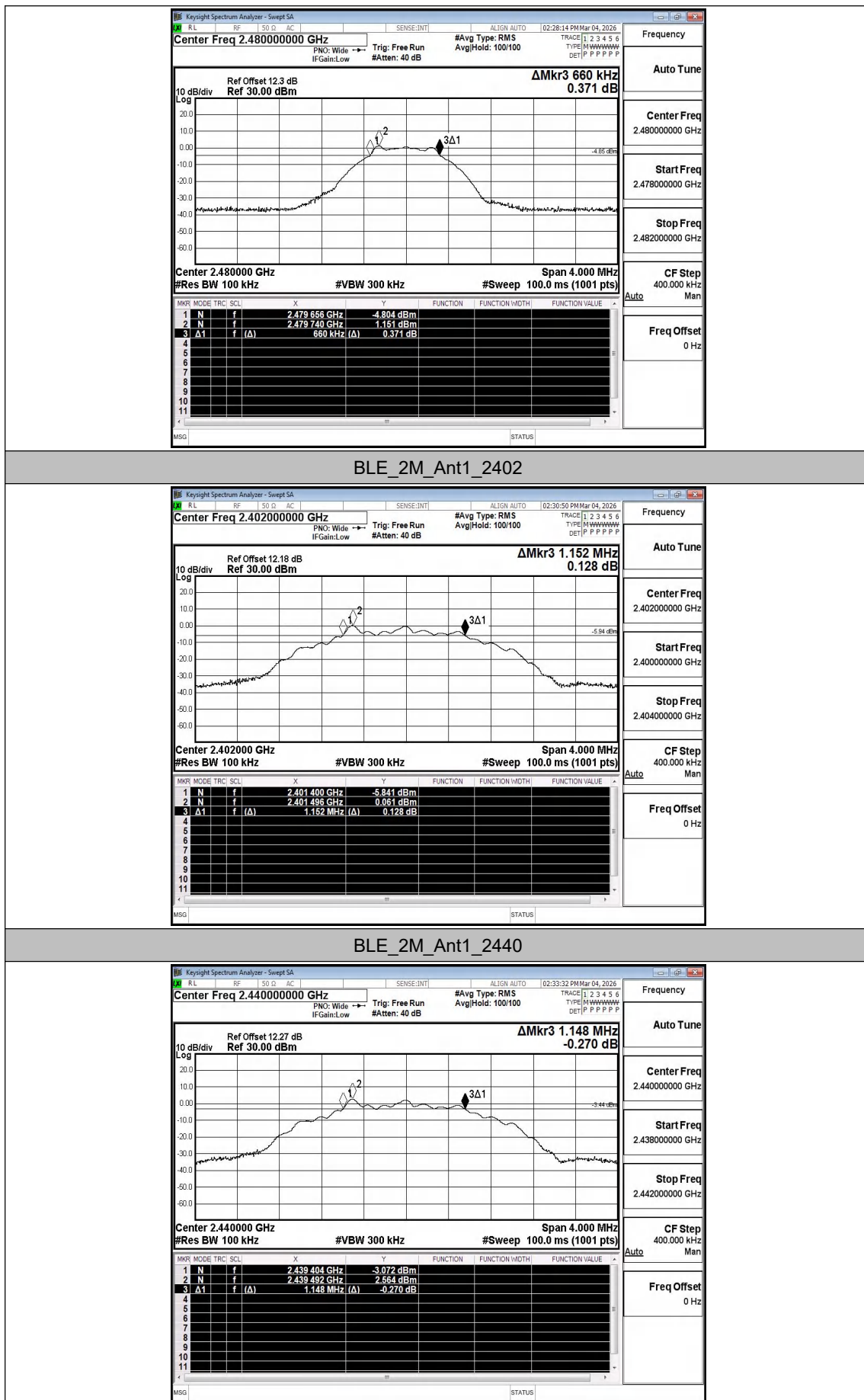
Environmental Conditions

Temperature:	23.8°C
Relative Humidity:	52.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

A.1 DTS Bandwidth

Test Result

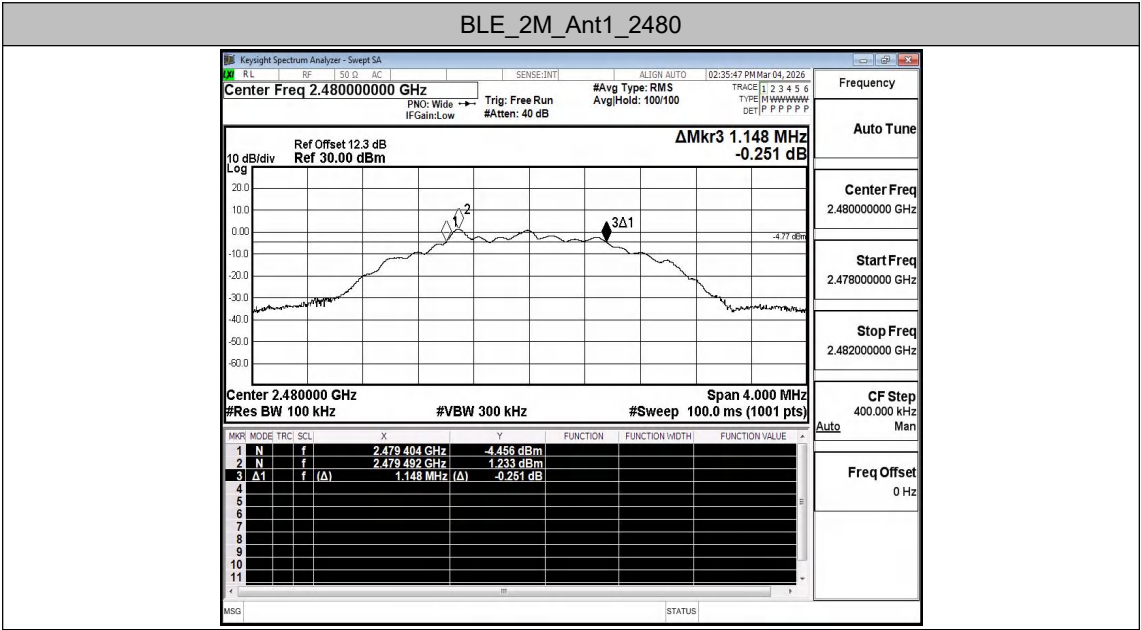
TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.660	2401.660	2402.320	0.5	PASS
		2440	0.656	2439.660	2440.316	0.5	PASS
		2480	0.660	2479.656	2480.316	0.5	PASS
BLE_2M	Ant1	2402	1.152	2401.400	2402.552	0.5	PASS
		2440	1.148	2439.404	2440.552	0.5	PASS
		2480	1.148	2479.404	2480.552	0.5	PASS



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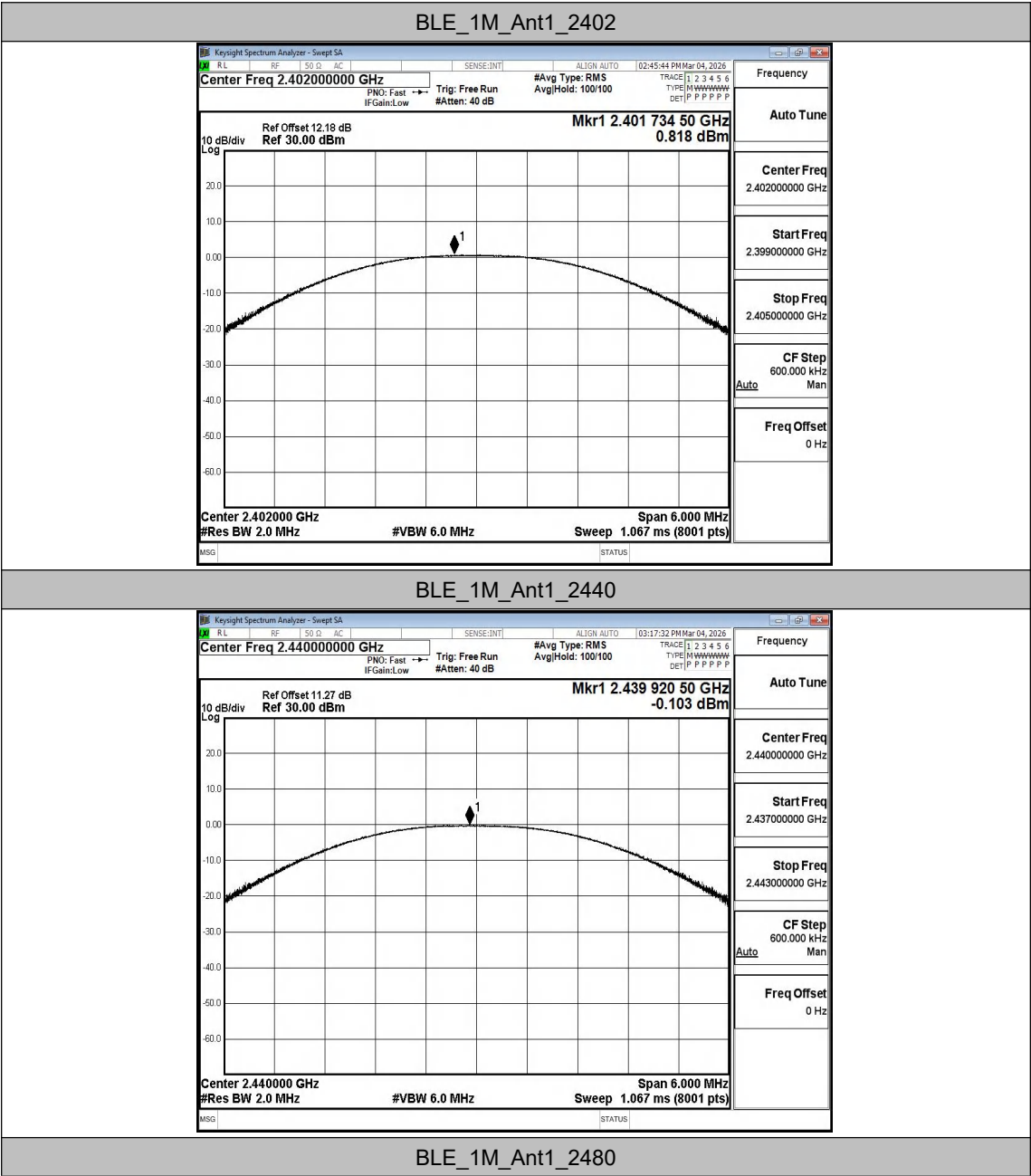


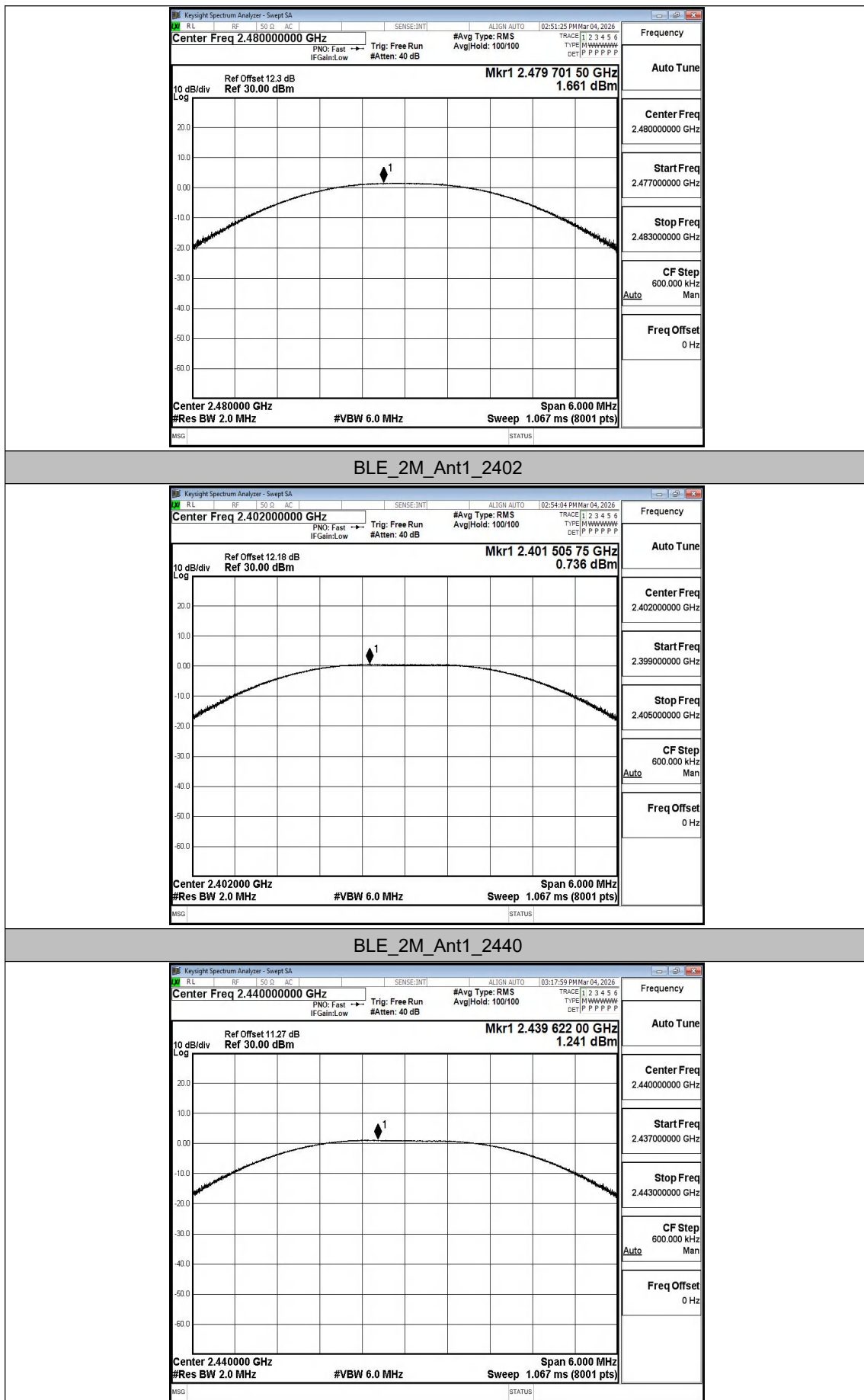
A.2 Maximum Peak conducted output power

Test Result Peak

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.82	≤30	PASS
		2440	-0.10	≤30	PASS
		2480	1.66	≤30	PASS
BLE_2M	Ant1	2402	0.74	≤30	PASS
		2440	1.24	≤30	PASS
		2480	1.71	≤30	PASS

Test Graphs Peak

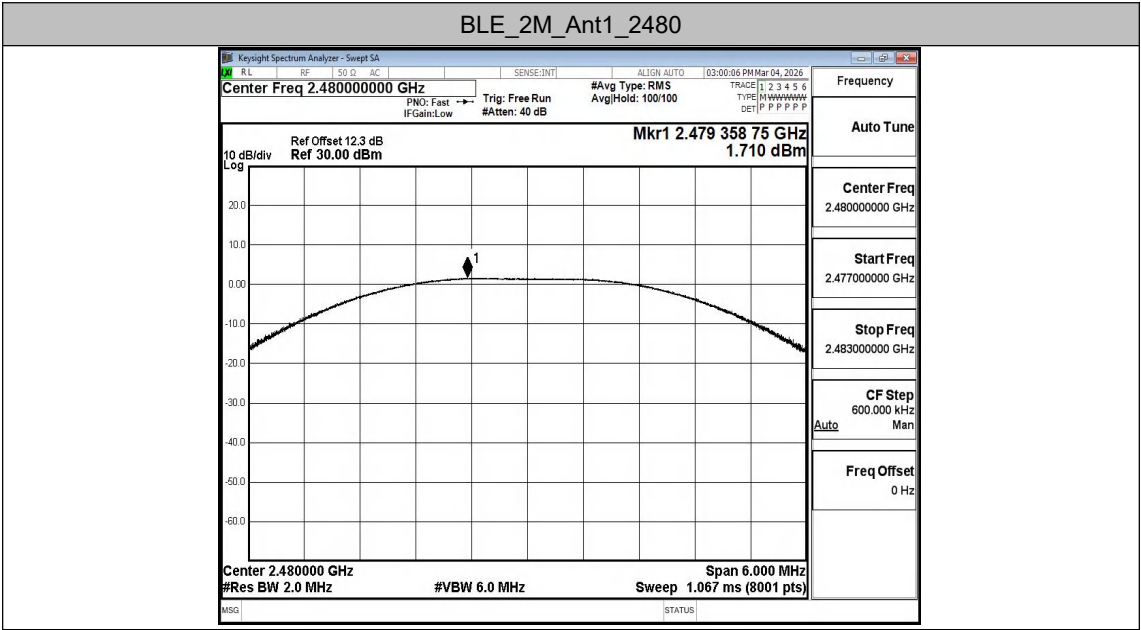




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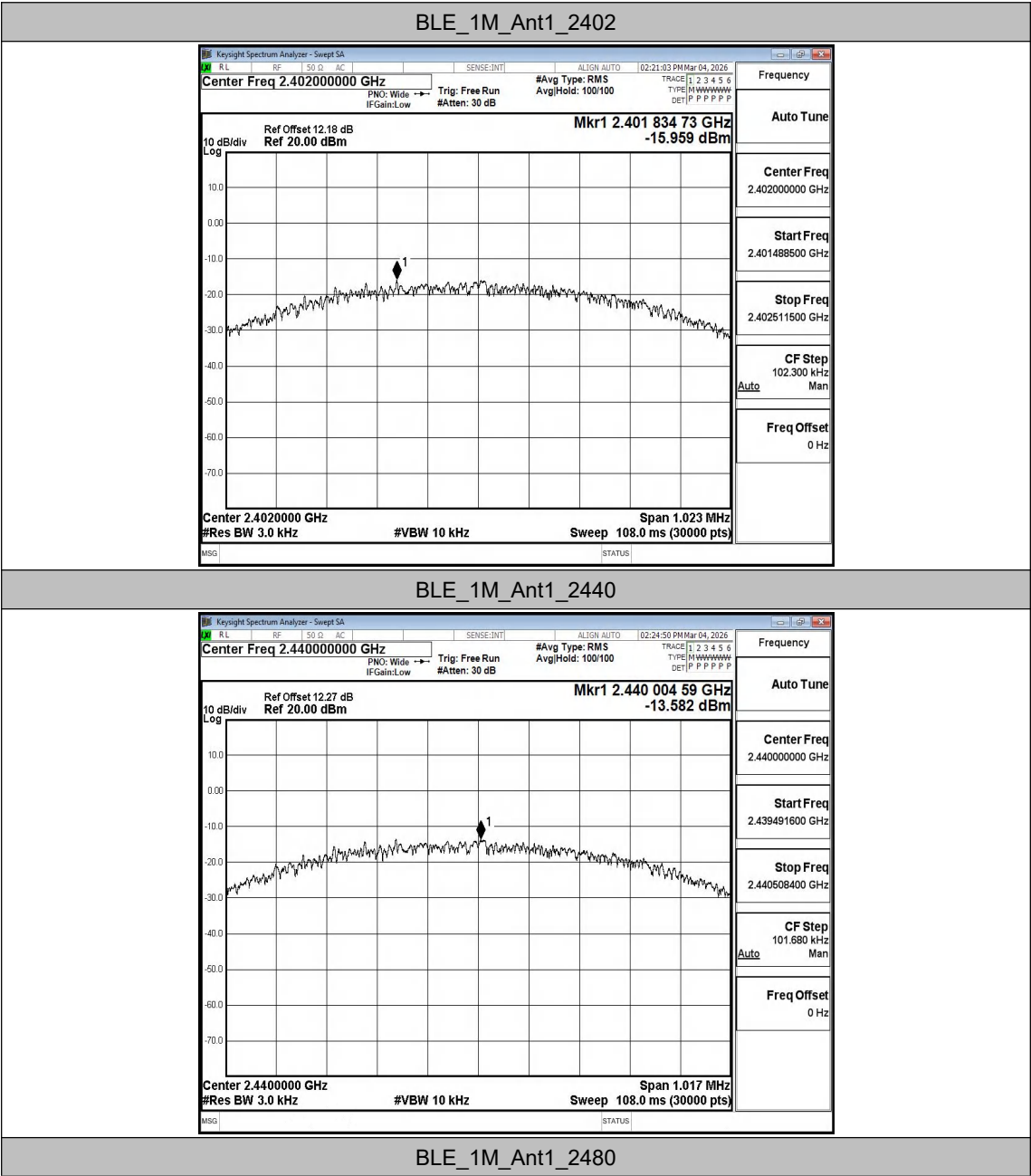


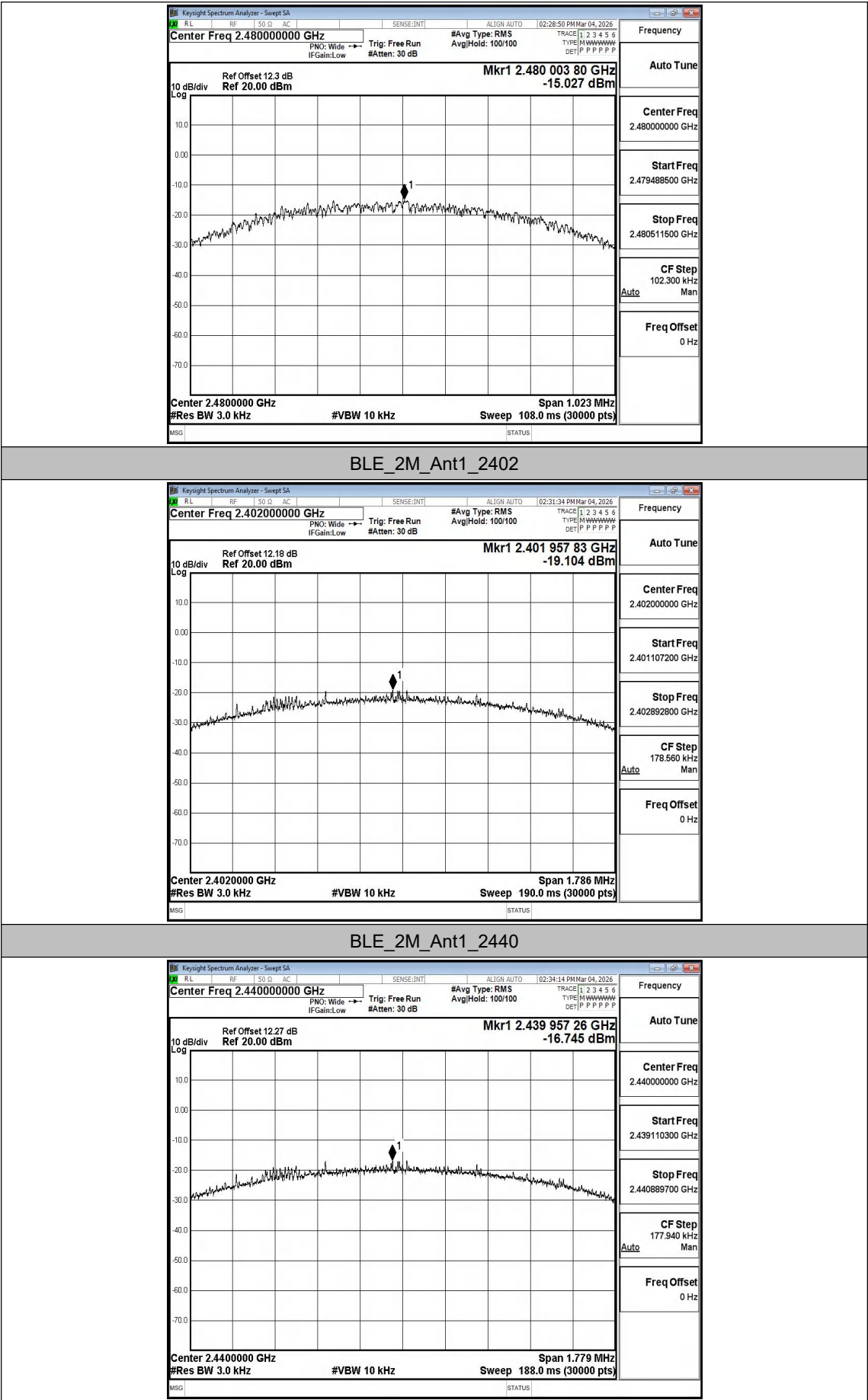
A.3 Maximum power spectral density

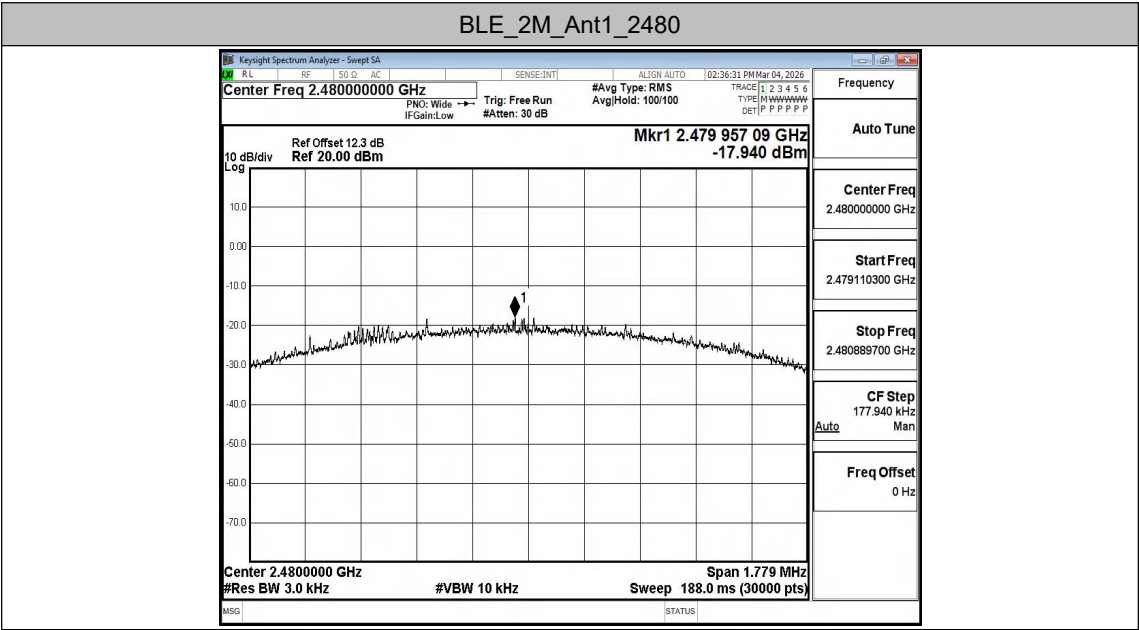
Test Result

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-15.96	≤8.00	PASS
		2440	-13.58	≤8.00	PASS
		2480	-15.03	≤8.00	PASS
BLE_2M	Ant1	2402	-19.10	≤8.00	PASS
		2440	-16.75	≤8.00	PASS
		2480	-17.94	≤8.00	PASS

Test Graphs





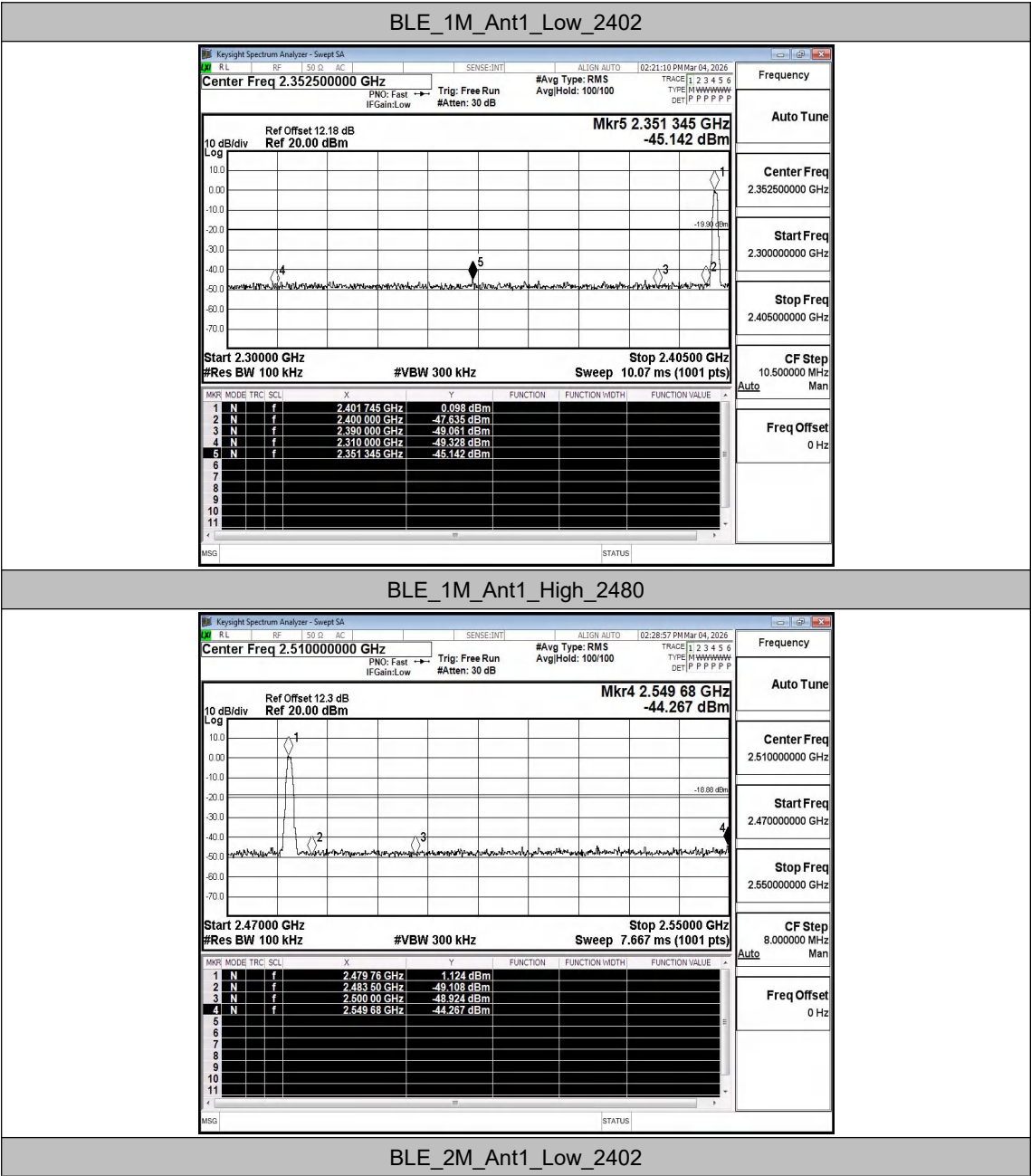


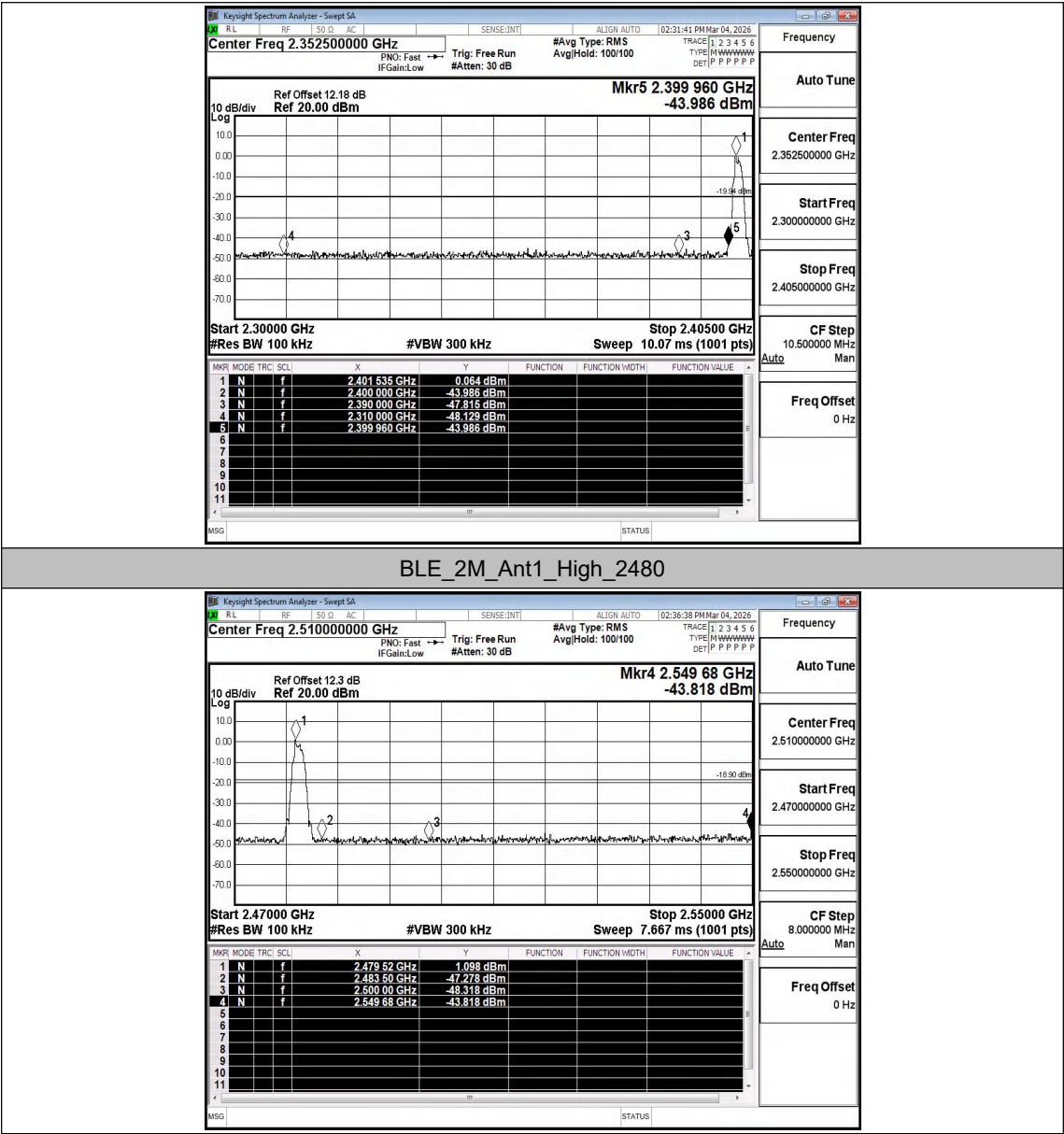
A.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	0.10	-45.14	≤-19.9	PASS
		High	2480	1.12	-44.27	≤-18.88	PASS
BLE_2M	Ant1	Low	2402	0.06	-43.99	≤-19.94	PASS
		High	2480	1.10	-43.82	≤-18.9	PASS

Test Graphs



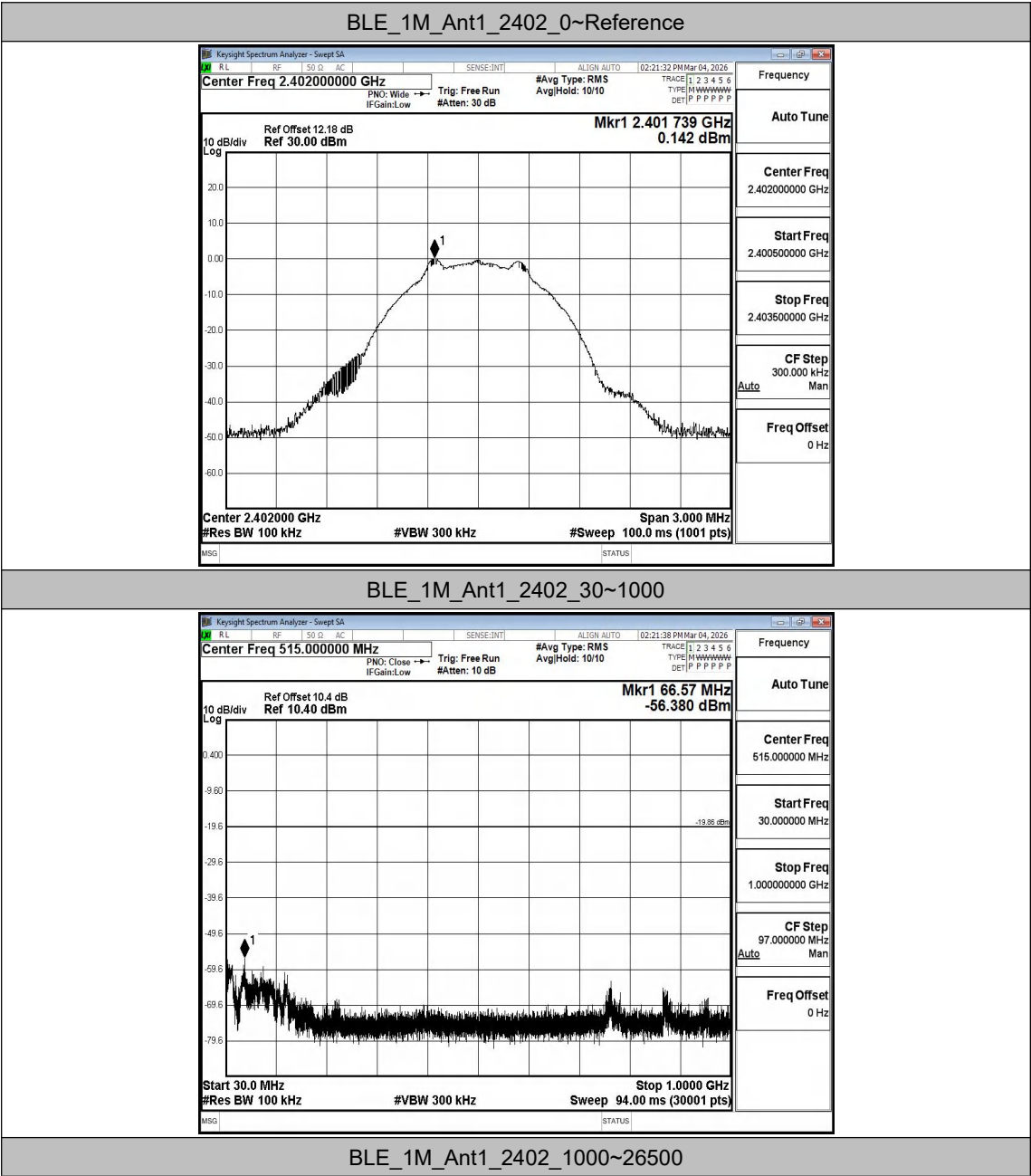


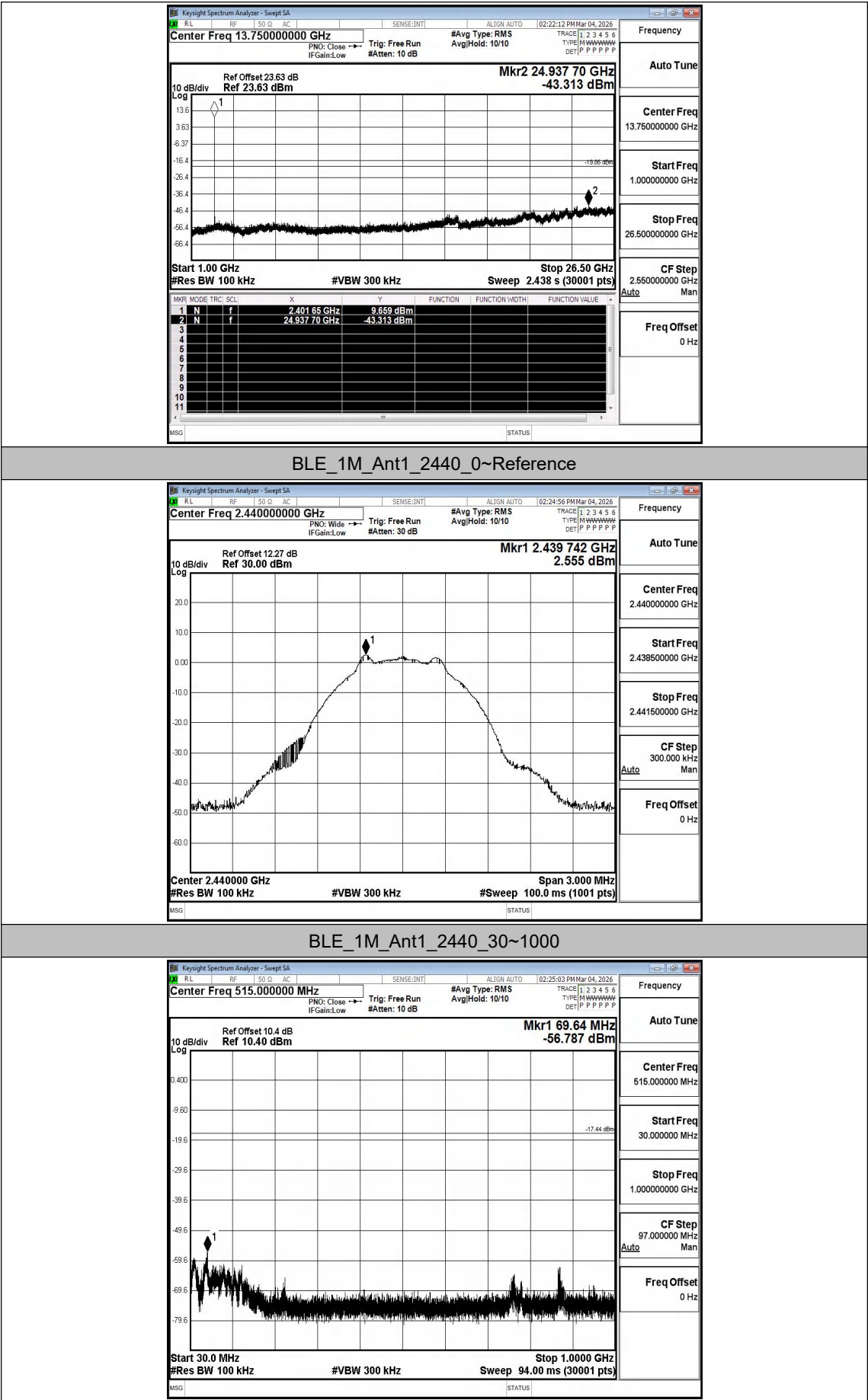
A.5 Conducted Spurious Emission

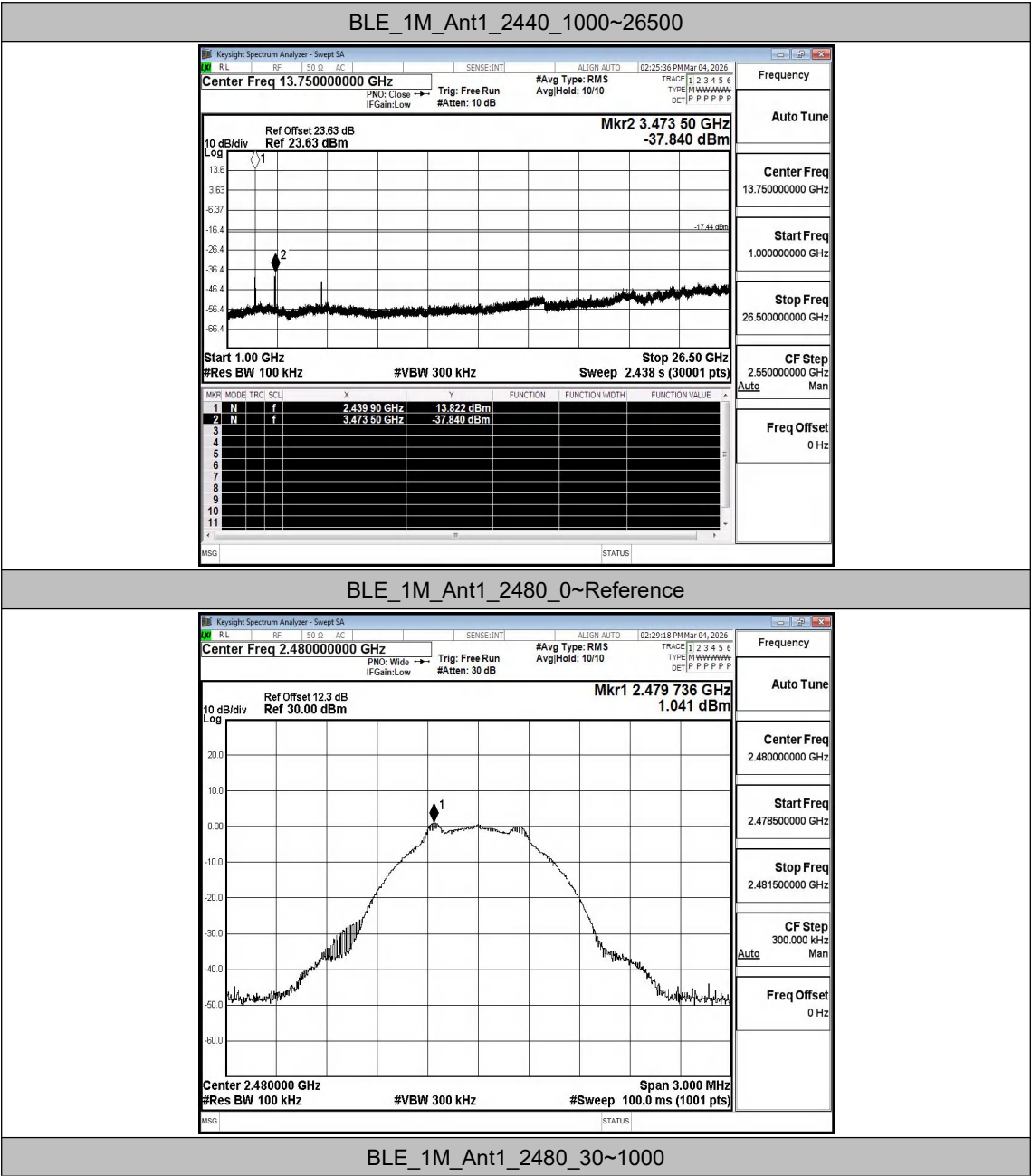
Test Result

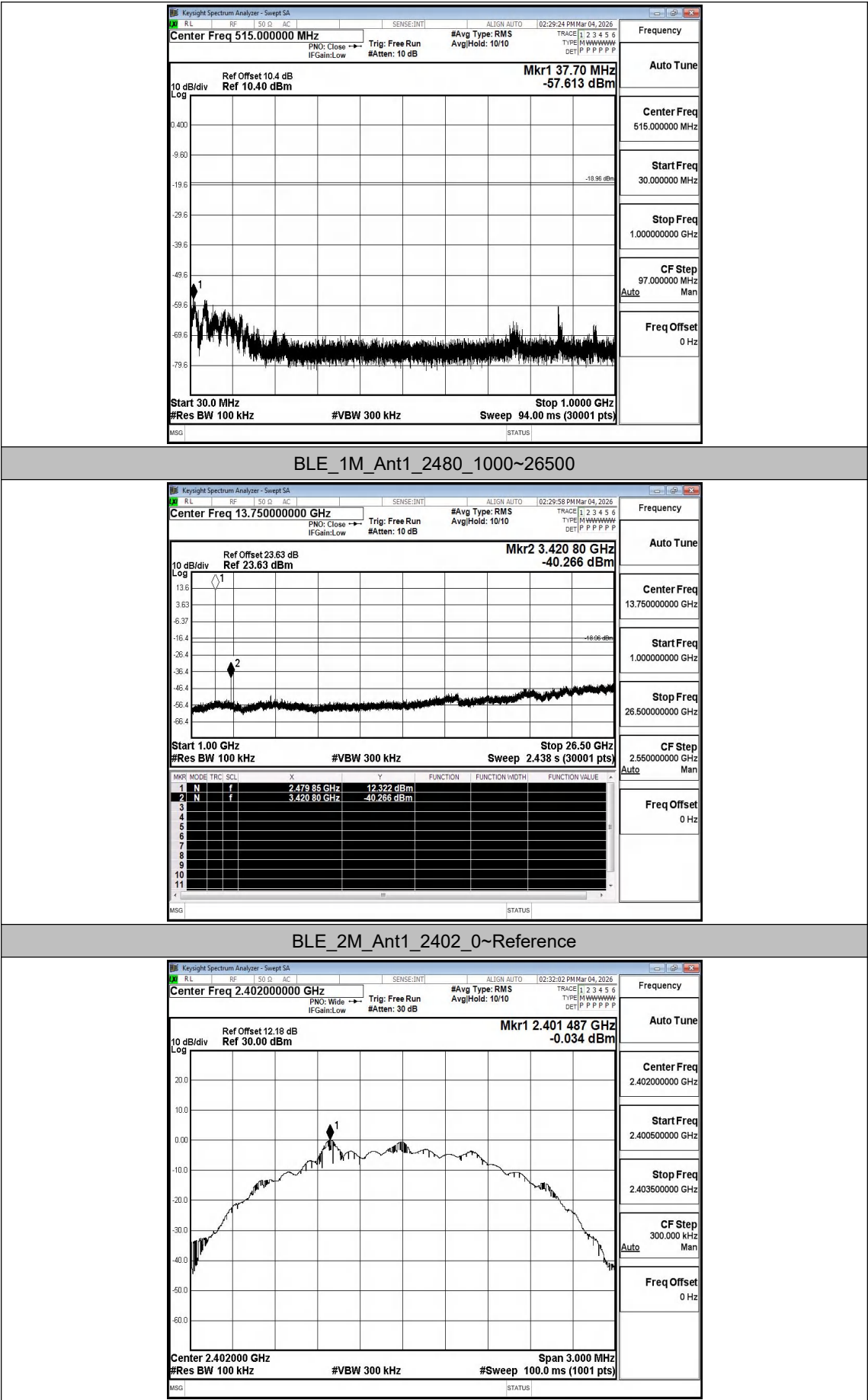
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	0.14	0.14	---	PASS
			30~1000	0.14	-56.38	≤-19.86	PASS
			1000~26500	0.14	-43.31	≤-19.86	PASS
		2440	Reference	2.56	2.56	---	PASS
			30~1000	2.56	-56.79	≤-17.44	PASS
			1000~26500	2.56	-37.84	≤-17.44	PASS
		2480	Reference	1.04	1.04	---	PASS
			30~1000	1.04	-57.61	≤-18.96	PASS
			1000~26500	1.04	-40.27	≤-18.96	PASS
BLE_2M	Ant1	2402	Reference	-0.03	-0.03	---	PASS
			30~1000	-0.03	-55.95	≤-20.03	PASS
			1000~26500	-0.03	-43.49	≤-20.03	PASS
		2440	Reference	2.44	2.44	---	PASS
			30~1000	2.44	-56.36	≤-17.56	PASS
			1000~26500	2.44	-38.91	≤-17.56	PASS
		2480	Reference	0.98	0.98	---	PASS
			30~1000	0.98	-56.36	≤-19.02	PASS
			1000~26500	0.98	-43.3	≤-19.02	PASS

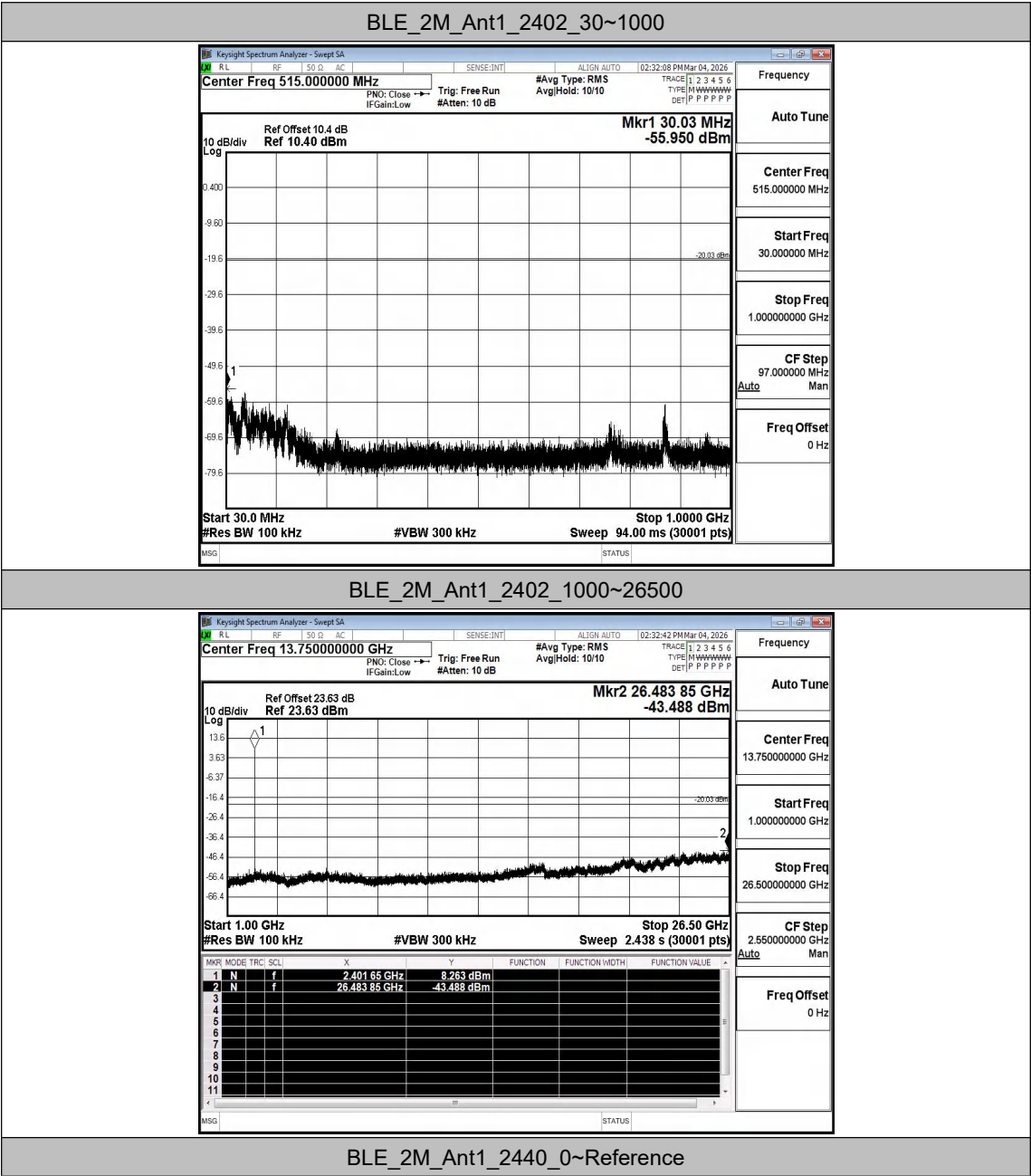
Test Graphs

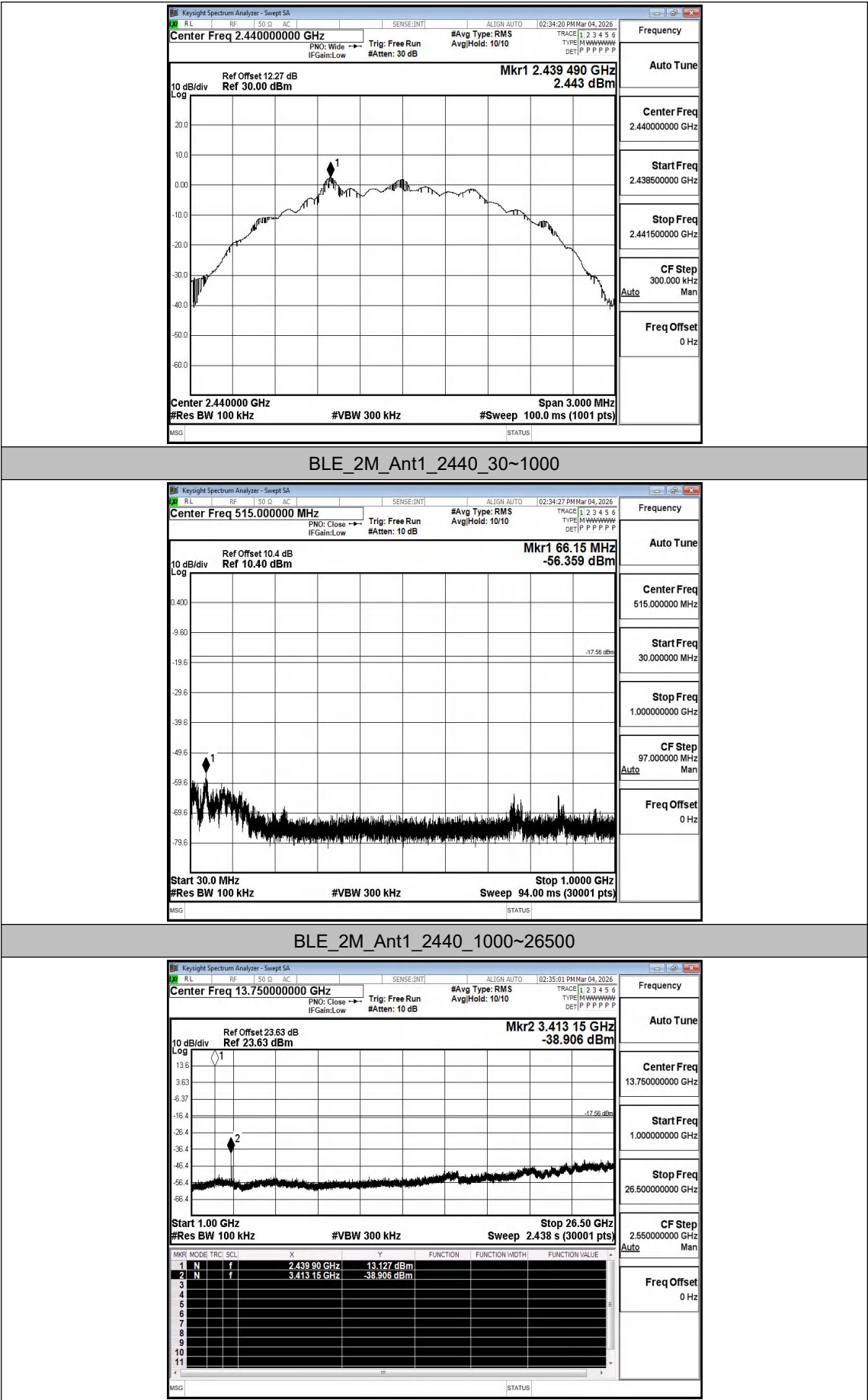


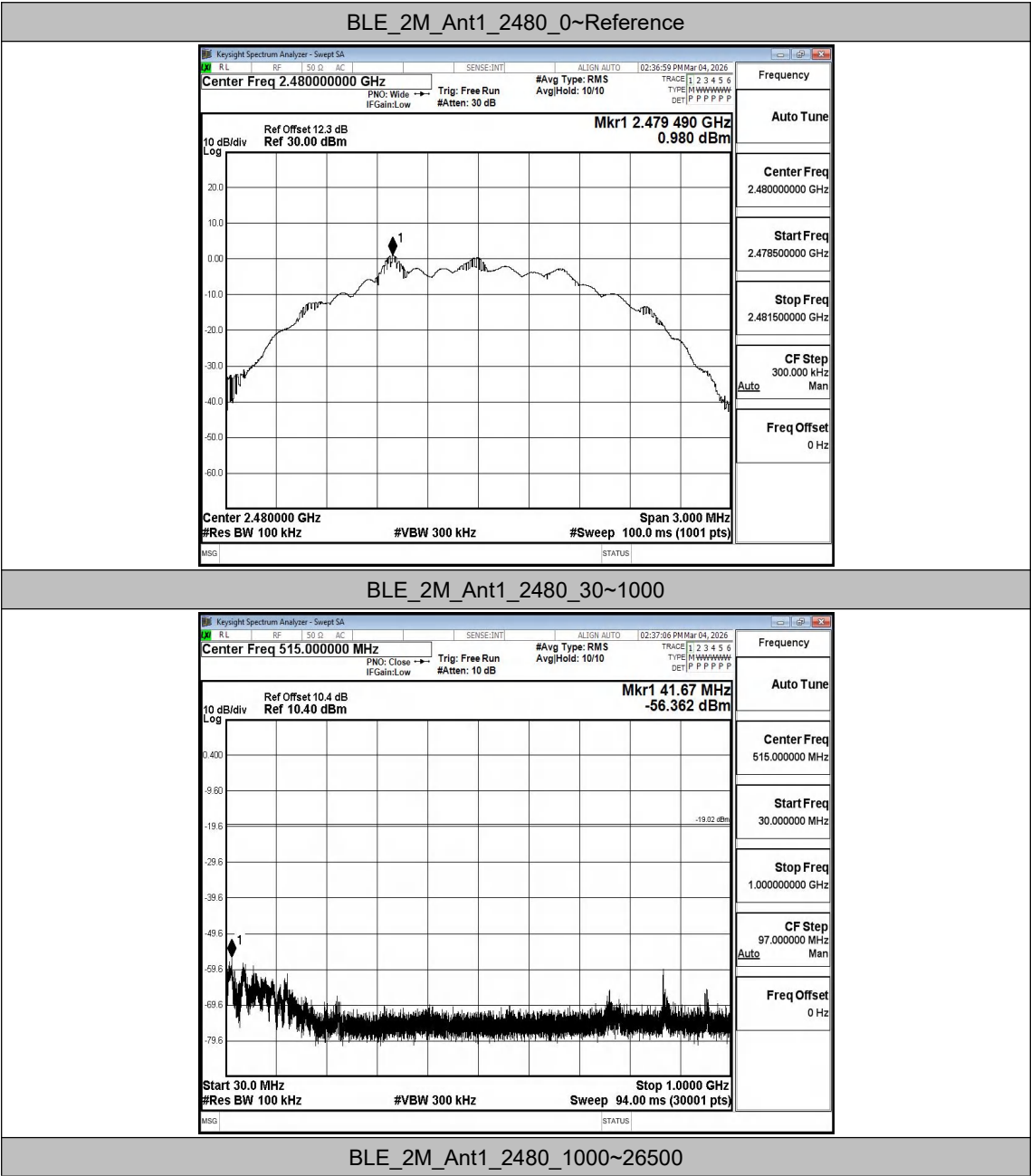










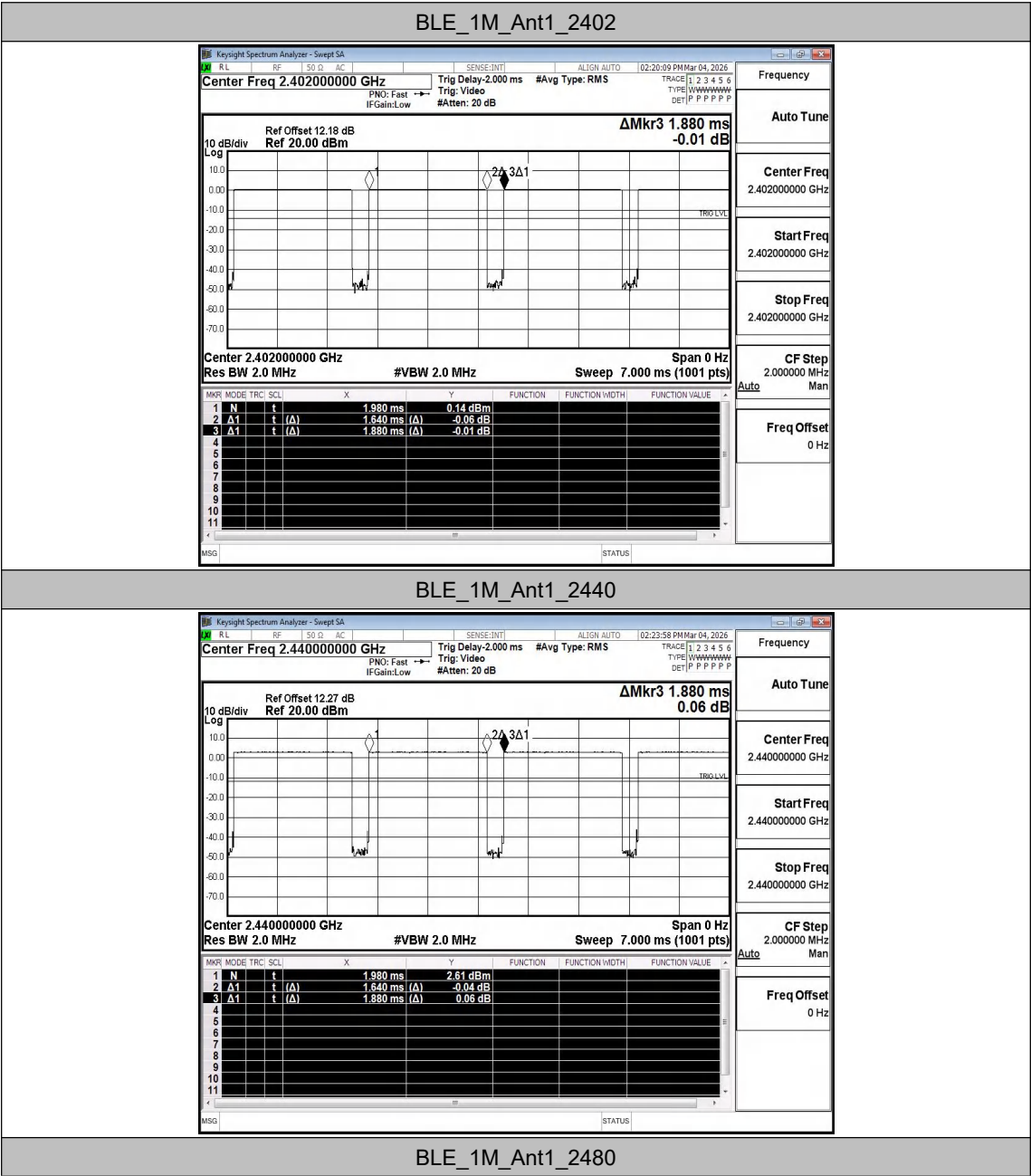


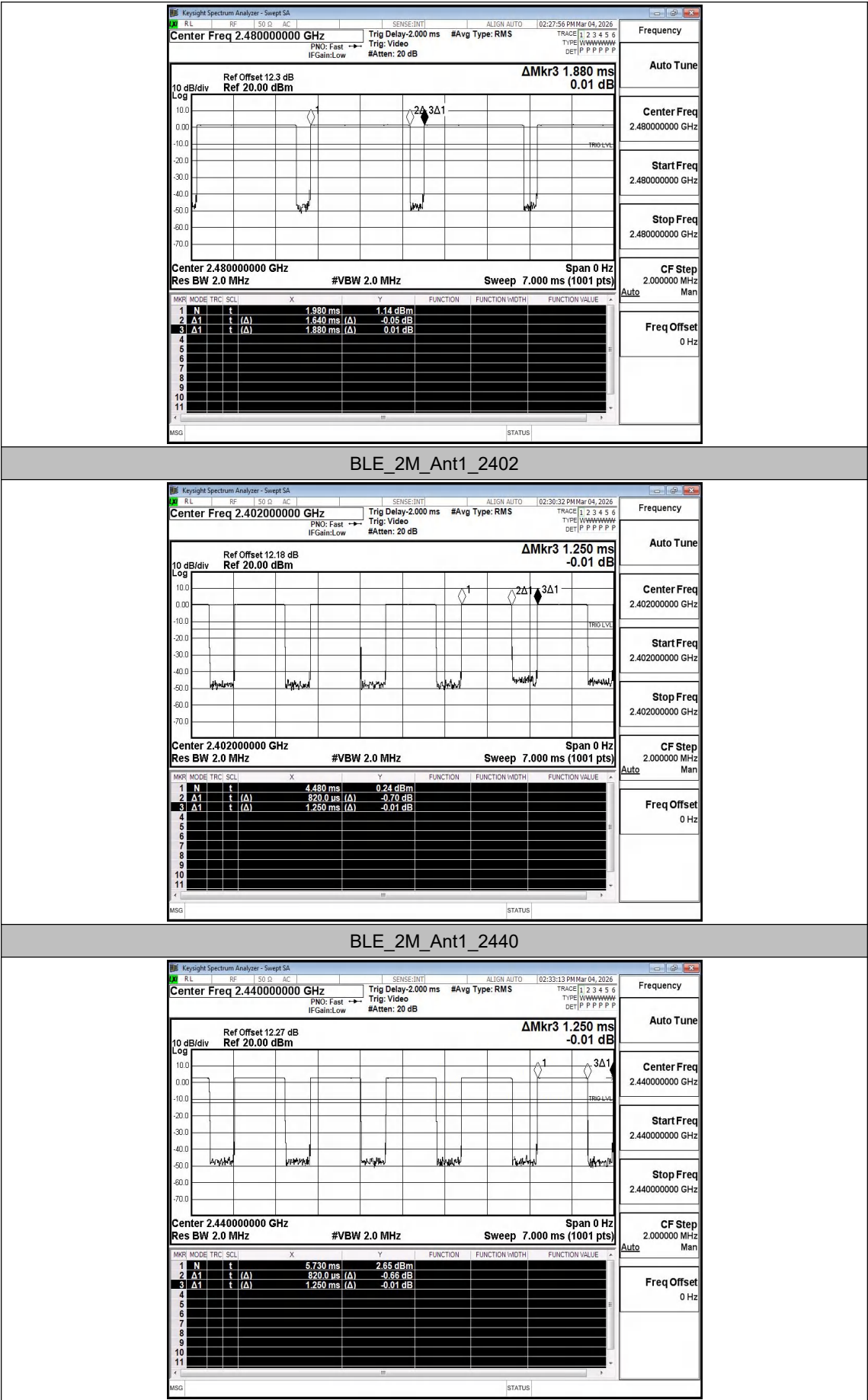
A.6 Duty Cycle

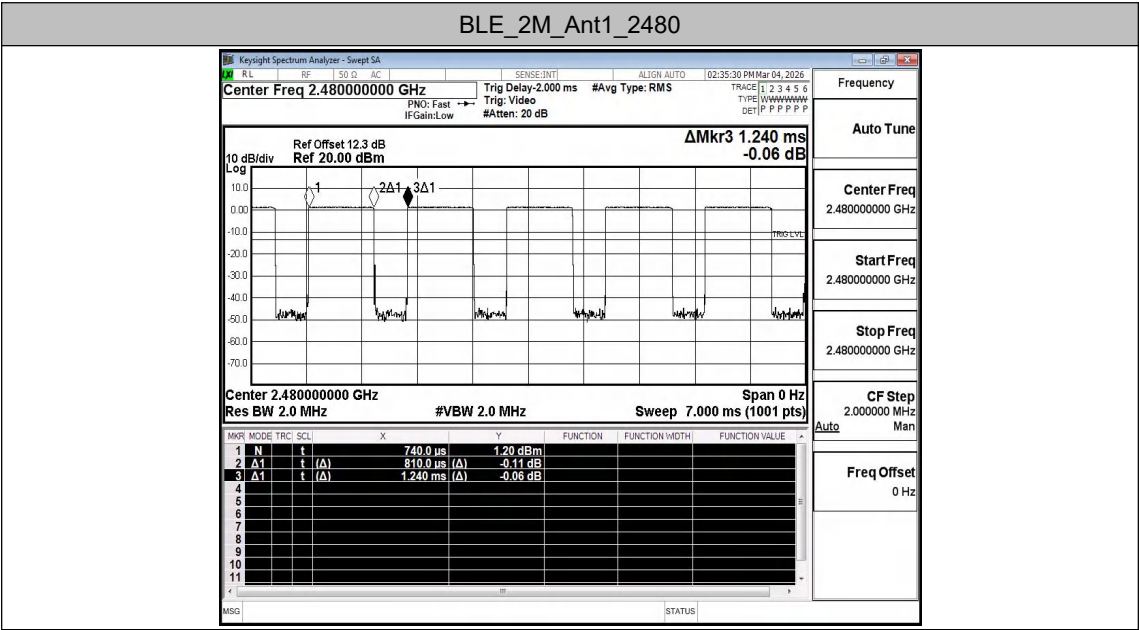
Test Result

TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	1.64	1.88	0.8723	87.23	0.59	---	---
		2440	1.64	1.88	0.8723	87.23	0.59	---	---
		2480	1.64	1.88	0.8723	87.23	0.59	---	---
BLE_2M	Ant1	2402	0.82	1.25	0.6560	65.60	1.83	---	---
		2440	0.82	1.25	0.6560	65.60	1.83	---	---
		2480	0.81	1.24	0.6532	65.32	1.85	---	---

Test Graphs







A.7 Emissions in Restricted Bands

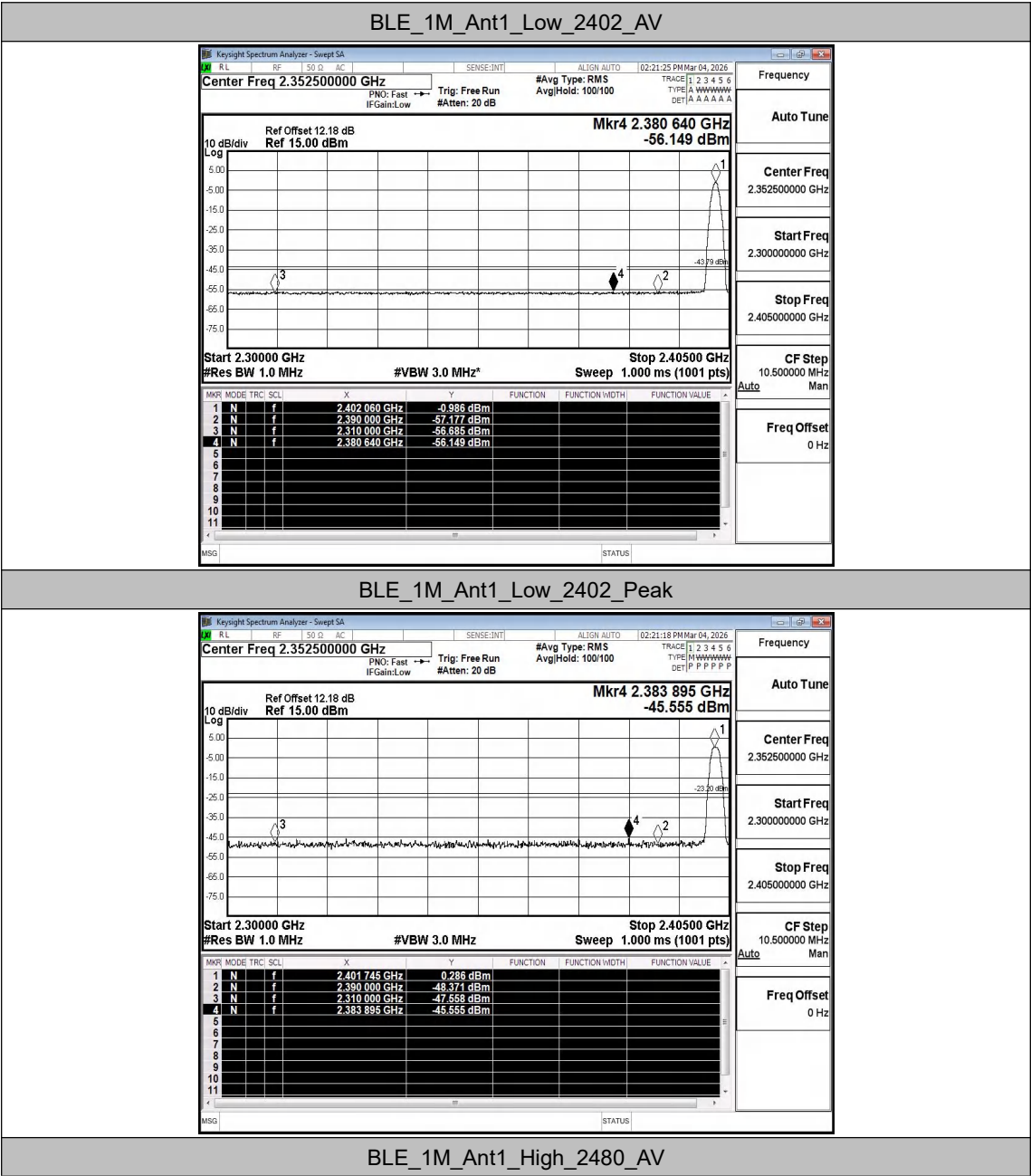
Test Result

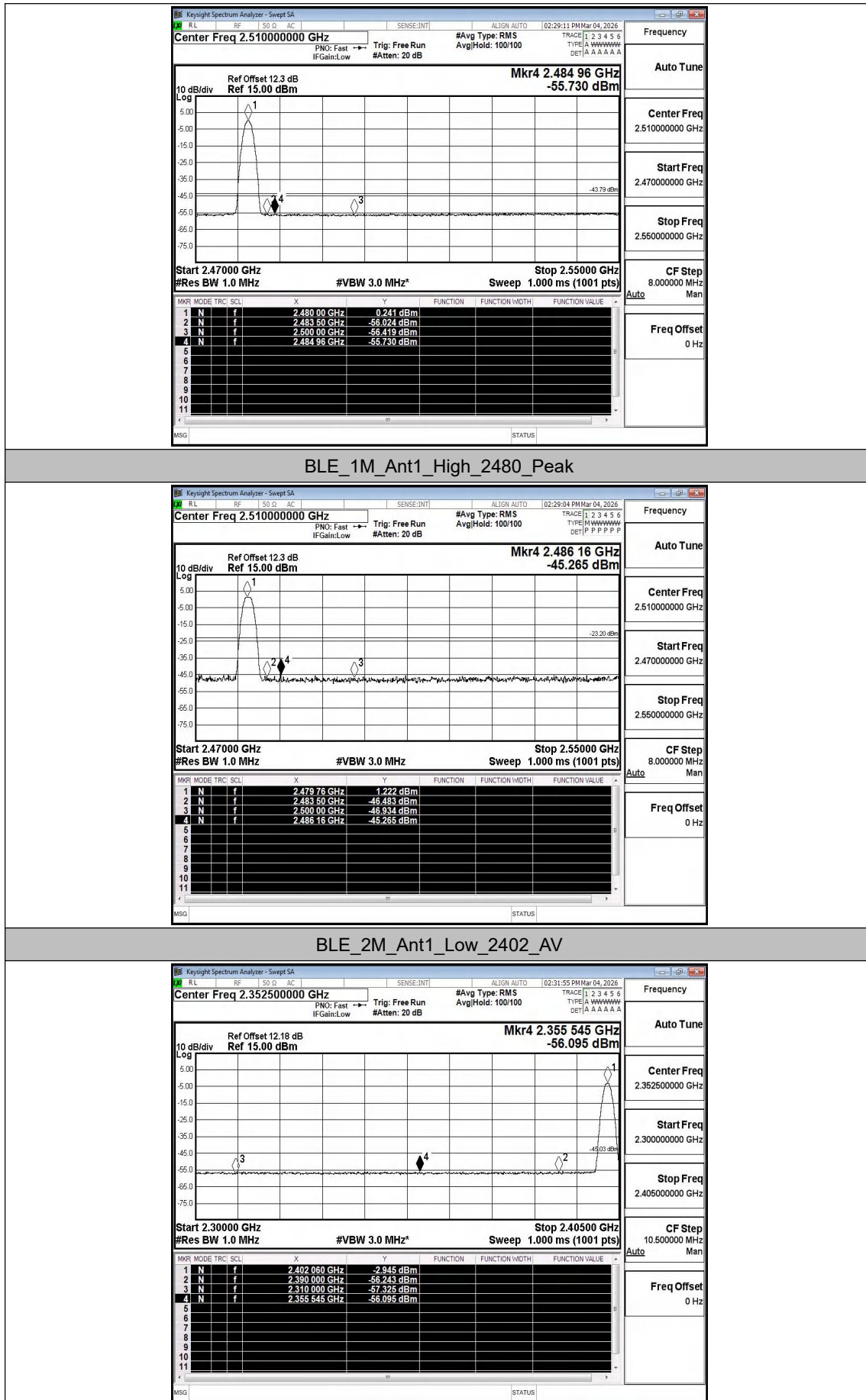
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Gain [dBi]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-56.69	≤-43.79	2.00	0.59	41.10	≤54	PASS
				AV	2380.640	-56.15	≤-43.79	2.00	0.59	41.64	≤54	PASS
				AV	2390.000	-57.18	≤-43.79	2.00	0.59	40.61	≤54	PASS
				Peak	2310.000	-47.56	≤-23.20	2.00	0.00	49.64	≤74	PASS
				Peak	2383.895	-45.56	≤-23.20	2.00	0.00	51.64	≤74	PASS
				Peak	2390.000	-48.37	≤-23.20	2.00	0.00	48.83	≤74	PASS
		High	2480	AV	2483.500	-56.02	≤-43.79	2.00	0.59	41.77	≤54	PASS
				AV	2484.960	-55.73	≤-43.79	2.00	0.59	42.06	≤54	PASS
				AV	2500.000	-56.42	≤-43.79	2.00	0.59	41.37	≤54	PASS
				Peak	2483.500	-46.48	≤-23.20	2.00	0.00	50.72	≤74	PASS
				Peak	2486.160	-45.27	≤-23.20	2.00	0.00	51.93	≤74	PASS
				Peak	2500.000	-46.93	≤-23.20	2.00	0.00	50.27	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-57.33	≤-45.03	2.00	1.83	41.70	≤54	PASS
				AV	2355.545	-56.09	≤-45.03	2.00	1.83	42.94	≤54	PASS
				AV	2390.000	-56.24	≤-45.03	2.00	1.83	42.79	≤54	PASS
				Peak	2310.000	-49.91	≤-23.20	2.00	0.00	47.29	≤74	PASS
				Peak	2372.765	-46.31	≤-23.20	2.00	0.00	50.89	≤74	PASS
				Peak	2390.000	-49.67	≤-23.20	2.00	0.00	47.53	≤74	PASS
		High	2480	AV	2483.500	-56.36	≤-45.05	2.00	1.85	42.69	≤54	PASS
				AV	2499.840	-55.61	≤-45.05	2.00	1.85	43.44	≤54	PASS
				AV	2500.000	-56.98	≤-45.05	2.00	1.85	42.07	≤54	PASS
				Peak	2483.500	-48.39	≤-23.20	2.00	0.00	48.81	≤74	PASS
				Peak	2488.320	-45.14	≤-23.20	2.00	0.00	52.06	≤74	PASS
				Peak	2500.000	-49.28	≤-23.20	2.00	0.00	47.92	≤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





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