

Appendix B

RF Test Data for BT LE (Conducted Measurement)

Product Name: Portable Speaker

Test Model: Sonic Boom Ultra

Environmental Conditions

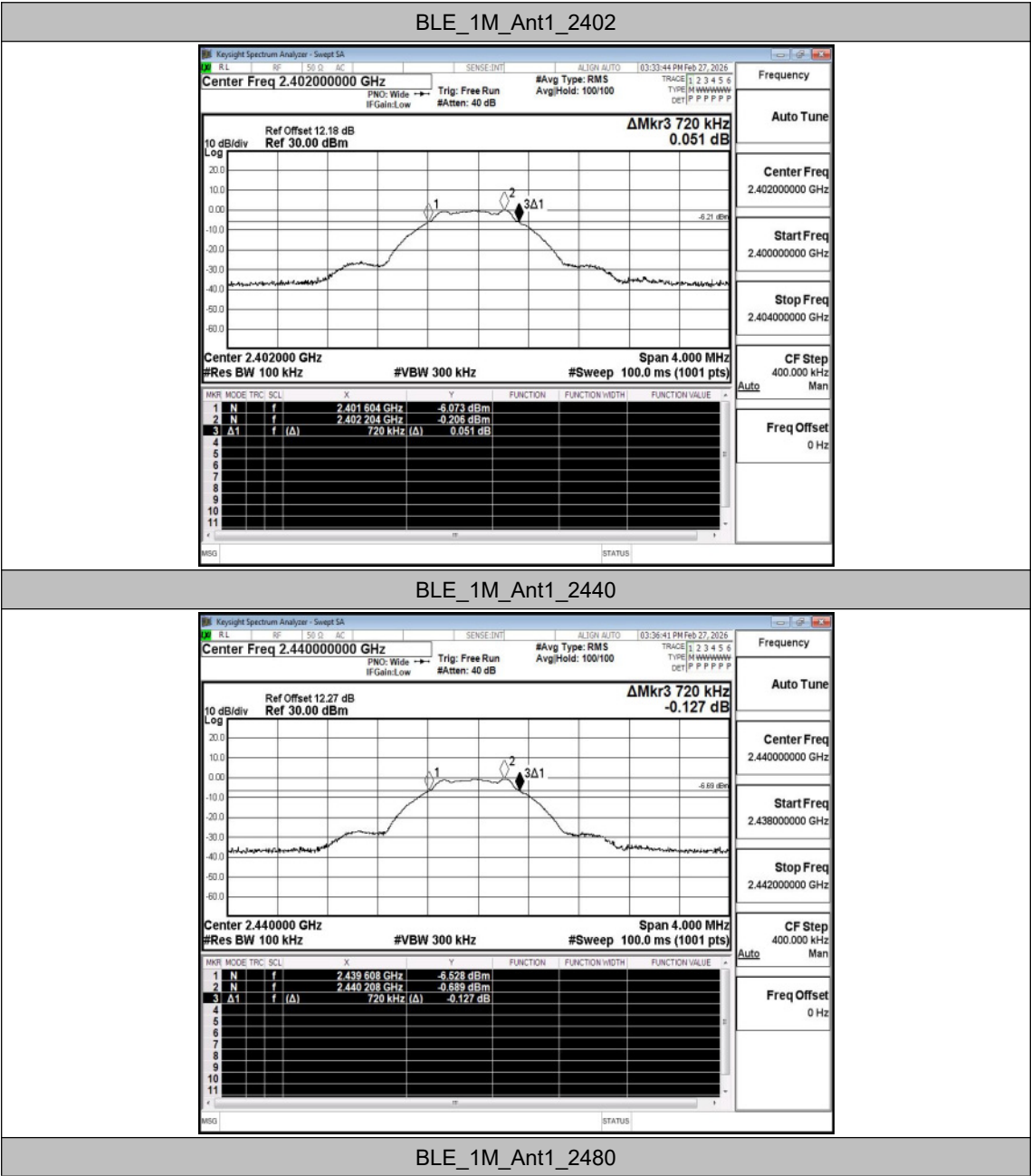
Temperature:	24.2°C
Relative Humidity:	53.8%
ATM Pressure:	100.0 kPa
Test Engineer:	Yan Chen
Supervised by:	Fengliu Tang

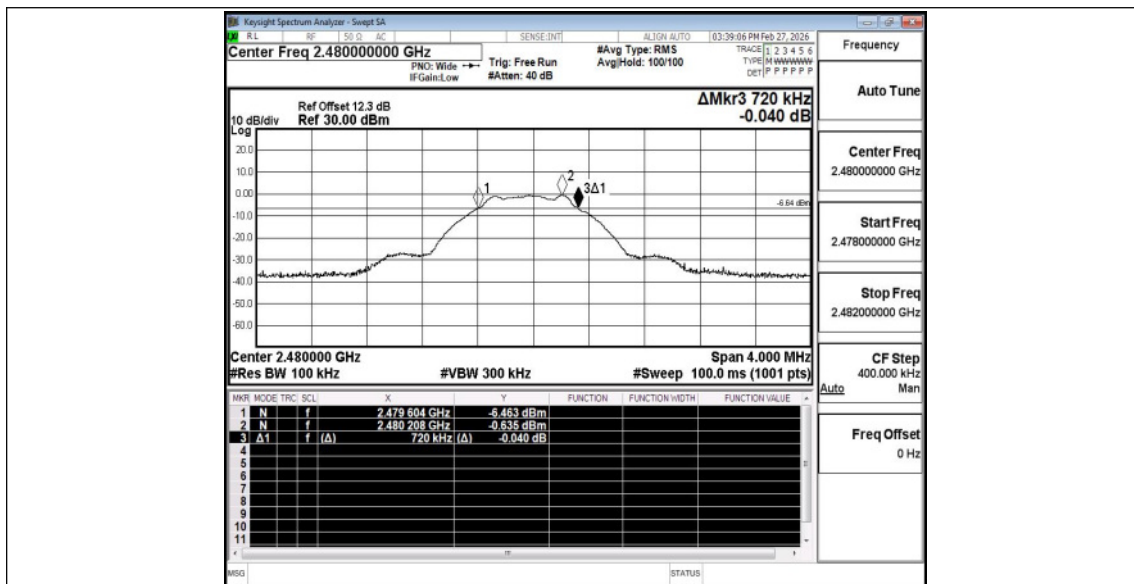
B.1 DTS Bandwidth

Test Result

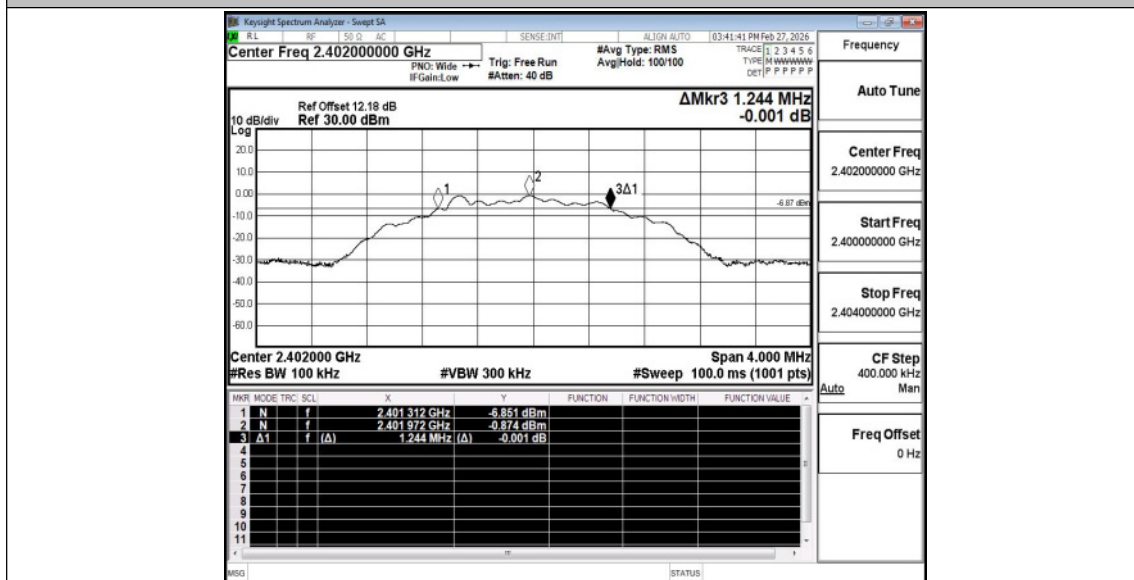
TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.720	2401.604	2402.324	0.5	PASS
		2440	0.720	2439.608	2440.328	0.5	PASS
		2480	0.720	2479.604	2480.324	0.5	PASS
BLE_2M	Ant1	2402	1.244	2401.312	2402.556	0.5	PASS
		2440	1.244	2439.316	2440.560	0.5	PASS
		2480	1.240	2479.312	2480.552	0.5	PASS

Test Graphs

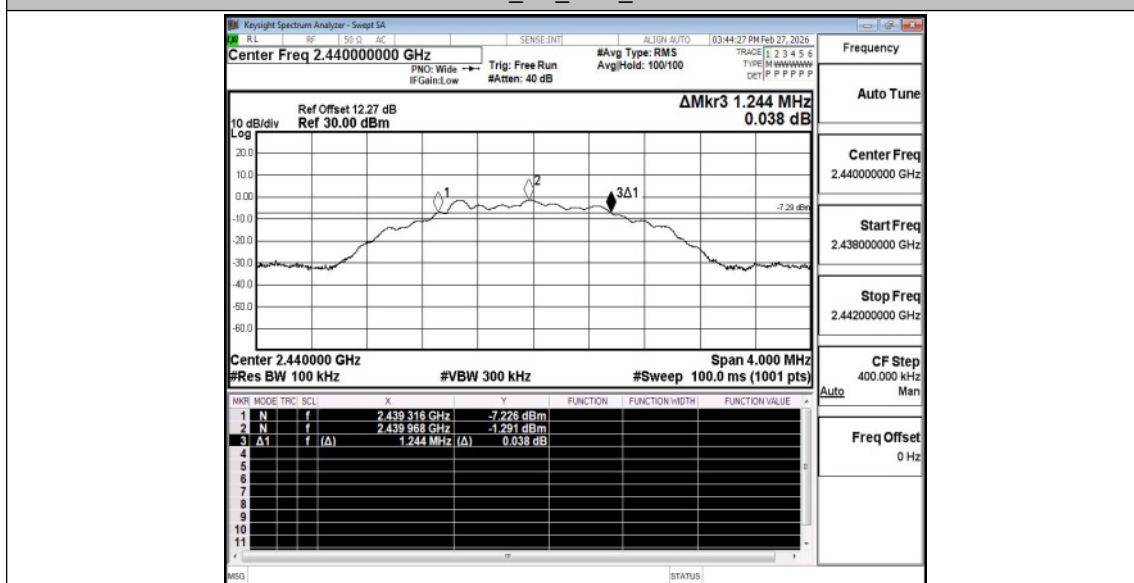




BLE_2M_Ant1_2402



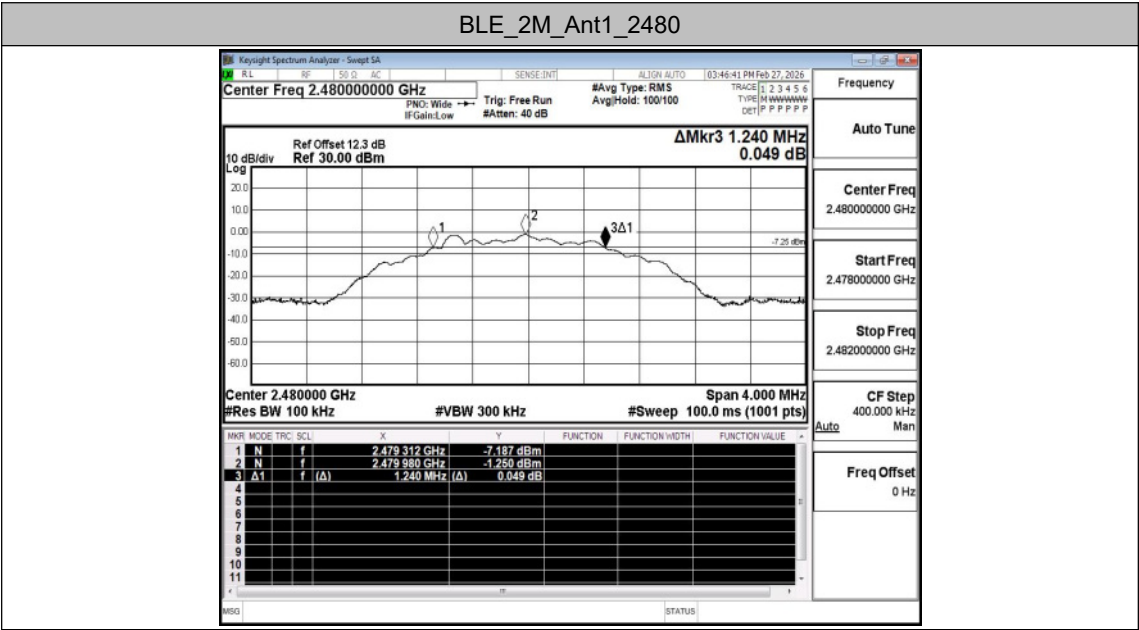
BLE_2M_Ant1_2440



Guangzhou LCS Compliance Testing Laboratory Ltd.

Add: No.44-1, Qianfeng North Road, Shiqi, Panyu District, Guangzhou, Guangdong, China

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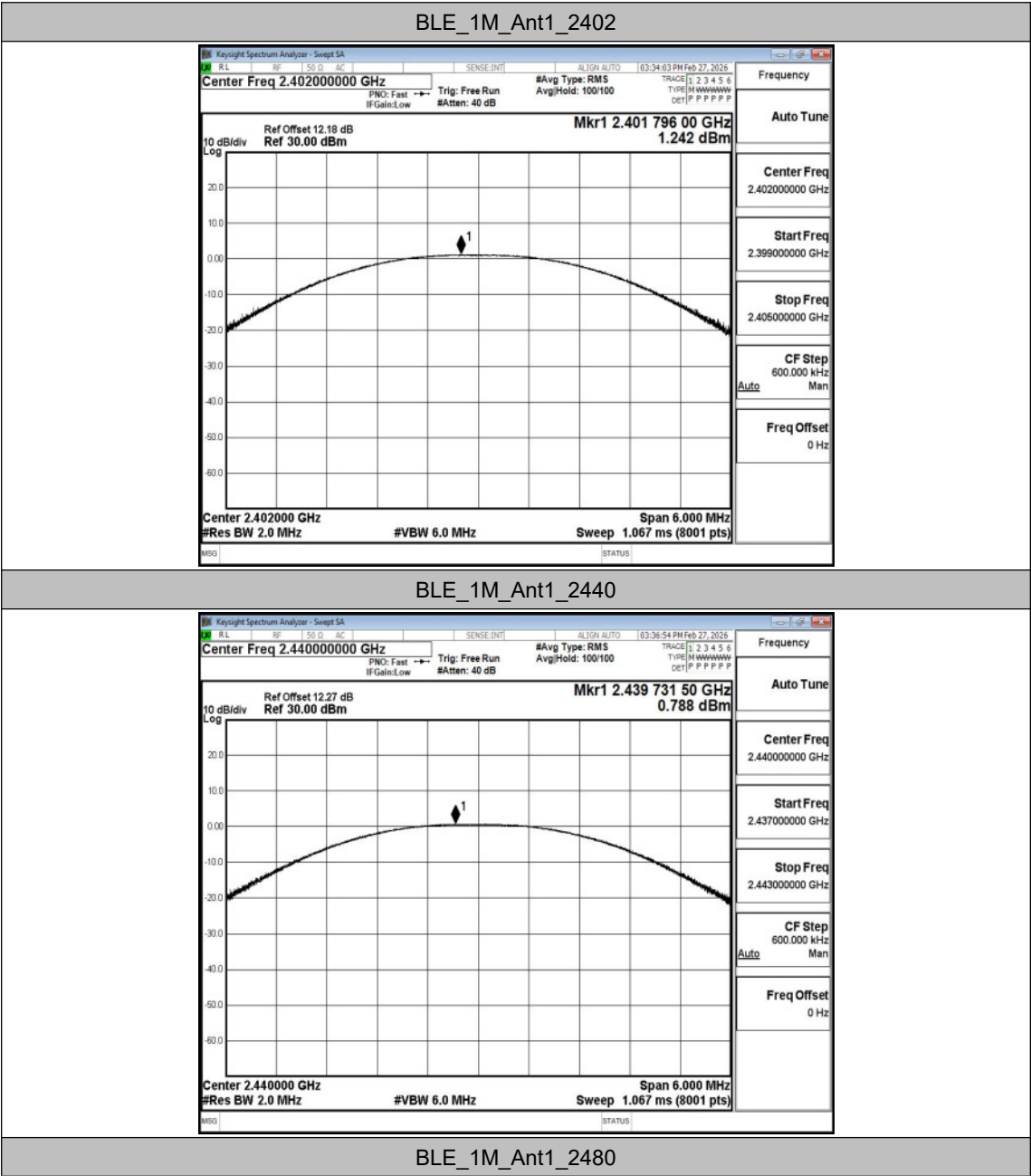


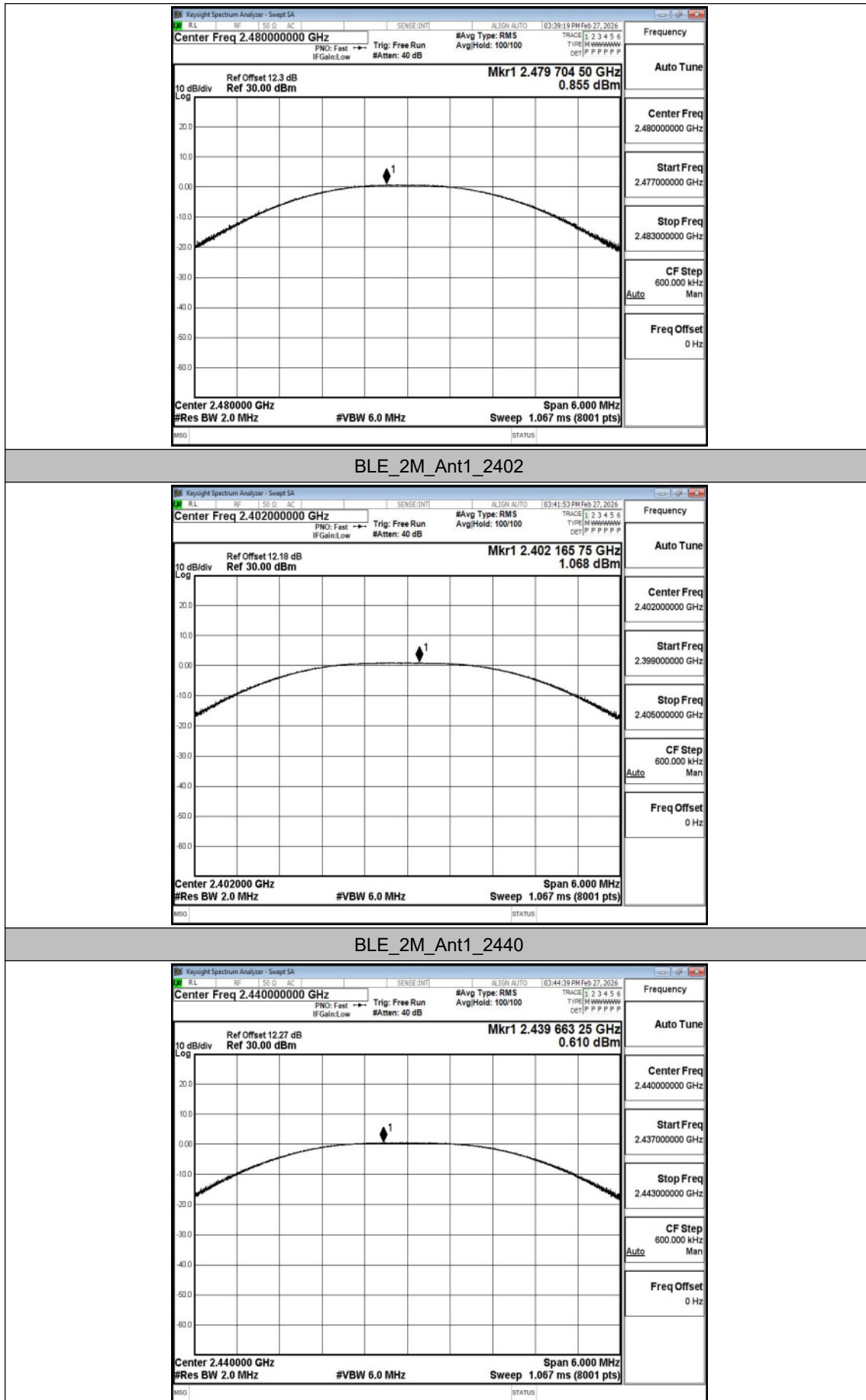
B.2 Maximum Peakconducted output power

Test Result Peak

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	1.24	≤30	PASS
		2440	0.79	≤30	PASS
		2480	0.86	≤30	PASS
BLE_2M	Ant1	2402	1.07	≤30	PASS
		2440	0.61	≤30	PASS
		2480	0.71	≤30	PASS

Test Graphs Peak

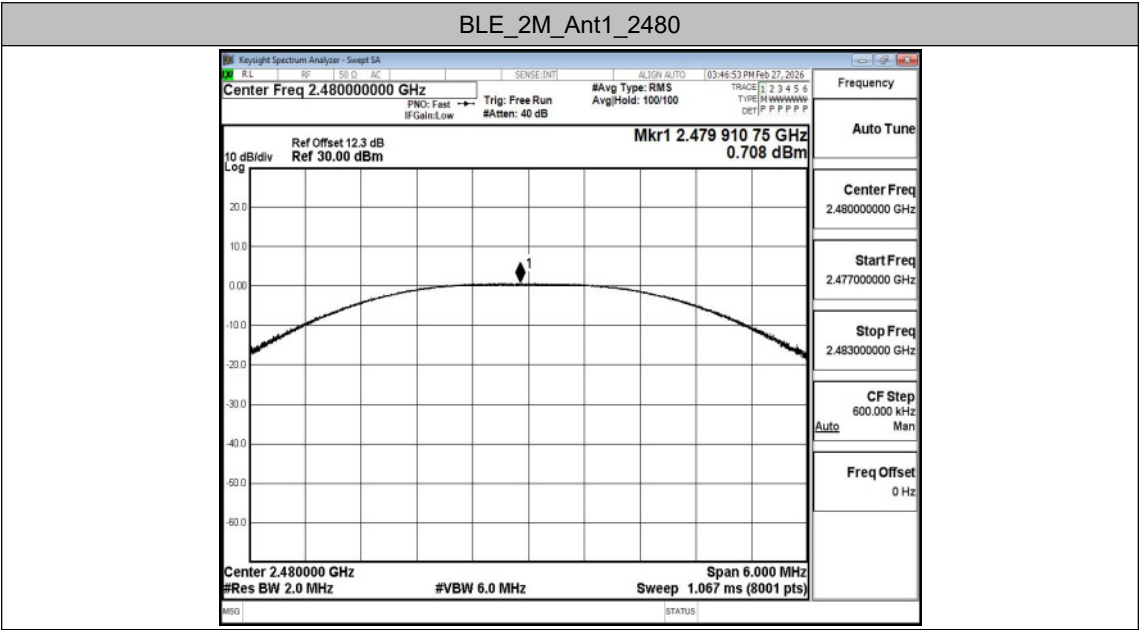




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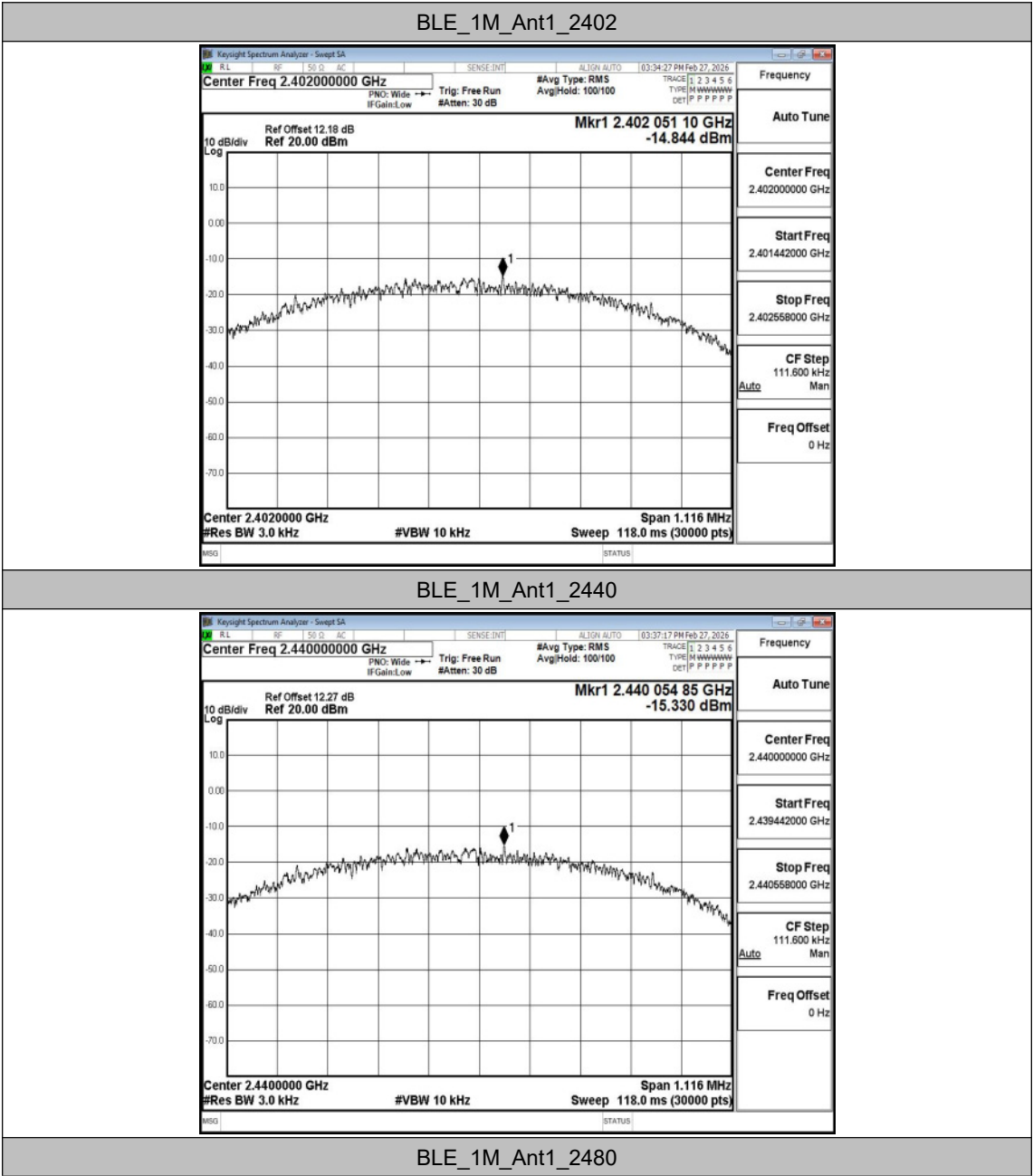


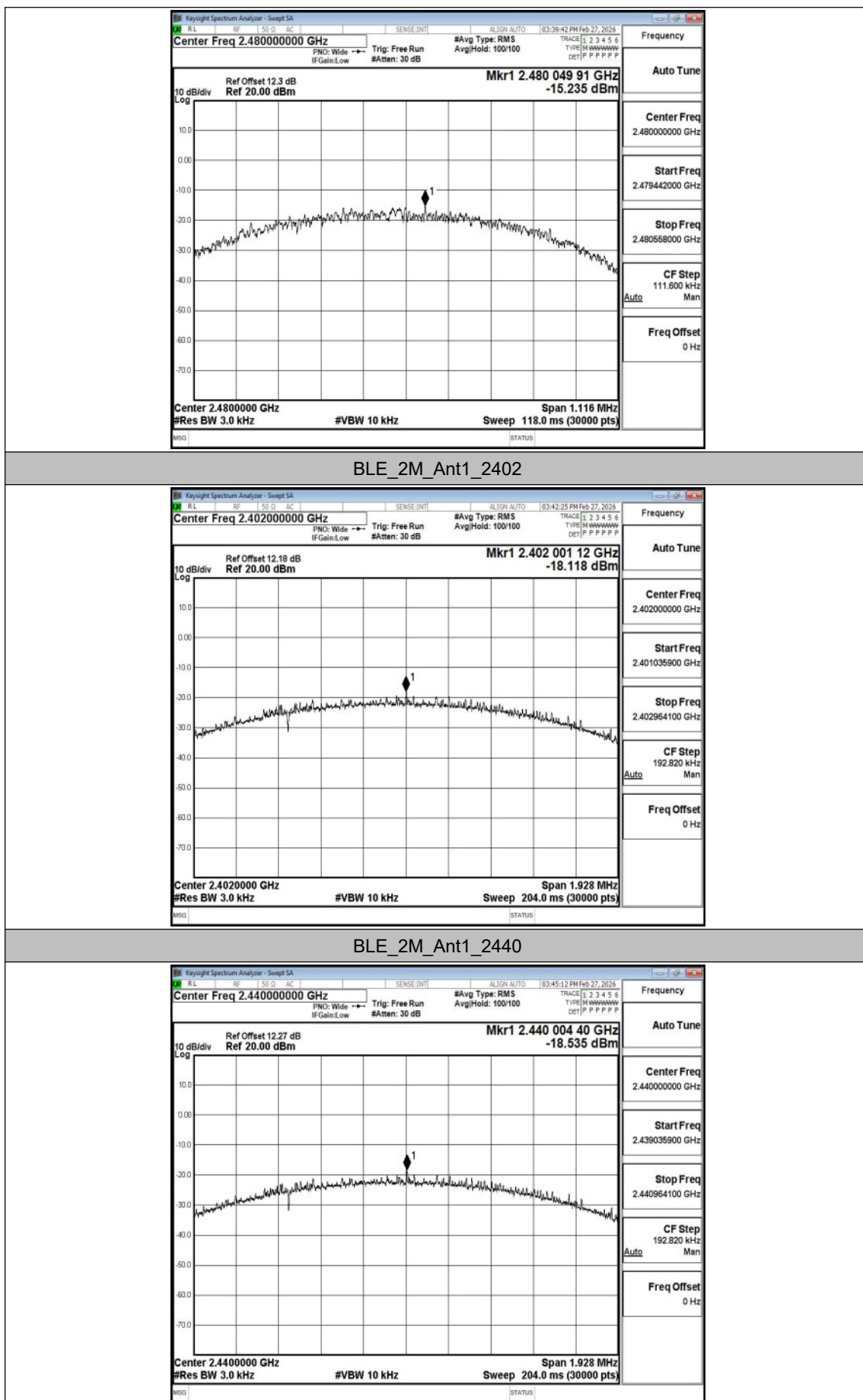
B.3 Maximum power spectral density

Test Result

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.84	≤8.00	PASS
		2440	-15.33	≤8.00	PASS
		2480	-15.24	≤8.00	PASS
BLE_2M	Ant1	2402	-18.12	≤8.00	PASS
		2440	-18.54	≤8.00	PASS
		2480	-18.43	≤8.00	PASS

Test Graphs

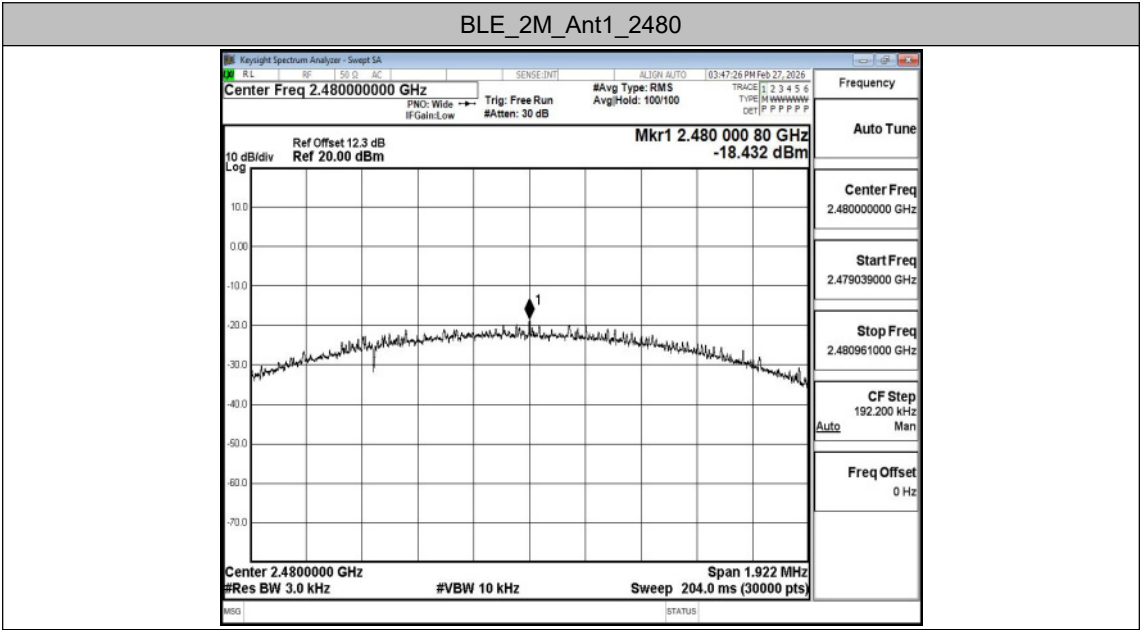




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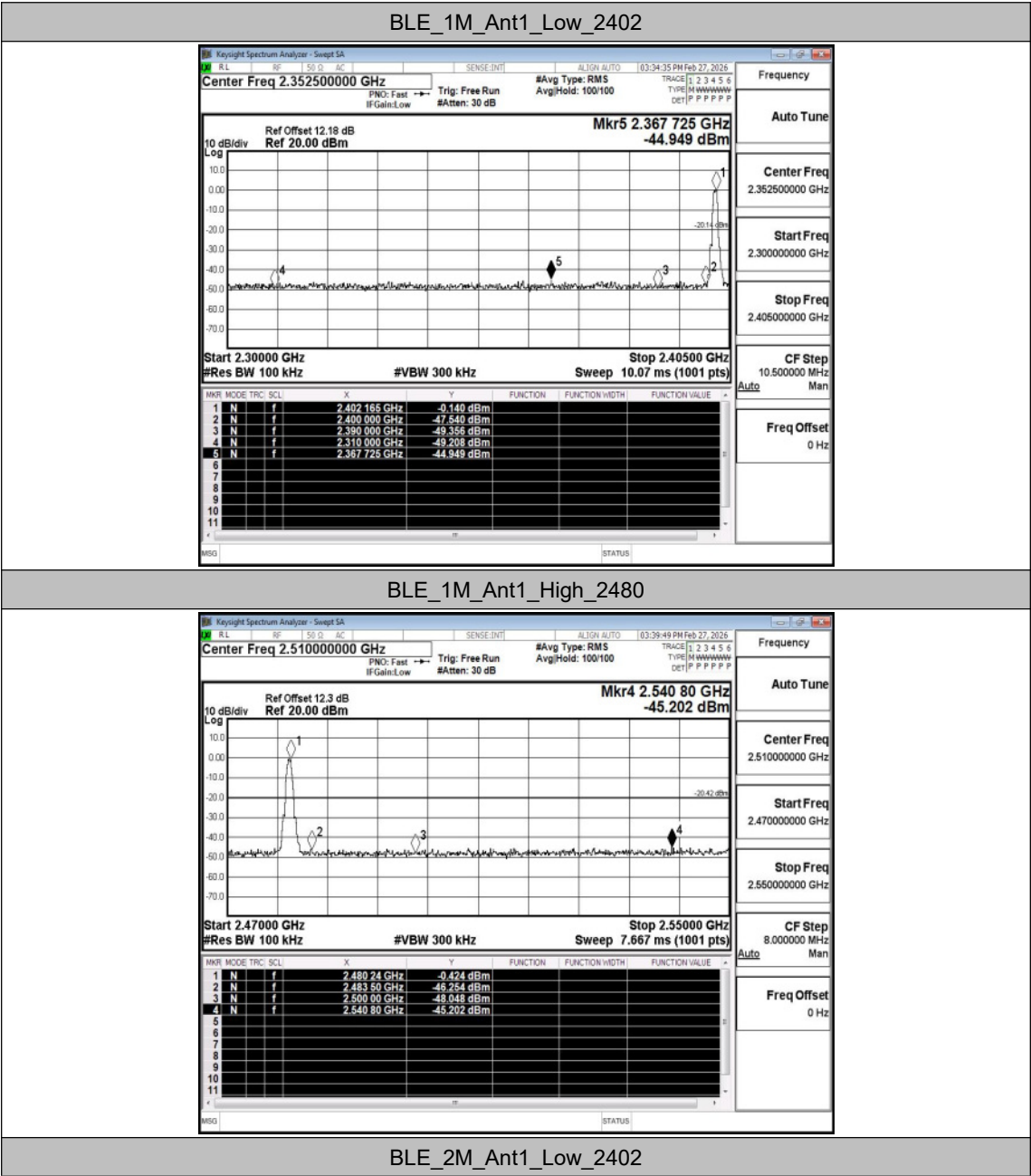


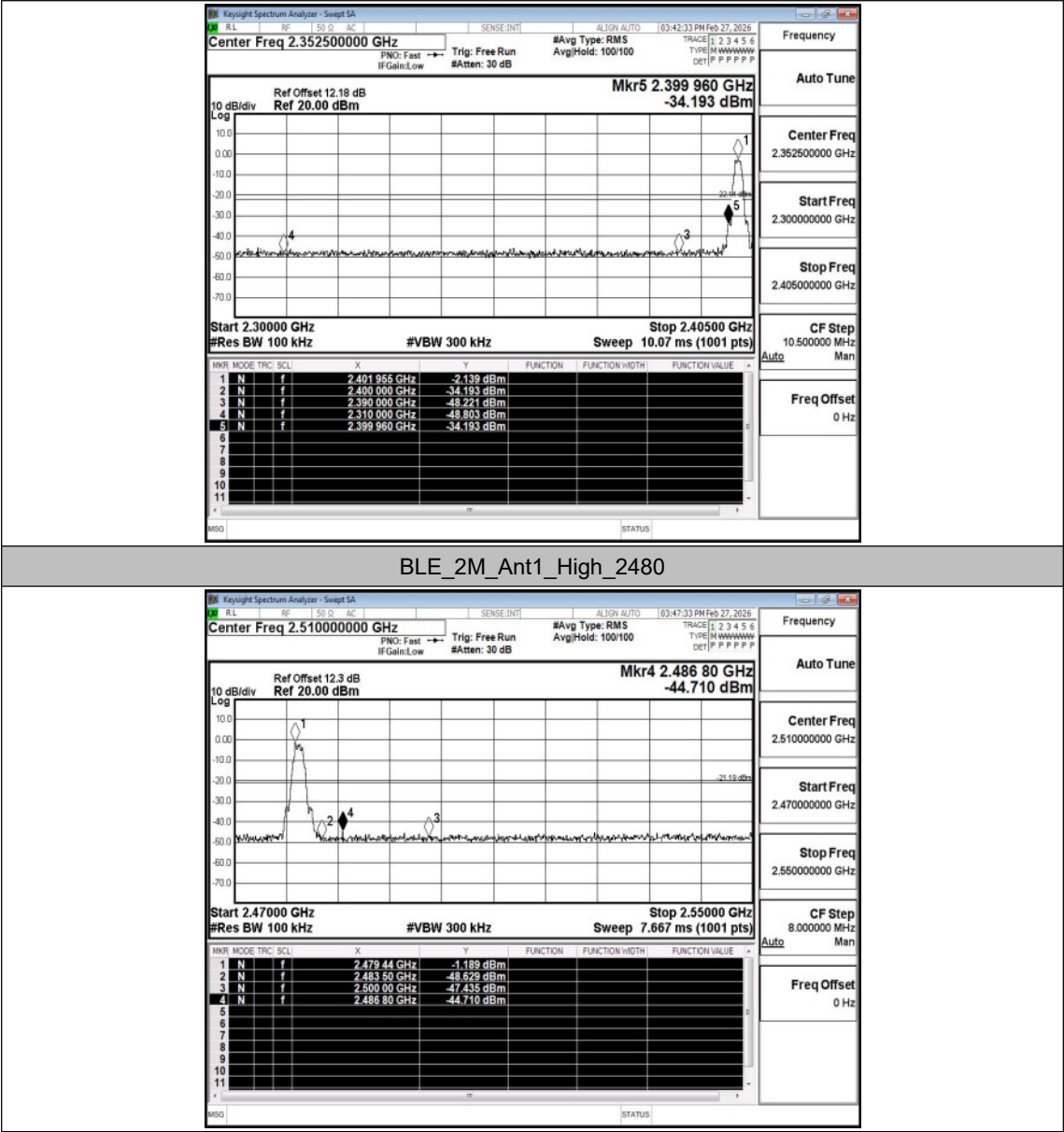
B.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.14	-44.95	≤-20.14	PASS
		High	2480	-0.42	-45.2	≤-20.42	PASS
BLE_2M	Ant1	Low	2402	-2.14	-34.19	≤-22.14	PASS
		High	2480	-1.19	-44.71	≤-21.19	PASS

Test Graphs

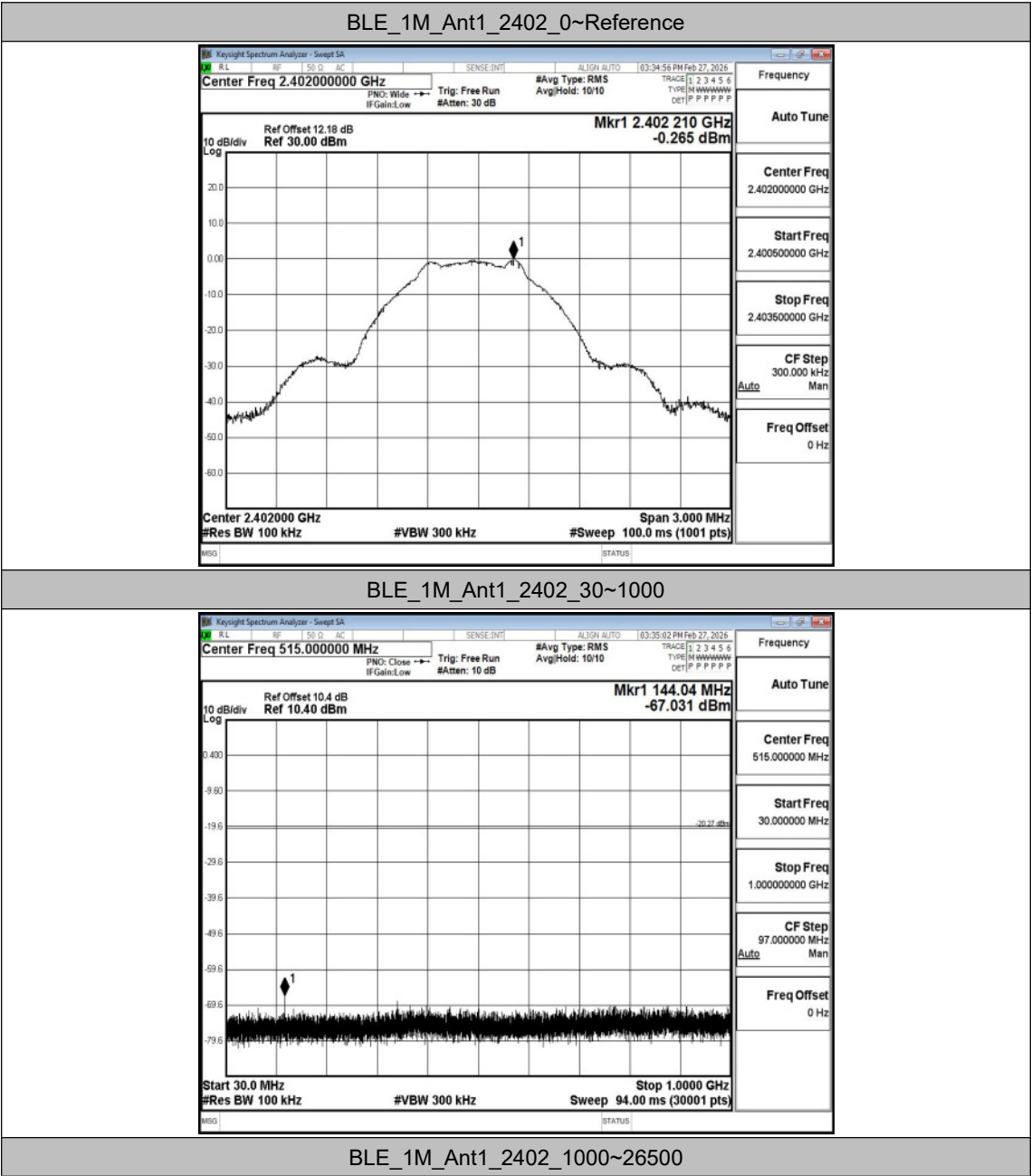


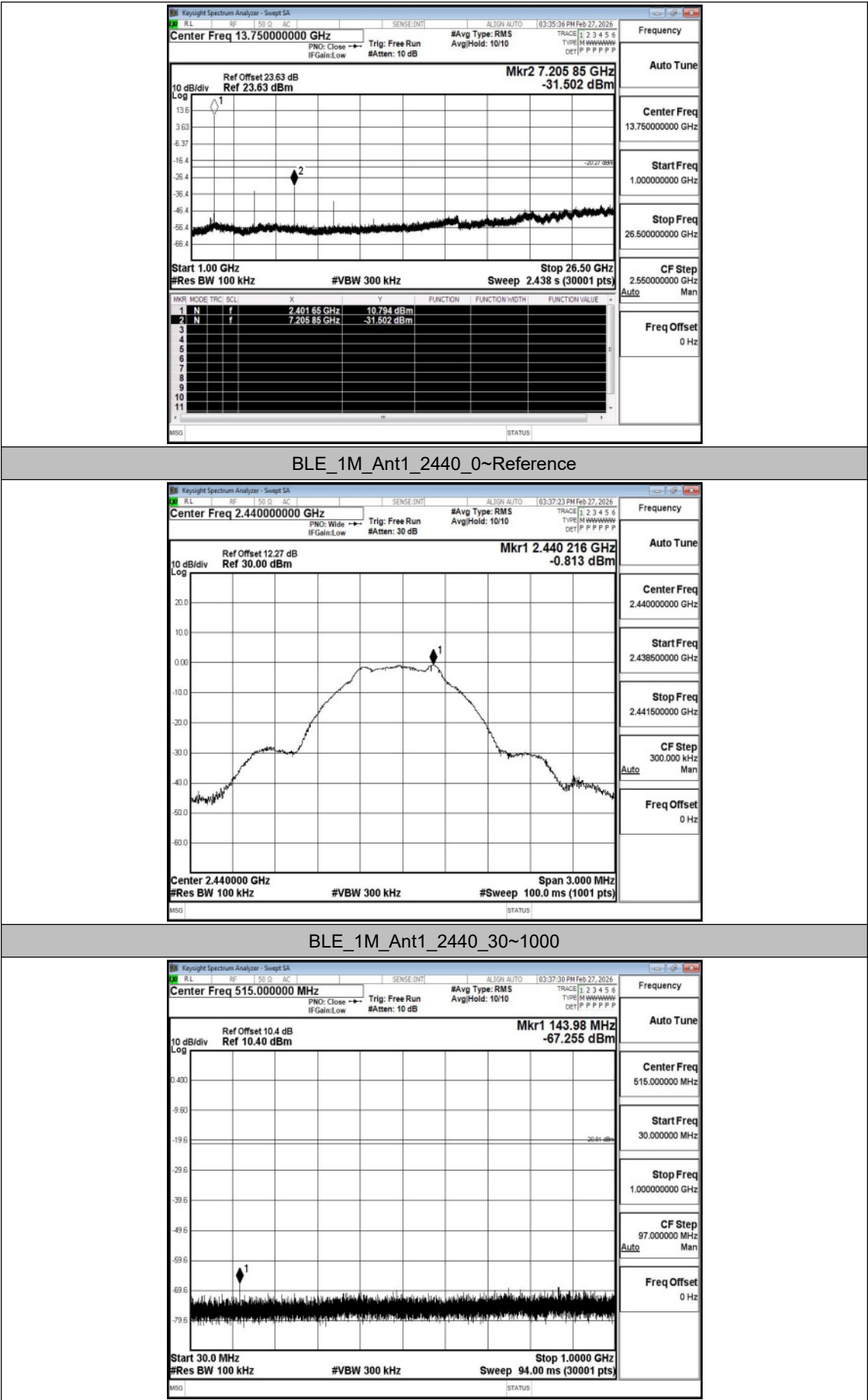


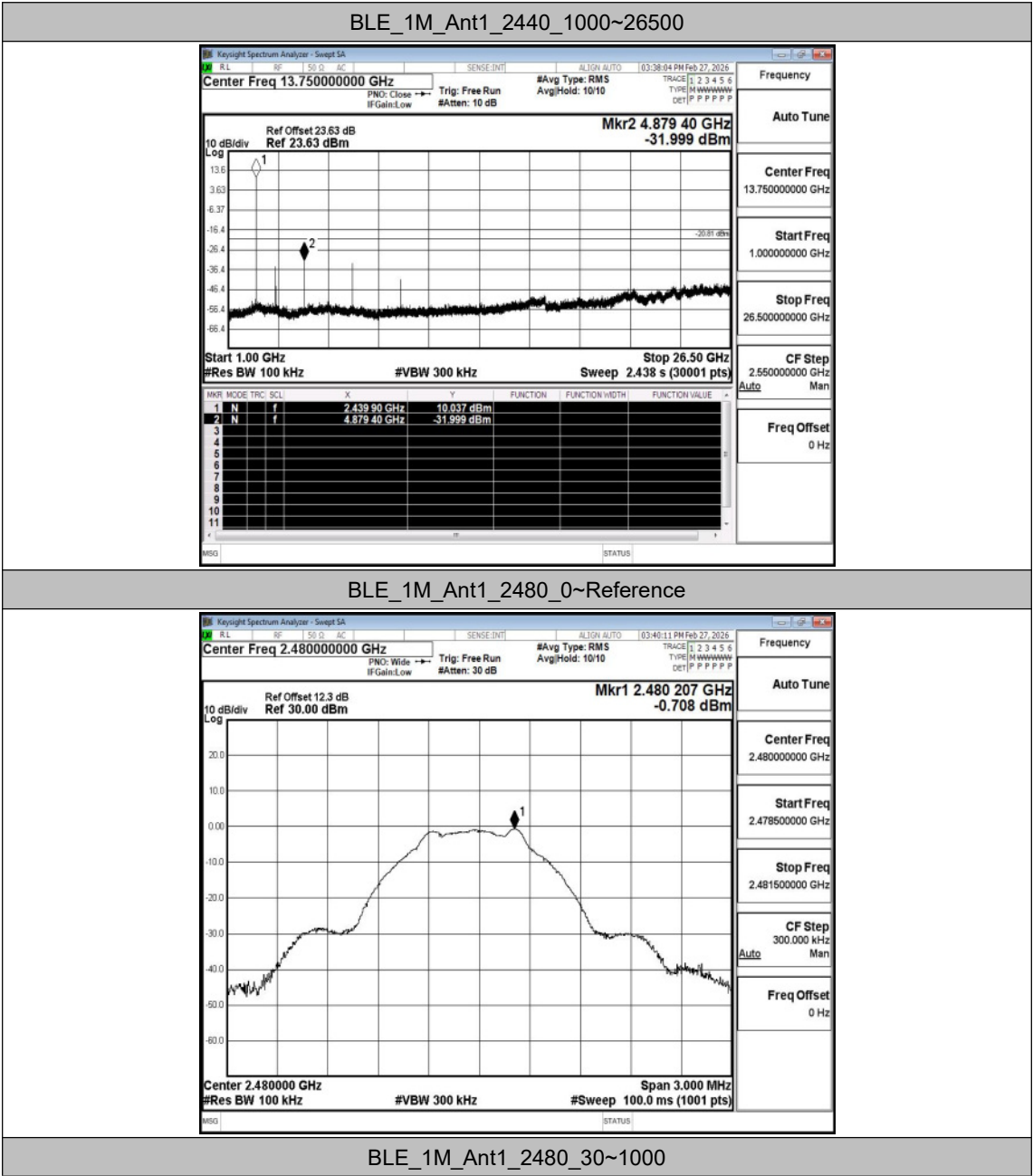
B.5 Conducted Spurious Emission**Test Result**

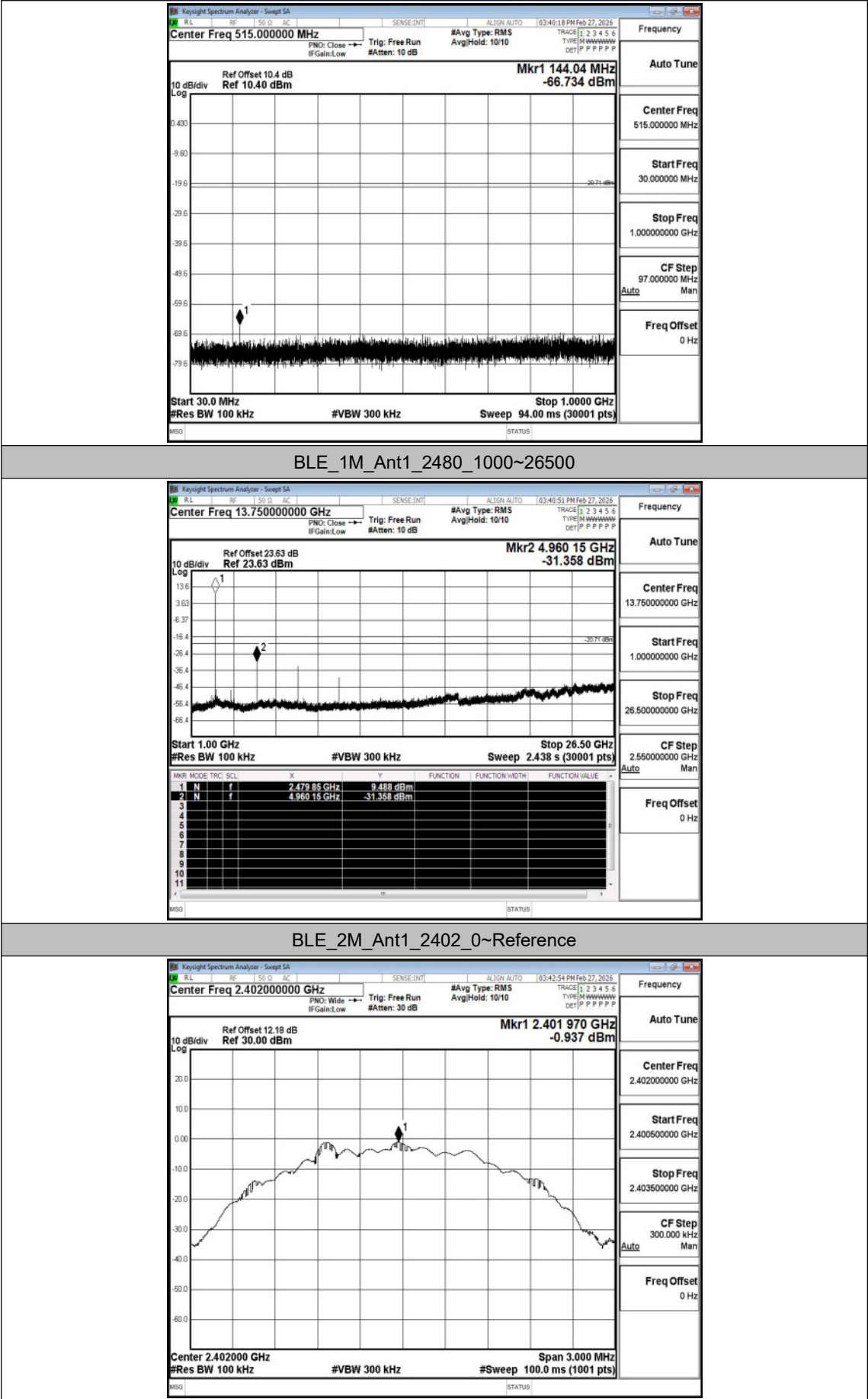
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-0.27	-0.27	---	PASS
			30~1000	-0.27	-67.03	≤-20.27	PASS
			1000~26500	-0.27	-31.5	≤-20.27	PASS
		2440	Reference	-0.81	-0.81	---	PASS
			30~1000	-0.81	-67.26	≤-20.81	PASS
			1000~26500	-0.81	-32	≤-20.81	PASS
		2480	Reference	-0.71	-0.71	---	PASS
			30~1000	-0.71	-66.73	≤-20.71	PASS
			1000~26500	-0.71	-31.36	≤-20.71	PASS
BLE_2M	Ant1	2402	Reference	-0.94	-0.94	---	PASS
			30~1000	-0.94	-51.6	≤-20.94	PASS
			1000~26500	-0.94	-34.34	≤-20.94	PASS
		2440	Reference	-1.44	-1.44	---	PASS
			30~1000	-1.44	-54.72	≤-21.44	PASS
			1000~26500	-1.44	-33.48	≤-21.44	PASS
		2480	Reference	-1.32	-1.32	---	PASS
			30~1000	-1.32	-43.2	≤-21.32	PASS
			1000~26500	-1.32	-33	≤-21.32	PASS

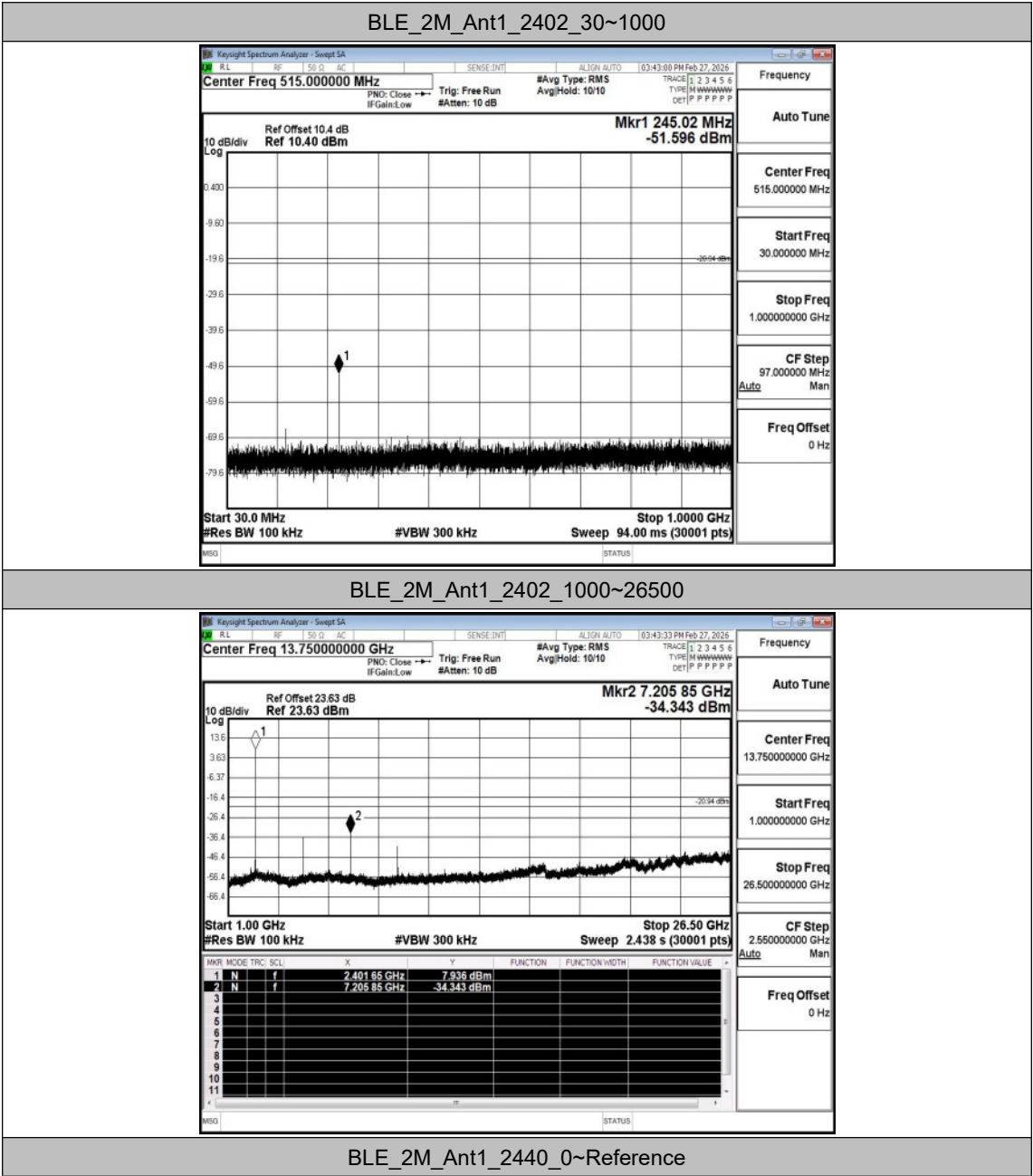
Test Graphs

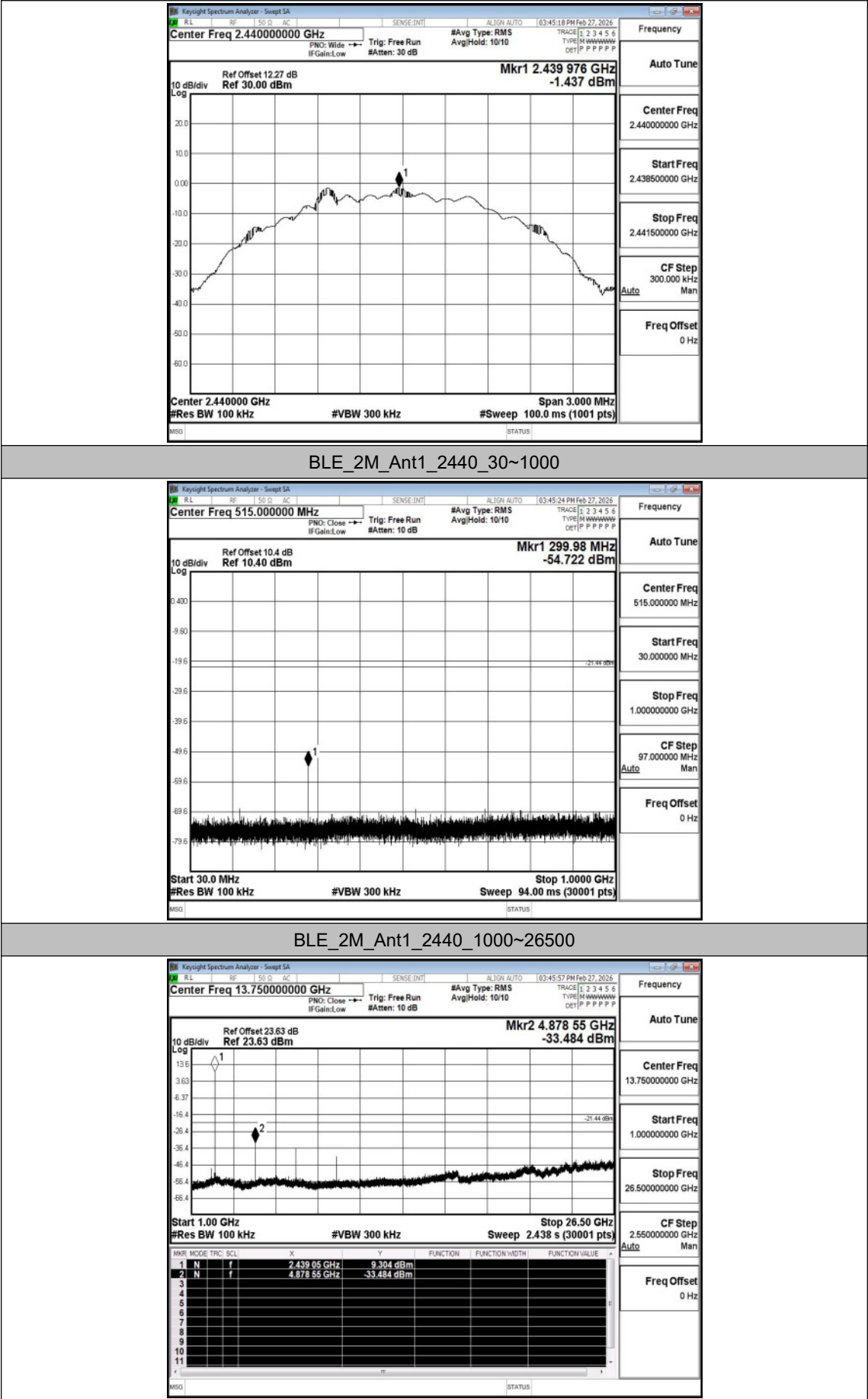


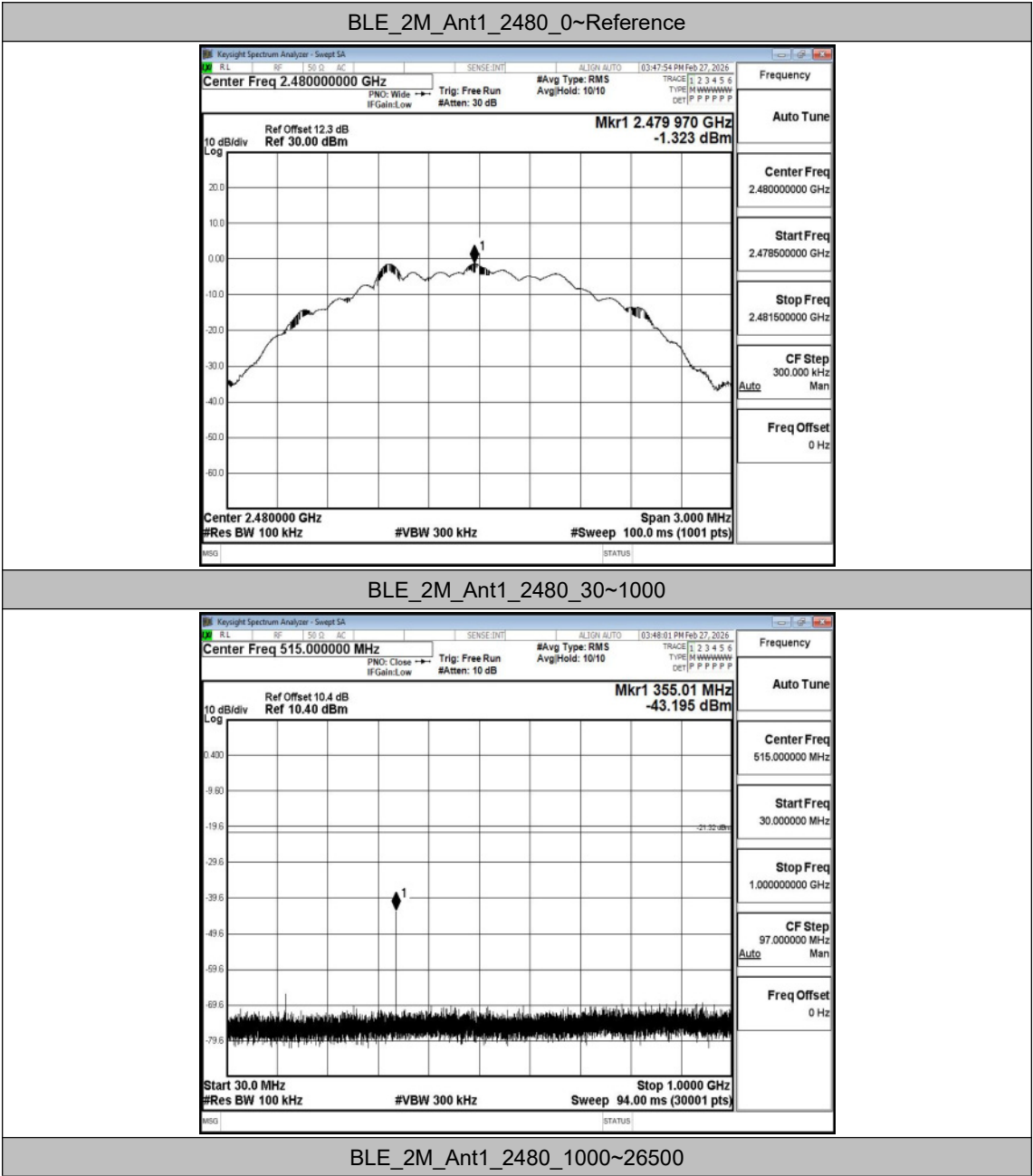


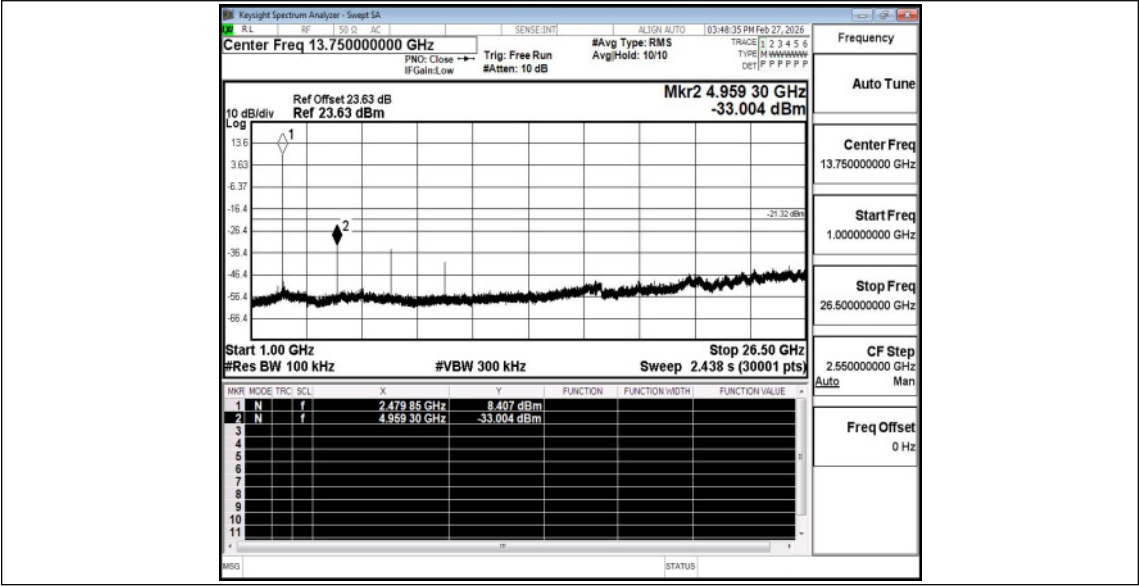










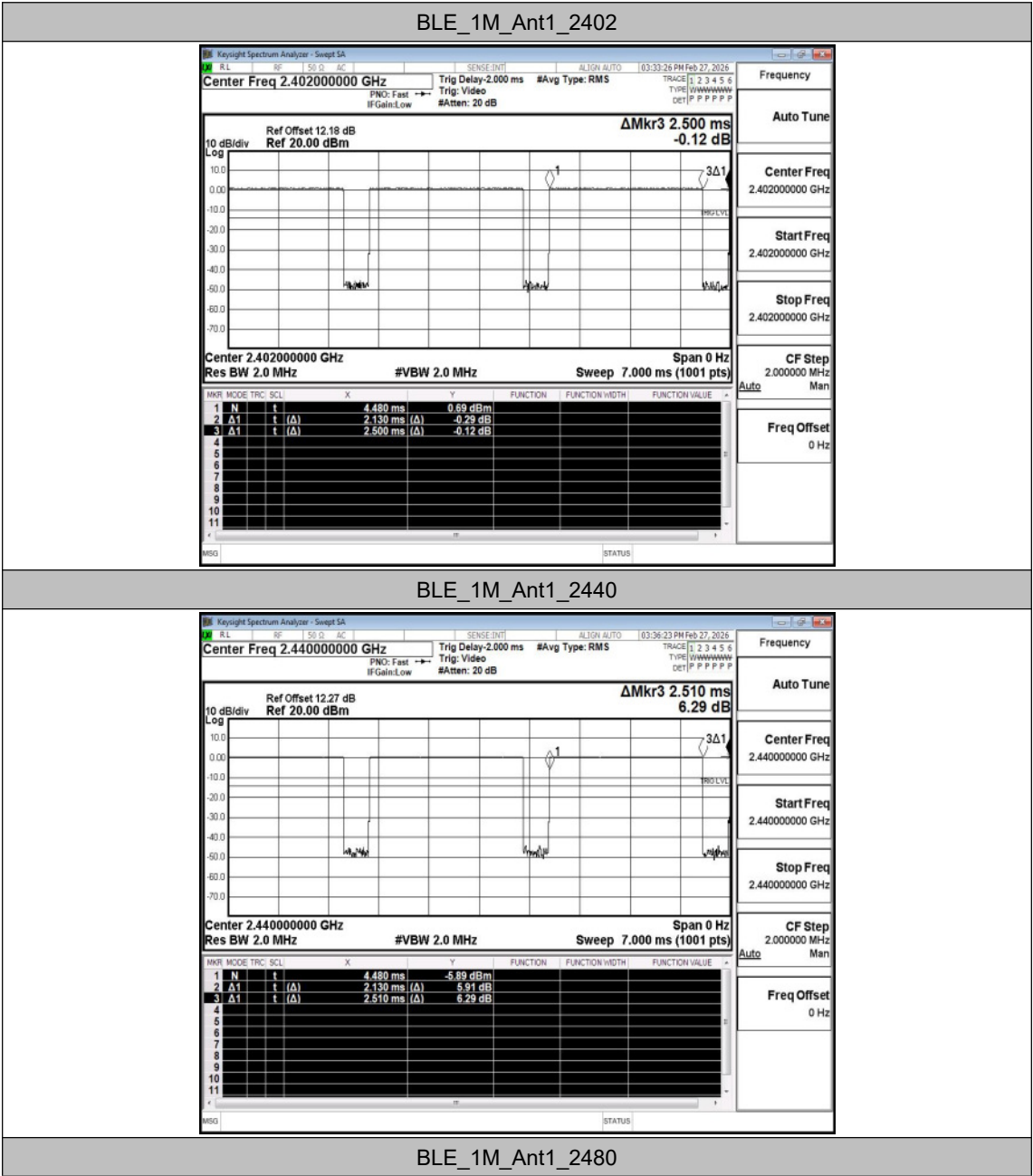


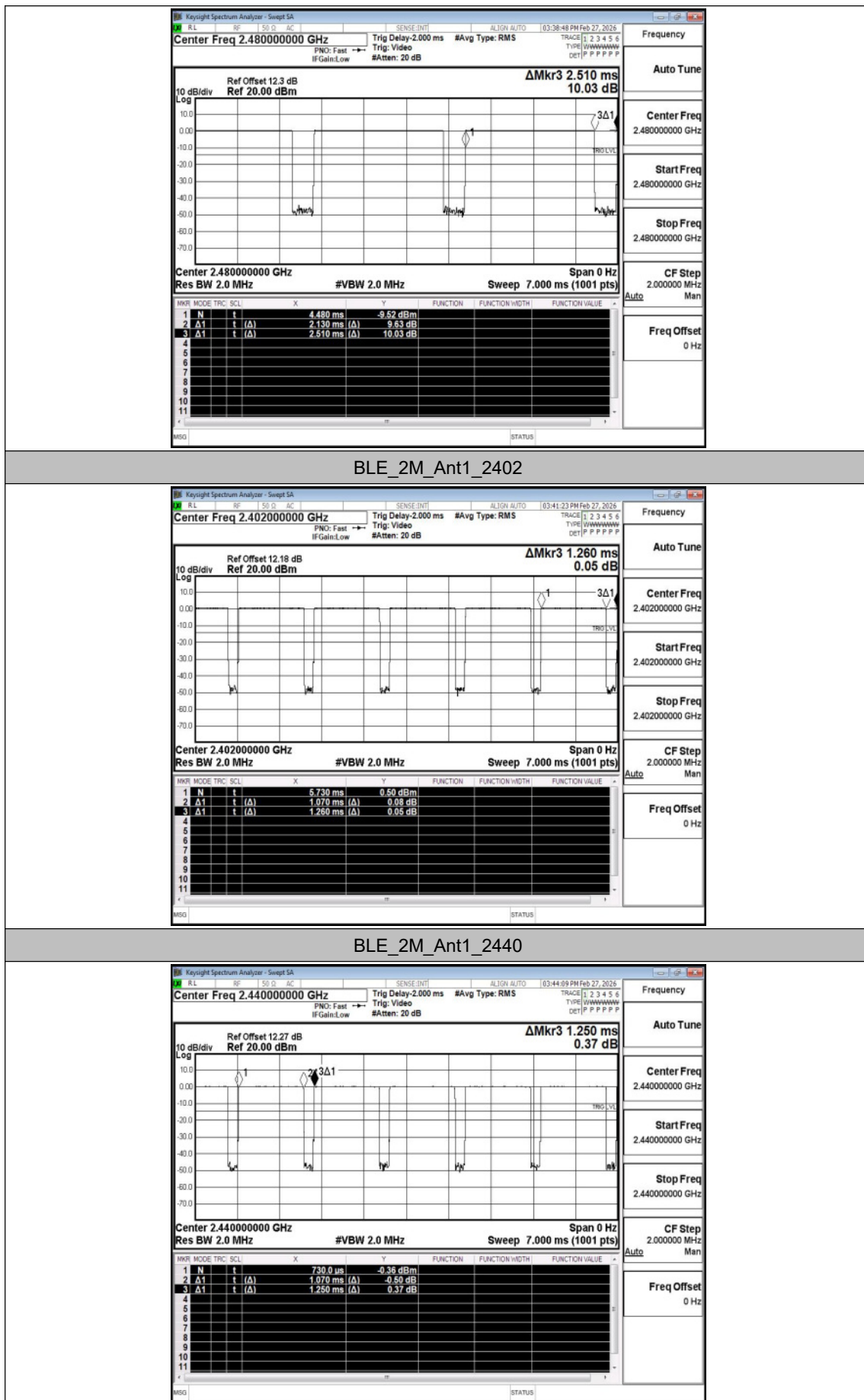
B.6 Duty Cycle

Test Result

TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	2.13	2.50	0.8520	85.20	0.70	---	---
		2440	2.13	2.51	0.8486	84.86	0.71	---	---
		2480	2.13	2.51	0.8486	84.86	0.71	---	---
BLE_2M	Ant1	2402	1.07	1.26	0.8492	84.92	0.71	---	---
		2440	1.07	1.25	0.8560	85.60	0.68	---	---
		2480	1.07	1.25	0.8560	85.60	0.68	---	---

Test Graphs

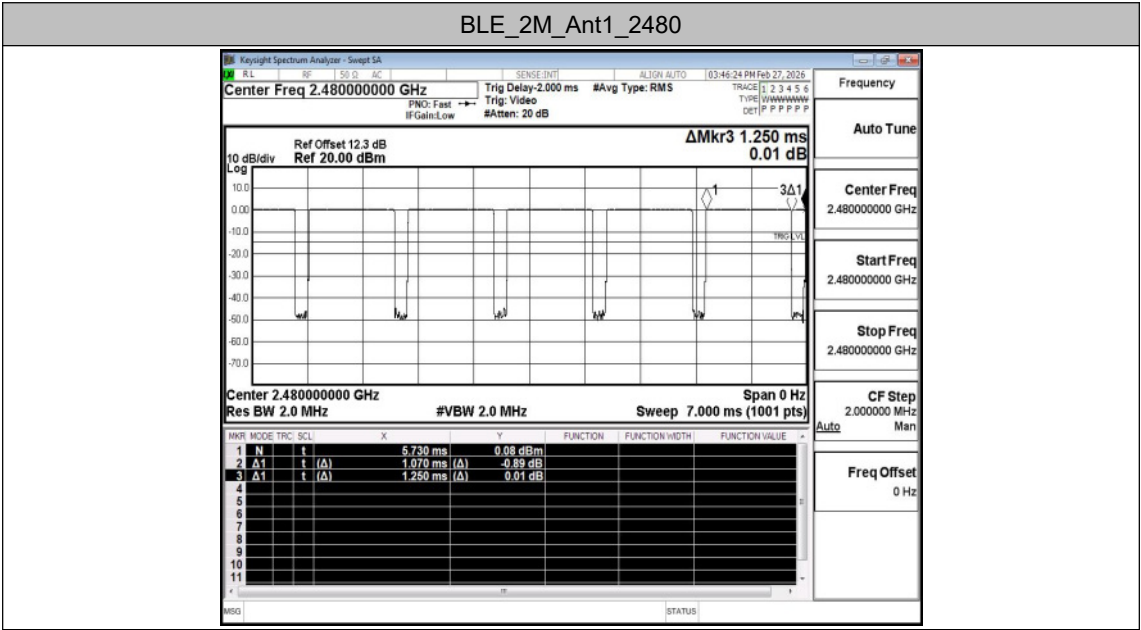




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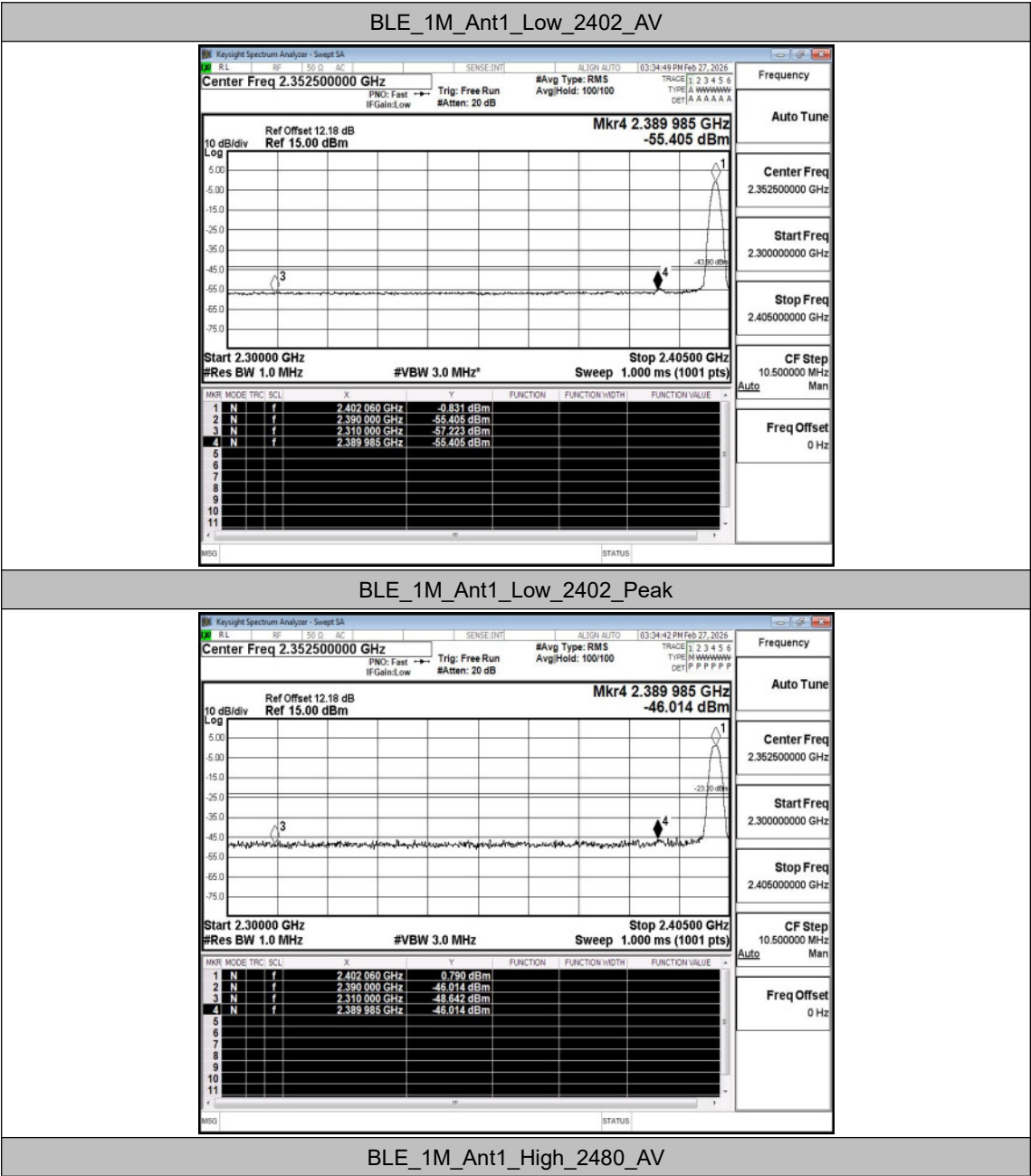
B.7 Emissions in Restricted Bands**Test Result**

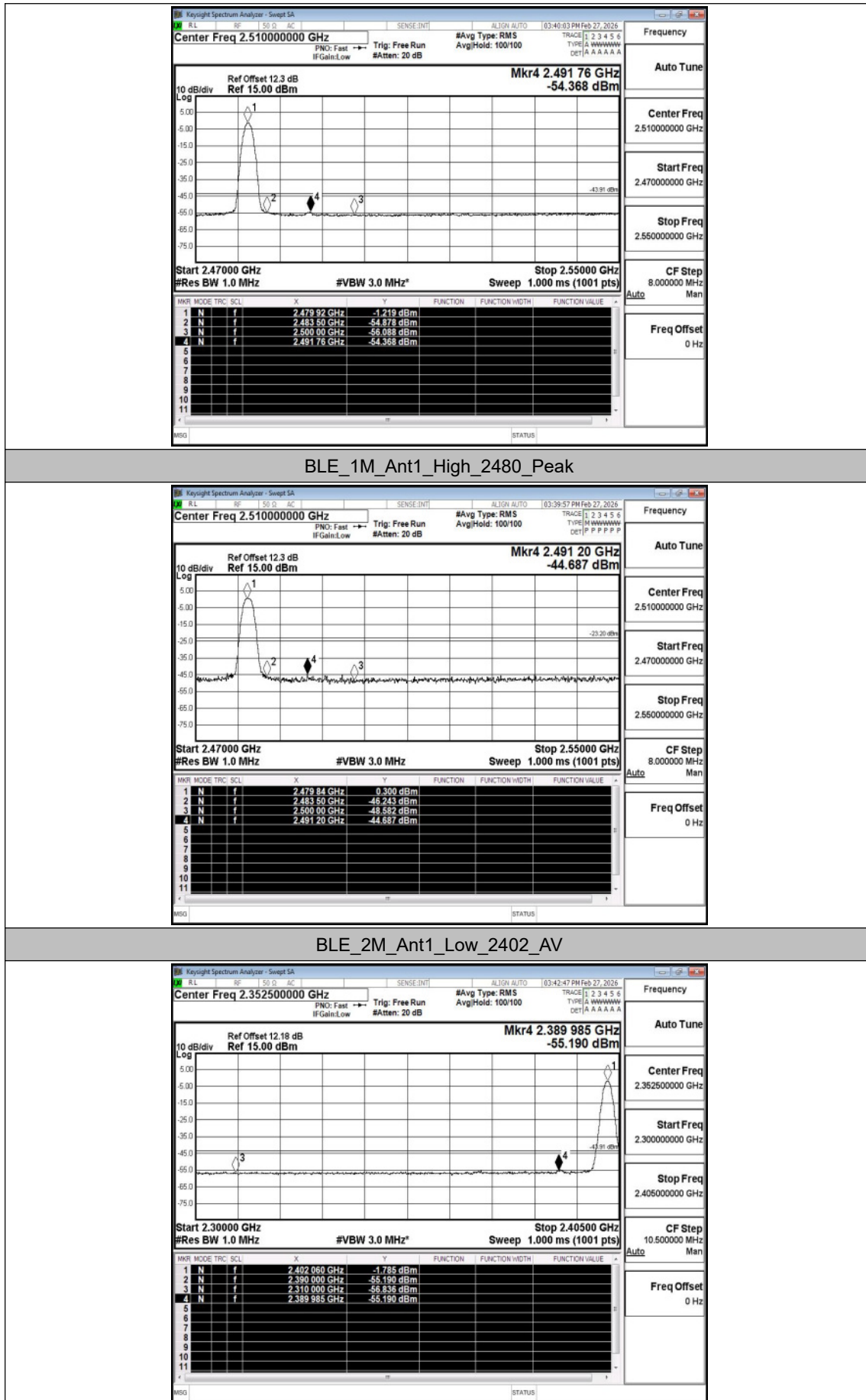
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Gain [dBi]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-57.22	≤-43.90	2.00	0.70	40.68	≤54	PASS
				AV	2389.985	-55.4	≤-43.90	2.00	0.70	42.50	≤54	PASS
				AV	2390.000	-55.41	≤-43.90	2.00	0.70	42.49	≤54	PASS
				Peak	2310.000	-48.64	≤-23.20	2.00	0.00	48.56	≤74	PASS
				Peak	2389.985	-46.01	≤-23.20	2.00	0.00	51.19	≤74	PASS
				Peak	2390.000	-46.01	≤-23.20	2.00	0.00	51.19	≤74	PASS
		High	2480	AV	2483.500	-54.88	≤-43.91	2.00	0.71	43.03	≤54	PASS
				AV	2491.760	-54.37	≤-43.91	2.00	0.71	43.54	≤54	PASS
				AV	2500.000	-56.09	≤-43.91	2.00	0.71	41.82	≤54	PASS
				Peak	2483.500	-46.24	≤-23.20	2.00	0.00	50.96	≤74	PASS
				Peak	2491.200	-44.69	≤-23.20	2.00	0.00	52.51	≤74	PASS
				Peak	2500.000	-48.58	≤-23.20	2.00	0.00	48.62	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-56.84	≤-43.91	2.00	0.71	41.07	≤54	PASS
				AV	2389.985	-55.19	≤-43.91	2.00	0.71	42.72	≤54	PASS
				AV	2390.000	-55.19	≤-43.91	2.00	0.71	42.72	≤54	PASS
				Peak	2310.000	-48.9	≤-23.20	2.00	0.00	48.30	≤74	PASS
				Peak	2359.115	-45.9	≤-23.20	2.00	0.00	51.30	≤74	PASS
				Peak	2390.000	-47.71	≤-23.20	2.00	0.00	49.49	≤74	PASS
		High	2480	AV	2483.500	-52.93	≤-43.88	2.00	0.68	44.95	≤54	PASS
				AV	2483.520	-52.93	≤-43.88	2.00	0.68	44.95	≤54	PASS
				AV	2500.000	-56.71	≤-43.88	2.00	0.68	41.17	≤54	PASS
				Peak	2483.500	-45.59	≤-23.20	2.00	0.00	51.61	≤74	PASS
				Peak	2491.600	-45.55	≤-23.20	2.00	0.00	51.65	≤74	PASS
				Peak	2500.000	-48.2	≤-23.20	2.00	0.00	49.00	≤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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