

Appendix A

RF Test Data for BT LE (Conducted Measurement)

Product Name: Nucleus Auto Focus Adapter Base Kit (E to PL)

Test Model: WLC-T07

Environmental Conditions

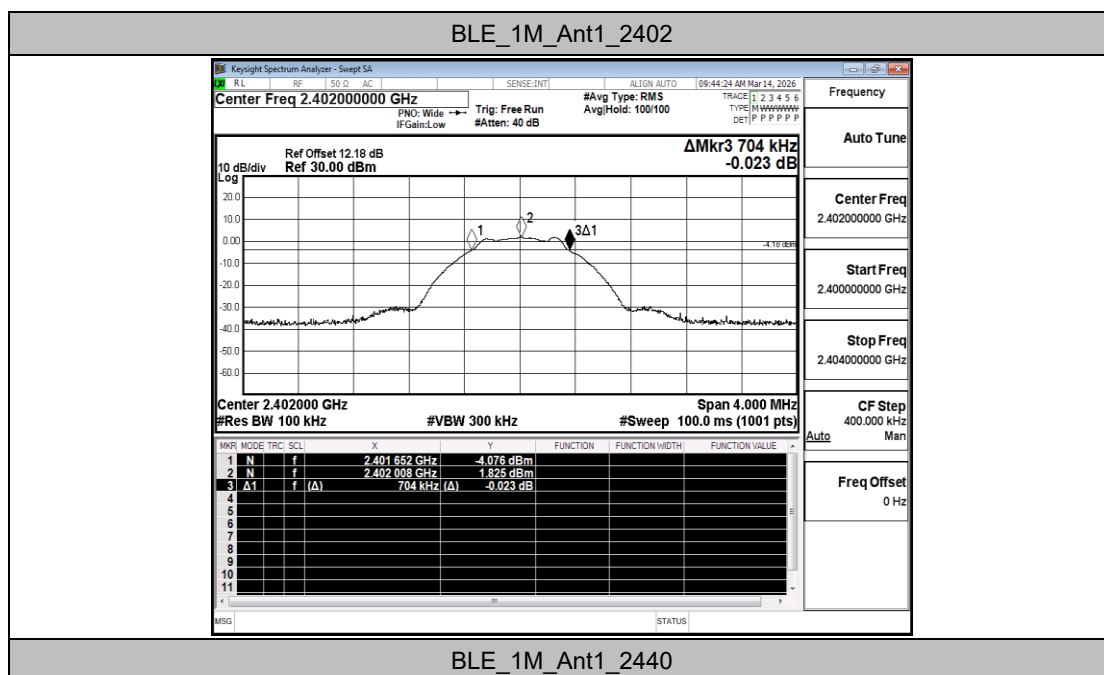
Temperature:	23.7°C
Relative Humidity:	54.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

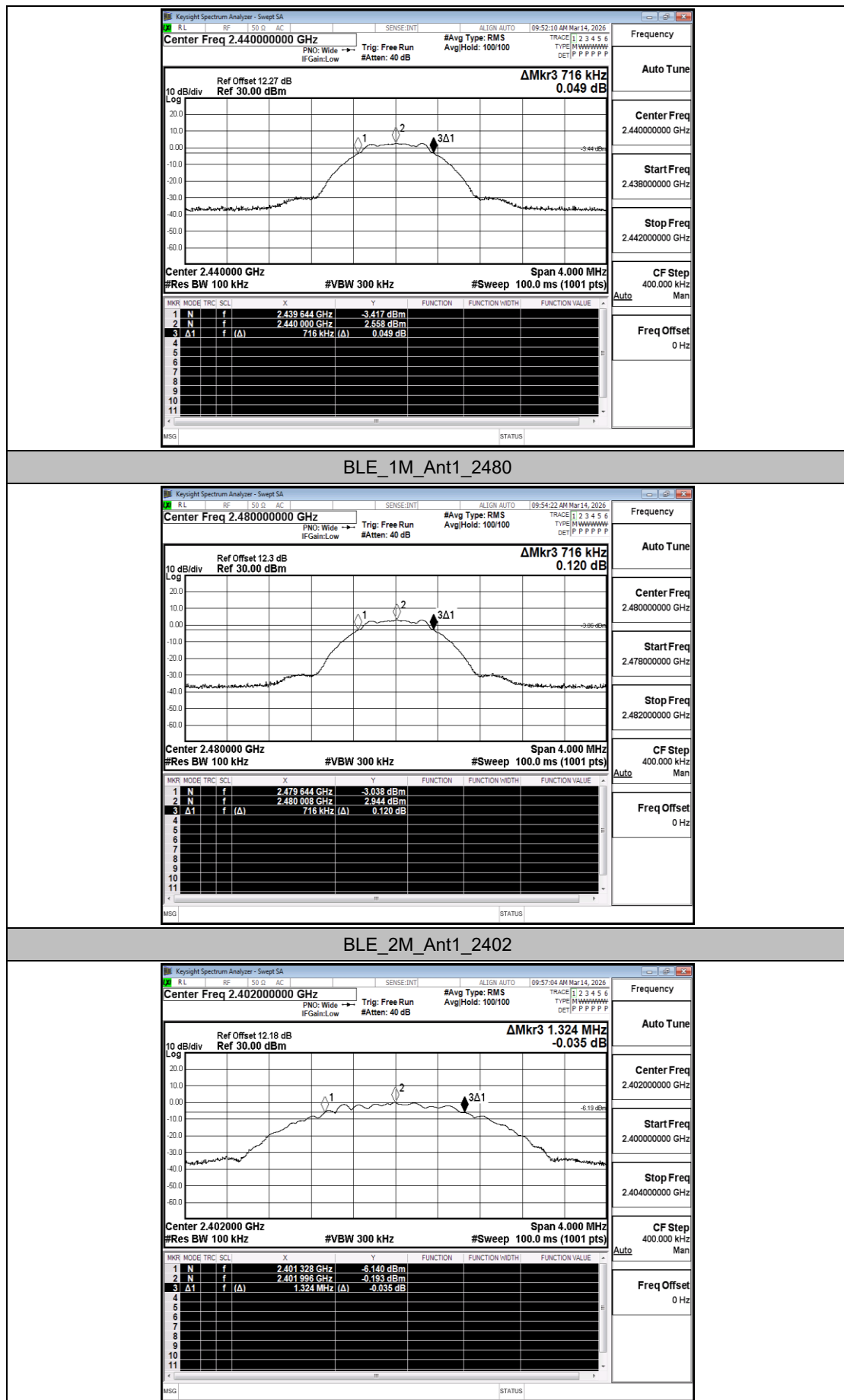
A.1 DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.704	2401.652	2402.356	0.5	PASS
		2440	0.716	2439.644	2440.360	0.5	PASS
		2480	0.716	2479.644	2480.360	0.5	PASS
BLE_2M	Ant1	2402	1.324	2401.328	2402.652	0.5	PASS
		2440	1.336	2439.328	2440.664	0.5	PASS
		2480	1.328	2479.328	2480.656	0.5	PASS

Test Graphs



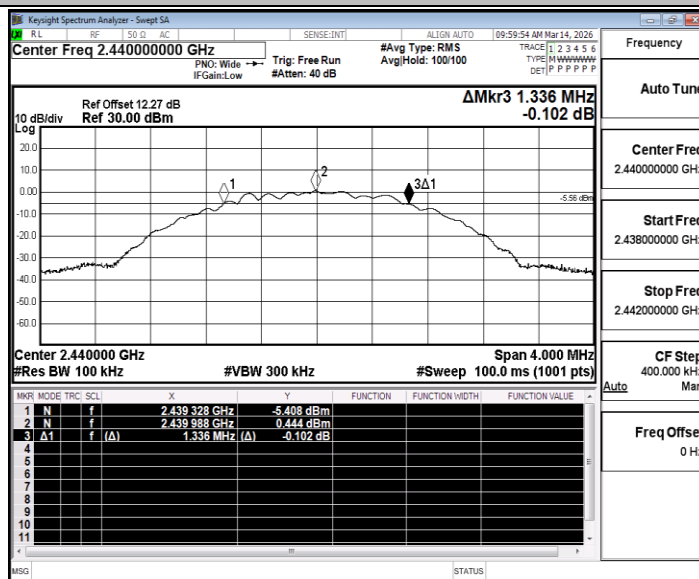


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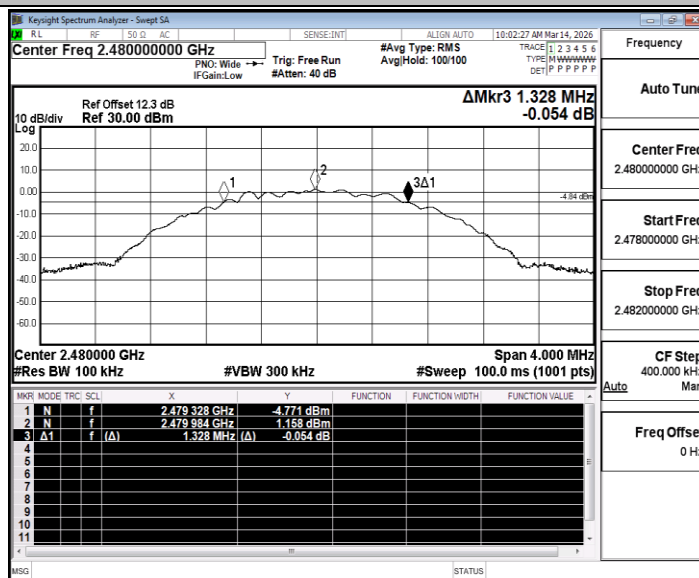
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BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

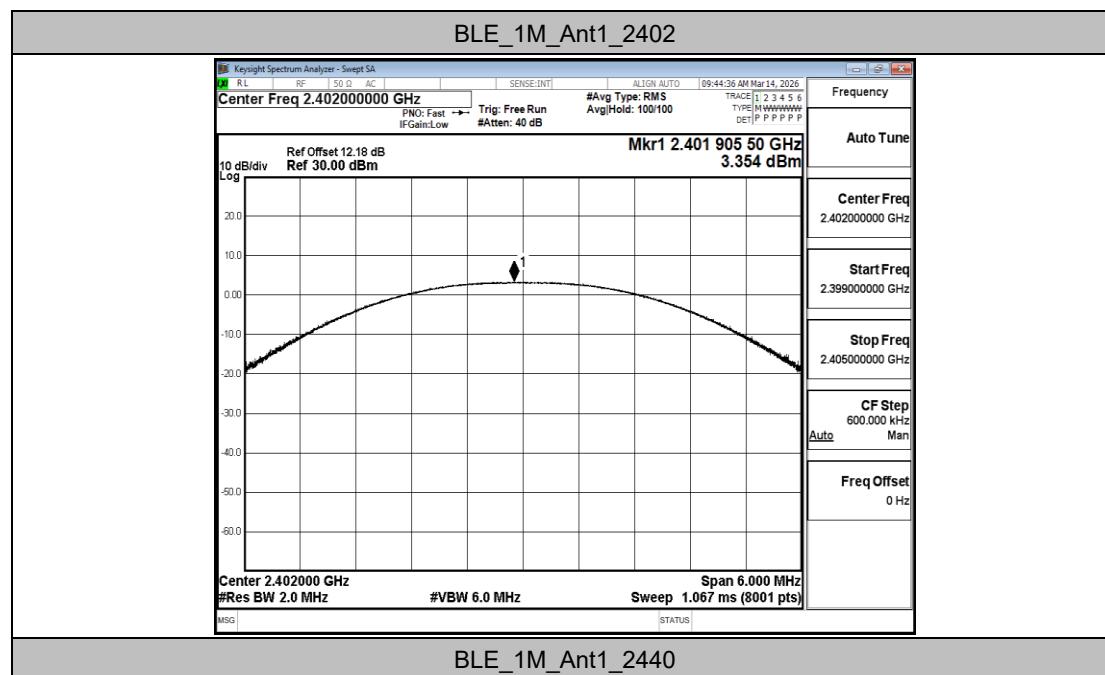


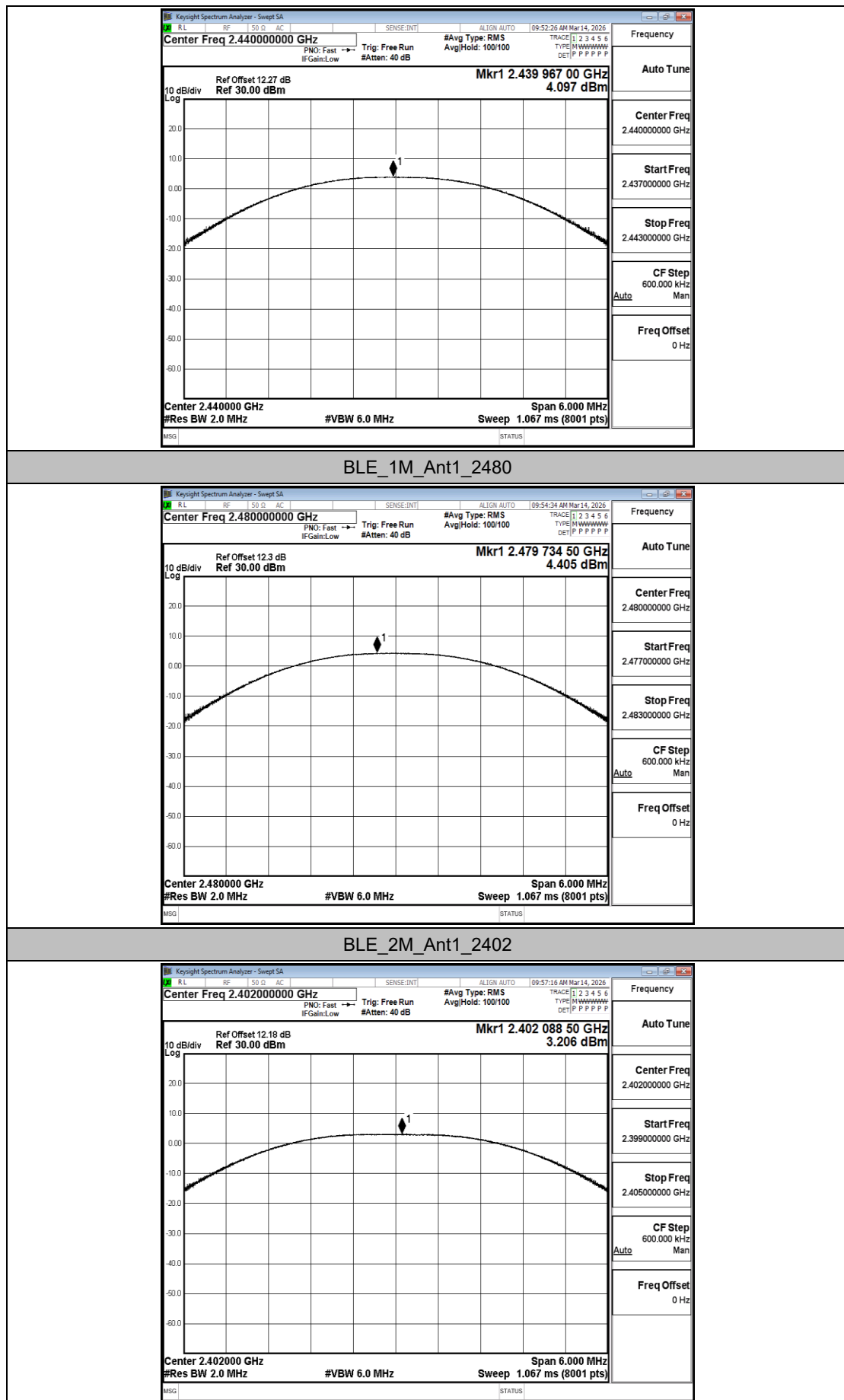
A.2 Maximum Peak conducted output power

Test Result Peak

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	3.35	≤30	PASS
		2440	4.10	≤30	PASS
		2480	4.41	≤30	PASS
BLE_2M	Ant1	2402	3.21	≤30	PASS
		2440	3.90	≤30	PASS
		2480	4.51	≤30	PASS

Test Graphs Peak



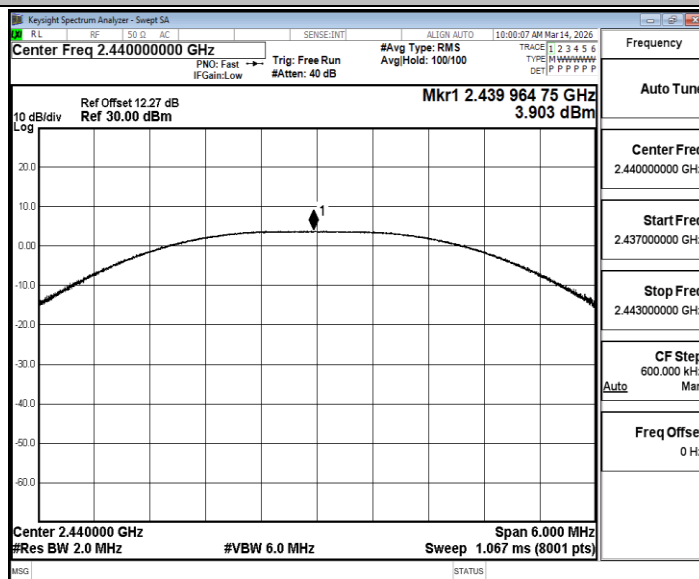


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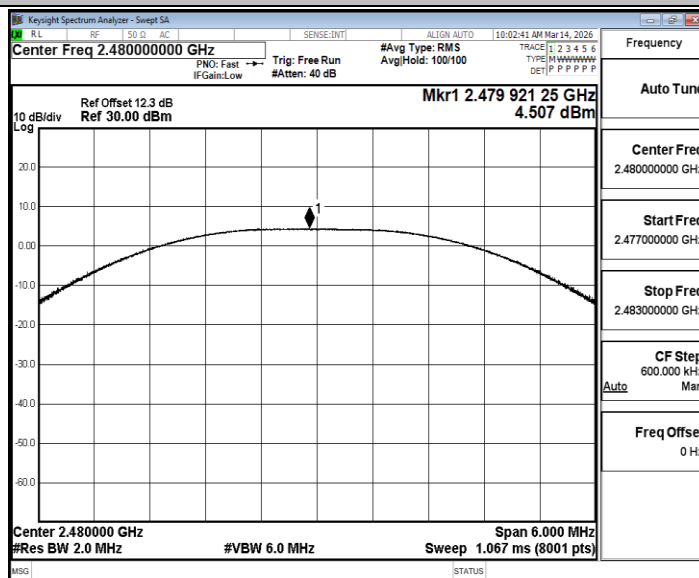
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BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

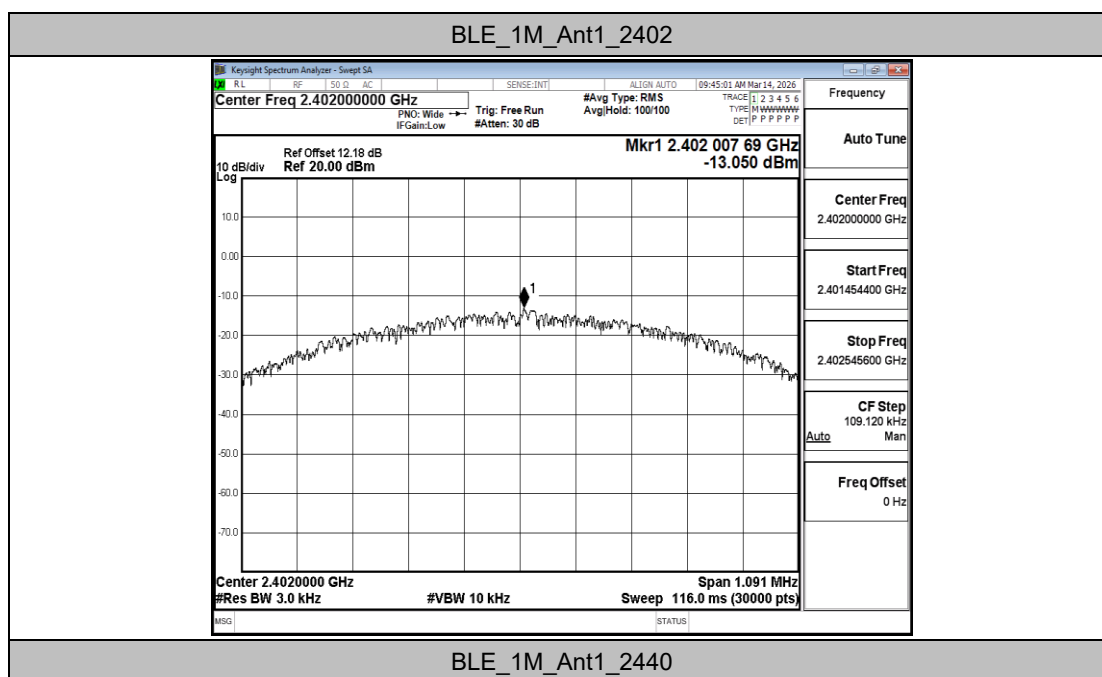


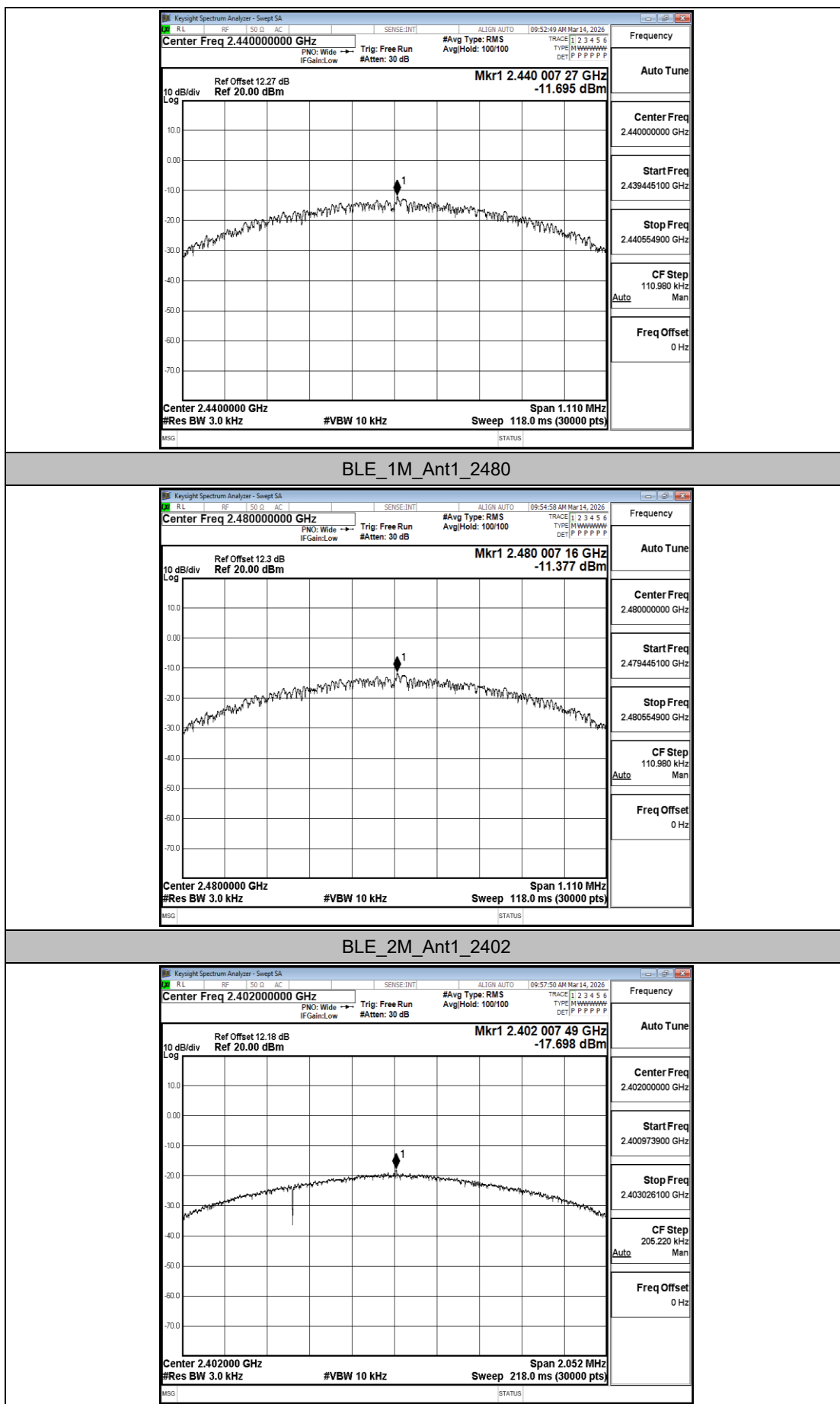
A.3 Maximum power spectral density

Test Result

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-13.05	≤8.00	PASS
		2440	-11.70	≤8.00	PASS
		2480	-11.38	≤8.00	PASS
BLE_2M	Ant1	2402	-17.70	≤8.00	PASS
		2440	-16.59	≤8.00	PASS
		2480	-15.77	≤8.00	PASS

Test Graphs



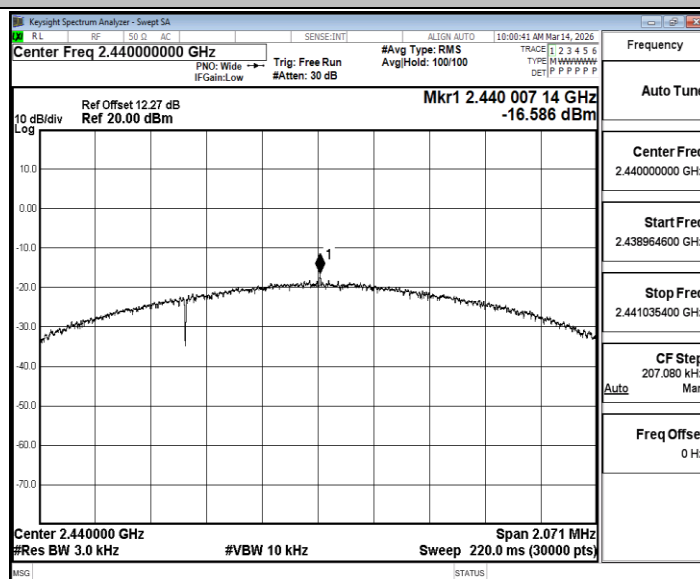


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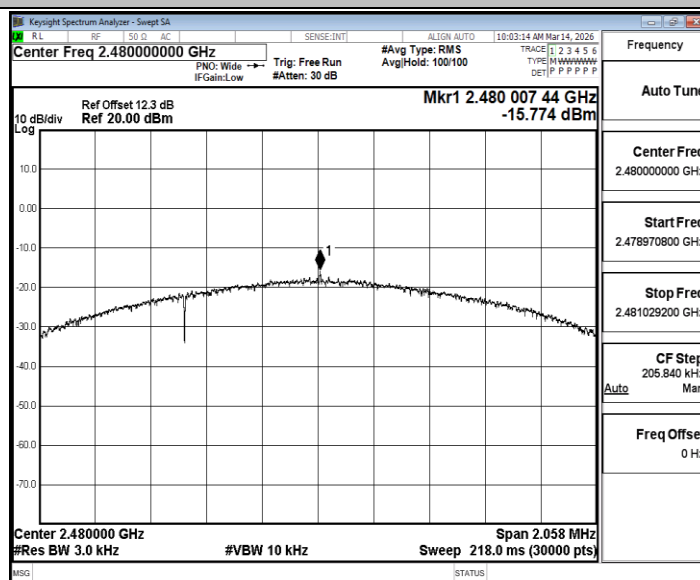
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BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

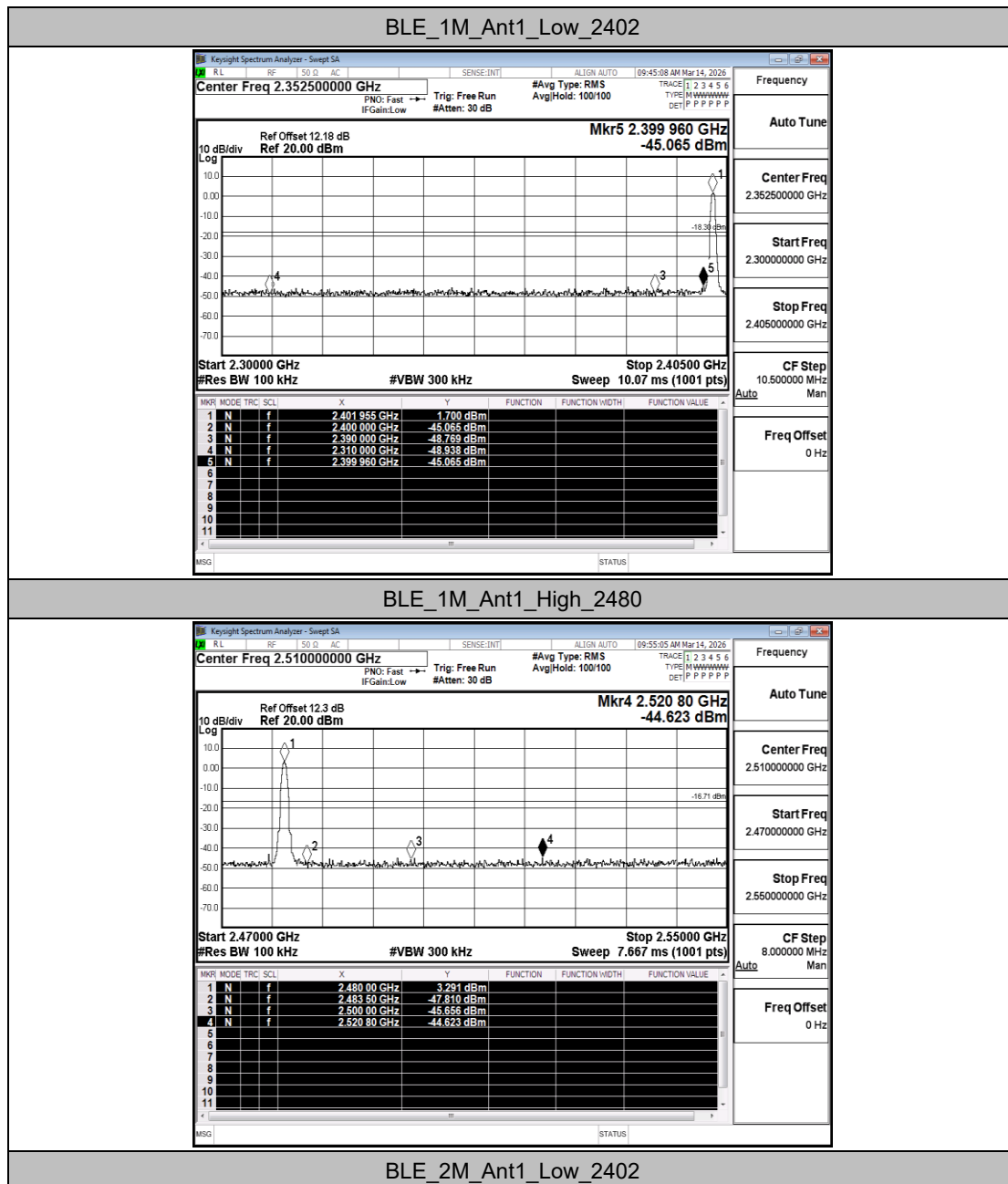


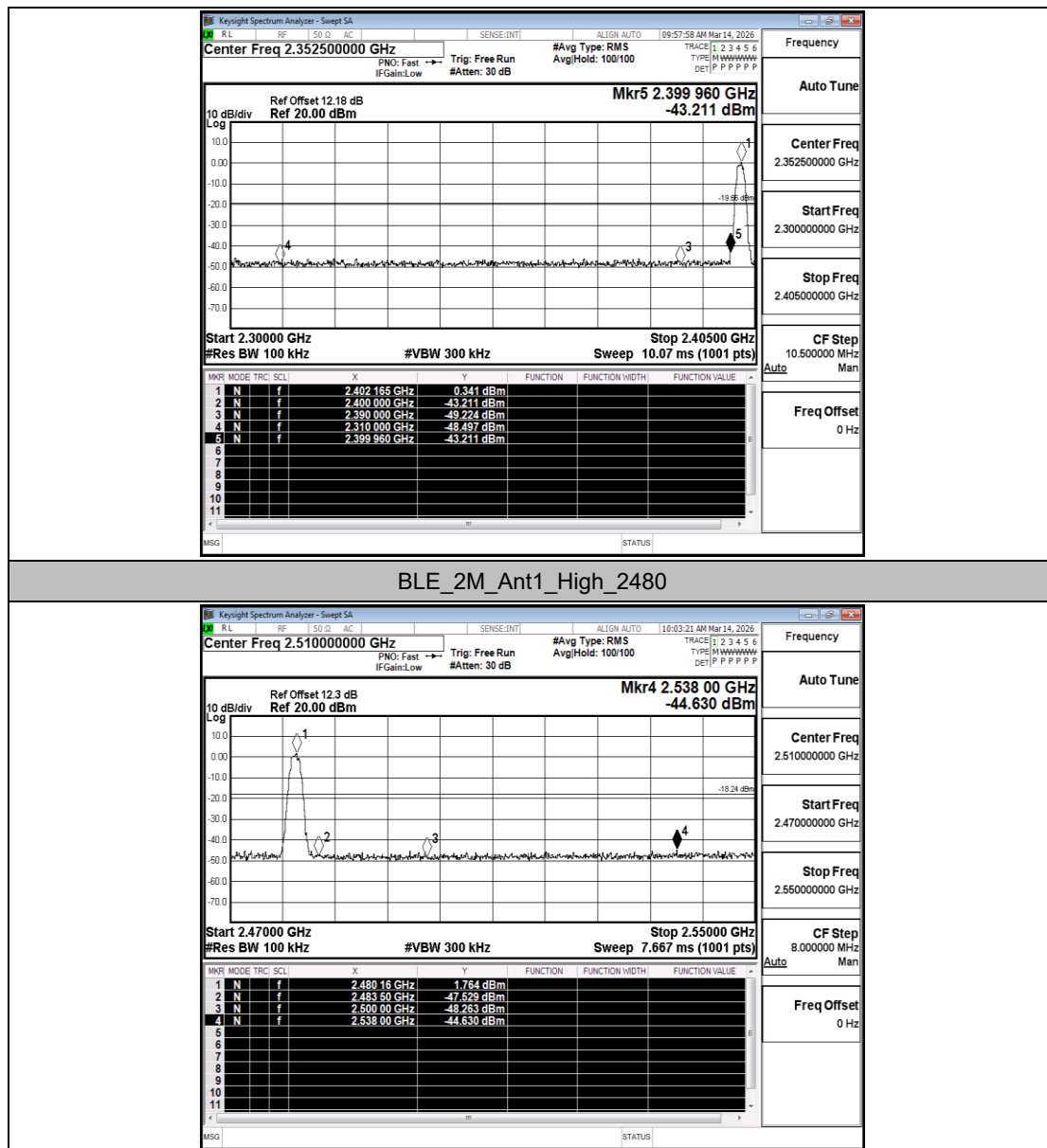
A.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	1.70	-45.07	≤-18.3	PASS
		High	2480	3.29	-44.62	≤-16.71	PASS
BLE_2M	Ant1	Low	2402	0.34	-43.21	≤-19.66	PASS
		High	2480	1.76	-44.63	≤-18.24	PASS

Test Graphs



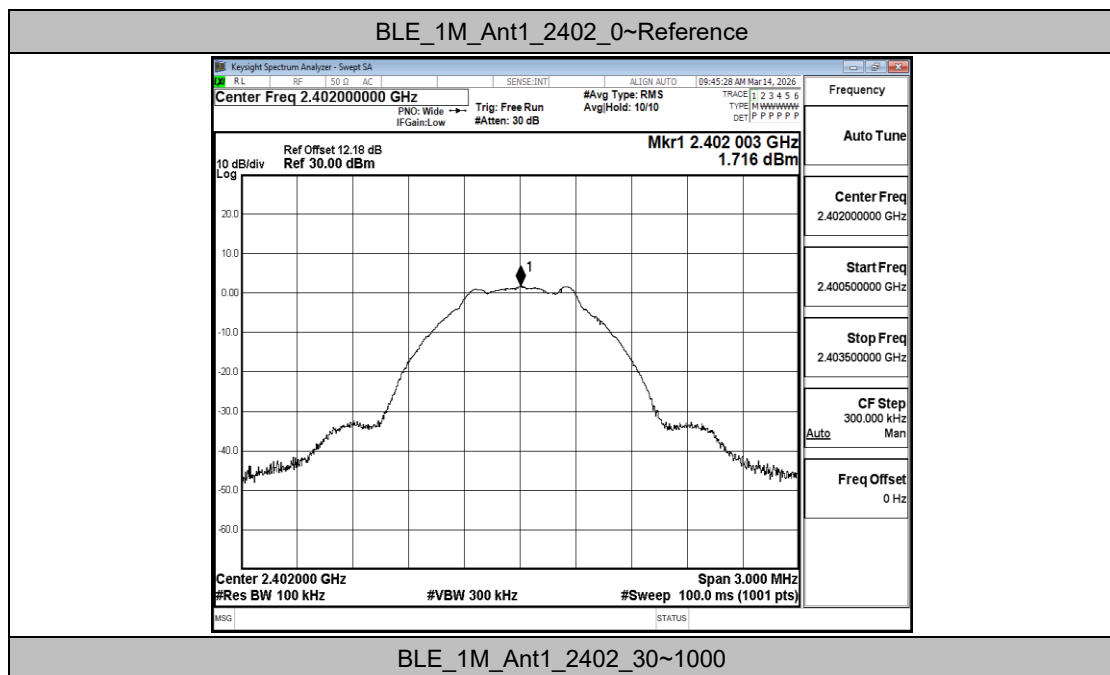


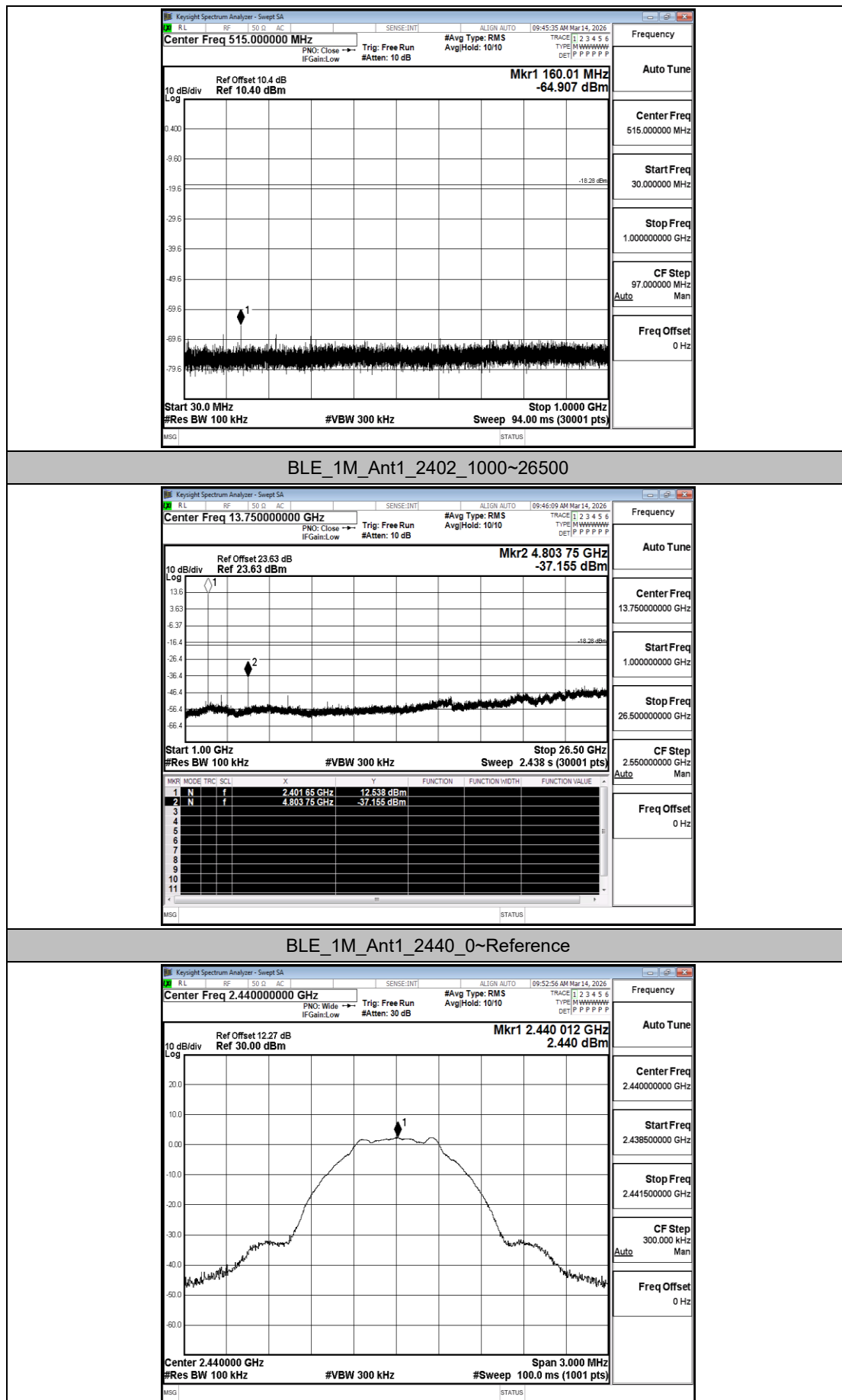
A.5 Conducted Spurious Emission

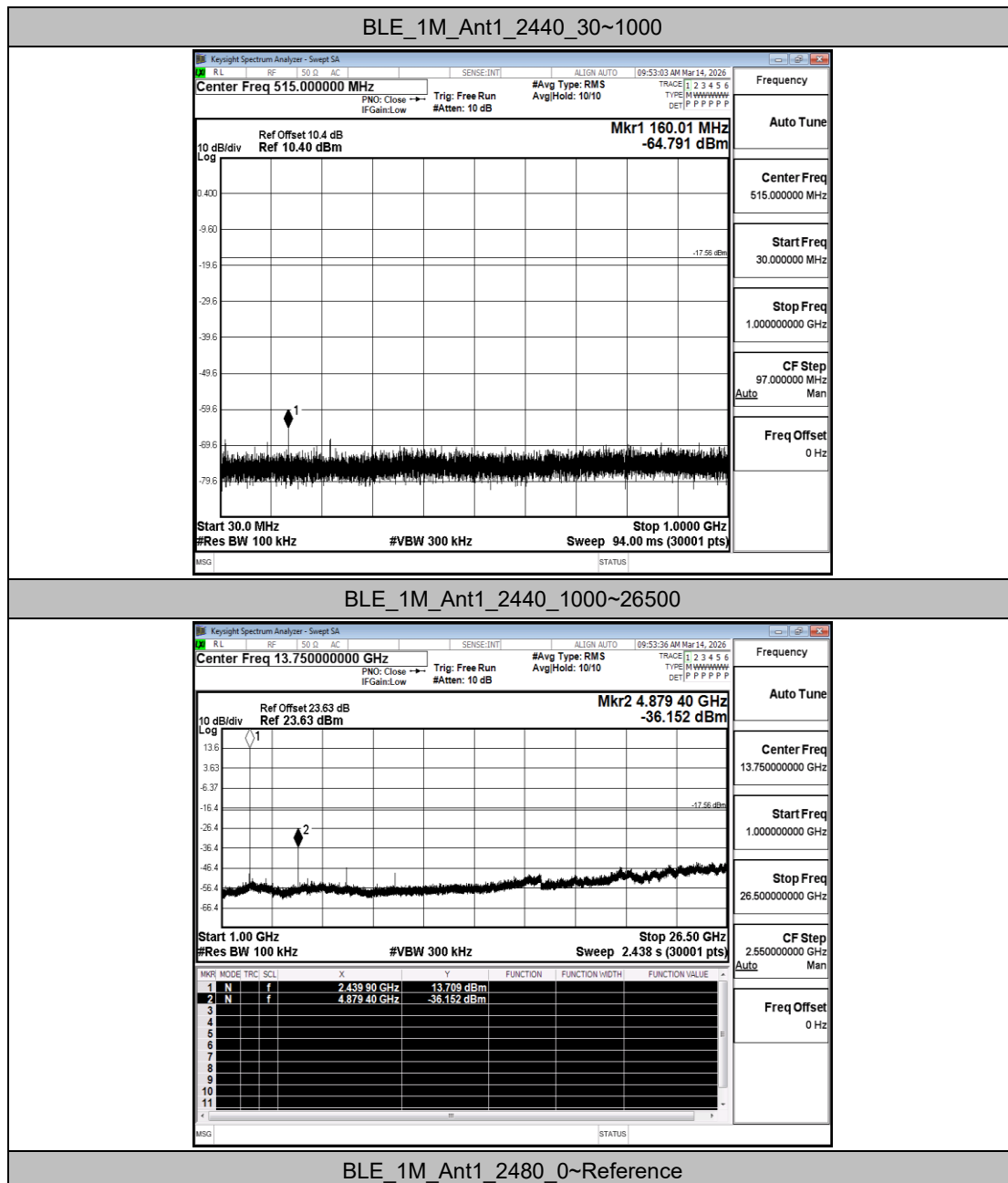
Test Result

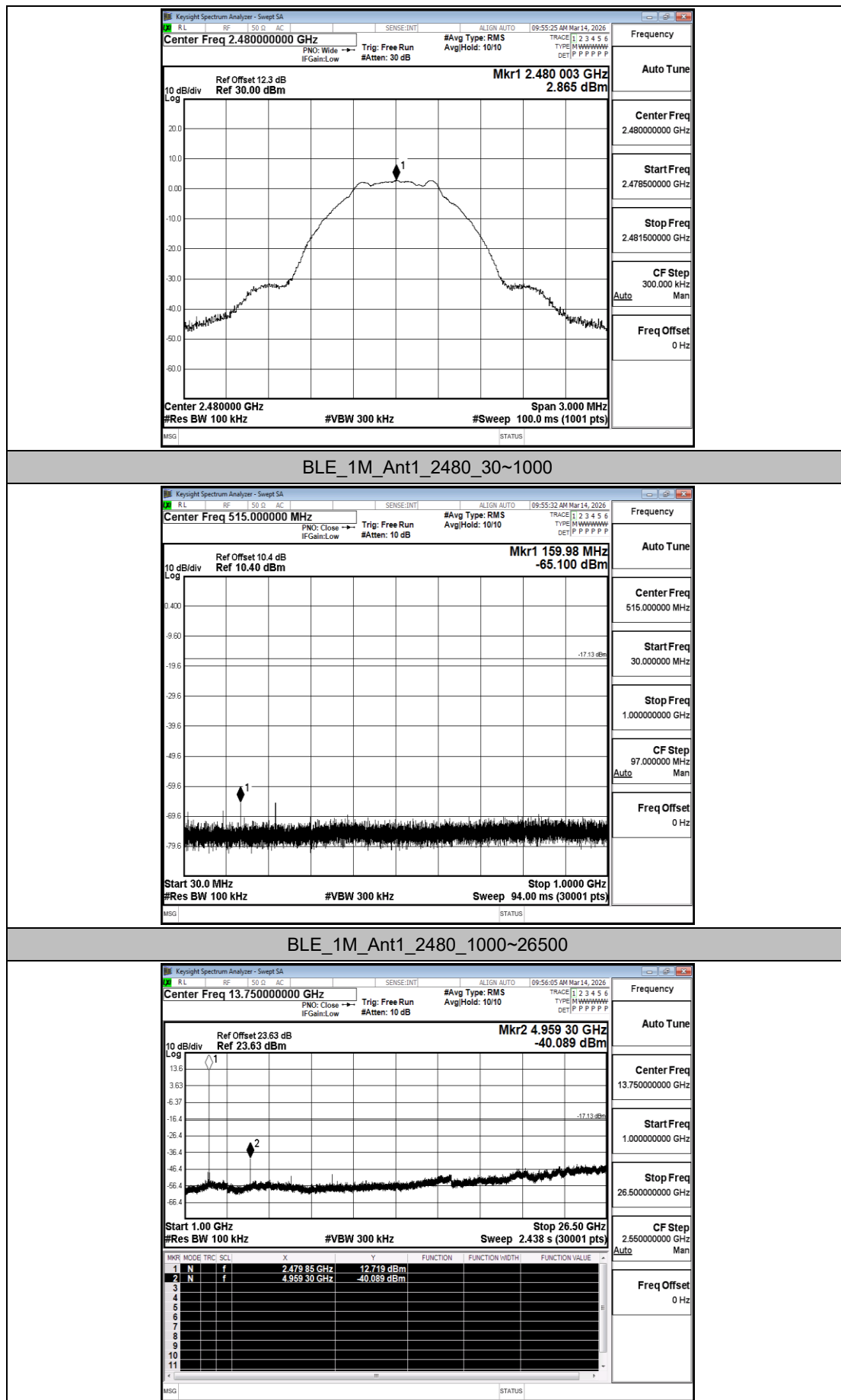
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	1.72	1.72	---	PASS
			30~1000	1.72	-64.91	≤-18.28	PASS
			1000~26500	1.72	-37.16	≤-18.28	PASS
		2440	Reference	2.44	2.44	---	PASS
			30~1000	2.44	-64.79	≤-17.56	PASS
			1000~26500	2.44	-36.15	≤-17.56	PASS
		2480	Reference	2.87	2.87	---	PASS
			30~1000	2.87	-65.1	≤-17.13	PASS
			1000~26500	2.87	-40.09	≤-17.13	PASS
BLE_2M	Ant1	2402	Reference	-0.30	-0.30	---	PASS
			30~1000	-0.30	-65.85	≤-20.3	PASS
			1000~26500	-0.30	-39.09	≤-20.3	PASS
		2440	Reference	0.35	0.35	---	PASS
			30~1000	0.35	-64.23	≤-19.65	PASS
			1000~26500	0.35	-38.34	≤-19.65	PASS
		2480	Reference	1.00	1.00	---	PASS
			30~1000	1.00	-64.8	≤-19	PASS
			1000~26500	1.00	-38.63	≤-19	PASS

Test Graphs





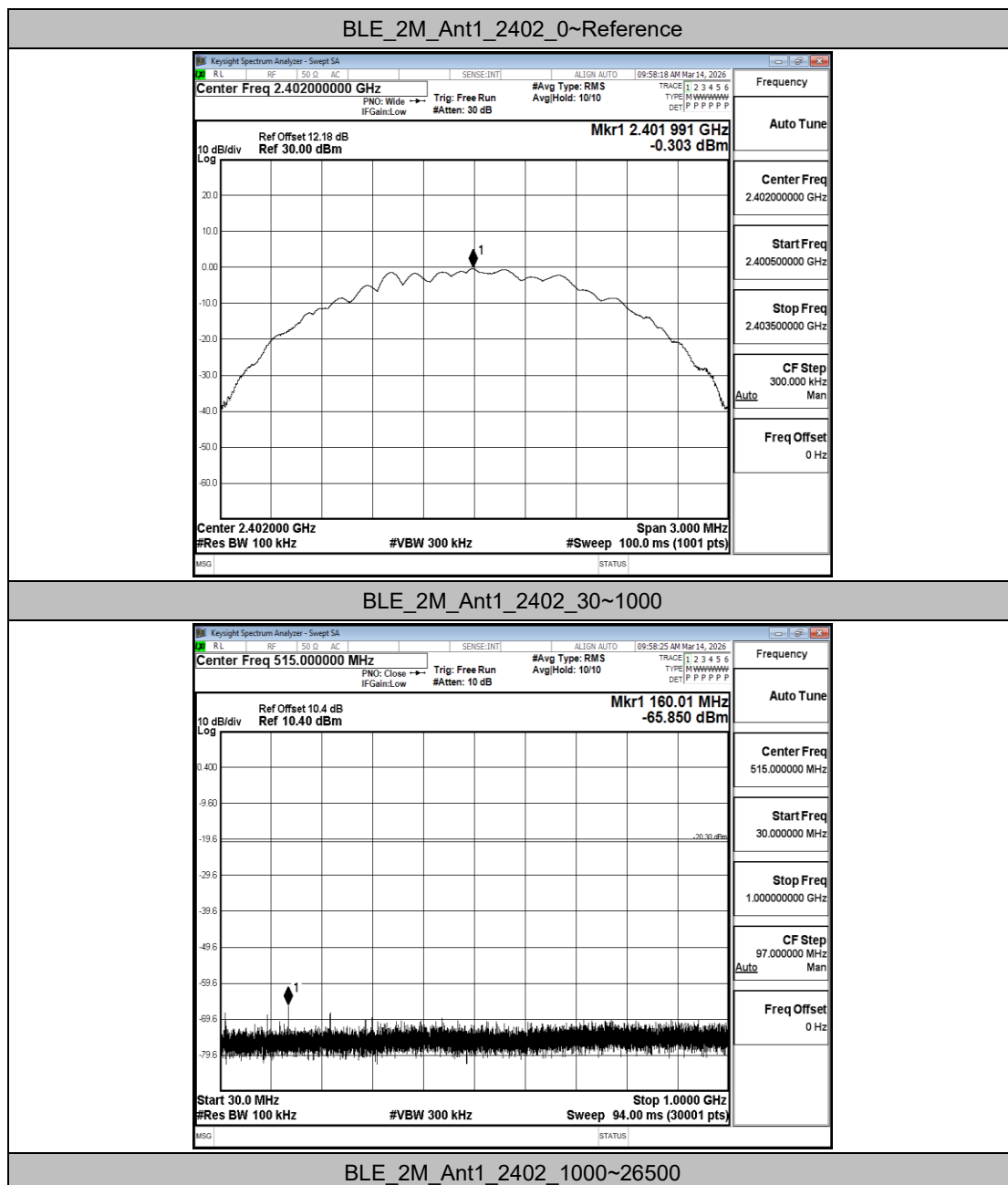


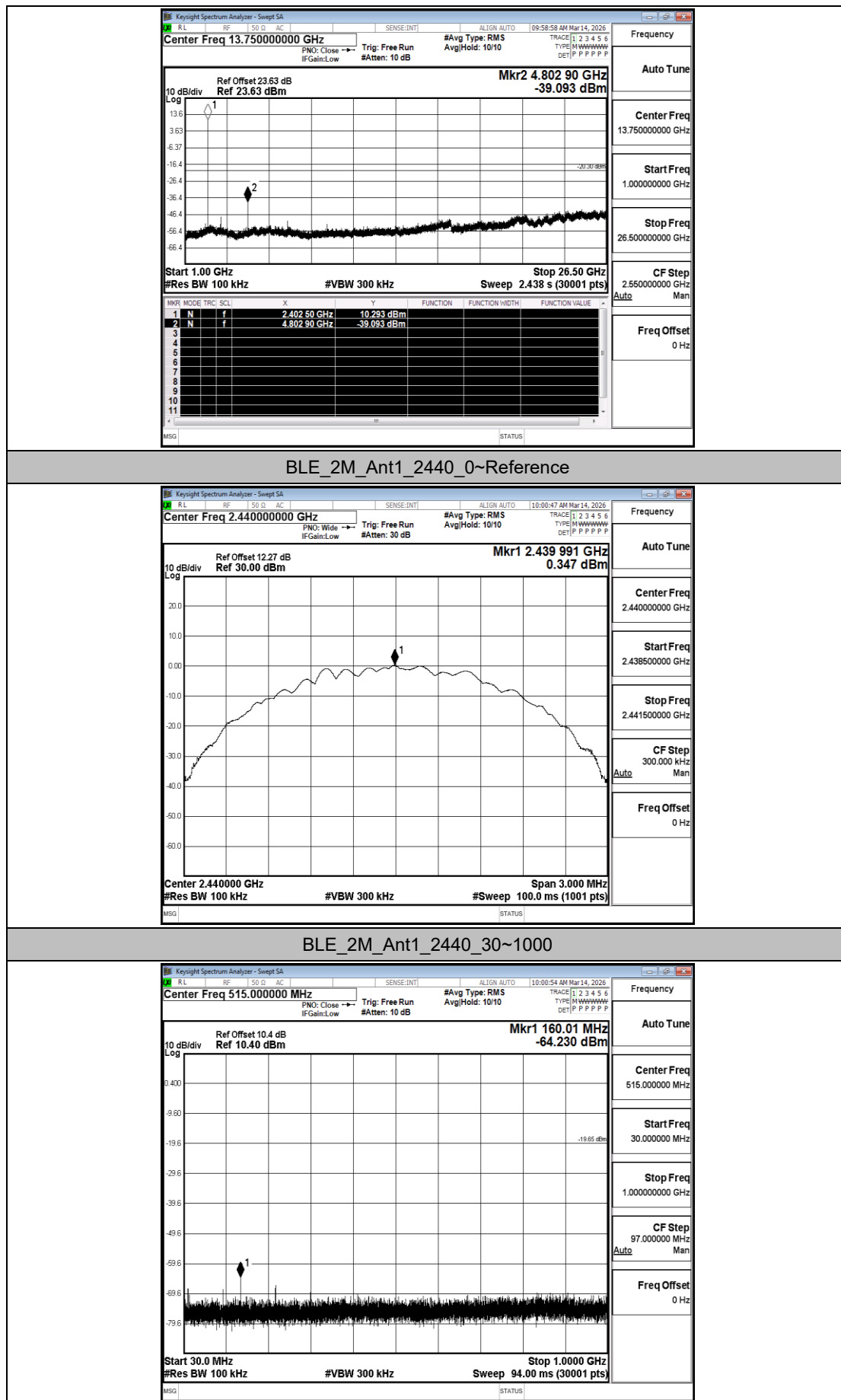


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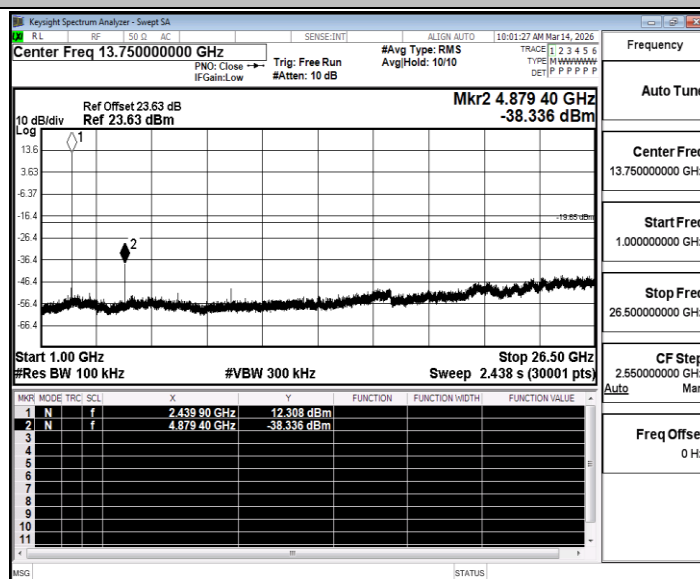


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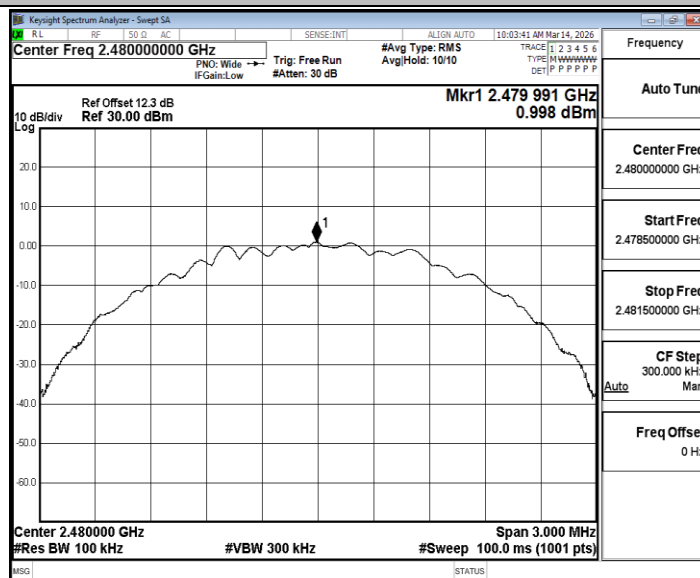
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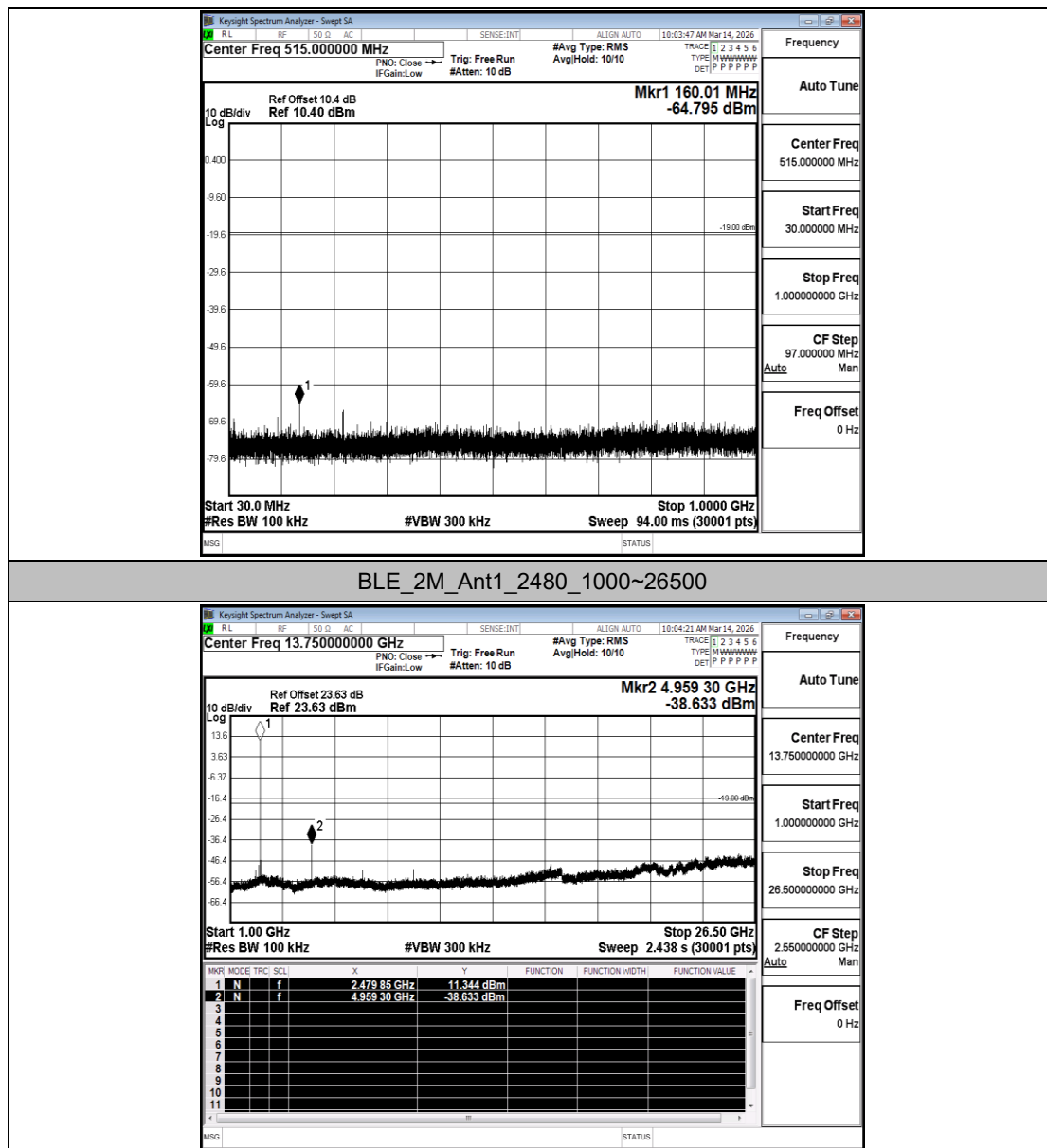
BLE_2M_Ant1_2440_1000~26500



BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000

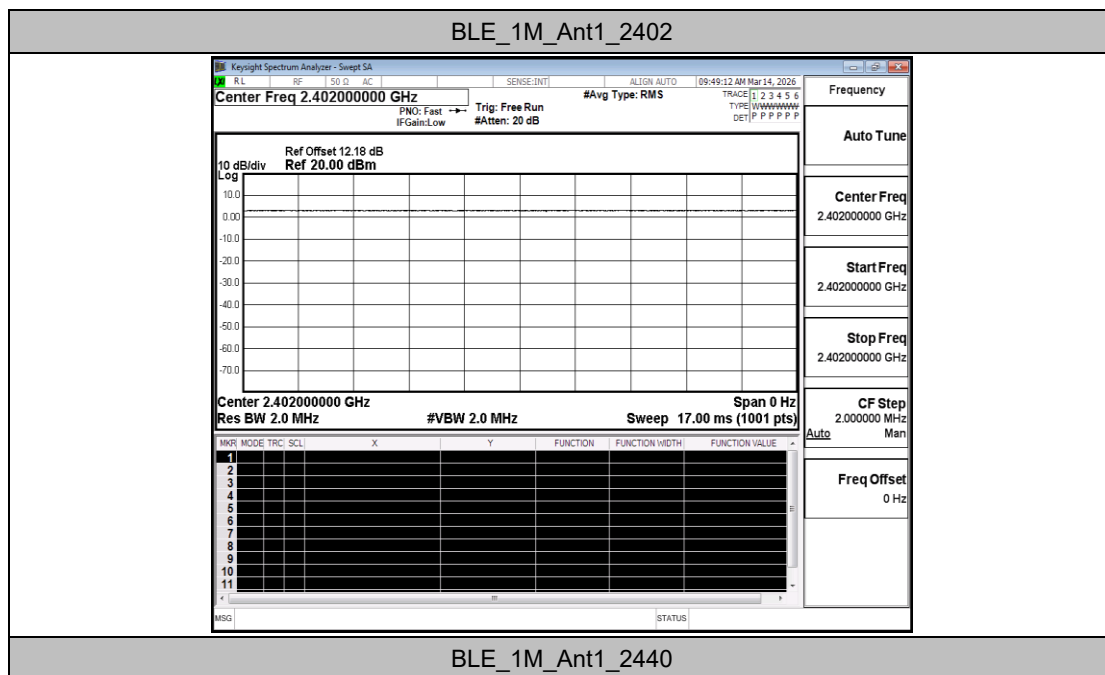


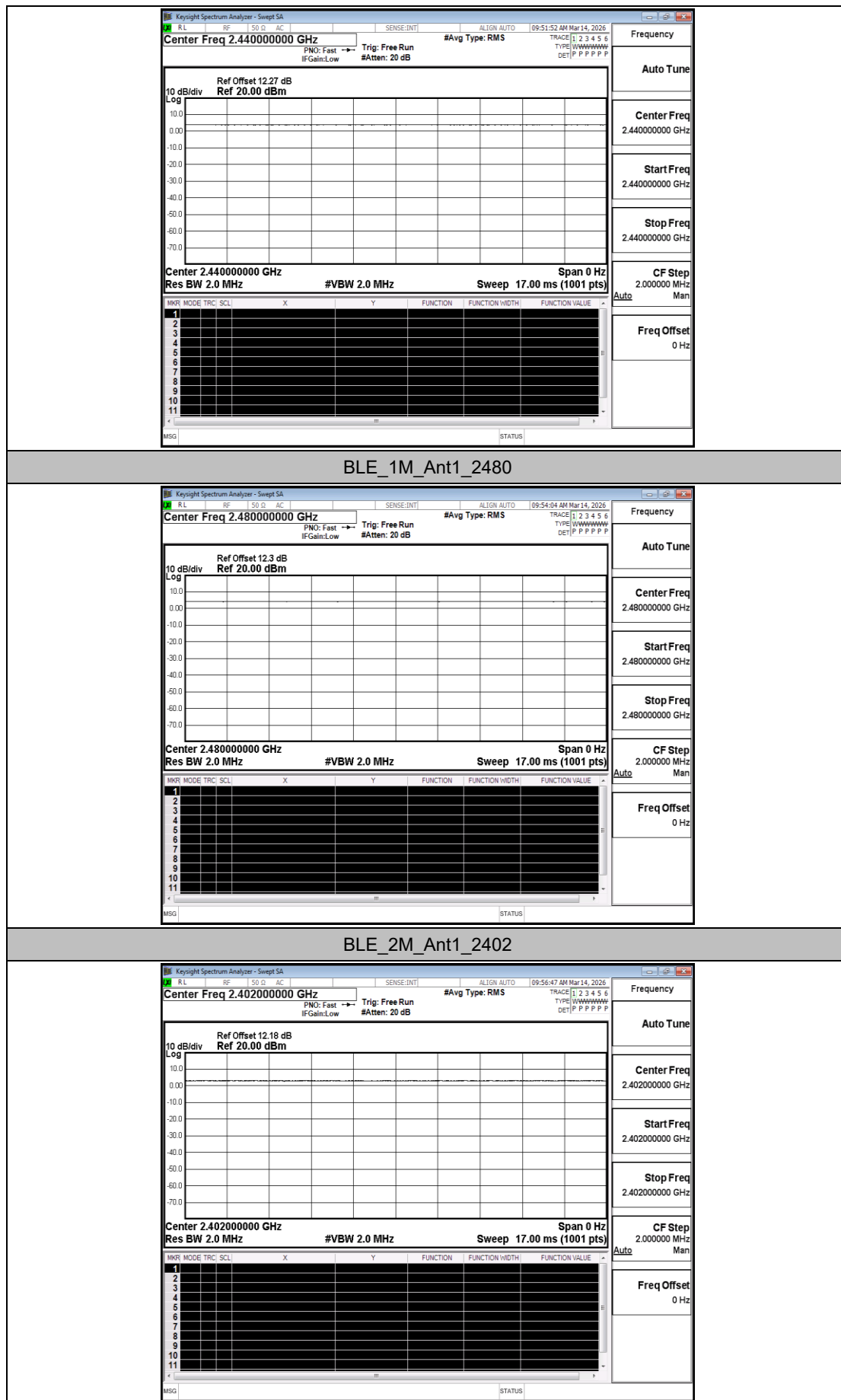
A.6 Duty Cycle

Test Result

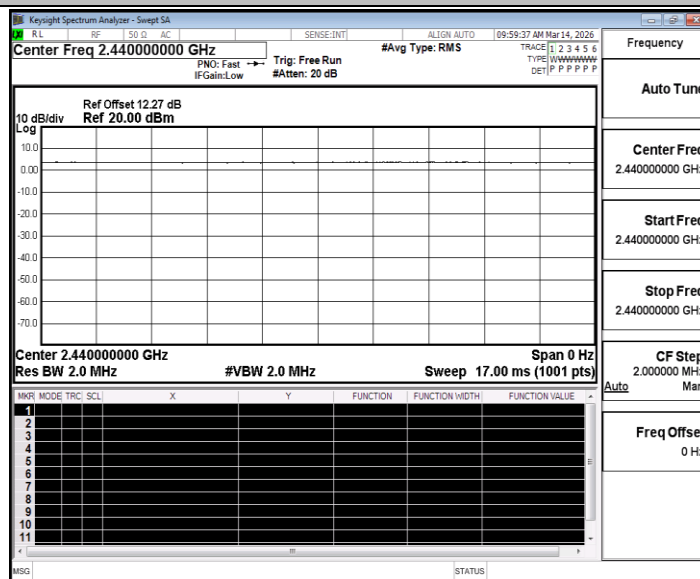
TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	17.00	17.00	1.0000	100.00	0.00	---	---
		2440	17.00	17.00	1.0000	100.00	0.00	---	---
		2480	17.00	17.00	1.0000	100.00	0.00	---	---
BLE_2M	Ant1	2402	17.00	17.00	1.0000	100.00	0.00	---	---
		2440	17.00	17.00	1.0000	100.00	0.00	---	---
		2480	17.00	17.00	1.0000	100.00	0.00	---	---

Test Graphs

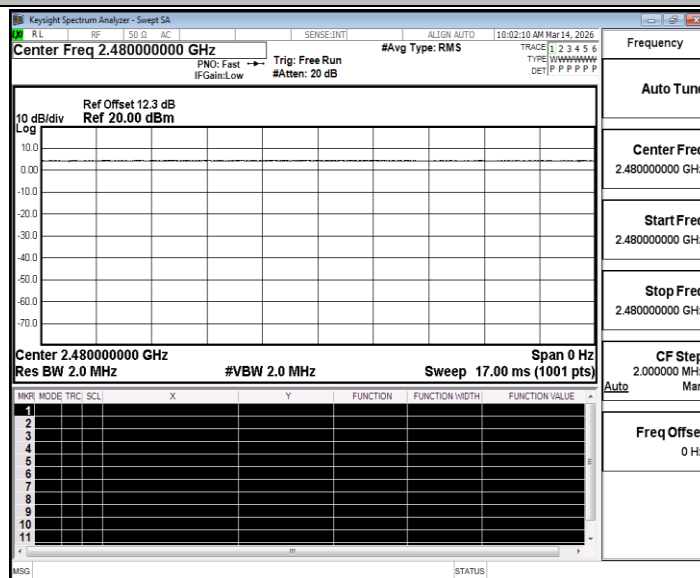




BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



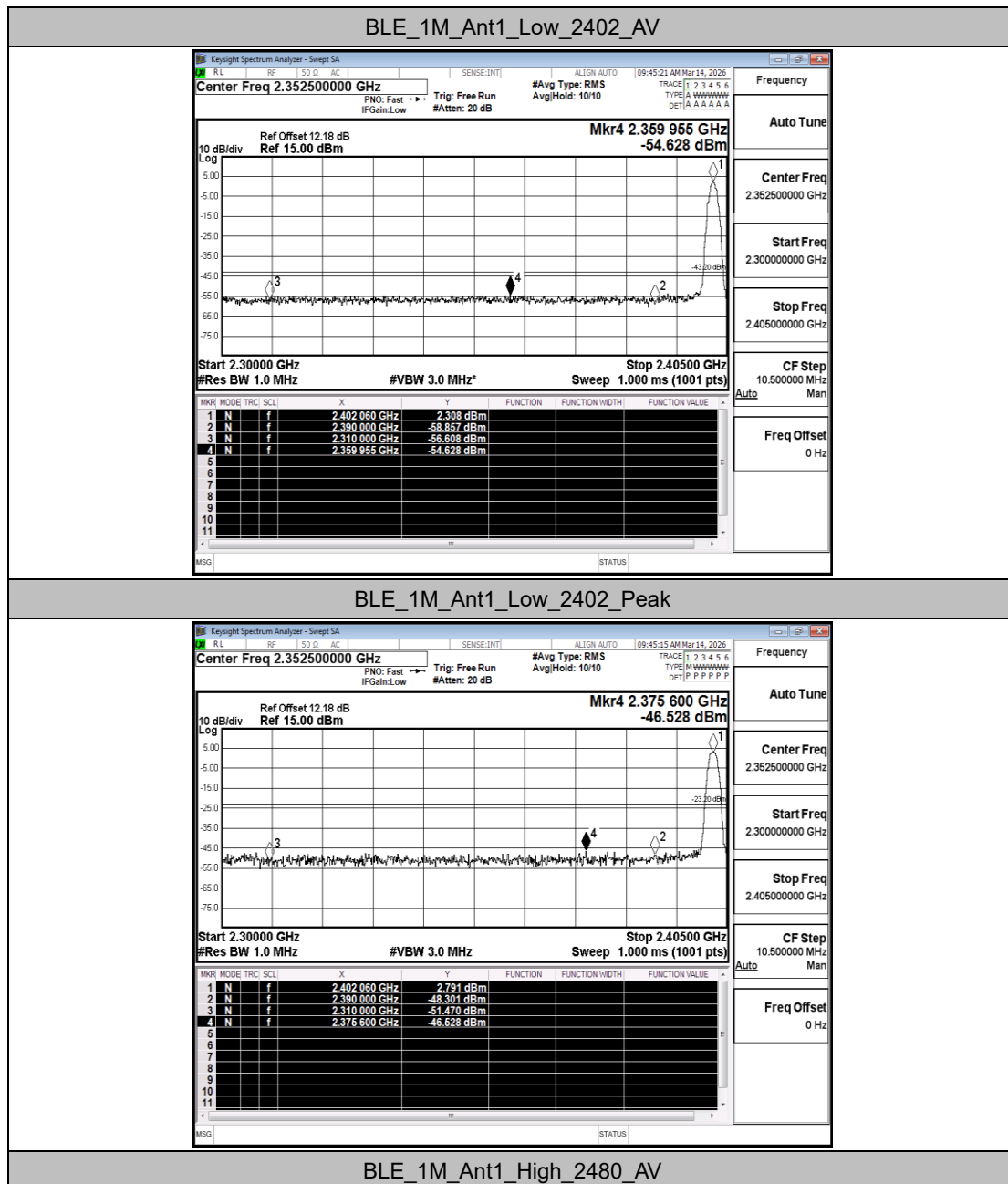
A.7 Emissions in Restricted Bands**Test Result**

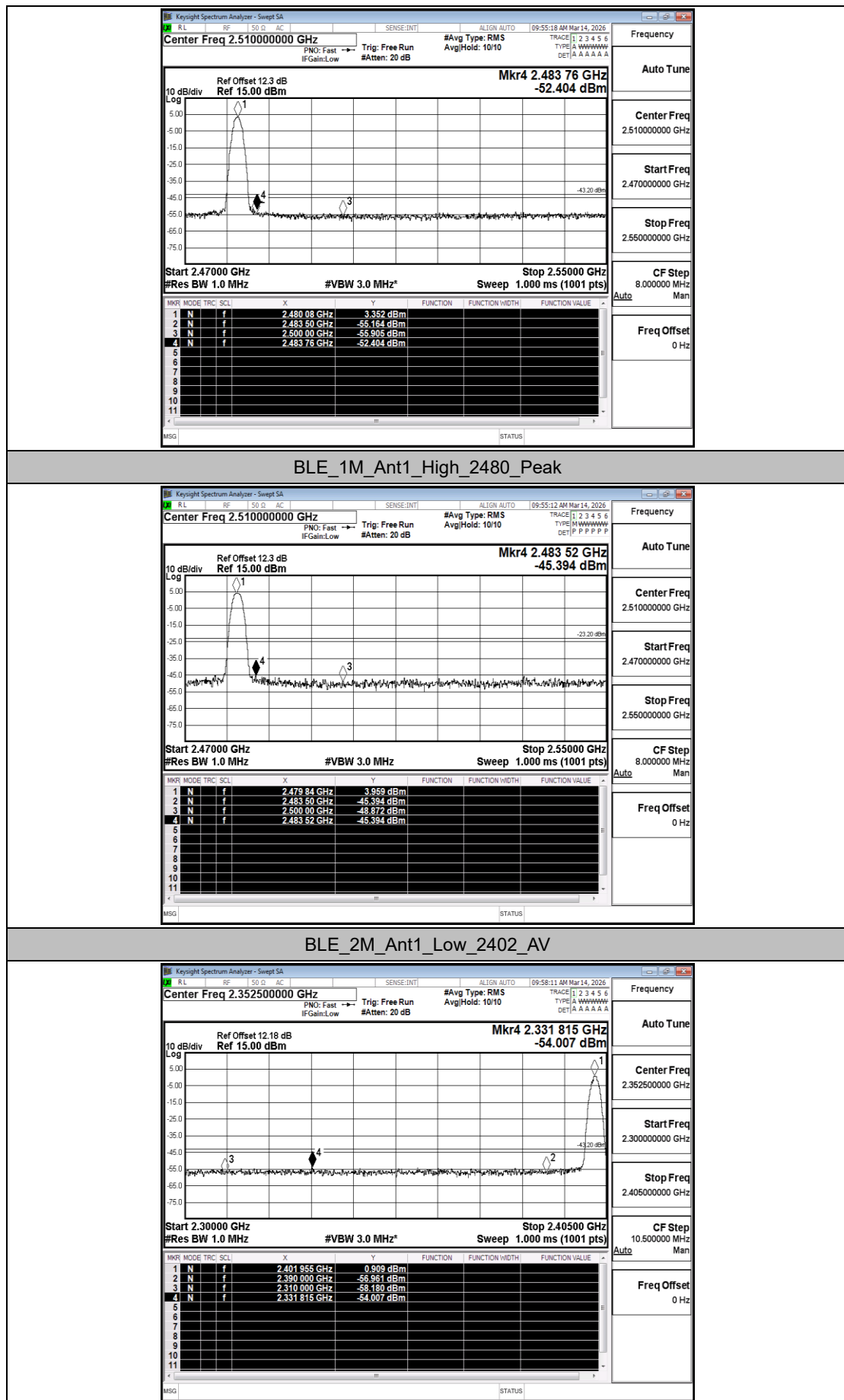
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Gain [dBi]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-56.61	≤-43.20	2.00	0.00	40.59	≤54	PASS
				AV	2359.955	-54.63	≤-43.20	2.00	0.00	42.57	≤54	PASS
				AV	2390.000	-58.86	≤-43.20	2.00	0.00	38.34	≤54	PASS
				Peak	2310.000	-51.47	≤-23.20	2.00	0.00	45.73	≤74	PASS
				Peak	2375.600	-46.53	≤-23.20	2.00	0.00	50.67	≤74	PASS
				Peak	2390.000	-48.3	≤-23.20	2.00	0.00	48.90	≤74	PASS
		High	2480	AV	2483.500	-55.16	≤-43.20	2.00	0.00	42.04	≤54	PASS
				AV	2483.760	-52.4	≤-43.20	2.00	0.00	44.80	≤54	PASS
				AV	2500.000	-55.91	≤-43.20	2.00	0.00	41.29	≤54	PASS
				Peak	2483.500	-45.39	≤-23.20	2.00	0.00	51.81	≤74	PASS
				Peak	2483.520	-45.39	≤-23.20	2.00	0.00	51.81	≤74	PASS
				Peak	2500.000	-48.87	≤-23.20	2.00	0.00	48.33	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-58.18	≤-43.20	2.00	0.00	39.02	≤54	PASS
				AV	2331.815	-54.01	≤-43.20	2.00	0.00	43.19	≤54	PASS
				AV	2390.000	-56.96	≤-43.20	2.00	0.00	40.24	≤54	PASS
				Peak	2310.000	-53.05	≤-23.20	2.00	0.00	44.15	≤74	PASS
				Peak	2359.220	-47.21	≤-23.20	2.00	0.00	49.99	≤74	PASS
				Peak	2390.000	-51.56	≤-23.20	2.00	0.00	45.64	≤74	PASS
		High	2480	AV	2483.500	-53.9	≤-43.20	2.00	0.00	43.30	≤54	PASS
				AV	2483.840	-52.25	≤-43.20	2.00	0.00	44.95	≤54	PASS
				AV	2500.000	-55.85	≤-43.20	2.00	0.00	41.35	≤54	PASS
				Peak	2483.500	-49.7	≤-23.20	2.00	0.00	47.50	≤74	PASS
				Peak	2483.600	-44.09	≤-23.20	2.00	0.00	53.11	≤74	PASS
				Peak	2500.000	-50.7	≤-23.20	2.00	0.00	46.50	≤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



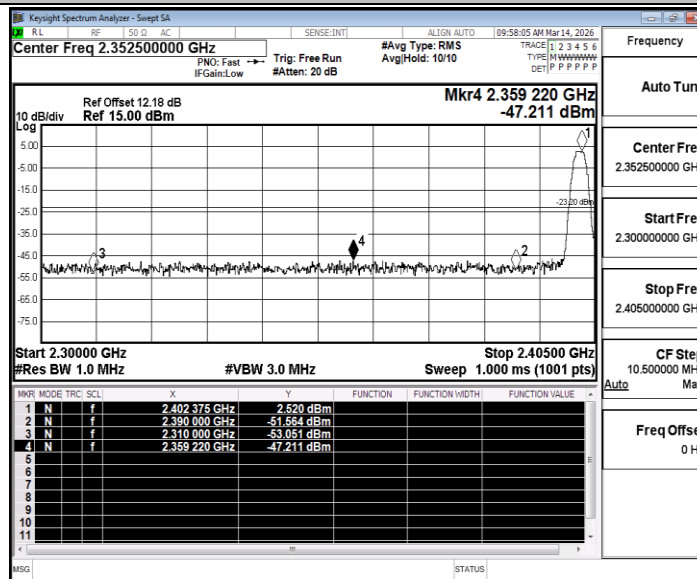


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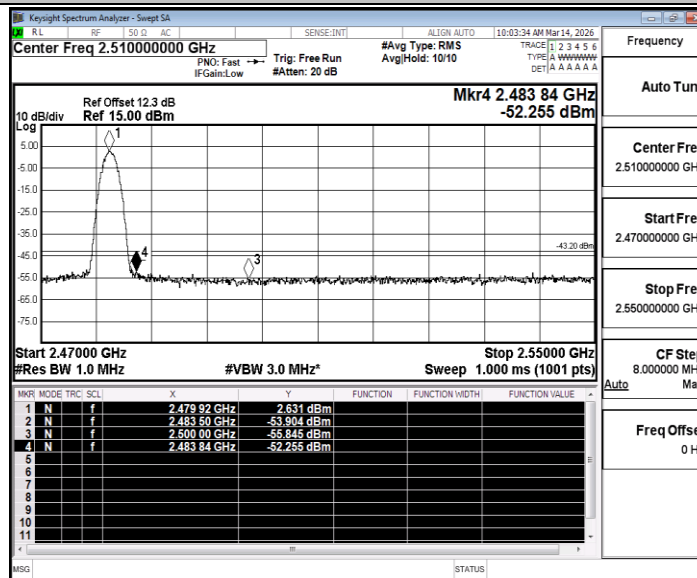
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BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

