

Appendix A

RF Test Data for BT LE (Conducted Measurement)

Product Name: LED Panel Device

Test Model: PRO300

Environmental Conditions

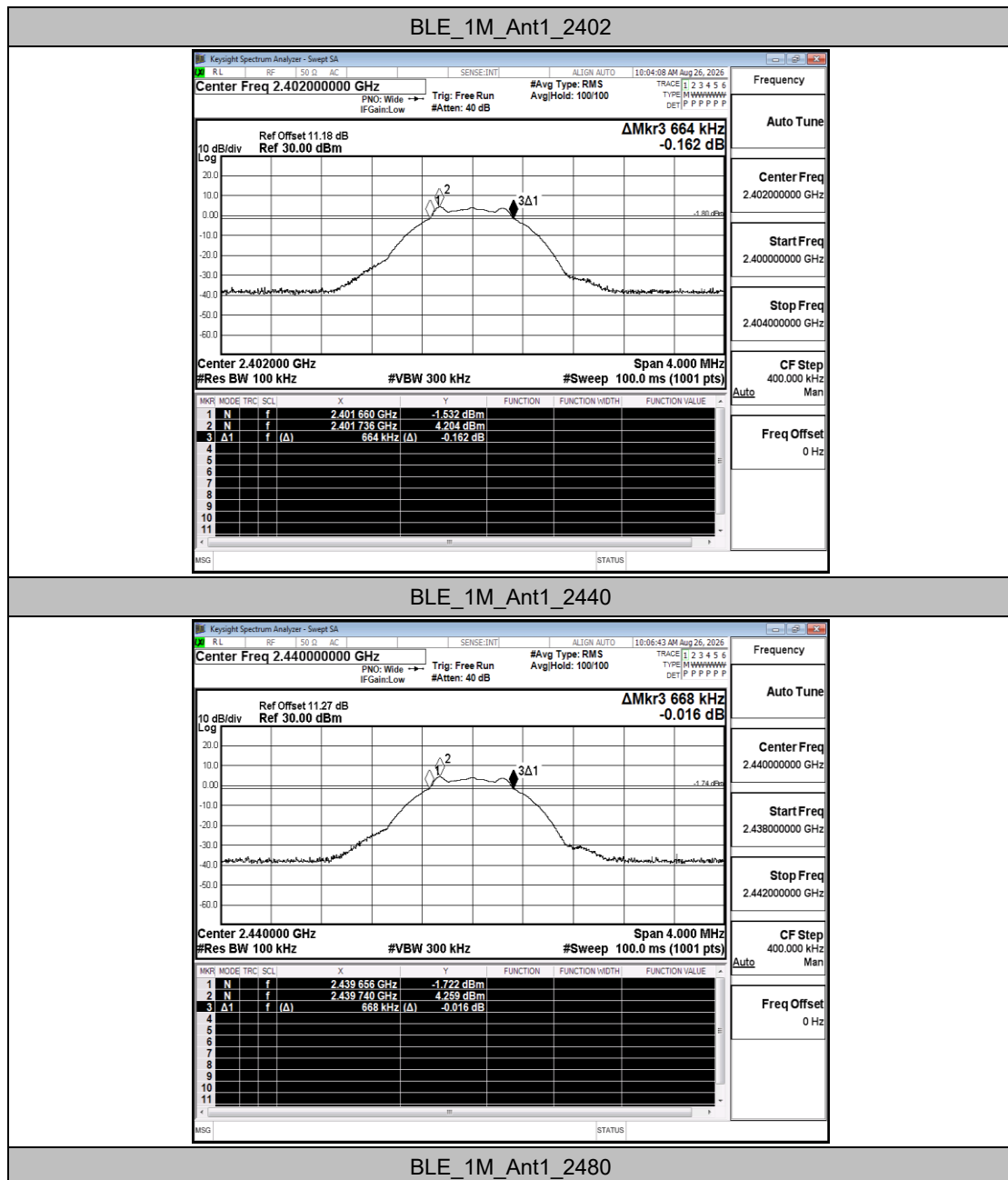
Temperature:	23.2°C
Relative Humidity:	54.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

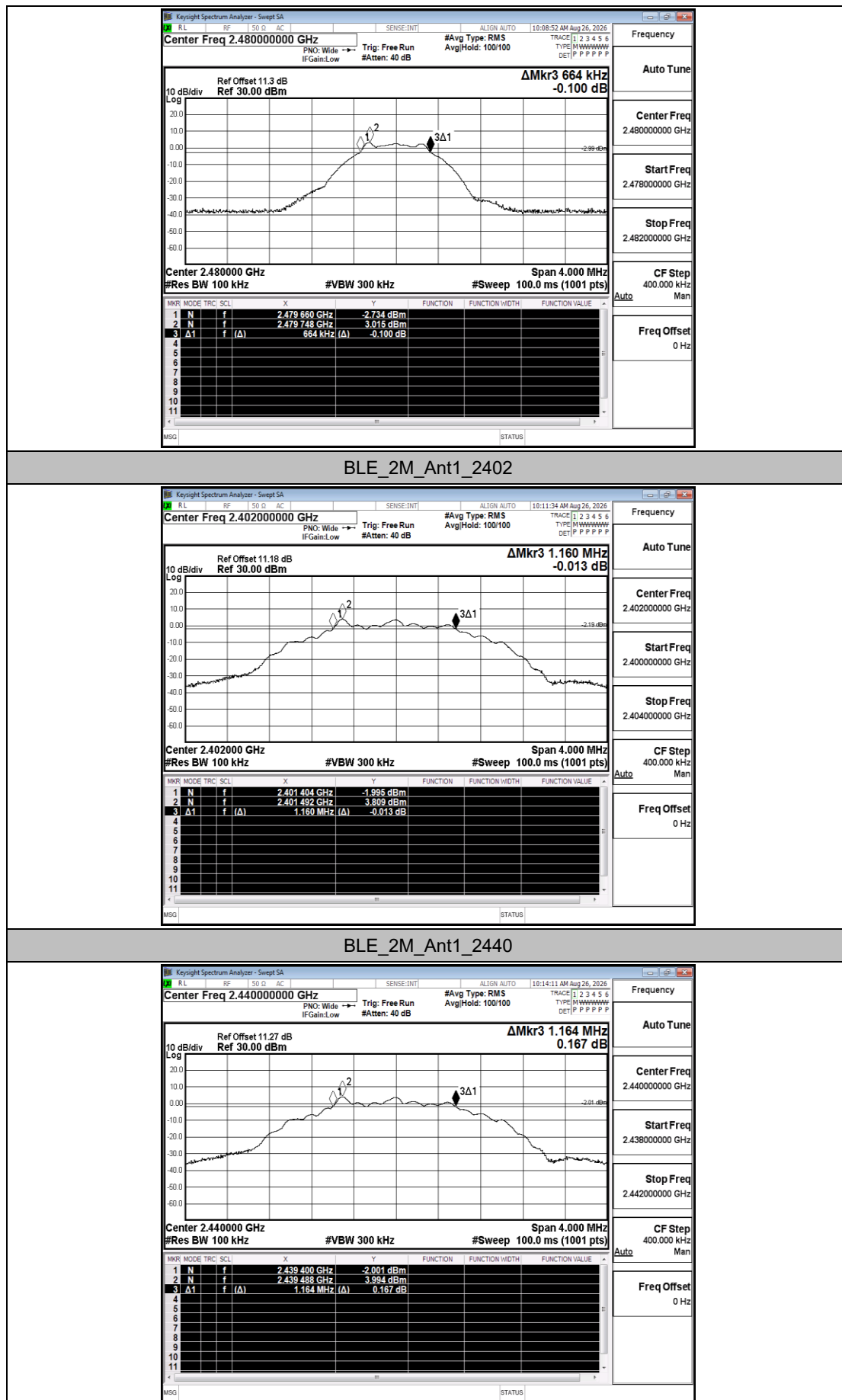
A.1 DTS Bandwidth

Test Result

TestMode	Antenna	Freq (MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit [MHz]	Verdict
BLE_1M	Ant1	2402	0.664	2401.660	2402.324	0.5	PASS
		2440	0.668	2439.656	2440.324	0.5	PASS
		2480	0.664	2479.660	2480.324	0.5	PASS
BLE_2M	Ant1	2402	1.160	2401.404	2402.564	0.5	PASS
		2440	1.164	2439.400	2440.564	0.5	PASS
		2480	1.160	2479.404	2480.564	0.5	PASS

Test Graphs

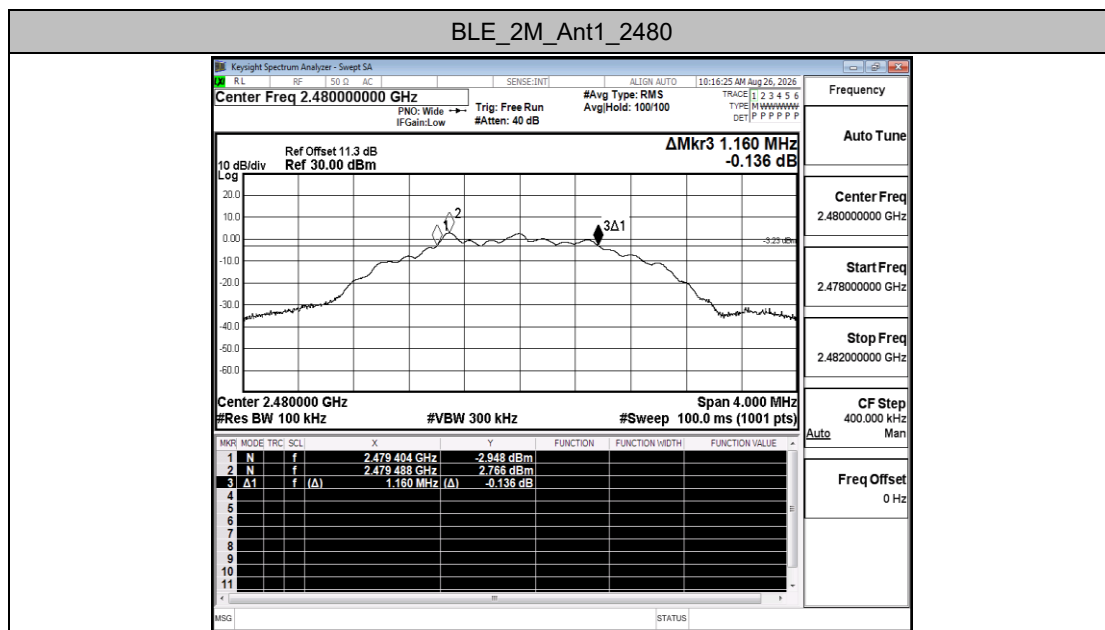




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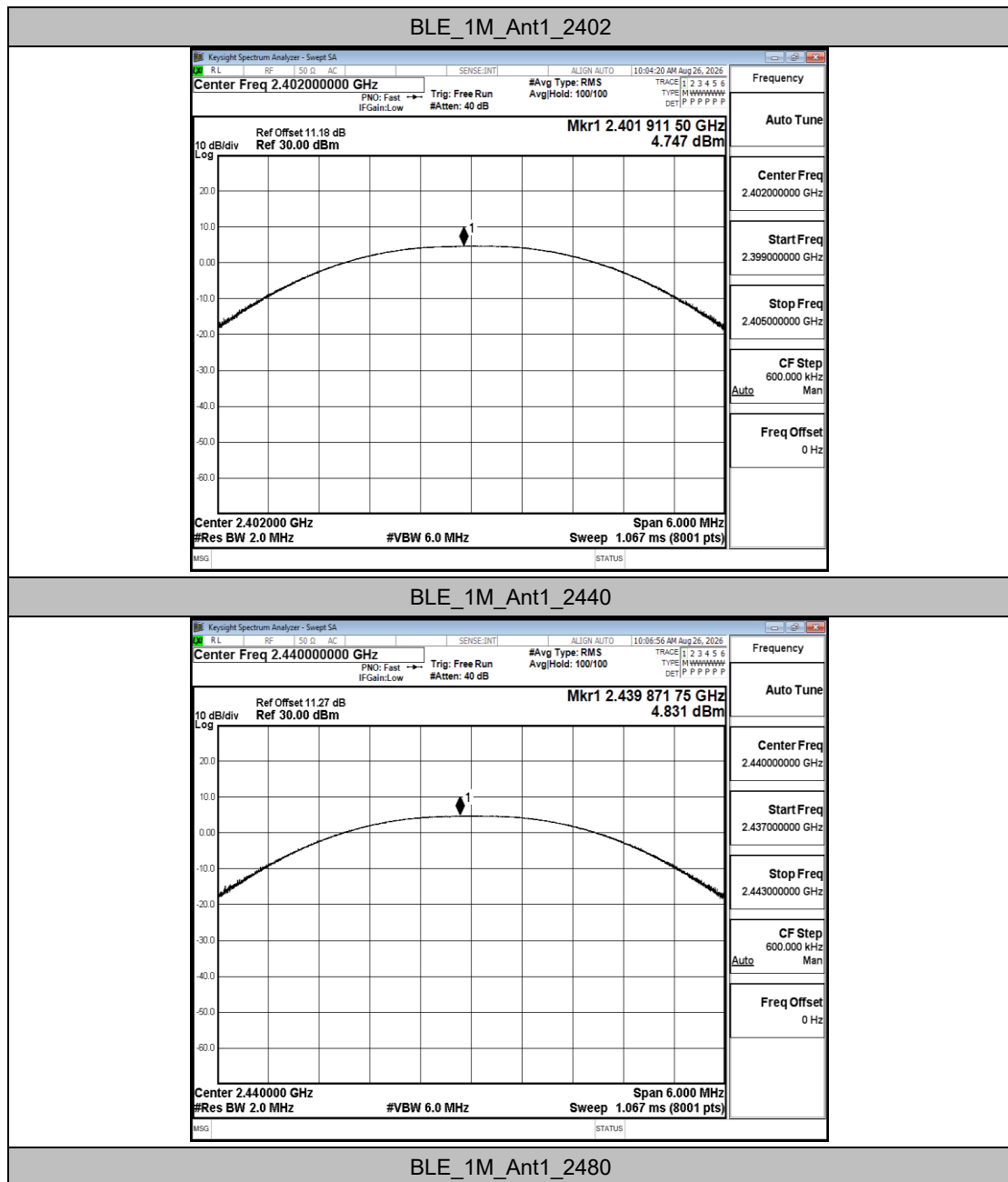


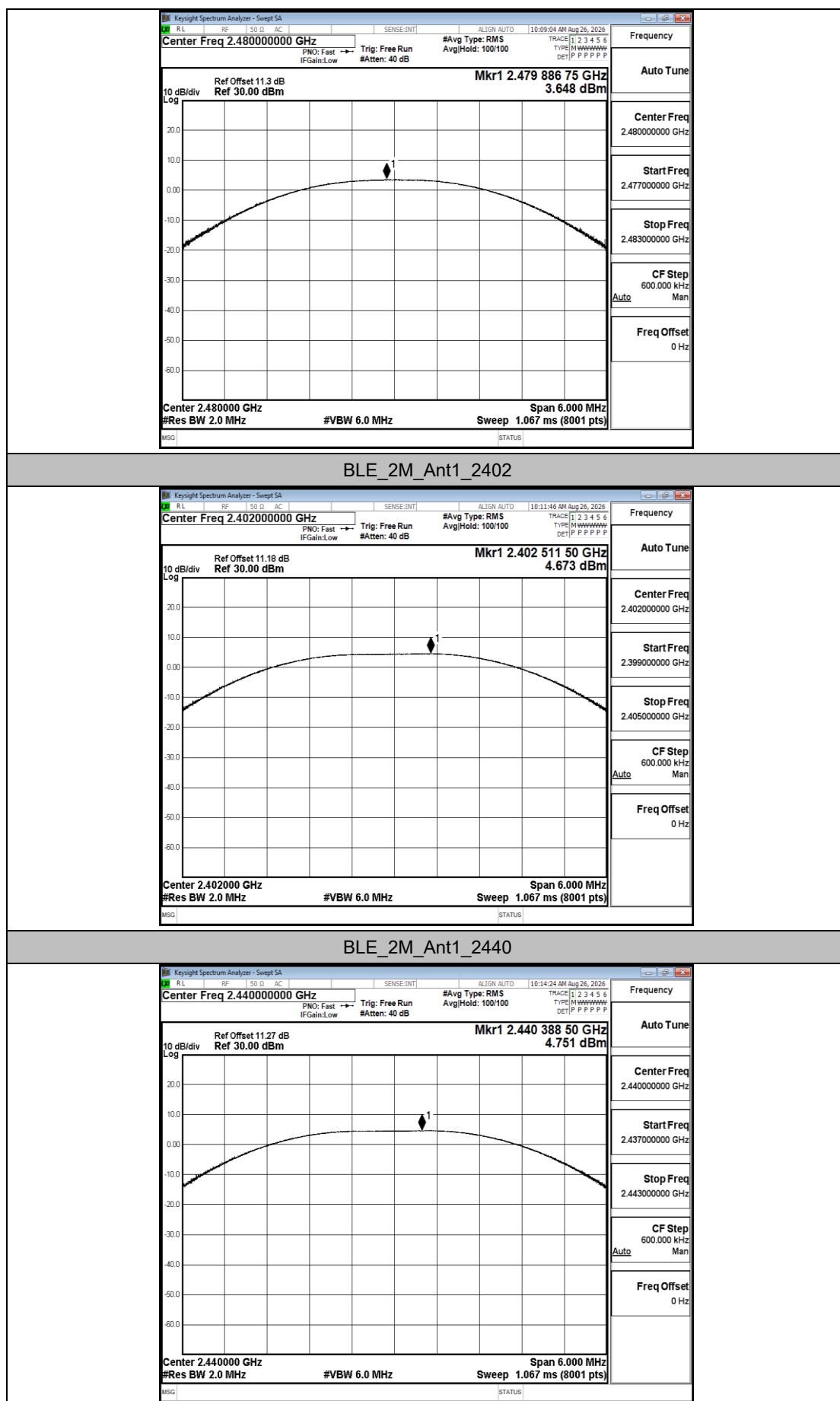
A.2 Maximum Peak conducted output power

Test Result Peak

TestMode	Antenna	Freq (MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	4.75	≤30	PASS
		2440	4.83	≤30	PASS
		2480	3.65	≤30	PASS
BLE_2M	Ant1	2402	4.67	≤30	PASS
		2440	4.75	≤30	PASS
		2480	3.56	≤30	PASS

Test Graphs Peak

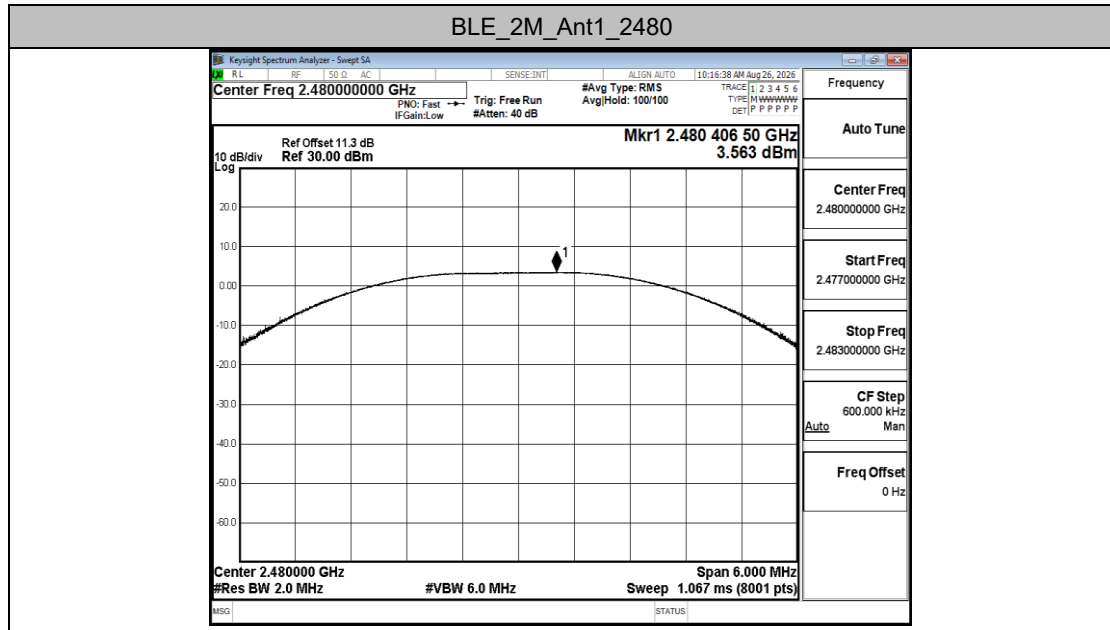




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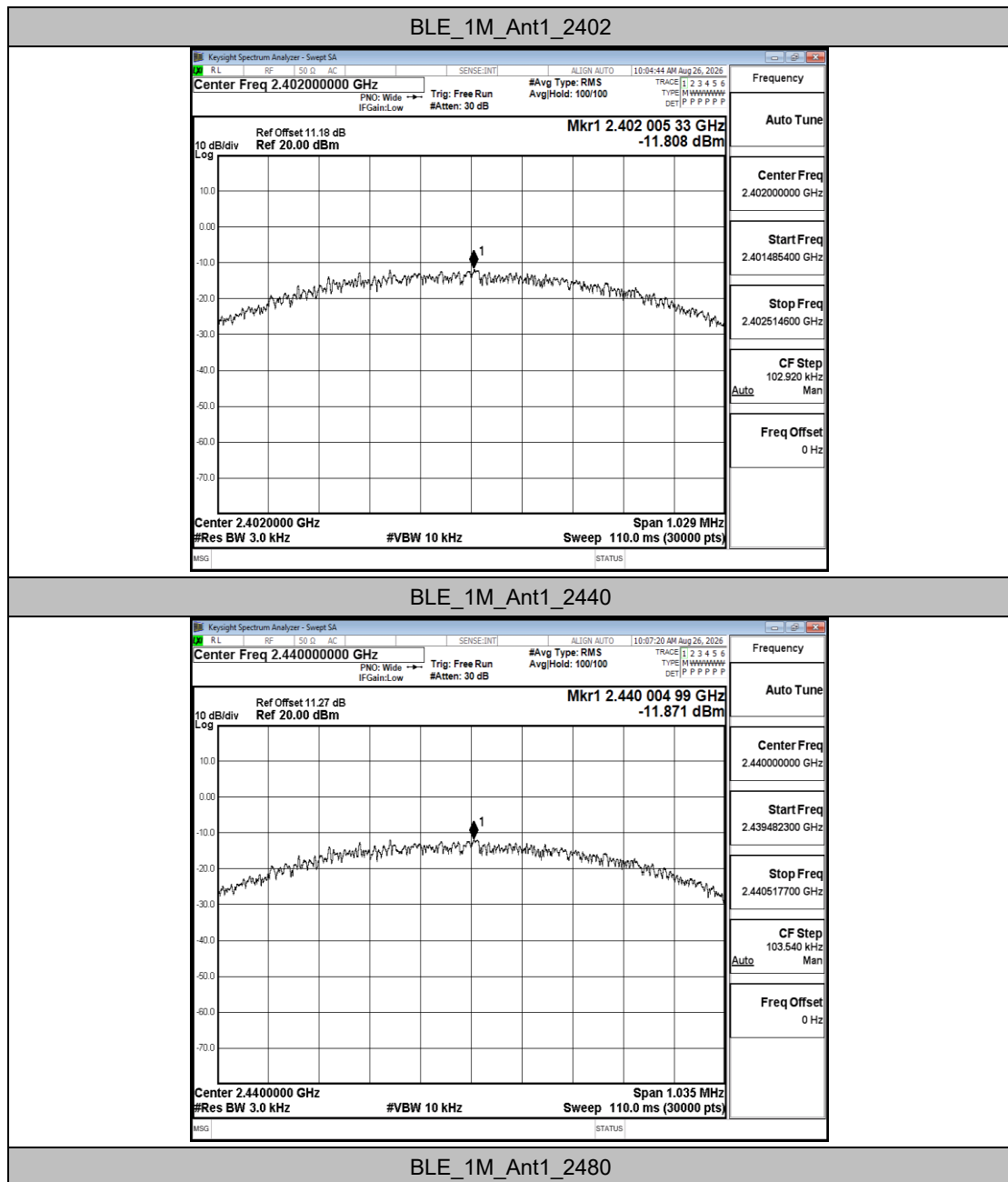


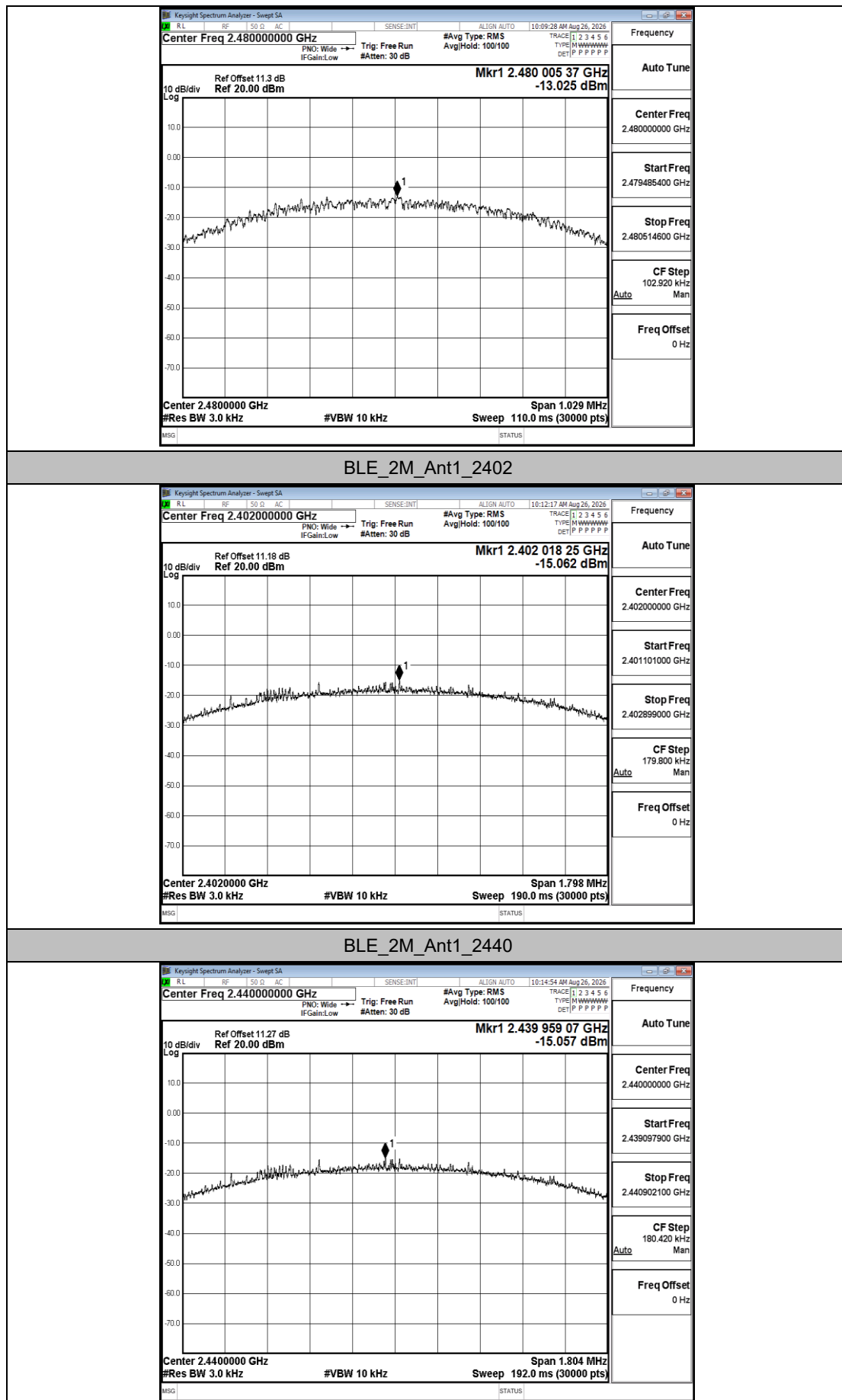
A.3 Maximum power spectral density

Test Result

TestMode	Antenna	Freq (MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-11.81	≤8.00	PASS
		2440	-11.87	≤8.00	PASS
		2480	-13.03	≤8.00	PASS
BLE_2M	Ant1	2402	-15.06	≤8.00	PASS
		2440	-15.06	≤8.00	PASS
		2480	-16.26	≤8.00	PASS

Test Graphs

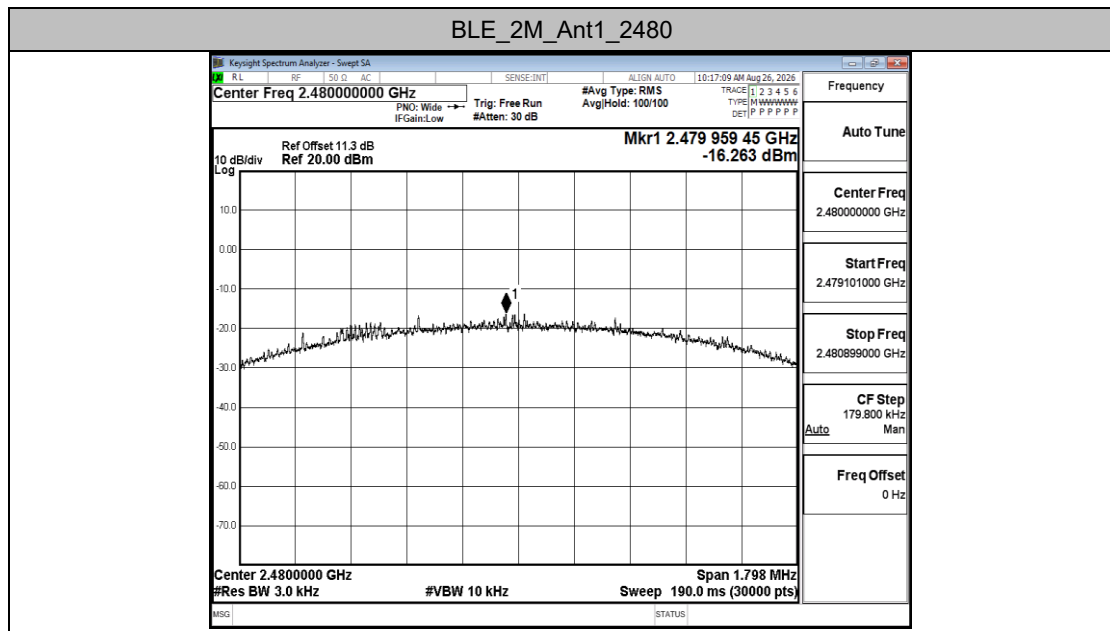




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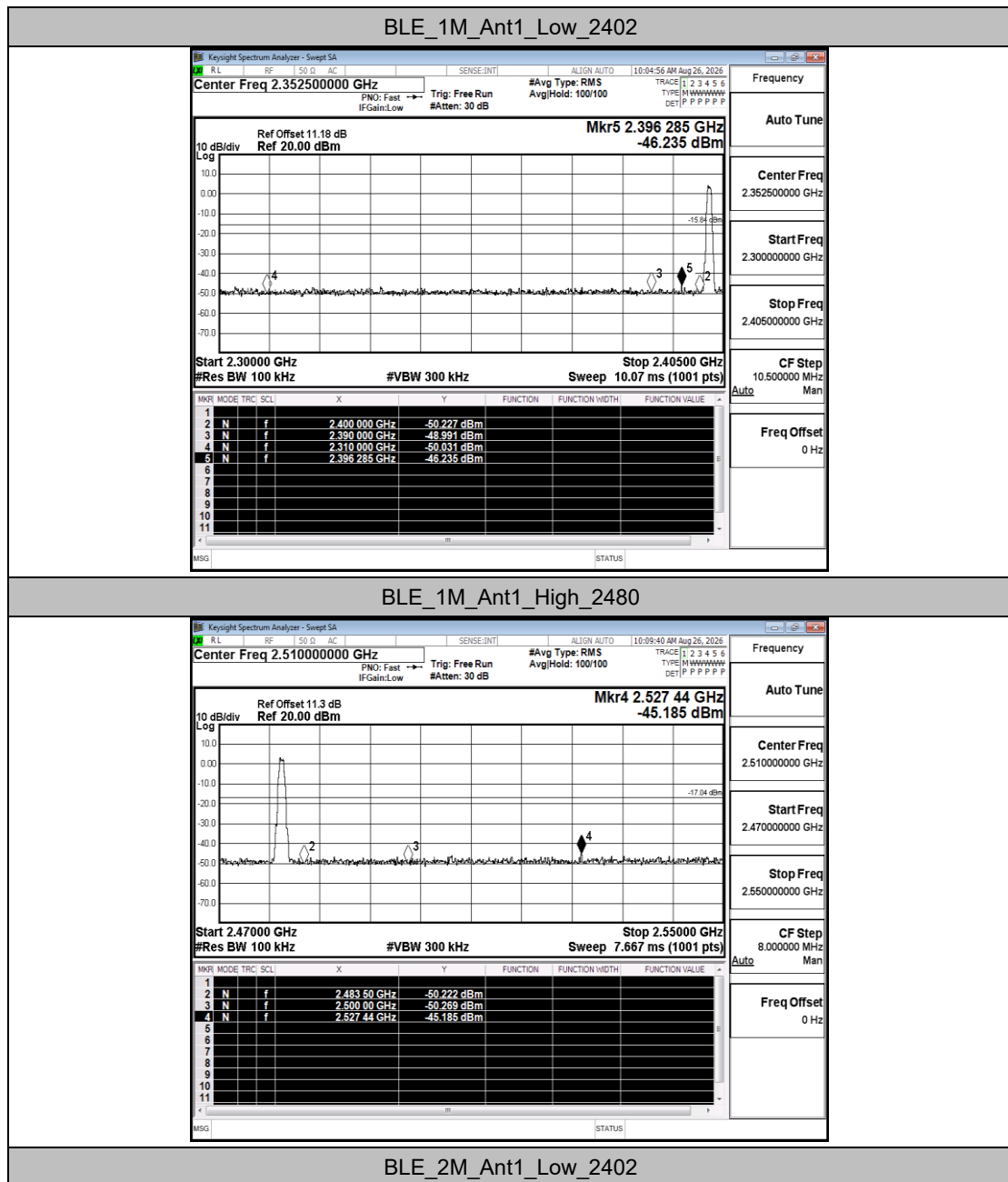


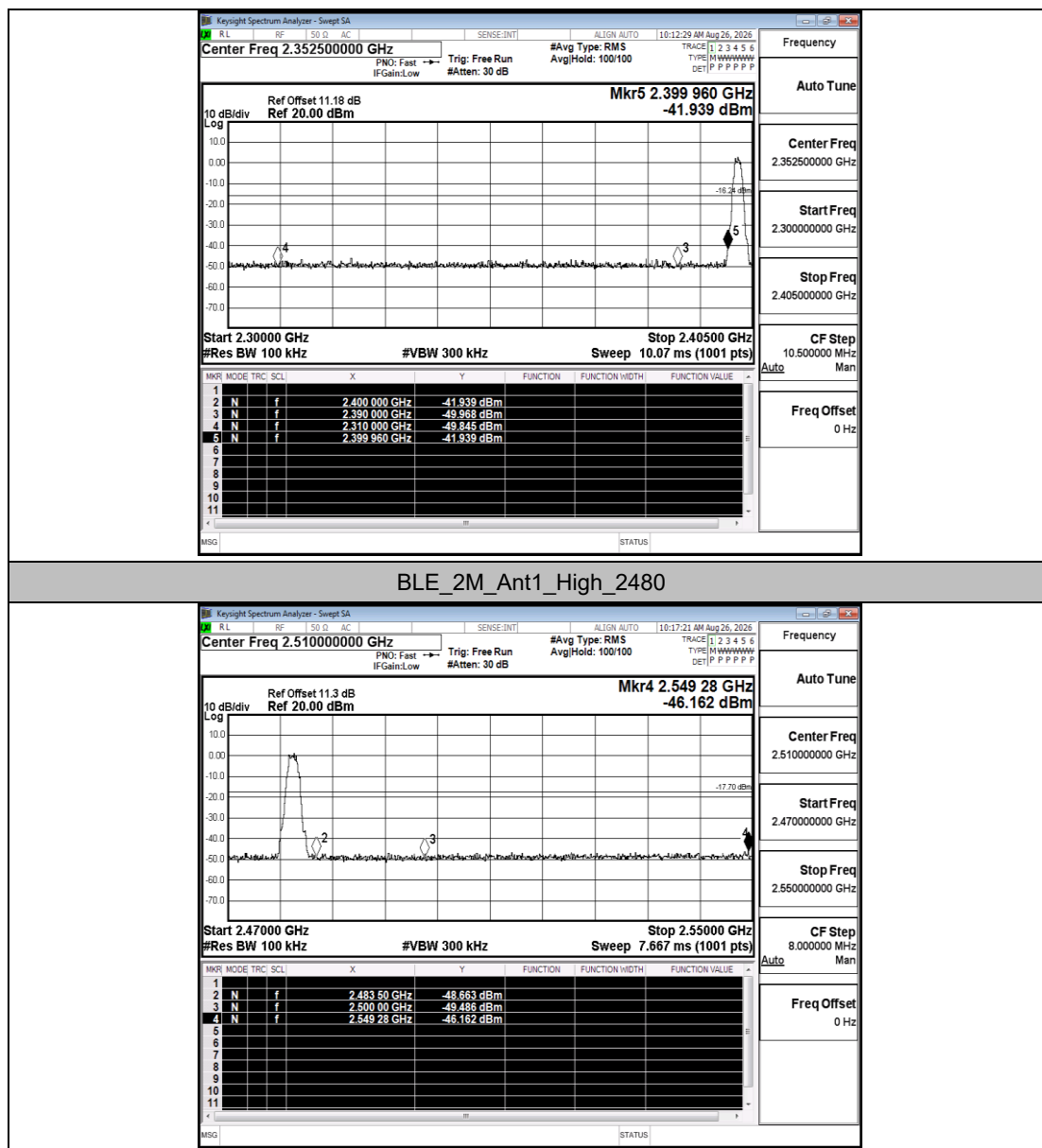
A.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Freq (MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	4.16	-46.24	≤-15.84	PASS
		High	2480	2.96	-45.19	≤-17.04	PASS
BLE_2M	Ant1	Low	2402	3.76	-41.94	≤-16.24	PASS
		High	2480	2.30	-46.16	≤-17.7	PASS

Test Graphs



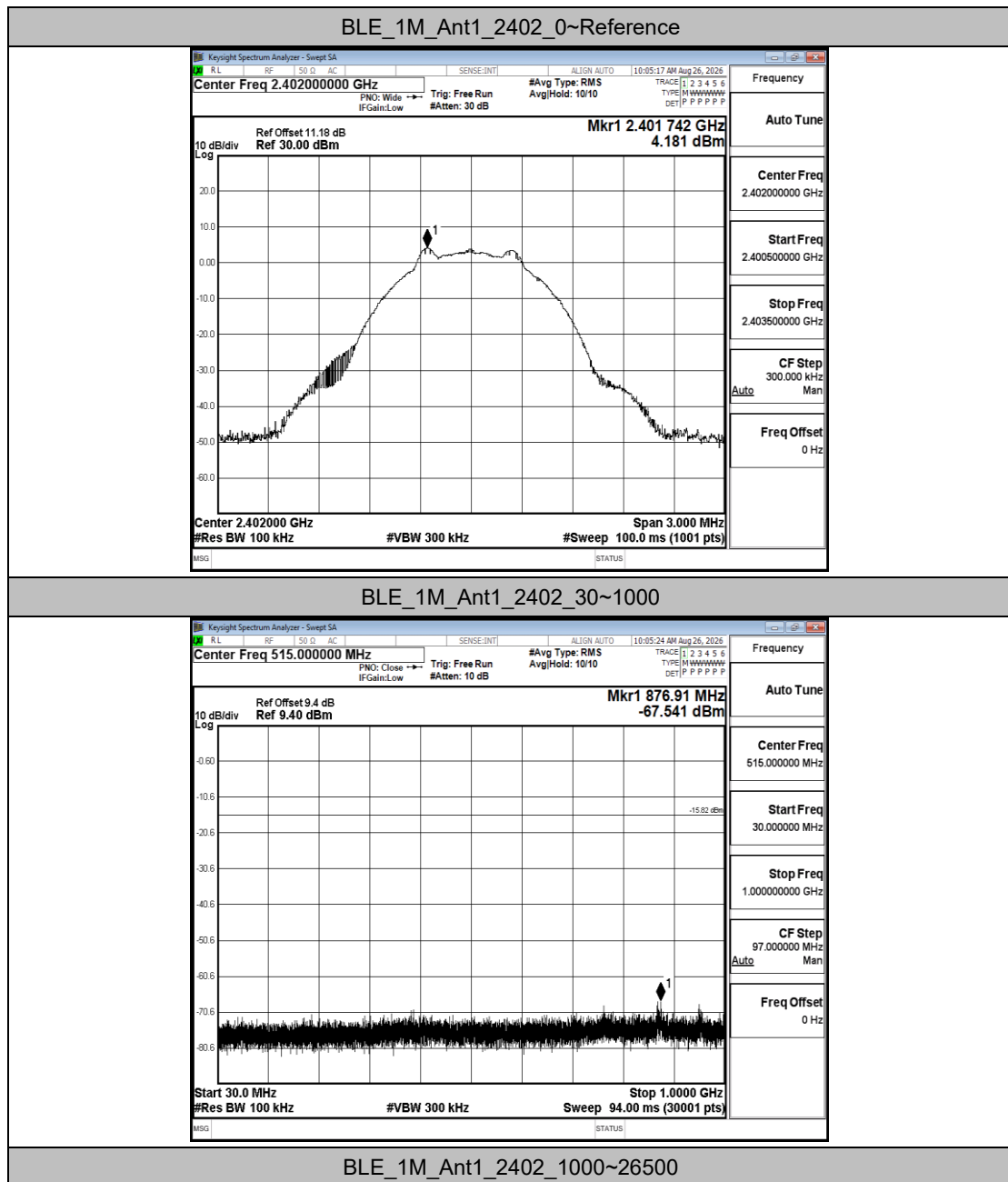


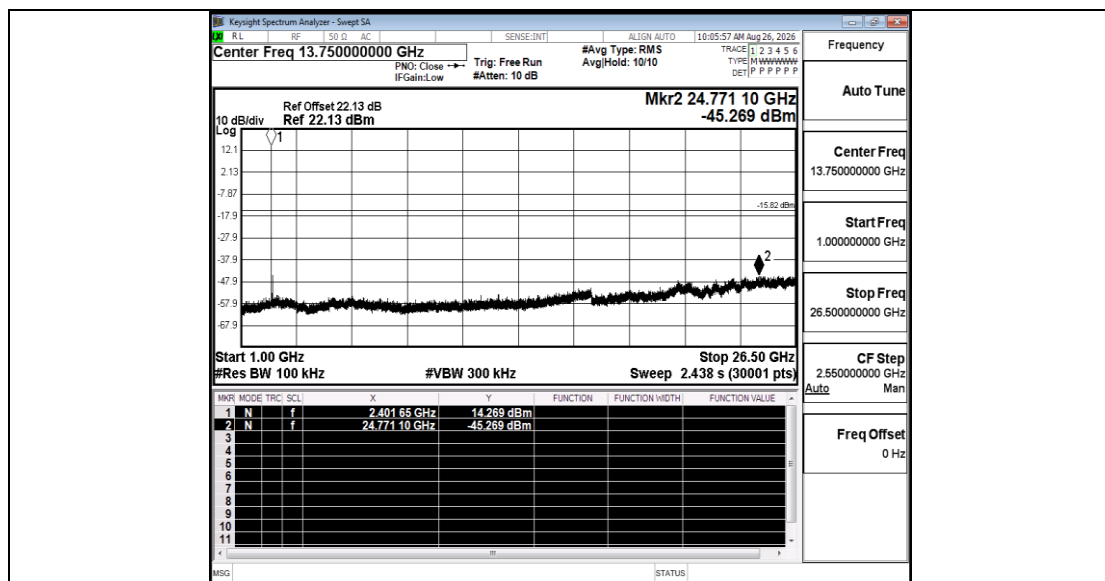
A.5 Conducted Spurious Emission

Test Result

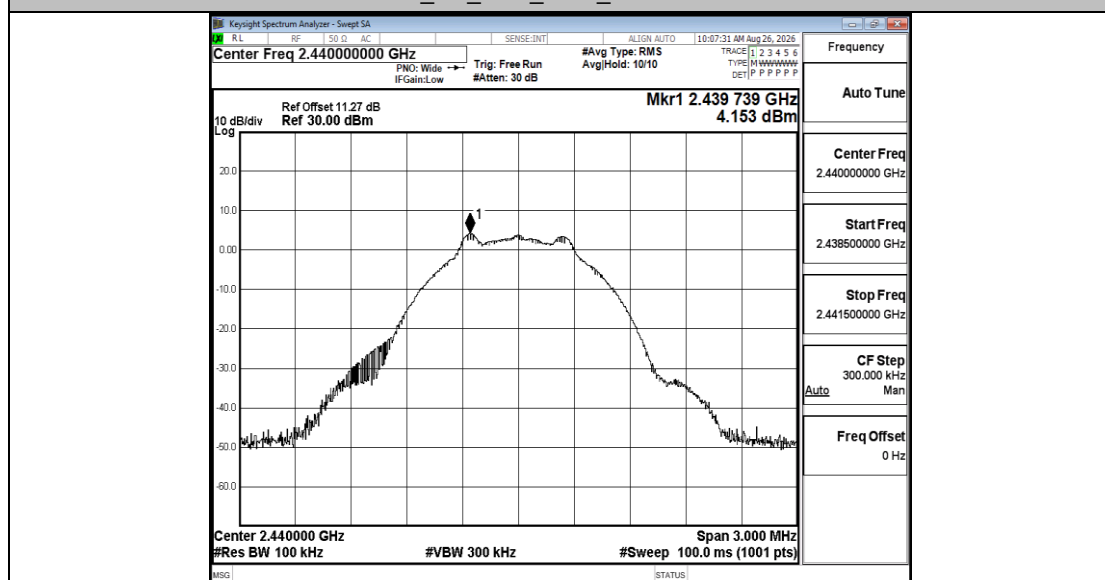
TestMode	Antenna	Freq (MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	4.18	4.18	---	PASS
			30~1000	4.18	-67.54	≤-15.82	PASS
			1000~26500	4.18	-45.27	≤-15.82	PASS
		2440	Reference	4.15	4.15	---	PASS
			30~1000	4.15	-67.89	≤-15.85	PASS
			1000~26500	4.15	-43.73	≤-15.85	PASS
		2480	Reference	2.96	2.96	---	PASS
			30~1000	2.96	-66.81	≤-17.04	PASS
			1000~26500	2.96	-44.78	≤-17.04	PASS
BLE_2M	Ant1	2402	Reference	3.74	3.74	---	PASS
			30~1000	3.74	-67.68	≤-16.26	PASS
			1000~26500	3.74	-44.25	≤-16.26	PASS
		2440	Reference	3.89	3.89	---	PASS
			30~1000	3.89	-66.54	≤-16.11	PASS
			1000~26500	3.89	-44.39	≤-16.11	PASS
		2480	Reference	2.65	2.65	---	PASS
			30~1000	2.65	-67.25	≤-17.35	PASS
			1000~26500	2.65	-43.87	≤-17.35	PASS

Test Graphs

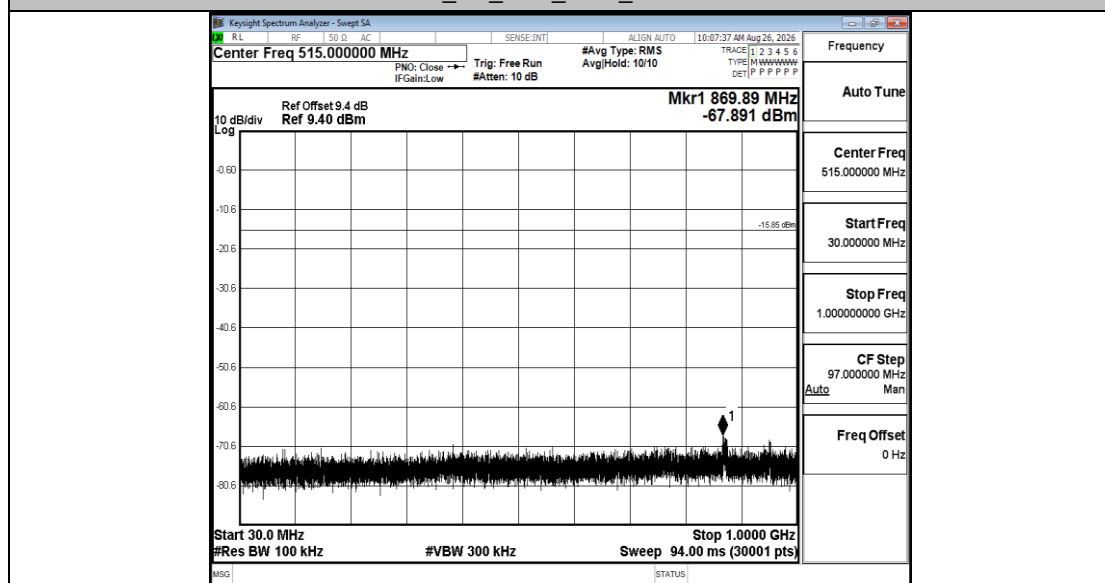


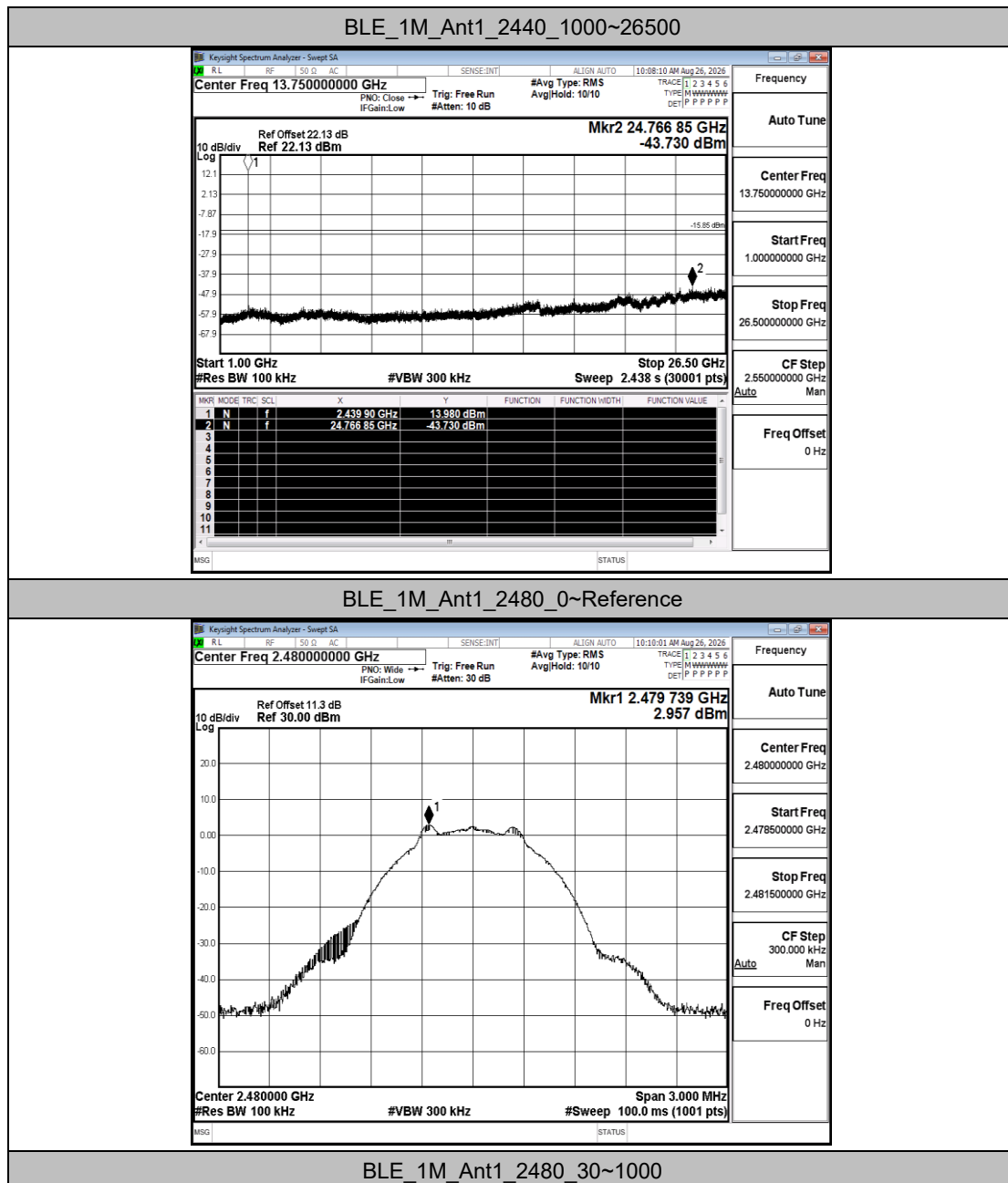


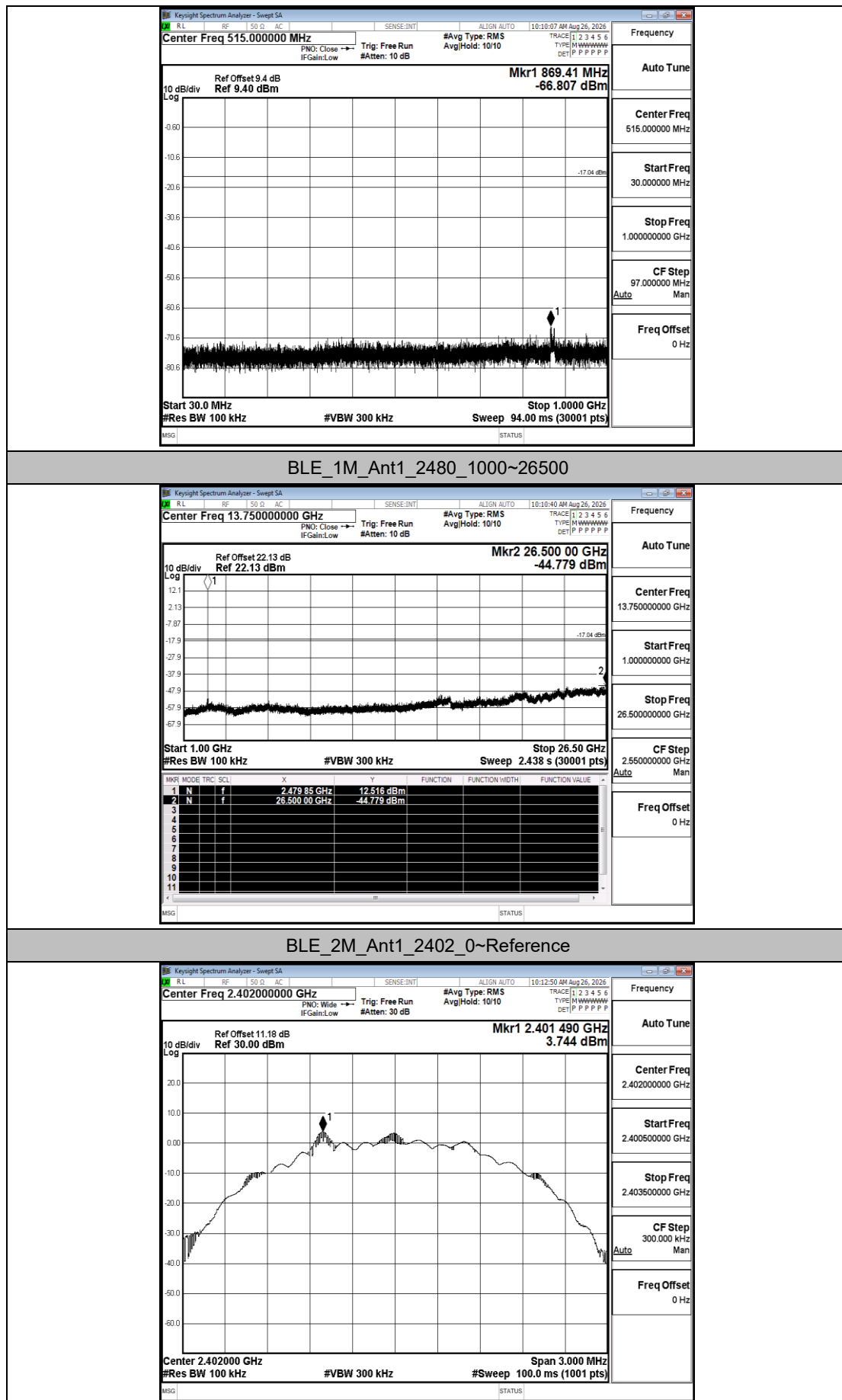
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



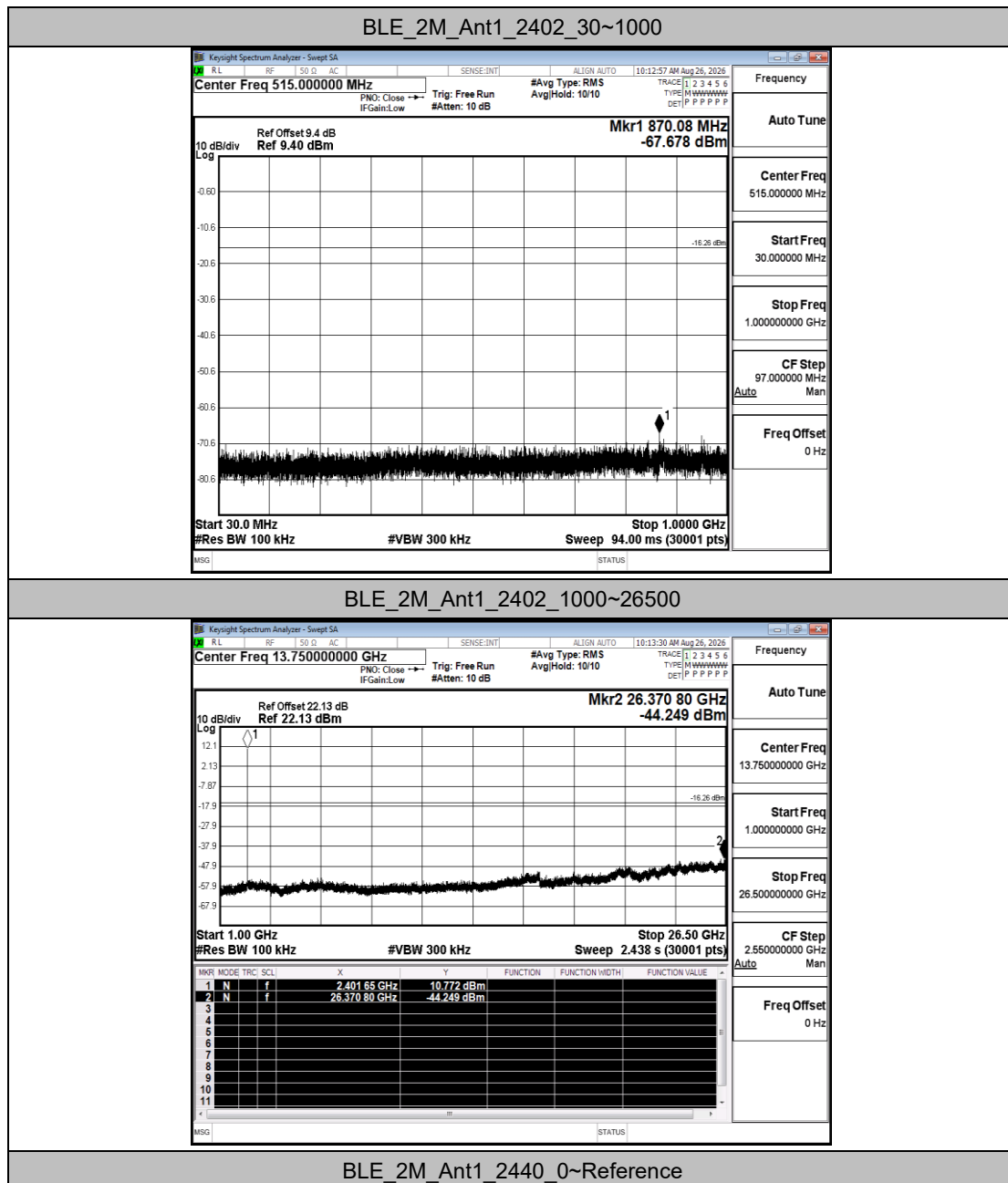


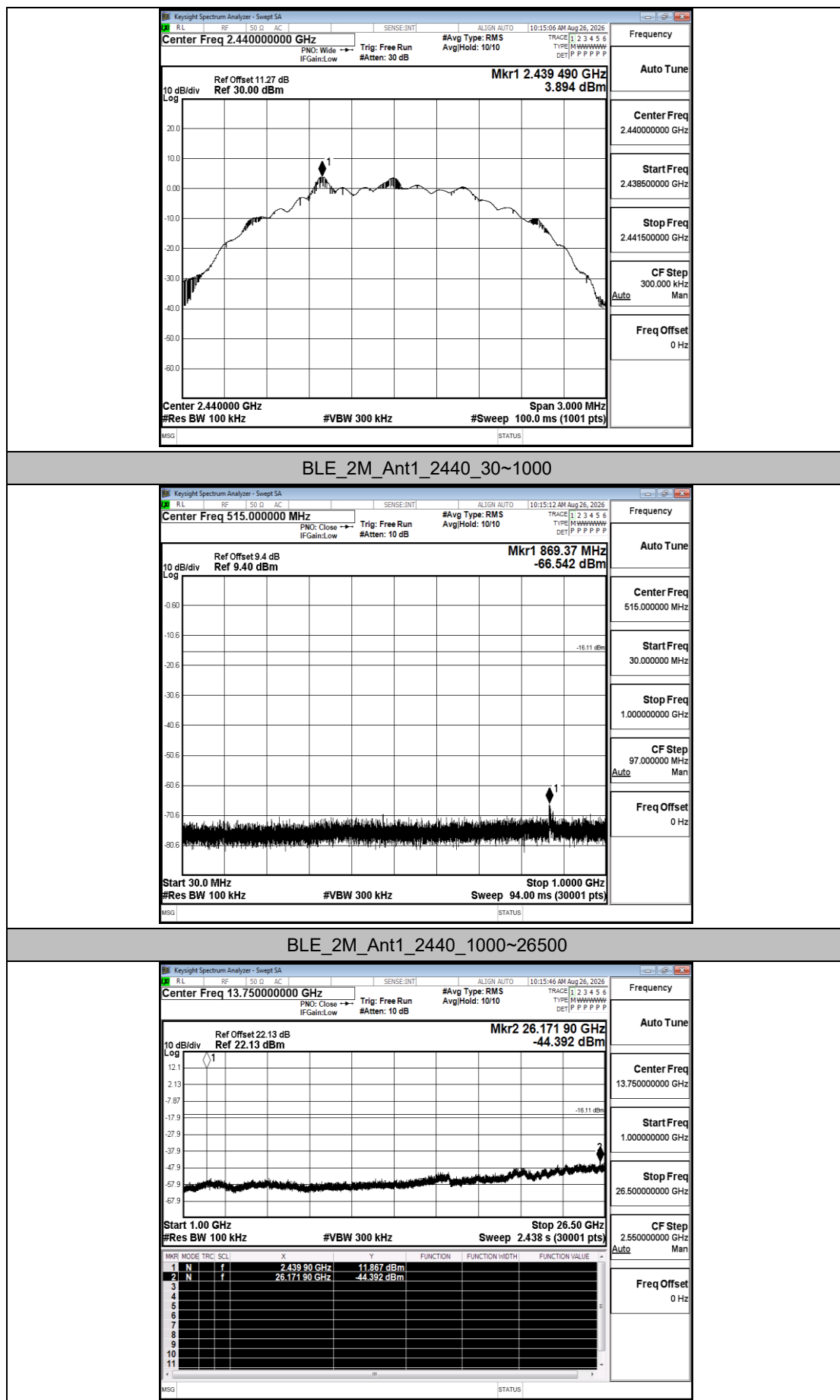


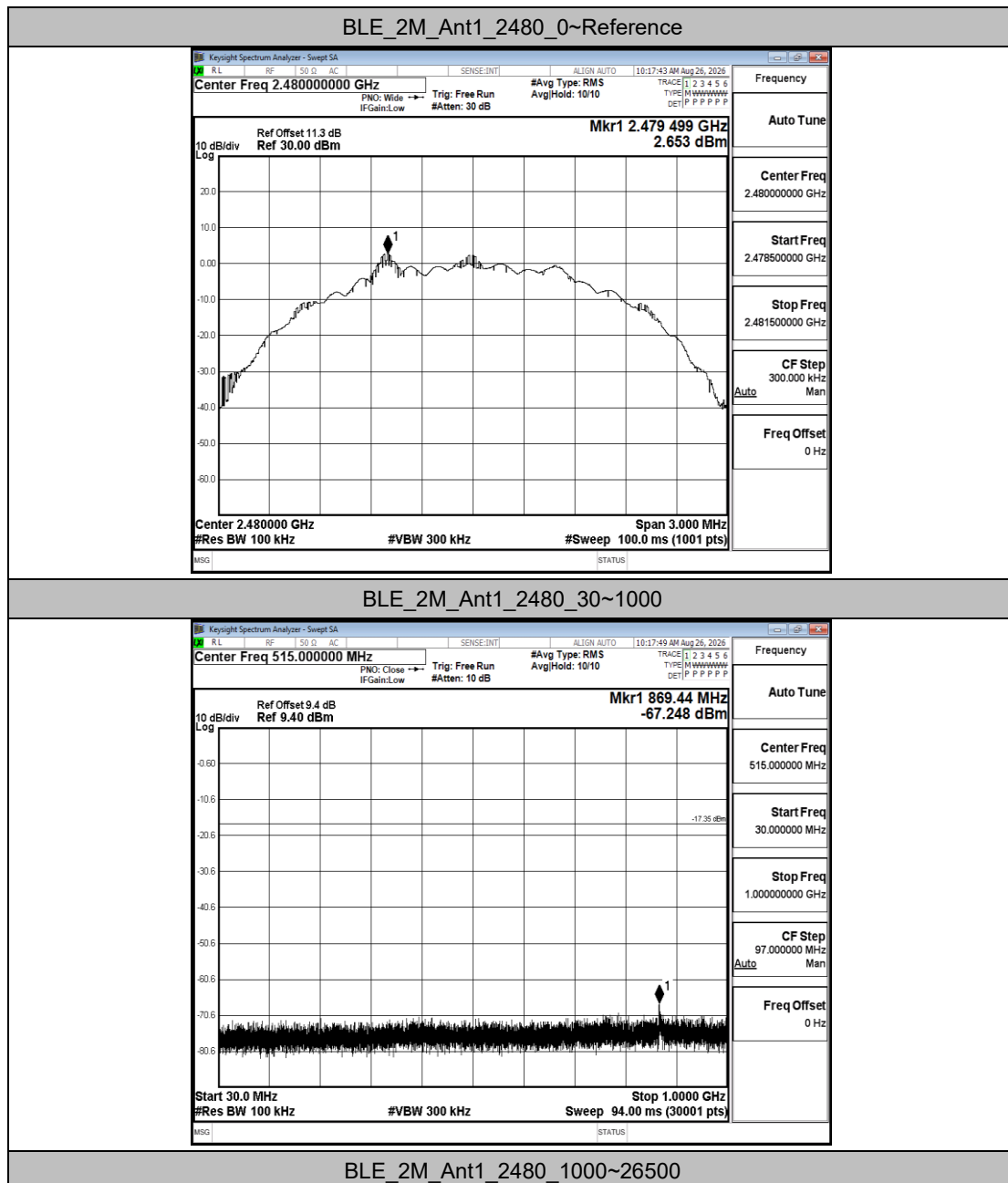
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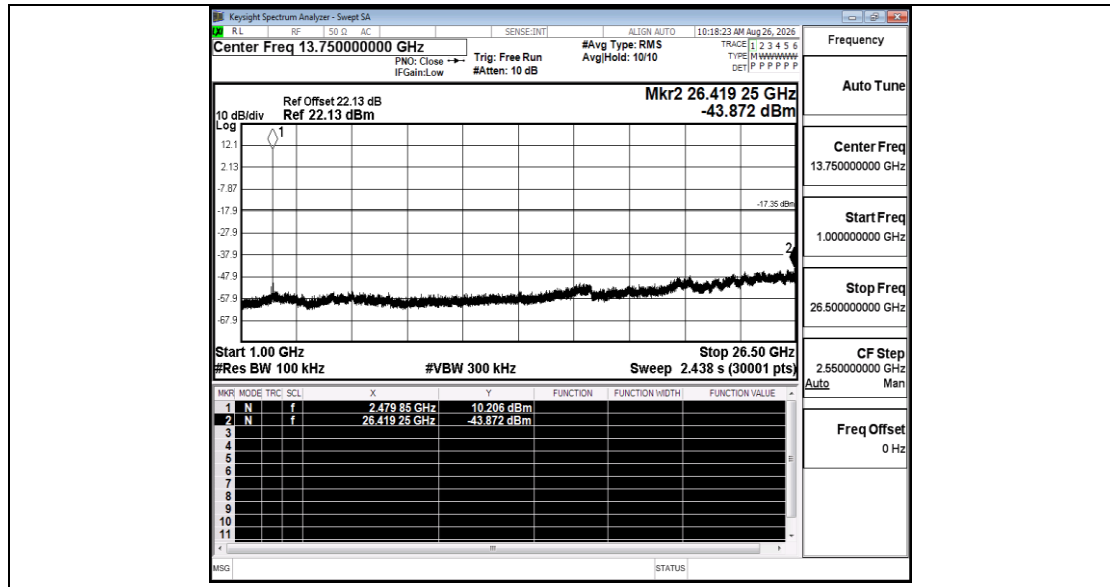
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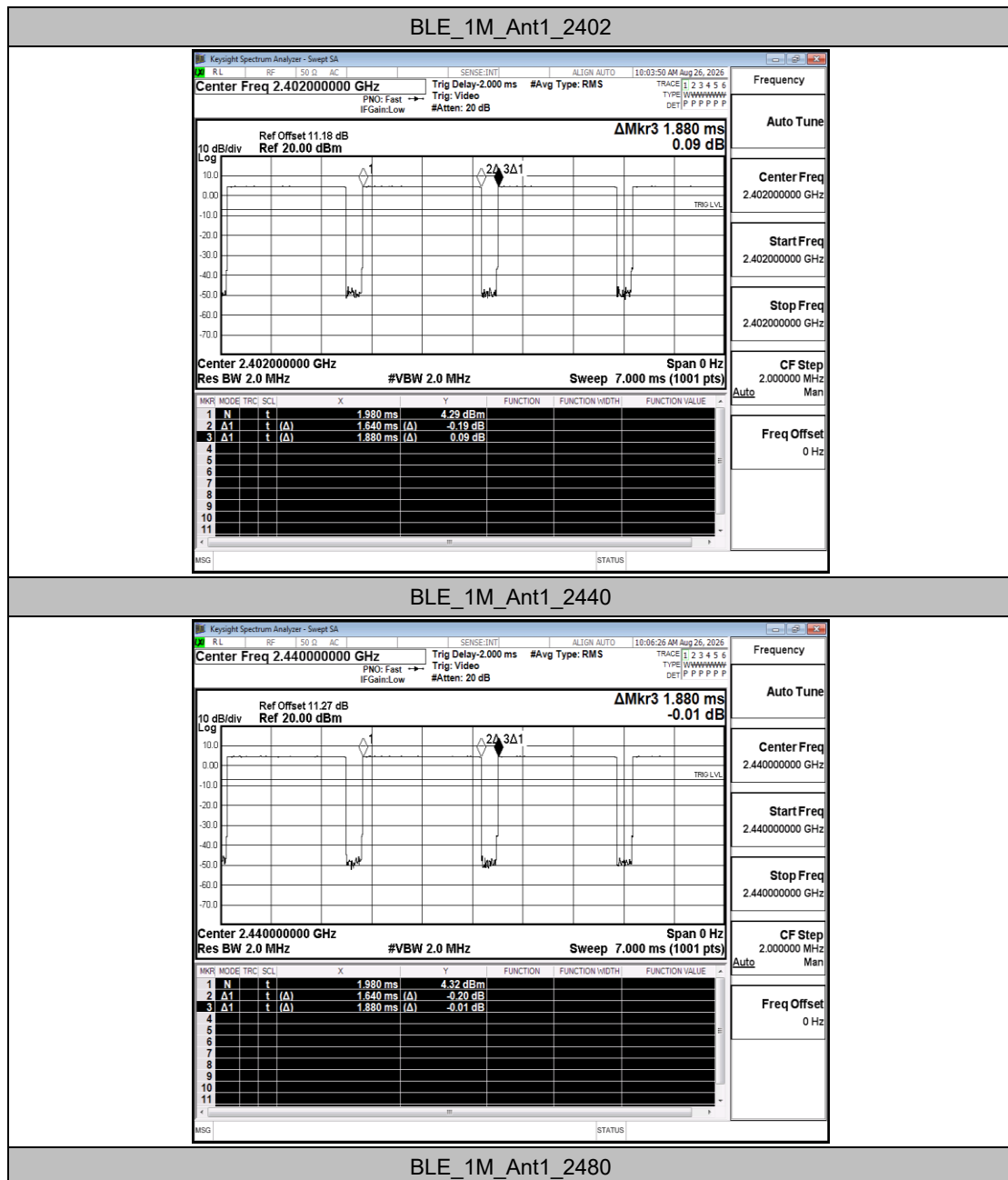


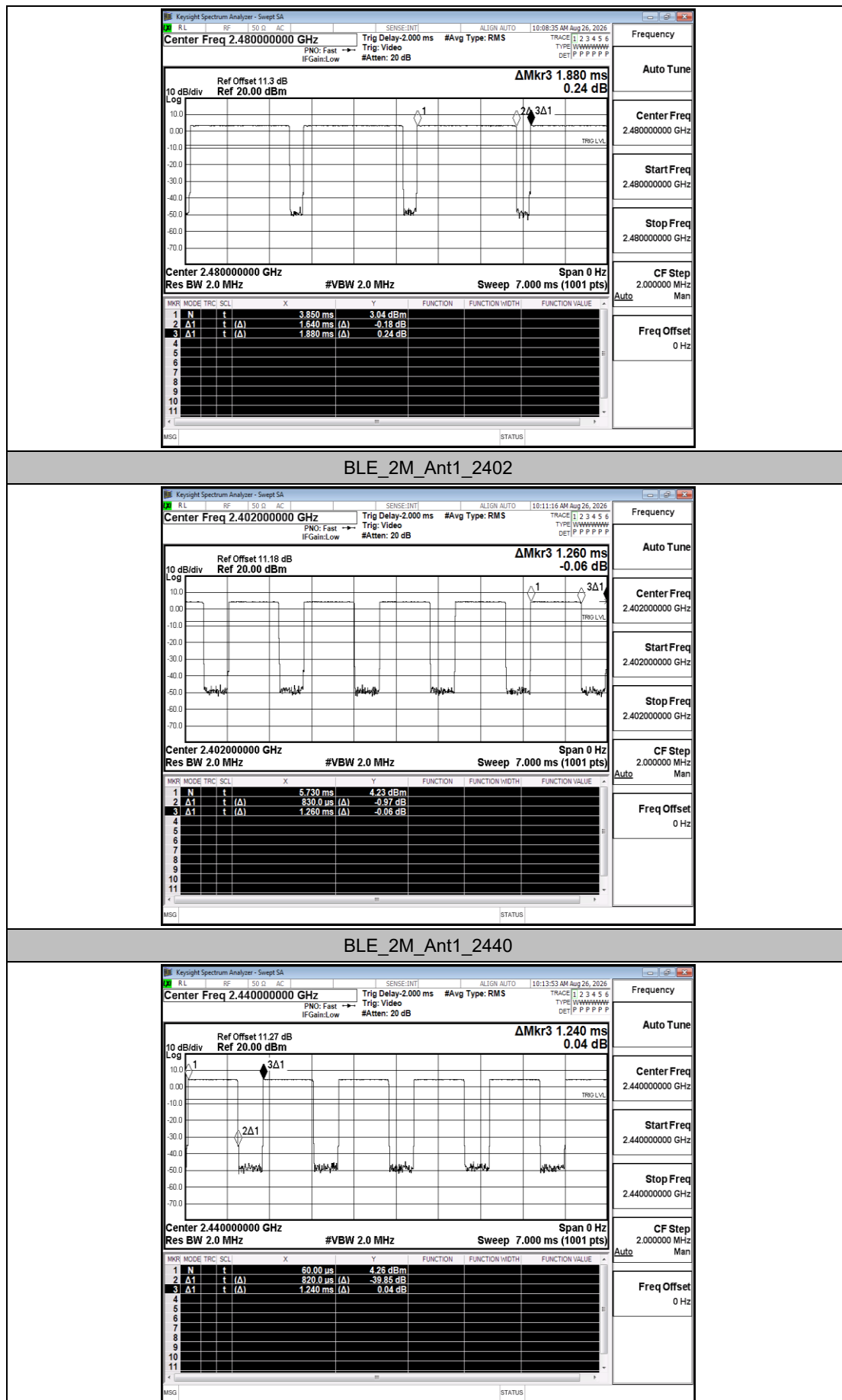
A.6 Duty Cycle

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	0.83	1.26	0.6587	65.87	1.81	---	---
		2440	0.82	1.24	0.6613	66.13	1.80	---	---
		2480	0.82	1.24	0.6613	66.13	1.80	---	---

Test Graphs

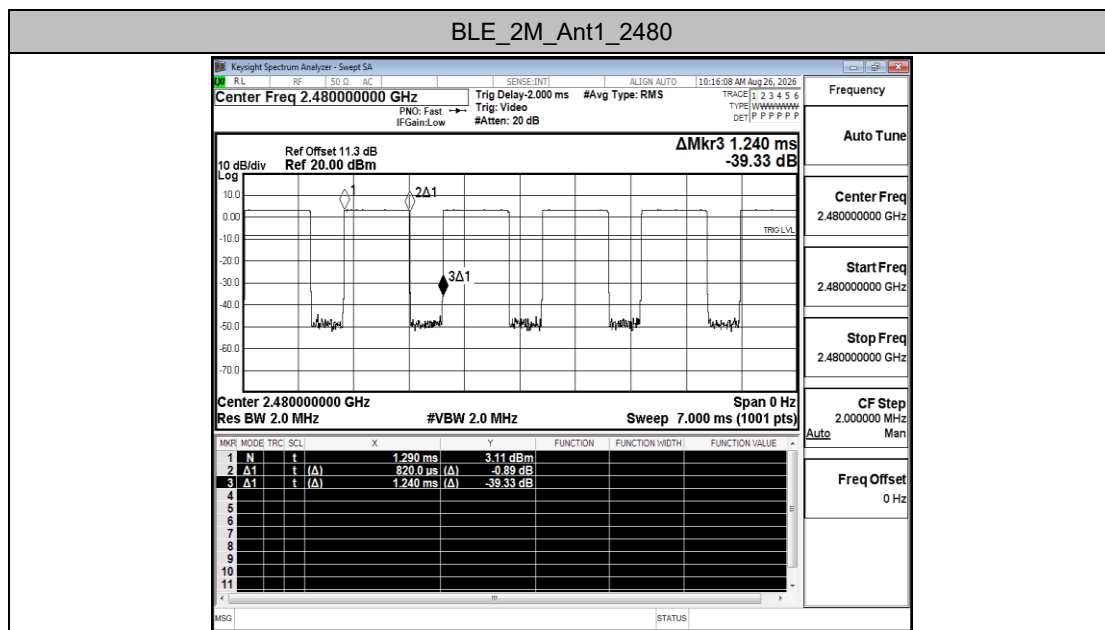




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A.7 Emissions in Restricted Bands

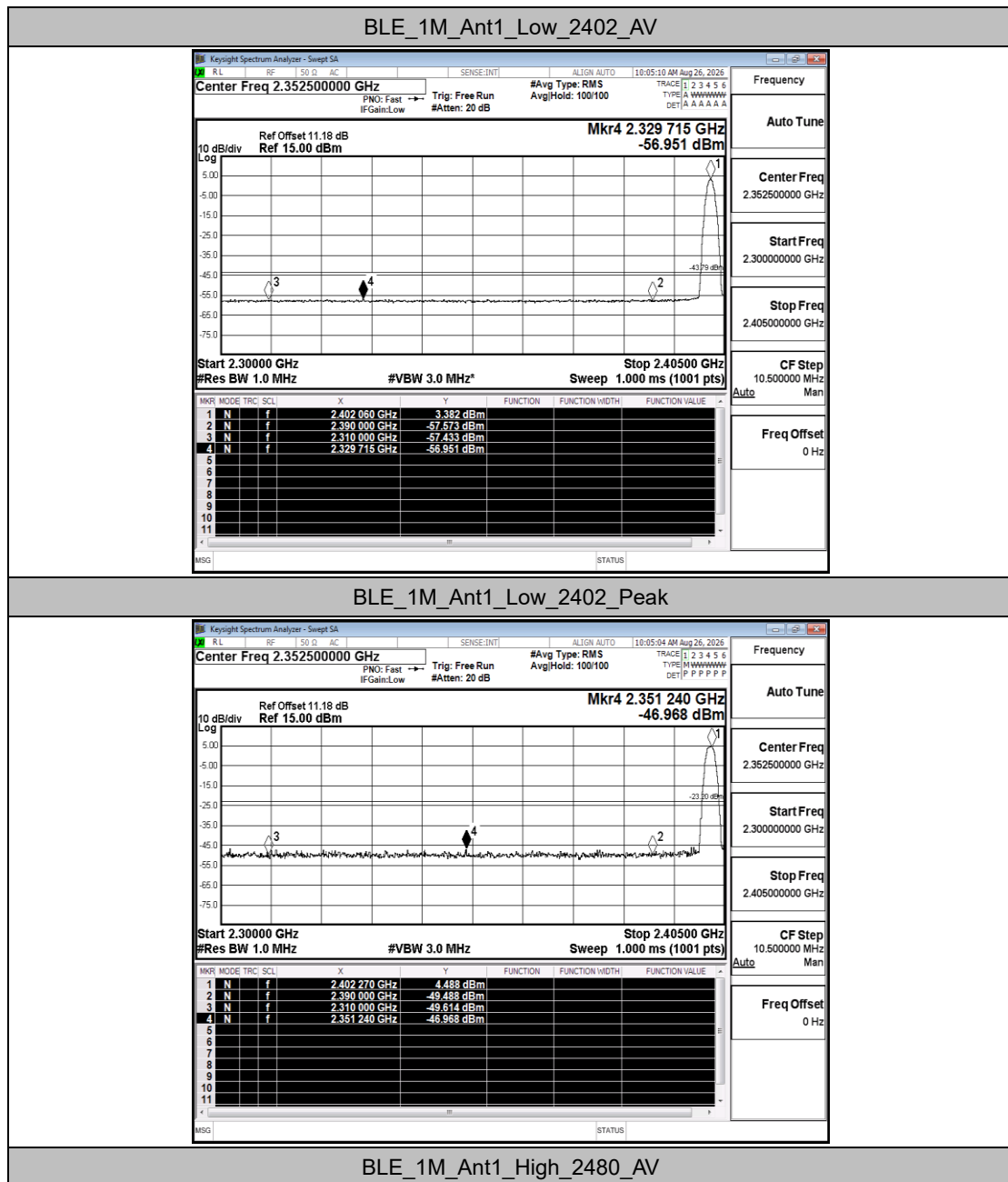
Test Result

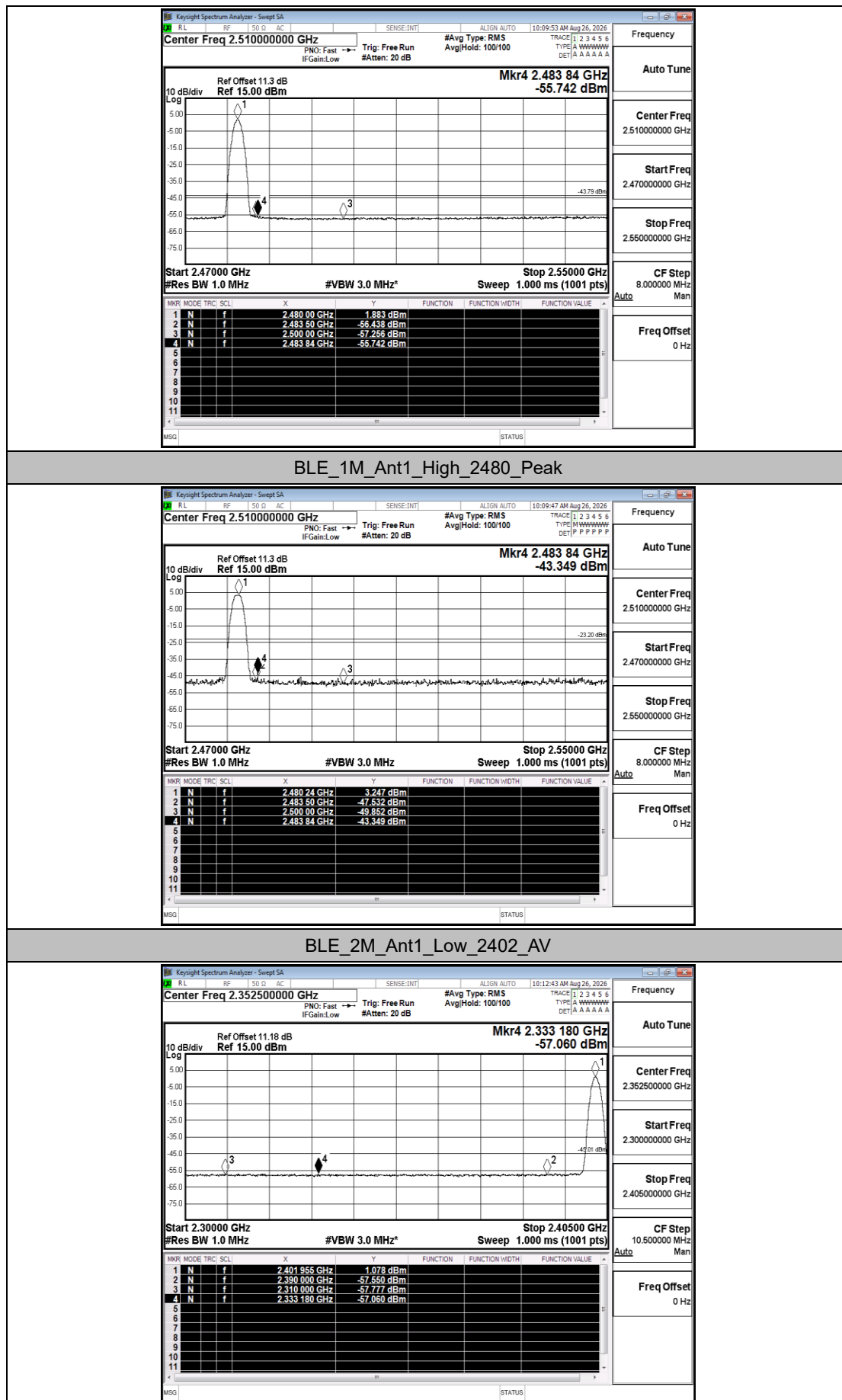
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Gain [dBi]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-57.43	≤-43.79	3.57	0.59	41.40	≤54	PASS
				AV	2329.715	-56.95	≤-43.79	3.57	0.59	42.47	≤54	PASS
				AV	2390.000	-57.57	≤-43.79	3.57	0.59	41.26	≤54	PASS
				Peak	2310.000	-49.61	≤-23.20	3.57	0.00	49.22	≤74	PASS
				Peak	2351.240	-46.97	≤-23.20	3.57	0.00	51.86	≤74	PASS
				Peak	2390.000	-49.49	≤-23.20	3.57	0.00	49.34	≤74	PASS
		High	2480	AV	2483.500	-56.44	≤-43.79	3.57	0.59	42.39	≤54	PASS
				AV	2483.840	-55.74	≤-43.79	3.57	0.59	43.68	≤54	PASS
				AV	2500.000	-57.26	≤-43.79	3.57	0.59	41.57	≤54	PASS
				Peak	2483.500	-47.53	≤-23.20	3.57	0.00	51.30	≤74	PASS
				Peak	2483.840	-43.35	≤-23.20	3.57	0.00	55.48	≤74	PASS
				Peak	2500.000	-49.85	≤-23.20	3.57	0.00	48.98	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-57.78	≤-45.01	3.57	1.81	41.05	≤54	PASS
				AV	2333.180	-57.06	≤-45.01	3.57	1.81	43.58	≤54	PASS
				AV	2390.000	-57.55	≤-45.01	3.57	1.81	41.28	≤54	PASS
				Peak	2310.000	-50.46	≤-23.20	3.57	0.00	48.37	≤74	PASS
				Peak	2384.840	-46.87	≤-23.20	3.57	0.00	51.96	≤74	PASS
				Peak	2390.000	-49.98	≤-23.20	3.57	0.00	48.85	≤74	PASS
		High	2480	AV	2483.500	-56.65	≤-45.00	3.57	1.80	42.18	≤54	PASS
				AV	2485.680	-56.04	≤-45.00	3.57	1.80	44.59	≤54	PASS
				AV	2500.000	-57.37	≤-45.00	3.57	1.80	41.46	≤54	PASS
				Peak	2483.500	-47.74	≤-23.20	3.57	0.00	51.09	≤74	PASS
				Peak	2484.400	-40.71	≤-23.20	3.57	0.00	58.12	≤74	PASS
				Peak	2500.000	-50.57	≤-23.20	3.57	0.00	48.26	≤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



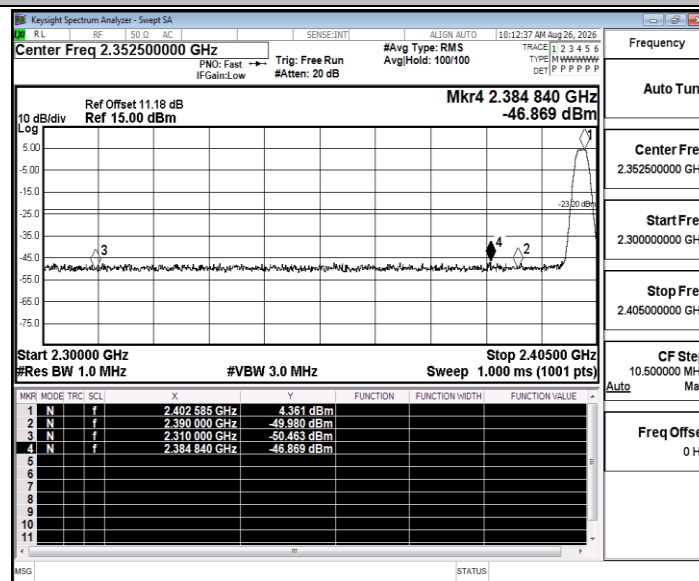


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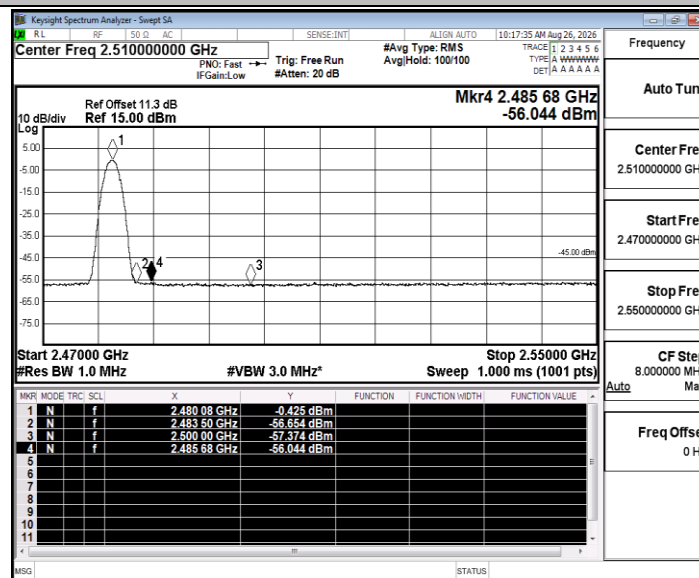
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BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

