

Appendix A

RF Test Data for BT LE (Conducted Measurement)

Product Name: Kids Magic Drawing Machine

Test Model: S1

Environmental Conditions

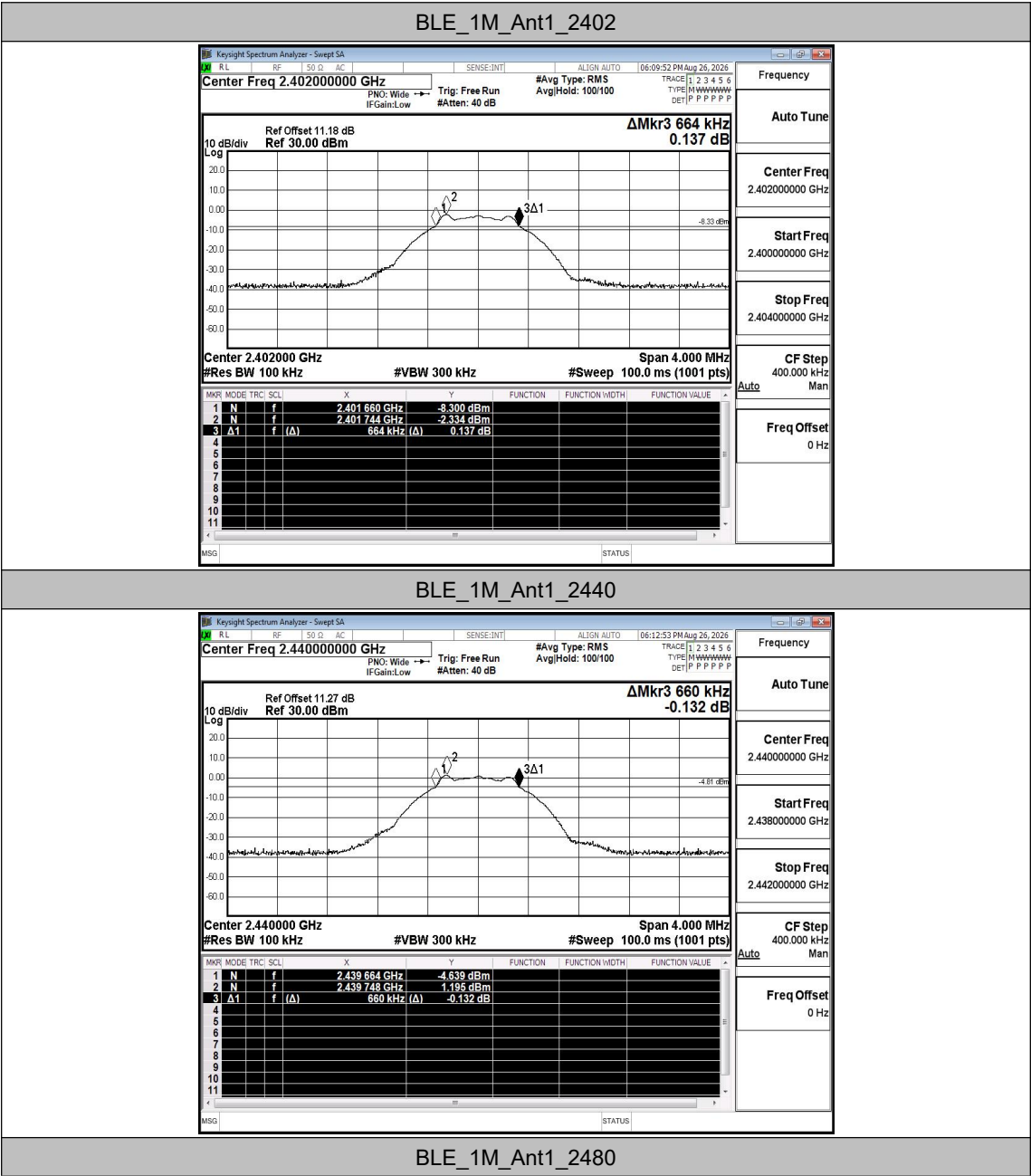
Temperature:	23.2°C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

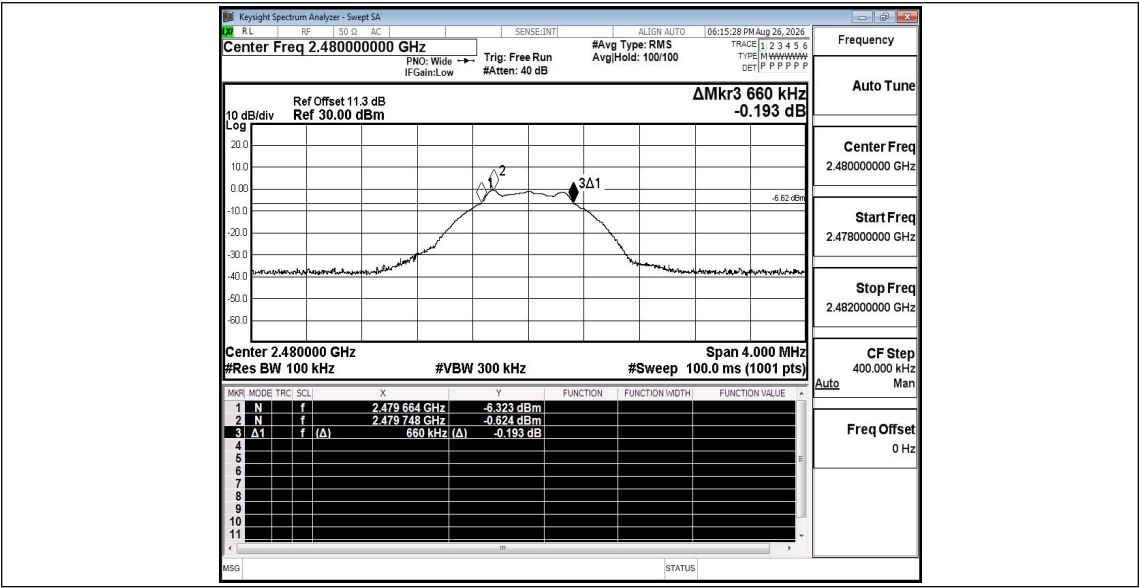
A.1 6dB Bandwidth

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	0.660	2439.664	2440.324	0.5	PASS
		2480	0.660	2479.664	2480.324	0.5	PASS

Test Graphs



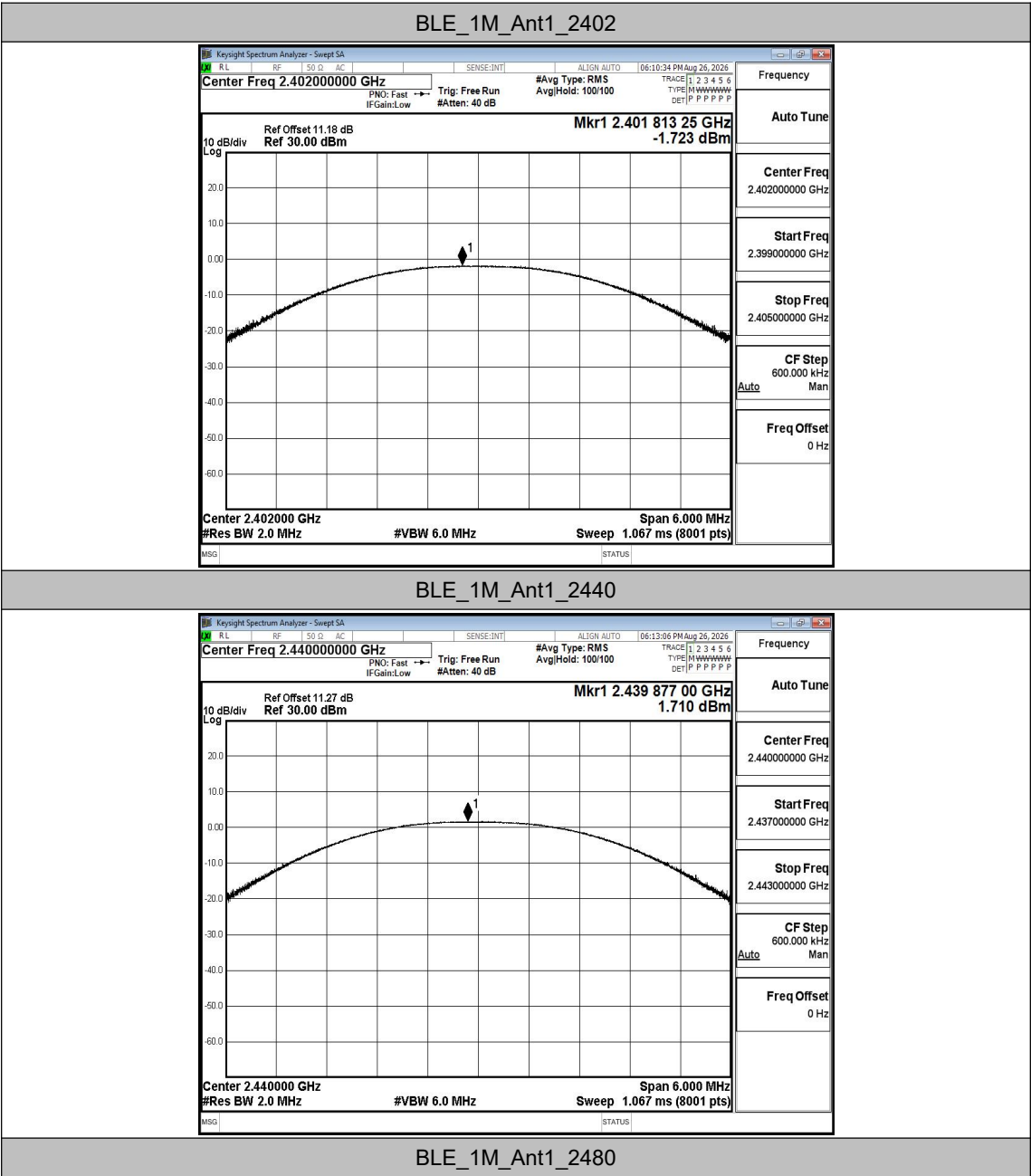


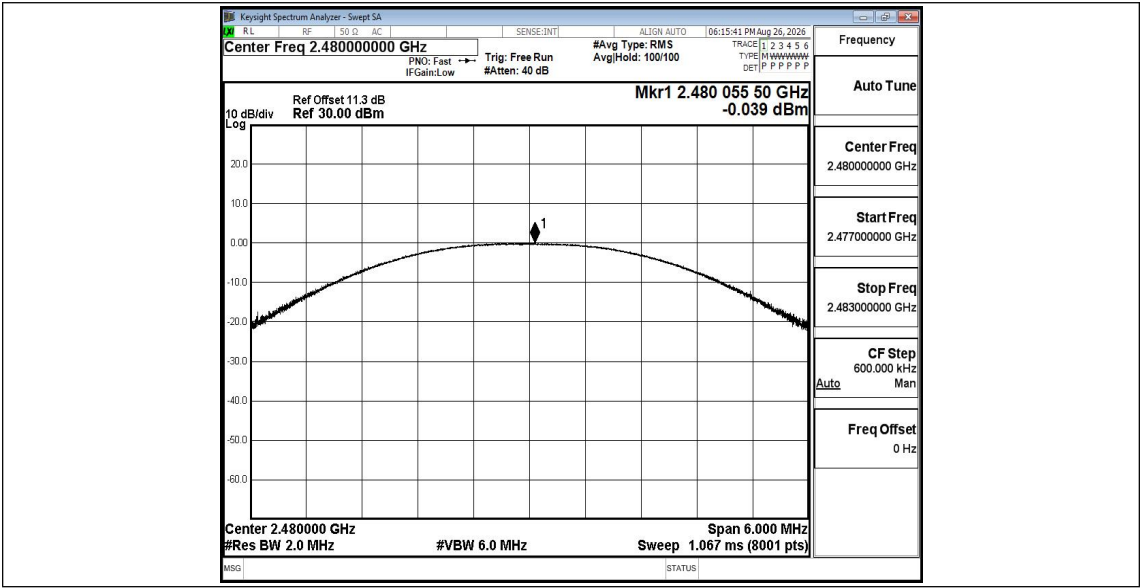
A.2 Maximum Peak conducted output power

Test Result

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-1.72	≤30	PASS
		2440	1.71	≤30	PASS
		2480	-0.04	≤30	PASS

Test Graphs



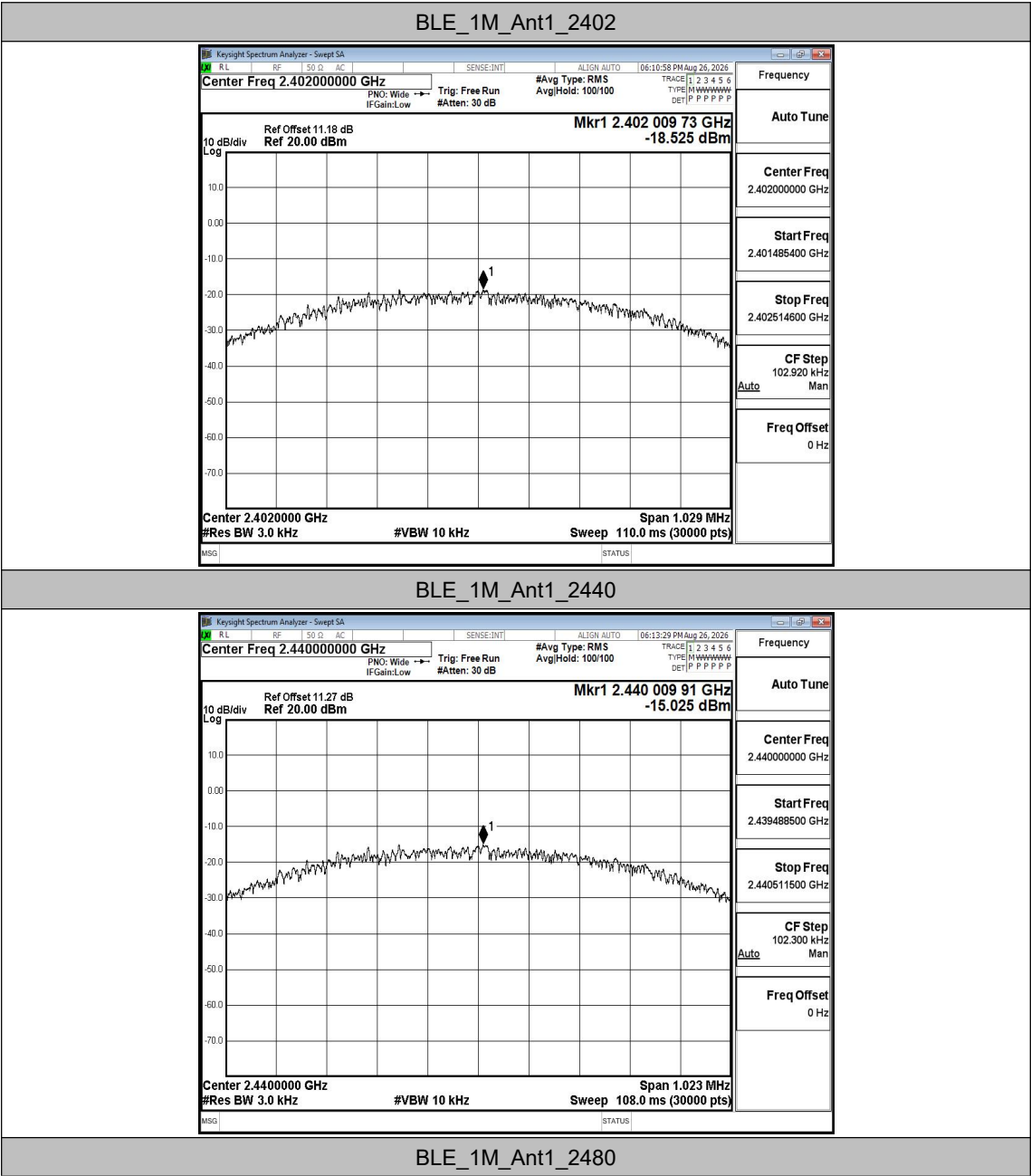


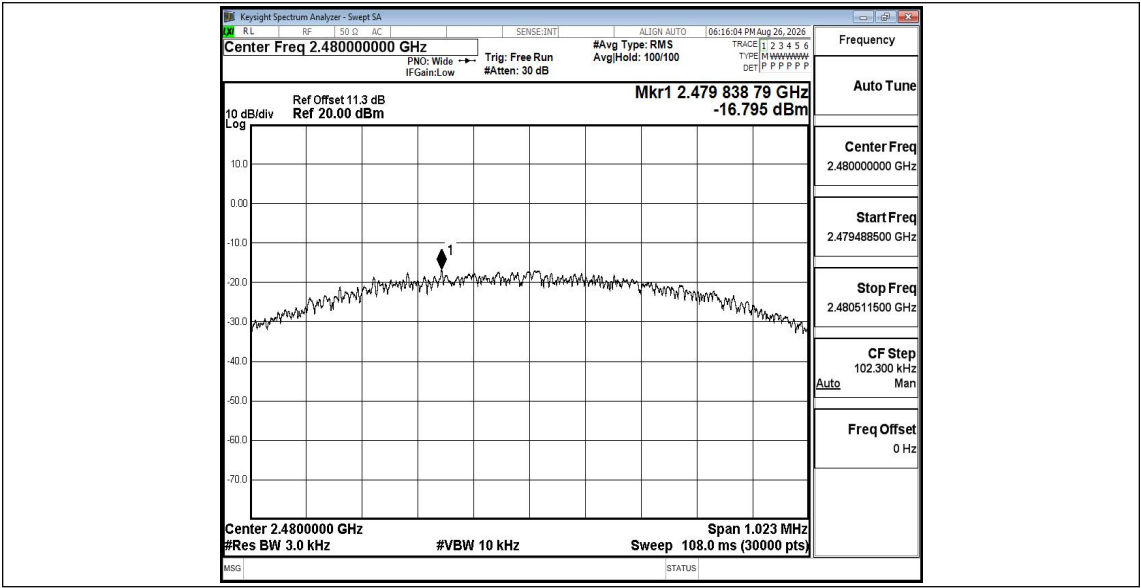
A.3 Maximum power spectral density

Test Result

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-18.53	≤8.00	PASS
		2440	-15.03	≤8.00	PASS
		2480	-16.80	≤8.00	PASS

Test Graphs



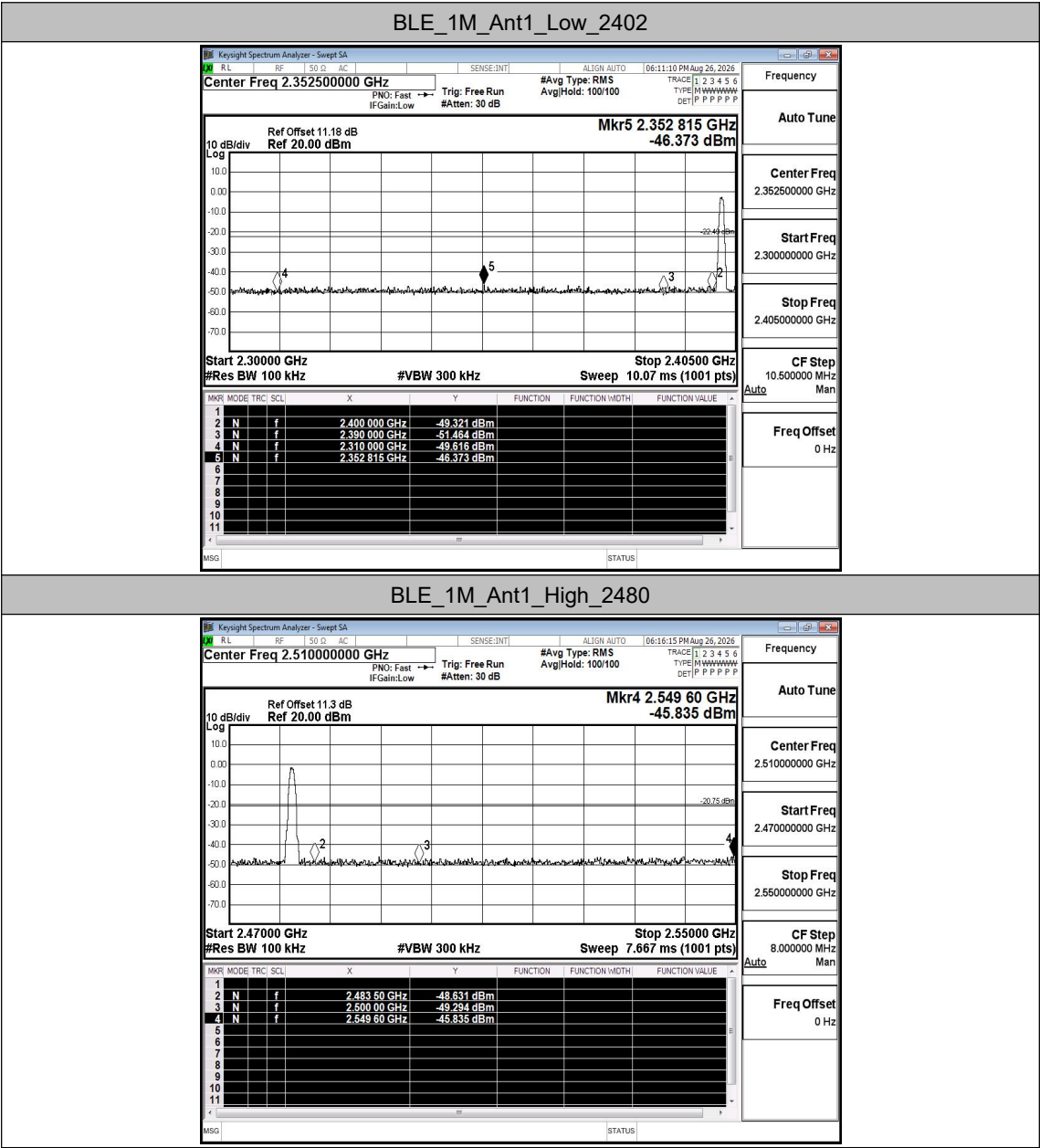


A.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-2.49	-46.37	≤-22.49	PASS
		High	2480	-0.75	-45.84	≤-20.75	PASS

Test Graphs



BLE_1M_Ant1_High_2480

Keysight Spectrum Analyzer - Sweep SA

RF: 150.0 AC SENSE:INT

ALIGN: AUTO

06:16:15 PM Aug 26, 2026

Center Freq 2.510000000 GHz

PN0: Fast IF Gain: Low

Trig: Free Run

#Avg Type: RMS

Avg/Hold: 100/100

TRACE 1 2 3 4 5 6

TYPE: M W W W W W W W

DET: P P P P P P P

Ref Offset 11.3 dB

Ref 20.00 dBm

Mkr4 2.549 60 GHz

-45.835 dBm

10 dB/div

Log

Start 2.47000 GHz

#Res BW 100 kHz

#VBW 300 kHz

Stop 2.55000 GHz

Sweep 7.667 ms (1001 pts)

Auto

Frequency

Auto Tune

Center Freq 2.510000000 GHz

Start Freq 2.470000000 GHz

Stop Freq 2.550000000 GHz

CF Step 8.000000 MHz

Man

Freq Offset 0 Hz

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1								
2	N	f		2.483 60 GHz	-48.631 dBm			
3	N	f		2.500 00 GHz	-48.204 dBm			
4	N	f		2.549 60 GHz	-45.835 dBm			
5								
6								
7								
8								
9								
10								
11								

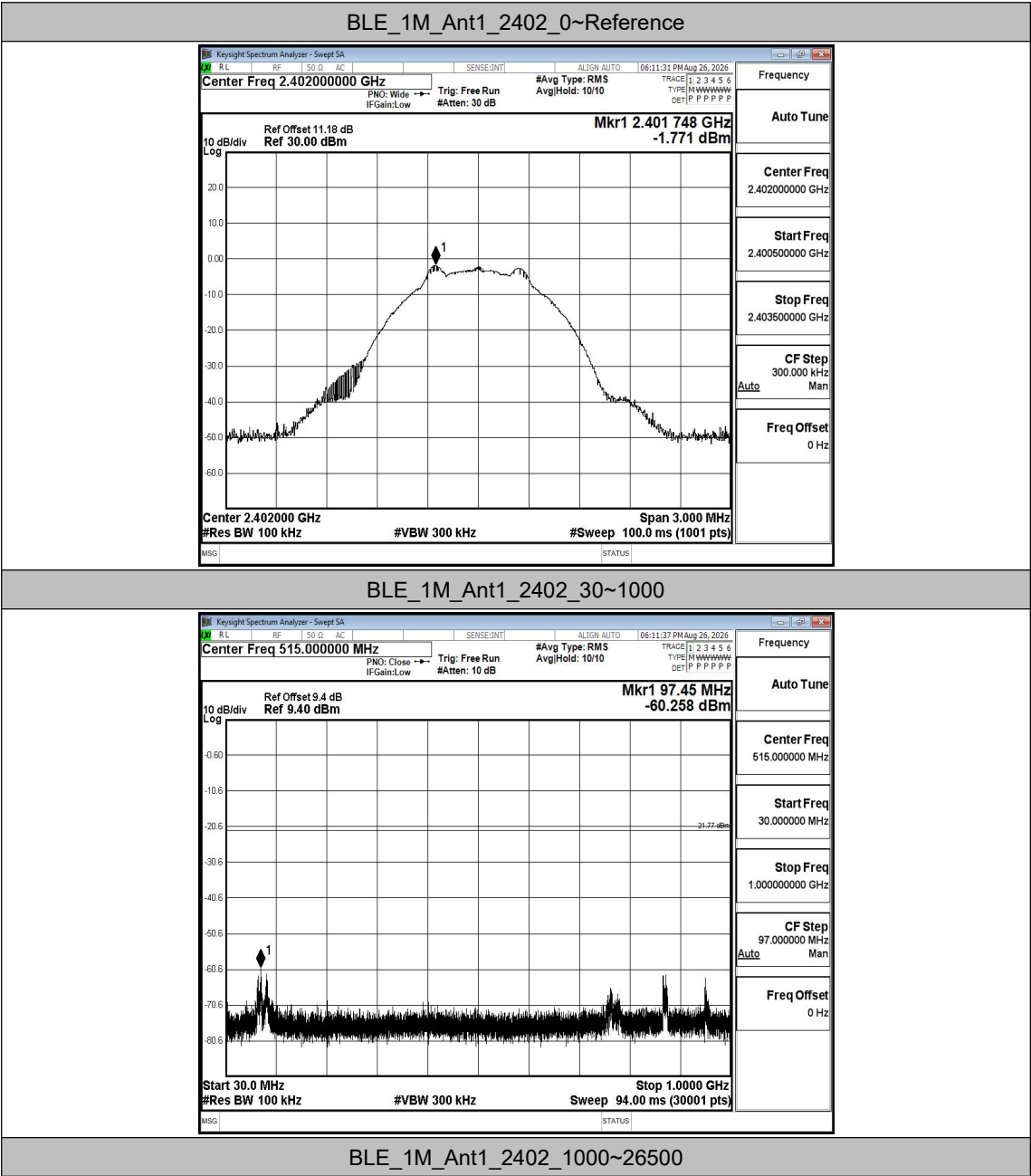
MSG STATUS

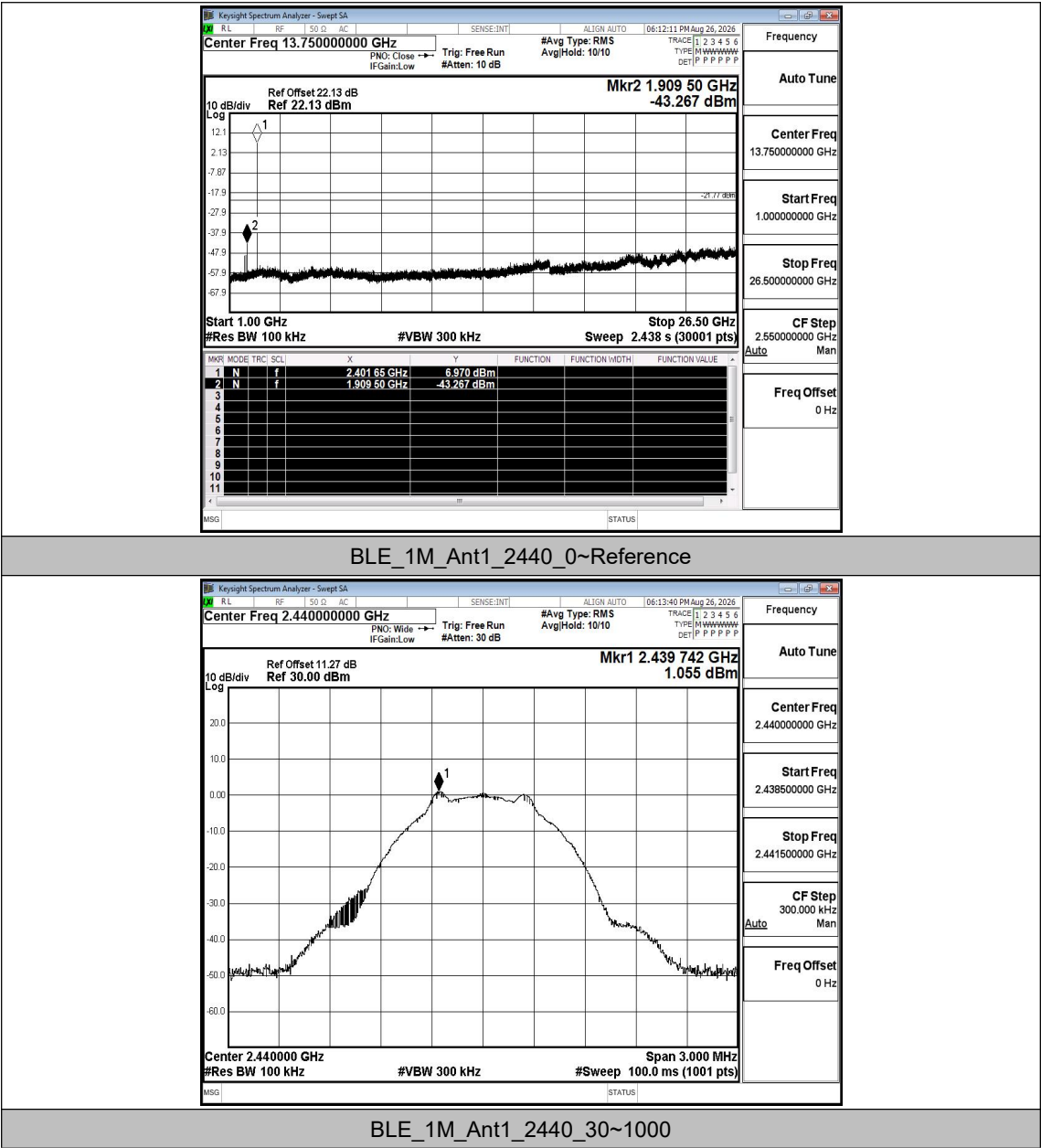
A.5 Conducted Spurious Emission

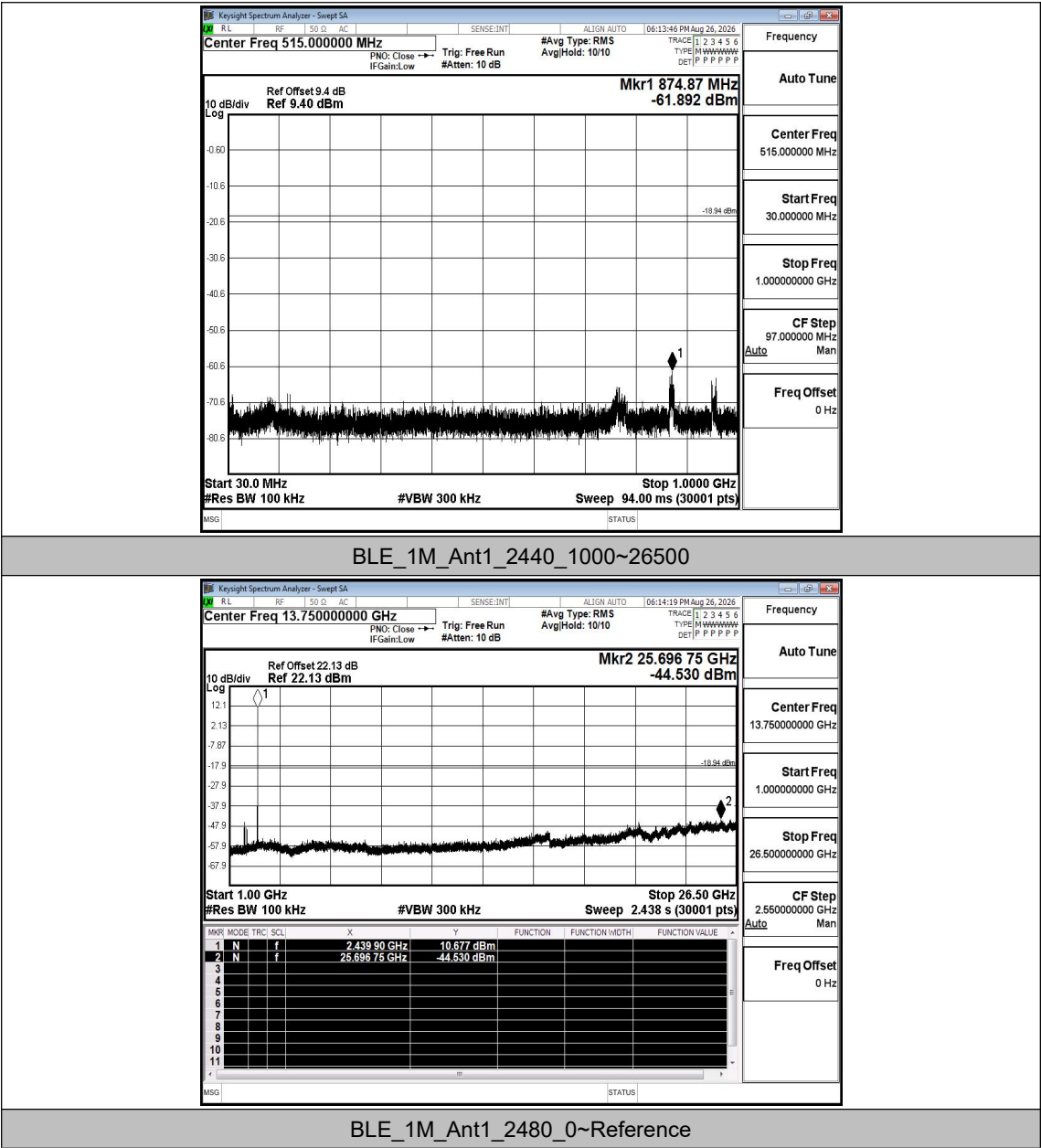
Test Result

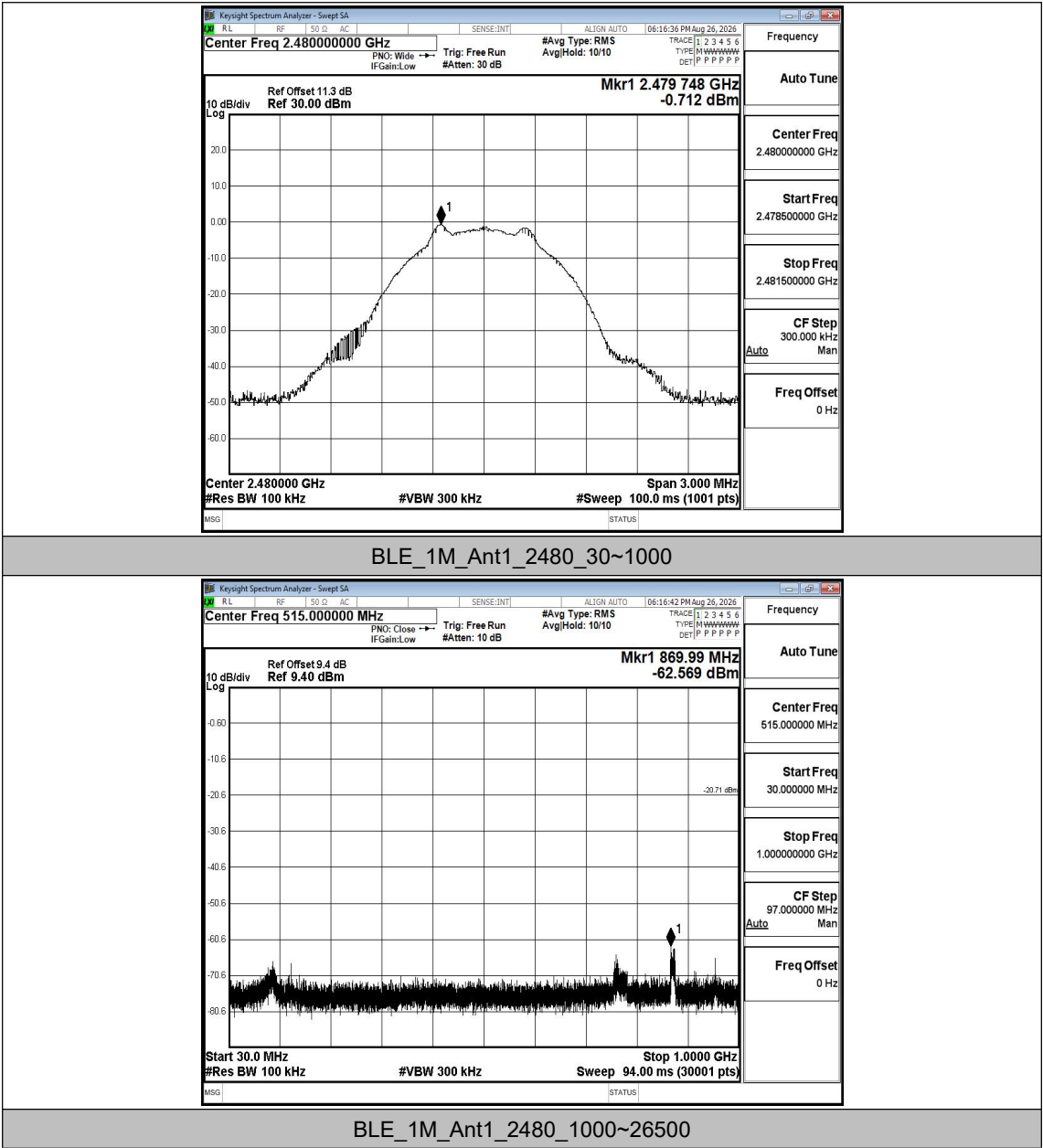
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-1.77	-1.77	---	PASS
			30~1000	-1.77	-60.26	≤-21.77	PASS
			1000~26500	-1.77	-43.27	≤-21.77	PASS
		2440	Reference	1.06	1.06	---	PASS
			30~1000	1.06	-61.89	≤-18.94	PASS
			1000~26500	1.06	-44.53	≤-18.94	PASS
		2480	Reference	-0.71	-0.71	---	PASS
			30~1000	-0.71	-62.57	≤-20.71	PASS
			1000~26500	-0.71	-44.7	≤-20.71	PASS

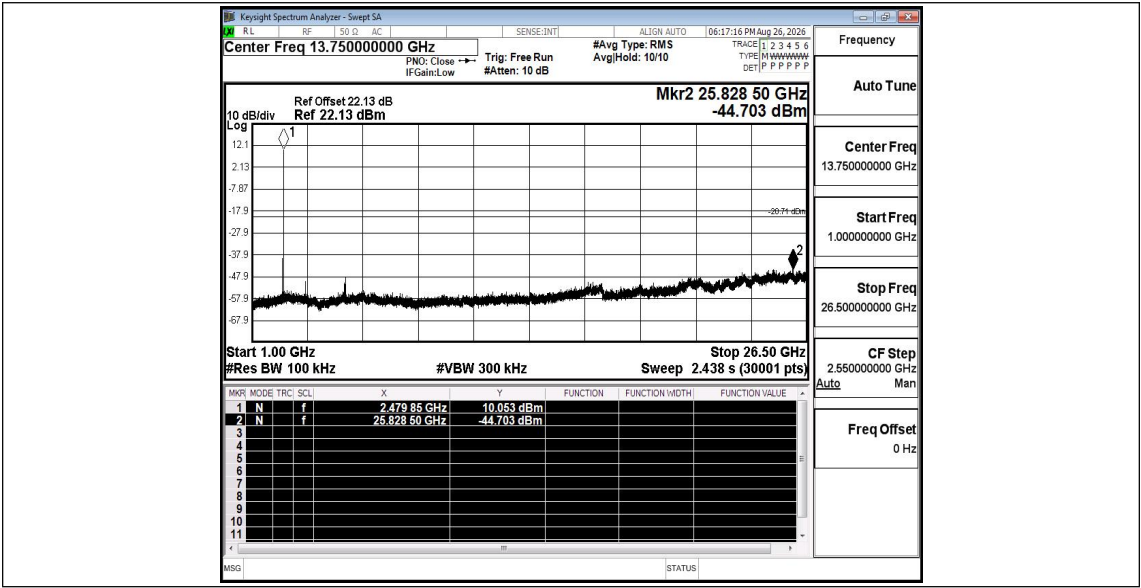
Test Graphs









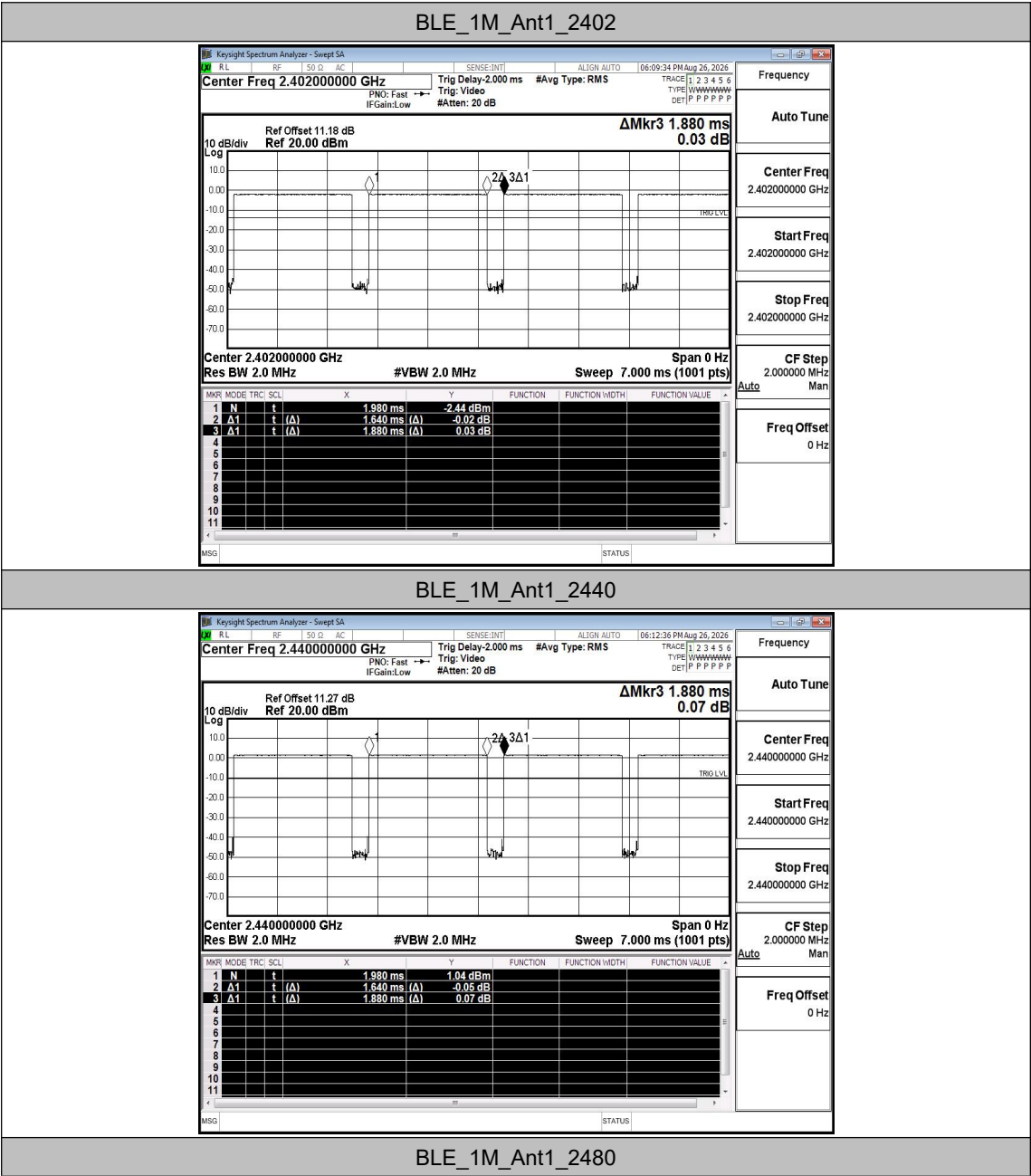


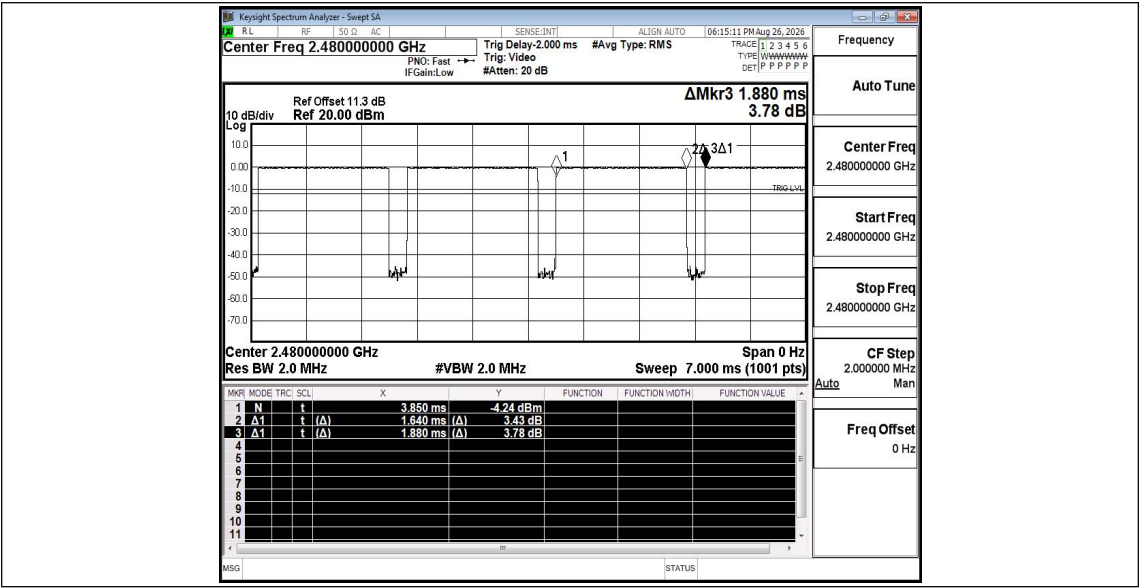
A.6 Duty Cycle

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	---	---

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	-57.95	≤-43.79	2.0	0.59	39.9	≤54	PASS
				AV	2327.405	-57.09	≤-43.79	2.0	0.59	40.76	≤54	PASS
				AV	2390.000	-58.16	≤-43.79	2.0	0.59	39.69	≤54	PASS
				Peak	2310.000	-49.05	≤-23.20	2.0	0.00	48.21	≤74	PASS
				Peak	2365.940	-47.17	≤-23.20	2.0	0.00	50.09	≤74	PASS
				Peak	2390.000	-49.82	≤-23.20	2.0	0.00	47.44	≤74	PASS
		High	2480	AV	2483.500	-56.72	≤-43.79	2.0	0.59	41.13	≤54	PASS
				AV	2483.680	-56.5	≤-43.79	2.0	0.59	41.35	≤54	PASS
				AV	2500.000	-57.4	≤-43.79	2.0	0.59	40.45	≤54	PASS
				Peak	2483.500	-48.91	≤-23.20	2.0	0.00	48.35	≤74	PASS
				Peak	2484.400	-44.87	≤-23.20	2.0	0.00	52.39	≤74	PASS
				Peak	2500.000	-49.54	≤-23.20	2.0	0.00	47.72	≤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

