

FCC Appendix RF Test Data for BLE

FCC ID : 2BXIY-Q-015-0076CP

Company : Shenzhen Beiyaochen Technology Co.,Ltd.

EUT : APP Qinghuan Combination Massage Stick Set
(bullet vibrator)

Model Number : Q-015-0076

Report No. : CTA26072203801

Reviewed By : Eric Wang

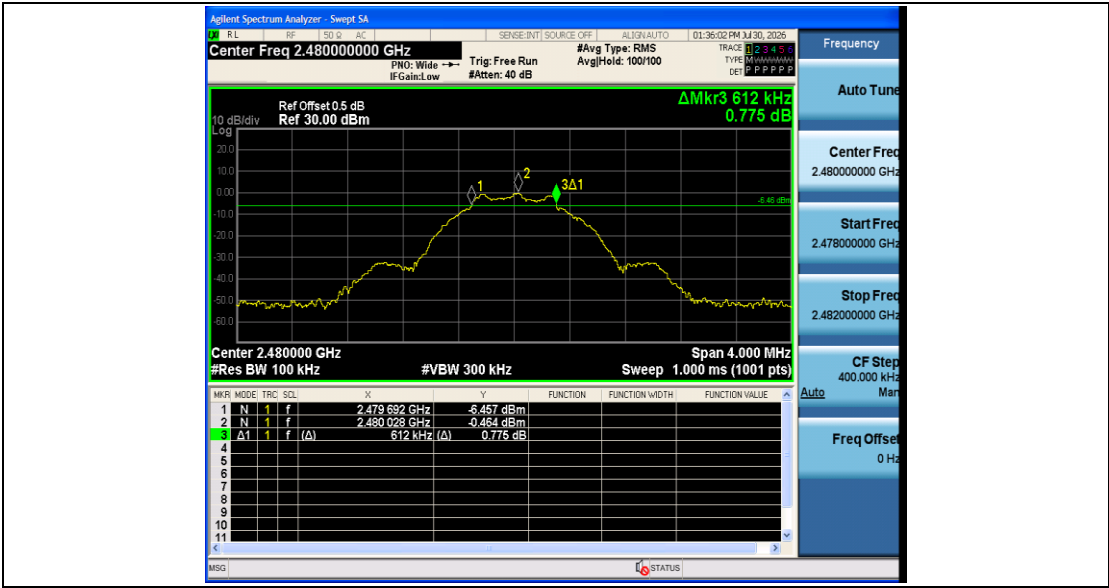
Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.652	2401.688	2402.340	0.5	PASS
		2440	0.652	2439.688	2440.340	0.5	PASS
		2480	0.612	2479.692	2480.304	0.5	PASS

Test Graphs



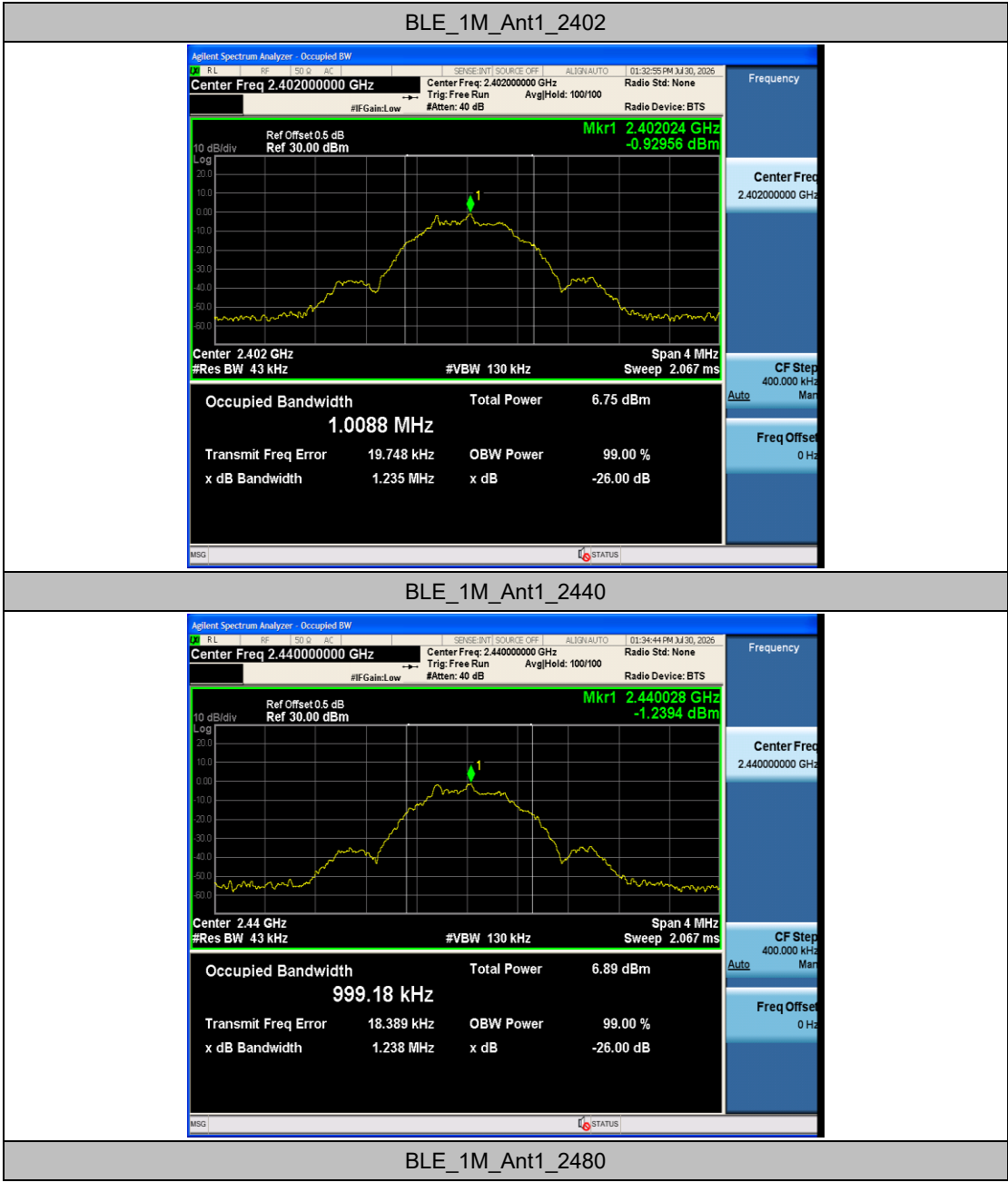


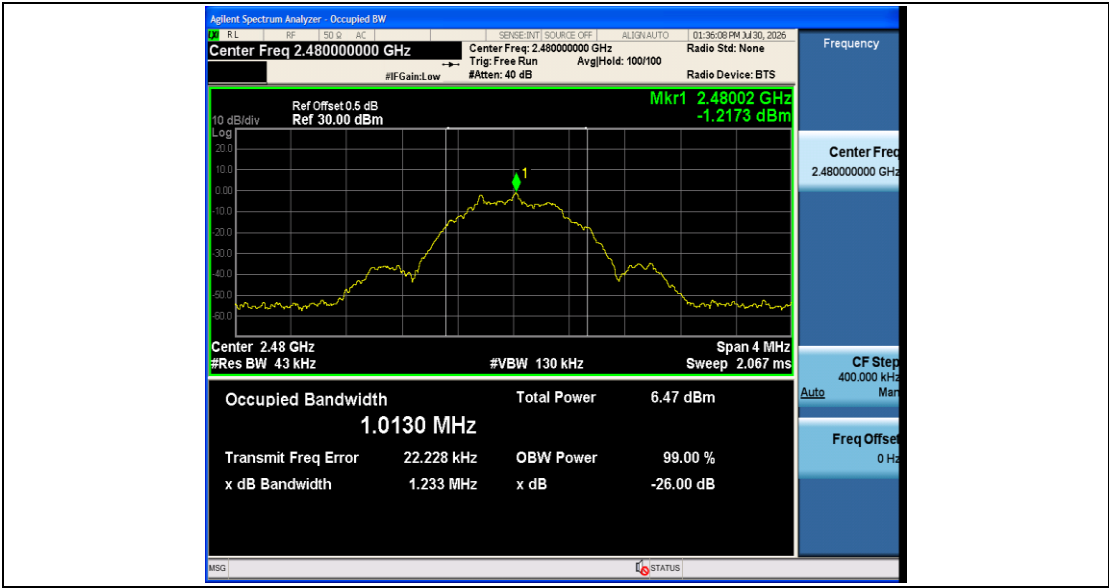
Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0088	2401.5154	2402.5242	---	---
		2440	0.99918	2439.5188	2440.5180	---	---
		2480	1.0130	2479.5157	2480.5287	---	---

Test Graphs





Appendix C: Maximum conducted output power

Test Result Peak

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.16	≤30	PASS
		2440	0.06	≤30	PASS
		2480	-0.23	≤30	PASS

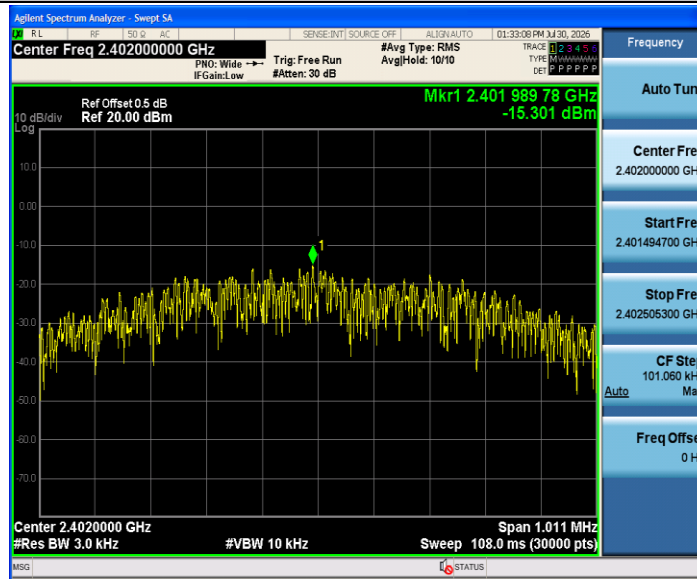
Appendix D: Maximum power spectral density

Test Result

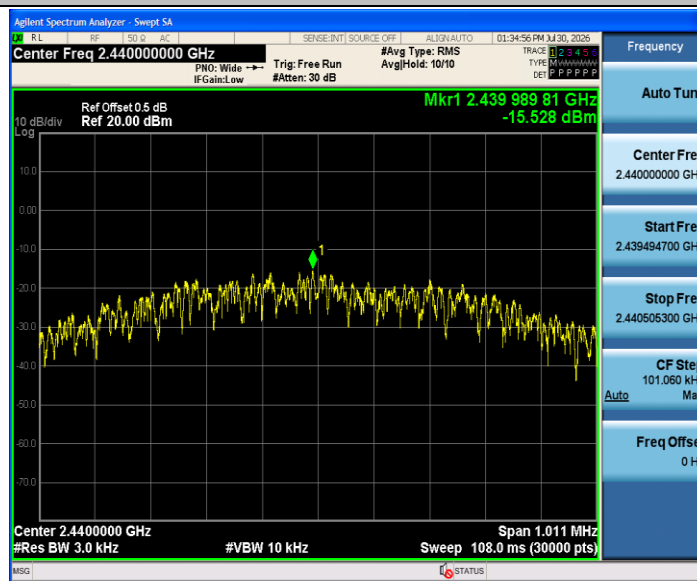
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-15.30	≤8.00	PASS
		2440	-15.53	≤8.00	PASS
		2480	-15.71	≤8.00	PASS

Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



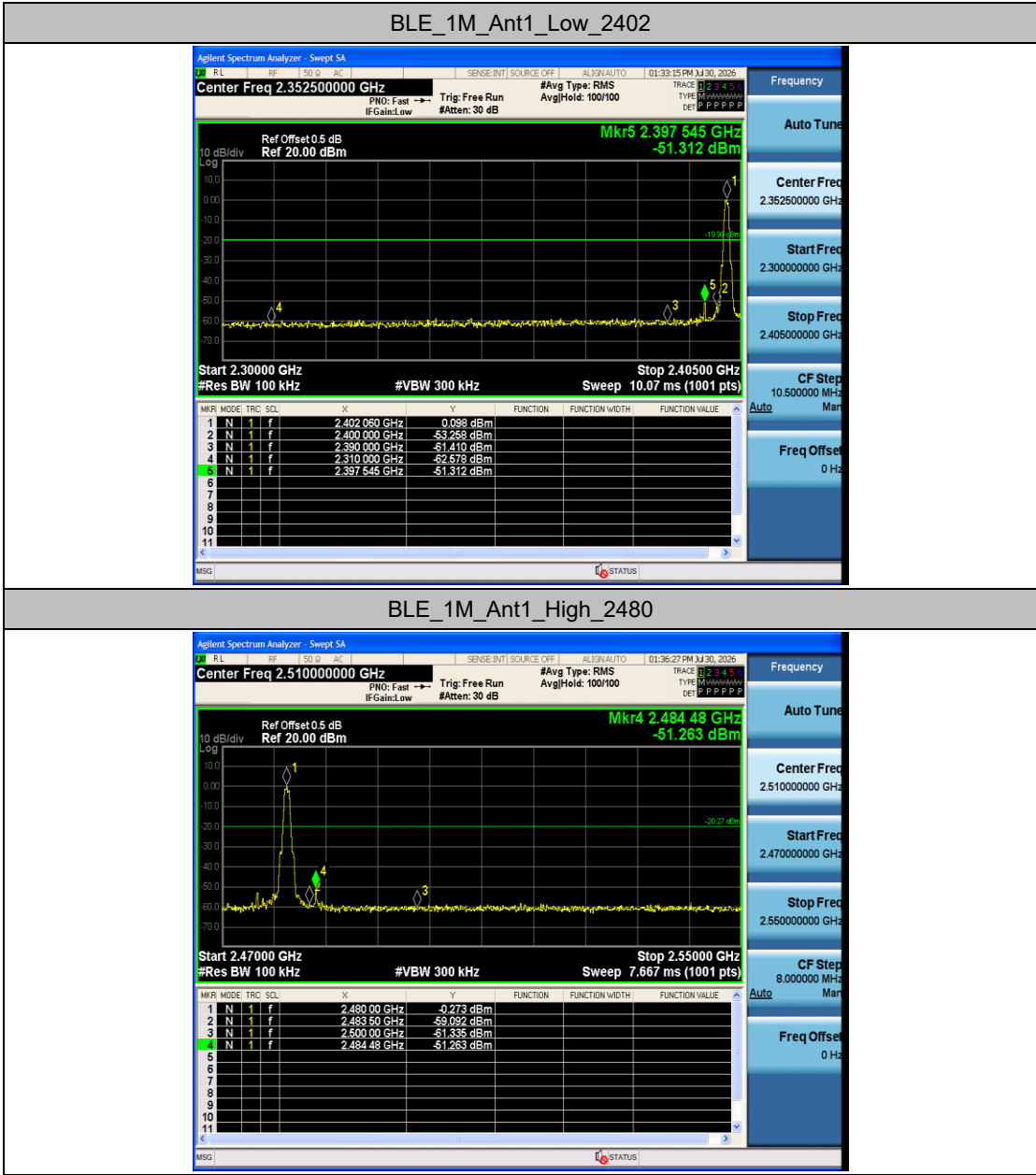
BLE_1M_Ant1_2480

Appendix E: Band edge measurements

Test Result

TestMode	Antenna	Channel	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	0.10	-51.31	≤-19.9	PASS
		High	2480	-0.27	-51.26	≤-20.27	PASS

Test Graphs



Appendix F: Conducted Spurious Emission

Test Result

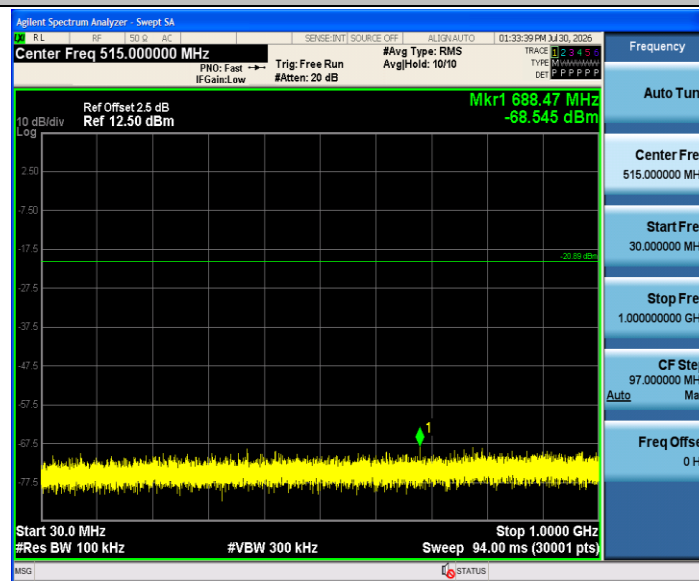
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-0.89	-0.89	---	PASS
			30~1000	-0.89	-68.55	≤-20.89	PASS
			1000~26500	-0.89	-39.77	≤-20.89	PASS
		2440	Reference	-1.27	-1.27	---	PASS
			30~1000	-1.27	-67.87	≤-21.27	PASS
			1000~26500	-1.27	-42.71	≤-21.27	PASS
		2480	Reference	-0.40	-0.40	---	PASS
			30~1000	-0.40	-68.4	≤-20.4	PASS
			1000~26500	-0.40	-42.36	≤-20.4	PASS

Test Graphs

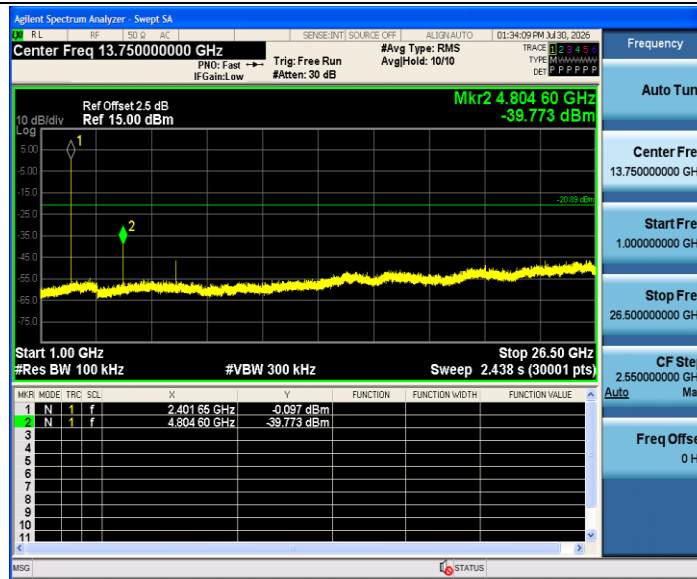
BLE_1M_Ant1_2402_0~Reference



BLE_1M_Ant1_2402_30~1000



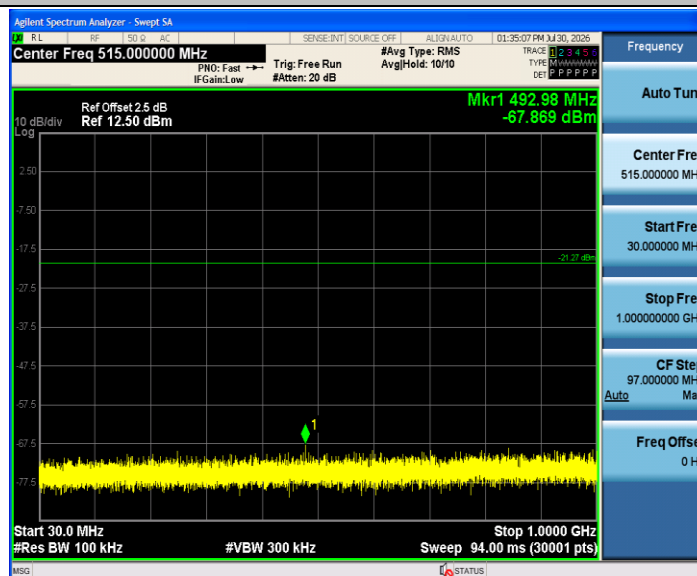
BLE_1M_Ant1_2402_1000~26500



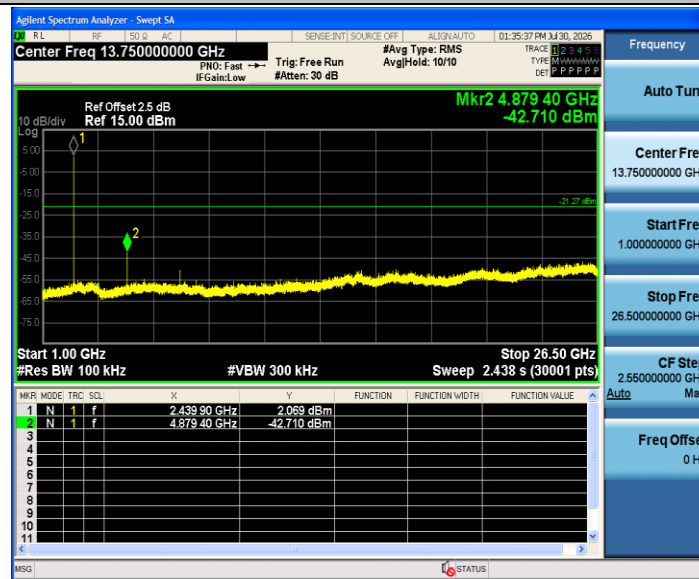
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



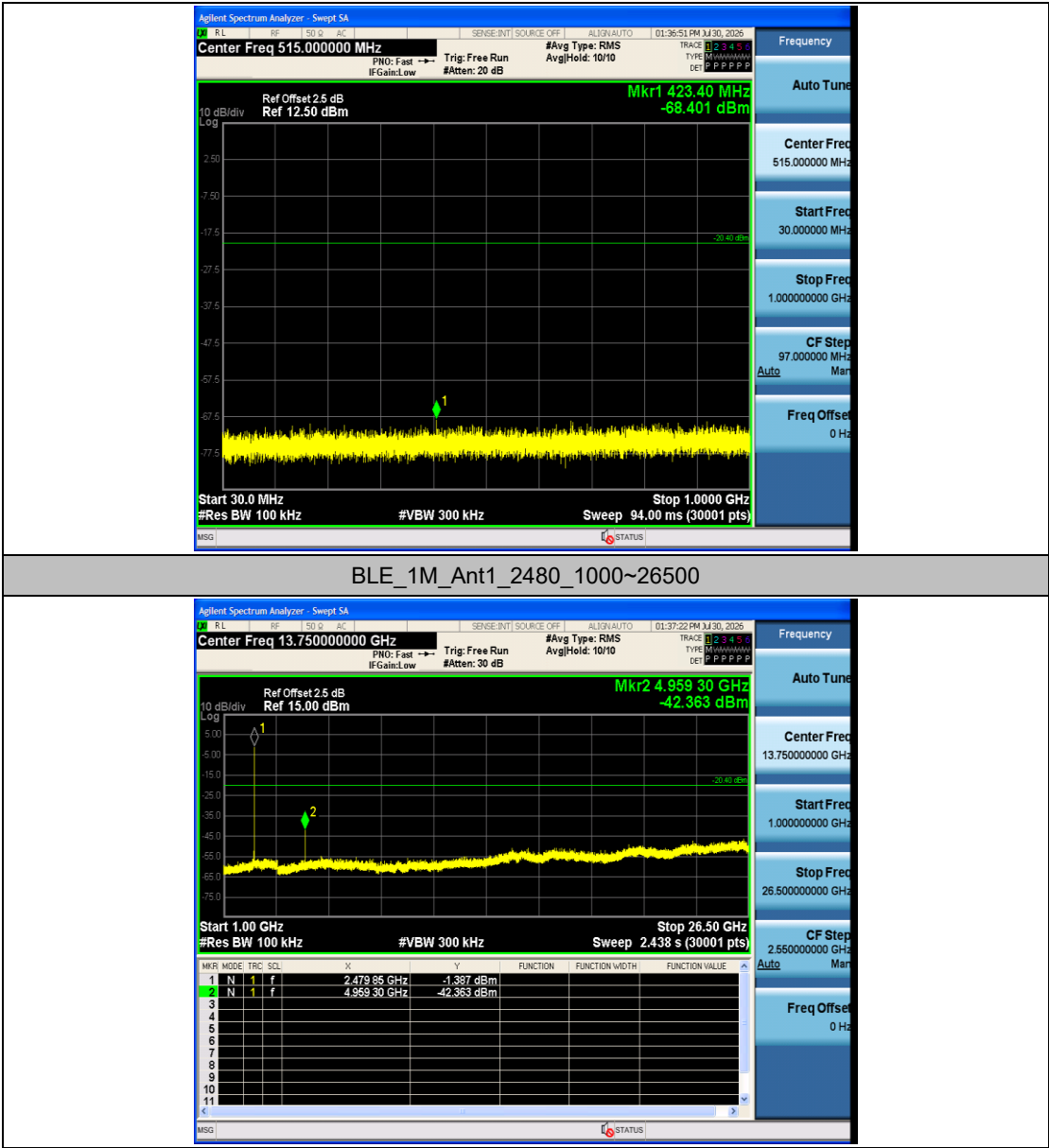
BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



Appendix G: Duty Cycle

Test Result

TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	0.41	0.62	0.6613	66.13	1.80	---	---
		2440	0.42	0.63	0.6667	66.67	1.76	---	---
		2480	0.41	0.62	0.6613	66.13	1.80	---	---

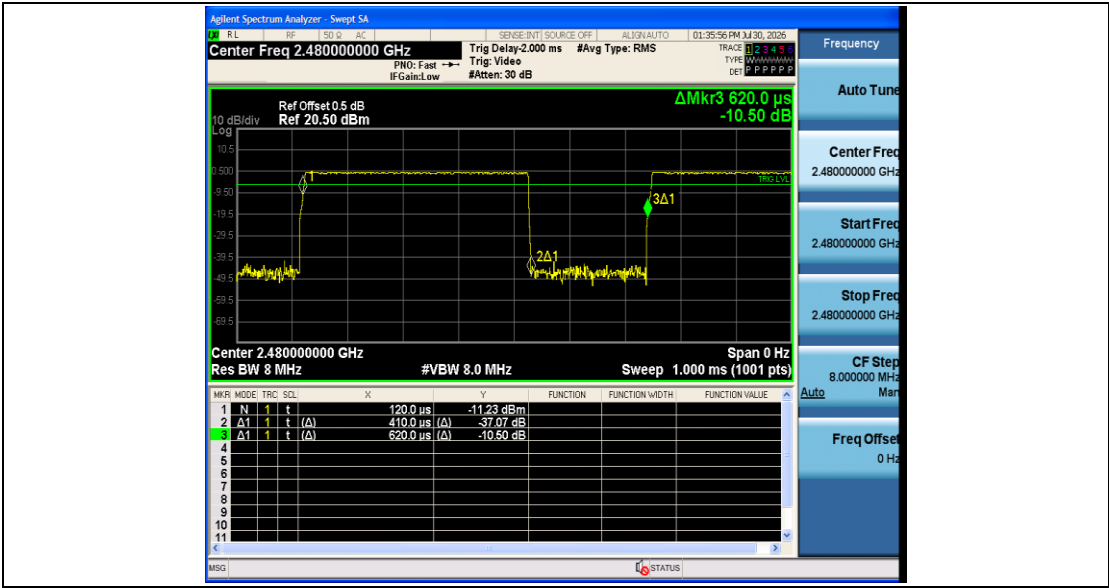
The figure displays two screenshots of an Agilent Spectrum Analyzer, showing signal measurements for two different BLE antennas.

Top Screenshot: BLE_1M_Ant1_2402

- Center Freq:** 2.402000000 GHz
- Ref Offset:** 0.5 dB
- Ref:** 20.50 dBm
- Trig Delay:** 2.000 ms
- #Avg Type:** RMS
- Trig:** Video
- #Atten:** 30 dB
- Span:** 0 Hz
- Center BW:** 8 MHz
- #VBW:** 8.0 MHz
- Sweep:** 1.000 ms (1001 pts)
- Measurements:**
 - Marker 1: -12.14 dBm
 - Marker 2Δ1: -20.54 dB
 - Marker 3Δ1: -10.77 dB

Bottom Screenshot: BLE_1M_Ant1_2440

- Center Freq:** 2.440000000 GHz
- Ref Offset:** 0.5 dB
- Ref:** 20.50 dBm
- Trig Delay:** 2.000 ms
- #Avg Type:** RMS
- Trig:** Video
- #Atten:** 30 dB
- Span:** 0 Hz
- Center BW:** 8 MHz
- #VBW:** 8.0 MHz
- Sweep:** 1.000 ms (1001 pts)
- Measurements:**
 - Marker 1: -46.97 dBm
 - Marker 2Δ1: -2.01 dB
 - Marker 3Δ1: 26.00 dB



Appendix H: Emissions in Restricted Bands

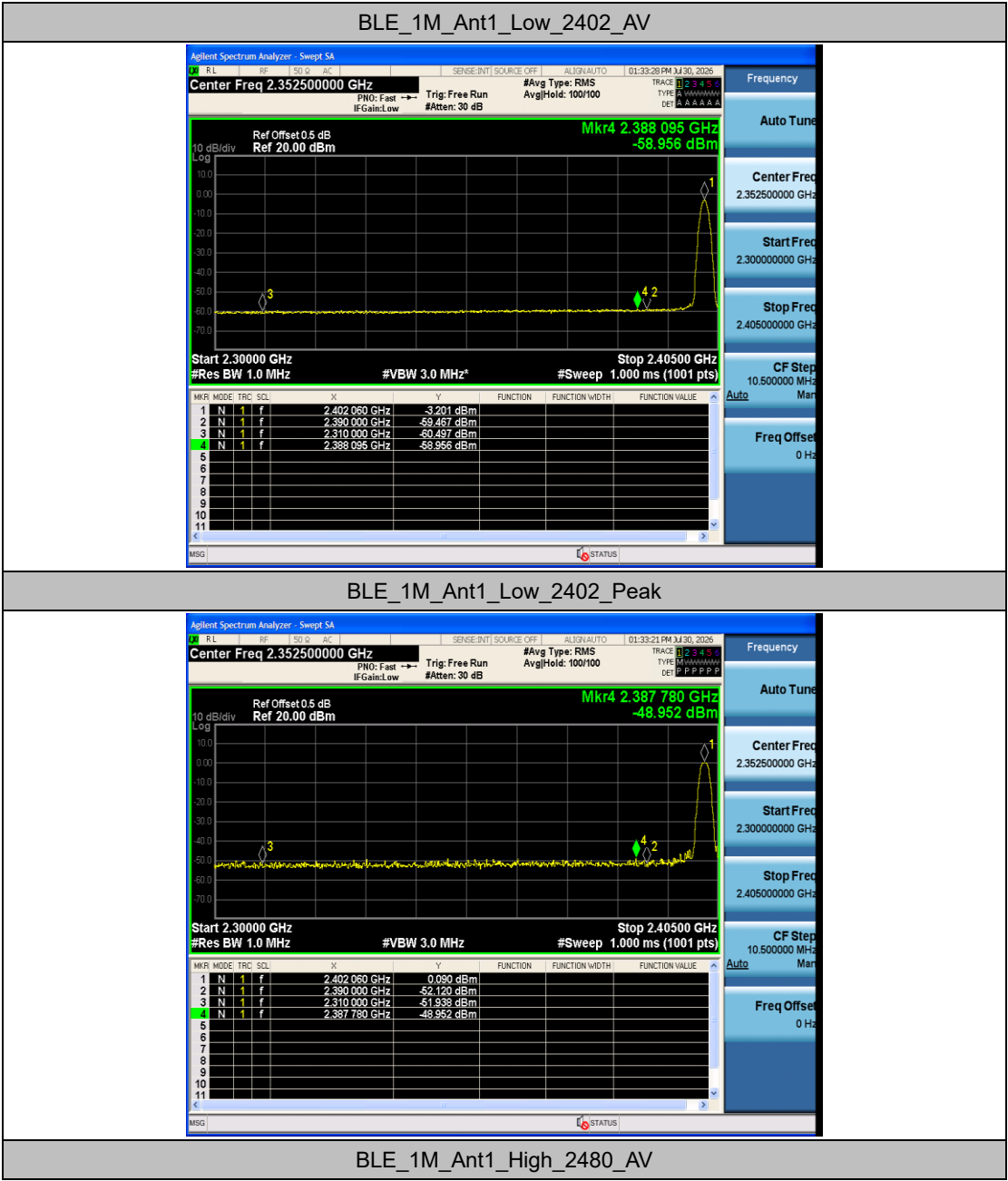
Test Result

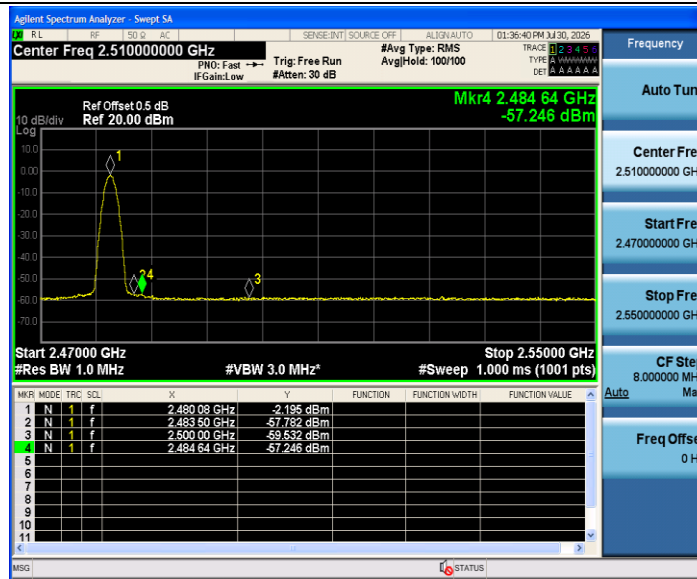
TestMode	Antenna	Channel	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Gain [dB]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-60.5	2.00	1.80	38.50	≤54	PASS
				AV	2388.095	-58.96	2.00	1.80	40.04	≤54	PASS
				AV	2390.000	-59.47	2.00	1.80	39.53	≤54	PASS
				Peak	2310.000	-51.94	2.00	0.00	45.26	≤74	PASS
				Peak	2387.780	-48.95	2.00	0.00	48.25	≤74	PASS
				Peak	2390.000	-52.12	2.00	0.00	45.08	≤74	PASS
		High	2480	AV	2483.500	-57.78	2.00	1.80	41.22	≤54	PASS
				AV	2484.640	-57.25	2.00	1.80	41.75	≤54	PASS
				AV	2500.000	-59.53	2.00	1.80	39.47	≤54	PASS
				Peak	2483.500	-48.86	2.00	0.00	48.34	≤74	PASS
				Peak	2484.880	-43.11	2.00	0.00	54.09	≤74	PASS
				Peak	2500.000	-51.99	2.00	0.00	45.21	≤74	PASS

Note:

1. 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





BLE_1M_Ant1_High_2480_Peak

