

FCC Appendix RF Test Data for BLE

FCC ID : 2A6P9-NWCA01

Company : Promaster Electronic LLC

EUT : Wireless CP&AA adaptor

Model Number : NWCAA-1

Report No. : CTA25092701201

Reviewed By : Eric Wang

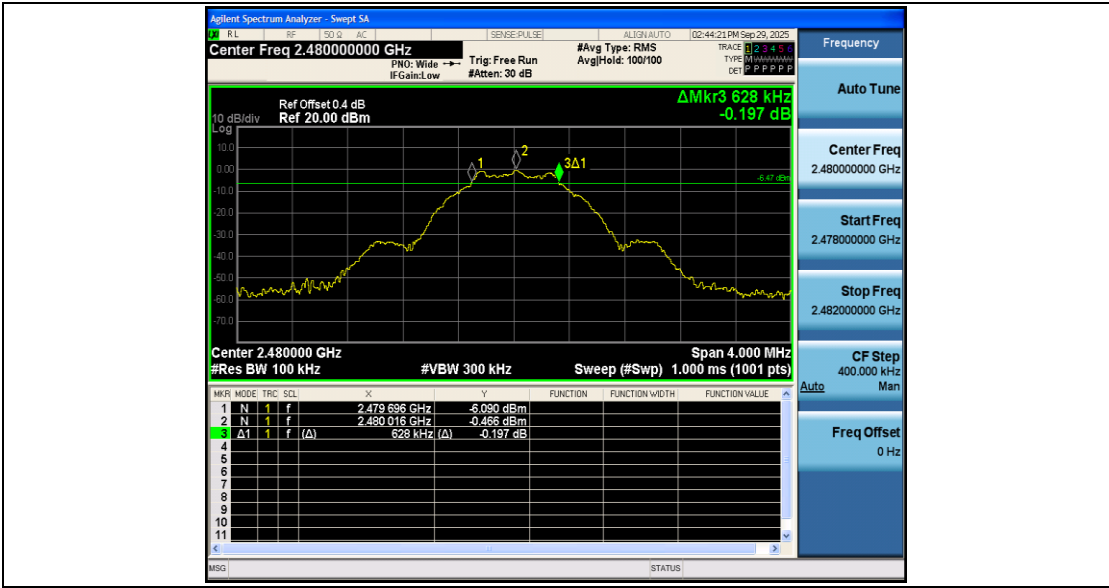
Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.644	2401.692	2402.336	0.5	PASS
		2440	0.640	2439.696	2440.336	0.5	PASS
		2480	0.628	2479.696	2480.324	0.5	PASS

Test Graphs



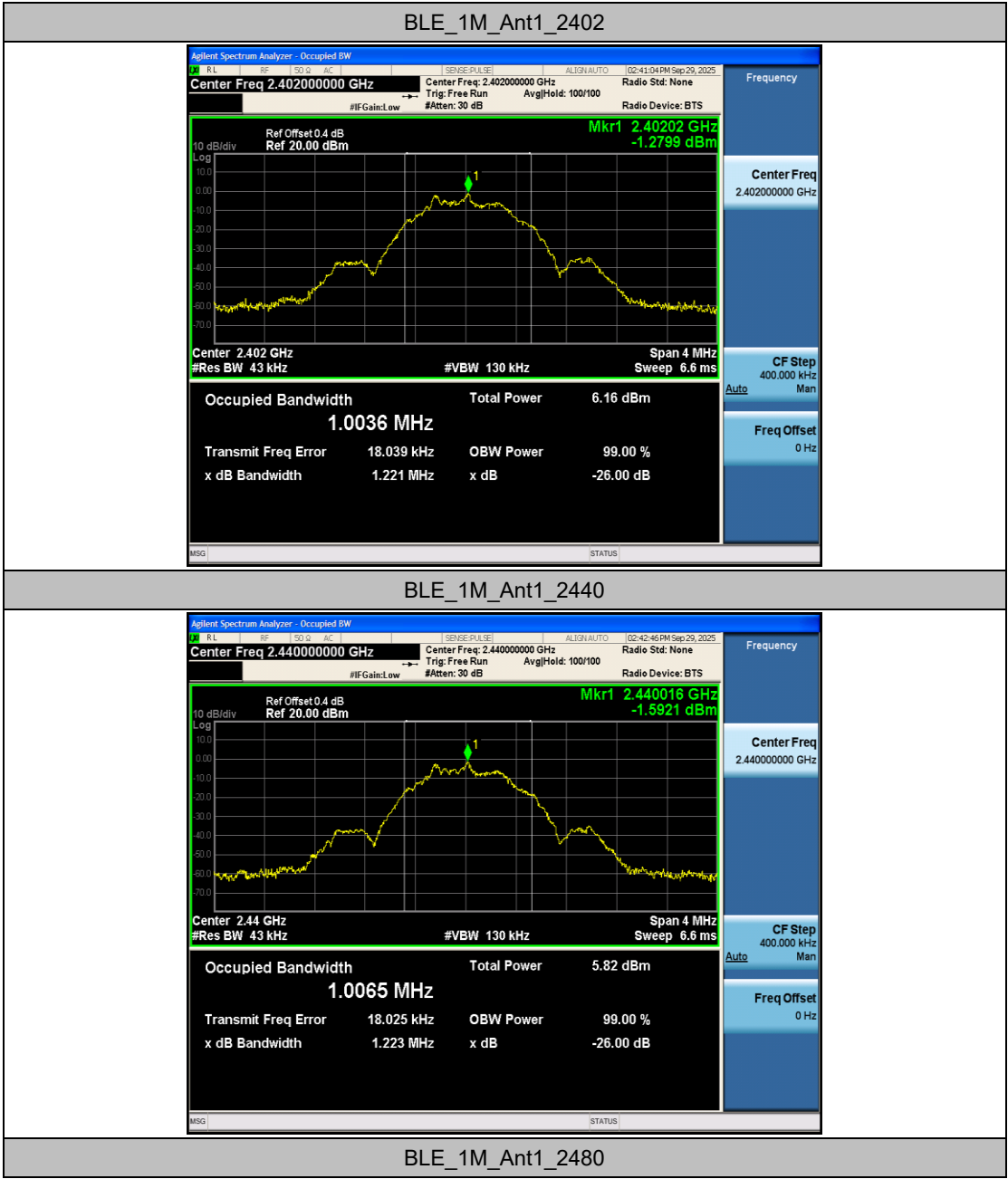


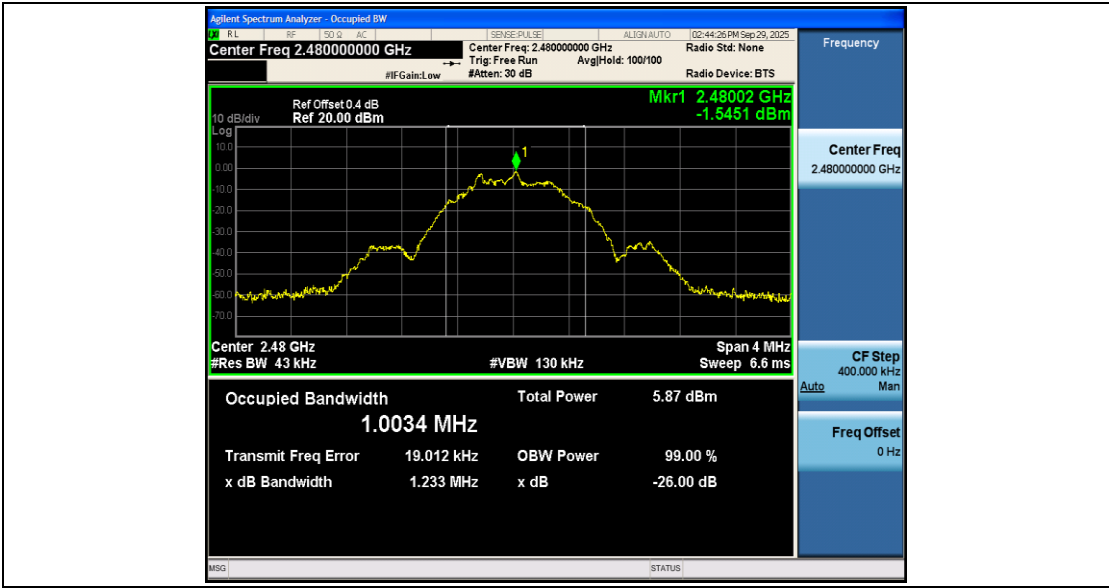
Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0036	2401.5162	2402.5198	---	---
		2440	1.0065	2439.5148	2440.5213	---	---
		2480	1.0034	2479.5173	2480.5207	---	---

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	-0.02	≤30	PASS
		2440	-0.33	≤30	PASS
		2480	-0.34	≤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	-16.08	≤8.00	PASS
		2440	-15.63	≤8.00	PASS
		2480	-15.95	≤8.00	PASS

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.40200000 GHz

Ref Offset 0.4 dB
Ref 10.00 dBm

10 dB/div
Log

Marker 1: 2.401990340 GHz, -16.083 dBm

Center 2.40200000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Sweep (#Swp) 101.9 ms (1001 pts)

Span 966.0 kHz

Frequency

Auto Tune

Center Freq 2.40200000 GHz

Start Freq 2.401517000 GHz

Stop Freq 2.402483000 GHz

CF Step 96.000 kHz
Auto Man

Freq Offset 0 Hz

BLE_1M_Ant1_2402

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.44000000 GHz

Ref Offset 0.4 dB
Ref 10.00 dBm

10 dB/div
Log

Marker 1: 2.43998944 GHz, -15.632 dBm

Center 2.44000000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Sweep (#Swp) 101.3 ms (1001 pts)

Span 960.0 kHz

Frequency

Auto Tune

Center Freq 2.44000000 GHz

Start Freq 2.439520000 GHz

Stop Freq 2.440480000 GHz

CF Step 96.000 kHz
Auto Man

Freq Offset 0 Hz

BLE_1M_Ant1_2440

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.48000000 GHz

Ref Offset 0.4 dB
Ref 10.00 dBm

10 dB/div
Log

Marker 1: 2.47998944 GHz, -15.632 dBm

Center 2.48000000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Sweep (#Swp) 101.3 ms (1001 pts)

Span 960.0 kHz

Frequency

Auto Tune

Center Freq 2.48000000 GHz

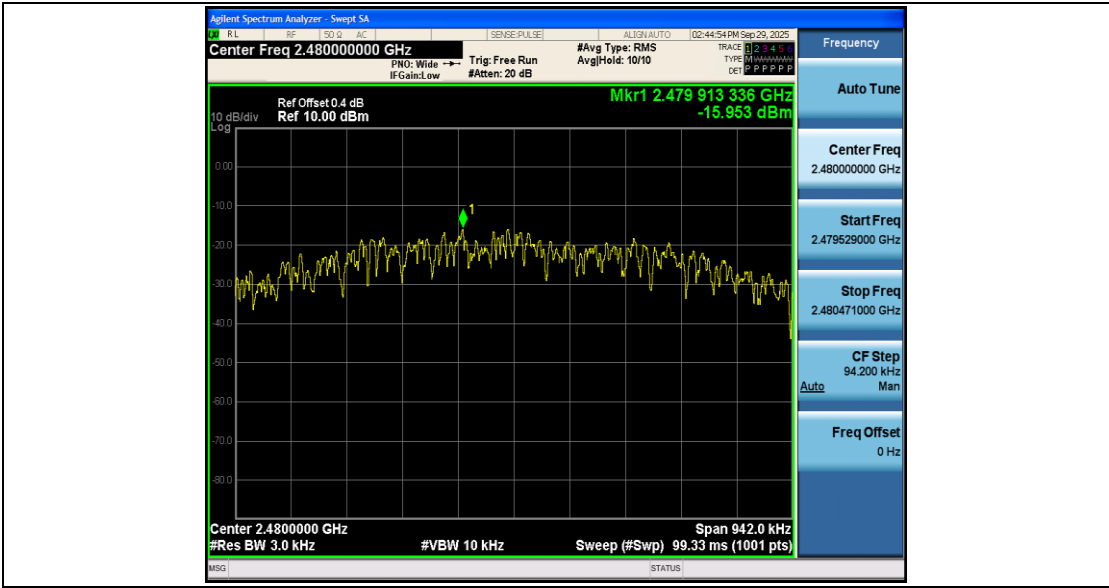
Start Freq 2.479520000 GHz

Stop Freq 2.480480000 GHz

CF Step 96.000 kHz
Auto Man

Freq Offset 0 Hz

BLE_1M_Ant1_2480

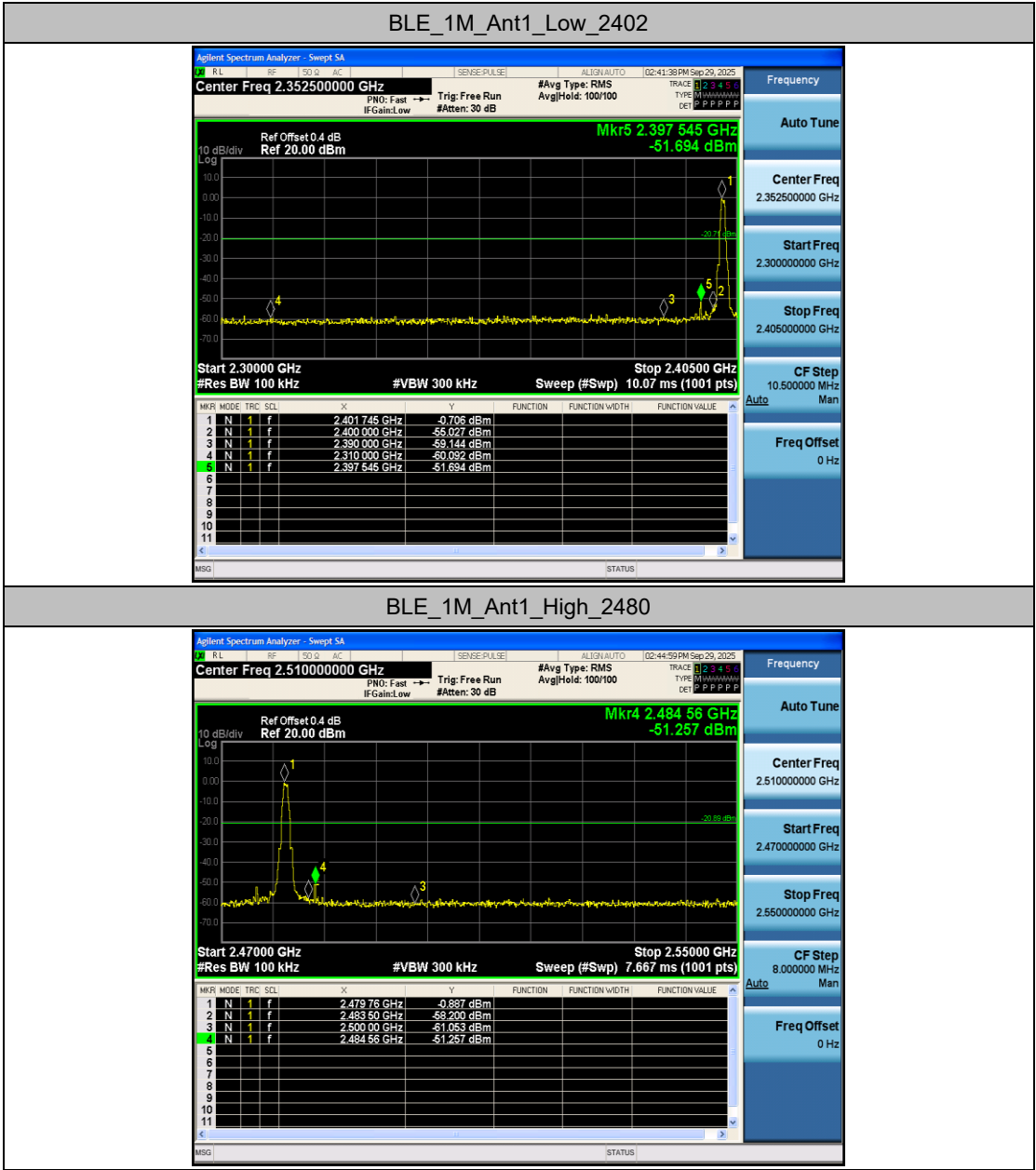


Appendix E: Band edge measurements

Test Result

TestMod e	Antenn a	ChNam e	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdic t
BLE_1M	Ant1	Low	2402	-0.71	-51.69	≤-20.71	PASS
		High	2480	-0.89	-51.26	≤-20.89	PASS

Test Graphs

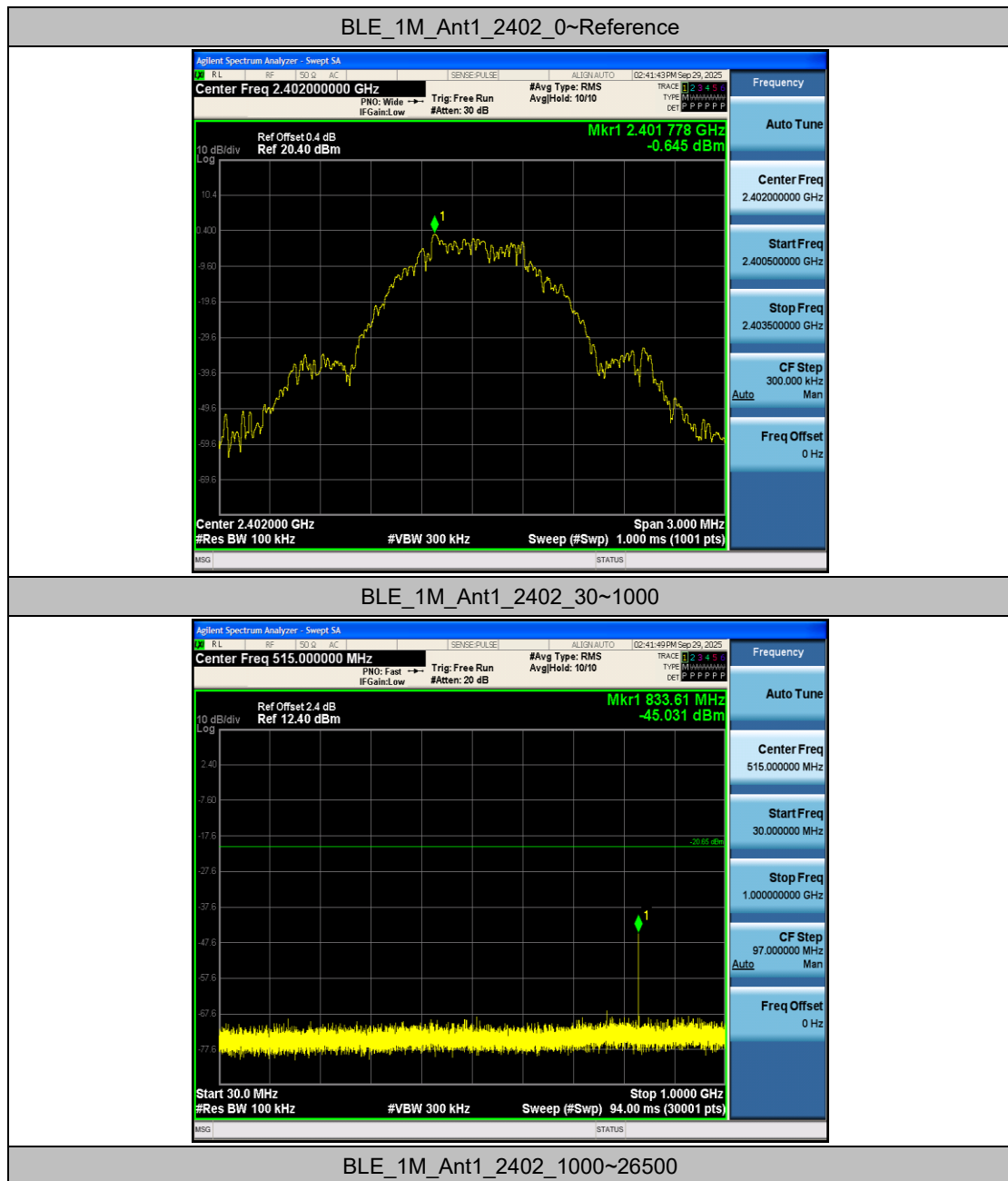


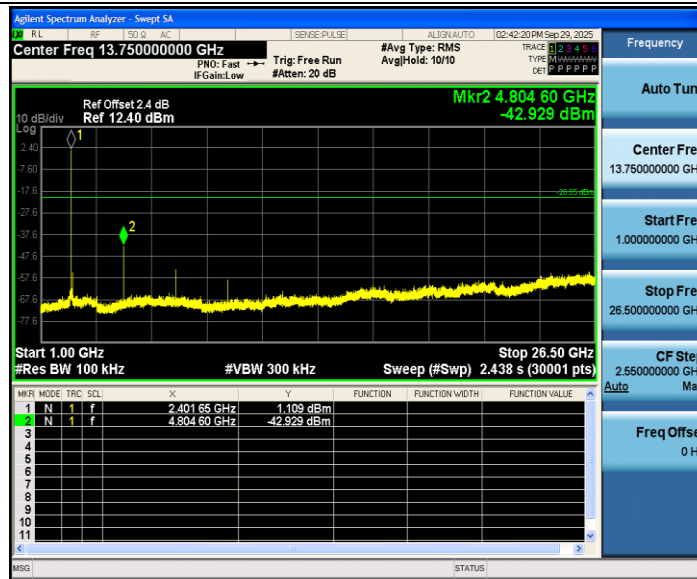
Appendix F: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-0.65	-0.65	---	PASS
			30~1000	-0.65	-45.03	≤-20.65	PASS
			1000~26500	-0.65	-42.93	≤-20.65	PASS
		2440	Reference	-1.09	-1.09	---	PASS
			30~1000	-1.09	-50.52	≤-21.09	PASS
			1000~26500	-1.09	-42.17	≤-21.09	PASS
		2480	Reference	-0.86	-0.86	---	PASS
			30~1000	-0.86	-48.75	≤-20.86	PASS
			1000~26500	-0.86	-43.96	≤-20.86	PASS

Test Graphs

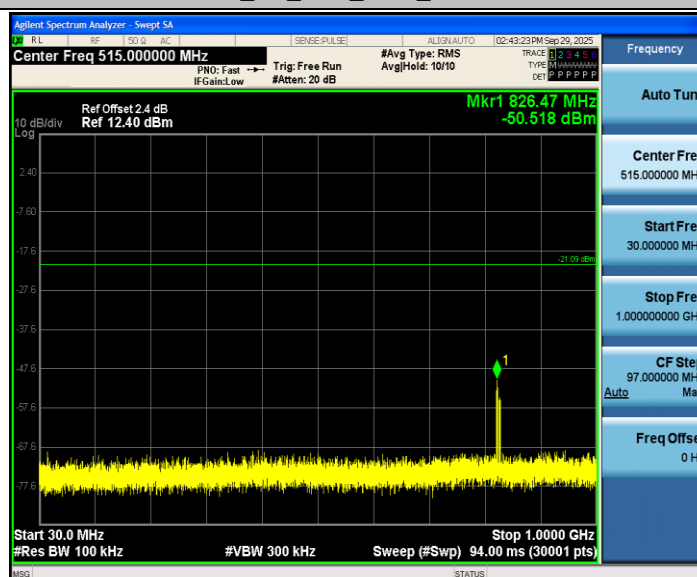




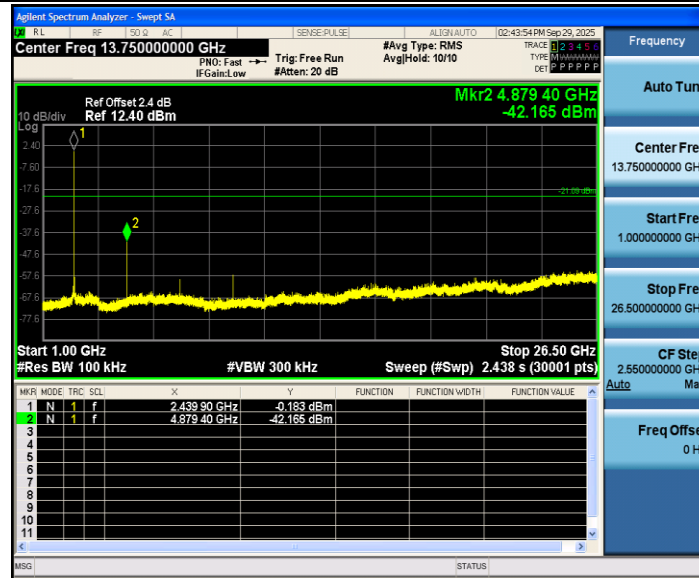
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



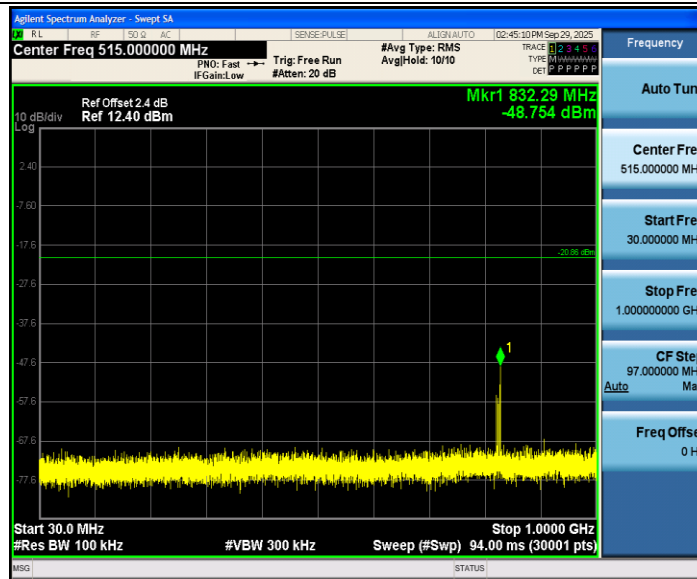
BLE_1M_Ant1_2440_1000~26500



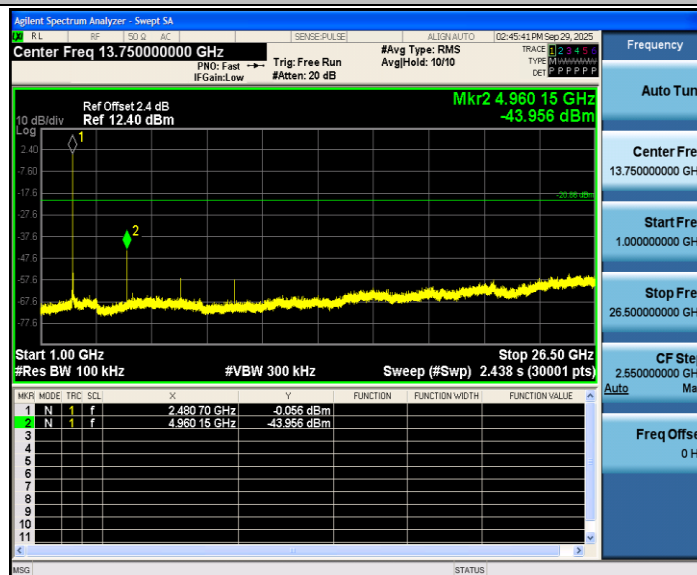
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



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	0.41	0.62	0.6613	66.13	1.80	---	---
		2480	0.41	0.62	0.6613	66.13	1.80	---	---

Test Graphs

