

Appendix RF Test Data for BLE

FCC ID : **2BQU2-BG02**

Company : **Shenzhen Qunlian Intelligent Manufacturing
Technology Co., Ltd**

EUT : **Lottery machine**

Model Number : **BG02**

Report No. : **CTA25080200401**

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	0.664	2401.684	2402.348	0.5	PASS
		2440	0.648	2439.692	2440.340	0.5	PASS
		2480	0.640	2479.692	2480.332	0.5	PASS

Agilent Spectrum Analyzer - Sweep SA

Center Freq 2.402000000 GHz

Ref Offset 0.9 dB
Ref 20.00 dBm

Trig: Free Run
#Atten: 30 dB

#Avg Type: RMS
Avg/Hold: 100/100

Span 4.000 MHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep (#Swp) 1.000 ms (1001 pts)

ΔMkr3 664 kHz
-0.288 dB

10 dB/div
Log

1 2 3Δ1

Center 2.402000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep (#Swp) 1.000 ms (1001 pts)

MNR	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.401 684 GHz	-9.121 dBm			
2	N	1	f	2.402 012 GHz	-3.758 dBm			
3	Δ1	1	f (Δ)	664 kHz (Δ)	-0.288 dB			

Frequency

Auto Tune

Center Freq
2.402000000 GHz

Start Freq
2.400000000 GHz

Stop Freq
2.404000000 GHz

CF Step
400.000 kHz
Man

Freq Offset
0 Hz

BLE_1M_Ant1_2402

Agilent Spectrum Analyzer - Sweep SA

Center Freq 2.440000000 GHz

Ref Offset 0.9 dB
Ref 20.00 dBm

Trig: Free Run
#Atten: 30 dB

#Avg Type: RMS
Avg/Hold: 100/100

Span 4.000 MHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep (#Swp) 1.000 ms (1001 pts)

ΔMkr3 648 kHz
-0.051 dB

10 dB/div
Log

1 2 3Δ1

Center 2.440000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep (#Swp) 1.000 ms (1001 pts)

MNR	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.439 692 GHz	-9.828 dBm			
2	N	1	f	2.440 000 GHz	-3.951 dBm			
3	Δ1	1	f (Δ)	648 kHz (Δ)	-0.051 dB			

Frequency

Auto Tune

Center Freq
2.440000000 GHz

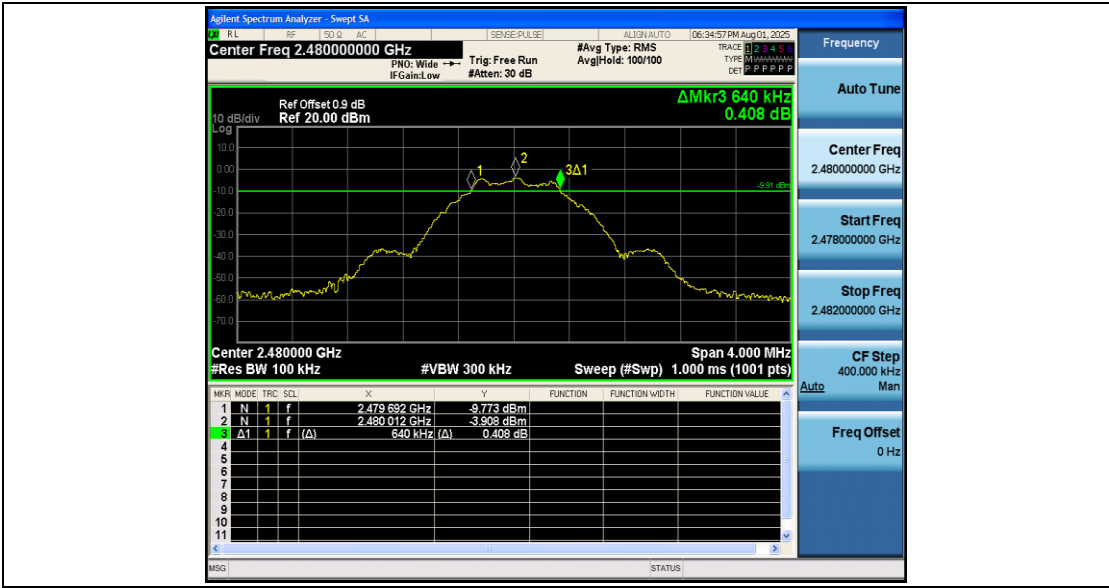
Start Freq
2.438000000 GHz

Stop Freq
2.442000000 GHz

CF Step
400.000 kHz
Man

Freq Offset
0 Hz

BLE_1M_Ant1_2440

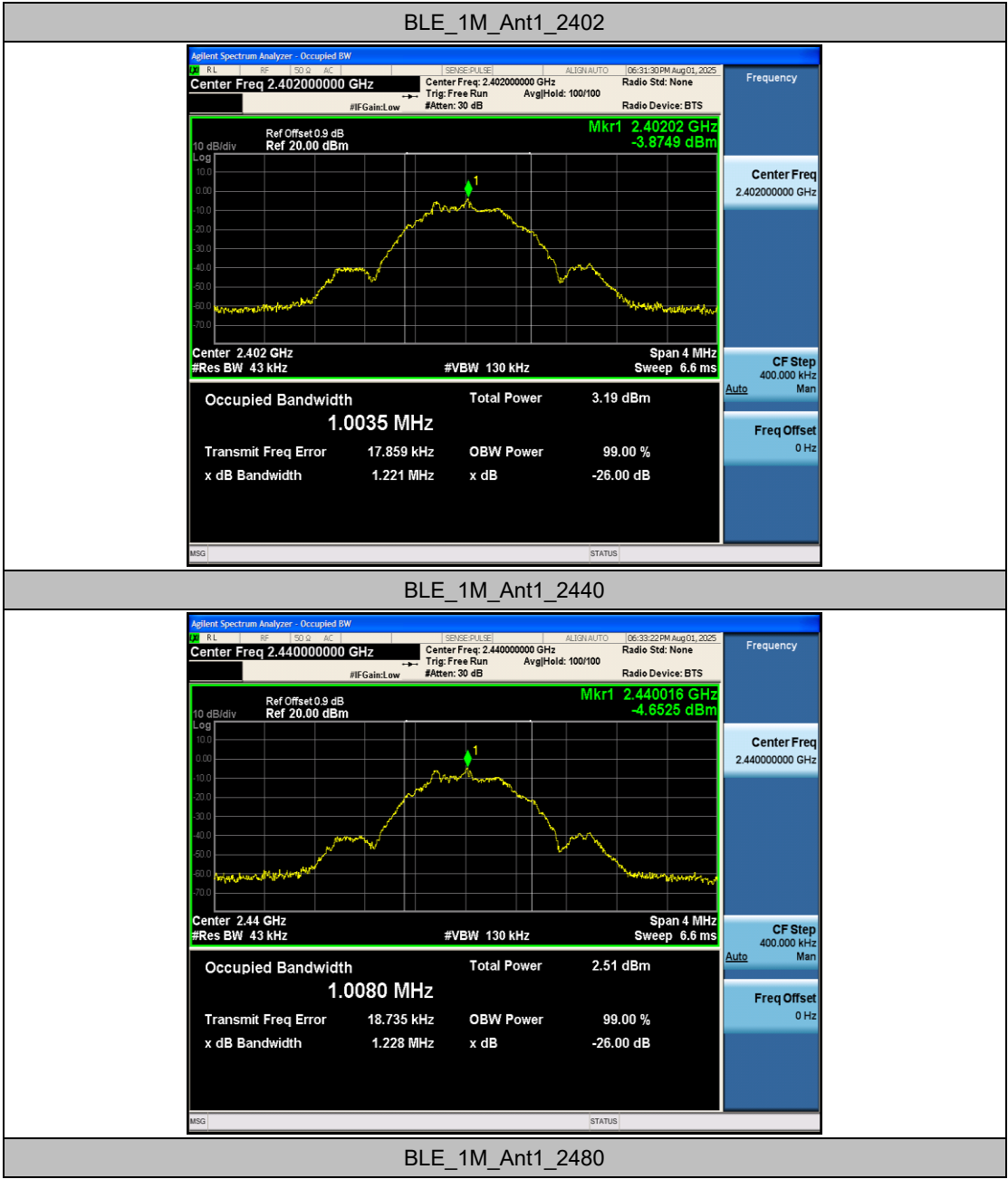


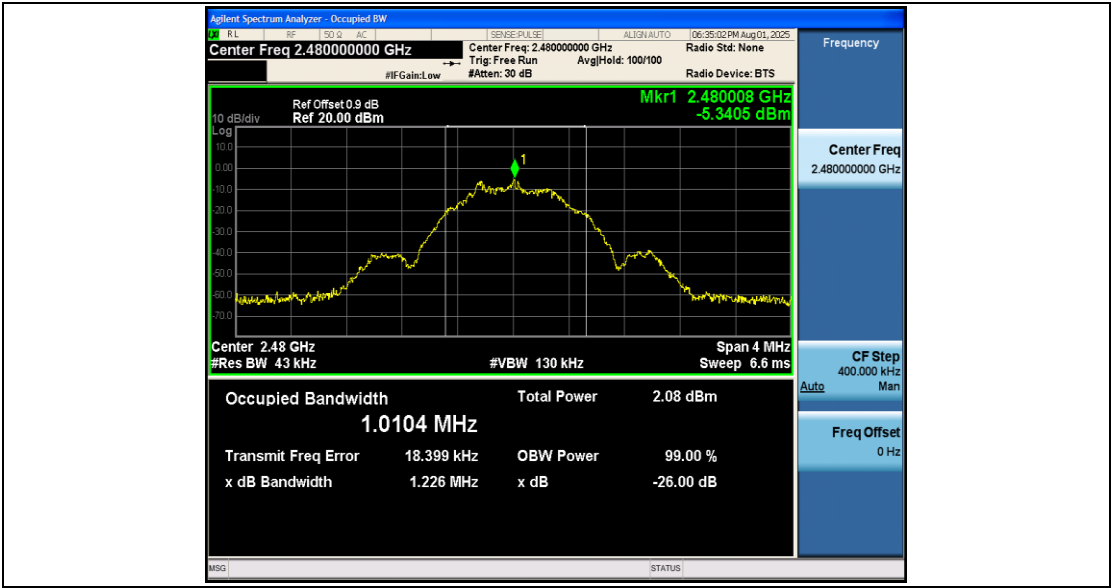
Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0035	2401.5161	2402.5196	---	---
		2440	1.0080	2439.5147	2440.5227	---	---
		2480	1.0104	2479.5132	2480.5236	---	---

Test Graphs





Appendix C: Maximum conducted output power

Test Result Peak

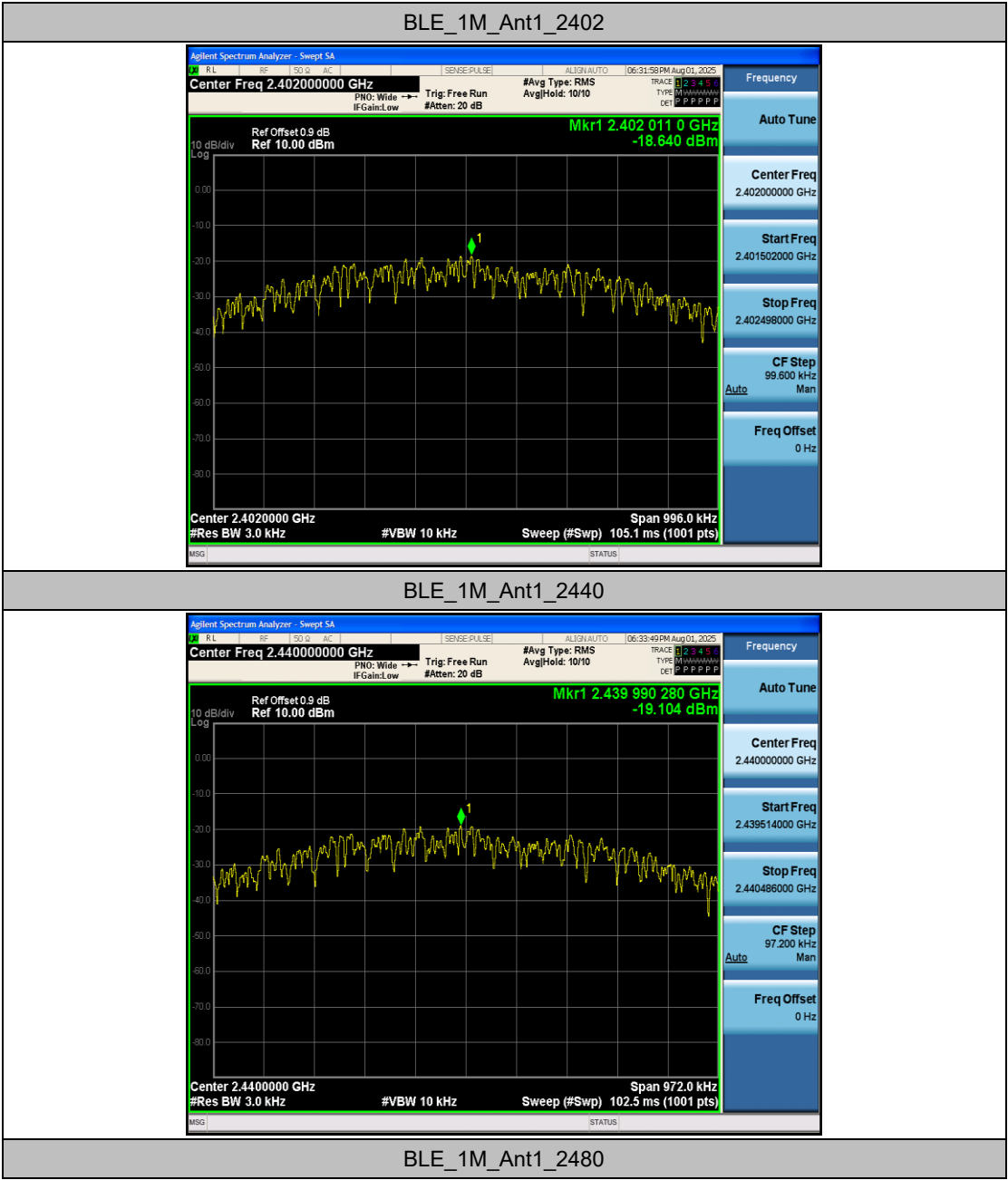
TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-2.85	≤30	PASS
		2440	-3.46	≤30	PASS
		2480	-3.73	≤30	PASS

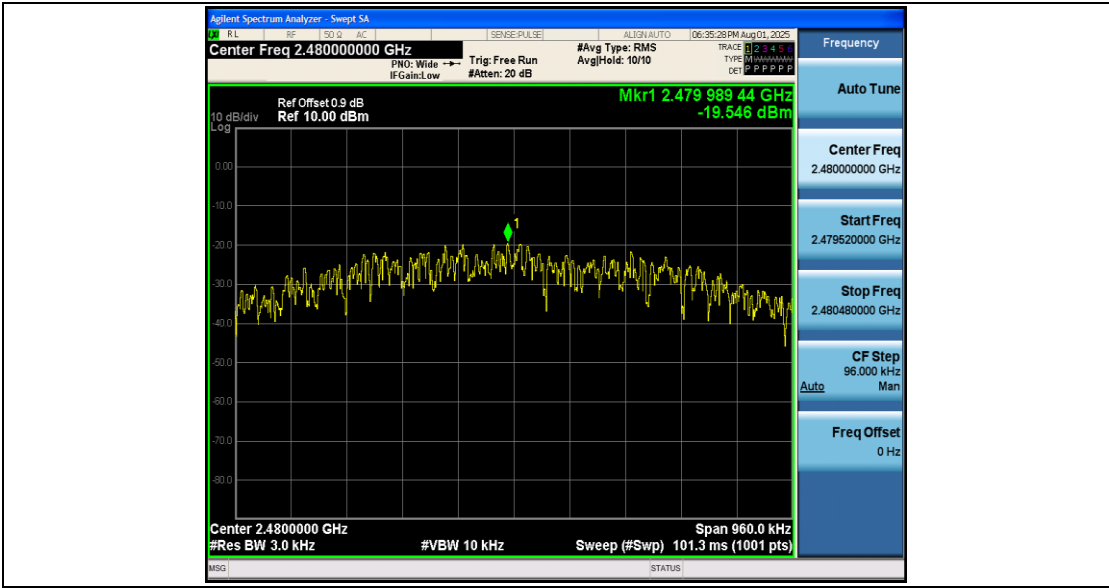
Appendix D: Maximum power spectral density

Test Result

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-18.64	≤8.00	PASS
		2440	-19.10	≤8.00	PASS
		2480	-19.55	≤8.00	PASS

Test Graphs



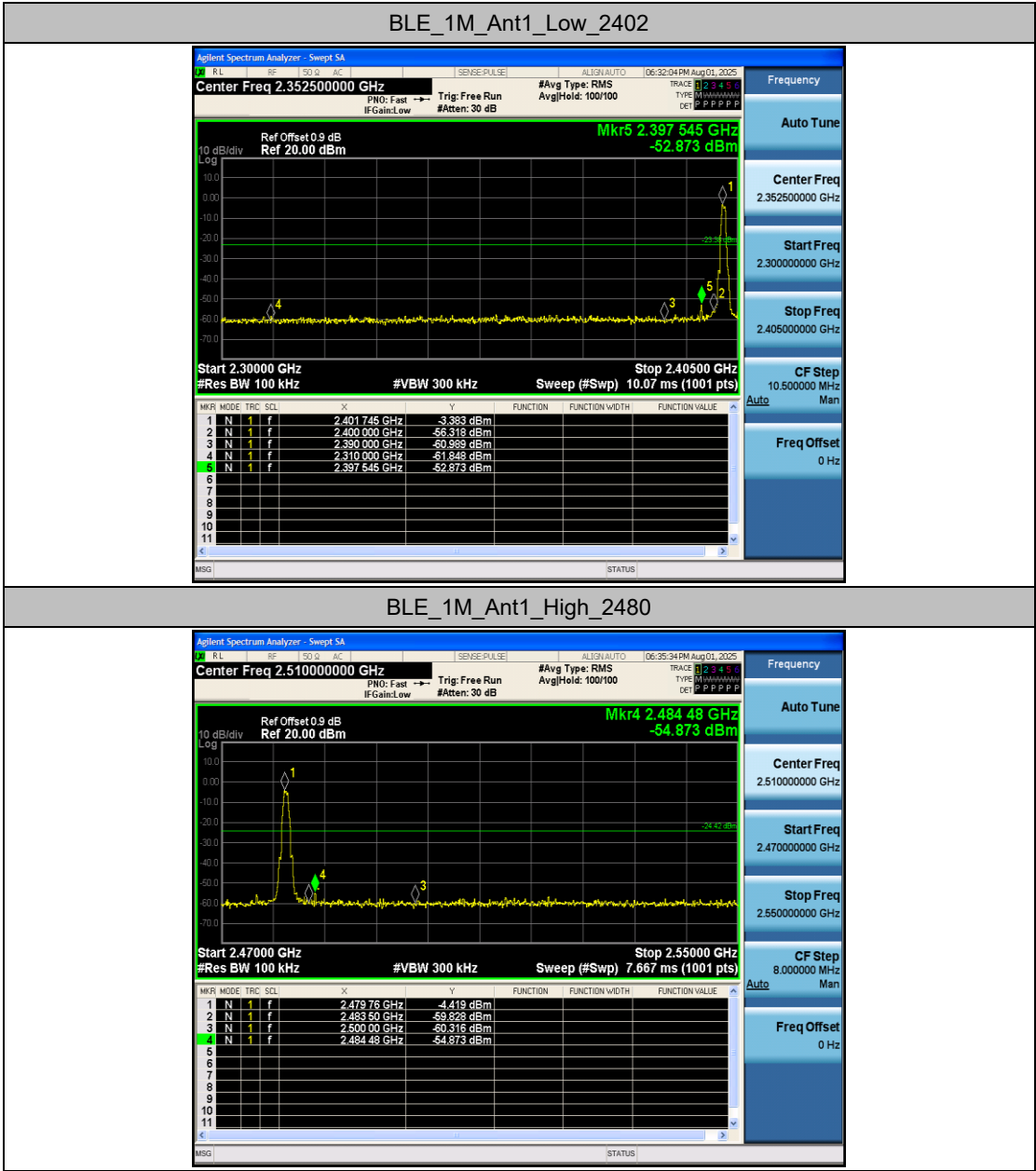


Appendix E: Band edge measurements

Test Result

TestMod e	Antenn a	ChNam e	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdic t
BLE_1M	Ant1	Low	2402	-3.38	-52.87	≤-23.38	PASS
		High	2480	-4.42	-54.87	≤-24.42	PASS

Test Graphs

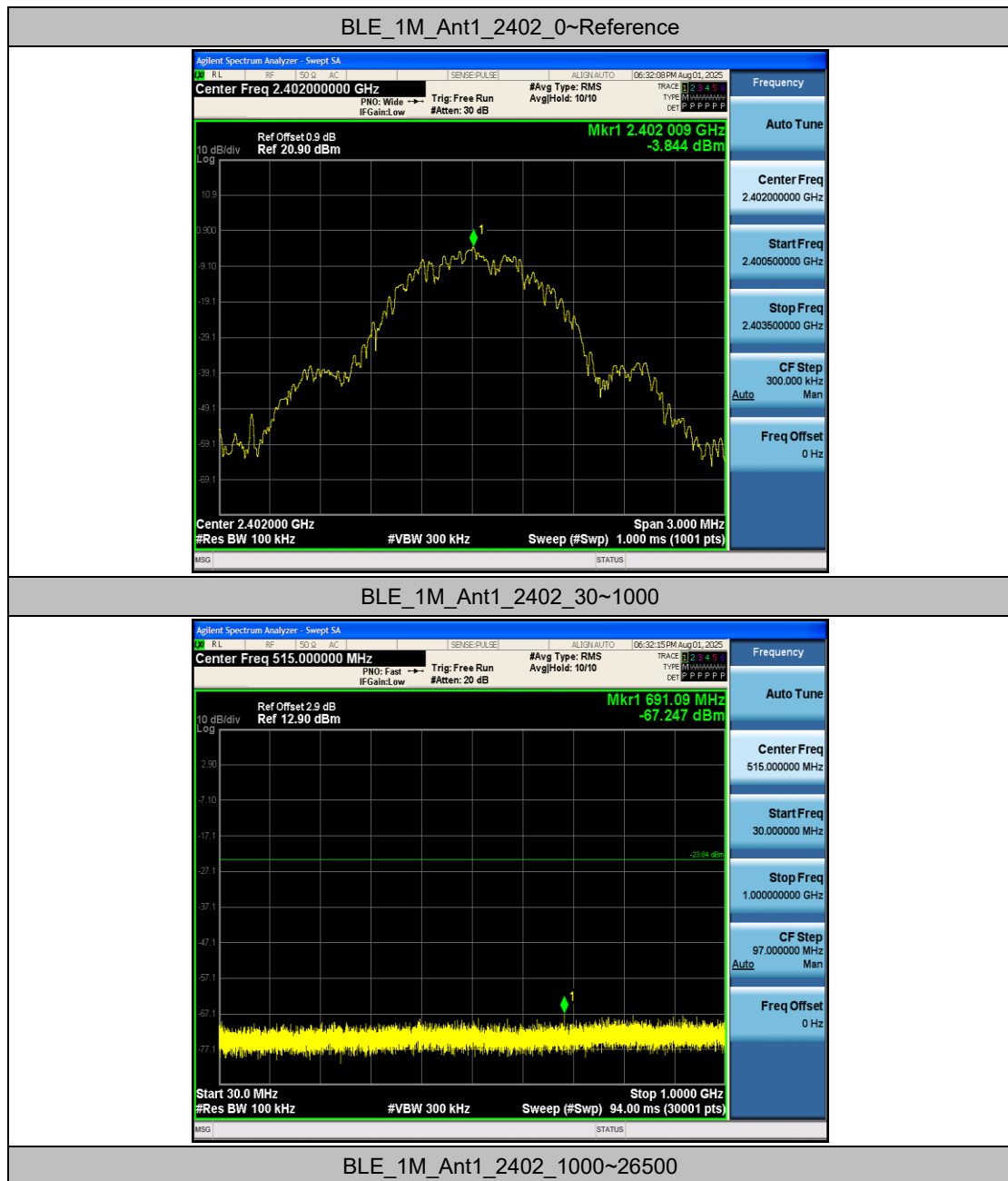


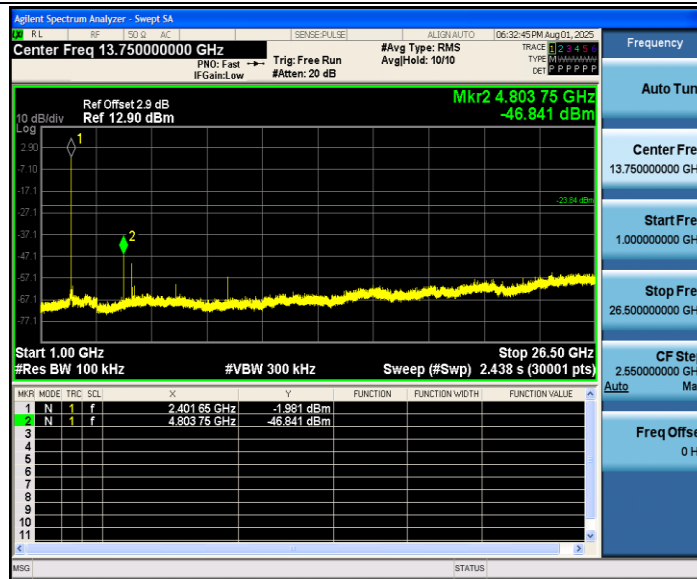
Appendix F: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-3.84	-3.84	---	PASS
			30~1000	-3.84	-67.25	≤-23.84	PASS
			1000~26500	-3.84	-46.84	≤-23.84	PASS
		2440	Reference	-5.56	-5.56	---	PASS
			30~1000	-5.56	-67.71	≤-25.56	PASS
			1000~26500	-5.56	-48.38	≤-25.56	PASS
		2480	Reference	-5.54	-5.54	---	PASS
			30~1000	-5.54	-67.43	≤-25.54	PASS
			1000~26500	-5.54	-46.1	≤-25.54	PASS

Test Graphs

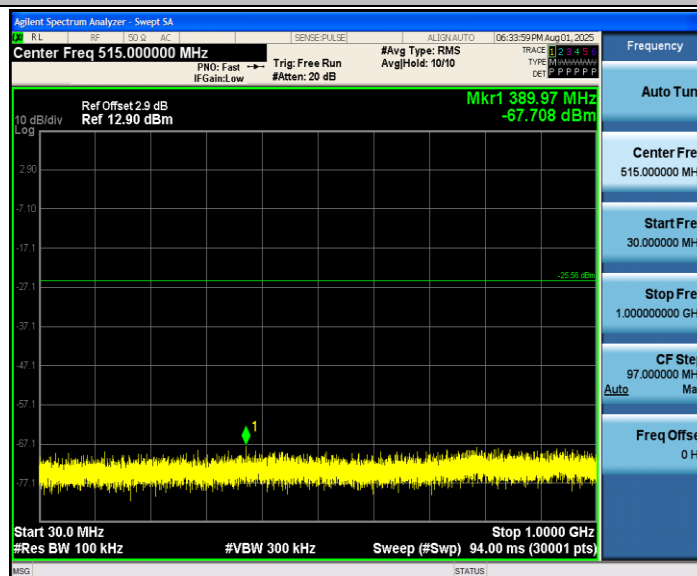




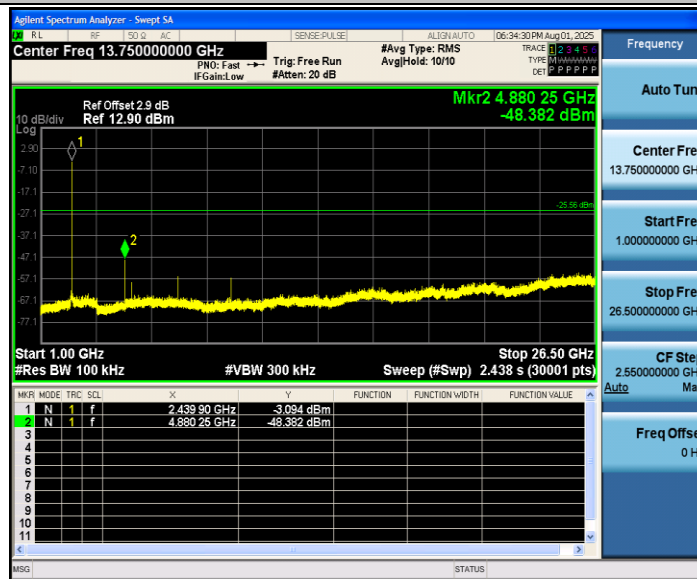
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



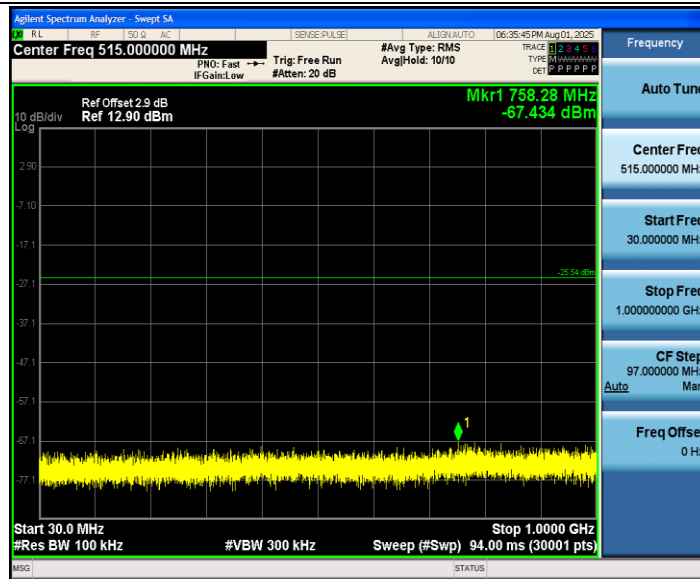
BLE_1M_Ant1_2440_1000~26500



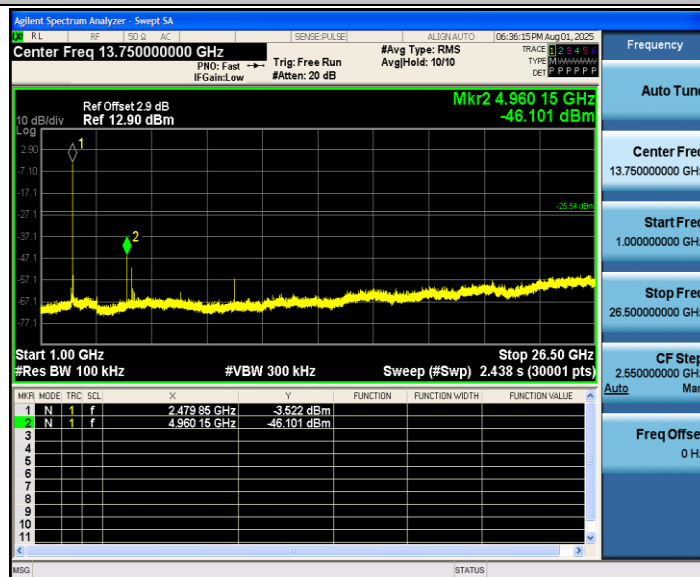
BLE_1M_Ant1_2480_0~Reference



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	0.63	0.6508	65.08	1.87	---	---
		2440	0.41	0.63	0.6508	65.08	1.87	---	---
		2480	0.41	0.63	0.6508	65.08	1.87	---	---

Test Graphs

