

FCC Appendix RF Test Data

FCC ID : 2BC3X-H21

Company: : Dongguan Langchen Technology Co.,Ltd.

EUT : Smart watch

Model Number : H21

Report No. : CTA25041500301

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	0.628	2439.696	2440.324	0.5	PASS
		2480	0.644	2479.692	2480.336	0.5	PASS

Test Graphs



BLE_1M_Ant1_2440

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.440000000 GHz

Ref Offset 0.5 dB
Ref 20.00 dBm

10 dB/div
Log

Span 4.000 MHz

Center 2.440000 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep (#Swp) 1.000 ms (1001 pts)

Trig: Free Run

#Atten: 30 dB

#Avg Type: RMS

Avg/Hold: 100/100

09-03-07 AM Apr 22, 2025

Frequency

Auto Tune

Center Freq
2.440000000 GHz

Start Freq
2.438000000 GHz

Stop Freq
2.442000000 GHz

CF Step
400.000 kHz
Man

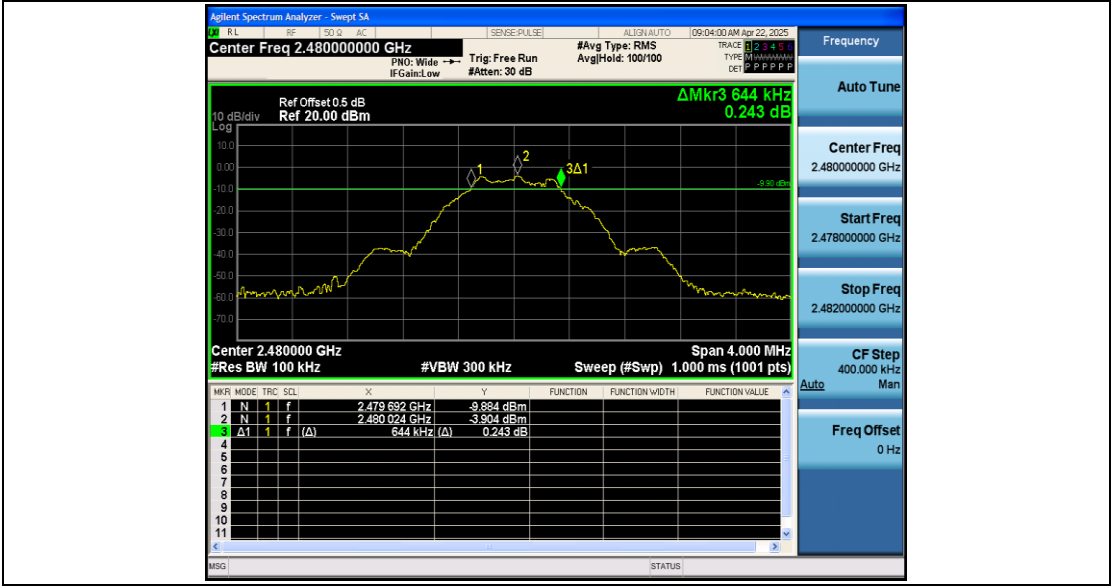
Freq Offset
0 Hz

MSG

STATUS

MARK	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.439696 GHz	-9.504 dBm			
2	N	1	f	2.440020 GHz	-3.813 dBm			
3	Δ	1	f (Δ)	628 kHz (Δ)	0.312 dB			

BLE_1M_Ant1_2480

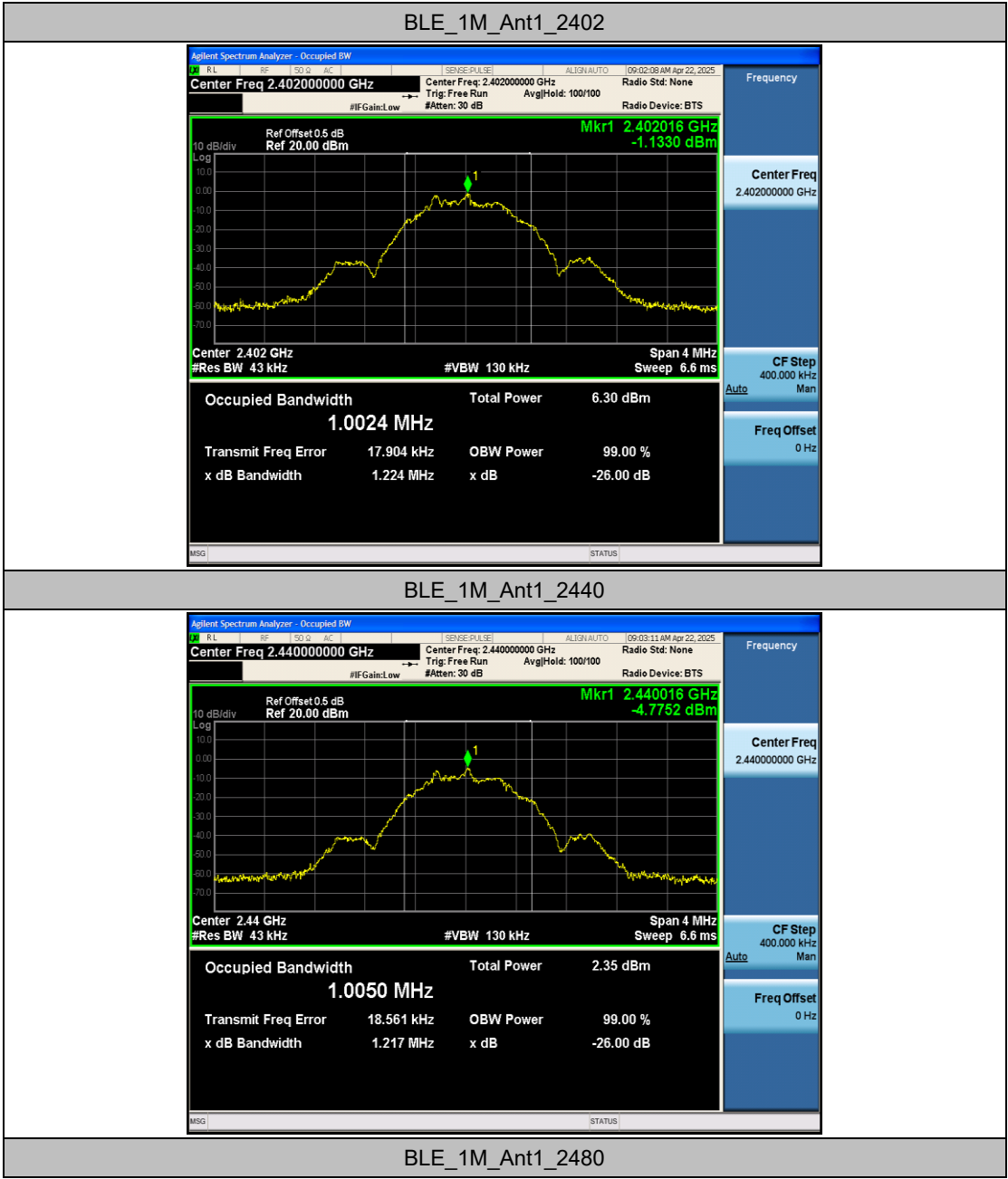


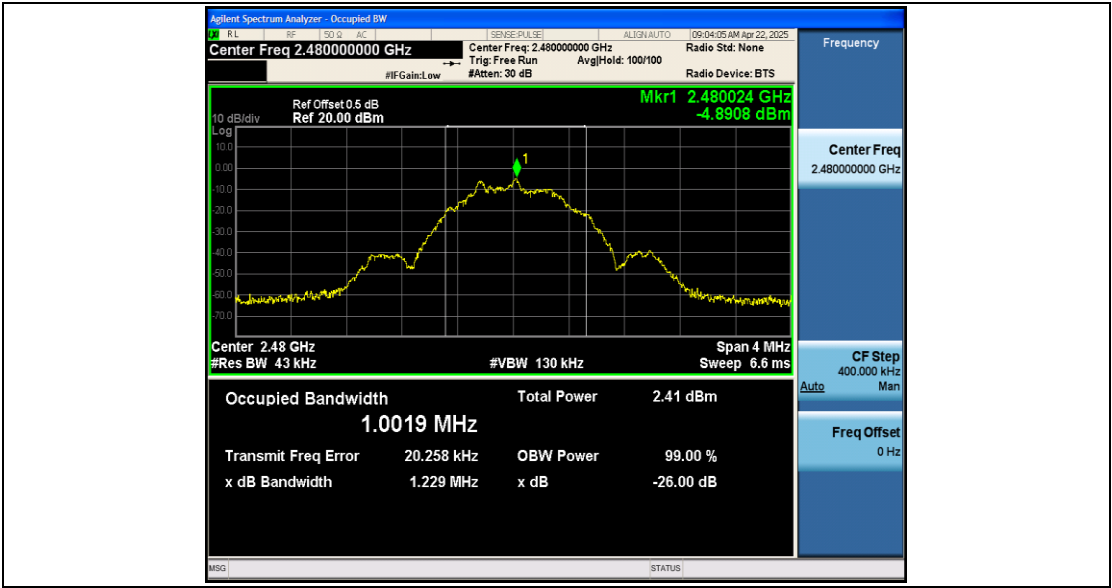
Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0024	2401.5167	2402.5191	---	---
		2440	1.0050	2439.5161	2440.5211	---	---
		2480	1.0019	2479.5193	2480.5212	---	---

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	0.09	≤30	PASS
		2440	-3.71	≤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	-15.57	≤8.00	PASS
		2440	-19.44	≤8.00	PASS
		2480	-19.47	≤8.00	PASS

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.40200000 GHz

Ref Offset 0.5 dB
Ref 10.00 dBm

Mkr1 2.401 990 340 GHz
-15.568 dBm

Frequency

Auto Tune

Center Freq
2.40200000 GHz

Start Freq
2.401517000 GHz

Stop Freq
2.402483000 GHz

CF Step
96.600 kHz
Auto Man

Freq Offset
0 Hz

Center 2.4020000 GHz

#Res BW 3.0 kHz

#VBW 10 kHz

Sweep (#Swp) 101.9 ms (1001 pts)

MSG (STATUS)

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.440000000 GHz

Ref Offset 0.5 dB
Ref 10.00 dBm

Mkr1 2.440 012 246 GHz
-19.436 dBm

Frequency

Auto Tune

Center Freq
2.440000000 GHz

Start Freq
2.439529000 GHz

Stop Freq
2.440471000 GHz

CF Step
94.200 kHz
Auto Man

Freq Offset
0 Hz

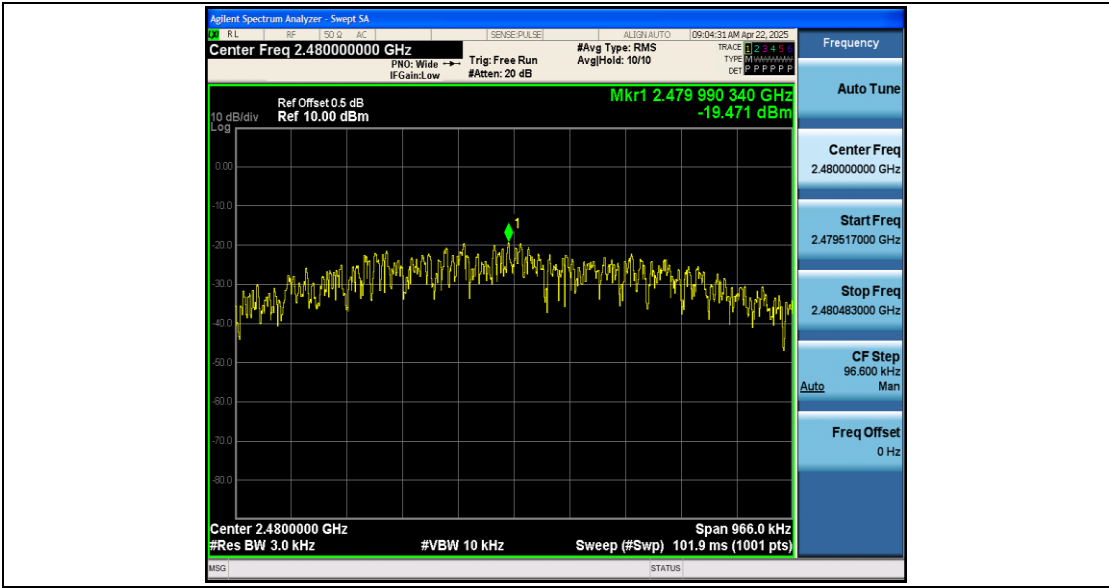
Center 2.4400000 GHz

#Res BW 3.0 kHz

#VBW 10 kHz

Sweep (#Swp) 99.33 ms (1001 pts)

MSG (STATUS)

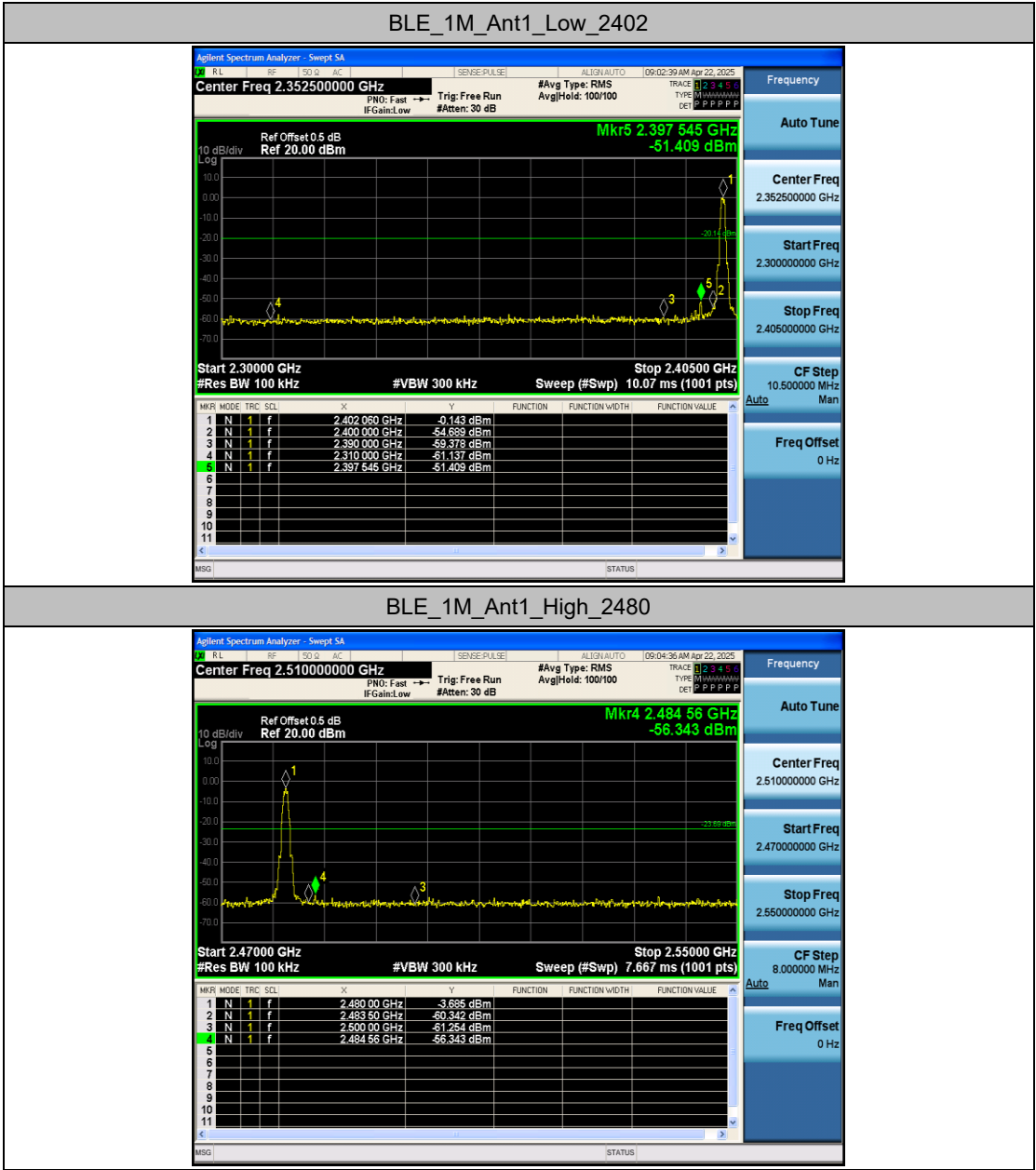


Appendix E: Band edge measurements

Test Result

TestMode	Antenna	Channel	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.14	-51.41	≤-20.14	PASS
		High	2480	-3.69	-56.34	≤-23.69	PASS

Test Graphs

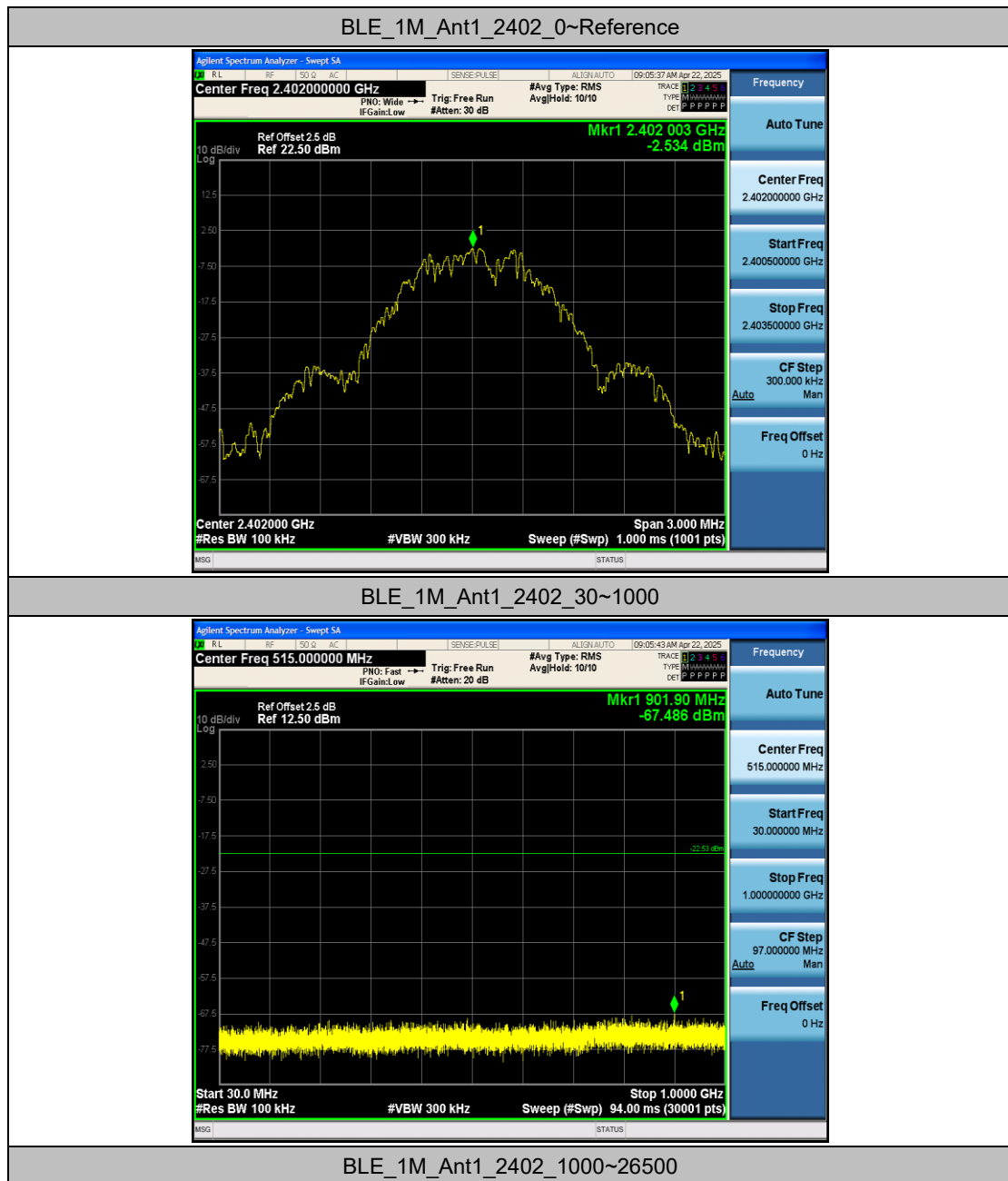


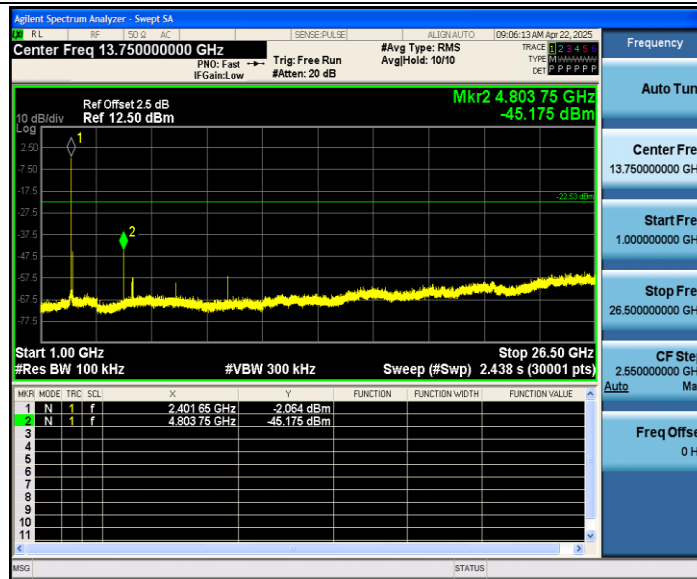
Appendix F: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-2.53	-2.53	---	PASS
			30~1000	-2.53	-67.49	≤-22.53	PASS
			1000~26500	-2.53	-45.18	≤-22.53	PASS
		2440	Reference	-2.37	-2.37	---	PASS
			30~1000	-2.37	-67.89	≤-22.37	PASS
			1000~26500	-2.37	-48.52	≤-22.37	PASS
		2480	Reference	-4.07	-4.07	---	PASS
			30~1000	-4.07	-68.17	≤-24.07	PASS
			1000~26500	-4.07	-46.69	≤-24.07	PASS

Test Graphs

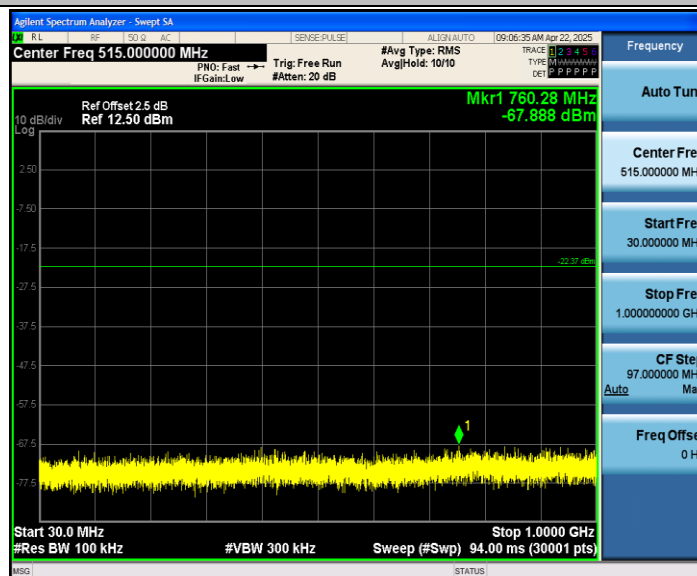




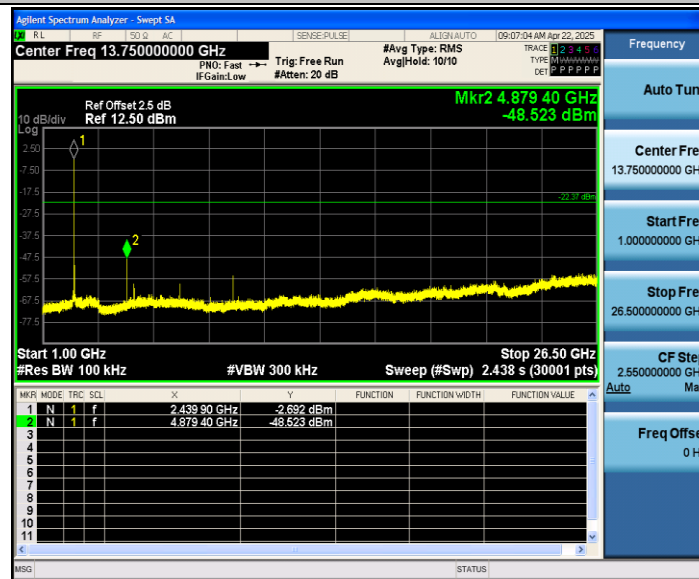
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



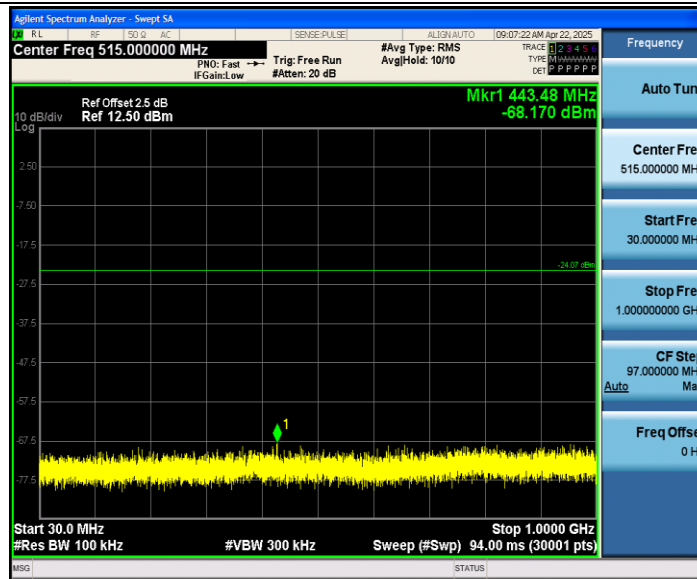
BLE_1M_Ant1_2440_1000~26500



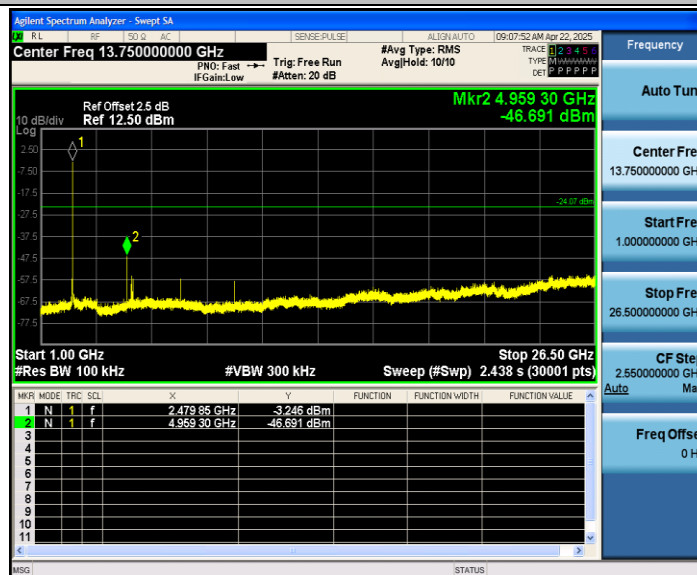
BLE_1M_Ant1_2480_0~Reference



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	0.42	0.63	0.6667	66.67	1.76	---	---
		2440	0.41	0.63	0.6508	65.08	1.87	---	---
		2480	0.41	0.63	0.6508	65.08	1.87	---	---

Test Graphs

