Case No. : GTS20230203009-1-31	
Ambient Condition: 22 ℃, 51 %RH, Atmos100.1Kpa,	
Test Date: 2023.3.9	**Test Engineer:** Jenny zeng

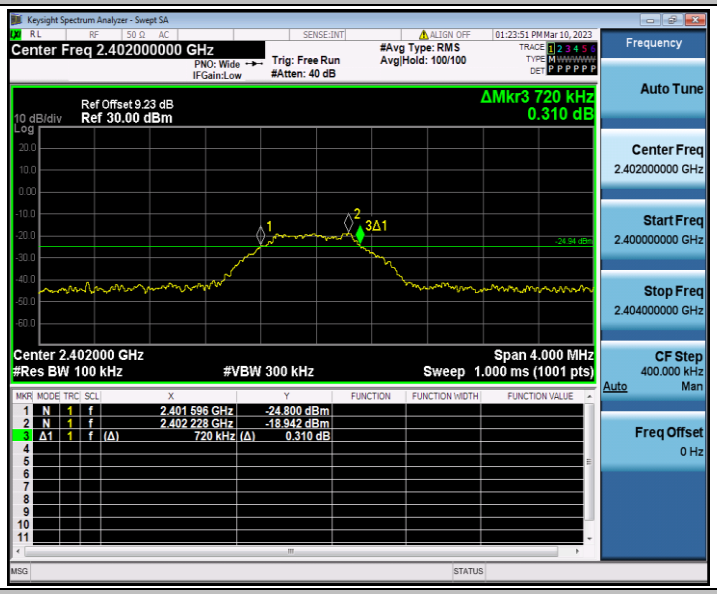
Appendix B.1: DTS Bandwidth

Test Result

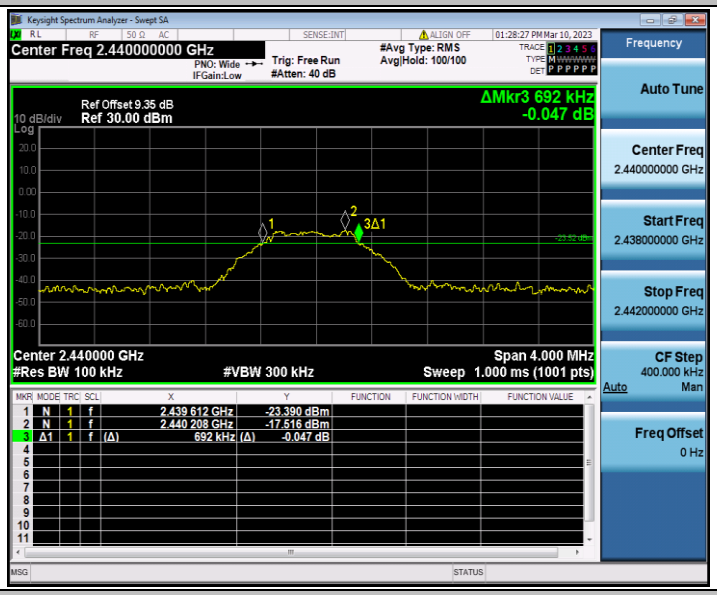
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant1	2402	0.720	2401.596	2402.316	0.5	PASS
		2440	0.692	2439.612	2440.304	0.5	PASS
		2480	0.716	2479.596	2480.312	0.5	PASS

Test Graphs

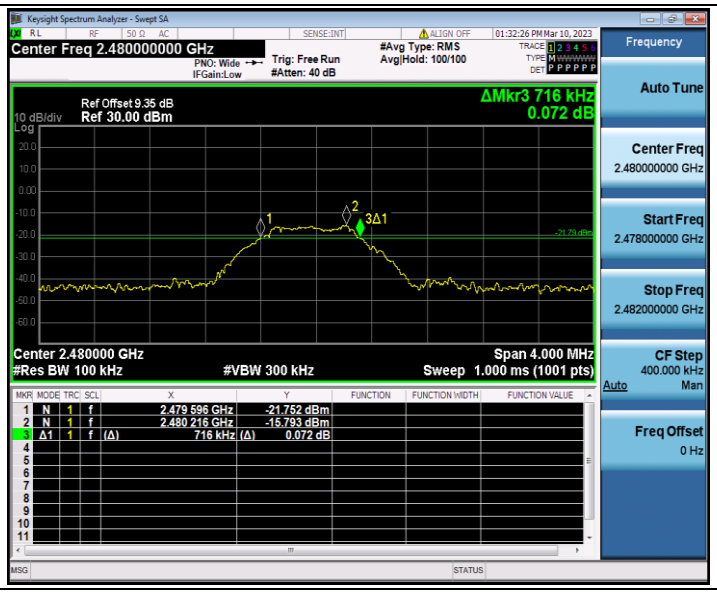
BLE_Ant1_2402



BLE_Ant1_2440



BLE_Ant1_2480


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 40 dB
#Avg Type: RMS
Avg|Hold: 100/100
01:32:26 PM Mar 10, 2023
Ref Offset 9.35 dB
10 dB/div
Ref 30.00 dBm
ΔMkr3 716 kHz
0.072 dB
Center 2.480000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 4.000 MHz
Sweep 1.000 ms (1001 pts)
1 N 1 f 2.479 596 GHz -21.752 dBm
2 N 1 f 2.480 216 GHz -15.793 dBm
3 Δ1 1 f (Δ) 716 kHz (Δ) 0.072 dB
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.478000000 GHz
Stop Freq
2.482000000 GHz
CF Step
400.000 kHz
Auto
Man
Freq Offset
0 Hz

Appendix B.2: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant1	2402	2.0025	2401.039	2403.041	---	---
		2440	1.4699	2439.254	2440.724	---	---
		2480	1.1869	2479.381	2480.568	---	---

Test Graphs

BLE_Ant1_2402

BLE_Ant1_2440

BLE_Ant1_2480

Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω AC
SENSE:INT
ALIGN OFF
01:32:39 PM Mar 10, 2023
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 40 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 9.35 dB
10 dB/div
Ref 30.00 dBm
Log
Mkr1 2.479956 GHz
-16.900 dBm
Center Freq
2.480000000 GHz
Center 2.48 GHz
#Res BW 43 kHz
#VBW 130 kHz
Span 4 MHz
Sweep 2.067 ms
CF Step
400.000 kHz
Auto
Man
Occupied Bandwidth
1.1869 MHz
Total Power
-8.18 dBm
Transmit Freq Error
-25.879 kHz
% of OBW Power
99.00 %
x dB Bandwidth
1.324 MHz
x dB
-26.00 dB
Freq Offset
0 Hz
MSG
STATUS

Appendix B.3: Maximum conducted output power

Test Result Peak

TestMode	Antenna	Frequency[MHz]	Conducted Peak Powert[dBm]	Conducted Limit[dBm]	Verdict
BLE	Ant1	2402	-13.11	≤30	PASS
		2440	-13.97	≤30	PASS
		2480	-13.48	≤30	PASS

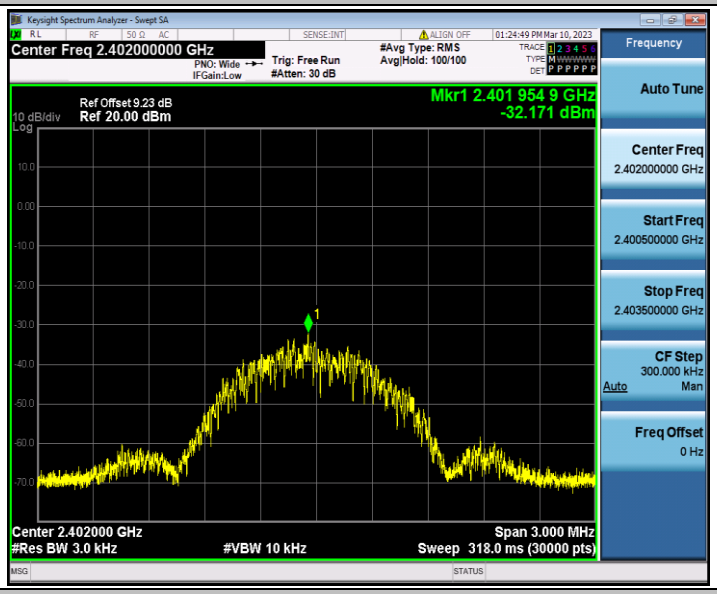
Appendix B.4: Maximum power spectral density

Test Result

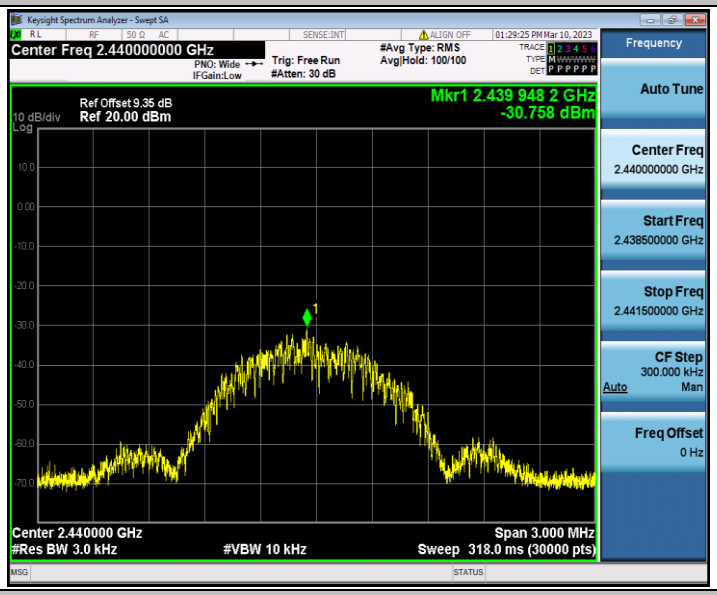
TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE	Ant1	2402	-32.17	≤8.00	PASS
		2440	-30.76	≤8.00	PASS
		2480	-28.96	≤8.00	PASS

Test Graphs

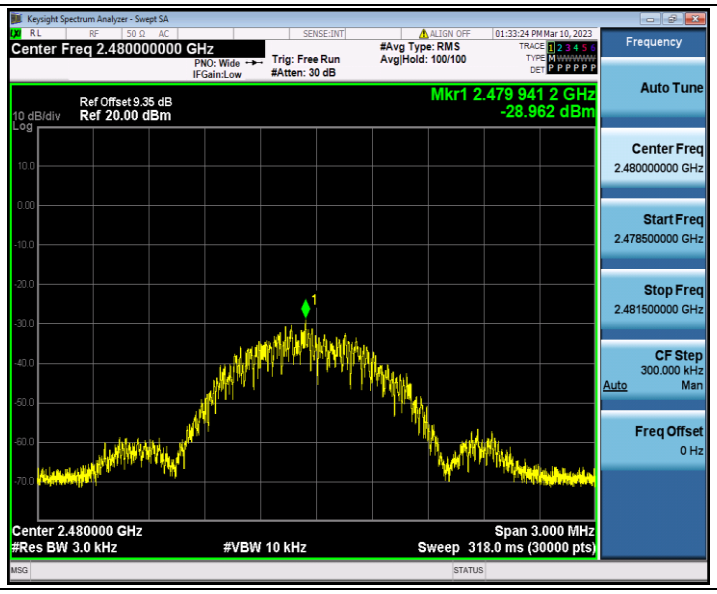
BLE_Ant1_2402



BLE_Ant1_2440



BLE_Ant1_2480


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 100/100
01:33:24 PM Mar 10, 2023
Ref Offset 9.35 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.479 941 2 GHz
-28.962 dBm
Center 2.480000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 3.000 MHz
Sweep 318.0 ms (30000 pts)
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.478500000 GHz
Stop Freq
2.481500000 GHz
CF Step
300.000 kHz
Auto
Man
Freq Offset
0 Hz

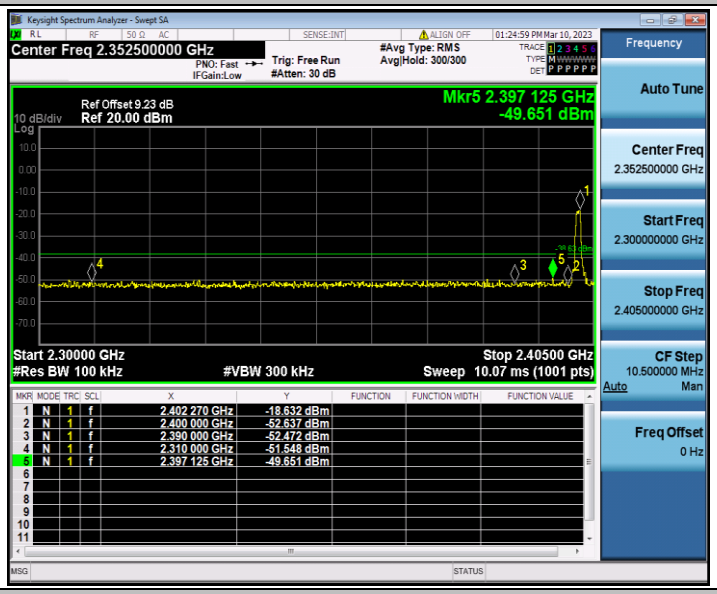
Appendix B.5: Band edge measurements

Test Result

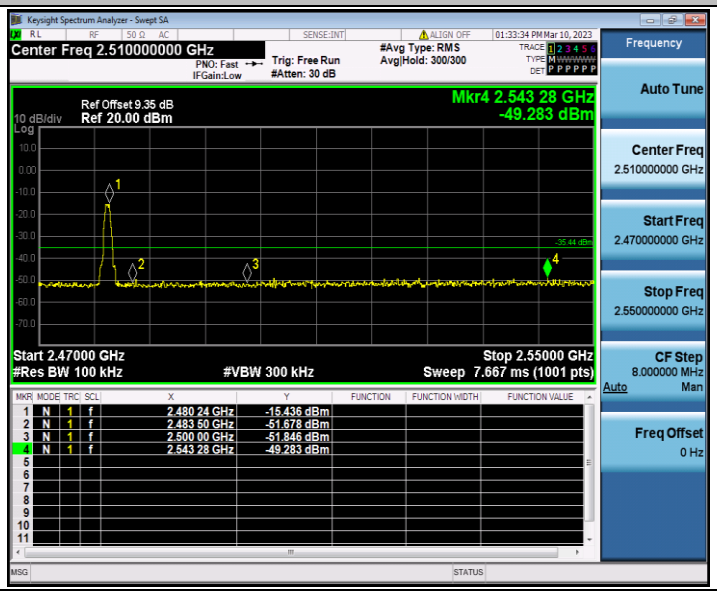
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant1	Low	2402	-18.63	-49.65	≤-38.63	PASS
		High	2480	-15.44	-49.28	≤-35.44	PASS

Test Graphs

BLE_Ant1_Low_2402



BLE_Ant1_High_2480



Appendix B.6: Conducted Spurious Emission

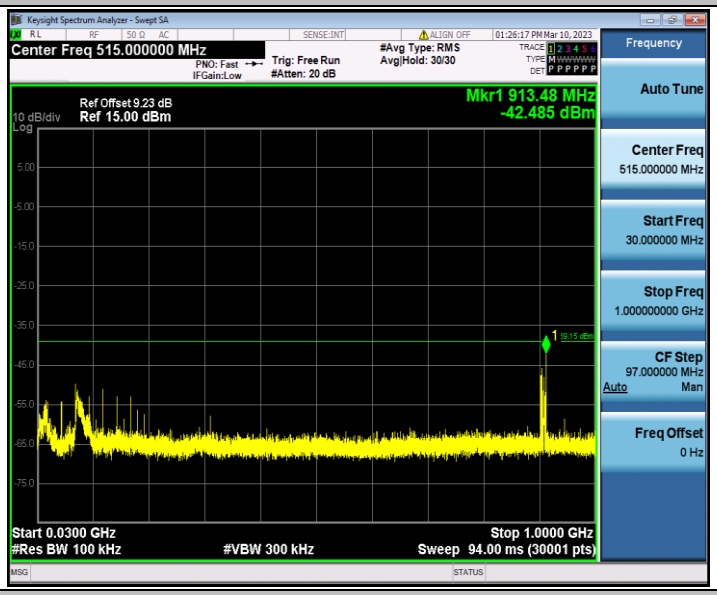
Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant1	2402	Reference	-19.15	-19.15	---	PASS
			30~1000	-19.15	-42.49	≤-39.15	PASS
			1000~26500	-19.15	-47.5	≤-39.15	PASS
		2440	Reference	-17.86	-17.86	---	PASS
			30~1000	-17.86	-48.69	≤-37.86	PASS
			1000~26500	-17.86	-47.28	≤-37.86	PASS
		2480	Reference	-10.94	-10.94	---	PASS
			30~1000	-10.94	-60.02	≤-30.94	PASS
			1000~26500	-10.94	-47.59	≤-30.94	PASS

Test Graphs

BLE_Ant1_2402_0~Reference

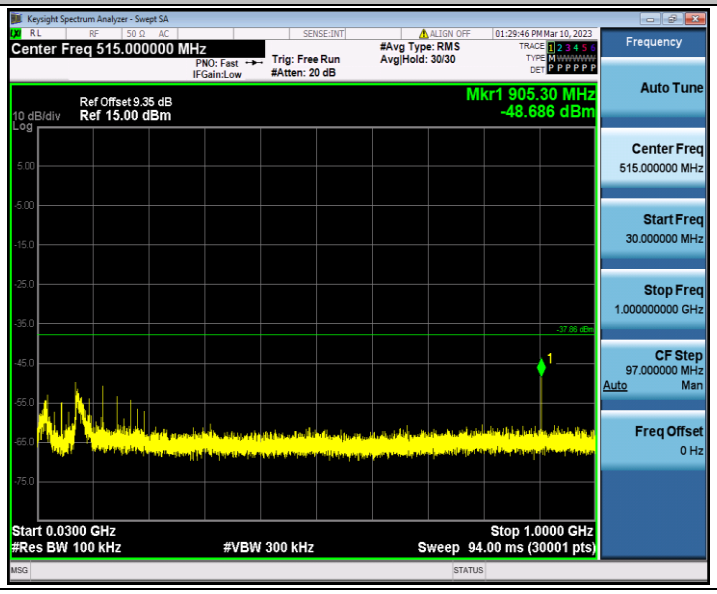
BLE_Ant1_2402_30~1000



BLE_Ant1_2402_1000~26500

BLE_Ant1_2440_0~Reference

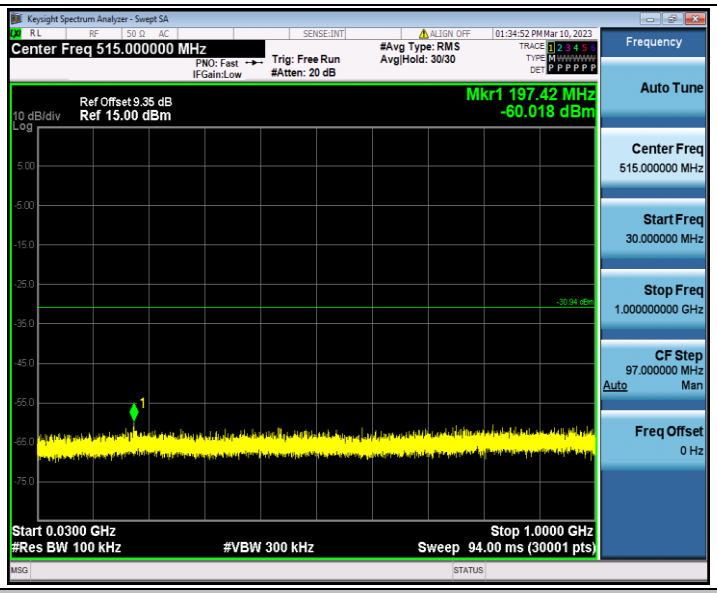
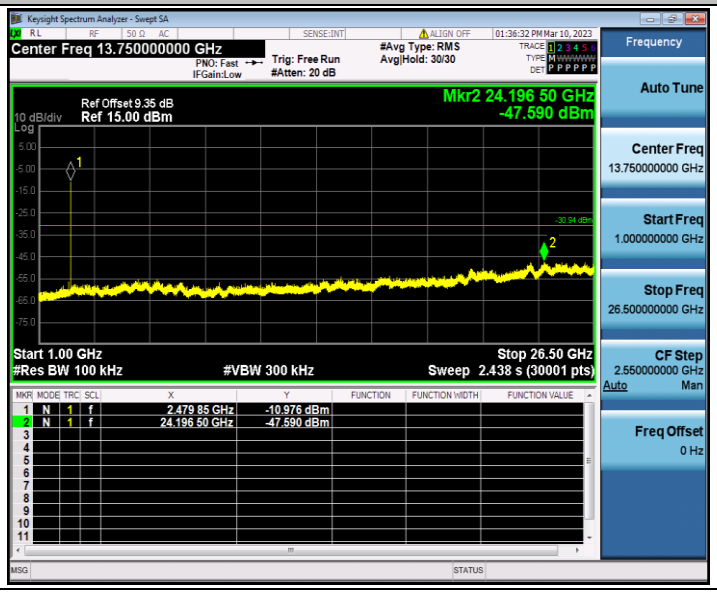
BLE_Ant1_2440_30~1000



BLE_Ant1_2440_1000~26500

BLE_Ant1_2480_0~Reference

BLE_Ant1_2480_30~1000



BLE_Ant1_2480_1000~26500