Appendix B

RF Test Data for BT LE (Conducted Measurement)

Product Name: MOBILE PHONE

Test Model: PADUA

Environmental Conditions

Temperature:	23.9 ° C
Relative Humidity:	52.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Ling Zhu
Supervised by:	Li Huan

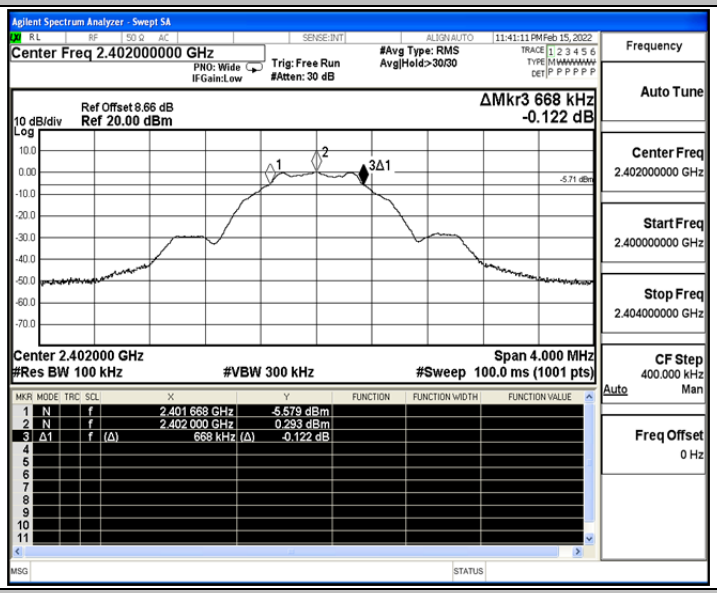
B.1 DTS Bandwidth

Test Result

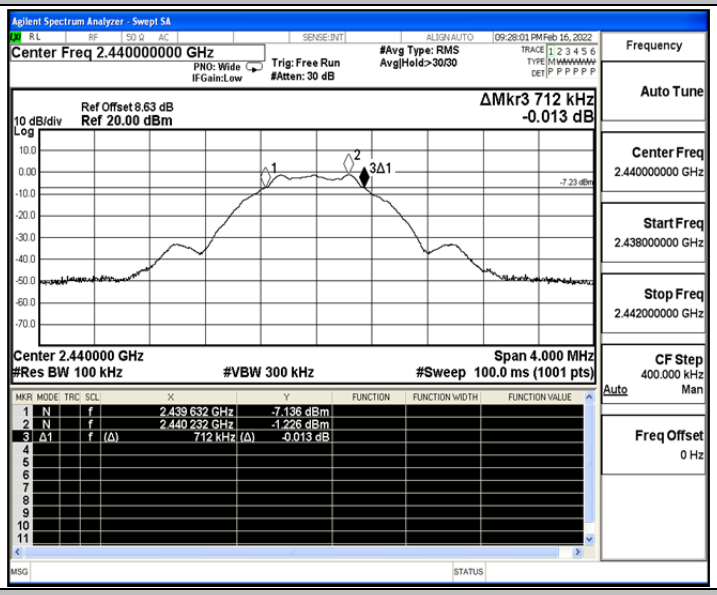
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.668	2401.668	2402.336	0.5	PASS
		2440	0.712	2439.632	2440.344	0.5	PASS
		2480	0.668	2479.664	2480.332	0.5	PASS

Test Graphs

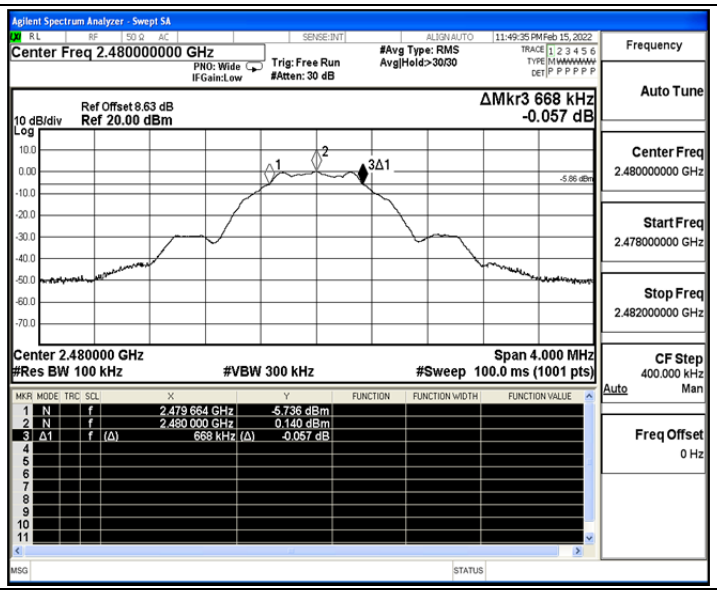
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold:>30/30
11:49:35 PM Feb 15, 2022
Ref Offset 8.63 dB
10 dB/div Ref 20.00 dBm
Log
ΔMkr3 668 kHz
-0.057 dB
Center 2.480000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 4.000 MHz
#Sweep 100.0 ms (1001 pts)
1 N f 2.479 664 GHz -5.736 dBm
2 N f 2.480 000 GHz 0.140 dBm
3 Δ1 f (Δ) 668 kHz (Δ) -0.057 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

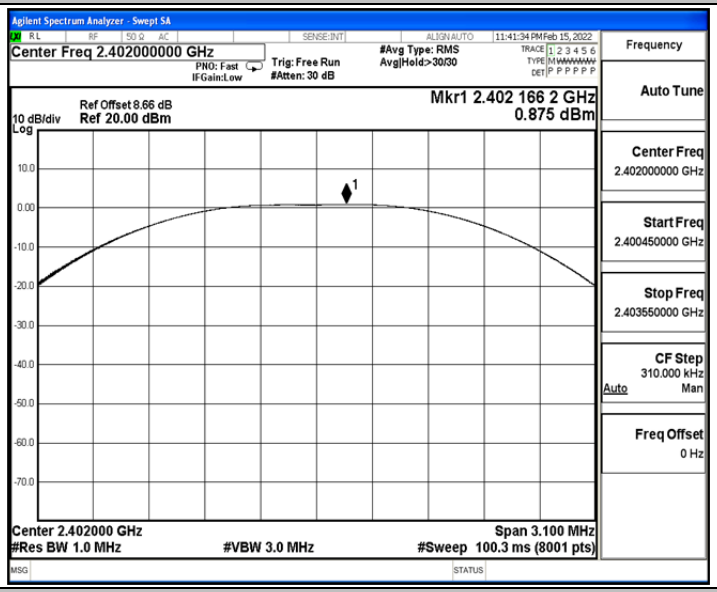
B.2 Maximum peak conducted output power

Test Result

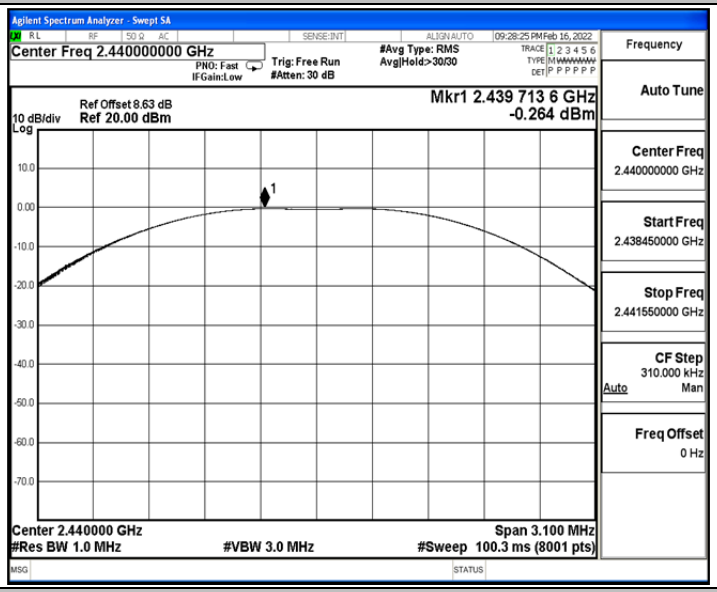
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.88	≤30	PASS
		2440	-0.26	≤30	PASS
		2480	0.69	≤30	PASS

Test Graphs

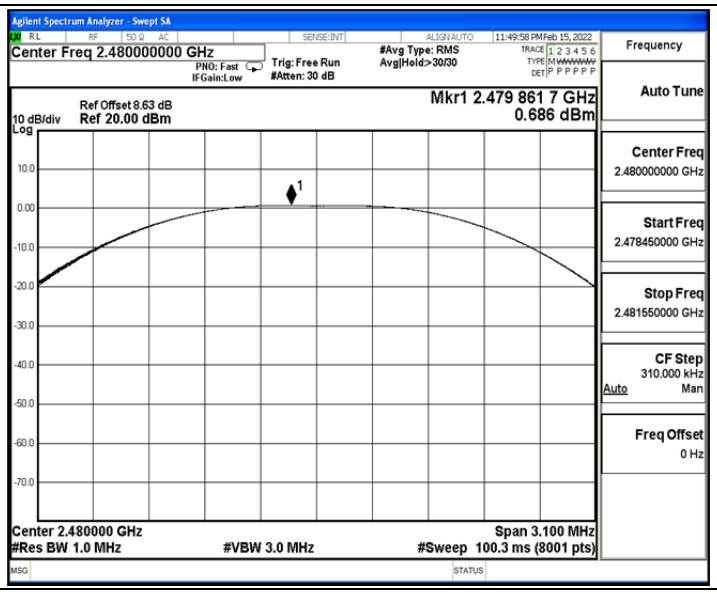
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold:>30/30
11:49:58 PM Feb 15, 2022
Ref Offset 8.63 dB
10 dB/div Ref 20.00 dBm
Log
Mkr1 2.479 861 7 GHz
0.686 dBm
Center 2.480000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 3.100 MHz
#Sweep 100.3 ms (8001 pts)
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.478450000 GHz
Stop Freq
2.481550000 GHz
CF Step
310.000 kHz
Auto Man
Freq Offset
0 Hz

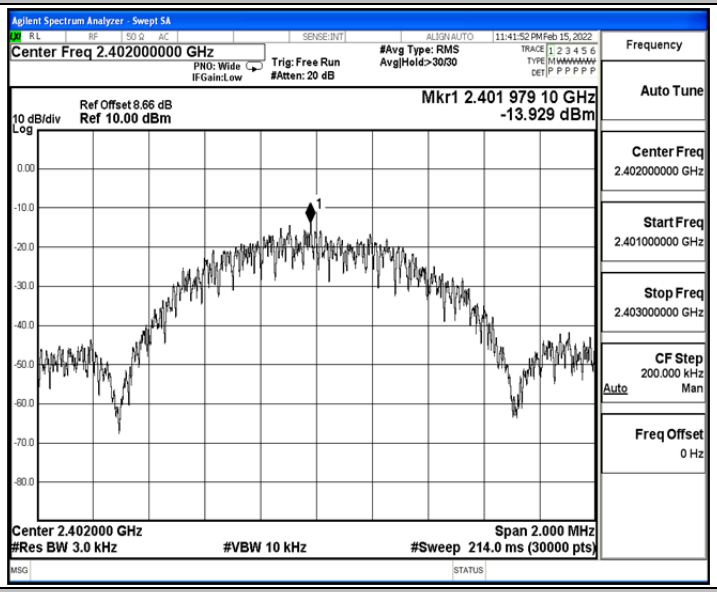
B.3 Maximum power spectral density

Test Result

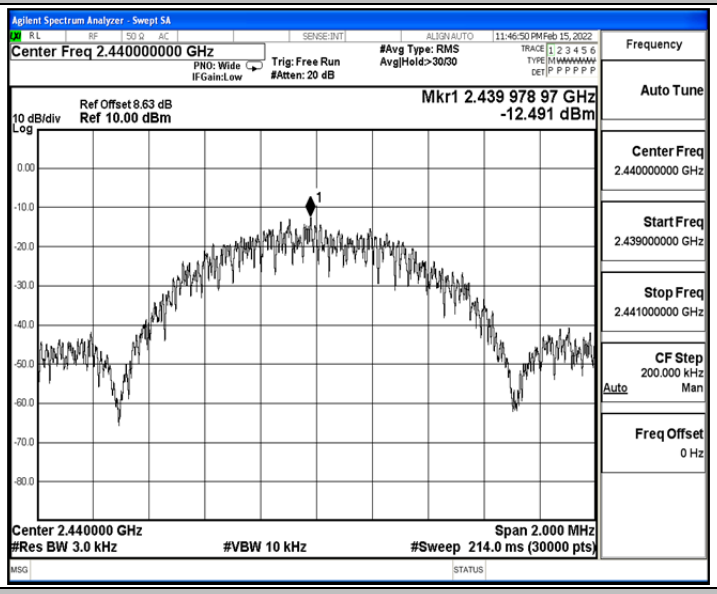
TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-13.93	≤8.00	PASS
		2440	-12.49	≤8.00	PASS
		2480	-14.09	≤8.00	PASS

Test Graphs

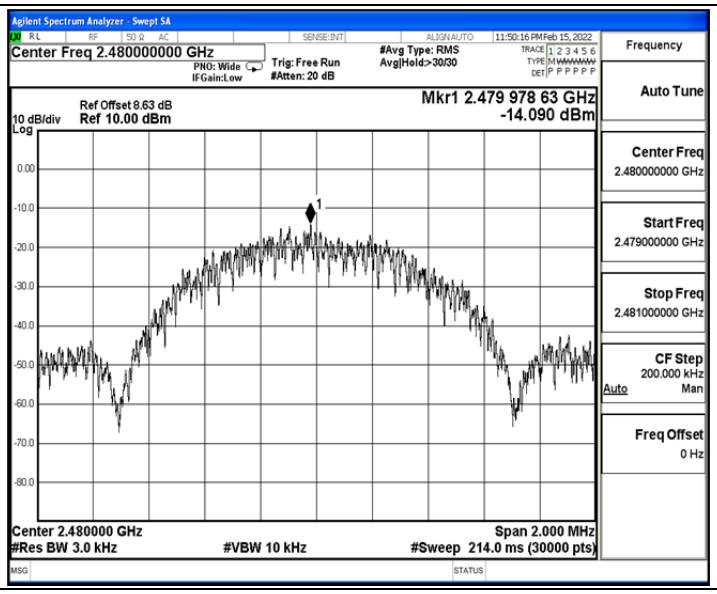
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold:>30/30
11:50:16 PM Feb 15, 2022
Frequency
Auto Tune
Ref Offset 8.63 dB
10 dB/div Ref 10.00 dBm
Log
Mkr1 2.479 978 63 GHz
-14.090 dBm
Center Freq
2.480000000 GHz
Start Freq
2.479000000 GHz
Stop Freq
2.481000000 GHz
CF Step
200.000 kHz
Auto Man
Freq Offset
0 Hz
Center 2.480000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 2.000 MHz
#Sweep 214.0 ms (30000 pts)

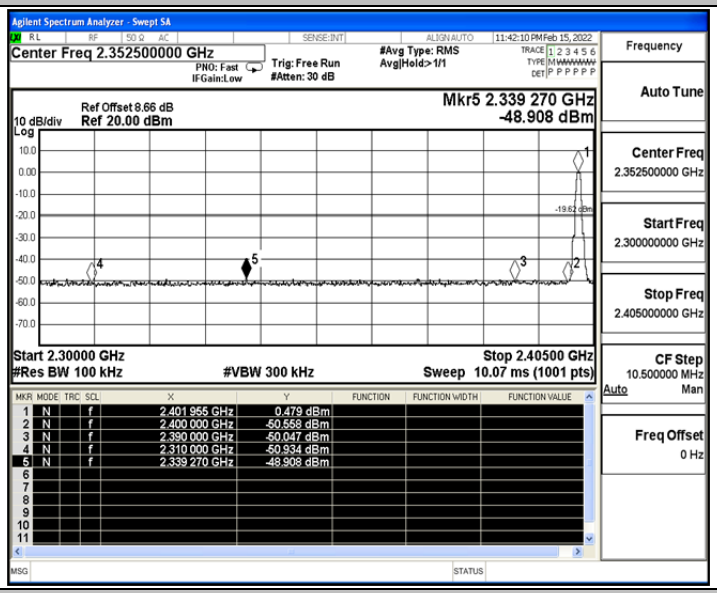
B.4 Band edge measurements

Test Result

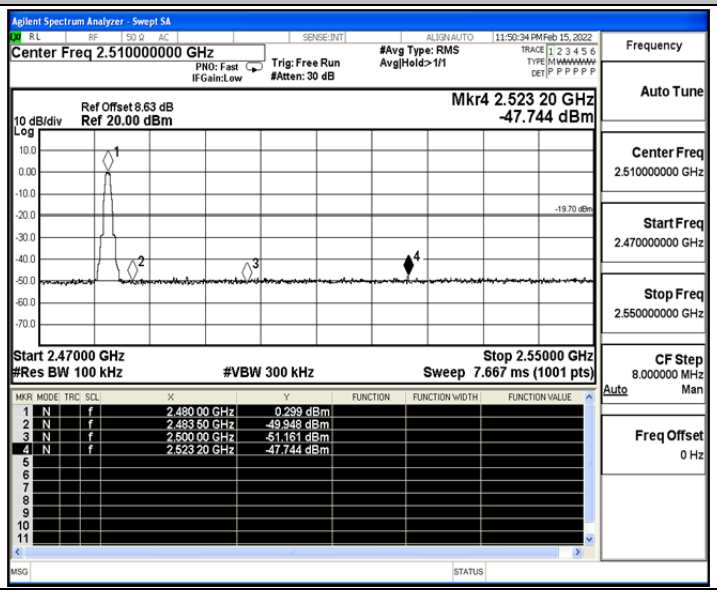
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	0.38	-48.91	≤-19.62	PASS
		High	2480	0.30	-47.74	≤-19.7	PASS

Test Graphs

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



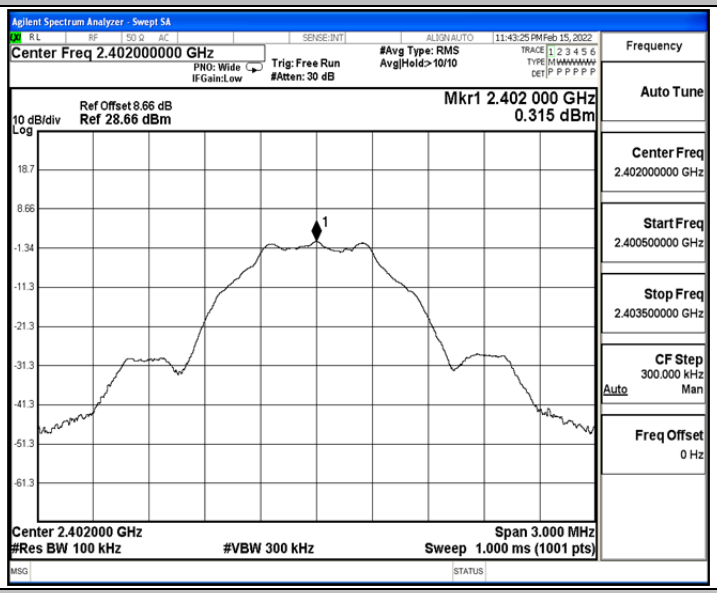
B.5 Conducted Spurious Emission

Test Result

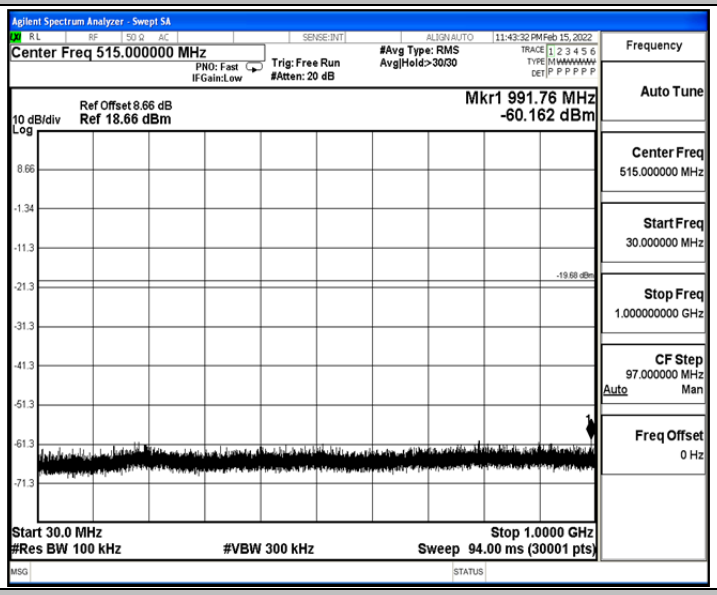
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	0.32	0.32	---	PASS
			30~1000	0.32	-60.16	≤-19.68	PASS
			1000~26500	0.32	-46.24	≤-19.68	PASS
		2440	Reference	1.71	1.71	---	PASS
			30~1000	1.71	-60.36	≤-18.29	PASS
			1000~26500	1.71	-46.33	≤-18.29	PASS
		2480	Reference	0.16	0.16	---	PASS
			30~1000	0.16	-60.35	≤-19.84	PASS
			1000~26500	0.16	-45.79	≤-19.84	PASS

Test Graphs

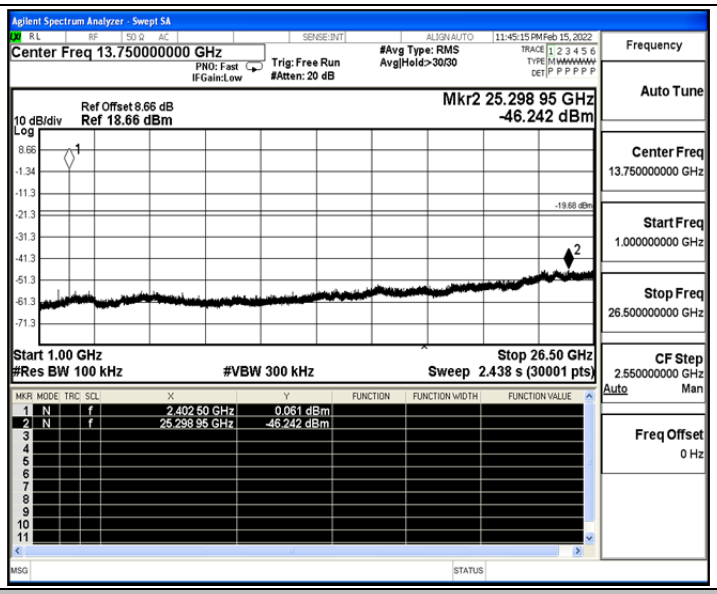
BLE_1M_Ant1_2402_0~Reference



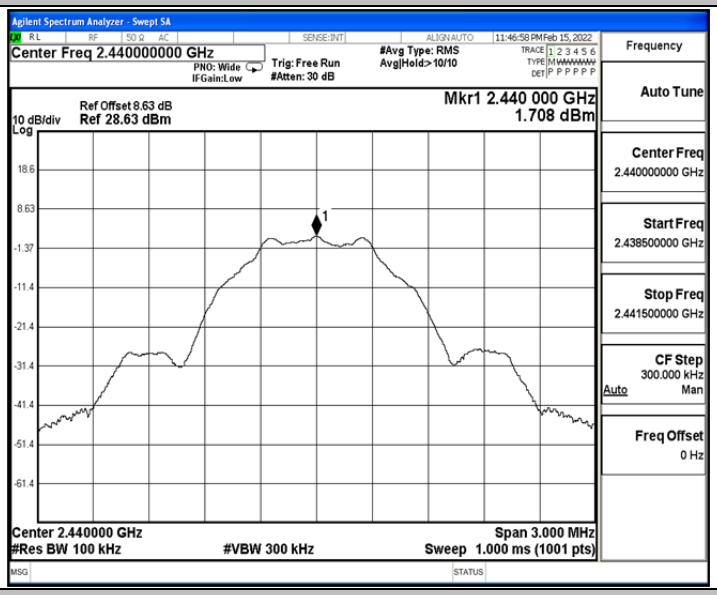
BLE_1M_Ant1_2402_30~1000



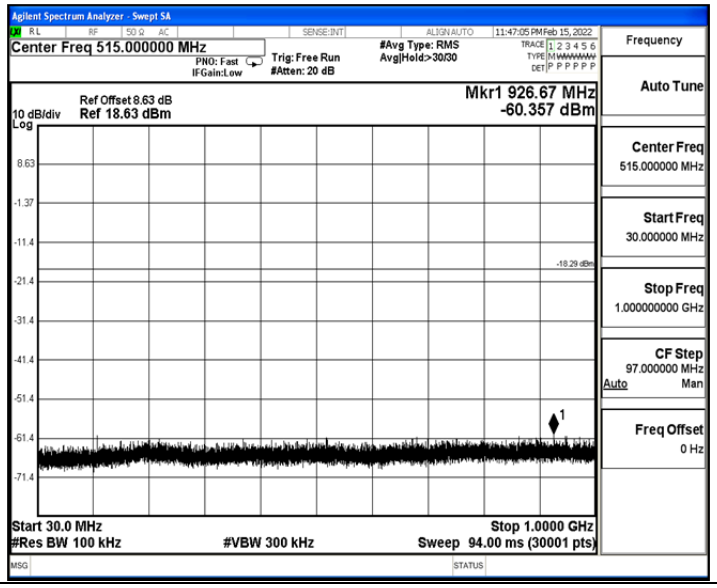
BLE_1M_Ant1_2402_1000~26500



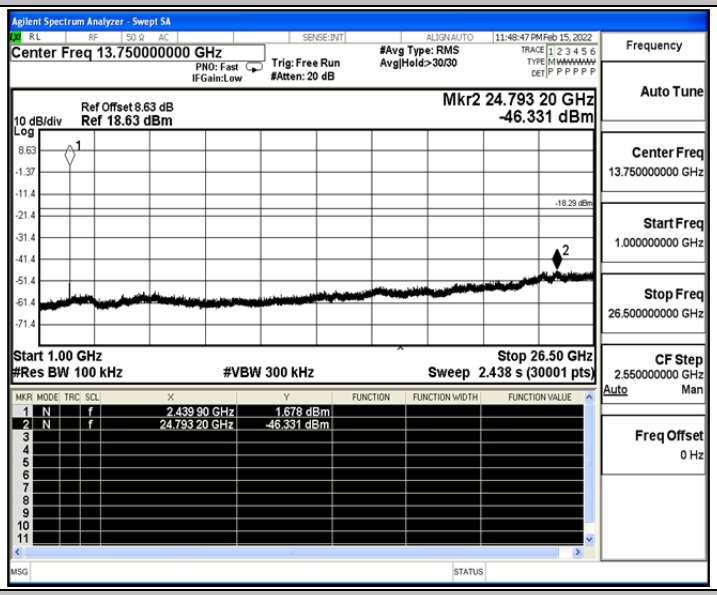
BLE_1M_Ant1_2440_0~Reference



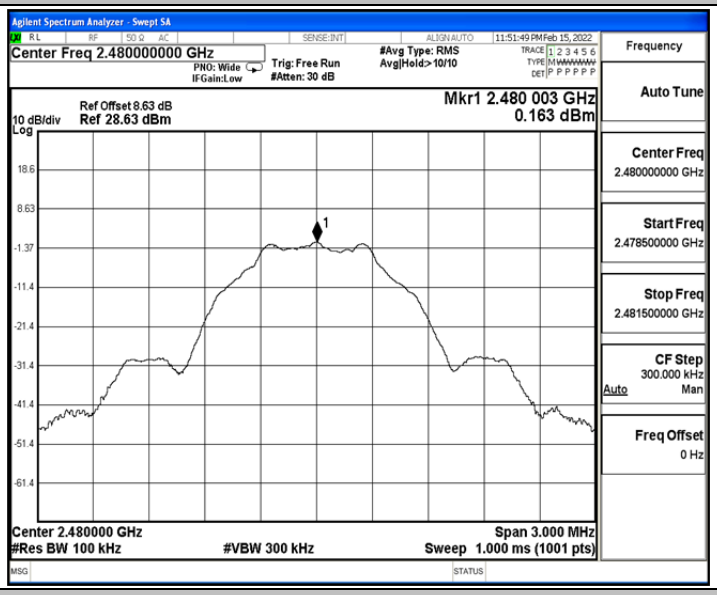
BLE_1M_Ant1_2440_30~1000



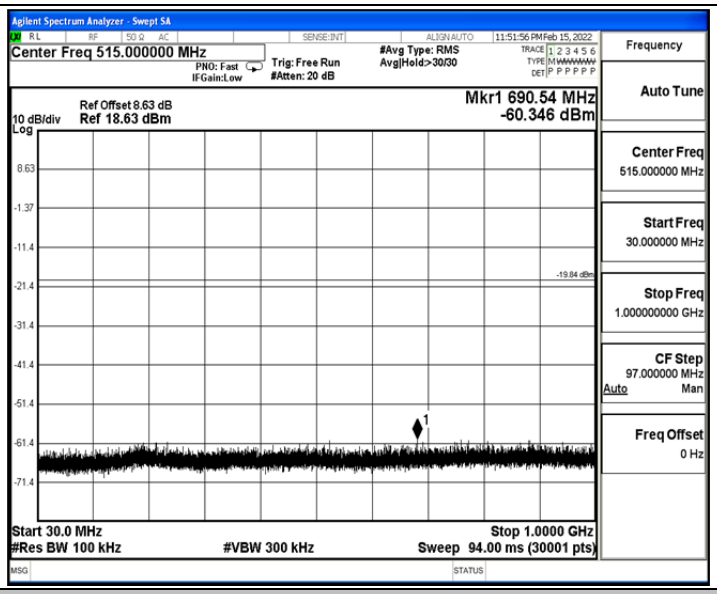
BLE_1M_Ant1_2440_1000~26500



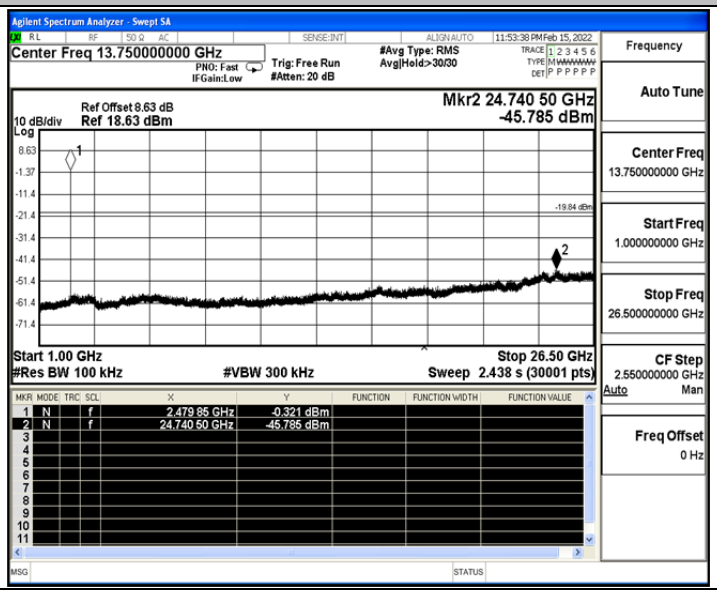
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



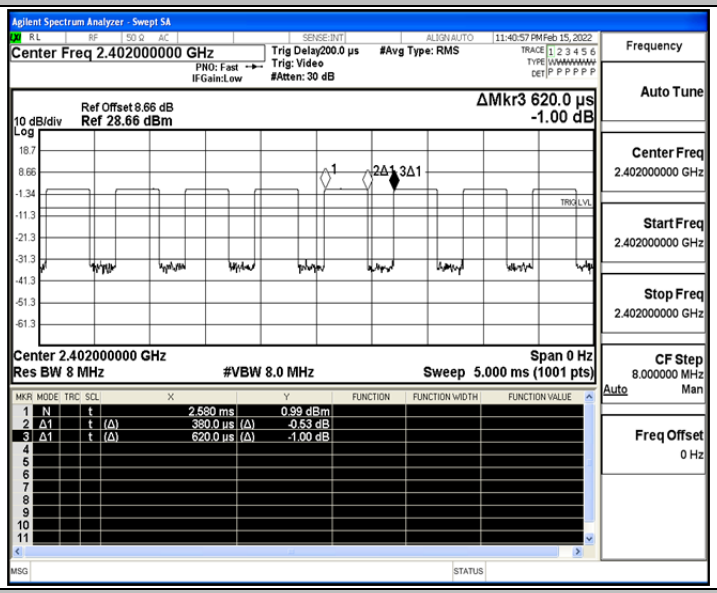
B.6 Duty Cycle

Test Result

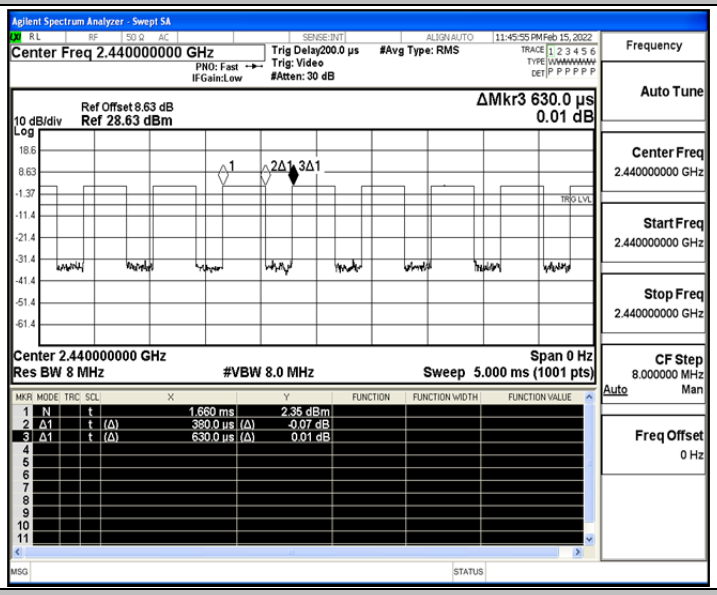
TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	0.38	0.62	0.6129	61.29	2.13	---	---
		2440	0.38	0.63	0.6032	60.32	2.20	---	---
		2480	0.38	0.63	0.6032	60.32	2.20	---	---

Test Graphs

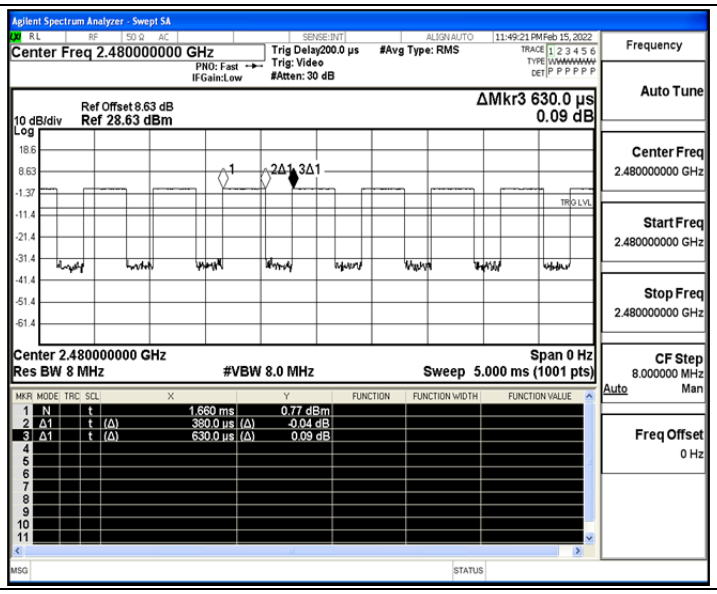
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
Trig Delay200.0 µs
Trig: Video
#Atten: 30 dB
#Avg Type: RMS
11:49:21 PM Feb 15, 2022
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.480000000 GHz
Stop Freq
2.480000000 GHz
CF Step
8.000000 MHz
Auto Man
Freq Offset
0 Hz
Ref Offset 8.63 dB
10 dB/div Ref 28.63 dBm
ΔMkr3 630.0 µs
0.09 dB
Center 2.480000000 GHz
Span 0 Hz
Res BW 8 MHz
#VBW 8.0 MHz
Sweep 5.000 ms (1001 pts)
1 N t 1.660 ms 0.77 dBm
2 Δ1 t (Δ) 380.0 µs (Δ) -0.04 dB
3 Δ1 t (Δ) 630.0 µs (Δ) 0.09 dB

B.7 Emissions in Restricted Bands

Test Result

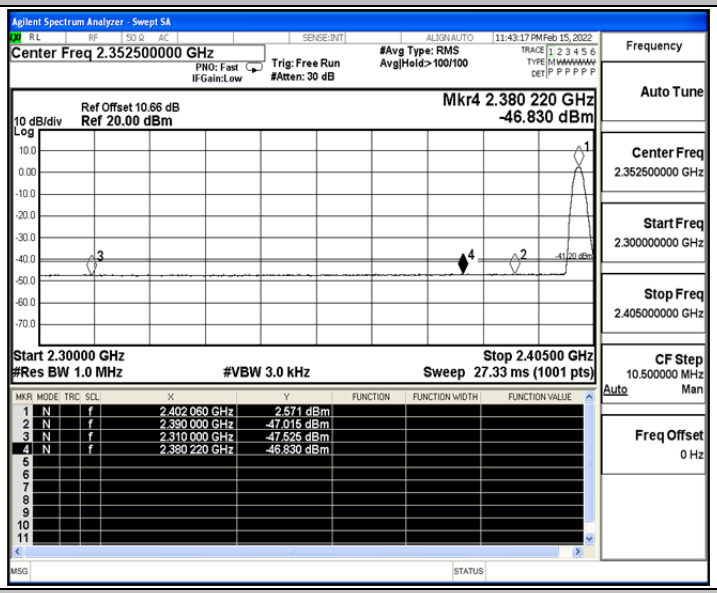
TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-47.53	≤-41.20	47.67	≤54	PASS
				AV	2380.220	-46.83	≤-41.20	48.37	≤54	PASS
				AV	2390.000	-47.19	≤-41.20	48.01	≤54	PASS
				Peak	2310.000	-38.33	≤-21.20	56.87	≤74	PASS
				Peak	2372.450	-36.17	≤-21.20	59.03	≤74	PASS
				Peak	2390.000	-39	≤-21.20	56.20	≤74	PASS
		High	2480	AV	2483.500	-46.27	≤-41.20	48.93	≤54	PASS
				AV	2499.360	-46.07	≤-41.20	49.13	≤54	PASS
				AV	2500.000	-46.54	≤-41.20	48.66	≤54	PASS
				Peak	2483.500	-37.78	≤-21.20	57.42	≤74	PASS
				Peak	2496.960	-36.35	≤-21.20	58.85	≤74	PASS
				Peak	2500.000	-38.6	≤-21.20	56.60	≤74	PASS

Note：

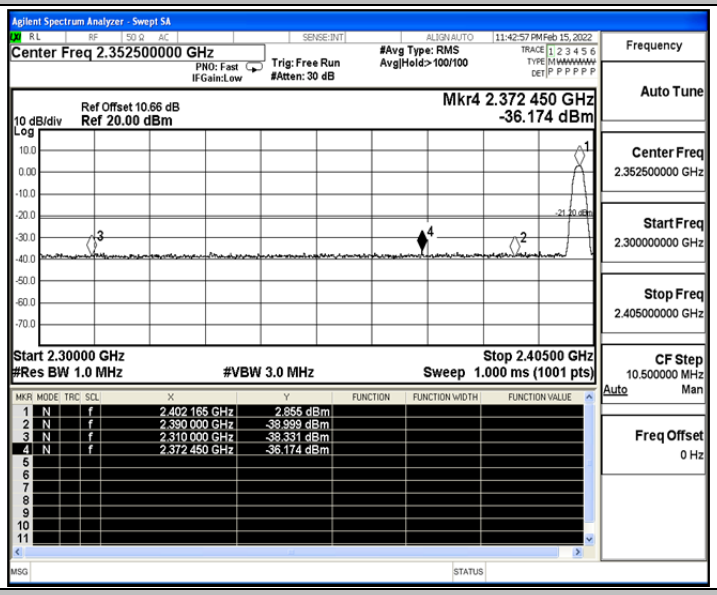
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

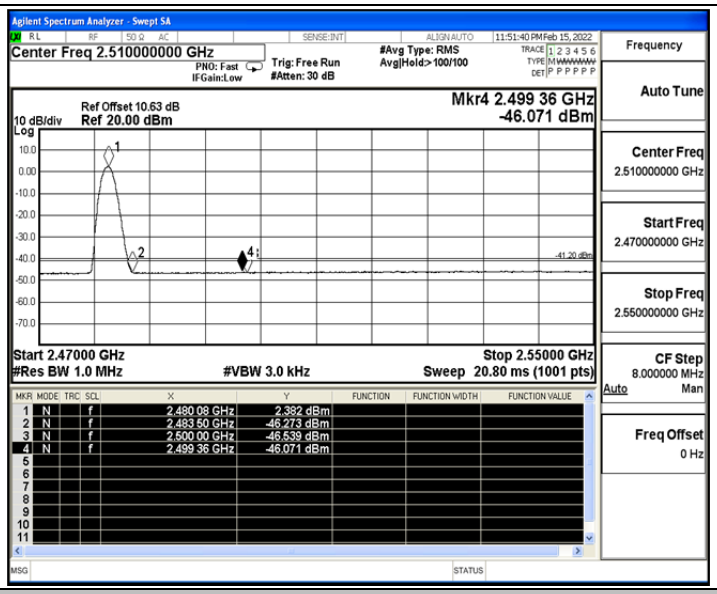
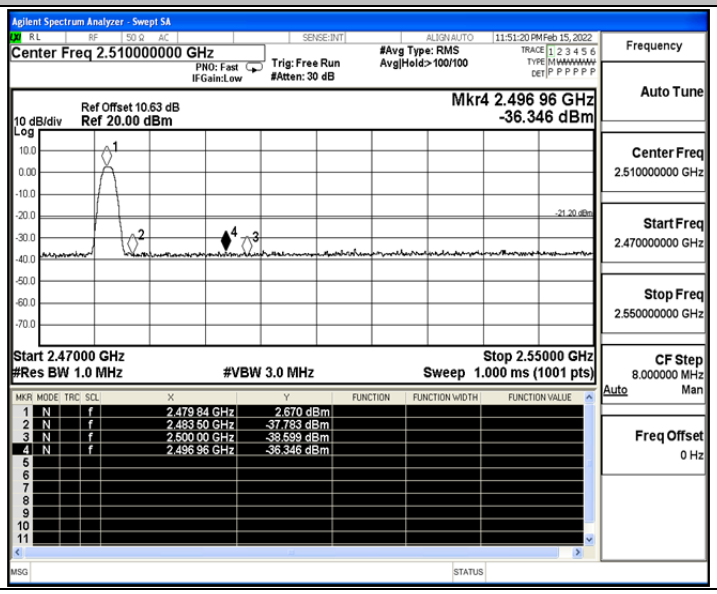
BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak