Appendix B

RF Test Data for BT LE (Conducted Measurement)

Product Name: Smart TV Box

Test Model: T95PLUS

Environmental Conditions

Temperature:	22.8° C
Relative Humidity:	53.5%
ATM Pressure:	100.0 kPa
Test Engineer:	Bill Zhu
Supervised by:	Li Huan

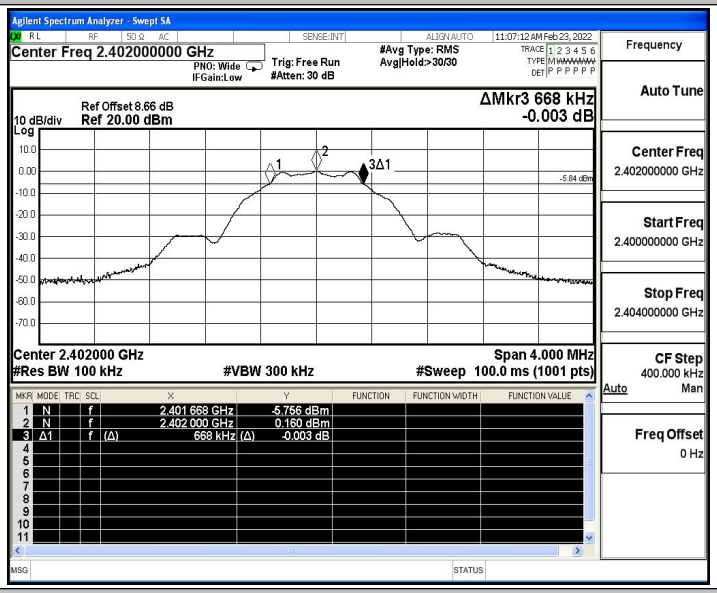
B.1 DTS Bandwidth

Test Result

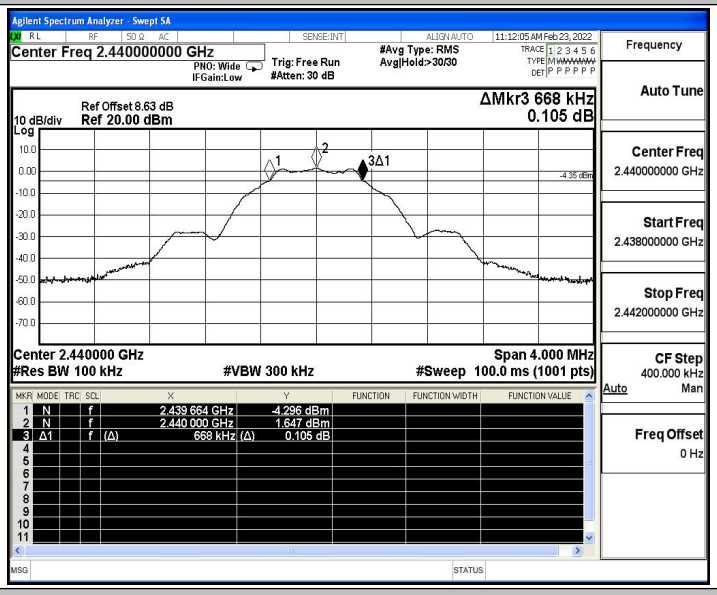
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.668	2401.668	2402.336	0.5	PASS
		2440	0.668	2439.664	2440.332	0.5	PASS
		2480	0.668	2479.664	2480.332	0.5	PASS

Test Graphs

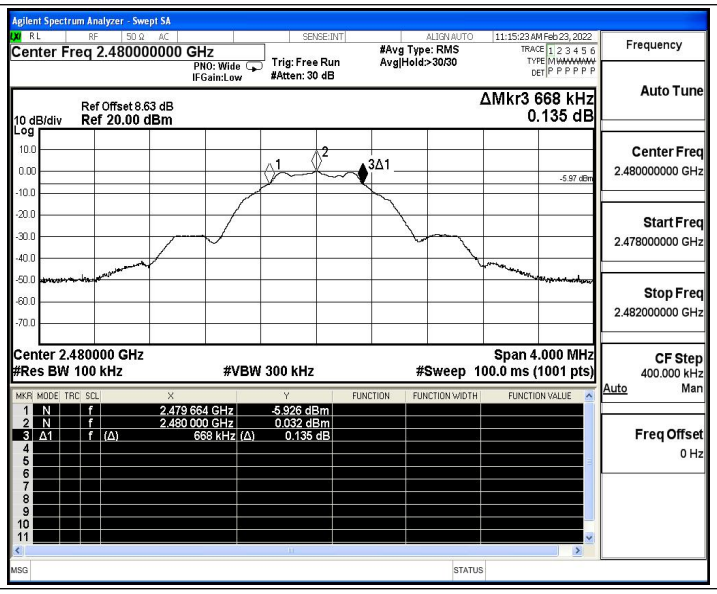
BLE_1M_Ant1_2402



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
11:15:23 AM Feb 23, 2022
Ref Offset 8.63 dB
10 dB/div
Ref 20.00 dBm
Log
ΔMkr3 668 kHz
0.135 dB
-5.97 dBm
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 -5.926 dBm
2 N f 2.480 000 GHz 0.032 dBm
3 Δ1 f (Δ) 668 kHz (Δ) 0.135 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

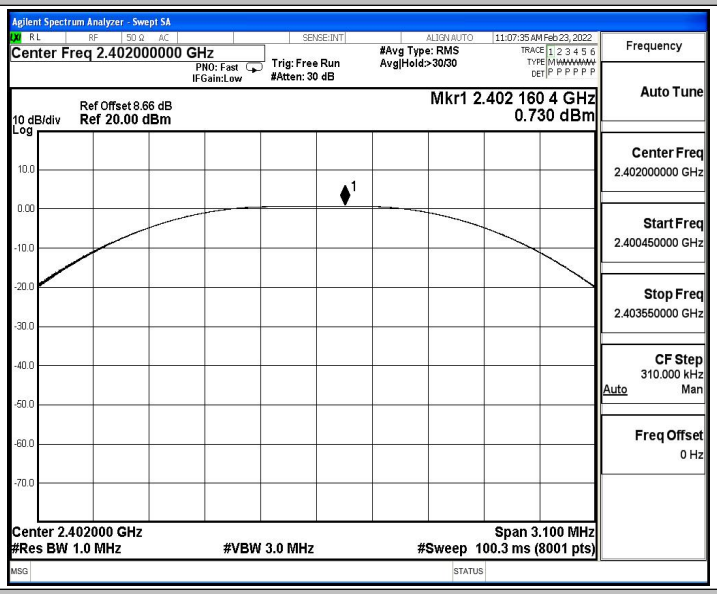
B.2 Maximum peak conducted output power

Test Result

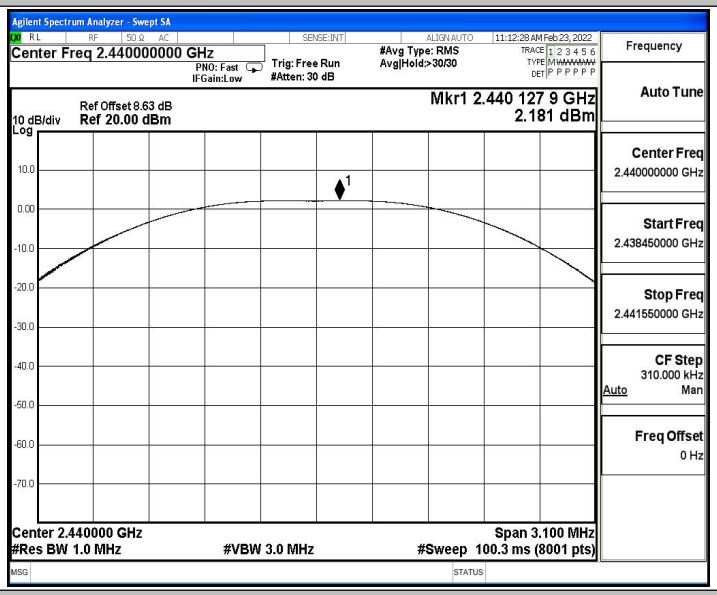
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.73	≤30	PASS
		2440	2.18	≤30	PASS
		2480	0.6	≤30	PASS

Test Graphs

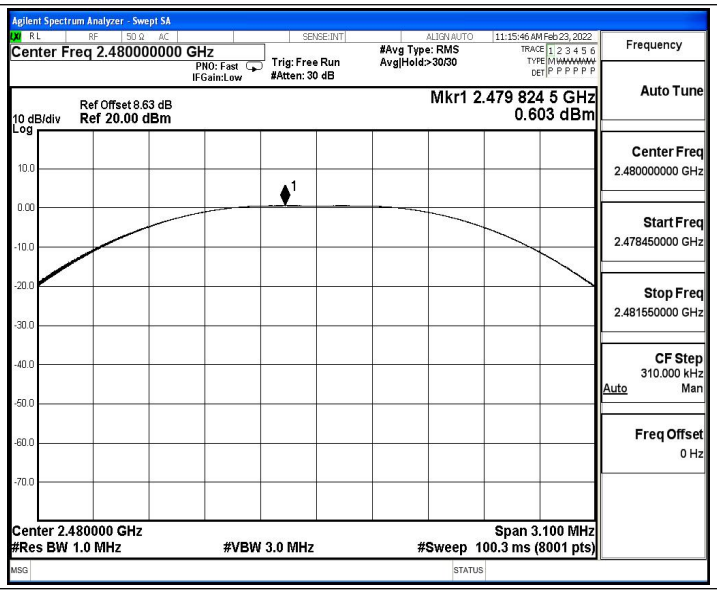
BLE_1M_Ant1_2402



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
11:15:46 AM Feb 23, 2022
Ref Offset 8.63 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.479 824 5 GHz
0.603 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

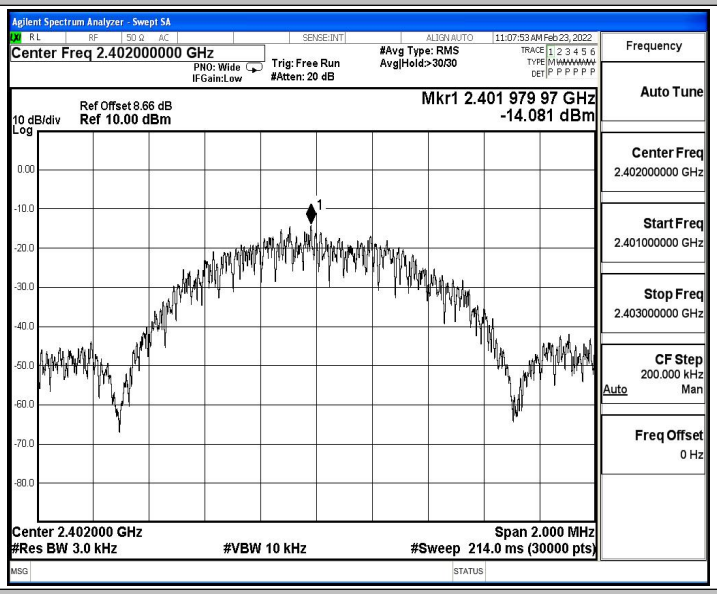
B.3 Maximum power spectral density

Test Result

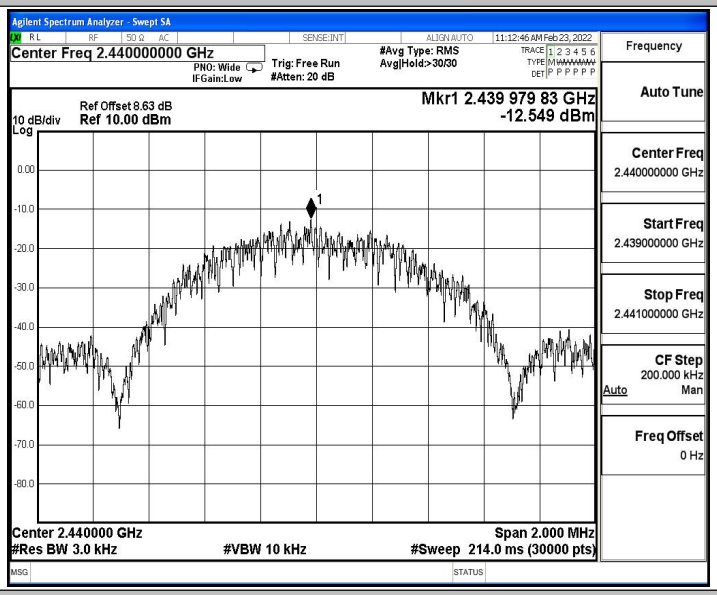
TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.08	≤8.00	PASS
		2440	-12.55	≤8.00	PASS
		2480	-14.13	≤8.00	PASS

Test Graphs

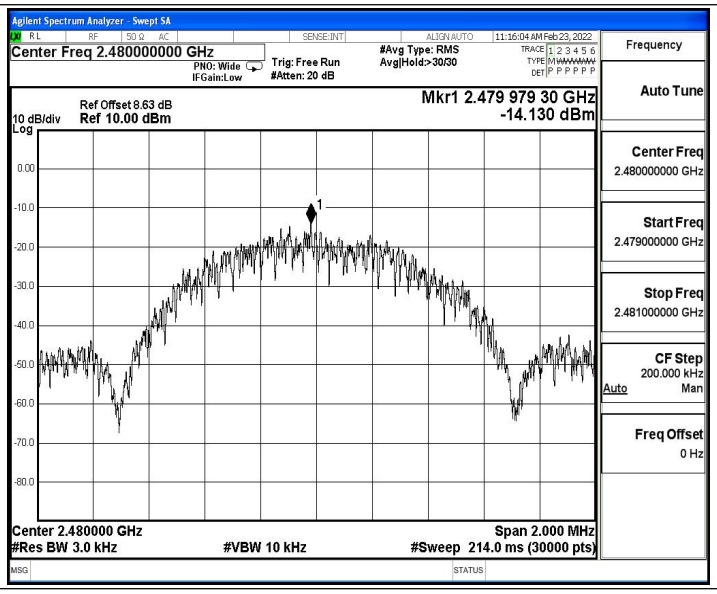
BLE_1M_Ant1_2402



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
11:16:04 AM Feb 23, 2022
Ref Offset 8.63 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 2.479 979 30 GHz
-14.130 dBm
Center 2.480000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 2.000 MHz
#Sweep 214.0 ms (30000 pts)
Frequency
Auto Tune
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

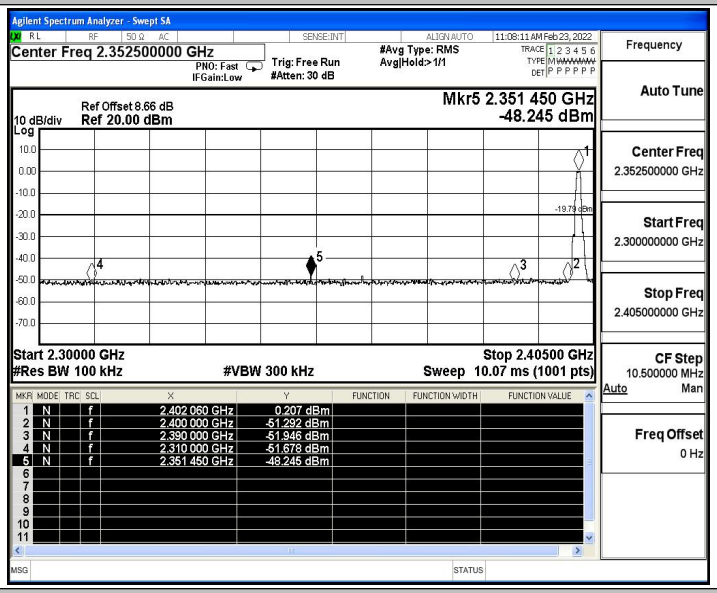
B.4 Band edge measurements

Test Result

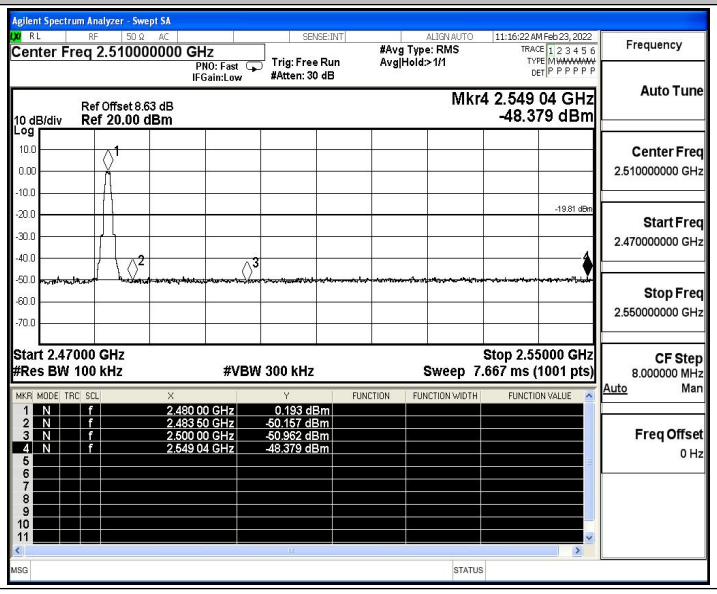
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	0.21	-48.25	≤-19.79	PASS
		High	2480	0.19	-48.38	≤-19.81	PASS

Test Graphs

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



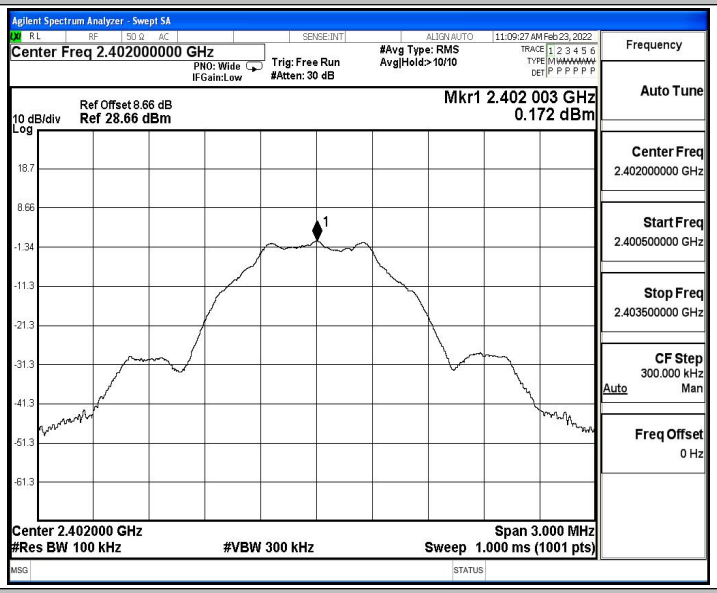
B.5 Conducted Spurious Emission

Test Result

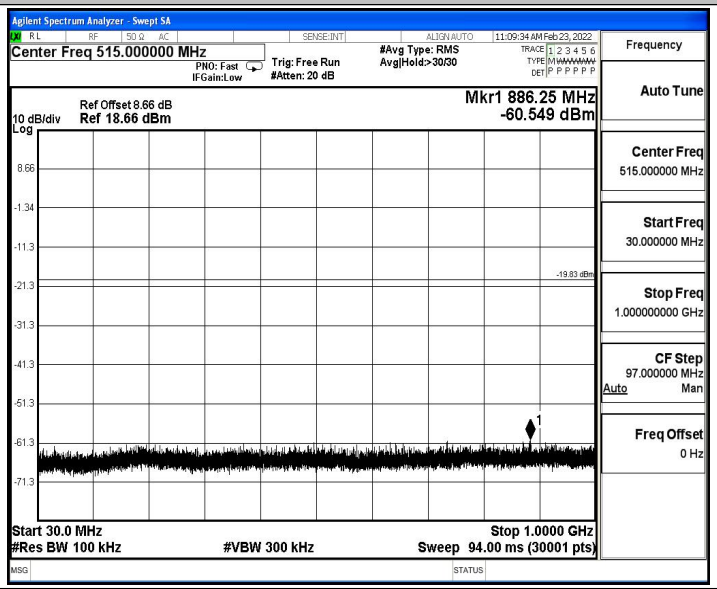
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	0.17	0.17	---	PASS
			30~1000	0.17	-60.55	≤-19.83	PASS
			1000~26500	0.17	-46.63	≤-19.83	PASS
		2440	Reference	1.65	1.65	---	PASS
			30~1000	1.65	-54.48	≤-18.35	PASS
			1000~26500	1.65	-46.5	≤-18.35	PASS
		2480	Reference	0.06	0.06	---	PASS
			30~1000	0.06	-60.72	≤-19.94	PASS
			1000~26500	0.06	-45.9	≤-19.94	PASS

Test Graphs

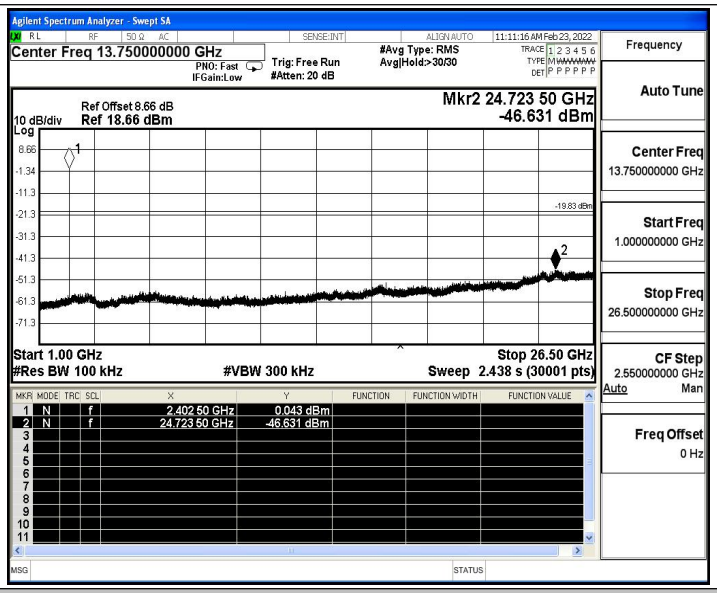
BLE_1M_Ant1_2402_0~Reference



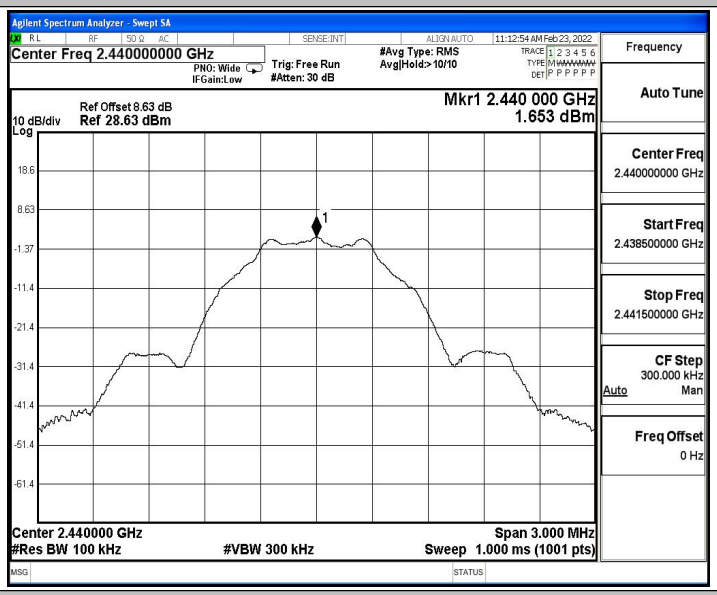
BLE_1M_Ant1_2402_30~1000



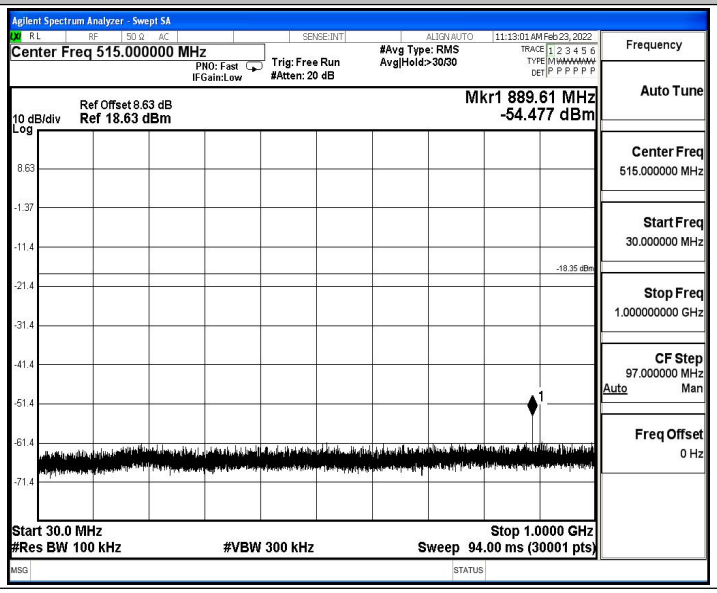
BLE_1M_Ant1_2402_1000~26500



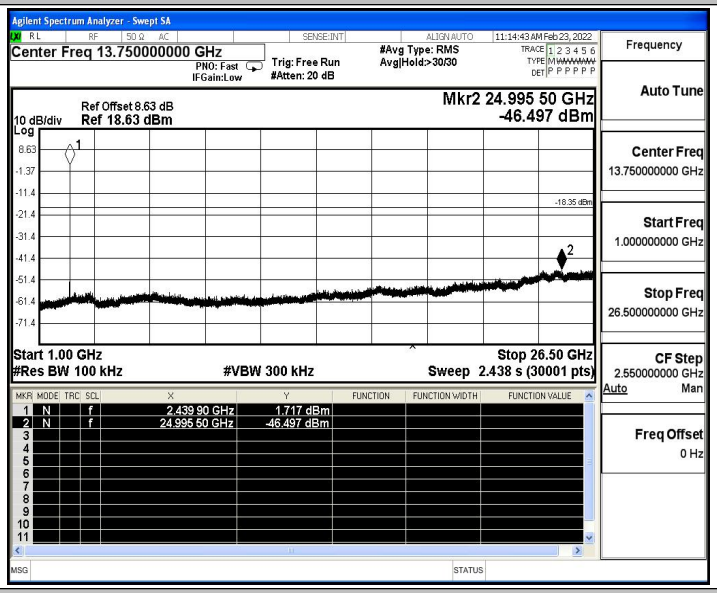
BLE_1M_Ant1_2440_0~Reference



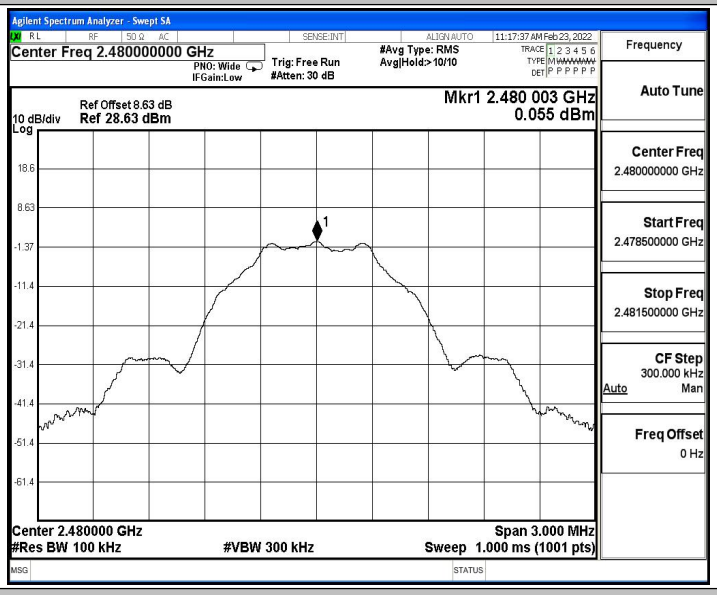
BLE_1M_Ant1_2440_30~1000



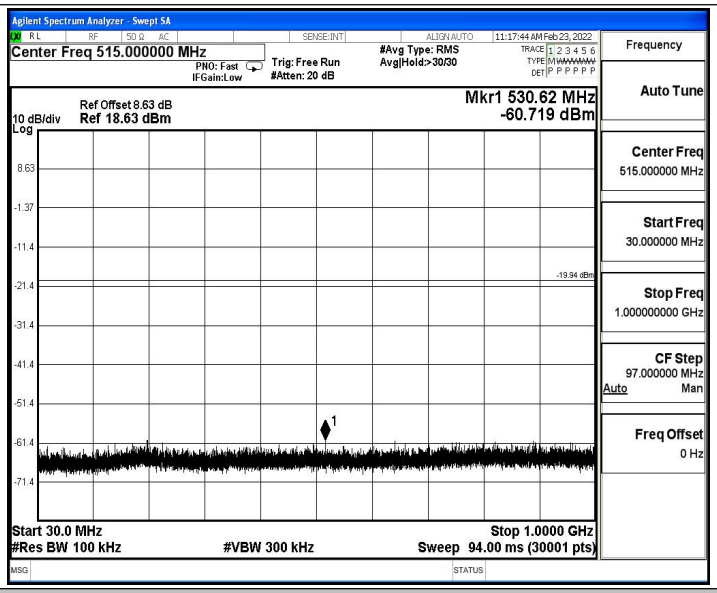
BLE_1M_Ant1_2440_1000~26500



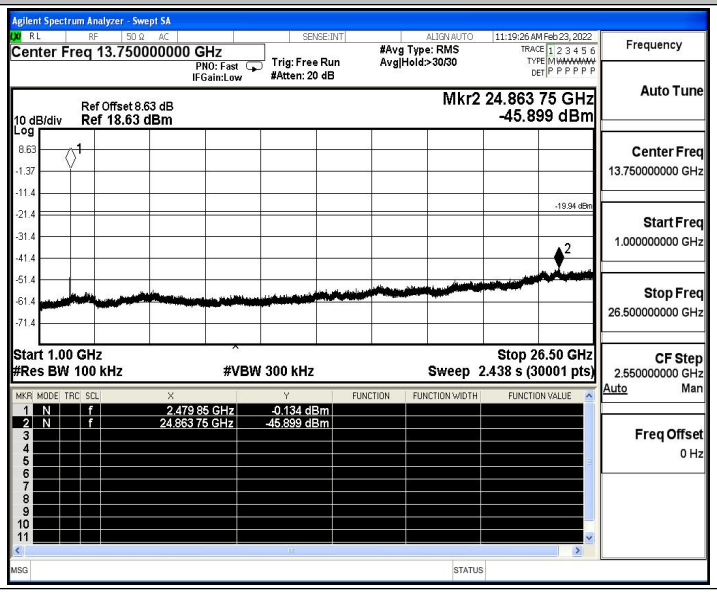
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



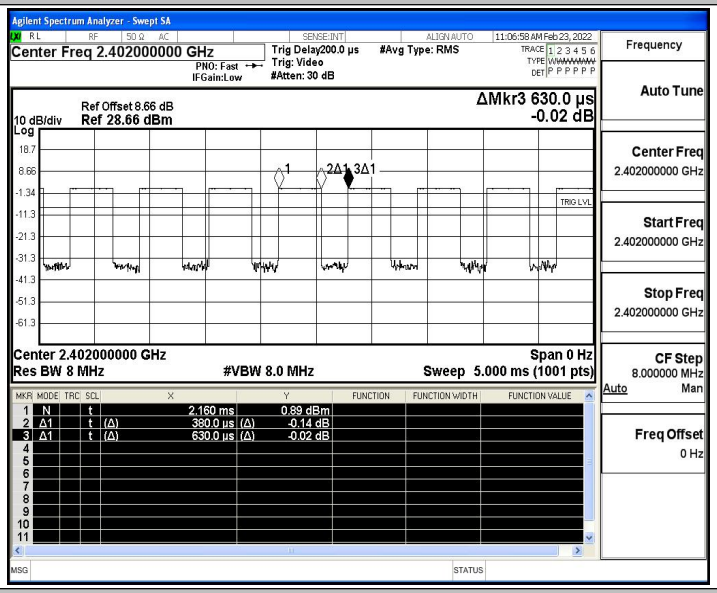
B.6 Duty Cycle

Test Result

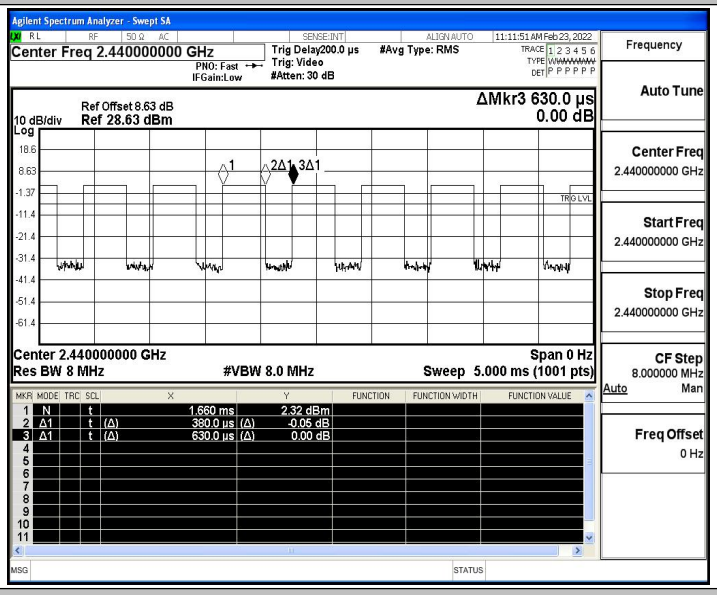
TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	1/T[kHz]
BLE_1M	Ant1	2402	0.38	0.63	0.6032	60.32	2.20	2.63
		2440	0.38	0.63	0.6032	60.32	2.20	2.63
		2480	0.38	0.63	0.6032	60.32	2.20	2.63

Test Graphs

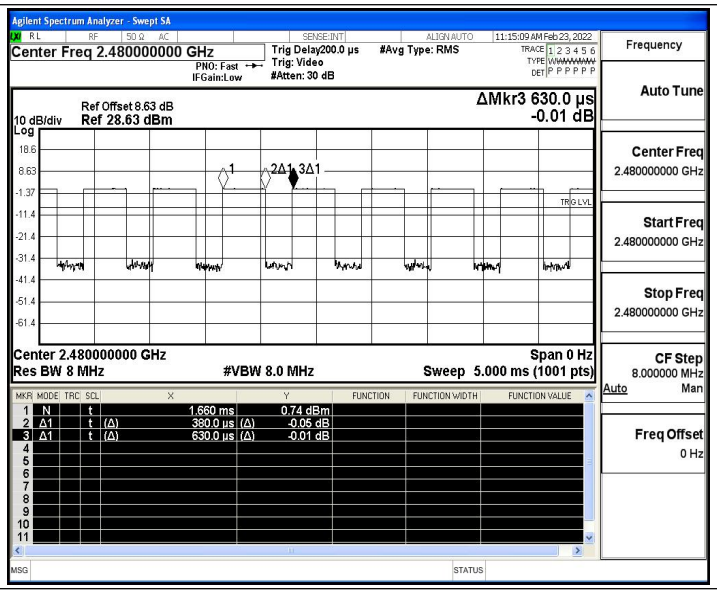
BLE_1M_Ant1_2402



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
11:15:09 AM Feb 23, 2022
Ref Offset 8.63 dB
10 dB/div Ref 28.63 dBm
Log
ΔMkr3 630.0 µs
-0.01 dB
Center 2.480000000 GHz
Res BW 8 MHz
#VBW 8.0 MHz
Span 0 Hz
Sweep 5.000 ms (1001 pts)
1 N t 1.660 ms 0.74 dBm
2 Δ1 t (Δ) 380.0 µs (Δ) -0.05 dB
3 Δ1 t (Δ) 630.0 µs (Δ) -0.01 dB
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

B.7 Emissions in Restricted Bands

Test Result

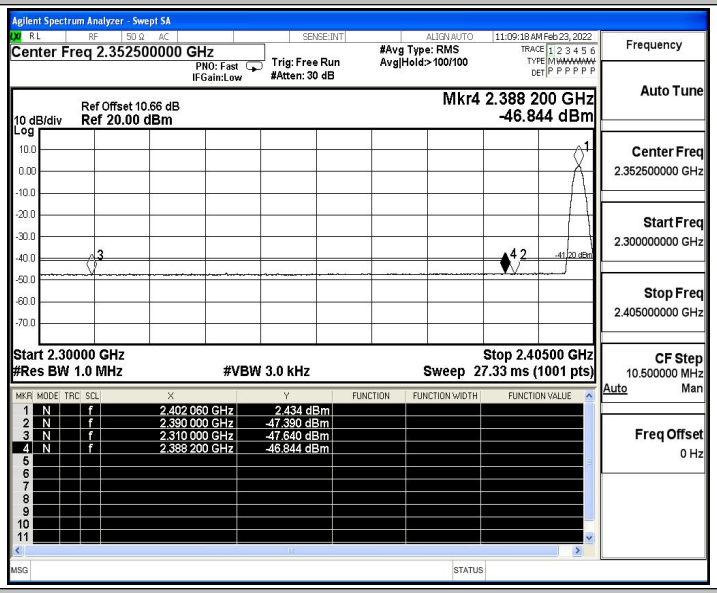
TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-47.64	≤-41.20	47.56	≤54	PASS
				AV	2388.200	-46.84	≤-41.20	48.36	≤54	PASS
				AV	2390.000	-47.39	≤-41.20	47.81	≤54	PASS
				Peak	2310.000	-39.06	≤-21.20	56.14	≤74	PASS
				Peak	2329.085	-36.69	≤-21.20	58.51	≤74	PASS
				Peak	2390.000	-38.22	≤-21.20	56.98	≤74	PASS
		High	2480	AV	2483.500	-46.2	≤-41.20	49.00	≤54	PASS
				AV	2483.520	-46.2	≤-41.20	49.00	≤54	PASS
				AV	2500.000	-46.61	≤-41.20	48.59	≤54	PASS
				Peak	2483.500	-38.24	≤-21.20	56.96	≤74	PASS
				Peak	2484.720	-36.73	≤-21.20	58.47	≤74	PASS
				Peak	2500.000	-38.2	≤-21.20	57.00	≤74	PASS

Note：

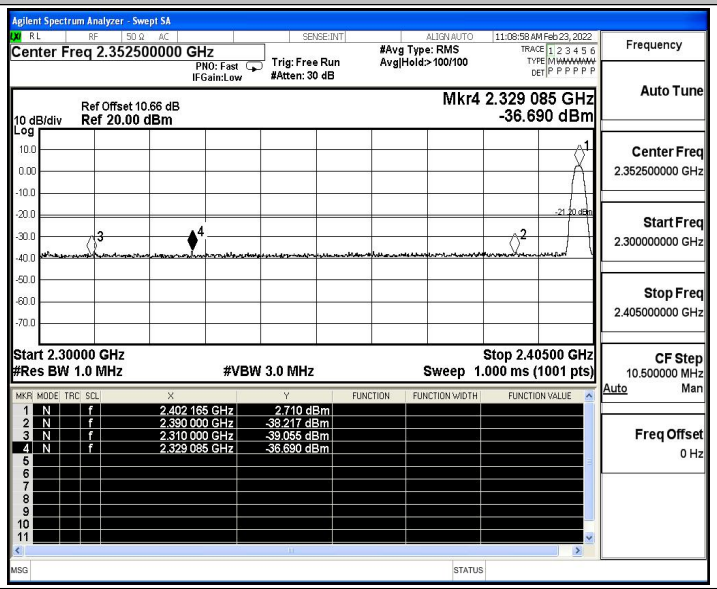
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

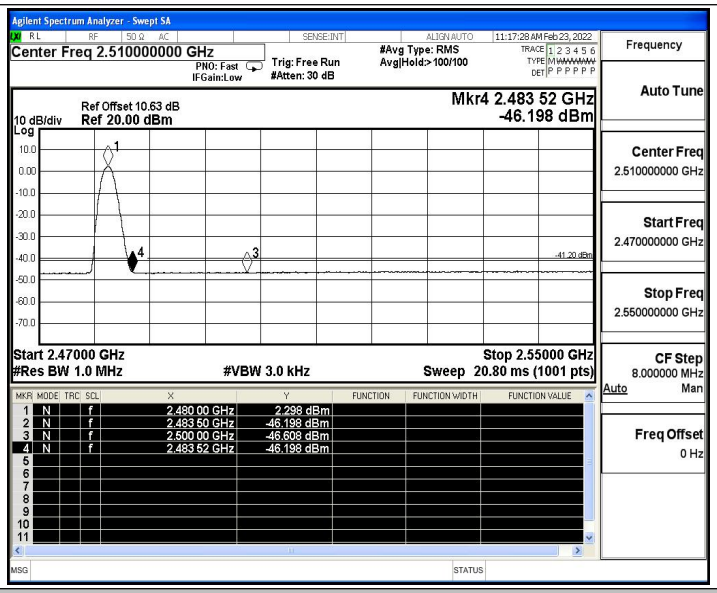
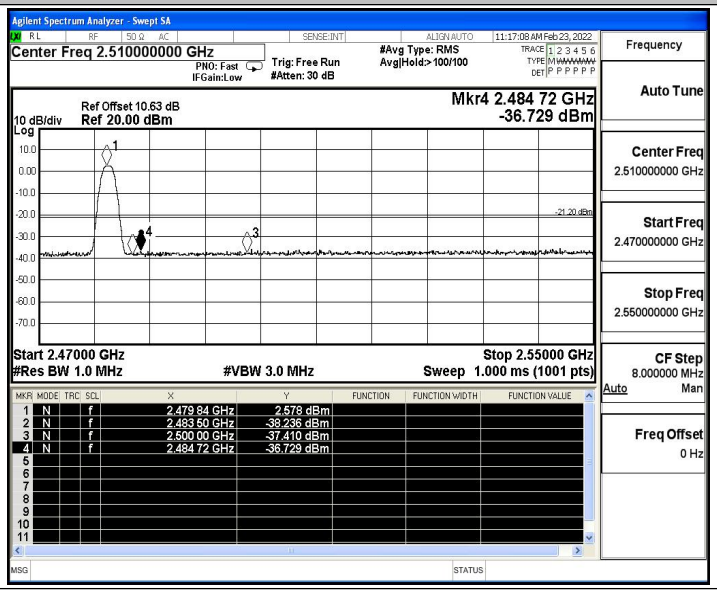
BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak