Appendix Test Data

Report No:	18220WC20239401	Test Sample NO:	1-2-2
Start Test Date:	2022.10.11	Finish Test Date:	2022.10.12
Test Engineer:	Rick Luo	Auditor:	Edward. Pan
Temperature:	27.3℃	Relative Humidity:	46.2%
Pressure:	1012 hPa		

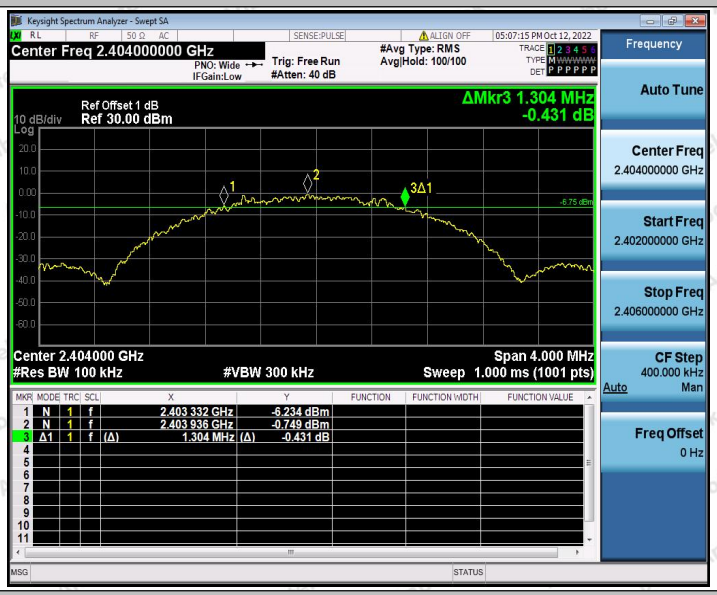
Appendix A: DTS Bandwidth

Test Result

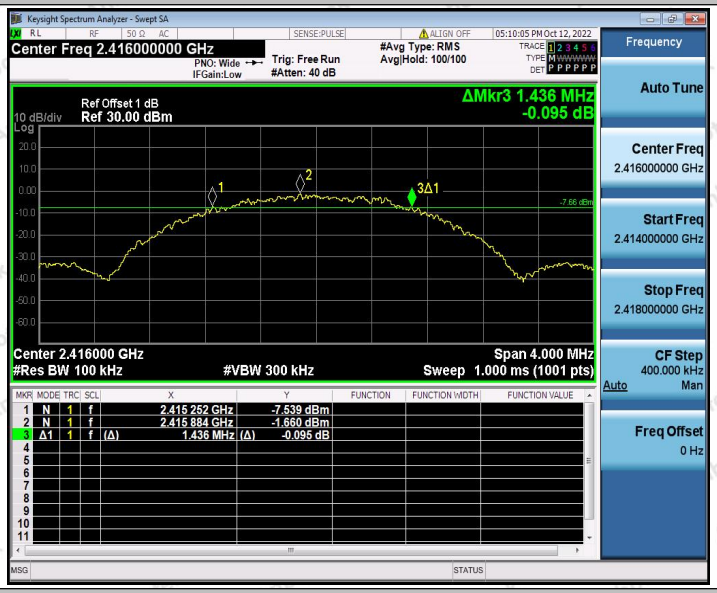
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
2.4G	Ant1	2404	1.304	2403.332	2404.636	0.5	PASS
		2416	1.436	2415.252	2416.688	0.5	PASS
		2430	1.280	2429.300	2430.580	0.5	PASS

Test Graphs

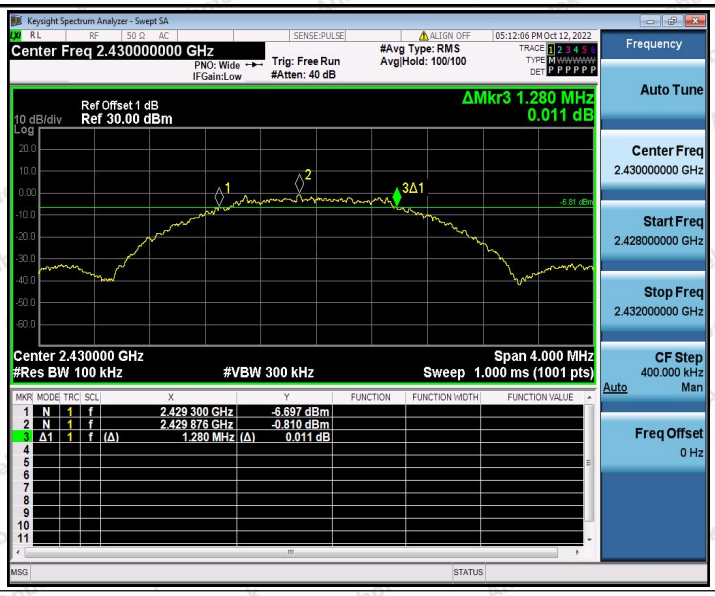
2.4G_Ant1_2404



2.4G_Ant1_2416



2.4G_Ant1_2430


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.430000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 40 dB
#Avg Type: RMS
Avg|Hold: 100/100
05:12:06 PM Oct 12, 2022
Ref Offset 1 dB
10 dB/div
Ref 30.00 dBm
ΔMkr3 1.280 MHz
0.011 dB
-6.81 dBm
Center 2.430000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 4.000 MHz
Sweep 1.000 ms (1001 pts)
1 N 1 f 2.429 300 GHz -6.697 dBm
2 N 1 f 2.429 876 GHz -0.810 dBm
3 Δ1 1 f (Δ) 1.280 MHz (Δ) 0.011 dB
Frequency
Auto Tune
Center Freq
2.430000000 GHz
Start Freq
2.428000000 GHz
Stop Freq
2.432000000 GHz
CF Step
400.000 kHz
Auto Man
Freq Offset
0 Hz

Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]
2.4G	Ant1	2404	2.0623	2402.9585	2405.0208
		2416	2.0401	2414.9547	2416.9948
		2430	2.0313	2428.9701	2431.0014

Test Graphs

2.4G_Ant1_2404

2.4G_Ant1_2416

2.4G_Ant1_2430

Keysight Spectrum Analyzer - Occupied BW
Center Freq 2.430000000 GHz
Center Freq: 2.430000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 40 dB
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 1 dB
10 dB/div
Ref 30.00 dBm
Mkr1 2.429896 GHz
-3.4834 dBm
Center Freq
2.430000000 GHz
Center 2.43 GHz
#Res BW 43 kHz
#VBW 130 kHz
Span 4 MHz
Sweep 2.067 ms
CF Step
400.000 kHz
Auto
Man
Occupied Bandwidth
2.0313 MHz
Total Power
8.57 dBm
Transmit Freq Error
-14.289 kHz
OBW Power
99.00 %
x dB Bandwidth
2.600 MHz
x dB
-26.00 dB
Freq Offset
0 Hz
MSG
STATUS

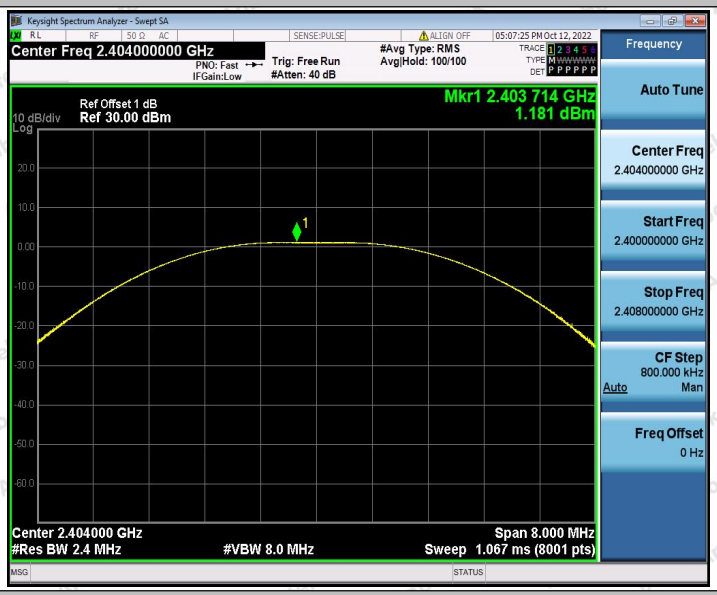
Appendix C: Maximum conducted output power

Test Result Peak

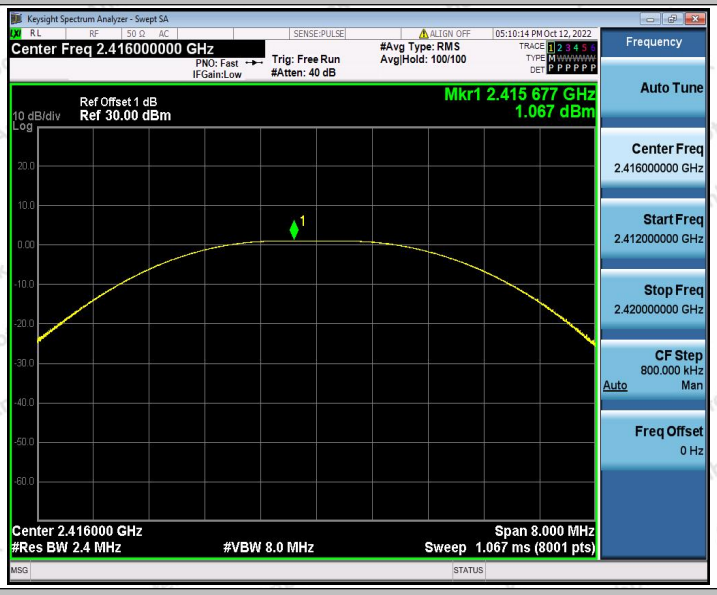
TestMode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
2.4G	Ant1	2404	1.18	≤30	PASS
		2416	1.07	≤30	PASS
		2430	0.99	≤30	PASS

Test Graphs Peak

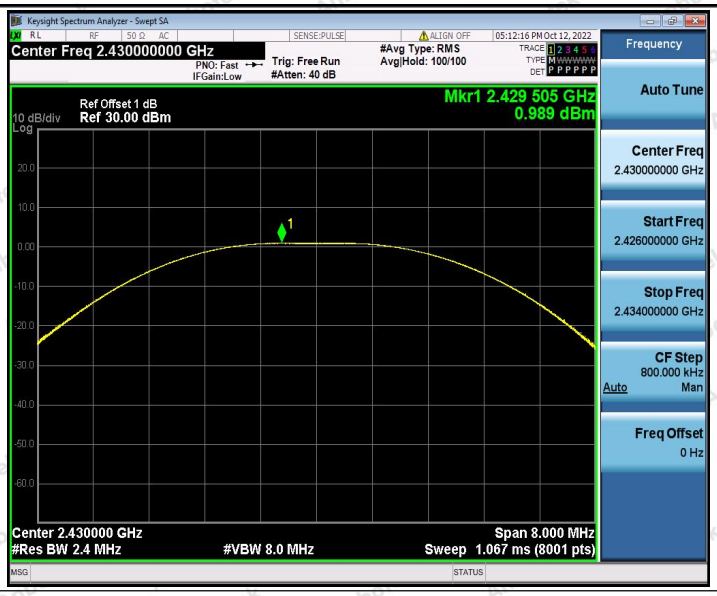
2.4G_Ant1_2404



2.4G_Ant1_2416



2.4G_Ant1_2430


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.430000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
#Avg Type: RMS
Avg|Hold: 100/100
05:12:16 PM Oct 12, 2022
Frequency
Auto Tune
Center Freq
2.430000000 GHz
Start Freq
2.426000000 GHz
Stop Freq
2.434000000 GHz
CF Step
800.000 kHz
Auto
Man
Freq Offset
0 Hz
Ref Offset 1 dB
10 dB/div
Ref 30.00 dBm
Log
Mkr1 2.429 505 GHz
0.989 dBm
Center 2.430000 GHz
#Res BW 2.4 MHz
#VBW 8.0 MHz
Span 8.000 MHz
Sweep 1.067 ms (8001 pts)

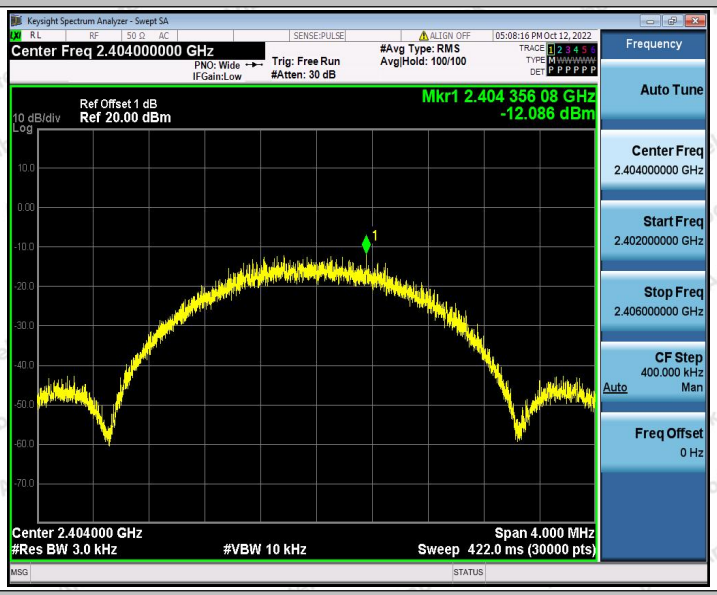
Appendix D: Maximum power spectral density

Test Result

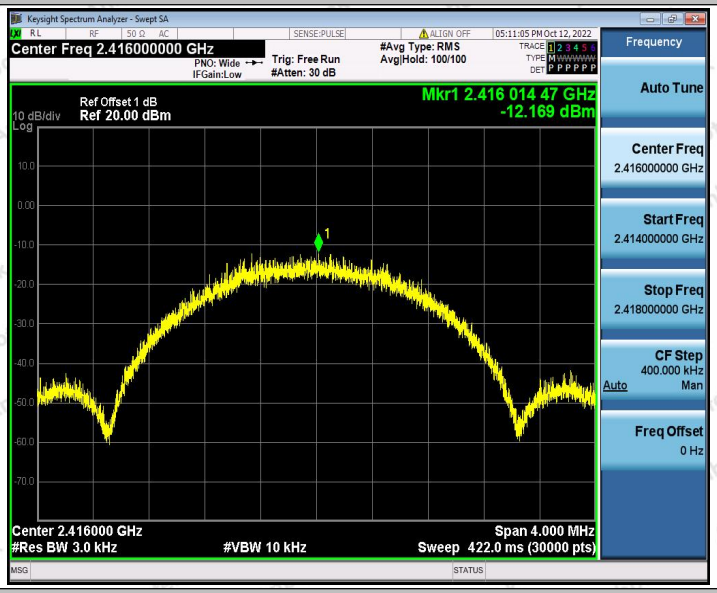
TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
2.4G	Ant1	2404	-12.09	≤8.00	PASS
		2416	-12.17	≤8.00	PASS
		2430	-12.1	≤8.00	PASS

Test Graphs

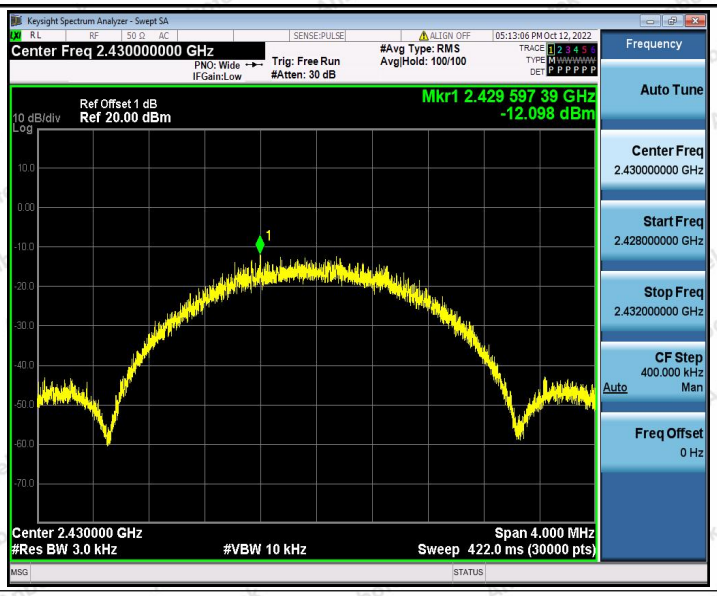
2.4G_Ant1_2404



2.4G_Ant1_2416



2.4G_Ant1_2430


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.430000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 100/100
05:13:06 PM Oct 12, 2022
Ref Offset 1 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.429 597 39 GHz
-12.098 dBm
Center 2.430000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 4.000 MHz
Sweep 422.0 ms (30000 pts)
Frequency
Auto Tune
Center Freq
2.430000000 GHz
Start Freq
2.428000000 GHz
Stop Freq
2.432000000 GHz
CF Step
400.000 kHz
Auto
Man
Freq Offset
0 Hz

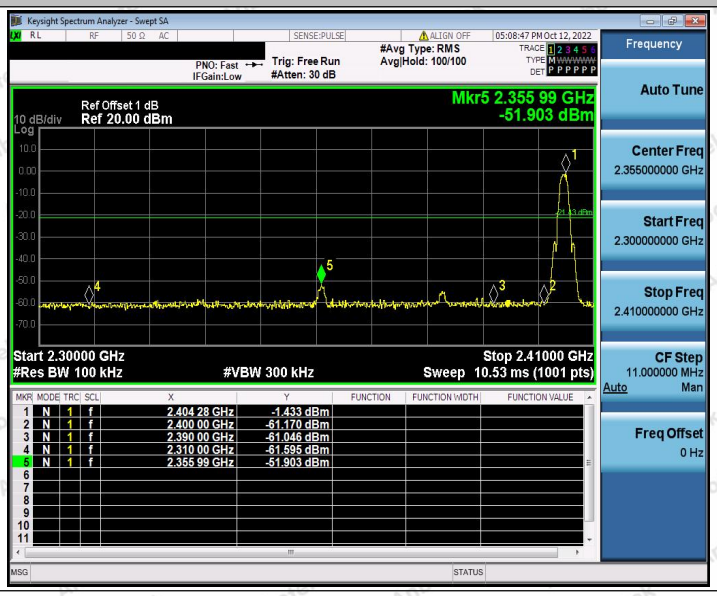
Appendix E: Band edge measurements

Test Result

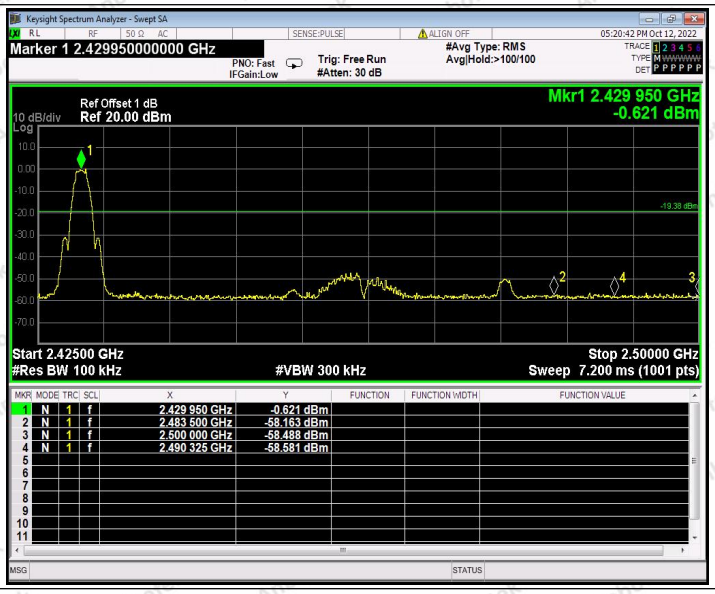
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
2.4G	Ant1	Low	2404	-1.433	-61.046	≤-21.43	PASS
	Ant1	High	2430	-0.621	-58.163	≤-19.38	PASS

Test Graphs

2.4G_Ant1_Low



2.4G_Ant1_High



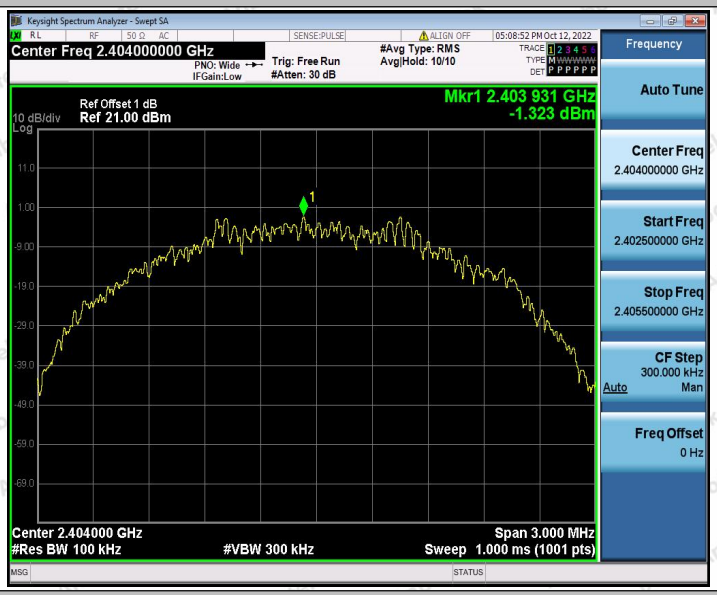
Appendix F: Conducted Spurious Emission

Test Result

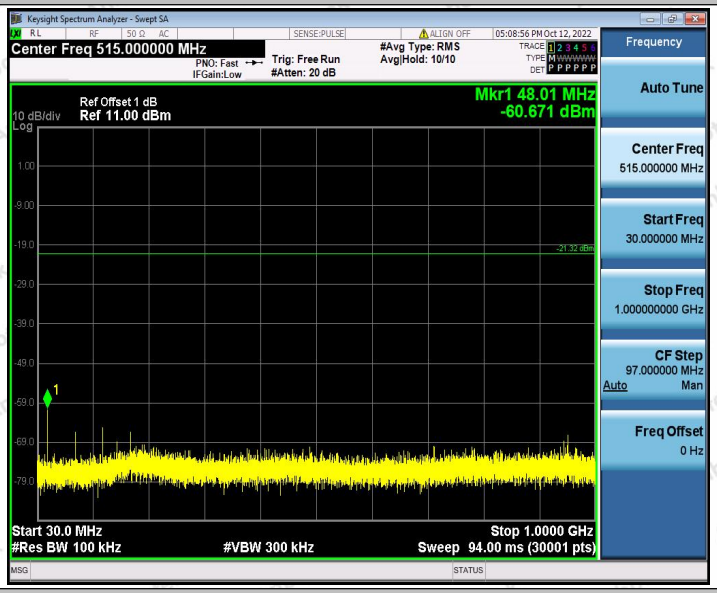
TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
2.4G	Ant1	2404	Reference	-1.32	-1.32	---	PASS
			30~1000	-1.32	-60.67	≤-21.32	PASS
			1000~26500	-1.32	-35.01	≤-21.32	PASS
		2416	Reference	-1.61	-1.61	---	PASS
			30~1000	-1.61	-61.09	≤-21.61	PASS
			1000~26500	-1.61	-34.23	≤-21.61	PASS
		2430	Reference	-1.96	-1.96	---	PASS
			30~1000	-1.96	-62.3	≤-21.96	PASS
			1000~26500	-1.96	-35.02	≤-21.96	PASS

Test Graphs

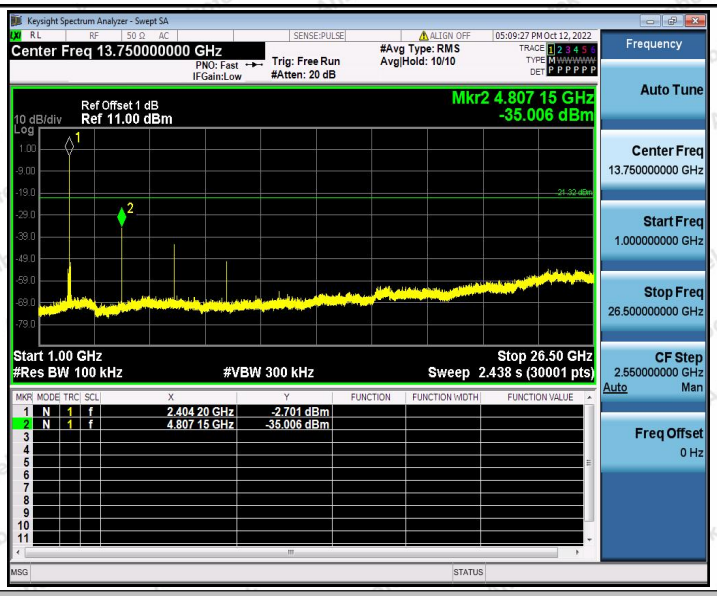
2.4G_Ant1_2404_0~Reference



2.4G_Ant1_2404_30~1000

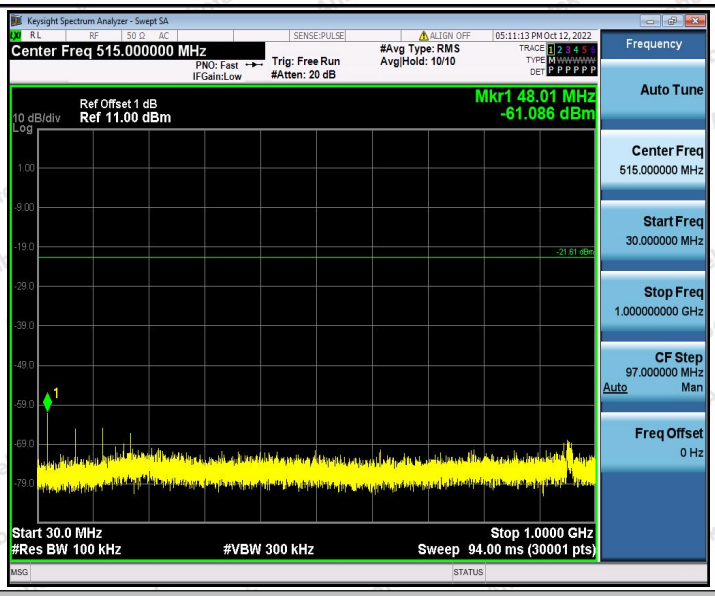


2.4G_Ant1_2404_1000~26500

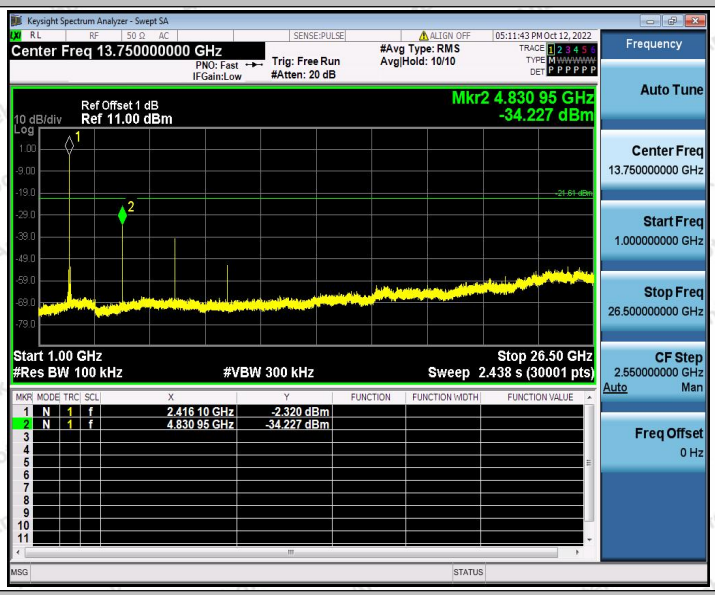


2.4G_Ant1_2416_0~Reference

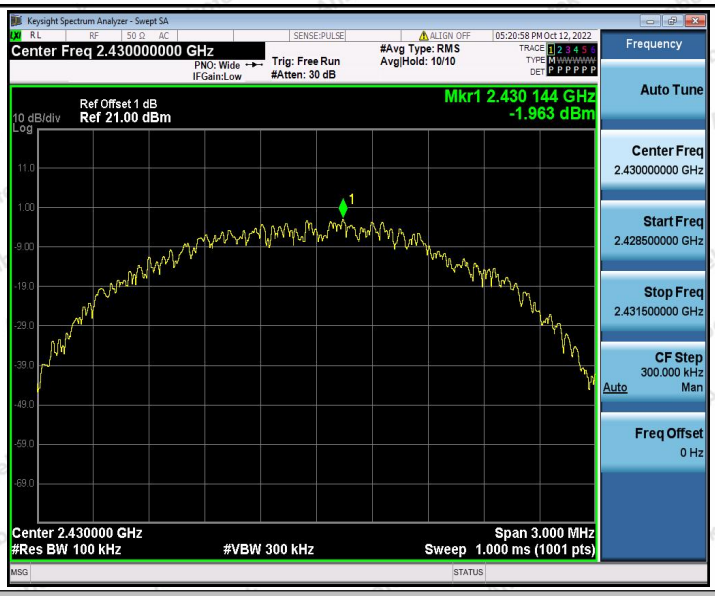
2.4G_Ant1_2416_30~1000



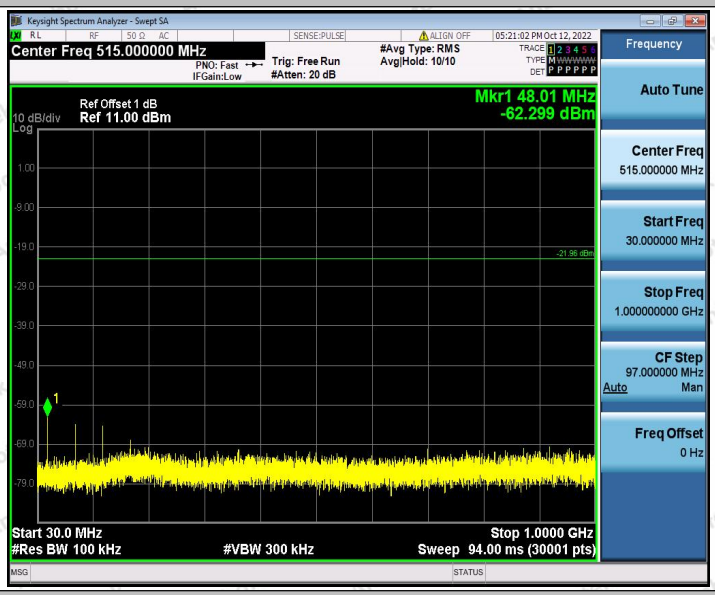
2.4G_Ant1_2416_1000~26500



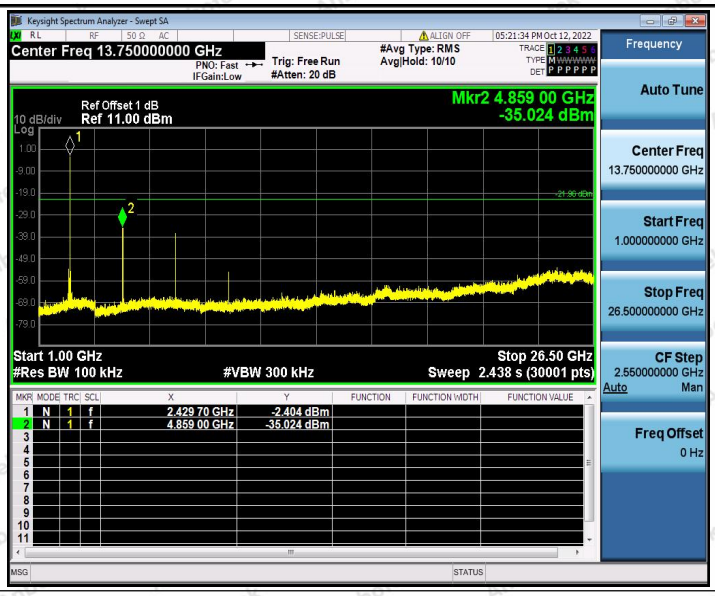
2.4G_Ant1_2430_0~Reference



2.4G_Ant1_2430_30~1000



2.4G_Ant1_2430_1000~26500


Keysight Spectrum Analyzer - Swept SA
Center Freq 13.750000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 10/10
05:21:34 PM Oct 12, 2022
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Mkr2 4,859 00 GHz
-35.024 dBm
Start 1.00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 26.50 GHz
Sweep 2.438 s (30001 pts)
1 N 1 f 2,429 70 GHz -2.404 dBm
2 N 1 f 4,859 00 GHz -35.024 dBm
Frequency
Auto Tune
Center Freq
13.750000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
26.500000000 GHz
CF Step
2.550000000 GHz
Auto Man
Freq Offset
0 Hz

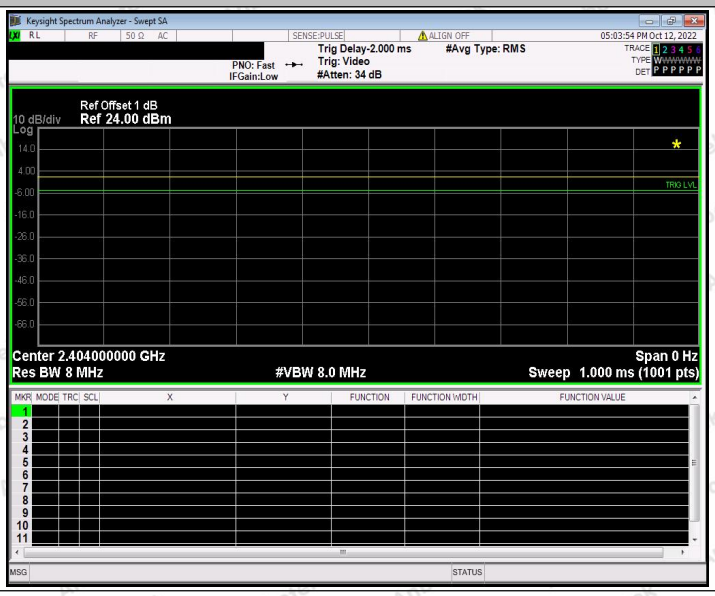
Appendix G: Duty Cycle

Test Result

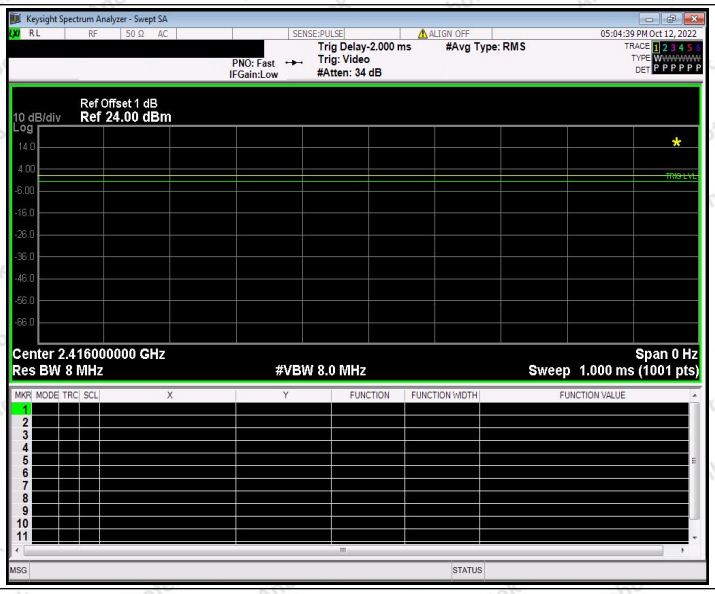
TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
2.4G	Ant1	2404	1.000	1.000	100	0
2.4G	Ant1	2416	1.000	1.000	100	0
2.4G	Ant1	2430	1.000	1.000	100	0

Test Graphs

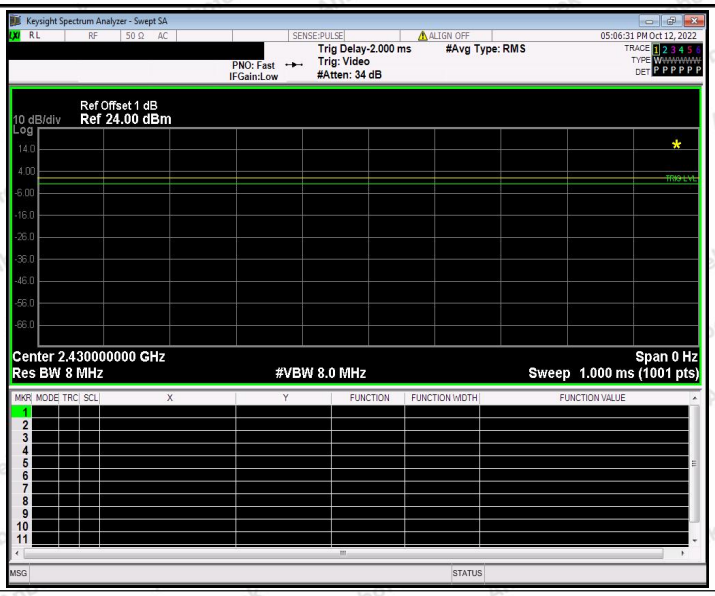
2.4G_Ant1_2404



2.4G_Ant1_2416



2.4G_Ant1_2430


Keysight Spectrum Analyzer - Swept SA
Trig Delay-2.000 ms
Trig: Video
#Atten: 34 dB
#Avg Type: RMS
PNO: Fast
IFGain:Low
Ref Offset 1 dB
10 dB/div
Ref 24.00 dBm
Log
Center 2.430000000 GHz
Res BW 8 MHz
#VBW 8.0 MHz
Span 0 Hz
Sweep 1.000 ms (1001 pts)

---End---