Appendix Test Data

Report No.:	18220WC10282701	Test Sample No.:	1-2-2
Start Test Date:	2022.1.6	Finish Test Date:	2022.2.21
Test Engineer:	Tony.He	Auditor:	Edward.Pan
Temperature:	24.3℃	Relative Humidity:	57 %
Pressure:	1012 hPa		

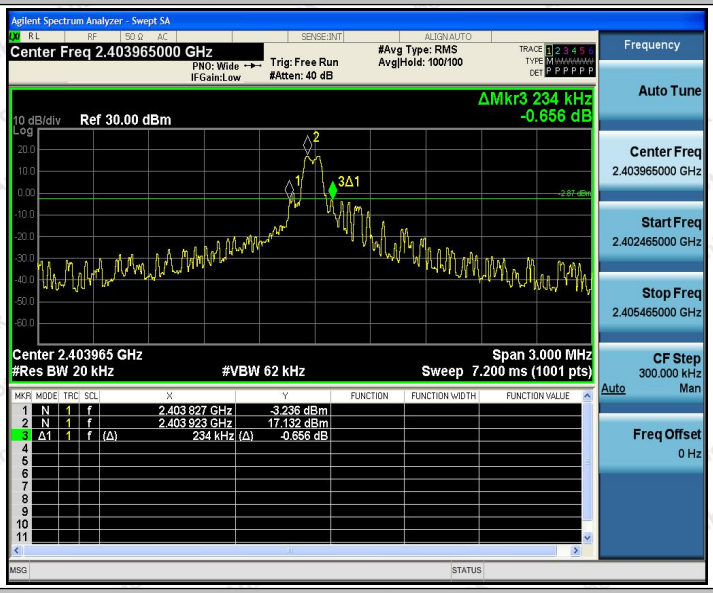
Appendix A: 20dB Emission Bandwidth

Test Result

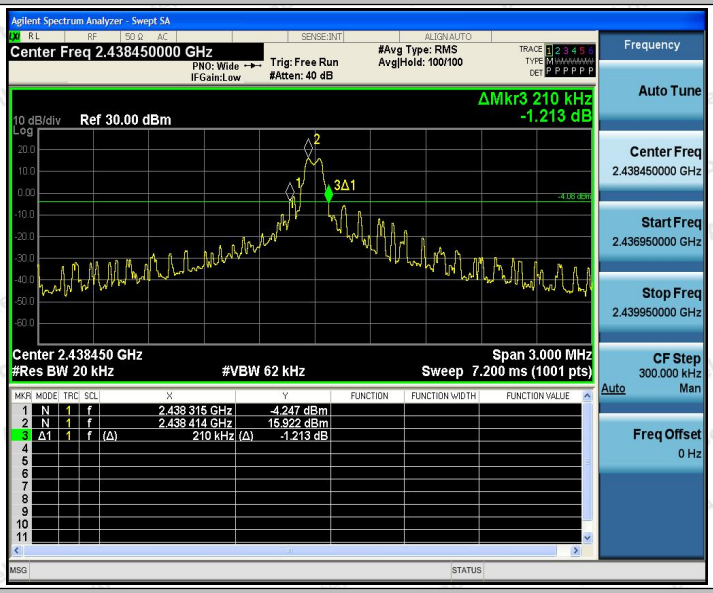
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
2.4	Ant1	2403.965	0.234	2403.827	2404.061	---	PASS
		2438.45	0.210	2438.315	2438.525	---	PASS
		2472.935	0.138	2472.866	2473.004	---	PASS

Test Graphs

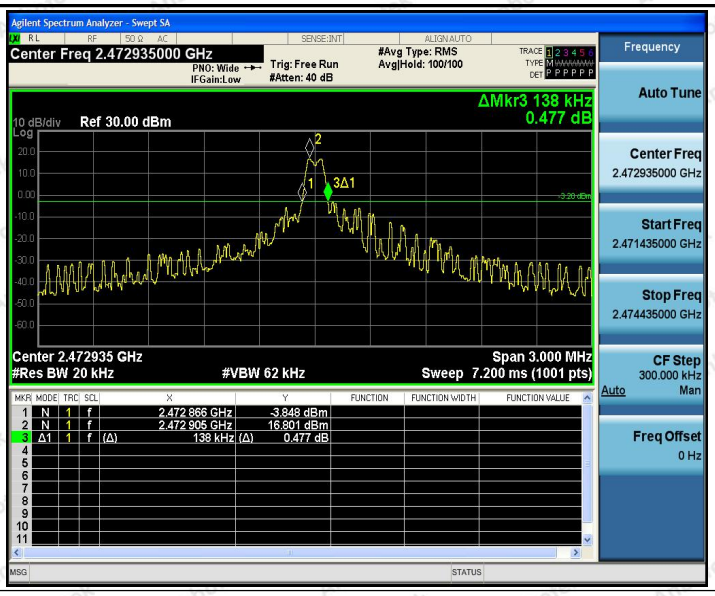
2.4_Ant1_2403.965



2.4_Ant1_2438.45



2.4_Ant1_2472.935


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.472935000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 40 dB
#Avg Type: RMS
Avg|Hold: 100/100
ΔMkr3 138 kHz
0.477 dB
10 dB/div
Ref 30.00 dBm
Center 2.472935 GHz
#Res BW 20 kHz
#VBW 62 kHz
Span 3.000 MHz
Sweep 7.200 ms (1001 pts)
1 N 1 f 2.472 866 GHz -3.848 dBm
2 N 1 f 2.472 905 GHz 16.801 dBm
3 Δ1 1 f (Δ) 138 kHz (Δ) 0.477 dB
Frequency
Auto Tune
Center Freq
2.472935000 GHz
Start Freq
2.471435000 GHz
Stop Freq
2.474435000 GHz
CF Step
300.000 kHz
Auto Man
Freq Offset
0 Hz

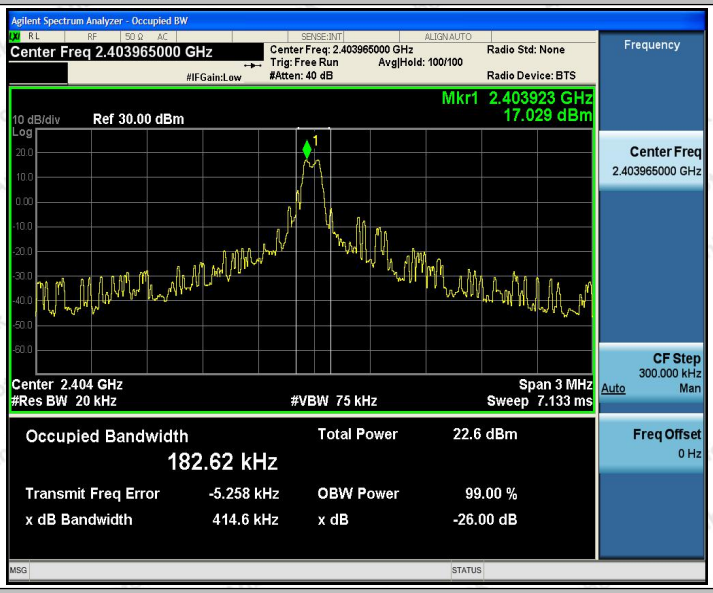
Appendix B: Occupied Channel Bandwidth

Test Result

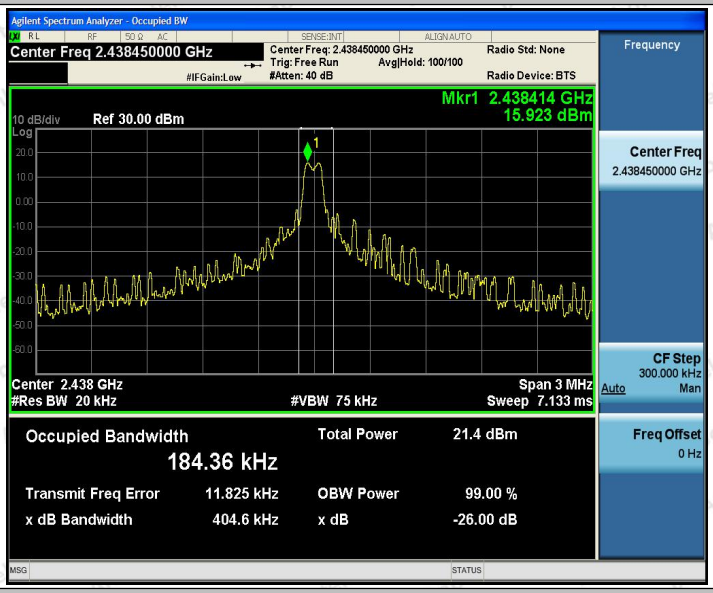
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
2.4	Ant1	2403.965	0.18262	2403.868	2404.051	---	PASS
		2438.45	0.18436	2438.370	2438.554	---	PASS
		2472.935	0.18548	2472.869	2473.054	---	PASS

Test Graphs

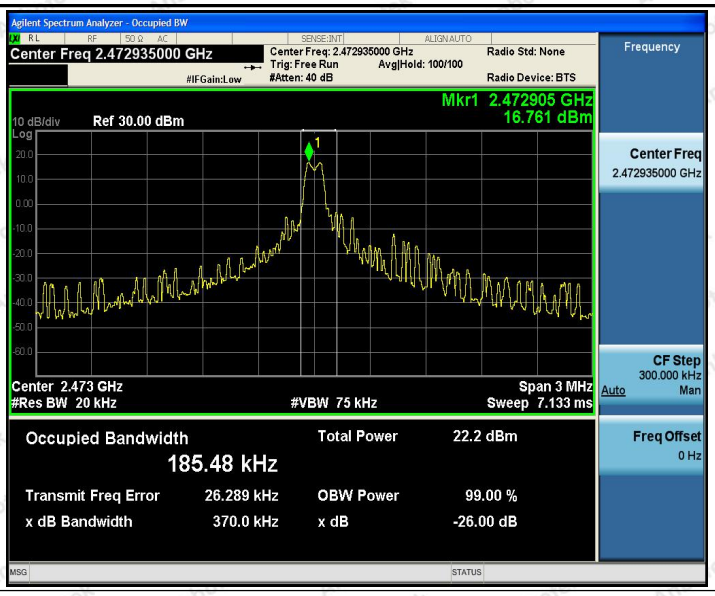
2.4_Ant1_2403.965



2.4_Ant1_2438.45



2.4_Ant1_2472.935


Agilent Spectrum Analyzer - Occupied BW
Center Freq 2.472935000 GHz
Center Freq: 2.472935000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 40 dB
Radio Std: None
Radio Device: BTS
Mkr1 2.472905 GHz
16.761 dBm
10 dB/div
Ref 30.00 dBm
Center 2.473 GHz
#Res BW 20 kHz
#VBW 75 kHz
Span 3 MHz
Sweep 7.133 ms
Occupied Bandwidth
185.48 kHz
Total Power 22.2 dBm
Transmit Freq Error 26.289 kHz
OBW Power 99.00 %
x dB Bandwidth 370.0 kHz
x dB -26.00 dB
Frequency
Center Freq
2.472935000 GHz
CF Step
300.000 kHz
Auto Man
Freq Offset
0 Hz

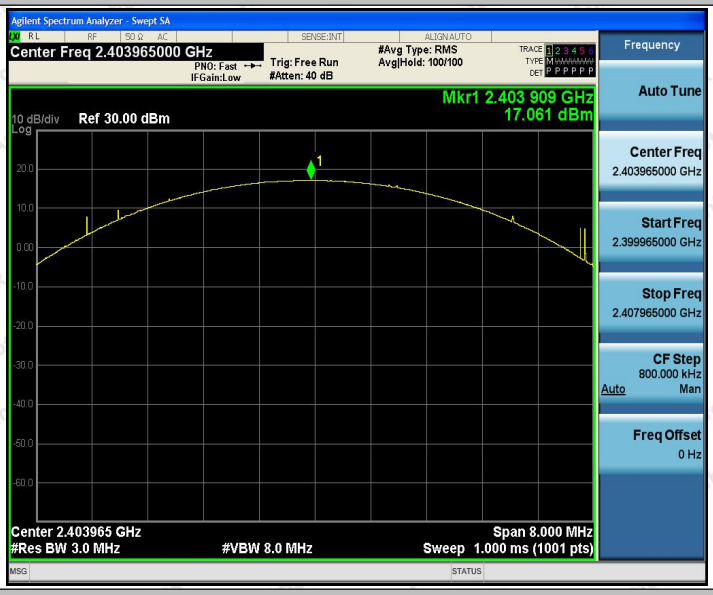
Appendix C: Maximum conducted output power

Test Result

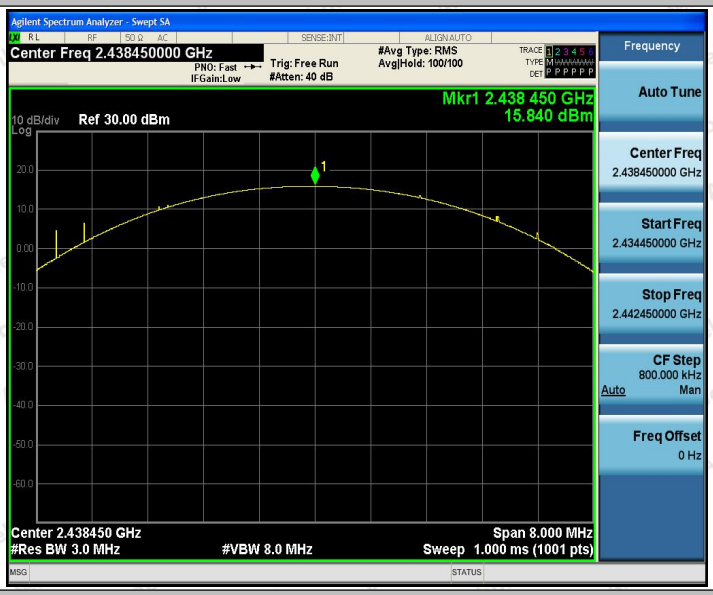
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
2.4	Ant1	2403.965	17.06	≤21	PASS
		2438.45	15.84	≤21	PASS
		2472.935	16.7	≤21	PASS

Test Graphs

2.4_Ant1_2403.965



2.4_Ant1_2438.45



2.4_Ant1_2472.935

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.472935000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
#Avg Type: RMS
Avg|Hold: 100/100
Mkr1 2.472 847 GHz
16.703 dBm
10 dB/div
Log
Ref 30.00 dBm
Center 2.472935 GHz
#Res BW 3.0 MHz
#VBW 8.0 MHz
Span 8.000 MHz
Sweep 1.000 ms (1001 pts)
Frequency
Auto Tune
Center Freq
2.472935000 GHz
Start Freq
2.468935000 GHz
Stop Freq
2.476935000 GHz
CF Step
800.000 kHz
Auto
Man
Freq Offset
0 Hz

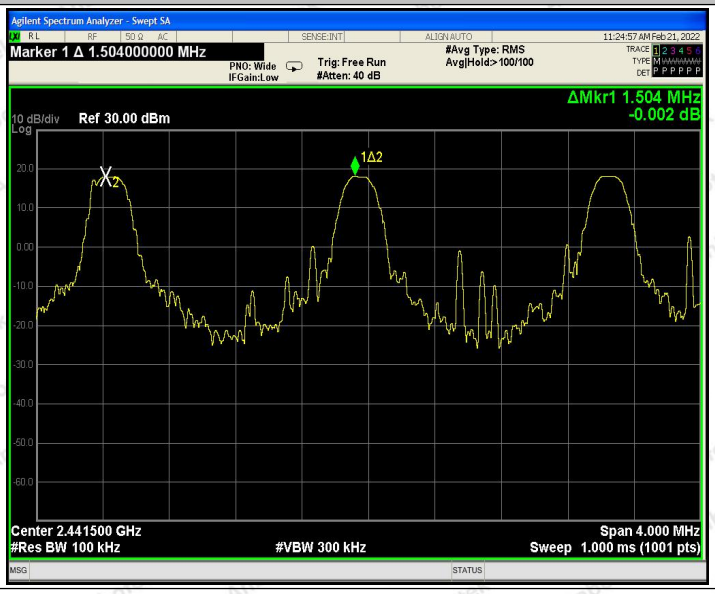
Appendix D: Carrier frequency separation

Test Result

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
2.4	Ant1	Hop	1.504	≥0.234	PASS

Test Graphs

2.4_Ant1_Hop



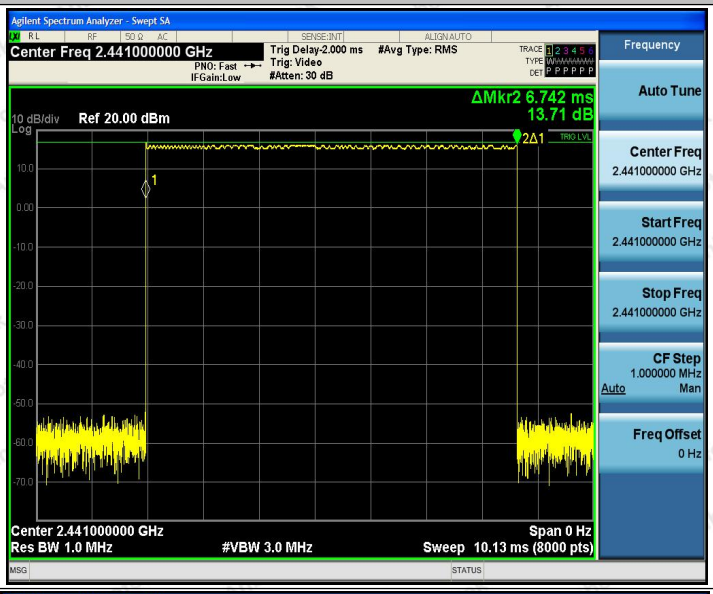
Appendix E: Time of occupancy

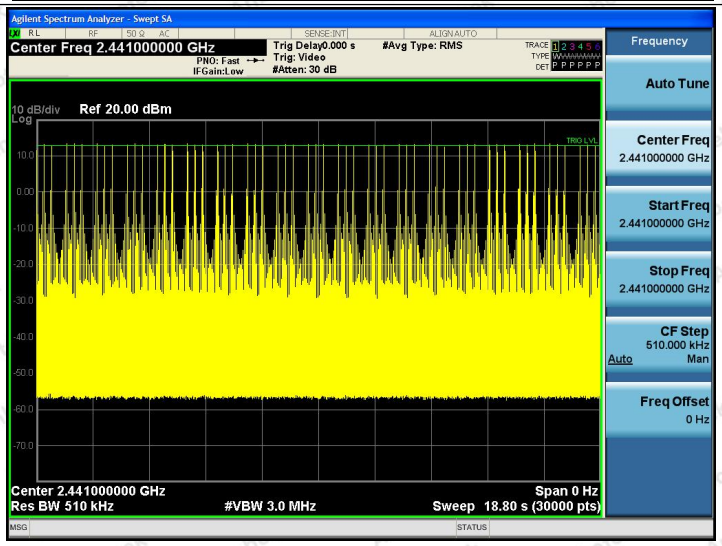
Test Result

TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
2.4	Ant1	Hop	6.74	57	0.384	≤0.4	PASS

Test Graphs

2.4_Ant1_Hop





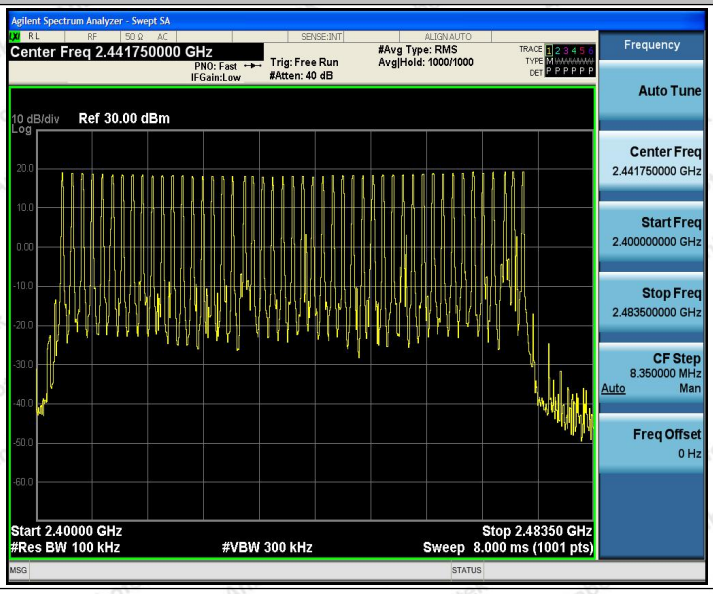
Appendix F: Number of hopping channels

Test Result

TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
2.4	Ant1	Hop	47	≥15	PASS

Test Graphs

2.4_Ant1_Hop



Appendix G: Band edge measurements

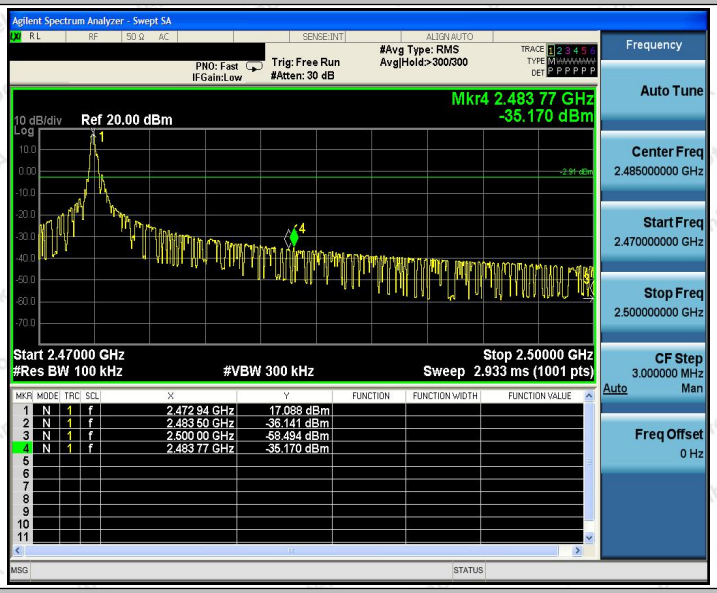
Test Result

TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
2.4	Ant1	Low	2403.965	17.22	-27.37	≤-2.78	PASS
		High	2472.935	17.09	-35.17	≤-2.91	PASS
		Low	Hop	18.77	-39.63	≤-1.23	PASS
		High	Hop	19.14	-50.05	≤-0.86	PASS

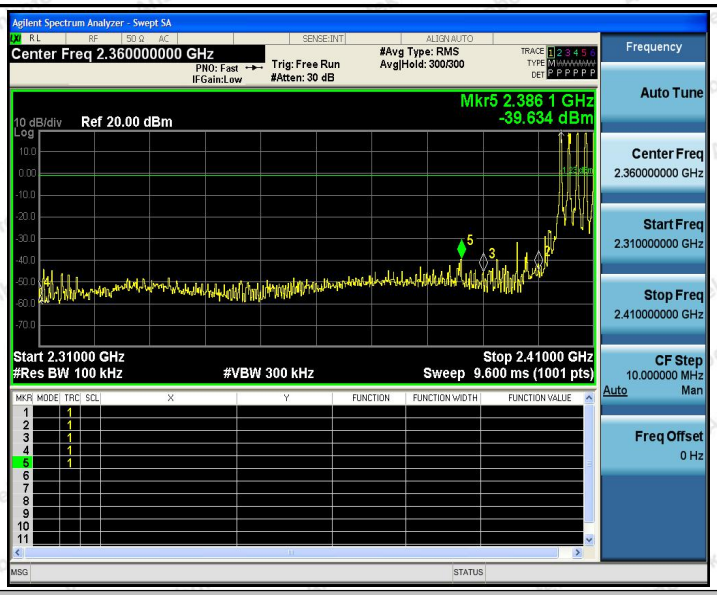
Test Graphs

2.4_Ant1_Low_2403.965

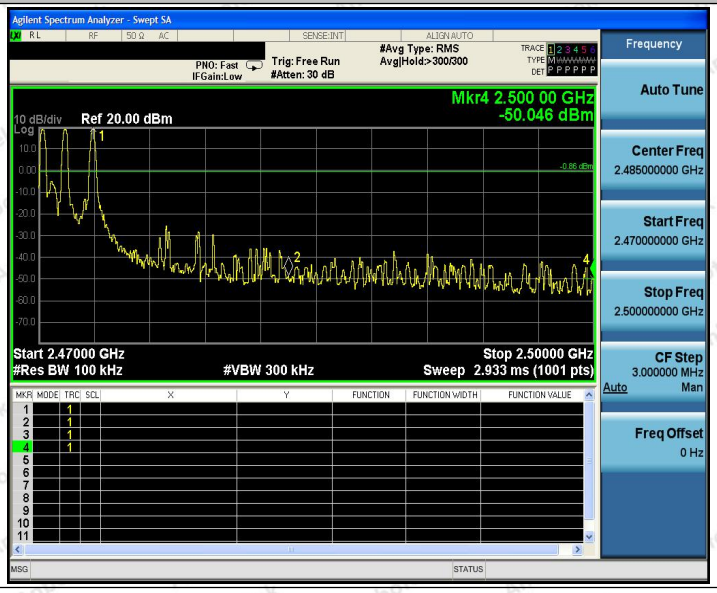
2.4_Ant1_High_2472.935



2.4_Ant1_Low_Hop



2.4_Ant1_High_Hop



Appendix H: Conducted Spurious Emission

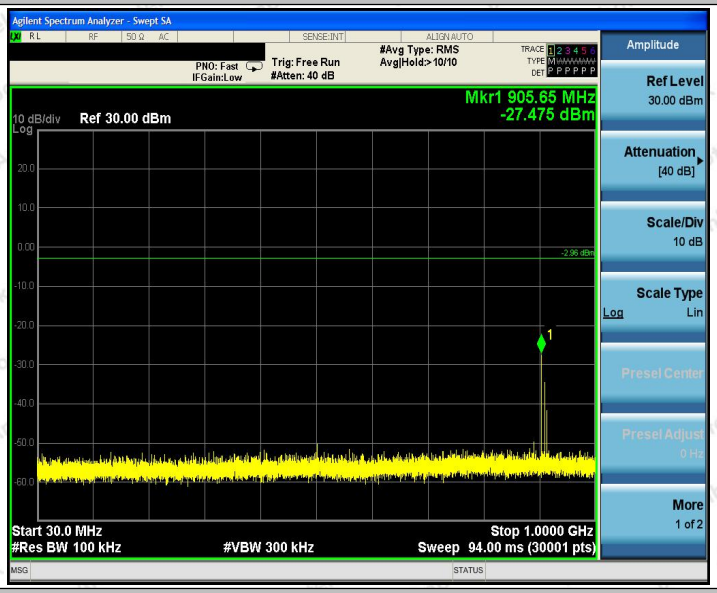
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
2.4	Ant1	2403.965	Reference	17.04	17.04	---	PASS
			30~1000	17.04	-27.48	≤-2.96	PASS
			1000~26500	17.04	-31.42	≤-2.96	PASS
		2438.45	Reference	15.85	15.85	---	PASS
			30~1000	15.85	-46.72	≤-4.15	PASS
			1000~26500	15.85	-26.24	≤-4.15	PASS
		2472.935	Reference	16.69	16.69	---	PASS
			30~1000	16.69	-27.82	≤-3.32	PASS
			1000~26500	16.69	-28.34	≤-3.32	PASS

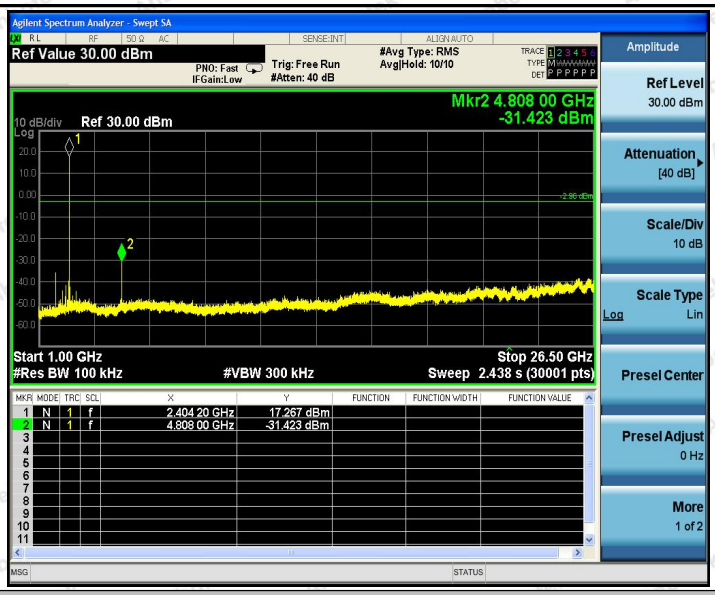
Test Graphs

2.4_Ant1_2403.965_0~Reference

2.4_Ant1_2403.965_30~1000

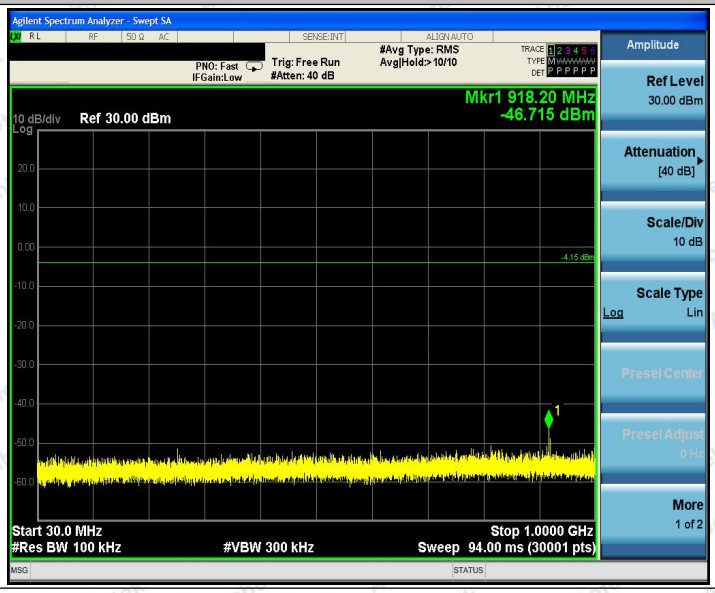


2.4_Ant1_2403.965_1000~26500

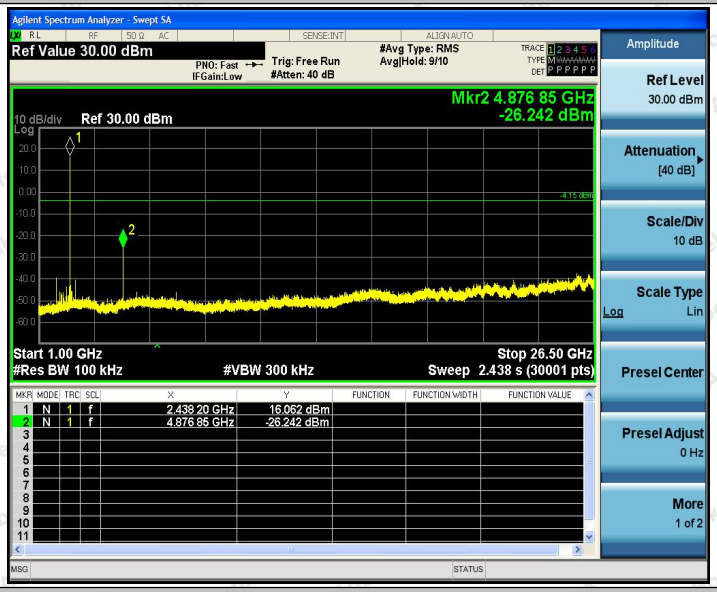


2.4_Ant1_2438.45_0~Reference

2.4_Ant1_2438.45_30~1000

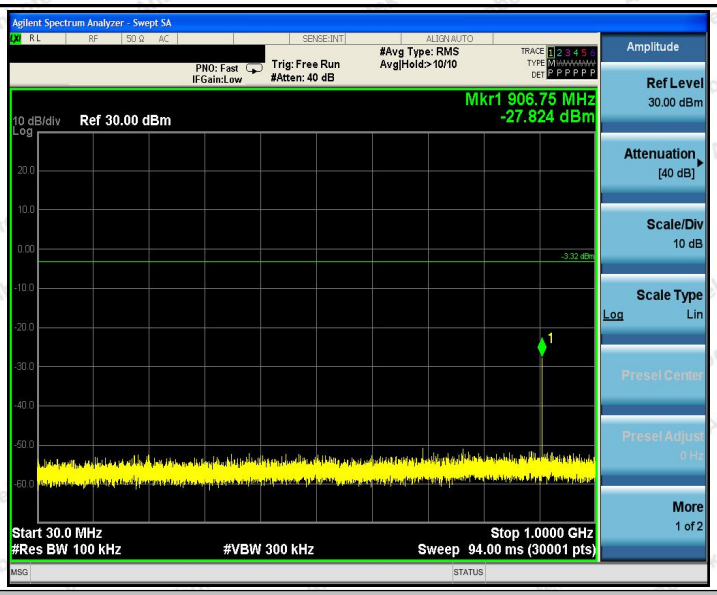


2.4_Ant1_2438.45_1000~26500

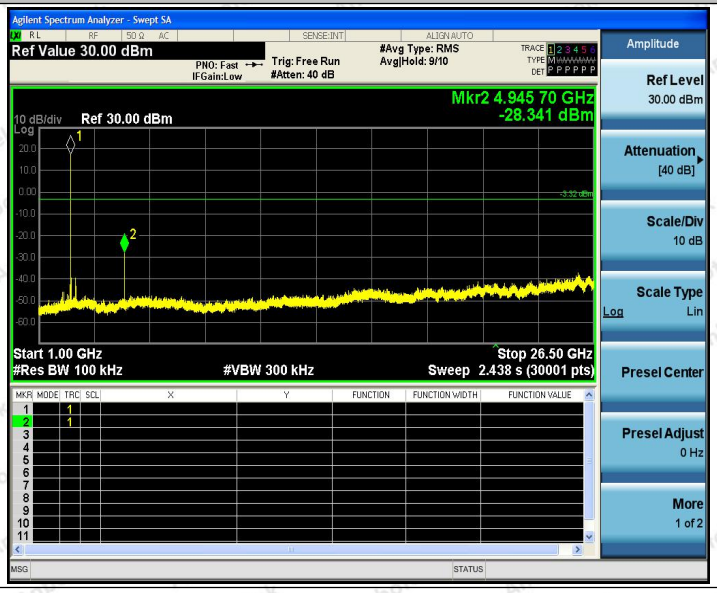


2.4_Ant1_2472.935_0~Reference

2.4_Ant1_2472.935_30~1000



2.4_Ant1_2472.935_1000~26500



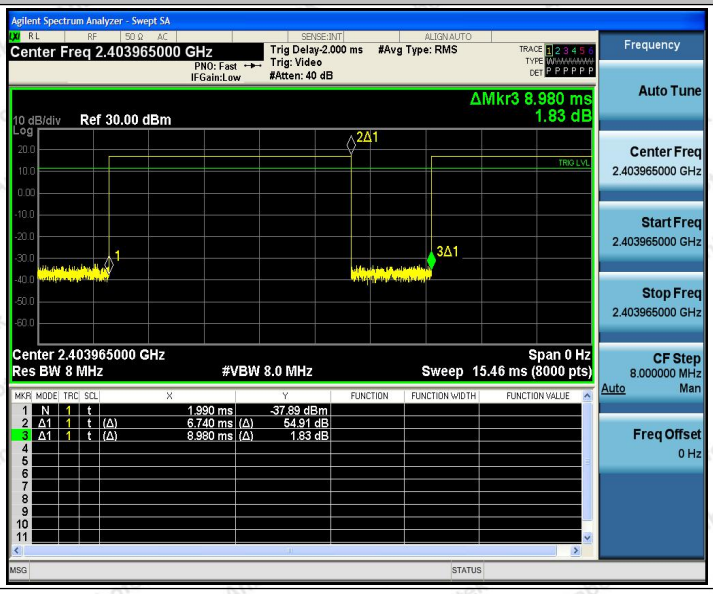
Appendix I: Duty Cycle

Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
2.4	Ant1	2403.965	6.74	8.98	0.7506	75.06	1.25	---	PASS

Test Graphs

2.4_Ant1_2403.965



---End---