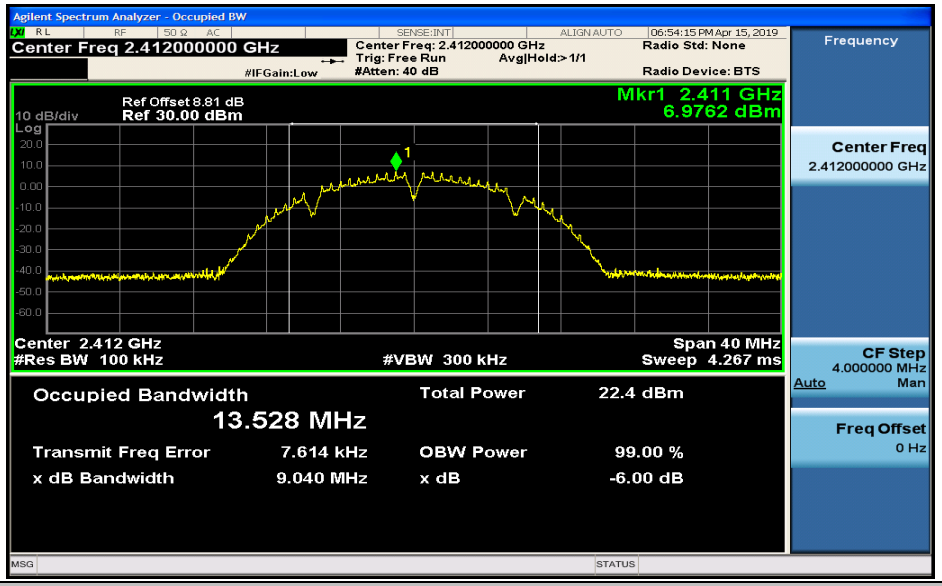
Appendix A for SHEM190401233901

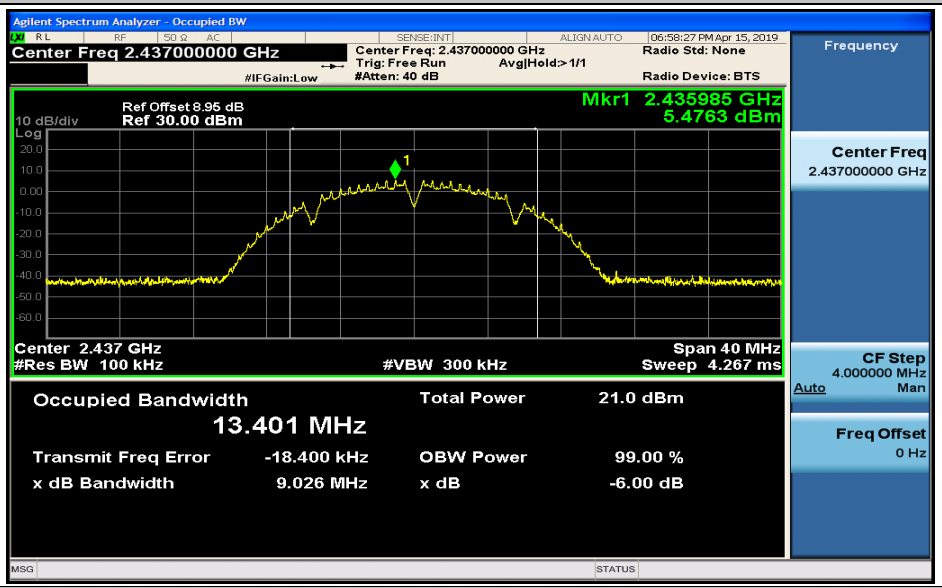
1.6dB Bandwidth

Test Mode	Test Channel	Ant	EBW[MHz]	Limit	Verdict
11B	2412	Ant1	9.04	0.5	PASS
11B	2437	Ant1	9.03	0.5	PASS
11B	2462	Ant1	8.57	0.5	PASS
11G	2412	Ant1	16.35	0.5	PASS
11G	2437	Ant1	16.34	0.5	PASS
11G	2462	Ant1	16.35	0.5	PASS
11N20SISO	2412	Ant1	17.58	0.5	PASS
11N20SISO	2437	Ant1	17.58	0.5	PASS
11N20SISO	2462	Ant1	17.55	0.5	PASS
11N40SISO	2422	Ant1	36.32	0.5	PASS
11N40SISO	2437	Ant1	35.70	0.5	PASS
11N40SISO	2452	Ant1	35.40	0.5	PASS

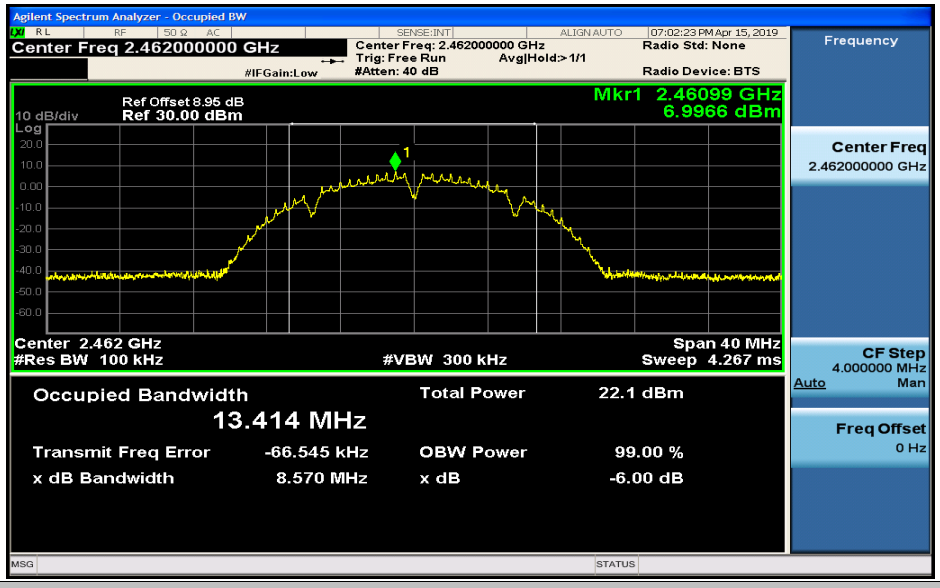
6dB Bandwidth_11B_2412_Ant1



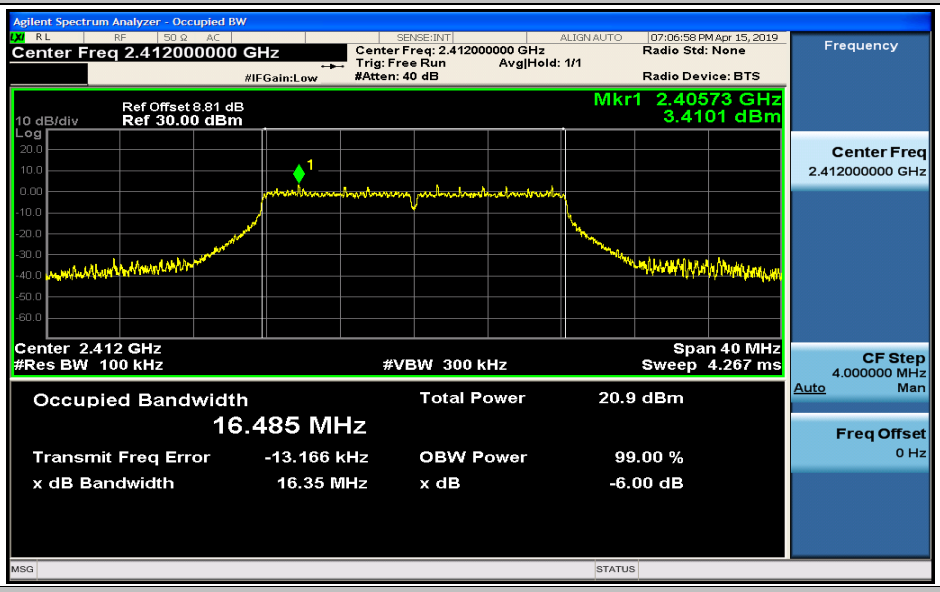
6dB Bandwidth_11B_2437_Ant1



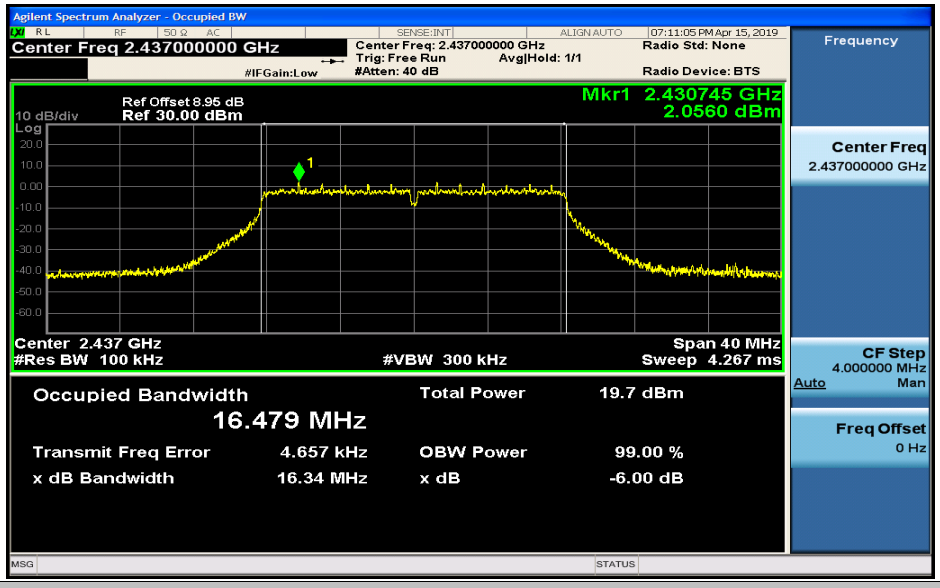
6dB Bandwidth_11B_2462_Ant1



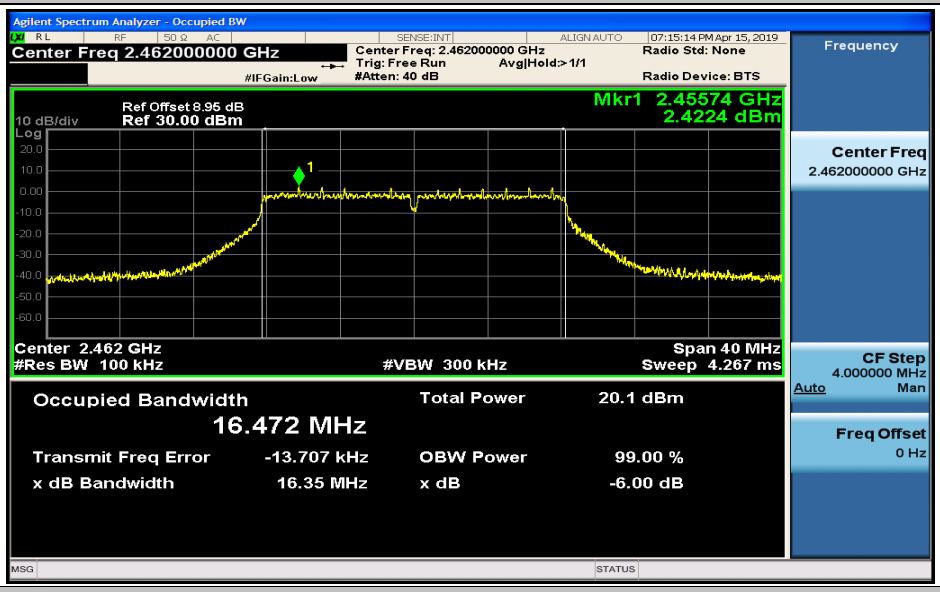
6dB Bandwidth_11G_2412_Ant1



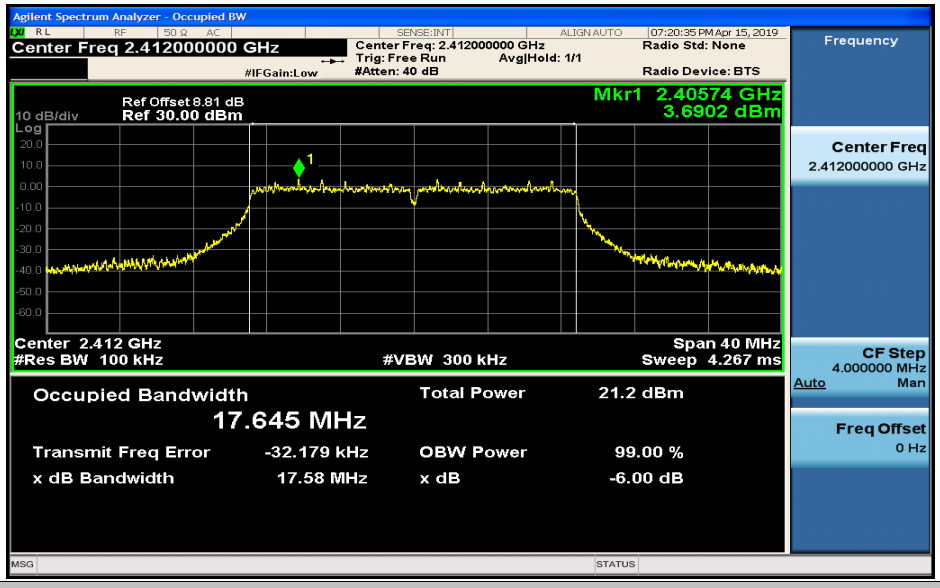
6dB Bandwidth_11G_2437_Ant1



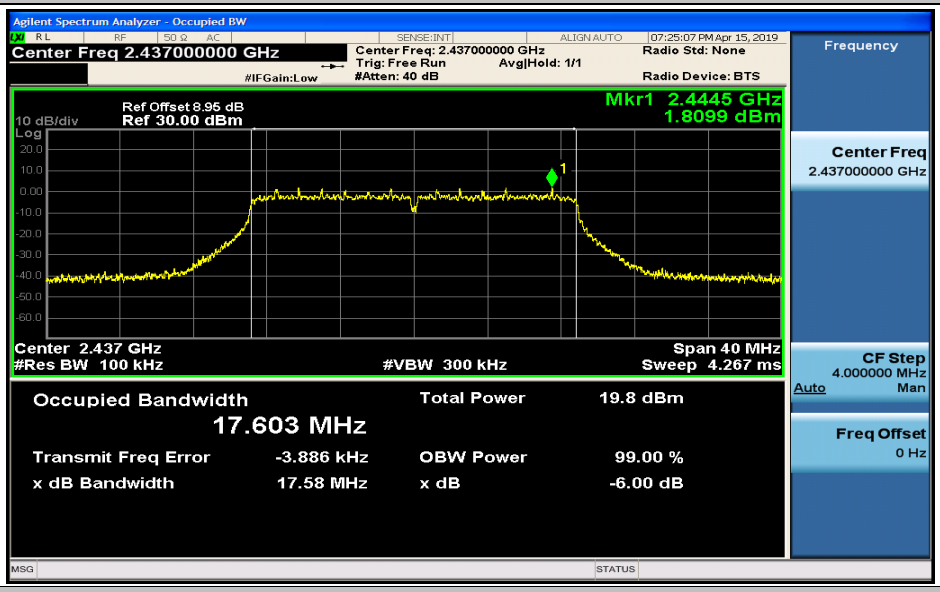
6dB Bandwidth_11G_2462_Ant1



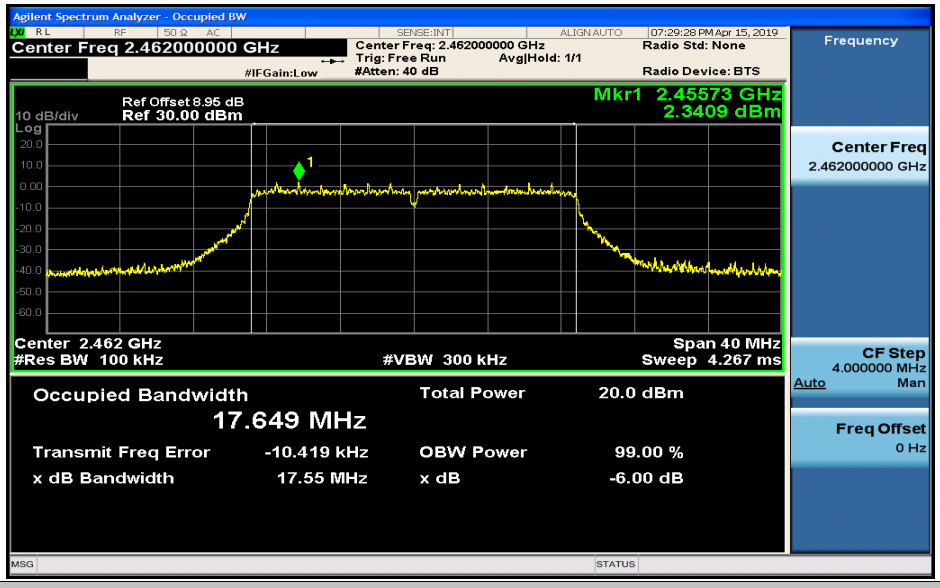
6dB Bandwidth_11N20SISO_2412_Ant1



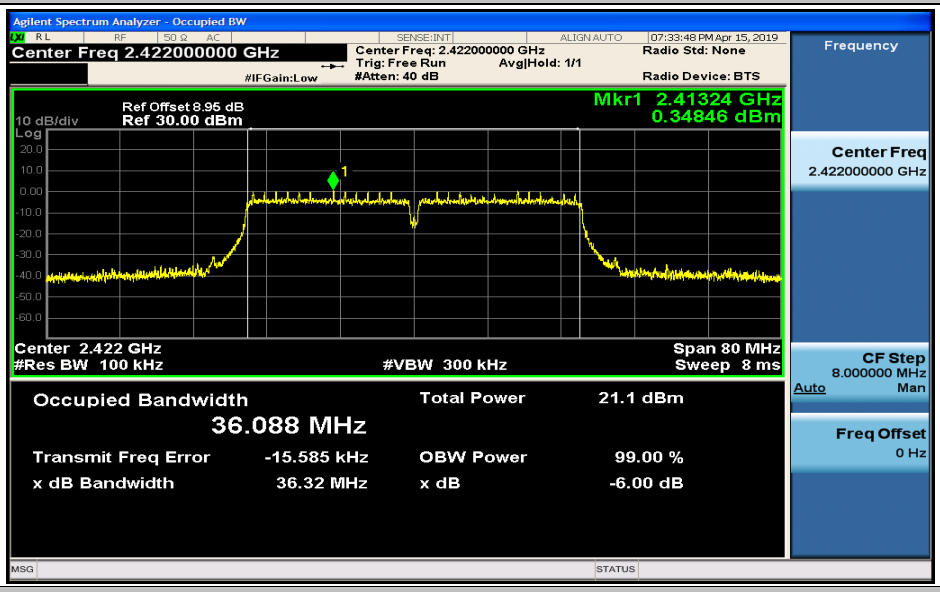
6dB Bandwidth_11N20SISO_2437_Ant1



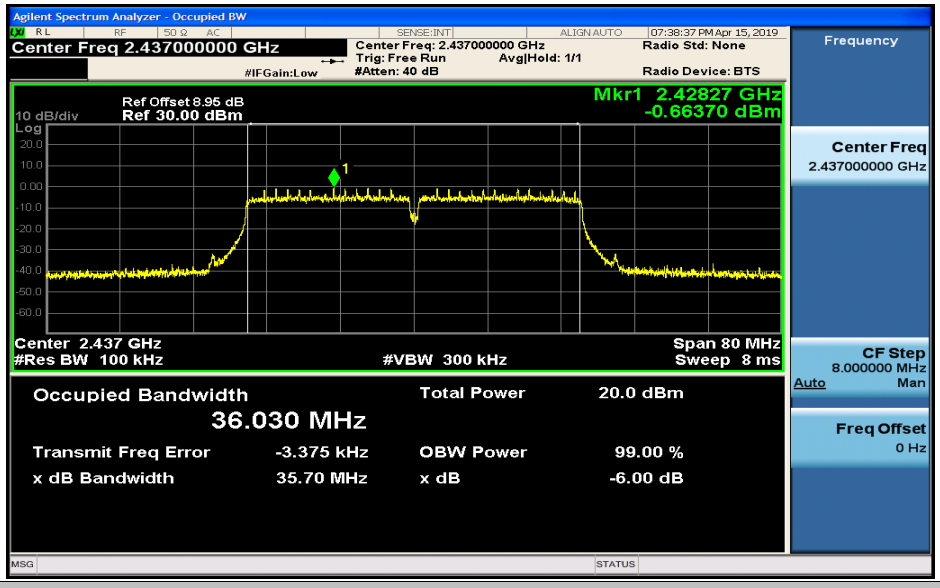
6dB Bandwidth_11N20SISO_2462_Ant1



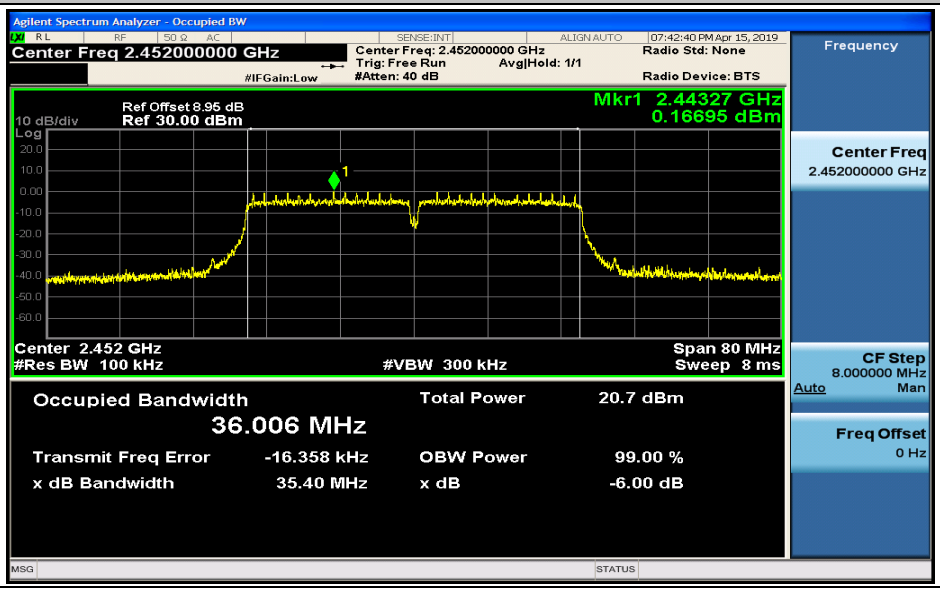
6dB Bandwidth_11N40SISO_2422_Ant1



6dB Bandwidth_11N40SISO_2437_Ant1



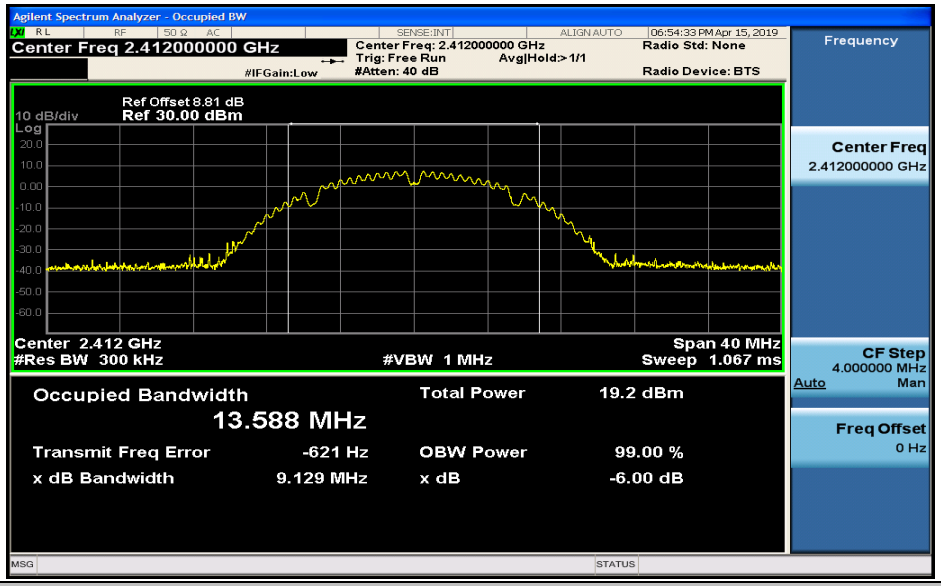
6dB Bandwidth_11N40SISO_2452_Ant1



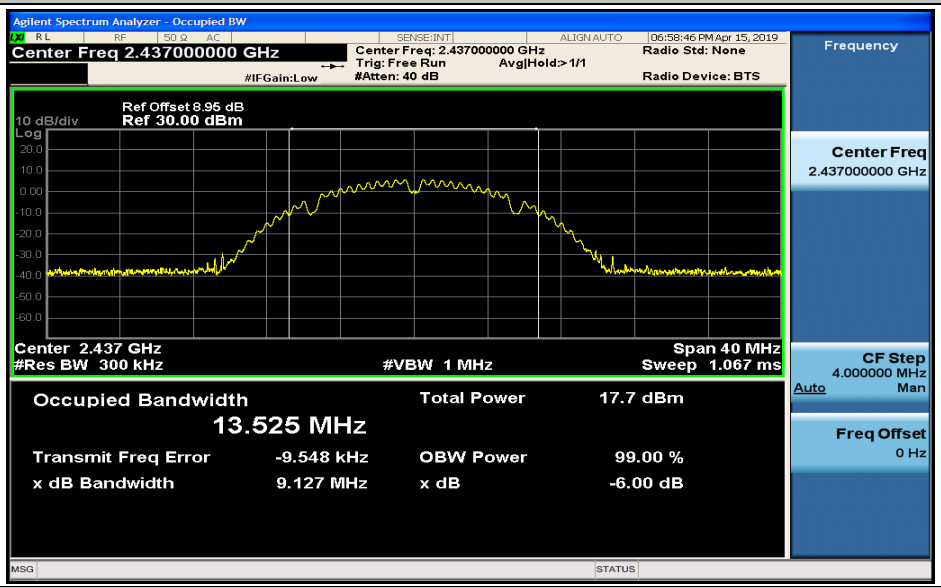
2.Occupied Bandwidth

Test Mode	Test Channel	Ant	OBW[MHz]	Limit[MHz]	Verdict
11B	2412	Ant1	13.59	---	PASS
11B	2437	Ant1	13.53	---	PASS
11B	2462	Ant1	13.47	---	PASS
11G	2412	Ant1	16.91	---	PASS
11G	2437	Ant1	16.94	---	PASS
11G	2462	Ant1	16.93	---	PASS
11N20SISO	2412	Ant1	17.91	---	PASS
11N20SISO	2437	Ant1	17.82	---	PASS
11N20SISO	2462	Ant1	17.97	---	PASS
11N40SISO	2422	Ant1	36.57	---	PASS
11N40SISO	2437	Ant1	36.44	---	PASS
11N40SISO	2452	Ant1	36.47	---	PASS

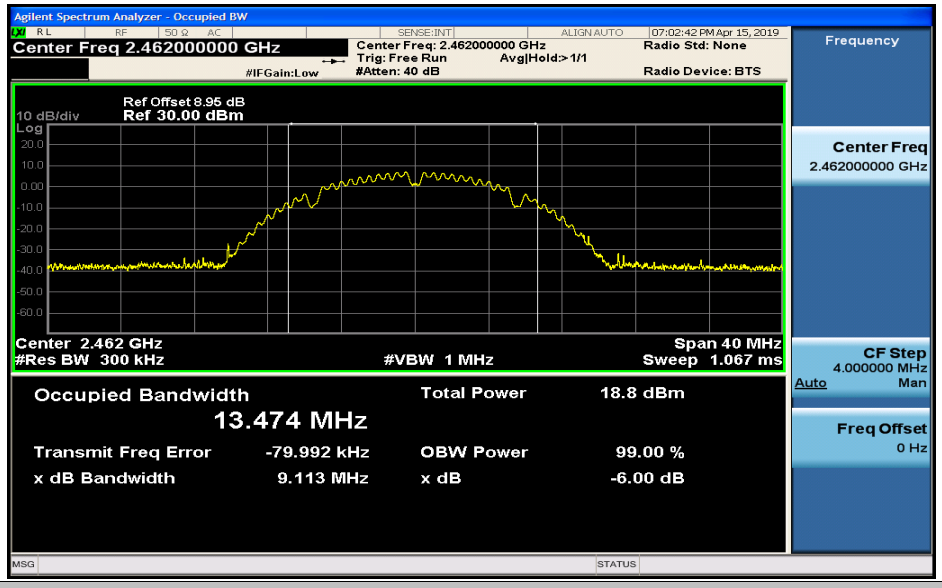
Occupied Bandwidth_11B_2412



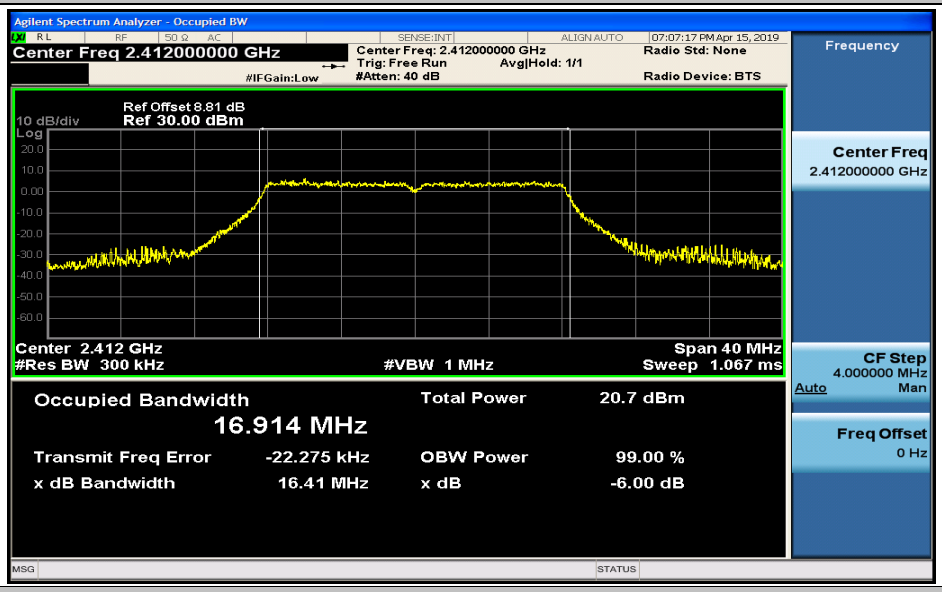
Occupied Bandwidth_11B_2437



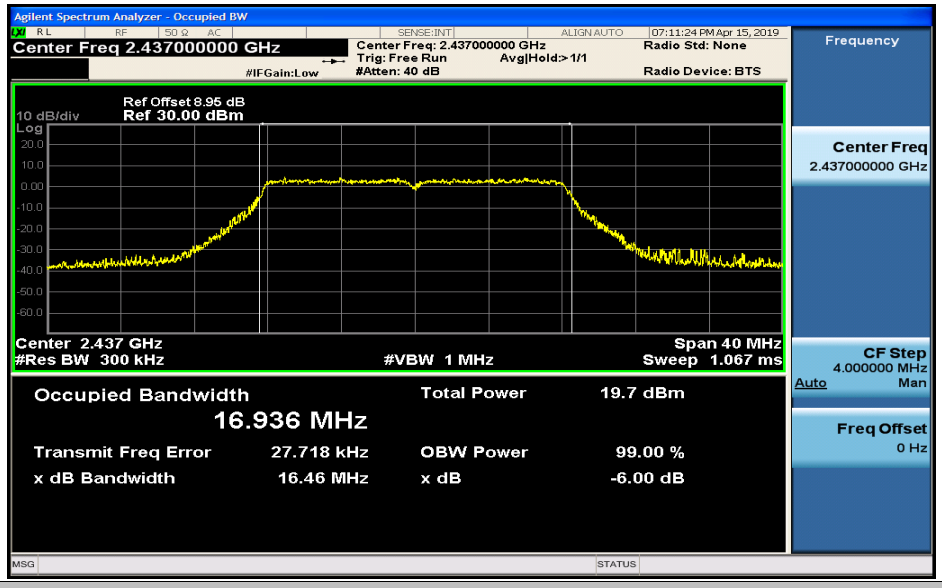
Occupied Bandwidth_11B_2462



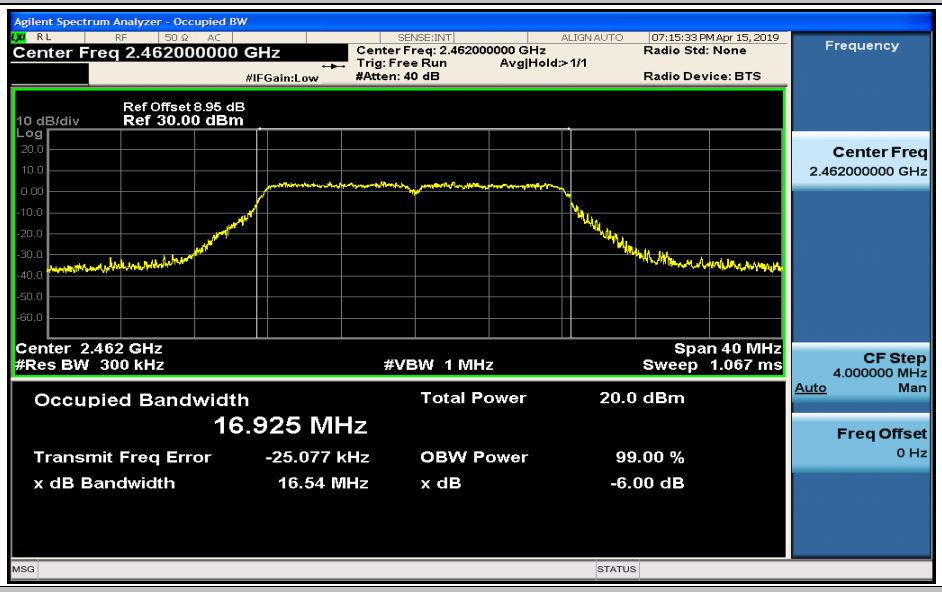
Occupied Bandwidth_11G_2412



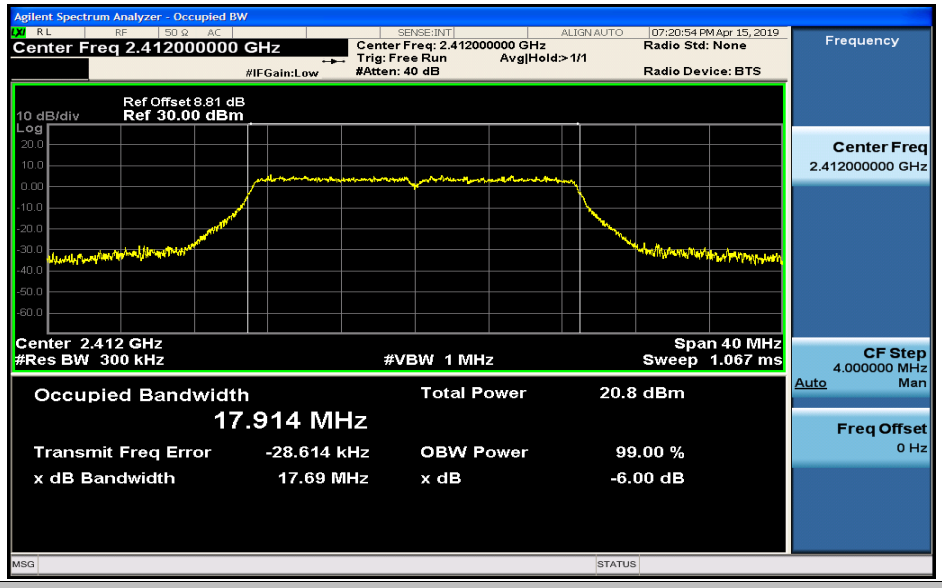
Occupied Bandwidth_11G_2437



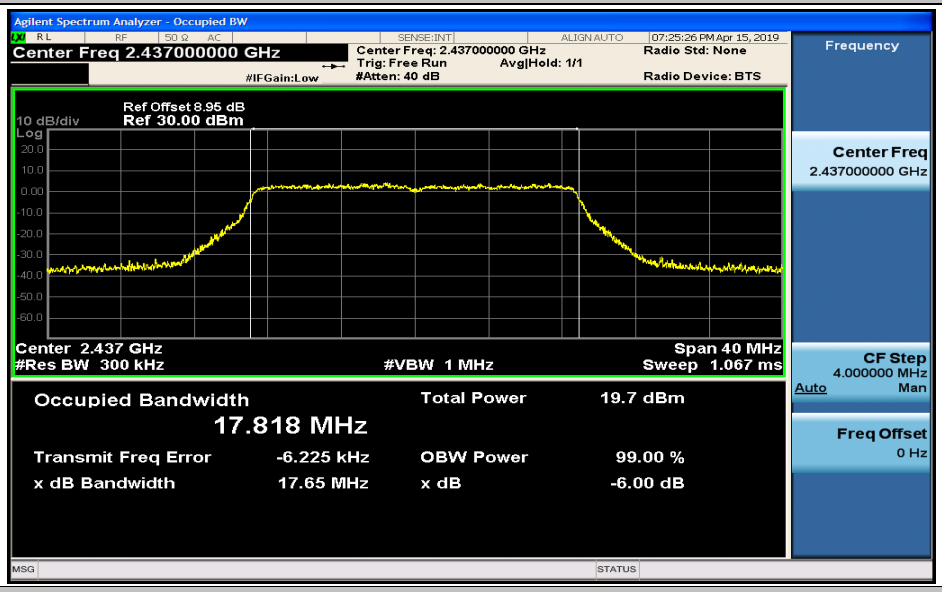
Occupied Bandwidth_11G_2462



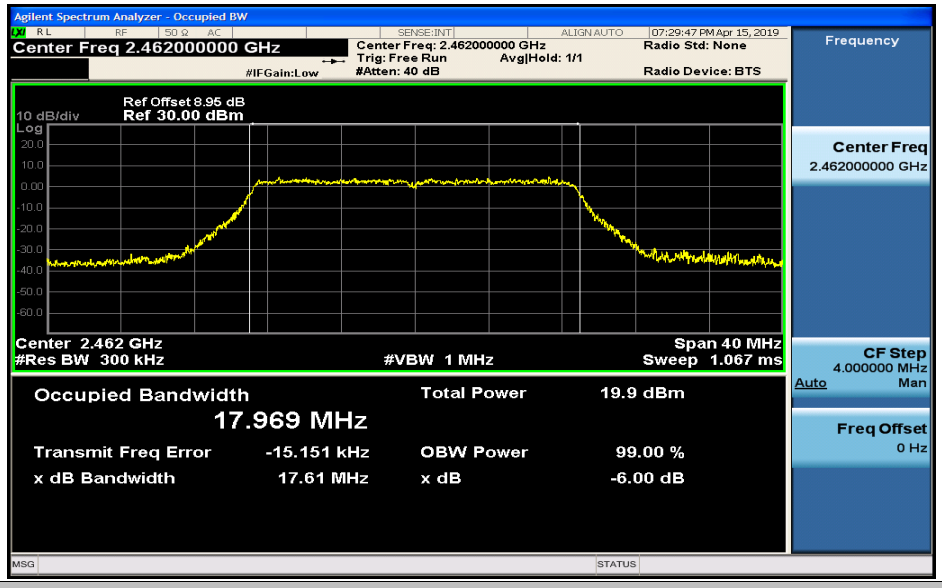
Occupied Bandwidth_11N20SISO_2412



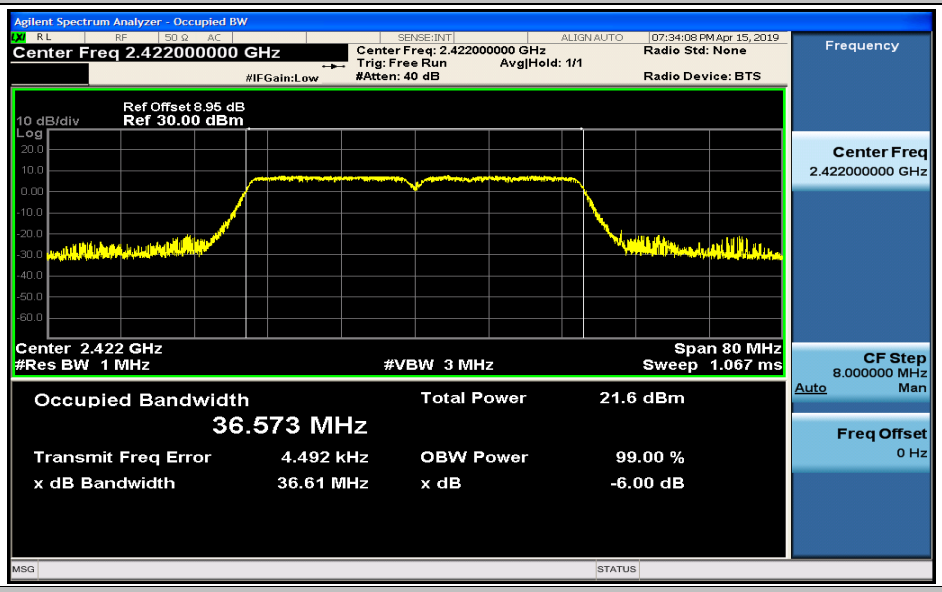
Occupied Bandwidth_11N20SISO_2437



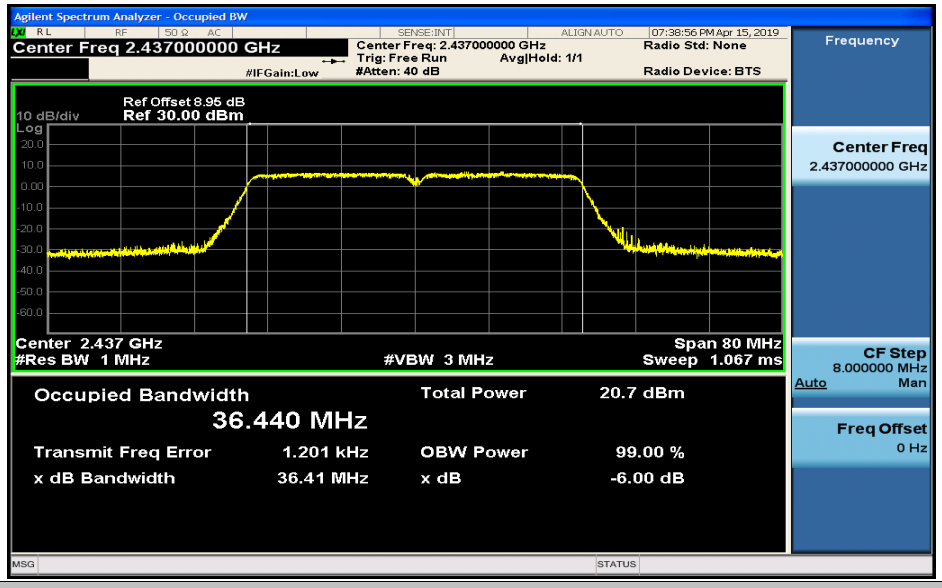
Occupied Bandwidth_11N20SISO_2462



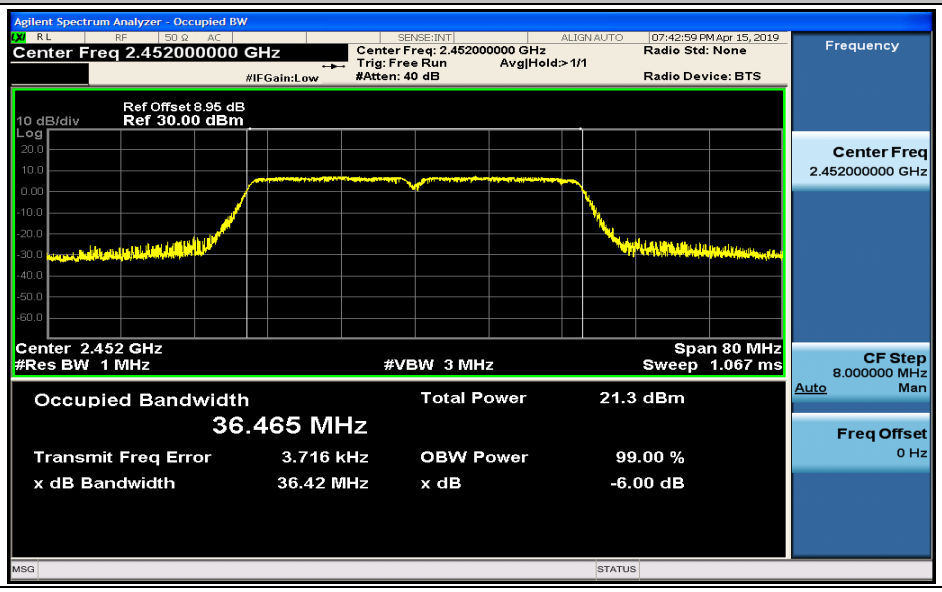
Occupied Bandwidth_11N40SISO_2422



Occupied Bandwidth_11N40SISO_2437



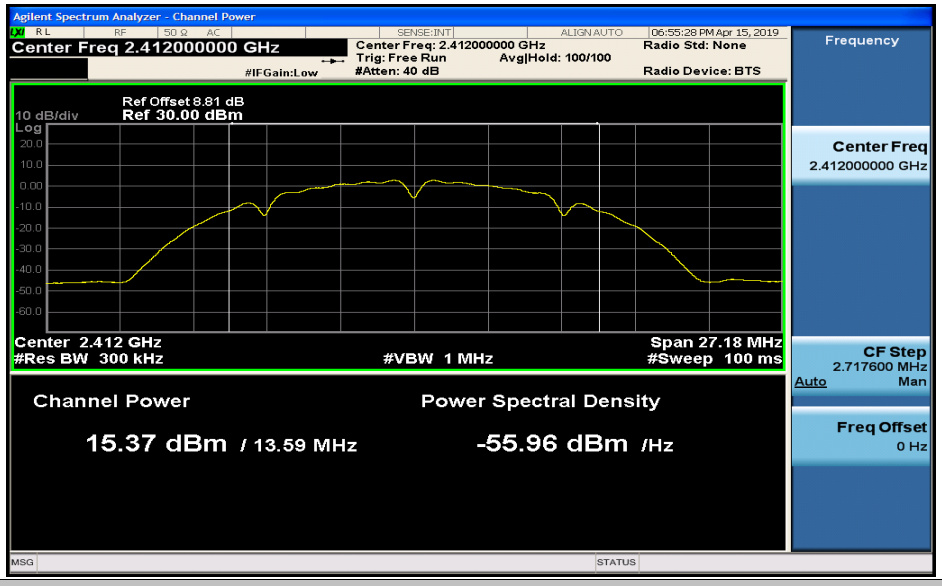
Occupied Bandwidth_11N40SISO_2452



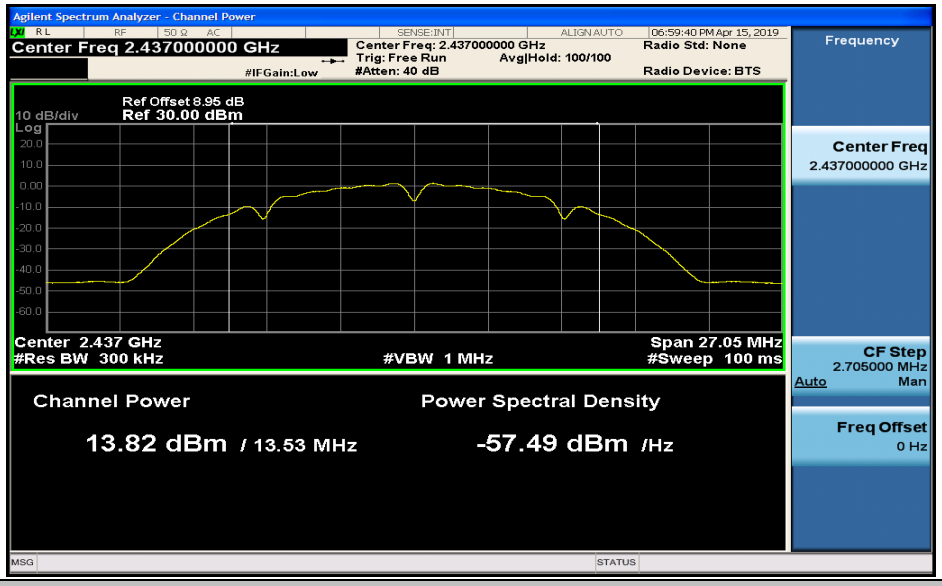
3.Maximum conducted (average) output power

Test Mode	Test Channel	Ant	Level [dBm]	10log(1/x) Factor[dB]	Power [dBm]	Limit [dBm]	Verdict
11B	2412	Ant1	15.37	0.00	15.37	30	PASS
11B	2437	Ant1	13.82	0.00	13.82	30	PASS
11B	2462	Ant1	14.89	0.00	14.89	30	PASS
11G	2412	Ant1	14.02	0.33	14.35	30	PASS
11G	2437	Ant1	13.1	0.17	13.27	30	PASS
11G	2462	Ant1	13.34	0.19	13.53	30	PASS
11N20SISO	2412	Ant1	14.02	0.24	14.26	30	PASS
11N20SISO	2437	Ant1	13.02	0.20	13.22	30	PASS
11N20SISO	2462	Ant1	13.25	0.26	13.51	30	PASS
11N40SISO	2422	Ant1	13.87	0.55	14.41	30	PASS
11N40SISO	2437	Ant1	12.88	0.40	13.28	30	PASS
11N40SISO	2452	Ant1	13.48	0.73	14.20	30	PASS

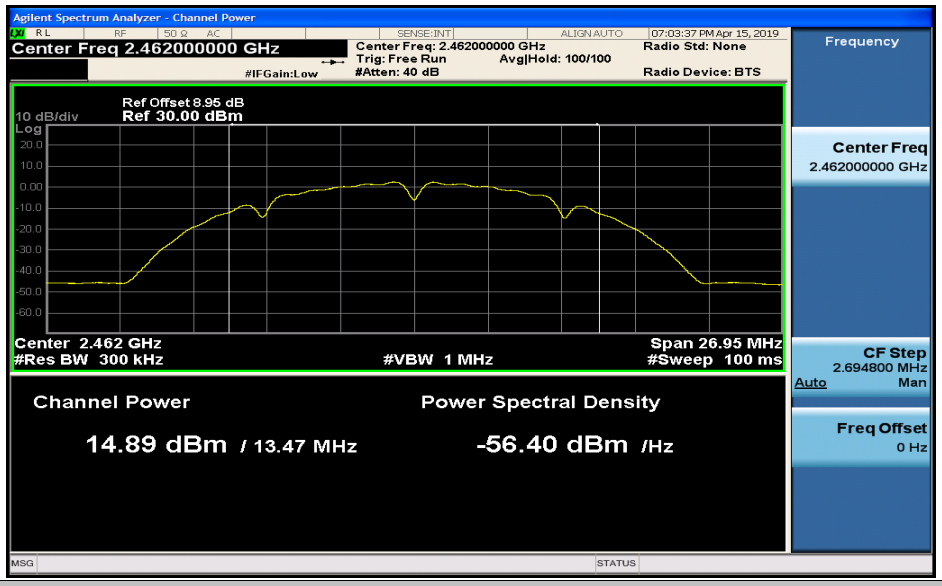
Maximum conducted (average) output power_11B_2412_Ant1



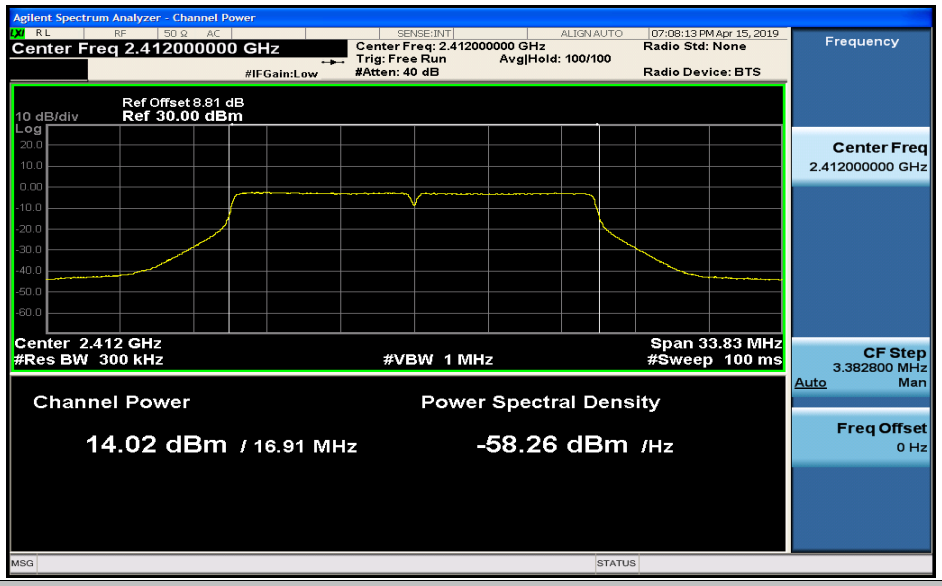
Maximum conducted (average) output power_11B_2437_Ant1



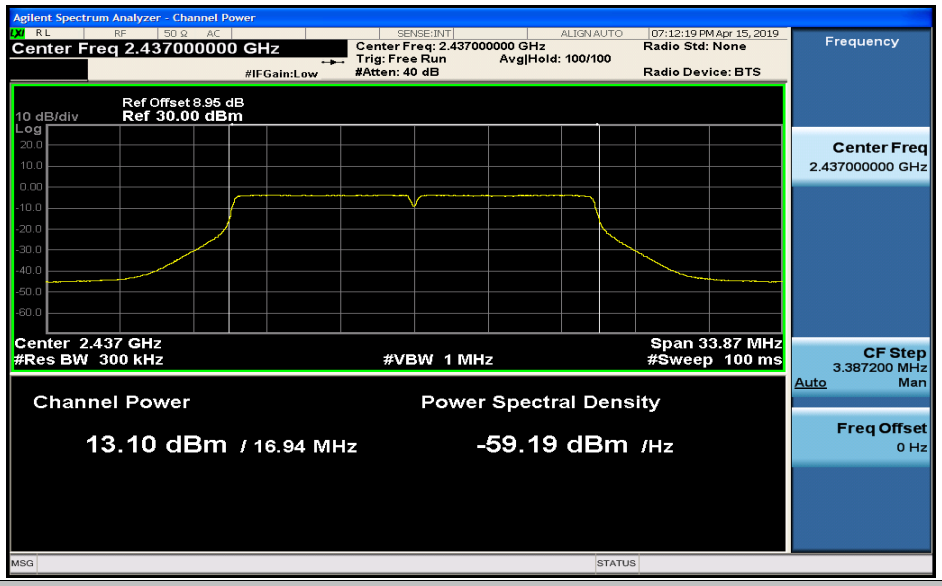
Maximum conducted (average) output power_11B_2462_Ant1



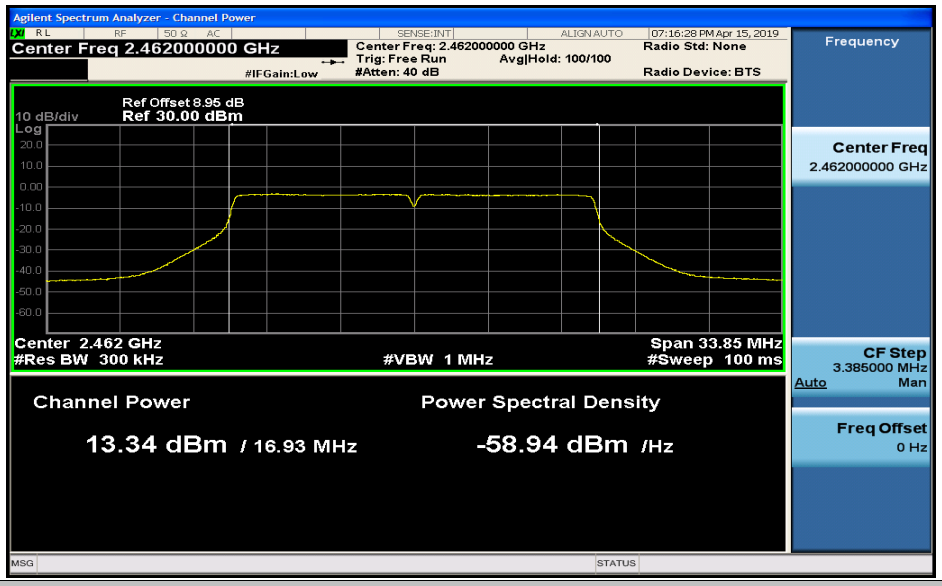
Maximum conducted (average) output power_11G_2412_Ant1



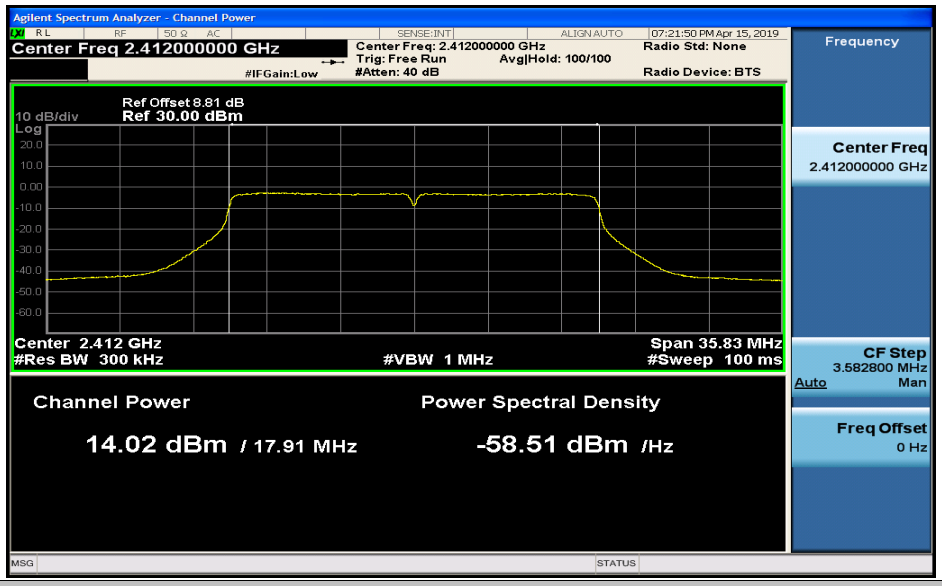
Maximum conducted (average) output power_11G_2437_Ant1



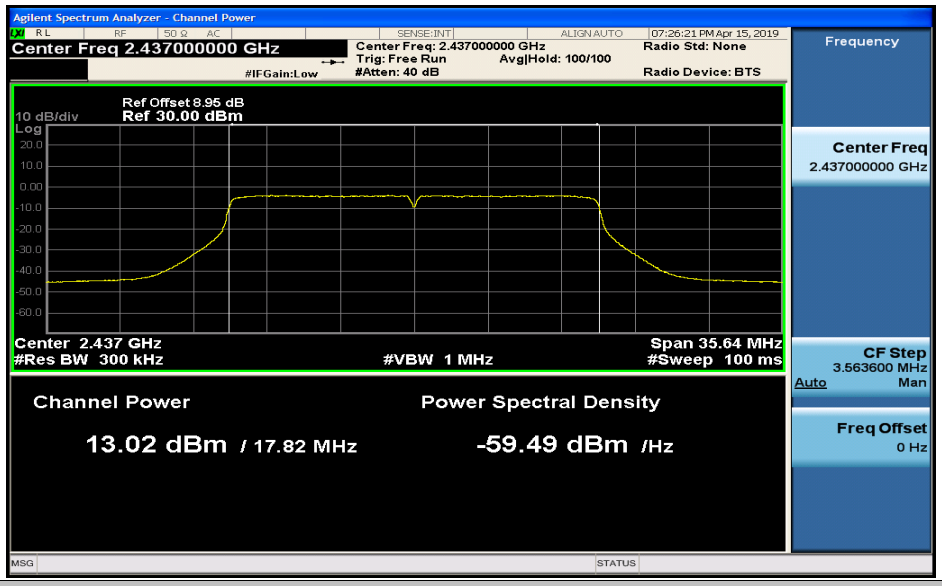
Maximum conducted (average) output power_11G_2462_Ant1



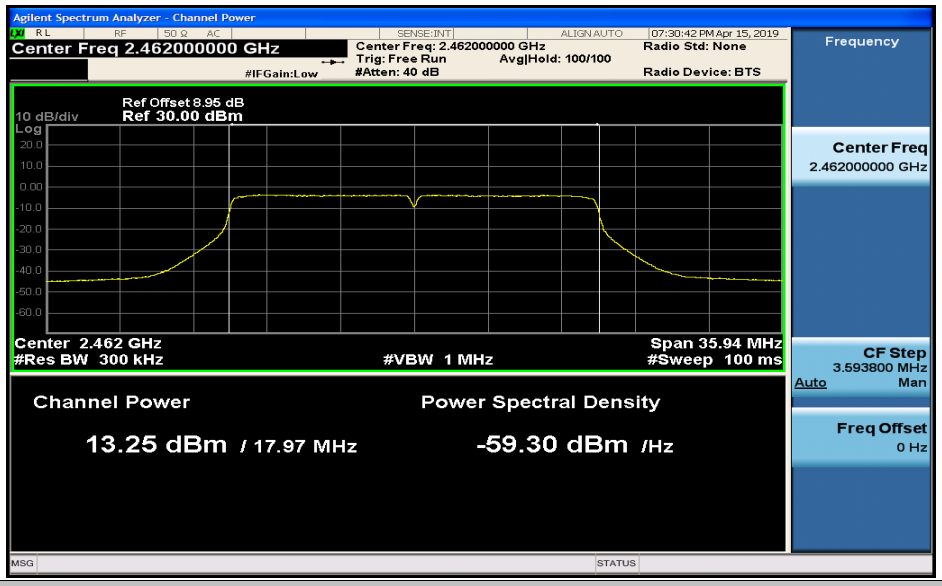
Maximum conducted (average) output power_11N20SISO_2412_Ant1



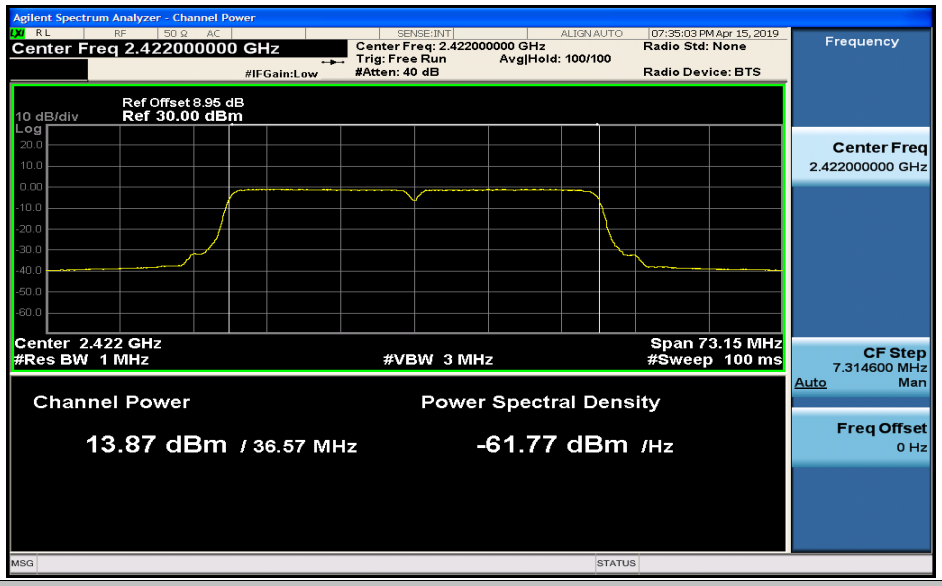
Maximum conducted (average) output power_11N20SISO_2437_Ant1



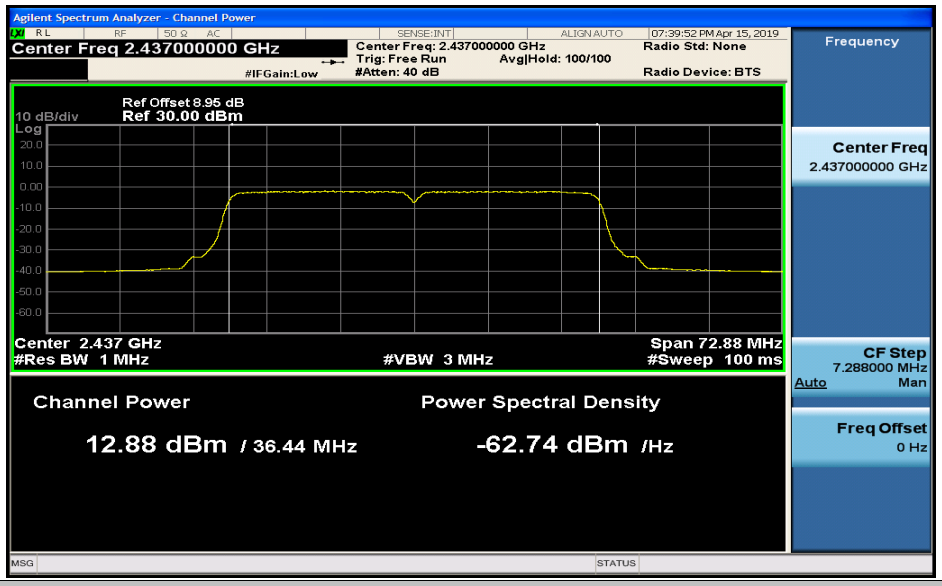
Maximum conducted (average) output power_11N20SISO_2462_Ant1



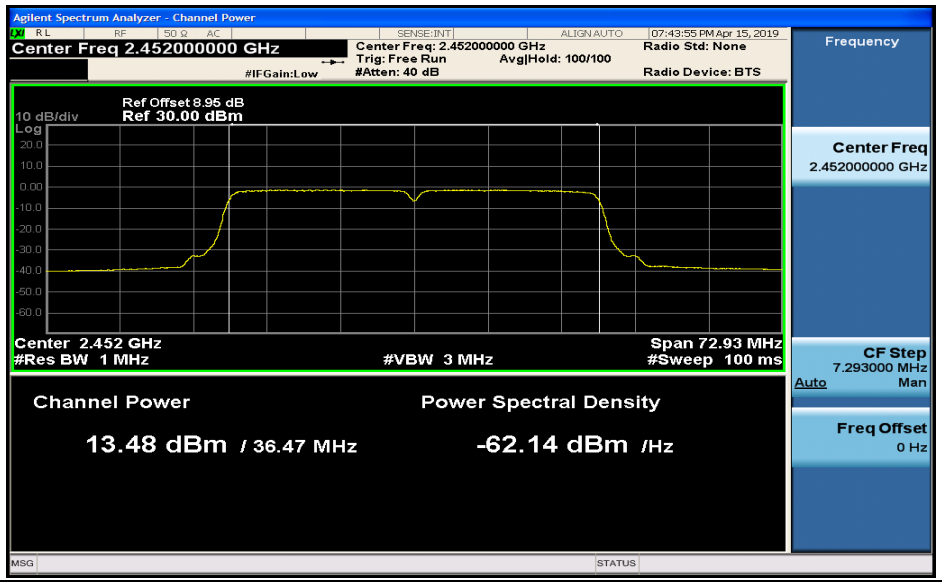
Maximum conducted (average) output power_11N40SISO_2422_Ant1



Maximum conducted (average) output power_11N40SISO_2437_Ant1



Maximum conducted (average) output power_11N40SISO_2452_Ant1



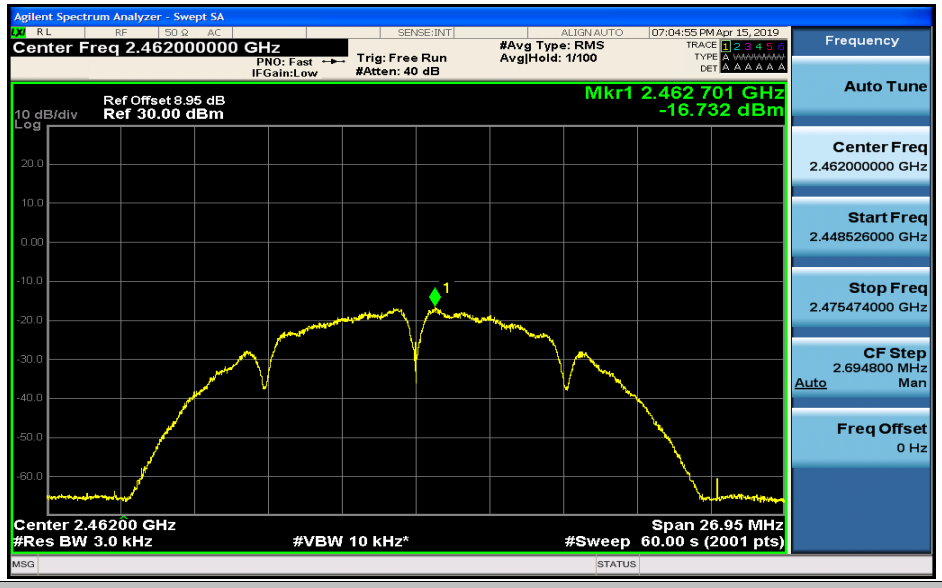
4.Maximum(average) power spectral density

Test Mode	Test Channel	Ant	Level [dBm/3kHz]	10log(1/x) Factor[dB]	PSD[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	2412	Ant1	-16.45	0.00	-16.45	8.00	PASS
11B	2437	Ant1	-17.66	0.00	-17.66	8.00	PASS
11B	2462	Ant1	-16.73	0.00	-16.73	8.00	PASS
11G	2412	Ant1	-20.18	0.33	-19.85	8.00	PASS
11G	2437	Ant1	-20.92	0.17	-20.75	8.00	PASS
11G	2462	Ant1	-20.79	0.19	-20.60	8.00	PASS
11N20SISO	2412	Ant1	-20.01	0.24	-19.77	8.00	PASS
11N20SISO	2437	Ant1	-21.26	0.20	-21.06	8.00	PASS
11N20SISO	2462	Ant1	-20.59	0.26	-20.33	8.00	PASS
11N40SISO	2422	Ant1	-22.85	0.55	-22.30	8.00	PASS
11N40SISO	2437	Ant1	-24.43	0.40	-24.03	8.00	PASS
11N40SISO	2452	Ant1	-23.88	0.73	-23.15	8.00	PASS

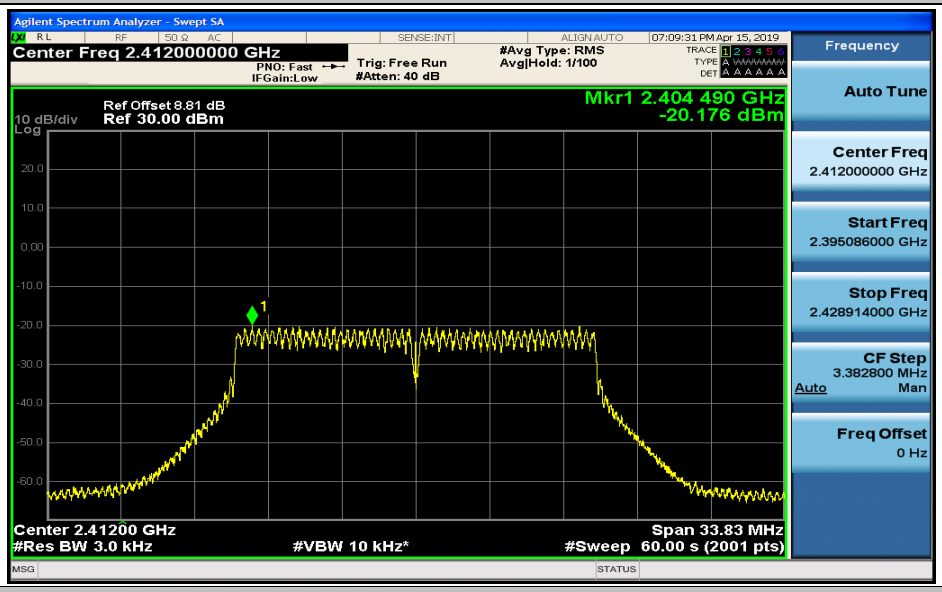
Maximum(average) power spectral density_11B_2412_Ant1

Maximum(average) power spectral density_11B_2437_Ant1

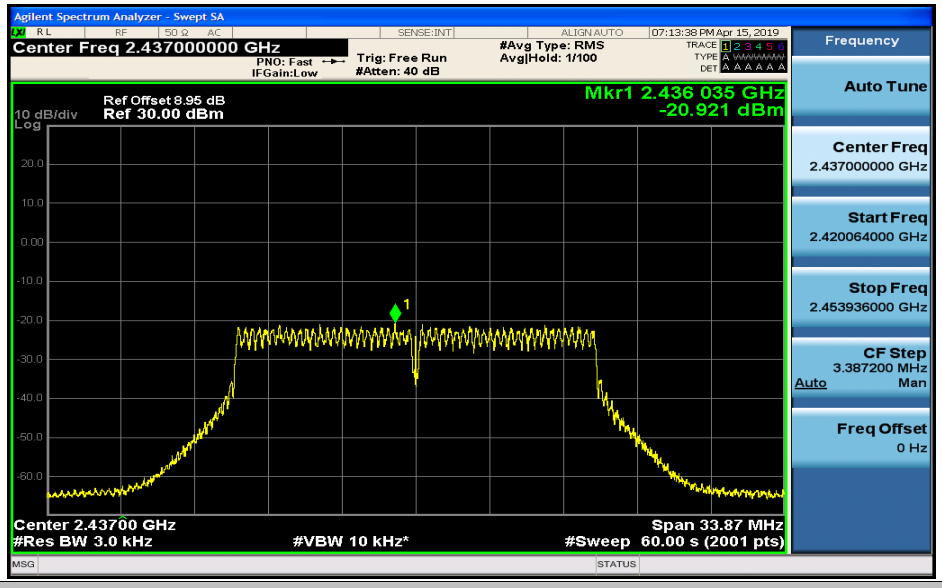
Maximum(average) power spectral density_11B_2462_Ant1



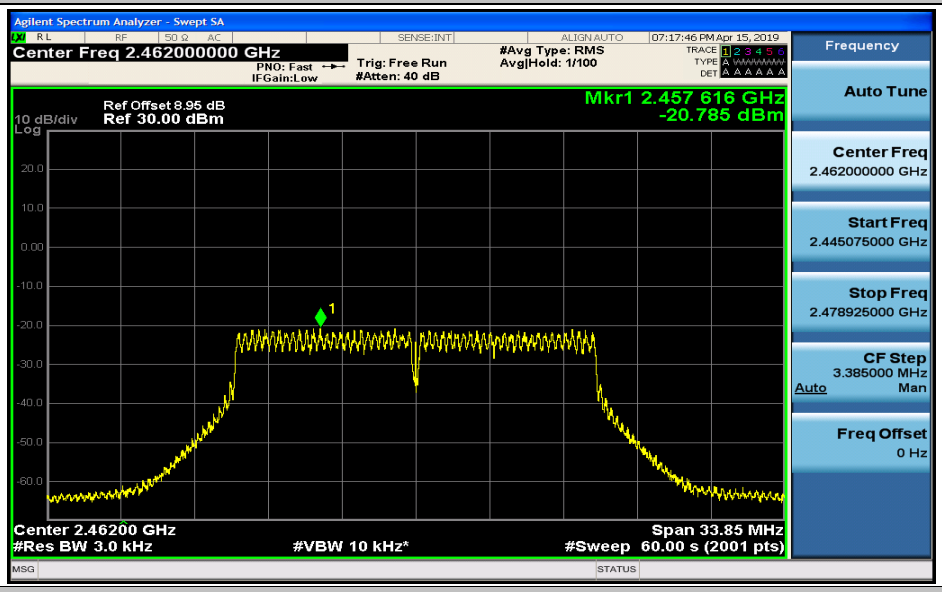
Maximum(average) power spectral density_11G_2412_Ant1



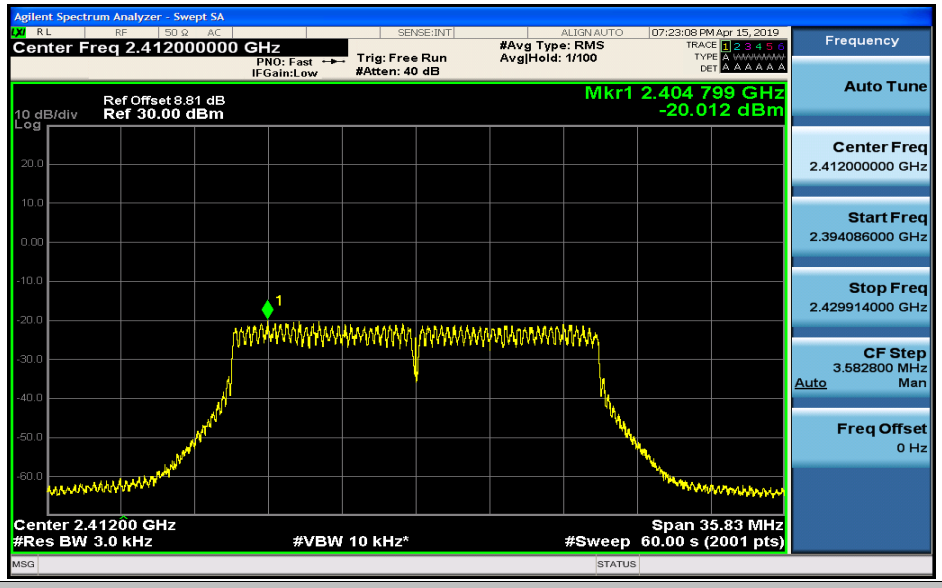
Maximum(average) power spectral density_11G_2437_Ant1



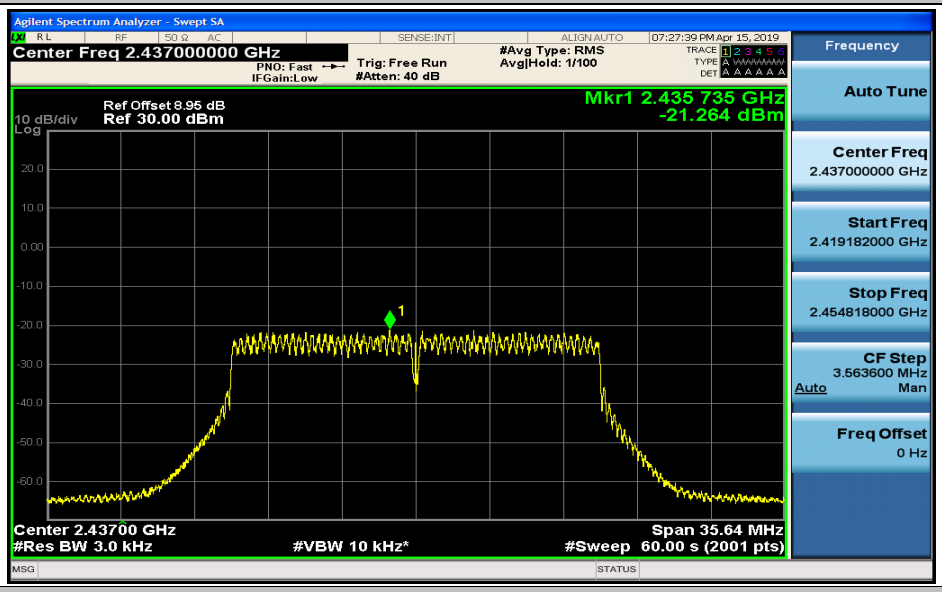
Maximum(average) power spectral density_11G_2462_Ant1



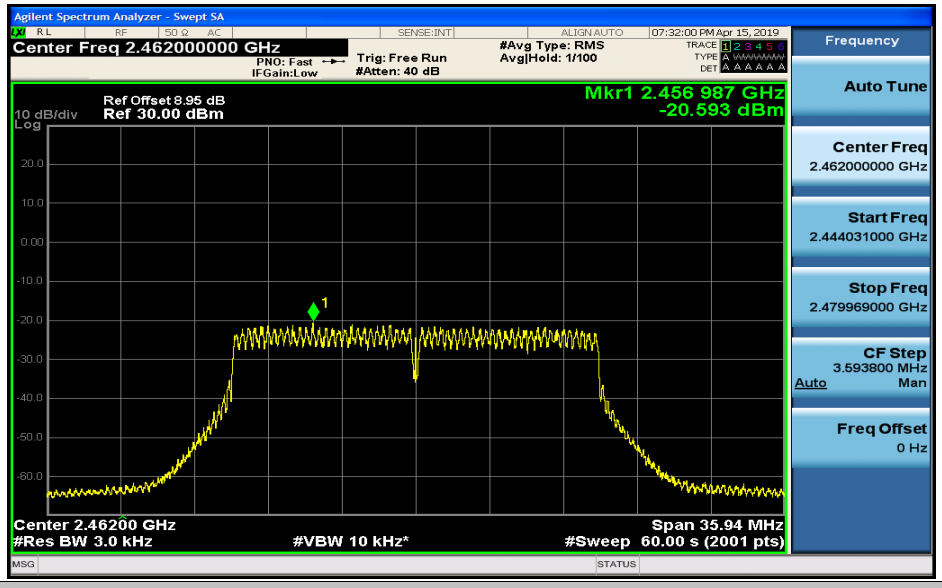
Maximum(average) power spectral density_11N20SISO_2412_Ant1



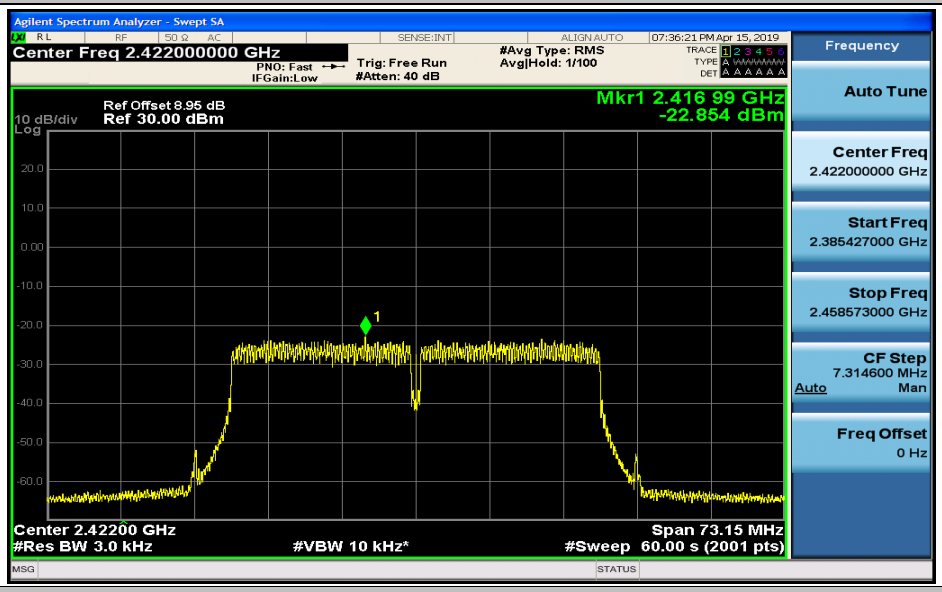
Maximum(average) power spectral density_11N20SISO_2437_Ant1



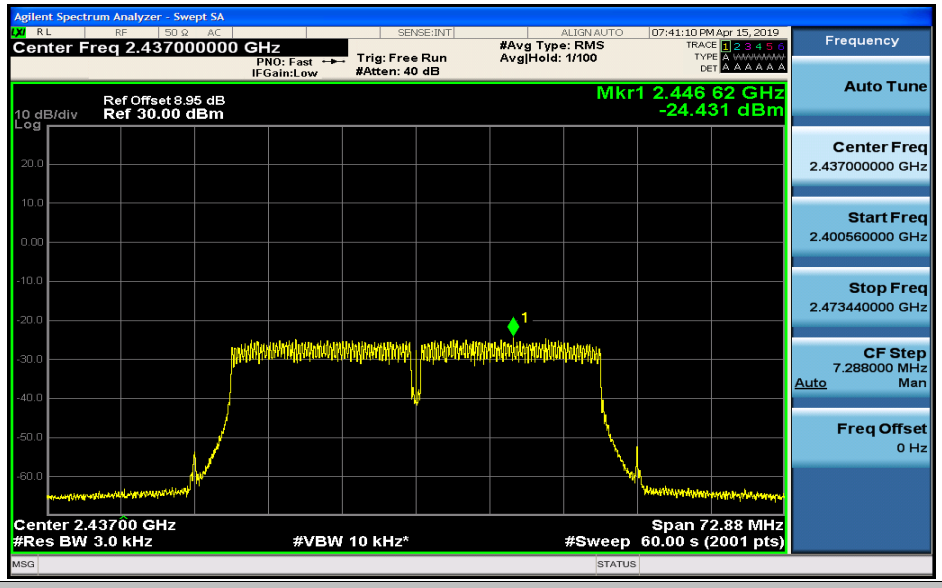
Maximum(average) power spectral density_11N20SISO_2462_Ant1



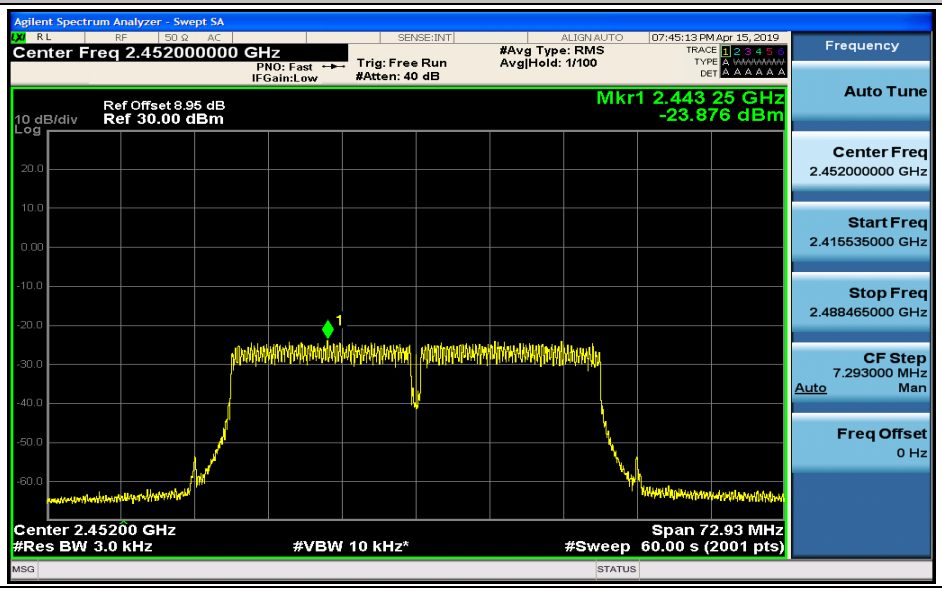
Maximum(average) power spectral density_11N40SISO_2422_Ant1



Maximum(average) power spectral density_11N40SISO_2437_Ant1



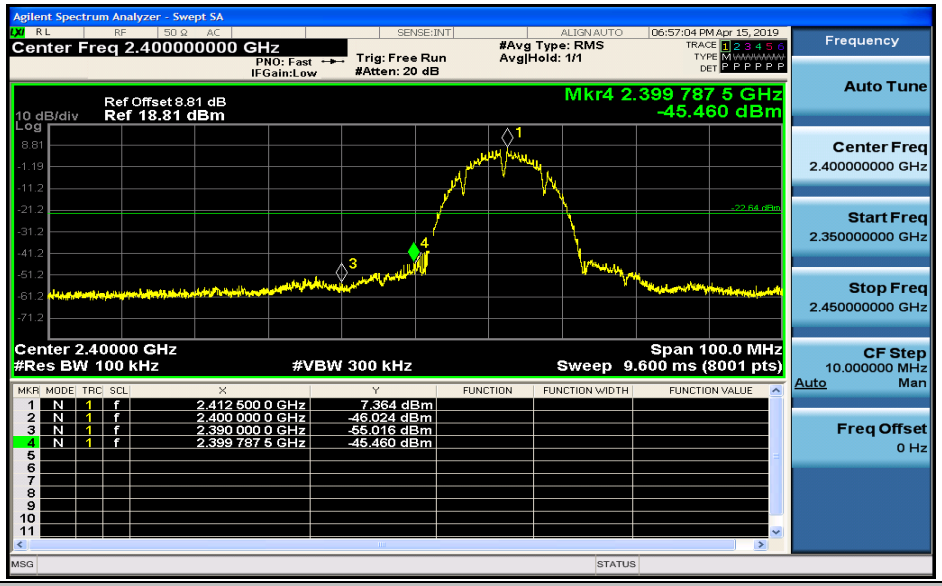
Maximum(average) power spectral density_11N40SISO_2452_Ant1



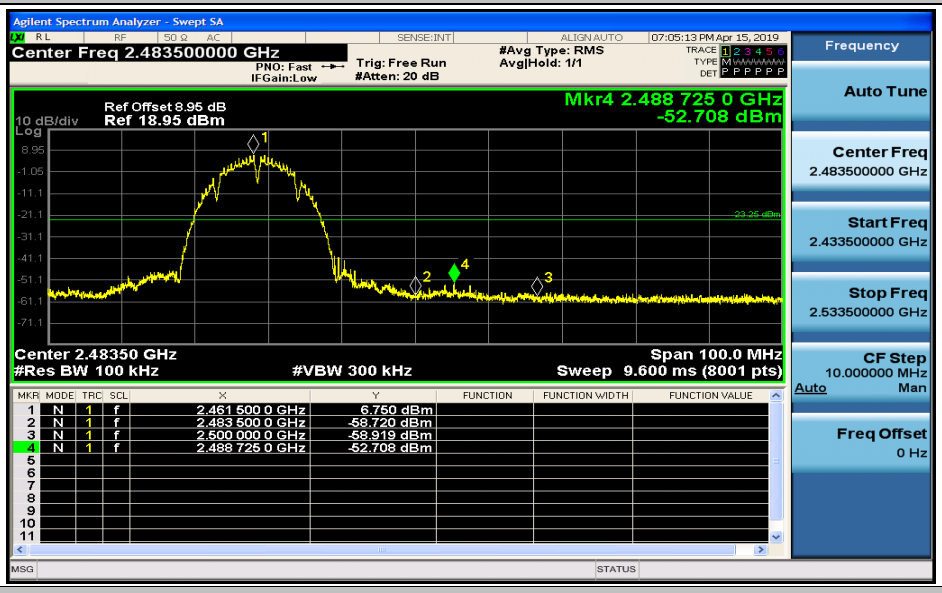
5.Band-edge for RF Conducted Emissions

Test Mode	Test Channel	Ant	Carrier Power[dBm]	Max. Spurious Level [dBm]	Limit [dBm]	Verdict
11B	2412	Ant1	7.36	-45.46	-22.64	PASS
11B	2462	Ant1	6.75	-52.71	-23.25	PASS
11G	2412	Ant1	2.62	-32.60	-27.38	PASS
11G	2462	Ant1	2.29	-43.62	-27.71	PASS
11N20SISO	2412	Ant1	2.79	-33.26	-27.21	PASS
11N20SISO	2462	Ant1	2.13	-43.13	-27.87	PASS
11N40SISO	2422	Ant1	-0.02	-34.51	-30.02	PASS
11N40SISO	2452	Ant1	-0.34	-37.13	-30.34	PASS

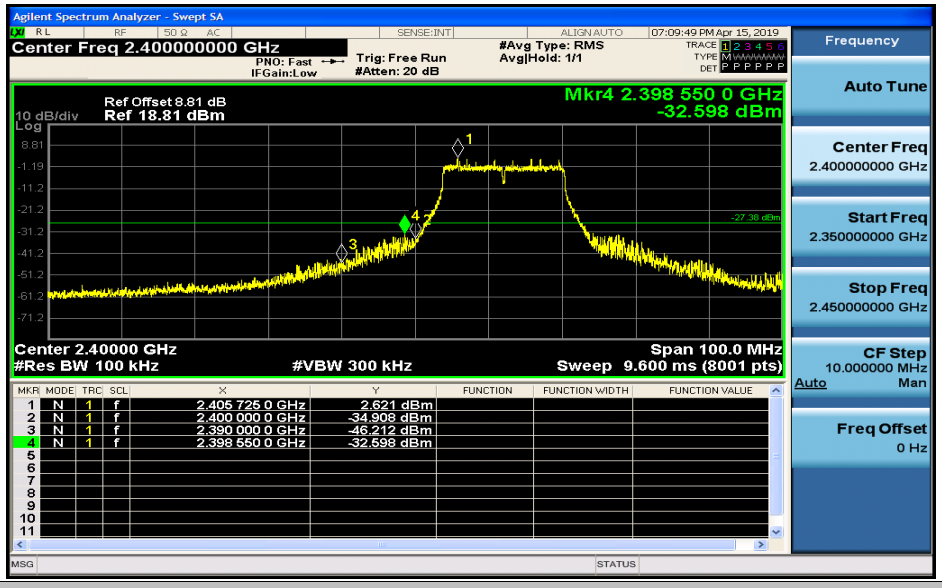
Band-edge for RF Conducted Emissions_11B_2412_Ant1



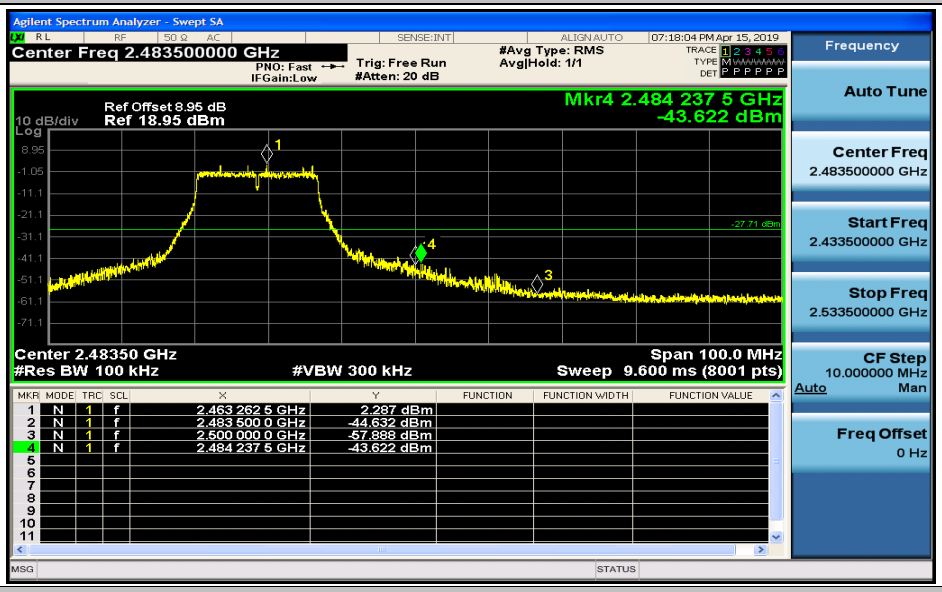
Band-edge for RF Conducted Emissions_11B_2462_Ant1



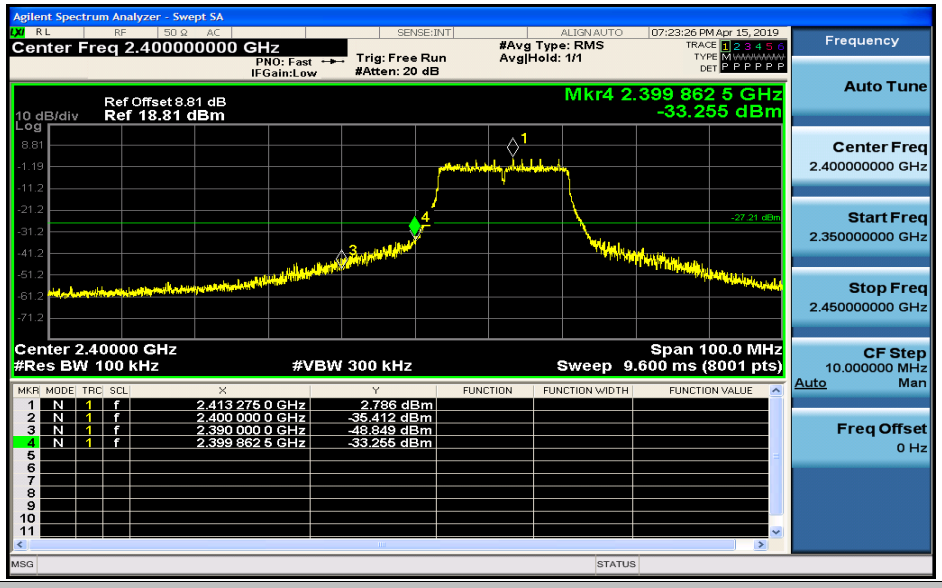
Band-edge for RF Conducted Emissions_11G_2412_Ant1



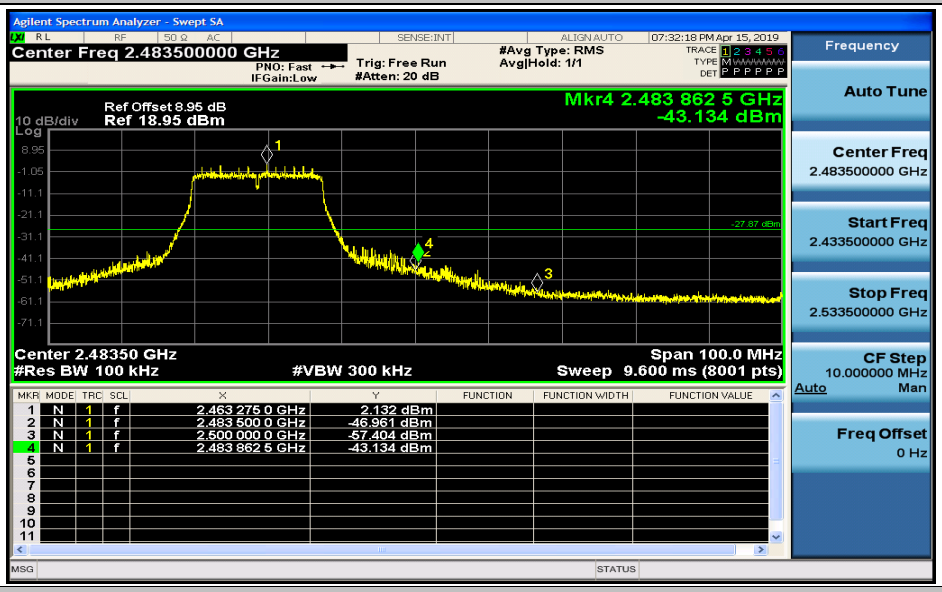
Band-edge for RF Conducted Emissions_11G_2462_Ant1



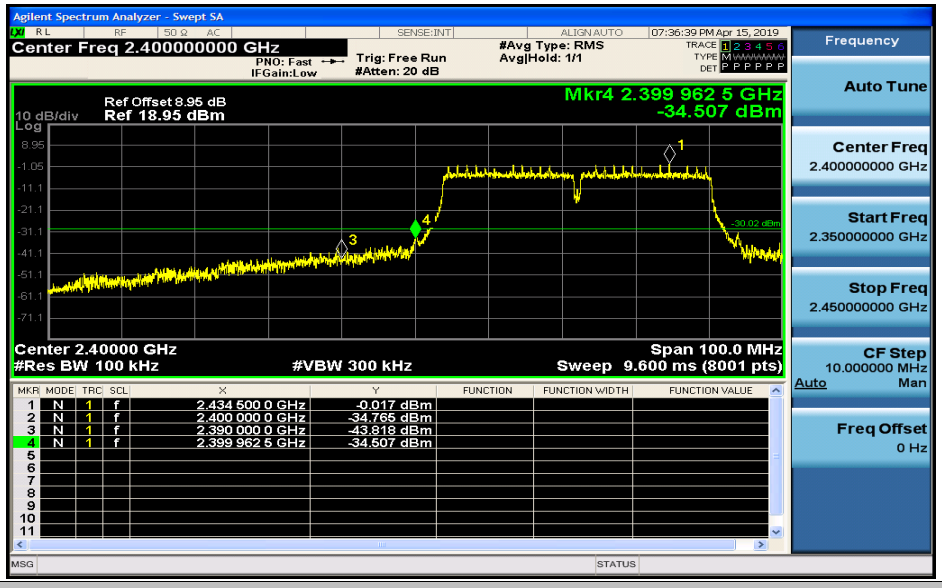
Band-edge for RF Conducted Emissions_11N20SISO_2412_Ant1



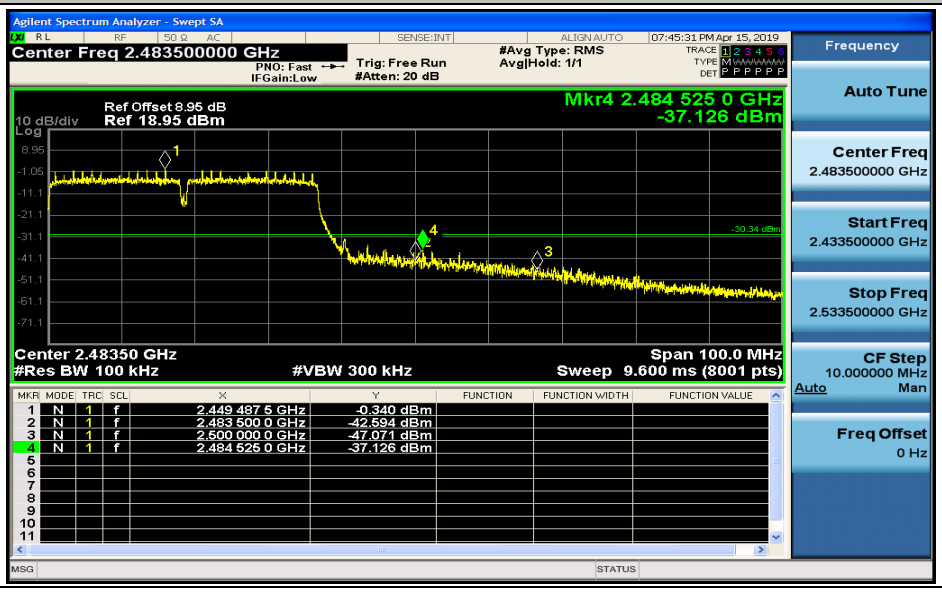
Band-edge for RF Conducted Emissions_11N20SISO_2462_Ant1



Band-edge for RF Conducted Emissions_11N40SISO_2422_Ant1



Band-edge for RF Conducted Emissions_11N40SISO_2452_Ant1

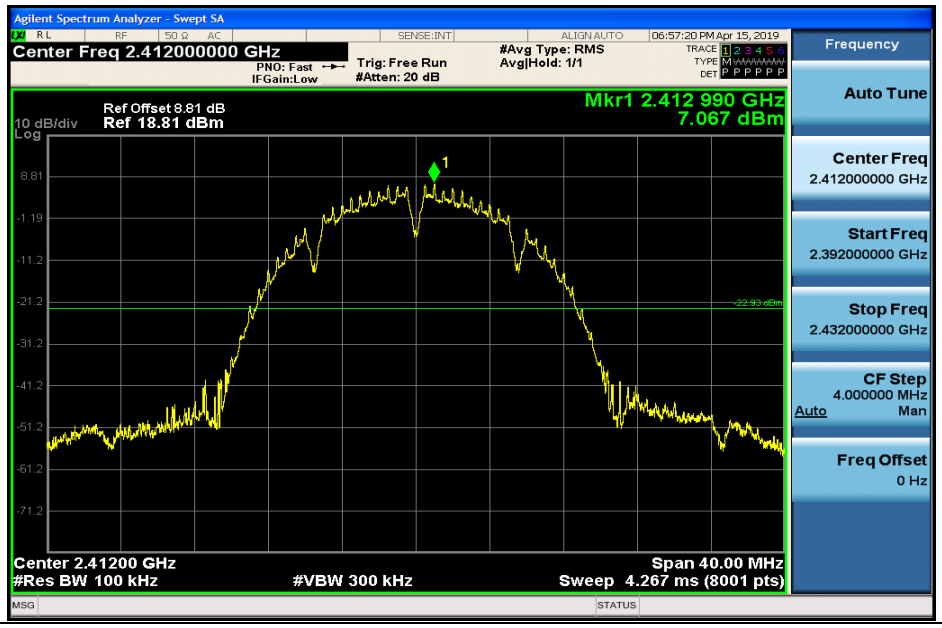


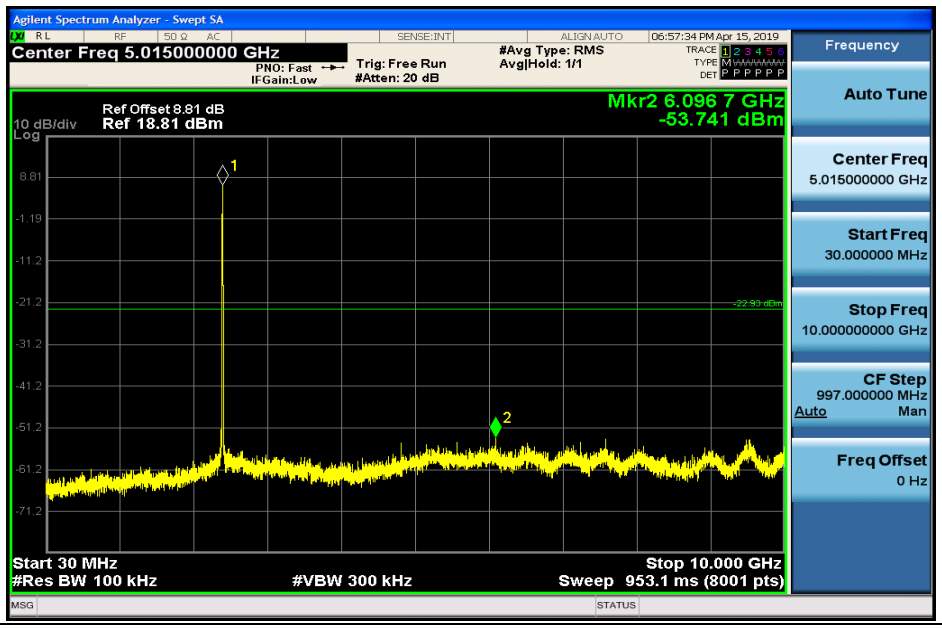
6.RF Conducted Spurious Emissions

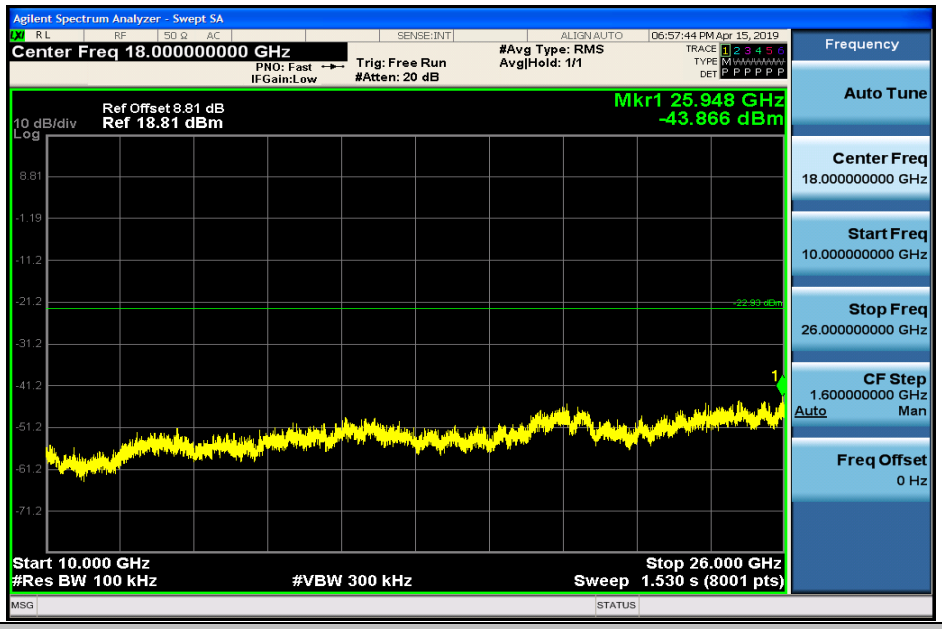
Test Mode	Test Channel	Ant	StartFre [MHz]	StopFre [MHz]	RBW [kHz]	VBW [kHz]	Pref[dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	2412	Ant1	30	10000	100	300	7.07	-53.74	<-22.93	PASS
11B	2412	Ant1	10000	26000	100	300	7.067	-43.866	<-22.933	PASS
11B	2437	Ant1	30	10000	100	300	5.79	-54.12	<-24.21	PASS
11B	2437	Ant1	10000	26000	100	300	5.788	-43.213	<-24.212	PASS
11B	2462	Ant1	30	10000	100	300	6.90	-53.63	<-23.10	PASS
11B	2462	Ant1	10000	26000	100	300	6.898	-44.125	<-23.102	PASS
11G	2412	Ant1	30	10000	100	300	3.01	-54.05	<-26.99	PASS
11G	2412	Ant1	10000	26000	100	300	3.009	-44.157	<-26.991	PASS
11G	2437	Ant1	30	10000	100	300	2.03	-52.36	<-27.97	PASS
11G	2437	Ant1	10000	26000	100	300	2.032	-43.651	<-27.968	PASS
11G	2462	Ant1	30	10000	100	300	2.17	-53.51	<-27.83	PASS
11G	2462	Ant1	10000	26000	100	300	2.17	-44.236	<-27.83	PASS
11N20SISO	2412	Ant1	30	10000	100	300	3.04	-53.84	<-26.97	PASS
11N20SISO	2412	Ant1	10000	26000	100	300	3.035	-43.490	<-26.965	PASS
11N20SISO	2437	Ant1	30	10000	100	300	1.77	-54.43	<-28.23	PASS
11N20SISO	2437	Ant1	10000	26000	100	300	1.773	-44.508	<-28.227	PASS
11N20SISO	2462	Ant1	30	10000	100	300	2.17	-52.91	<-27.83	PASS
11N20SISO	2462	Ant1	10000	26000	100	300	2.169	-43.397	<-27.831	PASS
11N40SISO	2422	Ant1	30	10000	100	300	0.12	-53.62	<-29.88	PASS
11N40SISO	2422	Ant1	10000	26000	100	300	0.117	-43.734	<-29.883	PASS

11N40SISO	2437	Ant1	30	10000	100	300	-0.83	-54.32	<-30.83	PASS
11N40SISO	2437	Ant1	10000	26000	100	300	-0.829	-43.812	<-30.829	PASS
11N40SISO	2452	Ant1	30	10000	100	300	-0.40	-53.71	<-30.40	PASS
11N40SISO	2452	Ant1	10000	26000	100	300	-0.397	-44.060	<-30.397	PASS

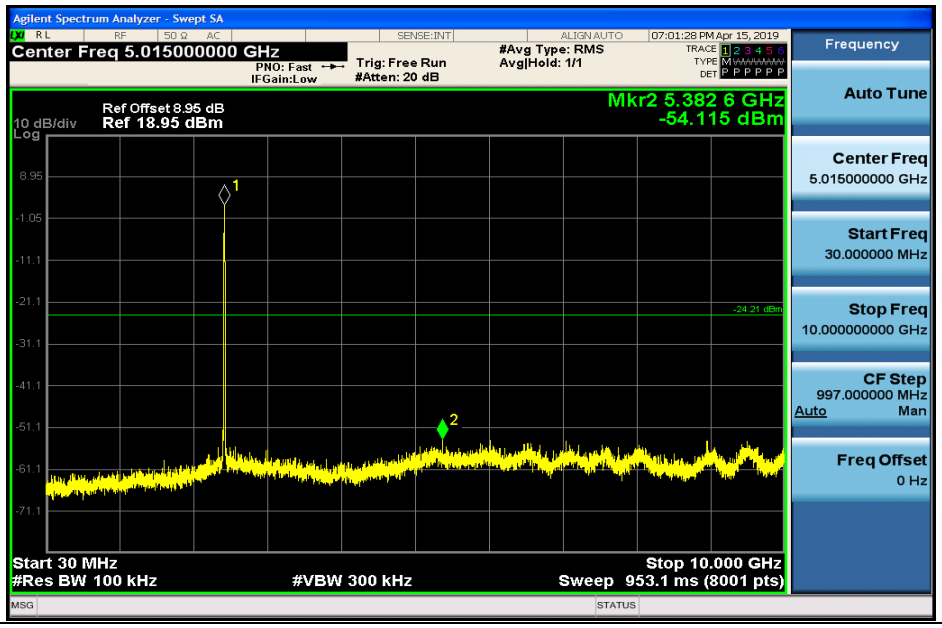
RF Conducted Spurious Emissions_11B_2412

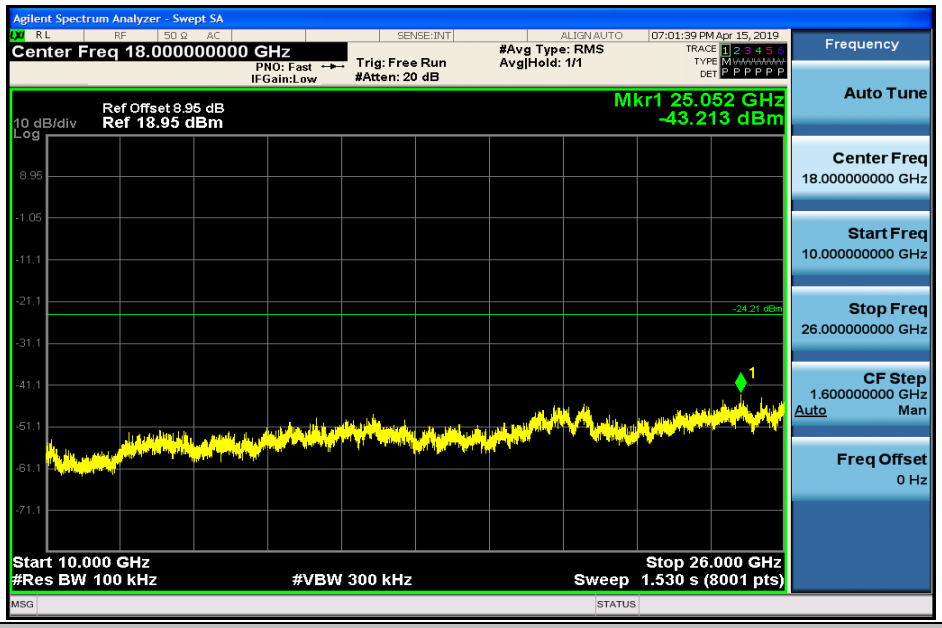




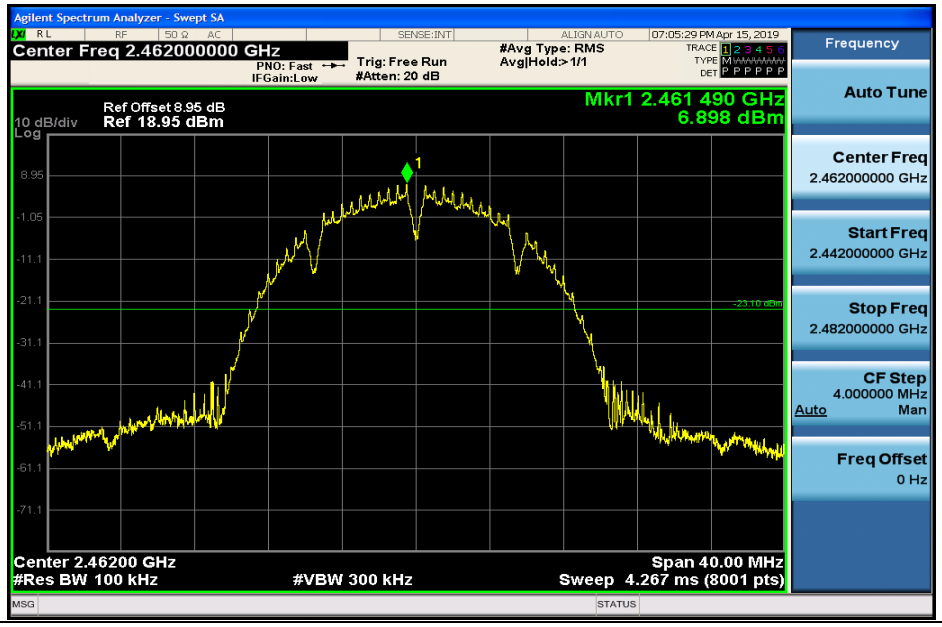


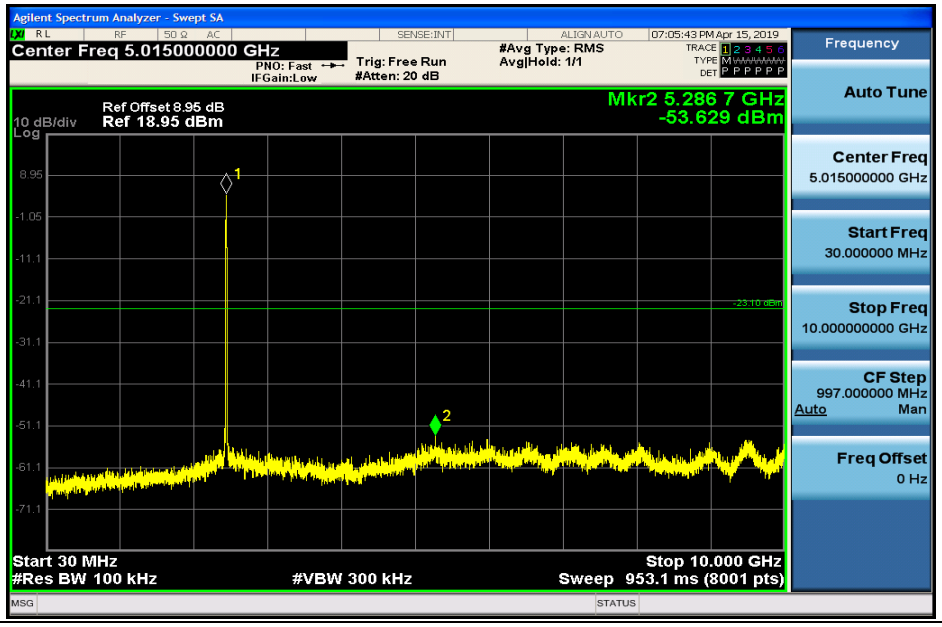
RF Conducted Spurious Emissions_11B_2437

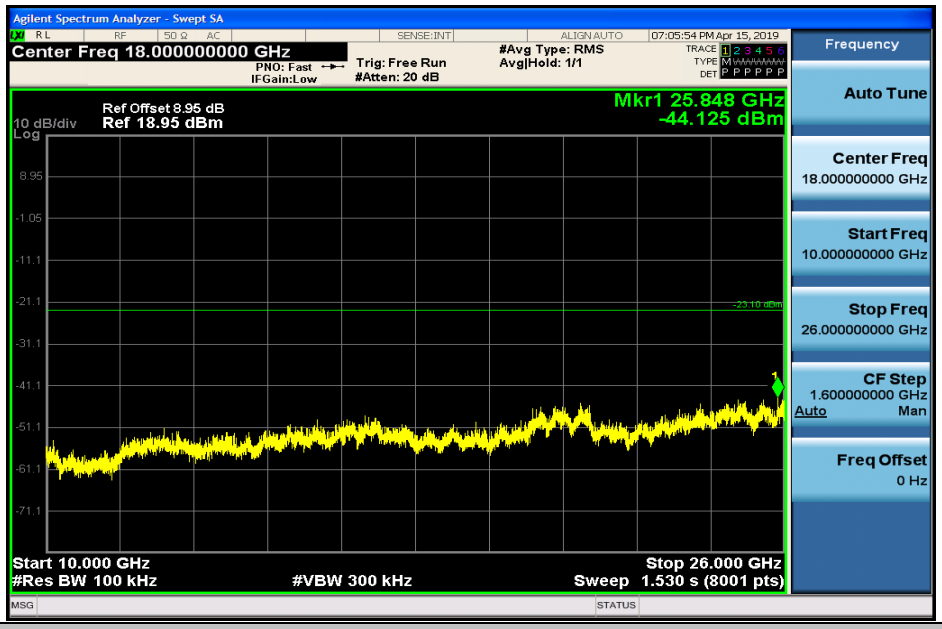




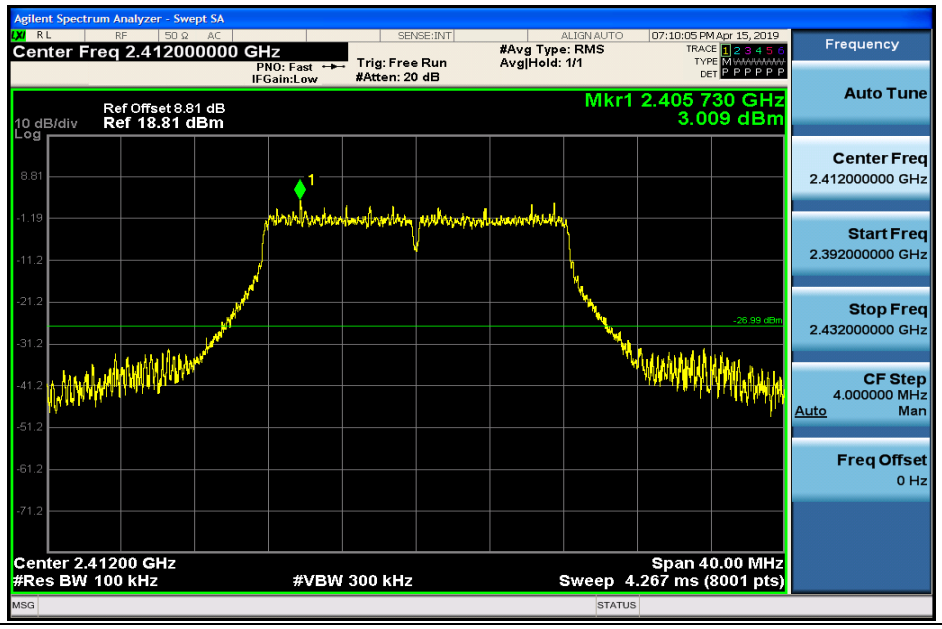
RF Conducted Spurious Emissions_11B_2462

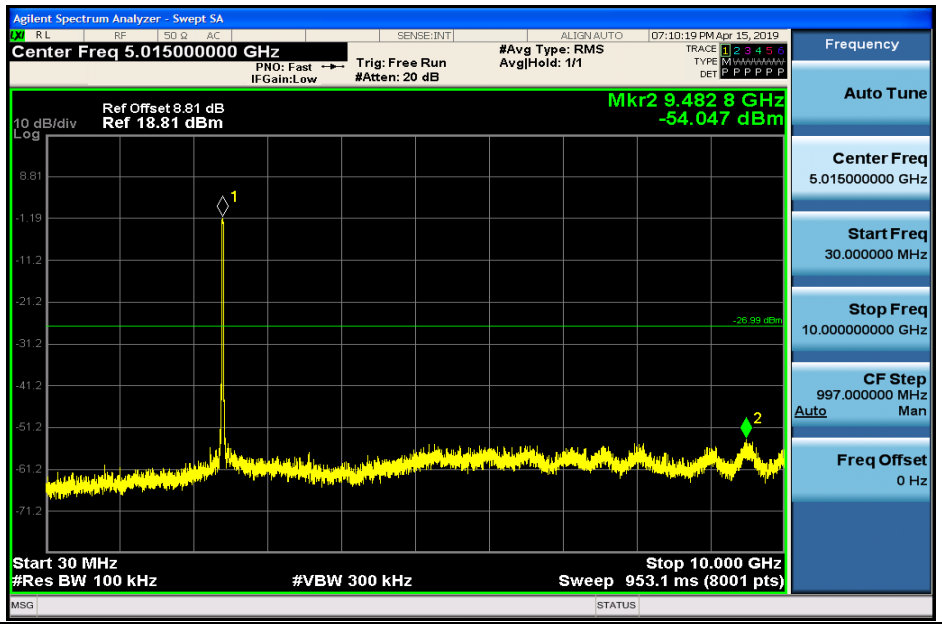

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.462000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold:>1/1
07:05:29 PM Apr 15, 2019
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr1 2.461 490 GHz
6.898 dBm
Center 2.46200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40.00 MHz
Sweep 4.267 ms (8001 pts)
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.442000000 GHz
Stop Freq
2.482000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz

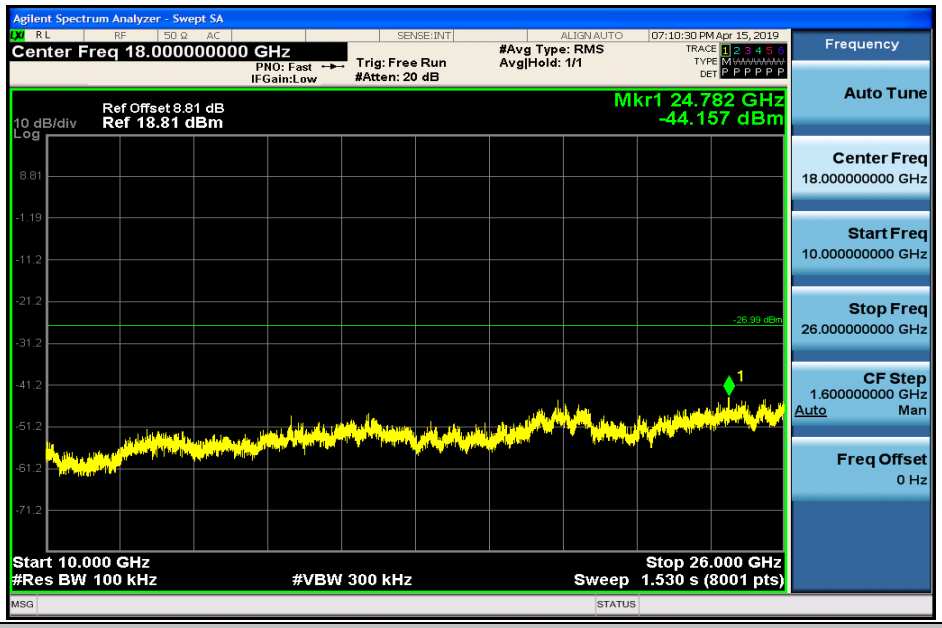

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 1/1
07:05:43 PM Apr 15, 2019
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 5.286 7 GHz
-53.629 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
Sweep 953.1 ms (8001 pts)
Frequency
Auto Tune
Center Freq
5.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
10.000000000 GHz
CF Step
997.000000 MHz
Auto
Man
Freq Offset
0 Hz



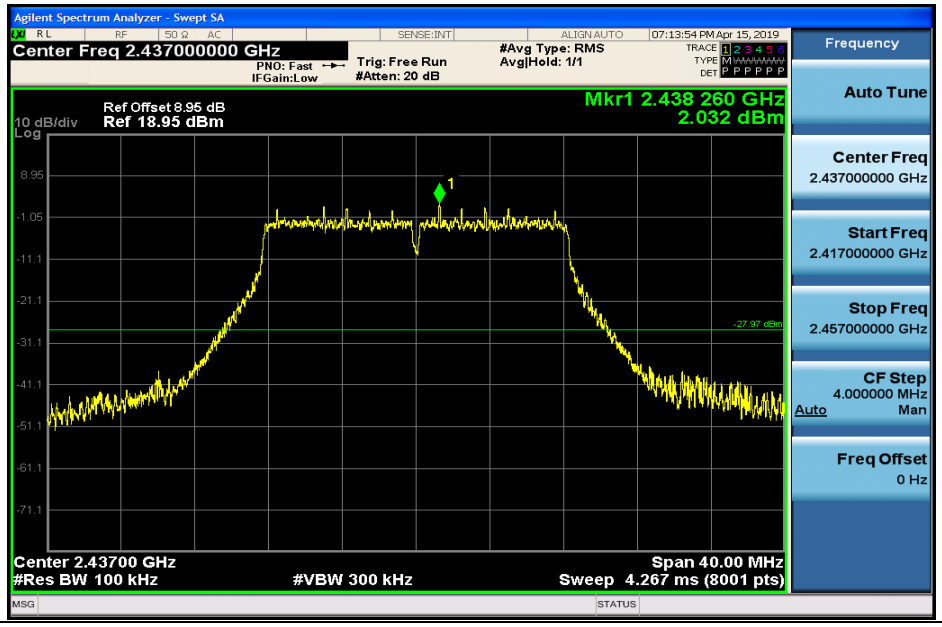
RF Conducted Spurious Emissions_11G_2412

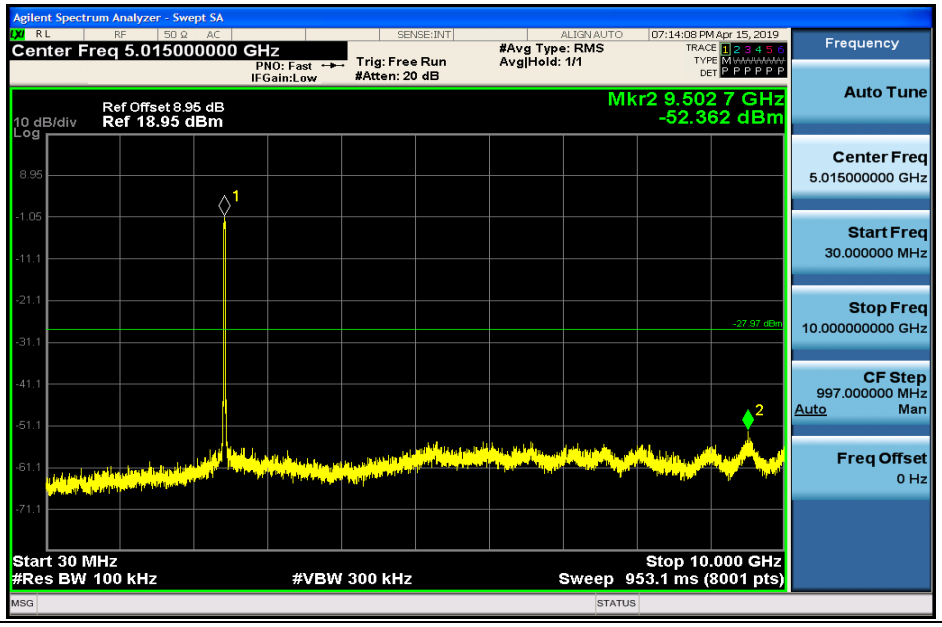


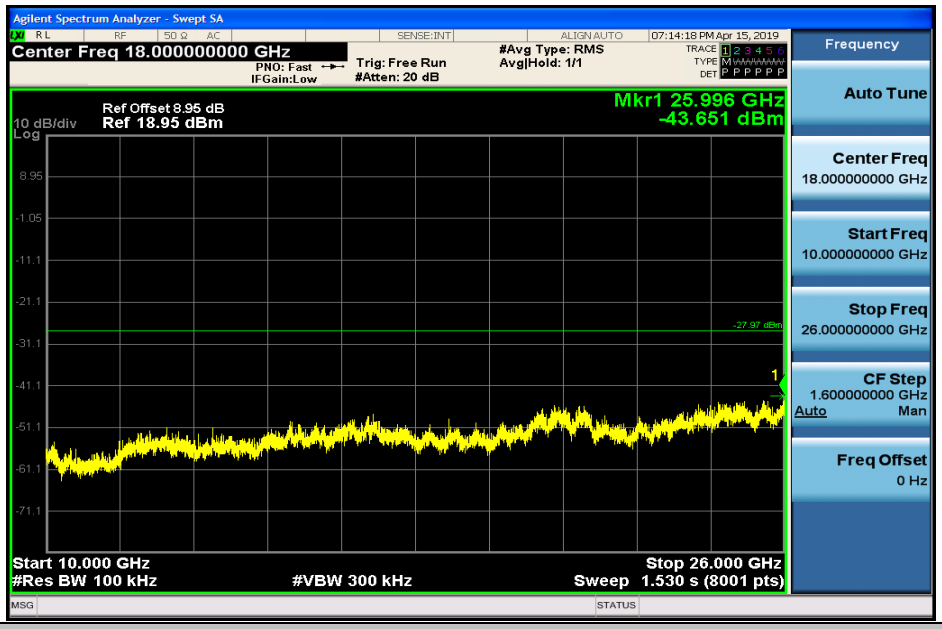




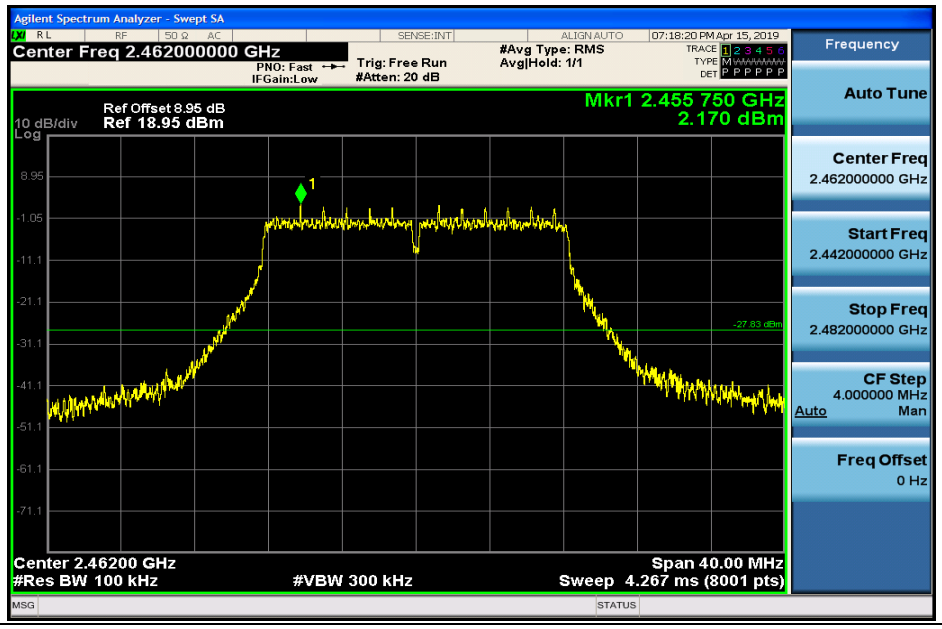
RF Conducted Spurious Emissions_11G_2437

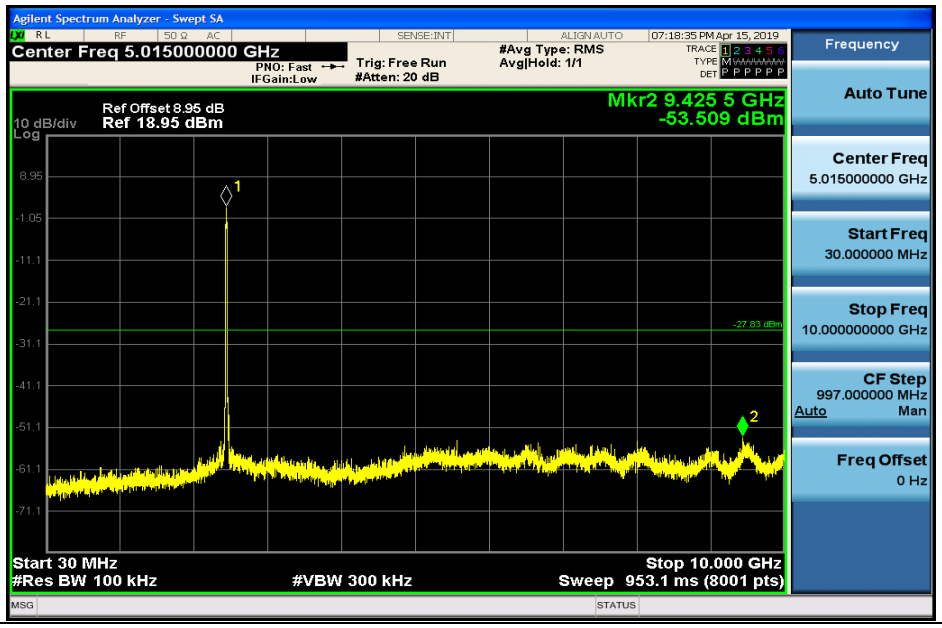

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.437000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 1/1
07:13:54 PM Apr 15, 2019
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr1 2.438 260 GHz
2.032 dBm
-27.97 dBm
Center 2.43700 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40.00 MHz
Sweep 4.267 ms (8001 pts)
Frequency
Auto Tune
Center Freq
2.437000000 GHz
Start Freq
2.417000000 GHz
Stop Freq
2.457000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz

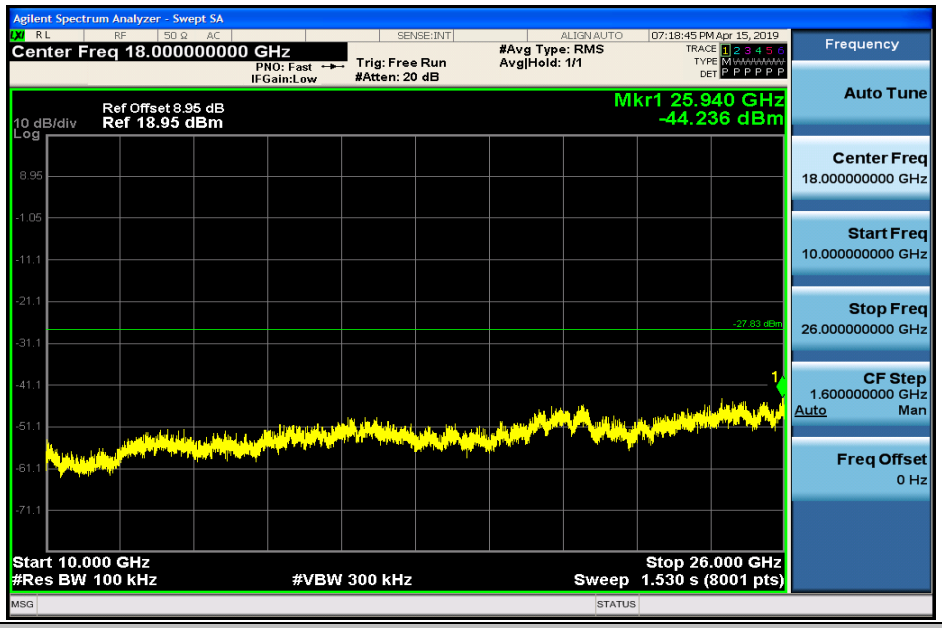

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 1/1
07:14:08 PM Apr 15, 2019
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 9.502 7 GHz
-52.362 dBm
-27.97 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
Sweep 953.1 ms (8001 pts)
Frequency
Auto Tune
Center Freq
5.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
10.000000000 GHz
CF Step
997.000000 MHz
Auto
Man
Freq Offset
0 Hz



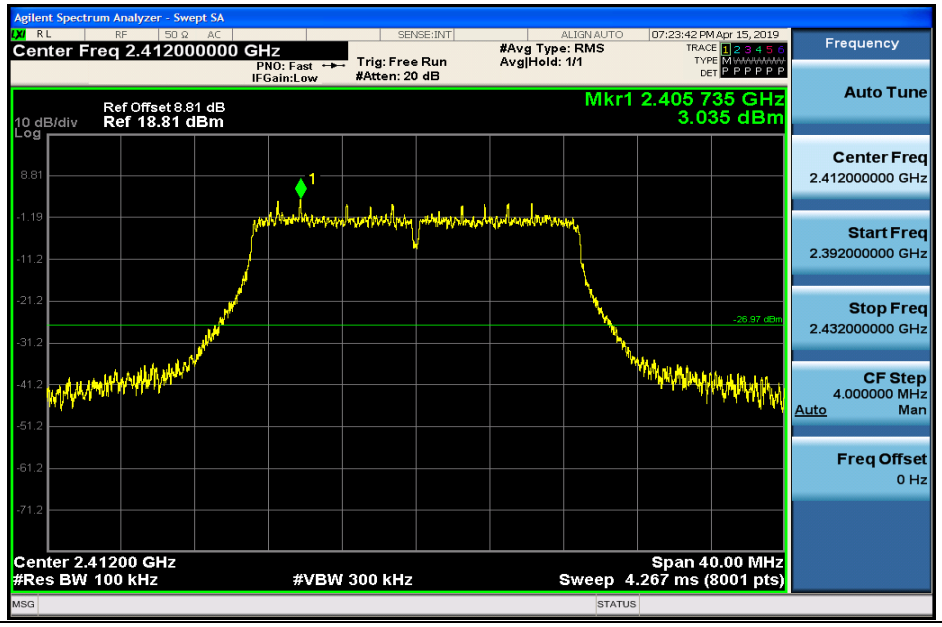
RF Conducted Spurious Emissions_11G_2462

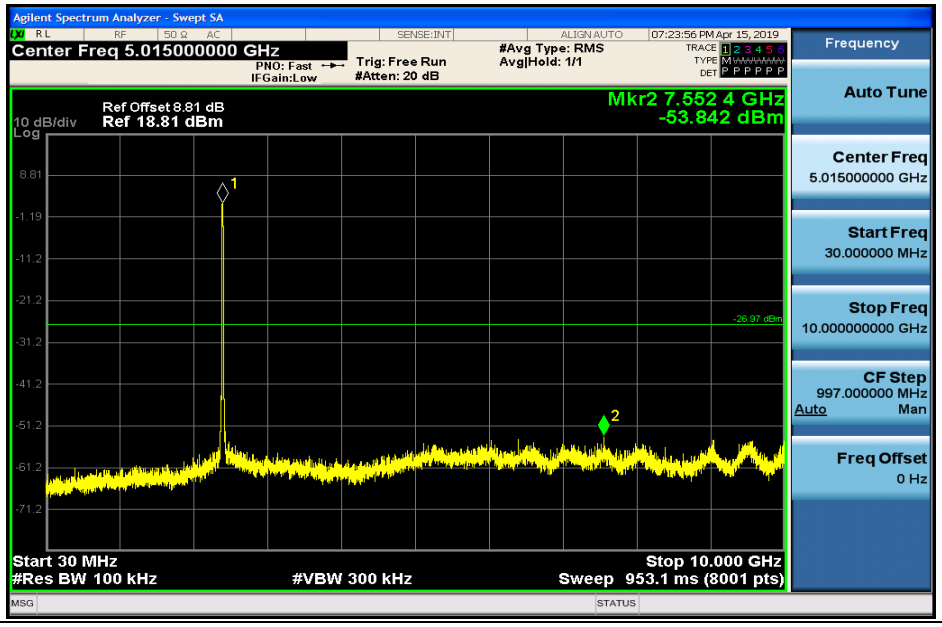


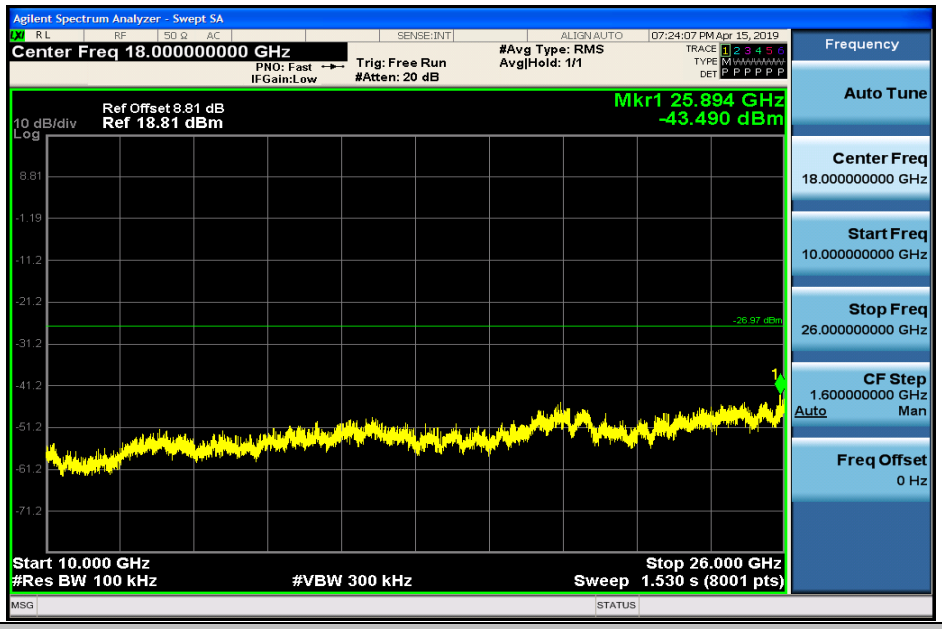




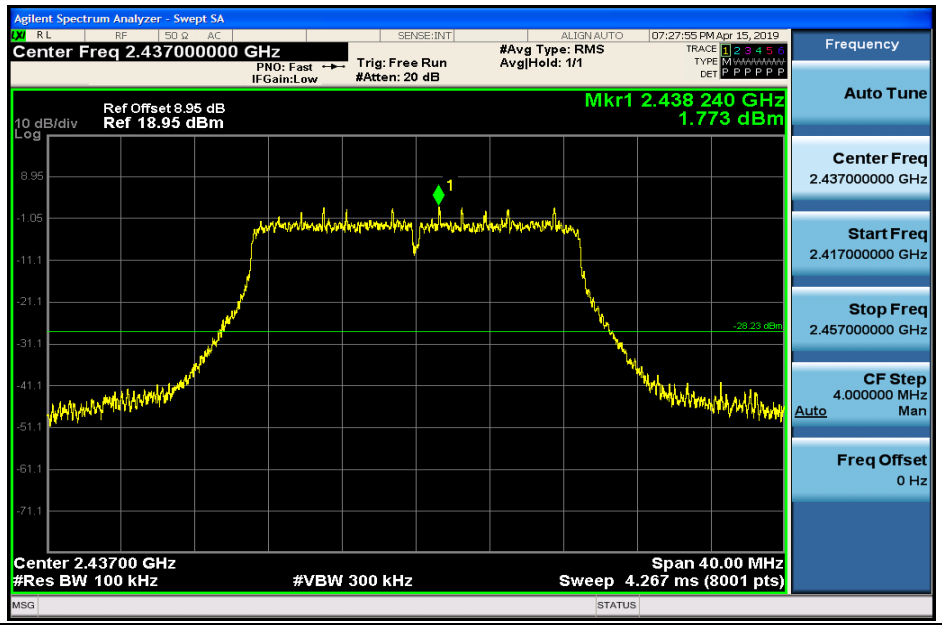
RF Conducted Spurious Emissions_11N20SISO_2412

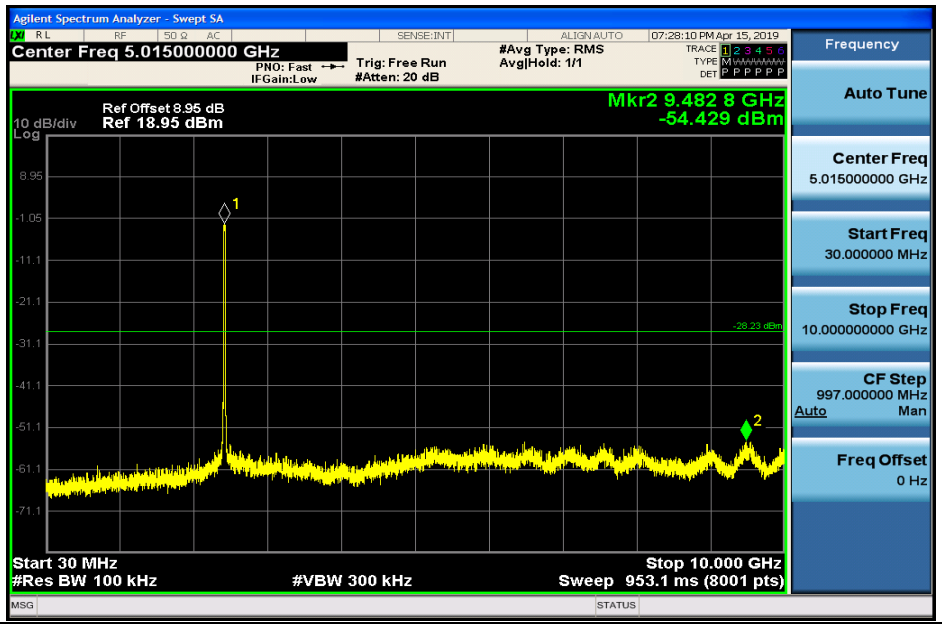

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.412000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 1/1
07:23:42 PM Apr 15, 2019
Ref Offset 8.81 dB
10 dB/div
Ref 18.81 dBm
Mkr1 2.405 735 GHz
3.035 dBm
-26.97 dBm
Center 2.41200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40.00 MHz
Sweep 4.267 ms (8001 pts)
Frequency
Auto Tune
Center Freq
2.412000000 GHz
Start Freq
2.392000000 GHz
Stop Freq
2.432000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz

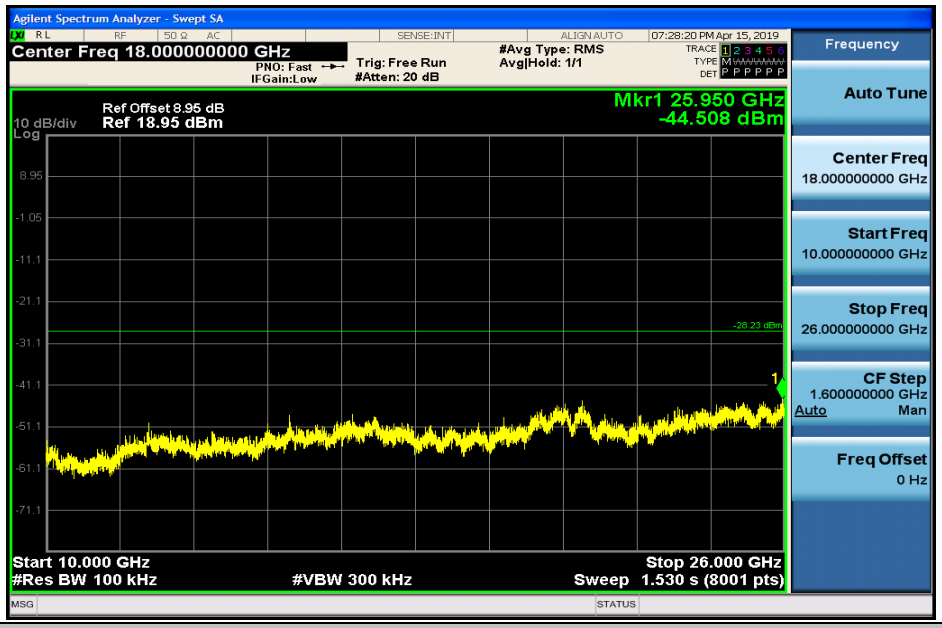

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 1/1
07:23:56 PM Apr 15, 2019
Ref Offset 8.81 dB
10 dB/div
Ref 18.81 dBm
Mkr2 7.552 4 GHz
-53.842 dBm
-26.97 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
Sweep 953.1 ms (8001 pts)
Frequency
Auto Tune
Center Freq
5.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
10.000000000 GHz
CF Step
997.000000 MHz
Auto
Man
Freq Offset
0 Hz



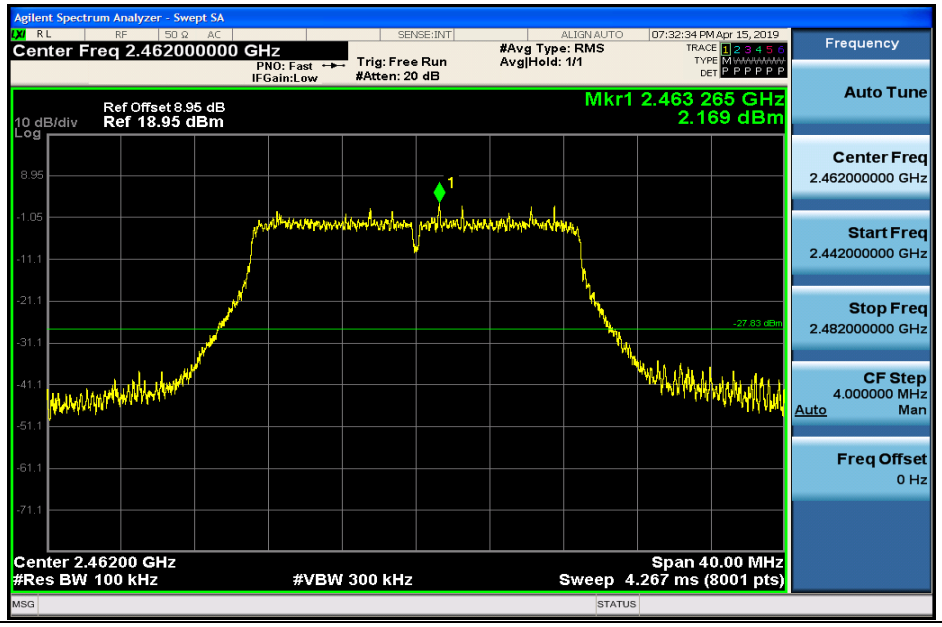
RF Conducted Spurious Emissions_11N20SISO_2437

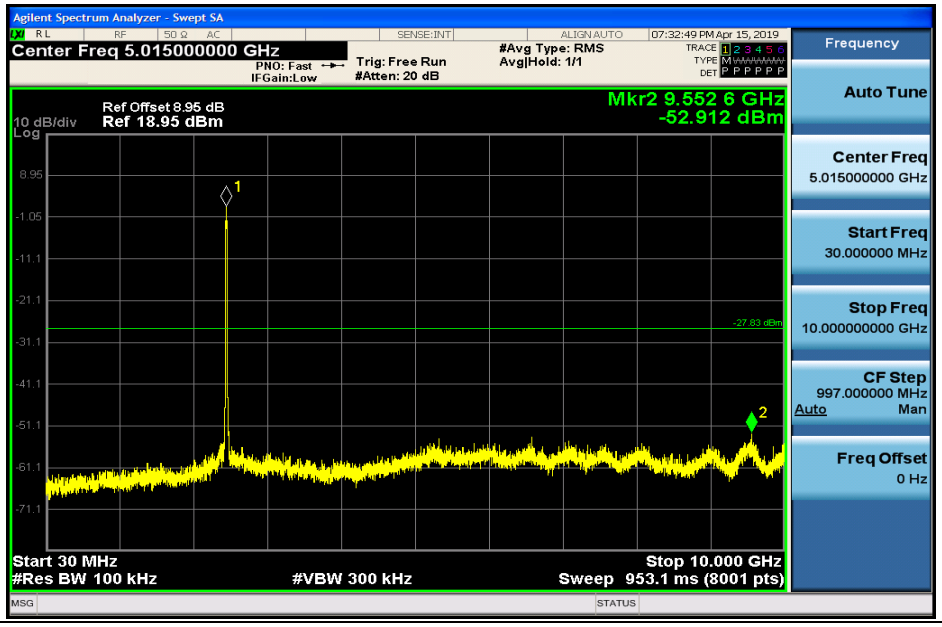


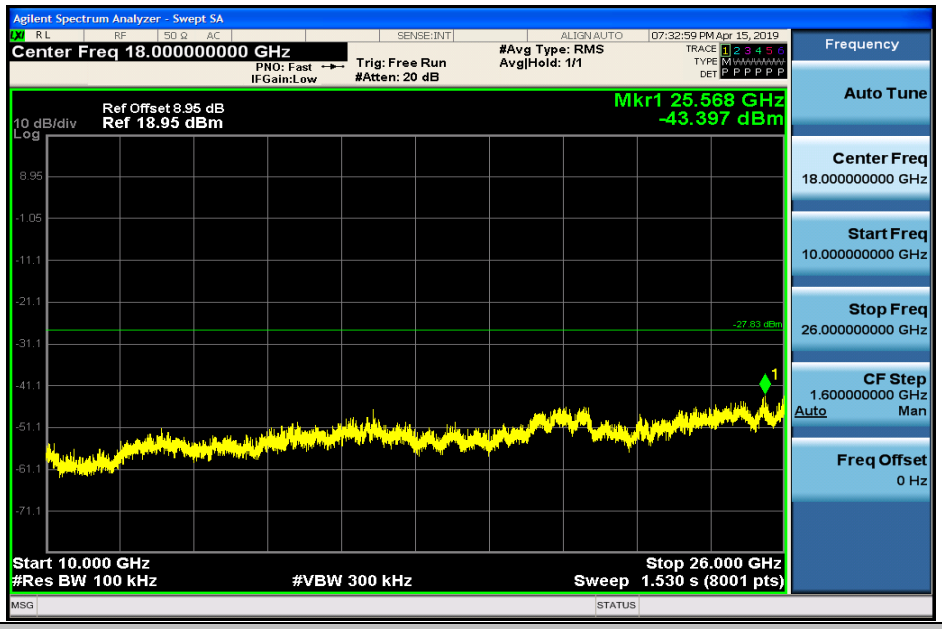




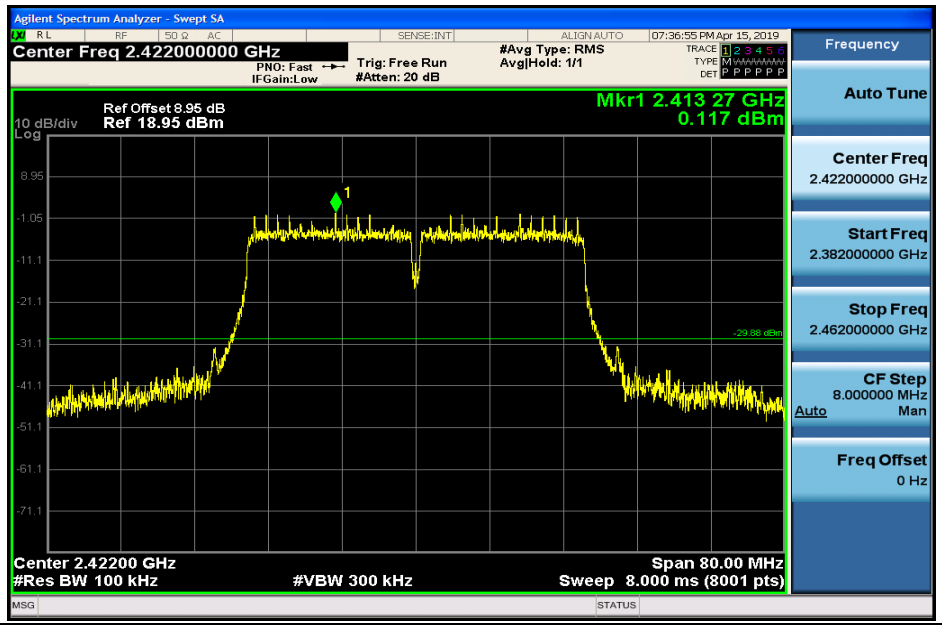
RF Conducted Spurious Emissions_11N20SISO_2462

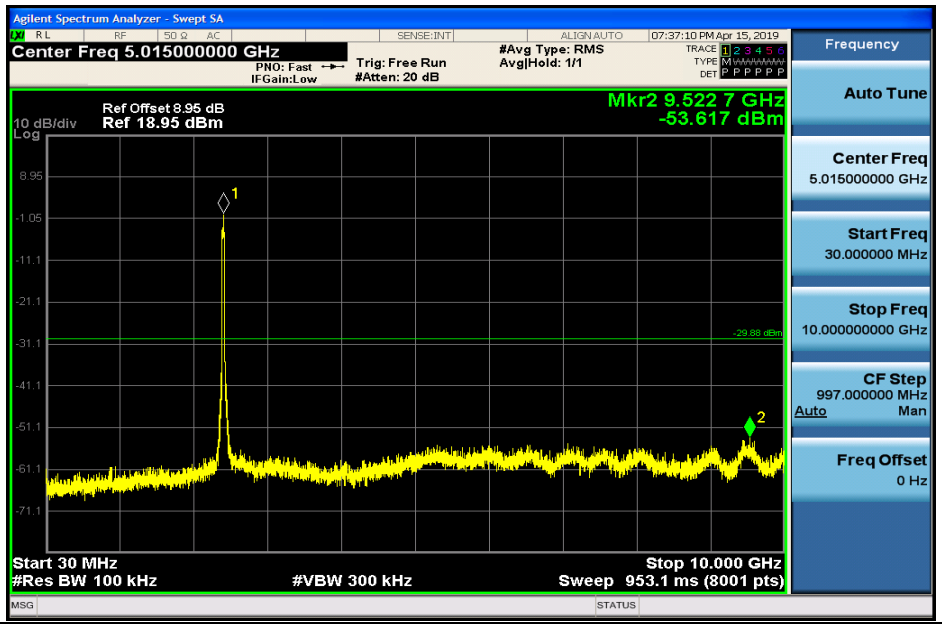

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.462000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 1/1
07:32:34 PM Apr 15, 2019
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr1 2.463 265 GHz
2.169 dBm
-27.83 dBm
Center 2.46200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40.00 MHz
Sweep 4.267 ms (8001 pts)
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.442000000 GHz
Stop Freq
2.482000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz

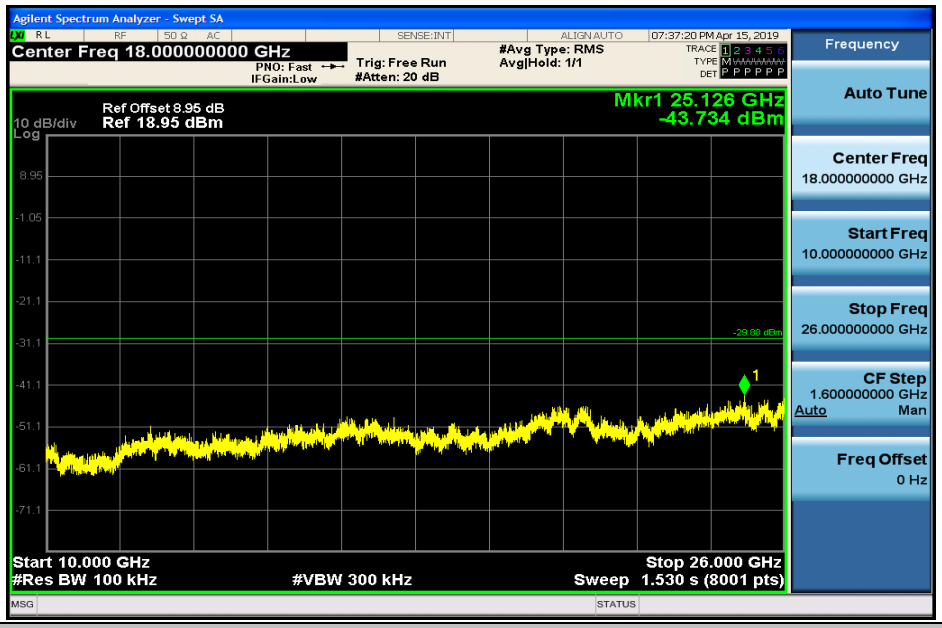

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 1/1
07:32:49 PM Apr 15, 2019
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 9.552 6 GHz
-52.912 dBm
-27.83 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
Sweep 953.1 ms (8001 pts)
Frequency
Auto Tune
Center Freq
5.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
10.000000000 GHz
CF Step
997.000000 MHz
Auto
Man
Freq Offset
0 Hz



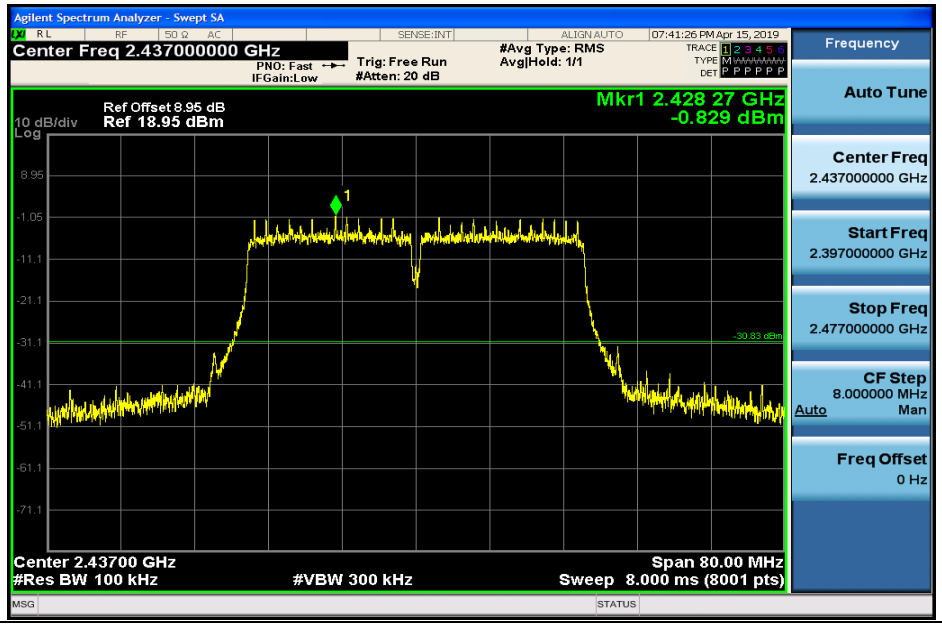
RF Conducted Spurious Emissions_11N40SISO_2422

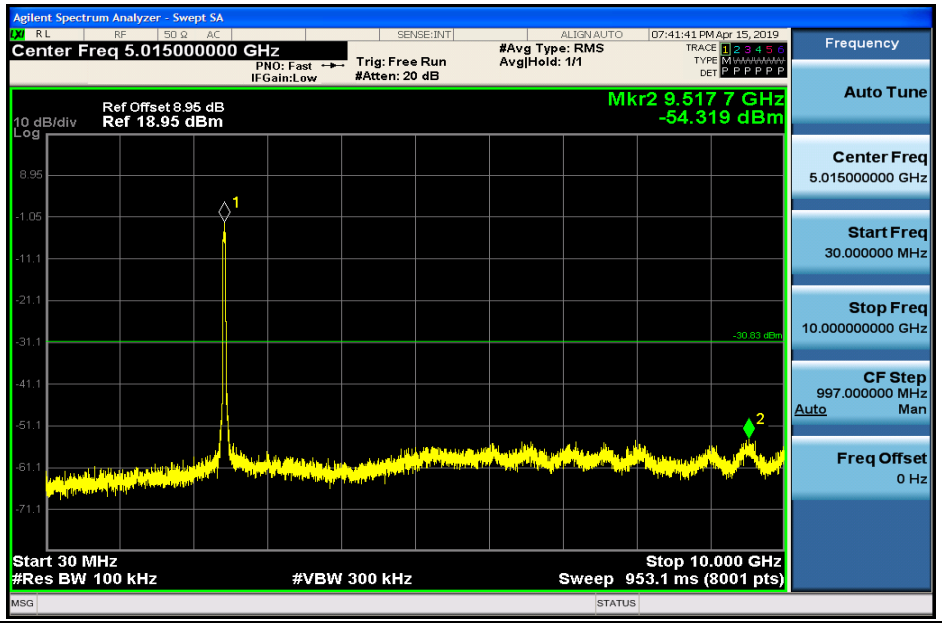


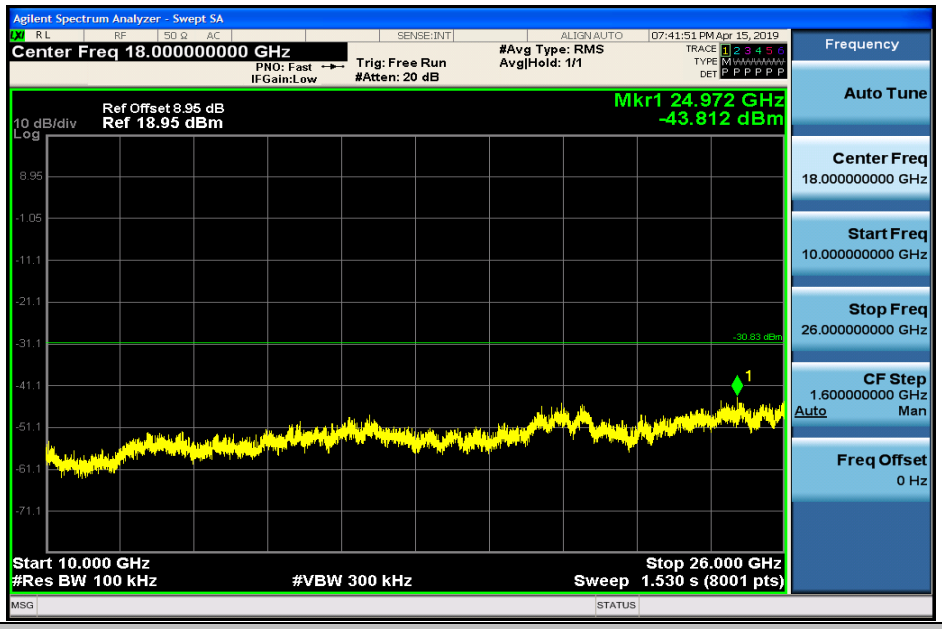




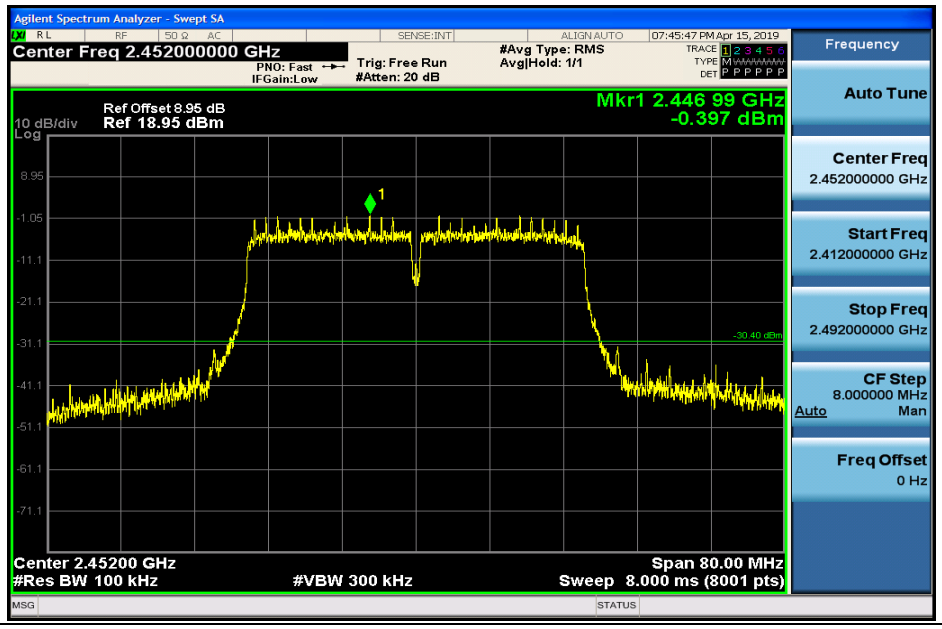
RF Conducted Spurious Emissions_11N40SISO_2437

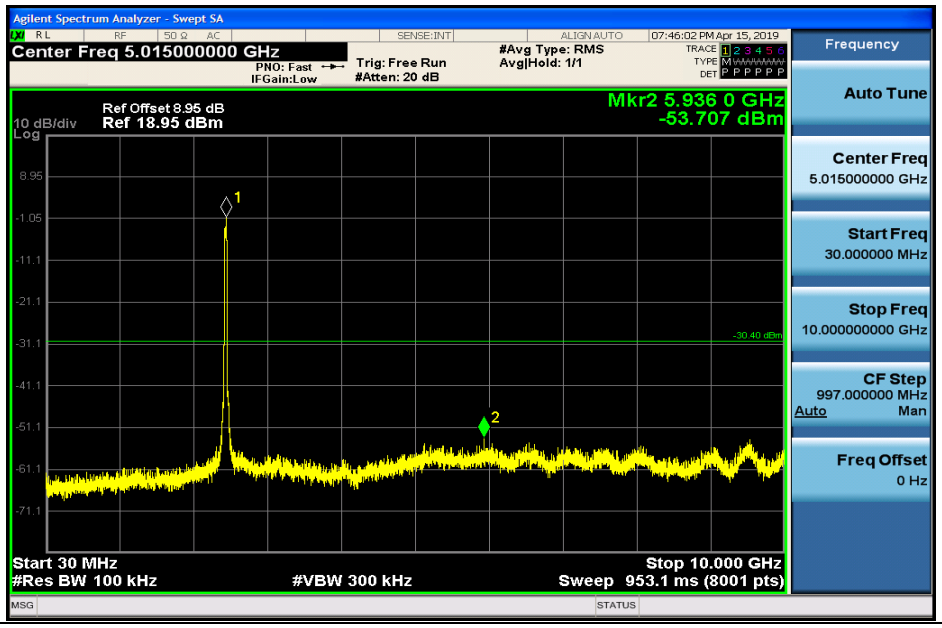

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.437000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 1/1
07:41:26 PM Apr 15, 2019
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr1 2.428 27 GHz
-0.829 dBm
Center 2.43700 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 80.00 MHz
Sweep 8.000 ms (8001 pts)
Frequency
Auto Tune
Center Freq
2.437000000 GHz
Start Freq
2.397000000 GHz
Stop Freq
2.477000000 GHz
CF Step
8.000000 MHz
Auto
Man
Freq Offset
0 Hz

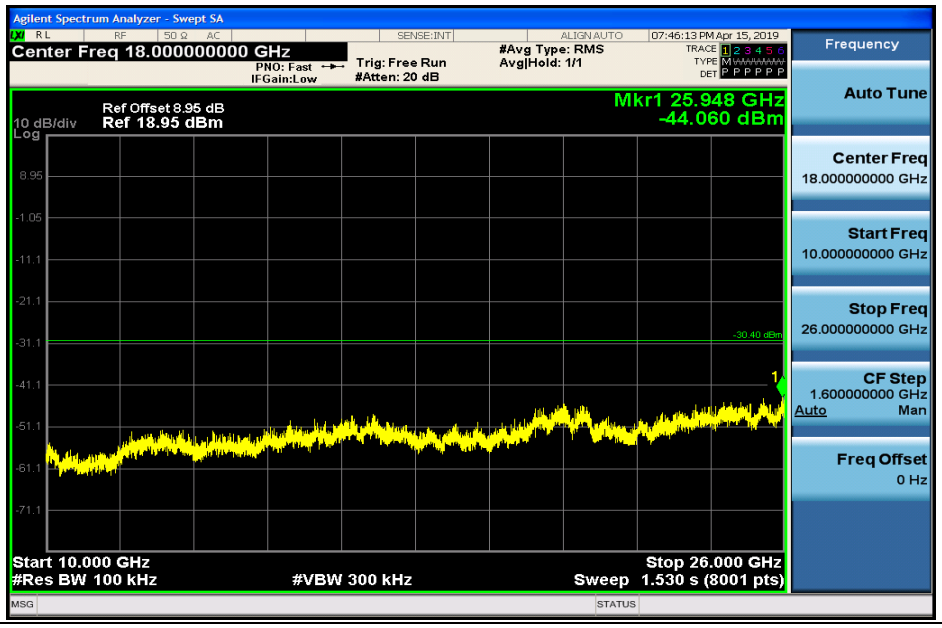

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 1/1
07:41:41 PM Apr 15, 2019
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 9.517 7 GHz
-54.319 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
Sweep 953.1 ms (8001 pts)
Frequency
Auto Tune
Center Freq
5.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
10.000000000 GHz
CF Step
997.000000 MHz
Auto
Man
Freq Offset
0 Hz



RF Conducted Spurious Emissions_11N40SISO_2452



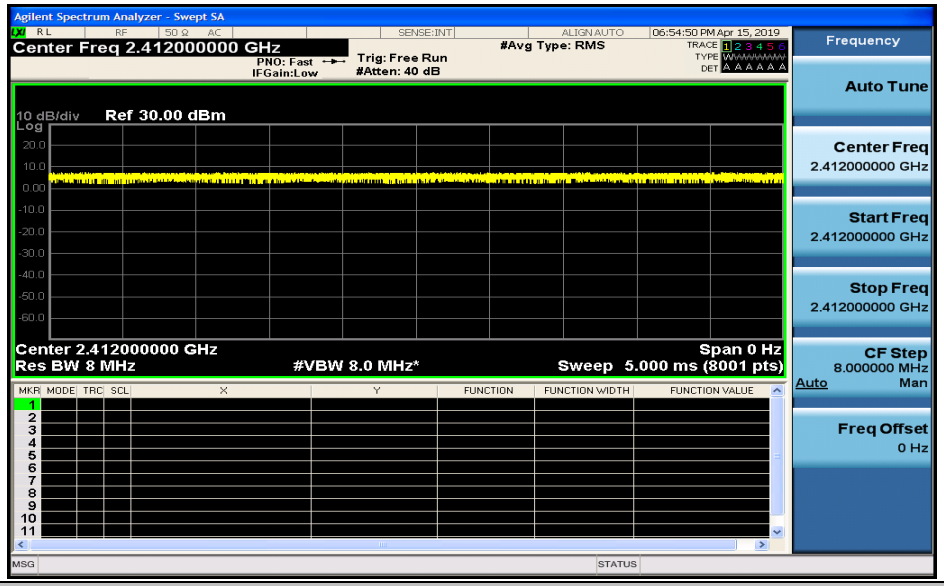

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 1/1
07:46:02 PM Apr 15, 2019
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 5.936 0 GHz
-53.707 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
Sweep 953.1 ms (8001 pts)
Frequency
Auto Tune
Center Freq
5.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
10.000000000 GHz
CF Step
997.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 18.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 1/1
07:46:13 PM Apr 15, 2019
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr1 25.948 GHz
-44.060 dBm
Start 10.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 26.000 GHz
Sweep 1.530 s (8001 pts)
Frequency
Auto Tune
Center Freq
18.000000000 GHz
Start Freq
10.000000000 GHz
Stop Freq
26.000000000 GHz
CF Step
1.600000000 GHz
Auto
Man
Freq Offset
0 Hz

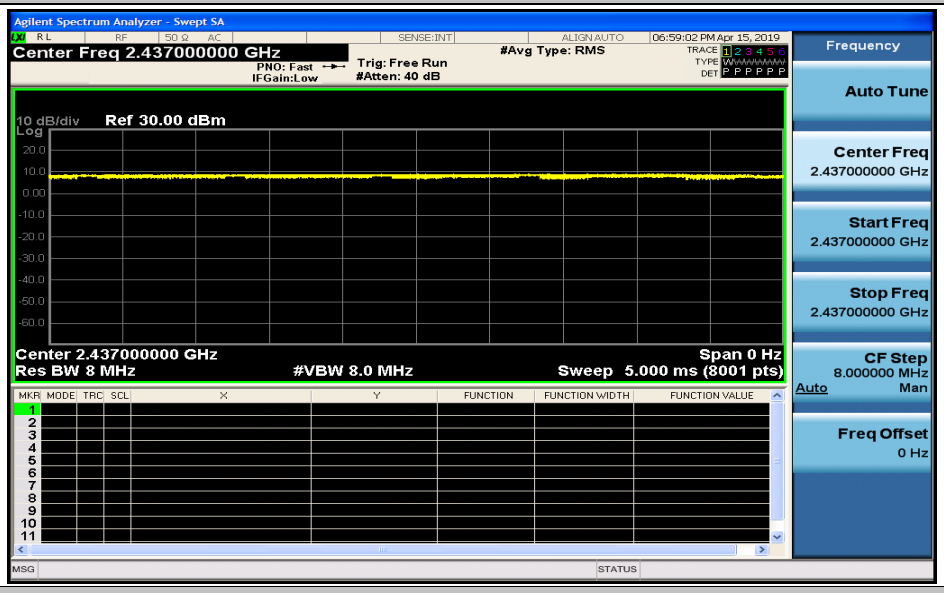
7.Duty Cycle

Test Mode	Test Channel	Ant	Duty Cycle[%]	10log(1/x) Factor[dB]
11B	2412	Ant1	100.00	0.00
11B	2437	Ant1	100.00	0.00
11B	2462	Ant1	100.00	0.00
11G	2412	Ant1	92.67	0.33
11G	2437	Ant1	96.15	0.17
11G	2462	Ant1	95.76	0.19
11N20SISO	2412	Ant1	94.61	0.24
11N20SISO	2437	Ant1	95.46	0.20
11N20SISO	2462	Ant1	94.20	0.26
11N40SISO	2422	Ant1	88.14	0.55
11N40SISO	2437	Ant1	91.18	0.40
11N40SISO	2452	Ant1	84.59	0.73

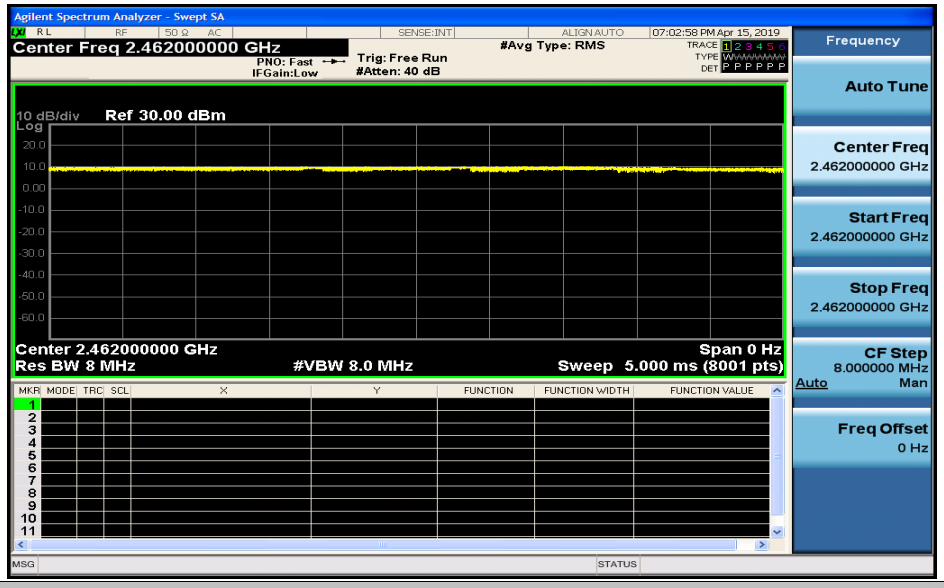
Duty Cycle_11B_2412_Ant1



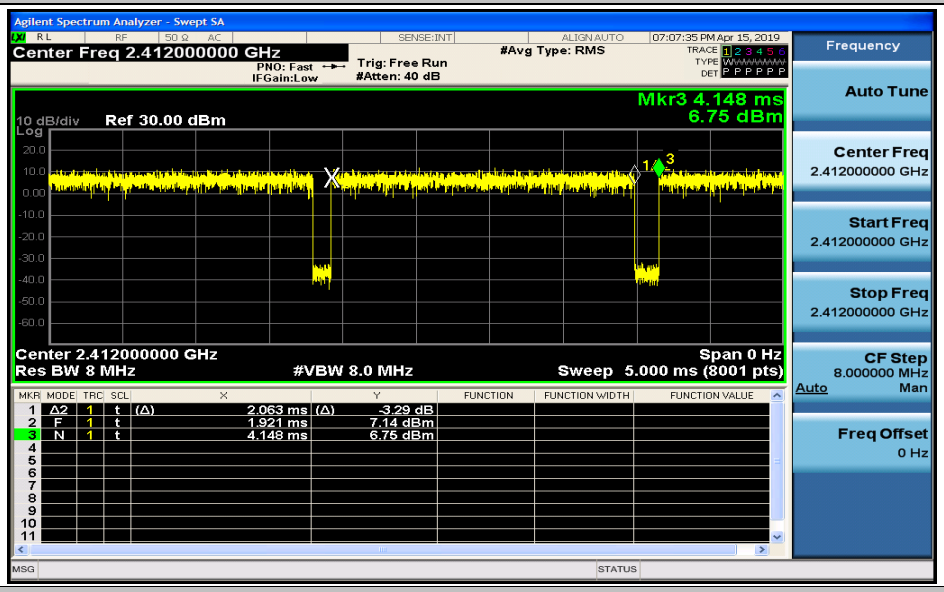
Duty Cycle_11B_2437_Ant1



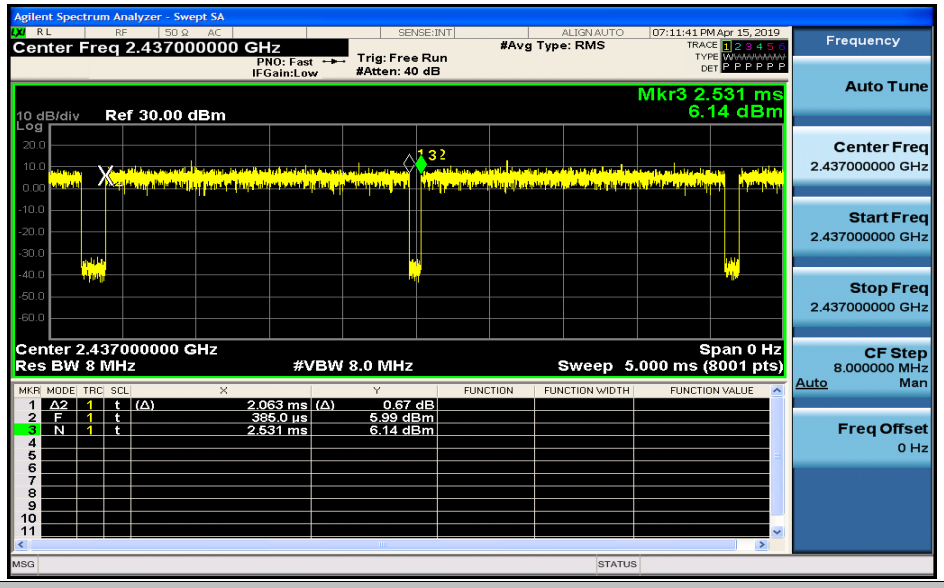
Duty Cycle_11B_2462_Ant1



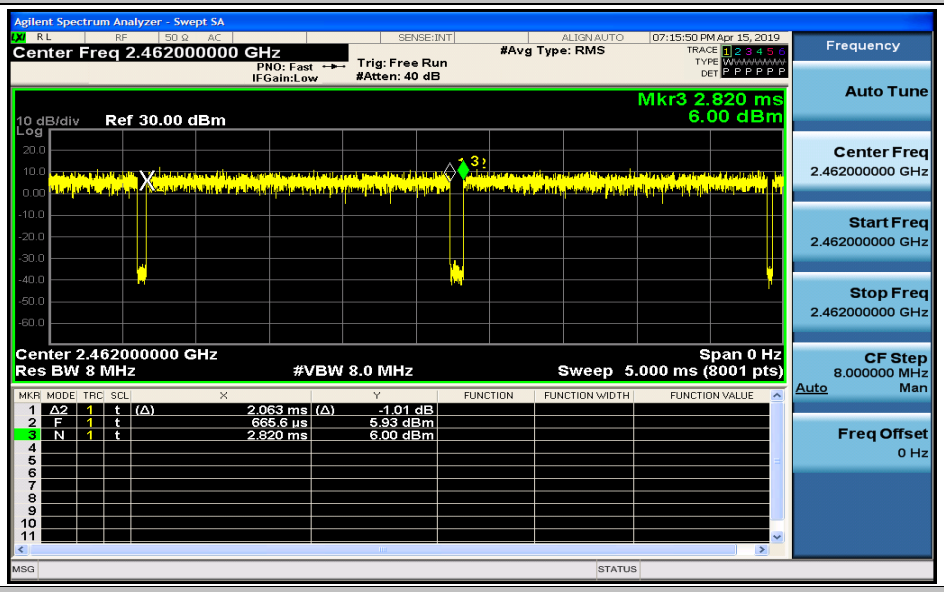
Duty Cycle_11G_2412_Ant1



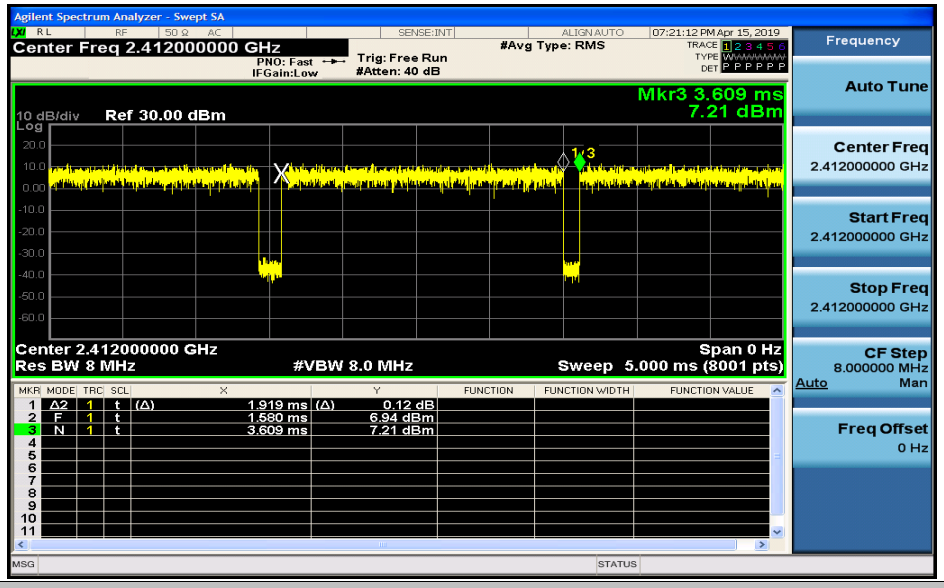
Duty Cycle_11G_2437_Ant1



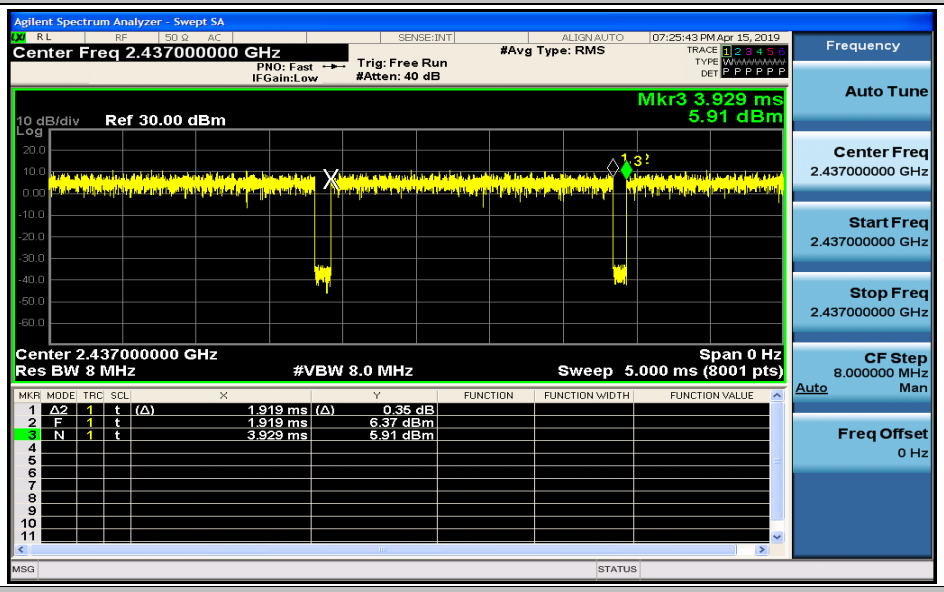
Duty Cycle_11G_2462_Ant1



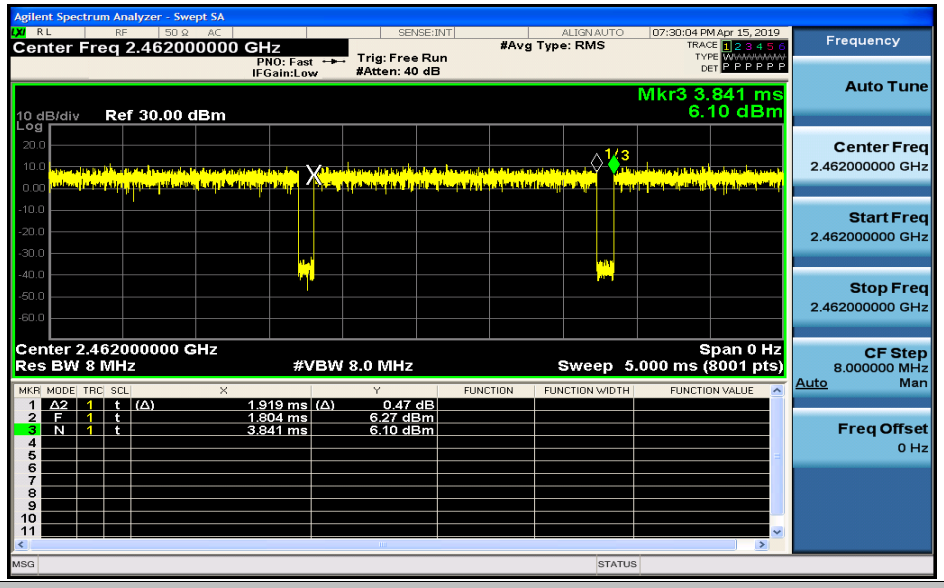
Duty Cycle_11N20SISO_2412_Ant1



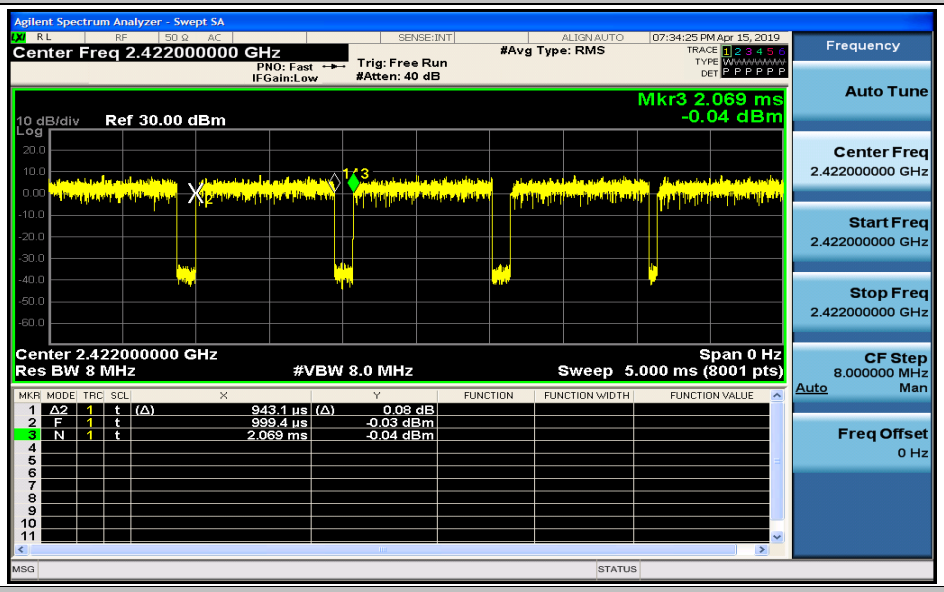
Duty Cycle_11N20SISO_2437_Ant1



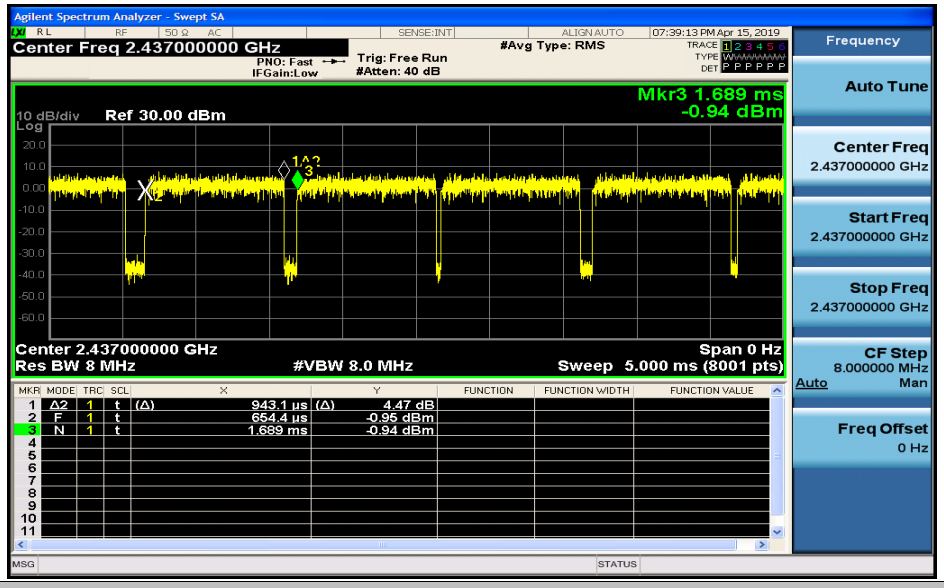
Duty Cycle_11N20SISO_2462_Ant1



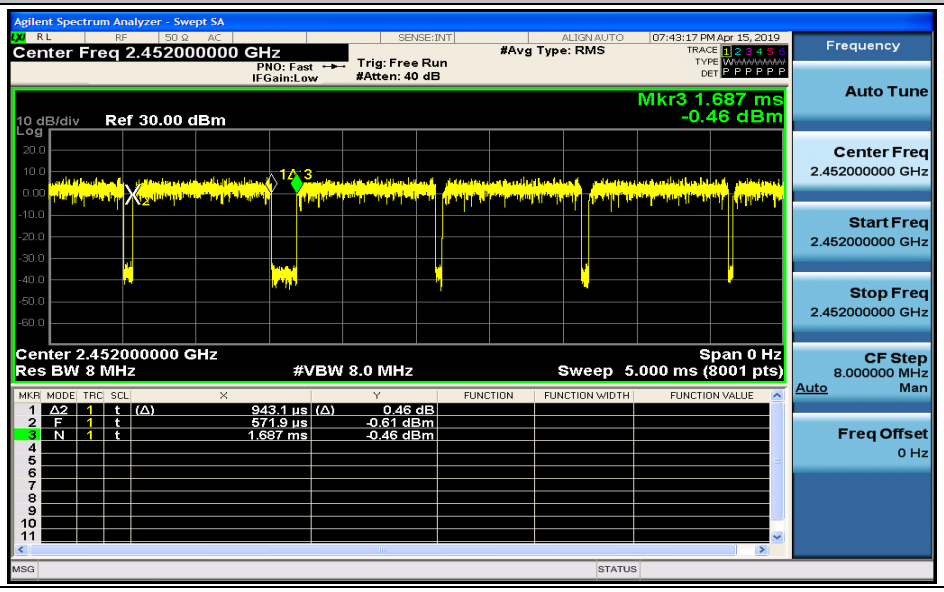
Duty Cycle_11N40SISO_2422_Ant1



Duty Cycle_11N40SISO_2437_Ant1



Duty Cycle_11N40SISO_2452_Ant1



- End of the Report -