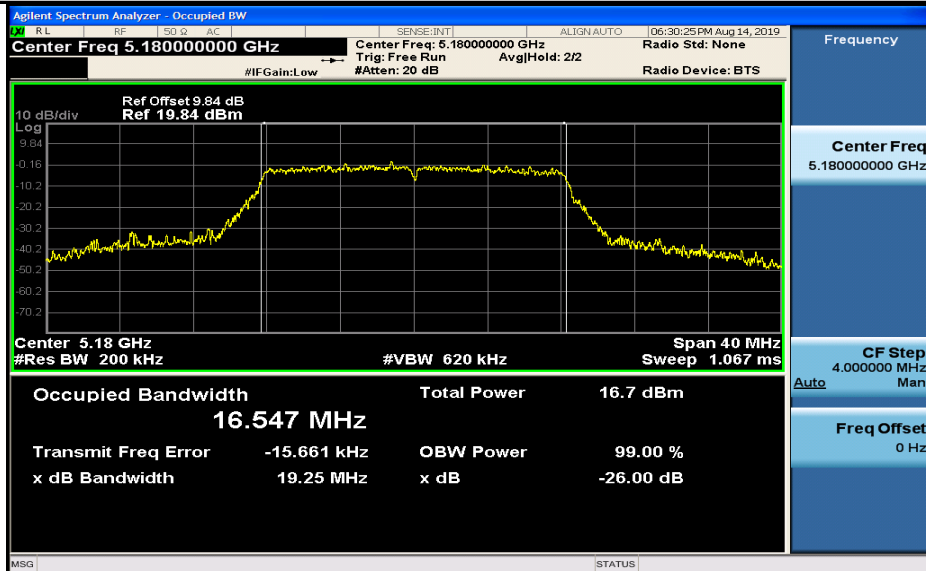


Appendix C for SHEM190601433803

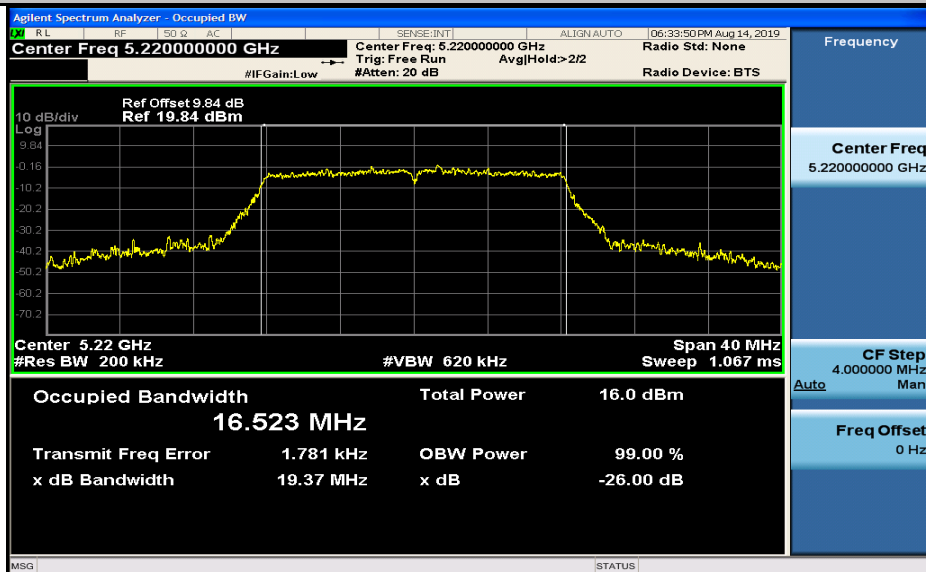
1.Emission Bandwidth Measurement

Test Mode	Test Channel	EBW[MHz]		Limit[MHz]	Verdict
		Ant1	Ant2		
11A	5180	19.25	19.48	---	PASS
11A	5220	19.37	19.55	---	PASS
11A	5240	19.84	19.49	---	PASS
11N20	5180	19.95	19.98	---	PASS
11N20	5220	19.97	19.81	---	PASS
11N20	5240	19.84	19.88	---	PASS
11N40	5190	39.59	39.73	---	PASS
11N40	5230	39.50	39.85	---	PASS
11AC20	5180	19.90	19.80	---	PASS
11AC20	5220	19.86	19.94	---	PASS
11AC20	5240	19.96	19.87	---	PASS
11AC40	5190	39.76	39.81	---	PASS
11AC40	5230	39.67	39.96	---	PASS

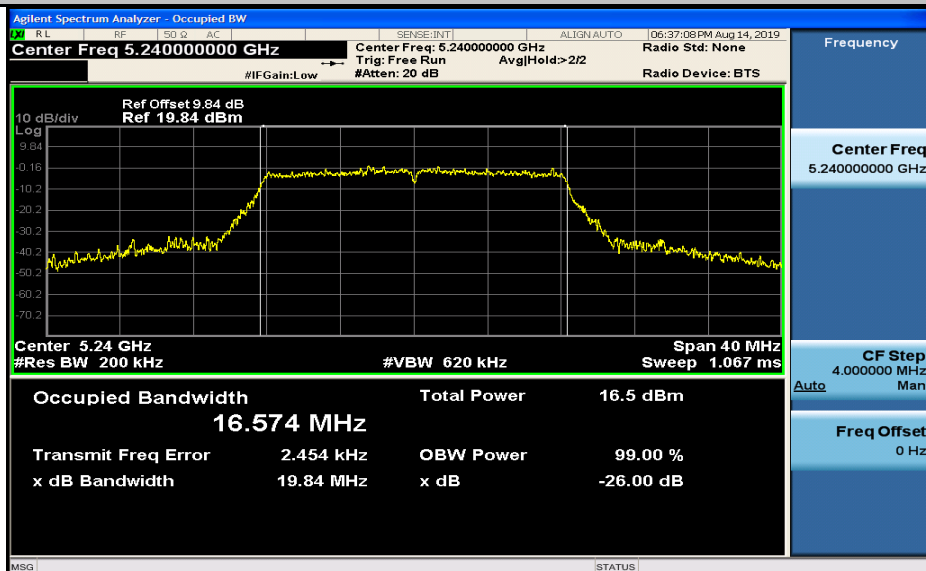
(26dB)Emission Bandwidth Measurement_11A_5180_Ant1



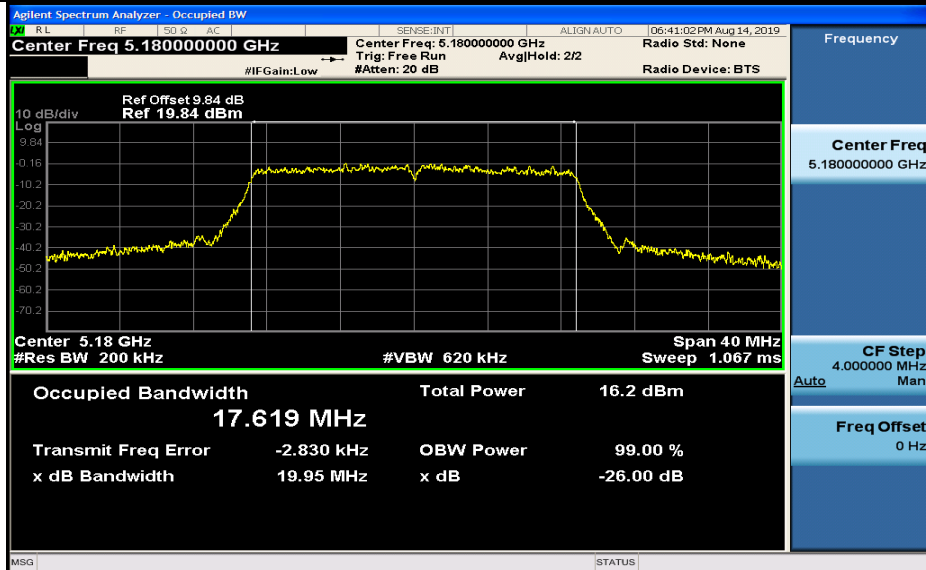
(26dB)Emission Bandwidth Measurement_11A_5220_Ant1



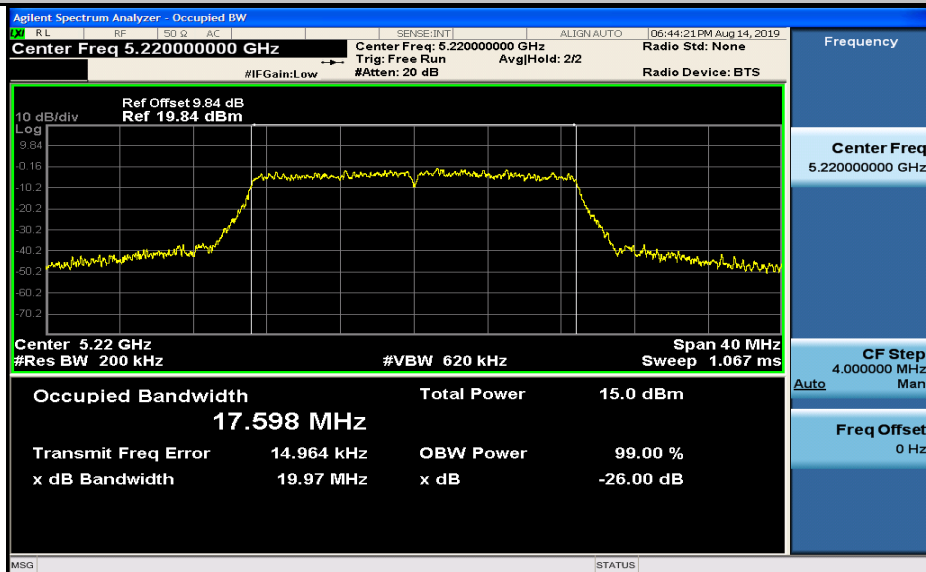
(26dB)Emission Bandwidth Measurement_11A_5240_Ant1



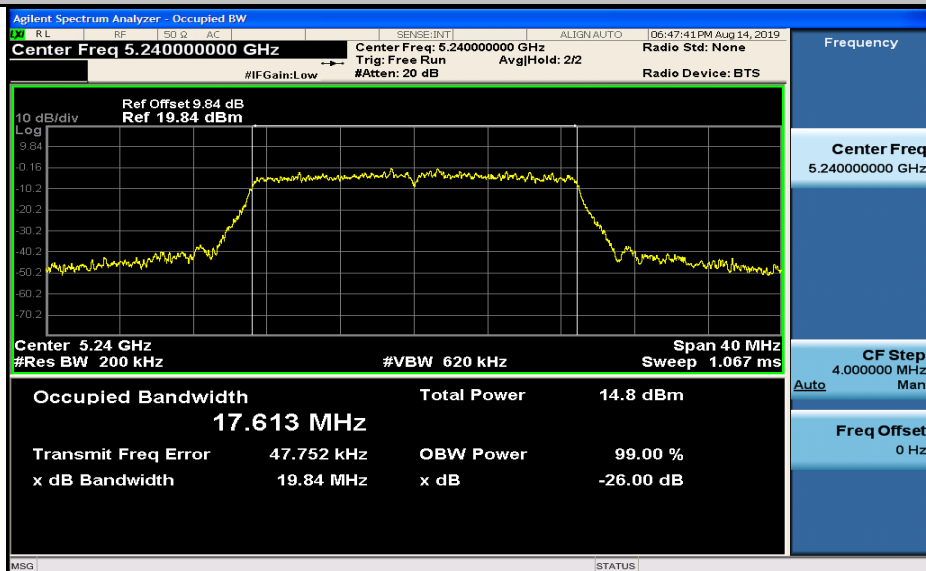
(26dB)Emission Bandwidth Measurement_11N20_5180_Ant1



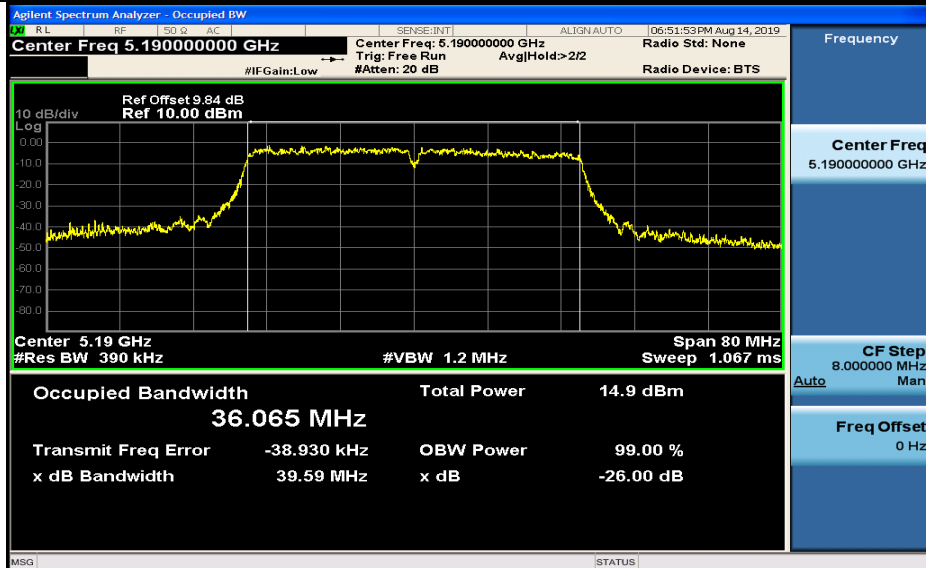
(26dB)Emission Bandwidth Measurement_11N20_5220_Ant1



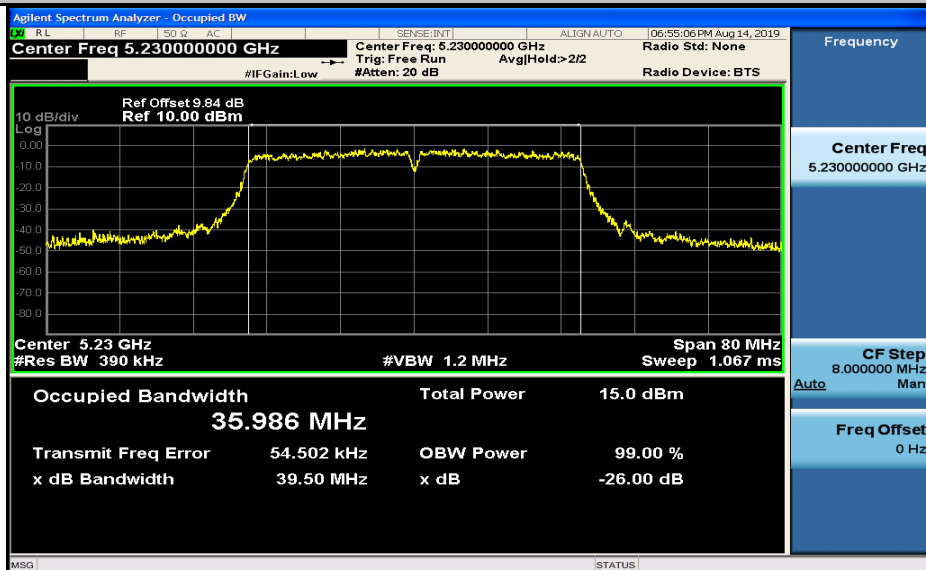
(26dB)Emission Bandwidth Measurement_11N20_5240_Ant1



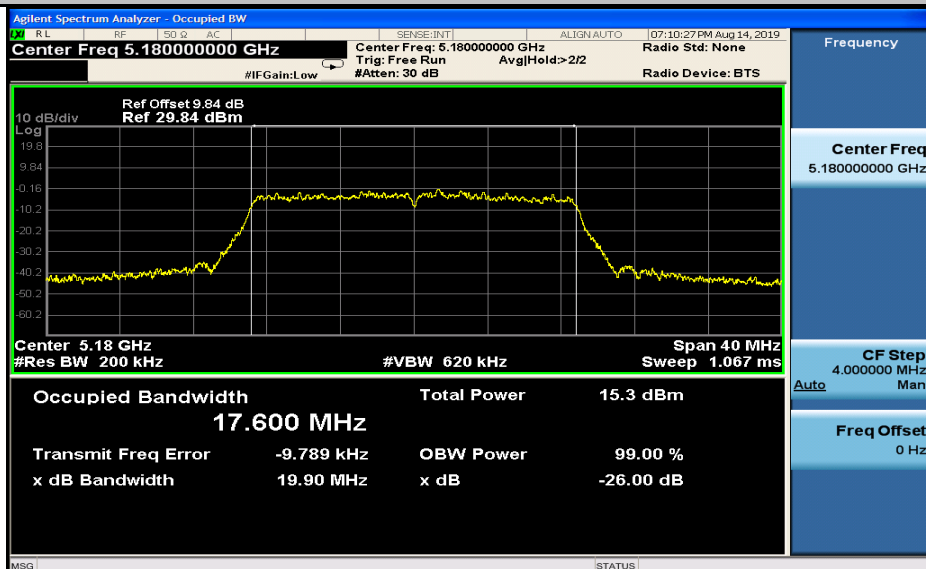
(26dB)Emission Bandwidth Measurement_11N40_5190_Ant1



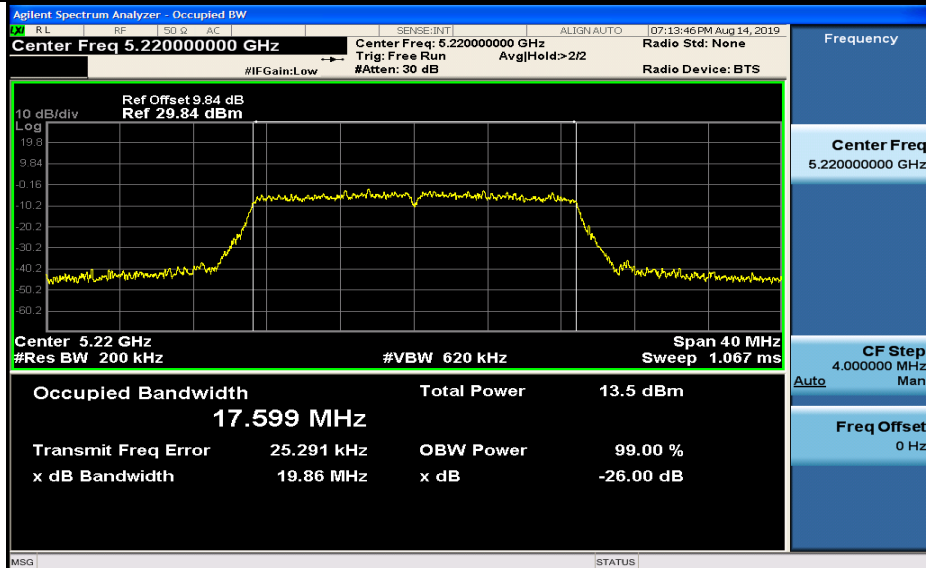
(26dB)Emission Bandwidth Measurement_11N40_5230_Ant1



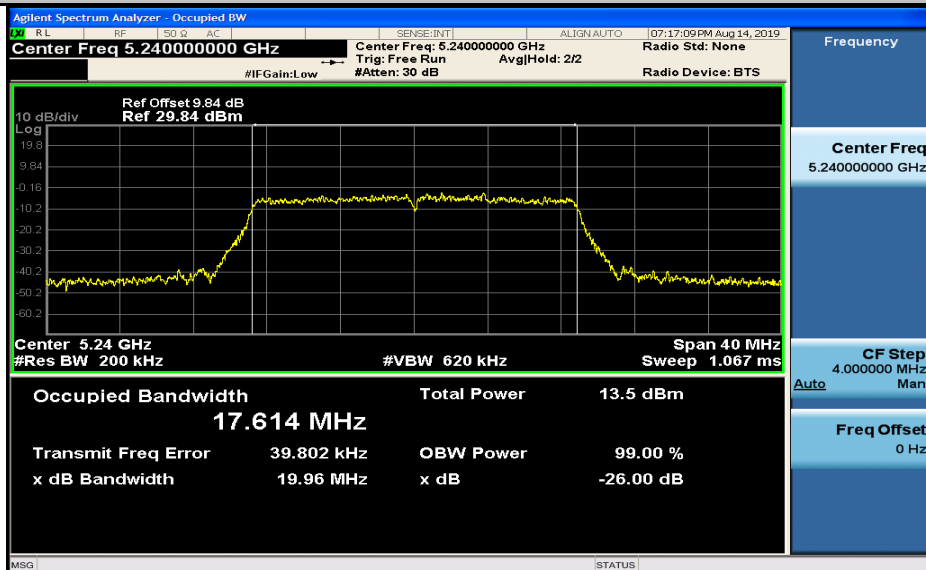
(26dB)Emission Bandwidth Measurement_11AC20_5180_Ant1



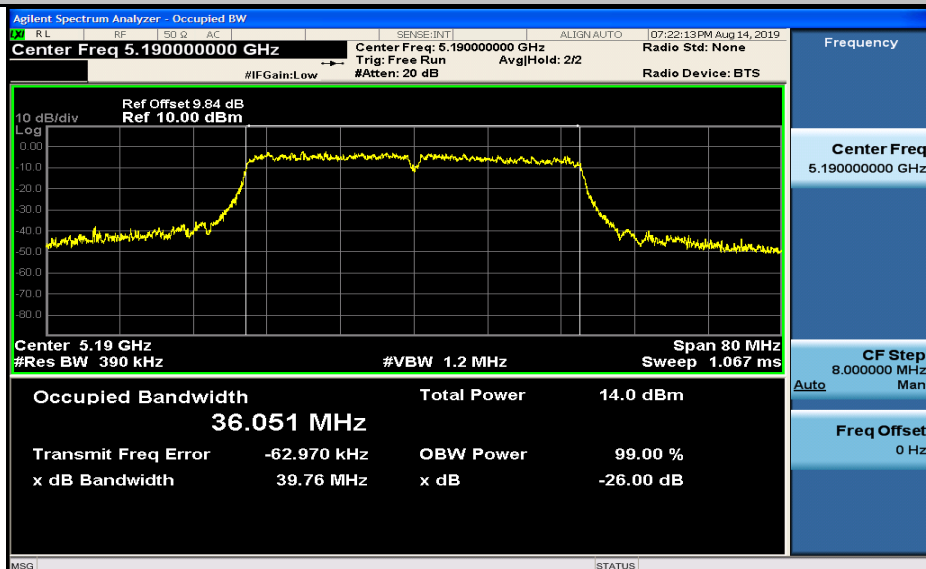
(26dB)Emission Bandwidth Measurement_11AC20_5220_Ant1



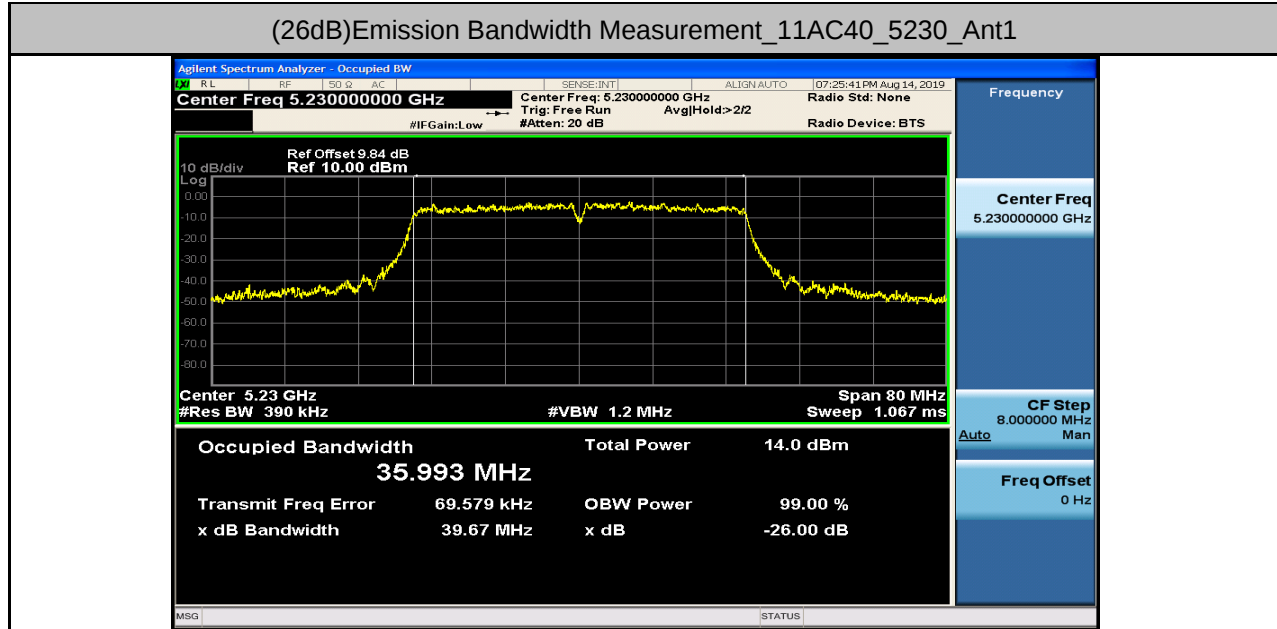
(26dB)Emission Bandwidth Measurement_11AC20_5240_Ant1



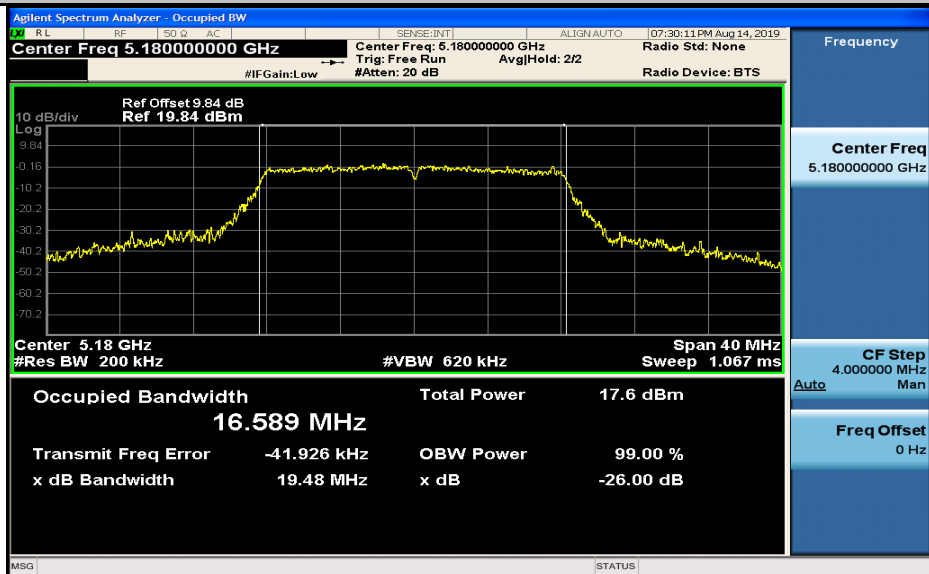
(26dB)Emission Bandwidth Measurement_11AC40_5190_Ant1



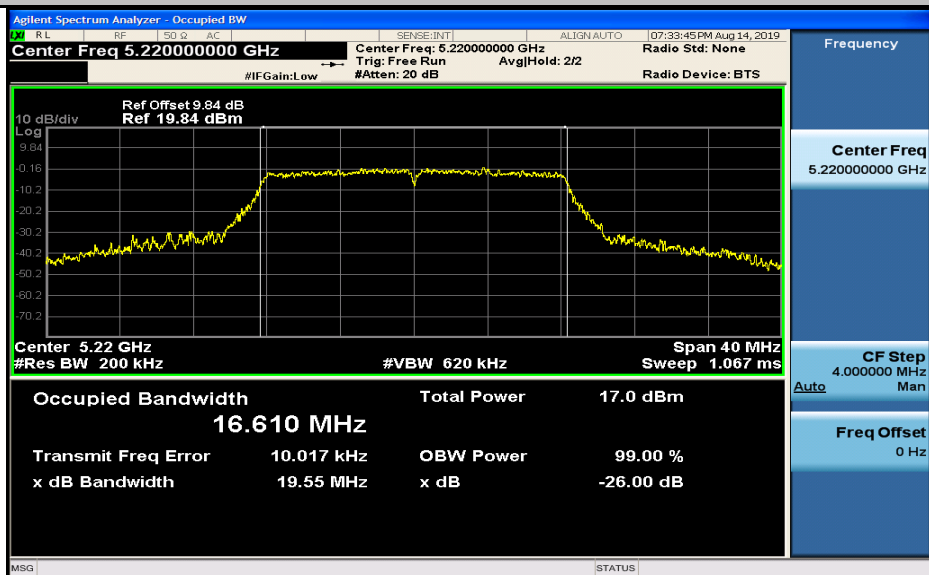
(26dB)Emission Bandwidth Measurement_11AC40_5230_Ant1



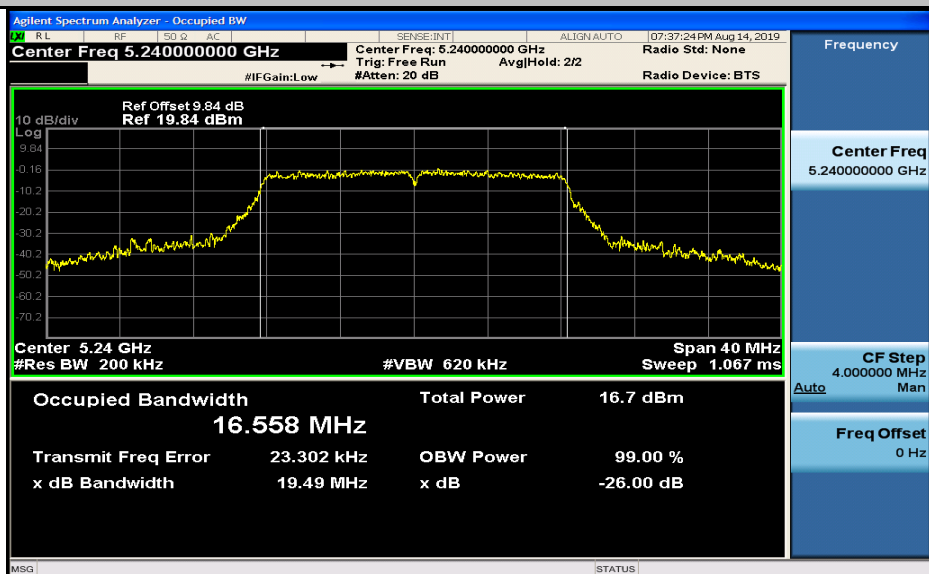
(26dB)Emission Bandwidth Measurement_11A_5180_Ant2



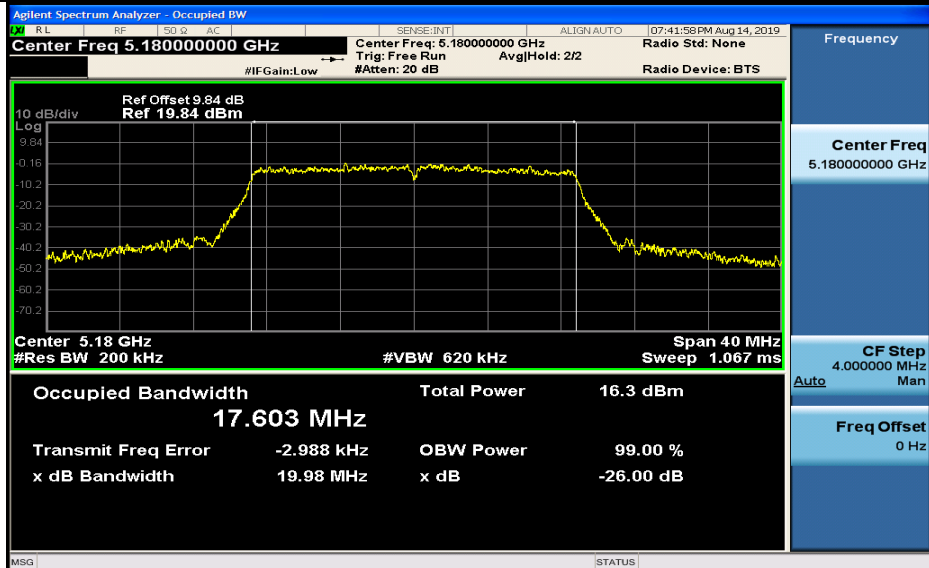
(26dB)Emission Bandwidth Measurement_11A_5220_Ant2



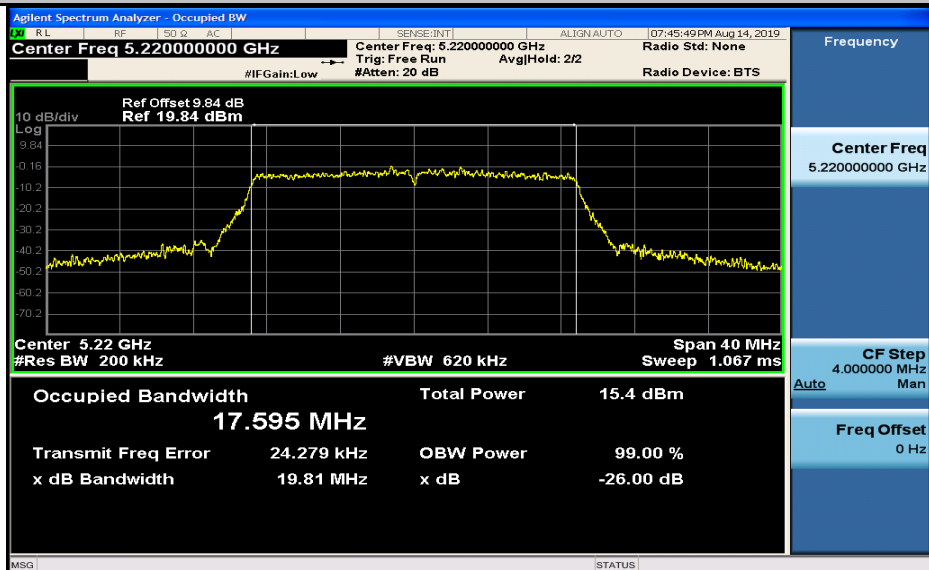
(26dB)Emission Bandwidth Measurement_11A_5240_Ant2



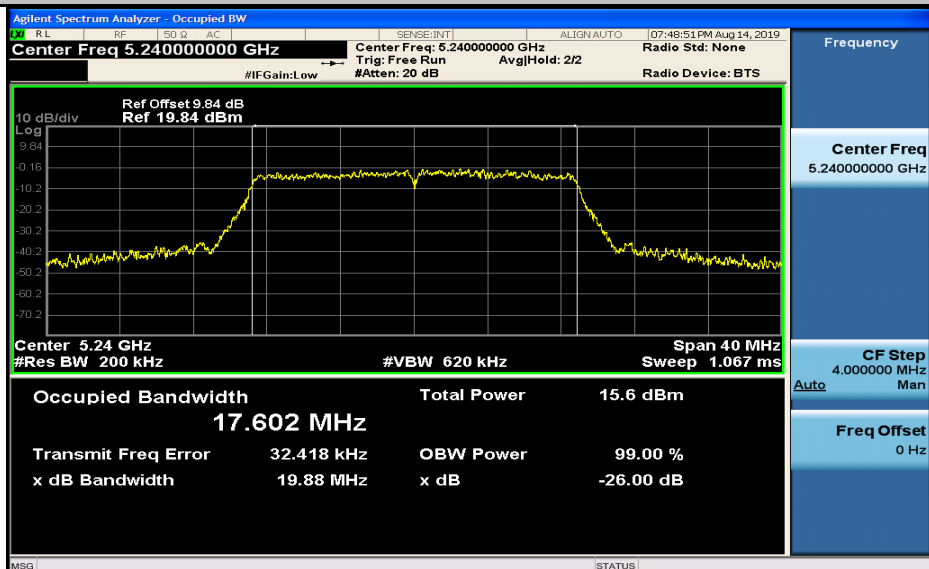
(26dB)Emission Bandwidth Measurement_11N20_5180_Ant2



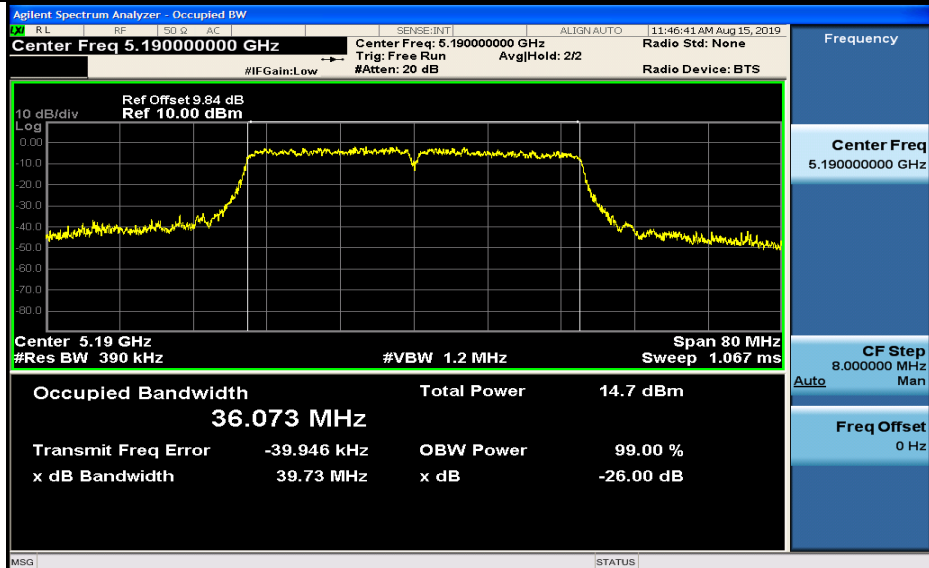
(26dB)Emission Bandwidth Measurement_11N20_5220_Ant2



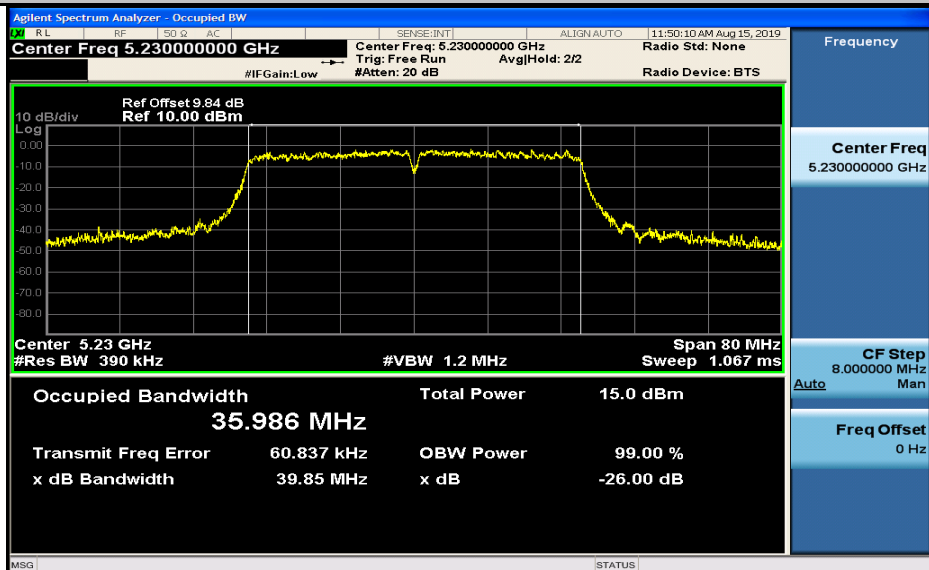
(26dB)Emission Bandwidth Measurement_11N20_5240_Ant2



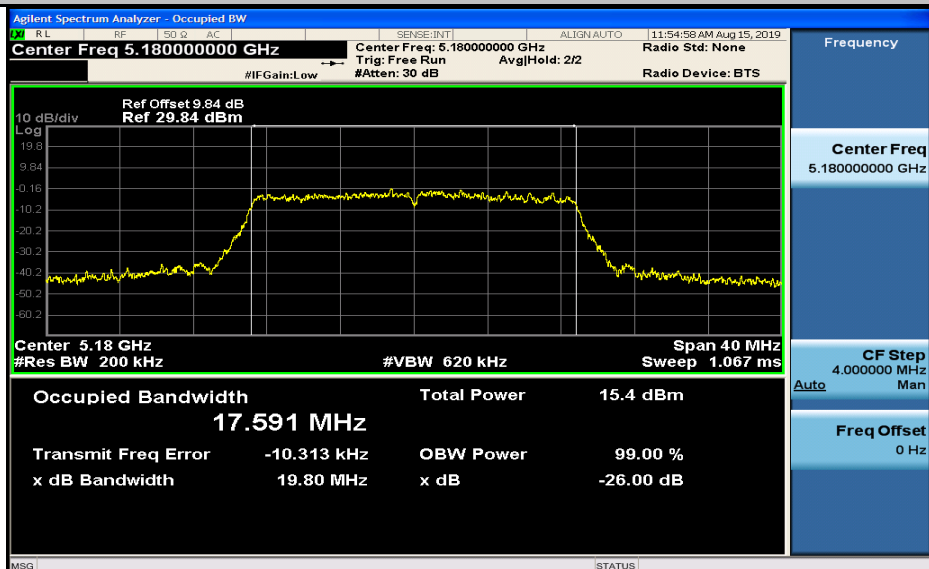
(26dB)Emission Bandwidth Measurement_11N40_5190_Ant2



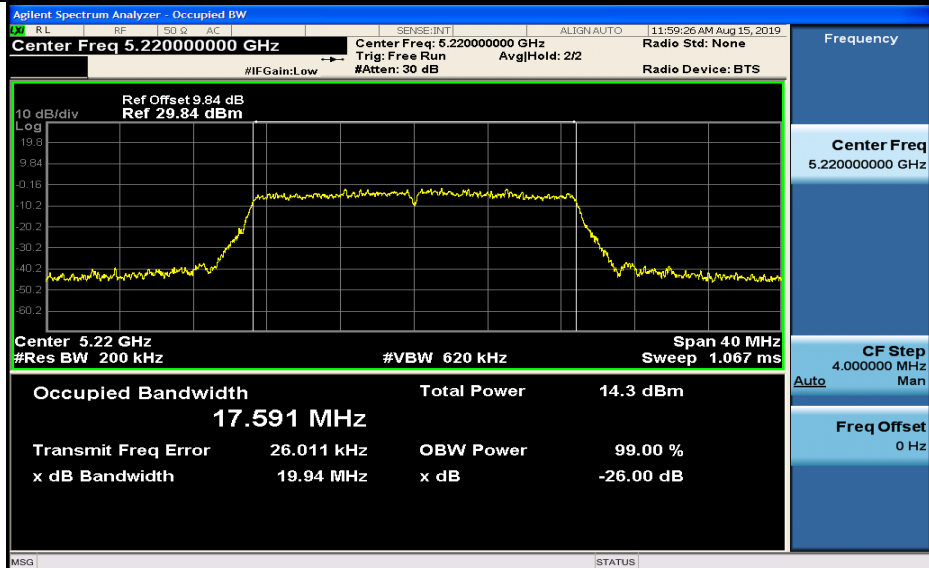
(26dB)Emission Bandwidth Measurement_11N40_5230_Ant2



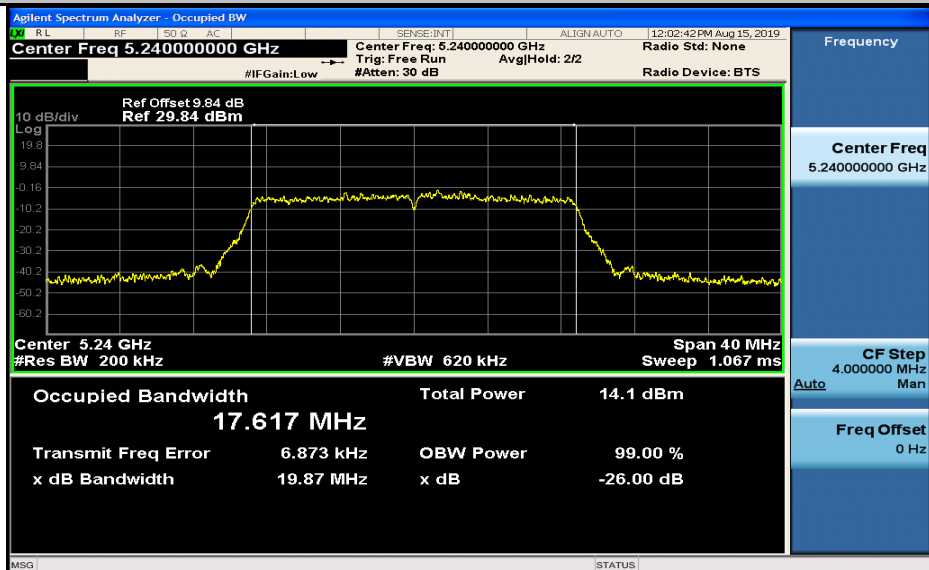
(26dB)Emission Bandwidth Measurement_11AC20_5180_Ant2



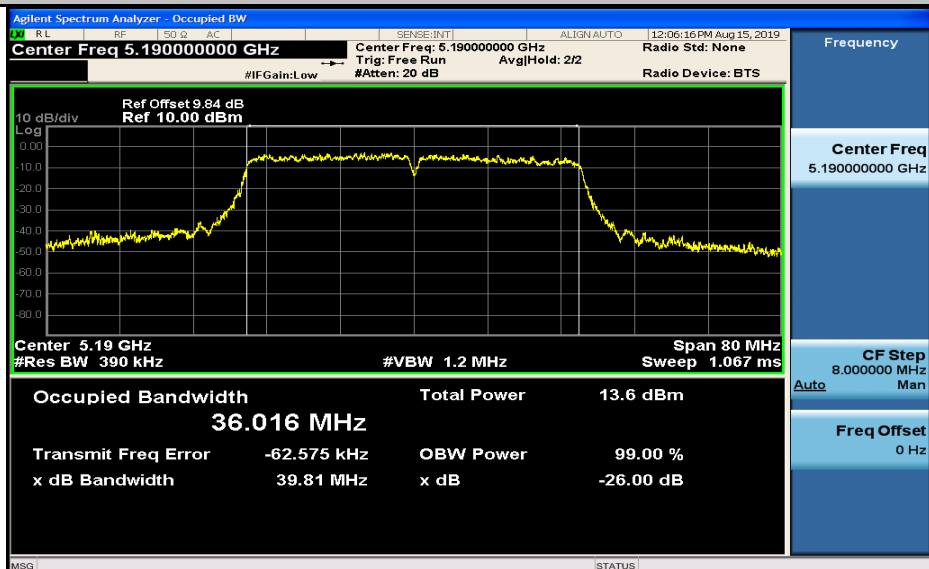
(26dB)Emission Bandwidth Measurement_11AC20_5220_Ant2



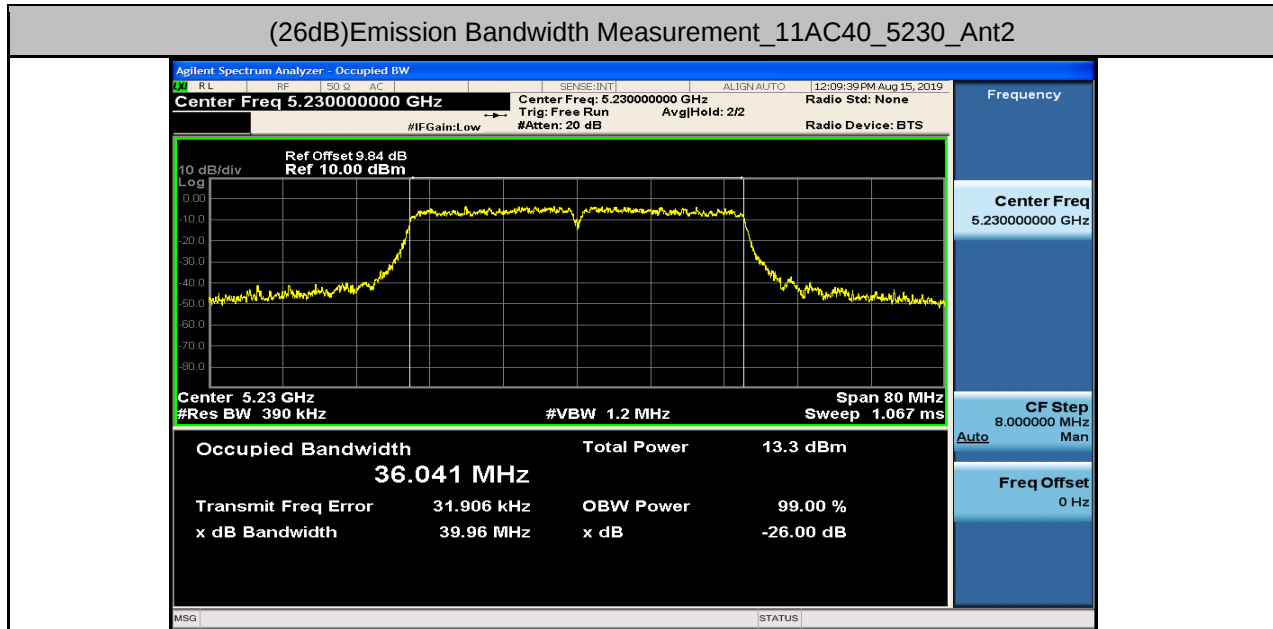
(26dB)Emission Bandwidth Measurement_11AC20_5240_Ant2



(26dB)Emission Bandwidth Measurement_11AC40_5190_Ant2



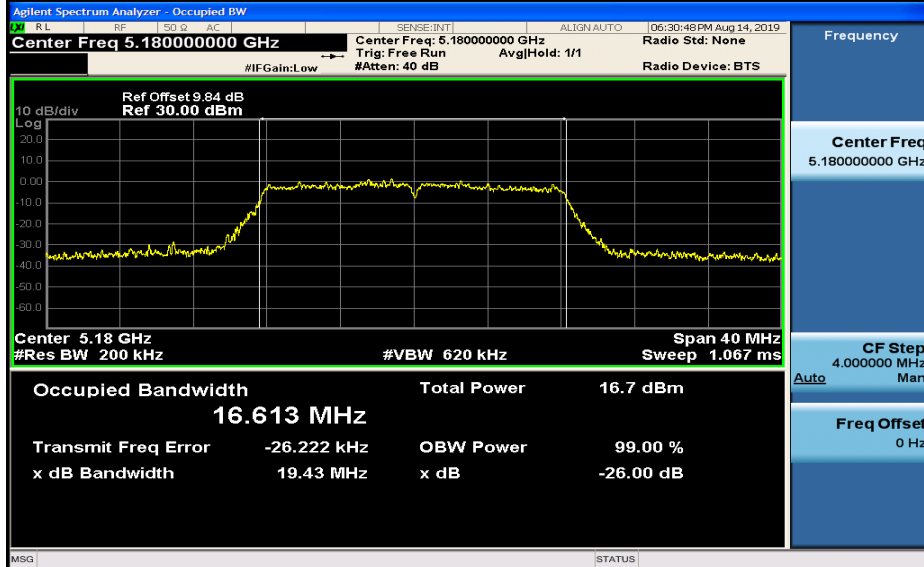
(26dB)Emission Bandwidth Measurement_11AC40_5230_Ant2



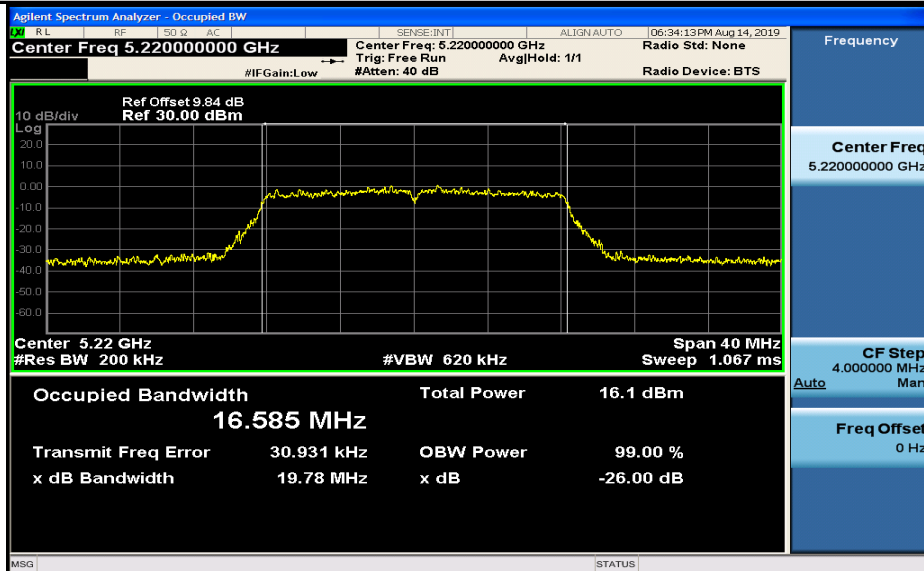
2.Occupied Bandwidth Measurement

Test Mode	Test Channel	OBW[MHz]		Limit[MHz]	Verdict
		Ant1	Ant2		
11A	5180	16.61	16.59	---	PASS
11A	5220	16.59	16.64	---	PASS
11A	5240	16.61	16.63	---	PASS
11N20	5180	17.63	17.63	---	PASS
11N20	5220	17.63	17.62	---	PASS
11N20	5240	17.61	17.65	---	PASS
11N40	5190	36.17	36.18	---	PASS
11N40	5230	36.10	36.09	---	PASS
11AC20	5180	17.63	17.62	---	PASS
11AC20	5220	17.64	17.66	---	PASS
11AC20	5240	17.69	17.65	---	PASS
11AC40	5190	36.21	36.13	---	PASS
11AC40	5230	36.12	36.21	---	PASS

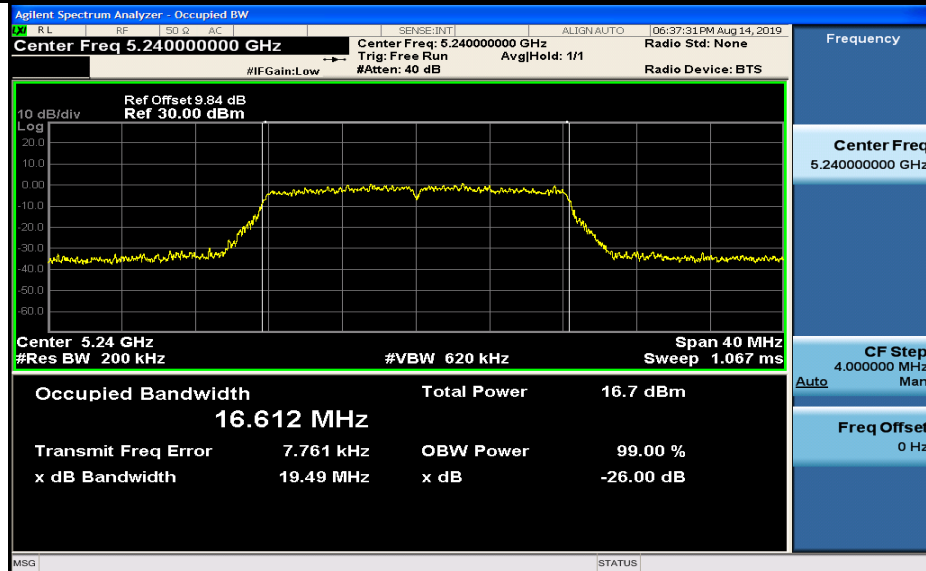
Occupied Bandwidth Measurement_11A_5180_Ant1



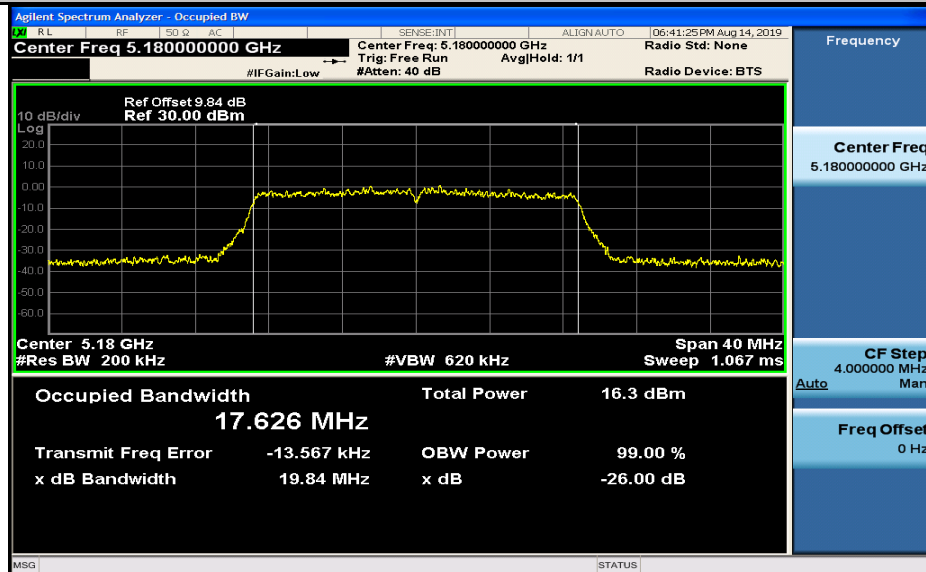
Occupied Bandwidth Measurement_11A_5220_Ant1



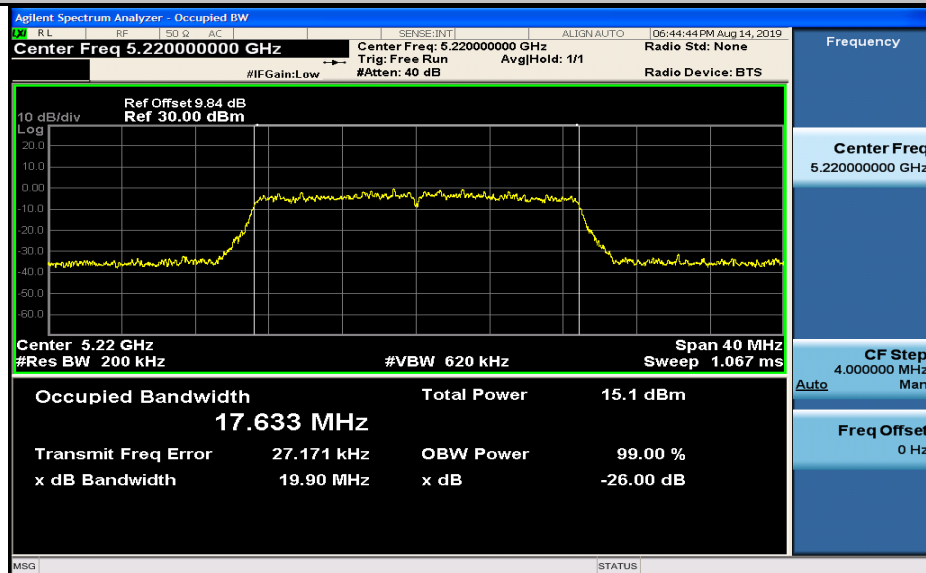
Occupied Bandwidth Measurement_11A_5240_Ant1



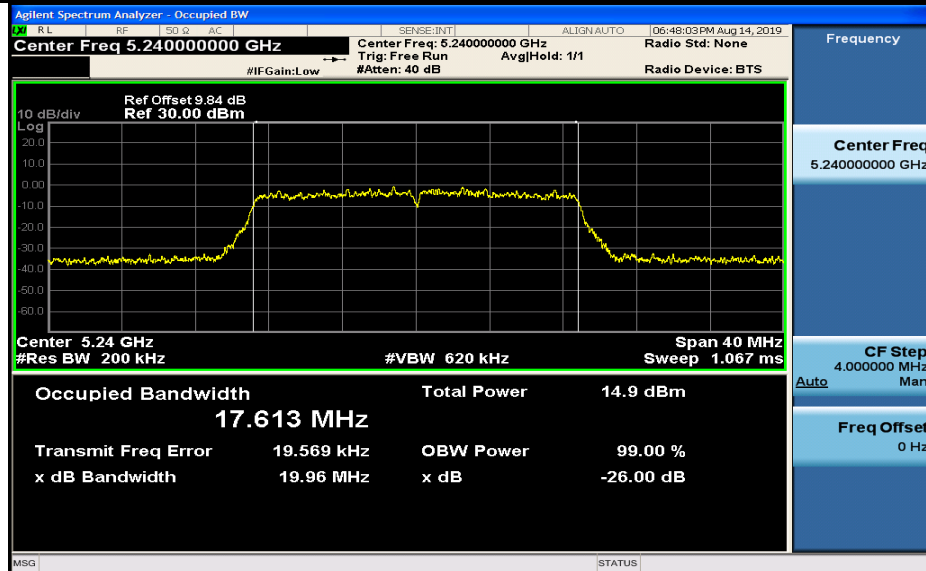
Occupied Bandwidth Measurement_11N20_5180_Ant1



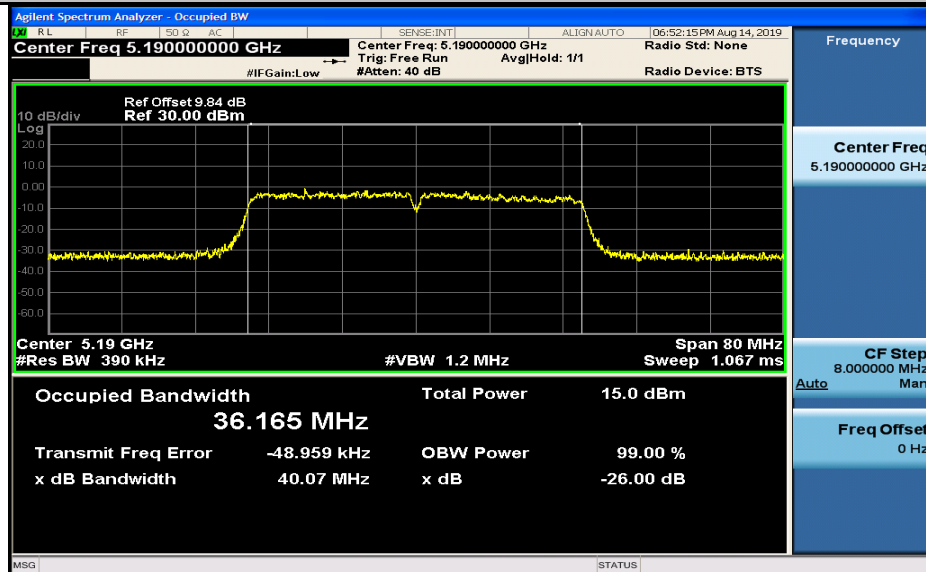
Occupied Bandwidth Measurement_11N20_5220_Ant1



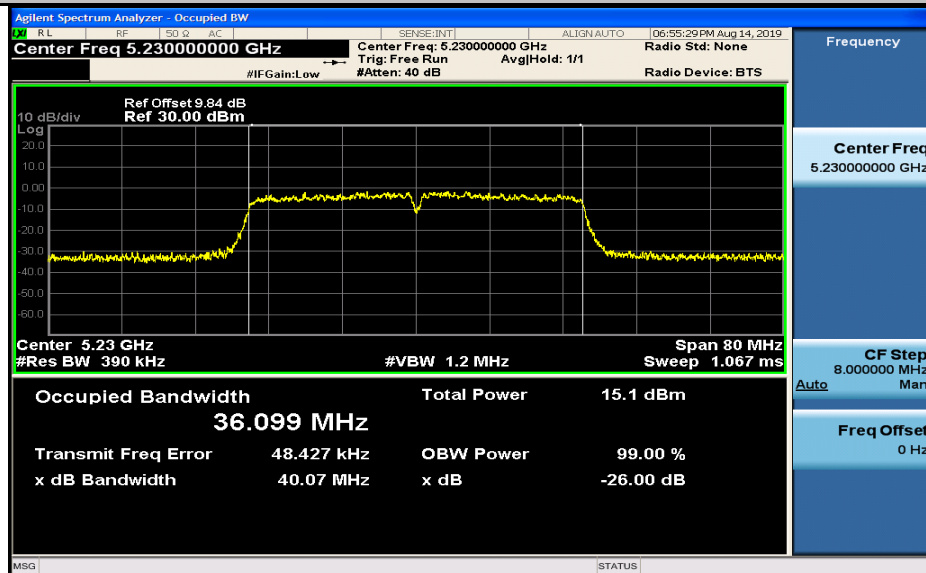
Occupied Bandwidth Measurement_11N20_5240_Ant1



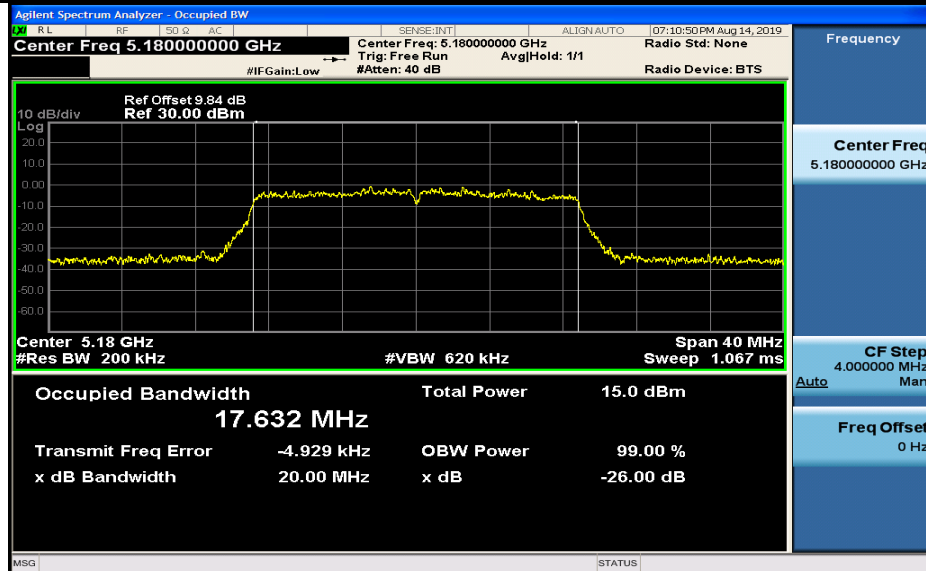
Occupied Bandwidth Measurement_11N40_5190_Ant1



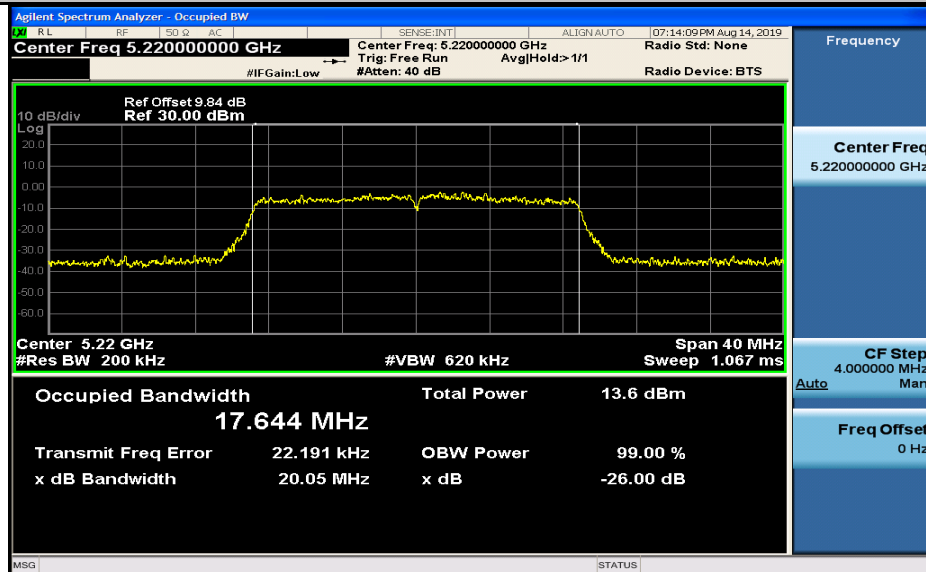
Occupied Bandwidth Measurement_11N40_5230_Ant1



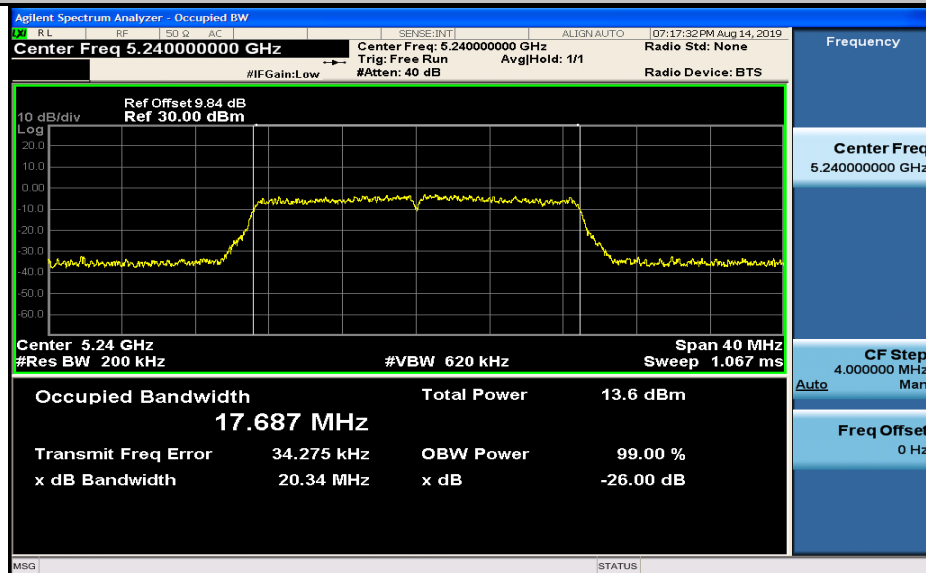
Occupied Bandwidth Measurement_11AC20_5180_Ant1



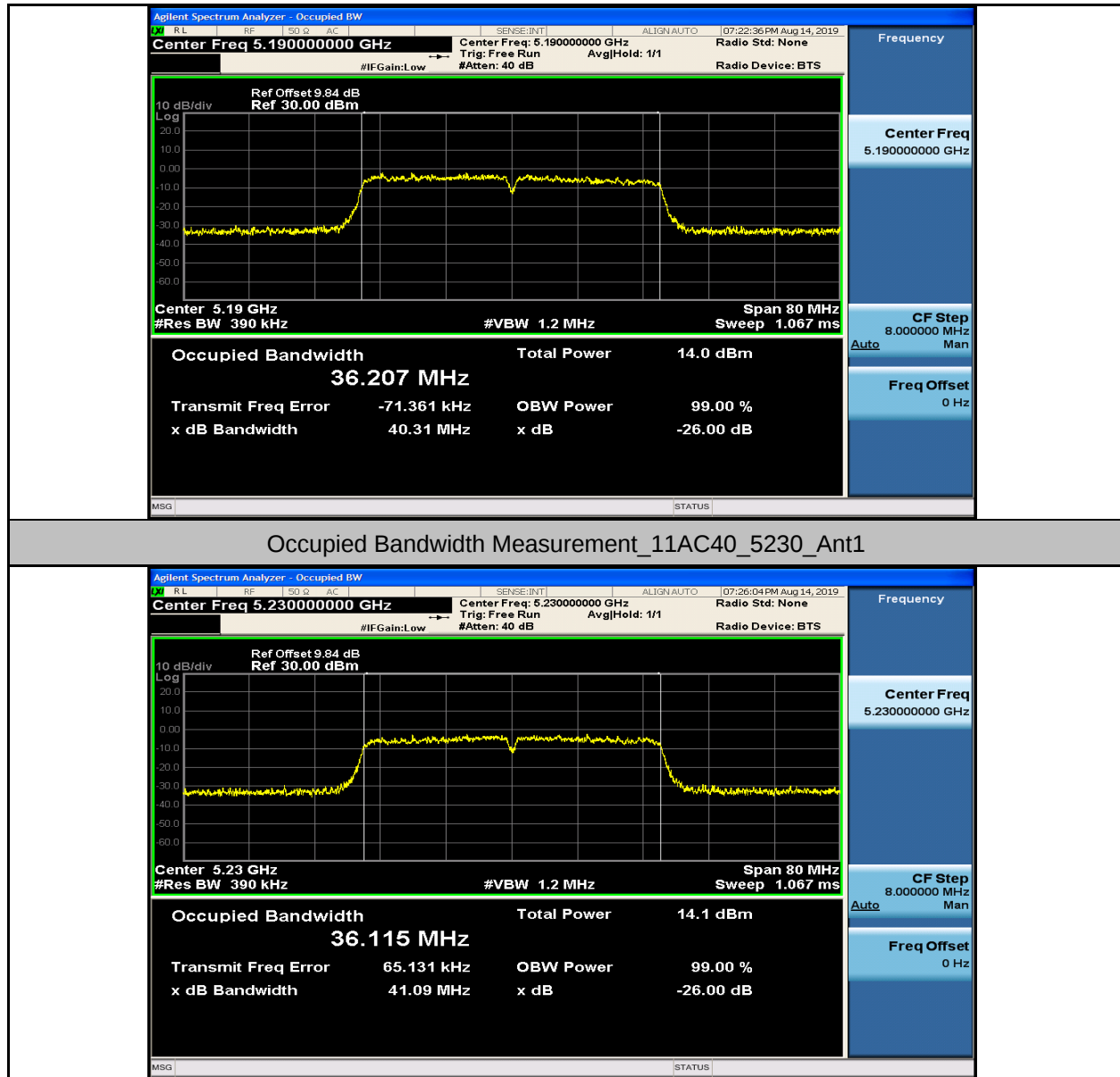
Occupied Bandwidth Measurement_11AC20_5220_Ant1



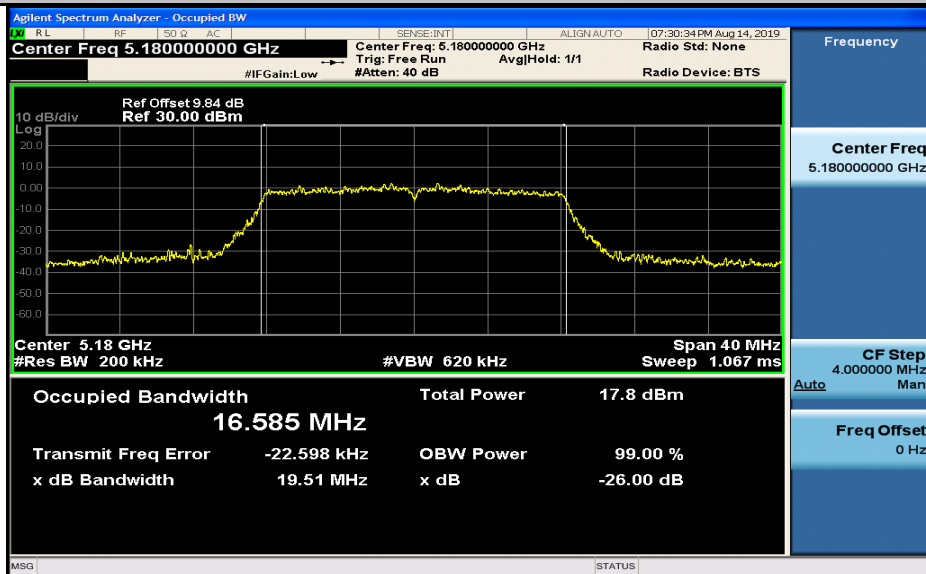
Occupied Bandwidth Measurement_11AC20_5240_Ant1



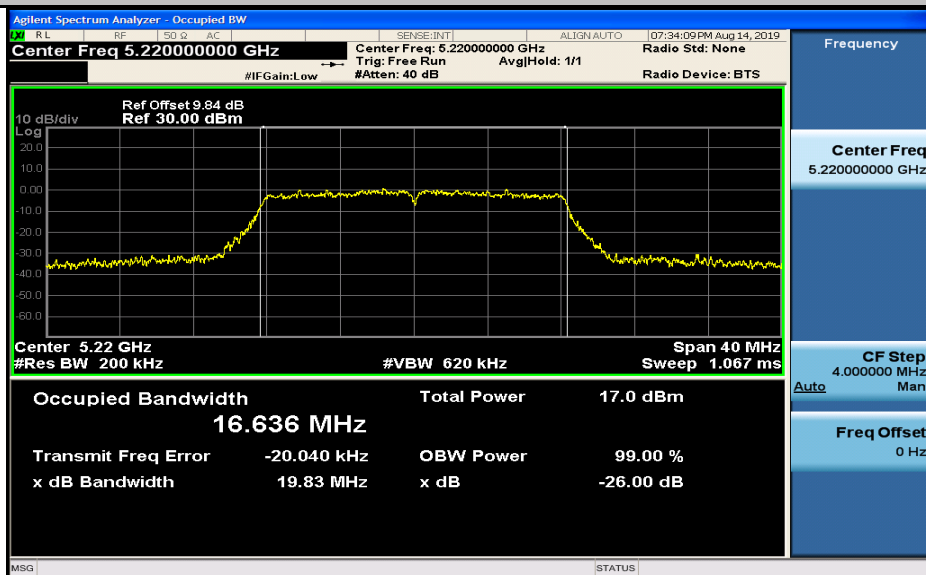
Occupied Bandwidth Measurement_11AC40_5190_Ant1



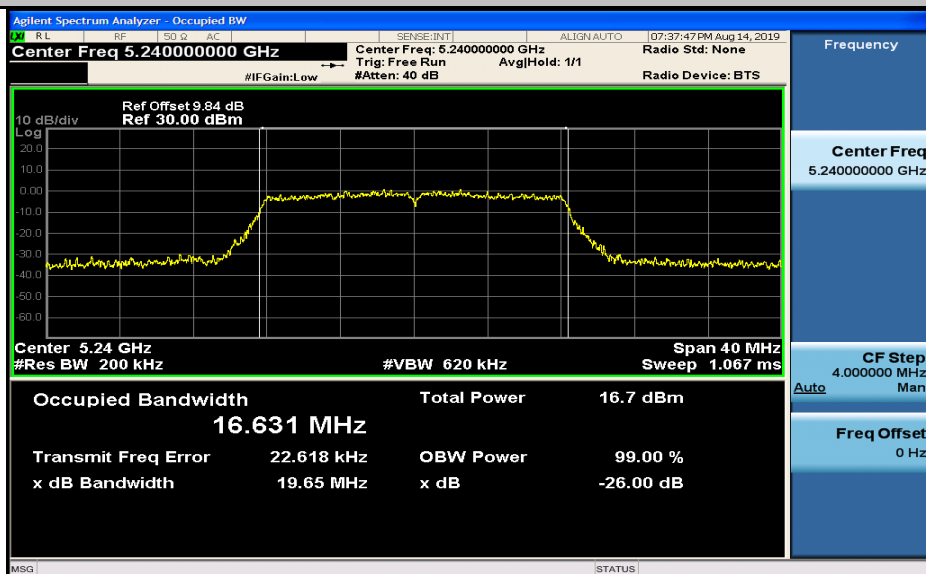
Occupied Bandwidth Measurement_11A_5180_Ant2



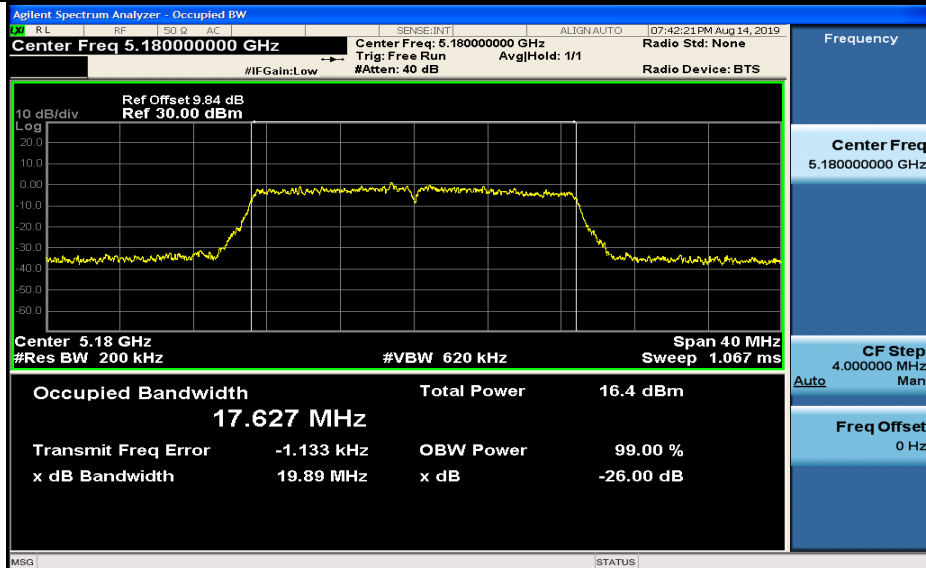
Occupied Bandwidth Measurement_11A_5220_Ant2



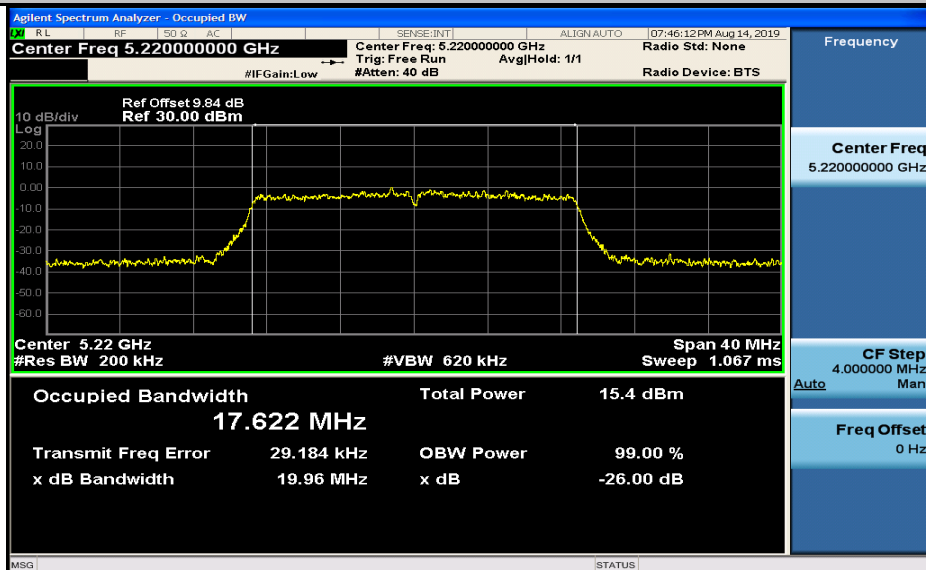
Occupied Bandwidth Measurement_11A_5240_Ant2



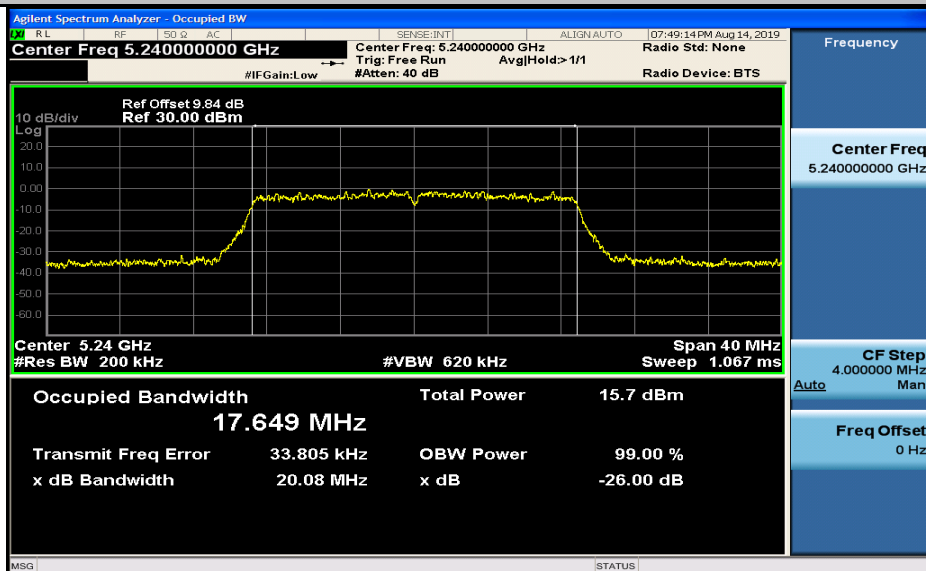
Occupied Bandwidth Measurement_11N20_5180_Ant2



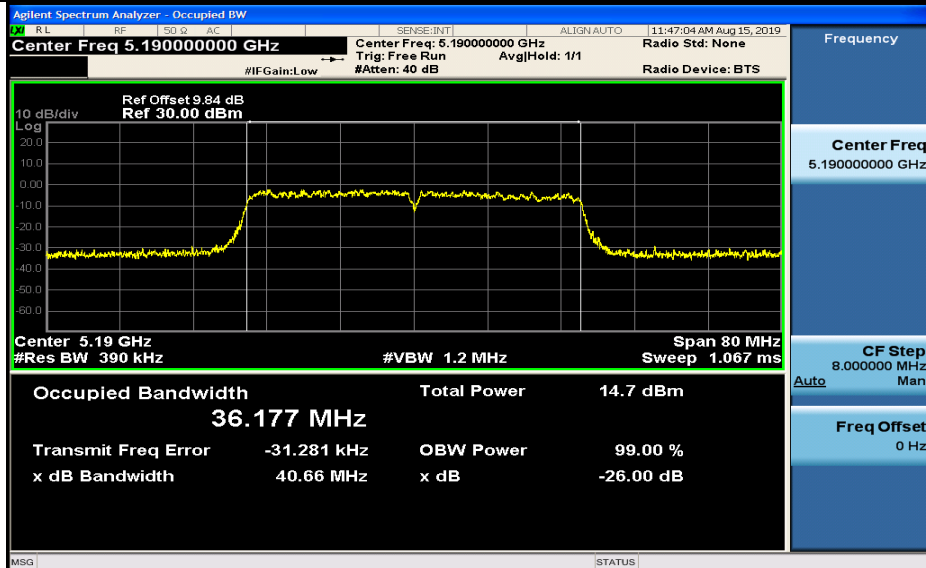
Occupied Bandwidth Measurement_11N20_5220_Ant2



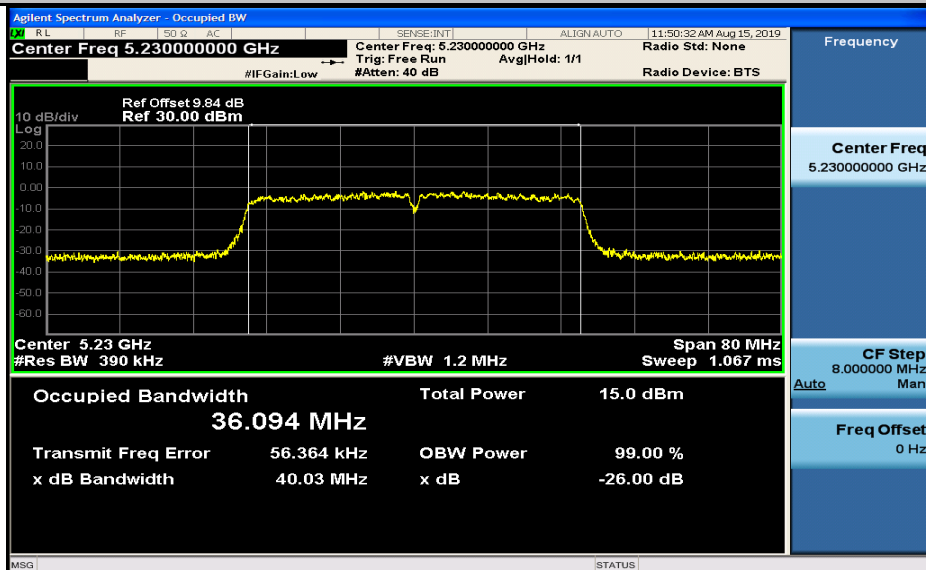
Occupied Bandwidth Measurement_11N20_5240_Ant2



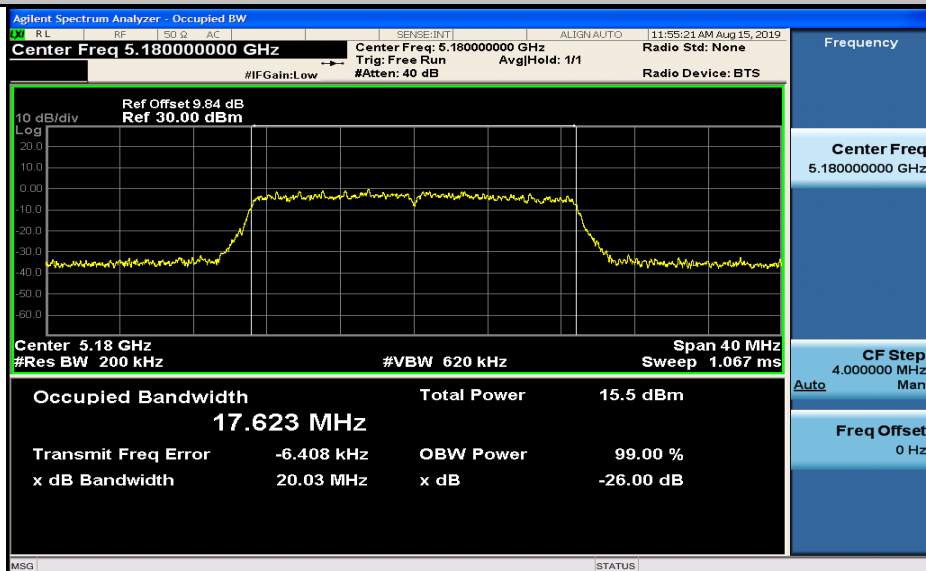
Occupied Bandwidth Measurement_11N40_5190_Ant2



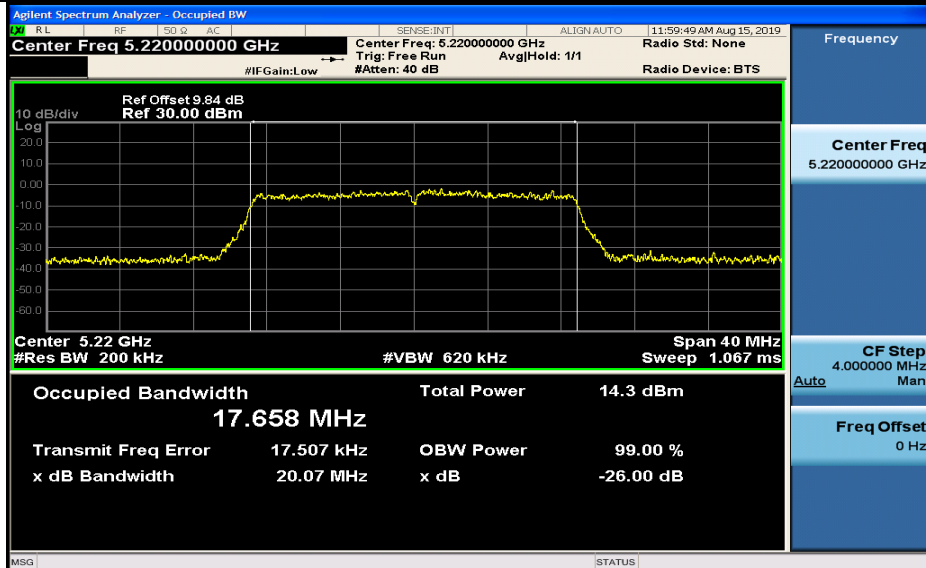
Occupied Bandwidth Measurement_11N40_5230_Ant2



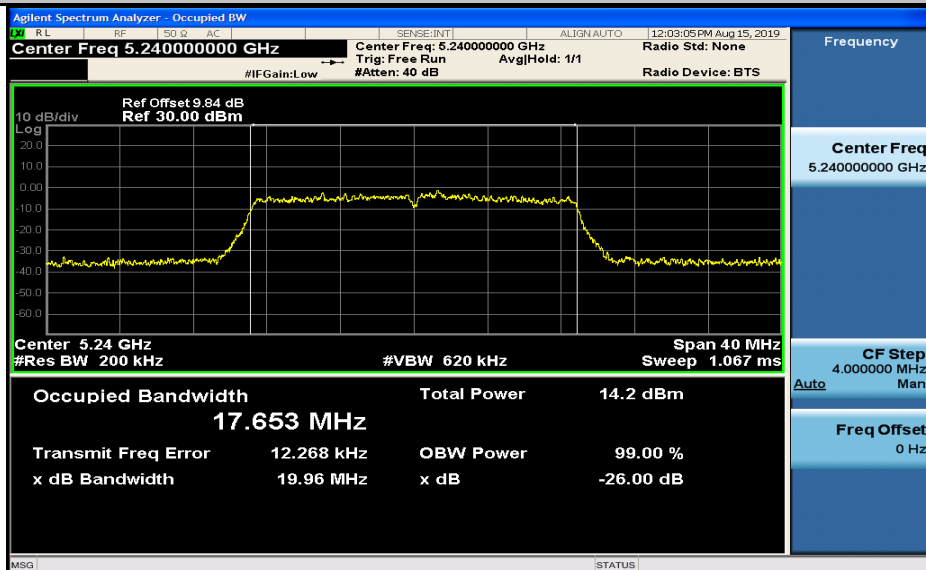
Occupied Bandwidth Measurement_11AC20_5180_Ant2



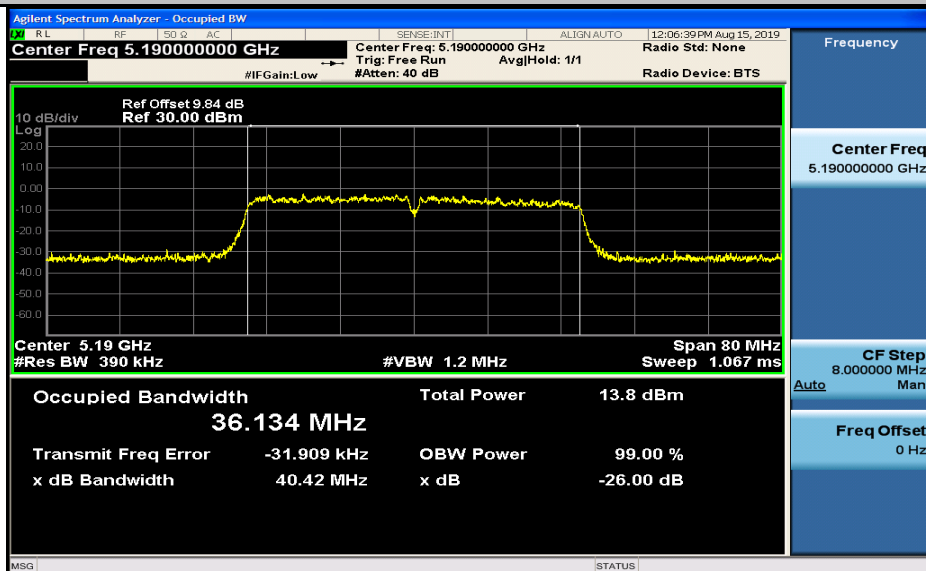
Occupied Bandwidth Measurement_11AC20_5220_Ant2



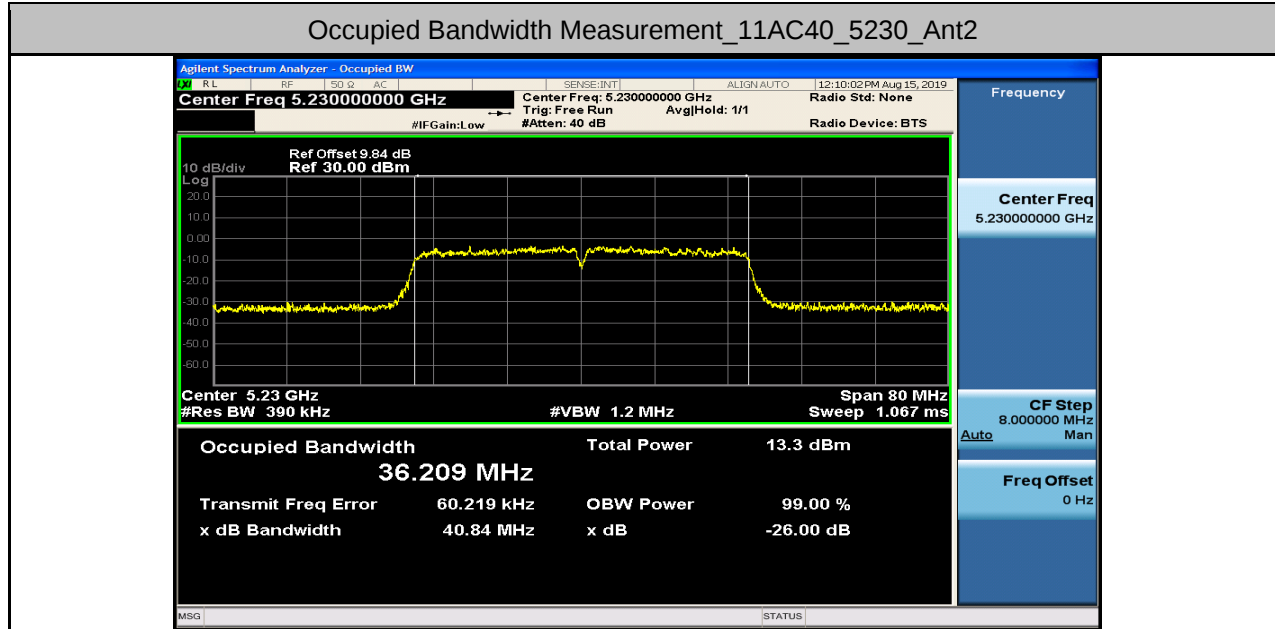
Occupied Bandwidth Measurement_11AC20_5240_Ant2



Occupied Bandwidth Measurement_11AC40_5190_Ant2



Occupied Bandwidth Measurement_11AC40_5230_Ant2



4.Maximum Conduct Output Power

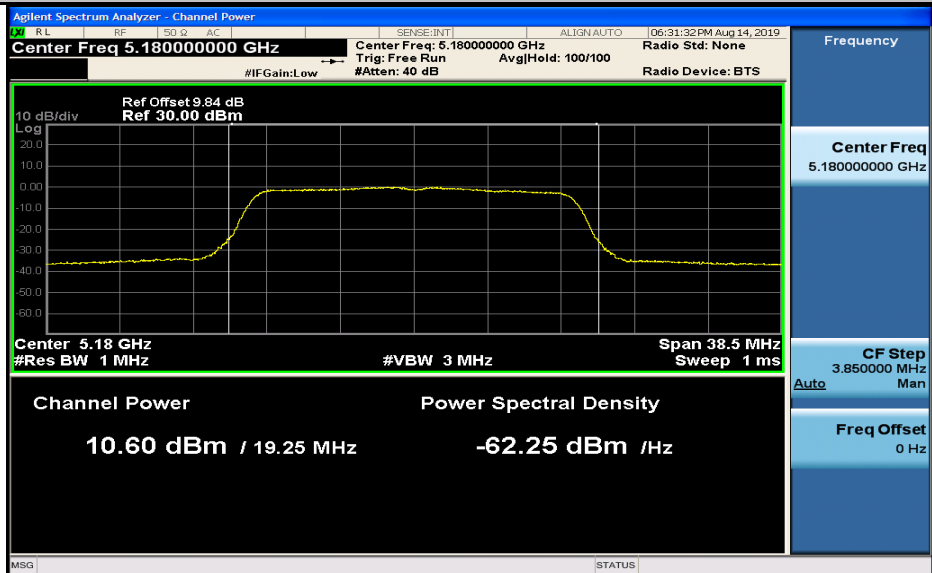
Test Mode	Test Channel	Level [dBm]		10log(1/x) Factor [dB]		Power [dBm]			Limit [dBm]	Verdict
		Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	MIMO		
11A	5180	10.6	11.49	0.28	0.28	10.88	11.77	NA	30.00	PASS
11A	5220	9.75	11.07	0.28	0.28	10.03	11.35	NA	30.00	PASS
11A	5240	10.41	10.57	0.28	0.29	10.69	10.86	NA	30.00	PASS
11N20	5180	9.68	10.06	0.31	0.31	9.99	10.37	13.19	28.00	PASS
11N20	5220	8.76	9.28	0.31	0.31	9.07	9.59	12.35	28.00	PASS
11N20	5240	8.39	9.46	0.31	0.31	8.7	9.77	12.28	28.00	PASS
11N40	5190	8.66	8.43	0.60	0.60	9.26	9.03	12.16	28.00	PASS
11N40	5230	8.62	8.48	0.60	0.60	9.22	9.08	12.16	28.00	PASS
11AC20	5180	8.64	9.08	0.30	0.30	8.94	9.38	12.18	28.00	PASS
11AC20	5220	7.34	8.14	0.30	0.30	7.64	8.44	11.07	28.00	PASS
11AC20	5240	7.46	7.92	0.30	0.31	7.76	8.23	11.01	28.00	PASS
11AC40	5190	7.67	7.43	0.59	0.60	8.26	8.03	11.16	28.00	PASS
11AC40	5230	7.65	6.8	0.59	0.59	8.24	7.39	10.85	28.00	PASS

Remark:

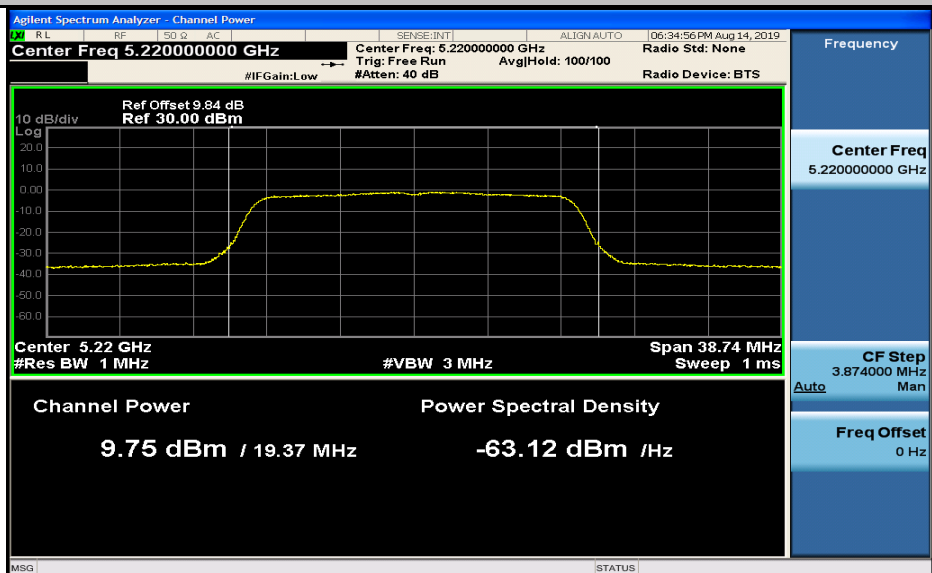
1) Output Average Power = Reading Power + Duty Cycle Correction Factor

2) Per KDB 662911, the conducted powers at Antenna A and Antenna B were first measured separately during MIMO transmission as shown in section above. The measured values were then summed in linear power units then converted back to dBm.

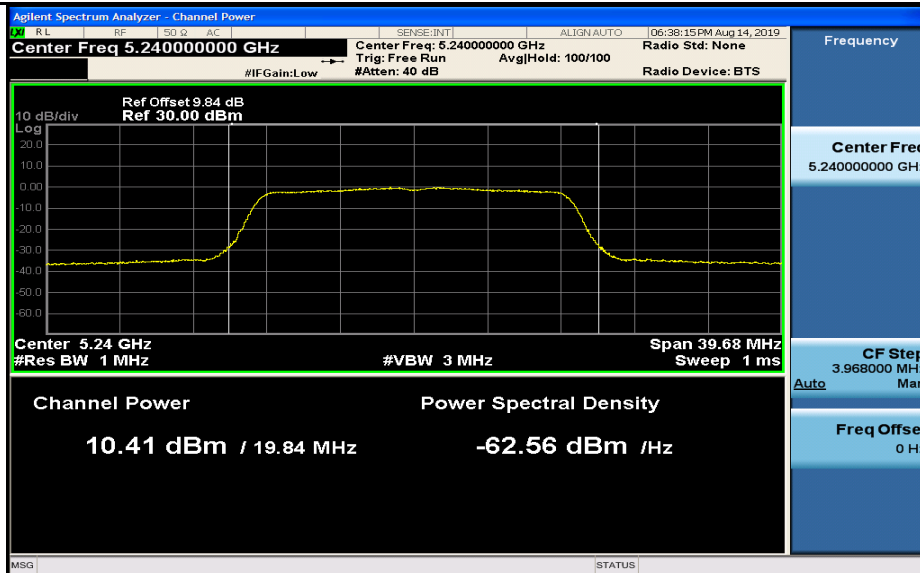
Maximum Conduct Output Power_11A_5180_Ant1



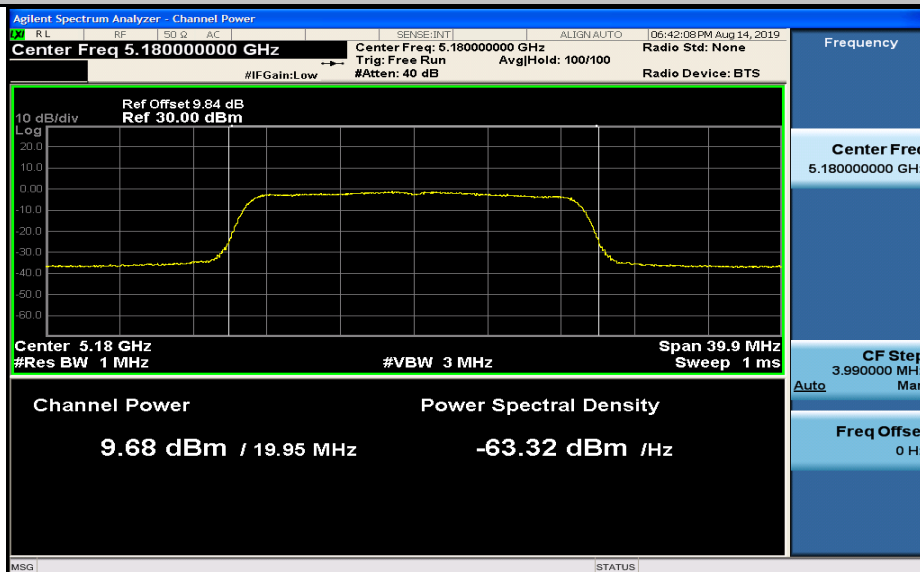
Maximum Conduct Output Power_11A_5220_Ant1



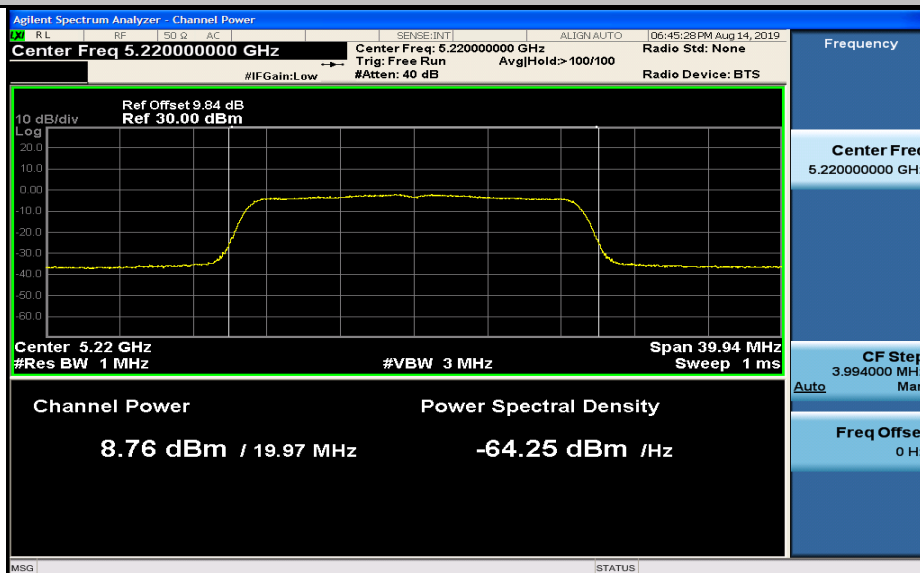
Maximum Conduct Output Power_11A_5240_Ant1



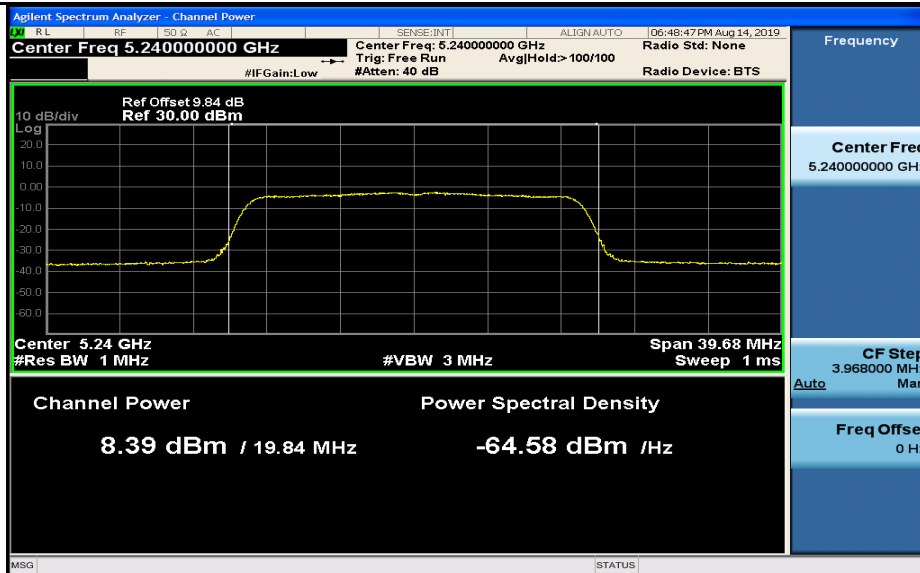
Maximum Conduct Output Power_11N20_5180_Ant1



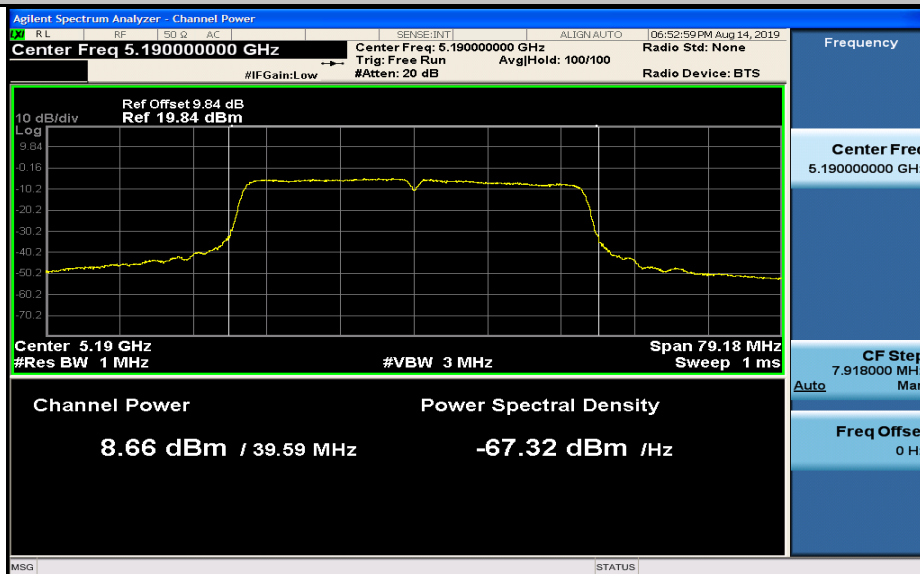
Maximum Conduct Output Power_11N20_5220_Ant1



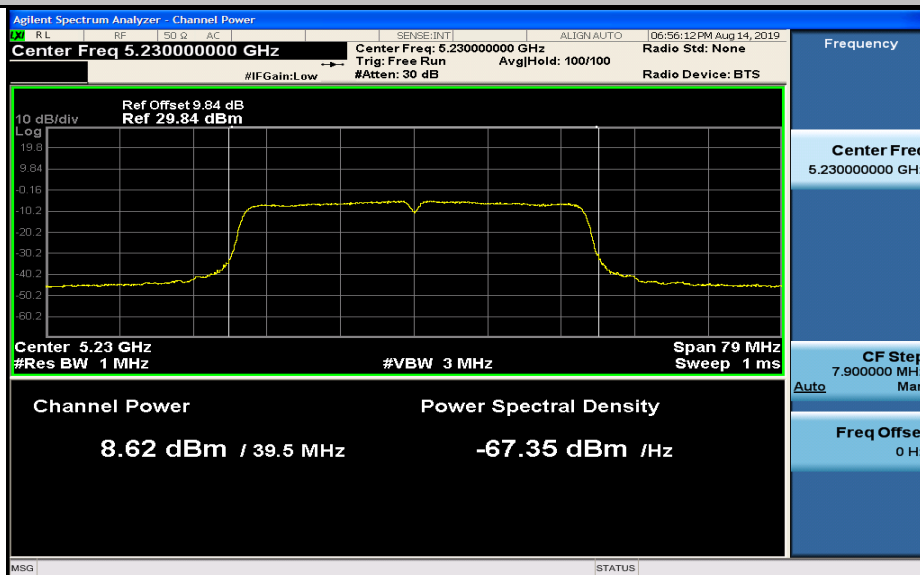
Maximum Conduct Output Power_11N20_5240_Ant1



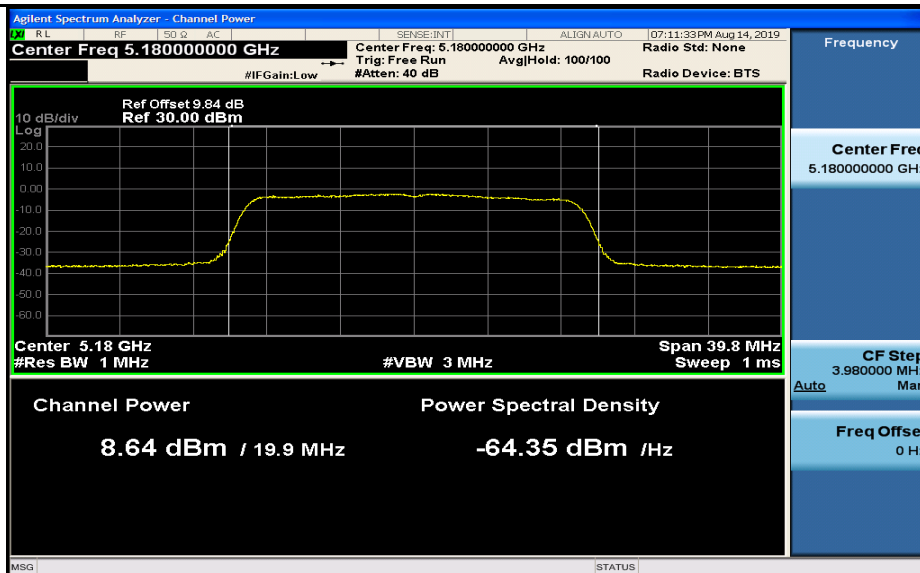
Maximum Conduct Output Power_11N40_5190_Ant1



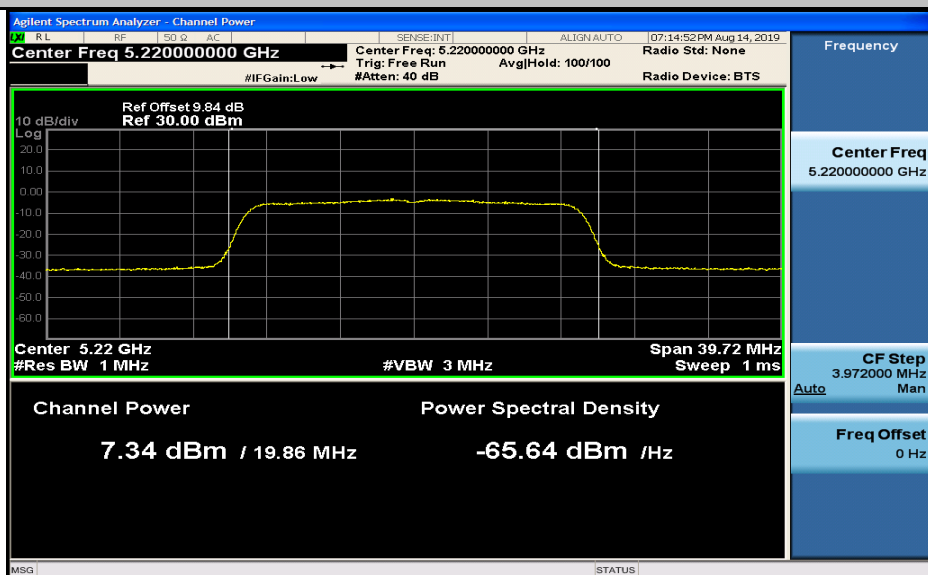
Maximum Conduct Output Power_11N40_5230_Ant1



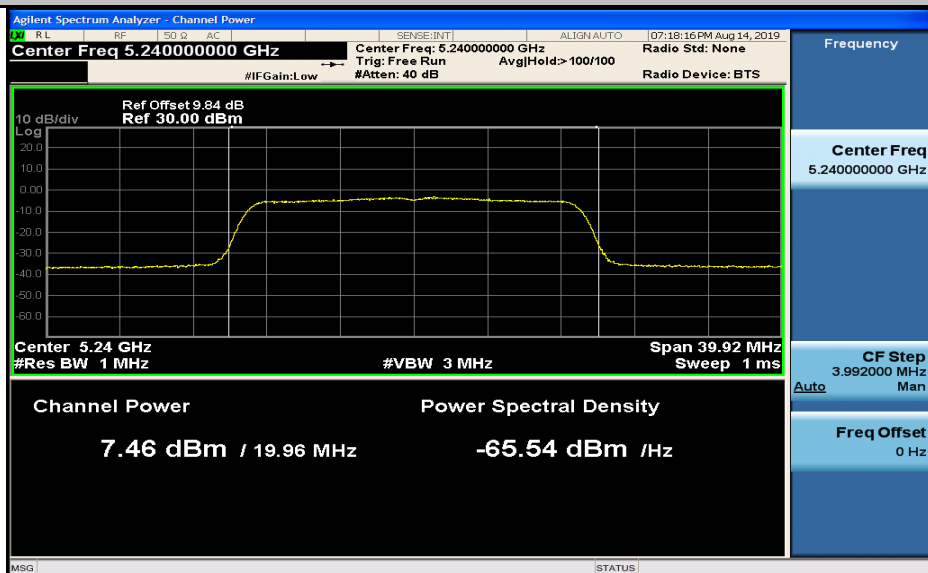
Maximum Conduct Output Power_11AC20_5180_Ant1



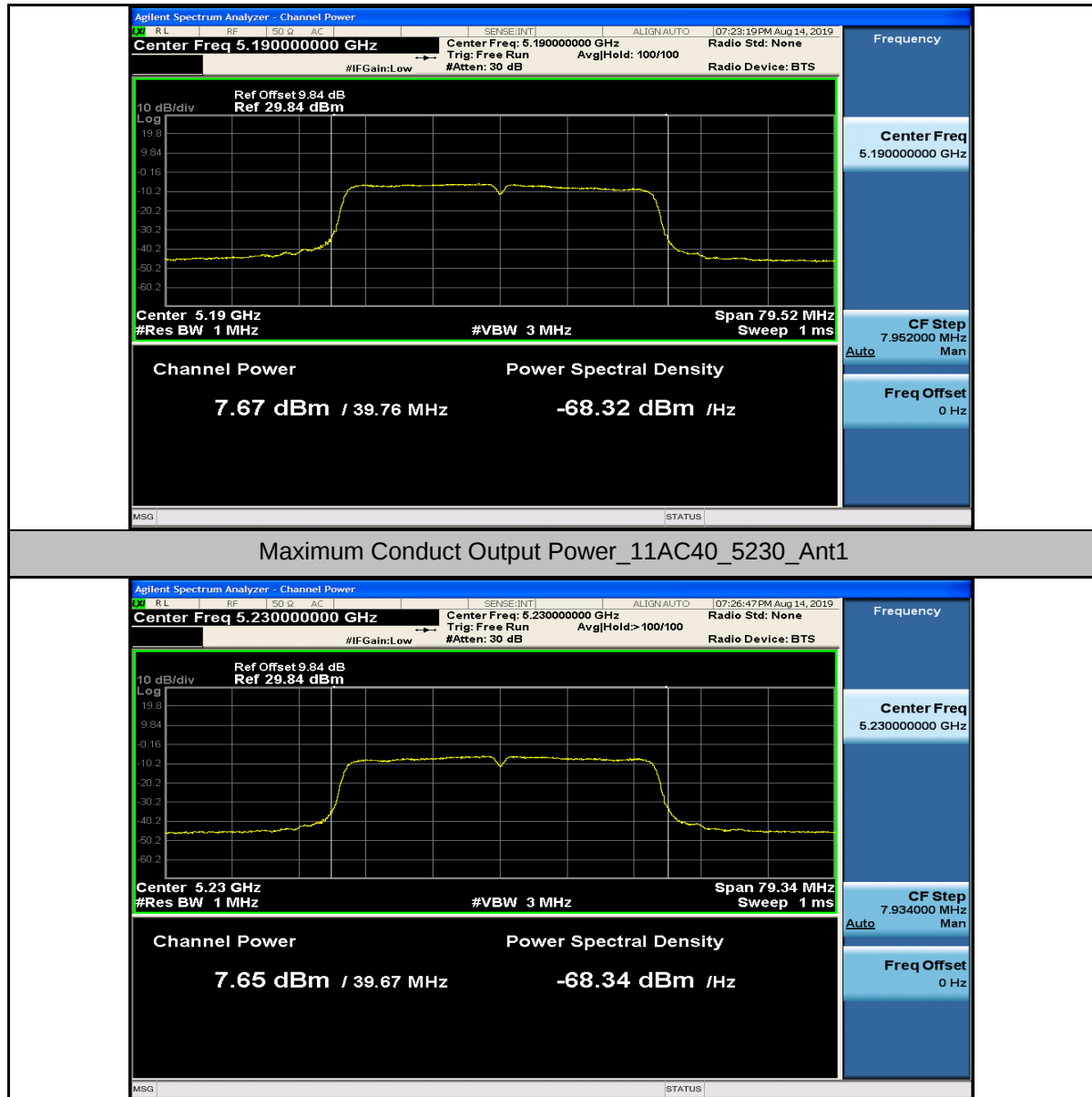
Maximum Conduct Output Power_11AC20_5220_Ant1



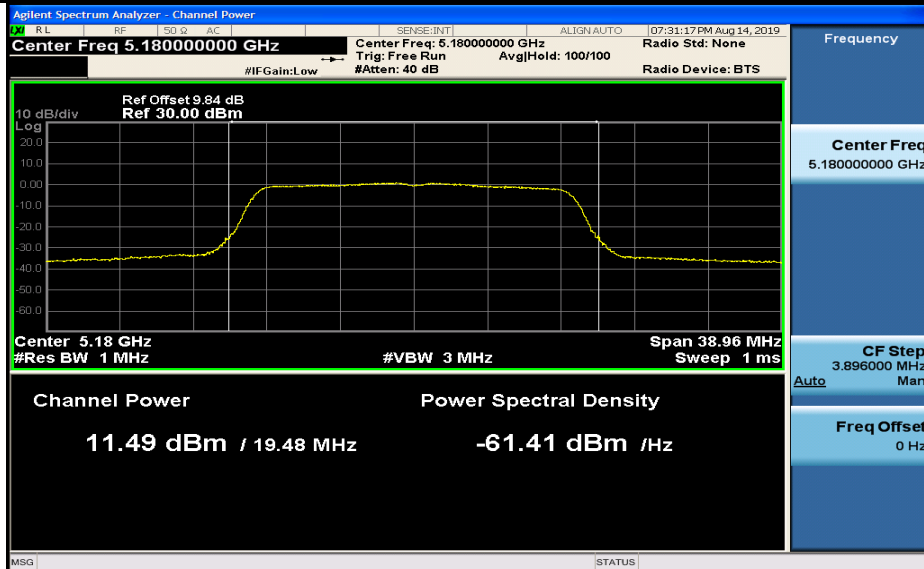
Maximum Conduct Output Power_11AC20_5240_Ant1



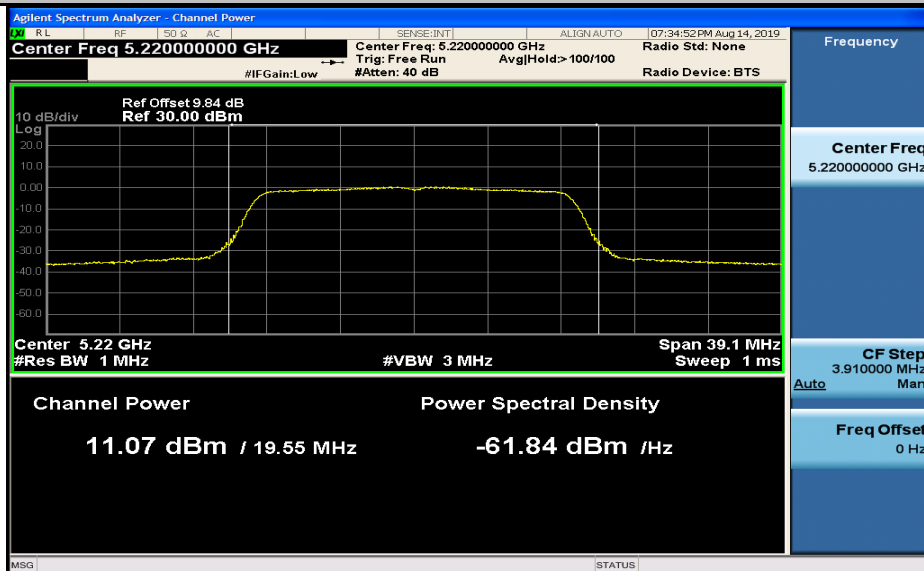
Maximum Conduct Output Power_11AC40_5190_Ant1



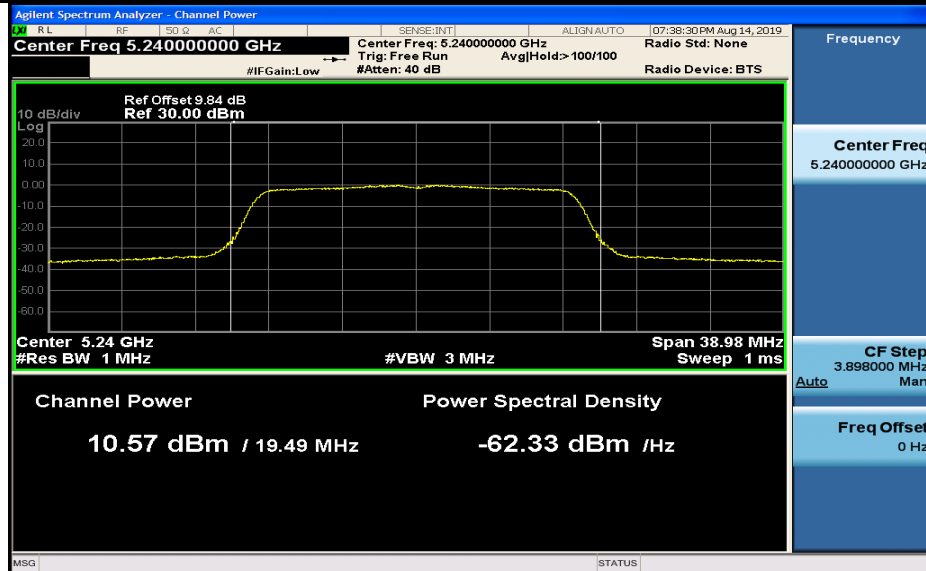
Maximum Conduct Output Power_11A_5180_Ant2



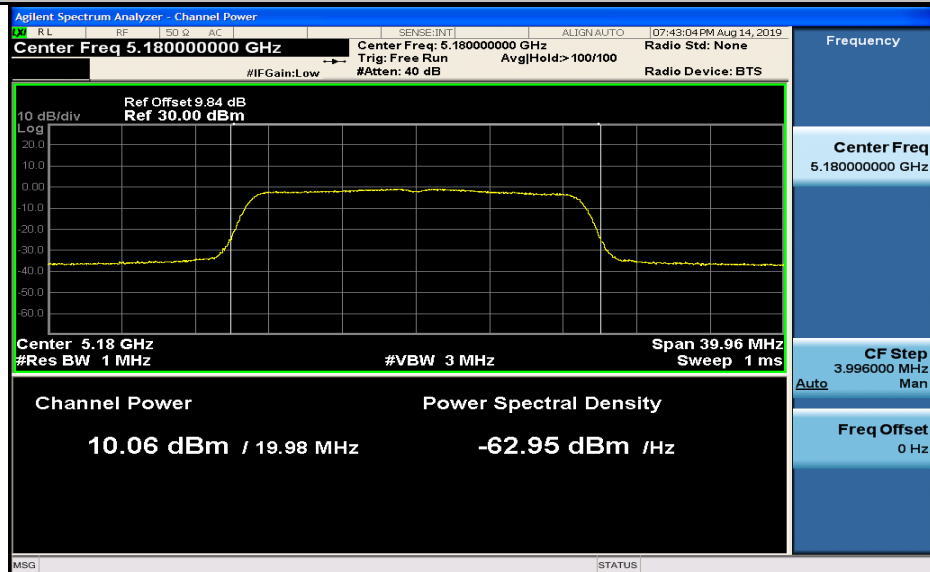
Maximum Conduct Output Power_11A_5220_Ant2



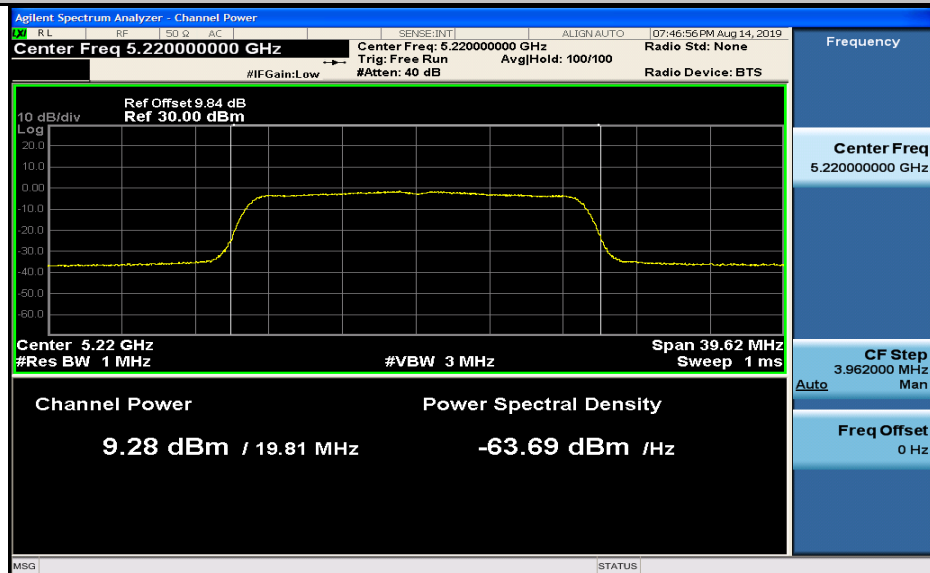
Maximum Conduct Output Power_11A_5240_Ant2



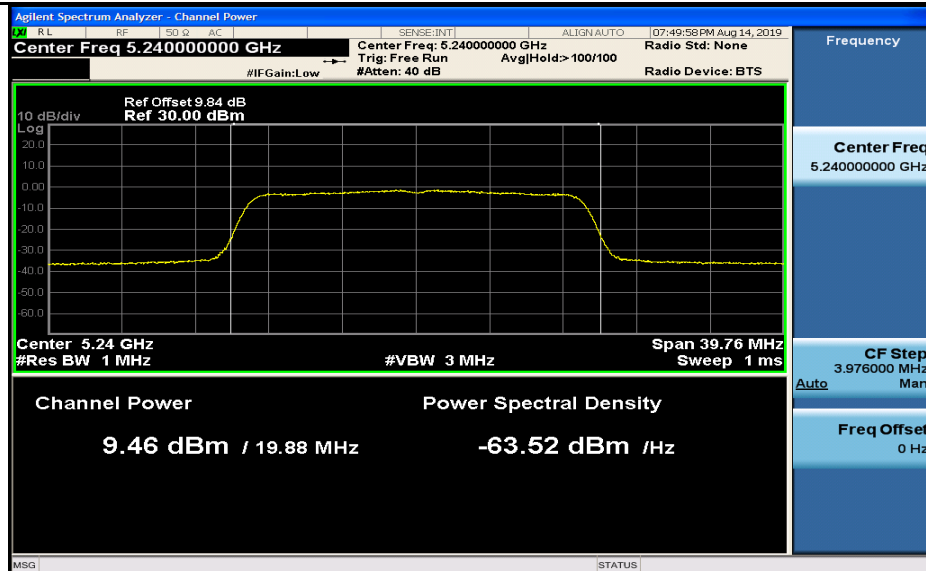
Maximum Conduct Output Power_11N20_5180_Ant2



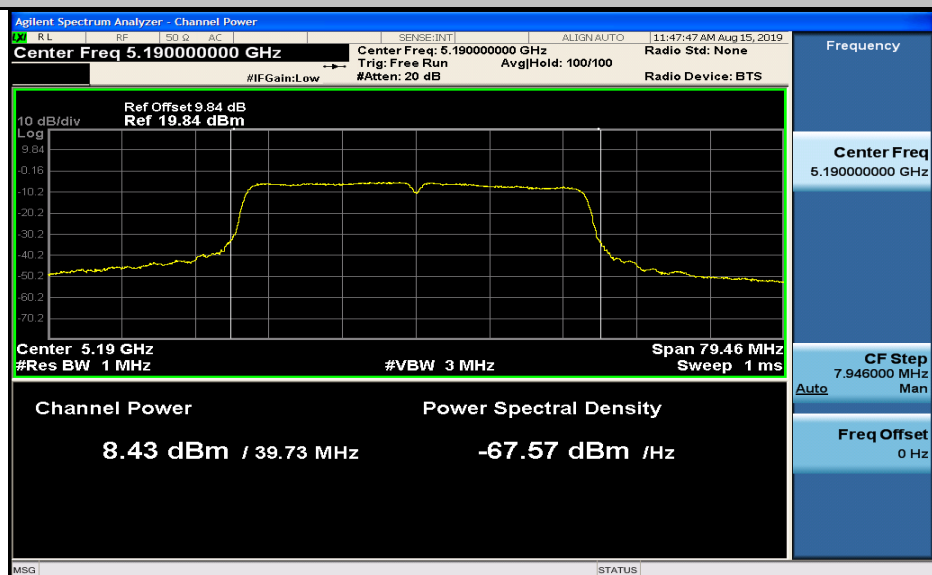
Maximum Conduct Output Power_11N20_5220_Ant2



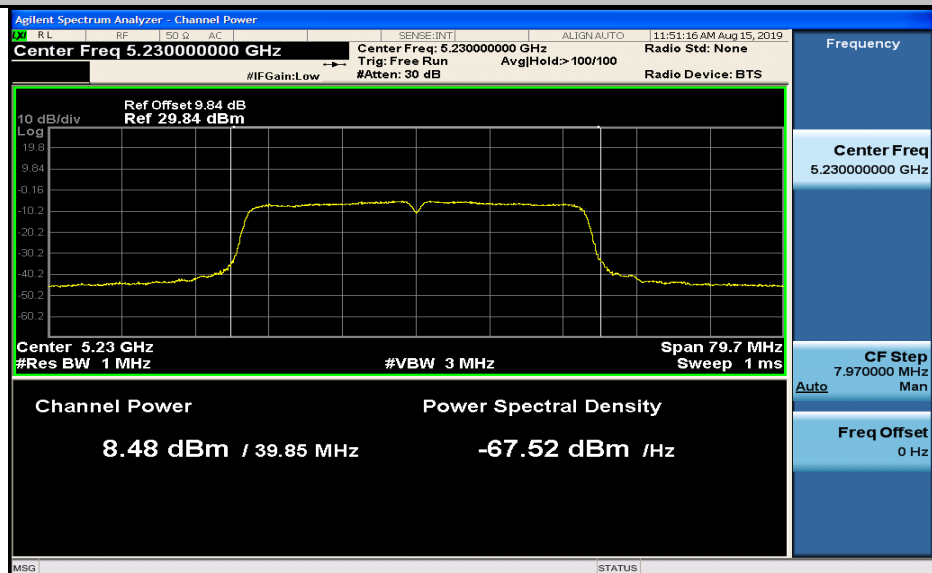
Maximum Conduct Output Power_11N20_5240_Ant2



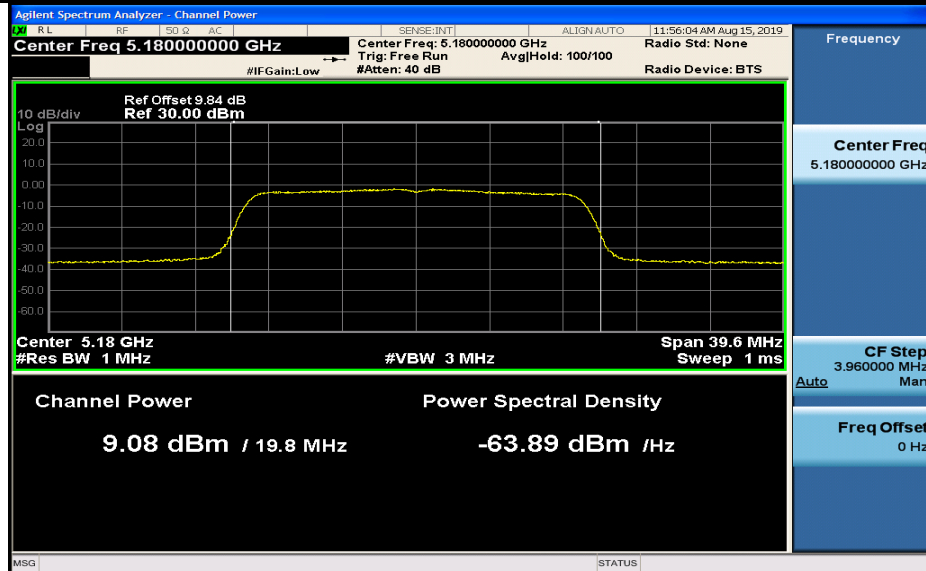
Maximum Conduct Output Power_11N40_5190_Ant2



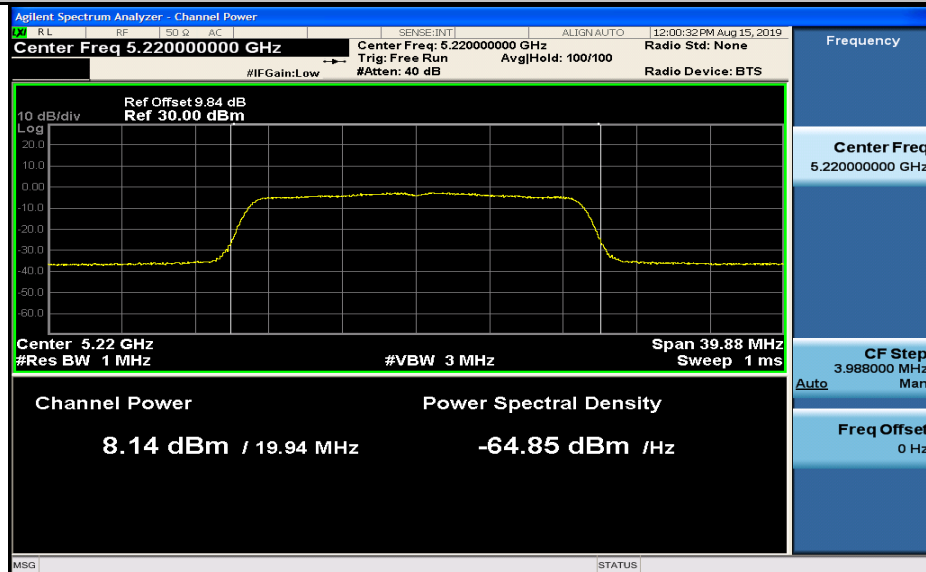
Maximum Conduct Output Power_11N40_5230_Ant2



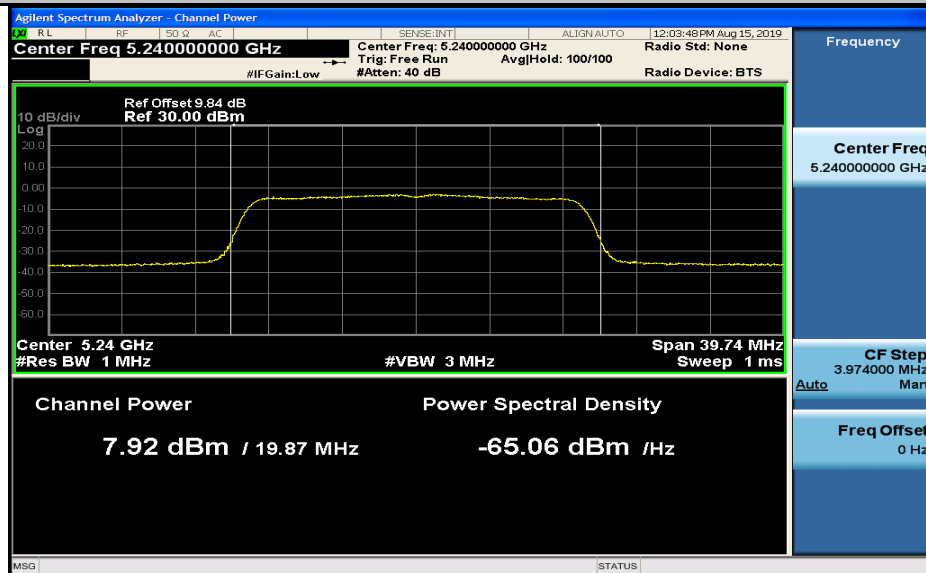
Maximum Conduct Output Power_11AC20_5180_Ant2



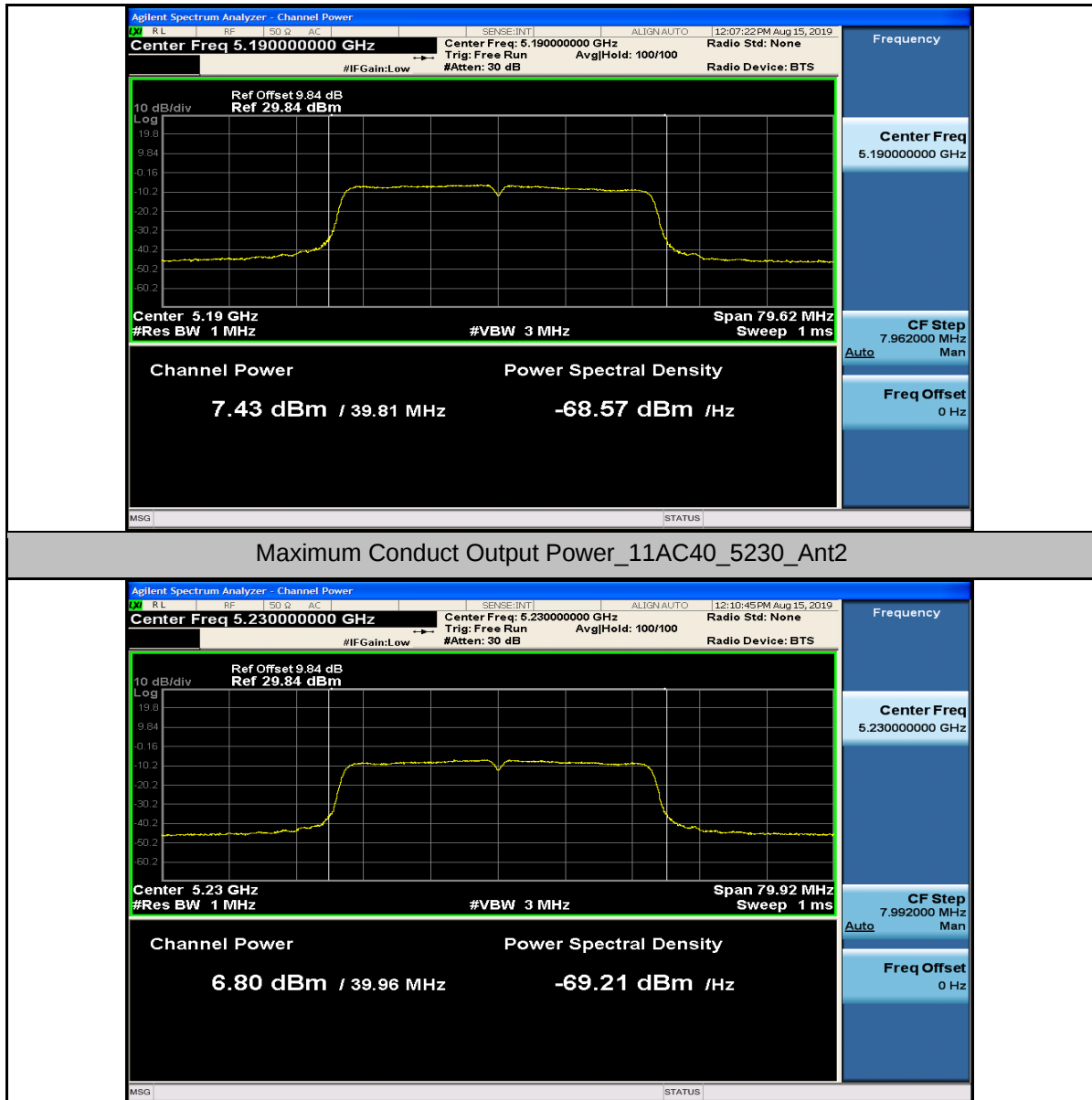
Maximum Conduct Output Power_11AC20_5220_Ant2



Maximum Conduct Output Power_11AC20_5240_Ant2



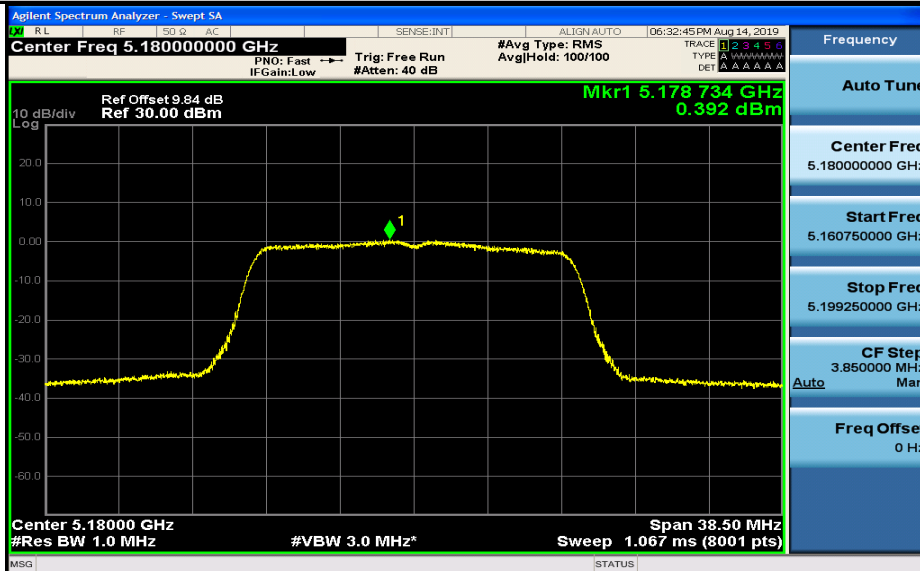
Maximum Conduct Output Power_11AC40_5190_Ant2



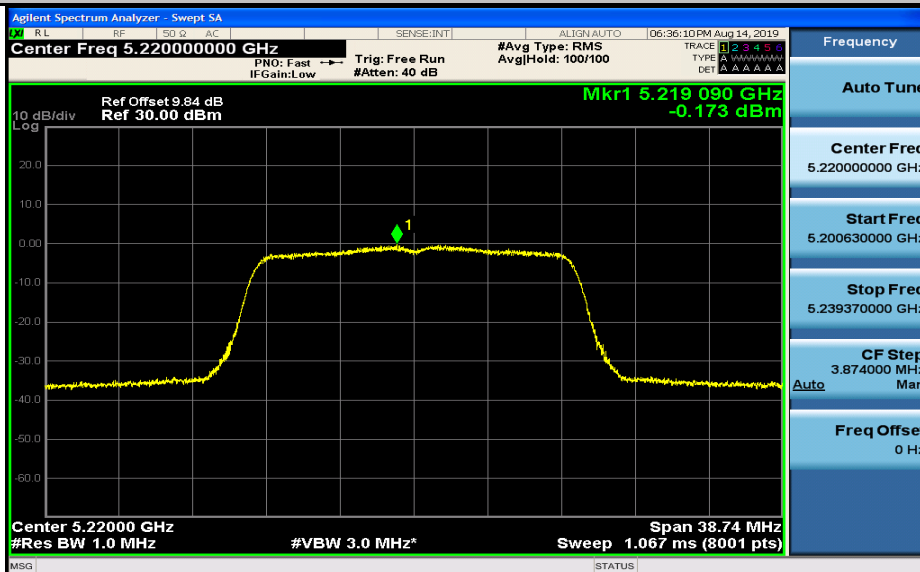
5.Maximum Power Spectral Density

Test Mode	Test Channel	Level [dBm/MHz]		10log(1/x) Factor [dB]		PSD [dBm/MHz]			Limit [dBm/MHz]	Verdict
		Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	MIMO		
11A	5180	0.39	1.18	0.28	0.28	0.67	1.46	NA	17.00	PASS
11A	5220	-0.17	0.64	0.28	0.28	0.11	0.92	NA	17.00	PASS
11A	5240	0.22	0.93	0.28	0.29	0.5	1.22	NA	17.00	PASS
11N20	5180	-0.49	-0.35	0.31	0.31	-0.18	-0.04	2.90	15.00	PASS
11N20	5220	-1.73	-1.35	0.31	0.31	-1.42	-1.04	1.78	15.00	PASS
11N20	5240	-2.01	-1.05	0.31	0.31	-1.7	-0.74	1.82	15.00	PASS
11N40	5190	-5	-5.42	0.6	0.6	-4.4	-4.82	-1.59	15.00	PASS
11N40	5230	-4.51	-5.06	0.6	0.6	-3.91	-4.46	-1.17	15.00	PASS
11AC20	5180	-1.99	-1.27	0.3	0.3	-1.69	-0.97	1.70	15.00	PASS
11AC20	5220	-3.46	-2.28	0.3	0.3	-3.16	-1.98	0.48	15.00	PASS
11AC20	5240	-2.94	-2.58	0.3	0.31	-2.64	-2.27	0.56	15.00	PASS
11AC40	5190	-6.13	-6.43	0.59	0.6	-5.54	-5.83	-2.67	15.00	PASS
11AC40	5230	-5.82	-6.46	0.59	0.59	-5.23	-5.87	-2.53	15.00	PASS

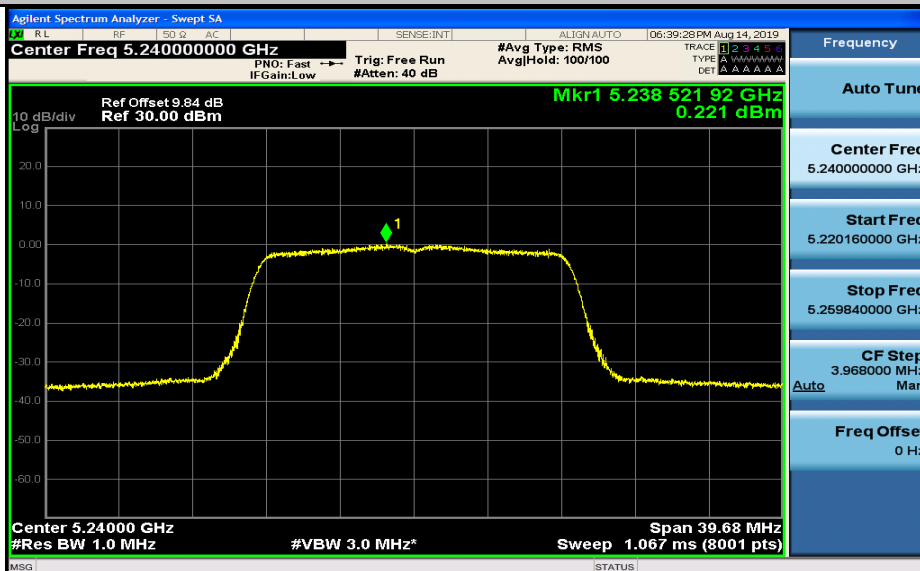
Maximum Power Spectral Density_TNVN_11A_5180_Ant1



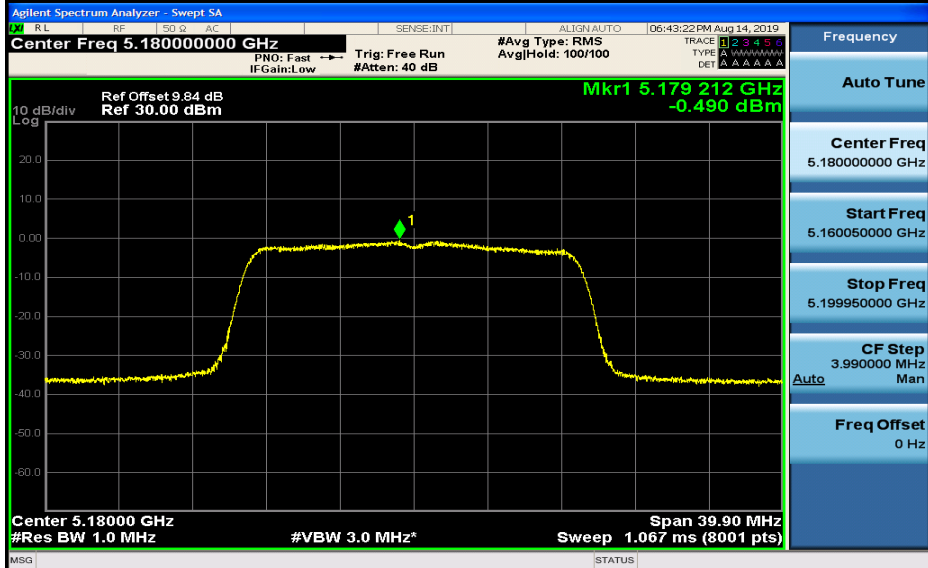
Maximum Power Spectral Density_TNVN_11A_5220_Ant1



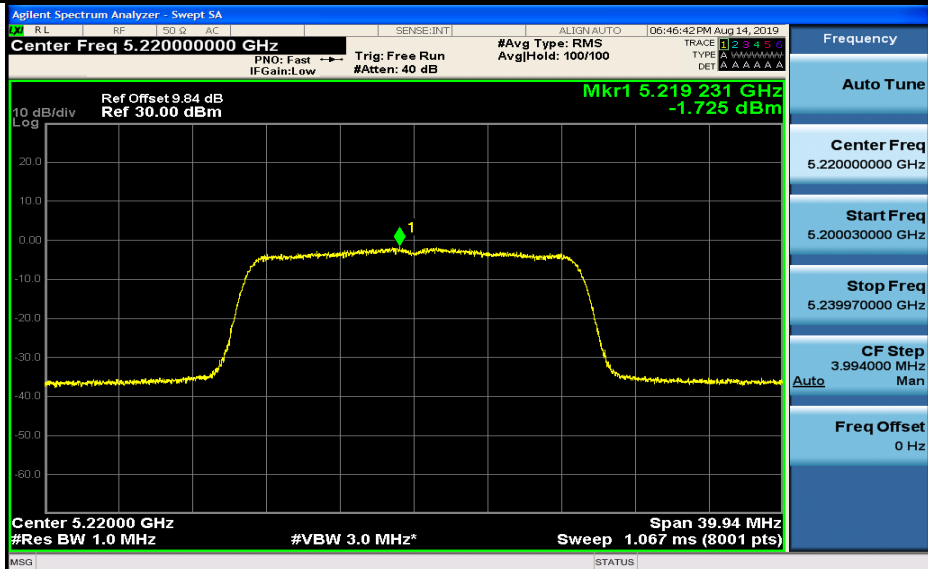
Maximum Power Spectral Density_TNVN_11A_5240_Ant1



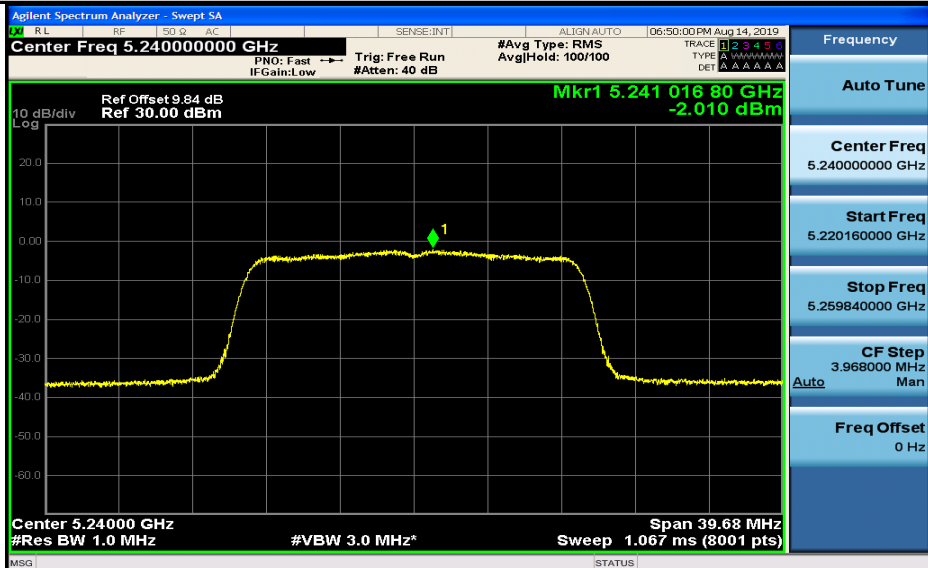
Maximum Power Spectral Density_TNVN_11N20_5180_Ant1



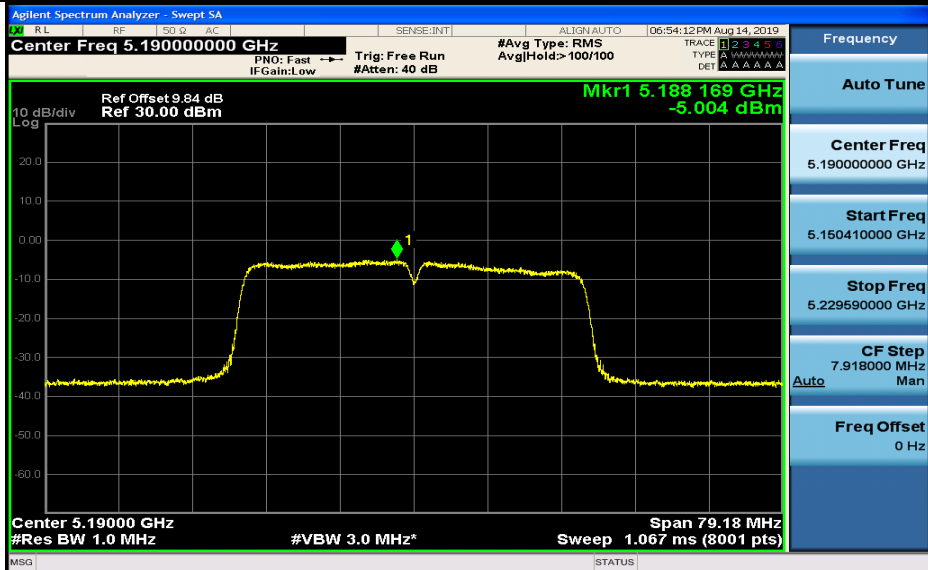
Maximum Power Spectral Density_TNVN_11N20_5220_Ant1



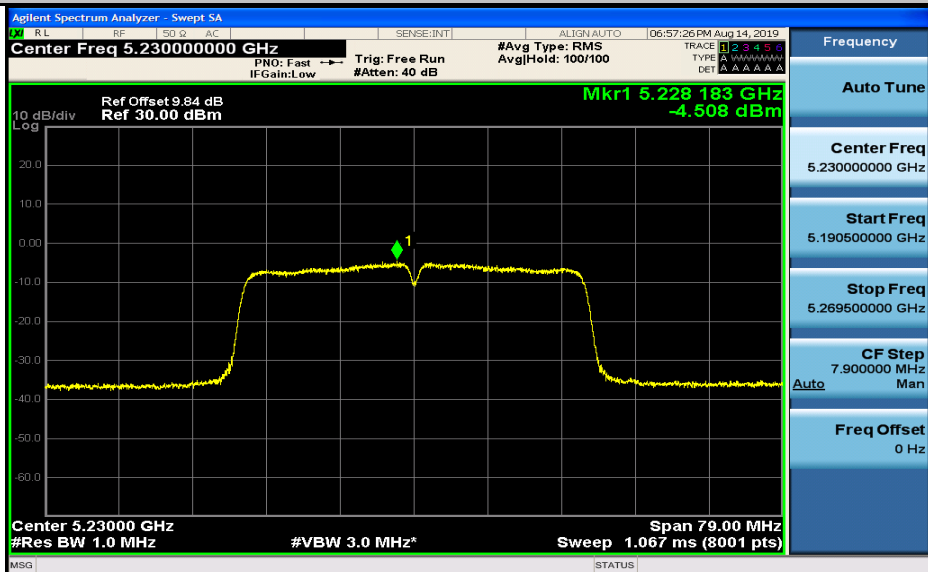
Maximum Power Spectral Density_TNVN_11N20_5240_Ant1



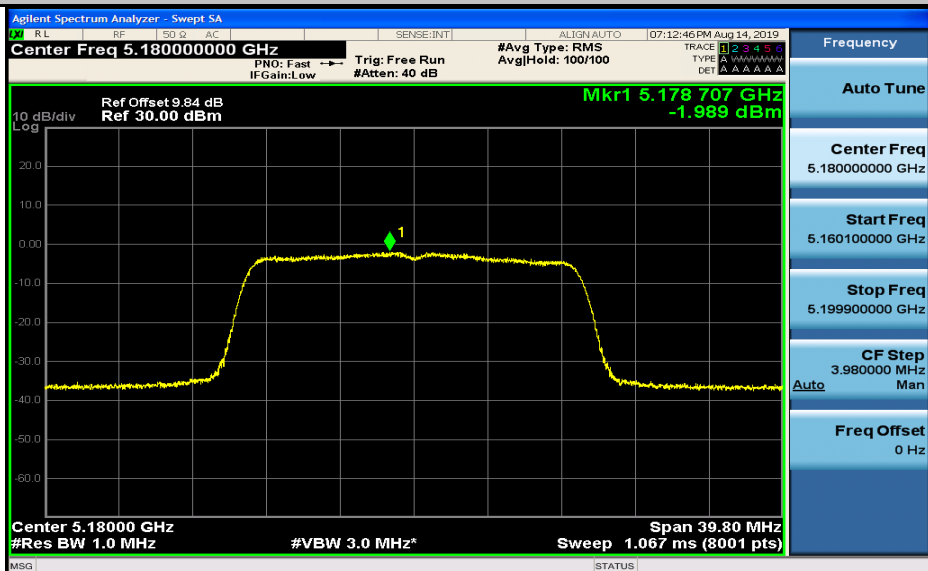
Maximum Power Spectral Density_TNVN_11N40_5190_Ant1



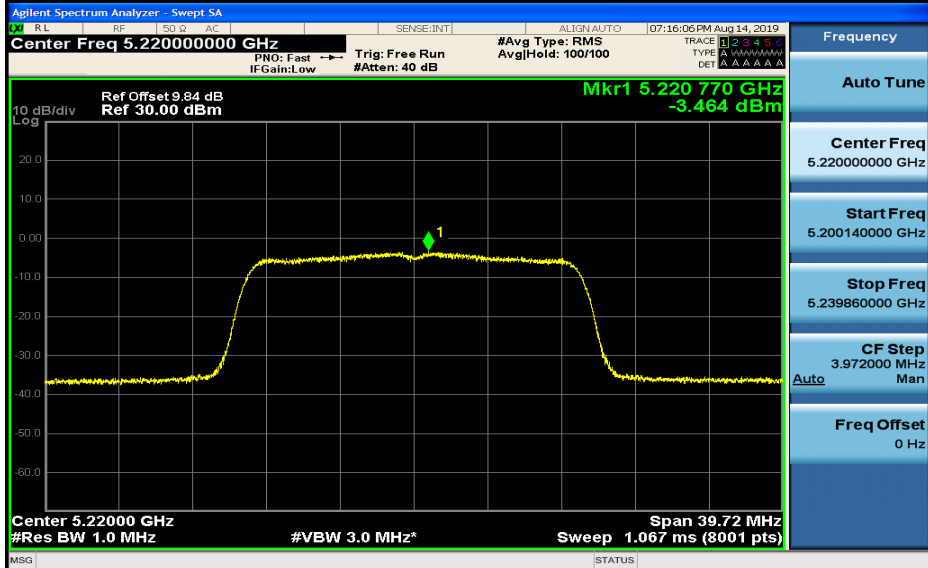
Maximum Power Spectral Density_TNVN_11N40_5230_Ant1



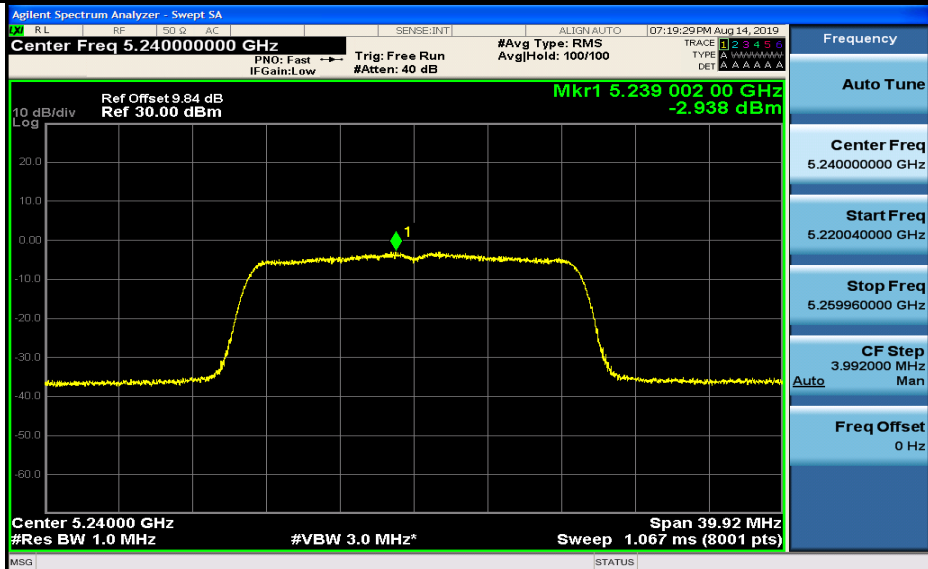
Maximum Power Spectral Density_TNVN_11AC20_5180_Ant1



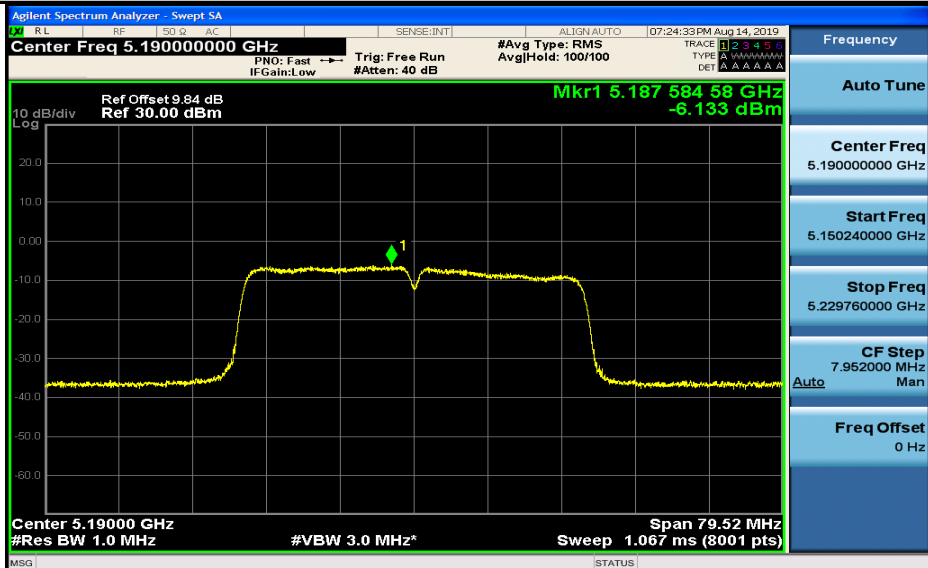
Maximum Power Spectral Density_TNVN_11AC20_5220_Ant1



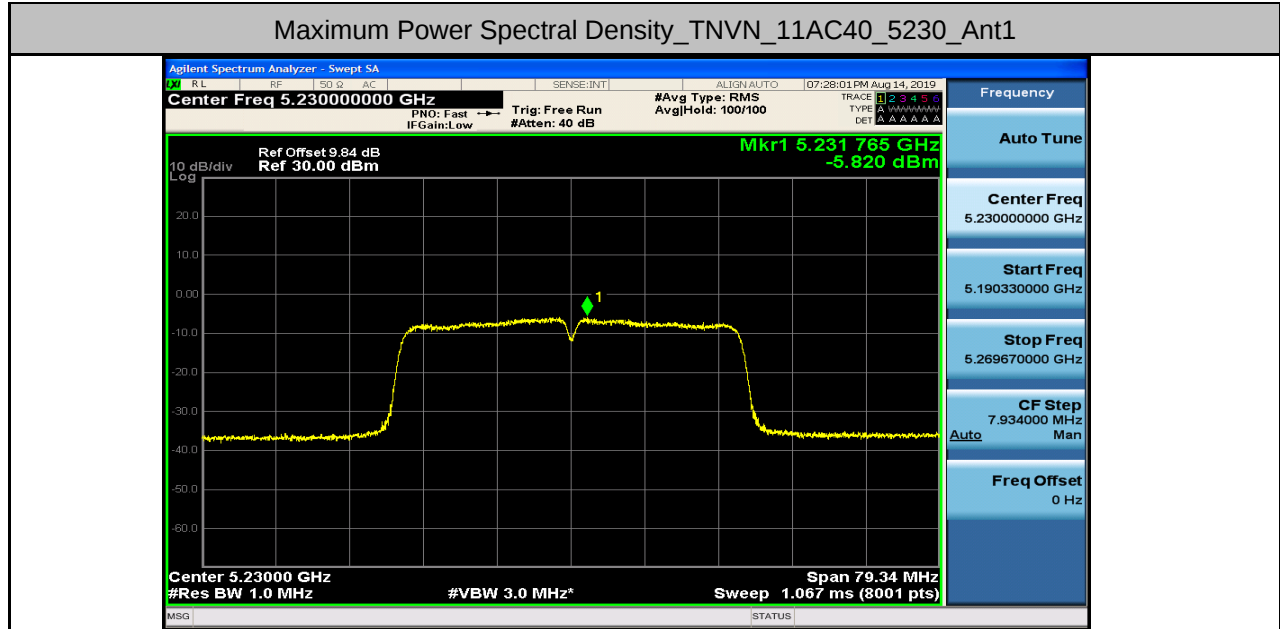
Maximum Power Spectral Density_TNVN_11AC20_5240_Ant1



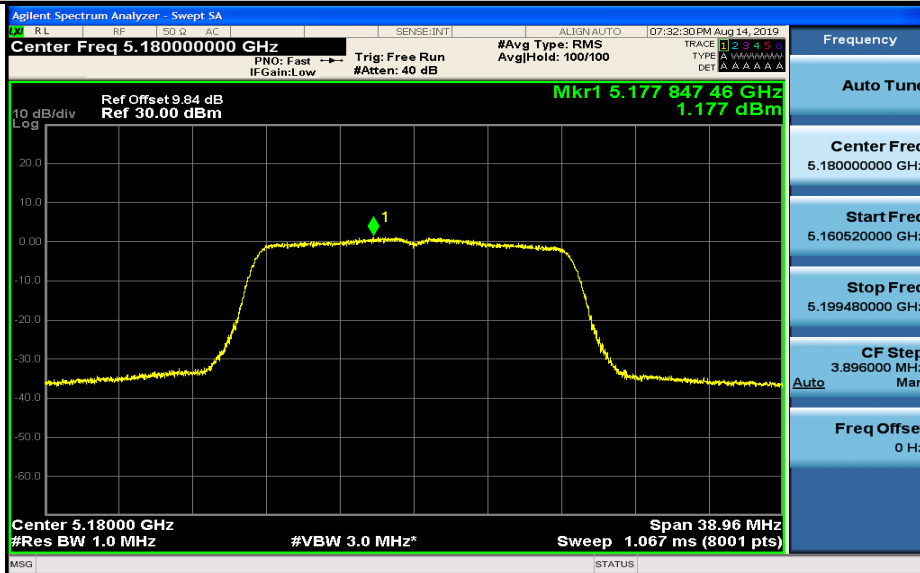
Maximum Power Spectral Density_TNVN_11AC40_5190_Ant1



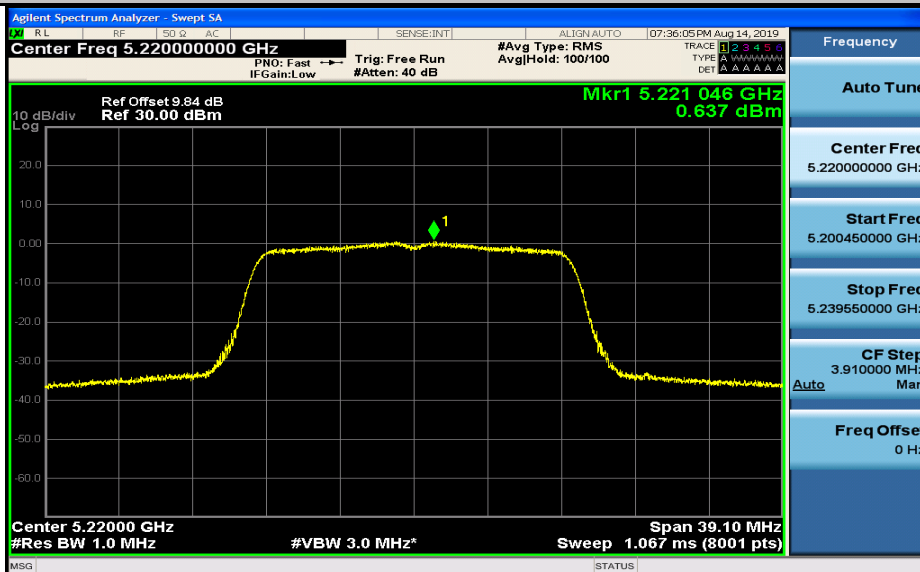
Maximum Power Spectral Density_TNVN_11AC40_5230_Ant1



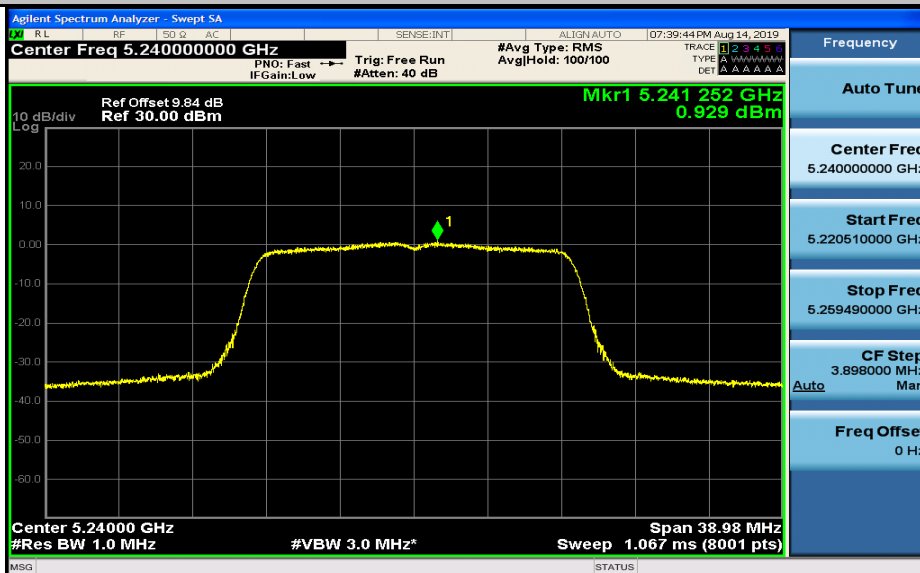
Maximum Power Spectral Density_TNVN_11A_5180_Ant2



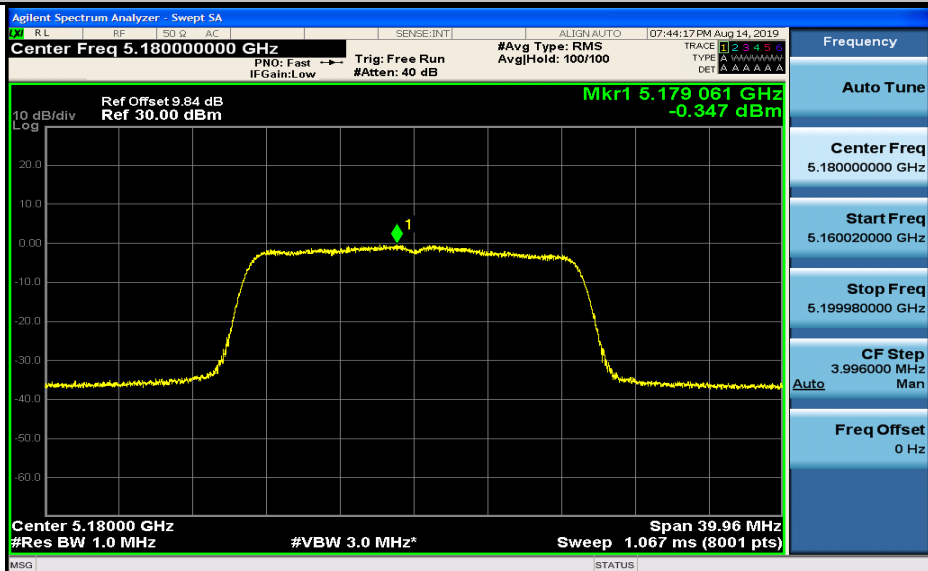
Maximum Power Spectral Density_TNVN_11A_5220_Ant2



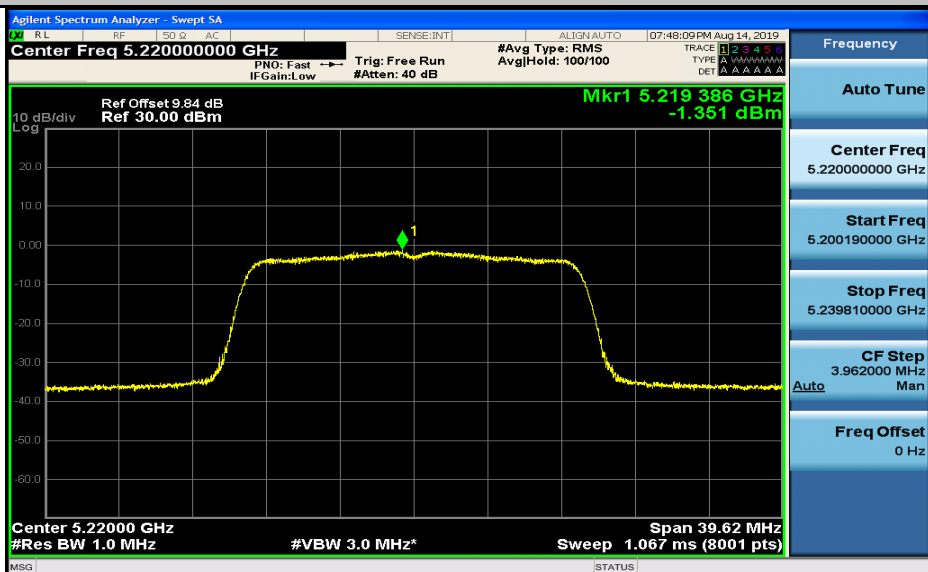
Maximum Power Spectral Density_TNVN_11A_5240_Ant2



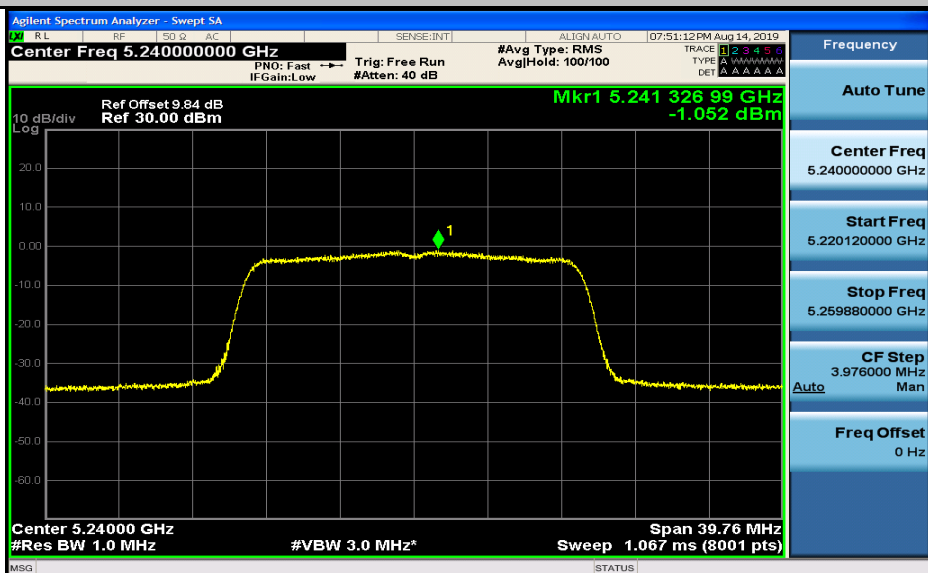
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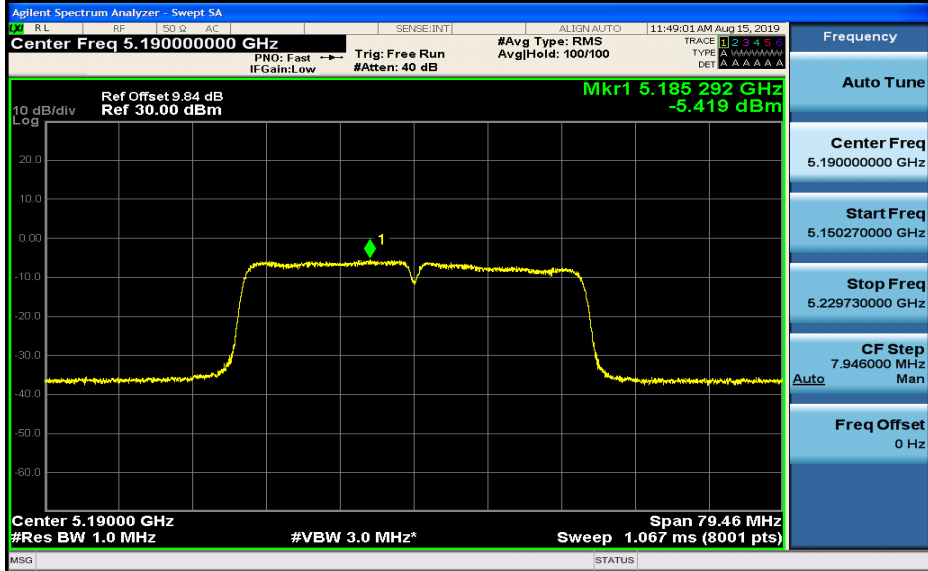
Maximum Power Spectral Density_TNVN_11N20_5220_Ant2



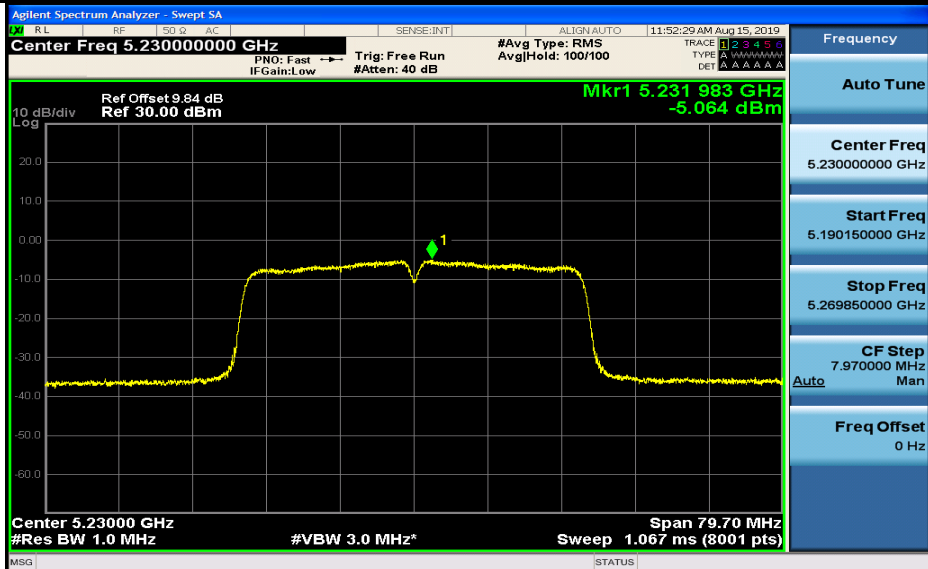
Maximum Power Spectral Density_TNVN_11N20_5240_Ant2



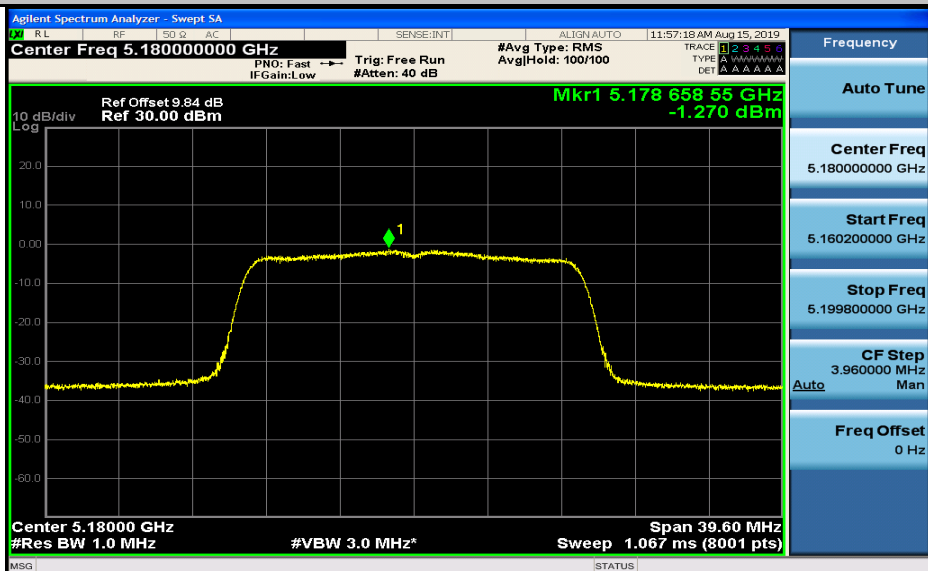
Maximum Power Spectral Density_TNVN_11N40_5190_Ant2



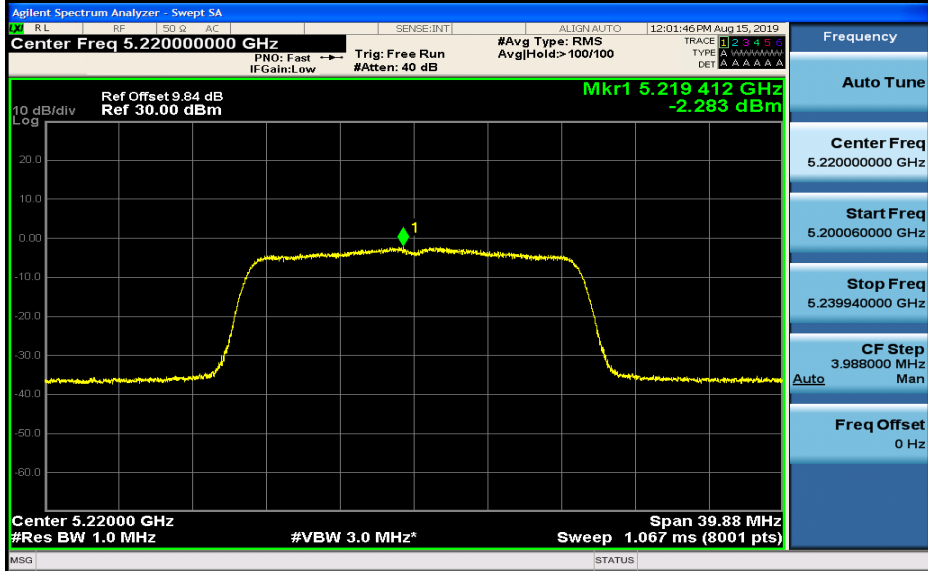
Maximum Power Spectral Density_TNVN_11N40_5230_Ant2



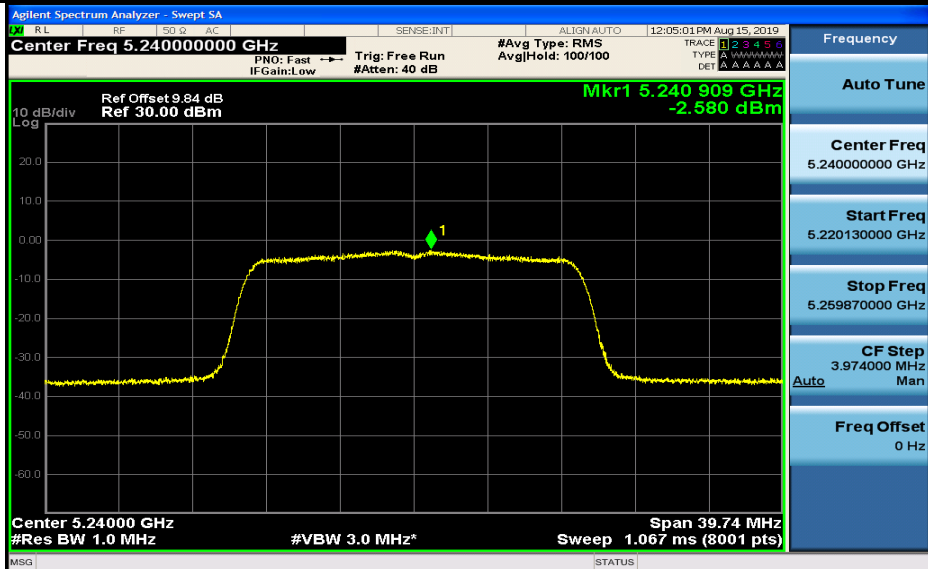
Maximum Power Spectral Density_TNVN_11AC20_5180_Ant2



Maximum Power Spectral Density_TNVN_11AC20_5220_Ant2



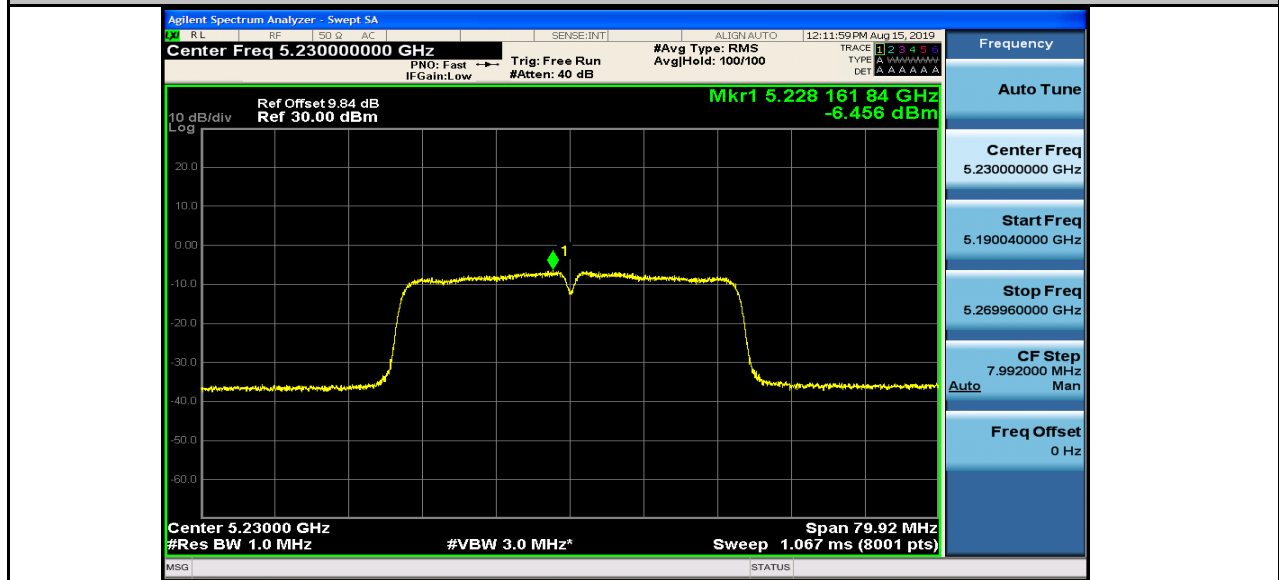
Maximum Power Spectral Density_TNVN_11AC20_5240_Ant2



Maximum Power Spectral Density_TNVN_11AC40_5190_Ant2



Maximum Power Spectral Density_TNVN_11AC40_5230_Ant2



6. Frequency Stability

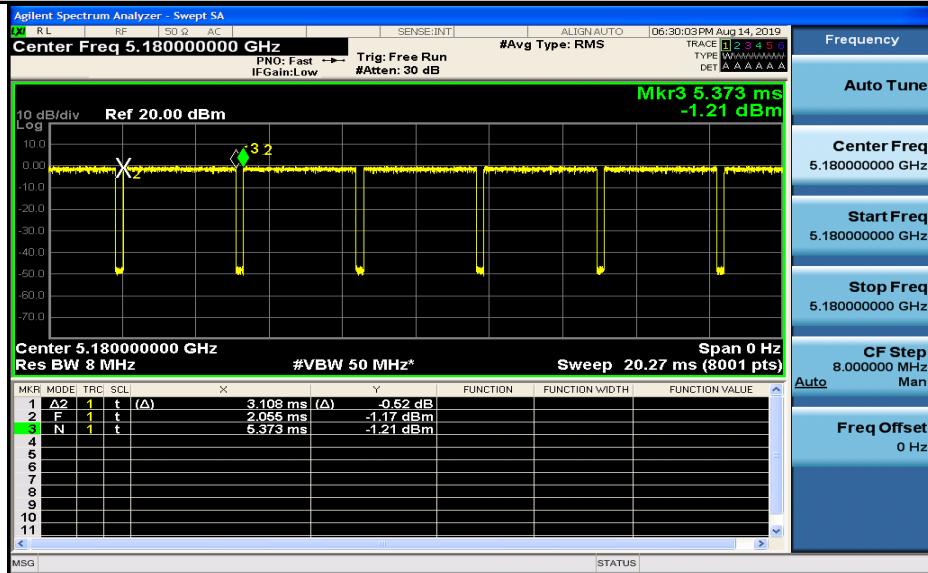
Band	Test Conditions		Operation Frequency (MHz)	Test Frequency (MHz)		Freq. Dev. (MHz)		Limit (GHz)	Result
	Volt (V AC)	Temp (°C)		ANT1	ANT2	ANT1	ANT2		
Band U-NII 1	Normal(120)	Extreme(-20)	5180	5180.0212	5180.0242	0.0212	0.0242	5.15- 5.25	Pass
		Extreme(-10)		5180.0235	5180.0305	0.0235	0.0305		Pass
		Extreme(0)		5180.0301	5180.0213	0.0301	0.0213		Pass
		Extreme(+10)		5180.0314	5180.0225	0.0314	0.0225		Pass
		Extreme(+20)		5180.0328	5180.0214	0.0328	0.0214		Pass
		Extreme(+30)		5180.0309	5180.0193	0.0309	0.0193		Pass
		Extreme(+40)		5180.0251	5180.0242	0.0251	0.0242		Pass
		Extreme(+55)		5180.0412	5180.0208	0.0412	0.0208		Pass
	Extreme(102)	Norma(+20)	5180	5180.0118	5180.0427	0.0118	0.0427		Pass
	Extreme(138)			5180.0305	5180.0154	0.0305	0.0154		Pass
	Normal(120)	Extreme(-20)	5240	5240.0246	5240.0389	0.0246	0.0389		Pass
		Extreme(-10)		5240.0213	5240.0248	0.0213	0.0248		Pass
		Extreme(0)		5240.0328	5240.0343	0.0328	0.0343		Pass
		Extreme(+10)		5240.0345	5240.0345	0.0345	0.0345		Pass
		Extreme(+20)		5240.0388	5240.0413	0.0388	0.0413		Pass
		Extreme(+30)		5240.0214	5240.0242	0.0214	0.0242		Pass
		Extreme(+40)		5240.0223	5240.0255	0.0223	0.0255		Pass
		Extreme(+55)		5240.0342	5240.0357	0.0342	0.0357		Pass
	Extreme(102)	Norma(20)	5240	5240.0406	5240.0437	0.0406	0.0437		Pass
	Extreme(138)			5240.0328	5240.0312	0.0328	0.0312		Pass

Remark: Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

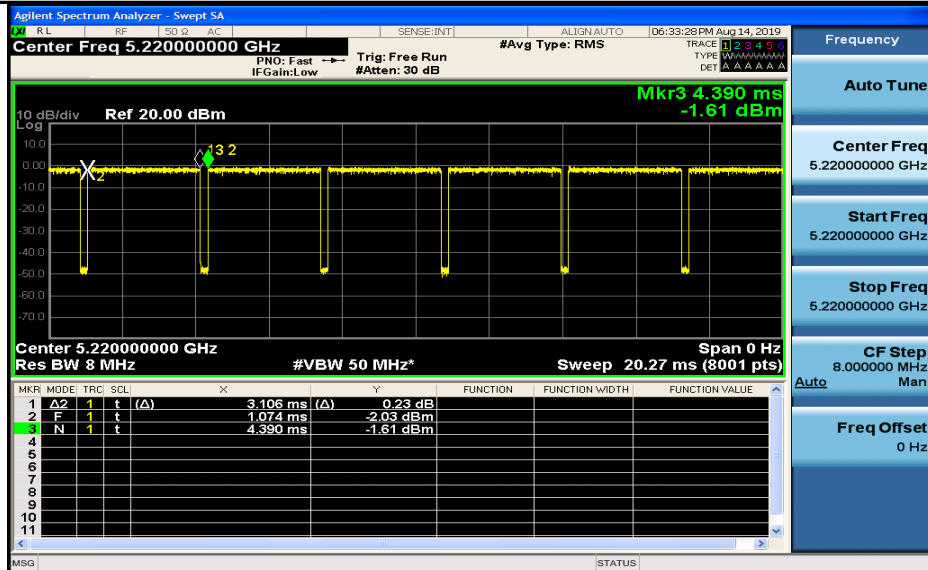
7.Duty Cycle

Test Mode	Test Channel	Duty Cycle[%]		10log(1/x) Factor[dB]	
		Ant1	Ant2	Ant1	Ant2
11A	5180	93.66	93.66	0.28	0.28
11A	5220	93.66	93.66	0.28	0.28
11A	5240	93.66	93.59	0.28	0.29
11N20	5180	93.21	93.21	0.31	0.31
11N20	5220	93.21	93.21	0.31	0.31
11N20	5240	93.21	93.13	0.31	0.31
11N40	5190	87.13	87.15	0.60	0.60
11N40	5230	87.13	87.15	0.60	0.60
11AC20	5180	93.23	93.23	0.30	0.30
11AC20	5220	93.23	93.23	0.30	0.30
11AC20	5240	93.23	93.15	0.30	0.31
11AC40	5190	87.21	87.05	0.59	0.60
11AC40	5230	87.21	87.21	0.59	0.59

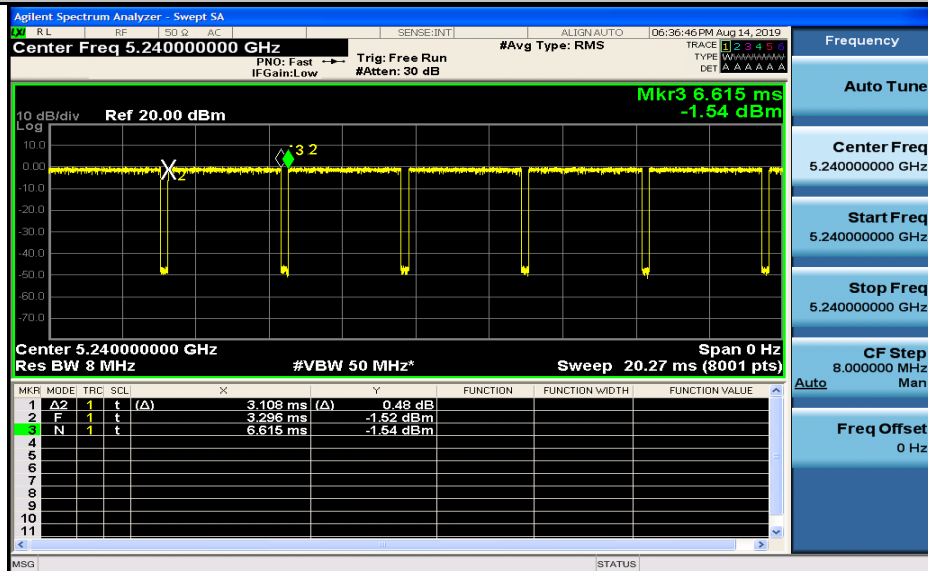
Duty Cycle_11A_5180_Ant1



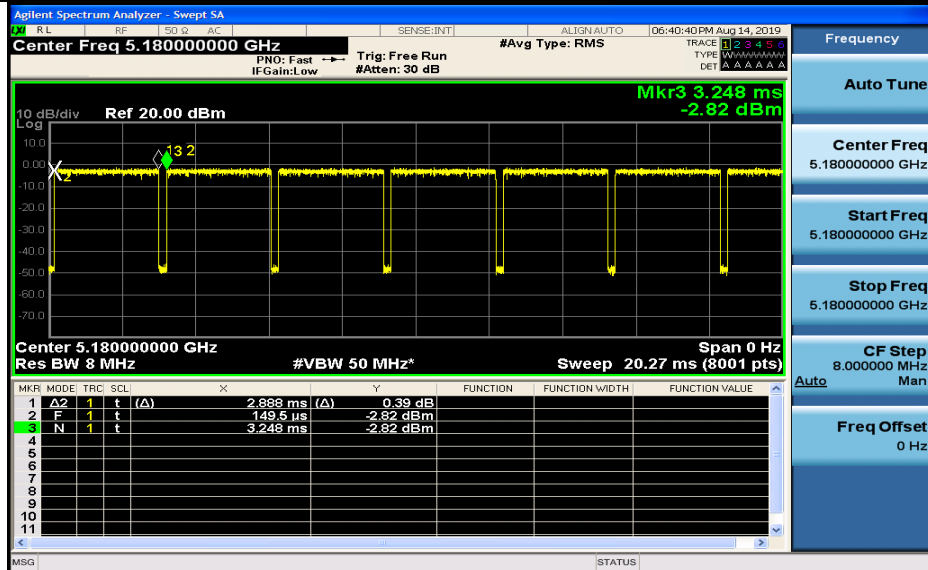
Duty Cycle_11A_5220_Ant1



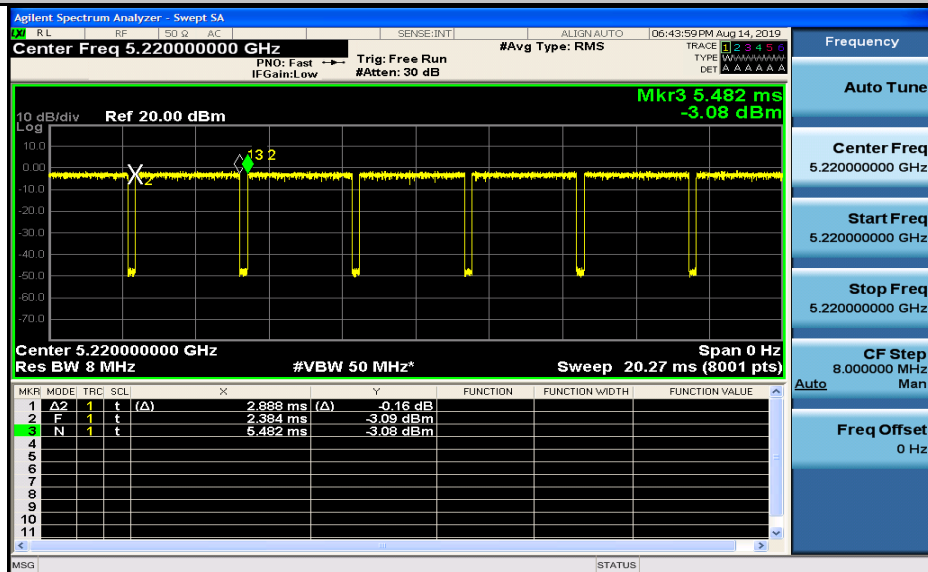
Duty Cycle_11A_5240_Ant1



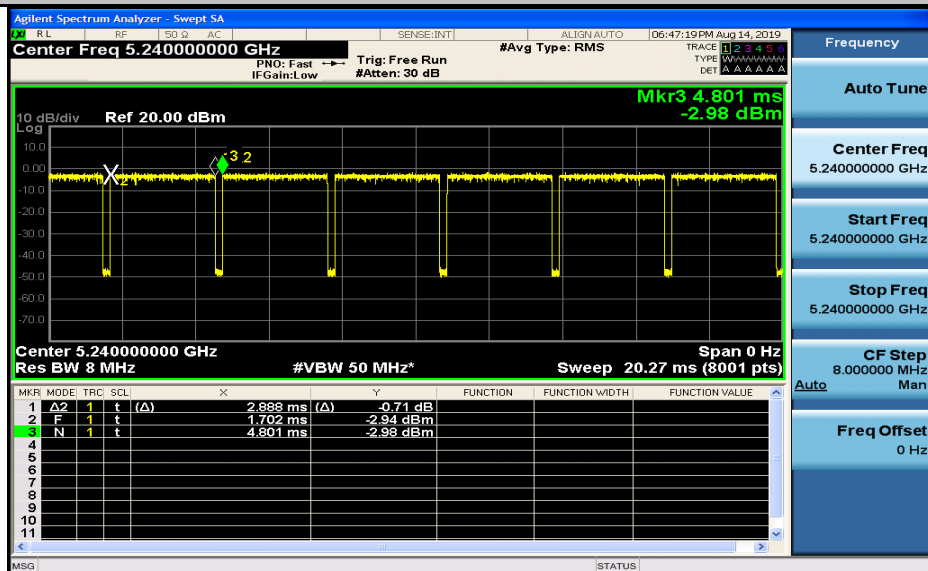
Duty Cycle_11N20_5180_Ant1



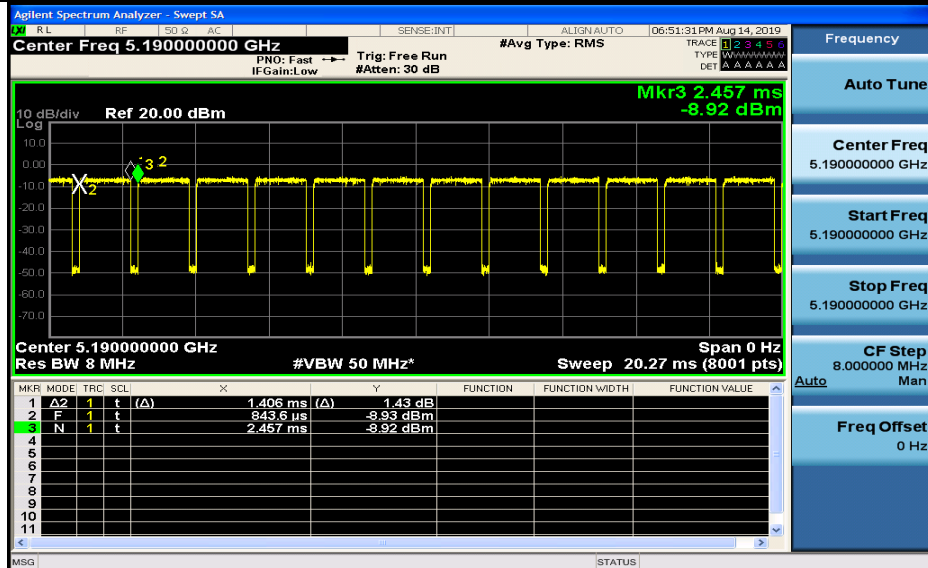
Duty Cycle_11N20_5220_Ant1



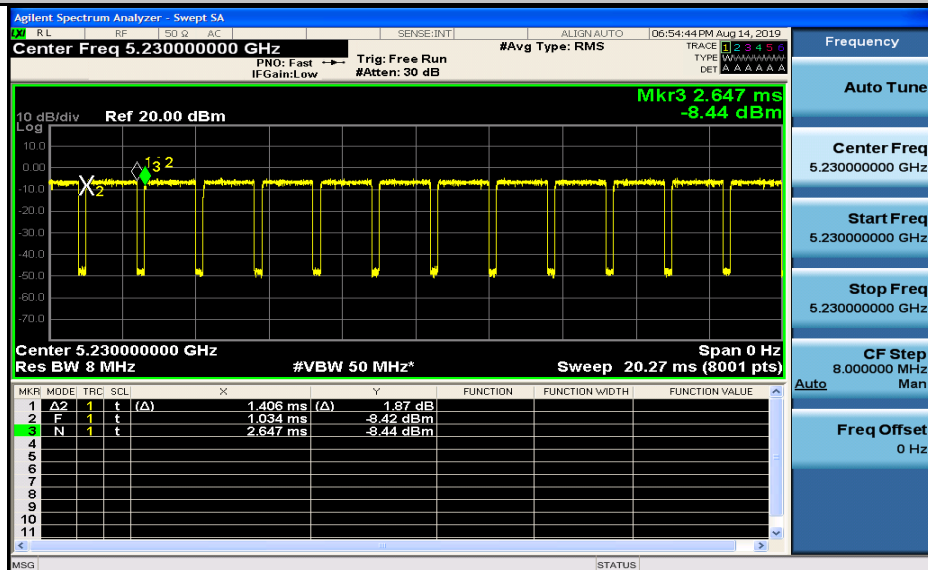
Duty Cycle_11N20_5240_Ant1



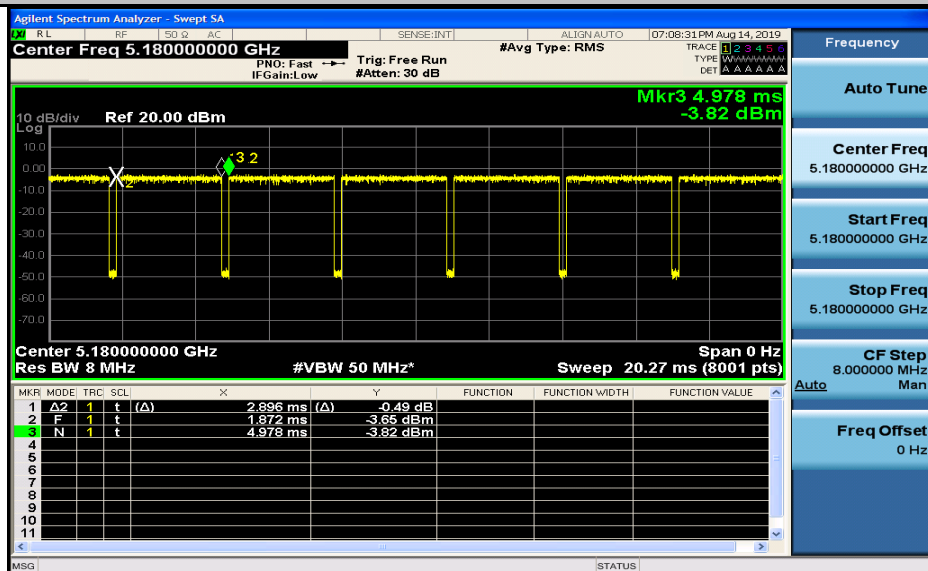
Duty Cycle_11N40_5190_Ant1



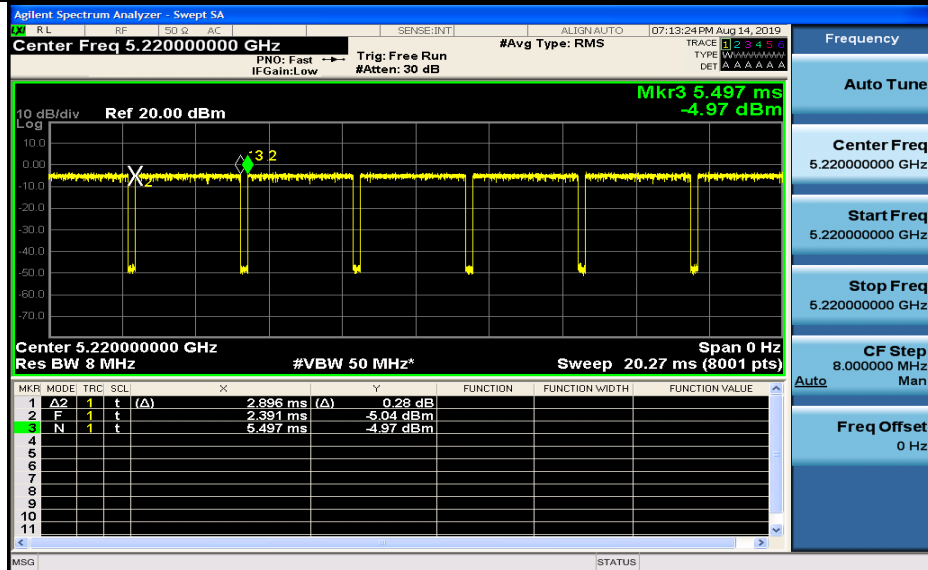
Duty Cycle_11N40_5230_Ant1



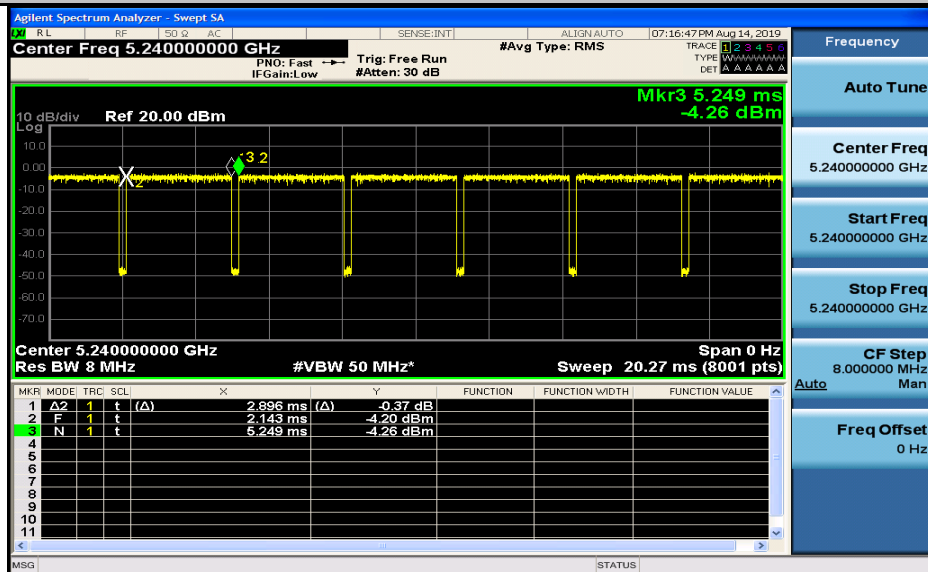
Duty Cycle_11AC20_5180_Ant1



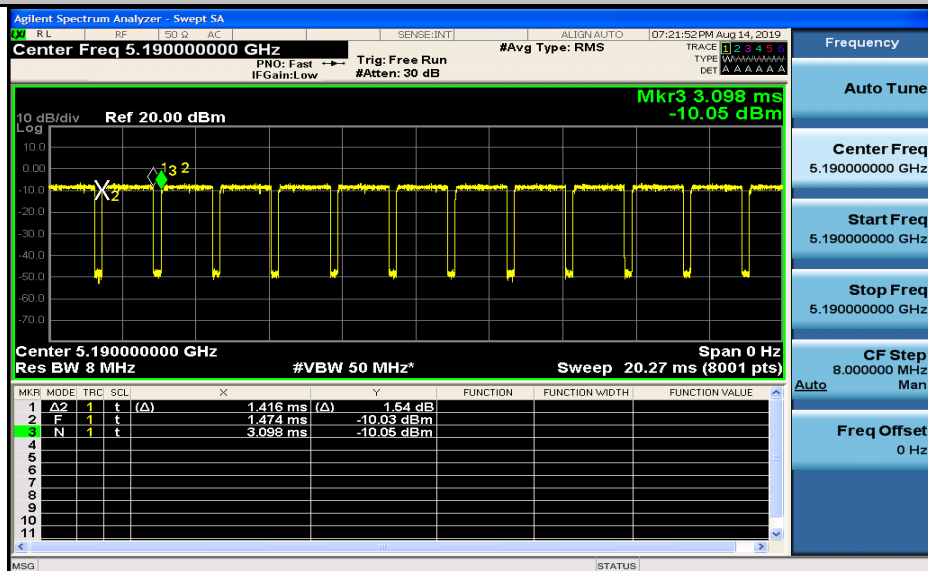
Duty Cycle_11AC20_5220_Ant1



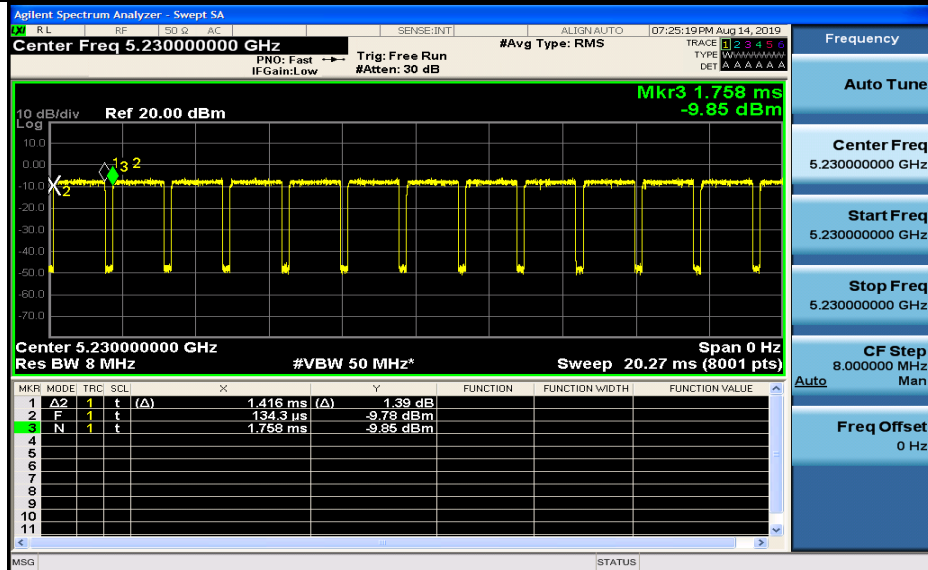
Duty Cycle_11AC20_5240_Ant1



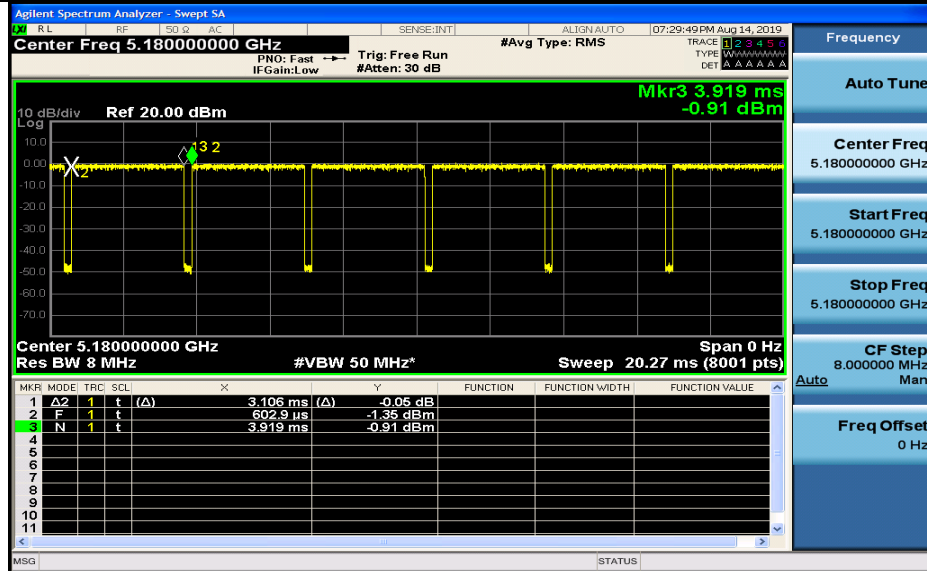
Duty Cycle_11AC40_5190_Ant1



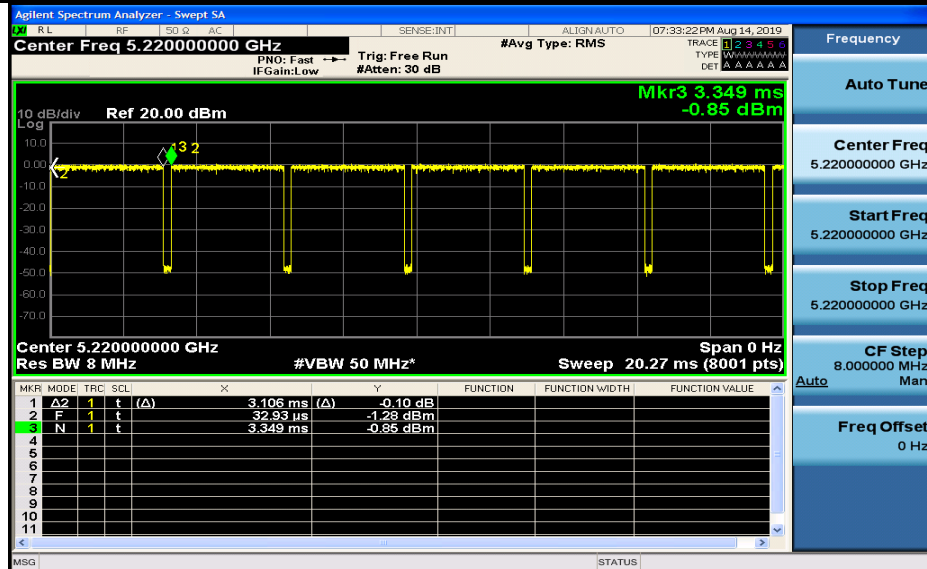
Duty Cycle_11AC40_5230_Ant1



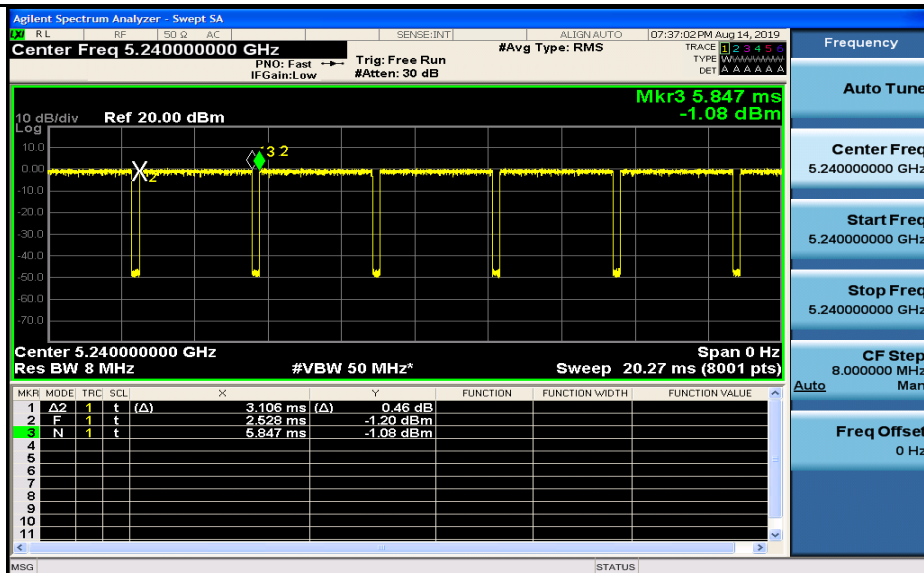
Duty Cycle_11A_5180_Ant2



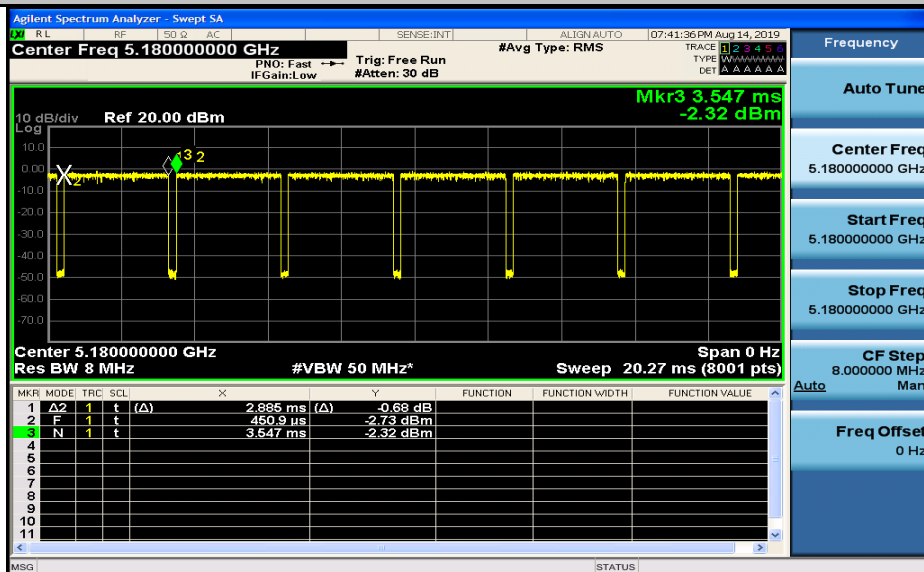
Duty Cycle_11A_5220_Ant2



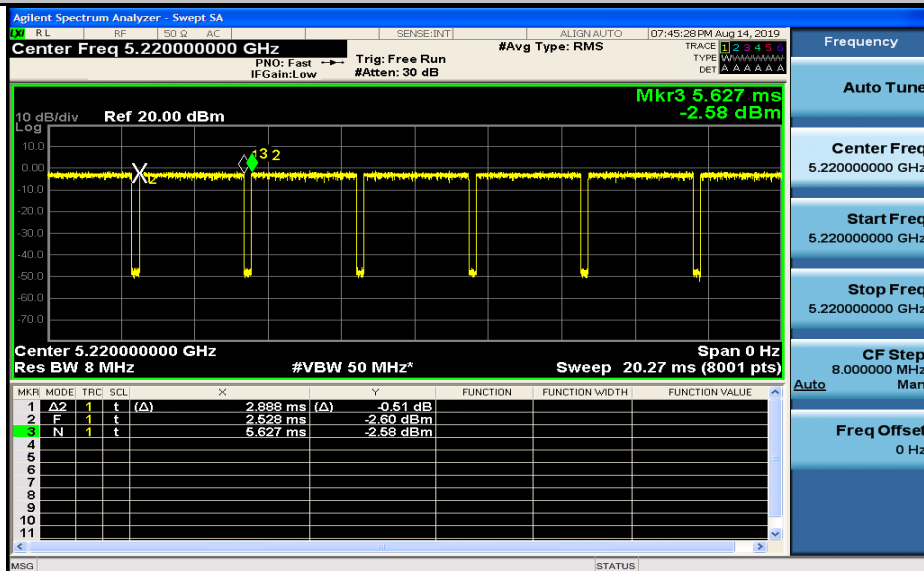
Duty Cycle_11A_5240_Ant2



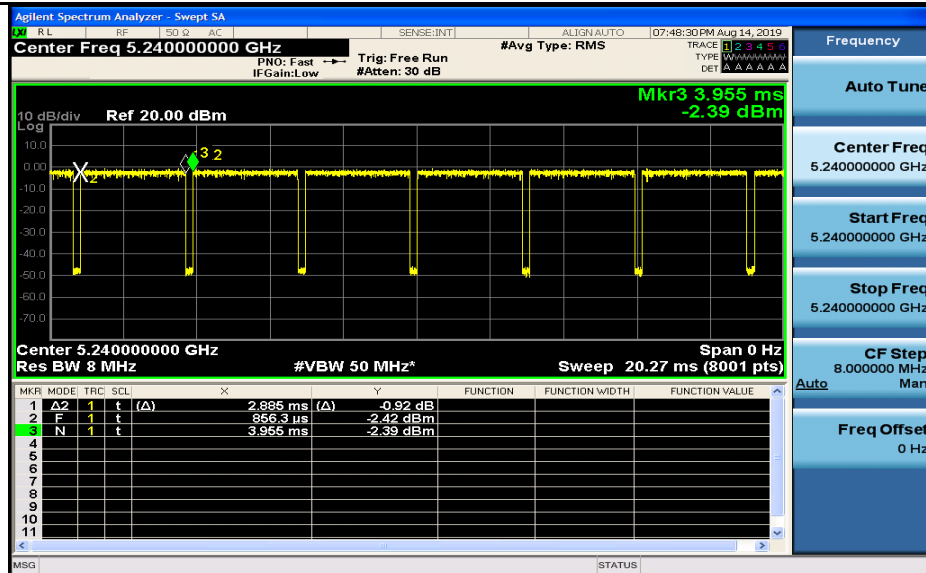
Duty Cycle_11N20_5180_Ant2



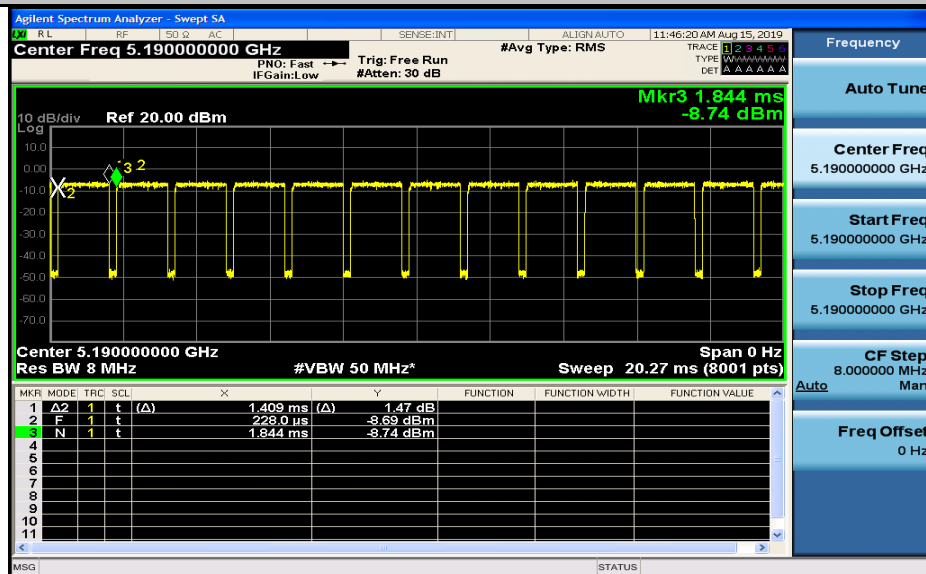
Duty Cycle_11N20_5220_Ant2



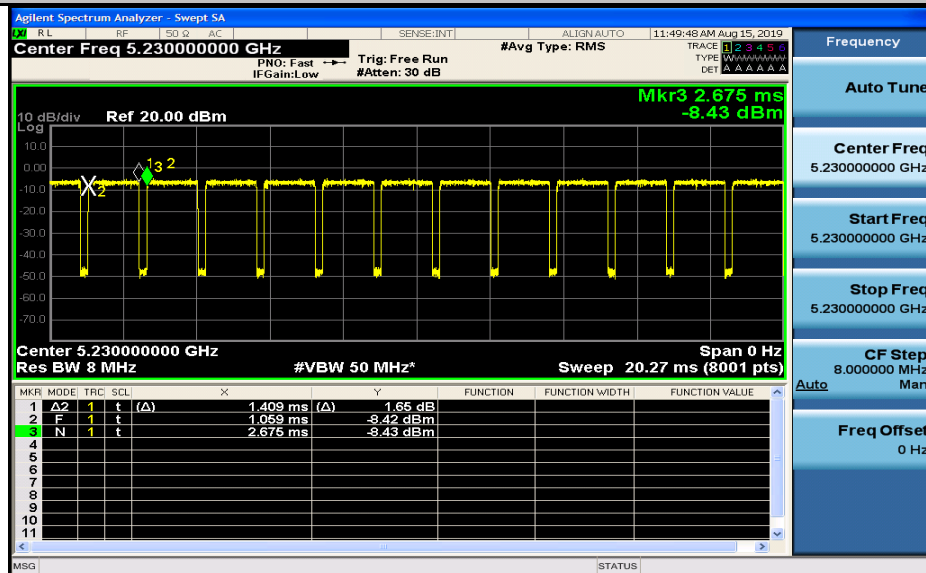
Duty Cycle_11N20_5240_Ant2



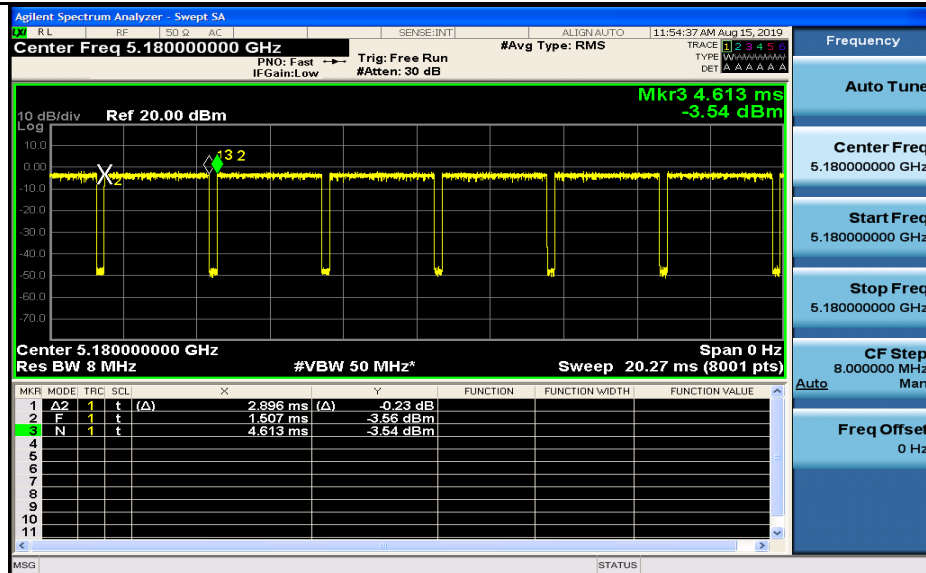
Duty Cycle_11N40_5190_Ant2



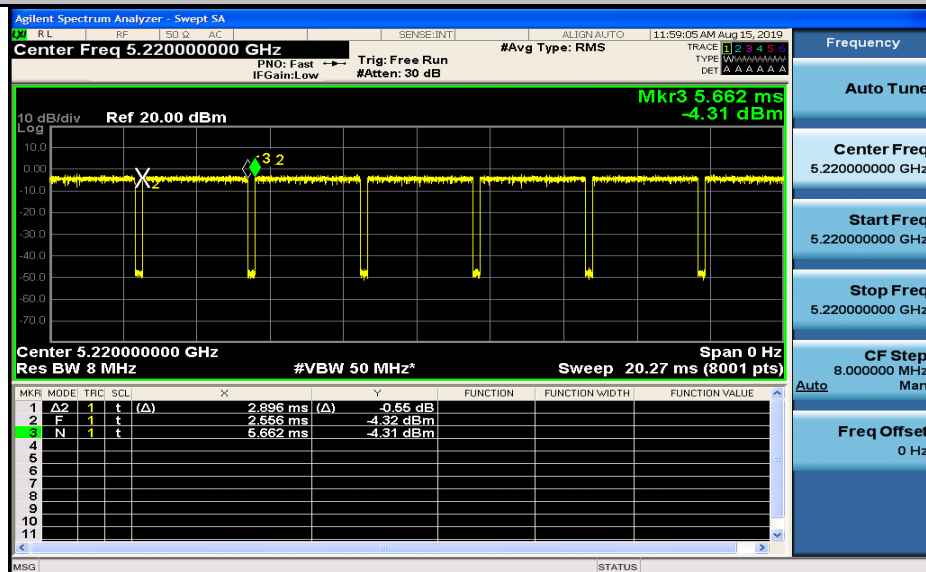
Duty Cycle_11N40_5230_Ant2



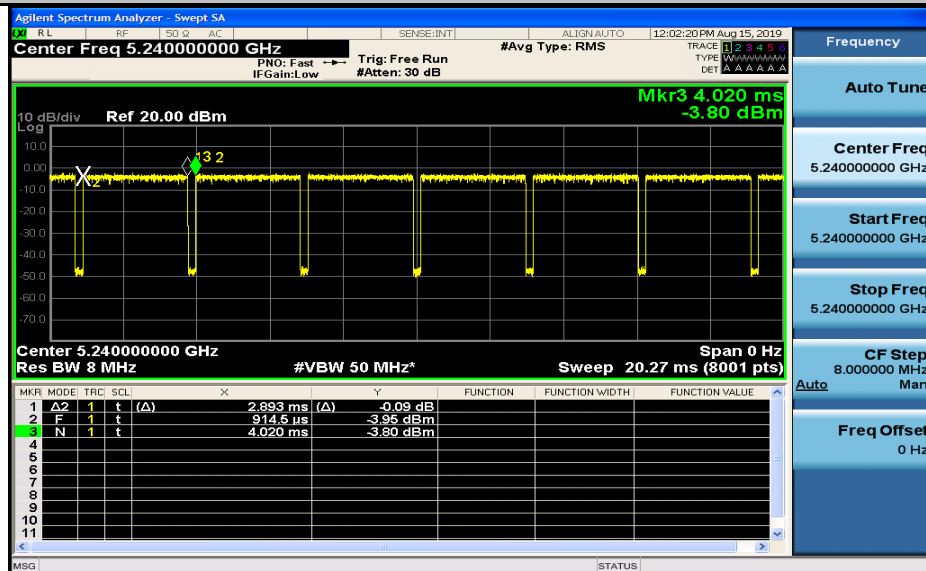
Duty Cycle_11AC20_5180_Ant2



Duty Cycle_11AC20_5220_Ant2



Duty Cycle_11AC20_5240_Ant2



Duty Cycle_11AC40_5190_Ant2

