

**Appendix A SHEMA190101016501****1. Emission Bandwidth Measurement**

Test Mode	Test Channel	EBW[MHz]		Limit[MHz]	Verdict
		Ant1	Ant2		
11A	5745	21.24	20.58	---	PASS
11A	5785	22.97	20.49	---	PASS
11A	5825	21.32	20.64	---	PASS
11N20	5745	21.43	21.31	---	PASS
11N20	5785	21.19	21.03	---	PASS
11N20	5825	21.29	21.56	---	PASS
11N40	5755	42.49	43.10	---	PASS
11N40	5795	43.12	42.54	---	PASS
11AC20	5745	21.11	21.17	---	PASS
11AC20	5785	21.36	21.20	---	PASS
11AC20	5825	21.34	21.44	---	PASS
11AC40	5755	43.32	43.45	---	PASS
11AC40	5795	43.23	42.97	---	PASS
11AC80	5775	81.90	81.58	---	PASS

(26dB)Emission Bandwidth Measurement_11A_5745_Ant1

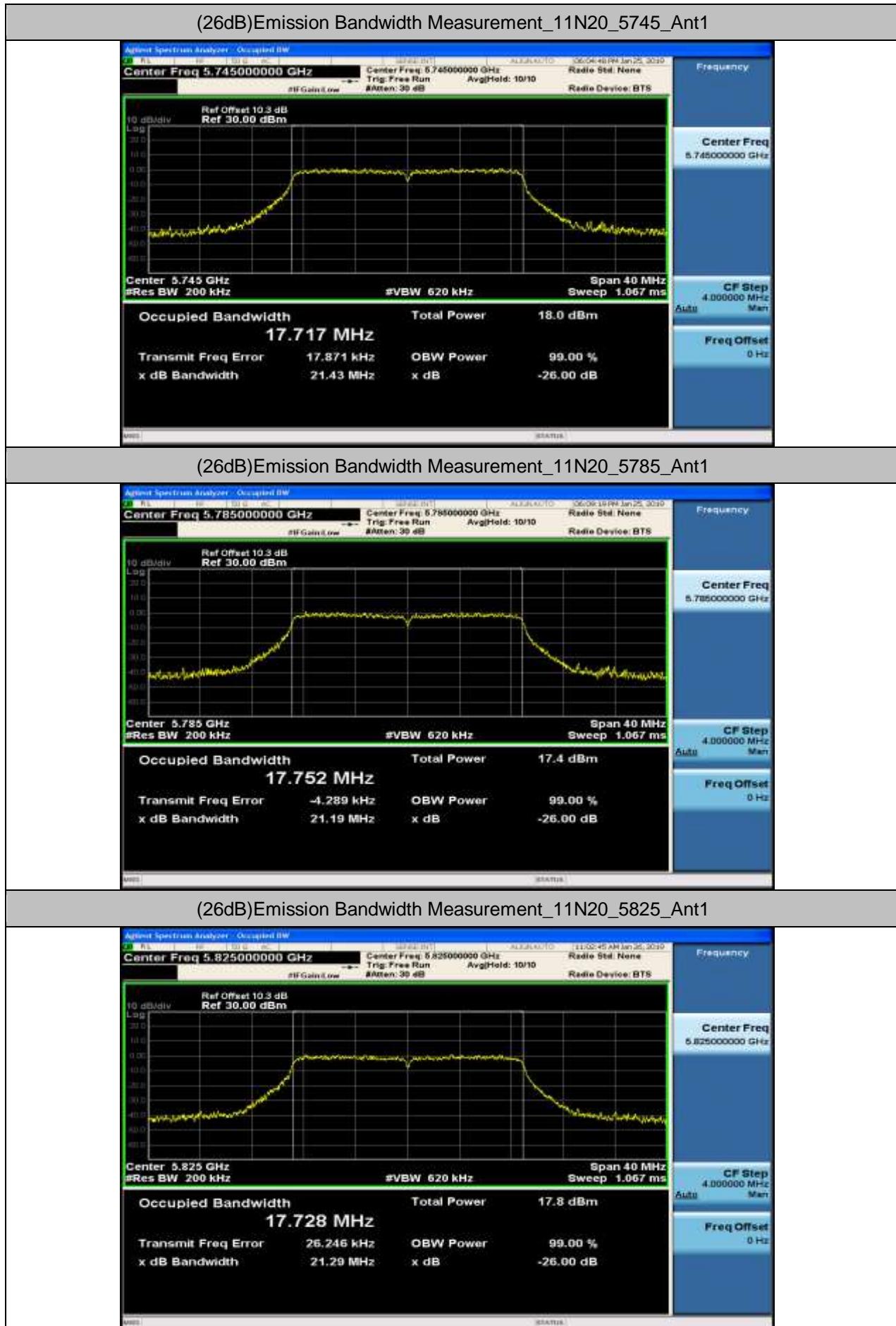


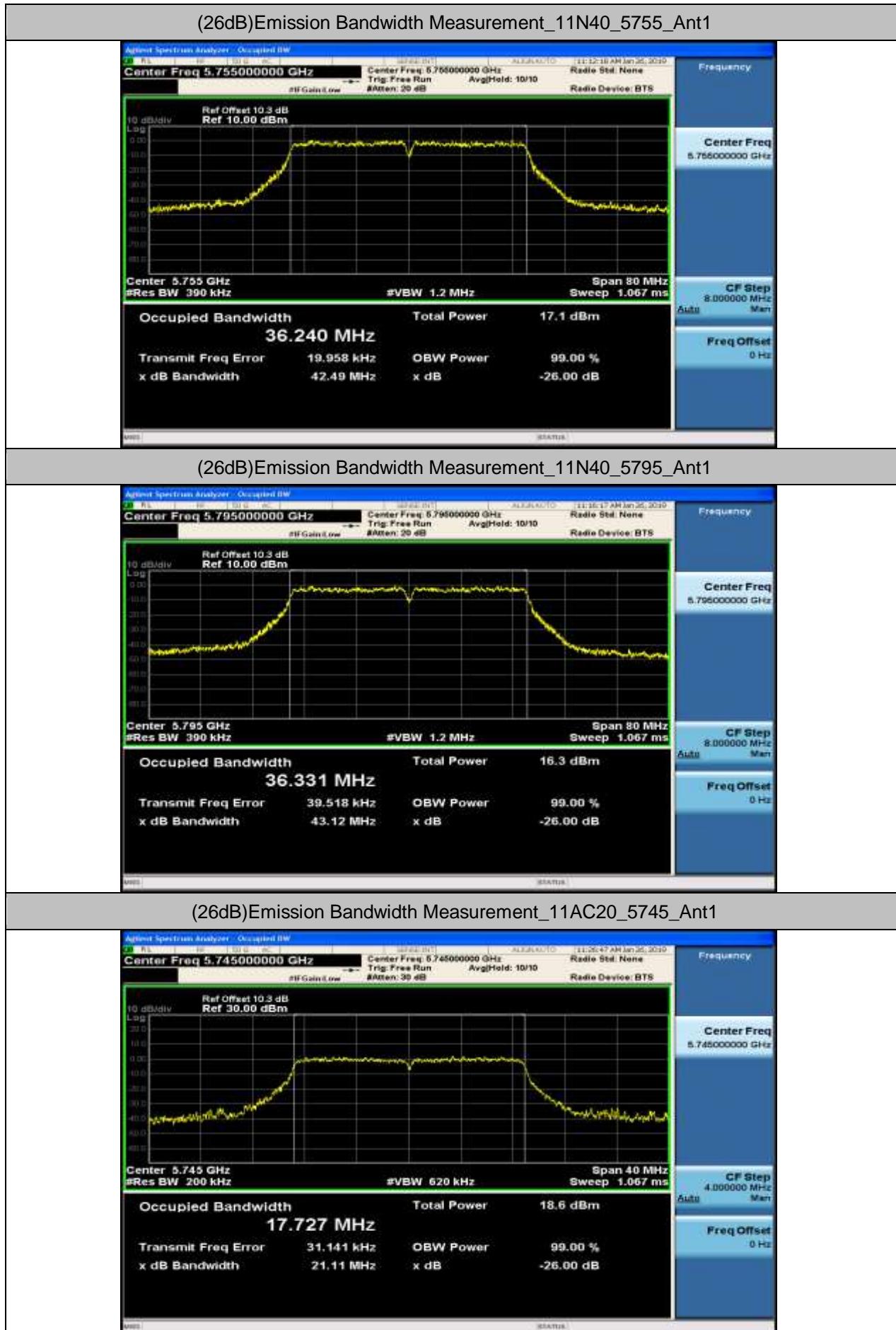
(26dB)Emission Bandwidth Measurement_11A_5785_Ant1

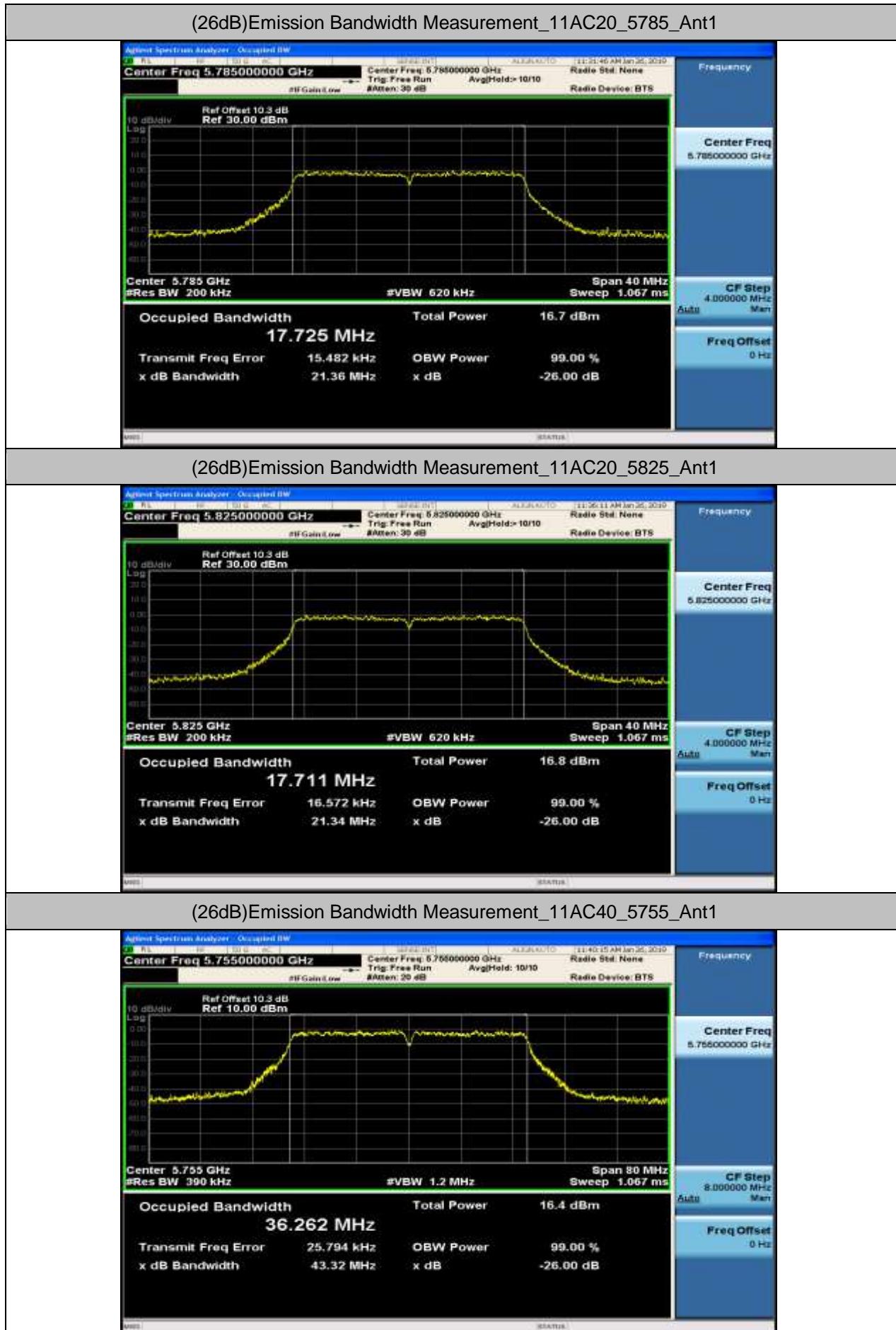


(26dB)Emission Bandwidth Measurement_11A_5825_Ant1

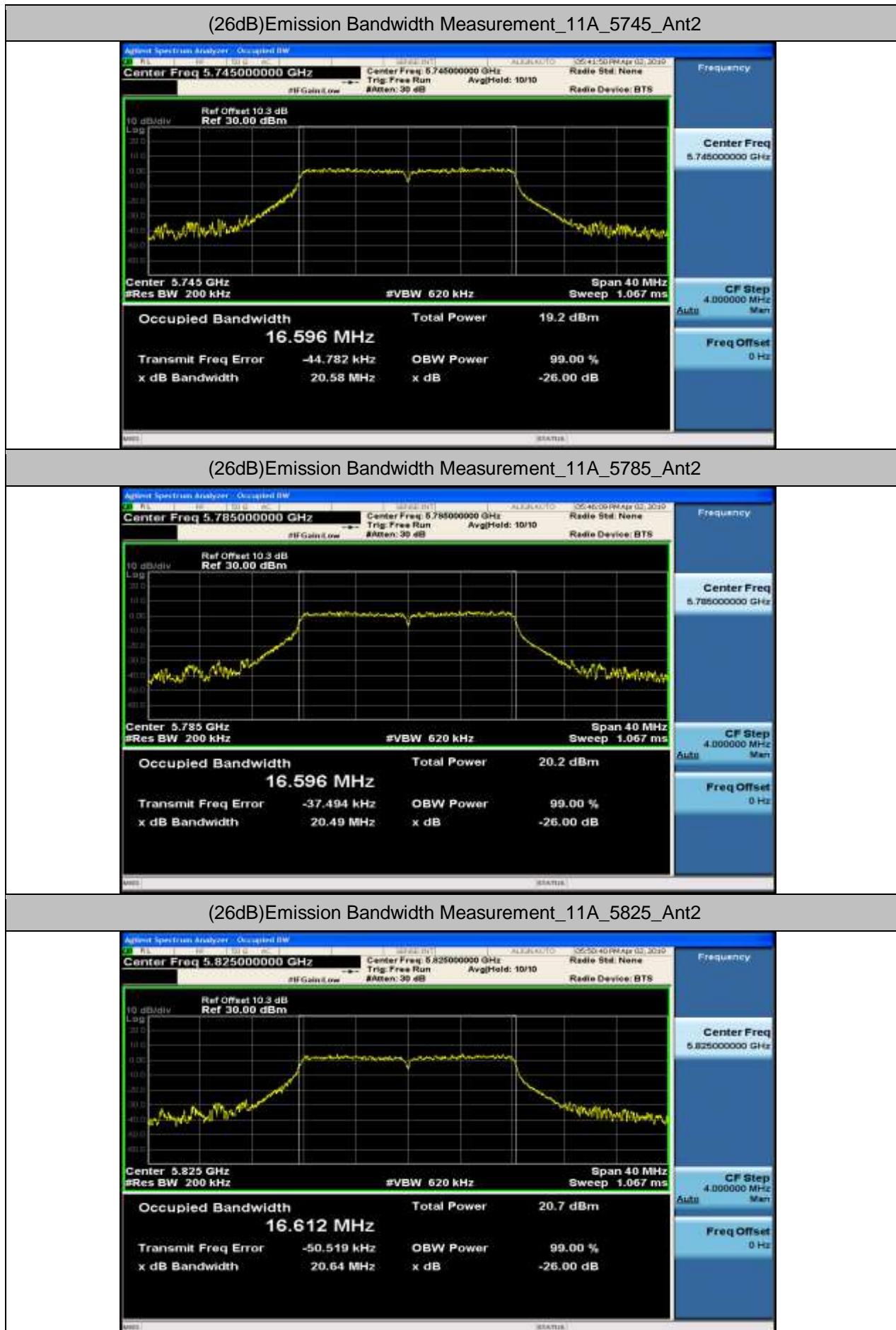


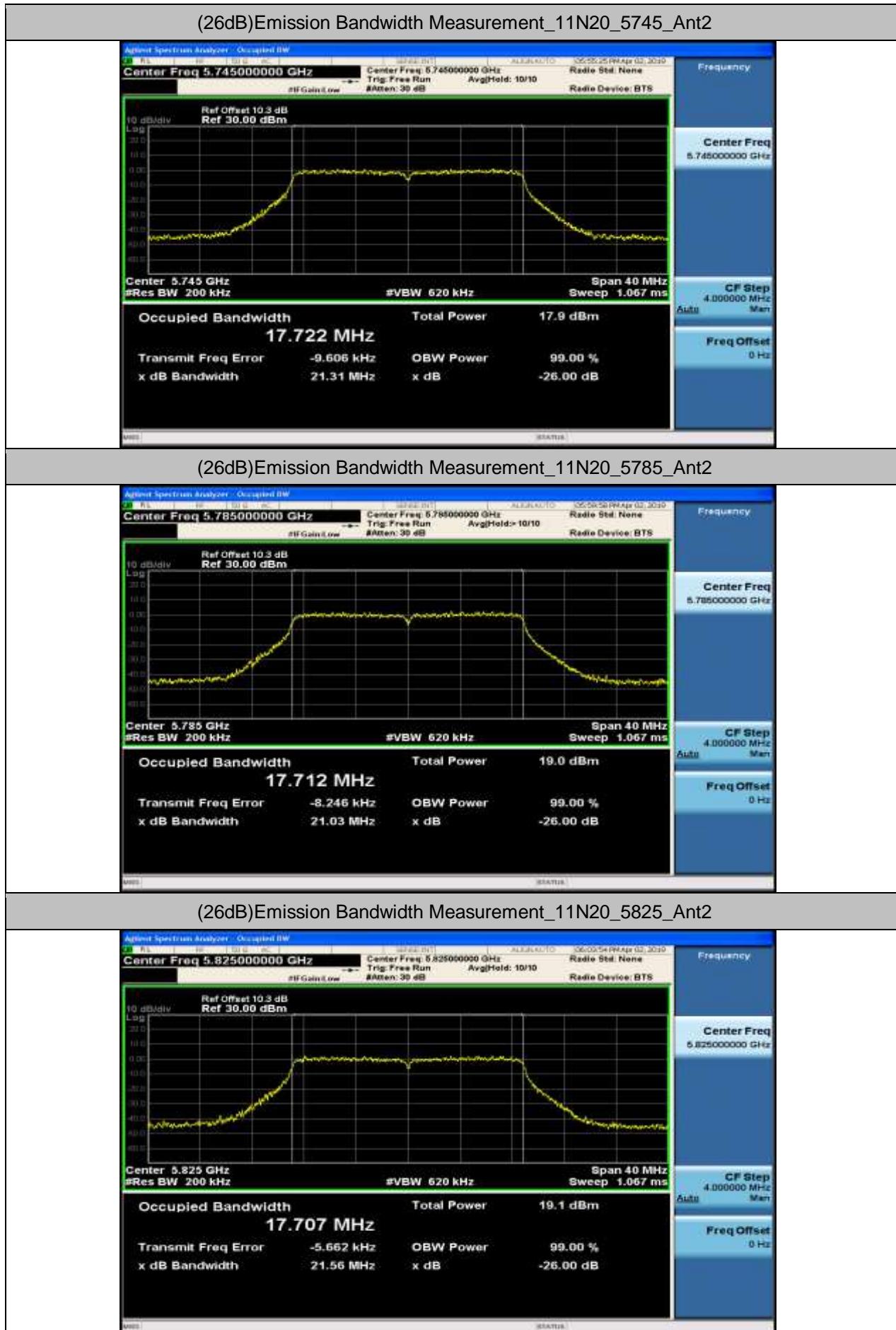


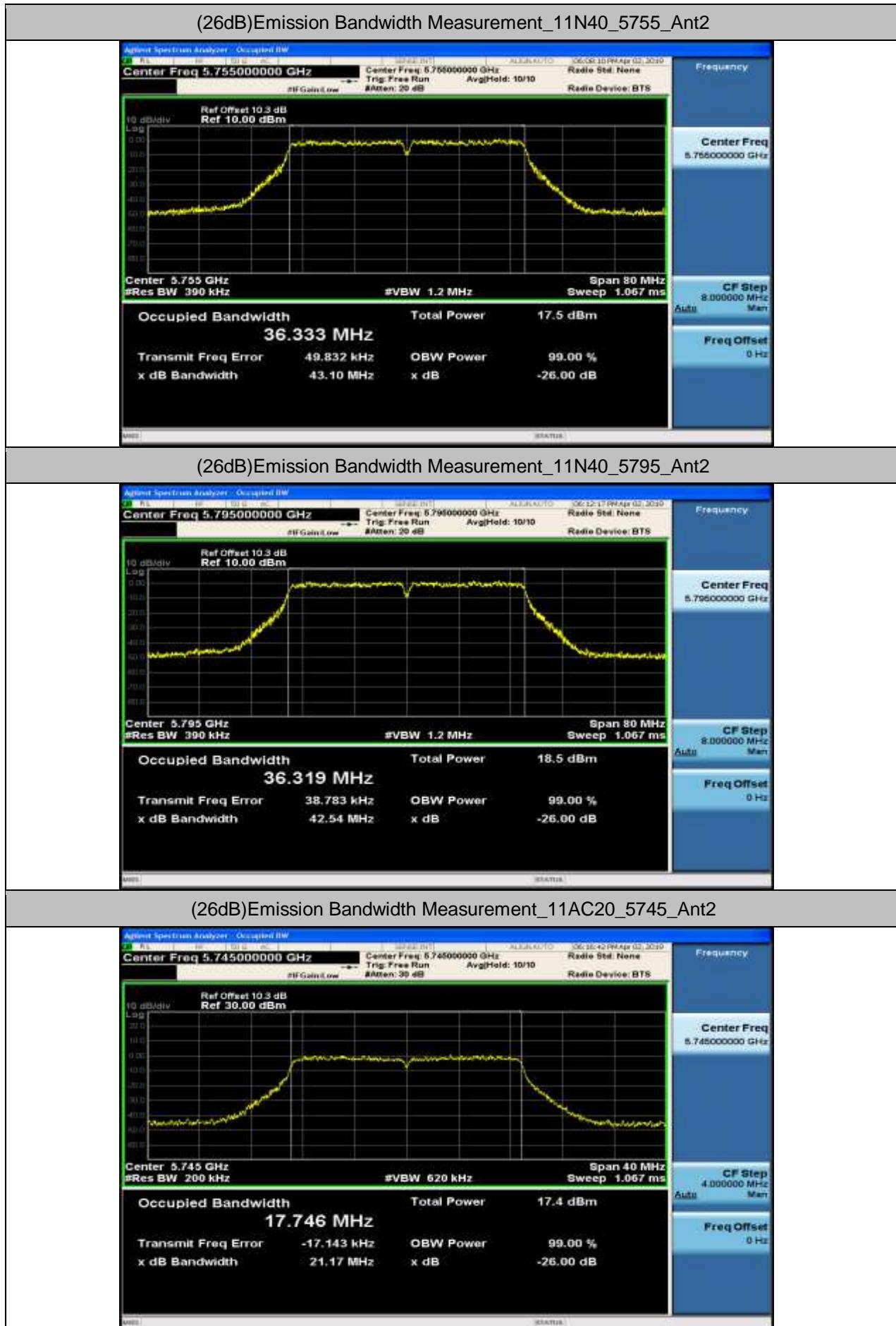


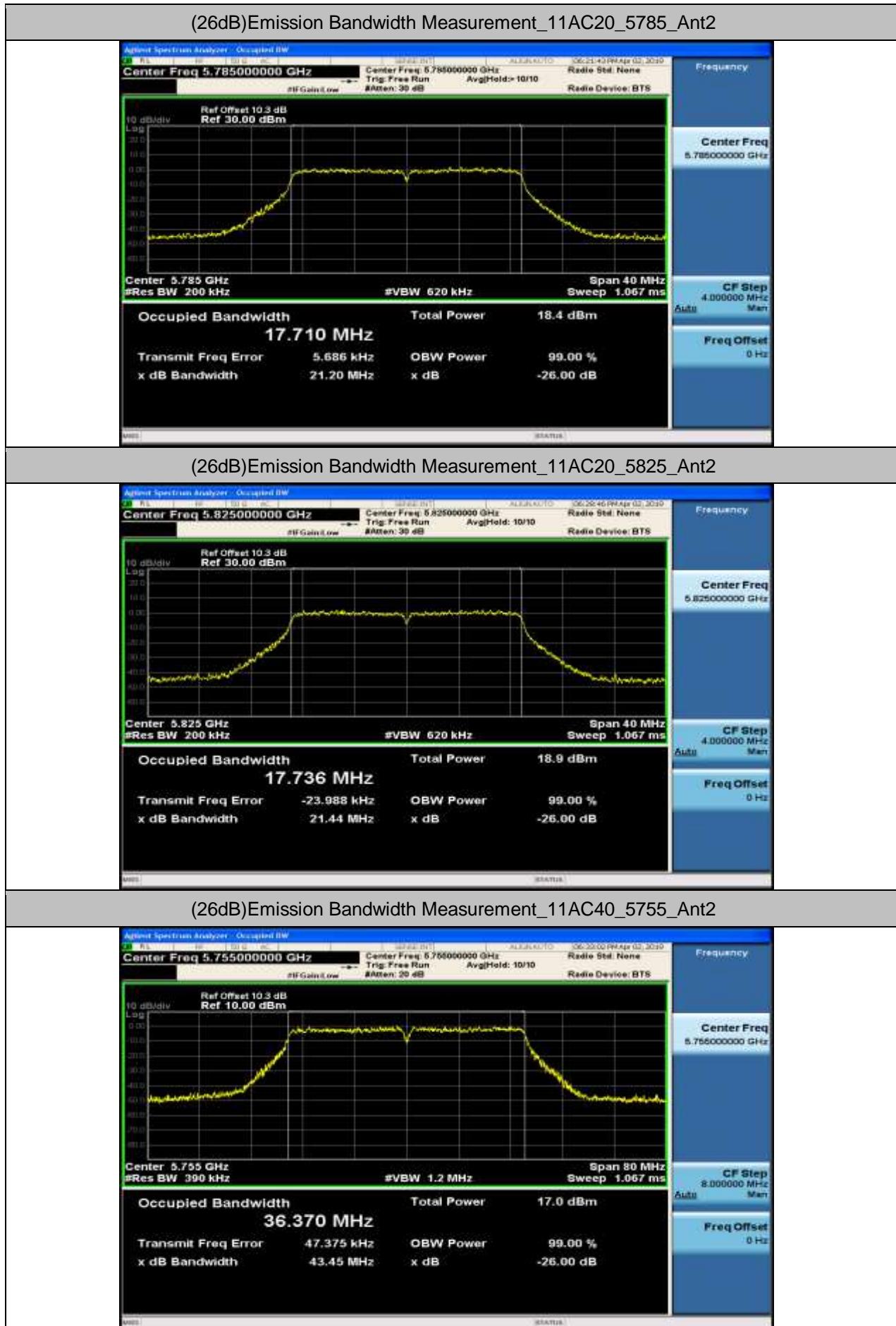


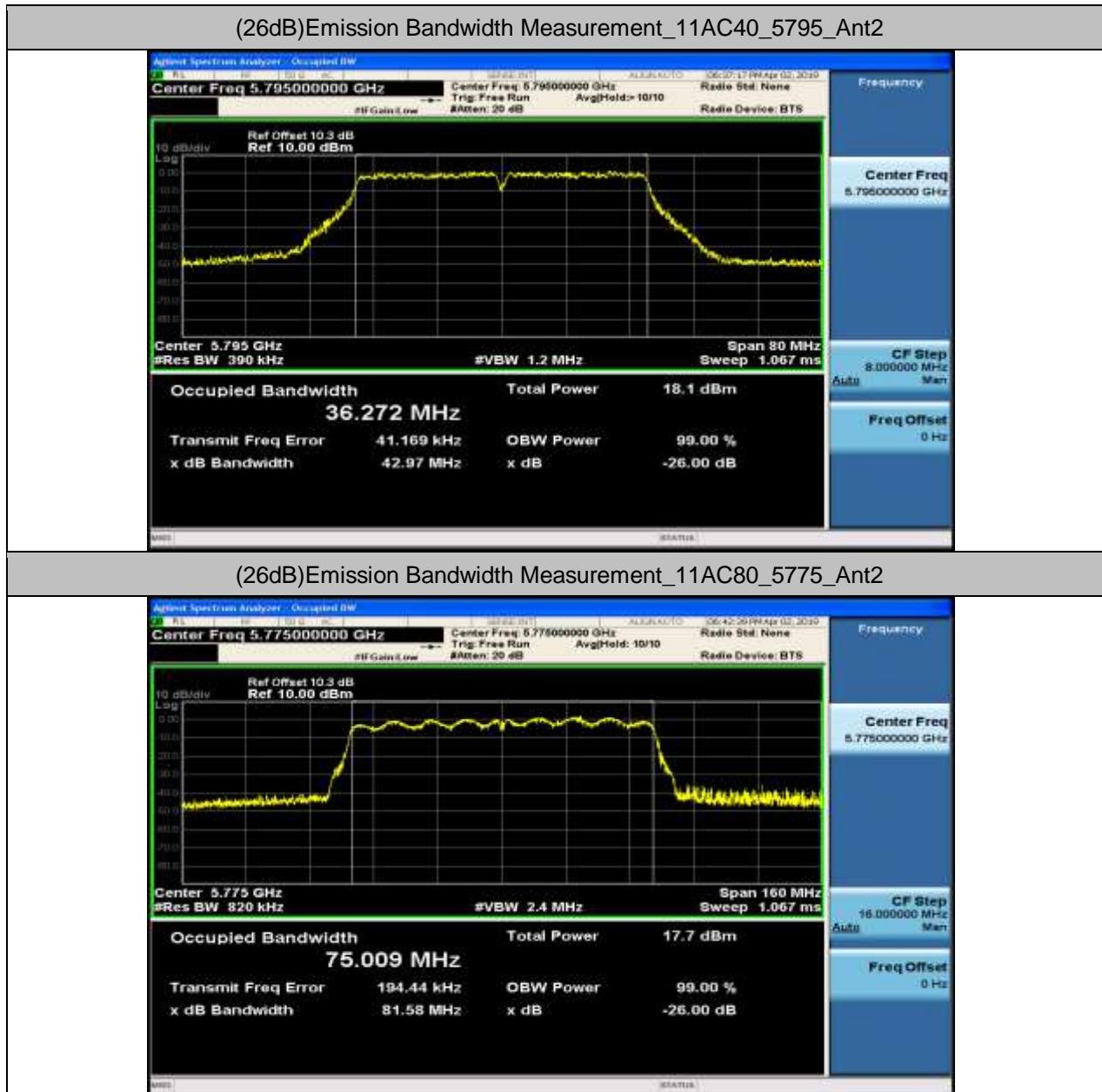












**2. Minimum Emission Bandwidth Measurement**

Test Mode	Test Channel	EBW[MHz]		Limit[MHz]	Verdict
		Ant1	Ant2		
11A	5745	16.54	16.53	---	PASS
11A	5785	16.54	16.54	---	PASS
11A	5825	16.55	16.55	---	PASS
11N20	5745	17.71	17.77	---	PASS
11N20	5785	17.69	17.78	---	PASS
11N20	5825	17.77	17.78	---	PASS
11N40	5755	36.47	36.47	---	PASS
11N40	5795	36.47	36.44	---	PASS
11AC20	5745	17.72	17.77	---	PASS
11AC20	5785	17.73	17.73	---	PASS
11AC20	5825	17.69	17.74	---	PASS
11AC40	5755	36.46	36.45	---	PASS
11AC40	5795	36.52	36.43	---	PASS
11AC80	5775	75.79	75.19	---	PASS

(6dB)Minimum Emission Bandwidth Measurement_11A_5745_Ant1



(6dB)Minimum Emission Bandwidth Measurement_11A_5785_Ant1



(6dB)Minimum Emission Bandwidth Measurement_11A_5825_Ant1



(6dB)Minimum Emission Bandwidth Measurement_11N20_5745_Ant1



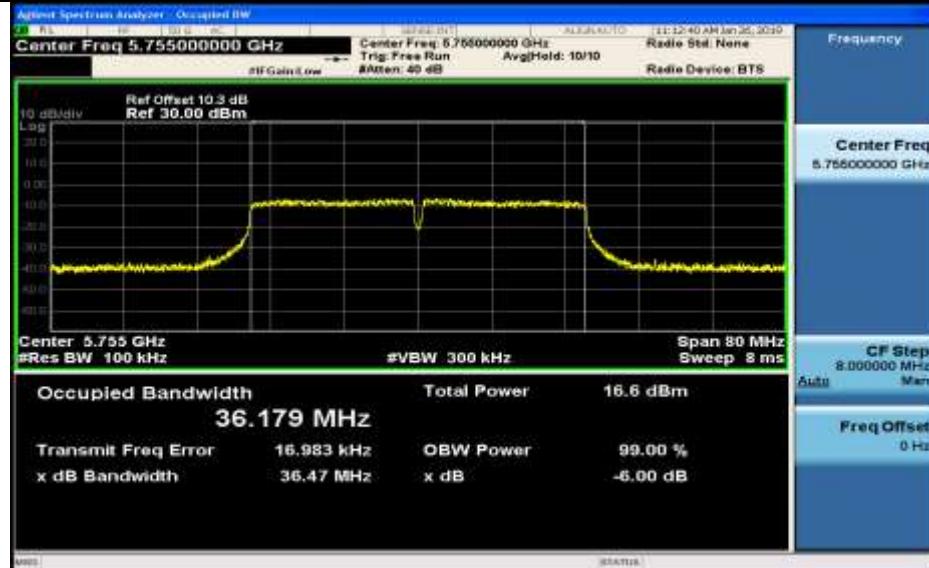
(6dB)Minimum Emission Bandwidth Measurement_11N20_5785_Ant1



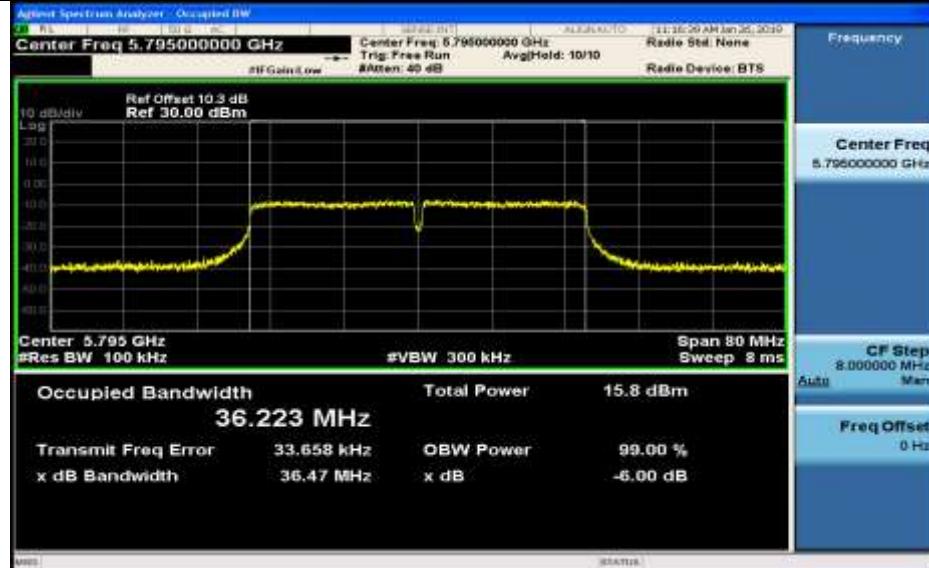
(6dB)Minimum Emission Bandwidth Measurement_11N20_5825_Ant1



(6dB)Minimum Emission Bandwidth Measurement_11N40_5755_Ant1

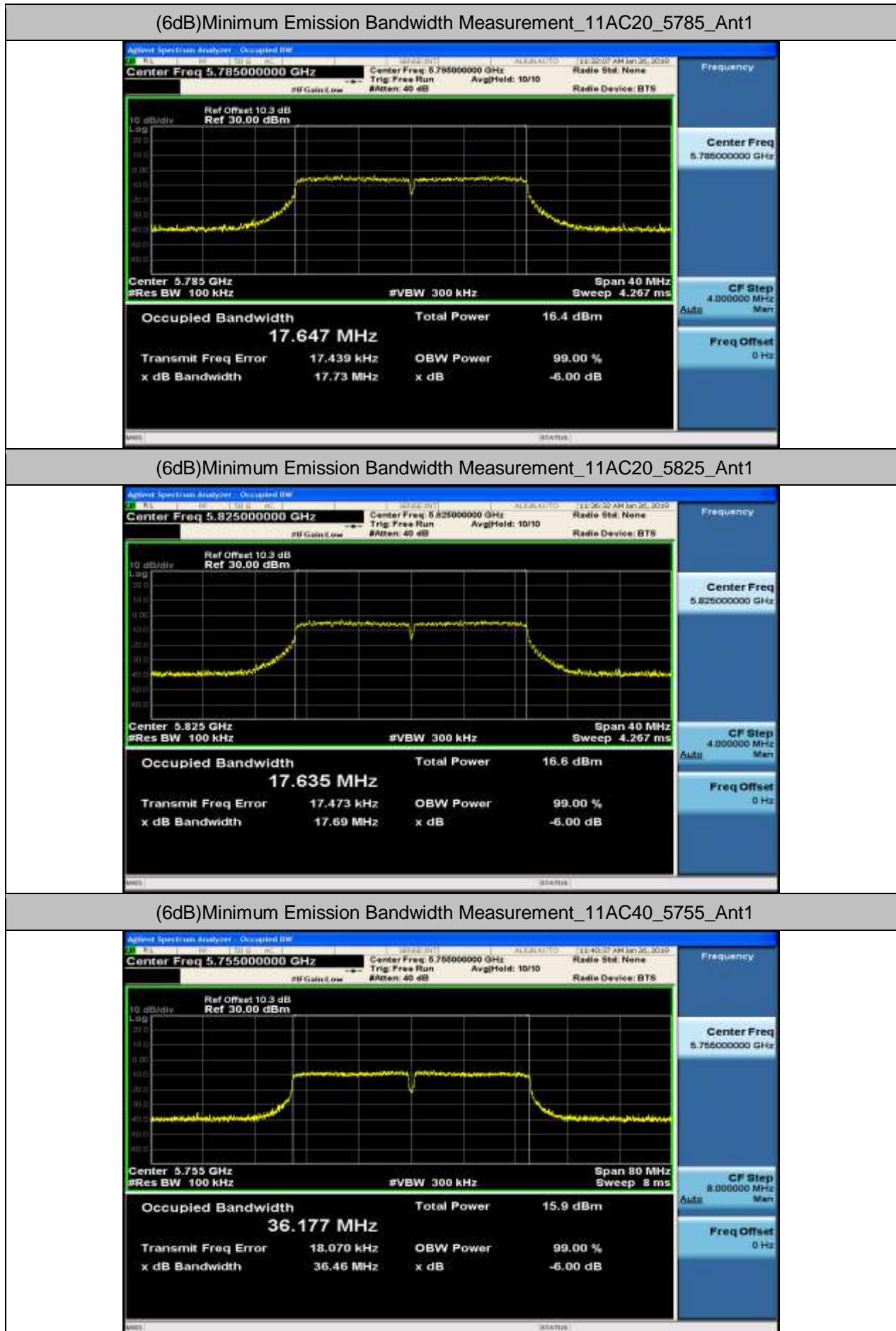


(6dB)Minimum Emission Bandwidth Measurement_11N40_5795_Ant1



(6dB)Minimum Emission Bandwidth Measurement_11AC20_5745_Ant1



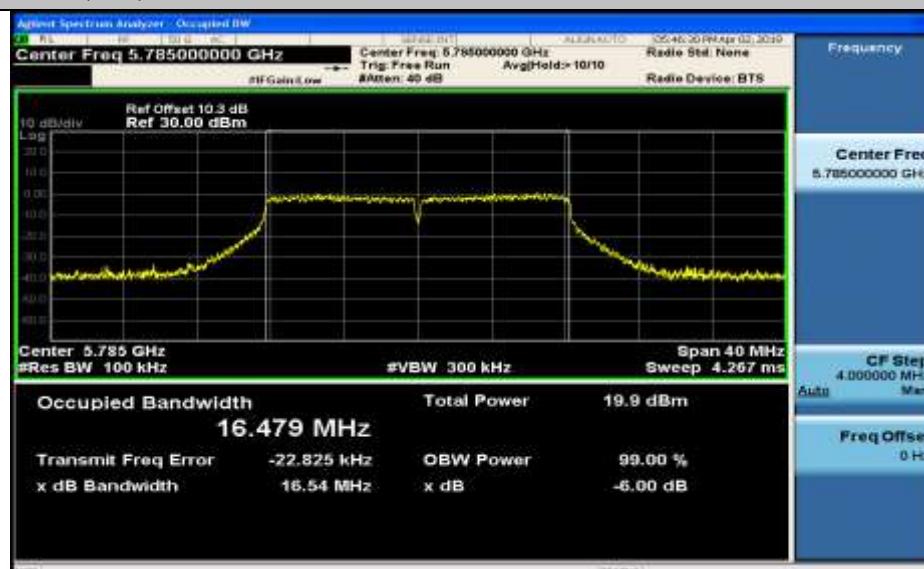




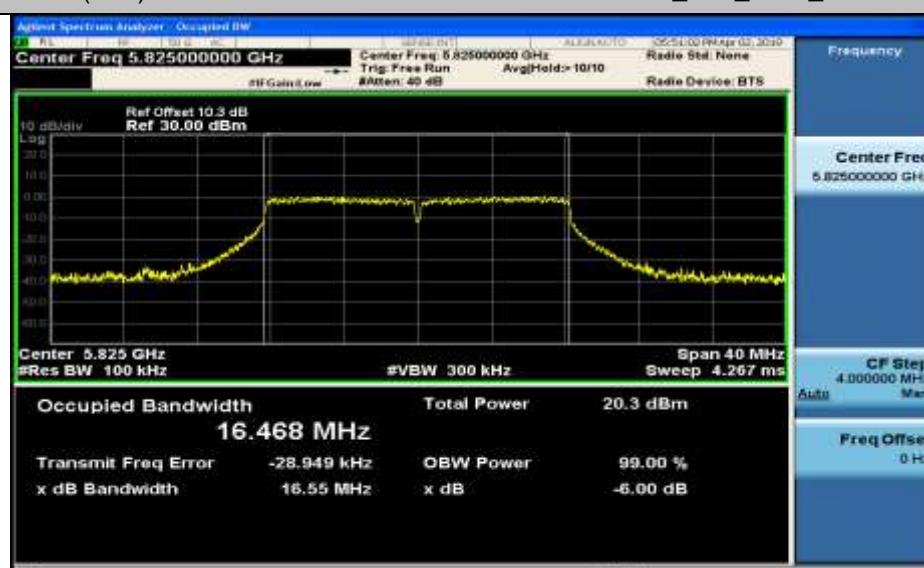
(6dB)Minimum Emission Bandwidth Measurement_11A_5745_Ant2

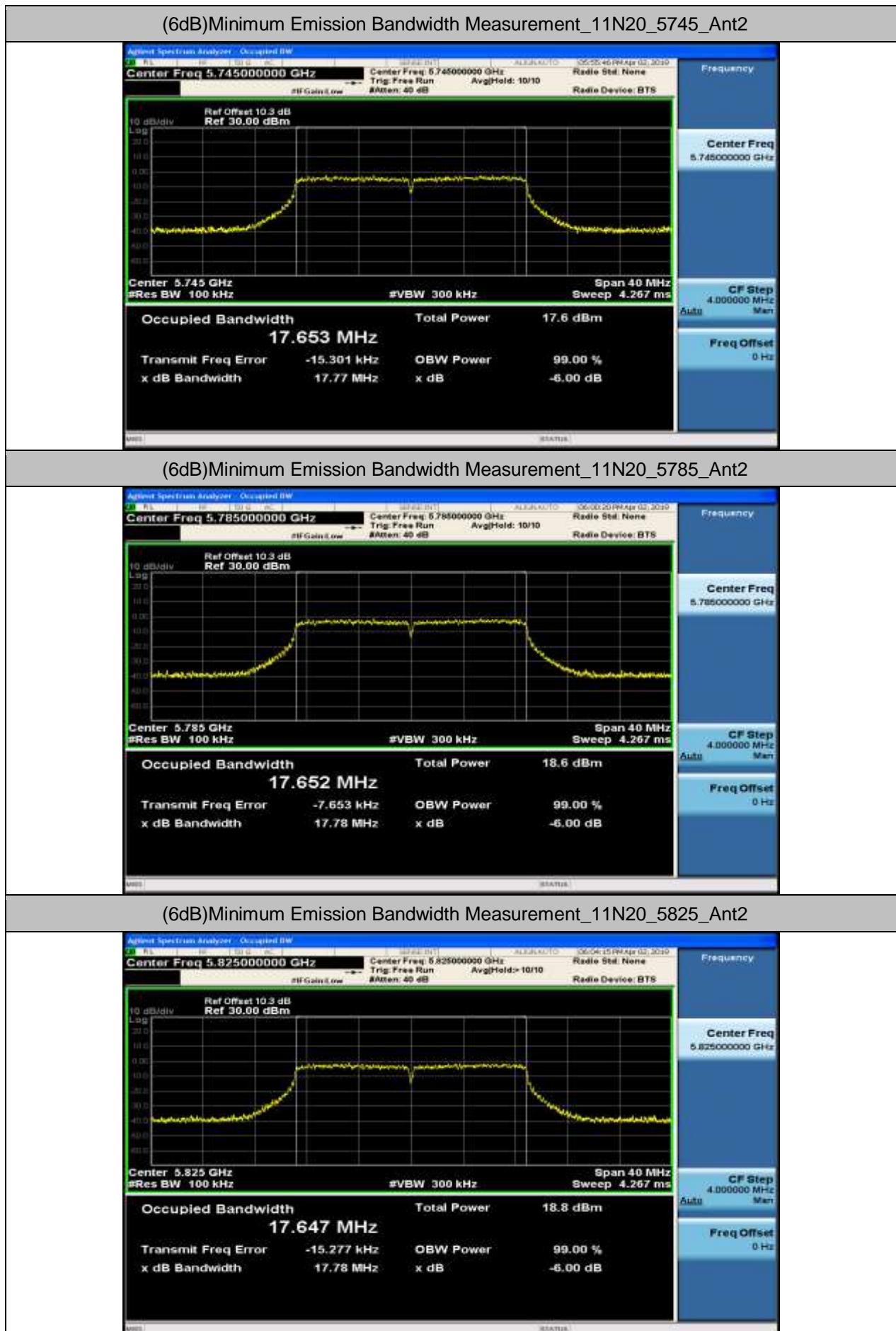


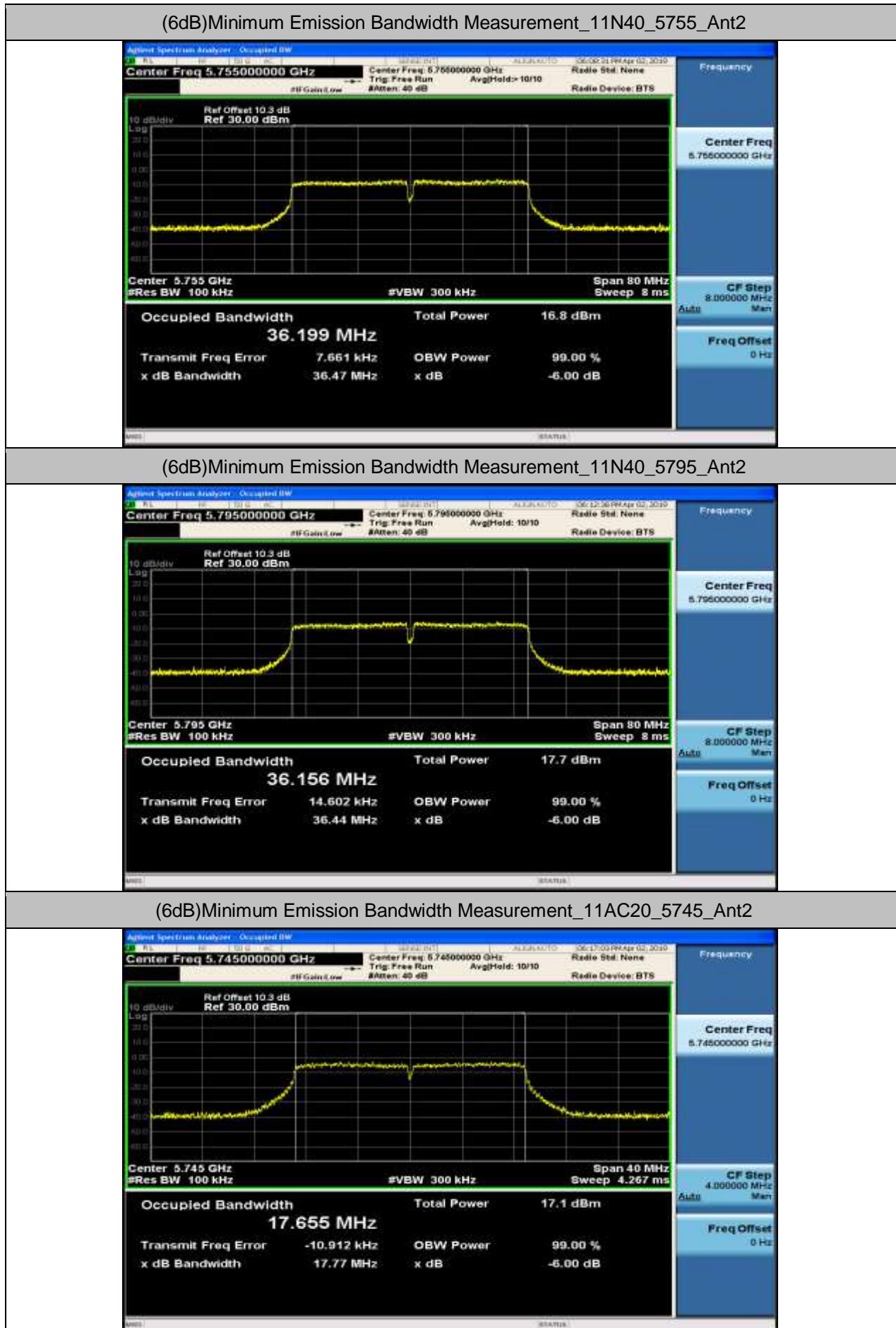
(6dB)Minimum Emission Bandwidth Measurement_11A_5785_Ant2

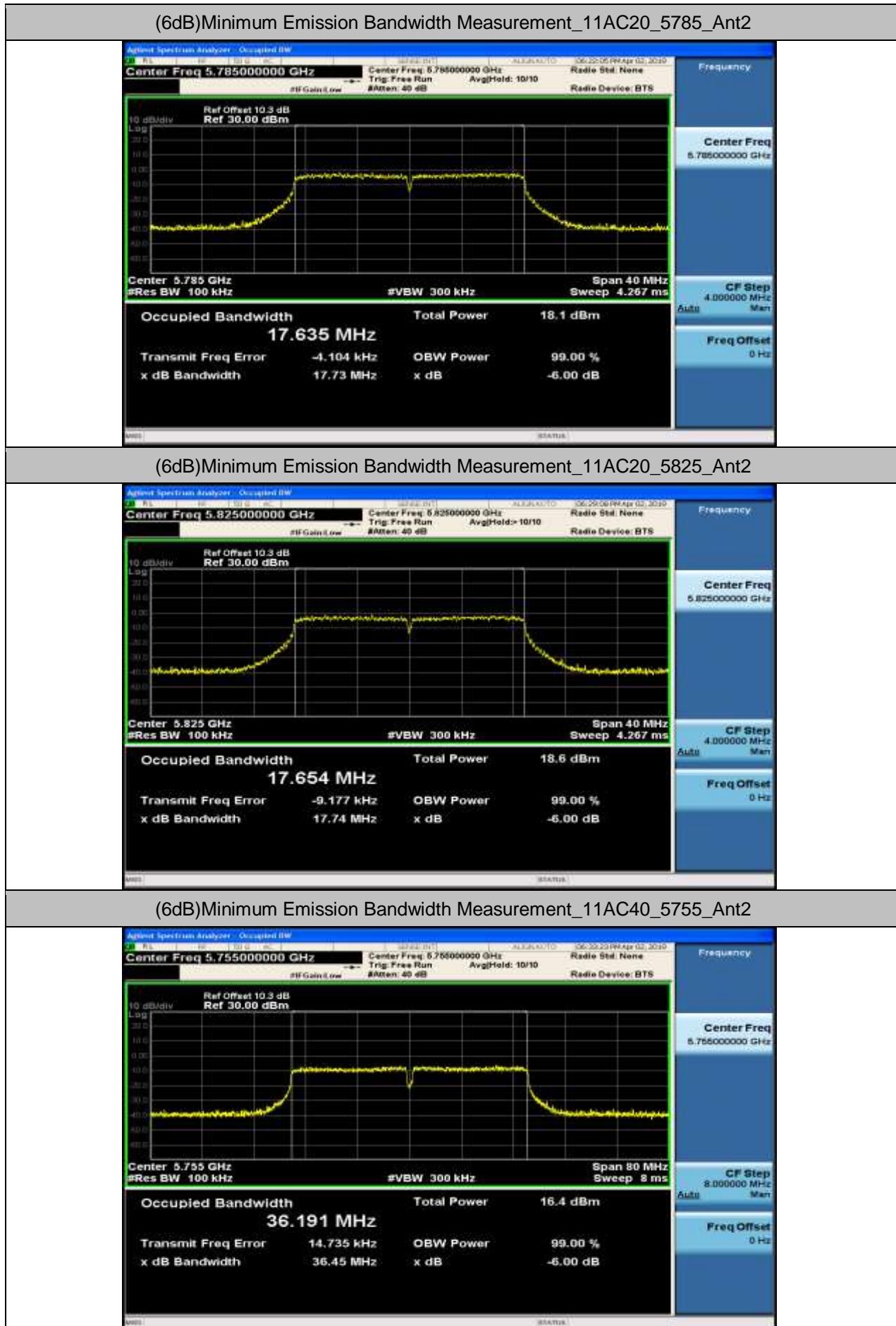


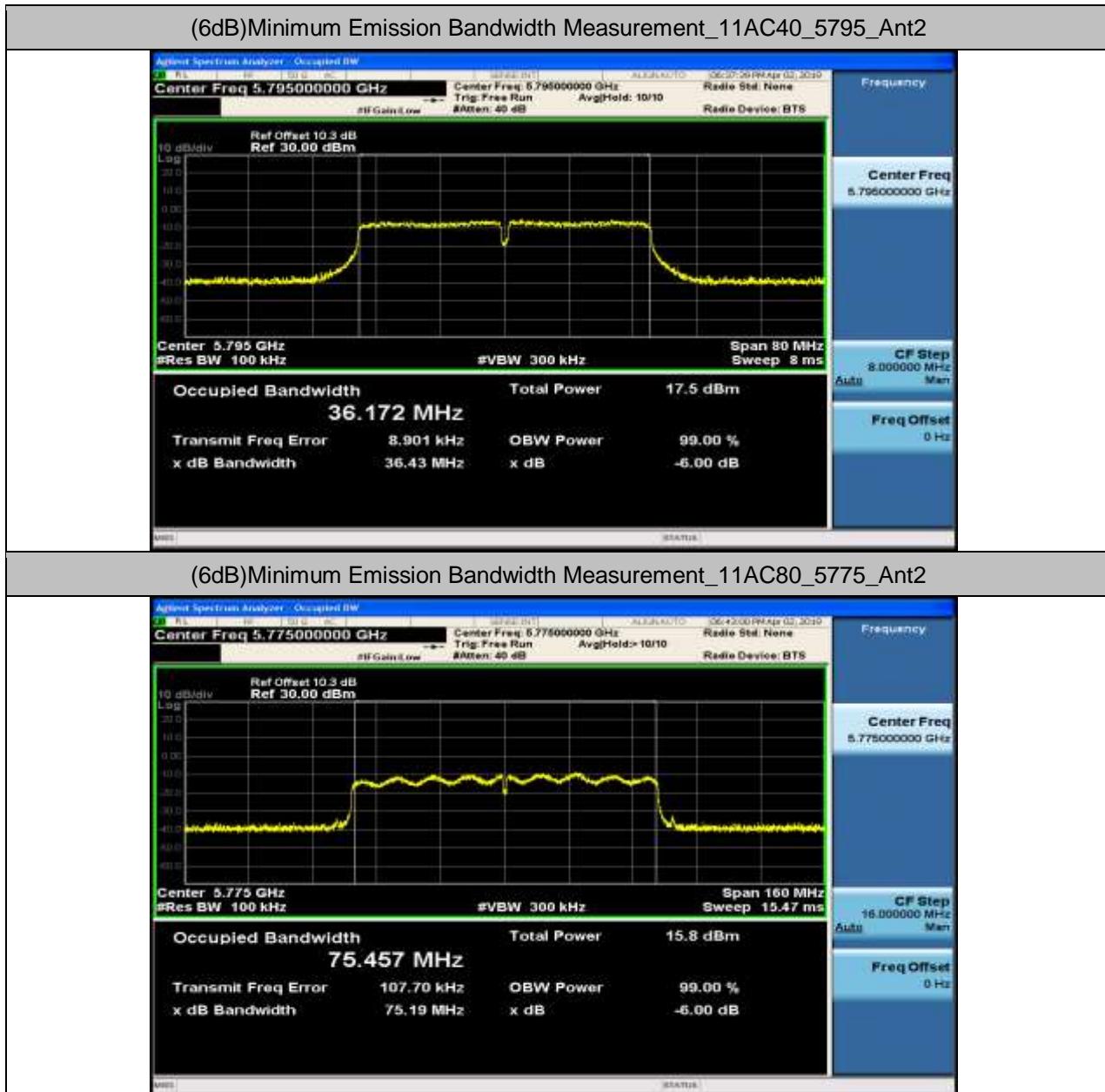
(6dB)Minimum Emission Bandwidth Measurement_11A_5825_Ant2













3.Occupied Bandwidth Measurement

Test Mode	Test Channel	OBW[MHz]		Limit[MHz]	Verdict
		Ant1	Ant2		
11A	5745	16.84	16.80	---	PASS
11A	5785	16.83	16.81	---	PASS
11A	5825	16.81	16.80	---	PASS
11N20	5745	17.87	17.88	---	PASS
11N20	5785	17.88	17.85	---	PASS
11N20	5825	17.83	17.87	---	PASS
11N40	5755	36.88	36.88	---	PASS
11N40	5795	36.94	36.92	---	PASS
11AC20	5745	17.86	17.87	---	PASS
11AC20	5785	17.87	17.87	---	PASS
11AC20	5825	17.84	17.86	---	PASS
11AC40	5755	36.77	36.96	---	PASS
11AC40	5795	36.91	36.85	---	PASS
11AC80	5775	75.36	75.24	---	PASS

Occupied Bandwidth Measurement_11A_5745_Ant1

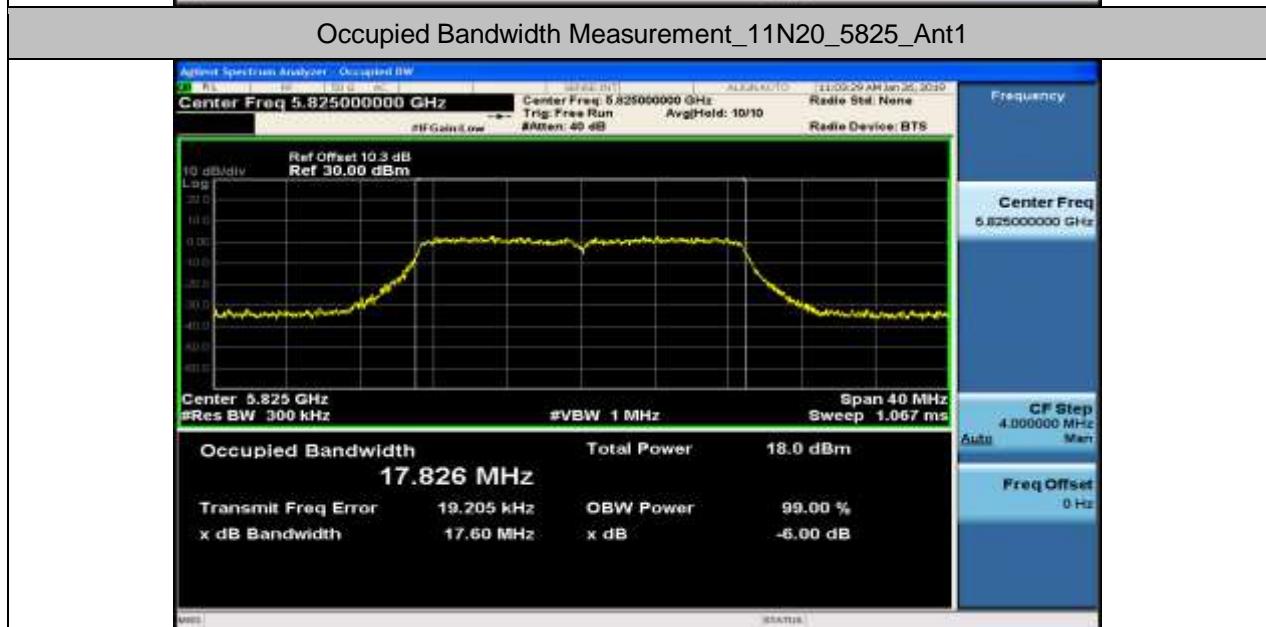
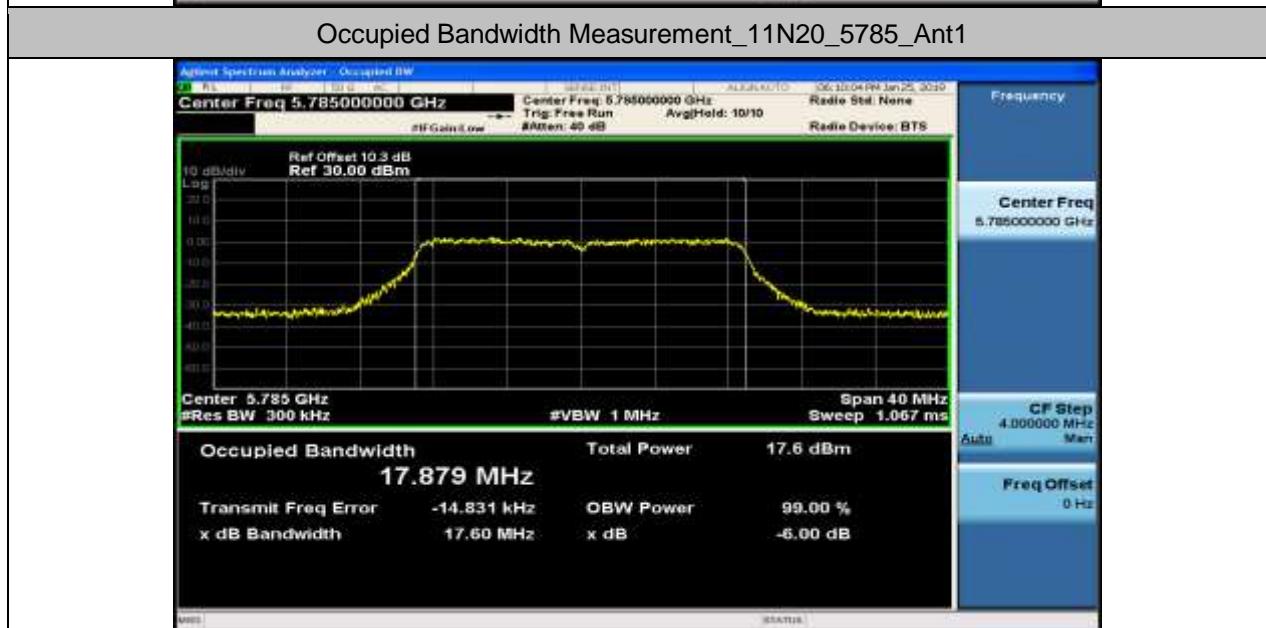
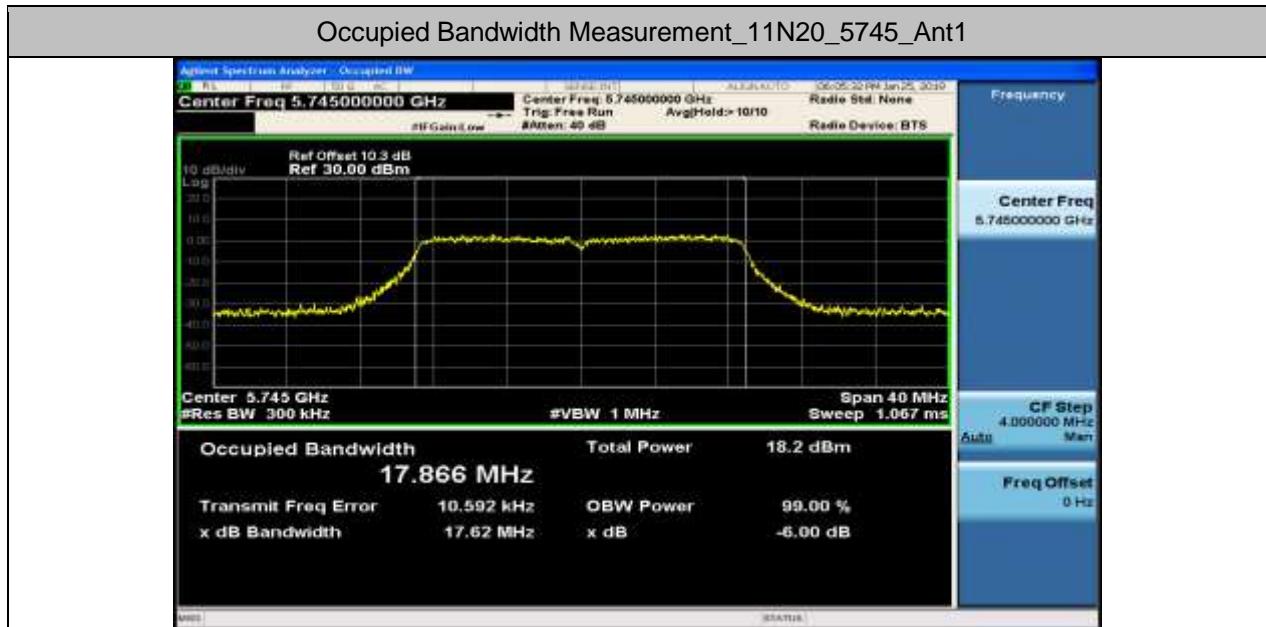


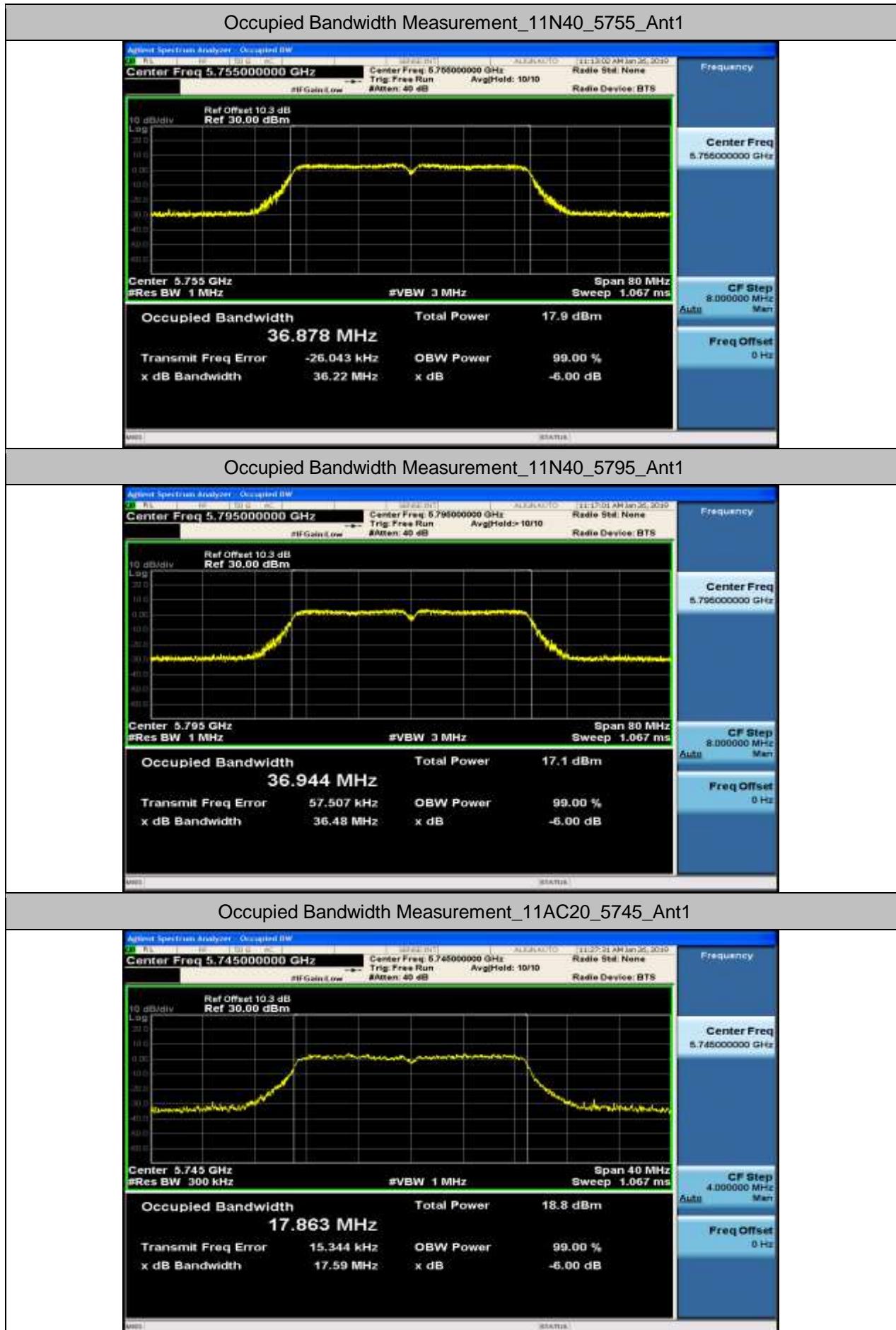
Occupied Bandwidth Measurement_11A_5785_Ant1

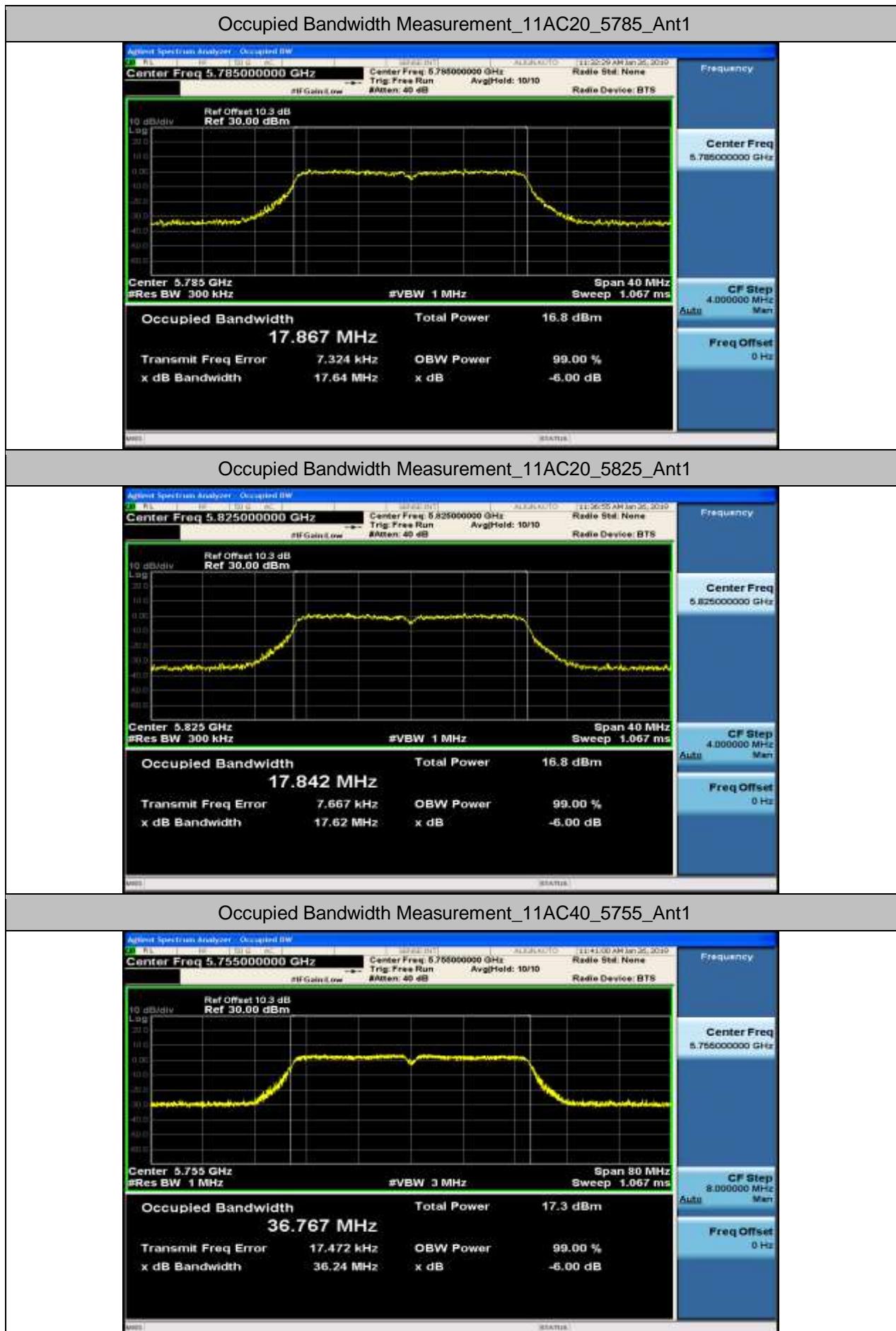


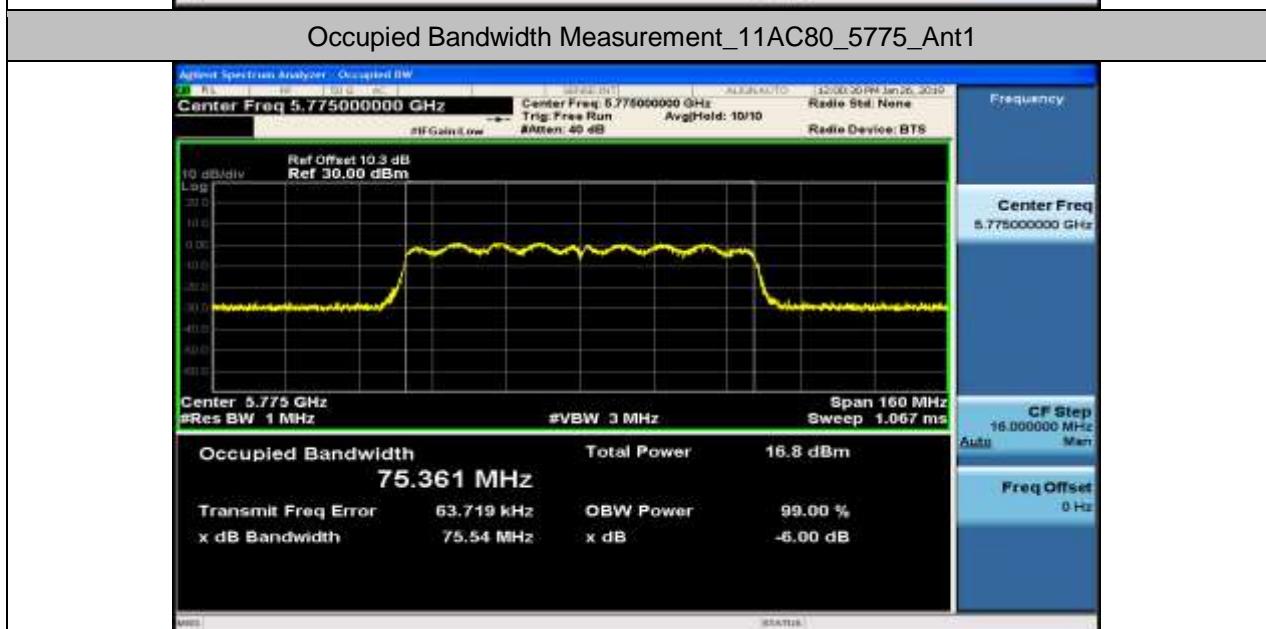
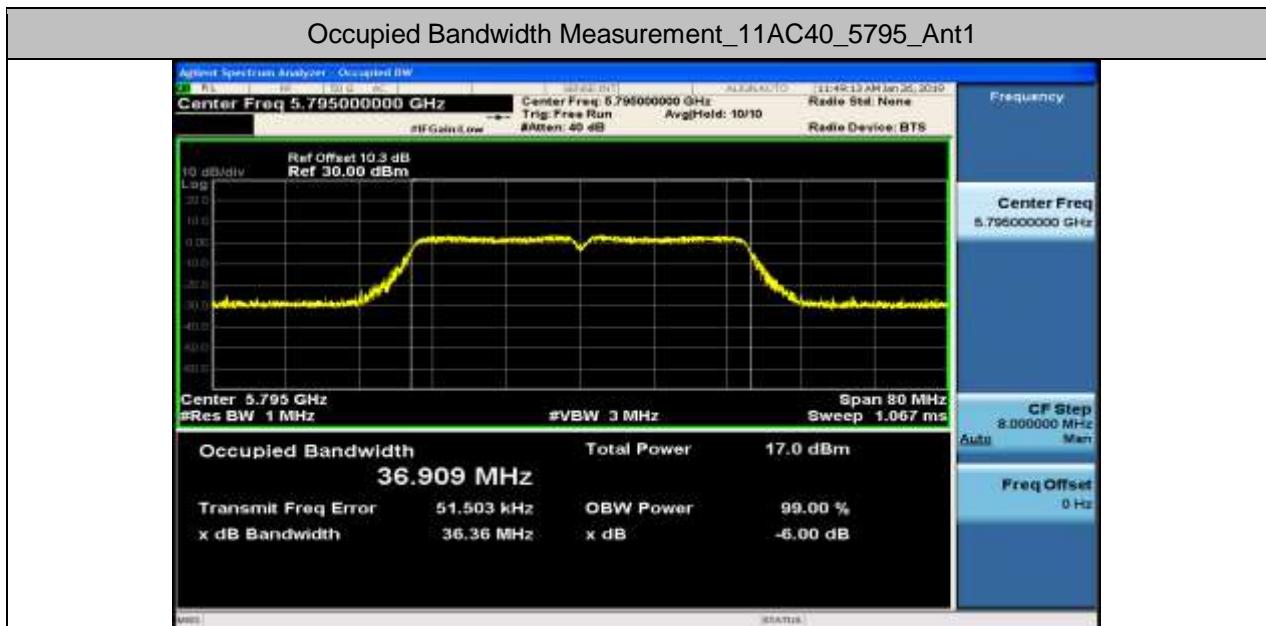
Occupied Bandwidth Measurement_11A_5825_Ant1











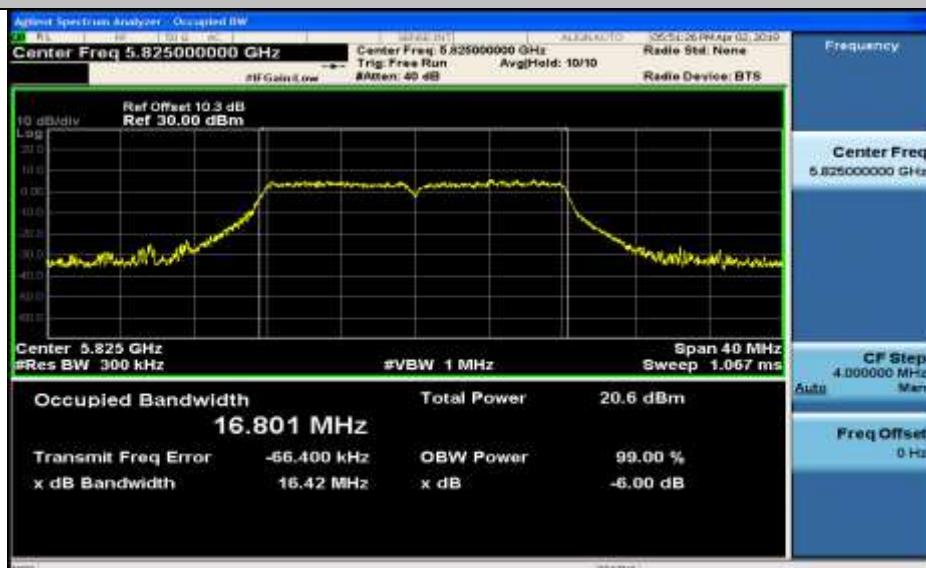
Occupied Bandwidth Measurement_11A_5745_Ant2



Occupied Bandwidth Measurement_11A_5785_Ant2



Occupied Bandwidth Measurement_11A_5825_Ant2



Occupied Bandwidth Measurement_11N20_5745_Ant2



Occupied Bandwidth Measurement_11N20_5785_Ant2



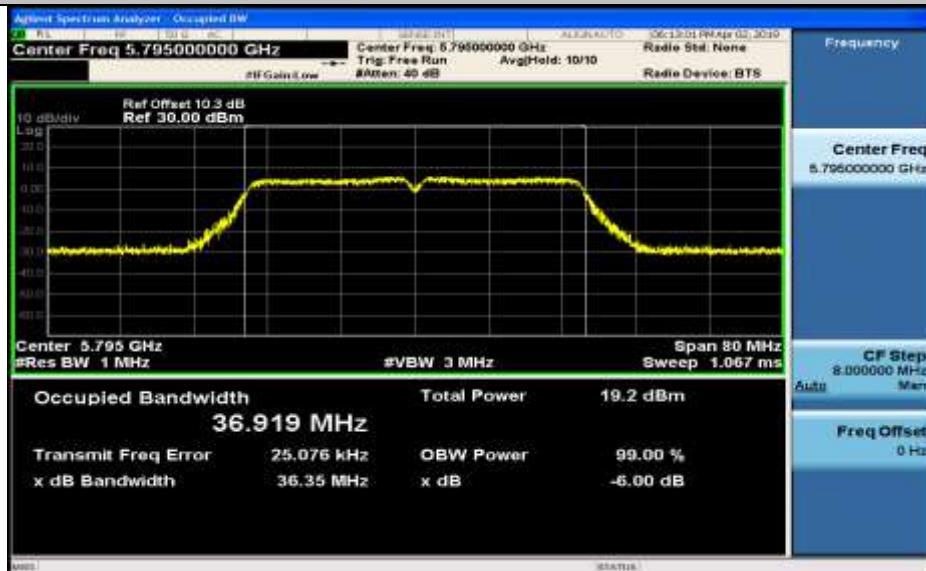
Occupied Bandwidth Measurement_11N20_5825_Ant2



Occupied Bandwidth Measurement_11N40_5755_Ant2



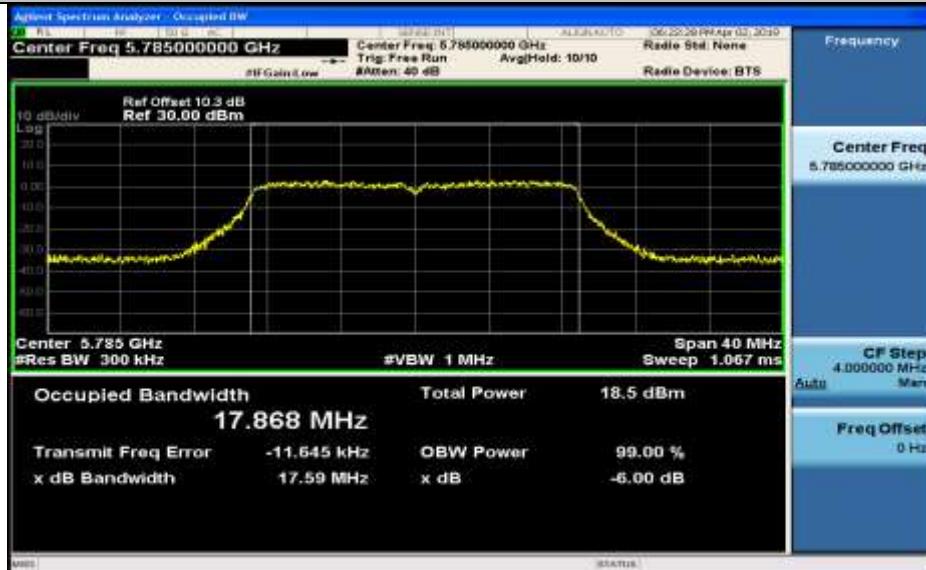
Occupied Bandwidth Measurement_11N40_5795_Ant2



Occupied Bandwidth Measurement_11AC20_5745_Ant2



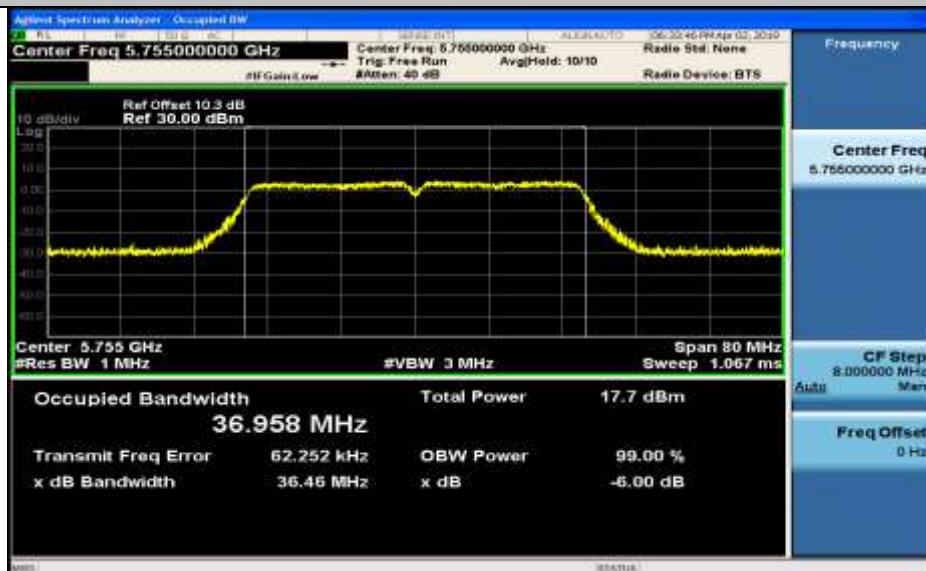
Occupied Bandwidth Measurement_11AC20_5785_Ant2



Occupied Bandwidth Measurement_11AC20_5825_Ant2



Occupied Bandwidth Measurement_11AC40_5755_Ant2



Occupied Bandwidth Measurement_11AC40_5795_Ant2



Occupied Bandwidth Measurement_11AC80_5775_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	5745	13.7	13.27	0.00	0.00	13.7	13.27	NA	30.00	PASS
11A	5785	13.16	14.28	0.00	0.00	13.16	14.28	NA	30.00	PASS
11A	5825	13.33	14.64	0.00	0.00	13.33	14.64	NA	30.00	PASS
11N20	5745	12.38	11.88	0.00	0.00	12.38	11.88	15.15	30.00	PASS
11N20	5785	11.65	12.95	0.00	0.00	11.65	12.95	15.36	30.00	PASS
11N20	5825	12.04	13.26	0.00	0.00	12.04	13.26	15.70	30.00	PASS
11N40	5755	11.21	11.36	0.00	0.00	11.21	11.36	14.30	30.00	PASS
11N40	5795	10.46	12.44	0.00	0.00	10.46	12.44	14.57	30.00	PASS
11AC20	5745	12.93	11.54	0.00	0.00	12.93	11.54	15.30	30.00	PASS
11AC20	5785	10.91	12.61	0.00	0.00	10.91	12.61	14.85	30.00	PASS
11AC20	5825	11.05	12.96	0.00	0.00	11.05	12.96	15.12	30.00	PASS
11AC40	5755	10.58	11.04	0.00	0.00	10.58	11.04	13.83	30.00	PASS
11AC40	5795	10.34	12.14	0.00	0.00	10.34	12.14	14.34	30.00	PASS
11AC80	5775	9.48	10.65	0.00	0.00	9.48	10.65	13.11	30.00	PASS

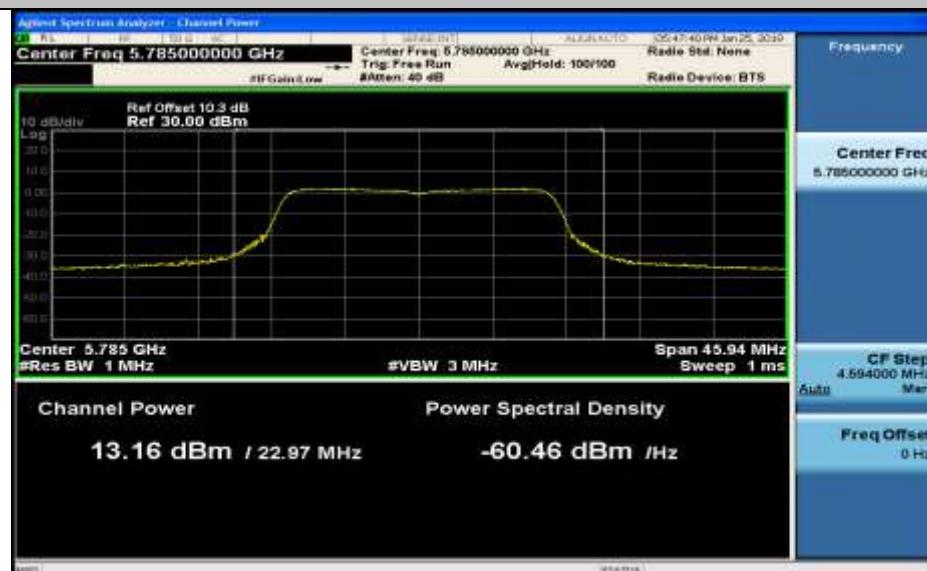
Remark:

- 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_5745_Ant1

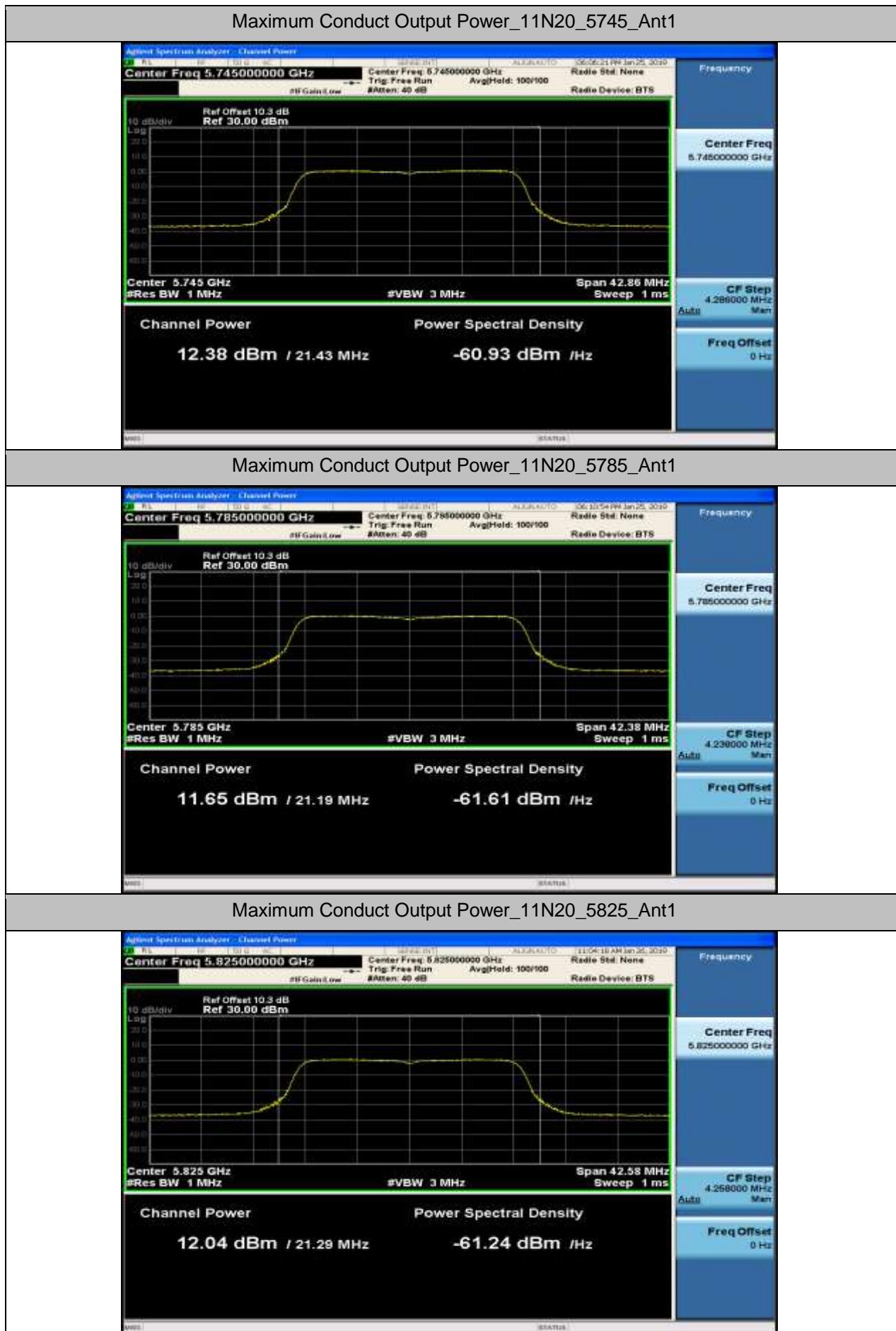


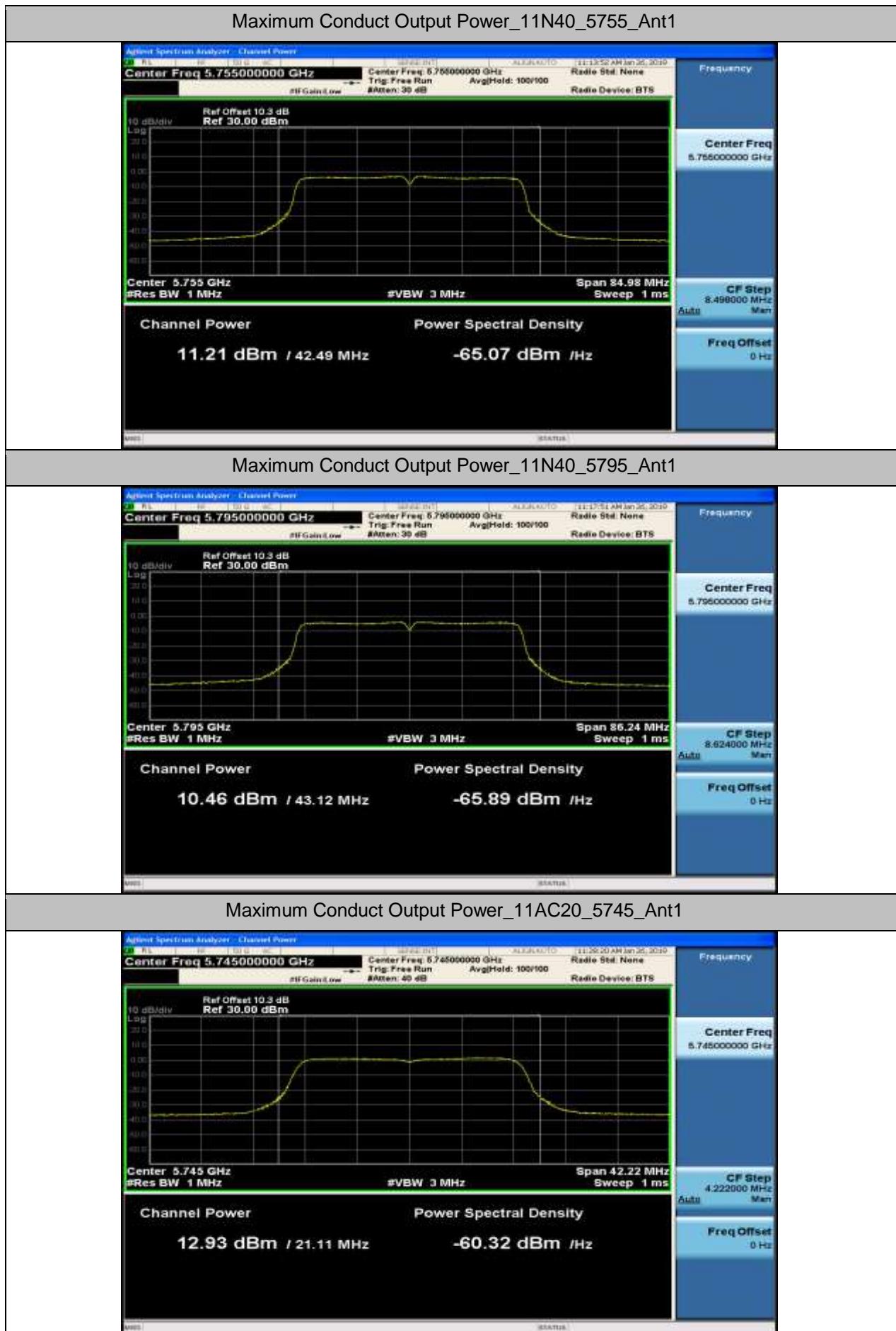
Maximum Conduct Output Power_11A_5785_Ant1

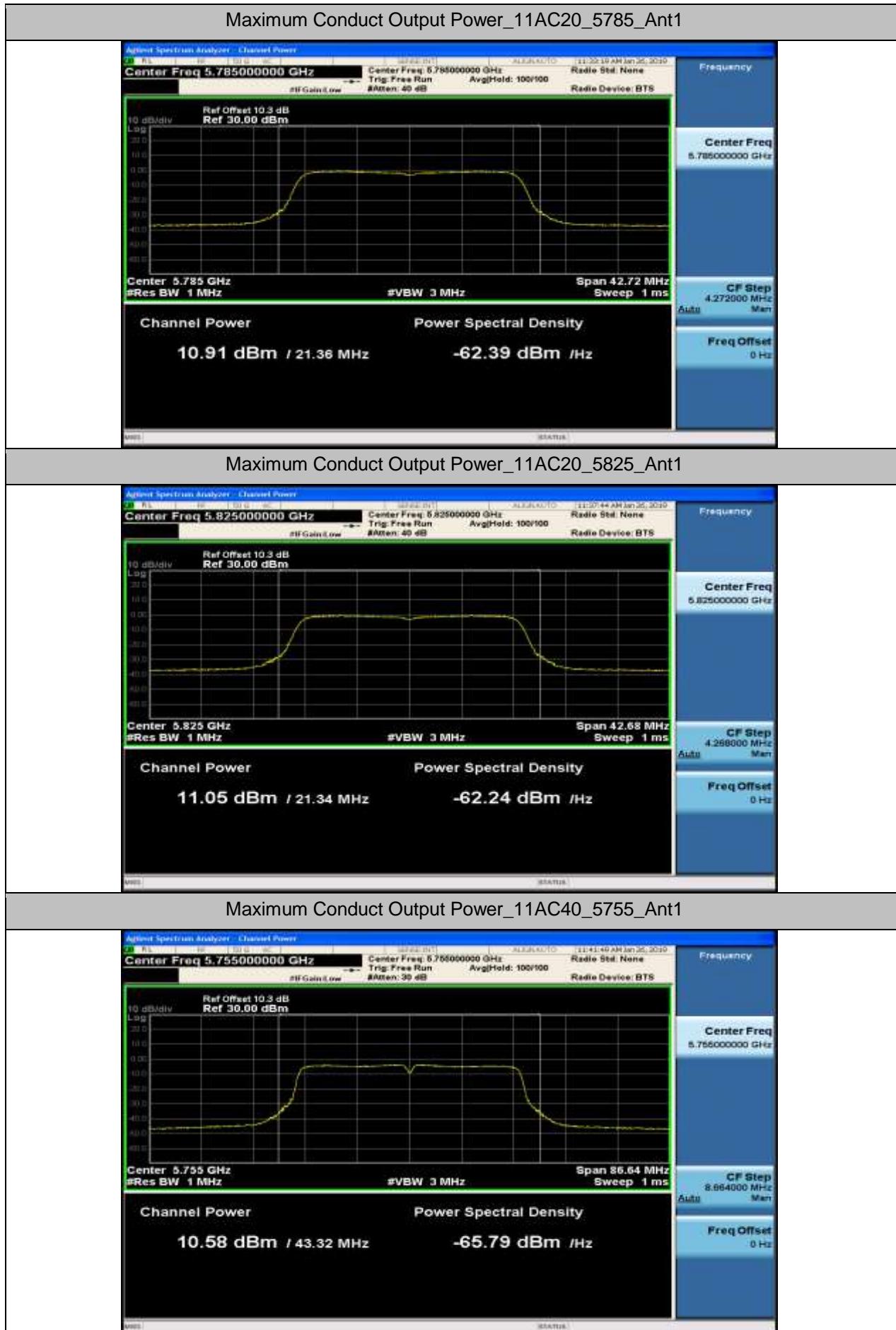


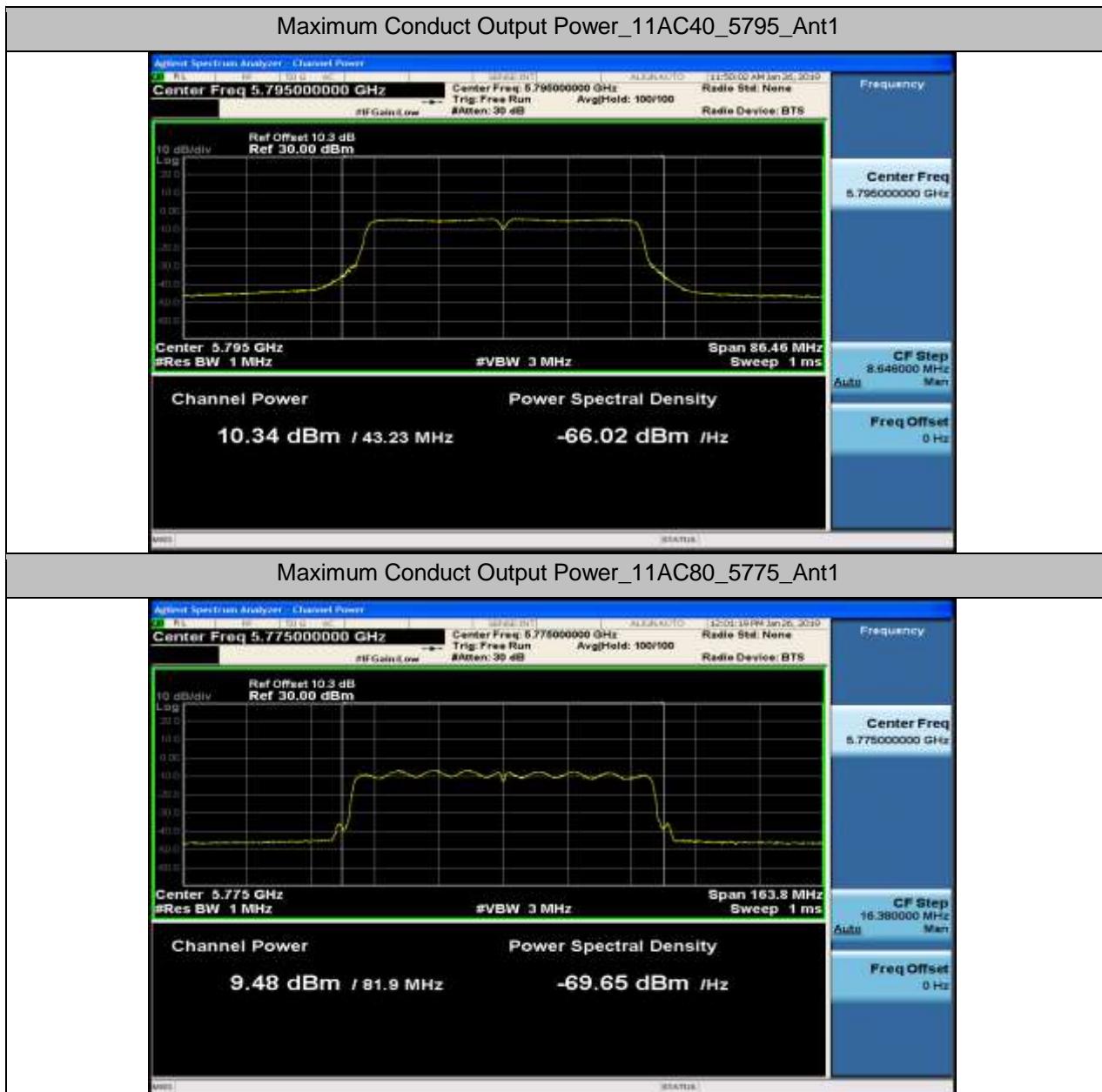
Maximum Conduct Output Power_11A_5825_Ant1

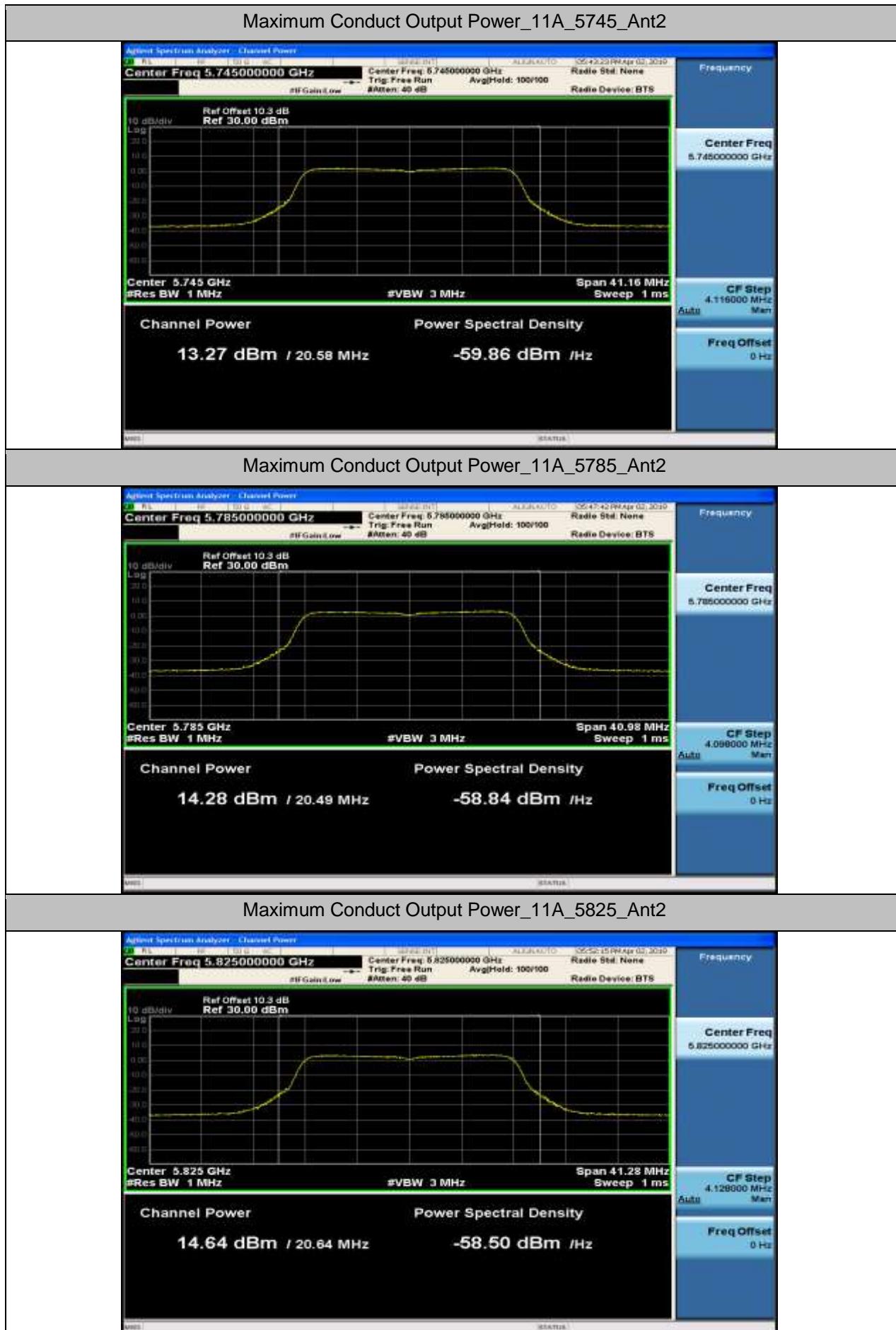


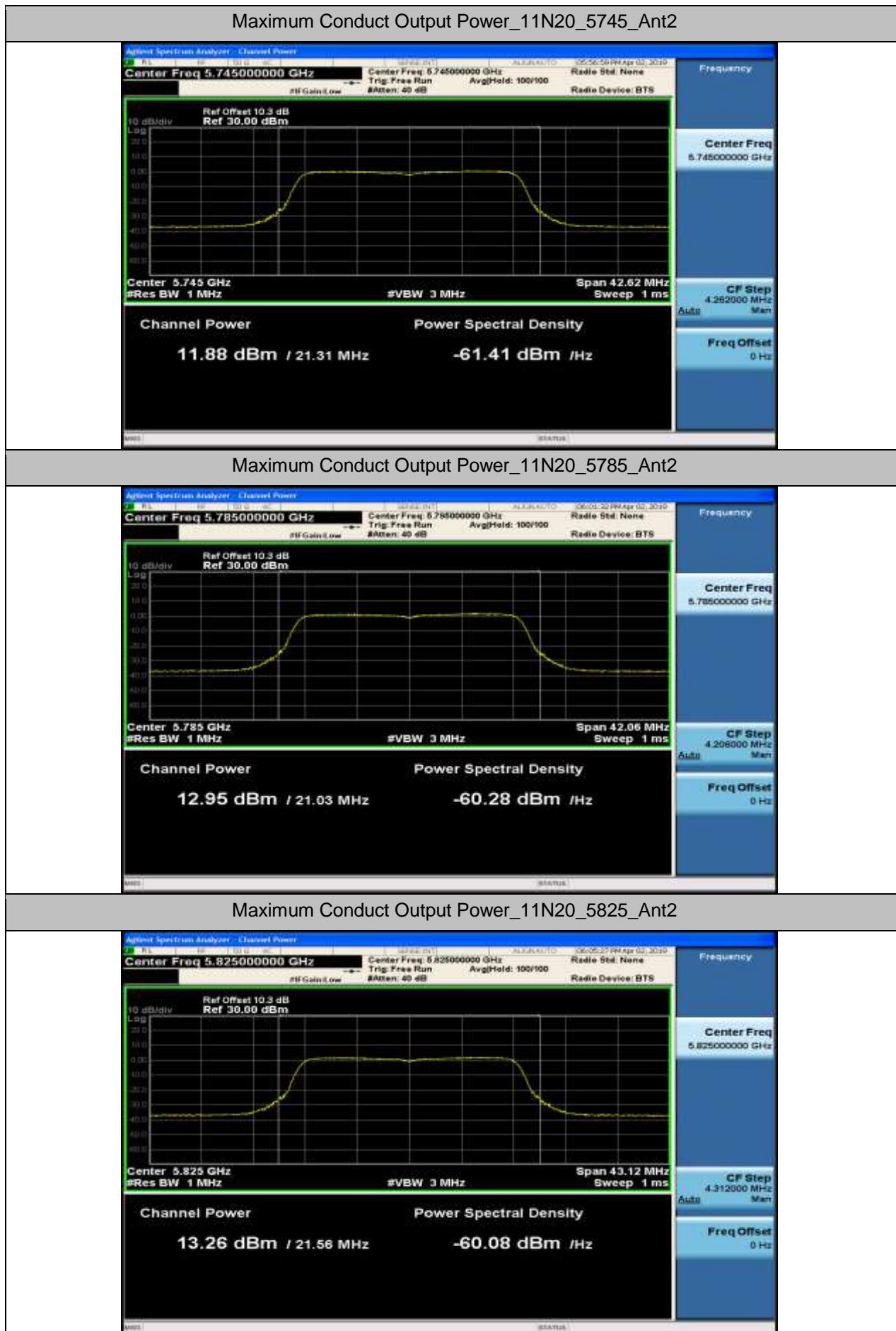


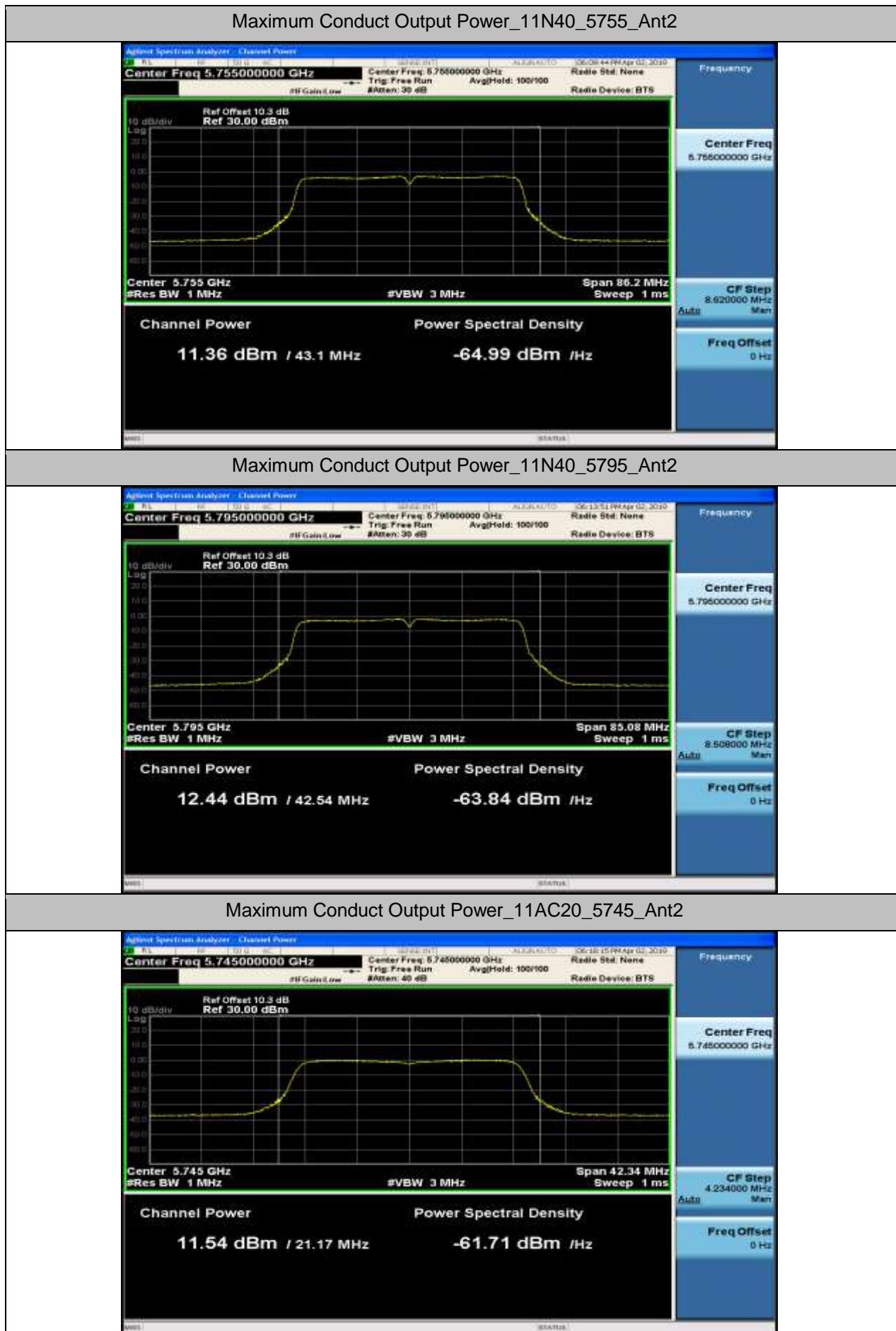


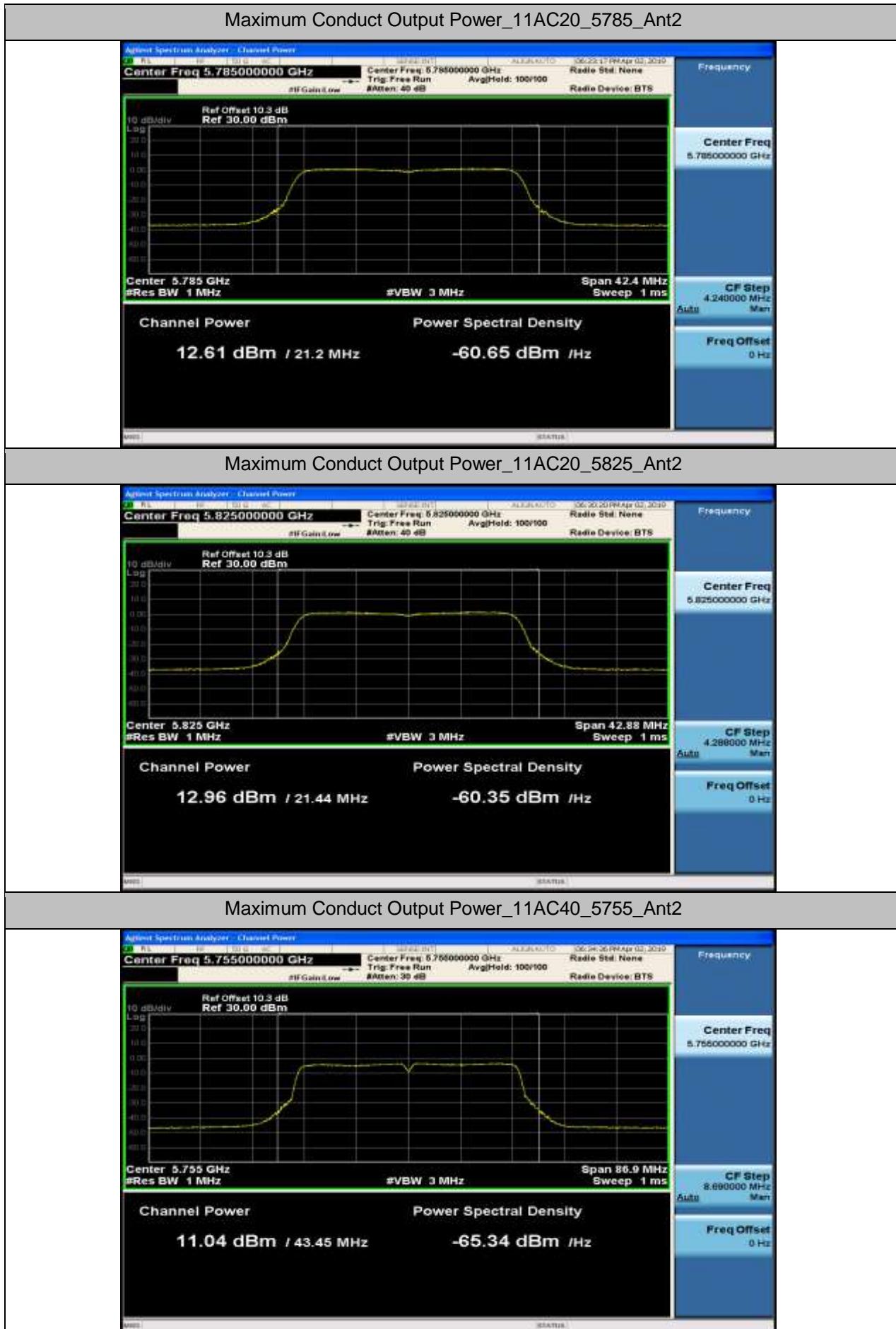


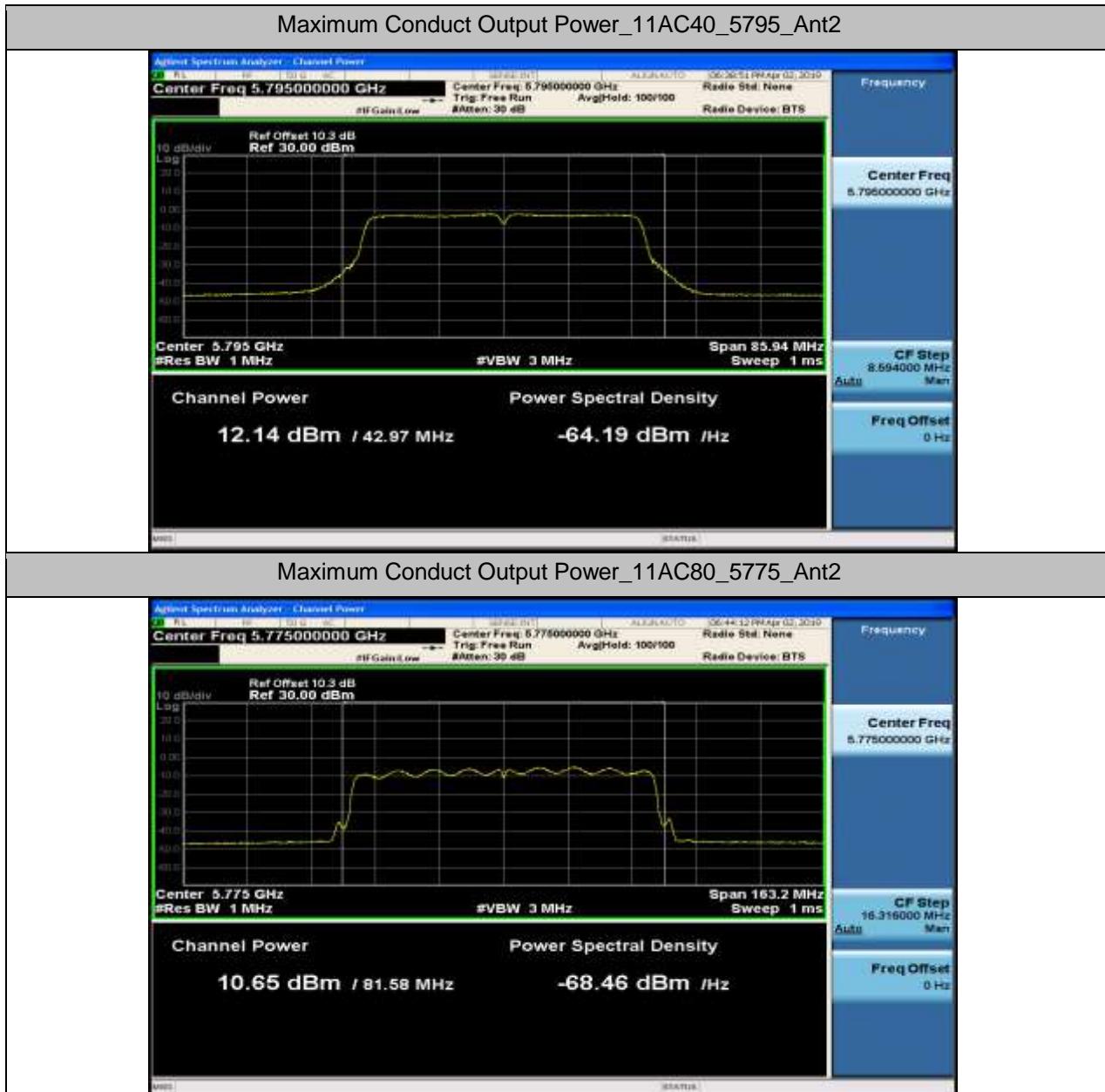












**5. Maximum Power Spectral Density**

Test Mode	Test Channel	Level [dBm/500kHz]		10log(1/x) Factor[dB]		10log(500kHz/RBW) Factor [dB]		PSD [dBm/500kHz]			Limit [dBm/500kHz]	Verdict
		Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	MIMO		
11A	5745	-2.64	-2.93	0	0	2.22	2.22	-0.42	-0.71	NA	17.00	PASS
11A	5785	-2.93	-1.73	0	0	2.22	2.22	-0.71	0.49	NA	17.00	PASS
11A	5825	-2.91	-1.51	0	0	2.22	2.22	-0.69	0.71	NA	17.00	PASS
11N20	5745	-3.76	-4.35	0	0	2.22	2.22	-1.54	-2.13	1.19	17.00	PASS
11N20	5785	-4.69	-3.25	0	0	2.22	2.22	-2.47	-1.03	1.32	17.00	PASS
11N20	5825	-4.38	-2.96	0	0	2.22	2.22	-2.16	-0.74	1.62	17.00	PASS
11N40	5755	-8.45	-8.06	0	0	2.22	2.22	-6.23	-5.84	-3.02	17.00	PASS
11N40	5795	-9.1	-7.07	0	0	2.22	2.22	-6.88	-4.85	-2.74	17.00	PASS
11AC20	5745	-3.63	-4.92	0	0	2.22	2.22	-1.41	-2.7	1.00	17.00	PASS
11AC20	5785	-5.64	-3.8	0	0	2.22	2.22	-3.42	-1.58	0.61	17.00	PASS
11AC20	5825	-5.11	-3.41	0	0	2.22	2.22	-2.89	-1.19	1.05	17.00	PASS
11AC40	5755	-8.67	-8.6	0	0	2.22	2.22	-6.45	-6.38	-3.40	17.00	PASS
11AC40	5795	-9.37	-7.31	0	0	2.22	2.22	-7.15	-5.09	-2.99	17.00	PASS
11AC80	5775	-12.15	-10.68	0	0	2.22	2.22	-9.93	-8.46	-6.12	17.00	PASS

Maximum Power Spectral Density_TNVN_11A_5745_Ant1

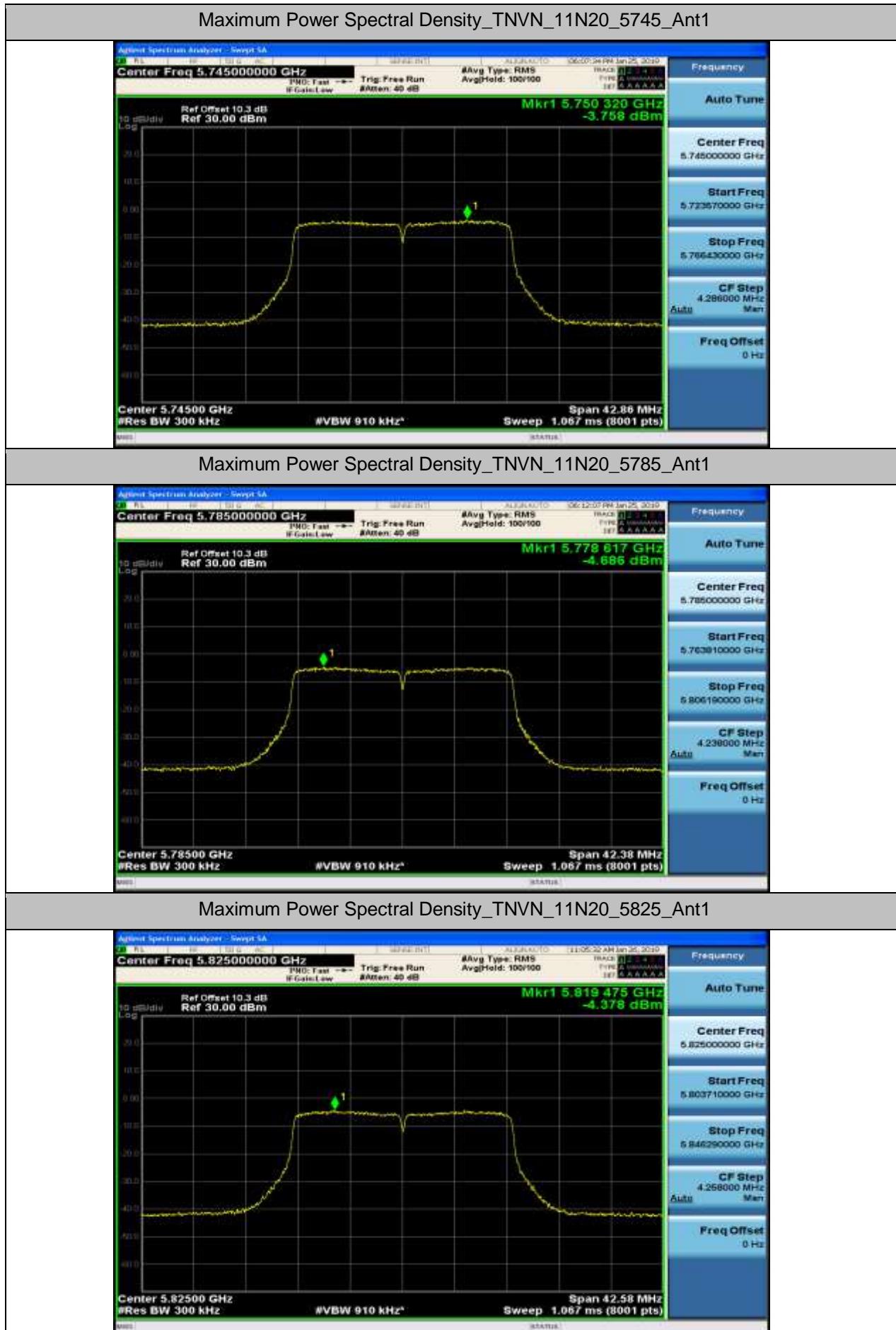


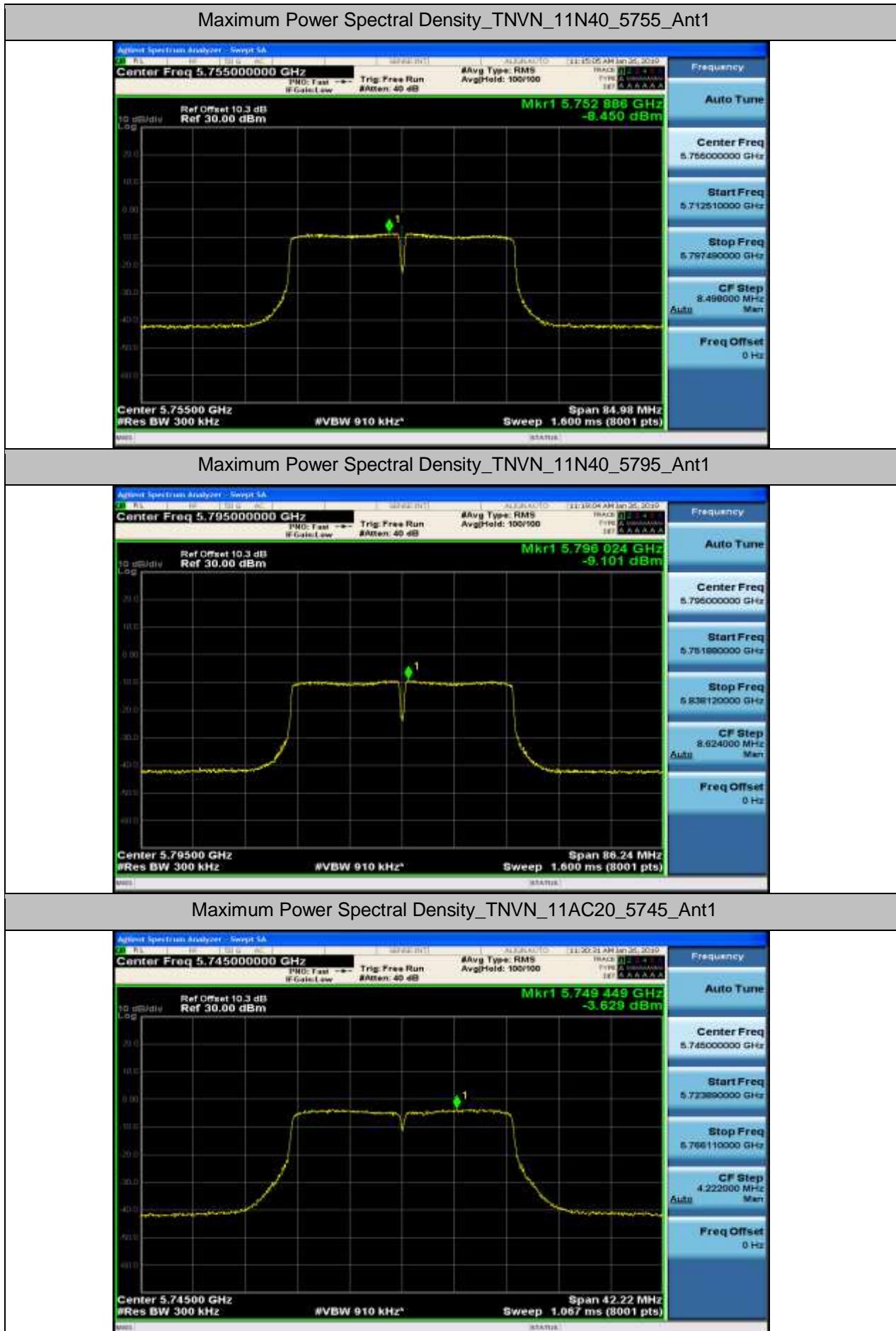
Maximum Power Spectral Density_TNVN_11A_5785_Ant1

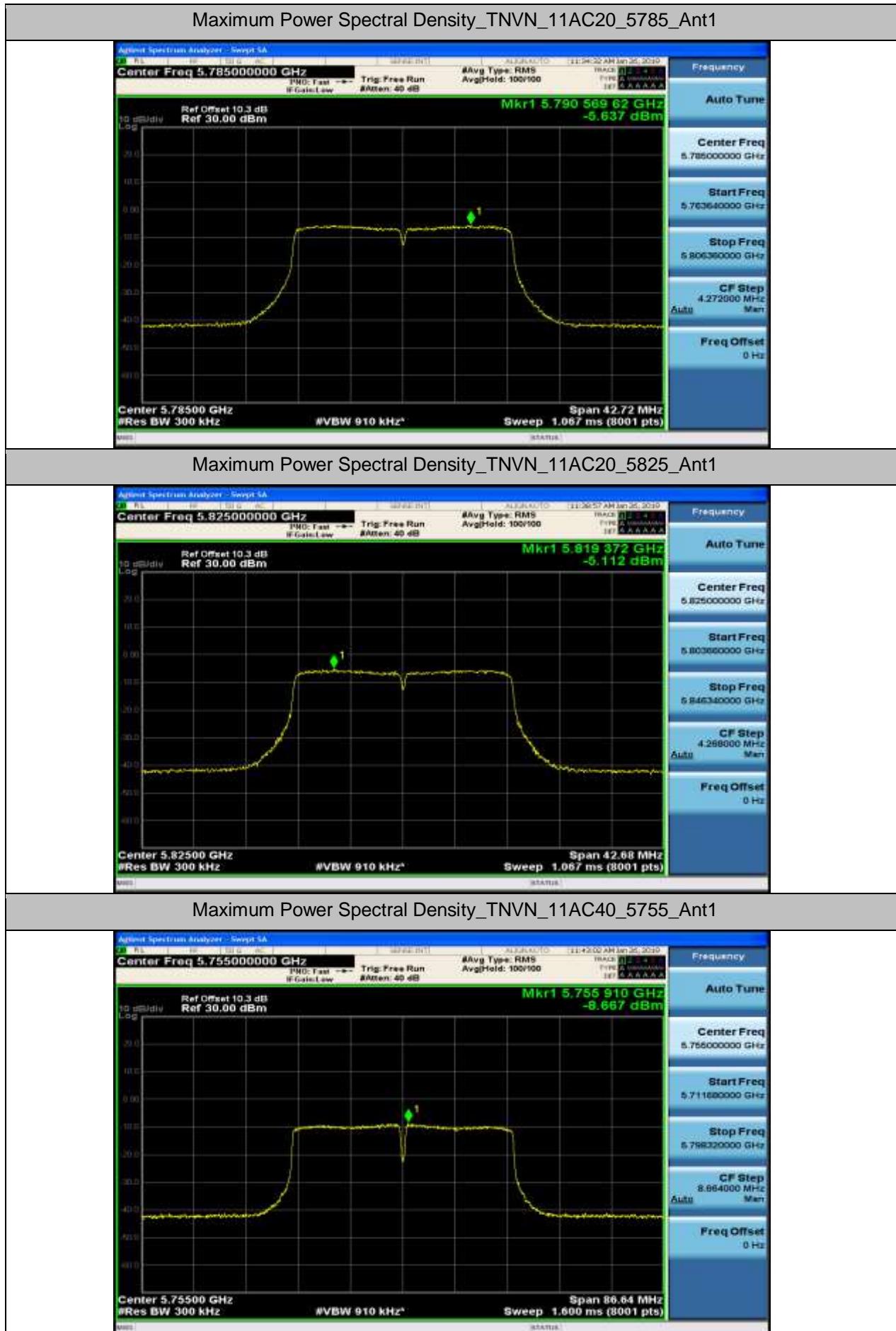


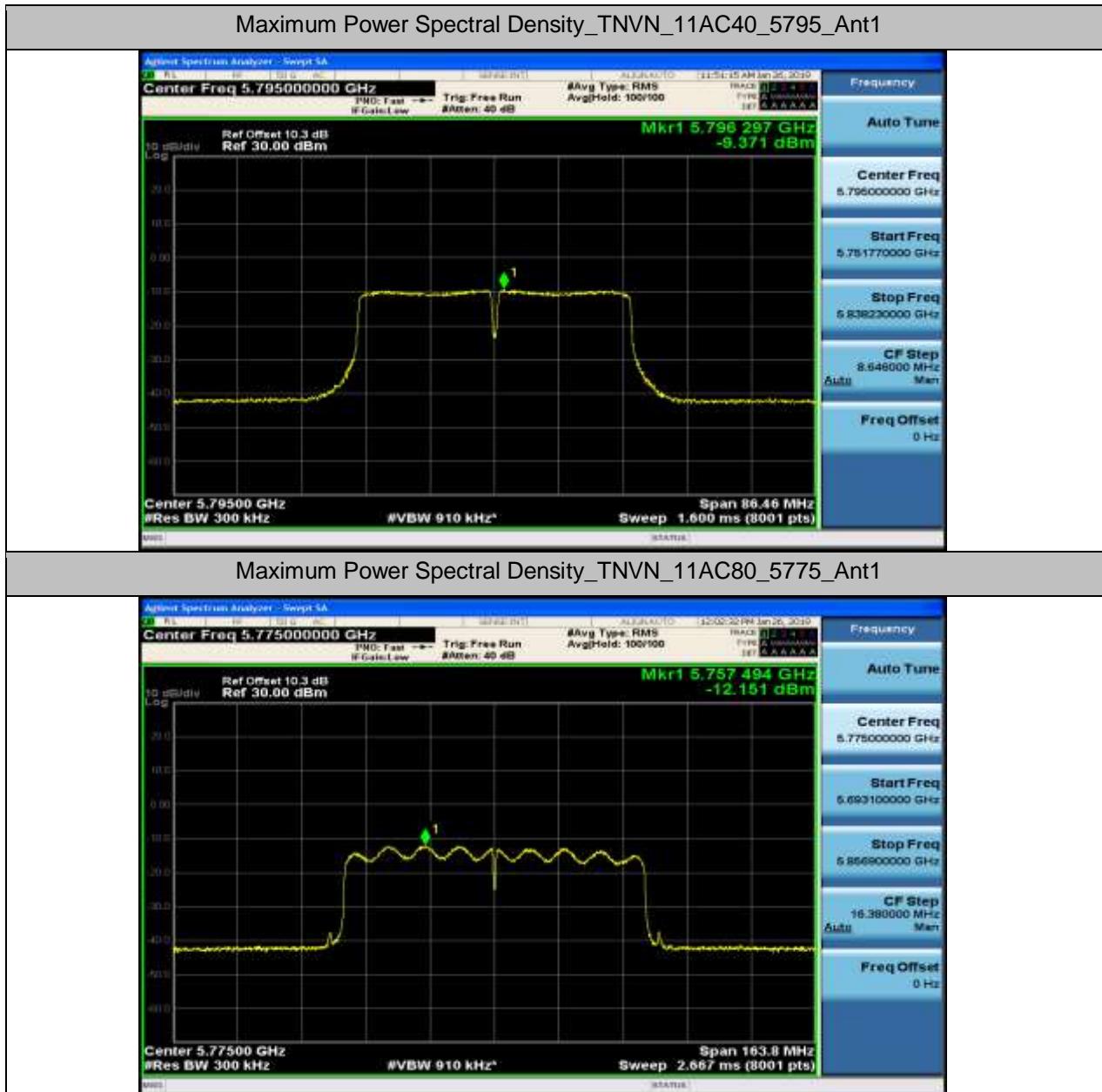
Maximum Power Spectral Density_TNVN_11A_5825_Ant1











Maximum Power Spectral Density_TNVN_11A_5745_Ant2

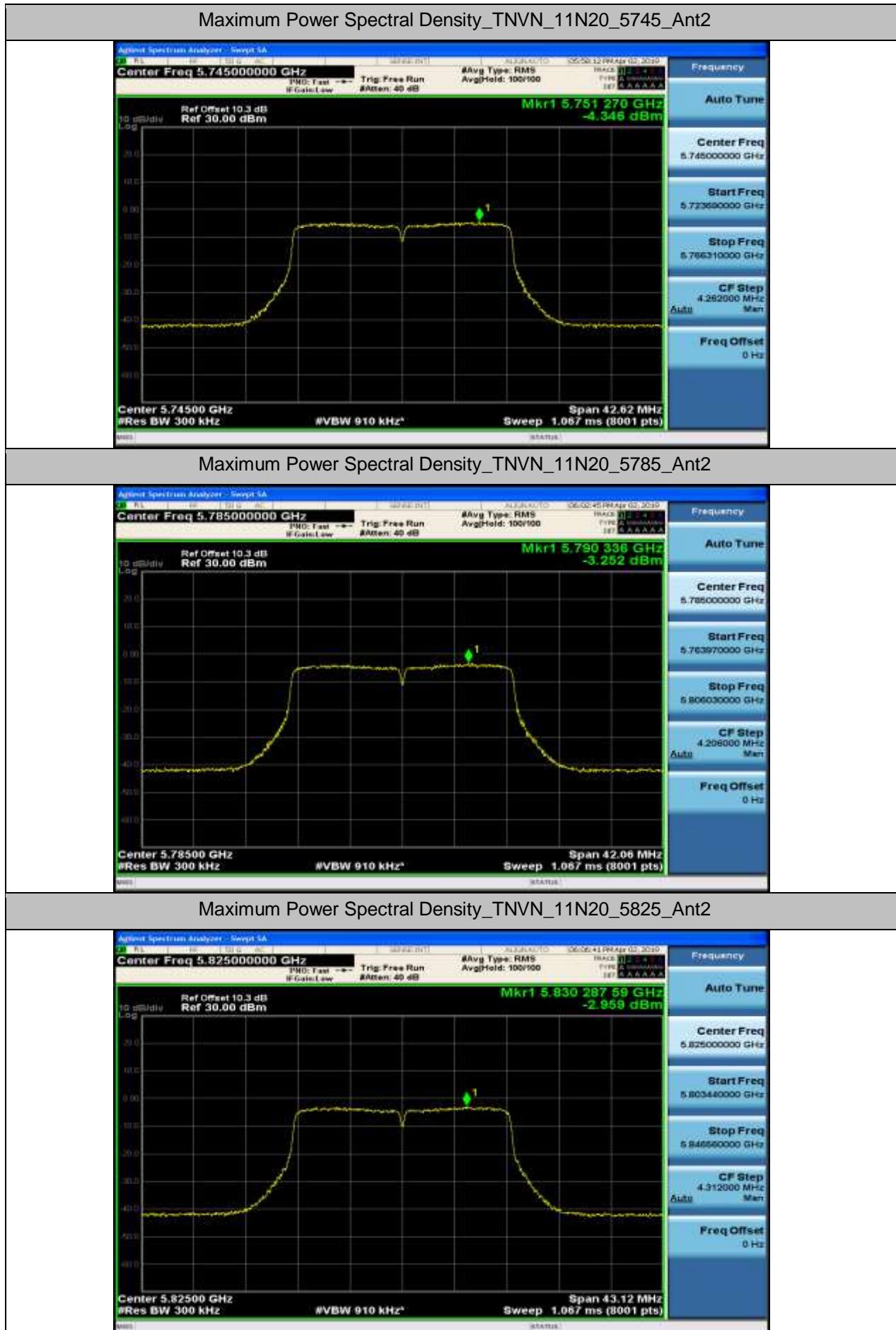


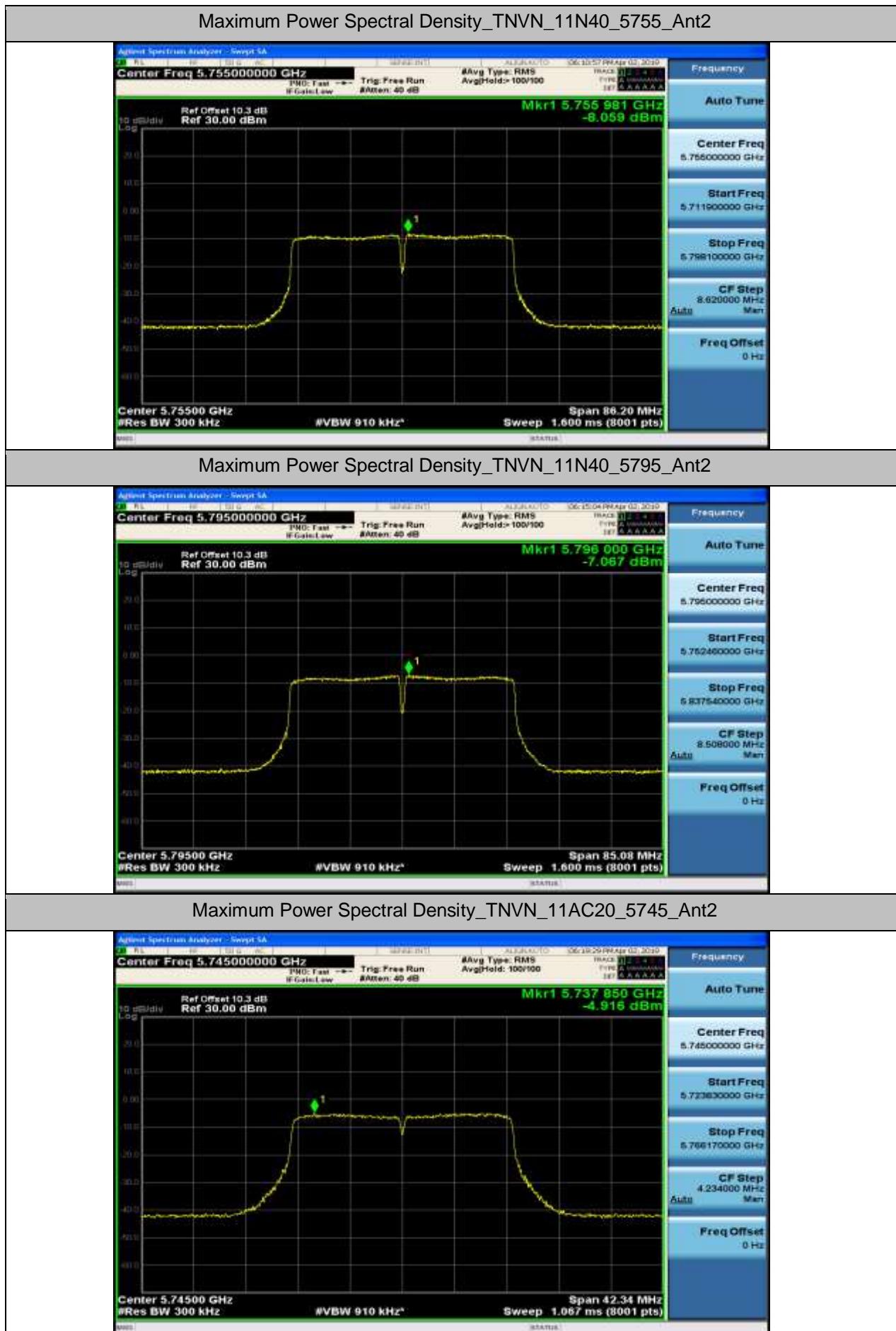
Maximum Power Spectral Density_TNVN_11A_5785_Ant2

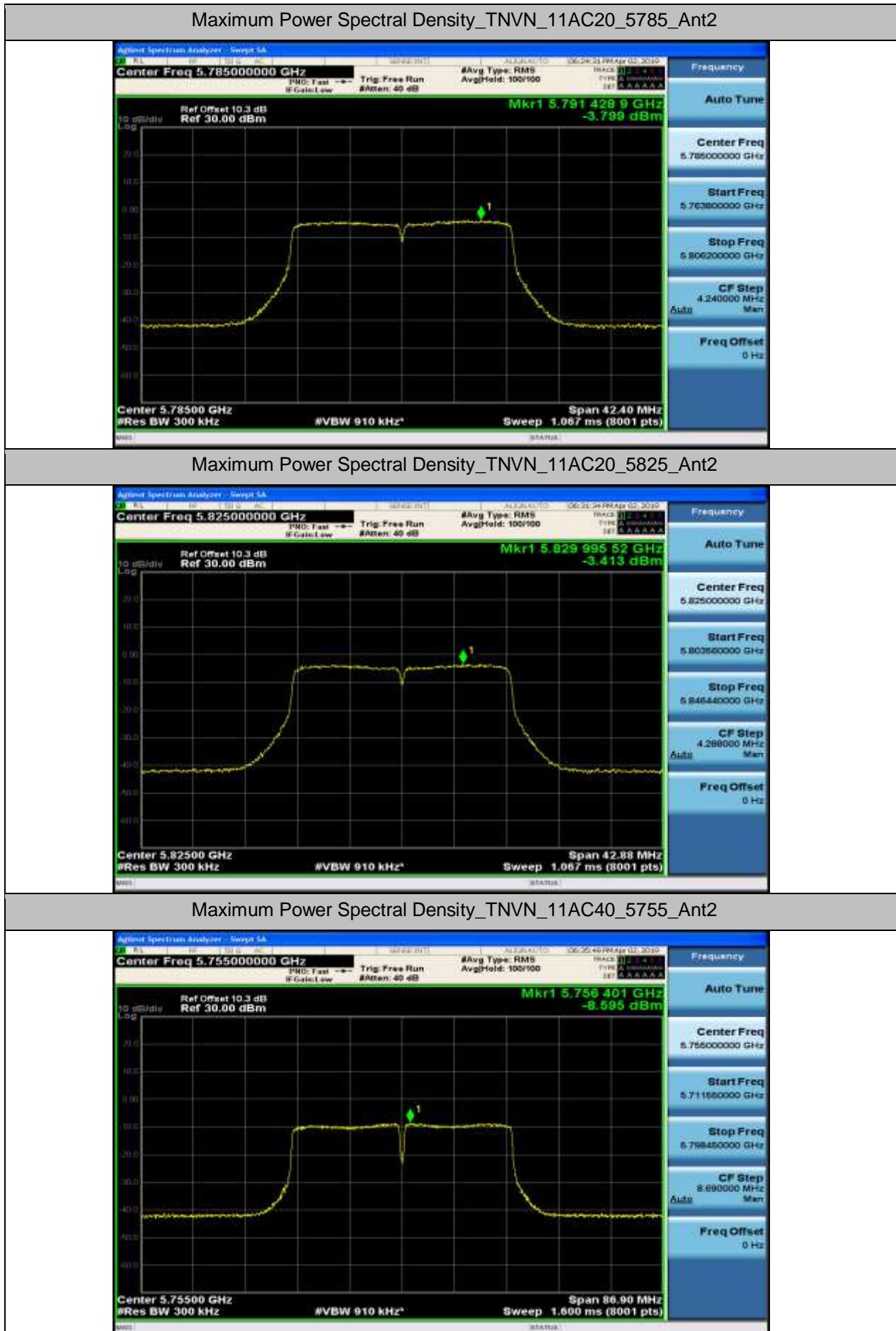


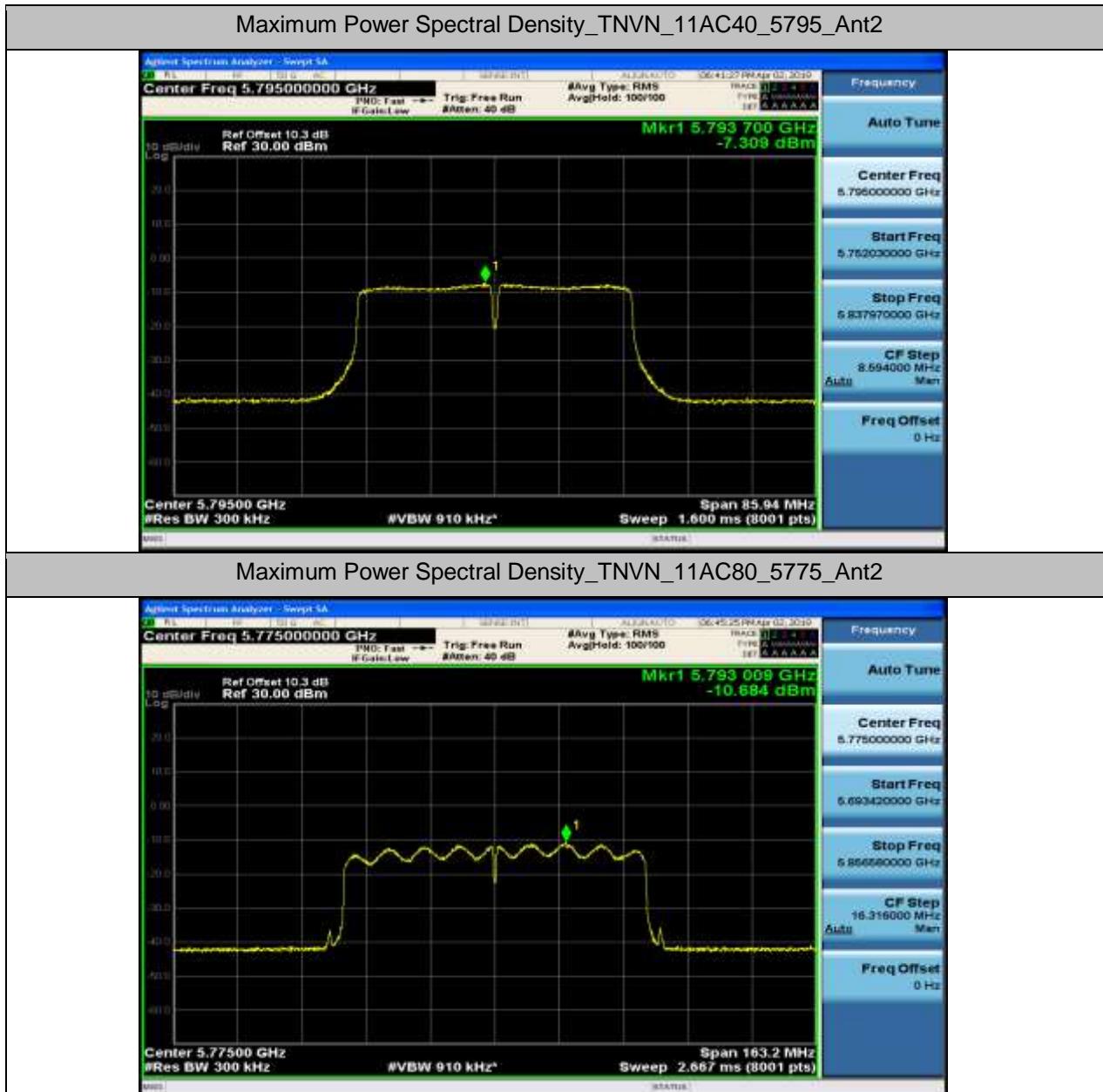
Maximum Power Spectral Density_TNVN_11A_5825_Ant2











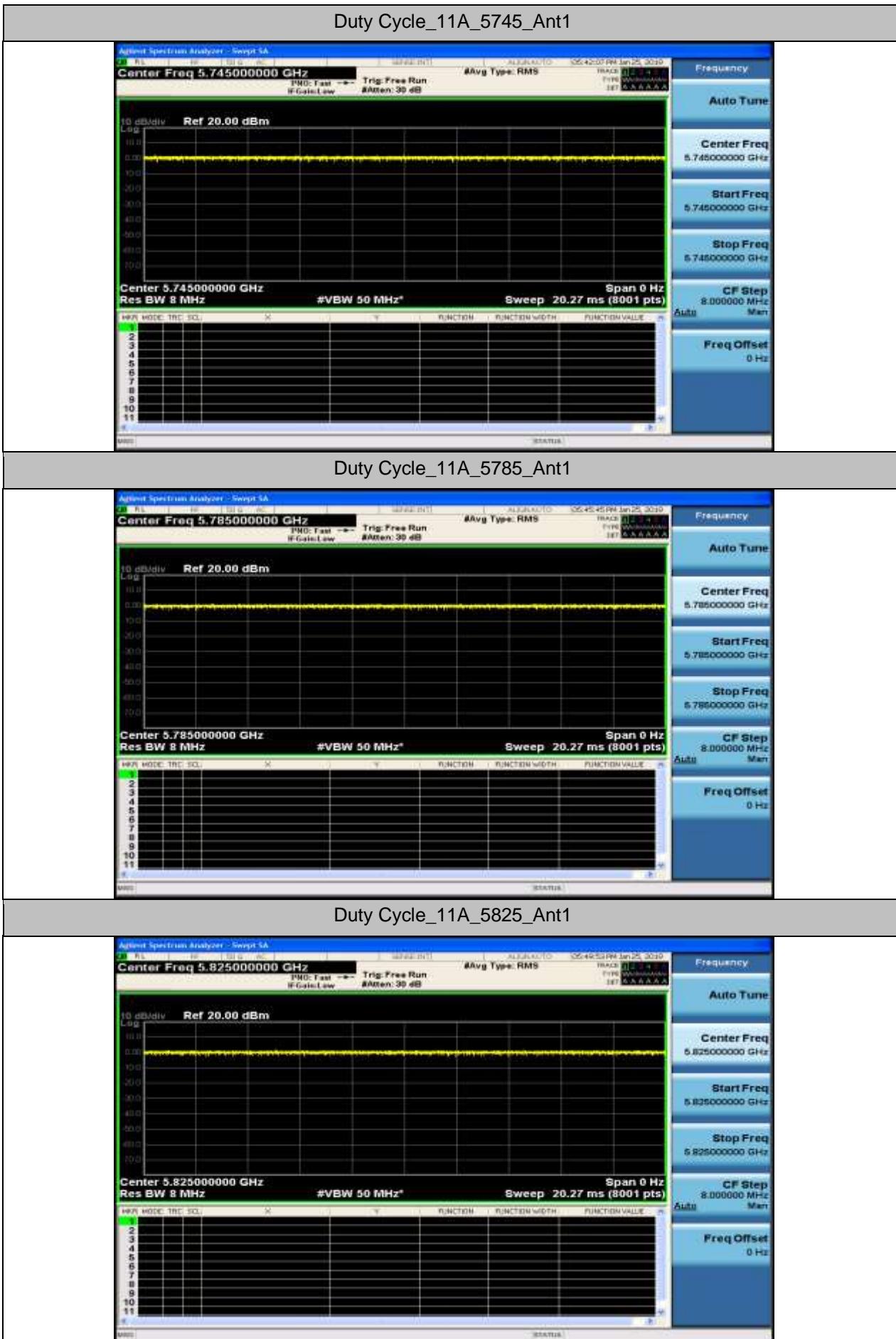
**6. Frequency Stability**

Band	Test Conditions		Operation Frequency (MHz)	Test Frequency (MHz)		Freq. Dev. (MHz)		Limit (GHz)	Result	
	Volt (V DC)	Temp (C°)		ANT1	ANT2	ANT1	ANT2			
Band U-NII 3	Normal(5)	Extreme(-20)	5745	5745.0456	5745.0453	0.0456	0.0453	5.725-5.85	Pass	
		Extreme(-10)		5745.0372	5745.0381	0.0372	0.0381		Pass	
		Extreme(0)		5745.0288	5745.0286	0.0288	0.0286		Pass	
		Extreme(+10)		5745.0178	5745.0185	0.0178	0.0185		Pass	
		Extreme(+20)		5745.0269	5745.0258	0.0269	0.0258		Pass	
		Extreme(+30)		5745.0442	5745.0439	0.0442	0.0439		Pass	
		Extreme(+40)		5745.0309	5745.0312	0.0309	0.0312		Pass	
		Extreme(+55)		5745.0238	5745.0239	0.0238	0.0239		Pass	
	Extreme(4.25)	Norma(+20)		5745.0358	5745.0367	0.0358	0.0367		Pass	
				5745.0447	5745.0452	0.0447	0.0452		Pass	
Band U-NII 3	Normal(5)	Extreme(-20)	5825	5825.0413	5825.0422	0.0413	0.0422	5.725-5.85	Pass	
		Extreme(-10)		5825.0425	5825.0419	0.0425	0.0419		Pass	
		Extreme(0)		5825.0243	5825.0268	0.0243	0.0268		Pass	
		Extreme(+10)		5825.0223	5825.0243	0.0223	0.0243		Pass	
		Extreme(+20)		5825.0192	5825.0188	0.0192	0.0188		Pass	
		Extreme(+30)		5825.0365	5825.0372	0.0365	0.0372		Pass	
		Extreme(+40)		5825.0149	5825.0155	0.0149	0.0155		Pass	
		Extreme(+55)		5825.0265	5825.0272	0.0265	0.0272		Pass	
	Extreme(4.25)	Norma(20)		5825.0421	5825.0423	0.0421	0.0423		Pass	
				5825.0193	5825.0188	0.0193	0.0188		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	5745	100.00	100.00	0.00	0.00
11A	5785	100.00	100.00	0.00	0.00
11A	5825	100.00	100.00	0.00	0.00
11N20	5745	100.00	100.00	0.00	0.00
11N20	5785	100.00	100.00	0.00	0.00
11N20	5825	100.00	100.00	0.00	0.00
11N40	5755	100.00	100.00	0.00	0.00
11N40	5795	100.00	100.00	0.00	0.00
11AC20	5745	100.00	100.00	0.00	0.00
11AC20	5785	100.00	100.00	0.00	0.00
11AC20	5825	100.00	100.00	0.00	0.00
11AC40	5755	100.00	100.00	0.00	0.00
11AC40	5795	100.00	100.00	0.00	0.00
11AC80	5775	100.00	100.00	0.00	0.00



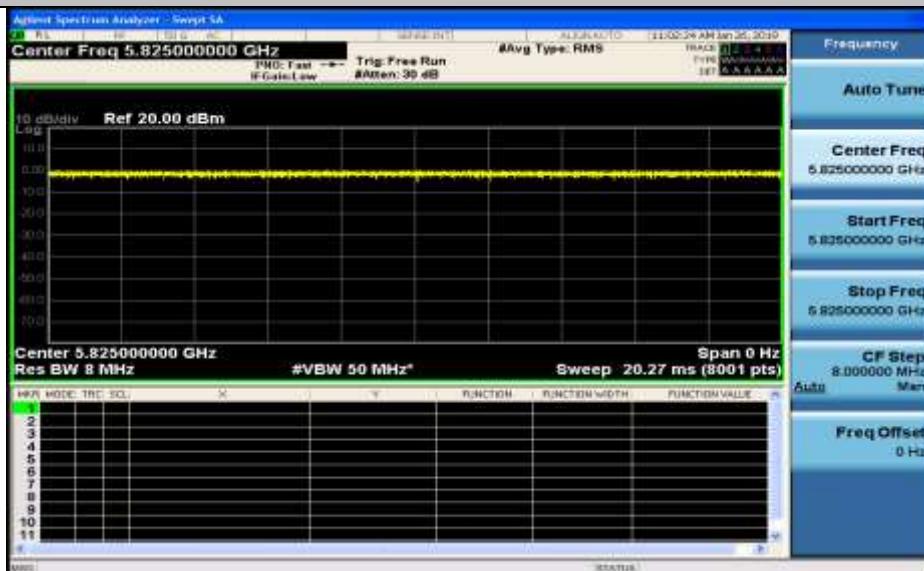
Duty Cycle_11N20_5745_Ant1



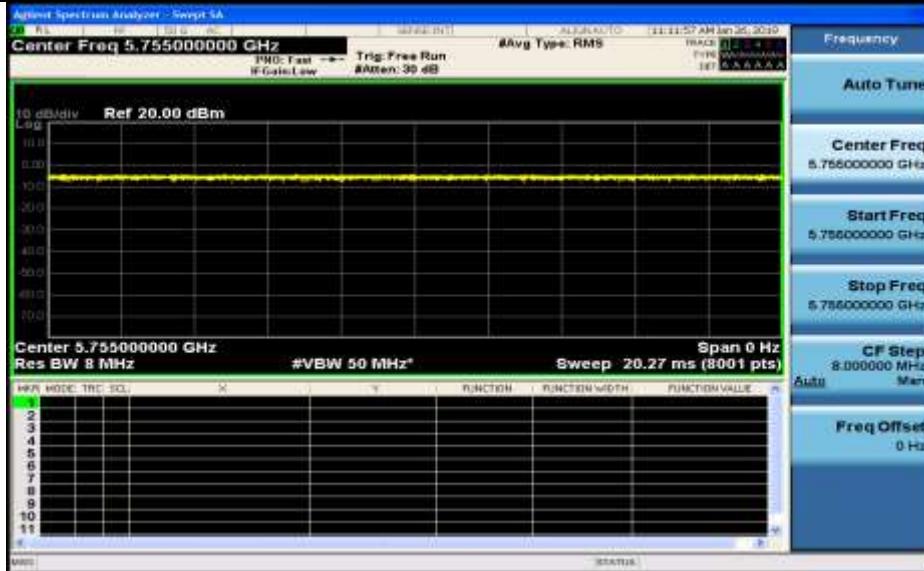
Duty Cycle_11N20_5785_Ant1



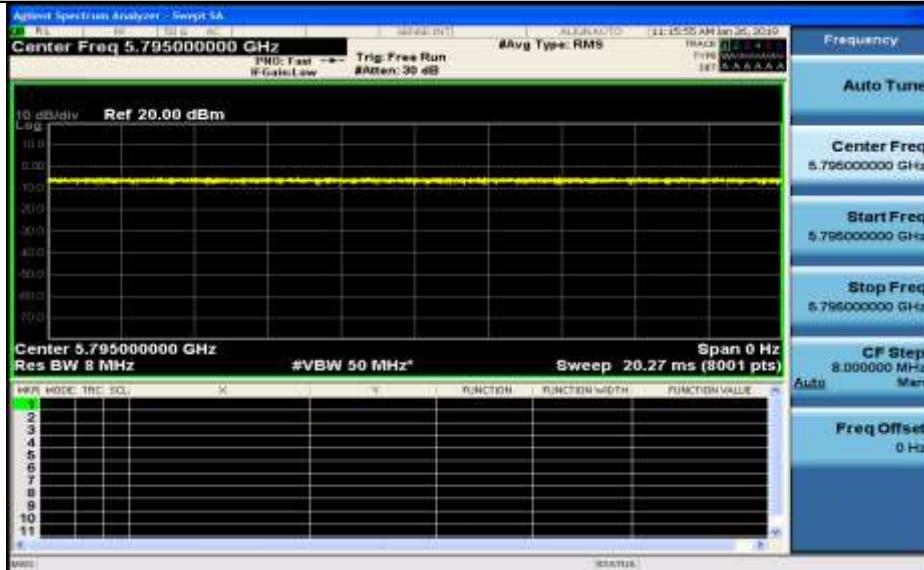
Duty Cycle_11N20_5825_Ant1



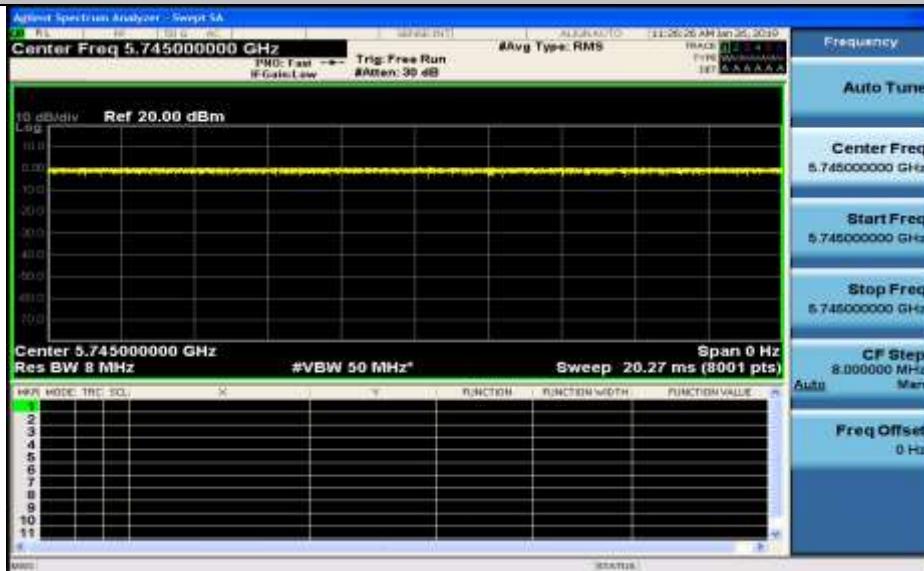
Duty Cycle_11N40_5755_Ant1

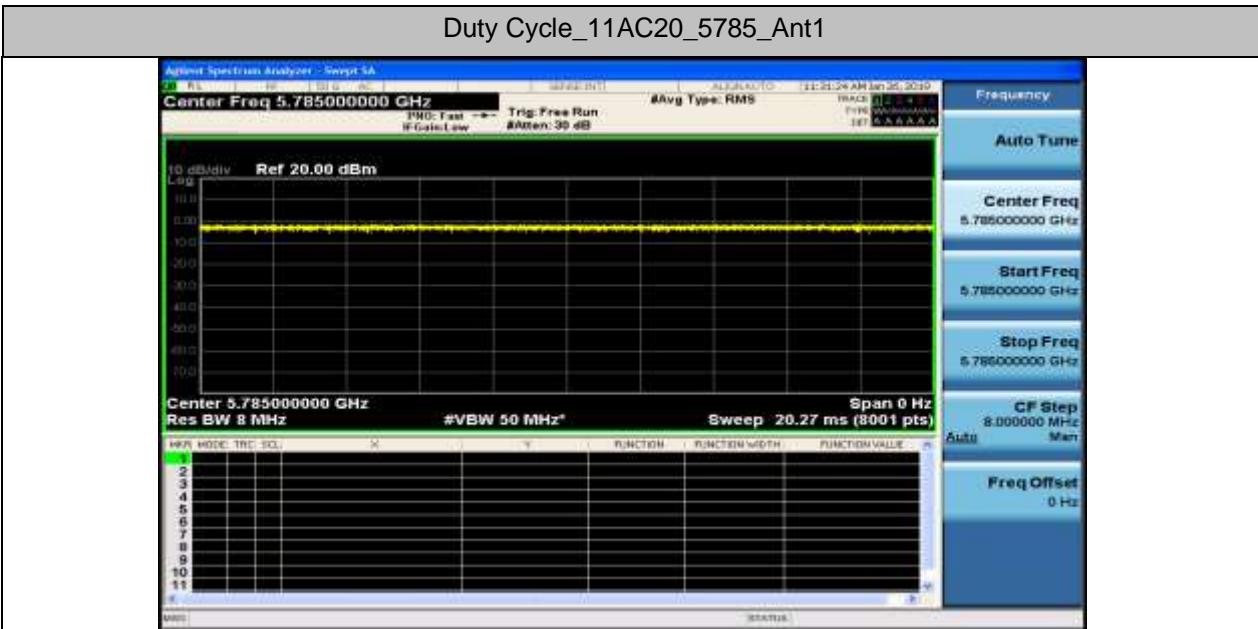


Duty Cycle_11N40_5795_Ant1

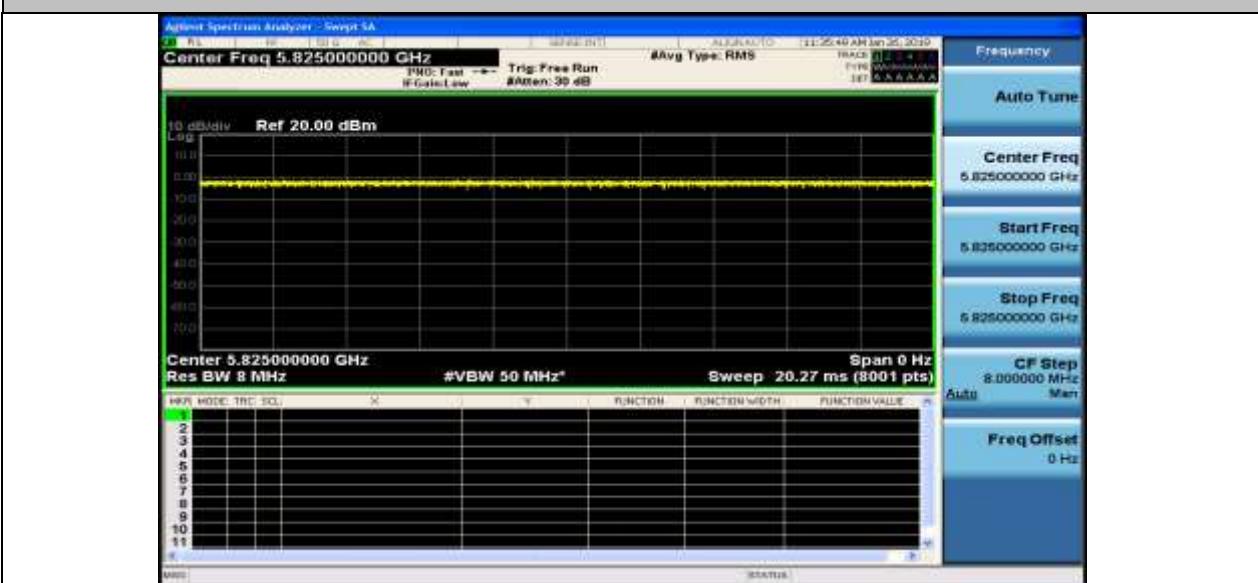


Duty Cycle_11AC20_5745_Ant1

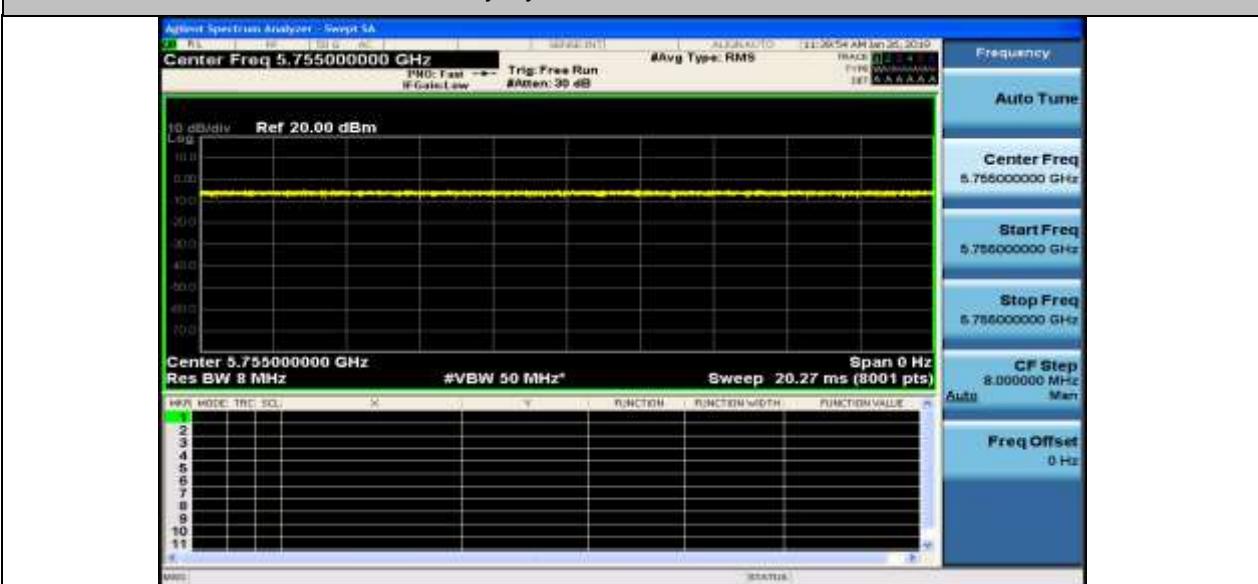


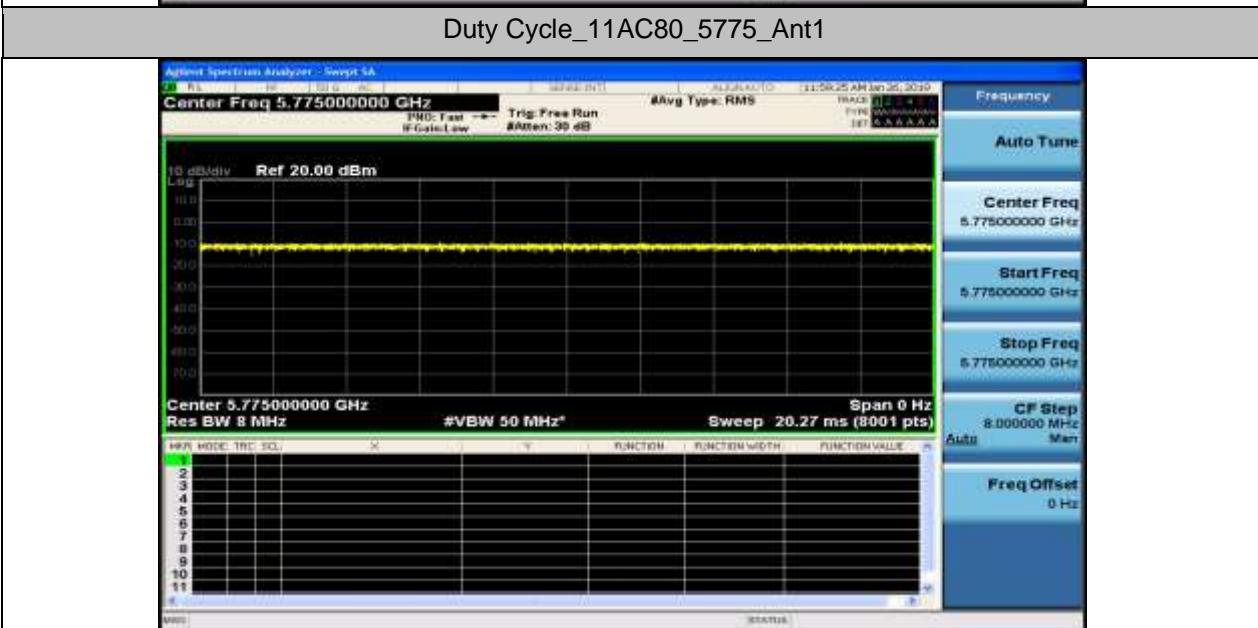
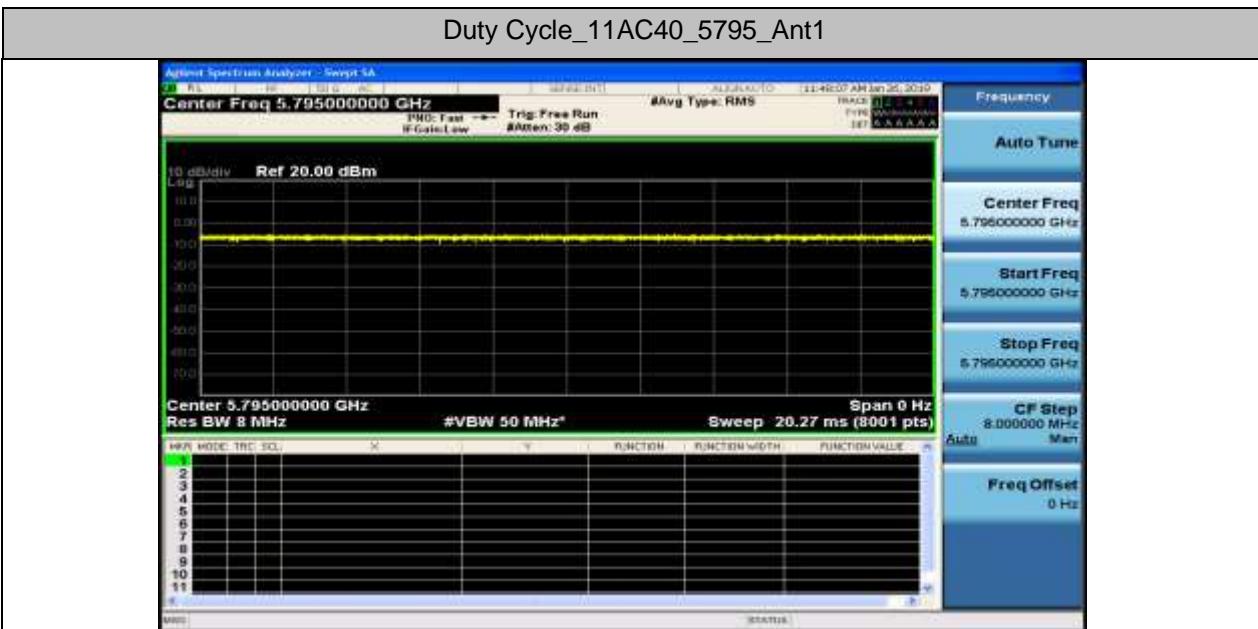


Duty Cycle_11AC20_5825_Ant1

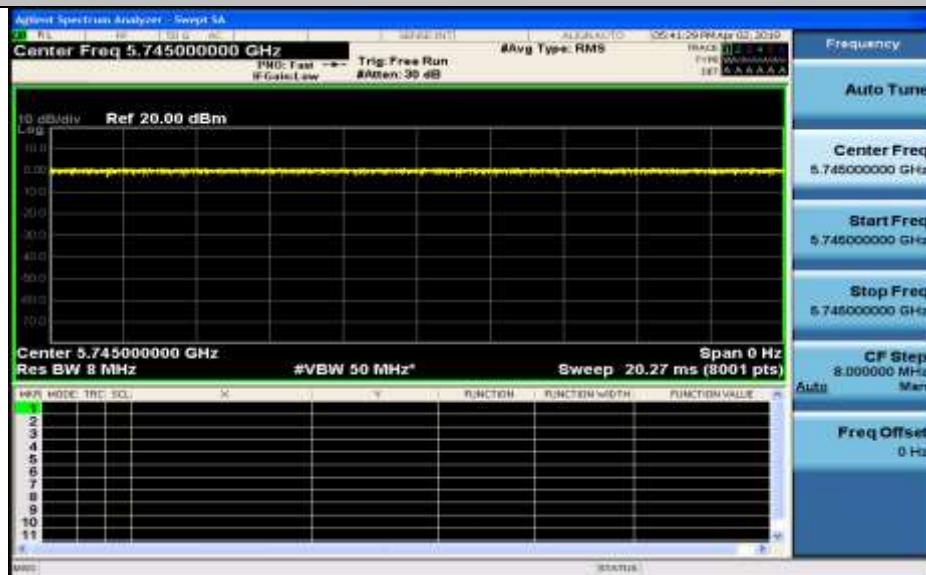


Duty Cycle_11AC40_5755_Ant1





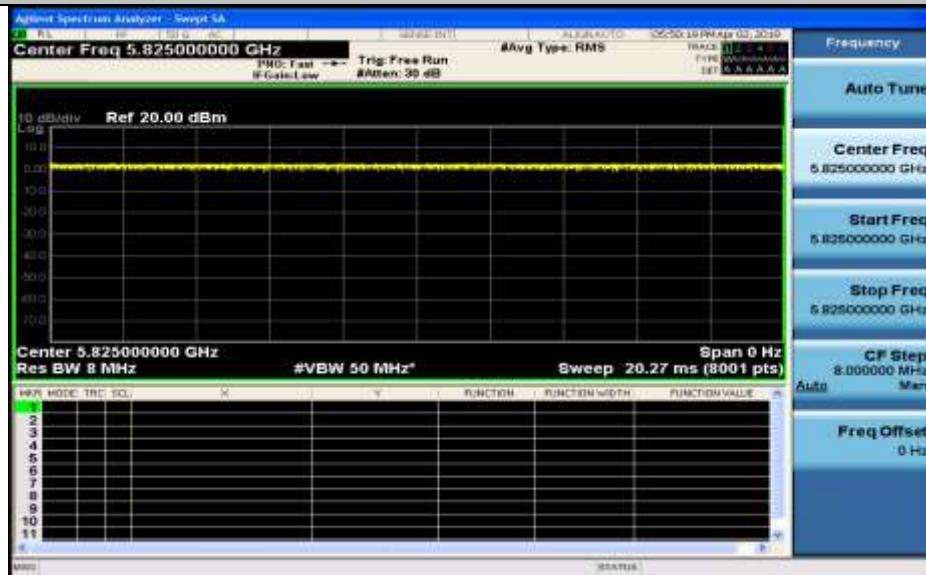
Duty Cycle_11A_5745_Ant2



Duty Cycle_11A_5785_Ant2



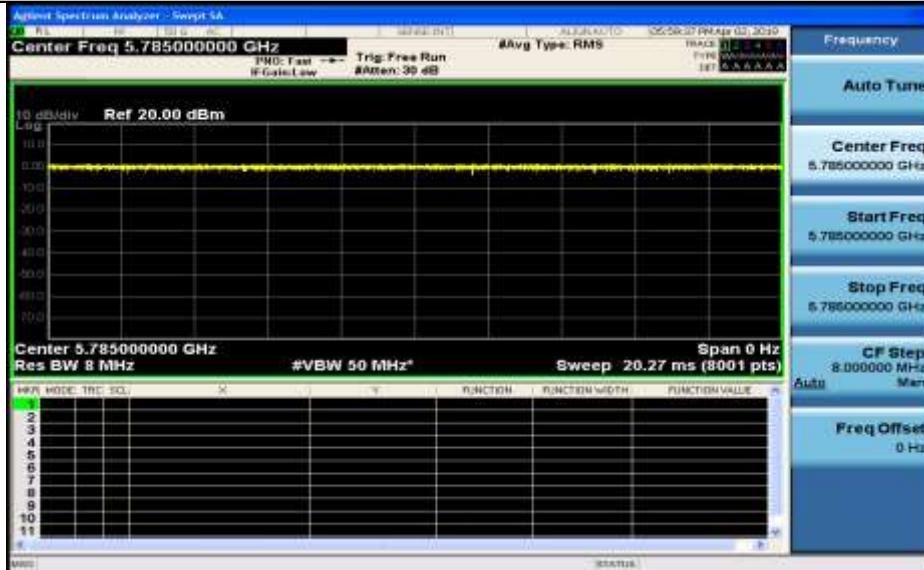
Duty Cycle_11A_5825_Ant2



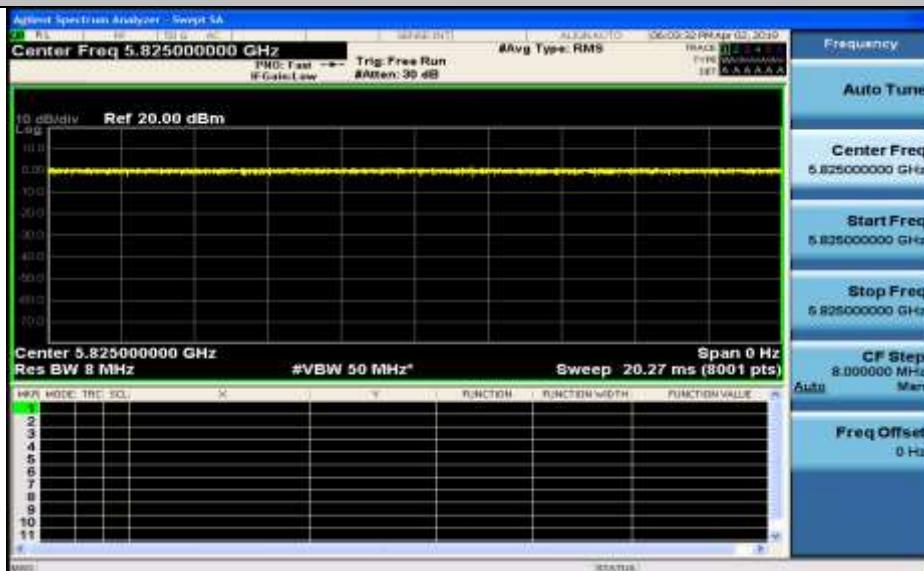
Duty Cycle_11N20_5745_Ant2



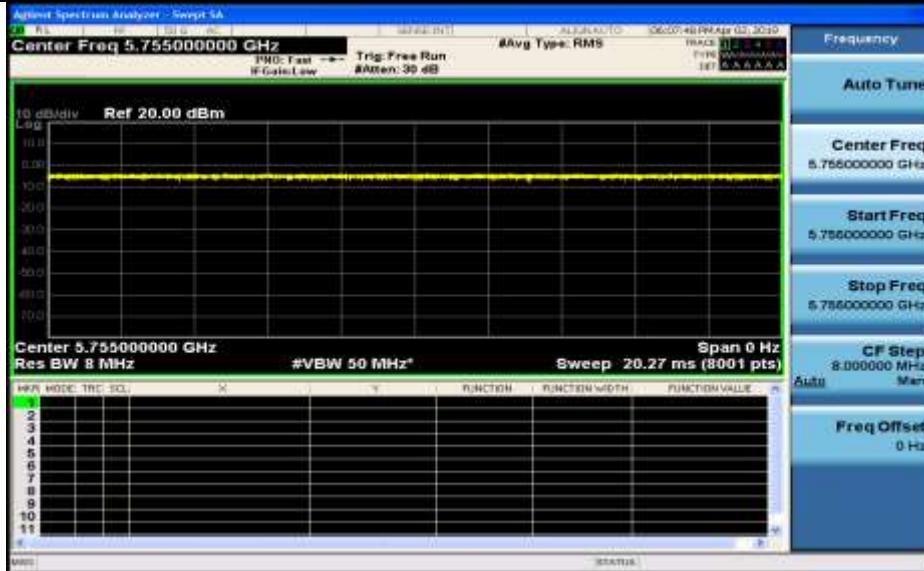
Duty Cycle_11N20_5785_Ant2



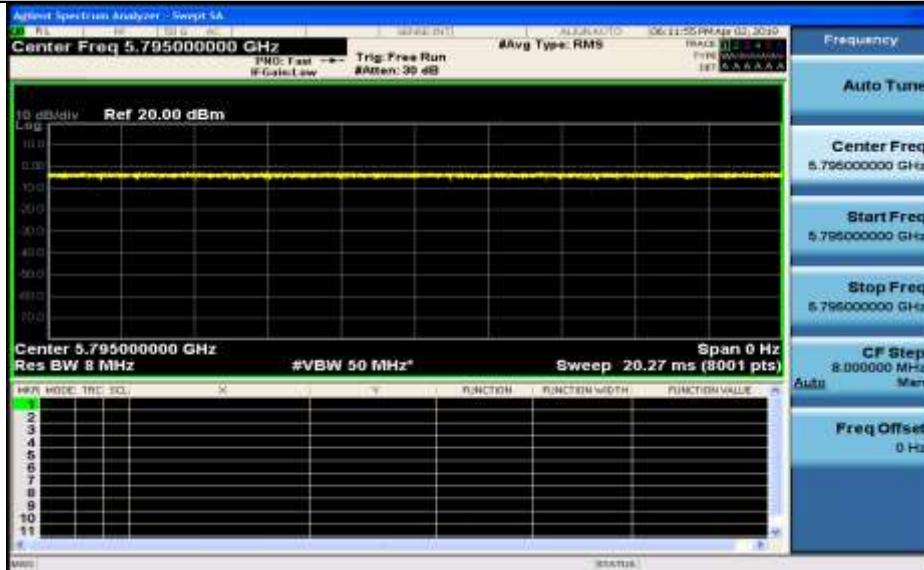
Duty Cycle_11N20_5825_Ant2



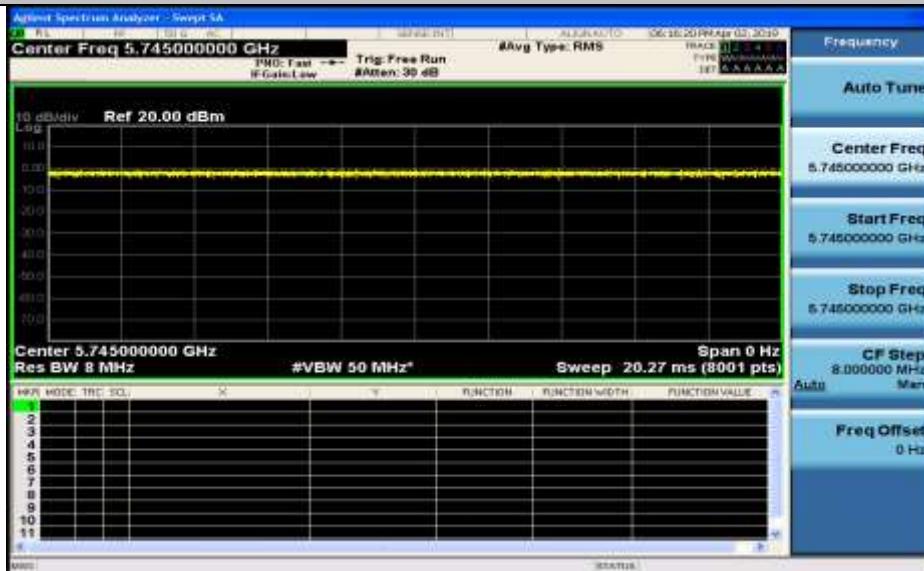
Duty Cycle_11N40_5755_Ant2

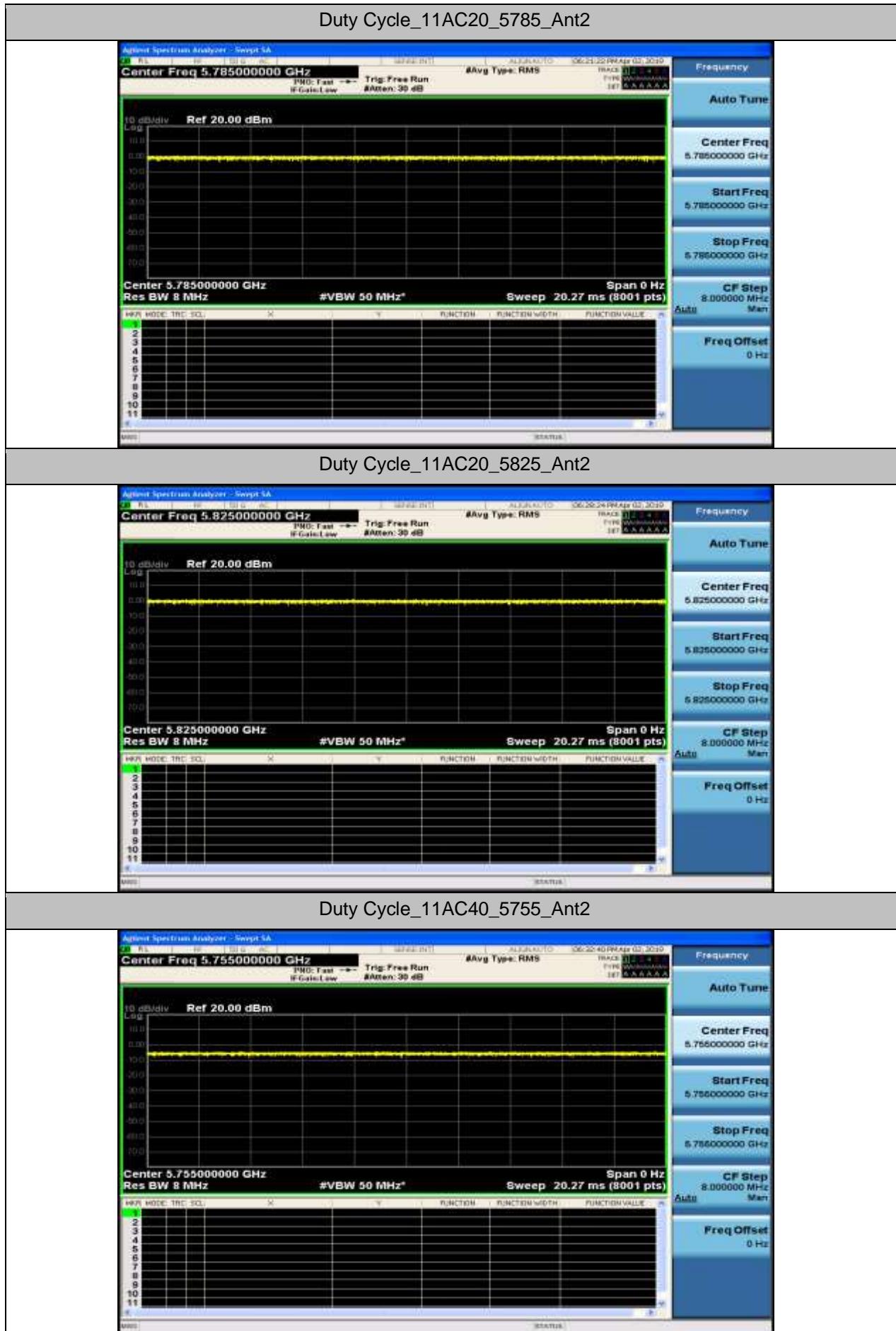


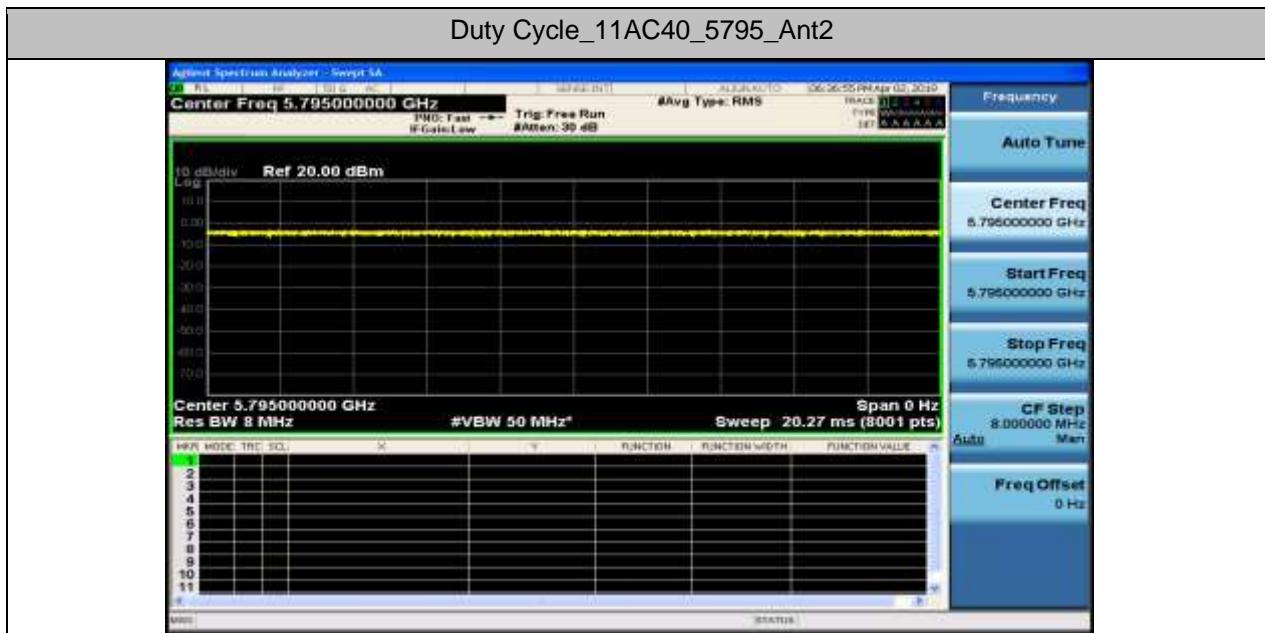
Duty Cycle_11N40_5795_Ant2



Duty Cycle_11AC20_5745_Ant2







Duty Cycle_11AC80_5775_Ant2

