



RF Test Data for RLAN(5.2G) (Conducted Measurement)

Product Name: Wanbo Projector

Trade Mark: wanbo

Test Model: X7 Pro Max

FCC ID: 2A7PI-WPAA4

Environmental Conditions

Temperature:	23.5℃
Relative Humidity:	58%
ATM Pressure:	100.0 kPa
Test Engineer:	Allen Lai
Supervised by:	Max Zhang
NOTE	N/A

Appendix A1: Emission Bandwidth

Test Result

Test Mode	Antenna	Frequency [MHz]	26db EBW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11A	Ant1	5180	18.360	5170.760	5189.120	---	---
11A	Ant2	5180	18.720	5170.560	5189.280	---	---
11A	Ant1	5200	18.240	5190.920	5209.160	---	---
11A	Ant2	5200	18.240	5190.960	5209.200	---	---
11A	Ant1	5240	18.360	5230.800	5249.160	---	---
11A	Ant2	5240	18.400	5230.840	5249.240	---	---
11N20MIMO	Ant1	5180	19.080	5170.480	5189.560	---	---
11N20MIMO	Ant2	5180	19.400	5170.400	5189.800	---	---
11N20MIMO	Ant1	5200	19.360	5190.360	5209.720	---	---
11N20MIMO	Ant2	5200	19.240	5190.320	5209.560	---	---
11N20MIMO	Ant1	5240	19.200	5230.480	5249.680	---	---
11N20MIMO	Ant2	5240	19.320	5230.320	5249.640	---	---
11N40MIMO	Ant1	5190	40.000	5170.000	5210.000	---	---
11N40MIMO	Ant2	5190	40.400	5170.000	5210.400	---	---
11N40MIMO	Ant1	5230	41.120	5209.360	5250.480	---	---
11N40MIMO	Ant2	5230	40.160	5210.160	5250.320	---	---
11AC20MIMO	Ant1	5180	19.360	5170.360	5189.720	---	---
11AC20MIMO	Ant2	5180	19.200	5170.440	5189.640	---	---
11AC20MIMO	Ant1	5200	19.120	5190.480	5209.600	---	---
11AC20MIMO	Ant2	5200	19.240	5190.440	5209.680	---	---
11AC20MIMO	Ant1	5240	19.160	5230.400	5249.560	---	---
11AC20MIMO	Ant2	5240	19.160	5230.480	5249.640	---	---





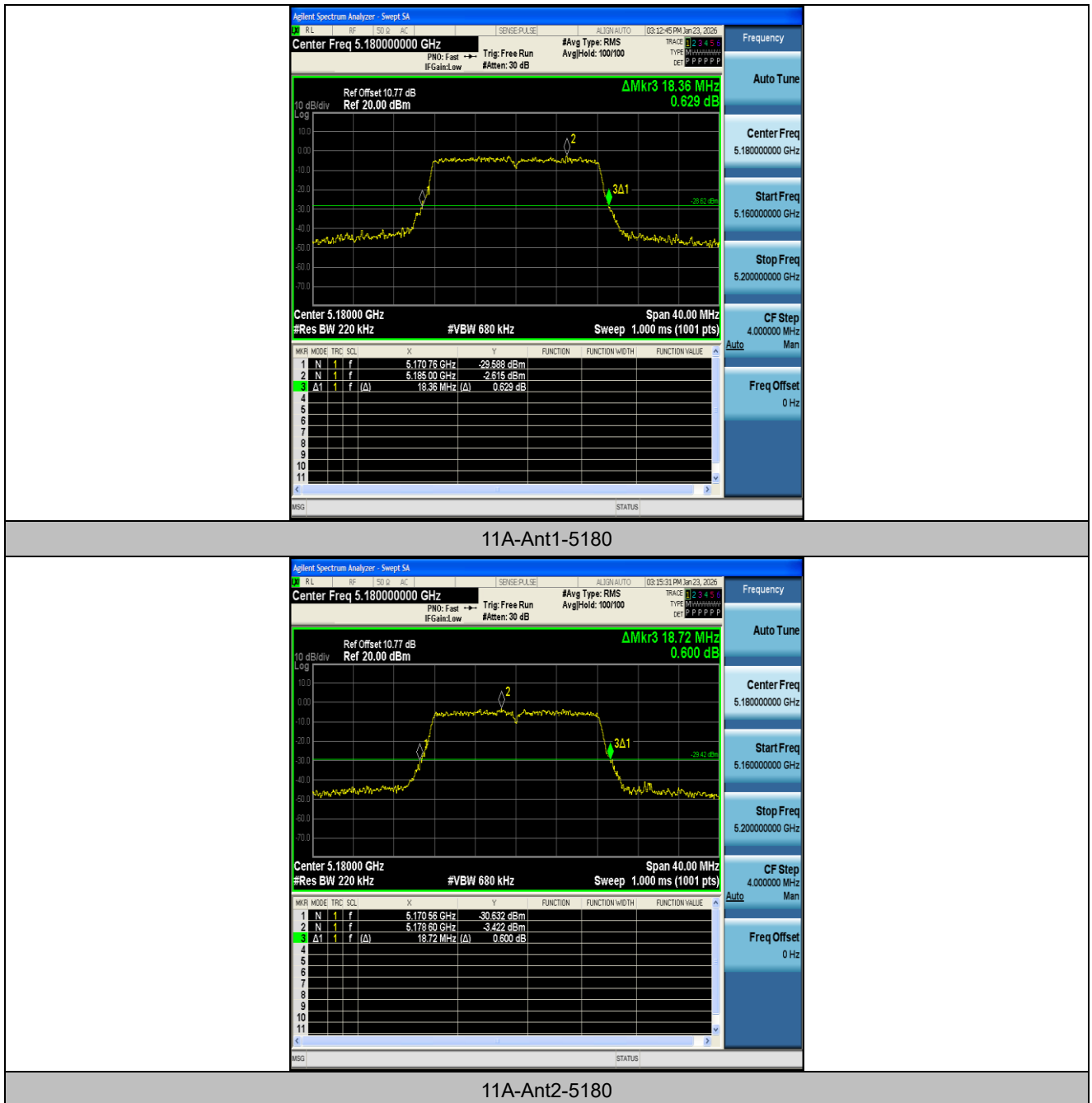
11AC40MIMO	Ant1	5190	40.320	5169.760	5210.080	---	---
11AC40MIMO	Ant2	5190	40.560	5169.840	5210.400	---	---
11AC40MIMO	Ant1	5230	40.480	5209.520	5250.000	---	---
11AC40MIMO	Ant2	5230	40.800	5209.520	5250.320	---	---
11AC80MIMO	Ant1	5210	80.640	5169.520	5250.160	---	---
11AC80MIMO	Ant2	5210	81.440	5169.520	5250.960	---	---

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)





Test Graphs





11A-Ant1-5200



11A-Ant2-5200



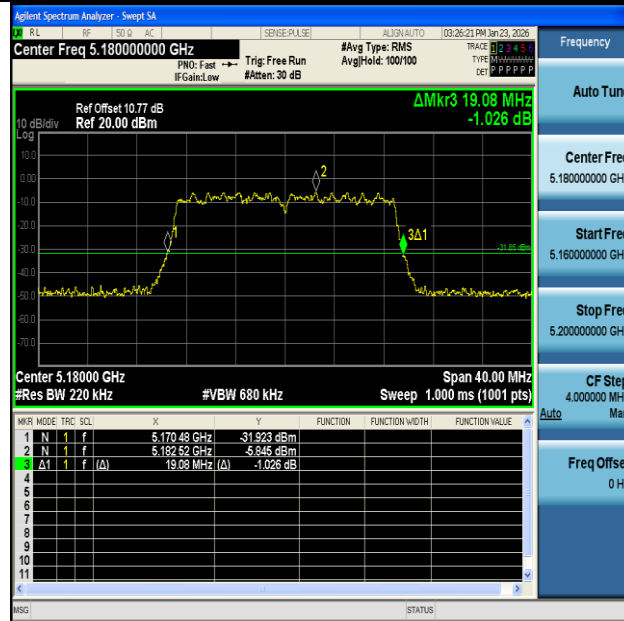


11A-Ant1-5240



11A-Ant2-5240



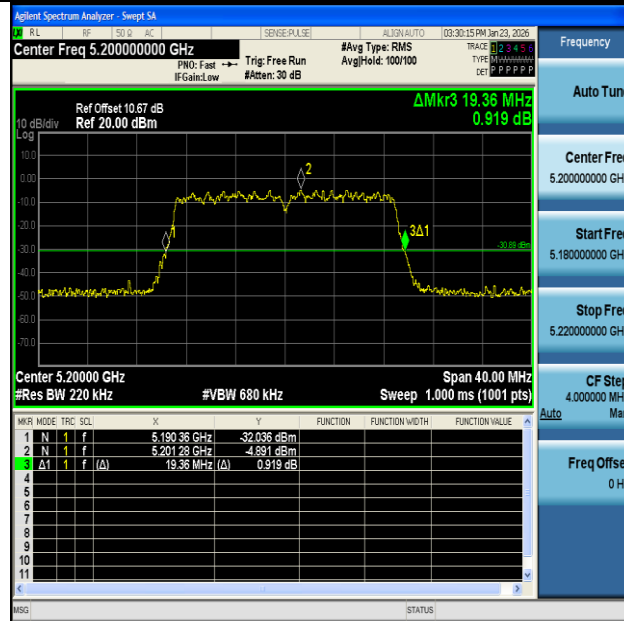


11N20MIMO-Ant1-5180

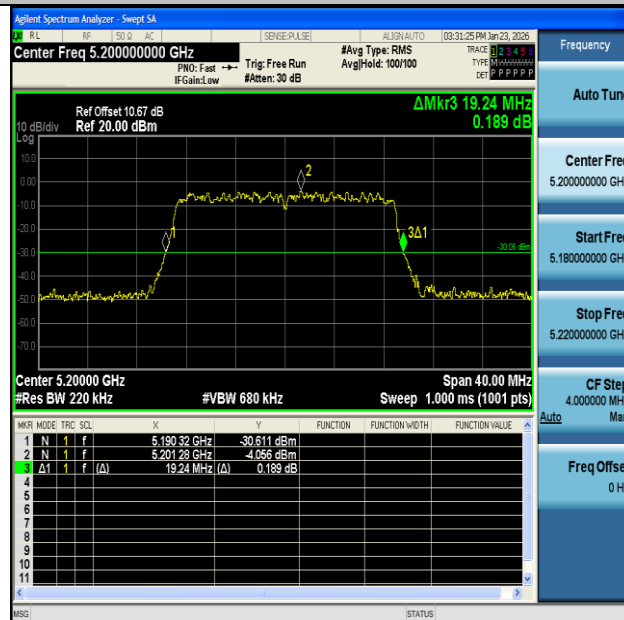


11N20MIMO-Ant2-5180



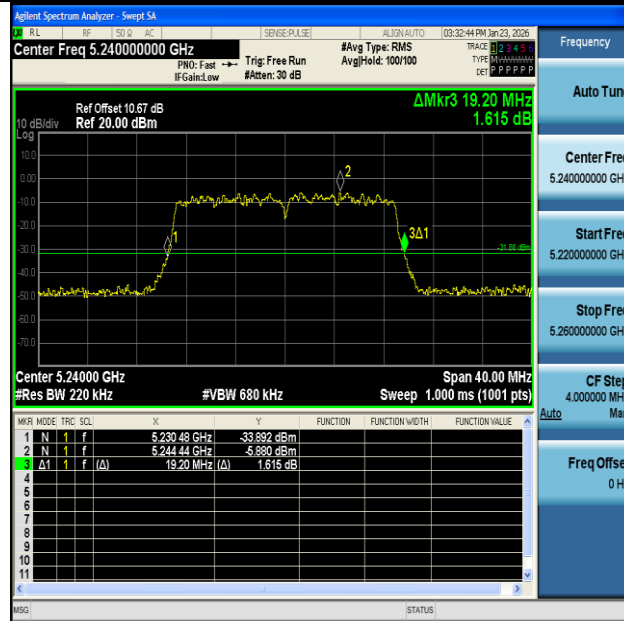


11N20MIMO-Ant1-5200



11N20MIMO-Ant2-5200





11N20MIMO-Ant1-5240



11N20MIMO-Ant2-5240





11N40MIMO-Ant1-5190

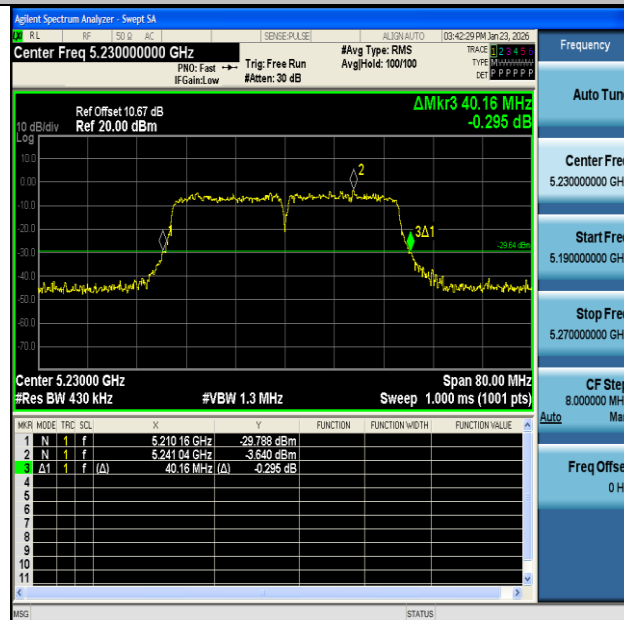


11N40MIMO-Ant2-5190





11N40MIMO-Ant1-5230

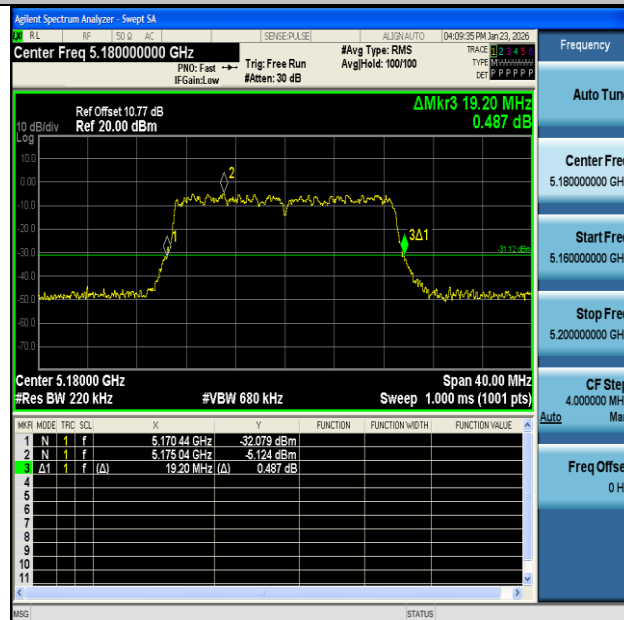


11N40MIMO-Ant2-5230



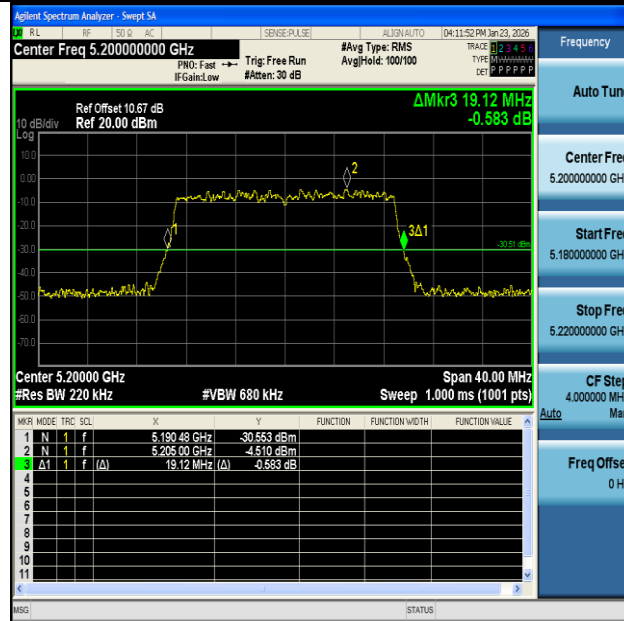


11AC20MIMO-Ant1-5180

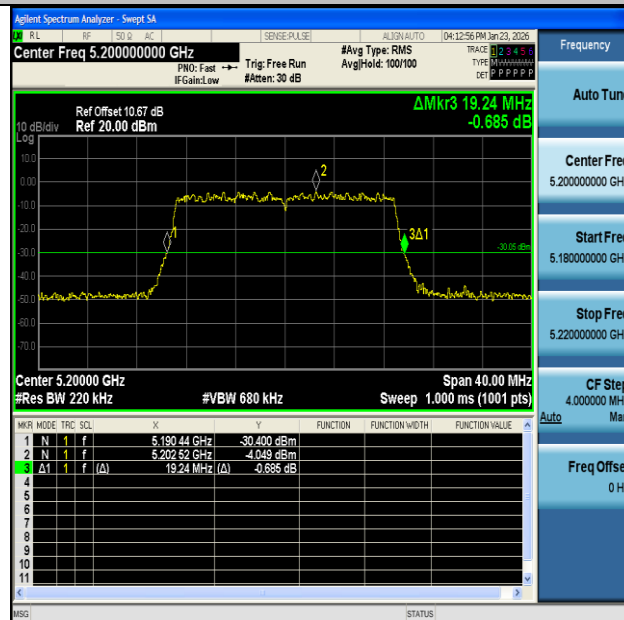


11AC20MIMO-Ant2-5180



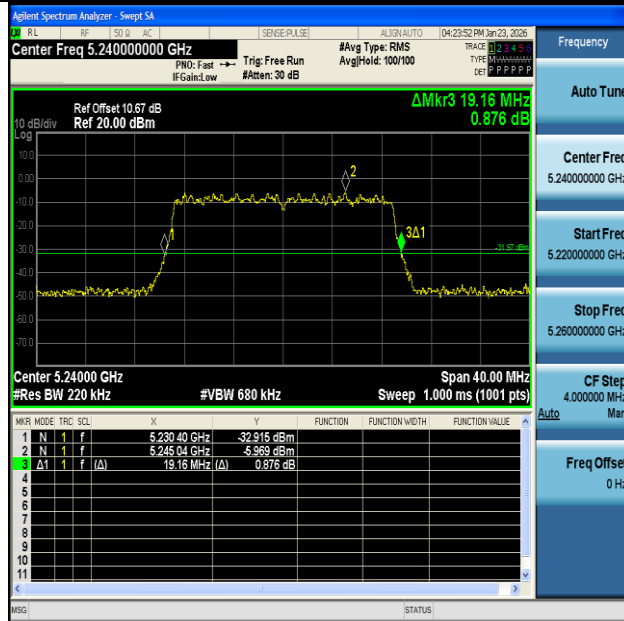


11AC20MIMO-Ant1-5200



11AC20MIMO-Ant2-5200





11AC20MIMO-Ant1-5240



11AC20MIMO-Ant2-5240





11AC40MIMO-Ant1-5190



11AC40MIMO-Ant2-5190



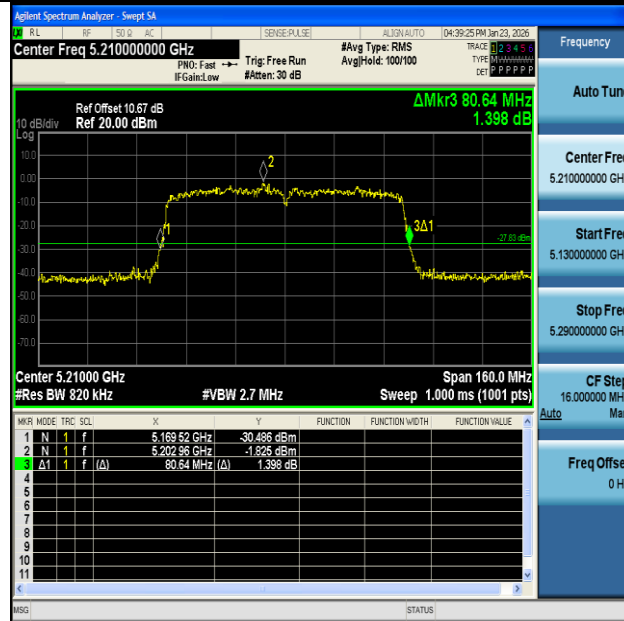


11AC40MIMO-Ant1-5230

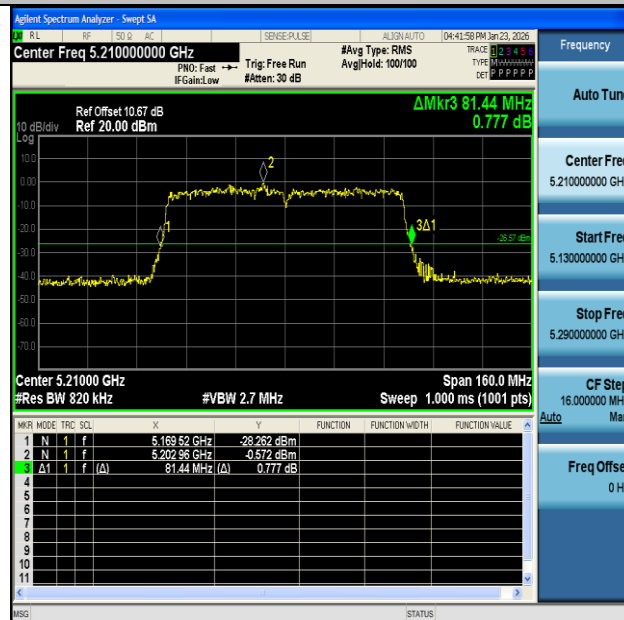


11AC40MIMO-Ant2-5230





11AC80MIMO-Ant1-5210



11AC80MIMO-Ant2-5210





Appendix A2: Occupied channel bandwidth

Test Result

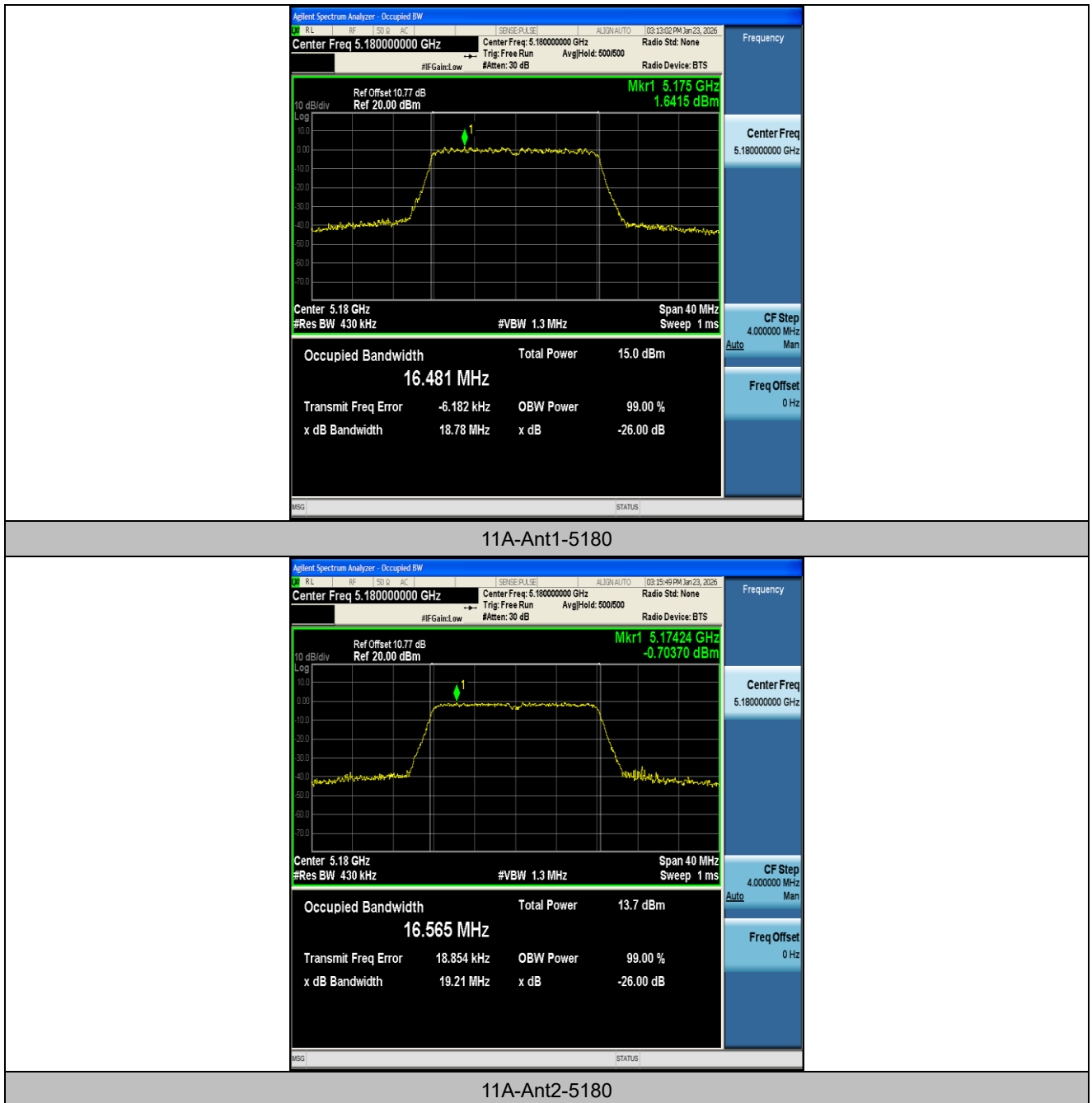
Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11A	Ant1	5180	16.481	5171.7533	5188.2343	---	---
11A	Ant2	5180	16.565	5171.7364	5188.3014	---	---
11A	Ant1	5200	16.440	5191.8090	5208.2490	---	---
11A	Ant2	5200	16.464	5191.8065	5208.2705	---	---
11A	Ant1	5240	16.432	5231.8237	5248.2557	---	---
11A	Ant2	5240	16.473	5231.8217	5248.2947	---	---
11N20MIMO	Ant1	5180	17.676	5171.1860	5188.8620	---	---
11N20MIMO	Ant2	5180	17.846	5171.1159	5188.9619	---	---
11N20MIMO	Ant1	5200	17.764	5191.1329	5208.8969	---	---
11N20MIMO	Ant2	5200	17.660	5191.2136	5208.8736	---	---
11N20MIMO	Ant1	5240	17.750	5231.1806	5248.9306	---	---
11N20MIMO	Ant2	5240	17.751	5231.1826	5248.9336	---	---
11N40MIMO	Ant1	5190	36.426	5171.9892	5208.4152	---	---
11N40MIMO	Ant2	5190	36.384	5171.8874	5208.2714	---	---
11N40MIMO	Ant1	5230	36.604	5211.8097	5248.4137	---	---
11N40MIMO	Ant2	5230	36.348	5211.9240	5248.2720	---	---
11AC20MIMO	Ant1	5180	17.813	5171.0637	5188.8767	---	---
11AC20MIMO	Ant2	5180	17.817	5171.0511	5188.8681	---	---
11AC20MIMO	Ant1	5200	17.757	5191.1561	5208.9131	---	---
11AC20MIMO	Ant2	5200	17.761	5191.1550	5208.9160	---	---
11AC20MIMO	Ant1	5240	17.723	5231.1302	5248.8532	---	---
11AC20MIMO	Ant2	5240	17.701	5231.1724	5248.8734	---	---
11AC40MIMO	Ant1	5190	36.272	5171.9209	5208.1929	---	---
11AC40MIMO	Ant2	5190	36.307	5171.8817	5208.1887	---	---
11AC40MIMO	Ant1	5230	36.374	5211.8044	5248.1784	---	---
11AC40MIMO	Ant2	5230	36.366	5211.8557	5248.2217	---	---
11AC80MIMO	Ant1	5210	75.603	5172.2234	5247.8264	---	---
11AC80MIMO	Ant2	5210	75.824	5172.2710	5248.0950	---	---

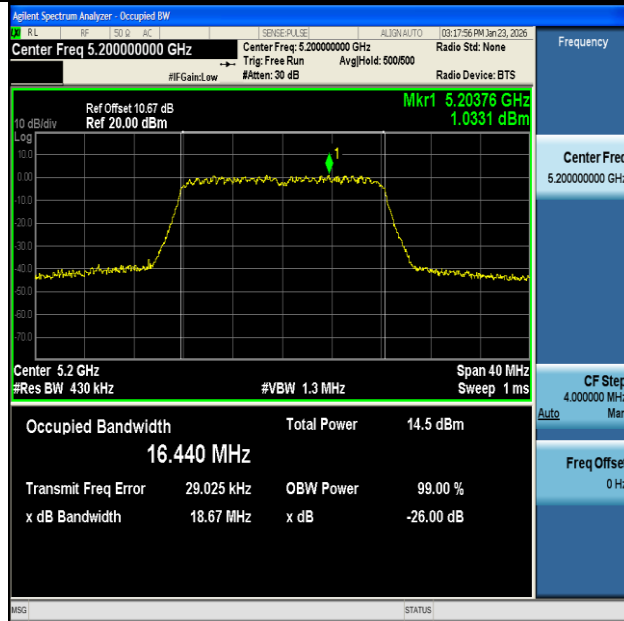
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)





Test Graphs



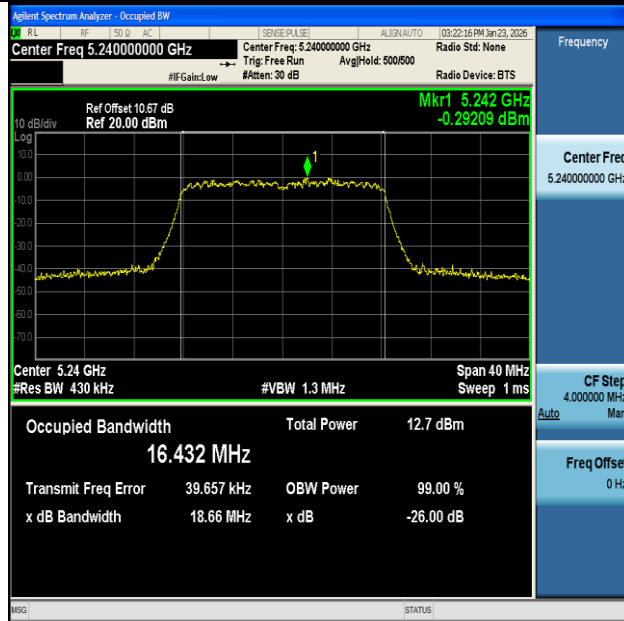


11A-Ant1-5200



11A-Ant2-5200



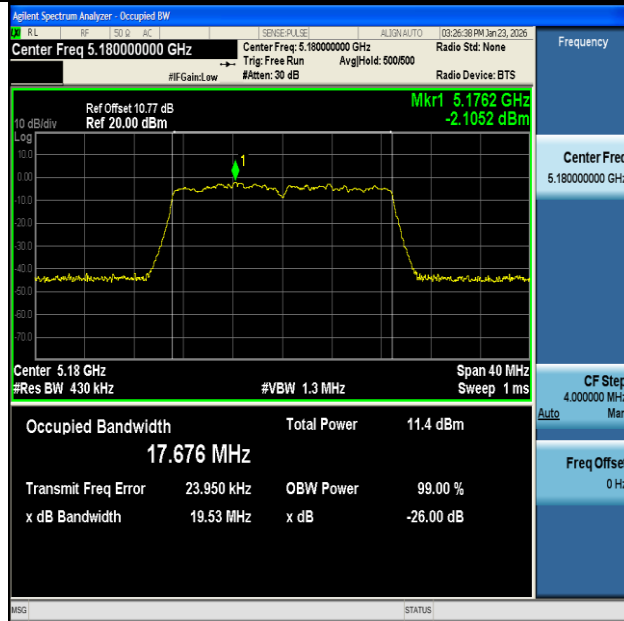


11A-Ant1-5240

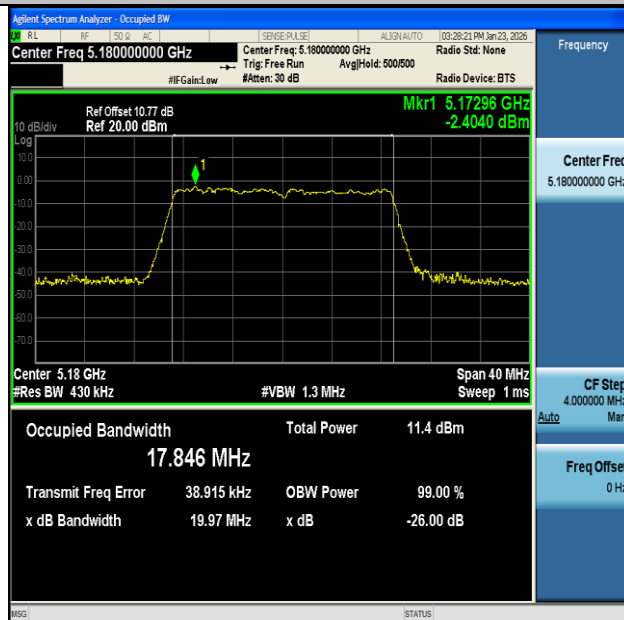


11A-Ant2-5240



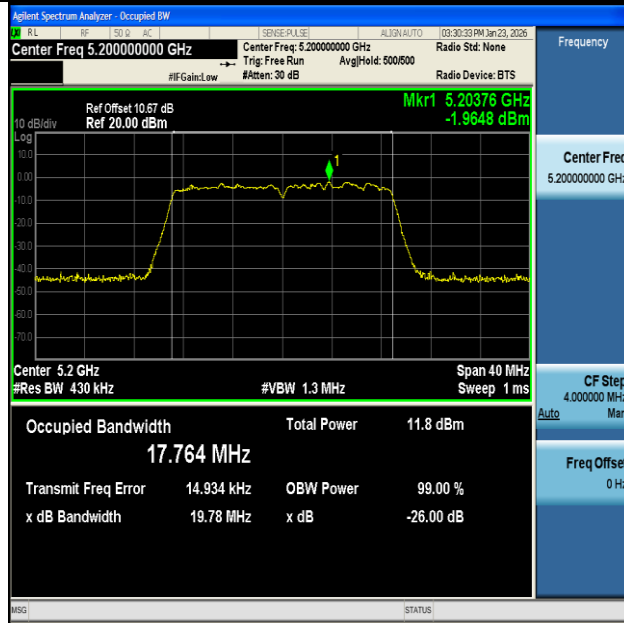


11N20MIMO-Ant1-5180

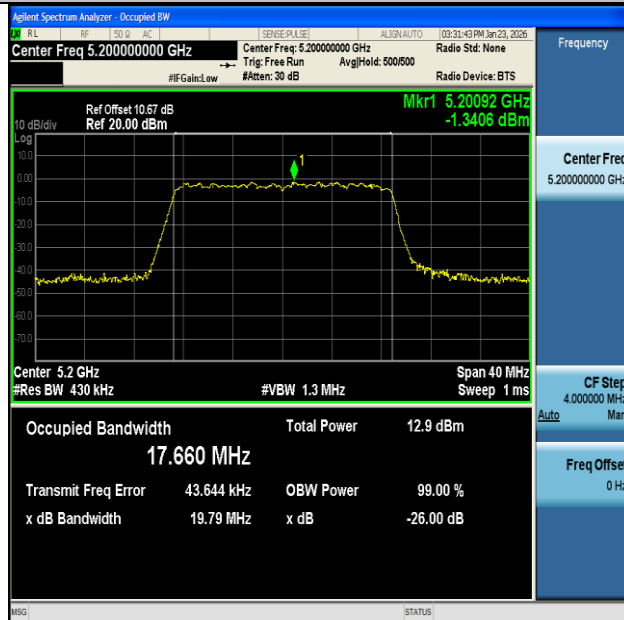


11N20MIMO-Ant2-5180



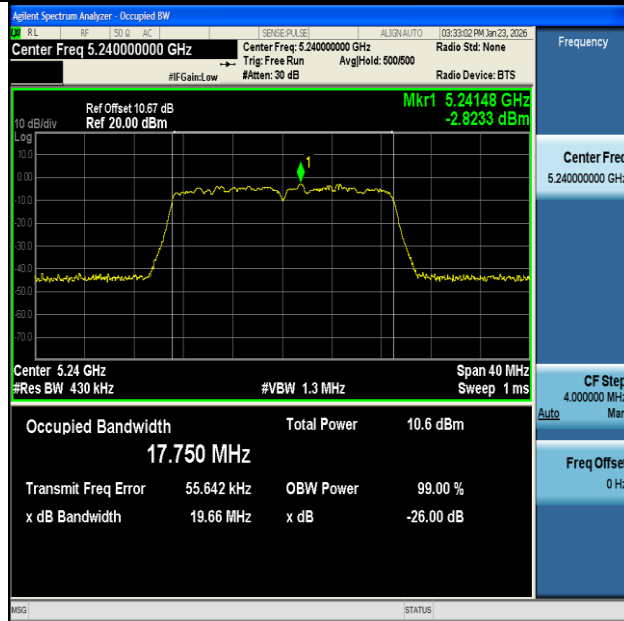


11N20MIMO-Ant1-5200



11N20MIMO-Ant2-5200



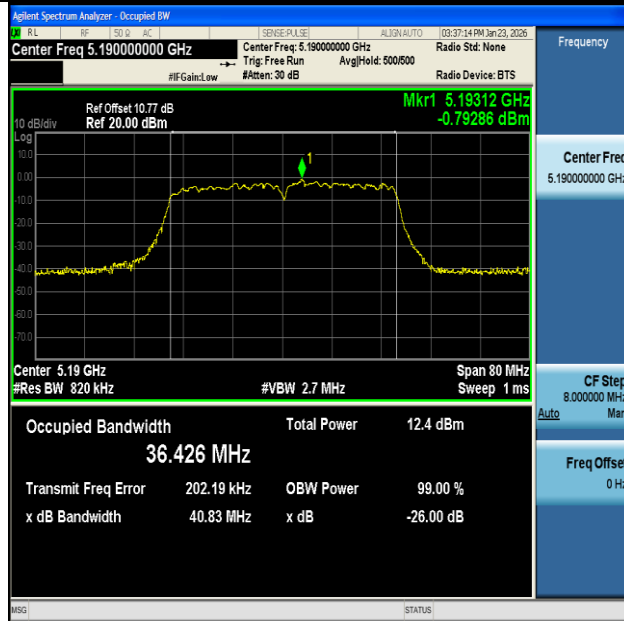


11N20MIMO-Ant1-5240

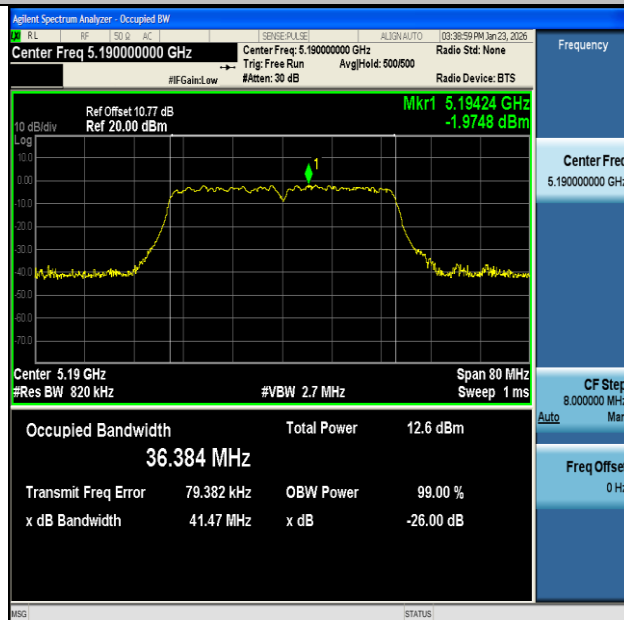


11N20MIMO-Ant2-5240



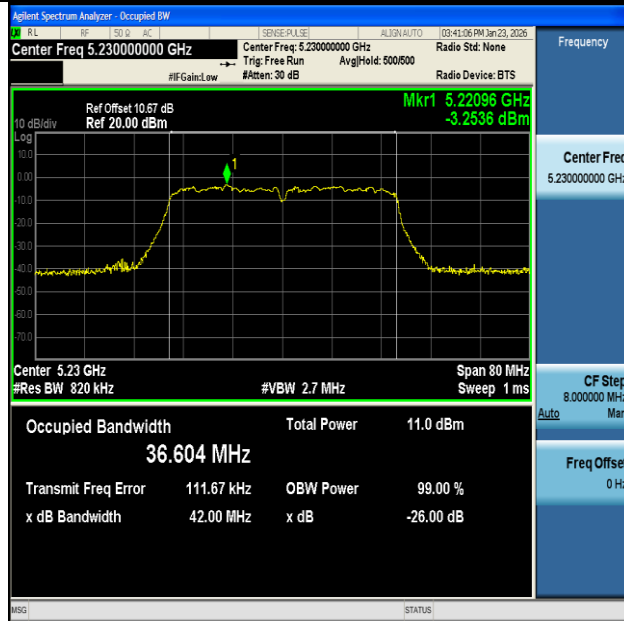


11N40MIMO-Ant1-5190

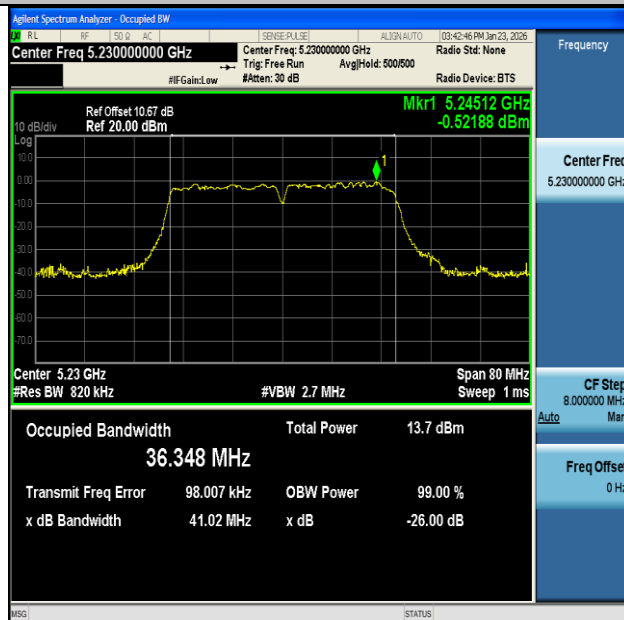


11N40MIMO-Ant2-5190



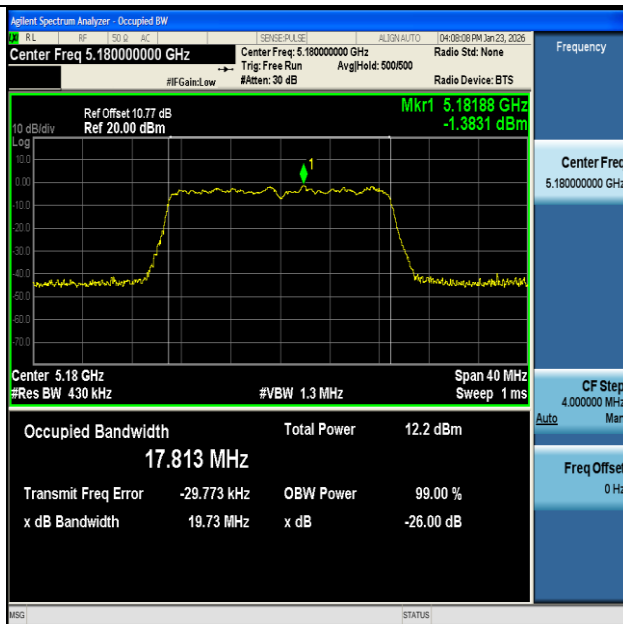


11N40MIMO-Ant1-5230

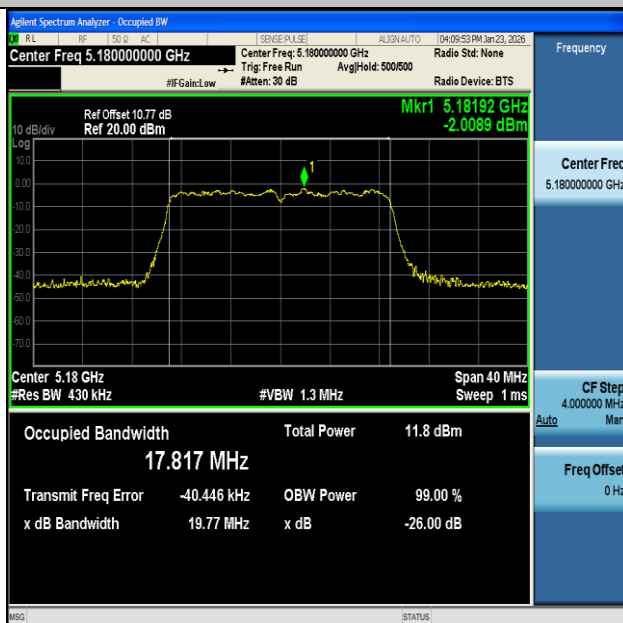


11N40MIMO-Ant2-5230



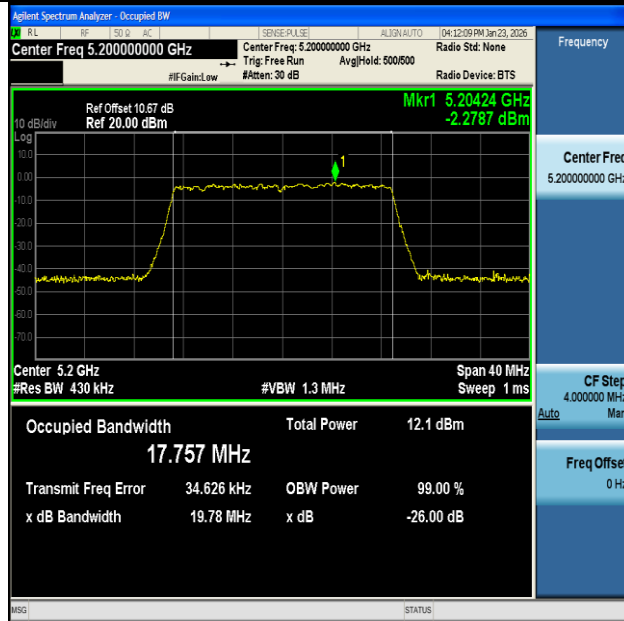


11AC20MIMO-Ant1-5180

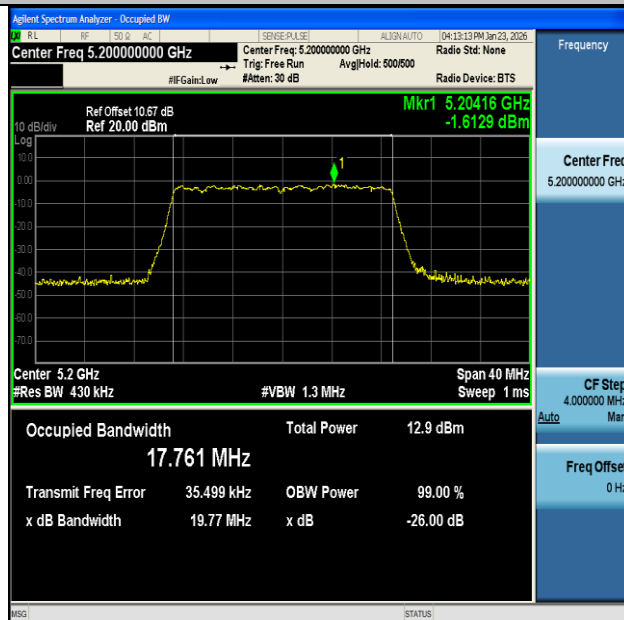


11AC20MIMO-Ant2-5180



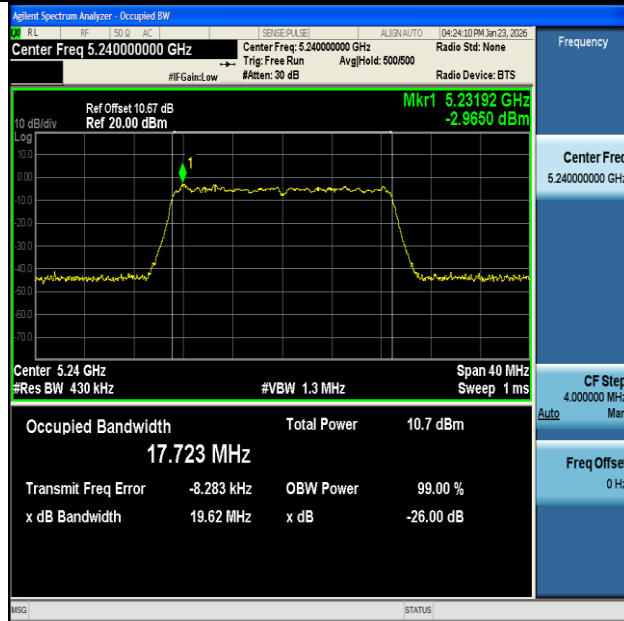


11AC20MIMO-Ant1-5200

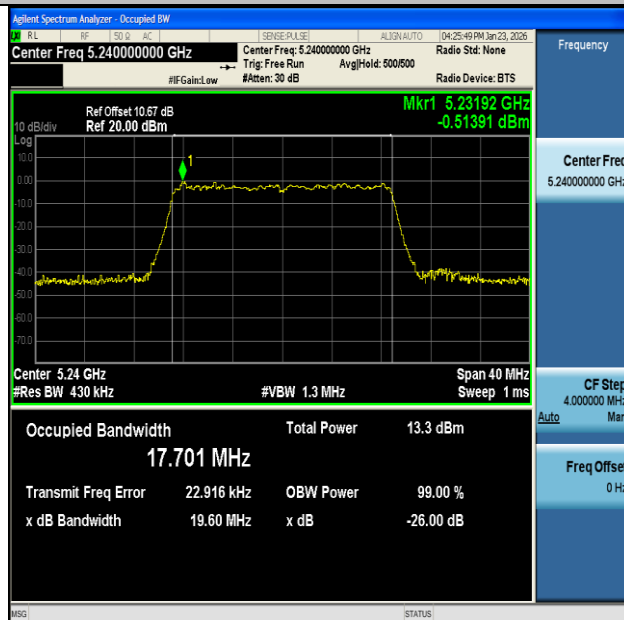


11AC20MIMO-Ant2-5200



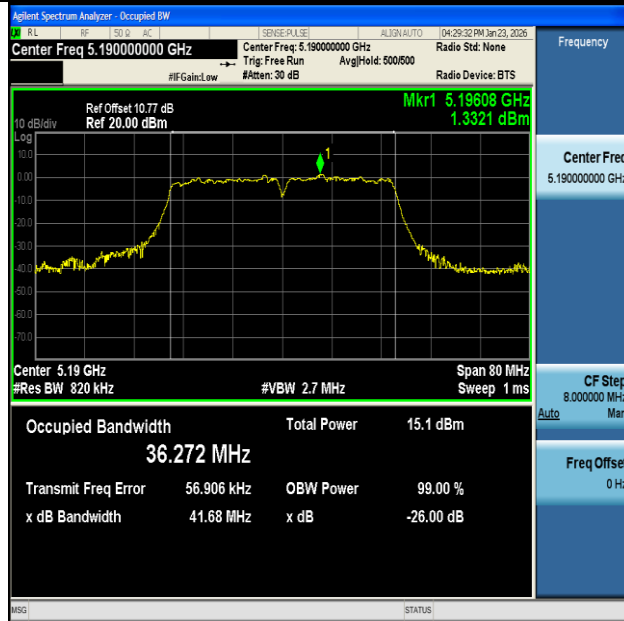


11AC20MIMO-Ant1-5240

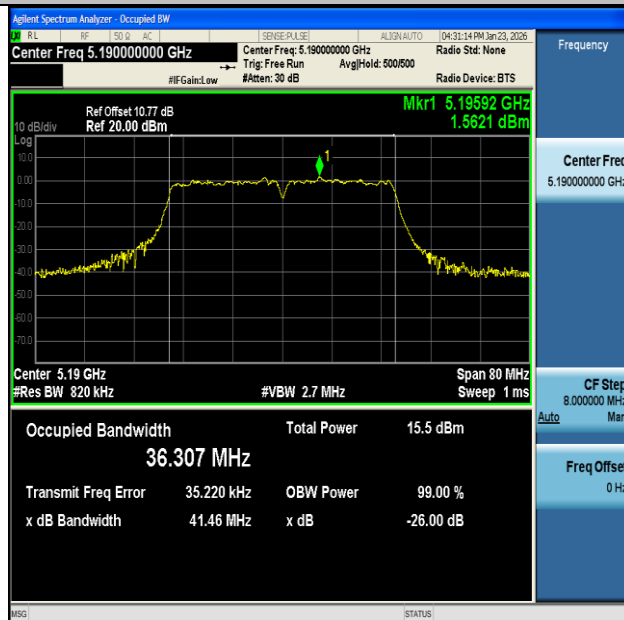


11AC20MIMO-Ant2-5240



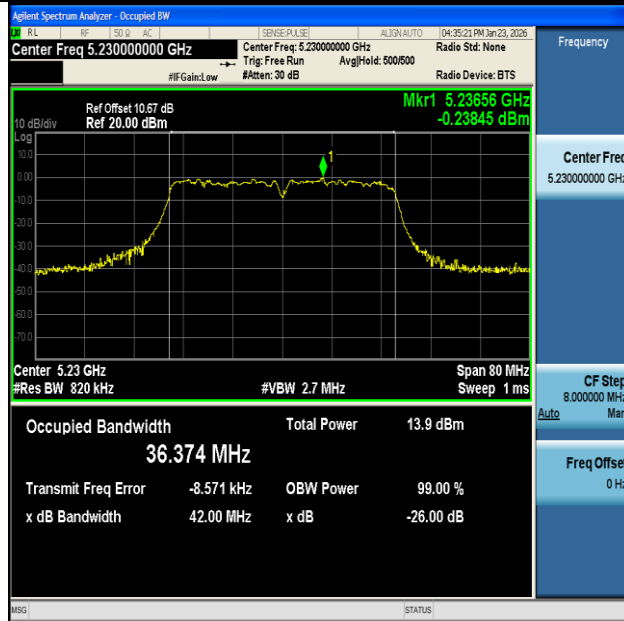


11AC40MIMO-Ant1-5190

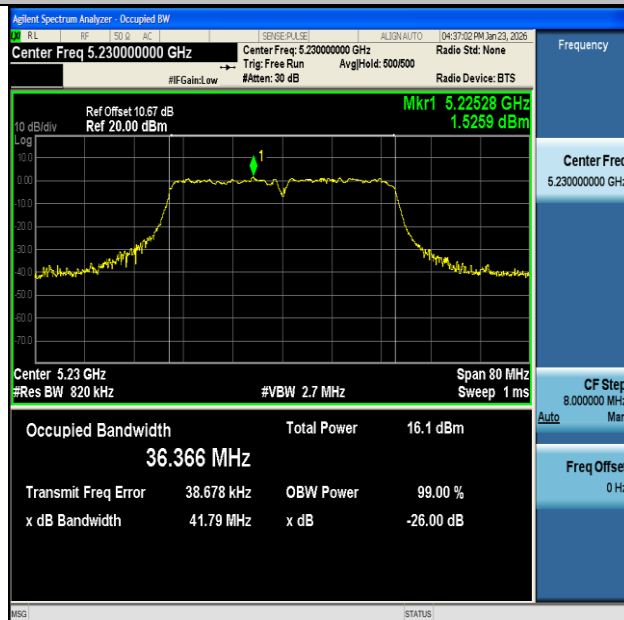


11AC40MIMO-Ant2-5190



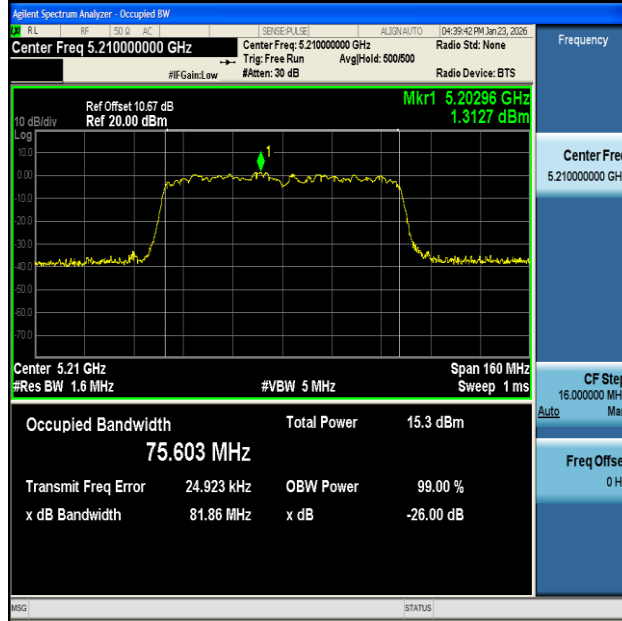


11AC40MIMO-Ant1-5230

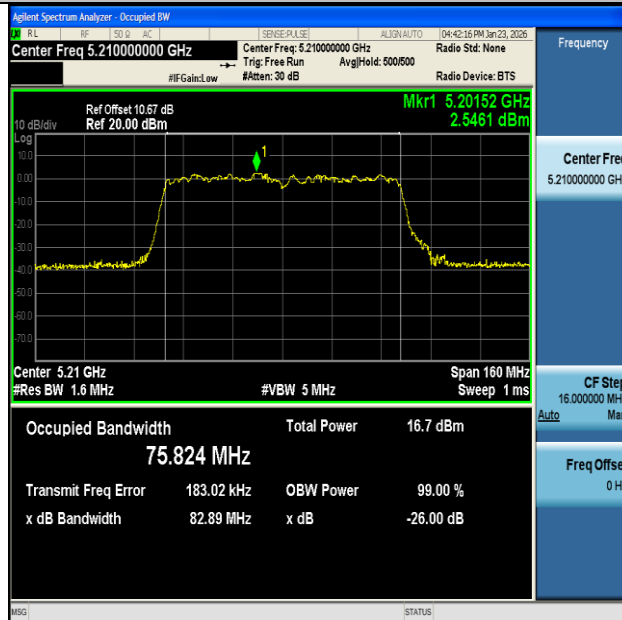


11AC40MIMO-Ant2-5230





11AC80MIMO-Ant1-5210



11AC80MIMO-Ant2-5210





Appendix B: Maximum conducted output power

Test Result

Test Mode	Antenna	Frequency [MHz]	Conducted Power [dBm]	Conducted Limit [dBm]	Verdict
11A	Ant1	5180	7.85	≤23.98	PASS
11A	Ant2	5180	7.01	≤23.98	PASS
11A	Ant1	5200	7.16	≤23.98	PASS
11A	Ant2	5200	7.89	≤23.98	PASS
11A	Ant1	5240	5.63	≤23.98	PASS
11A	Ant2	5240	8.20	≤23.98	PASS
11N20MIMO	Ant1	5180	5.94	≤23.98	PASS
11N20MIMO	Ant2	5180	6.06	≤23.98	PASS
11N20MIMO	total	5180	9.01	≤23.98	PASS
11N20MIMO	Ant1	5200	6.26	≤23.98	PASS
11N20MIMO	Ant2	5200	6.24	≤23.98	PASS
11N20MIMO	total	5200	9.26	≤23.98	PASS
11N20MIMO	Ant1	5240	4.95	≤23.98	PASS
11N20MIMO	Ant2	5240	7.16	≤23.98	PASS
11N20MIMO	total	5240	9.20	≤23.98	PASS
11N40MIMO	Ant1	5190	6.50	≤23.98	PASS
11N40MIMO	Ant2	5190	6.88	≤23.98	PASS
11N40MIMO	total	5190	9.70	≤23.98	PASS
11N40MIMO	Ant1	5230	5.44	≤23.98	PASS
11N40MIMO	Ant2	5230	7.63	≤23.98	PASS
11N40MIMO	total	5230	9.68	≤23.98	PASS
11AC20MIMO	Ant1	5180	6.21	≤23.98	PASS
11AC20MIMO	Ant2	5180	5.76	≤23.98	PASS
11AC20MIMO	total	5180	9.00	≤23.98	PASS
11AC20MIMO	Ant1	5200	6.07	≤23.98	PASS
11AC20MIMO	Ant2	5200	7.05	≤23.98	PASS
11AC20MIMO	total	5200	9.60	≤23.98	PASS
11AC20MIMO	Ant1	5240	4.46	≤23.98	PASS
11AC20MIMO	Ant2	5240	7.09	≤23.98	PASS
11AC20MIMO	total	5240	8.98	≤23.98	PASS
11AC40MIMO	Ant1	5190	8.39	≤23.98	PASS
11AC40MIMO	Ant2	5190	8.93	≤23.98	PASS
11AC40MIMO	total	5190	11.68	≤23.98	PASS
11AC40MIMO	Ant1	5230	7.07	≤23.98	PASS
11AC40MIMO	Ant2	5230	9.57	≤23.98	PASS
11AC40MIMO	total	5230	11.51	≤23.98	PASS
11AC80MIMO	Ant1	5210	8.54	≤23.98	PASS





11AC80MIMO	Ant2	5210	9.11	≤23.98	PASS
11AC80MIMO	total	5210	11.84	≤23.98	PASS

Note: offset(dB) = cable loss(dB) + attenuator factor(dB) + Duty Cycle Factor(dB)





Appendix C: Maximum power spectral density

Test Result

Test Mode	Antenna	Frequency [MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Verdict
11A	Ant1	5180	-3.47	≤11.00	PASS
11A	Ant2	5180	-3.63	≤11.00	PASS
11A	Ant1	5200	-3.67	≤11.00	PASS
11A	Ant2	5200	-3.12	≤11.00	PASS
11A	Ant1	5240	-5.40	≤11.00	PASS
11A	Ant2	5240	-2.71	≤11.00	PASS
11N20MIMO	Ant1	5180	-4.88	≤11.00	PASS
11N20MIMO	Ant2	5180	-3.67	≤11.00	PASS
11N20MIMO	total	5180	-1.22	≤10.41	PASS
11N20MIMO	Ant1	5200	-4.54	≤11.00	PASS
11N20MIMO	Ant2	5200	-4.12	≤11.00	PASS
11N20MIMO	total	5200	-1.31	≤10.41	PASS
11N20MIMO	Ant1	5240	-5.76	≤11.00	PASS
11N20MIMO	Ant2	5240	-3.32	≤11.00	PASS
11N20MIMO	total	5240	-1.36	≤10.41	PASS
11N40MIMO	Ant1	5190	-6.36	≤11.00	PASS
11N40MIMO	Ant2	5190	-5.76	≤11.00	PASS
11N40MIMO	total	5190	-3.04	≤10.41	PASS
11N40MIMO	Ant1	5230	-7.61	≤11.00	PASS
11N40MIMO	Ant2	5230	-5.42	≤11.00	PASS
11N40MIMO	total	5230	-3.37	≤10.41	PASS
11AC20MIMO	Ant1	5180	-4.37	≤11.00	PASS
11AC20MIMO	Ant2	5180	-5.06	≤11.00	PASS
11AC20MIMO	total	5180	-1.69	≤10.41	PASS
11AC20MIMO	Ant1	5200	-4.72	≤11.00	PASS
11AC20MIMO	Ant2	5200	-3.35	≤11.00	PASS
11AC20MIMO	total	5200	-0.97	≤10.41	PASS
11AC20MIMO	Ant1	5240	-6.59	≤11.00	PASS
11AC20MIMO	Ant2	5240	-3.37	≤11.00	PASS
11AC20MIMO	total	5240	-1.68	≤10.41	PASS
11AC40MIMO	Ant1	5190	-4.66	≤11.00	PASS
11AC40MIMO	Ant2	5190	-4.14	≤11.00	PASS
11AC40MIMO	total	5190	-1.38	≤10.41	PASS
11AC40MIMO	Ant1	5230	-6.75	≤11.00	PASS
11AC40MIMO	Ant2	5230	-3.03	≤11.00	PASS
11AC40MIMO	total	5230	-1.49	≤10.41	PASS
11AC80MIMO	Ant1	5210	-7.21	≤11.00	PASS





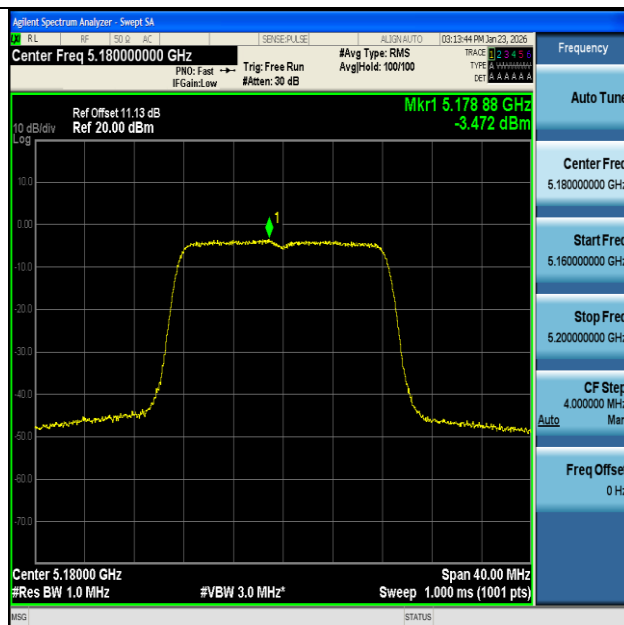
11AC80MIMO	Ant2	5210	-6.35	≤11.00	PASS
11AC80MIMO	total	5210	-3.75	≤10.41	PASS

Note: offset(dB) = cable loss(dB) + attenuator factor(dB) + Duty Cycle Factor(dB)

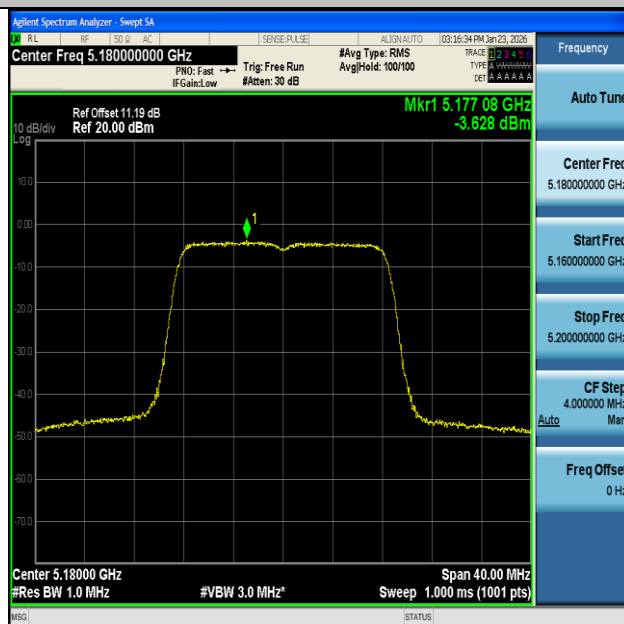




Test Graphs

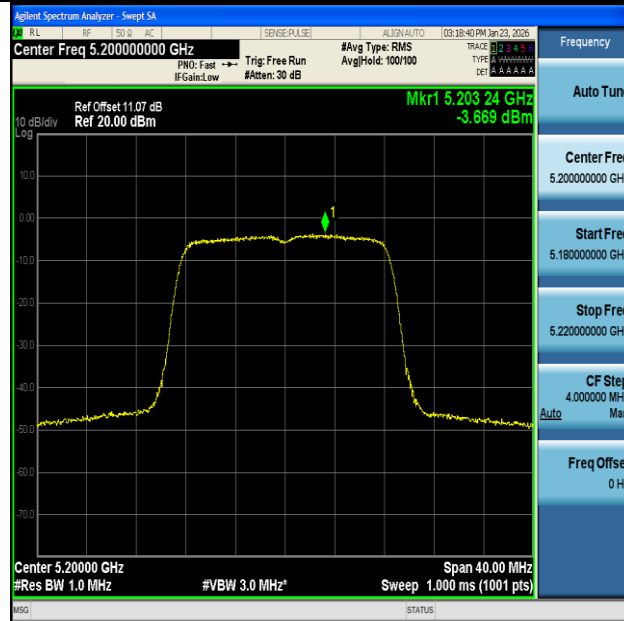


11A-Ant1-5180-PASS

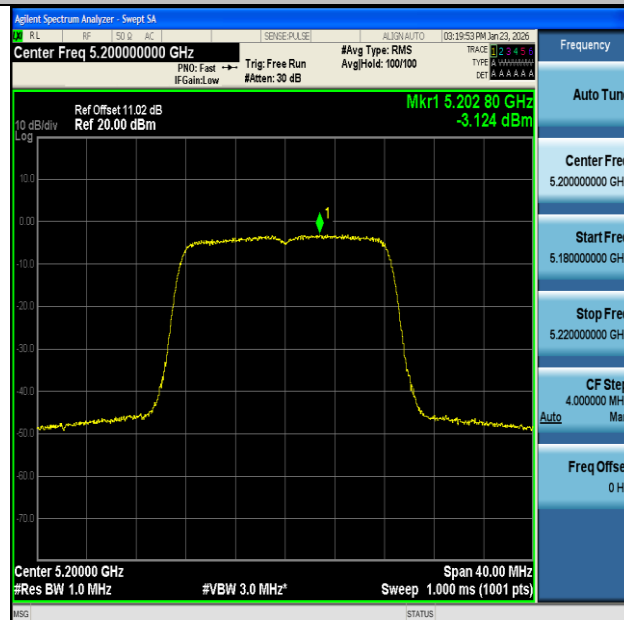


11A-Ant2-5180-PASS



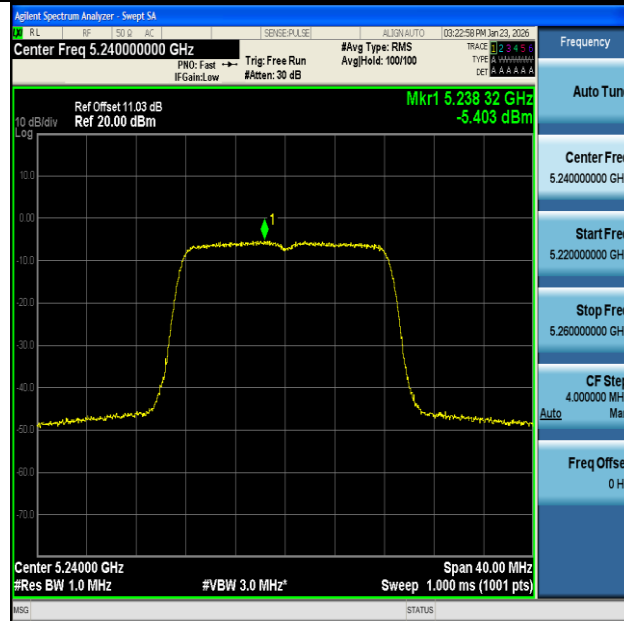


11A-Ant1-5200-PASS

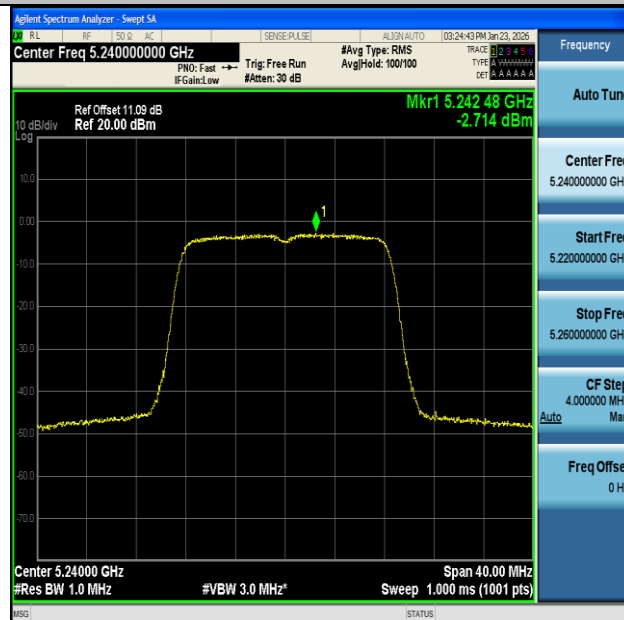


11A-Ant2-5200-PASS



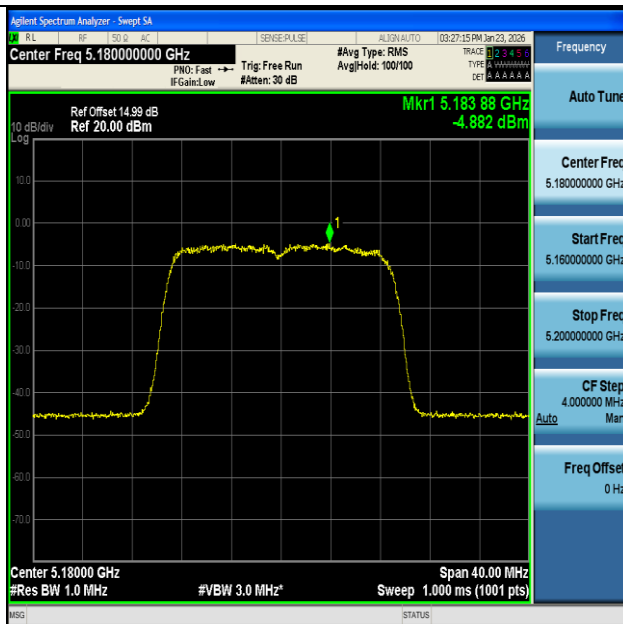


11A-Ant1-5240-PASS



11A-Ant2-5240-PASS



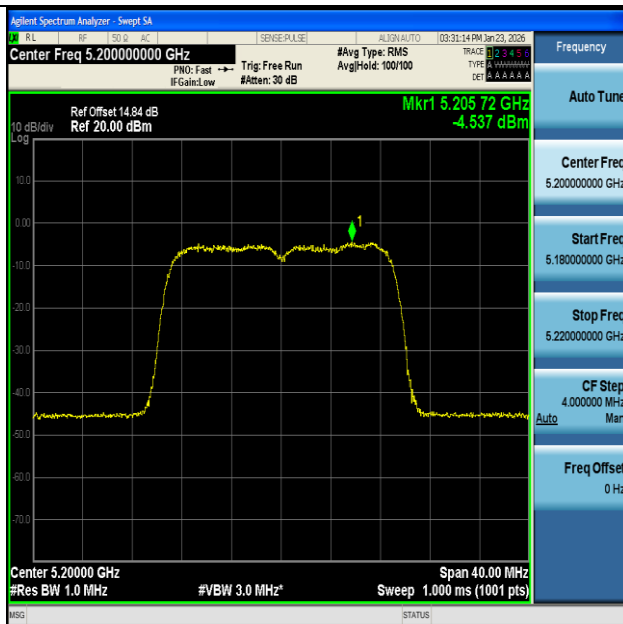


11N20MIMO-Ant1-5180-PASS

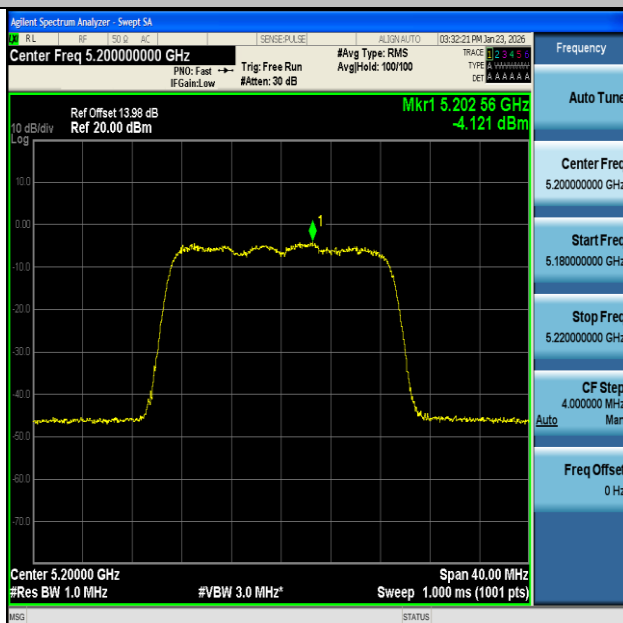


11N20MIMO-Ant2-5180-PASS



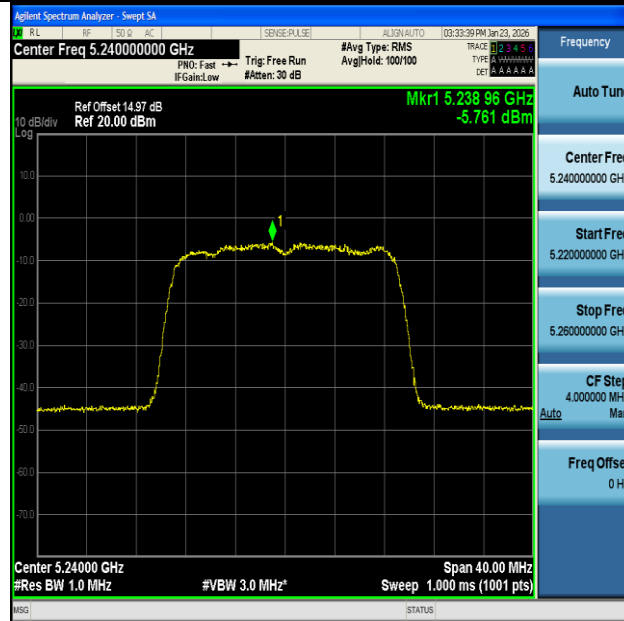


11N20MIMO-Ant1-5200-PASS

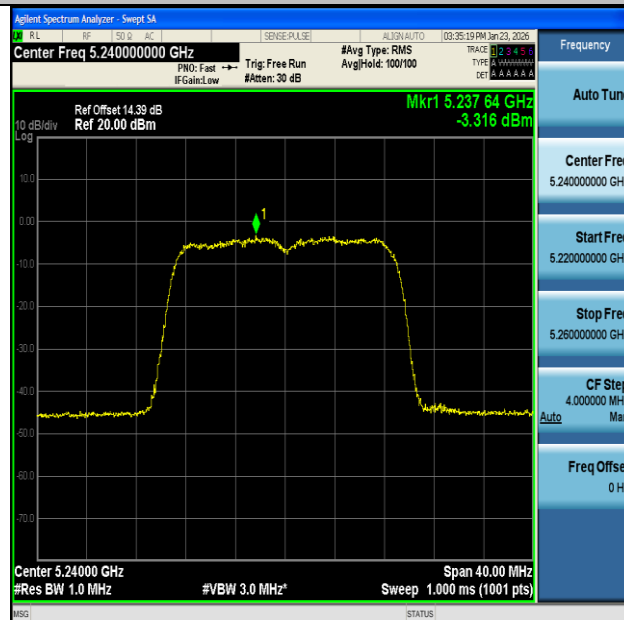


11N20MIMO-Ant2-5200-PASS



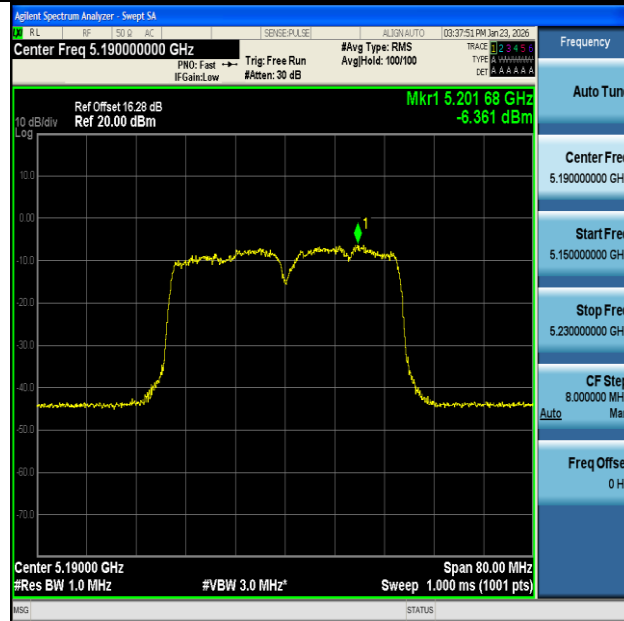


11N20MIMO-Ant1-5240-PASS

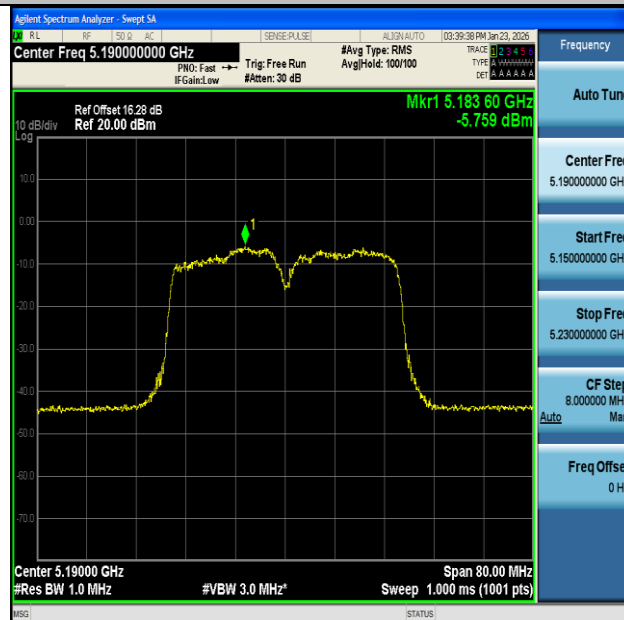


11N20MIMO-Ant2-5240-PASS



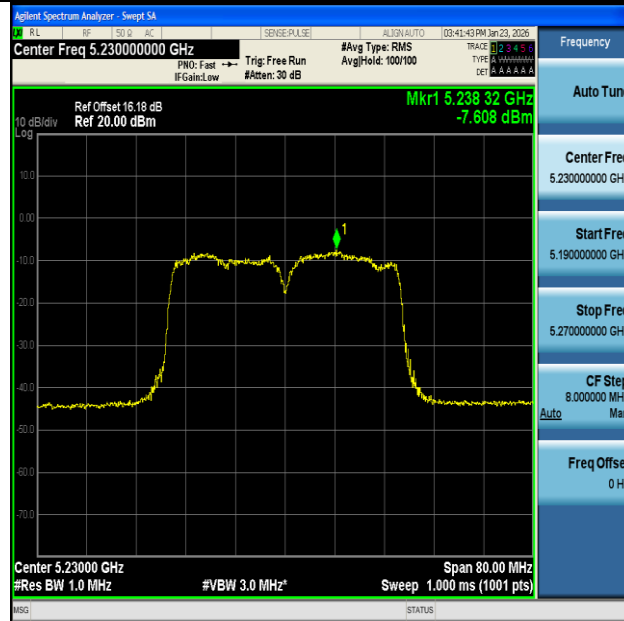


11N40MIMO-Ant1-5190-PASS

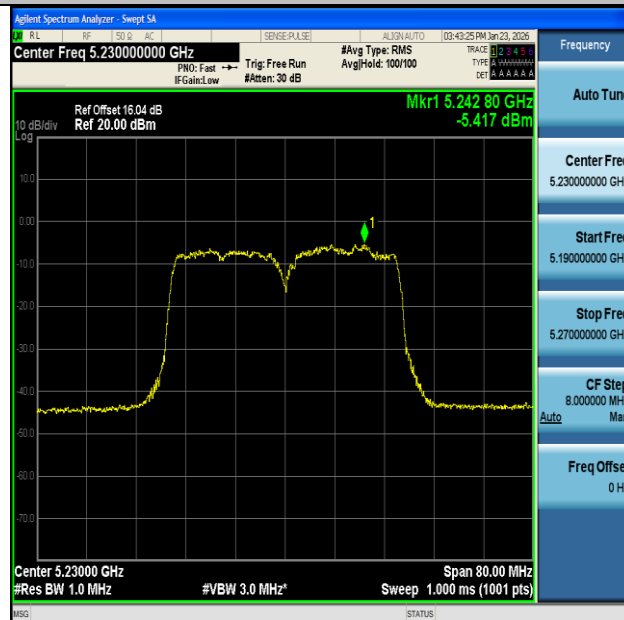


11N40MIMO-Ant2-5190-PASS





11N40MIMO-Ant1-5230-PASS

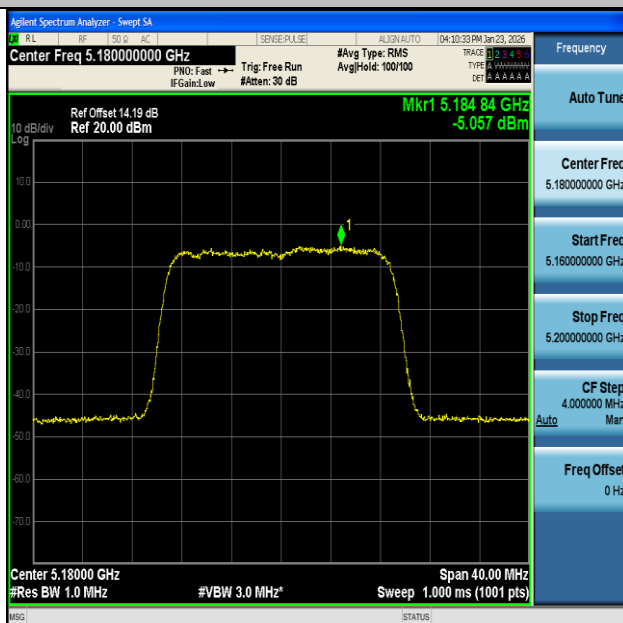


11N40MIMO-Ant2-5230-PASS



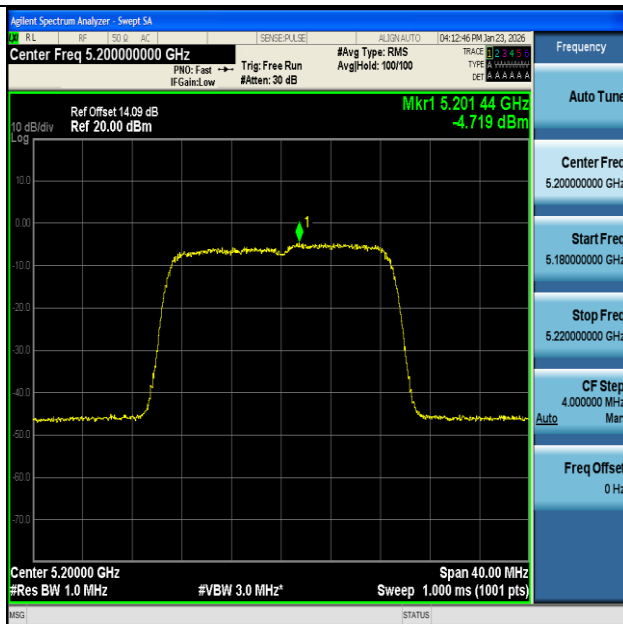


11AC20MIMO-Ant1-5180-PASS

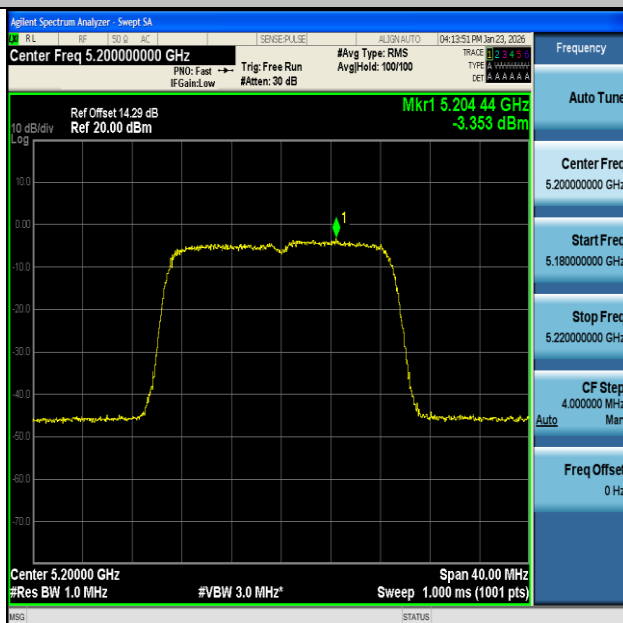


11AC20MIMO-Ant2-5180-PASS





11AC20MIMO-Ant1-5200-PASS

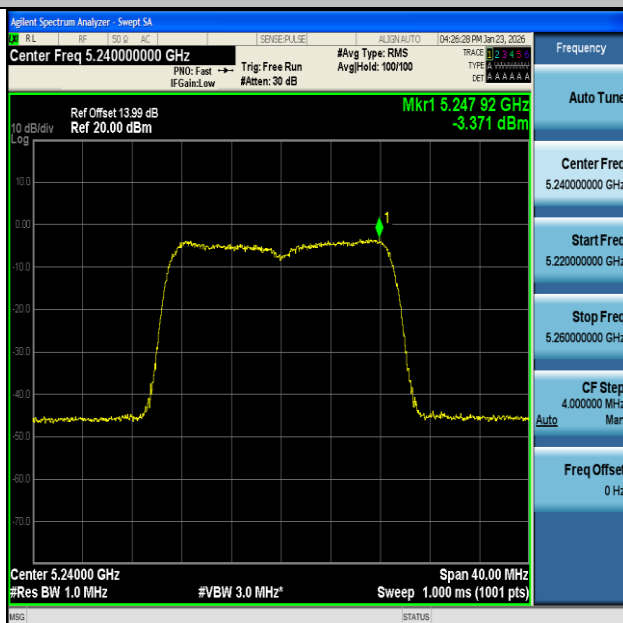


11AC20MIMO-Ant2-5200-PASS



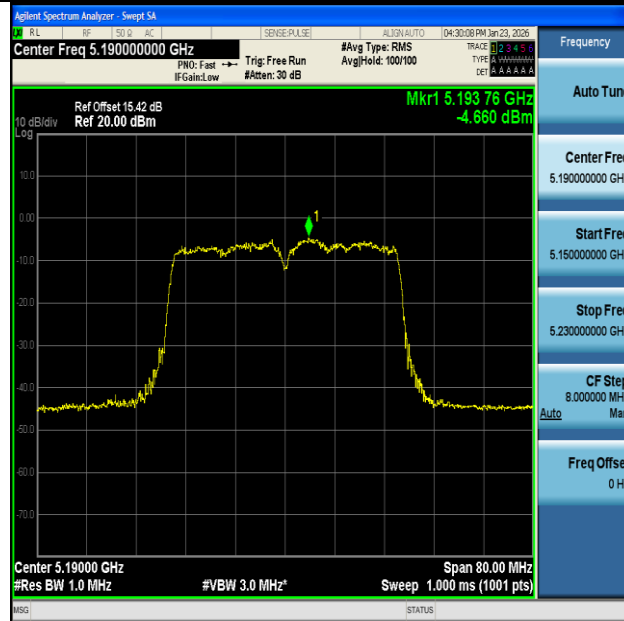


11AC20MIMO-Ant1-5240-PASS

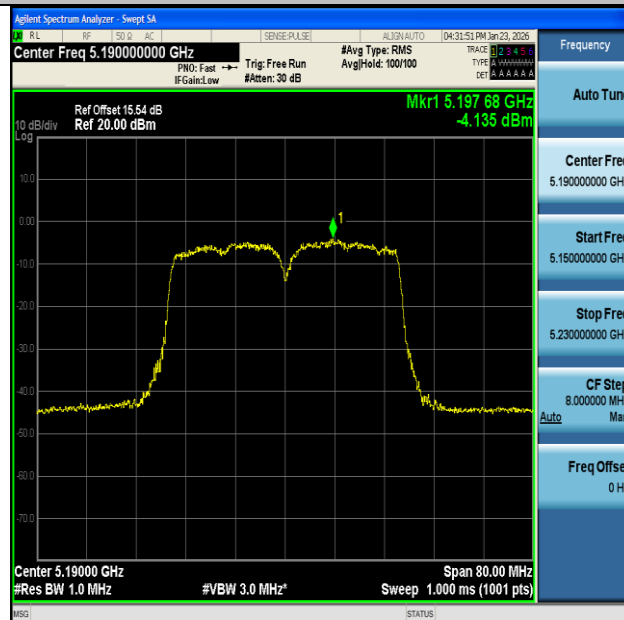


11AC20MIMO-Ant2-5240-PASS



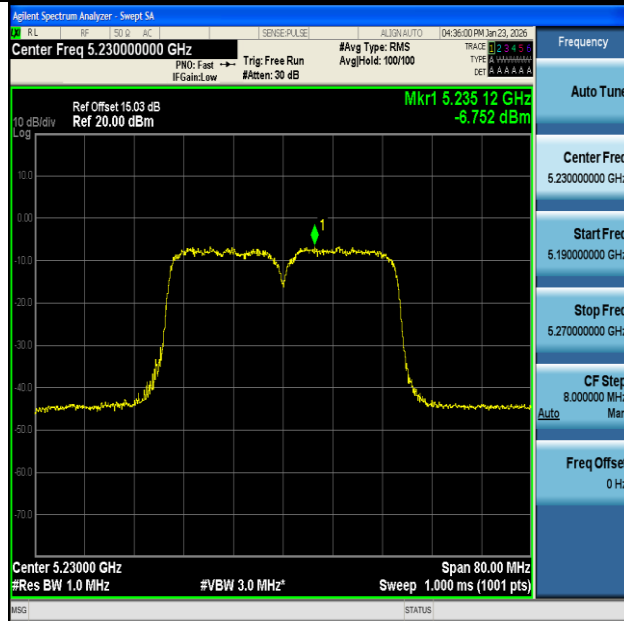


11AC40MIMO-Ant1-5190-PASS

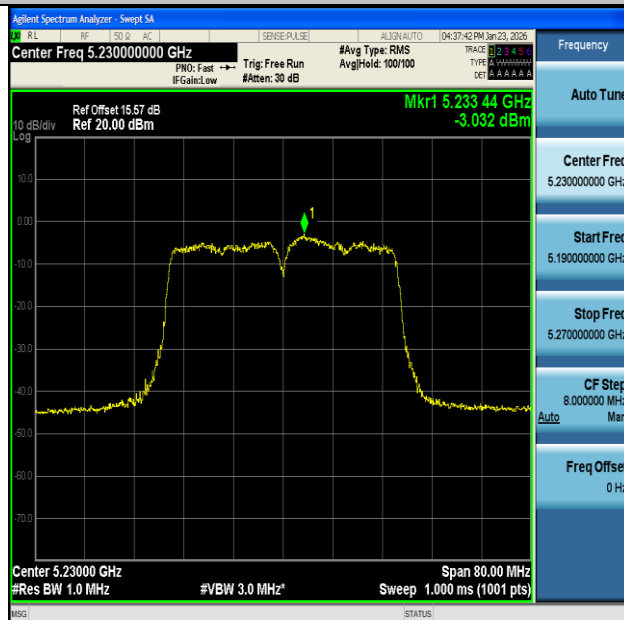


11AC40MIMO-Ant2-5190-PASS



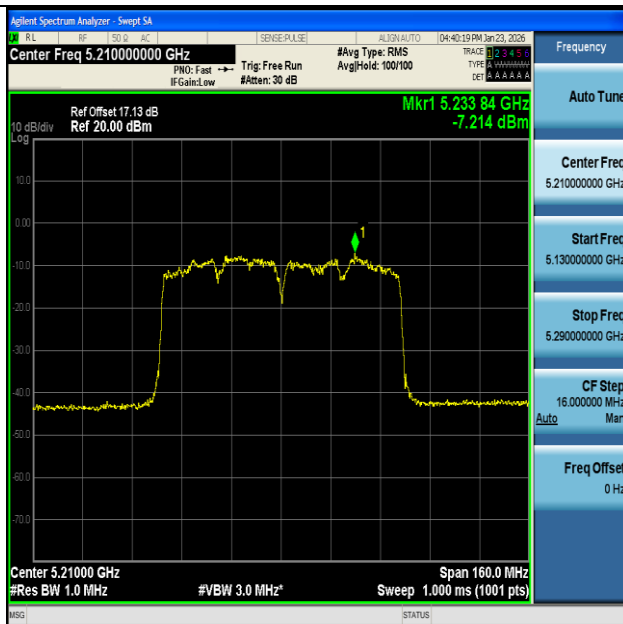


11AC40MIMO-Ant1-5230-PASS

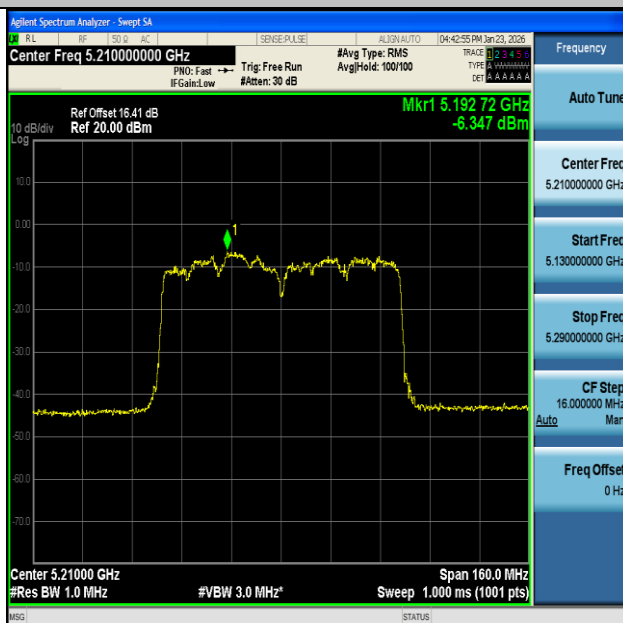


11AC40MIMO-Ant2-5230-PASS





11AC80MIMO-Ant1-5210-PASS



11AC80MIMO-Ant2-5210-PASS





Appendix D: Band edge measurements

Test Result

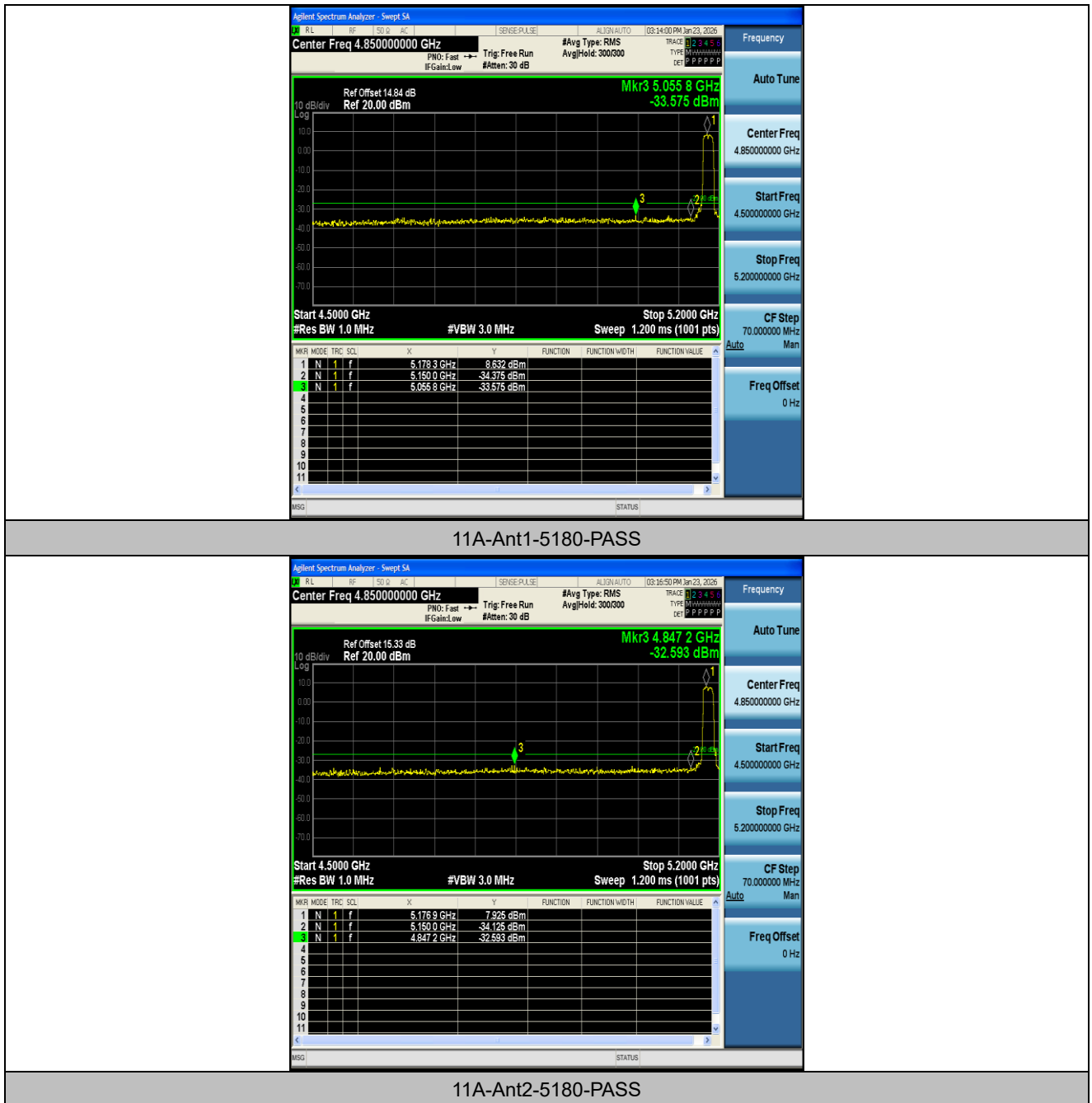
Test Mode	Antenna	Ch. Name	Frequency [MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	Low	5180	-33.58	≤ -27	PASS
11A	Ant2	Low	5180	-32.59	≤ -27	PASS
11A	Ant1	High	5240	-34	≤ -27	PASS
11A	Ant2	High	5240	-33.25	≤ -27	PASS
11N20MIMO	Ant1	Low	5180	-33.86	≤ -27	PASS
11N20MIMO	Ant2	Low	5180	-32.69	≤ -27	PASS
11N20MIMO	Ant1	High	5240	-33.8	≤ -27	PASS
11N20MIMO	Ant2	High	5240	-33.43	≤ -27	PASS
11N40MIMO	Ant1	Low	5190	-33.25	≤ -27	PASS
11N40MIMO	Ant2	Low	5190	-32.43	≤ -27	PASS
11N40MIMO	Ant1	High	5230	-33.86	≤ -27	PASS
11N40MIMO	Ant2	High	5230	-33.21	≤ -27	PASS
11AC20MIMO	Ant1	Low	5180	-33.08	≤ -27	PASS
11AC20MIMO	Ant2	Low	5180	-33.08	≤ -27	PASS
11AC20MIMO	Ant1	High	5240	-33.18	≤ -27	PASS
11AC20MIMO	Ant2	High	5240	-32.99	≤ -27	PASS
11AC40MIMO	Ant1	Low	5190	-33.5	≤ -27	PASS
11AC40MIMO	Ant2	Low	5190	-31.06	≤ -27	PASS
11AC40MIMO	Ant1	High	5230	-33.67	≤ -27	PASS
11AC40MIMO	Ant2	High	5230	-33.41	≤ -27	PASS
11AC80MIMO	Ant1	Low	5210	-33.29	≤ -27	PASS
11AC80MIMO	Ant1	High	5210	-33.35	≤ -27	PASS
11AC80MIMO	Ant2	Low	5210	-33.5	≤ -27	PASS
11AC80MIMO	Ant2	High	5210	-33.26	≤ -27	PASS

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



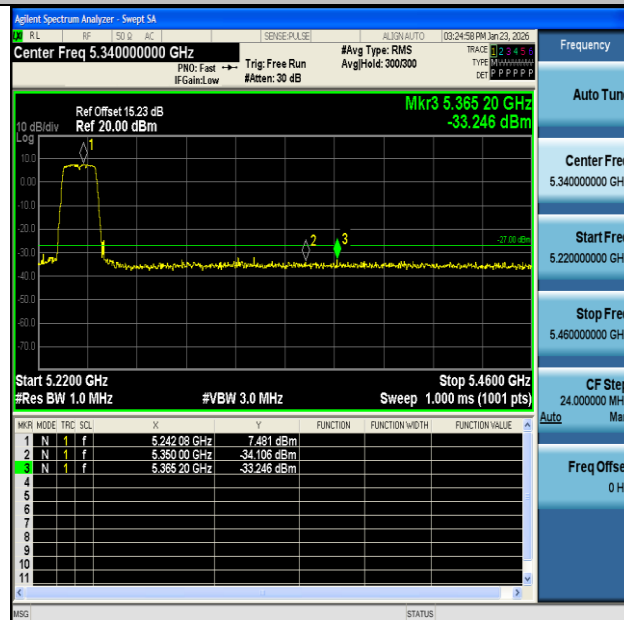


Test Graphs





11A-Ant1-5240-PASS



11A-Ant2-5240-PASS





11N20MIMO-Ant1-5180-PASS



11N20MIMO-Ant2-5180-PASS

