

After our meeting last week I looked into the reasons behind why our throughput was only achieving half of the rate. It seems that “To cope with the inherent unreliability of radio waves, the 802.11 MAC requires positive acknowledgement of every [TCP packet] transmission.”

Technology	Transactions per second	Mbps of TCP payload throughput	Transactional speed relative to 802.11b
11b, 11 Mbps	479	5.6	1.0
11a, 54 Mbps	2336	27.3	4.9
11g, 54 Mbps/no protection	2336	27.3	4.9
11g, 54 Mbps/CTS-to-self protection	1113	13.0	2.3
11g, 54 Mbps/RTS/CTS protection	750	8.8	1.6

Reference:

http://www.oreillynet.com/pub/a/wireless/2003/08/08/wireless_throughput.html