

ABSTRACT

The use of wireless networks based on *Wireless Fidelity* (WiFi) technology has become a major requirement in various educational institutions such as schools and campuses. However, problems are often encountered in the form of weak and uneven WiFi signal coverage in certain areas. This certainly has an impact on hampering teaching and learning activities that require wireless internet access. This research aims to optimize WiFi signal coverage in the SMK Mega Bangsa environment by utilizing antenna technology. The method used is to install the TP-Link CPE610 outdoor antenna in a strategic position to expand signal coverage to areas that were previously uncovered. The parameters measured include *Signal Strength*, throughput, availability, and overall signal quality after optimization with antennas. The measurement results show an increase in WiFi network performance in this school. Thus, the use of TP-Link CPE610 outdoor antenna is proven to be able to optimize WiFi signal coverage at SMK Mega Bangsa.

Keywords: optimization, WiFi, antenna, signal coverage, antenna, Ekahau, inSSIDer