

ABSTRACT

Wireless Local Area Network (WLAN) is one of the computer network that uses radio waves to exchange information as a transmission medium. IEEE 802.11x becomes the standard for WLAN communications. IEEE has released the 802.11n standard by offering an increased data rate up to 500 Mbps, 40 MHz bandwidth, good reliability, and supported by MIMO technology. MIMO technology is a multi-antenna that used at the transmitter side and receiver side to eliminate multipath fading. Furthermore, using MIMO technology also make the radio waves can pass through the obstacle well, and has a better coverage if working on 2,4 GHz frequency.

This final project considers the design of a 4×4 microstrip MIMO Bowtie antennas for WiFi technology applications that work in the 2.4 GHz frequency. The microstrip antenna is easy to implement in Access Point. The Bowtie Patch is chosen to provide a wide bandwidth, then this antenna will be arranged into MIMO antenna to overcome the multipath fading.

This 4×4 microstrip MIMO Bowtie antenna has the fabrication result result, which is $VSWR \leq 1,32$, $gain \geq 2,89$ dBi, Return loss $\leq -17,394$ dB, mutual coupling value $\leq -28,369$ dB, and the polarization is circular because has axial ratio value ≤ 3 dB with radiation pattern is omnidirectional pattern.

Keywords: Bowtie Microstrip Antenna, MIMO, WIFI