

ABSTRACT

Along with the needs of users in accessing information that requires a fast time in accessing the information, thus encouraging the emergence of Wi-Fi technology. Wi-Fi can provide high data transfer rates with a large number of users. On Wi-Fi systems there is a MIMO technique where MIMO techniques can help improve the use of Wi-Fi systems.

In this final project discuss about design of MIMO 2x2 microstrip antenna for frequency 2,4 GHz by using Meander Line Resonator. Where this technique is 4 resonators are connected to each other that serves to reduce the mutual coupling effect. Mutual coupling is an effect that causes a decrease in the quality of antenna parameters due to electromagnetic interference from two or more antennas that are too close together.

The results of fabrication for the bandwidth value of 2×2 MIMO antenna without a 74 MHz Meander Line Resonator for both ports, return loss $\leq -18,625$ dB for port 1 and $\leq -16,782$ dB for port 2, mutual coupling value for port 1 is ≤ -20.405 dB and port 2 for ≤ -20.899 dB. Whereas for 2×2 MIMO antenna using Meander Line Resonator, it produces bandwidth of 74 MHz for both ports, return loss $\leq -17,440$ dB for port 1 and $16 -16,701$ dB for port 2, mutual coupling value for port 1 is $\leq -22,371$ dB and port 2 equal to $22 -22,827$ dB. With the addition of the Meander Line Resonator element between the two patches, there is a decrease in the mutual coupling value of 1.96 dB for port 1 and 1.92 dB for port 2 and causes a frequency shift.

Keywords: Antenna Microstrip, MIMO, Wi-Fi