

ABSTRACT

The development of wireless devices wearable growing from year to year and the increasing application of wireless devices wearable as in the Telemedicine application, communication system. In its application, the antenna placed very close to the body and are conformal. One of the influence of the placement of the wearable antenna namely the bending (bend) follow the shape of the surface or parts of the body, where the shape changes that arise due to the nature of the conformal on the antenna if it is attached to the surface of the body [1].

At the Final Project that proposed the analysis will be conducted to determine the effect of bending on the characteristics of the wearable antenna. Research carried out by the process of analysis using software and laboratory experiments that realized with a photo paper substrate with a dielectric constant $\epsilon_r = 6,1$ and thickness $h = 0,2$ mm. In this Final Project microstrip square antenna with flexible structure is used as the object of observation with the system wearable on a frequency of 2.4 GHz. The results obtained are expected to be a reference in designing a microstrip antenna for wireless wearable application.

Results from field measurements and numerical simulations have been obtained and it can be observed that the changes that occur are changes in the VSWR value at the 2.4 GHz frequency, changes in the size of the Gain, the main lobe of the radiation pattern, and the generated beam. The shifting frequency below 2.4 GHz for the smallest value of VSWR when bending the vertical plane and the frequency above 2.4 GHz for the smallest value VSWR when bending is done in the horizontal plane.

Keyword: *Wearable Antennas, Bending, Microstrip*