

## ABSTRACT

One of the *Wireless Body Area Network (WBAN)* devices that is now in the spotlight is a worn antenna body that can be integrated with certain devices implemented in the health field such as medical applications that collect patient condition data such as heart rate, respiratory rate, or blood oxygen level.

The type of antenna used is a microstrip *Planar Inverted F-Antenna*. On the substrate used FR4 Epoxy. In this final project will be designed and measured antenna that can be utilized for WBAN. Parameters to be measured and tested are VSWR, impedance, radiation pattern, and gain. The simulation is done in CST *Microwave Studio software*.

PIFA measurements produce antennas that can be applied for Off-Body Communication. WBAN communication works in the Bluetooth frequency range (2,440 - 2,448 GHz), VSWR  $\leq 1.5$ , return loss  $\leq -15$  dB. The measurement results at the center frequency (2.444 GHz) are return loss of -23,484 dB, VSWR 1.1497 and impedance of 43,547  $\Omega$ .

**Keywords :** *Wireless Body Area Network, Planar Inverted F-Antenna, CPW*

