

## ABSTRACT

*Telemedicine is a clinical treatment application that utilizes telephone, internet, and other communication networks to provide medical information. So with the medical information, it can be used for health consultation, and can also be used for medical procedures. Therefore the antenna needs a good transfer rate capability and has good flexibility capability. With the emergence of wearable antenna textile technology, it enables the manufacture of antennas from comfortable, lightweight, and flexible textile materials to suit the above specifications.*

*In this final project designed a rectangular wearable patches antenna on 2.45 GHz frequency using 3 layer cordura fabrics as substrate and for design of patch and groundplane using copper tape material. Where the technique for technique rationing using strip line method, and ditahap optimization also added inset feed method that aims to increase the bandwidth.*

*From result of antenna measurement got result of VSWR  $<1,6$  at frequency 2,45 GHz and bandwidth  $> 50$  MHz. Gain antenna antenna when off body condition is at 9,08 dB and antenna gain when on body got equal to 9.18 MHz, Polarization antenna when off body becomes bidirectional and polarization of ellipse. The absorption of the electromagnetic field (SAR) when the antenna is close to the body is 1.057 W / Kg but with full distance between the antenna and the body is 2 cm. to reduce the effects of radiation on add the AMC that works also as a reflector. The dimensions of antenna dimensions are obtained through theoretical calculations which are then simulated by using ansoft HFSS software.*

**Keyword: Textile Wearable Anntena, Textile Antenna, Telemedicine**