

## ABSTRACT

Telemedicine is a health application that uses telecommunications technology. Antenna is needed for telemedicine applications, Therefore, the antenna needed is an antenna whose specifications are suitable for the human body. Textile antenna is a type of wearable antenna, which is an antenna that can be used on the human body. Textile antenna have the properties of a soft, lightweight, and flexible material.

This final project designs and realizes a dual band textile antenna made from cordura jeans with a thickness of 2 mm as a substrate and copper tape as a material for the groundplane and rectangular patch. This antenna works at a frequency of 2.45 GHz and 5.85 GHz and is expected to comply with the specifications, namely gain > 3 dB, return loss below -10 dB, VSWR <2 and the resulting bandwidth > 50 MHz.

The simulation results of the 2.45 GHz frequency has a gain value of 7.5591 dB, a return loss of -22.4638 dB, a VSWR value of 1.1629, and the resulting bandwidth is 50 MHz. Then at a frequency of 5.85 GHz it has a gain value of 7.3481. Then at 5.85 GHz frequency it has a gain value of 7.3481, a return loss value of -26.2804 dB, a VSWR value of 1.1020, and the resulting bandwidth is 120 MHz.

The realization results shows it has shift in frequency of 2,45 GHz to 2,80 GHz with a return loss value of -14,063 dB, a VSWR value of 1,4940 and it has gain value of 6,7409 dB. Of the 5,85 GHz frequency has a return loss of -16,122 dB, a VSWR value of 1,3779, and it has gain value of 8,6459 dB. When testing flexibility with a 8 cm and 10 cm tube, Antenna can work well. It has a return loss value less than -10 dB and a VSWR value <2.

**Keywords:** telemedicine, textile antenna, dual band antenna, return loss, VSWR