

ABSTRACT

Studies on the application of Ultra-Wideband Radar (UWB) are widely discussed and implemented in the health field which measures physiological parameters such as heart rate, body temperature, and blood pressure and vital body protectors. UWB radars are often used in various applications on specialized radars in the health field because the advantages of sponsored UWBs have a bandwidth that can support to increase the height does not require direct contact on the human body, and has non-ionic radiation properties that can easily connect through human tissue.

In this Final Project research, the design and realization of Vivaldi Antennas are elliptical. The elliptical polarized Antenna can reduce the dimensions of polarization loss factor (PLF) and multipath interference with a frequency range of 3 to 6 GHz. This Antenna is made by the Array method and arranged in order to get good results. The Realized Vivaldi Antenna has been fabricated using FR-4 substrate with a relative permittivity of 4.6 and a thickness of 1.6 mm.

UWB Antenna produced with the middle frequency of 4.5 GHz, the inner parameter has a return loss value of -17.84 dB VSWR of 1.29 and the outside parameter has a gain value of 7.8 dBi. elliptical polarization, and unidirectional radiation pattern.

Keywords: *UWB, Respiratory Detection, Vivaldi, Radar.*