

ABSTRACT

Continuous Wave Radar (CW Radar) is a type of radar with many applications in the health sector, such as detection of breathing, which is closely related to chest or abdominal wall motion. CW Radar with Ultra-Wideband Radar (UWB) has advantages such as wide bandwidth and safe contact when penetrating biological networks. The Radar system to detect breathing also more hygienic and can minimize patients' psychological effects.

Many things can affect the use of a radar system to detect human breathing, one of which is an obstacle, such as clothing. This final project research will analyze the effect of clothing on the detection of breathing. The Radar system will be modeled with a Vector Network Analyzer (VNA) and BladeRF. MATLAB is used to convert the frequency domain to the time domain. Data were collected on four clothes with different types with the object to the antenna is 45 cm.

Based on the research, it was found that the obstacle had a small attenuation value and a minor delay. Besides, the BladeRF results indicate that chest motion can be detected, even though there are obstacles to influence. So, it is stated that the obstacle does not have a significant effect on the respiratory detection process using the Radar system.

Keywords: Continuous Wave Radar (CW Radar), Respiratory Detection, Clothing, Vector Network Analyzer (VNA), BladeRF.