ABSTRACT

Radio Detection And Ranging (Radar) is an electromagnetic wave system that

is useful for detecting, identifying, and measuring a target. One type of radar is the

Frequency Modulated Continuous Wave (FMCW). Besides in the military field, the

use of radar is also implemented in the detection of hand gestures. This is commonly

referred to as communication between humans and machines or Human to Machine

(H2M).

This Final Project discusses the workings of an FMCW radar system using

delay blocks instead of SDR in detecting a target. This research was conducted in

several cases. When using 1 block delays, 2 block delays, and 3 block delays. The values

in the delay block are assumed to be different hand gestures. For data retrieval, the data

will be recorded in the file sink block on GNU Radio for 10 seconds and the results

will be seen in Matlab.

From the results of the simulation carried out, it is evident that the three targets

assumed by using the delay block produce different outputs. The difference is seen in

the Amplitude Output on GNU Radio, LPF Output, and also the FFT Output. The

greater the delay value, the farther the distance and phase difference produced.

Keywords: Radar, FMCW, Hand gesture, GNU Radio.

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