

ABSTRACT

Mobile robot is one of the needs in today's technological developments. However, the weakness of the mobile robot design is that when the mobile robot operator cannot know the level of the surrounding crowd, human error will occur which can cause work accidents when the robot is operated. Therefore, the design of a mobile robot must be able to move quickly or slowly by knowing the speed of the robot. In order for the operator to know the speed of the robot, then using a radar that is fired at the robot, to support the work of the radar to reflect the signal, the robot needs a reflector

The way the reflector works is that it moves with the robot and the radar stays at one point, this is the same way the Doppler effect works. The Doppler effect is a change in frequency with a change in the distance between the source and the receiver. The reflector serves to reflect the signal fired from the radar towards the robot. So the radar shoots a signal towards the robot, because the radar needs a return signal to detect the robot, the robot needs a reflector that can reflect the radar signal. After the radar detects the signal reflected by the reflector, the radar will process the signal and the robot's speed when walking will be known.

The robot that is applied to this final project, the operator can choose the desired speed level to run, and this robot can detect the rpm value issued by the DC motor and can be detected by the rotary encoder. This robot experiment uses a distance of 10 m which gets the fastest value of 0.3 meters per second and the presentation of the battery which affects the speed of the mobile robot. It can be concluded that the robot can run faster when not carrying a load

Kata Kunci : *Bluetooth, Pulse Width Modulation, Robot Mobile, System*