

Abstract

Humans use robots to facilitate an activity in everyday life. However, robots also have limitations, one of which is strength, especially in wireless network-controlled robots. Therefore a relay robot is needed to amplify the signal from a robot, this relay robot works as a signal amplifier that connects the booster robot signal with the main robot so that it can reach a distance that is more than the initial distance limit. For the relay, it uses NodeMCU ESP8266 and uses the painlessmesh library as a method to connect between nodes. The results obtained that the more obstacles and the longer the distance will affect the message sent and the strength of the signal being tested. One of the effective test signals is testing at a distance of 30 meters with obstacles using concrete, the signal strength is low and the message transfer speed is very slow.

Keywords: *painlessmesh, wireless sensor network, nodemcu*