ii

ABSTRACT

In this research, the author will create a distance control system between two miniature trains that run hand in hand by using the KY-026 infrared sensor on-board in each miniature train. The infrared LED (Tx) will emit infrared light to the photodiode LED (Rx), then the input results obtained by the sensor will be processed on the ESP8266 microcontroller.

This research successfully provides a safe distance between two miniature trains exceeding the separation distance of 12 cm at a speed of 12 cm / s and acceleration of 10 cm / s^2 and can walk hand in hand with an average speed profile of 8.73 cm / s on a track of 80 cm with a travel time of 9.34 seconds.

Keywords: *Train Control, Infrared Sensor, Moving Block, Safety Distance, Miniature Railway*