

ABSTRACT

TransJakarta is a bus rapid transport system built to overcome traffic congestion in Jakarta City. TransJakarta has private lane that cannot be passed by another vehicle. However, due to lack of supervision, TransJakarta lane often entered by private vehicle that not is way, so the TransJakarta lane get traffic congestion. Based on the problems i have an idea to create an automatic gate system that will placed on TransJakarta bus lane. The automatic gate system only open if the TransJakarta bus will pass through the lines, but not for other vehicles.

At this final project I have design and realize an automatic gate system on TransJakarta bus lane. This automatic gate system uses the transmitter device that installed in TransJakarta bus, and the receiver device will be placed on the doorstep to detect Transjakarta bus. On the transmitter device have microcontroller and zigbee to transmit data that contains code. While on the receiver device have zigbee and microcontroller to receive data from the transmitter device. Then the microcontroller will process the data that has been received. If the corresponding data obtained, the microcontroller will give instruction the motor driver to manage the direction of motion of DC motor on the doorstep.

With this final project have the result an automatic gate system that will be open if the TransJakarta bus will pass the line. This automatic gate system can be opened at the time of TransJakarta bus about 180 meters from the doorstep. Then the automatic gate system will be closed when the ultrasonic sensor detects that the bus is less than 2 meters. So this automatic gate system could be a solution on the indiscipline of drivers on the highway that passes through TransJakarta bus lane.

Keywords: TransJakarta Bus, ZigBee RF, Microcontroller, DC electric motor.