ABSTRACT

The growth of transportation and the progress of the current era, traffic jam becomes a major problem especially for large cities. The traffic light as a tool to regulate traffic at this point has not worked maximal. It needs a system of traffic lights that the flash of cycle time can be adjusted for the actual intersection. Thus it can help the authorities to regulate the traffic.

In this thesis, the system developedtoregulatethe trafficlightsgreenlongertoadjust to theflow of trafficat the time.For determine theeffectivegreentime isused theWebsterandCobbe method.This systemrequires anumber of vehiclesto be able toset the cycletimeof traffic lightswhere the numberof vehiclesenteredthrough the PS2keyboard. The resultsweremodeledwith thedesignof programminglanguagesVHDL(VeryHigh SpeedIntegratedCircuitDescription Language) andsynthesizedand implementedusingXilinxISE13.2isin the form ofLEDlights.

This devicecan be implementedon an FPGAdevicewith theXC3S1000Spartan-3board. Blocktraffic lightcontrollercan be simulatedon theFPGAtoset thetimingandcounter. From the results ofmodelingand simulationobtainednumber of vehicles thatenteredthrough thekeyboardandproducingLEDlightsred, yellow, greenlightsalternately. The accuracyis thelightsby 69% compared tosimulation onMS.Excel.

Keywords: Traffic Light, PS2 keyboard, VHDL, FPGA.