

ABSTRACT

TAN ADI WIDJOJO (08320050007)

LIGHT EMITTING DIODE CONTROL SYSTEM SIMULATION IN LOCAL AREA NETWORK

(xii + 71 pages: 41 figures; 3 tables)

In general, people who need to control lamps are required to be physically present at the same place where the lamps are. By the presence of LAN (Local Area Network), turning on and off any lamp can be performed remotely. This report discusses a simplified system whose main function is to control LEDs, instead of real lamps, accessible from any client computer which is connected to a LAN wirelessly or wired. In addition, not only switching on and off the LEDs, this system simulates adjustment of LED's brightness at three preset levels, i.e. 25%, 50%, 75%, where 0% means the LED is off, while 100% the LED is on.

In order to control the LED, the system uses a web application which bridging the communication between client and server based on TCP/IP connection. The LEDs themselves are connected to an IP addressable microcontroller. To this microcontroller, the server sends the data to be processed further by the microcontroller to affect the LEDs. For the sake of monitoring, then all authorized user activity in the website is logged in history pages.

From a series of tests conducted to see how this simulation functions, it can be concluded that the goal has been achieved. Using a remote client computer any LED can be controlled independently.

References: 17 (1981 - 2009)