

ABSTRACT

Electrical energy waste is increasing with the rapid technological growth. One of the most common waste is unused electronic device in an standby status, for example lights and air-conditioning. If the unused standby status can be reduced, then the electrical energy waste could be avoided. Several ways can be implied to reduce the standby status, for example makes the switch that can automatically react according to user existence at the room. Some ways also can be implied to detect the presence of users, for example uses Radio Frequency Identify (RFID) through user identification card which is applied RFID chip to an agency presence system.

Based on the above requirements, in this final project writer will designed an automated system switches which will work based on the presence / absence of an user who brought identification card to the room. This system use Field Programmable Gate Array(FPGA) and Very Highspeed Hardware Definition Language(VHDL) as a central processing unit and main database that collect data from RFID reader.

FPGA used because it have short process delay and good compability. System will process any data from the reader if there are user(s) who enter or exit the room detected. The number of user that detected, will affect lighting systems. The system is expected to reading and processing data room users well. The expected output is to replace the manual switch of lighting system to automatic switch.

Keywords: RFID, automation system, FPGA, VHDL