Direct current

Design

The designed PC based electricity power management system were achieved by the use of a timer software which acts as a computer User Interface control and a hardware which acts as a computer interface with the help of a parallel port. The design was done such that it allows different appliances to be assigned a pacific operating time and the use of the OPT-isolator totally isolates the PC from the hardware, therefore protecting the parallel port from overloading.

Firstly the power supply is built, a via-v AC transformer is used, the v section of the transformer is solder to the ever board and a bridge rectifier is fixed to the wires on the board, the filtering capacitor (puff) is connected to DC output of the rectifier, then a voltage regulator (LAMELY) is connected to the output of the rectifier, this steps completes the power supply so the parallel port cable is soldered to the board ND the opt-isolator are placed carefully on the board and soldered to the wires of the DUB cable as shown in the circuit diagram.

The current limiting resistors are connected to the isolators, the transistor are connected to the limiting resistor, the transistor collector terminals are connected to the v relay and the contacts of the relay are connected to the output port of the device. The system can be adapted to homes, offices, department of institution etc. Key words: Bridge rectifier, filter capacitor, limiting resistor, opt- isolator, relay, transformer, user interface, voltage regulator 1. INTRODUCTION Power providers constantly deal with demands to increase productivity and reduce costs.

This translates into the need for administrators to collect and act on decision-making information. Power system vendors are following a trend to make devices smarter so they can create and communicate this information. The term " power system" describes the collection of devices that make up the physical systems that generate, transmit, and distribute power. The term " instrumentation and control (I&C) system" refers to the collection of devices that monitor, control, and protect the power system. Power system automation refers to using devices to perform automatic decision making and control of the power system [1].

The project is based on energy conservation and management. Energy is a very valuable resource and the design will reduce household consumption and allow the user to be more environmentally friendly. The PC parallel port is an inexpensive yet a powerful platform for implementing projects dealing with the control of real-world peripherals. This port can be used to control the printer as well, also household and other electrical appliances. The computer program through the interface circuit controls the relays, which in turn, switch the appliances on or off.

This insight permits the user to cut costs and change the time of use of major power consuming appliances [2]. 2. METHODOLOGY Review of relevant literature Surfing the internet for relevant materials Design Construction Testing Review of relevant literature: By going through relevant materials so as to gather more information about the components to be use for the design and also study previous works on power management system. Surfing the internet for relevant materials: I did this by sourcing for information on the internet by using various search engines for example

http://www. Google. Com. To get an idea how the circuit diagram will look like and also went through some literature review. Design: The idea of the circuit diagram was gotten while surfing the internet. Construction: A via-1 v AC transformer is used, the v section of the transformer is solder to the ever board and a bridge rectifier is fixed to the wires on the board, the filtering capacitor (puff) is connected to DC output of the rectifier, then a voltage regulator (LAMELY) is connected to the output of the rectifier, this steps completes the power supply.