Memorandum

To: Engineering Department

From: Jesse Goodall

Date: 9/26/2006

Re: E90 Project Proposal due Friday 9/29/06

Overview

Recently with the increasing usage of personal computers, the control of household electronics and appliances is becoming increasingly common. Audio, television, business, webcam security, and even telephones are becoming computerized. All of these are ultimately controlled by a source of power. The power supply itself is not often computer controlled. This project proposal is to research and implement a power supply such as a power strip that can be programmed and controlled using a computer.

Objectives and Benefits

The project would involve background research on benefits, costs, human interfaces, and construction. The goal is to produce a power source for one or more devices which can be programmed and which would be inexpensive and user friendly as to be a consumer product. Applications include controlling lighting especially for when a house is vacant to simulate occupancy and avoid robbery of the house and controlling lighting for entertainment such as synchronizing it with music or switching a set of multicolored lights. The device could also be used to switch on power for electronic equipment at regular intervals such as radios, computers (for use with remote boot), speaker systems, battery chargers, fans or portable hvac equipment, dehumidifiers, or kitchen appliances. It could be used to save energy during the night when devices are not being used, for security to stop people from turning on equipment outside of business hours or when kids are around, or to control things remotely. For many of these applications this is an alternative solution. For instance a lot of equipment now features sleep modes which may be more effective. Controlling power could also have repercussions including safety.

Modularity and Feasibility of Design

This project can be completed in multiple steps to ensure that a workable solution is achievable

1. Background Research
2. Power supply construction
3. Direct control (using a computer or otherwise)
4. Direct link programmability (eg serial connection)
5. Remote programmability – radio transmitter, Ethernet line, infrared
6. Web programmability – independently hosts an interactive webpage or more likely a webpage on a server can send programs to the controller or control it in real-time