Abstract

The demand for electrical energy is steadily increasing, and the buildings sector represents one of the largest energy end use. The larger amounts of that energy are wasted due to unnecessary heating and cooling. Several studies have shown that the major reason for this behavior lies in poor controls and the lack of feedback information. In this paper, a new management system is designed and constructed in order to perform saving the electrical energy. This system consist of an Arduino microcontroller with various sensors such as a temperature sensors, simple RF modules as well as actuators to control the air conditions. The principal work of this system is based on measure the temperatures of several rooms in the smart home, and then send these information wirelessly to main control device which employing better controls and feedback information to turns on only one air condition in one room at each time to save the electrical energy. The simple measurement shows that using the suggested system can save the electricity cost for every test case.


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**Index Terms**

Computer Science  
Circuits and Systems

**Keywords**

Smart home; Temperature sensor; RF module; actutars.
Design and Implementation a Smart Energy Saving System using an Arduino and RF Module