SMART DIGITAL DOOR LOCK FOR THE HOME AUTOMATION

Mrs. Jigyasha Maru, Dept. of Electronics and Communication Engineering

Dr. C.V. Raman University, Bilaspur

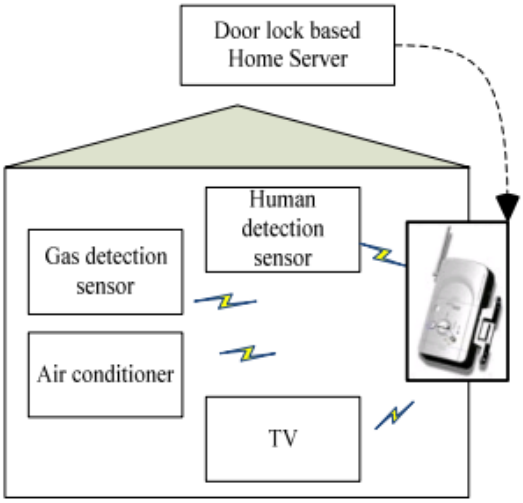
Abstract

The paper proposes an intelligent digital door locking scheme for home automation. A ZigBee module is integrated in the digital door lock in our suggested scheme and the door lock acts as a key primary controller for the general home automation scheme. Our proposed system is technically a network of sensor nodes and actuators with a digital door lock as that of the base station. It also enables users to monitor the condition inside the house remotely via the Internet or any other public network.

Key words: digital door locking, home automation, sensor nodes.

Introduction

The home automation system is a computerized, smart electronic device[1] network intended to monitor and regulate a building's home appliances and lighting systems. It enables users to regulate and control consumer electronics remotely through external networks such as the Internet. Home automation is the developing field that has attracted both business and research attention. Fig. 1 Shows a smart digital door locking[2] system. The novel approach to incorporating home security with home automation is being developed. The system uses We took ZigBee[3], [4] as the backbone. We implement a home automation system based on a digital door lock that takes advantage of ZigBee sensor network's full capacity by integrating home security with home automation.



Methodology

The Smart digital door lock is a system in which several devices are monitored and controlled at home. Our intelligent digital door locking system works over the network of wireless sensors. It is a network of digital door lock sensor nodes as sink node as shown in Fig.1. You can divide the intelligent digital door locking system into five components: The motor control, the sensor module, communication module, the IOT module[5] and the control module. The control module is made up of MCU integrated in the digital door lock, the system's brain. The engine module controls the locking procedure. The communication module is for device-to-control module communication. The user can use the IOT module to access the gate lock system. The IOT module involves RFID reader and authentication digital dialpad, TFT Touch LCD for individual device control and display of appropriate data. Once the system authenticates the user, from the main control panel, the user can monitor and control the home appliances. The door lock is fitted with camera module, microphone and speaker to interact with the visitor. On both sides of the gate, the touch LCD is given. Through these devices, users can easily monitor and interact with visitors on the other side of the door.

Conclusion

The paper proposes a ZigBee-based novel home automation system that integrates home security with home automation. Through the digital door lock, our proposed system exploits the full capability of the ZigBee to manage and control home environment and condition. As the suggested

system is constructed over a wireless sensor network, it is a cost-effective, versatile and easy to install system without any complexity such as careful planning, cabling and design works.

References

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