

ZigBee Based Home Automation System

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Abstract

This paper presents the implementation of a home automation system using the microchip PicDem Z demonstration kit. The architecture of the Microchip boards is based on the PIC18F4620 microcontroller, which has been programmed according to the network configuration, using the microchip ZigBee-2006 residential stack protocol. In terms of topology, the network consists of a central node (coordinator) which controls a terminal device (Reduced Function Device – RFD). The network coordinator receives commands using the serial interface RS232, from the Freescale i.MX53 Quick Start Board (QSB). Using a web page, the user can read the temperature from a sensor mounted on the RFD, can also turn on and off the build-in leds from the RFD as well as from the coordinator, and can control the state of the relays mounted on the RFD. These relays can be connected to ventilation, heating or other devices in the household.

Biography

Tița-Ramona ROMAN received the B.Sc. in Electronics, Telecommunications and Information Technology in 2013, currently being enrolled as a M.Sc. student in Telecommunication and working as a Software Developer Engineer at Continental Automotive. During the past year she has proven her affinity for embedded systems, deploying a diploma thesis and being involved in internal high level projects at Continental.

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