VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELGAUM

PROJECT REPORT
On

"Zigbee Enabled Power LED Dimming Control Thermostat Application"

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ABSTRACT

Control of electric appliances and monitoring of sensors is usuallyaccomplished using wires, the exception being devices or sensors that employ infrared(IR) or non-standard radio frequency (RF) wireless communications. Wire is oftendifficult and expensive to install, especially after construction of a structure iscomplete. Existing wired home automation standards do not offer enough bandwidthfor modern applications and virtually all wireless controlled appliances are noninteroperable.Development of the ZigBee wireless standard based on the IEEE802.15.4 specification promises to remedy these deficiencies.

This project will attempt to implement a ZigBee/IEEE 802.15.4 based wirelessnetwork that enables user control and monitoring of household appliances to create a"smart home". The principle advantage of ZigBee technology is its ability to controlhousehold electronics or monitor sensors that are not connected to the home's ACpower distribution lines. ZigBee is also far more suitable than WiFi or Bluetoothbecause of its low power consumption and simplified software protocol. ZigBeedevices can be designed to last an extraordinary long time on a relatively small DCcharge. Although the concept of the smart home is not new, ZigBee is industry's firstattempt at creating an interoperable wireless standard for smart appliances. The goalof this project is to create a wireless network of controllers and sensors that can bemanipulated or monitored from a Windows based PC or through an internet webbrowser to demonstrate the effectiveness of ZigBee in a modern smart home.