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Power Management System using Zigbee

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Abstract: *The rising global demand for energy, coupled with the need for sustainable consumption, has created a critical need for intelligent power monitoring solutions. Traditional wired systems often lack flexibility, scalability, and real-time communication capabilities. Zig Bee technology, characterized by its low power usage, cost-effectiveness, and robust wireless communication, presents a viable alternative for modern energy monitoring systems. This paper presents the design and implementation of a ZigBee-based power monitoring system capable of tracking real-time electricity consumption, enabling remote data access, and supporting smart energy management. The system integrates current and voltage sensors, microcontrollers, and ZigBee modules to form a wireless sensor network that communicates with a central monitoring interface. Through laboratory testing and real-world deployment, the proposed system demonstrated high accuracy, reliability, and scalability, making it suitable for residential, commercial, and industrial applications. The results highlight the potential of ZigBee-based systems in contributing to energy efficiency and grid optimization in smart environments.*

Keywords: Zig Bee technology

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