**Automated Electric Meter Reading and MonitoringSystem using ZigBee-Integrated Raspberry Pi Single Board Computer via Ethernet**

 **ABSTRACT**

In recent years, automated meter reading systems (AMR) are being utilized in most developed countries like the United States and other European countries. The advantages these electric metering system offers make it a more accurate measuring device than the conventional electromechanical meter reading system being used in developing countries. AMRs capacity to automatically transmit data real time increases the reliability of this metering system, unlike electromechanical meters which occasionally make use of previous readings as a basis of the consumer's current billing. It also puts consumers at a disadvantage as the accuracy of power consumption readings is being compromised. The integration of ZigBee protocol in singleboard computer Raspberry Pi, through the programming language C++, has successfully facilitated the reading and wireless transmission of the voltage or power consumption of the user. Through C++, the raw data transmitted to the coordinator ZigBee the received data to be uploaded in the website.

**Existing Work:**

 Existing System used a complex approach in order to gather data and upload to webpage using MySql database and external web server, Modbus, which are very heavy for the SBC type Board and also no front GUI system was designed for day to day monitoring

**Proposed Work:**

Proposed Work included a small light weight Web server designed on Raspberry pi board, which will make the system to work much faster and based on IoT technology the data will be uploaded to the Internet via Ethernet protocol, which is much faster communication protocol then Modbus.

**BLOCK DIAGRAM**

**Hardware:**

ARM11, Micro controller, Zigbee, Power supply, Current Sensors, Load, Energy meter.

**Software:**

**OS:** Embedded Linux, **Language:** C/ C++, **IDE:** Qt Creator.

**Applications:**

Industries, Home, Offices

**Advantages:**

* Decrease Manpower for collecting the bills
* Accurate Billing