RF BASED AUTOMATIC ELECTRIC METER READING

A Project Design
Presented to the Faculty of the
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Ramon Magsaysay Technological University
Iba Campus, Iba, Zambales

In Partial Fulfillment
of the Requirement for the Degree
Bachelor of Science in Computer Engineering

by
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The study hereto attached entitled

RF-BASED AUTOMATIC ELECTRIC METER READING

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Abstract

Radio Frequency (RF) based Automatic Electric Meter Reading is a remote collection of consumption data from consumers' electric utility meters using radio frequency technologies. This project aimed to develop a device to deviate from the traditional method of manual reading of electric meters in which a meter reader is required to read every meter in its location periodically to record the power consumption manually.

The device is a single phase digital kwh power meter with embedded RF encoder and decoder that utilized RF wireless technology to send power usage reading using encoder back to the energy provider wirelessly. All metered data is securely stored as it is updated in a nonvolatile memory EEPROM (Electronically Erasable Programmable Read Only Memory).

There are two (2) main sections in this project, the transmitter and receiver section. The transmitter section made use of RF transmitter in sending data including previous power consumption, current power consumption and the total power consumption used measured in kilowatt-hour (kWh) which is automatically computed as the difference between the current and previous power consumption used and stored in the microcontroller through its built-in EEPROM (Electronically Erasable Programmable Read Only Memory). The receiver section displayed the received meter readings on the LCD (Liquid Crystal Display). The device has two (2) push-to-on switches; the first one (B1) is for reading and the other one (B2) is for displaying the previous and current power consumption used as well as the consumed power in kilowatt hour (kWh).