

## Wireless Electricity Theft Tracing System

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### ABSTRACT:

In this paper we demonstrate the idea of wireless advance prepaid energy meter. In this paper we provide protection and wireless information to the control room. This paper has two modules. The first module is installed in the house and the other module is installed in the controlling room. The home module connects to the actual meter and reads the proper load that connects to the meter and the reading of the meter is transferred to the controlling room. If any problem such as over voltage or over current, this problem is transmitted to the controlling room by RF communication on the basis of load in the controlling room automatically.

If any such problems of power theft or over voltage or over current then the system automatically turns off the load or provides the information to the responsible person, rings the buzzer.

Wireless power theft monitoring system is an object detection system which uses RF communication module to determine the theft of electric power. The microcontroller compares the present use of power with a threshold value and decides whether it is a healthy condition or electricity theft. Aside from this it comprises several characteristics like bidirectional communication, detection of tampering, tripping etc. This project provides the study and implementation of an electrical energy monitoring system, consisting of an energy meter, a supervisor and manager software, and a database to store the measurements. Physical parts and communication protocols are also recommended. Programming languages are studied and used to evolve the software and database.

The Atmel's 89S52 is a low-power, better-performance CMOS 8-bit microcontroller with 8k bytes of in-system programmable flash memory.

In this project we show how we monitor the reading of the meter by actual meter measurement. In this project we use an innovative technique to measure the unit and load measurement. We use this data to amplify the signal and display this data on the LCD. In this project we use two circuits to show our idea. One is the transmitter and the second is the receiver. In the transmitter circuit we measure the unit and load and transmit the value of unit rate after a few seconds. Unit rate is transmitted on the radio frequency. In the receiver section we receive the data on radio frequency and display the value on the LCD display.

Key Words: ATMEL 80S52, RECTIFIER, TRANSFORMER, RELAY, TRANSISTORS

### 1.1 INTRODUCTION:

The power theft is a non-technical loss during transmission of electrical energy, which is a leading problem in non-industrial countries and it has been very burdensome for the utility companies to trace and get the people amenable for theft. Electricity theft forms a leading chunk of NTL. These losses influence the credibility of supply, appraise load on the generating station, and influence the tariff obligated on genuine customers. This paper discusses the factors that force the consumers to steal electricity. In light of these negative effects, various methods for spotting and estimation of the theft are discussed.

This project submits an architectural design of a smart meter, external control station, harmonic generator, and filter circuit. The impulse of this effort is to detect actionable consumers, and conserve and effectively utilize energy. As well, smart meters are designed to provide data of various parameters related to sudden power

consumption. NTL in the distribution feeder is cipher by exterior control station from the dispatching end information of the distribution feeder

While technology is on the increasing slope, we should also note the increasing evil activities. With a technical point, "Electricity Theft" is a unavoidable crime that is very prevalent, and at the same time it straightway strike the economy of a nation. Our project provides a complete and comprehensive tool to prevent power theft which is very easy to understand and easy to develop. Electricity is the modern man's most adaptable and useful form of energy without which the present social infrastructure would not be feasible. The apprise in per capita production is the reflection of the raise in the living standard of people.

The whole system architecture is based on integrating wireless network with existing electrical grid. This module also incorporates different data aggregation algorithms and proper solutions needed for the different paths of the energy distribution system.

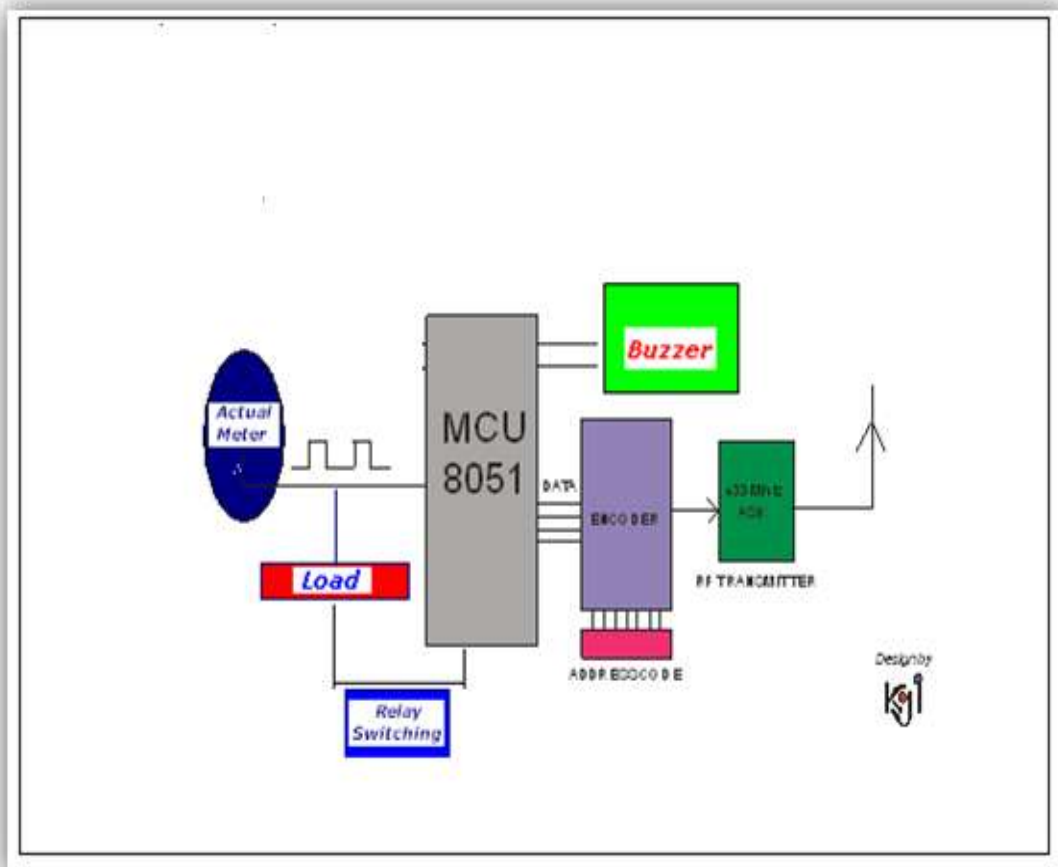
**OBJECTIVE:**

The objective of the project is to identify the methods for detecting power theft.

The power theft is to be

- a> Detected
- b> Located
- c> Communicated to the respective authority.

**TRANSMITTER:**

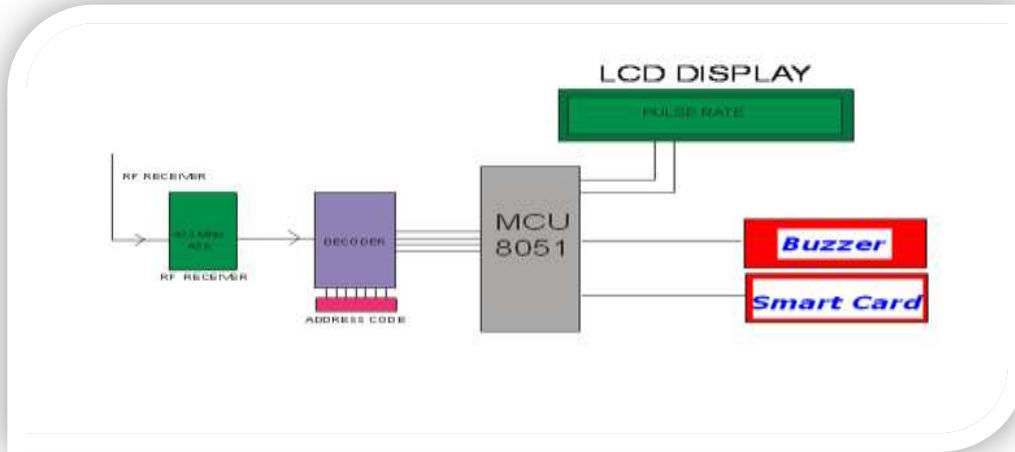


**Fig: circuit diagram**

**TRANSMITTERS ACTUAL DIAGRAM:**



**RECEIVER SECTION:**



**FIG: circuit diagram**

**RECEIVERS ACTUAL DIAGRAM:**



**Application:**

- a>For taking reading of voltage,current,instantaneous power and total power consumed.
- b>To send data automatically whenever required by substation.

**FUTURE SCOPE:**

- In future all the energy meters are digital in type where it is free from magnetic part ,so it is easy to implement this method ,
- Instead of implementing this method in individual houses we can implement it for a group of houses or for one street,
- No need to take regular reading of meter by a person from electrical department so it reduce the cost of a person and remote control and monitoring of house electrical meter ,
- All data of electrical power is easily sent to the local substation or control room of the electricity board,
- Every street every house monitoring is able to record and analyses easily with this system.

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