

---

## ETHERNET BASED HOME AUTOMATION

### DESCRIPTION:

The [Ethernet standards](#) comprise several wiring and signaling variants of the [OSI physical layer](#) in use with Ethernet. The original [10BASE5](#) Ethernet used [coaxial cable](#) as a [shared medium](#). Later the coaxial cables were replaced with [twisted pair](#) and [fiber optic](#) links in conjunction with [hubs](#) or [switches](#). Data rates were periodically increased from the original 10 [megabits](#) per second to 100 [gigabits](#) per second. In our project we can simply use it for transmitting data to embedded web server.

The project is designed to provide automation in homes. The owner of the house is able to access the web server throughout the internet. From that server he can directly control the appliances of his home. The server can be accessed from anywhere on earth from the world wide web.

The micro controller is interfaced to the Ethernet modem and the loads are interfaced to the micro controller. The loads are interfaced to the micro controller through relay driver circuit. This driver circuit switches the loads depending on the micro controller's signal. When the ethernet modem receives the command from the client then it sends signal to the micro controller then the controller sends signal to the driver circuit so that the loads are ON or OFF depending on the owner's command.

This server has a password to access the page so it cannot be accessed by other persons.

In this prototype model step-down power supply circuit is used. First from 230Volts AC is converted to 12V AC by using a step-down transformer. Then a 1000uf capacitor is used to convert it to pure 12V DC. 7805 will convert the 12V DC supply to 5V DC along with a 100uf capacitor. This 5V DC is used for all components like microcontroller, inputs and outputs.

---

## **TECHNICAL SPECIFICATIONS:**

### **HARDWARE SPECIFICATIONS**

- Micro controller :
- Crystal : 11.0592 MHz
- LED : 5mm Red LED
- Ethernet modem
- 12V relays (Electro mechanical type)
- loads
- Basic GPIOs

### **POWER SUPPLY**

- Transformer : 12V step down
- Filter : 1000uf/25V
- Voltage Regulator : 7805 / 7812



**EBREAKERS**  
Robotics Research & Technologies

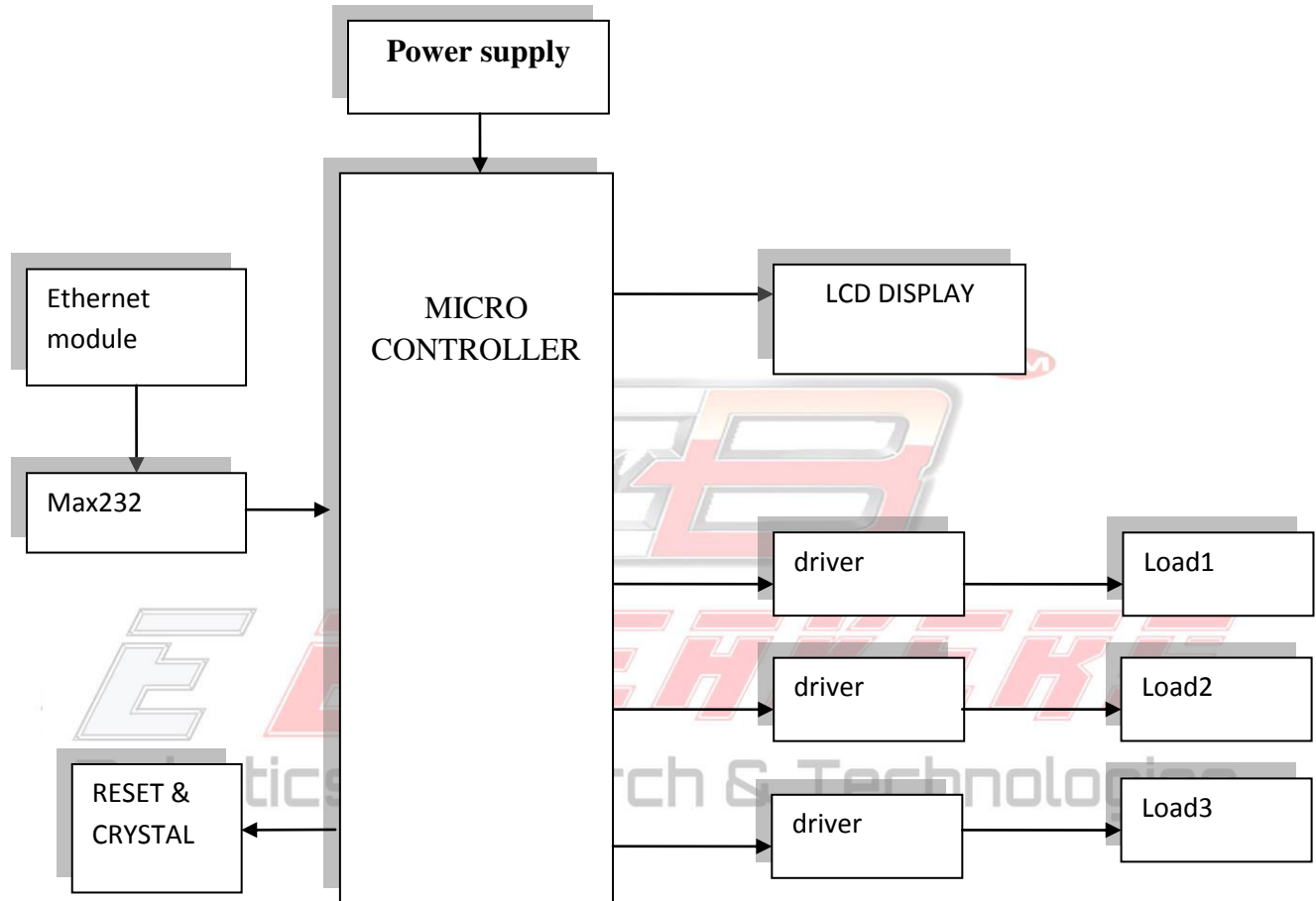
### **SOFTWARE SPECIFICATIONS**

- Keil IDE
- Proteus VSM
- UC flash

### **APPLICATIONS**

- Home appliances
- Industrials

## Block diagram



### POWER SUPPLY BLOCK DIAGRAM:

