



## PRIORITY BASED SUPPLY SELECTION USING PIC MICRO-CONTROLLER

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### ABSTRACT

There are many supplies available at same time but we need to select required supply only in this project from 4 Different Sources Using the PIC Microcontroller automatic select the required supply automatically. This auto power supply control system is very useful system for that consumer who want to attains uninterruptible power supply from different four sources such as main supply, solar, generator and inverter. If we see this system at commercial level, then we can estimate that there are so many customers which have the equipment whose requirements is only uninterruptible power supply regularly. Here we are making this auto power supply control system with the help of power electronics components, pic microcontroller and electronic relays.

**Keyword:** PIC microcontroller, Relay, Relay driver, LCD, Switches, LED

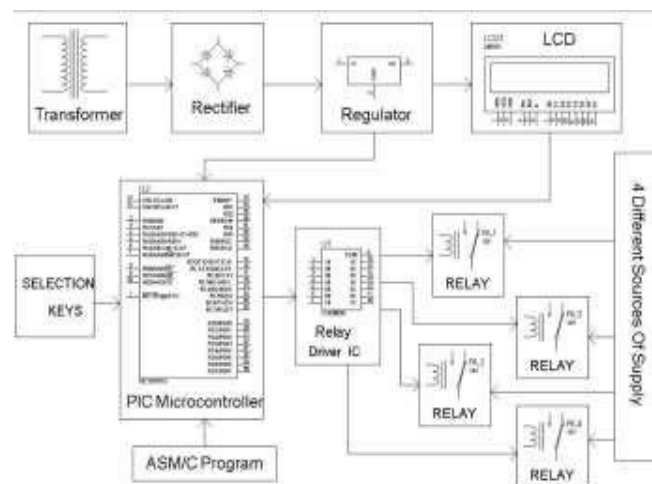
### 1. INTRODUCTION

The main objective of this project is to provide an uninterrupted power supply to a four different load, for selecting the supply source automatically from any available one out of 4 such as mains supply, generator supply, inverter supply, and solar supply. As we know the demand for electricity is increasing day by day because of the industry as well commercial electricity requirement and frequent power cut is the Causing many problems. Industries, hospitals as in houses also cut off problem affected on work can we use alternative arrangement for power source Switches are connected to the PIC microcontroller. A PIC microcontroller is used. output PIC controller is gives to the relay driver IC ULN2003. Output is check using a lamp drawing power from the mains initially. Which supply available are also displayed on an LCD.

#### Hardware components:

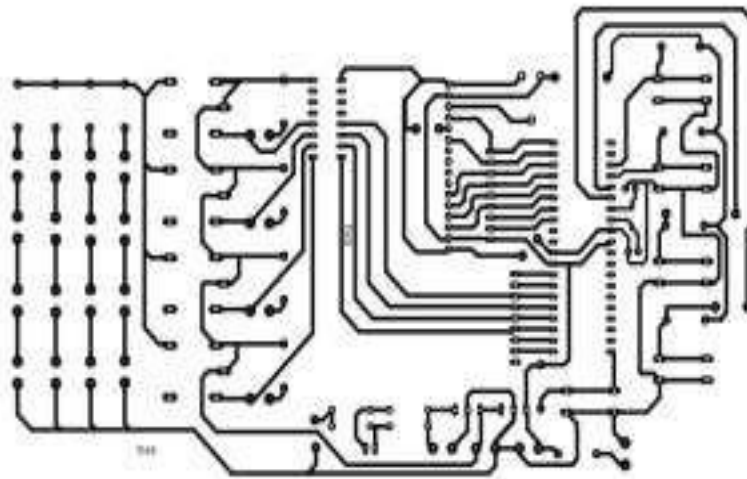
- PIC microcontroller
- Relay
- Relay driver
- LCD
- Switches
- LED

#### Block Diagram



- **Transformer** is thus available. In This project as input signals used in this project the transformer is used for connecting this system directly to the 220V ac. Used steps down the 220V ac into 12V ac. It consists of two winging's and work on the principle of mutual induction

- **Bridge rectifier:** used this auto power supply control system, the bridge rectifier is used for converting the 12V ac voltages into dc voltages for supplying the power to the other electronics components which are used in this project.
- **Voltage Regulator:** In this auto power supply control system project, the voltage regulator is used for regulating the 12V dc voltages into 5V dc voltages for supplying the power to the electronics components which are used in this project like LCD display, PIC microcontroller and relay driver IC. Selection.
- **Keys:** keys are used in this auto power supply control system Project the selection keys are the basically push buttons which are used or checking the working function of this system.
- **PIC Microcontroller:** In this project the Pic microcontroller is used for the auto selection of the available source. using the micro c software, it is programmed in c language output of pic It is interfaced with LCD display and relay driver IC. For the drive output load.
- **Relay Driver:** Relay Driver IC used in this project for driving the load relays relay receives the output signal from microcontroller for shifted the load on another alternative supply source. Load used in this auto power supply control system; the lamp is used here as an output load for demonstration purposes.



### PCB layout

- **ADVANTAGES**
  - a. very low Installation cost
  - b. No person is required to operate its Fully automated
  - c. Most useful in hospital as well

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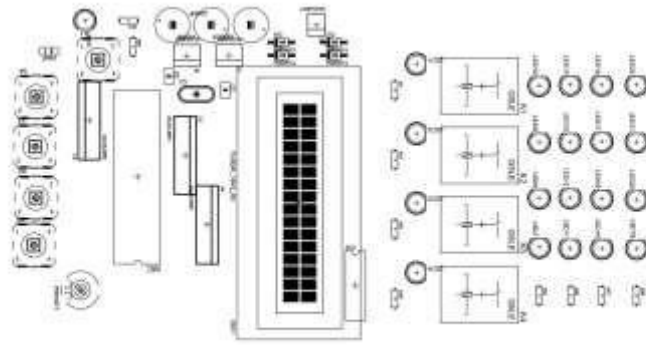
## 2. APPLICATION

The main application of this project is to provide priority wise power supply to a load, by selecting the supply source from any available one out of 4 such as: mains, generator, inverter and in the absence of power supply

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## 3. CONCLUSION

In this project "Priority based supply selection" including four sources Solar supply, Main supply, Generator supply, and Inverter supply, first priority is given to Solar because it free of cost. This project is useful for Residential, Commercial and Industrial application. Automatic change over switch with generator shut down facility has been designed to help man reduce the stress and loss of time associated with the starting and shutting down of the alternative sources of supply. this project also used to the entire field where electricity is highly needed and even to the small and medium entrepreneur that the automatic change over switch with generator shut down facility will help them.



**PCB Seles screen**



**Actual Project**

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#### **4. REFERENCE**

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