

Bluetooth Based Auto Power Supply Control From 4 Different Sources Using PIC Microcontroller

<https://www.youtube.com/watch?v=kcXRLkSLd7Q>

The main scope of this project is to ensure the consumption of the power supply from mains, generator, inverter and solar sources, optimally by using an appropriate programmed microcontroller in the most effective way. Emergency power systems are the types of systems that may include lighting, fuel cells and other apparatus, to provide backup power resources in crisis or when the regular systems fail. They find uses in a wide variety of settings from residential homes to hospitals, scientific laboratories, data centers, telecommunication equipment and modern naval ships. Some homebrew emergency power systems use regular lead-acid based car batteries. Reduction of the system's power consumption extends the battery life, reduces system temperature and the system's fan noise as well. The Power consumption can be greatly improved from a stock distribution configuration to a fine-tuned system. The main objective of this project is to provide uninterrupted power supply to a load, by selecting the supply from any source out of 4 such sources: mains, inverter, solar source and generator automatically in the absence of any of the source by using Bluetooth Mobile application.

When any source selects the user from mobile application, this data received by HC-05 Bluetooth module and fed as same input to the Microcontroller. The commands of the microcontroller are fed to the relay driver IC, which switches appropriate relay to maintain uninterrupted supply to the load. It is indicated by using a lamp which fed through a single power supply from the mains initially. To achieve this task microcontroller loaded program written in Embedded C language.

The main blocks of this project are:

- ☐ PIC Microcontroller.

- ☐ Reset button.
- ☐ Regulated power supply.
- ☐ Relays with driver.
- ☐ Battery.
- ☐ Generator.
- ☐ Mains.
- ☐ LCD display.
- ☐ Solar.
- ☐ HC-05 Bluetooth.

Software used:

1. PIC-C compiler for Embedded C programming.
2. PIC kit 2 programmer for dumping code into Micro controller.
3. Express SCH for Circuit design.

Block Diagram:

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