

Solar Based Android Controlled Load with Inverter System.

About This Project:

In this Project a solar powered Based Android Control Home Automation with Inverter is proposed. We designed this model considering low cost, reliability, alternate source of electric power and android control. Home Automation is undeniably a resource which can make a home environment automated. A power inverter, or inverter, is an electronic device or circuitry that changes direct current (DC) to alternating current (AC). The inverter does not produce any power; the power is provided by the DC source. In this project we developed a Solar Based Android Controlled Load with Inverter System. In this project we have used Arduino Nano for controlling the whole process of this project. And a Bluetooth module is used for controlling the home appliances wirelessly. Home appliances will turned ON and OFF when user will touch button in the Bluetooth mobile app in Android mobile phone. To run this project, first we need to download Bluetooth app form Google play store. We can use any Bluetooth app that can send data using Bluetooth. Now, when we touch any button in Bluetooth controller app then Android phone sends a signal to Bluetooth module, after receiving this signal, Bluetooth module sends the received signal to the Arduino and then Arduino reads it and compare it with predefined value. If any match is occurred then Arduino performs relative operation. Same operation will performed each time when button pressed. Circuit connections of this project are very simple. Bluetooth module's Rx and Tx pins are directly connected to the Tx and Rx pins of Microcontroller. Four 5 volt relays are used as a switch for turning on and off the home appliances running on AC mains. And a relay Module used for driving loads. Fan, Light and TV are connected at Arduino pin via relays. Our project's main power comes from Solar Panel. Battery Charging via Power Charger Circuit from Solar Panel. When the battery is fully charged, the voltage is being converted into an AC current through an inverter circuits. At last this ac current convert high voltage by a step up transformer & it's through a load.

Block Diagram:

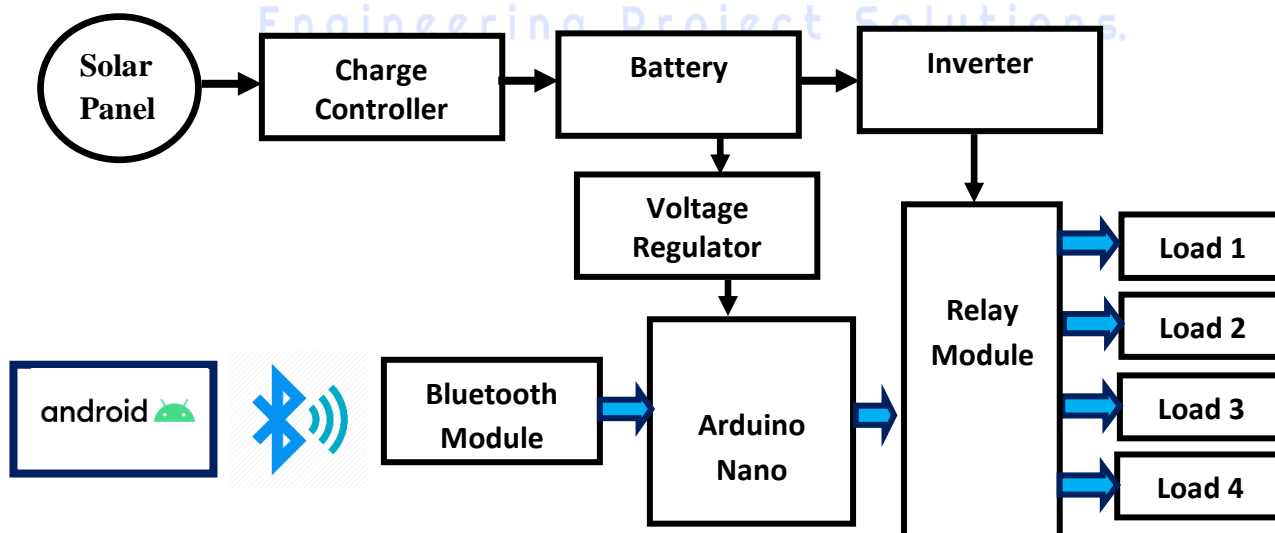


Figure: Block Diagram of Android Control Smart Home Automation.

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Required Instrument:

- Arduino.
- Bluetooth Module HC-05.
- Solar Panel.
- MOSFET.
- CD4047 IC.
- Relay.
- Battery.
- Transistor.
- Transformer.
- Diode.
- Capacitor.
- Voltage Regulator.

Advantages:

- The main advantage of “Home Automation through Android Mobile” is that the helpful for “Physically Challenged and Disabled People”.
- Provides Smart Home.
- Renewable Energy.
- Provides safety from electrical power short circuits while using conventional wall switches to operate loads.
- Home automation system Provides many facilitates & more security.
- Save a lot of time to operate from remotely without wasting time.
- Fan, Door Lock, Light, & Switch can be operated.
- Prevents wastage of energy.
- No need to carry separate remote or any other controlling unit.

Applications:

- Home Automation – This project can be used to control various Home Appliances.
- It's Can be widely used in rural aria.

N.B: Any modification of this project can be done as per your requirement. We will make the project according to your needs. Contact us with your any innovative engineering projects idea. We will help you to implement your project.

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