

SOLAR TRACKING SYSTEM USING LDR

DESCRIPTION:

The project is aimed to design an automatic solar tracking system which is very useful in industrial environment to gain the economical benefits of power consumption. Till now in shopping malls, theaters and House appliances and conference halls and at any another places they are using the source like generators along with the main power supply, but they are expensive. That's why by using the solar power we can generate power and as it is a natural power, there is no reduction in the source of power production and also no power wastage in this system.

The project is designed in such a way that the 8051 micro controller is interfaced to DC motor to which the solar panel is connected. And two LDRs are also interfaced to the controllers which are arranged in 2 different directions on an arch running from east to west. The controller is programmed in such a way that, when the power is ON, the motor rotates through some angle depending on the activation of particular LDR. For example if the LDR in the east direction is activated, the solar panel rotates to the east and stops, so that the solar power can be absorbed through the panel. Thus optimum power capturing can be acquired.

This project uses regulated 5V, 500mA power supply. Unregulated 12V DC is used for geared motor. 7805 three terminal voltage regulator is used for voltage regulation. Full wave bridge rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Micro controller : AT89x series

Crystal : 11.0592 MHz

DC motor

Solar panel

LDRs

Power supply

Transformer : 12V step down

Filter : 1000uf/25V

Voltage Regulator : 7805, 7812

SOFTWARE:

Keil IDE

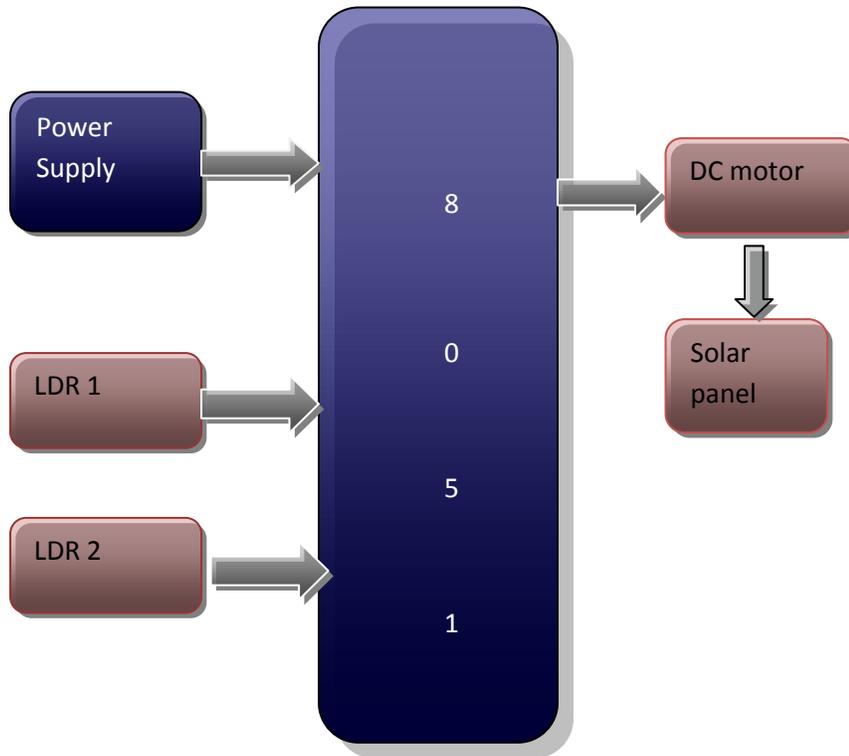
UC flash

Proteus

APPLICATIONS:

- Solar tracking systems

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:

