

BLUETOOTH BASED ENERGY METER USING ANDROID

AIM:

Design and Development of Bluetooth based Energy meter Using Android.

PURPOSE:

Energy meters read power consumption of homes or offices. Existing energy meters are static and we can monitor only with small LCD screens. We can't monitor from remote location. For Building management applications existing energy meters are not suitable. Here we propose Bluetooth based energy meter using Arduino. Using this we can monitor in Android Application

DESCRIPTION:

This project includes Bluetooth (HC-05) module, which is connected to Arduino through UART interface. Energy meter pulse taken by LDR sensor through calibration led. LDR signal amplified and given to Arduino digital pin. Energy meters are non-isolated. So we have to take pulses from energy meter in isolation way. LDR is best source of isolation and there is no electrical connection between controllers to energy meter.

WORKING:

In this project we are going to read pulses of energy meter and according pulses, power consumption units will increment. We have to connect load (AC bulb or other devices) to energy meter. It consumes power and based on power consumes units will increment. For each unit amount will increase. On 16X2 LCD this information will display. Here we have Android Application and it can read units and amount information.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
Bluetooth	:	HC-05
Energy Meter	:	230V AC
Pulse Capture	:	LDR
Power Source	:	12v 2 amp Adaptor

SOFTWARE:

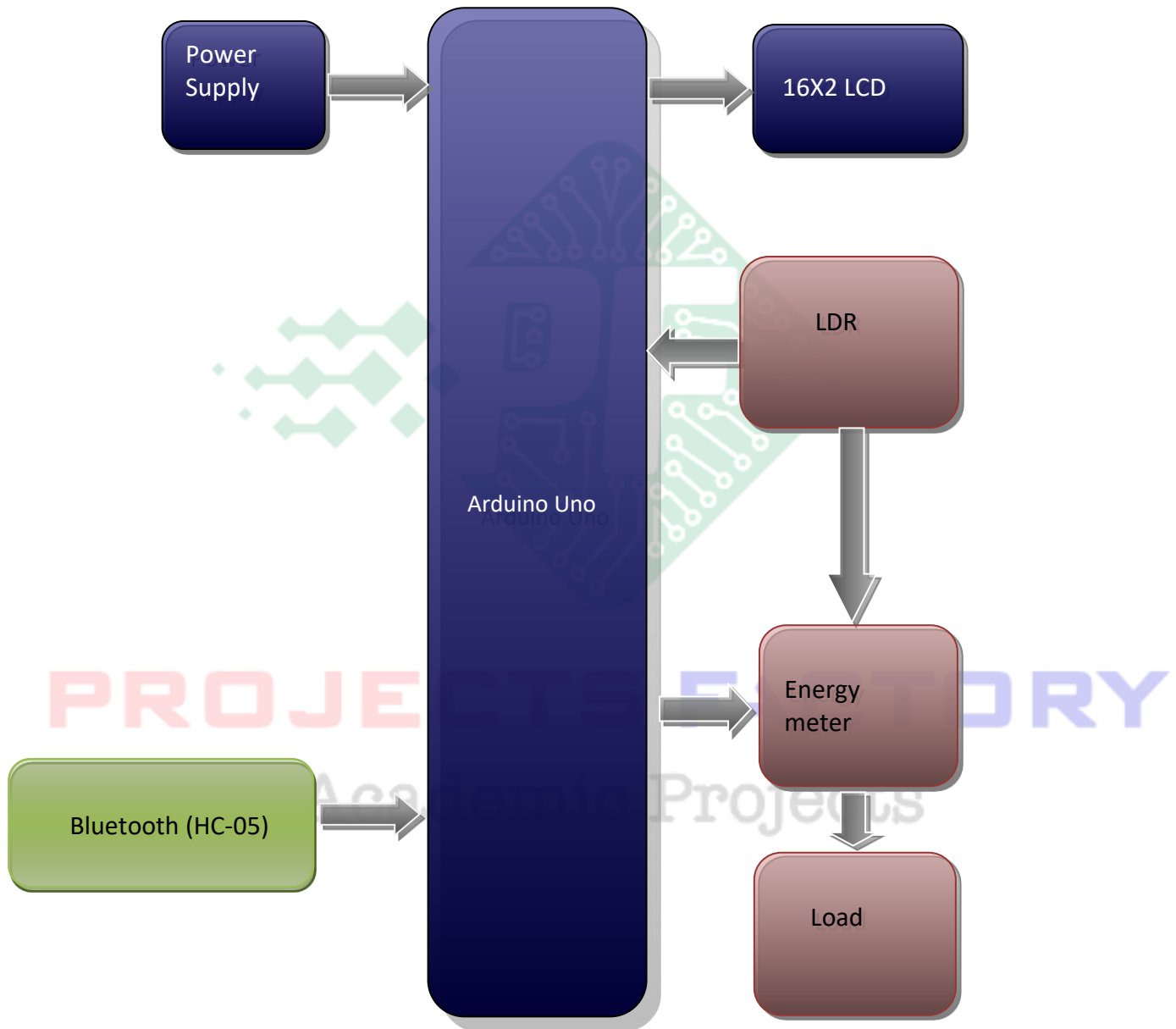
Arduino IDE
Proteus based circuit diagram

APPLICATIONS:

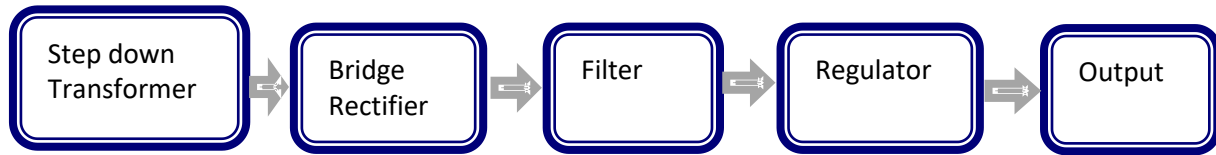
- Electricity Department
- Smart Power Meters

PROJECTS FACTORY
Academic Projects

BLOCK DIAGRAM:

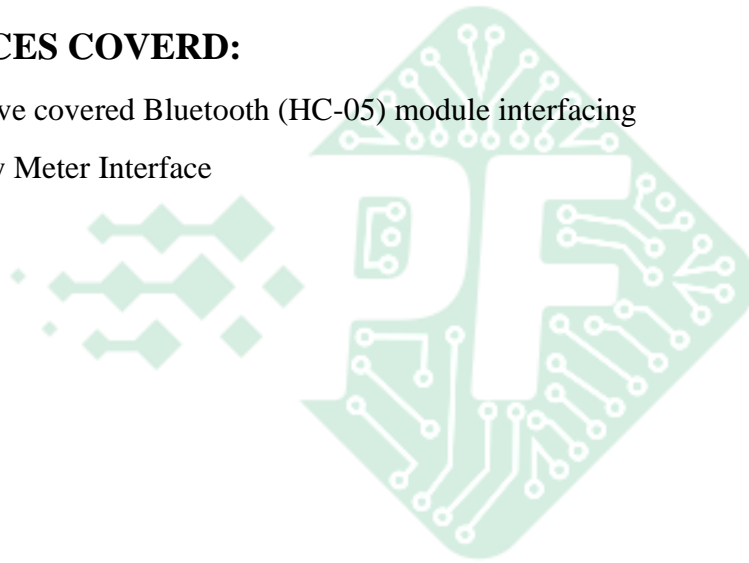


POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERED:

- We have covered Bluetooth (HC-05) module interfacing
- Energy Meter Interface



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