

ADVANCED WIRELESS POWER TRANSFER SYSTEM USING ARDUINO

AIM:

Design and development of advanced wireless power transfer system Using Arduino.

PURPOSE:

Wireless power transfer (WPT) is an advanced power transfer system without any physical wires. It was invented by Nikola Tesla more than 100 years ago. When current passes through a conductor or copper coil with high frequency then it generates electromagnetic field around it. This part we can consider as wireless power transmitter. When conductor or copper coil affected by electromagnetic field, it generates current. This part we can consider as wireless power receiver. There are some smart applications like wireless mobile charger, EV charging and robotics used wireless power transfer system.

DESCRIPTION:

Wireless power transmitter consists of copper coil and MOSFET. MOSFET creates high frequency to copper coil to generate electromagnetic field. At receiver side copper coil converts electromagnetic field to current. This current is our required output power to utilize.

WORKING:

Here, Arduino reads output power which is coming from wireless power receiver. Arduino displays voltage of receiver on LCD display. Using this system we will monitor how much voltage generated through wireless power transfer.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16x2 LCD display
Copper coil	:	25 gauge
MOSFET	:	IRFZ44
Voltage sensor	:	Resistor based voltage divider
Power Source	:	12v 1 amp DC battery, adaptor

SOFTWARE:

Arduino IDE
Proteus based circuit diagram

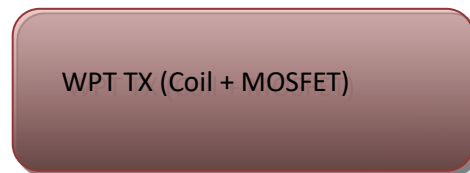
APPLICATIONS:

- Wireless mobile chargers
- Wireless IOT devices
- EV vehicle chargers

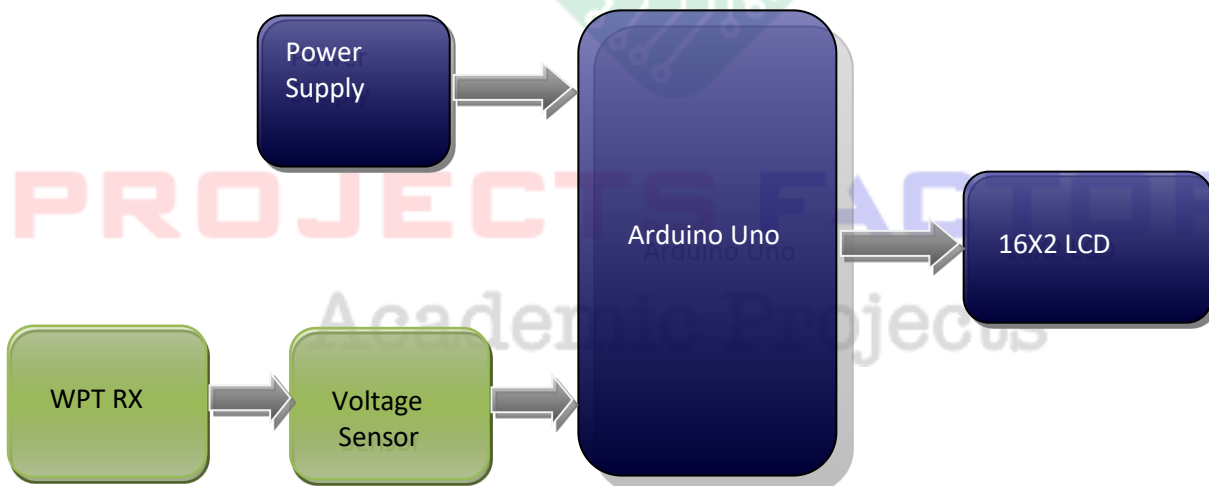
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BLOCK DIAGRAM:

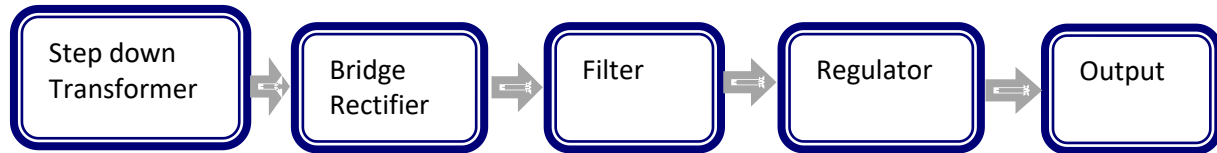
Transmitter:



Receiver:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERED:

In this project we have covered Wireless power transfer module design and Arduino programming.



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