Wireless Power Transmission With Battery Charging

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ABSTARCT:

The vital purpose of this task is to growth a tool for wireless energy transmission. In which the strength can be transmitted wirelessly via multiple copper coils at a distance. The device uses a frequency generator at the transmission surrender of the circuit. Therefore, the modern-day-day-day flows from the coil of the transmitter detail to the coil on the receiver problem related to rectifier and a regulator. The Wi-Fi energy transmission with battery charging makes the use of PIC microcontroller as a frequency generator and additionally makes use of multiple self resonating copper coils, a transformer, filters and a battery with charging circuit. The vital purpose of this undertaking is to make a circuit that could transmit energy wirelessly (through the usage of copper coils) at a distance. Thus the modern-day-day-day flows from the primary coil to the secondary coil via induction and makes Wi-Fi energy transmission

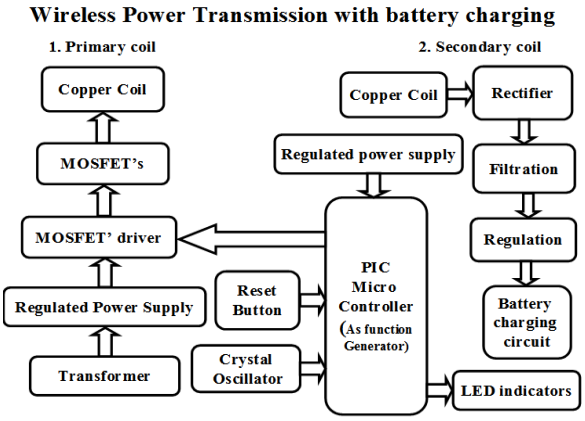
1.INTRODUCTION: Automation has created a bigger hype within the electronics. The most crucial cause for this kind is automation gives greater blessings like accuracy, electricity conversation, reliability and extra over the automated systems do no longer require any human interest. Any one of the requirements stated above goals for the format of an automatic tool. Wireless power transfer or wireless energy is the transmission of electrical strength from a energy supply to an electrical load without a conductive bodily connection. Wireless transmission is beneficial in instances in which interconnecting wires are inconvenient, dangerous, or now not feasible. The trouble of wi-fi strength transmission differs from that of wi-fi telecommunications, which incorporates radio. In the latter, the proportion of strength obtained turns into crucial exquisite if it's far too low for the signal to be incredible from the ancient past noise. With wireless strength, performance is the extra fantastic parameter. A massive a part of the

strength sent out with the beneficial aid of the producing plant want to attain at the receiver or receivers to make the tool rate-powerful. The maximum not unusual form of Wireless Power Transmission with battery charging is finished the usage of direct induction found thru resonant magnetic induction.

1.2 Project Overview:

The venture "Wireless Power Transmission with battery charging" the usage of copper coils, characteristic generator as PIC 16F72, switch, MOSFET's, and managed electricity deliver is a specific venture which could generate strength wirelessly using copper coils.

2.IMPLEMENTATION:

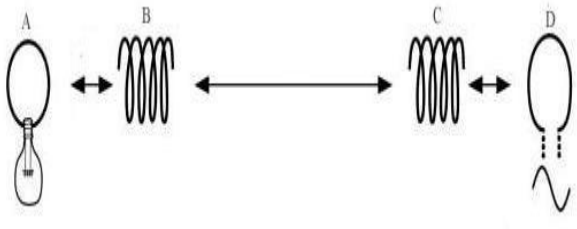


Wireless power transmission devices utilizing electromagnetic induction have been in widespread use. However, there is no frequency selectivity for power transmission between a power transmitter and a power receiver. Therefore, a transmitter may unintentionally supply power to plurality of receivers located adjacent a target receiver at the same time. The present technology has been introduced in view of the above circumstance. Accordingly, there is a need for a non-contact power transmission device capable of supplying power selectively to a specific receiver. According to an embodiment of the concept, an electromagnetic resonance non-contact power transmission device includes a transmitter including a transmitter resonance element having a mechanism for discretely or continuously varying a resonant frequency, a transmitter excitation element coupled to the transmitter resonance element by electromagnetic induction, and an alternating current source for applying an alternating current at the same frequency as the resonant frequency to the transmitter excitation element, and a plurality of receivers each including a receiver resonance element having a specific resonant frequency, a receiver excitation element coupled to the receiver resonance element by electromagnetic induction, and an output circuit for outputting an electric

current induced by the receiver excitation element. According to the no-contact power transmission device, electric power is transmitted selectively from the transmitter to any of the plurality of receivers having different specific resonant frequencies by changing the resonant frequency of the transmitter

PROJECT DESCRIPTION

In this financial damage, schematic diagram and interfacing of MOSFET's, PIC16F72, regulated energy deliver, interfacing with each module is taken into consideration.



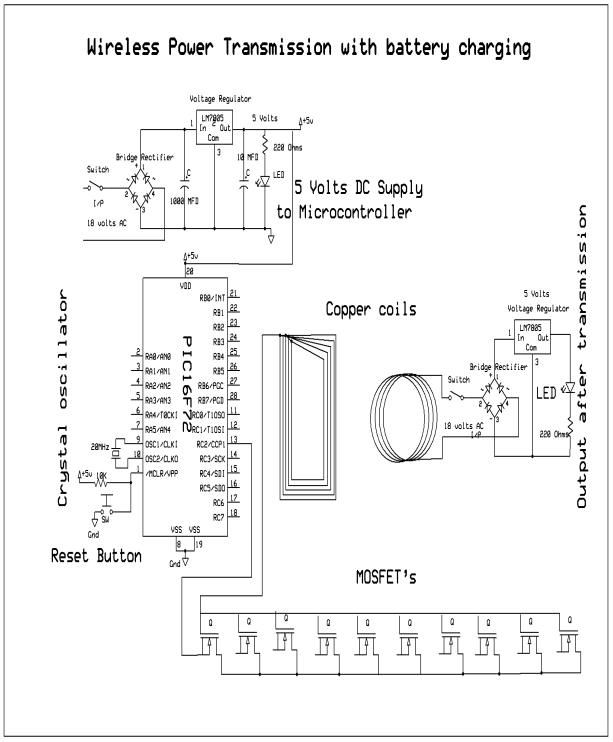


Fig : schematic diagram of Wireless Power Transmission with battery charging

The above schematic diagram of Wireless Power Transmission with battery charging

Explains the interfacing segment of each problem

Working Procedure:

Our check had six essential factors: the coronary heart beat generator, sending coil, receiving coil, rectifier, regulator, and load. The copper coil, illustrated thru item A, is a single loop of insulated copper cord. The

sending coil and receiving coil are illustrated with the aid of manner of way of devices B and C respectively. These coils of copper tubing are made to be precisely the same actually in order that they resonate at the equal frequency. The pick out out-up is item D and is installed in series to a load. The resonant frequency of our coils, at which we get the most power, varies with the gap the numerous coils. Due to this we decided on to apply a frequency generator certainly so we have to modify the frequency as wanted. Several oscillators were constructed to generate advantageous frequencies, but due to the numerous nature of our resonant frequency, the frequency generator like PIC 16F72 as pulse generator changed into used. A frequency generator PIC16F72 microcontroller outputs a sign of the equal frequency because of the fact the resonant frequency of our copper coils; because of the truth we are capable of output most power at this frequency.

The signal generated is located into our riding loop of 10 gauge twine. The loop is truly smaller than our number one coil (approximately fifty-five. five cm in diameter). The AC current-day within the using loop motives the loop of cord to act like a dipole. The usage of loop is positioned parallel to the primary coil, as near as possible. The flux generated with the useful resource of the usage of loop thru the number one coil reasons the coil to resonate. It is important to recognize that the using loop does no longer make the secondary loop resonate immediately. The evanescent waves emitted with the beneficial aid of manner of the primary coil motives the secondary coil to resonate, because of the truth the coils are of the same shape, length, and mass (or close to equal). Both the primary coil and the secondary coil are crafted from copper tubing this is 1/four inch inner diameter (3/eight inch outer diameter). The coils use 60 toes of tubing every, and function about 10 turns (fifty seven .Five cm in diameter). At this element the two coils are parallel to each unique and resonating, the use of super enough electricity to make the driving loop “strength” the primary coil. The distance is some of the number one and secondary coils determines the cost of strength that is transmitted. The energy exponentially decays because of the fact the coils are moved similarly aside. When the secondary coil vibrates at its resonant frequency, a stronger magnetic region is generated. The receiving loop of 10 gauge twine is placed parallel to the secondary coil, as near as possible. The magnetic flux from the secondary coil induces a contemporary-day within the receiving loop, which drives a resistive load.

ADVANTAGES:

1. Efficient design
2. Low power consumption.
3. Easy to install.
4. Fast response.

Disadvantages:

1. Limited distance.
2. No feedback.

Applications:

1. In industries, streets, etc which can be practically implemented in real time.
2. Industrial applications, batteries, vehicles, mining.

The mission "WIRELESS POWER TRANSMISSION WITH BATTERY CHARGING " turned into designed such that wireless power transfer or wireless strength is the transmission of electrical strength from a energy supply to an electrical load without a conductive bodily connection. Wireless transmission is beneficial in instances wherein interconnecting wires are inconvenient, volatile, or now not possible.

CONCLUSION:

Integrating competencies of all the hardware components used have been superior in it. Presence of every module has been reasoned out and located carefully, because of this contributing to the exceptional walking of the unit. Secondly, using in particular advanced IC's with the assist of developing generation, the project has been successfully achieved. Thus the undertaking has been correctly designed and examined.

FUTURE SCOPE:

Our task "Wireless Power Transmission with battery charging " is particularly presupposed to Wireless power transfer or wi-fi power is the transmission of electrical strength from a power source to an electrical load without a conductive bodily connection. Wireless transmission is beneficial in times in which interconnecting wires are inconvenient, risky, or now not feasible.

This challenge effects in a device in which the energy is transmitted wirelessly via copper coils for a distance. The device uses feature or pulse generator as PIC16F72 microcontroller at the transmitter circuit. Therefore, the modern flows from the coil on the transmitter hassle to the receiver hassle coil wirelessly associated with rectifier and regulator.

In this undertaking we are the use of transformer, RPS, Pulse Generator

PIC16F72 microcontroller, multiple copper coils, rectifier, clean out and a load

This machine is incapable of giving feed all over again of the devices being operated. This may be eliminated through using LCD show era, which suggests the voltage measured at the LCD display unit moreover offers the feedback through LED symptoms and signs and symptoms. GSM module moreover can be used to get the comments of the electrical devices through sending the SMS in a particular precise format.

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