

WIRELESS MOBILE CHARGER USING MUTUAL INDUCTION

Mr Shashank Kumar, Mr AniketNeogi, Mr SaketShrivastava, Miss NidhiDashputre

*Assistant professor, Department of electrical and electronics engineering, SSTC, Bhilai (C.G.), INDIA
Under graduate student Department of electrical and electronics engineering, SSTC, Bhilai (C.G.), INDIA*

ABSTRACT- In this day and age, cellphones are one of the fundamental necessities in every single individual's life, as it is the quickest method of correspondence. Battery of an advanced cell is generally thought to be as a significant issue for the makers. Individuals generally gripe about their telephones' battery charging link harm. We might want to present a thought with the charging of cell phones remotely.

Presently as opposed to connecting a PDA, it could accept its power remotely. The Technology for Wireless Power Transmission is in the bleeding edge of electronic turn of events. WPT frameworks are intended to communicate power without utilizing wires more productively than sending it while involving wires. There could be an enormous number of utilizations for remote power frameworks. Consequently, in this work, a remote battery charger has been proposed for PDA charging as would be considered normal to dispose of the relative multitude of problems of the present battery innovation. The upside of this gadget is that it can remotely energize the batteries which can set aside time and cash over the long haul for the overall population.

Key Words: Primary , Secondary , Bridge rectifier, Rectification , Capacitor, AC supply, DC supply

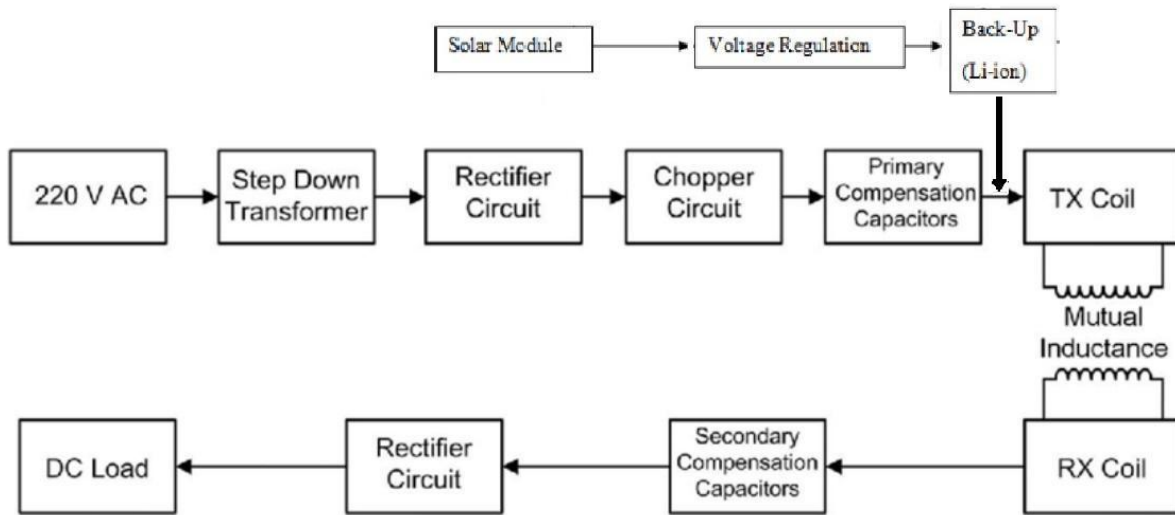
1. Introduction

Today, power assumes a fundamental part in our cutting edge life. As we are utilizing numerous apparatuses utilizing power, it is very challenging to live without power. Customarily wires or links are utilized to convey the electrical power starting with one spot then onto the next. Nonetheless, Wireless Power Transmission (WPT) has arisen as the innovation lately, where electrical power is communicated starting with one spot then onto the next without the utilization of wires. The principal subject behind Wireless power move is to get free of the dangerous utilization of the wires simultaneously to dispose of the trouble in getting sorted out the power cords. For model, the convenient electronic gadgets including cell phones, tablets, PCs, family robots, drones

and so forth typically depends upon the battery power. Because of quick turn of events and huge applications, these compact gadgets are turning out to be important for our everyday exercises. Furthermore, there is generally a rising interest for brilliant devices making them fit for charging without being connected. Subsequently, there is a need for viewing another innovation as liberated from the ungainly links or the chargers.

Remote power transfer(WTP) can be characterized as the electric energy sent to an electric burden from a power source without utilizing an actual association between them. Remote power move is permitting cell phones to be consistently charged advantageously, effectively and without imperative of utilizing a power string. Subsequently an effective strategy for move of electric power is expected to send it from charger to the cell phone across an air hole without using wire or other material.

2. Block Diagram



2.1 Adaptor Circuit

This circuit mostly comprises of step down Transformer, Full wave span rectifier and 5V controller IC (7805). First we want to venture down high voltage to low voltage. Here we have utilized a 9-0-9 1A advance down transformer, which changes 220V AC over completely to 9V AC. In the transformer there are essential and auxiliary loops which move forward or venture down the voltage and current through the no of turns in the curls. The result after the Rectification is throbbing DC , it is a wavering result and has an extremely high wave factor. We needn't bother with that throbbing result, that is the reason we use Capacitor. Capacitors charge till the pinnacle of the waveform and release into the Load circuit when the waveform goes low. So when result is going low, the capacitor keeps up with the legitimate voltage supply into the result , subsequently making the DC. Presently the worth of this channel capacitor should be determined. Here is the equation of capacitance $C = I * t/V$

A voltage controller IC 7805 gives unadulterated 5v DC. Input voltage ought to be 2 volts more than the evaluated yield voltage for legitimate working of IC, implies somewhere around 7v is required, in spite of the fact that it can work in input voltage scope of 7-20V. Voltage controllers have all the hardware inside it to give an unadulterated managed DC. Capacitor of 0.01uF ought to be associated with the result of the 7805 to take out the clamor delivered by transient changes in voltage.

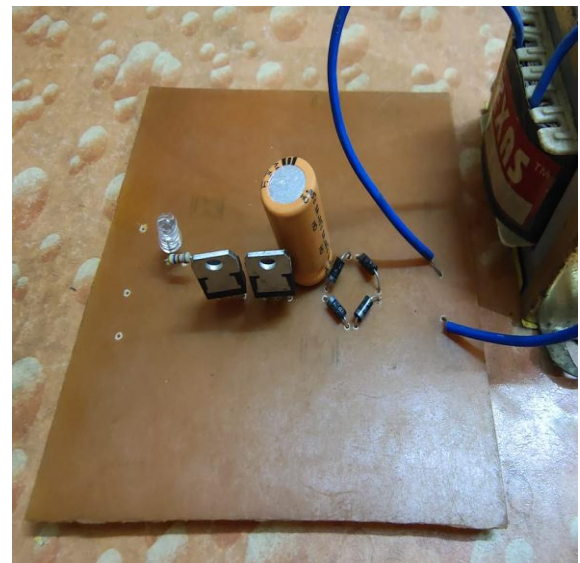


Fig-1:Adaptor circuit

2.2 Transmitter Section

Transmitter area begins with an information AC supply of 230V. Then we have the progression down transformer which is utilized for diminishing the info voltage. In reality, venture down transformer changes over the 230V AC supply into a 12V AC supply.

Then, at that point, the scaffold rectifier changes over the AC supply into DC supply. Justification behind utilizing the extension rectifier is that we want just a DC supply for charging the portable. Then, we have the voltage controller utilized for diminishing the repugnance in DC supply. At last, the

DC supply is sent to the transmitter loop.

The remote power sending loop would

Produce a substituting attractive field in the loop due to enlistment, to communicate energy

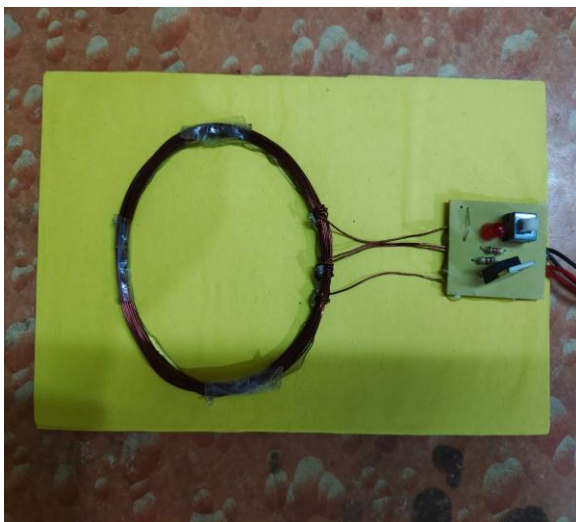


Fig-2:Transmitter circuit

2.3Receiver Circuit

Beneficiary circuit get the attractive field instigated by the transmission curl, which moves through the full scaffold rectifier and convert the AC current into DC current and redress the power and supply to the portable battery the recipient loop comes in contact with the rotating attractive field and incites an exchanging attractive field across its terminal. That substituting AC voltage goes through an extension rectifier structure with diode, that span rectifier changes AC voltage into throbbing DC voltage after that we have two or three capacitor which are essentially go about as a channel that changes throbbing dc voltage into unadulterated dc voltage and after that we have voltage controller to manage DC voltage and get 5v Dc voltage in yield.

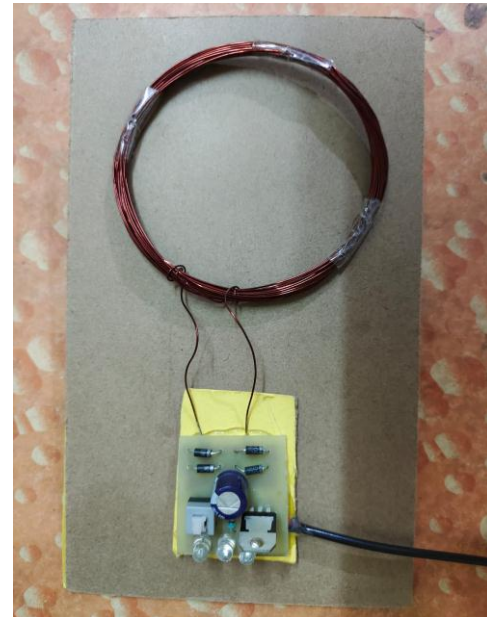


Fig-3:Receiver circuit

3. System Architecture

COMPONENTS	QUANTITY	DESCRIPTION
SOLAR PANEL	1	10-15W
TRANS-FORMER	1	9-0-9 STEP DOWN
BATTERY	1	5000mah
FULL BRIDGE RECTIFIER	2	1000V 1.5A
TRANSISTER	1	BD139
CAPACITOR	10	4.7nf,220nf,1nf... ...
RESISTOR	4	1K,5K,220,265
COPPER COIL	2	10 Turns, 10Turns center tapping
TWO WAY SWITCH	1	6 pin
DIODE	2	1N4001

4. CONCLUSION

The innovation of remote energy move for cell phones has ended up being an advantageous approach to providing capacity to helpful contraptions. Dissimilar to the conventional type of contact charging, which uses links and strings, the new framework is totally remote and hands free.

The use of remote charging frameworks is practically speaking viable with present day innovation which generally centers around the accompanying; performing various tasks capacity, versatility and above all energy-saving capacity. This extraordinary innovation is quickly coming to fruition in the cutting edge world, and there is no question that it will before long be supplanting the conductive framework totally, accordingly carrying a lot of comfort and straightforwardness to the clients of cell phones on the planet.

References

- 1 Xiao Lu, Niyato, D, Ping Wang, Dong In Kim, Zhu Han, "Remote charger organizing for cell phones: essentials, principles, and applications", IEEE Wireless Communications, Vol. 22, No. 2, pp. 126 - 135, April 2015.
- 2 Siqi Li , Mi, C.C., "Remote Power Transfer for Electric Vehicle Applications", IEEE Journal of Topics in Power Electronics, Vol. 3 , No.1, pp. 4 - 17, April 2014..
- 3 Lovitz, L , Vinko D, Svedek T, "Remote power move for cell phone charging gadget", Proc. 35th IEEE International Convention , pp. 141 - 145, May 2012.

BIOGRAPHIES

Mr Shashank Kumar	Assistant professor Department of electrical and electronics engineering, SSTC, Bhilai (C.G.), INDIA
Mr AniketNeogi	Under graduate student Department of electrical and electronics engineering, SSTC, Bhilai (C.G.), INDIA
Mr SaketShrivastava	Under graduate student Department of electrical and electronics engineering, SSTC, Bhilai (C.G.), INDIA
Miss NidhiDashputre	Under graduate student Department of electrical and electronics engineering, SSTC, Bhilai (C.G.), INDIA