

Wireless Power Transmission through Satellite

MOHAMMED KHALID

Department Of electrical engineering, shekhawati group of institutions, sikar, rajasthan

Abstract- wireless power transmission through satellite is a wide range of research fields and technology. In this field, this is a highly researchable technology because of their potential in providing a highly technologies to providing high values to our daily lives. The wireless power transmission will be mandatory to use of their near future and technology enables to transmission of electrical energy from one place to another place easily. The wireless power transmission of electrical energy from a power source to electrical loads without any air gap and without any interconnecting wires and transmission lines. In this paper we study of existing technologies and nearly future trends.

I. INTRODUCTION

(Wireless power transmission) solar energy is needed for the operation of a transmitter. This transmission is limited through an extensive system. The power is transmitted from one location to another, in space and at atmosphere, and is connected to one another. The use of the recently developed lightweight sections has made it possible to efficiently transmit electricity to a well-developed solid state. A 10% to 20% range of efficiency, which should be readily available, but further experimentation still required taking into consideration the possible hazards that it could cause to the human eyes. Compared to laser transmission, micro-transmissions are limited to 87%, developed and high quality, and the limitations reduce the level of coherence for long-term results.

Energy savings during microwaves transmissions are lower than international safety standards (2.45 ghz beam). The electric current generated by the electrical wires is a photovoltaic cells that converts the electromagnetic waves into an electric current. This made it an incredible sight to show the electromagnetic spectrum of electromagnets.

Exposure to multiple power supply units (wpt). Wpt only is the part of this system that allows antennas and

environmental connections and support. The wave beam is expanded proportionally to the propagation distance and a flow power density is increased inversely proportional to the square of its distance. Occasionally wpt will be in some cases, it will be sent here. The wpt system needs to be converted. So benefitable as a result of the amount of electricity consumed, but this is not necessarily the case. The efficiency of wpt systems is the power flow state that is provided by antennas to achieve full power.

Field distribution on the receiving antenna usually is uniform because its size is small comparatively to the width of the beam. This distribution is uniform for wpt systems. It is in the final form and is dependent on the distribution of the antenna in that region.

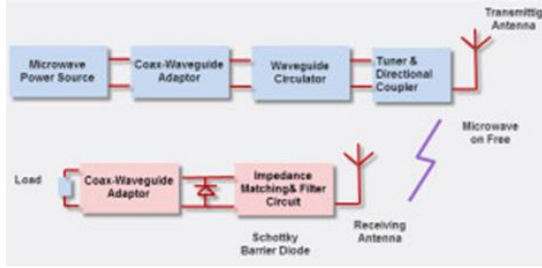
Radiation antenna propagation is used as the center of application of a new object with the applicant near the housing plate and radiation axis. Field has become more widespread with individuals using wpt systems. This allows for efficient transmission and output from the receiving antenna.

II. TYPES OF WIRELESS POWER TRANSMISSION METHODS

There are various types of methods for wireless power transmission: microelectric transmission, inductive-coupling transmission and laser power transmission.

1. Microwave power transmission

William s. Brown is the wpt leader in wpt technology, and is exclusive in design, which can be routed into free space through microwaves. The wpt concept was issued with an functional block diagram, which is shown below.



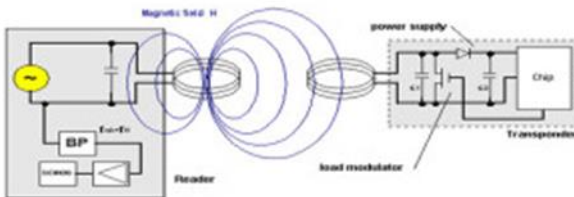
Microwave Power Transmission

The most important block province of the two wpt sections is the transmitting section and receiving section. In the transmitting compartment, the microwave generates microelectronic power controlled by electronic controlled circuits. Power from the waveguide circulator from the power connected to the co-ax waveguide adaptor. The tuner controlled both microbial and microbial advancement. Then, based on the signal propagation direction, the attenuated signals are separated by the directional coupler. The transmitting antennas periodically send space for power.

In the receiving unit, repeating antennas receive the same power while the micro power source converts them to dc power. The circuit identification filter and input are intended to recalculate circuit for scientific research. The dc power taken before the output of such schottky diodes.

2. Inductive coupling power transmission

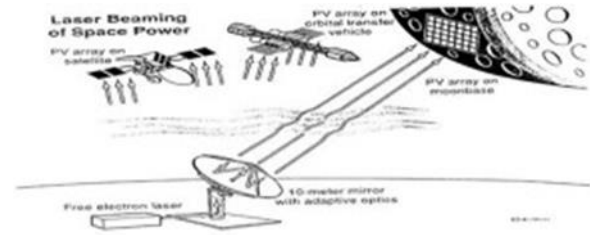
It is an important part of the energy of the metal being gradually replaced by the inductor coupling. Basically, it is used for near -field power transmission. Power is transmitted through two different conductive materials a common example of an inductive coupling power transfer is a normal transformer.



Inductive Coupling Power Transmission

3. Laser power transmission

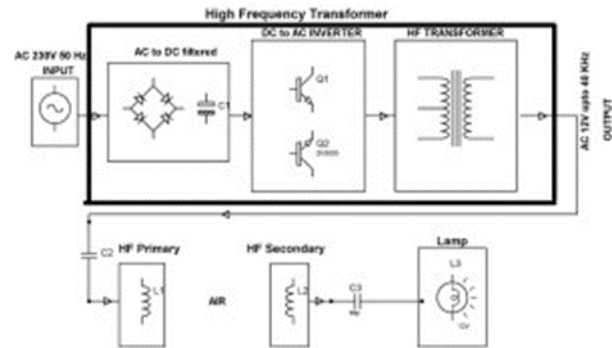
This method of transmission uses a laser to transmit light energy and energy is converted to receiver end. Laser utilized solar, electric, or high beam light sources using a variety of sources. The size and shape of the beam is determined by the set of optics. This laser beam can be used for a photo voltaic cell that uses an internal light beam. For use it uses fiber for transmission.



A LASER power Transmission System

Working example of wireless power transfer

The main objective of this project is to develop a system of wireless power transmission in 3d space.



Block Diagram of Wireless Power Transfer

The hardware requires hf transformers, diodes, rectifiers, capacitors, transformers, lamps, and air-filled inductors.

This 12v circuit requires 20 kHz ac 230v 50 Hz. Ac, connects to 50 Hz br1 and is generated for alternating current through transistors isolated and switching to 40 kHz. The second hijd joins the load for a few seconds.

Power. The secondary coil of the magnetic field has a voltage of 40 kHz, which is about 12 v. However, the efficiency of replenishment is 70% for all types of certified regenerators used in this project.

It is connected to an hf transformer (high independence). The output of which is then fed to a resonating coil which acts as a primary of another air-core transformer. Then, the secondary sides high frequency resonating coil is fed to a secondary side of rectifier to drive a dc load.

III. EVOLVING WPT MARKETS

Commercially available markets have a significant impact on business and business assets. Here are some examples of wpt's future commercial success:

Electrical appliances for electric vehicles on the road, electric devices with a high-speed car mounted on the road or at the location of an electric motor being a road vehicle. There are electrical wiring to reach the roof.

Up to 20 km from where the highest beneficiaries are required to execute long-term contracts, 20 km for the passengers located at several stations that provide passenger service and facilities.

Power sources for electricity generation from distribution lines. Electricity is delivered from the geosynchronous orbit and distant sites in the receiver where needed.

Solar energy satellites on earth or in geosynchronous orbits or satellites to supply the energy needs terrestrial power demands on a global scale.

IV. ADVANTAGES

- Unlimited Energy Resource
- Energy Delivered Anywhere In The World
- Zero Fuel Cost
- Zero Co2 Emission
- Zero Transmission And Maintenance Cost
- Lower Running Cost
- Minimum Environmental Impact
- Efficiency Of Solar Energy Is High Which Collected In Space Through Satellite

V. DISADVANTAGES

- Launching costs is high
- Capital cost even given cheap launchers

- Would require a network of thousands of satellites
- Possible health hazards is high
- The size of the antennas and rectennas is high
- Geosynchronous satellites would add more sections of space
- Interference with communication satellites
- High issue of radiation

VI. APPLICATIONS OF WIRELESS POWER TRANSMISSION

The largest application of application of wpt is the production of power plants with geosynchronous earth orbit and power plans supplying power to power stations. Wpt is made use of moving cards like fuel free electric vehicles, fuel free airplanes, fuel free rockets, and moving robots. Other applications of wpt are solar power sources, rf power adaptive rectifying circuits and wireless sensors. In this manners, anyone can do that using a wireless power transmission system for electrical and electronics devices, charging mobiles, mobile phones that are appearing in a very dangerous way, there are also different once to redesign. We provide you some basic information's about this powerful power transfers, which is related to this article.

VII. HYPOTHESIS

Going into this project, i knew it was already very dangerous. The simple presence of such high voltage made it a dangerous feat, one which is not helped by the fact that the corona discharge (the lightning) is also extremely dangerous and must only be used in areas with no dangers of fire. Also the coil could fry nearby electronics with easy. For a full list of dangers posed by this device, see the construction section. That is why i do not think that i will ever use this in a home setting, but i still believe that the coil will be able to light up a fluorescent bulb from a distance of at least 12 inches.

VIII. CONCLUSION

There is a little doubt that the supply of energy must be increased dramatically in coming decades. Furthermore, it appears almost certain that there will be a shift toward renewable sources and that solar will be a major contributor of renewable energy. It is said

that if the power system works for its entire population and is strong enough, then there are many options for development in terms of supply and expanded delivery. At present the use of space solar energy may seem futuristic, but it is technically feasible and economically viable, given the brief caveats. It has been stated for decades to come. Difficulties in the implementation of space solar energy are significant, but expanding energy supplies will not be easy. This takes need to be addressed by the space, energy and other communities. In conclusion, it should be noted that if we do not develop sustainable and clean power sources and do not strive to end up with current experience and expense, then it will be good for most nations the economic opportunities is, perhaps, unfavorable. Changes in the planetary environment.

REFERENCES

- [1] Waters, r., stålberg, m., svensson, o., gustafsson, s., danielsson, o., strömstedt, e., boström, c., sundberg, j., and leijon, m. "power absorption of a satellite energy converter". submitted to iee journal of oceanic engineering.
- [2] Tyrberg, s., waters, r., and leijon, m. "on the influence of water levels on satellite power absorption: experimental results". submitted to iee journal of oceanic engineering
- [3] Darvill, energy resources: tidal power, (2012). (february, 2012).
- [4] Renewable energy world, satellite energy, (february, 2012).