World Academy of Science, Engineering and Technology
International Journal of Energy and Power Engineering
Vol:8, No:09, 2014

Capacitive Coupling Wireless Power Transfer System with 6.78 MHz Class D Inverter

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Abstract : Wireless power transfer technologies are inductive coupling, magnetic resonance, and capacitive coupling methods, typically. Among them, the capacitive coupling wireless power transfer, also named Capacitive Coupling Wireless Power Transfer (CCWPT), has been researched to overcome the drawbacks of other approaches. The CCWPT has many advantages such as a simple structure, low standing power loss, reduced Electromagnetic Interference (EMI) and the ability to transfer power through metal barriers. In this paper, the CCWPT system with 6.78MHz class D inverter is proposed and analyzed. The proposed system is consisted of the 6.78MHz class D inverter with the LC low pass filter, the capacitor between a transmitter and a receiver and impedance transformers. The system is verified with a prototype for charging mobile devices.

Keywords : wireless power transfer, capacitive coupling power transfer, class D inverter, 6.78MHz
Conference Title : ICEPE 2014 : International Conference on Electrical Power Engineering
Conference Location : London, United Kingdom
Conference Dates : September 26-27, 2014