



DESIGN OF A WIRELESS CAPACITIVE POWER TRANSFER SYSTEM

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Abstract- This paper presents the design of a capacitive power transfer (CPT) system by using the Class-E amplifier approach. The Class-E amplifier approach is chosen to be adopted since it produces high efficiency as close as to 100%, theoretically. Based on the Class-E approach, a design of wireless power transfer system is used to transfer power to a LED lamp. The system has an output around 4.2 watts at a distance of 2 millimeters which transfer enough output power to light a LED lamp. Simulation and experimental results are carried out to verify the high efficiency of the Class-E amplifier. Finally, the design of practical wireless LED lamp is achieved.

Index terms: *Class-E amplifier; capacitive power transfer; ZVS condition; Additional capacitor; LED.*