

High Efficient Wireless Power Transfer Using Cut-off Parallel Plate Waveguide

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Abstract A novel near field WPT system using a cut-off parallel plate waveguide is proposed. The operating frequency of proposed WPT system is in the cutoff frequency band of the parallel plate waveguide and resultant mode is evanescent. As a result, transmitting/receiving antennas are coupled via evanescent wave without radiation and the proposed system enables a high efficiency of the power transfer. Numerical simulation clarifies the performance of the proposed system including high power transmission efficiency and suppression of leakage electromagnetic wave.