

Off-Resonance Frequency Operation of Wireless Power Transfer

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Technology Summary

A power transmission system includes a loosely coupled air core transformer having a resonance frequency determined by a product of inductance and capacitance of a primary circuit including a primary coil. A secondary circuit is configured to have a substantially same product of inductance and capacitance. A back EMF generating device (e.g., a battery), which generates a back EMF with power transfer, is attached to the secondary circuit. Once the load power of the back EMF generating device exceeds a certain threshold level, which depends on the system parameters, the power transfer can be achieved at higher transfer efficiency if performed at an operating frequency different than the resonance frequency.

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