TECHNOLOGY

Wireless Power Transfer Using Superconducting Oscillators

OVERVIEW

The field of non-radiative modes of coupled resonance used for wireless power transfer has been of great recent interest. The transfer of energy over non-negligible distances has the advantage of being impervious to extraneous environmental objects, e.g., ferrous materials. Existing resonant inductive power transfer has provided a transfer of 60 watts at distances exceeding 2 meters with as high as 40 percent efficiency. However, an improved design for wireless power transfer operates at lower frequencies to reduce losses of coils and capacitors in current designs to attain higher efficiencies and greater transmission distances.

This innovative design utilizes a superconductor designed to efficiently distribute wireless power with a greater effective range than existing power transfer designs. For one application, secured portable wireless power transfer may be achieved with greater power transmission in a similar footprint as other devices. In another application, current wireless power transfer systems require the electronic device to be placed on a mat or in close proximity of the charger (approximately 1 meters or less). However, this wireless power transfer device may be placed in a wall of a room or office and still transfer power to devices within the entire room with much higher power efficiency.

For additional information, please contact the Office of Technology Commercialization, University of Maryland College Park, via e-mail at otc@umd.edu or phone at 301-405-3947.

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INSTITUTION

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CATEGORIES

- Power Electronics

EXTERNAL RESOURCES

- US Patent 8,994,221

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