TECH OFFER

Empower Your Electronic Devices with Wireless Charging

KEY INFORMATION

TECHNOLOGY CATEGORY:
Infocomm - Wireless Technology

TECHNOLOGY READINESS LEVEL (TRL): TRL4
COUNTRY: JAPAN
ID NUMBER: TO175312

OVERVIEW

Currently, the practical application of wireless power transmission is advancing, particularly for smartphones, and is expected to expand to more electronic devices. However, traditional magnetic field-based wireless power transmission requires close-range alignment between the transmitter and receiver, meaning devices must be placed in specific locations for charging.

In contrast, microwave-based power transmission enables long-distance energy transfer but is limited by concerns about its effects on humans and interference with other communication devices.

A newly developed electric field coupling-based wireless power transmission technology overcomes these challenges by allowing high-power transmission without requiring precise alignment. This innovation enables flexible power delivery to various electronic devices across broad surfaces, such as desks and floors.

The technology owner is seeking collaboration partners, such as electronic and electric manufacturers, as well as service providers, for consumer or business applications.

TECHNOLOGY FEATURES & SPECIFICATIONS

- **Low-Cost, Large-Scale Planar Element:** By utilizing a new electric field coupling method, a power transmission system can be achieved without the need for complex transmission coils. Thin, flat electrodes made of printed circuit boards (PCBs) are arranged in an array, enabling a cost-effective, large-area planar power transmission element.
- **High-Efficiency Power Supply Circuit:** This innovative circuit technology draws power from the receiver side, enabling power transmission only at the receiver's location. This minimizes leakage to the surroundings and achieves a more efficient power supply compared to conventional electric field coupling methods. As a result, the system can safely transmit large amounts of power.

POTENTIAL APPLICATIONS

This technology serves as a reliable power source for devices that face challenges with charging operations or power cord management.

- **On Desks:** Simultaneously powers multiple electronic devices.
- **On-Site Work:** Enables bulk charging of devices like power tools.
- **Moving Objects:** Supports in-motion charging for robots and AGVs.
- **Office Use:** Provides layout-free power supply for electronic devices and furniture.

Additionally, this technology can be applied in various scenarios that leverage its key features, such as simultaneous power supply to multiple devices, wireless power delivery to moving objects, and layout-free charging.

UNIQUE VALUE PROPOSITION

- The technology allows charging devices to receive power freely over a large area without requiring precise positioning. It enables layout-free charging, is unrestricted by the location of power outlets, and supports simultaneous charging of multiple devices.
- Safe and high-power charging of up to approximately 50W, allowing the charging of devices with various power requirements within the same system. Supported devices include smartphones, laptops, displays, lights, small robots etc.