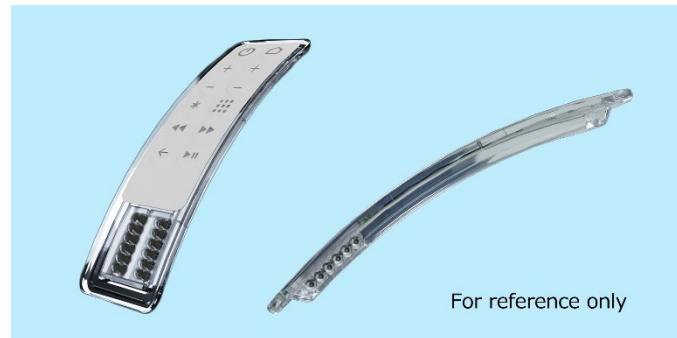


SMK Offers Battery-Free Solution for IoT with Combination of Energy Harvesting and WPT Technologies



SMK Corporation has established the industry's first*¹ hybrid technology that combines two types of power supply systems: energy harvesting technology that converts renewable energy (indoor light, temperature, vibration, etc.) into electricity, and far-field wireless power transfer (WPT)*² technology using sub-GHz microwaves, which is attracting attention as a next-generation energy source. This solution enables battery-free remote controls, sensors, and other IoT devices, and solves the issues of IoT technology such as battery replacement, running costs, and battery disposal. The two individual power supply systems can also be used independently.

In recent years, with the accelerating global efforts toward carbon neutrality, the amount of carbon dioxide emissions is becoming a key factor in market valuation. Using renewable energy through this new technology will help reduce carbon dioxide emissions and will also contribute to raising customers' corporate value.

■ Benefits

- No need to replace batteries, reducing running costs and making IoT devices maintenance-free.
- No need for dry batteries, making devices thinner.
(Reference) Thickness of AAA battery: 10.5mm, AA battery: 14.5mm
- Improved drop impact resistance due to weight reduction by battery-free design.
- Improved water resistance and robustness by eliminating the battery cover.

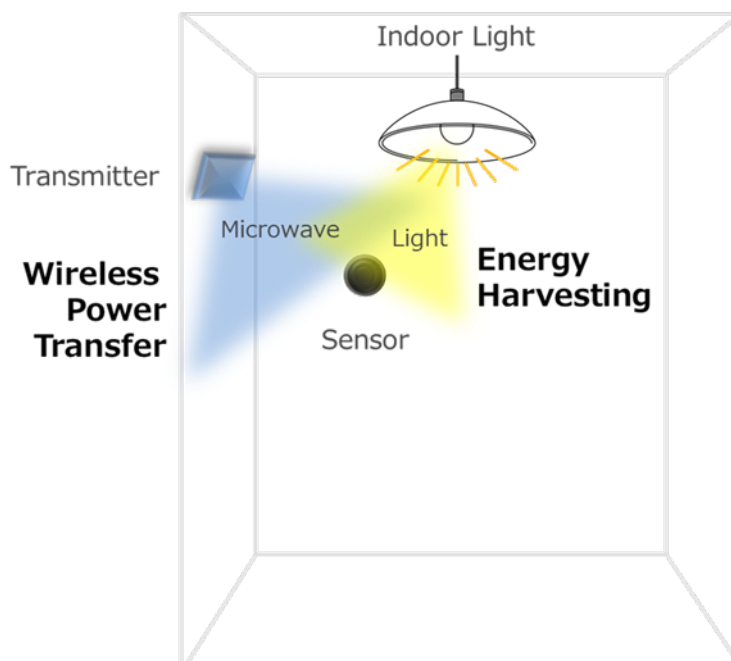
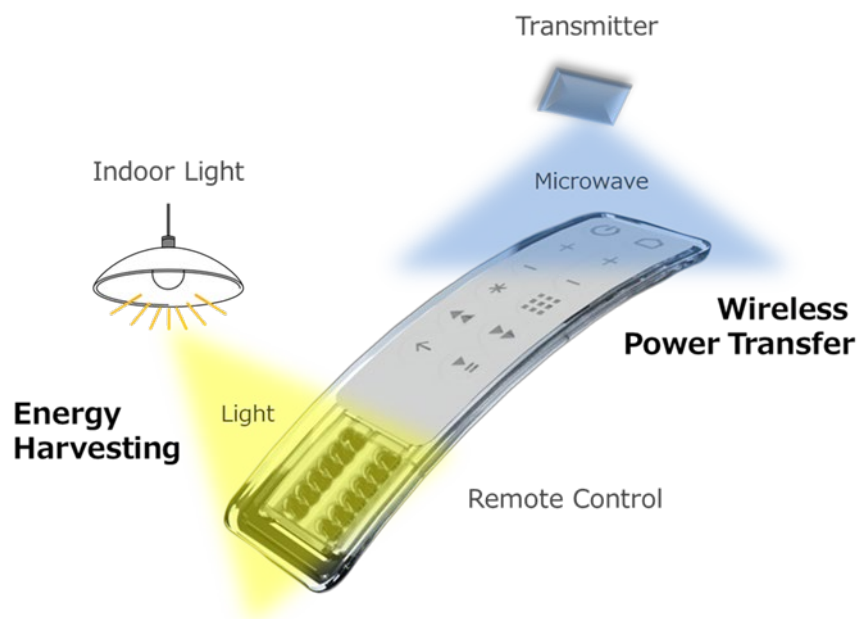
SMK will continue to proactively products and technologies that contribute to the advancement of the IoT society and a carbon-free future.

[Applications]

Remote controls, other controllers, sensor devices

*1 According to SMK's research

*2 Far-field WPT: Different from the proximity (near-field) WPT systems that are already in practical use for charging mobile devices, this system enables power transmission to a distant location (about 5 meters) using radio waves.



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Name	Hybrid technology of energy harvesting and wireless power transfer
Features	<ol style="list-style-type: none"> 1) Combines two power supply system: energy harvesting and Sub-GHz WPT. 2) Eliminates the batteries and battery covers, improving product design flexibility (thin, curved surfaces, etc.), water resistance, and robustness. 3) Contributes to lower carbon dioxide emissions by utilizing renewable energy and eliminating waste batteries. 4) Achieved approx. one-third lower power consumption during communication compared to SMK's conventional products by adopting Atomosic's*³ ultra-low-power system on chip (SoC).
Inquiry	For more information, please contact SCI Division

*3 Atomosic Technologies is a Silicon Valley-based startup founded in 2016 that develops power-saving and long battery life SoCs.