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## ●超音波を使って無線充電するuビームの技術

【New York Times Blog, 2014/08/06】

電力を音に変化し、それを超音波で伝送することで無線充電を可能にする技術を開発した u ビームは 6 日、実際に機能する試作品の開発に成功したことを発表した。

同技術は超音波を受信できるレシーバを携帯端末につけていれば、超音波が届く範囲内で端末を持ったまま動き回っていても継続的に充電が行われることが大きな特長。超音波を飛ばすトランスミッターは厚さ 5mm 以下で壁紙の中に仕込んだり、装飾の一部とすることも可能だとのこと。レシーバは同様に薄型になる。

u ビームは今後 2 年以内に製品の市販を開始する見込み。同社は充電器を使って高い機密性を維持しながらデータを伝送できる手段も発見したことを明らかにしている。

(参考) 本件報道記事

### **Wireless Charging, at a Distance, Moves Forward for uBeam**

By NICK BILTON

LOS ANGELES — When Meredith Perry, 25, started studying astrobiology at the University of Pennsylvania, her career goal was to eventually find life on other planets. Instead, Ms. Perry accidentally stumbled upon something even more exciting: the ability to charge portable electronics, like cellphones and laptops, wirelessly using ultrasound.

To do this, Ms. Perry created a technology that can take electricity, convert it into sound and send that audio through the air over ultrasound. Then a receiver attached to a portable electronic device catches the sound and converts it back into electricity.

The technology makes it possible for a device to move freely around a room, in a pocket or purse, while constantly charging.

Ms. Perry's company, uBeam, announced on Wednesday that it took an early prototype concept of this technology, first developed for Ms. Perry's college

innovation competition, and turned it into a fully functional prototype that the company now plans to build for consumers.

“This is the only wireless power system that allows you to be on your phone and moving around a room freely while your device is charging,” Ms. Perry said in an interview. “It allows for a Wi-Fi-like experience of charging; with everything else you have to be in close range of a transmitter.”

The uBeam charging stations will be thin, measuring no more than 5 millimeters thick. These transmitters could be tacked to walls like wallpaper or made into decorative art to beam electricity to devices. Smartphones and laptops could then be equipped with thin receivers able to convert audio and charge the devices.

The technology could also bring significant changes to how devices are designed: Gadgets that work with uBeam could have thinner batteries and constantly receive power. Battery technology has barely changed over the last few decades, with device makers relying on incremental improvements to battery power, in combination with more energy-efficient electronics.

“If wireless power is everywhere, then the size of your battery can shrink because it’s always charging.” Ms. Perry said. “You’ll never need a cord again, and you won’t need international charging adapters.”

The uBeam products will be on store shelves within the next two years, the company said. Ms. Perry said that the company planned to make two different charging products at first. One will be built for smaller rooms, like homes and offices, and the other, for much larger uBeam chargers, will be industrial-size for stadiums, airports, hotels, conference halls and music venues.

The company also announced Wednesday that it had stumbled upon the ability to be able to send highly secure data through its charging stations. This means that uBeam’s technology could be used for the so-called Internet of Things, where everyday objects are capable of communicating over the Internet.

The uBeam charging capabilities do have some serious limitations, including the power transmitters’ inability to beam through walls. This means that unlike

Wi-Fi hotspots, where a single device can transmit Internet to an entire house or small office, uBeam users would have to buy transmitters for each room.

There is also the question of adoption. Short-range wireless battery charging technology has been around for years, yet people have been slow to add it to their home or office. But uBeam says that will change because its technology can transmit farther distances, and because the company expects to have the transmitters in many places that people visit.

“We’re going to sell directly to consumers, and we’ll sell them to restaurant chains and hotels — we are going to saturate the market with uBeam transmitters,” Ms. Perry said. “In addition to your local coffee shop saying it has free Wi-Fi, it will also say it has free uBeam.”

The company is filing 18 patents related to wireless charging and ultrasound with the United States Patent and Trademark Office. It is also in the process of closing a Series A round of financing, in addition to an earlier \$1.7 million seed round from Marissa Mayer, Yahoo’s chief executive; Founders Fund; and Andreessen Horowitz.

Source: <http://bits.blogs.nytimes.com/2014/08/06/ubeam-technology-will-enable-people-to-charge-devices-through-the-air/>

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