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POWERCAST

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Harvesting RF energy

Posted by: Erica Ogg
January 7, 2007, 11:51 PM PST

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A Pennsylvania start-up says it has the answer to one of the biggest problems in mobile phones: battery life.

After three years of keeping its technology under close guard, Powercast has come to CES 2007 to get consumer and manufacturer attention. Powercast is a radio frequency that is transmitted over a small area, and its energy is "harvested"--wirelessly--to give power to small devices like cell phones.

While it's presented as wireless power, Powercast isn't just a replacement for a universal charger. Instead, it's meant to either continuously charge a battery or replace the need for them altogether.

It works like this: a transmitter can be placed anywhere--in a lamp, for example, that is plugged into the wall and sits on a table. The transmitter in the lamp sends out a continuous, low RF signal. Anything with either AA or AAA batteries set within its range--and equipped with a Powercast receiver, which is the size of your fingernail--will be continuously charged.

"Our solution is, if talk time (on a cell phone) is 5 1/2 hours, by trickle-charging (it) at work, now talk time is 10 hours because the battery never gets to dead," John Shearer, CEO of Powercast, said in an interview.

There are many applications for Powercast, said Shearer, but the company is making the PC peripherals market a priority. Think a wireless keyboard or mouse with no battery, or a hermetically sealed battery that the customer never need access again.

Major CE and IT manufacturers will have to agree to build Powercast capability into their products, and thus far Powercast is revealing only Philips as a future partner. The first Powercast product will come to market by the end of 2007, the company says.

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I have an Alternative to this
Instead of trying to achieve the sort of thing tesla worked why not advance it. You could powercast ion minipulation of molucules that absorb dangerous abient electricity and at the same time are absorbed by a molucule recieve and used to power a nano fuel cell.This way instead of just powering thing at close proximity you could infinitly power anything anywhere.
by wildchild_plasma_gyro (See profile) - March 26, 2007 8:43 PM PDT

Not Green, actually.
This is purely a convenience technology, not an environmental one.

It takes power to broadcast RF signals, and power to run the control circuitry modulating the signals.

The power not harvested immediately is wasted, and the power that is harvested is much less efficient than plugging your mouse in.

A while back some companies (Philips?) came out with induction pads that charged phones placed on them. This wastes less energy than RF, but still only had something like 10-20% efficiency. Which means 80-90% is wasted.

So you as the consumer have to decide - is this convenience (no wires, no effort recharging devices) worth the waste?
by supercatseven (See profile) - March 10, 2007 8:46 PM PST

RF energy density
What frequency(ies) are used,and what is the energy density at 1cm,10cm,and 1m from the source? This question regards both the health hazards and the radio interference produced by such a device, and also relates to the usable distance between the source and the battery whose charge is to be maintained.
by ajkatz (See profile) - February 25, 2007 2:44 PM PST

Is it safe
I haven't seen any data on the health risks of this technology? Is this not akin to living under high tension wires?

by airblaine (See profile) - January 22, 2007 8:23 AM PST

1 comment

very Un-American Response
Unlike the other snooty posts I for one think this is a great idea! This concept reflects a "green" ideal of the way our country should be progressing towards-
by Sparkle7 (See profile) - January 18, 2007 2:41 AM PST

1 comment

Nothing new under the sun.
Once again, Nikola Tesla demonstrated this yonks agao.

Geronimo.
by geronimo1881 (See profile) - January 16, 2007 12:13 PM PST

2 comments

I think my toothbrush does this...
I'm wondering if this is similar to the technology that is used to charge my Sonicare electric toothbrush. The Sonicare is placed into a charger/holder after use but there aren't any direct electrical connections. Works great!
by RenoDavid (See profile) - January 15, 2007 11:59 PM PST

1 comment

what is the effective charging/power radius?
I have few questions

1. think of outdoor or big hall situation: what is the standard effective charging/power radius for powercast? is it possible to reduce or expand the effective charging area to suit room dimension?

2. I understand that powercast if a 1-to-many charger. What is the maximum number of devices can I power simutaneously?

3. Is there a plan for selective charging? Is it possible to setup 1-to-1 or 1-to-selected-few charging? Will it be possible in the future?

4. If there are 10 trasmitters/chargers in the room and only 1 receiver device, what will happen? will the poor little device get overfed and explode?

by superkieu (See profile) - January 15, 2007 11:46 PM PST

Fascinating application, but nothing super new
If, like me, you are old enough to have put together a Radio Shack project radio, you know that the concept of receiving radio frequency energy and putting it to work is nothing new. For about 10 dollars, you would receive components for a powered and unpowered radio receiver. What is new here is that instead of a small speaker at the end of the process, there is a rechargeable battery,

What is striking about the comparison, though, is that the only stations I could receive with the unpowered version of the radio were those belting out tens of thousands of watts of energy--energy that was expensive for the respective radio stations and considered unsafe close to the towers.
by Charlie_V (See profile) - January 15, 2007 8:04 PM PST

Tesla, Morgan and the Shoreham Tower
Wasn't Tesla working on this in his lab in Shoreham, LI when JP Morgan refused to give him any more money to develop it? Imagine not having power lines anywhere. It could have been a different world.
by jspagnol (See profile) - January 15, 2007 6:07 AM PST

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