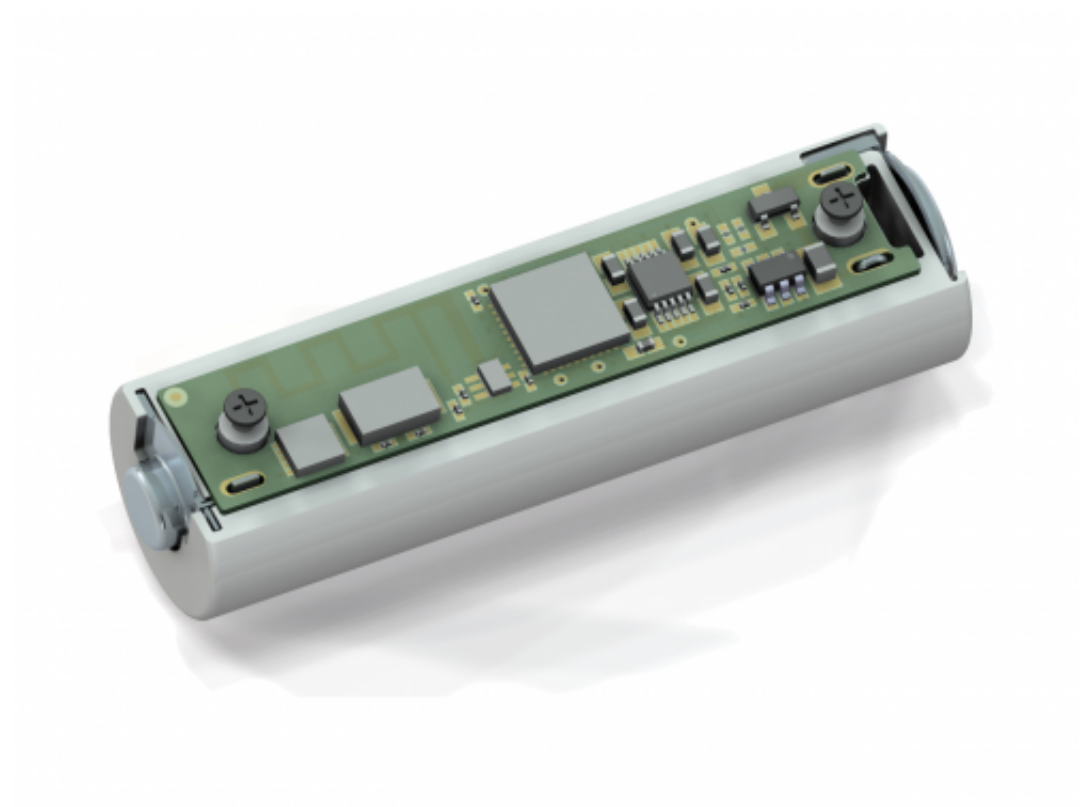
Tethercell battery could redefine smartphone control

January 11 2013, by Nancy Owano

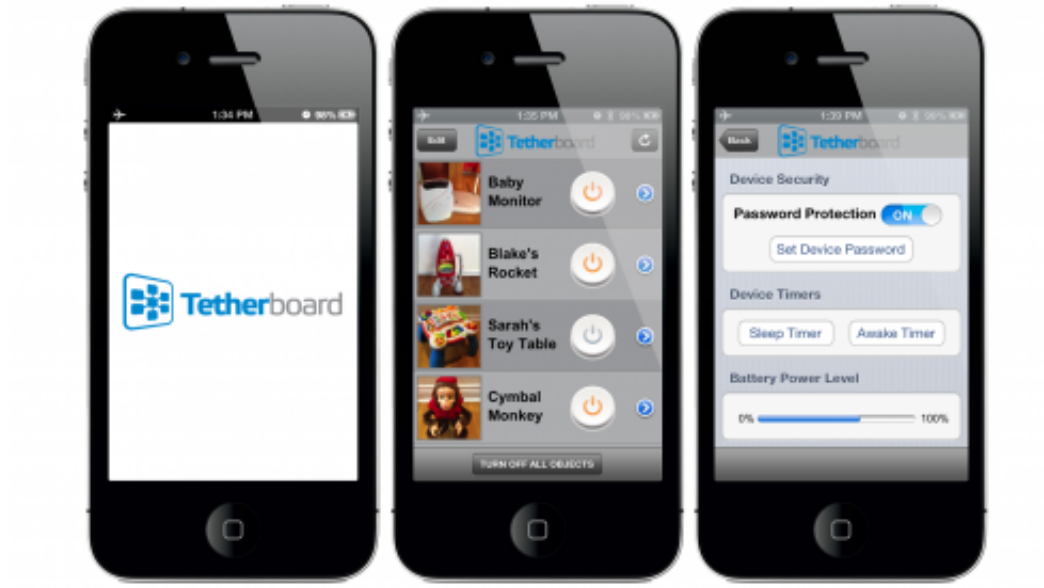


(Phys.org)—An Indiegogo project by Tetherboard drew interest at CES in Las Vegas this week where a novel concept of phone battery was demonstrated. The prototype on show was Tethercell, an adapter which the user can control from a smartphone or tablet, The adapter, powered by a AAA-battery, embeds Bluetooth into a traditional AA battery form.

A Tethercell holds an AAA battery inside its little case.

Tethercell comes with an app, and once the device is battery-operated with the product, one can time activities, get alerts when batteries are running low, and other tasks. The user can set hours when a device can be used; AA battery-powered devices can be turned on and off remotely; Tethercell can help to set device schedules to save battery power; and set simple timers. Instead of a phone running on batteries, in a sense, the batteries are helping to run the phone, as the Tethercell turns phone batteries into Bluetooth devices.

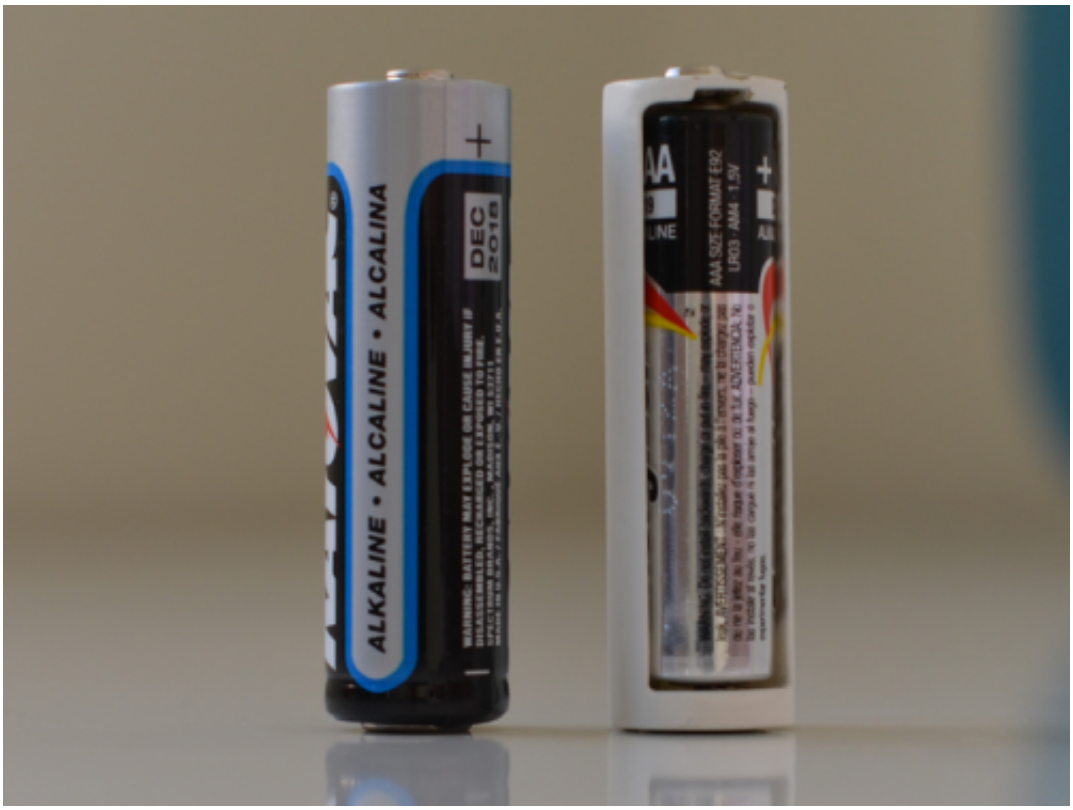
It works by the user taking out one AA battery and replacing it with a Tethercell with an AAA battery within it. No matter how many AA batteries are required to run the device, only one Tethercell would be needed. Then a Tetherboard app downloaded from the App store would be started up and the user would connect to an iOS device that is Bluetooth Smart compatible.



The design is a plastic enclosure with wireless circuitry the size of an AA battery. According to the product creators, Trey Madhyastha and Kellan O'Connor, mechanical design engineers, "The electronic brains embedded within the Tethercell contains a lot of cutting-edged electronics based upon the TI CC2540 microcontroller." They said it is packed with a current sensing OP-AMP comparator, temperature sensor, N-channel MOSFET (capable of switching up to 5A), 1.5 to 3V boost converter and embedded 8051 microcontroller."

Tethercell uses Bluetooth 4.0, a low-power Bluetooth protocol. "With Bluetooth Smart Ready the range of use with Tethercell should extend to about 60 feet through one wall," the creators said on their campaign site. They also said that they conducted some open field tests where they demonstrated connectivity at distances over 100 feet. "As with any RF device, environment plays a significant role in the performance of Tethercell. We are confident in stating these range figures as we routinely exceed them in testing."

For the present, Tethercell will support AA-batteries and iOS. The goal is for the product to start shipping in June.



The creators are offering the product as an Early Bird Special at $29 as part of its indiegogo campaign. Funds obtained from the campaign will be applied to such activities as finalizing the app design and electrical board layout, ordering parts and tooling for the shell and stampings, and obtaining certifications. Their goal is to raise $59,000. At the time of this writing, with 43 days left, they raised $11,335.

More information: www.indiegogo.com/tethercell