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Alan Pierce

pierceaj@techtoday.us; on Twitter @ TechToday_US

WattUp®—Charging from 15' without Wires or Pads

Currently, wireless charging requires the placement of your smartphone or other electronic device on a special charging pad. The pads used to charge your devices transfer electricity using an MIT breakthrough called magnetic resonant coupling. This technology demands physical contact between the transmitter and the receiver in your device. What we are going to explore today is a new technology that will allow your devices to charge just by being in the same room as the transmitter.

The WattUp charging-at-a-distance transmitter fills the area where it is installed with low power radio frequency (RF) waves. These RF waves are converted by a proprietary chipset into a low-voltage DC charge-

above, for this technology to take off it needs to meet stringent safety standards. Because it is transmitting a frequency that is a part of the electromagnetic spectrum, it also needed Federal Communications Commission (FCC) approval for it to be used in the United States.

In December 2017 the FCC granted Energous, the company that created WattUp, approval for their near field transmitters to transmit at 900 MHz for wireless charging at a distance of up to 3'. In April 2018 the distance between the transmitter and the embedded receivers that would need to go into phones, tablets, earphones, hearing aids, and other electronic devices was raised to 15'. You can explore the FCC 2017 approval online at: <https://fccid.io/2ADNG->



Photo 1—This extremely tiny chipset can convert RF waves into electricity to charge your electronic devices.

Photos courtesy Energous WattUp®

ing current. For this new technology to take off, the chipset, or one with a similar design, must be installed inside the device it is going to charge (Photo 1).

A WattUp transmitter can charge many devices at the same time but this is a slow charging system (Photos 2 & 3). The concept is that your devices will always be topping off their charge when they are in range of a transmitter; these transmitters could eventually find their way into every location where you now find free WiFi.

Just like the resonant magnetic coupling technology mentioned

MS300, and the 2018 ruling to raise the charging distance at <https://bit.ly/2LuGB6Z>.

The FCC was one of many roadblocks that this technology needed to pass before it even stood a chance of becoming a ubiquitous charging-at-a-distance reality. It has now also passed stringent Underwriters Laboratory testing so it now meets all U.S. requirements for commercial use. Before manufacturers adopt this

Alan Pierce, Ed.D., CSIT, is a technology education consultant. Visit www.technologytoday.us for past columns and teacher resources.



Photo 2—These devices could be charged at a distance when this technology is adopted by their product's manufacturers.

in their products. This Energo video can further your understanding of this new technology: www.youtube.com/watch?time_continue=53&v=6INH8o6GLec.

Taking it a Step Further

1. What is the electromagnetic spectrum and is it safe for us to be bathed in its waves of energy?
2. At this point in time it appears that Energo is the leader in charging-at-a-distance technology. Research the other companies that are exploring other parts of the electromagnetic spectrum to bring energy to our smart devices. ☺

technology and build the receiver directly into their products, the chipset could be built into an accessory charging case. This would be similar in design, but much flatter, than backup battery cases now sold for smartphones. This kind of introduction into the marketplace would be taking a page from the roll out of magnetic resonant charging.

Since we live in a connected world Energo has also filed for international ap-

proval with all the necessary regulatory organizations throughout the world. The last hurdle will be to get the different manufacturers to include the necessary chipset



Photo 3—Your devices will constantly refill their battery slowly even when you are wearing or using them. The chipset will automatically stop charging when your device is fully charged.

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