

# FINsix small-size laptop adapter uses special power platform

April 15 2014, by Nancy Owano

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(Phys.org) —Knowledge workers, road warriors, students, lab researchers, mobile executives and any other trendy computer user category you wish to reference, all share a similar need: a lighter load. We do not refer to "load" as in work volume but to load in terms of computer gear they need to lug around to send, receive, and store information on the move. Now a Menlo Park-based company is about to

provide some relief in the form of its Dart, a small device to charge your laptop just as efficiently as your old clunker does. A laptop adapter always seems to be the item that becomes the one-item-too-many for the handbag or backpack zipper to close securely. Though small and light, the Dart delivers 65W of power. The company says its Dart is four times smaller and six times lighter than older adapters, As the promotional video shows, Dart can easily fit in one's pocket or purse. How did they manage to design a working adapter so reduced in size? The team credits its patented MIT technology called very high frequency (VHF) power conversion.

The company, FINsix, said its VHF [power](#) technology allows for far less energy to be wasted with each cycle, "We can cycle up to 1000x faster without wasting any more energy than a conventional [power converter](#). Cycling faster means we can transfer a smaller packet of energy to each cycle - and make the [power converter](#) a lot smaller."

FINsix was founded by a team of MIT graduate students with an ambition to use the technology "to radically shrink" bulky chargers for electronics. "We chose the laptop adapter as our first product and set about the task of taking VHF power" to commercial production."

The company named itself FINsix using FIN as an acronym for Frequency Innovation and six, or VI, as the electrical formula for Power.

The Dart works with laptops that have a voltage of 18 - 21V and a power level of  $\leq 65$  watts. The full laptop compatibility [table](#) is provided on the company site.

Their effort is now a [Kickstarter campaign](#). They hope to raise \$200,000 with 29 days to go At the time of this writing, they had passed the goal with \$215,355 in pledges.

The team said the design is set. They are moving into approvals and pre-production. They said their next phase will be testing for design validation, completing required certifications, and spinning up production lines. They aim for November to ship standard units of Dart to Kickstarter backers. They aim for December to ship custom units. (As for Mac compatibility FINsix is making Darts available for the MacBook but they need to buy an Apple adapter to get the connector. The Dart for MacBook costs more than a standard Dart. MacBook users wishing to pledge are asked to select the Dart for MacBook or Custom Dart. The Kickstarter price is \$168 for the Dart for MacBook, which is more than a standard Dart. The standard Dart on Kickstarter costs \$89.)

Estimated delivery dates differ too. For the MacBook, that date is December 2014, while the date for the standard Dart is November. The Dart will be sold directly on FINsix's website and will be available through various retailers and e-tailers. A list of authorized dealers will be posted on FINsix's website once production begins. The company plans to sell Dart internationally early next year.

Beyond a device for laptops, though, FINsix has an even wider vision. As stated on their site, the Dart is just the beginning. "With VHF power, FINsix is changing the way power is delivered." The company's AC/DC power platform is designed to be scalable for applications from 20W to 1kW. "It is our goal to embed FINsix converters across a range of applications to enable a new class of smaller, lighter, and higher performance power electronics."

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