



## **Coil technology halves magnetic-component dissipation**

The Hyper-X Magnetics technology from electromagnetic-component manufacturer Tabtronics (Geneseo, NY) promises to reduce ac coil dissipation from 12% to 50%. Such reductions in inductive coil-based components such as coils, inductors, transformers, electromagnets, and motors would result in smaller and more-efficient products applications such as radios, aircraft, and handheld computers.

While standard coil design is traditionally based upon analytical techniques that offer accurate estimates of dissipation, this technology uses a derivation that, for the first time, yields the exact configuration of minimum loss. Existing planar-transformer winding technology enables the realization of these minimal-loss configurations.

In a case study published on the company's Web site, the inductors using constructed with this technology are used in a boost converter, where inductors typically experience both dc and ac signals, causing dissipation. Traditionally, designers solve this problem with Litz wire construction to reduce high-frequency eddy currents, but this is an expensive technique that can increase thermal resistance.

According to the study, inductors without the technology suffered from 8.0-W ac dissipation and 2.5-W dc dissipation. Using the technology, ac dissipation was reduced to 3.7 W, with negligible change in dc dissipation.

While the company plans to first roll out the technology in their own magnetic products, they are considering licensing opportunities. For more information, call Victor W. Quinn 585-243-4331, ext. 340, e-mail [vquinn@tabtronics.com](mailto:vquinn@tabtronics.com), or visit <http://www.tabtronics.com>.

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