

Researchers pushing 100 Gig copper networks

Penn State technology could provide alternative to fiber-optics in some settings

By Network World Staff, Network World, 11/14/07

Penn State engineers are trying to push relatively short Category-7 copper cables to support digital data speeds up to 100Gbps.

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The idea would be to enable copper cables within a room or building, perhaps being used to interconnect servers, to handle data rates typically reserved for fiber-optic links. The trick has been coming up with a transmitter/receiver that uses error correcting and equalizing methods to cancel interference better than traditional systems.

"A rate of 100 Gigabit over 70 meters is definitely possible, and we are working on extending that to 100 meters, or about 328 feet," said Ali Enteshari, graduate student in electrical engineering, in a statement. "However, the design of a 100 Gigabit modem might not be physically realizable at this time, as it is technology limited. We are providing a road map to design a high-speed modem for 100 Gigabits."

[Mohsen Kavehrad](#), a professor of electrical engineering at Penn State, says his team is working with NEXANS, the company that makes the cable. "These are the current, new generation of Ethernet cables," he says.

The Penn State engineers presented their system to the IEEE High Speed Study Group this week in Atlanta.

[Category 7 cable](#) consists of four pairs of twisted wires shielded to reduce crosstalk. It is heavier weight than Category 5 cable (Kavehrad's group did similar work on Cat-5 cable four years ago).

Earlier this year several LAN gear vendors launched 10G Ethernet products that broke new ground in product categories and could signal more advances to come from the LAN industry. [Chelsio](#) and [Tehuti Networks](#) both announced they had the industry's first 10GBase-T server adapters — which run 10Gbps of Ethernet over Category 6 or 7 copper cabling, Blade Network Technologies claimed it has the first 10G

Ethernet switch module for a [blade server chassis](#).

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