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Global expert in cables and cabling systems

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Best Paper Award @ DesignCon 2009

The recent collaboration between Nexans and Penn State on a paper entitled “40/100 Gbps Transmissio best paper award at DesignCon 2009. The paper was presented in the category “High-Speed and RF De

The paper was presented by Ali Enteshari, a Ph.D. candidate in the department of Electrical Engineering Park. His faculty advisor Dr. Mohsen Kavehrad had been contracted by Nexans, more specifically, the D to evaluate the theoretical possibilities of transmitting 40/100Gbps data rates over Category 7A cabling

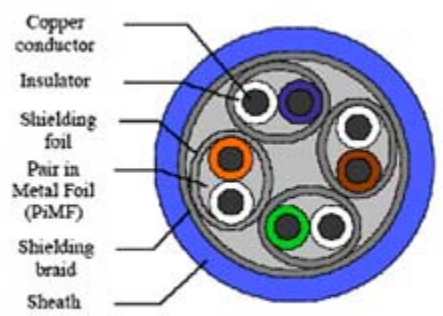
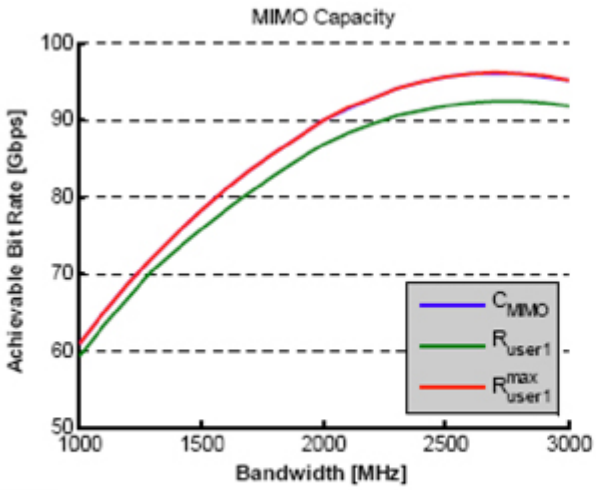
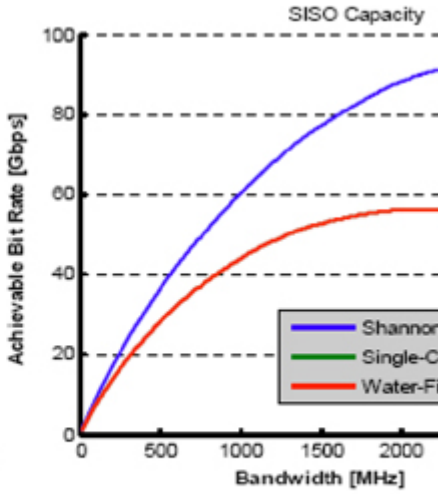


Fig. 1 Cross-section of Category 7 S/FTP cable.

Abstract
This paper focuses on assessment and design of transmission systems for distribution of digital signals beyond -10Gbps. The main contribution of the paper is on the technical feasibility and system design fo on capacity analysis and rate optimization algorithms, system parameters are obtained and the design simulation results confirm that with the aid of Decision-Feedback Equalizer and powerful coding techniq code, 40Gbps transmission is feasible over 50m of CAT-7A copper cable. These results also assure that the same copper cable.





Conclusion
The results of this paper confirm the technical feasibility of beyond 10Gbps high-speed transmission ov

assessment has revealed that CAT-7A cables are, theoretically, capable of delivering data streams at a
excellent shielding and engineering design. Also, based on our modeling and analysis, the maximum ac
100Gbps. However, with various degrees of DSP, the objective of running 100GBASE-T over CAT-7Acab
vendors, probably in the next generations of CMOS technology.

We conclude that 40GBASE-T is practical over 50 meters of CAT-7A cable, and this is within the realm o
standards committee.

Click here to read the award-winning paper: 40/100 Gbps Transmission Over Copper: Myths and Reali

Click here to visit the DesignCon site.