

SYSTIMAX[®]

SOLUTIONS

10 Gigabit Ethernet Developments Unlock the Value of Better Cabling

10G - TWO steps closer to YOU. Recent developments in 10 Gigabit Ethernet relating to optical and copper cabling highlight the clear value customers can receive by installing better cabling and confirm the SYSTIMAX[®] Solutions vision that cabling infrastructure is a key ingredient to building better, faster, and more cost-effective networks and businesses.

STEP ONE: 10G on Laser Optimized Multimode Fiber Goes Mainstream.

In September 2003, Cisco Systems announced that it would introduce 10GBASE-SR pluggable interfaces for the Catalyst 6000 family. These new interfaces are designed to operate at 10G over the SYSTIMAX LazrSPEED[®] Solution.

This announcement by Cisco Systems marks a milestone in the relentless progression of 10 Gigabit Ethernet towards the enterprise backbones. SYSTIMAX[™] Solutions customers have been waiting since the introduction of the LazrSPEED Solution (in 1999) for Cisco Systems to finally make the move to support enterprise networks with multimode options that are more cost effective than the singlemode alternatives targeted at longer distances and/or Service Provider networks. The wait is finally over. Customers now have the capability to implement their plans for low cost 10G networks.

In a clear demonstration of the true value offered by the LazrSPEED Solution, the Cisco Systems 10GBASE-SR modules are the lowest priced option for 10 Gigabit Ethernet support. SYSTIMAX Solutions anticipated this move towards 10GBASE-SR and offers customers a range of cost-effective options within the LazrSPEED Solution depending on their enterprise backbone lengths, with guaranteed 10GBASE-SR support up to 150, 300 or 550 meters.

Cisco Systems also announced a 10GBASE-LX4 module intended to support legacy 50 or 62.5 micron multimode fiber. The 10GBASE-LX4 design is more complicated and expensive resulting in a 33% price premium per module over the 10GBASE-SR option. We anticipate this price differential to increase over time, and the widening price gap will encourage many customers to consider the advantage of installing new LazrSPEED backbones as a more cost effective alternative to support 10 Gigabit Ethernet. The price penalty for singlemode backbones is even greater, as singlemode options (10GBASE-LR and 10GBASE-ER) are priced significantly higher than the 10GBASE-SR option.

We anticipate other major vendors will be introducing multimode options.

These announcements could not come at a better time. With SYSTIMAX Solutions customers worldwide choosing the LazrSPEED Solutions in rapidly increasing numbers, it is clear that legacy multimode fibers are no longer a strategic option for new installations, while the importance of superior and guaranteed laser optimized multimode fiber specifications based on Differential Mode Delay test methods is highlighted.

STEP TWO: IEEE 10GBASE-T Study Group Moves Forward to Define Copper Objectives

While 10 Gigabit Ethernet on multimode fiber continues to gain momentum, the value of performance excellence in copper cabling is also being highlighted, and Category 6/Class E cabling has received a significant boost from recent developments on the copper front. With the formation of the IEEE 802.3 10GBASE-T Study Group in November 2002, the groundwork for the development of a 10 Gigabit Ethernet standard for copper cabling began. At the most recent Study Group meeting held in September 2003, the Study Group approved a series of proposals to support Category 6/Class E or better cabling for channels 55-meters to 100-meters in length. A proposal to support Category 5e/ Class D channels was not approved as this cabling type would only support 10G implementation for very short distances. The Study Group also agreed to liaise with TIA and ISO/IEC cabling standards groups to develop the relevant augmentation of Category 6/Class E specifications up to 625 MHz in order to guarantee robust support for full 100-meter channels. SYSTIMAX Labs has played an important role in shaping these decisions through MDM modelling, advanced analysis and interpretation of key parameters, and experimental product designs.

The selection of the copper cabling necessary to support 10G implementation is the first step towards 10G over copper. IEEE members are now faced with investing years of dedicated effort to overcome many technical challenges to attain reliable 10G implementation over copper.

Although at this stage it is too early for anyone to offer guaranteed support for 10GBASE-T over any copper media, the push towards 10G on copper highlights the advantages of installing end-to-end solutions with guaranteed channel margin well beyond the minimum specification, such as the GigaSPEED XL7 and XL8 solutions. It is becoming clear to all associated with this initiative that better cabling is a better choice.

FINAL THOUGHTS

The evolution and drive of networking to increasingly higher levels of performance and cost effectiveness is a never-ending path. SYSTIMAX Labs are committed to leverage their unique expertise and design tools to ensure that customers can leverage their investment in SYSTIMAX SCS to maximum advantage relative to the requirements of the 10GBASE-T standard, and to continue leading the way with best-in-class UTP solutions for 10 Gigabit applications.

SYSTIMAX Labs will continue to deliver the industry's leading solutions through innovative technologies to maximize customer investment protection for the uncertain and rapidly changing future.

Luc Adriaenssens

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