

SYSTIMAX[®]

SOLUTIONS

What is so Revolutionary and Unique about the New SYSTIMAX[®] GigaSPEED[®] X10D Solution?

And what are the benefits for your enterprise?

- 1 **Bandwidth** - GigaSPEED[®] X10D Solution: Anticipates Enterprise Bandwidth Growth
- 2 **Performance** - GigaSPEED X10D Solution: Provides Revolutionary Channel Performance
- 3 **Tuning** - GigaSPEED X10D Solution: Tuned to Perfection
- 4 **Capacity** - GigaSPEED X10D Solution: Real and Robust 10 Gb/s Capacity
- 5 **End-to-end** - GigaSPEED X10D Solution: Components Deliver an End-to-end Channel
- 6 **Reliability** - GigaSPEED X10D Solution: High Reliability and Low Variability
- 7 **Warranty** - GigaSPEED X10D Solution: Warranted Channel Performance
- 8 **Quality** - GigaSPEED X10D Solution: Built with the World Class Quality of SYSTIMAX[®] Solutions
- 9 **Unique Technology** - GigaSPEED X10D Solution: Science and Engineering of SYSTIMAX Labs
- 10 **Ten? Yes, Ten** - GigaSPEED X10D Solution: Extends the Capabilities of UTP to 10 Gb/s

1 Anticipates Enterprise Bandwidth Growth

Advances in processing capabilities invite software developers to create powerful new software products with ever increasing bandwidth requirements. Just as they capitalize on higher computer CPU performance, developers are expected to take advantage of new and faster networking technologies. Couple this with the declining cost of gigabit interfaces and how they are becoming standard in most new computers, and gigabit networking is already a reality to the desktop. Forward-thinking enterprise managers need to consider what the next step will be.

Large enterprises are also faced with a growing need for higher bandwidth in the horizontal and backbone network to support such applications as Storage Area Networks, Network Attached Storage, high performance computing and grid computing. Even if these applications attain just 10% of the PC's network traffic potential, as current rates of processor speed increase, we believe 10 Gb/s desktop communication is within a planning horizon of five to ten years. Therefore, from a cabling infrastructure perspective, installing the GigaSPEED X10D Solution can be inexpensive insurance against an unpredictable future.

2. Provides Revolutionary Channel Performance

The flow of information is the life-blood of today's business world. A system that increases the bandwidth, throughput and operational efficiency of the network can yield tremendous benefits to an organization – and that is just for today's applications. The performance of the GigaSPEED X10D Solution is also engineered to meet the rapidly emerging enterprise applications of tomorrow.

The data-carrying capability of a structured cabling system is affected by a number of potential impairments. The GigaSPEED X10D Solution provides unprecedented performance for key parameters such as insertion loss and all forms of crosstalk, both within and between channels, yielding improved bandwidth, data throughput and network efficiency.

3 Tuned to Perfection

The GigaSPEED X10D Solution is a tuned system, optimized to deliver high levels of performance margin.

We believe this far exceeds the performance achieved by Category 6/ Class E standards compliance.

SYSTIMAX Solutions™ maintains that building the world's best and most complete cabling solution requires the world's best research, design and analytical tools. The scientists and engineers of SYSTIMAX® Labs have developed the most advanced design and testing technology; Modal Decomposition Modeling (MDM), Connector Field Pattern Modeling (CFPM) and Cable Twist Accuracy Technology (CTAT) in the industry.

This combination of tools allows a greater insight into the performance characteristics of every channel component with a precision that we believe no other company can match. It is these tools and engineering excellence that allows SYSTIMAX Labs to create end-to-end channel solutions with tuned performance that leads the structured cabling industry.

4 Real and Robust 10 Gb/s Capacity

10 Gb/s LAN transmission capacity is a function of channel performance, frequency band of the coding scheme, transmitter signal levels, Digital Signal Processing (DSP) techniques and the required bit error rate (BER).

Improvements in one or more areas affect and/or rely upon improvements in others. The composite performance of the GigaSPEED X10D cabling channel and the DSP compensation techniques (proposed for 10GBASE-T) results in a Shannon capacity of approximately 18 Gb/s for a 100 meter channel. This theoretical capacity is backed by real channel performance capable of meeting the latest 10GBASE-T requirements.

The GigaSPEED X10D Solution exhibits revolutionary channel Alien Crosstalk suppression in excess of the IEEE Model 1 requirements established for UTP, while continuing the SYSTIMAX SCS heritage of superior channel margin for Near End Crosstalk (NEXT), Far End Crosstalk (FEXT) and other internal parameters. In addition, the GigaSPEED X10D Solution exhibits far superior channel insertion loss up to 500 MHz in excess of the current Category 6/Class E and even Class F standards and, more importantly, the IEEE Model 1 insertion loss requirements. All this has been tested and proven in what is viewed as worst-case real life installation channel configurations, known as the '6-around-1' cable configuration.

5 Components Deliver an End-to-end Channel

The type of the components used in a system can affect the composite performance of the total system. Overall performance can also be decreased by any mismatches between the patch cords, connectors and horizontal cable. The GigaSPEED X10D Solution addresses performance by being a complete solution that offers a new innovative patching system together with a wide range of traditional round cables and cordage, including plenum, PVC, and LSZH (low smoke zero halogen) types. With any combination of these in a channel with up to four connectors, end-to-end performance is warranted to exceed Category 6A/Class E_A specifications. GigaSPEED X10D cables and components are also fully backward compatible with other SYSTIMAX cabling systems.

6 High Reliability, Low Variability

The “weak link” in any cabling channel is found at the connection points and is magnified at the higher frequencies being considered with 10GBASE-T. The solution to this problem can be to perfectly match backward compatible patch plugs and jacks. In the GigaSPEED X10D plugs, the termination of patch cable pairs inside the plugs is tightly controlled to reduce variability to a negligible level.

In the new GigaSPEED X10D jacks, additional patent pending crosstalk cancellation techniques unique in the industry have been incorporated. Just like the new plug design, the new jack design is fully backward compatible with existing plugs while still raising the performance of the mated connection. When combined with the GigaSPEED X10D GS10E cord and 91-series cable, laboratory tests prove that the channel exceeds performance requirements of Augmented Category 6 up to 500 MHz.

7 Warranted Channel Performance

The GigaSPEED X10D Solution is backed by the SYSTIMAX SCS 20-year Extended Product Warranty and Applications Assurance.

The SYSTIMAX SCS tradition is to make clear guaranteed performance statements, not claiming “typical” or “average” values or based on only selected frequencies or channels with fewer than 4 connections. SYSTIMAX GigaSPEED X10D performance statements relate to worst-case data, and across the full frequency range up to 500 MHz, and based on the ‘6-around-1’ cable bundle configuration.

8 World Class Quality of SYSTIMAX Solutions

The GigaSPEED X10D Solution is built to provide high quality as well as high performance. Application support and quality of transmission are essential, but organizations also need the assurance that they are dealing with a quality solution available worldwide and from a quality organization that will be there to support them wherever and whenever they need assistance. Our commitment to supporting customers and BusinessPartners with world class quality has made SYSTIMAX SCS the solution against which other cabling systems are most often measured.

9 The Science and Engineering of SYSTIMAX Labs

We believe it is our unique understanding of the science behind cabling, transmission systems and applications that sets us apart from our competitors. The SYSTIMAX SCS tradition is one of innovation in Research and Development, utilizing unique world-class design and analysis tools to understand and advance end-to-end infrastructure performance. This leading scientific capability allows every aspect of cabling performance to be fine-tuned for maximum performance and reliability. The GigaSPEED X10D Solution is the latest in a long line of SYSTIMAX developments, setting a new benchmark for UTP channel performance.

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10 Ten? Yes, Ten! Extends the Capabilities of UTP to 10 Gb/s

The GigaSPEED X10D Solution is warranted to deliver 10 Gigabits per second on UTP. In laboratory trials it exceeds the proposed TIA Category 6A and ISO/IEC Class E_A Ed. 2.1 cabling requirements, as well as the proposed IEEE 802.3an Task Force requirements for 10GBASE-T. The channel specifications for the GigaSPEED X10D Solution are as follows:

- Channel performance guaranteed to 500 MHz
- Supports channel lengths of up to 100 m with up to 4 connections
- Supports a Bit Error Rate (BER) of 10⁻¹² on all supported distances and classes

In addition, the channel specifications for the GigaSPEED X10D Solution meet or exceed:

- The GigaSPEED XL7 4-connector channel minimum guaranteed margins over Category 6 for Insertion Loss, NEXT, PSNEXT, ELFEXT, PSELFEXT up to 250 MHz
- The IEEE Model #1 Insertion Loss limits to 500 MHz
- The IEEE Model #1 Channel PSANEXT and PSAELFEXT requirements established for UTP
- Extrapolated TIA/EIA Category 6, ISO Class E channel NEXT up to 500 MHz
- Extrapolated TIA/EIA Category 6, ISO Class E channel PSNEXT up to 500 MHz
- Extrapolated TIA/EIA Category 6, ISO Class E channel ELFEXT up to 500 MHz
- Extrapolated TIA/EIA Category 6, ISO Class E channel PSELFEXT up to 500 MHz
- TIA /EIA Category 6, ISO Class E channel Return Loss to 250 MHz, with a minimum of 8 dB from 250 MHz to 500 MHz