

## **Frequently Asked Questions (FAQs) – Siemon 10G ip™ Solutions**

The world of enterprise cabling is evolving rapidly. Emerging, high-bandwidth services and the adoption of higher speed Ethernet standards, like Gigabit Ethernet and now 10 Gigabit Ethernet, are creating an environment where Internet Protocol (IP) and the delivery of advanced IP services such as Voice over IP (VoIP), IP videoconferencing and security are becoming common applications. Increasingly, voice, data and video networks are being converged onto a single infrastructure and the demand for reliability and Quality of Service (QoS) has never been greater. A reliable, high-performance structured cabling system, built to handle these bandwidth intensive applications, is the fundamental asset required to enable today's leading organizations to increase productivity and sales while decreasing operational costs. Specifically, a structured cabling system capable of delivering 10Gb/s services offers the best return on your cabling investment and is the best option to ensure future compatibility with emerging services. To this end, Siemon has created the **10G ip™** Cabling Solution.

### **Q: What is Siemon 10G ip?**

**10G ip** consists of Siemon's leading cabling solution sets — XGLO™ fiber, TERA® and 10G 6™ — bringing to market the best performing cabling solutions available today. With fiber capability rated for 10Gb/s and higher (XGLO), the world's highest performing category 7 copper system designed to support services up to 1.2 GHz (TERA), and the world's best category 6 system providing usable bandwidth to at least 500 MHz (10G 6), Siemon is the undisputed technology leader in the world of IT cabling. **10G ip** is designed to allow global enterprise customers the ability to capitalize on their investment in IT and realize true, tangible benefits from their cabling network. Businesses today are under enormous pressure to improve productivity and security. Siemon's **10G ip** cabling solutions provide the highest quality of service and are designed specifically to support high-capacity, high-bandwidth IP-based productivity and security applications.

### **Q: What cabling products are included in 10G ip?**

**10G ip** is comprised of Siemon's leading cabling systems: XGLO fiber, TERA and 10G 6. Whether, optical fiber, fully-shielded, screened or unshielded twisted-pair, each solution offers the best performance available for its respective media type. Together, these systems provide a truly new and higher standard of performance and flexibility to meet your current and future business needs in any environment, anywhere in the world.

**XGLO™ Fiber:** LAN backbones are the lifeline of today's networks. Five years ago, only 20% of all LAN traffic reached the network backbone; most computing was performed by individual computers and files were stored and accessed locally. There was little file sharing. Today, the situation is reversed. It is estimated that 80% of all traffic reaches the backbone. Applications are now served centrally — user files are stored on the server and file sharing and collaboration is widespread. It is critical that the network backbone be able to handle the ever-increasing demand volume.



Siemon's XGLO 50/125 multimode and singlemode fiber optic cabling systems are designed to provide network users with at least 10Gb/s data throughput. Supported by LC and SC style connecting hardware, XGLO solutions are ideal for high-speed LAN backbones, storage area networks, video on demand, fiber-to-the-desktop, and any 10G Ethernet application.

**Category 7 TERA®:** The fully-shielded TERA connector has been identified by ISO/IEC 11801 as the only approved solution for a non-RJ style category 7/class F interface. And, TERA is the only cabling solution able to provide service up to 1.2 GHz over each pair: twice the bandwidth of the category 7/class F standard!



As networks applications convergence, the combination of data, voice and video on a single medium offers the opportunity for tremendous cost savings. Siemon's category 7 TERA system supports cable sharing and is the only structured cabling solution capable of delivering data, voice and video over a single 4-pair, shielded twisted-pair (S/FTP) cable. TERA is even capable of supporting full broadband analog video — traditionally 862 MHz — over a single pair while transmitting voice and data on the other twisted-pairs.

The TERA connector fits within the same footprint as a standard RJ-style interface and there is no reduction in port density at the work area or in the telecommunications closet compared to an RJ-style solution. And, because the TERA is not an RJ-style interface, it is not limited by the bandwidth constraints that are inherent to the RJ connector design. In developing TERA, Siemon engineers were able to use a completely new approach and design a connector that is optimized to handle today's emerging higher bandwidth applications. Quite simply, TERA is the highest performing standards-recognized copper cabling system in the world.

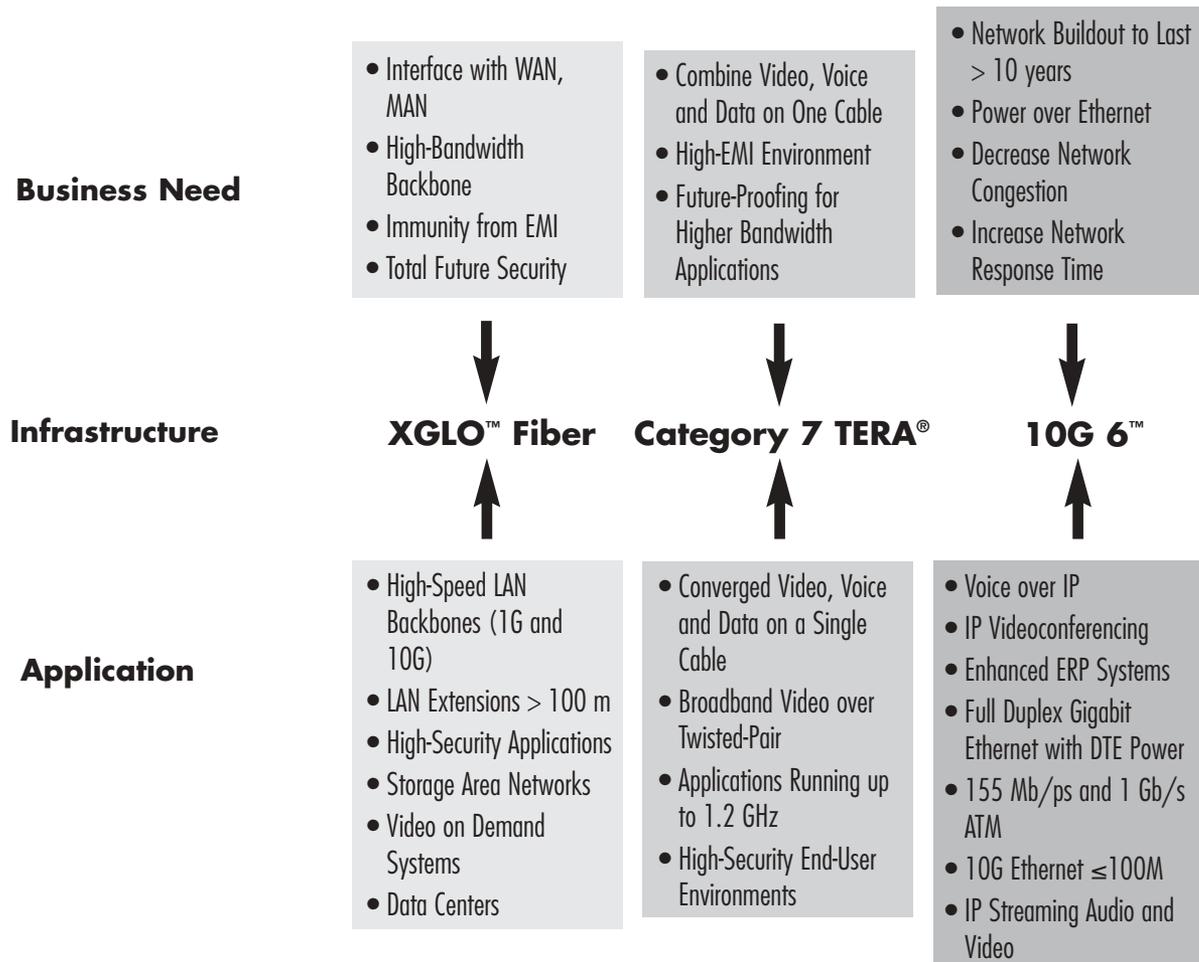
**10G 6™:** Horizontal cabling infrastructure planning focuses on the need to support the pending 10GBASE-T application standard when it publishes in July of 2006. Siemon is the pioneer in the category 6 performance arena; having developed the world's first category 6 compliant solution in November of 1998 and the world's first suite of 10G products in January of 2003. Siemon's 10G 6 is comprised of UTP and screened cabling systems specifically engineered to handle the increasing performance demands of 10GBASE-T and other emerging applications. Designed to provide linear performance and usable bandwidth to at least 500 MHz, Siemon's 10G 6 cabling is guaranteed to support the future 10GBASE-T application over full 100 meter, 4 connector channels. Siemon's 10G 6 channels



provide the industry's best insertion loss (attenuation) and overall system performance enabling the highest channel capacity and signal-to-noise ratios. Test reports on 10G 6 performance characterized to 500 MHz are available upon request.

**Q: Which 10G ip™ solution should I choose?**

Today's network deployments are as unique as the organizations that implement them, but the fundamental principles and applications across vertical markets are quite similar. The chart below helps identify the application and the business driver to guide a customer to select the optimum **10G ip** solution set for a given set of business needs.



**Q: What is Siemon's 10G ip™ applications assurance?**

Siemon's **10G ip** applications assurance has been in effect since January 2003 and provides:

- Guaranteed 10GBASE-T support over copper twisted-pair channels with up to four connections and a maximum length of 100 meters and,
- Guaranteed 10G Ethernet support over fiber optic channels up to the maximum length specified by the governing IEEE 10G Ethernet standards.

Siemon stands behind its claims with the industry's most comprehensive product and applications assurance warranty.

**Q: How does Siemon back-up its 10G 6 system performance claims?**

10G 6 system compatibility with future IEEE 802.3an compliant networking equipment has been validated by multiple PHY chip developers through extensive simulations, which conclusively demonstrate that Siemon 10G 6 solutions provide the required Shannon channel capacity necessary to support proposed IEEE 802.3an 10Gb/s transmission.

**Q: Do Siemon 10G ip copper solutions meet the alien crosstalk requirements specified by TIA and ISO/IEC?**

In the absence of a field test measurement method, the Siemon 10G 6 UTP solution does not claim to meet draft alien crosstalk specifications; however, system margin including insertion loss, return loss and crosstalk has been proven to offset the potential effects of alien crosstalk on channel capacity. It is important to note that, while no field measurement method exists for alien crosstalk parameters at this time, Siemon emphasizes proper engineering design and installation practices to mitigate the effects of both alien NEXT loss and alien FEXT loss. Examples of Siemon's 10G 6 UTP alien crosstalk reduction techniques include optimized port spacing at patch panel and work area, metallic barriers on S210 connecting blocks and improved cable management practices. Siemon's 10G 6 UTP system is guaranteed to meet the future TIA and ISO/IEC draft cabling specifications for augmented category 6/class E for all field-test parameters.

Siemon's screened 10G 6 and fully-shielded TERA® solutions have unsurpassed channel capacity and immunity to external noise. In addition to the 10G Ethernet applications assurance, these systems are guaranteed to outperform all future requirements for augmented category 6 and class E cabling, including alien crosstalk.

**Q: Why isn't the MT-RJ connector approved for use with XGLO™?**

The MT-RJ interface does not provide the performance required for use in XGLO. Some of the connector's performance limitations include:

- The MT-RJ provides 0.75 dB maximum insertion loss, which does not comply with the 0.65 dB maximum insertion loss requirement specified in the XGLO system for a field terminated connector.
- The MT-RJ provides 20 dB minimum return loss, which does not comply with the 30 dB minimum return loss requirement specified in the XGLO system for a field terminated connector.
- The index matching gel used in the MT-RJ mechanical splice may degrade the DMD performance of the XGLO system.

In addition, there are many benefits associated with using SC and LC connectors for support of 10G Ethernet applications. These include:

- All 10G Ethernet fiber optic transceivers available today support SC or LC ports.
- The field installable MT-RJ connector is not as robust as LC and SC connectors, making it much less suitable for singlemode or multimode 10G Ethernet applications.
- Siemon's new dual-polish LightSpeed termination process for LC or SC connectors is quicker and more efficient than typical MT-RJ termination practices.

**Q: What warranties are available with 10G ip™?**

When installed by a Siemon Certified Installer, end-users are eligible for a full 20-year product performance, installation and applications assurance warranty. For more information, please refer to the **10G ip** packet that details the XGLO, TERA®, and 10G 6™ warranties.

**Q: Why Siemon?**

Siemon has a well-deserved and well-recognized reputation for technology leadership. Although **10G ip** cabling solutions set a new standard for network cabling performance, this is only one element of Siemon leadership. Quality, stability, value and service are equally important differentiators. Together with Siemon's longevity, education programs and, global delivery systems, Siemon's **10G ip** cabling solutions provide a very strong and adaptive foundation for your business success. Most importantly, Siemon is the only manufacturer to offer 10G Ethernet ready cabling systems that include fiber optic, fully-shielded, screened, and unshielded twisted-pair solutions to meet your specific cabling needs, anywhere in the world.

**Q: Are Siemon 10G *ip*<sup>™</sup> products currently available and shipping?**

Yes. All Siemon **10G *ip*** components are available for order through your local Siemon distributor. For more information about these and other Siemon products, please call 860-945-4200 or visit us on the web at [www.siemon.com/10Gip](http://www.siemon.com/10Gip).

<sup>1</sup>For more information, see 2004 IWCS Savi white paper titled, "10G Ethernet over Structured Copper Cabling"



