

Hitachi Cable develops and releases world's first media converter for 40 Gigabit Ethernet

Hitachi Cable, Ltd. has announced the development of an XLGMC-1001 media converter. The XLGMC-1001 is the world's first*¹ product to comply*² with the 40 Gigabit Ethernet*³ specifications currently under standardization by the IEEE802 committee.*⁴ The product is slated for release in June 2010, when the 40 Gigabit Ethernet standard is expected to be officially released.

The growing diversity of IT systems, including IP telephony and TV conference systems, as well as conventional mission-critical tasks, Web access, e-mail transmission/reception, and file-sharing, have placed enormous burdens on the networks currently used by corporations. To handle greater data transfer volumes, companies are now switching interoffice networks from conventional dedicated telecommunication lines such as ATM*⁵ and SONET*⁶ to faster, higher-capacity, and less costly wide-area Ethernet networks. In light of this trend and to meet growing traffic volume, the IEEE802 committee is working to standardize next-generation 40 Gigabit/100 Gigabit Ethernet.

In response, Hitachi Cable has developed an XLGMC-1001 media converter that supports the new 40 Gigabit Ethernet interface standard, the first such product anywhere in the world. The company plans to introduce the product in June 2010, when the 40 Gigabit/100 Gigabit Ethernet standard is expected to be officially released.

Hitachi Cable has been manufacturing and selling media converters and transmission devices to meet the needs of its customers since 2000, when the company launched the GMX series,*⁷ the company's first Gigabit Ethernet multiplex long-distance transmission device developed based on in-house optical transceiver R&D capabilities. These products are highly acclaimed for their reliability and quality and are widely used by telecommunications carriers in Japan, among others.

The newly-developed XLGMC-1001 adopts a Wavelength Division Multiplexing (WDM) transmission*⁸ system to divide the 40 Gigabit Ethernet signal into four 10 Gigabit signals and encode them for transmission. This system eliminates the effects of Chromatic Dispersion(CD)*⁹ and Polarization Mode Dispersion (PMD)*¹⁰ that have become obstacles to high-speed transmission, achieving one-fiber bidirectional transmission for a maximum transmission distance of 80 km. This transmission performance is equivalent to that of a conventional 10 Gigabit media converter.

The XLGMC-1001 offers a QSFP*¹¹ transceiver port as a user interface, providing support for 40GBASE-SR4 for connections to multimode optical fiber cable and 40GBASE-CR4 for connections to copper cable. Hitachi Cable also plans to support XL2 small optical transceiver*¹² providing support for 40GBASE-LR4 for connection to single-mode optical fiber cable, enabling interconnection to a wide range of 40 Gigabit Ethernet equipments.

In addition, the XLGMC-1001 is packaged in the slim 1U (height: 44 mm) form factor, using miniaturized 10 Gigabit electronic components and high-density packaging technologies.

Hitachi Cable will continue to introduce products to meet the needs of customers by making full use of its store of comprehensive Ethernet technologies and drawing on its past delivery record and experience.

*1 As of January 19, 2010. Refers to media converters for Ethernet network. Source: Hitachi Cable survey.

*2 Complies with IEEE802.3ba draft3.0.

*3 Ethernet is a registered trademark of Fuji Xerox Co., Ltd.

*4 The IEEE802 committee is an organization within the Institute of Electrical and Electronics Engineers involved in establishing LAN standards.

*5 ATM (Asynchronous Transfer Mode) refers to a system that divides information of different types, such as data and sound, into 53-byte fixed-length cells for transmission.

*6 SONET (Synchronous Optical NETWORK) is a high-speed digital communication system based on fiber optics.

*7 GMX is a registered trademark of Hitachi Cable, Ltd.

*8 Wavelength Division Multiplexing (WDM) transmission is a high-speed, large-capacity information communication method that simultaneously transmits optical signals having different wavelengths through a single optical fiber cable.

*9 Chromatic Dispersion(CD) is a waveform-degrading phenomenon generated by the varying transmission speeds within an optical fiber attributable to different wavelengths.

*10 Polarization Mode Dispersion (PMD) is a waveform-degrading phenomenon caused by the slightly elliptical cross section of optical fiber cores.

*11 QSFP (Quad Small Form-Factor Pluggable) is an optical transceiver specification for 40 Gigabit applications.

*12 XL2 is an optical transceiver specification for 40 Gigabit applications in compliance with the form factor for 10 Gigabit X2-type optical transceivers.

[External view of the XLGMC-1001 (Note that the actual product may differ slightly from the photo.)]



[External view of the XL2 module (Note that the actual product may differ slightly from the photo.)]



[Main specifications of the XLGMC-1001 (Specifications are subject to change without notice.)]

Item		Specification
User interface	Module	QSFP module (40GBASE-SR4/40GBASE-CR4) XL2 module (40GBASE-LR4) --- Planned to be packaged
	Laser safety	SR4:Class 1M, LR4:Class 1
Network interface	Connector	Single core (SC)
	Laser safety	Class 1M
	Loss budget/dispersion tolerances	28 dB/-300 to +1,600 ps/nm
	Transmitting/receiving wavelength	1,550-nm band
Power source		Hot-swappable redundant power supply (AC) 100 to 120 / 120 to 240 V \pm 10%, (DC) -55 to -40 V Fan for air cooling
Power consumption		200 W max.
External dimensions		19-inch-rack 1U size (height: 44 mm)