

iConverter XGT+ **10GBASE-T Ethernet Media Converter**

The *iConverter* XGT+ is a 10 Gigabit Ethernet media converter with one 10GBASE-T RJ-45 port and one pluggable transceiver port that provides copper-to-fiber and copper-to-copper media conversion. Copper-to-fiber conversion is achieved with XFP or SFP+ fiber transceivers. Copper-to-copper conversion is achieved with a CX4 XFP transceiver.

The *iConverter* XGT+ provides a variety of 10G data center connectivity solutions, including resolving interface disparities between equipment with 10GBASE-T RJ-45 ports and existing rack servers or switches with fiber optic or CX4 ports. Architecture changes such as migrating from Top of Rack to End of Row can present cabling challenges when extending network distances from racks of servers. The XGT+ converts short-reach cabling to multimode fiber, single-mode fiber or CAT-6A cabling (up to 100 meters) to extend distances to servers, switches and patch panels. For CAT-6A cabling links less than 30 meters, the XGT+ supports 10GBASE-T Short Reach mode. In this mode, the device conserves energy by reducing power and cooling requirements.

The *iConverter* XGT+ also supports CWDM and DWDM transceivers to convert 10GBASE-T interfaces to WDM wavelengths. This enables connecting equipment with 10GBASE-T interfaces to *iConverter* CWDM multiplexers that expand fiber capacity and transport multiple 10G data channels across existing fiber links.

The XGT+ supports high-power (power level 4) XFP transceivers and the latest generation of wavelength tunable DWDM XFP transceivers. The wavelength of a tunable transceiver can be programmed and saved, eliminating the need for external programming equipment.

Built-in loopback functions, on-board status LEDs and link fault propagation modes facilitate easy setup and quick troubleshooting.

The *iConverter* XGT+ is available as a compact, unmanaged standalone unit, or chassis plug-in module that can be managed with a management module installed in the chassis. The hot-swappable, plug-in modules can be mounted in a variety of chassis with AC and DC power supplies.

The standalone *iConverter* XGT+ has built-in mounting brackets. It is DC powered and available with an external AC/DC power adapter, or a terminal connector for wiring directly to a DC power source.



SFP+/XFPs not included

KEY FEATURES

- 10GBASE-T Ethernet Media Converter
 - Copper to Fiber interfaces:
RJ-45 to XFP or RJ-45 to SFP+
 - Copper to Copper interfaces:
RJ-45 to CX4
- IEEE 802.3an Compliant
- Supports CWDM, DWDM and tunable DWDM fiber transceivers
- Supports MSA power level 4 XFP transceivers
- Supports up to 100m over CAT-6A and CAT-7
- Short Reach mode (up to 30m) reduces power and cooling requirements per IEEE 802.3az Energy Efficient Ethernet (EEE)
- Built-in loopback for installation verification and troubleshooting
- Link fault detection modes facilitate quick fault detection, isolation and reporting
- LED displays for immediate visual status of each port
- Omnitron transceivers support XFP and SFP+ digital diagnostics reporting via LEDs or management module
- Standalone and high-density chassis plug-in modules
- Management of the plug-in module is available with the addition of a management module to the chassis
- Provides management of wavelength tunable XFP transceivers, compliant with MSA SFF-8477 and INF-8077i
- SNMP management via *NetOutlook*[®] provides monitoring, configuration and fault notification
- 3 Year Warranty and free 24/7 Technical Support

MANAGEMENT

Management of the plug-in module is accomplished by installing a Network Management Module (NMM2) or a media converter with integrated management (such as an *iConverter* 10/100M2) that provides monitoring, remote configuration and trap notification.

MSA compliant pluggable transceivers support digital diagnostic capabilities, providing real time optical diagnostic information including fiber optic TX and RX power, voltage and transceiver temperature conditions on the plug-in module.

APPLICATION EXAMPLES

Data Center Application

In this application, new 10GBASE-T servers are added to an existing rack of servers with SFP+ interfaces. The servers are connected to a Top of Rack fiber switch with Direct Attach Copper (DAC) cables. The switch is connected to an aggregation switch in the data center with multimode fiber.

New 10GBASE-T servers have been added to the rack. 10GBASE-T servers are used due to their low cost. They have LAN on Motherboard (LoM) technology, so the 10GBASE-T RJ-45 ports are integrated into the server.

iConverter XGT+ plug-in media converters are installed in a high density (2U high), *iConverter* 19-Module chassis with redundant power supplies. CAT-6A patch cords connect the new servers to the XGT+ media converters, and DAC cables connect the media converters to the fiber switch.

Since the 10GBASE-T servers are connected to the 10GBASE-T media converters over a short cable (less than 30 meters) they can take advantage of the 10GBASE-T Short Reach mode, in which all devices operate with a lower

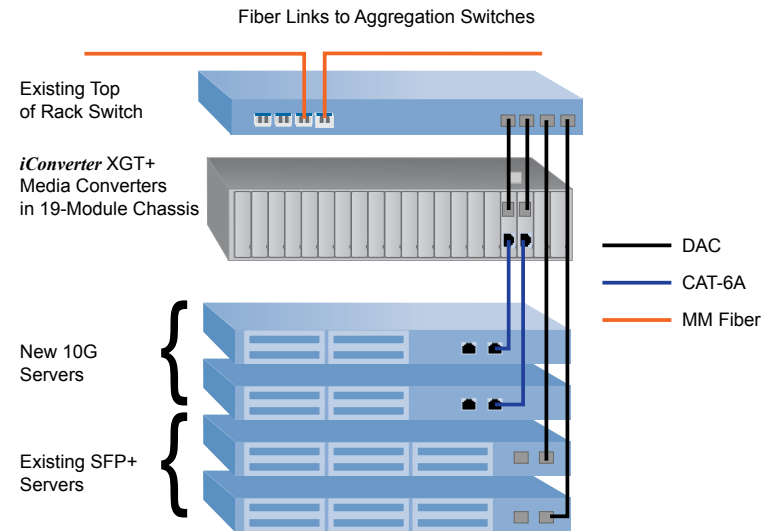
transmit power. Short reach mode is specified in the IEEE 10GBASE-T standard, and conserves energy and produces less heat.

These parameters can be monitored by the installed Network Management module.

Utilizing management, the programmable DWDM tunable transceivers can be configured and saved through convenient menu selections.

Plug-in modules feature full management capabilities, including remote configuration, status reporting, fault/alarm detection, loopback functionality, link status and transceiver threshold alerts.

transmit power. Short reach mode is specified in the IEEE 10GBASE-T standard, and conserves energy and produces less heat.



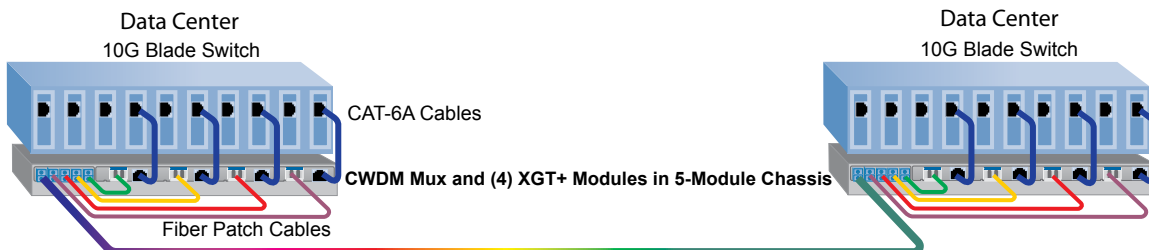
CWDM Data Center Interconnect Application

This application shows two data centers interconnected by four 10G Ethernet connections across a CWDM common fiber link (multi-color line) where fiber availability is limited and CWDM multiplexers are used to increase the fiber capacity.

An *iConverter* 4-Channel CWDM/X multiplexer module and four *iConverter* XGT+ plug-in modules are installed in an *iConverter* 5-Module Chassis at both locations. The *iConverter* XGT+ modules are used to convert the RJ-45 interfaces on the 10G

Ethernet switch ports to CWDM wavelengths required by the CWDM/X multiplexers.

The SFP+ port of each *iConverter* XGT+ contains an SFP+ CWDM transceiver that generates a specific CWDM optical wavelength, and is connected to the CWDM/X multiplexer with fiber patch cables (where each colored line represents a different wavelength).



SPECIFICATIONS

Model Type	<i>iConverter</i> XGT+
Protocols	10G Ethernet
Fiber Connector	Port 1: LC (via XFP or SFP+)
Copper Connector	Port 1: CX4 (via XFP)
Copper Connector	Port 2: RJ-45: 10GBASE-T
Compliance	UL, FCC Class A, CE, NEBS 3 Compliant, SFF-8077, SFF-8477
Plug-in Module Power Requirements	Typical: 2.8A @ 3.3VDC
Standalone Power Requirements	DC Power Input Connector: 2.5mm Barrel Connector or 2-Pin Terminal Connector
	DC Power: 10 - 60VDC 1.3A @ 12VDC
	AC Power Adapter (US) via 2.5mm Barrel Connector: 0.20A @ 120VAC
	AC Power Adapter (Universal) via 2.5mm Barrel Connector: 0.20A @ 120VAC
Temperature	Standard: 0 to 50° C Storage: -40 to 80° C
Humidity	5 to 95% (non-condensing)
Altitude	-100m to 4000m
MTBF (hrs)	Plug-in Module: 400,000 Standalone without power adapter: 230,000 Standalone with power adapter: 70,000

ORDERING INFORMATION

The XGT+ requires specific chassis and installation configurations. Please contact Omnitron for more information.

8 5 8 9 N - X - X

10Gigabit Ethernet Media Converter		
Port Configuration		<i>iConverter</i> XGT+*
Port 1	Port 2	
SFP+	RJ-45	8589N-0
XFP	RJ-45	8589N-1

<Blank>	Plug-in Module
D	Standalone w/mounting brackets and External US AC/DC adapter
E	Standalone w/mounting brackets and External Universal AC/DC adapter
F	Standalone w/mounting brackets and DC Terminal Power

* Refer to XG+ application note on installation requirements

Order the appropriate SFP+/XFPs separately.

For standard wavelengths: [See Optical Transceiver Data Sheet for available transceivers and optical specifications.](#)

For CWDM wavelengths: [See CWDM Optical Transceiver Data Sheet for available transceivers and optical specifications.](#)

Please contact Omnitron for other configurations.

Accessories	
7499-DC-1	10Gigabit SFP+ Direct Attach Cable (Twinax), 1m
7499-DC-3	10Gigabit SFP+ Direct Attach Cable (Twinax), 3m

Trademarks are owned by their respective companies. *iConverter* and *NetOutlook* are registered trademarks of Omnitron Systems Technology, Inc.

©2012 Omnitron Systems Technology, Inc. All rights reserved. Specifications subject to change without notice.

091-8589N-001B 3/12