miConverter™ GX/T

Industrial 10/100/1000 Ethernet Media Converter

The miConverter GX/T is a miniature industrial 10/100/1000BASE-T RJ-45 copper to 1000BASE-X fiber media converter that supports jumbo frames up to 10,240 bytes. The miConverter GX/T miniature Ethernet media converters provide cost-effective copper-to-fiber connectivity solutions. Due to their size, portability, and low power consumption, they are ideal for fiber-to-the-desktop/laptop under the desk deployments and mission-critical field diagnostic applications.

The miConverter GX/T features fixed fiber connectors and Small Form Pluggable (SFP) transceivers. ST, SC and LC fixed fiber connectors support multimode, single-mode, and single-mode single-fiber. 100BASE-X and 1000BASE-X SFP transceivers enable adaptability to different data rates, fiber types and wavelengths, including Coarse Wave Division Multiplexing (CWDM) wavelengths to increase the bandwidth capacity of fiber infrastructure.

The Plug-and-Play capability of the miConverter GX/T simplifies fiber-to-the-laptop and fiber-to-the-desktop deployments. Both the fiber port and the RJ-45 port support auto-negotiation to achieve the best possible mode of operation (speed, duplex mode and Pause mode) between the devices. The auto-negotiation feature can be disabled on both ports (for manual configuration) using DIP-switches on the module. This is useful in a situation where the GX/T is connected to a non-negotiating device and the configuration parameters must be set manually.

Network flow control is managed by the Pause function (configured via auto-negotiation or manually) that prevents network congestion on both the RJ-45 and fiber ports. When Pause is enabled and the device is experiencing network congestion, it will send out a Pause signal to its link partner, instructing it to slow down data transmission.

The GX/T generates a remote fault indication when it detects link fault conditions, and reports detection of these signals by displaying status on the LED. Through user DIP-switch configuration, the detection of these indicators or link modes can also be propagated to the other port on the GX/T as a means of notifying connected end-devices of the link fault.

Visual diagnostic information is provided through LED indicators that assist in network installation and maintenance. The LEDs report the availability of power, port activity and link status and speed.

The miConverter GX/T combines Gigabit Ethernet connectivity with the lightweight design and low-power consumption required for both permanent deployment and temporary facilities.

SFPs not included. Shown with optional wall mount bracket

KEY FEATURES

- Industrial Miniature Gigabit Ethernet media converter
- Extended (-40º to 75º C) and Industrial* (-40º to 85ºC) operational temperature ranges
- Supports 10BASE-T, 100BASE-TX, 1000BASE-T, 100BASE-X, 1000BASE-X and the IEEE 802.3 specification
- 100Mbps and 1Gbps SFP transceivers for standard or CWDM wavelengths
- Small and lightweight (5 ounces)
- Cost-effective
- Supports MDI/MDIX auto-crossover
- Plug-and-Play capability
- Supports Full/Half-Duplex fiber optic auto-negotiation
- Multimode and single-mode fiber options
- LED indicators for RJ-45 and fiber port status
- AC to DC Power Adapter or 2-Pin DC terminal
- USB power via optional Power Adapter Cable
- Wall-mount with optional mounting brackets
- Made in the USA
- Lifetime Warranty and free 24/7 Technical Support

* Only available with 2-pin terminal connector models.

The GX/T features AC or DC external power options. AC model includes a universal power adapter. DC models can be powered through a 2-pin terminal connection.

Weighing less than 5 oz. with the USB Power Adapter Cable, the miConverter GX/T can easily fit into any pocket or laptop carrying case. It can also be attached to portable equipment using the included Velcro® strips or wall-mounted using the optional wall-mounting bracket kit.

The miConverter GX/T can be mounted in the miConverter 18-Module Power Chassis to consolidate individual modules into a rack-mount form factor that can be deployed where multiple fiber optic links are distributed from UTP switch equipment.

SPECIFICATIONS

Description	***miConverter* GX/T** 10/100//1000BASE-T Copper to 1000BASE-X Fiber Media Converter	
Standard Compliances	IEEE 802.3	
Regulatory Compliances	UL, CE, FCC Class A, RoHS, WEEE, REACH	
Frame Size	Up to 10,240 bytes	
Port Types	Copper: Fiber:	10/100/1000BASE-T (RJ-45) 1000BASE-X (ST, SC, SFP) 100BASE-FX/LX (SFP) 1000BASE-BX (SC Single-Fiber, SFP)
Cable Types	Copper: Fiber:	EIA/TIA 568A/B, Cat 5 UTP and higher Multimode: 50/125µm, 62.5/125µm Single-mode: 9/125µm
AC Power Requirements	AC/DC Adapter:	100 - 240VAC/50 - 60Hz 0.02A @ 120VAC (max)
DC Power Requirements	DC Input: (AC/DC Adapter)	5.0 to 12.0VDC 0.35A @ 5VDC 2.5mm Barrel Connector
	DC Input: (Terminal Block)	5.0 to 12.0VDC 0.35A @ 5VDC 2-Pin Terminal (non-isolated)
Dimensions (W x D x H)	1.71" x 4.10" x 0.84" (43.4 mm x 104.1 mm x 21.3 mm)	
Weight	Module Only: with AC/DC Adapter:	4 oz. (113.4 grams) 14.62 oz. (414.4 grams)
Temperature	Extended: Industrial: Storage:	40 to 75°C -40 to 85°C (DC Terminal Power) -50 to 85°C
Humidity	5 to 95% (non-condensing)	
Altitude	-100m to 4,000m	
MTBF (hrs)	Module Only: AC/DC Adapter:	878,000 100,000
Warranty	Lifetime warranty with 24/7/365 free Technical Support	

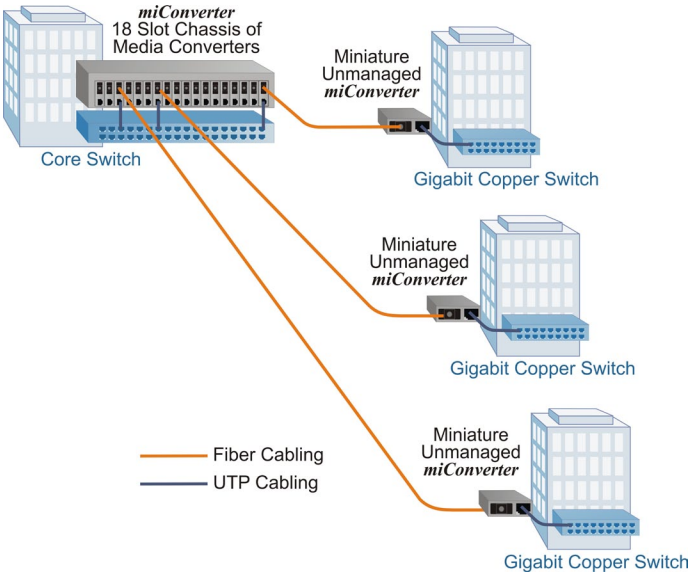
APPLICATION EXAMPLES

This application example illustrates an Ethernet Enterprise network with a star topology that provides multiple fiber links to remote buildings.

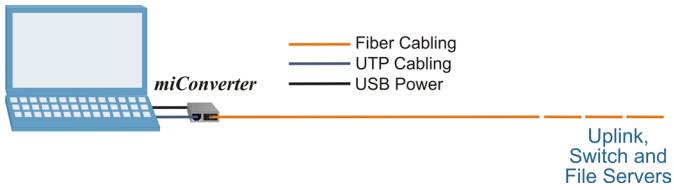
In the upper left, three copper UTP links from a core copper switch are converted to three fiber links with a miConverter 18-Module chassis of media converter modules. When fiber core switch is used, the chassis of media converters are not required.

The fiber links run to remote buildings, where the fiber at each location is converted back to copper with a standalone miConverter and distributed to end users at different buildings.

In all cases, multimode, single-mode, or single-mode single-fiber can be used.



The application diagram depicts a laptop computer used in a fiber network.



The miConverter connects to the laptop via two cables. The first cable is the USB Power Adapter which draws electrical current from the laptop's USB (1.0 or 2.0) port to power the miConverter. The other cable is the UTP cable that links the laptop network port and the miConverter copper port. The miConverter converts the UTP signal to fiber signal, which can extend up to 140km. Power from the USB port of the computer is automatically shut off when the computer is powered down, turning off the miConverter when fiber conversion is no longer needed.

ORDERING INFORMATION

miConverter Industrial GX/T Models											
Fiber Type	Distance	Connector Type			Tx / Rx Lambda (nm)	Min. Tx Power (dBm)	Max. Tx Power (dBm)	Min. Rx Power (dBm)	Max. Rx Power (dBm)	Min. Attenuation (dB)	Link Budget (dB)
		ST	SC	SFP							
-	-	-	-	1239-0-pt	-	-	-	-	-	-	-
MM/DF	220 / 550m[1]	1220-0-pt	1222-0-pt	-	850 / 850	-10	-4	-17	-3	-	7
SM/DF	12km	1221-1-pt	1223-1-pt	-	1310 / 1310	-9.5	-3	-19.5	-3	-	10
SM/DF	34km	1221-2-pt	1223-2-pt	-	1310 / 1310	-5	0	-23	-3	3	18
SM/DF	80km	-	1223-3-pt	-	1550 / 1550	-5	0	-23	-3	3	18
SM/DF	110km	-	1223-4-pt	-	1550 / 1550	0	5	-24	-3	8	24
SM/DF	140km	-	1223-5-pt	-	1550 / 1550	2	5	-28	-8	13	30
MM/SF[2]	550m	-	1230-0-pt	-	1310 / 1550	-9	-3	-18	-3	-	9
MM/SF[2]	550m	-	1231-0-pt	-	1550 / 1310	-9	-3	-18	-3	-	9
SM/SF[2]	20km	-	1230-1-pt	-	1310 / 1550	-9.5	-3	-20	-3	-	10.5
SM/SF[2]	20km	-	1231-1-pt	-	1550 / 1310	-9.5	-3	-20	-3	-	10.5
SM/SF[2]	40km	-	1230-2-pt	-	1310 / 1550	-3	0	-20	-3	3	17
SM/SF[2]	40km	-	1231-2-pt	-	1550 / 1310	-3	0	-20	-3	3	17

[1] 62.5/125µm (OM1) multimode fiber up to 220m. 50/125µm (OM2) multimode fiber up to 550m.
[2] When using single-fiber (SF) media converter models, the Tx wavelength on one end has to match the Rx wavelength on the other.
MM = Multimode, SM = Single-mode, DF = Dual Fiber, SF = Single-fiber

Base Model Number: 12xx-x-pt

Select the model from ordering table above.

Add power option (**p**) and operating temperature range (**t**) to the model type selected.

Power Options (p):

0 = Barrel Connector, No AC/DC Power Adapter	**5** = Barrel Connector and Universal AC/DC Power Adapter, 100-240VAC, 50-60Hz (requires AC power cord)
1 = Barrel Connector and Universal AC/DC Power Adapter, 100-240VAC, 50-60Hz (requires AC power cord)	**6** = Barrel Connector and USB Power Adapter Cable, No Power Adapter
2 = Barrel Connector and Universal AC/DC Power Adapter, 100-240VAC, 50-60Hz (requires AC power cord)	**8** = Barrel Connector and Universal AC/DC Power Adapter, 100-240VAC, 50-60Hz (requires AC power cord)
3 = Barrel Connector and Universal AC/DC Power Adapter, 100-240VAC, 50-60Hz (requires AC power cord)	**9** = 2 Pin DC Terminal Connector, 5-12VDC, No Power Adapter
4 = Barrel Connector and Universal AC/DC Power Adapter, 100-240VAC, 50-60Hz (requires AC power cord)	

Operating Temperature Options (t):

Z = Extended temperature (-40 to 75°C)	**Y** = Industrial temperature (-40 to 85°C) - Only available with 2 Pin DC models

Contact Omnitron for other fiber options. Order the appropriate SFPs separately. Visit the Omnitron Optical Transceivers web page.

Chassis, Mounting Options and Accessories	
Model Number	**Description**
1020-1	18-Module AC Powered Chassis*
1025-1	18-Module 48VDC Powered Chassis*
1026-1	18-Module 24VDC Powered Chassis*
1091-0	Wall Mounting Hardware Kit
8252-0	DIN Rail Mounting Clip
9119-PSE	Spare JET/PSE certified AC/DC Power Adapter for Wide and Extended temperature models
9129-PS	Spare AC/DC Power Adapter for Wide and Extended temperature models
9130-2	Spare USB Power Adapter Cable (not for use with DC terminal connector models)

Contact Omnitron for replacement power adapters and other accessories.
* Not for use with Extended temperature models or DC Terminal Connector models.