

miConverter® GX/T Industrial 10/100/1000 Ethernet Media Converter

The miConverter GX/T is a miniature industrial 10/100/1000BASE-T copper to 1000BASE-X fiber media converter that supports jumbo frames. 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 (-40° to 75° C) and Industrial¹ (-40° to 85°C) operational temperature ranges
- Supports 10/100/1000BASE-T, 100BASE-X, 1000BASE-X and the IEEE 802.3 specification
- Supports 100Mbps and 1Gbps SFP transceivers for standard, CWDM or DWDM wavelengths
- Supports Full/Half-Duplex fiber optic auto-negotiation
- Multimode and single-mode fiber options
- Supports MDI/MDIX auto-crossover
- LED indicators for RJ-45 and fiber port status
- Automatic Link Recovery
- Plug-and-Play Capability
- Small and lightweight (5 ounces)
- AC to DC Power Adapter or 2-Pin DC terminal
- USB power via optional Power Adapter Cable
- Wall-mount with optional mounting brackets
- TAA, BAA and NDAA compliant, and Made in the USA
- Lifetime Warranty and free 24/7 Technical Support

¹ Industrial temperature range is only available on 2-Pin DC 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 | | <i>miConverter GX/T</i> | |
|------------------------|---|---|--|
| Description | 10/100/1000BASE-T Copper to 1000BASE-X Fiber Media Converter | | |
| Standard Compliances | IEEE 802.3 | | |
| Regulatory Compliances | Safety: | UL, cUL, CE, UKCA | |
| | EMI: | FCC Class A | |
| | ACT: | TAA, BAA, NDAA | |
| Environmental | RoHS, WEEE, REACH | | |
| Frame Size | Fixed Fiber Models: Up to 9K bytes SFP Model: Up to 10,240 bytes | | |
| Port Types | Copper: | 10/100/1000BASE-T (RJ-45) | |
| | Fiber: | 100BASE-X (SFP) | |
| | | 1000BASE-X (ST, SC, SFP) | |
| | | 1000BASE-BX (SC Single-Fiber, SFP) | |
| Cable Types | Copper: | EIA/TIA 568A/B, Cat 5 UTP and higher | |
| | Fiber: | 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: | 4 oz. (113.4 grams) | |
| | with AC/DC Adapter: | 14.62 oz. (414.4 grams) | |
| Temperature | Extended: | -40 to 75°C | |
| | Industrial: | -40 to 85°C (2-Pin Terminal only) | |
| | Storage: | -50 to 85°C | |
| Humidity | 5 to 95% (non-condensing) | | |
| Altitude | -100m to 4,000m | | |
| MTBF (hrs) | Module Only: | 878,000 | |
| | AC/DC Adapter: | 100,000 | |
| Warranty | Lifetime warranty with 24/7/365 free Technical Support | | |

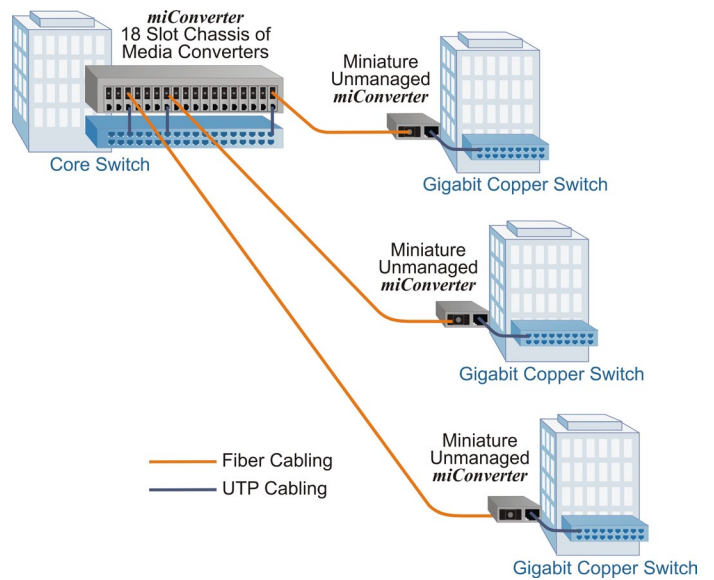
APPLICATIONS

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

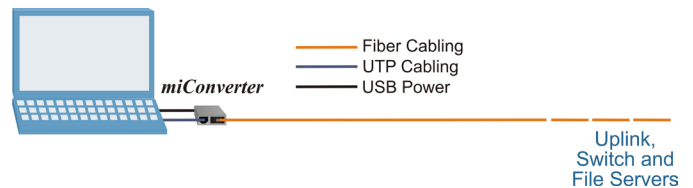
In the upper left, three copper UTP links from a core copper switch are converted to three fiber links with a miConverter 18-Module chassis of media converter modules. When fiber core switch is used, the chassis of media converters are not required.

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

Step 1: Choose a Base Part Number (xxxx-x-pt)

| 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 ² | 1220-0-pt | 1222-0-pt | - | 850 / 850 | -10 | -4 | -17 | -3 | - | 7 |
| MM/DF | 2km | - | 1222-6-pt | - | 1310 / 1310 | -9.5 | -3 | -19.5 | -3 | - | 10 |
| 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 ³ | 550m | - | 1230-0-pt | - | 1310 / 1550 | -9 | -3 | -18 | -3 | - | 9 |
| MM/SF ³ | 550m | - | 1231-0-pt | - | 1550 / 1310 | -9 | -3 | -18 | -3 | - | 9 |
| SM/SF ³ | 20km | - | 1230-1-pt | - | 1310 / 1550 | -9.5 | -3 | -20 | -3 | - | 10.5 |
| SM/SF ³ | 20km | - | 1231-1-pt | - | 1550 / 1310 | -9.5 | -3 | -20 | -3 | - | 10.5 |
| SM/SF ³ | 40km | - | 1230-2-pt | - | 1310 / 1550 | -3 | 0 | -20 | -3 | 3 | 17 |
| SM/SF ³ | 40km | - | 1231-2-pt | - | 1550 / 1310 | -3 | 0 | -20 | -3 | 3 | 17 |

² 62.5/125µm (OM1) multimode fiber up to 220m. 50/125µm (OM2) multimode fiber up to 550m.

³ 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

Contact Omnitron for other fiber options. Order the appropriate SFPs separately. [Visit the Omnitron Optical Transceivers web page.](#)

Step 2: Choose your Power Option (xxxx-x-pt)

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

Step 3: Choose an Operating Temperature Option (xxxx-x-pt)

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

| Chassis, Mounting Options and Accessories | |
|---|--|
| Model Number | Description |
| 1020-1 | 18-Module AC Powered Chassis - Not for use with Extended temperature models or DC Terminal Connector models |
| 1025-1 | 18-Module 48VDC Powered Chassis - Not for use with Extended temperature models or DC Terminal Connector models |
| 1026-1 | 18-Module 24VDC Powered Chassis - Not for use with Extended temperature models or DC Terminal Connector models |
| 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, requires AC power cord |
| 9130-2 | Spare USB Power Adapter Cable (not for use with DC terminal connector models) |

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