

### miConverter GX/T

#### 10/100/1000BASE-T to 1000BASE-X Ethernet Media Converter

The *miConverter* GX/T is a miniature 10/100/1000BASE-T UTP copper to 1000BASE-X fiber media converter that supports jumbo frames up to 10,240 bytes. The *miConverter* GX/T provides cost-effective fiber connectivity from Ethernet switches to diagnostic equipment, desktop and laptop computers.

The GX/T features Small Form Pluggable (SFP) transceivers that support 1000BASE-X for interoperability with Gigabit fiber equipment. SFP transceivers enable adaptability to different fiber types, speed and distances, and support Coarse Wave Division Multiplexing (CWDM) technology to increase the bandwidth capacity of fiber infrastructure.

The GX/T also supports SC and ST fixed fiber connectors for multimode, single-mode fiber; and single mode single-fiber models are available.

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 UTP port support auto-negotiation, an IEEE standard which defines how all the communicating devices automatically perform their configuration functions. Auto-negotiation achieves 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 UTP 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.

Diagnostic data 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 mobile service networks.



SFPs not included. Shown with optional wall mount bracket

### KEY FEATURES

- Miniature Gigabit Ethernet media converter
- Supports 1000BASE-T, 1000BASE-X and the IEEE 802.3 specification
- Plug-and-Play capability
- USB power via optional Power Adapter Cable
- Supports Full/Half-Duplex fiber optic auto-negotiation
- Multimode and single-mode fiber options
- LED indicators for UTP and fiber status
- Domestic, Universal and Country/Region specific power supply options
- Wall-mount with optional mounting brackets or an 18-Module Powered Chassis
- Small and lightweight (5 ounces)
- Cost-effective
- Lifetime Warranty and free 24/7 Technical Support

# SPECIFICATIONS

|                                  |  |  |
|----------------------------------|--|--|
| <b>Model Type</b>                | <i>miConverter GX/T</i>  |  |
| <b>Description</b>               | 10/100/1000BASE-T UTP to 1000BASE-X Fiber Converter  |  |
| <b>Protocols</b>                 | IEEE802.3, 10BASE-T, 100BASE-TX, 100BASE-T, 1000BASE-X   |  |
| <b>Frame Size</b>                | 10,240 byte max frame size   |  |
| <b>Compliance</b>                | UL, CE, FCC Class A  |  |
| <b>Cable Types</b>               | UTP: EIA/TIA 568A/B, Cat 5 and higher<br>Fiber: Multimode: 50/125, 62.5/125, 100/140µm<br>Single-mode: 9/125µm   |  |
| <b>Connector Types</b>           | UTP: RJ45<br>Fiber: Dual fiber: SC, ST<br>Single-fiber: SC<br>SFP: LC  |  |
| <b>LED Display</b>               | Pwr, P1-AN, P1-LK, P2-LK, P2-10, P2-100, P2-100  |  |
| <b>Dimensions</b>                | W:1.71" x L:4.10" x H:0.84"  |  |
| <b>Weight</b>                    | without power adapter 5 oz.<br>with USB power adapter 6 oz.<br>with AC power adapter [US] 12 oz.   |  |
| <b>Power Requirements</b>        | DC Power (Typical) 5 to 12VDC<br>0.35A @5VDC<br>DC Power Connector 2.5mm DC Jack or 2 Pin Terminal Connector<br>AC Power Adapter [US] 100-120VAC/60Hz<br>0.02A @ 120VAC<br>AC Power Adapter [Universal] 100-240VAC/50-60Hz<br>0.02A @ 120VAC |  |
| <b>Temperature</b>               | Standard 0 to +50°C<br>Storage -50 to +80°C  |  |
| <b>Humidity (non-condensing)</b> | 5 to 95%   |  |
| <b>Altitude</b>                  | -100m to 4000m   |  |
| <b>MTBF (hrs)</b>                | without power adapter 878,000<br>with US and Country/Region Specific power adapter 250,000<br>with Universal power adapter 100,000   |  |

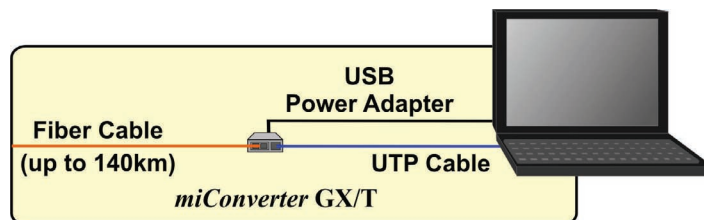
The external AC power supply is available in US, Universal and Country/Region specific models. Country/Region specific models feature optional interchangeable connectors, allowing for compatibility with electrical outlet types found around the world. The GX/T is also available with a terminal connector for DC power between 5 to 12 volts.

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. The chassis powers converter modules with barrel-style DC connectors, and is available with a single universal AC, 24VDC or 48VDC internal power supply. This compact, high-density chassis is 1.5 rack units high, and can be mounted in a standard 19" or 23" equipment rack.

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.

## APPLICATION EXAMPLE

The application diagram depicts a laptop computer connected to a fiber network.



The *miConverter GX/T* connects to the laptop via two cables. The USB Power Adapter Cable powers the *miConverter GX/T* by drawing electrical current from the USB port (1.0 or 2.0) of the laptop. The UTP cable links the laptop network port and the *miConverter GX/T* copper port. The GX/T converts the 10/100/1000BASE-T UTP signal to a 1000BASE-X fiber signal, which can extend the fiber link 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 GX/T* when fiber conversion is no longer needed.

The cost-effective *miConverter GX/T* is ideal for connecting large numbers of workstations in unmanaged fiber-to-the-desktop Gigabit Enterprise network applications. These applications can include remote edge locations where power outlets are at a premium, such as portable, temporary facilities. The *miConverter GX/T* is also an excellent solution for construction and military fiber-to-the-laptop applications where Gigabit fiber connectivity is required and local power is not available.

# ORDERING INFORMATION

| Fiber Type | Distances | ST Connector | SC Connector | SFP      | Tx λ (nm) | Rx λ (nm) | Min. Tx Power (dBm) | Max. Tx Power (dBm) | Min. Rx Sense (dBm) | Max. Rx Sense (dBm) | Min. Attenuation (dB) | Link Budget (dB) |
|------------|-----------|--------------|--------------|----------|-----------|-----------|---------------------|---------------------|---------------------|---------------------|-----------------------|------------------|
| SFP        | -         | -            | -            | 1239-0-x | -         | -         | -                   | -                   | -                   | -                   | -                     | -                |
| MM/DF      | 220/550m  | 1220-0-x     | 1222-0-x     | -        | 850       | 850       | -10                 | -4                  | -17                 | -3                  | -                     | 7                |
| SM/DF      | 12km      | 1221-1-x     | 1223-1-x     | -        | 1310      | 1310      | -9.5                | -3                  | -19.5               | -3                  | -                     | 10               |
| SM/DF      | 34km      | -            | 1223-2-x     | -        | 1310      | 1310      | -5                  | 0                   | -23                 | -3                  | 3                     | 18               |
| SM/DF      | 80km      | -            | 1223-3-x     | -        | 1550      | 1550      | -5                  | 0                   | -23                 | -3                  | 3                     | 18               |
| SM/DF      | 110km     | -            | 1223-4-x     | -        | 1550      | 1550      | 0                   | 5                   | -24                 | -3                  | 8                     | 24               |
| SM/DF      | 140km     | -            | 1223-5-x     | -        | 1550      | 1550      | 2                   | 5                   | -28                 | -3                  | 13                    | 30               |
| SM/SF      | 20km      | -            | 1230-1-x*    | -        | 1310      | 1550      | -9.5                | -3                  | -20                 | -3                  | -                     | 10.5             |
| SM/SF      | 20km      | -            | 1231-1-x*    | -        | 1550      | 1310      | -9.5                | -3                  | -20                 | -3                  | -                     | 10.5             |
| SM/SF      | 40km      | -            | 1230-2-x*    | -        | 1310      | 1550      | -3                  | 0                   | -20                 | -3                  | 3                     | 17               |
| SM/SF      | 40km      | -            | 1231-2-x*    | -        | 1550      | 1310      | -3                  | 0                   | -20                 | -3                  | 3                     | 17               |

When choosing power options, replace (-x) in the model number with the suffix number that corresponds to the selected power supply.

- 1 US Power Supply - 120Volt / 60Hz
- 2 Universal Power Supply (requires AC power cord) - 100-240Volt / 50-60Hz
- 3 European Power Supply - 100-240Volt / 50-60Hz
- 4 UK Power Supply - 100-240Volt / 50-60Hz
- 5 Australian Power Supply - 100-240Volt / 50-60Hz
- 6 USB Power Adapter Cable
- 8 US/JPN Power Supply - 100-240Volt / 50-60Hz
- 9 2 Pin Terminal Connector

**Example: 1223-3-6 = SM / DF / 80KM with a USB Power Adapter Cable.**

**For power supplies -3, -4, -5 and -8, country/region specific clips are used to provide the necessary power connection.**

\*Single-Fiber converters must be used in pairs. The Tx wavelength on one end has to match the Rx wavelength on the other. Consult the factory for other configurations

|  |           |
|--|-----------|
| 18-Module AC Powered Chassis   | 1020-1    |
| 18-Module 48VDC Powered Chassis  | 1025-1    |
| 18-Module 24VDC Powered Chassis  | 1026-1    |
| Wall Mounting Hardware Kit   | 1091-0    |
| USB Power Adapter  | 9130-2    |
| US Domestic AC Power Adapter   | 9113-PS   |
| Universal AC Power Adapter (requires AC power cord)  | 9115-PS   |
| AC Country/Region Specific Power Adapter w/ European Connector Clip  | 9116-PS-3 |
| AC Country/Region Specific Power Adapter w/ UK Connector Clip  | 9116-PS-4 |
| AC Country/Region Specific Power Adapter w/ Australian Connector Clip  | 9116-PS-5 |
| AC Country/Region Specific Power Adapter w/ Japanese Connector Clip  | 9116-PS-8 |
| Country/Region Specific European Connector Clip**  | 9116-3    |
| Country/Region Specific UK Connector Clip**  | 9116-4    |
| Country/Region Specific Australian Connector Clip**  | 9116-5    |
| Country/Region Specific Japanese Connector Clip**  | 9116-8    |
| **All spare Connector Clips can be used with AC Power Adapters 9116-PS-3, 9116-PS-4, 9116-PS-5 and 9116-PS-8 |           |

Order the appropriate SFPs separately. [Visit the Omnitron Optical Transceivers web page.](#)