

# IE-Giga-MiniMc/LFPT TX/SFP

# IE-Giga-MiniMc/LFPT TX/FX

Operation Manual



**B+B SMARTWORX**

Powered by

**ADVANTECH**

## FCC Radio Frequency Interference Statement

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This equipment has been tested and found to comply with the limits for a Class B computing device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which the user will be required to correct the interference at his own expense. Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment. The use of non-shielded I/O cables may not guarantee compliance with FCC RFI limits. This digital apparatus does not exceed the Class B limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

## Limited Lifetime Warranty

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Effective for products of B+B SmartWorx shipped on or after May 1, 2013, B+B SmartWorx warrants that each such product shall be free from defects in material and workmanship for its lifetime. This limited lifetime warranty is applicable solely to the original user and is not transferable.

This warranty is expressly conditioned upon proper storage, installation, connection, operation and maintenance of products in accordance with their written specifications.

Pursuant to the warranty, within the warranty period, B+B SmartWorx, at its option will:

1. Replace the product with a functional equivalent;
2. Repair the product; or
3. Provide a partial refund of purchase price based on a depreciated value.

Products of other manufacturers sold by B+B SmartWorx are not subject to any warranty or indemnity offered by B+B SmartWorx, but may be subject to the warranties of the other manufacturers.

Notwithstanding the foregoing, under no circumstances shall B+B SmartWorx have any warranty obligations or any other liability for: (i) any defects resulting from wear and tear, accident, improper use by the buyer or use by any third party except in accordance with the written instructions or advice of the B+B SmartWorx or the manufacturer of the products, including without limitation surge and overvoltage conditions that exceed specified ratings, (ii) any products which have been adjusted, modified or repaired by any party other than B+B SmartWorx or (iii) any descriptions, illustrations, figures as to performance, drawings and particulars of weights and dimensions contained in the B+B SmartWorx catalogs, price lists, marketing materials or elsewhere since they are merely intended to represent a general idea of the products and do not form part of this price quote and do not constitute a warranty of any kind, whether express or implied, as to any of the B+B SmartWorx products.

THE REPAIR OR REPLACEMENT OF THE DEFECTIVE ITEMS IN ACCORDANCE WITH THE EXPRESS WARRANTY SET FORTH ABOVE IS B+B SMARTWORX SOLE OBLIGATION UNDER THIS WARRANTY. THE WARRANTY CONTAINED IN THIS SECTION SHALL EXTEND TO THE ORIGINAL USER ONLY, IS IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND ALL SUCH WARRANTIES AND INDEMNITIES ARE EXPRESSLY DISCLAIMED, INCLUDING WITHOUT LIMITATION (I) THE IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND OF MERCHANTABILITY AND (II) ANY WARRANTY THAT THE PRODUCTS ARE DO NOT INFRINGE OR VIOLATE THE INTELLECTUAL PROPERTY RIGHTS OF ANY THIRD PARTY. IN NO EVENT SHALL B+B SMARTWORX BE LIABLE FOR LOSS OF BUSINESS, LOSS OF USE OR OF DATA INTERRUPTION OF BUSINESS, LOST PROFITS OR GOODWILL OR OTHER SPECIAL, INCIDENTAL, EXEMPLARY OR CONSEQUENTIAL DAMAGES. B+B SMARTWORX SHALL DISREGARD AND NOT BE BOUND BY ANY REPRESENTATIONS, WARRANTIES OR INDEMNITIES MADE BY ANY OTHER PERSON, INCLUDING WITHOUT LIMITATION EMPLOYEES, DISTRIBUTORS, RESELLERS OR DEALERS OF B+B SMARTWORX WHICH ARE INCONSISTENT WITH THE WARRANTY, SET FORTH ABOVE.

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## About the IE-Giga-MiniMc/LFPT TX/SFP

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The IE-Giga-MiniMc/LFPT TX/SFP provides a single conversion between 10/100/1000 Base-T twisted pair and 1000 Base-SX/FX fiber. This device Auto Negotiates speed and duplex on the copper port and the fiber is fixed at 1000Mbps. There is a fixed fiber and an SFP version available; both support jumbo frames up to 10240 MTU.

The IE-Giga-MiniMc/LFPT TX/FX, is a fixed fiber, transceiver model, includes one 10/100/1000Mbps RJ-45 connector and one 1000Mbps SC fiber connector which can support Single Mode fiber or multimode fiber in Dual Strand or Single Strand Configurations.

The IE-Giga-MiniMc/LFPT TX/SFP is a SFP port-base model, includes one 10/100/1000Mbps RJ-45 connector and one SFP port, which was designed to support MSA compliant 100Mbps or 1000Mbps SFPs. The device will read the SFP and run at the speed for which the SFP was designed. SFPs can be purchased from B&B Electronics to accommodate Single Mode or Multi Mode fiber in Single Strand or Dual Strand configurations.

<b>NOTE</b>
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CWDM fiber options are available for both the SFP and the FX models.
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Both models include LFPT, a diagnostic feature that is can be enabled via a DIP Switch on the back of the unit. This feature forces a port “down” state on one port when link is lost on the other port. The result is the link fault passes through the device. Understanding LFPT is critical to operating the device, for more information, please refer to the Link Fault Pass Through (LFPT) section.

<b>NOTE</b>
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<i>Unless noted otherwise, all references to the IE-Giga-MiniMc/LFPT TX/SFP in this manual are also applicable to the IE-Giga-MiniMc/LFPT TX/FX.</i>
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## Installing the IE-Giga-MiniMc/LFPT TX/SFP

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The IE-Giga-MiniMc/LFPT TX/SFP can be installed in the following ways:

- As a stand alone unit
- DIN Rail Mounting
- Wall Mount bracket
- IE-PowerTray/18
- Dual USB cable

As a standalone, the IE-Giga-MiniMc/LFPT TX/SFP uses a universal external switching power cube with 100 – 240  $\pm$ 10% VAC input and 5V DC output.

### Hardware Mounting

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The IE-Giga-MiniMc/LFPT TX/SFP can be mounted on a DIN rail or using wall mount brackets (shown below).



DIN rail clips (part number 806-39105) and wall mount brackets (part number 895-39229) are available for purchase through a B+B SmartWorx.

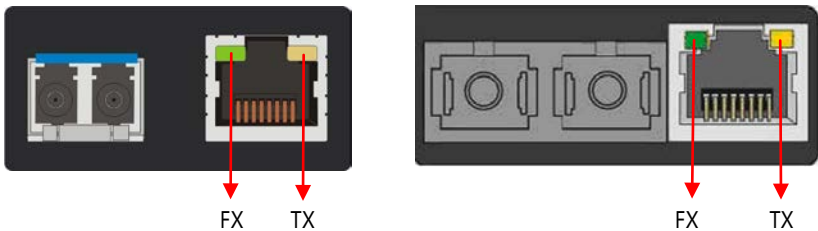
The DIN Rail clips include screws, to allow the installation onto a DIN Rail. Install the screws into DIN Rail clips, which should be mounted parallel or perpendicular to the DIN Rail. Snap the converter onto the clips. To remove the converter from the DIN Rail, use a flat-head screwdriver into the slot to gently pry the converter from the rail.



## LED Operation

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Each IE-Giga-MiniMc/LFPT TX/SFP includes two LEDs, located on the RJ-45 connector.



LED functions are as follows (above illustration is representative):

<b>FX LNK/ACT</b>	Glows green when a link is established on the fiber port; blinks green when activity is detected on the fiber port. Off when a fault is detected.
<b>TX LNK/ACT</b>	Glows amber when a link is established on the copper port; blinks amber when activity is detected on the copper port. Off when a fault is detected.

## Powering the IE-Giga-MiniMc/LFPT TX/SFP

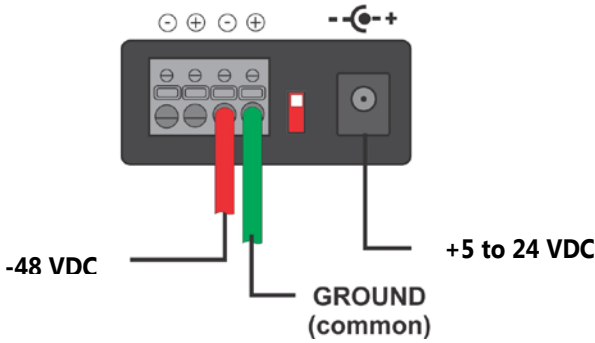
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The IE-Giga-MiniMc/LFPT TX/SFP includes multiple powering options:

- A country-specific, high-reliability AC power adapter (included)
- The 4-terminal DC power block
- IE-PowerTray/18 for Rack Mounting

## DC Terminal Block Wiring Instructions

The IE-Giga-MiniMc/LFPT TX/SFP can be powered via the DC terminal block. From a power source, connect to any one positive and any one negative terminal on IE-Giga-MiniMc/LFPT TX/SFP.

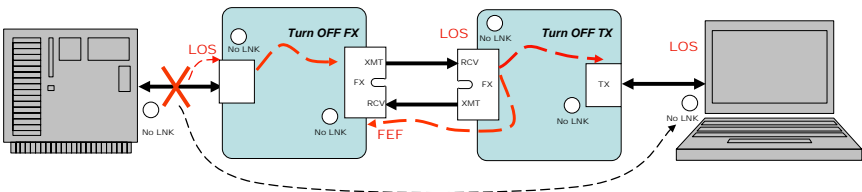


### NOTE

When using stranded wire, the leads must be tinned, and equivalent to a 16 AWG solid conductor. The *IE-Giga-MiniMc/LFPT TX/SFP* is protected against mis-wiring; if mis-wired the *IE-Giga-MiniMc/LFPT TX/SFP* will not function. The *IE-Giga-MiniMc/LFPT TX/SFP* is internally connected to the negative DC power terminals.

## Link Fault Pass Through (LFPT)

LFPT is a troubleshooting feature that combines TX and FX LinkLoss from both the local and remote B&B Electronics devices. This feature, when enabled, by setting the DSW on the back to ON, will pass a link fault through the device at each segment. Therefore, if a link fails on one side of the media converter, the media converter will force the link down on its link partner.



## Specifications

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### Ethernet Connections

- 10/100/1000 BaseT
- Auto Negotiation
- AutoCross
- Flow Control
- 10240 MTU
- Full Line-Rate Forwarding

### DC Input Voltage

7 to 50 VDC on DC terminal block

5 VDC on DC jack

### AC Wall Adapter

100 to 240  $\pm$ 10% VAC input, 5 VDC output, 2 A max

### Power Tray 18-Slot AC for Miniature Converters

125W, 20A@5V

### Power Consumption

600 mA

### Operating Temperature

-40°F to 185°F (-40°C to 85°C) DC terminal block

+14°F to +122°F (-10°C to +50°C) with IMC supplied AC wall adapter

### Storage Temperature

-31°F to +185°F (-35°C to +85°C)

### Humidity

5 to 95% (non-condensing); 0 to 10,000 ft. altitude

### Dimensions

0.83"H x 1.80"W x 3.35"D (2.11 x 4.57 x 8.51 cm)

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## B+B SmartWorx Technical Support

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**Tel:** (800) 346-3119 (in the U.S. and Canada)

Monday-Friday, 7:00am-7:00pm CST

+353 91 792444 (Europe)

Monday through Friday 8:00am - 5:00pm GMT

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**Web:** [www.advantech-bb.com](http://www.advantech-bb.com)

## Fiber Optic Cleaning Guidelines

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Fiber Optic transmitters and receivers are extremely susceptible to contamination by particles of dirt or dust, which can obstruct the optic path and cause performance degradation. Good system performance requires clean optics and connector ferrules.

1. Use fiber patch cords (or connectors, if you terminate your own fiber) only from a reputable supplier; low-quality components can cause many hard-to-diagnose problems in an installation.
2. Dust caps are installed at B+B SmartWorx to ensure factory-clean optical devices. These protective caps should not be removed until the moment of connecting the fiber cable to the device. Should it be necessary to disconnect the fiber device, reinstall the protective dust caps.
3. Store spare caps in a dust-free environment such as a sealed plastic bag or box so that when reinstalled they do not introduce any contamination to the optics.
4. If you suspect that the optics have been contaminated, alternate between blasting with clean, dry, compressed air and flushing with methanol to remove particles of dirt.

## Electrostatic Discharge Precautions

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Electrostatic discharge (ESD) can cause damage to any product, add-in modules or stand alone units, containing electronic components. Always observe the following precautions when installing or handling these kinds of products

1. Do not remove unit from its protective packaging until ready to install.
2. Wear an ESD wrist grounding strap before handling any module or component. If the wrist strap is not available, maintain grounded contact with the system unit throughout any procedure requiring ESD protection.
3. Hold the units by the edges; do not touch the electronic components or gold connectors.
4. After removal, always place the boards on a grounded, static-free surface, ESD pad or in a proper ESD bag. Do not slide the modules or stand alone units over any surface.



**WARNING!** Integrated circuits and fiber optic components are extremely susceptible to electrostatic discharge damage. Do not handle these components directly unless you are a qualified service technician and use tools and techniques that conform to accepted industry practices.

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## Safety Certifications

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UL/CUL: Listed to Safety of Information Technology Equipment, including Electrical Business Equipment.

CE: The products described herein comply with the Council Directive on Electromagnetic Compatibility (2004/108/EC) and the Council Directive on Electrical Equipment Designed for use within Certain Voltage Limits (2006/95/EC). Certified to Safety of Information Technology Equipment, Including Electrical Business Equipment. For further details, contact B+B SmartWorx.



**Class 1 Laser product, Luokan 1 Laserlaitte,  
Laser Klasse 1, Appareil A' Laser de Classe 1**

European Directive 2002/96/EC (WEEE) requires that any equipment that bears this symbol on product or packaging must not be disposed of with unsorted municipal waste. This symbol indicates that the equipment should be disposed of separately from regular household waste. It is the consumer's responsibility to dispose of this and all equipment so marked through designated collection facilities appointed by government or local authorities. Following these steps through proper disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about proper disposal, please contact local authorities, waste disposal services, or the point of purchase for this equipment.





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