PoE and PoE+ Giga-MiniMc

With LFPT

B&B ELECTRONICS

PoE and PoE+ Giga-MiniMc with LFPT

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FCC RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class A 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 A 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 A prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

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Limited Lifetime Warranty

Effective for products of B&B Electronics shipped on or after May 1, 2013, B&B Electronics 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 Electronics, 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 Electronics are not subject to any warranty or indemnity offered by B&B Electronics, but may be subject to the warranties of the other manufacturers.

Notwithstanding the foregoing, under no circumstances shall B&B Electronics 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 Electronics 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 Electronics or (iii) any

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ABOUT THE POE GIGA-MINIMC WITH LFPT SFP AND 1X9

The PoE Giga-MiniMc with LFPT is a solution for private network applications that require power over Ethernet for locations inside buildings where PoE is required to power an Ethernet device. The standalone unit offers a model with one SFP or fixed fiber transceiver, 1x9, uplink for the network connection, one PSE 10/100/1000Base-T copper port that provides Power-over-Ethernet (IEEE802.3af), and one 10/100/1000Mbps copper port. As a fiber-fed demarcation unit, it provides both power and data to a remote device over a standard CAT5 copper line, eliminating the need for a power connection to the remote device. The PoE Giga-MiniMc with LFPT provisions up to 15.4 watts on one copper port, and can be powered by an external AC adapter or DC terminal block. For more robust power requirements on both copper ports, please refer to the information about the PoE+ Giga-MiniMc on Page 13.

The SFP uplink can support fiber or copper SFPs. The fiber SFP, available in SC or LC connectors, supports 100FDX or 1000FDX; a copper SFP supports the SGMII interface (10/100/1000Mbps). The SFP, with or without DDMI, is available for purchase through B&B Electronics Distributors. The SFP must be MSA-compliant.

The copper ports auto negotiate to the connected device's speed and duplex mode: 10 Mbps, 100 Mbps or 1000 Mbps, and HDX or FDX (including Flow Control). The

PoE Giga-MiniMc with LFPT supports jumbo frames up to 10240.

NOTE
Unless noted otherwise, any reference is applicable for both the 1x9 and SFP version of the PoE Giga-MiniMc with LFPT in this manual.

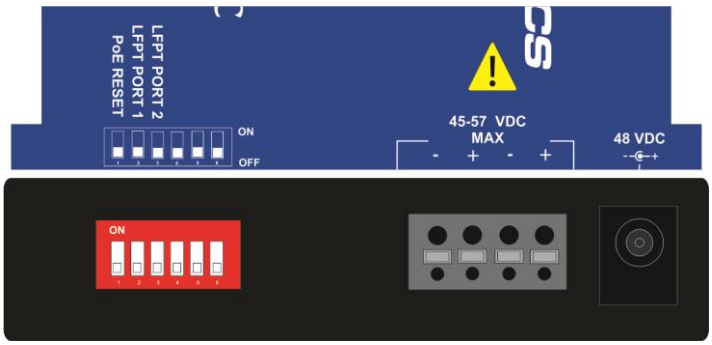
INSTALLATION

PoE Giga-MiniMc with LFPT installs virtually anywhere: as a standalone, table-top device, on a DIN rail, or using a Wallmount bracket. As a standalone device, the end user can install PoE Giga-MiniMc with LFPT in locations with extremely limited space. Velcro strips are also included to attach the device to most surfaces. The DIN Rail clips and Wallmount bracket are optional, available for purchase through B&B Electronics Distributors.

Installation Tips
Several models of the PoE Giga-MiniMc with LFPT support single-strand fiber for operation. Since single-strand fiber products use optics that transmit and receive on two different wavelengths, single-strand fiber products must be deployed in pairs. For example, connect a PoE Giga-MiniMc with LFPT , TX/SSLX-SM1310-SC (which has 1310 xmt and 1550 rcv) to a product which has 1550 xmt and 1310 rcv, e.g. PoE Giga-MiniMc with LFPT, TX/SSLX-SM1550-SC. The two connected products must also have the same speed and distance capabilities (i.e. both are single-mode [20km] or both are single/PLUS [40km]).

DIP SWITCH CONFIGURATION SFP AND 1X9

PoE Giga-MiniMc with LFPT SFP & PoE Giga-MiniMc with LFPT 1x9



DIP Switch	Name	Description	Default Setting
1	PoE Reset	ON forces Port 2, PSE/PoE, to OFF on LOS of Fiber input	OFF
2	LFPT Port 1	ON enables LFPT for Port 1 and the FX Port	OFF
3	LFPT Port 2	ON enables LFPT for Port 2 and the FX Port	OFF
4	Factory Set	Do not change	OFF
5	Factory Set	Do not change	OFF
6	Factory Set	Do not change	OFF

PoE RESET DSW

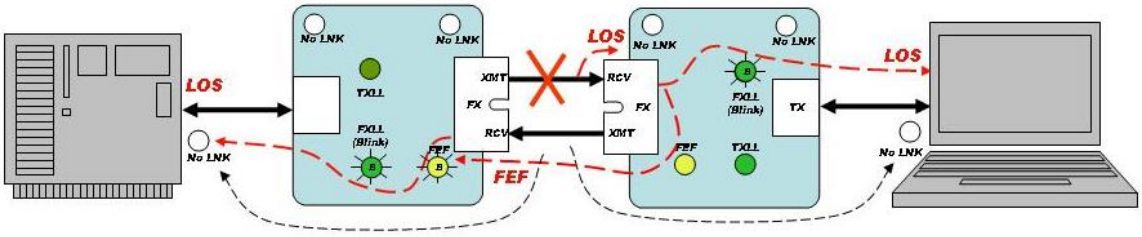
When set to ON, it will force the PSE output power on the copper port OFF when the LINK state is lost on the SFP line (copper or fiber SFP). By default, the DSW is set to OFF.

LFPT DSW FOR POE GIGA-MINIMC WITH LFPT

The DIP Switches for LFPT is to allow a LOS fault to be passed through the unit. When enabled, if link is lost on the FX port, the transmit on the TX port is disabled. If link is lost on a TX port, the transmit on the FX Port is disabled.

LFPT is a troubleshooting feature that combines TX and FX LinkLoss from both the local and remote IMC 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.

NOTE
With the fault switches – PoE Reset, LFPT Port1 and LFPT Port 2, only one fault condition is recognized at a time. The first fault condition is in charge. So if TX Port1 has no link and then the FX Port loses link, the loss of TX Port 1 link causes the FX Port to disable transmit.

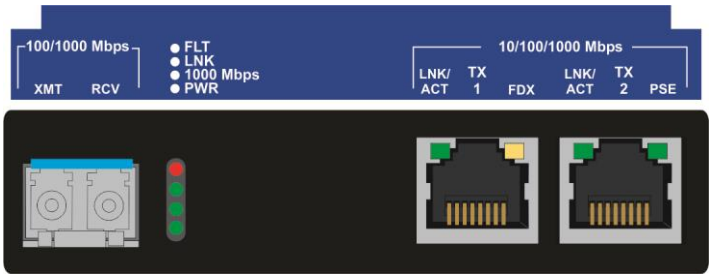


Link Fault Pass Through

NOTE
With the fault switches – PoE Reset, LFPT Port1 and LFPT Port 2, only one fault condition is recognized at a time. The first fault condition is in charge. So if TX Port1 has no link and then the FX Port loses link, the loss of TX Port 1 link causes the FX Port to disable transmit.

LED OPERATION SFP AND 1X9

The PoE Giga-MiniMc with LFPT SFP includes LEDs for three ports, as shown below:



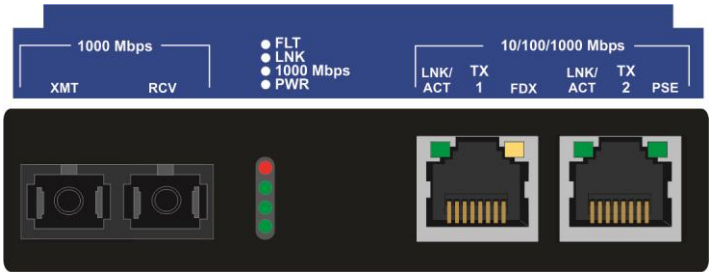
SFP LED Functions are as follows:

FLT	Glows red when a fault has been detected on the unit
LNK	Glows green with a valid link
1000 Mbps	Glows green when SFP is running at 1000Mbps
PWR	Glows green when unit is powered

RJ-45 LED Functions are as follows:

LNK/ACT (TX1, TX2)	Glows green with a valid link Blinks green when activity is detected
PSE (TX2)	Glows green when port is supplying PoE power Blinks green during fault conditions: 1 Hz flashes indicates an overload or short; 4 Hz flashes indicates out of range voltage or over-temperature Off if the port is not supplying power
FDX (TX1)	Glows amber when port is running full duplex

The PoE Giga-MiniMc with LFPT 1x9 includes LEDs for three ports, as shown below:



1x9 LED Functions are as follows:

FLT	Glows red when a fault has been detected on the unit
LNK	Glows green with a valid link
1000 Mbps	Glows green when is running at 1000Mbps
PWR	Glows green when unit is powered

RJ-45 LED Functions are as follows:

LNK/ACT (TX1, TX2)	Glows green with a valid link Blinks green when activity is detected
PSE (TX1, TX2)	Glows green when port is supplying PoE power Blinks green during fault conditions: 1 Hz flashes indicates an overload or short; 4 Hz flashes indicates out of range voltage or over-temperature Off if the port is not supplying power
FDX (TX1)	Glows amber when port is running full duplex

NOTE
The fixed twisted pair port labeled PSE is the only port capable of providing Power Over Ethernet.

POWERING OPTION

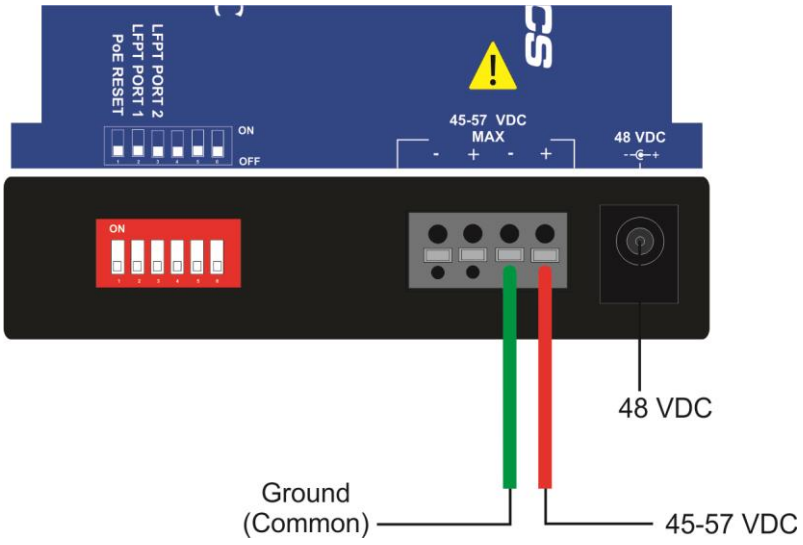
As a standalone unit, the PoE Giga-MiniMc with LFPT uses a universal external desktop switching power adapter. The PoE Giga-MiniMc with LFPT also includes a DC terminal block to support a voltage range of 45 to 57 VDC

PoE Giga-MiniMc with LFPT supports two powering options.

- Desktop AC power adapter with country specific power cord (included)
- The 4-terminal DC power block

DC Terminal Block Wiring Instructions

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

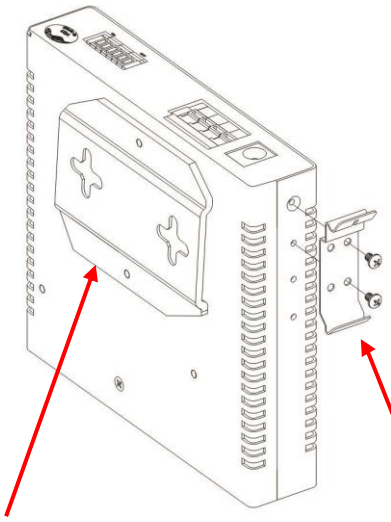


NOTE
When using stranded wire, the leads must be tinned, and equivalent to a 16 AWG solid conductor. The *PoE Giga-MiniMc with LFPT* is protected against mis-wiring; if mis-wired the *PoE Giga-MiniMc with LFPT* will not function. The *PoE Giga-MiniMc with LFPT* cannot support -48 VDC.

DIN RAIL AND WALLMOUNT BRACKET

The PoE Giga-MiniMc with LFPT can be mounted with DIN Rail clips, a hardware option available through B&B Electronics. 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 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. In addition, a Wallmount bracket can be installed onto the PoE Giga-MiniMc with LFPT.

NOTE
The DIN clips are designed for use on a DIN-35 rail.



Wallmount Bracket **Din Rail Mounting**

NOTE
The DIN clips are designed for use on a DIN-35 rail. *When using the side-installed location, remove the countersunk screw from the enclosure, and then use the vacated hole for one of the DIN clip screws.*

DC POWER SUPPLY PRECAUTIONS

The following precautions should be observed when installing chassis with DC power supplies.

1. Check nameplate ratings to assure there is no overloading of supply circuits that could have an effect on overcurrent protection and supply wiring.

2. When installing 45 to 57 VDC rated equipment, it must be installed only per the following conditions:

    a. Connect the equipment to a 45 to 57 VDC supply source that is electrically isolated form the alternating current source. The 45 to 57 VDC source must be connected to a 45 to 57 VDC SELV source.

    b. The maximum terminal voltage is 57 VDC.

    c. Input wiring to terminal block must be routed and secured in such a manner that it is protected from damage and stress. Do not route wiring past sharp edges or moving parts.

    d. A readily accessible disconnect device, with a 3mm minimum contact gap, shall be incorporated in the fixed wiring.

3. Grounding: reliable grounding of this equipment must be maintained. Particular attention should be given to supply connections when connecting to power strips, rather than direct connections to the branch circuit. The Negative Terminal is common to the grounded case.

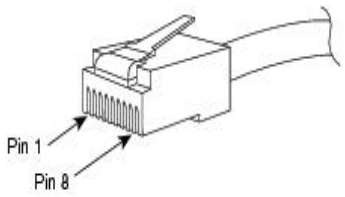
4. -48 VDC cannot be supported.

TROUBLESHOOTING

- PWR LED glows green when the unit is powered. If this LED is not lit, contact B&B Electronics Technical Support.

- Blinks green during fault conditions: 1 Hz flashes indicates an overload or short; 4 Hz flashes indicates out of range voltage or over-temperature. The PSE LED should maintain solid green, to indicate consistent power. Check the PD device and its requirements.

The following table lists the pin configuration for the RJ-48 connector.



Pin#	Signal Name 1000M	Signal Direction 10/100M	PoE & PoE+ (ALT-B)
1	TXD1+	Out*	
2	TXD1-	Out*	
3	RXD2+	IN*	
4	D3+		+V
5	D3-		+V
6	RXD2-	IN*	
7	D4+		-V
8	D4-		-V

SPECIFICATIONS FOR THE POE GIGA-MINIMC WITH LFPT

Ethernet Connections

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

DC Input Voltage

45 VDC to 57 VDC on DC terminal block
48 VDC on DC jack

AC Desktop Adapter

Input: 100 to 240 ±10% VAC, 50/60Hz, 0.7A *

Output: 48 VDC, 0.62A

* Maximum input power in Watts is calculated by multiplying the input amps by the lowest input voltage.

Power Consumption

21W max (PSE + PD)

5W max (PSE)

Operating Temperature

+32°F to + 158°F (0°C to +70°C) DC terminal block

+32°F to +122°F (0°C to +50°C) with IMC supplied AC desktop adapter

Storage Temperature

-40°F to +185°F (-40°C to +85°C)

Humidity

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

Power Characteristics

- Consumes less than 10 watts (heating) plus PSE power
- IEEE802.3af Power to field < 15.4 watts Powered from external 48 VDC power jack
- Powered from external 45 to 57 VDC 4-position terminal block
- The input power terminals are isolated from the unit chassis
- Threaded Chassis Grounding holes on unit for ground lug mounting

Standards Compliance

- IEEE 802.3af Power Over Ethernet
- IEEE 802.3 Ethernet Standards
- IEEE 802.3u Auto-Negotiation
- RFC-2474
- RFC-2475 DiffServ QoS

B&B Electronics Products	Length of Warranty
SFPs	1 year
PoE Giga-MiniMc with LFPT	Limited Lifetime

NOTE
Please refer to the Warranty Section at the beginning of this manual for the full terms of the warranty.

ABOUT THE POE+ GIGA-MINIMC SFP AND 1X9

The PoE+ Giga-MiniMc is a solution for private network applications that require power over Ethernet for locations inside buildings where PoE is required to power an Ethernet device. The standalone unit offers a model with one SFP or fixed fiber transceiver, 1x9, uplink for the network connection, and two PSE 10/100/1000Base-T copper ports that provides Power-over-Ethernet (IEEE802.3af). As a fiber-fed demarcation unit, it provides both power and data to a remote device over a standard CAT5 copper line, eliminating the need for a power connection to the remote device. The PoE+ Giga-MiniMc provides up to 25.5 watts per copper port and is powered by an external AC adapter or DC terminal block.

The SFP uplink can support fiber or copper SFPs. The fiber SFP, available in SC or LC connectors, supports 100FDX or 1000FDX; a copper SFP supports the SGMII interface (10/100/1000Mbps). The SFP, with or without DDMI, is available for purchase through B&B Electronics Distributors. The SFP must be MSA-compliant.

The copper ports auto negotiate to the connected device's speed and duplex mode: 10 Mbps, 100 Mbps or 1000 Mbps, and HDX or FDX (including Flow Control). The PoE+ Giga-MiniMc supports jumbo frames up to 10240.

NOTE

Unless noted otherwise, any reference is applicable for both the 1x9 and SFP version of the *PoE+ Giga-MiniMc* in this manual.

INSTALLATION

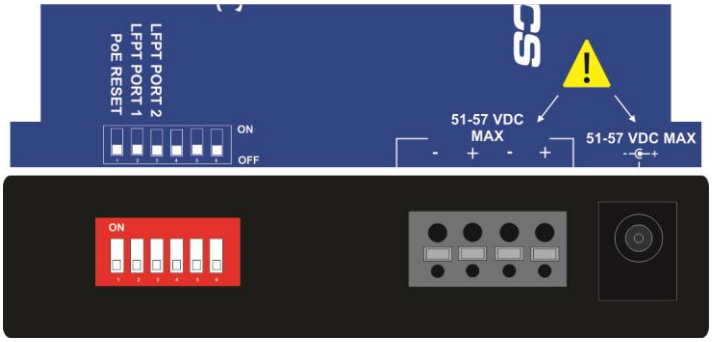
PoE+ Giga-MiniMc installs virtually anywhere: as a standalone, table-top device, on a DIN rail or using a Wallmount bracket. As a standalone device, the end user can install PoE+ Giga-MiniMc in locations with extremely limited space. Velcro strips are also included to attach the device to most surfaces. The DIN Rail clips and Wallmount bracket are optional, available for purchase through an B&B Electronics Distributor.

Installation Tip

Several models of the PoE+ Giga-MiniMc support single-strand fiber for operation. Since single-strand fiber products use optics that transmit and receive on two different wavelengths, single-strand fiber products must be deployed in pairs. For example, connect a PoE+ Giga-MiniMc, TX/SSLX-SM1310-SC (which has 1310 xmt and 1550 rcv) to a product which has 1550 xmt and 1310 rcv, e.g. PoE+ Giga-MiniMc, TX/SSLX-SM1550-SC. The two connected products must also have the same speed and distance capabilities (i.e. both are single-mode [20km] or both are single/PLUS [40km]).

DIP SWITCH CONFIGURATION SFP AND 1X9

PoE+ Giga-MiniMc SFP & PoE+ Giga-MiniMc 1x9



DIP Switch	Name	Description	Default Setting
1	PoE Reset	ON forces Ports 1 & 2 PSE/PoE to OFF on LOS of Fiber input	OFF
2	LFPT Port 1	ON enables LFPT for Port 1 and the FX Port	OFF
3	LFPT Port 2	ON enables LFPT for Port 2 and the FX Port	OFF
4	Factory Set	Do not change	OFF
5	Factory Set	Do not change	OFF
6	Factory Set	Do not change	OFF

POE RESET DSW

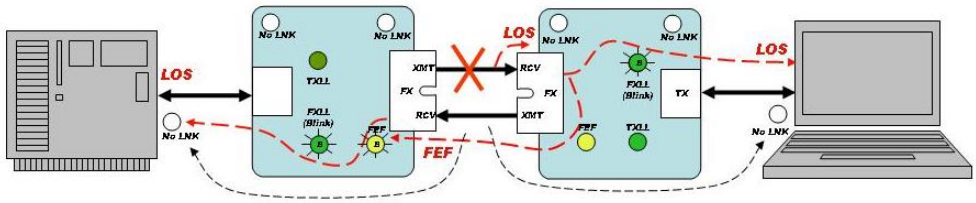
When set to ON, it will force the PSE output power on the copper ports OFF when the LINK state is lost on the fiber segment. By default, the DSW is set to OFF.

LFPT DSW FOR POE+ GIGA-MINIMC

The DIP Switches for LFPT is to allow a LOS fault to be passed through the unit. When enabled, if link is lost on the FX port, the transmit on the TX port is disabled. If link is lost on a TX port, the transmit on the FX Port is disabled.

NOTE
With the fault switches – PoE Reset, LFPT Port1 and LFPT Port 2, only one fault condition is recognized at a time. The first fault condition is in charge. So if TX Port1 has no link and then the FX Port loses link, the loss of TX Port 1 link causes the FX Port to disable transmit.

LFPT is a troubleshooting feature that combines TX and FX LinkLoss from both the local and remote IMC 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.

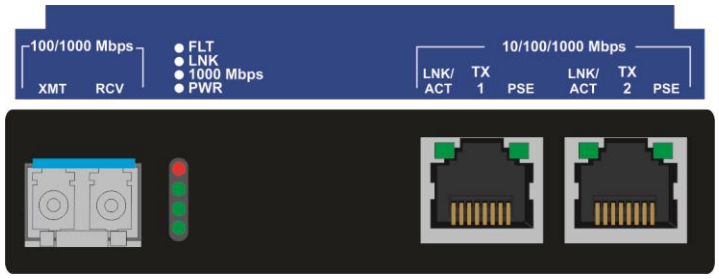


Link Fault Pass Through

NOTE
With the fault switches – PoE Reset, LFPT Port1 and LFPT Port 2, only one fault condition is recognized at a time. The first fault condition is in charge. So if TX Port1 has no link and then the FX Port loses link, the lose of TX Port 1 link causes the FX Port to disable transmit.

LED OPERATION SFP AND 1X9

The PoE+ Giga-MiniMc SFP includes LEDs for three ports, as shown below:



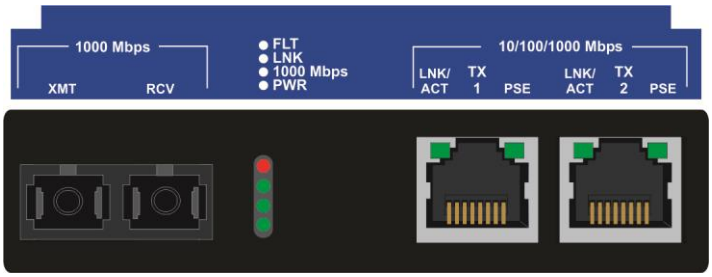
SFP LED Functions are as follows:

FLT	Glows red when a fault has been detected on the unit
LNK	Glows green with a valid link
1000 Mbps	Glows green when SFP is running at 1000Mbps
PWR	Glows green when unit is powered

RJ-45 LED Functions are as follows:

LNK/ACT (TX1, TX2)	Glows green with a valid link Blinks green when activity is detected
PSE (TX1, TX2)	Glows green when port is supplying PoE power Blinks green during fault conditions: 1 Hz flashes indicates an overload or short; 4 Hz flashes indicates out of range voltage or over-temperature Off if the port is not supplying power

The PoE+ Giga-MiniMc 1x9 includes LEDs for three ports, as shown below:



1x9 LED Functions are as follows:

FLT	Glows red when a fault has been detected on the unit
LNK	Glows green with a valid link
1000 Mbps	Glows green to indicate is running at 1000Mbps
PWR	Glows green when unit is powered

RJ-45 LED Functions are as follows:

LNK/ACT (TX1, TX2)	Glows green with a valid link Blinks green when activity is detected
PSE (TX1, TX2)	Glows green when port is supplying PoE power Blinks green during fault conditions: 1 Hz flashes indicates an overload or short; 4 Hz flashes indicates out of range voltage or over-temperature Off if the port is not supplying power

POWERING OPTIONS

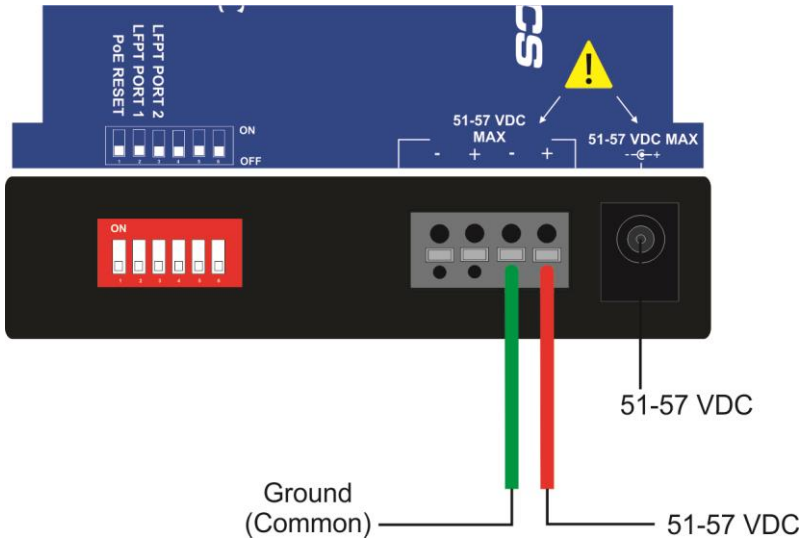
As a standalone unit, the PoE+ Giga-MiniMc uses a universal external desktop switching power adapter. The PoE+ Giga-MiniMc also includes a DC terminal block to support a voltage range of 51 to 57 VDC.

PoE+ Giga-MiniMc supports two powering options.

- Desktop AC power adapter with country specific power cord (included)
- The 4-terminal DC power block

DC TERMINAL BLOCK WIRING INSTRUCTIONS

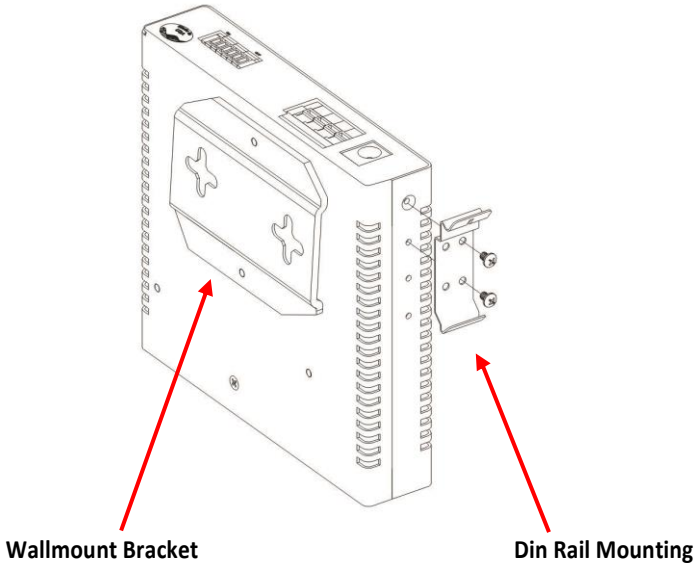
The PoE+ Giga-MiniMc can be powered via the DC terminal block. From a power source, connect to any one positive and any one negative terminal on PoE+ Giga-MiniMc.



NOTE
When using stranded wire, the leads must be tinned, and equivalent to a 16 AWG solid conductor. The *PoE+ Giga-MiniMc* is protected against mis-wiring; if mis-wired the *PoE+ Giga-MiniMc* will not function. The *PoE+ Giga-MiniMc* cannot support -48 VDC.

DIN RAIL AND WALLMOUNT BRACKET

The PoE+ Giga-MiniMc can be mounted with two DIN Rail clips, a hardware option available through B&B Electronics. 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 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. In addition, a Wallmount bracket can be installed onto the PoE+ Giga-MiniMc (optional purchase).



NOTE
The DIN clips are designed for use on a DIN-35 rail. *When using the side-installed location, remove the countersunk screw from the enclosure, and then use the vacated hole for one of the DIN clip screws.*

DC POWER SUPPLY PRECAUTIONS

The following precautions should be observed when installing chassis with DC power supplies.

1. Check nameplate ratings to assure there is no overloading of supply circuits that could have an effect on overcurrent protection and supply wiring.

2. When installing 51 to 57 VDC rated equipment, it must be installed only per the following conditions:

    a. Connect the equipment to a 51 to 57 VDC supply source that is electrically isolated form the alternating current source. The 51 to 57 VDC source must be connected to a 51 to 57 VDC SELV source.

    b. The maximum terminal voltage is 57 VDC.

    c. Input wiring to terminal block must be routed and secured in such a manner that it is protected from damage and stress. Do not route wiring past sharp edges or moving parts.

    d. A readily accessible disconnect device, with a 3mm minimum contact gap, shall be incorporated in the fixed wiring.

3. Grounding: reliable grounding of this equipment must be maintained. Particular attention should be given to supply connections when connecting to power strips, rather than direct connections to the branch circuit. The Negative Terminal is common to the grounded case.

4. -48 VDC cannot be supported.

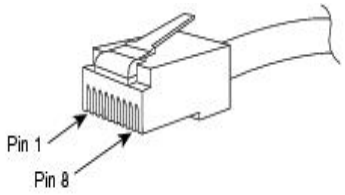
TROUBLESHOOTING

If the PoE+ Giga-MiniMc is not responding to the power provided to it, the following conditions may be responsible:

- Blinks green during fault conditions: 1 Hz flashes indicates an overload or short; 4 Hz flashes indicates out of range voltage or over-temperature. The PSE LED should maintain solid green, to indicate consistent power. Check the PD device and its requirements.

- If the PoE injector has power that can be verified, but the PSE LED is off, then contact B&B Electronics technical support.

The following table lists the pin configuration for the RJ-48 connector.



Pin#	Signal Name 1000M	Signal Direction 10/100M	PoE & PoE+ (ALT-B)
1	TXD1+	Out*	
2	TXD1-	Out*	
3	RXD2+	IN*	
4	D3+		+V
5	D3-		+V
6	RXD2-	IN*	
7	D4+		-V
8	D4-		-V

SPECIFICATIONS FOR THE PoE+ GIGA-MINIMC SFP AND 1X9

Ethernet Connections

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

DC Input Voltage

51 to 57 VDC on DC terminal block
51 to 57 VDC on DC jack

AC Desktop Adapter

Input: 100 to 240 ±10% VAC, 50/60Hz, 2A *

Output: 52 VDC, 2.31A

* Maximum input power in Watts is calculated by multiplying the input amps by the lowest input voltage.

Power Consumption

65W max (PSE + PD)

5W max (PSE)

Operating Temperature

+32°F to +158°F (0°C to +70°C) DC terminal block

+32°F to +122°F (0°C to +50°C) with IMC supplied AC desktop adapter

Storage Temperature

-40°F to +185°F (-40°C to +85°C)

Humidity

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

Power Characteristics

- Consumes less than 10 watts (heating) plus PSE power
- IEEE802.3af/at Power to field < 50 watts (2 x 25.5 watts)
- Powered from external 51 to 57 VDC power jack
- Powered from external 51 to 57 VDC 4-position terminal block
- The input power terminals are isolated from the unit chassis
- Threaded Chassis Grounding holes on unit for ground lug mounting

Standards Compliance

- IEEE 802.3af Power Over Ethernet
- IEEE 802.3at PoE+ Standards
- IEEE 802.3 Ethernet Standards
- IEEE 802.3u Auto-Negotiation
- RFC-2474
- RFC-2475 DiffServ QoS

B&B Electronics Products	Length of Warranty
SFPs	1 year
PoE+ Giga-MiniMc	Limited Lifetime

NOTE
Please refer to the Warranty Section at the beginning of this manual for the full terms of the warranty.

PoE PRECAUTIONS (FOR INSIDE-A-BUILDING INSTALLATION ONLY)

The PoE Giga-MiniMc with LFPT and PoE+ Giga-MiniMc are for inside-a-building installation only. Both devices cannot be installed outside-a-building environment, as they cannot meet the PoE requirements, per the PoE standard. If installing the device outside, serious damage can occur and void the B&B Electronics' warranty.

FIBER OPTIC CLEANING GUIDELINES

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 Electronics 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

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.

SAFETY CERTIFICATIONS

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 Electronics.

Class 1 Laser product, Luokan 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.