Installing S-Series I/O Fabric and I/O Modules

Electrical Hazard: Only qualified personnel should perform installation procedures.

For complete installation instructions and information about the S-Series® I/O fabric and I/O modules, see the *Enterasys S-Series I/O Module Hardware Installation Guide* at https://extranet.enterasys.com/downloads/.

Handling an S-Series Module

Caution: The S-Series modules are easily damaged by electrostatic discharge.

To prevent electrostatic damage, observe the following guidelines:

- Remove the S-Series module from its packaging only when ready to install it.
- Do not touch the module's pins, connectors, or components.
- Hold the module by its edges or front panel only.
- Wear a grounded, anti-static wrist strap when handling the module.
- Store or transport the module only in anti-static packaging.

Required Tools

This installation requires the following tools:

- Anti-static wrist strap
- Phillips screwdriver

Module Installation Restrictions

Table 1 lists which types of S-Series modules are supported by the S8, S6, S4, S3, and S1 chassis.

Table 1 S-Series Module Support

Module Type (Type Indicator in Model Number)	Module Supported by the Chassis?				
	S8	S6	S4	S3	S1
S130 Class I/O (SG4 or ST4)	Yes	Yes	Yes	Yes	No
S140 Class I/O (SG2, SK2, or ST2)	Yes	Yes	Yes	Yes	No
S150 Class I/O (SG1, SK1, or ST1)	Yes	Yes	Yes	No	No
S180 Class I/O (SK8 or SL8)	Yes	Yes	Yes	No	No
S130 Class I/O fabric (-Fx)	Yes (slots 4–6)	Yes (slots 4–6)	Yes (slots 2–3)	No	Yes
S150 Class I/O fabric (-Fx)	Yes (slots 4–6)	Yes (slots 4–6)	Yes (slots 2–3)	No	Yes
S155 Class I/O fabric (-Fx)	Yes (slots 4–6)	Yes (slots 4–6)	Yes (slots 2–3)	No	Yes
S180 Class I/O fabric (-Fx)	Yes (slots 4–6)	Yes (slots 4–6)	Yes (slots 2–3)	No	Yes

On the top cover of each S-Series I/O fabric and I/O module is a label that indicates the S-Series chassis in which you can install the module. For example, the label on an S180 I/O fabric module indicates that the module can only be installed in an S8, S6, S4, or S1 chassis.

For a listing of currently available S-Series I/O fabric and I/O modules, refer to the S-Series datasheet at http://www.enterasys.com/products/.

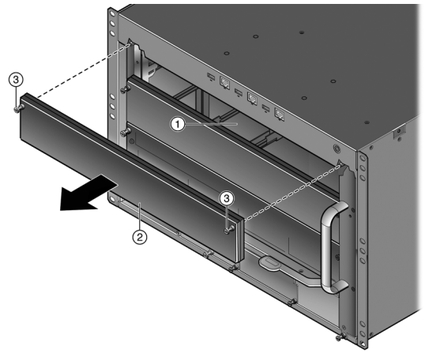
Module Installation Procedure

Caution: Before installing an S-Series module, ensure that you are properly grounded to avoid electrostatic discharge. However, since you can hotswap the module, the S-Series chassis may continue running.

To install an S-Series module:

1. Attach the anti-static wrist strap. Refer to the instructions on the anti-static wrist strap package.
2. If a coverplate is installed in the module slot, remove it by first loosening the two captive screws. See Figure 1.

Figure 1 Removing a Coverplate from a Module Slot



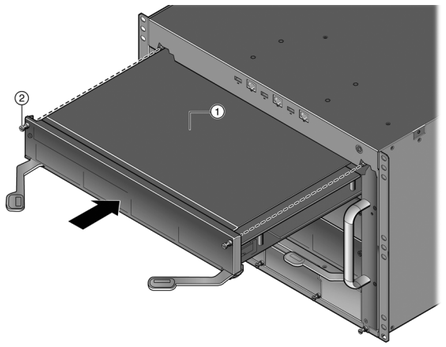
1 I/O module slot **2** I/O module coverplate **3** Captive screws (2)

3. Open the ejector handles of the module.

   The open position is approximately a 45° angle away from the module faceplate. The ejector handles must be open when inserting the module to allow the module to be installed properly.
4. Insert the module in the chassis. See Figure 2.

   If you are inserting a module in a slot that has guide rails, ensure that the module is in both the right and left guide rails.

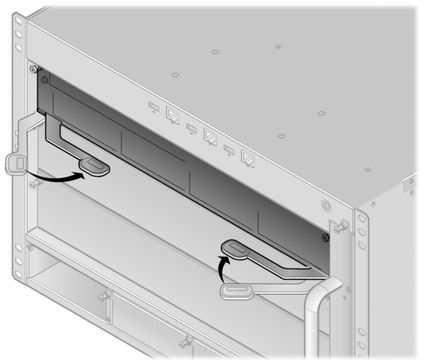
Figure 2 Inserting a Module into the Chassis



1 Module **2** Captive screws

5. Gently slide the module into the slot until the module engages the connector on the backplane.
6. Push the ejector handles toward the center of the module, as shown in Figure 3, until the module locks into place and is flush with adjacent coverplates or module faceplates.

Figure 3 Engaging Ejector Handles



7. Tighten the module's captive screws.

Installing SFP, SFP+, or QSFP+ Pluggable Transceivers

Warning: Fiber-optic SFP, SFP+, and QSFP+ ports use Class 1 lasers. Do not use optical instruments to view the laser output. The use of optical instruments to view laser output increases eye hazard. When viewing the output optical port, power must be removed from the network adapter.

This installation procedure applies to all SFP, SFP+, and QSFP+ transceivers. To install an SFP, SFP+, or QSFP+ transceiver in an S-Series module:

1. Attach the anti-static wrist strap. Refer to the instructions on the anti-static wrist strap package.
2. Remove the SFP, SFP+, or QSFP+ from the packaging.

   If there is a protective dust cover in the SFP, SFP+, or QSFP+ connector, DO NOT remove it at this time.
3. Hold the SFP, SFP+, or QSFP+ transceiver so that the connector will seat properly.
4. Carefully align the SFP, SFP+, or QSFP+ with the port slot.
5. Push the SFP, SFP+, or QSFP+ into the port slot until the transceiver clicks and locks into place.

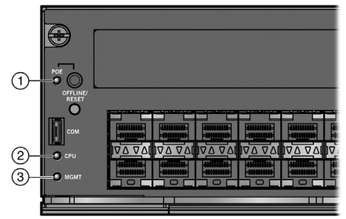
SFP, SFP+, and QSFP+ Fiber-Optic Specifications

For SFP, SFP+, and QSFP+ transceiver specifications, refer to the datasheet at http://www.enterasys.com/company/literature/transceivers-ds.pdf.

LEDs

The S-Series modules provide module and port LEDs. Figure 4 shows the module LEDs. For more information about the port LEDs, see the *Enterasys S-Series I/O Module Hardware Installation Guide* at https://extranet.enterasys.com/downloads/.

Figure 4 Module LEDs



1 POE LED **2** CPU LED **3** MGMT LED

Table 2 describes the module LED indications. Table 3 and Table 4 describe the port LED indications. Table 5 describes 10/100/1000 RJ45 port LEDs in PoE mode. You can switch the RJ45 port LEDs to PoE mode or RX/TX mode by pressing the red POE button, which is next to the POE LED on the left side of the module (see Figure 4).

Table 2 Module LEDs

LED	Activity	Status
POE	Green	The 10/100/1000 RJ45 port LEDs are in PoE mode. See Table 5. You can switch to or from PoE mode by pressing the red POE button next to the POE LED.
	None	The 10/100/1000 RJ45 port LEDs are in RX/TX mode. See Table 3. You can switch to or from RX/TX mode by pressing the red POE button next to the POE LED.
CPU	Off	Power off.
	Amber	**Blinking**. Device in bootup process.
		Solid. Testing.
	Green	**Blinking**. Image starts running.
		Solid. Functional.
	Red	**Solid**. Processor in reset.
	Green and Amber	**Blinking**. The module is shutting down.
	Amber and off	**Alternating (67% on, 33% off)**. Shutdown is complete. The indication will hold for 60 seconds then automatically restart.
CPU	White	**Blinking**. Booting up with no I/O fabric present. (S4/S6/S8 only)
	White and Green	**Alternating**. Operational chassis is now lacking an I/O fabric and is non-operational. (S4/S6/S8 only)
MGMT	None	This module is not the management module.
	Green	**Solid**. This module is the designated management module.
	Amber	**Blinking**. The module is saving data.

Table 3 10/100/1000 RJ45, SFP, SFP+, and QSFP+ Port LEDs

LED	Activity	Status
RX (Receive)	None	No link. No activity. Port enabled or disabled.
	Green	**Solid**. Link present, port enabled, no traffic is being received by the interface.
	Yellow	**Blinking**. Link present, port enabled, traffic is being received by the interface.
TX (Transmit)	None	Port enabled, but no activity.
	Green	**Blinking**. Indicates data transmission activity. Flashing frequency indicates the data rate.
	Yellow	**Solid**. Fault or error (collision).

Table 4 10Gb RJ45 Port LED

Color	Status
None	No link. No activity. Port enabled or disabled.
Green	**Solid**. Link present.
	Blinking. The interface is transmitting traffic.
Green and Yellow	**Alternating**. The interface is both transmitting and receiving traffic.
Yellow	**Blinking**. The interface is receiving traffic.
	Solid. Fault or error.

Table 5 10/100/1000 RJ45 Port LEDs—PoE Mode

RX LED Color	TX LED Color	State
Green	None	There is a connection to the PD and there is 48VDC at the RJ45 connector.
None	Yellow	Port is off due to overload (attached PD exceeded maximum load).
Yellow	None	Port is off due to PoE power management.
None	None	Port is off due to another reason.

Port Configuration CLI Commands

For port configuration CLI commands, refer to the *Enterasys S-Series CLI Reference Guide* or the *Enterasys S-Series Configuration Guide* at https://extranet.enterasys.com/downloads/.

Temperature and Humidity

Operating: 5° to 40°C (41° to 104°F)

Storage: -30° to 73°C (-22° to 164°F)

Operating relative humidity: 5% to 90% (non-condensing)

Notice

Enterasys Networks and its licensors reserve the right to make changes in specifications and other information contained in this document and its web site without prior notice. The reader should in all cases consult Enterasys Networks to determine whether any such changes have been made.

The hardware, firmware, or software described in this manual is subject to change without notice.

IN NO EVENT SHALL Enterasys Networks AND ITS LICENSORS BE LIABLE FOR ANY INCIDENTAL, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES WHATSOEVER (INCLUDING BUT NOT LIMITED TO LOST PROFITS) ARISING OUT OF OR RELATED TO THIS DOCUMENT, WEB SITE, OR THE INFORMATION CONTAINED IN THEM, EVEN IF Enterasys Networks AND ITS LICENSORS HAVE BEEN ADVISED OF, KNOWN, OR SHOULD HAVE KNOWN, THE POSSIBILITY OF SUCH DAMAGES.

Enterasys Networks, Inc.
9 Northeastern Boulevard
Salem, NH 03079

Part Number: 9034460-07 March 2013

Regulatory Compliance Information

Federal Communications Commission (FCC) Notice

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a class A digital 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 uses, generates, and can radiate radio frequency energy and if not installed in accordance with the operator's manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference in which case the user will be required to correct the interference at his own expense.

WARNING: Changes or modifications made to this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Industry Canada Notice

This digital apparatus does not exceed the class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

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

Class A ITE Notice

WARNING: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Clase A. Aviso de ITE

ADVERTENCIA: Este es un producto de Clase A. En un ambiente doméstico este producto puede causar interferencia de radio en cuyo caso puede ser requerido tomar medidas adecuadas.

Product Safety

This product complies with the following: UL 60950-1, CSA C22.2 No. 60950-1, 2006/95/EC, EN 60950-1, IEC 60950-1, EN 60825-1, EN 60825-2, 21 CFR 1040.10 and 1040.11.

Seguridad del Producto

El producto de Enterasys cumple con lo siguiente: UL 60950-1, CSA C22.2 No. 60950-1, 2006/95/EC, EN 60950-1, IEC 60950-1, EN 60825-1, EN 60825-2, 21 CFR 1040.10 and 1040.11.

Produktsicherheit

Dieses Produkt entspricht den folgenden Richtlinien: UL 60950-1, CSA C22.2 No. 60950-1, 2006/95/EC, EN 60950-1, IEC 60950-1, EN 60825-1, EN 60825-2, 21 CFR 1040.10 and 1040.11.

Electromagnetic Compatibility (EMC)

This product complies with the following: 47 CFR Part 15, ICES-003, CSA C108.8, 2004/108/EC, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024, AS/NZS CISPR 22, VCCI V-3, CNS 13438, and 2004/108/EC.

Compatibilidad Electromágnetica (EMC)

Este producto de Enterasys cumple con lo siguiente: 47 CFR Part 15, ICES-003, CSA C108.8, 2004/108/EC, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024, AS/NZS CISPR 22, VCCI V-3, CNS 13438, and 2004/108/EC.

Elektro-magnetische Kompatibilität (EMC)

Dieses Produkt entspricht den folgenden Richtlinien: 47 CFR Part 15, ICES-003, CSA C108.8, 2004/108/EC, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024, AS/NZS CISPR 22, VCCI V-3, CNS 13438, and 2004/108/EC.

产品说明书附件
Supplement to Product Instructions

部件名称 (Parts)	有毒有害物质或元素 (Hazardous Substance)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr^{6+})	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
金属部件 (Metal Parts)	×	○	○	×	○	○
电路模块 (Circuit Modules)	×	○	○	×	○	○
电缆及电缆组件 (Cables & Cable Assemblies)	×	○	○	×	○	○
塑料和聚合物部件 (Plastic and Polymeric parts)	○	○	○	○	○	×
电路开关 (Circuit Breakers)	○	○	×	×	○	○

○： 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。
Indicates that the concentration of the hazardous substance in all homogeneous materials in the parts is below the relevant threshold of the SJ/T 11363-2006 standard.

×： 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006 标准规定的限量要求。
Indicates that the concentration of the hazardous substance of at least one of all homogeneous materials in the parts is above the relevant threshold of the SJ/T 11363-2006 standard.

对销售之日的所售产品，本表显示，
凯创供应链的电子信息产品可能包含这些物质。注意：在所售产品中可能会也可能不会含有所有所列的部件。
This table shows where these substances may be found in the supply chain of Enterasys' electronic information products, as of the date of sale of the enclosed product. Note that some of the component types listed above may or may not be a part of the enclosed product.

除非另外特别的标注，此标志为针对所涉及产品的环保使用期标志。某些零部件会有一个不同的环保使用期(例如，电池单元模块)贴在其产品上。
此环保使用期限只适用于产品是在产品手册中所规定的条件下工作。
The Environmentally Friendly Use Period (EFUP) for all enclosed products and their parts are per the symbol shown here, unless otherwise marked. Certain parts may have a different EFUP (for example, battery modules) and so are marked to reflect such. The Environmentally Friendly Use Period is valid only when the product is operated under the conditions defined in the product manual.

VCCI Notice

This is a class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

この装置は，情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

BSMI EMC Statement — Taiwan

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種請況下，使用者會被要求採取某些適當的對策。

AS/NZS CISPR 22

Hazardous Substances

This product complies with the requirements of Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

European Waste Electrical and Electronic Equipment (WEEE) Notice

In accordance with Directive 2002/96/EC of the European Parliament on waste electrical and electronic equipment (WEEE):

1. The symbol above indicates that separate collection of electrical and electronic equipment is required and that this product was placed on the European market after August 13, 2005, the date of enforcement for Directive 2002/96/EC.
2. When this product has reached the end of its serviceable life, it cannot be disposed of as unsorted municipal waste. It must be collected and treated separately.
3. It has been determined by the European Parliament that there are potential negative effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment.
4. It is the users' responsibility to utilize the available collection system to ensure WEEE is properly treated.

For information about the available collection system, please contact Enterasys Customer Support at +353 61 705500 (Ireland).

Safety Information
Class 1 Laser Transceivers

The single mode interface modules use Class 1 laser transceivers. Read the following safety information before installing or operating these modules.

The Class 1 laser transceivers use an optical feedback loop to maintain Class 1 operation limits. This control loop eliminates the need for maintenance checks or adjustments. The output is factory set, and does not allow any user adjustment. Class 1 Laser transceivers comply with the following safety standards:

- 21 CFR 1040.10 and 1040.11 U.S. Department of Health and Human Services (FDA).
- IEC Publication 825 (International Electrotechnical Commission).
- CENELEC EN 60825 (European Committee for Electrotechnical Standardization).

When operating within their performance limitations, laser transceiver output meets the Class 1 accessible emission limit of all three standards. Class 1 levels of laser radiation are not considered hazardous.

When the connector is in place, all laser radiation remains within the fiber. The maximum amount of radiant power exiting the fiber (under normal conditions) is -12.6 dBm or 55 x 10^{-6} watts.

Removing the optical connector from the transceiver allows laser radiation to emit directly from the optical port. The maximum radiance from the optical port (under worst case conditions) is 0.8 W cm^{-2} or 8 x 10^{3} W m^{2} sr^{-1}.

Do not use optical instruments to view the laser output. The use of optical instruments to view laser output increases eye hazard. When viewing the output optical port, power must be removed from the network adapter.

Safety Compliance

Warning: Fiber Optic Port Safety

When using a fiber optic media expansion module, never look at the transmit laser while it is powered on. Also, never look directly at the fiber TX port and fiber cable ends when they are powered on.

Avertissment: Ports pour fibres optiques - sécurité sur le plan optique

Ne regardez jamais le laser tant qu'il est sous tension. Ne regardez jamais directement le port TX (Transmission) à fibres optiques et les embouts de câbles à fibres optiques tant qu'ils sont sous tension.

Warnhinweis: Faseroptikanschlüsse - Optische Sicherheit

Niemals ein Übertragungslaser betrachten, während dieses eingeschaltet ist. Niemals direkt auf den Faser-TX-Anschluß und auf die Faserkabelenden schauen, während diese eingeschaltet sind.

Declaration of Conformity

Application of Council Directive(s):	**2004/108/EC** **2006/95/EC** **2011/65/EU**
Manufacturer's Name:	**Enterasys Networks, Inc.**
Manufacturer's Address:	**9 Northeastern Boulevard** **Salem, NH 03079** **USA**
European Representative Name:	**Enterasys Networks Limited**
European Representative Address:	**Nexus House, Newbury Business Park** **London Road, Newbury** **Berkshire RG14 2PZ, England**
Conformance to Directive(s)/ Product Standards:	**EC Directive 2004/108/EC** **EN 55022:2006** **A1:2007** **EN 55024:1998** **A1:2001** **A2:2003** **EN 61000-3-2:2006** **A1:2009** **A2:2009** **EN 61000-3-3:2008** **EC Directive 2006/95/EC** **EN 60950-1:2006** **A1:2009** **EN 60825-1:2007** **EN 60825-2:2004** **A1:2007** **EU Directive 2011/65/EU**
Equipment Type/Environment:	**Information Technology Equipment, for use in a Commercial or Light Industrial Environment.**

The object of the declaration described above is in conformity with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Enterasys S-Series®

I/O Module

Quick Reference

enterasys®

P/N 9034460-07