

# Enterasys S-Series™

Option Module

---

## Hardware Installation Guide





**Electrical Hazard:** Only qualified personnel should perform installation procedures.

**Riesgo Electrico:** Solamente personal calificado debe realizar procedimientos de instalacion.

**Elektrischer Gefahrenhinweis:** Installationen sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

**Risques d'électrocution:** Seul un personnel qualifié doit effectuer les procédures d'installation.

## Notice

Enterasys Networks reserves 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 document is subject to change without notice.

IN NO EVENT SHALL ENTERASYS NETWORKS 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 HAS BEEN ADVISED OF, KNEW OF, OR SHOULD HAVE KNOWN OF, THE POSSIBILITY OF SUCH DAMAGES.

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

© 2013 Enterasys Networks, Inc. All rights reserved.

Part Number: 9034461-05 June 2013

ENTERASYS, ENTERASYS NETWORKS, ENTERASYS SECURE NETWORKS, and any logos associated therewith, are trademarks or registered trademarks of Enterasys Networks, Inc., in the United States and/or other countries. For a complete list of Enterasys trademarks, see <http://www.enterasys.com/company/trademarks.aspx>.

All other product names mentioned in this manual may be trademarks or registered trademarks of their respective companies.

**Documentation URL:** <https://extranet.enterasys.com/downloads/>

## 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.

### Klasse A ITE Anmerkung

**WARNHINWEIS:** Dieses Produkt zählt zur Klasse A (Industriebereich). In Wohnbereichen kann es hierdurch zu Funkstörungen kommen, daher sollten angemessene Vorkehrungen zum Schutz getroffen werden.

### 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，在這種情況下，使用者會被要求採取某些適當的對策。

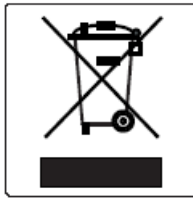
## AS/NZS CISPR 22



## 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 2012/19/EU 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.
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).

## 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 <sup>6+</sup> )	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,  
凯创供应链的电子产品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.



## 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  $55 \times 10^{-6}$  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  $0.8 \text{ W cm}^{-2}$  or  $8 \times 10^3 \text{ W m}^{-2} \text{ sr}^{-1}$ .

**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

**CLASS I  
LASER DEVICE**

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.

#### Avertissement: Ports pour fibres optiques - sécurité sur le plan optique

**DISPOSITIF LASER  
DE CLASSE I**

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

**LASERGERÄT  
DER KLASSE I**

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**

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**  
**EN55022:2006**  
**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**  
**EC 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 Networks, Inc. Firmware License Agreement

## BEFORE OPENING OR UTILIZING THE ENCLOSED PRODUCT, CAREFULLY READ THIS LICENSE AGREEMENT.

This document is an agreement (“Agreement”) between the end user (“You”) and Enterasys Networks, Inc., on behalf of itself and its Affiliates (as hereinafter defined) (“Enterasys”) that sets forth Your rights and obligations with respect to the Enterasys software program/firmware (including any accompanying documentation, hardware or media) (“Program”) in the package and prevails over any additional, conflicting or inconsistent terms and conditions appearing on any purchase order or other document submitted by You. “Affiliate” means any person, partnership, corporation, limited liability company, other form of enterprise that directly or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with the party specified. This Agreement constitutes the entire understanding between the parties, with respect to the subject matter of this Agreement. The Program may be contained in firmware, chips or other media.

BY INSTALLING OR OTHERWISE USING THE PROGRAM, YOU REPRESENT THAT YOU ARE AUTHORIZED TO ACCEPT THESE TERMS ON BEHALF OF THE END USER (IF THE END USER IS AN ENTITY ON WHOSE BEHALF YOU ARE AUTHORIZED TO ACT, “YOU” AND “YOUR” SHALL BE DEEMED TO REFER TO SUCH ENTITY) AND THAT YOU AGREE THAT YOU ARE BOUND BY THE TERMS OF THIS AGREEMENT, WHICH INCLUDES, AMONG OTHER PROVISIONS, THE LICENSE, THE DISCLAIMER OF WARRANTY AND THE LIMITATION OF LIABILITY. IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMENT OR ARE NOT AUTHORIZED TO ENTER INTO THIS AGREEMENT, ENTERASYS IS UNWILLING TO LICENSE THE PROGRAM TO YOU AND YOU AGREE TO RETURN THE UNOPENED PRODUCT TO ENTERASYS OR YOUR DEALER, IF ANY, WITHIN TEN (10) DAYS FOLLOWING THE DATE OF RECEIPT FOR A FULL REFUND.

IF YOU HAVE ANY QUESTIONS ABOUT THIS AGREEMENT, CONTACT ENTERASYS NETWORKS, LEGAL DEPARTMENT AT (603) 952-5000.

### You and Enterasys agree as follows:

1. **LICENSE.** You have the non-exclusive and non-transferable right to use only the one (1) copy of the Program provided in this package subject to the terms and conditions of this Agreement.
2. **RESTRICTIONS.** Except as otherwise authorized in writing by Enterasys, You may not, nor may You permit any third party to:
  - (a) Reverse engineer, decompile, disassemble or modify the Program, in whole or in part, including for reasons of error correction or interoperability, except to the extent expressly permitted by applicable law and to the extent the parties shall not be permitted by that applicable law, such rights are expressly excluded. Information necessary to achieve interoperability or correct errors is available from Enterasys upon request and upon payment of Enterasys’ applicable fee.
  - (b) Incorporate the Program in whole or in part, in any other product or create derivative works based on the Program, in whole or in part.
  - (c) Publish, disclose, copy reproduce or transmit the Program, in whole or in part.
  - (d) Assign, sell, license, sublicense, rent, lease, encumber by way of security interest, pledge or otherwise transfer the Program, in whole or in part.
  - (e) Remove any copyright, trademark, proprietary rights, disclaimer or warning notice included on or embedded in any part of the Program.
3. **APPLICABLE LAW.** This Agreement shall be interpreted and governed under the laws and in the state and federal courts of the State of New Hampshire without regard to its conflicts of laws provisions. You accept the personal jurisdiction and venue of the State of New Hampshire courts. None of the 1980 United Nations Convention on the Limitation Period in the International Sale of Goods, and the Uniform Computer Information Transactions Act shall apply to this Agreement.
4. **EXPORT RESTRICTIONS.** You understand that Enterasys and its Affiliates are subject to regulation by agencies of the U.S. Government, including the U.S. Department of Commerce, which prohibit export or diversion of certain technical products to certain countries, unless a license to export the product is obtained from the U.S. Government or an exception from obtaining such license may be relied upon by the exporting party.

If the Program is exported from the United States pursuant to the License Exception CIV under the U.S. Export Administration Regulations, You agree that You are a civil end user of the Program and agree that You will use the Program for civil end uses only and not for military purposes.

If the Program is exported from the United States pursuant to the License Exception TSR under the U.S. Export Administration Regulations, in addition to the restriction on transfer set forth in Section 1 or 2 of this Agreement, You agree not to (i) reexport or release the Program, the source code for the Program or technology to a national of a country in Country Groups D:1 or E:2 (Albania, Armenia, Azerbaijan, Belarus, Cambodia, Cuba, Georgia, Iraq, Kazakhstan, Laos, Libya, Macau, Moldova, Mongolia, North Korea, the People’s Republic of China, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan,

Vietnam, or such other countries as may be designated by the United States Government), (ii) export to Country Groups D:1 or E:2 (as defined herein) the direct product of the Program or the technology, if such foreign produced direct product is subject to national security controls as identified on the U.S. Commerce Control List, or (iii) if the direct product of the technology is a complete plant or any major component of a plant, export to Country Groups D:1 or E:2 the direct product of the plant or a major component thereof, if such foreign produced direct product is subject to national security controls as identified on the U.S. Commerce Control List or is subject to State Department controls under the U.S. Munitions List.

5. **UNITED STATES GOVERNMENT RESTRICTED RIGHTS.** The enclosed Program (i) was developed solely at private expense; (ii) contains "restricted computer software" submitted with restricted rights in accordance with section 52.227-19 (a) through (d) of the Commercial Computer Software-Restricted Rights Clause and its successors, and (iii) in all respects is proprietary data belonging to Enterasys and/or its suppliers. For Department of Defense units, the Program is considered commercial computer software in accordance with DFARS section 227.7202-3 and its successors, and use, duplication, or disclosure by the U.S. Government is subject to restrictions set forth herein.

6. **DISCLAIMER OF WARRANTY.** EXCEPT FOR THOSE WARRANTIES EXPRESSLY PROVIDED TO YOU IN WRITING BY ENTERASYS, ENTERASYS DISCLAIMS ALL WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY, SATISFACTORY QUALITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT WITH RESPECT TO THE PROGRAM. IF IMPLIED WARRANTIES MAY NOT BE DISCLAIMED BY APPLICABLE LAW, THEN ANY IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THIRTY (30) DAYS AFTER DELIVERY OF THE PROGRAM TO YOU.

7. **LIMITATION OF LIABILITY.** IN NO EVENT SHALL ENTERASYS OR ITS SUPPLIERS BE LIABLE FOR ANY DAMAGES WHATSOEVER (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF BUSINESS, PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR RELIANCE DAMAGES, OR OTHER LOSS) ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM, EVEN IF ENTERASYS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THIS FOREGOING LIMITATION SHALL APPLY REGARDLESS OF THE CAUSE OF ACTION UNDER WHICH DAMAGES ARE SOUGHT.

THE CUMULATIVE LIABILITY OF ENTERASYS TO YOU FOR ALL CLAIMS RELATING TO THE PROGRAM, IN CONTRACT, TORT OR OTHERWISE, SHALL NOT EXCEED THE TOTAL AMOUNT OF FEES PAID TO ENTERASYS BY YOU FOR THE RIGHTS GRANTED HEREIN.

8. **AUDIT RIGHTS.** You hereby acknowledge that the intellectual property rights associated with the Program are of critical value to Enterasys, and, accordingly, You hereby agree to maintain complete books, records and accounts showing (i) license fees due and paid, and (ii) the use, copying and deployment of the Program. You also grant to Enterasys and its authorized representatives, upon reasonable notice, the right to audit and examine during Your normal business hours, Your books, records, accounts and hardware devices upon which the Program may be deployed to verify compliance with this Agreement, including the verification of the license fees due and paid Enterasys and the use, copying and deployment of the Program. Enterasys' right of examination shall be exercised reasonably, in good faith and in a manner calculated to not unreasonably interfere with Your business. In the event such audit discovers non-compliance with this Agreement, including copies of the Program made, used or deployed in breach of this Agreement, You shall promptly pay to Enterasys the appropriate license fees. Enterasys reserves the right, to be exercised in its sole discretion and without prior notice, to terminate this license, effective immediately, for failure to comply with this Agreement. Upon any such termination, You shall immediately cease all use of the Program and shall return to Enterasys the Program and all copies of the Program.

9. **OWNERSHIP.** This is a license agreement and not an agreement for sale. You acknowledge and agree that the Program constitutes trade secrets and/or copyrighted material of Enterasys and/or its suppliers. You agree to implement reasonable security measures to protect such trade secrets and copyrighted material. All right, title and interest in and to the Program shall remain with Enterasys and/or its suppliers. All rights not specifically granted to You shall be reserved to Enterasys.

10. **ENFORCEMENT.** You acknowledge and agree that any breach of Sections 2, 4, or 9 of this Agreement by You may cause Enterasys irreparable damage for which recovery of money damages would be inadequate, and that Enterasys may be entitled to seek timely injunctive relief to protect Enterasys' rights under this Agreement in addition to any and all remedies available at law.

11. **ASSIGNMENT.** You may not assign, transfer or sublicense this Agreement or any of Your rights or obligations under this Agreement, except that You may assign this Agreement to any person or entity which acquires substantially all of Your stock assets. Enterasys may assign this Agreement in its sole discretion. This Agreement shall be binding upon and inure to the benefit of the parties, their legal representatives, permitted transferees, successors and assigns as permitted by this Agreement. Any attempted assignment, transfer or sublicense in violation of the terms of this Agreement shall be void and a breach of this Agreement.

12. **WAIVER.** A waiver by Enterasys of a breach of any of the terms and conditions of this Agreement must be in writing and will not be construed as a waiver of any subsequent breach of such term or condition. Enterasys' failure to enforce a term upon Your breach of such term shall not be construed as a waiver of Your breach or prevent enforcement on any other occasion.

13. **SEVERABILITY.** In the event any provision of this Agreement is found to be invalid, illegal or unenforceable, the validity, legality and enforceability of any of the remaining provisions shall not in any way be affected or impaired thereby, and that provision shall be reformed, construed and enforced to the maximum extent permissible. Any such invalidity, illegality, or unenforceability in any jurisdiction shall not invalidate or render illegal or unenforceable such provision in any other jurisdiction.

14. **TERMINATION.** Enterasys may terminate this Agreement immediately upon Your breach of any of the terms and conditions of this Agreement. Upon any such termination, You shall immediately cease all use of the Program and shall return to Enterasys the Program and all copies of the Program.



---

# Contents

## About This Guide

Who Should Use This Guide .....	xiii
How to Use This Guide .....	xiii
Related Documents .....	xiv
Typographical Conventions .....	xiv
Getting Help .....	xv

## Chapter 1: Introduction

Option Module Types and Compatibility .....	1-1
Option Module Port Options .....	1-2
Power over Ethernet .....	1-2
Management .....	1-2

## Chapter 2: Installing the Option Module

Required Tools .....	2-1
Unpacking the Option Module .....	2-2
Installing the Option Module .....	2-2
Connecting the Option Module to the Network .....	2-8
Connecting Category 5 UTP Ethernet Cables to the RJ45 Ports .....	2-8
Connecting Pluggable Transceivers to the SFP and SFP+ Ports .....	2-9
LEDs .....	2-10

## Appendix A: Specifications and Regulatory Compliance

Option Module Specifications .....	A-1
SFP and SFP+ Fiber-Optic Specifications .....	A-1
Regulatory Compliance .....	A-1

## Appendix B: Removing an Option Module from an I/O Module

Required Tools .....	B-1
Removing an Option Module .....	B-1

## Figures

2-1	Removing the Faceplate and Top Cover from the S-Series Module .....	2-3
2-2	Removing the Option Slot Cover .....	2-4
2-3	Installing the PoE Power Header for an Option Module with RJ45 Ports .....	2-5
2-4	Installing the Option Module .....	2-6
2-5	Securing the Option Module to the S-Series Module .....	2-7
2-6	Option Module LEDs (RJ45, SFP, and SFP+ Ports) .....	2-10
B-1	Removing the Top Cover and Faceplate of the I/O Module .....	B-2
B-2	Removing the Four Pan Head Screws .....	B-3
B-3	Removing the Option Module from the I/O Module .....	B-4
B-4	Removing the PoE Power Header (If Necessary) .....	B-5

## Tables

1-1	S-Series Option Module Compatibility .....	1-1
2-1	Port LEDs .....	2-11
A-1	Compliance Standards .....	A-1



---

# About This Guide

This guide provides an overview, installation and removal instructions, and specifications for the Enterasys S-Series™ option modules.

## Who Should Use This Guide



**Electrical Hazard:** Only qualified personnel should install or service this unit.

**Riesgo Electrico:** Nada mas personal capacitado debe de instalar o darle servicio a esta unida.

**Elektrischer Gefahrenhinweis:** Installationen oder Servicearbeiten sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

**Risques d'électrocution:** Seul un personnel qualifié doit installer ou effectuer les opérations de maintenance sur cet élément.

This guide is intended for a network administrator who is responsible for installing and cabling S-Series option modules.

## How to Use This Guide

Read through this guide completely to familiarize yourself with its contents and to gain an understanding of the features and capabilities of the S-Series option modules. A general working knowledge of data communications networks is helpful when setting up the S-Series option modules.

This preface provides the following:

- An overview of this guide and the S-Series manual set
- A brief summary of each chapter
- Definitions of the conventions used in this document
- Instructions regarding how to obtain technical support from Enterasys Networks.

To locate information about various subjects in this guide, refer to the following table.

For...	Refer to...
An overview of the S-Series option modules.	<a href="#">Chapter 1, Introduction</a>
Instructions for installing the option modules in S-Series modules.	<a href="#">Chapter 2, Installing the Option Module</a>
Specifications, environmental requirements, and physical properties of the S-Series option modules.	<a href="#">Appendix A, Specifications and Regulatory Compliance</a>
Instructions for removing option modules from S-Series modules.	<a href="#">Appendix B, Removing an Option Module from an I/O Module</a>

## Related Documents





*Enterasys S-Series Configuration Guide* and *Enterasys S-Series CLI Reference Guide* provide information on how to use the CLI to set up and manage the S-Series devices.

These manuals can be obtained from the World Wide Web in Adobe Acrobat Portable Document Format (PDF) at the following site:

<https://extranet.enterasys.com/downloads/>

## Typographical Conventions

The following typographical conventions and icons are used in this document.

<a href="#">blue type</a>	Indicates a hypertext link. When reading this document online, click the text in blue to go to the referenced figure, table, or section.
Lowercase x	Indicates the general use of an alphanumeric character.
	<b>Note:</b> Calls the reader's attention to any item of information that may be of special importance.
	<b>Caution:</b> Contains information essential to avoid damage to the equipment. <b>Precaución:</b> Contiene información esencial para prevenir dañar el equipo. <b>Achtung:</b> Verweist auf wichtige Informationen zum Schutz gegen Beschädigungen.
	<b>Warning:</b> Warns against an action that could result in personal injury or death. <b>Advertencia:</b> Advierte contra una acción que pudiera resultar en lesión corporal o la muerte. <b>Warnhinweis:</b> Warnung vor Handlungen, die zu Verletzung von Personen oder gar Todesfällen führen können! <b>Avertissements:</b> Met en garde contre un geste qui pourrait entraîner des blessures ou la mort.
	<b>Electrical Hazard:</b> Warns against an action that could result in personal injury or death due to an electrical hazard. <b>Riesgo Electrico:</b> Advierte contra una acción que pudiera resultar en lesión corporal o la muerte debido a un riesgo eléctrico. <b>Elektrischer Gefahrenhinweis:</b> Warnung vor sämtlichen Handlungen, die zu Verletzung von Personen oder Todesfällen – hervorgerufen durch elektrische Spannung – führen können! <b>Risques d'électrocution:</b> Met en garde contre un geste qui pourrait entraîner des blessures ou la mort à la suite d'une électrocution.



## Getting Help

For additional support related to the S-Series or this document, contact Enterasys Networks using one of the following methods:

---

World Wide Web	<a href="http://www.enterasys.com/support">http://www.enterasys.com/support</a>
Phone	1-800-872-8440 (toll-free in U.S. and Canada) or 1-603-952-5000  For the Enterasys Networks Support toll-free number in your country: <a href="http://www.enterasys.com/support">http://www.enterasys.com/support</a>
Email	<a href="mailto:support@enterasys.com">support@enterasys.com</a>  To expedite your message, please type <b>[S-Series]</b> in the subject line.

---

**Before contacting Enterasys Networks for technical support, have the following data ready:**

- Your Enterasys Networks service contract number
- A description of the failure
- A description of any action(s) already taken to resolve the problem (for example, changing mode switches or rebooting the unit)
- The serial and revision numbers of all involved Enterasys Networks products in the network
- A description of your network environment (such as layout, cable type, other relevant environmental information)
- Network load and frame size at the time of trouble (if known)
- The device history (for example, if you have returned the device before, or if this is a recurring problem)
- Any previous Return Material Authorization (RMA) numbers



## Introduction

For information about...	Refer to page...
<a href="#">Option Module Types and Compatibility</a>	1-1
<a href="#">Option Module Port Options</a>	1-2
<a href="#">Power over Ethernet</a>	1-2
<a href="#">Management</a>	1-2

### Option Module Types and Compatibility

Many S-Series I/O fabric modules and I/O modules can be expanded by installing S-Series option modules in their option module slots. Two types of S-Series option modules are available:

- Type 1 – The option module has one 20Gb connector for connecting to an S-Series module's motherboard.
- Type 2 – The option module has two 20Gb connectors for connecting to an S-Series module's motherboard.

To ensure that your S-Series option module is compatible with an S-Series I/O fabric module or I/O module, refer to [Table 1-1](#).

**Table 1-1 S-Series Option Module Compatibility**

S-Series Option Module Type	Install the Option Module in This S-Series Module?						
	S130 Class I/O Module	S130 Class I/O Fabric Module	S140 Class I/O Module	S150 Class I/O Module	S150 Class I/O Fabric Module	S155 Class I/O Fabric Module	S180 Class I/O Fabric Module
Type 1	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Type 2	No	Yes	Yes	Yes	Yes	Yes	Yes



**Note:** The VSB option module (SOV3208-0202) is compatible only with S140 Class I/O modules and the S180 Class I/O fabric modules.

For a complete list of the available S-Series I/O modules and I/O fabric modules and their compatibility with S-Series option modules, refer to the S-Series datasheet at <http://www.enterasys.com/products>.

## Option Module Port Options

S-Series option modules are available with the following port options:

- 10/100/1000BASE-TX RJ45 ports
- 1000BASE-X SFP ports
- 10GBASE-X SFP+ ports

IEEE 802.3af and 802.3at Power over Ethernet (PoE) are supported on the 10/100/1000BASE-TX RJ45 ports.

## Power over Ethernet

S-Series option modules with 10/100/1000BASE-TX RJ45 ports support both IEEE 802.3af and 802.3at Power over Ethernet (PoE) standards. Ensure that your configuration meets the following criteria to supply PoE power to the 10/100/1000BASE-TX RJ45 ports on the S-Series option modules:

- Your S-Series chassis has a PoE subsystem, with S-POE-PS power supplies, installed.
- You have installed the PoE-capable S-Series option module in a PoE-capable S-Series I/O fabric module or I/O module. If a PoE-capable S-Series option module is installed in an S-Series I/O fabric module or I/O module with SFP or SFP+ ports, the 10/100/1000BASE-TX RJ45 ports of the option module will not function as PoE ports.

Depending on your PoE power supply configuration, the S-Series chassis can supply PoE power to powered devices on all 10/100/1000BASE-TX RJ45 ports simultaneously.

The red PoE button on the left of the S-Series modules switches the RJ45 port LEDs to report PoE information.

## Management

You can manage the S-Series modules in which the S-Series option modules are installed either in-band or out-of-band. In-band remote management is possible using the Enterasys Networks' NetSight® management application or the command line interface (CLI) via Telnet. Out-of-band management is provided through the RJ45 COM (Communication) port on the front panel of the S-Series chassis using a PC, a VT terminal, or a VT terminal emulator.

## Installing the Option Module



**Electrical Hazard:** Only qualified personnel should perform installation procedures.

**Riesgo Electrico:** Solamente personal calificado debe realizar procedimientos de instalacion.

**Elektrischer Gefahrenhinweis:** Installationen sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

**Risques d'électrocution:** Seul un personnel qualifié doit effectuer les procédures d'installation.

### Important Notice

Read the Release Notes specific to the firmware image running in the chassis to check for any exceptions to the supported features and operation documented in this guide.

This chapter provides the instructions to install the S-Series option modules in S-Series I/O fabric modules and I/O modules.

Follow the order of the sections listed below to correctly install the option modules.

For information about...	Refer to page...
<a href="#">Required Tools</a>	<a href="#">2-1</a>
<a href="#">Unpacking the Option Module</a>	<a href="#">2-2</a>
<a href="#">Installing the Option Module</a>	<a href="#">2-2</a>
<a href="#">Connecting the Option Module to the Network</a>	<a href="#">2-8</a>
<a href="#">LEDs</a>	<a href="#">2-10</a>

## Required Tools

- ESD wrist strap
- Phillips screwdriver

## Unpacking the Option Module

1. Remove the option module and the items shipped with it from the shipping box.  
The S-Series option modules are shipped with the following:
  - Pan head screws (2) for securing the option module to the S-Series I/O module.
  - PoE power header (shipped with RJ45 port option modules only)Save the box and packing materials in the event the option module needs to be reshipped.
2. Locate the antistatic wrist strap shipped with the chassis. Attach the antistatic wrist strap to your wrist and plug the cable from the antistatic wrist strap into the ESD grounding receptacle at the upper right corner of the chassis.
3. Remove the option module from the plastic bag.  
Observe all precautions to prevent damage from Electrostatic Discharge (ESD):
  - Remove the option module from its packaging only when ready to install it.
  - Do not touch the option module's pins, connectors, or components.
  - Hold the option module by its edges or front panel only.
  - Wear a grounded, anti-static wrist strap when handling the option module.
  - Store or transport the option module only in anti-static packaging.Save the bag in the event the module must be reshipped.
4. Examine the module for damage.  
If any damage exists, DO NOT install the module. Immediately contact Enterasys Networks. Refer to ["Getting Help"](#) on page xv.

## Installing the Option Module



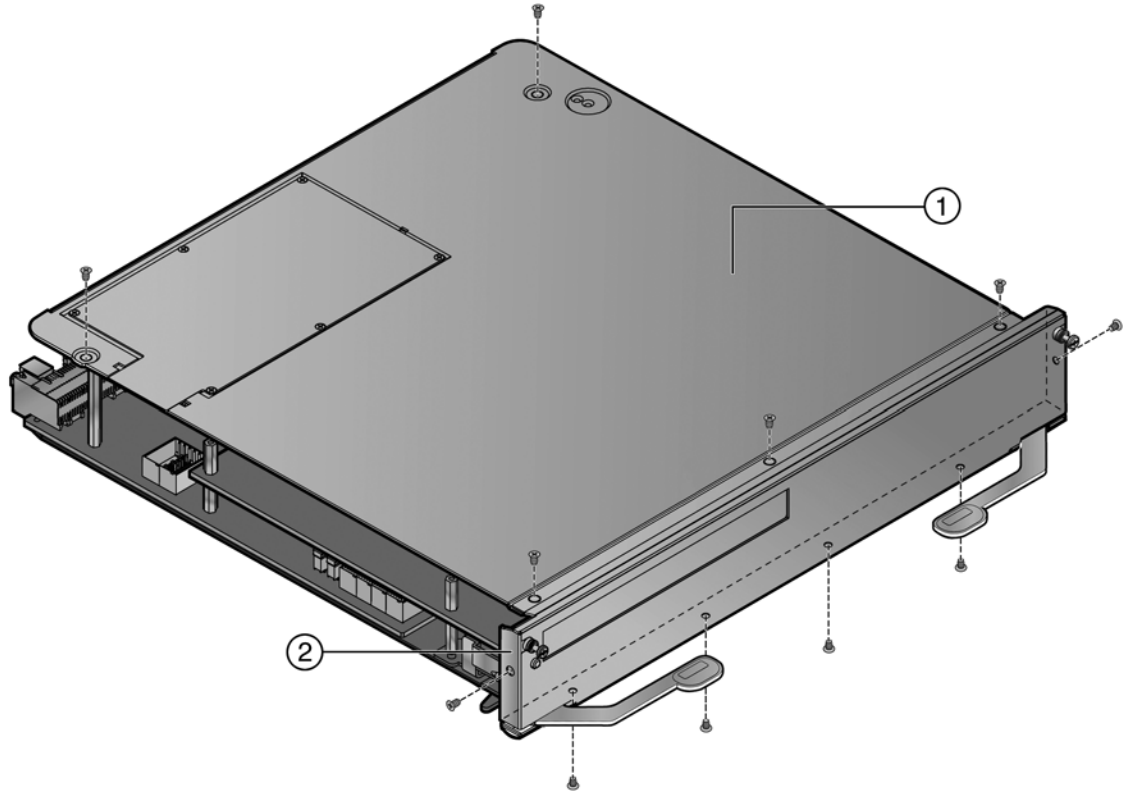
**Note:** If you are installing a VSB option module (SOV3208-0202), you must install it in the right option module slot of an S140 Class I/O module or an S180 I/O fabric module. DO NOT install the VSB option module in the left option module slot.

To install an S-Series option module in an S-Series I/O fabric module or I/O module:

1. Attach the anti-static wrist strap. Refer to the instructions on the anti-static wrist strap package.
2. Place the S-Series module on an anti-static pad on a sturdy flat surface.
3. Remove the eleven screws that fasten the top cover and faceplate to the main board of the module (five screws on top, two screws on the sides, four screws on the bottom). See [Figure 2-1](#).

Set the faceplate, top cover, and screws aside for reinstallation at the end of the procedure.

Figure 2-1 Removing the Faceplate and Top Cover from the S-Series Module

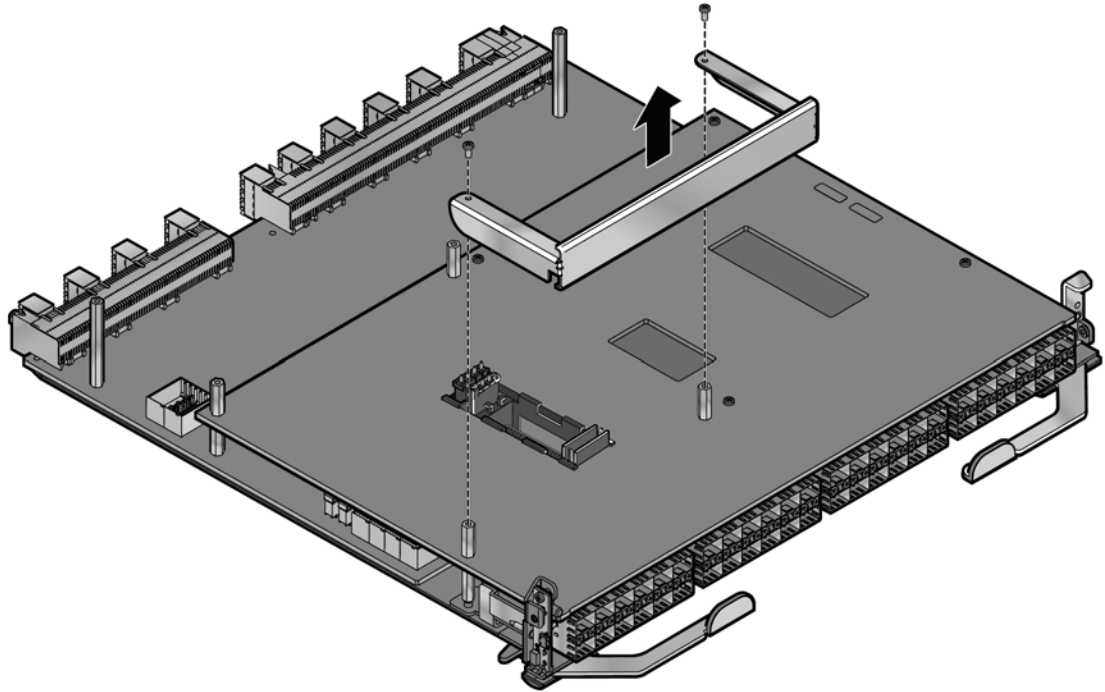


1 Top cover

2 Faceplate

4. Remove the option slot coverplate by unscrewing the two screws that fasten the option module coverplate to the S-Series module. See [Figure 2-2](#).

**Figure 2-2 Removing the Option Slot Cover**



Set the option slot coverplate aside in the event that you remove the option module and operate the module without an option module installed. You will use the two pan head screws to secure the option module to the S-Series module.

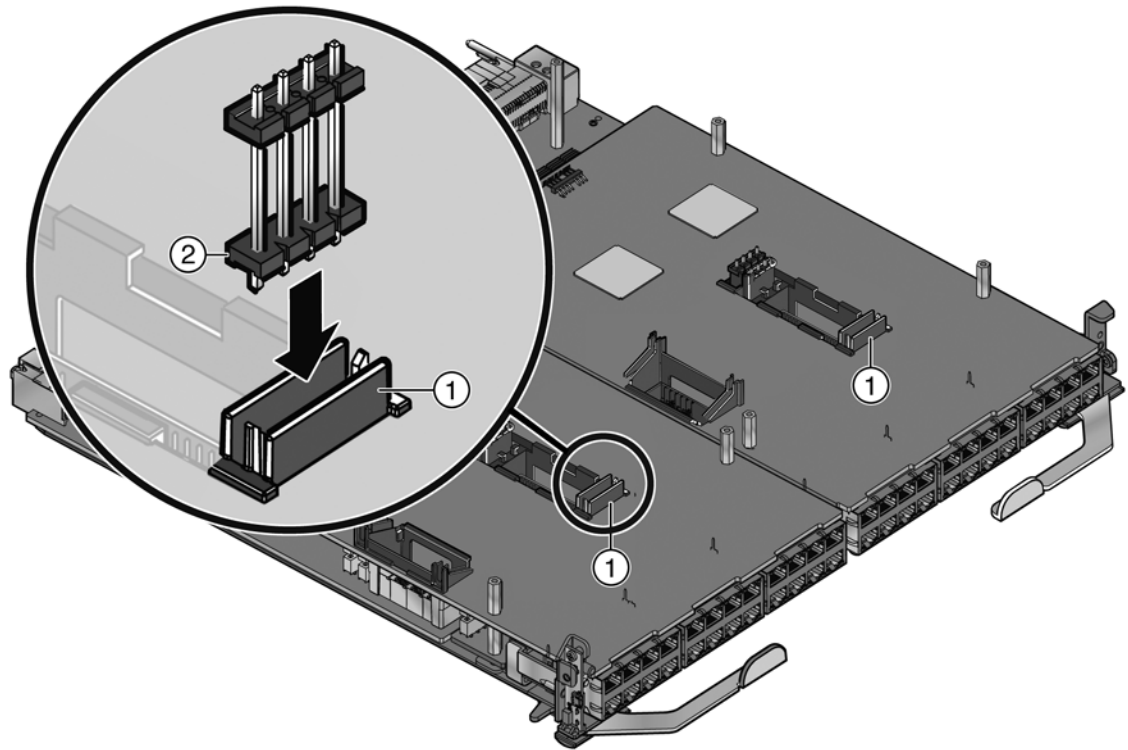
If you are installing an option module with RJ45 ports on an S-Series module that supports PoE, go to step 5.

If you are installing an option module with SFP or SFP+ or you are installing an option module with RJ45 ports on an S-Series module that does not support PoE, go to step 6.



5. Install the PoE power header, which allows the option module with RJ45 ports to receive PoE power. See [Figure 2-3](#).
  - a. Insert the power header into the slot in front of the option module ejection assembly.
  - b. Press down on the power header, applying pressure until it is properly seated in the module connector.

**Figure 2-3 Installing the PoE Power Header for an Option Module with RJ45 Ports**



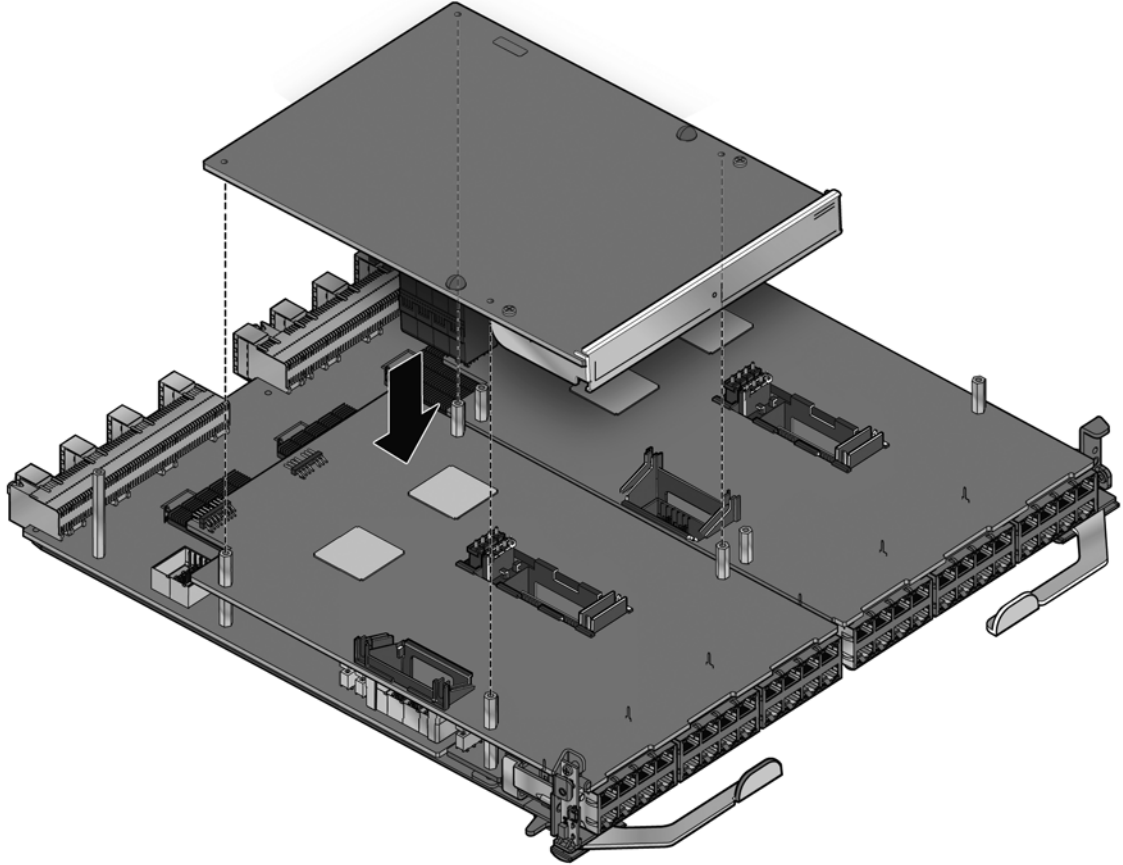
- 1 Installation slot for the PoE power header      2 PoE power header

6. Position the option module so its connectors align with the module's motherboard connectors.

7. Press straight down on the option module, applying pressure directly over the connectors until they are properly seated in the motherboard connectors. See [Figure 2-4](#).

The bottom of the option module board should rest against the top of the four standoffs under the option module.

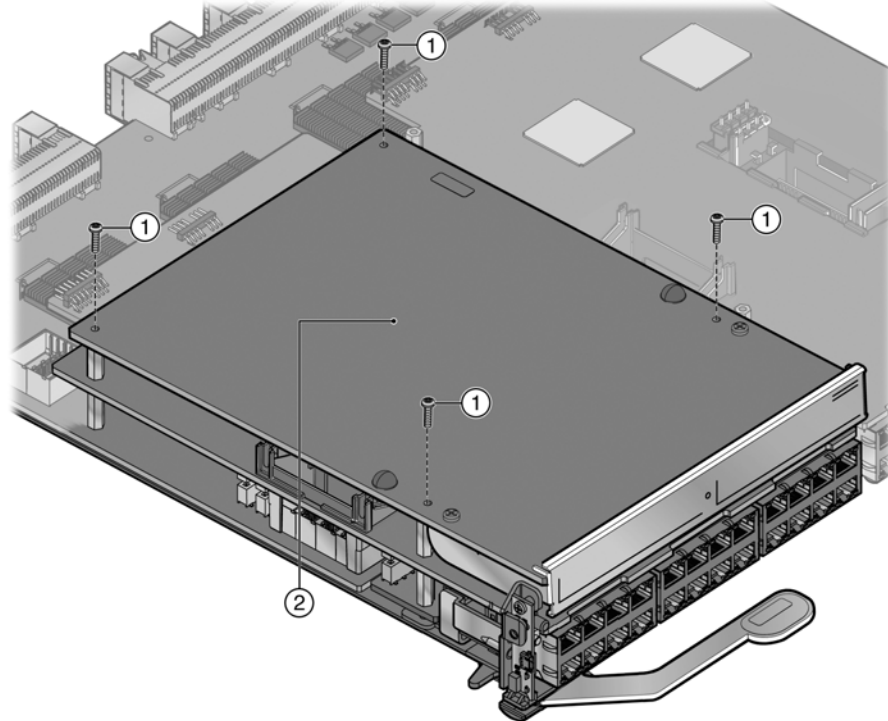
**Figure 2-4** Installing the Option Module



- Secure the option module to the module by screwing the four pan head screws—two that are supplied with the option module and two that were removed with the option slot coverplate—into the four standoffs on the module. See [Figure 2-5](#).

Tighten the screws snugly. Do not overtighten the screws.

**Figure 2-5 Securing the Option Module to the S-Series Module**



1 Pan head screws

2 Option module

- Reinstall the faceplate and top cover.

This completes the option module installation. You can now install the module in an S-Series chassis.

In the event that you must remove the option module from the module, see [Appendix B, Removing an Option Module from an I/O Module](#).

## Connecting the Option Module to the Network

This section provides the procedures for connecting Category 5 unshielded twisted pair (UTP) segments or SFP and SFP+ pluggable transceivers from the network or other devices to the S-Series option module.



**Note:** If the S-Series module is being installed in a network using Link Aggregation, there are rules concerning the network cable and port configurations that must be followed for Link Aggregation to operate properly. Before connecting the cables, refer to the *Enterasys S-Series Configuration Guide* for the configuration information. For details on how to obtain manuals, refer to “[Related Documents](#)” on page xiv.

### Connecting Category 5 UTP Ethernet Cables to the RJ45 Ports

The RJ45 connections of the S-Series option modules are 10/100/1000 Mbps ports. They have internal crossovers and support automatic-polarity sensing which eliminates the need for a crossover cable, regardless of whether the connection is to another network device or a workstation.



**Note:** All RJ45 front panel ports on the S-Series option modules support Category 5 Unshielded Twisted Pair (UTP) cabling with an impedance between 85 and 111 ohms. You can use Category 3 cable only for 10 Mbps connections.

1. Ensure that the far-end device connected to the other end of the segment is powered ON.
2. Connect the far-end device’s twisted pair segment into the appropriate S-Series option module RJ45 port connector.
3. Verify that a link exists by checking that the port RX (Receive) LED is ON (flashing amber, blinking green, or solid green).

If the RX LED is OFF and the TX (Transmit) LED is not blinking amber, perform the following steps until it is on:

- a. Verify that the cabling is Category 5 UTP with an impedance between 85 and 111 ohms. If the port is to operate at 100 Mbps or 1000Mbps, you must use Category 5 cabling.
  - b. Verify that the device at the other end of the twisted pair segment is on and properly connected to the segment.
  - c. Verify that the RJ45 connectors on the twisted pair segment have the proper pinouts and check the cable for continuity.
4. Repeat steps 1–3, until all connections have been made.

## Connecting Pluggable Transceivers to the SFP and SFP+ Ports

This section describes how to install an SFP or SFP+ pluggable transceiver in any of the S-Series module SFP or SFP+ ports. For a list of supported SFP and SFP+ pluggable transceivers and their specifications, refer to the S-Series firmware *Release Notes* for the latest compatibility matrix for SFP and SFP+ pluggable transceivers. You can also refer to the datasheet located at the following URL:

<http://www.enterasys.com/products/transceivers-ds.pdf>



**Warning:** Fiber-optic pluggable transceivers 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.

**Advertencia:** Los transmisores receptores de fibra óptica SFP y SFP+ conectables utilizan sistemas de láser clase 1. No emplee instrumentos ópticos para ver la salida del láser. Hacerlo podría incrementar el riesgo de daño en los ojos. Cuando se revise el puerto óptico de salida, deberá cortarse la energía del adaptador de red.

**Warnhinweis:** Faseroptische, steckbare Transceiver der Typen SFP und SFP+ verwenden Laser der Klasse 1. Zur Ansicht der Laserausgabe dürfen keine optischen Geräte verwendet werden, da hierdurch die Wahrscheinlichkeit einer Gefährdung der Augen erhöht wird. Vor der Inspektion des optischen Ausgangsanschlusses muss das Stromkabel des Netzwerkadapters herausgezogen werden.

**Avertissements:** Les émetteurs-récepteurs en fibre optique enfichables ne fonctionnent qu'avec des lasers de classe 1. N'utilisez aucun instrument d'optique pour observer la sortie du laser. L'utilisation d'instruments d'optique augmente les risques de blessure aux yeux. L'alimentation de l'adaptateur de réseau doit être coupée lorsque vous inspectez le port optique de sortie.



**Caution:** Carefully follow the instructions in this manual to avoid damaging the SFP, SFP+, and option module.

The SFP, SFP+, and option module are sensitive to static discharges. Use an antistatic wrist strap and observe all static precautions during this procedure. Failure to do so could result in damage to the SFP, SFP+, and option module. Always leave the SFP or SFP+ in the antistatic bag or an equivalent antistatic container when not installed.

**Precaución:** Siga las instrucciones del manual para no dañar el SFP, SFP+ ni el módulo de la opción, puesto que son muy sensible a las descargas de electricidad estática.

Utilice la pulsera antiestática y tome todas las precauciones necesarias durante este procedimiento. Si no lo hace, podría dañar el SFP, SFP+ o el módulo de la opción. Mientras no esté instalado, mantenga el SFP o SFP+ en su bolsa antiestática o en cualquier otro recipiente antiestático.

### Preparation

Before installing the pluggable transceiver, proceed as follows:

1. Put on the antistatic wrist strap and plug the cable from the antistatic wrist strap into the ESD grounding receptacle at the upper right corner of the chassis before removing the pluggable transceiver from the anti-static packaging. Refer to the instructions in the anti-static wrist strap package.
2. Remove the pluggable transceiver from the packaging.

If there is a protective dust cover on the pluggable transceiver, do not remove it at this time.

### Installing the Pluggable Transceiver

To install an SFP or SFP+ pluggable transceiver in the S-Series option module:

1. Hold the pluggable transceiver so that the connector will seat properly.
2. Carefully align the pluggable transceiver with the port.

- Push the pluggable transceiver into the port until the pluggable transceiver clicks and locks into place.

### Removing the Pluggable Transceiver

To remove a pluggable transceiver from a port:



**Caution:** Do NOT remove an SFP or SFP+ without releasing the locking tab located under the front bottom end of the SFP or SFP+. This can damage the SFP or SFP+.

The SFP, SFP+, and option module are sensitive to static discharges. Use an antistatic wrist strap and observe all static precautions during this procedure. Failure to do so could result in damage to the SFP, SFP+, and option module. Always leave the SFP or SFP+ in the antistatic bag or an equivalent antistatic container when not installed.

**Precaución:** NO quite el SFP o SFP+ sin antes abrir la traba ubicada en la parte frontal del el SFP o SFP+.

Utilice la pulsera antiestática y tome todas las precauciones necesarias durante este procedimiento. Si no lo hace, podría dañar el SFP, SFP+ o el módulo de la opción. Mientras no esté instalado, mantenga el SFP o SFP+ en su bolsa antiestática o en cualquier otro recipiente antiestático.

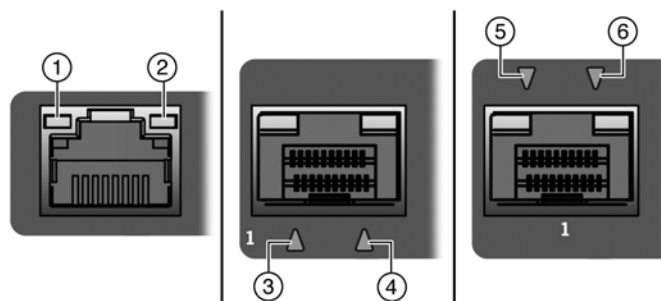
- Put on the antistatic wrist strap and plug the cable from the antistatic wrist strap into the ESD grounding receptacle at the upper right corner of the chassis before removing the pluggable transceiver from the anti-static packaging. Refer to the instructions in the anti-static wrist strap package.
- Remove the cables connected to the pluggable transceiver.
- Release the pluggable transceiver from the port.
- Grasp the sides of the pluggable transceiver and pull it straight out of the port.

If storing or shipping the pluggable transceiver, insert its dust protector to protect its fiber-optic ports.

## LEDs

You can view receive and transmit activity using the port RX and TX LEDs, as shown in [Figure 2-6](#).

**Figure 2-6 Option Module LEDs (RJ45, SFP, and SFP+ Ports)**



1 RJ45 port RX LED  
2 RJ45 port TX LED

3 SFP RX LED  
4 SFP TX LED

5 SFP+ RX LED  
6 SFP+ TX LED

Table 2-1 describes the option module port LED indications.

**Table 2-1 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).







---

## Specifications and Regulatory Compliance

### Option Module Specifications

For the S-Series option module specifications, refer to the S-Series datasheet at <http://www.enterasys.com/products>.

### SFP and SFP+ Fiber-Optic Specifications

For SFP and SFP+ transceiver specifications, refer to the datasheet at <http://www.enterasys.com/products/transceivers-ds.pdf>

### Regulatory Compliance

This product meets the safety, electromagnetic compatibility (EMC), and environmental requirements listed in [Table A-1](#).

**Table A-1 Compliance Standards**

Regulatory Compliance	Standard
Safety	UL 60950-1, FDA 21 CFR 1040.10 and 1040.11, CAN/CSA C22.2 No. 60950-1, EN 60950-1, EN 60825-1, EN 60825-2, IEC 60950-1, 2006/95/EC (Low Voltage Directive)
Electromagnetic Compatibility (EMC)	FCC 47 CFR Part 15 (Class A), ICES-003 (Class A), EN 55022 (Class A), EN 55024, EN 61000-3-2, EN 61000-3-3, AS/NZS CISPR-22 (Class A). VCCI V-3. CNS 13438 (BSMI), 2004/108/EC (EMC Directive)
Environmental	2011/65/EU (RoHS Directive), 2012/19/EU (WEEE Directive), Ministry of Information Order #39 (China RoHS)



---

## Removing an Option Module from an I/O Module

If you must remove an installed S-Series option module from an S-Series I/O module, follow the procedure in this appendix to avoid damaging the option module or the I/O module.



**Note:** In this appendix, the term I/O module refers to both I/O fabric modules and I/O modules.

### Required Tools

- Anti-static strap
- Anti-static bag (for storing the removed option module)
- Phillips screwdriver
- Narrow-nose pliers (for removing, if necessary, the PoE power header)

### Removing an Option Module

To remove an option module from an I/O module:

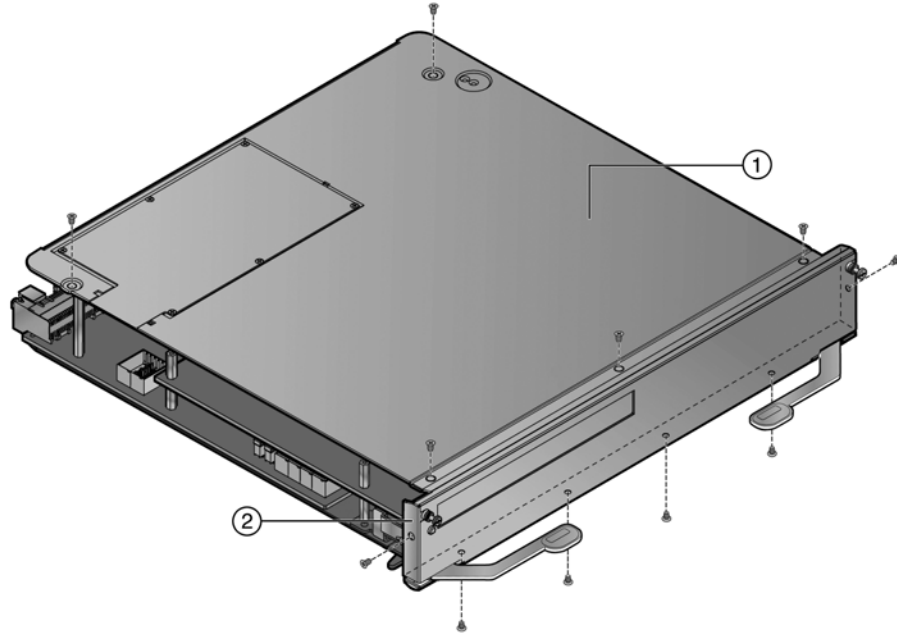


**Note:** Some S-Series I/O modules are equipped with ramp and rail option module ejector assemblies. This procedure is also applicable to those I/O modules.

1. Attach the anti-static wrist strap. Refer to the instructions on the anti-static wrist strap package.
2. Place the I/O module on an anti-static pad on a sturdy, flat surface.

3. Remove the eleven screws fastening the top cover and faceplate to the main board of the I/O module (five screws on top, two screws on the sides, four screws on the bottom). See [Figure B-1](#).  
Set aside the top cover, faceplate, and screws for reinstallation at the end of this procedure.

**Figure B-1 Removing the Top Cover and Faceplate of the I/O Module**



---

1 Top cover

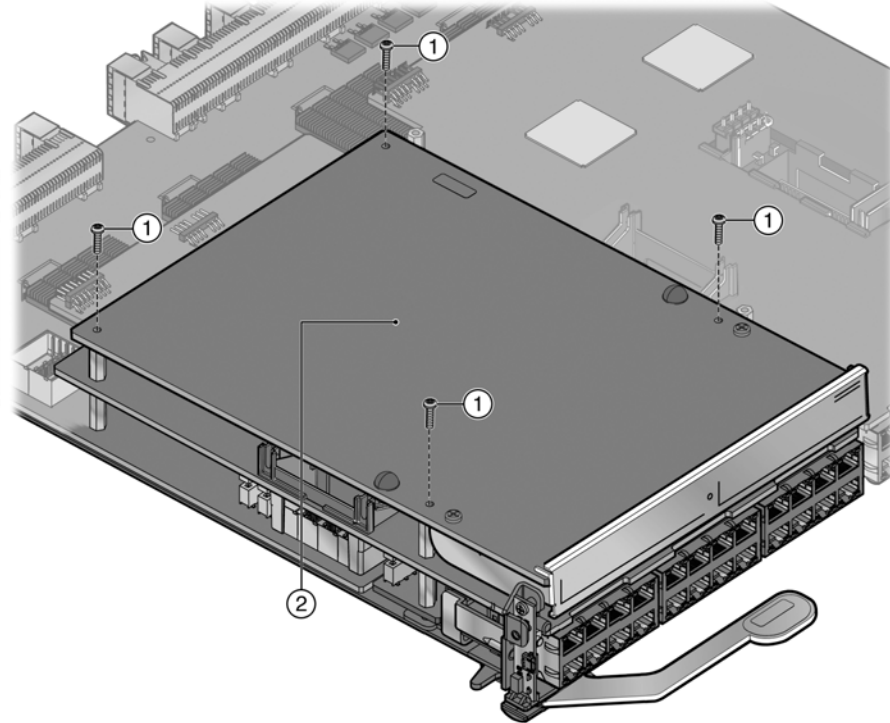
2 Faceplate

---

4. Unscrew the four pan head screws that secure the option module to the standoffs on the I/O module. See [Figure B-2](#).

Keep the screws with the option module. If you install an option slot coverplate after you have removed the option module, you will need to use two of the pan head screws.

**Figure B-2 Removing the Four Pan Head Screws**



1 Pan head screws

2 Option module

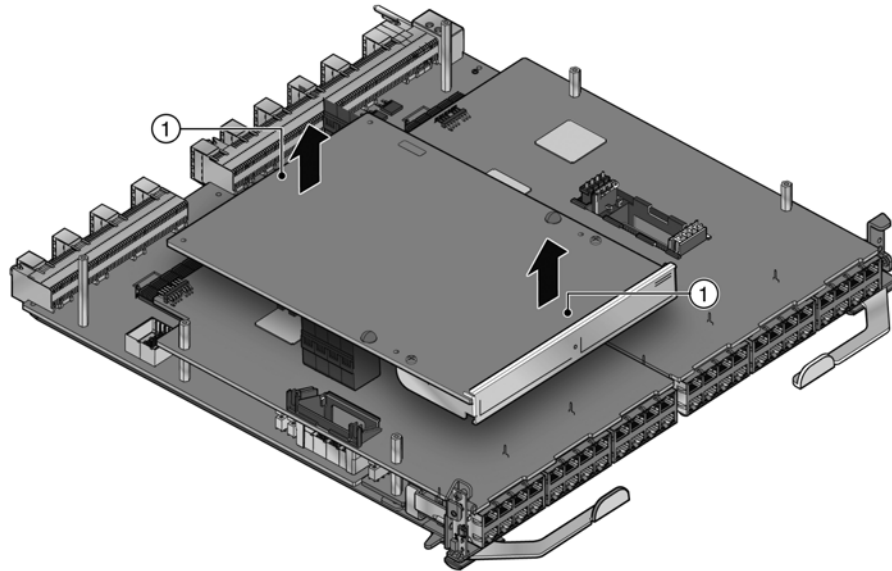
5. With your fingers under the faceplate and on the back edge of the option module, gently rock the option module back and forth 10 to 15 times while lifting the option module straight off the I/O module motherboard connectors. See [Figure B-3](#).



**Note:** The option module should never be more that five degrees from level.

Ensure that you do not touch any components on the option module as you remove it from the I/O module motherboard connectors.

**Figure B-3** Removing the Option Module from the I/O Module



- 1 Place fingers at the front and back of the option module
-

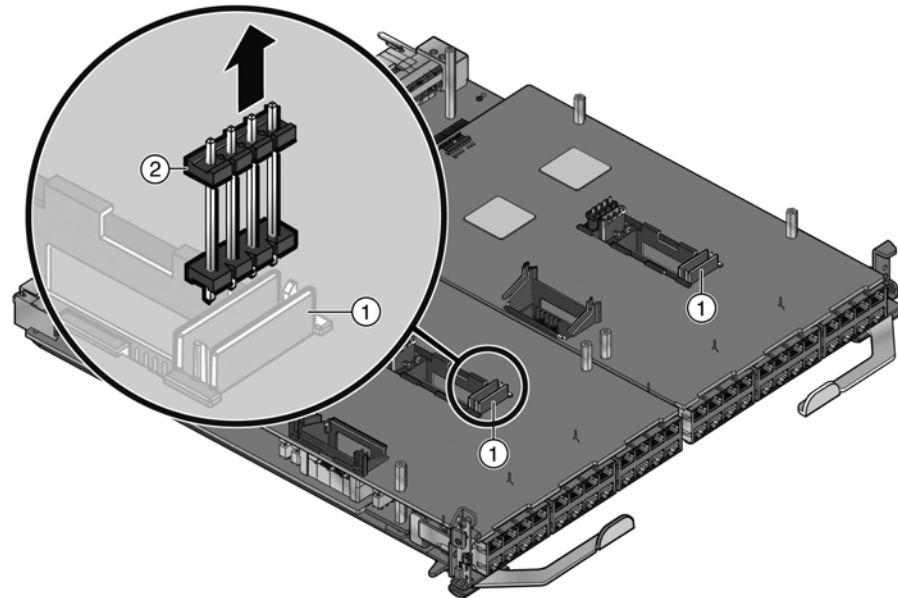
6. If you are removing an option module with RJ45 ports from an S-Series module that supports PoE, use a pair of pliers to remove the PoE power header from the I/O module if the PoE power header does not come out with the option module. See [Figure B-4](#).

You will feel some resistance as you unseat the PoE power header from the connector on the I/O module. You may need to use a slight side-to-side motion to unseat the PoE power header.



**Note:** Remove the PoE power header only if you are replacing the removed option module with an option module that does not support PoE.

**Figure B-4 Removing the PoE Power Header (If Necessary)**



1 Slot for the PoE power header

2 PoE power header

7. Place the option module in an anti-static bag. For additional protection, store the option module in its shipping container or similar cardboard box with foam.

You can now install a new option module. If you are not replacing the option module, you should reinstall the option slot coverplate before reinstalling the I/O module in the chassis.

8. Reinstall the faceplate and top cover of the I/O module.

You can now install the I/O module in an S-Series chassis.

