

Accton

Making Partnership Work

1000BASE-LX Gigabit Uplink Module EM4582-LX-SC

Quick Installation Guide



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EM4582-LX-SC Gigabit Uplink Module

Slide-in module with 1 1000BASE-LX (SC-type) port



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EM4582-LX-SC
E102000-R01
150514-102

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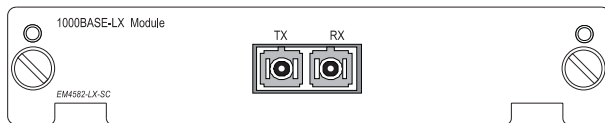
Description of Hardware

Gigabit Uplink Module

The EM4582-LX-SC fiber optic module is designed for use in Accton switch models which have a single-port Gigabit Ethernet transceiver slot. At present, suitable units include these CheetahSwitch Workgroup models – ES3514F, ES3526F, ES3526G, and ES3552. Detailed information about configuring these modules and advice about Fast Ethernet configuration rules can be found in the switch’s user guide.

Warning: Before installing or removing the EM4582-LX-SC module, first disconnect the switch from the main power supply. For full safety instructions, please refer to the user guide that accompanies the switch.

Accton’s EM4582-LX-SC fiber optic module provides a Gigabit port which can be used for a high-speed backbone or server connection. It contains one 1000BASE-LX port that can be connected to a site up to 5 km (16,404 ft) away with single-mode fiber cable.



Gigabit Port LEDs

Port LEDs are provided for the module on the front panel of the switch for “at-a-glance” network monitoring. The following table details the indicator functions provided by the switch:

Extender Module LEDs		
LEDs	Condition	Status
Status	On	A module is installed in this slot.
Activity	On	Traffic is passing through the port.

Installing the Module

Caution: Do not install this module in any unit other than the ES3514F, ES3526F, ES3526G, or ES3552. Contact your distributor for advice on newly released switches which may be designed for use with these modules.

The EM4582-LX-SC fiber optic module is field installable. Just follow the instructions below.

Package Contents

This package includes:

- One EM4582-LX-SC fiber optic module
- This User Guide
- Owner registration card

Handling the Module

Caution: The EM4582-LX-SC module can easily be damaged by electrostatic discharge.

To prevent electrostatic damage, observe the following guidelines:

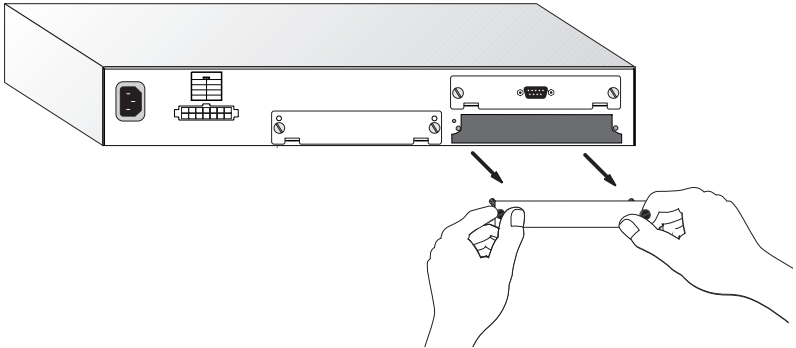
- Do not remove the module from its packaging until you are ready to install it.
- Do not touch any of the module's pins, connectors or components.
- Hold the module only by its edges or front panel.
- Wear an anti-static wristband connected to a suitable earth ground whenever handling the module.
- Store or transport this module only in appropriate anti-static packaging.

Instructions

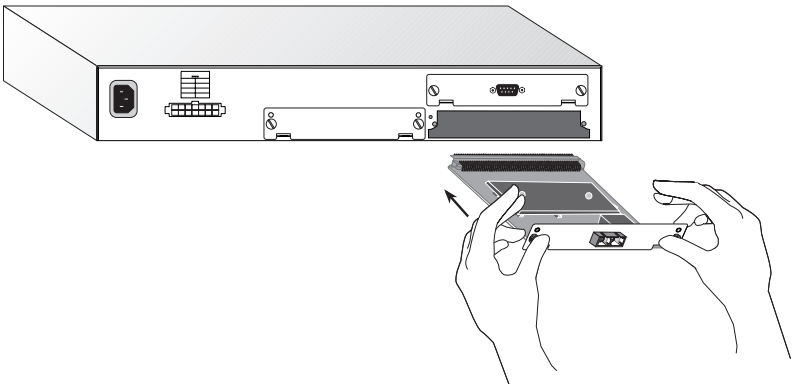
Caution: The switch must be powered off before installing or replacing any module.

1. **Power off the switch:** Disconnect the AC power cord from the switch. If a redundant power unit (RPU) is present, disconnect its DC cable connection from the switch.
2. **Remove network cables:** If you are replacing a module, remove the cable attached to any port on the module.
3. **Loosen the screws on the installed module or slot faceplate:** Using your fingers or a flathead screwdriver, turn the screws securing the module (or faceplate on the slot) in a counter-clockwise direction until they are free of the chassis. Be sure not to completely remove the screws from the module or faceplate.
4. **Remove the installed module or faceplate:** Firmly pull on the screws until the module is free of the switch. Carefully slide the module straight out of the slot.

Keep the original faceplate for future use. If you should remove the module, replace the faceplate to prevent dust and debris from entering the unit and to maintain proper air flow.

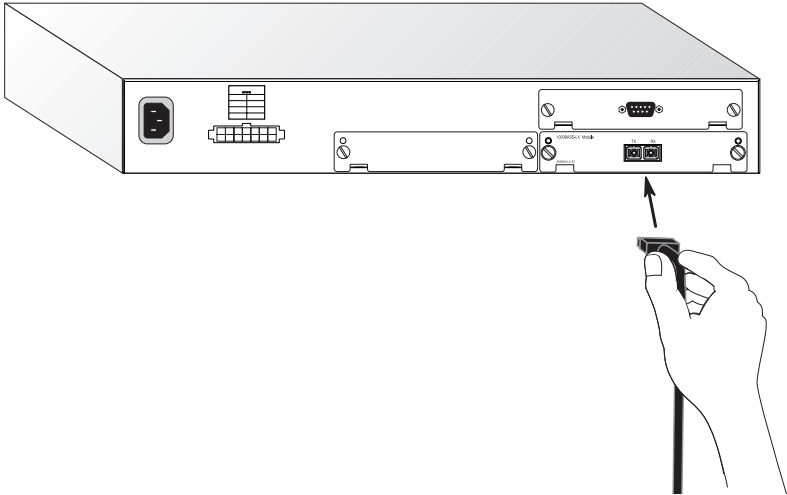


- 5. Insert the new module into the switch:** Holding the new module with the text on the front panel upright, carefully slide the module into a lower slot on the rear panel, and press gently until it snaps into place. Be sure the new module's front panel is flush with the switch panel.



Note: Media expansion modules can only be placed in the lower slots.

- 6. Secure the new module:** Secure the new module in place by screwing the attached screws clockwise into the switch's chassis. Tighten them enough to secure the module, but not so tight as to prevent them from being unscrewed by hand.
- 7. Connect the network cable to the module:** Connect fiber cable to the port on the newly installed module. See "Maximum Cable Length" on page 5 in this guide for further information.



- 8. Power on the switch:** Reconnect the previously removed power sources to the switch. Check the LED indicators for the fiber ports on the module's bracket to ensure that they are operating correctly. Refer to "Gigabit Port LEDs" on page 1 for a description of the LED indications. If the module does not respond, see "Troubleshooting" on page 6.

Refer to the following manuals for the base unit for further details on using this module:

- Quick Installation Guide - connection options and network applications
- Management Guide - configuration options

Maximum Cable Lengths

Cable Types and Specifications			
Cable	Type	Max. Length	Connector
10BASE-T	Cat. 3, 4, 5 100-ohm UTP	100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	100 m (328 ft)	RJ-45
100BASE-FX	50/125 or 62.5/125 micron core multimode fiber		
	Half duplex	412 m (1,351 ft.)	SC or ST
	Full duplex	2 km (1.24 miles)	SC or ST
1000BASE-SX	50/125 or 62.5/125 micron core multimode fiber	See the 1000BASE-SX table	SC or ST
1000BASE-LX	50/125 or 62.5/125 micron core MMF or 9/125 micron core SMF	See the 1000BASE-LX table	SC or ST

Maximum 1000BASE-SX Gigabit Ethernet Cable Length		
Fiber Size	Fiber Bandwidth	Maximum Cable Length
62.5/125 micron MMF	160 MHz/km	7-722 ft (2-220 m)
	200 MHz/km	7-902 ft (2-275 m)
50/125 micron MMF	400 MHz/km	7-1641 ft (2-500 m)
	500 MHz/km	7-1805 ft (2-550 m)

Maximum 1000BASE-LX Gigabit Ethernet Cable Length		
Fiber Size	Fiber Bandwidth	Maximum Cable Length
62.5/125 micron MMF	500 MHz/km	2-550 ft (7-1805 m)
50/125 micron MMF	400 MHz/km	2-550 ft (7-1805 m)
	500 MHz/km	2-550 ft (7-1805 m)
9/125 micron SMF	N/A	2 m - 5 km (7 - 16,404 ft)

Troubleshooting

If you experience any problems with the module, check the following items before contacting Accton Technical Support:

- Ensure the switch with the fiber optic module is powered up.
- Ensure that the device attached to the module is powered up and operating correctly.
- Ensure that the module is properly seated in the slot.
- Verify that the module port is configured to match the communication mode used by the attached device (full or half duplex).
- Check the connectors on both ends of the cable to be sure they are properly engaged. When attaching fiber cable to an SC-type port, be sure the plug clicks into place to ensure that it is properly seated.
- If you are using fiber optic cable with an ST-type connector (in conjunction with the SC-ST converter*), try switching the TX and RX connectors.
- Be sure the fiber terminators are clean. You can clean the cable plugs by wiping them gently with a clean tissue or cotton ball moistened with a little ethanol. Dirty fiber terminators on fiber optic cables will impair the quality of the light transmitted through the cable.

* You may use the Cheetah ST Converter (Part Number: ST5002) to attach 62.5/125 micron fiber cable with an ST-type connector to the SC-type port on the fiber optic module.

Product Specifications

Access Method	CSMA/CD
Ports	1 1000BASE-LX
Network Interface	SC connector: 62.5/125 or 50/125 micron multimode fiber cable 9/125 micron single-mode fiber cable
Communication Mode	Full or half duplex, auto-negotiation for duplex mode and flow control
Size	12.25 x 90.70.5 x 2.74 cm (4.82 x 3.57 x 1.08 in.)
Power Consumption	2.4 W maximum
Temperature	Operating: 0 to 50°C (32 to 122°F) Storage: -40 to 158°C (-40 to 70°F)
Humidity	5% to 95%
Standards	IEEE 802.3z Gigabit Ethernet ISO/IEC 8802-3
Compliances	CE Mark
Emissions	FCC Class A VCCI Class A Industry Canada Class A EN55022 (CISPR 22) Class A C-Tick - AS/NZS 3548 (1995) Class A
Immunity	IEC 1000-4-2/3/4/6
Warranty	Three years

EMI Certification

FCC Class A Certification (USA)

Warning: This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A digital device pursuant to Subpart B of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures are required to correct the interference.

You may use 50/125 or 62.5/125 micron multimode or 9/125 micron single-mode fiber optic cable for SC or ST-type connections.

Canada Department of Communications - Class A

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of the Department of Communications.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques," NMB-003 édictée par le ministère des Communications.

BSMI Class A (Taiwan)

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。

VCCI Class A Compliance (Japan)

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。

CE Mark Declaration of Conformance for EMI and Safety (EEC)

This is to certify that this product complies with ISO/IEC Guide 22 and EN45014.

It conforms to the following specifications:

EMC:	EN55022(1988)/CISPR-22(1985)	class A
	EN60555-2(1995)	class A
	EN60555-3	
	IEC1000-4-2(1995)	4kV CD, 8kV AD
	IEC1000-4-3(1995)	3V/m
	IEC1000-4-4(1995)	1kV - (power line), 0.5kV - (signal line)
	IEC1000-4-6(1995)	3Vrms

This product complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC.

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.



Avertissement: 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.



Underwriters Laboratories Inc. (USA)

Important! Before making connections, make sure you have the correct Cord Set. Check it (read the label on the cable) against the following specification list.

Operating Voltage	Cord Set Specifications
120 Volts	UL Listed/CSA Certified Cord Set
	Minimum 18 AWG
	Type SVT or SJT three conductor cord
	Maximum length of 15 feet
	Parallel blade, grounding type attachment plug rated 15A, 125V
240 Volts (Europe only)	Cord Set with H05VV-F cord having three conductors with minimum diameter of 0.75 mm ²
	IEC-320 receptacle
	Male plug rated 10A, 250V

Wichtige Sicherheitshinweise (Germany)

1. Bitte lesen Sie diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie keine Flüssiger Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.
4. Die Netzanschlussteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Beschädigungen hervorrufen.
7. Die Belüftungsöffnungen dienen der Luftzirkulation, die das Gerät vor Überhitzung schützt. Sorgen Sie dafür, daß diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim Anschluß an das Stromnetz die Anschlußwerte.
9. Verlegen Sie die Netzanschlußleitung so, daß niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen, die sich am Gerät befinden, sind zu beachten.
11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
13. Öffnen sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
 - a. Netzkabel oder Netzstecker sind beschädigt.
 - b. Flüssigkeit ist in das Gerät eingedrungen.
 - c. Das Gerät war Feuchtigkeit ausgesetzt.
 - d. Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
 - e. Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
 - f. Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
15. Zum Netzanschluß dieses Gerätes ist eine geprüfte Leitung zu verwenden. Für einen Nennstrom bis 6A und einem Gerätegewicht größer 3kg ist eine Leitung nicht leichter als H05VV-F, 3G, 0.75mm² einzusetzen.

Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70dB(A) oder weniger.

Warranty

Accton warrants to the original owner that the product delivered in this package will be free from defects in material and workmanship for a period of three (3) years from the date of purchase from Accton or its Authorized reseller. For the warranty to apply, you must register your purchase by returning the registration card indicating the date of purchase and including proof of purchase. There will be a minimal charge to replace consumable components, such as fuses, power transformers, and mechanical cooling devices. The warranty does not cover the product if it is damaged in the process of being installed. Accton recommends that you have the company from whom you purchased this product install it.

THE ABOVE WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ANY WARRANTY ARISING OUT OF ANY PROPOSAL, SPECIFICATION OR SAMPLE. ACCTON SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. ACCTON NEITHER ASSUMES NOR AUTHORIZES ANY PERSON TO ASSUME FOR IT ANY OTHER LIABILITY.

Optional Hardware

EM3604-FX-SC: Media Module with 4 100BASE-FX (SC-type) Ports
EM4601-SX-SC: Media Module with 1 1000BASE-SX (SC-type) Port
EM4582-LX-SC: Media Module with 1 1000BASE-LX (SC-type) Port
ST5002: SC to ST Plug Converter for Fiber Optic Module
(for 62.5/125 micron cable only)

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