EM-422

2-Slot XFP 10Gigabit Module

User's Guide

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Edition 1

ZyXEL

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Overview

The EM-422 is an uplink module with two slots for XFP (10-Gigabit Small Form Factor Pluggable) transceivers. It is designed for use with high-speed switches, such as the XGS-4528F. After installing the EM-422 in a switch, the switch can have 10 Gigabit connections to a backbone switch or other network devices.

This guide helps you set up and use your EM-422.

This guide contains the following sections:

Section	Page	Description
Hardware Installation	3	How to install the EM-422 in a switch's expansion slot.
Transceiver Installation	5	How to install an XFP transceiver in the EM-422.
Transceiver Removal	6	How to remove an XFP transceiver from the EM-422.
Troubleshooting	7	Some suggestions to solve problems you might encounter.
Specifications	7	Information about your EM-422's specifications
Safety Warnings	8	Using the EM-422 safely.
Legal Information	9	Certifications, warranty and customer support information.

1 Hardware Installation

Follow these steps to install the EM-422 in a switch.

Modules are NOT hot swappable!

1 Turn off your switch and unplug all power supply cords (including any backup power supply cords) from the switch.

2 Loosen the screws from the cover plate and remove the cover plate from an expansion slot on the switch. Do not discard the cover plate. You can put the cover plate back on if you remove the new module.

Before you continue, wear an anti-static wrist strap or touch any grounded or metal objects to discharge any bodily static electricity.

3 Remove the EM-422 from its protective anti-static packaging. Hold the EM-422 by its edge to avoid touching the onboard circuit components.

4 Insert the EM-422 into an available expansion slot on the switch. Press it firmly until the EM-422 snaps into place.

Never force, bend or twist the EM-422s into the expansion slots.

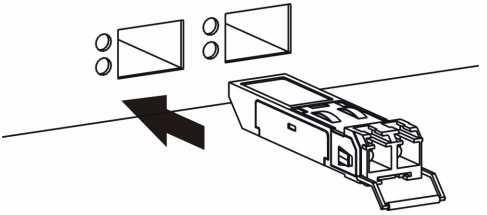
5 Secure it to the switch with the retaining screws.

6 Turn on the switch. The switch automatically detects the installed EM-422. Connect any necessary network cables to the EM-422 and check the LEDs to verify that it is functioning properly.

2 Transceiver Installation

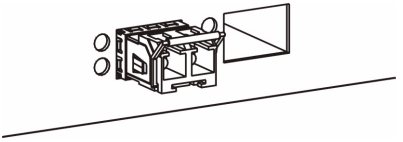
Use the following steps to install an XFP transceiver.

1 Insert the transceiver into the slot with the exposed section of PCB board facing down.

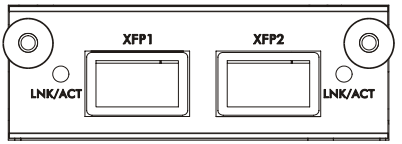


2 Press the transceiver firmly until it clicks into place.

3 The EM-422 automatically detects the installed transceiver. Check the LEDs to verify that it is functioning properly.



3 LEDs (Lights)



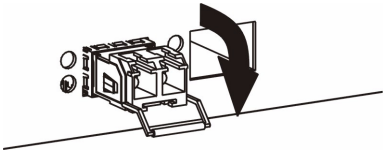
The following table describes the LEDs on the EM-422 panel.

LED	Color	Status	Description
LNK/ ACT	Blue	On	The port is connected to an Ethernet device.
		Blinking	The port is transmitting or receiving data.
		Off	The port is not connected to an Ethernet device.

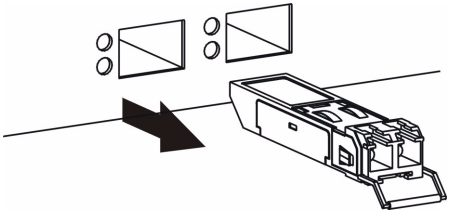
4 Transceiver Removal

Use the following steps to remove an XFP transceiver.

1 Open the transceiver's latch (latch styles vary).



2 Pull the transceiver out of the slot.



5 Troubleshooting

None of the lights turn on after I install the EM-422 and connect it to a network device.

- Make sure the EM-422 is properly installed in a switch.
- Make sure that you are using the XFP transceivers to connect the EM-422 to other device(s).
- Make sure the power source is turned on.
- If the problem continues, contact your vendor.

6 Specifications

Specifications are accurate at the time of writing.

Feature	Specification
Dimensions (mm)	80 (Wide) x 168 (Deep) x 28 (High)
Weight	175 g
Operating Environment	Temperature: 0º C ~ 45º C Humidity: 10% ~ 90% RH
Storage Environment	Temperature: -10º C ~ 70º C Humidity: 10% ~ 90% RH
Power Supply	Use main board 3.3 V
10 Gigabit Ethernet Interface	• Compliant with IEEE 802.3ae • XFP transceiver fiber-optic uplink

Feature	Specification
Switching	• Maximum frame size: 1522 bytes including tag/ CRC • Store and forward
Approvals	FCC Part 15 of Class A & CE

7 Safety Warnings

For your safety, be sure to read and follow all warning notices and instructions.

- Do NOT use this product near water, for example, in a wet basement or near a swimming pool.
- Do NOT expose your device to dampness, dust or corrosive liquids.
- Do NOT store things on the device.
- Do NOT install, use, or service this device during a thunderstorm. There is a remote risk of electric shock from lightning.
- Connect ONLY suitable accessories to the device.
- ONLY qualified service personnel should service or disassemble this device.
- Make sure to connect the cables to the correct ports.
- Place connecting cables carefully so that no one will step on them or stumble over them.
- Always disconnect all cables from this device before servicing or disassembling.
- Do not use the device outside, and make sure all the connections are indoors. There is a remote risk of electric shock from lightning.

- This product is recyclable. Dispose of it properly.

8 Legal Information

Certifications

Federal Communications Commission (FCC) Interference Statement

This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operations.

FCC Warning

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

CE Mark 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.

Taiwanese BSMI (Bureau of Standards, Metrology and Inspection) A Warning:

警告使用者
這是甲類的資訊產品，在居住的環境使用時，
可能造成射頻干擾，在這種情況下，
使用者會被要求採取某些適當的對策.

Notices

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.
CLASS 1 LASER PRODUCT
APPAREIL A LASER DE CLASS 1
PRODUCT COMPLIES WITH 21 CFR 1040.10 AND 1040.11.
PRODUIT CONFORME SELON 21 CFR 1040.10 ET 1040.11.

Viewing Certifications

1. Go to http://www.zyxel.com.
2. Select your product on the ZyXEL home page to go to that product's page.
3. Select the certification you wish to view from this page.

ZyXEL Limited Warranty

ZyXEL warrants to the original end user (purchaser) that this product is free from any defects in materials or workmanship for a period of up to two years from the date of purchase. During the warranty period, and upon proof of purchase, should the product have indications of failure due to faulty workmanship and/or materials, ZyXEL will, at its discretion, repair or replace the defective products or components without charge for either parts or labor, and to whatever extent it shall deem necessary to restore the product or components to proper operating condition. Any replacement will consist of a new or re-manufactured functionally equivalent product of equal or higher value, and will be solely at the discretion of ZyXEL. This warranty shall not apply if the product has been modified, misused, tampered with, damaged by an act of God, or subjected to abnormal working conditions.

Note

Repair or replacement, as provided under this warranty, is the exclusive remedy of the purchaser. This warranty is in lieu of all other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular use or purpose. ZyXEL shall in no event be held liable for indirect or consequential damages of any kind to the purchaser.

To obtain the services of this warranty, contact ZyXEL's Service Center for your Return Material Authorization number (RMA). Products must be returned Postage Prepaid. It is recommended that the unit be insured when shipped. Any returned products without proof of purchase or those with an out-dated warranty will be repaired or replaced (at the discretion of ZyXEL) and the customer will be billed for parts and labor. All repaired or replaced products will be shipped by ZyXEL to the corresponding return address, Postage Paid. This warranty gives you specific legal rights, and you may also have other rights that vary from country to country.

Related Documentation

Please go to http://www.zyxel.com for product news, firmware, documentation, and other support materials.

Registration

Register your product online to receive e-mail notices of firmware upgrades and information at www.zyxel.com for global products, or at www.us.zyxel.com for North American products.

User Guide Feedback

Help us help you. E-mail all User Guide-related comments, questions or suggestions for improvement to techwriters@zyxel.com.tw or send regular mail to The Technical Writing Team, ZyXEL Communications Corp., 6 Innovation Road II, Science-Based Industrial Park, Hsinchu, 300, Taiwan. Thank you.

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Customer Support

Please have the following information ready when you contact customer support.

- Product model and serial number.
- Warranty Information.
- Date that you received your device.
- Brief description of the problem and the steps you took to solve it.

"+" is the (prefix) number you dial to make an international telephone call.

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