



# 8271 NWAYS 100BASE-FX MODULE USER'S GUIDE

## Introduction

This guide covers the following products:

- **8271 Nways 100BASE-FX Module (Single) (02L0880)** — provides a single high-speed fiber port for connection to your network.
- **8271 Nways 100BASE-FX Module (Dual) (02L0881)** — provides two high-speed fiber ports, each of which can be used independently to provide two connections, or you can use them as a resilient link.

Both modules are designed to fit into the:

- 8271 Nways Ethernet LAN Switch Models E12 and E24
- 8271 Nways Ethernet LAN Switch Models F12 and F24

## Before Installation

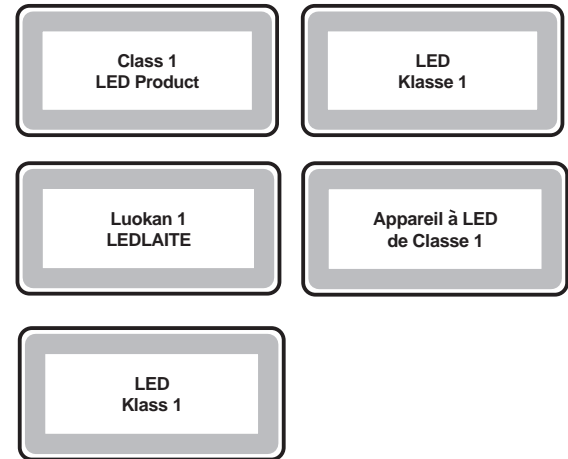


**ATTENTION:** Before installing the 100BASE-FX Module into a Switch, you must disconnect the Switch from the mains power supply.

For full safety instructions, refer to the appropriate Switch User's Guide.



**DANGER:**  SD21-0030.



## Handling the Module

The module can be easily damaged by electrostatic discharge. To prevent damage, please observe the following:

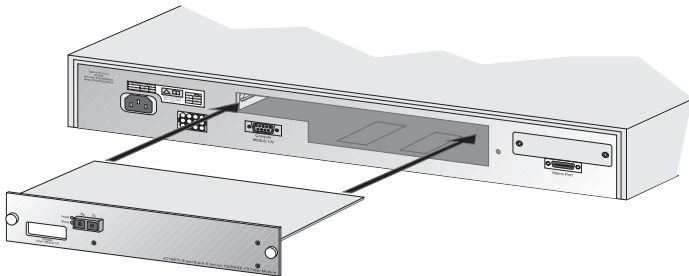
- Do not remove the module from its packaging until you are ready to install it into a switch.
- Do not touch any of the pins, connections or components on the module.
- Handle the module only by its edges and front panel.
- Always wear an anti-static wristband connected to a suitable earth point.

- Always store or transport modules in appropriate anti-static packaging.

## Installing the Module

To install the module into the switch:

- 1 Ensure that the switch is disconnected from the mains power supply and you are wearing an anti-static wristband connected to a suitable earth point.
- 2 Using a small cross-bladed screwdriver, remove the blanking plate from the rear of the switch. Do not remove any other screws from the rear of the switch.
- 3 Keep the blanking plate and screws in a safe place. If you remove the module at any time, you must replace the blanking plate to prevent dust and debris entering the switch and to aid the circulation of cooling air.
- 4 Hold the module so that the text on the front panel is oriented correctly, and position the printed circuit board (PCB) onto the guide rails inside the switch. Push the module fully into the switch, ensuring the connectors are fully engaged. Tighten the two captive thumbscrews securing the module.



**Figure 1** Inserting the module into the switch

## Connecting Cables and Powering Up

Each port supports half duplex and full duplex operation:

- In half duplex mode, the fiber optic segment cannot exceed 450m (1476ft) in length.

- In full duplex mode, the fiber optic segments cannot exceed 2km (6562ft) in length.

Use 62.5/125 micron 100BASE-FX fiber optic cable with SC connectors.

Connect the module:

- 1 Remove the protective plastic covers from the fiber connections on the module.
- 2 Ensure that the switch is powered up.
- 3 Plug the SC connector on the fiber cable into the fiber socket on the module.
- 4 Connect the other end of the fiber optic segment to an appropriate 100Mbps device.
- 5 Check LEDs to ensure correct operation.

## Checking LEDs

Once the module is correctly installed and the switch is powered up, check the LEDs on the module and the front of the switch to ensure correct operation.

LED	State	Indicates:
<i>Module LEDs</i>		
Packet	Yellow	Traffic is being transmitted/received on this port
Status	Green	Link is present; port enabled
	Green flashing	Link is present; port disabled
<i>Switch unit LED</i>		
Status	Yellow	Module operating correctly
	Yellow flashing	Unsupported module installed
	Off	No module installed

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## Removing the Module

To remove the module from a switch

- 1 Disconnect the switch from the power supply and remove fiber cables from the module.
- 2 Undo the two captive thumbscrews securing the module into the switch. Do not remove any other screws from the rear of the switch.
- 3 If you are not fitting another module immediately, you must replace the blanking plate to ensure that dust and debris do not enter the switch and to aid the circulation of cooling air.

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## Problem Solving

If you suspect a problem, carry out these steps *before* contacting your supplier:

- Ensure that the devices at both ends of the link are powered up and the connections are secure.
- Ensure that the module is correctly installed in the switch.
- Ensure that port configuration is correct.
- Ensure the Tx and Rx connections are correct.
- Clean the terminators (fiber cable ends) by wiping them gently with a clean tissue or cotton bud moistened with a little ethanol. Dirty fiber terminators on the fiber optic segment will impair the quality of the light transmitted through the cable.
- Check that the host switch is operating correctly.

## Obtaining Support

For further information on obtaining support, refer to the Technical Support information in the User's Guide that accompanies the switch, or visit our World Wide Web site by entering the following URL into your web browser:

<http://www.networking.ibm.com/support>

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## Technical Specification

<b>Operating Temperature</b>	0° to 50°C (32° to 122°F)
<b>Storage Temperature</b>	-10° to 70°C (14° to 158°C)
<b>Operating Humidity</b>	10–95% non-condensing
<b>Minimum Output Power</b>	-20dBm
<b>Input Sensitivity</b>	-31dBm
<b>Power Budget</b>	11dBm
<b>Power Consumption</b>	(@5V DC) 3A (15W)

### Standards:

Safety	UL 1950 EN60950 CSA22.2#950
EMC	
Emissions	EN55022 Class B, FCC Part 15 Sub-part B Class A, ICES-003 Class A, AS/NZS 3548 Class B, VCCI Class B
Immunity	EN50082-1
Environmental	EN60068 (IEC 68)

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## Electronic Emission Notices

### Federal Communications Commission (FCC) Statement

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 generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. IBM is not responsible for any radio or television interference caused by

using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

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.

### **Canadian Department of Communications (DOC) Compliance Statement**

Industry Canada Class A Emission Compliance Statement

This Class A digital apparatus complies with Canadian ICES-003.

### **Avis de conformite aux normes du ministere des Communications du Canada**

Cet appareil numérique de la classe A est conform à la norme NMB-003 du Canada.

### **European Union (EU) Statement for Shielded Cable**

This product is in conformity with the protection requirements of EU Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

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

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) vom 30. August 1995 (bzw. der EMC EG Richtlinie 89/336)

Dieses Gerät ist berechtigt in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

Verantwortlich für die Konformitätserklärung nach Paragraph 5 des EMVG ist die IBM Corporation. Deutschland Informationssysteme GmbH, 70547 Stuttgart.

Informationen in Hinsicht EMVG Paragraph 3 Abs. (2) 2:  
Das Gerät erfüllt die Schutzanforderungen nach EN.50082-1 und EN 55022 Klasse B.

EN 55022 Klasse B Geräte müssen mit folgendem Warhinweis versehen werden:

“Warnung: dies ist eine Einrichtung der Klasse B. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen.”

EN 50082-1 Hinweis:

“Wird dieses Geräte in eine Umgebung betrieben (wie in EN 50082-2 festgelegt), dann kann es dabei eventuell gestört werden. In solch einem Fall ist der Abstand bzw. die Abschirmung zu der industriellen Störquelle zu verößern.

Anmerkung:

Um die Einhaltung des EMVG sicherzustellen sind die Geräte, wie in den IBM Handbüchern angegeben, zu installieren und zu betreiben.

### **Japanese Voluntary Control Council for Interference (VCCI) Statement Class B for Shielded Cables**

This product is a Class B Information Technology Equipment and conforms to the standards set by the Voluntary Control Council for Interference by Technology Equipment (VCCI). This product is aimed to be used in a domestic environment. When used near a radio or TV receiver, it may become the

cause of radio interference. Read the Instructions for correct handling.

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B情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをして下さい。

## Taiwanese Class A Warning Statement

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。

## Korean Communications Statement

Please note that this device has been approved for business purpose with regard to electromagnetic interference. If you find this is not suitable for your use, you may exchange it for a non-business purpose one.

대한민국 통신문

이 기기는 업무용으로 전자파 적합증을 받은 기기이므로, 이 기기 또는 사용자는 이 점을 주의하시기 바라며, 만약 잘못 구입하였을 때에는 구입한 곳에서 비업무용으로 교환하시기 바랍니다.

## Statement of Limited Warranty



International Business Machines Corporation  
Armonk, NY 10504

*The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you originally purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. If you have any questions, contact IBM or your reseller*

**Machine: IBM 8271 Nways 100BASE-FX Module**

**Warranty Period\*: 1 year**

\* Contact your place of purchase for warranty service information.

### Production Status

Each Machine is manufactured from new parts, or new and used parts. In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's warranty terms apply.

### The IBM Warranty for Machines

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications. The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your receipt is the Date of Installation, unless IBM or your reseller informs you otherwise.

During the warranty period IBM or your reseller, if authorized by IBM, will provide warranty service under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

For IBM or your reseller to provide warranty service for a feature, conversion, or upgrade, IBM or your reseller may require that the Machine on which it is installed be 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Many of these transactions involve the removal of parts and their return to IBM. that are provided on an exchange basis. You represent that all removed parts are genuine and unaltered. A part that replaces a removed part will assume the warranty service status of the replaced part.

If a Machine does not function as warranted during the warranty period, IBM or your reseller will repair or replace it with one that is at least functionally equivalent, without charge. The replacement may not be new, but it will be in good

working order. If IBM or your reseller is unable to repair or replace the Machine, you may return it to your place of purchase and your money will be refunded.

If you transfer a Machine to another user, warranty service is available to that user for the remainder of the warranty period. You should give your proof of purchase and this Statement to that user. However, for machines which have a life-time warranty, this warranty is not transferable.

### Warranty Service

To obtain warranty service for the Machine, you should contact your reseller or call IBM. In the United States and Canada, call IBM at **1-800-IBM-SERV (426-7378)**. You may be required to present proof of purchase.

IBM or your reseller will provide certain types of repair and exchange service, either at your location or at IBM's or your reseller's service center, to restore a Machine to good working order.

When a type of service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item. Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service. You also agree to ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange.

You agree to:

- 1 obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
- 2 where applicable, before service is provided —
  - a follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provide,
  - b secure all programs, data, and funds contained in a Machine, and
  - c inform IBM or your reseller of changes in a Machine's location.

IBM is responsible for loss of, or damage to, a Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

### Extent of Warranty

IBM does not warrant uninterrupted or error-free operation of a Machine.

The warranties may be voided by misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, removal or alteration of Machine or parts identification labels, or failure caused by a product for which IBM is not responsible.

THESE WARRANTIES REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WAR-

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Circumstances may arise where, because of a default on IBM's part or other liability (including negligence and misrepresentation), you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), IBM is liable only for:

Damages for bodily injury (including death) and damage to real property and tangible personal property; and

The amount of any other actual direct damages or loss, up to the greater of US\$100,000 or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

Under no circumstances is IBM liable for any of the following: 1) Third-party claims against you for losses or damages (other than those under the first item listed above); 2) Loss of, or damage to, your records or data; or 3) Special, incidental, or indirect damages or for any economic consequential damages (including lost profits or savings), even if IBM or your reseller is informed of their possibility. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from jurisdiction to jurisdiction.

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