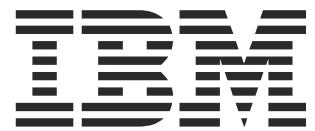IBM Flex System FC3052 2-port 8Gb FC Adapter

IBM

User's Guide

IBM Flex System FC3052 2-port 8Gb FC Adapter

User's Guide

Note: Before using this information and the product it supports, read the general information in Appendix B, "Notices," on page 13, the *Safety Information* and *Environmental Notices and User Guide* documents on the IBM *Notices for Network Devices* CD, and the *Warranty Information* document that comes with the product.

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Safety

Before installing this product, read the Safety Information.

قبل تركيب هذا المنتج، يجب قراءة الملاحظات الآمنية

Antes de instalar este produto, leia as Informações de Segurança.

在安装本产品之前，请仔细阅读 Safety Information
(安全信息)。

安裝本產品之前，請先閱讀「安全資訊」。

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

Ennen kuin asennat tämän tuotteen, lue turvaohjeet kohdasta Safety Information.

Avant d'installer ce produit, lisez les consignes de sécurité.

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

Πριν εγκαταστήσετε το προϊόν αυτό, διαβάστε τις πληροφορίες ασφάλειας
(safety information).

לפני שתתקינו מוצר זה, קראו את הוראות הבטיחות.

A termék telepítése előtt olvassa el a Biztonsági előírásokat!

Prima di installare questo prodotto, leggere le Informazioni sulla Sicurezza.

製品の設置の前に、安全情報をお読みください。

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

Пред да се инсталира овој продукт, прочитајте информацијата за безбедност.

Les sikkerhetsinformasjonen (Safety Information) før du installerer dette produktet.

Przed zainstalowaniem tego produktu, należy zapoznać się
z książką "Informacje dotyczące bezpieczeństwa" (Safety Information).

Antes de instalar este produto, leia as Informações sobre Segurança.

Перед установкой продукта прочтите инструкции по
технике безопасности.

Pred inštaláciou tohto zariadenia si pečítaje Bezpečnostné predpisy.

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Antes de instalar este producto, lea la información de seguridad.

Läs säkerhetsinformationen innan du installerar den här produkten.

Important:

Each caution and danger statement in this document is labeled with a number. This number is used to cross reference an English-language caution or danger statement with translated versions of the caution or danger statement in the *Safety Information* document.

For example, if a caution statement is labeled "Statement 1," translations for that caution statement are in the *Safety Information* document under "Statement 1."

Be sure to read all caution and danger statements in this document before you perform the procedures. Read any additional safety information that comes with the server or optional device before you install the device.

This device is intended for use with UL Listed IBM devices.

Statement 1:

DANGER

Electrical current from power, telephone, and communication cables is hazardous.

To avoid a shock hazard:
- **Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.**
- **Connect all power cords to a properly wired and grounded electrical outlet.**
- **Connect to properly wired outlets any equipment that will be attached to this product.**
- **When possible, use one hand only to connect or disconnect signal cables.**
- **Never turn on any equipment when there is evidence of fire, water, or structural damage.**
- **Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.**
- **Connect and disconnect cables as described in the following table when installing, moving, or opening covers on this product or attached devices.**

To Connect:	To Disconnect:
1. Turn everything OFF.	1. Turn everything OFF.
2. First, attach all cables to devices.	2. First, remove power cords from outlet.
3. Attach signal cables to connectors.	3. Remove signal cables from connectors.
4. Attach power cords to outlet.	4. Remove all cables from devices.
5. Turn device ON.	

Chapter 1. IBM Flex System FC3052 2-port 8Gb FC Adapter

The IBM Flex System™ FC3052 2-port 8Gb FC Adapter provides compute nodes with high-speed access to a Fibre Channel storage area network (SAN). This 2-port 8 Gb adapter is based on the Emulex® 8 Gb Fibre Channel ASIC, and it uses industry-proven technology to provide high-speed, reliable access to SAN connected storage. The two ports enable redundant connections to the SAN, which can increase reliability and reduce downtime.

This *User's Guide* contains information and instructions for installing the adapter, updating the firmware, and solving problems. See the documentation that came with your IBM Flex System compute node for information on how to install the adapter; then, return to this *User's Guide* for the information and instructions needed to complete the installation.

For information about the types of compatible devices available for IBM products, contact your IBM marketing representative or authorized reseller. For a list of supported optional devices, see http://www.ibm.com/servers/eserver/serverproven/compat/us/.

Related documentation

This *User's Guide* contains setup and installation instructions for the adapter and general information about the adapter, including how to configure, update, and troubleshoot the adapter, and how to get help.

In addition to this document, the following documentation is available:

- IBM Flex System compute node *User's Guides*

  These documents contain the hardware installation instructions for the adapter.

- *IBM Flex System Enterprise Chassis Installation and Service Guide* for the IBM Flex System Enterprise Chassis.

  This document contains information about setting up, configuring, and troubleshooting the IBM Flex System Enterprise Chassis and its components.

- *IBM Flex System Chassis Management Module Command-Line Interface Reference Guide*

  This document explains how to use the Chassis Management Module command-line interface (CLI) to directly access management functions. The command-line interface also provides access to the text-console command prompt on each compute node through a Serial over LAN (SOL) connection.

- *IBM Flex System Chassis Management Module User's Guide*

  This document explains how to use the Chassis Management Module user interface to manage chassis components.

- *IBM Flex System Manager System Management Guide*

  This document explains how to use the IBM Flex System Manager user interface to manage chassis components.

- *Environmental Notices and User Guide*

   This document is provided on the IBM Notices for Network Devices CD, and it contains translated environmental notices.

- *Safety Information*

   This document is provided on the IBM Notices for Network Devices CD, and it contains translated caution and danger statements. Each caution and danger statement that appears in the documentation has a number that you can use to locate the corresponding statement in your language in the Safety Information document.

For the most up-to-date product documentation for all of your IBM Flex System products, go to the IBM Flex System Information Center at http://publib.boulder.ibm.com/infocenter/flexsys/information/index.jsp.

Notices and statements in this document

The caution and danger statements in this document are also in the multilingual *Safety Information* document, which is provided on the IBM *Notices for Network Device* CD. Each statement is numbered for reference to the corresponding statement in your language in the *Safety Information* document.

The following notices and statements are used in this document:

- **Note:** These notices provide important tips, guidance, or advice.
- **Important:** These notices provide information or advice that might help you avoid inconvenient or problem situations.
- **Attention:** These notices indicate potential damage to programs, devices, or data. An attention notice is placed just before the instruction or situation in which damage could occur.
- **Caution:** These statements indicate situations that can be potentially hazardous to you. A caution statement is placed just before the description of a potentially hazardous procedure step or situation.
- **Danger:** These statements indicate situations that can be potentially lethal or extremely hazardous to you. A danger statement is placed just before the description of a potentially lethal or extremely hazardous procedure step or situation.

Features and specifications

The FC3052 2-port 8Gb FC adapter has the following features and specifications:

- Multifunction PCIe 2.0 device with two independent FC ports
- Auto-negotiation between 2-Gb/s, 4-Gb/s or 8-Gb/s FC link attachments
- Complies with the PCI Express Base Specification Revision 2.0
- Built-in temperature sensor

Chapter 2. Installing the adapter

This chapter provides information and instructions for installing and configuring the adapter. See the documentation that came with the IBM compute node to install the adapter in the compute node; then, return to this *User's Guide* for the information and instructions needed to complete the installation.

Installing device drivers

For device driver installation instructions, refer to the following operating system-specific documentation:

Windows drivers

Windows Server 2008	www.emulex.com/downloads/ibm/lightpulse-fc-hba-drivers.html
Windows Server 2008 R2	www.emulex.com/downloads/ibm/lightpulse-fc-hba-drivers.html

Linux drivers

Citrix XenServer 6.0	www.emulex.com/downloads/ibm/lightpulse-fc-hba-drivers.html
Citrix XenServer 5.6	www.emulex.com/downloads/ibm/lightpulse-fc-hba-drivers.html
SLES 11	www.emulex.com/downloads/ibm/lightpulse-fc-hba-drivers.html
SLES 10	www.emulex.com/downloads/ibm/lightpulse-fc-hba-drivers.html
RHEL 6	www.emulex.com/downloads/ibm/lightpulse-fc-hba-drivers.html
RHEL 5	www.emulex.com/downloads/ibm/lightpulse-fc-hba-drivers.html

VMware drivers

ESX 5.0	www.emulex.com/downloads/ibm/lightpulse-fc-hba-drivers.html
ESX 4.1	www.emulex.com/downloads/ibm/lightpulse-fc-hba-drivers.html

Managing the adapter

Adapter management information is provided in the following application and utilities documentation:

- *OneCommand™ Manager Application User Manual* (www.emulex.com/downloads/ibm/lightpulse-fc-hba-drivers.html)
- *Elxflash Offline/Online Utilities User Manual* (www.emulex.com/downloads/ibm/lightpulse-fc-hba-drivers.html)

Boot from SAN information is provided in the *Boot Code User Manual for Emulex Adapters* (www.emulex.com/files/downloads/hardware/bootcode.pdf).

Chapter 3. Updating the firmware

This chapter contains information and instructions for updating the adapter firmware.

Determining the adapter firmware level

For information on determining the adapter firmware level, refer to the following application and utilities documentation:

- *OneCommand™ Manager Application User Manual* (www.emulex.com/downloads/ibm/lightpulse-fc-hba-drivers.html)
- *Elxflash Offline/Online Utilities User Manual* (www.emulex.com/downloads/ibm/lightpulse-fc-hba-drivers.html)

Obtaining the latest level of adapter firmware

To obtain the latest level of IBM-supported adapter firmware:

1. Go to the IBM section of the Emulex website at http://www.emulex.com/downloads/ibm/fw-and-bootcode.html.

2. Click the appropriate adapter.

3. Locate the download icon for the firmware and click it.

Updating the firmware and device drivers

IBM periodically makes I/O adapter firmware and device driver updates available for the compute node. Provisioning is the set of actions that you take to update the firmware and device drivers and install the operating system. Several tools are available to help you update the firmware and device drivers in the provisioning process.

- **IBM Flex System Manager Update Manager**

  The IBM Flex System Manager Update Manager acquires, installs, and manages firmware and device driver updates and monitors your compute nodes to ensure that they remain current. For more information about Update Manager, see the IBM Flex System Manager information in the IBM Flex System Information Center at http://publib.boulder.ibm.com/infocenter/flexsys/information/index.jsp.

- **UpdateXpress System Packs**

  UpdateXpress System Packs (UXSP) contain an integration-tested bundle of online, updateable firmware and device drivers for your compute node. The IBM ToolsCenter Bootable Media Creator uses UpdateXpress System Packs to update the firmware and device drivers.

  Typically, use UpdateXpress System Packs to update firmware and devices drivers for a compute node that has previously been provisioned. For more

information about UpdateXpress System Packs, see the IBM UpdateXpress website.

- **IBM ToolsCenter Bootable Media Creator**

  You can use IBM ToolsCenter Bootable Media Creator to create bootable media that is suitable for applying firmware updates and running preboot diagnostics. Using IBM ToolsCenter Bootable Media Creator, you can create a single bootable image on supported media (such as CD, DVD, ISO image, USB flash drive, or set of PXE files) that bundles multiple IBM Flex System tools and updates from UpdateXpress System Packs, which contain Windows and Linux® firmware updates.

  Typically, use IBM ToolsCenter Bootable Media Creator for the initial setup of a compute node. For more information about the IBM Bootable Media Creator, see the IBM Bootable Media Creator website.

  To provision a compute node with updated firmware and device drivers by using IBM ToolsCenter Bootable Media Creator, complete the following steps:

  1) Download IBM ToolsCenter Bootable Media Creator to a computer that is connected over the management network to the IBM Flex System Manager management software that is managing the compute node.

  2) Create the bootable media of firmware and device driver updates.

  3) Connect to the IBM Flex System Manager management software that is managing the IBM Flex System chassis in which the compute node is installed.

  4) From IBM Flex System Manager Chassis Manager, select the compute node. In the Actions column, select Remote Control.

     Note: The user ID that you use to log in to IBM Flex System Manager management software must have sufficient user permissions to manage the compute node.

  5) From the Remote Control session, mount the bootable media (using Remote Media).

  6) Start the compute node to boot the media and install the updates.

Important: To avoid problems and to maintain system performance, always make sure that the I/O adapter firmware and device drivers are consistent in all compute nodes in the IBM Flex System chassis.

Chapter 4. Solving problems

If you cannot locate and correct a problem by using the information in this section, see Appendix A, "Getting help and technical assistance," on page 9.

Running POST

To ensure that it is fully operational, the adapter processes a series of tests during power-up or a restart (power-on self-test, or POST). These tests take approximately 1 minute to complete. The management module reads the test results and displays them for you. During normal operation, these tests are completed without error, and the green OK LED is lit. However, if the adapter fails POST, the amber adapter error LED and the system-error LED on the chassis are lit.

Parts listing

Replaceable components are of three types:

- **Tier 1 customer replaceable unit (CRU)**: Replacement of Tier 1 CRUs is your responsibility. If IBM installs a Tier 1 CRU at your request, you will be charged for the installation.
- **Tier 2 customer replaceable unit (CRU)**: You may install a Tier 2 CRU yourself or request IBM to install it, at no additional charge, under the type of warranty service that is designated for your server.
- **Field replaceable unit (FRU)**: FRUs must be installed only by trained service technicians.

For information about the terms of the warranty, see the *Warranty Information* document.

The replaceable components in the following table are Tier 1 CRUs. If other components require replacement, see the documentation that came with those devices for instructions.

Part	CRU number (Tier 1)
IBM Flex System FC3052 2-port 8Gb FC Adapter	95Y2378

Appendix A. Getting help and technical assistance

If you need help, service, or technical assistance or just want more information about IBM products, you will find a wide variety of sources available from IBM to assist you. This section contains information about where to go for additional information about IBM and IBM products, what to do if you experience a problem with your system, and whom to call for service, if it is necessary.

Before you call

Before you call, make sure that you have taken these steps to try to solve the problem yourself:
- Check all cables to make sure that they are connected.
- Check the power switches to make sure that the system and any optional devices are turned on.
- Use the troubleshooting information in your system documentation, and use the diagnostic tools that come with your system.
- Go to the IBM support website at http://www.ibm.com/supportportal/ to check for technical information, hints, tips, and new device drivers or to submit a request for information.

You can solve many problems without outside assistance by following the troubleshooting procedures that IBM provides in the online help or in the documentation that is provided with your IBM product. The documentation that comes with IBM systems also describes the diagnostic tests that you can perform. Most systems, operating systems, and programs come with documentation that contains troubleshooting procedures and explanations of error messages and error codes. If you suspect a software problem, see the documentation for the operating system or program.

Using the documentation

Information about your IBM system and preinstalled software, if any, or optional device is available in the documentation that comes with the product. That documentation can include printed documents, online documents, readme files, and help files. See the troubleshooting information in your system documentation for instructions for using the diagnostic programs. The troubleshooting information or the diagnostic programs might tell you that you need additional or updated device drivers or other software. IBM maintains pages on the World Wide Web where you can get the latest technical information and download device drivers and updates. To access these pages, go to http://www.ibm.com/supportportal/ and follow the instructions.

Getting help and information from the World Wide Web

If you need help, service, or technical assistance or just want more information about IBM products, you will find a wide variety of sources available from IBM to assist you. This section contains information about where to go for additional information about IBM and IBM products, what to do if you experience a problem with your system, and whom to call for service, if it is necessary.

Software service and support

Through IBM Support Line, you can get telephone assistance, for a fee, with usage, configuration, and software problems. For information about which products are supported by Support Line in your country or region, see http://www.ibm.com/services/supline/products/.

For more information about Support Line and other IBM services, see http://www.ibm.com/services/, or see http://www.ibm.com/planetwide/ for support telephone numbers. In the U.S. and Canada, call 1-800-IBM-SERV (1-800-426-7378).

Hardware service and support

You can receive hardware service through your IBM reseller or IBM Services. To locate a reseller authorized by IBM to provide warranty service, go to http://www.ibm.com/partnerworld/ and click **Find Business Partners** on the right side of the page. For IBM support telephone numbers, see http://www.ibm.com/planetwide/. In the U.S. and Canada, call 1-800-IBM-SERV (1-800-426-7378).

In the U.S. and Canada, hardware service and support is available 24 hours a day, 7 days a week. In the U.K., these services are available Monday through Friday, from 9 a.m. to 6 p.m.

IBM Taiwan product service

台灣 IBM 產品服務聯絡方式：
台灣國際商業機器股份有限公司
台北市松仁路 7 號 3 樓
電話：0800-016-888

IBM Taiwan product service contact information:
    IBM Taiwan Corporation
    3F, No 7, Song Ren Rd.
    Taipei, Taiwan
    Telephone: 0800-016-888

Appendix B. Notices

This information was developed for products and services offered in the U.S.A.

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    IBM Corporation
    North Castle Drive
    Armonk, NY 10504-1785
    U.S.A.

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Microsoft, Windows, and Windows NT are trademarks of Microsoft Corporation in
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UNIX is a registered trademark of The Open Group in the United States and other cou

Important notes

When referring to hard disk drive capacity or communications volume, MB stands for 1 000 000 bytes, and GB stands for 1 000 000 000 bytes. Total user-accessible capacity can vary depending on operating environments.

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Some software might differ from its retail version (if available) and might not include user manuals or all program functionality.

This product is not intended to be connected directly or indirectly by any means whatsoever to interfaces of public telecommunications networks, nor is it intended to be used in a public services network.

Documentation format

The publications for this product are in Adobe Portable Document Format (PDF) and should be compliant with accessibility standards. If you experience difficulties when you use the PDF files and want to request a web-based format or accessible PDF document for a publication, direct your mail to the following address:
   Information Development
   IBM Corporation
   205/A015
   3039 E. Cornwallis Road
   P.O. Box 12195
   Research Triangle Park, North Carolina 27709-2195
   U.S.A.

In the request, be sure to include the publication part number and title.

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Electronic emission notices

Federal Communications Commission (FCC) statement

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 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.

Industry Canada Class A emission compliance statement

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

Avis de conformité à la réglementation d'Industrie Canada

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

Australia and New Zealand Class A statement

Attention: 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.

European Union EMC Directive conformance statement

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC 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 nonrecommended modification of the product, including the fitting of non-IBM option cards.

Attention: This is an EN 55022 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.

Responsible manufacturer:
    International Business Machines Corp.
    New Orchard Road
    Armonk, New York 10504
    914-499-1900

European Community contact:
    IBM Technical Regulations, Department M456
    IBM-Allee 1, 71137 Ehningen, Germany
    Telephone: +49 7032 15-2937
    E-mail: tjahn@de.ibm.com

Germany Class A statement

Deutschsprachiger EU Hinweis:

Hinweis für Geräte der Klasse A EU-Richtlinie zur Elektromagnetischen Verträglichkeit

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2004/108/EG zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022 Klasse A ein.

Um dieses sicherzustellen, sind die Geräte wie in den Handbüchern beschrieben zu installieren und zu betreiben. Des Weiteren dürfen auch nur von der IBM empfohlene Kabel angeschlossen werden. IBM übernimmt keine Verantwortung für die Einhaltung der Schutzanforderungen, wenn das Produkt ohne Zustimmung der IBM verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung der IBM gesteckt/eingebaut werden.

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Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten

Dieses Produkt entspricht dem "Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG)". Dies ist die Umsetzung der EU-Richtlinie 2004/108/EG in der Bundesrepublik Deutschland.

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) (bzw. der EMC EG Richtlinie 2004/108/EG) für Geräte der Klasse A

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

Verantwortlich für die Einhaltung der EMV Vorschriften ist der Hersteller:
International Business Machines Corp.
New Orchard Road
Armonk, New York 10504
914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:
IBM Deutschland
Technical Regulations, Department M456
IBM-Allee 1, 71137 Ehningen, Germany
Telephone: +49 7032 15-2937
E-mail: tjahn@de.ibm.com

Generelle Informationen:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 Klasse A.

Japan VCCI Class A statement

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This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI). If this equipment is used in a domestic environment, radio interference may occur, in which case the user may be required to take corrective actions.

Korea Communications Commission (KCC) statement

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This is electromagnetic wave compatibility equipment
for business (Type A). Sellers and users need to pay
attention to it. This is for any areas other than home.

Russia Electromagnetic Interference (EMI) Class A statement

ВНИМАНИЕ! Настоящее изделие относится к классу А.
В жилых помещениях оно может создавать радиопомехи, для
снижения которых необходимы дополнительные меры

People's Republic of China Class A electronic emission statement

中华人民共和国 "A类" 警告声明

声 明
此为A级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，
可能需要用户对其干扰采取切实可行的措施。

Taiwan Class A compliance 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。

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