Intel® PRO/Wireless 2200BG
Mini-PCI Adapter from IBM®

IBM

User's Guide

Intel® PRO/Wireless 2200BG
Mini-PCI Adapter from IBM®

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User's Guide

┌─ **ATTENTION** ──┐
Refer to the documentation that comes with your computer before installing the product.
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┌─ **Note** ───┐
Be sure to keep your proof of purchase, because it might be required for warranty services. (For more information, refer to *Product warranty and notices for Intel PRO/Wireless 2200BG Mini-PCI Adapter from IBM.*)
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Read first – Safety information

Before installing this product, read the Safety Information.

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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）。

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

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.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

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.

安裝本產品之前，請先閱讀「安全資訊」。

安裝本產品之前，請先閱讀「安全資訊」。

General safety guidelines

Always observe the following precautions to reduce the risk of injury and property damage.

Service

Do not attempt to service a product yourself unless instructed to do so by the IBM® Support Center. Use only an IBM authorized service provider who is approved to repair your particular product.

Note: Some parts can be upgraded or replaced by the customer. These parts are referred to as Customer Replaceable Units, or CRUs. IBM expressly identifies CRUs as such, and provides documentation with instructions when it is appropriate for customers to replace those parts. You must closely follow all instructions when performing such replacements. Always make sure that the power is turned off and that the product is unplugged from any power source before you attempt the replacement. If you have any questions or concerns, contact the IBM Support Center.

Power cords and power adapters

Use only the power cords and power adapters supplied by the product manufacturer.

Never wrap a power cord around the power adapter or other object. Doing so can stress the cord in ways that can cause the cord to fray, crack or crimp. This can present a safety hazard.

Always route power cords so that they will not be walked on, tripped over, or pinched by objects.

Protect the cord and power adapters from liquids. For instance, do not leave your cord or power adapter near sinks, tubs, toilets, or on floors that are cleaned with liquid cleansers. Liquids can cause a short circuit, particularly if the cord or power adapter has been stressed by misuse. Liquids can also cause gradual corrosion of the power cord terminals and/or the connector terminals on the adapter which can eventually result in overheating.

Always connect power cords and signal cables in the correct order and ensure that all power cord connectors are securely and completely plugged into receptacles.

Do not use any power adapter that shows corrosion at the ac input pins and/or shows signs of overheating (such as deformed plastic) at the ac input or anywhere on the power adapter.

Do not use any power cords where the electrical contacts on either end show signs of corrosion or overheating or where the power cord appears to have been damaged in any way.

Extension cords and related devices

Ensure that extension cords, surge protectors, uninterruptible power supplies, and power strips that you use are rated to handle the electrical requirements of the product. Never overload these devices. If power strips are used, the load should not exceed the power strip input rating. Consult an electrician for more information if you have questions about power loads, power requirements, and input ratings.

Plugs and outlets

If a receptacle (power outlet) that you intend to use with your computer equipment appears to be damaged or corroded, do not use the outlet until it is replaced by a qualified electrician.

Do not bend or modify the plug. If the plug is damaged, contact the manufacturer to obtain a replacement.

Some products are equipped with a three-pronged plug. This plug fits only into a grounded electrical outlet. This is a safety feature. Do not defeat this safety feature by trying to insert it into a non-grounded outlet. If you cannot insert the plug into the outlet, contact an electrician for an approved outlet adapter or to replace the outlet with one that enables this safety feature. Never overload an electrical outlet. The overall system load should not exceed 80 percent of the branch circuit rating. Consult an electrician for more information if you have questions about power loads and branch circuit ratings.

Be sure that the power outlet you are using is properly wired, easily accessible, and located close to the equipment. Do not fully extend power cords in a way that will stress the cords.

Connect and disconnect the equipment from the electrical outlet carefully

Batteries

All IBM personal computers contain a non-rechargeable coin cell battery to provide power to the system clock. In addition many mobile products such as ThinkPad® notebook PCs utilize a rechargeable battery pack to provide system power when in portable mode. Batteries supplied by IBM for use with your product have been tested for compatibility and should only be replaced with IBM approved parts.

Never attempt to open or service any battery. Do not crush, puncture, or incinerate batteries or short circuit the metal contacts. Do not expose the battery to water or other liquids. Only recharge the battery pack strictly according to instructions included in the product documentation.

Battery abuse or mishandling can cause the battery to overheat, which can cause gasses or flame to "vent" from the battery pack or coin cell. If your battery is damaged, or if you notice any discharge from your battery or the buildup of foreign materials on the battery leads, stop using the battery and obtain a replacement from the battery manufacturer.

Batteries can degrade when they are left unused for long periods of time. For some rechargeable batteries (particularly Lithium Ion batteries), leaving a battery unused in a discharged state could increase the risk of a battery short circuit, which could

shorten the life of the battery and can also pose a safety hazard. Do not let rechargeable Lithium-Ion batteries completely discharge or store these batteries in a discharged state.

Heat and product ventilation

Computers generate heat when turned on and when batteries are charging. Notebook PCs can generate a significant amount of heat due to their compact size. Always follow these basic precautions:

- Do not leave the base of your computer in contact with your lap or any part of your body for an extended period when the computer is functioning or when the battery is charging. Your computer produces some heat during normal operation. Extended contact with the body could cause discomfort or, potentially, a skin burn.
- Do not operate your computer or charge the battery near flammable materials or in explosive environments.
- Ventilation slots, fans and/or heat sinks are provided with the product for safety, comfort, and reliable operation. These features might inadvertently become blocked by placing the product on a bed, sofa, carpet, or other flexible surface. Never block, cover or disable these features.

CD and DVD drive safety

CD and DVD drives spin discs at a high speed. If a CD or DVD is cracked or otherwise physically damaged, it is possible for the disc to break apart or even shatter when the CD drive is in use. To protect against possible injury due to this situation, and to reduce the risk of damage to your machine, do the following:

- Always store CD/DVD discs in their original packaging
- Always store CD/DVD discs out of direct sunlight and away from direct heat sources
- Remove CD/DVD discs from the computer when not in use
- Do not bend or flex CD/DVD discs, or force them into the computer or their packaging
- Check CD/DVD discs for cracks before each use. Do not use cracked or damaged discs

About the Intel PRO/Wireless 2200BG Mini-PCI Adapter from IBM

This section provides information on registering, installing, and using the Intel®
PRO/Wireless 2200BG Mini-PCI Adapter from IBM.

Product registration

Thank you for purchasing this IBM product. Please take a few moments to register
your product and provide us with information that will help IBM to serve you
better in the future. Your feedback is valuable to us in developing products and
services that are important to you, as well as in developing better ways to
communicate with you. Register your option on the IBM Web site at:

www.ibm.com/pc/register

IBM will send you information and updates on your registered product unless you
indicate on the Web site questionnaire that you do not want to receive further
information.

Product description

If you are using a wireless upgradable model of an IBM ThinkPad computer, you
can install the Intel PRO/Wireless 2200BG Mini-PCI Adapter from IBM (hereafter
called the *Mini-PCI Card*) in a Mini-PCI Card slot on your computer.

The option kit includes:
* Mini-PCI Card
* Mini-PCI guide
    Note: Some models do not require a Mini-PCI guide
* *Installation and User's Guide CD* (containing device drivers, BIOS update and this
  User's Guide)
* Product warranty and notices for Intel PRO/Wireless 2200BG Mini-PCI Adapter
  from IBM

Verifying the BIOS code level

If your ThinkPad computer is one of the following models:
>   ThinkPad R50/R50p
>   ThinkPad T40/T40p/T41/T41p
>   ThinkPad X40
>   ThinkPad X31

you may need to update BIOS, so that your machine will work with this Mini-PCI Card.

You need to update BIOS if you get the following error message just after starting your ThinkPad computer:

```
ERROR 1802: Unauthorized network card is plugged in - Power Off and remove
the miniPCI  network card.
```

Utilities for updating BIOS are placed as follows on the CD-ROM:

For ThinkPad R50/R50p
>   x:\BIOS\R50\US: US English version of BIOS update utility
>   x:\BIOS\R50\JP: Japanese version of BIOS update utility

For ThinkPad T40/T40p/T41/T41p
>   x:\BIOS\T40\US: US English version of BIOS update utility
>   x:\BIOS\T40\JP: Japanese version of BIOS update utility

For ThinkPad X40
>   x:\BIOS\X40\US: US English version of BIOS update utility
>   x:\BIOS\X40\JP: Japanese version of BIOS update utility

For ThinkPad X31
>   x:\BIOS\X31\US: US English version of BIOS update utility
>   x:\BIOS\X31\JP: Japanese version of BIOS update utility

Each subdirectory contains two files:

>   spsuxxxx.EXE: BIOS update utility file

>   spsuxxxx.TXT: Readme file
>   where xxxx is the ID corresponding to BIOS version.

The readme file for your ThinkPad computer specifies the BIOS code level required for this Mini-PCI Card.

Note: IBM frequently updates the BIOS code; therefore, this information is subject to change. To download the latest version of the BIOS code for your computer, go to www.pc.ibm.com/support on the World Wide Web.

How to check the BIOS level of your ThinkPad computer

To determine the BIOS code level of a ThinkPad computer that is using the Microsoft ® Windows® 2000 or Windows XP operating system, follow the procedure below:

1. Click **Start**; then choose **All Programs**.
2. Select the **Access IBM** group.
3. Double-click the **ThinkPad Configuration** icon.
4. Click **System Information**.
5. Click **BIOS System Information**.

6. Determine whether your BIOS version is older than the BIOS version specified in the readme file.

If your BIOS version is newer than the one specified in the readme file, you do not need to update BIOS.

If your BIOS version is older than the one specified in readme file, follow the instructions in "Updating the BIOS code of your ThinkPad computer."

If you are not sure what BIOS version you have or how to update BIOS code, follow the instructions in "Updating the BIOS code of your ThinkPad computer," and the IBM BIOS Update Utility will check your BIOS version for you.

Updating the BIOS code of your ThinkPad computer

You can update the BIOS code only if your computer has an ac adapter and a charged battery pack. If your ThinkPad computer is attached to any type of port replicator, turn off the computer, and detach the port replicator.

To update the BIOS code, follow this procedure:

1. Connect the ac adapter to the ThinkPad computer.
2. Start Windows 2000 or Windows XP.
3. Create a temporary folder on your hard drive (for example, `c:\temp`).
4. Insert the Installation CD into your CD-ROM or DVD drive.
5. Refer to "Verifying the BIOS code level" on page 8 to determine the location of the IBM ThinkPad BIOS Update Utility program required to update the BIOS level for your ThinkPad R50/R50p, T40/T40p/T41/T41p, X40 or X31 Series computer.
6. Copy the IBM ThinkPad BIOS Update Utility from the appropriate folder on the installation CD, and store the file in the temporary folder that you have created.
7. Click **Start**.
8. Click **Run**.
9. Specify the path and file name for the ThinkPad Update Utility, and press **Enter** (for example, `c:\temp\IYUJ10US.exe`).

   Attention: Do not turn off or suspend the computer until the update has been completed. If you turn off or suspend the computer while the update is still in progress, the computer system board might have to be replaced.
10. Follow the on-screen instructions.

    Note: If the following message is displayed, the BIOS update is not needed for your ThinkPad computer: "An update is not necessary at this time. The process has canceled. Restart your computer."
11. When the BIOS update is completed, the computer is automatically turned off.
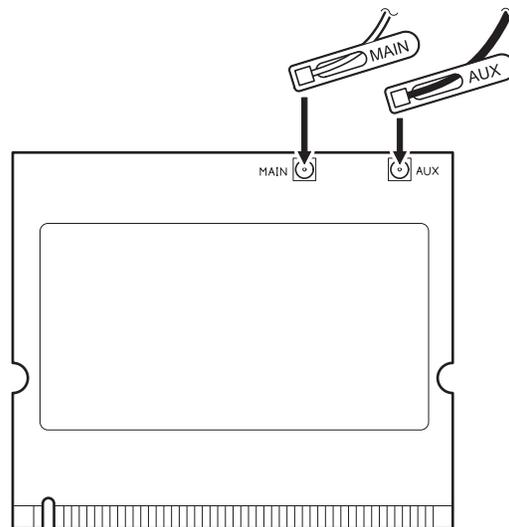
Installing the Mini-PCI Card

> **Note**
>
> Because the Intel PRO/Wireless 2200BG Mini-PCI Adapter from IBM can be damaged by static electricity, it is shipped in a static-protective bag.
> - Do not open the static-protective bag until you are replacing the Mini-PCI Card.
> - Touch the package to a metal table or a grounded metal object before removing the Mini-PCI Card from the bag. This action reduces any static electricity from the package and from your body.

Attention: Instructions for replacing the Mini-PCI Card are included in the online help information of your ThinkPad computer. Ensure you have access to a local printer. Press the Access IBM button on your ThinkPad keyboard and enter "mini PCI" in the Keyword Search at the top of the Access IBM application window. Press the **Display** button at the bottom of the Access Help window and print the instructions to replace the Mini-PCI Card.

Connect the cables to the Mini-PCI Card, as shown in the following figure.:

Plug the gray antenna cable with the tab marked "**MAIN**" into jack MAIN, and the black antenna cable with the tab marked "**AUX**" into jack AUX.

Installing the device driver

To use the Mini-PCI Card with your ThinkPad computer, first you need to install the device driver necessary to run it.

Installing the device driver in Windows XP and Windows 2000

To install the device driver in Windows XP or Windows 2000, do the following:

1. Start your operating system. Log on with a user ID authorized as an administrator.
2. Click **Start** → **Run**.

3. Specify SETUP.EXE with a full path. The path is different for each of the OS as follows:

For Windows 2000
```
X:\DRIVERS\WLANCX2\PROW2200\WIN2K\SETUPWLD.EXE
```

For Windows XP
```
X:\DRIVERS\WLANCX2\PROW2200\WINXP\SETUPWLD.EXE
```
where X is the drive letter for your CD-ROM drive).

4. Click **OK**.
5. Follow the instructions on the screen.

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ThinkPad

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