

NOTEBOOK PC

SOFTWARE SETUP & REFERENCE

Product Name: **Notebook PC Support CD**
Manual Revision: **1.00 E650**
Release Date: **November 2000**

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Windows® Quick Install Guide

1. While the Notebook PC is turned OFF, connect the AiBox to the Notebook PC.
2. Insert the Windows ME/2000 CD into the CD-ROM drive.
3. ATAPI CD-ROM Drive must be set to boot before the Hard Drive in BIOS setup (press **F2** during boot) or press **Esc** and select “ATAPI CD-ROM Drive” (use the up and down arrows and press Enter)
4. Press **Enter** to Setup Windows and press **F8** after you have read and accepted the Licensing Agreement.
5. **Windows ME:** If you have an existing OS, you can choose to install Windows ME in another directory in order to preserve your existing OS. You will be given an OS choice each time you boot up your Notebook PC. If you currently use Windows 95/98 and wish to preserve your installed applications and settings, “upgrade” Windows by installing into your existing directory.
Windows 2000: If you have a previous OS, press **ESC** to install a fresh copy of Windows 2000. Follow the next screens to partition your hard drive. Use the “NTFS” file system for increased functionality.
6. After you install Windows, insert the Notebook PC support CD to install hardware drivers.

Support CD for Windows ME & 2000

The Notebook PC you purchased may or may not be preloaded with an operating system. The support CD included with this Notebook PC provides all the necessary drivers and utilities in order for you to use your Notebook PC with Microsoft® Windows® 95/98/ME/2000/NT4.0 (referred to as “Windows” in this User’s Manual).

This Notebook PC offers its customers the choice of a pre-installed operating system such as **Microsoft Windows ME (Millennium Edition) or Windows 2000**. The choices and languages will depend on the territory. The levels of hardware and software support may vary depending on the installed operating system. Operating systems not pre-installed on this Notebook PC may produce different results than the ones described in the provided user’s manuals.

If your Notebook PC is not preloaded with any operating system, or you want to install another operating system other than the preloaded one, the following pages will give step-by-step installation procedures for typical system configurations under the Windows® operating system. For application usage, please see the online help provided with each of the applications after installation. The following is what you will see when you insert the support CD. If the autorun menu does not appear, double clicking the CD-ROM disc drive icon in “My Computer” (may be the (D:) drive or (E:) drive on hard drives with two partitions) or running SETUP.EXE (through Start menu “Run...”) located in the root of the support CD, will bring up the autorun menu.

Autorun Screen for Windows ME



Autorun Screen for Windows 2000



Drivers for Windows ME & 2000

The following are descriptions of what each autorun menu item does when selected with the mouse. Due to ongoing improvements in the support CD, there may be some differences between this User's Manual and your support CD. The names in quotations are the actual driver names displayed in the System Properties of MS Windows. Windows cannot contain all the device drivers from every manufacturer, with every update; therefore the provided support CD will contain the best driver for your built-in devices and should be used in place of any Windows default drivers.

VGA Driver (required)

Installs "Silicon Motion Lynx3DM" display drivers for your operating system in order to properly use the Notebook PC's built-in graphics and to provide optimal features. Once the display driver is installed, you can change your display's resolution and color through Display Properties. Right click the desktop and choose Properties or choose Display from the Control Panel. See this section for basic procedures on setting the display. Read the Windows documentation or Windows help files for detailed information if necessary.

Control Panel (optional)

Installs the Silicon Motion Control Program which is a utility that supports DualView™ and DualApp™ functions as well as other display functions for your Notebook PC.

Audio Driver (required for Windows 2000)

Installs drivers for your operating system in order to properly use the Notebook PC's built-in audio. The drivers will enable "ESS Allegro-1.COMM" for high-bandwidth rich audio and "Unimodem Full-Duplex Audio Device" for integration between the audio components and the internal modem. All audio functions are configured through Windows and help can be located within Windows documentation or Windows help files.

SpeedStep (recommended)

Installs Intel® SpeedStep™. SpeedStep™ is a technology that provides adjustable processor speeds for maximum performance when connected to an external power and battery optimized performance when going mobile. The processors can dynamically switch clock frequency and voltage, depending on whether the computer is running on batteries or is plugged into AC power. These changes in frequency happen in only 1/2000th of a second — so fast, they are invisible to users, even if they occur in the middle of performance-intensive applications.

ASUS PC Probe (optional)

Installs PC Probe utility to monitor the Notebook PC's CPU temperature and other resources. This is an optional software to help you better manage your Notebook PC's resources.

TouchPad (recommended)

Installs Synaptics® TouchPad utility. The Notebook PC fully supports built-in or externally connected keyboard and PS/2 mouse devices. The Notebook PC's integrated TouchPad pointing device is fully compatible with two or three-button PS/2 mice. However, the provided device driver will provide enhancements and features to the TouchPad to increase the functionality of the TouchPad. For detailed information, see the Software Reference in the next section. To access help, right-click the TouchPad icon on the taskbar and select Help.

Fast IR Driver (required)

Configures your Infrared Transceiver A to “IBM 31T1100” so that your Infrared port can work properly.

LAN Driver (already installed by Windows ME & 2000)

Installs the required LAN driver for the Notebook PC’s built-in 10/100 Fast-Ethernet controller.

Modem Driver

Installs the necessary “HSP56 MR” driver in order for your operating system to have the correct files for the Notebook PC with built-in modem and “Unimodem Full-Duplex Audio Device” for integration with the internal audio.

PC-cillin 2000 (optional)

Installs Trend’s PC-cillin 2000, a world-class anti-virus protection software for the new Internet era, to keep your PC virus-free. This very powerful anti-virus software is bundled with each Notebook PC to protect your investment. As software become more and more a part of our daily lives, measures have to be taken to protect them. You may skip this software if you have your own anti-virus software.

Hotkey Utility (optional)

Installs Hotkey utility. Hotkey utility is a program designed to intercept key strokes so that key assignments can be made to run a program or script. This program cannot be used to change default keys or key combinations used by other software, operating systems, or by the Notebook PC’s hardware. The Hotkey utility is currently not available for Windows 2000/NT4.0.

Screen Saver Utility (optional)

Installs Screenweaver screen saver utility to provide an amazing Macromedia Flash presentation on the S8 Series Notebook PC features. The Flash file can be found in Program Files \ S8Screen for separate presentation with Flash controls.

Read Me

Gives you notes concerning this support CD or the Notebook PC.

Browse this CD

Shows you the contents of this support CD using Windows Explorer.

Technical Support Form

Opens up a Technical Support Request Form so that you will understand what kind of information is needed if you run into problems and require technical assistance.

Exit

Closes the support CD autorun screen.

VGA Driver

(2000: Item 1, ME: Item 1)

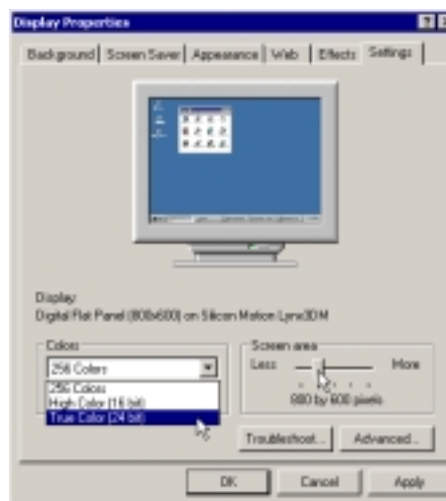
Installing the VGA Driver for Windows ME & 2000

Your display should appear in full screen but with poor resolution. Just click **VGA Driver** on the support CD autorun menu to correct this problem and then restart your Notebook PC. Windows ME will be ready to go after restart but Windows 2000 requires additional settings. Windows 2000's display will only use 3/4 of the screen after restart but appear with a higher resolution. To enlarge the screen to use the entire display, make changes in the display properties.

Setting Display Property Settings

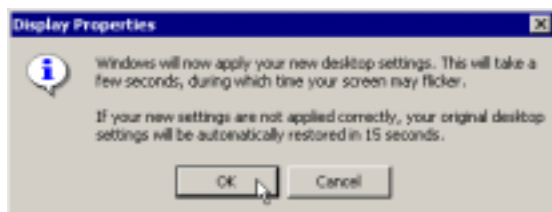


(1) Right-click on the Windows desktop and click **Properties**.

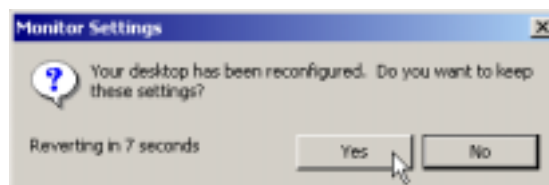


(2) Click **Settings**
 (3) Set Colors to **True Color** and Screen area to **800 by 600 pixels** (or 1024 by 768 on selected models).

NOTE: Setting to larger screen areas will require panning (by moving your cursor to the screen's border) in order to see the entire desktop.



(4) Click **OK** to test your settings.



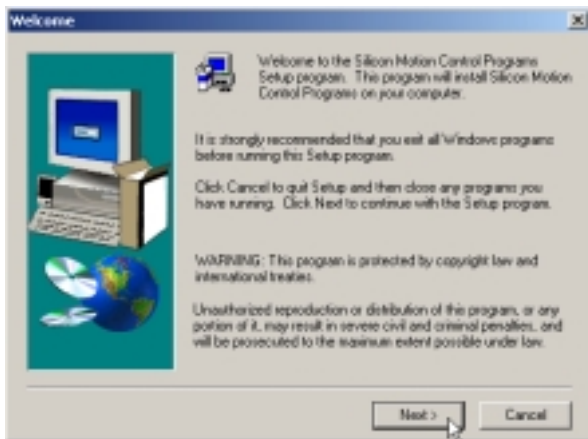
(5) Click **Yes** to keep your settings. If you click No or are unable to click to Yes, your previous settings will be restored.

Control Panel

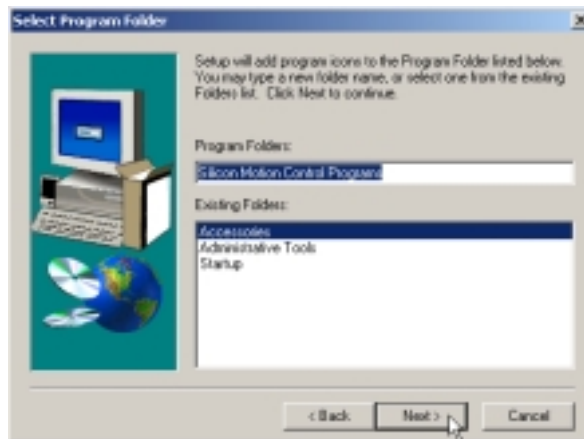
(2000: Item 2, ME: Item 2)

Installing the Control Panel for Windows ME & 2000

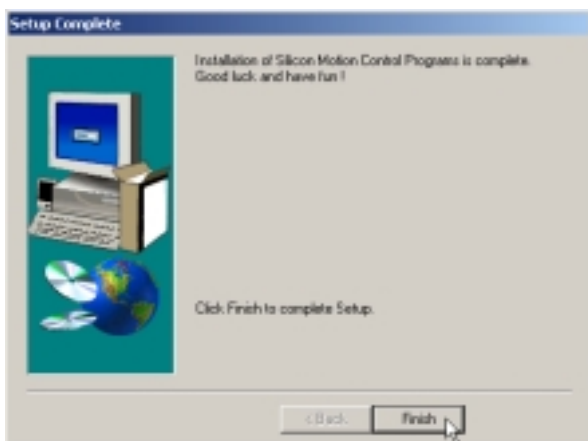
Installation is the same for Windows ME and 2000. Please see Software Reference for more information on this utility. Insert the support CD and click **Control Panel** on the autorun menu to start the installation wizard.



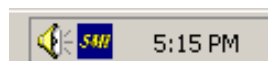
(1) Click **Next** after reading the “Welcome” screen.



(2) Click **Next** to create program icons in the default folder or select another folder or type in a new folder name for the program icons.



(3) Click **Finish** when you see the “Setup Complete” notice.



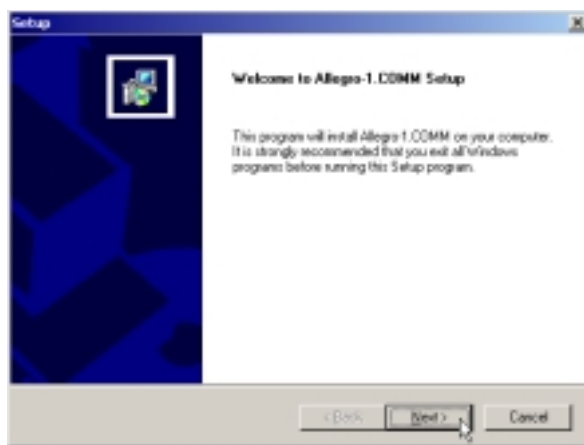
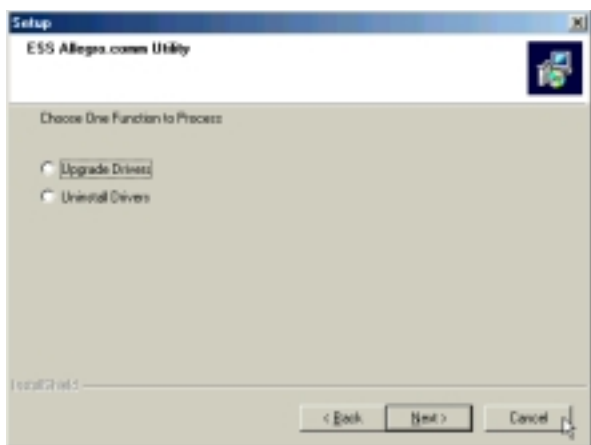
Windows Task Bar

(4) If you restart Windows, an **SMI** icon will appear on the task bar each time Windows starts. Double-click on the “SMI” icon to view or change special display settings. You may also run the **Control Program** manually through **Start – Programs – Silicon Motion Control Programs**.

Audio Driver

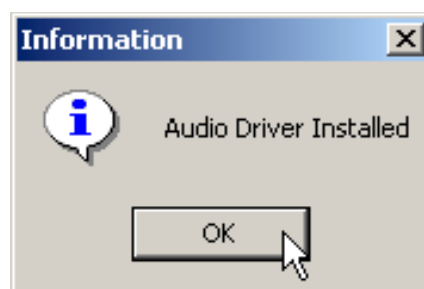
Installing the Audio Driver for Windows 2000

Windows ME already has this driver installed. Insert the support CD and click **Audio Driver** on the autorun menu to start the installation wizard. Windows 2000 require this driver installation but Windows ME will have this audio driver installed already. You should run this installation only if you do not hear any sounds or do not see a speaker icon in the taskbar.



(*) Since Windows ME already installed the audio driver, you will be asked to upgrade or uninstall if you run this installation. You can click Cancel to exit the installation.

(1) Click **Next** after reading the "Welcome" screen.



(2) Click **Yes** to accept the driver because the driver on this support CD has been fully tested by the Notebook manufacturer to work correctly with MS Windows.

(3) Click **OK** after the audio driver is installed. **Your Windows will be restarted automatically.**

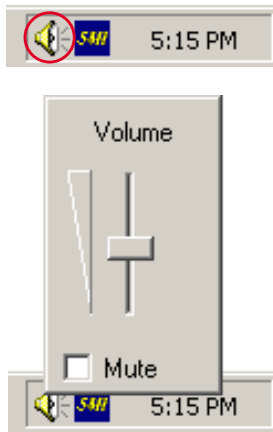
Audio Driver

Audio Driver (Cont')

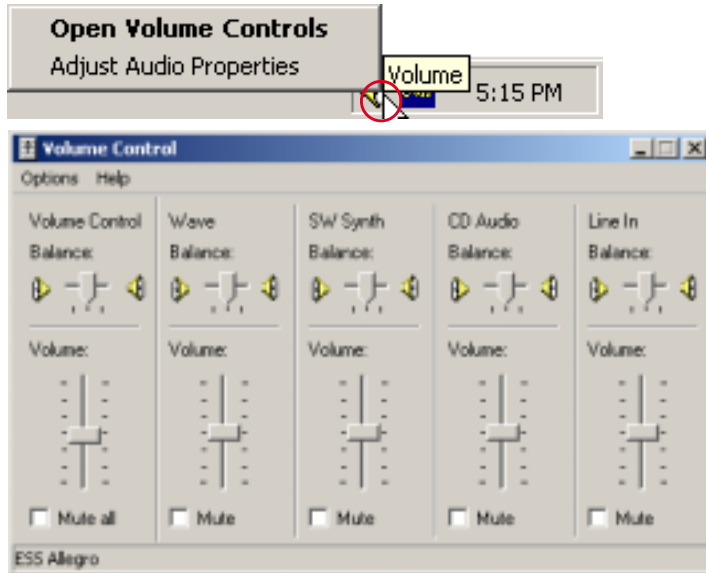
Audio Controls

A Speaker icon will show on the task bar and when selected with the left mouse button. A simple master control will show. If selected with the right mouse button a menu will show allowing adjustment of audio properties or detailed volume controls.

Mouse Left-Click



Mouse Right-Click



SpeedStep

Installing SpeedStep for Windows ME & 2000

Installation is the same for Windows ME and 2000. Insert the support CD and click **SPEEDSTEP** on the autorun menu to start the installation wizard.



(1) Click **Next** after reading the “Welcome” screen.

(2) Installation has finished. Click “**Yes...**” and **Finish** to restart your computer now or select “**No...**” and **Finish** so that you can install other items and restart your computer later.

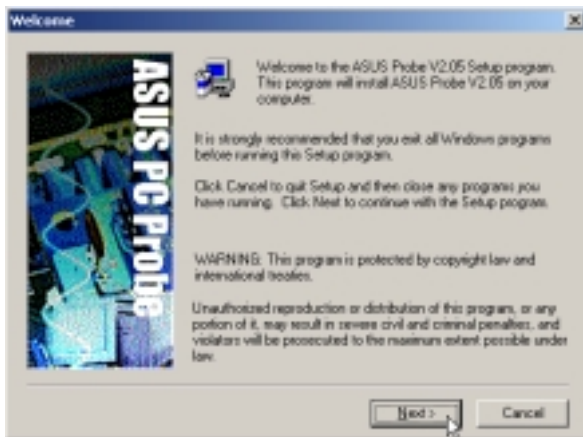
ASUS PC Probe

(2000: Item 5, ME: Item 5)

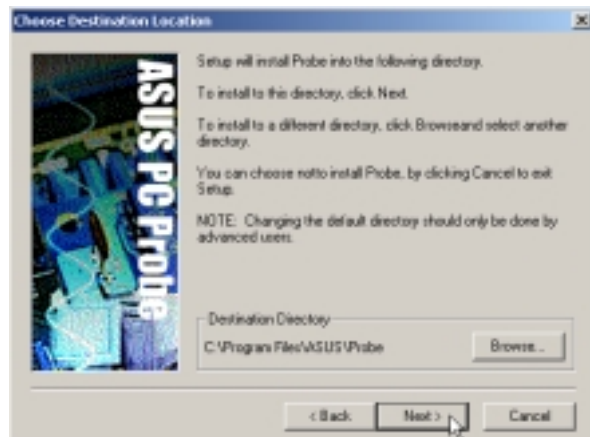
Installing PC Probe for Windows ME & 2000

Installation is the same for Windows ME and 2000. Insert the support CD and click **PC Probe** on the autorun menu to start the installation wizard.

NOTE: In order for PC Probe to run, Intel's LDCM and other hardware monitoring software cannot be installed. You must first uninstall other such software before installing PC Probe.



(2) Click **Next** after reading the Welcome message.



(3) Browse to another destination folder or click **Next** to install to the specified directory.



(4) Click **Next** after reading the current settings.



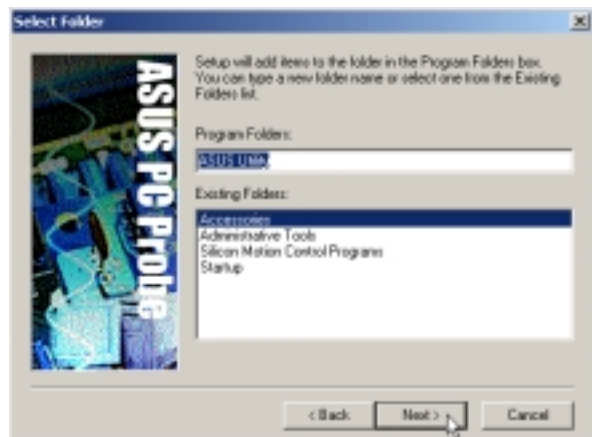
(5) Adjust the settings if you desire and click **Next**.

NOTE: You can also make settings any time after you install PC Probe. The default setting runs a check on the system every 5 seconds for the Temperature. Decreasing this value increases real-time accuracy but decreases system performance. Increasing this values produce the reverse effect.

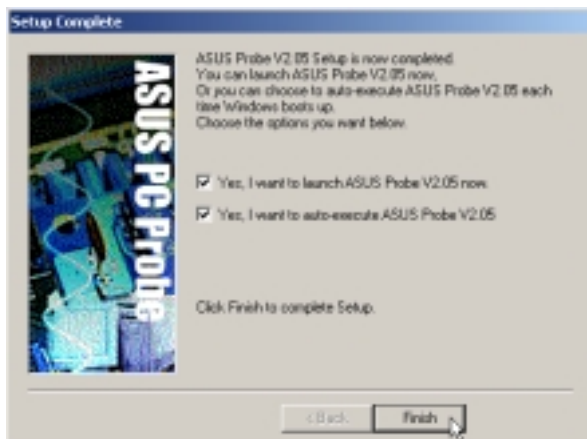
ASUS PC Probe (Cont')



(6) Click **Yes** after reading the final settings.



(7) Choose another folder, create a new folder, or click **Next** to use the default folder for the program icons.



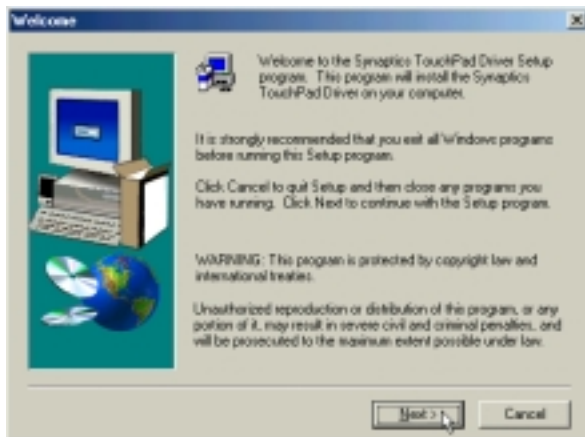
(8) Installation has finished. Click **Finish** to exit and execute commands checked above.

TouchPad

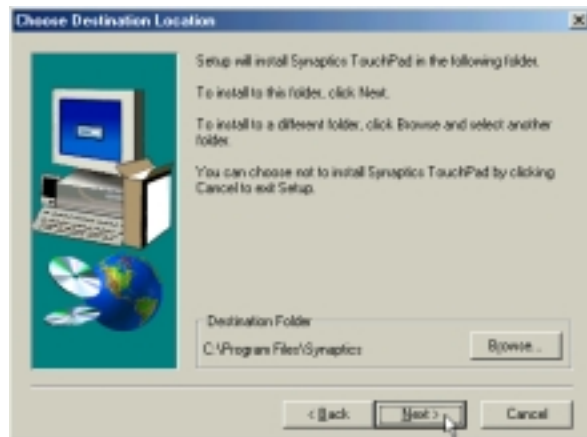
(2000: Item 6, ME: Item 7)

Installing the TouchPad Driver for Windows ME

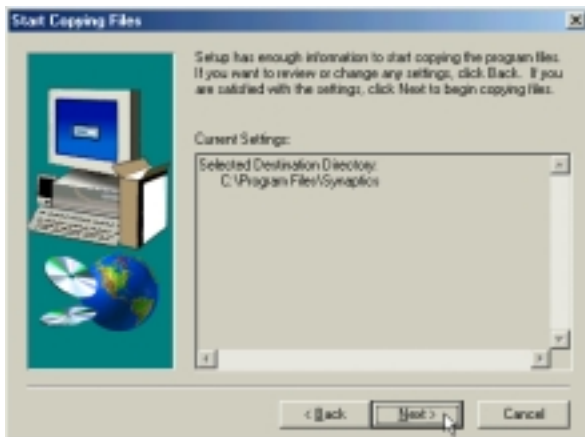
Windows 2000 has different installation steps (see next page). Insert the support CD and click **TouchPad** on the autorun menu to start the installation wizard.



(1) Click **Next** after reading the Welcome message.



(2) Browse to another destination folder or click **Next** to install to the specified directory.



(3) Click **Next** after reading the installation path.

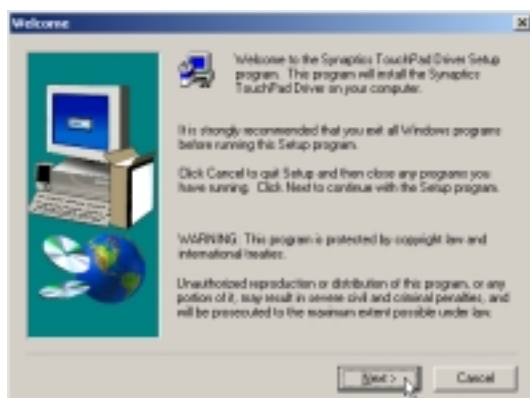


(4) Installation has finished. Select **No** so that you can install other items and then click **Finish**.

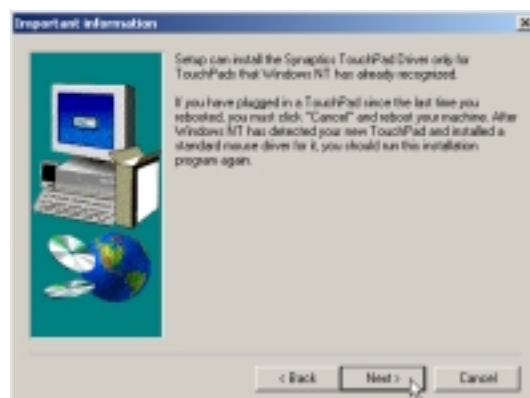
TouchPad (Cont')

Installing the TouchPad Driver for Windows 2000

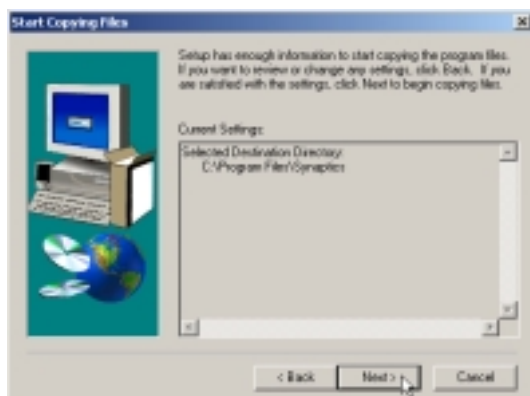
Windows ME has different installation steps (see previous page). Insert the support CD and click **TouchPad** on the autorun menu to start the installation wizard.



(1) Click **Next** after reading the Welcome message.



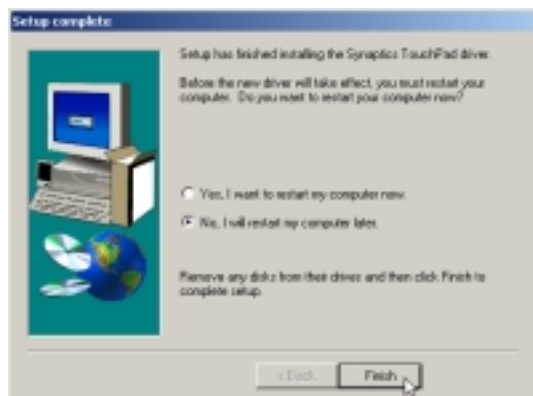
(2) Browse to another destination folder or click **Next** to install to the specified directory.



(3) Click **Yes** after reading the installation path.



(4) Click **Yes** to accept the driver. The driver on this support CD has been fully tested by the Notebook manufacturer to work correctly with MS Windows.



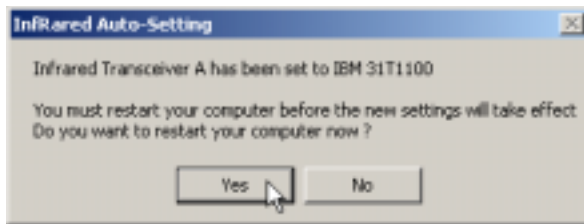
(5) Installation has finished. Select **No** so that you can install other items and then click **Finish**.

Fast IR Driver

(2000: Item 7, ME: Item 10)

Installing the Fast IR Driver for Windows ME & 2000

Actually Windows has already installed the Fast IR driver but one setting is necessary for this Notebook PC. Insert the support CD and click **Fast IR Driver** on the autorun menu to make the setting as shown by the dialog box.

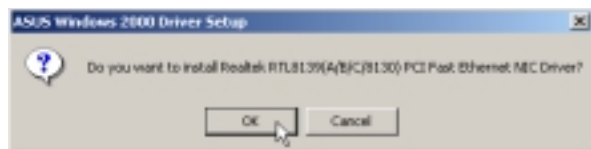


- (1) Click **No** so that you can install other drivers. Clicking Yes will automatically restart your computer.

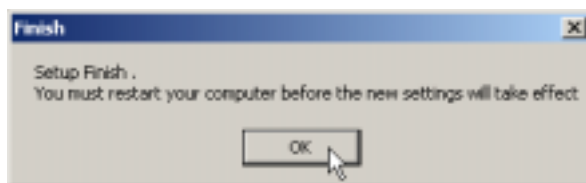
LAN Driver

Installing the LAN Driver for Windows ME & 2000

The LAN driver should already be installed by Windows 2000 & ME. If you have troubles making network connections contact your network administrator. If you need to reinstall, insert the support CD and click **Lan Driver** on the autorun menu to start the installation wizard.



(1) Click **OK** to begin installing drivers.



(2) Installation has finished. Click **OK** to restart your computer. **Your computer will automatically restart.**

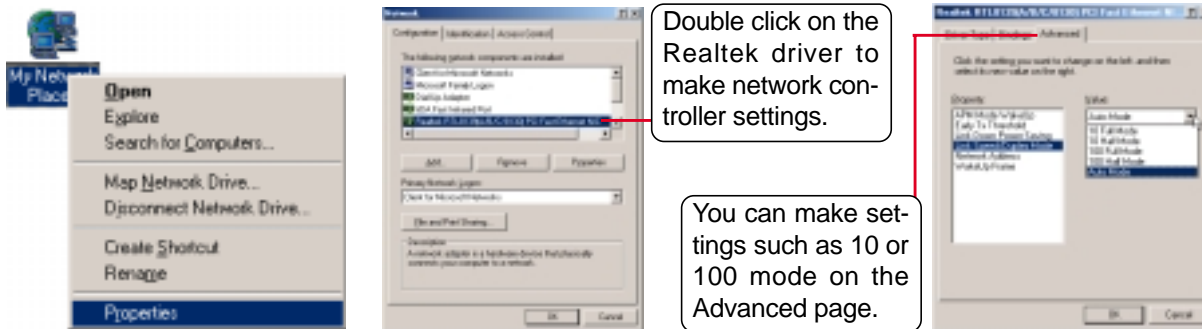
Configuring the Network Device

The network device has the ability to send and receive packets at the same time (full-duplexing) at both 10 and 100 Mbps. In order to reap the benefits of full duplexing, you **MUST** have a full duplex hub or switch.

The network device has the added ability to “talk” to the hub or switch and determine at which mode to communicate (either full or half duplex). This is called auto-negotiation. You must have an auto-negotiating hub or switch to get full duplex support with the Duplex Mode set to Auto. If you don’t have an auto-negotiating hub or switch and want to run at full duplex, set Duplex Mode to Full and then set the SPEED parameter to either 100 Mbps or 10 Mbps.

(See next page for examples.)

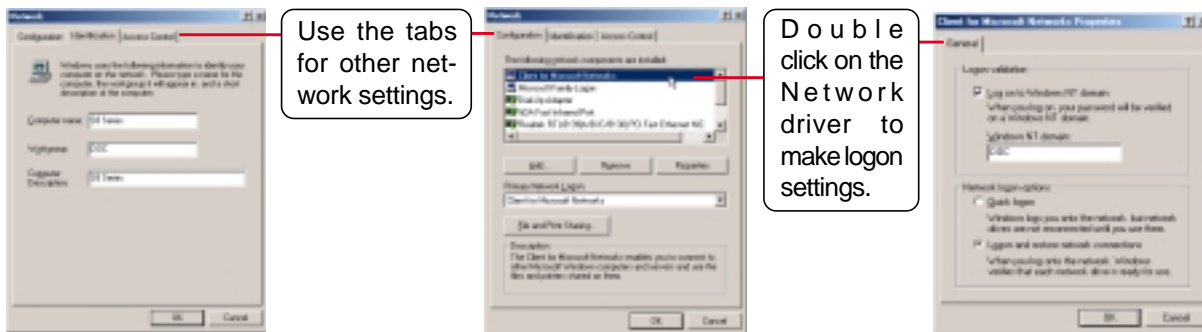
Changing Adapter Settings (Windows ME)



Right-click the **Network** icon on the desktop and select **Properties**.

Double click on the Realtek driver to make network controller settings.

You can make settings such as 10 or 100 mode on the Advanced page.



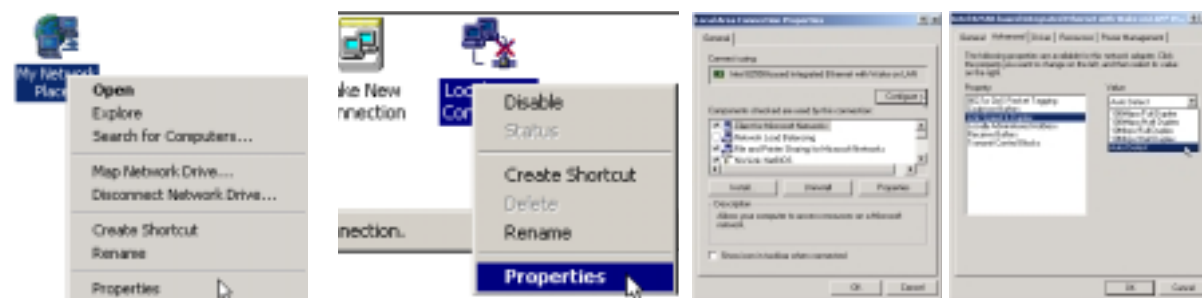
Use the tabs for other network settings.

Double click on the Network driver to make logon settings.

Identification is necessary to use the network browser. Enter a workgroup as instructed by your network administrator or try using your domain name.

If you want to log into a server, you must check "Log on..." and enter your domain name. Windows 95/98/ME/2000 all use Windows NT domain.

Changing Adapter Settings (Windows 2000)



Right-click the **Network** icon on the desktop and select **Properties**.

Right click the network connection and select **Properties**.

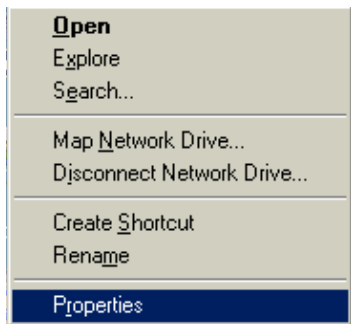
Click **Configure** to make network driver settings. Double-click the individual drivers to make network settings.

Modem Driver

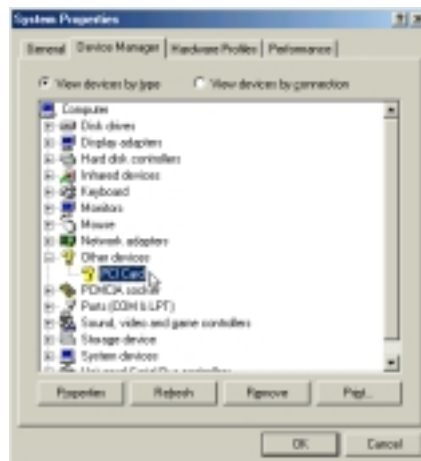
(2000: Item 9, ME: Item 8)

Installing the Modem Driver for Windows ME

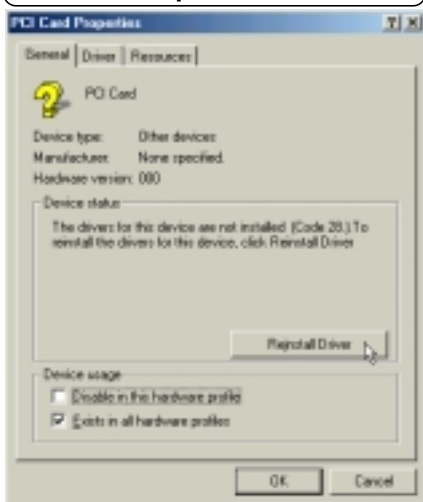
Installation is different for Windows ME and 2000. Find the Windows 2000 steps after Windows ME. Insert the support CD and follow the steps below to install the modem driver. There is no installation wizard for this process.



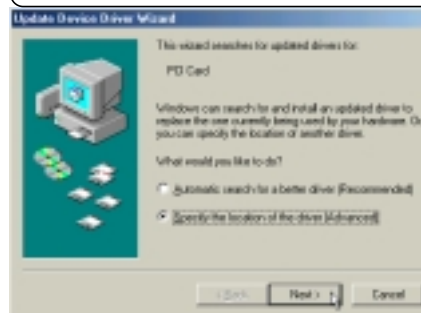
(1) Right-click "My Computer" and select **Properties**.



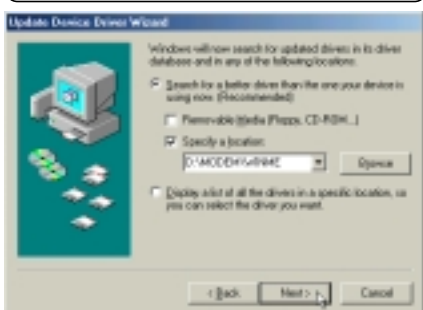
(2) Double-click **PCI Card** to see its properties.



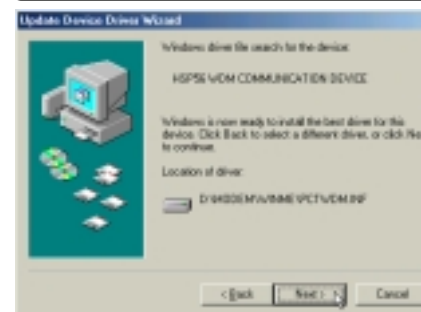
(3) Click **Reinstall Driver**.



(4) Select "Specify the location..." and click **Next**.

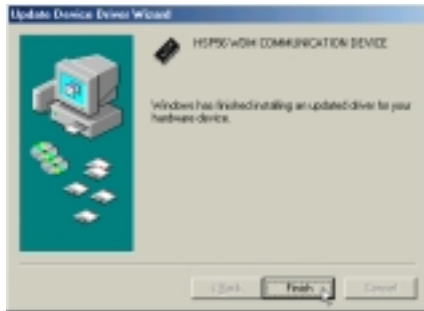


(5) Enter the path "\\modem\winme" and click **Next**.

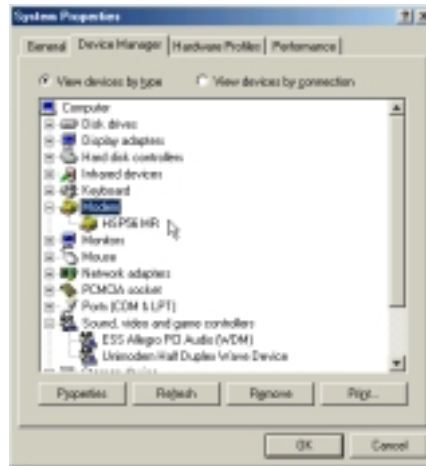


(6) Click **Next** when the driver is located by Windows.

Installing the Modem Driver for Windows ME (Cont’)



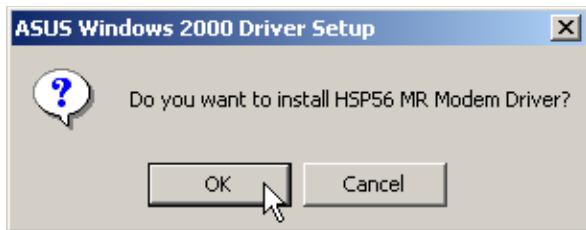
(7) Click **Finish** after Windows finishes installing the driver.



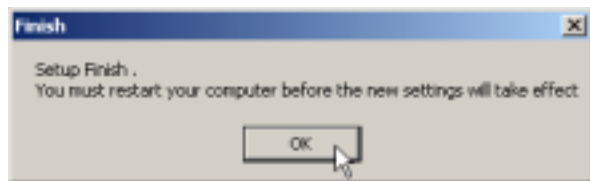
(*) You should now see “HSP56 MR” under Modem and “Unimodem Half Duplex Wave Device”

Installing the Modem Driver for Windows 2000

Installation is different for Windows ME and 2000. Find the Windows ME steps before Windows 2000. Insert the support CD and click **Modem Driver** on the autorun menu to start the installation wizard.



(1) Click **OK** to begin installing drivers.



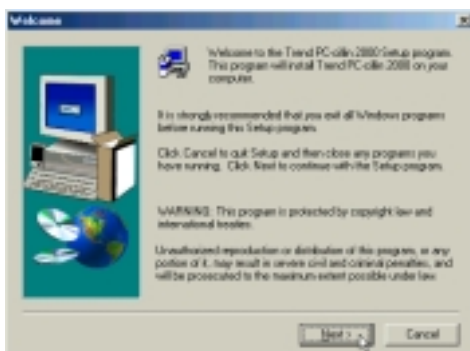
(2) Installation has finished. Click **OK** to restart your computer. **Your computer will automatically restart.**

PC-cillin 2000

(2000: Item 10, ME: Item 9)

Installing the PC-cillin 2000 Anti-Virus Software for Windows ME

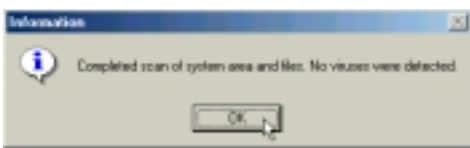
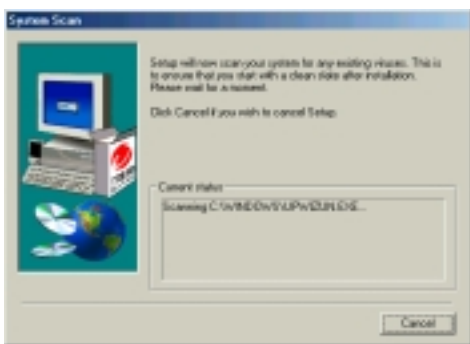
Installation is different for Windows ME and 2000. The following are steps for Windows ME. Insert the support CD and click **PC-cillin 2000** on the autorun menu to start the installation wizard.



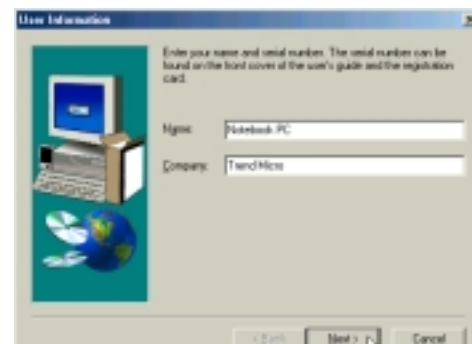
(1) Click **Next** to begin the installation wizard.



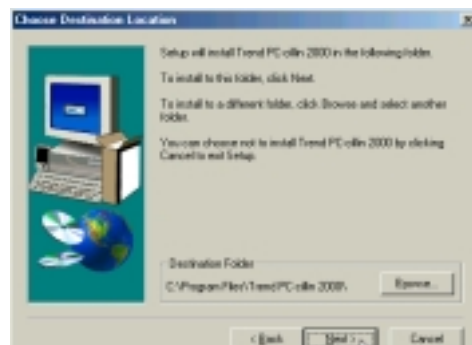
(2) Click **Yes** after reading the "Agreement".



(3) Wait while your setup checks your system for viruses based on the included pattern file. (This is usually older than what is available on the Internet at "<http://www.trend.com>". You should rescan your hard drives after updating the virus pattern.) The **OK** when completed.



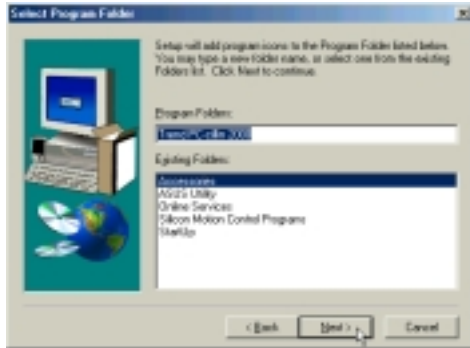
(4) Enter your "Name" and "Company" (if relevant) and click **Next**.



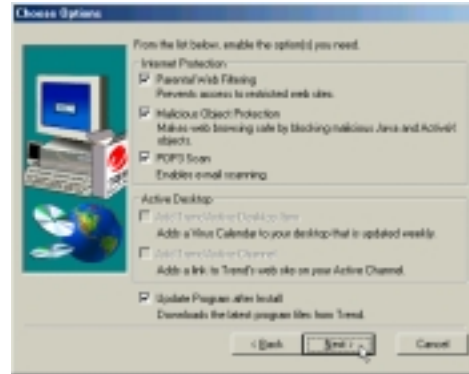
(5) Choose another destination folder or click **Next** to use the default.

PC-cillin 2000

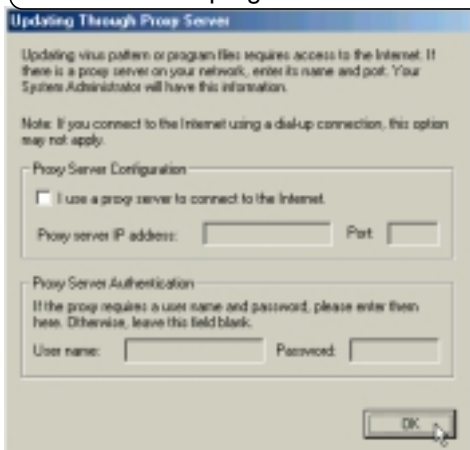
Installing the PC-cillin 2000 for Windows ME (Cont')



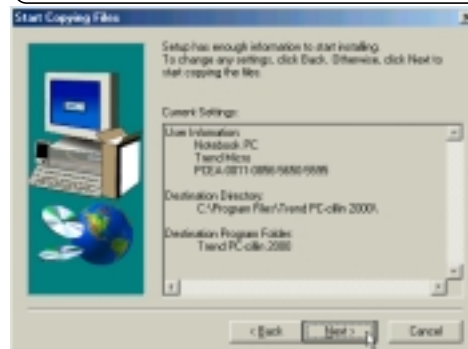
(6) Choose another folder, create a new folder, or click **Next** to use the default folder for the program icons.



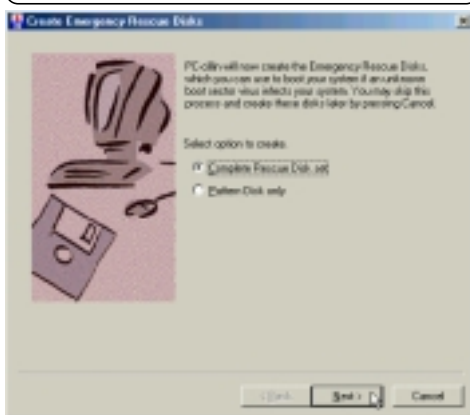
(7) Make Internet and Desktop settings and click **Next** to continue.



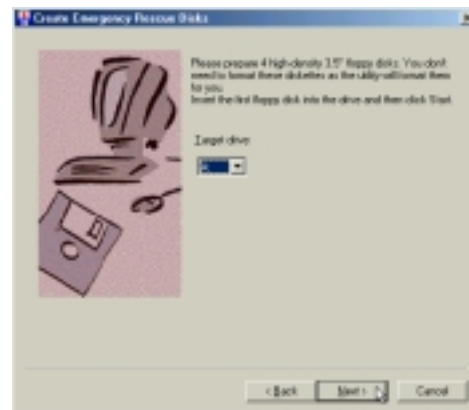
(8) Make proxy settings if necessary and click **OK** to continue.



(9) Check the installation settings and click **Next** to continue.

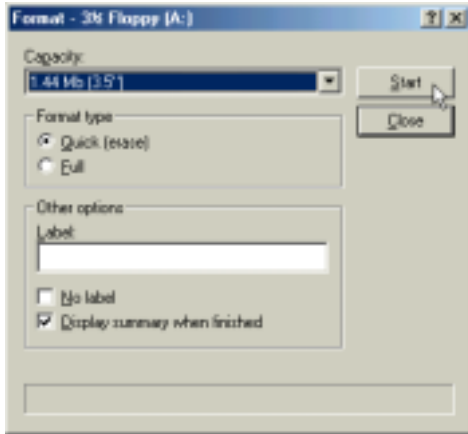


(10) You will be asked to create either complete rescue disks or virus pattern disk. Select one and click **Next**. You must have a USB floppy disk drive to create rescue diskettes.

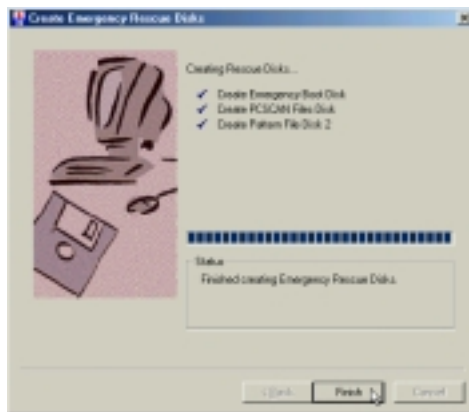


(11) Select a target floppy disk drive and click **Next**.

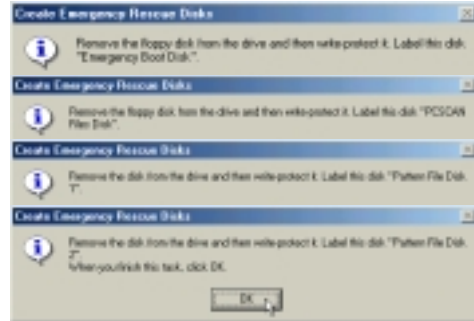
Installing the PC-cillin 2000 for Windows ME (Cont’)



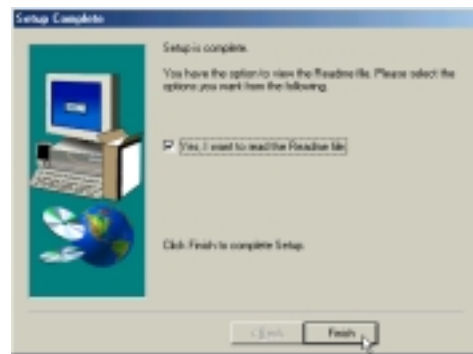
(12) You will be asked to format your floppy disk. Use **Quick** (or Full if necessary) and click **Start**. Click **Close** when format is completed. If you chose the full rescue disks, you have to repeat this step four times.



(14) Click **Finish** when the “Rescue Disks” are created.



(13) You will be asked to repeat this step four times if you chose the “Complete Rescue Disk Set”.

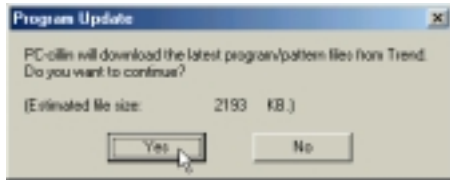


(15) Click **Finish** when the setup is complete.

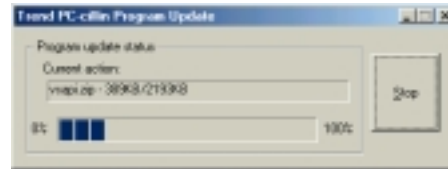


(16) Enter your “Name” and “Email Address” to register PC-cillin software.

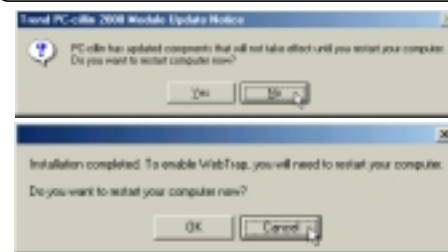
Installing the PC-cillin 2000 for Windows ME (Cont')



(17) Click **Yes** to update PC-cillin's program and virus pattern files.



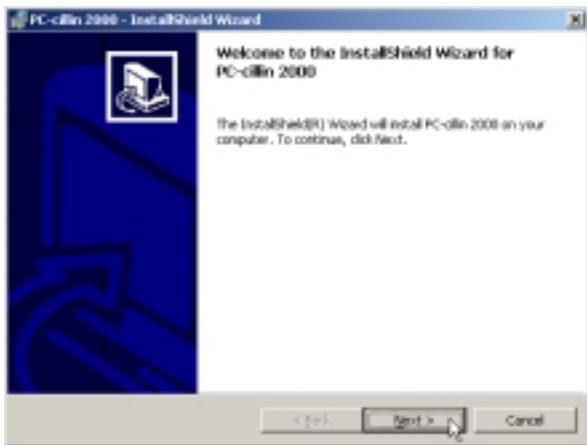
(18) Be patient while your computer connects to the Internet and downloads necessary files.



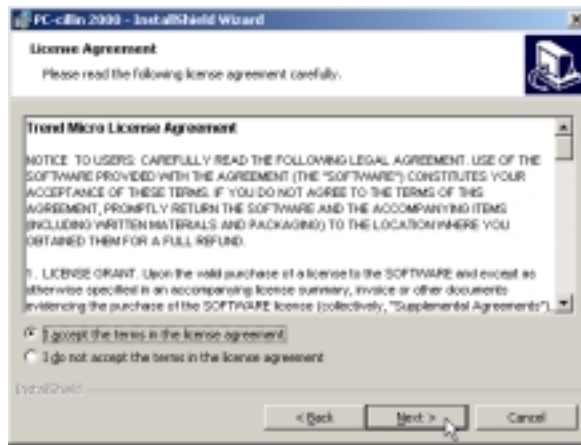
(19) You can answer **No** and **Cancel** so that you can install other drivers then restart your computer later.

Installing the PC-cillin 2000 Anti-Virus Software for Windows 2000

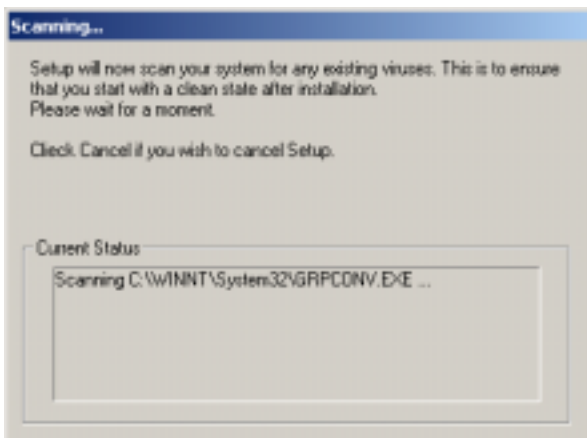
Installation is different for Windows ME and 2000. The following are steps for Windows 2000. Insert the support CD and click **PC-cillin 2000** on the autorun menu to start the installation wizard.



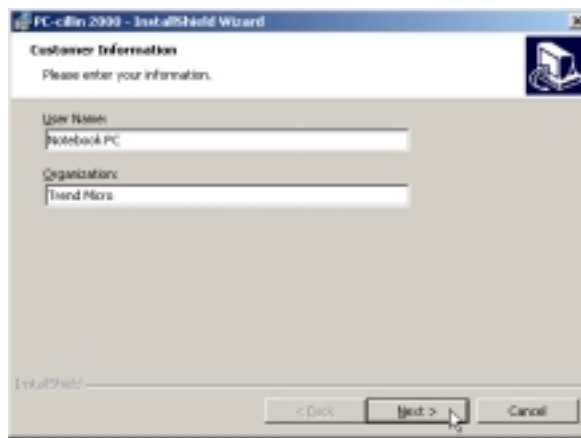
(1) Click **Next** after reading the Welcome message.



(2) Click **Next** after reading the license agreement.

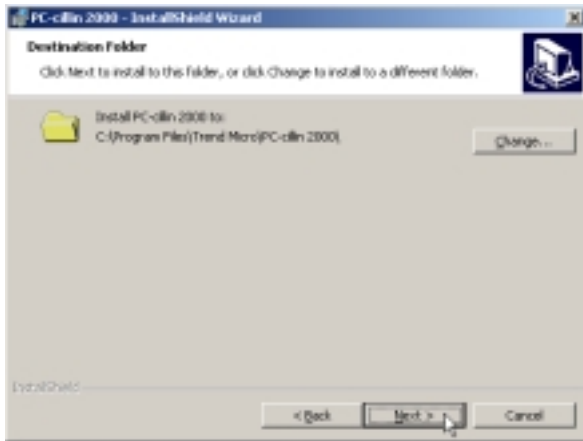


(3) Wait while your setup checks your system for viruses based on the included pattern file. (This is usually older than what is available on the Internet at "<http://www.trend.com>". You should rescan your hard drives after updating the virus pattern.) This screen will change when completed.

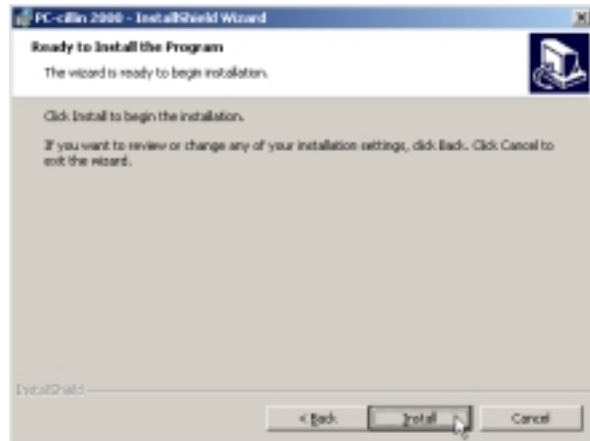


(4) Enter your "User Name" and "Organization" if applicable. Click **Next** to continue.

Installing PC-cillin 2000 for Windows 2000 (Cont')



(5) Change the destination folder or click **Next** to install to the specified directory.



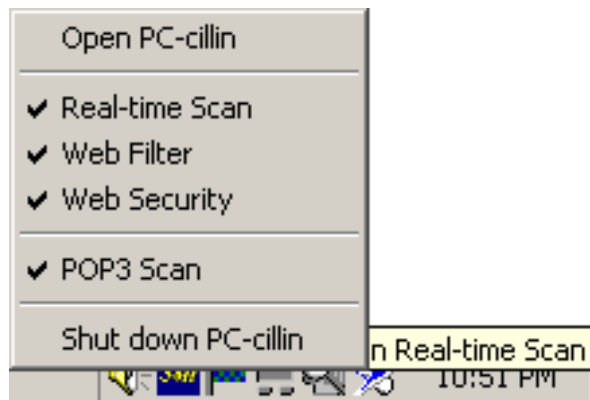
(6) Click **Install** now or click Back to make changes to the installation settings.



(7) Installation has finished. Select **Finish** to exit the installation wizard. No restart is necessary.



(*) An icon will be placed in your taskbar to show protection status and allow quick access to the PC-cillin software settings.



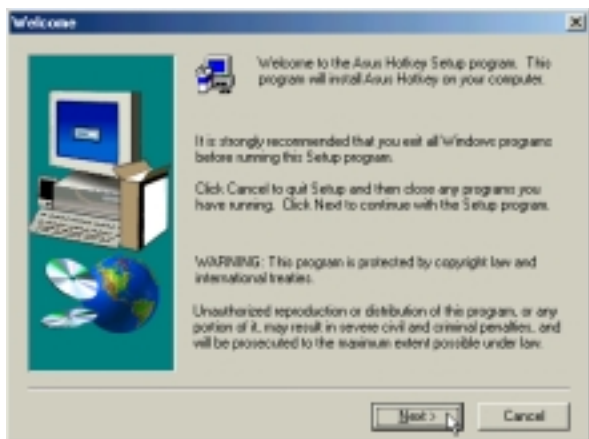
(*) Right-click the icon for quick software settings.

Hotkey Utility

(2000: None, ME: Item 11)

Installing the Hotkey Utility for Windows ME

Installation is not currently available for Windows 2000. Insert the support CD and click **Hotkey Utility** on the autorun menu to start the installation wizard.



(1) Click **Next** on the "Welcome" screen.



(2) Choose another destination folder or click **Next** to use the default.



(3) Choose another folder, create a new folder, or click **Next** to use the default folder for the program icons.



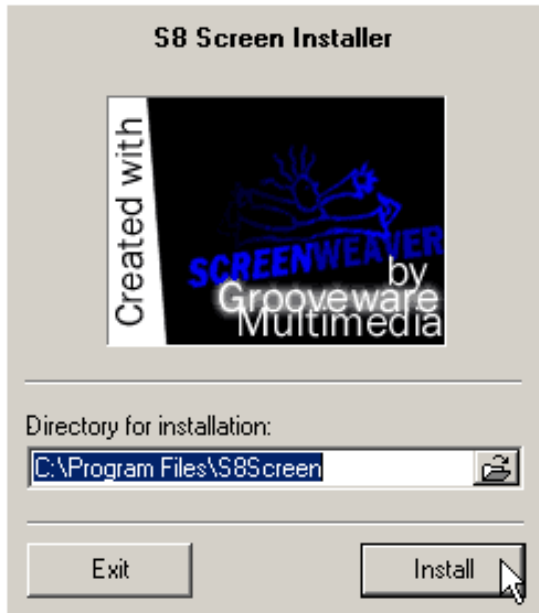
(4) Click **Finish** to exit the installation wizard and execute the selections. You can deselect the check boxes before clicking Finish if you want.

Screen Saver Utility

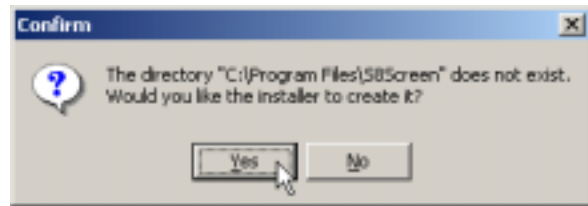
(2000: Item 11, ME: Item 12)

Installing the Screen Saver Utility for Windows ME & 2000

Installation is the same for Windows ME and 2000. Insert the support CD and click **Screen Saver Utility** on the autorun menu to start the installation wizard.



- (1) Enter a different installation path or click **Install** to use the specified path.



- (2) Click **Yes** to create the installation folder. The screen saver will install and run immediately.



**NOTEBOOK PC
SOFTWARE REFERENCE**

WINDOWS ME & 2000

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VGA DRIVER

Topics Covered:

Dual Display Settings

Display Arrangement

Enabling an External Monitor

Color Settings

Windows ME & 2000

Dual Display Settings (Windows ME and 2000)

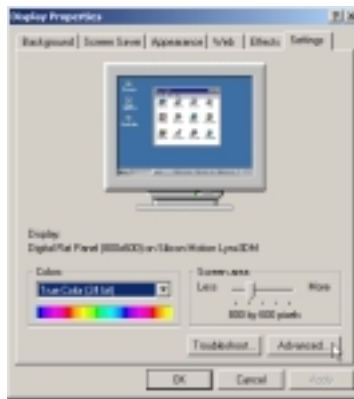
When you enter the Display Properties Settings, two displays will be shown which allow you set the resolution, color, and monitor type independently from each other in order to make independent display adjustments. Dual display provides the following two features:

- **Dual Application** – Display independent applications (graphics or video) on two different displays. Such as a spreadsheet on one display and a presentation on another display.
- **Dual View** – Display a selectable rectangular portion of the primary display full screen on a secondary display while keeping the first display in normal view.

Lynx3DM Settings



(1) Right click the desktop and select Properties.



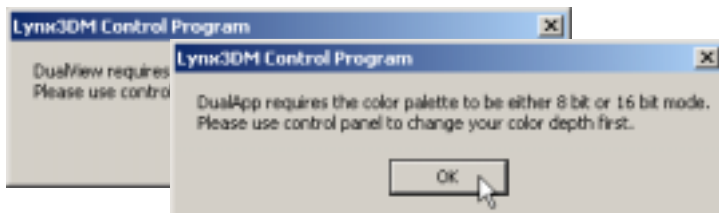
(2) Click the **Settings** tab.



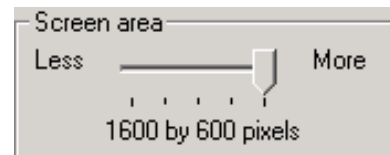
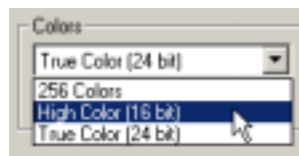
(3) Click the **Advanced** button in the **Display Properties Settings** and Click the **Lynx3DM** tab

Enabling an External Monitor

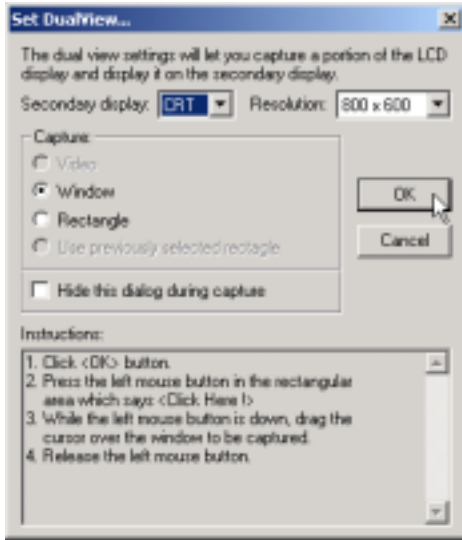
Use the LCD/Monitor Function keys <Fn><F8> to toggle between the Notebook PC's LCD display and an external monitor in this series: Notebook PC LCD -> External Monitor -> Both. You can also enable or disable displays using the display settings software.



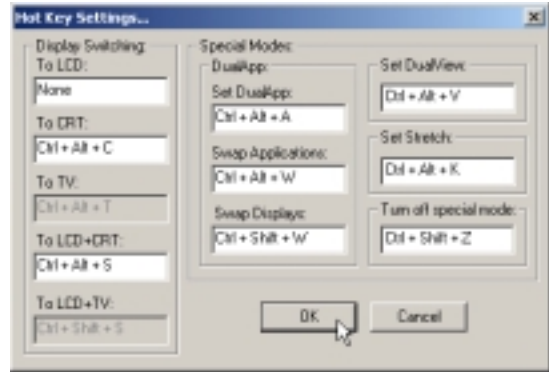
NOTE: DualView and DualApp cannot run at the same time and both require setting "Colors" to **High Color (16 bit)**.



NOTE: Once DualView or DualApp is activated, your screen area will be set to 1600 by 600 and your cursor can move past your visible screen area.



When you turn ON DualView, you will be given a few options. You may have to experiment a few times to make the best use of this software.

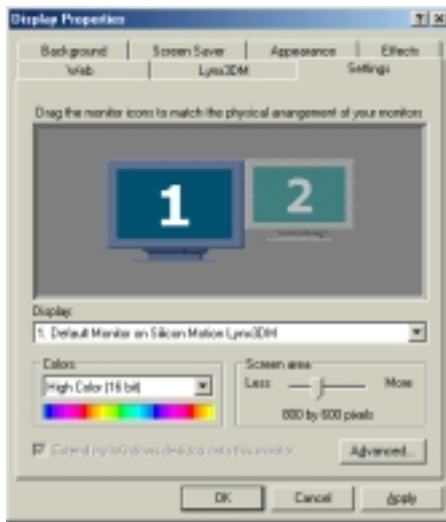


If you wish to use hot keys to activate special display functions, make them here. Defaults will be displayed here for your convenience. You will have to check “Enable Hot Key” on the Lynx3DM (previous screen) in order to activate this function.

Lynx3DM Settings (Windows 2000)

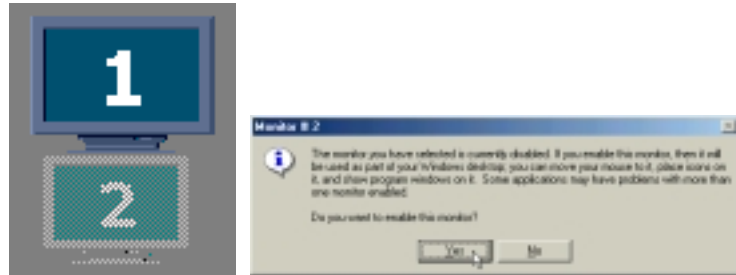


The Lynx3DM settings tab in Windows 2000 is the same as in Windows ME but will include a disabled “Stretch” function. The software stretch function is not required for this Notebook PC.



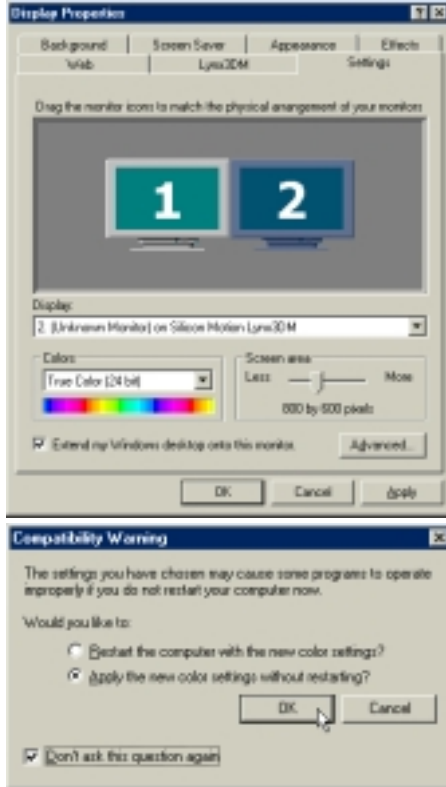
Display Arrangement

You can drag either display with your cursor in order to arrange the two displays in a configuration that is convenient for your use. In this example, the second display can be accessed by moving down from the first display.

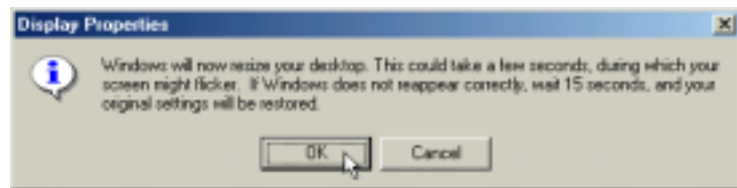


When you choose the second monitor, you will be asked whether you want to activate the second monitor. Select **Yes** to enable the second monitor. You can uncheck (first select the second monitor) the “Extend my Windows desktop onto this monitor” at any time to disable the second monitor on the Notebook PC.

NOTE: Making dual display settings do not require a second display to be connected, but using either Dual Application or Dual View requires a second display to be connected to the VGA port on the Notebook PC.



The VGA output to the second monitor connected to this Notebook PC can only use up to 800 by 600 pixels with True Color. Using screen areas greater than this will fail to display anything.



Click **OK** if you can see this dialog box. If you don't pay attention, your settings will be reverted back to your previous settings.

Color Setting Note

You can ignore this warning on this Notebook PC and select “Apply the new color settings without restarting” and “Don't ask this question again” so that you don't have to restart your computer each time you make a color setting.

SPEEDSTEP

Topics Covered:

Intel® SpeedStep™ Overview

How it Works

IT Friendly

Summary

SpeedStep Properties and Settings

SpeedStep Software Notes

Windows ME & 2000

Intel® SpeedStep™ Overview

Most important, the new processors, rated at frequencies of 600MHz and above, will be the first to incorporate an innovative performance technology called Intel® SpeedStep™ technology. Built into certain mobile Pentium III processors, this technology from Intel provides near-desktop performance with all the benefits of mobility. When connected to an AC power source, mobile Pentium III processors featuring Intel SpeedStep technology will deliver near-desktop-level performance. When working on battery, the mobile PC automatically detects the change and drops both the processor clock frequency and voltage to deliver outstanding performance without compromising battery life. This new technology will be available in the thinnest and lightest mobile PCs, so users won't have to compromise in order to enjoy the mobility they have come to expect.

How it Works

Mobile Pentium III processors featuring Intel SpeedStep technology can be switched between two performance modes—maximum performance and battery-optimized performance—either automatically or by user command. By default, mobile PCs with mobile Pentium III processors featuring Intel SpeedStep technology detect when they are plugged into or unplugged from an AC outlet. When a system is unplugged, the processor core automatically drops to a battery optimization² level from the peak frequency¹. At the same time, the operating voltage of the processor drops to 1.35 volts from 1.6 volts. Plug that system back into an outlet, and the processor automatically speeds back up to peak frequency¹ and boosts voltage to 1.6 volts.

Users can also manually adjust the Intel SpeedStep technology mode. For example, if a user needs to conduct a presentation away from an outlet, he or she can use the Intel SpeedStep technology applet to put the mobile PC into maximum performance mode. The applet is accessed via an icon in the Windows* Taskbar. When the presentation is complete, the system can be put back into battery-optimized performance mode.

When switching performance modes, Intel SpeedStep technology can reduce the active power of the processor up to 45% while maintaining up to 80% of the maximum performance. Switching voltage levels provides significant power savings, because power consumption occurs in proportion to the square of voltage. By contrast, clock frequency has a linear relationship with power consumption. The result: A slight reduction in voltage yields a significant impact on power savings. Of course, the overall impact on battery life depends on the application running and the design and components of the mobile PC.

¹ **Peak Frequency**

- 600&650MHz
- 700MHz
- 750MHz
- 800MHz
- 850MHz

² **Battery Optimization**

- 500MHz
- 550MHz
- 600MHz
- 650MHz
- 700MHz

IT Friendly

IT managers will be glad to know that Intel SpeedStep technology functionality is completely seamless. If we look under the hood, we find that Intel SpeedStep technology uses Intel® QuickStart technology to put the processor into “sleep” mode. The voltage level and processor frequency are then adjusted and the system awakened. The process is completely transparent to running applications and takes just one-half of a millisecond to complete—less time than the blink of an eye.

What’s more, IT managers won’t have to worry about implementing Intel SpeedStep technology in the enterprise. The technology works with all major operating systems, including Microsoft’s Windows 95/98/ME and Windows NT 4.0/2000.

Summary

When the notebook is plugged in, mobile Pentium III processors run at peak clock frequency. When the system runs on battery power, clock rates drop to a battery optimization level.

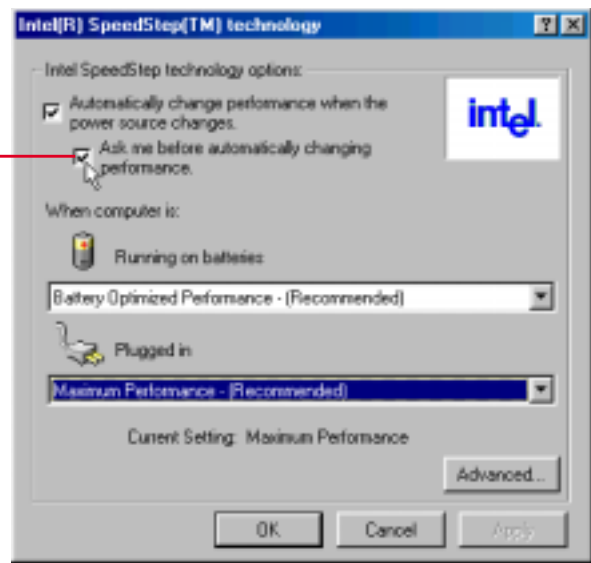
- Operating voltages also switch, dropping to 1.35 volts when unplugged from 1.6 volts when running off an AC power source.
- The mode switch can be invoked automatically when systems are plugged into or unplugged from an outlet, or by user command using a simple utility.
- Mode switches occur in less than one-half a millisecond and are completely transparent to both the end user and running applications.
- Intel mobile Pentium III processors featuring Intel SpeedStep technology allow OEMs to build mobile PCs that closely match the performance and capabilities of advanced desktop systems.

SpeedStep Properties and Settings



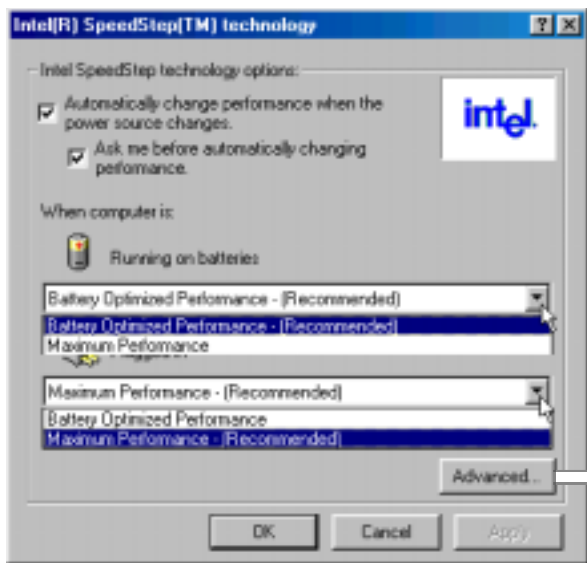
NOTE: If your processor does not support SpeedStep, the blue flag will have an “x” over it. Entering the properties page (double clicking with left button or selecting the menu called up by the right button) will show grayed out items.

Passing the cursor over the blue flag icon will show the performance status. There are two statuses: “Maximum Performance” or “Battery Optimized Performance”.

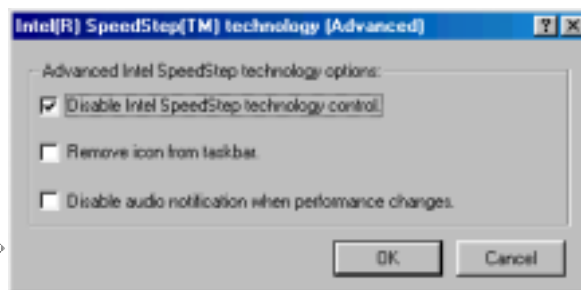


Select “Ask me before automatically changing performance” if you tend to plug and unplug the power while the Notebook PC is running applications. This will ensure that running applications do not stop due to a decrease in processor speed.

SpeedStep Properties and Settings (Cont’)



You can independently choose the performance level while “running on batteries” and when “plugged in”.

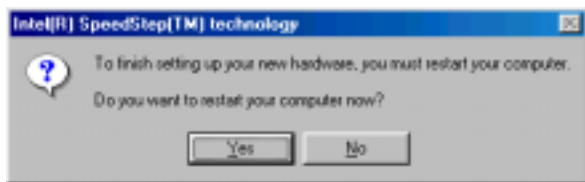


Clicking “Advanced” gives you the choice to:

Disable SpeedStep - Your Notebook PC will always run at the maximum processor speed regardless of whether an AC power source is present.

Remove icon from taskbar - Removes the blue flag icon from the taskbar. You will then have to enter the properties settings through the Control Panel “Power Management” icon.

Disable audio notification when performance changes - By default, a “ping” sound is heard when speed changes. If the noise is a problem, you can disable it here.



You may have to restart your computer in order to activate certain settings.



Right-clicking the blue flag will give you a menu in order to manually change the processor speed and to enter the properties page.

SpeedStep Software Notes

WARNING

You are authorized and licensed to install this application and driver ONLY on a Licensed PC that has System Management Mode (SMM) BIOS support installed. This driver may permanently damage any system that does not meet these requirements. A Licensed PC is a computer which (1) is capable of seamlessly and automatically transitioning among multiple performance states (potentially operating at different efficiency ratings) based upon power source changes, end user preference, processor performance demand, and thermal conditions; and (2.) includes an Intel mobile Pentium II processor, Intel mobile Pentium III processor, or any other future Intel processors that incorporates the capability to transition between different performance states by altering some or any combination of the following processor attributes: core voltage, core frequency, bus frequency, number of processor cores available, or any other attribute that changes the efficiency (instructions/unit time-power) at which the processor operates.

The User Interface

The User Interface is accessed either from the system tray icon (a “flag”) or from the power management icon in the Control Panel. If the user does not have restricted privileges (on Windows 2000 or NT4.0), the User Interface allows the user to select their processor performance level preference for when the computer is running on AC or on battery. The User Interface allows for advanced options, such as disabling the Applet. Disabling the Applet only disables the user’s ability to set preferences and control transitions, it does not disable Intel SpeedStep technology in the BIOS. The Applet never issues a SetSpeedStepSetup SMI command with ECX = 0xFF to disable control. The only way to completely disable Intel SpeedStep technology is via the BIOS setup.

Restricted User limitations

With some Windows operating systems, like Windows 2000, a user account can be created that has restricted access to the operating system and its environment. While the IST Applet will run correctly, the system preferences will not be available for the user to modify. System level preferences include the ability to disable the Applet and the ability to set processor performance level preferences for AC and battery. These choices will be grayed out. User preferences will not be effected.

Over-installing

If the Intel SpeedStep technology Applet has been installed previously, we recommend that you first uninstall the Applet.

If you over-install the Intel SpeedStep technology Applet without first uninstalling, the Applet must be removed from the running task list. If the Applet is running while attempting to over-install, an error message will appear informing the user to first uninstall the Applet before proceeding. Also, the OEM configuration and user preference values stored in the Windows registry will be overwritten by the values contained in the Registry.ini file that is part of the installation package.

Uninstalling the Applet

Open **Control Panel – Add Remove Programs** and select the Intel SpeedStep technology Applet entry and press **Add/Remove**.

ASUS PC PROBE

Topics Covered:

Starting ASUS PC Probe

Using PC Probe Monitoring

ASUS PC Probe Task Bar Icon

Windows ME & 2000

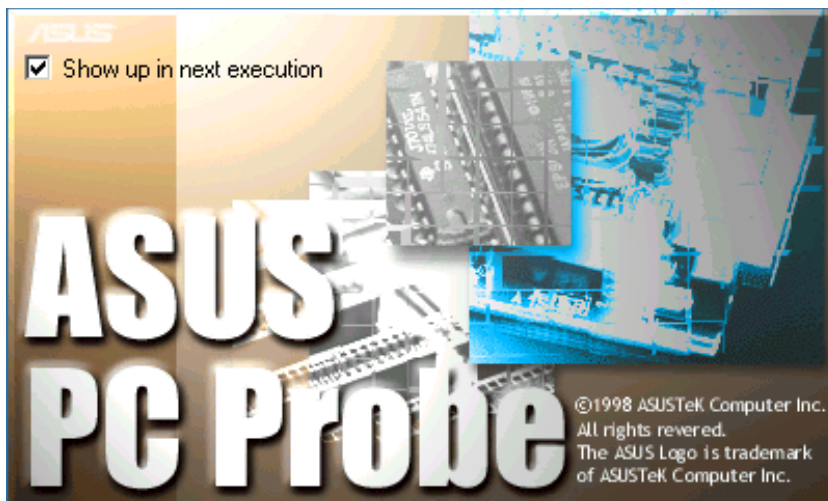
ASUS PC Probe


ASUS PC Probe is a convenient utility to continuously monitor your computer system's vital components, such as fan rotations, voltages, and temperatures. It also has a utility that lets you review useful information about your computer, such as hard disk space, memory usage, and CPU type, CPU speed, and internal/external frequencies through the DMI Explorer.

Starting ASUS PC Probe

If the ASUS Probe icon (magnifying glass) is not shown on the taskbar (see below), click the Windows **Start** button, point to **Programs**, and then **ASUS Utility**, and then click **Probe VX.XX**.

When ASUS PC Probe starts, a splash screen appears allowing you to select whether to show the screen again when you open PC Probe or not. To bypass this startup screen, clear the **Show up in next execution** check box.



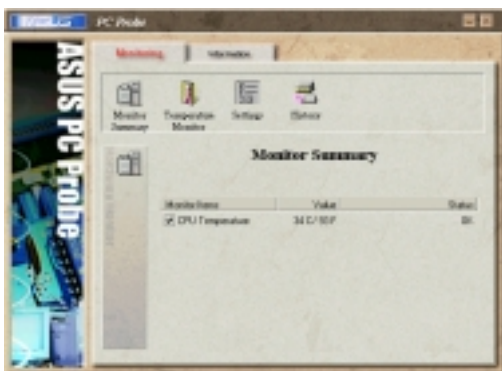
The PC Probe icon  will appear on the taskbar's system tray indicating that ASUS PC Probe is running. Clicking the icon once will allow open the PC Probe interface.



NOTE: PC Probe will constantly use resources to check the system status while Windows is operating. It is suggested to exit PC Probe while using high demanding applications.

Using ASUS PC Probe Monitoring

Monitoring



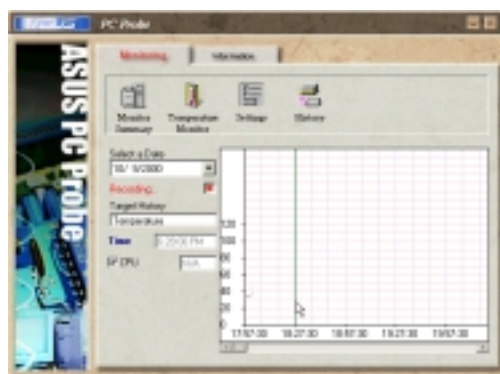
Monitor Summary
Shows a summary of the items being monitored.



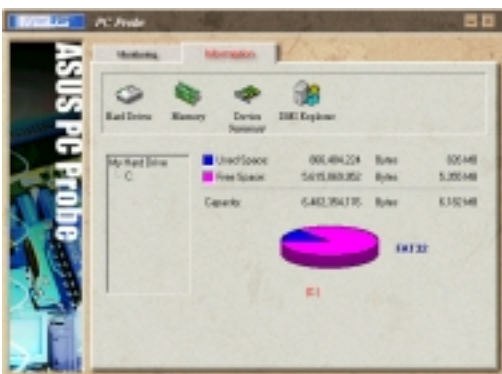
Temperature Monitor
Shows the PC's temperature.



Settings
Lets you set threshold levels and polling intervals or refresh times of the PC's temperature, fan rotation, and voltages.



History
Lets you record the monitoring activity of a certain component of your PC by date, time, and target history.



Information

Hard Drives

Shows the used and free space of the PC's hard disk drives and the file allocation table or file system used.

More Hard Drives

Information on other hard drives can be accessed by clicking on the relevant drive letter.



Memory

Shows the PC's memory load, memory usage, and paging file usage.



Device Summary

Shows a summary of devices in your PC.



DMI Explorer

Shows information pertinent to the PC, such as CPU type, CPU speed, and internal/external frequencies, and memory size.

ASUS PC Probe Task Bar Icon

Right clicking the PC Probe icon will bring up a menu to open or exit ASUS PC Probe and pause or resume all system monitoring.

When the ASUS PC Probe senses a problem with your PC, portions of the ASUS PC Probe icon changes to red and the PC speaker makes clicking noises.



TOUCHPAD

Topics Covered:

Overview of the TouchPad

Scrolling Properties Page

Button Actions Properties Page

Edge Motion Properties Page

Touch Properties Page

More Features Properties Page

Frequently Asked Questions

Windows ME & 2000

Overview of Synaptics® TouchPad Features

Your Synaptics TouchPad is much more powerful than an old-fashioned mouse. In addition to providing all the features of an ordinary mouse, your TouchPad allows you to:

- Tap on the Pad Instead of Pressing the Buttons
- Drag Icons, Windows and Other Objects without Using Buttons
- Adjust the Overall Touch Sensitivity
- Customize Buttons and Taps
- Prevent Accidental Pointing While Typing (also known as Palm Check)
- Scroll Through a Document Without Using Scroll Bars
- Zoom In/Out and Pan on Documents
- Move the Pointer Long Distances
- Fine Tune the Pointer Movement

Tap on the Pad Instead of Pressing the Buttons

Tapping on the surface of the pad is the same as clicking the left mouse or TouchPad button (i.e. the primary TouchPad button). Tapping is usually quicker and more convenient than using the button. To double-click, just tap twice. A light, quick tap works best; very hard or very slow taps are less likely to work.

Drag Icons, Windows and Other Objects without Using Buttons

Often, you need to hold the mouse or TouchPad button down while moving the pointer (to move an icon or window around the screen, for example). This action is called dragging. Just like clicking and double clicking, you can also drag without using the button.

To move or drag an object (equivalent to pressing and holding the left TouchPad button):

- 1) Position the pointer over the object and tap twice, down-up-down, leaving your finger on the TouchPad on the second tap. This action is sometimes called tap-and-a-half.
- 2) Now move the selected object by sliding your finger across the TouchPad surface.
- 3) Lift your finger to drop the object.

Tap-and-a-Half

You might wonder what happens when you reach the edge of the pad and you are dragging an object. The Synaptics TouchPad has a feature called Locking Drags. This feature allows you to lift your finger from the pad without ending the drag. You can drag an object across the screen using several finger strokes. To end a Locking Drag action, tap again. The Synaptics TouchPad also has a feature called Edge Motion to help with long distance dragging. See Move the Pointer Long Distances for details.

The Tap and Drag and Locking Drags features are located on the Touch Properties Page in the Mouse Properties dialog.

Adjust the Overall Touch Sensitivity

You can control how much finger pressure you must apply before the TouchPad responds by adjusting the Touch Sensitivity slider. This slider is located on the Touch Properties Page in the Mouse Properties dialog.

At higher (more sensitive) Touch Sensitivity settings, the TouchPad recognizes even a very slight touch. If you see undesired or erratic pointer motion, try a lower setting. Lower (less sensitive) settings require a firmer touch to move the pointer. In general, a lighter touch works best.

Customize Buttons and Taps

Most TouchPads come with two buttons that work just like traditional mouse buttons. You can customize the behavior of these buttons.

Tapping on the TouchPad surface also performs the same action as pressing a button. Tapping in the center of the pad will always produce a left-click (the action of the primary button), but you can configure each of the four corners of the TouchPad surface to act as different buttons. These special corner regions are called tap zones. With four corner tap zones, the center of the TouchPad, and the two physical buttons you can turn your TouchPad into a seven-button mouse!

A customization example:

Suppose you want to use your TouchPad like a three-button mouse. You can configure the left TouchPad button to produce middle clicks when pressed. Remember that tapping on the TouchPad will produce left clicks, and pressing the right TouchPad button will produce right clicks. For additional convenience, you can configure the top right corner tap zone of the TouchPad to produce right clicks. Looking at the TouchPad surface in the picture below, taps in the top right corner (the red shaded area) will produce right clicks, but tapping anywhere else on the TouchPad (the solid gray area) produces left clicks.

An Example TouchPad

There are many different actions that you can assign to the buttons and tap zones. The following actions are provided as built-in features with the Synaptics TouchPad device driver. Additional actions might be available if you have installed any third-party TouchPad Plug-In software.

- Jump to the Start Button. This action causes the pointer to jump to the Start button in the Windows task bar and automatically opens the Start Menu.
- Jump to the current application's menu. This action causes the pointer to jump to the leftmost entry in the application's window menu (usually the File menu) and automatically pops up the submenu.
- Minimize the current application. This action minimizes the current application's window. If the current application's window is already minimized, this action will restore it to its normal size and location.
- Maximize the current application. This action maximizes the current application's window (expands it to cover the full screen). If the current application's window is already maximized, this action will restore it to its normal size and location.
- Run a program of your choosing. This action allows you to specify the name of any program you want to run automatically when you click the button or tap in the tap zone.

To customize taps and buttons, go to the Button Actions Properties Page in the Mouse Properties dialog.

Prevent Accidental Pointing While Typing

Unintentional pointer movement and accidental taps can be caused by accidentally brushing the surface of the TouchPad with your palm or another part of your hand. The results of this contact can be observed as a changing cursor location when typing, causing subsequent text to appear in the wrong place. Or text may “spontaneously” be highlighted and replaced. Most often, this unwanted pointing activity occurs when typing on the keyboard. The TouchPad can detect and prevent accidental and unwanted pointer movement while you are typing.

If you see unwanted pointer movement occurring while you are typing, you can adjust the Palm Check slider located on the Touch Properties Page in the Mouse Properties dialog. Move the slider thumb to the right towards Maximum. Now accidental brushes of your hand on the TouchPad while you are typing are more likely to be ignored.

On the other hand, in the midst of typing, you might purposefully use the TouchPad to point and click, and sometimes the TouchPad may not seem to respond. In this case, move the slider thumb to the left towards Minimum. Now pointing during typing is less likely to be interpreted as an accidental brush with the pad surface, and will not be ignored.

Scroll Through A Document without Using Scroll Bars

Virtual Scrolling allows you to perform a very common task – scrolling documents – without having to move the pointer away from your work. By simply sliding your finger up and down the right edge of the TouchPad, the contents of the current window will scroll vertically. Similarly, by sliding your finger left and right along the bottom edge of the TouchPad, the contents will scroll horizontally. You no longer need to laboriously maneuver the pointer to the small scroll bar elements; you can scroll no matter where the pointer happens to be.

Virtual Scrolling works with document windows (like word processors and spreadsheets), and it also works with file lists, font lists, and other scrollable items. As a rule, you can use Virtual Scrolling when you are working in any window that has a scroll bar.

And Virtual Scrolling does more than just make scrolling more convenient. It also can make scrolling smoother. When you scroll by dragging the scroll thumb with the mouse, many applications do not re-display the document window until you release the mouse button. Virtual Scrolling makes navigation through documents easier, because it forces the application to re-display the window contents as you scroll.

How do I use Virtual Scrolling?

To customize the Virtual Scrolling feature, go to the Scrolling Properties Page located in the Mouse Properties dialog.

Zoom In/Out and Pan on Documents

Note that zooming and panning only work in applications that support the Microsoft Intellimouse. With Intellimouse aware applications, you can zoom and/or pan to quickly maneuver your way through lengthy documents. To jump to a distant location within your document, zoom out, click on the desired location, then zoom in. To scroll horizontally and vertically at the same time, simply pan in a diagonal direction!

Move the Pointer Long Distances

Suppose you are dragging an object, scrolling at high speed (via Virtual Scrolling!), or merrily moving the pointer when you suddenly reach the edge of your TouchPad. Don't despair, the Synaptics TouchPad Edge Motion feature comes to the rescue! Edge Motion helps with long distance pointer motion. When you reach an edge of the TouchPad, the pointer (or scroll thumb when Virtual Scrolling) continues to move in the same direction until you lift your finger from the TouchPad or move your finger away from the edge.

Edge Motion speed can be pressure-sensitive or constant. Pressure-sensitive speed means that the harder you press, the faster the object or pointer moves.

You can configure the Edge Motion feature on the Edge Motion Properties Page in the Mouse Properties dialog.

Fine Tune the Pointer Movement

The Synaptics TouchPad has many additional features to help you control the way your pointer moves. Please take a look at the list of additional features.

Accessories

Your TouchPad is a productivity enhancing tool, designed for serious work. But we think it should also be fun. We have included two fun application programs that demonstrate some of the capabilities of the TouchPad: Pressure Graph and The Incomparable, Mysterious Synaptics MoodPad.

To run these applications, click once on the Synaptics TouchPad Icon in the Taskbar, go to the Accessories menu and select the desired application.

More About the TouchPad

The TouchPad detects your finger by capacitive sensing (it is not sensitive to heat or applied force). As your finger approaches the pad, it alters the electric field in the vicinity of the pad surface. The TouchPad sensor is just a circuit board with a matrix of conductive traces printed on the top surface. A special chip on the back side of the TouchPad continuously measures the capacitance of these traces, and thus can determine the presence and location of your finger.

To get the most out of your TouchPad, be sure that the TouchPad driver software is installed. If the Synaptics TouchPad driver is properly installed, the Mouse Properties dialog will include several TouchPad tabs along the top in addition to the standard mouse tabs.

Property Pages

The property pages allow you to customize TouchPad settings for your Notebook PC. The following pages will describe each property page with the Synaptics logo. The "Buttons", "Pointers", and "Pointer Options" pages come with Windows and should be described in Windows documentation.

Scrolling Properties Page

The Scrolling properties page allows you to customize the Virtual Scrolling capabilities of your TouchPad.

In some applications, the scroll zones which activate Virtual Scrolling can be used for zooming too.

Enabling Virtual Scrolling of the Active Window

Check the appropriate boxes on this page for the type of Virtual Scrolling that you prefer:

- Horizontal Scrolling
- Vertical Scrolling
- Coasting

Choose where you want Virtual Scrolling to occur:

- Scroll Selected Item

- OR -

- Scroll Item Under Pointer

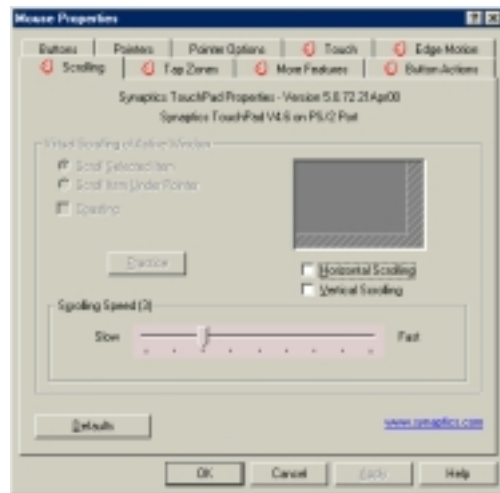
Customizing Scroll Zone Sizes

This page includes a small map of the TouchPad with the scroll zones shaded in red. See the Scroll Zone TouchPad Map for a more detailed description.

You can adjust the size of each zone by dragging one of the black resize handles on the TouchPad map. If you are having trouble activating the Virtual Scrolling feature, you might want to try making the scroll zones wider. If you find that scrolling sometimes gets activated when you didn't mean to scroll, try narrowing the scroll zones.

Customizing Virtual Scrolling Speed

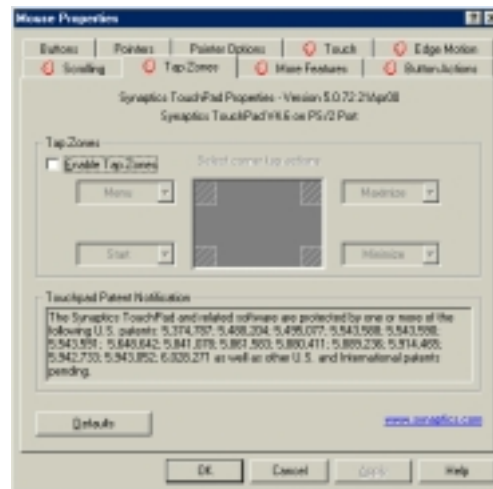
You can control the speed of Virtual Scrolling by adjusting the Scrolling Speed slider on this page. Drag the slider thumb to the right for faster scrolling.



Button Actions and Tap Zones Properties Pages

The Tap Zones and Button Actions properties pages allow you to assign custom actions to TouchPad physical buttons or to taps in the Touchpad's corner zone regions (or tap zone regions). See Customize Buttons and Taps for more information.

The Synaptics TouchPad driver may also control other pointing devices attached to your system. If the Synaptics TouchPad driver is controlling more than one pointing device on your system, the Synaptics pages on the Mouse control panel will have a drop-down box listing all of the pointing devices that are controlled. You may set separate settings for each by selecting the appropriate device (settings which don't apply to a particular pointing device will be grayed out).



Customizing the Tap Zones

When the tap zones are enabled, each tap inside a corresponding tap zone region on your TouchPad can have a different meaning or action. For example, you can define the upper right corner tap zone to mean right clicks. Then when you tap your finger on the upper right corner of your TouchPad, it is as if you are clicking the right mouse or TouchPad button.

This page includes a small map of the TouchPad with the active tap zones shaded in red. Next to each zone is a text box specifying the action for that zone. See the Tap Zones TouchPad Map for a more detailed description.

To Customize:

1. To activate the corner tap zones, check the box next to the text Enable Tap Zones. An unchecked box means that all taps on every part of the TouchPad surface will have left-click behavior.
2. To change an action for a particular zone, locate the text box nearest the zone. The text box displays the current action for this zone (for example, it might say No Zone which means that this particular zone is disabled and any taps here will produce the default left-click action). Click on the down arrow button { } located to the right of the text to display a list of actions. Select the desired action.
3. Each tap zone can be resized to be as large or as small as you desire by dragging one of the black resize handles located on the TouchPad map .

Customizing Button Assignments

You can customize the TouchPad buttons in the same way that you customize the tap zones.

To Customize:

Each button has a text box that displays the current action (for example, it might say Left, which means the left-click or primary-click action). To display a list of possible actions, click on the down arrow button { } located to the right of the text. Select the desired action.

More Features Properties Page

The More Features properties page allows you to control the following features of your Synaptics TouchPad:

Stop Pointer at Window Borders

This feature constrains the pointer to stay inside the active window. When you try to move the pointer outside the window, it stops at the edge. If you try a second time, the pointer is free to leave the window.

Stopping the pointer at the window borders makes it easy to access controls that lie around the edges of windows. For example, to close or resize a window, you can casually toss the pointer in the general direction of the close box or the edge of the window, and the pointer will stop exactly where you want it.

Snap to Default Button

This feature automatically moves the pointer to the Default Button when a dialog box appears on your screen.

Slow Motion Key

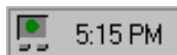
Sometimes you might need more accuracy when pointing with the TouchPad, such as in a drawing program. The speed of the pointer can make this type of accuracy difficult to obtain. To slow down the pointer movement, you can specify a slow motion key. Then, for slow pointer movement, press and hold this key as you move the pointer.

Constrained Pointer Key

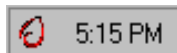
At times you may want to restrict the pointer to move only horizontally or only vertically. You can specify a constrained pointer key, then press and hold this key as you move the pointer. The initial pointer direction when holding this key determines whether the pointer is constrained to move only horizontally or only vertically.

Synaptics TouchPad Tray Icon

The Synaptics TouchPad tray icon appears in the Windows Taskbar near the clock. You can choose between two icons:

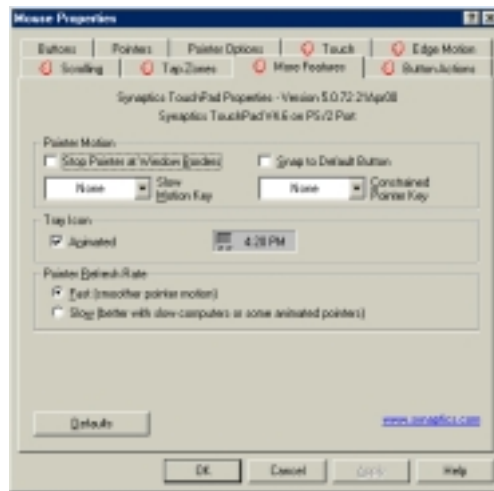


This is the animated Touch Meter icon. The size of the dot on the touch meter indicates the amount of finger pressure. The icon turns blue while Virtual Scrolling is in progress.



This is the non-animated Synaptics logo icon.

You can access the “TouchPad Properties” dialog by double clicking on either tray icon.

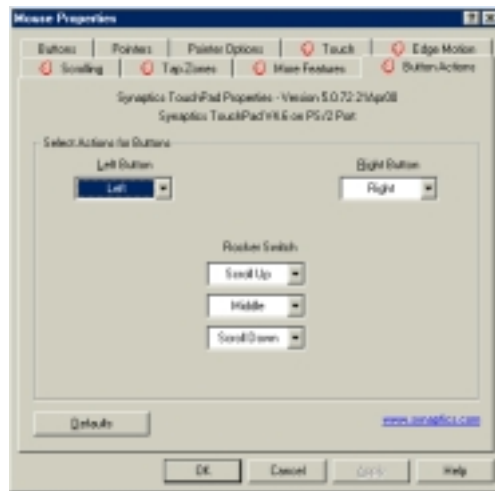


Button Actions Properties Page

The Button Actions properties page allows you to customize the taps in the corner zone regions (or tap zone regions) of your TouchPad. You can customize the physical TouchPad buttons too. See Customize Buttons and Taps for more information.

Customizing the Tap Zones

When the tap zones are enabled, each tap inside a corresponding tap zone region on your TouchPad can have a different meaning or action. For example, you can define the upper right corner tap zone to mean right clicks. Then when you tap your finger on the upper right corner of your TouchPad, it is as if you are clicking the right mouse or TouchPad button.



This page includes a small map of the TouchPad with the active tap zones shaded in red. Next to each zone is a text box specifying the action for that zone. See the Tap Zones TouchPad Map for a more detailed description.

To Customize:

- To activate the corner tap zones, check the box next to the text Enable Tap Zones. An unchecked box means that all taps on every part of the TouchPad surface will have left-click behavior.
- To change an action for a particular zone, locate the text box nearest the zone. The text box displays the current action for this zone (for example, it might say No Zone which means that this particular zone is disabled and any taps here will produce the default left-click action). Click on the down arrow button { } located to the right of the text to display a list of actions. Select the desired action.
- Each tap zone can be resized to be as large or as small as you desire by dragging one of the black resize handles located on the TouchPad map .

Customizing Button Assignments

You can customize the TouchPad buttons in the same way that you customize the tap zones.

To Customize:

- Each button has a text box that displays the current action (for example, it might say Left, which means the left-click or primary-click action). To display a list of possible actions, click on the down arrow button { } located to the right of the text. Select the desired action.

Touch Properties Page

The Touch properties page allows you to customize the tap response and sensitivity of your TouchPad.

Taps

Check the appropriate boxes in the Taps section of the Touch Properties Page for the tapping capabilities that you prefer:

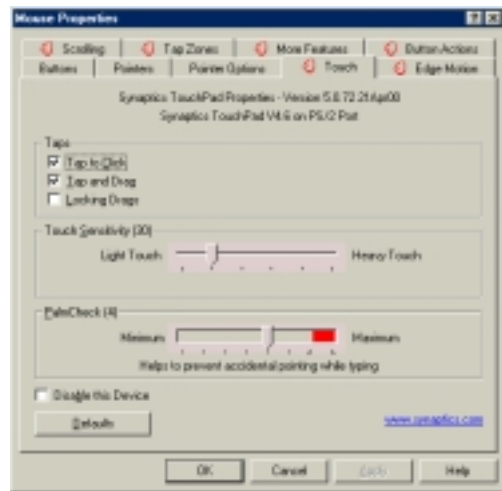
- Tap to Click
- Tap and Drag
- Locking Drags

Touch Sensitivity

Use the Touch Sensitivity slider to control how much finger pressure you must apply before the TouchPad responds. See Adjust the Overall Touch Sensitivity.

Palm Check

The Palm Check slider controls the TouchPad's detection of accidental and unwanted pointing movement. In addition to detecting palm contact with the TouchPad, the TouchPad can ignore much of the accidental and unwanted pointer movement that may occur while typing (due to accidentally contacting your TouchPad). See Prevent Accidental Pointing While Typing for more details.



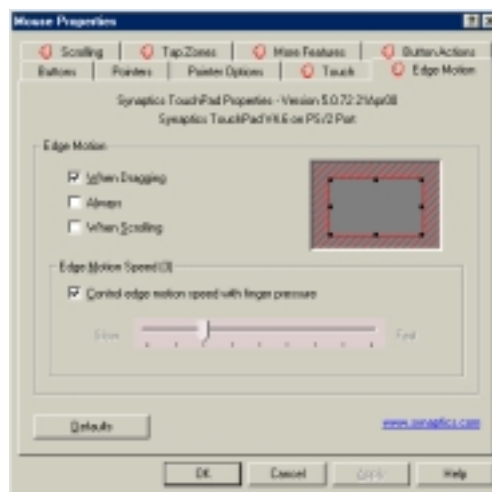
Edge Motion Properties Page

The Edge Motion properties page allows you to customize the long distance pointer motion capabilities of your TouchPad. When your finger reaches the edge of your TouchPad, the Edge Motion feature allows the pointer to continue to move until you lift your finger. See Move the Pointer Long Distances for more details about the Edge Motion feature.

Enabling Edge Motion

Check the appropriate boxes on this page for the types of Edge Motion that you desire:

- When Dragging
- Always
- When Scrolling



Customizing Edge Zone Sizes

This page includes a small map of the TouchPad with the edge zones shaded in red. See the Edge Zone TouchPad Map for a more detailed description. You can adjust the size of each zone by dragging one of the black resize handles on the TouchPad map. If you are having trouble activating the Edge Motion feature, you might want to try making the edge zones wider.

Customizing Edge Motion Speed

During Edge Motion, the speed at which the pointer (or dragged object or Virtual Scrolling scroll thumb) moves can be pressure-sensitive or constant. With pressure-sensitive speed, the harder you press the faster the object or pointer moves. For this type of speed, check the box labeled Control edge motion speed with finger pressure.

If you prefer a constant speed for Edge Motion, you can adjust the speed with the Edge Motion speed slider located on this page.

Frequently Asked Questions

Q: When I use Virtual Scrolling, the pointer jumps over to the scroll bar, and then jumps back where it came from when I'm done. Is this normal?

A: Yes.

Q: Why doesn't the Virtual Scrolling feature work in some windows, even though they have a scroll bar?

A: In order to scroll, Virtual Scrolling must be able to "see" the window's scroll bar. If the scroll bar is partially obscured by another window, or partially off the screen, then Virtual Scrolling will not activate in that window. In general, a window's scroll bar must be entirely on the screen, and fully visible, in order to use Virtual Scrolling in that window. There is an exception to this rule: Virtual Scrolling has "special knowledge" about many common types of windows, and can scroll them even if their scroll bars are not visible on the screen. A very small number of applications use nonstandard scroll bars that might not work reliably with Virtual Scrolling.

Q: Why do some windows scroll smoothly, while others re-display their contents only occasionally as I scroll?

A: The way a window responds to its scroll bars is entirely up to the application which owns that window. Some applications "smooth-scroll," while others wait until you release the scroll bar before updating their contents. Virtual Scrolling "knows" about many common applications and window types, and uses this knowledge to "trick" many windows into smooth-scrolling (Microsoft® Word™ document windows, for example, do not normally smooth-scroll, but they do when you use Virtual Scrolling). If Virtual Scrolling does not "know" about a particular type of window, it still approximates smooth-scrolling by causing the window to re-display when your finger slows down or stops. This can help you more accurately scroll to the right place in a document.

Q: Why does the scroll thumb sometimes "jump around" when I scroll, and not go exactly where the pointer is?

A: Again, the application actually has complete control over the way the scroll thumb moves. Depending upon the window contents, some applications will actually prevent you from moving the scroll thumb to certain locations. Sometimes, the scroll thumb is only "allowed" to come to rest at one or two positions along the scroll bar! In these cases, even if you were to manually drag the scroll thumb with the pointer, you would find that it would "jump" to a final location when you released it. Virtual Scrolling, unfortunately, cannot control how applications manage their scroll bars.

Q: Why doesn't Virtual Scrolling work properly with Microsoft Internet Explorer?

A: Make sure you are using Internet Explorer version 4.01 or later, and that the Use Smooth Scrolling option on the Advanced page of the Internet Explorer Properties dialog is NOT checked.

Q: When I press and hold the shift key or the control key (CTRL), the pointer movement is either very slow or restricted to move only horizontally or only vertically. What is happening?

A: The shift keys and the control keys are special and are used for various things, such as selecting multiple files in Microsoft Windows Explorer or for zooming in and out on a spread sheet in Microsoft Excel. These keys can also be used for special pointer movement, such as for slowing the pointer down or for constraining the pointer to move only horizontally or only vertically. For example, you can assign the left shift key to be the Slow Motion Key. Then when you press and hold the left shift key, the pointer motion will be slower than usual. Note that you can still use this shift key for other special behaviors! You can still press and hold the left shift key to select multiple files in Microsoft Windows Explorer, but the pointer motion will also be a bit slower. If you see slow or constrained pointer movement when pressing shift or CTRL and you want to turn off this special behavior, go to the More Features Properties Page in the Mouse Properties dialog and uncheck the appropriate boxes.

PC-CILLIN 2000

Topics Covered:

PC-cillin 2000 Features

What are Computer Viruses?

Methods of Virus Scan

Actions on Virus Found

What are Virus Pattern Files?

Real-time Monitor

WebTrap

Manual Scan

Scan Window

Manual Scan

Windows ME & 2000

Welcome to PC-cillin

Welcome to PC-cillin 2000, Trend Micro's award-winning antivirus software.

Here's what PC-cillin will do "straight out of the box":

- Checks for viruses every time you Open, Copy, Move, or Save a file
- Protects against downloading infected files from the Internet or FTP sites
- Guards against malicious Java applets and ActiveX controls while web surfing
- Monitors your Word and Excel sessions for macro viruses, using MacroTrap™
- Scans and cleans all files on your hard drive every Friday
- Scans all program files for viruses every month Checks all your saved documents for macro viruses.

Here's what you can do with just the click of a button:

- Scan every file on your system and clean any infected files
- Scan any file from Windows Explorer or My Computer by right-clicking the file icon
- Scan floppy diskettes and clean any infected files
- Check all of your Word and Excel document(s) for macro viruses
- If you use Outlook Express 4.0 or above or Eudora Pro 4.0 or above email clients, scan your email message attachments as they are being downloaded from the POP3 email server.
- Manually scan message attachments in your local Outlook 97/98/2000 folders

No Limits

Of course, if you're a person who likes to customize your software, there is no limit to the Scan tasks you can configure PC-cillin to perform.

You can "set and forget" as many tasks as you see fit. For each task, you can select the file types you want to scan for viruses, the action PC-cillin will take upon finding a virus (Clean the infected file, Delete it, Quarantine it, Pass it, or Rename / Deny Access to it), and other program details.

Scan Engine

Viruses are detected using Trend's 32-bit, multi-threaded scan engine and a process called pattern matching. In addition to catching known viruses, PC-cillin detects and intercepts previously unknown polymorphic, or mutation, viruses.

MacroTrap

Additional layers of protection come from MacroTrap™, Trend's macro virus scanning engine, which detects and removes both known and unknown macro viruses.

What's New in PC-cillin 2000

PC-cillin 2000 includes the following enhancements over the previous version:

- **Windows 2000 Support:** PC-cillin fully supports Windows 2000. Integration with the Windows installer means that you can install PC-cillin while installing other Windows components. PC-cillin is Windows 2000 compliant.
- **Antivirus scanning of POP3 mail:** If you use Microsoft Outlook Express 4.01 or above or Eudora Pro 4.0 or above as your email client, Trend PC-cillin 2000 will scan your email messages as they download from the POP3 server. Virus-infected attachments are stopped before they ever reach your computer!
- **Virus Scanning of Local Outlook Folders:** If you use Microsoft Outlook as your email client, Trend PC-cillin 2000 provides on-demand scanning of local folders for virus-infected attachments. Trend PC-cillin will automatically detect an installed copy of Microsoft Outlook on the computer and enable the user interface elements that permit the use of this feature. Please note that this feature does not scan messages stored on a Microsoft Exchange server, but only scans messages in local folders.
- **Incremental Virus Pattern Download:** No longer do you have to download the entire virus pattern file when updating your software. Trend PC-cillin 2000 supports incremental pattern updates whereby only the virus patterns that have changed since the last update are downloaded. This greatly reduces the download time, saving time and expense that you have to spend on Internet connection charges.
- **PC-cillin Can Scan Virtually All Media:** PC-cillin 2000 can scan the following types of drives in addition to conventional hard disk drives: CD-ROM, CD-R, CD-RW, PD, FDD, DVD, ZIP and LS120.
- **PCSCAN Command Line Scanner Supports Pattern Files Larger Than 1.44 MB:** Due to the large number of known computer viruses that have been identified, the virus pattern file is now too large to fit on a single 1.44 MB diskette. The emergency rescue disk creation utility can split the virus pattern file over several diskettes. Additionally, the PCSCAN command line scanner supports virus pattern files that have been spanned over more than one diskette.

Test Virus

The European Institute of Computer Anti-virus Research, along with antivirus vendors, has developed a test file that can be used in checking your installation and configuration.

The file is not an actual virus; it will cause no harm and it will not replicate. Rather, it is a specially created file whose “signature ” has been included in the Trend Micro virus pattern file and as such, can be detected by the virus engine.

You can download this file from: <http://www.antivirus.com/vinfo/testfiles/index.htm>!Internet (“<http://www.antivirus.com/vinfo/testfiles/index.htm>”)

Alternatively, copy the following text into a text editor and then save the file with a *.com extension.

```
X5O!P% @AP[4\PZX54(P^)7CC)7}$EICAR-STANDARD-ANTIVIRUS-TEST-FILE!$H+H*
```

You may need to disable real-time scanning before downloading the file. Once on your machine, you can use the test virus to see for yourself how PC-cillin’s various scanning features work.

What is a Computer Virus?

Simply put, a computer virus is a program that replicates. To do so, it will need to attach itself to other program files (for example, .exe, .com, .dll) and execute whenever the host program executes. Beyond simple replication, a virus almost always seeks to fulfill another purpose: to cause damage.

Called the damage routine, or payload, the destructive portion of a virus can range from overwriting critical information kept on your hard disk’s partition table to scrambling the numbers in your spreadsheets to just taunting you with sounds, pictures, or obnoxious effects.

It’s worth bearing in mind, however, that even without a “damage routine,” viruses allowed to run unabated will continue to propagate—consuming system memory, disk space, slowing network traffic and generally degrading performance. Besides, virus code is often buggy and can also be the source of mysterious system problems that take weeks to understand. So, whether it was written to be harmful or not, a virus on your system can lead to instability and should not be tolerated.

Some viruses, in conjunction with “logic bombs,” do not make their presence known for months. Instead of causing damage right away, these viruses do nothing but replicate—until the preordained trigger day or event when they unleash their damage routines across the network.

To learn more about any particular virus, or about viruses in general, you can access Trend Micro’s online Virus Encyclopedia that comes with the program or visit Trend Micro’s web site at: <http://www.antivirus.com>

How Viruses Spread

There are many ways for a virus to enter your system:

- Email attachments
- World Wide Web (WWW) sites
- FTP traffic from the Internet (file downloads)
- Shared network files & network traffic in general
- Demonstration software
- Pirated software
- Shrink-wrapped, production programs (rare)
- Computer labs
- Electronic bulletin boards (BBS)
- Diskette swapping (using other people's diskettes for carrying data and programs back and forth)

The most likely virus entry points are email, Internet and network connections, floppy disk drives, and modems or other serial or parallel port connections. In today's increasingly interconnected workplace (Internet, intranet, shared drives, removable drives, and email), virus outbreaks now can spread faster and wider than ever before.

Virus Writers

In the typical scenario, it is an individual, working alone, who writes a virus program and then introduces it onto a single computer, network server, or the Internet. Why? Ego, revenge, sabotage, and basic disgruntlement have all been cited as motivations. Recently, do-it-yourself "virus kits" have been popping up on the Internet, and macro scripts are becoming both easier to learn and more powerful, putting the capacity to engineer viruses in the hands of nearly everyone. In other words, no single, likely profile exists by which virus writers can be described or understood.

So whatever the reason one may have for writing a virus, the important thing is to make certain your company is not victimized, that your data you are responsible for is safe, and that precious time is not wasted hunting down (and cleaning up after) viruses.

HOTKEY UTILITY

Topics Covered:

ASUS Hotkey

Buttons

Hotkey Actions

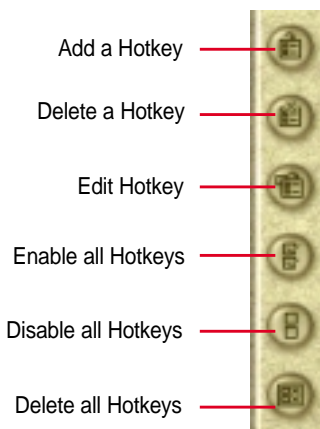
Add "Run Program" Procedure

Windows ME

ASUS Hotkey

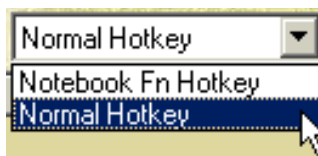
Buttons

The functions of the buttons located on the left side of the program window are labeled here.



Add a Hotkey

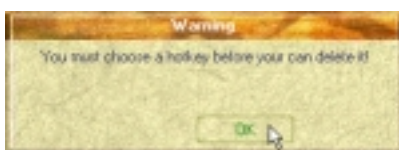
You can assign a Hotkey action to either the “Notebook Fn Hotkey” category (5 items max) or to the “Normal Hotkey” category. When you choose to add a hotkey, you can specify a key by pressing that key or key combination in the Hotkey box (the <Fn> key cannot be entered and will be automatically added to the “Notebook Fn Hotkey” category). The available Hotkey actions for assignment are shown in the “Hotkey Actions” tables.



Delete a Hotkey:

Highlight a Hotkey and click this button to delete it from the current category.

If you did not select a Hotkey, a message will show:



Edit a Hotkey

Highlight a Hotkey and click this button to change its Hotkey or action.

You can enter any information just like adding a Hotkey.



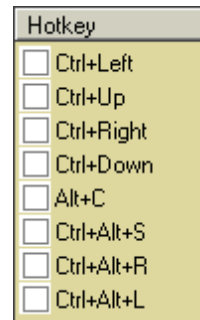
Enable all Hotkeys

Enables all Hotkeys by placing check marks in front of the Hotkeys in the current category.



Disable all Hotkeys

Disables all Hotkeys by removing check marks from the front of the Hotkeys in the current category.






Delete all Hotkeys

Deletes all Hotkeys in the current category. This confirmation will be shown:



Hotkey Actions

Actions	Descriptions	Examples (of action)
None:	Performs no action	--
Move Window To Left:	Moves the active window left between 1-50 steps	
Move Window To Up:	Moves the active window up between 1-50 steps	
Move Window To Right:	Moves the active window right between 1-50 steps	

Actions

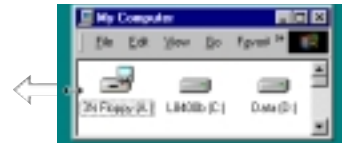
Descriptions

Examples (of action)

Move Window To Below: Moves the active window down between 1-50 steps



Extend Window From Left: Stretches the active window left between 1-50 steps



Extend Window From Up: Stretches the active window up between 1-50 steps



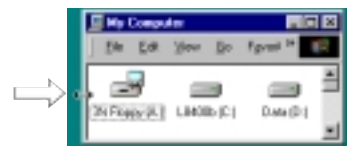
Extend Window From Right: Stretches the active window right between 1-50 steps



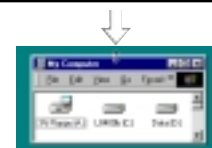
Extend Window From Below: Stretches the active window down between 1-50 steps



Shrink Window from Left: Shrinks the active window from the left between 1-50 steps



Shrink Window from Up: Shrinks the active window from the top between 1-50 steps


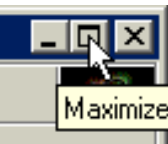

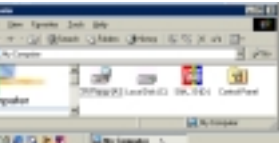

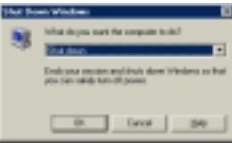
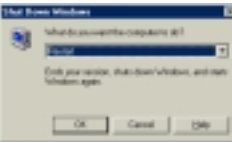

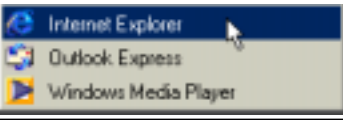
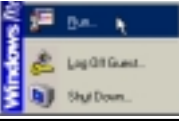


Shrink Window From Right: Shrinks the active window from the right between 1-50 steps



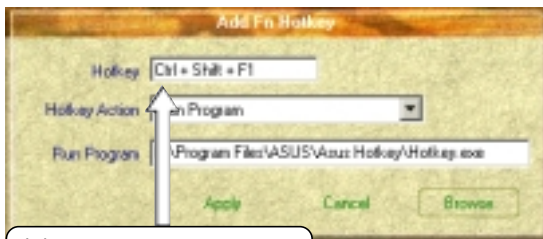
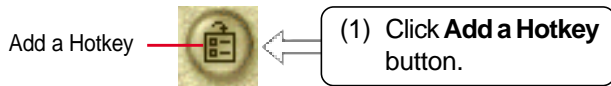
Shrink Window From Below: Shrinks the active window from the bottom between 1-50 steps



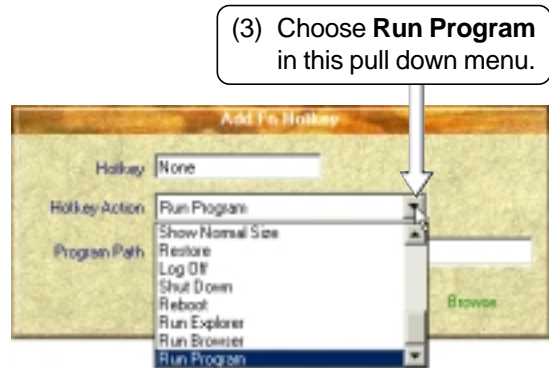
Actions	Descriptions	Examples (of action)
Minimize Window:	Minimizes the active window	
Maximize Window:	Maximizes the active window	
Show Normal Size:	Shows the active window in normal size (user adjustable)	
Restore:	Restores a minimized window to its previous size.	
Log Off:	Logs the current user OFF from the current Windows session and any connected networks.	
Shut Down:	Exits from Windows and turns OFF the Notebook PC.	
Reboot:	Restarts the Notebook PC	
Run Explorer:	Runs Windows Explorer	
Run Browser:	Runs the Internet Browser	
Run Program:	Runs a user defined program	

Add “Run Program” Procedure

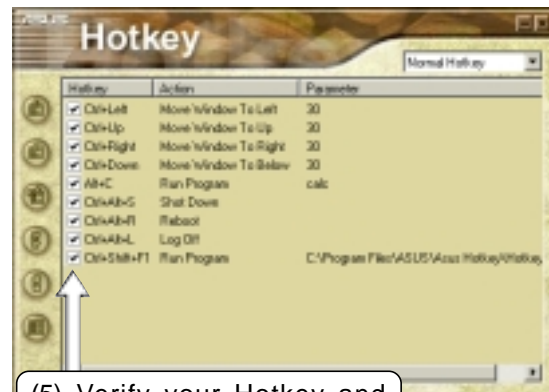
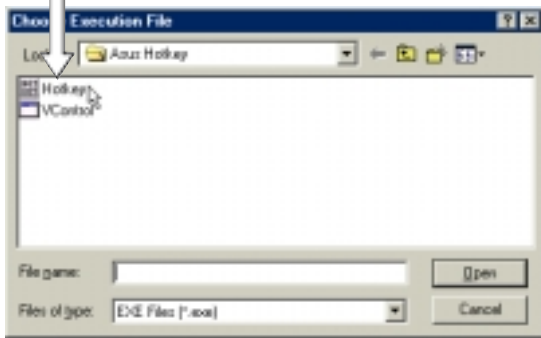
To add a Hotkey to run a program follow the steps below.



(2) Type a key or key combination here.



(4) Choose an executable file using explorer.



(5) Verify your Hotkey and make sure that it is enabled.

APPENDIX

Topics Covered:

Using New Hard Disk Drives

Using Save-to-Disk

Updating Your BIOS

Communication Regulations

Declaration Of Conformity

Using New Hard Disk Drives

When you purchase a new hard disk drive, there will not be any partitions on it unless it was pre-configured for your Notebook PC by your dealer. Partitions are necessary for a hard disk drive to accept data. Each user accessible partition will have its own drive letter and the CD-ROM will then add its own drive letter to the end.

NOTE: Formatting will not be allowed on non-partitioned hard disk drives and formatting hard disk drives will not remove partitions.

Creating a Bootable Diskette

A bootable system diskette is necessary to enter the command prompt when there are no active system partition on your hard disk drive. To create a bootable floppy diskette, type "FORMAT A:/S" from the DOS prompt or use Window's format (from "My Computer") and check "Copy system files." You must copy FDISK.EXE and other DOS utilities from the "C:\WINDOWS\COMMAND" directory of Windows 95/98/ME. Do not include AUTOEXEC.BAT or CONFIG.SYS system files on the boot disk because some utilities cannot be used with memory managers usually loaded through the AUTOEXEC.BAT and CONFIG.SYS system files.

Using the FDISK.EXE Utility

The FDISK.EXE utility can add or remove partitions on a hard disk drive. This utility is only required if the hard disk drive is new and has never been formatted or used (remember the ability to format a hard disk drive means that there is at least one partition). You do not need to use this utility after formatting a hard disk drive. Be careful not to remove existing partitions that you may need, you will not be able to recover it!

1. Boot from a system diskette with the "FDISK.EXE" utility.
2. Type "FDISK" from the "A:\>" prompt, then press [Enter].
3. Create a primary partition and set it active by following the on-screen menu, and also create extended partitions if needed.

Formatting the Hard Disk Drive

Formatting a hard disk drive actually only erases all the data on one partition. In order to erase data on other partitions, you must specify those drive letters when using the format utility. The /S command will place system files on the partition to allow bootup. Type "FORMAT /?" for a list of other options.

1. Boot from a system diskette with the "FORMAT.COM" utility.
2. Type "FORMAT C: /S" from the "A:\>" prompt then press [Enter].
3. Type "Y", then press [Enter] to confirm format.
4. Enter a Volume label, or press [Enter] to leave blank.

Using Save-to-Disk (Windows 95/98)

If you use Windows ME/2000, you do not need to create a “Save-to-Disk” partition to use “Hibernation Mode”.

The “Save-to-Disk” function requires that the “Suspend Mode” be set to “Save-to-Disk” in the “Power” menu of the BIOS setup and you must have a Save-to-Disk file or partition. The Save-to-Disk file or partition can be created or deleted at any time using the PHDISK utility.

The Save-to-Disk partition will occupy its own space on the hard disk drive that cannot be used for other purposes which is safer than a Save-to-Disk file. Because the Save-to-Disk partition is not user-accessible, it does not have a drive letter. The limitation with a Save-to-Disk partition is that it requires a free non-partitioned space on your hard drive which must first be setup using a partition management utility.

The Save-to-Disk file is a new feature supported by the current PHDISK which creates a hidden file called “SAVE2DSK.BIN” which is stored on your current partition and does not affect any of your current files or partitions. The limitation is that it is not a dedicated space and therefore is prone to problems that are associated with common files (e.g. accidental deletion, virus, and fragmentation). But the convenience of using a file is that it can be created, deleted, or changed at any time without concern for the current partition(s).

PHDISK can be used to create a space which is a slightly larger than the current system memory plus video memory size. But future memory upgrades will require that the Save-to-Disk file or partition be deleted and recreated to allow for the extra data that may be stored in memory.

Creating a Save-to-Disk Partition

Follow this procedure to create a Save-to-Disk partition:

1. Copy “PHDISK.EXE” from the Support CD to your hard drive or floppy disk.
2. Enter the DOS environment and type “PHDISK /CREATE /PARTITION” followed by pressing <Enter> in the same directory at “PHDISK.EXE”.

Creating a Save-to-Disk File

Follow this procedure to create a Save-to-Disk file:

1. Copy “PHDISK.EXE” from the Support CD to your hard drive or floppy disk.
2. Enter the DOS environment and type “PHDISK” followed by pressing <Enter> in the same directory at “PHDISK.EXE”.
3. Type “1” followed by pressing <Enter> to create file.
4. Type the size desired for the Save-to-Disk file that is greater than the minimum amount shown.
5. Confirm the Save-to-Disk file by reading the “Save to File Information:” and Type “4” followed by pressing <Enter> to exit the utility.

NOTE: If you have both a Save-to-Disk File and Save-to-Disk Partition, the Save-to-Disk File will be used. But you should delete one or the other to reclaim hard drive space.

Updating Your BIOS

PHLASH.EXE is a Flash Memory Writer utility that updates the BIOS by uploading a new BIOS file to the programmable flash ROM on the Notebook PC's motherboard. This file works only in DOS mode. To determine the BIOS version, check the code (e.g. BIOS Ver. XXXXX) displayed on the upper left-hand corner of your screen just before entering BIOS setup (after pressing the F2 key). Larger numbers represent a newer BIOS version.

Creating a BIOS Update Floppy Disk

PHLASH works only in DOS mode. It will not work with DOS prompt in Windows and will not work with certain memory drivers that may be loaded when you boot from your hard drive. It is recommended that you reboot using a floppy disk.

1. Download an updated BIOS file from the Internet (WWW or FTP) (see Contact Information).
2. Type **FORMAT A:/S** at the DOS prompt to create a bootable floppy disk. **DO NOT** copy **AUTOEXEC.BAT** & **CONFIG.SYS** to the floppy disk.
3. Copy **PHLASH.EXE**, **PLATFORM.BIN**, and the original **BIOS** (from the support CD) and new **BIOS** (from the Internet) files to the just created bootable floppy disk.

Copying BIOS Update Files to the Hard Disk Drive

If you do not want to use a floppy disk or CD when updating the BIOS. You can copy **PHLASH.EXE**, **PLATFORM.BIN**, and **BIOS** files to your hard disk drive from the support CD or the Internet. When possible, ask your dealer where you can find the latest BIOS file on the Internet.

Updating BIOS with a Floppy Disk Drive



WARNING! Only update your BIOS if you have problems with your Notebook PC and you know that the new BIOS revision will solve your problems (read the BIOS release information provided on the download site before using). Careless updating can result in your Notebook PC having more problems!

1. Boot from the BIOS floppy disk you created earlier. **NOTE:** BIOS setup must specify “Floppy Drive” as the first item in the boot sequence. (see Boot Menu)
2. At the “A:\” prompt, type “**phlash/mode=3 xxxx.rom** (xxxx being the name of the BIOS file) and then press [Enter].



WARNING! If you encounter problems while updating the new BIOS, **DO NOT** turn off your system since this might prevent your system from booting up. Just repeat the process, and if the problem still persists, restore the original BIOS file from the support CD. If the Flash Memory Writer utility was not able to successfully update a complete BIOS file, your system may not be able to boot up. If this happens, your system will need servicing.

3. The PHLASH utility will automatically update the BIOS. When the BIOS has been successfully programmed, you will be asked to press any key to power OFF the Notebook PC.
4. Assuming that you have successfully flashed the BIOS, power ON the Notebook PC and press [F2] on system bootup to enter the BIOS setup. Select the “Load Setup Defaults” on the “Exit” menu and then [Enter]. Go back to the other menus if you require BIOS configuration changes (previous BIOS settings are lost after updating the BIOS). Then select “Exit Saving Changes” to exit the BIOS setup. If the screen resolution has changed after you restart the Notebook PC, change your “Screen area” according to the Driver and Utility User’s Manual.

Updating BIOS From the Hard Disk Drive

NOTE: If you use Windows 2000/NT4.0 without a floppy disk drive, you will not be able to upgrade your BIOS.

1. **Windows 95/98:** Turn ON your Notebook PC and press [F8] before the Windows screen appears. Choose the option “**Command prompt only**”.
Windows ME: Use the Windows Recovery CD or operating system CD to boot from the CD-ROM drive and enter MS-DOS mode.
2. At the “C:\” prompt (where the BIOS update files are located), type “**phlash/mode=3 xxxx.rom** (xxxx being the name of the BIOS file) and then press [Enter].

Modem Communication Regulations

FCC Regulations

The following statements are provided in accordance with the Federal Communications Commission (FCC) regulations. Please read these statements carefully before installing your modem.

FCC Part 68 Requirements

This equipment complies with Part 68 of the FCC Rules. On the bottom of this equipment is a label that contains, among other information, the FCC Registration Number and Ringer Equivalence Number (REN) for this equipment. If requested, this information must be given to the telephone company.

The REN is used to determine the maximum number of devices connected to your telephone line that will ring in response to an incoming call. In most, but not all, areas, the total REN of devices connected to a line should not exceed five (5.0). To find out the total permitted in your area, contact your local telephone company.

If your telephone equipment causes harm to the telephone network, the telephone company can discontinue your service temporarily. If possible, the company will notify you in advance. But if advance notice isn't practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC.

Your telephone company can make changes in its facilities, equipment, operations, or procedures that could affect the operation of your equipment. If so, you will be notified in advance so you can make the changes needed to maintain uninterrupted service.

If you experience trouble with this equipment, please contact the manufacturer at the address given in this manual. The telephone company may ask that you disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning.

This equipment may not be used on public coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

Modem Declaration Of Conformity

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio and television reception, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING! CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT

Canadian Department Of Communications (CDOC):

Notice: The Canadian Department of Communications label identifies certified equipment. This certification means the equipment meets certain telecommunications network requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment users should ensure that connection to the line is allowed by the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a telephone extension cord. Compliance with the above conditions may not prevent degradation of service in certain situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

WARNING! Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

