



*6642 Pen Computer*

**TECHNICAL  
REFERENCE**



**P/N: 978-054-007**  
*Revision A*  
*May 2000*

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# Section 1

## Introduction



The material presented in this publication provides technical reference for the 6642 pen Computer and is intended for experienced application programmers and information systems engineers.

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### ***Related Publications***

Use the following manual for hardware components, maintenance, and troubleshooting information:

- ▶ *6642 Computer User's Guide* (P/N: 961-054-019)

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### ***About the Book***

The following shows how this publication is structured:

- ▶ **Section 1 — Introduction**  
Introduces the 6642 Computer, provides tips for installation, reprogramming flash memory, setting up for development, and identifies some development environments and resources.
- ▶ **Section 2 — CMOS Setup Options**  
Contains set up pages that include integrated peripherals, caches, passwords, power-on modes, etc.
- ▶ **Section 3 — Toolkit for the 6642 Computer**  
Lists various toolkit drivers, from video support to pen services. Each driver is defined and includes sample configurations.

- ▶ **Section 4 — Desktop Applications**  
Covers the two pen services supported by the 6642 Computer, defines the features of the Battery Gauge application, and lists radio components available on the 6642 Toolkit.
- ▶ **Section 5 — Recovery Procedures**  
Defines how to do a BIOS system recovery, reimage the 6642 Computer, and clone an image for multiple system recoveries.



## Indicator LEDs

To the right of the display are three two-color light emitting diode (LED) indicators which indicate the status of the external power, main battery and hard disk drive. Keep in mind the LEDs only work when the 6642 Computer is turned on.

The *top* LED is for the external power. Below are its conditions and meanings:

- ▶ **Off** System is off or in suspend to disk mode.
- ▶ **Steady Green** 6642 Computer is running off external power.
- ▶ **Steady Red** 6642 Computer is turned off and is in suspend to RAM mode.

The *middle* LED is for the main battery. Below are its conditions and meanings:

- ▶ **Off** 6642 Computer is running off of battery power.
- ▶ **Steady Green** Main battery is fully-charged, running, or on charge power.
- ▶ **Steady Red** Main battery voltage has dropped and capacity is very low.

The *bottom* LED is for the hard disk drive. Below are its conditions and meanings:

- ▶ **Blinking Green** 6642 Computer is accessing the hard disk drive.

## **Customer Support**

Customer Support's on-going objective is to provide quality support to all of our customers worldwide.

### **Factory Service**

If your unit is faulty, you can ship it to the nearest authorized Service Center for factory-quality service. The addresses and telephone numbers are included in the Warranty Card shipped with your product.

### **Customer Response Center**

The Customer Response Center (technical support) telephone number is 800-755-5505 (U.S.A. or Canada) or 425-356-1799. The facsimile number is 425-356-1688. Email is *support@intermec.com*.

If you email or fax a problem or question include the following information in your message: your name, your company name and address, phone number and email to respond to, and problem description or question (the more specific, the better). If the equipment was purchased through a Value-Added Reseller please include that information.

### **Web Site**

The Customer Support File Libraries, including Hot Tips and Product Awareness Bulletins, are available on the Internet. New users start at the Intemec web site: *www.intermec.com*. Choose "Support," then "Product Support," then "Conference Area." Look on the main page for a link to register new customers.

A PDF version of this manual will be available at this address *http://www.intermec.com/manuals/english.htm* or

select “Products” → “Manuals” → “English” from the home page.

## ***Bulletin Board Service***

The Customer Support Bulletin Board (BBS), maintained by the Norand pen Systems Division of Intermec Technologies Corporation, provides software and documentation:

- ▶ **Phone number:** 319-369-3515 (14.4 Kbps modem)  
319-369-3516 (28.8 Kbps modem)
- ▶ **Protocol:** Full duplex, ANSI or ANSI-BBS; 300 to 28,800 bps; v.32bis; 8 bits, no parity, 1 stop bit. *For high-speed modems, disable XON/XOFF and enable RTS/CTS.*

This is the same location available via the web site. If your web access uses high-speed phone lines, the web interface provides a faster response.



## Section 2

# CMOS Setup



Press the <↓> key from the keypad or <2> when prompted to do so to access the “PhoenixBIOS Setup Utility” window. Use this window to configure adapters, integrated peripherals, passwords, and power management.

This section defines each of the parameters within the “PhoenixBIOS Setup Utility” window.

---

## *Navigating the CMOS Setup*

You can navigate within the CMOS setup using either the keypad or external keyboard.

### *Using the Keypad*

- ▶ Press the ← or → keys to move between pages.
- ▶ Press the ↑ or ↓ keys to move between setup fields.
- ▶ Press the space bar or [+ ] key to increment a value.
- ▶ Press the hyphen [- ] key to decrement a value.
- ▶ Press **[Enter]** to choose the value from a pop-up menu or to accept the highlighted value.
- ▶ If a field is preceded with an ► arrow, select that field, then press **[Enter]** to access its submenu.
- ▶ If you are in a submenu, press the **[Esc]** key to return to the original menu.

## Main

The “Main” menu of the CMOS window configures the system time and date, drives, and cache.

System time	Sets the time of day. Initial value is 00:00:00.
System date	Sets the date. Initial value is 1988/01/01.
Diskette A	This option is used to set FDD use.
Options: Auto	Not installed
Primary Master	Specifies the primary HDD type.
Primary Slave	Specifies the secondary HDD type.
Secondary Master	Specifies the third HDD type.
Secondary Slave	Specifies the fourth HDD type.

- ▶ **System Time:**  
Set the system time in the HH:MM:SS format. Use the tab key to move between the hour, minute, and second fields.
- ▶ **System Date:**  
Set the system date in the MM/DD/YYYY format. Use the tab key to move between the month, day, and year fields.
- ▶ **Diskette A:**  
Selects the floppy drive type as either “Not Installed” or “1.44 MB, 3?” with the 6642 Pen Computer supporting a 1.44 MB floppy.

- ▶ **Primary Master:**  
Configures the Hard Disk Drive (HDD). To enter HDD parameters manually, select “User.” To have HDD parameters set automatically, select “Auto” (*default*). Select “None” to disable the HDD. The CD-ROM and ATAPI Removable options are available for the 6642 Computer.
  
- ▶ **Primary Slave:**  
(*Submenu — press [Enter] to access.*) Configures the primary slave IDE adapter with the same options as under **Hard Disk Type**. Set **Primary Slave** to “None.”

***Press the [Esc] key to return to the “Main” menu.***

## Advanced

The “Advanced” page lets you modify peripherals, display, and operating system features.

COM Port	Sets the internal serial port. The internal values are set as follows: COM Port=Enabled Base I/O address=3F8 Interrupt=IRQ4
IR Port	Sets the internal IR port. The initial values are set as follows: IR Port=Enabled Mode=FIR Base I/O address=2F8 Interrupt=IRQ3 DMA Channel=DMA1
LPT Port	Sets the internal printer port. The initial values are set as follows: LPT Port=Enabled Mode=Bidirectional Base I/O address=378 Interrupt=IRQ7
Memory Cache	Specifies whether cache memory is enabled or disabled. Menu options: Enabled
Installed O/S	Specifies the PnP function of the OS Options: Other, ACPI O/S
USB Virtualizer	The USB virtualizer allows the use of the USB keyboard on DOS. Menu options: Enabled.



**COM Port:**

Enables (*default*) or disables COM port options.  
Auto (if selected), allows the BIOS or OS to choose the port configuration.

**► Base I/O Address (3F8):**

Enables or disables the RS-232C serial port for use (*Default is enabled*) and displays the **Base I/O address** which can be modified.

Options are 2E8, 2F8, 3E8, 3F8.

**► Interrupt:**

This port is enabled by default at “3F8 IRQ4” and its base I/O address can be modified. (Options are IRQ3 or IRQ4).

**► IR Port:**

This port is enabled at “3E8 IRQ3” and can be modified.

**Mode:**

FIR (*default*)

Sets the mode of the IR port--FIR  
Normal, IrDA, ASK-IR

**Base I/O address:** 378 (*default*), 278, 3BC

**Interrupt:** IRQ3 (*default-FIR*), IRQ4

**DMA Channel:** DMA1 (*default-FIR*), DMA3

- ▶ **LPT Port:**  
Enables or disables (*default*) the use of the printer and parallel floppy port.

- ▶ **Mode:**  
Sets the mode of the LPT port — Output only, Bidirectional (*default*), EPP, or ECP.

- ▶ **Base I/O address:** 378 (*default*), 278, 3BC

- ▶ **Interrupt:** IRQ5, IRQ7

**Bidirectional (PS/2)**, a standard interface for communicating between the PC and attached devices using the PS/2 mode.

**Enhanced Parallel (EPP)**, a parallel port standard for PCs that supports bidirectional communications. EPP is good for links that change directions frequently, such as drives.

**Extended Capabilities (ECP)**, a parallel port standard for computers similar to the EPP. ECP is good for transferring large data blocks quickly, such as printers.

*Note EPP and ECP are about ten times faster than the older Centronics standard.*

- ▶ **Memory Cache:**  
Enables (*default*) or disables memory cache function.
- ▶ **Installed O/S:**  
Use the Enter key to select the operating system used on the 6642 Pen Computer. *Be sure to select the correct operating system, or some features may display unexpected behavior.* The available operating systems include: “PnP O/S” — “ACPI O/S” or “Other” — such as Unix.
- ▶ **USB Virtualizer:**  
When enabled, allows legacy support for USB devices.

## Security

This menu configures passwords and security functions.

Set Supervisor Password	Sets the supervisor password. The initial setting is “no password”.
Set User Password	Sets the user password. System enters BIOS setup with password set.
Password on boot	Sets system request for password on boot. The initial setting is “Disabled”.
Power Management Security	Sets system request for password on returning from Suspend to Disk. The initial setting is “Disabled”.
Diskette Access	Controls access to diskette drive via password.
Fixed disk boot sector	Write protects boot sector on hard disk to protect against viruses. The initial setting is “Normal” (Enabled).

- ▶ **Set Supervisor Password**  
The supervisor password controls access to the setup utility. To disable the supervisor password, press **[Enter]** when prompted for the password. If this password is disabled, **User Password** is also disabled.
- ▶ **Set User Password**  
Allows access to the user password and displays whether the user password is enabled, giving restricted access to setup menus.
- ▶ **Password on boot:**  
When enabled, you must enter a User or Supervisor password at the end of POST or the system is disabled. This field is “Disabled” by default.

- ▶ **Diskette access:**  
(Applicable if passwords are used.) Specifies who can have access to the floppy disk drive, “Supervisor” or “User.” (Default is Supervisor)
- ▶ **Fixed disk boot sector:**  
Defines whether the boot sector of the HDD is write-protected from viruses. When formatting HDD or re-installing software, set this to “Normal” (default). To guard against viruses, select “Write Protect.”

## Power

The “Power” menu configures power management methods and suspend mode.

Power Switch	Sets the action of the power switch. Menu options: On-Off, Suspend-Resume, On-Only. The initial setting is On-Only.
Power Management	Enables or disables system power management modes.
Hard Disk Power Down After	Specifies the amount of time the hard disk needs to be inactive before it is turned off. Initial setting is Disabled.
Video Power Down After	Amount of time the user input devices need to be inactive before the screen is turned off. The initial setting is “Disabled”.
Suspend Mode	Sets the suspend mode for power off.
Auto Suspend After	The amount of time the system needs to be in Standby mode before entering Suspend mode.
Resume On Modem Ring	When enabled, wakes the system up when an incoming call is detected on the modem. The initial setting is “Disabled”.
LCD Backlight Brightness	Sets the initial brightness value of the LCD backlight. The initial setting is “Auto”.

- ▶ **Suspend Mode:**  
Sets the type of suspend performed during user-initiated suspend — “Suspend to RAM” — save state but remain in low power mode (*default*) or “Suspend to Disk” — save state to disk and power off.
- ▶ **Resume on Modem Ring:**  
Defines whether the system resumes from the “Suspend to RAM” mode when the modem receives a call. (*Default is disabled*)

## Boot

Use this page to set the order in which the 6642 Computer attempts to boot from bootable devices. Removable devices include virtual flash, parallel, and USB floppies.

PCMCIA Boot	Sets whether PCMCIA device boot is supported or not. Menu options: Enabled.
Boot Device Priority	Specifies boot device priority among devices. The devices include: [PCMCIA-SRAM or Diskette Drive] [PCMCIA-ATA or Hard Drive] the boot device is searched in the order of set devices. Default example: “PCMCIA Boot” enabled “Boot Device Priority: [PCMCIA-SRAM or Diskette Drive] [PCMCIA-ATA or Hard Drive] [ATAPI CD-ROM Drive] Result: the boot device is searched in the following order: PCMCIA-SRAM → FDD → PCMCIA-ATA → □□□ → □□□□□□

## Exit

This page shows how the system is to exit CMOS setup.

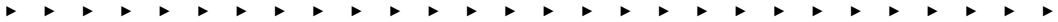
Exit Saving Changes	Exit System setup and save your changes in CMOS.
Exit Discarding Changes	Exit utility without saving Setup data to CMOS.
Load Setup Defaults	Load default values for all SETUP items.
Discard Changes	Load previous values from CMOS for all SETUP items.
Save Changes	Save SETUP data to CMOS.
Save Changes & Power Off	Save SETUP data to CMOS and turn off system power.
Discard Changes & Power Off	Discard your changes and turn off system power.

- ▶ **Exit Saving Changes:**  
Exits system setup and saves your changes to CMOS.
- ▶ **Save Changes and Shutdown:**  
Exits system setup, saves your changes to CMOS, then shuts down the system.
- ▶ **Exit Discarding Changes:**  
Exits the utility without saving Setup data to CMOS.
- ▶ **Load Setup Defaults:**  
Loads default values for *all* Setup items.
- ▶ **Discard Changes:**  
Loads previous values from CMOS for all Setup items.
- ▶ **Saves Changes**  
Saves Setup data to CMOS.



## **Section 3**

# ***Toolkit for the 6642 Computer***



This section deals with how software, drivers, and tools are created, supported, and packaged for the 6642 Pen Computer.

The Toolkit contains Windows resources for configuration, power management, communications, and peripherals.

The files and documentation in the Toolkit are available to purchasers of the 6642 Computer, who hold a Windows 98 license through Intermec Technologies Corporation.

The 6642 Computer, as shipped from the factory, has loaded the boot media with Windows 98. This also includes all Windows 98 installation files typically shipped on a Windows 98 CD.

The Toolkit does not include application software. Obtain the software from Intermec Systems and Solutions Division, from third-party suppliers, or design your own.

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## 6642 Toolkit Set Up

The Toolkit contains the following drivers and utilities that are factory-installed on the 6642 Computer, unless otherwise noted. Most components are optional (and noted) and can be installed via the toolkit utility found on the CD and are part of the default hard drive load.

► **NOTE:**

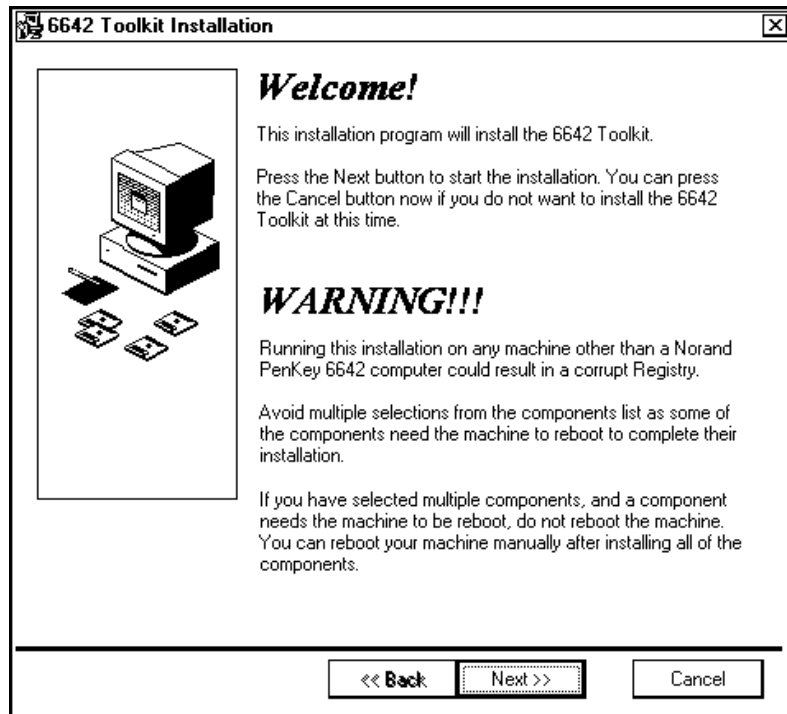
*If you need to do a manual installation of any of these components, locations for drivers or installation files are provided.*

- **Pen Installation**
- **PenX Recognition Services**
- **APM Guard Driver**
- **Create Recovery Media** (*Optional*)
- **Battery Gauge**
- **802.11 DS Radio Driver**

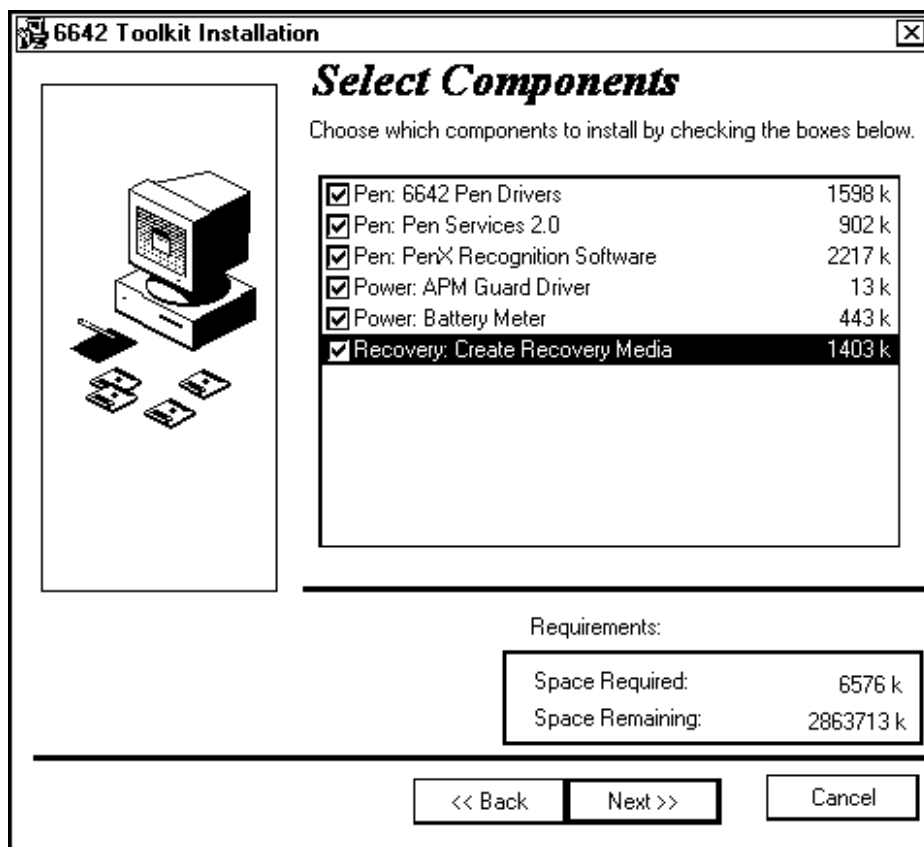
## Installing Toolkit Components

Components can be loaded into the 6642 Computer via the 6642 Toolkit using the “Wise Installation Wizard” application. We recommend that each component be loaded separately to ensure the 6642 Computer is set properly for that component.

1. Double-click the **My Computer** icon to access the source directory, then double-click that source directory, such as the C: drive.
2. Double-click the **Drvsetup** folder, then double-click the **Drvsetup** icon (shown left) to access the “6642 Toolkit Installation” window. Read the information provided, then click the **Next** button to continue.



- Use the “Select Components” window to select which component to load onto your 6642 Computer, then click the **Next** button to continue. See next page for executables and pages with additional information about these components.

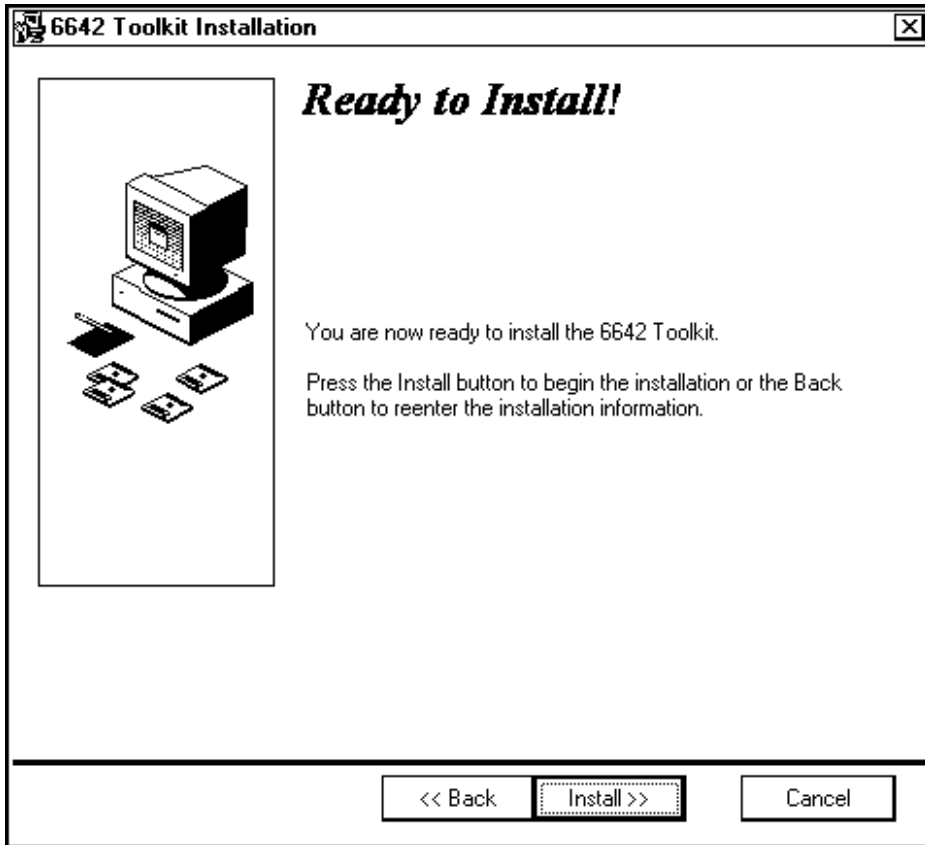


Below is a list of executables that go with each of the components listed in the “Select Components” window.

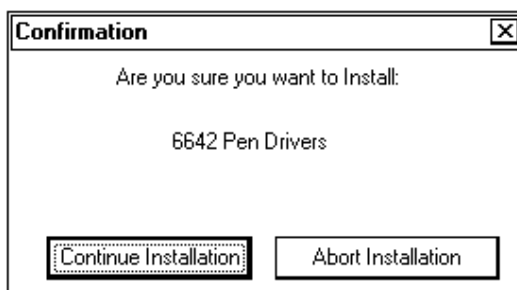
*Table 3-1*  
**Component Executables**

<b>Components</b>		<b>Executable</b>
Pen:	Drivers	PEN.EXE
	Microsoft Pen Windows 2.0	6642PEN.EXE
	PenX Recognition Software	PENX.EXE
Power:	APM Guard Driver	APMGUARD.EXE
Recovery:	Create Recovery Media	MKFLOPPY.EXE
Power:	Battery Gauge	BATTMTR.EXE

4. Click the **Install** button in the “Ready to Install!” window to begin the installation.



5. Each of the components selected from the “Select Components” screen (page 3-4) is loaded separately. Before each component is loaded, a confirmation window appears to ensure that you do want that component installed. On the next page is a sample confirmation window with the component being loaded listed in the center:



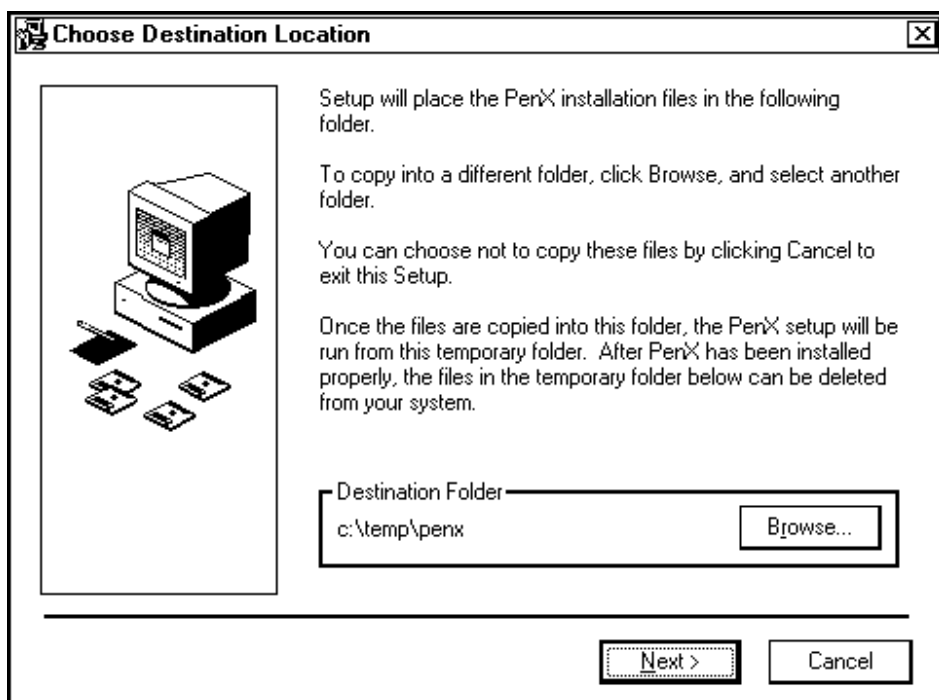
- ▶ If you decide not to load a component, click the **Abort Installation** button to move to the next component or to the end of the installation.
  - ▶ Click the **Continue Installation** button if you elect to continue loading that component onto the 6642 Computer.
6. The following screen may appear for some of the components selected. Select **Run the Installation Setup**, then click the **OK** button if you want to continue the installation.

If you want to do the installation another time, select **Copy the driver and setup files**, then click the **OK** button. A “Choose Destination Location” window appears for you to elect where to place these files.

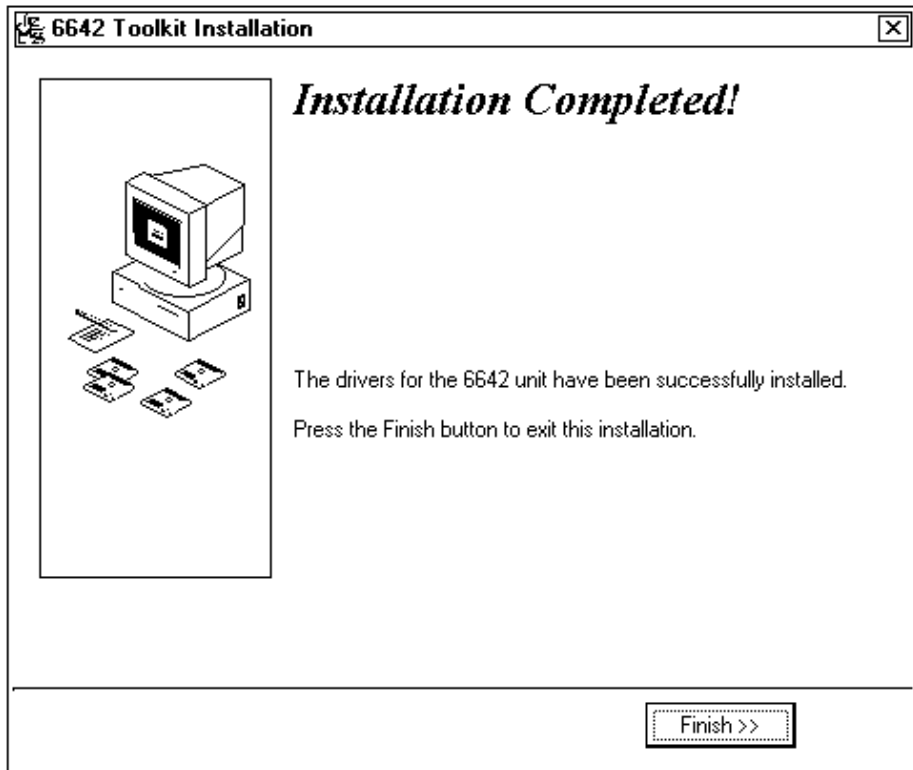
7. A default location is given in the “Choose Destination Location” window, use the **Browse** button if you want to change the location. Click the **Next** button to continue to the “Installation Complete” window.

## ***Completing the Installation***

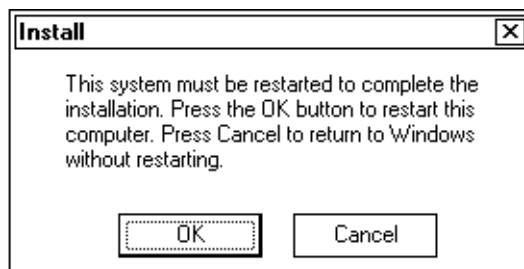
When the components are finished loading onto the 6642 Computer, an “Installation Complete” screen appears, like the sample on the next page. Click the **Finish** button to return to the desktop or to continue to reboot the 6642 Computer.







Some components, when loaded onto the 6642 Computer, will generate the following "Install" prompt. Click the **OK** button to reboot the system or click the **Cancel** button to load the next component.



## ***Setting Up the Driver***

You do need to reboot the 6642 Computer after you have completed these driver loads, to have these components work on the 6642 Computer.

Go to the page listed with each component to continue instructions for that component:

- ▶ Pen Drivers 3-11
- ▶ Microsoft Pen Windows 2.0 3-11
- ▶ PenX Recognition Services 4-1
- ▶ APM Guard Driver 3-21
- ▶ Create Recovery Media 3-22
- ▶ Battery Gauge 3-38

## **Loading Pen Drivers**

The Pen Drivers component loads pen drivers automatically into the 6642 Computer. When done, an “Install” prompt appears to remind you to reboot the 6642 Computer to update the configuration files (see page 3-9). Click the **OK** button to reboot the 6642 Computer, or click the **Cancel** button to return to the desktop.

If you clicked **OK** to reboot the 6642 Computer, the unit updates your system configuration files, prompts for your network password, then activates the “Pen Alignment Utility,” which opens to the recalibration page. Use your stylus to tap each of the four targets (crosshairs inside circles) three times.

If the calibration was successful, click the **Save** button on the next screen to return to the Windows desktop. If unsatisfactory (whether the touch does not work or is misaligned from what you expect), use your keyboard **<Tab>** key to move the cursor to the **Recalibrate** button and press **[Enter]** to redo the four calibration targets.

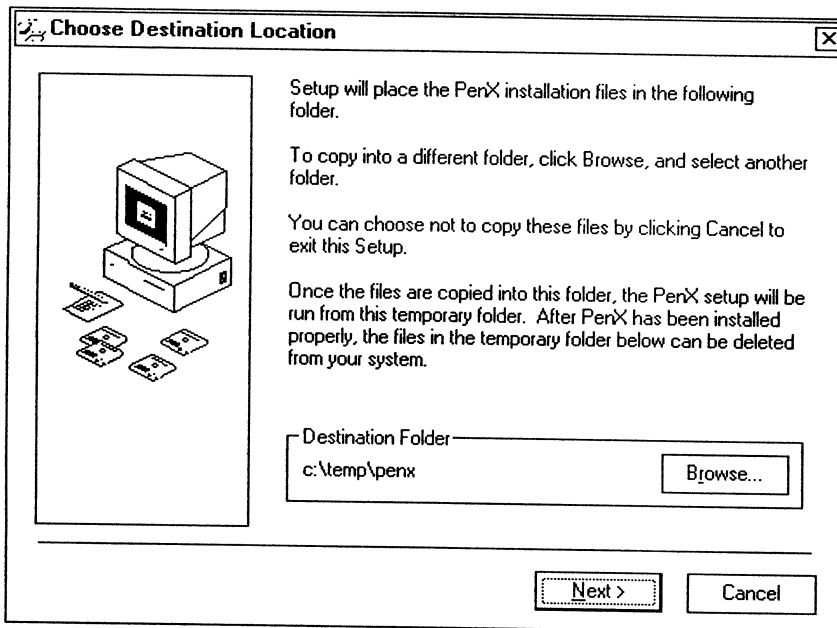
## **Loading Microsoft Pen Windows 2.0**

The Microsoft Pen Windows 2.0 component loads automatically into the 6642 Computer. When done, an “Install” prompt appears to remind you to reboot the 6642 Computer to update the configuration files (see page 3-9). Click the **OK** button to reboot the 6642 Computer, or click **Cancel** to return to the desktop.

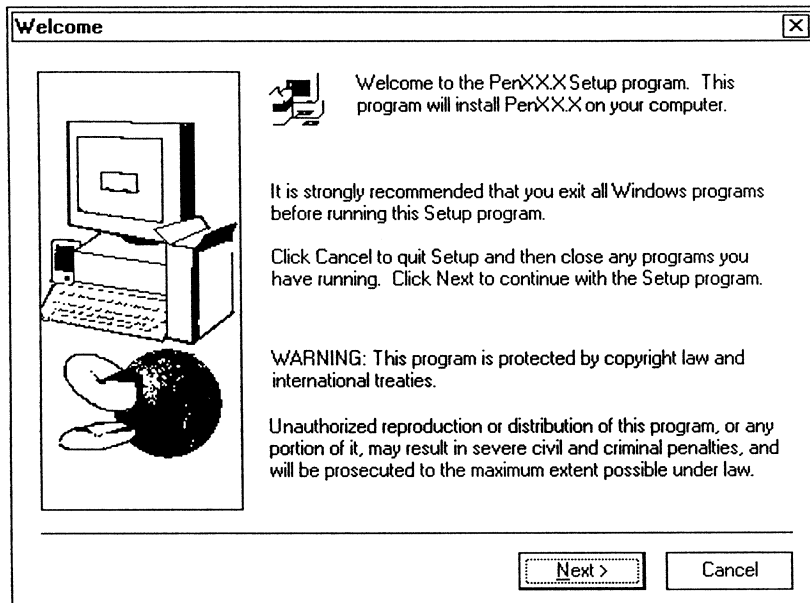
If you clicked **OK** to reboot the 6642 Computer, the unit returns to the Windows desktop. From the desktop, select **Start** → **Programs** → **Pen Services** to access the screen keyboard. Additional information is in Section 4.

If you do have a license for PenX Recognition, install the CIC PenX Recognition Software.

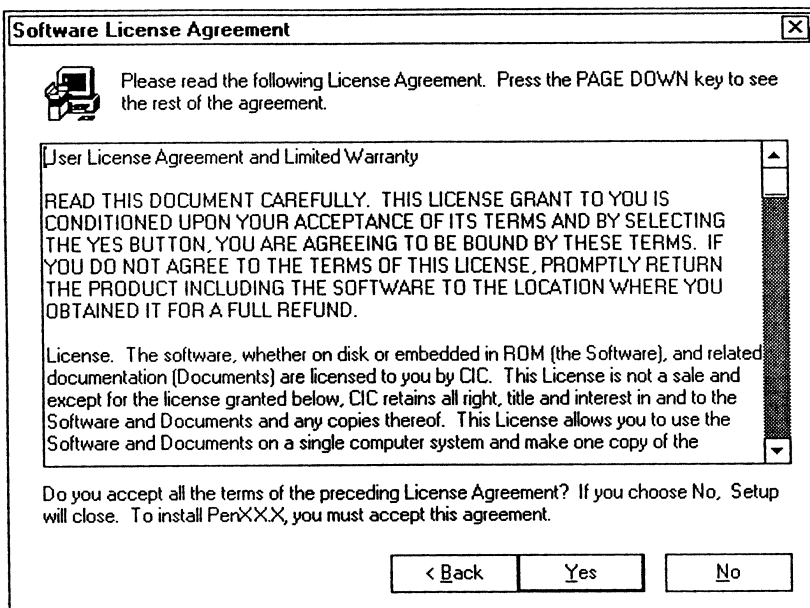
1. The PenX software files will go to a temporary location during the installation, then transfer to a more permanent location on the 6642. Click Browse to change the temporary location, if necessary, then click the **Next** button to start the installation.



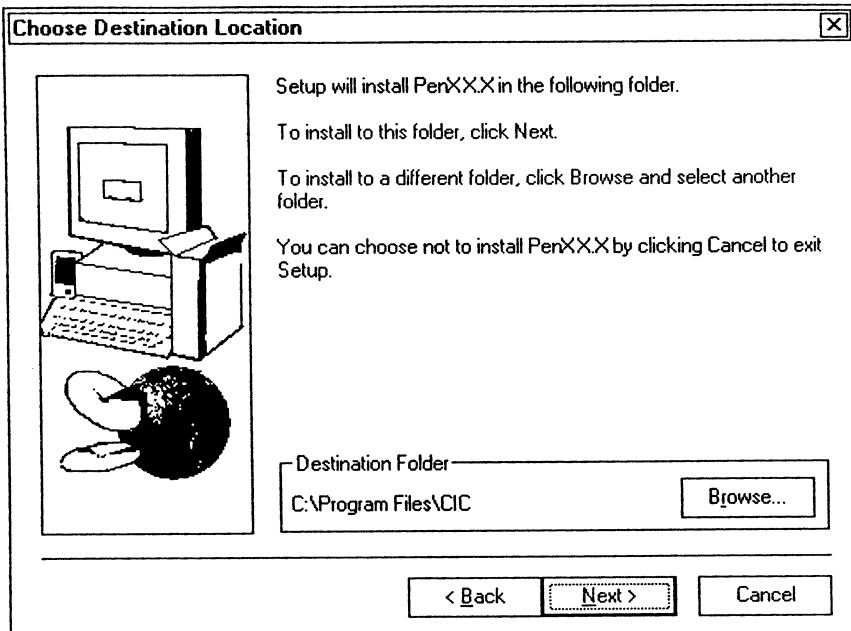
2. The “Welcome” screen lists a reminder about the need to shut down other Windows applications to ensure a successful installation. Do as instructed, then click **Next** to continue.



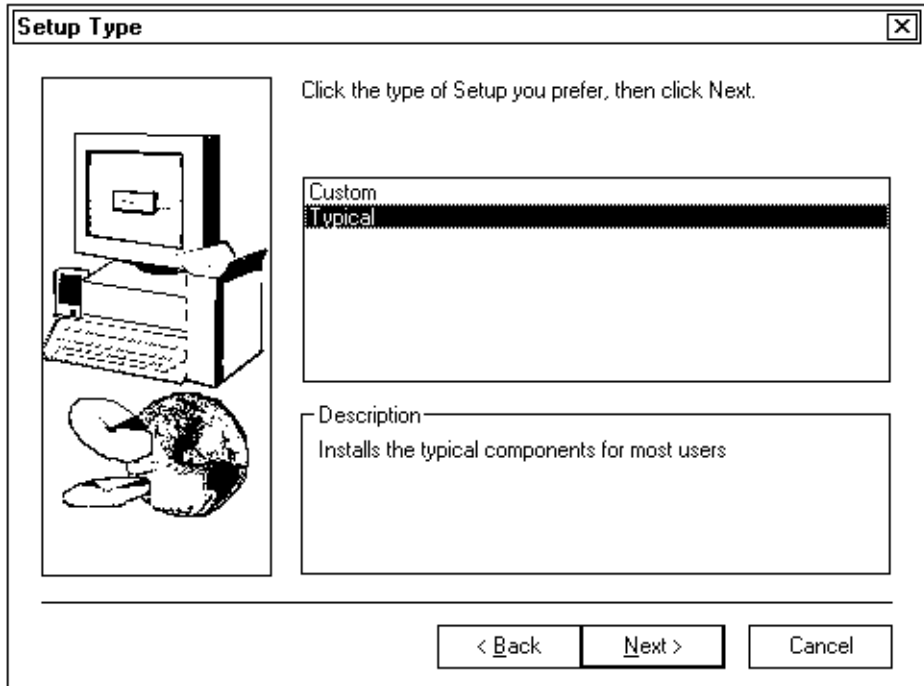
3. The following screen contains a standard license agreement, click the **Yes** button to agree to the license and continue the installation.



4. Click the **Browse** button to change the default “C:\Program Files\CIC” folder (or directory). Click the **Next** button to continue.

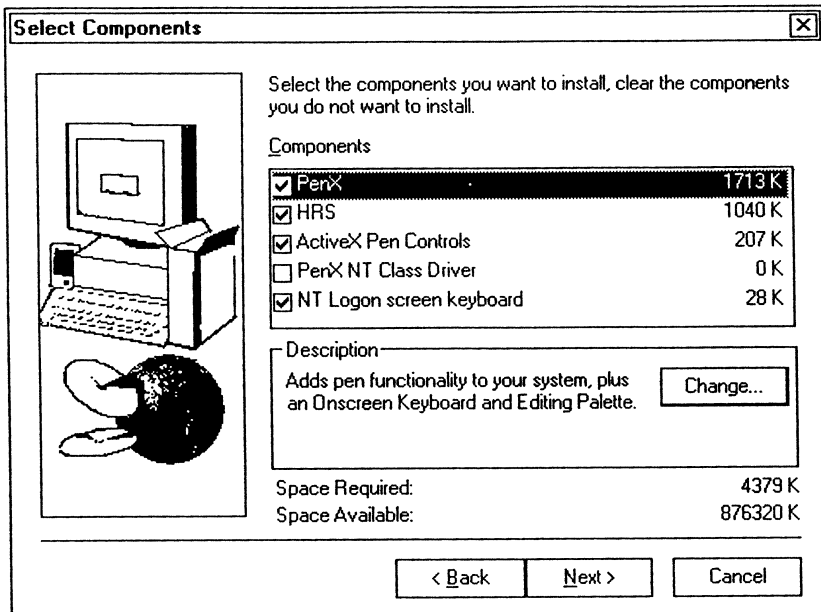


5. Use this screen to indicate whether this is to be a typical pen service (*default*) or a custom pen service. Click the **Next** button to continue. If you selected a typical installation, go to step 7.

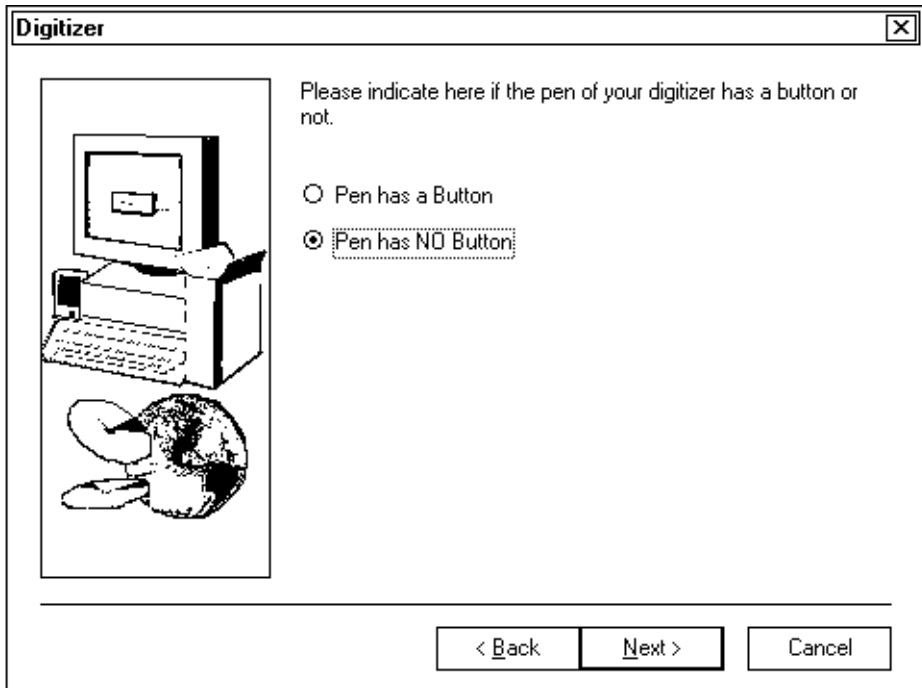




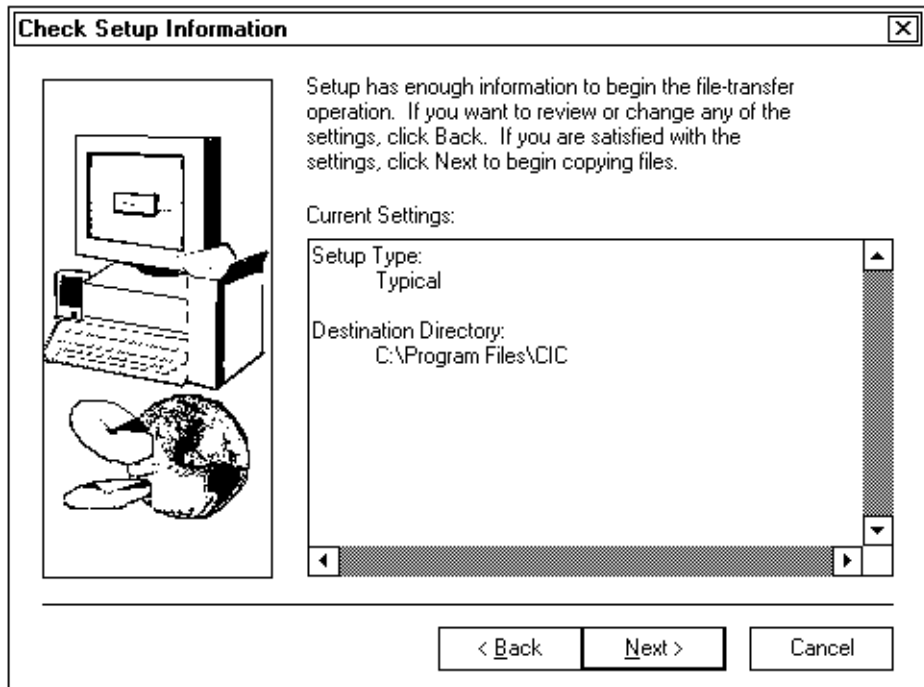
6. If you elected to have a custom installation, use the “Select Components” screen to specify what components are to be installed in the 6642 Computer. Click the **Next** button to continue.



- The next screen verifies whether your stylus pen has a button. Choose the **Pen has NO Button** option, then click the **Next** button to continue.

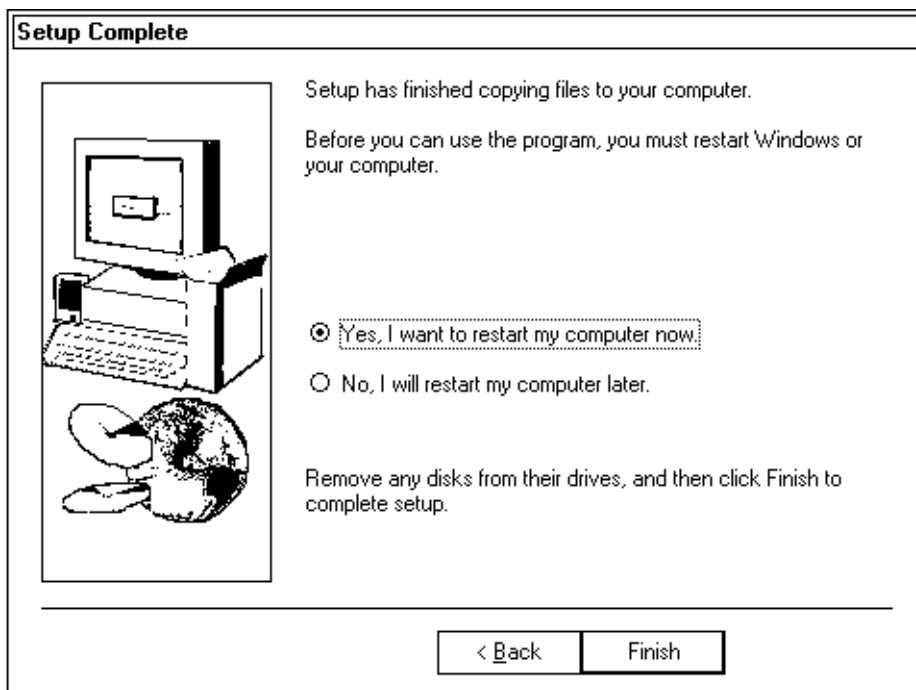


- The “Check Setup Information” screen prompts you to verify the settings assigned for the pen recognition service. Click the **Back** button to redo any of the settings, or click the **Next** button to finish the installation.



- The second “Setup Complete” screen prompts you to reboot the 6642 Computer to update the system properties. Select the **Yes** option, then click the **Finish** button to reset the computer.

If you want to reset the 6642 Computer at another time, select the **No** option, then click the **Finish** button to continue.



### ***Loading APM Guard Driver***

The APM Guard Driver component enables the proper functioning of Advanced Power Management (APM) devices.

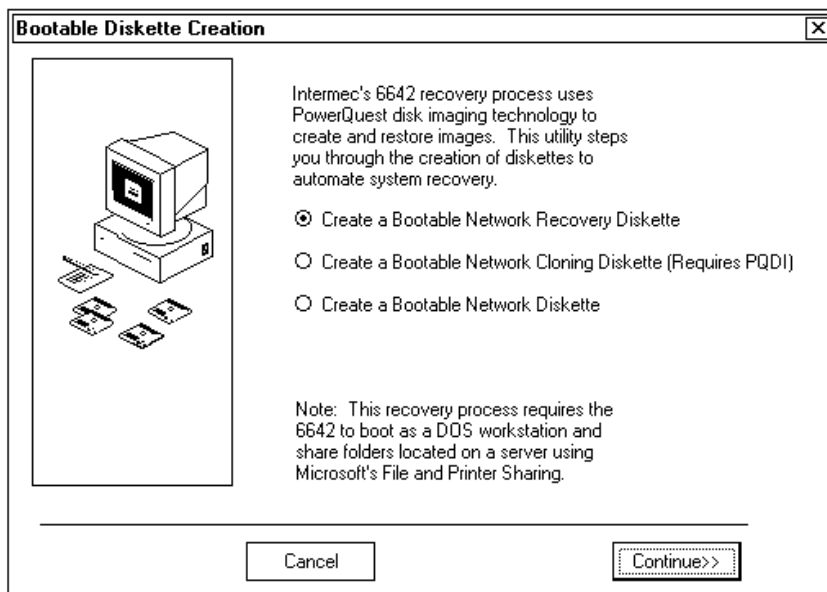
The APM Guard Driver is loaded automatically into the 6642 Computer, when done, an “Install” prompt appears (page 3-9) to remind you to reboot the 6642 Computer to recognize the new driver and to update the configuration files. Click the **OK** button to reboot the 6642 Computer, or click the **Cancel** button to return to the desktop.

## Setting Up to Create Recovery Media

The “Create Recovery Media” component lets you set up a recovery installation either to the floppy drive or to a temporary directory.

Use the “Bootable Diskette Creation” screen to select one of these three options, respectively, then click **Continue**. Click the **Cancel** button if you want to exit this component.

- ▶ Create a bootable network recovery disk on the floppy drive that uses PQR (PowerQuest EasyRestore) to reimage a hard drive (go to page 3-23).
- ▶ Create a bootable network cloning diskette using PQDI (PowerQuest Drive Image) for multiple custom imaging (go to page 3-29).
- ▶ Create a bootable network disk on the floppy drive (go to page 3-34).

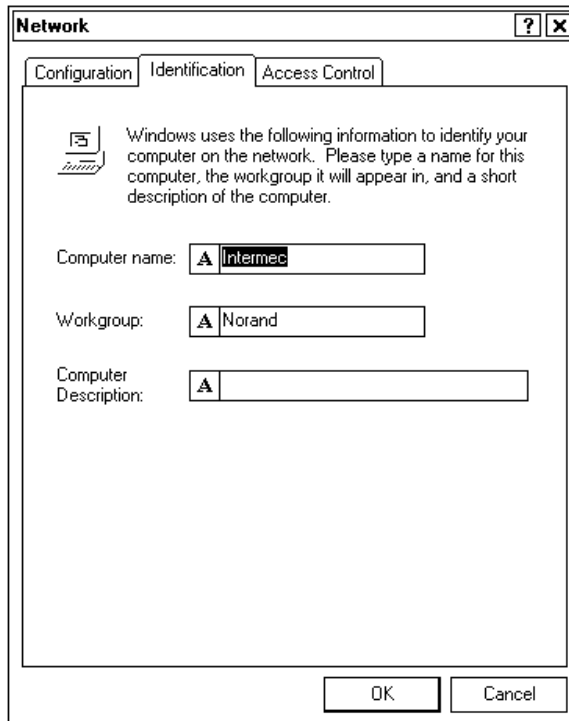


### Bootable Network Recovery Diskette

A compressed image of an entire hard drive can be stored in a single \*.PQI file. Power Quest EasyRestore (PQER) is the product that can take the \*.PQI file and restore the entire hard drive to a previous state, the state at which the \*.PQI file was made. Each 6642 Toolkit CD contains a .PQI file for the full image.



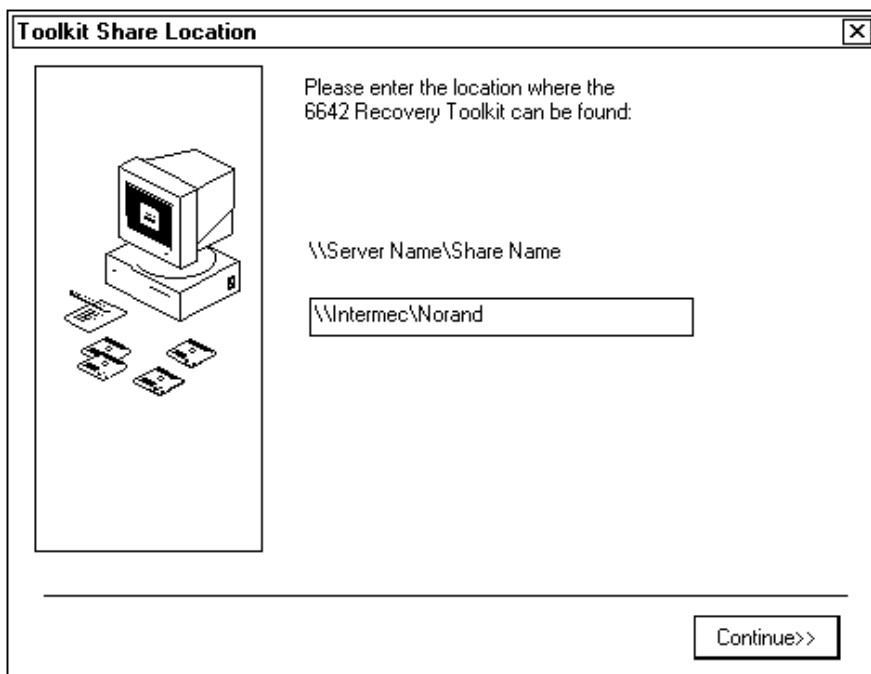
1. If you do not know the server name (computer name) of your 6642 Computer, select **Start** → **Settings** → **Control Panel** to access the “Control Panel,” then double-click the **Network** icon (shown left) to access the “Network” window. Click the **Identification** tab to access that information. Note the entry in the **Computer name** field. You will need this information for step 2 on the next page.



**► NOTE:**

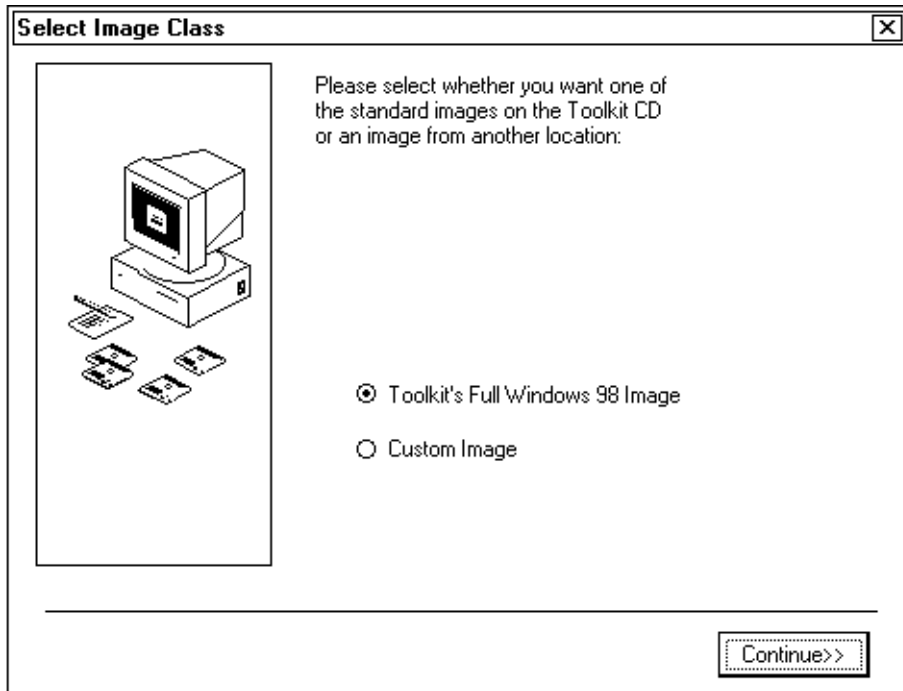
*It is recommended that you do not use a computer name or a share name with a space or a wild character, such as an asterisk (\*), a semicolon (:), or an exclamation point (!). These characters or a blank space may cause confusion.*

- Using the “\\Computer Name\Share Name” format, enter the server name (computer name) and share name, in the text field of the “Toolkit Share Location” screen, of the location where the 6642 Toolkit CD can be found, then click the **Continue** button.



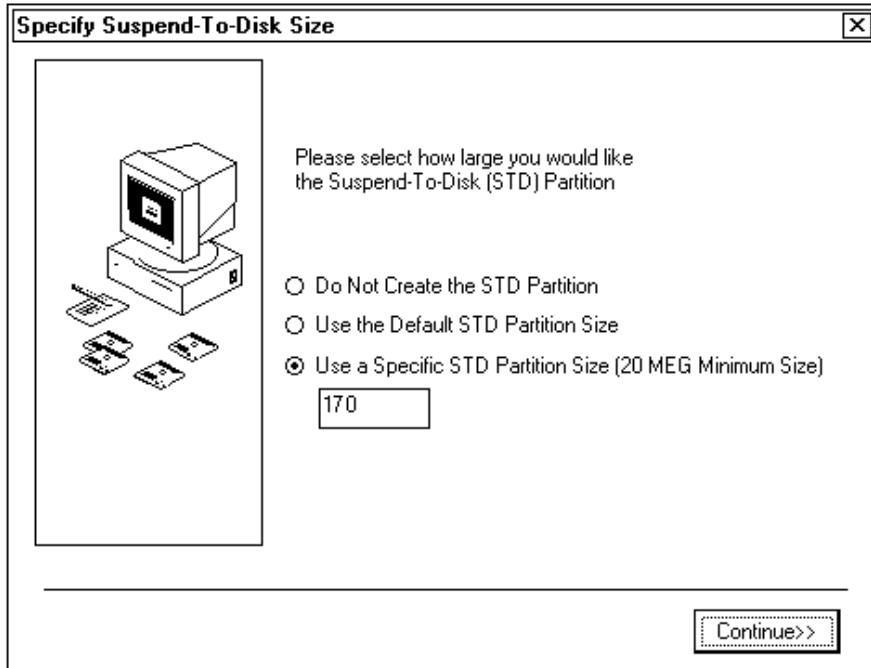


3. Use the “Select Image Class” screen to pick one of three recovery images to be restored, then click the **Continue** button:



- ▶ **Toolkit's Standard Windows 98 Image** Includes nonessential files such as most third-party Internet software, ISP setup utilities, MS Paint, screen saver images, games, help files, and multimedia files.
  - ▶ **Custom Image** This option allows you to use a .PQI file that is not on the 6642 Toolkit CD. Usually you can create a custom \*.PQI file to contain your application and configuration.
4. Use the “Specify Suspend-To-Disk Size” screen to *not* create a Suspend-To-Disk (STD) partition, go with the default STD partition size, or dictate a STD partition size, then click the **Continue** button.

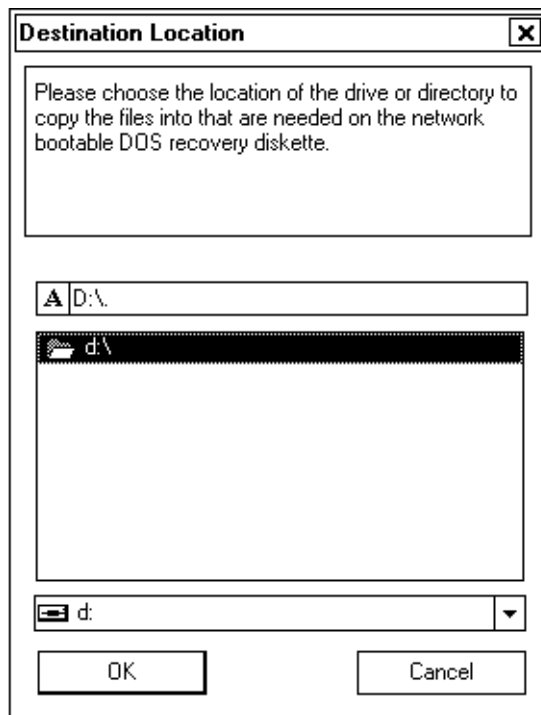
The **Use the Default . . .** option uses “phdisk/create” to create a STD partition. The size of the STD partition will vary depending on the size of RAM in the 6642 Computer being recovered. For example, if the 6642 Computer has 64 MB of RAM, the STD will be slightly larger than 80 MB.



5. If a floppy drive is attached, the “Destination Location” screen will default to drive A:. Use drive A: or the floppy disk drive to store the recovery. *For this example, the floppy disk drive is drive D:.* For a temporary C: drive location, use “C: \temp \recovery.” Click **OK** to continue.

► **NOTE:**

**Do not** use the C: drive as the destination directory as it will overwrite AUTOEXEC.BAT, MSDOS.SYS, and other system files.



6. After files are transferred to the location designated by the previous screen, the following completion screen appears with a caution against write-protecting the newly created recovery disk. Click the **Finish** button to exit, then click the **Finish** button on the “Installation Completed” screen (page 3-7) to return to the desktop.



**Bootable Network Cloning Diskette**

Images on the Toolkit CD are standard images for anyone that orders the Toolkit CD. You may want to install images on units that already have applications and custom configurations loaded. Then use “PQDI” to create a custom image. Once the custom image is created, you can install the custom image on other 6642 Computers and have applications and settings installed at that time.

“PQDI” captures the entire content of a drive partition and stores it in a file. When “PQDI” restores the partition to a drive, the drive must have enough free space available for the partition to fit. This is so “PQDI” can expand a partition to fill the remaining free space, but “PQDI” cannot shrink a partition.

When choosing a 6642 Computer to create a custom image, choose the computer with the smallest hard drive and largest STD partition. This will ensure that the image fits without problems; or use “partition magic” to shrink the main partition before using “PQDI” to create the image.

The “Network Cloning Diskette” option allows you to create one floppy diskette. Using the same diskette, you can boot a 6642 Computer and create an image of the hard drive on the network. Once the image is created, you can take the same diskette and place it in another 6642 Computer and recover the unit, using the custom image just created on the network.



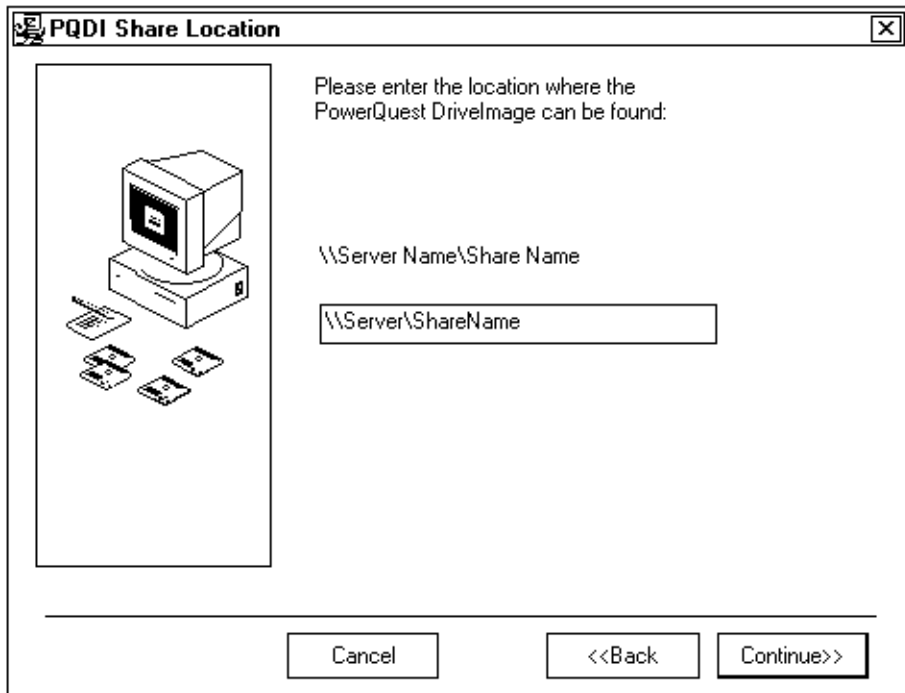
To create the custom image for cloning:

1. If you do not know the server name (computer name) of your 6642 Computer, select **Start** → **Settings** → **Control Panel** to access the “Control Panel,” then double-click the **Network** icon (shown left) to access the “Network” window (shown on page 3-23). Click the **Identification** tab to access that information. Note the entry in the **Computer name** field. You will need this information for step 2 on the next page.

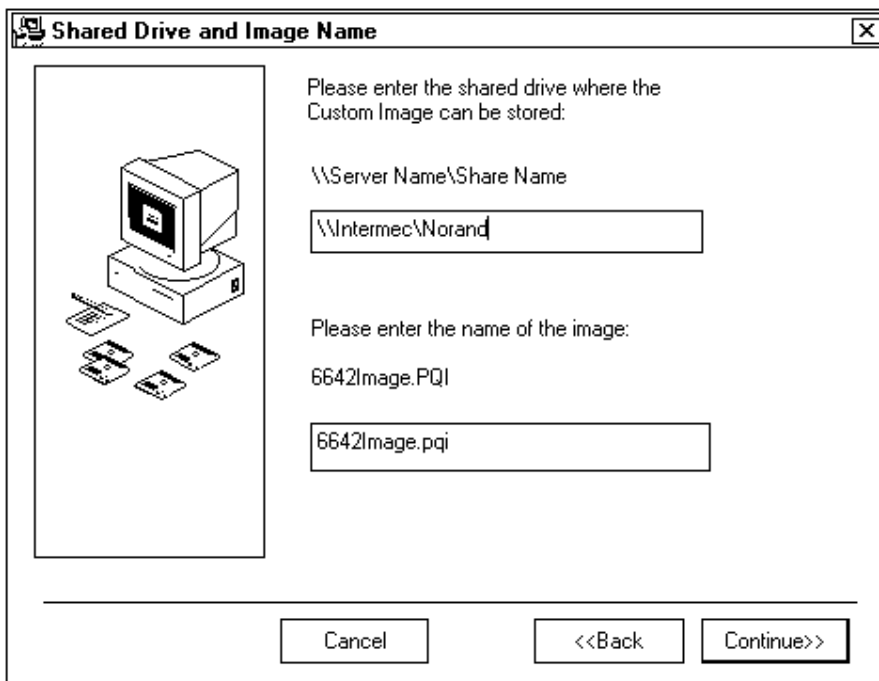
► **NOTE:**

*We recommend that you avoid a computer name or a share name with a space or a wild character, such as an asterisk (\*), a semicolon (;), or an exclamation point (!). These characters or a blank space may cause unpredictable results.*

- Using the “\\Server Name\Share Name” format, enter the server name (computer name) and share name of the location where the 6642 Toolkit CD can be found in the text field of the “PQDI Share Location” screen, then click **Continue**.



- Using the “\\Computer Name\Share Name” format, enter the server name (computer name) and share name of the location where the custom 6642IMAGE.PQI image file can be stored, then click the **Continue** button.



- Use the “Specify Suspend-To-Disk Size” screen (shown on page 3-25) to either *not* create an STD partition, or to dictate the size of the suspend-to-disk partition, then click the **Continue** button.

The **Use the Default . . .** option uses “phdisk/create” to create a STD partition. The size of the STD partition will vary depending on the size of RAM in the 6642 Computer being recovered. For example, if the 6642 Computer has 64 MB of RAM, the STD will be slightly larger than 64 MB.



5. If a floppy drive is attached, the “Destination Location” screen will default to drive A:. Use drive A: or the floppy disk drive to store the recovery. *For this example, the floppy disk drive is drive D:.* For a temporary C: drive location, use “C:\temp\recovery.” Click **OK** to continue.

► **NOTE:**

*Do not use the “C:\” root directory as the destination directory because it will overwrite AUTOEXEC.BAT, MSDOS.SYS, and other system files.*

6. After files are transferred to the location designated by the previous screen, the following completion screen appears with a caution against write-protecting the newly created recovery disk. Click the **Finish** button to exit, then click the **Finish** button on the “Installation Completed” screen (page 3-7) to return to the desktop.



**Bootable Network Diskette**

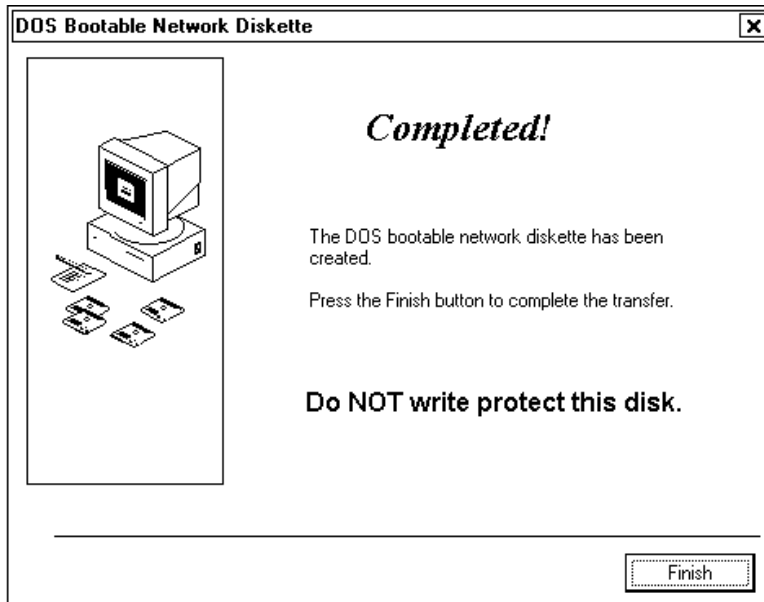
The 6642 Computer can use this disk to boot up to DOS and connect to a server, providing the Microsoft “File and Printer Sharing” function is enabled (see page 3-36).

1. If a floppy drive is attached, the “Destination Location” screen (shown on page 3-27) will default to drive A:. Use drive A: or the floppy disk drive to store the recovery. *For this example, the floppy disk drive is drive D:.* For a temporary C: drive location, use “C:\temp\recovery.” Click **OK** to continue.

**► NOTE:**

**Do not** use the “C:\” root directory as the destination directory because it will overwrite *AUTOEXEC.BAT*, *MSDOS.SYS*, and other system files.

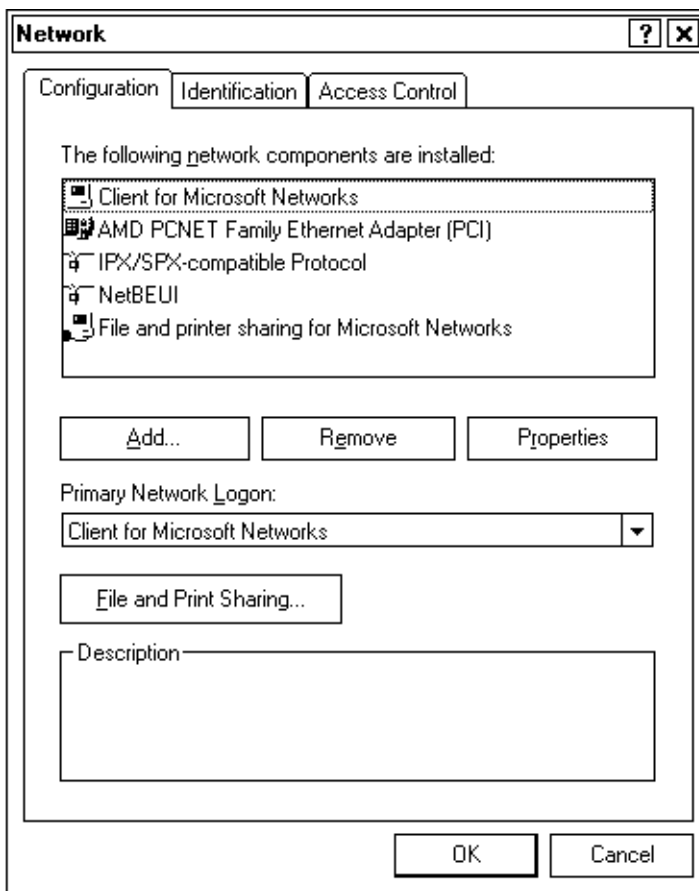
2. After files are transferred to the designated location, the following completion screen appears with a caution. Click the **Finish** button to exit, then click the **Finish** button on the “Installation Completed” screen (page 3-7) to return to the desktop.



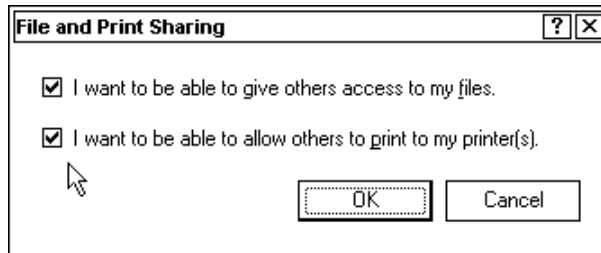
To set up a server to share a 6642 Toolkit CD for recovery, you must enable “Microsoft File Sharing:”



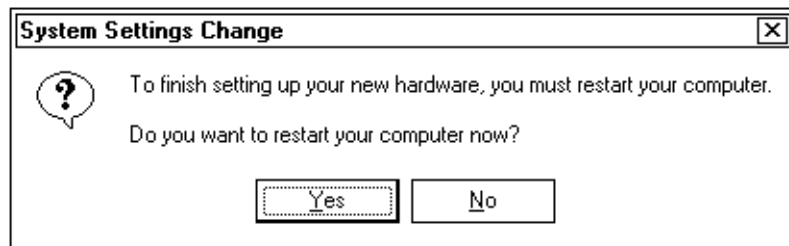
1. From the Windows desktop, select **Start** → **Settings** → **Control Panel** for the “Control Panel” window. Double-click the **Network** icon (shown left) to access the “Network” window.
2. Check the “Configuration” page for the “File and printer sharing for Microsoft Networks” component. If the component is listed, click **OK** to exit the “Network” window. If not, do step 3 on the next page:



3. Click the **File and Print Sharing** button to access the “File and Print Sharing” window. Ensure that both boxes are checked. If not, check both boxes, then click the **OK** button to save and return to the “Network” window.



Click **OK** to exit the “Network” window. You are prompted to reboot the 6642 Computer to reset the property settings. Click **Yes** to continue, or click **No** to do the reboot at another time.



## ***Battery Gauge Utility***

From the 6642 Toolkit, you can install a battery gauge utility that monitors the status of the main battery. If installed on the 6642 Pen Computer, a **Battery Meter** icon would appear on the Windows taskbar. Double-click this icon to view the battery meter.

The battery meter is part of the PKTool utilities, executed from the tray icon or found in the **Start ->Program->Utility** menu. The file **UTILITY.EXE** starts the PKTool utility and allows user settings for display of backlight, battery state, suspend execution and keypad reassign functions.

## Battery Gauge Utility Update

If the battery gauge does not display the correct capacity after recharge, a utility program is available for download.

Refer to **Customer Support** in the **Introduction** section of this reference guide for contact information and downloading the utility.

► **NOTE:**

*The update utility requires that you format a boot PC Card or floppy disk.*

### Creating an Installation Floppy Disk

1. The self-extracting archive file (BGPF.EXE) contains :

File Name	Description
INSTRUCT.RTF	BGPF Readme file
DISK1/DISK.1	Installation floppy disk image
DISK1/INSTALL.BAT	Installation floppy disk image
DISK1/X.EXE	Installation floppy disk image

2. Run BGPF.EXE at any directory on any PC.
3. Copy three files under DISK1 directory to the root directory of a floppy disk, to create the installation floppy disk.

## ***Installing to Flash Memory Card***

You need to install the update utility into a flash memory card by using the installation floppy disk.

### **Hardware needed:**

- ▶ 6642 pen computer
  - ▶ AC adapter
  - ▶ Floppy disk drive/port replicator
  - ▶ Keyboard
  - ▶ Flash memory card
  - ▶ The update utility installation floppy disk
1. Connect the AC adapter, the floppy disk drive and the keyboard to the pen computer.
  2. Turn on the pen computer.
  3. Insert the installation floppy disk into the floppy disk drive when the Windows desktop screen is displayed.
  4. Insert the flash memory card into the PC card slot.
  5. **Run A:\INSTALL.BAT.**
  6. Specify the driver letter allocated to the ATA flash memory card when the message is displayed as shown below.
  7. **Specify target drive.[D,E,F,G,H]**
  8. Press [Y] key if the target driver letter is correct.
  9. **Target drive is X: This will destroy all contents of the target drive. Are you sure? [Y,N]?**
  10. When the following message appears on the screen, the installation is completed.

**Update program card creation completed.**



## ***Installing to the 6642***

### **Hardware needed:**

- ▶ AC adapter
- ▶ The update utility flash memory card
- ▶ 6642 Pen Computer

1. Connect the AC adapter to the pen computer.
2. Insert the update utility flash memory card into the PC card slot of the pen computer.
3. Power on the 6642. The update utility software automatically changes the contents of the EEPROM inside the internal battery and installs the Battery Initializing Tool on the HDD.
4. If the AC adapter is not connected, the message “Connect AC adapter” appears. Connect the AC adapter and press [1] to proceed when the message is displayed.

When the update utility is successfully completed, a large OK is displayed at the upper right portion on the screen. If the update utility fails, a large NG is displayed at the upper right portion on the screen.

5. Press the [-] key to turn off the pen computer.
6. Remove the AC adapter and the update utility flash memory card.

## **Error Messages**

If the update utility installation fails, the detail of the error cause is displayed on the bottom left portion on the screen. If the following message is displayed, there is no "Programs" directory under the start menu.

### **Start menu directory does not exist.**

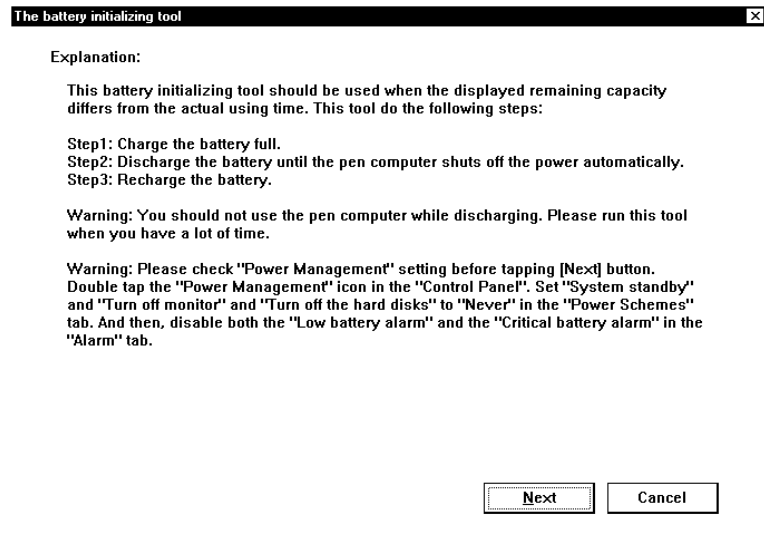
You will then need to create a "Programs" directory under Windows.

Create a "\WINDOWS\Start Menu\Programs" manually.

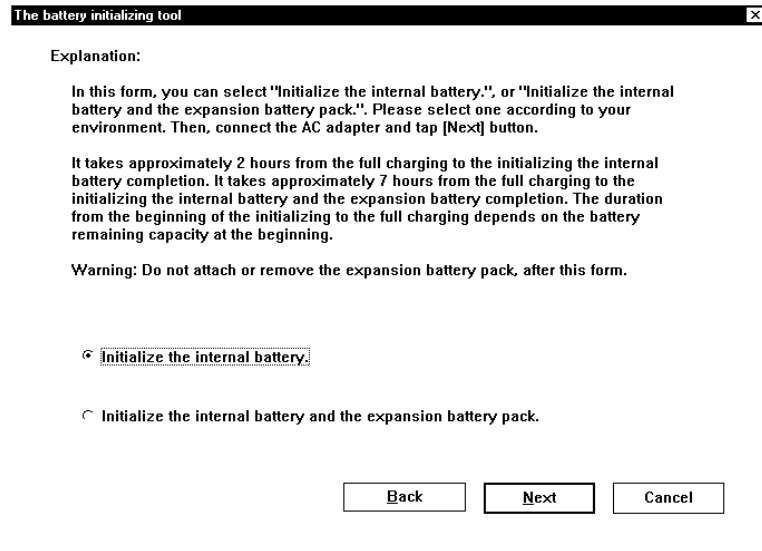
If you run the update utility software on a pen computer twice, the large OK displayed on the screen as same as the first installation, and the message "Already updated" is displayed on the bottom left, but no changes are made to the pen computer settings.

## Running the Utility from Windows 98

1. From the Desktop, select **Start** → **Programs** → **Bat\_tool** from the Windows Start Menu. The first setup screen appears.



2. Follow the instructions outlined onscreen before clicking the **Next** button.



The screenshot shows a dialog box titled "The battery initializing tool" with a close button (X) in the top right corner. The text inside the dialog box is as follows:

Explanation:

In this form, you can select "Initialize the internal battery.", or "Initialize the internal battery and the expansion battery pack.". Please select one according to your environment. Then, connect the AC adapter and tap [Next] button.

It takes approximately 2 hours from the full charging to the initializing the internal battery completion. It takes approximately 7 hours from the full charging to the initializing the internal battery and the expansion battery completion. The duration from the beginning of the initializing to the full charging depends on the battery remaining capacity at the beginning.

Warning: Do not attach or remove the expansion battery pack, after this form.

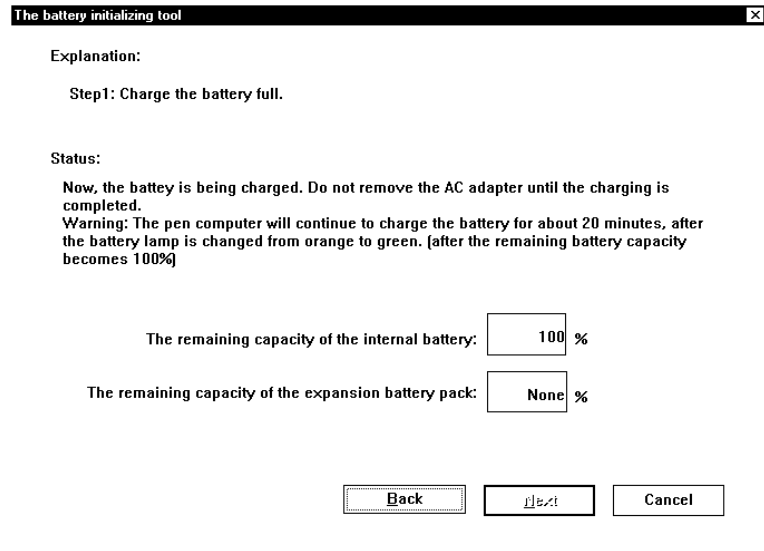
Initialize the internal battery.

Initialize the internal battery and the expansion battery pack.

At the bottom of the dialog box, there are three buttons: "Back", "Next", and "Cancel". The "Next" button is highlighted with a dark background.

This screen displays the option for initializing the internal battery alone or both internal and expansion battery pack.

Click on the **Next** button to continue.



The initialization charge is displayed for the internal battery and the expansion battery if connected.

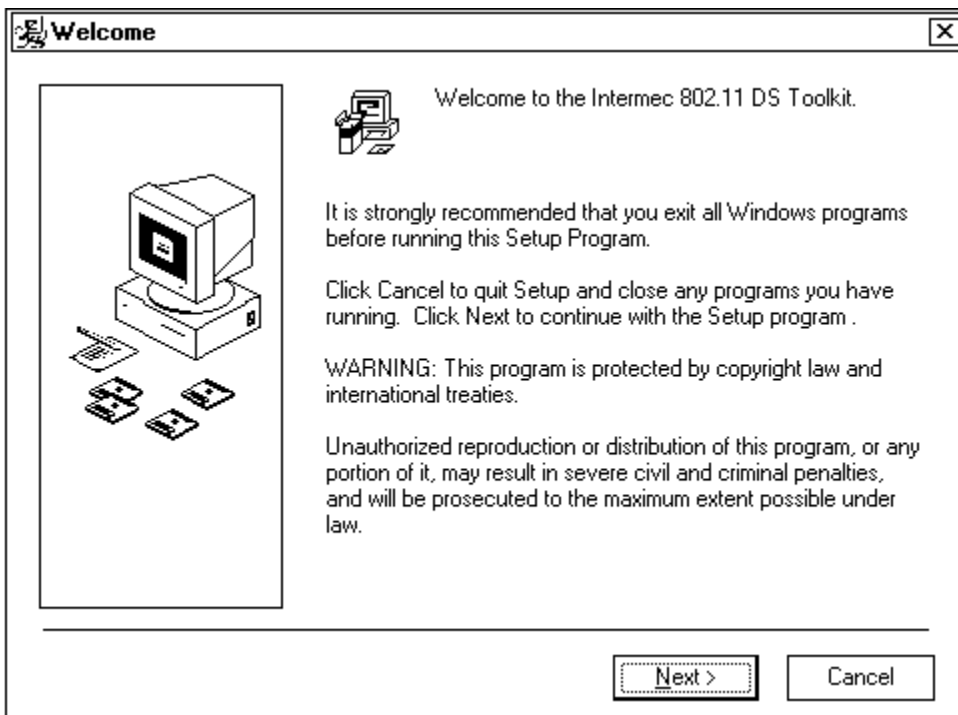
Click the **Close** button to exit the battery utility.

## 802.11 DS Radio Driver Installation



Double-click the installation executable (icon shown left) to start the installation.

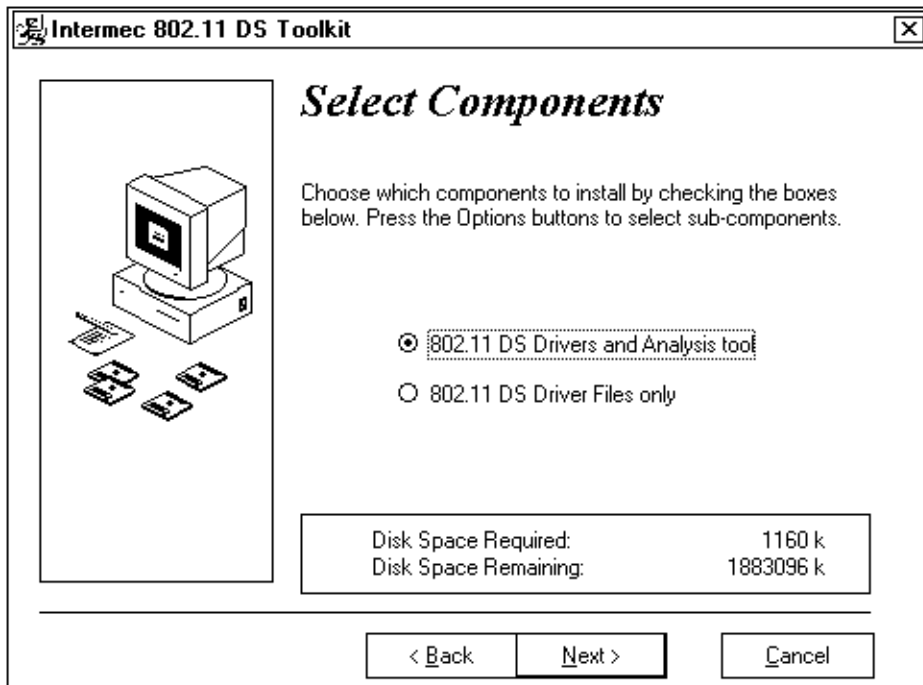
1. The first screen is a “Welcome” screen with a reminder to close all Windows applications before starting this installation.



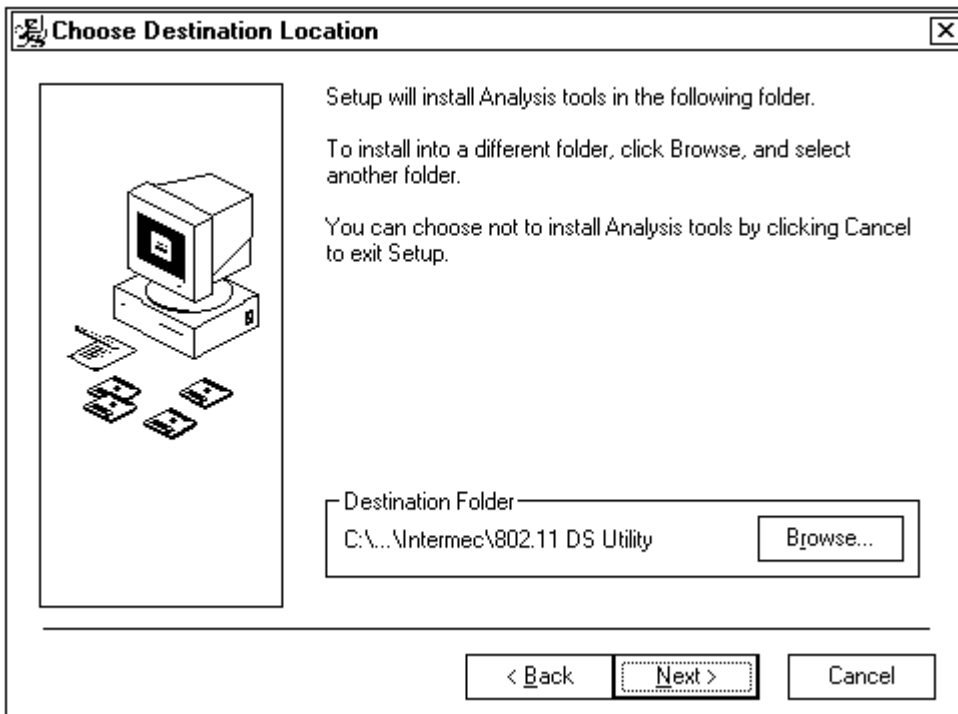
If you want to close any applications, click the **Cancel** button to exit the setup application, close the applications, and double-click the installation executable (802\_11DS.EXE) to do the installation again.

Otherwise, click the **Next** button to continue the set up.

2. Choose one of the following from the “Select Components” screen, then click the **Next** button to start the installation.
  - ▶ Select **Drivers and Analysis tool** (*default*) to include various analysis tools. If you select this option, go to step 3 on the next page.
  - ▶ Select **Driver Files Only** to just install the radio driver. If you select this option, go to step 5 on page 3-85.

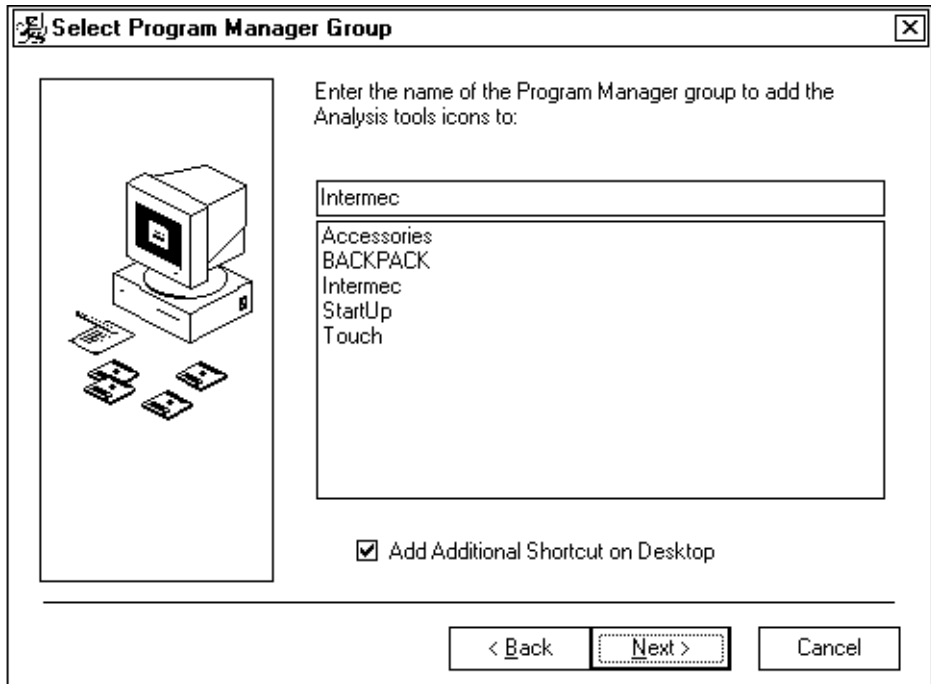


3. If you chose **Drivers and Analysis tool** in step 2, the “Choose Destination Location” screen appears with a destination folder in which the analysis tools will be installed (**802.11 DS Utility**). If you wish to change the destination folder, use the **Browse** button to make the change. Click **Next** to continue the installation.





- Use the “Select Program Manager Group” window to elect what folder (group) the setup program is to add the analysis tools.

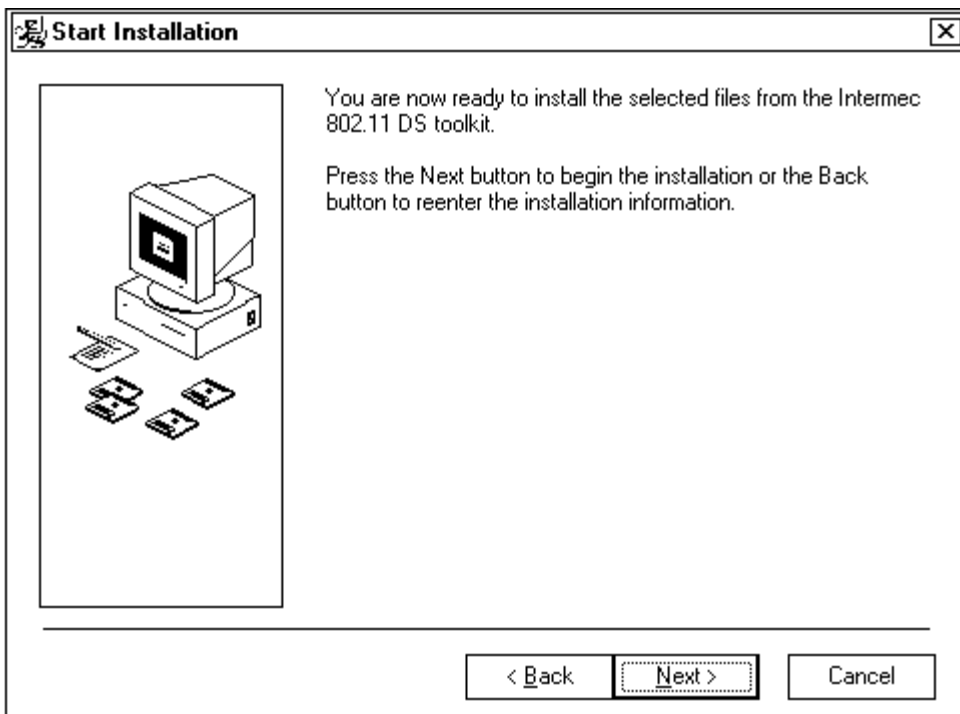


A check mark in the **Add Additional Shortcut on Desktop** creates a shortcut icon for the Windows desktop, like the following. Click the **Next** button to go to the “Start Installation” page.

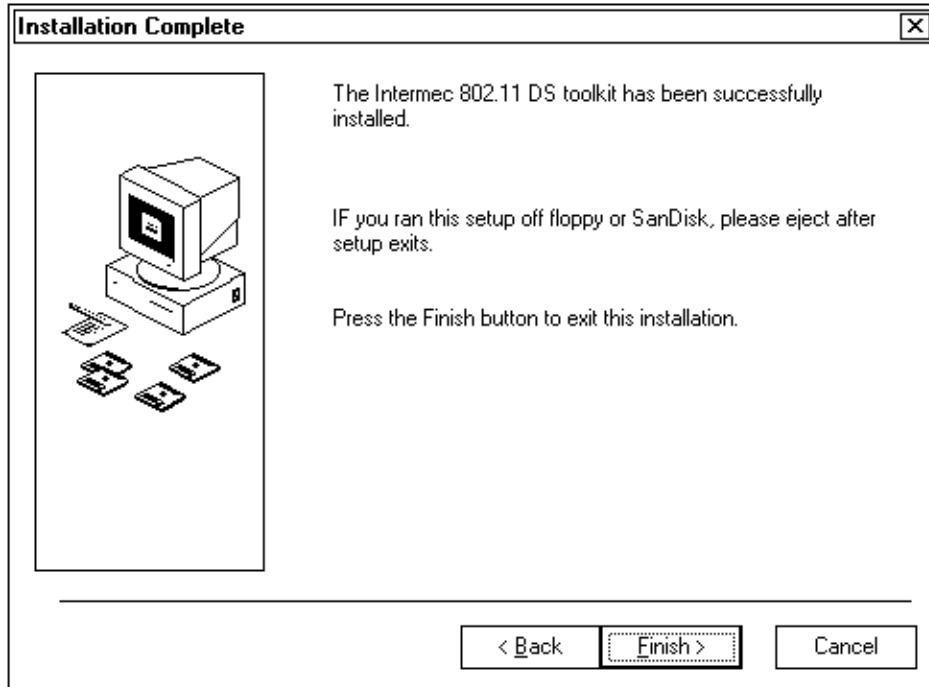
- **802.11 DS Utility** icon (shown right)



5. Click the **Next** button to start the installation.



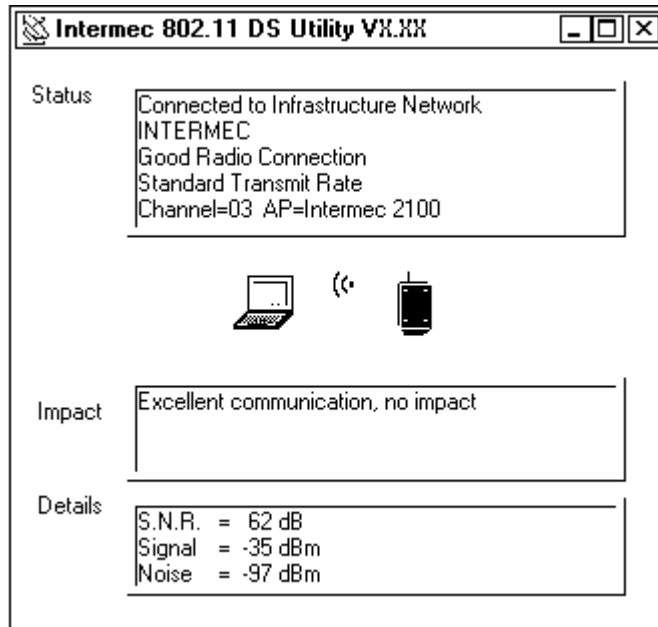
- An “Installing” screen displays the files transferred from the toolkit into the destination directory, then the final “Installation Complete” screen appears with a reminder about disks or SanDisk cards. Click the **Finish** button to exit the toolkit.



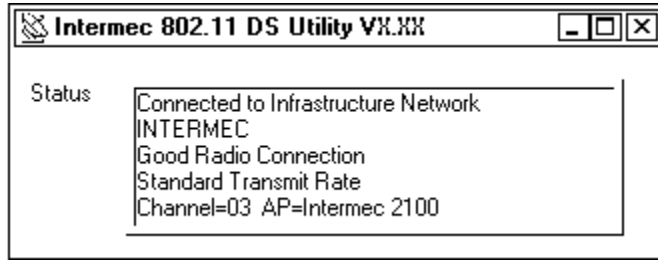
### 802.11 DS Utility



From the Windows desktop, select **Start** → **Programs** → **Intermec** → **802.11 DS Utility** or double-click the **802.11 DS Utility** icon (shown left) for the “Intermec 802.11 DS Utility VX.XX” window which provides status information, impact, and details about the infrastructure network.



- If you just want to view just the status information, click the upper-right box (shown left) to minimize the window to this. Click the box again to return to the expanded view shown on the previous page.



A satellite dish icon (shown left) in the title bar (or in the desktop tray if the utility is minimized) is color-coded to provide clues as to the status of communications:

- ▶ Green      Good
- ▶ Yellow     Warning
- ▶ Red        Failure
- ▶ Gray       No activity

If yellow or red, ensure that cable and radio connections are attached properly and secure. If no change in the status (still red or yellow), consult the online help for troubleshooting tips. From the desktop, select **Start** → **Programs** → **Intermec** → **802.11 DS Utility Help**.


## Pop-Up Menu Options

Touch anywhere in the “802.11 DS Utility” window (outside the **Status**, **Impact**, and **Details** boxes) to bring up the following pop-up menu. To remove the pop-up menu from view, touch inside the three boxes.

Send To Tray Remove From Tray
About This Application Program Properties
Site Survey General Version Info Card Statistics
Driver/Firmware/Card Test Link Partner Test
Update Radio Firmware
Exit

### **Send to Tray or Remove From Tray**

The first two options on the menu, “Send to Tray” and “Remove From Tray,” minimizes the utility to the desktop tray and returns the “802.11 DS Utility” window to its full size, respectively.

-  Another, more standard, way to minimize the utility is to click the top-right minimize icon (shown left). Another way to maximize the utility from the tray is to click the satellite dish icon from the system tray.

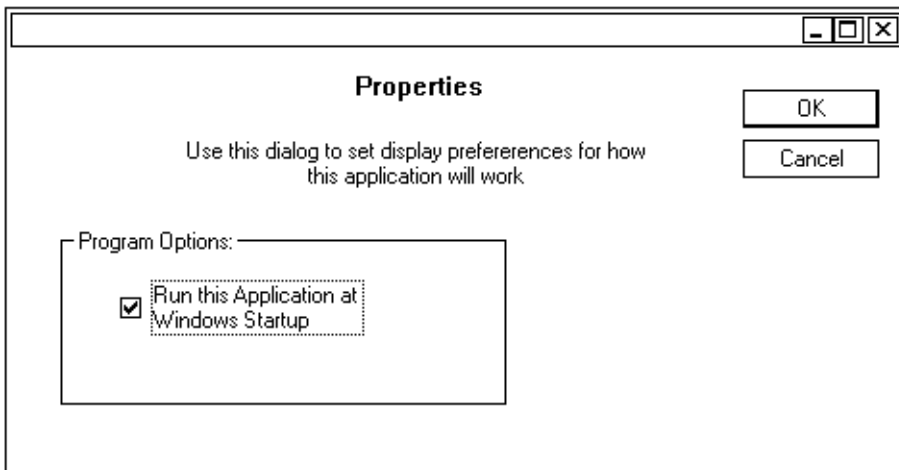
### **About This Application**

This is a standard information window that provides system information about the 802.11 DS utility. Bring up the pop-up menu, then select **About This Application** for the “About this program” window. Click the **OK** button to exit.

### **Program Properties**

To have the “Intermec 802.11 DS Utility VX.XX” window activate when the 6642 is started up:

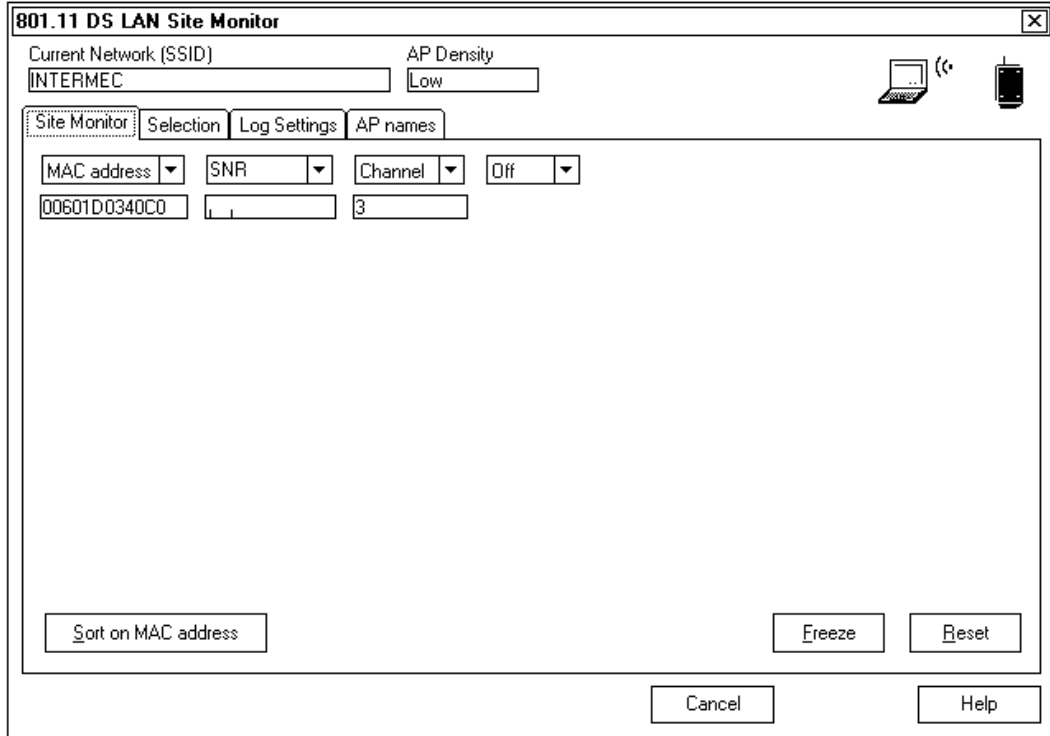
1. Bring up the pop-up menu, then select **Program Properties** to access the “Properties” window.
2. Add a check mark to the **Run this Application at Windows Startup** box, then click the **OK** button to set this feature.



### Site Survey

The “802.11 DS LAN Site Monitor” window monitors the optimal positions of access points within your network.

The “Site Monitor” page provides access point information and allows you to reset or freeze the information.





The “Selection” page lets you choose an infrastructure network to monitor.

801.11 DS LAN Site Monitor

Current Network (SSID) AP Density  
INTERMEC Low

Site Monitor Selection Log Settings AP names

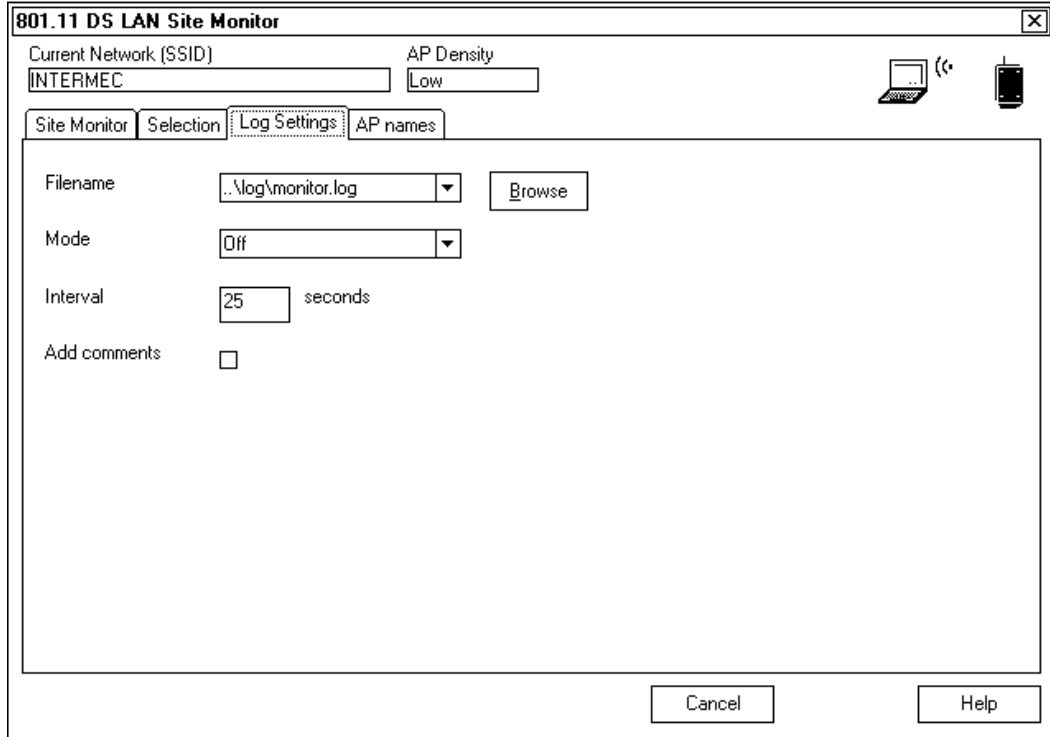
Observed Networks	Network type	No. of AP's	Channels
INTERMEC	Infrastructure	1	3

Select an Infrastructure to be monitored

Scan Now

Cancel Help

The “Log Settings” page lets you write log measurement data to a file.



Use the “AP names” window to create names for the access points displayed in the site monitor for easier identification as opposed to reading MAC addresses of those access points.

The screenshot shows a window titled "801.11 DS LAN Site Monitor". At the top, there are two input fields: "Current Network (SSID)" containing "INTERMEC" and "AP Density" set to "Low". To the right are icons for a laptop, a signal tower, and a mobile phone. Below these are four tabs: "Site Monitor", "Selection", "Log Settings", and "AP names", with "AP names" being the active tab. The main area is divided into two sections. On the left, under the heading "Observed MAC addresses/AP names", there is a list box containing one entry: "00601D0340C0 Unknown". On the right, there is instructional text: "Enter a MAC address or select one from the observed MAC address list by double clicking on a MAC address." Below this text are two input fields: "MAC Address" and "AP name". At the bottom right of this section is a button labeled "Add to table". At the very bottom of the window are two buttons: "Cancel" and "Help".

Click the **Help** button for additional information about the “Site Monitor” window and related pages.

### General Version Info

To access the “Version Information” window, bring up the pop-up menu, then select **General Version Info** to access the “Version Information” window. This window provides information about the variant and version numbers regarding the application program, driver, firmware, and hardware.

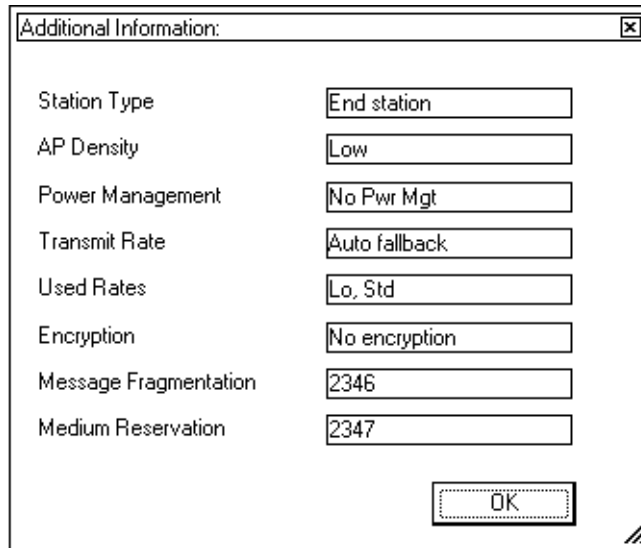
**Version Information**
\_ □ ×

Network Card :	<input type="text" value="WaveLAN-II PC Card Type-II NIC (integrated)"/>	Variant: <input type="text" value="1"/>	Version: <input type="text" value="1.10"/>
Primary Card Firmware :	<input type="text" value="WaveLAN-II Primary Functions firmware"/>	Variant: <input type="text" value="1"/>	Version: <input type="text" value="4.00"/>
Secondary Card Firmware :	<input type="text" value="WaveLAN/IEEE Station Functions firmware"/>	Variant: <input type="text" value="1"/>	Version: <input type="text" value="4.13"/>
Driver :	<input type="text" value="WaveLAN/IEEE NDIS Miniport driver"/>	Variant: <input type="text" value="1"/>	Version: <input type="text" value="4.00"/>
Client Utility :	<input type="text" value="WaveMANAGER/CLIENT-II"/>	Variant: <input type="text" value="1"/>	Version: <input type="text" value="4.02"/>

---

MAC address : <input type="text" value="00.60.1D.03.EA.5D"/>	Country Code : <input type="text" value="USA Canada ( Channels: 1-11 )"/>
Serial # : <input type="text" value="98UT12335849"/>	Data Rates : <input type="text" value="IEEE Data rates (no Turbo or High Speed)"/>
Tracer # : <input type="text" value="85001550"/>	Privacy : <input type="text" value="No Encryption"/>
PCB part # : <input type="text" value="A010936A"/>	Card Type : <input type="text" value="Standard (white) Card"/>

Click the **More** button to access additional information about the access point. Click the **OK** button to exit the additional information, then click **OK** again to exit the “Version Information” window.



The image shows a dialog box titled "Additional Information:" with a close button (X) in the top right corner. The dialog contains several configuration options, each with a corresponding text input field:

Station Type	End station
AP Density	Low
Power Management	No Pwr Mgt
Transmit Rate	Auto fallback
Used Rates	Lo, Std
Encryption	No encryption
Message Fragmentation	2346
Medium Reservation	2347

An "OK" button is located in the bottom right corner of the dialog box.

### Card Statistics

To access the “802.11 DS LAN Card Statistics” window, bring up the pop-up menu, then select **Card Statistics**.

The “802.11 DS LAN Card Statistics” window monitors card communications by way of counters. These read-only counters would be useful in troubleshooting efforts. Click the **OK** button to exit.

The screenshot shows a window titled "802.11 DS LAN Card Statistics" with a standard Windows-style title bar (minimize, maximize, close buttons). The window contains a list of communication counters, each with a text label and a numeric input field. The counters are arranged in two columns. At the bottom left, there is a section for "Intermec Engineering Use:" with four additional counters. At the bottom right, there is an "OK" button and a small icon in the corner.

Communication Counters	
TxUnicastFrames	26
TxMulticastFrames	0
TxFragments	5121
TxUnicastOctets	6584
TxMulticastOctets	0
TxDeferredTransmissions	0
TxSingleRetryFrames	0
TxMultipleRetryFrames	0
TxRetryLimitExceeded	0
TxDiscards	0
RxUnicastFrames	2
RxMulticastFrames	54
RxFragments	20840
RxUnicastOctets	188
RxMulticastOctets	12876
RxFCSErrors	1067
RxDiscardsNoBuffer	0
TxDiscardsWrongSA	0
RxDiscardsWEPUndecryptable	0
RxMessageInMsgFragments	4
RxMessageInBadMsgFragments	5
WEP ICV error	0
WEP Excluded	0
Intermec Engineering Use:	
HCF_NoBufInq	0
HCF_MiscErr	0
HCF_NoBufMB	0
HCF_EngCnt	0
HCF_NoBufInfo	0

### **Driver/Firmware/Card Test**

► **NOTE:**

Using this feature **will temporarily break communications contact with your 802.11 DS LAN card.**

To access the “Card Check” window, bring up the pop-up menu, then select **Driver/Firmware/Card Test**.

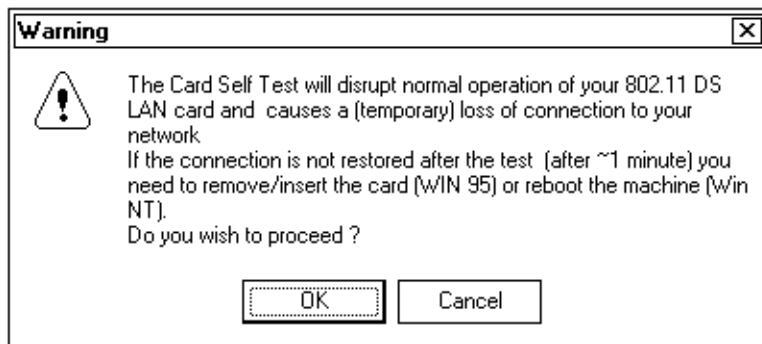
The “Card Check” window lets you check the status of the 802.11 DS card you are using in the 6642. However, once you activate this card check, you will lose communications with your 802.11 DS LAN card.

The screenshot shows a window titled "Card Check:" with a close button (X) in the top right corner. Inside the window, there is a section labeled "Selftest Results:" which contains a list of test items, each with a corresponding text box showing the result:

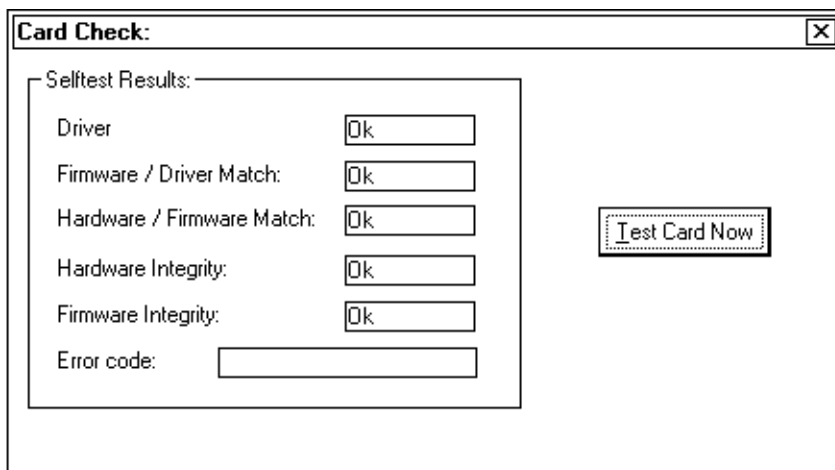
Driver	Ok
Firmware / Driver Match:	Ok
Hardware / Firmware Match:	Not Tested
Hardware Integrity:	Not Tested
Firmware Integrity:	Not Tested
Error code:	

To the right of this list is a button labeled "Test Card Now".

If you choose to go ahead and check the card status, click the **Test Card Now** button. A warning message appears advising of the temporary loss of contact with your card.



Click the **Cancel** button to return to the "Card Check" window, or click the **OK** button to go ahead with the card test. The card test results appear in the "Card Check" window, like the following. Click the upper right corner to exit.



You can wait for the 802.11 DS Utility to momentarily resume communications, which may take a moment; or you can turn off the 6642, then turn it back on for the 802.11 DS Utility to resume contact.



### Link Partner Test

To access the “802.11 DS LAN — Link Test” window, bring up the pop-up menu, then select **Link Partner Test**.

The “802.11 DS LAN — Link Test” window provides an on-going record of test messages transmitted to and acknowledged from clients within the network. Signal strength from both sides of the wireless connection and levels of interference (noise) are measured at preset intervals on the following “Test Results” page.

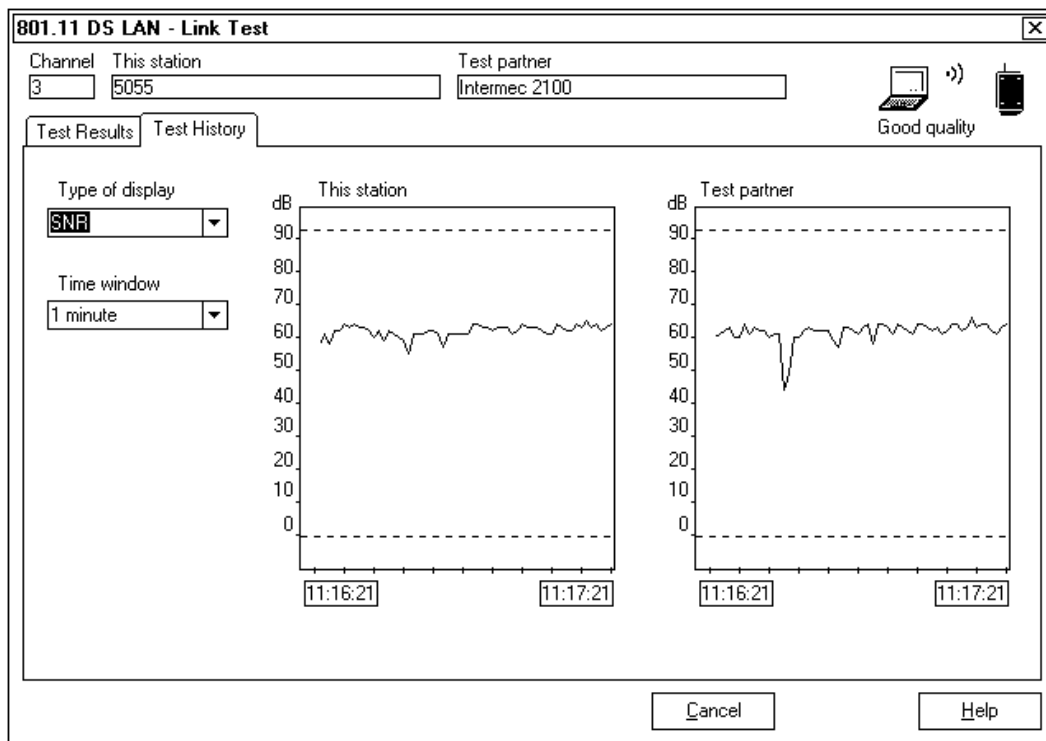
The screenshot shows a window titled "801.11 DS LAN - Link Test". At the top, it displays "Channel 3", "This station 5055", and "Test partner Intermec 2100". There are icons for a laptop, a signal strength indicator, and a mobile phone, with the text "Good quality" below them. Below the icons are two tabs: "Test Results" (selected) and "Test History".

The main area is divided into three sections:

- Total Messages:** Sent 32, Received 31, Lost 0.
- This station:** Address 00-60-1D-03-EA-5D. SNR 58 dB, Signal Level -39 dBm, Noise Level -97 dBm. Received Messages: High 0%, Medium 0%, Standard 31/100%, Low 0%.
- Test partner:** Address 00-60-1D-03-40-C0. SNR 58 dB, Signal Level -39 dBm, Noise Level -97 dBm. Received Messages: High 0%, Medium 0%, Standard 31/100%, Low 0%.

At the bottom right, there are "Freeze" and "Reset" buttons. At the very bottom, there are "Cancel" and "Help" buttons.

The “Test History” page displays the measurements in a graphical line chart and can be configured to types of signal and noise displays at intervals of one minute, one hour, or 24 hours.



In both the “Test Results” and “Test History” pages, click the **Help** button for additional information.

### **Update Radio Firmware**

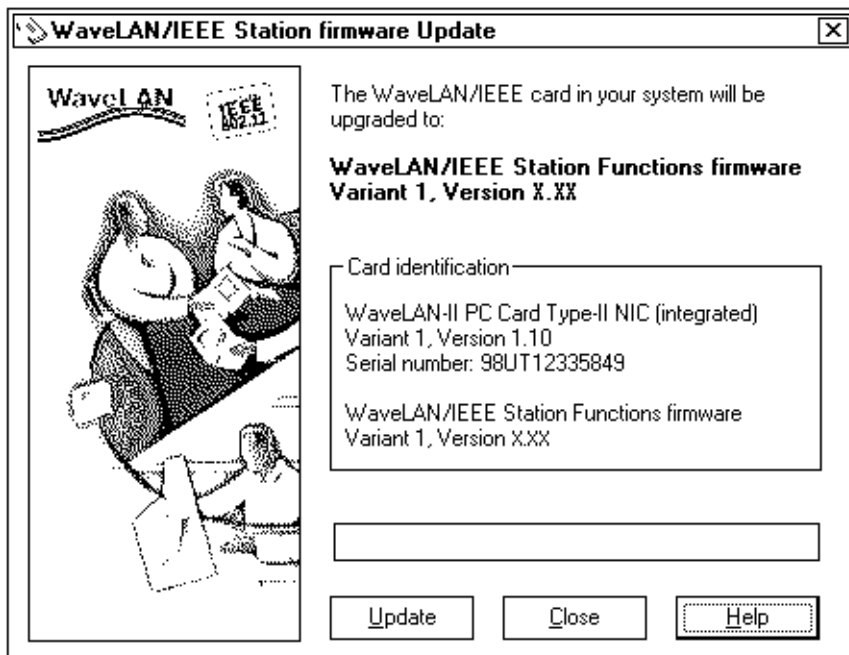
► **NOTE:**

*While the WaveLAN/IEEE PC Card is backwards-compatible, a number of features shown in the previous pages will not work if the driver version does not match the embedded software version in the WaveLAN/IEEE PC Card.*

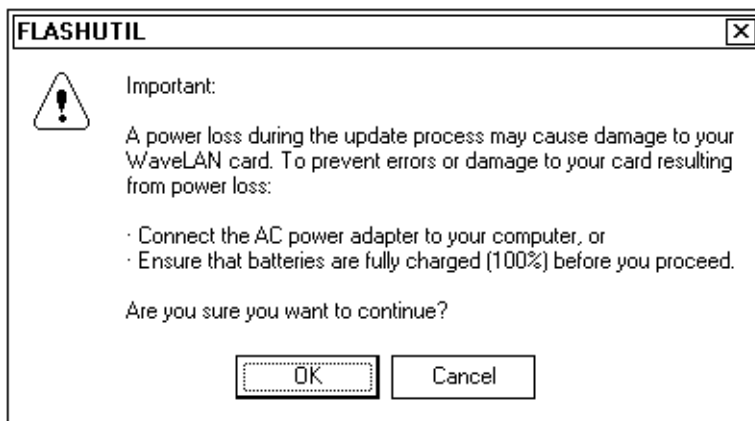
If you update the WaveLAN/IEEE PC Card with newer embedded software, the PC Card can work with older versions of the 802.11 DS Utility with its several features. However, note that some of the options within these features will not show any information due to incompatibility.

It is strongly advised that you update the 802.11 DS Utility driver when you update the WaveLAN/IEEE PC Card. Use the “WaveLAN/IEEE Station firmware Update” feature to update the 802.11 DS Utility driver. Click the **Help** button for more information about this feature.

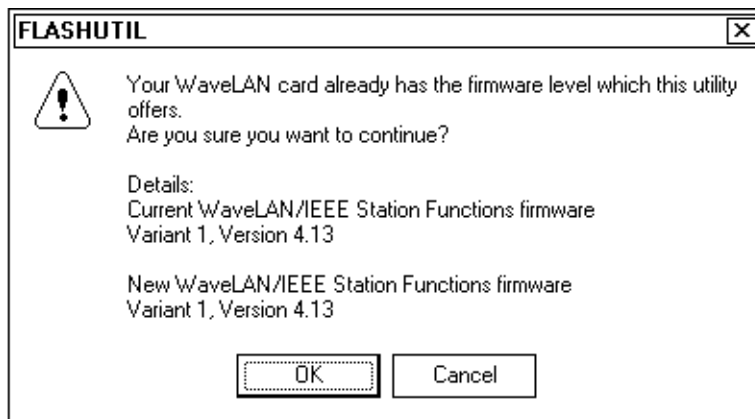
1. The first screen lists the embedded software version of the WaveLAN/IEEE PC Card along with the current WaveLAN/IEEE driver in the 6642. Click the **Close** button to exit this feature if you do not need to update the 802.11 DS Utility driver, or click **Update** button to continue.



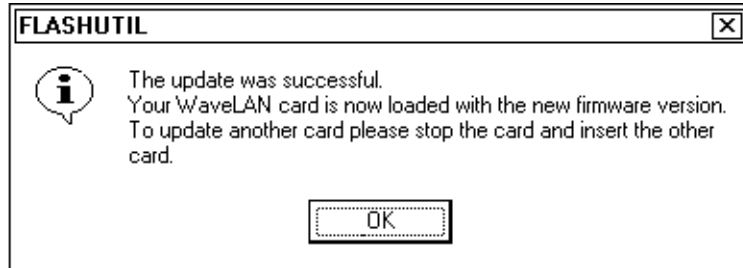
2. A cautionary message appears to warn against power loss during this procedure, as a power loss can damage your WaveLAN/IEEE PC Card during the download. Follow the advice given to ensure there will be no power loss, then click the **OK** button to continue.



3. If your 802.11 DS Utility driver and WaveLAN/IEEE PC Card are compatible, a message similar to the following appears. To update the PC Card, click the **OK** button.



4. The following message appears to note a successful download and to remind you to update the WaveLAN/IEEE PC Card if necessary. Click **OK** to exit.



The “WaveLAN/IEEE Station firmware Update” screen now shows the newest downloaded version for the PC Card. If you want to update another WaveLAN/IEEE PC Card, insert another PC Card, then click the **Update** button to do the update. If you are done updating PC Cards, click the **Close** button to exit this feature.

## ***Reinstalling the Radio Driver***

Should you need to upgrade the utility, remove the older version of the utility and replace it with its upgrade.

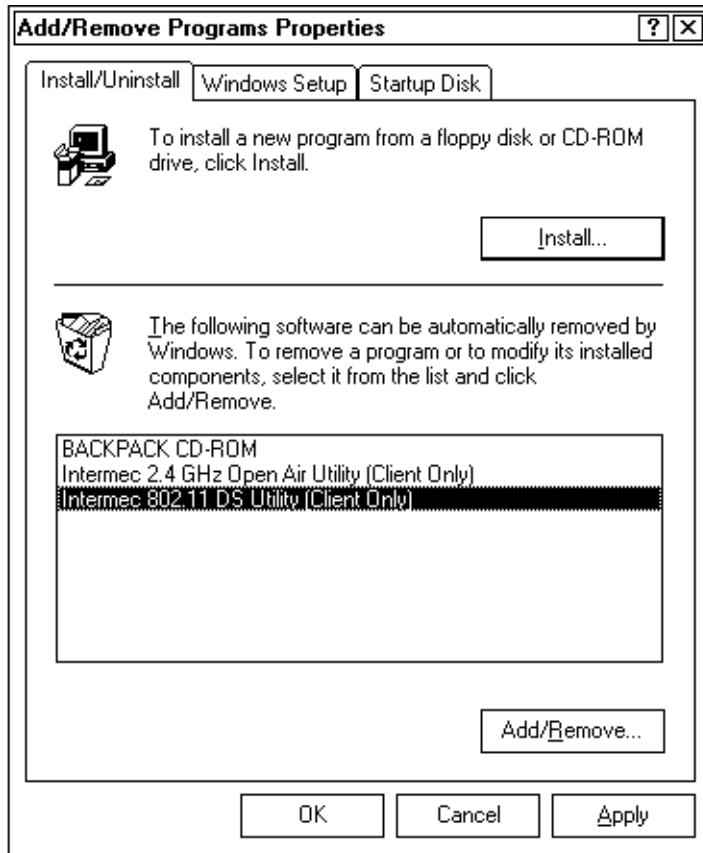
### ***Uninstall Old Radio Driver***

To uninstall the older radio driver:

1. From the Windows desktop, select **Start** → **Settings** → **Control Panel** icon to access the “Control Panel.”



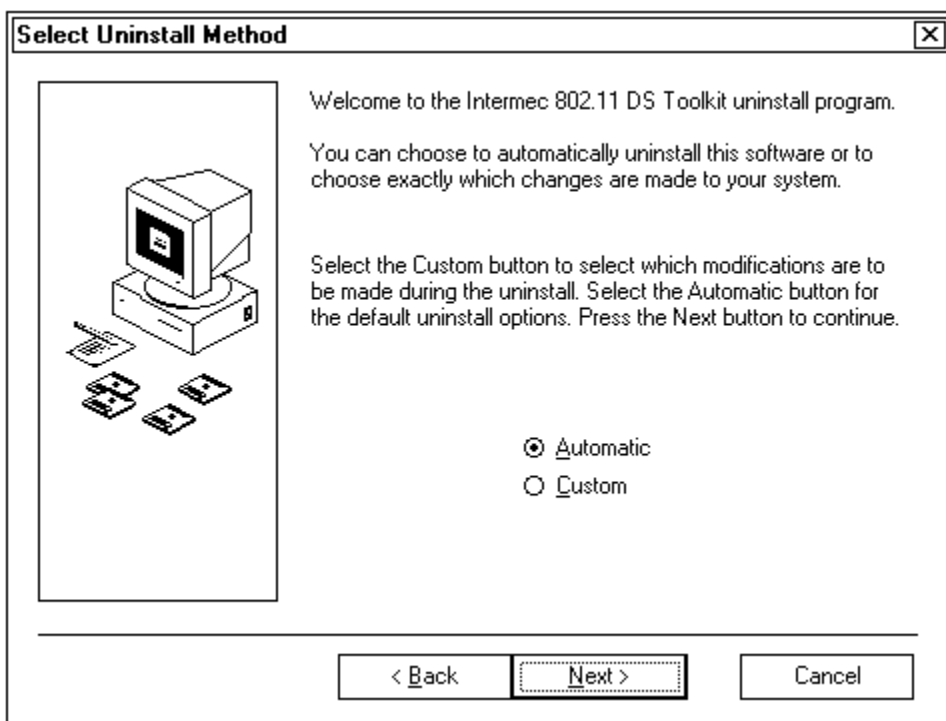
2. Double-click the **Add/Remove Programs** icon (shown left) to access the “Add/Remove Programs Properties” window.



3. Select the utility to be removed from the list of software, “Intermec 802.11 DS Utility (Client Only),” then click the **Add/Remove** button to access the uninstall wizard.

4. The “Select Uninstall Method” screen gives you two ways to remove the radio utility from the 6642.
  - ▶ Select “Automatic” for the default uninstall method to remove the entire utility (page 3-79).
  - ▶ Select “Custom” to choose which components are to be removed (go to the next page).

Click the **Next** button to continue.

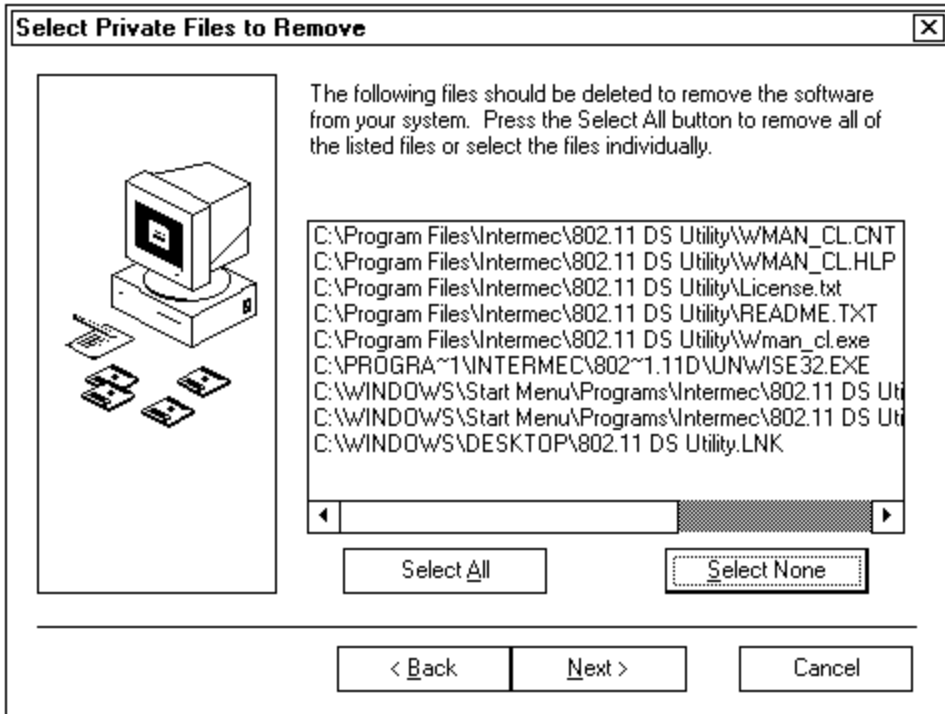


There are private files, system files, registry keys, and sub-systems that can be removed (or edited in the case of the registry keys) in the next five screens.

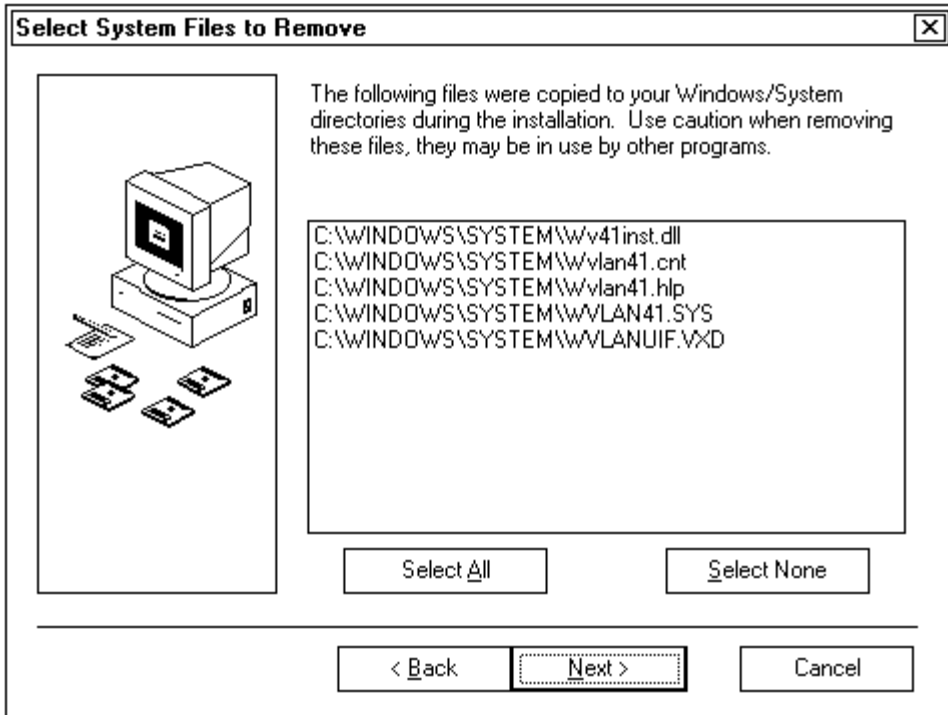
In each of the screens, click the **Select All** button to select all of the items listed. You can pick out items individually by touching each item on the display. Click the **Select None** button if you choose to unselect your selections.



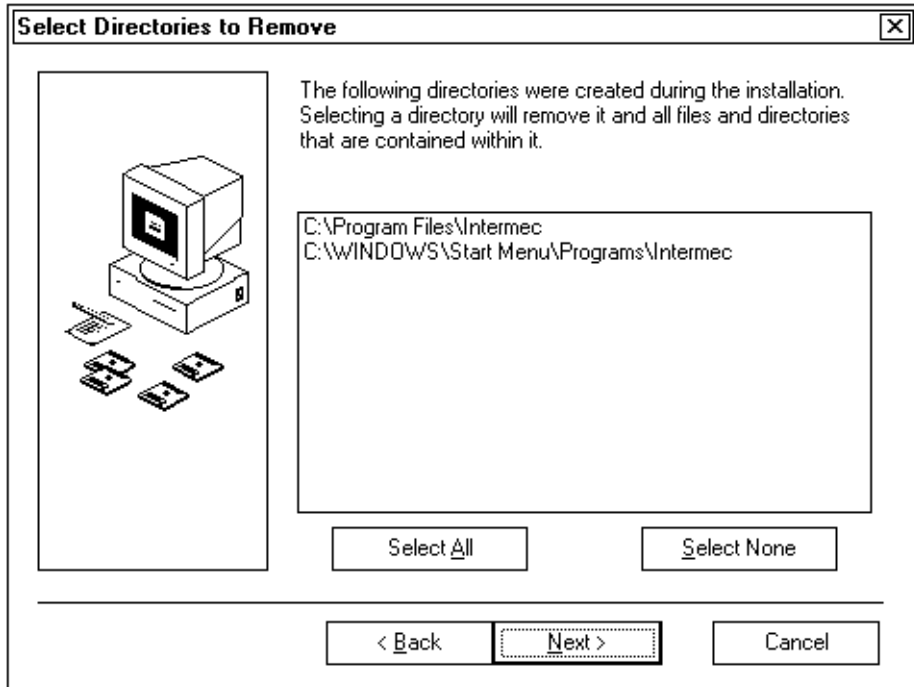
1. The “Select Private Files to Remove” screen lists software used by the 802.11 DS Utility. Select the files to be removed, then click the **Next** button to continue.



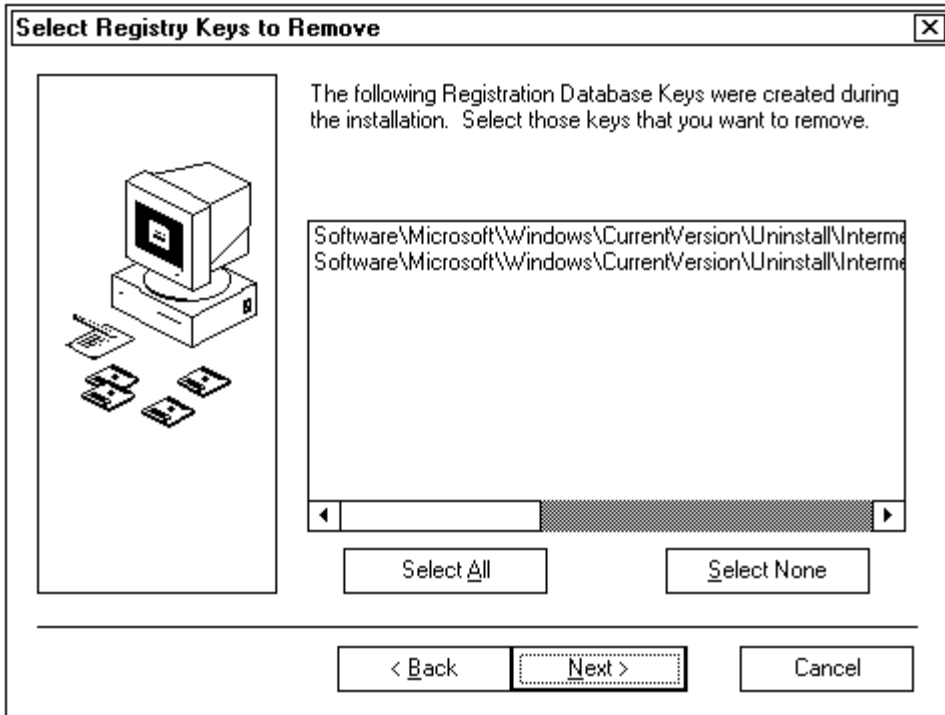
2. The “Select System Files to Remove” screen lists the files that were copied to system directories within the 6642. Select the files to be removed, then click the **Next** button to continue.



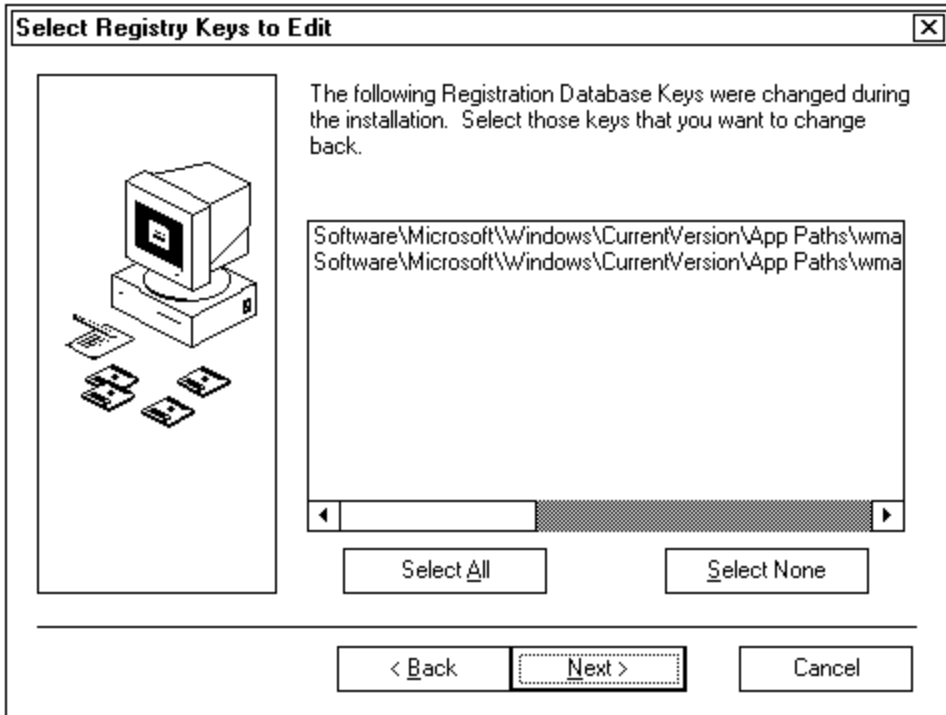
3. The “Select Directories to Remove” screen names the directories that were created to contain 802.11 DS Utility files. Select the directories to be removed, then click the **Next** button.



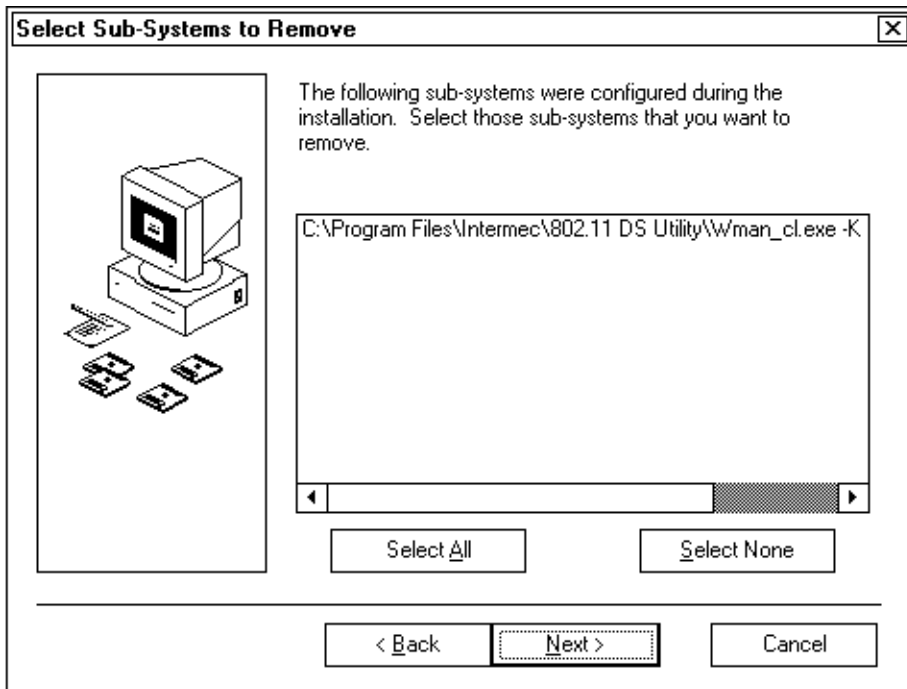
4. The “Select Registry Keys to Remove” screen names the registration database keys created during the installation of the radio utility. Select the keys to be removed, then click the **Next** button to continue.



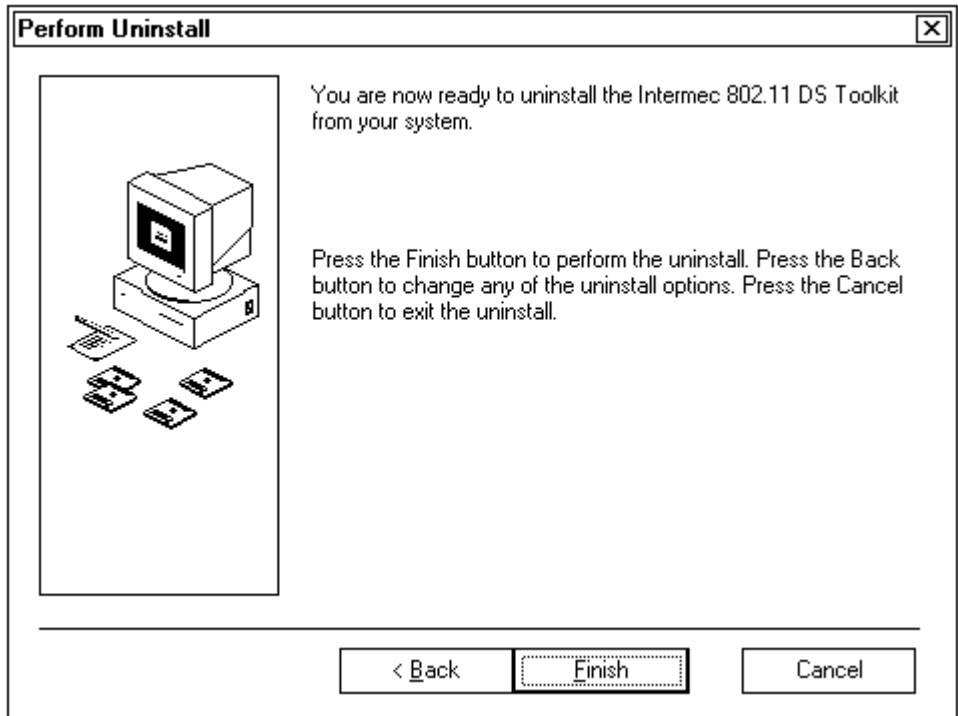
5. The “Select Registry Keys to Edit” screen lets you choose registration database keys that were altered during the installation, to allow for changing the information back to prior the installation.



- The “Select Sub-Systems to Remove” screen lists the subsystems that were configured for the radio utility. Select the subsystems to be removed, then click the **Next** button to complete the uninstallation (go to the next page).



7. The “Perform Uninstall” screen names the utility that is about to be removed from the 6642 system. Click the **Finish** button to start the uninstallation if this is the correct utility. If the utility is not correct, click the **Back** button to redo any of the previous screens, or click the **Cancel** button to stop the uninstall.



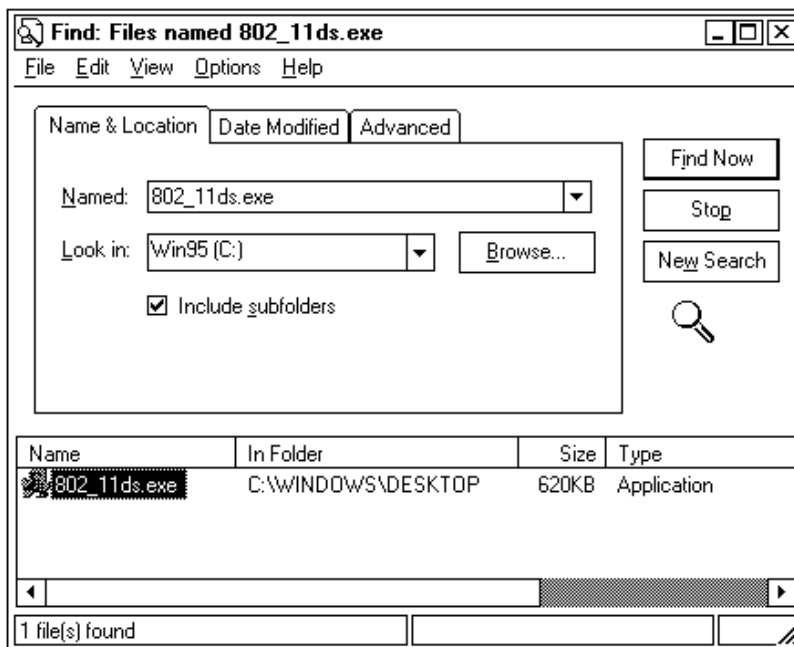
Exit both the “Add/Remove Programs” application and the “Control Panel” to return to the desktop.



## Add New Radio Driver

If the **802\_11ds.exe** shortcut icon (shown left) is on the 6642 desktop, go to the next page.

If the applicable shortcut is *not* on the desktop, from the Windows desktop, select **Start** → **Find** → **Files or Folders** to access the “Find: All Files” window. Search the 6642 desktop for the installation executable (802\_11DS.EXE).

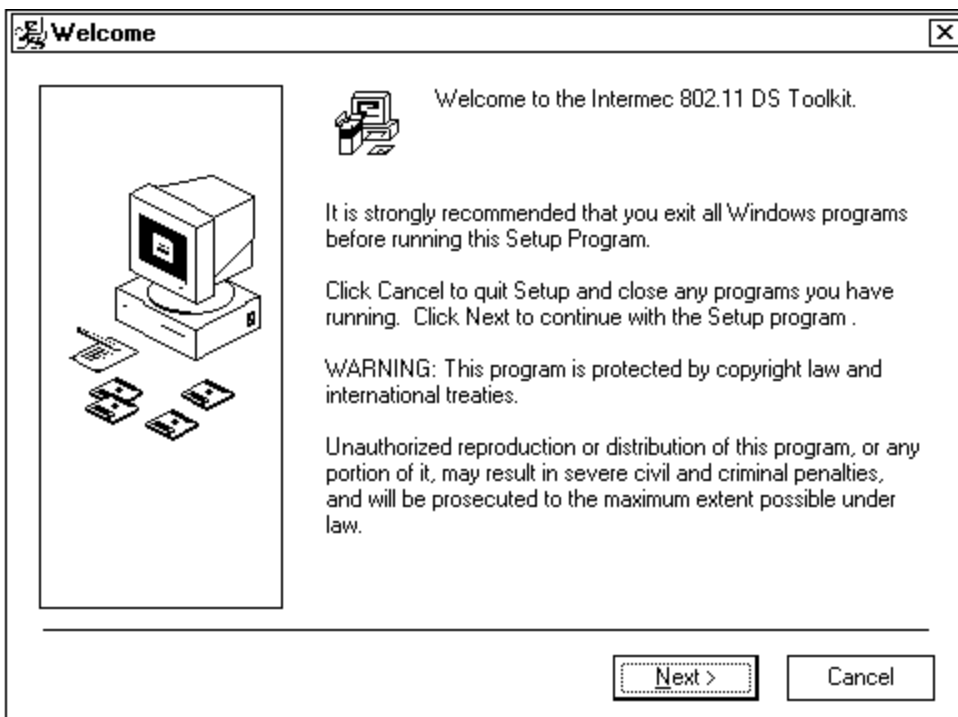






Double-click the installation executable (icon shown left) to start the installation.

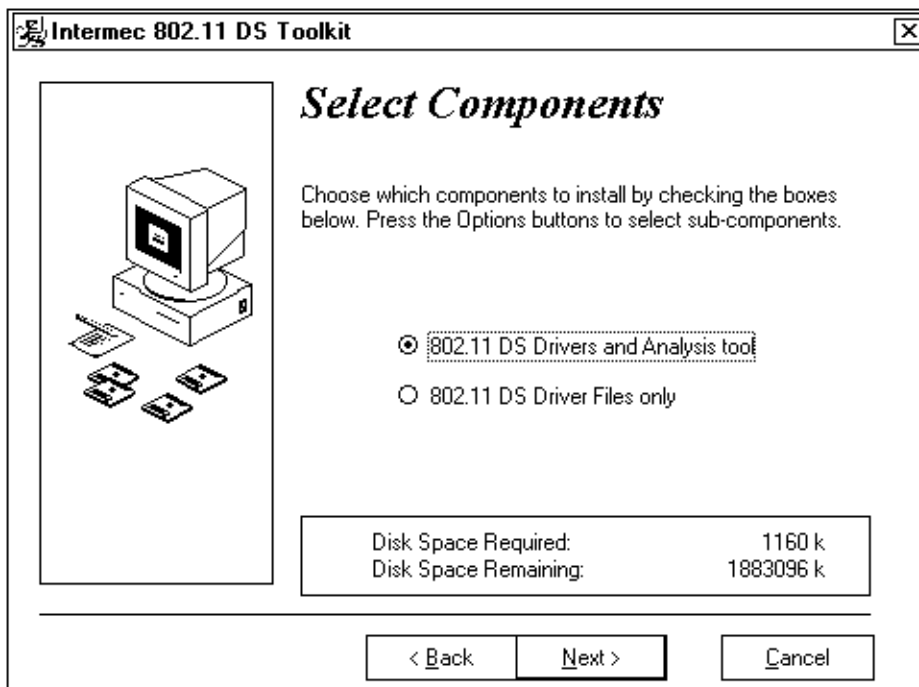
1. The first screen is a “Welcome” screen with a reminder to close all Windows applications before starting this installation.



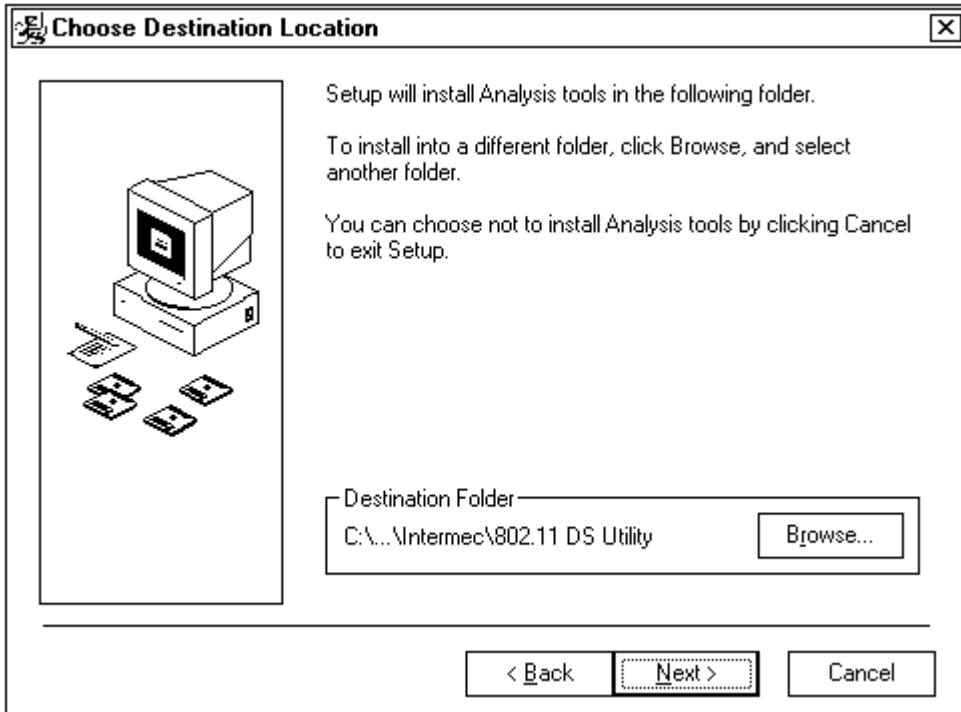
If you want to close any applications, click the **Cancel** button to exit the setup application, close the applications, and double-click the installation executable (802\_11DS.EXE) to do the installation again.

Otherwise, click the **Next** button to continue the set up.

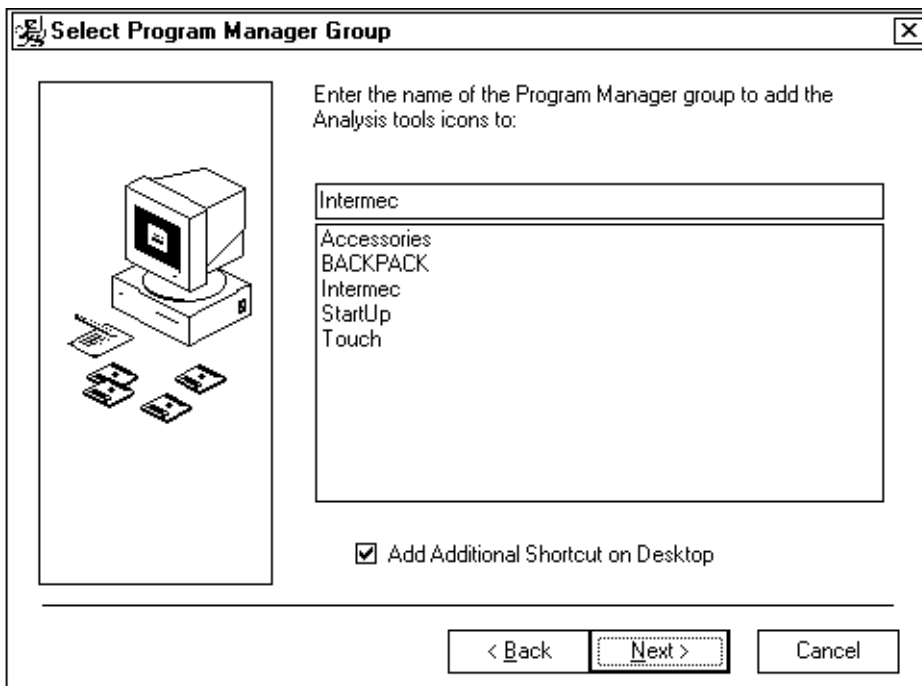
2. Choose one of the following from the “Select Components” screen, then click the **Next** button to start the installation.
  - ▶ Select **Drivers and Analysis tool** (*default*) to include various analysis tools. If you select this option, go to step 3 on the next page.
  - ▶ Select **Driver Files Only** to just install the radio driver. If you select this option, go to step 5 on page 3-85.



3. If you chose **Drivers and Analysis tool** in step 2, the “Choose Destination Location” screen appears with a destination folder in which the analysis tools will be installed (**802.11 DS Utility**). If you wish to change the destination folder, use the **Browse** button to make the change. Click **Next** to continue the installation.



- Use the “Select Program Manager Group” window to elect what folder (group) the setup program is to add the analysis tools.

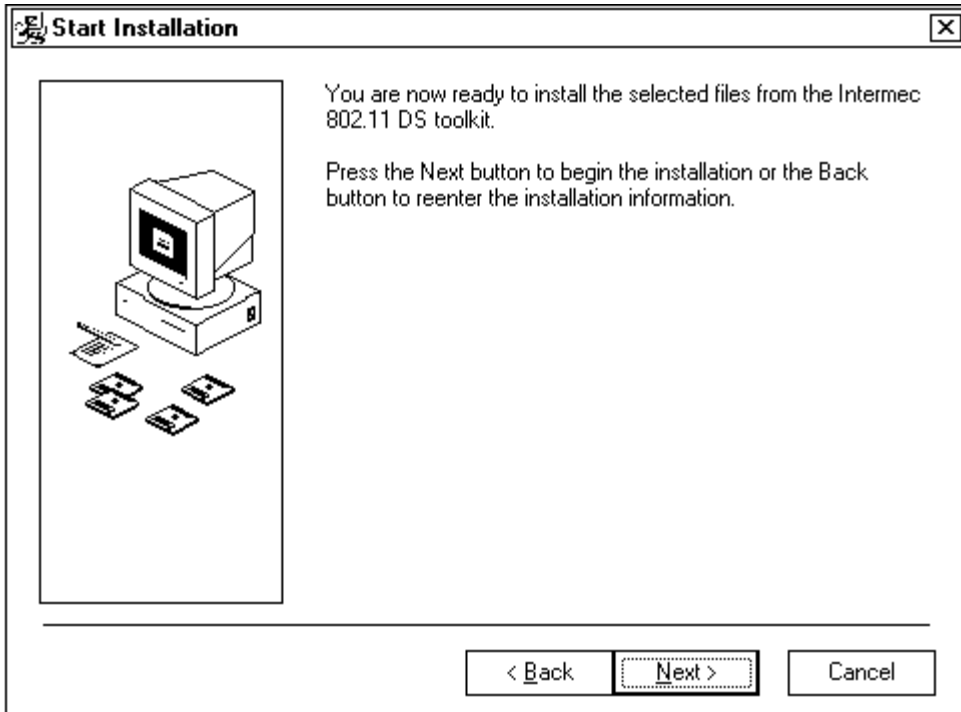


A check mark in the **Add Additional Shortcut on Desktop** creates a shortcut icon for the Windows desktop, like the following. Click the **Next** button to go to the “Start Installation” page.

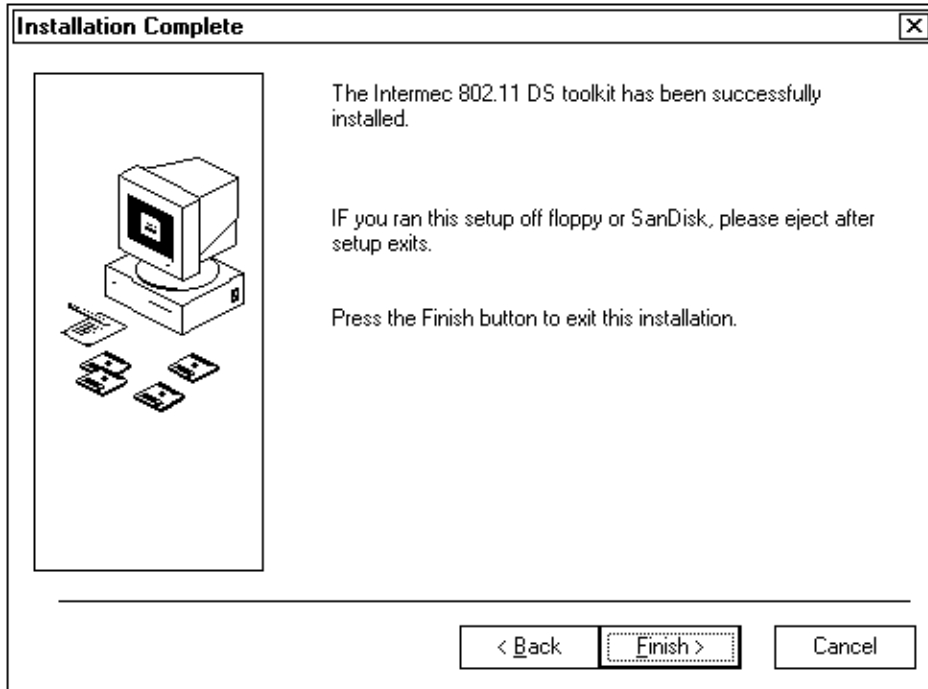
- **802.11 DS Utility** icon (shown right)



5. Click the **Next** button to start the installation.



- An “Installing” screen displays the files transferred from the toolkit into the destination directory, then the final “Installation Complete” screen appears with a reminder about disks or SanDisk cards. Click the **Finish** button to exit the toolkit.



## Section 4

# Desktop Applications



This section covers applications found on the Windows desktop once installed from the 6642 Toolkit. The applications include two pen recognition services and battery meter utility.

---

## Pen Recognition Services

The Microsoft Pen Services 2.0 and CIC PenX Recognition Software applications include a screen keyboard.



In some applications, Pen Services produces a text button (shown left) next to some text fields with which you can access the screen keyboard.

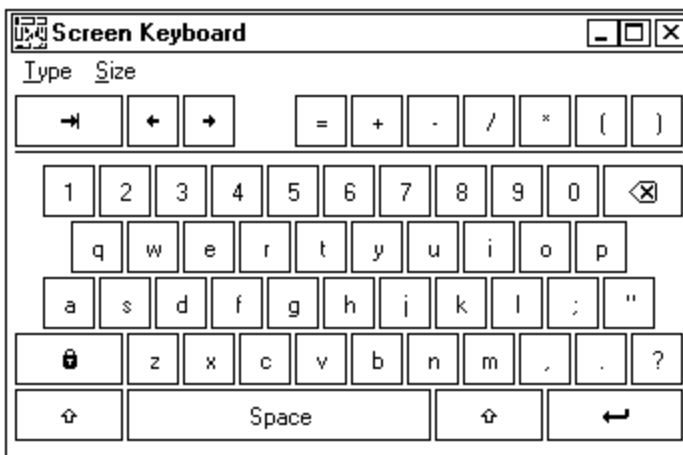
This text button can be disabled by editing a registry key. From the Windows desktop, select **Start Run** to access the “Run” window, then type “regedit” in the **Open** field. Click the **OK** button to access the “Registry Editor.”

From the “Registry Editor” tree, select **HKEY\_LOCAL\_MACHINE** → **Software** → **Microsoft** → **Windows** → **CurrentVersion** → **Pen** and look for the “Lens” field. A value of “1” enables the text button on text fields and a value of “0” disables or hides the text button from the text fields.

## Microsoft Pen Services 2.0

The Microsoft Pen Services application is accessed by selecting **Start** → **Programs** → **Pen Services** from the desktop.

The SK.EXE screen keyboard, from *Microsoft Windows for Pen Computing*, runs on Windows 98 and can also be found in the “C:\Windows” directory. Use the menu options to alter the type or size of this keyboard. Pictured below is the basic keyboard of normal size.



If you are using the screen keyboard to enter characters for an application and you notice that the application seems to lose focus and not receive the characters you sent, you may have to check that the mouse's pointer trail feature is turned off.

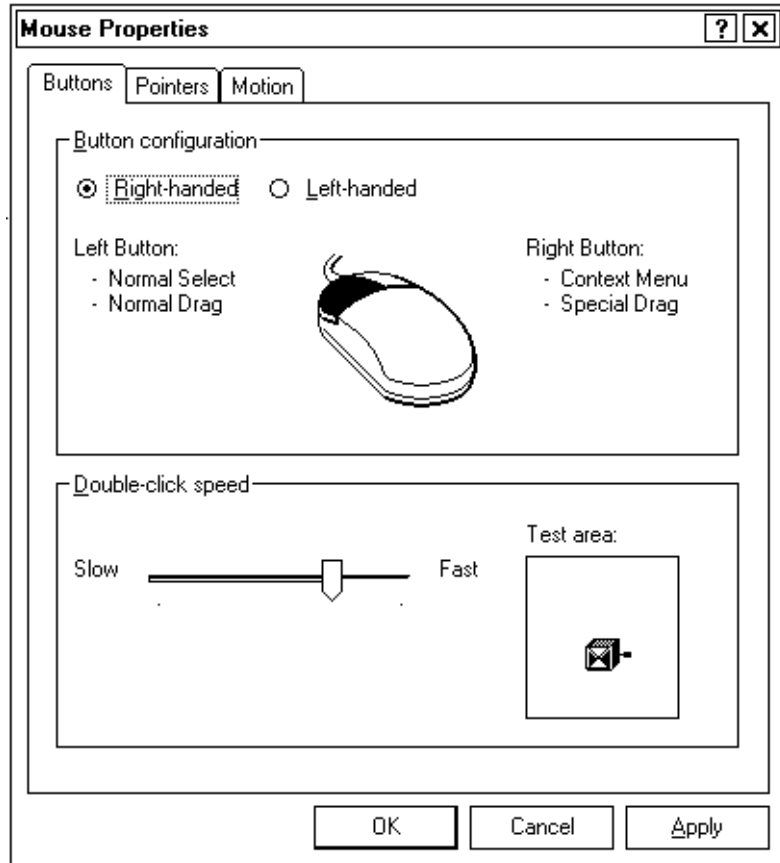


**Mouse**

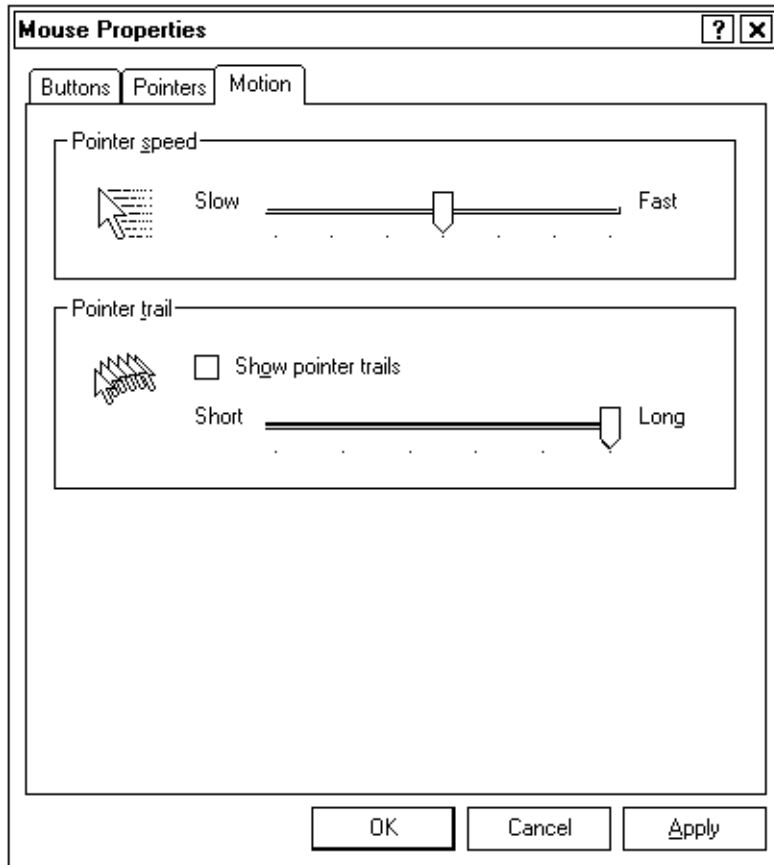
1. From the Windows desktop, select **Start** → **Settings** → **Control Panel** to access the “Control Panel,” then double-click the **Mouse** icon (shown left) to access the “Mouse Properties” window (see next page).



2. Click the **Motion** tab to access the pointer features (see next page).



3. Check to ensure there is no check mark in the **Show pointer trails** check box in the “Pointer trail” area. If there is a check mark, click the box to remove the check mark. Click the **Apply** button, then click the **OK** button to exit the “Mouse Properties” window.



## CIC PenX Recognition Software

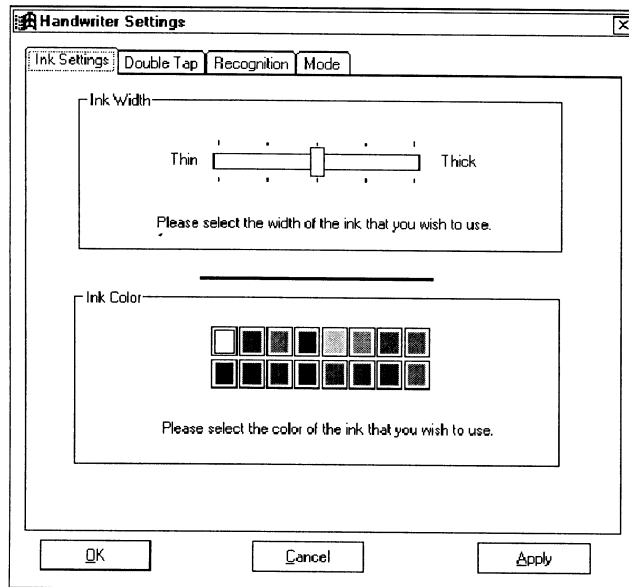
The CIC PenX Recognition Software application is a handwriting recognition system with a number of additional applications. Access these from the desktop by selecting **Start** → **Programs** → **CIC PenX X.X**.

### Handwriter Help

Basic information on how handwriting works on your system.

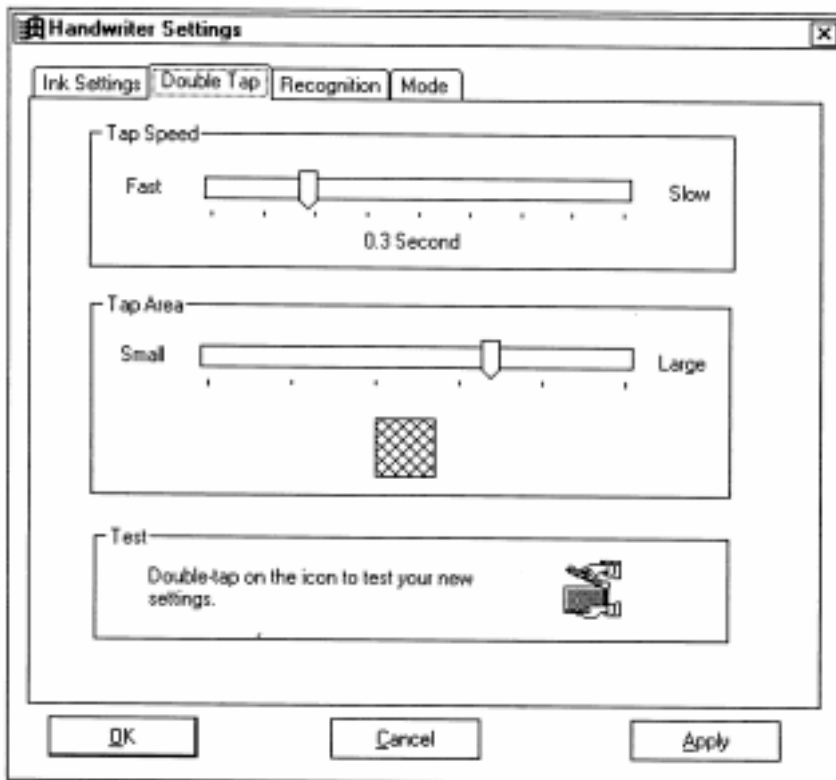
### Handwriter Settings

This is a control panel that manipulate inking and recognition features. Use **Ink Settings** to set the thickness and color of the stylus pen etchings made onscreen. Click **Apply** to save the ink settings; click **OK** to quit.



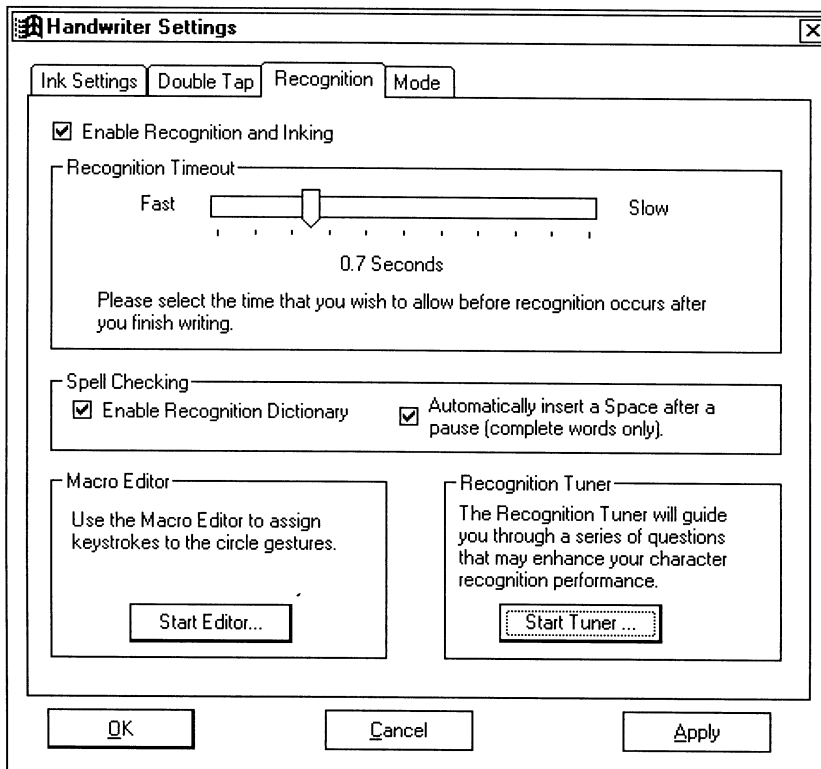
### Double Tap

The **Double Tap** page sets the speed and area at which you can tap the screen to incur “double-click.” Click **Apply** to save the settings; click **OK** to quit.



### Recognition

Use this page to enable recognition and inking, to dictate how soon the 6642 Pen Computer records your writing, and to enable a dictionary or automatically insert spaces between words. Click **Apply** to save; click **OK** to quit.

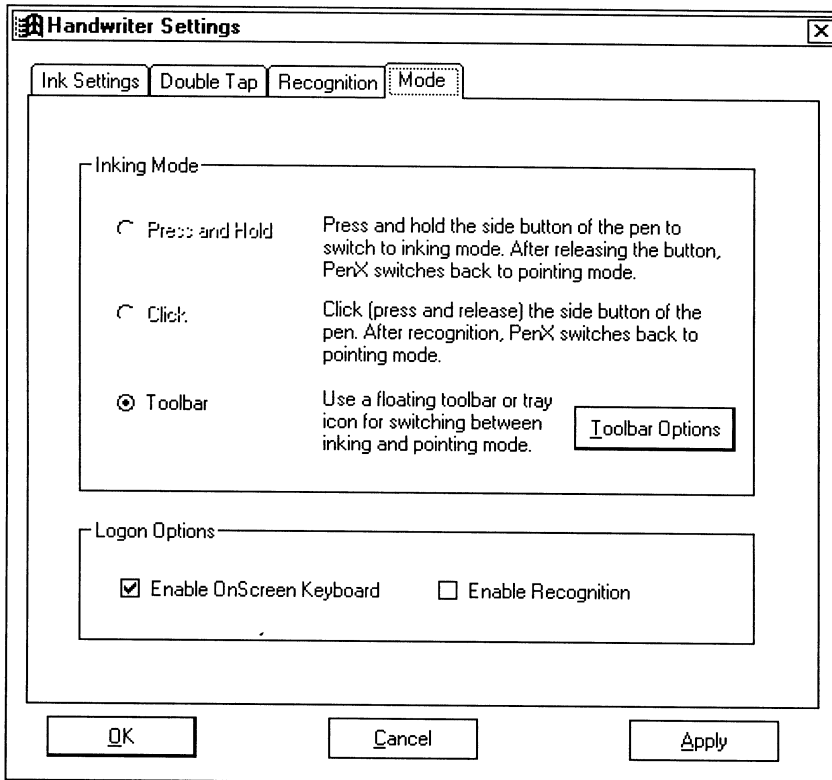


Once enabled, click **Start Editor** to access the "Gesture Macro Editor" application.

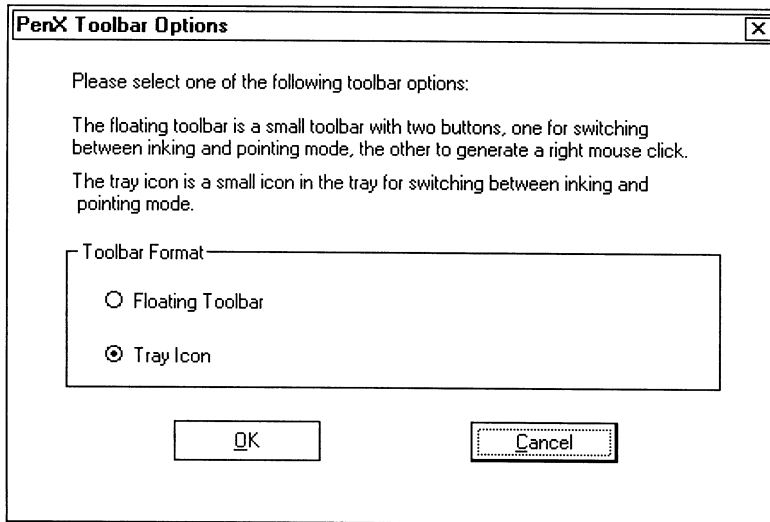
Also once enabled, click **Start Tuner** to access the "Training Wizard" to accustom the PenX application to your style of writing.

### Mode

The Mode page sets the function of the button on the stylus pen, logon options, and accesses the “Toolbar Options” screen.



If **Toolbar** is enabled, click **Toolbar Options** to access the following screen. Click **OK** to save and quit.

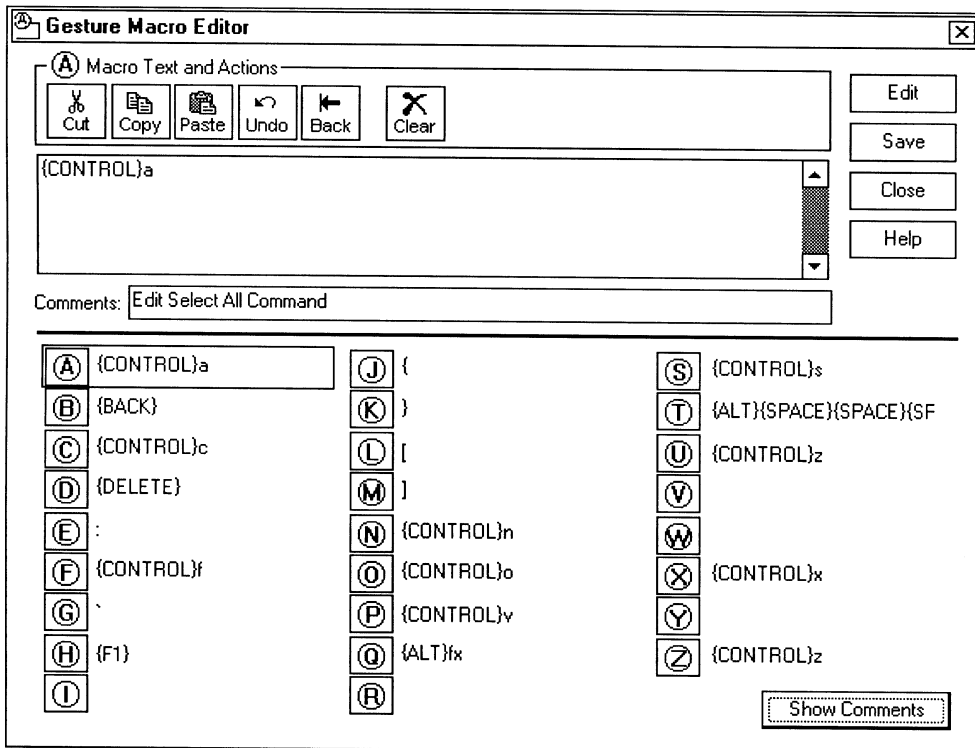


- ▶ Floating Toolbar places a small, two-button box on the desktop.
- ▶ Tray Icon puts a rotating “pencil” (inking) and “pointer” (pointing) icon in the system tray.

## Macro Editor

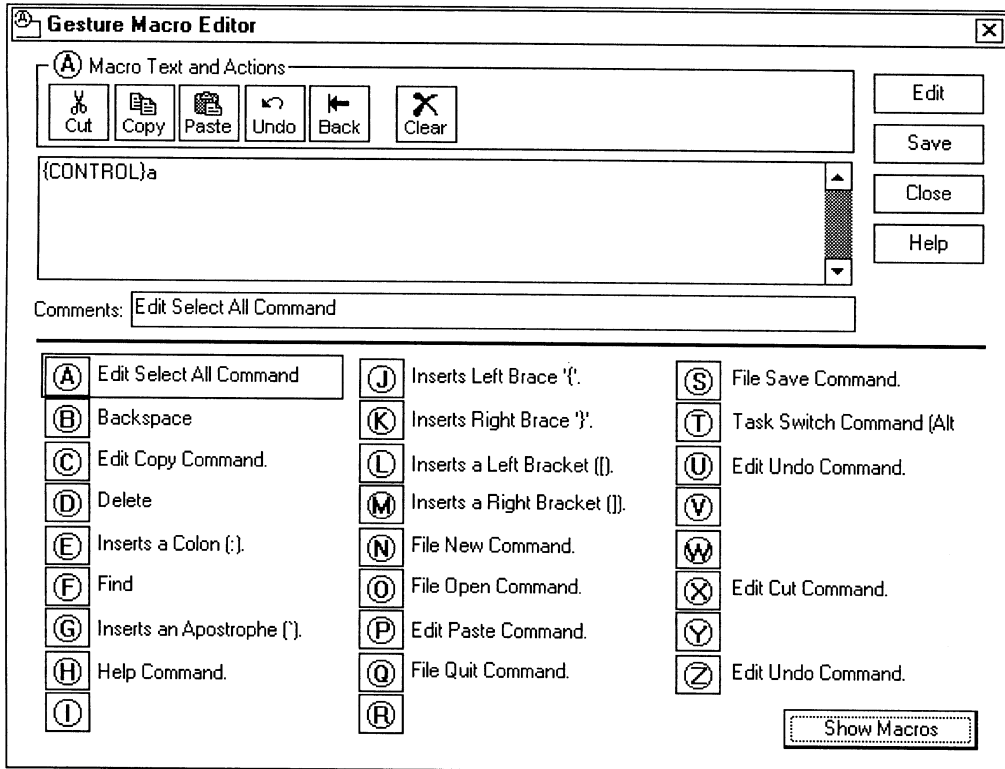
Access the “Gesture Macro Editor” either through the “Handwriter Settings” → “Recognition” page (see page 4-7) or by selecting **Start** → **Programs** → **CIC PenX X.XX** → **Macro Editor** from the desktop. Click **Edit**, then **Save** to create or modify macros or shortcuts. Click **Close** to quit. Click **Help** for more information about this editor.

Below is the editor showing the macro version. Click **Show Comments** to see the comments version (shown next page).



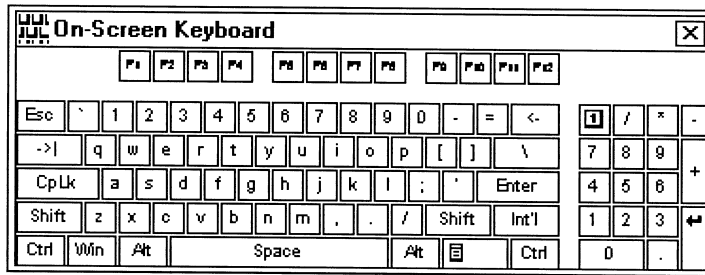


Below is the editor showing the comments version. Click **Show Macros** to see the macro version (shown previous page).



## Onscreen Keyboard

Select **Start**→**Programs**→**CICPenX X.XX**→**Onscreen Keyboard** from the desktop, then click the keyboard icon from the system tray to access the following onscreen keyboard for typing with a stylus. This may be configured to always appear on the desktop during start up or to stay minimized in the desktop system tray. Click the upper-right **Close** button to quit.

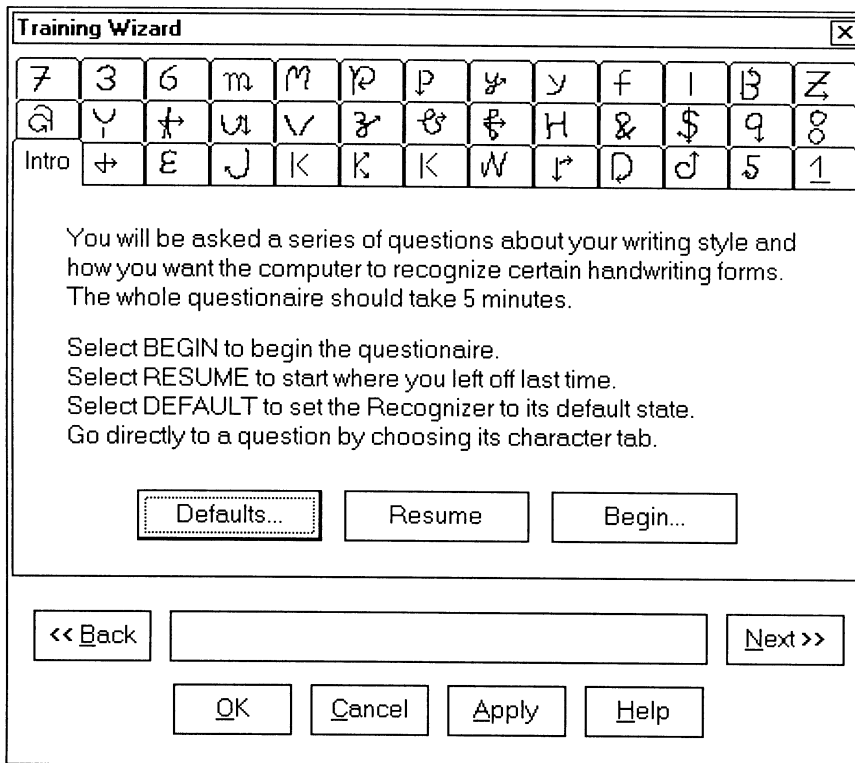


## Pen Controls Help

Select **Start**→**Programs**→**CICPenX X.XX**→**Pen Controls Help** from the desktop to access help files for using Active-X pen controls.

## Recognition Tuner

Access the “Training Wizard” either through the “Handwriter Settings” “Recognition” page (see page 4-7) or by selecting **Start Programs** → **CIC PenX X.XX** → **Recognition Tuner** from the desktop to access the “Training Wizard” application. This presents a questionnaire about your writing style. It adjusts the way the recognition system works and help improve handwriting recognition.



## ***PenX Support***

Review the online help file to become familiar with these applications. For additional information, visit the CIC web site at:

*<http://www.cic.com>*

for FAQs and other product information. If you still need technical assistance, email them at:

*[tech\\_support@cic.com](mailto:tech_support@cic.com)*

## Section 5

# Recovery Procedures



This section defines several ways you can do system recoveries on the 6642 Computer. The components needed for a 6642 Recovery Procedure are available in the 6642 Toolkit. Contact your Sales Representative for information.

The 6642 Computer uses third-party software from PowerQuest (<http://www.powerquest.com>) along with MS-DOS networking for system recovery. Software from PowerQuest stores and restores the entire contents of a hard drive to and from a single file.

Each 6642 Toolkit CD contains a factory-installed hard drive images created specifically for the 6642 Computer using software from PowerQuest. The images are located in the “\images” subdirectory on the Toolkit CD.

Using a recovery disk, you boot the 6642 Computer, create the proper HDD (Hard Disk Drive) partitions, gain access to the 6642 Toolkit CD by connecting to a designated server with the HDD image file, restore the HDD on the 6642 Computer to a known state, and reboot.

---

## Assumptions

The following assumptions are made prior to conducting a system recovery:

- ▶ Only two partitions exist on a HDD image, a Fat32 main partition is in position 1 of the partition table, and an STD is placed in position 4 of the partition table.
- ▶ The STD partition is recreated on every drive and never saved.
- ▶ When reimaging a system, the main partition will expand to fill all remaining free space.
- ▶ The main partition cannot be resized smaller. In other words, if the partition was 500 MB when stored into the “PQDI” image file, it can only go on a drive with at least 500 MB of free space.
- ▶ Reimaging a system destroys all existing partitions and data.
- ▶ Modifications can be made to the 6642 recovery process only if it is fully understood. Follow the CONFIG.SYS and AUTOEXEC.BAT trail for self-documenting batch files, and refer to the “PQDI” documentation for more details.

---

## Required Components

The following components are needed for a BIOS recovery:

- ▶ A parallel floppy drive and a parallel port
- ▶ A 6642 “Crisis Recovery” floppy disk

The following components are required for a system recovery using a shared location:

- ▶ 6642 Computer (to be recovered)
- ▶ Ethernet Cables and Hub (such as a LINKSYS 5-Port Workgroup Hub)
- ▶ NetGear PCMCIA Ethernet Card 410TA
- ▶ 6642 Recovery Toolkit CD-ROM
- ▶ Host computer on the network with a shared CD-ROM drive

These components are optional:

- ▶ 1.44 MB Floppy Disk
- ▶ Floppy Drive

If you are creating a bootable network cloning disk using “PQDI” (PowerQuest Drive Image) for multiple custom imaging, the following additional components are required:

- ▶ “PQDI” Software Package
- ▶ Writable location on the host computer and target 6642 Computer to store the image of the hard drive

---

## Shared Location Recovery Process

The following instructions list what is needed and tell how to restore or update the hard drive on the 6642 Computer via a shared location on the host computer.

### ***Before Reimaging 6642 Computer***

Do the following before reimaging a 6642 Computer.

#### ***Determine Server Name***

To determine the name of the server (or host computer) you are using to share the 6642 Toolkit CD.

1. From the host computer's Windows desktop, right-click the **Network Neighborhood** icon to access the pop-up menu.
2. Select **Properties** at the bottom of the pop-up menu to access the "Network" window.
3. Click the **Identification** tab to access the host computer identification information.

The server (or host computer) name is in the **Computer Name** field (sample screen on page 3-23).

#### ***Ensure Enabled File-Sharing***

To ensure that file-sharing is enabled on the host computer.

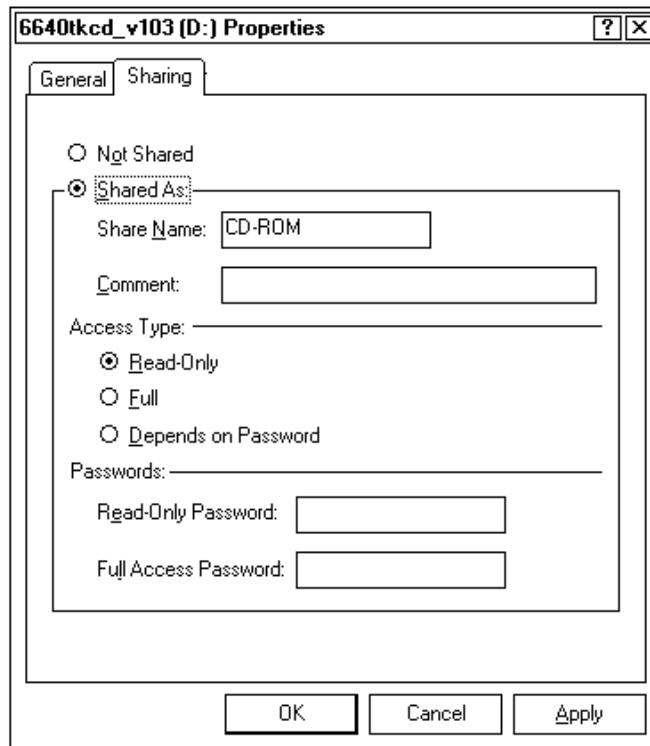
1. From Windows desktop, right-click the **Network Neighborhood** icon to access the pop-up menu.
2. Select **Properties** at the bottom of the pop-up menu to access the "Network" window, then click the **File and Print Sharing** button to access the "File and Print Sharing" window.
3. Ensure both boxes are checked (sample screen on page 3-37). If not, check both boxes, then click the **OK** button to save and return to the "Network" window.



## Determine Name of Shared Location

Determine the name of the shared location of the 6642 Toolkit CD-ROM via the host computer.

1. Access “Windows Explorer,” then right-click the CD-ROM drive to access the pop-up menu.
2. Select **Properties** at the bottom of the pop-up menu to access the 6642 Toolkit CD “Properties” window.
3. Click the **Sharing** tab to access the sharing information for the CD-ROM drive.
4. If not selected, click the **Shared As** option, then type “CD-ROM” in the **Share Name** field.

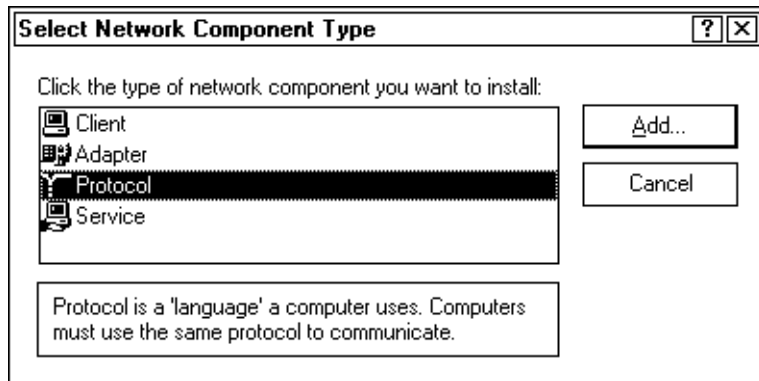


Click the **Apply** button to save your changes, if necessary, then exit the “Properties” window and “Windows Explorer.”

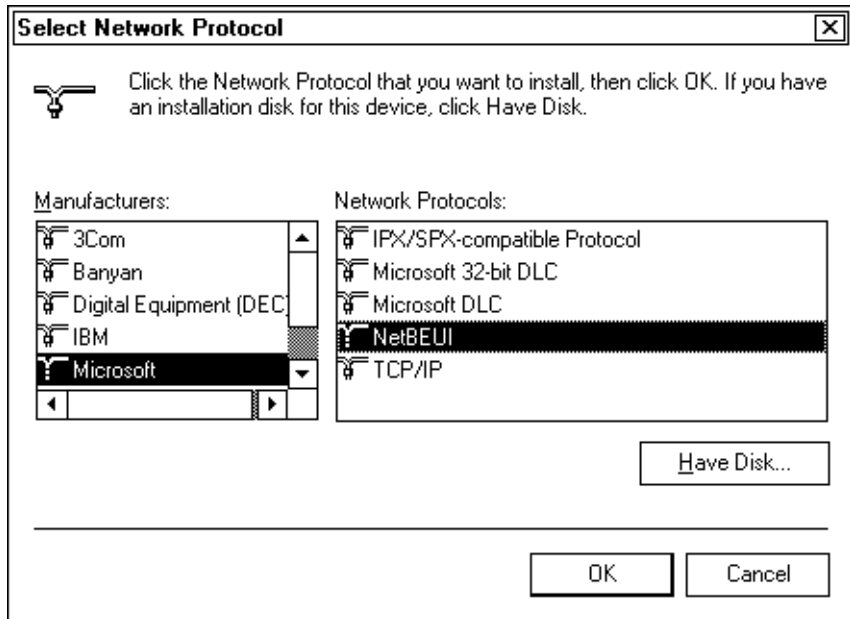
## Ensure Protocols Are Available

To ensure that the host computer has the “NetBEUI” and “IPX/SPX-compatible Protocol” components installed.

1. From the host computer’s Windows desktop, right-click the **Network Neighborhood** icon to access the pop-up menu.
2. Select **Properties** at the bottom of the pop-up menu to access the “Network” window.
3. Scroll down the list of components for the “NetBEUI” and “IPX/SPX-compatible protocol” items. If listed, exit the “Network” window and create the network recovery media (instructions are on page 5-7).
4. If either component is not listed, click **Add** to access the “Select Network Component Type” window.



5. Double-click the “Protocol” option for the “Select Network Protocol” window. Select “Microsoft” from the **Manufacturers** box, then select either “NetBEUI” or the “IPX/SPX-compatible Protocol” option.



Click the **OK** button to apply the selection, then click the **OK** button again to apply the change. You must reboot the host computer to save this change.

### **Create Network Recovery Media**

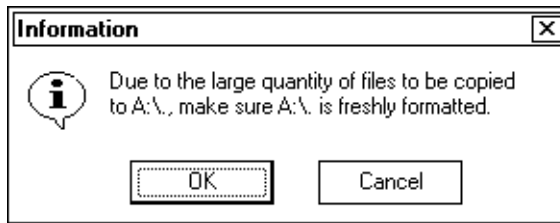
Create the proper network recovery media, using the first or second options via the “Bootable Diskette Creation” window.

1. Insert a formatted floppy disk in the floppy disk drive of the host computer.
2. Using “Windows Explorer,” access the contents of the Toolkit CD-ROM.
3. From the Toolkit CD-ROM, select **Drvsetup** → **support**, then double-click MKFLOPPY.EXE.

Follow the screens as defined in Section 4, starting on page 3-22. Note the following exceptions:

- ▶ In the “PQDI Toolkit Share Location” screen (sample on page 3-31), enter the host computer name (from page 5-4) and the CD-ROM share name (from page 5-5) in the field, using the format given in the screen.
- ▶ In the “Destination Location” screen (sample on page 3-27), the floppy disk drive should be selected. Click the **OK** button to copy the Toolkit CD contents to the floppy disk.

You may get the following message noting the quantity of Toolkit files. Click the **OK** button to continue.



## Shared Location Reimaging Process

To reimage the 6642 Computer:

1. Make the Ethernet connection between the 6642 Computer and the host computer using the hub and Ethernet cables.
2. Take the newly created recovery floppy disk from the host computer, then insert it in the floppy drive on the 6642 Computer. Press the power button on the 6642 Computer to do a hard reboot (power off/power on).
3. Press [**1**], then press [**Enter**] on the external keyboard to select the “Recover a 6642” option from the “Microsoft Windows 98 Startup Menu” screen.

An “EasyRestore” application appears to list Support Center information and the progress of the copied files.

The imaging is successful when you see the following on a blank screen on the 6642 Computer:

```
-----  
Imaging of 6642 complete  
Remove any Diskettes from A:  
Power off system before running windows  
A:\>_
```

```
-----
```

If the above information does not appear, call Customer Support at 800-755-5505 (U.S.A or Canada) or 425-356-1799 for assistance. Be sure to select option 2. Have your name, your company name and address, phone number or fax number, equipment model, and software or firmware version information ready when you call.

---

# System Cloning Process

System cloning is the same method as the reimaging process with one exception. Instead of using an image from the 6642 Toolkit CD, create the image from the 6642 Computer with the custom settings and software already loaded.

## Create an Image

This requires the replication kit P/N: 474-028-902.

- ▶ You can either create this image manually using PowerQuest's DriveImagePro found at the following URL:  
*http://www.powerquest.com/driveimagepro/index.html*
- ▶ or, you can also create an image using the "Network Cloning Diskette" window via the 6642 Toolkit CD:
  1. Insert a formatted floppy disk in the floppy disk drive of the host computer.
  2. Using "Windows Explorer," access the contents of the Toolkit CD-ROM.
  3. From the Toolkit CD-ROM, select **Drvsetup** → **support**, then double-click MKFLOPPY.EXE.
  4. Select the **Bootable Network Cloning Diskette** option from the "Bootable Diskette Creation" screen (shown on page 3-22), then follow the steps starting on page 3-29. Below are the exceptions:
    - ▶ In the "PQDI Share Location" screen (sample on page 3-32), enter the share location for the PQDI CD-ROM and server location and file name of the custom .PQI file in the field.
    - ▶ In the "Destination Location" screen (sample on page 3-27), the floppy disk drive should be selected. Click the **OK** button to copy the Toolkit CD contents to the floppy disk.

You may get a message noting the quantity of Toolkit files. Click the **OK** button to continue.

► **NOTE:**

*You need the external keyboard on both the source 6642 Computer and the target 6642 Computer to continue.*

## ***Clone Source Computer Image***

To create the clone image from the source (master) 6642 Computer:

1. Take the newly-created network clone floppy disk from the host computer and insert the disk into the source (or master) 6642 Computer.
2. Boot the 6642 Computer.
3. Press [**1**], then [**Enter**] to select the “Network Image Creation (Intermec 6642)” option from the “Microsoft Windows 98 Startup Menu” screen.

The hard drive image file is created from the source 6642 Computer and copied to a network location. When done, the A: prompt appears on the screen. Remove the disk, then reboot the source computer.

## ***Image Target Computer***

Restore the hard drive image previously created from the source (master) 6642 Computer onto a target (or slave) 6642 Computer.

1. Place the same disk in the floppy drive of the target 6642 Computer.
2. Boot the target 6642 Computer.
3. Press [**2**], then [**Enter**] to select the “Network Image Recovery (Intermec 6642)” option via the “Microsoft Windows 98 Startup Menu” screen.

Files are copied onto the target 6642 Computer. When done, the A: prompt appears on the screen. Remove the disk, then reboot the target computer.





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