



ControlNet Communication Card

1784-PCC

Installation Manual



Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of this control equipment must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards.

The illustrations, charts, sample programs and layout examples shown in this guide are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Allen-Bradley does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Allen-Bradley publication SGI-1.1, *Safety Guidelines for the Application, Installation and Maintenance of Solid-State Control* (available from your local Allen-Bradley office), describes some important differences between solid-state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

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Throughout this manual we use notes to make you aware of safety considerations:



Identifies information about practices or circumstances that can lead to personal injury or death, property damage or economic loss

Attention statements help you to:

- identify a hazard
- avoid a hazard
- recognize the consequences

IMPORTANT

Identifies information that is critical for successful application and understanding of the product.

Allen-Bradley is a trademark of Rockwell Automation

European Communities (EC) Directive Compliance

If this product has the CE mark it is approved for installation within the European Union and EEA regions. It has been designed and tested to meet the following directives.

EMC Directive

This product is tested to meet the Council Directive 89/336/EC Electromagnetic Compatibility (EMC) by applying the following standards, in whole or in part, documented in a technical construction file:

- EN 50081-2 EMC Generic Emission Standard, Part 2 Industrial Environment
- EN 50082-2 EMC Generic Immunity Standard, Part 2 Industrial Environment

This product is intended for use in an industrial environment.

Low Voltage Directive

This product is tested to meet Council Directive 73/23/EEC Low Voltage, by applying the safety requirements of EN 61131-2 Programmable Controllers, Part 2 - Equipment Requirements and Tests. For specific information required by EN 61131-2, see the appropriate sections in this publication, as well as the Allen-Bradley publication Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

This equipment is classified as open equipment and must be mounted in an enclosure during operation to provide safety protection.

This release of the 1784-PCC installation instructions contain new and updated information about Windows 2000 and Windows Me (Millenium Edition), as well as additional third-party PC card controller vendors for Windows NT. You will see change bars, as shown to the left of this paragraph, throughout this manual to help you quickly identify revisions.

Other information was revised extensively. For those chapters that contain all new information, or extensively revised information, you will find a change bar in the margin of the chapters.

Notes:

About the Manual

Use this manual to install and use the ControlNet[®] PC card (PCMCIA interface), catalog number 1784-PCC. This interface enables a system to communicate on a ControlNet network.

Audience

The information in this manual is intended for users who are:

- familiar with Windows[®] 2000, Windows NT[™], Windows[®] Me, Windows 98[®], Windows 95[®]
- experienced with one or more of these Allen-Bradley products: PLC-5[®], ControlLogix, or SLC-500[™] family of programmable controllers, or any other products that communicate with the PCC card
- experienced with ControlNet configuration software and the ControlNet network

Refer to the following table for the version of RSLinx you will need for your operating system.

Operating System	Version of RSLinx
Windows 95/98/Me	2.0 or later
Windows NT	2.1 or later
Windows 2000	2.2 or later

Conventions

I

In this manual, anything that you can select, click on, or type on a screen is shown in **bold** type.

Rockwell Automation Support

Rockwell Automation offers support services worldwide, with over 75 sales/support offices, over 500 authorized distributors, and 260 authorized systems integrators located throughout the United States alone, plus Rockwell Automation representatives in every major country around the world. Contact your local Rockwell Automation representative for:

- sales and order support
- product technical training
- warranty support
- support service agreements

Obtain Pre-Sales Product Support

If you need to contact Rockwell Automation for pre-sales product support, try one of the following methods:

- Call your local Rockwell Automation representative
- Network pre-sales support line, 1.440.646.3638 (3NET)
- Pre-Sales e-mail, RACle3net@ra.rockwell.com

Obtain Technical Product Support

If you need to contact Rockwell Automation for technical assistance, try one of the following methods:

Type of technical support:	Access at:
Personalized Service	Call your local Rockwell Automation representative
Post-sales Technical Support	1.440.646.5800
Email your questions to	racleasktheexpert@ra.rockwell.com
Internet site	www.ab.com, then select Product Support or www.ab.com/support/products/pccards.html
	Note: You can access Rockwell Automation Knowledge documents from this internet address.

Abbreviations

Throughout this manual, we abbreviate some terms. Use the following table to become familiar with our terminology.

mational Association.

IMPORTANT

Driver and firmware versions that appear in the screen captures in this manual are not necessarily the latest version available. The version you use should be the version that appears in the screen capture or a later version.

In this document, we refer to the ControlNet PC card as the 1784-PCC card.

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About the 1784-PCC Card

What is in This Chapter?

Read this section to familiarize yourself with PC card technology and the 1784-PCC card. The following table describes what this chapter contains and where to find specific information.

For information about this topic:	See page:
What is PCMCIA?	1-1
What is a PC Card?	1-1
What is the PCC Card?	1-3

What is PCMCIA?

The Personal Computer Memory Card International Association (PCMCIA) developed a standard for credit-card size personal computer (PC) cards. The PCMCIA standard defines an architecture and communication method for these PC cards.

PC cards developed under Release 1.0 of the PCMCIA standard are used for data storage. PC cards developed under Release 2.0 of the PCMCIA standard can be used for both I/O and data storage.

What is a PC Card?

Since personal computers have become smaller, a need for smaller storage media developed. The PC card is a small form-factor adapter that can add memory, storage, and I/O capabilities to these smaller computers.

All PC cards measure the same length and width (54 mm x 85.6 mm), but differ in thickness at the center. The thickness at the connector end and along the rails is the same for all types of PC cards.

Architecture

Currently there are three types of PC cards:



IMPORTANT

If the PCMCIA slot in your computer is thick enough to accommodate a Type III card, then it can also accommodate a Type I or II card.

All three types of PC cards use the same 68–pin connector. The pins are in two parallel rows of 34 pins. When inserted into the PCMCIA slot on your computer, the connector mates with a single molded socket.



What is the PCC Card?

The ControlNet communication card (1784-PCC) allows you to connect a programming device to any intelligent device (i.e., workstation, PLC[®], processor, scanner, or adapter) on a ControlNet network through the Network Access Port (



IMPORTANT

Your computer must be PCMCIA 2.1 compliant to support the 1784-PCC card. To verify that your computer is PCMCIA 2.1 compliant, see your computer's user manual.

Notes:

Pre-Installation Procedures

What is in This Chapter?

The following table describes what this chapter contains and where to find specific information.

For information about this topic:	See page:
Verify Your Package Contents	2-1
System Requirements	2-2
Find the 1784-PCC Driver	2-3

Verify Your Package Contents

Be certain that you have these items before you discard any packing material. If an item is missing or incorrect, contact your local sales representative.





1784-PCC installation utility disk



Ree Oraday	
ControlNet Communication Card (Cat. No. 1784-PCC)	Installation Manual
ControlNet	

installation manual (publication 1784-IN034C-EN-P) 30185-M

System Requirements

operating system	Microsoft [®] Windows 95/98/Me, 2000, or NT 4.0
application software	RSNetWorx for ControlNet software RSLinx 2.0 or later for Windows 95/98/Me RSLinx 2.1 or later for Windows NT RSLinx 2.2 or later for Windows 2000
memory for computer resources	at least 8 MB
memory for card resources	4KB
IRQ	1 available IRQ
diskette drive	One 3.5" diskette drive
hard disk space	300K
PCMCIA slot	one Type II slot

ATTENTION



Windows NT users:

If you have a 1784-PCC series A interface card, you will need to perform a flash upgrade to upgrade to series B. Refer to Publication 1784-PCC-RN1 for details. To access this information, visit www.ab.com/support. Click on the PC Cards link and download the PCC_Upgrade.exe file. This file contains both the upgrade utility and the publication (1784-PCC-RN1) containing the instructions for completing the upgrade.

Find the 1784-PCC Driver

When you install drivers for your operating systems, you must be certain to install the correct files. Windows 95/98/Me systems require a Virtual Device Driver (VxD), which contains .inf and .vxd files. Windows NT requires an NT driver, which uses setup.exe, Unpccnt.exe and pcc_config.exe files. Windows 2000 requires a Windows Driver Model (WDM), which contains .inf and .sys files. Refer to the table below to be sure you are installing the correct driver files.



Failure to install the correct driver files could result in unpredictable system operation.

Source (where	Driver location (for each operating system)		
the driver is loaded from)	Windows 95/98/Me	Windows NT	Windows 2000
installation disk (shipped with the 1784-PCC card)	A:\Rsipcc.inf A:\Rsipcc.vxd where A:\ is the floppy drive letter	A:\setup.exe A:\Unpccnt.exe A:\pcc_config.exe where A:\ is the floppy drive letter	A:\Win2K\PccWdm.inf A:\Win2K\PccWdm.sys where A:\ is the floppy drive letter
RS-Linx 2.2 or later product CD	E:\PnP_Drivers\Win9x\Rsipcc.inf E:\PnP_Drivers\Win9x\Rsipcc.vxd where E:\ is the CD-ROM drive letter	Not distributed on RSLinx product CD	E:\PnP_Drivers\Win2K\PccWdm.inf E:\PnP_Drivers\Win2K\PccWdm.sys where E:\ is the CD-ROM drive letter
internet		ww.ab.com/support/products/pccard mation Knowledge documents at this	

Notes:

Install and Use the 1784-PCC Card in Windows 95/98/Me

What is in This Chapter?

Read this chapter to learn how to operate the 1784-PCC card on Windows 95/98/Me. The following table describes what this chapter contains and where to find specific information.

For information about this topic:	See page:
Locate the 1784-PCC Windows 95/98/Me Driver	3-2
Install the 1784-PCC Driver	3-2
Stop the Card	3-6
Remove and Uninstall the 1784-PCC Driver	3-7
Enable the PC Card Icon on the Taskbar	3-8
Troubleshoot the Card Installation	3-10

IMPORTANT

The screen captures in this chapter are taken from Windows 95/B. If you are using another version of Windows 95,98, or Me, your screens may be different.

Locate the 1784-PCC Windows 95/98/Me Driver

When you install drivers for your operating systems, you must be certain to install the correct files. Windows 95/98/Me systems require a Virtual Device Driver (VxD), which contains .inf and .vxd files. Refer to the table below to be sure you are installing the correct driver files.

ATTENTION



Failure to install the correct driver files could result in unpredictable system operation.

Source (where the driver is loaded from)	Driver location (for Windows 95/98/Me operating systems)
installation disk (shipped with the 1784-PCC card)	A:\Rsipcc.inf A:\Rsipcc.vxd where A:\ is the floppy drive letter
RS-Linx 2.2 or later product CD	E:\PnP_Drivers\Win9x\Rsipcc.inf E:\PnP_Drivers\Win9x\Rsipcc.vxd where E:\ is the CD-ROM drive letter
internet	www.ab.com/support/products/pccards.html You can also access Rockwell Automation Knowledge documents at this site.

Install the 1784-PCC Driver

Follow the procedures below to install the Windows 95/98/Me driver for the 1784-PCC Series A or B card.

1. In Windows 95/98/Me, insert the card into the PCMCIA slot by following the directions in Chapter 7, "Insert and Remove the 1784-PCC Card".

After you insert the PCC card, the system detects the hardware and begins to build the driver information needed to run the hardware. Because the driver has not been loaded, Windows 95/98/Me displays a new hardware dialog box and the following message:



You see:

Update Device Driver V	√izard
	This wizard will complete the installation of:
	Allen-Bradley Company, Inc1784-PCC/B
	by searching your local drives, network, and Internet locations for the most current driver.
	If you have a disk or CD-ROM that came with this device, insert it now.
	It is recommended that you let Windows search for an updated driver. To do this, click Next to continue.
T	
	< Back. Next> Cancel

2. Insert the installation disk into the floppy disk drive.

3. Click **Next** to begin the install.

You see a message telling you that the system is searching for a driver for the new device.

Once Windows 95/98/Me finds the driver, you should see:

Update Device Driver \	; √izard
	Windows found the following updated driver for this device: Allen-Bradley Company, Inc. 1784-PCC/B (Driver Ver. 3.)
	If you want to use this driver, click Finish. If this is not the correct driver and you want to search for a different driver manually, click Other Locations. Location of Driver
*	Other Locations
	< <u>B</u> ack Finish Cancel



If you do not see the message that Windows has found a driver (as shown in the screen above), click the **Other Locations** button on the screen and select the appropriate 95/98/Me driver. Refer to the table on page 3-2 for the correct driver file to install.

4. Click Finish to install/upgrade the driver.

You may see the following message:

Insert Di	sk 🛛 🕅
8	Please insert the disk labeled '1784-PCCInstallationUtility', and then click OK.
	<u> </u>

a. If you have not already done so, insert the diskette into the floppy disk drive and press **Enter** or click **Ok**.

You	see:
-----	------

Copying	Files	X
-	The file 'pcc_del.exe' on 1784-PCCInstallationUtility could not be found. Insert 1784-PCCInstallationUtility into the drive selected below, and click OK.	OK Cancel
	Copy files from:	<u>S</u> kip File <u>D</u> etails <u>B</u> rowse
	,	

- b. In the Copy files from box, specify the drive (usually **A:**\) that corresponds to your floppy disk drive.
- c. Press Enter or click Ok.

After the system has finished copying files, you should hear two upward tones that indicate the card is ready to use. If you do not hear these tones, check to see that your speakers/sound are enabled.

5. Run the 1784-PCC test utility as described in Chapter 6 to verify your installation. If the test fails, refer to the section entitled Troubleshoot the Card Installation on page 3-10 of this manual.

Stop the Card

In Windows 95/98/Me, before you remove the 1784-PCC card from its sockets, you should stop the communication to it. To do this:



1.Click with your right mouse button on the PC Card icon in the taskbar. If the icon is not there, refer to the section entitled Enable the PC Card Icon on the Taskbar on page 3-8 of this manual.

- 2. Select Adjust PC Card Properties.
- 3. In the list of PC cards, click on the 1784-PCC card you want to stop.
- 4. Click Stop.
- **5.** When you see the window that states that you may safely remove this device, press **Enter** or click **Ok**.
- 6. Remove the 1784-PCC card from the PCMCIA slot.

Alternately, to stop the card, you can do the following:

- 1. Click with your left mouse button on the PC Card icon in the taskbar.
- 2. Click on the 1784-PCC card you want to stop in the list of PC cards.
- 3. Click Stop.
- **4.** When you see the window that states that you may safely remove this device, press **Enter** or click **Ok**.

Remove and Uninstall the 1784-PCC Driver

I

You can access the uninstaller through the Windows 95/98/Me Add/Remove programs applet to remove the card's driver from your system.

- 1. Stop the PCC card as described on page 3-6.
- **2.** Access the Control Panel by selecting **Start** \Rightarrow **Settings** \Rightarrow **Control Panel**.
- 3. Double-click on the Add/Remove Programs icon.
- 4. Select Allen-Bradley 1784-PCC Driver.

Add/Remo	ove Programs Properties	
Install/Uni	install Windows Setup Startup Disk	
Ð	To install a new program from a floppy disk or CD-ROM drive, click Install.	
	Install	
S	The following software can be automatically removed by Windows. To remove a program or to modify its installed components, select it from the list and click Add/Remove.	
Allen-Br DCOM I Infrared Latitude Microso Rockwe RSLinx	edeu 1784-PCD Driver Ver. 3.0 adley 1784-PCD DeviceNet Driver for Windows 95 Support for Windows 95 c/Dock Quick Install for Windows 95 ft Office 97, Professional E dition ell Software Harmory Runtime 2.0 Ma Soft Synthesizer S-YXG50	
	Add/ <u>B</u> emove	
	OK Cancel Apply	

5. Click the Add/Remove button. You see:



- **6.** Remove the 1784-PCC card before continuing. The system gives you the opportunity to cancel the operation before deleting any files.
- 7. Press Enter or click Ok to remove the driver.

Enable the PC Card Icon on the Taskbar

The PC card icon in the Taskbar lets you know the status of your PC card, and lets you stop processing before you remove or change PC cards. You can display this icon within the Taskbar on your Windows 95/98/Me desktop. You will see this icon only when there is one or more PC card(s) installed in the computer.

To set up the PC card icon within the Taskbar:

- **1.** Access the Control Panel by selecting **Start** \Rightarrow **Settings** \Rightarrow **Control Panel**.
- 2. Double-click the PC card (PCMCIA) icon.



If you find that there is no PC card icon in the Control Panel, this could be an indication that the PCMCIA socket hardware or drivers were not installed properly. This situation prevents Windows 95/98/Me from locating the PC card. To resolve this problem, contact the computer manufacturer.

3. When the PC card Properties dialog box appears, click Show control on the taskbar.

If you do not see these dialog boxes, contact the computer manufacturer.

PC Card (PCMCIA) Properties
Socket Status Global Settings
Sector A PC card, select it from the list, and then click Stop.
Compty) - Socket 1 Allen-Bradley Company, Inc1784-PCC/B - Socket 2
Stop
 ✓ Show control on taskbar ✓ Display warning if card is removed before it is stopped
OK Cancel Apply

4. Press Enter or click Ok. The PC card icon appears in the Taskbar.



Troubleshoot the Card Installation

To resolve card installation issues:

- 1. Insert your 1784-PCC card into your system.
- 2. Click the My Computer icon with the right mouse button.
- Select Properties from the menu. The System Properties dialog box appears.

System Properties		? ×
General Device Manager Hard	dware Profiles Performance	
	System: Microsoft Windows 95 4.00.950 Registered to:	
	Computer: 80486 12.0MB RAM	
	OK Ca	incel

4. Click the **Device Manager** tab.

All of the devices within the system are displayed.

5. Scroll through the devices and search for the Allen–Bradley PCC Family line.

If this line has a plus sign, click the plus sign to expand the item.

The Allen-Bradley 1784-PCC card should be listed.



- 6. Select the Allen-Bradley Company, Inc. 1784-PCC card.
- 7. Click the **Properties** button.

You see:

Allen-Bradley Company, Inc. 1784-PCC/B (Driver Ver 😭 🔀
General Driver Resources
Allen-Bradley Company, Inc. 1784-PCC/B (Driver Ver. 3.0)
Device type: Allen-Bradley PCC Family Manufacturer: Allen-Bradley Company, Inc. Hardware version: Not available
Device status
This device is working properly.
Device usage
Disable in this hardware profile
Exists in all hardware profiles
OK Cancel

If Code 10 (conflicting memory resources) is reported in the Device status dialog box, continue with the following steps.

8. In the Properties dialog box, click the **Resources** tab.

llen-Bradley Company,	Inc. 1784-PCC/B (Driver Ver 👔 🗙
General Driver Resou	rces
Allen-Bradley C 3.0)	ompany, Inc. 1784-PCC/B (Driver Ver.
<u>R</u> esource settings:	
Resource type	Setting
Input/Output Range	0100 - 0101
Interrupt Request	15
Memory Range	000CE000 - 000CEFFF
Setting based on: Bas	ic configuration 0000
Change Setting	☑ Use automatic settings
	_
Conflicting device list:	
No conflicts.	×
	OK Cancel

Verify that there are no resource conflicts listed in the Conflicting Device list. You also should verify that you have assigned an interrupt to the 1784-PCC card. If you have not, then you need to do so. You may have to disable a device to make an interrupt available. **9.** If there are conflicts, you may need to alter the settings of devices involved in the conflict to get the 1784-PCC card to function properly.

Try unchecking the **Use automatic settings** box and then changing the conflicting I/O, interrupt, or memory resources.

IMPORTANT The option of unchecking the **Use automatic settings** box is Not always available in Windows 98. It depends on how the operating system was installed and configured.

If there are no conflicts, continue with the following steps.

- **10.** Return to the Device Manager and scroll through the list to find PCMCIA sockets.
- 11. Double-click PCMCIA sockets to expand it.
- 12. Click on the PCMCIA controller used by your system.
- **13.** Click **Properties**. Verify that the socket controller is enabled in the hardware profile you are using.

lf	Then
the device status says, "This device is not present, not working properly, or does not have all	 click the Resources tab and check the Conflicting Device list for possible hardware conflicts; or you may want to verify that the Use Automatic Settings option is enabled.
drivers installed, code 10."	 you may have a general PCMCIA problem. You should contact your computer manufacturer for a resolution.
Install and Use the 1784-PCC Card in Windows NT

What is in This Chapter?

Read this chapter to learn how to operate the 1784-PCC card on Windows NT. The following table describes what this chapter contains and where to find specific information.

For information about this topic:	See page:
Locate the 1784-PCC Driver for Windows NT	4-5
Install the 1784-PCC Driver	4-5
Troubleshoot the Card Installation	4-11
Remove the 1784-PCC Driver	4-15

Before You Begin

Read the following **before** you install your 1784-PCC card, Series B or later.



If you have a 1784-PCC series A interface card, you will need to perform a flash upgrade to upgrade to series B. Refer to Publication 1784-PCC-RN1 for details. To access this information, visit www.ab.com/support. Click on the PC Cards link and download the PCC_Upgrade.exe file. This file contains both the upgrade utility and the publication (1784-PCC-RN1) containing the instructions for completing the upgrade.



The 1784-PCC series B interface card and NT Driver are designed for use in notebook PCs equipped with NT 4.0 from the original manufacturer and certified by Microsoft.

If your PC is not certified, it may not be compatible for use with the 1784-PCC series B card under NT 4.0.

IMPORTANT

Before you can install the driver for the 1784-PCC/B card, you must be logged in as an administrator of the machine. Being an administrator gives you permission to install or make changes to the machine software. If you try to install the driver without being an administrator, you will get error messages and the driver will not install.

- You must be running Windows NT 4.0 with Service Pack 3 or later.
- You can use only one 1784-PCC card at a time in Windows NT.
- You must have RSLinx 2.1 or greater.

Do You Have Any of the Following Third-Party Plug-and-Play PC Card Controller Software Installed?

lf	Then	
you do have third-party plug-and-play PC card controller software	a PC card icon (circled in this illustration) will appear on the Windows task bar	j∞ _⋛ ⊗∰⊳⊅⊡
you do not have third-party plug-and-play PC card controller software	go to page 4-5 and continue wit	h the driver installation.



To find the version of your third-party plug-and-play software, you can usually do the following:

- 1. Double-click on the PC card icon in the taskbar.
- **2.** When a dialog box appears, click **Help** \Rightarrow **About**.

SystemSoft's CardWizard

The 1784-PCC Windows NT driver does not work with SystemSoft's CardWizard versions prior to 5.10.06.

If you have SystemSoft's CardWizard, you must upgrade the PC Card Controller Software to version 5.10.06 or later for the 1784-PCC driver to function.

For more information on obtaining the CardWizard upgrade for use with the 1784-PCC card, contact your computer manufacturer or SystemSoft:

- Internet: www.systemsoft.com
- Phone: 1.800.796.0088 or 508.651.0088 (ask for sales)

Phoenix/Softex's Card Executive

If you have Phoenix/Softex's Card Executive, you must upgrade the PC Card Controller Software to version 2.35 or later for the 1784-PCC Driver to function.

For more information on obtaining the Card Executive upgrade for use with the 1784-PCC card, contact your computer manufacturer or Phoenix/Softex:

- Internet: www.softexinc.com or www.phoenix.com/platform/cardexec.html
- Phone: 512.452.8836
- Fax: 512.795.8702



If you have a version of Card Executive between 2.24 and 2.35, contact Rockwell Automation Technical Support at 440.646.5800 for a free patch.

IMPORTANT

When using Card Executive, do not access the Windows Control Panel (Start \Rightarrow Settings \Rightarrow Control Panel; double-click the PC card icon). Instead, access the Phoenix/Softex Control Panel by double-clicking the PC card icon in the taskbar.

Unicore's CardWare

Contact your computer manufacturer for the recommended version.

For more information, contact Unicore:

- Internet: www.unicore.com/products/CardWare/CardWarent.cfm
- Phone: 978.686.6468

IMPORTANT

The PCC_Config utility (described on page 4-11) does not work with CardWare. If you have an unresolved resource conflict, contact your computer manufacturer.

Locate the 1784-PCC Driver for Windows NT

When you install drivers for your operating systems, you must be certain to install the correct files. Windows NT systems require an NT Driver. Refer to the table below to be sure you are installing the correct driver files.

ATTENTION

Failure to install the correct driver files could result in unpredictable system operation.

Source (where the driver is loaded from)	Driver location (for Windows NT operating systems)
installation disk (shipped with the 1784-PCC card)	A:\setup.exe A:\Unpccnt.exe A:\pcc_config.exe where A:\ is the floppy drive letter
internet	www.ab.com/support/products/pccards.html You can also access Rockwell Automation Knowledge documents at this site.

Install the 1784-PCC Driver

Follow the procedure below to install the Windows NT driver for the 1784-PCC/B card.

IMPORTANT

You are required to insert the 1784-PCC card in order for the installation to work properly. We recommend that you insert the 1784-PCC card only when your system is not powered. Once you have installed the driver and you insert the 1784-PCC card into the slot, we do not recommend that you remove the 1784-PCC card while Windows NT is running.

- 1. Start the install process with your machine off.
- 2. Insert the 1784-PCC/B card.

3. Turn your machine on and log on with administrative rights.

IMPORTANT

Remember, in order for the installation process to run correctly, you must have administrator privileges to install the software.

We strongly recommend that you exit all Windows programs before running this utility. We cannot guarantee that data will not be lost.

lf	Then
you do have third-party plug-and-play PC card controller software	go to Step 4 on page 4-6
you do not have third-party plug-and-play PC card controller software	go to Step 5 on page 4-8

- **4.** If you have third-party plug-and-play PC card controller software, do the following. otherwise, skip to Step 5 on page 4-8.
 - If you have Phoenix/Softex's Card Executive on your system, you may see the following message:

PCMCIA Card Not Configured
The following PCMCIA card has been inserted in the system, however, there is no software installed to work with this card. This card is currently not available for use.
I
Manufacturer: Allen-Bradley Company, Inc.
Card Type: 1784-PCC/B
If you have already installed software for this card, please do not install any more drivers for this card. You need to go to the control panel for your card and adjust the settings. Otherwise, Please select from one of the following choices:
Install the driver that was provided with the PC Card.
O Manually install the driver for this card.
Do not install any driver for this card.
Do not display this dialog for this PC Card again.

If you get this message, do the following:

- a. Choose the **Do not install any driver for this card** radio button.
- b. Check the **Do not display this dialog for the PC card again** checkbox.
- c. Press **Enter** or click **Ok**. You still need to install the driver. Continue on with this procedure.
- If you have SystemSoft's CardWizard, you may get the following message. Click **Exit**.

Wizard	X
Wizard Information	Gunal
1784-PCC/B, Allen-Bradley Company, Inc.	Correct
This is a Specialty PC Card which uses unique software drivers. In order to remedy this problem, please refer to the User Manual for the PC Card.	Test
	Help
	Exit
E	nable AutoCorrection 🥅

• If you have Unicore's CardWare, you may get the following message. Click **Done**.





Be sure to click **Done** at this screen. If you do not, you will see this screen every time you reboot your pc.



- **6.** Access the Run window by selecting **Start** \Rightarrow **Run**.
- 7. In the Run dialog box, type the path

A:\setup.exe.

where $A:\setminus$ is the drive letter of your floppy disk drive.



8. Press Enter or click Ok.

You see:



IMPORTANT

If you have programs running, click **Cancel** to exit the installation process and exit the programs. After you exit the programs, re-start the install process.

9. If you have CardWare installed, you may see the following screen. Press **Enter** or click **Ok** to continue with the installation.



10. Click Ok.

When this portion of the installation is complete, you see:



- **11.** Remove the driver installation diskette from your floppy drive.
- 12. Select Yes or click Ok to reboot your system.

IMPORTANT Wait for the logon screen to appear. Do not log on. Depending on the speed of your machine, your wait could be 5 minutes or more.

- **13.** Ignore any third-party plug-and-play software messages that may appear here.
- **14.** Click **Ok**. Your system will automatically reboot. The driver installation is complete.



IMPORTANT

If you have Unicore's CardWare, you may see a screen that tells you the driver has not been started. Click Yes to start the driver.

15. Run the 1784-PCC test utility as described in Chapter 6 to verify the installation.

If installation fails, refer to Troubleshoot the Card Installation on page 4-11.

Troubleshoot the Card Installation

Use the following sections to determine why the test utility failed.

Check for Resource Conflicts

When you run the PCC setup utility in Windows NT, the utility tries to assign free resources to the PCC card. If your card used to work, and has now stopped working, it is probably because the resources originally assigned to the card are now being used by another device you recently added, such as an Ethernet card. Try re-running the card's setup utility. Refer to Locate the 1784-PCC Driver for Windows NT on page 4-5. The utility may be able to automatically find other resources to assign to the card.

If you do this, and the test utility still fails, you will need to check for resource conflicts. To view and change your resource locations, you will need to view all of your resource allocations to determine which resouces are free.

To access and change resouce locations:

- **1.** Do one of the following:
 - access Windows NT diagnostics (Start ⇒Programs ⇒Administrative Tools ⇒Windows NT Diagnostics), or
 - Select **Start** ⇒**Run** and type **WINMSD** in the Run dialog box. Press **Enter** or click **Ok**.
- 2. Click on the **Resources** tab.

You see:

IRQ Device Bus 01 i8042prt 0	Network . resources [
IRQ Device Bus 01 i8042prt 0	
01 i8042prt 0	-
	Туре
	Isa
03 Serial 0	lsa
04 Serial 0 05 cs32ba11 0	lsa Isa
06 Floppy 0	Isa
11 EI90xs 0	Pci
12 SynTP 0	Isa
14 atapi 0	Isa
15 atapi O	Isa

3. View your resource assignments.

If you have any devices that have the same IRQ location, run the PCC Configuration Utility described on page 4-13 and change the IRQ location of the PCC card.

If there are no IRQ conflicts, you might have a Memory conflict.

4. Click the **Memory** button.

Ja v	/indows NT D	iagnostie	s - \\M50	995			
Eile	<u>H</u> elp						
	Version Services	System Res	u) Di ources	splay Env	Drives	: _] 	Memory Network
	Include <u>H</u> AL				resources 🗖		
	Address FBE 00000 - FE FD 000000 - FE		Device neo20xx neo20xx		E		Type Pci Pci
	000A0000 - 00 08000000 - 08	OBFFFF	VgaSave Pomoia		í í	5	Pci Isa
		_			-		
	IRQ	1/0 Po	et	MA	Memor	_ [_צ	Devices
		Properties	Bef	resh	Pri <u>n</u> t		ОК

5. View your resource assignments.

If you have any devices that have the same memory location, run the PCC Configuration Utility described on page 4-13 and change the memory location of the PCC card.

Run the 1784-PCC Configuration Utility for Windows NT

To view and change your PCC card resource configurations, run the configuration utility that we provide on the installation utility disk.

IMPORTANT

The PCC_Config utility does not work with CardWare. If you have an unresolved resource conflict, contact your computer manufacturer.

1. Select **Start** \Rightarrow **Run**.

Run	? X
2	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
<u>O</u> pen:	A:\pcc_config.exe
	Run in separate memory space
	OK Cancel Browse

 In the window that appears, type pcc_config.exe and press Enter or click Ok. The utility runs.

The configuration utility displays:

🌭 1784-PCC Resources	×
Base Memory Address Currently Assigned Value: 0x40002000	New <u>M</u> emory Address:
Interrupt Request Currently Assigned Value:	New Interrupt Request:
ОК	Cancel

At this point you can view your card's current settings. You can change the card's memory address and interrupt request.



We recommend that you only make the changes if you have another device that needs a dedicated address and/or the interrupt is the same as the PCC card's installation default. We do not recommend that you change these settings unless absolutely necessary. Simply use the defaults that the system assigns to the card.

Figure 4.1 Example of New Interrupt Request drop down selections

1784-PCC Resources	×
Base Memory Address Currently Assigned Value:	New Memory Address: 0xC8000
Interrupt Request Currently Assigned Value:	New Interrupt Request:
OK	3 4 5 7
	10 11 12 15

Figure 4.2 Example of New Memory Address drop down selections

1784-PCC Resources	1	×
Base Memory Address Currently Assigned Value:	New Memory Address:	1
	0xC8000	
Interrupt Request Currently Assigned Value:	0xC8000 0xC9000 0xCA000 0xC8000 0xCC000 0xCC000 0xCD000	
ОК	0xCE000 0xCF000 0xD0000 0xD0000 0xD1000	

If you change the settings and click **Ok**, you need to restart your computer for the new settings to take effect.

Restart F	Required 🔀
⚠	You must restart your system in order for these new values to take effect
	OK

Remove the 1784-PCC Driver

You can access the uninstaller through the Windows NT Add/Remove programs applet to remove the card's drivers from your system.



In addition to the following procedure, you can also use the unpccnt.exe utility provided with the 1784-PCC driver to uninstall the 1784-PCC card.

- **1.** Access the Control Panel by selecting **Start** \Rightarrow **Settings** \Rightarrow **Control Panel**.
- 2. Double-click the Add/Remove Programs icon.
- 3. Select Allen-Bradley 1784 PCC Driver.



4. Click the Add/Remove button.

You see:



You do not have to remove the card. The system gives you the opportunity to cancel the operation before deleting any files.

- 5. Click **Ok** to uninstall the driver.
- 6. Close the Control Panel.

Install and Use the1784-PCC Card in Windows 2000

What is in This Chapter?

Read this chapter to learn how to operate the 1784-PCC card on Windows 2000. The following table describes what this chapter contains and where to find specific information.

For information about this topic:	See page:
Locate the 1784-PCC Windows 2000 Driver	5-2
Install the Driver	5-2
Review the 1784-PCC Hardware Properties	5-7
Stop and Eject the 1784-PCC Card	5-7
Unsafe Removal of Card	5-9
Remove the 1784-PCC Plug-and-Play Driver	5-10
Troubleshoot the Card Installation	5-12
Update the 1784-PCC Plug-and Play-Driver	5-18
Show the Card Unplug/Eject Icon on the Taskbar	5-20

In order to follow the instructions in this chapter, you must:

- have Windows 2000 loaded
- have the Windows 2000 driver for the PCC card

IMPORTANT

You can have one 1784-PCC card configured in Windows 2000. If you insert more than one 1784-PCC card into your PC, only one of the cards will be available for use.

Locate the 1784-PCC Windows 2000 Driver

When you install drivers for your operating systems, you must be certain to install the correct files. Windows 2000 systems require a Windows Driver Model (WDM), which contains .inf and .sys files. Refer to the table below to be sure you are installing the correct driver files.

ATTENTION



Failure to install the correct driver files could result in unpredictable system operation.

Source (where the driver is loaded from)	Driver location (for Windows 2000 operating systems)
installation disk (shipped with the 1784-PCC card)	A:\Win2K\PccWdm.inf A:\Win2K\PccWdm.sys where A:\ is the floppy drive letter
RS-Linx 2.2 or later product CD	E:\PnP_Drivers\Win2K\PccWdm.inf E:\PnP_Drivers\Win2K\PccWdm.sys where E:\ is the CD-ROM drive letter
internet	www.ab.com/support/products/pccards.html You can also access Rockwell Automation Knowledge documents at this site.

Install the Driver

Follow the instructions in Chapter 7 to insert your card in your laptop.

IMPORTANT Before you can install the driver for the 1784-PCC card, you must be logged in as an administrator of the machine. Being an administrator gives you permission to install or make changes to the machine software. If you try to install the driver without being an administrator, you will get error messages and the driver will not install.

Hearing Multiple Tones

If you insert multiple PC Cards, you may hear more than one tonal notification per card. Windows 2000 detects devices during the power up process, and adjusts the device resources accordingly. This results in sounding multiple tones. When the system changes settings (for example, when removing a card), the tones will sound again for each change.

1. After you insert the PCC card, the system detects the hardware and begins to build the driver information needed to run the hardware. Because the driver has not been loaded, Windows 2000 displays a new hardware dialog box and the following message:

Found New Hardware		
	Allen-Bradley_CompanyInc. 1784-PCC/B	
Installing		

Windows 2000 displays:



2. Click Next.

Windows 2000 displays:

Found New Hardware Wizard			
Install Hardware Device Drivers A device driver is a software program that enables a hardware device to work with an operating system.			
This wizard will complete the installation for this device:			
Allen-Bradley_Company_Inc. 1784-PCC/B			
A device driver is a software program that makes a hardware device work. Windows needs driver files for your new device. To locate driver files and complete the installation click Next.			
What do you want the wizard to do?			
 Search for a suitable driver for my device (recommended) 			
O Display a list of the known drivers for this device so that I can choose a specific driver			
<back next=""> Cancel</back>			

3. Select the **Search for a suitable driver for my device** radio button and click **Next**.

Found New Hardware Wizard			
Locate Driver Files Where do you want Windows to search for driver files?			
Search for driver files for the following hardware device:			
Allen-Bradley_Company_Inc. 1784-PCC/B			
The wizard searches for suitable drivers in its driver database on your computer and in any of the following optional search locations that you specify.			
To start the search, click Next. If you are searching on a floppy disk or CD-ROM drive, insert the floppy disk or CD before clicking Next.			
Optional search locations:			
Floppy disk drives			
CD-ROM drives			
Specify a location			
Microsoft Windows Update			
< Back Next > Cancel			

At this point you need to select where the file is located.

- 4. Select one of the following checkboxes:
 - **Floppy disk drives** if you are going to use the floppy that ships with the 1784-PCC card
 - **CD-ROM drives** if you are going to get the file from the RSLinx CD-ROM Version 2.2 or later
 - **Specify a location** if you downloaded the driver file from www.ab.com.

If you select:	Then:
Floppy disk drives	insert the PnP drivers disk into the drive and click Next . Windows 2000 will search for the appropriate driver. Continue with Step 6.
CD-ROM drives	insert the RSLinx CD into the drive and click Next . Windows 2000 will search for the appropriate driver. Continue with Step 6.
Specify a location	use this selection if you have downloaded the driver from www.ab.com. You will be prompted for the location path of the driver. Click Next and Continue with Step 5.

5. If you select the **Specify a location** radio button in Step 4, Windows 2000 will prompt you to provide a location for the driver, as shown below:



Type the location of the Windows 2000 driver and click Ok.

6. Click Next.

Found New Hardware Wizard			
Driver Files Search Results The wizard has finished searching for driver files for your hardware device.			
Allen-Bradley_Company_Inc. 1784-PCC/B			
Windows found a driver for this device. To install the driver Windows found, click Next.			
a:\win2k\pccwdm.inf			
< Back Next > Cancel			

7. Once Windows 2000 installs the driver, the following displays.



8. Click Finish.

You may be prompted to restart you computer for the driver to take effect.

9. Run the 1784-PCC test utility as described in Chapter 6 to verify the installation. If the test utility fails, refer to Troubleshoot the Card Installation on page 5-12.

1784-PCC Hardware Properties

Windows 2000 provides properties dialog boxes for removable devices. The properties dialog boxes provide the following:

- general information such as device status, manufacturer and card location
- device driver information such as driver version and buttons for you to uninstall and update the driver
- resource information such as interrupt request settings and memory range settings

We recommend you verify that the card is running properly after you install the 1784-PCC card and the driver. Refer to Troubleshoot the Card Installation on page 5-12.

Stop and Eject the 1784-PCC Card

Before you remove the PCC card from its slot, you need to stop the communication to the card. To stop the card:

1. Double-click on the Unplug/eject Hardware icon on your taskbar.





If you don't have the icon on your taskbar, refer to Show the Card Unplug/Eject Icon on the Taskbar on page 5-20. 2. Click on the PCC card you want to stop.

🏷 Unplug or Eject Hardware	<u>? ×</u>
Select the device you want to unplug or eject, and then or Windows notifies you that it is safe to do so unplug the de computer.	
Hardware devices:	
Allen-Bradley 1784-PCC Series B Floppy disk drive - (A:)	
ATSHITA DVD-ROM SR-8174 - (E:)	
Allen-Bradley 1784-PCC Series B at CardBus Slot 0	
Alleri-brauley 1764-FCC Series bial Calubus Siol 0	
Properties	Stop
Display device components	
☑ Show Unplug/Eject icon on the taskbar	Close

- 3. Click Stop.
- **4.** When you see the window that states you may safely remove this device, click **Ok**.
- 5. Remove the card.

Unsafe Removal of Card

If you do not stop the communication to your card before you remove a card from your computer, Windows 2000 displays:

🏷 Unsafe Removal of Device	<u>?</u> ×		
You have unplugged or ejected a device without stoppin Unplugging or ejecting devices without first stopping then often cause your computer to crash and lose valuable da	ncan		
To safely unplug or eject any of the following devices, first use the Hardware wizard in the Control Panel to stop the device.			
Allen-Bradley 1784-PCC Series B			
1			
If you frequently need to unplug this device, Windows can give you an icon on the taskbar to quickly unplug or eject your device. If you would like to use this option, check the following:			
Show Unplug/Eject icon on the taskbar.			
4			
2:01 PM			
	ОК		

1. To stop the card, refer to Stop and Eject the 1784-PCC Card on page 5-7.

IMPORTANT

Use the Unplug/eject icon on the taskbar to insure you do not damage your card.

2. Once you have stopped the card, use the Unplug/eject icon on the taskbar to remove the card.

Remove the 1784-PCC Plug-and-Play Driver

Follow this procedure to remove the 1784-PCC driver.

1. Double-click on the Unplug/eject hardware icon



the taskbar.



If you don't have the icon on your taskbar, refer to Show the Card Unplug/Eject Icon on the Taskbar on page 5-20.



loplug or Eject Hardware	<u>? ×</u>
Select the device you want to unplug or eject, and then Windows notifies you that it is safe to do so unplug the de computer.	
Hardware devices:	
Allen-Bradley 1784-PCC Series B Floppy disk drive - (A:) MATSHITA DVD-ROM SR-8174 - (E:)	
Allen-Bradley 1784-PCC Series B at CardBus Slot 0	
Properties	Stop
Display device components	
I▼ Show Unplug/Eject icon on the taskbar	Close

2. Select the card.

3. Click Properties.

Allen-Bra	dley 1784-PCC Se	ries B Propertie	5	<u>? ×</u>
General	Driver Resource	es		
Allen-Bradley 1784-PCC Series B				
	Driver Provider:	Rockwell Softwa	ire, Inc	
	Driver Date:	Not available		
	Driver Version: 1.0.0.0			
	Digital Signer: Not digitally signed			
To view details about the driver files loaded for this device, click Driver Details. To uninstall the driver files for this device, click Uninstall. To update the driver files for this device, click Update Driver.				
Driver Details Uninstall Update Driver				
			OK	Cancel

- 4. Click the **Drivers** tab.
- 5. Click Uninstall.
- 6. Press Enter or click Ok. You see this screen:



- 7. Press Enter or click Ok to confirm device removal.
- 8. Remove the 1784-PCC card from your system.

Troubleshoot the Card Installation

To access Hardware Properties and verify that the 1784-PCC card is working properly, follow the steps below.

1. Double-click on the Unplug/eject hardware icon



taskbar.

TIP

If you don't have the icon on your taskbar, refer to Show the Card Unplug/Eject Icon on the Taskbar on page 5-20.

🏂 Unp	lug	or Eje	ct Haro	ware					?
\$, ,		s notifie:				eject, and so unplug		top. When rom your
Hardw	are	device	s:						
FI FI	lopp	oy disk	1784-P drive - (A DVD-RC	:)	es B 174 - (E:)	I			
Allen-E	Brac	lley 178	4-PCC S	eries B -	at CardBu	us Slot I	1		
Allen-B	3rac	lley 178	4-PCC S	eries B -	at CardBu	us Slot I) Propertie	25	Stop
			4-PCC S		at CardBu	us Slot I		25	Stop

2. Select the card.

3. Click Properties.

I

Allen-Brac	en-Bradley 1784-PCC Series B Properties				
General	Driver Resource	es			
	Allen-Bradley 1784-PCC Series B				
	Device type:	Allen-Bradley P	CCard Family		
	Manufacturer:	Allen-Bradley C	ompany, Inc		
	Location:	CardBus Slot 0			
Devic	e status				
If you	device is working p are having probler the troubleshooter.		e, click Troublesh	ooter to	
			Troublesho	oter	
Device	Device usage:				
Use th	is device (enable)			-	
			ОК	Cancel	

lf:	Then:
the Device status field says "This device is not present, not working properly, or does not have all drivers installed."	click on the Resources tab and check the Conflicting Device list for possible hardware conflicts,
	or you may want to try disabling the Automatic Settings option. Refer to Click on the Resources tab. on page 5-14.

4. Click on the **Resources** tab.

Allen-Bradley 1784-PCC 9	en-Bradley 1784-PCC Series B Properties				
General Driver Resource	ces				
Allen-Bradley 17 Resource settings:	84-PCC Series B				
Resource type	Setting				
interrupt Request	07				
Input/Output Range					
iiii Memory Range	FFBFD000 - FFBFDFFF				
Setting based on: Curre	nt configuration	Change Setting			
Conflicting device list:					
No conflicts.					
		OK Can	cel		



The majority of the time, we recommend that you use the automatic settings. The card will assign an interrupt (memory location) for you. An interrupt must be assigned to the 1784-PCC card. Verify that there is an interrupt assigned and no resource conflicts display in the Conflicting Device list.

- **5.** In the unlikely event that you have a resource conflict, you may need to assign a specific interrupt to free the resource for another device. To manually assign an interrupt:
 - a. Deselect (uncheck) the Use automatic settings checkbox.
 - b. Click on Interrupt Request.

c. Click Change Setting ... and select an interrupt location.



Most systems have 15 interrupt locations available for you to assign. If you have more than 15 devices that need an interrupt location, you may need to disable another device, such as an unused serial or parallel port to make an interrupt available for the PCC card.

d. In some cases, a device other than the 1784-PCC card may be determined to use the interrupt that the PCC card wants. If this happens, let the other device have the interrupt and assign the 1784-PCC card another interrupt location.

Navigate to Device Manager

Here is a second way to find your way to the hardware properties so you can verify that your card is working properly.

- 1. Right-click on My Computer.
- 2. Select Manage.



3. On the Computer Management window that appears, select **Device Manager**.



4. Click on the **+** next to **Allen-Bradley PCMCIA** to display the available Allen-Bradley cards.

IMPORTANT

If you insert two PCC cards, only one of the cards that you insert is available for use. The Device Manager windows looks like this:



The card that displays this icon

Allen-Bradley 1784-PCC Series B is unavailable for use. We do not recommend that you have more than one 1784-PCC card installed in your system.

5. Double-click on 1784-PCC Series B.

Allen-Bra	dley 1784-PCC S	eries B Properties	<u>? ×</u>
General	Driver Resourc	es	
	Allen-Bradley 178	34-PCC Series B	
	Device type:	Allen-Bradley PCCard Family	
	Manufacturer:	Allen-Bradley Company, Inc	
	Location:	CardBus Slot 0	
This If yo	e status device is working p u are having proble the troubleshooter.	rroperly.	
		Troubleshooter	
Device	usage:		
Use th	is device (enable)		-
		OK Cano	cel

Update the 1784-PCC Plug-and Play-Driver

Perform these steps if you need to re-install or update the driver.

1. Insert the PCC card into a PCMCIA slot in your computer.

Once you insert the PCC card, the system will detect the hardware and begin to build the driver information needed to run the hardware. Because the driver has not been loaded, Windows 2000 displays a new hardware dialog box and the following message:



- 2. Right-click on My Computer.
- 3. Select Properties.
- 4. Select Hardware.

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- 5. Select Device Manager.
- 6. Expand Allen-Bradley Communication Cards.
- 7. Highlight 1784-PCC card.
- 8. Right-click on 1784-PCC card.
- 9. Select Properties.
- 10. Select the Driver tab.
- 11. Select Update Driver.

Allen-Bra	dley 1784-PCC Se	eries B Properties	<u>? ×</u>
General	Driver Resource	98	
	Allen-Bradley 178	4-PCC Series B	
	Driver Provider:	Rockwell Software, Inc	
	Driver Date:	Not available	
	Driver Version:	1.0.0.0	
	Digital Signer:	Not digitally signed	
Details	To uninstall the driv	iriver files loaded for this device, click Driver er files for this device, click Uninstall. To upd e, click Update Driver. Uninstall Update Driver.	
		OK Cano	

- 12. Click Next.
- 13. Select Search for suitable driver and click Next.
- 14. Select a location and click Next.
- 15. Type the path location to the 1784-PCC Windows 2000 driver and click Ok.
- 16. Click Next to verify driver file search results.

17. Click Finish.

18. Click Close.

Show the Card Unplug/Eject Icon on the Taskbar

If you frequently need to unplug the device, be sure to check the Show Unplug/ Eject icon on the taskbar checkbox on the Completing the Add/Remove Hardware wizard screen. You can check the box the first time you install the card. The next time you want to unplug or eject the device, you can use the icon on the taskbar instead of the Add/Remove Hardware wizard.

If the icon is not on your taskbar, you can find the checkbox in the Add/Remove Hardware Wizard. You must finish the process of removing the card from the slot in order for the checkbox to take effect. You are not given the opportunity to back out of the hardware Wizard once you get to the location of the checkbox.

- 1. Double-click My Computer.
- 2. Double-click Control Panel.
- 3. Double-click Add/Remove Hardware.
- 4. Click Next.
- 5. Check Uninstall/Unplug a device and click Next.
- 6. Check Unplug/Eject a device and click Next.
- 7. Select the 1784-PCC card and click Next.
- 8. Confirm the device and click Next.
- 9. Check the Show Unplug/Eject icon on the taskbar.
- 10. Click Finish.
- **11.** Remove your card.
Run the 1784-PCC Test Utility in Windows 95/98/Me, NT and 2000

What is in This Chapter?

I

Read this chapter to learn how to run the 1784-PCC test utility. The following table describes what this chapter contains and where to find specific information.

For information about this topic:	See page:
Run the 1784-PCC Installation Test Utility	6-2

In order to follow the instructions in this chapter, you must:

- have Windows 95/98/Me, NT, or 2000 loaded.
- have the appropriate drivers loaded for the PCC card

Run the 1784-PCC Installation Test Utility

The installation test utility is compatible with Windows 95/98/Me, NT, and 2000. To test your installation, run the utility that we provide on the installation utility disk.

1. Select **Start** \Rightarrow **Run**.

Run	? ×
7	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	A:\Pcc_test.exe
	OK Cancel Browse

 In the window that appears, type A:\Pcc_test.exe and press Enter or click Ok. a. If you choose **Browse** on the A:\ drive, you will see:

Browse						?	×
Look jn:	🛃 3½ Floppy	(A:)	•	E	Ċ	0-0- 5-5- 0-0-	
Win2K		🕡 Unpcont.exe					
🛛 🚫 pcc_confi							
PCC_DEL							
pcc_instal Pcc_test.e	l2_service.exe						
setup.exe							
I							
File <u>n</u> ame:						<u>O</u> pen	1
Files of type:	Programs			-		Cancel	i
Der Der	1				_	Cancel	J

b. Double-click on the **Pcc_test.exe** file to start the PCC test utility.

The utility runs through a series of tests.

🇞 pcc_test	×
RSIPCC.SYS Found 12.0 1784-PCC Socket: N/A Serial Number: N/A Memory FFF 1784-PCC Firmware	\checkmark
Class: 20 Version 1.4.1f 1784-PCC Memory Test	 ✓ ✓
Set Node Address to 94	2
Interrupt Test	

The 1784-PCC installation test utility automatically looks for your card and begins the tests. As the tests are completed, a green check mark appears, illustrating that the particular test was successful.



If there is an error, you will see a red X and an explanation.





lf you:	Then:
do not see six green check marks or you do not see the message stating that the 1784-PCC completed all tests successfully	 In Windows NT, restart your computer and run the setup utility again. In Windows 95/98/Me and 2000, go to Device Manager and adjust resources.
are still getting an error	 Review the chapter for your operating system. Follow the instructions again. If you are still having problems, contact your Rockwell Automation service representative for assistance. Refer to the Preface of this manual for information on Rockwell Automation Support.

3. Once the tests are finished and successful, you see:

Pcc_test	×
?	The 1784-PCC completed all tests successfully.
	Do you wish to perform a test of the PCC cable? If so, connect the 1784-PCC card to the Network Access Port of a device that is on a valid ControlNet network and click Yes.
	NOTE: This may take up to 10 seconds to sufficiently determine all active nodes on a ControlNet network.
	<u>Yes</u> <u>N</u> o

4. Click Yes or No.

•

When you click Yes and you are properly connected to your network, the test utility will browse your network to find active nodes. You will see a node table with the active nodes checked.

Active Node Table (Snap	shot)		×
I 1 16 31 2 17 32 3 18 33 4 19 34 5 20 35 6 21 36 7 22 37 8 23 38 9 24 39 10 25 40 11 26 41 12 27 42 13 28 43 14 29 44 15 30 45 NUT (msecs): Max. Scheduled Node: Max. Unscheduled Node: Slot Time (usecs):	46 61 47 62 48 63 49 64 50 65 51 66 52 67 53 68 55 70 56 71 57 72 58 73 59 74 60 75 100 99 255	76 91 77 92 78 93 79 94 80 95 81 96 82 97 83 98 84 99 85 86 87 88 89 90	

5. Click Ok.

The utility also provides information about:

- NUT (Network Update Time, in msecs)
- maximum scheduled node
- maximum unscheduled node
- slot time (μ secs)

IMPORTANT

Be certain that the address assigned to the PCC card in RSLinx is less than the Maximum Unscheduled Node shown in the PCC test utility. If you see this screen, check to see if the cable is connected properly to your network.



Notes:

Insert and Remove the 1784-PCC Card

What is in This Chapter?

Read this chapter to understand how to insert and remove the card from your laptop computer. The following table describes what this chapter contains and where to find specific information.

For information about this topic:	See page:
Insert the Card	7-1
Remove the Card	7-3

Insert the Card

IMPORTANT

If you are using Windows 95/98/Me, you can insert or remove the 1784-PCC card from a powered computer. If you are using Windows NT, shut down the computer before inserting or removing the card. If your are using Windows 2000 or another operating system, use the eject utility to turn off communication to the card before you remove it from your computer. In Windows 2000, you can insert the card while the system is on.



The following diagrams show a PCMCIA 2.1 compliant system. If you are using another computer, your installation may be slightly different.



1. Open the door to the PCMCIA slot. Some slots do not have doors.

2. Grasp the card by the edges with the logo facing upward and the 68-pin connector facing into the PCMCIA slot.

IMPORTANT

If you have more than one slot in your computer, you can insert the 1784-PCC card into any empty slot. Check your computer's documentation for the slot numbers. You can use the other available slots for other PC cards such as network or modem cards.



3. Insert the card into the PCMCIA slot and slide the card in until it is firmly seated in the connector. Some computers have an ejector button that pops out when the card is seated in the connector.

If the computer is configured properly, your sound/speaker is enabled, and you installed the 1784-PCC card successfully, you hear multiple tones when you insert a card or boot the computer.

Multiple Tones

If you insert multiple PC cards, you may hear more than one tonal notification per card. Windows 95/98/Me and 2000 detects devices during the power-up process, and adjusts the device resources accordingly. This results in sounding multiple tones. When the system changes settings, for example, when a card is removed, the tones will sound again for each change.

Remove the Card

IMPORTANT

You should stop any software communicating with the card before removing the PC card. If you do not do this, the stray processes may halt the system's performance.

On most computers, you press the release button and remove the card from the slot. If this is not applicable to your computer, follow the instructions specified in your computer user manual.

You hear multiple tones for each card that you remove if your system is configured properly. These tones indicate the card is now disabled.

Notes:

Connect the 1784-PCC Card to the Network

What is in This Chapter?

Read this chapter to connect the 1784-PCC card to the network and to understand network communication. The following table describes what this chapter contains and where to find specific information.

For information about this topic:	See page:
Connect the Card to the ControlNet Network	8-1
Communicate with the Card on the ControlNet Network	8-2

Connect the Card to the ControlNet Network

These instructions assume that you have:

- installed your application software
- inserted the card
- installed the 1784-PCC drivers Chapter 3: Windows 95/98/Me Chapter 4: Windows NT Chapter 5: Windows 2000

The following diagrams show a PCMCIA 2.1 compliant system. If you are using another computer, your installation may appear slightly different.



2. Attach the other end of the 1784-PCC1 cable to any intelligent device (i.e., workstation, PLC processor, scanner, or adapter) on ControlNet through its Network Access Port.

Communicate with the Card on the ControlNet Network

The 1784-PCC card communicates on the ControlNet network through a standard application programming interface (API) known as RSLinx[™] from Rockwell Software, Inc. If you need additional information about this software package or about communicating on the ControlNet network, refer to the ControlNet Coax Media Planning and Installation Manual, publication number CNET-IN002A-EN-P, or contact your Rockwell Automation representative.

IMPORTANT

Do not accidently plug the end of the 1784-PCC cable into the Ethernet port. This type of connection will generate noise on Ethernet and it will not work. Refer to the following table for the version of RSLinx you will need for your operating system.

Operating System	Version of RSLinx
Windows 95/98/Me	2.0 or later
Windows NT	2.1 or later
Windows 2000	2.2 or later

Notes:

Specifications

PCMCIA Type	Type II form-factor network a	dapter card
PCMCIA Standard	Compliant to PCMCIA Standa	
Power Requirements	5V dc @ 225 mA maximum C	lass 2
Conductor	Category 2 ¹	
Environmental Conditions	Operating ²	Non-operating
Slot Temperature	0-50° C (32-122° F)	-40-85° C (-40-185° F)
Humidity	5-95% without condensation	5-95% without condensation
Vibration	0-70 Hz constant.012" displacement 70-500 Hz, constant 2 G acceleration	N/A
Shock	30 G peak/11 ms	50 G peak/11 ms
Agency Certification (when product or packaging is marked)	Control Equipm	Component - Industrial nent Il applicable directives
1784-PCC1 Cable Specification Total length of cable	0 NS 120 cm	
Pin Assignments	PC card Plug	ControlNet Plug
Pin Assignments	1	ControlNet Plug
Pin Assignments		
Pin Assignments	1	1
Pin Assignments	1 3	1 3
Pin Assignments	1 3 4	1 3 4

²The operating parameters describe the environment within the PCMCIA slot. Refer to the documentation for your computer for environmental requirements. The 1784-PCC card should not exceed those specifications.

Notes:

adapter

The hardware that connects the computer bus to the 68-pin PC card sockets in the PCMCIA slot. *See also* socket.

application programming interface (API)

The set of services that an operating system makes available to programs that run under it.

ControlNet network

A communication architecture that allows the exchange of messages between Allen-Bradley Company, Inc. products and certified third-party products.

connection

An opened communication path between two nodes on a ControlNet network.

ControlNet status indicators

Channel A and channel B indicators on your node indicating status on the ControlNet link.

enabler

Software used to control PC cards. There are three types of enablers: generic (which can control many different types of cards), specific (which is designed for a specific manufacturer's PC card), and point enabler (which is designed for a specific manufacturer's PC card but does not require Card and Socket Services).

drop cable

A cable that connects a node to the trunk cable. This is an integral part of Allen-Bradley 1786 taps.

link

A collection of nodes with unique addresses (in the range of 1-99). Segments connected by repeaters make up a link; links connected by bridges make up a network.

maximum scheduled node

The node with highest network address that can use *scheduled* time on a ControlNet link.

maximum unscheduled node

The node with highest network address that can be *unscheduled* time on a ControlNet link.

Network Access Port (NAP)

In a ControlNet network, NAP is a physical layer variant that allows a temporary node to be connected to the link by connection to the NAP of permanent node. It is an RJ45 connection between two cnet devices that is typically temporary between a programming device and the network.

network

A series of nodes connected by some type of communication medium. The connection paths between any pair of nodes can include repeaters, routers, bridges, and gateways.

network address

A node's address on the network.

node

The port of a physical device connected to the network that requires a network address to function on the network. A link may contain a maximum of 99 nodes.

NUI (Network Update Interval)

A single occurrence of the network update time (NUT).

NUT (Network Update Time)

Repetitive time interval in which data can be sent on the ControlNet network.

PC card

Credit-card size, 68-pin add-in cards that were designed to meet PCMCIA standards.

redundant media

A dual cable system that lets you receive the best signal over a network.

repeater

A two-part active physical-layer device that reconstructs and retransmits all traffic it hears on one segment to another segment.

segment

Trunk-cable sections connected via taps with terminators at each end; a segment does not include repeaters.

socket

The 68-pin physical connection in the PCMCIA slot in your computer that connects to the 68-pins on the PC card.

Socket Services

The software interface that manipulates the PC cards, sockets, and adapters. *See also* PC cards, sockets, adapters.

tap

A component that connects products to the ControlNet trunk cable. A tap is required for each node and for both sides of each repeater.

terminator

A 75- Ω resistor (mounted in a BNC plug) placed on the ends of segments to prevent reflections from occurring at the ends of cables.

trunk cable

The bus or central part of the ControlNet cable system.

trunk cable section

The length of trunk cable between any two taps.

type

Refers to the physical size of the PC card. There are three types of cards that have the same length and width (54 mm x 85.6 mm). The cards differ in thickness in the center, but have identical thickness at the connector end and long the rails. This lets you use all three types in the same PCMCIA slot, if the slot is thick enough in the center.

Туре І

A 3.3 mm thick PC card that is used for memory enhancements, such as Flash memory cards. *See also* PC card.

Type II

A 5 mm thick PC card that is used for I/O features such as modem, LAN, and host communications. *See also* PC card.

Type III

A 10.5 mm thick PC card that is used for memory enhancements or I/O capabilities that require more space, such as rotating media and wireless communication devices. *See also* PC card.

Virtual Device Driver (VxD)

A Windows device driver that processes interrupts and carries out I/O operations for a given application without disrupting the execution of other applications. Used in 1784-PCC Windows 95/98/Me applications.

Windows Driver Model (WDM)

A Windows device drivers that use I/O Request Packets (IRPs) as a means for messaging and data transfer. Used in 1784-PCC Windows 2000 applications.

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