



Camera^{Pro™} *Connect*

Parallel Port Flash Card Reader

User's Manual

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Introduction

The CameraConnect Pro allows your desktop system to use the same PCMCIA and CompactFlash storage technology as most notebook and palmtop computers. It also provides a convenient way to transfer data from Digital Cameras that use ATA Flash Cards, CompactFlash Cards, or Smart Media (SSFDC) Devices without the bother and slow transfer rates of serial port downloads.

Contacting Actiontec Customer Support

Actiontec Electronics prides itself on making high-quality, durable, high-performance products. If you should need assistance, the Actiontec Technical Support Department is available from 7:00 AM to 7:00 PM Pacific Coast Time, Monday through Friday to provide professional support.

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Sunnyvale, CA 94086
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Fax: 408-732-0097
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Email:techsupp@actiontec.com

New drivers are released as need arises to insure maximum compatibility and operation of your new CameraConnect Pro. Find out about these and other new Actiontec products at the Actiontec web site: <http://www.actiontec.com>

Don't forget to register your CameraConnect Pro. Make sure to fill out the registration card and send it in to the address above.

Features

32 bit drivers for use with Windows 95/98 and Windows NT 4.0.

Hardware acceleration using parallel port EPP mode for faster data transfers

Reads and writes PCMCIA ATA Flash Cards, CompactFlash Association Cards, and SSFDC (Solid State Floppy Disk Card) Devices.

Reads CompactFlash Cards and SSFDC Devices without an adapter.

Software based Smart Media (SSFDC) management supports up to 64MB devices for easy future updates.

Does not require additional IRQ or DMA settings. Leaves valuable system resources available for other hardware to use.

Provides faster digital camera image transfers to your computer so that there is no need to hook up a serial cable to your camera and wait for images to transfer.

Includes a printer pass-through so that you don't have to disconnect your printer.

Eject buttons for the PCMCIA and CompactFlash slots for easy removal of cards.

Getting Started

Before you install your CameraConnect Pro, familiarize yourself with the location and appearance of your computer system's printer port connector and keyboard connector. Determine if you have a "PS/2" keyboard or an "AT" keyboard. The best resource for this information is your computer system user's manual.

If you can't find your computer user's manual, go to "Appendix B: Technical Reference" at the back of this manual for help. In that appendix are drawings of these connectors that might help you to identify the correct components. The location of these ports change from system to system, however, so study the layout of your computer's I/O ports carefully to avoid plugging a cable into the wrong connector.

Connecting the CameraConnect Pro Hardware

Turn off the power and unplug the power cord. Although you will not be opening your computer's cover, this step is necessary to prevent damage to your computer system's motherboard from insertion or removal of connectors with the power on.

- Step 1 If your computer is on, shut it down, turn off the power, and unplug the power cord.
- Step 2 Find the keyboard adapter included in the CameraConnect Pro package. This device allows you to use the CameraConnect Pro in a system with either an AT or PS/2 keyboard. The following drawing illustrates this device.

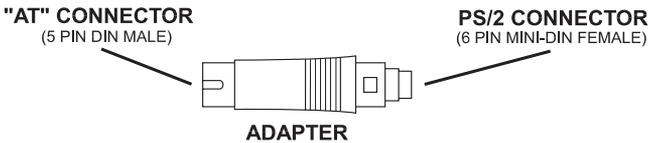


Figure 1: Keyboard Adapter

- Step 3 Find the port where your keyboard is connected to your computer. Make a note of the location of this port, then unplug the keyboard cable. If you have an AT keyboard, see Figure 2. If you have a PS/2 keyboard, see Figure 3. In both cases the connection of the CameraConnect Pro to the printer port is the same.

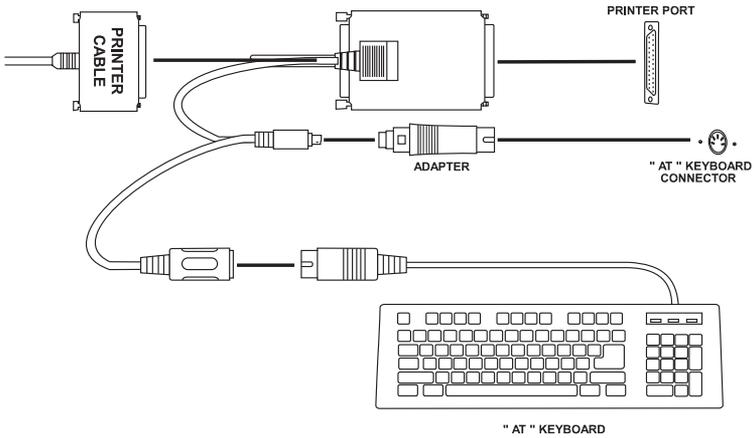


Figure 2: AT Keyboard Assembly Diagram

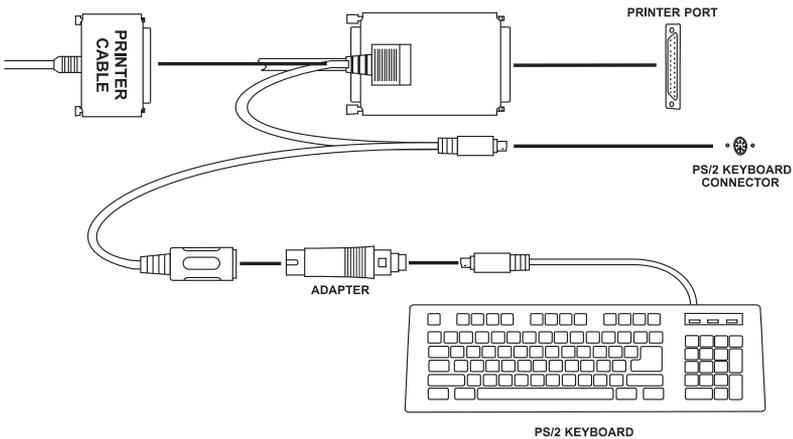


Figure 3: PS/2 Keyboard Assembly Diagram

Notice how the adapter shown in Figure 1 is used in both of the keyboard connection scenarios. For an AT keyboard, the adapter plugs into the computer. For a PS/2 keyboard, the adapter plugs into the keyboard cable.

Step 4 After you have completed the installation of the CameraConnect Pro, check your work again to verify that all the connections are correct and that each connector is firmly inserted and secure.

Step 5 Reconnect the power cord you disconnected in step 1 and turn on the computer. Look at the front of the CameraConnect Pro during start-up.

Do you see a green light? If the green light is on and you receive no keyboard errors, you have correctly installed the power-tap to your keyboard. Both the keyboard and printer pass-through cables on the CameraConnect Pro must be attached to the proper connectors on your computer. If you do not see a green light on the front of the CameraConnect Pro, turn off the power and check the method you used to connect your keyboard and the keyboard adapter.

Installing the Driver and Utility Software

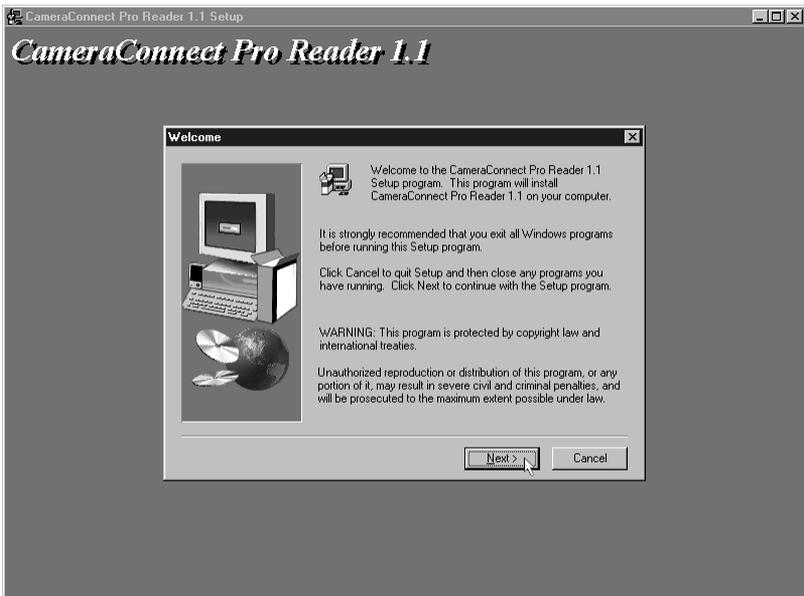
Windows 95 or 98

Step 1 Close any applications you may have running. Insert the installation disk into your computer's floppy disk drive. On the Windows taskbar, click **Start**. On the Start menu, click **Settings**, then click **Run**. In the window that appears, type

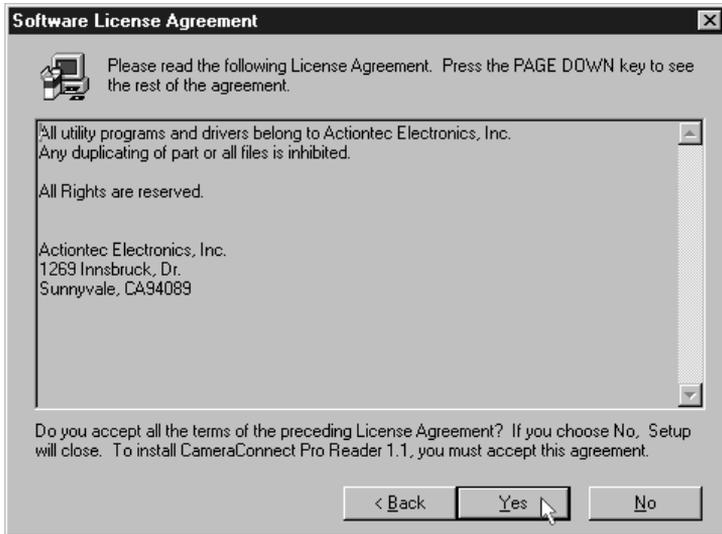
A:\setup.exe

and press ENTER.

Step 2 The setup utility will display its welcome screen. Click **Next**.



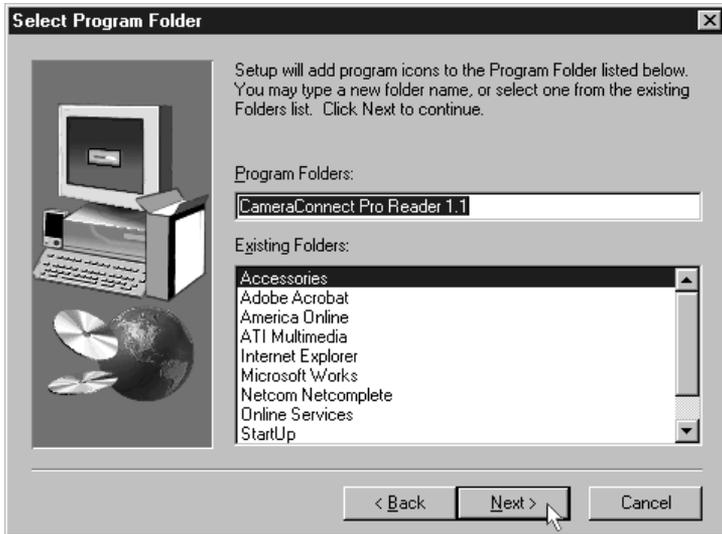
- Step 3 The setup utility will display the software license agreement. You must click **Yes** to continue.



- Step 4 The **Choose Destination Location** dialog box will appear next, suggesting a folder where the drivers will be installed. Click **Next** to install in the location displayed, or click **Browse** to pick a different location.



- Step 5 The installation program will ask you to confirm the destination folder. Click **Next** to continue.

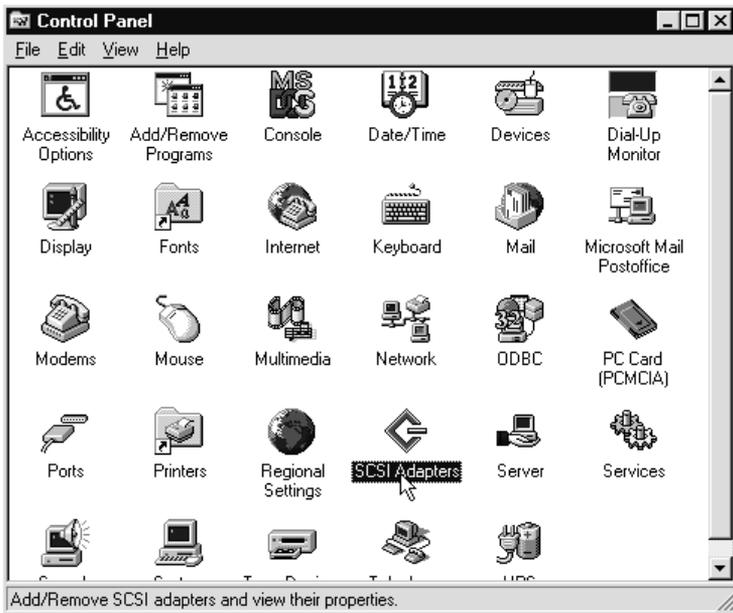


- Step 6 When the file has been copied to the location you specified earlier, click **Finish** to restart your computer and enable the software.

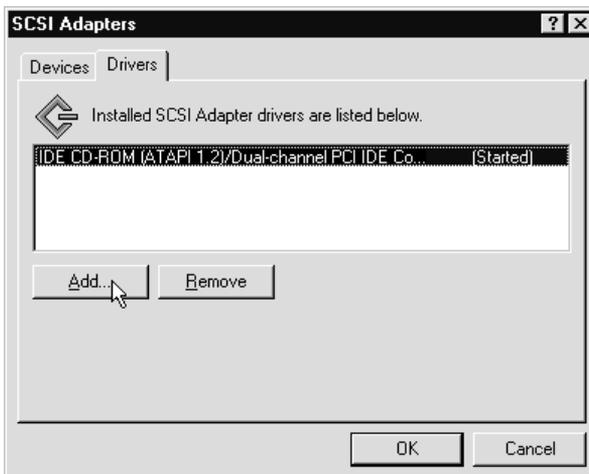


Windows NT 4.0

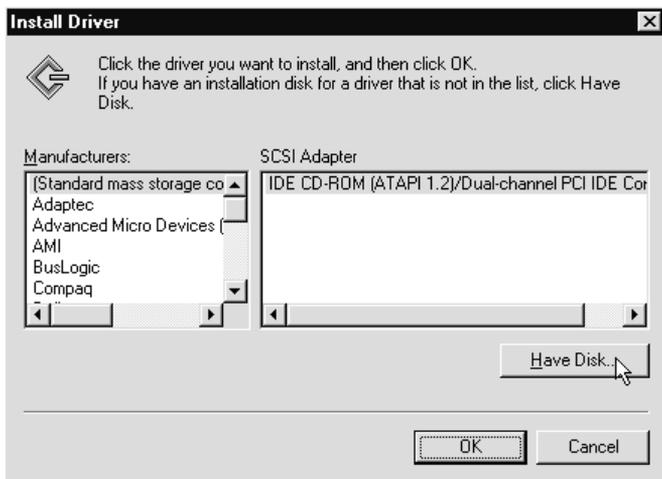
Step 1 On the Windows taskbar, click **Start**. On the Start menu, click **Settings**, then click **Control Panel**. Double-click on **SCSI Adapters**.



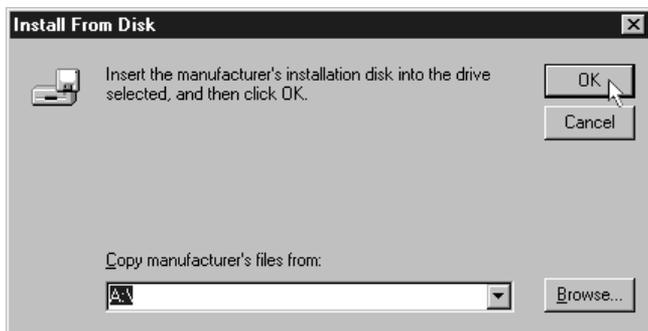
Step 2 Click the **Drivers** tab to bring it to the front, then click the **Add** button.



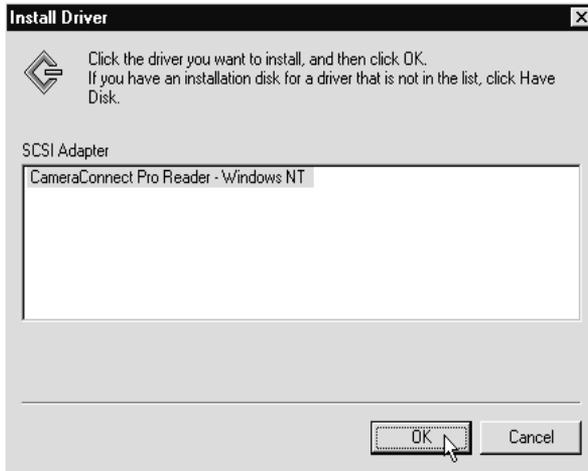
- Step 3 Next, insert the CameraConnect Pro's installation disk into the A drive and click **Have Disk**.



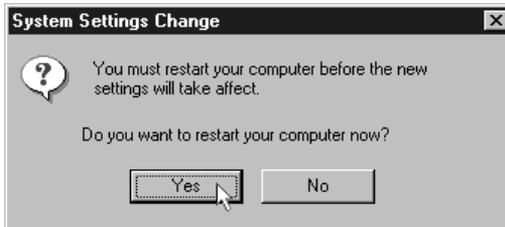
- Step 4 In the next dialog box, be sure that A : \ appears under “Copy manufacturer’s files from:”. Click **Continue**.



- Step 5 Window NT will find the CameraConnect Pro driver on the disk. Click **OK**. Windows NT 4.0 will copy and install the CameraConnect Pro driver.



- Step 7 Allow Windows NT to restart the system and enable the CameraConnect Pro.



If you had difficulty with the procedure above, place the installation disk in the A drive. On the Start menu, click Run, then type

a:\setup.exe

and click OK. Follow the on-screen instructions.

Using the CameraConnect Pro

Front Panel Functions

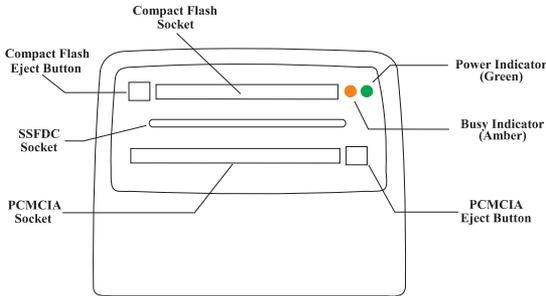


Figure 4: Front Panel Arrangement

Figure 4 shows the front panel layout of the CameraConnect Pro. There are two indicator LEDs, three slots, and two eject buttons.

The indicator lights display the power-on and device-busy states of the reader. The green LED indicates that the unit has power and is ready to function. The amber LED shows that data is being read from or written to the device. If the unit is properly connected, the green light should always be on. The busy or amber LED light is on only when the device is accessing a card placed in the CameraConnect Pro.

Inserting Devices into the CameraConnect Pro

The upper slot is designed to accept CompactFlash Association-compliant flash cards. These storage devices are primarily used in digital cameras and Personal Digital Assistants (PDAs). Figure 5 illustrates the proper method of inserting these devices into the upper slot. Remember to push the card completely into the slot so that the CameraConnect Pro's ejector button comes out.

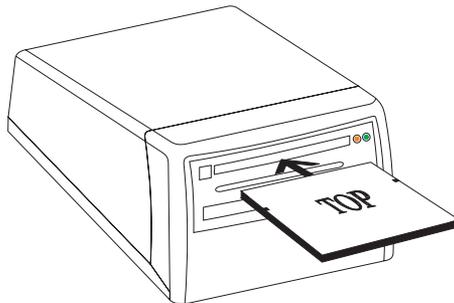


Figure 5: Inserting a Compact Flash Card

An inserted card will not be recognized until you perform some relevant action, such as reading or writing to the device. When you select the CameraConnect Pro's "Removable Disk" icon in My Computer, your computer system's speakers will emit a tone if a card is recognized. If a card is not recognized, an error message will be displayed.

To eject a card, press the ejector button into the case. This will allow the CompactFlash Card to be easily removed by hand.

The lower slot is designed to accept PCMCIA ATA Flash Cards. It will not work with any other type of Flash Card, such as Linear Flash Cards, or with non-flash PCMCIA cards. The reader does not recognize SCSI Cards, Modem Cards, SRAM Cards, Network Cards or other non-ATA Flash cards. If you attempt to access these cards, a "device not ready" error message will be displayed. With certain types of PCMCIA cards, the system will cease responding altogether.

ATA type Flash Cards will not be recognized until you read or write to the device. When you select the CameraConnect Pro in My Computer, your computer system will sound a 'beep' if the card is recognized. Figure 6 illustrates the proper insertion of these devices in the lower slot.

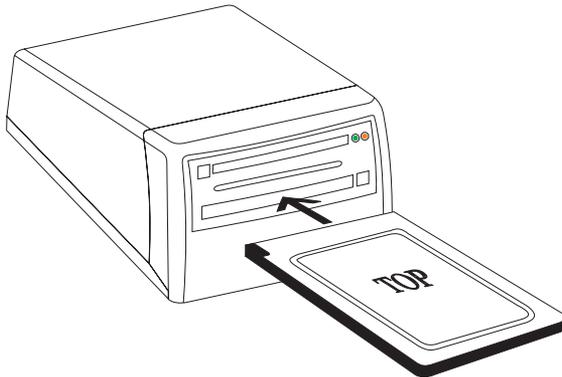


Figure 6: Inserting a PCMCIA ATA Flash Card

Like CompactFlash cards, PCMCIA ATA Cards are also polarized and can only be inserted in the correct orientation. Remember to push the card completely into the slot so that the eject button comes out. To release the card, press the eject button into the case. This will allow the PCMCIA ATA Flash Card to be easily removed by hand.

The small slot in the middle of the CameraConnect Pro's front panel is used for SSFDC or "SmartMedia" Devices. These cards are commonly used in modern digital cameras. The CameraConnect Pro has the hardware necessary to automatically de-

test and configure itself to use these devices.

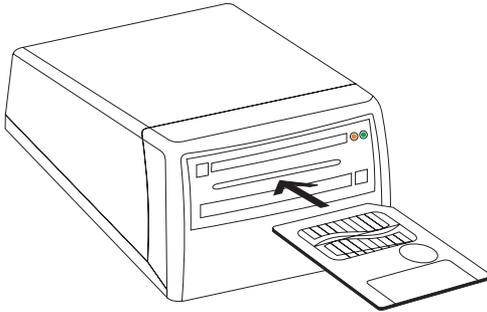


Figure 7: Inserting an Smart Media (SSFDC) Device

Figure 7 shows the correct way to insert an SSFDC device into the CameraConnect Pro. Notice that the gold pads are facing up. If you attempt to insert the device with the gold pads facing down, the device will not be recognized by the CameraConnect Pro.

Note: Insert only one card at a time into the CameraConnect Pro. If two or more cards are inserted at the same time, none of them will work.

Formatting a Card or Smart Media (SSFDC) Device

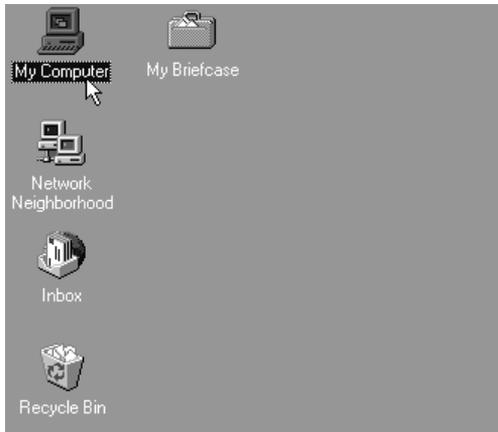
Although your Flash Card or SSFDC Device will probably be formatted when you purchase it, there may be times when you will need to reformat it. Like all other types of storage media, a Flash Card or SSFDC Device must be formatted before you can store information on it. This section outlines the procedure for formatting a device using your operating system and the CameraConnect Pro.

Note: If you are using Windows NT, format cards using the Windows NT FAT option. Otherwise the card may be unreadable by a computer running a non-Windows NT operating system.

Step 1 To format a device using the CameraConnect Pro, first insert the card into the correct slot. Refer to Figure 5, 6, or 7 (depending on the type of card you are using) for the proper orientation of the card when inserting it into the CameraConnect Pro.

Remember that ATA Flash Cards and Compact Flash Cards are designed so that they will not go completely into the slot if inserted upside down. Smart Media (SSFDC) cards must be inserted with the gold pads facing up as shown in Figure 7. If you insert this type of card with the gold pads facing down, the card will not be recognized by the CameraConnect Pro.

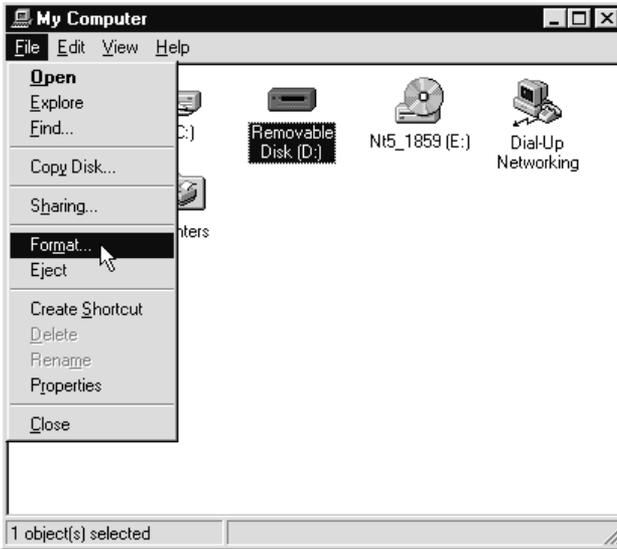
Step 2 Double-click the **My Computer** icon on the Windows desktop as shown below.



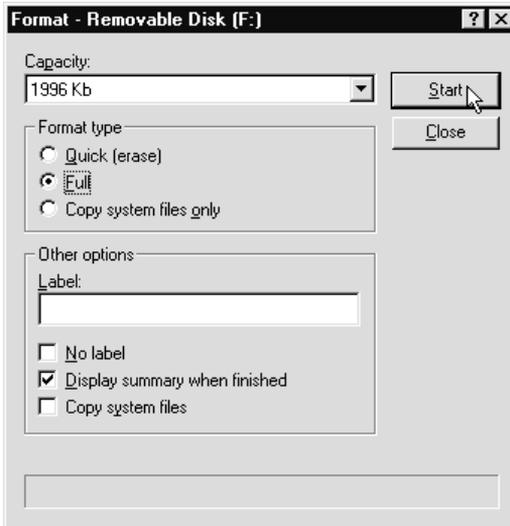
Step 3 The CameraConnect Pro will be identified as a Removable Drive and a drive letter will be assigned to it in My Computer. Click on its **Removable Drive** icon to select it as shown below. Do not double-click the icon.



Step 4 From the File menu, choose **Format**.



Step 5 The Format dialog box will appear. You can perform a “full format” or select options such as Quick (erase.) Below is the Format dialog box for Windows 98. Windows 95 displays a slightly different dialog box but the options offered will be the same. Click the **Start** button in this dialog box to begin formatting.



Note: Do not use the format function on a computer running Windows NT 4.0. Computers running other operating systems may not be able to read cards formatted under Windows NT 4.0.

Viewing, Writing, and Copying Files

Use My Computer or Windows Explorer to gain access to the files contained on your flash cards. When the CameraConnect Pro is installed, it is assigned a drive letter like any other disk drive in your system. You may write to and copy files from your ATA Flash Cards, Compact Flash Cards, and SmartMedia Devices using standard Windows drag-n-drop copy.

Menu based commands and drive utilities like Scandisk work with the CameraConnect Pro in the same way as with any other drive that appears in My Computer. Remember, however, that the CameraConnect Pro will not detect a card placed in one of the slots until you access the device through its drive letter. Once the CameraConnect Pro is accessed, it will read the information on the card and display the files on screen. It will not automatically detect a card when one is inserted or removed. In this way, the CameraConnect Pro behaves in much the same way as your floppy disk drive.

Because it does not remain in its active state all the time, the CameraConnect Pro to coexist with other peripherals on the parallel port. See “Using the CameraConnect Pro with Other Parallel Port Devices” for help.

Using The CameraConnect Pro With Other Parallel Port Devices

The CameraConnect Pro’s driver and utility program allow it to share the system printer port with other devices. However, this does not mean that the other devices can or will share the printer port. Granted, the parallel port is designed for printers and there is usually only one printer installed at a time. With this in mind, printer manufacturers usually are not concerned with any additional, non-printing devices that might be installed on a parallel port. Listed below are some guidelines for using the CameraConnect Pro with other peripherals attached to your parallel port.

Printers

The CameraConnect Pro will coexist with most printers available on the market today. This is also true of older, outdated printers like 9-pin dot matrix printers. Newer printers with enhanced capabilities may include memory resident programs which run in the background. These programs can be recognized by looking to the Windows Taskbar in the lower right-hand corner of the desktop screen. An icon will be visible that shows the program is active.



Figure 8: Windows Taskbar

Some resident programs may be shown as minimized applications on the taskbar. These programs constantly interrogate the printer port and can prevent the CameraConnect Pro from operating. Printers that have resident programs are generally multifunction inkjet printers that have faxing and scanning functions. Some laser printers may also include this type of resident program. They monopolize the port making it unavailable to other applications.

In order to use the CameraConnect Pro with these printers, you will need to close the resident printer program. Locate the program's icon in the lower right hand corner of the Windows desktop screen. (See Figure 9.) Click once on the icon. There will be an option to close, or exit, on the menu that appears. Click once on either of these listings and the program should close.

If you want to use the advanced features of your printer after you have copied the files from your Flash Card, you can reactivate the printer's resident program through the Start-Programs menu. It will be listed in your printer's program folder.

Other External Devices

The CameraConnect Pro will work with most external parallel devices. The rule to remember is that only one peripheral device can use the printer port at any one time. If you have another external device connected to the printer port, make sure it is not transferring data when you are using the CameraConnect Pro. Trying to use two devices at once will have unpredictable results which may include Windows becoming non-responsive, making it necessary to restart your computer.

Using The CameraConnect Pro Utility

When you load the CameraConnect Pro Drivers in Windows 95 or Windows 98, a utility program is also installed. This utility provides some useful information about the CameraConnect Pro's installation parameters and the status of any cards which are installed in it.

The CameraConnect Pro Utility can be started from Programs menu. On the Start menu, click Programs, click CameraConnect Pro, then click CameraConnect Utility. The utility will display the dialog box shown below.

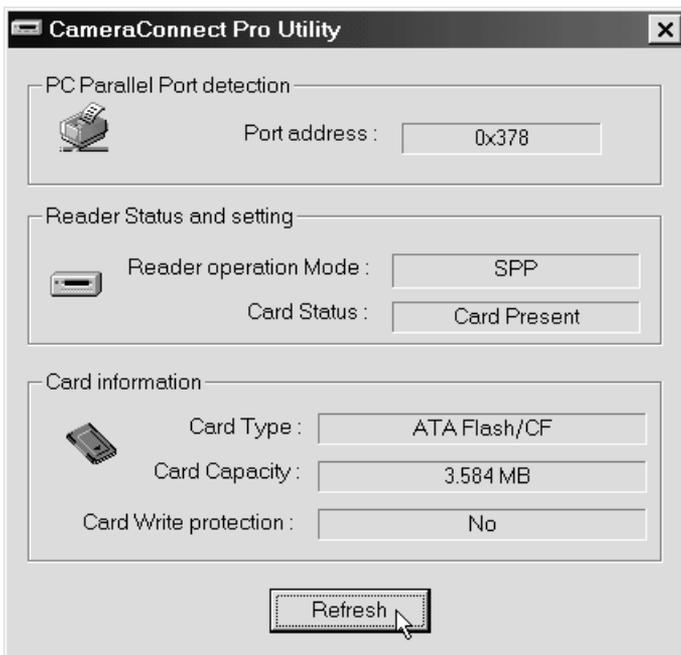


Figure 9: The CameraConnect Utility Screen

Three sections of information are provided in the utility's dialog box. The first block gives PC Parallel Port detection information. The port address indicates which LPT Port the CameraConnect Pro is connected to. The default LPT addresses are listed below.

0x378	LPT1 :
0x278	LPT2 :
0x3BC	LPT3 :

The Reader Status and Setting block shows the CameraConnect Pro's current operational mode, as well as indicating if a card is present or the sockets are empty. The parallel port modes displayed are SPP (standard), PS/2 (simple bidirectional), EPP (enhanced parallel port), and ECP (extended capabilities port). The PS/2 listing will be shown by a system with a bidirectional printer port configured in standard mode. SPP mode is a standard unidirectional printer port. EPP and ECP are the two other modes for parallel ports.

EPP mode is the preferred setting for the CameraConnect Pro. Your printer port mode can be configured through your system BIOS setup utility. See your computer system user's manual for information on setting your printer port mode through the system BIOS setup.

Note: Setting your printer port to EPP or ECC/EPP mode will also facilitate the best transfer speeds in most cases.

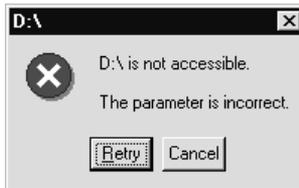
The Card Information block will show the type of card inserted (SmartMedia or ATA Flash/CF), its size in Megabytes, and if write protection is enabled. The card you have may not offer this feature and the Card Write protection area will always show "No."

Remember that the utility screen will not automatically update when you insert or remove a card from one of the CameraConnect Pro's slots. If you insert or remove a card, be sure to click on the Refresh button to update the screen.

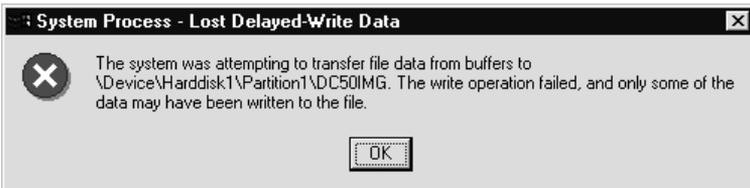
Error Messages and Troubleshooting

This section lists some common error messages and operational problems that might be encountered when using the CameraConnect Pro and offers suggestions for their correction. If you have difficulties when trying to share the printer port with several external devices, it is suggested that you obtain a separate parallel port card for some of your devices. Generally, two external parallel port peripherals can share the same port with little difficulty but if there are three, four, or five external devices on one printer port, problems are much more likely. The only solution in this case is to remove as many devices as possible and move them to a separate printer port.

Some Common Error Messages



The above error message is likely to be issued when the card placed in the CameraConnect Pro is not recognized. This message can also be seen when there is no card in the CameraConnect Pro. Likely causes are: The card is not formatted, has no CIS (Card Information Structure), or the card is not an ATA Flash Card (the CameraConnect Pro will only operate with ATA Flash, Compact Flash, or SmartMedia devices).



The message shown above is issued by Windows NT 4.0 when a SmartMedia device is removed from the CameraConnect Pro after the copy process appeared to end. The 'busy' light had stopped flashing and the copy process looked to be finished. However, Windows NT had not finished writing to the device. When using Windows NT 4.0, wait 10 seconds after the 'busy' light stops flashing before removing a device from the CameraConnect Pro.

Some Common Problems

When I insert a card into the CameraConnect Pro, nothing happens.

You must access the CameraConnect Pro through Windows My Computer or Windows Explorer before you can view or copy files.

When I double-click the Removable Drive icon in My Computer, I can see my picture files. How do I view them with my picture program?

You can copy your files into your hard drive and open them from there, or you can open them directly from the card. Just specify the removable drive as the source for your files in your application's Open dialog box. They will load directly from the CameraConnect Pro into your program.

When I insert a SmartMedia Card into the CameraConnect Pro, I can't read the files. Windows returns a "not accessible" error.

See "Inserting Devices into the CameraConnect Pro" for the correct way to insert an SSFDC device.

When I copy files from the CameraConnect Pro, my printer pauses printing for a few seconds.

When you access the CameraConnect Pro, be sure no other device is using the printer port. See "Using The CameraConnect Pro With Other Parallel Port Devices" for help.

When I try to use a card formatted by a computer running Windows NT 4.0, my camera reformats it.

Do not format cards in Windows NT 4.0. Cards formatted in Windows NT 4.0 will not be readable in other operating systems and may be automatically reformatted by certain cameras and other devices.

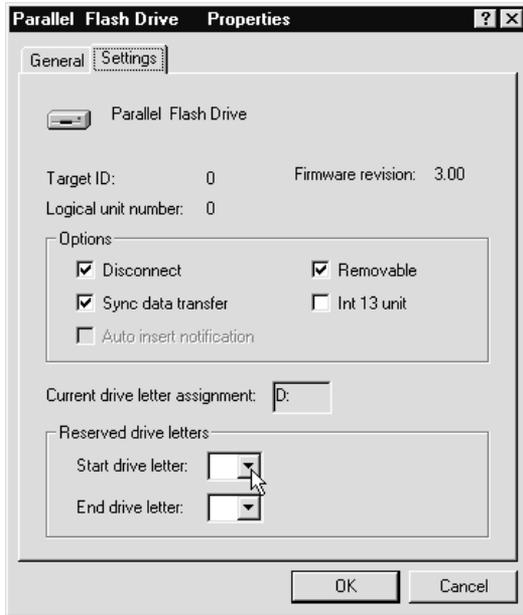
I installed the CameraConnect Pro in my office system, but it is not listed as a drive in My Computer.

If you are connected to a network, be sure you have enough drive letters assigned to your system. See your MIS department or System Administrator for help in modifying your lastdrive statement.

The CameraConnect Pro will not install. (No Drive Letter Assigned)

You may not have enough drive letters available to your system. In Windows 95 or Windows 98, right-click the **My Computer** icon on the desktop and choose **Properties** from the menu that appears. In the System Properties window, click on the **Device Manager** tab. Double-click the **Disk Drives** icon in the device tree to show what drives are installed in the system. Click once on **Parallel Flash Drive** to select it, then click **Properties** to display the Properties Window. Now click the **Settings** tab to access the drive letter information. The information below should be displayed.

At the bottom of the window there will be an option selection box for Reserved drive letters. Click once on the Start drive letter box as shown in the picture. The start drive letter must be greater than the total number of disk drives and CD-ROM drives in your system. After you have set the start drive letter, set the End drive letter to Z. Restart your system and check My Computer. Your CameraConnect Pro should be listed as a Removable Drive.



Note: Never select "Int 13 unit". Your system will stop responding.

You may need to do a "clean" installation of the CameraConnect Pro software in your system. See Appendix A for instructions on how to uninstall the software. When the software has been uninstalled, remove the parallel port from the Device Manager listing (it can be found under the heading "Ports.") Shut down, rather than restart, your computer, then turn it back on again and reinstall the software.

The green light on the CameraConnect Pro never comes on and the computer's light is also off.

If both the computer system's power light and the green light on the CameraConnect Pro are off, you should turn off the power and disconnect the CameraConnect Pro. If your system is functioning normally, not be allowing power sharing from the keyboard connector. Contact your computer's manufacturer for assistance.

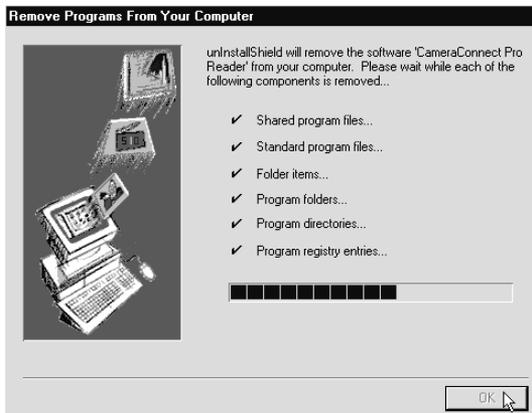
Appendix A: Uninstalling the CameraConnect Pro

Uninstalling in Windows 95 or Windows 98

- Step 1 On the Start menu, click **Settings**, then click **Control Panel**. In **Control Panel**, double-click **Add/Remove Programs**.
- Step 2 Click **CameraConnect Pro Reader** to select it. Then click **Add/Remove**.



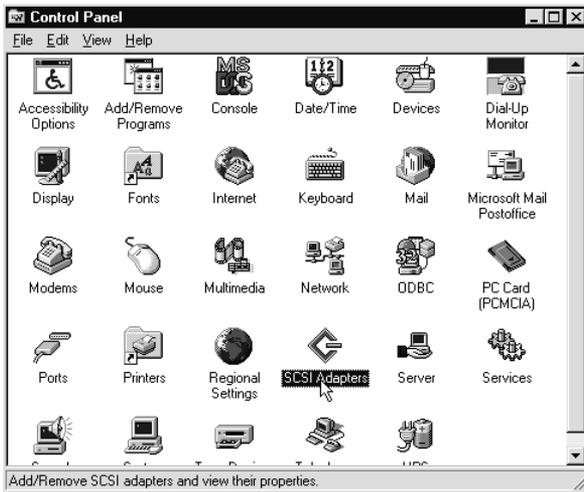
- Step 3 A warning message will ask you to confirm the removal of the **CameraConnect Pro Reader** from the system. Click the **Yes** button.



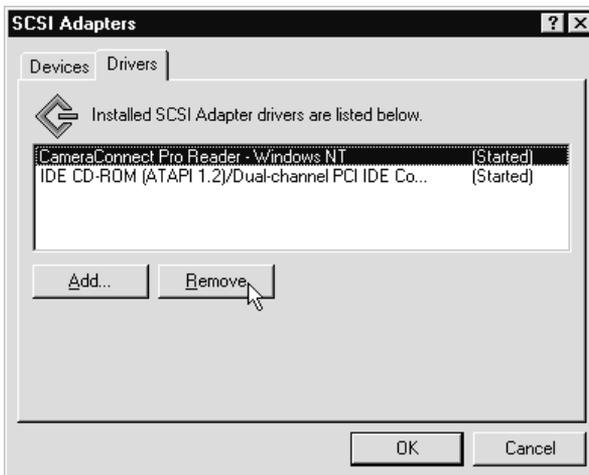
- Step 4 After the files have been removed, click **OK**.

Windows NT 4.0

Step 1 On the Start menu, click **Settings**, then click **Control Panel**. In Control Panel, double-click on **SCSI Adapters**.



Step 2 Click on the **Drivers** tab. In the list, click to select **CameraConnect Pro Reader**. Then click **Remove**.



Step 3 A warning message will ask you to confirm the removal of the CameraConnect Pro Reader from the system. Click the **Yes** button.

Step 4 The driver will be removed from your system. Click **Cancel**.

Appendix B: Technical Reference

External Port Connectors

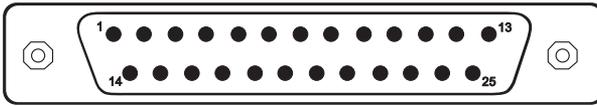


Figure 10: Printer (LPT) Port Connector - Front View

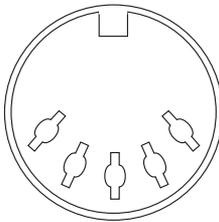


Figure 11: AT Keyboard Connector - Front View

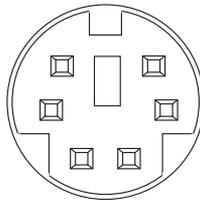


Figure 12: PS/2 Keyboard Connector - Front View

Notices

Declaration of Conformity

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

Reorient the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

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

Notice for the European Community

The product CameraConnect Pro (PC805) complies with the European Directives 89/336/EEC, "Electromagnetic Compatibility" (EMC) and 73/23/EEC "Low Voltage Directive".

