Windows 95 Driver Installation

Addendum to
5515/5525/5575 PCI ATM Adapter
Users Guide

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Interphase Corporation
13800 Senlac
Dallas, Texas 75234
Phone: (214) 654-5000
Fax: (214) 654-5500

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	Fax:	(214) 654-5500
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United Kingdom:	Telephone:	+ 44 (0) 1869-321222
	Fax:	+ 44 (0) 1869-247720
France:	Telephone:	+ 33 (0) 1 41 15 44 00
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Asia/Pacific Rim:	Telephone:	+ 81 35423 6513
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ADDENDUM: Windows 95 Driver Installation

Windows 95 Driver Installation

Overview

This addendum contains the procedures for installing the Interphase® PCI ATM driver in an endstation running Microsoft® Windows 95®. The driver provides broadcast and multicast addressing, allowing you to run legacy LAN (Ethernet®, Token Ring, and FDDI) applications and protocols over an ATM network. Multiple emulated LANs (ELANs) are supported in that a single adapter can join up to four different ELANs and one IP over ATM segment simultaneously.

All references to *Users Guide* in this addendum are referring you to the *5515/5525/5575 PCI ATM Adapter Users Guide*.

The Interphase software supports the following:

- One PCI ATM adapter per endstation
- User-Network Interface (UNI) 3.0/3.1 signalling specification for Switched Virtual Circuits (SVCs)
- Permanent Virtual Circuits (PVCs) based on RFC-1483
- ATM Forum LAN Emulation Specification version 1.0
- Up to four LECs (LAN Emulation Clients) using both SVC and PVC communications
- One IP over ATM client (based on RFC-1577) using both SVC and PVC communications
- Ethernet and Token Ring compatible
- Optional Network Services
  - Up to eight LESs (LAN Emulation Servers)
  - One LECS (LAN Emulation Configuration Server)
  - One IP over ATM ARP server

CAUTION

Your ATM switch must be capable of supporting the UNI 3.0/3.1 signalling standard for SVCs. Some switch vendors allow the mixing of the two standards. Some vendors require that all ports be set to either UNI 3.0 or UNI 3.1. Check your switch documentation for the proper settings. The default setting for the PCI ATM adapter is UNI 3.0.

Before You Start

If any *Read Me First* documentation is in your installation kit, review it before installing the driver. It contains any changes and updates to this addendum since the printing date. Also, check for a **readme** file in the **Win95** directory on the installation CD-ROM. If you are not thoroughly familiar with ATM networking, read the tutorial *ATM Technology Overview* in the *Users Guide*.

If you have any questions about the installation that are not answered in this addendum or in the *Users Guide* and supporting documentation, contact Interphase Customer Support. See the assistance information at the front of this addendum.

The basic procedures for installing the driver are:

- Verify driver requirements
- Install the ATM driver
- Configure LEC1 to the network
- Initialize additional clients, if needed
- Enable and configure the clients with CellView™

Driver Requirements

The Windows 95 workstation must meet the following minimum requirements:

- Intel® x86 or Pentium® system with PCI bus running Windows 95
- System memory
  - 20 MB minimum
  - 32 MB minimum with the LAN services enabled
- At least 5 MB available space on the hard disk for the driver files
- The Microsoft Windows 95 installation CD-ROM or diskettes
- CD-ROM drive or diskette drive, depending on the Interphase installation media and the Microsoft installation media
- The appropriate network configuration information for the protocols that you want to use: TCP/IP, NetBEUI and/or IPX

Installing the Driver

The driver can be installed prior to installing the adapter. Where feasible, however, it is recommended the adapter be installed first.

NOTE

The following instruction and dialogs are for Windows 95 4.00.950 B. The dialogs may differ slightly, depending upon which service pack you are running.

To install the driver for Windows 95, do the following:

1. Shutdown and turn off the machine.
2. Install the Interphase ATM PCI adapter.

   See the *Users Guide* for installation instructions.
3. Turn on the machine.

   During bootup, the New Hardware Found dialog should appear, advising an unconfigured PCI card has been detected in the machine.
4. Select **Driver from disk provided by manufacturer.**
5. Select **OK.**

   The Install From Disk dialog appears.
6. Insert the Interphase installation CD-ROM or the Interphase driver diskette, whichever is available.
7. Enter the path to the installation media.

   For example, if using the Interphase installation CD-ROM, the path would be similar to:

   `d:\Win95`
8. Select **OK.**

   The Interphase drivers are copied to your hard disk.
9. When prompted for the location of the Microsoft Windows 95 install files,
   a. Insert the Microsoft installation CD-ROM or the appropriate installation diskette.
   b. Enter the path to the drive, such as **d:**\ or **a:**\.
   c. Select **OK.**

10. If installing from both Microsoft and Interphase diskettes, you are prompted that setup cannot find the **cellview.cpl** file.

    a. Replace the Microsoft diskette with the Interphase CellView diskette.

    b. Select **OK**.

    You will then be prompted that setup cannot find the **cvconf** files.

    c. Replace the CellView diskette with the Interphase driver diskette.

    d. Select **OK.**

11. Select **Yes** in the System Settings Change dialog to reboot the computer.

Continue the installation with the procedures in the next section.

Configuring LEC1 to the Network

NOTE

If you are going to use TCP/IP and the protocol is not installed on the host machine, you need to install the TCP/IP stack at this time. Make sure you reboot the system before configuring the clients to the network.

With the Interphase drivers loaded to your hard disk as described in the previous section, do the following to configure the adapter to the network:

1. Select **Start, Settings, Control Panel,** then select the **Network** icon.

   The Network dialog appears as shown in Figure 1-1.

   There are two sets of drivers for the PCI ATM adapter. The default setting at installation is for the 5515. The other set of drivers is for the 5525/5575 adapter. They are not cross-compatible. If a 5525/5575 adapter is installed in the machine, you must remove the 5515 bindings and attach the 5525/5575 drivers as follows:

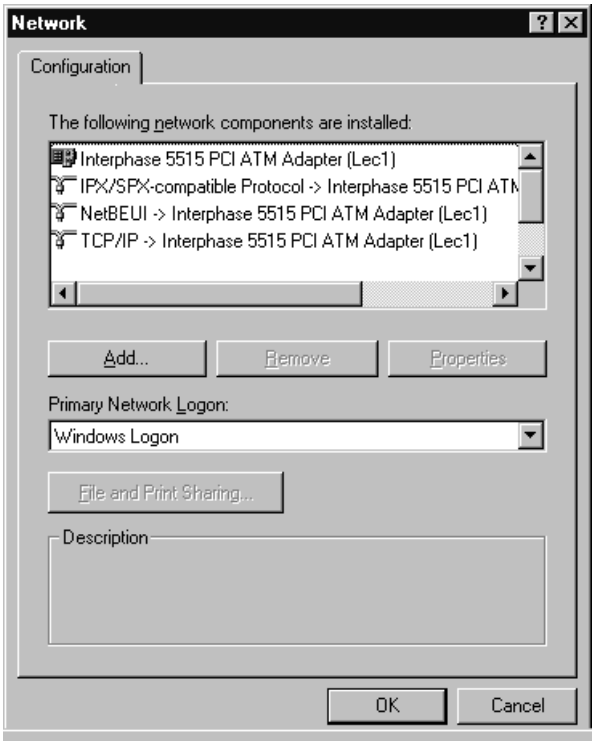

Figure 1-1. Default Settings for Driver

a. Move the highlight to **Interphase 5515 PCI ATM Adapter (LEC1)** in the Network/Configuration dialog.

b. Select **Remove.**

The 5515 driver and its protocols for LEC1 are removed from the list.

c. Select **Add.**

The Select Network Component Type dialog appears.

d. Move the highlight to **Adapter**, then select **Add.**

The Select Network Adapters dialog appears, as shown in Figure 1-2. All the drivers available for the PCI ATM adapter are listed in the Models window.

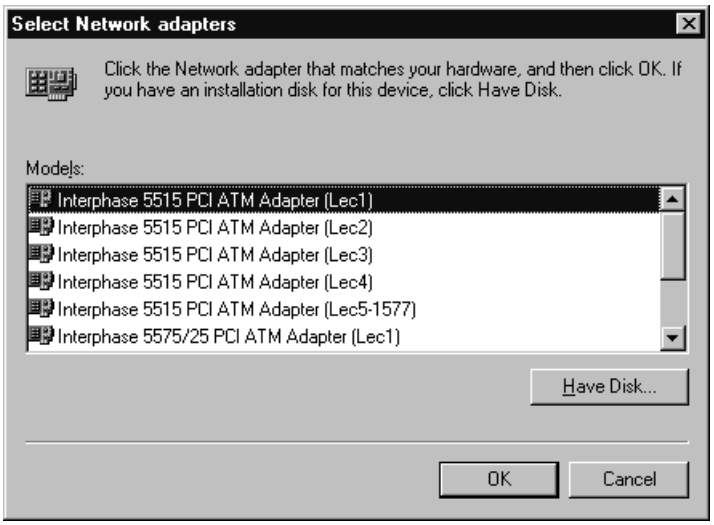

Figure 1-2. List of Drivers for the Adapter

e. Move the highlight to **Interphase 5575/5525 PCI ATM Adapter (LEC1)**, then select **Have Disk.**

The Install From Disk dialog appears.

f. Enter the path to your system directory, typically **c:\windows\system**, then select **OK.**

The Network/Configuration dialog reappears with the new driver bound to the adapter as shown in Figure 1-3.

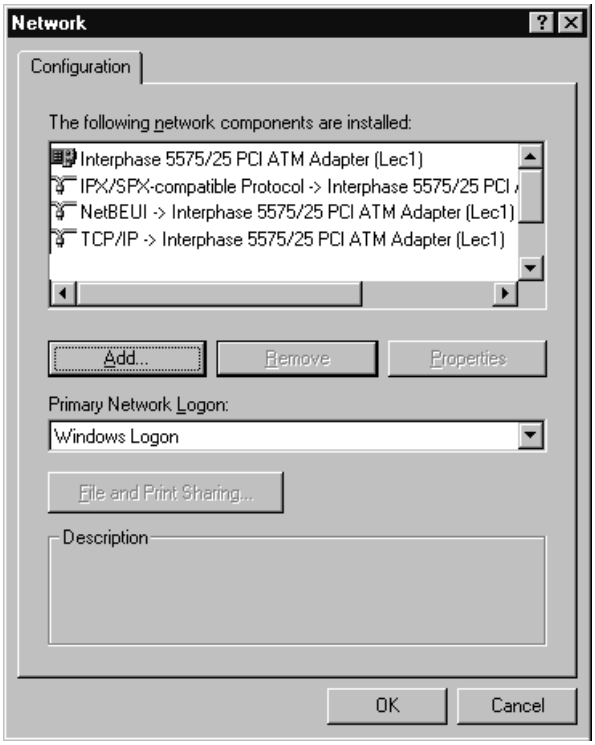

Figure 1-3. 5525/75 Settings for LEC1

You are now ready to configure LEC1.

2. Add or remove the network protocols for LEC1.

   When initializing LEC1, the IPX® protocol, a client for NetWare Networks®, the NetBEUI protocol, and a client for TCP/IP (if the stack is detected on the machine) are bound to the client.

NOTE

If you are going to use TCP/IP and the protocol is not installed, you need to install the TCP/IP stack at this time. When you return to the Network/Configuration dialog, the TCP/IP binding for LEC1 should appear as shown in Figure 1-1 on page 6 or Figure 1-3 on page 8.

3. Remove the protocols which are not needed.

   For example, leaving IPX configured when there is not an IPX server on the network may cause the Windows 95 operating system to lock or hang. To remove IPX from your machine, do the following:

   a. In the Network/Configure dialog, move the highlight to the IPX listing for LEC1.

   b. Select **Remove.**

      The IPX binding for LEC1 is removed along with the client for NetWare Networks.

4. Configure the remaining protocols for your network.

   For example if you are using TCP/IP,

   a. Select (double click) the TCP/IP listing for LEC1 in the Network/Configuration dialog.

      The TCP/IP Properties dialog appears as shown in Figure 1-4 on page 10.

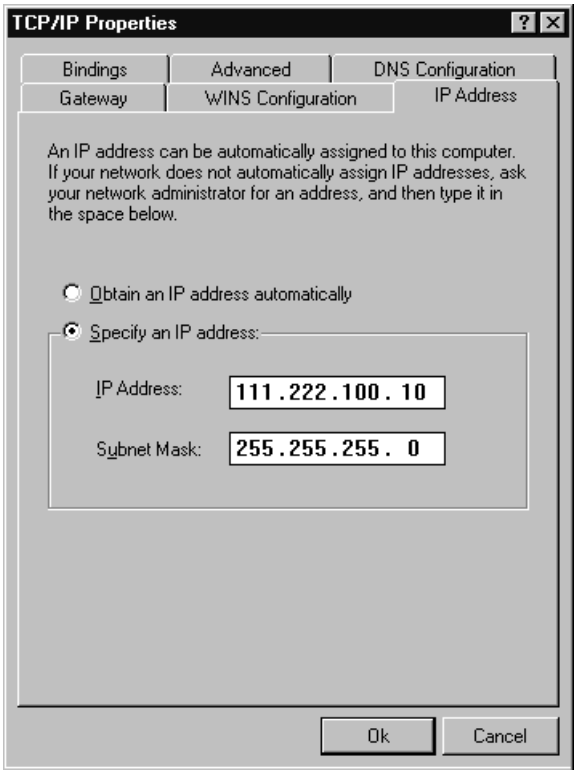

Figure 1-4. TCP/IP Configuration

NOTE

The IP addresses shown in Figure 1-4 are examples only. Use the IP address for your network.

b. Select one of the radio buttons for how you wish to enter the IP address.

- Selecting **Obtain an IP address automatically** enables the DHCP for address resolution.
- Selecting **Specify an IP Address** allows you to enter the IP Address and the Subnet Mask directly.

c. Configure the remainder of items for TCP/IP as required for your network.

d. When complete, select **OK** in the TCP/IP Properties dialog.

The initialization of LEC1 is complete.

If LEC1 is the only client needed:

- Exit the Network dialog.
- Answer **No** to the restart prompt.
- Go to *Configuring the Adapter to the Network* on page 14.

Otherwise, continue with the procedures in the next section.

Adding Additional Clients

Up to four LANE clients and one IP over ATM client can be initialized on the adapter. However, they all must belong to the same set of drivers. You cannot mix clients from the 5515 and the 5525/5575 drivers.

With LEC1 fully configured as described in the previous section, do the following to initialize additional clients.

1. From the Network/Configuration dialog, select **Add.**

The Select Network Component Type dialog appears.

a. Move the highlight to **Adapter**, then select **Add.**

The Select Network Adapters dialog appears, as shown in Figure 1-5, listing all the drivers available for the PCI ATM adapter.

b. Move the highlight to the client you wish to initialize.

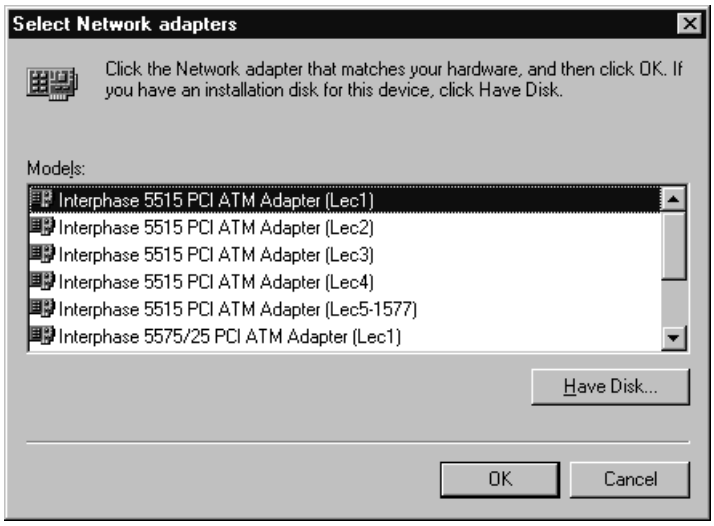

Figure 1-5. List of Drivers for the Adapter

There are five clients for each set of 5515 and 5525/5575 drivers. LEC1 – LEC4 are the LANE clients. LEC5-1577 is for the IP over ATM client. You can add any client that you wish. Just make sure the new client is from the same driver group as LEC1. Clients from the two sets of drivers cannot be mixed.

c. Select **Have Disk.**

The Install From Disk dialog appears.

d. Enter the path to your system directory, typically **c:\windows\system**, then select **OK.**

a. The client is added and bound (attached) to all of the installed protocols. The Network/Configuration dialog reappears with listings for the additional client.

b. Remove the unwanted protocols from the new client.

c. Configure the remaining protocols for the client to your network.

CAUTION

When other IP nodes reside on the host system (Ethernet for example), the IP address used for each ATM client must be a totally separate network segment. If the same segment is used, then routing and broadcast problems will occur as the network layer will assume that both devices are physically on the same segment. Also, do not assign more than one ATM client for an adapter to the same network segment.

2. Repeat step **1** until you have installed all of the clients that you need.

3. Select **OK** in the Network/Configuration dialog.

4. You may be prompted to install the file **cellview.cpl.** If this occurs, select **Skip.**

5. You may be prompted for the location of the Microsoft Windows 95 install files. If this occurs:

   a. Insert the Microsoft installation CD-ROM or the appropriate installation diskette.

   b. Enter the path, such as **d:** or **a:**.

   c. Select **OK.**

6. When you are prompted to restart now, select **No.**

Continue the installation with the procedures in the next section.

Configuring the Adapter to the Network

The Interphase CellView utility is used to enable and configure the clients to the network. LEC1 is enabled by default when the driver is installed; however, you should check the parameter settings for Signalling and LEC1 to see if they conform to your network requirements. See *CellView Utility* in the *Users Guide* for details on how to use the utility.

To run CellView, do the following:

1. From the Desktop, select **Start, Settings, Control Panel,** then select the **CellView** icon.

   The main CellView dialog appears.

2. Select **Setup** and check the Signalling parameters.

   All settings must conform to the capabilities of your ATM switch.

3. Enable and configure the clients that were initialized in the previous sections.

   a. From the Setup dialog, select the **LEC** tab to configure the LECs.

b. From the Setup dialog select the **1577** tab, if needed, to configure the IP over ATM client and the ARP server (optional).

4. If the LECS and the LESs are to be on this machine, enable the LECS and the quantity of LESs as required.

At initial installation, the dialogs for the servers are disabled and their tabs do not appear in the Setup or Statistics menus. To activate the dialogs,

a. From the main CellView dialog, select **Global.**

The Application dialog appears.

b. Turn on Enable Advanced Settings by clicking the adjacent box or button, whichever is available in your dialog.

The feature is enabled when a check mark appears in the box or when the button is depressed.

c. Select **OK**.

The tabs for the LECS and the LESs should now be visible in the Setup and Statistics routines.

5. When complete, exit the CellView utility and reboot the machine.

The installation and configuration of the driver for the PCI ATM adapter is complete.

See the next section if you wish to verify the installation.

Verifying Driver Installation

For a client to have any form of communication with a server,

- The switch must be configured correctly
- The client must be enabled and configured correctly

- Signalling must be up and running
- The adapter must be assigned a network prefix
- At least one LES must be present on the network

An application program does not have to be running in order to check these items. At bootup of the endstation, certain systems communications must take place between the client and the server (through the switch) in order for the client to log on to the network. Use the Statistics routines in the Interphase CellView utility to monitor this traffic as well as for checking a few other essential items.

If you find an item in error, or you suspect something is wrong with your setup, see *Troubleshooting* in the Users Guide. If you cannot resolve the problem with the information in the Users Guide and supporting documentation, contact Interphase Customer Support at the nearest location listed in the front of this addendum.

To perform a quick check of the operating statistics for an adapter, do the following:

1. From the Desktop, select **Start, Settings, Control Panel,** then select the **CellView** icon.

   See *CellView Utility in* the *Users Guide* for detail operating instructions.

2. When the main CellView dialog appears, select **Stats**.

   The Signalling dialog appears.

   If signalling is up and running,

   – All three graphical LEDs in the Signalling State box should be green in color

   – The three text fields in the State Detail box should read similar to:

     ILMI: **ILMI Registered**

QSAAL: **Data transfer ready**

Signalling: **Signalling Ready**

– There should be some traffic numbers in the Signalling Statistics box for both Frames In and Frames Out

3. Select the **AAL5** tab.

If the adapter is communicating properly,

– All six graphical LEDs in the SONET box should be green in color

– There should be some traffic numbers in the AAL5 Statistics box

4. If at least one LEC on the adapter is enabled, select the **LEC** tab.

a. Select the tab for an enabled LEC.

If the LEC is communicating properly,

– The LEC graphical LED should be green in color

– There should be some traffic numbers in the Tx Packets and Rx Packets fields of the display boxes

b. Repeat the above step for all enabled LECs.

5. If the IP over ATM client is enabled, select the **1577** tab.

If the client is communicating properly,

– The **1577** graphical LED should be green in color

– There should be some traffic numbers in the **1577** Statistics fields

When complete, exit the CellView utility.

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