IRMA 3270 PCI Adapter
Installation Guide

CONNECTIVITY
ADAPTER

ATTACHMATE.

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Declaration of Conformity

We, Attachmate Corporation, 3617 131st Avenue, SE, Bellevue, WA, United States of America, declare under our sole responsibility that the IRMA 3270 PCI adapter, to which this declaration relates, is in conformity with the provisions of 89/336/EEC Electromagnetic Compatibility Directive and has been tested to meet the following standards:

EN 55022:1994 Radiated Emissions, Class A
EN 55022:1994 Conducted Emissions, Class A
EN 61000-4-2 Electrostatic Discharge, Level B
EN 61000-4-3 RF Electromagnetic Fields, Level A
EN 61000-4-4 Fast Transient/Burst, Level B

A "Declaration of Conformity" in accordance with the preceding standards is on file at Attachmate Corporation Europe, Sèvres, France.

Statement of Compliance: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including any interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A 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 or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1.   Reorient or relocate the receiving antenna.

2.   Increase the separation between the equipment and receiver.

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

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

CAUTION: Part 15 of the FCC Rules requires that this Class A digital device be installed on computer equipment certified to comply with the Class A limits. FCC Rules and Regulations also require connections to this device be made with shielded cables with metallic RFI/EMI connector hoods. Operation of non-certified computers or non-shielded cables may result in interference with radio or television reception.

MODIFICATIONS: Any changes or modifications not expressly approved by Attachmate Corporation may void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emissions from a digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Cet présent appareil numérique n'émets pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe A prescrites dans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.
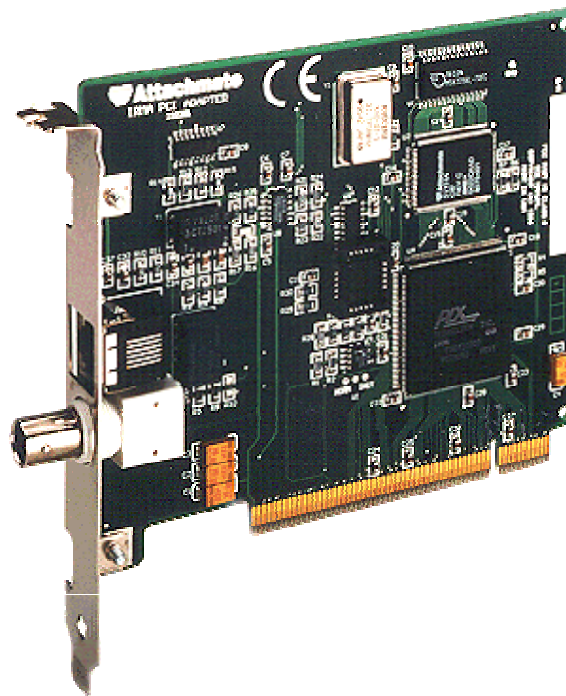
Introduction

This manual describes how to install the Attachmate® IRMA™ 3270 PCI Adapter in a PCI-compatible computer.

The IRMA 3270 PCI adapter allows an IBM®-compatible PC to operate as an IBM 3270 workstation attached through an IBM 3274, 3276, or 3174 control unit to an IBM mainframe.

The IRMA 3270 PCI adapter features:

- Support for either RG-62A/U coaxial or twisted pair cabling

- RJ-11 jack eliminates the need for an external balun when using twisted pair cable

- Twisted pair input can be electrically inverted to easily accommodate cables wired "out of phase"

- Electronically switched front-end eliminates the need for jumpers or switches to select the cable type.

- Features the Attachmate Coax Integrated Processor ASIC - a powerful, highly integrated microprocessor specifically designed for 3270 communications

- Fully PCI v2.1 and Plug and Play compliant - no DIP switches or jumpers to set

- Diagnostic and configuration software provided for Windows™ 95, 98, Windows NT™, and Windows 2000

Package Contents

Before you begin the installation, make sure the following items are included in your package:

- The IRMA 3270 PCI Adapter
- The IRMA 3270 PCI Adapter Installation CD

Requirements

Table 1 summarizes the system requirements for the adapter. The technical specifications for the adapter are listed at the end of this installation guide.

Table 1 – System Requirements

Type	Description
Hardware	An IBM-compatible PC with one available 32-bit, 5V PCI slot.
Operating System	Microsoft® Windows NT® 4.0, Windows 2000 Microsoft Windows 3.1x, 95, 98
Terminal Emulation Software	Attachmate EXTRA! ® Personal Client 6.30 or newer Attachmate EXTRA! for Windows 5.0 or newer Attachmate IRMA for the Mainframe 4.0 or newer

Installation Instructions

This section describes how to install the adapter in your PC, and how to install the drivers required to use the IRMA 3270 PCI adapter.

Installation consists of the following general steps:

- Installing the adapter

- Connecting the adapter to a coax controller

- Completing Installation on Windows 95, Windows 98, or Windows 2000 Systems

- Installing the diagnostic and configuration program

- Running the diagnostic tests and configuring Attachmate's EXTRA! software to use the IRMA 3270 PCI adapter

Safety Guidelines

Review the following safety guidelines before you install the adapter.

- Turn off all power switches and disconnect the power plugs of all peripherals before installing the adapter.

- Do not touch the exposed metal surfaces of two separate communications cables at the same time.

- Do not touch the communications cables during an electrical storm.

- Make sure the power cord, plug, and outlet are properly wired and grounded. Improper wiring can place hazardous voltages on accessible metal parts. You are responsible for proper outlet and plug wiring.

Installing The Adapter

To install the adapter, refer to your PC manual and follow the instructions for installing components.

1. Turn off the PC power, and then disconnect the PC's power cable.

2. Remove the PC cover.

3. Install the adapter in any available PCI slot. Be sure the adapter is fully seated.

4. Fasten the screw through the adapter bracket to hold it in place.

5. Install the PC cover, and then reconnect the PC's power cable.

Connecting The Adapter to a Coax Controller

You may connect the IRMA 3270 PCI adapter to an IBM 3174 or similar coax controller using either RG-62A/U coaxial cable via the adapter's BNC connector, or by using Unshielded Twisted Pair (UTP) cable via the adapter's RJ-11 connector. Consult your mainframe system administrator for your connection type.

NOTE: Do not connect the adapter to a telephone outlet. The telephone's high voltage ring signal can permanently damage your adapter.

Note that the IRMA 3270 PCI adapter can use twisted pair cabling which has the center pair reversed, due to its unique electrical invert function. You do not have to know the polarity of your twisted pair cabling to make a successful mainframe connection. The IRMA PCI 3270 adapter comes with a diagnostic program, IrmaPciDiag, that can automatically determine the proper cable type in use, and can also configure Attachmate's EXTRA! software to use this connection type *(32-bit EXTRA! only)*.

Completing Installation on Windows 95, Windows 98, or Windows 2000 Systems

To complete the installation of the IRMA 3270 PCI adapter on Windows 95 and Windows 98 systems, follow these steps:

NOTE: This step is not necessary on Windows NT 4.0 systems.

1. After the adapter has been installed and connected to a coax controller, restart your PC and start Windows.

2. When Windows has started, the Add New Hardware Wizard will find the adapter and prompt you for a disk.

3. Insert the IRMA 3270 PCI Installation CD in your CD-ROM drive. When prompted by the Windows, enter the appropriate drive letter for your CD-ROM drive.

4. The Windows Add New Hardware Wizard will finish installing your adapter.

NOTE: If you are using the IRMA 3270 PCI adapter with Attachmate's EXTRA! software, complete the installation of EXTRA! *before* starting the next step *(32-bit EXTRA! only)*.

5. Proceed to the next section, "Installing The Diagnostic Program".

Installing the Diagnostic and Configuration Program

The IRMA 3270 PCI adapter ships with a diagnostic program, IrmaPciDiag, which can be used to verify the adapter's proper installation, functional integrity, and can automatically detect the connection type in use and configure Attachmate's EXTRA! Personal Client to use this connection type. IrmaPciDiag runs under Windows NT, Windows 2000, Windows 95 and 98.

NOTE: If you are using Attachmate's EXTRA! software, complete the installation of EXTRA! *before* starting the next step *(32-bit EXTRA! only)*.

The setup program for the diagnostic will check your version of EXTRA!, and update any device drivers and support files as necessary to assure proper operation with the IRMA 3270 PCI adapter.

To install the diagnostic program, follow these steps:

1. Insert the IRMA 3270 PCI Installation CD into your CD-ROM drive. The CD should start automatically, and the main screen will appear.

   -or-

   If the CD does not start automatically, from the Windows Start menu, choose Run, and in the Run window, type the following command:

   `<d>:\launch`

   where <d> is the letter of your CD-ROM drive.

2. From the main window, select Install Software. The Install window appears.

3. From the Install window, select Install Diagnostic. The setup program appears.

4. Follow the instructions on the screen to install the diagnostic program.

Running The Diagnostic Tests and Configuring Attachmate's EXTRA! To Use The IRMA 3270 PCI adapter

When IrmaPciDiag is run, it will look to see if Attachmate's EXTRA! is installed on the system. When the Active Connection test is run, IrmaPciDiag will automatically detect the connection type in use on your IRMA 3270 PCI adapter, and will configure Attachmate's EXTRA! software to use this connection type *(EXTRA! 32-bit products only)*.

To run the diagnostic program, follow these steps:

NOTE: Before running IrmaPciDiag, close any open sessions and exit from EXTRA! Personal Client, and wait for the APPN node to close.

Do not attempt to run both EXTRA! Personal Client and IrmaPciDiag at the same time. Both programs will attempt to access the IRMA 3270 PCI adapter, and unstable system behavior may result.

1. From the Windows Start menu, select Programs, Attachmate Hardware, IrmaPciDiag. Select the IrmaPciDiag program icon. The IrmaPciDiag window appears.

2. On Windows NT and Windows 2000 systems, IrmaPciDiag will check to see if Attachmate's EXTRA! is configured to use the IRMA 3270 PCI adapter. If necessary, IrmaPciDiag will display a message box asking if you would like to configure EXTRA! to use the adapter. Select Yes if you would like IrmaPciDiag to perform this configuration for you.

NOTE: This prompt is not required and will not appear on Windows 95 or 98 systems.

3. To run all tests with the default test selections press F9. As the tests run, the status and results will be displayed in the diagnostic program's adapter windows. If you need help while running the diagnostic program press F1.

4. When the Active Connection test runs, it will try to find a connection to a coax controller using each of the available connection types (Coax, RJ-11, and RJ-11 Inverted). If an active connection is found, IrmaPciDiag will configure EXTRA! to use this setting.

5. When the diagnostic tests have completed, the test results will be displayed in the adapter window. When all tests have completed successfully you are ready to use your IRMA 3270 PCI adapter to connect to a mainframe.

6. On Windows 95 or 98 systems, it may be necessary to re-start your system prior to using EXTRA! with a different connection type. When you exit from IrmaPciDiag you will be prompted to re-start your system if the connection type has changed. This step is not necessary on Windows NT or Windows 2000 systems.

Technical Specifications

Table 2 lists the technical specifications for the IRMA 3270 PCI adapter.

Table 2 – IRMA 3270 PCI Adapter Technical Specifications

Category	Description
Line Interface	IBM 3270 Type A coaxial transceiver
Cable Types Supported	RG-62A/U coaxial cable IBM Type 3 unshielded twisted-pair cable Supports twisted pair cable with reversed center pair Maximum length for coax is 5,000' (1524m) Maximum length for twisted-pair is 900' (274m)
Protocol	Supports CUT, DTF, and 87E
Connector Types	BNC or RJ-11
Bus Interface	PCI v2.1 compliant 32-bit Target interface

Resource Requirements	Memory Address
	    128 bytes (located anywhere in the 4GB virtual address space)
	
	Memory Address
	    256KB (located anywhere in the 4GB virtual address space)
	
	Memory Address
	    256KB (located anywhere in the 4GB virtual address space)
	
	IRQ
	    Any available IRQ. Supports interrupt sharing.

Dimensions	4.2" W x 5.0" H (114mm x 127mm)

Table 2 – IRMA 3270 PCI Adapter Technical Specifications *(continued)*

Power Requirements	+5VDC @ 305 mA +12VDC @ 6.9mA -12VDC @ 3.1mA All voltages ±5%
Power Consumption	1.7 Watts

Environmental	Temperature:
	   0 to +55°C (operating)
	   −40 to +70°C (non-operating)
	
	Humidity:
	   8% to 80% (operating, non-condensing)
	   5% to 95% (non-operating, non-condensing)

Safety	All materials meet a UL® 94V-1 or better flammability rating and are in accordance with IEC-950 safety requirements.
EMI	EN 55022:1994 Radiated Emissions, Class A EN 55022:1994 Conducted Emissions, Class A EN 61000-4-2 Electrostatic Discharge, Level B EN 61000-4-3 RF Electromagnetic Fields, Level A EN 61000-4-4 Fast Transient/Burst, Level B
Reliability	MTBF: 1,113,198 hrs Failure rate per 10^9 hrs: 898 Calculated per Bellcore Issue 5, Method 1, Case 3 Limited Stress Reliability Prediction, at 30°C, Gc, Ground Fixed Controlled (Office) environment