3270 Emulation PCI Adapter

IBM

User's Guide

3270 Emulation PCI Adapter

User's Guide

Note

Before using this information and the product it supports, be sure to read the general information under "Notice" on page 30.

First Edition (January 1999)

The following paragraph does not apply to the United Kingdom or any country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This publication could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time.

It is possible that this publication may contain reference to, or information about, IBM products (machines and programs), programming, or services that are not announced in your country. Such references or information must not be construed to mean that IBM intends to announce such IBM products, programming, or services in your country.

Requests for technical information about IBM products should be made to your IBM Authorized Dealer or your IBM Marketing Representative.

A form for readers' comments appears at the back of this publication. If the form has been removed, address your comments to:

IBM Corporation
MG78/101
8501 IBM Drive
Charlotte, NC 28262-8563
USA

When you send information to IBM, you grant IBM a nonexclusive right to use or distribute the information in any way it believes appropriate without incurring any obligation to you.

Contents

Safety Information

⚠️ **Danger:** Before you begin to install this product, read the safety information in *Caution: Safety Information—Read This First*, SD21-0030. This booklet describes safe procedures for cabling and plugging in electrical equipment.

⚠️ **Varning — livsfara:** Innan du börjar installera den här produkten bör du läsa säkerhetsinformationen i dokumentet *Varning: Säkerhetsföreskrifter— Läs detta först,* SD21-0030. Där beskrivs hur du på ett säkert sätt ansluter elektrisk utrustning.

⚠️ **Fare:** Før du begynner å installere dette produktet, må du lese sikkerhetsinformasjonen i *Advarsel: Sikkerhetsinformasjon — Les dette først*, SD21-0030 som beskriver sikkerhetsrutinene for kabling og tilkobling av elektrisk utstyr.

⚠️ **Fare!** Før du installerer dette produkt, skal du læse sikkerhedsforskrifterne i *NB: Sikkerhedsforskrifter—Læs dette først* SD21-0030. Vejledningen beskriver den fremgangsmåde, du skal bruge ved tilslutning af kabler og udstyr.

⚠️ **Gevaar:** Voordat u begint met de installatie van dit produkt, moet u eerst de veiligheidsinstructies lezen in de brochure *PAS OP! Veiligheidsinstructies—Lees dit eerst,* SD21-0030. Hierin wordt beschreven hoe u electrische apparatuur op een veilige manier moet bekabelen en aansluiten.

⚠️ **Gevaar** Voordat u begint met het installeren van dit produkt, dient u eerst de veiligheidsrichtlijnen te lezen die zijn vermeld in de publikatie *Caution: Safety Information - Read This First*, SD21-0030. In dit boekje vindt u veilige procedures voor het aansluiten van elektrische appratuur.

v

⚠️ **Vorsicht:** Bevor mit der Installation des Produktes begonnen wird, die Sicherheitshinweise in *Achtung: Sicherheitsinformationen—Bitte zuerst lesen,* IBM Form SD21-0030. Diese Veröffentlichung beschreibt die Sicherheitsvorkehrungen für das Verkabeln und Anschließen elektrischer Geräte.

⚠️

危険： 導入作業を開始する前に、安全に関する
小冊子SD21-0030の「最初にお読みください」
(Read This First)の項をお読みください。
この小冊子は、電気機器の安全な配線と接続の
手順について説明しています。

⚠️ **Danger :** Avant d'installer le présent produit, consultez le livret *Attention : Informations pour la sécurité — Lisez-moi d'abord*, SD21-0030, qui décrit les procédures à respecter pour effectuer les opérations de câblage et brancher les équipements électriques en toute sécurité.

⚠️ **Danger:** Avant de procéder à l'installation de ce produit, lisez d'abord les consignes de sécurité dans la brochure *ATTENTION: Consignes de sécurité—A lire au préalable,* SD21-0030. Cette brochure décrit les procédures pour câbler et connecter les appareils électriques en toute sécurité.

⚠️ **Pericolo:** prima di iniziare l'installazione di questo prodotto, leggere le informazioni relative alla sicurezza riportate nell'opuscolo *Attenzione: Informazioni di sicurezza — Prime informazioni da leggere*, SD21-0030 in cui sono descritte le procedure per il cablaggio ed il collegamento di apparecchiature elettriche.

⚠ **Perigo:** Antes de iniciar a instalação deste produto, leia as informações de segurança *Cuidado: Informações de Segurança — Leia Primeiro*, SD21-0030. Este documento descreve como efectuar, de um modo seguro, as ligações eléctricas dos equipamentos.

⚠ **Peligro:** Antes de empezar a instalar este producto, lea la información de seguridad en *Atención: Información de Seguridad — Lea Esto Primero,* SD21-0030. Este documento describe los procedimientos de seguridad para cablear y enchufar equipos eléctricos.

⚠ **Perigo:** Antes de começar a instalar este produto, leia as informações de segurança contidas em *Cuidado: Informações Sobre Segurança—Leia Isto Primeiro,* SD21-0030. Esse folheto descreve procedimentos de segurança para a instalação de cabos e conexões em equipamentos elétricos.

⚠ **VAARA:** Ennen kuin aloitat tämän tuotteen asennuksen, lue julkaisussa *Varoitus: Turvaohjeet—Lue tämä ensin*, SD21-0030, olevat turvaohjeet. Tässä kirjasessa on ohjeet siitä, miten sähkölaitteet kaapeloidaan ja kytketään turvallisesti.

⚠

위험: 이 제품을 설치하기 전에 반드시
"주의: 안전 정보-시작하기 전에"
(SD21-0030)에 있는 안전 정보를
읽으십시오.

危險：安裝本產品之前，請先閱讀
"Caution: Safety Information--Read
This First" SD21-0030 手冊中所提
供的安全注意事項。 這本手冊將會說明
使用電器設備的纜線及電源的安全程序。

Uwaga:
Przed rozpoczęciem instalacji produktu należy zapoznać się z instrukcją:
"Caution: Safety Information - Read This First", SD21-0030.
Zawiera ona warunki bezpieczeństwa przy podłączaniu do sieci elektrycznej
i eksploatacji.

Upozornění: než zahájíte instalaci tohoto produktu, přečtěte si
nejprve bezpečnostní informace v pokynech „Bezpečnostní
informace" č. 21-0030. Tato brožurka o popisuje bez pečnostní
opatření pro kabeláž a zapojení elektrického zařízení.

 Vigyázat: Mielôtt megkezdi a berendezés üzembe helyezését,
olvassa el a *"Caution: Safety Information— Read This First,*
SD21-0030 könyvecskében leírt biztonsági információkat. Ez a
könyv leírja, milyen biztonsági intézkedéseket kell megtenni az
elektromos berendezés huzalozásakor illetve csatlakoztatásakor.

⚠️

Pozor: Preden zaènete z instalacijo tega produkta
preberite poglavje: 'Opozorilo: Informacije
o varnem rokovanju-preberi pred uporabo,"
SD21-0030. To poglavje opisuje pravilne postopke
za kabliranje,

About This Guide

This manual is the guide to installation, problem determination, and maintenance of the 3270 PCI Card. The manual contains four sections and one appendix:

Section 1: This section introduces the 3270 PCI Card. The section also provides cabling and unpacking information.

Section 2: This section contains guidelines for installing the 3270 PCI Card (Personal Computer 3278/79 Emulation PCI Adapter) in a personal computer with a PCI bus. This section also provides instructions for diagnosing problems that may occur during operation.

Section 3: This section contains information to be used by service personnel.

Appendix A: This appendix contains information to help you obtain technical support.

Appendix B: This appendix contains the product warranty, notices, and trademarks.

Required Publications

- The operator's manual for your personal computer
- The hardware maintenance manual for your personal computer

Associated Publications

- *Caution: Safety Information—Read This First*, SD21-0030
- The technical reference manual for your personal computer
- *IBM Personal Computer 3278/79 Emulation Adapter, Technical Reference for the Advanced Adapter*, GA23-0302
- *IBM 3270 Connection Technical Reference*, GA23-0339

Other Related Publications

- *IBM 3270 Character Set Reference*, GA27-2837
- *IBM 3270 Information Display System: 3274 Control Unit Description and Programming Guide*, GA23-0061
- *IBM 3270 Information Display System Data Stream Programmer's Reference*, GA23-0059
- *IBM 3270 Information Display System: 3174 Control Unit Functional Description*, GA23-0218
- *IBM 3270 Information Display System: Installation Manual-Physical Planning*, GA27-2787
- *IBM 3270 Information Display System: IBM 3299 Terminal Multiplexer Product Information*, G520-4216
- *Electrical Safety for IBM Customer Engineers*, S229-8124
- *Safety/Health Guidelines for IBM Service Representatives*, S241-5493
- *IBM Cabling System Planning and Installation Guide*, GA27-3361
- *IBM/ROLM 3270 Coax-to-Twisted-Pair Adapter Planning and Installation Guide*, GA27-3722

- *Installation and Assembly of Coaxial Cable and Accessories*, GA27-2805

- *Using the IBM Cabling System with Communication Products*, GA27-3620.

| To order these publications, contact your IBM Authorized Dealer or
| IBM Marketing Representative.

Section 1. Introduction

The 3270 PCI Card is a hardware component that, with the appropriate software, provides 3278/79 emulation capabilities for personal computers with PCI busses.

The 3270 PCI Card can be installed in personal computers with a PCI bus.

---

[1] In this book, unless otherwise stated, Intel 8088 bus refers to the 8088, 8086, and 80286 buses.

1

Signal Cable Considerations

When a 3270 Card is attached to a host system, consider the following practices for installing signal cable:

- Installation

  - Cable runs (indoor and outdoor)
  - Types of signal cables and specifications (coaxial and twisted-pair)
  - Signal cable and power line separation
  - Cable labeling and testing

- Cable accessories.

Outdoor runs require additional installation guidelines, including lightning protection. For more information, refer to the signal cable publications listed in "Other Related Publications" on page xii.

Cable Requirements and Card Options

Table 1 shows the card requirements for various signal cable types
| and IBM products. To order these cables, contact your IBM
| Authorized Dealer or IBM Marketing Representative.

Table 1. Cable Requirements

IBM Model	Coaxial RG62A/U	150 ohm Shielded Twisted-Pair (22 AWG)[1]	150 ohm Shielded Twisted-Pair (26 AWG)[1]	Telephone Twisted-Pair Type 3
3270 Cards	BNC	Yes (notes 1 and 3)	Yes (notes 1 and 3)	Yes (notes 2 and 5)
3299 Model 1 or 3274	BNC	Yes (note 1)	Yes (note 3)	Yes (note 2)
3299 Model 2 or 3174	BNC	Yes (note 1)	Yes (note 1)	Yes (note 5)
3299 Model 3	NA	NA	NA	Yes (note 4)

NA = Not applicable
[1] Dual Purpose Connector (DPC)
[2] IBM/ROLM Coax-to-Twisted-Pair Adapter (CTPA)
[3] IBM Cabling System red balun
[4] Modular jack connector
[5] Dual Purpose Connector - T3 (DPC-T3)

Cable Length Limits

| Table 2 shows the length limits of signal cable. To order these
| cables, contact your IBM Authorized Dealer or IBM Marketing
| Representative.

Table 2. Signal Cable Length Limits

	150 ohm Shielded Twisted-Pair (22 AWG)	150 ohm Shielded Twisted-Pair (26 AWG)	Coaxial (RG62A/U)	Telephone Twisted-Pair Type 3
Red Balun both ends (note 1)	2000 ft	1333 ft	N/A	N/A
Red Balun one end (note 1)	3280 ft	2186 ft	N/A	N/A
DPC both ends (note 2)	4920 ft	3333 ft	N/A	N/A
DPC-T3 both ends (note 3)	N/A	N/A	N/A	Yes (note 5)
IBM/ROLM Balun both ends (note 4)	N/A	N/A	N/A	Yes (note 5)
DPC-T3 IBM/ROLM opposite ends	N/A	N/A	N/A	Yes (note 5)
Minimum Length	None	None	None	100 ft
Maximum Length	See above	See above	4920 ft	900 ft

1 Red Balun is the IBM Coaxial Balun Assembly, P/N 8642546
| 2 DPC is the IBM Dual Purpose Connector Attachment Cable (this cable has been
| withdrawn from marketing and is shown here for reference purposes only).
3 DPC-T3 is the IBM 3270 Dual Purpose Connector-to-Twisted-Pair
   (DPC-T3) Adapter. (See the *IBM 3174 Site Planning Guide*, GA23-0213)
4 See the *IBM/ROLM Coax-to-Twisted-Pair Adapter Planning and Installation
   Guide*, GA27-3722
5 The telephone twisted-pair type 3 cable length must be between the minimum
   and maximum lengths.

Note: In this book, unless otherwise stated, the word "cable" refers
to any of the above cable types.

Before You Install a Card

Your system control unit must be made ready (customized) for this application. Check with the person in your organization responsible for the control unit to be sure that this has been done.

Note: If you receive communication errors during operation, make sure the control unit and control unit configuration are compatible with your personal computer software.

For more information on these modes of operation, refer to publications listed in "Other Related Publications" on page xii.

To operate the 3270 PCI Card, the card must be connected to the system control unit by a proper cable. See Table 1 on page 2 and Table 2 on page 3.

How to Unpack a Card

Warning: This card can be damaged by static discharge. To prevent damage, the card is wrapped in an antistatic bag. Certain precautions must be taken when removing the card from the bag.

1. Hold the card (still wrapped in the antistatic bag) in one hand, and with your other hand hold the metal portion of a screwdriver or other metal object.

2. Touch the screwdriver or metal object to an unpainted metal part of your system unit briefly to discharge static.

3. Carefully remove the card from the bag, holding it by the edges only.
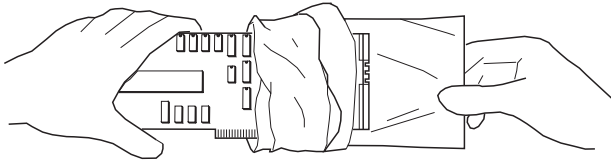
4. Avoid touching the components or connections of the card.

5. Set the card in a safe place until you are ready to install it.

For information on installing, operating, or testing a 3270 PCI Card, see Section 2.

Section 2. The 3270 PCI Card for Personal Computers with PCI Buses

This section contains information for installing, operating, and testing the 3270 PCI Card for personal computers with a PCI bus.

Operating Requirements

The 3270 PCI Card operates under the same environmental limits as IBM personal computers or compatible system units. See your personal computer documentation for temperature and humidity requirements.

Dimensions

Length　　　　137 mm (5.40 in)

Height　　　　116 mm (4.56 in)

Power Requirements

Voltage　　　　+5 volts ±5% (at card socket)

Current　　　　750 mA maximum at 5.25 volts

Heat Output
23 BTU/hour

Installing and Operating the Card

This card package consists of:

- 3270 PCI Card
- CD-ROM containing:
  - This book.
  - Configuration Diagnostic Utility
  - Adapter Initialization File

If any item is missing or damaged, notify the place of purchase.

System Resources Required

The 3270 PCI Card requires system resources to operate correctly. The following resources must be available to the card:

- One hardware interrupt
- An 8-KB memory page
- 16 bytes of I/O space.

The PCI system configurator will make assignments for these resources during PC startup. Refer to your PC manufacturer's user's guide or operating system user's guide for help in determining availability of resources.

Installation Instructions

1. Set the power switches for all connected devices to OFF.

2. Unplug the system unit power cord from the power outlet.

   Note: Steps 3 through 6 are summarized instructions for installing the card. Refer to your personal computer operator's manual for specific feature card installation instructions.

3. Remove the system unit cover.

4. Install the card in the personal computer. The card can be installed in any available PCI expansion slot.

5. Replace the system unit cover.

6. Reconnect the cables.

7. Reconnect the power cords.

8. Power on the system unit.

9. Depending on the operating system on your PC, you may be asked to provide a driver file. This file (PCI3270.INF) is on the CD-ROM shipped with your 3270 PCI card. If your operating system requires the driver, it will display a message indicating that a PCI Communication Device has been detected.

   When prompted for the driver, insert the IBM 3270 Emulation PCI Adapter CD-ROM into the CD-ROM drive.

   Note: The CD-ROM menu will not self-start when the CD-ROM is inserted during the installation process.

   When your operating system has located the driver on the CD-ROM, it displays a message indicating it has found a driver for the IBM 3270 Emulation PCI Adapter.

10. Follow the operating system instructions to complete the installation after the driver has been located.

11. **Card installation is complete.**

Operation

How the 3270 PCI Card operates depends on the application software being used. Refer to the documentation that came with your application software for instructions on how to install and use it.

For information on available software for the card, see your personal computer dealer.

Diagnostic Utility

The diagnostic utility is on the CD-ROM shipped with your 3270 PCI card. It is a Windows application that runs in the same operating system environment that the 3270 emulation program runs (Windows 95, Windows 98, or Windows NT). It verifies that the adapter is operating correctly and that the appropriate resources have been assigned to the adapter by the operating system. It also verifies that the adapter can communicate with a control unit. It is made up of four separate tests:

Table 3. Diagnostic Utility

Test No.	Test Indicator	Description
1	I/O 0xNNNN	Card input/output space test (NNNN indicates the base I/O address assigned to the card in hexadecimal format)
2	Memory 0xNNNNNNNN	Card memory test (NNNNNNNN indicates the base memory address assigned to the card (in hexadecimal format)
3	Connectivity	Control unit communications test
4	Interrupt 0xNN	Card interrupt test (NN indicates interrupt line assigned to the card in hexadecimal format)

| A check mark beside the test indicator means that test passed. An
| "X" beside the test indicator means that test failed.

Tests 1, 2, and 4 are card resource tests. A failure in one of these three tests could be caused by:

- Down-level PC system BIOS (Basic Input Output System) code
- Problems with the PC slot where the card is mounted
- Resource conflicts within the system (interrupt, I/O, or memory)
- A defective card

Test 3 verifies that the card can successfully communicate with a control unit. A failure in this test could be caused by:

- A defective cable
- A card not connected to control unit
- A control unit port not active
- A defective card

Running the Diagnostic Utility

┌─ **Note to Windows NT Users** ──────────────────────────┐

If your PC operating system is Windows NT, you must run the
setup utility prior to running the diagnostic utility. *This note does
not apply to Windows 95 or Windows 98 users.* Windows NT
users run the setup utility as follows:

1. Logon to the PC running Windows NT.

2. Insert the 3270 PCI CD-ROM into the CD-ROM drive.

3. Select **Diagnostic Setup for Windows NT only** from the
   CD-ROM menu.

└──┘

1. Make sure the PCI card is connected to an active control unit.

2. Start the PC operating system.

3. Make sure no other application is accessing the 3270 PCI card.

4. Insert the 3270 PCI CD-ROM into the drive.

5. Select **Diagnostic Utility** from the CD-ROM menu. The window shown in Figure 1 appears.
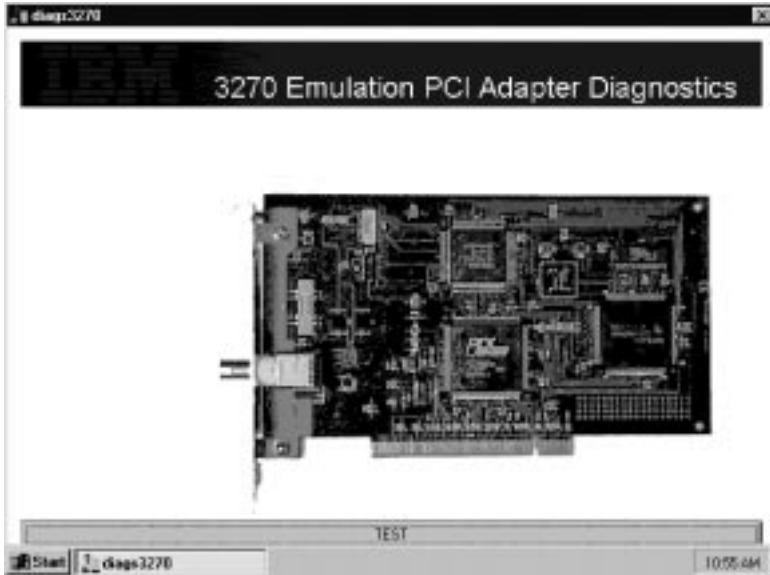
Figure 1. 3270 Emulation PCI Adapter Diagnostics - Test

6. Select **Test** at the bottom of the 3270 Emulation PCI Adapter Diagnostics window to run the diagnostics.

   The test takes approximately 12 seconds to complete.

7. Four check marks, as shown in Figure 2, indicate that all diagnostics completed successfully. This means that the adapter is functioning properly and is connected to an active control unit. If you get four check marks but communications problems still exist, there may be problems elsewhere in the PC or in the application program that accesses the 3270 PCI card.
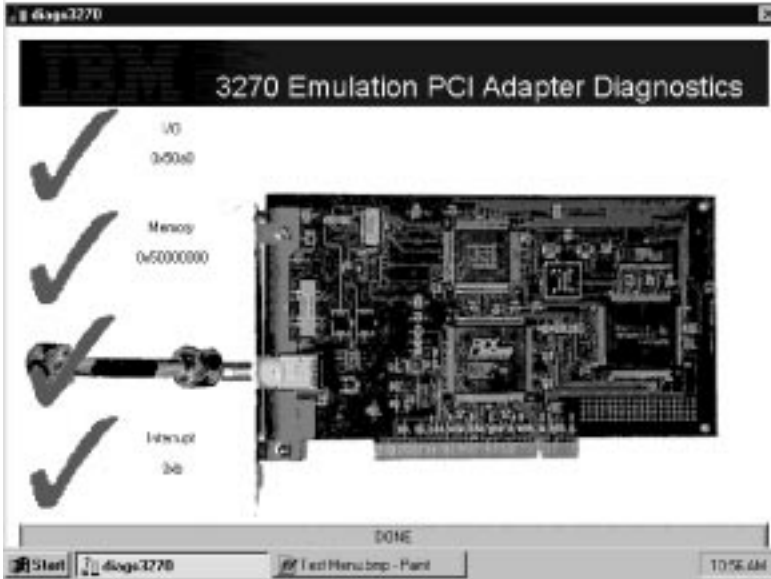

Figure 2. 3270 Emulation PCI Adapter Diagnostics - Results

8. An **X** beside any one of the four tests indicates that test failed. Proceed to the "Problem Determination Procedures" if any of the tests fail when the diagnostic utility is run.

Problem Determination Procedures

The problem determination procedures (PDP) in this section test the 3270 PCI Card in a personal computer running Windows 95, Windows 98, or Windows NT.

Procedures

1. Did the message "No Adapter Card Found" appear?

   No   Continue at step 3.

   Yes Continue at step 2.

2. Check the following to isolate the problem. Run the diagnostic program after each step to see if the problem is resolved.

   a. Make sure that the card is fully seated in the system PCI slot.

   b. Refer to the "Installation Instructions" on page 9 and ensure that the card (and the initialization file if required for your operating system) are installed correctly.

   c. If the problem still persists, have the card serviced (see Appendix A on page 23).

3. Did an **X** appear beside any of the following three diagnostic display items?

   • I/O
   • Memory
   • Interrupt

   No   Continue at step 5 on page 16.

   Yes Continue at step 4.

4. Check the following to isolate the problem. Run the diagnostic program after each step to see if the problem is resolved.

   a. Make sure that the system BIOS code is current.

      Note: If it is not the most current version, obtain the most current version and load it onto your system. For information on revising and upgrading BIOS for IBM PCs, go to http://www.pc.ibm.com/support on the World Wide Web. For non-IBM PCs, contact the PC manufacturer for BIOS information.

   b. The following is an optional step if a vacant PCI slot is available in the system unit:

Remove the card from the PCI slot and reinstall it in a vacant PCI slot according to the "Installation Instructions" on page 9.

   c. If the problem persists, contact technical support (see Appendix A on page 23).

5. Did an **X** appear beside the picture of the coax cable on the diagnostic display?

   No   Continue at step 7.

   Yes   Continue at step 6.

6. Check the following to isolate the problem. Run the diagnostic program after each step to see if the problem is resolved.

   a. Make sure that the cable is firmly attached to the card connector.

   b. Make sure that the cable connecting the card to the control unit is good.

   c. Make sure the control unit port is active.

   d. If the problem persists, contact technical support (see Appendix A on page 23).

7. Did "Cannot Load VXD3270.VXD" message appear on the diagnostic display?

   No   Continue at step 9.

   Yes   Continue at step 8.

8. Check the following to isolate the problem. Run the diagnostic program to see if the problem is resolved.

   a. Make sure that the file VXD3270.VXD is in the same directory where DIAG3270.EXE is being run. File VXD3270.VXD is in the DIAG directory on the 3270 PCI CD-ROM.

   b. If the problem still persists, have the system unit serviced (see Appendix A on page 23).

9. Did "Cannot Load IBM3270.SYS" message appear on the diagnostic display?

   No   Continue at step 11 on page 17.

10. Check the following to isolate the problem. Run the diagnostic program to see if the problem is resolved.

    a. Run the setup utility as described in the Note to Windows NT Users on page 12.

    b. If the problem still persists, have the system unit serviced.

11. Did check marks appear beside all four of the diagnostic display items?

    No   Continue at step 1 on page 15.

    Yes   Continue at step 12.

12. Four check marks, as shown in Figure 2 on page 14, indicate that all the diagnostic tests completed successfully. This means that the adapter is functioning properly in the Windows 95, 98, or NT environment and is connected to an active control unit. If you get four check marks but communication problems still persist, there may be problems elsewhere in the PC or in the application program that accesses the 3270 PCI card.

What to Do Next

If the problem persists, do the following:

- Follow the PDP in the operator's guide for your personal computer.

- If you have already followed these procedures and you have other options installed, check the documentation that came with the options for PDP.

- Check the documentation that came with the software you are using for PDP.

- If all PDP available have been done and the problem persists, seek technical assistance (see Appendix A on page 23).

Section 3. Maintenance and Service

This section contains information to be used by service personnel to isolate failures of the 3270 PCI Card.

For system failures, go to the hardware maintenance manual for the personal computer.

Safety Inspection Guide

The intent of this inspection guide is to assist you in identifying potentially unsafe conditions related to card maintenance. Good judgment should be used to identify potential safety hazards not covered by this inspection guide.

If any unsafe conditions are present, a determination must be made about how serious the apparent hazard can be and whether you can continue without first correcting the problem.

Consider these conditions and the safety hazards they present:

- Electrical hazards, especially primary power: Primary voltage on the frame can cause serious or fatal electrical shock.

- Explosive hazards: A damaged CRT face or capacitor can cause serious injury.

- Mechanical hazards: Loose or missing hardware can cause serious injury.

The guide consists of a series of checks.

1. Set the power switches for all personal computer components to off.

2. Disconnect all power cords from the power receptacles.

3. Check exterior covers for damage (loose, broken, or sharp edges).

4. Check power cords for the following:

- Each power cord must have a third-wire ground connector in good condition. Use a meter to measure third-wire ground resistance for 0.1 ohm or less between the external ground pin and the frame ground as specified in the system hardware maintenance manual.

- The cord set should be the appropriate molded type as specified in the system hardware maintenance manual.

- The insulation must not be frayed or worn.

5. Refer to the operator's manual or hardware maintenance manual for the personal computer being serviced for the proper system unit cover removal procedures.

6. Check for any obvious unsafe alterations. Use good judgment as to the safety of any alterations.

7. Check inside the unit for any obvious unsafe conditions, such as: metal filings, contamination, water or other liquids, or signs of fire or smoke damage.

8. Check for worn, frayed, or pinched cables. Ensure the voltage specified on the voltage tag (back panel of the unit) matches the voltage of the power receptacle. If in doubt, verify the voltage.

9. Examine the power supply and verify the following:

- That the input voltage selection switch is set correctly on the universal power supplies.

- That nonremovable fasteners in the power-supply cover have not been removed or tampered with.

- That the grommet is installed where the internal power cables come through the frame of the power supply.

10. Check for the following labels:

- On all system power supplies:

  "Caution Hazardous Area. Do Not Remove This Cover. Trained Service People Only. No Serviceable Components Inside."

- If your system has a battery unit:

  "Warning: Do not dispose of the battery unit in fire or water. See instructions for disposal in the battery installation instructions."

  "Check the condition of the battery."

Problem Isolation

All repair action associated with the card begins here.

Problem isolation is based on operator-reported failures or diagnostic messages. These procedures point out system unit problems, cabling, and card problems.

If the failure is not caused by the card, go to the maintenance packages for other options, if installed. If the problem is still not resolved, refer to the hardware maintenance manual for the personal computer being serviced.

To do problem isolation, you need the 3270 PCI Card diagnostic utility that is on the CD-ROM shipped with the card and the hardware maintenance manual for the personal computer being serviced.

- Follow the "Problem Determination Procedures" on page 14 to determine whether or not the 3270 PCI card is bad.

Additional Problem Isolation

If you have completed problem isolation procedures without solving the problem, the following steps should help you find additional audio or visual symptoms.

1. Check the entire system for loose or damaged connectors.

2. Go to the hardware maintenance manual for the personal computer and follow the procedures there.

If you have followed these procedures and still have an unsolved problem, you should request technical assistance (see Appendix A on page 23).

Removal and Replacement

Follow the procedures in the operator's manual or hardware maintenance manual for the personal computer being serviced to remove or replace the 3270 PCI Card.

Appendix A. Technical Support

Installation and technical support, including problem diagnosis and resolution, is provided by the IBM 3270 Emulation Support Center. This support is accessed in call-back mode through the IBM Support Center. In the United States, you may call the **IBM Support Center at 1-800-237-5511** anytime and receive a return call within eight business hours (Monday-Friday, 8:30 a.m.-5:00 p.m., eastern time).

If you get an automated response when you call the IBM Support Center, select the **0** (zero) option. When asked what platform you are running, be sure to ask for support for the 3270 Emulation PCI Adapter card. The customer support representative can help you route a call to the 3270 queue at Location 153 area of the IBM RETAIN Customer Support System. *The IBM 3270 Emulation PCI Adapter does not not require a support contract.*

The IBM 3270 Technical Support Center also maintains a bulletin board system (BBS) that contains tips, user information, and program updates. The BBS is available 24 hours a day. You can call the IBM Technical Support Center BBS at 704-594-3799 anytime using an asynchronous modem. The BBS supports communications up to 14.4KB with 8 bits, no parity, and 1 stop bit.

You might also be able to obtain corrective service and information from the PC Company BBS at 1-919-517-0001. The BBS supports communications up to 14.4KB with 8 bits, no parity, and 1 stop bit. This BBS is mirrored on the Internet as follows:

`FTP.PC.IBM.COM`

Program updates might also be available through the World Wide Web. For program updates, refer to the Networking Hardware Product Offerings Home Page on the Internet at URL:

`http://www.networking.ibm.com/3270`

In Canada, you may call 1-800-565-3344 to obtain support.

Outside the United States, Puerto Rico, or Canada, contact your local IBM representative or your Authorized IBM Supplier for information on program services.

When you call, you should have the following information available:

- Operating System version (Windows 95, Windows 98, or Windows NT)
- Emulation program type and version
- Type of IBM 3270 adapter
- PC brand, model, RAM memory, amount of free disk space, operating system, and operating system level (for example, ServicePack Applied)
- PC BIOS name and revision
- Host system model and host operating system level
- Workstation controller type and model
- The specific steps and other details to reproduce your problem
- Customer number

If you have an IBM System/390, your customer number is associated with the host serial number. To find out what your customer number is, call the IBM Support Center at 1-800-237-5511 and ask to be routed to the control desk.

When you are connected to the control desk, inform the customer support representative that you have an IBM mainframe and that you need to access your customer number.

Appendix B. Product Warranty and Notices

This appendix contains the product warranty, notices, and trademarks.

Product Warranty

IBM

International Business Machines Corporation   Armonk, NY 10504

Statement of Limited Warranty

The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you originally purchase for your use, and not for resale, from IBM or an IBM authorized reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. Machines are subject to these terms only if purchased in the United States or Puerto Rico, or Canada, and located in the country of purchase. If you have any questions, contact IBM or your reseller.

Machine   IBM 3270 Emulation Cards

Warranty Period*   1 year

*Elements and accessories are warranted for three months. Contact your place of purchase for warranty service information.

Production Status

Each Machine is manufactured from new parts, or new and serviceable used parts (which perform like new parts). In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's warranty terms apply.

The IBM Warranty

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications. IBM calculates the expiration of the warranty period from the Machine's Date of Installation. The date on your receipt is the Date of Installation, unless IBM or your reseller informs you otherwise.

During the warranty period, IBM or your reseller will provide warranty service under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine. IBM or your reseller will specify the type of service.

For a feature, conversion, or upgrade, IBM or your reseller may require that the Machine on which it is installed be 1) the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Some of these transactions (called "Net-Priced" transactions) may include additional parts and associated replacement parts that are provided on an exchange basis. All removed parts become the property of IBM and must be returned to IBM.

Replacement parts assume the remaining warranty of the parts they replace.

If a Machine does not function as warranted during the warranty period, IBM or your reseller will repair or replace it (with a Machine that is at least functionally equivalent) without charge. If IBM or your reseller is unable to do so, you may return it to your place of purchase and your money will be refunded.

If you transfer a Machine to another user, warranty service is available to that user for the remainder of the warranty period. You should give your proof of purchase and this Statement to that user.

Warranty Service

To obtain warranty service for the Machine, you should contact your reseller or call IBM. In the United States, call IBM at **1-800-426-7299** In Canada, call IBM at **1-800-565-3344.** You may be required to present proof of purchase.

Depending on the Machine, the service may be 1) a "Repair" service at your location (called "On-site") or at one of IBM's or a reseller's service locations (called "Carry-in") or 2) an "Exchange" service, either On-site or Carry-in.

When a type of service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced.

It is your responsibility to:

1. obtain authorization from the owner (for example, your lessor) to have IBM or your reseller service a Machine that you do not own;

2. where applicable, before service is provided —

   a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provide,

   b. secure all programs, data, and funds contained in a Machine,

   c. inform IBM or your reseller of changes in a Machine's location, and

   d. for a Machine with exchange service, remove all features, parts, options, alterations, and attachments not under warranty service. Also, the Machine must be free of any legal obligations or restrictions that prevent its exchange; and

3. be responsible for loss of, or damage to, a Machine in transit when you are responsible for the transportation charges.

Extent of Warranty

IBM does not warrant uninterrupted or error-free operation of a Machine.

Misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible may void the warranties.

THESE WARRANTIES REPLACE ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. HOWEVER, SOME LAWS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES. IF THESE LAWS APPLY, THEN ALL EXPRESS AND IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD.

In Canada, warranties include both warranties and conditions.

Some jurisdictions do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

Limitation of Liability

Circumstances may arise where, because of a default on IBM's part (including fundamental breach) or other liability (including negligence and misrepresentation), you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages, IBM is liable only for:

1. bodily injury (including death), and damage to real property and tangible personal property; and

2. the amount of any other actual loss or damage, up to the greater of $100,000 or the charge for the Machine that is the subject of the claim.

Under no circumstances is IBM liable for any of the following:

1. third-party claims against you for losses or damages (other than those under the first item listed above);

2. loss of, or damage to, your records or data; or

3. economic consequential damages (including lost profits or savings) or incidental damages, even if IBM is informed of their possibility.

Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from jurisdiction to jurisdiction.

Notice

References in this publication to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM product, program, or service is not intended to state or imply that only IBM's product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any of IBM's intellectual property rights may be used instead of the IBM product, program, or service. Evaluation and verification of operation in conjunction with other products, programs, or services, except those expressly designated by IBM, are the user's responsibility.

IBM may have patents or pending patent applications covering subject matter in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to the IBM Director of Licensing, IBM Corporation, 500 Columbus Avenue, THORNWOOD NY 10594 USA.

Electronic Emission Notices

Federal Communications Commission (FCC) Statement

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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

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 interference that may cause undesired operation.

Industry Canada Compliance Statement

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled: *Digital Apparatus*, ICES-003 of Industry Canada.

Avis de conformité aux normes d'Industrie Canada

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouiller : *Appareils numériques*, NMB-003 édictée par Industrie Canada.

Japanese Voluntary Control Council for Interference (VCCI) Statement

This equipment is in the 1st Class category (information equipment to be used in commercial and/or industrial areas) and conforms to the standards set by the Voluntary Control Council for Interference by Information Technology Equipment aimed at preventing radio interference in commercial and industrial areas.

Consequently, when used in a residential area or in an adjacent area thereto, radio interference may be caused to radios and TV receivers, and so on.

Read the instructions for correct handling.

危険： 導入作業を開始する前に、安全に関する
小冊子SD21-0030の「最初にお読みください」
(Read This First)の項をお読みください。
この小冊子は、電気機器の安全な配線と接続の
手順について説明しています。

Trademarks

The following terms are trademarks of the IBM Corporation in the United States or other countries or both:

IBM
Micro Channel
PC XT
Personal Computer AT
Personal System/2

Windows is a trademark of Microsoft Corporation.

PC Direct is a trademark of Ziff Communications Company and is used by IBM Corporation under license.

UNIX is a registered trademark in the United States and other countries licensed exclusively through X/Open Company Limited.

Other company, product, and service names, which may be denoted by a double asterisk (**), may be trademarks or service marks of others.

List of Abbreviations and Acronyms

ASCII American National Standard Code for Information Interchange

AWG American Wire Gage

BIOS Basic Input Output System

CPU Central processing unit

CRT Cathode ray tube display

CUT Control unit terminal mode

DFT Distributed function terminal mode

DOS Disk operating system

HEX Hexadecimal

I/O Input/output

IRQ Interrupt level

KB Kilobyte

MB Megabyte

PC Personal Computer

PCI Peripheral Controller Interconnect

PDP Problem determination procedures

POR Power-on reset

POST Power-on self-test

RAM Random access memory

Index

Readers' Comments — We'd Like to Hear from You

3270 Emulation PCI Adapter
User's Guide

Publication No. GA27-3913-00

Overall, how satisfied are you with the information in this book?

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
Overall satisfaction	□	□	□	□	□

How satisfied are you that the information in this book is:

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
Accurate	□	□	□	□	□
Complete	□	□	□	□	□
Easy to find	□	□	□	□	□
Easy to understand	□	□	□	□	□
Well organized	□	□	□	□	□
Applicable to your tasks	□	□	□	□	□

Please tell us how we can improve this book:

Thank you for your responses. May we contact you? □ Yes □ No

When you send comments to IBM, you grant IBM a nonexclusive right to use or distribute your comments in any way it believes appropriate without incurring any obligation to you.

Name   Address

Company or Organization

Phone No.
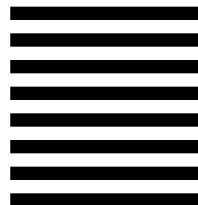
Fold and Tape   **Please do not staple**   Fold and Tape

Readers' Comments — We'd Like to Hear from You
GA27-3913-00

IBM

IBM ®

42H0480

Free Manuals Download Website

http://myh66.com

http://usermanuals.us

http://www.somanuals.com

http://www.4manuals.cc

http://www.manual-lib.com

http://www.404manual.com

http://www.luxmanual.com

http://aubethermostatmanual.com

Golf course search by state

http://golfingnear.com

Email search by domain

http://emailbydomain.com

Auto manuals search

http://auto.somanuals.com

TV manuals search

http://tv.somanuals.com