

8371 Networking Multilayer Ethernet Switch

GA27-4226-01

Installation and Planning Guide
Includes Instructions for
8371-A16, 8265-L3S, and 8260-L3S



8371 Networking Multilayer Ethernet Switch

GA27-4226-01

Installation and Planning Guide
Includes Instructions for
8371-A16, 8265-L3S, and 8260-L3S

Note

Before using this information and the product it supports, be sure to read the safety information under "Safety Information" on page vii and the general and emissions notices in Appendix B, "Notices" on page B-1.

Second Edition (August 1999)

This edition applies to the IBM 8371-A16 Networking Multiprotocol Ethernet Switch.

Order publications through your IBM representative or the IBM branch office serving your locality. Publications are not stocked at the address given below.

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

Department CGF
Design & Information Development
IBM Corporation
PO Box 12195
RESEARCH TRIANGLE PARK NC 27709-9990
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.

© **Copyright International Business Machines Corporation 1999. All rights reserved.**

Note to U.S. Government Users — Documentation related to restricted rights — Use, duplication or disclosure is subject to restrictions set forth in GSA ADP Schedule Contract with IBM Corp.

Contents

Safety Information	vii
Caution Notices	x
About This Manual	xvii
Who Should Read This Manual	xvii
How This Manual Is Organized	xvii
Prerequisite Publication	xvii
Chapter 1. Introduction	1-1
8371 Hardware	1-1
Product Features	1-2
Functional Characteristics	1-2
Cables and Connectors	1-3
Chapter 2. Network Planning	2-1
Chapter 3. Installation	3-1
Installation Summary	3-1
Unpacking Instructions	3-1
Rack-Mounting the 8371	3-1
Installing the 8265-L3S or the 8260-L3S	3-2
Installing a Feature Module	3-3
Removing a Feature Module	3-5
Power-On Checkout	3-5
Cabling	3-5
Starting a Console Session and Loading New Code Image	3-6
Chapter 4. Problem Determination	4-1
Troubleshooting	4-1
8371 LED Indicators	4-1
Module LED Status Indicators	4-4
Appendix A. Physical Characteristics and Requirements	A-1
Appendix B. Notices	B-1
Electronic Emission Notices	B-2
Class 1 LED Statement	B-4
Class 1 Laser Statement	B-4
Trademarks	B-4
Index	X-1

Figures

1-1.	8371-A16 Networking Multiprotocol Ethernet Switch	1-1
1-2.	Front Panel	1-2
1-3.	Rear Panel	1-2
1-4.	Null Modem Cable Pin Assignments	1-4
2-1.	Ethernet network using 8371	2-1
3-1.	Rack-Mounting the 8371	3-2
3-2.	Installing a Blade	3-3
3-3.	The Feature Modules	3-4
3-4.	Installing a Feature Module	3-4
4-1.	Front Panel of the 8371	4-1
4-2.	Problem Solving for the 8371	4-3
4-3.	Front Panel of the FX Feature Module	4-4
4-4.	Front Panel of the TX Feature Module	4-5
4-5.	Front Panel of the ATM Feature Module	4-5

Tables

1-1.	Recommended Maximum Cable Lengths	1-3
3-1.	Ethernet Desktop Installation Procedures	3-1
4-1.	8371 LEDs	4-2
4-2.	8-port 10/100 TX Feature Module LEDs	4-6
4-3.	100BASE-FX and ATM155 Blade LEDs	4-6
A-1.	Operating Environment - 8371-A16 Networking Multiprotocol Ethernet Switch	A-1

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.



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 elektrische apparatuur op een veilige manier moet bekabelen en aansluiten.



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.



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。



Opasnost: Prije nego što počnete sa instalacijom produkta, pročitajte naputak o pravilima o sigurnom rukovanju u
Upozorenje: Pravila o sigurnom rukovanju - Prvo pročitaj ovo, SD21-0030. Ovaj privitak opisuje sigurnosne postupke za priključivanje kabela i priključivanje na električno napajanje.



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



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 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 apparatuur.



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.



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.



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.



Κίνδυνος: Πριν ξεκινήσετε την εγκατάσταση αυτού του προϊόντος, διαβάστε τις πληροφορίες ασφάλειας στο φυλλάδιο *Caution: Safety Information—Read this first*, SD21-0030. Στο φυλλάδιο αυτό περιγράφονται οι ασφαλείς διαδικασίες για την καλωδίωση των ηλεκτρικών συσκευών και τη σύνδεσή τους στην πρίζα.



Vigyázat: Mielőtt 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.



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* in cui sono descritte le procedure per il cablaggio ed il collegamento di apparecchiature elettriche.



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。



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



ОПАСНОСТ

Пред да почнете да го инсталирате овој продукт, прочитајте ја информацијата за безбедност:

"Предупредување: Информација за безбедност: Прочитајте го прво ова", SD21-0030.

Оваа брошура опишува безбедносни процедури за каблирање и вклучување на електрична опрема.



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.



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.



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.



ОСТОРОЖНО: Прежде чем инсталлировать этот продукт, прочтите Инструкцию по технике безопасности в документе "Внимание: Инструкция по технике безопасности -- Прочестъ в первую очередь", SD21-0030. В этой брошюре описаны безопасные способы каблирования и подключения электрического оборудования.



Nebezpečenstvo: Pred inštaláciou výrobku si prečítajte bezpečnosté predpisy v

Výstraha: Bezpečnosté predpisy - Prečítaj ako prvé, SD21 0030. V tejto brožúrke sú opísané bezpečnosté postupy pre pripojenie elektrických zariadení.



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



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.



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.



危險：

開始安裝此產品之前，請先閱讀安全資訊。

注意：

請先閱讀 - 安全資訊 SD21-0030

此冊子說明插接電器設備之電纜線的安全程序。

Caution Notices



Caution:

Double-pole/neutral fusing in the power supply. Power may be present in the product unless the power cord is unplugged.



Waarschuwing:

Dubbelpool/neutraal zekering in de voedingseenheid. Er kan spanning in het product aanwezig zijn zolang de stekker in het stopcontact zit.



Cuidado:

Fus vel bipolar/neutro na fonte de alimenta o. Pode haver energia presente no produto, a menos que o cabo de alimenta o esteja desconectado.



Pas p !

Str mforsyningsenheden er sikret til brug ved 110 og 220 volt. Der kan v re sp nding i produktet, medmindre netledningen er trukket ud.



Waarschuwing:

Dubbelpool/neutral zekering in de voedingseenheid. Er kan spanning in het product aanwezig zijn zolang de stekker in het stopcontact zit.



VAARA:

Virtal hde on varustettu kaksinapaisella sulakkeella, jossa on my s maanapa. Tuotteessa voi olla j nnite, jos verkkojohtoa ei ole irrotettu.



ATTENTION :

L'un des deux fusibles est sur le neutre. L'alimentation  lectrique est prot g e par fusibles sur les deux p les (phase et neutre). Pr sence de courant possible sauf si le cordon d'alimentation est d branch .



Achtung:

Zweipolige bzw. Neutralleiter-Sicherung im Netzteil. Netzstecker ziehen, um sicherzustellen, da  keine Spannung am Ger t anliegt.



Attenzione:

L'alimentatore contiene fusibili su fasi/neutro. Pu  essere presente tensione nell'apparecchiatura se il cavo di alimentazione   collegato.



Advarsel:

Topolet/nøytral sikring i strømforsyningsenheten. Det kan være strøm i maskinen hvis ikke nettkabelen er dratt ut.



CUIDADO:

Protecção (por fusíveis) bipolar com neutro na fonte de alimentação. A menos que o cabo de alimentação esteja desligado, o produto pode estar sob tensão.



Precaución:

Hay una fusión de doble polo/neutro en la fuente de alimentación. El producto podría estar cargado eléctricamente a menos que el cable de alimentación esté desconectado.



WARNING: Nätaggregatet är dubbelpoligt avsäkrat. Det kan finnas ström i produkten såvida inte nätkabeln är urkopplad.



تحذير: القطب الثنائي محايد الانصهار في مصدر الطاقة .
يمكن أن تكون الكهرباء موجودة في المنتج ما لم يتم فصل سلك
الكهرباء.



Предупреждение: Дублирано - фаза/нула свързване в енергийното
захранване. Възможно е наличие на ел.енергия в уреда, докато
захранващият кабел не е изваден от контакта.



Opasnost: Energetski izvor opremljen je osiguračima na faznom i nultom
priključku. Uređaj može ostati pod naponom sve dok se priključni kabel ne
odvoji od utičnice.



注意：电源中装有双柱式/中性保险丝。除非未插入电源线，否则产品带电。



注意：電源供應器內含雙極/中性熔絲 (Double-pole/neutral fusing)。未將電源線自插座拔掉前，本產品內部可能有電存在。



Pozor: V napájecím zdroji je dvupólové jistění (pojistka ve středním vodiči). Dokud není napájecí šňůra odpojená od sítě, může být zařízení pod napětím.



Προσοχή: Ασφάλεια δύο πόλων/ουδέτερου στην πηγή ρεύματος. Ενδέχεται να υπάρχει ηλεκτρική ισχύς στο προϊόν εάν δεν έχει αποσυνδεθεί το καλώδιο ρεύματος.



זהירות: נתיך דו-קוטבי/נייטרלי באספקת הכוח.
יש לנתק את כבל הכוח כדי למנוע זרם חשמל
במוצר.



Figyelem: A tápegységben kétpólusú biztosíték található. A termék kikapcsolt állapotban is feszültség alatt állhat, kivéve, ha a tápkábel ki van húzva.



注意：
この電源は、2極/中性線にヒューズを使用しています。
電源コードを抜いていない状態では電圧がかかっています。



주의: 전원 공급 장치에 양극/중성의 퓨즈가 있습니다. 전원 코드가 연결되지 않아도 제품 내에 전원이 잔류할 수 있습니다.



Uzmanību: Divpolu/neitrālā apvienotā strāvas apgāde. Iespējams, ka produktā ir elektriskā strāva, ja strāvas vada kontaktdakša nav izrauta no līgzdas.



Dėmesio: Įrenginyje yra atvirų dvigubų kontaktų su įtampa. Jeigu įrenginys neišjungtas, kai kurios dalys gali būti su įtampa.



Опасност: Во единицата за напојување има двополен осигурувач. Доколку кабелот за напојување не е исклучен, во производот може да биде присутна електрична енергија.



Uwaga: W zasilaczu zamontowany jest bezpiecznik. Dopóki kabel zasilający nie zostanie odłączony w urządzeniu może występować napięcie.



Pericol: O siguranță neutră/două capete este în sursa de alimentare. Tensiunea poate să fie prezentă în produs dacă nu este scos din priză cablul de alimentare.



Осторожно: Источник питания с двухполюсным предохранителем. Устройство может быть под напряжением, пока вы не выдернете шнур из розетки.



Опасност: Извор напајања је опремљен осигурачима на фазном и нултом прикључку. У уређају може бити присутан напон осим ако је прикључни кабл одвојен од утичнице.



Výstraha: Poistky sú na oboch póloch napájacieho zdroja. Pokiaľ nie je odpojená šnúra zo siete, zariadenie môže byť pod napätím.



Nevarnost: Pri napajalniku je zagotovljeno varovanje polov in nevtralnega vodnika. Napetost je lahko prisotna na izdelku, če priključnega kabla ne potegnemo iz vtičnice.



Dikkat: Güç kaynağı çift kutuplu, topraklı sigorta içerir. Güç kablosu prizden çekilmedikçe üründe elektrik bulunabilir.

About This Manual

This manual explains how to plan for and install the 8371-A16 Networking Multiprotocol Ethernet Switch, the 8265-L3S and the 8260-L3S.

Who Should Read This Manual

This manual is intended for use by installation technicians and network administrators.

How This Manual Is Organized

- Chapter 1, "Introduction" provides a functional product description.
- Chapter 2, "Network Planning" provides information about planning your network to include the 8371-A16 Networking Multiprotocol Ethernet Switch, the 8265-L3S, or the 8260-L3S.
- Chapter 3, "Installation" describes installation and cabling procedures.
- Chapter 4, "Problem Determination" provides problem determination procedures, how to get help from IBM, and procedures for downloading new code.
- Appendix A, "Physical Characteristics and Requirements" is a description of physical and environmental characteristics of the 8371-A16 Networking Multiprotocol Ethernet Switch, the 8265-L3S, and the 8260-L3S.
- Appendix B, "Notices" contains product notices and provides warranty information.

Prerequisite Publication

Caution: Safety Information—Read This First, SD21-0030.

Chapter 1. Introduction

This chapter describes the features of the 8371-A16 Networking Multiprotocol Ethernet Switch, the 8265-L3S (8371 blade version for the 8265), and the 8260-L3S (8371 blade version for the 8260), and provides a functional overview that can help you integrate the products into your new or existing network. Both products have the same function, and will be referred to as 8371 in this publication.

The 8371 is an intelligent managed switch, designed for use in medium-sized workgroups or remote locations that are part of a large network.

8371 Hardware

The 8371-A16 Networking Multiprotocol Ethernet Switch, the 8265-L3S, and the 8260-L3S have all the connectors and light-emitting diodes (LEDs) on the front, with the exception of the power cord and the 10/100BASE-TX Ethernet service port, which are on the back.

The 8371 also has one standard serial service port: an EIA/TIA 232 male 9-pin D-shell connector. (In the 8265-L3S and the 8260-L3S, the EIA/TIA 232 service port is identified as an RS-232 port.) The serial service port can be attached locally through a null modem cable or remotely through a modem attachment.

See Appendix A, "Physical Characteristics and Requirements" for a description of physical and environmental characteristics of the 8371. Figure 1-4 on page 1-4 shows the pin assignments for the EIA/TIA 232 service port.

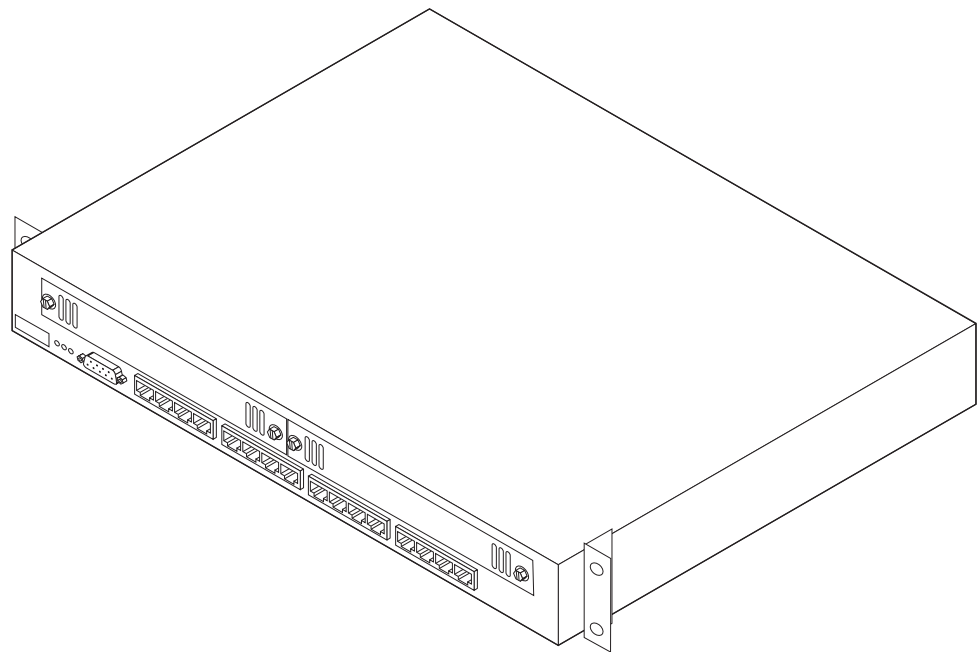


Figure 1-1. 8371-A16 Networking Multiprotocol Ethernet Switch

Product Features

The 8371 contains the following features:

- An EIA/TIA 232 port on the front of the 8371 that allows you to monitor and manage the 8371 and its ports. You can use the panel to set device-level configuration values.
- A command line interface that allows you to issue management commands and retrieve data. You can access this interface by a terminal attached to the EIA/TIA 232 port.
- SNMP Network Management — The ability to act as an SNMP agent allowing the switch to be managed by a wide range of SNMP management programs such as Nways® Workgroup Manager for Windows NT V1.1.3 and Nways Manager for AIX® V1.2.3 - Campus Manager LAN.
- Web-Based Management — The ability to use an Internet browser to manage the 8371 remotely.
- Switch Security — The ability to use a password to prevent unauthorized personnel from changing switch configuration settings.
- Virtual LANs (VLANs) — The ability to limit the proliferation of broadcast and multicast frames that are normally forwarded over all active bridge ports. The bridged network can thus be dynamically partitioned into protocol-specific subnetworks.
- Software updates — The ability to download software upgrades to the 8371 by using TFTP.

Functional Characteristics

Figure 1-2 shows the indicators and ports on the front panel of the 8371.

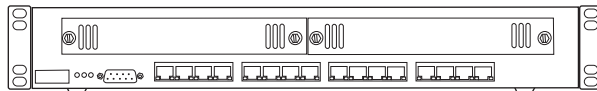


Figure 1-2. Front Panel

Figure 1-3 shows the rear panel of the 8371.



Figure 1-3. Rear Panel

Communication Ports

The following types of ports are available on the 8371.

- Base Ports
 - 10/100BASE-TX (8371-A16, 8265 Feature Code 6616, 8260 Feature Code 6616)
 - 100BASE-FX (8265 Feature Code 6617, 8260 Feature Code 6617)

- Expansion Ports
 - 10/100BASE-TX (8265 Feature Code 6626, 8260 Feature Code 6626)
 - 100BASE-FX (8265 Feature Code 6627, 8260 Feature Code 6627)
 - OC-3 ATM (8260 Feature Code 6625, not supported in the 8265-L3S) Limit one permitted in an 8371.

The last 8 digits of the base MAC Address of the 8371 are printed on a label on the front of the 8371. The first 4 digits of the base MAC Address are not on the label. You can get the numbers through a console session.

The Management Port

The management port is an EIA/TIA 232 port that is used to configure the 8371 using an ASCII terminal.

Cables and Connectors

Cable and connector requirements differ depending on the port to which each cable connects.

Maximum Cable Lengths

Table 1-1 lists the maximum recommended cable lengths.

Table 1-1. Recommended Maximum Cable Lengths

Ethernet Type	Maximum Segment Length
10/100BASE-TX	100 m (328 ft)
100BASE-FX	412 m (1352 ft) for half-duplex 2000 m (6562 ft) for full-duplex

Base Ports Cabling

- TX

The 8371 uses 16 RJ-45 connectors. For connection to 10/100BASE-TX networks, you should use UTP/STP category 3, 4, or 5 cables. For connection to 100BASE-TX networks, you can use only category 5 cables. STP requires a user-provided 100-ohm/150-ohm balun.
- FX

This blade uses 16 MT-RJ-type connectors. Use multimode optical fiber that meets the specifications in EIA/TIA 568A or ISO/IEC 11801. The maximum length of optical fiber cable between devices should not exceed 2000 m (6562 ft) if the link is used in full-duplex mode. If the link is used in half-duplex mode, the length should not exceed 412 m (1352 ft).

Cabling Requirements for the 8-Port 10/100BASE-TX Feature Module

This expansion module uses 8 RJ-45 connectors. For connection to 10/100BASE-TX networks, you should use UTP/STP category 3, 4, or 5 cables. For connection to 100BASE-TX networks, you can use only category 5 cables. STP requires a user-provided 100-ohm/150-ohm balun.

Cabling Requirements for the 8-Port 100BASE-FX Feature Module

This blade uses 8 MT-RJ-type connectors. Use multimode optical fiber that meets the specifications in EIA/TIA 568A or ISO/IEC 11801. The maximum length of optical fiber cable between devices should not exceed 2000 m (6562 ft) if the link is used in full-duplex mode. If the link is used in half-duplex mode, the length should not exceed 412 m (1352 ft).

Cabling Requirements for the 2-Port ATM155 Feature Module

This module uses 2 SC-type connectors. For connection to 155Mbps ATM networks, use 62.5-micron, plenum-rated, multimode optical fiber.

Cabling Requirements for the Management Port

The management port is a standard DB-9 male connector that provides an EIA/TIA 232 serial interface. You can connect using a null-modem cable to a local workstation or a standard serial cable to a modem for a remote connection. Once connected you can manage the 8371. This is called *out-of-band management*.

Note: You can make a null-modem cable by connecting a null-modem adapter to a standard serial cable.

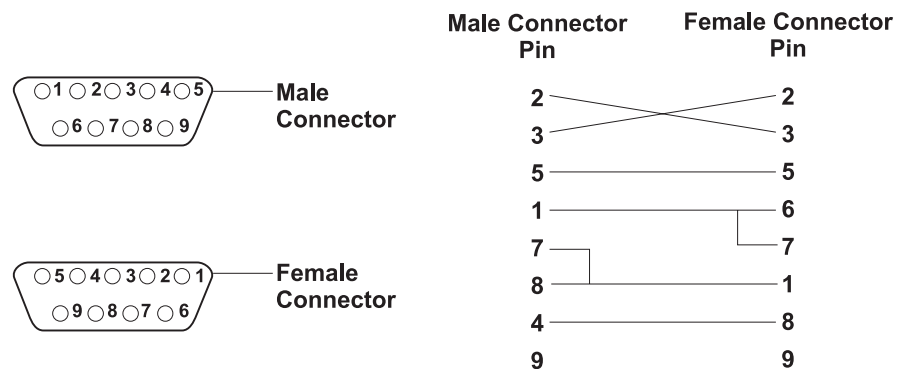


Figure 1-4. Null Modem Cable Pin Assignments

Chapter 2. Network Planning

Figure 2-1 shows a typical Ethernet network arrangement, including an 8371-A16 Networking Multiprotocol Ethernet Switch.

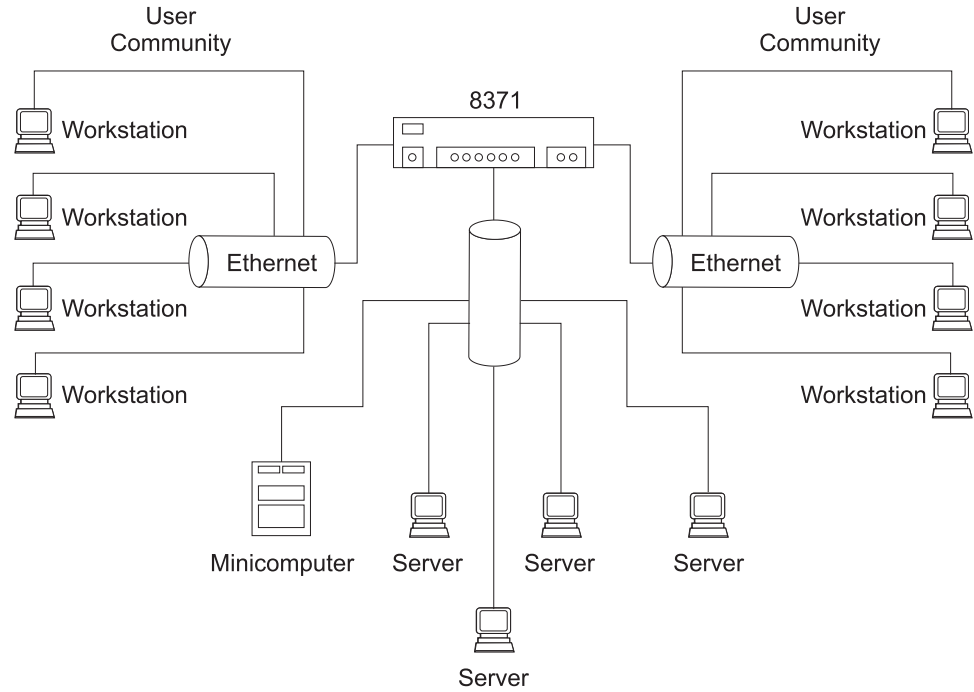


Figure 2-1. Ethernet network using 8371

Chapter 3. Installation

Before installing the 8371, be sure to read “Safety Information” on page vii and the notices and warranty information in Appendix B, “Notices” on page B-1.

This chapter provides step-by-step instructions for installing the 8371.

Installation Summary

Table 3-1. Ethernet Desktop Installation Procedures

Step	Procedure	Reference
1.	Read the safety booklet.	SD21-0030
2.	Unpack the 8371	“Unpacking Instructions” on page 3-1
3.	Rack-mount the 8371	“Rack-Mounting the 8371” on page 3-1
4.	Install an Optional Module	“Installing a Feature Module” on page 3-3
5.	Perform power-on checkout	“Power-On Checkout” on page 3-5
6.	Connect the Cables	“Cabling” on page 3-5
7.	Plan and configure the 8371	Chapter 2, “Network Planning” on page 2-1

Unpacking Instructions

1. Verify that the items listed here are in the package. The package should contain:
 - A CD-ROM
 - An 8371-A16 Networking Multiprotocol Ethernet Switch, 8265-L3S, or 8260-L3S
 - A rack-mounting kit (not included with the 8265-L3S or the 8260-L3S)
 - *Operations Reference* card
 - A card tray to hold the Reference card (not included with blade)
 - Safety Manual
2. Visually inspect the unit to ensure that it was not damaged during shipping. If any items are missing or damaged, contact your place of purchase.

Rack-Mounting the 8371

If you choose rack-mounting, you must provide the rack; it is not provided with the 8371.

You can use any EIA standard 19-inch rack. The rack can be open or closed. However, if you choose a closed rack, you must make sure that enough air flows through the 8371. Covers on the front of the rack that would not let air reach the 8371 must be removed or modified to let air pass. Similarly, unvented rear rack covers that would not let air exit the 8371 or would cause back pressure to build up from several machines must not be used.

The 8371 can be installed on a flat level surface or it can be installed in a standard 19-inch rack. To install the 8371 in a rack, refer to Figure 3-1 on page 3-2 and perform the following steps.

1. Install the two mounting brackets to the sides of the 8371 using the brackets and screws provided.
2. Insert the switch into a 19-inch rack.

Note: The rack-mounting screws are *not* provided. Ensure that the ventilation holes are not obstructed.

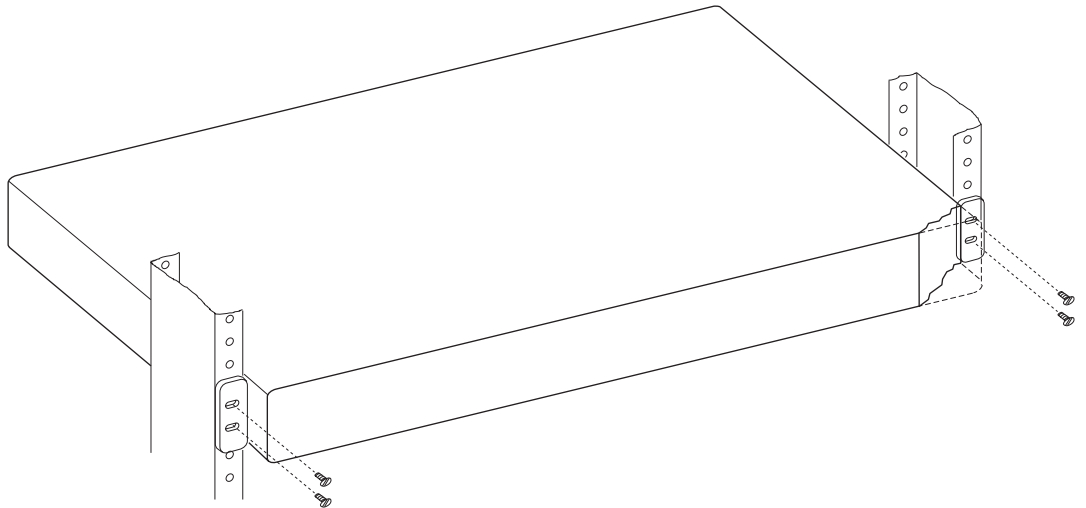


Figure 3-1. Rack-Mounting the 8371

Installing the 8265-L3S or the 8260-L3S

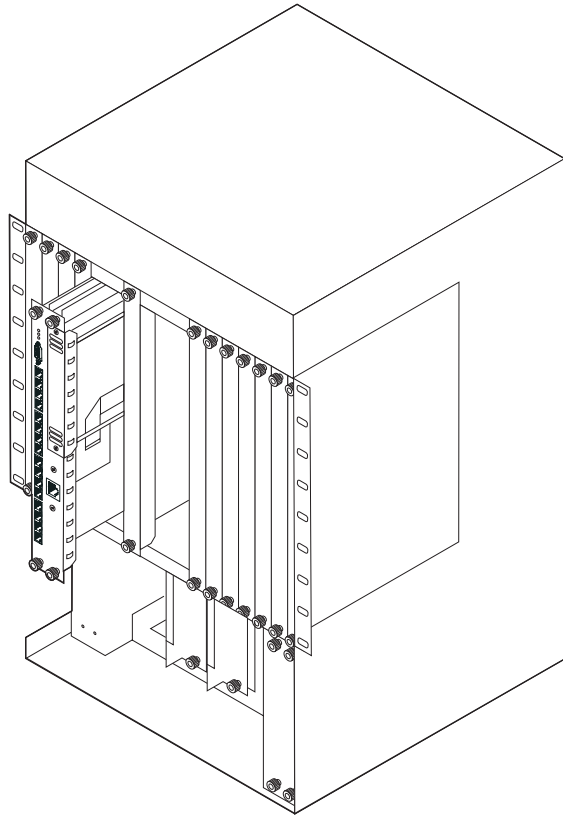


Figure 3-2. Installing a Blade

Installing the blade does not require you to power down the 8265 or 8260; you can hot-swap the blade.

Grasp the blade by the top and bottom of the faceplate. Carefully insert the blade into its slot and guide it straight while pressing evenly and firmly to correctly seat the connectors into the hub backplane.

When it is completely seated, close the latches and tighten the thumb-screws to secure the blade.

Installing a Feature Module

Important: 8371 feature modules are hot-swappable and can be inserted and removed from the 8371 without disconnecting the power.

Prior to hot-swapping an 8371 feature module, you must disable the feature module ports. Use the + **disable slot** *n* (where *n* is the slot number) command from t 5 to disable all ports on the slot. After replacing the feature module, use the + **enable slot** *n* command from t 5 to test all of the ports.

Three feature modules are available for the 8371: 2-Port ATM155, 8-Port 100BASE-FX, and 8-Port 10/100BASE-TX.

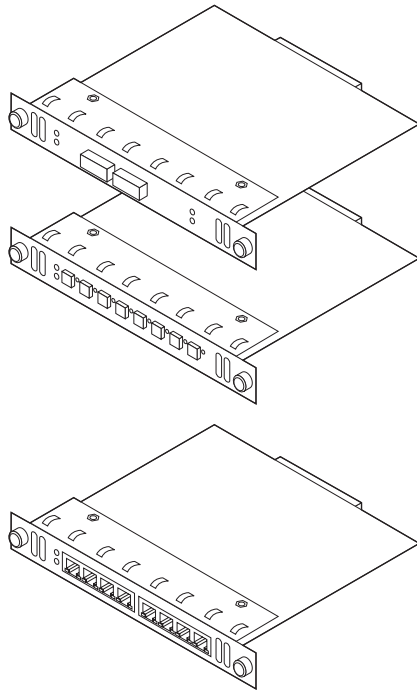


Figure 3-3. The Feature Modules

To install these modules, perform the following steps:

1. If you are installing a feature module in an unused slot, remove the screws on the blank cover with a screwdriver.
2. Remove the cover or existing feature module from the 8371.

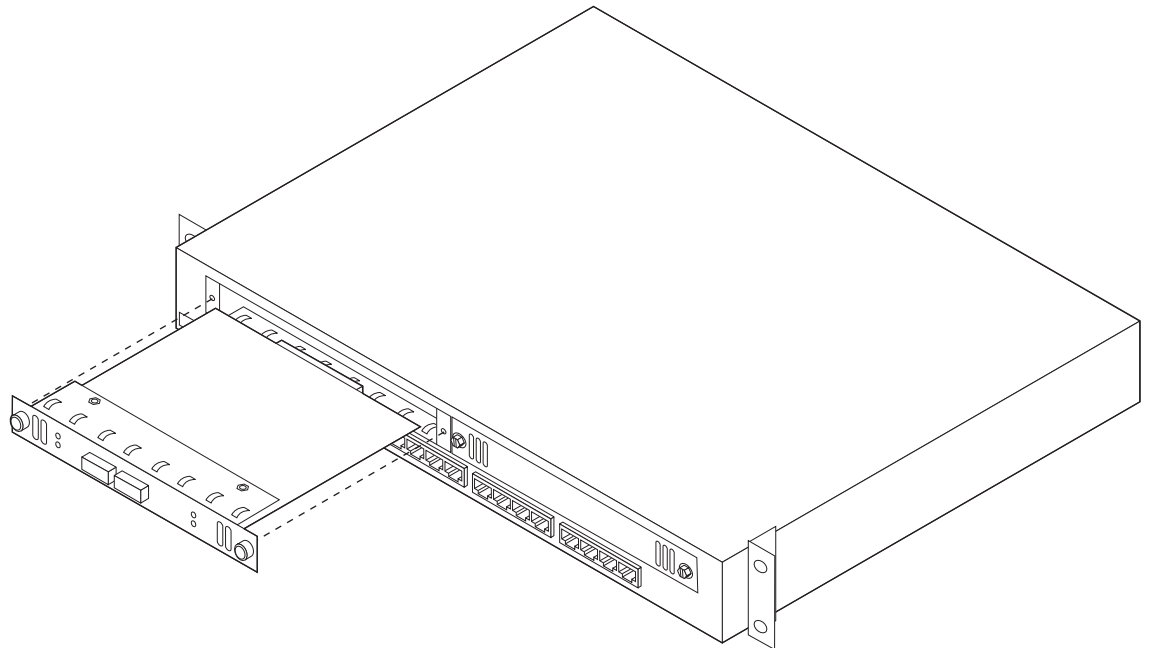


Figure 3-4. Installing a Feature Module

3. Slide the new card along the grooves in the slot and secure the two thumbscrews.

4. Reattach the cables to the system card.
5. Verify the LEDs. See Table 4-2 on page 4-6 and Table 4-3 on page 4-6.

Additionally, the System Card Status green LED should be on and the System Card Status Yellow LED should be Off. If the LEDs are not in the correct state, call your service representative.

6. Notify the network administrator that you have finished installing the 8371.

For information about attaching cables to the newly installed feature module, see “Cabling.”

Removing a Feature Module

Prior to hot-swapping an 8371 feature module, you must disable the feature module ports. Use the + **disable slot** *n* (where *n* is the slot number) command from t 5 to disable all ports on the slot. After replacing the feature module, use the + **enable slot** *n* command from t 5 to test all of the ports.

1. Remove any cables from the installed feature module and remove the feature module, or remove the blank cover, by turning the two screws on the front counterclockwise.
2. Reinstall the blank cover or a new module.

Power-On Checkout

Connect the AC power cable from the back panel to the power source. This powers on the 8371.

At power on, the power, fault, and OK LEDs should be lit. The fault LED will turn off within several seconds. The OK LED should start to blink, then turn on solid once the 8371 is operational. For more information about the LEDs, see “8371 LED Indicators” on page 4-1.

Cabling

Cable Tips

- Avoid stretching or bending cables.
- Avoid routing cables near potential sources of electromagnetic interference, such as motorized devices or fluorescent lights.
- Route cables away from aisles and walkways to avoid creating trip hazards. Use floor cable covers to secure cables if such routes cannot be avoided.

Attaching Cables to Ports

1. Refer to your network documentation to determine each cable’s port or optional slot assignment.
2. Using appropriate connectors, connect the cables to the ports or optional slots.
3. Route cables through a cable bracket at the side of the 8371, if needed.
4. Label each end of the cables so that it is easy to identify the device at the other end of the cable. At the end of the cable nearest the switch, place a

label containing a unique identifier for the cable, the location and MAC address of the device at the other end of the cable, and the number of the port to which the device is attached.

5. If required, at the attached device's end of each cable, connect a cable from the device to any faceplate or other intermediate connection point, as appropriate.
6. At the end of the cable nearest the attached device, place a label containing a unique identifier for the cable, the location, and MAC address of the 8371 at the other end of the cable, and the number of the 8371 port to which the device is attached.

Connecting to the EIA/TIA 232 Service Port

You can connect the management port directly to a local workstation by using a null-modem cable, or you can use a serial cable and a modem to connect to a remote workstation.

Using a Local Workstation: To access the 8371 locally, perform the following steps.

1. Connect one end of a null-modem cable to the 8371 management port labeled EIA 232.
2. Connect the other end of the cable to the communications port on your workstation.

Using a Remote Workstation: To access the 8371 remotely, perform the following steps.

1. Connect one end of a serial cable to the 8371 management port labeled EIA 232.
2. Connect the other end of the cable to your modem.
3. Make sure that the modem is in auto-answer mode.

For information on setting up a session through the management port, see *8371 Networking Multilayer Ethernet Switch Software User's Guide and Configuration Reference*.

Connecting to the 10/100BASE-TX Service Port

1. Connect one end of an RJ-45 cable to the 8371 service port.
2. Connect the other end of the cable to the Ethernet network.

Starting a Console Session and Loading New Code Image

See *8371 Networking Multilayer Ethernet Switch Software User's Guide and Configuration Reference*.

Chapter 4. Problem Determination

This chapter briefly describes methods of diagnosing hardware problems.

Troubleshooting

Both hardware and software (operational code and configuration) problems can affect the 8371. LEDs, diagnostic programs, and error messages provide information needed for problem determination. This manual is chiefly concerned with diagnosing and correcting hardware problems, but it includes some software information for your convenience.

Diagnosing Hardware Problems

Generally, errors that occur *before* the operational code is loaded are hardware-related. LEDs on the front of the 8371 are indicators of the status of hardware components within the 8371.

Go to “8371 LED Indicators” for LED status and indicators for the 8371.

See “Installing a Feature Module” on page 3-3 for information on removal and replacement procedures for optional modules.

Diagnosing Operational Code and Configuration Problems

Generally, errors that occur *after* the operational code is loaded indicate problems with the operational code or configuration file.

Error codes and corrective action are described in the *8371 Networking Multilayer Ethernet Switch Software User's Guide and Configuration Reference*.

8371 LED Indicators

Figure 4-1 shows the locations of the LEDs, and Table 4-1 on page 4-2 indicates the meaning of the LEDs.

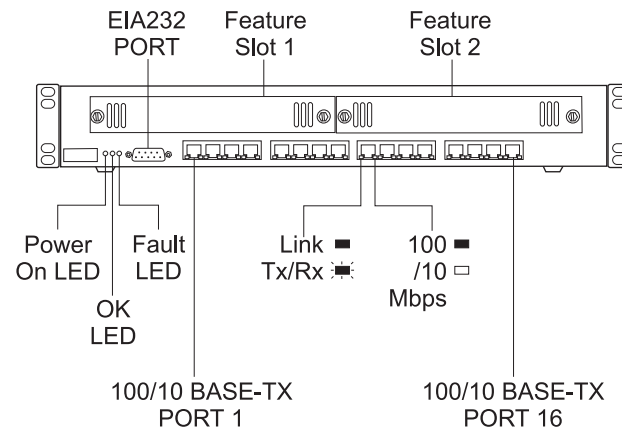


Figure 4-1. Front Panel of the 8371

Table 4-1. 8371 LEDs

LED	Color	State	Explanation
I (Power On)	Green	ON	8371-A16 There is ac power to the 8371 and the power supply is OK.
			8265-L3S Blade is recognized and enabled by the 8265.
			8260-L3S Blade is enabled by the 8260.
		OFF	8371-A16 No ac power is present, or there is a power supply failure.
			8265-L3S No power received from the 8265.
			8260-L3S No power received from the 8260.
OK	Green	ON	Operational code has loaded without a fault.
		OFF	Operational code has not loaded or has failed.
		Flickering	Operational code load is in process.
Fault	Yellow	ON	Indicates a hardware fault.
		OFF	No hardware fault.
Right Ethernet Port LED	Green	ON	100 Mbps
		OFF	10 Mbps
Left Ethernet Port LED	Green	ON	Link
		Flickering	TxRx traffic

Use the following chart to determine the correct course of action concerning your 8371.

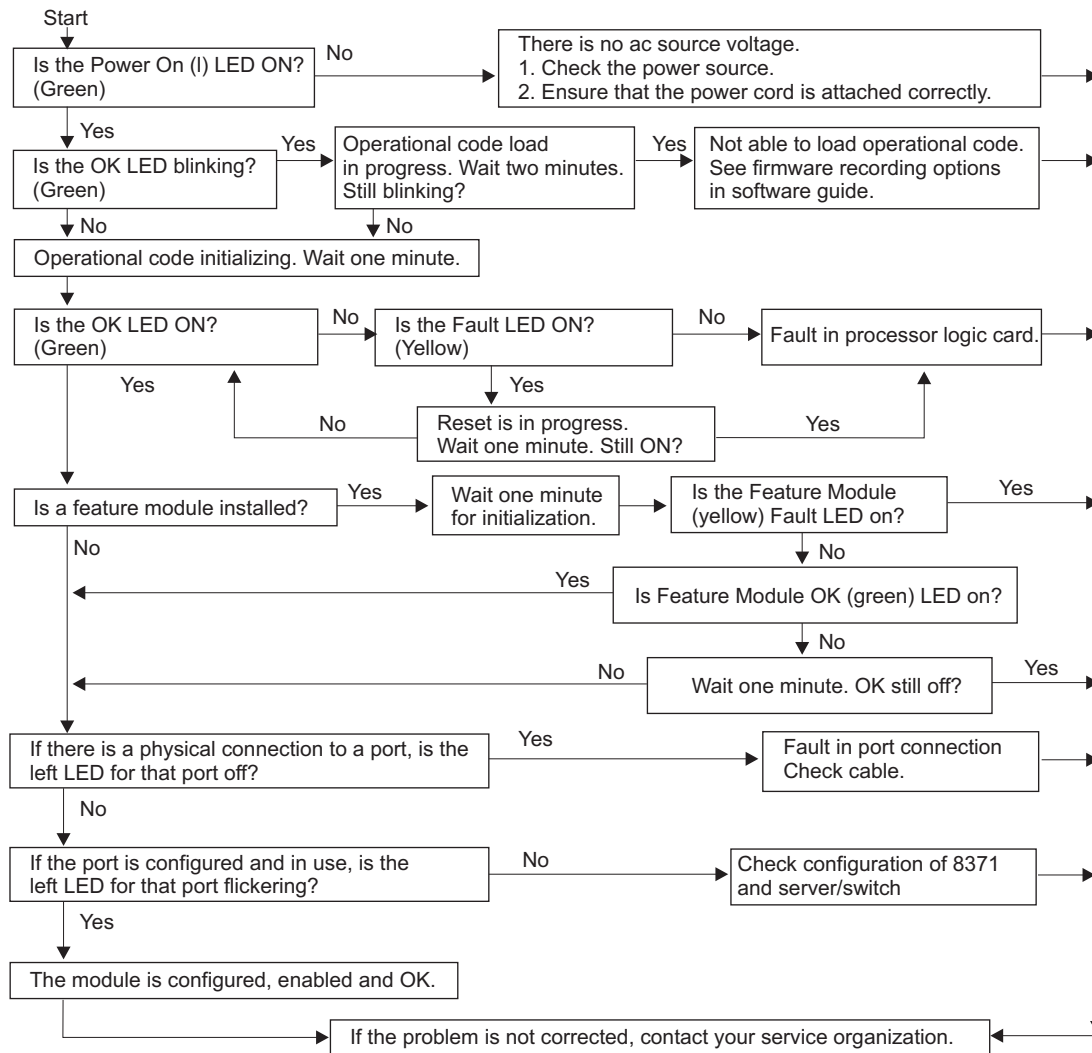


Figure 4-2. Problem Solving for the 8371

Module LED Status Indicators

This section describes the LED status indicators for the 8371 feature modules.

Generally, errors occurring **before** the operational code is loaded are hardware-related. LEDs on the front of the 8371 reflect the status of the hardware components within the 8371.

Figure 4-3, Figure 4-4 on page 4-5, and Figure 4-5 on page 4-5 show the location of the LEDs, and Table 4-2 on page 4-6 indicates the meaning of the LEDs.

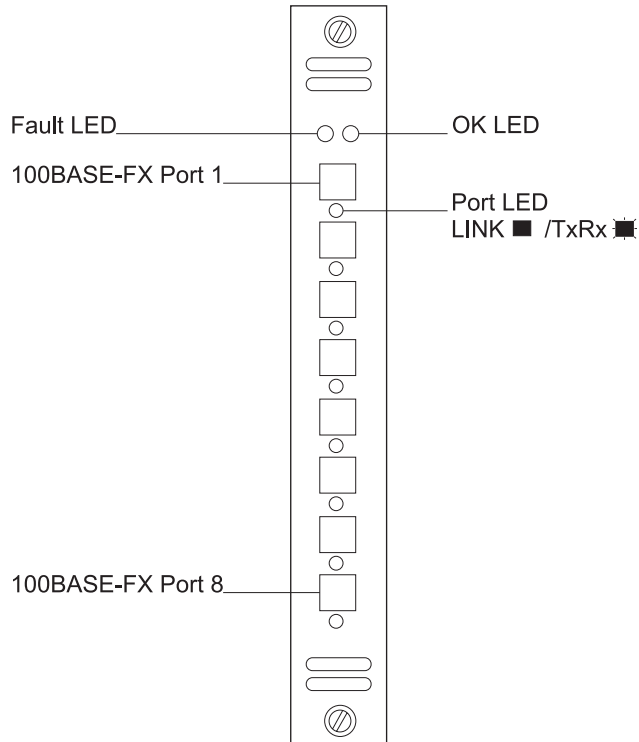


Figure 4-3. Front Panel of the FX Feature Module

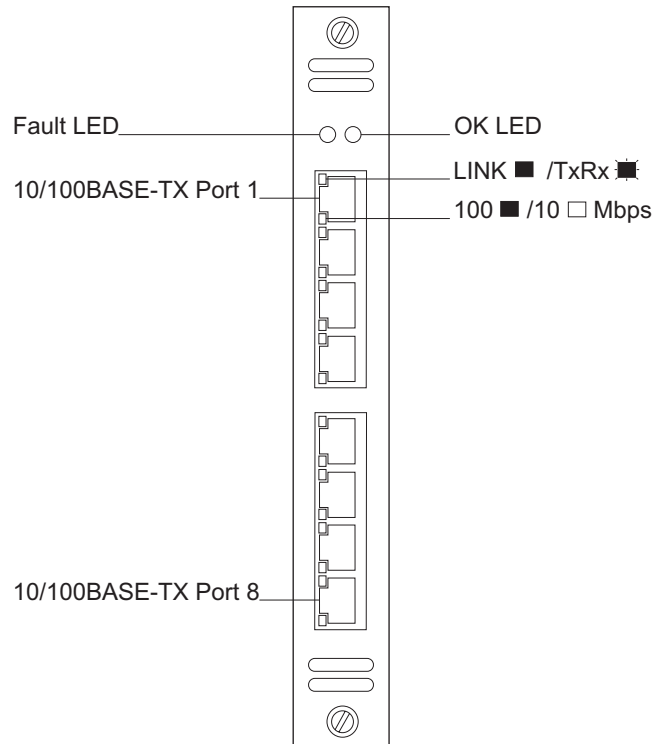


Figure 4-4. Front Panel of the TX Feature Module

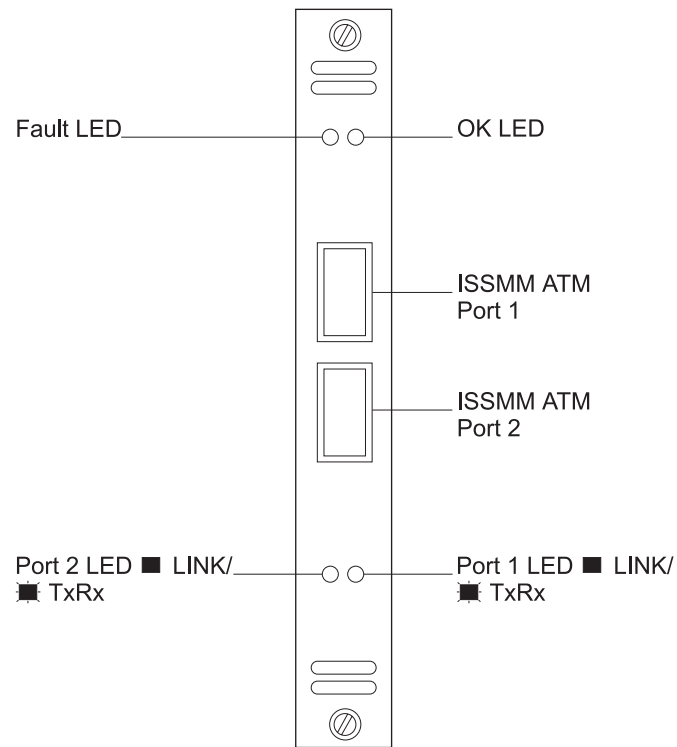


Figure 4-5. Front Panel of the ATM Feature Module

Table 4-2. 8-port 10/100 TX Feature Module LEDs

LED	Color	State	Explanation
OK	Green	ON	Module is operational.
		OFF	Module is not operational.
Fault	Yellow	ON	Indicates a hardware fault.
		OFF	No hardware fault.
Bottom Ethernet Port LED	Green	ON	100 Mbps
		OFF	10 Mbps
Top Ethernet Port LED	Green	ON	Link
		Flickering	TxRx traffic

Table 4-3. 100BASE-FX and ATM155 Blade LEDs

LED	Color	State	Explanation
OK	Green	ON	Module is operational.
		OFF	Module is not operational.
Fault	Yellow	ON	Indicates a hardware fault.
		OFF	No hardware fault.
Port LED	Green	ON	Link
		Flickering	TxRx traffic

Appendix A. Physical Characteristics and Requirements

Dimensions

8371-A16 Networking Multiprotocol Ethernet Switch

Width: 439 mm (17.3 in.)

Depth: 355.6 mm (14 in.)

Height: 64 mm (2.5 in.)

8265-L3S Width: the width of two slots

8260-L3S Width: the width of two slots

Operating Clearances

8371-A16 Networking Multiprotocol Ethernet Switch

Front: Adequate space to view LEDs

Sides: 50.8 mm (2 in.)

Rear: 50.8 mm (2 in.)

8265-L3S N/A

8260-L3S N/A

Weight

8371-A16 Networking Multiprotocol Ethernet Switch 6.4 kg (14.19 lb)

8265-L3S 2.38 kg (5.19 lb)

8260-L3S 2.38 kg (5.19 lb)

Power Requirements

8371-A16 Networking Multiprotocol Ethernet Switch The internal universal power supply can accept ac voltage in the following range: 100–240 V ac, 50-60 Hz.

8265-L3S 100W

8260-L3S 87W

Power Dissipation

Maximum input power is 150W.

Operating Environment

Table A-1. Operating Environment - 8371-A16 Networking Multiprotocol Ethernet Switch

Operating Temperature	10°C to 40° C (50° to 104° F)
Storage Temperature	1° C to 60° C (33.8° to 140° F)
Operating Humidity	8% to 80% non-condensing

Appendix B. Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent publications covering subject matter described 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:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

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 program(s) described in this publication at any time.

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 Class A Emission Compliance Statement

This Class A digital apparatus complies with Canadian ICES-003.

Avis de conformité aux normes d'Industrie Canada

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

European Norm (EN) Statement

This product is in conformity with the protection requirements of EC Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

This product has been tested and found to comply with the limits for Class A Information Technology Equipment according to CISPR 22/European Standard EN 55022. The limits for Class A equipment were derived for commercial and industrial environments to provide reasonable protection against interference with licensed communication equipment.

Warning: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) vom 30. August 1995 (bzw. der EMC EG Richtlinie 89/336).

Dieses Gerät ist berechtigt in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

Verantwortlich für die Konformitätserklärung nach Paragraph 5 des EMVG ist die IBM Deutschland Informationssysteme GmbH, 70548 Stuttgart.

Informationen in Hinsicht EMVG Paragraph 3 Abs. (2) 2:

Das Gerät erfüllt die Schutzanforderungen nach EN 50082-1 und EN 55022 Klasse A.
--

EN 55022 Klasse A Geräte müssen mit folgendem Warnhinweis versehen werden: "Warnung: dies ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen."

EN 50082-1 Hinweis:

"Wird dieses Gerät in einer industriellen Umgebung betrieben (wie in EN 50082-2 festgelegt), dann kann es dabei eventuell gestört werden. In solch einem Fall ist der Abstand bzw. die Abschirmung zu der industriellen Störquelle zu vergrößern."

Anmerkung:

Um die Einhaltung des EMVG sicherzustellen sind die Geräte, wie in den IBM Handbüchern angegeben, zu installieren und zu betreiben.

Japanese Voluntary Control Council for Interference (VCCI) Statement

This product is a Class A Information Technology Equipment and conforms to the standards set by the Voluntary Control Council for Interference by Technology Equipment (VCCI). In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Korean Communications Statement

Please note that this device has been certified for business purpose with regard to electromagnetic interference. If you find this is not suitable for your use, you may exchange it for one of residential use.

Taiwanese Class A Warning Statement

警告使用者：
這是甲類的資訊產品，在
居住的環境中使用時，可
能會造成射頻干擾，在這
種情況下，使用者會被要
求採取某些適當的對策。

Class 1 LED Statement

Class 1 LED Product
LED Klasse 1
LED Klass 1
Luokan 1 Ledlaite
Appareil À LED de Classe 1

To IEC 825-1:1993

Class 1 Laser Statement

Class 1 Laser Product
Laser Klasse 1
Laser Klass 1
Luokan 1 Laserlaite
Appareil À Laser de Classe 1

To IEC 825-1:1993

Trademarks

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

AIX
Nways

IBM

Microsoft, Windows, Windows NT, and the Windows 95 logo are trademarks or registered trademarks of Microsoft Corporation.

Other company, product and service names may be trademarks or service marks of other companies.

Index



Printed in U.S.A.

GA27-4226-01

