1374 Control Unit

Product Family Guide

1374000001M1
F/N 700665
P/N 700665-001

MEMOREX TELEX

1374 Control Unit

Product Family Guide

1374000001M1
F/N 700665
P/N 700665-001

ISSUE/REVISION SCHEDULE

Comments	Rev. No.	Date
Initial Release	700665-001	5/22/89

IBM is a registered trademark of IBM Corporation.

©Copyright 1989 by Memorex Telex Corporation

COMPLIANCE STATEMENTS (VDE AND DEUTSCHES BUNDESPOST)

This equipment has been tested concerning compliance with the relevant RFI protection requirements, both individually and on a system level (to simulate normal operation conditions). However, it is possible that these RFI requirements are not met under certain unfavorable conditions in other installations. It is the user who is responsible for compliance of his particular installation.

Compliance with applicable regulations depends on the use of shielded cables. It is the user who is responsible for procuring the appropriate cables.

Dieses Gerät wurde sowohl einzeln als auch in einer Einlage, die einen normalen Anwendungsfall nachbildet, auf die Einhaltung der Funkentstörbestimmung geprüft. Es ist jedoch möglich daß die Funkentstörbestimmung unter ungünstigen Umständen bei anderen Gerätekombinationen nicht eingehalten werden. Für die Einhaltung der Funkentstörbestimmung einer Anlage, in der dieses Gerät betrieben wird, ist der Betreiber verantwortlich.

Einhaltung mit betreffenden Bestimmung kommt darauf an, daß geschirmte Ausführungen gebraucht werden. Für die Beschaffung richtiger Ausführungen ist der Betreiber verantwortlich.

WARNING

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for Class A computing devices pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference. Operation of this equipment in a residential area is required to take whatever measures may be required to correct the interference.

CERTIFICATES

CERTIFICATE BY MANUFACTURER/IMPORTER

This is to certify that the 1374-1L Model 1, 1374-1R Model 1, 1374-2R Model 1, 1374-3R Model 1, 1374-71R Models 1 and 2, 1374-72R Models 1 and 2 is/are shielded against radio interference in accordance with the provisions of Vfg 1046/1984.

The German Postal Services have been advised that this device is being put on the market and that they have been given the right to inspect the series for compliance with the regulations.

BESCHEINIGUNG DES HERSTELLERS/IMPORTEURS

Hiermit wird bescheinigt, daß die 1374-1L Model 1, 1374-1R Model 1, 1374-2R Model 1, 1374-3R Model 1, 1374-71R Models 1 and 2, 1374-72R Models 1 and 2 (Gerät, Typ, Bezeichnung) in übereinstimmt mit den Bestimmungen der Vfg 1046/1984 und funkentstört ist/sind.(Amtsblattverfügung)

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmung eingeräumt.

1374 USER MANUAL PUBLICATIONS

1374 USER MANUALS

The 1374 user manuals needed to install, configure, and operate all the control units in Memorex Telex's 1374 product line are divided into two groups: basic publications and feature-specific publications.

BASIC PUBLICATIONS

The basic publications are the *1374 Product Family Guide*, *1374 Configuration Guide*, and *1374 Offline Utility Operations Manual*. These manuals contain information that applies to all the 1374 control unit models, regardless of their options.

FEATURE-SPECIFIC PUBLICATIONS

These publications are the *1374 ACS Operations Manual*, *1374 Central Site Customization Guide*, *1374 LAN Operations Manual*, and *1374 X.25 Operations Manual*. Each manual discusses a major 1374 optional function, such as attachment to a Token-Ring Local Area Network (LAN) or X.25 network operations. The control unit's functions determine which manuals you will need.

Use the chart below to direct you to the appropriate 1374 manuals.

If You Want To:	Use This Manual:
Install control unit and/or optional features.	*1374 Product Family Guide*
Configure control unit via LCP.	*1374 Configuration Guide*
Customize keyboards and devices via ASCII Definition Utility (ADU), System Definition Utility (SDU), and use DOS commands.	*1374 Offline Utility Operations Manual*
Use the ACS feature to attach terminals and printers to the control unit.	*1374 ACS Operations Manual*
Create system diskettes on an IBM-compatible PC/AT at a central site.	*1374 Central Site Customization Guide*
Attach control units to a Token-Ring LAN.	*1374 LAN Operations Manual*
Access X.25 packet-switched networks.	*1374 X.25 Operations Manual*

PREFACE

MANUAL CONTENTS

This manual introduces the 1374 family of control unit products. It is a description of the various series of products within the 1374 product family with their standard and optional features and functions.

This manual is divided into the following chapters:

Chapter 1. Introduction – This chapter briefly describes the features and characteristics of the 1374 control unit family. Each control unit series within the 1374 family is described.

Chapter 2. Host Communication – This chapter describes the host (local and remote) communications interfaces and parameters used with the 1374 control units.

Chapter 3. Site Planning and Management – This chapter describes the requirements (space, voltage, clearances, etc.) and provides the procedures for installing a 1374 control unit.

Chapter 4. 1374 User-Installable Options – This chapter describes the user-installable options provided for the 1374 product family. Installa- tion procedures for all options are provided.

Appendixes – The appendixes contain supplemental information such as lists of related publications, check error codes, device support, and 1374 unpacking instructions.

INTENDED AUDIENCE

This manual is for the data processing professional with overall responsibility for installing, configuring, and operating the 1374 control unit.

Readers should be familiar with the IBM 3270 environment in which 1374 control units operate. Reference documentation from IBM or other supported vendors for additional information.

MANUAL CONVENTIONS

The notational conventions described below are used throughout this manual:

- Messages and prompts that appear on the terminal screen are enclosed in double quotation marks (" ").
- User responses are in bold and all UPPERCASE; however, the response may be upper or lower case, unless otherwise noted.
- Coax terminals described in the manual are Control Unit Terminals (CUT), unless otherwise noted.

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

LIST OF ILLUSTRATIONS

Chapter 1

Introduction

INTRODUCTION

OVERVIEW

1374 control units provide cluster coordination of Category A terminal devices, Asynchronous/ASCII (A/A) devices, and Token-Ring LAN-attached devices. 1374 control units are functionally equivalent to IBM's 3174 control unit family and offer increased functional capabilities with substantial flexibility in feature/function support, such as simplified online configuration, Operator Information Area enhancements, use and performance statistics, Response Time Monitoring (RTM), user-installable options, and operator-generated Alert support.

1374 CONTROL UNIT SERIES

The 1374 family of control units comprises five distinct model series, which are distinguished by the number of devices supported and physical size, although each offers the same basic standard functional support and software features. The control units in each model series (referred to here as "0X," "4XR," etc.) are described in the "Introduction" to each series in this chapter. The 1374 control unit series are:

- 0X – 1L models 1 and 2, 1R models 1 and 2, 2R models 1 and 2, and 3R models 1 and 2
- 4XR – 41R, 42R, and 43R
- 5XR – 51R, 52R, and 53R
- 61R
- 7XR – 71R models 1 and 2, 72R models 1 and 2, and 73R models 1 and 2

FUNCTIONAL SUPPORT

Memorex Telex has incorporated the following standard software features in all 1374 control units. Those marked with an asterisk are optionally available.

- Advanced remote and on-site diagnostics
- All standard keyboards and keyboard layouts
- APL keyboard input
- APL/Text control
- ASCII code set
- ASCII Definition Utility (ADU)

- Base (4) color
- Extended (7) color*
- Between bracket printer sharing (SNA/SDLC)
- BSC (EBCDIC or ASCII)
- Copy (local print)
- Customized keyboard support
- Diskette processing
- Distributed Function Terminal (DFT) device support
- Downstream Load terminal (DSL) device support
- Dual-host mixed language support*
- Dual-session support (excluding DFT devices)*
- Easy device/system statistics access
- Expanded LU support (up to 254 LUs per PU)
- Extended attributes
- Extended data stream
- Expanded Operator Information Area
- File transfer support for IBM PC and compatible devices (when attached via coax emulation cards)
- Foreign-language keyboard support (including C8, C80, and C81 keyboards)
- Host-loadable Printer Authorization Matrix (PAM)
- IBM Category A coax device support
- IBM-compatible RTM/Alerts
- IBM-compatible terminal support
- IBM host software compatibility
- IBM PC and compatible device support
- Intelligent Printer Data Stream (IPDS) support
- Keyboard code with and without numeric lock
- System Definition Utility (SDU)
- Local channel SNA/non-SNA operation
- Local Control Point (LCP)

- Magnetic card/slot reader support
- Multiple Logical Terminal (MLT) support (5 sessions)
- Operator entry assist
- Operator type-ahead
- PC-based Central Site Customization (CSC)
- PF13 through PF24 for A/A devices*
- Programmed symbols
- Remote diagnostics port
- Remote SNA/SDLC and BSC operation
  - SNA/SDLC (RS 232C: 19.2 Kbps to 64 Kbps)
  - Non-SNA (BSC – RS 232C 9.6 Kbps)
  - SNA (X.25 – X.21/X.21bis 19.2 Kbps)
- RTM Transaction-end definition for CUT-mode devices
- SCS printer support (SNA/SDLC)
- Security keylock
- Simplified online configuration
- Solicitation of summary maintenance statistics
- Third Program Attention Key (PA3)
- Token-Ring LAN support*
- Unsupported control code translate
- 3180 native and emulation support
- 3270 Operator Information Area support
- 3270 personal computer file transfer and MLU support (3270 PC control program version 1.22 and higher)
- 3274 unsupported control code translate
- 3287/89 printer support
- 3289 text print control

1374 personal computer support includes IBM 3270 personal computers, and IBM and compatible personal computers equipped with a 3270 coax emulation board.

Memorex Telex's Token-Ring LAN support conforms to the 1985 Institute of Electrical and Electronic Engineers (IEEE) Token-Ring Electrical Specification Standard 802.5.

EXCLUSIVE FEATURES

In addition to standard 3270 compatibility, all 1374 control units offer exclusive features that simplify cluster system management and provide convenient user functions:

- Expanded Operator Information Area indicators
- Local Control Point (LCP) online configuration
- PC-based Central Site Customization (CSC)
- Use and performance statistics
- Easy-to-use configuration services
- Remote diagnostic capability
- Type-ahead

OPERATOR INFORMATION AREA SUPPORT

3270-type display stations and A/A display stations operating in 3270 emulation mode indicate system status and error conditions on the last screen line, known as the Operator Information Area. 1374 control units provide three modes of Operator Information Area support: IBM-mode, and two Memorex Telex-enhanced modes with additional status and error messages.

A terminal operator may select any of the three modes via key sequences. 1374 control unit configuration procedures allow definition of a default mode for each attached terminal.

LOCAL CONTROL POINT

1374 control units coordinate four types of device ownership: System Services Control Point (SSCP), host application (APPL), unowned, and Memorex Telex Local Control Point (LCP). LCP provides a wide range of system services, including use and performance reporting, system configuration commands, and status reporting. Execution of the Alt/Test key sequence invokes LCP. A second Alt/Test sequence exits LCP and returns the system to the previous screen.

LCP provides 10 commands for displaying terminal statistics and for configuring device and host parameters, as shown next:

Command	Level	Description
ASCII Host Printer Assignments	Privilege	Assigns A/A or coax printers
Configure	Privilege	Displays Configure options menu
Display	Basic	Displays Display options menu
Echo	Basic	Echoes input string
Host	Privilege	Displays Host options menu
Host Selection	Basic	Displays Host Selection menu
Operator-Generated Alert	Basic	Generates Alert message to host
Read	Privilege	Reads configuration to control unit
Test	Basic	Initiates IBM Test 0 pattern
Write	Privilege	Writes configuration to diskette

Two authorization levels, Basic and Privilege, define the types of commands you may access. The Basic authorization level allows you to invoke Alert, Display, Echo, Host Selection, and Test commands. The password-protected Privilege level allows the setting of new configuration parameters.

BASIC LCP

Basic-level LCP provides access to terminal statistics and status via the Display command. Alert allows the operator to generate Alert messages to the host. Two commands, Test and Echo, provide standard and user-defined testing functions.

PRIVILEGE LCP

The password-protected Privilege-level LCP provides configuration commands (ASCII Host Printer Assignments, Configure, Host, Read, and Write) and expanded display functions. Basic commands can also be accessed from this level. The Privilege command activates Privilege-level and LCP allows the current password to be entered and/or changed.

USE AND PERFORMANCE STATISTICS

System software updates a complete set of message traffic statistics during normal operation. These counts may be accessed and/or reset by LCP commands.

SIMPLIFIED CONFIGURATION

LCP provides convenient online configuration commands to define printer authorization, local copy assignment, printer classes, and LCP command authorization. Other services define host processor addresses and additional host parameters. In addition, LCP provides configuration commands for the optional Token-Ring LAN support. For further discussion on LCP, refer to "Local Control Point" in the *1374 Configuration Guide*.

DIAGNOSTIC SUPPORT

Several levels of diagnostics are available for 1374 control units. Initialization self-tests verify basic processing functions. More comprehensive testing and monitoring are available from an onsite or remote terminal attached to a control unit's maintenance port (labeled "MAINT PORT" or port "B").

1374 MODEL 1L/1R/2R/3R

INTRODUCTION

The largest members of the 1374 control unit family, the 0X series comprises the 1L models 1 and 2, 1R models 1 and 2, 2R models 1 and 2, and 3R models 1 and 2 (referred to throughout this manual as the 1L, 1R, 2R, and 3R, respectively, except when describing specific differences). The major difference between the 0X series model 1 and 2 control units is in physical size (0X series model 2 control units are approximately 3.5 inches deeper). 0X series control units support up to 32 coax and 24 A/A devices.

STANDARD HARDWARE

0X series control units include the following standard hardware features:

- Processor
  - 1L model 2: 80386-based
  - all others: 80286-based
- 1.5-MByte memory
- 3.5-Inch diskette drive

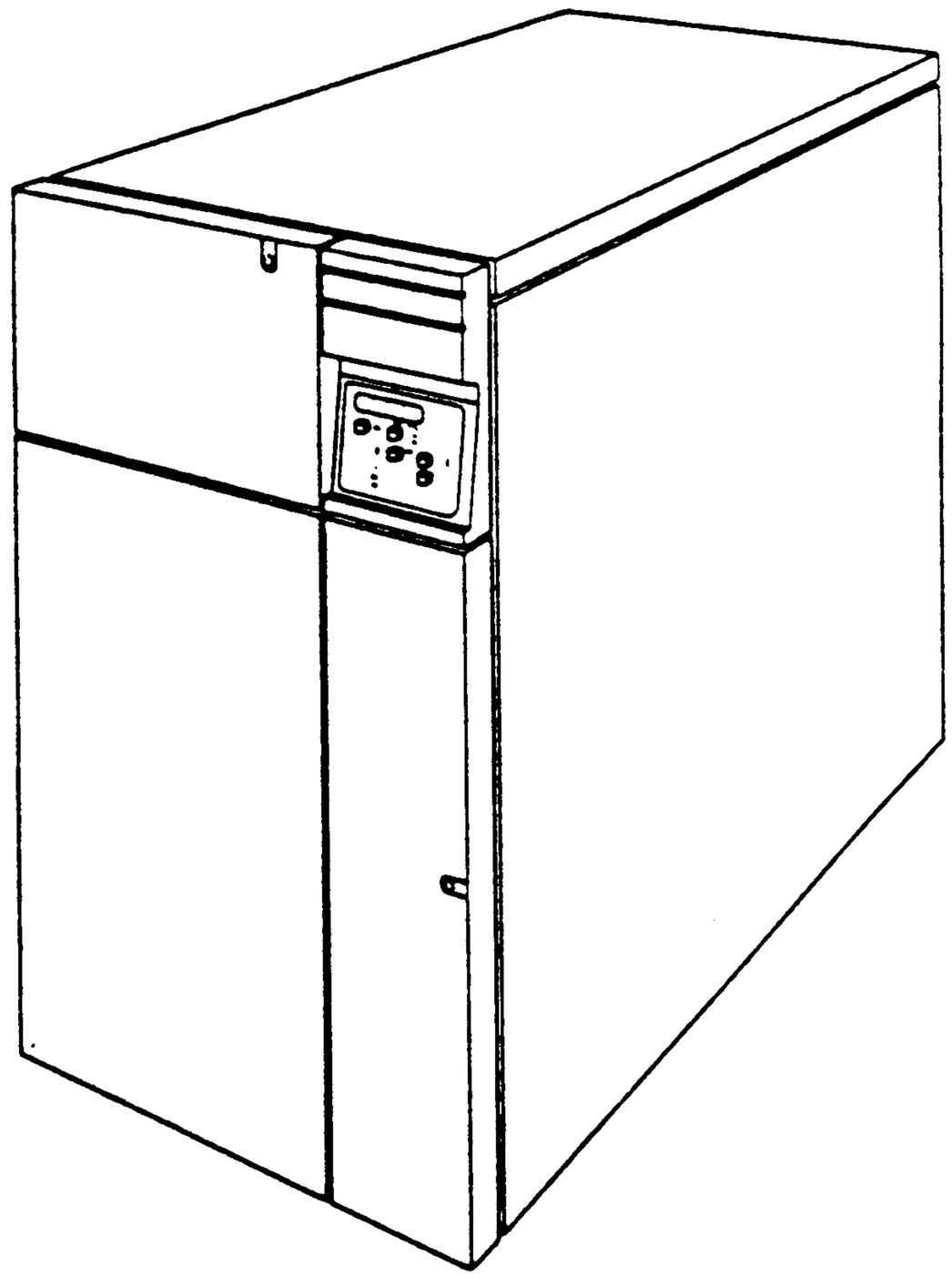

Figure 1-1. 1374-0X Series Control Unit

- 18 Category A coax ports (18 direct or any combination of direct and multiplexed ports up to a maximum of 32)
- IBM cabling system support (dual purpose connectors)
- One RS 232C asynchronous remote diagnostics port for direct or remote monitoring
- One IBM host interface
  - Model 1L: IBM system/370 channel
  - Model 1R: RS 232C or V.35
  - Model 2R: X.21
  - Model 3R: Token-Ring LAN

OPTIONAL HARDWARE

The following hardware options are available for 0X series control units. Installation instructions for these options are provided in Chapter 4, "User-Installable Options."

- 16-Port Coax Extender Adapter
- 8-Port Asynchronous Adapter (maximum of three)
- Second 3.5-inch diskette drive
- Memory Expansion Modules (512-KByte or 1-MByte increments)
- Host Serial Interface Extender (HSIE1 and HSIE2)
- Token-Ring Gateway (model 1L, 1R, 2R)
- Model Conversions

Model 1L supports an IBM-compatible System/370 channel host interface and, as options, a high-performance gateway for the IBM Token-Ring LAN and a serial interface for remote SNA connection to a second host (SNA/SDLC). As standard, model 1R supports one RS 232C or V.35 remote host link; model 2R supports one X.21 remote host link. Dual SNA IBM host support, Dual IBM mixed protocol (SNA/SDLC and BSC) host support, and the Token-Ring Gateway are model 1R and 2R options. Model 3R supports the IBM Token-Ring LAN and provides for host access through a model 1L, 1R, or 2R (or compatible) gateway. All models support Category A coax devices, A/A devices, and A/A hosts.

CONTROL UNIT ARCHITECTURE

0X series control units conduct coax transfer and host/device interface management. The modular 1374 software design affords easy future expansion of both features and device support. Model 0X control units equipped with Token-Ring LAN support token ring network transfers compatible with the IBM Token-Ring LAN.

HOST ATTACHMENT

Model 1L attaches to a byte multiplexer, block multiplexer, or selector channel of an IBM or compatible System/370 processor and provides single-tag interlocked and two-tag high-speed transfer channel-operation modes.

Model 1R supports point-to-point or multipoint configurations in half-duplex mode on half- or full-duplex, nonswitched (SNA/SDLC at 64 Kbps or BSC at 19.2 Kbps) or switched (SNA/SDLC) facilities. In X.25/SNA mode, model 1R provides full-duplex, nonswitched, X.25 permanent or switched virtual circuit communications. X.25 support includes Qualified Logical Link Control (QLLC) and Physical Service Header (PSH) support.

Model 2R uses an X.21 interface to support X.25 (in SNA) at speeds up to 19.2 Kbps for nonswitched operation and SNA/SDLC at speeds up to 64 Kbps for nonswitched operation. X.25 support includes Qualified Logical Link Control (QLLC) and Physical Service Header (PSH) support.

Models 1R and 2R include a high-performance communications adapter with an external modem interface for the remote host connection.

DEVICE SUPPORT

0X series control units offer flexible device support. Category A coax devices and Asynchronous/ASCII (A/A) devices from a variety of vendors may be attached to these control units. The A/A and coax devices can run concurrently. The 16-port Coax Extender Adapter increases number the of directly attached coax devices from 18 to 32. Each Asynchronous Adapter adds concurrent support for A/A devices and A/A host links (8 per adapter) and is used in conjunction with the Asynchronous Communications Support (ACS) option. The optional Token-Ring Gateway LAN feature supports remote or local host access for coax and A/A devices attached to Memorex Telex downstream controllers.

CONTROL UNIT CORRESPONDENCE

The next table shows the correspondence between the IBM 3174 series and the 1374-0X series control units.

1374 Model	Host Attachment	Operating Mode	Coax Ports	ASCII Ports	Corresponding IBM Models
1L	Channel	SNA/non	32	24	3174 1L
1R	Remote	SNA/SDLC BSC SNA/X.25	32	24	3174 1R
2R	Remote	SNA/SDLC SNA/X.25	32	24	3174 2R
3R	Remote	Token-Ring	32	24	3174 3R

Table 1-1. Control Unit Correspondence – 0X Series

PRODUCT SPECIFICATIONS

PHYSICAL CHARACTERISTICS

- Height: 26.5 in (66 cm)
- Width: 14 in (36 cm)
- Depth:
  - 0X model 1 control units: 22 in (56 cm)
  - 0X model 2 control units: 25.5 in (64.8 cm)
- Weight:
  - 0X model 1 control units: 120 lb (54.5 kg)
  - 0X Model 2 control units: 130 lb (58.9 kg)

POWER

- Model 1R/2R/3R:
  - 120 VAC, 60 Hz, 2.0 A typical, 155W
  - 220 VAC, 50 Hz, 1.1 A typical, 159W
- Model 1L:
  - 120 VAC, 60 Hz, 2.0 A typical, 155W
  - 208 VAC, 60 Hz, 1.25 A typical, 153W
  - 220 VAC, 50 Hz, 1.1 A typical, 159W
  - 240 VAC, 60 Hz, 1.25 A typical, 153W

HEAT OUTPUT

- 292 W, 995 Btu/hr maximum

HUMIDITY

- Operating: 8% to 80%, noncondensing
- Storage: 5% to 90%, noncondensing

TEMPERATURE

- Operating: 40° to 105°F (4.4° to 40.5°C)
- Storage : 0° to 140°F (-17.8° to 60°C)

Models 41R and 42R support one remote host link as standard. Model 41R provides an RS 232C or V.35 interface, while model 42R provides an X.21 interface. Dual IBM mixed protocol (SNA/SDLC and BSC) host support and the Token-Ring Gateway are available options on the model 41R/42R. Model 43R supports the IBM Token-Ring LAN as a downstream node. Model 41R and 42R control units can be converted to Model 43R downstream node controllers by installing the Token-Ring Adapter PCB. Refer to Chapter 4, "User-Installable Options," for details. All three models support Category A coax devices, A/A devices and A/A hosts, and several hardware options.

CONTROL UNIT ARCHITECTURE

4XR series control units conduct coax transfers and host/device interface management. The modular 1374 software design affords easy future expansion of both features and device support. Model 43R is equipped with the Token-Ring LAN Adapter to connect to a token ring network as a downstream node.

HOST ATTACHMENT

Model 41R supports point-to-point or multipoint configurations in half-duplex mode on half- or full-duplex, nonswitched (SNA/SDLC at 64 Kbps or BSC at 19.2 Kbps) or switched (SNA/SDLC) facilities. In X.25/SNA mode, model 41R provides full-duplex nonswitched X.25 permanent or switched virtual circuit communications. X.25 support includes NCP Packet-Switching Interface (NPSI), Qualified Logical Link Control (QLLC), and Physical Service Header (PSH) support.

Model 42R uses an X.21 interface to support X.25 (in SNA) at speeds up to 19.2 Kbps for nonswitched operation and SNA/SDLC at speeds up to 64 Kbps for nonswitched operation. X.25 support includes Qualified Logical Link Control (QLLC) and Physical Service Header (PSH) support.

Models 41R and 42R provide a high-performance communications adapter with an external modem interface for the remote host connection.

CONTROL UNIT CORRESPONDENCE

The next table shows the correspondence between the IBM 3174 series and the 1374-4XR series control units.

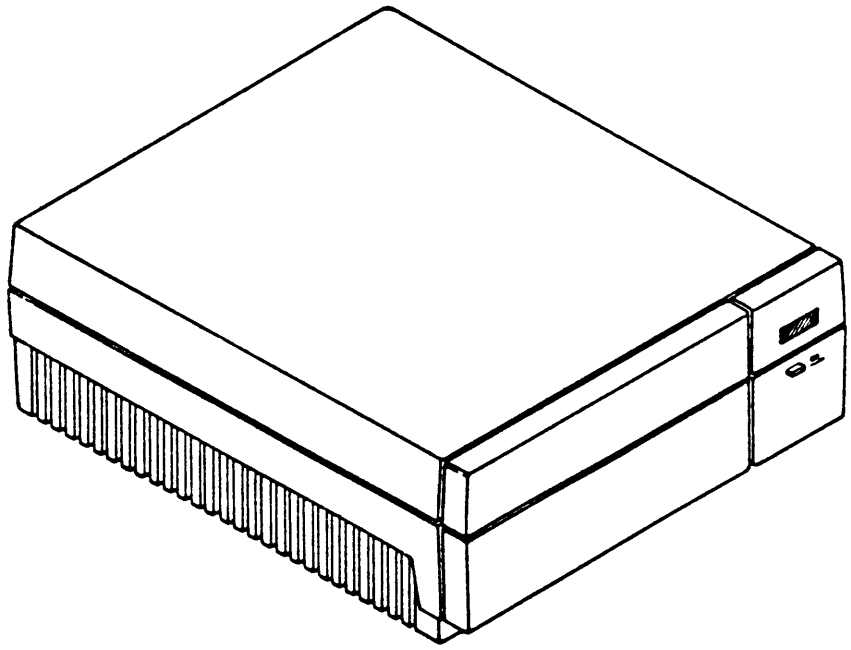

Figure 1-2. 1374-4XR Series Control Unit

- One IBM host interface
  - Model 41R: RS 232C or V.35 (determined by cable used)
  - Model 42R: X.21
  - Model 43R: Token-Ring LAN
- Three general-purpose option slots

OPTIONAL HARDWARE

The following hardware options are available for 4XR series units. Installation instructions are in Chapter 4, "User-Installable Options."

- 8-Port Asynchronous Adapter
- Second 3.5-inch diskette drive
- Memory Expansion Modules (512-KByte or 1-MByte)
- Host Serial Interface Extender (HSIE1 and HSIE2) for second host serial interface (41R and 42R)
- 9-Port Coax Extender Adapter
- Token-Ring Gateway (41R and 42R)
- Model Conversions (41R and 42R to 43R)

TEMPERATURE

- Operating: 40° to 105°F (4.4° to 40.5°C)
- Storage: 0° to 140°F (-17.8° to 60°C)

OPERATING NOISE

- Less than 55 dB

VIBRATION

- Operating: .25g 5-150 Hz
- Storage: 2.0g 5-100 Hz

SHOCK

- Operating: 10g <msec
- Storage: 40g <msec

ALTITUDE

- Operating: 10,500 ft (3,200 m)
- Storage: 40,000 ft (12,192 m)

1374 MODEL 51R/42R/53R

INTRODUCTION

Intermediate-sized members of the 1374 control unit family, the 5XR series comprises the 51R, 52R, and 53R. This series supports up to 16 coax and 8 A/A devices.

STANDARD HARDWARE

5XR series control units include the following as standard hardware features:

- Intel 80186 processor
- 1.5-MByte memory
- One memory expansion slot
- 3.5-Inch diskette drive
- Connector for hard disk interface

1374 Model	Host Attachment	Operating Mode	Coax Ports	ASCII Ports	Corresponding IBM Models
41R	Remote	SNA/SDLC BSC SNA/X.25	18 (32 via mux)	8	none
42R	Remote	SNA/X.25	18 (32 via mux)	8	none
43R	Remote	TOKEN-RING	18 (32 via mux)	8	none

Table 1-2. Control Unit Correspondence – 4XR Series

PRODUCT SPECIFICATIONS

PHYSICAL CHARACTERISTICS

- Height: 7.50 in (19.7 cm)
- Width: 17.62 in (44.8 cm)
- Depth: 18 in (45.7 cm)
- Weight: 30 lb (13.6 kg)

POWER

- Switch-selectable 120 VAC or 220 VAC
  - 120 VAC, 60 Hz
  - 220 VAC, 50 Hz

HEAT OUTPUT

- 292W, 995 Btu/hr maximum

HUMIDITY

- Operating: 8% to 80%, noncondensing
- Storage: 5% to 90%, noncondensing

- Host Serial Interface Extender (HSIE1 and HSIE2) for second host serial interface (51R and 52R)
- Token-Ring Gateway (51R and 52R)
- Model Conversions (51R and 52R to 53R)

Models 51R and 52R support one remote host link. Model 51R supports a RS 232C or V.35 interface, while model 52R supports the X.21 interface. Dual IBM SNA host support and the Token-Ring Gateway are available options on models 51R and 52R. Model 53R supports the IBM Token-Ring LAN as a downstream node. Model 51R and 52R control units can be converted to Model 53R downstream node controllers by installing the Token-Ring Adapter PCB. Refer to Chapter 4, "User-Installable Options," for details. Models 51R and 52R support Category A coax devices, A/A devices and hosts, and several hardware options.

CONTROL UNIT ARCHITECTURE

5XR control units conduct coax transfers and host/device interface management. The modular 1374 software design affords easy future expansion of both features and device support. Model 53R is equipped with the Token-Ring LAN Adapter to connect to a token ring network as a downstream node.

HOST ATTACHMENT

Model 51R supports point-to-point or multipoint configurations in half-duplex mode on half- or full-duplex, nonswitched (SNA/SDLC at 64 Kbps or BSC at 19.2 Kbps) or switched (SNA/SDLC) facilities. In SNA/X.25 mode, model 51R provides full-duplex nonswitched X.25 permanent or switched virtual circuit communications. X.25 support includes NCP Packet-Switching Interface (NPSI), Qualified Logical Link Control (QLLC), and Physical Service Header (PSH) support.

Model 52R provides an X.21 interface to support X.25 (in SNA) at speeds up to 19.2 Kbps for nonswitched operation and SNA/SDLC at speeds up to 64 Kbps for nonswitched operation. X.25 support includes Qualified Logical Link Control (QLLC) and Physical Service Header (PSH) support.

Models 51R and 52R provide a high-performance communications adapter with an external modem interface for the remote host connection.

CONTROL UNIT CORRESPONDENCE

The next table shows the correspondence between the IBM 3174 series and the 1374-5XR series control units.

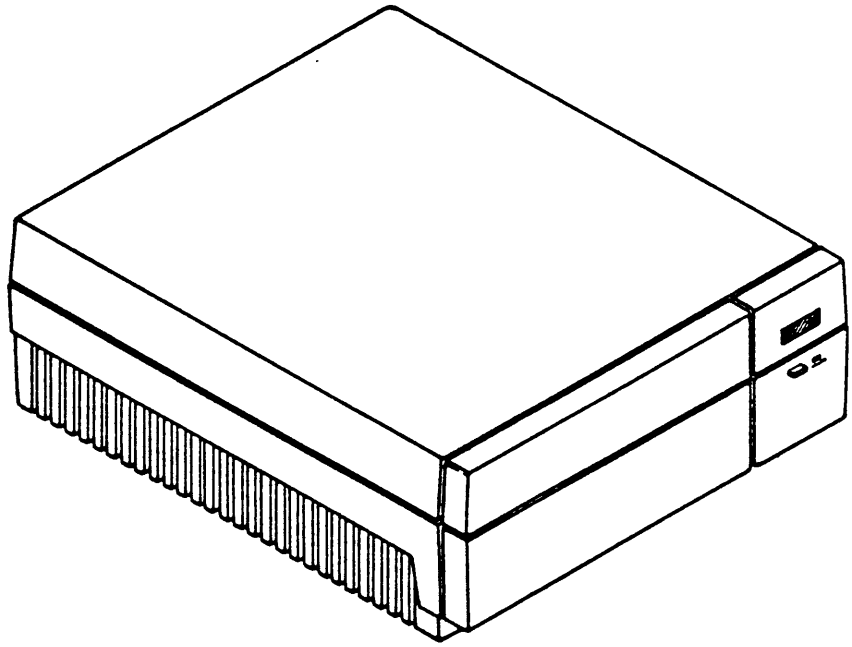

Figure 1-3. 1374-5XR Series Control Unit

- Nine Category A coax ports (nine direct or any combination of direct and multiplexed ports up to a maximum of 16)
- IBM cabling system support (dual-purpose connectors)
- One RS 232C asynchronous remote diagnostics port for direct or remote monitoring
- One IBM host interface
  - Model 51R: RS 232C or V.35
  - Model 52R: X.21
  - Model 53R: Token-Ring LAN
- One general-purpose option slot (51R and 52R)

OPTIONAL HARDWARE

The following hardware options are available for 5XR series control units. Installation instructions for these options are provided in Chapter 4, "User-Installable Options."

- 8-Port Asynchronous Adapter (51R and 52R)
- Second 3.5-inch diskette drive
- Memory Expansion Modules (512-KByte or 1-MByte increments)

TEMPERATURE

- Operating: 40° to 105°F (4.4° to 40.5°C)
- Storage: 0° to 140°F (-17.8° to 60°C)

OPERATING NOISE

- Less than 55 dB

VIBRATION

- Operating: .25g, 5-150 Hz
- Storage: 1.0g 5-100 Hz

SHOCK

- Operating: 3g <msec
- Storage: 40g <msec

ALTITUDE

- Operating: 10,000 ft (3,200 m)
- Storage: 40,000 ft (12,192 m)

1374 MODEL 61R

INTRODUCTION

One of the small briefcase-sized members of the 1374 control unit family, the model 61R provides full control unit functions for environments where space is a premium. This series supports up to nine coax and two A/A devices.

STANDARD HARDWARE

Model 61R control units include the following as standard hardware features:

- Intel 80186 processor
- 1-MByte memory
- One memory expansion slot
- 3.5-inch diskette drive (formatted capacity 1.4 MBytes)

1374 Model	Host Attachment	Operating Mode	Coax Ports	ASCII Ports	Corresponding IBM Models
51R	Remote	SNA/SDLC BSC SNA/X.25	9 (16 via mux)	8	3174 51R
52R	Remote	SNA/SDLC SNA/X.25	9 (16 via mux)	8	3174 52R
53R	Remote	Token-Ring	9 (16 via mux)	0	3174 53R

Table 1-3. Control Unit Correspondence – 5XR Series

PRODUCT SPECIFICATIONS

PHYSICAL CHARACTERISTICS

- Height: 7.50 in (19.05 cm)
- Width: 17.62 in (44.75 cm)
- Depth: 18 in (45.72 cm)
- Weight: 26.5 lb (12.05 kg)

POWER

- Single phase
- 120 VAC, 60 Hz, 0.74 A (89 VA) typical
- 220 VAC, 50 Hz, 0.57 A (125.5 VA) typical

HEAT OUTPUT

- 59W, 201 Btu/hr

HUMIDITY

- Operating: 8% to 80%, noncondensing
- Storage: 5% to 90%, noncondensing

61R control units support one cable-selectable remote host serial interface (RS 232C/V.35), Category A devices, and several hardware options. Optional printed circuit boards (PCBs) provide a second host serial interface (RS 232C), a serial or parallel port interface for asynchronous devices, and a 512-KByte memory expansion.

CONTROL UNIT ARCHITECTURE

The single microprocessor in model 61R control units conducts coax transfer and host/device interface management. The modular 1374 software design affords easy future expansion of both features and device support.

HOST ATTACHMENT

Model 61R supports point-to-point or multipoint configurations in half-duplex mode on half- or full-duplex, nonswitched (SNA/SDLC at 64 Kbps, SNA/X.25 at 19.2 Kbps, and BSC at 9.6 Kbps) or switched (SNA/SDLC) facilities. In SNA/X.25 mode, model 61R provides full-duplex nonswitched X.25 permanent or switched virtual circuit communications. X.25 support includes NCP Packet-Switching Interface (NPSI), Qualified Logical Link Control (QLLC), and Physical Service Header (PSH) support. Model 61R provides a high-performance communications adapter with an external modem interface for the remote host connection.

With the addition of a Host Serial Interface Extender (HSIE), the 61R can utilize the Dual IBM SNA/SDLC Host option for two IBM SNA/SDLC host links on the control unit.

DEVICE SUPPORT

Model 61R control units offer flexible device support. Category A devices from a variety of vendors may be attached to these control units. Option slots 2 and 3 support the installation of the second host serial interface or Port Option PCBs.

CONTROL UNIT CORRESPONDENCE

The next table shows the correspondence between the IBM 3174 series and the 61R control units.

1374 Model	Host Attachment	Operating Mode	Coax Ports	ASCII Ports	Corresponding IBM Models
61R	Remote	SNA/SDLC	9 (16 via mux)	2	3174 51R or 81R

Table 1-4. Control Unit Correspondence – 61R

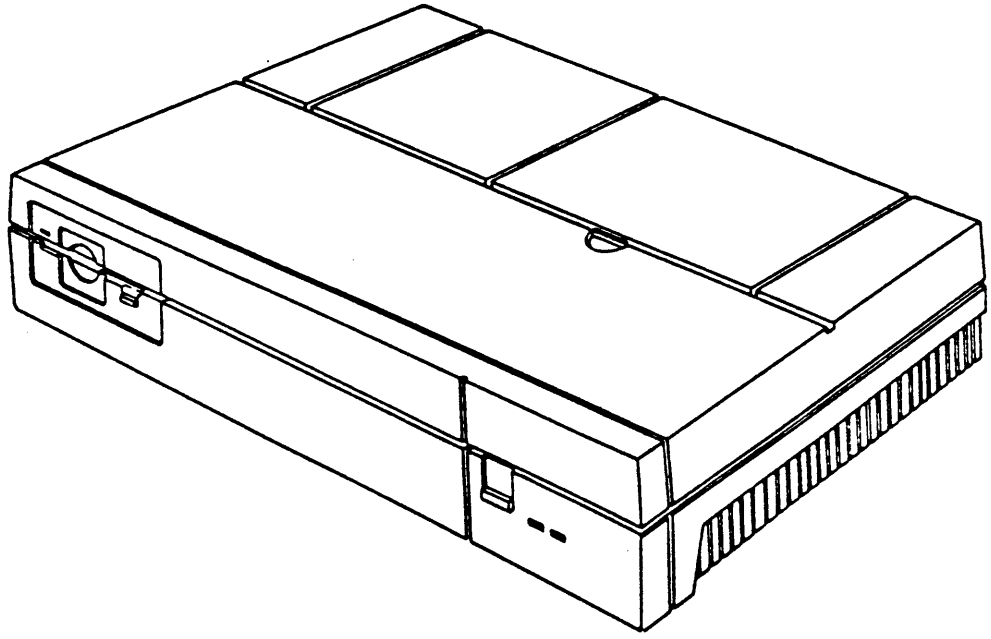

Figure 1-4. 1374-61R Control Unit

- Nine Category A coax ports (nine direct or any combination of direct and multiplexed ports up to a maximum of 16)
- IBM cabling system support (dual-purpose connections)
- One RS 232C asynchronous remote diagnostics port
- One remote RS 232C or V.35 host interface (Host 1 port only)
- Three general-purpose option slots

OPTIONAL HARDWARE

The following hardware options are available for model 61R control units. Installation instructions for these options are provided in Chapter 4, "User-Installable Options."

- Additional 512-KByte plug-in memory PCB
- Host Serial Expansion PCB (labeled "Host 2")
- Serial Port Option PCB
- Parallel Port Option PCB

ALTITUDE

- Operating: 10,500 ft (3,200 m)
- Storage: 40,000 ft (12,192 m)

1374 MODEL 71R/72R/73R

INTRODUCTION

Small briefcase-sized members of the 1374 control unit family, the 7XR series comprises the 71R models 1 and 2, 72R models 1 and 2, and 73R models 1 and 2 (referred throughout this manual as the 71R, 72R, and 73R, respectively, except when describing specific differences). The major differences between 7XR model 1 and 2 are: the expanded on-board memory (71R model 2, 72R model 2), and a new power supply with an external switch for line voltage selection (7XR model 2). This series supports up to 8 coax and 2 A/A devices.

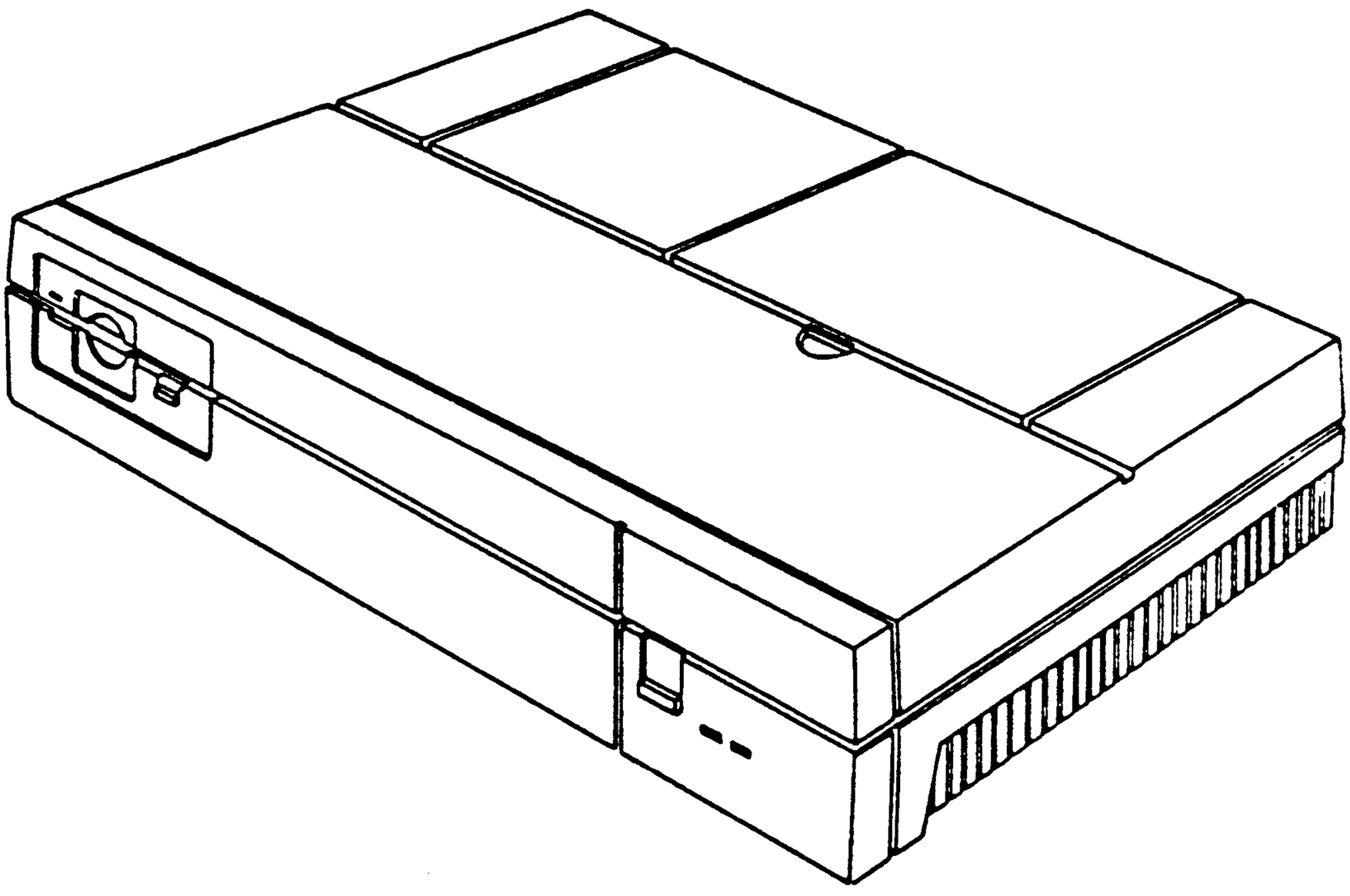

Figure 1-5. 1374-7XR Series Control Unit

PRODUCT SPECIFICATIONS

PHYSICAL CHARACTERISTICS

- Height: 3.93 in (9.98 cm)
- Width: 17.64 in (44.8 cm)
- Depth: 12.64 in (32.1 cm)
- Weight: 11 lb (5 kg)

POWER

- Single phase
- 120 VAC, 60 Hz, 0.56 A typical
- 220 VAC, 50 Hz, 0.40 A typical

HEAT OUTPUT

- 40W, 136 Btu/hr

HUMIDITY

- Operating: 8% to 80%, noncondensing
- Storage: 5% to 90%, noncondensing

TEMPERATURE

- Operating: 40° to 105°F (4.4° to 40.5°C)
- Storage: 0° to 122°F (-17.8° to 50°C)

OPERATING NOISE

- Less than 55 dB

VIBRATION

- Operating: .25g 5-150 Hz
- Storage: 1.00g 5-100 Hz

SHOCK

- Operating: 3g <msec
- Storage: 40g <msec

7XR series control units support one remote link host interface. Category A devices, and several hardware options. 71R model 1 control units support an RS 232C interface: 71R model 2 control units support an RS 232C/V.35 interface (cable selectable). 72R control units (models 1 and 2) support an X.21 interface. Optional printed circuit boards (PCBs) for these control units provide a serial or parallel port interface for asynchronous devices and expand coax device support from four to eight devices. Model 73R interfaces to the IBM Token-Ring LAN as a downstream node, providing host access through an 1374-0X, 4XR, or 5XR series (or compatible) gateway control unit.

CONTROL UNIT ARCHITECTURE

The single microprocessor in 7XR series control units conducts coax transfer and host/device interface management. The modular 1374 software design affords easy future expansion of both features and device support.

HOST ATTACHMENT

Model 71R supports point-to-point or multipoint configurations in half-duplex mode on half- or full-duplex, nonswitched (SDLC or BSC) or switched (SDLC) facilities. In X.25/SNA mode, model 41R provides full-duplex nonswitched X.25 permanent or switched virtual circuit communications. This includes NCP Packet-Switching Interface (NPSI), Qualified Logical Link Control (QLLC), and Physical Service Header (PSH) support.

Model 72R uses an X.21 interface to support X.25 (in SNA) at speeds up to 19.2 Kbps for nonswitched operation and SNA/SDLC at speeds up to 64 Kbps for nonswitched operation. This includes Qualified Logical Link Control (QLLC) and Physical Service Header (PSH) support.

Models 71R and 72R have a high-performance communications adapter with an external modem interface.

DEVICE SUPPORT

7XR control units offer flexible device support. Category A devices from a variety of vendors may be attached to these control units. Option slots 2 and 3 support the installation of Port Option PCBs. An additional option slot is provided on the rear of the control unit. This slot accommodates the 4-Port Coax Extender Adapter, which doubles the coax device support from four to eight devices.

CONTROL UNIT CORRESPONDENCE

The next table shows the correspondence between the IBM 3174 series and the 7XR series.

STANDARD HARDWARE

7XR series control units include the following as standard hardware features:

- Intel 80186 processor
- 1-MByte memory, located as follows:
- 71R/72R model 1
  - Processor: 512-KBytes,
  - Memory Expansion Module: 512-KBytes
- 71R/72R model 2:
  - Processor: 1-MByte
- 73R models 1, 2
  - Processor: 512-KBytes,
  - Memory Expansion Module: 512-KBytes
- 3.5-inch diskette drive (formatted capacity 1.4 MBytes)
- 4-port Category A coax device support
- IBM cabling system support (dual-purpose connectors)
- One RS 232C asynchronous remote diagnostics port
- One remote host interface
  - Model 71R: RS 232C or V.35
  - Model 72R: X.21
  - Model 73R: Token-Ring LAN
- Two or three general-purpose option slots (model-specific)

OPTIONAL HARDWARE

The following hardware options are available for the 7XR series. Installation instructions for these options are provided in Chapter 4, "User-Installable Options."

- Additional 512-KByte plug-in memory PCB (71R and 72R model 2 control units only)
- Serial Port Option PCB
- Parallel Port Option PCB
- 4-Port Coax Extender Adapter

TEMPERATURE

- Operating: 40° to 105°F (4.4° to 40.5°C)
- Storage: 0° to 122°F (-17.8° to 50°C)

OPERATING NOISE

- Less than 55 dB

VIBRATION

- Operating: .25g, 5-150 Hz
- Storage: 1.00g, 5-100 Hz

SHOCK

- Operating: 3g <msec.
- Storage: 40g <msec.

ALTITUDE

- Operating: 10,500 ft (3,200 m)
- Storage: 40,000 ft (12,192 m)

1374 Model	Host Attachment	Operating Mode	Coax Ports	ASCII Ports	Corresponding IBM Models
71R	Remote	SNA/SDLC BSC SNA/X.25	8	2	3174 81R*
72R	Remote	SNA/SDLC SNA/X.25	8	2	3174 82R*
73R	Remote	Token-Ring	8	2	none

*These IBM control units do not support ASCII ports.

Table 1-5. Control Unit Correspondence – 7XR Series

PRODUCT SPECIFICATIONS

PHYSICAL CHARACTERISTICS

- Height: 3.93 in (9.98 cm)
- Width: 17.64 in (44.8 cm)
- Depth: 12.64 in (32.1 cm)
- Weight: 11 lb (5 kg)

POWER

- Single phase
- 120 VAC, 60 Hz, 0.56 A typical
- 220 VAC, 50 Hz, 0.40 A typical

HEAT OUTPUT

- 40W, 136 Btu/hr

HUMIDITY

- Operating: 8% to 80%, noncondensing
- Storage: 5% to 90%, noncondensing

TEMPERATURE

- Operating: 40° to 105°F (4.4° to 40.5°C)
- Storage: 0° to 122°F (-17.8° to 50°C)

OPERATING NOISE

- Less than 55 dB

VIBRATION

- Operating: .25g, 5-150 Hz
- Storage: 1.00g, 5-100 Hz

SHOCK

- Operating: 3g <msec.
- Storage: 40g <msec.

ALTITUDE

- Operating: 10,500 ft (3,200 m)
- Storage: 40,000 ft (12,192 m)