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Systems

**IBM 3270
Information Display System
Description and Configuration**

**IBM 3278 Display Station Model 5
IBM 3287 Printer Models 1 and 2
IBM 3289 Line Printer Models 1 and 2**

IBM

First Edition (May 1979)

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Preface

This publication provides customer executives, installation managers, and planners of installations using the IBM 3270 Information Display System with information on a new model of the IBM 3278 Display Station . The new display-station model has a wideline-display capability of 27 lines of 132 characters on each line. A new specify feature is required on the IBM 3287 Printer and the IBM 3289 Line Printer for compatibility with the wideline display when the printers are used for local-copy operation.

This publication contains five chapters.

Chapter 1 is an introduction to the new model of the 3278 Display Station and the associated features on the 3287 and 3289 Printers to support the capability of displaying up to 132 characters per line and to support printing of a new, larger buffer capacity (3564 characters).

Chapter 2 describes the 3278 Display Station Model 5 and the features on the 3287 and 3289 Printers to support the wideline display.

Chapter 3 describes possible applications for the new wideline capability.

Chapter 4 describes the programming support available for the wideline capability of the 3278 Display Station Model 5, of the 3287 Printer Models 1 and 2, and of the 3289 Line Printer Models 1 and 2.

Chapter 5 describes the configurations that support the wideline capability of the display and printers.

This publication will become obsolete approximately 90 days after the date of this edition. The information in this publication will be included in subsequent updates to the following publications:

- *An Introduction to the IBM 3270 Information Display System, GA27-2739*
- *IBM 3270 Information Display System Configurator, GA27-2849*

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Chapter 1. Introduction

The current family of IBM 3270 Information Display System products provides various models of display stations capable of displaying five different screen formats:

- 12 lines of 40 characters each (480-character capacity)
- 12 lines of 80 characters each (960-character capacity)
- 24 lines of 80 characters each (1920-character capacity)
- 32 lines of 80 characters each (2560-character capacity)
- 43 lines of 80 characters each (3440-character capacity)

The new IBM 3278 Display Station Model 5 extends the capabilities of the displays to provide a total screen capacity of 3564 characters with 27 lines of 132 characters each. A new feature is required on the IBM 3287 Printer and on the IBM 3289 Line Printer to provide compatibility with the increased display-screen capacity of 3564 characters.

The new IBM 3278 Display Station Model 5 can be attached to the IBM 3274 Control Unit Model 1A, 1C, or 1D, which can support up to 32 attached devices. All the attached devices may be the new model 3278 Display Station Model 5, or a combination of the new model display station with any mix of displays and printers that currently can be attached to the control unit. The new model display can facilitate both the display of data and the input of data for any application requiring a line length capability of up to 132 characters. This same model of the display can be used to display data in the same format as the current models of the 3278 Display Station that use a maximum line length of 80 characters. The selection of line length is dependent on the host application program, and the display can be switched between the 132-character format and the 80-character format. However, the display screen cannot be used in both formats at the same time.

The new features on the IBM 3287 Printer and on the 3289 Line Printer, when used in conjunction with IBM 3278 Display Station Model 5, can provide hard-copy printouts of the 3564-character screen size in the same format as the display.

Chapter 2. Description and Functional Capability

This chapter describes the function of the new 3278 Display Station Model 5 and the new features on the 3287 Printer and on the 3289 Line Printer to support the wideline capability of these devices.

3278 Display Station Model 5

The 3278 Display Station Model 5, shown in Figure 2-1, has the same physical characteristics as the other four models of the 3278 Display Station. The Model 5 uses the same-size display screen to display either 27 lines of 132 characters per line (a total screen capacity of 3564 characters) or 24 lines of 80 characters per line (a total screen capacity of 1920 characters). The display has the same two operational modes as the other four models of the display. The modes determine the format of the display and are host-program-controlled by use of the Erase/Write and Erase/Write Alternate commands.

The display mode is set to the character capacity of 24 lines of 80 characters (1920 total characters) during the power-on sequence of the control unit. The alternate mode provides the new wideline-display format of 27 lines of 132 characters (3564 total characters).

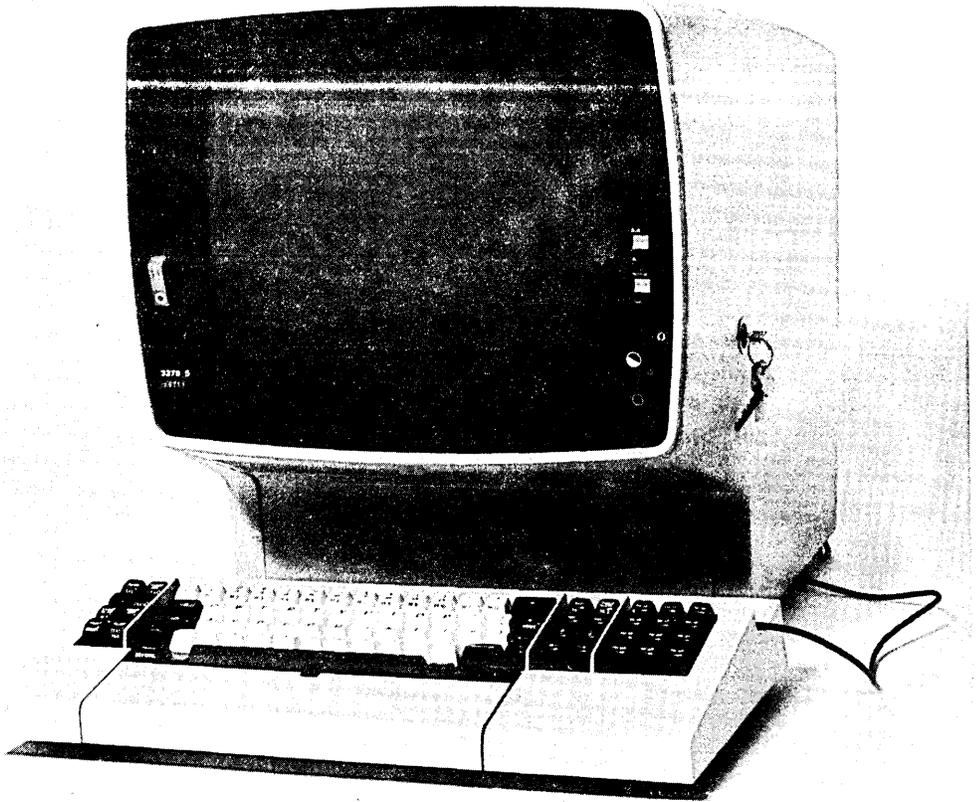


Figure 2-1. IBM 3278 Display Station Model 5 (Design Model)

The character matrix used is the same in both modes and is comparable to the character matrix of the 3278 Model 4. The two display formats of the Model 5 cover approximately the same viewing area, which is almost the same as that of the 3278 Model 2. Thus, it can be observed that, even though the character matrix is the same in both modes, the actual character size and spacing are smaller in alternate mode in order to provide 132 characters in the same approximate line space as 80 characters in the power-on mode.

Except for the 132-character line and the 3564-character capacity of the display, the 3278 Model 5 is functionally equivalent to any other model of the 3278 Display Station. All the features currently available on the Models 1, 2, 3, and 4 are supported on the Model 5.

Configuration flexibility is provided through two configuration support options of the system and feature diskettes for the 3274 Control Unit. The two options are identified as Configuration Support A and Configuration Support B. The user must select the microcode option that supports the configurations, features, and functions required to meet the user requirements. The 3278 Display Station Model 5 requires the use of Configuration Support B.

3287 Printer Models 1 and 2

The 3287 Printer, shown in Figure 2-2, is a desk-top serial matrix printer and is capable of providing hard-copy output of the 132-character-per-line display of the 3278 Display Station Model 5. The model numbers of the printer relate to print speeds:

- Model 1 – Up to 80 characters per second
- Model 2 – Up to 120 characters per second

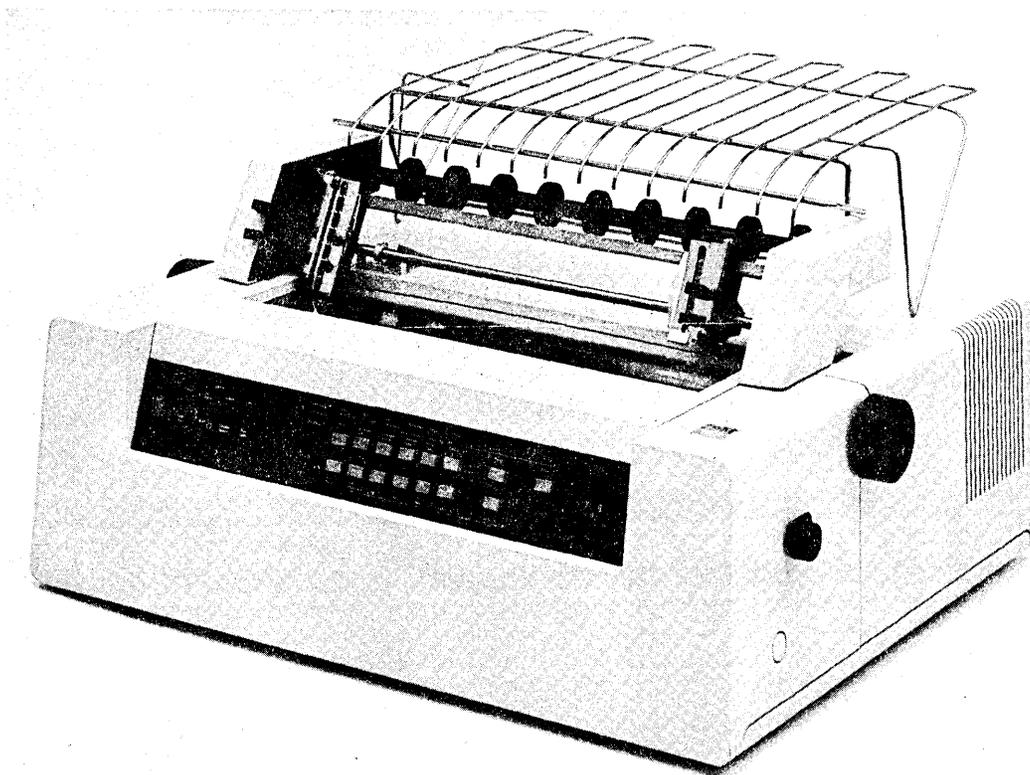


Figure 2-2. IBM 3287 Printer Model 1 (Design Model)

The 3287 Printer requires the 3564 Character Print Operation feature, 9525, for compatibility with the 3278 Display Station Model 5. This feature provides a printer buffer size of 3564 bytes for host programs that use the Erase/Write Alternate command. Installation of the Extended Print Buffer feature, 3880, is a prerequisite. Copy operations from a larger-screen-size display to a smaller printer buffer are not allowed.

All the features currently available for the 3287 Printer are supported when the 3564 Character Print Operation feature is installed.

3289 Line Printer Models 1 and 2

The 3289 Line Printer, shown in Figure 2-3, is a floor-standing line printer and is capable of providing hard-copy output of the 3278 Display Station Model 5. The model numbers relate to print speeds:

- Model 1 – Up to 155 lines per minute
- Model 2 – Up to 400 lines per minute

The 3289 Line Printer requires the 3564 Character Print Operation feature, 9525, for compatibility with the 3278 Display Station Model 5. This feature provides a printer buffer size of 3564 bytes for host programs that use the Erase/Write Alternate command. Copy operations from a larger-screen-size display to a smaller printer buffer are not allowed.

All the features currently available for the 3289 Line Printer are supported when the 3564 Character Print Operation feature is installed.

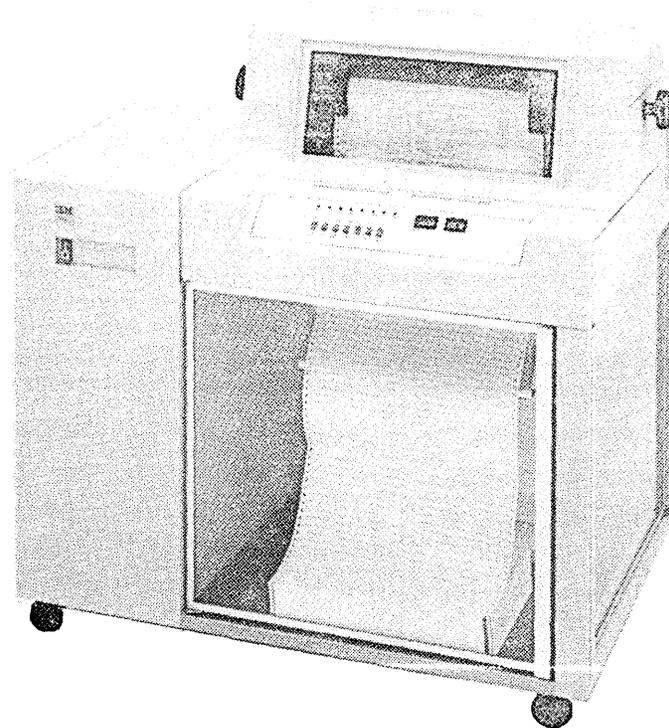


Figure 2-3. IBM 3289 Line Printer Model 1 (Design Model)

Chapter 3. Applications

This chapter describes applications where the new 132-character wideline capability can enhance both the input of data and the display of data.

Previous 3270 Information Display System displays have been limited to line lengths of 80 characters or less. When line lengths have exceeded the 80-character length, the application program has had to provide an alternate display format to display the balance of the line. These alternate formats have included truncating the line, wrapping the display into two or more lines, and providing an operator function to shift the display. All these techniques inhibit the best presentation of the data and can inhibit the rate of data input.

With the 132-character-per-line capability of the Model 5, the user has more flexibility in the use of displays. For example, program listings are commonly formatted in line lengths of greater than 80 characters per line. On the wideline display, record lengths of up to 132 characters can be displayed with an appropriate correspondence to printed output. Hard copy of the display can be obtained from a 3287 or 3289 Printer by use of the local-copy option. Thus, this display capability can facilitate program development and maintenance. Other uses of the wideline capability include the display and printout of any form of a report with record lengths of up to 132 characters.

Enhanced operation may be possible with the wideline capability for application programs that use split screens. Also, a program can switch the display between the 80-character line length and the 132-character line length. However, a single image cannot be displayed in both modes simultaneously.

Chapter 4. Programming Support

This chapter describes the IBM programming support available for the wideline capability of the display and printers.

IBM Access Methods and Subsystem Support

The 132-character wideline capability of the 3278 Model 5, of the 3287 Models 1 and 2, and of the 3289 Models 1 and 2 will be supported by the following programs:

	DOS/VS	DOS/VSE	OS/VS1	OS/VS2 (MVS)
BTAM	X	NA	X	X
BTAM-ES	NA	X	NA	NA
ACF/TCAM	NA	NA	X	X
ACF/VTAM	NA	X	*	X
ACF/VTAME	NA	X	NA	NA
IMS	NA	NA	X	X
TSO/TCAM**	NA	NA	NA	X
TSO/VTAM**	NA	NA	NA	X
CICS/VS	X	X	X	X

X—Support available with the latest current level of program release available at the time of availability of the 3278 Model 5.

NA—Not applicable.

*See your IBM Sales Representative for the availability date of the applicable level of program release.

**3287 and 3289 Printers not supported.

In addition, the following programs will be modified to support the 3278 Model 5:

- VM/Basic System Extensions Program Product
- VM/System Extensions Program Product

See your IBM Sales Representative for the availability dates of the applicable level of program releases.

IBM Program Product Support

The following IBM program products will be extended to support the wideline capability of the IBM 3278 Model 5, the 3287 Printer, and the 3289 Line Printer:

Program Product	Device Supported		
	3278-5	3287	3289
ATMS-11	X	*	*
VS APL CICS	X	X	X
VS APL TSO	X	NA	NA
SDF/CICS	X	X	X
SPF/TSO	X	NA	NA
SPF/CMS	X	NA	NA

X—Supported.

NA—Not applicable.

*Printer output buffer size restricted to 1920 characters.

See your IBM Sales Representative for the availability dates and applicable system environments of these programs.

Chapter 5. Configurations

This chapter supplements the information in the *IBM 3270 Information Display System Configurator*, GA27-2849, by providing configuration information for the new wideline-display capability of the 3278 Display Station Model 5, of the 3287 Printer Models 1 and 2, and of the 3289 Line Printer Models 1 and 2 with their associated feature.

Locally Attached Configurations

Configuration information for the new wideline display and for the printers on a locally attached 3274 Control Unit Model 1A or 1D is shown in Figure 5-1.

Remotely Attached Configurations

Configuration information for the new wideline display and for the printers on a remotely attached 3274 Control Unit Model 1C is shown in Figure 5-2.

Control Unit Control Storage Requirements

The attachment of the IBM 3278 Display Station Model 5 to an IBM 3274 Control Unit Model 1A, 1C, or 1D requires that Configuration Support B be installed in the 3274 Control Unit. The installation of Configuration Support B requires the following number of additional bytes of control storage in the 3274 Control Unit base:

3274 Control Unit	Additional Control Storage Required (bytes)	
	Type C	Type D
Model 1A (Base)	3872	884
Model 1C/SNA EBCDIC (Base)	5072	1396
Model 1C/SNA ASCII (Base)	5072	1396
Model 1C/BSC EBCDIC (Base)	3872	884
Model 1C/BSC ASCII (Base)	3872	884
Model 1D (Base)	3872	884

Refer to *IBM 3270 Information Display System Configurator*, GA27-2849, for calculating the total control storage requirement of the 3274 Control Unit to support all desired functions.

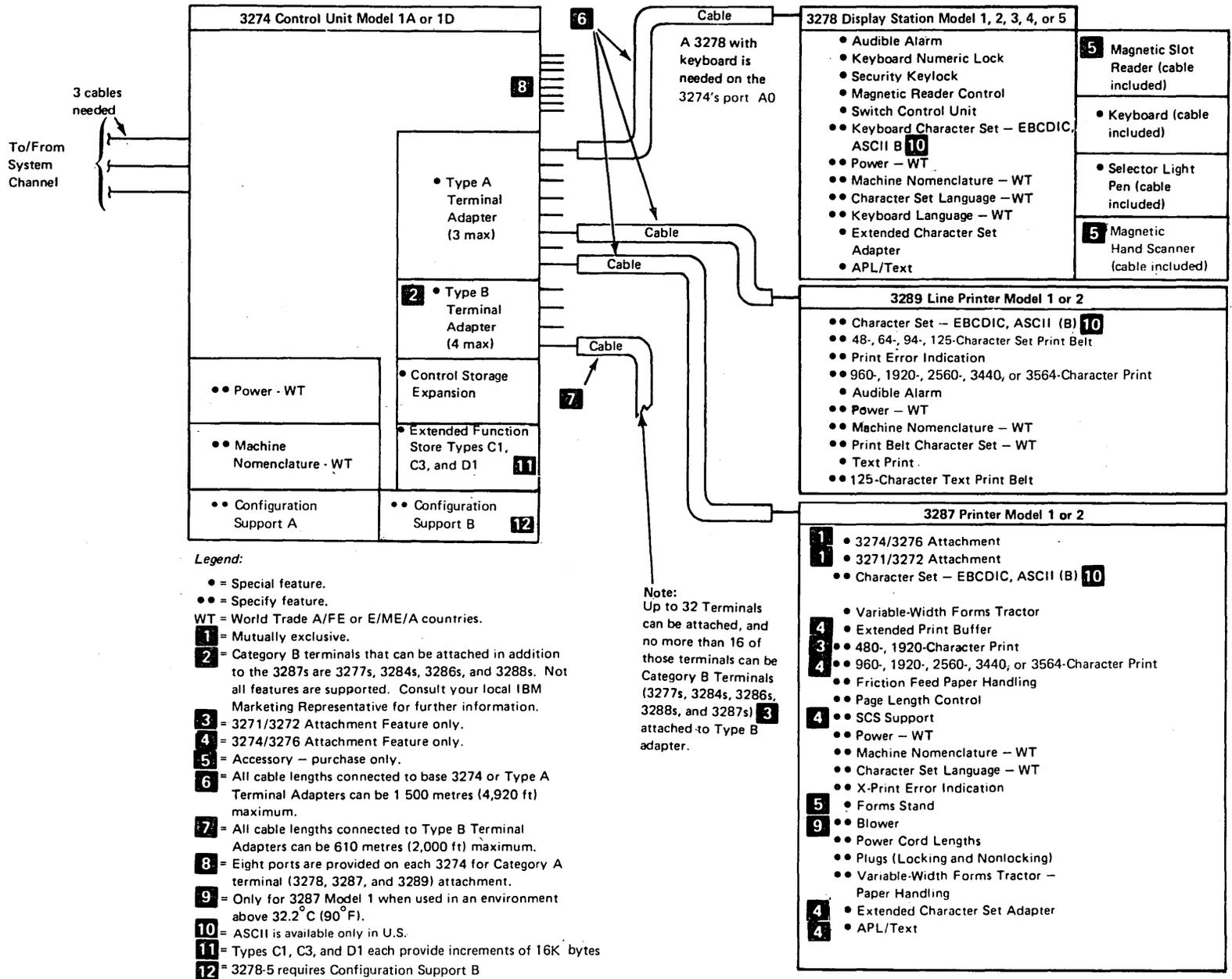


Figure 5-1. Configuring the 3278 Display Station Model 5, 3287 Printer Model 1 or 2, and 3289 Line Printer Model 1 or 2 on a Locally Attached 3274 Control Unit Model 1A or 1D

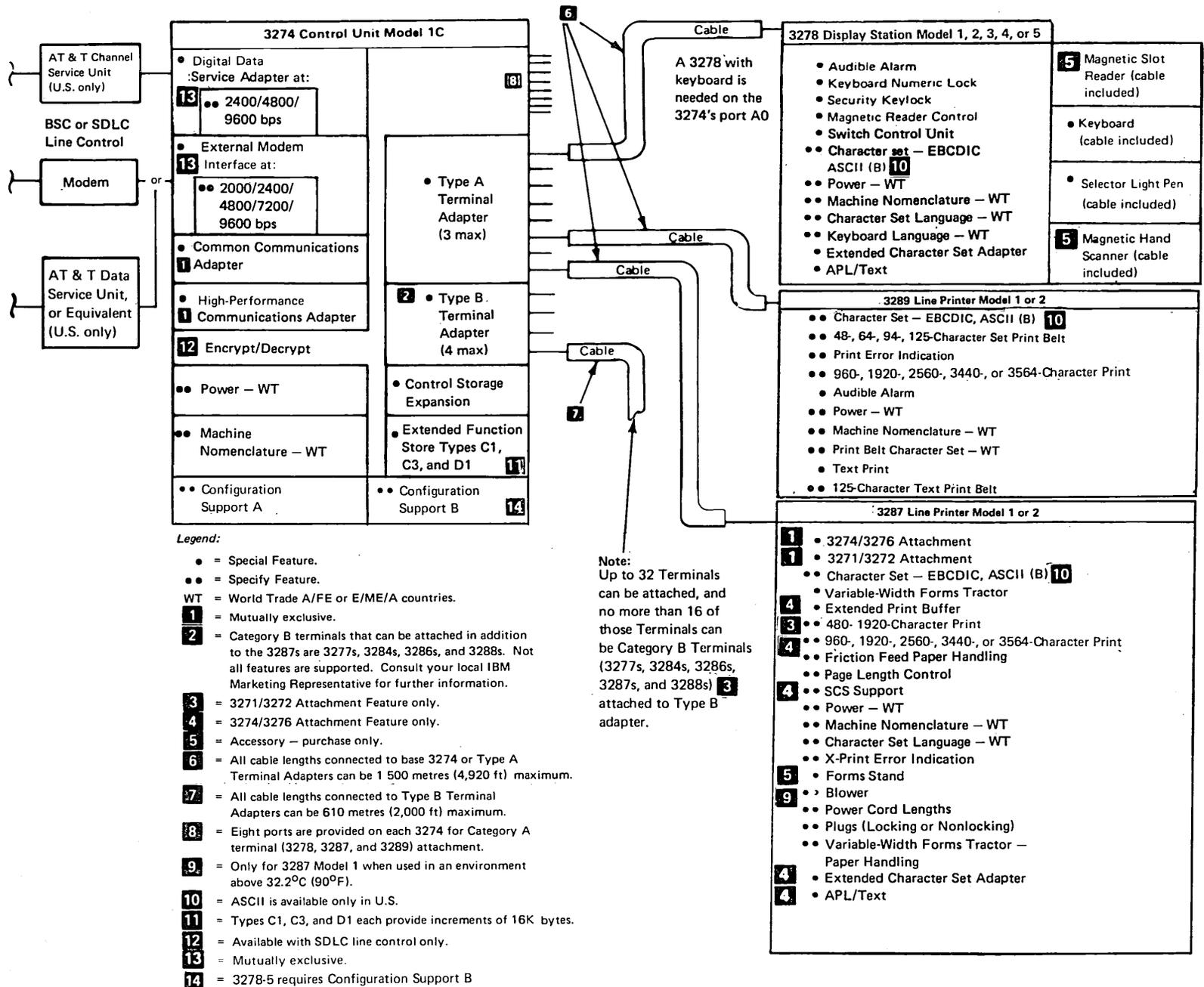


Figure 5-2. Configuring the 3278 Display Station Model 5, 3287 Printer Model 1 or 2, and 3289 Line Printer Model 1 or 2 on a Remotely Attached 3274 Control Unit Model 1C (BSC or SDLC Application)

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Description and Configuration

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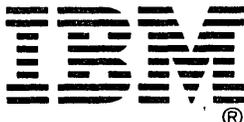
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