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IBM 3164 ASCII COLOR DISPLAY STATION MODELS 11 AND 12 IBM 3161/3163 FEATURE CARTRIDGES

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[Announcement Letter Number 186-026 dated February 7, 1986](#)

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Brief Description of Announcement, Charges, and Availability

The newest addition to IBM's 316X family of ASCII display stations, the IBM 3164 ASCII Color Display Station offers eight colors on a high-resolution, 14-inch monitor.

New cartridges for the IBM 3161 and 3163 ASCII Display Stations provide the additional read command feature on the 3161 and 3163 and TeleVideo 950* emulation on the 3163.

* TeleVideo 950 is a registered trademark of TeleVideo Systems, Inc.

Customer Letter Section

The 3164 is a high-function display that offers the advanced capabilities of the IBM 3163 ASCII Display Station in eight colors. Applications that call for multiple windows, smooth scrolling, and double size characters can now be presented in color.

As a member of a family of ASCII displays, the 3164 is upward compatible from the 3161 and 3163. In native mode the 3164 will default to four colors on programs written for the 3161/3163. The 3164 also emulates the IBM 3101 model 881 (model 230) and provides four colors for 3101 programs in block mode.

The 3164 continues IBM's product quality excellence. The 14-inch monitor produces clear, crisp characters. The low-profile keyboard has tactile feedback and is compatible with the keyboards on the 3161 and 3163.

HIGHLIGHTS

- o Screen Characteristics
 - 14-inch cathode ray tube (CRT)
 - 8 foreground and 8 background colors (including black)
 - Color, reverse video, blinking, underscore, and non-display attributes
 - 80 characters x 25 lines
 - 8 x 16 character cell
- o Improved Ergonomics
 - Tilt/swivel pedestal
 - Etched/dark screen to reduce glare
 - Brightness control
- o Keyboard
 - Designed for ASCII
 - Compatible with 3161/3163 keyboards
 - Tactile feedback
 - Low profile
 - 12 function keys (shifted to 24) and 3 PA keys
 - Numeric keypad
 - Coiled cable
- o Communication
 - RS-232C and RS-422A host attachment
 - Selectable speed to 19.2Kbps
 - 7/8 bits option
 - XON/XOFF
 - RS-232C bidirectional auxiliary port
- o Functions
 - Menu setup
 - Definable function keys
 - Character, field, and line attributes
 - Line drawing characters
 - CRT saver
 - Smooth scroll
 - Windows, paging, and partitions
 - Double high/double wide characters
 - Redefinable keyboard
 - Host loadable character set
 - Extended attributes

- Block longitudinal redundancy checking (LRC)
- o Compatibility
 - Upward compatibility from 3161 and 3163
 - 3101 emulation

DESCRIPTION

3164 ASCII COLOR DISPLAY

The 3164 models 11 and 12 are part of a family of ASCII displays that provide a wide range of functions and communicate using the ASCII/ISO communication codes. The 3164 is composed of a high-quality 14-inch color monitor on a tilt and swivel pedestal, a 102-key low-profile keyboard that is specifically designed for use with ASCII systems, and a logic element.

The 3164 is an advanced display with a wide variety of functions. Its dark, etched screen displays eight foreground and background colors under program control: red, white, green, blue, yellow, turquoise, pink, black. Color can be used with up to three viewports for displaying data from multiple sources. Line drawing characters and host loadable characters can be displayed in color to produce simple bar charts and special graphic symbols. Color can be combined with other attributes such as blinking, reverse video, and underscore, to draw attention to data on the screen.

Upward compatible from the IBM 3161 and IBM 3163 ASCII Display Stations, the 3164 uses the same screen format, with 80 characters across and 24 lines for data and a 25th line for operator information. It provides the functions of the 3161 and 3163, including menu setup, definable function keys, attributes in character and block modes, line drawing characters, and CRT saver. In native mode, the 3164 also has all of the advanced capabilities of the 3163, such as smooth scroll, viewports, pages, partitions, double high/double wide character, host loadable characters, extended attributes, and block longitudinal redundancy checking. The keyboard on the 3164 uses the same layout as the 3163 and can be redefined. In its native mode, the 3164 can run 3163 programs unchanged and will default to four colors based on selected attributes:

- Green - Unprotected, normal intensity
- Blue - Protected, normal intensity*
- Red - Unprotected, high intensity

White - Protected, high intensity*

* Protected attribute in block mode only

Emulating the IBM 3101 model 881, the 3164 can run 3101 model 881 programs unchanged and will default to these same four colors in block mode.

The 3164 is offered in two models:

- o 3164 Model 11 - RS-232C interface
- o 3164 Model 12 - RS-232C/RS-422A operator selectable interface

DISPLAY FUNCTIONS

COLOR: The 3164 displays eight colors. In 3164 programmed color mode, these colors are fully programmable and can be used in any combination in foreground and background. For example, a character on a field can be defined as black characters on a yellow background or white characters on a red background. In default color mode and in 3101 mode, the 3164 displays four colors based on attribute combinations.

MENU SETUP: Communication options for both the main and auxiliary ports are easily modified by the operator. Pressing the SETUP key on the keyboard provides a full-screen display of the current settings. To change a value, the operator simply advances the cursor to the chosen field and presses the space bar until the desired value appears. Such communication options as line speed, parity, number of stop bits, word length, and turnaround characters are on the menu, along with the operating options, such as native/emulation modes and character/block modes. All setup data will be retained when power is turned off.

DEFINABLE FUNCTION KEYS: The 24 function keys (F1 through F24) may have data 'defined' to them by either the operator or a host program have data 'defined' to them by either the operator or a host program to assist in entering frequently keyed information. Any function key can be set to a character string, and subsequent pressing of that key will simulate the operator's entering of that character string. Each key may be set to a maximum of 64 characters. The sum of all the key strings may be a maximum of 256 characters. All values are stored in nonvolatile memory, so they are saved when power is turned off.

CHARACTER, FIELD, AND LINE ATTRIBUTES: Attributes that control the visual presentation of characters (color, underline, reverse video,

nondisplay, and blinking) are available. There are three types of attributes: field, character, and line. Field attributes provide control in a manner similar to the 3270 and are available in block mode only. A field attribute occupies a screen and buffer position and affects all characters in a field. Character attributes may be used in both block and character modes. A character attribute does not take up a screen or buffer position, and is in effect for all subsequent characters sent to the display until the next character attribute is sent. Double high/double wide characters are provided via a line attribute, which is in effect for a line of the screen. All of these attributes can be used in combination with color. This allows great variety in the visual presentation of data on the display.

LINE DRAWING CHARACTERS: Twenty-four line drawing characters are available for creating continuous lines on the display. These characters use the entire 8x16 cell of each screen position, and are invoked by host command or operator action. All 24 characters are represented on the numeric keypad for easy access. An example of the use of these characters would be a grid or table that has horizontal and vertical rows or an organization hierarchy with each position contained in a box.

CRT SAVER: A timer is provided that "blanks" or "dims" the display if there has been no keystroke activity or no data transfer from the host for an operator-specified amount of time. During menu setup, the operator may choose this time to be 5, 10, or 15 minutes or "none" (the screen will never dim).

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TERMINAL EMULATION AND COMPATIBILITY: The 3164 emulates the IBM 3101 model 881. It is upward compatible from the 3161 and 3163.

HOST ATTACHMENT: The 3164 attaches to IBM and non-IBM hosts via the main communications port with one of two interfaces. The 3164 model 11 provides an RS-232C interface, while the model 12 has a menu option to select RS-232C or RS-422A. The main communications port has a selectable transmission rate from 50 bps to 19,200 bps, inbound and outbound XON/XOFF pacing, and echo/character/block modes, and

supports 7- or 8- bit word length and none/odd/even/mark/space parity. It allows full and half-duplex communication to a host. The RS-232C communications cable may be up to 40 feet long, and the attachment may be direct or via a modem. The RS-422A interface supports a point-to-point direct coupling with a maximum cable length of 4,000 feet. A multi-function attachment cable is used to attach the 3164 model 12 to the IBM Cabling System.

AUXILIARY PORT: This RS-232C port can be used on the 3164 for attaching another asynchronous ASCII device such as an ASCII printer. The auxiliary port is bidirectional, allowing the attachment of output devices, such as a printer, as well as input devices, such as wands and other ASCII terminals. Transmission rates from 50 bps to 19,200 bps are selectable independent of the main communications port speed settings. An I/O cable is used to attach input/output devices to the 3164.

SMOOTH SCROLLING: This feature allows the terminal to move the data displayed on the CRT smoothly, upward and downward. The data is rolled one picture element at a time, so that the movement looks continuous, rather than "jumping" a line at a time up the screen.

VIEWPORTS, PAGING, AND PARTITIONING: The 3164 has a data buffer that is four times the size of the screen (7,680 characters vs. 1,920 characters). The screen can be divided into three areas or viewports which display a portion of the data buffer. The operator may pan across sections of the data in these screen areas. A more detailed explanation of the terminology and available functions follows:

- o **Horizontal and Vertical Viewports:** Each screen area is called a "viewport" since it displays a "view" into the data buffer. The 3164 viewports may be both horizontal and vertical screen areas. There is a maximum of two adjacent viewports on the screen. Data in the viewports may be viewed by moving vertically and horizontally using the scroll keys. Data in different viewports may be presented in different colors.
- o **Partitioning:** The three screen viewports look into three corresponding areas in the data buffer, called "partitions."

Partitions may not overlap in the data buffer. The sum of the three partitions must be less than or equal to the size of the data buffer (7,680 characters).

- o Paging: Data in a partition may be organized into a maximum of four 'pages.'" This gives the operator the ability to "jump" to four 'pages.'" This gives the operator the ability to "jump" to different sections or pages of the data, which may be formatted differently.

DOUBLE HIGH/DOUBLE WIDE CHARACTERS: A line attribute may be used to control the following characteristics of each line of a screen area or partition: single high/single wide, single high/double wide, double high/single wide, double high/double wide. These characters can be used as another means of highlighting important information. Only viewports that are 80 columns wide may use this feature.

REDEFINABLE KEYBOARD: The following functions are provided for all the single unit keys except the keys in the typewriter input area:

Swap	To exchange the locations of two function keys
Copy	To copy a function from one key to another
Delete	To delete a function from the keyboard
Default	To return the functions of all keys to the default
Check	To check the key function.

BLOCK LRC ERROR CHECK: The 3164 has the ability to generate and check the longitudinal redundancy check character at the end of block mode data transmission. This capability allows increased data integrity for this asynchronous terminal.

HOST-LOADABLE CHARACTER SET: A user may define his own special characters or graphics symbols within the 8 x 16 character cell. Examples of special characters include foreign language letters, mathematical and scientific symbols, and special fonts such as bold and italics. Up to 94 characters may be loaded and accessed. Characters are loaded under program control and accessed for display through programming or operator control. Characters can be displayed in all eight colors.

ADVANCED EDITING FIELD ATTRIBUTES: These attributes are used to reduce user programming and host workload by performing the editing at the terminal.

- o Right Justify with Zero or Blank Fill: When the cursor exits

this field, all data characters are right-justified and the left portion of the field is filled with zeroes or blanks.

- o Must-Enter: This field must be modified before transmission can occur. The terminal performs a test to verify that all must-enter fields have been filled when the operator attempts to send the data to the host.
- o Must-Fill: If this field is modified by the operator, it must be completely filled before the operator can move the cursor out of the field. This feature can be used to edit fixed-length fields at the terminal.
- o Auto-Send: This field is transmitted to the host as soon as the operator modifies it and moves the cursor out of the field.

HOST ACCESS TO THE INDICATOR ROW: A host message may be written to an 80-character terminal buffer. The contents of the message sent from the host to this buffer are displayed in the operator information area (25th row) by operator or host control.

IBM 3161/3163 FEATURE CARTRIDGES

Cartridges are available for the 3161 and 3163 to provide an additional read command. When inserted into the logic element, the cartridge allows the display to handle a 'read unprotected' command in block mode. (This additional read command is available on the 3164 without a cartridge.)

The TeleVideo 950 Emulation cartridge is available on the 3163 and allows the 3163 to emulate the functions of the TeleVideo Model 950.

PUBLICATIONS

3164

- o IBM 3164 ASCII Color Display Station Setup Instructions (GA18-2319)
- o IBM 3164 ASCII Color Display Station Operator Reference and Problem Solving Guide (GA18-2318)
- o IBM 3164 ASCII Color Display Station Description Manual (GA18-2317)
- o Keyboard Overlay (GX18-2143)
 - Feature Cartridges
- o Using the IBM 3163 ASCII Display Station to Emulate the TeleVideo

Model 950 (GA18-2314)

- o How to use the Additional Read Command Cartridge on the IBM 3161/3163 (GA18-2487)

SCHEDULE

General availability of the 3164, the TeleVideo 950 emulation cartridge, and the 3161/3163 Additional Read Command cartridges is planned for February 1986.

TECHNICAL INFORMATION

SPECIFIED OPERATING ENVIRONMENT

SOFTWARE SUPPORT: The 3164 is supported in 3101 emulation mode by IBM hosts that currently support the 3101 model 881 or 230, and in native mode by IBM hosts that support the CPT-TWX 33/35 ASCII protocols.

They are supported by the current levels of DOS/VSE, OS/VSE, MVS/370, Multiple Virtual Storage Extended Architecture (MVS/XA), Virtual Machine/Systems Product (VM/SP), and VM/SP HPO for the System 370, 30XX, and 43XX processors. They are also supported by the current levels of the Series/1 EDX and Realtime Programming System operating systems. In 3164 native mode, the 3164 communicates in an ANSI X3.4 data stream.

SYSTEM ATTACHMENT: The 3164 attaches to hosts via a main communication port that supports RS-232C (model 11) or RS-232C and RS-422A (model 12). This may be a direct host attachment (as on the Series/1) or a TP/modem attachment (as on a dial-up connection to a System/370). As an alternative to a modem attachment, the 3164 may be directly connected to a ROLM CBX (private branch exchange) at speeds up to 9600 bps through one of the following devices (RS-232C interface): Rolmphone DataCom Module (DCM); Data Terminal Interface (DTI); rack-mounted version of the DCM or DTI.

SERIES/1 PROGRAMMING SUPPORT: Series/1 support of the 3164 is provided by the current versions of the following licensed programs in 3101 emulation mode only:

- o Realtime Programming System 7.1
- o Event Driven Executive (EDX) 5.1
- o Communications Facility (CF) 2.1
- o Transaction Processing System 1.1
- o Series/1 Input/Output Executive (IOX) (in conjunction with the

appropriate version of the Realtime Programming System or EDX)

Additionally, the Transaction Processing System Version 1.1 licensed program has support in 3164 native mode as provided for the 3161 and 3163 (see Programming Announcement 285-373) and includes programmable color field attributes.

SERIES/1 ATTACHMENT: The 3164 attaches directly to the IBM Series/1 using either the RS-232C interface or RS-422A interface, or TP attach via modems using the RS-232C interface. The display station attaches to the IBM Series/1 5170 System Unit model 495 six-port terminal/host attachment card using either the RS-232C or RS-422A interface, or to the serial/parallel adapter using the RS-232C interface.

IBM 8100 PROGRAMMING SUPPORT AND ATTACHMENT: IBM 8100 support for the 3164 is provided in 3101 emulation mode by the current versions of the DPCX and DPPX operating systems. For direct connection, the 3-meter (10-foot) modem cable must be used and the 8100 direct connect cable cannot exceed 9.1 meters (30 feet). The 8100 EIA interface has speeds up to 9,600 bps.

IBM 3708/3710: The 3164 can attach to the IBM 3708 Network Conversion Unit or the IBM 3710 Network Controller's 8-Port Communication Adapter and use host applications that support full screen 3270 displays and printers. The 3164 can have an ASCII printer attached and take advantage of the 3708/3710's feature that allows an ASCII display and printer to share a single port on the 3708/3710 and appear to the host as two separate logical units. The 3164 can also attach to an ASCII host processor through a 3708/3710. Selection of an IBM host or an ASCII host is dynamic at sign-on time. The 3708 and 3710 support the 3270 status line, highlighting, and 4-color features. Attachment to a 3708/3710 can be either a direct connection or a TP connection via a non-switched or switched line using an asynchronous modem with an RS-232C interface. For direct or TP connection using the RS-232C interface, the distance between the display terminal and the 3708/3710 can be up to 15 meters.

IBM 7171: The 3164 can attach to the IBM 7171 ASCII Device Control Unit and use host applications that support full screen 3270 displays.

IBM RT PERSONAL COMPUTER: The IBM 316X displays can attach to the RT Personal Computer and use host applications that support the IBM 3161

level of function. For more details see Product Announcement 186-006, dated January 21, 1986.

X.28: The 3164 may be attached to packet switched networks through the PAD complying with the CCITT recommendation X.28 via DCEs with a CCITT X.20bis interface.

PRINTERS: The 3164 has an auxiliary port that can connect an ASCII printer over an RS-232C direct connection using an I/O cable. A print key allows local printing of the screen, while software commands allow remote printing from a host. For example, the IBM 4201 Proprinter may attach via its serial interface to the 3164 for direct printing of text-oriented screens (or graphics and text via host programming).

IBM 3101 COMPATIBILITY AND MIGRATION: The 3164, when operating in 3101 emulation mode, will accept and generate 3101 model 881 data streams. There are two methods of placing the 3164 into 3101 emulation mode. The operator may select the 3101 operating mode during menu setup, or a suitably programmed host may send a '3101 mode' command to the 3164. The terminal may then be used as a 3101 model 881 or earlier 3101 model (110, 130, 210, or 230).

There are some operational differences in terms of the screen management facilities. Protect and intensity attributes default to four colors. The new keyboard has some differences in key nomenclature and key positions. The operator may receive new or different messages. The IBM 3164 ASCII Color Display Station Description Manual (GA18-2317) documents these differences. It is recommended that current 3101 users refer to this manual for migration planning. Also, see "Limitations" below.

3161/3163 COMPATIBILITY AND MIGRATION: The 3164 is fully compatible with the 3163 and will run 3163 programs unchanged. These programs will cause the display to default to four colors based on attributes.

The 3164 is upward compatible from the 3161 and will run 3161 programs unchanged when field and characters attributes are not combined on the screen. 3161 programs also cause the display to default to four colors based on attributes.

SECURITY, AUDITABILITY, AND CONTROL

Data security is assisted via a non-display field control. User management is responsible for evaluation, selection, and implementation of the security features, for administrative procedures, and for appropriate controls in application systems. If sensitive data is sent over external communication facilities, user management may wish to pursue the application of cryptography. For more information on data security controls, see Data Security Controls and Procedures (G320-5649).

PLANNING INFORMATION

CUSTOMER RESPONSIBILITY: Customers are responsible for all modifications they make to the 3164 keyboard. They are also responsible for handling any necessary keyboard changes in the event of a maintenance action. This means that the customer should remove and save all special keycaps prior to submitting a keyboard to IBM for exchange. The keyboard IBM returns to the customer will have a standard key layout, which may then be modified by the customer using the same or different keycaps.

PHYSICAL PLANNING: See the IBM 3164 Display Station Description Manual (GA18-2317) for detailed physical planning information.

POWER RATING AND LINE CORD: Power - 120 V AC, one-phase, three-wire. Line cord - A 2.8-meter (9-foot) line cord with nonlocking plug is standard. A 1.8-meter (6-foot) line cord with nonlocking plug is available.

LIMITATIONS: When using 3101 emulation on the 3164 or when using TeleVideo 950 emulation on the 3163, many of the unique functions of the native display are not available. You may use only those functions that the emulated device accepts. For example the 3101 has eight program function keys. When using the 3164 in 3101 emulation mode, only F1 through F8 are available on the 3164; F9 through F24 are disabled.

Refer to Using the IBM 3163 ASCII Display Station to Emulate the TeleVideo Model 950 (GA18-2314) for specific operational differences and limitations on the TeleVideo emulation.

PREREQUISITES: The 3164 must be attached to a host that supports the asynchronous ASCII/ISO communications protocol over RS-232C or RS-422A direct connection, or over a telecommunications line through

asynchronous modems.

PERFORMANCE: Performance is influenced by a wide variety of factors, many of which are not under IBM's control. However, the 3164 does offer some performance advantages. It has a high-speed I/O communications port that can communicate at speeds up to 19.2K bps. In comparison, the 3101's maximum communication speed is 9.6K bps. The 7,680-byte buffer in the 3164 allows data to be sent in large "blocks" and then paged through by the user. This could reduce the number of I/Os executed by the host, allowing it to perform better, and could also give the user better response time since the data is already in the terminal.

CHARGES, TERMS, AND CONDITIONS

TERMS AND CONDITIONS

CUSTOMER SETUP: The 3164 is a customer setup (CSU) machine. The customer setup allowance is one day. A copy of the IBM 3164 Setup Instruction (GA18-2319) which contains detailed CSU information will be shipped with each display station.

ELIGIBLE MACHINE UNDER ALTERNATIVE CERTIFICATION FOR IBM MACHINES:

Yes.

EDUCATIONAL ALLOWANCE: Yes. 20% for qualifying institutions. This

allowance is not additive to any other allowance or discount.

MACHINE GROUP: A

IBM HOURLY SERVICE RATE CLASSIFICATION: 1

WARRANTY PERIOD: Three months.

TYPES OF SERVICE:

- o Warranty
 - Customer Carry-in Exchange (CCE)
- o Warranty Option
 - IBM On-site Exchange (IOE)
 - Customer On-site Exchange (COE)
- o Maintenance Agreement
 - IBM On-site Exchange (IOE)
 - Customer On-site Exchange (COE)
 - Customer Carry-in Exchange (CCE)
 - Customer Carry-in Repair (CCR)

CSU/CPAR TELEPHONE ASSISTANCE: For customers who are under warranty or maintenance agreements, customer setup (CSU) and customer problem analysis and resolution (CPAR) procedure assistance are available. If the customer has difficulty in completing the CSU or CPAR procedures, the customer may call the Service/Exchange Communication Center (S/ECC), toll-free, on (800) 428-2569 and request assistance in completing the CSU or CPAR procedures. The customer will receive a return telephone call to aid him in completing the procedures.

IBM HOURLY SERVICE: If desired, IBM repairs or exchanges defective 3164 elements on an IBM hourly service basis. The same procedure as for the Customer Carry-In Repair offering must be followed. The IBM hourly service rate classification applies.

ON-SITE ASSISTANCE: If a customer desires on-site assistance to perform CSU or CPAR procedures, the customer may call the Service/Exchange Communication Center on the toll-free number. IBM will assist the customer in performing on-site CSU or CPAR procedures using the same documentation that is available to the customer. All on-site assistance is provided on an IBM hourly service basis at the applicable hourly rates and terms.

VOLUME PROCUREMENT AMENDMENT (VPA): The 3164 is available under Category I of the Information Display Station VPA Exhibit and may be aggregated with and substituted for 3161s and 3163s. See your IBM marketing representative for details.

FINANCING: IBM Credit Corporation term lease and installment payment plans are available.

CHARGES

	Purchase	Minimum Warranty	
		IOE	COE
Model	Price	(#9799)	(#9826)
3164 ASCII Color Display Station			
RS-232C interface	110	\$1,295	\$85
RS-232C/ RS-422A interface	120	1,374	85

Annual Minimum Maintenance Charges

		IOE	COE	CCE	CCR
	Model	(#9830)	(#9824)	(#9816)	(#9821)
3164	110	\$95	\$65	\$60	\$55
3164	120	95	65	60	55

Machine Element Charges

	Part	Purchase
3164 Machine Elements	Number	Price
Video	6405301	\$680
Keyboard	1386304	200
Logic (Model 11)	6113004	355
Logic (Model 12)	6113005	434
Pedestal	6165550	20
Line Cord - 2.8m (9.0 ft)	6952297	10
Line Cord - 1.8m (6.0 ft)	6952298	10
Video Cable	6405213	30
3163 Machine Elements		
Cartridge (TeleVideo 950)	6113021(1)	\$35
Cartridge (Additional Read Command)	6456333(2)	15
(1) Also available via #8953 when ordered with 3163		
(2) Also available via #8003 when ordered with 3163		
3161 Machine Element		
Cartridge (Additional Read Command)	6456332(3)	\$15
(3) Also available via #8001 when ordered with 3161		

Supplies

	Part	Purchase
	Number	Price
Clear Keycaps (60) with Paper Inserts	6341707	\$50
Blank Light Keycaps (60)	1351710	25
Blank Dark Keycaps (60)	1351728	25
Paper Inserts (300)	6341704	30
Keycap Removal Tools (6)	1351717	11
Modem Cable	6343332	66
I/O Cable	6343373	66

Multi-Function Attachment

Cable 8310553 76

Keycaps and Paper Inserts include a removal tool.

Notice to IBM Customers

February 7, 1986

VOLUME PROCUREMENT AMENDMENT EXHIBIT FOR INFORMATION DISPLAY SYSTEM
REVISED

Today, IBM announced the new IBM 3164 ASCII Color Display Station. The Information Display Systems Exhibit used with your Volume Procurement Amendment (VPA) has been revised to include this new product in Category I, effective immediately.

For customers with VPA Exhibit No.3270-14 in effect, it is automatically superseded by the attached VPA Exhibit No. 3270-15. You should refer to this revised Exhibit when placing orders for the Category I machines under your VPA.

For customers with Exhibit No. 3270-13 or 3270-12 in effect with commitments to quantities in Category I, the 3164 ASCII Color Display Station will be deemed to be included in Category I.

For customers with an existing VPA Exhibit No. 3270-12 or later, you may order the IBM 3164 ASCII Color Display Station either as additional quantities to, or as direct substitutes for, the other machines listed in Category I, subject to availability.

Customers with VPA Exhibit No.3270-11 or prior in effect are not affected by this announcement. The revised Exhibit is for your information purposes only.

If sufficient additional quantities are ordered to qualify for a higher discount, a Supplement for Additional Quantities must be signed, and all machines shipped on and after the date it is received by IBM, and prior to expiration of the contract period, will receive the higher discount.

If you have any questions regarding this notification, please contact your IBM marketing representative.