

[Offering Information](#) > [Announcement Letters](#) >

**IBM 3162 ASCII DISPLAY STATION
NEW NON-IBM EMULATION CARTRIDGES
NEW 3163/3164 ALA MODELS
IBM 3161, 3163, AND 3164 FUNCTIONAL
ENHANCEMENT CARTRIDGES**

Contents

[Announcement Letter Number 186-167 dated September 2, 1986](#)

[US - Last Revised on September 2, 1986](#)

Brief Description of Announcement, Charges, and Availability

The 3162 ASCII Display Station with a new, ergonomically designed, 14-inch, 132-character, green or amber-gold display, has the same low profile ASCII keyboard as the 3161, 3163, and 3164 displays. An optional space-saving shorter keyboard is also available. The compact logic unit has resident IBM 3101 and 3161 compatibility and accommodates the new cartridges that emulate DEC VT220/100/52 (1), WYSE 50/50+ (2), Televideo 925/925E (3), and other non-IBM terminals. The 3162 has a three-year warranty. The new 3163/3164 Models 860 and 861 are American Library Association (ALA) models that adapt the 3163 and 3164 to library environments (U.S. English only). The 3161/3162 Conversion Cartridges enhance the usability of the 3161/3162 when attached to a protocol converter (3708/3710).

| Type | Model | Purchase Price | Planned Availability Date |
|------|-------|----------------|---------------------------|
| 3162 | 110 | \$ 645 | October 1986 |
| 3162 | 120 | 724 | October 1986 |
| 3162 | 210 | 645 | First quarter 1987 |
| 3162 | 220 | 724 | First quarter 1987 |
| 3162 | 310 | 645 | October 1986 |
| 3162 | 320 | 724 | October 1986 |
| 3162 | 410 | 645 | First quarter 1987 |

| | | | |
|------|-----|-------|--------------------|
| 3162 | 420 | 724 | First quarter 1987 |
| 3163 | 860 | 976 | September 1986 |
| 3163 | 861 | 985 | November 1986 |
| 3164 | 860 | 1,376 | September 1986 |
| 3164 | 861 | 1,385 | November 1986 |

(1) Registered trademark of the Digital Equipment Corp.
(2) Registered trademark of Wyse Technology Inc.
(3) Registered trademark of TeleVideo Systems Inc.

Customer Letter Section

HIGHLIGHTS

For the 3162:

- o Improved Ergonomics
 - Tilt/swivel display
 - Etched/dark screen to reduce glare
 - Brightness/contrast controls
 - Reduced footprint
- o Screen Characteristics
 - 25/29 lines X 80/132 characters
 - 9 X 15 character matrix (25 column mode), 9 X 13 character matrix (29 column mode)
 - 14-inch green or amber-gold phosphor
 - Reverse video, blinking, underline, dual intensity, and nondisplay attributes
 - Screen reverse video
- o 316X Family Keyboard
 - Designed for ASCII
 - Tactile feedback
 - Low profile
 - 12 function keys (shiftable to 24) and three (PA) keys
 - Numeric keypad
 - Optional shorter keyboard (without numeric keypad)
 - Recappable keycaps
- o Enhanced Functions
 - Extended menu set-up

- Definable function keys
- Attributes in character and block mode
- Line drawing characters
- Split screen
- CRT saver
- Smooth scroll (2 speeds)
- 3161 compatible data stream
- o Communications
 - Selectable speeds to 19.2K bps
 - 7/8 bits option
 - Xon/Xoff
 - RS-232C auxiliary port
 - Main port RS-422A/RS-232C
- o Variety of Emulations
 - 3101
 - DEC VT220/100/52
 - DEC VT220/100/52 with Protocol Conversion Enhancements
 - TVI 925/925E/910/910+/912/920; HZ 1500; ADDS VP A2;
LEAR-SIEGLER ADM3A/5; WYSE 50/50+

For the 3161, 3163, 3164:
- o Special Applications
 - 3163/3164 American Library Association Models
 - 3161 Protocol Conversion Cartridge

DESCRIPTION

3162 ASCII DISPLAY STATION

The 3162 is a general purpose ASCII display that provides a wide range of functions and communication codes. It is composed of a high-quality, 14-inch monochrome display available in green or amber-gold phosphor. A 102-key low-profile 316X family keyboard designed for use with ASCII systems and an optional space-saving shorter keyboard are also available. The slim logic unit will accommodate an optional cartridge.

The 3162 is designed to attach to both IBM and non-IBM systems. For IBM systems, 3101 and 3161 compatibility and 3162 native mode is resident in the 3162 base logic. For non-IBM systems emulation cartridges are available to emulate OEM terminals.

The 3162 is a high-function ASCII display that offers such

functions as extended menu set-up, definable function keys, split screen plus character and field attributes. The display provides brightness and contrast control knobs on a green or amber-gold phosphor, anti-glare screen that is 25/29 lines by 80/132 characters wide; (the 25th/29th line is an indicator row). The keyboard layout is compatible with many ASCII display keyboards and is attached to the logic unit via a coiled cable. The keyboard provides tactile feedback to the operator, selectable tilt angle and a numeric keypad. The logic element provides multiple options for communication, such as line speed, XON/XOFF, and operating modes. The operator may select 3162 native mode or 3101 mode or when a cartridge is inserted, one of the non-IBM emulator modes may be selected. A bidirectional auxiliary port permits attachment of an ASCII printer.

The 3162 also offers sophisticated features, such as smooth scroll (two speeds) and split screen.

3162 MODELS: The 3162 is offered in eight models as follows:

| Model | Interface | | Keyboard | | Monitor | |
|-------|-----------|---------|----------|-------|---------|------------|
| | RS-232C | RS-422A | Std | Short | Green | Amber-Gold |
| 110 | X | - | X | - | X | - |
| 120 | X | X | X | - | X | - |
| 210 | X | - | X | - | - | X |
| 220 | X | X | X | - | - | X |
| 310 | X | - | - | X | X | - |
| 320 | X | X | - | X | X | - |
| 410 | X | - | - | X | - | X |
| 420 | X | X | - | X | - | X |

3162 DISPLAY FUNCTIONS:

- o EXTENDED MENU SET-UP: Communication options for both the main and auxiliary ports are easily modified by the operator. Pressing the set-up key on the keyboard provides a menu 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. Various menus allow the operator to change such communication options as the line speed, parity, number of stop bits, word length, and turnaround characters on the menu, along with the operating options, such as native/emulation modes and character/block modes. All set-up data will be retained when

power is turned off.

- o DEFINABLE FUNCTION KEYS: The 24 function keys (F1 through F24) may have data 'defined' to them by either the operator or a host may 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. One hundred twenty-eight characters of data are stored in nonvolatile memory, so they are saved when power is turned off.
- o CHARACTER AND BLOCK MODE ATTRIBUTES: Attributes that control the visual presentation of characters (underline, reverse video, nondisplay, blinking, and dual intensity) are available. There are two types of attributes: field and character. Field attributes provide control in a manner similar to the 3270. 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.
- o LINE DRAWING CHARACTERS: Twenty-four line drawing characters are available for creating continuous lines on the display. These characters use the entire 9X15 or 9X13 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.
- o 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 set-up, the operator may choose this time to be 15 minutes or 'none.' If "none" is chosen, the screen will not dim.
- o 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 set-up, the operator may choose this time to be 15 minutes or 'none.' If "none" is chosen, the screen will not dim.
- o TERMINAL EMULATION: The 3162 provides for a wide range of

emulations of competitive terminals as well as of the 3101 and 3161 data stream. Switching between 3101 and the native 3162 mode is accomplished via menu set-up or host software.

- o SPLIT SCREEN: The 3162 supports the ability of a host program to divide the screen into three horizontal screen areas or 'viewports.' The host program may define the height of each area and send data to and receive data from each of them. The operator has the capability of remaining within the current viewport set by the host program or 'jumping' to the next one. A possible use of the split-screen facility would be the creation of a master program that assigns each viewport to a different application for the operator. Split-screen capability is available in both 80 column and 132 column modes.

- o SMOOTH SCROLLING: This feature allows the terminal to move smoothly, upward and downward with the data displayed on the cathode ray tube (CRT). 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. Two speeds are available.

- o RECAPPABLE KEYBOARDS: Single-unit keys may be recapped by the user. Blank and clear key caps may be ordered as accessories. For example, the recapping of the keyboard enhances the DEC VT220 emulation; the key caps with DEC nomenclature are shipped with the emulation cartridge.

- o HOST ACCESS TO THE INDICATOR ROW: A host message may be written to the terminal buffer. The contents of the message sent from the host to this buffer are displayed in the operator information area (25th/29th row) by operator or host control.

- o HOST ATTACHMENT: The 3162 attaches to a wide variety of IBM and non-IBM hosts via the main communications port with one of two interfaces. The 3162 provides 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

pacing, echo/character/block modes, and supports 7- or 8-bit word length and non/odd/even/mark and space for 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-422 interface supports a point-to-point direct coupling with a maximum cable length of 4,000 feet.

- o AUXILIARY PORT: This RS-232C port can be used on the 3162 for attaching another asynchronous ASCII device such as an ASCII printer. On the 3162 the auxiliary port is enhanced with a bidirectional capability. This allows 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.

SYSTEM 88 ATTACHMENT: The 3162 ASCII Display Stations attach to the System/88 using the RS-232C interface. The display stations attach to the 4575 Model 20 and 4576 Models 40 and 60 processors via the Direct Connect Line Adapter (#1202) or Full Modem Line Adapter (#1201) on the System/88.

System/88 programming support for the 3162 is provided in (80 column) character mode by the current versions of the following licensed programs:

- o System/88 Operating System
- o System/88 3270 Emulation
- o System/88 Transaction Processing
- o System/88 high-level languages (COBOL, FORTRAN, PL/I, Pascal, BASIC)

PRINTERS: The 3162 has an auxiliary port that can connect an ASCII printer over an RS-232C direct connection. A print key allows local printing of the screen, while software commands allow remote printing from a host. The IBM 4201 Proprinter may attach via its serial interface to the 3162 for direct printing of text-oriented screens (or graphics and text via host programming).

IBM 3101 COMPATIBILITY AND MIGRATION: The 3162, when operating in 3101 emulation mode, will accept and generate 3101 Model 881 datastreams.

There are some operational differences in terms of the screen management facilities. The new keyboard has some differences in key nomenclature and key positions. The operator may receive new or different messages. The IBM 3162 ASCII Display Station Description Manual (GA18-2310) documents these differences. It is recommended that current 3101 users refer to this manual for migration planning. Also, see the Limitations section.

CARTRIDGE DESCRIPTIONS

The emulation cartridges are available as features on the 316X or can be ordered separately by part number.

| | Feature Number | Part Number |
|-------------------------|-------------------|----------------|
| 3162 Cartridges | | |
| VT220/100/52 Emulation | #8222 | 65X0016 |
| VT220 with Hot Key/3708 | #8232 | 65X0319 |
| 10 ASCII Emulations | #8922 | 65X0089 |
| WYSE Emulations | #8502 | 65X0090 |

3163/3164 Cartridges

| | | |
|-------------------------|-----|---------|
| ALA Model 860 Cartridge | N/A | 6051947 |
| ALA Model 861 Cartridge | N/A | 65X3303 |

3161 Cartridge

| | | |
|--------------------------|-------|---------|
| Enhanced 3708 Attachment | #8371 | 65X3317 |
|--------------------------|-------|---------|

DEC VT220/100/52: The 3162 can emulate the DEC VT220/100/52. This is accomplished by inserting the emulation cartridge into the logic element and operating the 3162 using the program stored on the cartridge.

This 3162 cartridge supports the DEC VT220 features with the following additional functions:

- o EIA RS-422 interface for the main port (depending on machine model)
- o Large-screen support (28 lines of 132 characters). A screen format from a set-up menu or by host command can be selected.
- o Operator information area
- o Break signal with two selectable lengths
- o Keyboard functions

The following are not supported in emulation mode:

- o Changeable power supply voltage

- o Keyclick
- o 20 mA current loop communication interface
- o Speed indicator (pin 12) and speed select (pin 23) on the main port connector (EIA RS-232C interface)
- o Video signal output port

The DEC emulation cartridge requires the standard keyboard.

THE 10 ASCII EMULATIONS CARTRIDGE: This cartridge provides emulation of the following products:

- o TeleVideo 925/925E/912/920/910/910+ (3)
- o ADM 3A/5 (4)
- o ADDS Viewpoint A2 (5)
- o Hazeltine 1500 (6)

In addition, the following capabilities are available on these cartridges:

- RS-422A adjustable audible alarm
- Large screen
- Smooth scroll (2 speeds)
- CRT saver on/off
- High intensity visual attribute
- Friendly 'define function key"
- Friendly 'define function key"
- Alternate cursor key
- Operator information area
- Message key to display/remove the operator information area

THE WYSE EMULATIONS CARTRIDGE: This cartridge provides emulation of the following:

- o WYSE 50/50+ (without multipages)
- o TeleVideo 925/925E/912/920/910/910+
- o ADM 3A/5
- o ADDS Viewpoint A2
- o Hazeltine 1500

(4) Registered trademark of Lear Siegler, Inc.

(5) Registered trademark of Applied Digital Data Systems, Inc.

(6) Registered trademark of Hazeltine Corp.

VT220 WITH HOT KEY/3708 CARTRIDGE: This cartridge includes the same DEC emulation capabilities as the DEC Emulation Cartridge. In addition, it provides the following:

- o Allows transfer between DEC mode and protocol convertor mode.
- o Enhancements for the attachment to protocol converters (that is, 3708/3710).

Additional information about operation and connectivity will be available from IBM marketing representatives at general availability in November 1986.

ENHANCED 3708 ATTACHMENT: This cartridge enhances the useability of the 3161 when attached to a protocol converter (3708/3710). These enhanced functions are: reset key, send/return key, F13-24, host and local prints, and 25th line access.

NEW 3163 AND 3164 AMERICAN LIBRARY ASSOCIATION (ALA) MODELS

Two new cartridges and a new keyboard have been developed for use with either the 3163 or 3164 which enable the user to input, display, and print all characters contained in the extended ALA character set. The new ALA keyboard contains all diacritic characters on one keyboard in standard lower/upper case positions. Special characters (including superscripts and subscripts) are accessed via an alternate character shift key which automatically reverts to standard character set after one keystroke. The cartridges plug into the 3163/3164 logic unit. The cartridges provide two different methods of diacritic/alpha character display.

The Model 860 provides ALA character support by displaying each diacritic, alpha, or special character in an individual space on the display screen. Diacritics precede the alpha character they modify. The Model 860 includes the new ALA keyboard. Local printer support is provided by the IBM 4201 Proprinter or IBM 4202 Proprinter/XL. When used in conjunction with the Model 860 cartridge, the 4201 or 4202 combines all side-by-side diacritic/alpha combinations and prints them in a single space. The 3164 (color) and 3163 (mono-green only) are available.

The Model 861 provides the ability to display all diacritic/alpha combinations used in 25 languages in a single display position. Combinations in other languages are displayed side-by-side. The Model 861 includes the new ALA keyboard. Printer support is provided by the 4201 or 4202 with the same ability to combine characters. The 3164 (color) and 3163 (mono-green only) are

available.

The ALA cartridges and keyboard are included in the shipment group of new equipment orders for ALA machines or the cartridges can be ordered separately by part number.

PUBLICATIONS

The following publications are available. Additional copies will be available for a fee. To order, contact your IBM marketing representative. The User's Guide is shipped with the 3162.

- o 3162 User's Guide (GA18-2493)
- o Problem Solving Guide (GA18-2494)
- o Programmer's Guide (GA18-2495)
- o VT-220 Emulation (GA18-2496)
- o 10 ASCII Emulations (GA18-2554)
- o WYSE Emulations (GA18-2593)
- o VT220 with Hot Key/3708 (GA18-2621)
- o 3161 Enhanced 3708 Attachment (GA18-2595)
- o ALA User's Guide (GA18-2563)
- o Repair Center Maintenance (SY18-2163)

SCHEDULE

Planned general availability is as follows:

Machine

| Type | Model | Date |
|------|-------|--------------------|
| 3162 | 110 | October 1986 |
| 3162 | 120 | October 1986 |
| 3162 | 210 | First quarter 1987 |
| 3162 | 220 | First quarter 1987 |
| 3162 | 310 | October 1986 |
| 3162 | 320 | October 1986 |
| 3162 | 410 | First quarter 1987 |
| 3162 | 420 | First quarter 1987 |
| 3163 | 860 | September 1986 |
| 3163 | 861 | November 1986 |
| 3164 | 860 | September 1986 |
| 3164 | 861 | November 1986 |

Cartridge Planned Availability:

| | |
|---------------------|--------------|
| DEC VT220/100/52 | October 1986 |
| 10 ASCII Emulations | October 1986 |

WYSE Emulations November 1986

Enhanced 3708 Attachment October 1986

VT220 with Hot Key/3708 November 1986

INSTALLATION INFORMATION

SPECIFIED OPERATING ENVIRONMENT

4361 PROCESSOR: The 3162 ASCII Display Station may be attached to a 4361 Processor via the 4361 EIA/CCITT Interface (#3701) and Line Attachment Base for Non-Clocked Modems (#4696). It operates at speeds up to 2,400 bps, in 3101 mode and in 3162 native mode. The attachment must be via the RS-232C (CCITT V.24.28) interface, via an asynchronous modem with switched or non-switched telephone line or via direct attachment at a distance up to 12 meters (40 feet).

SOFTWARE SUPPORT: The 3162 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/VS1. MVS/370, Multiple Virtual Storage Extended Architecture (MVS/XA), Virtual Machine/System Product (VM/SP), and VM/SP High Performance Option (HPO) for the System/370, 30XX, and 43XX processors. They are also supported by the current levels of Series/1 Event Driven Executive (EDX) and realtime programming system operating systems.

SYSTEM ATTACHMENT: The 3162 attaches to hosts via a main communication port that supports RS-232C and RS-422A. This may be a direct host attachment (as on 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 3162 may be directly connected to a ROLM CBX (private branch exchange) at speeds up to 19.2K 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 ATTACHMENT: The 3162 ASCII Display Station 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's 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.

Series/1 programming support of the 3162 is provided by the current versions of the following licensed programs in 3101 and 3161 emulation modes:

- o Realtime Programming System 7.2
- o Event Driven Executive (EDX) 5.2
- o Communications Facility (CF) 2.1 (3101 mode only)
- o Transaction Processing System 1.2
- o Series/1 Input/Output Executive 1.1 (in conjunction with the appropriate version of the Realtime Programming System or EDX).

IBM 8100 PROGRAMMING SUPPORT AND ATTACHMENT: IBM 8100 support for the 3162 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 interface has speeds up to 9,600 bps.

3708/3710: The 3162 can be attached to the IBM 3708 Network Conversion Unit or to the IBM 3710 Network Controller's 8-Port Communication Adapter and use host applications that support full-screen 3270 displays and printers. The 3162 can have an ASCII printer attached. The 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 EIA RS-232C interface, the distance between the display terminal and the 3708/3710 can be up to 15 meters.

7171: The 3162 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 3162 Display can attach to the IBM RT Personal Computer and use host applications (in 80-column mode) that support the IBM 3161 level of function.

X.28: The 3162 may be attached to the packet switched networks through the PAD complying with the CCITT recommendation X.28 via DCEs with CCITT X.20 bis interface.

PREREQUISITES: The 3162 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.

LIMITATIONS: See the emulation cartridge publications for specific operational differences and limitations on TeleVideo and ASCII emulations.

PLANNING INFORMATION

PHYSICAL PLANNING: See the IBM 3162 Display Station User's Guide (GA18-2493) for detailed physical planning information.

POWER RATING AND LINE CORD: Power - 120V 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.

SECURITY, AUDITABILITY, AND CONTROL

Data security is assisted via a non-display field control.

User management is responsible for evaluation, selection, and implementation of 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).

TERMS, CONDITIONS, AND CHARGES

TERMS AND CONDITIONS FOR 3162, 3163, 3164

PRODUCT AVAILABILITY STATUS: New product available.

ELIGIBLE MACHINE UNDER ALTERNATIVE CERTIFICATION FOR IBM MACHINES: No.

CUSTOMER SET-UP (CSU): Yes, the CSU allowance is one day.

VOLUME PROCUREMENT AMENDMENT (VPA): Volume purchasing is available under Discount Group 5, Category A, of the IBM Workstations VPA Exhibit 32WS and may be aggregated with workstations to receive discounts. The 3162 is also available under Category I of the Information Display System VPA Exhibit 3270 for existing VPAs. See your IBM marketing representative for details.

EDUCATIONAL ALLOWANCE: A 20% educational allowance is available to qualifying institutions in accordance with the Educational Allowance Amendment. The educational allowance is not additive to any other discount or allowance.

WARRANTY PERIOD: 3 years. Three-month Customer Carry-In Exchange

warranties are available. See Charges below.

TYPES OF SERVICE:

- o Warranty
 - Customer Carry-In Exchange (CCE)
- o Warranty Option
 - IBM On-Site Exchange (IOE)
- o IBM Maintenance Agreement
 - IBM On-Site Exchange (IOE)
 - Customer Carry-In Exchange CCE)

TELEPHONE ASSISTANCE: For customers with 3162s under warranty or the IBM Maintenance Agreement, customer set-up 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, toll-free, at (800) 428-2569 and request assistance in completing the CSU or CPAR procedures. The customer will receive a return telephone call to aid in completing the procedures.

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.

IBM HOURLY SERVICE RATE CLASSIFICATION: 1

MACHINE GROUP: A

IBM CREDIT CORPORATION FINANCING: Term leases and installment payment plans are available.

CHARGES

| | | Purchase | Minimum | | | |
|-------|----------|----------|----------|-------------|---------|--|
| | | Price of | Warranty | | | |
| | | 3-Month | Option | Annual | Minimum | |
| | Purchase | Warranty | Charge | Maintenance | Charge | |
| Model | Price | Model | IOE | IOE | CCE | |
| | | | (#9876) | (#9830) | (#9816) | |

3162 ASCII

| | | | | | | |
|-----------------|-----|-------|-------|------|------|------|
| Display Station | 110 | \$645 | \$610 | \$45 | \$35 | \$20 |
|-----------------|-----|-------|-------|------|------|------|

| | | | | | |
|-----|-----|-----|----|----|----|
| 120 | 724 | 689 | 45 | 35 | 20 |
| 210 | 645 | 610 | 45 | 35 | 20 |
| 220 | 724 | 689 | 45 | 35 | 20 |
| 310 | 645 | 610 | 45 | 35 | 20 |
| 320 | 724 | 689 | 45 | 35 | 20 |
| 410 | 645 | 610 | 45 | 35 | 20 |
| 420 | 724 | 689 | 45 | 35 | 20 |

3163 ASCII

| | | | | | | |
|-----------------|-----|-----|-----|----|----|----|
| Display Station | 860 | 976 | 926 | 60 | 45 | 25 |
| | 861 | 985 | 935 | 60 | 45 | 25 |

3164 ASCII

| | | | | | | |
|-----------------|-----|-------|-------|----|----|----|
| Display Station | 860 | 1,376 | 1,316 | 75 | 50 | 30 |
| | 861 | 1,385 | 1,325 | 75 | 50 | 30 |

| Feature Cartridge | Feature Number | Purchase Price |
|-------------------|----------------|----------------|
|-------------------|----------------|----------------|

For 3162

| | | |
|-------------------------------------|------|------|
| DEC VT220/100/52 Emulation** | 8222 | \$50 |
| VT220/100/52 with Hot Key/3708** | 8232 | 60 |
| 10 ASCII Emulations | 8922 | 50 |
| WYSE Emulations | 8502 | 50 |

For 3161

| | | |
|--------------------------|------|----|
| Enhanced 3708 Attachment | 8371 | 40 |
|--------------------------|------|----|

** For 3162 Models 110, 120, 210, 220 only.

3162 MACHINE ELEMENTS

| To Fit Model | Machine Element | Part Number | Purchase Price |
|-----------------|-------------------------------|-------------|----------------|
| 110,120,310,320 | Video (green) | 65X0103 | \$290 |
| 210,220,410,420 | Video (amber) | 65X0120 | 290 |
| 110,210,310,410 | Logic | 65X0000 | 165 |
| 120,220,320,420 | Logic | 65X0001 | 244 |
| 110,120,210,220 | Keyboard-US English (long) | 1390670 | 180 |
| 310,320,410,420 | Keyboard-US English (short) | 1391518 | 180 |
| All | Power Cord-2.8 m. (9 ft.) | 6952297 | 10 |
| ALL | Power Cord-6 ft. | 6952298 | 10 |
| 110,120,210,220 | Cartridge-VT220/100/52 | 65X0016 | 50 |
| All | Cartridge-10 ASCII Emulations | 65X0089 | 50 |

| | | | |
|-----------------|--------------------------------|---------|----|
| All | Cartridge-WYSE Emulations | 65X0090 | 50 |
| 110,120,210,220 | Cartridge VT220 w/Hot Key/3708 | 65X0319 | 60 |
| 3161 | Enhanced 3708 Attachment | 65X3317 | 40 |

Note: Machine element exchange prices are the same as machine element prices.

3162 ACCESSORIES

Order via 1-800-IBM-2468, using the part number.

| Description | Part Number | Purchase Price |
|--|-------------|----------------|
| Blank Keycaps-light-(60 caps) and keycap removal tool | 1351710 | \$25 |
| Blank Keycaps-dark-(60 caps) and keycap removal tool | 1351728 | 25 |
| Clear lens caps-with paper inserts (60 light and 60 dark) and removal tool | 6341707 | 50 |
| Keycap removal tool (6 tools) | 1351717 | 11 |
| Paper inserts for clear lens keycaps (150 light and 150 dark) | 6341704 | 30 |
| Modem Cable** -inch screws | 6343332 | 66 |
| I/O Cable | 6343373 | 66 |
| Multifunction attachment cable | 8310553 | 76 |
| 1.8-meter (6 ft) power cord | 6952298 | 10 |

** For connection to IBM 5841 modem or PTT modem, the modem cable equivalent must be used.

Notice to IBM Customers

September 2, 1986

VOLUME PROCUREMENT AMENDMENT (VPA) PROVISIONS FOR IBM 3162 ASCII DISPLAY STATION

Today, IBM announced the 3162 ASCII Display Station.

All models of the 3162 are eligible under Category A, Discount Group 5, of the revised IBM Workstations Volume Procurement Amendment Exhibit (32WS-9). The revised VPA Exhibit applies automatically to customers with VPAs for 316X displays in effect with a commitment in Category A.

Those customers currently having a Information Display System VPA Exhibit (3270) in effect may purchase the 3162 under the Category

I and receive the applicable discount.

For further information, please contact your IBM marketing representative.
