PRELIMINARY

APPLICON

4635B GRAPHICS TERMINAL USER'S GUIDE

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APPLICON 4635B GRAPHICS TERMINAL USER'S GUIDE
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PRELIMINARY

CHAPTER 1. INTRODUCTION

1.1 PURPOSE

This manual contains the information necessary for you to install and operate the Applicon 4635B Graphics Terminal.

1.2 CONTENTS

For ease of reference, the manual is divided into four chapters and two appendixes as follows:

Chapter 1 -- Introduction

Describes the manual and the 4635B terminal.

Chapter 2 -- System Operation

Identifies switches, connections, controls and indicators with a functional description of each.

Chapter 3 -- Installation and Power-Up

Provides installation and power-up procedures.

Chapter 4 -- Terminal Emulation Mode

Describes how the 4635B emulates the operations of the (Digital Equipment Corporation) VT220.

Appendix A -- Standard 4635B Terminal Installation Procedure

Describes the procedure to do a standard 4635B Terminal software installation.

Appendix B -- 4635B Terminal Installation From the Editor Maintenance Tape

Describes the procedure to install 4635B Terminal software from the Applicon Editor Tape

1.1 GRAPHICS TERMINAL 4635B OVERVIEW

The Graphics Terminal 4635B (GT4635B), shown in Figure 1-1, is a command entry and graphics editing terminal for use with Applicon VAX-based systems. The 4635B is an ideal solution for those applications that require high resolution, 19-inch, color graphics.

Features of the 4635B include:

- A 19-inch rasterscan CRT with a 60Hz, noninterlaced refresh rate, 1280 x 1024 resolution, 256 colors from a palette of 16.7 million.
- Selective erase.
- A tilt and swivel monitor.
- An integral 11 x 21-inch keyboard/tablet (a smaller tablet is an available option).
- A compact electronic components module which fits easily next to a desk or table.
- Emulation of a subset of the DEC VT220.

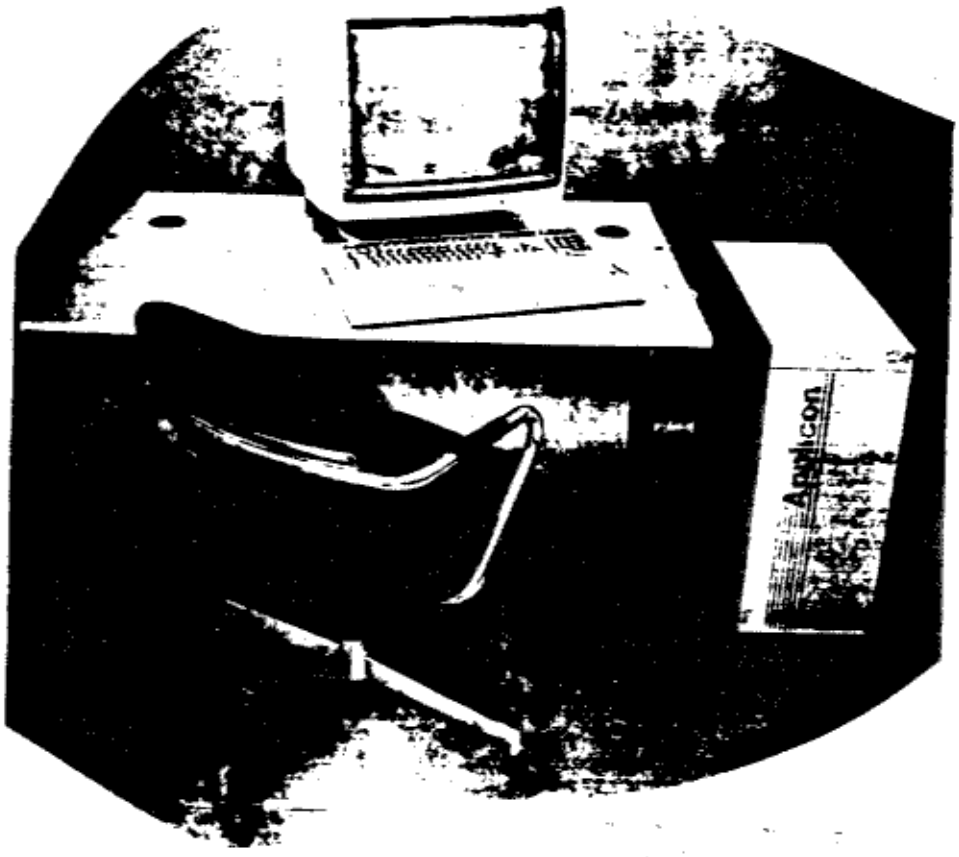


Figure 1-1 4635B Graphics Terminal

1.1.1 Graphics Display Description

The graphics display presents a bright, high-contrast color image suitable in normal room light. The image is displayed at a resolution of 1280 x 1024 and with up to 256 distinct colors. The display provides users with the immediate verification of drawing information as it is entered or edited. Selective erase capability increases system throughput by permitting components to be edited and viewed without having to repaint the entire displayed image.

1.1.2 Tablet/Pen and Keyboard Descriptions

The tablet/pen combination is the primary command and graphics data input device of the 4635B. The Applicon Tablet Symbol Recognition feature enables the system to interpret hand-drawn tablet symbols as graphics commands and data.

The 4635B keyboard includes four keypad groups for text and numeric data input as well as alternate command input and cursor control.

CHAPTER 2. SYSTEM OPERATION

2.1 INTRODUCTION

This chapter provides you with a description and location of 4635B switches, connections, controls, and indicators.

2.1.1 Initial Unpacking

The 4635B is shipped in a single carton. Within the carton are the:

- Floor Unit (With the power cable and video cable).
- Monitor
- Keyboard/Tablet (with the keyboard cable)
- 25 foot SIL Cables

Carefully unpack the 4635B and begin getting familiar with the location of the various switches, connections, controls, and indicators described in this section.

2.2 MONITOR REAR PANEL SWITCHES

Monitor rear panel switches are shown in Figure 2-1 and are described below.

2.2.1 Rear Panel ON/OFF Switch

The rear panel ON/OFF toggle switch is used to power-up and power-down the 4635B monitor.

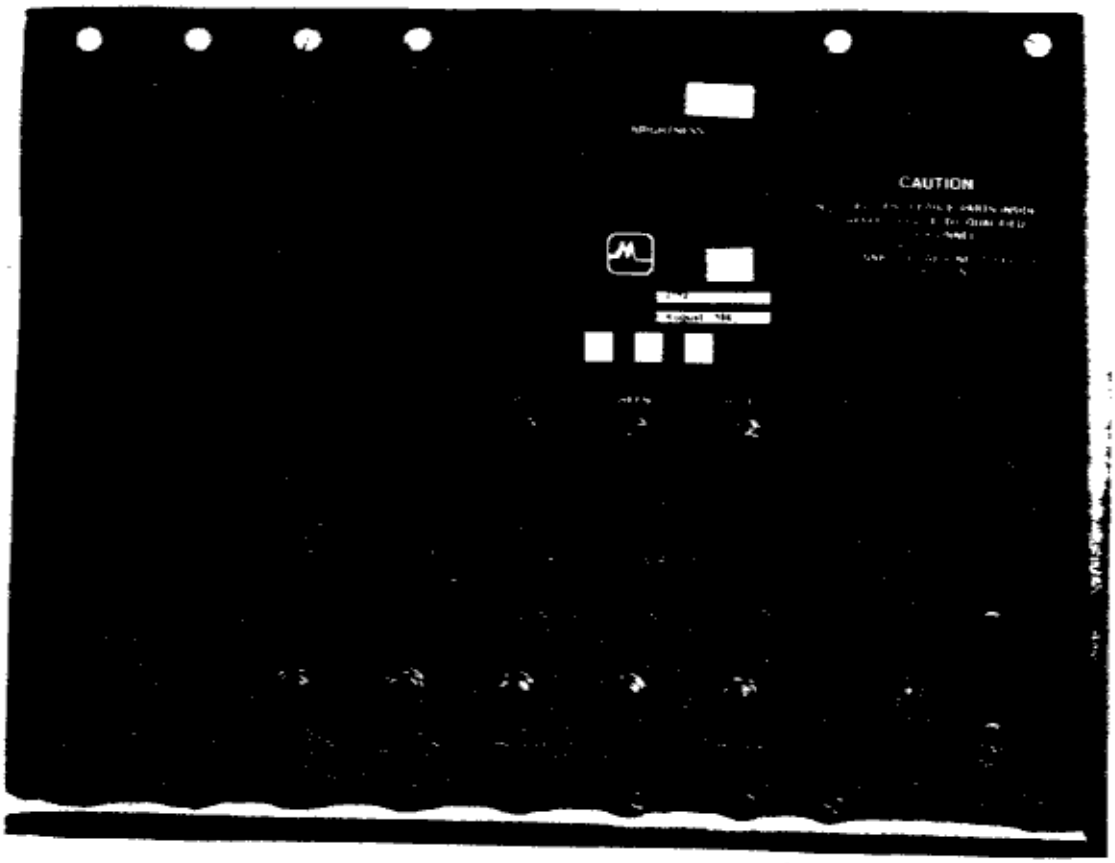


Figure 2-1 Monitor Rear Panel Connections and Switches

2.2.2 DEGAUSS Switch

After prolonged terminal use, magnetism can distort the video display. The degauss switch (a momentary pushbutton switch), neutralizes such magnetism. Degaussing can be performed at any time. To degauss the monitor, depress the DEGAUSS switch, hold it depressed for five seconds, then release it.

2.3 MONITOR REAR PANEL AND I/O BLOCK CONNECTIONS

Located on the rear panel of the monitor (see Figure 2-1) are the fuse, power receptacle, and five video connections.

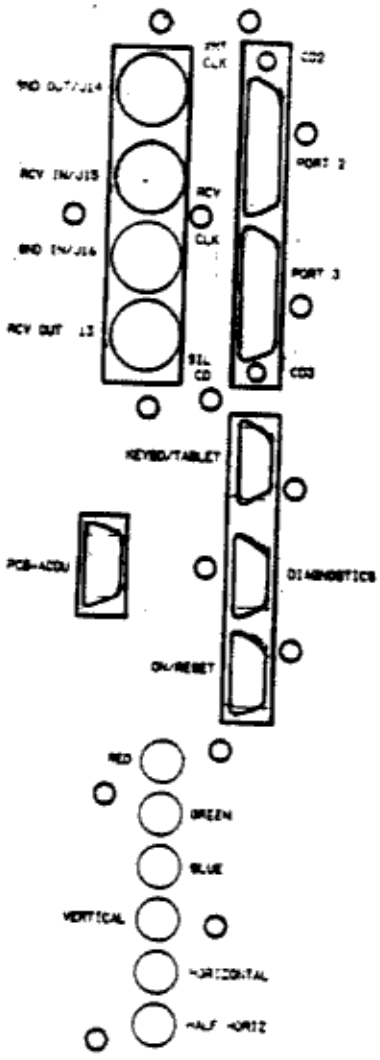
The I/O connector block is beneath the power input side of the monitor (see Figure 2-1). On the rear of the I/O connector block are inputs labeled: Hardcopy, On/Reset Off, and Kyb/Tablet; these inputs are for cables from the floor unit. The keyboard/tablet connects to the front of the I/O connector block.

2.4 FLOOR UNIT SWITCHES AND CONNECTIONS

Floor unit switches and connections are shown in Figure 2-2 and are described in this section.

2.4.1 Floor Unit Circuit Breaker Switch

Located at the bottom left of the floor unit is the main ON/OFF switch. This switch is used to power-up and power-down the 4635B.



AC
Circuit
Breaker

Figure 2-2 Floor Unit Connections and Switches

2.4.2 SIL Connections

There are four SIL (Serial Interface Link) connectors located inside the floor unit on the upper left of the connector panel. The connectors are labeled: SND OUT/J14, RCV IN/J15, SND IN/J16, RCV OUT/J13.

2.4.3 RS232 Connections

There are two RS232 inputs located inside the floor unit on the upper left of the connector panel and are labeled PORT 2 and PORT 3.

The PORT 3 input is a standard 25-pin RS232 connector used for communication with your host computer.

2.4.4 Video Connections

The monitor connects to the floor unit with five video cables to five inputs located at the bottom left corner of the connector panel. The cables and inputs are labeled: RED, GREEN, BLUE, HORIZONTAL and VERTICAL.

2.4.5 Keyboard/Tablet and On/Reset Connections

There are two inputs labeled KEYBD/TABLET and ON/RESET located below the RS232 connections on the connector panel. These inputs use nine pin connectors and can only be inserted one way.

2.5 4635B TERMINAL OPERATOR CONTROLS AND INDICATORS

4635B operator controls and indicators are found on the monitor and the keyboard/tablet. These controls and indicators are discussed below beginning with the monitor.

2.5.1 Monitor Operator Controls and Indicator

On the front of monitor there are four controls and two LED indicators. Reading from left to right they are On/Reset, an LED power indicator (above the On/Reset control), Off, Brightness, and an LED illuminated Hardcopy control. See Figure 2-3 for the monitor controls and their location.

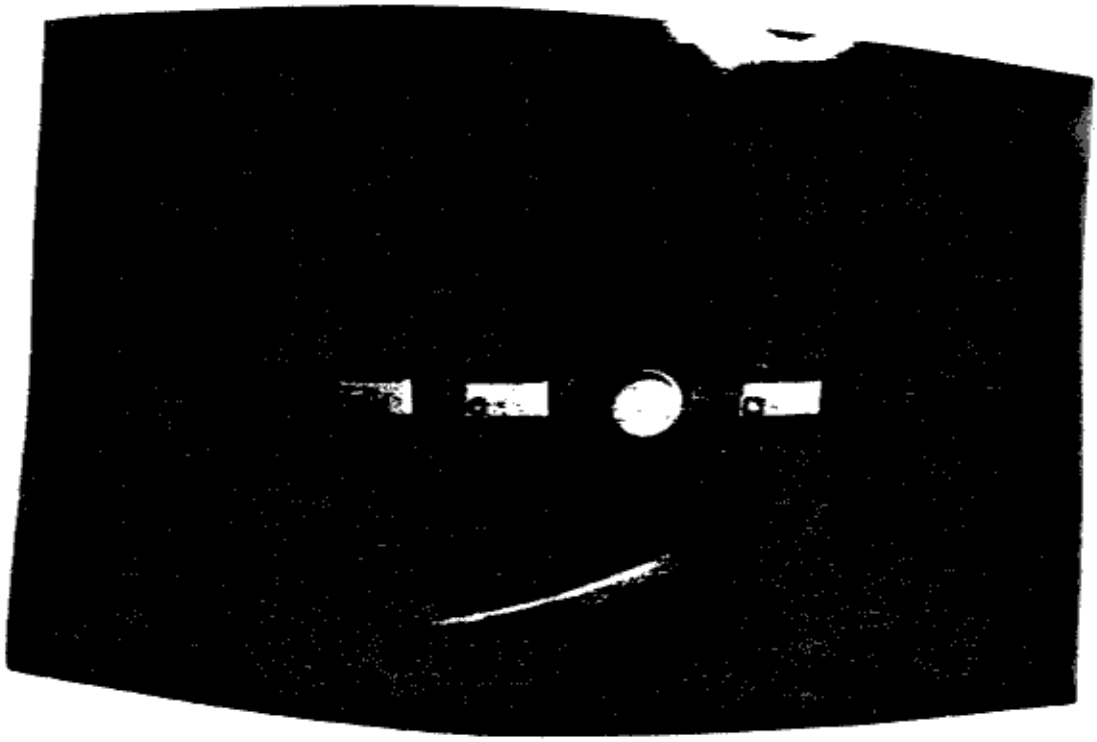


Figure 2-3 Monitor Operator Controls and Indicators

The On/Reset switch (labeled with a "1"), applies power to the monitor. When pressed (for more than one second), the switch applies power to the monitor (the AC circuit breaker at the rear of the monitor and the AC circuit breaker on the floor unit must also be on). After power is applied, the switch acts as a reset switch. The LED indicator, verifies that power is on.

The Off switch is labeled with a "0". The monitor is powered down when the Off switch is pressed.

The Brightness knob is set according to operator preference. Turning the knob clockwise increases brightness; counter-clockwise decreases brightness.

The Hardcopy switch is labeled with a hardcopy symbol. This switch is LED illuminated (it lights when the switch is depressed and stays lit until a hardcopy is produced) and is used to create printed copies of the video display when a (optional) hardcopy unit is attached.

2.5.2 The Keyboard/Tablet

The Applicon keyboard has a key arrangement similar to a VT220 keyboard (see Figure 2-4). Additional keys provide required system functions. There are also 24 user programmable keys, including four cursor keys and four special function keys (Done, Help, Quit, Backup).

The tablet (and pen) provides another way to enter data into the system using the Applicon Tablet Symbol Recognition feature.

The keyboard/tablet connects to the the terminal at the I/O connector block located at the bottom right of the monitor (see Figure 2-3).

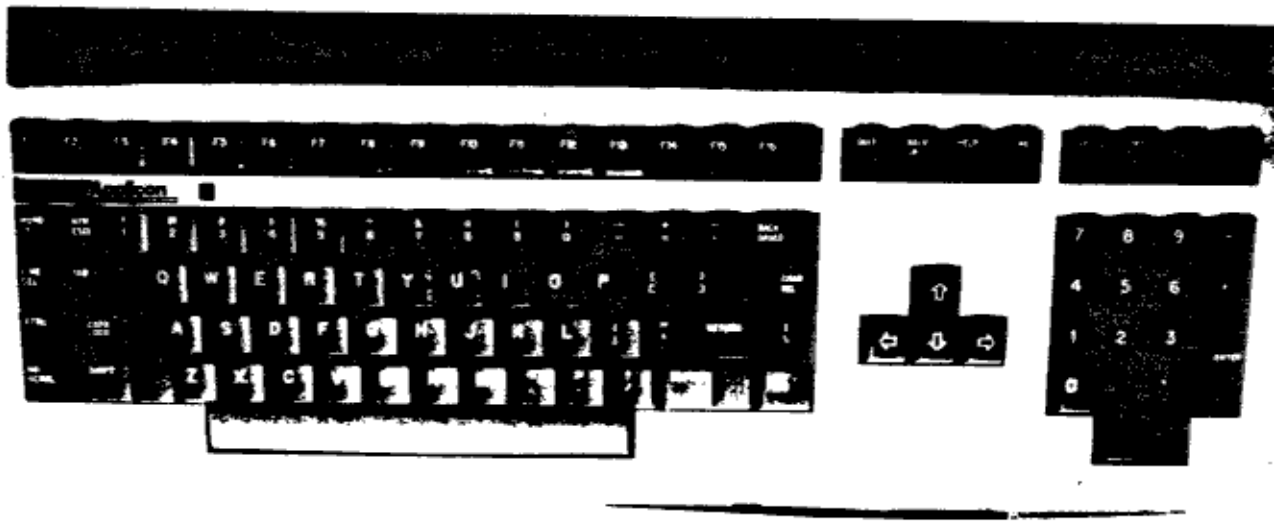


Figure 2-4 4635B Keyboard

CHAPTER 3. INSTALLATION AND POWER-UP

3.1 4635B INSTALLATION

The following section describes the procedures necessary to install the 4635B.

1 Ensure that all power switches are in the off position.

2. Connect the video cables to the Red, Green, Blue, Vertical and Horizontal inputs of the floor unit connector panel (see Figure 2-2).

3. Using the attached floor unit cables, connect the video cables (labeled: Horizontal, Vertical, Red, Green and Blue) to the rear panel of the monitor (see Figure 2-1). The monitor rear panel inputs are labeled: Horizontal Deflection, Vertical Deflection, and three inputs labeled Video Amplifier (the video amplifiers are also labeled Red, Green, and Blue).

NOTE

The red, green, and blue video cables may attach to any of video amplifier inputs. The video cables are coaxial and can only plug into the monitor one way.

4. From the floor unit, connect the HARDCOPY, the ON/RESET OFF and the Keyboard/Tablet cables to the rear of the I/O connector block (see Figure 2-1). These inputs are labeled: HARDCOPY, ON/RESET OFF, KYB/TBLT.

5. Also from the floor unit, attach the power cord to the power input at the rear of the monitor.

6. From the keyboard, connect the keyboard cable to the front of the I/O connector block (see Figure 2-1).

7. At the floor unit, open the back door of the unit and install the SIL cables to the SIL connectors, located in the upper left of the back panel (see Figure 2-2). The cables and the inputs are labeled: J13, J14, J15, and J16.

NOTE

If you want to use VT220 mode, attach an RS-232 cable from your VAX to Port 3. Refer to Chapter 4 for a detailed explanation of how the 4635B works in terminal emulation mode.

8. From under the floor unit, plug the main power cord into a wall or suitable power outlet.

3.2 4635B POWER-UP

After completing the installation, perform 4635B power-up as follows (refer to Figures 2-1, 2-2, and 2-3):

1. Ensure that the floor unit power cord is plugged into a suitable outlet.

2. At the rear of the monitor, ensure that the power cord from the floor unit is plugged into the power cord cord which is part of the main video cable. Ensure that the other end of the cable is plugged into the floor unit.

3. At the bottom rear of the floor unit, place the AC circuit breaker to the ON position.

4. At the rear of the 4635B monitor, place the AC power switch to the ON position.

5. Press (for five seconds before releasing) the front panel ON switch.

6. Power-up diagnostics will begin running and a message will flash on the CRT (other screen characters may appear during this test, which is normal). If these diagnostics run successfully, a menu will be shown on the screen. If the diagnostics take more than 120 seconds to run, a fault has occured and diagnostic testing halts. If this happens, call your Applicon customer engineer.

When the automatic power-up diagnostics run successfully, the screen displays a statement and the main menu (see Figure 3-1).

```
This is an Applicon Workstation
configured with:
a SIL, a Keyboard with a SMALL tablet,
and 512KB of RAM.
Prom Revision levels:
     D Segment
     S Segment
     M Segment


F1 - DOWNLOAD TERMINAL SOFTWARE
F2 - RESERVED FOR FUTURE EXPANSION
F3 - DIAGNOSTICS
F4 - TERMINAL SETUP
F5 - TERMINAL EMULATION

(Last keystroke in HEX = .. in ASCII = .)
```

Figure 3-1 Main Menu

The statement describes the workstation's main components: the SIL, the keyboard, and 512 kbytes of memory.

NOTE

The keyboard can be used alone or it can be used in conjunction with a small or large tablet.

3.2.1 MAIN MENU Descriptions

The six MAIN MENU options are:

F1 - DOWNLOAD TERMINAL SOFTWARE	Resets the workstation and downloads terminal software.
F2 - Reserved	
F3 - DIAGNOSTICS	Activates the Terminal Diagnostic Menu
F4 - TERMINAL SETUP	Activates the workstation setup option. This option allows you to set and store specific workstation hardware characteristics. (This operation is similar to the setup function on a VT220, although key features are different.)
F5 - TERMINAL EMULATION	Activates a subset of the VT220 emulation described in Chapter 4.

NOTE

Pressing the ESCAPE key returns you to the menu one level above the menu from which you are exiting. (Does not apply to the main menu.)

3.2.1.1 The Terminal Setup Menu

Picking the Terminal Setup option (F4) generates the menu shown in Figure 3-2.

```
*** TERMINAL ID                    01
*** PORTS 1 AND 2 BAUD RATES       9600
*** PORT 3 RECEIVE BAUD RATE       9600
*** PORT 3 TRANSMIT BAUD RATE      9600
*** PORT 2 MODE                    RS232
*** Reserved for future use
*** KEY CLICKS                     ENABLED
*** SET TEXT COLOR                 7

SPACE BAR     = step through menu selections
UP-ARROW      = increment setup value for menu item selected
DOWN-ARROW    = decrement setup value for menu item selected
[CONTROL-R]   = restore saved setup values
[CONTROL-S]   = save setup values in EEMEMORY
"ESC" (INTR) = exit to main menu
```

Figure 3-2 TERMINAL SETUP Menu

The seven TERMINAL SETUP MENU options are:

1. Set the workstation identification number for BRAVO3 software utilization.

2. Set the baud rate for Ports 1 and 2. Baud rates can range between 50 and 19.2 kbaud.

3. Set the receive baud rate for Port 3. Baud rates can range between 50 and 19.2 kbaud.

4. Set the transmit baud rate for Port 3. Baud rates can range between 50 and 19.2 kbaud.

5. Enable or disable the audible keyclick feature of the 4635B terminal keyboard.

6. Set the color of alphanumeric text. The available choices are:

   1 - RED
   2 - GREEN
   3 - YELLOW
   4 - BLUE
   5 - MAGENTA
   6 - CYAN
   7 - WHITE

Note the following when using the TERMINAL SETUP Menu:

1. The active menu option is displayed in reverse video. The space bar moves from one option to the next.

2. The up and down arrows allow you to step through values within an option.

3. If you execute a <CTRL>S, the values you determine for the above menu items are stored in nonvolative, workstation memory.

4. If you execute a <CTRL>R, the values you stored for the above menu items are displayed.

3.2.1.2 The Workstation Local Function Menu

Executing a Control-tilde (only after download) while in VMS or graphics mode (refer to Chapter 4), causes the workstation Local Functions Menu to be displayed, see Figure 3-3. (The tilde (~) is the upper case function of the key located immediately to the left of the BACK SPACE key.)

```
                    APPLICON 4635B Desktop Workstation
                          Local Functions Menu

          F01           DISPLAY TERMINAL SOFTWARE VERSION NUMBER
          F02           TERMINAL RESET/RELOAD
          F03           LOCAL DEBUGGER
          F04           TRANSFER TO MAIN MENU
          F05           ACTIVATE INTERNAL DIAGNOSTICS
          F06           TOGGLE ON/OFF OF COORDINATE STATUS DISPLAY
          F07           TERMINAL EMULATION MODE
QUIT/BACKUP/DONE        Exit Local Functions Menu
```

Figure 3-3 Workstation Local Function Menu

The seven LOCAL FUNCTIONS MENU options are:

F01	DISPLAY TERMINAL SOFTWARE VERSION NUMBER	Shows the version number of the currently installed workstation software.
F02	TERMINAL RESET/RELOAD	Resets the workstation.
F03	LOCAL DEBUGGER	Reserved for Applicon
F04	TRANSFER TO MAIN MENU	Returns you to the main menu.
F05	ACTIVATE INTERNAL DIAGNOSTICS	Executes the power up diagnostics. (These diagnostics are the same as those performed when the 4635B is powered up.)

F06	TOGGLE ON/OFF OF COORDINATE STATUS DISPLAY	Switches the coordinate status display on or off during Editor operations.
F07	TERMINAL EMULATION MODE	Enters the 4635B terminal emulation mode (see Chapter 4).
QUIT/BACKUP/DONE		Exits this menu and returns to normal operations.

NOTE

When this menu is displayed, pressing any key other than those discussed above rings the bell. In this case, the bell is an error indication.

3.3 STANDARD 4635B TERMINAL INSTALLATION

3.3.1 Registering the Terminal

Before you can use the 4635B terminal, it must be registered as a valid device on the system. Each terminal must have an entry in the VMS device table to identify it to the VAX terminal driver.

3.4 4635B TERMINAL INSTALLATION FROM THE EDITOR MAINTENANCE TAPE

Software for the 4635B terminal is occasionally released independent of general Applicon BRAVO3 releases. In such a case, you are provided with an Applicon Editor and Database Manager Maintenance Tape. The procedure used to install such a tape is included with the release notes for the tape.

CHAPTER 4. TERMINAL EMULATION MODE

4.1 INTRODUCTION

Applicon's Workstation can emulate the operations of Digital (Digital Equipment Corporation) VT220. Such operations require a link between the host processor and the terminal via a standard RS232 terminal cable. (These connections are discussed later in this section.)

The ability to integrate the Editor's graphics capability (via a SIL connection to the host processor) with terminal emulation makes the workstation a more complete engineering tool. Terminal operators can use the full range of BRAVO! functions, yet still retain the capability of using a variety of standard VMS programs to enhance productivity.

4.2 TERMS

These terms will help you understand this section.

Terminal Emulation Mode	The mode in which the 4635B operates when communicating with the VAX via the RS232 cable connection.
Graphics Mode	The mode in which the 4635B operates when communicating with the VAX via the SIL connection, and the terminal is running BRAVO3.
VMS Mode	The mode in which the 4635B operates when communicating with the VAX via a SIL connection, but the terminal is not running BRAVO3. (The 4635B communicates with the VMS operating system while in this mode.)

4.3 HARDWARE REQUIREMENTS

The terminal's emulation support package connects to the host processor the same way it would connect with the VT100 or VT220 terminals.

You must first determine whether there is an unused I/O port available on your VAX. This is most easily determined by consulting your Applicon field service representative. If no spare I/O port is available, a hardware upgrade is required for your system. Contact your Applicon representative.

Assuming the appropriate hardware is in place and that a standard RS232 cable has been properly connected to the VAX, you can proceed. Connect the free end of the cable into PORT 3 inside the floor unit (see Figure 2-3).

NOTE

This is the only hardware connection required to use terminal emulation mode.

4.4 ACCESSING TERMINAL EMULATION MODE

If you wish to access terminal emulation mode, first perform the standard terminal download sequence described in Appendix A. Once the terminal software is downloaded, terminal emulation mode can be accessed via keystroke sequence or software command. The keystroke sequence necessitates your accessing the local functions menu as described in section 3.2.1.2 (using Control Tilde). Depressing the F7 button activates terminal emulation mode and draws the terminal emulation window in the center of the screen. Proceed with your work.

When terminal emulation mode is activated with this procedure, the terminal emulation software retains the contents of this terminal emulation mode window. This data will be restored the next time you activate terminal emulation mode via 4635B terminal software. When you activate terminal emulation mode, you suspend all communication via the SIL between the VAX system and the 4635B terminal. This stays in effect until you exit terminal emulation mode.

The second method mentioned above -- accessing the emulation package via software command -- is explained in section 4.6. This method is particularly helpful when you plan to use terminal emulation mode simultaneously with the BRAVO3 Editor because this method allows you to quickly switch from graphics operations (and/or VMS operations) to terminal emulation mode by using a command procedure (CPROC).

4.4.1 Terminal Emulation Mode Setup Characteristics Menu

During a terminal emulation mode session, pressing the F1 function key causes the VT220 setup menu to be displayed.

The arrow keys move the red field up and down. The ENTER key scrolls through the various menus. To return to terminal emulation, use the F1 key.

4.5. EXITING TERMINAL EMULATION MODE

Terminal emulation mode is exited via keystroke sequence or software command. Either option can be used regardless of the method that was used to access terminal emulation mode. Simply depress the <QUIT> key or the <DONE> key.

Upon executing the command above, communication between the VAX and the terminal emulator is suspended and communication via the SIL between the VAX and the 4635B terminal is enabled.

4.6 MODE SWITCHING VIA A COMMAND PROCEDURE (CPROC)

It is possible to quickly switch from graphics and/or VMS modes to terminal emulation mode (and vice versa) by using a CPROC.

1. Switching from BRAVO3 operations to terminal emulation mode

This is easily accomplished by executing a CPROC during Editor operations. An Applicon-supplied mode switching CPROC is part of the software installation tape. Assuming that tape has been installed, the file SYS$MANAGER:BRVT100.COM is available. (This CPROC should be copied from this file to a dictionary all system users can access.)

Copy the file SYS$MANAGER:BRVT100.COM into the dictionary you wish to have contain the mode switching CPROC. From the Editor's main menu, execute the following commands:

```
DICTIONARY MANAGE OPEN WRITEREAD xxxxx <DONE> <DONE>
```

where: you replace xxxxx with your dictionary's file specification

Then execute the commands:

```
DICTIONARY CHANGE CPROC VT100 ADD INCLUDE
SYS$MANAGER:BRVT100.COM NEXT <DONE> <DONE>
```

Note: VT100 is the name of the CPROC copied.

Now you can switch from Editor operations to terminal emulation mode by executing the CPROC:

```
\VT100
```

If you wish, define a tablet symbol for this CPROC. Then use that tablet symbol to switch modes (thereby eliminating the need for typing).

2. Switching from VMS mode to terminal emulation mode

Assuming the 4635B installation tape mentioned above was installed, a file you can use to switch from VMS mode to terminal emulation mode resides on your system disk. This file is located in SYS$MANAGER:GOTOVT100.DAT.

To switch modes, execute the following command:

```
TYPE SYS$MANAGER:GOTOVT100.DAT
```

To simplify this operation, add an entry to your LOGIN.COM file that abbreviates the command identifying data required to execute this command. Type:

```
$ GV :== TYPE SYS$MANAGER:GOTOVT100.DAT
```

You can then switch modes by typing "GV" in response to the VMS input prompt $.

3. Exiting terminal emulation mode

Assuming the installation tape mentioned above was installed, a file you can use to exit from terminal emulation mode resides on your system disk. This file is located in SYS$MANAGER:EXITVT100.DAT. To exit terminal emulation mode, execute the following command:

```
TYPE SYS$MANAGER:EXITVT100.DAT
```

To simplify this operation, add an entry to your LOGIN.COM file that abbreviates the command identifying data required to execute this command. Type:

```
$ EV :== TYPE SYS$MANAGER:EXITVT100.DAT
```

You can then exit terminal emulation mode by typing "EV" in response to the VMS input prompt $.

4.7 SPECIAL FUNCTION KEYS

The keyboard functions somewhat differently during terminal emulation mode operations than it functions during graphic and/or VMS mode operations. The chief difference is that the local functions menu does not function in terminal emulation mode. For example, if you execute a <CTRL> tilde (as discussed in Section 3.2.1.2) while in terminal emulation mode, the terminal performs a sequence of operations that duplicate the operations that follow a terminal reset on a standard VT220. The screen flashes for a second, a bell rings, and all terminal parameters are reset to their initial state.

4.8 PROGRAMMING THE TERMINAL EMULATOR

The user can program the terminal emulator; however, programming is not required.

Program the terminal emulator as you would program a standard VT220 terminal. This process is documented in the VT 220 User's Guide.

Unless specifically stated (see following list), the user can assume that information contained in these manuals regarding the terminal's VT220 programming capabilities are features that are supported by the terminal emulation software package.

1. The 4635B terminal does NOT support the following VT220 terminal features:

- 132 characters per line
- Interlace
- Underline cursor (only block cursor)
- Auto repeat mode (always on)
- Auto XON/XOFF (always enabled)
- Double width and/or height lines
- Scrolling mode
- Underscore "_" character attributes (displayed in reverse video)
- 20 mA current loop interface
- Confidence tests
- Answerback message saved in EEPROM
- National keyboards (only North American)
- Composing characters (compose key)
- Editing keypad for FIND, INSERT HERE, REMOVE, SELECT, PREV SCREEN, NEXT SCREEN
- All printer functions
- Status line in SETUP
- Insert/Replacement mode, Send-receive mode
- Multinational character sets
- Downline loadable character set
- SETUP language
- Caps lock/shift lock
- Select XOFF point
- Local echo
- Limited transmit, disconnect delay
- BREAK and TALK/DATA keys
- CLEAR COMM in setup

2. The 4635B terminal implements the following features (with these differences):

Features	Differences
Multiple SETUP screens	Only one SETUP screen
HOLD SCREEN key	Use NO SCROLL key
SETUP KEY	Use F1 key
Function Keys F6 - F20	Use F2 - F16 keys
HOLD SCREEN indicator	HOLD SCREEN message
LOCK indicator	KEYBOARD LOCKED message

4.9 OPERATIONAL NOTES AND DESCRIPTIONS

1. You must log on to the VAX twice when following these procedures. The SIL connection and the RS232 terminal emulation connection provide two totally independent pathways into the VAX. You must first log on after the terminal software has been successfully downloaded. You must log on again when you initially engage the terminal emulation mode.

2. Whenever you switch from one mode to another (for example, from graphics mode to terminal emulation mode), the communication mode from which you exit is suspended. For example, when you access terminal emulation mode, all communication between the terminal and the VAX via the SIL connection is suspended. The physical link is maintained, but the capacity to transmit and receive data is suspended. This condition stays in effect until you exit terminal emulation mode. In turn, when you exit terminal emulation mode, all communication between the 4635B and the VAX via the RS232 cable is suspended.

   Programs executing in either mode continue to execute with one restriction. Such programs will immediately stop executing if they attempt an input or output (I/O) function with the 4635B's inactive mode. Such programs will proceed only if the user switches modes.

3. Graphics information displayed on the terminal screen outside the terminal emulation window remains visible while terminal emulation mode is active. Alphanumeric information that is outside the window is not visible during terminal emulation mode.

4. The VAX/VMS system must be told the type of terminal with which it is communicating via the RS232 cable. Specifically the system requires: the baud rate, the number of bits per character, and the type of parity to be used. By default the emulator operates at 9600 baud; however, this rate can be changed. To change this rate, see Section 4.4.1. In such a case, adjust the baud rate values for Port 3. Allowable baud rate values range from 110 baud to 19200 baud. Once you set the desired baud rate for your terminal, the VMS system must be provided the same information. To do so, use the SET TERMINAL command as follows:

```
$ SET TERMINAL/SPEED=xxxx/NOPARITY/EIGHT_BIT TTXX:
```

where: xxxx represents the desired baud rate

and: TTXX represents the terminal I/O port to which the emulator is connected.

5. The VAX/VMS system must also be told that the I/O port connected to the terminal emulator is communicating with a VT100 (and/or VT101) type terminal. Either of the following (equally valid) command options do this:

```
$ SET TERM/VT100
```

```
$ SET TERM/INQUIRE
```

The "SET TERM/VT100" command should ONLY be issued on the 4635B terminal when operating in terminal emulation mode. If you fail to heed this warning, problems will occur later, especially when you attempt to log off the terminal.

After a download has been completed for a terminal on the SIL, the system is advised as to the type of terminal involved. This information is required by the system to properly execute commands; it should not be changed. Do NOT tell the VMS system that your terminal is a VT100 terminal when you are operating in either VMS or Graphics mode.

6. It is possible to create certain conditions that could block your ability to perform a complete system shutdown. This occurs when a user, simultaneously logged in to the system in both graphics mode and terminal emulation mode, executes the system shutdown procedure from within terminal emulation mode. Under such circumstances, a chance exists that the system could never be shut down in an orderly manner. This situation can be avoided by following either of the suggestions below:

   a) Log off graphics mode before you run the system shutdown procedure from terminal emulation mode. (This is the preferred solution.)

   b) Inform the VAX's VMS operating system that the terminal currently operating in graphics mode should not receive any system BROADCAST messages. Do this while in VMS mode by typing the following command:

      "SET TERMINAL/NOBROADCAST"

   Executing either of these suggestions enables a complete and proper shutdown.

7. Whenever the VAX processor is rebooted (for ANY reason), the terminal MUST be downloaded at least once to become fully operational.

   Only terminal diagnostics can operate without a terminal download.