

## VT220

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The VT220 video display terminal combines advanced capabilities with human engineering to give you a high-productivity tool that's remarkably easy to use.

This monochromatic text terminal includes all the capabilities of Digital's VT100 video terminal as well as convenient new features, such as 15 programmable function keys and selective erase.

Human engineering makes the VT220 terminal comfortable to work with, so it boosts your productivity. The keyboard is the best height for efficient typing. The three keypads and function keys are separated and arranged in a layout that is logical and easy to use. This helps reduce fatigue and eliminate errors. Plain-language setup menus (available in English, French, or German) make it easy for first-time users to operate the terminal.

The VT220 terminal is truly international, with multinational character set support, multiple language keyboards available in normal (typewriter) or word processing versions, and a universal power supply.

The combination of advanced capabilities and human engineering make the VT220 terminal a high productivity tool that can be used in almost any environment in the world.

## Highlights

### *User-Oriented Features*

- Multiple-language keyboards available in normal (typewriter) or word processing versions
- Multinational Character Set support
- National Replacement Character Set support
- Downline loadable character set
- 15 programmable function keys
- Selective erase
- VT100-compatibility mode
- Normal or reverse video, blinking, underline, and bold attributes on a character-by-character basis
- Double-height/double-width characters
- Small, compact design with detachable keyboard
- Nonglare screen
- Plain-language setup menu for feature selection

### *Engineering*

- Serial printer port for local print functions
- Communications speeds up to 19,200 baud
- Nonvolatile memory stores feature settings
- VT102 software compatibility
- EIA and 20-milliampere interfaces standard
- Local echo selectable
- Composite video output for auxiliary monitors
- Universal power supply
- CRT Saver

## Operating Mode

The VT220 terminal has three operating modes, making it flexible enough to run on Digital and many non-Digital host computers. It can operate in VT200 mode (7-bit or 8-bit controls), VT100 mode, and VT52 mode. Except for VT52 mode, all modes support standard ANSI functions. The VT220 can connect to a host computer either locally or remotely via an optional modem.

## Screen Display

The VT220 terminal provides a screen display of 24 lines by 80 or 132 columns. The 132-column format is especially useful for viewing spreadsheets and other tabular work. Crisp, clear text displays are provided by the VT220's 10-by-10-dot matrix. Most characters are 7 by 9 with true descenders and ascenders. Double-width and double-height characters, selectable on a line-by-line basis, make text on the screen even easier to read.

In addition, any character can be displayed in a selectable combination of blinking, bold, underline, and normal or reverse video. These attributes are useful in formatting copy, prompting the user, and highlighting portions of the text. Many of Digital's software packages—for example, FMS, INDENT, and EDT—use these features.

*The optional modem, which fits under the monitor, operates at 300/1200 baud and supports autoanswer.*

The vt220 terminal's basic character set features 32 line-drawing and other graphic characters that can be used to present solid-line displays of simple forms and data plotting.

### **Keyboard**

The vt220 terminal's streamlined keyboard is easy to use so it can help you increase your productivity. The terminal's standard, (typewriter) alphanumeric keypad, numeric keypad, auxiliary keypad, and function keys are grouped separately. Their logical arrangement increases data entry speed and reduces the chance of error. The 30-millimeter home-row key height makes typing a less tiresome task.

The 105-key keyboard is detachable, connected to the monitor by a six-foot (1.9-meter) coiled cord. This allows you to put the keyboard wherever it's most comfortable for you to work. It's so thin and lightweight, you can even place it on your lap.

### **Monitor**

The compact, wedge-shaped monitor takes little space on your desk. Its nonglare screen comes with white, green, or amber phosphor. You can adjust the tilt angle of the monitor for comfortable viewing and tune the screen's contrast and brightness to your liking with controls located right on the monitor.

### **Function Keys**

The vt220 terminal has 25 programmed function keys that make it even easier to use. In addition, 15 programmable keys are also provided. They can be downline loaded from the host to contain unique user-defined character sequences. A total of 256 characters can be assigned to these functions, and they can be changed at any time. "Help" and "do" function keys, when supported by system software, reduce key strokes and provide you assistance. Five other function keys are reserved for local terminal functions, including hold screen, print screen, and setup.

### **Printer Port**

The serial printer port enables hard-copy printing directly from the video terminal, thus sharing one communication line between two peripherals. rs232c-compatible, the printer port also allows local print functions without host intervention. When in local-keyboard-to-printer mode, characters entered on the vt220 keyboard will be sent to the printer.

### **Optional Modem**

The optional integral modem provides the vt220 terminal with remote communications capability. The modem operates at 0-300 or 1200 baud, and is compatible with Digital's DF Series and the Bell System's 103J and 212A-series of modems.

Designed to fit snugly under the vt220, the modem can be controlled at the keyboard, making it easier for the operator to use. The modem has

Automatic Answering, which means that the host can initiate a connection without operator attendance at the terminal. This is particularly useful when using a printer via the vt220 printer port.

### **Software Compatibility**

vt100 compatibility mode lets you use most of the software that supports Digital's vt100, vt101, and vt102 terminals on the vt220 with little or no software change. For more details, refer to the vt220 Programmers Reference Manual for the differences between vt220 and vt100 family hardware. For information on vt220 video terminal support for a particular Digital-supplied software package, refer to the Software Product Description (SPD) for that package.

### **Setup Mode**

The vt220 terminal extends the capabilities of the vt100 by giving you more control of the terminal's operation. You can select features in Plain Language setup menus and then store them in nonvolatile memory. In setup mode, the vt220 displays a menu from which you select the terminal's operating characteristics. The menu will display predefined values for these characteristics. You can either use these characteristics as defined, or change their values, and store them so that they automatically become the standard parameters.

Seven setup menus allow you to define such parameters as keyboard language, communication and print parameters, display, tabs, parity, key click, autowrap, cursor style, margin bell, and answerback message. Setup menus can be displayed in English, French, or German.

### **CRT Saver**

The VT220 terminal's CRT Saver extends screen life by blanking the screen (without losing any data) if the terminal hasn't received information from the user or the host within 30 minutes. Pressing any key (the shift or control key is recommended), or receiving data from the host restores the screen. The green power indicator light lets you know that the terminal is still on.

### **Selective Erase**

The selective erase feature allows selected character positions on the screen to be erased. For example, this feature supports applications where data is entered by filling in the blanks of a form. After the blanks are filled and the data is accepted by the host, the host can use a single command to erase only the information in the blanks. The form remains on the screen for the next data entry sequence. As a result, the amount of information transmitted can be reduced, thus accelerating host-to-terminal communication and increasing productivity.

### **Composite Video**

Composite video allows the VT220 video terminal to drive an auxiliary monitor. The feature is useful when you want to display text on a large screen for a group of people.

### **Communications**

The VT220 terminal communicates with a host via a full-duplex asynchronous line. There are 10 possible transmit/receive speeds that you can select from a setup menu. The built-in 20-milliampere current loop interface supports communications at distances exceeding 50 feet.

The VT220 operates in accordance with EIA standards RS-232C and RS-423, and CCITT Recommendations V.24, V.26 (V.10), and X.20 (V.21). Serial character format is used for communication with the host computer and is user-selectable to 7 or 8 bits with or without parity. A 254-character input buffer and XON/XOFF support ensure that transmitted data is not lost. While throughput is dependent on the application, the VT220 has been designed to operate at 9600 characters per second without restraint in most cases. Use of XOFF support, however, is recommended to accommodate exceptions.

### **Reliability and Maintainability**

The VT220 terminal is very reliable because it has only two mechanical switches, one for turning the terminal on and off and one for selecting the power supply voltage. The absence of other mechanical switches aids the use of diagnostics for testing the terminal functions and adapting to varying environments under host control.

Maintaining the VT220 is easy since no preventive maintenance is necessary. If an operating problem does appear, self-test diagnostics and keyboard LEDs can isolate the difficulty.

### **Ordering Information**

Because the VT200 terminals are international products, two items must be specified for each terminal ordered. One item specifies the terminal type, power, and screen color (white, green, amber). The other item, called the keyboard country kit, specifies the power cord, keyboard and user documentation.

### **To Find Out More...**

About Digital's VT220 terminals, contact your Digital sales representative or call 1-800-DIGITAL, Ext. 700 for the name of the Digital representative nearest you.

## HELP

The HELP command invokes the VAX-11 HELP Utility to display information about a particular VMS topic.

The HELP utility retrieves help available in the system help files or in any help library that you specify. You can also specify a set of default help libraries for HELP to search in addition to these libraries.

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Analog Loop Remote Loop

Test



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### Specifications

Character Sets	ASCII, UK National, Digital Special Graphic (Line Drawing), Digital Supplemental Graphic, and user-definable character sets (each 94 characters).
Communications	Full-duplex asynchronous with selectable echo and full modem control: 7 or 8-bit character length with 1 or 2 stop bits.  Optional Modem (VT22X-AA) with selectable 300/1200 baud rate.
Communication Speeds	75, 110, 150, 300, 600, 1200, 2400, 4800, 9600, 19,200 baud (keyboard selectable). Transmit and receive rates can be set separately.
Parity	Even, odd, mark (7-bit only), space (7-bit only), or none (keyboard selectable). Transmit and receive must be the same parity.
Interface Standard	EIA RS-232-C, RS-423, and 20mA

### Dimensions

Monitor	28.3 cm high x 33.3 cm wide x 38.7 cm deep (11.1 in H x 13.1 in W x 15.25 in D)
Keyboard	5.1 cm high x 53.3 cm wide x 17.1 cm deep (2.0 in H x 21.0 in W x 6.75 in D)
Power	0.48 A RMS max at 120 V RMS 0.24 A RMS max at 240 V RMS 47-63 Hz
Power Cords	Detachable, 3 conductor, grounded

### Operating Environment

Temperature	10-40°C (50-104°F)
Relative Humidity	10-90%
Maximum Wet Bulb	28°C (82°F)
Minimum Dew Point	2°C (36°F)
Maximum Altitude	2.4 km (8,000 ft)

### Storage Environment

Temperature	-40-66°C (-40-151°F)
Relative Humidity	0 to 95%
Maximum Altitude	9.1 km (30,000 ft)