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THE VT55 GRAPHICS TERMINAL...



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A NEW DIMENSION.

The VT55 is an on-line interactive CRT terminal that offers waveform graphics capability—a new and significant extension to meet the needs of a variety of applications. Two graphs of 512 (maximum) data points each can be displayed with a screen resolution of 512 x by 236 y. Cursors (20-point vertical lines) are available (one per data point) to facilitate data editing and graph generation. In addition, the VT55 allows simultaneous display of any combination of text and graphics. By simply pressing a specified key, the VT55 supplies a hard copy reproduction of the display screen for both characters and graphs.

Waveform graphics capability is an important addition to applications involved with such activities as plotting histograms, waveform and peak analyses, data acquisition, monitoring, trending, simulation, laboratory charts and forms... wherever results can be improved through graphics with extended capability.

The VT55 can hold up to 1,920 characters in 24 lines of an 80 characters-per-line matrix. The 24th line of text is positioned below any graphs to facilitate labelling the x axis.

A KEY ADDITION.

The VT55's combination of characters, graphics, and hard copy, all in one terminal at a low package price, can be a key addition to many applications in need of graphics with extended capabilities.

In Laboratory Research. Plotting and comparison of waveforms, complete with the ability to label graphs and have a hard copy reproduction on hand make the VT55 particularly valuable to such application areas as physics, chemistry and biological sciences.

In Education. Computer Aided Instruction can now be augmented by graphics. The mathematics student can solve an equation and see the plotting of a corresponding graph. The student of ecology can see trends plotted for various parameters of the environment. Scores can be shown for tests in either normal,

bar graph, or histogram mode.

In Business. Charting forecasts and trends, or plotting existing records for sales volume or profits are easily accomplished by the VT55. Clearly labelled graphs with "break-even" lines, time scales and bar graph indicators are now possible.

In Industry. A status display of process control applications can be shown to plant personnel. Past and projected values for such variables as temperatures, pressure and flow volume can be illustrated in graph form.

THE VT55 SCREEN

The screen is tilted to avoid glare from overhead lighting. A control at the rear of the terminal allows the operator to adjust screen brightness for the best possible vision under varying light conditions. The standard model has no filter covering, so it can be easily cleaned. For users with special applications, the VT55 will accept colored filters.

Operator response to the VT55 is based on the cursor—a flashing underline that indicates where the next character will appear. Because it is a fast position indicator, the cursor encourages quick operator response. (Programs can also direct the computer to display a form on the screen and move the cursor to its proper location so the operator can fill in responses.)

The cursor provides a full range of user control flexibility, including both conventional and extended-movement commands utilizing escape sequences. Up, down, right, and left movements, plus 8-space tabbing are available.

The full screen as well as individual characters and lines can be erased by using simple "ESCape" commands (an escape character followed by another character). Line speeds of up to 9600 baud allow high-speed display of and interaction with the terminal's character and graphic displays.

At high baud rates, the operator can freeze data transmission with the SCROLL key. When the bottom line of text on the screen is displayed, and the cursor is directed to move to the next line, the top line of text automatically "scrolls" off the screen to allow space for the new line.

When receiving data at high baud rates, this scrolling can occur so rapidly that a visual inspection of screen information is impossible. The VT55 allows scrolling to be controlled at the terminal. When the screen is full, transmission stops until the SCROLL key is pressed, signalling that the operator is ready to proceed.

Two control dials let the operator select transmission rates from 75 to 9600 baud (75, 110, 150, 300, 600, 1200, 2400, 4800, and 9600). These controls can be set separately so that some reception and transmission speeds can be mixed.

THE VT55 COPIER

The new electrolytic copier, located on the side of the terminal, prints line-for-line images of the text and graphics that are displayed on the screen.

To copy all lines currently on the screen, the operator simply presses the COPY key. The terminal tells the host computer to wait (sends XOFF code) and normal operations will resume after the copying is done (terminal sends XON code). This operation can also be initiated by the computer program.

A FAMILIAR KEYBOARD

The VT55 keyboard is built to a universally accepted standard—the office typewriter. Its layout, stroke and touch are familiar to any typist, thereby maintaining the training and familiarization period to an absolute minimum, without sacrificing accuracy and speed.

The VT55 does not require cooling fans. In noise-sensitive locations, therefore, the VT55 can operate in absolute silence. When silence is not necessary, the operator simply turns on an audible response switch to produce a keystroke

click that encourages rhythmic, high-throughput keying.

The VT55 keyboard features three-key rollover construction that encourages operator speed by eliminating errors due to striking multiple keys.

THE VT55 SOFTWARE

RT-11 is a high performance, real-time operating system complete with a versatile monitor and a full complement of systems programs. The VT55 is supported under both RT-11/BASIC and FOCAL/RT-11.

RT-11/BASIC

BASIC offers the facility of advanced techniques to perform intricate manipulations or express problems efficiently. With BASIC, the programmer can solve complex data acquisition and processing problems with a minimum of effort.

RT-11/BASIC features include:

- String capability. Users can have Dartmouth-compatible string support complete with string arrays and functions.
- A "CALL" statement that allows easy interfacing of assembly language functions; the function can be called by name and passed several parameters.
- Interrupt-driven support for standard devices.
- Sequential and virtual memory file support for RT-11 mass storage devices.
- CHAIN and OVERLAY statements to accommodate programs many times larger than available memory.

With RT-11/BASIC, the VT55 operator can use "CALLS" to perform such functions as "CLEAR GRAPH," "DRAW VERTICAL LINE," and "ADD CURSORS."

FOCAL/RT-11

FOCAL/RT-11 is a powerful interactive high level programming language designed for applications which require simplicity as well as the full problem solving capabilities of a general purpose digital computer. FOCAL support of the VT55 is similar to BASIC but is implemented by using the "FNEW" feature. FOCAL is particularly well suited to one-time calculations and offers a full range of mathematical functions, extendable I/O, and versatile self-editing capabilities. The basic FOCAL command set contains 12 powerful commands which are all that is required for most applications.

NOTE: There is an existing demonstration package for the VT55 that is written in RT-11/FORTRAN. Although it is not supported software, customers can obtain it from the DECUS library.

SIMPLE INSTALLATION AND INTERFACING

No special interfacing is necessary with the VT55. It can be wired directly to any computer with full duplex or half-duplex capability via its standard 20mA current loop interface or EIA RS-232-C signals. The VT55 can be installed as an active device, a passive device, or active during transmission and passive during reception.

The use of standard screw terminals as connectors eliminates any cabling restrictions and minimizes both the cost and effort of installation.



DIGITAL AND GRAPHICS

Digital Equipment Corporation has gained a solid reputation on its ability to solve graphics problems by providing efficient and effective tools at the low end of the price scale.

We've been supplying graphics systems for as long as we've been manufacturing minicomputers. It has given us a considerable number of years during which we've built our base of graphics knowledge and product balance.

The VT55, like its other product relatives, is yet another response to very real application needs. If you're interested in the new VT55 Graphics Terminal, contact your nearest DIGITAL sales office for our VT55 User's Guide.

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