

CIE Terminals Display Terminals



The ANT provides features normally found on other basic ASCII terminals. The unit contains a 14-inch nonglare amber screen with 24-line by 80 format and 25th status message line. It is fully compatible with the ADDS Viewpoint A2, IIT Qume QVT 101, TeleVideo 910, and Lear Siegler ADM 3A/5. The difference is the price—\$299. The ANT is currently the lowest priced alphanumeric terminal on the market.

MANAGEMENT SUMMARY

UPDATE: This report provides you with information on CIE Terminals' four new models. These include the CIT-50+, CIT-220+, CIT-224 and the ANT, CIE's new general purpose terminal. Also mentioned are those models no longer manufactured. Pricing information for the new models as well as existing models and graphics cards is included.

CIE Terminals, a subsidiary of C. Itoh Electronics, was formed in 1983 as a result of a merger between a division of C. Itoh and ACRO Corporation, C. Itoh's exclusive marketing representative for the CIT line. While the initial members of the CIT line are no longer manufactured (CIT-80, CIT-101, CIT-161, and CIT-500), still being offered are the color alphanumeric CIT-414 and the monochrome and color graphics terminal, the CIT-467. In addition to these models, new members include the CIT-50+, CIT-220+, CIT-224 and the ANT. The most significant aspect of the CIT-50+ is that it offers both ANSI and ASCII capabilities. The CIT-220+ is a direct replacement for Digital's VT200 as is the CIT-224. The CIT-224 however, contains a larger, 14-inch screen. The only terminal currently manufactured by CIE that is not Digital emulating is the ANT. With a price tag of \$299, this model moves CIE Terminals into competition with other low-price, general purpose terminal vendors.

CIE Terminals' Tektronix-compatible graphics models are the CIT-414 and CIT-467. The CIT-414 is a monochrome unit that emulates Tektronix' 4010 and 4014 terminals. The CIT-467 is an eight-color model for emulation of the Tektronix 4027A. Both terminals provide 640-by-480 dot

CIE Terminals' CIT series is a family of Digital Equipment Corporation—emulating and Tektronix-compatible alphanumeric and graphics terminals. Since July of 1984, CIE Terminals has introduced four new terminals: CIT-220+, CIT-224, CIT-50+, and the ANT. No longer manufactured are the CIT-80, CIT-101, CIT-161, and CIT-500. The CIT-414, and CIT-467 (formerly CIT 427) are still offered for sale.

MODELS: CIT-50+, CIT-101e, CIT-220+, CIT-224, CIT-414, CIT-467 and the ANT.
DISPLAY: The CIT-220+, CIT-414, and the CIT-467 feature 12-inch diagonal displays. The CIT-101e, CIT-224, CIT-50+ and the ANT contain 12-inch (diagonal) screens. The CIT-414 and CIT-467 offer a 35-line by 80-column display format. All other models feature 24-line by 80 or 132 column formats.
KEYBOARD: All models include a detachable, typewriter-style keyboard with a low-profile design.
COMPETITION: Digital VT100 and VT200 series; Digital-compatible and/or graphics terminals from Ann Arbor, Datamedia, Lear Siegler, Micro-Term, Teleray, Visual Technology, ADDS, Wyse, and several others.
PRICE: Purchase prices range from \$299 to \$2,995.

CHARACTERISTICS

VENDOR: CIE Terminals, Inc. (a subsidiary of C. Itoh Electronics, Inc.), 2505 McCabe Way, Irvine, CA 92714-6297. Telephone (714) 660-1421.

DATE OF ANNOUNCEMENT: CIT-414 & CIT-467—June 1982; CIT-101e—May 1983; CIT-220+—June 1984; CIT-224, CIT-50+ & ANT—November 1985.

DATE OF FIRST DELIVERY: CIT-414, CIT-467—third quarter 1982; CIT-101e—third quarter 1983; CIT-220+—July 1984; CIT-224—November 1985; CIT-50+ & ANT—January 1986.

NUMBER DELIVERED TO DATE: Over 50,000.

SERVICED BY: Service contract currently under negotiation.

MODELS

CIT-50+—an ANSI/ASCII terminal with 12-inch display features 24-line by 80/132 character capacity with low-profile, detachable keyboard with three-position tilt adjustment.

CIT-101e—an ergonomically designed version of the CIT-101, with a 14-inch tilt/swivel display and a low-profile detached keyboard.

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▷ resolution, with line, arc, circle, and box graphics generation. Limited editing capabilities are available in both models' alpha mode.

Graphics capabilities can also be added to the CIT-101e terminal through the addition of CIE Terminals' optional graphics cards. The CIG-201 Graphics Card Option provides the CIT-101e with Tektronix 4010/4014 compatibility.

COMPETITIVE POSITION

Since 1980, CIE Terminals has become a leading competitor in the Digital VT100 emulation market. The CIT-101e, a redesigned version of the CIT-101, as well as CIE's graphics models, and the CIT-220+ and CIT-224, have enabled the company to respond quickly to Digital's introduction of its new generation of displays, the VT200 series. Other competitors in the VT100/VT200 emulation market include Visual Technology, Datamedia, Teleray, Ann Arbor, Lear Siegler and Micro-Term, among others. Most of the vendors in the general purpose ASCII display market offer at least one VT100/VT200 emulation model as part of their product line.

The CIT-50+, which offers both ANSI and ASCII capabilities, competes with like models from Digital and Wyse. Visual Technology manufactures graphics terminals to compete with the CIT-414 and CIT-467. CIE's main competition is, of course, Digital, which holds about a 50 percent share of the VT100-type terminal market.

ADVANTAGES AND RESTRICTIONS

CIE Terminals' broad product line serves it well in its battle for a share of the VT100 (and VT200) market. In addition to VT100/VT200 emulation, its color and graphics models give CIE an advantage over most of the other competition ▷



The CIT-220+ is an ergonomically designed video terminal fully compatible with Digital's VT220, VT100 and VT52. The five programmable video attributes, multimode bidirectional auxiliary port and eleven setup menus enhance this unit's functional capabilities. The 12-inch diagonal, nonglare screen provides 24-line by 132/80-character column display.

▶ CIT-220+—a Digital VT220, VT100 and VT52 compatible terminal. Added features include a 24-line by 80-or 132-character display, five programmable video attributes, and a multimode, bidirectional auxiliary port. The ergonomic design provides a 12-inch diagonal nonglare monitor.

CIT-224—a monochrome alphanumeric terminal, compatible with the Digital VT100, VT102 and VT200. Includes a 14-inch screen with tilt and swivel base; features a total of 11 setup screens.

ANT—an alphanumeric terminal fully compatible with the ADDS Viewpoint A2, ITT Qume QVT 101, TeleVideo 910, and Lear Siegler ADM 3A/5. Includes a 14-inch diagonal, nonglare, PLA amber phosphor monitor.

CIT-414—a monochrome graphics terminal, compatible with the Tektronix 4010 and 4014 graphics terminals. The terminal includes a 12-inch display with a 35-line by 80-column format, and 640-by-480 dot resolution. A vector generator provides line, arc, circle, and box graphics capabilities.

CIT-467—a color graphics terminal compatible with the Tektronix 4027A. Contains all of the features of the CIT-414 plus eight displayable colors from a palette of 64.

TRANSMISSION SPECIFICATIONS

Transmission for all models is asynchronous, in half- or full-duplex modes, at selectable transmission rates from 50 to 19,200 bits per second. An RS-232-C interface is standard; a 20 ma current loop interface is optionally available. A character length of 7 or 8 bits is standard on all models, with 1 or 2 stop bits. Even, odd, or no parity is keyboard-selectable. ANSI X3.64-compatible control sequences are provided for all models except the CIT-467. An independent RS-232-C auxiliary port is also standard.

DEVICE CONTROL

All models transmit data in conversational mode (character-by-character as it is keyed). X-on/X-off protocol is used, with RTS-CTS handshake. Full ANSI X3.64 control sequence compatibility is provided for all models except the CIT-414 (partial ANSI) and CIT-467 (Tektronix 4027A control sequence compatibility).

The cursor on all models appears as a block or underline (operator-selectable), and can also be selected as blinking or nonblinking, and as visible or invisible. The CIT-414 and CIT-467 also feature a graphic input crosshair cursor. The CIT-50+, CIT-101e, CIT-220+, and CIT-224 include normal, reverse, blinking, underline, and bold. The CIT-414 includes normal, reverse, blinking, underline, and reverse half-intensity. The ANT includes normal, reverse, blinking, underline and half-intensity. The CIT-467 provides for display in various colors and backgrounds. Video attributes can be selected and used in any combination. Smooth scrolling and erase capabilities are available on all models.

Split screen operation is available on the CIT-101e and CIT-220+. A window erase feature allows any portion of the display screen to be erased by providing the line and column coordinates of the upper left and lower right corners. Column tabs may be set or cleared, either by the operator or host computer, in any location or in every eighth position by using a control sequence.

A tutorial soft setup mode is provided on all models for ease in setting display parameters. Monitor mode operation is also available on the CIT-101e.

The CIT-414 monochrome graphics terminal provides Tektronix 4010/4014 compatibility; in addition, the termi- ▶

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▷ in this area. Interestingly, the CIT-101e beat its direct competitor, the VT220, to market. The VT200 series has put price pressure on this market, and CIE will have to respond with the rest of the competitors (the VT220, at \$1,095, is currently \$400 cheaper than the CIT-101e; CIE will no longer manufacture this model). CIE's response has been the introduction of the CIT-220+, with a list price of \$995.

USER REACTION

In Datapro's 1985 Terminal Users Survey, conducted in conjunction with *Data Communications* magazine, a total of twelve responses were received from users of CIT series terminals. These responses represented an installed base of 456 units, including both the CIT-101 and CIT-101e, as well as other older CIT terminals. The users were asked to rate their terminals in seven specific categories. Their ratings are summarized in the following table.

	Excellent	Good	Fair	Poor	WA*
Overall performance	10	2	0	0	3.8
Ease of operation	10	1	1	0	3.8
Display clarity	9	3	0	0	3.8
Keyboard feel & usability	9	2	1	3	3.7
Ergonomics	6	2	2	2	3.0
Hardware reliability	9	3	0	0	3.8
Maintenance service/ technical support	4	5	1	1	3.1

*Weighted Average on a scale of 4.0 for Excellent.

The users were also asked whether or not they would recommend their CIT terminals to another user. Ten answered that they would; one answered no; and the twelfth user was undecided. □

▶ nal supports a native graphics mode as well as an ANSI-compatible alpha mode. In Tektronix emulation mode, the terminal provides the following features: 4096-by-4096 addressable plot area; vector variation (dot/dash); full page break; point plot; vector plot; and incremental plot. In native graphics mode, the following features are supported: 65K-by-65K addressable plot area; variable character sizes; variable character rotation; vector generation for line, arc, circle, and box; area fill; relocatable origin; repeat and auto repeat functions; and a crosshair cursor.

The CIT-467 color graphics terminal provides Tektronix 4027A compatibility, as well as an alpha mode. The terminal displays up to eight colors from a palette of 64. Up to 120 user-defined patterns can be programmed, displaying mixtures created by alternating pixels of the eight colors within the patterns (patterns can be stripes, shades, polkadots, etc.). Polygons and pie charts can be filled with these colors or patterns, automatically overlaying previous shapes. Line types available can be solid lines (one of 8 colors), dashed lines (7 styles), 120 patterned lines, and single points. Erase vectors rewrite over vectors by filling in with the current background color. The CIT-467 is software-compatible with Tektronix Plot 10. Other features include point and vector incremental plot, vector variation, and a crosshair cursor.

Optional graphics cards are available for the CIT-101e. The CIG-201 plug-in graphics card provides the CIT-101e with Tektronix 4010/4014 compatibility.

COMPONENTS

CIT-220+ CRT DISPLAY UNIT: Includes a 12-inch (diagonally measured) display screen. Provides a 1920-character screen capacity, arranged in 24 lines of 80 characters each. Characters are formed using a 7-by-10 dot matrix within a 10-by-10 cell in 80-column mode. Characters are displayed in P4 white, P31 green or PLA amber phosphor.

CIT-101e, CIT-50+, CIT-224, & ANT CRT DISPLAY UNITS: Include 14-inch (diagonally measured) display screens with a capacity of 3168 characters, with selectable formats of 24 lines by 80 or 132 characters. The CIT-101e offers a display screen with tilt/swivel capability. Characters are formed using a 7-by-9 dot matrix with descenders, and displayed in white (P4 phosphor); green (P31) or amber (P22) characters are optional. A 96-character ASCII set is displayable. The CIT-50+ characters are formed using a 7-by-9 dot matrix within a 10-by-13 cell and are displayed in P4 white, P31 green or PLA amber phosphor. The CIT-224 offers a tilt/swivel monitor. Characters, formed using a 7-by-15 dot matrix within a 10-by-16 cell, are displayed in P4 white, P31 green or PLA amber phosphor. The ANT characters are formed using a 7-by-11 matrix with 2 dot descenders within a 9-by-12 character cell. Characters are displayed in PLA amber phosphor.

CIT-414 & CIT-467 CRT DISPLAY UNITS: Include a 12-inch (diagonally measured) display screen. Screen capacity is 2800 characters, arranged in 35 lines of 80 characters each. Characters are formed using a 7-by-9 dot matrix with descenders on the CIT-414, and by an 8-by-14 dot matrix on the CIT-467. The CIT-414 displays characters in green (P39 phosphor); the CIT-467 can display up to eight colors, from a palette of 64 (expandable to 512). The 128-character ASCII set is standard; an optional 128 additional characters are available on the CIT-467. The CIT-467 can display various line types, including solid, dashed, patterned, and single points. Both models feature a 640-by-480 dot resolution for graphics.

CIT-414 & CIT-467 KEYBOARDS: Include an 85-key keyboard with a typewriter-style layout. The keyboard is detached, connected to the monitor via a six-foot coiled cord. The keyboard consists of a 67-key main array and an 18-key numeric pad with 4 general-purpose function keys. Seven LED status indicators are available; three are dedicated (on-line, local, keyboard locked) and four are user-programmable. Two-key rollover is standard.

CIT-101e KEYBOARD: This model includes a typewriter-style keyboard with a low-profile design. The CIT-101e's keyboard contains 85 keys in a layout identical to the models mentioned in the previous paragraph, as well as the same 7 LED status indicators.

CIT-220+ & CIT-224 KEYBOARDS: The CIT-220+ includes a low-profile, detachable, 105-key keyboard with typewriter-style layout; consists of 77-key main pad. The CIT-224 includes a 108-key, typewriter-style keyboard; consists of 80-key main pad. Both models contain 18-key auxiliary keypad with 6-key editing pad and 4-key cursor control pad. In addition, they contain an 18-key numeric pad and 4 function keys or O-F hexadecimal pad (selectable).

CIT-50+ & ANT KEYBOARDS: Both models include a low-profile, detachable keyboard and 6 foot coiled cord. The keyboard consists of 101 keys: 65-key main pad, 18-key auxiliary keypad, and 16 function keys.

PRICING

CIE Terminals markets their line of display terminals on a purchase only basis, with OEM discounts available. ▶

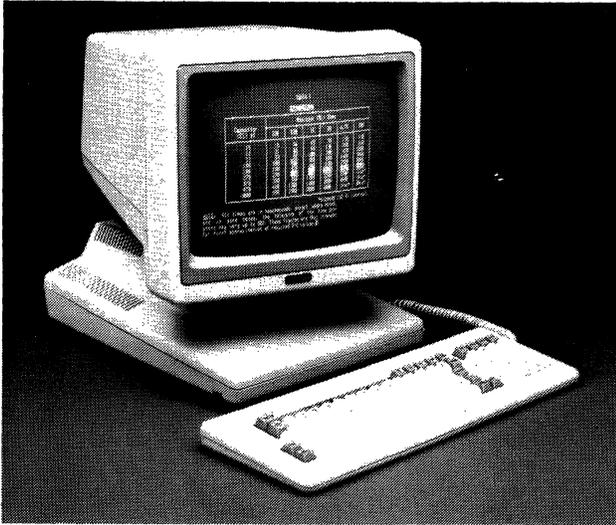
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EQUIPMENT PRICES

	<u>Purchase Price (\$)</u>
CIT-50+	649
ANT	299
CIT-101e	1,495
CIT-220+	995
CIT-414	1,495
CIT-467	2,995
CIT-224	749
CIG-201	795
CIG-267	1,195 ■

CIE Terminals CIT Display Terminals



The CIT-101e is an ergonomically designed DEC VT100 (and VT200) emulator. The unit contains a 14-inch tilt/swivel display with selectable 24-line by 80/132-character formats. The keyboard is detached and features a low-profile design.

MANAGEMENT SUMMARY

CIE Terminals, a subsidiary of C. Itoh Electronics, was formed in 1983 as a result of a merger between a division of C. Itoh and ACRO Corporation, C. Itoh's exclusive marketing representative for the CIT line. The initial members of the CIT line, the CIT-80 and CIT-101, are DEC VT100-emulating terminals. Since the introduction of the CIT-101 in 1980, additional members have been added to the CIT family. New members include a color alphanumeric model, monochrome and color graphics terminals, a full-page display word processing terminal, and an ergonomically redesigned version of the CIT-101.

The CIT-101 provides emulation of the DEC VT52, VT100, VT101, and VT102, and control sequence compatibility with ANSI standard X3.64. The unit includes a 12-inch display with selectable formats of 24 lines by 80 or 132 characters. The CIT-101e, introduced in 1983, is an ergonomically designed version of the CIT-101. It provides the majority of the features of the CIT-101, and adds a 14-inch tilt/swivel display, low-profile keyboard, and a smaller footprint. The CIT-80 is an entry-level version of the CIT-101, and has the same basic design as that model. The CIT-80 features DEC VT52/VT101 compatibility, and contains a 12-inch display with a 24-line by 80-character display format.

The CIT-161 is a color version of the CIT-101. It contains the same display design and all of the features of the CIT-101, including DEC VT100 and ANSI X3.64 compatibility, and 80/132-character display capability on a 12-inch screen. The CIT-161 can display eight primary colors in 64 programmable combinations.

CIE Terminals' CIT series is a family of DEC-emulating and Tektronix-compatible alphanumeric, graphics, and word processing terminals. Monochrome and color models are available.

MODELS: CIT-80, CIT-101, CIT-101e, CIT-161, CIT-414, CIT-427, and CIT-500.

DISPLAY: The CIT-500 features a 15-inch vertical display screen. The CIT-101e includes a 14-inch (diagonal) display; all other models contain a 12-inch (diagonal) screen. The CIT-500 offers a 64-line by 80-column display format; the CIT-414 and CIT-427 provide 35-line by 80-column formats; the CIT-80 contains a 24-line by 80-column format. All other models feature selectable formats of 24 lines by 80 or 132 columns.

KEYBOARD: All models include a detachable, typewriter-style keyboard. The CIT-101e and CIT-500 feature keyboards with a low-profile design.

COMPETITION: DEC VT100 and VT200 series; DEC-compatible and/or graphics terminals from Ann Arbor, Cobar, Datamedia, Lear Siegler, Micro-Term, Teleray, Visual Technology, and several others.

PRICE: Purchase prices range from \$1,195 to \$3,500.

CHARACTERISTICS

VENDOR: CIE Terminals, Inc. (a subsidiary of C. Itoh Electronics, Inc.), 2505 McCabe Way, Irvine, CA 92714-6297. Telephone (714) 660-1421.

DATE OF ANNOUNCEMENT: CIT-101—June 1980; CIT-80—June 1981; CIT-161, CIT-414, CIT-427, & CIT-500—June 1982; CIT-101e—May 1983.

DATE OF FIRST DELIVERY: CIT-101—December 1980; CIT-80—September 1981; CIT-161, CIT-414, CIT-427, & CIT-500—third quarter 1982; CIT-101e—third quarter 1983.

NUMBER DELIVERED TO DATE: Over 50,000.

SERVICED BY: Western Union.

MODELS

CIT-80—a DEC VT52/VT101-compatible terminal. Includes a 12-inch display with a 24-line by 80-column capacity and a detachable keyboard. Video attributes and smooth scrolling are standard.

CIT-101—an enhanced version of the CIT-80, featuring compatibility with the DEC VT52, VT100, VT101, and VT102. Added features include 80/132-column display capability and double size characters.

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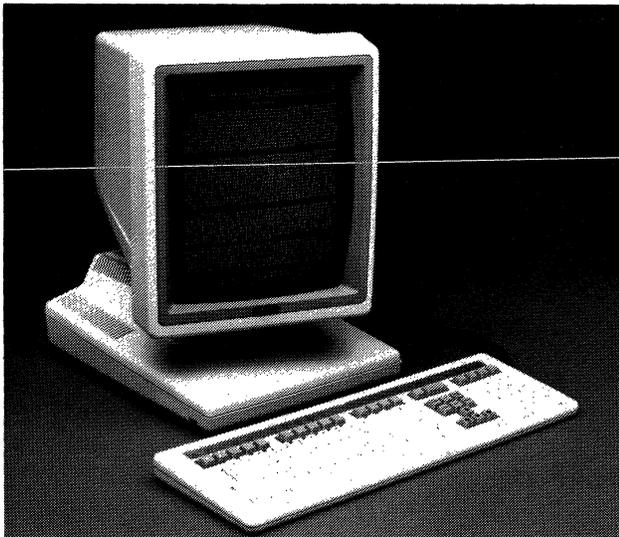
➤ The CIT-500 is a word processing/text editing terminal. The unit includes a 15-inch vertical monitor with a 64-line by 80-character display capacity. The CIT-500 is ergonomically designed, with a tilt/swivel monitor and a low-profile detached keyboard. Standard features include DEC VT100 and ANSI X3.64 compatibility, overstrike capability, and compatibility with Word 11, Lex 11, and WordStar word processing software.

CIE Terminals' Tektronix-compatible graphics models are the CIT-414 and CIT-427. The CIT-414 is a monochrome unit that emulates Tektronix' 4010 and 4014 terminals. The CIT-427 is an eight-color model for emulation of the Tektronix 4027A. Both terminals provide 640-by-480 dot resolution, with line, arc, circle, and box graphics generation. Limited editing capabilities are available in both models' alpha mode.

Graphics capabilities can also be added to the CIT-101, CIT-101e, and CIT-161 terminals through the addition of CIE Terminals' optional graphics cards. The CIG-201 Graphics Card Option provides the CIT-101 and CIT-101e with Tektronix 4010/4014 compatibility. The CIG-261 Color Graphics Card Option provides the CIT-161 with Tektronix 4010/4014 compatibility, as well as command compatibility with the Tektronix 4027A. The CIG-267 Color Graphics Card Option equips the CIT-161 with Tektronix 4027A compatibility, as well as compatibility with DEC alphanumeric software commands.

COMPETITIVE POSITION

Since the introduction of the CIT-101 in 1980, CIE Terminals has become the number-one competitor in the DEC VT100 emulation market. The CIT-101e, a redesigned version of the CIT-101, as well as CIE's graphics models, have enabled the company to respond quickly to DEC's introduction of its new generation of displays, the VT200



The CIT-500 is a word processing/text editing display with full overstrike capability. The 15-inch vertically oriented display screen provides a full-page display of 64 lines by 80 characters.

➤ **CIT-101e**—an ergonomically designed version of the CIT-101, with a 14-inch tilt/swivel display and a low-profile detached keyboard.

CIT-161—a color display terminal with most of the features found on the CIT-101. Eight colors are standard, available in 64 programmable combinations.

CIT-414—a monochrome graphics terminal, compatible with the Tektronix 4010 and 4014 graphics terminals. The terminal includes a 12-inch display with a 35-line by 80-column format, and 640-by-480 dot resolution. A vector generator provides line, arc, circle, and box graphics capabilities.

CIT-427—a color graphics terminal compatible with the Tektronix 4027A. Contains all of the features of the CIT-414 plus eight displayable colors from a palette of 64.

CIT-500—a word processing/text editing terminal with full-page display capability. Includes a 15-inch vertical display screen with a 64-line by 80-column capacity, and full VT100 compatibility. Ergonomic features include a tilt/swivel monitor and a low-profile detached keyboard.

TRANSMISSION SPECIFICATIONS

Transmission for all models is asynchronous, in half- or full-duplex modes, at selectable transmission rates from 50 to 19,200 bits per second. An RS-232-C interface is standard; a 20 ma current loop interface is optionally available. A character length of 7 or 8 bits is standard on all models except the CIT-80 (7 bits only), with 1 or 2 stop bits. Even, odd, or no parity is keyboard-selectable. ANSI X3.64-compatible control sequences are provided for all models except the CIT-427. An independent RS-232-C auxiliary port is also standard.

DEVICE CONTROL

All models transmit data in conversational mode (character-by-character as it is keyed). X-on/X-off protocol is used, with RTS-CTS handshake. Full ANSI X3.64 control sequence compatibility is provided for all models except the CIT-414 (partial ANSI) and CIT-427 (Tektronix 4027A control sequence compatibility).

The cursor on all models appears as a block or underline (operator-selectable), and can also be selected as blinking or non-blinking, and (on all models except the CIT-80) as visible or invisible. The CIT-414 and CIT-427 also feature a graphic input crosshair cursor. Video attributes available on the CIT-80 include normal, reverse, blinking, underline, half-intensity, and non-display (security). The CIT-101 and CIT-161 include all of these video attributes, plus double high/wide characters. The CIT-101e and CIT-500 include normal, reverse, blinking, underline, and bold. The CIT-414 includes normal, reverse, blinking, underline, and reverse half-intensity. The CIT-427 provides for display in various colors and backgrounds. Video attributes can be selected and used in any combination. Smooth scrolling and erase capabilities are available on all models.

Split screen operation is available on the CIT-101, CIT-101e, and CIT-161. A window erase feature allows any portion of the display screen to be erased by providing the line and column coordinates of the upper left and lower right corners. Column tabs may be set or cleared, either by the operator or host computer, in any location or in every eighth position by using a control sequence.

A tutorial soft set-up mode is provided on all models for ease in setting display parameters. Monitor mode operation is also available on the CIT-101, CIT-101e, CIT-161, and CIT-500.

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➤ series. Other competitors in the VT100 emulation market include Visual Technology, Datamedia, Teleray, Ann Arbor, Lear Siegler, Micro-Term, and Cobar, among others. Most of the vendors in the general purpose ASCII display market offer at least one VT100 emulation model as part of their product line.

The CIT-500, a full-page display word processing unit, competes with other full-page terminal models from Ann Arbor and Micro-Term. Visual Technology manufactures graphics terminals to compete with the CIT-414 and CIT-427 (although Visual does not make a color model). CIE's main competition is, of course, DEC, which holds about a 50 percent share of the VT100-type terminal market.

ADVANTAGES AND RESTRICTIONS

CIE Terminals' broad product line serves it well in its battle for a share of the VT100 (and VT200) market. In addition to VT100 emulation, its color and graphics models give CIE an advantage over most of the other competition in this area. Interestingly, the CIT-101e beat its direct competitor, the VT220, to market. The VT200 series has put price pressure on this market, and CIE will have to respond with the rest of the competitors (the VT220, at \$1,295, is currently \$200 cheaper than the CIT-101e).

USER REACTION

In Datapro's 1983 Terminal Users Survey, conducted in conjunction with *Data Communications* magazine, a total of four responses were received from users of CIT series terminals. These responses represented an installed base of 91 units, including both CIT-80 and CIT-101 terminals. The users were asked to rate their terminals in seven specific categories. Their ratings are summarized in the following table.

	Excellent	Good	Fair	Poor	WA*
Overall performance	3	1	0	0	3.8
Ease of operation	3	1	0	0	3.8
Display clarity	2	0	1	0	3.3
Keyboard feel & usability	2	0	1	0	3.3
Ergonomics	2	1	0	0	3.7
Hardware reliability	1	2	0	0	3.3
Maintenance service/ technical support	2	1	0	0	3.7

*Weighted Average on a scale of 4.0 for Excellent.

The users were also asked whether or not they would recommend their CIT terminals to another user. Three answered that they would; the fourth user was undecided. □

➤ The CIT-500 word processing terminal provides downline loadable character sets and downline loadable I/O logic allowing alternate terminal personalities to be established. The terminal features selectable video/logical character attributes. Full overstrike capability is standard. The CIT-500 is compatible with multiuser computer systems using Word 11, Lex 11, and WordStar software.

The CIT-414 monochrome graphics terminal provides Tektronix 4010/4014 compatibility; in addition, the terminal supports a native graphics mode as well as an ANSI-compatible alpha mode. In Tektronix emulation mode, the terminal provides the following features: 4096-by-4096 addressable plot area; vector variation (dot/dash); full page break; point plot; vector plot; and incremental plot. In native graphics mode, the following features are supported: 65K-by-65K addressable plot area; variable character sizes; variable character rotation; vector generation for line, arc, circle, and box; area fill; relocatable origin; repeat and auto repeat functions; and a crosshair cursor.

The CIT-427 color graphics terminal provides Tektronix 4027A compatibility, as well as an alpha mode. The terminal displays up to eight colors from a palette of 64. Up to 120 user-defined patterns can be programmed, displaying mixtures created by alternating pixels of the eight colors within the patterns (patterns can be stripes, shades, polkadots, etc.). Polygons and pie charts can be filled with these colors or patterns, automatically overlaying previous shapes. Line types available can be solid lines (one of 8 colors), dashed lines (7 styles), 120 patterned lines, and single points. Erase vectors rewrite over vectors by filling in with the current background color. The CIT-427 is software-compatible with Tektronix Plot 10. Other features include point and vector incremental plot, vector variation, and a crosshair cursor.

Optional graphics cards are available for the CIT-101, CIT-101e, and CIT-161. The CIG-201 plug-in graphics card provides the CIT-101 and CIT-101e with Tektronix 4010/4014 compatibility. The CIG-261 Color Graphics Card plugs into the CIT-161 and provides that terminal with compatibility with the Tektronix 4010 and 4014 monochrome terminals, using the same color commands as the Tektronix 4027A. The CIG-267 Color Graphics Card plugs into the CIT-161 and provides it with DEC alphanumeric software command compatibility as well as with Tektronix 4027A compatibility.

COMPONENTS

CIT-80, CIT-101, & CIT-161 CRT DISPLAY UNITS: Include a 12-inch (diagonally measured) display screen. The CIT-80 provides a 1920-character screen capacity, arranged in 24 lines of 80 characters each. The CIT-101 and CIT-161 provide a 3168-character screen capacity, with selectable formats of 24 lines by 80 or 132 characters each. Characters are formed using a 7-by-9 dot matrix in a 9-by-12 cell. On the CIT-80 and CIT-101, characters are displayed in white (P4 phosphor); green (P31 phosphor) or amber (P22 phosphor) characters are optionally available. The CIT-161 can display up to eight colors, in 64 programmable combinations. A 128-character ASCII set is displayable, plus line drawing graphics.

CIT-101e CRT DISPLAY UNIT: Includes a 14-inch (diagonally measured) display screen with tilt/swivel capability. Screen capacity is 3168 characters, with selectable formats of 24 lines by 80 or 132 characters each. Characters are formed using a 7-by-9 dot matrix with descenders, and displayed in white (P4 phosphor); green (P31) or amber (P22) characters are optional. A 96-character ASCII set is displayable.

CIT-414 & CIT-427 CRT DISPLAY UNITS: Include a 12-inch (diagonally measured) display screen. Screen capacity is 2800 characters, arranged in 35 lines of 80 characters each. Characters are formed using a 7-by-9 dot matrix with descenders on the CIT-414, and by an 8-by-14 dot matrix on the CIT-427. The CIT-414 displays characters in green (P39 phosphor); the CIT-427 can display up to eight colors, from a palette of 64 (expandable to 512). The 128-character ASCII set is standard; an optional 128 additional characters

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► are available on the CIT-427. The CIT-427 can display various line types, including solid, dashed, patterned, and single points. Both models feature a 640-by-480 dot resolution for graphics.

CIT-500 CRT DISPLAY UNIT: Includes a 15-inch (vertically oriented) full-page interlaced display screen with tilt/swivel capability. Screen capacity is 5120 characters, arranged in 64 lines of 80 characters each. Characters are formed using a 7-by-9 dot matrix with descenders, and displayed in green (P39 phosphor). Character sets are down-line loadable.

CIT-80, CIT-101, CIT-161, CIT-414, & CIT-427 KEYBOARDS: Include an 85-key keyboard with a typewriter-style layout. The keyboard is detached, connected to the monitor via a six-foot coiled cord. The keyboard consists of a 67-key main array and an 18-key numeric pad with 4 general-purpose function keys. Seven LED status indicators are available; three are dedicated (on-line, local, keyboard locked) and four are user-programmable. Two-key rollover is standard.

CIT-101e & CIT-500 KEYBOARDS: These models include a typewriter-style keyboard with a low-profile design. The CIT-101e's keyboard contains 85 keys in a layout identical to the models mentioned in the previous paragraph,

as well as the same 7 LED status indicators. The CIT-500's keyboard contains 105 keys, including a main key array, cursor/control keypad, numeric pad with 4 general-purpose function keys, and a row of programmable function keys. A total of 41 programmable functions are available. Two-key rollover is standard on both models.

PRICING

CIE Terminals markets the CIT series of display terminals on a purchase only basis, with OEM discounts available. Service is performed through Western Union.

<u>Models</u>	<u>Purchase Price</u>
CIT-80	\$1,195
CIT-101	1,495
CIT-101e	1,495
CIT-161	2,595
CIT-414	1,895
CIT-427	3,500
CIT-500	2,395
CIG-201 Graphics Card	1,395
CIG-261 Color Graphics Card	1,600
CIG-267 Color Graphics Card	1,195 ■