

AT&T Teletype 5400 Series Display Terminals

Models 5410 & 5420

■ PROFILE

Function • general-purpose, nonprogrammable, interactive keyboard-display ASCII terminals • ANSI 3.64 compatible.

Architecture Supported • any architecture supporting an ASCII terminal; local/remote attachment.

Communications • half-/full-duplex, asynchronous, 300 bps to 19.2K bps • point-to-point • character-only transmission mode on Model 5410; character/line/page/block modes on Model 5420 • RS-232C communication/printer port interfaces.

Operating System • none.

Database Management • none; only in association with host facilities.

Transaction Processing Management • none; only in association with host facilities.

Support Software • none; only in association with host facilities.

Processor • display-oriented control and communication logic • host-initiated print operation on Model 5410; local/remote print operation on Model 5420.

Terminals/Workstations • single keyboard 1920-/3168-character display • auxiliary printer port for local printer attachment.

First Delivery • 1983.

Systems Delivered • unknown.

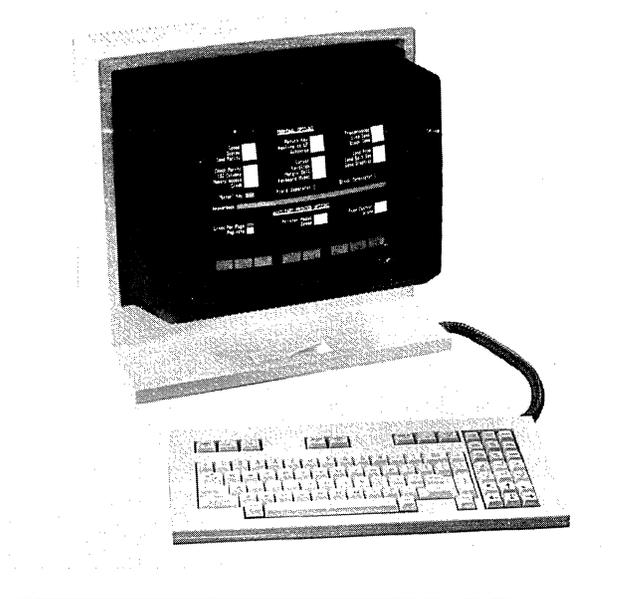
Comparable Systems • competitive with a number of ASCII display terminals, typically DEC VT100, Anderson-Jacobson 510/520, Beehive DM Series, Datagraphic 132, DEC VT100, Hazeltine Esprit and Exec 80, Lear Siegler ADM Series, ADDS Viewpoint Series and Model 25, IBM 3101, Televideo 900 Series, Teleray Models 7, 16, and 100.

Vendor • AT&T Teletype Corporation; 5555 Touhy Avenue, Skokie, IL 60077 • 312-982-2000.

Distribution • nationwide through AT&T Teletype sales offices.

■ ANALYSIS

Within the past few years, a new class of ASCII display terminal has appeared under the name "buffered display/editing terminals." Essentially, these products allow the user to build screens of data—called pages—and store them locally in a RAM buffer. Thus, when users wish to recall a page, it can be done with no host intervention and no associated communications cost. These same terminals also allow the local editing of screen data, relieving the host of this chore.



The AT&T Teletype 5420 is this class of terminal. It can store up to 3 pages of **80- or 132-column** by 24-line screens, and operates in character/line/page/block communication modes. It even has a bidirectional printer port that allows concurrent printing and keyboard operations. This is quite an advantage, as we'll discuss later under Strengths.

The 5410, the other member of the 5400 series, is pretty much your standard character-mode only, ANSI 3.64-compatible keyboard-display terminal. While it offers no local page storage or bidirectional printer port, it does share the 5420's facility for handling 80- or 132-column lines.

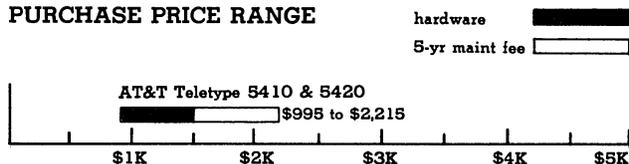
Both terminals are in one of the most crowded, highly competitive segments of the communications marketplace where price unfortunately is one of the most important factors in the selection process while there are currently over 100 ASCII keyboard-displays available (see report 722), the principal players are Televideo, ADDS, Beehive, DEC, Lear Siegler, Visual, and Esprit. For the most part, the offerings from these companies (except DEC) are priced **below** comparable 5410 and 5420. The price spreads, however, aren't that great and the 5410 and 5420 are very nice products.

□ Strengths

The strongest feature of the 5410 lies with its 80-/132-column line display capability. The 132-column (characters) display can be used for displaying spreadsheet data or large inventory forms more conveniently. In addition, it permits users to view a standard printed line as it appears when printed.

The 5420 is the more powerful of the 2 products. Aside from a 132-column line, this terminal provides up to 3 pages of storage which allows users to build multiple screens of data and store them locally. Aside from being a convenience factor, local storage cuts communication costs by eliminating the need to store and retrieve such data at the host. Note that the stored pages can be 80 or 132 columns wide. While some of AT&T Teletype's

PURCHASE PRICE RANGE



AT&T TELETYPE 5410 & 5420 PURCHASE PRICING bar graph covers price range between "small" and "large" configurations for hardware (solid bar) and for associated 5-year maintenance (open bar) • **SMALL Model 5410** consists of keyboard-display terminal with auxiliary printer port • **LARGE Model 5420** consists of keyboard-display terminal with 3 pages of display memory and bidirectional printer port.

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competitors do offer a multipage local storage facility, none to our knowledge allow storing 132-column pages.

The final strong point of the 5420 is its bidirectional auxiliary printer port. This port allows the host to directly transmit data to the printer without interfering with terminal activity. Users can continue to enter data from the keyboard while the received data is printed. The bidirectional port is an uncommon feature, available only with the Televideo and Beehive DM5B terminals.

□ Limitations

The most severe limitations of both terminals are the lack of powerful graphics, and an intelligent terminal upgrade. While AT&T Teletype does offer a 96-symbol line-drawing and special graphics PROM set for both terminals, no sophisticated graphic sets are available as yet.

The lack of an intelligent option, such as offered by DEC on its VT100, could prove to be a drawback to those installations planning to implement distributed processing networks. Such an environment variable will involve local processing, and any terminal which cannot be upgraded will likely be at a disadvantage.

The user should also consider that neither AT&T Teletype terminal offers a smooth scrolling capability. This facility allows the user to vary the speed at which data from the host is displayed on the screen. Some operators find the "normal" rate too quick to read comfortably, others do not. You might survey yours before selecting or rejecting the AT&T Teletype offerings.

■ COMMUNICATIONS FACILITIES OVERVIEW

Both terminals operate as general-purpose, half-/full-duplex asynchronous ASCII display units at rates of 300 bps to 19.2K bps. Online operating modes are point-to-point; keyboard-to-line/display; line-to-display; line-to-printer. On Model 5420, incoming printer-bound data is buffered. Both terminals support echoplexing; Model 5420 provide local echo. The DTE/DCE electrical interface as RS-232C.

■ SOFTWARE

No software support is furnished.

□ Operating System

None; firmware controls all terminal functions. Programmable key functions may be downline loaded from host or established locally, and held in nonvolatile storage.

■ HARDWARE

Terms • terminals offered on purchase basis only; quantity discounts have not been announced as yet.

Support • rendered from AT&T Teletype field offices at varying monthly rates depending on location of customer from field office • Zone 1 service covers greater metropolitan area, is typical monthly charge, and the one shown in this report.

■ OVERVIEW

AT&T Teletype Models 5410 and 5420 are general-purpose ASCII terminals which operate point-to-point at speeds up to 19.2K bps. Both support 128 ASCII characters, or can be ordered with 96 line-drawing and special graphic characters.

Both terminals are quite similar in basic operation and facilities provided (see Model packages). For example, each support an 80-/132-character display line, split-screen formatting, scrolling, and limited data editing. Both are also soft-configured via a menu, and have hardware/software self-checking facilities. The major differences include local storage of displayed pages, nondistinctive scrolling, memory windowing, and buffered printer port—all features of the Model 5420.

Model Packages

Model 5410 Display Terminal • keyboard-display terminal with 7-tilt position CRT; displays 1920/3162 characters at 24 lines x 80/132 characters; 25th status line • 7x9 dot matrix with decender for 80-character format; 5x7 dot matrix with decender

for 132-character format • 128 ASCII character set of 96 line-drawing and special graphic characters • detachable typewriter format keyboard with separate numeric keypad; 8 programmable function keys • auxiliary RS-232C printer port • half-/full-duplex operation • 50-cps to 19.2K-bps transmission rate • ANSI 3.64 compatible • character mode transmission:

\$995 prch \$10 maint

Model 5420 Buffered Display Terminal • same as Model 5410 except has 78-line display (scroll buffer) memory with 80-character-per-line display format, or 54-line display memory with 132-character-per-line display format; 8 user-programmable and 8 host-definable keys; 2K-character buffered printer port; character/line/page/block mode transmission:

1,495 12

□ CPU & Memory

Both terminals are microprocessor controlled. The controller uses 32K bytes of RAM, and up to 32K bytes of ROM for software-driven functions. Some 2K bytes of RAM in battery-backed CMOS is employed for programmable function key strings.

Model 5420 provides a 9600-character buffer which allows users to store data locally. This buffer can be used to access and manipulate data in 4 different ways: scroll mode, page mode, horizontal split screen, and windowing. In scroll mode, the operator can scroll through 72 80-character lines; for 132-character lines, 48 lines can be scrolled. In page mode, the memory is divided into 3 distinct pages, each of which can have its own set of screen labels for system-defined function keys.

The horizontal split-screen feature allows the screen to be divided into a scrolling region and 1 or 2 fixed regions. The defined scrolling region must contain at least 2 lines. Split screening operation can be used in scroll or page modes. Windowing allows the 9600-character memory to be divided into as many as 4 workspaces of varying length and width. Each workspace can have its position location defined on the screen, and displayed workspaces can be overlapped. Maximum size of the workspace is 1782 characters; its length cannot exceed 24 lines.

□ I/O & Communications

Both terminals support point-to-point asynchronous ASCII communication at rates of 300 bps to 19.2K bps. Both communicate over switched or dedicated lines in half-/full-duplex modes and support echoplexing. Odd or even character parity or mark or space are selectable. Parity detection is also selectable.

Terminal operating parameters are user selected from a menu. Such factors as transmission speed, protocol, send/detect parity, size of display column, etc are displayed as labels, and the user keys-in the parameter. User-programmable function key assignments are also established from the keyboard—up to 50 characters can be assigned to each key; labels associated with each key are displayed on the 26th and 27th lines of the display. The user-programmable/host-programmable function key values and user-configured operating parameters are held in CMOS RAM.

Both terminals are equipped for RS-232C interfaces for DTE/DCE connection, and for connecting the auxiliary printer to the terminal. The printer can be addressed directly by the host, and can receive data without it displayed on the screen. The Model 5420's interface is buffered and bidirectional which means that while the printer is receiving, the operator can continue keying data for transmissions. A locally initiated print operation is available only on the Model 5420.

All incoming data is processed through a 2000-character line buffer which passes the characters to the display and/or printer. When the buffer is filled to within 1000 characters of its capacity, the terminal transmits a DC3 character to request the host to stop sending data. A DC1 character requests transmission resumption.

PRCH: purchase price. **MAINT:** monthly maintenance charge for local service. Prices effective as of June 1984. All prices single quantity.

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Disk

No disk/diskette is supported.

Terminals/Workstations

Models 5410 and 5420 are basically the same terminal. The 5420 is the more powerful of the two, with its extended editing and formatting capabilities, character/line/page/block mode transmission, 3 pages of display memory, and buffered printer port.

Both terminals provide a split-screen function which divides the screen into 2 fixed regions and 1 variable region. While both terminals support scrolling, only the 5420's is nondestructive as a result of the display memory buffer design. Both terminals also support automatic character wraparound (called autowrap), whereby a line is automatically advanced when the character reaches the right margin.

A particularly useful feature available on both terminals is the 80-/132-character line format. Such a feature, until recently, was rare on any terminal. It is still an exceptional feature in low-cost terminals.

Configuration • tabletop keyboard-display with detached typewriter-style keyboard and separate numeric keypad • 3 pages of display buffer on Model 5420 • both terminals accommodate a local serial printer.

Display • 12-inch diagonal CRT • displays 1920 characters at 24 lines x 80 characters or 3168 characters at 24 lines x 132 characters; 25th status line; 26th and 27th lines for programmable function key labels • 128 ASCII character set and 96 line drawing and special graphic characters.

Edit & Format Features • cursor up, down, left, right, home, save, and restore • solid or blinking cursor • scroll up and down • cursor wraparound • clear line, screen, all • character/line insert/delete • split screen • revise index • Model 5420 only: protected fields, tab, delete word, nondestructive scrolling, active memory/workspace positioning, and next/previous page.

Peripherals • RS-232C interface supports local printer attachment • input from terminal (Model 5420) or host.

Printers

Both terminals will accommodate any serial printer with an RS-232C interface. The interface employed with the Model 5410 is unidirectional, while the 5420 employs a buffered bidirectional interface. The bidirectional feature bypasses data transmitted from the host around the screen so that users can continue to key data for transmission during a print operation. This is quite a performance boost, as was mentioned under Strengths.

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