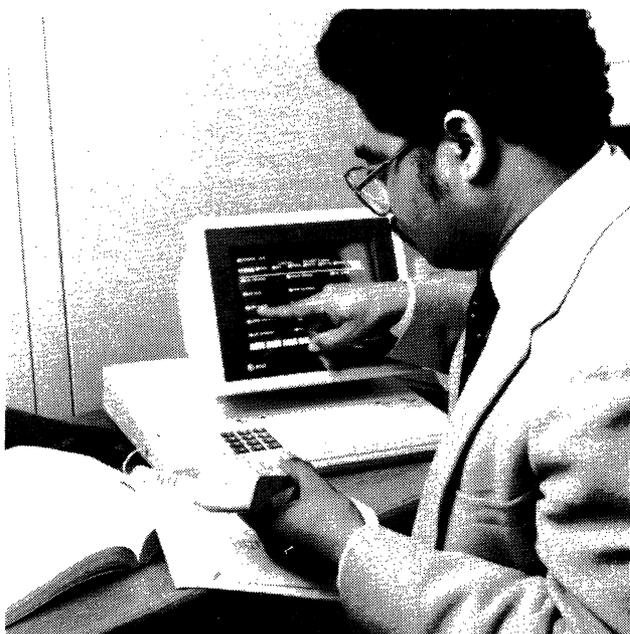


AT&T Personal Terminal Model 510

MANAGEMENT SUMMARY

AT&T's entry in the integrated voice/data terminal (IVDT) market is the Personal Terminal Model 510, introduced in March 1985. Designed for use with the AT&T System 75 and System 85 PABXs, the Model 510 includes a 9-inch display, integral telephone handset, speakerphone for hands-free operation, autodialer, built-in calculator and calendar, and a telephone directory with 100 listings (up to 200 listings with the optional Directory Cartridge). Data capabilities, available via an integrated digital data module, include character and block mode transmission at speeds up to 19,200 bps, 2 pages of data memory, 40/80/132 column modes, and multiple screen windows. Simultaneous voice and data transmission is possible over one physical line to the PABX.

The features mentioned above can be found on most IVDTs on the market today; the Personal Terminal Model 510, however, is a unique product. With the Model 510, AT&T has introduced the first IVDT with touch-sensitive screen capabilities. The Workstation Design Group of AT&T Information Systems Laboratories has designed and patented a "soft" touch-sensitive screen for the Model 510. The soft screen utilizes a silicon gel, giving the screen a softer, more cushiony feel. The user is actually provided with tactile feedback when the screen is touched, unlike many other "hard" touch-sensitive screens. Targets on the screen, represented by circles, provide the user with a menu of choices or functions. When a target is touched, the circles ➤



The AT&T Personal Terminal Model 510 is an integrated voice/data terminal (IVDT) equipped with a touch-sensitive screen. Designed for use in conjunction with the AT&T System 75 and System 85 PABXs, the Model 510 provides one-touch access to voice and data functions.

AT&T Information Systems' Personal Terminal Model 510 is an integrated voice/data terminal designed for use with the AT&T System 75 and System 85 PABXs. The Model 510 includes a patented "soft" touch-sensitive display screen, for one-touch access to voice and data features; a retractable alphanumeric keyboard is optional. Standard features of the Model 510 include a 9-inch display, integral telephone handset, built-in speakerphone, and a telephone dial pad.

MODELS: Personal Terminal Model 510.

DISPLAY: The Model 510 features a 9-inch display screen with a 27-line by 80-column display format as standard; 40-, 80-, and 132-column display modes are selectable. The screen is touch-sensitive, using a patented "soft" touch technique that provides the user with tactile feedback.

KEYBOARD: Voice and data features are activated through the touch-sensitive screen. A 72-key alphanumeric keyboard is optionally available.

INTEGRATED HANDSET: An integrated telephone R-handset is located to the left of the display; a built-in speakerphone and telephone dial pad are also included.

COMPETITION: Northern Telecom Displayphone; Rolm Cypress; GTE XT300E ActionStation; InteCom/Wang Keystone; ITT Telecom InfoStation; Mitel SuperStation; Ambi AmbiSet; and others.

PRICE: The Personal Terminal Model 510 is priced at \$1,795; the optional keyboard is \$100.

CHARACTERISTICS

MANUFACTURER: AT&T Information Systems, 1 Speedwell Avenue, Morristown, NJ 07960. Telephone (201) 898-2000.

IN CANADA: AT&T Canada, 1500 Don Mills Road, Ontario M3B 3K4. Telephone (416) 449-4300.

MODELS: Personal Terminal Model 510.

DATE ANNOUNCED: March 1985.

DATE FIRST INSTALLED: May 1985.

NUMBER INSTALLED TO DATE: Contact vendor.

MODELS

The Personal Terminal Model 510 is available in digital (510D) and analog (510A) versions. Standard features in- ➤

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▷ are transformed into squares, additionally providing the user with visual feedback. This visual and tactile feedback reduces the possibility of input errors on the Model 510's screen.

In phone mode, the targets on the screen allow the user to select lines (from among 4 line appearances), activate features such as conference calls, transfer, hold, and drop, retrieve phone messages, provide notification of other messages such as electronic mail, and dial a number from the 100-listing local directory. The Model 510 provides one-touch access to all System 75/85 PABX Unified Messaging services via an on-screen 40-character display. In data mode, the targets on the screen provide for one-touch auto log-in to data bases such as Dow Jones. A time manager and on-screen calculator are also included.

For extensive data applications, users may configure the Personal Terminal Model 510 with an optional alphanumeric keyboard. The keyboard includes 72 keys, including eight function keys, cursor control keys, and a "Dial It" key that provides the same one-touch telephone dialing as the touch screen. The keyboard has a low-profile design, and retracts into the terminal's base when not in use. The data capabilities of the Model 510 are stored in an asynchronous integrated digital data module within the terminal, and can be accessed through the touch screen or the keyboard. The Model 510 can transmit asynchronous data in character and block modes, at speeds up to 19,200 bps. Other standard data functions include horizontal/smooth scrolling, multiple display windows, 2 pages of data memory, and protected fields/forms support.

Each Personal Terminal Model 510 is equipped with a software cartridge that provides the user with an introduction to the Model 510 and training in its use. Two optional software cartridges are also available. The Directory Cartridge doubles the capacity of the local directory (from 100 listings to 200), or it can be used to back-up the local directory; the Security Cartridge performs the function of a software lock to prevent unauthorized access to the terminal.

COMPETITIVE POSITION

Despite predictions of rapid growth at its outset, the market for integrated voice/data terminals (IVDTs) remains slow-moving and only marginally successful. A number of reasons for the disappointing performance of this market have been proffered, including the lack of concrete applications for the devices and the targeting of the executive segment as the prime users of IVDTs. Whatever the reasons, many companies who founded their businesses on the premise that the IVDT market would be a lucrative one have run into financial difficulties.

The most successful of the IVDT vendors have been the PABX makers. Northern Telecom, which founded the IVDT market with the introduction of the Displayphone in 1981, has done reasonably well with the product, selling it in conjunction with their highly successful SL-1 PABX product. Likewise, telecommunications vendors such as ▷

▶ include a 9-inch touch-sensitive display screen; telephone handset with 7-foot connecting cord; built-in speakerphone with on/off button and volume control; telephone dialing pad, phone button, privacy button, and microphone on/off button; message waiting lamp; software cartridge port; and Centronics-compatible parallel printer port. A 72-key, low-profile alphanumeric keyboard is optionally available. The keyboard is retractable, and can be stowed in the terminal's housing when not in use. The Model 510 is a compact device, with dimensions of 11½ inches high, 13⅞ inches wide, and 14⅜ inches deep, and a weight of 18½ pounds (without the optional keyboard). Optional software cartridges for directory expansion and security functions are available. For data applications, the Model 510 conforms to the ANSI X3.64 standard for command codes.

TRANSMISSION SPECIFICATIONS

The AT&T Personal Terminal Model 510 provides four line appearances plus a dedicated data line. Voice and data may be simultaneously transmitted over a single line to the AT&T System 75 or System 85 PABX. An asynchronous integrated digital data module provides for asynchronous data transmission over the PABX, in character or block modes, half- or full-duplex, at speeds from 300 to 19,200 bps. Parity checking is provided, along with flow control and answerback. A Centronics-compatible parallel printer port is included.

The Personal Terminal Model 510D must be plugged into a 110-120 V outlet. The digital voice terminal is connected via a standard 8-position modular jack for connection to AT&T System 75 or System 85 Digital Communications Protocol. The telephone handset is connected via a standard 4-pin modular jack. The optional alphanumeric keyboard is connected via an 8-wire keyboard jack in the rear of the unit. The Personal Terminal Model 510A provides two modular jack connections for analog lines.

For more information on the AT&T Information Systems, System 85, see Report TC07-070NV-101. For more information on the AT&T Information Systems, System 75, see Report TC07-070NV-301.

DATA FEATURES

An integral digital data module provides the Personal Terminal Model 510 with data terminal capabilities. In data mode, the Model 510 conforms with the ANSI X3.64 standards for command code compatibility. The Model 510 is also compatible with the older AT&T 513 BCT. The Model 510 provides for both character and block mode transmission.

Using the touch screen, one- or two-touch access to the following data features is available: communications with System 75 or System 85 applications processors; access to resident services such as Message Center and Electronic Document Communication; and links to public data bases for access to stock prices, financial reports, and newswires. In data mode, an on-screen keyboard is provided, with touch targets for the simplification of data entry and retrieval. One-touch access to on-line data bases is also provided via the touch screen.

For more intensive data applications, users can optionally add an alphanumeric keyboard to the Model 510. Automatic log-in is provided to AT&T processors and other UNIX-based processors.

Standard data features include 2 pages of data memory; vertical/horizontal smooth scrolling; visual attributes including underline, blank, reverse video, and half-intensity; multiple screen windows; 40/80/132-column display modes; ▶

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➤ AT&T, Rolm, InteCom (in a joint venture with Wang), Mitel, GTE, and ITT Telecom have all introduced IVDTs as an add-on device for their PABX lines. It is primarily these vendors who have found, at least for now, a viable market for these products.

AT&T has unveiled a number of IVDTs for use with their PABX systems, including the Dimension, System 85, and System 75. These include the 515 BCT, an intelligent IVDT that could be downloaded to emulate a number of different ASCII terminals. However, the Personal Terminal Model 510 is technologically superior to these earlier IVDT products. The Model 510's touch-screen capability makes it the first IVDT on the market to utilize this technology. With the number of features that most IVDTs are designed to access via a single keystroke, the implementation of a touch screen for this type of device is a logical and smart step. In fact, it would seem that touch-sensitive screens are ideal for the types of applications for which IVDTs are designed. We feel that the Personal Terminal Model 510 will carve itself a respectable niche in this marketplace, not only because of the strength of AT&T, but also due to its technological advantages.

ADVANTAGES AND RESTRICTIONS

As we have just mentioned, the most attractive feature of the Model 510 is its touch-sensitive screen. AT&T has patented the screen used on the Model 510; it is a "soft" touch screen, that provides improved tactile feedback over most conventional touch screens available today. The screen implements a silicon gel that gives the screen a soft, cushiony feeling. When a target is pressed, the screen actually gives, providing the user with positive tactile feedback. In addition, visual feedback is supplied; the targets, when they are touched, change from circles to squares. These 2 features virtually eliminate the chance for an input error using the touch screen. The screen is also designed so that it will not go out of alignment. Unlike other touch screens, that use a separate grid of light beams on top of the screen, the Model 510's screen uses the light from the gun that paints the screen.

For ease of use, the Model 510 is unmatched by any other comparable product. When the "Phone" button on the terminal console is depressed, the phone mode screen appears. The phone mode screen includes 4 line appearances, each of which is activated by touch. Status displays tell the user if a line is idle, active, or on hold. Also displayed are messaging functions, targets for programmable System 75/85 features, and 8 touch blocks that provide menus for additional functions. Three of these blocks provide access to the local directory, time manager, and calculator.

For data functions, the screen provides one-touch access to private and public data bases. For more intensive data applications, an optional keyboard is available. Additional software cartridges provide the Model 510 with training courses for new users, additional directory space, and security features.

➤ protected field/forms support; and separate user- and host-programmable screen labels.

VOICE FEATURES

The voice features on the Personal Terminal Model 510 may be used in the traditional manner, or via the touch screen. For traditional use, a telephone dial pad is provided on the terminal console. The integral handset may be used; for hands-free operation, the speakerphone button activates the built-in speakerphone. The microphone on/off button provides the caller with privacy.

For touch screen operation, the user presses the phone button on the console. The screen is then activated, providing the user with a menu of operations which are activated by touching a "target," or touchpoint, on the screen. The target appears as a circle; once pressed, the circle becomes a square, providing the user with visual confirmation that the target has been pressed and its associated function activated.

The activated touch screen has 4 distinct parts. The top part of the screen provides the 4 telephone line appearances; the state of the line (idle, active, or hold) is displayed by a status message next to the line display. Calls from and to individuals within the company are also identified. To the right of the line appearances, displays provide call notifications and preset time alarms. Below that are touch targets for Conference, Transfer, Drop, and Hold functions.

The second section of the screen provides the messaging functions. When the Message Waiting lamp on the terminal console lights, the user can retrieve the message by touching a target on the screen. With Unified Messaging (available on the System 75/85), this includes all items addressed to the user's electronic mailbox via Message Center Service, AUDIX, Electronic Document Communication, and Leave Word Calling.

Below the messaging section are 9 touch targets that may be programmed for any System 75 or System 85 application desired.

At the bottom of the screen are 8 menu blocks, that generate menus for additional Model 510 functions. These include 3 resident services:

- **Time Manager**—maintains a list of daily objectives and acts as a personal reminder system, with audible alarms;
- **Calculator**—converts the screen to a calculator for mathematical calculations; and
- **Local Directory**—maintains a personal list of up to 100 names, addresses, and telephone numbers, or automatic log-ins to data bases. Numbers from the local directory can be dialed via a single touch of the target beside the name displayed on the screen.

➤ Two optional software cartridges are available to plug into the Model 510. The Directory Cartridge doubles the number of listings in the local directory from 100 to 200; it can also serve as a backup device, for the copying of an entire directory, specified directory group, or the Time Manager service. The Security Cartridge performs the function of a software lock to prevent unauthorized access to the terminal and its functions. An electronic serial number from the cartridge is stored in the terminal; to change the password, the user must insert the security cartridge with the same electronic serial number. On-screen privacy is provided by the privacy button; when it is depressed, the entire screen is blanked.

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➤ As an IVDT product, the Personal Terminal Model 510 is a functional and easy-to-use addition to a System 75 or System 85 PABX. The only drawback of the device, or of AT&T's IVDT product line, is the lack of local processing capabilities (such as those found on the Rolm Cedar). Look for AT&T to introduce a PC-compatible IVDT (possibly based on the 6300 PC) in the near future. □

► COMPONENTS

CRT DISPLAY UNIT: The Personal Terminal Model 510 includes a 9-inch (diagonally measured) display screen. The display format is 27 lines of 80 characters each; separate user- and host-programmable screen labels are displayed at the bottom of the screen. Characters are displayed in green phosphor on a black background, and formed using a 6-by-10 dot matrix in an 8-by-12 dot cell. Visual attributes available include underline, blink, half-intensity, and reverse video. A 256-character set is displayable.

The Personal Terminal Model 510's display screen is touch-sensitive; both voice and data applications may be accessed via the touch screen. The screen provides a menu of functions in both phone and data modes. These functions are activated by touching a "target," which is represented by a circle on the screen. The Model 510 has a patented "soft" screen; a silicon gel is used to give the screen a cushiony feeling. Thus, the user is provided with tactile feedback when using the screen. In addition, when a target is touched, the circle is transformed into a square, verifying that the target has been touched and the associated function accessed.

HANDSET/SPEAKERPHONE: An integral telephone handset (R-handset) is located to the left of the display screen on the Model 510. A built-in speakerphone is located below the display screen, on the right-hand side of the display console. Speakerphone volume control is also included.

UPPER KEYBOARD: Various keys are available on the display console of the Model 510. A standard 12-key tele-

phone dial pad is located just to the right of the R-handset. Just above the dial pad are located the Phone button (which activates the phone mode screen display), Privacy button (that provides security by blanking the display), and Message lamp (which indicates that a message is waiting). Located above the built-in speakerphone are the Speakerphone On/Off button (which enables hands-free operation) and the Microphone On/Off button (mute). Lamps indicate the status of the speakerphone and microphone buttons.

ALPHANUMERIC KEYBOARD: An alphanumeric keyboard is optionally available for use with the Personal Terminal Model 510. The keyboard contains 72 keys in a typewriter-style layout, including cursor control keys, 8 function keys, and a Dial It key, which allows for one-key dialing of numbers from the keyboard. The keyboard has a low-profile design, is detachable, and stows under the terminal console when not in use.

PRICING

The Personal Terminal Model 510 is available for purchase, only, through AT&T Information Systems' direct sales; the customer has the option of installing the unit or contracting for installation with AT&T Information Systems. The Model 510 carries a one-year warranty from the date of purchase; during the warranty period, AT&T-IS will replace any defective part free of charge. After the warranty period, AT&T-IS offers several Equipment Maintenance Agreement Plans, including both per-occurrence and contract plans. For maintenance service, the AT&T Information Systems Service Organization can be contacted by calling 1 (800) 922-0354.

EQUIPMENT PRICES

	Purchase Price (\$)
Personal Terminal Model 510	1,795
Alphanumeric Keyboard	100
Directory Cartridge	70
Security Cartridge	50 ■