# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

Alphanumeric display terminals are today the most common interface between man and the computer. Probably any American between the ages of five and sixty-five could identify one of these terminals because of having seen them in bank branches, schools, the credit office of a department store, where the individual works, or simply from watching television. The use of alphanumeric display terminals (or CRTs, as they are frequently referred to) is now so widespread, that the evolution of this market has stabilized after several years of explosive growth.

One of the major controlling factors of the display terminal market is price. Historically, price has been in proportion to capability: dumb terminals have carried the lowest price tags, while fully-featured editing terminals occupied the high end of the pricing structure. While this is basically still true, the lines of distinction have been smeared somewhat by a price war which is currently taking place in the low end of the market.

The roots of this price war can be traced to the fact that, as in other segments of the computer market, technological advances have driven down the costs of display terminal hardware. The effect has been that terminal manufacturers can add more and more advanced features to their products while holding down, or even lowering, the price.

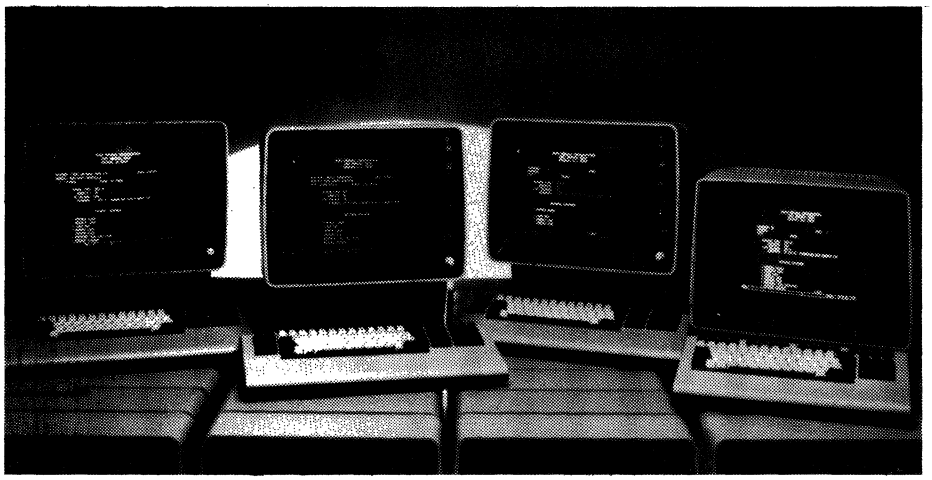
The current battle, which can be considered a skirmish in the long-term ongoing fight to control this market, began in March 1981, when Applied Digital Data Systems, a leader in the ASCII terminal market, introduced a new low-end terminal, the Viewpoint, which carried a price tag of $650 (quantity one). At the time, the Viewpoint was the lowest priced terminal of its kind. Soon, ADDS' competitors responded by offering low-priced models of their own. Today, nearly all of the major ASCII terminal makers offer a low-end unit with a price tag below $800. And these prices are even lower when the terminals are purchased in large quantities. As an example of the benefits of this new price trend for the terminal buyer, one large terminal user told Datapro that his company now only purchases terminals in large quantities, and never pays more than $500 per unit.

**An overview of the general-purpose, non-user-programmable alphanumeric display terminal market. Included in this report is a brief historical summary of the display terminal market; a look at the two major segments of the market; and an extensive feature on display terminal ergonomics, an area which is currently growing in importance. Datapro's annual display terminal user survey is included, with a summary of user experiences with over 15,000 installed units. Finally, comparison charts are included detailing the features of 260 terminal models currently available from 77 vendors. This year's comparison charts contain several new feature entries, in response to subscriber requests for added information, particularly in the area of ergonomics.**

## General Categories

All the terminals covered in this report have three features in common: 1) each has a keyboard that can generate and a monitor that can display a full alphanumeric character/code set; 2) each has the capability to send and receive data via communications lines to a remote host computer; and 3) each is marketed for general-purpose usage in the United States and Canada, and is identified as a distinct product to end users.

Display terminals fall into one of three general categories: dumb, smart, and user-programmable. This report concerns itself with dumb and smart terminals, according to Datapro's definitions. User-programmable terminals have been placed into a distinct and separate section (C21) because of their sophistication, features, and price. ▷



*Telex Computer Products is a major participant in the IBM 3270-compatible market. Shown here are four members of the company's 270 Information Display System. They are, from left to right, the 276 Control Unit Display (a plug-compatible replacement for the IBM 3276); the 278 Display (a plug-compatible replacement for the IBM 3278); the 279 Display (a plug-compatible replacement for the IBM 3279); and the new 178 Display, a small cabinet/screen version of the 278. The 270 family also includes several control unit and printer models.*

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Naturally, there is some overlap between dumb, smart, and user-programmable terminals. The definitions of these categories are given as follows:

*Dumb* terminals offer a limited number of functions; most feature Teletype compatibility.

*Smart* terminals offer extended functions, such as editing and formatted data entry. In some cases, the user can tailor the terminal to fit his own application via a limited degree of programming, such as format creation and parameter definition.

*User-programmable* (or *intelligent*) terminals feature software support. The vendor typically provides an operating system, an assembler- or compiler-driven programming language, subroutines, I/O utilities, one or more protocol emulators, and one or two application programs, such as data entry and text editing.

For more information on user-programmable terminals, see report number C21-010-101 entitled "Distributed Data Processing Systems and Intelligent Terminals."

## Microprocessor Control

Virtually all display terminals currently being manufactured are microprocessor-controlled. Microprocessor-based programs (firmware) reside in ROM or PROM memory. ROM-resident programs, which are inexpensive when reproduced in large quantities, control those features which are permanent and unchangeable; while PROM-resident programs are typically produced in smaller quantities and implement customized or modifiable features. Either type can be replaced by simply removing the old chip and putting in a new one. This flexibility is highly beneficial to the manufacturer, since older equipment can be updated and non-standard customer specifications fulfilled without costly hardware changes. Theoretically, program interchangeability might also benefit the user, but in practice it is doubtful that the requirements of a particular user will change often enough to make it a great advantage. The fact that PROM replacement generally must be done at the factory or by a field service technician precludes frequent PROM replacement.

In addition to controlling basic terminal functions, the microprocessor firmware can provide protocol emulation, define the character/code sets to be generated by the keyboard and displayed on the screen, implement special features, set control parameters, etc. Firmware specifications are generally determined at the time of order, and once the firmware is in place, execution is transparent to the user. Some vendors have predetermined programs from which to choose; a few permit the user to submit his own firmware specifications.

## Display Media

The vast majority of display terminals manufactured today employ a cathode ray tube (CRT) as the display medium. The popularity of this device stems from its flexibility, high character capacity, and relatively low cost. In addition to being able to display alphabetic and numeric characters in virtually any format, the CRT can highlight characters by means of underscoring, reverse video, blinking, or several levels of brightness. Some CRT terminals can display double size characters. Many CRT terminals have a graphics character set for creating forms and report formats on the screen. Some CRTs also permit the creation of business graphics—for example, bar, column, and pie charts reflecting sales, income and expense, inventory levels, etc. Interactive graphics or engineering graphics on the other hand, is a completely different discipline which requires a graphics terminal, the subject of report 70D5-010-92 in DATAPRO 70. Graphics terminals can also display alphanumeric characters, but they are considerably more expensive.

*TeleVideo Systems, founded in 1975, has quickly become a leader in the ASCII terminal market. The company began commercial deliveries in 1979, and recently announced that it had shipped its 100,000th terminal. Model 920C, shown here, is one of the first members of the company's terminal family. The unit features block mode as well as conversational operation, and also includes editing capabilities.*

Other types of alphanumeric displays have existed for years, and at one time were thought to be a serious challenge to the CRT. Examples of these are LEDs (light-emitting diodes) which are very popular in calculators and point of sale (POS) terminals, and gas discharge displays such as Burroughs Self-Scan, which are common in bank teller terminals, ATMs (automatic teller machine), factory data collection equipment, general-purpose data entry equipment and hand-held display terminals. Liquid crystal displays (LCD) were also thought to be applicable to the terminal areas, but a clear, legible, alphabetic character has only recently been produced via liquid crystal. Consequently, use of these is confined primarily to digital watches and calculators which require only numerics. Some pocket computers employ a single-line alpha-numeric LCD display.

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The above-mentioned alternate types of displays are advantageous where a limited number of characters are needed, where format flexibility is not important, and space restrictions (particularly depth) may be severe. But for general-purpose dialog with a computer, the CRT has no peer and is here to stay.

## Ergonomics

According to the American National Standard ANSI 294.1-1972, Ergonomics is defined as: "A multi-disciplinary activity dealing with the interactions between man and his total working environment, plus such traditional and environmental aspects as atmosphere, heat, light, and sound, as well as of tools and equipment of the workplace."

Recently, display terminal manufacturers have become increasingly aware of the need to consider human factors, or ergonomics, in the design of their equipment. The trend toward making CRTs more "operator-friendly" began in Europe, particularly the Scandinavian countries, where powerful unions representing clerical workers have implemented rigid guidelines as to what types of display terminals their members will use.

While no such guidelines are currently in effect in the United States, many CRT manufacturers are beginning to recognize market opportunities in ergonomic designs, and are appealing to the user through marketing campaigns emphasizing the human factors which influenced the design of their terminals.

The average operator of a display terminal is concerned primarily with two components with which he or she has the most interaction: the keyboard, for inputting of data, and the display screen, for verifying what was keyed and for reading the outputted data. Ergonomic design improvements are therefore concentrated on these two components.

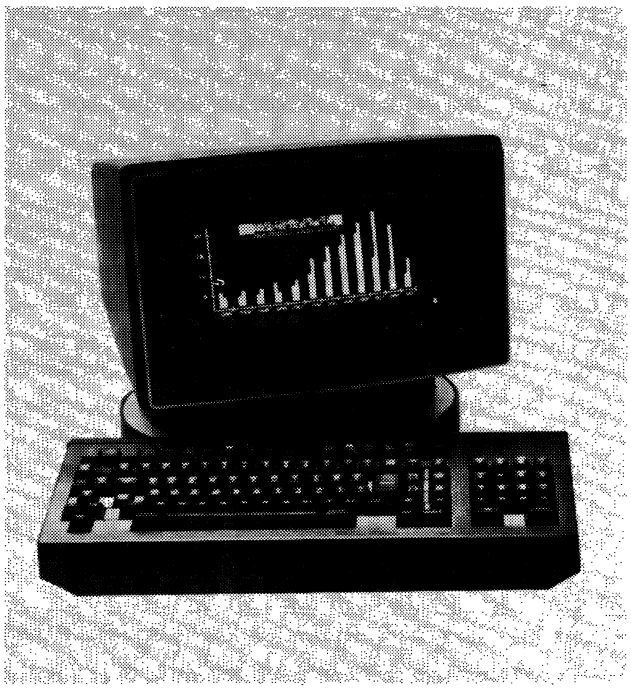
The majority of display terminal vendors now offer keyboards that are detached or detachable. Connected to the display console via a cable or coiled wire, these keyboards may be placed at some distance (usually 3 to 6 feet) from the console, allowing the operator to place the keyboard in the most comfortable position(s) while working at the terminal.

The layout of the keyboard is also a concern. Most keyboards feature a typewriter-style layout, for ease of training personnel already familiar with a typewriter's key arrangement. Dedicated (separate) numeric keypads are also generally available, duplicating the key arrangement of a pocket calculator or adding machine, for fast numeric entry. In addition, some vendors have added a palm rest for the numeric pad, for operator comfort. Many vendors also offer sculptured key caps in place of flat key caps, to facilitate speed of data entry and improve operator comfort. For keyboard feedback, vendors may offer either audible or tactile (touch-sensitive) key click, which tells the operator that the key has been depressed far enough to register.

Another important design factor to be considered is the slope and thickness of the keyboard assembly itself. Most keyboards manufactured today are either sloped or stepped, and the optimum profile angle is generally believed to be between 5 and 15 degrees. It has also been determined in studies that the thickness of the keyboard, or the distance from the base of the keyboard to the home row of keys, generally should not exceed 30 mm.

Operator eye strain or fatigue is a consideration which must be dealt with when designing a CRT display screen. Most display screens produced today are etched or contain a bonded faceplate to reduce glare. Another method of glare reduction being utilized by more and more manufacturers is the addition of tilt and/or swivel adjustments. These adjustments not only allow the operator to place the viewing area in a position to avoid glare, but also to place the screen at the most comfortable viewing angle.

The phosphor color and size of characters also contributes to their legibility. White or green phosphor characters are generally used in the United States; green phosphor characters are becoming increasingly popular, and in Europe they are considered easier on the eyes than the standard white. Amber phosphors are also used in Europe, and some domestic vendors who also have large European markets are beginning to offer amber phosphor characters in this country. The vast majority of display terminals on the market today utilize the dot matrix technique to form



*Teletype's 4424 Interactive Buffered Display is designed for use on point-to-point systems. The terminal is ergonomically designed, featuring a rotatable base, a tilt tube, a non-glare smudge-resistant display screen, and a detached keyboard.*

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*Beehive International's new DM78 display is an ASCII terminal designed to emulate the IBM 3278 display when attached to a protocol converter. Beehive's line of display terminals includes a wide variety of Teletype-compatible models, an IBM 3101 emulator, an IBM 3275/3276 emulator, and a Burroughs TD 830/MT 983 replacement.*

characters. The more dots that are contained in the character cell, the sharper the character will appear. For years, 5 x 7 characters were the standard of the industry; today, 7 x 7 and 7 x 9 characters are more common, and they provide a clearer character. Some vendors have incorporated higher refresh rates to reduce image instability, or flicker, in the characters, further improving their legibility. One vendor, DatagraphiX, uses a patented Charactron-shaped beam technique to generate fully-formed, high-resolution, flicker-free characters. This results in a physically larger and somewhat more expensive terminal, but one in which eye fatigue has been virtually eliminated.

The size of the characters generated depends on the size of the screen and the display format used. Characters will be larger on 15" (diagonally measured) screens than on 12" screens; likewise, characters will be larger in an 80 character-per-line format than in a 132 character-per-line format. Display enhancements such as double-height and double-width characters can alleviate this problem, but are generally included to highlight significant data, not for general usage.

To facilitate specialized data entry, some vendors offer a light-pen option, which allows the user to enter data via a light-pen for applications involving menu selection. A variation of this is the touch-sensitive screen, offered by a small number of vendors, which allows the user to input data by touching the screen with a finger or a pen. Finally, LSI circuitry has contributed to the use of smaller power supplies. Some CRT terminals have smaller cooling fans than before, resulting in reduced noise level. Individually, these improvements may be slight, but when considered cumulatively, they represent a vast improvement over the terminals of say, five years ago.

All of the above features should merit serious consideration from potential terminal buyers. Although many ergonomic features may be ordered from the terminal manufacturer, the increased emphasis of ergonomics has led to the springing up of a number of specialty companies that offer devices which can be *added* to terminals to make them more user-friendly. Several companies market optical display filters, glare shields, noise shields, etc., which are designed to fit most major displays. Modular office furniture manufacturers also offer work stations that provide tilt/swivel bases for terminals not equipped with these features.

As user awareness of human factors grows, we see ergonomic considerations in the U.S. becoming not simply a market opportunity, but a mandate. Even now, controversy is mounting on what effects constant use of a CRT has on the health of the operator. Workers whose jobs require that they sit at the display all day have complained of headaches, dizziness, back pains, and nausea. The National Institute for Occupational Safety and Health (NIOSH) has conducted research studies on this subject (copies of these reports can be obtained from NIOSH). While no definite conclusions have as yet resulted from these studies, it is clear that these concerns are now a significant matter that must be addressed by both vendors and buyers.

## Major Display Markets

The alphanumeric display terminal market is generally acknowledged to contain two major segments: the ASCII (asynchronous) terminal market, and the IBM 3270 (synchronous) terminal replacement market. Both segments continue to enjoy healthy growth, particularly the ASCII market. And, as mentioned previously, low prices and increased price/performance have made display terminals more attractive than ever to potential users, and continue to play a major role in the direction of each of these segments.

## IBM's Best-Seller, the 3270

The IBM 3270 has strongly impacted the alphanumeric display terminal market since deliveries began late in 1971. The first generation of devices included the 3271/3272 control units, 3275 display station, 3277 display, and 3284/3286/3288 printers. In 1977, the product line was radically overhauled, resulting in trhe announcement of a second generation of components (the 3274 control unit, 3276 control/display, 3278 display, and 3287/3289 printers) that offers increased capabilities at prices much lower than comparable older models. Along with that announcement came major price reductions on the older equipment.

The 1977 announcement boosted the 3270 family into a favorable position in the highly competitive terminal marketplace, and it has maintained that position. In late 1979, color displays and printers were added to the family.

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**TABLE 1. IBM 3270 COMPATIBILITY**

| Vendor | System | Controllers | Displays |
|---|---|---|---|
| Beehive | DM 3270 | — | 3276-2 |
| Control Concepts | EM 3275/EM 3276 | — | 3275/3276 |
| DatagraphiX | 132-70 | 3274 | 3278 |
| Datamedia | 3270-S | — | 3275/3276 |
| Docutel/Olivetti | TCV 28 | 3271/3272 | 3277 |
| Harris | 8000 | 3271/3272 | 3277 |
| Harris | 9200 | 3274 | 3278 |
| ITT Courier | 270 | 3271/3272/3274 | 3275/3276/3277/3278/3279 |
| Lee Data | Series 300 | 3274 | 3278 |
| MDS Trivex | Plus 70 | 3271/3272 | 3275/3277 |
| MDS Trivex | Plus 80 | 3274 | 3278 |
| Memorex | 1377 | — | 3277-2 |
| Memorex | 2076/2078/2079 | — | 3276/3278/3279 |
| Northern Telecom | 290 | 3272/3274 | 3276/3277 |
| Paradyne | 9476/9478 | — | 3276/3278 |
| Racal-Milgo | 4270 Series | 3274 | 3278 |
| Racal-Milgo | 4276 | — | 3275/3276 |
| Raytheon | PTS-100 | 3271/3274 | 3277/3278 |
| Raytheon | PTS-2000 | 3274 | 3276/3278 |
| Teletype | 4540 | 3271/3272/3274 | 3275/3276/3277/3278 |
| Teletype | 40/4 | — | 3277 |
| Telex | 270 | 3271/3272 | 3275/3276/3277/3278/3279 |

IBM 3270-type terminals account for approximately one-fourth of all CRT terminals currently installed in the United States. Of these, about one-half are actually IBM terminals—the rest are compatible models offered by vendors such as Harris, ITT Courier, Lee Data, Memorex, Teletype, Telex, Raytheon, and several others. These vendors utilize various strategies in an attempt to capture a share of the 3270 terminal market. The two most prevalent of these strategies are: to offer their 3270-compatible equipment at a price lower than what IBM is charging; and to feature faster delivery of their equipment than IBM (delivery time for IBM components currently is about 11 months ARO). In many cases, these are the only ways a new vendor can hope to penetrate an installation that has traditionally used only IBM equipment. Other strategies include offering increased price/performance, or enhanced ergonomic features.

A buyer who is looking to an independent vendor for 3270-compatible equipment should be aware that there are differing degrees of compatibility among the independents. Most major vendors offer full plug-compatibility—that is, when you plug the equipment in, it will operate in exactly the same way as the IBM unit it is replacing with regards to function and capability. Not all 3270-compatible gear, however, is fully plug-compatible. Although this equipment will replace the IBM equipment and operate on the network, not all of the features of the IBM unit will be available. A specific concern in this area is the question of BSC and SNA/SDLC protocol compatibility. The original 3270 components operated under BSC protocol; SNA/SDLC protocol compatibility was implemented following IBM's unveiling of SNA in 1974. Although most major vendors now offer both, there are some independents who have yet to implement SDLC compatibility. Moreover, even those implementing the basic BSC or SDLC compatibility might not observe all of the finer points of IBM's own versions.

One trend which has seen increasing popularity in the past few months is that of replacing 3270-type terminals with ASCII terminals on a 3270 network. The replacement of synchronous terminals with asynchronous units is achieved through the use of a protocol converter (see report number C29-010-201 for a detailed discussion of protocol converters). The protocol converter allows the ASCII terminal to support the functional characteristics of the 3270-type unit. The advantage to this strategy is obvious—ASCII terminals are considerably less expensive than their 3270 counterparts. One terminal vendor, Beehive, has recently introduced an ASCII terminal which, when combined with a protocol converter, is intended to emulate the IBM 3278 display station. There is reason to believe that other ASCII terminal vendors may follow suit.

Table 1 provides a list of the major independent vendors that offer IBM 3270-compatible equipment.

## The ASCII Terminal Market

The ASCII display terminal market is the largest segment of the two major display markets, with regard to number of vendors, number of units marketed, and quantity sold. This market originated as the Teletype replacement market, with units intended to replace the highly popular Teletype ASR 33/35 terminals. Although today not many of the ASCII terminals purchased are actually replacing the older Teletype units, the ASCII terminal market is still universally referred to as the Teletype-compatible market.

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## USERS' RATINGS OF ALPHANUMERIC DISPLAY TERMINALS

| Display Supplier and Model | No. of User Responses | No. of Displays in Use | Weighted Averages and Response Counts | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Overall Performance | | | | | Ease of Operation | | | | | Display Clarity | | | | | Keyboard Feel and Usability | | | | | Hardware Reliability | | | | | Maintenance Service | | | | | Software and Technical Support | | | | |
| | | | WA | E | G | F | P | WA | E | G | F | P | WA | E | G | F | P | WA | E | G | F | P | WA | E | G | F | P | WA | E | G | F | P | WA | E | G | F | P |
| ADDS— | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Regent Series | 5 | 103 | 3.4 | 2 | 3 | 0 | 0 | 3.2 | 2 | 2 | 1 | 0 | 3.4 | 2 | 3 | 0 | 0 | 3.2 | 2 | 2 | 1 | 0 | 3.2 | 1 | 4 | 0 | 0 | 3.0 | 2 | 1 | 2 | 0 | 2.8 | 0 | 3 | 1 | 0 |
| All others | 5 | 118 | 3.2 | 2 | 2 | 1 | 0 | 3.2 | 2 | 2 | 1 | 0 | 3.0 | 2 | 1 | 2 | 0 | 3.0 | 2 | 1 | 2 | 0 | 2.8 | 2 | 1 | 1 | 1 | 1.8 | 0 | 0 | 3 | 1 | 2.8 | 0 | 3 | 1 | 0 |
| Subtotals | 10 | 221 | 3.3 | 4 | 5 | 1 | 0 | 3.2 | 4 | 4 | 2 | 0 | 3.2 | 4 | 4 | 2 | 0 | 3.1 | 4 | 3 | 3 | 0 | 30 | 3 | 5 | 1 | 1 | 2.4 | 2 | 1 | 5 | 1 | 2.8 | 0 | 6 | 2 | 0 |
| Burroughs— | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TD830/TD800 | 12 | 478 | 3.3 | 5 | 6 | 1 | 0 | 3.3 | 4 | 7 | 1 | 0 | 3.3 | 4 | 7 | 1 | 0 | 3.3 | 4 | 7 | 1 | 0 | 3.4 | 6 | 5 | 1 | 0 | 3.0 | 3 | 5 | 3 | 0 | 2.4 | 3 | 2 | 4 | 3 |
| MT 983 | 10 | 249 | 3.0 | 3 | 4 | 3 | 0 | 3.1 | 2 | 7 | 1 | 0 | 2.8 | 1 | 6 | 3 | 0 | 3.0 | 3 | 5 | 1 | 1 | 3.0 | 2 | 6 | 2 | 0 | 2.9 | 2 | 5 | 3 | 0 | 2.1 | 2 | 1 | 3 | 4 |
| Subtotals | 22 | 727 | 3.2 | 8 | 10 | 4 | 0 | 3.2 | 6 | 14 | 2 | 0 | 3.0 | 5 | 13 | 4 | 0 | 3.1 | 7 | 12 | 2 | 1 | 3.2 | 8 | 11 | 3 | 0 | 3.0 | 5 | 10 | 6 | 0 | 2.3 | 5 | 3 | 7 | 7 |
| Datapoint, all models | 4 | 12 | 3.8 | 3 | 1 | 0 | 0 | 3.5 | 2 | 2 | 0 | 0 | 3.8 | 3 | 1 | 0 | 0 | 3.3 | 2 | 1 | 1 | 0 | 3.8 | 3 | 1 | 0 | 0 | 3.8 | 3 | 1 | 0 | 0 | 3.3 | 2 | 1 | 1 | 0 |
| DEC VT100/VT52 | 17 | 307 | 3.7 | 12 | 5 | 0 | 0 | 3.4 | 8 | 8 | 1 | 0 | 3.3 | 6 | 10 | 1 | 0 | 3.3 | 7 | 8 | 2 | 0 | 3.2 | 9 | 3 | 5 | 0 | 3.0 | 5 | 7 | 3 | 1 | 3.0 | 5 | 6 | 3 | 1 |
| Harris 8000 Series | 3 | 324 | 3.3 | 2 | 0 | 1 | 0 | 3.3 | 1 | 2 | 0 | 0 | 3.0 | 1 | 1 | 1 | 0 | 3.3 | 2 | 0 | 1 | 0 | 3.7 | 2 | 1 | 0 | 0 | * | 1 | 1 | 0 | 0 | * | 0 | 2 | 0 | 0 |
| Hazeltine, all models | 6 | 117 | 3.5 | 3 | 3 | 0 | 0 | 3.0 | 1 | 4 | 1 | 0 | 2.7 | 0 | 4 | 2 | 0 | 2.8 | 0 | 5 | 1 | 0 | 3.3 | 2 | 4 | 0 | 0 | 2.7 | 0 | 4 | 2 | 0 | 2.0 | 0 | 1 | 3 | 1 |
| Hewlett-Packard— | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2640 | 4 | 46 | 3.8 | 3 | 1 | 0 | 0 | 3.5 | 3 | 0 | 1 | 0 | 3.8 | 3 | 1 | 0 | 0 | 3.5 | 2 | 2 | 0 | 0 | 3.8 | 3 | 1 | 0 | 0 | 3.5 | 3 | 0 | 1 | 0 | 3.0 | 1 | 2 | 1 | 0 |
| 2645 | 4 | 33 | 4.0 | 4 | 0 | 0 | 0 | 4.0 | 4 | 0 | 0 | 0 | 4.0 | 4 | 0 | 0 | 0 | 3.8 | 3 | 1 | 0 | 0 | 4.0 | 4 | 0 | 0 | 0 | 4.0 | 4 | 0 | 0 | 0 | 3.8 | 3 | 1 | 0 | 0 |
| 2647/2648/2649 | 4 | 21 | 4.0 | 4 | 0 | 0 | 0 | 4.0 | 4 | 0 | 0 | 0 | 3.5 | 2 | 2 | 0 | 0 | 3.5 | 2 | 2 | 0 | 0 | 4.0 | 4 | 0 | 0 | 0 | 3.5 | 2 | 2 | 0 | 0 | 2.5 | 1 | 1 | 1 | 1 |
| 2621 | 7 | 62 | 3.7 | 5 | 2 | 0 | 0 | 3.6 | 4 | 3 | 0 | 0 | 3.7 | 5 | 2 | 0 | 0 | 3.6 | 4 | 3 | 0 | 0 | 3.7 | 5 | 2 | 0 | 0 | 3.3 | 2 | 4 | 0 | 0 | 3.3 | 3 | 3 | 1 | 0 |
| 2624 | 3 | 9 | 4.0 | 3 | 0 | 0 | 0 | 4.0 | 3 | 0 | 0 | 0 | 3.7 | 2 | 1 | 0 | 0 | 3.7 | 2 | 1 | 0 | 0 | 4.0 | 3 | 0 | 0 | 0 | * | 1 | 1 | 0 | 0 | 3.3 | 2 | 0 | 1 | 0 |
| Subtotals | 22 | 171 | 3.9 | 19 | 3 | 0 | 0 | 3.8 | 18 | 3 | 1 | 0 | 3.7 | 16 | 6 | 0 | 0 | 3.6 | 13 | 9 | 0 | 0 | 3.9 | 19 | 3 | 0 | 0 | 3.6 | 12 | 7 | 1 | 0 | 3.2 | 10 | 7 | 4 | 1 |
| Honeywell VIP 7100/7700 | 6 | 119 | 3.3 | 2 | 4 | 0 | 0 | 3.0 | 2 | 2 | 2 | 0 | 3.3 | 2 | 4 | 0 | 0 | 3.3 | 2 | 4 | 0 | 0 | 3.7 | 4 | 2 | 0 | 0 | 4.0 | 6 | 0 | 0 | 0 | 2.8 | 1 | 3 | 2 | 0 |
| IBM— | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3276 | 11 | 249 | 3.7 | 8 | 3 | 0 | 0 | 3.4 | 4 | 7 | 0 | 0 | 3.5 | 6 | 5 | 0 | 0 | 3.5 | 7 | 3 | 1 | 0 | 3.6 | 7 | 4 | 0 | 0 | 3.3 | 4 | 6 | 1 | 0 | 3.5 | 5 | 6 | 0 | 0 |
| 3277 | 20 | 630 | 3.2 | 5 | 14 | 1 | 0 | 3.2 | 4 | 16 | 0 | 0 | 3.1 | 5 | 12 | 3 | 0 | 3.0 | 5 | 10 | 5 | 0 | 3.1 | 6 | 9 | 4 | 0 | 3.0 | 4 | 12 | 4 | 0 | 3.2 | 4 | 15 | 1 | 0 |
| 3278 | 56 | 5,672 | 3.6 | 35 | 21 | 0 | 0 | 3.3 | 22 | 29 | 5 | 0 | 3.4 | 26 | 27 | 3 | 0 | 3.3 | 26 | 23 | 7 | 0 | 3.7 | 40 | 15 | 1 | 0 | 3.4 | 25 | 27 | 4 | 0 | 3.2 | 22 | 28 | 3 | 3 |
| 3279 | 16 | 618 | 3.9 | 15 | 1 | 0 | 0 | 3.5 | 9 | 6 | 1 | 0 | 3.6 | 10 | 5 | 1 | 0 | 3.6 | 12 | 2 | 2 | 0 | 3.8 | 13 | 3 | 0 | 0 | 3.5 | 8 | 8 | 0 | 0 | 3.3 | 6 | 9 | 1 | 0 |
| 3270, others & unspecified | 6 | 1,046 | 3.7 | 4 | 2 | 0 | 0 | 3.3 | 2 | 4 | 0 | 0 | 3.2 | 1 | 5 | 0 | 0 | 3.5 | 3 | 3 | 0 | 0 | 3.5 | 3 | 3 | 0 | 0 | 3.3 | 2 | 4 | 0 | 0 | 3.5 | 3 | 3 | 0 | 0 |
| 5251 | 5 | 86 | 3.6 | 3 | 2 | 0 | 0 | 3.4 | 2 | 3 | 0 | 0 | 3.6 | 3 | 2 | 0 | 0 | 3.4 | 2 | 3 | 0 | 0 | 3.6 | 3 | 2 | 0 | 0 | 3.8 | 4 | 1 | 0 | 0 | 3.8 | 4 | 1 | 0 | 0 |
| All others | 3 | 87 | 3.3 | 1 | 2 | 0 | 0 | 2.7 | 0 | 2 | 1 | 0 | 4.0 | 3 | 0 | 0 | 0 | 3.0 | 1 | 1 | 1 | 0 | 3.3 | 1 | 2 | 0 | 0 | 3.0 | 0 | 3 | 0 | 0 | 3.0 | 0 | 3 | 0 | 0 |
| Subtotals | 117 | 8,388 | 3.6 | 71 | 45 | 1 | 0 | 3.3 | 43 | 67 | 7 | 0 | 3.4 | 54 | 56 | 7 | 0 | 3.3 | 56 | 45 | 16 | 0 | 3.6 | 73 | 38 | 5 | 0 | 3.3 | 47 | 61 | 9 | 0 | 3.3 | 44 | 65 | 5 | 3 |
| ITT Courier 270/2700 | 22 | 1,146 | 3.5 | 13 | 8 | 1 | 0 | 3.5 | 12 | 8 | 2 | 0 | 3.3 | 7 | 14 | 1 | 0 | 3.3 | 8 | 12 | 2 | 0 | 3.2 | 7 | 13 | 1 | 1 | 2.9 | 4 | 13 | 4 | 1 | 2.6 | 2 | 11 | 8 | 1 |
| Lear Siegler— | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ADM 3A/3A+ | 6 | 371 | 3.7 | 4 | 2 | 0 | 0 | 3.2 | 1 | 5 | 0 | 0 | 3.0 | 1 | 4 | 1 | 0 | 2.8 | 0 | 5 | 1 | 0 | 3.7 | 5 | 0 | 1 | 0 | * | 0 | 2 | 0 | 0 | 3.3 | 2 | 1 | 1 | 0 |
| ADM 31/42 | 6 | 231 | 3.5 | 4 | 1 | 1 | 0 | 3.5 | 4 | 1 | 1 | 0 | 2.8 | 0 | 5 | 1 | 0 | 3.0 | 2 | 2 | 2 | 0 | 3.3 | 3 | 2 | 1 | 0 | 3.0 | 2 | 0 | 2 | 0 | 2.6 | 0 | 3 | 2 | 0 |
| Subtotals | 12 | 602 | 3.6 | 8 | 3 | 1 | 0 | 3.3 | 5 | 6 | 1 | 0 | 2.9 | 1 | 9 | 2 | 0 | 2.9 | 2 | 7 | 3 | 0 | 3.5 | 8 | 2 | 2 | 0 | 3.0 | 2 | 2 | 2 | 0 | 2.9 | 2 | 4 | 3 | 0 |
| MDS Trivex Plus 80 (8078) | 4 | 70 | 2.5 | 0 | 2 | 2 | 0 | 3.0 | 0 | 4 | 0 | 0 | 3.0 | 1 | 2 | 1 | 0 | 2.5 | 0 | 2 | 2 | 0 | 1.8 | 0 | 1 | 1 | 2 | 3.0 | 1 | 2 | 1 | 0 | 2.5 | 1 | 0 | 3 | 0 |
| Memorex— | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1377 | 12 | 552 | 3.5 | 6 | 6 | 0 | 0 | 3.3 | 5 | 6 | 1 | 0 | 3.4 | 5 | 7 | 0 | 0 | 2.9 | 2 | 7 | 1 | 1 | 3.3 | 4 | 8 | 0 | 0 | 3.3 | 4 | 8 | 0 | 0 | 3.0 | 2 | 8 | 2 | 0 |
| 2078 | 6 | 187 | 3.3 | 2 | 4 | 0 | 0 | 3.7 | 4 | 2 | 0 | 0 | 3.3 | 3 | 2 | 1 | 0 | 3.2 | 1 | 5 | 0 | 0 | 2.8 | 1 | 3 | 2 | 0 | 2.8 | 0 | 5 | 1 | 0 | 2.8 | 0 | 5 | 1 | 0 |
| Subtotals | 18 | 739 | 3.4 | 8 | 10 | 0 | 0 | 3.4 | 9 | 8 | 1 | 0 | 3.4 | 8 | 9 | 1 | 0 | 3.0 | 3 | 12 | 1 | 1 | 3.2 | 5 | 11 | 2 | 0 | 3.2 | 4 | 13 | 1 | 0 | 2.9 | 2 | 13 | 3 | 0 |
| NCR 796/7900 | 5 | 47 | 3.0 | 1 | 3 | 1 | 0 | 2.6 | 0 | 3 | 2 | 0 | 2.6 | 1 | 1 | 3 | 0 | 2.4 | 0 | 2 | 3 | 0 | 2.6 | 0 | 3 | 2 | 0 | 2.2 | 1 | 1 | 1 | 2 | 2.4 | 0 | 3 | 1 | 1 |
| Raytheon PTS-100/PTS-2000 | 3 | 65 | 2.3 | 0 | 1 | 2 | 0 | 2.7 | 0 | 2 | 1 | 0 | 3.0 | 0 | 3 | 0 | 0 | 2.0 | 0 | 0 | 3 | 0 | 1.7 | 0 | 1 | 0 | 2 | 2.3 | 0 | 1 | 2 | 0 | 2.0 | 0 | 1 | 1 | 1 |
| Tektronix, all models | 4 | 55 | 4.0 | 4 | 0 | 0 | 0 | 3.5 | 3 | 0 | 1 | 0 | 4.0 | 4 | 0 | 0 | 0 | 3.5 | 3 | 0 | 1 | 0 | 3.5 | 2 | 2 | 0 | 0 | 3.5 | 2 | 2 | 0 | 0 | 3.3 | 2 | 1 | 1 | 0 |
| Teletype— | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Model 40 | 6 | 9 | 4.0 | 6 | 0 | 0 | 0 | 3.8 | 5 | 1 | 0 | 0 | 3.8 | 5 | 1 | 0 | 0 | 3.8 | 5 | 1 | 0 | 0 | 3.8 | 5 | 1 | 0 | 0 | 3.8 | 5 | 1 | 0 | 0 | 3.8 | 5 | 1 | 0 | 0 |
| All others | 5 | 83 | 3.8 | 4 | 1 | 0 | 0 | 3.8 | 4 | 1 | 0 | 0 | 3.8 | 4 | 1 | 0 | 0 | 3.6 | 4 | 0 | 1 | 0 | 3.8 | 4 | 1 | 0 | 0 | 3.6 | 4 | 0 | 1 | 0 | 3.0 | 2 | 2 | 0 | 1 |
| Subtotals | 11 | 92 | 3.9 | 10 | 1 | 0 | 0 | 3.8 | 9 | 2 | 0 | 0 | 3.8 | 9 | 2 | 0 | 0 | 3.7 | 9 | 1 | 1 | 0 | 3.8 | 9 | 2 | 0 | 0 | 3.7 | 9 | 1 | 1 | 0 | 3.5 | 7 | 3 | 0 | 1 |
| TeleVideo— | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 912/920 | 4 | 55 | 3.5 | 2 | 2 | 0 | 0 | 4.0 | 4 | 0 | 0 | 0 | 3.0 | 0 | 4 | 0 | 0 | 3.7 | 2 | 1 | 0 | 0 | 3.3 | 2 | 1 | 1 | 0 | 2.5 | 0 | 2 | 2 | 0 | 2.7 | 0 | 2 | 1 | 0 |
| 950 | 4 | 74 | 3.8 | 3 | 1 | 0 | 0 | 3.3 | 2 | 1 | 1 | 0 | 3.8 | 3 | 1 | 0 | 0 | 2.5 | 0 | 3 | 0 | 1 | 3.5 | 2 | 2 | 0 | 0 | * | 0 | 1 | 0 | 0 | 2.3 | 0 | 2 | 0 | 1 |
| Subtotals | 8 | 129 | 3.6 | 5 | 3 | 0 | 0 | 3.6 | 6 | 1 | 1 | 0 | 3.4 | 3 | 5 | 0 | 0 | 3.0 | 2 | 4 | 0 | 1 | 3.4 | 4 | 3 | 1 | 0 | 2.6 | 0 | 3 | 2 | 0 | 2.5 | 0 | 4 | 1 | 1 |
| Telex— | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 277 | 5 | 320 | 3.4 | 2 | 3 | 0 | 0 | 3.4 | 2 | 3 | 0 | 0 | 2.8 | 0 | 4 | 1 | 0 | 3.0 | 0 | 5 | 0 | 0 | 3.4 | 2 | 3 | 0 | 0 | 3.0 | 1 | 3 | 1 | 0 | 2.5 | 0 | 2 | 2 | 0 |
| 278 | 9 | 347 | 3.3 | 3 | 6 | 0 | 0 | 3.4 | 4 | 5 | 0 | 0 | 3.2 | 3 | 5 | 1 | 0 | 3.3 | 4 | 4 | 1 | 0 | 3.3 | 3 | 6 | 0 | 0 | 3.4 | 4 | 5 | 0 | 0 | 3.4 | 3 | 5 | 0 | 0 |
| Subtotals | 14 | 667 | 3.4 | 5 | 9 | 0 | 0 | 3.4 | 6 | 8 | 0 | 0 | 3.1 | 3 | 9 | 2 | 0 | 3.2 | 4 | 9 | 1 | 0 | 3.4 | 5 | 9 | 0 | 0 | 3.3 | 5 | 8 | 1 | 0 | 3.1 | 3 | 7 | 2 | 0 |
| Texas Instruments, all models | 3 | 24 | 4.0 | 3 | 0 | 0 | 0 | 4.0 | 3 | 0 | 0 | 0 | 4.0 | 3 | 0 | 0 | 0 | 3.3 | 1 | 2 | 0 | 0 | 3.7 | 2 | 1 | 0 | 0 | 3.0 | 0 | 3 | 0 | 0 | 3.0 | 0 | 3 | 0 | 0 |
| Sperry Univac, all models | 7 | 218 | 3.1 | 4 | 1 | 1 | 1 | 3.4 | 4 | 2 | 1 | 0 | 3.3 | 3 | 3 | 1 | 0 | 3.3 | 3 | 3 | 1 | 0 | 3.0 | 3 | 2 | 1 | 1 | 2.9 | 3 | 2 | 0 | 2 | 2.3 | 0 | 4 | 1 | 2 |
| All Others | 38 | 806 | 3.3 | 15 | 17 | 5 | 0 | 3.2 | 15 | 17 | 6 | 0 | 3.2 | 13 | 18 | 7 | 0 | 3.1 | 9 | 23 | 6 | 0 | 3.2 | 18 | 10 | 9 | 1 | 2.7 | 5 | 19 | 6 | 5 | 2.7 | 6 | 17 | 9 | 4 |
| GRAND TOTALS | 356 | 15,046 | 3.5 | 200 | 134 | 20 | 1 | 3.4 | 157 | 167 | 32 | 0 | 3.3 | 147 | 174 | 35 | 0 | 3.2 | 137 | 164 | 50 | 3 | 3.4 | 186 | 128 | 33 | 8 | 3.1 | 117 | 162 | 47 | 12 | 3.0 | 92 | 165 | 60 | 24 |

LEGEND: Weighted Average (WA) is based on assigning a weight of 4 to each user rating of Excellent (E), 3 to Good (G), 2 to Fair (F), and 1 to Poor (P).
*Weighted Average invalid if fewer than three responses are received.

Manufacturers of ASCII terminals generally aim their products at educational and commercial users requiring large numbers of low-priced terminals for applications such as order entry and time-sharing.

As was mentioned earlier in this report, price is a key factor for success in this market. The current price war involving the low end entries in the ASCII terminal market has made the recent activity in this segment even greater than in the past. Initially, only the truly "dumb" terminals (like the original dumb unit, the Lear Siegler ADM 3A) were available for less than $1,000. Now, features such as block mode transmission and editing capabilities are available at below traditional dumb terminal prices. In addition to price cutting, vendors are attempting to make their offerings more attractive to potential buyers by adding enhanced features such as business graphics, split screens or windowing, and a variety of visual attributes. ASCII terminal vendors are also paying a lot of attention to ergonomics.

Leaders in the ASCII field generally provide a full range of terminal models ranging from low end units to editing models. The current leaders include ADDS, Hazeltine, Lear Siegler, and a relative newcomer, TeleVideo. An active, but somewhat separate subsection of the ASCII terminal market consists of the Digital Equipment Corporation (DEC) VT100 and those terminals that offer VT100 (or VT52) emulation. The VT100 emulators differ from the other major ASCII terminals in that they offer 132-column display capability.

IBM entered the TTY-compatible market with the introduction of the Model 3101 ASCII terminal in October, 1979. The IBM unit is priced somewhat higher than the competition. IBM offers the 3101 for purchase

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> only, with quantity discounts available for high volume orders. The company provides maintenance/repair service only through IBM Service Centers, to which the customer must mail the defective part, after removing it himself. As of today, the 3101 still has not achieved the popularity enjoyed by some of the older established lines of ASCII terminals, such as the ADDS Regent Series, the Hazeltine 1400 and 1500 Series, and the Lear Siegler ADM Series. The message from this is that in a price-sensitive market with established suppliers, IBM cannot walk in as the new kid on the block and pick up all of the marbles just because it is IBM. We think that that is the sign of a mature market.

## User Experience

To assess the current level of user satisfaction with display terminals, and to determine the patterns of usage of these terminals, Datapro conducted an extensive user survey. A Reader Survey form was included in the January 1982 supplements to DATAPRO REPORTS ON DATA COMMUNICATIONS and DATAPRO 70, and mailed to all subscribers. By February 25, usable responses had been received from 176 users with a total of 15,046 installed display stations.

Because many of the users reported on more than one model of display, the user replies generated a total of 356 responses or individual equipment ratings and profiles. The orientation of the users participating in the survey can be shown by the following table:

| Responses on: | Responses Number | Responses Percent | Displays Number | Displays Percent |
|---|---|---|---|---|
| IBM displays | 117 | 33% | 8,388 | 56% |
| Other displays | 239 | 67 | 6,658 | 44 |
| Total | 356 | | 15,046 | |

Overall, the average number of displays per response was 42, while the average number of displays per responding user was 85; these averages are somewhat misleading, however, because of a few responses from some exceptionally large IBM users (one user reported on a total of 1100 installed units).

The users were asked to rate the overall performance, ease of operation, display clarity, keyboard feel and usability, hardware reliability, maintenance service, and technical support for each display by assigning a rating of excellent, good, fair, or poor. The resulting ratings for display models or families are summarized in the accompanying table. Any model or category that received more than two user responses is identified by manufacturer; models, categories, or manufacturers receiving only one or two responses were categorized as "other."

To put the raw counts into a form more readily grasped, Datapro calculated a weighted average for each rating category. Each user response was assigned a weight of one, and the ratings were weighted on the conventional scale of 4, 3, 2, and 1 for excellent, good, fair, and poor, respectively. Prospective buyers should note that the small sample sizes for some of these models make it unwise to draw firm conclusions from the indicated ratings. The data is presented as an additional information source, not as the final word on the worth of the displays represented.

The ratings assigned by the responding users can also be combined to form this overall picture of current user satisfaction with the IBM displays, other manufacturers' displays, and all displays:

| | Weighted Averages | | |
|---|---|---|---|
| | IBM displays | Other displays | All displays |
| Overall performance | 3.6 | 3.5 | 3.5 |
| Ease of operation | 3.3 | 3.4 | 3.4 |
| Display clarity | 3.4 | 3.3 | 3.3 |
| Keyboard feel & usability | 3.3 | 3.2 | 3.2 |
| Hardware reliability | 3.6 | 3.3 | 3.4 |
| Maintenance service | 3.3 | 3.0 | 3.1 |
| Technical support | 3.3 | 2.8 | 3.0 |
| Number of responses | 117 | 239 | 356 |

When queried about what applications they presently used their terminals for, most users indicated interactive data entry & inquiry and program development. The current applications are noted in the following table:

| | Total | Percent |
|---|---|---|
| Interactive data entry & inquiry | 298 | 84% |
| Program development | 287 | 81 |
| System console | 138 | 39 |
| Text editing/word processing | 123 | 35 |
| Intracompany message traffic | 70 | 20 |
| Business graphics | 37 | 10 |
| Other | 16 | 4 |

The users were also asked what special terminal features had an influence on their buying decisions. The most frequently mentioned features are listed in the following table:

| | Total | Percent |
|---|---|---|
| Detachable keyboard | 102 | 29% |
| Local editing | 93 | 26 |
| Additional pages/memory | 52 | 15 |
| Green/amber characters | 47 | 13 |
| Split screen | 35 | 10 |
| Tilt/swivel display | 29 | 8 |
| 132-column display | 26 | 7 |
| Business graphics | 23 | 6 |
| Color | 17 | 5 |

When asked who performs maintenance and repair service on their display terminals, most users indicated the manufacturer. The responses were as follows: >

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| Maintenance | Total | Percent |
|---|---|---|
| Manufacturer | 278 | 78% |
| In-house | 32 | 9 |
| Third-party | 48 | 13 |

The final question in our survey asked the users if they would recommend the display they were using to others with similar applications. The overwhelming majority indicated that they would.

| | Total | Percent |
|---|---|---|
| Yes, would recommend to others | 302 | 85% |
| No, would not recommend | 33 | 9 |

## Display Terminal Characteristics

The accompanying comparison charts summarize the characteristics of 260 commercially available alphanumeric display terminals from 77 vendors. Nearly all of the information was supplied by the manufacturers during the months of February and March 1982. Their cooperation is acknowledged and greatly appreciated.

Datapro sent repeated requests for information to approximately 95 companies known or believed to be in the display terminal business. The usable responses summarized in our charts provide a comprehensive picture of the commercial display terminals that are currently available in the United States and Canada. *The absence of any specific company from our charts means that the company either failed to respond to our repeated information requests or was unknown to us.*

The chart entries and their significance are explained in the following paragraphs.

### Terminal Description

Display terminals are available in one of two basic terminal configurations: *stand-alone* and *cluster*. Stand-alone units are typically those that contain all components that support the operation of the terminal including display, keyboard, interface, and power supply within a single cabinet. Auxiliary units such as printers, cassette tape drives, etc., are usually external devices. Sometimes a stand-alone unit includes separate cabinets for terminal control and keyboard/display sections, and it may even include one or two separate displays. A cluster configuration typically includes a terminal control unit and a number of individual cable-connected keyboard/display units, which can often be located several thousand feet from the controller. In some cases, the vendor provides a multiplexer that accommodates a cluster of stand-alone terminals. The size of a cluster arrangement is defined by the *maximum number of displays per controller.*

Terminals that are designed to be hand-held or to be hand-carried, are noted in the entry *transportability*.

Some terminals are designed as direct replacements for other terminals. In the alphanumeric display terminal market, replacement terminals fall into two principal categories: those designed to replace an IBM family terminal are indicated as having *IBM compatibility;* and those designed to replace a terminal in the ASCII/Teletype market are indicated as having *Teletype compatibility*.

Some vendors provide *other compatibility,* and can replace terminals such as those produced by Burroughs, Digital Equipment, Honeywell, and Univac. For example, a wide variety of vendors market terminals which are compatible with the DEC VT100 (or VT52, the VT100's predecessor).

Either of two types of compatibility may be offered: transmission compatibility or "plug-to-plug" compatibility. Transmission compatibility requirements include identical protocol, code and unit code structure, timing, asynchronous or synchronous operation, and transmission speed. Some vendors even provide identical cables, which is a cost-effective consideration in a local cluster environment. Most vendors with transmission-compatible units offer additional features and functions that the original vendor's equipment does not have, implemented via minor changes in host software. Units with true plug-to-plug compatibility not only have identical transmission parameters, but also identical features and functions; no alteration to host software is necessary, but no enhancements beyond the original vendor's equipment are available. For example, although numerous vendors offer IBM 3270 compatibility, only a few, including ITT Courier, Memorex, Telex, and MDS Trivex, make a true plug-for-plug replacement for the 3277/3278 display stations.

### Display Parameters

Information displayed on the screen of a CRT is generally arranged according to an orderly format consisting of a maximum number of printed lines per screen and characters per line. The electronic circuitry that produces the display image is designed to a specified set of parameters that define the *display capacity* (i.e., the maximum number of display positions) and the *screen arrangement* (i.e., the maximum number of displayable lines and displayable characters per line). The most common display capacity is 1920 characters arranged in 24 lines of 80 characters. Many vendors offer 132-character display lines, which can eliminate the need to revise or patch software designed for standard 132-column printers or to maintain dual sets of programs for 80-column and 132-column output.

In most terminals, the number of characters that can be stored by the terminal's display memory equals the maximum screen capacity. In some terminals, however, storage is provided for more characters than can be displayed on the screen at one time. This additional data

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may be stored character-by-character, by the line, or by the "page" (a full screen of data). *Memory capacity* defines the total number of characters, lines, and pages that can be stored in the terminal's display memory.

Information is displayed in a rectangular area, slightly smaller than the total surface of the display screen. The factors that determine the required size of the *screen area* are the display arrangement and the size of the displayable characters. For example, the typical 1920-character display utilizes a 12- or 15-inch (diagonal) screen area.

Egonomic factors are becoming increasingly important as terminal features. One such feature gaining in popularity is a *tilt and/or swivel screen.* This feature provides for the mounting of the display monitor onto a separate desktop base or pedestal, and allows the operator to twist the screen vertically ("tilt") and/or horizontally ("swivel") to the most advantageous position for viewing. The set of *total displayable symbols* and the method of *symbol formation* are functions of the character generator, which accepts coded characters (typically ASCII or EBCDIC) from the computer and keyboard and converts them to a number of dots or strokes so that the form of the symbol or image can be displayed. In CRTs, characters are formed almost exclusively by the dot matrix technique. Each character is formed within a matrix of dots, and only those dots required to form the specific character are intensified. For example, a dot matrix that contains 35 dots is typically arranged 7 dots high by 5 dots wide. Characters can be made clearer by increasing the number of dots within the matrix. The stroke technique forms characters by drawing short straight lines between specified points. *Character phosphor* refers to the physical coating of phosphorous on the back side of the screen which, when illuminated, creates the displayed characters. The type of phosphor used defines the color of the displayed character, as well as the persistence of the phosphor (a long-persistence phosphor is less likely to cause image flicker problems than a short-persistence phosphor; however, the image of a long-persistence phosphor is more likely to smear when lines are scrolled). Among the more common phosphors available are P4 (white), and P31 or P39 (green). Amber and yellow-green phosphors are also available on some terminals.

Display arrangement, display medium, character phosphor, and symbol formation all have a great impact on display clarity. Test several units to decide which is easiest on the operator's eyes.

Attention can be drawn to vital information and different types of significant data can be visually separated by the use of the following display features:

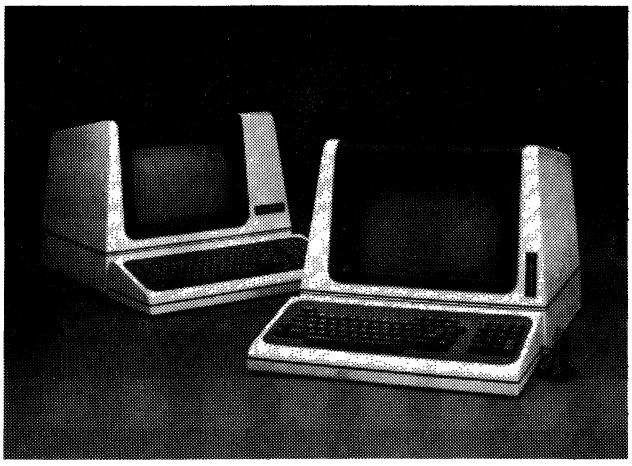
- *Color*—characters or fields can be separated by color, which can also be used to identify conditions or types of data. IBM's color display, the 3279, is currently emulated by a few independent vendors.
- *Underline*—highlights significant information by underlining.
- *Blink*—highlights significant information by causing it to blink off and on.
- *Blank (security)*—sensitive information is transmitted, but not shown on the screen.
- *Bold*—highlights significant information by displaying it at a different brightness level.
- *Reverse*—highlights significant information by displaying a negative image of it; e.g., when normal data is displayed in white on a dark background, the highlighted character or field is displayed in dark on a white background.
- *Double size*—highlights significant information by displaying it in characters which are of a larger size than normal. Double height, double width, and/or double height/width characters may be supported.

Some terminals offer several of these display features, which can be combined to produce even more effective results. The features are programmable (usually via the keyboard), and can be used on a character-by-character basis, or in a designated field.

Some applications require viewing more data than can be displayed at one time. The following features satisfy this need:

- *Scroll*—this feature moves all displayed lines of data up or down by one line as a new line is added and an existing one removed. In some cases, the first line is linked with the last so that the data is rolled but not lost. In others, data is lost as it rolls off the screen. This feature permits the user to scan through a volume of data to locate key information.

  Many vendors now feature smooth scrolling, in which data is rolled or scrolled smoothly up or down (much the same as the credits at the end of a movie).



*Cobar, Incorporated, is a manufacturer of DEC-compatible displays. The company's products include the Model 3100 (left), a VT100/VT101/VT102-compatible unit, and the Model 3132, a replacement for the VT131 and VT132. Cobar offers quantity discounts on both models.*

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*The Esprit is Hazeltine's entry in the low-end ASCII terminal market. Priced at $695 (single quantity), the Esprit provides enhanced features such as block mode transmission and editing. Like many other major vendors involved in the current price war in this market, Hazeltine utilizes offshore manufacturing facilities to reduce costs.*

- *Paging*—this feature defines and stores two or more discrete frames or pages of data and displays any selected page.

Although scroll and paging features can be software implemented in the host computer, the comparison chart entry applies to only those terminals that implement the feature via hardware or firmware.

Many terminals provide the scroll feature, but relatively few provide paging. Some provide both features.

The cursor marks the position on the screen where the next character will be read or written from memory. Cursor controls enable the operator to maneuver the cursor on the screen and facilitate the input and output of data. Different manufacturers use a variety of symbols to indicate the cursor position on the screen, for example, an underline, a reverse video block, or a blinking character. Some terminals allow the operator to choose among several types of cursor symbols; the most typical feature being *selectable blinking cursor.* Some terminals also have *addressable/readable cursors,* which enable the position of the cursor to be written or read by the host computer under program control.

Most businesses use printed forms for daily activities such as billing, ordering, payroll, etc. Some CRT terminals can duplicate the printed form on the face of the screen, and data can be keyed into the blank spaces just as the typist enters data into a printed form. This "fill-in-the-blanks" approach to data entry requires a *protected format* capability. Display terminals that incorporate this feature treat the fixed format differently from keyed data. Field identifiers such as "name" or "salesman number" are protected from inadvertent key entry, and data entry is confined to the variable fields (blank spaces) following the field identifiers.

Having completed entry into the fixed format, the operator transmits the data to the central computer. A feature called *partial screen transmit* promotes line economies by transmitting only the keyed data; the fixed format remains displayed and the "blanks" are erased for the next entry. This feature is also useful for transmitting only a portion of the displayed data such as a field, line, or block.

A few vendors now offer a *split screen* and/or *"windows"* feature on their terminals, in which the display screen can be divided or partitioned into a number of separate workspaces. Data in these workspaces can be manipulated (e.g., scrolled, stored, or transmitted) independently of the rest of the screen. *Tabulation* capabilities allow some terminals to automatically move the cursor to the beginning of the next line, or to the beginning of the next variable field within a line of formatted data immediately following the entry of the character that completes the end of the current line or field. The tab key needs to be used only when the current line/field is to remain partially filled.

Editing features in a display terminal can consist of any combination of the functions listed below, although the best terminal for editing purposes would include all of them. Each function is performed with respect to the current position of the cursor. The desirable editing functions are:

- *Character insert*—the capability to insert a character into an existing line of displayed text; the remaining characters shift to the right or "spread" to accommodate the added character. The spreading capability may terminate at the last character position of the line or at the last displayable position on the screen. Data is lost when it is spread beyond the termination point.

- *Character delete*—the capability to delete a character from an existing line of displayed text; the remaining text closes up when the character is deleted.

- *Line insert*—the capability to insert a line of text into existing text; the text spreads to accommodate the added line.

- *Line delete*—the capability to delete a line of text from existing text; the remaining text closes up when the line is deleted.

- *Erase*—the capability to erase a character, line of text, message, field, or the complete screen. Most terminals include character erase and some form of display erase, which may erase the entire contents of the display, just that portion following the cursor location, or a combination of both functions. Line erase is optional in many terminals.

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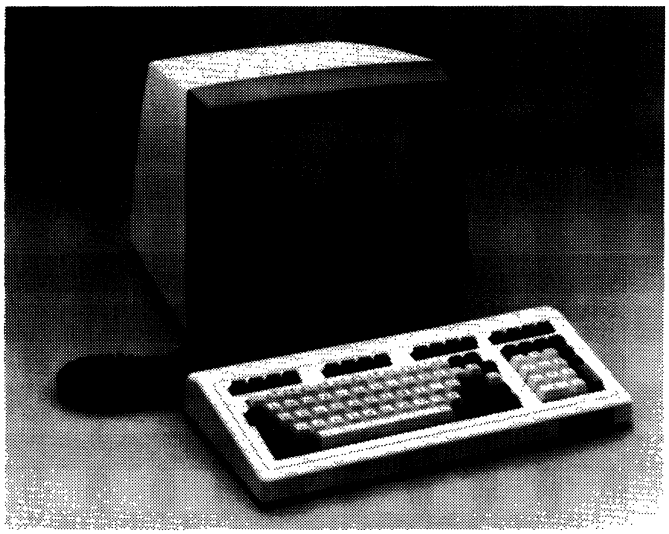
## Keyboard Parameters

Keyboard *style* defines the general arrangement of keys; e.g., typewriter- or data entry (keypunch)-style. Data entry keyboards have a numeric keypad embedded in the alphabetic part of the keyboard which is accessed via numeric shift. The *character/code set* refers to the set of symbols that appear on the keytops and, in many cases, to the actual character codes generated for each key depression, such as ASCII, EBCDIC, APL, etc. Some terminals are available with more than one keyboard style to satisfy particular user needs.

Keyboards that can either fit flush against the display or be located some distance away via cable connection are referred to as *detachable* keyboards. This feature provides increased configuration flexibility and operator convenience.



*At $995, General Terminal's SW10 display is the lowest priced DEC VT100/VT52 emulator currently on the market. The compact display cabinet features a 12-inch (diagonal) screen with a 24-line by 80-character capacity. The typewriter-style keyboard is detachable.*

Some terminals are available with *program function keys.* These are special keys whose character codes are interpreted by the user's program. A function key is used to reduce the number of required input keystrokes to save time and reduce the number of input errors. Depressing one key could instruct the system to "sell one seat" or "call Chart A," for example.

A *numeric keypad* is a special keyboard feature that includes a set or block of 10 numeric keys, usually located to the right of the main keygroup. These numeric keys are arranged in an adding-machine format and are particularly useful for applications that require a high volume of numeric entries or arithmetic calculations.

## Ancillary Devices

External I/O devices can add considerable flexibility to the applications possibilities for display terminals. Many vendors provide *serial printers* or *line printers* for use with their terminal families.

*Composite video* output allows the terminal to drive an auxiliary monitor. This capability is useful in applications such as computer-aided instruction, where there is a need to display the screen image to a group of people.

*Other devices* supplied and supported by the terminal vendor, such as diskette drives, cassette tape drives, light pens, magnetic stripe (ID card) readers, bar code readers, etc., are also listed. Even if they supply no auxiliary devices themselves, most vendors supply a *port* through which another vendor's printer or other device may be attached to the display.

## Transmission Parameters

Nearly every display terminal contains a communications interface that enables communications between the terminal and the central computer site. *Mode* and *technique* define the operating mode and the method in which data is transmitted. There are two operating modes: half duplex (transmission both directions, but not simultaneously), and full duplex (simultaneous transmission in both directions).

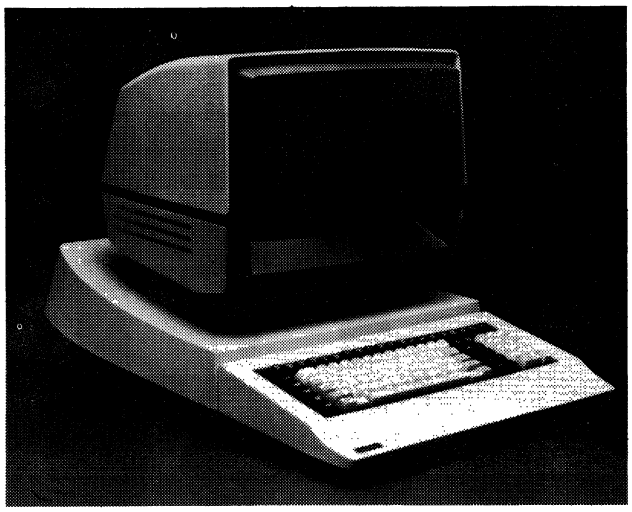
Data is transmitted synchronously or asynchronously. Asynchronous transmission is characterized by the transmission of data in irregular spurts, where the duration of time can vary between successive transmitted characters; the transmission from an unbuffered teletypewriter is a good example. Synchronous transmission implies the transmission of data in a steady stream. The time interval between successive characters is always precisely the same. The communications interface either provides clocking or accepts external clocking signals from the data set.

*Communications protocol* refers to the type of line discipline (control code sequence and control characters) that the terminal employs. The three most commonly used protocols are ASCII, IBM's Binary Synchronous Communications (BSC) technique, and IBM's Synchronous Data Line Control (SDLC) line discipline. Other large mainframe vendors such as Burroughs, Honeywell, and Digital Equipment Corporation (DEC) have produced their own communications protocols.

The transmission *code* refers to the bit pattern of the transmitted characters. Two codes are prominent: EBCDIC and ASCII. The latter has been accepted as an industry and government standard, and is now the most commonly used code by display terminals. EBCDIC is most commonly used with IBM equipment and its replacements.

The CRT terminal is a high-speed device that is usually capable of transmitting and receiving several thousand ➢

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications



*The 4278 Display Station is part of Racal-Milgo's 4270 Clustered Terminal System, designed for IBM 3270 emulation. A cluster configuration of up to 32 displays can be attached to Racal-Milgo's 4274 Cluster Controller; both BSC and SNA/SDLC compatibility are provided. The 4278 is designed for operator comfort, with a tilt/swivel display, green characters on a non-glare screen, and a detachable keyboard.*

characters per second; however, it must run at a speed that is compatible with the communications system in which it is used. Most terminals are used on voice-grade facilities, which limit the transmission *speed* to a practical maximum of 4800 bits per second over the dial network and 9600 bits per second over leased or private lines.

Message *format* refers to the way data is transmitted (e.g., by block, by line, or by character). Terminals that are designed to be transmission-compatible with a Teletype unit transmit a character for each key depression. Buffered terminals transmit data in multi-character blocks. The line or block mode permits data to be composed and edited prior to each transmission and generally permits more efficient utilization of the communications facility. Some terminals offer manual selection between the modes.

*Multipoint operation* characterizes terminals that are capable of operating in a multiple-terminals-per-line environment such as that employed by the IBM 3270 display terminals. Basic to implementing this capability is the ability of a terminal to distinguish a control message intended for it alone. Polling invites the terminals to send data. Addressing informs the terminal that a message from the central computer is coming, so that it will be conditioned to receive. Central control of the message traffic is maintained by the central computer.

Display terminals usually have a *terminal interface* that meets the standards of the EIA RS-232-C specification or the 20mA current loop, and connects to an external modem or acoustic telephone coupler. EIA RS-449, the heir apparent to RS-232-C, is not yet widely used.

Some terminals contain an *integral modem* that can be connected directly to a communications line. In some cases, the vendor provides an integral *acoustic telephone coupler,* so that the terminal can be connected to a conventional telephone handset.

### Pricing and Availability

Terminal pricing is provided for unit quantities (one terminal) unless otherwise specified. Two-year lease prices, including maintenance, and purchase prices are shown for the complete terminal (including keyboard, display, and controller) for stand-alone units, and for the keyboard/display station and terminal controller for cluster units. The monthly prime-shift maintenance charge is the cost of service during regular business hours (usually 9 A.M.-5 P.M., Monday-Friday).

Single entries generally indicate the price of the basic unit without options; price ranges show the price of the basic unit and the price of an expanded unit with all options, or the price of the low-end and high-end of a multiple-unit family. In general, all prices exclude ancillary devices. In some cases, the terminal vendor offers a lease term other than those shown, such as a 4- or 5-year lease or a 30- or 60-day, short-term rental. In such cases, the lease prices and terms appear in the Comments at the bottom of the charts.

Many terminal vendors do not lease their equipment, and in these cases you'll find dashes in the lease price entries. Also, a number of terminal makers sell their wares on an OEM basis only, for incorporation into systems supplied by other vendors. Quantity discounts, and discounts for educational and other institutions, are often available.

*Date of announcement* indicates the date that the terminal was unveiled to the public.

*Date of first production delivery* indicates when the first production model of each terminal was delivered (or is scheduled to be delivered) to a customer.

*Display units installed to date* shows how many display units of each type had been delivered to customers as of approximately March 1, 1982. All figures were supplied by the vendors themselves, and a number of companies chose not to release this information.

*Serviced by* specifies the party responsible for maintaining the terminal. In some cases, the vendor provides total service; in others, a national service organization is responsible. Service is sometimes rendered under the combined efforts of both the vendor and an independent service organization; usually in this situation, the vendor handles those areas close to its headquarters or where it has a multiplicity of installations, and the service company handles other geographical areas.

### Comments

Comments at the bottom of the charts describe significant or unusual features, capabilities, or applications which are not reflected in the standard entries.

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

## > Vendors

Listed below, for your convenience in obtaining additional information, are the full names and addresses of the 77 vendors whose products are summarized in the comparison charts.

**Ampex Corporation,** 200 N. Nash Street, El Segundo, CA 90245. Telephone (213) 640-0150.

**Anderson Jacobson, Incorporated,** 521 Charcot Avenue, San Jose, CA 95131. Telephone (408) 263-8520.

**Ann Arbor Terminals, Incorporated,** 6175 Jackson Road, Ann Arbor, MI 48103. Telephone (313) 663-8000.

**Applied Digital Data Systems, Incorporated (ADDS),** 100 Marcus Boulevard, Hauppauge, NY 11787. Telephone (516) 231-5400.

**Applied Dynamics International,** 3800 Stone School Road, Ann Arbor, MI 48104. Telephone (313) 973-1300.

**A.R. Shaw, Incorporated,** 10800 Lyndale Avenue South, Minneapolis, MN 55420. Telephone (612) 888-6700.

**Beehive International,** 4910 Amelia Earhart Drive, P.O. Box 25668, Salt Lake City, UT 84125. Telephone (801) 355-6000.

**The Braegen Corporation,** 20740 Valley Green Drive, Cupertino, CA 95014. Telephone (408) 255-4200.

**Burroughs Corporation,** Burroughs Place, Detroit, MI 48232. Telephone (313) 972-7000.

**C. Itoh Electronics, Incorporated,** 5301 Beethoven Street, Los Angeles, CA 90066. Telephone (213) 306-6700.

**Cobar, Inc.,** 1181 N. Fountain Way, Anaheim, CA 92806. Telephone (714) 630-0970.

**Control Concepts Corporation,** 2361 South Jefferson Davis Highway, Arlington, VA 22202. Telephone (703) 553-2910.

**Control Data Corporation,** 8100 34th Avenue South, P.O. Box 0, Minneapolis, MN 55440. Telephone (612) 853-8100.

**Custom Terminals, Inc.,** P.O. Box 19906, Raleigh, NC 27619. Telephone (919) 876-8731.

**Data General Corporation,** 4400 Computer Drive, Westboro, MA 01580. Telephone (617) 366-8911.

**DatagraphiX, Incorporated,** P.O. Box 82449, San Diego, CA 92138. Telephone (714) 291-9960.

**Datamaxx USA Corporation,** 1815 South Gadsden Street, Tallahassee, FL 32301. Telephone (904) 224-8213.

**Datamedia Corporation,** 7401 Central Highway, Pennsauken, NJ 08109. Telephone (609) 665-5400.

**Datapoint Corporation,** 9725 Datapoint Drive, San Antonio, TX 78284. Telephone (512) 699-7000.

**Data Terminals & Communications,** 590 Division Street, Campbell, CA 95008. Telephone (408) 378-1112.

**Datavue Corporation,** 1911 22nd Avenue South, Seattle, WA 98144. Telephone (206) 322-9330.

**Decision Data Computer Corporation,** 100 Witmer Road, Horsham, PA 19044. Telephone (215) 674-3300.

**Delta Data Systems Corporation,** 2595 Metropolitan Drive, Trevose, PA 19047. Telephone (215) 639-9400.

**Digital Equipment Corporation (DEC),** 146 Main Street, Maynard, MA 01754. Telephone (617) 897-5111.

**Direct, Inc.,** 1279 Lawrence Station Road, Sunnyvale, CA 94086. Telephone (408) 734-5504.

**Docutel/Olivetti Financial Systems,** 219 East 42nd Street, New York, NY 10017. Telephone (212) 599-4030.

**Falco Data Products, Inc.,** 1286 Lawrence Station Road, Sunnyvale, CA 94086. Telephone (408) 745-7123.

**General Digital Corporation,** 700 Burnside Avenue, East Hartford, CT 06108. Telephone (203) 528-9041.

**General Terminal Corporation** (formerly Infoton), 14831 Franklin Avenue, Tustin, CA 92680. Telephone (714) 730-0123.

**Harris Corporation,** Data Communications Division, 16001 Dallas Parkway, P.O. Box 400010, Dallas, TX 75240. Telephone (214) 386-2000

**Hazeltine Corporation,** Greenlawn, NY 11740. Telephone (516) 261-7000.

**Hewlett-Packard,** Data Terminals Division, 974 East Arques Avenue, Sunnyvale, CA 94086. Telephone (408) 735-1550.

**Honeywell, Incorporated,** U.S. Marketing & Service Division, 200 Smith Street, Waltham, MA 02154. Telephone (617) 890-8400.

**Human Designed Systems, Incorporated,** 3700 Market Street, Philadelphia, PA 19104. Telephone (215) 382-5000.

**Informer, Incorporated,** 8332 Osage Avenue, Los Angeles, CA 90045. Telephone (213) 649-2030.

**Intelligent Systems Corporation,** 225 Technology Park, Norcross, GA 30092. Telephone (404) 449-5961.

**Interaction Systems, Inc.,** 24 Munroe Street, Newtonville, MA 02160. Telephone (617) 964-5300.

**International Business Machines Corporation (IBM),** Information Systems Group, National Accounts Division, 1133 Westchester Avenue, White Plains, NY 10604. Telephone (914) 696-1900.

**International Business Machines Corporation (IBM),** Information Systems Group, National Marketing Division, 4111 Northside Parkway, Atlanta, GA 30327. Telephone (404) 238-2000.

**Intertec Data Systems Corporation,** 2300 Broad River Road, Columbia, SC 29210. Telephone (803) 798-9100.

**ITT Courier Terminal Systems, Incorporated,** 1515 West 14th Street, Tempe, AZ 84281. Mailing Address: P.O. Box 29039, Phoenix, AZ 85038. Telephone (602) 275-7555.

**Kimtron Corporation,** 2255 H Martin Avenue, Santa Clara, CA 95050. Telephone (408) 727-1510.

**Lear Siegler, Incorporated,** Data Products Division, 714 North Brookhurst Street, Anaheim, CA 92803. Telephone (714) 774-1010.

**Lee Data Corporation,** 10206 Crosstown Circle, Minneapolis, MN 55344. Telephone (612) 932-0300.

**MDS Trivex, Incorporated** (Division of Mohawk Data Sciences), 3180 Red Hill Avenue, Costa Mesa, CA 92626. Telephone (714) 546-7781.

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# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

**Megadata Corporation,** 35 Orville Drive, Bohemia, NY 11716. Telephone (516) 589-6800.

**Memorex Corporation,** Communications Group, 18922 Forge Drive, Cupertino, CA 95014. Telephone (408) 996-9000.

**Microdata Corporation,** 17481 Red Hill Avenue, Irvine, CA 92713. Telephone (714) 540-6730.

**Micro-Term, Incorporated,** 1314 Hanley Industrial Court, St. Louis, MO 63144. Telephone (314) 968-8151.

**NCR Corporation,** 1700 South Patterson Boulevard, Dayton, OH 45479. Telephone (513) 445-5000.

**Northern Telecom Inc.** 6100 Blue Circle Drive, Minnetonka, MN 55343. Mailing Address: P.O. Box 1222, Minneapolis, MN 55440. Telephone (612) 932-8000.

**Paradyne Corporation,** 8550 Ulmerton Road, Largo, FL 33540. Telephone (813) 530-2000.

**Perkin-Elmer,** Terminals Division, 360 Route 206 South, Flanders, NJ 07836. Telephone (201) 584-1400.

**Perry Data Systems, Inc.,** 3401 Spring Forest Road, Raleigh, NC 27658. Telephone (919) 876-8100.

**Racal-Milgo, Incorporated,** Computer Products Division, 6250 N.W. 27th Way, Ft. Lauderdale, FL 33309. Telephone (305) 979-4000.

**Raytheon Data Systems,** 1415 Boston-Providence Turnpike, Norwood, MA 02062. Telephone (617) 762-6700.

**Soroc Technology, Incorporated,** 165 Freedom Avenue, Anaheim, CA 92801. Telephone (714) 992-2860.

**Tab Products Co.,** Electronics Office Products Division, 1451 California Avenue, Palo Alto, CA 94304. Telephone (415) 858-2500.

**Taumark, Incorporated,** 6621 Century Avenue, Middleton, WI 53562. Telephone (608) 831-9291.

**TEC, Incorporated,** 2727 North Fairview Avenue, Tucson, AZ 85705. Telephone (602) 792-2230.

**Tektronix, Incorporated,** Information Display Division, P.O. Box 500, Beaverton, OR 97077. Telephone (503) 644-0161.

**Telcon Industries, Inc.,** 1401 N.W. 69th Street, Ft. Lauderdale, FL 33309. Telephone (305) 971-2250.

**Teleram Communications Corporation,** 2 Corporate Park Drive, White Plains, NY 10604. Telephone (914) 694-9270.

**Teleray, Division of Research Incorporated,** P.O. Box 24064, Minneapolis, MN 55424. Telephone (612) 941-3300.

**Teletype Corporation,** 5555 Touhy Avenue, Skokie, IL 60077. Telephone (312) 982-2000.

**TeleVideo Systems, Incorporated,** 1170 Morse Avenue, Sunnyvale, CA 94086. Telephone (408) 745-7760.

**Telex Computer Products, Inc.,** 6422 E. 41st Street, Tulsa, OK 74135. Telephone (918) 627-1111.

**Termiflex Corporation,** 18 Airport Road, Nashua, NH 03063. Telephone (603) 889-3883.

**Texas Instruments, Inc.,** Digital Systems Group, P.O. Box 1444, Houston, TX 77001. Telephone (713) 937-2000.

**Texas Instruments, Inc.,** Computer Systems Division, P.O. Box 2909, Austin, TX 78769. Telephone (512) 250-7111.

**Sperry Univac Division,** Sperry Rand Corp., P.O. Box 500, Blue Bell, PA 19422. Telephone (215) 542-4011.

**Visual Technology, Incorporated,** 540 Main Street, Tewksbury, MA 01876. Telephone (617) 851-5000.

**Volker-Craig Limited,** 330 Weber Street North, Waterloo, Ontario, Canada N2J 3H6. Telephone (519) 884-9300.

**Western Union Data Services Company,** 1 Lake Street, Upper Saddle River, NJ 07458. Telephone (201) 825-5000.

**Westinghouse Canada, Inc.,** Box 5009, 777 Walker's Line, Burlington, Ontario, Canada L7R 4B3. Telephone (416) 528-8811.

**Wyse Technology, Inc.,** 2184 Bering Drive, San Jose, CA 95131. Telephone (408) 946-3075.

**Xerox Computer Services,** 5310 Beethoven Street, Los Angeles, CA 90066. Telephone (213) 306-4000.

**Zenith Data Systems,** 1000 Milwaukee Avenue, Glenview, IL 60025. Telephone (312) 391-8860.

**Zentec Corporation,** 2400 Walsh Avenue, Santa Clara, CA 95050. Telephone (408) 246-7662.□

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Ampex Dialogue 30 | Ampex Dialogue 80 | Ampex Dialogue 81 | Anderson Jacobson AJ 510 | Anderson Jacobson AJ 520 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | — | — | — | 1 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | No | 2741 (opt.) | No |
| Teletype compatibility | Std. | Std. | Std. | Std. | Std. |
| Other compatibility | Lear Siegler ADM 3A+ | Lear Siegler ADM 3A+ | Lear Siegler ADM 3A+ | — | DEC VT100 |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 1920 | 1920 | 1920, 3168 |
| Memory capacity, no. char./lines/pages | 80/24/1 | 80/24/2 or 4 | 80/24/2 or 4 | — | 5K std.; 16K opt. |
| Screen arrangement, lines x chars./line | 24 x 80 | 24 x 80 | 24 x 80 | 24 x 80 | 24 x 80, 24 x 132 |
| Screen area, diagonal, inches | 12 | 12 | 12 | 15 | 15 |
| Tilt/swivel screen | No | No | No | No | Tilt std. |
| Total displayable symbols | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII |
| Symbol formation | 7 x 10 dot matrix | 7 x 10 dot matrix | 7 x 10 dot matrix | 7 x 10 dot matrix | 10 x 12 dot matrix |
| Character phosphor | P4 white std., P31 green opt. | P4 white std., P31 green opt. | P4 white std., P31 green opt. | P31 green std. | P31 green std.; amber opt. |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | No | Std. | Std. | Std. | Std. |
| Blink | No | Std. | Std. | Std. | Opt. |
| Blank | No | Std. | Std. | No | No |
| Bold | No | No | No | Std. | Opt. |
| Reverse | No | Std. | Std. | Std. | Opt. |
| Double size | No | No | No | Std. | Opt. |
| Scroll | Up std. | Up/flip std. | Up/flip std. | Up/down std. | Up/down std. |
| Paging | No | 2 std., 2 opt. | 2 std., 2 opt. | No | 2 std.; 8 opt. |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Std. | Std. |
| Protected format | No | Std. | Std. | Std. | No |
| Partial screen transmit | No | Std. | Std. | Std. | No |
| Split screen/windows | No | No | No | No | 2 |
| Tabulation | Forward std. | Fwd./back std. | Fwd./back std. | Fwd. std. | Fwd. std. |
| Character insert/delete | No | Std. | Std. | Std. | Std. |
| Line insert/delete | No | Std. | Std. | Std. | Std. |
| Erase | No | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter-Selectric | Typewriter | Typewriter |
| Character/code set | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII; APL opt. | 128 ASCII; APL opt. |
| Detachability | Std. | Std. | Std. | No | Std. |
| Program function keys | No | 20 | 20 | No | 24 std. |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | Various, 30-200 cps | Various, 30-200 cps |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | No | No | No | Opt. |
| Port for cust.-supplied devices | Std. | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | No | No | No | Diskette recorder, acoustic coupler/ modems | Diskette recorder, acoustic coupler/ modems |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | ASCII | ASCII | ASCII | ASCII | ASCII |
| Code | ASCII | ASCII | ASCII | ASCII std. | ASCII |
| Speed, bits/second | 50-19,200 | 50-19,200 | 50-19,200 | 110-9600 | 50-19,200 |
| Format; character, line, or block | Character | Char./line/block | Char./line/block | Char./line/page | Character |
| Multipoint operation (pollable/addr.) | No | No | No | No | No |
| Terminal interface | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C std.; 20mA opt. | RS-232-C std.; 20mA opt. |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | 100-150 | 100-150 |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 999 | 1,199 | 1,249 | See comments | See comments |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | 25 | 25-28 |
| Date of announcement | 11/80 | 5/80 | 11/81 | — | — |
| Date of first production delivery | 4/81 | 7/80 | 3/82 | 9/78 | 9/81 |
| Display units installed to date | 2,000 | 12,000 | — | — | — |
| Serviced by | TRW | TRW | TRW | Anderson Jacobson | Anderson Jacobson |
| COMMENTS | | | | APL keyboard opt.; widely used in X-L applications; terminals priced below $2,000—contact vendor for detailed pricing. | APL unit includes line mode, user-defined overstrike memory, plus all video attributes except bold; terminals priced below $2,000—contact vendor for detailed pricing. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Ann Arbor Ambassador | Ann Arbor Ambassador 300 | Ann Arbor Model 400S | ADDS Viewpoint | ADDS Viewpoint/90 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | — | — | — | 1 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | Std. | Std. | Std. | Std. | Std. |
| Other compatibility | — | DEC VT100/VT52 | — | — | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 4800 | 4800 | 1920 | 1920 | 1920, 3840 |
| Memory capacity, no. char./lines/pages | 4800/60/1 | 4800/60/1 | 1920/24/1 | 1 page | 1-2 pages |
| Screen arrangement, lines x chars./line | 18 x 80 up to 60 x 80 | 18 x 80 up to 60 x 80 | 12 x 40, 24 x 40, 24 x 80 | 24 x 80 | 12-24 x 40-80 |
| Screen area, diagonal, inches | 15 | 15 | 15 | 12 | 12 |
| Tilt/swivel screen | Opt. stand | Opt. stand | Opt. stand | Tilt std. | Tilt std. |
| Total displayable symbols | 128 ASCII | 128 ASCII | 95 ASCII | 128 | 128; 256 prog. |
| Symbol formation | 7 x 9 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix | 5 x 7 dot matrix | 7 x 9 dot matrix |
| Character phosphor | P39 green std., P4 white opt. | P39 green std., P4 white opt. | P39 green std., P4 opt. | P4 white, P31 green | P4 white, P31 green |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | No | Std. | Std. |
| Blink | Std. | Std. | Std. | Std. | Std. |
| Blank | Std. | Std. | No | Std. | Std. |
| Bold | Std. | Std. | Std. | No | No |
| Reverse | Std. | Std. | Std. | Std. | Std. |
| Double size | No | No | Opt. | No | Std. |
| Scroll | Up/down/slow std. | Up/down/slow std. | Up/down std. | Up std. | Std. |
| Paging | No | No | No | No | 2 pages opt. |
| Selectable cursor blinking | Std. | Std. | No | Std. | Std. |
| Addressable/readable cursor | Both std. | Both std. | Add. std., read opt. | Addressable only | Both std. |
| Protected format | Std. | Std. | No | No | Std. |
| Partial screen transmit | Std. | Std. | No | No | Std. |
| Split screen/windows | Std. | Std. | No | No | Std. |
| Tabulation | Fwd./back std. | Fwd./back std. | No | No | Std. |
| Character insert/delete | Std. | Std. | No | No | Std. |
| Line insert/delete | Std. | Std. | No | No | Std. |
| Erase | Char./line/screen std. | Char./line/screen std. | Screen std. | Line/page std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | TTY | Typewriter | Typewriter |
| Character/code set | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | 48 std. | 48 std. | Up to 36 opt. | 3 std. | Std. |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | No | No |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | No | Std. | Opt. | No |
| Port for cust.-supplied devices | Std. | Std. | No | Std. | Std. |
| Other vendor-supplied devices | Touch-screen opt. | — | No | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | ASCII | ASCII | ASCII | ASCII | ASCII |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 110-19,200 | 110-19,200 | 110-9600 | Up to 19,200 | Up to 9600 |
| Format; character, line, or block | Char./line/block | Char./line/block | Character | Character | Char./line/block |
| Multipoint operation (pollable/addr.) | No | No | No | No | No |
| Terminal interface | RS-232-C, std., 20mA opt. | RS-232-C std., 20mA opt. | RS-232-C std., 20mA opt. | RS-232-C | RS-232-C; 20mA opt. |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | — | — |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 1,395 | 1,595 | 1,220 | 650 | 1,100 |
| Controller, purchase, $ | — | — | 795 | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | — | — |
| Date of announcement | 5/80 | 9/81 | 6/77 | 3/81 | 12/81 |
| Date of first production delivery | 7/80 | 9/81 | 7/77 | 4/81 | 1st Q/82 |
| Display units installed to date | — | — | — | — | — |
| Serviced by | Ann Arbor | Ann Arbor | Ann Arbor | ADDS | ADDS |
| COMMENTS | Implements the ANSI X3.64-1979 standard, user-definable operation | Includes a line drawing character set, an ANSI/VT52 mode, and VT100 codes to operate on most VT100 software. Implements the ANSI X3.64-1979 standard. | | | |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | ADDS Viewpoint/3A Plus | ADDS Regent 20 | ADDS Regent 25 | ADDS Regent 30 | ADDS Regent 40 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 1 | 1 | 1 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | Std. | Std. | Std. | Std. | Std. |
| Other compatibility | Lear Siegler ADM 3 | — | — | — | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 1920 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | 1 page | 1 page | 1 page | 1-2 pages | 1 page |
| Screen arrangement, lines x chars./line | 24 x 80 | 24 x 80 | 24 x 80 | 24 x 80 | 24 x 80 |
| Screen area, diagonal, inches | 12 | 12 | 12 | 12 | 12 |
| Tilt/swivel screen | Tilt std. | No | No | No | No |
| Total displayable symbols | 128 | 128 | 128 | 128 | 128 |
| Symbol formation | 5 x 7 dot matrix | 5 x 8 dot matrix | 5 x 8 dot matrix | 7 x 8 dot matrix | 7 x 8 dot matrix |
| Character phosphor | P4 white, P31 green | P4 white | P4 white | P4 white | P4 white |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | No | No | Std. | Std. |
| Blink | Std. | No | No | Std. | Std. |
| Blank | Std. | No | No | Std. | Std. |
| Bold | No | No | No | No | No |
| Reverse | Std. | No | No | Std. | Std. |
| Double size | Std. | No | No | No | No |
| Scroll | Std. | Up std. | Up std. | Up/down std. | Up std. |
| Paging | No | No | No | 2 pages opt. | No |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Addressable only | Addressable only | Addressable only | Both std. | Both std. |
| Protected format | No | No | No | Std. | No |
| Partial screen transmit | No | No | No | Std. | No |
| Split screen/windows | No | No | No | No | No |
| Tabulation | No | No | No | Std. | No |
| Character insert/delete | No | No | No | Std. | No |
| Line insert/delete | No | No | No | Std. | Std. |
| Erase | Line/screen std. | Line/page std. | Line/page std. | Char./line/page Std. | Line/page std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII |
| Detachability | Std. | No | No | No | No |
| Program function keys | No | No | Switch-selectable | Std., 26 switch-selectable | 16 std. |
| Numeric keypad | Std. | No | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | No | No |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | No | No | Opt. | No |
| Port for cust.-supplied devices | Std. | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | — | — | — | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | ASCII | ASCII | ASCII | ASCII | ASCII |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | Up to 19,200 | Up to 9600 | Up to 9600 | 110-19,200 | 110-9,600 |
| Format; character, line, or block | Character | Character | Character | Char./line/block | Character |
| Multipoint operation (pollable/addr.) | No | No | No | No | No |
| Terminal interface | RS-232-C | RS-232-C; 20mA opt. | RS-232-C; 20mA opt. | RS-232-C std.; 20mA opt. | RS-232-C std.; 20mA opt. |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | — | — |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 650 | 695 | 1,095 | 1,200 | 1,300 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | — | — |
| Date of announcement | 12/81 | — | — | — | — |
| Date of first production delivery | 1st Q/82 | 3/79 | 3/79 | — | 3/79 |
| Display units installed to date | — | — | — | — | — |
| Serviced by | ADDS | ADDS | ADDS | ADDS | ADDS |
| COMMENTS | | | | | Compatible with Regent 100. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | ADDS Regent 60 | Applied Dynamics Series 60 | A.R. Shaw Touch Command Model 40 | Beehive DM5/5A/5B | Beehive DM10 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 10 | — | 1 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | Std. | Std. | No | Std. | Std. |
| Other compatibility | — | — | ADDS Regent 40 | — | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 256-920 | 1920 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | 1 page | — | 80/24/1 | — | — |
| Screen arrangement, lines x chars./line | 24 x 80 | 24 x 80 | 24 x 80 | 24 x 80 plus status line | 24 x 80 plus status line |
| Screen area, diagonal, inches | 12 | 15 | 12 | 12 | 12; 15 opt. |
| Tilt/swivel screen | No | No | No | No | No |
| Total displayable symbols | 128 | 64 std.; 128 opt. | 96 ASCII | 128 ASCII | 128 ASCII |
| Symbol formation | 7 x 8 dot matrix | 5 x 7 std.; 7 x 9 opt. | 5 x 8 dot matrix | 5 x 7 dot matrix | 5 x 7 dot matrix |
| Character phosphor | P4 white | — | White | P42 green | P4 white |
| Color capability | No | No | No | | |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | — | Std. | Std. | Std. |
| Blink | Std. | — | Std. | Std. | Std. |
| Blank | Std. | — | Std. | Std. | Std. |
| Bold | No | — | No | Std. | No |
| Reverse | Std. | — | Std. | Std. | Std. |
| Double size | No | — | No | No | No |
| Scroll | Up std. | Std. | Up std. | Std. | Up std. |
| Paging | 1 page | Up to 32 | No | No | 1 std. |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Both std. | Both std. | Addressable only | Both std. | Both std. |
| Protected format | Std. | Std. | No | DM5B only | No |
| Partial screen transmit | Std. | Std. | No | No | No |
| Split screen/windows | No | — | No | No | Std. |
| Tabulation | Std. | No | No | Fwd./back std. | Fwd. std. |
| Character insert/delete | Std. | Std. | No | No | No |
| Line insert/delete | Std. | Std. | Std. | Std. | No |
| Erase | Char./line/page std. | Std. | Line/screen std. | Line/field/page std. | EOL/EOP/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Per customer spec | Typewriter | Typewriter | Typewriter |
| Character/code set | 128 ASCII | Any | 128 ASCII | 128 ASCII | 128 ASCII |
| Detachability | No | Std. | No | Std. | Std. |
| Program function keys | 16 std. | Up to 48 opt. | 8 std. | DM5A/DM5B only | No |
| Numeric keypad | Std. | Opt. | Std. | DM5A/DM5B only | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | No | No |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | No | No | No | No |
| Port for cust.-supplied devices | Std. | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | — | — | — | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | ASCII | — | ASCII | — | — |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 110-9600 | 110-19,200 | 110-9600 | Up to 19,200 | 110 to 19,200 |
| Format; character, line, or block | Char./line/block | Char./line/block | Character | Char./line/block | Character |
| Multipoint operation (pollable/addr.) | No | No | No | No | No |
| Terminal interface | RS-232-C std.; 20mA opt. | RS-232-C std.; 20mA TTL opt. | RS-232-C | RS-232-C; 20mA (DM5A/DM5B only) | RS-232-C, 20mA |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | Third party | Third party |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 1,500 | 1,520 | 2,800 | 880-1,295 | 1,245 |
| Controller, purchase, $ | — | 720 | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | 25 | — | — |
| Date of announcement | — | — | 5/80 | 4/81 | — |
| Date of first production delivery | 7/79 | 9/78 | 5/80 | 4/81 | 8/78 |
| Display units installed to date | — | — | 60 | — | — |
| Serviced by | ADDS | OEM only; no field service | A.R. Shaw, Inc. | Beehive & Western Union | Beehive & Western Union |
| COMMENTS | Compatible with Regent 200. | Based on 1981 information. | Comes equipped with a touch-sensitive CRT screen. | Time-of-day clock. | Line lock/memory lock with invisible address pointer std.; 11 line drawing characters at time of day clock. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Beehive DM1A | Beehive DM20 | Beehive DM30 | Beehive DM310 | Beehive DM3270 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 1 | 1 | 1 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | No | 3101-22/23 | 3276/3275 BSC |
| Teletype compatibility | Std. | Std. | Std. | Std. | No |
| Other compatibility | — | — | — | — | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 1920 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | — | — | 80/24/2 (4 opt.) | 1 page | — |
| Screen arrangement, lines x chars./line | 24 x 80 plus status line | 24 x 80 plus status line | 24 x 80 plus status line | 24 x 80 | 24 x 80 plus status line |
| Screen area, diagonal, inches | 12; 15 opt. | 12; 15 opt. | 12; 15 opt. | 12 | 12; 15 opt. |
| Tilt/swivel screen | No | No | No | No | No |
| Total displayable symbols | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII | 128 |
| Symbol formation | 5 x 7 dot matrix | 5 x 7 dot matrix | 5 x 7 dot matrix | 7 x 10 cell | 7 x 7 dot matrix |
| Character phosphor | P4 white | P4 white | P4 white | P42 green | P42 green |
| Color capability | | | | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | Std. | No | Std. |
| Blink | Std. | Std. | Std. | Std. | Std. |
| Blank | Std. | Std. | Std. | Std. | Std. |
| Bold | No | No | No | Std. | Std. |
| Reverse | Std. | Std. | Std. | No | Std. |
| Double size | No | No | No | No | No |
| Scroll | Up std. | Up std. | Up/down std. | Up. Std. | No |
| Paging | 1 std. | 1 std. | 2 std.; 4 opt. | No | No |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Both std. | Both std. |
| Protected format | No | Std. | Std. | Std. | Std. |
| Partial screen transmit | No | Std. | Std. | Std. | Std. |
| Split screen/windows | Std. | Std. | Std. | No | No |
| Tabulation | Fwd. std. | Fwd./back std. | Fwd./back std. | Std. | Fwd./back std. |
| Character insert/delete | No | Std. | Std. | Std. | Std. |
| Line insert/delete | No | Std. | Std. | Std. | No |
| Erase | EOL/EOP/screen std. | Line/screen/field/ end-of-screen std. | Line/screen/field/ end-of-screen std. | EOP/EOL/EOF/ screen std. | Char./screen/field std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII | 128 EBCDIC |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | 12 std. | 16 std. | 16 std. | 8 std. | 24 + 3 PA keys |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | No | No |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | No | No | No | No |
| Port for cust.-supplied devices | Std. | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | Bi-directional RS-232-C aux. port. | Bi-directional RS-232-C aux. port | Bi-directional RS-232-C aux. port | — | Alarm, bidir. RS-232-C aux. port |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Synchronous |
| Communications protocol | — | ASCII | ASCII | TTY | BSC |
| Code | ASCII | ASCII | ASCII | ASCII | EBCDIC |
| Speed, bits/second | 110-19,200 | 110-19,200 | 110-19,200 | 110-9600 | 150-9600 |
| Format; character, line, or block | Character | Char./line/blk/field | Char./line/blk/field | Char./line/blk | Block |
| Multipoint operation (pollable/addr.) | No | No | No | No | Std. |
| Terminal interface | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C, 20mA, RS-422 | RS-232-C |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | Third party | Third party | Third party | Third party | Third party |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 1,645 | 1,895 | 2,095 | 1,295 | 2,395 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | — | — |
| Date of announcement | — | — | — | 11/81 | — |
| Date of first production delivery | 8/78 | 10/78 | 6/79 | 12/81 | 2/81 |
| Display units installed to date | — | — | — | — | — |
| Serviced by | Beehive & Western Union | Beehive & Western Union | Beehive & Western Union | Beehive & Western Union | Beehive & Western Union |
| COMMENTS | All std. features of DM10 plus buffered bidir. aux. port. | Full editing features; line drawing forms mode; line lock/memory lock with invisible address pointer std. | All std. DM20 features plus two page display memory (four pages opt.) & parallel printer interface. | | Supports serial ASCII printer. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Beehive DM78 | Beehive Micro 4400 | Beehive DM83 | Braegen 3081 | Braegen 3161 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Cluster | Either | Stand-alone | Cluster | Cluster |
| Maximum displays/controller | 32 | 1 | 1 | 32 | 32 |
| Transportability | No | No | No | No | No |
| IBM compatibility | 3278 | No | No | 3270, 1403, 2501 | 3270 local/BSC |
| Teletype compatibility | Std. | No | No | No | No |
| Other compatibility | Beehive DM5A | Burroughs TD830 | Burroughs TD830/ MT983 | — | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 1920 | 480, 1920 | 1920 |
| Memory capacity, no. char./lines/pages | 1 page | 9 pages | 16K std., 36K opt. | 1 page | 1 page |
| Screen arrangement, lines x chars./line | 24 x 80 | 24 x 80 plus status line | 24 x 80 | 12 x 40, 24 x 80 | 24 x 80 |
| Screen area, diagonal, inches | 12; 15 opt. | 12; 15 opt. | 12 | 12 | 15 |
| Tilt/swivel screen | No | No | No | No | No |
| Total displayable symbols | 128 ASCII | 128 ASCII | 256 ASCII | 196 | 196 |
| Symbol formation | 7 x 10 cell | 5 x 7 dot matrix | 8 x 10 cell | 7 x 9 dot matrix | 7 x 9 dot matrix |
| Character phosphor | P42 green | P42 green | P42 green | Green | Green |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | Std. | Std. | Std. |
| Blink | Std. | Std. | Std. | Std. | Std. |
| Blank | Std. | Std. | Std. | Std. | Std. |
| Bold | Std. | Std. | Std. | Std. | Std. |
| Reverse | Std. | Std. | Std. | No | No |
| Double size | No | No | No | No | No |
| Scroll | Up std. | Up/down std. | Up std. | Opt. | Opt. |
| Paging | 1 std., 2 opt. | 9 std. | 4 std., 9 opt. | Opt. | Opt. |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Std. | Std. |
| Protected format | No | Std. | Std. | Std. | Std. |
| Partial screen transmit | Std. | Std. | Std. | Std. | Std. |
| Split screen/windows | Std. | Std. | Std. | No | No |
| Tabulation | Std. | Fwd./back std. | Std. | Std. | Std. |
| Character insert/delete | Std. | Std. | Std. | Std. | Std. |
| Line insert/delete | Std. | Std. | Std. | Opt. | Opt. |
| Erase | Screen/char./EOF/ EOL std. | Page/field/line/ screen std. | EOP/EOL/screen std. | Char./field/screen std. | Char./field/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter, data entry, console | Typewriter, data entry, console |
| Character/code set | 256 ASCII/EBCDIC | 128 ASCII | 256 ASCII | 256 EBCDIC | 256 EBCDIC |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | 24 std. | 16 std. | 16 std. | 10 std.; 15 opt. | 10 std.; 15 opt. |
| Numeric keypad | Std. | Std. | Std. | Opt. | Opt. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | No | No |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | No | No | Opt. | Opt. |
| Port for cust.-supplied devices | Std. | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | — | — | — | Alarm, disk, card reader | Alarm, disk, card reader |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half-duplex | Half-duplex | Half-duplex | Half-duplex |
| Technique | Asynchronous | Async./sync. | Async./sync. | Synchronous | Synchronous |
| Communications protocol | TTY | — | Burroughs | BSC | BSC |
| Code | ASCII | ASCII | ASCII | ASCII/EBCDIC | ASCII/EBCDIC |
| Speed, bits/second | 110-19,200 | 50-19,200 | 50-19,200 | 1200-19,200 | 1200-19,200 |
| Format; character, line, or block | Char./line/block | Char./line/blk/field | Block/line/page | Char./block | Char./block |
| Multipoint operation (pollable/addr.) | No | std. | Std. | Std. | Std. |
| Terminal interface | RS-232-C, RS-422, 20mA | RS-232-C, TDI | RS-232-C, TDI | RS-232-C | RS-232-C |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | Third party | Third party | Third party | 47 | 47 |
| Controller, 2-year lease, $/mo. | — | — | — | 137 | 137 |
| Display station, purchase, $ | 1,495 | 3,245 | 1,995 | 2,800 | 2,800 |
| Controller, purchase, $ | 4,000-up | — | — | 5,200 | 5,200 |
| Monthly prime-shift maint., $/mo. | — | — | — | 15 (disp.); 50 (cont.) | 15 (disp.); 50 (cont.) |
| Date of announcement | 1/82 | — | 4/82 | — | — |
| Date of first production delivery | 4/82 | 8/80 | 5/82 | — | 3/80 |
| Display units installed to date | — | — | — | — | — |
| Serviced by | Beehive & Western Union | Beehive & Western Union | Beehive & Western Union | Braegen | Braegen |
| COMMENTS | Designed to emulate IBM 3278 when used with protocol converter. | 11 graphics symbols & lines; line lock; memory; lock/split screen; full editing & formatting features. | | May be connected to up to 8 IBM hosts, local & remote, and switched to operate with 14 different applications. | May be connected to up to 8 IBM hosts, local & remote, and switched to operate with 14 different applications; APL support. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Burroughs TD 830 | Burroughs MT 983/MT 993 | C. Itoh CIT 80 | C. Itoh CIT 90 | C. Itoh CIT 101 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 1 | 1 | 1 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | 3275 opt. | — | No | No | No |
| Teletype compatibility | No | No | Std. | Std. | Std. |
| Other compatibility | Burroughs | Burroughs | DEC VT52/VT101 | DEC VT101 | DEC VT52/VT100/ VT101/VT102 |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 2000 | 2000 | 1920 | 1920 | 3168 |
| Memory capacity, no. char./lines/pages | 2000 char. (4080) | 2000 char. | 80/24/1 | 80/24/1 | 80 or 132/24/1 |
| Screen arrangement, lines x chars./line | 25 x 80 | 25 x 80 | 24 x 80 | 24 x 80 | |
| Screen area, diagonal, inches | 11 | 12 (983); 9 (993) | 12 | 12 | 12 |
| Tilt/swivel screen | No | No | No | No | No |
| Total displayable symbols | 128 | 128 | 128 ASCII | 128 ASCII | 128 ASCII |
| Symbol formation | 5 x 7 dot matrix | 8 x 12 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix |
| Character phosphor | White | Green | P4 white std.; P31 green/amber opt. | P4 white std.; P31 green/amber opt. | P4 white std.; P31 green/amber opt. |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | Std. | Std. | Std. |
| Blink | Std. | Std. | Std. | Std. | Std. |
| Blank | Std. | Std. | Std. | Std. | Std. |
| Bold | Std. | Std. | Std. | Std. | Std. |
| Reverse | Std. | Std. | Std. | Std. | Std. |
| Double size | Std. | Std. | No | No | Std. |
| Scroll | Up/down std. | Up/down std. | Up/down/jump/sm. | Up/down/jump/sm. | Up/down/jump/sm. |
| Paging | Std. | Std. | No | Opt. | No |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Std. | Std. | Both std. | Both std. | Both std. |
| Protected format | Std. | Std. | No | Std. | No |
| Partial screen transmit | Std. | Std. | No | Std. | No |
| Split screen/windows | No | No | 3 std. | 3 std. | 3 std. |
| Tabulation | Fixed/var./reverse | Std. | Fwd./back std. | Fwd./back std. | Fwd./back std. |
| Character insert/delete | Std. | Std. | No | Std. | No |
| Line insert/delete | Std. | Std. | No | Std. | No |
| Erase | Line/page std. | Line/page std. | Line/screen/char./ window | Line/screen/char./ window | Line/screen/char./ window |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter, data entry | Typewriter, data entry | Typewriter | Typewriter | Typewriter |
| Character/code set | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | — | — | 16 std. | 16 std. | 16 std. |
| Numeric keypad | Opt. | Opt. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | Std. | Std. | 9600 bps | 9600 bps | 9600 bps |
| Line printer, type and speed | Std. | Std. | 9600 bps | 9600 bps | 9600 bps |
| Composite video | No | No | No | No | Std. |
| Port for cust.-supplied devices | Std. | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | Audible alarm, ID card reader | Magnetic card reader, microdisk subsystem | — | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half-duplex | Half-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Async./sync. | Async./sync. | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | Burr./BSC | Burroughs | ANSI/ASCII | ANSI/ASCII | ANSI/ASCII |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | Up to 38,400 | Up to 38,400 | Up to 19,200 | Up to 19,200 | Up to 19,200 |
| Format; character, line, or block | Char./block | Char./block | Character | Char./line/block | Character |
| Multipoint operation (pollable/addr.) | Std. | Std. | No | No | No |
| Terminal interface | RS-232-C | RS-232-C | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C, 20mA |
| Integral modem | No | No | Std. | Std. | Std. |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | 143-179 (1 yr.) | 164-174 (1 yr.) | — | — | — |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 3,289-3,997 | 1,995-2,270 | 1,195 | 1,295 | 1,695 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | — | — |
| Date of announcement | — | 2/80 | 6/81 | 1/82 | 6/80 |
| Date of first production delivery | 8/76 | 4/80 | 9/81 | 1/82 | 12/80 |
| Display units installed to date | — | — | — | — | — |
| Serviced by | Burroughs | Burroughs | Western Union | Western Union | Western Union |
| COMMENTS | Models include TD 831, TD 832, TD 833, & TD 834. | | Lease plans available from authorized distributors. | Lease plans available from authorized distributors. | Lease plans available from authorized distributors. Graphics, power supply and other expansion options available. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Cobar 3100 | Cobar 3132 | Control Concepts EM-3275 | Control Concepts EM-3276/IC-3276 | Control Concepts CC-3275-12 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone/cluster | Stand-alone |
| Maximum displays/controller | — | — | 1 | 1/4 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | 3275-BSC | 3276-BSC | 3275-SDLC/8775 |
| Teletype compatibility | No | No | No | No | No |
| Other compatibility | DEC VT100/ VT101/VT102 | DEC VT131/VT132 | — | — | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 3168 | 3168 | 1920 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | 4K | 4K | 8K | 12K | 12K |
| Screen arrangement, lines x chars./line | 24 x 80; 24 x 132 | 24 x 80; 24 x 132 | 24 x 80, plus status line | 24 x 80, plus status line | 24 x 80, plus status line |
| Screen area, diagonal, inches | 12 | 15 | 12 | 12 | 12 |
| Tilt/swivel screen | No | No | Swivel opt. | Swivel opt. | Swivel opt. |
| Total displayable symbols | 127 ASCII | 127 ASCII | 96 EBCDIC/ASCII | 96 EBCDIC/ASCII | 96 EBCDIC |
| Symbol formation | 7 x 10 dot matrix | 7 x 10 dot matrix | 5 x 7 dot matrix | 5 x 7 dot matrix | 5 x 7 dot matrix |
| Character phosphor | P4 white std.; P31 grn/P134 amber opt. | P4 white std.; P31 grn./P134 amb. opt. | P42 green | P42 green | P42 green |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | No | No | No |
| Blink | Std. | Std. | No | No | No |
| Blank | No | No | Std. | Std. | Std. |
| Bold | Std. | Std. | Std. | Std. | Std. |
| Reverse | Std. | Std. | No | No | No |
| Double size | Std. | Std. | No | No | No |
| Scroll | Up/down/smooth | Up/down/smooth | No | No | No |
| Paging | 1 std.; 3 opt. | 1 std.; 3 opt. | No | No | No |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Both std. | Both std. |
| Protected format | No | Std. | Std. | Std. | Std. |
| Partial screen transmit | No | Std. | Std. | Std. | Std. |
| Split screen/windows | 3 std. | 3 std. | No | No | No |
| Tabulation | Fwd. std. | Fwd./back std. | Fwd./back std. | Fwd./back std. | Fwd./back std. |
| Character insert/delete | Std. | Std. | Std. | Std. | Std. |
| Line insert/delete | Std. | Std. | Std. | Std. | Std. |
| Erase | Line/screen std. | Line/screen std. | Char./field/screen std. | Char./field/screen std. | Char./field/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 128 ASCII | 128 ASCII | 96 EBCDIC/ASCII | 96 EBCDIC/ASCII | 96 EBCDIC |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | 18 std. | 18 std. | 24 std. | 24 std. | 24 std. |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | 75 cps impact | 75 cps impact | 75 cps impact |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | Opt. | Opt. | Opt. | Opt. | Opt. |
| Port for cust.-supplied devices | Std. | Std. | Opt. | Opt. | Opt. |
| Other vendor-supplied devices | — | — | Audible alarm | Audible alarm | Audible alarm |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half-duplex | Half-duplex | Half-duplex |
| Technique | Asynchronous | Asynchronous | Synchronous | Synchronous | Synchronous |
| Communications protocol | ASCII | ASCII | BSC | BSC | SDLC |
| Code | ASCII | ASCII | EBCDIC/ASCII | EBCDIC/ASCII | EBCDIC |
| Speed, bits/second | 50-19,200 | 50-19,200 | Up to 9600 | Up to 9600 | Up to 9600 |
| Format; character, line, or block | Character | Char./line/block | Block | Block | Block |
| Multipoint operation (pollable/addr.) | No | No | Std. | Std. | Std. |
| Terminal interface | RS-232-C, 20mA opt. | RS-232-C, 20mA opt. | RS-232-C | RS-232-C | RS-232-C |
| Integral modem | No | No | Opt. | Opt. | Opt. |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | Purchase only | Purchase only | 125 | 135 | 168 |
| Controller, 2-year lease, $/mo. | — | — | — | 173 | — |
| Display station, purchase, $ | 1,395 | 1,595 | 2,350-3,895 | 2,545-4,090 | 3,150 |
| Controller, purchase, $ | — | — | — | 3,260-4,805 | — |
| Monthly prime-shift maint., $/mo. | — | — | 32 | 35/45 | 35 |
| Date of announcement | 4/81 | 10/80 | 6/80 | 6/80/9/81 | 3/82 |
| Date of first production delivery | 5/81 | 1/81 | 9/80 | 9/80/11/81 | 2nd Q/82 |
| Display units installed to date | 650 | 400 | — | — | — |
| Serviced by | Cobar | Cobar | Control Concepts, third party | Control Concepts, third party | Control Concepts, third party |
| COMMENTS | | | | | |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Control Concepts CC-3276-12 | Control Data Model 714 | Control Data Model 722 | Control Data Model 751 | Custom Terminals CTi 1000 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Either | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 15 | 1 | 1 | — |
| Transportability | No | No | No | No | No |
| IBM compatibility | 3276-SDLC | No | No | No | 2740/I & II |
| Teletype compatibility | No | No | Std. | Std. | No |
| Other compatibility | — | — | Control Data | — | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1280, 1920 | 1920 | 1920 | 1840 |
| Memory capacity, no. char./lines/pages | 12K | 2560, 3940 char. | — | — | 4 pages |
| Screen arrangement, lines x chars./line | 24 x 80, plus status line | 16 x 80, 24 x 80 | 24 x 80 | 24 x 80 | 23 x 80 |
| Screen area, diagonal, inches | 12 | 8 x 10 | 12 | 12 | 12 |
| Tilt/swivel screen | Swivel opt. | No | No | No | No |
| Total displayable symbols | 96 EBCDIC | 96 | 96 ASCII | 128 ASCII | 64 |
| Symbol formation | 5 x 7 dot matrix | 5 x 9 dot matrix | 8 x 10 dot matrix | 7 x 9 dot matrix | 5 x 7 dot matrix |
| Character phosphor | P42 green | P4 white | P4 white | P4 white | White |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | No | Std. | Std. | No | No |
| Blink | No | No | Std. | Std. | Std. |
| Blank | Std. | No | No | No | No |
| Bold | Std. | No | Std. | No | No |
| Reverse | No | Std. | No | No | Std. |
| Double size | No | No | No | No | No |
| Scroll | No | No | Up/down std. | Up std. | Up std. |
| Paging | No | No | 1 std. | Opt. | No |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | No |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Both std. | No |
| Protected format | Std. | Std. | No | Std. | Std. |
| Partial screen transmit | Std. | Std. | Std. | Std. | Std. |
| Split screen/windows | No | No | No | No | No |
| Tabulation | Fwd./back std. | Std. | Std. | Std. | Fwd./back std. |
| Character insert/delete | Std. | Std. | Std. | Std. | No |
| Line insert/delete | Std. | Std. | Std. | Std. | No |
| Erase | Char./field/screen std. | Char./screen std. | No | Char./screen std. | Char. std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 96 EBCDIC | ASCII | ASCII | 64/96 ASCII | 64 ASCII |
| Detachability | Std. | No | No | Std. | No |
| Program function keys | 24 std. | 8 | 12 | No | 8 std. |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | 75 cps impact | 180 cps | 180 cps | 180 cps | 120/180 cps impact |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | Opt. | No | No | No | No |
| Port for cust.-supplied devices | Opt. | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | Audible alarm | Audible alarm | Audible alarm | Audible alarm | Second printer port, OCR wand, mag card reader |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half-duplex |
| Technique | Synchronous | Synchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | SDLC | ASCII, CDC | ASCII, TTY | ASCII | IBM 2740 |
| Code | EBCDIC | ASCII | ASCII | ASCII | EBCDIC |
| Speed, bits/second | Up to 9600 | 2000-9600 | 110-9600 | 110-9600 | 600/1200/1800 |
| Format; character, line, or block | Block | Block | Character | Char./line/block | Block |
| Multipoint operation (pollable/addr.) | Std. | Std. | No | No | Std. |
| Terminal interface | RS-232-C | RS-232-C | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C |
| Integral modem | Opt. | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | 184 | 112-284 | 74 | 110 | 131 |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 3,450 | 4,490-10,108 | 1,575. | 2,700 | 2,350 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | 38 | 53-82 | 19 | 30 | 25 |
| Date of announcement | 3/82 | 5/78 | 2/81 | — | 11/80 |
| Date of first production delivery | 2nd Q/82 | 5/78 | 2/81 | 9/76 | 11/80 |
| Display units installed to date | — | Over 500 | Over 1000 | Over 500 | — |
| Serviced by | Control Concepts, third party | Control Data | Control Data | Control Data | TRW |
| COMMENTS | | | | | |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Data General Dasher D100 (6106/6107) | Data General Dasher D200 (6108/6109) | Data General Dasher D400 (6130) | Data General Dasher D450 (6134) | DatagraphiX 132A |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 1 | 1 | 1 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | Std. | Std. | Std. | Std. | Std. |
| Other compatibility | — | — | DG Dasher D200 | DG Dasher D200, D400 | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 1920, 3240 | 1920, 3240 | 3960 |
| Memory capacity, no. char./lines/pages | — | — | — | — | 2 pages; 4 opt. |
| Screen arrangement, lines x chars./line | 24 x 80 | 24 x 80 | 24 x 80, 24 x 135 | 24 x 80, 24 x 135 | 30 x 132 |
| Screen area, diagonal, inches | 12 | 12 | 12 | 12 | 15 |
| Tilt/swivel screen | Std. | Std. | Std. | Std. | No |
| Total displayable symbols | 96 ASCII | 96 ASCII | 256 | 256 | 96 |
| Symbol formation | 7 x 11 dot matrix | 7 x 11 dot matrix | 7 x 11 dot matrix | 7 x 11 dot matrix | Charactron |
| Character phosphor | White | White | P31 green std. | P31 green std. | P31 green |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | Std. | Std. | No |
| Blink | Std. | Std. | Std. | Std. | No |
| Blank | No | No | No | No | No |
| Bold | Std. | Std. | Std. | Std. | Std. |
| Reverse | Std. | Std. | Std. | Std. | No |
| Double size | No | No | No | User definable | No |
| Scroll | Up std. | Up std. | Up/down/hor./sm. | Up/down/hor./sm. | Up/down std. |
| Paging | No | No | No | No | No |
| Selectable cursor blinking | No | No | Std. | Std. | Std. |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Both std. | Std. |
| Protected format | No | No | Std. | Std. | No |
| Partial screen transmit | No | No | No | No | Std. |
| Split screen/windows | No | No | Std.; up to 24 | Std.; up to 24 | No |
| Tabulation | Std. | Std. | Std. | Std. | Std. |
| Character insert/delete | No | No | Std. | Std. | Std. |
| Line insert/delete | No | No | Std. | Std. | Std. |
| Erase | Line/screen std. | Line/screen std. | Char./line/screen/ window std. | Char./line/screen/ window std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | No | 19 std. | 15 | 15 | No |
| Numeric keypad | Std. | Std. | Std. | Std. | No |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | Std. (TP1, TP2) | Std. (TP1, TP2) | No |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | No | No | No | No |
| Port for cust.-supplied devices | Opt. | Opt. | Std. | Std. | Std. |
| Other vendor-supplied devices | — | — | — | — | Audible alarm |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Full-duplex | Full-duplex | Full-duplex | Full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | ASCII | ASCII | ASCII | ASCII | ASCII |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | Up to 19,200 | Up to 19,200 | Up to 19,200 | Up to 19,200 | 110-9600 |
| Format; character, line, or block | Character | Character | Character | Character | Char./line/block |
| Multipoint operation (pollable/addr.) | No | No | No | No | No |
| Terminal interface | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C, 20mA |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | — | 272-307 (1 yr.) |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 1,750-2,150 | 1,950-2,350 | 2,300 | 2,800 | 3,950-4,450 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | 20 | 20 | 20 | 22 | 504-576/yr. |
| Date of announcement | 11/79 | 11/79 | 10/81 | 10/81 | 3/77 |
| Date of first production delivery | 2/80 | 2/80 | 2/82 | 2/81 | 8/77 |
| Display units installed to date | — | — | — | — | — |
| Serviced by | Data General | Data General | Data General | Data General | DatagraphiX |
| COMMENTS | Lease and rental available via third parties and terminal resellers. | Lease and rental available via third parties and terminal resellers. | Lease and rental available via third parties and terminal resellers. | Lease and rental available via third parties and terminal resellers, graphics capability with Trendview. | Memory buffer of 60 or 120 lines. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | DatagraphiX 132B | DatagraphiX 132-1/132-1D | DatagraphiX 132-2 | DatagraphiX 132-70 System | Datamaxx Datamaxx Series |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Either | Stand-alone |
| Maximum displays/controller | 1 | — | — | 32 | — |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | No | See comments | 3275/3276 BSC |
| Teletype compatibility | Std. | Std. | Std. | No | Std. |
| Other compatibility | — | DEC VT100 (132-1D) | — | Univac opt. | See comments |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 3960 | 3168 | 3168 | Up to 3564 | 2000 |
| Memory capacity, no. char./lines/pages | 2 pages; 4 opt. | — | — | — | 2 pages |
| Screen arrangement, lines x chars./line | 30 x 132 | 24 x 132 plus status line | 24 x 132 plus status line | 12/24 x 40, 24/32/43 x 80, 27 x 132 | 25 x 80 |
| Screen area, diagonal, inches | 15 | 12 | 12 | 15 | 12 std.; 15 opt. |
| Tilt/swivel screen | No | No | No | No | Opt. |
| Total displayable symbols | 96 | 96 ASCII | 96 ASCII | 96 | 128 ASCII/EBCDIC |
| Symbol formation | Charactron | Charactron | Charactron | Charactron | 7 x 11 dot matrix |
| Character phosphor | P31 green | P31 green | P31 green | P31 green | P4 white std.; P31 grn/P34 amber opt. |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | No | Std. | Std. | No | Std. |
| Blink | No | Std. | Std. | No | Std. |
| Blank | No | No | No | No | Std. |
| Bold | Std. | Std. | Std. | Std. (dim) | Std. |
| Reverse | No | No | No | No | Std. |
| Double size | No | No | No | No | No |
| Scroll | Up/down std. | No | Up/down std. | No | Up std. |
| Paging | Std. | No | No | No | 2 std. |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Std. | Both std. | Both std. | Addressable only | Both std. |
| Protected format | Std. | No | Std. | Std. | Std. |
| Partial screen transmit | Std. | No | Std. | Std. | Std. |
| Split screen/windows | No | No | No | No | No |
| Tabulation | Std. | Fwd./back std. | Fwd./back std. | Fwd./back std. | Fwd./back/fix/var. |
| Character insert/delete | Std. | No | Std. | Std. | Std. |
| Line insert/delete | Std. | No | Std. | Std. | Std. |
| Erase | Char./line/screen std. | Line/screen std. | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 128 ASCII | 128 ASCII | 128 ASCII | ASCII/EBCDIC | 128 ASCII/EBCDIC |
| Detachability | Std. | No | No | Std. | Opt. |
| Program function keys | 12 std. | No | 8 std. (16 functions) | 12 std. | 12 opt. |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | 120 cps | 340 cps matrix |
| Line printer, type and speed | No | No | No | 340 lpm | 600 lpm band |
| Composite video | No | No | No | No | No |
| Port for cust.-supplied devices | Std. | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | Audible alarm | Audible alarm | Audible alarm | Audible alarm | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Synchronous | Async./sync. |
| Communications protocol | ASCII | ASCII | ASCII | BSC | Polled, pt. to pt., BSC |
| Code | ASCII | ASCII | ASCII | ASCII/EBCDIC | ASCII/EBCDIC |
| Speed, bits/second | 110-9600 | 300-19,200 | 300 to 19,200 | Up to 9600 | 50-9600 |
| Format; character, line, or block | Char./line/block | Char./line/block | Char./line/block | Block | Char./line/block |
| Multipoint operation (pollable/addr.) | No | No | No | No | Std. |
| Terminal interface | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C | RS-232-C, TDI, 20mA std. |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | 306-341 (1 yr.) | 89/91 | 94 | Contact vendor | — |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 4,450-4,950 | 1,525/1,565 | 1,650 | 1,295-1,695 | 1,670-2,250 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | 600-672/yr. | 240/yr. | 240/yr. | — | 37 |
| Date of announcement | 12/78 | 6/79 | 9/80 | — | — |
| Date of first production delivery | 11/78 | 1/80 | 11/80 | 10/77 | 2/79 |
| Display units installed to date | — | — | — | — | Over 5000 |
| Serviced by | DatagraphiX | DatagraphiX | DatagraphiX | DatagraphiX | Datamaxx; Dow Jones |
| COMMENTS | Memory buffer of 60 or 120 lines; quantity discounts available. | Quantity discounts available. | Quantity discounts available. | Compatible with all remote stand-alone & cluster configurations for IBM 3277 & 3278 terminal models. | Compatible with Burroughs TD 830; MT 983; NCR 796-501; Honeywell 7700; Tandem B52; IBM 3275/3276. Quantity discounts available. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Datamaxx Maxxima Series | Datamedia Excel 10 | Datamedia Excel 20 | Datamedia Excel 30 | Datamedia Excel 40 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | — | 1 | 1 | 1 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | Std. | Std. | Std. | Std. | Std. |
| Other compatibility | See comments | DEC VT100 | DEC VT100 | See comments | TeleVideo 950 |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 2000 | 1920, 3168 | 1920,1848 (3168 opt.) | 1920,1848 (3168 opt.) | 1920, 960, 480 |
| Memory capacity, no. char./lines/pages | 4 pages | Interactive | 132/24/1 | 132/24/1 | 1920/24/2 |
| Screen arrangement, lines x chars./line | 25 x 80 | 24 x 80, 24 x 132 | 24 x 80, 14 x 132 (24 x 132 opt.) | 24 x 80, 14 x 132 (24 x 132 opt.) | 24 x 80, 24 x 40, 12 x 40 |
| Screen area, diagonal, inches | 12 | 12; 14 opt. | 12; 14 opt. | 12; 14 opt. | 12; 14 opt. |
| Tilt/swivel screen | No | Tilt std. | Tilt std. | Tilt std. | Tilt std. |
| Total displayable symbols | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII | 96 ASCII + 32 ctls. |
| Symbol formation | 7 x 11 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix | 5 x 7 dot matrix |
| Character phosphor | P31 green std.; P4 wh./P34 amber opt. | P4 white std.; P31 green opt. | P4 white std., P31 green opt. | P4 white std.; P31 green opt. | P4 white std.; P31 green opt. |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | Std. | Std. | Std. |
| Blink | Std. | Std. | Opt. | Std. | Std. |
| Blank | Std. | No | No | No | Std. |
| Bold | Std. | Std. | Opt. | Std. | Std. |
| Reverse | Std. | Std. | Std. | Std. | Std. |
| Double size | Std. | Std. | Std. | Std. | Std. |
| Scroll | Up/down std. | Up/down std. | Up/down std. | Up/down std. | Up/down std. |
| Paging | 2-24 pages std. | No | No | No | 2 std. |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Std. | Both std. | Both std. | Both std. | Both std. |
| Protected format | Std. | No | No | No | Std. |
| Partial screen transmit | Std. | No | No | No | Std. |
| Split screen/windows | No | 1 std. | 1 std. | 1 std. | 1 std. |
| Tabulation | Fwd./back/fix/var. | Fwd. std. | Fwd. std. | Fwd. std. | Fwd./back std. |
| Character insert/delete | Std. | No | No | No | Std. |
| Line insert/delete | Std. | No | No | Std. | Std. |
| Erase | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 128 ASCII | 64 ASCII | 64 ASCII | 64 ASCII | 64 ASCII |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | 15 std. | 4 std.; 12 opt. | 4 std.; 12 opt. | 8 opt. | 32 std. |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | 340 cps matrix | No | No | No | No |
| Line printer, type and speed | 1000 lpm band | No | No | No | No |
| Composite video | Opt. | Std. | Opt. | Opt. | No |
| Port for cust.-supplied devices | Std. | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | — | — | — | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Async./sync. | Asynchronous | Asynchronous | Asynchronous | Asychronous |
| Communications protocol | Polled, pt. to pt., BSC | X on/X off | X on/X off | — | X on/X off |
| Code | ASCII | ASCII/ANSI | ASCII/ANSI | ASCII | ASCII |
| Speed, bits/second | 50-19,200 | 50-19,200 | 50-19,200 | 50-19,200 | 110-9600 |
| Format; character, line, or block | Char./line/block | Character | Character | Character | Char./line/block |
| Multipoint operation (pollable/addr.) | Std. | No | No | No | No |
| Terminal interface | RS-232-C, TDI std.; 20mA opt. | RS-232-C; 20mA opt. | RS-232-C; 20mA opt. | RS-232-C; 20mA opt. | RS-232-C |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | — | — |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 1,800-2,450 | 1,695 | 1,495 | 1,395 | 995 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | 37 | — | — | — | — |
| Date of announcement | — | — | — | — | 11/81 |
| Date of first production delivery | 8/81 | — | — | — | — |
| Display units installed to date | — | — | — | — | — |
| Serviced by | Datamaxx; Dow Jones | RCA Service Co. | RCA Service Co. | RCA Service Co. | RCA Service Co. |
| COMMENTS | Compatible with Burroughs TD 830, MT 983; NCR 7900/3; DEC VT 100; VT 52. Quantity discounts available. | | | Emulations include: Datamedia 1521, ADDS Regent 25, Hazeltine 1420, Lear Siegler ADM 3A. | |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Datamedia Excel 50 | Datamedia Excel 60 | Datamedia Excel 70 | Datamedia ColorScan 10 | Datamedia ColorScan 30 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 1 | 1 | 1 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | Std. | Std. | Std. | Std. | Std. |
| Other compatibility | DEC VT100/APL | DEC VT132 | DG Dasher D200 | DEC VT100 | See comments |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920, 3168 | 1920, 3168 | 1920, 3168 | 1920, 3168 | 1920, 3168 |
| Memory capacity, no. char./lines/pages | 132/24/1 | 132/24/1 | 132/24/1 | 132/24/1 | 132/24/1 |
| Screen arrangement, lines x chars./line | 24 x 80, 24 x 132 | 24 x 80, 24 x 132 | 24 x 80, 24 x 132 | 24 x 80, 24 x 132 | 24 x 80, 24 x 132 |
| Screen area, diagonal, inches | 12; 14 opt. | 12; 14 opt. | 12; 14 opt. | 12 | 12 |
| Tilt/swivel screen | Tilt std. | Tilt std. | Tilt std. | Tilt std. | Tilt std. |
| Total displayable symbols | 96 ASCII/69 APL | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII |
| Symbol formation | 7 x 9 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix |
| Character phosphor | P4 white std.; P31 green opt. | P4 white std.; P31 green opt. | P4 white std.; P31 green opt. | Color screen | Color screen |
| Color capability | No | No | No | 8 colors std. | 8 colors std. |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | Std. | Std. | Std. |
| Blink | Std. | Std. | Std. | Std. | Std. |
| Blank | No | No | No | No | No |
| Bold | Std. | Std. | Std. | Std. | Std. |
| Reverse | Std. | Std. | Std. | Std. | Std. |
| Double size | Std. | Std. | Std. | Std. | Std. |
| Scroll | Up/down std. | Up/down std. | Up/down std. | Up/down std. | Up/down std. |
| Paging | No | No | No | No | No |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Both std. | Both std. |
| Protected format | No | Std. | No | No | No |
| Partial screen transmit | No | Std. | No | No | Std. |
| Split screen/windows | 1 std. | 1 std. | 1 std. | 1 std. | 1 std. |
| Tabulation | Fwd. std. | Fwd. std. | Fwd. std. | Fwd. std. | Fwd. std. |
| Character insert/delete | No | Std. | No | No | No |
| Line insert/delete | No | Std. | Std. | No | Std. |
| Erase | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 64 ASCII | 64 ASCII | 64 ASCII | 64 ASCII | 64 ASCII |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | 4 std.; 12 opt. | 12 std. | 12 std. | 12 std. | 8 std. |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | No | No |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | Std. | Opt. | Opt. | Opt. | Opt. |
| Port for cust.-supplied devices | Std. | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | — | — | — | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Asychronous |
| Communications protocol | X on/X off | X on/X off | X on/X off | X on/X off | — |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 50-19,200 | 50-19,200 | 50-19,200 | 50-19,200 | 50-19,200 |
| Format; character, line, or block | Character | Char./line/block | Character | Character | Character |
| Multipoint operation (pollable/addr.) | No | No | No | No | No |
| Terminal interface | RS-232-C; 20mA opt. | RS-232-C; 20mA opt. | RS-232-C; 20mA opt. | RS-232-C; 20mA opt. | RS-232-C; 20mA opt. |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | — | — |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 1,840 | 1,895 | 1,395 | 3,195 | 3,195 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | — | — |
| Date of announcement | — | — | 10/81 | — | 11/81 |
| Date of first production delivery | — | — | — | — | — |
| Display units installed to date | — | — | — | — | — |
| Serviced by | RCA Service Co. | RCA Service Co. | RCA Service Co. | RCA Service Co. | RCA Service Co. |
| COMMENTS | | | | | Emulations include: Datamedia 1521, ADDS Regent 25, Hazeltine 1420, Lear Siegler ADM 3A. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Datamedia ColorScan 60 | Datamedia ColorScan 70 | Datamedia 3270-S | Datapoint 8200/8220 | Data Terminals & Communications DTC-382V |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 1 | 1 | Variable | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | 3275/3276-BSC | W/Datapoint proc. | 2741 opt. |
| Teletype compatibility | Std. | Std. | Opt. | Std. | Std. |
| Other compatibility | DEC VT132 | DG Dasher D200 | — | — | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920, 3168 | 1920, 3168 | 1920 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | 132/24/1 | 132/24/1 | 80/24/1 | 80/24/1 | — |
| Screen arrangement, lines x chars./line | 24 x 80, 24 x 132 | 24 x 80, 24 x 132 | 24 x 80 | 24 x 80 | 24 x 80 |
| Screen area, diagonal, inches | 12 | 12 | 12; 14 opt. | 12 | 12 |
| Tilt/swivel screen | Tilt std. | Tilt std. | Tilt std. | No | No |
| Total displayable symbols | 128 ASCII | 128 ASCII | 96 EBCDIC | 96 ASCII | 128 ASCII |
| Symbol formation | 7 x 9 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix | 5 x 7/7 x 9 (8220) | 7 x 9 dot matrix |
| Character phosphor | Color screen | Color screen | P4 white std., P31 green opt. | Green/white (8220) | — |
| Color capability | 8 colors std. | 8 colors std. | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | No | No | Std. |
| Blink | Std. | Std. | No | No | Std. |
| Blank | No | No | No | No | Std. |
| Bold | Std. | Std. | Std. | Std. | Std. |
| Reverse | Std. | Std. | No | Std. | Std. |
| Double size | Std. | Std. | No | No | No |
| Scroll | Up/down std. | Up/down std. | No | Std. | Up/down std. |
| Paging | No | No | No | No | 4 std.; 8 opt. |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Both std. | Addressable only |
| Protected format | Std. | No | Std. | Opt. | Std. |
| Partial screen transmit | Std. | No | No | No | Std. |
| Split screen/windows | 1 std. | 1 std. | No | Opt.; std. (8220) | — |
| Tabulation | Fwd. std. | Fwd. std. | Std. | Opt.; std. (8220) | Fwd./back std. |
| Character insert/delete | Std. | No | Std. | Via program control | Std. |
| Line insert/delete | Std. | Std. | Std. | Via program control | Std. |
| Erase | Char./line/screen std. | Char./line/screen std. | Screen std. | Via program control | Std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 64 ASCII | 64 ASCII | 96 EBCDIC | 96 ASCII | 128 ASCII |
| Detachability | Std. | Std. | Std. | Opt. | No |
| Program function keys | 12 std. | 12 std. | 24 std. | 4 std. | 19 std. |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | No | Std. |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | Opt. | Opt. | No | No | No |
| Port for cust.-supplied devices | Std. | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | — | — | — | — | Disk drive, Micro 210 microcomputer |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Synchronous | Asynchronous | Asynchronous |
| Communications protocol | Xon/Xoff | Xon/Xoff | BSC | — | ASCII |
| Code | ASCII | ASCII | EBCDIC | ASCII | ASCII |
| Speed, bits/second | 50-19,200 | 50-19,200 | 110-19,200 | 50-9600 | 9600 |
| Format; character, line, or block | Char./line/block | Character | Block | Character | Character |
| Multipoint operation (pollable/addr.) | No | No | Std. | No | No |
| Terminal interface | RS-232-C; 20mA opt. | RS-232-C; 20mA opt. | RS-232-C | RS-232-C | RS-232-C |
| Integral modem | No | No | Opt. | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | 85 | 215 |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 3,395 | 3,195 | 2,295 | 1,895 | 5,700 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | 24 | 20 | 47 |
| Date of announcement | 11/81 | 11/81 | 3/82 | 11/81 (8220) | — |
| Date of first production delivery | — | — | 4/82 | — | 1978 |
| Display units installed to date | — | — | — | — | 600 |
| Serviced by | RCA Service Co. | RCA Service Co. | RCA Service Co. | Datapoint | DTC/Dow Jones, or third party |
| COMMENTS | | | | Amber screen, tilt/rotate base available on 8220. | The videodisplay is mounted above the printer and sold as one unit. A metal wheel print mechanism is available. Printer buffer is 256 characters. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Datavue Displaymaster 132-C | Decision Data 3751-11 | Delta Data 2830-2 | Delta Data 2400 | Digital Equipment (DEC) VT100 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Either | Either | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | Up to 9 | — | — | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | 5251-11 | No | No | No |
| Teletype compatibility | Std. | No | Std. | Std. | Std. |
| Other compatibility | Over 20 programmable | — | Burroughs TD830 | Univac U100/ U200/UTS 400 | VT100 |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 3168 | 1920 | 1920 | Up to 1920 | 1920; 3168 opt. |
| Memory capacity, no. char./lines/pages | 32K | — | 1920 char. (4000 opt.) | 16K char. | — |
| Screen arrangement, lines x chars./lines | 24 x 80; 24 x 132 | 24 x 80 plus status line | 24 x 80 plus 2 status lines | 12/16/24 x 64/80 plus status | 24 x 80; 24 x 132 opt. |
| Screen area, diagonal, inches | 11¾ x 5¾ | 15 | 12 | 15 | 12 |
| Tilt/swivel screen | No | Tilt std. | Std. | No | Opt. |
| Total displayable symbols | 128 ASCII | 96 | 136 | 128 | 128 ASCII |
| Symbol formation | 5 x 9 dot matrix | 8 x 16 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix |
| Character phosphor | P31 green std.; P4 white, amber opt. | Green | P31 green | P31 green | P4 white std. |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Opt. | — | Std. | Std. | Std. |
| Blink | Opt. | — | Std. | Std. | Opt. |
| Blank | Opt. | No | Std. | Std. | No |
| Bold | Std. | Std. | Std. | Std. | Opt. |
| Reverse | Std. | Std. | Std. | Std. | Std. |
| Double size | No | No | No | No | Std. |
| Scroll | Up/down std. | Std. | Up/down std. | Up/down std. | Smooth/bidir. |
| Paging | 8 (80 col.); 5 (132 col.) | No | 12 std. | Std. | No |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Std. | Std. | Both std. | Both std. | Both std. |
| Protected format | Std. | No | Std. | Std. | No |
| Partial screen transmit | Std. | No | No | No | Std. |
| Split screen/windows | Opt. | No | No | No | 2 std. |
| Tabulation | Fwd./back std. | Std. | Fwd./back std. | Fwd./back std. | Std. & program. tabs |
| Character insert/delete | Std. | — | Std. | No | Opt. |
| Line insert/delete | Std. | — | Std. | Std. | Opt. |
| Erase | Char./line/screen std. | — | Char./line/screen std. | Line/field/screen std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter, data entry | Typewriter | Typewriter |
| Character/code set | 128 ASCII | EBCDIC | 128 ASCII | 128 ASCII | ASCII |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | 16 std. | No | No | No | 4 std. |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | Std. | No | No | 30-240 cps impact |
| Line printer, type and speed | No | Std. | No | No | — |
| Composite video | Opt. | No | No | No | Std. |
| Port for cust.-supplied devices | Std. | Std. | Std. | Std. | Opt. |
| Other vendor-supplied devices | Light pen | — | Audible alarm | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Full-duplex |
| Technique | Asynchronous | Synchronous | Async./sync. | Async./sync. | Asynchronous |
| Communications protocol | ASCII | BSC/SDLC | Burroughs TDI | — | ASCII |
| Code | ASCII | EBCDIC | ASCII | ASCII | ASCII |
| Speed, bits/second | 50-19,200 | | Up to 9600 | Up to 9600 | 50-19,200 |
| Format; character, line, or block | Char./line/block | Block | Char./block | Char./block | Character |
| Multipoint operation (pollable/addr.) | Opt. | No | Std. | Std. | No |
| Terminal interface | RS-232-C, 20mA opt. | RS-232-C | RS-232-C std. | RS-232-C | RS-232-C, 20mA opt. |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | Purchase only | 92 | See comments | — | — |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 1,995 | 2,500 | 2,150 | 2,750 | 2,150 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | 21 | — | — | 18 |
| Date of announcement | 12/79 | 10/80 | — | 11/80 | 1978 |
| Date of first production delivery | 10/80 | 1/81 | 9/79 | 1/81 | 1978 |
| Display units installed to date | 800 | — | Over 1,000 | — | — |
| Serviced by | Third party | Decision Data | Delta Data & Sorbus | Delta Data & Sorbus | DEC |
| COMMENTS | Optional graphics; opt. 16KB additional memory; Z-80 microprocessor std.; two RS-232-C ports std. | | Leasing available through distributors. | | ANSI std. escape sequences; line drawing set std. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Digital Equipment (DEC) VT101 | Digital Equipment (DEC) VT102 | Digital Equipment (DEC) VT 125 | Digital Equipment (DEC) VT131 | Direct VP800/A |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 1 | 1 | 1 | 1 |
| Transportability | No | No | No | No | Portable case |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | Std. | Std. | Std. | Std. | No |
| Other compatibility | VT100 | VT100 | VT 100 | VT100 | DEC VT100/VT52 |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 3168 | 1920; 3168 opt. | 3168 | 1920/3168 |
| Memory capacity, no. char./lines/pages | — | — | — | — | 8K |
| Screen arrangement, lines x chars./line | 24 x 80; 14 x 132 | 24 x 80; 24 x 132 | 24 x 80; 14 x 132 | 24 x 80; 24 x 132 | 24 x 80; 28 x 132 |
| Screen area, diagonal, inches | 12 | 12 | 12 | 12 | 12 |
| Tilt/swivel screen | Opt. | Opt. | Opt. | Opt. | No |
| Total displayable symbols | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII |
| Symbol formation | 7 x 9 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix | 7 x 12 dot matrix |
| Character phosphor | P4 white std. | P4 white std. | P4 white std. | P4 white std. | P4 white/P31 green |
| Color capability | No | No | 4 of 64 ext. monitor | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | Std. | Std. | Std. |
| Blink | No | Std. | Opt. | Std. | Std. |
| Blank | No | No | No | No | Opt. |
| Bold | No | Std. | Opt. | Std. | Std. |
| Reverse | Std. | Std. | Std. | Std. | Std. |
| Double size | Std. | Std. | Std. | Std. | Std. |
| Scroll | Smooth/bidir. | Smooth/bidir. | Smooth/bidir. | Smooth/bidir. | Bidir.; 3 rates |
| Paging | No | No | No | No | Std., all of mem. |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | No |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Both std. | Both std. |
| Protected format | No | No | No | Std. | No |
| Partial screen transmit | Std. | Std. | Std. | Std. | No |
| Split screen/windows | 2 std. | 2 std. | 2 std. | 2 std. | Std. |
| Tabulation | Std. & program. tabs | Std. & program. tabs | Std. & program tabs | Std. & program tabs | Fwd./back std. |
| Character insert/delete | No | Std. | No | Std. | No |
| Line insert/delete | No | Std. | No | Std. | No |
| Erase | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. | Line/page std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | ASCII | ASCII | ASCII | ASCII | 128 ASCII |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | 4 std. | 4 std. | 4 std. | 4 std. | 16 combinations |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | 30-240 cps impact | 30-240 cps impact | 30-240 cps impact | 30-240 cps impact | No |
| Line printer, type and speed | — | — | — | — | No |
| Composite video | Std. | Std. | Std. | Std. | No |
| Port for cust.-supplied devices | No | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | — | — | Graphics printer | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Full-duplex | Half/full-duplex | Full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | ASCII | ASCII | ASCII | ASCII | ASCII |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 50-19,200 | 50-19,200 | 50-19,200 | 50-19,200 | 50-19,200 |
| Format; character, line, or block | Character | Character | Character | Char./line/block | Character |
| Multipoint operation (pollable/addr.) | No | No | No | No | No |
| Terminal interface | RS-232-C, 20mA opt. | RS-232-C, 20mA opt. | RS-232-C, 20mA opt. | RS-232-C, 20mA opt. | RS-232-C |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | — | Purchase only |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 2,150 | 2,400 | 3,800 | 2,400 | 1,590 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | 15 | 22 | 29 | 22 | 24 |
| Date of announcement | 9/81 | 9/81 | 7/81 | 9/81 | — |
| Date of first production delivery | 10/81 | 10/81 | 10/81 | 10/81 | 8/80 |
| Display units installed to date | — | — | — | — | — |
| Serviced by | DEC | DEC | DEC | DEC | Direct; third party |
| COMMENTS | ANSI std. escape sequences; line drawing set std.; local echo; national power cords; bounded. | ANSI std. escape sequences; line drawing set std.; local echo; national power cords; international modem support; bounded. | Same as VT100 plus bit map graphics for business & scientific users. | ANSI std. escape sequences; line drawing set std.; local echo; national power cords; international modem support; bounded. | All user controls & adjustments can be made from keyboard; set-up features saved in non-volatile memory; line-drawing set, downloadable fonts, fold-up keyboard std. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Direct VP800/B | Direct VP800/C | Direct VP825 | Direct VP828 | Docutel/ Olivetti TCV 280 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Cluster |
| Maximum displays/controller | 1 | 1 | 1 | 1 | 16/8 |
| Transportability | Portable case | Portable case | Portable case | Portable case | No |
| IBM compatibility | No | No | No | No | 3270 BSC/SDLC |
| Teletype compatibility | No | No | No | No | No |
| Other compatibility | DEC VT100/VT52 | DEC VT100/VT52 | HP2640, HP2645A, HP2622 | HP2640, HP2645, HP2622, DEC VT100 | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920/3168 | 1920/3168 | 1920/3168 | 1920/3168 | 1920 |
| Memory capacity, no. char./lines/pages | 32K | 32K | 16K | 32K | — |
| Screen arrangement, lines x chars./line | 24 x80; 28 x 132 | 24 x 80; 28 x 132 | 24 x 80; 28 x 132 | 24 x 80; 24 x 132 | 24 x 80 |
| Screen area, diagonal, inches | 12 | 12 | 12 | 12 | 15 |
| Tilt/swivel screen | No | No | No | No | No |
| Total displayable symbols | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII | 64 |
| Symbol formation | 7 x 12 dot matrix | 7 x 12 dot matrix | 7 x 12 dot matrix | 7 x 12 dot matrix | 7 x 9 dot matrix |
| Character phosphor | P4 white/P31 green | P4 white/P31 green | P4 white/P31 green | P4 white/P31 green | Green |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | Std. | Std. | No |
| Blink | Std. | Std. | Std. | Std. | No |
| Blank | Opt. | Opt. | Opt. | Opt. | Std. |
| Bold | Std. | Std. | Std. | Std. | Std. |
| Reverse | Std. | Std. | Std. | Std. | Std. |
| Double size | Std. | Std. | Std. | Std. | No |
| Scroll | Bidir.; 3 rates | Bidir.; 3 rates | Bidir.; 3 rates | Bidir.; 3 rates | No |
| Paging | Std., all of mem. | Std., all of mem. | Mult. pages std. | Mult. pages std. | No |
| Selectable cursor blinking | No | No | Std. | Std. | Std. |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Both std. | Both std. |
| Protected format | No | Std. | Std. | Std. | Std. |
| Partial screen transmit | Std. | Std. | Std. | Std. | Std. |
| Split screen/windows | Std. | Std. | Std. | Std. | — |
| Tabulation | Fwd./back std. | Fwd./back std. | Fwd./back tab | Fwd./back tab | Fwd./back std. |
| Character insert/delete | Std. | Std. | Std. | Std. | Std. |
| Line insert/delete | Std. | Std. | Std. | Std. | No |
| Erase | Char./line/page std. | Char./line/page std. | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter, data entry, keypunch |
| Character/code set | 128 ASCII | 128 ASCII | 96 ASCII | 96 ASCII | ASCII/EBCDIC |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | 16 combinations | 16 combinations | 8 std. | 8 std. | 12 opt. |
| Numeric keypad | Std. | Std. | Std. | Std. | Opt. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | No | Impact |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | No | No | No | No |
| Port for cust.-supplied devices | Std. | Std. | No | Std. | Std. |
| Other vendor-supplied devices | — | — | — | — | Audible alarm, ID reader, light pen |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Synchronous |
| Communications protocol | ASCII | ASCII | DC1/DC2; Eng./Ack. | DC1/DC2; Eng/Ack. | BSC/SDLC |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII/EBCDIC |
| Speed, bits/second | 50-19,200 | 50-19,200 | 50-19,200 | 50-19,200 | 1200-9600 |
| Format; character, line, or block | Char./block/line | Char./block/line | Char./line/block | Char./line/block | Block |
| Multipoint operation (pollable/addr.) | No | No | No | No | Std. |
| Terminal interface | RS-232-C | RS-232-C | RS-232-C | RS-232-C | RS-232-C |
| Integral modem | No | No | No | No | |
| Integral acoustic coupler | No | No | No | No | |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | Purchase only | Purchase only | Purchase only | Purchase only | — |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 1,690 | 1,995 | 1,890 | 2,590 | 2,080 |
| Controller, purchase, $ | — | — | — | — | 3,080-7,690 |
| Monthly prime-shift maint., $/mo. | 24 | 24 | 24 | 24 | — |
| Date of announcement | — | — | 7/81 | 3/81 | — |
| Date of first production delivery | 10/80 | 12/81 | 7/81 | 4/81 | 10/78 |
| Display units installed to date | — | — | — | — | — |
| Serviced by | Direct; third party | Direct; third party | Direct; third party | Direct; third party | Docutel/Olivetti |
| COMMENTS | Same as VP800/A plus opt. 32K RAM. | Optional debugger, program download & run capability, font editing package, full data entry checking and forms capability; 32K RAM optional. Fold-up keyboard. | Line-drawing set; fold-up keyboard; user-adjustable convenience features. | Same as VP825 plus downline loadable fonts. | The internal controller is capable of supporting up to 16 (BS-281) or 8 (BS-286) TCV-287 displays or printers. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Falco Data Products TS-1 | General Digital VuePoint | General Terminal SW 10 | General Terminal Avant 300 | General Terminal GT-100D |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 1 | — | — | — |
| Transportability | No | Portable case | No | No | No |
| IBM compatibility | 3275 | Special order | No | No | No |
| Teletype compatibility | Std. | Opt. | Std. | Std. | Std. |
| Other compatibility | DEC VT52<br>Lear Siegler ADM 31 | — | DEC VT100/VT52 | — | Data General DG 6053 |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 480 | 1920 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | 16K opt. | — | 80/24/1 | 10K std. | 80/24/1 |
| Screen arrangement, lines x chars./line | 24 x 80 plus status line | 12 x 40 | 24 x 80 plus status line | 24 x 80 plus status line | 24 x 80 plus status line |
| Screen area, diagonal, inches | 12 | 5 x 9 | 12 | 12 | 12 |
| Tilt/swivel screen | Opt. | No | No | Std. | No |
| Total displayable symbols | 128 ASCII | 96 ASCII | 96 ASCII | 128 ASCII | 128 ASCII |
| Symbol formation | 6 x 10 dot matrix | 5 x 7 dot matrix | 5 x 7 dot matrix | 5 x 7 dot matrix | 5 x 7 dot matrix |
| Character phosphor | P31 green std.; P4 wht./P134 amb. opt. | Gas plasma panel | P31 green std.; P4 white opt. | P31 green std.; P4 white opt. | P4 white std.; P31 green opt. |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | No | No | Std. | No |
| Blink | Std. | No | No | Std. | No |
| Blank | Std. | No | No | Std. | Std. |
| Bold | Std. | No | No | Half | Half |
| Reverse | Std. | No | Std. | Std. | Std. |
| Double size | Std. | No | No | Std. | No |
| Scroll | Up/smooth std. | Up std. | Up/smooth std. | Up std. | Up/smooth std. |
| Paging | Opt. | 3 std.; up to 51 opt. | No | 4 std. | No |
| Selectable cursor blinking | Std. | Std. | Std. | No | No |
| Addressable/readable cursor | Both std. | Addressable only | Both std. | Both std. | Both std. |
| Protected format | Std. | Std. | Std. | Std. | Std. |
| Partial screen transmit | Std. | No | No | Std. | Std. |
| Split screen/windows | Std. | No | Std. | No | No |
| Tabulation | Fwd./back std. | Fwd. std. | Fwd. std. | Fwd./back std. | No |
| Character insert/delete | Std. | No | Std. | Std. | No |
| Line insert/delete | Std. | No | Std. | Std. | No |
| Erase | Line/page std. | Char./line/screen/. partial screen std. | Line/screen std. | Line/field/page | Line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter, data entry | Typewriter opt. | Typewriter | Typewriter | Typewriter |
| Character/code set | 128 ASCII | 128 ASCII | 96 ASCII | 128 ASCII | 96 ASCII |
| Detachability | Std. | Std. | Std. | Std. | Opt. |
| Program function keys | 28 std., separate row opt. | Via touch screen | 12 std.; 20 char./key | 16 std.; 48 char./key | 8 std. |
| Numeric keypad | Std. | Via touch screen | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | No | No |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | Std. | No | No | No | No |
| Port for cust.-supplied devices | Std.; 2 I/O ports | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | — | Audible alarm std. | — | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Full-duplex | Full-duplex | Half/full-duplex | Full-duplex |
| Technique | Async. std., syn. opt. | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | SDLC | — | ASCII | ASCII | ASCII |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 50-19,200 | 300-19,200 | 50-9600 | 50-19,200 | 110-19,200 |
| Format; character, line, or block | Char./line/block | Character | Character | Char./block | Character |
| Multipoint operation (pollable/addr.) | Opt. | Opt. | No | No | No |
| Terminal interface | RS-232-C | RS-232-C; 20mA opt. | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C, 20mA |
| Integral modem | Opt. Auto dialer | — | No | No | No |
| Integral acoustic coupler | No | — | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | Purchase only | — | Purchase only | Purchase only | Purchase only |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 1,295 | 3,500 | 995 | 1,249 | 995 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | — | — |
| Date of announcement | — | — | 5/81 | 5/81 | — |
| Date of first production delivery | 10/80 | 9/79 | 9/81 | 9/81 | — |
| Display units installed to date | 5,000 | — | — | — | — |
| Serviced by | Dow Jones/factory | General Digital | General Terminal | General Terminal | General Terminal |
| COMMENTS | Additional emulations include: DEC VT100, Burroughs, NCR, Data General, line & business graphics; horizontal/down scrolling opt. | The VuePoint is a touch-input terminal with optional keyboard & printer. | 11 international keyboards available. | 10K user-downloadable RAM; 11 international keyboards available; 32 video attribute combinations. | 32 line graphics. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | General Terminal GT-101/GT-110 | General Terminal GT-400 | Harris 8000 | Harris 9200 | Hazeltine Esprit |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Cluster | Cluster | Stand-alone |
| Maximum displays/controller | — | — | 32 | 32 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | 3270 BSC/SDLC | 3270 BSC/SDLC | No |
| Teletype compatibility | Std. | Std. | No | No | Std. |
| Other compatibility | — | — | Burroughs, Honeywell, Univac | — | ADDS Regent 25, Lear Siegler ADM3A |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 2000 | 480, 960, 1920 | 960-3440 | 1920 |
| Memory capacity, no. char./lines/pages | 80/24/1 | 7500 opt. | — | — | No |
| Screen arrangement, lines x chars./line | 24 x 80 plus status line | 25 x 80 | 12 x 40, 12 x 80, 24 x 80 | 12 x 80, 24 x 80, 32 x 80, 43 x 80 | 24 x 80 |
| Screen area, diagonal, inches | 12 | 12 | 12 | 15 | 12 |
| Tilt/swivel screen | No | No | No | No | No |
| Total displayable symbols | 128 ASCII | 128 ASCII | 96/128 ASCII | 128 | 128 |
| Symbol formation | 5 x 7 dot matrix | 5 x 7 dot matrix | 7 x 9 dot matrix | 7 x 13 dot matrix | 7 x 11 dot matrix |
| Character phosphor | P4 white std.; P31 green opt. | P4 white std.; P31 green opt. | P4 white | P39/P42 Green | Green |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | Std. | No | No |
| Blink | Std. | Std. | Std. | No | Std. |
| Blank | Std. | Std. | No | No | No |
| Bold | Half (101); Std. (110) | Std. | Std. | Std. | No |
| Reverse | Std. | Std. | No | No | Std. |
| Double size | No | No | No | No | No |
| Scroll | Up std. | Up std. | No | No | No |
| Paging | No | 3 opt. | No | No | No |
| Selectable cursor blinking | No | No | Std. | Std. | No |
| Addressable/readable cursor | Both std. | Both std. | Std. | Std. | Both std. |
| Protected format | Std. | Std. | Std. | Std. | Std. |
| Partial screen transmit | Std. | Std. | Std. | Std. | No |
| Split screen/windows | No | No | No | No | No |
| Tabulation | Fwd./back std. | Fwd./back std. | Std. | Std. | Std. |
| Character insert/delete | Std. | Std. | Std. | Std. | No |
| Line insert/delete | Std. | Std. | Char./line/screen | — | Std. |
| Erase | Field/line/screen | Field/line/screen | Std. | | Line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter, data entry, others | Typewriter, data entry, keypunch | Typewriter |
| Character/code set | 128 ASCII | 128 ASCII | ASCII/EBCDIC | ASCII/EBCDIC | 128 ASCII |
| Detachability | Opt. | Std. | Std. | Std. | No |
| Program function keys | 8 std. | No | Up to 36 | Up to 24 | No |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | Impact, 40-165 cps | Impact, 80-180 cps | No |
| Line printer, type and speed | No | No | Belt, 200 lpm | Band, 300 lpm | No |
| Composite video | Opt. | No | No | No | No |
| Port for cust.-supplied devices | Std. | Opt. | Std. | Std. | Std. |
| Other vendor-supplied devices | — | | Hard disk | Light pen, magnetic stripe reader | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Async./Sync. | Synchronous | Asynchronous |
| Communications protocol | ASCII | ASCII | BSC/SDLC | BSC/SDLC | TTY |
| Code | ASCII | ASCII | ASCII/EBCDIC | ASCII/EBCDIC | ASCII |
| Speed, bits/second | 110-19,200 | 50-19,200 | 1200-9600 | Up to 9600 | Up to 9600 |
| Format; character, line, or block | Char./block | Char./line/block | Char./block | Char./block | Char./block |
| Multipoint operation (pollable/addr.) | No | Polling opt. | Std. | Std. | No |
| Terminal interface | RS-232-C, 20mA | 20mA/60mA | RS-232-C | RS-232-C | RS-232-C |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | Purchase only | Purchase only | Contact vendor | Contact vendor | — |
| Controller, 2-year lease, $/mo. | — | — | Contact vendor | Contact vendor | — |
| Display station, purchase, $ | 995 | 1,625 | Contact vendor | Contact vendor | 695 |
| Controller, purchase, $ | — | — | Contact vendor | Contact vendor | — |
| Monthly prime-shift maint., $/mo. | — | — | Contact vendor | Contact vendor | — |
| Date of announcement | — | — | — | — | — |
| Date of first production delivery | — | — | 1976 | 5/80 | 6/81 |
| Display units installed to date | — | — | 4200 systems | — | — |
| Serviced by | General Terminal | General Terminal | Harris | Harris | Hazeltine & Western Union |
| COMMENTS | | Options include serial or parallel printer ports, business graphics, international keyboards, paging, & polling. | An interactive terminal system with enhanced capabilities for local format storage & queued transaction handling. | | Low-cost buffered terminal. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Hazeltine Executive 80 Model 20 | Hazeltine Executive 80 Model 30 | Hewlett-Packard 2621B | Hewlett-Packard 2622A | Hewlett-Packard 2623A |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 1 | — | — | — |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | Std. | Std. | Std. | Std. | Std. |
| Other compatibility | — | — | — | — | Tektronix 4010 |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920, 3168 | 1920, 3168 | 1920 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | 1 page | 2 pages | 2 pages | 2 pages | 2 pages |
| Screen arrangement, lines x chars./line | 24 x80, 24 x 132 | 24 x 80, 24 x 132 | 24 x 80 | 24 x 80 | 24 x 80 |
| Screen area, diagonal, inches | 15 | 15 | 12 | 12 | 12 |
| Tilt/swivel screen | Tilt opr. | Tilt std. | No | No | No |
| Total displayable symbols | 128 | 128 | 128 ASCII | 128 ASCII | 128 ASCII |
| Symbol formation | 7x10; 5x9 (132 col.) | 7x10; 5x9 (132 col.) | 7 x 9 dot matrix | 7 x 11 dot matrix | 7 x 11 dot matrix |
| Character phosphor | P146 yellow green | P146 yellow green | P4 white std.; P31 green opt. | P4 white std.; P31 green opt. | P4 white std.; P31 green opt. |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | No | Std. | Std. | Std. | Std. |
| Blink | Std. | Std. | No | Std. | Std. |
| Blank | Std. | Std. | No | No | No |
| Bold | Std. | Std. | No | No | No |
| Reverse | Std. | Std. | Std. | Std. | Std. |
| Double size | Opt. | Opt. | No | No | No |
| Scroll | No | No | Up/down std. | Up/down std. | Up/down std. |
| Paging | 1 page std. | 2 pages std. | 2 std. | 2 std. | 2 std. |
| Selectable cursor blinking | Std. | Std. | Std. | No | No |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Both std. | Both std. |
| Protected format | Std. | Std. | No | Std. | Std. |
| Partial screen transmit | Std. | Std. | Std. | Std. | Std. |
| Split screen/windows | 2 std. | 2 std. | No | No | No |
| Tabulation | Std. | Std. | Fwd./back std. | Fwd./back std. | Fwd./back std. |
| Character insert/delete | Std. | Std. | Std. | Std. | Std. |
| Line insert/delete | Std. | Std. | Std. | Std. | Std. |
| Erase | Std. | Std. | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | 8 std. | 16 std. | 8 std. | 8 std. (screen labelled) | 8 std. |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | Opt. (integral) | Opt. (integral) | — |
| Line printer, type and speed | No | No | No | No | Thermal |
| Composite video | No | No | No | No | No |
| Port for cust.-supplied devices | Opt. | Std. | No | No | Std. |
| Other vendor-supplied devices | — | — | — | — | 7221 C/T 8-pen plotter, 7225 1-pen plotter |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Full-duplex | Full-duplex | Full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | — | — | ASCII | ASCII | ASCII |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | Up to 19,200 | Up to 19,200 | 110-9600 | 110-9600 | 110-9600 |
| Format; character, line, or block | Char./block | Char./line/block | Char./line | Char./line/block | Char./line/block |
| Multipoint operation (pollable/addr.) | No | No | No | No | No |
| Terminal interface | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C | RS-232-C | RS-232-C |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | 80 (18-mo.) | 131 | 222 |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 1,595 | 1,815 | 1,595 | 2,175 | 3,750 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | 17 | 24 | 38 |
| Date of announcement | — | — | 12/81 | 4/81 | 8/81 |
| Date of first production delivery | 2/81 | 2/81 | — | 4/81 | 8/81 |
| Display units installed to date | — | — | — | — | — |
| Serviced by | Hazeltine & Western Union | Hazeltine & Western Union | Hewlett-Packard | Hewlett-Packard | Hewlett-Packard |
| COMMENTS | Enhanced video package includes 132 columns, smooth scrolling, double height/ width characters; split screen std.; CRT tilt opt. | Enhanced video package includes 132 columns, smooth scrolling, double height/ width characters; split screen, CRT tilt std. | Optional integral thermal printer ($1,210); 8 user-definable soft keys; screen-labelled function keys; user-adjustable brightness. | Optional integral thermal printer ($1,210). | Graphics terminal; optional integral thermal printer ($1,210). |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Hewlett-Packard 2624B | Hewlett-Packard 2626A | Hewlett-Packard 2382A | Hewlett-Packard 2645A | Honeywell VIP 7200/ 7205/7207 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | — | — | — | — | 1 |
| Transportability | No | No | Portable case | No | No |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | Std. | Std. | Std. | Std. | Std. |
| Other compatibility | — | — | — | — | Honeywell |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 1920 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | 4 pages | 5 pages | 2 pages | 4K std.; plus opt. 8K | 80/24/1 |
| Screen arrangement, lines x chars./line | 24 x 80 | 24 x 80 | 24 x 80 | 24 x 80 | 24 x 80 |
| Screen area, diagonal, inches | 12 | 12 | 9 | 11 | 12 |
| Tilt/swivel screen | No | No | No | No | No |
| Total displayable symbols | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII | 64 (7200); 95 (7205) |
| Symbol formation | 7 x 11 dot matrix | 7 x 11 dot matrix | 7 x 11 dot matrix | 9 x 15 dot matrix | 5 x 7 dot matrix |
| Character phosphor | P4 white std.; P31 green opt. | P4 white std.; P31 green opt. | P4 white | P39 white | P4 white std. |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | Std. | Opt. | Std. |
| Blink | Std. | Std. | Std. | Opt. | No |
| Blank | Std. | Std. | No | No | No |
| Bold | No | No | No | Opt. | No |
| Reverse | Std. | Std. | Std. | Std. | No |
| Double size | No | No | No | No | No |
| Scroll | Up/down std. | Up/down/back std. | Up/down std. | Up/down std. | Up std. |
| Paging | 4 std.; up to 9 opt. | Up to 5 | 2 std. | 1-2 std.; 3-6 opt. | No |
| Selectable cursor blinking | No | No | No | No | Std. |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Both std. | Both std. |
| Protected format | Std. | Std. | Std. | Std. | No |
| Partial screen transmit | Std. | Std. | Std. | Std. | No |
| Split screen/windows | No | 4 std. | No | No | No |
| Tabulation | Fwd./back std. | Fwd./back std. | Fwd./back std. | Fwd./back std. | No |
| Character insert/delete | Std. | Std. | Std. | Std. | No |
| Line insert/delete | Std. | Std. | Std. | Std. | No |
| Erase | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. | Line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Data entry | Typewriter, data entry |
| Character/code set | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | 8 std. (screen labelled) | 8 std. (screen labelled) | 8 std. (screen labelled) | 8 std. | 7 std. |
| Numeric keypad | Std. | Std. | No | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | Impact, 32/180 cps | Impact, 32/180 cps | No | Various | No |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | No | No | Opt. | No |
| Port for cust.-supplied devices | Std. | Std. | No | 7 opt. slots | No |
| Other vendor-supplied devices | — | — | — | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Async./sync. | Async./sync. | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | ASCII | ASCII | ASCII | TTY | ASCII-7 bit |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 110-9600 | 110-9600 | 110-9600 | 110-9600 | 110-9600 |
| Format; character, line, or block | Char./line/block | Char./line/block | Char./line/block | Char./line/block | Char./line/block |
| Multipoint operation (pollable/addr.) | Std. | Std. | No | Std. | No |
| Terminal interface | RS-232-C | RS-232-C | RS-232-C | RS-232-C, 20mA | RS-232-C, 20/60 mA |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | 173 | 246 | 99 | — | — |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 3,000 | 4,350 | 1,700 | 4,550-7,160 | 1,980; 2,100 (7205) |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | 26 | 33 | 16 | 22-30 | 28 |
| Date of announcement | 9/81 | 7/80 | 8/81 | 9/76 | — |
| Date of first production delivery | 9/81 | 7/80 | 8/81 | 9/76 | 5/77 |
| Display units installed to date | — | — | — | Over 120,000 (264X) | — |
| Serviced by | Hewlett-Packard | Hewlett-Packard | Hewlett-Packard | Hewlett-Packard | Honeywell |
| COMMENTS | Optional integral thermal printer ($1,210). | Optional integral thermal printer ($1,210). | | | VIP 7207 includes a special data entry keyboard operating with Honeywell DEF-II software. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Honeywell VIP 7301/ 7303/7307 | Honeywell VIP 7801/7802/ 7804/7805 | Honeywell VIP 7700R/7705R | Honeywell VTS 7710 | Honeywell VTS 7740 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Cluster | Cluster |
| Maximum displays/controller | 1 | 1 | 1 | 4 | 8 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | Std. | Std. | No | No | No |
| Other compatibility | Honeywell | Honeywell | Honeywell | Honeywell VIP | Honeywell VIP |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 2000 | 2000 | 1920 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | 80/25/1 | 1 page std., 3 opt. | 80/24/1 | — | — |
| Screen arrangement, lines x chars./line | 25 x 80 | 25 x 80 | 24 x 80 | 24 x 80 | 24 x 80 |
| Screen area, diagonal, inches | 12 | 12/15 | 12 | 12 | 12 |
| Tilt/swivel screen | No | Std. (7802/7805) | No | Tilt std. | Tilt std. |
| Total displayable symbols | 120 | 130 ASCII/special | 64/96 ASCII | 96 ASCII | 96 ASCII |
| Symbol formation | 7 x 9 dot matrix | 7 x 10 dot matrix | 5 x 7 dot matrix | 8 x 12 dot matrix | 8 x 12 dot matrix |
| Character phosphor | P31 green std. | P4 white/P31 green | P4 white | P39 green | P39 green |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | No | No | No |
| Blink | Std. | Std. | Std. | Std. | Std. |
| Blank | Std. | Std. | Std. | Std. | Std. |
| Bold | No | No | No | No | No |
| Reverse | Std. | Std. | No | No | No |
| Double size | No | No | No | No | No |
| Scroll | Up/horiz std. (7303) | Up std.; down opt. | No | No | No |
| Paging | No | 1 std., 3 opt. | No | No | No |
| Selectable cursor blinking | Std. | Std. | Std. | No | No |
| Addressable/readable cursor | Both std. | Both std. | Addressable only | Both std. | Both std. |
| Protected format | No | Std. | Std. | Std. | Std. |
| Partial screen transmit | No | Std. | Std. | Std. | Std. |
| Split screen/windows | No | 2 std. | No | No | No |
| Tabulation | Std. | Std. | Std. | Fwd./back std. | Fwd./back std. |
| Character insert/delete | Std. | Std. | Std. | Std. | Std. |
| Line insert/delete | Std. | Std. | Std. | Std. | Std. |
| Erase | Line/screen std. | Page/field std. | Char./line std. | Char./line/screen std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter, data entry, WP | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 128 ASCII | 128 ASCII | 96 ASCII | 96 ASCII | 96 ASCII |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | 12 std. | 12 std. | Std. | See comments | See comments |
| Numeric keypad | Std. (7303/7307) | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | 30/120 cps impact | 30/120 cps impact | 100/160 cps impact | 100/160 cps impact |
| Line printer, type and speed | No | 280 lpm | No | 220 lpm belt | 220 lpm belt |
| Composite video | No | Opt. | No | Std. | Std. |
| Port for cust.-supplied devices | No | Std. | Opt. | No | No |
| Other vendor-supplied devices | — | — | — | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half-duplex | Half-duplex |
| Technique | Asynchronous | Async.; Sync (04,05) | Synchronous | Synchronous | Synchronous |
| Communications protocol | ASCII-7 bit | Honeywell VIP | Honeywell | Honeywell VIP | Honeywell VIP |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 300-19,200 | 110-19,200 | 2400/4800/9600 | Up to 9600 | Up to 9600 |
| Format; character, line, or block | Character | Char./line/block | Block | Block | Block |
| Multipoint operation (pollable/addr.) | No | Std. (7804, 7805) | Poll/select | Std. | Std. |
| Terminal interface | RS-232-C, RS-422A 20mA, MIL-188C | RS-232-C, 20/60 mA | RS-232-C, MIL-188C | RS-232-C | RS-232-C |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | 57 (3 yr.) | 57 (3 yr.) |
| Controller, 2-year lease, $/mo. | — | — | — | 215 (3 yr.) | 525 (3 yr.) |
| Display station, purchase, $ | 1,900 | 3,175-3,705 | 3,990 | 1,250 | 1,250 |
| Controller, purchase, $ | — | — | — | 4,535 | 12,200 |
| Monthly prime-shift maint., $/mo. | 20 | 32-39 | 36 | 63 | 96 |
| Date of announcement | 4/81 | — | — | 4/81 | 4/81 |
| Date of first production delivery | 7/81 | 10/78 | 3/77 | 4/81 | 4/81 |
| Display units installed to date | — | — | — | — | — |
| Serviced by | Honeywell | Honeywell | Honeywell | Honeywell | Honeywell |
| COMMENTS | Customer-assisted maintenance priced at $40/yr.; separate/ interchangeable keyboards for standard conversational, word processing or data entry applications. | Horizontal & vertical line graphics forms creation; buffered printer adapter opt.; up to 32 units sync. can be multi-dropped on a single line. | Up to 32 units can be multi-dropped on a single line. | Function codes obtainable via control key sequences. | Function codes obtainable via control key sequences. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Human Designed Systems Concept 108 | Human Designed Systems APL/8 | Informer 301 Series | Informer 311 Series | Informer 304 Series |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | — | — | 1 | 1 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | Std. | Std. | Std. | Std. | Std. |
| Other compatibility | — | — | — | — | See comments |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920, 3168 | 1920, 3168 | 512 | 1024 | 2048 |
| Memory capacity, no. char./lines/pages | 4 pages std.; 8 opt. | 4 pages std.; 8 opt. | 32/16/1 | 64/16/1 | 32/16/4; 40/12/4 |
| Screen arrangement, lines x chars./line | 24 x 80, 24 x 132 | 24 x 80, 24 x 132 | 16 x 32 | 16 x 32 | 12 x 40, 24 x 80, 16 x 32, 16 x 64 |
| Screen area, diagonal, inches | 12 | 12 | 6 | 6 std.; 9 opt. | 9 |
| Tilt/swivel screen | Tilt std. | Tilt std. | Std. | Std. | Std. |
| Total displayable symbols | 128 ASCII | 128 ASCII/APL | 64 ASCII | 64 ASCII | 128 ASCII |
| Symbol formation | 7 x 9/5 x 7 (132) | 7 x 9/5 x 7 (132) | 5 x 7 dot matrix | 5 x 7 dot matrix | 7 x 9 dot matrix |
| Character phosphor | P4 white std.; P31 green/amber opt. | P4 white std.; P31 green/amber opt. | P4 white std.; P31 green opt. | P4 white std.; P31 green opt. | P4 white std.; P31 green opt. |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | No | No | Opt. |
| Blink | Std. | Std. | No | Std. | Std. |
| Blank | Std. | Std. | No | No | Std. |
| Bold | No | No | Std. | Std. | Std. |
| Reverse | Std. | Std. | No | No | Std. |
| Double size | No | No | No | No | No |
| Scroll | Up/down std. | Up/down std. | Up/down opt. | Up/down opt. | Up/down std. |
| Paging | 4 std., 8 opt. | 4 std.; 8 opt. | No | No | No |
| Selectable cursor blinking | Std. | Std. | Opt. | Opt. | Std. |
| Addressable/readable cursor | Both std. | Both std. | Addressable only | Addressable only | Both std. |
| Protected format | Std. | Std. | Std. | Std. | Std. |
| Partial screen transmit | Std. | Std. | No | No | Std. |
| Split screen/windows | 4 std. | 4 std. | No | No | No |
| Tabulation | Fwd./back std. | Fwd./back std. | Fwd. std. | Fwd. std. | Fwd./back std. |
| Character insert/delete | Std. | Std. | No | No | Std. |
| Line insert/delete | Std. | Std. | No | No | Std. |
| Erase | Char./line/screen std. | Char./line/screen std. | Protected, screen std. | Protected, screen std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Data entry | Data entry | Data entry |
| Character/code set | 128 ASCII | 128 ASCII | 64 ASCII | 64 ASCII | 128 ASCII |
| Detachability | Std. | Std. | Opt. | Opt. | Opt. |
| Program function keys | 8 std., 11 additional opt. | 8 std.; 11 additional opt. | 2 std. | 2 std. | 14 std., 2 levels each |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | No | No |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | Opt. | Opt. | Opt. | Opt. | Std. |
| Port for cust.-supplied devices | 2 opt. | 2 opt. | No | No | Opt. |
| Other vendor-supplied devices | Shared printer interface | Shared printer interface | — | — | Light pen, bar code wand |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | — | — | ASCII | ASCII | ASCII |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 50-9600 | 50-9600 | 110-9600 | 50-9600 | 50-19,200 |
| Format; character, line, or block | Char./block | Char./block | Character | Character | Char./line/block |
| Multipoint operation (pollable/addr.) | No | No | No | No | Both std. |
| Terminal interface | RS-232-C std.; 20mA opt. | RS-232-C std.; 20mA opt. | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C, 20mA |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | 96-148.50 | 106-156.50 | Purchase only | Purchase only | Purchase only |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 1,575-2,270 | 1,750-2,550 | 1,675 | 1,705 | 2,295 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | — | — |
| Date of announcement | 3/81 | 3/81 | — | — | — |
| Date of first production delivery | 3/81 | 3/81 | — | — | — |
| Display units installed to date | — | — | — | — | — |
| Serviced by | HDS, distributors | HDS, distributors | Informer | Informer | Informer |
| COMMENTS | Non-volatile memory; networking between mult. comm. lines; self-test capability; multiple status lines (25th line); light-weight. | Non-volatile memory; networking between mult. comm. lines; self-test capability; multiple status lines (25th line); light-weight. | | | Emulations include: ADDS Regent 100, DEC VT52, NCR 796-101/301, TGC 425, Datapoint 3601, Lear Siegler ADM1A, IBM 3101, Data General 6053/0200, Computer Automation, & Microdata. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Informer 401 | Informer 314 | Intelligent Systems 8001G/I | Intelligent Systems 8300 | Interaction Systems TT-100 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 1 | 1 | 1 | — |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | 3275-BSC | No | No | No |
| Teletype compatibility | Std. | No | Std. | Std. | No |
| Other compatibility | General Terminal GT-100 | — | DEC VT100 | DEC VT100 | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 3840 | 3840 | 1920 |
| Memory capacity, no. char./lines/pages | 80/24/1 | 80/24/1 | — | — | 80/24/2 |
| Screen arrangement, lines x chars./line | 24 x 80 | 24 x 80 plus status line | 48 x 80 | 48 x 80 | 24 x 80 |
| Screen area, diagonal, inches | 9 | 9 std.; 12 opt. | 19 | 13 | 15 |
| Tilt/swivel screen | Std. | Std. | No | No | Std. |
| Total displayable symbols | 128 ASCII | 96 EBCDIC | 64 ASCII/64 spec. | 64 ASCII/64 spec. | 96 ASCII |
| Symbol formation | 7 x 9 dot matrix | 7 x 9 dot matrix | 5 x 7 dot matrix | 5 x 7 dot matrix | 10 x 14 dot matrix |
| Character phosphor | P4 white std.; P31 green opt. | P4 white std., P31 green opt. | 8 colors | 8 colors | P31 green std. |
| Color capability | No | No | 8 colors | 8 colors | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | No | No | No |
| Blink | Std. | Std. | Std. | No | No |
| Blank | Std. | Std. | No | No | No |
| Bold | Std. | Std. | No | No | No |
| Reverse | Std. | Std. | Std. | Std. | Std. |
| Double size | No | No | Std. | Std. | No |
| Scroll | Up/down std. | No | Std. | Std. | Up/down std. |
| Paging | No | No | Std. | Std. | 2 std. |
| Selectable cursor blinking | Std. | Std. | No | No | Std. |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Both std. | Addressable only |
| Protected format | Std. | Std. | Opt. | Opt. | No |
| Partial screen transmit | Std. | Std. | No | No | No |
| Split screen/windows | No | Std. | No | No | Function key section |
| Tabulation | Fwd./back std. | Fwd./back std. | Std. | Std. | Fwd. std. |
| Character insert/delete | Std. | Std. | Opt. | Opt. | No |
| Line insert/delete | Std. | Std. | Opt. | Opt. | No |
| Erase | Char./line/screen std. | Char./line/screen std. | Opt. | Opt. | Line/page/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Data entry | Data entry | Data entry | Data entry | Typewriter opt. |
| Character/code set | 128 ASCII | 96 EBCDIC | ASCII | ASCII | 96 ASCII |
| Detachability | No | Opt. | Std. | No | Std. |
| Program function keys | 8 std. | 24 std. | 16 opt. | 16 opt. | 12 std. |
| Numeric keypad | No | Std. | Opt. | Opt. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | Std. | Std. | No |
| Line printer, type and speed | No | No | Std. | Std. | No |
| Composite video | Std. | Std. | No | — | No |
| Port for cust.-supplied devices | Opt. | Std. | Std. | Std. | No |
| Other vendor-supplied devices | — | — | Light pen, digitizer (8000I) | Light pen | Touch-sensitive screen |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full duplex |
| Technique | Asynchronous | Synchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | ASCII | BSC | — | — | ASCII |
| Code | ASCII | EBCDIC | ASCII | ASCII | ASCII |
| Speed, bits/second | 50-19,200 | 50-9600 | Up to 9600 | Up to 9600 | Up to 9600 |
| Format; character, line, or block | Character | Block | Character | Character | Character |
| Multipoint operation (pollable/addr.) | Opt. | Std. | Opt. | Opt. | No |
| Terminal interface | RS-232-C, 20mA | RS-232-C | RS-232-C | RS-232-C | RS-232-C, 20mA |
| Integral modem | No | No | No | No | Opt. |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | Purchase only | Purchase only | — | — | — |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 1,450 | 2,900 | 2,095/3,355 (I) | 2,455 | 4,000 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | — | — |
| Date of announcement | — | — | 1974/1980 (I) | 1979 | 11/80 |
| Date of first production delivery | — | — | 1974/1980 (I) | 1980 | 11/80 |
| Display units installed to date | — | — | — | — | Over 500 |
| Serviced by | Informer | Informer | Intelligent Systems (rep.) | Intelligent Systems (rep.) | Interaction Systems |
| COMMENTS | | Supports asynchronous ASCII printer; daisy chain interface. | | | Touch-sensitive display terminal, keyboard optional. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | IBM 3271/3277 | IBM 3274/3278 | IBM 3275 | IBM 3276/ 3278/3279 | IBM 3101 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Cluster | Cluster | Stand-alone | Cluster | Stand-alone |
| Maximum displays/controller | 32 | 32 | 1 | 8 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | 3270 System | 3270 System | 3270 System | 3270 System | No |
| Teletype compatibility | No | No | No | No | Std. |
| Other compatibility | — | — | — | — | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 480/1920 | See comments | 1920 | See comments | 1920 |
| Memory capacity, no. char./lines/pages | — | — | — | — | — |
| Screen arrangement, lines x chars./line | 12 x 40, 24 x 80 | 12/24/32/43 x 80, 27 x 132 | 24 x 80 | 12/24/32/43 x 80, 27 x 132 (3278) | 24 x 80 plus status line |
| Screen area, diagonal, inches | 14 | 14 | 14 | 14 | 12 |
| Tilt/swivel screen | No | No | No | No | Std. |
| Total displayable symbols | 64 std.; 120 APL opt. | 64; 96; 120 APL | 64 std.; 120 APL opt. | 96; 120 APL opt. | 128 |
| Symbol formation | 7 x 9 dot matrix | 7 x 9/14; 7 x 11 | 7 x 9 dot matrix | 7 x 9/14; 7 x 11 | 7 x 14 dot matrix |
| Character phosphor | White | White | White | White | Green |
| Color capability | No | No | No | 3279 only | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | No | Std. | — | Std. | — |
| Blink | No | Std. | — | Std. | — |
| Blank | No | Std. | — | Std. | — |
| Bold | No | Std. | — | Std. | — |
| Reverse | Std. | Std. | Std. | Std. | Std. |
| Double size | No | No | No | No | No |
| Scroll | No | No | No | No | — |
| Paging | No | No | No | No | No |
| Selectable cursor blinking | No | Std. | No | No | Std. |
| Addressable/readable cursor | Addressable only | Addressable only | Addressable only | Addressable only | |
| Protected format | Std. | Std. | Std. | Std. | Std. |
| Partial screen transmit | Std. | Std. | Std. | Std. | No |
| Split screen/windows | | | | | |
| Tabulation | Std. | Std. | Std. | Std. | Std. |
| Character insert/delete | Std. | Std. | Std. | Std. | Std. (Mdl 20,22,23) |
| Line insert/delete | No | No | No | No | Std. (Mdl 20,22,23) |
| Erase | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. | Std. (Mdl 20,22,23) |
| KEYBOARD PARAMETERS | | | | | |
| Style | Several | Several | Several | Several | Typewriter |
| Character/code set | ASCII/EBCDIC | ASCII/EBCDIC | ASCII/EBCDIC | ASCII/EBCDIC | ASCII |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | Std. | Std. | Opt. | Opt. | 8 |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | Std. | Std. | Std. | Std. | No |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | No | No | No | No |
| Port for cust.-supplied devices | Std. | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | Audible alarm, I.D. reader, light pen, keylock | Aud. alarm, mag. slot reader, light pen, keylock, I.D. reader | Audible alarm, I.D. card reader, light pen, keylock | Audible alarm, mag. slot reader, light pen, keylock | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Synchronous | Synchronous | Synchronous | Synchronous | Asynchronous |
| Communications protocol | BSC/SDLC | BSC/SDLC | BSC/SDLC | BSC/SDLC | ASCII |
| Code | ASCII/EBCDIC | ASCII/EBCDIC | ASCII/EBCDIC | ASCII/EBCDIC | ASCII |
| Speed, bits/second | 1200-9600 | 1200-9600 | 1200-9600 | 1200-9600 | Up to 9600 |
| Format; character, line, or block | Block only | Block only | Block only | Block only | Char./block |
| Multipoint operation (pollable/addr.) | Std. | Std. | Std. | Std. | No |
| Terminal interface | RS-232-C | RS-232-C | RS-232-C | RS-232-C | RS-232-C, 20mA, RS-422 |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | 86-124 | 69-103 | 162-225 | 69-142 | Purchase only |
| Controller, 2-year lease, $/mo. | 189-292 | 196-709 | — | 203-221 | — |
| Display station, purchase, $ | 1,470-1,905 | 2,060-3,070 | 2,820-3,835 | 2,060-4,760 | 1,355-1,590 |
| Controller, purchase, $ | 2,820-4,135 | 6,035-20,570 | — | 5,980-6,480 | — |
| Monthly prime-shift maint., $/mo. | 10.50-22.00 | 13.00-18.50 | 42.00-81.50 | 13-29 | 70-80 |
| Date of announcement | 1972 | 1977 | 1972 | 1977 | 1979 |
| Date of first production delivery | 1972 | 1978 | 1972 | 1977 | 1979 |
| Display units installed to date | — | — | — | — | — |
| Serviced by | IBM | IBM | IBM | IBM | IBM |
| COMMENTS | 3271-controller; 3277-display. | Display capacities available include: 960, 1920, 2560, 3440, & 3564; controller (3274) accommodates 3278 & 3277 display stations. | | Display capacities available include: 960, 1920, 2560, 3440, & 3564 (3278 only). | Six models: 10, 12, 13 (conversational); 20, 22, 23 (block mode/editing). |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | IBM 5251/5252 | IBM 8775 | Intertec Intertube III | Intertec Emulator | ITT Courier 270 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Either | Either | Stand-alone | Stand-alone | Cluster |
| Maximum displays/controller | Up to 9 | — | 1 | 1 | 32 |
| Transportability | No | No | No | No | No |
| IBM compatibility | SDLC | Std. | No | No | 3270, full line |
| Teletype compatibility | No | No | Std. | Std. | No |
| Other compatibility | — | — | — | See comments | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 960, 1920 | 960-3440 | 2000 | 1920 | 1920-3564 |
| Memory capacity, no. char./lines/pages | — | — | — | — | 1920-3564 char. |
| Screen arrangement, lines x chars./line | 12/24 x 80 | 12/24/32/43 x 80 | 25 x 80 | 24 x 80 | 24/32/43 x 80; 27 x 132 |
| Screen area, diagonal, inches | 12; 15 opt. | 12 | 12 | 12 | 14 |
| Tilt/swivel screen | No | Tilt std. | No | No | No |
| Total displayable symbols | 96; 188 Multi-Natl.opt. | 96 | 128 ASCII | 128 ASCII | 64 std.; 96 opt. |
| Symbol formation | 8 x 16 dot matrix | 9 x 12/9 x 16 | 8 x 10 dot matrix | 8 x 10 dot matrix | 9x12,9x11,9x9,5x7 |
| Character phosphor | White | White | White | White | Green |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | — | Std. | No | No | Std./opt. |
| Blink | — | Std. | Std. | Std. | Opt. |
| Blank | — | No | Std. | Std. | No |
| Bold | — | No | No | No | No |
| Reverse | Std. | Std. | Std. | Std. | No |
| Double size | No | No | No | No | No |
| Scroll | Std. | Std. | Std. | Std. | No |
| Paging | No | No | Std. | Std. | No |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Both std. | Both std. | Std. | Std. | Both std. |
| Protected format | Std. | Std. | Std. | Std. | Std. |
| Partial screen transmit | Std. | Std. | Std. | Std. | Std. |
| Split screen/windows | — | Std. | No | No | No |
| Tabulation | Std. | Std. | Std. | Std. | Std. |
| Character insert/delete | Std. | Std. | Std. | Std. | Std. |
| Line insert/delete | No | Std. | Std. | Std. | No |
| Erase | Char./field/screen std. | Char./field/screen std. | Std. | Std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter, data entry | Typewriter | Typewriter | Typewriter, data entry, APL |
| Character/code set | EBCDIC | EBCDIC/APL | ASCII | ASCII | 64 ASCII/96 EBCDIC |
| Detachability | Std. | Std. | No | No | Std. |
| Program function keys | 24 std. | Std. (various) | 14 std. | 14 std. | 12 std.; 24 opt. |
| Numeric keypad | Std. | Std. | Std. | Std. | Opt. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | Std. | Std. | No | No | Impact, 60-180 cps |
| Line printer, type and speed | No | Std. | No | No | Belt, 340 lpm |
| Composite video | No | No | No | No | No |
| Port for cust.-supplied devices | Std. | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | Mag. stripe reader, selector light pen, aud. alarm, keylock | Audible alarm, keylock, clock | RS-232-C | RS-232-C | Light pen, slot reader, extended device adapter |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half-duplex |
| Technique | Synchronous | Synchronous | Asynchronous | Asynchronous | Synchronous |
| Communications protocol | BSC/SDLC | BSC/SDLC | ASCII | ASCII | BSC/SDLC |
| Code | EBCDIC | EBCDIC | ASCII | ASCII | ASCII/EBCDIC |
| Speed, bits/second | 1200-9600 | Up to 38,400 | 110-9600 | 110-9600 | Up to 9600 |
| Format; character, line, or block | Block only | Block | Char./line/block | Char./block | Block |
| Multipoint operation (pollable/addr.) | Std. | Std. | Opt. | Opt. | Std. |
| Terminal interface | RS-232-C, twinax cable | RS-232-C | RS-232-C | RS-232-C | RS-232-C |
| Integral modem | Opt. | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | 86-146 | 93-113 | — | — | Contact vendor |
| Controller, 2-year lease, $/mo. | — | — | — | — | Contact vendor |
| Display station, purchase, $ | 2,420-3,445 | 3,566-4,233 | 895 | 895 | Contact vendor |
| Controller, purchase, $ | — | — | — | — | Contact vendor |
| Monthly prime-shift maint., $/mo. | 19.50-44.50 | 24.50-31.50 | 108/yr. | 108/yr. | Contact vendor |
| Date of announcement | — | 10/78 | — | — | — |
| Date of first production delivery | 1978 | 8/79 | 8/78 | 3/80 | 1974 |
| Display units installed to date | — | — | — | — | — |
| Serviced by | IBM | IBM | Intertec & third party | Intertec & third party | ITT Courier |
| COMMENTS | Workstations for IBM S/34, S/38, & Series 1; 5251-1/11 is remote cluster or local station; 5251-2/12 is remote cluster controller/station; 5252 is remote cluster or local dual station. | Worksation for IBM 8100 Information System; also attaches to 4331 processor, 4300, & S/370. | Z-80 processor based, single board design; uses specifically designed non-glare high resolution CRT; also features local editing capability. | Emulates DEC VT52, Lear Siegler ADM 3A, Hazeltine 1500 series, Soroc IQ 120; all emulations are keyboard selectable. | Fully compatible with IBM 3270 Information Display System including 3271/2/4/6/7/8/9. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | ITT Courier 275 | ITT Courier 277 | ITT Courier 278 | ITT Courier 279 | ITT Courier 7700 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Cluster | Cluster | Cluster | Cluster |
| Maximum displays/controller | 1 | 32 | 32 | 32 | 32 |
| Transportability | No | No | No | No | No |
| IBM compatibility | 3275 | 3277 | 3278 | 3279-2A | No |
| Teletype compatibility | No | No | No | No | No |
| Other compatibility | — | — | — | — | Honeywell 7700/ 7700R/7760 |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 480, 1920 | 480, 1920 | 1920, 2560, 3440 | 1920 | 960, 1920 |
| Memory capacity, no. char./lines/pages | 480, 1920 char. | 480, 1920 char. | 1920-3440 char. | 1920 char. | 960, 1920 char. |
| Screen arrangement, lines x chars./line | 12 x 40; 12/24 x 80 | 12 x 40, 24 x 80 | 24/32/43 x 80 | 24 x 80 | 12 x 80, 24 x 80 |
| Screen area, diagonal, inches | 14 | 14 | 14 | 14 | 15 |
| Tilt/swivel screen | No | No | No | No | Opt. |
| Total displayable symbols | 64 std., 96 opt. | 64 std.; 96 opt. | 64 std.; 96 opt. | 96 | 96 std.; 128 opt. |
| Symbol formation | 9 x 12 dot matrix | 9 x 12 dot matrix | 9 x 12, 9 x 11, 9 x 9 | 9 x 12 dot matrix | 7 x 10 dot matrix |
| Character phosphor | Green | Green | Green | Green | Green |
| Color capability | No | No | No | Four colors std. | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std./opt. | Std./opt. | Std./opt. | Std./opt. | Std. |
| Blink | Opt. | Opt. | Opt. | Opt. | Std. |
| Blank | No | No | No | No | No |
| Bold | No | No | No | No | No |
| Reverse | No | No | No | No | No |
| Double size | No | No | No | No | No |
| Scroll | No | No | No | No | No |
| Paging | No | No | No | No | No |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Addressable only | Addressable only |
| Protected format | Std. | Std. | Std. | Std. | Std. |
| Partial screen transmit | Std. | Std. | Std. | Std. | Std. |
| Split screen/windows | No | No | No | No | No |
| Tabulation | Std. | Std. | Std. | Fwd./back std. | Fwd./back std. |
| Character insert/delete | Std. | Std. | Std. | Std. | Std. |
| Line insert/delete | No | No | No | Std. | Std. |
| Erase | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. | Char./line/screen/ var. fields std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter, data entry | Typewriter, data entry | Typewriter, data entry | Typewriter, data entry | Typewriter, data entry |
| Character/code set | 64 ASCII/96 EBCDIC | 64 ASCII/96 EBCDIC | 96 EBCDIC | 96 ASCII; 128 opt. | 96 ASCII/128 opt. |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | 6 std.; 12 opt. | 6 std.; 12 opt. | 6 std.; 12 opt. | 12 std.; 24 opt. | 10 std. |
| Numeric keypad | Opt. | Opt. | Opt. | Opt. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | Impact, 60-180 cps | Impact, 60-180 cps | Impact, 60-180 cps | Impact, 60-180 cps | 60/120/180 cps |
| Line printer, type and speed | Belt, 340 lpm | Belt, 340 lpm | Belt, 340 lpm | Belt, 340 lpm | 115/340 lpm |
| Composite video | No | No | No | No | No |
| Port for cust.-supplied devices | Std. | Std. | Std. | Std. | No |
| Other vendor-supplied devices | — | Badge reader, light pen | Light pen, slot reader | Light pen, slot reader | Mag slot reader, audible alarm, security keylock |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half-duplex | See comments | See comments | Half-duplex | Half-duplex |
| Technique | Synchronous | See comments | See comments | Synchronous | Synchronous |
| Communications protocol | BSC | See comments | See comments | BSC/SDLC | HIS VIP 7700 |
| Code | ASCII/EBCDIC | See comments | See comments | ASCII/EBCDIC | ASCII |
| Speed, bits/second | Up to 9600 | See comments | See comments | Up to 9600 | 2400-9600 |
| Format; character, line, or block | Block | See comments | See comments | Block | Block |
| Multipoint operation (pollable/addr.) | Std. | Std. | Std. | Std. | Std. |
| Terminal interface | RS-232-C | RS-232-C | RS-232-C | RS-232-C | RS-232-C |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | Contact vendor | Contact vendor | Contact vendor | Contact vendor | Contact vendor |
| Controller, 2-year lease, $/mo. | Contact vendor | Contact vendor | Contact vendor | Contact vendor | Contact vendor |
| Display station, purchase, $ | Contact vendor | Contact vendor | Contact vendor | Contact vendor | Contact vendor |
| Controller, purchase, $ | Contact vendor | Contact vendor | Contact vendor | Contact vendor | Contact vendor |
| Monthly prime-shift maint., $/mo. | Contact vendor | Contact vendor | Contact vendor | Contact vendor | Contact vendor |
| Date of announcement | — | — | — | — | — |
| Date of first production delivery | 1974 | 1977 | 1980 | 1981 | 1977 |
| Display units installed to date | — | — | — | — | — |
| Serviced by | ITT Courier | ITT Courier | ITT Courier | ITT Courier | ITT Courier |
| COMMENTS | | Interfaces to IBM 3271, 3272, and 3790 controllers (or System/3) in same manner as on IBM 3277. | Interfaces to IBM 3274, 3276, or 4300 CPUs in same manner as on IBM 3278. | Red, blue, green & white are standard colors. | Compatible with computers that support Honeywell VIP 7700/7700R/7760 protocol, redundant terminal controller opt.; integral line monitor functions. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | ITT Courier 7750 | Kimtron ABM 85 | Lear Siegler ADM 3A | Lear Siegler ADM 5 | Lear Siegler ADM 21 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 1 | — | — | — |
| Transportability | No | Portable case | No | No | No |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | No | Std. | Std. | Std. | Std. |
| Other compatibility | Honeywell 7700/ 7700R/7760 | — | — | — | ADDS, Hazeltine, IBM |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 960, 1920 | 1920 | 1920 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | 960, 1920 char. | 80/24/2 | 1 page | 1 page | 1 page |
| Screen arrangement, lines x chars./line | 12 x 80, 24 x 80 | 24 x 80 | 24 x 80 | 24 x 80 | 24 x 80 |
| Screen area, diagonal, inches | 15 | 12 | 12 | 12 | 12 |
| Tilt/swivel screen | Opt. | Tilt std. | No | No | No |
| Total displayable symbols | 96 std.; 128 opt. | 128 ASCII/11 graph. | 64 ASCII; 96 opt. | 128 ASCII | 128 ASCII, graph. |
| Symbol formation | 7 x 10 dot matrix | 7 x 9/9 x 13 dot | 5 x 7 dot matrix | 5 x 9 dot matrix | 7 x 8 dot matrix |
| Character phosphor | Green | P31 green std., P4, P39, amber opt. | P4 white, P31 green | P4 white, P31 green | P4 white, P31 green |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | No | No | Std. |
| Blink | Std. | Std. | No | No | Std. |
| Blank | No | Std. | No | No | Std. |
| Bold | No | Std. | No | No | No |
| Reverse | No | Std. | No | Std. | Std. |
| Double size | No | No | No | No | No |
| Scroll | No | Smooth std. | Up std. | Up std. | Up std. |
| Paging | No | 2 pages opt. | No | No | No |
| Selectable cursor blinking | Std. | Std. | No | No | Std. |
| Addressable/readable cursor | Addressable only | Both std. | Addressable only | Addressable only | Both std. |
| Protected format | Std. | Std. | No | No | No |
| Partial screen transmit | Std. | Std. | No | No | Std. |
| Split screen/windows | No | Opt. | No | No | No |
| Tabulation | Fwd./back std. | Fwd./back std. | No | No | No |
| Character insert/delete | Std. | Std. | No | No | Std. |
| Line insert/delete | Std. | Std. | No | No | Std. |
| Erase | Char./line/screen std. | Char./line/screen std. | No | Line/screen std. | Line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter, data entry | Typewriter | Teletype | Teletype | Typewriter |
| Character/code set | 96 ASCII; 128 opt. | 128 ASCII | 64 ASCII, 96 opt. | 128 ASCII | 128 ASCII |
| Detachability | Std. | Std. | No | No | No |
| Program function keys | 10 std. | 16 std. | No | No | 8 opt. |
| Numeric keypad | Std. | Std. | Opt. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | 60/120/180 cps | No | Dot matrix, 180 cps | Dot matrix, 180 cps | Dot matrix, 180 cps |
| Line printer, type and speed | 115/340 lpm | No | No | No | No |
| Composite video | No | Opt. | No | No | No |
| Port for cust.-supplied devices | No | Std. | Opt. | Std. | Std. |
| Other vendor-supplied devices | Mag slot reader, audible alarm, security keylock | — | Graphics, voice recognition | Graphics, voice recognition | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Synchronous | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | HIS VIP 7700 | ASCII | — | — | — |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 2400-9600 | 75-19,200 | 75-19,200 | 75-19,200 | 110-19,200 |
| Format; character, line, or block | Block | Char./line/block | Character | Character | Char./line/block |
| Multipoint operation (pollable/addr.) | Std. | No | No | No | No |
| Terminal interface | RS-232-C | RS-232-C, 20mA opt. | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C std.; 20mA opt. |
| Integral modem | No | Opt. | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | Contact vendor | — | — | — | — |
| Controller, 2-year lease, $/mo. | Contact vendor | — | — | — | — |
| Display station, purchase, $ | Contact vendor | 995 | 595 | 645 | 695 |
| Controller, purchase, $ | Contact vendor | — | — | — | — |
| Monthly prime-shift maint., $/mo. | Contact vendor | — | 17 | 17 | 19 |
| Date of announcement | — | 5/81 | 5/75 | 6/80 | 5/81 |
| Date of first production delivery | 1977 | 6/81 | 8/75 | 12/80 | 9/81 |
| Display units installed to date | — | 1000 | 132,165 | 8,535 | 784 |
| Serviced by | ITT Courier | Kimtron, third party, dist. | Lear Siegler | Lear Siegler | Lear Siegler |
| COMMENTS | Compatible with computers that support Honeywell VIP 7700/7700R/7760 protocol; redundant terminal controller opt.; integral line monitor functions. | | | | |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Lear Siegler ADM 24 | Lear Siegler ADM 31 | Lear Siegler ADM 32 | Lear Siegler ADM 36 | Lear Siegler ADM 42 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | — | — | — | — | — |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | Std. | Std. | Std. | Std. | Std. |
| Other compatibility | — | — | — | — | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 1920 | 1920, 3168 | 2000 |
| Memory capacity, no. char./lines/pages | 96 lines | 2 pages | 2 pages | 1 page | 8 pages |
| Screen arrangement, lines x chars./line | 24 x 80 plus status line | 24 x 80 | 24 x 80 plus status line | 24 x 80, 24 x 132 | 24 x 80 plus status line |
| Screen area, diagonal, inches | 12; 14 opt. | 12 | 12 std.; 15 opt. | 12 std.; 15 opt. | 15 |
| Tilt/swivel screen | Tilt opt. | No | Tilt opt. | Tilt opt. | Tilt std. |
| Total displayable symbols | 128 ASCII, graph. | 128 ASCII, graph. | 128 ASCII, graph. | 96 ASCII, graph. | 128 ASCII, graph. |
| Symbol formation | 7 x 9 dot matrix | 7 x 11 dot matrix | 7 x 11 dot matrix | 7 x 9 dot matrix | 7 x 11 dot matrix |
| Character phosphor | P4 white, P31 green | P4 white, P31 green | P4 white, P31 green | P4 white, P31 green | P4 white, P31 green |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | Std. | Std. | Std. |
| Blink | Std. | Std. | Std. | Std. | Std. |
| Blank | Std. | Std. | Std. | Std. | Std. |
| Bold | No | No | No | Std. | No |
| Reverse | Std. | Std. | Std. | Std. | Std. |
| Double size | Double wide | No | No | Std. | No |
| Scroll | Up/smooth std. | Up std. | Up/smooth std. | Up/smooth std. | Up std. |
| Paging | Opt. | 2 std. | 2 std. | No | 4 std.; 8 opt. |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Both std. | Both std. |
| Protected format | Std. | Std. | Std. | Std. | Std. |
| Partial screen transmit | Std. | Std. | Std. | Std. | Std. |
| Split screen/windows | 2 std. | No | No | 2 std. | No |
| Tabulation | Fwd./back std. | Fwd./back std. | Fwd./back std. | Fwd. std. | Fwd./back std. |
| Character insert/delete | Std. | Std. | Std. | Std. | Std. |
| Line insert/delete | Std. | Std. | Std. | Std. | Std. |
| Erase | Line/screen std. | Line/screen std. | Line/screen std. | Std. | Std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Teletype | Teletype | Typewriter | Teletype |
| Character/code set | 128 ASCII | 128 ASCII | 128 ASCII | 96 ASCII | 128 ASCII |
| Detachability | Std. | No | Std. | Std. | Std. |
| Program function keys | 8 std. | 2 std. | 10 prog. plus 2 std. | 4 std. plus alt. mode | 16 std. |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | Dot matrix, 180 cps | Dot matrix, 180 cps | Dot matrix, 180 cps | Dot matrix, 180 cps | Dot matrix, 180 cps |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | No | No | Opt. | No |
| Port for cust.-supplied devices | Std. | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | Integral modem, touch screen | — | Integral modem, touch screen | Integral modem, touch screen | Touch screen |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | — | — | — | — | — |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 75-19,200 | 110-19,200 | 110-19,200 | 50-19,200 | 110-9600 |
| Format; character, line, or block | Char./line/block | Char./line/block | Char./line/block | Character | Char./line/block |
| Multipoint operation (pollable/addr.) | Opt. | Std. | Opt. | No | Opt. |
| Terminal interface | RS-232-C std.; 20mA opt. | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C, 20mA, RS-422 | RS-232-C, 20mA |
| Integral modem | Opt. | No | Opt. | Opt. | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | — | — |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 1,095 | 1,095 | 1,295 | 1,195 | 2,195 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | 26 | 27.50 | — | 30 |
| Date of announcement | 11/81 | 6/78 | 10/80 | 11/81 | 6/78 |
| Date of first production delivery | — | 8/78 | 5/81 | 10/81 | 8/78 |
| Display units installed to date | — | 30,175 | 2,259 | 290 | 12,605 |
| Serviced by | Lear Siegler | Lear Siegler | Lear Siegler | Lear Siegler | Lear Siegler |
| COMMENTS | | | | | |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Lee Data Series 300 1218/1220/1230 | MDS Trivex Plus 70 | MDS Trivex Plus 80 | Megadata System 850 | Memorex 1371/1377 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Cluster | Either | Cluster | Stand-alone | Cluster |
| Maximum displays/controller | 32 | 32 | 32 | 1 | 32 |
| Transportability | No | No | No | No | No |
| IBM compatibility | 3274/3278;BSC/SNA | 3277/3278 | 3278 BSC/SDLC | Opt. | 3277 |
| Teletype compatibility | Opt. | No | No | Opt. | No |
| Other compatibility | DEC VT100 | — | — | Opt. | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 to 3564 | 480-3440 | 480-3440 | 2000 | 1920 |
| Memory capacity, no. char./lines/pages | 1 page | 1 page | 1 page | 16 pages | 1920 char. |
| Screen arrangement, lines x chars./line | 24 x 80, 32 x 80, 43 x 80, 27 x 132 | 24 x 80, 12 x 40 43 x 80 | 12/24 x 40, 24/ 32/43 x 80 | 25 x 80 | 24 x 80 |
| Screen area, diagonal, inches | 15 | 15 | 15 | 15 | 15 |
| Tilt/swivel screen | Std. | No | No | Std. | Tilt std. |
| Total displayable symbols | 94 EBCDIC/64 ASCII | 90 EBCDIC | 96 EBCDIC/ASCII | 256 | 89 |
| Symbol formation | 7 x 9 dot matrix | 7 x 9 dot matrix | 7x9/7x14 dot matrix | 15 x 11 | 7 x 8 dot matrix |
| Character phosphor | Green | P4 White | White or green | P31 green std.; PC144 amber opt. | — |
| Color capability | 1230 (4 std., 7 opt.) | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Opt. | No | No | Std. | Std. |
| Blink | Opt. | No | No | Std. | Std. |
| Blank | Opt. | Std. | Std. | Std. | Std. |
| Bold | Std. | Std. | Std. | Std. | Std. |
| Reverse | Opt. | No | No | Std. | No |
| Double size | No | No | No | No | No |
| Scroll | Opt. (Async.) | No | No | Up/down std. | No |
| Paging | Std. | No | No | Std. | No |
| Selectable cursor blinking | Std. | Opt. | Std. | Std. | Std. |
| Addressable/readable cursor | Std. | Std. | Std. | Both std.; | Std. |
| Protected format | Std. | Std. | Std. | Std. | Std. |
| Partial screen transmit | Std. | Std. | Std. | Std. | Std. |
| Split screen/windows | Application control | No | No | 2 std. | No |
| Tabulation | Fwd./back std. | Std. | Std. | Fwd./back std. | Std. |
| Character insert/delete | Std. | Std. | Std. | Std. | Std. |
| Line insert/delete | No | No | Std. | Std. | No |
| Erase | Std. | Field/screen std. | Field/screen std. | Char./line/screen std. | Char./field/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter, data entry, APL | Typewriter, data entry, console | Typewriter, data entry, keypunch | Typewriter | Typewriter, data entry, console |
| Character/code set | 96 EBCDIC | EBCDIC | ASCII/EBCDIC | 128 ASCII | EBCDIC |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | 12/24 std. | 12 opt. | 12 std.; 24 opt. | 70 std. | 12 std. |
| Numeric keypad | Std. | Opt. | Opt. | Std. | Opt. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | 180/340 cps matrix | Impact, 165 cps | Impact, 180 cps | 30 cps impact | No |
| Line printer, type and speed | No | Belt, 340 lpm | Belt, 340 lpm | No | Belt, 200-415 lpm |
| Composite video | No | No | No | Opt. | No |
| Port for cust.-supplied devices | Opt. | Opt. | No | 3 std. | Opt. |
| Other vendor-supplied devices | Bar code reader, mag. stripe reader, light pen | Audible alarm std.; ID card reader, light pen opt. | Audible alarm, security lock, light pen | Tape punch, audible alarm, dual diskette drive | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half-duplex | Half-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Sync./Async. | Synchronous | Synchronous | Async./Sync. | Synchronous |
| Communications protocol | BSC/SNA/SDLC | BSC | BSC/SDLC | To spec. | BSC |
| Code | EBCDIC/ASCII | EBCDIC | ASCII/EBCDIC | ASCII/EBCDIC | EBCDIC |
| Speed, bits/second | Up to 19,200 | 110-9600 | Up to 9600 | 50-19,200 | 1200-19,200 |
| Format; character, line, or block | Block | Block | Block | Char./block | Block |
| Multipoint operation (pollable/addr.) | Std. | Std. | Std. | Std. | Std. |
| Terminal interface | RS-232-C | RS-232-C | RS-232-C | RS-232-C | RS-232-C |
| Integral modem | No | No | No | Opt. | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | Contact vendor | Contact vendor | Contact vendor | — | 90 |
| Controller, 2-year lease, $/mo. | Contact vendor | Contact vendor | Contact vendor | — | 290 |
| Display station, purchase, $ | Contact vendor | Contact vendor | Contact vendor | 1,700-2,800 | 2,600 |
| Controller, purchase, $ | Contact vendor | Contact vendor | Contact vendor | — | 6,050 |
| Monthly prime-shift maint., $/mo. | Contact vendor | Contact vendor | Contact vendor | 20-50 | — |
| Date of announcement | — | 1/75 | 10/79 | — | — |
| Date of first production delivery | 9/79 | 5/75 | 2/80 | 10/81 | 5/76 |
| Display units installed to date | — | 33,000 | 4,000 | — | Over 50,000 |
| Serviced by | Lee Data | MDS Trivex | MDS Trivex | Megadata, third party | Memorex |
| COMMENTS | 1230 provides 3279 compatibility. Display capacities include 1920, 2560, 3440, and 3564 characters. | Includes 712/722 cluster, 752 stand-alone, & 712 mini-cluster. | | 8 bit microprocessor based terminal features noiseless operation and low power requirements; 2K EAROM for user-selection of transmission rate, parity mode, stop bits, etc. | 1377 display unit attaches to Memorex or IBM controller. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Memorex 2076/2078 | Memorex 2079 | Microdata PRISM | Micro-Term ACT-5A |
|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | |
| Stand-alone or cluster | Cluster | Cluster | Stand-alone | Stand-alone |
| Maximum displays/controller | 8 | 32 | — | 1 |
| Transportability | No | No | No | No |
| IBM compatibility | 3276/3278 | 3279 | No | No |
| Teletype compatibility | No | No | Std. | Std. |
| Other compatibility | — | — | — | — |
| DISPLAY PARAMETERS | | | | |
| Display capacity, no. of chars. | 960-4488 | 1920, 2560 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | 1 page | 1920/2560 char. | 80/24/1 | — |
| Screen arrangement, lines x chars./line | 12/24/32/43 x 80; 34 x 132 | 24 x 80, 32 x 80 plus status line | 24 x 80 | 24 x 80 |
| Screen area, diagonal, inches | 15 | 13 | 12 | 12 |
| Tilt/swivel screen | Tilt std. | Tilt std. | No | No |
| Total displayable symbols | 94; APL up to 222 | Up to 222 (APL) | 96 | 128 |
| Symbol formation | 7 x 8/9/12/14 | 7 x 9 dot matrix | 5 x 7 dot matrix | 7 x 11 dot matrix |
| Character phosphor | — | P22 | P4 white std. | P4 white |
| Color capability | No | 4/7 colors | No | No |
| Programmable field/char. highlighting via: | | | | |
| Underline | Std. | Std. | No | Std. |
| Blink | Std. | Std. | No | Std. |
| Blank | Std. | Std. | No | No |
| Bold | Std. | Std. | No | No |
| Reverse | No | Std. | Std. | Std. |
| Double size | No | No | No | No |
| Scroll | No | No | Std. | Std. |
| Paging | No | No | No | No |
| Selectable cursor blinking | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Addressable only | Both std. | Both std. | Both std. |
| Protected format | Std. | Std. | Opt. | Std. |
| Partial screen transmit | Appl. dependent | Appl. dependent | No | Std. |
| Split screen/windows | No | No | — | No |
| Tabulation | Fwd./back std. | Fwd./back std. | Fwd. std. | Std. |
| Character insert/delete | Std. | Std. | No | Std. |
| Line insert/delete | No | No | No | Std. |
| Erase | Char./field/screen std. | Char./line/screen std. | Line/screen std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | |
| Style | Typewriter, data entry | Typewriter, data entry, APL | Typewriter | Typewriter |
| Character/code set | EBCDIC/ASCII/APL | EBCDIC/ASCII/APL | 96 ASCII | 128 ASCII |
| Detachability | Std. | Std. | Std. | No |
| Program function keys | 10/12/24 std. | 24 std. | No | Std. |
| Numeric keypad | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | |
| Serial printer, type and speed | Impact, 180 cps | No | Opt. | No |
| Line printer, type and speed | Belt, 200-415 lpm | No | No | No |
| Composite video | No | Opt. | No | No |
| Port for cust.-supplied devices | Std. | Opt. | Std. | Std. |
| Other vendor-supplied devices | Audible alarm, light pen | Light pen, mag. card reader | — | — |
| TRANSMISSION PARAMETERS | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Synchronous | Synchronous | Asynchronous | Asynchronous |
| Communications protocol | BSC | BSC/SDLC | ASCII | ASCII |
| Code | EBCDIC | ASCII/EBCDIC/APL | ASCII | ASCII |
| Speed, bits/second | 1200-9600 | 1200-9600 | Up to 9600 | 110-19,200 |
| Format; character, line, or block | Block | Block | Character | Char./line/block |
| Multipoint operation (pollable/addr.) | Std. | Std. | No | No |
| Terminal interface | RS-232-C | RS-232-C | RS-232-C | RS-232-C, 20mA |
| Integral modem | No | No | No | No |
| Integral acoustic coupler | No | No | No | No |
| PRICING AND AVAILABILITY | | | | |
| Display station, 2-year lease, $/mo. | 65-107 | — | Purchase only | Purchase only |
| Controller, 2-year lease, $/mo. | 105-147 | — | — | — |
| Display station, purchase, $ | 2,431-3,565 | — | 2,500 | 995 |
| Controller, purchase, $ | 4,500-5,910 | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | — |
| Date of announcement | — | 1Q/82 | — | — |
| Date of first production delivery | 2/80 | 1982 | 1/80 | 9/78 |
| Display units installed to date | Over 27,000 | — | — | — |
| Serviced by | Memorex | Memorex | Microdata | Micro-Term |
| COMMENTS | Separate controller (2076). | Includes: tiltable display, antiglare screen, audible alarm, unprotected field indicator, upper/lower case switch, 2/4 color switch, energy efficient. | | Based on 1981 information. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Micro-Term MIME-2A | Micro-Term MIME-100 | Micro-Term MIME-314 | NCR 7900 Model 1 |
|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 1 | 1 | 1 |
| Transportability | No | No | No | No |
| IBM compatibility | No | No | No | No |
| Teletype compatibility | Std. | Std. | Std. | Std. |
| Other compatibility | DEC VT52, Hazeltine 1500, Soroc 120 | DEC VT100 | Lear Siegler ADM 3A, Hazeltine 1410 | — |
| DISPLAY PARAMETERS | | | | |
| Display capacity, no. of chars. | 1920 | 1920; 3168 opt. | 1920 | 2000 |
| Memory capacity, no. char./lines/pages | — | — | — | — |
| Screen arrangement, lines x chars./line | 24 x 80 | 24 x 80; 24 x 132 opt. | 24 x 80 | 25 x 80 |
| Screen area, diagonal, inches | 12 | 12 | 12 | 12 |
| Tilt/swivel screen | — | — | — | No |
| Total displayable symbols | 128 | 128 | 96 | 64/96/128 |
| Symbol formation | 7 x 11 dot matrix | 7 x 11 dot matrix | 5 x 9 dot matrix | 7 x 7 dot matrix |
| Character phosphor | P4 white | P4 white | P4 white | P31 green std. |
| Color capability | No | No | No | No |
| Programmable field/char. highlighting via: | | | | |
| Underline | Std. | Std. | No | Std. |
| Blink | Std. | Std. | No | Std. |
| Blank | No | No | No | No |
| Bold | No | No | No | No |
| Reverse | Std. | Std. | Std. | Std. |
| Double size | No | No | No | No |
| Scroll | Std. | Std. | No | Up std. |
| Paging | No | No | No | No |
| Selectable cursor blinking | Std. | Std. | No | Std. |
| Addressable/readable cursor | Std. | Std. | Std. | Addressable only |
| Protected format | Std. | No | No | No |
| Partial screen transmit | Std. | No | Std. | No |
| Split screen/windows | No | No | No | No |
| Tabulation | Std. | Std. | Std. | No |
| Character insert/delete | Std. | Std. | Std. | No |
| Line insert/delete | Std. | Std. | Std. | No |
| Erase | Char./line/screen std. | Char./line/screen std. | Char./line/screen Std. | Line/screen std. |
| KEYBOARD PARAMETERS | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 128 ASCII | 128 ASCII | 96 ASCII | 64/96/128 ASCII |
| Detachability | No | No | No | Opt. |
| Program function keys | Std. | Std. | No | 1 key (96 functions) |
| Numeric keypad | Std. | Std. | Std. | Std., touch-tone opt. |
| ANCILLARY DEVICES | | | | |
| Serial printer, type and speed | No | No | No | Thermal/impact |
| Line printer, type and speed | No | No | No | No |
| Composite video | No | No | No | No |
| Port for cust.-supplied devices | Std. | Std. | No | Opt. |
| Other vendor-supplied devices | — | — | — | — |
| TRANSMISSION PARAMETERS | | | | |
| Mode | Half/full-duplex | Full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | ASCII | ASCII | ASCII | ASCII |
| Code | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 110-9600 | 50-19,200 | 110-9600 | 50-19,200 |
| Format; character, line, or block | Char./line/block | Character | Black | Char./line |
| Multipoint operation (pollable/addr.) | No | No | No | No |
| Terminal interface | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C |
| Integral modem | No | No | No | No |
| Integral acoustic coupler | No | No | No | No |
| PRICING AND AVAILABILITY | | | | |
| Display station, 2-year lease, $/mo. | Purchase only | Purchase only | Purchase only | 89-95 |
| Controller, 2-year lease, $/mo. | — | — | — | — |
| Display station, purchase, $ | 1,045 | 1,995 | 895 | 2,000-2,170 |
| Controller, purchase, $ | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | 27 |
| Date of announcement | — | — | — | — |
| Date of first production delivery | 8/78 | 2/80 | 2/80 | 6/79 |
| Display units installed to date | — | — | — | — |
| Serviced by | Micro-Term | Micro-Term | Micro-Term | NCR |
| COMMENTS | Based on 1981 information. | Based on 1981 information. | Based on 1981 information. | |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | NCR 7900 Model 3 | NCR 7901 | Northern Telecom 292-IV | Northern Telecom 294C/296C | Paradyne 9440 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Cluster | Cluster | Either |
| Maximum displays/controller | 1 | — | 16 | 16 (294); 8 (296) | 3 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | 3272 | 3270 BSC/SNA | 1052 |
| Teletype compatibility | Std. | Std. | No | No | No |
| Other compatibility | — | — | — | — | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 2000 | 1920 | 1920 | 1920, 2560, 3440 | 1920 |
| Memory capacity, no. char./lines/pages | — | — | — | — | — |
| Screen arrangement, lines x chars./line | 25 x 80 | 24 x 80 | 24 x 80 | 24 x 80, 32 x 80, 43 x 80 | 24 x 80 |
| Screen area, diagonal, inches | 12 | 12 | 15 | 15 | 12 |
| Tilt/swivel screen | No | Tilt std. | No | No | Tilt std. |
| Total displayable symbols | 128 ASCII | 96 ASCII | 64, 96 | 64, 96 | 128 ASCII/EBCDIC |
| Symbol formation | 7 x 7 dot matrix | 5 x 7 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix | 7 x 14 dot matrix |
| Character phosphor | P31 green std. | P31 green std. | Green | Green | P39 green |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | No | No | No |
| Blink | Std. | Std. | No | No | No |
| Blank | Std. | Std. | Std. | Std. | Std. |
| Bold | No | No | Std. | Std. | No |
| Reverse | Std. | Std. | No | No | No |
| Double size | No | No | No | No | No |
| Scroll | No | No | No | No | Std. |
| Paging | No | No | No | No | No |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | No |
| Addressable/readable cursor | Both std. | Addressable only | Addressable only | Addressable only | Both std. |
| Protected format | Std. | No | Std. | Std. | No |
| Partial screen transmit | Std. | No | Std. | Std. | Std. |
| Split screen/windows | No | No | No | No | No |
| Tabulation | Fwd./back std. | No | Std. | Std. | No |
| Character insert/delete | Std. | No | Std. | Std. | No |
| Line insert/delete | Std. | No | No | No | No |
| Erase | Char./line/screen std. | Screen std. | Char./screen std. | Char./screen std. | Std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter, data entry, keypunch | Typewriter, data entry, keypunch | Typewriter |
| Character/code set | 128 ASCII | 96 ASCII | ASCII/EBCDIC | ASCII/EBCDIC | ASCII |
| Detachability | Opt. | Std. | Std. | Std. | Std. |
| Program function keys | No | No | 12 opt. | 12 opt. | 24 std. |
| Numeric keypad | Std., touch-tone opt. | Std. | Opt. | Opt. | Opt. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | Opt. | Serial interface | Impact, 66-180 cps | Impact, 66-180 cps | Impact |
| Line printer, type and speed | Opt. | No | No | No | No |
| Composite video | No | No | No | No | Opt. |
| Port for cust.-supplied devices | Opt. | Std. | Std. | Std. | No |
| Other vendor-supplied devices | — | — | ID badge reader, light pen | ID badge reader, light pen | Light pen, keylock |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Channel connect | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | — | Synchronous | Asynchronous |
| Communications protocol | ASCII | ASCII | — | BSC/SDLC | Paradyne SDLC |
| Code | ASCII | ASCII | — | ASCII/EBCDIC | ASCII/EBCDIC |
| Speed, bits/second | 50-9600 | 110-19,200 | — | 1200-9600 | Up to 19,200 |
| Format; character, line, or block | Line/page | Character | — | Block | Character |
| Multipoint operation (pollable/addr.) | Both std. | No | — | Std. | No |
| Terminal interface | RS-22-C | RS-232-C | — | RS-232-C | RS-232-C |
| Integral modem | No | No | — | No | No |
| Integral acoustic coupler | No | No | — | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | 160-166 | — | 65 | 57 | 134 |
| Controller, 2-year lease, $/mo. | — | — | 541 | 253 | 33 |
| Display station, purchase, $ | 3,500-3,670 | 850 | 2,240 | 2,265 | 3,000 |
| Controller, purchase, $ | — | — | 18,160 | 10,475 | 1,000 |
| Monthly prime-shift maint., $/mo. | 33 | 15 | — | — | 27 |
| Date of announcement | — | 2/82 | — | — | 11/80 |
| Date of first production delivery | — | 5/82 | — | 2/81 | 1/81 |
| Display units installed to date | — | — | — | — | 200 |
| Serviced by | — | NCR | NTI | NTI | Paradyne |
| COMMENTS | | | | | |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Paradyne 9476 | Paradyne 9478 | Perkin-Elmer 550B/550E | Perkin-Elmer 550S | Perkin-Elmer 1245/1251 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Either | Either | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 32 | 32 | 1 | 1 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | 3276-looks local | 3278 | No | No | No |
| Teletype compatibility | No | No | Std. | Std. | Std. |
| Other compatibility | — | — | — | — | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 1920 | 1920 | 2000 |
| Memory capacity, no. char./lines/pages | — | — | 80/24/1 | 80/48/2 | 80/24/1 |
| Screen arrangement, lines x chars./line | 24 x 80 | 24 x 80 | 24 x 80 | 24 x 80 | 24 x 80 |
| Screen area, diagonal, inches | 15 | 15 | 12 | 12 | 12 |
| Tilt/swivel screen | Tilt std. | Tilt std. | No | No | Tilt std. |
| Total displayable symbols | 128 ASCII/EBCDIC | 128 ASCII/EBCDIC | 128 ASCII | 128 ASCII | 128 ASCII, 32 forms |
| Symbol formation | 8 x 16 dot matrix | 8 x 16 dot matrix | 5 x 9 dot matrix | 5 x 9 dot matrix | 7 x 11 dot matrix |
| Character phosphor | P39 green | P39 green | P4 white std.; P31 green/amber opt. | P4 white std.; P31 green/amber opt. | P4 white std.; P31 green/amber opt. |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | No | No | Std. |
| Blink | Std. | Std. | No | Std. | Std. |
| Blank | Std. | Std. | No | Std. | Std. |
| Bold | Std. | Std. | No | No | No |
| Reverse | Std. | Std. | No | Std. | Std. |
| Double size | No | No | No | No | No |
| Scroll | No | No | Up std. | Up/down std. | Up std. |
| Paging | No | No | No | 2 opt. | No |
| Selectable cursor blinking | Std. | Std. | No | No | Std. |
| Addressable/readable cursor | Both std. | Both std. | Addressable only | Both std. | Both std. |
| Protected format | Std. | Std. | No | Std. | Std. |
| Partial screen transmit | Std. | Std. | No | No | Std. |
| Split screen/windows | No | No | No | No | No |
| Tabulation | Std. | Std. | Fwd. std. | Fwd/back std. | Fwd./back std. |
| Character insert/delete | Std. | Std. | No | Std. | Std. |
| Line insert/delete | No | No | No | Std. | Std. |
| Erase | Std. | Std. | Line/screen std. | Char./line/screen std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter, data entry, WP | Typewriter, data entry, WP | Typewriter | Typewriter | Typewriter |
| Character/code set | ASCII/EBCDIC | ASCII/EBCDIC | 128 ASCII | 128 ASCII | 128 ASCII |
| Detachability | Std. | Std. | No | No | Opt. |
| Program function keys | 24 std. | 24 std. | No | 8 std. | 24/32 opt. |
| Numeric keypad | Std. | Std. | Std. (550E) | Std. | Opt. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | 45/150 letter/dot | 45/150 letter/dot | Thermal, 96 cps | Thermal, 96 cps | Thermal, 96 cps |
| Line printer, type and speed | 300/600 band | 300/600 band | Thermal, 180 lpm | Thermal, 180 lpm | No |
| Composite video | Opt. | Opt. | No | No | No |
| Port for cust.-supplied devices | Opt. | Opt. | Std. | Std. | Std. |
| Other vendor-supplied devices | Light pen, keylock | Light pen, keylock | — | — | Light pen |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Full-duplex | Full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Synchronous | Synchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | Paradyne SDLC | Paradyne SDLC | — | — | — |
| Code | ASCII/EBCDIC | ASCII/EBCDIC | ASCII | ASCII | ASCII |
| Speed, bits/second | 256KB | 256KB | 110-9600 | 50-19,200 | 110-9600 |
| Format; character, line, or block | Block | Block | Character | Char./block | Char./line/block |
| Multipoint operation (pollable/addr.) | Std. | No | No | No | Std. |
| Terminal interface | RS-232-C | RS-232-C | RS-232-C; 20mA opt. | RS-232-C; 20mA opt. | RS-232-C; 20mA opt. |
| Integral modem | Opt. | Opt. | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | 166 | 77 | Contact vendor | Contact vendor | Contact vendor |
| Controller, 2-year lease, $/mo. | 95 | 135 | — | — | — |
| Display station, purchase, $ | 5,850 | 3,000 | Contact vendor | Contact vendor | Contact vendor |
| Controller, purchase, $ | 2,500 | 4,000 | — | — | — |
| Monthly prime-shift maint., $/mo. | 30 | 20 | — | — | — |
| Date of announcement | 11/80 | 11/80 | — | — | — |
| Date of first production delivery | 1/81 | 1/81 | — | — | — |
| Display units installed to date | 400 | 1,200 | — | — | — |
| Serviced by | Paradyne | Paradyne | Perkin-Elmer | Perkin-Elmer | Perkin-Elmer |
| COMMENTS | All remote connected devices appear as local channel attached; no need for remote software; Paradyne CRTs use loop technology. | | International character sets/keyboards available. | International character sets/keyboards available. | International character sets/keyboards. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Perry Data Systems PDS 9812 | Perry Data Systems PDS 9815 | Perry Data Systems PDS 9880 | Racal-Milgo 4010 8A1 | Racal-Milgo 4220 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 1 | 1 | 1 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | Std. | Std. | Std. | Bell 8A1 (40/3) | No |
| Other compatibility | Data General | Hazeltine 1510 | ADDS 580 | — | Univac |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 1920 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | — | — | — | 3 std.; up to 8 opt. | 1 page |
| Screen arrangement, lines x chars./line | 24 x 80 | 24 x 80 | 24 x 80 | 24 x 80 | 24 x 80 |
| Screen area, diagonal, inches | 9 | 9 | 9 | 15 | 15 |
| Tilt/swivel screen | — | — | — | Std. | Std. |
| Total displayable symbols | 128 ASCII | 128 ASCII | 128 ASCII | 127 ASCII | 127 ASCII |
| Symbol formation | 5 x 7 dot matrix | 5 x 7 dot matrix | 5 x 7 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix |
| Character phosphor | — | — | — | Green std. | Green std. |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | — | — | — | Std. | Std. |
| Blink | — | — | — | Std. | Std. |
| Blank | — | — | — | Std. | Std. |
| Bold | — | — | — | No | No |
| Reverse | — | — | — | No | No |
| Double size | — | — | — | No | No |
| Scroll | Std. | Std. | Std. | Std. | Up/down std. |
| Paging | 1 std. | 1 std. | 1 std. | 3 std., 8 max. | No |
| Selectable cursor blinking | Opt. | Opt. | Opt. | No | No |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Addressable only | Both std. |
| Protected format | Opt. | Std. | Opt. | Std. | Std. |
| Partial screen transmit | Opt. | Std. | No | Std. | Std. |
| Split screen/windows | No | No | No | No | No |
| Tabulation | Opt. | Std. | No | Fwd. std. | Fwd./back std. |
| Character insert/delete | Opt. | Std. | Opt. | Std. (also word) | Std. |
| Line insert/delete | Opt. | Std. | Opt. | Std. | Std. |
| Erase | Line/screen std. | Std. | Opt. | Char./line/screen/ word std. | Std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 96 ASCII | 128 ASCII | 128 ASCII | ASCII | ASCII |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | 34 std. | 10 std. | 10 std. | 6 std. | 4 std.; 22 opt. |
| Numeric keypad | Std. | Std. | Std. | Opt. | Opt. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | 160/200 cps matrix | 160/200 cps matrix |
| Line printer, type and speed | No | No | No | 200/300 lpm | 200/300 lpm |
| Composite video | No | No | No | No | No |
| Port for cust.-supplied devices | Std. | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | — | — | — | 120 cps 80-col. desk-top printer | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Async./sync. |
| Communications protocol | ASCII | ASCII | ASCII | 8A1 | Univac U200/UTS20 |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 110-9600 | 110-9600 | 110-9600 | Up to 4800 | Up to 9600 |
| Format; character, line, or block | Character | Char./line/block | Character | Block | Block |
| Multipoint operation (pollable/addr.) | No | Opt. | Opt. | Std. | Std. |
| Terminal interface | RS-232-C | RS-232-C | RS-232-C | RS-232-C | RS-232-C |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | 134 | 117 |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 1,796 | 1,796 | 1,695 | 5,275 | 3,370 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | 35 | 35 |
| Date of announcement | — | — | — | 4/80 | 2/81 |
| Date of first production delivery | 9/80 | 9/80 | 10/80 | 7/80 | 5/81 |
| Display units installed to date | — | — | — | 900 | 200 |
| Serviced by | Perry | Perry | Perry | Racal-Milgo | Racal-Milgo |
| COMMENTS | Based on 1981 information. | Based on 1981 information. | | One-, three-, & five-year leases also available. | |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Racal-Milgo 4274/4278 | Racal-Milgo 4276 | Raytheon PTS-100 | Raytheon PTS-2000 | Soroc IQ 120 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Cluster | Stand-alone | Cluster | Cluster | Stand-alone |
| Maximum displays/controller | 32 | 1 | 32 | 8/32 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | 3274 BSC/SDLC | 3276/3275, BSC/SD. | Std. | 3274, 3276, 3278 | No |
| Teletype compatibility | No | No | Std. | No | Std. |
| Other compatibility | — | — | Honeywell, Univac | — | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | See comments | 1920 | 480, 960, 1920 | 960-3440 | 1920 |
| Memory capacity, no. char./lines/pages | — | — | — | — | — |
| Screen arrangement, lines x chars./line | 24 x 80, 32 x 80, 43 x 80, 27 x 132 | 24 x80 | 12 x 40, 15 x 64, 12 x 80, 24x80, 30x64 | 12/24/32/43 x 80 | 24 x 80 |
| Screen area, diagonal, inches | 15 | 15 | 15 | 15 | 12 |
| Tilt/swivel screen | Std. | Std. | No | No | No |
| Total displayable symbols | 96 ASCII/EBCDIC | 96 ASCII/EBCDIC | 64/96 ASCII | 128 ASCII | 96 |
| Symbol formation | 7 x 9 dot matrix | 7 x 9 dot matrix | 7 x 7, 7 x 9 | 7 x 14 dot matrix | 5 x 9 dot matrix |
| Character phosphor | Green std. | Green, std. | P31 green | P31 green | White |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | No | No | No | Std. |
| Blink | Std. | Std. | No | No | Std. |
| Blank | Std. | Std. | No | Std. | No |
| Bold | No | No | No | Std. | No |
| Reverse | Std. | No | No | No | Std. |
| Double size | No | No | No | No | No |
| Scroll | No | No | No | No | Up std. |
| Paging | No | No | No | No | No |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | No |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Both std. | Addressable only |
| Protected format | Std. | Std. | Std. | Std. | Std. |
| Partial screen transmit | Std. | Std. | Std. | Std. | Std. |
| Split screen/windows | No | No | No | No | No |
| Tabulation | Fwd./back std. | Fwd./back std. | Fwd./back std. | Fwd./back std. | Std. |
| Character insert/delete | Std. | Std. | Std. | Std. | No |
| Line insert/delete | No | No | No | No | No |
| Erase | Char./line/screen std. | Char./line/screen std. | Chr./line/screen std. | Char./line/screen std. | Line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter, data entry | Typewriter, data entry | Typewriter, data entry | Typewriter, data entry | Typewriter |
| Character/code set | ASCII/EBCDIC | ASCII/EBCDIC | ASCII/EBCDIC | ASCII/EBCDIC | 96 ASCII |
| Detachability | Std. | Std. | No | No | No |
| Program function keys | 24 std. | 24 std. | 2 std., 4 opt. | 24 std. | No |
| Numeric keypad | Std. | Std. | Opt. | Opt. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | 160/200 cps matrix | 160/200 cps matrix | 30,50,100,120 cps | Impact, 180 cps | No |
| Line printer, type and speed | 200/300 lpm | 200/300 lpm | 300, 600 lpm | No | No |
| Composite video | No | No | No | No | No |
| Port for cust.-supplied devices | No | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | 120 cps 80-col. desk-top printer | 120 cps, 80-col. desk-top printer | Card reader, mag. stripe reader | Light pen | Audible alarm |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half-duplex | Half/full-duplex |
| Technique | Synchronous | Synchronous | Async./sync. | Synchronous | Asynchronous |
| Communications protocol | BSC, SNA/SDLC | BSC | BSC/SDLC | BSC/SDLC | ASCII |
| Code | EBCDIC/ASCII | EBCDIC/ASCII | ASCII/EBCDIC | ASCII/EBCDIC | ASCII |
| Speed, bits/second | 9600 | 9600 | Up to 9600 | Up to 9600 | 75-19,200 |
| Format; character, line, or block | Block | Block | Block | Block | Char./block |
| Multipoint operation (pollable/addr.) | Std. | Std. | Std. | Std. | No |
| Terminal interface | RS-232-C | RS-232-C | RS-232-C CCITT V.24 | RS-232-C | RS-232-C, 20mA |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | 67 | 154 | Contact vendor | 56-66 | Purchase only |
| Controller, 2-year lease, $/mo. | BSC-113; SDLC-143 | — | Contact vendor | 95-194 | — |
| Display station, purchase, $ | 2,560 | 5,660 | Contact vendor | 2,095-2,750 | 779 |
| Controller, purchase, $ | BSC-3,949;SDLC-4,724 | — | Contact vendor | 2,850-6,320 | — |
| Monthly prime-shift maint., $/mo. | Disp.-14; cont.-32 | 35 | Contact vendor | 12-60 | — |
| Date of announcement | 3/80 | 9/80 | 5/71 | 4/80 | — |
| Date of first production delivery | 6/80 | 1/81 | 10/72 | 4/80 | 11/76 |
| Display units installed to date | 3000 | 1200 | Over 125,000 disp. | Over 2500 displays | 40,000 |
| Serviced by | Racal-Milgo | Racal-Milgo | Raytheon | Raytheon | Soroc |
| COMMENTS | Display capacities: 1920, 2560, 3440, 3564; one-, three-, and five-year leases also available. | One-, three-, and five-year leases also available. | IBM compatibility includes IPARS, 3270 BSC, 3274 BSC/SDLC, 3271 SDLC. | Permits field-upgradability from small to large controller. | |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Soroc IQ 135 | Soroc IQ 140 | Soroc IQ 150A | Sperry Univac U 100 | Sperry Univac U 200 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 1 | 1 | — | — |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | Std. | No | No |
| Teletype compatibility | Std. | Std. | Std. | No | No |
| Other compatibility | — | — | Lear Siegler | Univac | Univac |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 1920 | 960, 1024 | 1536, 1920 |
| Memory capacity, no. char./lines/pages | 1 page | 1 page | 5 pages | 960/1024 char. | 1536/1920 char. |
| Screen arrangement, lines x chars./line | 24 x 80 plus status line | 24 x 80 plus status line | 24 x 80 plus status line | 12 x 80, 16 x 64 | 24 x 64, 24 x 80 |
| Screen area, diagonal, inches | 12 | 12 | 12 | 12 | 12 |
| Tilt/swivel screen | No | No | No | No | No |
| Total displayable symbols | 128 | 128 | 128 | 64; 96 opt. | 64; 96 opt. |
| Symbol formation | 5 x 9 dot matrix | 5 x 9 dot matrix | 5 x 9 dot matrix | Stroke | 7 x 9 dot matrix |
| Character phosphor | White | White | White | P31 green | P31 green |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | Std. | No | No |
| Blink | Std. | Std. | Std. | Std. | Std. |
| Blank | No | No | Std. | No | No |
| Bold | No | No | No | No | No |
| Reverse | Std. | Std. | Std. | No | No |
| Double size | No | No | No | No | No |
| Scroll | Up std. | Up std. | Std. | Up/down std. | Up/down std. |
| Paging | No | No | No | No | No |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Both std. | Both std. |
| Protected format | Std. | Std. | Std. | Std. | Std. |
| Partial screen transmit | Std. | Std. | Std. | Std. | Std. |
| Split screen/windows | No | No | Vertical | No | No |
| Tabulation | Fwd./back std. | Std. | Std. | Std. | Std. |
| Character insert/delete | Std. | Std. | Std. | Std. | Std. |
| Line insert/delete | Std. | Std. | Std. | Std. | Std. |
| Erase | Char./line/screen std. | Line/screen std. | Std. | Char./line/screen std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 96 ASCII | 96 ASCII | 96 ASCII | 96 ASCII | 96 ASCII |
| Detachability | Opt. | Std. | Std. | No | No |
| Program function keys | 14 std. | 16 std. | 16 std. | 4 opt. | 4 opt. |
| Numeric keypad | Std. | Std. | Std. | Opt. | Opt. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | 30/200 cps impact | 30/200 cps impact |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | No | No | No | No |
| Port for cust.-supplied devices | Std. | Std. | Std. | No | No |
| Other vendor-supplied devices | Audible alarm | Audible alarm | — | Cassette tape | Cassette tape |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half-duplex | Half-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Async./sync. | Async./sync. |
| Communications protocol | ASCII | ASCII | ASCII | Uniscope | Uniscope |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 110-19,200 | 110-19,200 | 110-19,200 | Up to 9600 | Up to 9600 |
| Format; character, line, or block | Char./line/block | Char./block | Char./block | Block | Block |
| Multipoint operation (pollable/addr.) | No | Opt. | No | Std. | Std. |
| Terminal interface | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C | RS-232-C | RS-232-C |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | Purchase only | Purchase only | Purchase only | 145-170* | 166-192* |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 799 | 1,200 | 1,135 | 3,945-4,570 | 5,022-6,240 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | 72 | 72 |
| Date of announcement | — | — | — | 1969 | 9/74 |
| Date of first production delivery | 1/81 | 8/78 | 3/82 | 5/70 | 2/75 |
| Display units installed to date | 300 | 5,000 | — | — | — |
| Serviced by | Soroc | Soroc | Soroc | Univac | Univac |
| COMMENTS | Includes programmable transmit & print delimiters, keyboard repeat rate enable/disable cursor; graphics option available. | | | *Five-year lease. | *Five-year lease. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Sperry Univac UTS 10 | Sperry Univac UTS 20 | Tab Products 132/15 | Taumark Tera System (Handheld) | TEC 511/512 611/612 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Both | Stand-alone | Radio net. cluster | Stand-alone |
| Maximum displays/controller | — | 31 | 1 | 250 | 1 |
| Transportability | No | No | No | Std. (handheld) | No |
| IBM compatibility | No | No | No | 3270 opt. | No |
| Teletype compatibility | Std. | No | Std. | Std. (controller) | Std. |
| Other compatibility | — | Univac | DEC VT52/VT100/ VT132 | To customer requirements | Upon request |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 1920, 3168 | 64 | 2000 |
| Memory capacity, no. char./lines/pages | 1920 char. | 4000 char. | 4 pages | 1920 char. opt. | — |
| Screen arrangement, lines x chars./line | 24 x 80 | Up to 24 x 80 | 24 x 80, 24 x 132, plus status | 4 x 16 | 25 x 80 |
| Screen area, diagonal, inches | 12 | 12 | 15 | 2.5 x 3.62 in. | 12 |
| Tilt/swivel screen | Opt. | Opt. | Tilt std. | — | Opt. (611/612) |
| Total displayable symbols | 128 ASCII | 96 ASCII | 128 | 64 ASCII std. | 95 ASCII |
| Symbol formation | 7 x 11 dot matrix | 7 x 11 dot matrix | 7 x 11 dot matrix | 5 x 7 dot matrix | 6 x 8 dot matrix |
| Character phosphor | P31 green | P31 green | P31 green std., P4 white opt. | — | P4 white std.; P31 green opt. |
| Color capability | No | No | No | — | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | No | No | Std. | No | Std. |
| Blink | No | Std. | Std. | No | Std. |
| Blank | No | No | Std. | No | Std. |
| Bold | No | Std. | Std. | No | Reduced std. |
| Reverse | No | Std. | Std. | No | Std. |
| Double size | No | No | Std. | No | No |
| Scroll | Up opt. | Up/down std. | Up/down/sm./jump | Up/down std. | No |
| Paging | No | No | 4 std. | 1920 char. opt. | No |
| Selectable cursor blinking | Over char. | Over char. | Std. | No | No |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Addr. std.; read opt. | Both std. |
| Protected format | Std. | Std. | Std. | 16 1-line form std. | Std. |
| Partial screen transmit | Std. | Std. | Std. | Std. | Std. |
| Split screen/windows | No | No | Std. | No | No |
| Tabulation | Std. (Block mode) | Std. | Fwd./back std. | No | Fwd./back std. |
| Character insert/delete | Std. | Std. | Std. | No | No |
| Line insert/delete | Std. | Std. | Std. | No | No |
| Erase | Char./line/screen std. | Char./line/screen std. | Line/screen/ memory std. | Char./line/screen std. | Screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter, expanded function | Typewriter, expanded function | Typewriter | 40 key A/N std.; others opt. | Typewriter |
| Character/code set | 128 ASCII | 96 ASCII | 96 ASCII | 64 ASCII std. | 128 ASCII |
| Detachability | Std. | Std. | Std. | No | Std. (611/612) |
| Program function keys | 12 std. | 22 std. | 26 std.; 8 downloadable | Opt. | No |
| Numeric keypad | Opt. | Opt. | Std. | Std. | Opt. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | 80 cps impact | 80/200 cps impact | No | No | No |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | No | No | No | No |
| Port for cust.-supplied devices | No | No | Opt. | No | Opt. |
| Other vendor-supplied devices | Magnetic stripe reader | Magnetic stripe reader | — | Bar code reader, A/D probe, audible alarm, battery-low indicator | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Synchronous | Asynchronous | Async./sync./bisync. | Asynchronous |
| Communications protocol | TTY | Uniscope/UTS 400 | ASCII | ASCII std., BSC opt. | — |
| Code | ASCII | ASCII | ASCII | 600-50K (cont.) | ASCII |
| Speed, bits/second | Up to 9600 | Up to 9600 | 50-19,200 | Block | 110-9600 |
| Format; character, line, or block | Char./block | Block | Char./line/blk./pg. | Std. (terminals) | Char./line/block |
| Multipoint operation (pollable/addr.) | No | Std. | No | RS-232-C, 20mA (controller) | No |
| Terminal interface | RS-232-C; 20mA | RS-232-C | RS-232-C, 20mA | Std. (terminal) | RS-232-C; 20mA opt. |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | Third party | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | 117-125* | 127 | — | — |
| Controller, 2-year lease, $/mo. | — | — | — | 3,600 (w/o radio) | — |
| Display station, purchase, $ | 1,360-1,560 | 3,225—3,530 | 2,100 | 5,250 (w/o radio) | 1,020/1,215 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | See comments | 87 | 22 | — | — |
| Date of announcement | 6/80 | 6/80 | 2/81 | 7/78 | 7/79 |
| Date of first production delivery | 3/81 | 10/80 | 4/81 | — | 9/79 |
| Display units installed to date | — | — | Over 3,000 | Taumark | 2800 |
| Serviced by | Univac | Univac | Tab | | TEC |
| COMMENTS | Central Repair Service—$80/year; unit is customer-installable; Operator-selectable parameters. | *Five-year lease; operator-selectable parameters; customer set-up. | | Provides 2-way on-line comm. via FM radio btwn. mobile personnel & base station controller, which controls network & converts radio protocol to acceptable digital format for host comp. | OEM quantities 25+—$680/$810. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | TEC 571/572 671/672 | TEC 631/632 | TEC 415/425/435 | TEC 455 | TEC 1440/1445 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 1 | 1 | 1 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | Std. | Std. | Std. | Std. | Std. |
| Other compatibility | Upon request | Upon request | — | — | No |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 2000 | 2000 | 1920 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | 3 pages | 4 pages | — | — | — |
| Screen arrangement, lines x chars./line | 25 x 80 | 25 x 80 | 24 x 80 | 24 x 80 | 24 x 80 |
| Screen area, diagonal, inches | 12 | 12 | 12 | 12 | 12 |
| Tilt/swivel screen | Opt. (671/672) | Std. | No | No | No |
| Total displayable symbols | 128 ASCII | 128 ASCII | 68 ASCII | 68 ASCII | 127 ASCII |
| Symbol formation | 6 x 8 dot matrix | 6 x 8 dot matrix | 5 x 7 dot matrix | 5 x 7 dot matrix | 5 x 7 dot matrix |
| Character phosphor | P4 white std.; P31 green opt. | P4 white std.; P31 green opt. | P4 white std.; P31 green opt. | P4 white std.; P31 green opt. | P4 white std.; P31 green opt. |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | No | No | No |
| Blink | Std. | Std. | Std. | Std. | No |
| Blank | Std. | Std. | No | No | No |
| Bold | Reduced std. | Reduced std. | No | No | No |
| Reverse | Std. | Std. | Std. | Std. | No |
| Double size | No | No | No | No | No |
| Scroll | Std. | Std. | Up std. | Up std. | Up std. |
| Paging | 2 opt. | 2/4 opt. | No | No | No |
| Selectable cursor blinking | Std. | Std. | No | No | No |
| Addressable/readable cursor | Both std. | Both std. | Load/read std. | Load/read std. | No |
| Protected format | Std. | Std. | Std. | Std. | No |
| Partial screen transmit | Std. | Std. | Std. (415/425) | Std. | No |
| Split screen/windows | No | No | No | No | No |
| Tabulation | Fwd./back/auto std. | Fwd./back/auto std. | Std. | Std. | No |
| Character insert/delete | Std. | Std. | Std. | Std. | No |
| Line insert/delete | Std. | Std. | Std. | Std. | No |
| Erase | Line/page/screen/ memory std. | Line/page/screen/ memory std. | Line/screen std. | Line/screen std. | Screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 128 ASCII | 128 ASCII | 68 ASCII | 128 ASCII | 128 ASCII |
| Detachability | Std. (671/672) | Std. | Std. | Std. | Std. |
| Program function keys | 7 std. (customer specified) | 6 std. | No | No | No |
| Numeric keypad | Opt. | Opt. | Opt. | Opt. | Opt. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | No | No |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | No | Std. | Std. | Opt. |
| Port for cust.-supplied devices | Std. | Std. | Std. (435) | No | Std. (1445); Opt. |
| Other vendor-supplied devices | Light pen | Mag. card reader/ writer | — | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | — | — | — | — | — |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 50-19,200 | 110-9600 | 110-2400 (9600-425) | 110-9600 | 50-9600 |
| Format; character, line, or block | Char./line/block | Char./line/block | Char./bl. (415/425) | Char./block | Character |
| Multipoint operation (pollable/addr.) | No | No | Std. (425) | No | No |
| Terminal interface | RS-232-C; TTL; 20mA | RS-232-C; std.; 20mA opt. | RS-232-C; TTL; 20mA | RS-232-C; TTL; 20mA | RS-232-C; TTL; 20mA |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | — | — |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 1,425/1,640 | 1,310 | 3,105/3,115/3,220 | 3,245 | 1,605/1,720 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | — | — |
| Date of announcement | 4/79 | 9/80 | 11/71 | 12/72 | 3/75 |
| Date of first production delivery | 6/79 | 11/80 | 1/72 | 2/73 | 5/75 |
| Display units installed to date | 400 | 800 | 6200 | 5800 | 6700 |
| Serviced by | TEC | TEC | TEC | TEC | TEC |
| COMMENTS | OEM quantities 25+-$965/1,105. | OEM quantities 25+-$925. | OEM quantities 25+-$2,295 (415); $2,485 (425); $2,270 (435). | OEM quantities 25+-$2,285. | OEM quantities 25+-$1,135 (1440); $1,225 (1445). |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | TEC 1450/2410 | TEC Model 70 | Tektronix 4025A | Telcon VCS-200/ VCS-202 | Telcon VCS-203/ VCS-204 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 1 | 1 | — | — |
| Transportability | No | No | No | Portable case | Portable case |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | Std. | Std. | Std. | Std. | Std. |
| Other compatibility | — | Upon request | DEC VT100 opt. | DEC VT52/VT100 | DEC VT52/VT100 std.; ADDS Viewpoint |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 2000 | 2720 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | 1 page | — | 16K/400/12 total | 144 lines (370 opt.) | 1 page |
| Screen arrangement, lines x chars./line | 24 x 80 | 25 x 80 | 34 x 80 | 24 x 80 | 24 x80 |
| Screen area, diagonal, inches | 12 | 12 | 12 | 7 | 7 |
| Tilt/swivel screen | No | Std. | No | No | No |
| Total displayable symbols | 128 (1450); 95 (2410) | 126 ASCII | 96 std. | 128 ASCII | 128 ASCII |
| Symbol formation | 5 x 7 dot matrix | 5 x 7 dot matrix | 7 x 9 dot matrix | 5 x 8 dot matrix | 5 x 8 dot matrix |
| Character phosphor | P4 white std.; P31 green opt. | P4 white std.; P31 green opt. | P39 green | P31 green std. | P31 green std. |
| Color capability | No | | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | No | No | Std. | No | No |
| Blink | Std. (2410) | Std. | Std. | No | No |
| Blank | No | Std. | Std. | No | No |
| Bold | Std. (2410) | Reduced std. | No | No | No |
| Reverse | No | Std. | Std. | No | No |
| Double size | No | No | No | No | No |
| Scroll | No | Up/down std. | Up/down std. | Up/down std. | No |
| Paging | No | 1/2 opt. | Std. | 6 std.; 15 opt. | 1 std. (VCS-203) |
| Selectable cursor blinking | No | Std. | No | No | No |
| Addressable/readable cursor | Std. (2410) | Load/read std. | Both std. | No | Addressable only |
| Protected format | Std. (2410) | Std. | Std. | No | No |
| Partial screen transmit | Std. (2410) | Std. | Std. | No | No |
| Split screen/windows | No | No | Std. | No | No |
| Tabulation | Fwd. std. (2410) | Fwd./back std. | Fwd./back std. | Fwd. std. | Fwd. std. |
| Character insert/delete | No | Std. | Std. | Std. | No |
| Line insert/delete | No | Std. | Std. | Std. | No |
| Erase | Screen std.; page (2410) | Line/page/screen std. | Char./line/screen std. | Word/paragraph/ screen std. | Screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 128 ASCII | 128 ASCII | ASCII | 96 ASCII | 128 ASCII |
| Detachability | Std. | Std. | Std. | No | No |
| Program function keys | No | 8 std. | 20 plus all keys std. | No | 3 std. |
| Numeric keypad | Opt. | Opt. | | No | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | Opt. (2410) | No | Serial opt. | 40/80-col. electro. | 80-col. electro (204) |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | Opt. | Std. | Std. | Opt. | Opt. |
| Port for cust.-supplied devices | Opt. (1450) | Std. | Std. | No | No |
| Other vendor-supplied devices | — | Card reader | Tape, plotters | 144K mini cassette tape drive (VCS-200) | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Full (std.); half (opt.) | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | — | — | ASCII | — | — |
| Code | ASCII | ASCII | ASCII | ASCII, Baudot, TTS | ASCII |
| Speed, bits/second | 110-9600 | 50-9600 | 75-9600 | 45.5-4800 | 110-4800 |
| Format; character, line, or block | Char./line/blk (2410) | Char./line/block | Char./block | Char./block | Char./page |
| Multipoint operation (pollable/addr.) | No | No | No | No | No |
| Terminal interface | RS-232-C; TTL; 20mA | RS-232-C; TTL; 20mA | RS-232-C, 20mA | RS-232-C | RS-232-C; 20mA (opt. 204) |
| Integral modem | No | No | No | Opt. 212A | Opt. 212A |
| Integral acoustic coupler | No | No | No | Std. | Std. |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | 273 | — | — |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | Contact vendor | 2,395-2,990 | 5,200 | Contact vendor | Contact vendor |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | 7 | Contact vendor | Contact vendor |
| Date of announcement | 2/82 | — | 1977 | — | — |
| Date of first production delivery | Future | 6/77 | 1977 | — | — |
| Display units installed to date | — | 8000 | — | — | — |
| Serviced by | TEC | TEC | Tektronix | Telcon | Telcon |
| COMMENTS | | OEM quantities 25+-$1,680-$2,190. | Updated to 4025A in 1981 w/new features, 3X speed, 4027A color terminal also available. | | |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Telcon VCS-205/ VCS-206 | Telcon VCS-780 | Telcon Newsman 1 | Telcon Satellite 1 | Teleram 2277 Mark II |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Either |
| Maximum displays/controller | — | — | — | — | 1 |
| Transportability | Portable case | No | Portable case | Portable case | No |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | Std. | Std. | No | Std. | Std. |
| Other compatibility | DEC VT52/VT100 | DEC VT52/VT100 | — | DEC VT52/VT100 | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 1920 | 1920 | 1840 |
| Memory capacity, no. char./lines/pages | 144 lines (370 opt.) | 144 lines (370 opt.) | 2 10K-char. stories | 144 lines (370 opt.) | 84K/disk |
| Screen arrangement, lines x chars./line | 24 x 80 | 24 x 80 | 24 x 80, 20 x 70 | 24 x80 | 23 x 80 |
| Screen area, diagonal, inches | 7 | 12 | 7 | 7 | 12 |
| Tilt/swivel screen | No | No | No | No | No |
| Total displayable symbols | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII |
| Symbol formation | 5 x 8 dot matrix | 5 x 8 dot matrix | 5 x 9 dot matrix | 5 x 8 dot matrix | 7 x 9 dot matrix |
| Character phosphor | P31 green std. | P31 green std. | P31 green std. | P31 green std. | White |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | No | No | Std. | No | No |
| Blink | No | No | Std. | No | Std. |
| Blank | No | No | No | No | No |
| Bold | No | No | No | No | No |
| Reverse | No | No | Std. | No | No |
| Double size | No | No | No | No | No |
| Scroll | Up/down std. | Up/down std. | Up/down std. | Up/down std. | Up/down std. |
| Paging | 6 std.; 15 opt. | 6 std.; 15 opt. | No | 6 std.; 15 opt. | Full memory std. |
| Selectable cursor blinking | No | No | No | No | No |
| Addressable/readable cursor | No | Addressable only | No | Addressable only | No |
| Protected format | No | No | Std. | No | No |
| Partial screen transmit | No | Std. | No | Std. | No |
| Split screen/windows | No | No | No | No | No |
| Tabulation | Fwd. std. | No | No | No | Fwd./back std. |
| Character insert/delete | Std. | Std. | Std. | Std. | Std. |
| Line insert/delete | Std. | Std. | Std. | Std. | Std. |
| Erase | Word/paragraph/ screen std. | Word/paragraph/ screen std. | Line/partial or entire memory | Word/paragraph/ screen std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII, 64 TTS |
| Detachability | No | Std. | No | No | Std. |
| Program function keys | No | No | 6 | No | No |
| Numeric keypad | No | No | No | No | No |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | No | No |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | Opt. | Opt. | Opt. | Opt. | No |
| Port for cust.-supplied devices | No | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | 144K mini cassette tape drive (VCS-206) | 144K mini cassette tape drive | — | Built-in 160K floppy disk storage | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | — | — | — | — | — |
| Code | ASCII, Baúdot, TTS | ASCII, Baudot, TTS | ASCII | ASCII, Baudot, TTS | ASCII, TTS, Baudot |
| Speed, bits/second | 45.5-4800 | 45.5-4800 | 50-4800 | 45.5-4800 | 300/1200 |
| Format; character, line, or block | Char./block | Char./block | Block | Char./block | Char./block |
| Multipoint operation (pollable/addr.) | No | No | No | No | No |
| Terminal interface | RS-232-C, 20mA opt. | RS-232-C | RS-232-C | RS-232-C | RS-232-C |
| Integral modem | Opt. 212A | Opt. 212A | Opt. 212A | Opt. 212A | No |
| Integral acoustic coupler | Std. | No | Std. | Std. | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | — | — |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | Contact vendor | Contact vendor | Contact vendor | Contact vendor | 4,795 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | Contact vendor | Contact vendor | Contact vendor | Contact vendor | — |
| Date of announcement | — | — | 11/81 | 1/82 | — |
| Date of first production delivery | — | — | — | — | — |
| Display units installed to date | — | — | — | — | — |
| Serviced by | Telcon | Telcon | Telcon | Telcon | Teleram |
| COMMENTS | | Built-in 201C or 212A-type modems planned. | | | Floppy disk (8-inch) available for $720. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Teleram Portabubble 81/91 | Teleray Model 10 | Teleray Model 11 APL | Teleray Model 16 | Teleray Model 100 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Either | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | — | — | — | — |
| Transportability | Portable case | No | No | No | No |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | Std. | Std. | Std. | Std. | Std. |
| Other compatibility | — | DEC VT52, DG 6053, Microdata | — | — | DEC VT52/VT100/ VT132 |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 544, 816 | 1920 | 1920 | 1920 | 3168 |
| Memory capacity, no. char./lines/pages | 62K/13K (P91) | 1920 char. | 1920 char. | 7760 char. | 3168 char. |
| Screen arrangement, lines x chars./line | 16 x 34, 15 x 54 | 24 x 80, 24 x 40 | 24 x 80, 24 x 40 | 24 x 80, or user-defined | 24 x 40, 24 x 66, 24 x 80, 24 x 132 |
| Screen area, diagonal, inches | 5 | 12; 15 opt. | 12; 15 opt. | 12; 15 opt. | 12; 15 opt. |
| Tilt/swivel screen | No | Opt. | Opt. | Opt. | Opt. |
| Total displayable symbols | 128 ASCII | 128 ASCII | 128 ASCII/96 APL | 128 ASCII/64 graph. | 128 ASCII/32 graph. |
| Symbol formation | 7 x 9 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix | 5 x 9 dot matrix | 7 x 9 dot matrix |
| Character phosphor | White | White std.; green, amber opt. | White std.; green, amber opt. | White std.; green, amber opt. | White std.; green, amber opt. |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | No | Std. | Std. | Std. | Std., + overline |
| Blink | Std. | Std. | Std. | Std. | Std. |
| Blank | No | Std. | Std. | Std. | Std. |
| Bold | No | Dim std. | Dim std. | Dim std. | Std. |
| Reverse | No | Std. | Std. | Std. | Std. |
| Double size | No | No | No | No | Std. |
| Scroll | Up/down std. | Up/down std. | Up/down std. | Up/down/sm./hor. | Up/down/smooth |
| Paging | Full memory std. | No | No | 4 std., plus 4 opt. | No |
| Selectable cursor blinking | No | No | No | Std. | Std. |
| Addressable/readable cursor | No | Both std. | Both std. | Both std. | Both std. |
| Protected format | No | Std. | Std. | Std. | Std. |
| Partial screen transmit | No | Std. | Std. | Std. | Std. |
| Split screen/windows | No | No | No | Std. | Std. |
| Tabulation | Fwd./back std. | Fwd./back std. | Fwd./back std. | Fwd./back std. | Fwd./back std. |
| Character insert/delete | Std. | Std. | Std. | Std. | Std. |
| Line insert/delete | Std. | Std. | Std. | Std. | Std. |
| Erase | Char./line/screen std. | EOL/EOP/page std. | EOL/EOP/page std. | Char./line/screen/ memory std. | EOL/line/page/ EOP/memory std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 128 ASC.,'64 TTS/Bdt | 96 ASCII +32 ctrl. | 128 ASCII/96 APL | 96 ASCII +32 ctrl. | 128 ASCII +32 graph. |
| Detachability | No | Std. | Std. | Std. | Std. |
| Program function keys | No | 8 keys-32 functions | 8 keys-32 functions | 32/64 user-definable | 20 functions/ 880 char. |
| Numeric keypad | No | Std. | Std. | Std. + calc. mode | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | No | No |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | No | No | Opt. | Opt. |
| Port for cust.-supplied devices | — | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | — | — | — | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchonous | Asynchronous |
| Communications protocol | — | ASCII | ASCII | ASCII | ASCII |
| Code | ASCII, TTS, Baudot | ASCII | ASCII | ASCII/ANSI | ASCII/ANSI |
| Speed, bits/second | 50-9600 | Up to 9600 | Up to 9600 | Up to 19,200 | Up to 19,200 |
| Format; character, line, or block | Char./block | Char./line/block | Char./line/block | Char./line/block | Char./line/block |
| Multipoint operation (pollable/addr.) | No | No | No | No | No |
| Terminal interface | RS-232-C, acoustic coupler | RS-232-C; 20mA opt. | RS-232-C; 20mA opt. | RS-232-C; 20mA opt. | RS-232-C; 20mA opt. |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | Std. | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | 62-82 | 86-106 | Contact vendor | 92-112 |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 5,095/2,995 (P91) | 1,150-1,450 | 1,595-1,895 | 1,545 | 1,695-1,995 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | — | — |
| Date of announcement | — | — | — | 3/82 | — |
| Date of first production delivery | — | 9/78 | 7/79 | 4/82 | 12/80 |
| Display units installed to date | — | — | — | — | — |
| Serviced by | Teleram | Teleray | Teleray | Teleray | Teleray |
| COMMENTS | Weighs 12½ pounds; Portabubble 91 is identical to P81, but without bubble memory, for newspaper applications. | Available in six enclosure styles; includes 527-character function memory. | Available in three enclosure styles; includes 527-character function memory. | Additional 7680 char. memory opt.—volatile or non-volatile; user-definable logical line & page length; real-time clock read-out; alpha-only/numeric-only modes. | Four scrolling speeds: 5/10/15/ 20 lps. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Teletype 4420 | Teletype 4424 | Teletype 4430 | Teletype 4540 | Teletype 4543 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Cluster | Stand-alone |
| Maximum displays/controller | 1 | 1 | 1 | 32 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | No | 3270 BSC, SDLC | SDLC only |
| Teletype compatibility | Std. | Std. | Std. | No | No |
| Other compatibility | Teletype 40/1, 40/2 | DEC VT100 | Teletype 33, 35, 40/3 (multi-pt.) | — | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 1920 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | 5,760 char. | 3,840 char. | 5,760 char. | 1920 char. | 1920 char. |
| Screen arrangement, lines x chars./lines | 24 x 80 | 24 x 80 | 24 x 80 | 24 x80 | 24 x 80 |
| Screen area, diagonal, inches | 12 | 13 | 13 | 13 | 13 |
| Tilt/swivel screen | Tilt std. | Tilt std. | Tilt std. | Tilt std. | Tilt std. |
| Total displayable symbols | 128 ASCII | 96 ASCII +32 graph. | 128 ASCII | 97 ASCII/EBCDIC | 64 EBCDIC |
| Symbol formation | 7 x 9 dot matrix | 8 x 14 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix |
| Character phosphor | P4 white std. | P4 white std. | P4 white std. | P4 white std. | P4 white std. |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | Std. | Std. | No | No |
| Blink | Std. | Std. | Std. | Std. | Std. |
| Blank | No | No | No | Std. | Std. |
| Bold | No | Std. | No | No | No |
| Reverse | Std. | Std. | No | No | No |
| Double size | No | No | No | No | No |
| Scroll | Up/down std. | Up/down std. | Up/down std. | No | No |
| Paging | 3 std. | 2 std. | 3 std. | No | No |
| Selectable cursor blinking | No | Std. | No | No | No |
| Addressable/readable cursor | Both std. | Both std. | Addressable only | Both std. | Both std. |
| Protected format | Std. | No | Std. | Std. | Std. |
| Partial screen transmit | Std. | No | Std. | Std. | Std. |
| Split screen/windows | No | 1 std. | No | No | No |
| Tabulation | Fwd./back std. | Fwd./back std. | Fwd./back std. | Std. | Std. |
| Character insert/delete | Std. | Std. | Std. | Std. | Std. |
| Line insert/delete | Std. | Std. | Std. | Std. | Std. |
| Erase | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter, data entry | Typewriter, data entry |
| Character/code set | 128 ASCII | 128 ASCII | 128 ASCII | 96 ASCII/EBCDIC | 64 EBCDIC |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | 10 std. | 16 std. | 1 std. | 12 std. | 12/24 std. |
| Numeric keypad | Std. | Std. | Opt. | Opt. (typewr. keyb.) | Opt. (typewr. keyb.) |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | 30/340 cps impact | 30 cps impact | 30/340 cps impact | 30/340 cps impact | 30/340 cps impact |
| Line printer, type and speed | 300 lpm belt | 300 lpm belt | 300 lpm belt | 300 lpm belt | 300 lpm belt |
| Composite video | No | No | No | No | No |
| Port for cust.-supplied devices | Std. | Std. | Std. | No | No |
| Other vendor-supplied devices | — | — | Comm-Stor 2 | Mag card reader | Mag card reader |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Full-duplex | Half-duplex | Half-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Async./sync. | Synchronous | Synchronous |
| Communications protocol | — | ASCII | 8A1, 85A1 opt. | BSC, SDLC | SDLC |
| Code | ASCII | ASCII | ASCII | ASCII/EBCDIC | EBCDIC |
| Speed, bits/second | Up to 9600 | Up to 9600 | Up to 4800 | Up to 9600 | Up to 9600 |
| Format; character, line, or block | Char./line/blk/page | Character | Char./line/blk/page. | Block | Block |
| Multipoint operation (pollable/addr.) | No | No | Std. | Std. | Std. |
| Terminal interface | RS-232-C; 20/60 mA | RS-232-C; 20/60 mA | RS-232-C; 20/60 mA | RS-232-C | RS-232-C |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | Purchase only | Purchase only |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 4,105 | 4,207 | 4,985 | 1,952 | 4,745 |
| Controller, purchase, $ | Incl. | Incl. | Incl. | 6,682 (cluster-32) | Incl. |
| Monthly prime-shift maint., $/mo. | 19 | 19 | 19 | 30 (cluster) 19 (disp.) | 19 |
| Date of announcement | 11/80 | 1/82 | 6/81 | 3/79 | 5/81 |
| Date of first production delivery | 10/80 | 10/81 | 12/81 | 9/79 | — |
| Display units installed to date | — | — | — | — | — |
| Serviced by | Teletype | Teletype | Teletype | Teletype | Teletype |
| COMMENTS | 10 user-programmable function keys. | ANSI 3.64 std. escape sequences; compatible w/UNIX; line drawing set std., buffered printer port; 16 oper.-programmable function keys. | 2 send and 3 receive buffers share buffer pool of 16K, 32K opt.; aux. port accommodates model 43RO, Model 43RT set, and Model 40 printer. | Controllers for local connect or remote operation; local & remote self-diagnostics; also available from AT&T (Bell System) as Dataspeed 4540. | Also available from AT&T (Bell System) as Dataspeed 4540. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Teletype 40/4 | TeleVideo 910 | TeleVideo 910 Plus | TeleVideo 912/920 | TeleVideo 925 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 2 | 1 | 1 | 1 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | 3270 BSC | No | No | No | No |
| Teletype compatibility | No | Std. | Std. | Std. | Std. |
| Other compatibility | — | See comments | — | — | TeleVideo 912/920 |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 1920 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | 1920 char. | 80/24/1 | 80/24/1 | 80/24/2 | 80/24/2 |
| Screen arrangement, lines x chars./line | 24 x 80 | 24 x 80 | 24 x 80 | 24 x 80 | 24 x 80 |
| Screen area, diagonal, inches | 13 | 12 | 12 | 12 | 12 |
| Tilt/swivel screen | Tilt std. | Swivel std. | Swivel std. | Swivel std. | Std. |
| Total displayable symbols | 64 ASCII/EBCDIC | 128 ASCII | 128 ASCII | 96 ASCII | 128 ASCII |
| Symbol formation | 7 x 9 dot matrix | 6 x 7 dot matrix | 6 x 7 dot matrix | 6 x 7 dot matrix | 6 x 8 dot matrix |
| Character phosphor | P4 white std. | P31 green | P31 green | P31 green | P31 green |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | No | Std. | Std. | Std. | Std. |
| Blink | Std. | Std. | Std. | Std. | Std. |
| Blank | Std. | Std. | Std. | Std. | Std. |
| Bold | No | No | No | No | Std. |
| Reverse | No | Std. | Std. | Std. | Std. |
| Double size | No | No | No | No | No |
| Scroll | No | Up/down std. | Up/down std. | Up/down std. | Up/down std. |
| Paging | No | 1 std. | 1 std. | 2 opt. | 2 opt. |
| Selectable cursor blinking | No | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Both std. | Both std. |
| Protected format | Std. | No | Std. | Std. | Std. |
| Partial screen transmit | Std. | No | No | No | Std. |
| Split screen/windows | No | No | No | No | No |
| Tabulation | Std. | Fwd./back std. | Fwd./back std. | Fwd./back std. | Fwd./back std. |
| Character insert/delete | Std. | No | Std. | Std. | Std. |
| Line insert/delete | Std. | No | Std. | Std. | Std. |
| Erase | Char./line/screen std. | Line/screen std. | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter, data entry | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 96 ASCII/EBCDIC | 128 ASCII | 128 ASCII | 96 ASCII | 128 ASCII |
| Detachability | Std. | No | No | No | Std. |
| Program function keys | 12 std. | No | No | 22 (920 only) | 22 std. |
| Numeric keypad | Opt. (typewr. keyb.) | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | 30/340 cps impact | No | No | No | No |
| Line printer, type and speed | 300 lpm belt | No | No | No | No |
| Composite video | No | Opt. | Opt. | Opt. | Opt. |
| Port for cust.-supplied devices | No | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | Mag card reader | — | — | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Synchronous | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | BSC | — | — | — | — |
| Code | ASCII/EBCDIC | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | Up to 4800 | 50-19,200 | 50-19,200 | 75-9600 | 50-19,200 |
| Format; character, line, or block | Block | Character | Char./line/block | Char./line/block | Char./line/block |
| Multipoint operation (pollable/addr.) | Std. | No | No | No | No |
| Terminal interface | RS-232-C | RS-232-C; 20mA opt. | RS-232-C; 20mA opt. | RS-232-C; 20mA opt. | RS-232-C |
| Integral modem | No | Opt. | Opt. | Opt. | Opt. |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | Purchase only | Purchase only | Purchase only | Purchase only | Purchase only |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 4,785 | 699 | 699 | 925/995 | 995 |
| Controller, purchase, $ | Incl. | — | — | — | — |
| Monthly prime-shift maint., $/mo. | 19 | — | — | — | — |
| Date of announcement | 11/76 | 5/81 | 2/82 | 9/79 | 11/81 |
| Date of first production delivery | — | 5/81 | 2/82 | 9/79 | 11/81 |
| Display units installed to date | — | 10,000 | — | 40,000 | 10,000 |
| Serviced by | Teletype | GE Instr. & Comm. | GE Instr. & Comm. | GE Instr. & Comm. | GE Instr. & Comm. |
| COMMENTS | | Emulations include: ADDS Regent 25, Hazeltine 1410, & Lear Siegler ADM 3A/5. | | | |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | TeleVideo 950 | Telex 275 | Telex 276 | Telex 277 | Telex 278 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Both | Cluster | Cluster |
| Maximum displays/controller | 1 | 1 | 8 | 32 | 32 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | 3275 | 3276 BSC/SDLC | 3277 | 3278 BSC/SDLC |
| Teletype compatibility | Std. | No | No | No | No |
| Other compatibility | — | — | — | — | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 1920-3564 | 1920 | 1920-3564 |
| Memory capacity, no. char./lines/pages | 80/24/4 | — | — | — | — |
| Screen arrangement, lines x chars./line | 24 x 80 | 24 x 80 | 24 x80, 32 x 80, 43 x 80, 27 x 132 | 24 x 80 | 24 x 80, 32 x 80, 43 x 80, 27 x 132 |
| Screen area, diagonal, inches | 12 | 15 | 15 | 15 | 15 |
| Tilt/swivel screen | Std. | No | No | No | No |
| Total displayable symbols | 128 ASCII | 96 EBCDIC/ASCII | 96 EBCDIC/ASCII | 96 | 96 EBCDIC/ASCII |
| Symbol formation | 10 x 7 dot matrix | 7 x 9/7 x 8 dot matrix | 9 x 14 dot matrix | 7x9/7x8 dot matrix | 9 x 14 dot matrix |
| Character phosphor | P31 green | White std., green opt. | White std., green opt. | White std., green opt. | Green or White |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | No | No | No | No |
| Blink | Std. | No | No | No | No |
| Blank | Std. | No | No | No | No |
| Bold | Std. | No | No | No | No |
| Reverse | Std. | Std. | Std. | Std. | Std. |
| Double size | No | No | No | No | No |
| Scroll | Up/down std. | No | No | No | No |
| Paging | 4 opt. | No | No | No | No |
| Selectable cursor blinking | Std. | No | Std. | No | Std. |
| Addressable/readable cursor | Both std. | Both std. | Both std. | Std. | Both std. |
| Protected format | Std. | Std. | Std. | Std. | Std. |
| Partial screen transmit | Std. | Std. | Std. | Std. | Std. |
| Split screen/windows | No | No | No | No | No |
| Tabulation | Fwd./back std. | Fwd./back std. | Fwd./back std. | Std. | Fwd./back std. |
| Character insert/delete | Std. | Std. | Std. | Std. | Std. |
| Line insert/delete | Std. | No | No | Std. | No |
| Erase | Char./line/screen std. | Char./line/screen std. | Char./screen std. | Char./line/screen std. | Char./screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter, data entry | Typewriter, data entry | Typewriter, data entry | Typewriter, data entry |
| Character/code set | 128 ASCII | ASCII/EBCDIC | 64 ASCII/EBCDIC | ASCII/EBCDIC | 64 ASCII/96 EBCDIC |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | 22 std. | Opt. | 24 opt. | Opt. | 24 opt. |
| Numeric keypad | Std. | Std. | Opt. | Std. | Opt. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | Std. | Std. | Std. | Std. |
| Line printer, type and speed | No | — | — | Std. | No |
| Composite video | Opt. | No | No | No | No |
| Port for cust.-supplied devices | Std. | Std. | Std. | Std. | Std. |
| Other vendor-supplied devices | — | Audible alarm, light pen, mag. stripe reader opt. | Security lock, audible alarm, light pen | Audible alarm, light pen, mag. stripe reader opt. | Security lock, audible alarm, light pen |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half-duplex | Half-duplex | Half-duplex | Half-duplex |
| Technique | Asynchronous | Synchronous | Synchronous | Synchronous | Synchronous |
| Communications protocol | — | BSC/SDLC | BSC/SDLC | BSC/SDLC | BSC/SDLC |
| Code | ASCII | ASCII/EBCDIC | ASCII/EBCDIC | ASCII/EBCDIC | ASCII/EBCDIC |
| Speed, bits/second | 50-19,200 | 1200-4800 | 2400-9600 | 2400-9600 | 2400-9600 |
| Format; character, line, or block | Char./line/block | Block | Block | Block | Block |
| Multipoint operation (pollable/addr.) | No | Std. | Std. | Std. | Std. |
| Terminal interface | RS-232-C | RS-232-C | RS-232-C | RS-232-C | RS-232-C |
| Integral modem | Opt. | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | Purchase only | 121 | 184 | 64 | 55-82 |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 1,195 | 3,800 | 5,300 | 1,590 | 2,100-2,800 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | 26 | 24 | 26 | 7-10 |
| Date of announcement | 2/81 | 1/74 | 6/79 | 1/74 | 6/79 |
| Date of first production delivery | 2/81 | 9/74 | 8/79 | 3/74 | 8/79 |
| Display units installed to date | 40,000 | — | — | — | — |
| Serviced by | GE Instr. & Comm. | Telex Service Co. | Telex Service Co. | Telex Service Co. | Telex Service Co. |
| COMMENTS | | | | | |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Telex 279 | Telex 310 | Telex 178 | Termiflex HT/2 | Termiflex HT/3-HT/4 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Cluster | Stand-alone | Cluster | Stand-alone | Stand-alone |
| Maximum displays/controller | 32 | 1 | 32 | — | — |
| Transportability | No | No | No | Hand-held | Hand-held |
| IBM compatibility | 3279 | 3101 | 3278 BSC/SDLC | — | — |
| Teletype compatibility | No | Std. | No | Opt. | Opt. |
| Other compatibility | — | See comments | — | Opt. | Opt. |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 1920 | 20 | 12 (HT/3); 24 (HT/4) |
| Memory capacity, no. char./lines/pages | — | — | — | 1000 | 12/24 |
| Screen arrangement, lines x chars./line | 24 x 80 | 24 x 80 plus status line | 24 x 80 | 2 x 10 | 1 x 12/2 x 12 |
| Screen area, diagonal, inches | 15 | 15 | 12 | — | — |
| Tilt/swivel screen | No | — | No | — | — |
| Total displayable symbols | 96 EBCDIC/ASCII | 128 | 96 | 96/128 selectable | 96 |
| Symbol formation | 9 x 14 dot matrix | 7 x 11 dot matrix | — | 5 x 7 dot matrix | 5 x 7 dot matrix |
| Character phosphor | — | White std., green opt. | Green or white | Red LED | Red LED |
| Color capability | Red, green, blue, wh. | No | No | — | — |
| Programmable field/char. highlighting via: | | | | | |
| Underline | No | Std. | No | No | No |
| Blink | No | Std. | No | No | No |
| Blank | No | Std. | No | No | No |
| Bold | No | Std. | No | No | No |
| Reverse | Std. | Std. | Std. | No | No |
| Double size | No | No | No | No | No |
| Scroll | No | Up std. | No | Up/down std. | No |
| Paging | No | Opt. | No | No | No |
| Selectable cursor blinking | Std. | Std. | Std. | No | No |
| Addressable/readable cursor | Both std. | Std. | Both std. | Opt. | No |
| Protected format | Std. | Opt. | Std. | No | No |
| Partial screen transmit | Std. | Opt. | Std. | No | No |
| Split screen/windows | No | No | No | No | No |
| Tabulation | Fwd./back std. | Std./Prog. tabs | Fwd./back std. | No | No |
| Character insert/delete | Std. | Opt. | Std. | Via backspace | No |
| Line insert/delete | No | Opt. | No | No | No |
| Erase | Char./screen std. | Std. | Char./screen std. | No | No |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter, data entry | Typewriter | Typewriter, data entry | 20 keys + 3 shift | 20 keys + 3 shift |
| Character/code set | ASCII/EBCDIC | 128 ASCII | 64 ASCII/96 EBCDIC | 128 ASCII | 128 ASCII |
| Detachability | STd. | Std. | Std. | No | No |
| Program function keys | Opt. | 8 std. | Opt. | No | No |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | Std. | STd. | No | No | No |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | No | No | No | No |
| Port for cust.-supplied devices | Std. | Std. | Std. | No | No |
| Other vendor-supplied devices | Security lock, audible alarm, light pen | Audible alarm | — | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half-duplex | Half/full-duplex | Half-duplex | Half/full-duplex | Full std./half opt. |
| Technique | Synchronous | Asynchronous | Synchronous | Asynchronous | Asynchronous |
| Communications protocol | BSC/SDLC | ASCII | BSC/SDLC | Bit serial | Bit serial |
| Code | ASCII/EBCDIC | ASCII | ASCII/EBCDIC | ASCII | ASCII |
| Speed, bits/second | 2400-9600 | 50-19,200 | 2400-9600 | 110-1200 (2400 opt.) | 110-1200 (2400 opt.) |
| Format; character, line, or block | Block | Char./block | Block | Character | Character |
| Multipoint operation (pollable/addr.) | Std. | No | Std. | Opt. | Opt. |
| Terminal interface | RS-232-C | RS-232-C, 20mA, RS-422 | RS-232-C | RS-232-C, TTL, 20 mA | RS-232-C, TTL, 20 mA |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | — | | | | |
| Display station, 2-year lease, $/mo. | | Purchase only | Contact vendor | — | — |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 3,500 | 1,250-1,400 | Contact vendor | 2,495 | 795(HT/3)/1,195(HT/4) |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | Contact vendor | — | — |
| Date of announcement | 1/82 | 2/80 | 2/82 | — | — |
| Date of first production delivery | 1st Q. 1982 | 5/80 | — | — | — |
| Display units installed to date | — | — | — | — | — |
| Serviced by | Telex Service Co. | Telex Service Co. | Telex Service Co. | Factory | Factory |
| COMMENTS | | Custom options & other compatibility available on custom quote. User set-up & control options are selected from keyboard & stored in non-volatile storage. | Small screen & cabinet version of the 278. | Quantity discounts available | Quantity discounts available |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Termiflex HT/5 | Termiflex HT/6-HT/7-HT/8 | Termiflex HT/10 | Termiflex HT/11 | Termiflex HT/12 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | — | — | — | — | — |
| Transportability | Hand-held | Hand-held | Hand-held | Hand-held | Hand-held |
| IBM compatibility | — | — | — | — | — |
| Teletype compatibility | No | Opt. | Opt. | Opt. | Opt. |
| Other compatibility | Opt. | Opt. | Opt. | Opt. | Opt. |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 12 status lamps | 20 (6)/40 (7)/80 (8) | 12 | 16 | 32 |
| Memory capacity, no. char./lines/pages | — | 940/960/1000 | 12; 84 opt. | 16; 80 opt. | 32; 80 opt. |
| Screen arrangement, lines x chars./line | 2 x 6 status lamps | 1/2/4 x 20 | 1 x 12 | 1 x 16 | 2 x 16 |
| Screen area, diagonal, inches | — | — | — | — | — |
| Tilt/swivel screen | — | — | — | — | — |
| Total displayable symbols | — | 96/128 selectable | 96; 128 opt. | 96; 128 opt. | 96; 128 opt. |
| Symbol formation | — | 5 x 7 dot matrix | 16 ele. starburst | 18 ele. starburst | 18 ele. starburst |
| Character phosphor | Red LED | Red LED | Red LED | Red LED | Red LED |
| Color capability | — | — | — | — | — |
| Programmable field/char. highlighting via: | | | | | |
| Underline | — | No | No | No | No |
| Blink | — | No | Std. | Opt. | Opt. |
| Blank | — | No | No | No | No |
| Bold | — | No | No | No | No |
| Reverse | — | No | No | No | No |
| Double size | — | No | No | No | No |
| Scroll | — | Up/down std. | Up/down opt. | Up/down opt. | Up/down opt. |
| Paging | — | No | No | No | No |
| Selectable cursor blinking | — | No | No | No | No |
| Addressable/readable cursor | — | Opt. | No | No | No |
| Protected format | — | No | No | No | No |
| Partial screen transmit | — | No | No | No | No |
| Split screen/windows | — | No | No | No | No |
| Tabulation | — | No | No | No | No |
| Character insert/delete | — | Via backspace | Via backspace | Via backspace | Via backspace |
| Line insert/delete | — | No | No | No | No |
| Erase | — | No | No | No | No |
| KEYBOARD PARAMETERS | | | | | |
| Style | 20 keys + 3 shift | 20 keys + 3 shift | 20 keys + 3 shift | 20 keys +3 shift | 20 keys +3 shift |
| Character/code set | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII |
| Detachability | No | No | No | No | No |
| Program function keys | No | No | No | No | No |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | No | No |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | No | No | No | No |
| Port for cust.-supplied devices | No | No | No | No | No |
| Other vendor-supplied devices | — | — | — | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Full std./half opt. | Half/full-duplex | Full std.; half opt. | Full std.; half opt. | Full std.; half opt. |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | Bit serial | Bit serial | Bit serial | Bit serial | Bit serial |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 110-1200 (2400 opt.) | 110-1200 (2400 opt.) | 300/1200 std. (9600) | 300/1200 std. (9600) | 300/1200 std. (9600) |
| Format; character, line, or block | Character | Character | Character | Character | Character |
| Multipoint operation (pollable/addr.) | Opt. | Opt. | Opt. | Opt. | Opt. |
| Terminal interface | RS-232-C, TTL, 20 mA | RS-232-C, TTL, 20 mA | RS-232-C, TTL, 20mA, RS-422 | RS-232-C, TTL, 20mA, RS-422 | RS-232-C, TTL, 20mA, RS-422 |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | — | — |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 495 | See Comments | 495 | 745 | 995 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | — | — |
| Date of announcement | — | — | — | — | — |
| Date of first production delivery | — | — | — | — | — |
| Display units installed to date | — | — | — | — | — |
| Serviced by | Factory | Factory | Factory | Factory | Factory |
| COMMENTS | Quantity discounts available | Purchase prices: HT/6—$1,795; HT/7—$7,595; HT/8—$3,995; Quantity discounts available | Quantity discounts available. | Quantity discounts available. | Quantity discounts available. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Termiflex HT/20 | Termiflex CD/20 | Texas Instruments 911 | Texas Instruments 915 | Texas Instruments 940 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Both | Both | Stand-alone |
| Maximum displays/controller | — | — | 1 | 1-8 | — |
| Transportability | Hand-held/panel | Hand-held/panel | No | No | No |
| IBM compatibility | — | — | No | No | No |
| Teletype compatibility | Opt. | Opt. | No | No | Std. |
| Other compatibility | Opt. | Opt. | — | — | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 16 | 16 | 1920 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | 16 | 16 | 1 page (cont.) | 1 page (cont.) | 1 page std., 4 opt. |
| Screen arrangement, lines x chars./line | 1 x 16 | 1 x 16 | 24 x 80 | 24 x 80 | 24 x80, 11 x 132 |
| Screen area, diagonal, inches | — | — | 12 | 12 | 12 |
| Tilt/swivel screen | — | — | No | No | Opt. |
| Total displayable symbols | 96 | 96 | 128 | 128 | 128 std.; 320 opt. |
| Symbol formation | 18 ele. starburst | 18 ele. starburst | 5 x 7 dot matrix | 5 x 7 dot matrix | 7 x 9 dot matrix |
| Character phosphor | Red LED | Red LED | Green | Green | White |
| Color capability | — | — | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | No | No | No | No | Std. (prog.) |
| Blink | Opt. | Opt. | No | No | Std., (prog.) |
| Blank | No | No | No | No | Std. (prog.) |
| Bold | No | No | No | No | Std. (prog.) |
| Reverse | No | No | No | No | Std. |
| Double size | No | No | No | No | Std. |
| Scroll | No | No | Std. (prog.) | Std. (prog.) | Std. |
| Paging | No | No | No | No | Std. |
| Selectable cursor blinking | No | No | No | No | Std. |
| Addressable/readable cursor | No | No | Std. | Std. | Both std. |
| Protected format | No | No | Std. | Std. | Std. |
| Partial screen transmit | No | No | No | No | Std. |
| Split screen/windows | No | No | No | No | 12 opt. |
| Tabulation | No | No | Std. | Std. | Fwd./back std. |
| Character insert/delete | Via backspace | Via backspace | Std. | Std. | Std. |
| Line insert/delete | No | No | Std. | Std. | Std. |
| Erase | No | o | Std. | Std. | Char./line/field/ screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | 20 keys +3 shift | 24 keys | Typewriter | Typewriter | Typewriter |
| Character/code set | 128 ASCII | 24 ASCII | 128 ASCII | 128 ASCII | ASCII |
| Detachability | No | No | Std. | No | Std. |
| Program function keys | No | No | 8 std. | 8 std. | 12 std. (24 functions) |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | EIA Port | EIA Device |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | No | Std. | No | No |
| Port for cust.-supplied devices | No | No | No | No | Std. |
| Other vendor-supplied devices | — | — | — | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Full, half opt. | Full, half opt. | Full-duplex | Full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Synchronous | Asynchronous |
| Communications protocol | Bit serial | Bit serial | Non-std. | BSC | TTY |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 300/1200/9600 | 300/1200/9600 | 6 MHz | 9600 | 110-19,200 |
| Format; character, line, or block | Character | Character | Character | Block | Char./blk/field |
| Multipoint operation (pollable/addr.) | Opt. | Opt. | No | No | No |
| Terminal interface | RS-232-C, TTL, 20mA, RS-422 | RS-232-C, TTL, 20mA, RS-422 | Non-std. | Non-std. sync. | RS-232-C std.; 20mA, RS-422 opt. |
| Integral modem | No | No | No | Std. | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | — | 155 (see comments) |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 495 | 495 | 2,400 | 3,500 | 1,895 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | 20 | 53 | 34 |
| Date of announcement | — | — | 1975 | 1979 | 1981 |
| Date of first production delivery | — | — | 4th Q/75 | 8/79 | 6/81 |
| Display units installed to date | — | — | — | — | — |
| Serviced by | Factory | Factory | Texas Instruments | Texas Instruments. | Texas Instruments. |
| COMMENTS | Quantity discounts available. | Quantity discounts available. | | | All leased units include 3 pages additional memory, special character sets; screen can be split into 12 regions, vertical & horizontal divisions. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Texas Instruments Series 10 | Visual 100 | Visual 110 | Visual 200 | Visual 300 |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | — | — | — | — | — |
| Transportability | Personal info. term. | No | No | No | No |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | No | Std. | Std. | Std. | Std. |
| Other compatibility | — | DEC VT100/VT52 | Data General D200/D300/6053 | See comments | ANSI X3.64 |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 960 | 1920 | 1920 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | 960 char. | 1 page | 1 page | 1 page | 8 pages |
| Screen arrangement, lines x chars./line | 24 x 40 | 24 x 80, 24 x 132 | 24 x 80, 24 x 132 | 24 x 80 | 24 x 80 plus status line |
| Screen area, diagonal, inches | 5.5 | 12; 14 opt. | 12; 14 opt. | 12; 14 opt. | 12; 14 opt. |
| Tilt/swivel screen | Std. | Std. | Std. | Std. | Std. |
| Total displayable symbols | 69 | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII +64 grph. |
| Symbol formation | 5 x 9 dot matrix | 7 x 7 dot matrix | 7 x 7 dot matrix | 7 x 7 dot matrix | 7 x 9 dot matrix |
| Character phosphor | P4 white std. | P4 white std.; P31 green opt. | P4 white std., P31 green opt. | P4 white std., P31 green opt. | P4 white std., P31 green opt. |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | No | Std. | Std. | No | Std. |
| Blink | No | Std. | Std. | Std. | Std. |
| Blank | No | Std. | Std. | Std. | Std. |
| Bold | No | Std. | Std. | Std. | Std. |
| Reverse | No | Std. | Std. | No | Std. |
| Double size | No | Std. | Std. | No | No |
| Scroll | Up std. | Up/down/smooth | Up/down/smooth | Up/down/smooth | Up/down/smooth |
| Paging | No | No | No | No | 1 std., 8 opt. |
| Selectable cursor blinking | No | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | No | Std. | Std. | Std. | Both std. |
| Protected format | No | No | No | Opt. | Std. |
| Partial screen transmit | No | No | No | Opt. | Std. |
| Split screen/windows | No | Std. | Std. | No | Std. |
| Tabulation | No | Fwd./back std. | Fwd./back std. | Fwd./back std. | Fwd./back std. |
| Character insert/delete | No | No | No | Std. | Std. |
| Line insert/delete | No | No | No | Std. | Std. |
| Erase | Screen std. | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. | Std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | ASCII | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII |
| Detachability | No | Std. | Std. | Std. | Std. |
| Program function keys | 8 std. | 4 std. | 16 std. | 12 opt. | 12 std. |
| Numeric keypad | No | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | No | No | No | No |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | No | Std. | Std. | Std. | No |
| Port for cust.-supplied devices | No | Std. | Std. | Std. | Opt. |
| Other vendor-supplied devices | — | — | — | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | — | ANSI | ANSI | ANSI | ANSI X3.64 |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 300 | 50-19,200 | 50-19,200 | 110-19,200 | 50-19,200 |
| Format; character, line, or block | Character | Character | Character | Char. std.; blk. opt. | Char./line/block |
| Multipoint operation (pollable/addr.) | No | No | No | No | No |
| Terminal interface | RS-232-C, RJ11 phone | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C, 20mA |
| Integral modem | Std. (Bell 103) | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | — | — |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 695 | 1,695 | 1,395 | 1,205 | 1,150 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | — | — |
| Date of announcement | 3/81 | — | — | — | — |
| Date of first production delivery | 3/81 | 12/80 | 6/81 | 4/79 | 9/81 |
| Display units installed to date | — | — | — | — | — |
| Serviced by | Texas Instruments | Sorbus | Sorbus | Sorbus | Sorbus |
| COMMENTS | Optional command module is PROM module with capacity of 8 functions, each function is keyboard addressable. | ANSI X3.64 compliant. | ANSI X3.64 compliant. | Emulations include: ADDS 520, DEC VT52, Lear Siegler ADM 3A. | Block graphic & 16 line drawing character set std.; menu-style setup. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Visual 400 | Volker-Craig VC404 | Volker-Craig VC4152 | Volker-Craig VC414H | Volker-Craig VC415APL |
|---|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | — | 1 | 1 | 1 | 1 |
| Transportability | No | No | No | No | No |
| IBM compatibility | No | No | No | No | No |
| Teletype compatibility | Std. | Std. | Std. | Std. | Std. |
| Other compatibility | DEC VT100/VT132 | No | DEC VT52 | Hazeltine 1510 | — |
| DISPLAY PARAMETERS | | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 1920 | 1920 | 1920 |
| Memory capacity, no. char./lines/pages | 4 pages | 1920 char. | 1920 char. | 1920 char. | 1920 char. |
| Screen arrangement, lines x chars./line | 24 x 80, 24 x 132 | 24 x 80 | 24 x 80 | 24 x 80 | 24 x 80 |
| Screen area, diagonal, inches | 12; 14 opt. | 12 | 12 | 12 | 12 |
| Tilt/swivel screen | Std. | No | No | No | No |
| Total displayable symbols | 128 ASCII +64 graph. | 128 ASCII | 128 ASCII | 128 ASCII | 128 ASCII |
| Symbol formation | 7 x 7 dot matrix | 5 x 7 dot matrix | 5 x 7 dot matrix | 5 x 7 dot matrix | 5 x 7 dot matrix |
| Character phosphor | P4 white std.; P31 green opt. | P4 white std.; P31 green or amber opt. | P4 white std.; P31 green or amber opt. | P4 white std.; P31 green or amber opt. | P4 white std.; P31 green or amber opt. |
| Color capability | No | No | No | No | No |
| Programmable field/char. highlighting via: | | | | | |
| Underline | Std. | No | No | Std. | Std. (overstrike) |
| Blink | Std. | No | No | Std. | No |
| Blank | Std. | No | No | No | No |
| Bold | Std. | No | No | Dim | No |
| Reverse | Std. | No | No | Std. | No |
| Double size | Std. | No | No | No | No |
| Scroll | Up/down/smooth | Up std. | Up/down std. | Up std. | Up std. |
| Paging | 1 std., 4 opt. | No | No | No | No |
| Selectable cursor blinking | Std. | Std. | Std. | Std. | Std. |
| Addressable/readable cursor | Both std. | Addressable only | Addressable only | Both std. | Addressable only |
| Protected format | Std. | No | No | Std. | No |
| Partial screen transmit | Std. | No | No | Std. | No |
| Split screen/windows | Std. | No | No | No | 2 std. |
| Tabulation | Fwd./back std. | No | Fwd. std. | Fwd./back std. | No |
| Character insert/delete | Std. | No | No | Std. | Std. |
| Line insert/delete | Std. | No | No | Std. | Std. |
| Erase | Std. | Line/screen std. | Screen std. | Char./line/screen std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 128 ASCII | 96 ASCII | 96 ASCII | 96 ASCII | 96 ASCII |
| Detachability | Std. | Std. | Std. | Std. | Std. |
| Program function keys | 12 std. | 12 std. | 10 std. | 8 std. | 12 std. |
| Numeric keypad | Std. | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | | |
| Serial printer, type and speed | No | 120 cps | 120 cps | 120 cps | 120 cps |
| Line printer, type and speed | No | No | No | No | No |
| Composite video | Std. | Opt. | Opt. | Opt. | Opt. |
| Port for cust.-supplied devices | Opt. | Opt. | Opt. | Opt. | Opt. |
| Other vendor-supplied devices | — | — | — | — | — |
| TRANSMISSION PARAMETERS | | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | ANSI X3.64 | ASCII | ASCII | ASCII | ASCII |
| Code | ASCII | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 50-19,200 | 110-19,200 | 110-9600 | 110-9600 | 110-9600 |
| Format; character, line, or block | Char./line/block | Character | Character | Char./line/block | Char./line |
| Multipoint operation (pollable/addr.) | No | No | No | No | No |
| Terminal interface | RS-232-C, 20mA | RS-232-C std.; 20mA opt. | RS-232-C std.; 20mA opt. | RS-232-C std.; 20 mA opt. | RS-232-C std.; 20mA opt. |
| Integral modem | No | No | No | No | No |
| Integral acoustic coupler | No | No | No | No | No |
| PRICING AND AVAILABILITY | | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | — | — |
| Controller, 2-year lease, $/mo. | — | — | — | — | — |
| Display station, purchase, $ | 1,650 | 895 | 1,095 | 1,095 | 1,295 |
| Controller, purchase, $ | — | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | — | — |
| Date of announcement | — | — | — | — | — |
| Date of first production delivery | 6/81 | 2/78 | 10/78 | 8/78 | 3/79 |
| Display units installed to date | — | — | — | — | — |
| Serviced by | Sorbus | Third party | Third party | Third party | Third party |
| COMMENTS | ANSI X3.64 compliant. | | | | |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Volker-Craig VC4404 | Volker-Craig VC2100 | Volker-Craig VC3100 | Western Union Video 100 |
|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | |
| Stand-alone or cluster | Stand-alone | Stand-alone | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 1 | 1 | 1 |
| Transportability | No | No | No | No |
| IBM compatibility | No | No | No | No |
| Teletype compatibility | Std. | Std. | Std. | Std. |
| Other compatibility | Lear Siegler ADM 3A & VC404 | DEC VT100 | ANSI | — |
| DISPLAY PARAMETERS | | | | |
| Display capacity, no. of chars. | 1920 | 1920 | 1920 | 960, 1920 |
| Memory capacity, no. char./lines/pages | 1920 char. | 2 pages | 1 page std.; to 8 opt. | — |
| Screen arrangement, lines x chars./lines | 24 x 80 | 24 x 80, 24 x 132 | 24 x 80 | 12 x 80, 24 x 80 |
| Screen area, diagonal, inches | 12 | 12 | 12 | 12 |
| Tilt/swivel screen | No | No | No | No |
| Total displayable symbols | 128 ASCII | 128 ASCII + 32 grph. | 128 ASCII + 16 grph. | 64; 95 opt. |
| Symbol formation | 7 x 9 dot matrix | 7 x 9 dot matrix | 7 x 9 dot matrix | 5 x 7 dot matrix |
| Character phosphor | P4 white std., P31 green or amber std. | P4 wh. sd.; P31 grn. or amber opt. | P4 wh. std.; P31 grn. or amber opt. | P4 white std. |
| Color capability | No | No | No | No |
| Programmable field/char. highlighting via: | | | | |
| Underline | No | Std. | Std. | Std. |
| Blink | No | Std. | Std. | No |
| Blank | No | Std. | Std. | No |
| Bold | Dim | Std. | Std. | No |
| Reverse | No | Std. | Std. | No |
| Double size | No | Std. | Std. | No |
| Scroll | Up std. | Up/down std. | Up/down std. | Up std. |
| Paging | No | 2 pages std. | 2/4/6/8 opt. | No |
| Selectable cursor blinking | Std. | Std. | Std. | No |
| Addressable/readable cursor | Addressable only | Both std. | Both std. | Addressable opt. |
| Protected format | No | No | Std. | No |
| Partial screen transmit | No | No | Std. | No |
| Split screen/windows | No | 3 std. | 3 std. | No |
| Tabulation | No | Fwd./back std. | Fwd./back std. | No |
| Character insert/delete | No | No | Std. | No |
| Line insert/delete | No | No | Std. | No |
| Erase | Line/screen std. | Line/screen std. | Char./line/screen std. | No |
| KEYBOARD PARAMETERS | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 96 ASCII | 96 ASCII | 96 ASCII | 64 ASCII |
| Detachability | Std. | Std. | Std. | No |
| Program function keys | 10 std. | 4 std. & 8 user string | 16 user string | No |
| Numeric keypad | Std. | Std. | Std. | Opt. |
| ANCILLARY DEVICES | | | | |
| Serial printer, type and speed | 120 cps | 120 cps | 120 cps | 10/30/120 impact |
| Line printer, type and speed | No | No | No | No |
| Composite video | Opt. | Opt. | Opt. | No |
| Port for cust.-supplied devices | Std. | Opt. | Opt. | Std. |
| Other vendor-supplied devices | — | — | — | Cassette tape drive |
| TRANSMISSION PARAMETERS | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half/full-duplex | Half/full-duplex |
| Technique | Asynchronous | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | ASCII | ASCII | ASCII | ASCII |
| Code | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 50-19,200 | 50-19,200 | 50-19,200 | 110-19,200 |
| Format; character, line, or block | Character | Character | Char./line/block | Character |
| Multipoint operation (pollable/addr.) | No | No | No | No |
| Terminal interface | RS-232-C std.; 20mA opt. | RS-232-C std.; 20mA opt. | RS-232-C std.; 20mA opt. | RS-232-C |
| Integral modem | No | No | No | No |
| Integral acoustic coupler | No | No | No | No |
| PRICING AND AVAILABILITY | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | 53 |
| Controller, 2-year lease, $/mo. | — | — | — | — |
| Display station, purchase, $ | 695 | 1,740 | Contact vendor | 395-450 |
| Controller, purchase, $ | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | — | — | 15 |
| Date of announcement | — | — | — | 8/75 |
| Date of first production delivery | 6/81 | 2/81 | 9/81 | 12/75 |
| Display units installed to date | — | — | — | 7500 |
| Serviced by | Third party | Third party | Third party | Western Union |
| COMMENTS | | | | Built by Lear Siegler as ADM 3/3A; quantity discounts available. |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Westinghouse Canada Model W1625 | Westinghouse Canada Model W1640 | Westinghouse Canada Model W1642 | Wyse WY-100 |
|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | |
| Stand-alone or cluster | Either | Either | Either | Stand-alone |
| Maximum displays/controller | 48 | 48 | 48 | 1 |
| Transportability | No | No | No | No |
| IBM compatibility | IPARS | No | IPARS | No |
| Teletype compatibility | Opt. | No | Opt. | Std. |
| Other compatibility | Honeywell VIP7700, Uniscope 100/200 opt. | Honeywell VIP 7700, Uniscope 100/200 opt. | Univac UTS 20, Uniscope 100 | — |
| DISPLAY PARAMETERS | | | | |
| Display capacity, no. of chars. | 1920 | 1920; 2000 opt. | 2000 | 1920 |
| Memory capacity, no. char./lines/pages | 80/24/1; 3/5 pp. opt. | 80/25/1; multi opt. | 80/25/1; multi opt. | 1 page std.; 2 opt. |
| Screen arrangement, lines x chars./line | 24 x 80 | 24 x 80 plus status line | 24 x80 plus status line | 24 x 80 plus 2 status lines |
| Screen area, diagonal, inches | 12 | 12 | 12 | 12 |
| Tilt/swivel screen | Opt. | Opt. | Opt. | Std. |
| Total displayable symbols | 126 ASCII; 254 opt. | 94 ASCII + opt. | 94 ASCII + opt. | 128 ASCII |
| Symbol formation | 5 x 7 dot matrix | 5 x 7/7 x 9 dot | 5 x 7/7 x 9 dot | 8 x 10 dot matrix |
| Character phosphor | P31 green std. | P31 green std. | P31 green std. | Green |
| Color capability | No | No | No | No |
| Programmable field/char. highlighting via: | | | | |
| Underline | Field std. | Field std. | Field std. | Std. |
| Blink | Field std. | Field std. | Field std. | Std. |
| Blank | Field opt. | Field std. | Field std. | Std. |
| Bold | Std. | Std. | Std. | No |
| Reverse | Field opt. | Opt. | Field opt. | Std. |
| Double size | No | No | No | No |
| Scroll | Up/down std. | Opt. | Opt. | Std. |
| Paging | 1st; 3/5 opt. | Opt. | Opt. | Std. |
| Selectable cursor blinking | No | Opt. | Opt. | Std. |
| Addressable/readable cursor | Both std. | Add. std.; Read opt. | Add. std.; Read opt. | Addressable only |
| Protected format | Std. | Std. | Opt. | Std. |
| Partial screen transmit | Std. | Std. | Std. | Std. |
| Split screen/windows | 2 opt. | 2 opt. | Opt. | Std. |
| Tabulation | Fwd./back std. | Fwd./back std. | Fwd./back std. | Std. |
| Character insert/delete | Std. | Std. | Std. | Std. |
| Line insert/delete | Std. | Std. | Std. | Std. |
| Erase | Char./line/screen std. | Char./line/screen std. | Cahr./line/screen std. | Line/page/field std. |
| KEYBOARD PARAMETERS | | | | |
| Style | Typewriter | Typewriter | Typewriter | Typewriter |
| Character/code set | 126 ASCII | 94 ASCII | 94 ASCII | ASCII |
| Detachability | Std. | Std. | Std. | Std. |
| Program function keys | 7 std.; up to 19 opt. | 7 std.; up to 19 opt. | Up to 32 user-defined | 8 std. |
| Numeric keypad | Std. | Std. | Opt. | Std. |
| ANCILLARY DEVICES | | | | |
| Serial printer, type and speed | 30-60 cps impact | 30-60 cps impact | 30-60 cps impact | No |
| Line printer, type and speed | No | No | No | No |
| Composite video | Opt. | No | No | No |
| Port for cust.-supplied devices | Std.; Aux. opt. | Std. | Std. | Std. |
| Other vendor-supplied devices | — | — | Credit card reader, embedded numeric pad w/ calculator functions | — |
| TRANSMISSION PARAMETERS | | | | |
| Mode | Half/full-duplex | Half/full-duplex | Half std.; full opt. | Half/full-duplex |
| Technique | Async./sync. | Synchronous | Async./sync. | Asynchronous |
| Communications protocol | Various opt. | Honeywell, Univac opt. | Various opt. | ASCII/TTY |
| Code | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | 50-9600 | Up to 9600 | Up to 9600 | 50-9600 |
| Format; character, line, or block | Blk. std.; char./line opt. | Block | Block | Char./block |
| Multipoint operation (pollable/addr.) | Std. | Std. | Std. | No |
| Terminal interface | RS-232-C; 20mA, party line opt. | RS-232-C; party line opt. | Party line; RS-232-C opt. | RS-232-C std., 20mA opt. |
| Integral modem | No | No | No | No |
| Integral acoustic coupler | No | No | No | No |
| PRICING AND AVAILABILITY | | | | |
| Display station, 2-year lease, $/mo. | — | — | — | — |
| Controller, 2-year lease, $/mo. | — | — | — | — |
| Display station, purchase, $ | 2,600 | 2,800 | 2,400 | 995 |
| Controller, purchase, $ | 650 | 1,565 | 425 | — |
| Monthly prime-shift maint., $/mo. | Contact vendor | Contact vendor | Contact vendor | — |
| Date of announcement | 6/76 | 2/80 | 5/80 | 10/81 |
| Date of first production delivery | 11/76 | 1/81 | 3/81 | 12/81 |
| Display units installed to date | 8000 | 1800 | 2300 | — |
| Serviced by | Westinghouse Canada/ RCA | Westinghouse Canada/ RCA | Westinghouse Canada/ RCA | Wyse Technology |
| COMMENTS | A base design CRT which can be supplied with customer firmware & I/O configured to meet specific customer requirements. | A base design CRT which can be supplied with customer firmware & I/O configured to meet specific customer requirements. | A base design CRT which can be supplied with customer firmware & I/O configured to meet specific customer requirements. | |

# Alphanumeric Display Terminals—Management Perspective and Equipment Specifications

| SUPPLIER AND MODEL | Wyse WY-200 | Xerox 1330 | Zenith Z-19 | Zentec Zephyr |
|---|---|---|---|---|
| TERMINAL DESCRIPTION | | | | |
| Stand-alone or cluster | Stand-alone | Either | Stand-alone | Stand-alone |
| Maximum displays/controller | 1 | 1 | 1 | 1 |
| Transportability | No | No | No | No |
| IBM compatibility | No | No | No | No |
| Teletype compatibility | Std. | Std. | No | Std. |
| Other compatibility | DEC VT100, Lear Siegler ADM 31 | XCS network | ANSI, DEC VT52 | — |
| DISPLAY PARAMETERS | | | | |
| Display capacity, no. of chars. | 1920, 3168 | 1920 | 2000 | 2000 |
| Memory capacity, no. char./lines/pages | 8 pages | 2 pages | 2000 char. | — |
| Screen arrangement, lines x chars./line | 24 x 80, 24 x 132 | 24 x 80 | 24 x 80 plus status line | 25 x 80 |
| Screen area, diagonal, inches | 12 std.; 15 opt. | 12 | 12 | 12 |
| Tilt/swivel screen | Std. | No | No | No |
| Total displayable symbols | 256 | 128 ASCII | 95 ASCII + 33 graph. | 128 ASCII |
| Symbol formation | 8 x 10 dot matrix | 9 x 11 dot matrix | 5 x 7/5 x 9 dot | 7 x 9 dot matrix |
| Character phosphor | P31 green | P4 white std. | P31 green std., P4 white opt. | P4 white |
| Color capability | Opt. | No | No | No |
| Programmable field/char. highlighting via: | | | | |
| Underline | Std. | Opt. | No | Std. |
| Blink | Std. | Opt. | No | Std. |
| Blank | Std. | Opt. | No | Std. |
| Bold | No | Opt. | No | Std. (dim) |
| Reverse | Std. | Opt. | Std. | Std. |
| Double size | Std. | No | No | No |
| Scroll | Smooth std. | No | Up/down std. | Up std. |
| Paging | 8 std. | 2 std. | No | 2 std. |
| Selectable cursor blinking | Std. | Std. | Std. | No |
| Addressable/readable cursor | Std. | Both std. | Both std. | Both std. |
| Protected format | Std. | No | No | Std. |
| Partial screen transmit | Std. | No | No | Std. |
| Split screen/windows | Ver./Hor. std. | No | No | No |
| Tabulation | Std. | Std. | Fwd. std. | Fwd./back std. |
| Character insert/delete | Std. | Std. | Std. | Std. |
| Line insert/delete | Std. | Std. | Std. | Std. |
| Erase | Std. | Char./line/screen std. | Char./line/screen std. | Char./line/screen std. |
| KEYBOARD PARAMETERS | | | | |
| Style | Typewriter | Typewriter | Typewriter, data entry | Typewriter |
| Character/code set | ASCII | 128 ASCII | ASCII | 128 ASCII |
| Detachability | Std. | No | No | No |
| Program function keys | 8 std. | 9 std. | 8 std. | 16 std. (32 codes) |
| Numeric keypad | Std. | Std. | Std. | Std. |
| ANCILLARY DEVICES | | | | |
| Serial printer, type and speed | No | No | No | No |
| Line printer, type and speed | No | No | No | No |
| Composite video | No | No | No | No |
| Port for cust.-supplied devices | Std. | Opt. | No | Opt. |
| Other vendor-supplied devices | — | — | Auto-dial modem | — |
| TRANSMISSION PARAMETERS | | | | |
| Mode | Half/full-duplex | Either | Half/full-duplex | Half/full-duplex |
| Technique | Async./sync. | Asynchronous | Asynchronous | Asynchronous |
| Communications protocol | — | ASCII | DC1-DC3 | — |
| Code | ASCII | ASCII | ASCII | ASCII |
| Speed, bits/second | Up to 19,200 | 50-9600 | 110-9600 | 110-19,200 |
| Format; character, line, or block | Char./line/block | Line/block | Char./block | Char./line/block |
| Multipoint operation (pollable/addr.) | No | No | No | No |
| Terminal interface | RS-232-C, 20mA | RS-232-C, 20mA | RS-232-C | RS-232-C, 20mA |
| Integral modem | No | No | No | No |
| Integral acoustic coupler | No | No | No | No |
| PRICING AND AVAILABILITY | | | | |
| Display station, 2-year lease, $/mo. | — | 102 | Contact dealer | — |
| Controller, 2-year lease, $/mo. | — | — | — | — |
| Display station, purchase, $ | 1,295 | 1,550 | 895 | 1,350 |
| Controller, purchase, $ | — | — | — | — |
| Monthly prime-shift maint., $/mo. | — | 30 | — | — |
| Date of announcement | 4/82 | 11/79 | — | — |
| Date of first production delivery | 6/82 | 11/79 | 6/79 | 1/80 |
| Display units installed to date | — | 700 | — | — |
| Serviced by | Wyse Technology | Sorbus | Zenith Data Systems | Zentec and distributors |
| COMMENTS | | | Available in kit version as Heathkit H-19A-$695; 90-day on-site service under warranty; follow-on service contract available; 300 Zenith svc. ctrs.; 75 Heathkit elec. ctrs. | OEM discounts available. |