Datamedia Excel Series Display Terminals

Datamedia's Excel Series of display terminals are ergonomically designed. The display monitor can be tilted from 5° to 15° to achieve the most comfortable viewing angle. The keyboard is detachable, and connected to the monitor via a six-foot coiled cord. A choice of 12-inch or 14-inch screen sizes is available.

MANAGEMENT SUMMARY

The first members of the Excel Series were introduced by Datamedia at the National Computer Conference in Chicago, during May 1981. Eight models were introduced at that time as ergonomically-designed versions of existing Series 80 models. Since then, Datamedia has added six additional models to the family. All Excel terminals feature the same ergonomic design, with tiltable display screen and a detachable keyboard. Both 12-inch or 14-inch screen versions are available. (Datamedia also offers the Excel 3270-S, an IBM-compatible unit, which is not covered in this report.)

All Excel terminals (except Models 42 and 44) feature 80/132-column display capability. Other features standard on all models include: split screen with regional scrolling; selectable video attributes (some of which vary by model); cursor address/sense functions; a typewriter-style keyboard with a separate numeric pad; a CRT Saver feature; and a printer interface. Editing features, business graphics, and smooth scrolling are features common to most models.

Excel Models 12, 14, 22, and 24 are all DEC VT100/VT52-compatible units. Models 12 and 14 provide the Advanced Video Option (AVO) available on DEC's terminals. The AVO provides the terminal with video attributes (underline, blink, bold, and reverse video) selectable on a character-by-character basis, an enhanced auxiliary port, and 24-line screen capacity in 132-column mode. Models 22 and 24 are VT100/VT52- ▷

A family of ergonomically-designed display terminals offering a variety of emulations and capabilities.

All models feature of 12- or 14-inch (diagonal) display screen. Most models offer 80/132-column display capability. Standard features on all models include: selectable video attributes; split screen with regional scrolling; a numeric keypad; and a printer interface. Business graphics and editing capabilities are available on some models. Ergonomic features on all Excel terminals include a tiltable display and a detachable keyboard.

Purchase prices for the Excel Series terminals range from $995 to $2,040. Quantity discounts are available. Nationwide on-site manintenance service is provided through the RCA Service Company.

CHARACTERISTICS

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

DATE OF ANNOUNCEMENT: Excel 12, 14, 22, 24, 32, 34, 52, & 54—May 1981; Excel 42, 44, 62, 64, 72D, & 74D—November 1981.

DATE OF FIRST DELIVERY: Excel 12, 14, 22, 24, 32, 34, 52, & 54—July 1981; Excel 42, 44, 62, 64, 72D, & 74D—December 1981.

NUMBER DELIVERED TO DATE: Information not available.

SERVICED BY: RCA Service Company.

MODELS

Fourteen models currently comprise the Excel Series. All models feature a 12- or 14-inch (diagonal) display screen, and a detachable typewriter-style keyboard.

Models 12, 14, 22, and 24 are DEC VT100/VT52-compatible terminals. Models 12 and 14 feature the Advanced Video Option (AVO) as standard; Models 22 and 24 do not provide AVO. Models 12 and 22 feature the 12-inch display screen, while Models 14 and 24 feature the 14-inch screen.

Excel Models 32 and 34 offer keyboard-selectable emulation of the ADDS Regent 25, Datamedia Elite 1521, Hazeltine 1420, and Lear Siegler ADM 3A. Model 32 is the 12-inch model, and Model 34 is the 14-inch model.

Models 42 and 44 differ from the other members of the Excel Series in that they feature two pages of display memory, and do not possess 132-column display capability. Model 42 features the 12-inch screen; Model 44 has the 14-inch screen. ▶

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> compatible, but without the standard AVO. Models 12 and 22 provide 12-inch screens; Models 14 and 24 are equipped with 14-inch screens.

Excel Models 32 and 34 feature keyboard-selectable compatibility with the ADDS Regent 25, Hazeltine 1420, and Lear Siegler ADM 3A, as well as the Datamedia Elite 1521. Model 32 is the 12-inch screen model, while Model 34 utilizes the 14-inch screen. Other standard features on both models include: 80/132-column capability; selectable video attributes; double high/wide and double wide characters; insert/delete line; and a line drawing graphics character set.

Models 42 and 44 are two of the newer members of the Excel Series. They differ from the other models in that they offer two pages of display memory, and do not offer 132-column display capability. Eight programmable function keys (offering 32 variations) are also included. Other standard features include: block mode; insert/delete line or character; video attributes; double high/wide and double wide characters; protected/unprotected fields; and 12-inch (Excel 42) or 14-inch (Excel 44) display screens. A graphics character set is optional. Both models are compatible with the Lear Siegler ADM31 and the TeleVideo 950.

The Excel 52 and 54 offer APL as well as ASCII (DEC VT100) capability. Both the Model 52 (12-inch screen) and Model 54 (14-inch screen) feature 80/132-column capability, 69 overstrike APL characters, the AVO (in VT100 ANSI mode), 32 special symbols including business graphics, and double high/wide and double wide characters.

Excel Models 62 and 64 are block mode DEC VT132-compatible smart terminals. Standard features include: 80/132-column capability; video attributes; double high/wide characters; protected/unprotected fields; insert/delete line or character; business graphics; and 12-inch (Excel 62) or 14-inch (Excel 64) screens.

Datamedia's Excel 72D and 74D terminals offer compatibility with Data General Dasher Models 100/200 and 6053/6052, while offering 132-column display capability. Standard features include: video attributes; double high/wide and double wide characters; insert/delete line; business graphics; and 12 programmable function keys. As with the other members of the Excel Series, 12-inch (72D) and 14-inch (74D) screen versions are available.

Nationwide on-site maintenance service for all Datamedia terminals is available through the RCA Service Company. On-site service is provided on both an eight-hour/five-day, and 24-hour/seven-day per week basis. Service is also available on a depot or demand basis.□

> Excel Models 52 and 54 feature APL capability, as well as DEC VT100 (ANSI mode) emulation. Model 52 is the 12-inch version, and Model 54 is the 14-inch version.
>
> Models 62 and 64 are smart block mode terminals compatible with the DEC VT132 and the ANSI X3.64 standard. Model 62 has the 12-inch screen; Model 64 features the 14-inch screen.

Excel models 72D and 74D offer Data General Dasher 100/200 and 6053/6052 compatibility coupled with 132-column capability. As with the other Excel models, the 72D features the 12-inch screen and the 74D possesses the 14-inch display.

TRANSMISSION SPECIFICATIONS

All Excel Series terminals are asynchronous units, and operate in either half- or full-duplex mode. Models 42 and 44 feature switch-selectable transmission speeds from 110 to 9600 bits per second; all other models feature selectable speeds from 50 to 19,200 bits per second. The ASCII code is standard on all models; in addition, Models 12, 14, 22, 24, 62, and 64 are ANSI-compliant. An RS-232-C interface is standard on all models; a 20mA current loop is optional on all models except Models 42 and 44. A printer interface is also standard on all models.

DEVICE CONTROL

All Excel Series terminals transmit data on a character-by-character basis, as it is keyed. In addition, Models 42, 44, 62, and 64 can store data in the terminal buffer, and transmit it on a line or block basis. Models 42 and 44 feature two pages of display memory; all other models feature one page.

Cursor control keys move the cursor left, right, up, and down. The Up and Down cursor keys are also used to determine display brightness when in Set-Up Mode (not available on Excel 42/44). Set-Up Mode, activated when the Set-Up key is pressed, allows terminal operating parameters such as type of cursor display, transmission rate, and parity to be changed and then retained in the terminal's non-volatile memory. Seven LED indicators are located on the keyboard to provide the operator with terminal status information.

Xon/Xoff is provided as a keyboard-selectable feature. The use of Xon/Xoff synchronization ensures that no data is lost when operating the terminal at higher transmission rates.

A range of video attributes are available on all models. Underline, reverse video, and double size characters are standard on all models. Blinking and bold characters are standard on all models except the Excel 22 and 24. Blanked (for security) characters are standard on the Excel 42 and 44.

Line insert/delete capabilities are standard on Excel Models 32, 34, 42, 44, 62, 64, 72D, and 74D. Character insert/delete capabilities are standard on Models 42, 44, 62, and 64. All models feature a range of erase/clear functions.

COMPONENTS

CRT DISPLAY UNIT: Excel Models 12, 22, 32, 42, 52, 62, and 72D feature a 12-inch (diagonally measured) display screen. Models 14, 24, 34, 44, 54, 64 and 74D feature a 14-inch display screen. Display capacities for the various models are as follows:

	Lines	Characters
Excel 12/14	24	80/132
Excel 22/24	24	80/132(opt.)
	14	132
Excel 32/34	24	80/132(opt.)
	12	132
Excel 42/44	24	80
Excel 52/54	24	80/132
Excel 62/64	24	80/132
Excel 72D/74D	24	80/132

Characters are formed utilizing a 7-by-9 dot matrix on all models except the 42 and 44, which utilize a 5-by-9 dot ➤

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▶ matrix. Characters are displayed in white (P4 phosphor); green (P31 phosphor) characters are optionally available for all models. The 128-character ASCII set is standard on all models except the 42/44, which provides 96-character ASCII set plus 32 special symbols, and the 52/54, which provides a 96-character ASCII set plus 69k APL overstrike characters and 40 special APL symbols. Business graphics/line drawing sets are available on all models. All Excel Series terminal monitors can be tilted from 5° to 15°.

KEYBOARDS: All Excel Series terminals feature a detachable typewriter-style keyboard, connected to the monitor via a six-foot coiled cable. A numeric keypad is standard on all models. Models 12, 14, 22, 24, 52, and 54 feature four pre-coded function keys as standard (12 optional on Excel 22/24); Models 42 and 44 feature eight function keys (shiftable to 32); Models 62 and 64 feature 12 pre-coded function keys; 72D and 74D feature 12 pre-coded function keys; 8 pre-coded function keys are optional on Models 32 and 34. Cursor control keys are included on all models.

PRICING

The Datamedia Excel Series display terminals are available for purchase only. Quantity discounts are available.

On-site maintenance service is available through RCA Service Company locations. Service is available on an eight-hour per day/five-days per week basis, or on a 24-hour/seven days per week basis. On-site service rates begin at $288 per year. Service is also available on a depot or demand basis. Contracts for service arrangements may be obtained through Datamedia sales offices or distributors.

	Purchase Price
Excel 12	$1,695
Excel 14	1,840
Excel 22	1,495
Excel 24	1,640
Excel 32	1,395
Excel 34	1,540
Excel 42	995
Excel 44	1,140
Excel 52	1,840
Excel 54	1,985
Excel 62	1,895
Excel 64	2,040
Excel 72D	1,395
Excel 74D	1,540■

Datamedia Elite Display Terminals

The Datamedia Elite 3045A, a buffered APL/ASCII terminal, features a single-page video memory that displays 1920 alphanumeric characters in a 24-line by 80-column format. As with all of the Elite series terminals, the keyboard is detachable.

MANAGEMENT SUMMARY

Datamedia's Elite series is a family of display terminals which consists of five desk-top and two portable models. The desk-top units feature a 12″ diagonal CRT as standard; a 15″ diagonal CRT is optional. The portable models feature a 9″ diagonal CRT. All models have a display capacity of 1920 characters in a 24-line by 80-column format. Each character is created using a 5 x 9 dot matrix (with lower case descenders). The standard monitors are all the same size regardless of model. They feature all-metal housing and weigh approximately 31 pounds (40 pounds for portable units). All keyboards are detachable and vary slightly in size depending on model but weigh an average of seven pounds. The portable terminals can be equipped with an optional built-in acoustic coupler operating at 0 to 300 bps (103 compatible). Each terminal in the family can support up to 16 external monitors. All models provide an EIA RS-232-C line interface and most offer a 20-mA current-loop interface as an option. All models also provide a second RS-232-C interface for connection to an external, user-supplied serial printer. Some models can also interface with an external cassette.

The following features are included in most of the Elite family:

- Addressable cursor.
- Full cursor control.
- Tabulation; between tab settings or unprotected fields.
- Roll.
- Dual intensity display.
- Blink.

▷

A family of five desk-top and two portable video display terminals.

The desk-top models feature a 12″ diagonal screen (15″ diagonal screen is optional) and can display 1920 alphanumeric characters in a 24-line by 80-character format. The terminals support asynchronous communications in full- or half-duplex mode at switch-selectable speeds up to 9600 bps.

The portable Elite terminals feature a 9″ diagonal screen and weigh 40 pounds. Both the portable and desk-top models have a detachable keyboard.

Purchase prices range from $1,250 to $2,695 in single-unit quantity. Volume discounts are offered by the vendor.

CHARACTERISTICS

VENDOR: Datamedia Corporation, 7401 Central Highway, Pennsauken, New Jersey 08110. Telephone (609) 665-5400.

DATE OF ANNOUNCEMENT: Elite 1521A — June 1977; Elite 3000A Series — August 1977; Portable Elite 1520A/APL — June 1977.

DATE OF FIRST DELIVERY: Coincides with announcement dates.

NUMBER DELIVERED TO DATE: Over 40,000.

SERVICED BY: Datamedia Corporation and/or selling OEM or distributor.

MODELS

The Elite family consists of five stand-alone models (1521A, 3025A, 3045A, 3052A, and 3250A) and two portable models (1520A and 1520APL). An integral acoustic coupler is optional on the portable models. All models are Teletype compatible and consist of the monitor and a separate keyboard. Each is equipped with an RS-232-C connector to interface a user-supplied serial printer, in addition to the EIA interface for an external modem operating at up to 9600 bps, asynchronous.

TRANSMISSION SPECIFICATIONS

Transmission is serial by character in half- or full-duplex mode at asynchronous rates of up to 9600 bps. The Portable Elite 1520A and 1520APL provide switch selection for either of two user-specified speeds. The 1521A allows selection of up to seven speeds; the 3000A series permits a choice of up to 15 different rates. All models employ 8-level, ASCII code; at 110 bps (Teletype Model 33 and 35 compatible) an 11-unit code is used; at higher speeds a 10-unit code is used.

The standard rates available are (in bps): 50, 75, 134.5, 110, 150, 300, 600, 1200, 1800, 2000, 2400, 3600, 4800, 7200, and 9600. Other speeds are available on special order; isochronous operation is available on the 3000 series. ▶

Datamedia Elite Display Terminals

▷ • Reverse video.
 • Switch selectable transmission rates, to 9600 bps, asynchronous.
 • Numeric pad.
 • Polling/addressing.
 • Full 128-character ASCII code (and APL on some models).
 • Character and line editing.

Not all of these features are available for every model, and the mixture of standard and optional features varies within the family. However, all models incorporate those features most necessary to serve the Teletype replacement market.

Datamedia is a privately owned company that grossed over $10 million in the fiscal year ended April 30, 1979. The first Elite terminal was introduced in 1972 and since then the product has been enhanced and the line expanded. The firm began by selling to large OEM's and distributors, then gradually moved into the educational institutions and systems houses. It is now increasing its market penetration noticeably in the end user segment.

USER REACTION

In Datapro's 1980 survey of alphanumeric display terminal users, eight responses were received from users of Datamedia Elite series terminals. To supplement these responses, Datapro conducted telephone interviews with three additional users from a list supplied by Datamedia.

All three users interviewed by telephone were northeastern universities (educational institutions represent one of Datamedia's largest end user bases). Responses received during the annual alphanumeric display terminal survey came from private businesses as well as universities.

Altogether, these 10 responses covered a total of 182 Elite 1520A (an older, stand-alone model no longer in production) and 1521A terminals, one portable 1520A terminal, one 3025A and two 3045A terminals. The users questioned over the telephone had been using the Datamedia equipment from two to five years. The combined ratings obtained from the two user groups are as follows:

	Excellent	Good	Fair	Poor	WA*
Overall performance	7	3	0	0	3.7
Ease of operation	7	3	0	0	3.7
Display clarity	7	3	0	0	3.7
Keyboard feel & usability	4	6	0	0	3.4
Hardware reliability	7	2	1	0	3.6
Maintenance service	5	2	1	0	3.5
Technical support	5	3	1	0	3.4

*Weighted Average based on a scale of 4.0 for Excellent. ▷

▶ The interface to the modem is via standard EIA RS-232-C connector with 20-mA loop operation available as an option. The portable models 1520A and 1520APL can be equipped with an optional 103 compatible acoustic coupler operating at up to 300 bps.

DEVICE CONTROL

Elite 1521A: A conversational terminal that incorporates new mechanical and electronic design features including full upper/lower case or alternatively, a 64-character upper-case subset with a dual intensity feature that facilitates operation in a foreground/background mode. Transmission can be in full- or half-duplex mode. Speeds are switch selectable at rates between 50 and 9600 bps. The logic for this terminal is contained on a single board to facilitate maintenance. The 1521A is directed to the straight Teletype replacement market.

Elite 3000A Series: These terminals are microprocessor based, equipped with MOS memory, and a buffer capacity of one page (1920 characters). Transmission is character by character. In the full-duplex mode, keyed data is not displayed unless returned by the receiving device; i.e., echoed back. The terminal features an addressable, blinkable cursor displayed as an underscore. By received or keyed command, the cursor can be positioned up, down, left, right, home, backspaced, or tabbed to the next tab stop. Data is entered from the home position line by line until the screen is full. Displayed data rolls up by one line when data is entered after the screen is full, and the top line is lost. Erasure functions include clear screen and clear to end of page or line. An optional tape mode permits storage and display of control codes. Audible alarm, a standard feature, sounds when a Bell code is received or the eighth character from the end of a line is reached.

Additional features such as reverse video, protected fields, blink, and up to 15 selectable transmission rates from 50 to 9600 bps, asynchronous, are provided. Transmit and receive rates can be selected separately. Dual intensity is also provided. These terminals can be hardware/firmware programmed with factory support. All of these terminals are transaction oriented with the main difference among them being application. The 3025 is a straight ASCII transaction-type terminal, while the 3045 provides switch selection between ASCII and APL. The 3052 is used for Digital Equipment Corp. applications and is a substitute for a DEC VT-52. The 3250A is a replacement for the Elite 2500A, a Teletype-compatible unit.

Portable Elite 1520A/APL: Transmission can be half- or full-duplex at two user-specified speeds up to 9600 bps. The 1520A features a 64-character (standard) or 128-character (optional) upper and lower case ASCII set. The 1520APL can be switched between APL and ASCII character sets.

COMPONENTS

CRT DISPLAY UNIT: All models except the portable terminals contain a 12-inch (diagonal measurement) CRT with a viewing area 6 inches high by 9 inches wide. The portable models of the 1520A and 1520APL contain a 9-inch CRT with a viewing area 4.5 inches high by 6.75 inches wide. The standard display arrangement for all models is 24 lines of 80 characters each. Some models can be supplied with an optional 15-inch (diagonal) CRT. Screens are either supplied with a glare reducing plastic filter or a bonded-etched faceplate.

A 128-character set of ASCII symbols is standard for the Elite 1521A, 3000A Series, and Portable Elite 1520 APL; it is optional for the Portable Elite 1520A (64-character set standard). The 128-character set of ASCII symbols includes ▶

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> Two of the users declined to rate maintenance, saying that they performed this service themselves. One user could not rate technical support because he had not required any as of yet.

The first user interviewed by Datapro has a total of 15 Elite 1520A (stand-alone) and 1521A terminals. He stated that the university had been using the Datamedia units for a period of from two to three years and he was most impressed by their durability. "I get the feeling," he said, "that you could pick them up about six feet off the floor and drop them, and they would still work." This user also stated that while the university was looking to replace some of their older units with the newer Elite 3000 series, the differences between the two types of terminals might create a problem. The terminals are used mostly by students, who might be confused by some of the differences in the equipment.

The second university we interviewed had been using eight of the 1520A stand-alone terminals for about five years. Like the first user we talked to, this user praised the durability of the equipment. Citing mostly student usage, often from "8:30 in the morning until midnight," he stated that the Datamedia terminal "takes a beating and keeps right on going." He added, "For student applications, they are doing the job well."

The last user that we spoke to has been using 130 1520A stand-alone and 1521A units for three years. He praised the terminals for their reliability, ease of use, and low cost. He did mention that the university had encountered some "deficiencies in the keyboard," citing the space bar as the main culprit.□

➤ both upper and lower case alphabetics. The 128-character set of APL symbols includes upper case alphabetics only.

Each character is formed with a 5-by-9 dot matrix (with lower case descenders) and is displayed in white on all models; however, reverse video on an individual character basis is available on the Elite 3025A and 3052A. A separate video output can drive up to 16 slave monitors.

ELITE 1521A KEYBOARD: A 66-key typewriter-style arrangement. A standard 21-key cluster at the right of the main keygroup includes numeric, cursor control, and print keys. The standard keyboard generates any of 64 ASCII characters. Optional keyboards generate any of 128 ASCII or 128 ASCII/APL (switch-selectable) characters. Key functions include Line Feed, Carriage Return, Rub Out, Repeat, Break, Backspace, Tab, Escape, Alpha Lock, Shift, Control Shift, Tape Mode, Load Tape, Clear, Erase to End of Line, Erase to End of Screen, and Clear. Cursor control keys include Home, Up, Down, Left, and Right. Print and Print Off keys are provided.

ELITE 3000A SERIES KEYBOARD: A 78-key typewriter-style arrangement. The standard keyboard also includes a 21-key cluster of numeric, cursor control, print, and edit keys to the right of the main keygroup. The keyboard generates any of 128 ASCII characters. Key functions include Line Feed, Carriage Return, Rub Out, Repeat, Break, Backspace, Tab, Back Tab, Tab Set, Tab Clear, Escape, Shift, Control, Alt. Mode, Alpha Lock, Transmit, Transmit Line, Erase to End of Line, Erase to End of Screen, MR, Cursor Control (five keys), Roll, Print, and Insert/Delete.

PORTABLE ELITE 1520A/APL KEYBOARD: A 53-key typewriter-style arrangement. The keyboard generates any of 128 ASCII characters. Editing features include Clear Screen, Clear to End of Line, Cursor Up, Down, Left, Right, Home, Typeover, and Absolute Cursor Addressing. The keyboard folds up into the display housing.
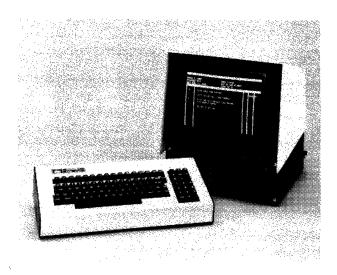
PRICING

The Datamedia Elite terminals can be obtained by purchase with quantity discounts offered. A limited rental plan is also available through some distributors. Generally, there is no installation charge, because the equipment is usually installed by the selling OEM or distributor.

Service is also usually provided by the selling OEM or distributor. However, Datamedia does provide limited service on its own. All Datamedia terminals carry a 90-day warranty on parts and labor. Unit prices are shown in the accompanying table. For quantity discount prices, contact vendor.

	Purchase Price
Elite 1520A (Portable)	$2,195
Elite 1520APL (Portable)	2,695
Elite 1521A	1,250
Elite 3025A	1,595
Elite 3052A	1,595
Elite 3250A	1,595
Elite 3045A	1,795■

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The 3025A, one of the newer members of the Elite family, is a microprocessor-based, communications-oriented, Teletype-compatible CRT. The unit is equipped with one page (1920 characters) of memory and is capable of performing in a variety of transaction processing and inquiry response applications.

MANAGEMENT SUMMARY

With over 12,000 units installed to date, Datamedia is one of the smaller manufacturers of Teletype-compatible display terminals but is growing rapidly. The current product line, called the Elite series, spans the range of capability from simple Teletype emulation through intelligent terminals that incorporate sophisticated features found in competitive offerings costing much more.

Datamedia is a privately owned company that grossed over $7 million in the fiscal year ended April 30, 1978. The first Elite terminal was introduced in 1972 and since then the product has been enhanced and the line expanded. The firm began by selling to large OEM's and distributors, then gradually moved into the educational institutions and systems houses. It is now increasing its market penetration noticeably in the end user segment.

All Elite terminals are desk-top units with a 12-inch (diagonal) CRT with display capacity of 1920 characters in a 24-line by 80-column format. Each character is created using a 5 x 9 dot matrix. The standard monitors are all the same size regardless of model and weigh approximately 31 pounds (40 pounds for portable units). All keyboards are detachable and vary slightly in size depending on model but weigh an average of seven pounds. The portable terminals can be equipped with an optional built-in acoustic coupler operating at 0 to 300 bps (103 compatible). Each terminal in the family can support up to 16 external monitors. All models provide an EIA RS-232C line interface and most offer a 20-ma current-loop interface as an option. All models also provide a second RS-232C interface for connection to an external, user-supplied serial printer. Some models can also interface with an external cassette. ▷

A family of terminals ranging in complexity from a simple "glass" Teletype replacements to intelligent devices.

Features available include asynchronous communications capability at up to 9600 bps, polling, control code display format protection, addressable cursor, insert/delete, upper/lower case, roll, numeric pad, current interface, and a 128-character display selectable between ASCII and APL symbol sets. All units can be obtained in desk-top configuration and some are also available in portable carrying cases.

The terminals can support external (user-supplied) serial printers and up to 16 monitors. All models have detachable keyboards.

Purchase prices range from $1,200 to $2,800 in single-unit quantity with volume discounts offered. Most terminals are sold on a purchase basis but a limited rental program is being placed into effect.

CHARACTERISTICS

VENDOR: Datamedia Corporation, 7300 N. Crescent Boulevard, Pennsauken, New Jersey 08110. Telephone (609) 665-2382.

DATE OF ANNOUNCEMENT: Elite 1520A—January 1975; Elite 1520A (APL/ASCII)—June 1975; Elite 1521A—June 1977; Elite 3000A—August 1977; Elite 4000A—January 1977.

DATE OF FIRST DELIVERY: Coincides with announcement dates.

NUMBER DELIVERED TO DATE: Over 12,000.

SERVICED BY: Datamedia Corporation and/or selling OEM or distributor.

MODELS

The Elite family consists of seven stand-alone models: 1520A, 1520APL/ASCII, 1521A, 3025A, 3045A, 3052A, and 4000A. A portable version of the 1520A is also available; this model can be equipped with an integral acoustic coupler. All models are Teletype compatible and consist of the monitor and a separate keyboard. Each is equipped with an RS-232C connector to interface a user-supplied serial printer, in addition to the EIA interface for an external modem operating at up to 9600 bps, asynchronous.

TRANSMISSION SPECIFICATIONS

Transmission is serial by character in half- or full-duplex mode at asynchronous rates of up to 9600 bps. The Elite 1520A and 1520APL provide switch selection for either of two user-specified speeds. The 1521A allows selection of up to seven speeds; the 3000 and 4000 series permit a choice of ▶

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▷ The following features are included in most of the Elite family:

- Addressable cursor.

- Full cursor control.

- Tabulation; between tab settings or unprotected fields.

- Roll.

- Dual intensity display.

- Blink.

- Reverse video.

- Switch selectable transmission rates, to 9600 bps, asynchronous.

- Numeric pad.

- Polling/addressing.

- Full 128-character ASCII code (and APL on some models).

- Character and line editing.

Not all of these features are available for every model, and the mixture of standard and optional features varies within the family. However, all models incorporate those features most necessary to serve the Teletype replacement market.

USER REACTION

In early 1978, Datapro conducted a survey of alphanumeric display terminal users. A total of 39 responses were received from users of Datamedia terminals, representing an installed base of over 800 terminals. In June 1978, Datapro also made telephone contact with three additional users that had extensive experience with the equipment. These users agreed with the results obtained from the write-in survey and represented an additional base of over 1100 terminals of all models. The equipment rated varied in age from six months to six years. Because there were no meaningful differences in the ratings within the product family, all models were grouped together. The user ratings are as follows:

	Excellent	Good	Fair	Poor	WA*
Overall performance	28	14	0	0	3.7
Ease of operation	26	15	1	0	3.6
Display clarity	20	18	3	0	3.4
Keyboard feel & usability	18	21	3	0	3.4
Hardware reliability	27	12	3	0	3.6
Maintenance service	16	13	3	2	3.3
Software & technical support	15	15	5	0	3.3

*Weighted average on a scale of 4.0 for Excellent.

Of the 42 users covered in this survey, the most common application was, predictably, time sharing. Although ▷

up to 15 different rates. All models employ 8-level, ASCII code; at 110 bps (Teletype Model 33 and 35 compatible) an 11-unit code is used; at higher speeds a 10-unit code is used.

The standard rates available are (in bps): 50, 75, 134.5, 110, 150, 300, 600, 1200, 1800, 2000, 2400, 3600, 4800, 7200, and 9600. Other speeds are available on special order; isosynchronous operation is available on the 3000 and 4000 series.

The interface to the modem is via standard EIA RS 232C connector with 20-ma loop operation available as an option. The Elite 4000A can be equipped with a built-in 202 compatible 1200 bps modem. The portable versions of the 1520A and 1520APL can be equipped with an optional 103 compatible acoustic coupler operating at up to 300 bps.

DEVICE CONTROL

Elite 1520A & 1520A APL/ASCII: Transmission is character by character. In the full-duplex mode, keyed data is not displayed unless returned by the receiving device; i.e., echoed back. The terminal features an addressable, blinkable cursor displayed as an underscore. By received or keyed command, the cursor can be positioned up, down, left, right, home, backspaced, or tabbed to the next tab stop. Data is entered from the home position line by line until the screen is full. Displayed data rolls up by one line when data is entered after the screen is full, and the top line is lost. Erasure functions include clear screen and clear to end of page or line. An optional tape mode permits storage and display of control codes. Audible alarm, a standard feature, sounds when a Bell code is received or the eighth character from the end of a line is reached.

Elite 1521A: A conversational terminal that incorporates new mechanical and electronic design features including full upper/lower case or alternatively, a 64-character upper-case subset with a dual intensity feature that facilitates operation in a foreground/background mode. Transmission can be in full- or half-duplex mode. Speeds are switch selectable at rates between 50 and 9600 bps. The logic for this terminal is contained on a single board to facilitate maintenance. The 1521A is directed to the straight Teletype replacement market. The chief differences between the 1520A and the 1521A are the degree of modularity and the lack of the dual intensity feature in the 1520A.

Elite 3000 Series: These terminals are microprocessor based, equipped with MOS memory, and a buffer capacity of one page (1920 characters). These terminals provide all the features of the 1500 Series previously described. In addition, they provide additional features such as reverse video, protected fields, blink, and up to 15 selectable transmission rates from 50 to 9600 bps, asynchronous. Transmit and receive rates can be selected separately. Dual intensity is also provided. These terminals can be hardware/firmware programmed with factory support. All of these terminals are transaction oriented with the main difference among them being application. The 3025 is a straight ASCII transaction-type terminal, while the 3045 provides switch selection between ASCII and APL. The 3052 is used for Digital Equipment Corp. applications and is a substitute for a DEC VT-52.

Elite 4000A: Can be user programmed utilizing 8080 assembly language. Up to 32K of MOS RAM and up to 8K of ROM are provided. The character set is full ASCII upper/lower case with 254 codes stored. All of the 3000 series features, with the exception of APL, are incorporated.

COMPONENTS

CRT DISPLAY UNIT: All models except the portable terminals contain a 12-inch (diagonal measurement) CRT

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▷ educational institutions head the list of users, the terminals are used in several other areas with notable regularity. These include local and federal governments, power and telephone utilities, and manufacturing firms. The number of terminals covered is fairly well distributed across the product line; those models recently introduced naturally represented a proportionately lower percentage. The user base was also geographically scattered.

Eight users did not rate Maintenance service. Of the three interviewed by phone, two did not rate maintenance because they perform their own; perhaps this is the same reason that the other users had for not rating this category. The third telephone interview resulted in a high maintenance rating based upon turnaround time. When Datamedia is notified of a failure, they air express a replacement board. When the failed board is received by Datamedia, it is either repaired and returned to stock or used for parts.

Seven users did not rate Software & technical support, probably because they have older non-programmable models. One user wanted to rate Software as Good and Technical support as Poor; he has equipment that was recently introduced and said that the documentation was inadequate. Datapro averaged this rating as a Fair.

The most commonly cited advantages were cost and reliability. Users with terminals that have the ASCII/APL function switch commented favorably on the feature. One user, who is a distributor and had obviously surveyed all available terminals carefully before adding Datamedia to his line said, "as good as or better than any of them and better than most." Lack of programmability was mentioned as a disadvantage by many users of older models. But, as the ratings indicate, Datamedia has a satisfied customer base.□

▶ with a viewing area 6 inches high by 9 inches wide. The portable models of the 1520A and 1520APL contain a 9-inch CRT with a viewing area 4.5 inches high by 6.75 inches wide. The standard display arrangement for all models is 24 lines of 80 characters each. Some models can be supplied with an optional 15-inch (diagonal) CRT. Screens are either supplied with a glare reducing plastic filter or a bonded-etched faceplate.

A 128-character set of ASCII symbols is standard for the Elite 1521A, 3025A, 4000A, and the switchable APL/ASCII version of the Elite 1520A; it is optional for the Elite

1520A. The 128-character set of ASCII symbols includes both upper and lower case alphabetics. The 128-character set of APL symbols includes upper case alphabetics only.

Each character is formed with a 5-by-9 dot matrix and is displayed in white on all models; however, reverse video on an individual character basis is available on the Elite 3025A, 3052A and 4000A. A separate video output can drive up to 16 slave monitors.

ELITE 1520A/1521A KEYBOARD: A 66-key typewriter-style arrangement. An optional 21-key cluster at the right of the main keygroup includes numeric, cursor control, and print keys. The standard keyboard generates any of 64 ASCII characters. Optional keyboards generate any of 128 ASCII or 128 ASCII/APL (switch-selectable) characters. Key functions include Line Feed, Carriage Return, Rub Out, Repeat, Break, Backspace, Tab, Escape, Alpha Lock, Shift, Control Shift, Tape Mode, Load Tape, Clear, Erase to End of Line, Erase to End of Screen, and Clear. Cursor control keys include Home, Up, Down, Left, and Right. Print and Print Off keys are provided.

ELITE 3025A KEYBOARD: A 78-key typewriter-style arrangement. The standard keyboard also includes a 21-key cluster of numeric, cursor control, print, and edit keys to the right of the main keygroup. The keyboard generates any of 128 ASCII characters. Key functions include Line Feed, Carriage Return, Rub Out, Repeat, Break, Backspace, Tab, Back Tab, Tab Set, Tab Clr, Escape, Shift, Control, Alt. Mode, Alpha Lock, Transmit, Transmit Line, Erase to End of Line, Erase to End of Screen, MR, Cursor Control (five keys), Roll, Print, and Insert/Delete.

PRICING

The Datamedia Elite terminals can be obtained by purchase with quantity discounts offered. A limited rental plan is also available. Generally, there is no installation charge, because the equipment is usually installed by the selling OEM or distributor. In special cases, an installation charge of $50 applies, except where multiple terminals are installed at the same site; then the charge is $20 per terminal for three units and up.

Service is also usually provided by the selling OEM or distributor. However, Datamedia does provide limited service on its own. For locations within a 25-mile radius of a service center, Datamedia service charges are as follows: Elite 1520A and 1521A versions—$15 per month; Elite 1520A APL/ASCII, 2500A, 3025A, 3045A, and 3052A—$20 per month; Elite 4000A—$25 per month. All Datamedia terminals carry a 90-day warranty on parts and labor. Unit prices are shown in the accompanying table. Some items listed are not actively marketed for new customers because later Datamedia equipment incorporating additional features is available at a competitive price; these older items are listed for the information of customers still adding to their installed base.

	Purchase Price
Elite 1520A:	
Upper case only	$1,555
Upper case, numerical pad, and controls	1,605
Upper/lower case	1,655
Upper/lower case, numerical pad, and controls	1,705
Portable, upper/lower case, 20 ma loop interface, controls	2,155
APL/ASCII	2,150
APL/ASCII, numerical pad and controls	2,200
Portable, APL/ASCII, 20 ma loop interface, controls	2,650

▶

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	Purchase Price
Elite 1250A (Continued):	
20 ma loop interface	25
Acoustic coupler (portable models)	300
ASCII overstrike	50
Timed break	50
Elite 1521A:	
Basic model	1,200
Basic model with numerical pad and controls	1,250
20 ma loop interface	25
Bonded etched faceplate	10
Elite 2500A	2,080
Character/line-insert/delete	200
Printer buffer	200
20 ma loop interface	25
Typewriter tab	25
Limited graphics	75
Polling	150
Elite 3025A with insert/delete, print and tab	1,700
Polling	100
20 ma loop interface	25
Elite 3045A	1,900
20 ma loop interface	25
Elite 3052A (DEC VT-52 compatible)	1,700
Elite 4000A (includes 4K x 10-bit RAM display memory and provision for 4 PROM's)	2,800
Additional 4K x 10-bit RAM display memory	500
Additional 8K x 8-bit RAM memory	600
Expander and interval timer	300

General Options

15-inch white (P4) display	200
15-inch green (P31) display	250
Integral 300 or 1200 bps modem	277
Walnut vinyl clad	50
6-foot EIA cable (plus $1/add'l foot)	20 ∎

Datamedia Alphanumeric Display Terminals

MANAGEMENT SUMMARY

Formed in 1969, Datamedia is one of the smaller vendors of low-cost, Teletype-compatible display terminals, but significant nonetheless. Its current family of products consists of four members that range from a basic Teletype replacement terminal to a terminal that offers many of the features found in some of the more sophisticated terminals within the industry.

Datamedia's Elite desk top family members each consist of a 12-inch monitor and separate keyboard. The monitors are all the same size, have the same attractive physical appearance, and weigh just 31 pounds. Keyboards differ in size and average seven pounds. The portable Elite models feature a metal cabinet with fold-away handle; the total weight is 40 pounds. The keyboard is hinged and can be separated from the nine-inch monitor for ease of use. The portable terminals also feature an optional 300-bps acoustic coupler for use with a conventional telephone.

All models in the Elite family feature display capacities of up to 1920 characters, which has become the industry standard. Each can support up to 16 external monitors. All models provide an RS-232 line interface; most offer a current loop interface as an option. And all models provide a second RS-232 interface for an external user-supplied, serial printer or cassette tape drive. ▷

A low-cost family of Teletype-compatible display terminals.

Standard features include a wide range of transmission speeds up to 9600 bps, roll, upper/lower case, format protection, addressable cursor, polling, control code display, numeric pad, 128-character, switchable ASCII or APL symbol set, etc.

Only stand-alone configurations are available. The terminals can support external user-supplied serial printers and cassette tape drives and up to 16 monitors. The desk-top terminals all include separate keyboards; portable versions of some models are available that are built into a suitcase-like metal enclosure and weigh 40 pounds.

Purchase prices range from $1,250 to $2,200 in unit quantities; quantity discounts are provided. The terminals are sold on a purchase basis only.

The Elite 1520A has the same attractive physical appearance as the other members of the Elite family and offers many of the features of the top-of-the-line 2500A. A key feature is its support for both APL and ASCII.

Datamedia Alphanumeric Display Terminals

▷ Salient features of the Elite terminals include:

- Addressable cursor (all models but 1500A).
- Full cursor control (all models but 1500A).
- Format protection.
- Tabulation between tab settings or unprotected fields.
- Roll.
- Dual intensity display.
- Switch-selectable transmission rates to 9600 bps.
- Numeric pad.
- Polling/addressing.
- Full 128-character ASCII/APL.
- Character and line editing.
- Audible alarm.
- Program function keys.

Not all of these features are offered in each model. And the mix of standard and optional features is different for each model. For example, the Elite 2100A is the only model specifically designed for a polling/addressing environment, but polling is optional for the Elite 2500A, which includes format protection and offers editing and limited graphics as options. In perspective, the Elite family offers the more useful features that serve the needs of the Teletype replacement market, at a reasonably low cost.

Since its inception, Datamedia has directed its sales to large OEM's, distributors, and systems houses, but more recently it has found a growing market in the educational establishment. A small, privately held, but profitable company, Datamedia has established a foothold in the industry. Its more prominent competitors are ADDS, Hazeltine, and Lear Siegler, which also market display terminals for the Teletype replacement market.

USER REACTION

In Datapro's 1976 survey of alphanumeric display terminal users, 2 users reported on their experience with 16 Datamedia display terminals. Their ratings are presented in the following table.

	Excellent	Good	Fair	Poor	WA*
Overall performance	2	0	0	0	4.0
Ease of operation	2	0	0	0	4.0
Display clarity	1	1	0	0	3.5
Keyboard feel & usability	0	2	0	0	3.0
Hardware reliability	1	1	0	0	3.5
Maintenance service	1	1	0	0	3.5
Software & technical support	1	1	0	0	3.5

*Weighted Average on a scale of 4.0 for Excellent.

Both users are delighted with their terminals, as is reflected in the ratings. Both cited low cost, reliability, and strong vendor support as key advantages. No disadvantages were noted. One of the elated users, who has 15 more terminals on order, commented, "We are doing tasks which one of our customers has purchased $8,800 smart terminals to accomplish, on a $2,400 terminal." □

CHARACTERISTICS

VENDOR: Datamedia Corporation, 7300 N. Crescent Boulevard, Pennsauken, New Jersey 08110. Telephone (609) 665-2382.

DATE OF ANNOUNCEMENT: Information not available.

DATE OF FIRST DELIVERY: Elite 1500A—February 1972; Elite 1520A—January 1975; Elite 1520A (APL/ASCII)—June 1975; Elite 2100A—October 1972; Elite 2500A—July 1973.

NUMBER DELIVERED TO DATE: About 5,000 units.

SERVICED BY: Datamedia and end-user vendor.

MODELS

Four stand-alone models include the Elite 1500A, Elite 1520A, Elite 2500A, and Elite 2100A. Portable versions of Models 1500A and 1520A are contained in a metal carrying case and weigh 40 pounds. All models provide Teletype compatibility and are composed of a monitor with separate keyboard. All provide a separate RS-232C interface for a user-supplied serial printer or cassette tape unit. Model differences are detailed in the following paragraphs.

TRANSMISSION SPECIFICATIONS

Transmission is asynchronous in the half- or full-duplex mode at data rates of 50 to 4800 (Elite 1500A) or 50 to 9600 bits/second (all other models). The Elite 1500A and 1520A provide switch selection between any two user-specified speeds. The Elite 2500A provides switch selection for any five speeds.

All models use the 8-level, 10- or 11-unit ASCII (including parity) code. The terminals are transmission-compatible with the Teletype Model 33 and 35 teleprinters. Transmission is performed character by character in all modes except the Elite 2100A, which operates in the block mode. Block transmission is selectable on the Elite 2500A.

All models are equipped with an RS-232C interface. A 20 or 60 ma dc current loop interface is optional.

An integral 1200-bps modem is optional for Elite Models 2100A and 2500A. Portable versions of the Elite 1500A, 1520A, and 1520A APL can be equipped with an integral 300-bps acoustic coupler as an option; a current loop interface is optional. An RS-232C interface is standard.

DEVICE CONTROL

Elite 1500A: Transmission is character by character. Operating modes include: transmit to line; transmit to printer or cassette; receive to printer; and receive from cassette. In the full duplex mode, keyed data is not displayed unless returned by the receiving device; i.e., echoed back. Audible alarm is standard and sounds when a Bell code is received or the eighth character from the end of the line is reached. All data enters at the bottom line and rolls up by one line after each line is filled. The top line is lost when rolled off. The Answerback option transmits a 21-character identification upon interrogation.

Elite 1520A & 1520A APL/ASCII: Transmission is character by character. In the full-duplex mode, keyed data is not displayed unless returned by the receiving device; i.e., echoed back. The terminal features an addressable, blinkable cursor displayed as an underscore. By received or keyed command, the cursor can be positioned up, down, left, right, home, backspaced, or tabbed to the next tab ▶

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► stop. Data is entered from the home position line by line until the screen is full. Displayed data rolls up by one line when data is entered after the screen is full, and the top line is lost. Erasure functions include clear screen and clear to end of page or line. An optional tape mode permits storage and display of control codes. Audible alarm, a standard feature, sounds when a Bell code is received or the eighth character from the end of a line is reached.

Elite 2100A: The terminal operates in a polling/addressing environment; addressing logic for up to 95 terminals is provided. Multiple terminals can be addressed simultaneously, and terminals can be polled during the receive cycle to provide more efficient line utilization. Transmission is performed in the block mode. The Transmit Line feature automatically transmits a line of data in response to polling.

The terminal features an addressable cursor that, by received or keyed command, can be positioned up, down, left, right, or home. Erasure functions include clear screen and clear to end of line. Print and transmit functions are also provided. Audible alarm, a standard feature, sounds when a Bell code is received or the eighth character from the end of a line is reached.

Elite 2500A: The standard terminal performs transmission on a character-by-character basis. In the full-duplex mode, keyed data is displayed only when "echoed back" from the receiving device. As an option, the terminal can operate in a polling/addressing environment, where a variable block of data is transmitted in response to a poll.

The terminal features an addressable cursor (displayed as an underscore), that, by received or keyed command, can be positioned up, down, left, right, home, or tabbed to the next tab stop. Erasure functions include screen erase and line or field erasure. The selectable roll function moves all displayed lines of data up by one line when data is received after the screen is full. The first line is lost when rolled up.

The standard terminal features formatted operation with protected fields. Dual-intensity displays format information within protected fields at half-intensity. Unprotected fields can be made to blink. Tabbing moves the cursor between unprotected fields.

The Tape mode displays and stores all control codes. Audible alarm, a standard feature, sounds when a Bell code is received or the eighth character from the end of a line is reached.

Options include character or line insertion or deletion, limited graphics, tabulation, and an independent print speed buffer.

COMPONENTS

CRT DISPLAY UNIT: All models except the portable terminals contain a 12-inch (diagonal measurement) CRT with a viewing area 6 inches high by 9 inches wide. The portable models of the Elite 1500A, 1520A, and 1520A APL contain a 9-inch CRT with a viewing area 4.5 inches high by 6.75 inches wide. The standard display arrangement for all models is 24 lines of 80 characters each. The Elite 1500A is available with a variety of standard display arrangements that include 6, 12, 18, or 24 lines of 80 characters each; 8, 16, or 24 lines of 64 characters each; or 8 lines of 32 characters each.

The standard displayable character set for Elite Models 1500A, 1520A, and 2100A is 64 ASCII symbols. A 128-character set of ASCII symbols is standard for the Elite 2500A and the switchable APL/ASCII version of the Elite 1520A and optional for the Elite 1520A. The 128-character set of ASCII symbols includes both upper and lower case alphabetics. The 128-character set of APL symbols includes upper case alphabetics only.

Each character is formed within a 5-by-7 dot matrix and is displayed in white on all models. The Elite 2500A is available with a 5-by-9 dot matrix for added clarity.

A separate video output can drive up to 16 slave monitors.

ELITE 1500A KEYBOARD: A 53-key Teletype-style arrangement. Generates any of 64 ASCII characters. Key functions include Here Is, Line Feed, Carriage Return, Rub Out, Repeat, Break, Escape, Shift, and Control Shift.

ELITE 1520A KEYBOARD: A 66-key typewriter-style arrangement. An optional 21-key cluster at the right of the main keygroup includes numeric, cursor control, and print keys. The standard keyboard generates any of 64 ASCII characters. Optional keyboards generate any of 128 ASCII or 128 ASCII/APL (switch-selectable) characters. Key functions include Line Feed, Carriage Return, Rub Out, Repeat, Break, Backspace, Tab, Escape, Alpha Lock, Shift, Control Shift, Tape Mode, Load Tape, Clear, Erase to End of Line, Erase to End of Screen, and Clear. Cursor control keys include Home, Up, Down, Left, and Right. Print and Print Off keys are provided.

ELITE 2100 KEYBOARD: A 47-key Teletype-style arrangement. The keyboard generates any of 64 ASCII characters. Key functions include the basic cursor controls, Print, Transmit, Clear to End of Line, and Clear Screen.

ELITE 2500A KEYBOARD: A 78-key typewriter-style arrangement. The standard keyboard also includes a 21-key cluster of numeric, cursor control, print, and edit (optional) keys to the right of the main keygroup. The keyboard generates any of 128 ASCII characters. Key functions include Line Feed, Carriage Return, Rub Out, Repeat, Break, Backspace, Tab (optional), Escape, Shift, Control Shift, Alpha Lock, Load Tape, Transmit, Transmit Line, Transmit Tape, Erase to End of Line, Erase to End of Screen, MR, Cursor Control (five keys), Roll, Print, and Insert/Delete (optional).

PRICING

The Datamedia terminals are available for purchase on an OEM basis only. Quantity discounts are provided and the investment tax credit is passed on to the customer. Datamedia sells to OEM manufacturers, distributors, systems houses, and a variety of educational establishments. There are no installation charges except in certain cases, which are charged at $50 per installation or $20 per terminal for multiple terminal installations.

Datamedia provides its own service on a limited basis, but typically, OEM's and distributors provide service for end users. Datamedia service charges for locations within a 25-mile radius of a service center are: Elite 1500A—$15/mo.; Elite 1520A—$15/mo.; Elite 1520A APL/ASCII version—$17/mo.; Elite 2100A—$20/mo.; and Elite 2500A—$20/mo. Datamedia terminals are covered under a 90-day warranty for parts and labor.

Customer training is conducted at the Datamedia plant and typically lasts three days. ►

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	Purchase Prices				
	1-9 Units	10-24 Units	25-49 Units	50-99 Units	100-249 Units
Elite 1500A*					
Display arrangement:					
32 x 8; 64 x 8; or 80 x 6	$1,250	$1,188	$1,125	$1,063	$1,000
64 x 16 or 80 x 12	1,310	1,245	1,179	1,114	1,048
64 x 24 or 80 x 18	1,370	1,302	1,233	1,165	1,096
80 x 24	1,430	1,359	1,287	1,216	1,144
Options—					
Numeric Cluster	50	48	45	43	40
20 ma Current Loop Interface:					
Without RS-232C	25	24	23	21	20
With RS-232C	75	71	68	64	60
Answer-Back (21-char.)	150	143	135	128	120
Portability	500	475	450	425	400
Accoustic Coupler (for portable unit only)	300	285	270	255	240
Elite 1520A					
Upper Case only*	1,555	1,477	1,400	1,322	1,244
Upper Case & Numeric Pad (with function controls)	1,605	1,525	1,446	1,364	1,284
Upper & Lower Case*	1,655	1,572	1,490	1,407	1,324
Upper & Lower Case with Numeric Pad (incl. function ctrls.)	1,705	1,620	1,535	1,449	1,364
APL/ASCII Version*	2,150	2,043	1,935	1,828	1,720
APL/ASCII Version with Numeric Pad (with function controls)	2,200	2,090	1,980	1,870	1,760
Options—					
20 ma Current Loop Interface	25	24	23	27	20
Portability	500	475	450	425	400
Acoustic Coupler (for portable unit only)	300	285	270	255	240
Elite 2100A					
Display Arrangement:					
80 x 18	2,035	1,933	1,832	1,730	1,628
80 x 24	2,095	1,990	1,886	1,781	1,676
Integral Modem	277	277	277	277	277
Elite 2500A					
Standard terminal	2,080	1,976	1,872	1,768	1,664
Options—					
Char./Line Insert/Delete	200	190	180	170	160
Printer Buffer	200	190	180	170	160
20 ma Current Loop Interface	25	24	23	21	20
Tabulation	25	24	23	21	20
Limited Graphics	75	71	68	64	60
Polling	150	143	135	128	120

*Portable versions of Elite models are priced by adding portability and acoustic coupler options to the models with an asterisk. ∎