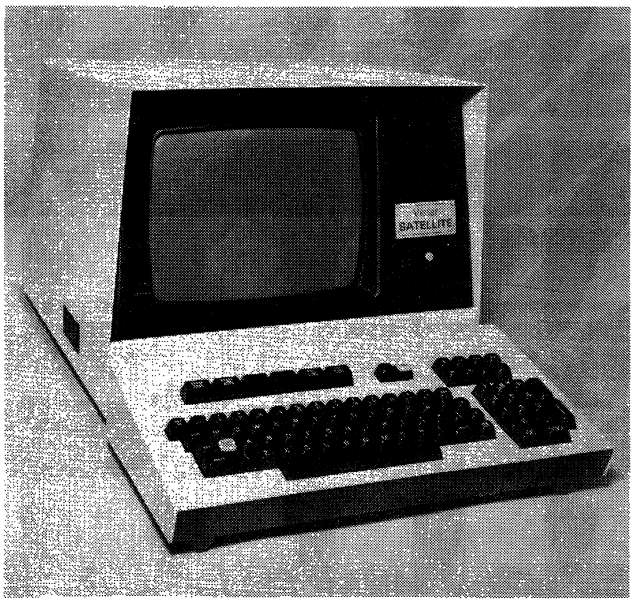
Infoton Vistar Series Display Terminals



The Vistar/Satellite is a middle-of-the-line member of the Vistar family. It is essentially an enhanced version of the early Vistar, but it has the physical appearance of the later models.

A low-cost family of Teletype-compatible CRT keyboard/display terminals.

Standard features include switch-selectable transmission speeds from 50 to 9600 bps, character or block mode transmission, page and roll modes, full cursor control, cursor addressability/readability, extensive editing, format protection, 128-character ASCII keyboard, 96 display symbols, etc. Key options include polling, a printer interface, and numeric pad.

Available with integral or separate keyboards, these stand-alone terminals range in price from $1,215 to $2,795. Up to 96 terminals can be multidropped on the same line. Infoton does not provide a lease program; the terminals are available for purchase only. Quantity discounts are available.

MANAGEMENT SUMMARY

Founded in 1969, Infoton is dedicated to the low-cost, Teletype-compatible display terminal market. Its market is heavily OEM-oriented, but also includes a significant number of large end-users, such as hospitals, educational institutions, and the U.S. Government. Infoton also exports its products to European customers via distributors. Europe accounts for about 30 percent of Infoton's installations.

Infoton's family of stand-alone terminals currently consists of six members that range in vintage from the Vistar, introduced in 1972, to the Vistar/3 and Vistar/GTX, introduced in 1976. Early models feature integral keyboards while later models provide separate keyboards. All models feature a 12-inch (diagonal), 1920-character display screen. The Vistar/Satellite, Vistar/2, and Vistar/3 are available with an optional serial or parallel printer interface for a user-supplied printer.

The Vistar and Vistar/GT, both early members of the Vistar family, are produced on a limited basis primarily for existing customers of those models. The Vistar/Satellite, Vistar/GTX, Vistar/2, and Vistar/3 feature modern casework design with a separate keyboard that can be located up to five feet from the display unit for operator convenience. Though all models are characterized as Teletype-compatible terminals, they differ functionally in available features and keyboard controls. The key differences among the models are highlighted in the following paragraphs.

CHARACTERISTICS

VENDOR: Infoton, Inc. (a Division of Optical Scanning Corporation), Second Avenue, Burlington, Massachusetts 01803. Telephone (617) 272-6660.

DATE OF ANNOUNCEMENT: Vistar—October 1972; Vistar/GT—January 1973; Vistar/GTX—February 1976; Vistar/Satellite—December 1975; Vistar/2—December 1974; Vistar/3—March 1976.

DATE OF FIRST DELIVERY: Vistar—January 1973; Vistar/GT—April 1973; Vistar/GTX—April 1976; Vistar/Satellite—April 1976; Vistar/2—March 1975; Vistar/3—June 1976.

NUMBER DELIVERED TO DATE: Over 15,000.

SERVICED BY: Infoton and Optical Scanning in about 25 major cities nationwide.

MODELS

Six stand-alone models include the Vistar, Vistar/GT, Vistar/GTX, Vistar/Satellite, Vistar/2, and Vistar/3. All models provide Teletype compatibility and, except for the early Vistar and Vistar/GT, which contain integral keyboards, the terminals are composed of a monitor and a separate keyboard. Model differences are detailed in the following paragraphs. A serial or parallel printer interface for a user-supplied printer is optional.

TRANSMISSION SPECIFICATIONS

Transmission is asynchronous in the half- or full-duplex mode at switch-selectable data rates from 50 to 9600 bits/second. The Vistar, Vistar/GT, and Vistar/2 provide 11 switch-selectable rates including 75, 110, 150, 300, 600, 1200, 1800, 2400, 4800, 7200, and 9600 bits/second plus a switch setting for an external clock rate up to 1800 bps (not

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The Vistar, though dated as the initial member of the family, offers many of the features provided by the later models. The salient features of the Vistar include:

- Character or block transmission.
- 11 switch-selectable data rates from 75 to 9600 bps plus an empty switch position for an external clock source.
- Page and Roll modes (selected by key or command).
- Page and Line Transmission (selected by key or command).
- Page and Line Erasure (selected by key or command).
- Individual cursor controls (selected by key or command).
- Numeric keypad.
- 64 displayable symbols.
- An RS-232C and a 20 or 60 ma dc current loop interface.

The Vistar/GT is a lower cost version of the Vistar (GT means glass teleprinter). In lieu of cursor controls, simplified cursor manipulation via space, carriage return, and line feed is provided. The salient features of the Vistar/GT are:

- Character transmission (unbuffered).
- 11 switch-selectable data rates from 75 to 9600 bps plus an empty switch position for an external clock source.
- Roll mode.
- 64 displayable symbols.
- 5 command functions (including screen erase, line feed, carriage return, rub-out, and bell).
- An RS-232C and a 20 or 60 ma dc current loop interface.
- An optional numeric pad.

The Vistar/GTX is a more recent lower cost version of the Vistar/GT. The GTX, like the GT, does not provide individual cursor controls; cursor control is provided by space, backspace, carriage-return, and line-feed functions. The salient features of the Vistar/GTX are:

- Character transmission (unbuffered operation).
- 15 switch-selectable transmission speeds from 50 to 9600 bps plus provision for an external clock source.

provided on the Vistar/2). The Vistar/GTX, Vistar/Satellite, and Vistar/3 provide 15 switch-selectable rates including 50, 75, 110, 134.5, 150, 300, 600, 900, 1200, 1800, 2400, 3600, 4800, 7200, and 9600 bits/second plus a switch setting for an external clock rate up to 1800 bps.

Transmission is performed in the switch-selectable character or block mode by the Vistar, Vistar/Satellite, Vistar/2, and Vistar/3. The Vistar/GT and Vistar/GTX transmit character by character only. All models employ the 8-level, 10- or 11-unit ASCII code. The 11-unit code includes one start and two stop bits and is conventionally used at 110 bps; the 10-unit code includes one start and one stop bit and is conventionally used at all other speeds. Odd, even, mark (1), or space (0) is switch-selectable for the parity (8th) bit position of each character.

All models are equipped with both an EIA RS-232C and a 20- or 60-ma (as wired) dc current loop interface.

All models are transmission-compatible with the Teletype Model 33 and 35 teleprinters. A polling option is available for the Vistar/2 and Vistar/3. The option accommodates up to 96 terminals on a common line; each has its own discrete address.

DEVICE CONTROL

VISTAR AND VISTAR/SATELLITE: All terminals respond to command control codes interspersed within a received message. Operating modes include Local, On-Line, Character, Block, Page, and Roll. The Local mode disconnects the terminal from the communications line; data communication functions are performed in the On-Line mode. Transmit modes provide character-by-character transmission for Teletype compatibility and block transmission. A line or page, as selected, is transmitted in the block mode. Page mode writes up to a full screen (page) of data; additional data is written over the first line. Roll mode moves all lines up by one line when the screen is full and a line feed is received. The top line is lost and a blank line appears at the bottom so that additional data can be written. The Roll feature has the visual effect of a continuous scroll of text moving past a window. Page and Roll modes cannot be selected simultaneously.

Cursor control features wraparound. The cursor is addressable and can be switched on or off via received control codes on the Vistar/Satellite. Cursor controls include up, down, left, right, and home. The cursor can be controlled via keyed or received commands.

Erasure functions include screen and line erasure. Line erasure erases all data from the cursor to the end of a line.

Audible alarm, a standard feature, sounds when a Bell code is received. On the Vistar, the audible alarm also sounds when data is keyed into the 70th character position when in the Block mode or the cursor enters this position in the Character mode.

The Answerback option (Vistar/Satellite) transmits a predetermined identification message of one to eight characters in response to a received ENQ code.

A local page print function transfers the contents of the display to the peripheral interface on either model. The Vistar/Satellite responds to a received control code to switch an attached printer on or off.

VISTAR/GT AND VISTAR/GTX: Operating modes include Local, On-Line, and Roll. These operating modes are the same as those described for the Vistar and Vistar/Satellite. Transmission is performed in the character mode only, because the GT and GTX are unbuffered terminals.

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- Roll mode.
- 64 displayable symbols.
- 5 command functions (identical with the GT).
- An RS-232C and a 20 or 60 ma dc current loop interface.

The Vistar/Satellite is a middle-of-the line product. It is essentially a Vistar with a few extra features that include:

- An addressable cursor.
- 64 or 96 displayable symbols.
- True lower case character generation.
- Cursor on/off and printer on/off command functions.
- An answerback option.
- Individual cursor control keys.
- A numeric pad.
- A full 128-character ASCII keyboard.
- A separate local print key.
- An optional printer interface.
- 15 switch-selectable data rates (instead of 11) plus an empty switch position for an external clock source.

The penultimate Vistar/2 is essentially an enhanced Vistar/Satellite. The Vistar/2 includes all the features of the Vistar/Satellite plus the following enhancements:

- Editing—character or line insert or delete.
- Protected format operation—for structured data entry applications.
- A polling option—up to 96 terminals can share a common line.

Unlike the Vistar/Satellite, the Vistar/2 provides the same 11 switch-selectable speeds as the Vistar.

The top-of-the-line Vistar/3 provides all the features of the Vistar/2 plus a few additional ones that include:

- An addressable/readable cursor.
- A forms generation mode.
- Display enhancements that include reverse video and blinking.

The cursor is restricted to the last line of the display, where all data is entered. No cursor control functions or keyboard cursor controls are provided. The cursor moves in response to a keyed or received carriage-return, line-feed, rub-out (optional on GTX), and space-forward functions; the cursor also advances one character position for each character keyed or received. Erasure is limited to screen erasure. The Bell function for the GT is identical with that for the Vistar; the Bell function for the GTX is identical with that for the Vistar/Satellite. Optional functions for the GTX include backspace, in response to Rub-Out or Control H, and space forward destructive or non-destructive.

VISTAR/2 AND VISTAR/3: The terminals respond to command control codes interspersed within a received message. Operating modes include Local, On-Line, Character, Block, Roll, and Page. These operating modes are identical with those described for the Vistar and Vistar/Satellite. However, the Block mode does not include a line transmit function. It does, however, permit transmission of a full or partial page of displayed data. The Vistar/3 provides an additional operating mode, the Forms Generation mode. This mode is used to create formats from the keyboard for structured data entry applications.

Cursor control features wraparound. Both the Vistar/2 and Vistar/3 feature an addressable cursor (line and character), but the Vistar/3 also features a readable cursor. The current cursor address can be sensed via computer command; cursor controls include up, down, left, right, home, and tab. The cursor can be controlled via keyed or received commands.

Edit functions include character or line insert or delete. Character insert or delete functions feature line wraparound (to the end of the display) and operate only within unprotected fields.

Erasure functions differ on the Vistar/3 and /2. The Vistar/2 provides screen and field erasure functions; all unprotected fields (foreground) are erased. The Vistar/3 provides page and field erasure. Page erasure erases all unprotected data and positions the cursor to Home. Field erasure erases all data from the cursor position to the end of an unprotected field; the cursor does not move.

Data entry via a displayed format is performed in the Block and Page modes. The protected fields (background) are displayed at reduced intensity and unprotected fields (foreground) at increased intensity. Forms can be created on the Vistar/2 via a multi-key sequence and on the Vistar/3 via the Forms Delimiter key, which is used to define the start and finish of unprotected (variable) fields. Formats are typically received from the host computer via the data line instead of by keyboard.

The Vistar/3 provides a forms transmit function which transmits a displayed form in response to a keyed command. When transmitting (Vistar/2 or /3), only the keyed data (unprotected fields) is transmitted; the format remains displayed. Vistar/3 provides both page and field transmit functions. Field transmit transmits only the field occupied by the cursor. These functions operate in the Block mode only; a control code is transmitted in the Character mode when either function is initiated.

The Tab key is used to advance from one unprotected field to the next when keying data. Vistar/3 also provides a back tab function, which moves the cursor to the end of the previous unprotected field. Tab and back tab functions are operable only when a protected format is displayed.

Both the Vistar/2 and Vistar/3 provide a local print-page function that prints a copy of the displayed page. Vistar/3

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- 15 switch-selectable data rates plus an empty switch position for an external clock source.
- Separate keys for forms generation and forms transmission.
- Separate keys for printing a line or a full page.
- Separate keys for transmitting a field or a full page.
- A back tab function.

The wide range of features that these terminals offer for their cost should satisfy virtually any environment where low cost, Teletype compatibility, and operating flexibility (without the need for programmability) are the criteria.

USER REACTION

In Datapro's 1976 survey of alphanumeric display terminal users, 6 users reported on their experience with a total of 31 Infoton display terminals. Their ratings are presented as follows:

	Excellent	Good	Fair	Poor	WA*
Overall performance	1	5	0	0	3.2
Ease of operation	1	5	0	0	3.2
Display clarity	2	4	0	0	3.3
Keyboard feel and usability	4	1	1	0	3.5
Hardware reliability	2	2	2	0	3.0
Maintenance service	1	5	0	0	3.2
Software and technical support	1	2	2	0	2.8

*Weighted Average on a scale of 4.0 for Excellent.

The high scores supplied by these users demonstrate a high degree of user satisfaction with all aspects of the Infoton terminals except support, which could use some improvement, as indicated by the rating. These users unanimously cited low cost as the key advantage. Two users cited reliability as a second key advantage. Only two users mentioned specific disadvantages. One felt these were performance limitations. The second mentioned poor support; however, this user rated maintenance service as good and technical support as fair.□

also provides a print field function that prints only the field occupied by the cursor. The Vistar/2 or /3 printer can operate on-line in the copy mode as a communications printer or off-line as a local copy printer via switch selection.

Audible alarm, a standard feature for both Vistar/2 and Vistar/3, sounds when a Bell code is received in the Character mode or when data is keyed into the 70th character position when in the Block mode.

The Vistar/3 features display enhancements that include blink and reverse video functions; both functions are initiated via control codes and can be specified for any number of display positions.

COMPONENTS

CRT DISPLAY UNIT: All models contain a 12-inch (diagonal measurement) CRT with a viewing area 7 inches high and 9 inches wide. The standard display arrangement for all models is 24 lines of 80 character each. The Vistar, Vistar/GT, and Vistar/GTX each display a set of 64 ASCII symbols including upper case alphabetics, numerics, and special symbols. The Vistar/Satellite, Vistar/2, and Vistar/3 each display a set of 96 ASCII symbols including upper and lower case alphabetics, numerics, and special symbols. Each character is formed via a 5-by-7 dot matrix within a 7-by-10 dot matrix character cell so that symbols such as the lower case alphabetics g, p, q, j, and y are displayed in true lower case with the descenders on the bottom two rows of the matrix. All models display data in white (P4 phosphor). The cursor is displayed as blinking underscore. Vistar/3 display enhancements including blinking and reverse video.

VISTAR KEYBOARD: A 57-key, teletype-compatible, integral keyboard. An 11-key numeric pad (including decimal) plus a cursor-control key cluster (5 keys) are located to the right of the main keygroup. Key functions include "Here Is," Line Feed, Carriage Return, Rub Out, Repeat, Break, Space, Escape, WRU, Tape On, Tape Off, Tab, X-Off, EOT, RU, Bell, Erase Page, Erase Line, Xmit Page, Xmit Line, Shift, and Control Shift. The keyboard generates any of 128 ASCII codes.

VISTAR/GT AND /GTX KEYBOARDS: A 53-key, teletype-compatible keyboard. The GT keyboard is an integral part of the terminal; the GTX keyboard is a separate unit. A numeric pad is optional on the Vistar/GT. Key functions are the same as those for the Vistar with the following exceptions: Line/Page Erase and Line/Page Xmit. The keyboard generates any of 128 ASCII codes.

VISTAR SATELLITE KEYBOARD: A 60-key typewriter-style detachable keyboard. A 15-key numeric pad is located to the right of the main keygroup, and an 8-key cursor control cluster is located over the numeric pad. A row of eight function keys is located over the main keygroup. Key functions include Space, Backspace, Carriage Return, Line Feed, Rub Out, Break, Repeat, Escape, Print Page, Enter, On-/Off-Line, Erase Page, Erase Line, Xmit Page, Xmit Line, Shift, and Control Shift. The keyboard generates any of 128 ASCII codes.

VISTAR/2 AND /3 KEYBOARDS: A 59-key, typewriter-style detachable keyboard. A 17-key cluster located to the right of the main keyboard includes numeric, cursor-control, and break keys. A row of 11 function keys is located over the main keygroup. Key functions include Space, Tab, Delete, Escape, Line Feed, Carriage Return, Rub Out, Repeat, Break, On/Off Line, Shift, and Control Shift. Key functions for the row of 11 function keys located over the main keygroup are different for the two terminals. Vistar/2 functions include Erase All, Erase Foreground (unprotected fields), Xmit, Line, Delete Line, Insert Line, Delete Character, and Insert Characters. Vistar/3 functions include Back Tab, Field Delimiter, Xmit Forms, Xmit Field/Page, Print Field/Page, Clear Field/Page, Line, Delete Line, Insert Line, Delete Character, and Insert Character. The keyboards generate any of 128 ASCII codes.

PRICING

The Vistar series terminals are available for purchase only. Quantity discounts of up to 35 percent on quantities of over

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100 units are available. There are no installation charges and the investment tax credit is passed on to the customer. Each terminal is covered by a 90-day warranty.

Training is provided at the factory as well as on-site. A maintenance manual and technical user's manual are supplied with each terminal.

	Purchase Price
Vistar	$2,295
Vistar/GT	1,595
Vistar/GTX	1,215
Vistar/Satellite	1,795
Vistar/2	2,795
Vistar/3	2,795

Options

Numeric Keypad with Double size Return Key (Vistar/GT only)	100
Command Functions (Vistar/GTX only)	Contact vendor
Answerback (Vistar/Satellite only)	200
Printer Interface, serial/parallel (Vistar/Satellite, Vistar/2 & Vistar/3 only)	250
Polling (Vistar/2 & Vistar/3 only)	200 plus programming charge■

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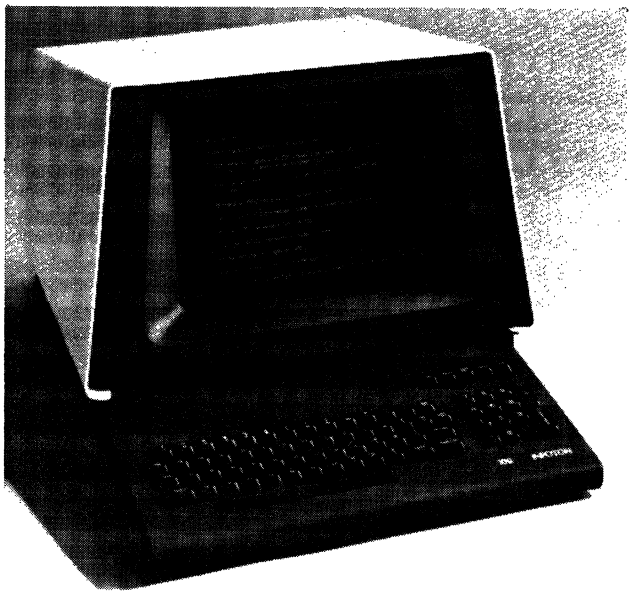
Infoton 100, 200, and 400 Display Terminals



The Infoton 100 shown above is a low-cost, microprocessor-based display terminal offering screen formatting and editing, paging, and line drawing features.

Teletype-compatible keyboard/display terminals offering capabilities ranging from basic Teletype replacement to data entry and editing.

Standard features include switch-selectable transmission rates, modem and current loop interfaces, cursor addressing, 64 or 128 displayable symbols, and, on some models, format protection and editing. Options include a buffered printer interface, a variety of keyboards, paging, and answerback.

The terminals are sold to OEM's and distributors. Suggested list prices are $995 for the basic Model 100, $1,000 for the basic Model 200, and $1,500 for the basic Model 400.

MANAGEMENT SUMMARY

The Infoton 200 and 400 were introduced in 1977 as the first members of a family of Teletype-compatible display terminals. The Infoton 200 is a Teletype replacement terminal, while the Infoton 400 is a microprocessor-based terminal with additional features for data entry applications. The Infoton 100, the newest member of the family, offers features that place it between the Infoton 200 and 400 in terms of capabilities. It is, however, the least expensive of the three models.

The Infoton 100 features Zilog Z-80 microprocessor control, character or optional block transmission, and 96 displayable ASCII characters plus 32 line drawing symbols. The keyboard is equipped with separate numeric/edit and cursor control clusters. Eight program function keys are optional. Edit functions include line insert and delete and, in Block Mode, character insert and delete and protected and unprotected fields. Emulation of the Lear Siegler ADM-3A, ADDS Consul 520, Hazeltine 1500, and DEC VT-52 terminals is optional.

The Infoton 200 is available with any of four keyboards that range from a basic upper-case only arrangement to a sophisticated upper and lower case arrangement with numeric pad, cursor keys, and 12 program function keys. The terminal operates in scroll or page modes and transmits a character at a time. The standard terminal is restricted to 64 upper case only display symbols; however, 128 ASCII symbols including control code symbols can be displayed as an option.

CHARACTERISTICS

VENDOR: Infoton, Inc., 2nd Avenue, Burlington, Massachusetts 01803. Telephone (617) 272-6660.

DATE OF ANNOUNCEMENT: Model 100—October 1978; Models 200 and 400—June 1977.

DATE OF FIRST DELIVERY: Model 100—November 1978; Models 200 and 400—August 1977.

NUMBER DELIVERED TO DATE: Information not available.

SERVICED BY: Distributors.

MODELS

Models 100, 200, and 400 are stand-alone, Teletype-compatible display terminals. Models 200 and 400 are equipped with a detachable keyboard. Models 100 and 400 are equipped with microprocessor control and provide an extended array of features. An RS-232C printer interface is standard for Model 100 and optional for Models 200 and 400.

TRANSMISSION SPECIFICATIONS

Transmission is asynchronous in the half- or full-duplex mode. Models 200 and 400 provide 16 internally-generated switch-selectable rates of 50, 75, 110, 134.5, 150, 200, 300, 600, 1200, 1800, 2400, 3600, 4800, 7200, 9600, and 19,200 bits/second. The Model 100 provides 8 switch-selectable rates of 110, 200, 300, 1200, 2400, 4800, 9600, and 19,200 bits/second. External timing can be used. The 8-level, 10- or 11-unit ASCII code is used. Odd or even parity, marking, or spacing are switch-selectable. The terminal is equipped with an RS-232C and 20 or 60 mA dc current loop interface. Multipoint operation is optional for Model 400 via a polling feature.

DEVICE CONTROL

INFOTON 100: Transmission is on a character-by-character

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The Infoton 400 is controlled by a Z-80 microprocessor and is available with either of two keyboards. Both keyboards are equipped with a numeric pad and a cursor/edit keypad, but differ in the number of program function keys—8 with the standard keyboard and 24 with the optional. Infoton 400 features include format generation and protection and full editing, including character and line insert and delete. The Infoton 400 also features expanded highlighting functions over the 100 and 200. Selected fields can be displayed in reverse video (symbols in black) full- or half-intensity, underlined, or blinked. Program controlled cursor sensing and addressing are standard features. Character or block transmission modes are operator-selectable and the Infoton 400 displays all 128 ASCII symbols as a standard feature. The terminal can be used in a multipoint network when the polling option is incorporated.

USER REACTION

Datapro's 1979 survey of alphanumeric display terminal users yielded responses from two users of the Infoton terminals. In June 1979, we talked with three additional users whose names were supplied by Infoton's distributors. These 5 users had a total of 53 units installed: 20 Model 100's, 27 Model 200's, and 6 Model 400's. The ratings assigned by the users are summarized in the following table.

	Excellent	Good	Fair	Poor	WA*
Overall performance	1	4	0	0	3.2
Ease of operation	0	5	0	0	3.0
Display clarity	3	2	0	0	3.6
Keyboard feel & usability	1	2	2	0	2.8
Hardware reliability	2	2	0	0	3.5
Maintenance service	2	1	0	0	3.7

*Weighted Average on a scale of 4.0 for Excellent.

Advantages of the Infoton terminals cited by the users included cost, sturdiness, good keyboard layout, and ease of maintenance. One user commented that Infoton makes quality products that are more reliable than comparable equipment.

There were few negative comments. One user had found the Model 200 was incompatible with an older Infoton model, and another said the operators complained because there was no backspace key.

In regard to the lower ratings assigned to the Keyboard Feel & Usability category, an Infoton spokesman pointed out that the Infoton terminals use solid state keyboards, which might feel strange, at first, to persons accustomed to mechanically activated keyboards.□

basis or, optionally, on a block basis. Line and keyboard command functions include carriage return, line feed, new line, line erase, page erase, cursor positioning, tabulation, columnar tabulation, and keyboard lock/unlock. Cursor addressing and sensing are standard features. Cursor controls move the cursor up, down, left, right, or home. Edit functions include line insert and delete. Character insert or delete and format protection are provided in the optional Block Mode. Eight program function keys are optional.

INFOTON 200: Transmission is performed on a character-by-character basis as each character is keyed. Model 200 operates in one of two switch-selectable modes: Bottom Line Entry and Full Screen Entry (alternatively, the Infoton 200 can be equipped at the factory to operate in a non-scroll mode only). In the Bottom Line Entry mode, data is entered in the last line, from left to right, and all displayed data scrolls up by one line after the line is filled. In the Full Screen Entry mode, data is entered on the first line and scrolling begins only after the screen is full. In the Non-Scroll Page mode, data entry is performed from first to last lines, but scrolling is disabled. Received and keyed commands execute carriage return, line feed, line insert, line delete, line erase, screen erase, audible alarm (Bell), and keyboard lock/unlock functions. An addressable cursor is standard. An optional cursor control pad provides individual cursor control keys that move the cursor up, down, left, right, or home. An answerback option transmits a station identification message in response to a keyed "Here Is" or received ENQ. The optional program function keys generate a program-defined character code.

INFOTON 400: Transmission can be performed on a character-by-character basis or on a block basis. Received and keyed commands execute carriage return, line feed, cursor positioning, tabulation, and keyboard lock/unlock functions. Cursor controls are provided that move the cursor up, down, left, right, or home. Cursor addressing and sensing are standard features. Edit functions include line and character insert and delete. Format protection, a standard feature, restricts data entry to unprotected fields. In Block Mode, a variety of transmission parameters can be defined to permit transmission of different portions of the display, including unprotected fields, protected fields, an entire field, or an entire page. Protected or unprotected fields can be highlighted by reverse video, half- and full-intensity, blinking, and underline functions. Fields can be designated as alphanumeric or numeric only. Tabbing can be performed between fields. Erase functions include field erase and page erase. Eight program function keys are standard for execution of program-defined functions; 24 are optional.

COMPONENTS

MODEL 100 CRT DISPLAY UNIT: A 12-inch (diagonal measurement) CRT with a display arrangement of 24 lines of 80 characters each for a total screen capacity of 1920 characters. Model 100 provides a character set of 96 ASCII symbols plus 32 line drawing symbols. Each character is formed by a 5-by-9 dot matrix. Data is displayed in white (P4 phosphor). Highlighting features include reverse video and dual intensity.

MODEL 200 CRT DISPLAY UNIT: The screen size, display arrangement, and total screen capacity are the same as on the Model 100. Model 200 provides a character set of 64 upper case ASCII symbols; a set of 128 displayable ASCII symbols is optional with the appropriate keyboards. Each character is formed by a 9-by-9 dot matrix. Data is displayed in white (P4 phosphor) or, optionally, in green (P31 phosphor). Reverse video is switch-selectable.

MODEL 400 CRT DISPLAY UNIT: A 12-inch (diagonal measurement) CRT that displays 25 lines of 80 characters each for a total screen capacity of 2000 characters. A character set of 128 displayable ASCII symbols is provided. Each character is formed by a 9-by-9 dot matrix, and data is displayed in white (P4 phosphor) or, optionally, in green (P31 phosphor). Highlighting features include reverse video, half- and full-intensity, blink, and underline.

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MODEL 100 KEYBOARD: A typewriter-style keyboard with cursor control and numeric/edit key clusters. Eight program function keys are optional. Key functions include Line Feed, Return, Break, Tab, Back Tab, Caps, Block, Insert Line, Delete Line, Insert Character, Delete Character, Erase Line, Erase Field, Erase Page, and Print. N-key rollover and repeatable keys are standard features.

MODEL 200 KEYBOARDS: Four models are available:

- Model 200/1—Typewriter style; ASCII upper case only.
- Model 200/2—Typewriter style with separate numeric pad; ASCII upper case only.
- Model 200/3—Typewriter style with separate numeric pad; ASCII upper and lower case.
- Model 200/4—Typewriter style with separate numeric pad, cursor key cluster, and 12 program function keys, ASCII upper and lower case.

Key functions for Models 200/1 and 200/2 include Here Is, Line Feed, Return, Rub Out, Repeat, Break, Escape, Shift and Control Shift. Key functions for Models 200/3 and 200/4 include Backspace, Break, Line Feed, Return, Repeat, Tab, Escape, Line, Page, Caps Only, Shift, and Control Shift.

MODEL 400 KEYBOARDS: Two keyboards are available. Models 400/4 and 400/5 are typewriter-style keyboards with separate numeric pad, cursor-control and edit key cluster, and a row of function keys. Model 400/4 provides 8 program function keys; Model 400/5 is equipped with 24 program function keys. Key functions include Backspace, Break, Line Feed, Return, Repeat, Escape, Tab, Erase Page, Erase Field, Print Page, Print Field, Back Tab, Transmit, Line, Block, Caps Only, Shift, and Control Shift. The cursor/edit key cluster includes five cursor and four edit keys.

PRICING

The Infoton terminals are available for purchase by OEM's and distributors only. The prices listed below are suggested list prices; actual prices will vary according to the options selected and the prices set by the distributors.

	Purchase Price
Infoton 100	$995
Infoton 200	$1,000 to $1,300
Infoton 400	$1,500 to $1,700

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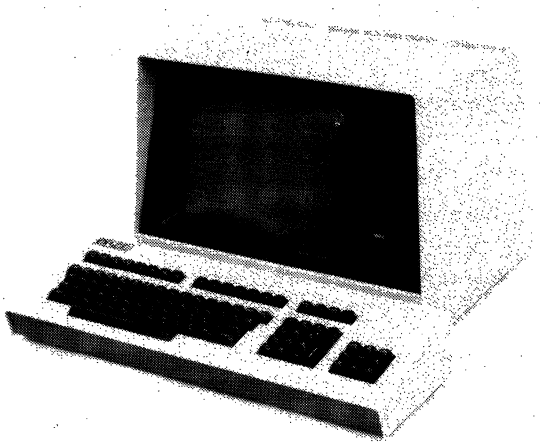
Infoton 200 and 400 Display Terminals



Low-cost, stand-alone keyboard/display terminals that feature Teletype compatibility and support data entry applications.

Standard features include a 1920-character display, 64 or 128 displayable symbols, cursor sensing and addressing, numeric pad, operator-selectable data rates, format protection, editing, etc. Options include multipoint operation, a buffered printer interface, answerback, and a variety of keyboards.

Single unit prices are $1,195 for the basic Infoton 200 and $1,525 for the basic Infoton 400. Quantity discounts are provided for both OEM and end-user quantity purchases.

MANAGEMENT SUMMARY

Infoton has recently introduced the first two members of a new family of Teletype-compatible display terminals. Both members are stand-alone terminals with detached keyboards. The Infoton 200, a Teletype replacement terminal, is essentially an upgraded Vistar GTX and employs integrated circuit technology. The Infoton 400 is a microprocessor-based terminal designed for data entry applications; its firmware supports a more expanded set of features than the 200. Both models use the same display monitor, which features a 12-inch screen; however, the keyboards differ. Both models also feature 16 operator-selectable data rates from 50 to 19,200 bps.

The Infoton 200 is available with any of five keyboards that range from a basic upper-case only arrangement to a sophisticated upper and lower case arrangement with numeric pad, cursor keys, and 12 program function keys. The terminal operates in scroll or page modes and transmits a character at a time. The standard terminal is restricted to 64 upper case only display symbols; however, 128 ASCII symbols including control code symbols can be displayed as an option.

The Infoton 400 is controlled by a Zylog Z-80 microprocessor and is available with either of two keyboards. Both keyboards are equipped with a numeric pad and a cursor/edit keypad, but differ in the number of program function keys—8 with the standard keyboard and 24 with the optional. Infoton 400 features include format generation and protection and full editing, including character and line insert and delete. The Infoton 400 also features expanded highlighting functions over the 200. Selected fields can be displayed in reverse video (symbols in black) full- or half-intensity, underlined, or blinked. Program controlled cursor sensing and addressing are standard features. Character or block transmission modes are operator-selectable and the Infoton 400 displays all 128 ASCII ▷

CHARACTERISTICS

VENDOR: Infoton, Inc., 2nd Avenue, Burlington, Massachusetts 01803. Telephone (617) 272-6660.

DATE OF ANNOUNCEMENT: June 1977.

DATE OF FIRST DELIVERY: August 1977.

NUMBER DELIVERED TO DATE: —

SERVICED BY: Sorbus.

MODELS

Models 200 and 400 are stand-alone, Teletype-compatible display terminals with a detachable keyboard. Model 400 is equipped with microprocessor control and provides an extended array of features. An RS-232C printer interface is optional for both models.

TRANSMISSION SPECIFICATIONS

Transmission is asynchronous in the half- or full-duplex mode at 16 internally-generated switch-selectable rates of 50, 75, 110, 134.5, 150, 200, 300, 600, 1200, 1800, 2400, 3600, 4800, 7200, 9600, and 19,200 bits/second. External timing can be used. The 8-level, 10- or 11-unit ASCII code is used. Odd or even parity, marking, or spacing are switch-selectable. The terminal is equipped with an RS-232C and 20 or 60 ma dc current loop interface. Multipoint operation is optional for Model 400 via a polling feature.

DEVICE CONTROL

INFOTON 200: Transmission is performed on a character-by-character basis as each character is keyed. Model 200 operates in one of two switch-selectable modes: Bottom Line Entry and Full Screen Entry (alternatively, the Infoton 200 can be equipped at the factory to operate in a non-scroll mode only). In the Bottom Line Entry mode, data is entered in the last line, from left to right, and all displayed data scrolls up by one line after the line is filled. In the Full Screen Entry mode, data is entered on the first line and scrolling begins only after the screen is full. In the Non-Scroll Page mode, data entry is performed from first to last lines, ▶

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Infoton 200 and 400 Display Terminals

symbols as a standard feature. The terminal can be used in a multipoint network when the polling option is incorporated.

Salient features of the Infoton 200 and 400 are:

- A 1920-character display capacity.
- 128 displayable ASCII symbols including upper and lower case alphabetics and representative symbols for the ASCII control codes (optional on the 200; standard on the 400).
- Cursor addressing (both models) and sensing (400 only).
- Page or Scroll modes (200 only).
- Forms generation and protection (400 only).
- Character and line insert and delete (400 only).
- Program function keys.
- Individual cursor control keys.
- Numeric keypad.
- Answerback option.
- Display highlighting.
- 16 operator-selectable asynchronous transmission speeds from 50 to 19,200 bps.
- An optional buffered printer interface.□

but scrolling is disabled. Received and keyed commands execute carriage return, line feed, line erase, screen erase, audible alarm (Bell), and keyboard lock/unlock functions. An addressable cursor is standard. An optional cursor control pad provides individual cursor control keys that move the cursor up, down, left, right, or home. An answerback option transmits a station identification message in response to a keyed "Here Is" or received ENQ. The optional program function keys generate a program-defined character code.

INFOTON 400: Transmission can be performed on a character-by-character basis or on a block basis. Received and keyed commands execute carriage return, line feed, cursor positioning, tabulation, and keyboard lock/unlock functions. Cursor controls are provided that move the cursor up, down, left, right, or home. Cursor addressing and sensing are standard features. Edit functions include line and character insert and delete. Format protection, a standard feature, restricts data entry to unprotected fields. Only unprotected fields are transmitted and/or transferred to an auxiliary device. Protected or unprotected fields can be highlighted by reverse video, half- and full-intensity, blinking, and underline functions. Fields can be designated as alphanumeric or numeric only. Tabbing can be performed between fields. Erase functions include field erase and page erase. Eight program function keys are standard for execution of program-defined functions; 24 are optional.

COMPONENTS

CRT DISPLAY UNIT: A 12-inch (diagonal measurement) CRT with a display arrangement of 24 lines of 80 characters each for a total screen capacity of 1920 characters. Model 200 provides a character set of 64 upper case ASCII symbols; a set of 128 displayable ASCII symbols is optional with the appropriate keyboards. Model 400 provides a character set of 128 displayable ASCII symbols. Each character is formed by 9-by-9 dot matrix. Data is displayed in white (P4 phosphor). Highlighting features include reverse video, half- and full-intensity, blink, and underline (Model 400 only).

MODEL 200 KEYBOARDS: Five models are available:

- Model 200/1—Typewriter style; ASCII upper case only.
- Model 200/2—Typewriter style with separate numeric pad; ASCII upper case only.
- Model 200/3A—Typewriter style; ASCII upper and lower case.
- Model 200/3—Typewriter style with separate numeric pad; ASCII upper and lower case.
- Model 200/4—Typewriter style with separate numeric pad, cursor key cluster, and 12 program function keys, ASCII upper and lower case.

Key functions for Models 200/1 and 200/2 include Here Is, Line Feed, Return, Rub Out, Repeat, Break, Escape, Shift and Control Shift. Key functions for Models 200/3A, 200/3; and 200/4 include Backspace, Break, Line Feed, Return, Repeat, Tab, Escape, Line, Page, Caps Only, Shift, and Control Shift.

MODEL 400 KEYBOARDS: Two keyboards are available. Models 400/4 and 400/5 are typewriter-style keyboards with separate numeric pad, cursor-control and edit key cluster, and a row of function keys. Model 400/4 provides 8 program function keys; Model 400/5 is equipped with 24 program function keys. Key functions include Backspace, Break, Line Feed, Return, Repeat, Escape, Tab, Erase, Page, Erase Field, Back Tab, Transmit, Line, Block, Caps Only, Shift, and Control Shift. The cursor/edit key cluster includes five cursor and four edit keys.

PRICING

The Infoton 200 and 400 are available for purchase only. Quantity discounts are provided for OEM and end-user purchases, and educational discounts are available. There are no installation charges. Each terminal is covered by a 90-day warranty. Infoton declined to disclose its discount prices.

	Purchase Price
Infoton 200—	
With Model 200/1 Keyboard	$1,195
With Model 200/2 Keyboard	1,210
With Model 200/3A Keyboard	1,225
With Model 200/3 Keyboard	1,240
With Model 200/4 Keyboard	1,295
Infoton 400	
With Model 400/4 Keyboard	1,525
With Model 400/5 Keyboard	1,595

Infoton 200 Options

Printer Interface (RS-232C)	20
Answerback	100
Non-Scroll Page Mode	0
Modem Cable	15

Infoton 400 Options

Buffered Printer Interface (Serial or parallel)	200
Polling (one- or two-character address-selectable)	50
Modem Cable	15■

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