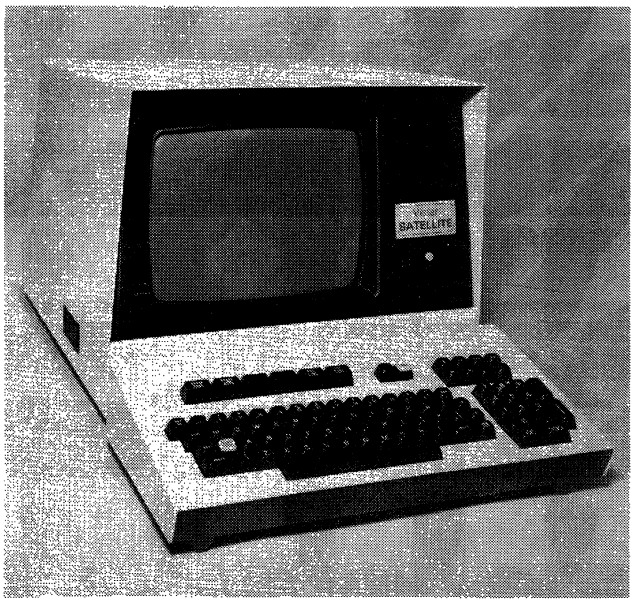
Infoton Vistar Series Display Terminals



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■