

X Terminals

Comparison Column Entry Descriptions

Vendor and Product

The name of the manufacturer and the product's name and model number are listed at the top of each column.

Physical Specifications

Terminal Design. X terminals generally consist of two components: the display, which handles graphics presentation-related functions, and the server or logic unit, which runs X Windows software and implements a network communications protocol such as TCP/IP. For some products, the display is mounted permanently upon the server; in others, the server is a separate unit that may reside under or beside the user's desk.

Display Dimensions. The height, width, and depth of the display portion of the X terminal, in inches, is recorded here.

Screen Size. The screen size is measured diagonally and stated in inches.

Display Pedestal. Display terminals commonly include a pedestal that provides vertical tilt and horizontal swivel capability. Some products also offer height adjustment. These features allow the user to achieve the best viewing position.

Internal Components.

Information items recorded in this section include the *main microprocessor* model and clock speed (in MHz); what model *graphics processor*, if any, is used; and the standard and maximum *internal memory capacity* of the X terminal, expressed in megabytes of random access memory (RAM).

Vendors also specify here the *boot strategy* used: the method by which the X terminal loads the required system software into its memory during start-up. Some X terminals can boot themselves using internal firmware (ROM or PROM); others rely on downloaded software from a host computer. Some products support either method.

In the final item here, vendors specify the *cooling system*: whether the display is cooled by an internal fan (which adds noise to the environment) or by simple heat convection.

U.S. Keyboard Styles Supported.

A range of U.S. keyboards is offered with X terminals, including data entry, typewriter, Digital VT, IBM PS/2, and UNIX styles.

Number of International Keyboard Styles. Many European languages use

slightly different keyboard arrangements to accommodate European-specific characters. The number of international keyboard styles offered by the vendor, if any, is recorded here.

Mouse. This entry specifies whether the mouse is standard equipment (included in the purchase price), optional equipment, or not supplied at all. Vendors offering the mouse as optional equipment were requested to supply the price.

Other Supported Equipment. Support for a display-attached printer is universal for today's display terminals. Other equipment that may be supported includes a bar code reader, an optical scanner, a tablet, and a track ball.

Display Characteristics

Display Color(s). Vendors manufacture both monochrome and color X terminals. The most common monochrome color is white. For color displays, vendors enter the number of foreground and background colors that can be presented simultaneously.

Number of Color or Gray Shades. Color X terminals typically offer a palette of color shades from which to choose. Monochrome X terminals are designed to display different levels of gray shading.

Screen Resolution. This section records both the number of presentable

dots horizontally and vertically (the *pixel resolution*) and the dot density (horizontally) in *dots per inch*.

Refresh Rate (Hz). The number of times per second that the display's electron beam scans the entire screen, referred to as the refresh rate, is another factor that determines image quality.

Graphics Capability

Window Customization Capability. For X terminals, the maximum number of concurrent windows is limited only by the amount of internal memory. Each window can be customized, to some degree, by the user. Customizable window elements may include window size and shape, screen position, the window border pattern, and window colors.

Other Graphics Features.

Here, vendors specify any additional graphics features, such as backing store and off-screen graphics. Backing store saves information about a window that has been overwritten by another existing window, eliminating the need for the host to retransmit the information later. With off-screen graphics, a host application transmits an image to the X terminal's memory, where the image is then mapped to a specific area of the display screen.

Font Service. Protocols for font access that are typically supported include DAP, NFS, and TFTP.

Software Support Windowing Standards Supported. Two versions of X Windows, Version 11 Release 3 and Version 11 Release 4, are implemented. Release 4, introduced at the end of 1989, provides several enhancements, including improved line drawing text output, a 50 percent reduction in X server code required for windows and drawings, and support for additional fonts.

Graphical User Interface. A graphical user interface (GUI) provides subroutines that generate menus, command buttons, and other interactive screen elements and also helps manage multiple windows on the screen. Popular GUIs include the Open Software Foundation's Motif, Digital's DE-Cwindows, and OpenLook from Sun Microsystems and AT&T. In most product literature, vendors state explicitly that their terminals are compatible with all major GUIs. This entry records whether a GUI is included with purchase, is offered optionally, or is not offered at all.

Network Management Capability
X terminals typically provide the means to monitor

network and terminal conditions through features such as diagnostics and network statistics reporting. Some products also offer an out of memory alarm to alert the user that the X terminal has reached the limits of its memory capacity.

User Setup Options
Type of User Setup System. Most products provide a menu-driven interface. A few products, however, are known to offer a command-line interface.

Selectable Options. Typical user-specifiable options include the boot strategy, displayable colors or shades, text fonts, active input and output devices, network protocols, and keyboard style.

Transmission Specifications
Maximum Communications Speed. Since most X terminals communicate over Ethernet cable, communications speeds of 10M bps are possible.

Transport Protocols Supported. In this section, vendors enter both *standard* and *optional* protocols. Common entries include DECnet, LAT, SLIP, TCP/IP, and Telnet.

Data Compression Supported. Support for data compression, which increases the data transmission rate, can improve terminal performance. Vendors supply a yes or a no for this entry.

Communications Ports. This section records the *number of ports* supported by the X terminal and the choice of *physical interfaces*. Vendors typically provide two or more ports, with a selection of RS-232-C, Ethernet ThickNet (10BASE5), or Ethernet ThinNet (10BASE2). Some also support Ethernet Twisted Pair (10BASE-T).

Pricing and Availability
Purchase Price (\$). Pricing is provided for single-unit quantities, unless otherwise specified. Single entries generally indicate the price of the basic unit without options.

Warranty Duration. A warranty period can vary from three months to three years. While under warranty, a display terminal is repaired at minimal or no cost to the user, either at a vendor-specified service center or at the user's site. After the expiration of the warranty, the user is given

the option to extend the maintenance arrangement for an annual or monthly fee.

Annual Maintenance. This entry records the cost of maintenance service during regular business hours (usually 9 a.m. to 5 p.m., Monday through Friday).

Serviced by. This entry specifies the party responsible for maintaining the display terminal. In some cases, the vendor provides total service; in others, a national service organization is responsible. Service is sometimes rendered under the combined efforts of both the vendor and an independent service organization.

Date of First Commercial Delivery. This entry indicates when the first production model of each terminal was delivered (or is scheduled to be delivered) to a customer.

Comments
In this section, vendors describe significant or unusual features, capabilities, or applications that are not reflected in the standard entries.

Vendor	Applied Digital Data Systems			
Product	4514C	4515	4517C	4519
Physical Specifications				
Terminal Design	Two piece	Two piece	Two piece	Two piece
Display Dimensions (HxWxD, inches)	13.10 x 13.80 x 15.30	14.41 x 14.17 x 14.76	16.00 x 16.00 x 17.00	16.93 x 18.82 x 17.48
Screen Size (inches, diagonal)	14	15	17	19
Display Pedestal	Tilt, swivel	Tilt, swivel	Tilt, swivel	Tilt, swivel
Internal Components:				
Main microprocessor	Motorola 68020, 16 MHz			
Graphics processor	Texas Instruments TMS 34010	None	Texas Instruments TMS 34010	None
Internal memory capacity (Mb RAM)	3 std., 12 max.	2 std., 4 max.	3 std., 12 max.	2 std., 4 max.
Boot strategy	Software download or firmware			
Cooling system	Internal fan	Internal fan	Internal fan	Internal fan
US Keyboard Styles Supported	Digital VT200, IBM PS/2			
No. of International Keybd. Styles	7	7	7	7
Mouse	Included with terminal	Included with terminal	Included with terminal	Included with terminal
Other Supported Equipment	Bar code reader	Bar code reader	Bar code reader	Bar code reader
Display Characteristics				
Display Color(s)	256 colors	Monochrome white	256 colors	Monochrome white
Number of Color or Gray Shades	16.7 million	Not specified	16.7 million	Not specified
Screen Resolution:				
Pixel resolution	640 x 480	1,024 x 800	1,024 x 768	1,280 x 1,024
Dots per inch	68	100	86	100
Refresh Rate (Hz)	56	76	70	70
Graphics Capability				
Window Customization Capability	Color/shade, position, size, title, text	Color/shade, position, size, title	Color/shade, position, size, title, text	Color/shade, position, size, title
Other Graphics Features	Backing store, save under, panning	Backing store, save under	Backing store, save under, panning	Backing store, save under
Font Service	NFS, TFTP	NFS, TFTP	NFS, TFTP	NFS, TFTP
Software Support				
Windowing Standards Supported	X Windows 11.4	X Windows 11.4	X Windows 11.4	X Windows 11.4
Graphical User Interface	None supplied	None supplied	None supplied	None supplied
Network Management Capability				
	Diagnostics, network statistics, out of memory alarm, SNMP protocol support	Diagnostics, network statistics, out of memory alarm, SNMP protocol support	Diagnostics, network statistics, out of memory alarm, SNMP protocol support	Diagnostics, network statistics, out of memory alarm, SNMP protocol support
User Setup Options				
Type of User Setup System	Menu driven	Menu driven	Menu driven	Menu driven
Selectable Options	Boot strategy, color/shades, fonts, keybd, network protocols	Boot strategy, fonts, I/O devices, keybd, network protocols	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols	Boot strategy, fonts, I/O devices, keybd, network protocols
Transmission Specifications				
Max. Comm. Speed (bps)	Not specified	10M	10M	10M
Transport Protocols Supported:				
Standard protocols	DECnet, SLIP, TCP/IP, Telnet, PPP	DECnet, SLIP, TCP/IP, Telnet	DECnet, SLIP, TCP/IP, Telnet	DECnet, SLIP, TCP/IP, Telnet
Optional protocols	Not specified	PPP	PPP	PPP
Data Compression Supported	No	No	No	No
Communications Ports:				
Number of ports	3	3	3	3
Physical interfaces supported	RS-232-C, Ethernet ThickNet (10base5)	RS-232-C, Ethernet ThickNet (10base5)	RS-232-C, Ethernet ThickNet (10base5)	RS-232-C, Ethernet ThickNet or ThinNet (10base5/10base2)
Pricing and Availability				
Purchase Price (\$)	3,595	2,545	4,470	3,350
Warranty Duration	3 months	3 months	3 months	3 months
Annual Maintenance	Varies	Varies	Varies	Varies
Serviced By	NCR/ADDS	NCR/ADDS	NCR/ADDS	NCR/ADDS
Date of First Commercial Delivery	January 1991	April 1990	January 1991	April 1990
Comments				
	NCR/ADDS first to offer a local copy of the Motif Window Manager, which provides a consist. industry-std. user interface	NCR/ADDS first to offer a local copy of the Motif Window Manager, which provides a consist. industry-std. user interface	NCR/ADDS first to offer a local copy of the Motif Window Manager, which provides a consist. industry-std. user interface	NCR/ADDS first to offer a local copy of the Motif Window Manager, which provides a consistent industry-std. user interface

Vendor	Data General Corp.	Digital Equipment Corp.	Digital Equipment Corp.	Digital Equipment Corp.
Product	AVX-30 X-Window Display Station	DECimage 1200	VT1200	VT1300
Physical Specifications				
Terminal Design	One piece	Two piece	Two piece	Two piece
Display Dimensions (HxWxD, inches)	15.00 x 14.00 x 14.00	18.10 x 19.50 x 15.60	18.10 x 19.50 x 15.80	18.10 x 19.50 x 17.80
Screen Size (inches, diagonal)	16	15, 19	15, 19	19
Display Pedestal	Tilt, swivel	Tilt, swivel	Tilt, swivel	Tilt, swivel
Internal Components:				
Main microprocessor	Motorola 68000, 12.5 MHz	Texas Instruments TMS 34010	Texas Instruments TMS 34010	CVAX
Graphics processor	ASIC	ASIC	Did not specify	SPX
Internal memory capacity (Mb RAM)	5 std., 4.5 max.	2 std., 4 max.	2 std., 4 max.	8 std., 8 max.
Boot strategy	Software download or firmware	Firmware	Software download	Software download
Cooling system	Not specified	Internal fan	Internal fan	Internal fan
US Keyboard Styles Supported	IBM PS/2	Data entry, typewriter, Digital LK401	Data entry, typewriter, Digital LK401	Data entry, Digital VT300, typewriter
No. of International Keybd. Styles	Not specified	Not specified	Did not specify	Not specified
Mouse	Included with terminal	Included with terminal	Included with terminal	Included with terminal
Other Supported Equipment	Printer	Printer, bar code reader	Printer, bar code reader	Bar code reader
Display Characteristics				
Display Color(s)	Monochrome white	Monochrome white	Monochrome white or 8 colors	8 colors
Number of Color or Gray Shades	Not specified	Not specified	256	256
Screen Resolution:				
Pixel resolution	1,024 x 1,024	1,280 x 1,024	1,280 x 1,024	1,280 x 1,024
Dots per inch	105	Not specified	100	100
Refresh Rate (Hz)	70	72	72	66
Graphics Capability				
Window Customization Capability	Position, size	Position, size, title	Position, size, title	Color/shade, position, size, title
Other Graphics Features	Backing store, save under, off-screen graphics	Pan/zoom	Backing store, save under, read only	Backing store, save under
Font Service	TFTP	TFTP, LAT	TFTP, DECnet	TFTP, DECnet
Software Support				
Windowing Standards Supported	X Windows 11.3	X Windows 11.4, XIE	X Windows 11.3	X Windows 11.3
Graphical User Interface	Included with purchase	Included with purchase (Digital DECwindows)	Included with purchase (Digital DECwindows)	Included with purchase (Digital DECwindows)
Network Management Capability				
	Not specified	Diagnostics, out of memory alarm	Diagnostics, out of memory alarm, TCP/IP routing tables, network security, TCP/IP name server	Diagnostics, network statistics
User Setup Options				
Type of User Setup System	Menu driven	Menu driven	Menu driven	Menu driven
Selectable Options	Not specified	Boot strategy, fonts, style, network protocols	Boot strategy, fonts, keybd, network protocols, window management, session management	Boot strategy, color/shades, fonts, keybd, network protocols
Transmission Specifications				
Max. Comm. Speed (bps)	56K	Not specified	Not specified	Not specified
Transport Protocols Supported:				
Standard protocols	SLIP, TCP/IP, Telnet	LAT, TCP/IP, Telnet	DECnet, LAT, TCP/IP, Telnet, ANSI	DECnet, TCP/IP
Optional protocols	Not specified	Not specified	Not specified	Not specified
Data Compression Supported	No	Yes	No	No
Communications Ports:				
Number of ports	2	3	3	2
Physical interfaces supported	RS-232-C, Ethernet ThickNet (10base5), RS-423	RS-232-C, Ethernet ThickNet or ThinNet (10base5/10base2)	RS-232-C, Ethernet ThickNet or ThinNet (10base5/10base2)	Ethernet ThickNet (10base5)
Pricing and Availability				
Purchase Price (\$)	2,795	15": 3,395; 19": 4,095	15": 2,195; 19": 2,695	15": 2,195; 19": 2,695
Warranty Duration	Not specified	1 year	1 year	1 year
Annual Maintenance	29 per month	Not specified	Various agreements	Various plans
Serviced By	Data General	Digital	Digital	Digital
Date of First Commercial Delivery	August 1989	May 1991	September 1990	October 1990
Comments				
		Window manager, session manager, XIE compressed image storage, VT320 emulation	Window manager, session manager, VT320 emulation	Window manager and session manager; XIE compressed image storage; VT320 emulation

Vendor	Hewlett-Packard Co.	Hewlett-Packard Co.	Hewlett-Packard Co.	Hewlett-Packard Co.
Product	HP 700/RX Model 16Ca	HP 700/RX Model 16Ci	HP 700/RX Model 19Ca	HP 700/RX Model 19Mi
Physical Specifications				
Terminal Design	Two piece	Two piece	Two piece	Two piece
Display Dimensions (HxWxD, inches)	13.60 x 16.20 x 17.10	13.60 x 16.20 x 17.10	15.75 x 19.68 x 19.88	15.00 x 18.82 x 26.90
Screen Size (inches, diagonal)	16	16	19	19
Display Pedestal	Tilt, swivel	Tilt, swivel	Tilt, swivel	Tilt, swivel
Internal Components:				
Main microprocessor	Intel i960CA RISC, 22.7 MHz	Intel i960CA, 22.7 MHz	Intel i960CA RISC, 22.7 MHz	Intel i960CA RISC, 22.7 MHz
Graphics processor	None	None	None	None
Internal memory capacity (Mb RAM)	5 std., 19 max.	5 std., 19 max.	6 std., 20 max.	2.25 std., 18.25 max.
Boot strategy	Software download or firmware			
Cooling system	Internal fan	Internal fan	Internal fan	Not specified
US Keyboard Styles Supported	IBM PS/2, HP-HIL	IBM PS/2, HP-HIL	IBM PS/2, HP-HIL	IBM PS/2, HP-HIL
No. of International Keybd. Styles	28	28	28	28
Mouse	Included with terminal	Included with terminal	Included with terminal	Included with terminal
Other Supported Equipment	Printer, bar code reader, track ball, any serial or parallel RS-232-C device	Printer, bar code reader, track ball, plotter, any serial or parallel RS-232-C device	Printer, bar code reader, track ball, any serial or parallel RS-232-C device	Printer, bar code reader, track ball, any serial or parallel RS-232-C device
Display Characteristics				
Display Color(s)	256 colors	256 colors	256 colors	Monochrome white
Number of Color or Gray Shades	16.7 million	16.7 million	16.7 million	Not applicable
Screen Resolution:				
Pixel resolution	1,024 x 768	1,024 x 768	1,280 x 1,024	1,280 x 768
Dots per inch	88	88	98	97
Refresh Rate (Hz)	75	75	72	72
Graphics Capability				
Window Customization Capability	Color/shade, position, size, title			
Other Graphics Features	Backing store, save under			
Font Service	NFS, TFTP, ROM Card			
Software Support				
Windowing Standards Supported	X Windows 11.4	X Windows 11.4	X Windows 11.4	X Windows 11.4
Graphical User Interface	None supplied	None supplied	None supplied	None supplied
Network Management Capability				
	Diagnostics, network statistics, out of memory alarm, network utilities test script	Diagnostics, network statistics, out of memory alarm, network utilities test script	Diagnostics, network statistics, out of memory alarm, network utilities test script	Diagnostics, network statistics, out of memory alarm, network utilities test script
User Setup Options				
Type of User Setup System	Menu driven	Menu driven	Menu driven	Menu driven
Selectable Options	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols, foreign language keyboards, video resolution	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols, foreign language keyboards	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols, foreign language keyboards	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols, foreign language keyboards, video resolution
Transmission Specifications				
Max. Comm. Speed (bps)	10M	10M	10M	10M
Transport Protocols Supported:				
Standard protocols	TCP/IP, Telnet	TCP/IP, Telnet	TCP/IP, Telnet	TCP/IP, Telnet
Optional protocols	Not specified	Not specified	Not specified	Not specified
Data Compression Supported	No	No	No	No
Communications Ports:				
Number of ports	7	7	7	7
Physical interfaces supported	RS-232-C, Ethernet ThickNet or twisted-pair, HP-HIL port	RS-232-C, Ethernet ThickNet (10base5) or twisted-pair	RS-232-C, Ethernet ThickNet (10base5) or twisted-pair	RS-232-C, Ethernet ThickNet, twisted-pair, or HP-HIL port
Pricing and Availability				
Purchase Price (\$)	5,195	4,495	5,995	2,995
Warranty Duration	1 year	1 year	1 year	1 year
Annual Maintenance	Not specified	Not specified	20	Not specified
Serviced By	Hewlett-Packard	Hewlett-Packard	Hewlett-Packard	Hewlett-Packard
Date of First Commercial Delivery	June 1991	July 1991	May 1991	July 1991
Comments				
	HP 700/RX family is first to use RISC technology; 2-4 times faster than competing terminals at a comparable or lower price	HP 700/RX family is first to use RISC technology; 2-4 times faster than competing terminals at a comparable or lower price	HP 700/RX family is first to use RISC technology; 2-4 times faster than competing terminals at a comparable or lower price	HP 700/RX family is first to use RISC technology; 2-4 times faster than competing terminals at a comparable or lower price

Vendor	Human Designed Systems, Inc.	Jupiter Systems	Jupiter Systems	NCR Corp.
Product	HDS ViewStation	410	412	XL14C
Physical Specifications				
Terminal Design	Two piece	Two piece	Logic unit plus 2 displays	Two piece
Display Dimensions (HxWxD, inches)	Not specified	Not specified	Not specified	13.10 x 13.80 x 15.30
Screen Size (inches, diagonal)	14, 15, 16, 19, 21	19	19	14
Display Pedestal	Tilt, swivel	Tilt, swivel	Tilt, swivel	Tilt, swivel
Internal Components:				
Main microprocessor	Intel 80186, 10/16 MHz	Motorola 68030	Motorola 68030	Motorola 68020, 16.67 MHz
Graphics processor	Texas Instruments TMS 34010	Jupiter RFBGraphics Engine	Jupiter RFBGraphics Engine	Texas Instruments TMS 34010
Internal memory capacity (Mb RAM)	1.5 std., 9.0 max.	4 std., 16 max.	4 std., 16 max.	3 std., 12 max.
Boot strategy	Software download or firmware	Software download	Software download	Software download or firmware
Cooling system	Internal fan	Internal fan	Internal fan	Internal fan
US Keyboard Styles Supported	Digital VT200, IBM Enhanced PC, multinational types	Digital VT200, IBM Enhanced PC	Digital VT200, IBM Enhanced PC	Digital VT200, IBM PS/2
No. of International Keybd. Styles	11	Not specified	Not specified	7
Mouse	Included with terminal	Included with terminal	Included with terminal	Included with terminal
Other Supported Equipment	Printer, track ball	Track ball	Track ball	Bar code reader
Display Characteristics				
Display Color(s)	Mono. white or 256-color	256 colors	256 colors	256 colors
Number of Color or Gray Shades	16 million	16.7 Million	16.7 Million	16.7
Screen Resolution:				
Pixel resolution	1,280 x 1,024	1,280 x 1024	1,280 x 1,024	640 x 480
Dots per inch	Various	100	100	68
Refresh Rate (Hz)	60, 70, 72	60	60	56
Graphics Capability				
Window Customization Capability	Color/shade, position, size, title	Color/shade, position, size, title	Color/shade, position, size, title	Color/shade, position, size, title
Other Graphics Features	Backing store, save under	Backing store, save under, zoom, mapping of 12-bit image data	Backing store, save under, zoom, mapping of 12-bit image data	Backing store, panning
Font Service	TFTP, FTP	NFS, TFTP	NFS, TFTP	NFS, TFTP
Software Support				
Windowing Standards Supported	X Windows 11.4, X Windows 11.3	X Windows 11.4, DECwindows	X Windows 11.4	X Windows 11.4
Graphical User Interface	None supplied	None supplied	Not specified	None supplied
Network Management Capability				
	Diagnostics, network stat., out of memory alarm, SNMP protocol support, SLIP, CSLIP; RARP and BOOTP;	Diagnostics, SNMP protocol support, Ping utility, remote login	Diagnostics, SNMP protocol support, Ping utility, remote login	Diagnostics, network statistics, out of memory alarm, SNMP protocol support
User Setup Options				
Type of User Setup System	Menu driven	Command line driven	Command line driven	Menu driven
Selectable Options	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols, diagnostic window; ANSI term. emulat.	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols	Boot strategy, color/shades, fonts, keybd, network protocols
Transmission Specifications				
Max. Comm. Speed (bps)	10M	10M	10M	Not specified
Transport Protocols Supported:				
Standard protocols	SLIP, TCP/IP, Telnet, compressed SLIP	DECnet, TCP/IP, Telnet	DECnet, TCP/IP, MOP	DECnet, SLIP, TCP/IP, Telnet, PPP
Optional protocols	Not specified	Not specified	Not specified	Not specified
Data Compression Supported	Yes	No	No	No
Communications Ports:				
Number of ports	4	1	1	3
Physical interfaces supported	RS-232-C, Ethernet ThickNet, ThinNet, twisted-pair, MMJ	RS-232-C, Ethernet ThickNet (10base5)	RS-232-C, Ethernet ThickNet (10base5)	RS-232-C, Ethernet ThickNet or ThinNet (10base5/10base/2)
Pricing and Availability				
Purchase Price (\$)	1,499-5,999	7,950	13,950	3,595
Warranty Duration	4 years	6 months	6 months	1 year
Annual Maintenance	Not specified	477	837	180
Serviced By	HDS	Jupiter Systems	Jupiter Systems	NCR/ADDS
Date of First Commercial Delivery	September 1989	06/90	07/90	01/91
Comments				
		The performance leader in color X terminals; includes high quality monitor with invar. shadow mask	Dual-display color system; cursor moves from display to display	NCR/ADDS first to offer a local copy of the Motif Window Manager, which provides a consist. industry-std. user interface

Vendor	NCR Corp.	NCR Corp.	NCR Corp.	Network Computing, Devices, Inc.
Product	XL15	XL17C	XL19	NCD 14c
Physical Specifications				
Terminal Design	Two piece	Two piece	Two piece	One piece
Display Dimensions (HxWxD, inches)	14.41 x 14.17 x 14.76	16.00 x 16.00 x 17.00	16.93 x 18.82 x 17.48	15.10 x 13.80 x 15.80
Screen Size (inches, diagonal)	15	17	19	14
Display Pedestal	Tilt, swivel	Tilt, swivel	Tilt, swivel	Tilt, swivel
Internal Components:				
Main microprocessor	Motorola 68020, 16.67 MHz	Motorola 68020, 16.67 MHz	Motorola 68020, 16.67 MHz	Motorola 68020, 70 MHz
Graphics processor	None	Texas Instruments TMS 34010	None	ASIC (custom)
Internal memory capacity (Mb RAM)	2 std., 4 max.	3 std., 12 max.	2 std., 4 max.	4 std., 32 max.
Boot strategy	Software download or firmware			
Cooling system	Internal fan	Internal fan	Internal fan	Convection
US Keyboard Styles Supported	Digital VT200, IBM PS/2	Digital VT200, IBM PS/2	Digital VT200, IBM PS/2	Digital VT200, IBM PS/2, UNIX
No. of International Keybd. Styles	7	7	7	19
Mouse	Included with terminal	Included with terminal	Included with terminal	Included with terminal
Other Supported Equipment	Bar code reader	Bar code reader	Bar code reader	Printer, bar code reader, optical scanner, track ball
Display Characteristics				
Display Color(s)	Monochrome white	256 colors	Monochrome white	256 colors
Number of Color or Gray Shades	Not specified	16.7 million	Not specified	Not specified
Screen Resolution:				
Pixel resolution	1,024 x 800	1,024 x 768	1,280 x 1,024	1,024 x 768
Dots per inch	100	86	100	108
Refresh Rate (Hz)	76	70	70	70
Graphics Capability				
Window Customization Capability	Color/shade, position, size, title			
Other Graphics Features	Backing store, save under	Backing store, save under, panning	Backing store, save under	Backing store, save under
Font Service	NFS, TFTP	NFS, TFTP	NFS, TFTP	DAP, NFS, TFTP
Software Support				
Windowing Standards Supported	X Windows 11.4	X Windows 11.4	X Windows 11.4	X Windows 11.4
Graphical User Interface	None supplied	None supplied	None supplied	None supplied
Network Management Capability				
	Diagnostics, network statistics, out of memory alarm, SNMP protocol support	Diagnostics, network statistics, out of memory alarm, SNMP protocol support	Diagnostics, network statistics, out of memory alarm, SNMP protocol support	Diagnostics, network statistics, out of memory alarm, SNMP protocol support, remote config.
User Setup Options				
Type of User Setup System	Menu driven	Menu driven	Menu driven	Command line or menu driven
Selectable Options	Boot strategy, fonts, I/O devices, keybd, network protocols	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols	Boot strategy, fonts, I/O devices, keybd, network protocols	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols, remote or local configuration
Transmission Specifications				
Max. Comm. Speed (bps)	10M	10M	10M	Not specified
Transport Protocols Supported:				
Standard protocols	DECnet, SLIP, TCP/IP, Telnet, PPP	DECnet, SLIP, TCP/IP, Telnet, PPP	DECnet, SLIP, TCP/IP, Telnet, PPP	LAT, SLIP, TCP/IP, Telnet, XRemote optimized serial
Optional protocols	Not specified	Not specified	Not specified	DECnet
Data Compression Supported	No	No	No	Yes
Communications Ports:				
Number of ports	3	3	3	3
Physical interfaces supported	RS-232-C	RS-232-C	RS-232-C	RS-232-C, Ethernet ThickNet, ThinNet, or twisted pair
Pricing and Availability				
Purchase Price (\$)	2,545	4,470	3,350	3,000
Warranty Duration	1 year	1 year	1 year	1 year
Annual Maintenance	180	240	225	120
Serviced By	NCR/ADDS	NCR/ADDS	NCR/ADDS	NCD, Motorola onsite service
Date of First Commercial Delivery	04/90	01/91	04/90	12/89
Comments				
	NCR/ADDS first to offer a local copy of the Motif Window Manager, which provides a consist. industry-std. user interface	NCR/ADDS first to offer a local copy of the Motif Window Manager, which provides a consist. industry-std. user interface	NCR/ADDS first to offer a local copy of the Motif Window Manager, which provides a consist. industry-std. user interface	Std. s/w includes perform enhancements; window mgr.; Telnet sessions; DECnet, SNMP, XRemote, and XDMCP supp.; and user authenticat.

Vendor	Network Computing Devices, Inc.			
Product	NCD 156	NCD 16e	NCD 17c	NCD 19
Physical Specifications				
Terminal Design	One piece	One piece	One piece	One piece
Display Dimensions (HxWxD, inches)	13.50 x 13.60 x 14.00	15.00 x 14.00 x 14.00	16.00 x 16.00 x 17.00	18.40 x 18.00 x 16.00
Screen Size (inches, diagonal)	15	16	17	19
Display Pedestal	Tilt, swivel	Tilt, swivel	Tilt, swivel	Tilt, swivel
Internal Components:				
Main microprocessor	Motorola 68000, 16 MHz	Motorola 68020, 15 MHz	Motorola 68020, 20 MHz	Motorola 68020, 15 MHz
Graphics processor	ASIC (custom)	ASIC (custom)	ASIC (custom)	ASIC (custom)
Internal memory capacity (Mb RAM)	2 std., 5 max.	2 std., 8 max.	4 std., 32 max.	4 std., 8 max.
Boot strategy	Software download or firmware			
Cooling system	Convection	Convection	Convection	Convection
US Keyboard Styles Supported	Digital VT200, IBM PS/2, UNIX			
No. of International Keybd. Styles	19	19	19	19
Mouse	Included with terminal	Included with terminal	Included with terminal	Included with terminal
Other Supported Equipment	Printer, bar code reader, optical scanner, track ball	Printer, bar code reader, optical scanner, track ball	Printer, bar code reader, optical scanner, track ball	Printer, bar code reader, optical scanner, track ball
Display Characteristics				
Display Color(s)	Monochrome white	Monochrome white	256 colors	Monochrome white
Number of Color or Gray Shades	Not specified	Not specified	16.7 million	Not specified
Screen Resolution:				
Pixel resolution	1,024 x 800	1,024 x 1,024	1,024 x 768	1,280 x 1,024
Dots per inch	100	100	87	100
Refresh Rate (Hz)	70	70	70	70
Graphics Capability				
Window Customization Capability	Color/shade, position, size, title			
Other Graphics Features	Backing store, save under			
Font Service	DAP, NFS, TFTP	DAP, NFS, TFTP	DAP, NFS, TFTP	DAP, NFS, TFTP
Software Support				
Windowing Standards Supported	X Windows 11.4	X Windows 11.4	X Windows 11.4	X Windows 11.4
Graphical User Interface	None supplied	None supplied	None supplied	None supplied
Network Management Capability				
	Diagnostics, network statistics, out of memory alarm, SNMP protocol support, remote config.	Diagnostics, network statistics, out of memory alarm, SNMP protocol support, remote config.	Diagnostics, network statistics, out of memory alarm, SNMP protocol support, remote config.	Diagnostics, network statistics, out of memory alarm, SNMP protocol support, remote config.
User Setup Options				
Type of User Setup System	Command line or menu driven			
Selectable Options	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols, local or remote config.	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols, local or remote configuration	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols, local or remote configuration	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols, local or remote configuration
Transmission Specifications				
Max. Comm. Speed (bps)	Not specified	Not specified	Not specified	Not specified
Transport Protocols Supported:				
Standard protocols	LAT, SLIP, TCP/IP, Telnet, XRemote optimized serial			
Optional protocols	DECnet	DECnet	DECnet	DECnet
Data Compression Supported	Yes	Yes	Yes	Yes
Communications Ports:				
Number of ports	3	3	3	3
Physical interfaces supported	RS-232-C, Ethernet ThickNet, ThinNet, or twisted-pair	RS-232-C, Ethernet ThickNet, ThinNet, or twisted pair	RS-232-C, Ethernet ThickNet or twisted-pair	RS-232-C, Ethernet ThickNet or twisted pair
Pricing and Availability				
Purchase Price (\$)	1,495	2,895	4,500	3,400
Warranty Duration	1 year	1 year	1 year	1 year
Annual Maintenance	60	108	204	132
Serviced By	NCD, Motorola onsite service	Not specified	NCD, optional Motorola onsite	NCD, optional Motorola onsite
Date of First Commercial Delivery	10/89	02/90	02/89	07/89
Comments				
	Std. s/w includes perform enhancements; window mgr.; Telnet sessions; DECnet, SNMP, XRemote, and XDMCP suppt.; and user authentic.	Std. s/w includes perform enhancements; window mgr.; Telnet sessions; DECnet, SNMP, XRemote, and XDMCP suppt.; and user authentic.	Std. s/w includes perform enhancements; window mgr.; Telnet sessions; DECnet, SNMP, XRemote, and XDMCP suppt.; and user authentic.	Std. s/w includes perform enhancements; window mgr.; Telnet sessions; DECnet, SNMP, XRemote, and XDMCP suppt.; and user authentic.

Vendor	Network Computing Devices, Inc.	Tektronix Inc.	Tektronix Inc.	Tektronix Inc.
Product	NCD 19b	TekXpress XP21 Monochrome X Terminal	TekXpress XP23 Grayscale X Terminal	TekXpress XP25 Color Graphics X Terminal
Physical Specifications				
Terminal Design	One piece	Two piece	Two piece	Two piece
Display Dimensions (HxWxD, inches)	18.40 x 18.00 x 16.00	15.00 x 15.75 x 7.00	18.33 x 18.20 x 15.40	13.80 x 13.80 x 15.80
Screen Size (inches, diagonal)	19	17	19	14
Display Pedestal	Tilt, swivel	Tilt, swivel	Tilt, swivel	Tilt, swivel
Internal Components:				
Main microprocessor	Motorola 68000, 16 MHz	Not specified	Motorola 68030	Motorola 68030
Graphics processor	ASIC (custom)	Texas Instruments TMS 34020	Texas Instruments TMS 34020	Texas Instruments TMS 34020
Internal memory capacity (Mb RAM)	2 std., 5 max.	5 std., 21 max.	5 std., 21 max.	5 std., 21 max.
Boot strategy	Software download or firmware	Software download or firmware	Software download or firmware	Software download or firmware
Cooling system	Convection	Convection	Convection	Convection
US Keyboard Styles Supported	Digital VT200, IBM PS/2, UNIX	Digital VT200, IBM Enhanced PC	Digital VT200, IBM PS/2	Digital VT200, IBM Enhanced PC
No. of International Keybd. Styles	19	9	9	9
Mouse	Included with terminal	Included with terminal	Included with terminal	Included with terminal
Other Supported Equipment	Printer, bar code reader, optical scanner, track ball	Printer, bar code reader, track ball, tablet	Printer, bar code reader, track ball, tablet	Printer, bar code reader, track ball, tablet
Display Characteristics				
Display Color(s)	Monochrome white	Monochrome white	16 colors	256 colors
Number of Color or Gray Shades	Not specified	Not specified	256	16.7 million
Screen Resolution:				
Pixel resolution	1,024 x 768	1,152 x 900	1,280 x 1,024	1,152 x 900
Dots per inch	75	Not specified	100	Not specified
Refresh Rate (Hz)	70	72	72	60
Graphics Capability				
Window Customization Capability	Color/shade, position, size, title	Color/shade, position, size, title	Color/shade, position, size, title	Color/shade, position, size, title
Other Graphics Features	Backing store, save under	Backing store, save under	Backing store, save under	Backing store, save under
Font Service	DAP, NFS, TFTP	DAP, NFS, TFTP	NFS, TFTP	DAP, NFS, TFTP
Software Support				
Windowing Standards Supported	X Windows 11.4	X Windows 11.4	X Windows 11.4	X Windows 11.4
Graphical User Interface	None supplied	Optional	Optional	Optional
Network Management Capability				
	Diagnostics, network statistics, out of memory alarm, SNMP protocol support, remote config.	Diagnostics, network statistics, SNMP protocol support	Diagnostics, network statistics, SNMP protocol support	Diagnostics, network statistics, SNMP protocol support
User Setup Options				
Type of User Setup System	Command line or menu driven	Not specified	Menu driven	Menu driven
Selectable Options	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols, local or remote configuration	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols
Transmission Specifications				
Max. Comm. Speed (bps)	Not specified	Not specified	Not specified	Not specified
Transport Protocols Supported:				
Standard protocols	LAT, SLIP, TCP/IP, Telnet, XRemote optimized serial	LAT, SLIP, TCP/IP, Telnet	LAT, SLIP, TCP/IP, Telnet	LAT, SLIP, TCP/IP, Telnet
Optional protocols	DECnet	DECnet	DECnet	DECnet
Data Compression Supported	Yes	No	No	No
Communications Ports:				
Number of ports	3	2	2	2
Physical interfaces supported	RS-232-C, Ethernet ThickNet or twisted-pair	RS-232-C, Ethernet ThickNet or twisted-pair	RS-232-C, Ethernet ThickNet, ThinNet, or twisted-pair	RS-232-C, Ethernet ThickNet, ThinNet, or twisted-pair
Pricing and Availability				
Purchase Price (\$)	2,295	2,995	3,495	3,995
Warranty Duration	1 year	3 years	3 years	3 years
Annual Maintenance	96	Not specified	Not specified	Not specified
Serviced By	NCD, optional Motorola onsite	Not specified	Not specified	Not specified
Date of First Commercial Delivery	07/89	Not specified	Not specified	Not specified
Comments				
	Std. s/w includes perform enhancements; window mgr.; Telnet sessions; DECnet, SNMP, XRemote, and XDMCP suppt.; and user authentic.			

Vendor	Tektronix Inc.	Tektronix Inc.	Tektronix Inc.	Visual Technology, Inc.
Product	TekXpress XP27 Color Graphics X Terminal	TekXpress XP29 Color Graphics X Terminal	XNII Graphics X Station	X-14/ES
Physical Specifications				
Terminal Design	Two piece	Two piece	Two piece	One piece
Display Dimensions (HxWxD, inches)	18.70 x 19.10 x 19.30	18.70 x 19.10 x 19.30	15.60 x 15.70 x 17.70	13.00 x 12.25 x 12.50
Screen Size (inches, diagonal)	19	19	15	14
Display Pedestal	Tilt, swivel	Tilt, swivel	Tilt, swivel	Tilt, swivel
Internal Components:				
Main microprocessor	Motorola 68030	Motorola 68030	Intel 386SX, 16 MHz	Motorola 68000, 12 MHz
Graphics processor	Texas Instruments TMS 34020	Texas Instruments TMS 34020	Texas Instruments TMS 34020	Texas Instruments TMS 34020
Internal memory capacity (Mb RAM)	5 std., 21 max.	5 std., 21 max.	2 std., 8 max.	1 std., 4 max.
Boot strategy	Software download or firmware	Software download or firmware	Not specified	Software download or firmware
Cooling system	Convection	Convection	Convection	Convection
US Keyboard Styles Supported	Digital VT200, IBM Enhanced PC	Digital VT200, IBM Enhanced PC	Digital VT200, IBM Enhanced PC	Digital VT200
No. of International Keybd. Styles	9	9	7	Any, by special order
Mouse	Included with terminal	Included with terminal	Included with terminal	Included with terminal
Other Supported Equipment	Printer, bar code reader, track ball, tablet	Printer, bar code reader, track ball, tablet	Printer, bar code reader, tablet	Printer, optical scanner, track ball
Display Characteristics				
Display Color(s)	256 colors	256 colors	256 colors	Monochrome white
Number of Color or Gray Shades	16.7 million	16.7 million	16.7 million	2
Screen Resolution:				
Pixel resolution	1,152 x 900	1,280 x 1,024	1,024 x 768	1,024 x 800
Dots per inch	Not specified	Not specified	Not specified	115
Refresh Rate (Hz)	72	72	60	82
Graphics Capability				
Window Customization Capability	Color/shade, position, size, title	Color/shade, position, size, title	Color/shade, position, size, title	Color/shade, position, size, title, shape
Other Graphics Features	Backing store, save under	Backing store, save under	Backing store, save under, off-screen graphics, zoom and pan, segments	Backing store, save under
Font Service	DAP, NFS, TFTP	DAP, NFS, TFTP	Not specified	NFS, TFTP, Font Daemon
Software Support				
Windowing Standards Supported	X Windows 11.4	X Windows 11.4	Not specified	X Windows 11.4
Graphical User Interface	Optional	Optional	Not specified	None supplied
Network Management Capability				
	Diagnostics, network statistics, SNMP protocol support	Diagnostics, network statistics, SNMP protocol support	Not specified	Diagnostics, network statistics, out of memory alarm
User Setup Options				
Type of User Setup System	Menu driven	Menu driven	Not specified	Menu driven
Selectable Options	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols	Not specified	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols
Transmission Specifications				
Max. Comm. Speed (bps)	Not specified	Not specified	Not specified	10M
Transport Protocols Supported:				
Standard protocols	LAT, SLIP, TCP/IP, Telnet	LAT, SLIP, TCP/IP, Telnet	Not specified	DECnet, SLIP, TCP/IP, Telnet, C-Term, RARP, Bootp, ICMP
Optional protocols	DECnet	DECnet	Not specified	Not specified
Data Compression Supported	No	No	Not specified	Yes
Communications Ports:				
Number of ports	2	2	4	3
Physical interfaces supported	RS-232-C, Ethernet ThickNet, ThinNet, or twisted-pair	RS-232-C, Ethernet ThickNet, ThinNet, or twisted-pair	RS-232-C, Ethernet ThickNet or ThinNet, Coax type A	RS-232-C, Ethernet ThickNet or ThinNet (10base5/10base2)
Pricing and Availability				
Purchase Price (\$)	4,995	5,995	7,495	995
Warranty Duration	3 years	3 years	3 months	12 months
Annual Maintenance	Not specified	Not specified	250	Not specified
Serviced By	Not specified	Not specified	Textronix	Visual Technology, Inc.
Date of First Commercial Delivery	Not specified	Not specified	09/89	09/90
Comments				

Vendor	Visual Technology, Inc.	Visual Technology, Inc.	Visual Technology, Inc.	Visual Technology, Inc.
Product	X-15	X-19	X-19 Turbo	X-19/PQD
Physical Specifications				
Terminal Design	Two piece	Two piece	Two piece	Two piece
Display Dimensions (HxWxD, inches)	15.00 x 12.25 x 12.00	19.00 x 18.25 x 14.50	19.00 x 18.25 x 14.50	19.00 x 18.25 x 14.50
Screen Size (inches, diagonal)	15	19	19	19
Display Pedestal	Tilt, swivel	Tilt, swivel	Tilt, swivel, height adjustable	Tilt, swivel, height adjustable
Internal Components:				
Main microprocessor	Motorola 68000, 16.6 MHz	Motorola 68000, 16.6 MHz	Motorola 68020, 20 MHz	Motorola 68020, 16 MHz
Graphics processor	Texas Instruments TMS 34020	Not specified	Not specified	Texas Instruments TMS 34020
Internal memory capacity (Mb RAM)	1 std., 4 max.	1 std., 4 max.	2 std., 8 max.	2 std., 26 max.
Boot strategy	Software download or firmware			
Cooling system	Convection	Convection	Convection	Convection
US Keyboard Styles Supported	Digital VT200, IBM Enhanced PC			
No. of International Keybd. Styles	No limit	No limit	No limit	No limit
Mouse	Included with terminal	Included with terminal	Included with terminal	Included with terminal
Other Supported Equipment	Printer, optical scanner, track ball			
Display Characteristics				
Display Color(s)	Monochrome white	Monochrome white	Monochrome white	Mono. white or 256 colors
Number of Color or Gray Shades	Not specified	Not specified	4 gray scale	256
Screen Resolution:				
Pixel resolution	1,024 x 800	1,152 x 900	1,280 x 1,024	1,280 x 1,024
Dots per inch	100	85	100	100
Refresh Rate (Hz)	76	72	72	72
Graphics Capability				
Window Customization Capability	Color/shade, position, size, title, shape			
Other Graphics Features	Backing store, save under			
Font Service	NFS, TFTP, Font Daemon	DAP, NFS, TFTP, Font Daemon	DAP, NFS, TFTP, Font Daemon	DAP, NFS, TFTP, Font Daemon
Software Support				
Windowing Standards Supported	X Windows 11.4	X Windows 11.4	X Windows 11.4	X Windows 11.4
Graphical User Interface	None supplied	None supplied	None supplied	None supplied
Network Management Capability				
	Diagnostics, network statistics, out of memory alarm			
User Setup Options				
Type of User Setup System	Menu driven	Menu driven	Menu driven	Menu driven
Selectable Options	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols	Boot strategy, color/shades, fonts, I/O devices, keybd, network protocols
Transmission Specifications				
Max. Comm. Speed (bps)	10M	10M	10M	10M
Transport Protocols Supported:				
Standard protocols	DECnet, SLIP, TCP/IP, Telnet, C-Term, RARP, BootP, ICMP	DECnet, SLIP, TCP/IP, Telnet, C-Term, RARP, BootP, ICMP	DECnet, SLIP, TCP/IP, Telnet, C-Term, RARP, BootP, ICMP	DECnet, SLIP, TCP/IP, Telnet, C-Term, RARP, BootP, ICMP
Optional protocols	Not specified	Not specified	Not specified	Not specified
Data Compression Supported	Yes	Yes	Yes	Yes
Communications Ports:				
Number of ports	3	3	3	3
Physical interfaces supported	RS-232-C, Ethernet ThickNet or ThinNet (10base5/10base2)	RS-232-C, Ethernet ThickNet ThinNet (10base5/10base2)	RS-232-C, Ethernet ThickNet or ThinNet (10base5/10base2)	RS-232-C, Ethernet ThickNet or ThinNet (10base5/10base2)
Pricing and Availability				
Purchase Price (\$)	2,195	2,695	3,570	4,495
Warranty Duration	12 months	12 months	12 months	12 months
Annual Maintenance	Not specified	Not specified	Not specified	Not specified
Serviced By	Visual Technology, Inc.	Visual Technology, Inc.	Visual Technology, Inc.	Visual Technology, Inc.
Date of First Commercial Delivery	Not specified	Not specified	Not specified	Not specified
Comments				

Vendor Wyse Technology, Inc.

Product WY-X5

Physical Specifications

Terminal Design	Two piece
Display Dimensions (HxWxD, inches)	14.00 x 16.00 x 13.50
Screen Size (inches, diagonal)	17
Display Pedestal	Tilt, swivel

Internal Components:	
Main microprocessor	Motorola 68020, 16 MHz
Graphics processor	None
Internal memory capacity (Mb RAM)	1 std., 5 max.
Boot strategy	Software download or firmware
Cooling system	Convection

US Keyboard Styles Supported	IBM Enhanced PC, Wyse proprietary 105-key ANSI
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No. of International Keybd. Styles	14
Mouse	Included with terminal
Other Supported Equipment	Printer, optical scanner, track ball, tablet, joystick

Display Characteristics

Display Color(s)	White
Number of Color or Gray Shades	Not specified

Screen Resolution:	
Pixel resolution	1,280 x 1,024
Dots per inch	108
Refresh Rate (Hz)	70

Graphics Capability

Window Customization Capability	Color/shade, position, size, title
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Other Graphics Features	Backing store, save under
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Font Service	TFTP
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Software Support

Windowing Standards Supported	X Windows 11.4
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Graphical User Interface	None supplied
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Network Management Capability

Diagnostics, network statistics, out of memory alarm
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User Setup Options

Type of User Setup System	Menu driven
Selectable Options	Boot strategy, fonts, I/O devices, network protocols

Transmission Specifications

Max. Comm. Speed (bps)	10M
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Transport Protocols Supported:	
Standard protocols	SLIP, TCP/IP, Telnet, RARP, bootp
Optional protocols	Not specified

Data Compression Supported	Not specified
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Communications Ports:	
Number of ports	3
Physical interfaces supported	RS-232-C, Ethernet ThickNet (10base5)

Pricing and Availability

Purchase Price (\$)	1,799
Warranty Duration	3 years
Annual Maintenance	84-216
Serviced By	Wyse or third party
Date of First Commercial Delivery	1Q 1991

Comments