
Asynchronous Communications Software: Market Overview

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Synopsis**Editor's Note**

This report examines the current status of the asynchronous communications market. For information on the technology behind these products, see the technology overview (Report 531-201). In the comparison columns (Report 531-301), we provide detailed information on products currently available from asynchronous communications vendors.

Market Highlights

Communications software can be used for a variety of applications. Unlike applications programs (e.g., word processing and spreadsheets), communications programs provide tools to accomplish specific tasks. Each communications solution works best only for certain tasks, and users should make their selection based on a careful definition of their needs. This report focuses on the current market for asynchronous communications software for the desktop computer. It discusses the market leaders and the trends and issues driving market development.

The first section of this report, Market Leaders, takes a brief look at the history and major product offerings of the top vendors in the asynchronous communications software market. Included are brief profiles of such industry leaders as DCA/Crosstalk, Hayes Microcomputer Products, and Microcom Software Division. The report also looks at lesser known but competitive vendors such as Hilgraeve.

The other section of this report, Trends and Issues, discusses key factors in the growth of the current market. Issues covered here include the continuing move toward greater functionality (particularly in the market's high end), the fragmentation and specialization occurring within the market, and the impact of graphical user interface operating environments on new product development.

—By *Dave Hickey*
Staff Writer

Analysis

Market Leaders

DCA/Crosstalk

In October 1986 Digital Communications Associates (DCA) acquired Microstuf, Inc., which now operates as DCA's Crosstalk division. The company offers a wide variety of asynchronous communications products, competing in both the low and high ends of the general asynchronous communications market, as well as remote control software. DCA/Crosstalk's Crosstalk XVI is the company's entry in the low-end market. Introduced in 1983, the product now claims an installed base of more than 900,000, making it a dominant player in its market. In addition, DCA/Crosstalk has enjoyed considerable success with its high-end Crosstalk Mk.4 package and its Remote2 remote control software. In an effort to increase an already strong position and capitalize on the growing popularity of Microsoft's Windows 3.0, the company has also introduced Crosstalk for Windows.

Datastorm Technologies, Inc.

Since its inception, Datastorm Technologies has specialized in producing data communications software. The company made its first market inroads with its original ProComm software, which it offered as shareware through electronic bulletin boards. The company followed the success of this package with the introduction of its enhanced ProComm Plus in late 1987. Since that time, ProComm Plus has become one of the most widely installed programs on the market. Though lacking a few features of some other high-end packages, the software maintains high functionality while carrying a price tag of only \$119. Datastorm Technologies has demonstrated consistent growth since its introduction of ProComm Plus, with sales increasing from \$1.7 million in 1987 to \$6.14 million in 1989.

Microcom Software Division

Microcom Software Division is the result of the acquisitions, by Microcom, Inc., of Meridian Technology and Relay Communications, both of which already enjoyed a good deal of success in the asynchronous communications market. In fact, the reputation of these companies has made Microcom Software Division an immediate market leader. The company's two main products are Relay Gold and Carbon Copy Plus, a high-end asynchronous communications package and remote control program, respectively. Carbon Copy Plus is currently the company's top product. It boasts an installed base of approximately 750,000 and is perhaps the most widely recognized remote control program in a steadily growing market. Like DCA/Crosstalk, Microcom is also attempting to take advantage of the success of the Windows interface and has recently introduced its Relay Gold for Windows communications program.

Hayes Microcomputer Products, Inc.

Hayes is best known as the leading manufacturer of microcomputer modems and as such has been able to use a different strategy in establishing itself in the asynchronous communications market. The company currently produces several data communications packages, including Smartcom II for the Macintosh, Smartcom EZ, and Smartcom Exec. Hayes' top product, though, is its Smartcom III program, a highly functional, easy-to-use communications package. Hayes' ability to bundle this software with its popular V-series modems provides a unique distribution channel not available to other vendors and has allowed the company to establish Smartcom III as a top communications program.

Dynamic Microprocessor Associates

A small, privately held company, Dynamic Microprocessor Associates, has (like Datastorm Technologies) concentrated on the development of software for PC communications. The company's founder and current president, Lee Rautenberg, developed DMA's original offerings, Ascom and pcAnywhere. Since its inception, the company has remained on the leading edge of the industry with products that have consistently won critical acclaim as innovative, dependable, and cost effective. DMA's current products include pcAnywhere IV, a leading remote control program; pcMacterm

II, a program that lets Macintosh users access and control DOS-based PCs; and Ascom IV, a high-end asynchronous communications program.

Hilgraeve, Inc.

Hilgraeve, a small privately held company, has recently been receiving very high marks for its HyperAccess/5 product, an extremely functional, intuitive, simple to understand communications product designed specifically to take advantage of the OS/2 operating system. The program also offers DOS compatibility and is making some inroads in this area. But as OS/2 begins to gain acceptance, it is likely to find itself in a commanding position in that segment of the market, as it currently faces little if any competition on the OS/2 front.

Trends and Issues

The processing power, speed, and efficiency of desktop computer systems have made them very popular in most corporations. Whether retrieving sales or personnel data from the corporate mainframe, accessing stock prices from an online service, or exchanging reports and memos within a corporation, users need access to corporate information to use microcomputers effectively and fulfill the promise of the "Information Age."

The entire communications industry has grown up around the need to share information among computers. The emphasis on information as a corporate resource, as well as the need to integrate PCs into the corporate computer system, will continue to drive this market growth. The increasing popularity of portable and laptop computers adds fuel to this growing market, since portability applies not just to the system, but also to the information on the system.

Functionality

The basic technology governing asynchronous communications stabilized several years ago. Therefore, product introductions in the asynchronous market generally reflect user demands for packages that are more sophisticated and yet easier to use. Purchasing decisions should reflect a combination of concerns, such as price/performance, compatibility with existing systems, ease of use, ability to customize for special applications, and

vendor support policies. Some packages offer specialized functions or increased functionality, and many are less expensive than the market leaders.

More sophisticated communications packages, such as Crosstalk Mk.4, Relay Gold, Smartcom III, and HyperAccess/5, offer a variety of features. These include multitasking operation, multiple communications sessions, extended terminal emulation and modem support, sophisticated programming languages (often called script languages), and support for more error-checking protocols (e.g., Kermit, X.PC, and the extended versions of xmodem). Some newer programs even allow the user to custom install external protocols for greater compatibility. For example, if users need to communicate with a system that only supports a specific version of Kermit, they could install that version in their program.

Other features that make even sophisticated programs easier to use include automatic installation programs, menu-driven configuration, preset modem and system parameters, automatic logons for online services, learn facilities that record keystrokes as they are typed and create script programs automatically, and telephone directories that save individual access configurations for later recall (often using only a single keystroke to establish the connection).

Fragmentation

One obvious trend in the asynchronous communications market has traditionally been its fragmentation. While general asynchronous packages continued to dominate the market, highly specialized packages, designed to accomplish specific tasks, have become popular because users often do not want to purchase more functionality than they need. Packages such as electronic mail and remote access/control packages support limited functions geared toward their specific area. Remote access/control packages, such as Microcom's Carbon Copy Plus or Norton-Lambert's Close Up, allow a remote PC to call into a host PC and access its programs as if the remote user were seated at the host PC's keyboard. Recently, however, some remote computing packages, such as DCA/Crosstalk's Remote2 and Triton Technologies' CO/Session, have also begun offering such features as TTY terminal emulation and xmodem protocol support, allowing them to provide basic asynchronous communications capabilities.

Electronic mail packages are designed to send electronic messages. They often support access to a specific electronic mail service such as MCI Mail, Easylink, or AT&T Mail. Another segment of the asynchronous market includes programs designed specifically for PC-to-PC communications. Programs such as Traveling Software's LapLink simplify the transfer of data between any two locally connected systems, although their target audience is laptop owners.

Windows and OS/2

The recent success of Microsoft's new Windows 3.0 operating environment has created renewed interest in graphical user interfaces (GUIs). Though vendors will obviously continue to enjoy a highly profitable market for DOS applications in the foreseeable future, some are already beginning to introduce products designed to take advantage of the Windows GUI. Most notable among these products are Crosstalk for Windows and Relay Gold for Windows.

In contrast to Windows, however, OS/2 has been slow in gaining support in the communications arena. Though seen by many as the next logical step from Windows, there are currently few

packages that offer OS/2 compatibility. Part of this may be due to the fact OS/2 includes communications functions, through its Communications Manager, as an integral part of the operating system. When fully delivered, OS/2 should make it easier to integrate transparent communications between desktop systems and other systems, host and desktop.

Currently, however, the Communications Manager feature of OS/2 is very basic and lacks the functionality to which users of high-end asynchronous communications packages have become accustomed. As a result, feature-rich packages such as HyperAccess/5, which are compatible with OS/2, are still likely to find a highly receptive market for their products. The impact of OS/2 on the asynchronous communications market, however, remains to be seen. Until the Communications Manager is fully delivered, it is not certain how other vendors' products will add value to, enhance, or replace the IBM offering. Meanwhile, MS-DOS products will continue to play a large part in this market for several years to come. ■

Asynchronous Communications Software: Technology Overview

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Synopsis**Editor's Note**

This report looks at the technology driving the asynchronous communications marketplace. For a detailed list of available asynchronous communications products and their capabilities, see the comparison columns (Report 531-301). For a more complete look at the state of the market, see the market overview (Report 531-101).

Technology Highlights

The first section of this report, Technology Basics, examines the technology behind asynchronous communications. It discusses the basic aspects of establishing a physical connection, including asynchronous modems and the RS-232-C interface. In addition, the report looks at asynchronous transmission, serial data transfers, and the ASCII and EBCDIC data codes.

Also in this section is a detailed discussion of error detection/correction protocols, perhaps the most important aspect of asynchronous transmission. This section also examines the parity and CRC methods of error detection and how they work to ensure data integrity during asynchronous transfers.

The final part of this report, Matching Products with Applications, looks at some general functions offered by various asynchronous communications programs, as well as matching these functions with the types of users most likely to require them. Among the areas covered here are user interface, terminal emulation, programming features, and security.

—By *Dave Hickey*
Staff Writer

Analysis

Technology Basics

Asynchronous communications involves two computers, two software programs, two modems, and the telephone line between them. Its complexities stem from coordinating this system. To establish a connection to a remote system, the PC requires communications software and a physical connection to the remote system. The physical connection consists of an asynchronous modem sending data over telephone lines. Asynchronous modems can be internal or external; internal modems are add-in boards, while external modems are standalone devices cable-connected to the standard RS-232-C serial interface. A null modem cable can connect local systems directly. At its most basic, the communications software accesses the serial port, dials the phone, formats data for transmission, and decodes data received. For communications to occur, certain parameters of the sending and receiving systems must match.

Physical Interface

The interface is the physical link between data circuit-terminating equipment (DCE) and data terminal equipment (DTE). Modems are DCEs; microcomputers are DTEs. Most asynchronous communications use the RS-232-C interface. Interface standards define the electrical, mechanical, and physical specifications for connecting data processing equipment. The RS-232-C interface uses a pin-per-function approach to define circuit functions and their corresponding pin assignments. Each pin is assigned a particular task; e.g., RS-232-C pin 8 performs carrier detection (for a complete breakdown of pin assignments, see Table 1). The RS-232-C interface is used for both asynchronous and synchronous serial transmission at data rates up to 20K bps, in half- or full-duplex mode. It is also known as the serial port.

Whether internal or external, most asynchronous modems used with PCs are smart modems or

Hayes-compatible modems. Smart modems can use commands from the communications software to automatically answer the phone, dial a phone number, and hang up the connection. Hayes-compatible modems, sometimes called AT-compatible modems, use the de facto standard AT command set, developed by Hayes Microcomputer Products, to control modem functions. All modem commands are preceded by AT; for example, the command to dial is ATDT5554444, and the command to hang up is ATH.

Asynchronous Transmission

Asynchronous transmission refers to data transmission in spurts—delays are possible between

Table 1. RS-232-C Pin Assignments

Pin Number	Description
1	Protective ground
2	Transmitted data
3	Received data
4	Request to send
5	Clear to send
6	Data set ready
7	Signal ground
8	Received line signal detector
9	Reserved for data set testing
10	Reserved for data set testing
11	Unassigned
12	Secondary received line signal detector
13	Secondary clear to send
14	Secondary transmitted data
15	Transmission signal element timing
16	Secondary received data
17	Receiver signal element timing
18	Unassigned
19	Secondary request to send
20	Data terminal ready
21	Signal quality detector
22	Ring indicator
23	Data signal rate selector
24	Transmitted signal element timing
25	Unassigned

bytes of data. The other form of data transmission is synchronous. In synchronous transmission, a group of characters is sent in a continuous bit stream; data transfer is controlled by a timing device, called the clock, initiated at the sending device. Microcomputers normally transmit asynchronously. This works well with irregular data input rates, such as those associated with interactive communications. Synchronous transmission is more efficient, but it is also more expensive because it requires additional hardware, either in the modem or internally installed in the PC. PC-to-PC and PC-to-Digital Equipment Corp. minicomputer communications is primarily asynchronous. PC-to-IBM mainframe system communications is primarily synchronous.

Serial Data Transfer

Asynchronous communications uses serial data transfer. Transmission is bit by bit rather than parallel. To transmit serially, parallel codes (data characters) must be converted to a serial bit stream to travel over the communications line. Therefore, the serial bit stream must be broken up into individual characters, from five to eight bits in length. These characters are defined by adding start and stop bits (see Figure 1).

Data Codes

All data on a computer exists in coded format. A code is a standard format for ordering binary digits (bits), i.e., 1s and 0s, for transmission. The most common codes in use today are the American Standard Code for Information Interchange (ASCII) and the Extended Binary-Coded Decimal Interchange Code (EBCDIC). All microcomputers are ASCII based. ASCII defines 128 characters; codes 32 to 127 are standard printable characters such as ?, A, B, and c. The codes 0 to 31 are characters that control line feed, vertical tab, and backspacing. Extended ASCII includes codes 128 to 256; these are not standardized. A text file uses only printable ASCII codes plus four of the ASCII control codes: carriage return (CR), line feed (LF), form feed (FF), and horizontal tab (HT).

All characters are represented by seven bits, binary 1s and 0s; an eighth bit can be added for parity checking. Most communications programs allow the user to select character length, set stop and start bits, and set parity. These settings must be the same on both the sending and receiving

computers. One of the most commonly used settings between PCs is eight bits, one start bit, one stop bit, and no parity. Each online service has a specific required setting.

EBCDIC defines 256 characters, each represented by eight bits. All IBM networks use the EBCDIC code, and it is important in PC-to-host communications.

Error Controls/Protocols

The most critical element in transferring data between two systems is to ensure integrity. Telephone lines are an inefficient medium for transferring digital data. A communications line carrying a serial datastream is subject to interference from storms, cross talk, echoes, and other lines. It can also be subject to delays, especially across satellite networks. This interference destroys data integrity and propagates errors. There is no way to prevent error transmission, especially over long distances.

Protocols, however, do allow error correction. A protocol is a standard set of procedures for establishing and controlling communications. Protocols group data into envelopes, called frames or blocks. These envelopes comprise start and stop bits, error detection sequences, and methods for retransmitting blocks of data containing errors. Transferring text files is possible using only the start and stop bits, because the ASCII codes are transparent and can be passed through the communications system. Exchanging binary files (e.g., some word processing, spreadsheet, or database files), however, requires a protocol because binary files contain nonstandard bit patterns. The same protocol must be implemented at both the sending and receiving computers.

Many protocols divide the data to be transmitted into blocks. Each block is then checked for its correct transmission; a positive acknowledgment (ACK) is sent if it is correct, and a negative acknowledgment (NAK) and request for retransmission is sent if it is incorrect. The size of each data block depends on the protocol. Xmodem defines 256K bytes to a block, but some versions allow the block size to be adjusted up to 1,024K bytes. The more bytes per block, the more efficient the file transfer will be. The difference in transfer time can be considerable. For example, take a 5,000K-byte file. At 1 minute per block, 256K blocks will take about 20 minutes; 1,024K blocks will take about 5 minutes. High block sizes work

best over relatively clean lines and good connections. The exact method of error detection depends on the protocol being used. Many employ some variation of cyclic redundancy checking (CRC).

Parity is the simplest form of error detection. With parity, a bit is appended to each character, and the receiving system verifies the number of bits in each character according to the parity setting. For example, if odd parity is selected, the parity bit is set to 1 or 0 so that the total number of 1s, excluding the stop and start bits, is always odd. Parity can be set to odd, even, or none. If none is selected, no parity bit is added (see Figure 1). Different online services require different parity settings. The parity setting must be the same at both the receiving and sending computers. Cyclic redundancy checking is a more powerful error-checking technique that employs polynomially generated check characters. With CRC, the entire block of data is considered to be one long binary number divided by another standard binary number. After the quotient is discarded, the remainder is transmitted as one- or two-block check characters that are checked at the other end.

Asynchronous communications packages offer both proprietary and public domain protocols. Since the same protocol must be implemented on the sending and the receiving system, proprietary protocols, such as Communications Research Group's Blast, must be running on both systems. Commonly used access public domain protocols, such as xmodem and Kermit, allow file transfer with a wide variety of remote systems. Xmodem remains the most popular and widely implemented protocol. Kermit, a system developed at Columbia University, is increasingly popular because it runs on microcomputers, minicomputers, and mainframes. X.PC is an asynchronous protocol from Tymnet that supports a maximum of 15 simultaneous sessions.

Transmission Modes

There are three transmission modes: simplex, half duplex, and full duplex. Simplex transmission is in one direction only. Half duplex transmits in one direction at a time. Full-duplex transmission occurs in both directions at once. Full duplex is the most efficient, since data can be sent in one direction while ACKs and NAKs can be sent in the other. Some protocols are full duplex, e.g., Kermit and X.PC; xmodem is half duplex. Users should be

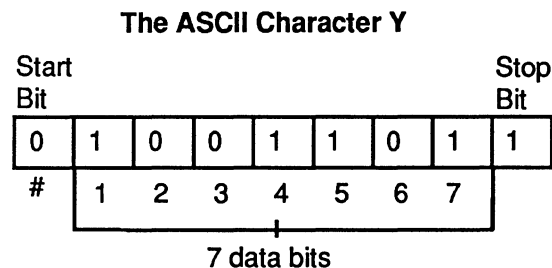
careful to distinguish full- and half-duplex transmission from full- and half-duplex terminal modes. These are also known as local echo. This setting determines whether characters typed at the local keyboard are echoed to the local screen.

Matching Products with Applications

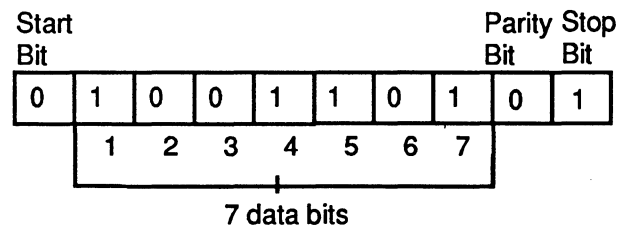
The various functions offered by each package determine its suitability for a particular application. For example, the user who wants to exchange files with another PC or access an online service or public BBS needs a basic communications package with file transfer and error-correcting protocols. A basic communications package also should support the industry-standard Hayes AT command set, which controls intelligent modems.

In addition, many users, especially novices, prefer communications packages that are easy to use. Certain features make a package simpler to learn and use. One of the most important of these is a Help facility. Help facilities can be simple (an

Figure 1.
The ASCII Character Y



The ASCII Character Y With Parity Bit Added.



Note: Parity was set to even. This means that the total number of 1s will be even. The character Y includes 4 1s: therefore, the parity bit is set to 0.

ASCII character codes representing the letter Y, both with and without parity bit added.

explanation of keys and commands) or sophisticated (context-sensitive text explanations of program functions). The user interface also affects the package's ease of use. Menus can step the user through system configuration and spell out options such as modem types and speeds; this can be reassuring for users unfamiliar with exact types and names.

Command-driven programs save time for more experienced users. Many packages offer preset logons to online services, a text editor, and printer support, along with user-defined communications parameters that can be customized for specific configurations. Most basic communications packages support telephone directories, and many offer such common terminal emulation as TTY and Digital VT100/200. Some features such as macro support and disk access make communications easier but are unnecessary. Macro support allows the user to put a series of operations into a single key sequence—for example, the logon to CompuServe or a user's account number. Disk access makes it easier to locate files for transfer.

Applications requiring host access must use communications packages that support specific types of terminal emulation. If the application requires file transfer, the package should offer protocol support. Proprietary protocols are more commonly used with host access packages aimed at specific environments, since the user often controls

both ends of the exchange. The public domain Kermit protocol, however, is widely implemented for general host access. Host/remote access functions and unattended execution features, which allow the user to exchange data with the host during off-peak hours and from remote sites, are frequently valued by users.

These packages generally offer a more limited range of user-defined parameters and calling/answering functions that match the targeted host/terminal environment. Packages that concentrate on host access and terminal emulation may not support printer access, editing functions, or telephone number directories.

Packages that allow programmers to integrate communications into an application support sophisticated programming functions and added flexibility. Packages that offer a wide variety of user-defined parameters contain added flexibility for meeting specific requirements. Some packages support script files and offer programmable control over parameters, calls to DOS, and calls to other programs or languages.

Security is a separate issue. Some packages offer single-level password access; others offer multiple-level password access. Some packages implement security only for remote access or unattended execution. Many terminal emulation or host access packages depend on the security provided by the host rather than adding their own. Security remains a side issue in communications; most packages do not offer it. ■

Asynchronous Communications Software: Comparison Columns

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Synopsis

Editor's Note

This report provides a detailed list of asynchronous communications products, as well as a listing of product specifications and pricing. For more information on the history and recent trends of the market, see the market overview (Report 531-101). Further information on the technology behind these products can be found in the technology overview (Report 531-201).

Comparison Column Highlights

The accompanying comparison columns summarize the characteristics of 82 commercially available asynchronous communications software products from 41 vendors. In most cases, the vendors supplied this information to Datapro during September 1990; their cooperation in compiling this report is acknowledged and greatly appreciated.

Datapro requested information from over 70 companies known or believed to offer asynchronous communications software products. The absence of any vendor from this report means that the company failed to respond to repeated requests for product information. Vendors that are not listed in this report are urged to contact the editorial staff of *Datapro Reports on PC & LAN Communications* to have their products included in future reports.

The products included here offer a wide variety of functions and capabilities. Datapro has tried to be as flexible as possible when including products in the comparison columns. Therefore some entries may not correspond exactly to the specification headings listed in the columns. For additional product information, or to clarify a column entry, please contact the appropriate vendor.

Vendors

Avenue Software, Inc.
2162 Charest Boulevard West
Ste-Foy, QC Canada G1N 2G3 (418) 682-3088

Bit Software, Inc.
830 Hillview Court, Suite 160
Milpitas, CA 95035 (408) 263-2197

Boyan Communications
P.O. Box 71
Marriottsville, MD 21163 (201) 794-7125 (BBS support)

Cambridge Computer Corp.
80 Mount Sanford Road
Mt. Carmel, CT 06518 (203) 288-6004, (800)462-4481

Cawthon Software Group
24224 Michigan Avenue
Dearborn, MI 48124 (313) 565-4000

Century Software
5284 South 320 West, Suite 134
Salt Lake City, UT 84107 (801) 268-3088

Commtech International
2580 Cumberland Parkway, Suite 150
Atlanta, GA 30339 (404) 438-9999

Communications Research Group
5615 Corporate Boulevard
Baton Rouge, LA 70808 (504) 923-0888, (800)242-5278

Computer Systems Consultants, Inc.
1454 Latta Lane
Conyers, GA 30207 (404) 483-1717

Crystal Point, Inc.
22122 20th Avenue SE, Suite 148
Bothell, WA 98021 (206) 487-3656

Datability Software Systems, Inc.
322 Eighth Avenue
New York, NY 10001 (212) 807-7800, (800)342-5377

Datastorm Technologies, Inc.
P.O. Box 1471
Columbia, MO 65205 (314) 443-3282

DCA/Crosstalk
1000 Alderman Drive
Alpharetta, GA 30202 (404) 442-4000, (800)241-4762

Diversified Computer Systems, Inc.
3775 Iris Avenue
Boulder, CO 80301 (303) 447-9251

Dynamic Microprocessor Associates
1776 E. Jericho Turnpike
Huntington, NY 11743 (516) 462-0440

Everex Systems, Inc.
48431 Milmont Avenue
Fremont, CA 94538 (415) 498-1111, (800)821-0806

The Freesoft Co.
105 McKinley Road
Beaver Falls, PA 15010 (412) 846-2700

Hawkeye Grafix
Box 1400
Oldsmar, FL 34677 (813) 855-8687

Hayes Microcomputer Products, Inc.
705 Westech Drive
Norcross, GA 30092 (404) 449-8791

Headlands Communications Corp.
P.O. Box 8
Tiburon, CA 94920 (415) 435-0770

Hilgraeve, Inc.
Genesis Centre
111 Conant Avenue, Suite A
Monroe, MI 95134 (313) 243-0576, (800)826-2760

Information Analysis Systems Corp.
2 Brookside Lane
Mansfield Center, CT 06250 (203) 429-1691

International Business Machines, Corp. (IBM)
Old Orchard Road
Armonk, NY 10504 Contact local IBM representative

KEA Systems, Ltd.
3738 North Fraser Way, Unit 101
Burnaby, BC V5J 5G1 (604) 431-0727, (800)663-8702

Lightwave
P.O. Box 16858
Tampa, FL 33617 (813) 988-5033

Microcom
500 River Ridge Drive
Norwood, MA 02060 (617) 551-1999

MicroGate Corp.
9501 Capital of Texas Highway, #105
Austin, TX 78759 (512) 345-7791

MicroPlot Systems, Inc.
1897 Red Fern Drive
Columbus, OH 43229 (614) 882-4786

Norton-Lambert Corp.
P.O. Box 4085
Santa Barbara, CA 93140 (805) 687-8896

OMM Corp.
4200 Wisconsin Avenue Northwest, #106
Washington, DC 20016 (202) 234-2117

Persoft, Inc.
465 Science Drive
Madison, WI 53711 (608) 273-6000, (800)368-5283

Polygon, Inc.
1015 Corporate Square Drive, #100
St. Louis, MO 63132 (314) 432-4142

POS Technologies
800 N. Delsea Drive
Plaza 47, Suite 10
Westville, NJ 08093 (609) 848-2848, (800)426-7744

Rupp Corp.
603 South Broadway
Boulder, CO 80303 (303) 494-5987

Selecterm, Inc.
153 Andover Street
Danvers, MA 01923 (617) 246-1300

SoftKlone Distributing Corp.
327 Office Plaza Drive, Suite 100
Tallahassee, FL 32301 (904)878-8564, (800)634-8670

Softronics, Inc.
5085 List Drive
Colorado Springs, CO 80919 (719) 593-9540, (800)225-8590

Software Store
706 Chippewa Square
Marquette, MI 49855 (906) 228-7622

Software Ventures
2907 Claremont Avenue, Suite 220
Berkeley, CA 94705 (415) 644-3232, (800)336-6477

Traveling Software, Inc.
18702 North Creek Parkway
Bothell, WA 98011 (206) 483-8088, (800)662-2652

Triton Technologies, Inc.
200 Middlesex Turnpike
Iselin, NJ 08830 (201) 855-9440

Asynchronous Communications Software

Comparison Column Entry Descriptions

Vendor/Product. These identify the vendor and the name of the communications software programs to which the column entries apply.

Communications Supported. This section lists the function of the product. We divided asynchronous packages into PC-to-host links, PC-to-PC links, and PC-to-information service links. Some programs perform all three functions; others concentrate on one specific function.

Remote Access Capability. Some packages support access from remote sites and function as unattended hosts for the remote computer. This entry indicates whether such functions are supported.

Terminals Emulated. Emulation is the use of programming techniques and special machine features to permit a computer to execute programs written for another system. The specific terminals that a product emulates are listed in this section. The most common emulations are Digital Equipment VT52/100 and IBM 3101, but many other terminals are represented. Users

who need to emulate specific terminals, such as VT240 or Prime systems, can use this entry to locate packages which support those terminals.

Computers Supported. This lists the computer system(s) on which the communications software was designed to run. Most of the products run on an IBM PC/XT/AT or compatible system. Many vendors also support the IBM PS/2.

Operating Systems. This is the most important indicator of a software program's compatibility with a user's system. The most popular operating system supported by small computer hardware and software vendors is Microsoft's MS-DOS, also known as PC-DOS (IBM's implementation). UNIX, another popular operating system, has many derivatives—Cromix (Cromemco) and Xenix (Microsoft) are two. Apple computers run under Apple operating systems. Only operating systems on which the program will run without modification are shown.

Users Supported. This entry indicates whether the software supports a

single user or multiple users via a LAN-administered communications server.

LAN Compatibility. Some communications software programs are capable of running on local area networks (LANs). This entry refers to support of some of the most popular LANs, including Ethernet, ARCnet, Novell, 3Com, and the IBM Networks (PC Network and/or Token-Ring Network).

Min. Memory Required (bytes). This is the amount of internal storage a program needs to support both its own logic and the normal volume of data to which that logic will be applied; all responses will appear in either kilobytes (Kb) or megabytes (Mb).

Memory Resident. If the program is memory resident, it will be listed in this entry.

Diskette Size (in inches). This entry lists the size(s), in inches, of the diskettes on which the program is supplied and whether or not the program is compatible with hard disk systems.

Hayes AT Command Set Compatible. The Hayes AT command set for modems has become the de facto standard in the modem industry. This entry refers to whether or not the communications program supports this command set.

Communications Number of Concurrent Sessions. Many communications packages allow

a single user to conduct multiple host sessions, thus allowing more than one task to be performed simultaneously. This entry list the number of simultaneous sessions supported by the package.

Transmission Speed (bps). The rate at which characters are transmitted by a communications system is listed as a range in bps. The transmission speed depends on the modem being used. For direct connections using a null modem cable, the speed depends on the system being used. For example, the serial port on an IBM PC/XT supports a maximum transmission speed of only 9600 bps.

File Transfer Capabilities. This entry lists the types of files transferred and the codes which the computer supports. Most computers support ASCII code, while many mainframe systems support EBCDIC. Also, seven-bit text files contain no control characters and use only ASCII values through 128; eight-bit binary files use all ASCII values up to 256. These can represent control characters, such as Control Z=026 which signals the end of a file for DOS files. These control codes can create problems when transmitted between systems and should be buffered using a protocol.

File Transfer Protocols. Protocols provide error-checking and correction during transmission. This allows data to be sent over phone lines without

transmission errors. The most common protocol is xmodem.

File Transfer Info. Provided. In this entry, the information presented on the program's status line or screen is listed. Status indicators give the user information about what the program is doing. Possible entries include number of characters sent/received, blocks sent/received, estimated transmission time, number of errors/retries, session name, and parameter settings.

Downloading Options. This entry indicates if the program allows the user to specify downloading options such as write to disk, write to printer, or screen snapshot.

Capture Buffer Size (K bytes). This entry indicates the amount of data (in K bytes) that the program can store in a buffer area.

Communications Features. This section indicates whether the package supports automatic dialing, automatic timed dialing, automatic redial, automatic retry on disconnect, and automatic answer mode.

Dialing Directory. If the package supports a telephone number directory, it will be listed here.

Max. Phone Numbers Stored. If the package is capable of storing phone numbers, the maximum number stored will be listed here.

User Interface. This entry indicates which form of user interface the program supports. Some of the choices are menu-driven, command-driven, graphic icons, and pop-up windows. Many programs offer both menus and commands to simplify use for novices, while allowing technically proficient users to bypass the menus. This entry will also indicate whether the program offers such features as an installation program, help facility, or mouse support.

User-Defined Parameters. These are parameters that can be established by the user so that the communications hardware/software environment can be completely customized. These include modem initialization strings, dialing commands, answerback strings, connect strings, hang-up strings, redial timeout, and sound control. For basic communi-

cations, these parameters may never need to be changed. However, being able to change such parameters gives the package increased flexibility in meeting specific user requirements.

Hot Key to Operating System. If the package allows the user to toggle between a communications session and the operating system, it will be indicated in this area.

Text Editor. If a software program possesses a built-in text editor, it will be listed in this entry.

Programming Features. The programming functions for each package are listed in this section. Programming features include support for macros and script files. Macros are programmable keys that allow the user to program a series of actions to a single key sequence, such as logging on to an on-line service or a host system. Script files are programs written in either a unique file structure or text file structure.

Security. This section lists security functions supported by the package, including file and transmission encryption, and multilevel passwords.

Pricing and Availability

Price per Unit (\$). This figure, in dollars, is the full charge for the program.

Date of First Delivery. This entry lists the date of the product's initial delivery.

Number Installed to Date. This may help discern the magnitude of the market but does not always reveal the relative merits of a product. For example, some products may have very powerful capabilities but, because they are recently released, have a modest installed base.

Warranty. This entry gives the length of the warranty for each package and the vendor update policy.

Distribution. This entry explains the vendor distribution method.

Vendor Phone Number. This entry lists the number at which the vendor can be reached to obtain further details about the product.

Comments. This entry is used to list any information about the product or its support that cannot be accommodated in other categories.

Vendor	Avenue Software Inc.	Bit Software, Inc.	Boyan Communications	Cambridge Computer Corp.
Product	Contact 2.00	BITCOM 4.08	BOYAN Communications 4.01	Mac 73/78 3.0
Communications Supported	PC-to-host, Host-to-PC	PC-to-information service, PC-to-PC	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host
Remote Access Capability Terminals Emulated	Yes TTY, Digital VT52/100, IBM 3101, IBM 3270, Unisys	Yes TTY, TeleVideo, Digital VT52/100, Digital VT200/VT300, IBM 3101, IBM 3270, Wyse	Yes TTY, TeleVideo, Digital VT52/100, IBM 3101, ADM-3A	Yes TTY, Digital VT52/100, Digital VT200/VT300, Honeywell VIP 7200/7300/7800
Computers Supported	Apple Macintosh Family	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT	Apple Macintosh Family
Operating Systems	Macintosh Finder	MS-DOS, PC-DOS, MS- Windows	MS-DOS, PC-DOS	Macintosh Finder, Multifinder
Users Supported	Single	Single	Single	Single, multiple via LAN-administered communications server
LAN Compatibility	Novell NetWare, AppleTalk	Novell NetWare	Not applicable	AppleTalk
Min. Memory Required (bytes)	300K	640K	256K	1M
Memory Resident	Yes	No	No	No
Diskette Size (in inches)	3.5	3.5, 5.25	3.5, 5.25	3.5
Hayes AT Command Set Compatible	Yes	Yes	Yes	Yes
Communications				
Number of Concurrent Sessions	Dependent on memory	1	1	1
Transmission Speed (bps)	300 to 19.2K	300 to 19.2K	300 to 38.4K	Up to 56K
File Transfer Capabilities	ASCII, batch transfers, binary	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary	ASCII, batch transfers, binary, Macbinary
File Transfer Protocols	Xmodem, ASCII, ICC/File Xpress Canoe	Xmodem, CRC, Kermit, MNP, ASCII, Ymodem	Xmodem, CRC, Kermit, ASCII, Ymodem, Zmodem, CompuServe B, Ymodem G	Xmodem, Kermit, ASCII
File Transfer Info. Provided	Characters sent/received, blocks sent/received	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, blocks sent/received, session name
Downloading Options	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot	Write to disk, screen snapshot, write to printer, Save from capture buffer	Write to disk, screen snapshot, write to printer
Capture Buffer Size (K bytes)	Not applicable	Vendor did not specify	Up to 400	Unlimited
Communications Features	Auto dial, unattended execution, auto answer	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer, Auto logon
Dialing Directory	No	Yes	Yes	Vendor did not specify
Max. Phone Numbers Stored	Unlimited	32,767	200 per directory	Vendor did not specify
User Interface	Status line, menu driven, nested menus, mouse support, windowing capability, Simulated LEDs	Status line, help facility, menu driven, mouse support	Installation program, status line, command driven, help facility	Installation program, status line, command driven, help facility, menu driven, graphic icons, nested menus, mouse support, pop-up windows
User-Defined Parameters	Modem initialization strings, dialing commands, log files, connect strings, answerback strings, line wrap control, sound control, monitor attributes, Character size, character sets	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, line wrap control, hangup strings, sound control, redial timeout, monitor attributes	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, log file directories, line wrap control, hangup strings, sound control, redial timeout, monitor attributes	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, line wrap control, hangup strings, sound control, redial timeout, monitor attributes
Hot Key to Operating System	Not applicable	No	Yes	Yes
Text Editor	Yes	No	Yes	Yes
Programming Features	Softkeys, File transfer definition	Script language, softkeys	Macros, script language, script language learn mode, predefined scripts	Macros, script language, script language learn mode, softkeys
Security	Single-level passwords	Vendor did not specify	Multilevel passwords	Host dependent
Pricing and Availability				
Price per Unit (\$)	395.00	79.00	65.00	295.00
Date of First Delivery	March 1987	September 1988	October 1986	November 1988
Number Installed to Date	1,000	Contact vendor	Vendor did not specify	3,000
Warranty	90 days	90 days	Vendor did not specify	1 year
Distribution	Direct, distributor/dealer/retail, mail order	Direct, OEMs, distributor/dealer/retail	Direct	Direct, distributor/dealer/retail
Vendor Phone Number	(418) 682-3088	(408) 263-2197	(201) 794-7125	(203) 288-6004
Comments	Supports international keyboards and char. sets	—	Product is shareware supported via the RelayNet international network of Bulletin Board Systems	—

Vendor	Cambridge Computer Corp.	Cawthon Software Group	Century Software	Century Software
Product	PC 73/78 1.40	ChipChat 1.1	Term 6.1	Term For X Windows
Communications Supported	PC-to-host	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host
Remote Access Capability	Yes	Vendor did not specify	Yes	Yes
Terminals Emulated	TTY, Honeywell VIP 7200/7300/7800	TTY, Digital VT52/100, Digital VT200/VT300, IBM 3101	TTY, TeleVideo, Digital VT52/100, Digital VT200/VT300, IBM 3101, Wyse, SCO Color Console	TTY, TeleVideo, Digital VT52/100, Digital VT200/VT300, IBM 3101, Wyse, SCO Color Console
Computers Supported	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), Apple Macintosh Family, IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), Apple Macintosh Family
Operating Systems	MS-DOS, PC-DOS	OS/2	MS-DOS, Macintosh Finder, PC-DOS, UNIX, OS/2, Xenix, MS-Windows, VMS, BTOS	MS-DOS, Macintosh Finder, PC-DOS, UNIX, OS/2, Xenix, MS-Windows
Users Supported	Single	Single, multiple via LAN-administered communications server	Single, multiple via LAN-administered communications server	Single
LAN Compatibility	IBM NETBIOS	IBM NETBIOS, MS OS/2 LAN Manager	IBM NETBIOS, Novell NetWare	IBM NETBIOS, Novell NetWare
Min. Memory Required (bytes)	256K	Vendor did not specify	640K	1M
Memory Resident	No	No	Yes	No
Diskette Size (in inches)	3.5	3.5, 5.25	3.5, 5.25	3.5, 5.25
Hayes AT Command Set Compatible	Yes	Yes	Yes	Yes
Communications				
Number of Concurrent Sessions	1	Multiple	1	10
Transmission Speed (bps)	Up to 19.2K	300 to 38.4K	300 to 38.4K	300 to 38.4K
File Transfer Capabilities	ASCII, batch transfers, binary	ASCII, batch transfers, binary, graphics	ASCII, binary, graphics	ASCII, binary, graphics
File Transfer Protocols	Xmodem, Kermit, ASCII	Xmodem, CRC, Kermit, ASCII, Ymodem	Xmodem, CRC, Kermit, ASCII, Ymodem, Proprietary	Xmodem, CRC, Kermit, ASCII, Ymodem, Proprietary
File Transfer Info. Provided	Characters sent/received, blocks sent/received, session name	Characters sent/received	Number of errors/retries, blocks sent/received, session name, % of file transferred	Number of errors/retries, blocks sent/received, session name, % of file transferred
Downloading Options	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer	Write to disk, write to printer
Capture Buffer Size (K bytes)	Unlimited	1024	Vendor did not specify	Vendor did not specify
Communications Features	Auto dial, unattended execution, auto redial, auto answer, Auto logon	Auto dial, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer
Dialing Directory	Vendor did not specify	Yes	Yes	Yes
Max. Phone Numbers Stored	Vendor did not specify	Vendor did not specify	99	99
User Interface	Installation program, status line, command driven, help facility, menu driven, nested menus, pop-up windows	Installation program, status line, help facility, menu driven, graphic icons, nested menus, mouse support, pop-up windows, windowing capability	Installation program, status line, command driven, help facility, menu driven, windowing capability	Installation program, command driven, help facility, menu driven, windowing capability
User-Defined Parameters	Modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, line wrap control, hangup strings, sound control, redial timeout, monitor attributes	String equivalents/substitutions, modem initialization strings, line wrap control, monitor attributes	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, answerback strings, hangup strings, redial timeout	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, answerback strings, hangup strings, redial timeout
Hot Key to Operating System	Yes	Yes	Yes	Yes
Text Editor	No	Vendor did not specify	No	No
Programming Features	Macros, script language, softkeys	Macros, script language, softkeys	Script language, predefined scripts	Script language, predefined scripts
Security	Host dependent	File encryption	None	None
Pricing and Availability				
Price per Unit (\$)	295.00	299.00	195.00	599.00
Date of First Delivery	February 1985	1989	1982	1989
Number Installed to Date	8,000	Vendor did not specify	Vendor did not specify	Vendor did not specify
Warranty	1 year	1 year	Vendor did not specify	Vendor did not specify
Distribution	Direct, distributor/dealer/retail	Direct, mail order	Direct, OEMs, distributor/dealer/retail, mail order, VARs (801) 268-3088	Direct, OEMs, distributor/dealer/retail, mail order, VARs (801) 268-3088
Vendor Phone Number	(203) 288-6004	(313) 565-4000		
Comments	—	ChipChat is communications software for OS/2 Presentation Manager; supports the OS/2 Clipboard, Dynamic Data Exchange	—	—

Vendor	Century Software	Commtech International	Communications Research Group	Communications Research Group
Product	TermNET Communications Software 6.1	XChange Plus 7.0	Blast MAC rev. 8.4.1	Blast PC Rev 10
Communications Supported	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-fax, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service
Remote Access Capability	Yes	Yes	No	Yes
Terminals Emulated	TTY, TeleVideo, Digital VT52/100, Digital VT200/VT300, IBM 3101, Wyse, SCO Color Console	TTY	TTY, TeleVideo, Digital VT52/100, Hewlett-Packard, Digital VT200/VT300, Lear Siegler, Wyse, Data General	TTY, TeleVideo, Digital VT52/100, Hewlett-Packard, Digital VT200/VT300, Lear Siegler, IBM 3101
Computers Supported	IBM PC/AT/XT, IBM PS/2 (MCA), Apple Macintosh Family, UNIX, ZENIX, VMS	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	Apple Macintosh Family	IBM PC/AT/XT, Apple Macintosh Family, IBM PS/2 (non-MCA), 30 others
Operating Systems	MS-DOS, PC-DOS, UNIX, OS/2, Xenix, MS-Windows	MS-DOS, PC-DOS, UNIX	Macintosh Finder	MS-DOS, Macintosh Finder, PC-DOS, UNIX, Xenix, VM/CMS, VAX/VMS, others
Users Supported	Single, multiple via LAN-administered communications server	Single	Single	Single, multiple via LAN-administered communications server
LAN Compatibility	IBM NETBIOS, Novell NetWare	Not applicable	AppleTalk	IBM NETBIOS, Novell NetWare, ACS, LAT
Min. Memory Required (bytes)	640K	280K	512K	90K
Memory Resident	No	No	Yes	Yes
Diskette Size (in inches)	3.5, 5.25	3.5, 5.25	3.5, 5.25	3.5, 5.25
Hayes AT Command Set Compatible	Yes	Yes	Yes	Yes
Communications				
Number of Concurrent Sessions	10	1	1	Variable
Transmission Speed (bps)	300 to 38.4K	300 to 57.6	300 to 57.6K	300 to 115K
File Transfer Capabilities	ASCII, binary, graphics	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics, Mac Binary	ASCII, batch transfers, binary, graphics
File Transfer Protocols	Xmodem, CRC, Kermit, ASCII, Ymodem, Proprietary	Xmodem, CRC, Kermit, ASCII, Ymodem, Proprietary	Xmodem, ASCII, BLAST	Xmodem, CRC, Kermit, ASCII, Ymodem, BLAST
File Transfer Info. Provided	Number of errors/retries, blocks sent/received, session name, % of file transferred	Characters sent/received, number of errors/retries, blocks sent/received, session name	Characters sent/received, number of errors/retries, blocks sent/received, session name	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time
Downloading Options	Write to disk, write to printer	Write to disk, write to printer, Delayed DOS commands	Write to disk, write to printer	Write to disk, write to printer
Capture Buffer Size (K bytes)	Vendor did not specify	6K	32, not applicable	Unlimited
Communications Features	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer, polling
Dialing Directory	Yes	Yes	Vendor did not specify	Yes
Max. Phone Numbers Stored	99	Vendor did not specify	Unlimited	Unlimited
User Interface	Installation program, status line, command driven, help facility, menu driven, windowing capability	Installation program, status line, command driven, help facility, menu driven, nested menus, pop-up windows, Graphic log display, modem window	Installation program, status line, command driven, help facility, menu driven, graphic icons, nested menus, mouse support, pop-up windows	Installation program, status line, command driven, help facility, menu driven, nested menus, pop-up windows, windowing capability
User-Defined Parameters	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, answerback strings, hangup strings, redial timeout	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, hangup strings, redial timeout, monitor attributes	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, answerback strings, hangup strings, redial timeout	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, line wrap control, hangup strings, sound control, redial timeout, monitor attributes
Hot Key to Operating System	Yes	Yes	Vendor did not specify	Yes
Text Editor	No	Yes	Yes	Yes
Programming Features	Script language, predefined scripts	Script language, predefined scripts	Script language, softkeys, predefined scripts	Macros, script language, script language learn mode, softkeys, predefined scripts
Security	None	Multilevel passwords, transmission encryption	Single-level passwords, multilevel passwords, lock & key codes	Single-level passwords, multilevel passwords, lock & key codes
Pricing and Availability				
Price per Unit (\$)	249.00	245.00	195.00	250.00
Date of First Delivery	1988	August 1987	Vendor did not specify	1981
Number Installed to Date	Vendor did not specify	Vendor did not specify	Vendor did not specify	70,000
Warranty	Vendor did not specify	90 days	90 days	90 days
Distribution	Direct, OEMs, distributor/dealer/retail, mail order, VARs	Direct, OEMs, distributor/dealer/retail	OEMs, distributor/dealer/retail, VARs	Distributor/dealer/retail, VARs
Vendor Phone Number	(801) 268-3088	(404) 438-9999	(504) 923-0888	(504) 923-0888
Comments	—	Remote control feature is memory resident	—	Connects to any mini or mainframe with BLAST; uses high-speed data compression and full-duplex protocol

Vendor	Communications Research Group	Communications Research Group	Communications Research Group	Computer Systems Consultants, Inc.
Product	Blast Unix rev. 8.4	Blast Xenix rev. 8.4	PC Blast Plus rev 10.0	CMODEM 9.1
Communications Supported	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service
Remote Access Capability	No	No	Yes	No
Terminals Emulated	TTY	TTY, TeleVideo, Digital VT52/100, Hewlett-Packard, Digital VT200/VT300, Lear Siegler, IBM 3101, Wyse	TTY, TeleVideo, Digital VT52/100, Hewlett-Packard, Digital VT200/VT300, IBM 3101, IBM 3270, Wyse	TTY, TeleVideo, Digital VT200/VT300
Computers Supported	IBM PC/AT/XT	Xenix-based computers	IBM PC/AT/XT, Apple Macintosh Family, 30 others	IBM PC/AT/XT, UNIX, XENIX
Operating Systems	UNIX	Xenix	MS-DOS, Macintosh Finder, PC-DOS, UNIX, Xenix, VM/CMS, VAX/VMS, others	MS-DOS, PC-DOS, UNIX, Xenix
Users Supported	Single	Single, multiple via LAN-administered communications server	Single, multiple via LAN-administered communications server	Single
LAN Compatibility	Not applicable	Not applicable	IBM NETBIOS, Novell NetWare, ACS, LAT	Vendor did not specify
Mn. Memory Required (bytes)	Vendor did not specify	Vendor did not specify	256K	128K
Memory Resident	Yes	Yes	Yes	No
Diskette Size (in inches)	3.5, 5.25	3.5, 5.25	3.5, 5.25	5.25
Hayes AT Command Set Compatible	Yes	Yes	Yes	Yes
Communications				
Number of Concurrent Sessions	1, variable	Variable	2	1
Transmission Speed (bps)	300 to 57.6K	300 to 57.6K	300 to 115K	300 to 19.2K
File Transfer Capabilities	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary
File Transfer Protocols	BLAST	Xmodem, CRC, ASCII, BLAST	Xmodem, CRC, Kermit, ASCII, Ymodem, BLAST	Xmodem, ASCII
File Transfer Info. Provided	Characters sent/received, number of errors/retries, blocks sent/received, session name	Characters sent/received, blocks sent/received, session name	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Number of errors/retries, blocks sent/received
Downloading Options	Write to disk, write to printer	Write to disk, write to printer	Write to disk, write to printer	Write to disk, write to printer
Capture Buffer Size (K bytes)	Not applicable	Vendor did not specify	Vendor did not specify	At least 64K
Communications Features	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution	Auto dial, unattended execution, auto redial, auto answer, polling	Auto dial, auto answer
Dialing Directory	Yes	Yes	Yes	No
Max. Phone Numbers Stored	Not applicable	Unlimited	Unlimited	Vendor did not specify
User Interface	Installation program, status line, command driven, help facility, menu driven, nested menus	Installation program, status line, command driven, help facility, menu driven, nested menus	Installation program, status line, command driven, help facility, menu driven, nested menus, pop-up windows, windowing capability	Menu driven
User-Defined Parameters	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, line wrap control, hangup strings, redial timeout, monitor attributes	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, line wrap control, hangup strings, redial timeout, monitor attributes	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, line wrap control, hangup strings, redial timeout, monitor attributes	Modem initialization strings, dialing commands
Hot Key to Operating System	Vendor did not specify	Vendor did not specify	Yes	Yes
Text Editor	Yes	Yes	Yes	No
Programming Features	Script language, softkeys, predefined scripts	Script language, predefined scripts	Script language, script language learn mode, softkeys, predefined scripts	Vendor did not specify
Security	Single-level passwords, multilevel passwords, lock & key codes	Single-level passwords, multilevel passwords, lock & key codes	Single-level passwords, multilevel passwords, lock & key codes	Vendor did not specify
Pricing and Availability				
Price per Unit (\$)	495.00	395.00	295.00	100.00
Date of First Delivery	1980	1988	September 1, 1990	1984
Number Installed to Date	Vendor did not specify	Vendor did not specify	1,000	200
Warranty	90 days	90 days	90 days	Permanent
Distribution	OEMs, distributor/dealer/retail, VARs	OEMs, distributor/dealer/retail, VARs	Distributor/dealer/retail, VARs	Direct, distributor/dealer/retail, mail order
Vendor Phone Number	(504) 923-0888	(504) 923-0888	(504) 923-0888	(404) 483-1717
Comments	Unix BLAST connects to PC, MAC, Xenix or any other computers with BLAST	Connects to any other computer with BLAST; provides high-speed, noise-resistant data transfers	Offers PC-to-PC remote control features; connects to any other computer with BLAST	—

Vendor	Crystal Point, Inc.	Datability Software Systems, Inc.	Datastorm Technologies, Inc.	Datastorm Technologies, Inc.
Product	PC-TERM 3.2	RAF Remote Access Facility 2.1	ProComm PLUS 1.1B	ProComm PLUS Network Version 1.0
Communications Supported	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service
Remote Access Capability	Yes	Yes	Yes	Yes
Terminals Emulated	TTY, TeleVideo, Digital VT52/100, Hewlett-Packard, Digital VT200/VT300, IBM 3270	Digital VT52/100, Digital VT200/VT300	TTY, TeleVideo, Digital VT52/100, Lear Siegler, IBM 3101, IBM 3270, Wyse, Heath Zenith 19, ANSI	TTY, TeleVideo, Digital VT52/100, Lear Siegler, IBM 3101, IBM 3270, Wyse, Heath Zenith 19, ANSI
Computers Supported	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)
Operating Systems	MS-DOS, PC-DOS, OS/2	MS-DOS, PC-DOS	MS-DOS, PC-DOS, OS/2	MS-DOS, PC-DOS
Users Supported	Single, multiple via LAN-administered communications server	Single	Single	Multiple via LAN-administered communications server
LAN Compatibility	IBM NETBIOS, Novell NetWare, AT&T Starlan, 3Com	IBM NETBIOS, Novell NetWare	Novell NetWare	Novell NetWare
Min. Memory Required (bytes)	256K	640K	192K	192K
Memory Resident	Yes	Vendor did not specify	No	No
Diskette Size (in inches)	3.5, 5.25	3.5, 5.25	3.5, 5.25	3.5, 5.25
Hayes AT Command Set Compatible	Yes	Yes	Yes	Yes
Communications				
Number of Concurrent Sessions	Dependent on memory	1, 6	1	Up to 9
Transmission Speed (bps)	300 to 19.2K	300 to 38.4K	300 to 115.2K	300 to 19.2K
File Transfer Capabilities	ASCII, batch transfers, binary	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics
File Transfer Protocols	Xmodem, Kermit, ASCII	Vendor did not specify	Xmodem, Kermit, ASCII, Ymodem, Sealink, Telink, Modem 7	Xmodem, Kermit, ASCII, Ymodem, Sealink, Imodem, Telink
File Transfer Info. Provided	Characters sent/received, number of errors/retries, blocks sent/received, session name	Characters sent/received, number of errors/retries, blocks sent/received, Transfer status	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time
Downloading Options	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer
Capture Buffer Size (K bytes)	Vendor did not specify	Not applicable	4K	4
Communications Features	Unattended execution	Auto dial, unattended execution, auto redial	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer
Dialing Directory	Vendor did not specify	No	Yes	Yes
Max. Phone Numbers Stored	Vendor did not specify	Not applicable	200 per dialing dir.	200 per dialing dir.
User Interface	Menu driven, nested menus	Installation program, status line, help facility, menu driven	Installation program, status line, command driven, help facility, menu driven, pop-up windows	Installation program, status line, command driven, help facility, menu driven, pop-up windows
User-Defined Parameters	String equivalents/substitutions, answerback strings, line wrap control, hangup strings	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, line wrap control, hangup strings, redial timeout, monitor attributes, Keyboard remapping	Modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, line wrap control, hangup strings, sound control, redial timeout, monitor attributes, Keyboard remapping	Modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, line wrap control, hangup strings, sound control, redial timeout, monitor attributes, Keyboard remapping
Hot Key to Operating System	Yes	Yes	Yes	Yes
Text Editor	No	No	Yes	Yes
Programming Features	Macros	Script language, softkeys, predefined scripts, Remote procedure calls	Macros, script language, script language learn mode	Macros, script language, script language learn mode
Security	Vendor did not specify	Keyboard idle timeout	Single-level passwords	Single-level passwords
Pricing and Availability				
Price per Unit (\$)	249.00	395.00	119.00	595.00
Date of First Delivery	1983	1986	February 7, 1988	August 1989
Number Installed to Date	Vendor did not specify	30,000	Vendor did not specify	Vendor did not specify
Warranty	Vendor did not specify	90 days	60 days	60 days
Distribution	Direct, OEMs, distributor/dealer/retail, VARs	Direct, VARs	Direct, OEMs, distributor/dealer/retail, VARs	Direct, OEMs, distributor/dealer/retail, VARs
Vendor Phone Number	(206) 487-3656	(212) 807-7800	(314) 443-3282	(314) 443-3282
Comments	—	Price dependent on quantity purchased; Ethernet version also available	Program offers Host mode, allowing a PC to act as a small BBS	Cost is for a LAN 5-Pak, additional ports can be added for \$119 each. offers Host mode, allowing a PC to act as a small BBS

Vendor	DCA/Crosstalk	DCA/Crosstalk	DCA/Crosstalk	DCA/Crosstalk
Product	Crosstalk for Windows 1.1	Crosstalk MK.4 2.0	Crosstalk XVI 3.71	R2LAN 2.0
Communications Supported	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-PC
Remote Access Capability	No	No	No	Yes
Terminals Emulated	TTY, Digital VT52/100, IBM 3101, VIDTEX	TTY, TeleVideo, Digital VT52/100, Digital VT200/VT300, Lear Siegler, IBM 3101, IBM 3270	TTY, TeleVideo, Digital VT52/100, IBM 3101, TI 940 Adds viewpoint	TTY
Computers Supported	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)
Operating Systems	MS-DOS, PC-DOS	MS-DOS, PC-DOS	MS-DOS, PC-DOS	MS-DOS, PC-DOS
Users Supported	Single	Single, multiple via LAN-administered communications server	Single	Multiple via LAN-administered communications server
LAN Compatibility	Vendor did not specify	IBM NETBIOS, Novell NetWare	Vendor did not specify	IBM NETBIOS, Novell NetWare
Min. Memory Required (bytes)	150K	320K	128K	104K Host, 128K Call
Memory Resident	Yes	Yes	Yes	Yes
Diskette Size (in inches)	3.5, 5.25	3.5, 5.25	3.5, 5.25	3.5, 5.25
Hayes AT Command Set Compatible	Yes	Yes	Yes	Yes
Communications				
Number of Concurrent Sessions	1	15	1	1
Transmission Speed (bps)	300 to 19.2K	300 to 115.2K	300 to 115.2K	Dependent on network speed
File Transfer Capabilities	ASCII, binary, graphics	ASCII, batch transfers, binary, graphics	ASCII, binary, graphics	Binary, graphics
File Transfer Protocols	Xmodem, Kermit, ASCII, Ymodem, Zmodem, Dart, CompuServe B	Xmodem, CRC, Kermit, ASCII, X-PC, Ymodem, Zmodem, Dart, CompuServe B	Xmodem, Kermit, ASCII, Crosstalk	Xmodem, Ymodem, Crosstalk
File Transfer Info. Provided	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received, session name	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time
Downloading Options	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer
Capture Buffer Size (K bytes)	64K	64K	64K	Not applicable
Communications Features	Auto dial, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer	Auto dial, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer
Dialing Directory	Yes	Yes	No	Yes
Max. Phone Numbers Stored	Dependent on memory	Dependent on memory	Dependent on memory	2,000
User Interface	Installation program, help facility, menu driven, graphic icons, nested menus, mouse support, pop-up windows	Installation program, help facility, menu driven, nested menus, windowing capability	Status line, command driven, help facility	Installation program, help facility, menu driven, nested menus, pop-up windows
User-Defined Parameters	String equivalents/substitutions, modem initialization strings, dialing commands, connect strings, answerback strings, line wrap control, hangup strings, redial timeout	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, answerback strings, line wrap control, hangup strings, redial timeout	Modem initialization strings, dialing commands, log files, connect strings, answerback strings, line wrap control, hangup strings	Modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, hangup strings, redial timeout, monitor attributes
Hot Key to Operating System	No	Yes	Yes	Yes
Text Editor	No	Yes	No	No
Programming Features	Script language, script language learn mode, predefined scripts	Macros, script language, script language learn mode, predefined scripts	Script language, predefined scripts	None
Security	Single-level passwords	Single-level passwords	Single-level passwords	Multilevel passwords, Guard Host Security System
Pricing and Availability				
Price per Unit (\$)	195.00	245.00	195.00	795.00
Date of First Delivery	July 1989	March 1987	1983	1988
Number Installed to Date	Vendor did not specify	Vendor did not specify	900,000	Vendor did not specify
Warranty	Vendor did not specify	Vendor did not specify	Vendor did not specify	Vendor did not specify
Distribution	OEMs, distributor/dealer/retail, VARs	OEMs, distributor/dealer/retail, mail order, VARs	OEMs, distributor/dealer/retail, VARs	Distributor/dealer/retail, VARs
Vendor Phone Number	(404) 442-4000	(404) 442-4000	(404) 442-4000	(404) 442-4000
Comments	—	—	—	—

Vendor	DCA/Crosstalk	Diversified Computer Systems, Inc.	Diversified Computer Systems, Inc.	Diversified Computer Systems, Inc.
Product	Remote2 2.0	EM320 5.10	EM4010 5.10 3.02	EM4105 5.10 2.24
Communications Supported	PC-to-PC	PC-to-host, PC-to-information service	PC-to-host, PC-to-information service	PC-to-host, PC-to-information service
Remote Access Capability	Yes	Yes	Yes	Yes
Terminals Emulated	TTY	Digital VT52/100, Digital VT200/VT300, Wyse	Digital VT52/100, Digital VT200/VT300, Wyse, Tek 4010/4014, VT640	Digital VT52/100, Digital VT200/VT300, Wyse, Tek 4105, 4010/4014, 4107
Computers Supported	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)
Operating Systems	MS-DOS, PC-DOS	MS-DOS, PC-DOS, MS-Windows	MS-DOS, PC-DOS, MS-Windows	MS-DOS, PC-DOS, MS-Windows
Users Supported	Single	Single	Single	Single
LAN Compatibility	Vendor did not specify	IBM NETBIOS, Novell NetWare, DEC NET, 3COM, Ungermann-Bass	IBM NETBIOS, Novell NetWare, DEC NET, 3COM, Ungermann-Bass	IBM NETBIOS, Novell NetWare, DEC NET, 3COM, Ungermann-Bass
Min. Memory Required (bytes)	64K on Host, 128K Call	170K	330K	300K
Memory Resident	Yes	Yes	Yes	Yes
Diskette Size (in inches)	3.5, 5.25	3.5, 5.25	3.5, 5.25	3.5, 5.25
Hayes AT Command Set Compatible	Yes	Yes	Yes	Yes
Communications				
Number of Concurrent Sessions	1	8	8	8
Transmission Speed (bps)	300 to 115.2K	1200 to 38.4K	1200 to 38.4K	1200 to 38.4K
File Transfer Capabilities	Binary, graphics	ASCII, batch transfers, binary	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics
File Transfer Protocols	Xmodem, Ymodem, Crosstalk	Xmodem, Kermit, ASCII	Xmodem, Kermit, ASCII	Xmodem, Kermit, ASCII
File Transfer Info. Provided	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received, session name, %complete	Characters sent/received, number of errors/retries, blocks sent/received, session name, %complete	Characters sent/received, number of errors/retries, blocks sent/received, session name, %complete
Downloading Options	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer
Capture Buffer Size (K bytes)	Not applicable	10 to 100	10 to 100	10 to 100
Communications Features	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution, auto answer	Auto dial, unattended execution, auto answer	Auto dial, unattended execution, auto answer
Dialing Directory	Yes	Yes	Yes	Yes
Max. Phone Numbers Stored	2,000	15	15	15
User Interface	Installation program, help facility, menu driven, nested menus, pop-up windows	Installation program, status line, command driven, help facility, menu driven, windowing capability	Installation program, status line, command driven, help facility, menu driven, mouse support, windowing capability	Installation program, status line, command driven, help facility, menu driven, mouse support, windowing capability
User-Defined Parameters	Modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, hangup strings, redial timeout, monitor attributes	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, line wrap control, hangup strings, redial timeout	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, line wrap control, hangup strings, redial timeout	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, log file directories, line wrap control, hangup strings, redial timeout
Hot Key to Operating System	Yes	Yes	Yes	Yes
Text Editor	No	No	No	No
Programming Features	None	Macros, script language, softkeys, predefined scripts	Macros, script language, softkeys, predefined scripts	Macros, script language, softkeys, predefined scripts
Security	Multilevel passwords, Guard host security system	None	None	None
Pricing and Availability				
Price per Unit (\$)	195.00	189.00	249.00	359.00
Date of First Delivery	1988	1985	1984	1987
Number Installed to Date	Vendor did not specify	11,000	10,000	6,000
Warranty	Vendor did not specify	90 days	90 days	90 days
Distribution	OEMs, distributor/dealer/retail, VARs	Direct, OEMs, distributor/dealer/retail, VARs	Direct, OEMs, distributor/dealer/retail, VARs	Direct, OEMs, distributor/dealer/retail, VARs
Vendor Phone Number	(404) 442-4000	(303) 447-9251	(303) 447-9251	(303) 447-9251
Comments	—	Includes 132 Column Mode, remappable keyboard, scroll memory, and extensive network support; 15% federal government discount	Includes high resolution graphics support, hard copy, and graphics print queuing; 15% federal government discount	Includes 16 color 800 x 600 support, PostScript support, HP Laserjet III, and HP GC support; 15% federal government discount

Vendor	Dynamic Microprocessor Associates	Dynamic Microprocessor Associates	Dynamic Microprocessor Associates	Dynamic Microprocessor Associates
Product	ASCOM IV 1.42	PC Macterm II 3.11C	pcANYWHERE IV 4.0	pcANYWHERE IV/LAN 4.0
Communications Supported	PC-to-information service, PC-to-PC	Mac-to-PC	PC-to-information service, PC-to-PC	PC-to-information service, PC-to-PC
Remote Access Capability	No	Yes	Yes	Yes
Terminals Emulated	TTY, TeleVideo, Digital VT52/100, VT200/VT300, Hewlett-Packard, Wyse, IBM 3101, IBM 3270	Not applicable	Digital VT52/100, Digital VT200/VT300	Digital VT52/100, Digital VT200/VT300
Computers Supported	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), Apple Macintosh Family, IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)
Operating Systems	MS-DOS, PC-DOS	MS-DOS, Macintosh Finder, PC-DOS, PC MOS	MS-DOS, PC-DOS, PC MOS	MS-DOS, PC-DOS
Users Supported	Single, multiple via LAN-administered communications server	Single	Single	Multiple via LAN-administered communications server
LAN Compatibility	Vendor did not specify	AppleTalk	IBM NETBIOS, Novell NetWare	IBM NETBIOS, Novell NetWare
Min. Memory Required (bytes)	256K	256K	256K	320K
Memory Resident	Yes	Yes	Yes	Yes
Diskette Size (in inches)	5.25	3.5, 5.25	3.5, 5.25	3.5, 5.25
Hayes AT Command Set Compatible	Yes	Yes	Yes	Yes
Communications				
Number of Concurrent Sessions	1	1	Up to 3	Dependent on license
Transmission Speed (bps)	300 to 19.2K	300 to 57.6K	300 to 115.2K	300 to 115.2K
File Transfer Capabilities	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics
File Transfer Protocols	Xmodem, CRC, Kermit, MNP, ASCII, X.PC, Ymodem, proprietary	Proprietary	Xmodem, Proprietary	Xmodem, Proprietary
File Transfer Info. Provided	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time
Downloading Options	Write to disk, screen snapshot, write to printer	Write to disk, write to printer	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer
Capture Buffer Size (K bytes)	Vendor did not specify	Vendor did not specify	Vendor did not specify	Vendor did not specify
Communications Features	Auto dial, unattended execution, auto redial, auto answer	Auto dial, auto redial, auto answer	Auto dial, unattended execution, auto redial	Auto dial, unattended execution, auto redial, auto answer
Dialing Directory	Yes	Yes	Yes	Yes
Max. Phone Numbers Stored	Unlimited	Unlimited	Unlimited	Unlimited
User Interface	Status line, command driven, help facility, menu driven	Help facility, menu driven, graphic icons, mouse support, pop-up windows	Installation program, status line, command driven, help facility, menu driven, nested menus, pop-up windows	Installation program, status line, command driven, help facility, menu driven, nested menus, pop-up windows
User-Defined Parameters	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, hangup strings, redial timeout	Modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, hangup strings, redial timeout	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, hangup strings, redial timeout, monitor attributes	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, hangup strings, redial timeout, monitor attributes
Hot Key to Operating System	No	Yes	Yes	Yes
Text Editor	Yes	No	Yes	No
Programming Features	Macros, script language	None	Script language	Script language
Security	Multilevel passwords	Multilevel passwords	File encryption, multilevel passwords	File encryption, multilevel passwords
Pricing and Availability				
Price per Unit (\$)	195.00	195.00	179.00	495.00
Date of First Delivery	1979	1988	1976	August 1, 1990
Number Installed to Date	100,000	10,000	400,000	Vendor did not specify
Warranty	Vendor did not specify	Vendor did not specify	Vendor did not specify	Vendor did not specify
Distribution	Distributor/dealer/retail, VARs	OEMs, distributor/dealer/retail, mail order, VARs	OEMs, distributor/dealer/retail, mail order, VARs	OEMs, distributor/dealer/retail, mail order, VARs
Vendor Phone Number	(516) 462-0440	(516) 462-0440	(516) 462-0440	(516) 462-0440
Comments	—	Purchase price includes remote Mac and Host PC software; network version \$395	Purchase price includes both host and remote software	Purchase price includes license for two nodes; additional nodes \$25 each

Vendor	Everex Systems, Inc.	Everex Systems, Inc.	The Freesoft Co.	The Freesoft Co.
Product	CommUnity DOS 3.2	CommUnity MAC 1.3.1	OKyto 1.02	Second Sight 2.1
Communications Supported	PC-to-host, PC-to-PC	PC-to-host, PC-to-PC	PC-to-PC	PC-to-PC
Remote Access Capability Terminals Emulated	Yes Digital VT52/100, Digital VT200/VT300	Yes Digital VT52/100, Digital VT200/VT300	Yes TTY	Yes TTY, Digital VT52/100
Computers Supported	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	Apple II Family, Apple Macintosh Family	Apple Macintosh Family	Apple Macintosh Family
Operating Systems	MS-DOS, PC-DOS	Macintosh Finder	Macintosh Finder	Macintosh Finder
Users Supported	Single, multiple via LAN-administered communications server	Single, multiple via LAN-administered communications server	Single	Single
LAN Compatibility	IBM NETBIOS	AppleTalk	AppleTalk	AppleTalk
Min. Memory Required (bytes)	256K	80K	1M	1M
Memory Resident	No	No	Yes	Yes
Diskette Size (in inches)	5.25	3.5	3.5	3.5
Hayes AT Command Set Compatible	Yes	Yes	Yes	Yes
Communications				
Number of Concurrent Sessions	1	1	1	1
Transmission Speed (bps)	19.2K, 10M Ethernet	19.2K, 10M Ethernet	300 to 19.2K	300 to 57.6K
File Transfer Capabilities	ASCII, batch transfers, binary	ASCII, batch transfers, binary	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics
File Transfer Protocols	ASCII	ASCII	Proprietary	Xmodem, ASCII, Zmodem
File Transfer Info. Provided	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received
Downloading Options	Write to disk, write to printer	Write to disk, write to printer	Write to disk	Write to disk
Capture Buffer Size (K bytes)	Vendor did not specify	Not applicable	Not applicable	Not applicable
Communications Features	Vendor did not specify	Vendor did not specify	Auto dial, unattended execution, auto redial, auto answer	Unattended execution
Dialing Directory	Vendor did not specify	Vendor did not specify	Yes	Vendor did not specify
Max. Phone Numbers Stored	Vendor did not specify	Vendor did not specify	Unlimited	Not applicable
User Interface	Installation program, menu driven, mouse support	Installation program, menu driven, mouse support	Nested menus, pop-up windows	Menu driven, nested menus
User-Defined Parameters	Vendor did not specify	Vendor did not specify	String equivalents/substitutions, modem initialization strings, dialing commands, log files, hangup strings, redial timeout	Modem initialization strings, log files, connect strings, log file directories, line wrap control, hangup strings, monitor attributes
Hot Key to Operating System	No	No	No	No
Text Editor	Yes	Yes	No	No
Programming Features	Macros, script language, softkeys	Macros, script language, softkeys	Script language, predefined scripts	Survey language
Security	File encryption, multilevel passwords, transmission encryption	File encryption, multilevel passwords, transmission encryption	Multilevel passwords	Single-level passwords
Pricing and Availability				
Price per Unit (\$)	475.00	445.00	39.95	135.00
Date of First Delivery	1986	1988	November 1, 1989	January 23, 1989
Number Installed to Date	3,000	2,000	Vendor did not specify	Vendor did not specify
Warranty	1 year	1 year	60 days	60 days
Distribution	Direct, OEMs, distributor/dealer/retail, VARs	Direct, OEMs, distributor/dealer/retail, VARs	Direct, OEMs, distributor/dealer/retail, mail order, VARs	Direct, distributor/dealer/retail, mail order
Vendor Phone Number	(415) 498-1111	(415) 498-1111	(412) 846-2700	(412) 846-2700
Comments	Additional licenses \$315	Additional licenses \$315	—	—

Vendor	The Freesoft Co.	Hawkeye Grafix	Hayes Microcomputer Products, Inc.	Hayes Microcomputer Products, Inc.
Product	White Knight V.11	COMMX A.05	Smartcom Exec	Smartcom EZ 2.0
Communications Supported	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service
Remote Access Capability	Yes	Yes	Yes	Yes
Terminals Emulated	TTY, Digital VT52/100	TTY, TeleVideo, Digital VT52/100, Hewlett-Packard, Lear Siegler, IBM 3101, Wyse	TTY, Digital VT52/100, ANSI	TTY, Digital VT52/100
Computers Supported	Apple Macintosh Family	IBM PC/AT/XT, Apple II Family, IBM PS/2 (non-MCA), CP/M80	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)
Operating Systems	Macintosh Finder	MS-DOS, PC-DOS, MS-Windows, CP/M80	MS-DOS, PC-DOS	MS-DOS, PC-DOS
Users Supported	Single	Single, multiple via LAN-administered communications server	Single	Single
LAN Compatibility	AppleTalk	IBM NETBIOS	Not applicable	Not applicable
Min. Memory Required (bytes)	1M	64K	400K	256K
Memory Resident	Yes	Yes	Yes	Yes
Diskette Size (in inches)	3.5	3.5, 5.25	3.5, 5.25	3.5, 5.25
Hayes AT Command Set Compatible	Yes	Yes	Yes	Yes
Communications				
Number of Concurrent Sessions	1	2	Vendor did not specify	1
Transmission Speed (bps)	300 to 57.6K	300 to 19.2K	300 to 115.2K	300 to 19.2K
File Transfer Capabilities	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics	ASCII, binary, graphics
File Transfer Protocols	Xmodem, CRC, Kermit, ASCII, Ymodem, Zmodem	Xmodem, CRC, Kermit, ASCII	Xmodem, CRC, Kermit, ASCII, Ymodem, Zmodem	Xmodem
File Transfer Info. Provided	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, blocks sent/received, session name, estimated transmit time
Downloading Options	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer
Capture Buffer Size (K bytes)	Unlimited	Vendor did not specify	200	Not applicable
Communications Features	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer	Auto dial, auto redial, auto answer	Auto dial, auto redial, auto answer
Dialing Directory	Yes	Yes	Yes	Yes
Max. Phone Numbers Stored	Unlimited	500	Dep. on disk space	Vendor did not specify
User Interface	Status line, menu driven, graphic icons, nested menus, mouse support, pop-up windows, windowing capability, User Definable dialogs, shell compiler	Installation program, status line, help facility, menu driven, pop-up windows, windowing capability	Installation program, status line, command driven, help facility, menu driven, nested menus, mouse support, pop-up windows	Status line, command driven, nested menus, pop-up windows
User-Defined Parameters	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, line wrap control, hangup strings, sound control, redial timeout	String equivalents/substitutions, dialing commands, log files, connect strings, monitor attributes	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, answerback strings, line wrap control, hangup strings, redial timeout, monitor attributes	Modem initialization strings, answerback strings, redial timeout
Hot Key to Operating System	No	Yes	Yes	Yes
Text Editor	No	No	Yes	No
Programming Features	Macros, script language, script language learn mode	Macros, script language, predefined scripts	Macros, script language, script language learn mode, softkeys, predefined scripts	Macros, softkeys
Security	Single-level passwords, multilevel passwords	Single-level passwords, file encryption, transmission encryption	Single-level passwords	Single-level passwords
Pricing and Availability				
Price per Unit (\$)	139.00	99.00	129.00	49.00
Date of First Delivery	November 1, 1989	1978	1990	1988
Number Installed to Date	Vendor did not specify	50,000	Vendor did not specify	Vendor did not specify
Warranty	60 days	30 day trial	90 days	90 days
Distribution	Direct, OEMs, distributor/dealer/retail, mail order, VARs	Direct, distributor/dealer/retail	OEMs, distributor/dealer/retail, VARs	OEMs, distributor/dealer/retail, VARs
Vendor Phone Number	(412) 846-2700	(813) 855-8687	(404) 449-8791	(404) 449-8791
Comments	—	—	Includes color utility, custom & international keyboard and printer support	—

Vendor	Hayes Microcomputer Products, Inc.	Hayes Microcomputer Products, Inc.	Headlands Communications Corp.	Hilgraeve, Inc.
Product	Smartcom for the Macintosh	Smartcom II for the Macintosh 3.2	PC-TALK4	HyperACCESS/5 1.1
Communications Supported	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service
Remote Access Capability	No	Yes	Yes	Yes
Terminals Emulated	TTY, Digital VT52/100	TTY, Digital VT52/100, Show controls	TTY, Digital VT52/100	TTY, TeleVideo, Digital VT52/100, VT200/VT300, IBM 3101, IBM 3278, Wang, ANSI, VideoText IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)
Computers Supported	Apple Macintosh Family	Apple Macintosh Family	IBM PC/AT/XT	
Operating Systems	Macintosh Finder, Macintosh Multifinder	Macintosh Finder, Macintosh Multifinder	MS-DOS, PC-DOS	MS-DOS, PC-DOS, UNIX, OS/2, Xenix, MS-Windows
Users Supported	Single	Single, multiple via LAN-administered communications server	Single	Single
LAN Compatibility	AppleTalk	AppleTalk	Vendor did not specify	MS OS/2 LAN Manager, Lan Server
Min. Memory Required (bytes)	256K	350K	Vendor did not specify	350K
Memory Resident	Yes	Yes	Yes	No
Diskette Size (in inches)	3.5	3.5, 5.25	3.5, 5.25	3.5, 5.25
Hayes AT Command Set Compatible	Yes	Yes	Yes	Yes
Communications				
Number of Concurrent Sessions	1	1	1	Unlimited under OS/2
Transmission Speed (bps)	300 to 38.4K	300 to 57.6K	300 to 9600	300 to 115.6K
File Transfer Capabilities	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics	ASCII, binary	ASCII, batch transfers, binary, graphics
File Transfer Protocols	Xmodem, ASCII	Xmodem, CRC, ASCII, Ymodem, Zmodem	Xmodem, CRC	Xmodem, CRC, Kermit, ASCII, Ymodem, Zmodem, Hyper Protocol
File Transfer Info. Provided	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, session name, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time
Downloading Options	Write to disk, write to printer	Write to disk, write to printer	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer
Capture Buffer Size (K bytes)	Vendor did not specify	Dependent on memory	Vendor did not specify	250K
Communications Features	Auto dial, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer	Auto dial, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer
Dialing Directory	Yes	Yes	Yes	Yes
Max. Phone Numbers Stored	Dep. on disk space	Dep. on disk space	900	250
User Interface	Status line, help facility, menu driven, graphic icons, mouse support, pop-up windows	Status line, help facility, menu driven, graphic icons, mouse support, pop-up windows	Status line, command driven, help facility	Installation program, status line, command driven, help facility, menu driven, nested menus, pop-up windows, Point-and-shoot
User-Defined Parameters	String equivalents/substitutions, answerback strings, line wrap control, redial timeout	String equivalents/substitutions, modem initialization strings, dialing commands, connect strings, answerback strings, line wrap control, hangup strings, redial timeout	String equivalents/substitutions, modem initialization strings, dialing commands, hangup strings, sound control, redial timeout	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, line wrap control, hangup strings, sound control, redial timeout, monitor attributes, Screen colors
Hot Key to Operating System	Yes	Yes	Yes	Yes
Text Editor	No	No	Yes	Yes
Programming Features	Macros, softkeys	Macros, script language, script language learn mode, softkeys, predefined scripts	Macros	Macros, script language, script language learn mode, softkeys, predefined scripts
Security	Vendor did not specify	Protected strings	None	Single-level passwords, multilevel passwords, Password encryption
Pricing and Availability				
Price per Unit (\$)	49.00	149.00	99.00	199.00
Date of First Delivery	1990	1985	Vendor did not specify	10,000
Number Installed to Date	Vendor did not specify	Vendor did not specify	Vendor did not specify	Vendor did not specify
Warranty	90 days	90 days	Vendor did not specify	1 year
Distribution	OEMs, distributor/dealer/retail, VARs	OEMs, distributor/dealer/retail, VARs	Direct, distributor/dealer/retail, mail order	OEMs, distributor/dealer/retail, mail order, VARs
Vendor Phone Number	(404) 449-8791	(404) 449-8791	(415) 435-0770	(313) 243-0576
Comments	—	—	—	—

Vendor	Information Analysis Systems Corp.	Information Analysis Systems Corp.	International Business Machines Corp. (IBM.)	KEA Systems, Ltd.
Product	Genterm 2.04	Genterm	FTTERM 2.1	ZSTEM 100 2.7.2
Communications Supported	PC-to-host, PC-to-PC	Vendor did not specify	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service
Remote Access Capability	No	Vendor did not specify	Vendor did not specify	Yes
Terminals Emulated	TTY, TeleVideo, Digital VT52/100, Lear Siegler, IBM 3101	TTY, TeleVideo, Digital VT52/100, Lear Siegler, IBM 3101	TTY, Digital VT52/100, Digital VT200/VT300, IBM 3101, IBM 3270	Digital VT52/100
Computers Supported	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)
Operating Systems	MS-DOS, PC-DOS	MS-DOS, PC-DOS	MS-DOS, PC-DOS	MS-DOS, PC-DOS, UNIX, Xenix, MS-Windows
Users Supported	Single	Single	Single	Single
LAN Compatibility	Not applicable	Not applicable	IBM Token-Ring	IBM NETBIOS, Novell NetWare
Min. Memory Required (bytes)	256K	256K	256K	Vendor did not specify
Memory Resident	No	Yes	Yes	No
Diskette Size (in inches)	3.5, 5.25	3.5, 5.25	3.5, 5.25	3.5, 5.25
Hayes AT Command Set Compatible	Yes	Yes	Vendor did not specify	Yes
Communications				
Number of Concurrent Sessions	1	1	1 Host, 1 DOS	1
Transmission Speed (bps)	300 to 9600	300 to 9600	300 to 19.2K	Dependent on connection
File Transfer Capabilities	ASCII, binary	ASCII, binary, graphics	ASCII, batch transfers, binary	ASCII, binary
File Transfer Protocols	Xmodem, Kermit	Xmodem, Kermit, ASCII	Xmodem, CRC, ASCII, Ymodem	Xmodem, Kermit, ASCII
File Transfer Info. Provided	Number of errors/retries, blocks sent/received	Number of errors/retries, blocks sent/received	Vendor did not specify	Characters sent/received, number of errors/retries, blocks sent/received
Downloading Options	Write to disk, write to printer	Write to disk, write to printer	Write to disk, write to printer	Write to disk, screen snapshot, write to printer
Capture Buffer Size (K bytes)	Not applicable	Not applicable	Vendor did not specify	Vendor did not specify
Communications Features	Auto dial, auto redial	Auto dial	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution, auto answer
Dialing Directory	Yes	Yes	Yes	Yes
Max. Phone Numbers Stored	100	20	Vendor did not specify	Vendor did not specify
User Interface	Installation program, status line, help facility, menu driven, nested menus	Installation program, status line, help facility, menu driven, nested menus	Help facility, menu driven, pop-up windows	Status line, menu driven, nested menus
User-Defined Parameters	Modem initialization strings, dialing commands, connect strings, answerback strings, line wrap control	Modem initialization strings, dialing commands, connect strings, answerback strings	Vendor did not specify	Log files, connect strings, answerback strings, line wrap control, redial timeout, monitor attributes
Hot Key to Operating System	Yes	Yes	Yes	Yes
Text Editor	No	No	Vendor did not specify	No
Programming Features	Macros, script language	Macros, script language	Macros, predefined scripts, FTHLLAPI program interface	Macros, script language, softkeys, predefined scripts
Security	Vendor did not specify	None	Dependent on Host	Vendor did not specify
Pricing and Availability				
Price per Unit (\$)	79.95	79.95	145.00	99.00
Date of First Delivery	1985	1985	July 1988	Vendor did not specify
Number Installed to Date	40,000	20,000	Vendor did not specify	Vendor did not specify
Warranty	1 year	1 year	90 days	Vendor did not specify
Distribution	Direct, VARs	Direct	Direct, distributor/dealer/retail, VARs	Direct, OEMs, distributor/dealer/retail
Vendor Phone Number	(203) 429-1691	(203) 429-1691	(914) 765-1900	(604) 431-0727
Comments	—	—	108 addl. licenses; product #75X3-286 supports all IBM 3270 protocol converters	30 day money back guarantee

Vendor	KEA Systems, Ltd.	KEA Systems, Ltd.	KEA Systems, Ltd.	Lightwave
Product	ZSTEM 220 3.3.3	ZSTEM 240 2.2.1	ZSTEM 4014 2.1.5A	Lightwave Communications 1.1
Communications Supported	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service
Remote Access Capability	Yes	Yes	No	Vendor did not specify
Terminals Emulated	Digital VT52/100, Digital VT200/VT300	Digital VT52/100, Digital VT200/VT300, Tektronix 4010/4014	Tektronix 4010/4014	TTY, IBM 3101
Computers Supported	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA)
Operating Systems	MS-DOS, PC-DOS, UNIX, Xenix, MS-Windows	MS-DOS, PC-DOS, UNIX, Xenix, MS-Windows	MS-DOS, PC-DOS, UNIX, OS/2, Xenix, MS-Windows	MS-DOS, PC-DOS
Users Supported	Single, multiple via LAN-administered communications server	Single, multiple via LAN-administered communications server	Single	Multiple via LAN-administered communications server
LAN Compatibility	IBM NETBIOS, Novell NetWare, TCP/IP	IBM NETBIOS, Novell NetWare, TCP/IP	Vendor did not specify	Vendor did not specify
Min. Memory Required (bytes)	220K	220K	Vendor did not specify	128K
Memory Resident	No	No	No	No
Diskette Size (in inches)	3.5, 5.25	3.5, 5.25	3.5, 5.25	3.5, 5.25
Hayes AT Command Set Compatible	Yes	Yes	Yes	Yes
Communications				
Number of Concurrent Sessions	1	2	1	1
Transmission Speed (bps)	Dependent on connection	Dependent on connection	Dependent on connection	1200 to 19.2K
File Transfer Capabilities	ASCII, binary	ASCII, binary	ASCII, binary	ASCII, binary, graphics
File Transfer Protocols	Xmodem, Kermit, ASCII	Xmodem, Kermit, ASCII	Xmodem, Kermit, ASCII	Xmodem, ASCII
File Transfer Info. Provided	Characters sent/received, number of errors/retries, blocks sent/received	Characters sent/received, number of errors/retries, blocks sent/received	Vendor did not specify	Characters sent/received, number of errors/retries
Downloading Options	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer	Vendor did not specify	Write to disk
Capture Buffer Size (K bytes)	Vendor did not specify	Vendor did not specify	Vendor did not specify	Not applicable
Communications Features	Auto dial, unattended execution, auto answer	Auto dial, unattended execution, auto answer	Auto dial, unattended execution, auto answer	Auto dial, auto redial, auto answer
Dialing Directory	Yes	Yes	Yes	Yes
Max. Phone Numbers Stored	Vendor did not specify	Vendor did not specify	24K	10
User Interface	Status line, menu driven, nested menus	Installation program, menu driven, nested menus, mouse support	Menu driven, nested menus	Installation program, help facility, menu driven, pop-up windows
User-Defined Parameters	Log files, connect strings, answerback strings, line wrap control, redial timeout, monitor attributes	Log files, connect strings, answerback strings, line wrap control, redial timeout, monitor attributes	Vendor did not specify	Monitor attributes
Hot Key to Operating System	Yes	Yes	No	Yes
Text Editor	No	No	No	No
Programming Features	Macros, script language, softkeys, predefined scripts	Macros, script language, softkeys, predefined scripts	Macros, script language, predefined scripts	Vendor did not specify
Security	Vendor did not specify	Vendor did not specify	Vendor did not specify	None
Pricing and Availability				
Price per Unit (\$)	150.00	295.00	99.00	45.00
Date of First Delivery	Vendor did not specify	Vendor did not specify	Vendor did not specify	Vendor did not specify
Number Installed to Date	Vendor did not specify	Vendor did not specify	Vendor did not specify	Vendor did not specify
Warranty	Vendor did not specify	Vendor did not specify	Vendor did not specify	Vendor did not specify
Distribution	Direct, OEMs, distributor/dealer/retail	Direct, OEMs, distributor/dealer/retail	Direct, OEMs, distributor/dealer/retail	Direct, OEMs, distributor/dealer/retail, mail order, VARS
Vendor Phone Number	(604) 431-0727	(604) 431-0727	(604) 431-0727	(813) 988-5033
Comments	30 day money back guarantee, Full ANSI support with true double-high/double-wide characters, smooth scrolling, and 132 column mode	30 day satisfaction or money back guarantee, 1 year technical support; ZSTEM 240 features true 132 column support, and extensive network support	30 day money back guarantee	—

Vendor	Microcom	Microcom	Microcom	MicroGate Corp.
Product	Carbon Copy Plus & Host 5.2.2	Relay Gold 5.0	Relay Gold for Windows 5.0	MicroGate 6540 4.13
Communications Supported	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host
Remote Access Capability	Yes	Yes	Yes	Yes
Terminals Emulated	Digital VT52/100, IBM 3278/79	TTY, TeleVideo, Digital VT52/100, Lear Siegler, IBM 3101, IBM 3278/79, ANSI, Tymnet-78	TTY, TeleVideo, Digital VT52/100, Lear Siegler, IBM 3278/79, ADDS 25	TTY, Tandem 65XX
Computers Supported	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)
Operating Systems	MS-DOS	MS-DOS, PC-DOS	MS-Windows	MS-DOS, PC-DOS, MS-Windows
Users Supported	Single	Single, multiple via LAN-administered communications server	Single, multiple via LAN-administered communications server	Single
LAN Compatibility	Novell NetWare, Banyan, 3Com	IBM NETBIOS, Novell NetWare, Banyan, 3Com, Ungermann Bass	IBM NETBIOS, Novell NetWare, Banyan, 3Com, Ungermann Bass	Not applicable
Min. Memory Required (bytes)	60K - host; 256K - remote	129K (w/expanded memory)	129K (w/expanded memory)	256K
Memory Resident	Yes	Yes	Yes	Yes
Diskette Size (in inches)	3.5, 5.25	3.5, 5.25	3.5, 5.25	3.5, 5.25
Hayes AT Command Set Compatible	Yes	Yes	Yes	Yes
Communications				
Number of Concurrent Sessions	1	15	15	1
Transmission Speed (bps)	300 to 38.4K	300 to 57.6K	300 to 57.6K	1200 to 19.2K
File Transfer Capabilities	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics	ASCII, binary, graphics
File Transfer Protocols	Xmodem, Kermit, ASCII, Ymodem, proprietary	Xmodem, CRC, Kermit, ASCII, Ymodem, IBM IND\$FILE, relay	Xmodem, CRC, Kermit, ASCII, Ymodem, IBM IND\$FILE, relay	FLASH
File Transfer Info. Provided	Session name, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received, session name	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Number of errors/retries, blocks sent/received
Downloading Options	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer
Capture Buffer Size (K bytes)	Limited to available memory	32 screens	32 screens	Not applicable
Communications Features	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer
Dialing Directory	Yes	Yes	Yes	No
Max. Phone Numbers Stored	200	Dependent on memory	Dependent on memory	Not applicable
User Interface	Installation program, status line, help facility, menu driven, nested menus	Installation program, status line, command driven, help facility, menu driven, pop-up windows, windowing capability	Installation program, status line, command driven, help facility, menu driven, pop-up windows, windowing capability	Status line
User-Defined Parameters	String equivalents/substitutions, modem initialization strings, dialing commands, connect strings, log file directories, answerback strings, line wrap control, hangup strings, redial timeout, monitor attributes	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, answerback strings, line wrap control, hangup strings, sound control, redial timeout, monitor attributes	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, answerback strings, line wrap control, hangup strings, sound control, redial timeout, monitor attributes	Vendor did not specify
Hot Key to Operating System	Yes	Yes	Yes	Yes
Text Editor	No	Yes	Yes	No
Programming Features	Script language	Macros, script language, script language learn mode, softkeys	Macros, script language, script language learn mode, softkeys	Script language learn mode
Security	Single-level passwords, transmission encryption, Auto call-back	Single-level passwords, multilevel passwords, transmission encryption	Single-level passwords, multilevel passwords, transmission encryption	Vendor did not specify
Pricing and Availability				
Price per Unit (\$)	342.00	299.00	299.00	195.00
Date of First Delivery	April 1990	1983	December 1990	1984
Number Installed to Date	Vendor did not specify	250,000	Vendor did not specify	Vendor did not specify
Warranty	90 days	90 days	90 days	Vendor did not specify
Distribution	Direct, OEMs, distributor/dealer/retail, mail order, VARs	Direct, OEMs, distributor/dealer/retail, VARs	Direct, distributor/dealer/retail, VARs	Direct
Vendor Phone Number	(617) 551-1999	(617) 551-1999	(617) 551-1999	(512) 345-7791
Comments	Package includes a host (cc) program in addition to the full Carbon Copy Plus product	—	Also supports 3270 coax, async token-ring SDLC and X.25 gateways	Features 16-page display memory, configurable display colors, recording and playback of sessions

Vendor	MicroPlot Systems, Inc.	Norton-Lambert Corp.	OMM Corp.	Persoft, Inc.
Product	PC-Plot-V 5.11	Close-Up 3.0A	MIST+ 1.4	SmartTerm 240 3.1
Communications Supported	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service
Remote Access Capability	Yes	Yes	Yes	Yes
Terminals Emulated	TTY, Digital VT52/100, Digital VT200/VT300, Tektronix 410S/07	TTY	TTY	TTY, Digital VT52/100, Digital VT200/VT300
Computers Supported	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT
Operating Systems	MS-DOS, PC-DOS	MS-DOS, PC-DOS	MS-DOS, PC-DOS	PC-DOS
Users Supported	Single	Single, multiple via LAN-administered communications server	Single, multiple via LAN-administered communications server	Single, multiple via LAN-administered communications server
LAN Compatibility	IBM NETBIOS, Novell NetWare, TCP/IP, DecNet	IBM NETBIOS, MS OS/2 LAN Manager, Novell NetWare	IBM NETBIOS, Novell NetWare	Novell NetWare, 3Com, Banyan, Ungermann-Bass
Min. Memory Required (bytes)	512K	67K customer/term	256K	512K
Memory Resident	No	Yes	No	No
Diskette Size (in inches)	3.5, 5.25	3.5, 5.25	5.25	3.5, 5.25
Hayes AT Command Set Compatible	Yes	Yes	Yes	Yes
Communications				
Number of Concurrent Sessions	1	1	1	Vendor did not specify
Transmission Speed (bps)	300 to 19.2K	300 to 38.4K	300 to 9600	75 to 19.2K
File Transfer Capabilities	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics	ASCII, binary
File Transfer Protocols	Xmodem, Kermit, ASCII	Xmodem	Xmodem, ASCII	Xmodem, CRC, Kermit, Ymodem, PDIP
File Transfer Info. Provided	Characters sent/received, number of errors/retries, blocks sent/received, session name	Characters sent/received, 100% error corrected	Vendor did not specify	Characters sent/received, number of errors/retries, blocks sent/received
Downloading Options	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer	Write to disk, write to printer	Write to disk, write to printer
Capture Buffer Size (K bytes)	64K	Vendor did not specify	Not applicable	Vendor did not specify
Communications Features	Auto dial, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer	Auto dial, auto redial
Dialing Directory	Yes	Yes	Yes	No
Max. Phone Numbers Stored	Unlimited	Unlimited	Unlimited	Not applicable
User Interface	Installation program, status line, help facility, menu driven, nested menus, mouse support, pop-up windows	Command driven, menu driven	Command driven, help facility	Installation program, status line, help facility, menu driven, mouse support, pop-up windows, windowing capability
User-Defined Parameters	String equivalents/substitutions, modem initialization strings, dialing commands, connect strings, answerback strings, line wrap control, hangup strings, redial timeout, monitor attributes	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, log file directories, answerback strings, line wrap control, hangup strings, redial timeout, monitor attributes	String equivalents/substitutions, modem initialization strings, dialing commands, connect strings, answerback strings, hangup strings, redial timeout	Answerback strings, line wrap control, redial timeout
Hot Key to Operating System	Yes	Yes	No	Yes
Text Editor	Yes	No	Yes	No
Programming Features	Macros, script language, softkeys	Script language, softkeys	Macros, script language, predefined scripts	Macros, softkeys
Security	None	Multilevel passwords	Multilevel passwords	Vendor did not specify
Pricing and Availability				
Price per Unit (\$)	225.00	195.00	149.00	345.00
Date of First Delivery	January 1990	March 1985	May 1983	January 1986
Number Installed to Date	4,600	Vendor did not specify	3,000	87,286
Warranty	1 year	90 days	None	30 day guarantee
Distribution	Direct, OEMs, distributor/dealer/retail, mail order	Direct, distributor/dealer/retail	Direct, mail order	Direct, distributor/dealer/retail, VARs
Vendor Phone Number	(614) 882-4786	(805) 687-8896	(202) 234-2117	(608) 273-6000
Comments	—	195 customer/terminal, \$245 support/ACS	—	Multi-user version available for \$1,495

Vendor	Persoft, Inc.	Persoft, Inc.	Polygon Inc.	Polygon Inc.
Product	SmarTerm 320 1.1	SmarTerm 340 1.0	Poly-STAR/G 2.3	Poly-STAR/T 2.3
Communications Supported	PC-to-host, PC-to-PC, PC-to-Information service	PC-to-host, PC-to-PC, PC-to-Information service	PC-to-host	PC-to-host
Remote Access Capability	Vendor did not specify	Yes	Yes	Yes
Terminals Emulated	TTY, Digital VT52/100, Digital VT200/VT300	TTY, Digital VT52/100	Digital VT52/100, Digital VT200/VT300	Digital VT52/100, Digital VT200/VT300
Computers Supported	IBM PC/AT/XT	IBM PC/AT/XT	IBM PC/AT/XT, IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (non-MCA)
Operating Systems	PC-DOS	MS-DOS, PC-DOS	MS-DOS, PC-DOS, MS-Windows	MS-DOS, PC-DOS, MS-Windows
Users Supported	Single, multiple via LAN-administered communications server	Single, multiple via LAN-administered communications server	Single, multiple via LAN-administered communications server	Single, multiple via LAN-administered communications server
LAN Compatibility	Novell NetWare, 3Com, Banyan, Ungermann-Bass	Novell NetWare, 3Com, Banyan, Ungermann-Bass	MS OS/2 LAN Manager, Novell NetWare, Banyan, 3Com	MS OS/2 LAN Manager, Novell NetWare, Banyan, 3Com
Min. Memory Required (bytes)	320K	310K	512K	512K
Memory Resident	Vendor did not specify	Yes	Yes	Yes
Diskette Size (in inches)	3.5, 5.25	3.5, 5.25	3.5, 5.25	3.5, 5.25
Hayes AT Command Set Compatible	Vendor did not specify	Yes	Yes	Yes
Communications				
Number of Concurrent Sessions	Vendor did not specify	4 via LAN	Up to 20 sessions	Up to 20 sessions
Transmission Speed (bps)	75 to 19.2K	75 to 19.2K	300 to 9600	300 to 9600
File Transfer Capabilities	ASCII, batch transfers, binary	ASCII, binary	ASCII, binary	ASCII, binary
File Transfer Protocols	Xmodem, CRC, Kermit, Ymodem, PDIP	Xmodem, CRC, Kermit, Ymodem, PDIP	Kermit, ASCII, XFR plus	Kermit, ASCII, XFR plus
File Transfer Info. Provided	Characters sent/received, number of errors/retries, blocks sent/received	Characters sent/received, number of errors/retries, blocks sent/received	Number of errors/retries, blocks sent/received	Number of errors/retries, blocks sent/received
Downloading Options	Write to printer	Write to disk, write to printer	Write to disk	Write to disk
Capture Buffer Size (K bytes)	Not applicable	Not applicable	Vendor did not specify	Vendor did not specify
Communications Features	Auto dial, auto answer	Auto dial, auto redial, auto answer	Auto dial, unattended execution, auto answer	Auto dial, unattended execution, auto answer
Dialing Directory	No	No	Yes	Yes
Max. Phone Numbers Stored	Vendor did not specify	Not applicable	50	50
User Interface	Installation program, status line, help facility, menu driven, pop-up windows, windowing capability	Installation program, status line, help facility, menu driven, mouse support, pop-up windows, windowing capability	Installation program, status line, command driven, help facility, menu driven, nested menus, mouse support, pop-up windows	Installation program, status line, command driven, help facility, menu driven, nested menus, mouse support, pop-up windows
User-Defined Parameters	Answerback strings, line wrap control, redial timeout	Log files, log file directories, answerback strings, line wrap control, monitor attributes	String equivalents/substitutions, modem initialization strings, dialing commands, log files, answerback strings, line wrap control, sound control	String equivalents/substitutions, modem initialization strings, dialing commands, log files, answerback strings, line wrap control, sound control
Hot Key to Operating System	Yes	Yes	Yes	Yes
Text Editor	Vendor did not specify	No	No	No
Programming Features	Macros, softkeys	Macros, softkeys	Macros, script language, softkeys, predefined scripts	Macros, script language, softkeys, predefined scripts
Security	Vendor did not specify	Vendor did not specify	None	None
Pricing and Availability				
Price per Unit (\$)	195.00	349.00	329.00	229.00
Date of First Delivery	September 1989	June 1990	November 1986	November 1986
Number Installed to Date	273	903	100,000	100,000
Warranty	30 day guarantee	30 day guarantee	90 days	90 days
Distribution	Direct, distributor/dealer/retail, VARs	Direct, distributor/dealer/retail, VARs	Direct, distributor/dealer/retail, VARs	Direct, distributor/dealer/retail, VARs
Vendor Phone Number	(608) 273-6000	(608) 273-6000	(314) 432-4142	(314) 432-4142
Comments	Multi-user version available for \$825	Multi-user version available for \$1,495	—	—

Vendor	POS Technologies	Rupp Corp.	Selecterm, Inc.	SoftKlone Distributing Corp.
Product	The Video Store 4.5	FASTLYNX 1.1	Microscript 1.11	Mirror III 2.0
Communications Supported	PC-to-host, PC-to-PC	PC-to-PC	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service
Remote Access Capability	Yes	Yes	Yes	No
Terminals Emulated	Wyse	Not applicable	TTY, Digital VT52/100, IBM 3101, IBM 3270	TTY, TeleVideo, Digital VT52/100, VT200/VT300, Lear Siegler, IBM 3101, Wyse, ANSI, IBM 3278
Computers Supported	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)
Operating Systems	MS-DOS, PC-DOS, PC-MOS	MS-DOS, PC-DOS	MS-DOS	MS-DOS, PC-DOS
Users Supported	Single, multiple via LAN-administered communications server	Single	Single	Single
LAN Compatibility	Novell NetWare, 3-Com	IBM NETBIOS, Novell NetWare, Any DOS environment LAN	Novell NetWare	Not applicable
Min. Memory Required (bytes)	2,048K/LAN, 640K/DOS	190K	640K	185 to 470K
Memory Resident	Yes	No	Yes	Yes
Diskette Size (in inches)	3.5, 5.25	3.5, 5.25	3.5, 5.25	3.5, 5.25
Hayes AT Command Set Compatible	Yes	Vendor did not specify	Vendor did not specify	Yes
Communications				
Number of Concurrent Sessions	1, 2	1	1	1
Transmission Speed (bps)	300 to 9600	Dependent on CPU	300 to 9600	300 to 115.2K
File Transfer Capabilities	Vendor did not specify	ASCII, batch transfers, binary, graphics	ASCII, batch transfers	ASCII, batch transfers, binary, graphics
File Transfer Protocols	Xmodem, MNP, Ymodem	CRC	ASCII	Xmodem, CRC, Kermit, MNP, ASCII, Ymodem, Zmodem, Crosstalk, Hayes
File Transfer Info. Provided	Vendor did not specify	Number of errors/retries, Percentage sent/received	Not applicable	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time
Downloading Options	Write to disk, write to printer	Vendor did not specify	Write to disk, write to printer, Data element capture	Write to disk, screen snapshot, write to printer
Capture Buffer Size (K bytes)	Not applicable	Not applicable	Variable	50K (variable)
Communications Features	Auto dial, auto redial, auto answer	Not applicable	Unattended execution	Auto dial, unattended execution, auto redial, auto answer
Dialing Directory	Yes	No	No	Yes
Max. Phone Numbers Stored	Not applicable	Not applicable	Not applicable	Unlimited
User Interface	Installation program, command driven, help facility, menu driven	Command driven, menu driven, pop-up windows	Installation program, status line, help facility, nested menus, pop-up windows	Installation program, status line, command driven, help facility, menu driven, nested menus, mouse support, pop-up windows
User-Defined Parameters	Log files, log file directories	Monitor attributes, Port selection, error checking method	Vendor did not specify	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, answerback strings, line wrap control, sound control, redial timeout, monitor attributes
Hot Key to Operating System	No	No	No	Yes
Text Editor	No	No	Yes	Yes
Programming Features	None	Macros, DOS command mode	Script language, script language learn mode	Macros, script language, script language learn mode, predefined scripts, Script debugger
Security	Multilevel passwords	None	Single-level passwords, multilevel passwords	Single-level passwords, multilevel passwords, Directory limits
Pricing and Availability				
Price per Unit (\$)	Contact vendor	149.95	1,995.00	149.00
Date of First Delivery	Vendor did not specify	November 1, 1987	August 3, 1989	December 1988
Number Installed to Date	550	100,000	300	300,000
Warranty	90 days	30 day	90 days	60-day moneyback guarantee
Distribution	Direct	Direct, OEMs, distributor/dealer/retail, mail order, VARs	Direct, OEMs, distributor/dealer/retail, VARs	Direct, distributor/dealer/retail, VARs
Vendor Phone Number	(609) 848-2848	(303) 494-5987	(617) 246-1300	(904) 878-8564
Comments	—	149.94 retail, both serial and parallel cables are included	—	—

Vendor	SoftKlone Distributing Corp.	SoftKlone Distributing Corp.	Softronic, Inc.	Softronic, Inc.
Product	Mirror III LAN 2.0	Takeover 1.0	Softerm Modular Work Group 1	Softerm PC 3.10
Communications Supported	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-information service	PC-to-host, PC-to-information service
Remote Access Capability	No	Yes	Yes	Yes
Terminals Emulated	TTY, TeleVideo, Digital VT52/100, VT200/VT300, Lear Siegler, IBM 3101, Wyse, ANSI, IBM 3278	TTY, TeleVideo, Digital VT52/100, VT200/VT300, Lear Siegler, IBM 3101, Wyse, ANSI, IBM 3278	TTY, TeleVideo, Digital VT52/100, VT200/VT300, Hewlett-Packard, Wyse, IBM 3101, ANSI, Prime	TTY, TeleVideo, Digital VT52/100, VT200/VT300, Lear Siegler, ANSI, ADDS, IBM 3101, Wyse, Honeywell
Computers Supported	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)
Operating Systems	MS-DOS, PC-DOS	MS-DOS, PC-DOS	MS-DOS, PC-DOS, UNIX, OS/2, MS-Windows	MS-DOS, PC-DOS, MS-Windows
Users Supported	Single, multiple via LAN-administered communications server	Single	Single, multiple via LAN-administered communications server	Single, multiple via LAN-administered communications server
LAN Compatibility	IBM NETBIOS, Novell NetWare, 3Com, Ungermann Bass	Vendor did not specify	IBM NETBIOS, MS OS/2 LAN Manager, Novell NetWare	IBM NETBIOS, MS OS/2 LAN Manager, Novell NetWare
Min. Memory Required (bytes)	Vendor did not specify	Guest 480K, Host PC 55K	400	230
Memory Resident	Yes	Yes	No	Yes, no
Diskette Size (in inches)	3.5, 5.25	3.5, 5.25	3.5, 5.25	3.5, 5.25
Hayes AT Command Set Compatible	Yes	Yes	Yes	Yes
Communications				
Number of Concurrent Sessions	1	1	Limited by hardware	1
Transmission Speed (bps)	300 to 115.2K	300 to 57.6K	300 to 19.2K	300 to 19.2K
File Transfer Capabilities	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary	ASCII, batch transfers, binary
File Transfer Protocols	Xmodem, CRC, Kermit, MNP, ASCII, Ymodem, Zmodem, Crosstalk, Hayes	Xmodem, CRC, Kermit, MNP, ASCII, Ymodem, Zmodem, Crosstalk, Hayes	Xmodem, CRC, Kermit, ASCII, Ymodem, Crosstalk, Hayes	Xmodem, CRC, Kermit, ASCII, Ymodem, Crosstalk, Hayes
File Transfer Info. Provided	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received	Characters sent/received, number of errors/retries
Downloading Options	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer
Capture Buffer Size (K bytes)	50K (variable)	50K (variable)	User-defined	User-defined
Communications Features	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution, auto answer	Auto dial, unattended execution, auto answer
Dialing Directory	Yes	Yes	Yes	Yes
Max. Phone Numbers Stored	Unlimited	Unlimited	Unlimited	Unlimited
User Interface	Installation program, status line, command driven, help facility, menu driven, nested menus, mouse support, pop-up windows	Installation program, status line, command driven, help facility, menu driven, nested menus, mouse support, pop-up windows	Installation program, status line, help facility, menu driven, nested menus, mouse support, pop-up windows, windowing capability	Installation program, status line, help facility, menu driven, nested menus, pop-up windows, windowing capability
User-Defined Parameters	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, answerback strings, line wrap control, sound control, redial timeout, monitor attributes	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, answerback strings, line wrap control, sound control, redial timeout, monitor attributes	String equivalents/substitutions, dialing commands, log files, connect strings, log file directories, answerback strings, line wrap control, sound control, redial timeout, monitor attributes	String equivalents/substitutions, dialing commands, log files, connect strings, answerback strings, line wrap control, redial timeout, monitor attributes, Colors
Hot Key to Operating System	Yes	Yes	Yes	Yes
Text Editor	Yes	Yes	No	Yes
Programming Features	Macros, script language, script language learn mode, predefined scripts, Script debugger	Macros, script language, script language learn mode, predefined scripts, Script debugger	Vendor did not specify	Macros, script language, softkeys
Security	Single-level passwords, multilevel passwords, Directory limits	Single-level passwords, Directory limits	None	Vendor did not specify
Pricing and Availability				
Price per Unit (\$)	595.00	295.00	Contact vendor	195.00
Date of First Delivery	Vendor did not specify	March 1990	1990	1988
Number Installed to Date	Vendor did not specify	Vendor did not specify	500	80,000
Warranty	60-day moneyback guarantee	60-day moneyback guarantee	90 days	90 days
Distribution	Direct, distributor/dealer/retail, VARs	Direct, distributor/dealer/retail, VARs	Direct, OEMs, distributor/dealer/retail, VARs	Vendor did not specify
Vendor Phone Number	(904) 878-8564	(904) 878-8564	(719) 593-9540	(719) 593-9540
Comments	Price is for 5 workstations	—	—	—

Vendor	Software Store	Software Ventures	Software Ventures	Software Ventures
Product	MasterCom	Microphone 1.5	MicroPhone II 3.0	MicroPhone II for windows 1.0
Communications Supported	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service
Remote Access Capability	Yes	Yes	Yes	Yes
Terminals Emulated	TTY, Lear Siegler	TTY, Digital VT52/100	TTY, Digital VT52/100	TTY, Digital VT52/100
Computers Supported	IBM PC/AT/XT, Apple II Family, CP/M	Apple Macintosh Family	Apple Macintosh Family	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)
Operating Systems	MS-DOS, PC-DOS, CP/M	Macintosh Finder	Macintosh Finder	MS-Windows
Users Supported	Single	Single	Single	Single
LAN Compatibility	IBM NETBIOS, Novell NetWare	Vendor did not specify	Vendor did not specify	Vendor did not specify
Min. Memory Required (bytes)	256K	512K	Vendor did not specify	Vendor did not specify
Memory Resident	No	Vendor did not specify	Vendor did not specify	Vendor did not specify
Diskette Size (in inches)	3.5, 5.25	3.5	3.5	3.5, 5.25
Hayes AT Command Set Compatible	Yes	Yes	Yes	Yes
Communications				
Number of Concurrent Sessions	1	1	1	1
Transmission Speed (bps)	300 to 19.2K	300 to 57.6K	300 to 57.6K	300 to 19.2K
File Transfer Capabilities	ASCII, batch transfers, binary, graphics	ASCII, binary, graphics	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics
File Transfer Protocols	Xmodem, CRC, ASCII, X.PC	Xmodem, CRC, ASCII	Xmodem, CRC, Kermit, ASCII, Ymodem, Zmodem	Xmodem, CRC, ASCII, Ymodem
File Transfer Info. Provided	Number of errors/retries, blocks sent/received	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time	Characters sent/received, number of errors/retries, blocks sent/received, estimated transmit time
Downloading Options	Write to disk, screen snapshot, write to printer	Write to disk, write to printer	Write to disk, write to printer	Write to disk, write to printer
Capture Buffer Size (K bytes)	Vendor did not specify	Dependent on memory	Vendor did not specify	Dependent on memory
Communications Features	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer	Auto dial, auto redial, auto answer	Auto dial, auto redial, auto answer
Dialing Directory	Yes	Yes	Yes	Yes
Max. Phone Numbers Stored	Not applicable	16	16	75
User Interface	Status line, command driven, menu driven, nested menus	Menu driven, graphic icons, mouse support	Menu driven	Installation program, menu driven, graphic icons, mouse support
User-Defined Parameters	String equivalents/substitutions, dialing commands, log files, connect strings, line wrap control	Answerback strings, line wrap control	Modem initialization strings, dialing commands, connect strings, answerback strings, line wrap control, hangup strings, sound control, redial timeout	Modem initialization strings, dialing commands, connect strings, answerback strings, line wrap control, hangup strings, redial timeout
Hot Key to Operating System	Yes	Vendor did not specify	Vendor did not specify	Vendor did not specify
Text Editor	No	Yes	Yes	Yes
Programming Features	Macros, softkeys	Script language, script language learn mode, predefined scripts	Script language, script language learn mode, predefined scripts	Script language, script language learn mode, predefined scripts
Security	Single-level passwords	Vendor did not specify	Vendor did not specify	Vendor did not specify
Pricing and Availability				
Price per Unit (\$)	49.00	99.00	295.00	295.00
Date of First Delivery	June 1982	February 1985	Vendor did not specify	Vendor did not specify
Number Installed to Date	1,000	Vendor did not specify	Vendor did not specify	Vendor did not specify
Warranty	1 year	30 day money back guarantee	30 day money back guarantee	30 day money back guarantee
Distribution	Direct, distributor/dealer/retail	Direct	Direct	Direct
Vendor Phone Number	(906) 228-7622	(415) 644-3232	(415) 644-3232	(415) 644-3232
Comments	—	—	—	—

Vendor	Traveling Software, Inc.	Traveling Software, Inc.	Traveling Software, Inc.	Triton Technologies, Inc.
Product	DeskLink	LapLink III	LapLink Mac Connectivity Pac 3.00a	Co/Session 4.0
Communications Supported	PC-to-PC	PC-to-PC	Mac-to-Mac, Mac-to-PC	PC-to-host, PC-to-PC, PC-to-information service
Remote Access Capability	No	No	Yes	Yes
Terminals Emulated	Not applicable	Not applicable	Not applicable	TTY, Via Emulation Package
Computers Supported	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), Apple Macintosh Family, IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)
Operating Systems	MS-DOS, PC-DOS	MS-DOS, PC-DOS	MS-DOS, Macintosh Finder, PC-DOS	MS-DOS, PC-DOS
Users Supported	Multiple via LAN-administered communications server	Single	Single	Single
LAN Compatibility	Novell NetWare, 3Com	Novell NetWare, 3Com	Novell NetWare, AppleTalk, Tops, 3Com	IBM NETBIOS, Novell NetWare
Min. Memory Required (bytes)	140K	256	PC 330K, Mac 300K	51 to 125K
Memory Resident	Yes	No	No	Yes
Diskette Size (in inches)	3.5, 5.25	3.5	3.5, 5.25	3.5, 5.25
Hayes AT Command Set Compatible	No	No	Yes	Yes
Communications				
Number of Concurrent Sessions	Vendor did not specify	Vendor did not specify	1	1
Transmission Speed (bps)	300 to 115.2K	Vendor did not specify	300 to 750K	300 to 57.6K
File Transfer Capabilities	ASCII, binary, graphics	ASCII, batch transfers, binary, graphics	ASCII, binary, graphics	ASCII, batch transfers, binary, graphics
File Transfer Protocols	Proprietary	Proprietary	Proprietary	Xmodem, Proprietary
File Transfer Info. Provided	Blocks sent/received	Blocks sent/received	Blocks sent/received	Characters sent/received, number of errors/retries, blocks sent/received, session name
Downloading Options	Write to disk, write to printer	Write to disk, not applicable	Write to disk	Write to disk, screen snapshot, write to printer
Capture Buffer Size (K bytes)	Not applicable	Not applicable	Not applicable	Not applicable
Communications Features	Vendor did not specify	Vendor did not specify	Auto dial, unattended execution, auto answer	Auto dial, unattended execution, auto answer
Dialing Directory	No	No	Yes	Yes
Max. Phone Numbers Stored	Not applicable	Not applicable	Unlimited	256
User Interface	Installation program, help facility, pop-up windows	Help facility, menu driven	Help facility, menu driven, mouse support	Status line, command driven, menu driven, pop-up windows, windowing capability
User-Defined Parameters	Vendor did not specify	Vendor did not specify	Modem initialization strings, dialing commands, monitor attributes, Various copy options	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, answerback strings, hangup strings, sound control
Hot Key to Operating System	No	No	No	Yes
Text Editor	No	No	No	No
Programming Features	None	None	None	Vendor did not specify
Security	None	None	Multilevel passwords	Single-level passwords, file encryption, multilevel passwords, transmission encryption, ¹
Pricing and Availability				
Price per Unit (\$)	169.95	140.00	189.95	249.00
Date of First Delivery	November 1987	April 1989	January 1990	August 1988
Number Installed to Date	Vendor did not specify	Vendor did not specify	Vendor did not specify	138,000
Warranty	45 days	45 days	45 days	90 days
Distribution	OEMs, distributor/dealer/retail, VARs	OEMs, distributor/dealer/retail, VARs	Distributor/dealer/retail	Direct, OEMs, distributor/dealer/retail, mail order, VARs
Vendor Phone Number	(206) 483-8088	(206) 483-8088	(206) 483-8088	(201) 855-9440
Comments	—	—	—	¹ Dialback, screen blanking & keyboard disabling; 30-day money back guarantee

Vendor	Triton Technologies, Inc.	Triton Technologies, Inc.
Product	Co/Session LAN 4.0	Session/XL 2.0
Communications Supported	PC-to-host, PC-to-PC, PC-to-information service	PC-to-host, PC-to-PC, PC-to-information service
Remote Access Capability	Yes	Yes
Terminals Emulated	TTY, Via Emulation Package	TTY, Via Emulation Package
Computers Supported	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)	IBM PC/AT/XT, IBM PS/2 (MCA), IBM PS/2 (non-MCA)
Operating Systems	MS-DOS, PC-DOS	MS-DOS, PC-DOS
Users Supported	Single, multiple via LAN-administered communications server	Single
LAN Compatibility	IBM NETBIOS, Novell NetWare, 3Com, Banyan	IBM NETBIOS, Novell NetWare
Min. Memory Required (bytes)	51 to 125K	Vendor did not specify
Memory Resident	Yes	No
Diskette Size (in inches)	3.5, 5.25	3.5, 5.25
Hayes AT Command Set Compatible	Yes	Yes
Communications		
Number of Concurrent Sessions	4	1
Transmission Speed (bps)	300 to 57.6K	300 to 57.6K
File Transfer Capabilities	ASCII, batch transfers, binary, graphics	ASCII, batch transfers, binary, graphics
File Transfer Protocols	Xmodem, Proprietary	Xmodem, Proprietary
File Transfer Info. Provided	Characters sent/received, number of errors/retries, blocks sent/received, session name	Characters sent/received, blocks sent/received, session name
Downloading Options	Write to disk, screen snapshot, write to printer	Write to disk, screen snapshot, write to printer
Capture Buffer Size (K bytes)	Vendor did not specify	Vendor did not specify
Communications Features	Auto dial, unattended execution, auto redial, auto answer	Auto dial, unattended execution, auto redial, auto answer
Dialing Directory	Yes	Yes
Max. Phone Numbers Stored	256	Unlimited
User Interface	Installation program, status line, command driven, menu driven, pop-up windows, windowing capability	Command driven, menu driven
User-Defined Parameters	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, answerback strings, hangup strings, sound control, redial timeout	String equivalents/substitutions, modem initialization strings, dialing commands, log files, connect strings, answerback strings, hangup strings, sound control, redial timeout
Hot Key to Operating System	Yes	No
Text Editor	No	No
Programming Features	Macros, script language, predefined scripts	Macros, script language, predefined scripts
Security	Single-level passwords, file encryption, multilevel passwords, transmission encryption, ¹	Single-level passwords, file encryption, multilevel passwords, transmission encryption
Pricing and Availability		
Price per Unit (\$)	495.00	95.00
Date of First Delivery	March 1990	March 1988
Number Installed to Date	1,000	Vendor did not specify
Warranty	90 days	90 days
Distribution	Direct, OEMs, distributor/dealer/retail, mail order, VARs	Direct, OEMs, distributor/dealer/retail, mail order, VARs
Vendor Phone Number	(201) 855-9440	(201) 855-9440
Comments	¹ Dialback, screen blanking & keyboard disabling; 30-day money back guarantee	30-day money back guarantee