# Integrating Micros in the Mainframe Environment

The connectivity movement gained momentum during the past year, more vendors offering micro-to-mainframe links in software, hardware, or combinations of both. Two of the largest computer vendors, IBM and Unisys, are offering several connectivity products to link their own incompatible systems to one another or to systems from other vendors. IBM's Systems Application Architecture (SAA) is the most ambitious product addressing the connectivity problem to date. Third-party vendors offer a great variety of microcomputer-to-host links, most of them targeted for the IBM market, and prices are as varied as the products. In this report, we cover products consisting of software only, a plug-in conversion card plus software, or a standalone converter plus software. If you are responsible for managing and/or installing a micro-computer-to-host connection, are developing a corporate information center, or are concerned about the potential impact of microcomputers on host data processing, this report will help you to select the right micro-to-host communications product.

As the microcomputer becomes the workstation of choice in many organizations, users are increasingly concerned with the necessity of access to corporate information through microcomputers. This report covers a wide variety of products available to connect a microcomputer or personal computer to a host mainframe or minicomputer. Products covered in this report range from relatively inexpensive software packages to more costly software/hardware combinations. All of these products provide a solution of some degree to the connectivity problem—users must choose the solution that best suits their particular situation.

We have included detailed specifications, in comparison column form, of 237 currently available micro-to-mainframe link products from 99 vendors.

WHY MICRO-TO-MAINFRAME?

The microcomputer has gained acceptance as a tool for local data analysis. It should be recognized that it is a tool powerful enough to handle fairly sophisticated processing. Micro software has evolved to meet the needs of nontechni-
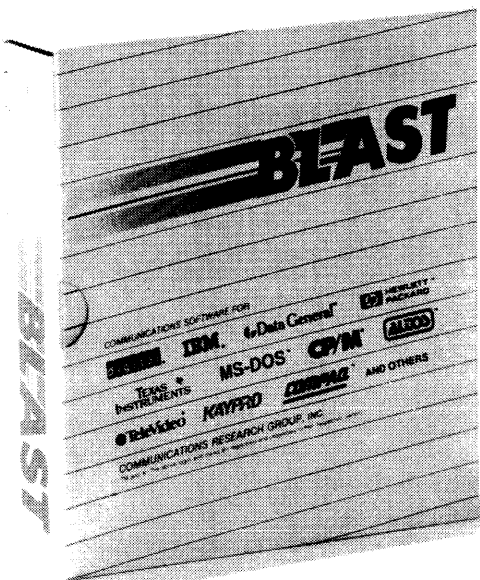
Communications Research Group markets BLAST (Blocked Asynchronous Transmission) communications software. BLAST links over 60 different microcomputers, minicomputers, and mainframes for error-free file transfer. Any computer with BLAST can communicate with any other computer with BLAST, using asynchronous modems or directly linked, at speeds from 300 to 19,200 bps.

cal managers and is easier to use and more flexible than most interactive host packages. The evolution of microcomputer software, including spreadsheets, graphics programs, and data base management programs, has helped the microcomputer to gain access to information residing on the company mainframe, providing a wealth of valuable information to managers at the departmental level. It is not surprising that many microcomputer users, MIS managers, and department managers are beginning to take a second look at the relationship between desktop computers and mainframes. Even the most advanced microcomputer will never displace the corporate mainframe, but increasingly the two levels of technology must work together to make people more productive. First, however, they must be able to communicate.

There are several reasons to establish a micro-to-mainframe connection. The primary reason is the obvious need for mainframe data. A microcomputer is not efficiently used if data must be rekeyed into the system. Operators are not able to work with large files, updating of information is a laborious task, and time is wasted in unnecessary data entry tasks. Additionally, the PC is a personal workstation, and managers feel that efficiency can be improved through the use of the programs typically available on the microcomputer. If the data processing department does not make this data available, less work will be done, or harmful ways will be found to circumvent the system. Finally, the microcomputer has become an integral part of many organizations. In the early days of the personal computer, it entered through the back door, but it has now become a standard office tool. It would certainly be counterproductive to prevent efficient use of this tool by blocking access to corporate data.

Mainframe programming languages have been simplified, data base management programs have made information ▷

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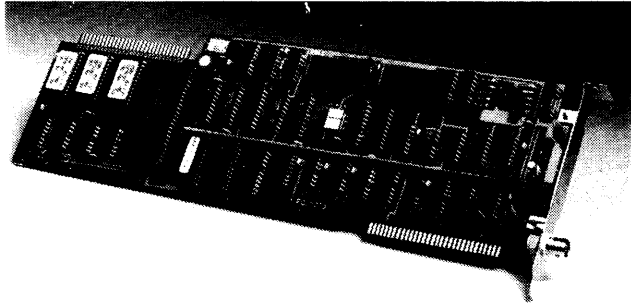
Digital Communications Associates Irma Series provides microcomputer-to-host communications for the IBM PC with a direct, high-speed, coaxial cable channel-attachment to IBM 3274, 3276, and integral Type A terminal controllers; both BSC and SDLC 3274 cluster controllers are supported.

▷ easier to maintain, interactive processing has brought terminals to the desks of end users, and information centers have taught end users how to access mainframe files through fourth-generation languages. Progress naturally points to the day when a desktop microcomputer will be as essential to the motivated corporate manager as the telephone is today. Information centers were originally set up with the idea of reducing data processing applications backlogs by teaching end users the rudiments of data base access. Today's information centers are almost invariably tied to the acquisition, use, and communications of microcomputers.

Although the use of microcomputers is not a panacea for mainframe backlog problems, it can provide some relief. In this, it is a step beyond mainframe-based end-user computing. Files can be accessed through fourth-generation languages and entire programs can be off-loaded from the mainframe to the microcomputer. If a file is downloaded into a spreadsheet, processing reverts to the microcomputer, and the mainframe CPU is available for other applications. It should be noted that mainframe access will probably rise overall as the result of microcomputer proliferation. There will simply be more people trying to obtain data, and the net result may be a network overload. Most requests for processing will, however, be valid and will contribute to the overall efficiency of the organization.

MAKING THE RIGHT CONNECTION

A number of methods are available for establishing a micro-to-mainframe connection, the choice depending upon and budget constraints. The microcomputer is a great communicator in its own right, and its native ASCII abilities can be enhanced with appropriate hardware and software.

Terminal emulation is the usual method of establishing connections, and IBM 3270 emulation is preferred because of the widespread use of IBM mainframes and bisynchronous or SNA/SDLC communications in major corporations. Batch terminals such as the IBM 2780/3780 or 360/20 HASP have also been selected for some micro-

to-mainframe packages. Less popular formats are also available, though not in the same quantities.

Most micro-to-mainframe connections are established through the use of some type of protocol conversion. Protocol conversion provides terminal emulation capability. It is generally accomplished through the use of an external or internal device, such as the popular Irma board from DCA. It should be noted that some micro-to-mainframe products assume that such a device has been installed. In general, three different levels of connection are available: dumb terminal emulation, intelligent emulation, and integrated micro-to-mainframe processing.

Simple, or "dumb," terminal emulation works well, but does not provide the processing capabilities that most microcomputer users envision when they think of gaining access to a mainframe. In this configuration, the microcomputer operates as a terminal—and nothing more. No records are stored and no local processing of incoming data is possible.

At the next level, "intelligent" terminal emulation, the micro retains information passed to it by the mainframe and stores it in files for local processing at a later time. Local processing is attractive due to the ease of use and manipulative power characteristic of spreadsheet programs. Applications developed for microcomputers are still largely limited to the microcomputer environment.

Further up the scale are more powerful emulation schemes which allow the micro to sift through data called from the mainframe, sorting it into a form that is readily usable by the microcomputer program that will be used, before storing it in a file for local processing. In some powerful connection products, the mainframe actually handles all sorting, providing more efficient use of resources and improved access times.

The cost of establishing a connection is directly related to its sophistication, so determining an appropriate level of communications can yield considerable cost savings.

APPLICATIONS

When a micro-to-mainframe connection is needed, a careful study should be made of how it will be used. The connection will introduce a new level of complexity into the data processing environment; it can be costly and can compromise the security of the corporate data base. The need, therefore, must be strong, and detailed planning, which includes all involved users, is essential.

The major advantage to using a microcomputer, as perceived by users, is the ability to perform financial analysis on an ad hoc basis. The electronic spreadsheet is the tool which made microcomputer usage popular, and it is still the primary tool used to manipulate information on these systems. Data used in spreadsheet analysis is generally resident on the mainframe data base. Microcomputer users must find a way to download that data electronically, ▷

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▷ or must rekey it themselves. As spreadsheets grow in size and complexity, manual data entry becomes increasingly unattractive. This problem provides the major impetus behind the movement toward micro-to-mainframe communications. Many facilities now available are specifically targeted toward spreadsheet users.

There are other applications in which a micro-to-mainframe connection is desirable. In the simplest case, a microcomputer simply replaces a terminal. This occurs when a manager has some applications requiring the instant power of a small computer, but must also use a terminal for on-line interactive processing tasks. Users may work with a mainframe accounting package, for example, and perform simple cost-benefit analyses using a micro spreadsheet. To avoid having two CRT display stations, the microcomputer can operate in a local processing mode for spreadsheets and in a terminal emulation mode for the on-line application. Moreover, the microcomputer can address several hosts and can be used to replace several terminals.

With interest turning toward microcomputer-to-host connections, more capabilities will be developed. Integrated microcomputer packages provide the ability to mix text, graphics, and spreadsheet results, and this ability is supported by microcomputer-to-host connections. A primary application will be the creation of reports for later reference, for presentations, or as sales tools. Specific applications packages, such as accounting and project management tools, will also take advantage of these connections.

Data processing history demonstrates that the appearence of new facilities leads to previously unimagined applications. As microcomputer-to-host connections evolve, we can look forward to many new uses and, perhaps, an entirely new approach to distributed processing.

In summary, then, we can identify the following specific benefits of a microcomputer-host connection:

• More efficient microcomputer spreadsheet usage.

• Space savings (one CRT per desk).

• Ease of report preparation (integrating text, spreadsheet projections, and graphics).

• Speed of processing and a reduced queue for host CPU time.

• Access to multiple hosts, with possible data integration (the Dow Jones on-line service with MIS data, for example).

• The ability to run user-developed applications for quick analysis of corporate data (user-defined spreadsheets, DBMS reports, and high-level language programs).

Persoft's (Madison, WI) SmarTerm 220 is a member of that company's family of terminal emulation/file transfer software packages for the IBM Personal Computer and compatible microcomputers. SmarTerm 220 enables an IBM PC to function as a DEC VT220, as well as a VT100, VT102, or VT52, to transfer ASCII or binary program and data files between the PC and a host computer.

ACCESS PROBLEMS

To determine what is appropriate for an organization, the traditional difficulties associated with micro-to-mainframe connection strategies must be examined. The most important of these problems can be summarized as follows:

—Mainframe file size.

—Emulation capabilities.

—Interconnection complexity.

—Downloading flexibility.

Size of Mainframe Files

Mainframe files are, typically, much larger than a microcomputer is able to manage. Size restrictions have two important effects upon the microcomputer-to-host connection. First, access to complete files is ruled out. Procedures for data selection must therefore be in place on the host (for downloading) or on the microcomputer. Second, host files are more easily manipulated by the host. Efficiency dictates that a file transfer package do at least some initial processing at that level. The differences in file size are obscured by the advertised capabilities of spreadsheets. Many spreadsheet packages may be expanded far beyond a microcomputer's capacity. The primary limitation is RAM. Even 640K bytes will not support the thousands of rows and columns that mainframe files might involve. Theoretically, the spreadsheet may be able to do it, but RAM is the practical limitation.

Emulation Capabilities

Terminal emulation capability is related to the problem of mainframe file size. Most micro-to-mainframe packages establish connections by acting as terminals. In this mode, ▷

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▷ the simplest way to download data is to simply dump whatever is on the display into a file on the microcomputer. For many applications, this is an easy and effective method. The format of mainframe data is immediately apparent, the size of the resultant file can be limited, and information can be screened with mainframe data base queries. Unfortunately, only information appearing on the display can be transferred, and the resulting format may require substantial alteration in order to fit a microcomputer application. The user also must spend time fitting the information to the computer, thus eliminating some of the advantages of electronic downloading. Nevertheless, these emulation packages remain popular, and ways to eliminate these problems are appearing.

Interconnection Complexity

The level of complexity, or intelligence, of a connection between two machines is, in part, responsible for data access difficulties. In more powerful connection schemes, more tools are provided to make the end user's job easier. Ideally, access should be established by a simple query, and the connection product should be able to select data, format it for an appropriate microcomputer package, download it, and possibly send the data back to the mainframe after alterations have been made. The process should, in other words, be transparent to the user, and all the information needed should be available in one file, in a size that the microcomputer can handle. The package should also be reasonably affordable.

Downloading Flexibility

If the information transferred is not in a form that the microcomputer can use, a micro-to-mainframe package is of little value to the user. The evolution of standards, such as the spreadsheet DIF file, is a hopeful trend, but compatibility should nonetheless be thoroughly researched before an expensive communications package is purchased.

MICRO-TO-MAINFRAME IMPACT ON DATA PROCESSING

The prospect of a micro-to-mainframe connection causes considerable disquiet among data processing managers for a number of reasons. The political ramifications of putting power in the hands of end users are threatening, in that microcomputer users are actually able to perform data processing tasks using central files. Micro-to-mainframe connections may also have an impact on the security of the mainframe data base, and many administrators are uncertain as to how they can both open the host and maintain control. A related area of concern is the way in which the microcomputer will affect other parts of the data processing establishment, particularly in its tendency to increase a company's communications load and to make networking a more complex task. The need for adequate training of end users is also important, as is the establishment of an organizational climate that supports the micro-to-mainframe link.

Security

Installation of a micro-to-mainframe connection affects security in a number of ways. Most mainframe access techniques make use of terminal emulation. This allows users to take advantage of standard security measures employed by the mainframe—password protection, usage logs, and the like. Any security provisions that are used to control terminal access can be used for microcomputer access control, provided that only terminal emulation is permitted. Packages that allow unhindered uploading from the microcomputer to mainframe files will, of course, create genuine hazards, but this is really a terminal control problem.

The real threat is posed by the dramatic proliferation of microcomputers. Terminal proliferation becomes a security problem when limited physical access to terminals has played a part in the security system. This situation is not very common, but it does occur. The solution is provision of adequate security, through use of logons and passwords, thus placing security at the user rather than at the terminal level.

Local microcomputer storage represents a much more serious problem. Highly confidential material, such as salary information, new product descriptions, and customer files, may be originally downloaded by authorized personnel, but tapped by unauthorized users if it is stored on disk. Disks can be stolen or copied, or the user may fail to end the local application, leaving part of the file resident in RAM. The only solution to this problem is establishment of adequate physical security for the microcomputer, and the secure storage of disks. Because this form of security is not implemented at the mainframe, and is not easily implemented in software, many organizations have overlooked this area. With a micro-to-mainframe connection, the risks of microcomputer vulnerability are magnified.

The increasing use of microcomputers poses another problem which, through independent of the micro-to-mainframe connection, deserves mention. Increased computer literacy leads, inevitably, to increased vulnerability of data processing centers. As more people learn how to enter a system, the potential for abuse increases.

Networking

Any micro-to-mainframe connection imposes additional burdens upon a data communications network. Since networks are generally under the control of the data processing manager, the impact here should be considered before a link is established. Difficulties in this area emerge slowly, as more connections are established. The problem does not lie in micro-to-mainframe connections per se; microcomputer usage is growing at a tremendous rate and most users want access to the mainframe data base, creating a big demand for lines. ▷

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▷ Micro-to-mainframe connections emulate terminals in most connection strategies. Terminal emulation may be accomplished through hardware or through software. In either case, it takes some time to complete. There is a slight delay between input and translation. Meanwhile, the mainframe "believes" that it is communicating with a terminal, and there are no provisions for a translation delay. In very heavy-use situations, therefore, protocol conversion may cause errors and result in delays due to faulty transmission. The microcomputer communications link must be evaluated carefully, and care should be taken to insure that demands on the network do not become excessive.

Mainframe Software Impact

In micro-to-mainframe connections, the mainframe frequently handles the difficult process of fitting a file to the format demanded by microcomputer software. The mainframe may also handle data selection and provide powerful data base query functions. Micro-to-mainframe links may be provided for a specific mainframe package, such as a data base management system, or they may be provided for a series of packages. The mainframe software's link facilities describe how the connection will be established. Since mainframe packages are many times more expensive than microcomputer programs, they will essentially drive the purchase decision. Many mainframe software companies are using a personal computer link as an incentive in marketing the larger packages. Selection of such a package will largely depend upon its other capabilities and upon how well it fits an organization's needs. The personal computer link can, however, be a persuasive factor—as many of these vendors are discovering.

Cost Control

Host connections vary greatly in price. Access to a time-sharing system through a modem can cost under $100, while an intelligent microcomputer-to-host link, with host software and instant downloading to several microcomputers, can cost well over $50,000. The range of functionality is very broad, and, in general, you pay for what you get. It is an obvious mistake to purchase too little and find out later that desired tasks cannot be accomplished. It also is a mistake to purchase too much. An evaluation of actual needs is required, and needs, with due provision for expansion, should be carefully matched to the systems available.

In implementing microcomputer-to-host links, a modular approach is frequently possible. For large installations with heavy usage, however, it generally is best to undertake a wholesale conversion.

Capabilities Selection

In selecting a microcomputer-to-host package, it is important to match functionality with needs. Considerations include:

—Communications method—terminal emulation (async, bisync, ASCII, etc.)

—Download capability—screen, full file, selected fields

—Upload capability—ability to send altered files to the mainframe

—Mainframe participation (or, is the package only resident on the microcomputer?)

—Software restrictions—limitations to specific packages, microcomputer, and/or mainframe

—Security features

—User interface, specifically concerning speed, ease of use, and interface transparency

Training

The development of a micro-to-mainframe connection has made user training a critical issue. Training needs have surfaced before, particularly in the effort to install various corporate controls on microcomputers. Because micro-to-mainframe connections directly impact the corporate data base, users must be made aware of how specific actions may affect the data base and must be taught to use the microcomputer efficiently within the new environment. As microcomputer capabilities are expanded, usage becomes more complex, and the data processing department is often the only source of information for users. Training becomes the responsibility of the data processing department, and, through training, control can be established.

Policy Needs

Control of microcomputer usage has become an issue partly as a result of micro-to-mainframe links and partly ▷
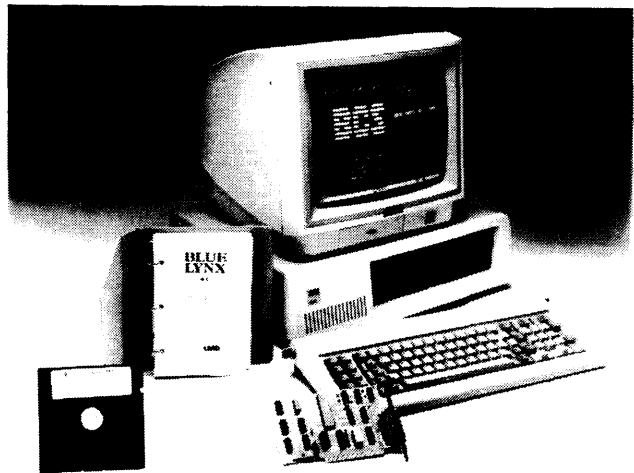
Techland Systems (New York, NY) BlueLynx 5251 Model 12 Emulation package offers a software/hardware combination that allows a PC to emulate an IBM 5251 Model 12 workstation with a 5256 dot matrix printer.

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▷ as a result of the tremendous growth of microcomputing in recent years. Compatibility and cost are the driving forces behind the control issue. If microcomputers are introduced into an organization on a random basis, they will not be able to communicate with each other, let alone with a mainframe. Standards have to be set for the purchase of microcomputers in order to provide a sophisticated micro-to-mainframe connection. Sophisticated micro-to-mainframe packages may also require standardization of microcomputer software. Most importantly, distinctions must be made between what is appropriate for processing on the microcomputer and what is more efficiently handled by the mainframe.

A microcomputer with a mainframe connection is a valuable corporate resource. It has the capacity to change the data processing environment, and planning is therefore essential. The critical part of the planning process is the configuration of the system to meet real user needs, and provision of channels for feedback from users to insure that the system is operating effectively. If user needs are met and micro-to-mainframe connections are working properly, processing tasks can be handled with an efficiency that was previously impossible to achieve.

Information Centers

One popular method for establishing control over microcomputers and facilitating mainframe linkage is the use of the information center concept. The information center was developed at IBM as a means of introducing and controlling end-user computing within a corporation. End-user computing was originally defined as the use of fourth-generation languages to access the corporate data base through a terminal.

The information center operates as a subdepartmental group within the data processing department. Its primary mission is the selection and maintenance of equipment and provision of appropriate training for microcomputer-to-host connections. In some corporations, of course, user-driven computing will continue to be restricted to the use of terminals, but for most companies, microcomputers will assume more and more communications tasks.

The tasks of the information center, with control of microcomputer usage included, are as follows:

—End-user education, including training in appropriate languages and in the operation of microcomputer programs.

—Technical support, including developing micro-to-mainframe connections and providing terminal access where appropriate.

—Data availability, or insuring that the data requested is accessible to users in a form suited to their level of sophistication in computer usage.
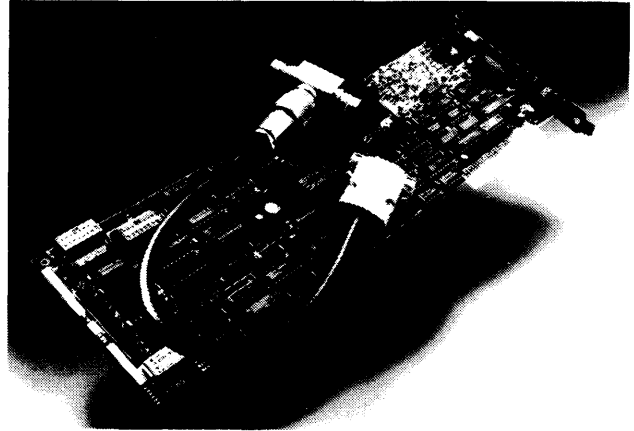
AST Research (Irvine, CA), a popular maker of IBM PC add-on products, has recently introduced the AST-5251/11. The AST-5251/11 is a conversion card/software package that allows an IBM PC, PC XT, PC AT, or compatible microcomputer to communicate with the IBM S/34, S/36, and S/38 minicomputers.

—Evaluation of tools, including testing of microcomputer programs to insure that they meet the needs of users and provision of appropriate on-line query languages.

—Consultation, providing end users with advice when situations arise that end users are unable to handle through conventional means, and channeling applications through the data processing department if they exceed the capabilities of the user-driven system.

One of the primary difficulties in the development of an information center is finding and training staff members. The information center requires a staff with expertise in training as well as in technical matters. Ideally, it should function as an intermediary between data processing and the end user. The staff should be knowledgeable in microcomputer hardware and software areas and familiar with advances in micro-to-mainframe connection strategy. It should be able to help and advise users while remaining in constant communications with the data processing department to insure that security measures are not violated and that the network has sufficient capacity to handle connections efficiently.

Resultant Trends

Microcomputer access to the mainframe has been sought for some time; it is now becoming a reality. Although micro-to-mainframe links may appear relatively simple, the implications of installing such a link may be extraordinary.

The micro-to-mainframe connection insures that the microcomputer will have a place in the business world for many years to come. It will probably become the standard workstation.

The microcomputer also will make it necessary for data processing centers to upgrade software to permit more interactive processing. The host access by microcomput- ▷

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▷ ers will put considerable pressure on corporate networks, in some cases forcing upgrades and making more sophisticated network monitoring tools necessary. A networking center may, in fact, be required.

The need for computer literacy will become more evident; it will become impossible to perform many jobs without a knowledge of elementary data processing techniques. Micro-to-mainframe packages will become more user friendly, and capabilities will expand to include access to more varieties of microcomputer and host programs. It is likely that microcomputer-to-host packages will drop in price.

MICRO-TO-MAINFRAME LINK CHARACTERISTICS

The comparison columns at the end of this report present the key characteristics of 237 products allowing microcomputers to communicate with a host mainframe.

Datapro requested information from over 180 micro-to-mainframe link vendors. Each mailed request was followed by at least one telephone call. The responses provide an in-depth overview of today's micro-to-mainframe market.

The absence of any specific company from the comparison columns means that the company failed to respond to our requests for information, was unknown to us, or no longer markets micro-to-mainframe links.

Note: A dash (—) in a column indicates that the information was unavailable from the vendor.

The column entries and their definitions are explained in the following paragraphs.

Vendor/Product

Listed at the top of each column is the vendor and the product name. By policy, only those vendors that manufacture the microcomputer-to-mainframe hardware or publish appropriate software are listed; distributors have been excluded. Several vendors have more than one product listed. For information on how to contact these vendors, refer to the vendor list immediately preceding the comparison columns.

Function

This section lists the product function. The categories are local terminal emulation, remote terminal emulation, protocol converter, network gateway, host-application specific link, and non-host-application specific link.

Configuration indicates whether the product supports single or multiple users.

Components

Microcomputer-to-host products can contain different components including microcomputer software and hard-ware, host software and hardware, and standalone hardware. The components for each product are listed here.

Microcomputer Support

Systems indicates which microcomputer systems the product is compatible with, including IBM PC/XT/AT, Apple, and UNIX systems.

Operating Environment lists the microcomputer operating environments which the product supports, for example MS-/PC-DOS or CPM/86.

Configuration gives the minimum configuration which the product requires to operate. This includes minimum RAM in K bytes, minimum storage, and any other requirements for operation.

Network Compatibility shows whether or not the product is compatible with a local area network, such as those from Novell or 3Com.

Host Interface

System indicates the computer systems supported by the product. Most of the products included in the columns are for use with IBM mainframes, e.g., the 30XX or 43XX Series. In addition, some products are designed to operate with IBM System/36 and System/38 minicomputers, and other vendors have targeted the Digital Equipment, Honeywell Bull, and Unisys markets.

Operating Environment identifies the host operating system environment that supports the microcomputer-to-host link.

Protocol Support indicates the communications protocols used to control the link.

Connection lists the connection to the host (channel adapter, front-end processor, controller, communications port, etc.) that is supported by each product.

Applications indicates the host applications that the microcomputer link is designed to support; for example, virtual drives on host, calls to host-resident programs, DBMS access, and accounting applications access.

Emulation

Terminals lists the type of terminals that the product emulates, including 3270, Digital Equipment VT series, and Data General Dasher terminals.

Concurrent Sessions details the number of concurrent sessions, if any, that the product supports.

Physical Connection indicates the type of connection supported by the product, including coax, twinax, fiber optic, or RS-232-C.   ▷

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▷ **Access to Micro OS During Host Session** defines whether access to the microcomputer operating system is allowed during terminal emulation.

Features

Most of the microcomputer communications packages on the market today offer value-added services, such as providing compatibility between the file formats of the different applications running on the microcomputer and on the host system. Such services are provided through advanced capabilities or user customization.

File Transfer indicates the capability of the package to support the transfer of large files in a batch mode.

Code Conversion provides information on the types of code conversion supported by the product. Most micro-to-mainframe link packages provide code conversion between the ASCII character representation of PCs and that of mainframe environments where character coding is exclusively EBCDIC.

API Compatibility provides information on the Applications Program Interface (API), which allows microcomputer programs to access the functions of the terminal emulation card without interrupting the application. The convention implemented is provided here.

Programmability lists the package's ability to support scripts and unattended operation.

Transmission

This section provides information on the technical characteristics of the transmission link, including transmission mode and speed of data transmission.

Mode refers to the type of synchronization of data transfer employed between the sending and receiving device. Normally, data is sent in a serial-bit, asynchronous mode or synchronous mode.

Speed of data transmission is provided. The rate of data transmission depends on the quality of the communications link, i.e., whether the connection is local or remote.

Security

Security is a critical issue when a microcomputer user is permitted to access a corporate data base. A tremendous amount of effort is involved in the entry and organization of data in any system, but this effort can be in vain if there is not an appreciable level of data security. For this reason, it is desirable that a program control access to data through a variety of schemes, including the use of single- and multilevel passwords, file encryption, and transmission encryption.

Pricing and Availability

The price of the product is listed here along with the availability of site licensing and maintenance contracts. The length of the warranty, the date of first delivery, and the number installed are also listed.

Distribution

This section describes the method of distribution the vendor uses, i.e., direct, through dealers and/or distributors, through OEMs, or by mail order.

VENDORS

Listed below, for your convenience, are the full names, addresses, and telephone numbers of the 99 vendors whose products are included in the comparison columns that follow.

Access International Inc., 1853 Bernice Road, Lansing, MI 60438. Telephone (312) 895-3495.

AGS Genasys, 11820 Parklawn Drive, Rockville, MD 20852. Telephone (301) 770-4600.

Applied Data Research, Orchard Road and Route 206, CN-8, Princeton, NJ 08540. Telephone (201) 874-9000; **Canadian Distribution:** Applied Data Research Canada Limited, 505 Consumers Road, Suite 401, Toronto, ON M2J 4V8. Telephone (416) 497-4424.

Applied Information Systems, Inc., 500 Eastowne Drive, Suite 207, Chapel Hill, NC 27514. Telephone (919) 942-7801; **Canadian Distribution:** Compu-Design Group, 4339 Alta Court, Mississauga, ON L4Z 1N6. Telephone (416) 272-0752.

Aspen Research Inc., 475 Roblar Avenue, Hillsborough, CA 94010. Telephone (415) 340-1588.

AST Research, 2121 Alton Avenue, Irvine, CA 92714. Telephone (714) 863-1333; **Canadian Distribution:** AST Canada, 6549A Misssissauga Road, Mississauga, ON L5N 1A2. Telephone (416) 826-7514.

Attachmate Corp., 3241 118th Southeast, Bellevue, WA 98005. Telephone (206) 644-4010; **Canadian Distribution:** VCS, 825 Denison Street, Unit 8, Markham, ON L3R 5E4. Telephone (416) 477-0695.

Avatar Technologies Inc., 99 South Street, Hopkinton, MA 01748. Telephone (617) 435-6872; **Canadian Distribution:** Canadian General Electric, 396 Atwell Drive, Rexdale, ON M9W 5C3. Telephone (416) 675-7500.

Barr Systems, Inc., 2830 Northwest 41st Street, Gainesville, FL 32606. Telephone (904) 371-3050.

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

Carleton Corp., 245 First Street, Cambridge, MA 02142. Telephone (617) 494-1232.

CCQ Computer Communications, Inc., 5380 Capital Circle Northwest, Tallahassee, FL 32303. Telephone (904) 562-4255.

Chi Corp., 26055 Emery Road, Cleveland, OH 44128. Telephone (216) 831-2622; **Canadian Distribution:** All-Comm Computer Products Limited, 450 East Matheson Boulevard, Suite 41, Mississauga, ON L4Z 1R5. Telephone (416) 890-2229.

Cincom, 2300 Montana Avenue, Cincinnati, OH 45211. Telephone (513) 662-2300; **Canadian Distribution:** Cincom, 130 Dundas Street East, Mississauga, ON L5A 3V8. Telephone (416) 279-4220. ▷

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▷ **CLEO Software**, 1639 North Alpine Road, Rockford, IL 61107. Telephone (815) 397-8110; **Canadian Distribution:** Canamicro, 5455 Pare, Suite 102-1, Montreal, PQ H4P 1R1. Telephone (514) 737-3631.

Coefficient Systems, 611 Broadway, New York, NY 10012. Telephone (212) 777-6701; **Canadian Distribution:** Soft Options, 121 58th Avenue, Calgary, AB T2H 0A4. Telephone (403) 255-4996.

Commtex Inc., 1655 Crofton Boulevard, Suite 300, Crofton, MD 21114. Telephone (301) 721-3666; **Canadian Distribution:** Datamex Limited, 115 Norfinch Drive, Downsview, ON M3N 1W8. Telephone (416) 665-1808.

Communications Research Group, 5615 Corporate Boulevard, Baton Rouge, LA 70808. Telephone (504) 923-0888.

Communications Solutions, Inc., 992 S. Saratoga-Sunnyvale Road, San Jose, CA 95129. Telephone (408) 725-1568.

Computer Associates International, Inc., Application Products Division, 1 Tech Drive, Andover, MA 01810-2497. Telephone (617) 685-1400.

Computer Corp. of America, 4 Cambridge Center, Cambridge, MA 02142. Telephone (617) 492-8860; **Canadian Distribution:** Computer Corp. of America, 160 Bloor Street East, Suite 920, Toronto, ON M4W 1B9. Telephone (416) 920-5777.

Comshare, Inc., 3001 South State Street, Ann Arbor, MI 48108. Telephone (313) 994-4800, (800) 922-7979; **Canadian Distribution:** Comshare Limited, 180 Attwell Drive, Rexdale, ON M9W 6H4. Telephone (416) 675-6363.

Convergent, 2700 North First Street, San Jose, CA 95054. Telephone (408) 434-2848; **Canadian Distribution:** Convergent Technologies, 789 Don Mills Road, Suite 700, Don Mills, ON M3C 3L6. Telephone (416) 422-3009.

Cullinet Software, Inc., 400 Blue Hill Drive, Westwood, MA 02090. Telephone (617) 329-7700.

CXI, Inc., 1157 San Antonio Road, Mountain View, CA 94043-1069. Telephone (415) 969-1999; **Canadian Distribution:** ITT Courier/Canada, 6889 Rexwood Road, Mississauga, ON L4V 1R2. Telephone (416) 676-9930.

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

Datalex, Inc., 100 Pine, 24th Floor, San Francisco, CA 94111. Telephone (415) 362-4466.

Digital Communications Associates, Inc., 1000 Alderman Drive, Alpharetta, GA 30201. Telephone (404) 442-4000.

Digital Equipment Corp., 146 Main Street, Maynard, MA 01754-2571. Telephone (617) 897-5111; **Canadian Distribution:** Digital Equipment of Canada, Limited, 100 Herzberg Road, Kanata, ON K2K 2A6. Telephone (613) 592-5111.

Direct Aid, 31332 Via Colinas #102, Westlake Village, CA 91362. Telephone (818) 889-1013.

Diversified Computer Systems, 3775 Iris Avenue, Suite 1B, Boulder, CO 80301. Telephone (303) 447-9251.

Dynamic Microprocessor Associates, 545 5th Avenue, New York, NY 10017. Telephone (212) 687-7115.

Emulex Corp., 3545 Harbor Boulevard, P.O. Box 6725, Costa Mesa, CA 92626. Telephone (714) 662-5600; **Canadian Distribution:** Emulex Corp., 5945 Airport Road, Suite 288, Mississauga, ON L4V 1R9. Telephone (416) 673-1211.

FIG Data Systems, 10801 Dale Street, Suite J-2, P.O. Box 615, Stanton, CA 90680. Telephone (714) 995-3900; **Canadian Distribution:** Pro/Soft Consultants Inc., 8280 San Francisco, Brossard, PQ J4X 1Y4. Telephone (514) 466-2296.

Gateway Microsystems, Inc., 9501 Capital of Texas Highway North, Suite 105, Austin, TX 78759. Telephone (512) 345-7791.

Grafpoint, 4340 Stevens Creek Boulevard, Suite 280, San Jose, CA 95129. Telephone (408) 249-7951; **Canadian Distribution:** Ahearn and Soper, Inc., 100 Woodbine Downs Boulevard, Rexdale, ON M9W 5S6. Telephone (416) 675-3999.

Hawkeye Grafix, Inc., Box 1400, Oldsmar, FL 33557. Telephone (813) 855-5846.

Henson Systems Inc., 4127 South Olathe Way, Aurora, CO 80013. Telephone (303) 690-6279.

IDE Associates, Inc., 29 Dunham Road, Billerica, MA 01821. Telephone (617) 663-6878, (800) 257-5027; **Canadian Distribution:** VCS Computer Agency, 257 McNicholl Avenue, Willowdale, ON M2H 2C6. Telephone (416) 499-5400.

Information Builders, Inc., 1250 Broadway, New York, NY 10001. Telephone (212) 736-4433; **Canadian Distribution:** Infobuild, Inc., 150 York Street, Suite 1313, Toronto, ON M5H 3S5. Telephone (416) 364-2760.

Innovative Electronics, Inc., 4714 NW 165th Street, Miami, FL 33014. Telephone (305) 624-1644.

Integrated Network Systems, Inc. d/b/a INS Corp., P.O. Box 91395, Mobile, AL 36691. Telephone (205) 633-3270.

Intelligent Technologies, 737 Lincoln Center Drive, Foster City, CA 94404. Telephone (415) 345-6666.

Intercomputer Communications Corp., 8230 Montgomery Road, Cincinatti, OH 45236. Telephone (513) 745-0500.

International Business Machines Corp. (IBM), Old Orchard Road, Armonk, NY 10504. Contact your local representative; **Canadian Distribution:** IBM Canada Limited, 3500 Steeles Avenue, Markham, ON L3R 2Z1. Telephone (416) 474-2111.

KEA Systems Limited, 2150 West Broadway, Suite 412, Vancouver, BC V6K 4L9. Telephone (604) 732-7411; **Canadian Distribution:** Zenith Data Systems, 1900 North Austin Avenue, Chicago, IL 60639. Telephone (312) 745-2138.

Lee Data/Datastream Division, 2520 Mission-College Boulevard, Santa Clara, CA 95050. Telephone (408) 986-8022.

Local Data, Inc., 2771 Toledo Street, Torrance, CA 90503. Telephone (213) 320-7126.

Lotus Development Corp., Business Products, 55 Cambridge Parkway, Cambridge, MA 02142. Telephone (617) 577-8500; **Canadian Distribution:** Lotus Development Corp., 595 Bay Street, Suite 1050, Toronto, ON M5G 2C2. Telephone (416) 595-5300.

Mackensen Corp., 3000 Ocean Park Boulevard, Suite 3025, Santa Monica, CA 90405-3033. Telephone (213) 452-5520. ▷

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▷ **Management Science America, Inc. (MSA)**, 3445 Peachtree Road, Northeast, Atlanta, GA 30326. Telephone (404) 239-2000.

McCormack and Dodge, 1225 Worcester Road, Natick, MA 01760. Telephone (617) 655-8200.

mdbs, Inc., P.O. Box 248, Lafayette, IN 47902. Telephone (317) 463-2581, (800) 344-5832; **Canadian Distribution:** mdbs, Inc., Yonge Corp. Center, 4100 Yonge, Suite 404, North York, ON M2N 2B5. Telephone (416) 733-4380.

Micom Systems, 4100 Los Angeles Avenue, Simi Valley, CA 93063. Telephone (805) 583-8600; **Canadian Distribution:** Atelco, 3400 Pharmacy Avenue, Unit 1, Scarborough, ON M1W 3S8. Telephone (416) 497-2208.

Micro Decisionware, 2995 Wilderness Place, Boulder, CO 80301. Telephone (303) 443-2706.

Micro-Integration, 112 Main Street, Box 359, Newmarket, NH 03857. Telephone (603) 659-5891; **Canadian Distribution:** Distributed Online Systems, 762 Gordon Baker Road, Willowdale, ON M2H 3B4.

Micro Plus, 3200 North Federal Highway, Boca Raton, FL 33431. Telephone (305) 391-9775.

Micro Tempus Inc., 440 Dorchester Boulevard West, Suite 300, Montreal, PQ H2Z 1V7. Telephone (514) 397-9512; **Canadian Distribution:** Micatek, Inc., 4 Farnham Place, Bonaventure, C.P. 523, Montreal, PQ H5A 1C3. Telephone (514) 866-8135.

Microplot Systems, 659 Park Meadow Road, Suite H, Westerville, OH 43081. Telephone (614) 882-4786.

Mob Corp., 1575 Northside Drive Northwest, 100 Atlanta Technology Center, Atlanta, GA 30318. Telephone (404) 351-2902, (800) 241-1170.

Morris Systems, 824 Trotter Court, Walnut Creek, CA 94596. Telephone (415) 946-0358.

Multi Soft Inc., 499 Thornall Street, 6th Floor Midlantic Building, Edison, NJ 08837. Telephone (201) 549-7722.

National Information Systems, Inc., 20370 Town Center Lane, #130, Cupertino, CA 95014. Telephone (408) 257-7700.

Network Research Corp., 2380 North Rose Avenue, Oxnard, CA 93030. Telephone (805) 485-2700.

Network Software Associates (NSA), 22982 Mill Creek #B, Laguna Hills, CA 92653. Telephone (714) 768-4013.

OBS Software, Division of On-Line Business Sys, 115 Sansome Street, San Francisco, CA 94104. Telephone (415) 391-9555.

On-Line Software International, Inc., Fort Lee Executive Park, 2 Executive Drive, Fort Lee, NJ 07024. Telephone (201) 592-0009, (800) 526-0272.

Oracle, Inc., 20 Davis Drive, Belmont, CA 94002. Telephone (415) 598-8000.

Pacer Software Inc., 7911 Herschel Avenue, Suite 402, La Jolla, CA 92037. Telephone (619) 454-0565.

Packaged Solutions, Inc., One Huntington Quadrangle, Suite 2C14, Melville, NY 11747. Telephone (516) 752-1640.

Pathway Design, Inc., 1 Apple Hill, P.O. Box 8170, Natick, MA 01760. Telephone (617) 237-7722; **Canadian Distribution:** Drake Computer Systems, 450 Bloor Street West, 6th Floor, Toronto, ON M4S 2X9. Telephone (416) 967-7714.

Performance Software Inc., 452 South Lake Boulevard, Richmond, VA 23236. Telephone (804) 794-1012, (804) 794-1012; **Canadian Distribution:** Caledon Computer Systems, P.O. Box 77, Erin, ON N0B 1T0. Telephone (519) 833-2092.

Persoft, Inc., 465 Science Drive, Madison, WI 53711. Telephone (608) 273-6000; **Canadian Distribution:** Softsel of Canada, 1048 Ronsa Court, Mississauga, ON L4W 3Y4. Telephone (416) 692-2222.

Polygon Associates, Inc., 1024 Executive Parkway, St. Louis, MO 63141. Telephone (314) 576-7709.

Protocol Computer, Inc., 26630 Agoura Road, Calabasas, CA 91302-1921. Telephone (818) 716-5500; **Canadian Distribution:** Ahern Soper, 100 Woodbine Downs, Rexdale, ON M9W 586. Telephone (416) 675-3999.

Quadram Corp., One Quad Way, Norcross, GA 30093. Telephone (404) 923-6666; **Canadian Distribution:** Chevco Computing Company, Canada, 6581 Kitimat Road, #14, Mississauga, ON L5N 2X5. Telephone (416) 821-7600.

Rabbit Software Corp., Great Valley Corporate Center, 7 Great Valley Parkway East, Malvern, PA 19355. Telephone (215) 647-0440.

Ross Systems, Inc., 1860 Embarcadero Road, Palo Alto, CA 94303. Telephone (415) 856-1100.

SAS Institute Inc., SAS Circle, Box 8000, Cary, NC 27511-8000. Telephone (919) 467-8000.

Simware, Inc., 14 Concourse Gate, Suite 100, Nepean, Ontario K2E 7S6. Telephone (613) 727-1779.

Softel, Inc., 25 Maple Lane, East Hampton, NY 11937. Telephone (516) 324-1305.

Softronics, Inc., 7899 Lexington Drive, Suite 210, Colorado Springs, CO 80918. Telephone (303) 593-9540.

Software Clearing House, Inc., 771 Neeb Road, Cincinatti, OH 45238. Telephone (513) 451-6742.

Software Dynamics Inc., P.O. Box 247, Dunedin, FL 34296-0247. Telephone (813) 733-8784.

Software Synergy, Inc., 641 Avenue of the Americas, New York, NY 10011. Telephone (212) 645-9663.

Solution Systems, 541 Main Street, Suite 410, South Weymouth, MA 02190. Telephone (617) 659-1571.

Sterling Software, Dylakor Division, 9340 Owensmouth Avenue, P.O. Box 2210, Chatsworth, CA 91313-2210. Telephone (818) 718-8877; **Canadian Distribution:** Sterling Software, 2200 Yonge Street, Suite 607, Toronto, ON M4S 2C6. Telephone (416) 488-7192.

Sterling Software/Systems Software, 11050 White Rock Road, Suite 100, Rancho Cordova, CA 95670. Telephone (916) 635-5535. ▷

Integrating Micros in the Mainframe Environment

▷ **Techland Systems, Inc.,** 25 Waterside Plaza, New York, NY 10010. Telephone (212) 684-7788; **Canadian Distribution:** Softsearch Corp., 488 Wyecroft Road, Oakville, ON L6K 2G7. Telephone (416) 842-8240.

Technological Systems Group, Inc., 5044 Haley Court, Lilburn, GA 30247. Telephone (404) 923-4980.

Teknigraphics, 4635 Southwest Freeway, Suite 510, Houston, TX 77027. Telephone (713) 623-0089; **Canadian Distribution:** Datamex Limited, 115 Norfinch Drive, Downsview, ON M3N 1W8. Telephone (416) 665-1808.

Texas Instruments Inc., P.O. Box 809063, Dallas, TX 75380-9063. Telephone (800) 527-3500.

2B Enterprises, 1252 Columbia Road Northwest, Washington, DC 20009. Telephone (202) 234-2117.

Universal Data Systems, 5000 Bradford Drive, Huntsville, AL 35805. Telephone (205) 721-8000; **Canadian Distribution:**

Universal Data Systems, 200 Consumers Road, Suite 603, Willowdale, ON M2J 4R4. Telephone (416) 495-0008.

URGEO Software, Inc., P.O. Box 305, Cheney, WA 99004. Telephone (509) 838-6058.

VM Personal Computing, 41 Kenosia Avenue, Danbury, CT 06810. Telephone (203) 798-3800; **Canadian Distribution:** Quay Computer Corp., 216 Matheson Boulevard East, Mississauga, ON L4Z 1X1. Telephone (416) 890-2041.

Walker, Richer, & Quinn, Inc., 2825 Eastlake Avenue East, Seattle, WA 98102. Telephone (206) 324-0350; **Canadian Distribution:** M.B. Foster & Associates, 190 Bronson Avenue, Ottawa, ON K1R 6H4. Telephone (613) 448-2333.

Wall Data, Inc., 17769 Northeast 78th Place, Redmond, WA 98052. Telephone (206) 883-4777.

Winterhalter, Inc., 3853 Plaza Drive, Ann Arbor, MI 48108. Telephone (313) 662-2002; **Canadian Distribution:** Intelligent Technologies Group, 15 Montgomery Lane, Milton, ON L9T 2P8. Telephone (416) 878-8897. □ ▶

Integrating Micros in the Mainframe Environment

	Local Terminal Emulator	Remote Terminal Emulator	Standalone Terminal Emulator	Host Application Protocol Converter	Non-Host Application Specific	Network Gateway	MS-/PC-DOS Specific	Apple ProDOS Compatible	Apple Macintosh Compatible	CP/M Compatible	UNIX Compatible	Other Compatibility	Micro Software Component	Micro Hardware Component	Standalone Hardware Component	Host Software/Hardware Component	Digital VT Series Emulation	DG Dasher Emulation	HP Terminal Emulation	Honeywell Terminal Emulation	IBM 3101 Emulation	IBM 2780/3780 Emulation	IBM 327X Emulation	IBM 525X Emulation	Tektronix 4014 Emulation	Televideo 9XX Emulation	TTY Emulation	Unisys Terminal Emulation	Other Terminal Emulation
Access International																													
ACCESS 34/36/38				•	•							•				•													
AGS Genasys																													
Telios		•										•				•											•		
Applied Data Research																													
ADR/Adlib				•	•		•								•		•			•			•		•			
ADR/PC Datacom			•			•		•							•	•	•			•	•		•		•			
ADR/PC eMail				•		•		•							•	•	•			•	•		•					
Applied Information Systems																													
Burcom	•	•																											•
Aspen Research																													
Enter/3270												•											•					
AST Research																													
AST-3708		•					•			•				•							•							
AST-5251		•					•			•				•										•				
AST-BSC		•					•			•				•									•					
AST-PCOX		•					•			•				•									•					
AST-SNA		•					•			•				•									•					
Attachmate																													
3-N-1 System	•							•		•		•											•					
Avatar Technologies																													
MacMain Frame DX		•	•						•			•	•										•					
PA1000G/3270			•						•			•	•										•					
PA100G/3270	•								•			•	•										•					
Barr Systems																													
BARR/HASP		•			•																	•						•
BARR/HASP 208A/B		•			•																	•						•
Cambridge Computer																													
PC/240	•	•													•											•	•	
PC73/78	•	•																					•					
PC77/78	•	•																					•					
Carleton																													
CQS-Auditlink	•	•											•	•							•		•					
CQS-Infolink	•	•											•	•							•		•					
CCQ Computer Communications																													
CQ-3270 SNA Remote Emulation	•	•																					•					
CQ-3770 SNA RJE Emulation		•																					•				•	
CQ-3780 Bi-sync RJE emulation		•																			•							
CQ-HASTE HASP Station Emulator		•																			•							
Chi																													
Chi DEC/VT100 Emulator	•											•			•		•											
Chi EMP Sperry/IBM Emulator	•	•										•										•		•		•		•
Chi Honeywell 77XX/78XX Emulator	•											•								•				•				
Chi IBM/3270 BSC Emulator	•											•										•		•				
Chi Sperry/VTS Emulator	•											•												•		•		
ChiLan CS-1				•				•			•	•												•				
Cincom																													
PC Contact				•			•			•		•											•					
CLEO Software																													
3780 Plus		•										•				•					•			•				
Coefficient Systems																													
VTERM II Series		•										•					•											
Commtex																													
CA-80 Data Exchange			•									•				•												
Communications Research Group																													
BLAST		•			•							•				•			•									•

Integrating Micros in the Mainframe Environment

	Local Terminal Emulator	Remote Terminal Emulator	Standalone Terminal Emulator	Host Application Protocol Converter	Non-Host Application Specific	Network Gateway	MS-/PC-DOS Specific	Apple ProDOS Compatible	Apple Macintosh Compatible	CP/M Compatible	UNIX Compatible	Other Compatibility	Micro Software Component	Micro Hardware Component	Standalone Hardware Component	Host Software/Hardware Component	Digital VT Series Emulation	DG Dasher Emulation	HP Terminal Emulation	Honeywell Terminal Emulation	IBM 3101 Emulation	IBM 2780/3780 Emulation	IBM 327X Emulation	IBM 525X Emulation	Tektronix 4014 Emulation	Televideo 9XX Emulation	TTY Emulation	Unisys Terminal Emulation	Other Terminal Emulation
Communications Solutions																													
Access/BSC 3270	-	•	-	•	-	•	•	-	-	-	•	•	•	•	-	-	-	-	-	-	-	-	•	-	-	-	•	-	-
Access/DIA	-	-	-	-	-	•	•	-	-	-	•	•	•	•	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-
Access/SNA 3270	-	•	-	-	-	•	•	-	-	-	•	•	•	•	-	-	-	-	-	-	-	-	•	-	-	-	-	•	-
Access/SNA 3770	-	•	-	-	-	•	•	-	-	-	•	•	•	•	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-
Access/SNA APPC	-	-	-	-	-	•	•	-	-	-	•	•	•	•	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-
Access/SNADS	-	-	-	-	-	•	•	-	-	-	•	•	•	•	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-
Computer Associates																													
Smart Link	•	•	-	•	-	-	•	-	-	-	-	•	•	•	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-
Computer of America																													
PC/204	-	•	-	-	-	-	•	-	-	-	•	-	•	•	-	-	-	-	-	-	-	-	-	-	-	-	•	-	-
Comshare																													
W/Information Gateway	•	•	-	•	-	•	•	-	-	-	-	•	-	•	•	-	-	-	•	-	•	-	•	-	-	•	-	-	-
Convergent Technologies																													
Cluster Systems	•	-	-	•	•	•	•	-	-	-	-	•	•	•	-	-	-	-	-	-	•	-	•	-	-	•	-	-	-
Cullinet Software																													
Goldengate	•	•	-	•	•	-	•	-	-	-	-	•	-	-	•	-	-	-	•	-	-	-	•	-	-	•	-	-	-
Infogate	•	•	-	-	•	-	•	-	-	-	-	•	-	-	•	-	-	-	-	-	-	-	•	-	-	•	-	-	-
CXI																													
PCOX/3270 PC	•	-	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	•	-	-	-
PCOX/3270 Remote	-	•	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	•	-	-	-
PCOX/3270 Upgrade for IRMA	•	-	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	•	-	-	-
PCOX/5250 Remote	-	•	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	-	•	-	•	-	-	-
PCOX/5251 Twinax	•	-	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	-	•	-	•	-	-	-
PCOX/Gateway COAX	-	-	-	-	-	•	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	•	-	-	-
PCOX/Gateway-16	-	-	-	-	-	•	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-
PCOX/Gateway-5250	-	•	-	-	-	•	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	-	•	-	•	-	-	-
PCOX/Gateway-64	-	-	-	-	-	•	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-
PCOX/Graphics	•	-	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	•	-	-	-
PCOX/Multi-APA	•	•	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	•	-	•	-
PCOX/One-APA	•	•	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	•	-	-	-
PCOX/Plus	•	-	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	•	-	-	-
PCOX/Plus Remote	-	•	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	•	-	-	-
PCOX/Standard	•	-	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	•	-	-	-
Datability Software Systems																													
RAF Remote Access Facility	-	•	-	-	•	•	-	-	-	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	-	•	•	-	-
Datalex																													
Passport	•	•	-	•	-	•	-	-	-	-	-	-	•	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-
Digital Comm. Associates																													
IRMA	•	•	-	-	-	-	•	-	-	-	•	•	-	•	-	•	-	-	-	-	-	-	•	-	-	•	-	-	-
IRMACOM	-	•	-	-	-	-	•	-	-	-	•	•	-	•	-	•	-	-	-	-	-	•	•	-	-	•	-	-	-
IRMALAN DFT Gateway	-	-	-	-	•	•	•	-	-	-	•	•	-	-	-	•	-	-	-	-	-	-	•	-	-	-	-	-	-
IRMALAN SDLC Gateway	-	-	-	-	•	•	•	-	-	-	•	•	-	-	-	•	-	-	-	-	-	-	•	-	-	-	-	-	-
Smart Alec	•	-	-	-	-	-	•	-	-	-	•	•	-	•	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-
Digital Equipment																													
DECnet-DOS	•	•	-	-	•	•	•	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-
Direct Aid																													
The Impersonator	-	•	-	-	-	-	•	-	-	-	-	-	-	-	•	•	-	•	-	-	•	-	-	-	•	•	•	-	-
Diversified Computer Systems																													
EM220	•	-	-	•	-	-	•	-	-	-	-	-	•	-	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-
EM4010	•	-	-	-	-	-	•	-	-	-	-	-	•	-	-	•	-	-	-	-	-	-	-	-	•	-	-	-	-
EM4105	-	-	-	-	-	-	•	-	-	-	-	-	•	-	-	•	-	-	-	-	-	-	-	-	•	-	•	-	-
Dynamic Microprocessor Associates																													
ASCOM IV	-	-	-	-	•	-	•	-	-	-	-	-	•	-	-	•	-	-	-	-	-	-	-	-	-	-	-	•	-

Integrating Micros in the Mainframe Environment

	Local Terminal Emulator	Remote Terminal Emulator	Standalone Terminal Emulator	Host Application Protocol Converter	Non-Host Application Specific	Network Gateway	MS-/PC-DOS Compatible	Apple ProDOS Compatible	Apple Macintosh Compatible	CP/M Compatible	UNIX Compatible	Other Compatibility	Micro Software Component	Micro Hardware Component	Standalone Hardware Component	Host Software/Hardware Component	Digital VT Series Emulation	DG Dasher Emulation	HP Terminal Emulation	Honeywell Terminal Emulation	IBM 3101 Emulation	IBM 2780/3780 Emulation	IBM 327X Emulation	IBM 525X Emulation	Tektronix 4014 Emulation	Televideo 9XX Emulation	TTY Emulation	Unisys Terminal Emulation	Other Terminal Emulation
Emulex																													
Emulex/Persyst Coax/3270	•	•	-	-	-	-	•	-	-	-	-	-	•	•	•	-	-	-	-	-	-	-	•	-	-	-	•	-	-
Emulex/Persyst Coax/3270	•	•	-	-	-	-	•	-	-	-	-	-	•	•	•	-	-	-	-	-	-	-	•	-	-	-	•	-	-
Emulex/Persyst PC/3780	-	•	-	-	-	-	•	-	-	-	-	-	•	•	•	-	-	-	-	-	-	•	-	-	-	-	-	-	-
FIG Data Systems																													
EMU-TEK Five Plus	•	•	-	-	-	-	•	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-
EMU-TEK Level I	•	•	-	-	-	-	•	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-
EMU-TEK Level II	•	•	-	-	-	-	•	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-
Gateway Microsystems																													
MG 3270/BSC	•	•	-	-	-	•	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	•	-	-	-	-	-	-
MG 3270/SNA	•	•	-	-	-	•	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	•	-	-	-	-	-	-
MG PCOM/BSC	•	•	-	-	-	•	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	-	•	-	-	-	-	-
MG RJE/BSC	•	•	-	-	-	•	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grafpoint																													
TGRAF-05	•	•	-	-	-	-	•	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-
TGRAF-07	•	•	-	-	-	-	•	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-
TGRAF-15	•	•	-	-	-	-	•	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-
TNET	•	•	-	-	-	-	•	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-	-
TPort	•	•	-	-	-	-	•	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-
Hawkeye Grafix																													
COMMX	•	-	-	-	-	•	-	-	-	-	-	-	•	•	•	-	-	-	•	-	-	-	-	-	•	-	-	•	-
Henson Systems																													
CRTXE	•	•	-	-	•	-	•	-	-	-	-	-	•	•	•	•	-	-	-	-	-	-	•	-	•	-	•	-	-
XE100	•	•	-	-	•	-	•	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-
XE2622	•	•	-	-	•	-	•	-	-	-	-	-	•	-	-	-	-	-	•	-	-	-	-	-	•	-	-	-	-
XE3101	•	•	-	-	•	-	•	-	-	-	-	-	•	-	-	-	-	-	-	-	•	-	-	-	•	-	-	-	-
XE7800	•	•	-	-	•	-	•	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-
XE950	•	•	-	-	•	-	•	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-
IDEAssociates																													
IDEAcomm 3278	•	-	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	-	•	-	-
IDEAcomm 5250/Modem	-	•	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	-	•	-	-	•	-	-
IDEAcomm 5250/Remote	-	•	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	-	•	-	-	•	-	-
IDEAcomm 5251	•	-	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	-	•	-	-	•	-	-
IDEAcomm 5251/Share	•	•	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	-	•	-	-	•	-	-
Information Builders																													
FOCTALK	•	•	-	•	-	-	•	-	•	-	-	-	•	•	-	-	•	•	-	-	-	-	•	-	-	-	•	-	-
Innovative Electronics																													
Netmaster System	-	•	-	•	-	-	•	-	-	-	-	-	•	•	-	•	-	-	-	-	-	-	•	-	-	-	-	-	-
Integrated Network Systems																													
INS 8100 Gateway PC Adapter	•	-	-	-	-	•	-	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	-	•	-	-
INS SDLC Gateway PC Adapter	-	•	-	-	-	•	-	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	-	•	-	-
INS SDLC Loop PC Adapter	•	-	-	-	-	•	-	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	-	•	-	-
INS SDLC PC Adapter	-	•	-	-	-	•	-	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	-	•	-	-
INS X.25 PC Adapter	-	•	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	-	•	-	-
Intelligent Technologies																													
BiSync Exchange 3270	-	•	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	-	•	-	-
Bisync Exchange 3780	-	•	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	•	-	-	-	-	•	-	-
Gateway Exchange	-	•	-	-	-	•	-	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	-	•	-	-
Modem Exchange	-	•	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	-	•	•	-
SNA Exchange	-	•	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	-	-	•	•	-
Intercomputer Communications																													
ICC/FileXpress	-	-	-	-	-	-	•	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	•
ICC/Intercom 102	•	•	-	-	-	-	•	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	•
International Business Machines																													
3101 Emulation Program	•	•	-	-	-	-	•	-	-	-	-	-	•	-	-	-	-	-	-	-	•	-	-	-	-	-	•	-	-
BSC 3270	-	-	-	-	-	-	•	•	-	-	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
Enhanced 5250 Emulation	•	-	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-
IBM PC 3270 Emulation program	•	•	-	-	-	-	•	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
PC Support/36	-	-	-	-	•	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-

Integrating Micros in the Mainframe Environment

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KEA Systems Limited																													
ZSTEMpc-4014	•	•	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-
ZSTEMpc-VT100	•	•	-	-	-	-	-	-	-	-	-	-	-	•	-	-	•	-	-	-	-	-	-	-	-	-	-	-	-
ZSTEMpc-VT220	•	•	-	-	-	-	-	-	-	-	-	-	-	•	-	-	•	-	-	-	-	-	-	-	-	-	-	-	-
Lee Data/Datastream Division																													
EXECULINK II and Series 8000	-	•	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
Local Data																													
DataLynx/5251	-	•	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-
FileLynx/3278	•	•	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
FileLynx/5251	•	•	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-
InterLynx/5251	•	•	•	-	-	-	-	-	-	-	-	-	-	•	-	•	•	•	•	-	•	-	-	•	-	-	-	-	-
TermLynx II	•	•	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
TruLynx/3270	•	•	-	•	-	•	-	•	-	-	-	-	-	•	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
TruLynx/5251	•	•	-	•	-	•	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-
Lotus Development																													
Symphony Link	-	-	-	-	•	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
Mackensen																													
File Transfer System	-	-	-	-	•	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	•	-	•	-
Management Science America																													
Expertlink	•	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	-
McCormack & Dodge																													
Interactive PC Link	-	-	-	-	•	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
Micom Systems																													
Micro7400	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
Micro Data Base Systems (mdbs)																													
WIN/PC	-	•	-	•	•	-	-	-	-	-	-	-	•	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	-
Micro Decisionware																													
PC/SQL-link	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	-	-	-	-
Micro Plus																													
BISYNC 3278/79 Remote Workstat	-	•	-	-	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-	-	-	-	•	-	-	-	-	•	-
BISYNC Gateway Plus	-	•	-	-	-	•	-	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	•	-	-	-	-	•	-
MP01 3278/79 Coax Emulator Plus	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	•	-	-	-	-	•	-
SNA 3278/79 Remote Workstation	-	•	-	-	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-	-	-	-	•	-	-	-	-	•	-
SNA Gateway Plus	-	-	-	-	-	•	-	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	•	-	-	-	-	•	-
Micro Tempus																													
Tempus-Access	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	•	-	-	•	-	-	-	•	-	-	-	-	-	-
Tempus-Link	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	•	-	-	•	-	-	-	•	-	-	-	-	-	-
Micro-Integration																													
Acculink	•	•	-	-	-	-	-	-	-	•	•	-	•	-	•	-	•	-	-	-	-	-	•	•	•	-	-	-	-
Bis-3270	-	•	-	-	-	-	-	-	-	•	•	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
Bis-3780	-	•	-	-	-	-	-	-	-	•	•	-	•	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-
Bis-7705	-	•	-	-	-	-	-	-	-	•	•	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
Bis-Hasp	-	•	-	-	-	-	-	-	-	•	•	-	•	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-
Coaxxsys	•	•	-	-	-	-	-	-	-	•	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
Micro-SNA/3270	-	•	-	-	-	-	-	-	-	•	•	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
Micro-SNA/3770	-	•	-	-	-	-	-	-	-	•	•	-	•	-	-	-	-	-	-	-	-	•	-	-	-	-	-	•	-
Micro-SNA/5250	-	•	-	-	-	-	-	-	-	•	•	-	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-
Twinaxis	-	•	-	-	-	-	-	-	-	•	•	-	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-	•	-
Microplot Systems																													
PC-PLOT-IV	•	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-
Morris Systems																													
MSY-3270 Emulation System	-	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
Multi Soft																													
Super-Link	-	-	-	•	-	-	-	-	-	-	-	-	•	-	-	•	-	-	-	-	-	-	•	-	-	-	-	-	-
National Information Systems																													
Teleport II	•	•	•	-	-	-	•	-	-	-	-	-	•	-	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-
Network Research																													
Fusion Network Software	•	•	-	-	•	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	-

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Network Software Associates (NSA)																													
AdaptSNA 3270	-	•	•	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	•	-	-	-	•	-	-
AdaptSNA RJE	-	•	•	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	•	-	-	-	•	-	-
OBS Software																													
Excellink	•	•	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	•	-	-	-	•	-	•	-	•	-	-
VDAM	-	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	•	-	-	-	•	-	-	-	•	-	-
On-Line Software International																													
Freedisk & Omnilink	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
Oracle																													
SQL*NET	-	-	-	•	-	-	-	-	-	-	•	-	-	•	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
Pacer Software																													
pcLINK	•	•	-	-	-	-	-	-	-	-	-	-	•	-	-	•	-	-	-	-	-	-	-	-	-	•	•	-	•
Packaged Solutions																													
BiComm-3700	-	•	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	•	-	-	-	-	-	-	-
BiComm-3270	-	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
Pathway Design																													
pcPATH BSC-2870/3780	-	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	•	•	-	-	-	-	-	-
pcPATH SNA-3270	-	•	-	-	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	-	-	•	•	-	-	-	-	-
Performance Software																													
Masterlink 3270	-	-	-	-	•	-	-	•	-	-	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
Persoft																													
SmarTerm 220	•	•	-	-	-	-	-	-	-	-	-	-	•	•	-	-	•	-	-	-	-	-	-	-	•	-	•	-	-
SmarTerm 240	•	•	-	-	-	-	-	-	-	-	-	-	•	•	-	-	•	-	-	-	-	-	-	-	•	-	•	-	-
Polygon Associates																													
poly-COM/220	•	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-
poly-COM/240	•	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-
poly-STAR	•	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-	-
Protocol Computer																													
PCI 1051	-	-	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	•	-	-	-	-	-	-	-	•	-	-
PCI 1071	-	-	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	•	-	-	-	-	-	•	-	•	-	-
PCI 1076	-	-	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	•	-	-	-	-	-	•	-	•	-	-
Quadram																													
Quad3278	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
Rabbit Software																													
3270-Plus SNA	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
APPC-Plus	-	-	-	•	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-
DIA-Plus	-	-	•	-	-	-	-	-	-	•	•	-	•	-	•	-	-	-	-	-	-	-	-	-	-	-	-	•	-
RJE-Plus	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-
Ross Systems																													
MAPS/MICROLINK	-	•	-	•	-	-	-	-	-	-	-	-	-	-	•	-	•	-	•	-	-	-	-	-	-	-	-	-	-
SAS Institute																													
base SAS Software	-	•	-	•	-	-	-	-	-	-	-	-	•	-	•	-	•	-	•	-	-	-	-	-	•	-	•	-	-
Simware																													
SIM3278/PC	-	•	-	-	-	-	-	-	-	-	-	-	•	-	•	-	•	-	-	-	-	-	•	-	-	-	-	-	-
Softel																													
PC52	-	•	-	-	-	-	•	-	-	-	-	-	•	-	-	-	•	-	•	-	-	-	-	-	-	-	-	-	-
Softronics																													
Softerm PC	•	•	-	-	-	-	-	-	-	-	-	-	•	-	•	•	•	•	•	-	•	-	-	-	•	-	•	-	-
Software Clearing House																													
MICROLINK	•	-	-	•	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-	-
Software Dynamics																													
SDI 1780/3780	-	•	-	-	-	•	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-
Software Synergy																													
Respond PC Host	•	•	-	•	-	-	-	-	-	-	-	-	•	-	•	•	-	-	-	-	-	-	-	-	-	•	-	•	-
Respond/Async	•	•	-	-	-	-	-	-	-	-	-	-	•	-	-	•	-	-	-	-	-	-	-	-	-	•	-	•	-
Respond/Quick	•	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	-	•	-	•	-
Solution Systems																													
ZAP	•	•	•	-	-	•	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-	•	-

Integrating Micros in the Mainframe Environment

	Local Terminal Emulator	Remote Terminal Emulator	Standalone Protocol Converter	Host Application Specific	Non-Host Application Specific	Network Gateway	MS-/PC-DOS Compatible	Apple ProDOS Compatible	Apple Macintosh Compatible	CP/M Compatible	UNIX Compatible	Other Compatibility	Micro Software Component	Micro Hardware Component	Standalone Hardware Component	Host Software/Hardware Component	Digital VT Series Emulation	DG Dasher Emulation	HP Terminal Emulation	Honeywell Terminal Emulation	IBM 3101 Emulation	IBM 2780/3780 Emulation	IBM 327X Emulation	IBM 525X Emulation	Tektronix 4014 Emulation	Televideo 9XX Emulation	TTY Emulation	Unisys Terminal Emulation	Other Terminal Emulation
Sterling Software, Dylakor Div.																													
DYL-ULINK	-	-	-	•	•	-	-	-	-	-	-	-	•	-	-	-	•	-	-	•	-	-	-	-	•	-	•	-	-
Sterling Software/Sys. Software																													
dBase/Answer	•	-	-	-	-	-	-	-	-	-	-	-	•	-	-	•	•	-	-	-	-	-	-	-	-	-	-	-	-
Lotus/Answer	•	-	-	-	-	-	-	-	-	-	-	-	•	-	-	•	•	-	-	-	-	-	-	-	-	-	-	-	-
PC-TRACS 3270	-	•	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	•	-	-	-	-	-	-
PC-TRACS 3770	-	•	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	-	-	-	-	-	•	-
PC-TRACS 3780	-	•	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	-	•	-	-	-	-	-
PC-TRACS 6.2	-	•	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Techland Systems																													
BlueLynx 3270 Remote	-	•	-	-	-	-	•	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-	•	-	•	-	-	-	-
BlueLynx 5251	•	-	-	-	-	-	•	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-
BlueLynx Advanced Coax	•	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-
Technological Systems Group																													
Tepro 4010	-	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-
Teknigraphics																													
GRAPH-TEK	•	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	•	-	•	-	•
The Mom Corp.																													
PC COM	-	-	-	•	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2B Enterprises																													
Micro Information Support	•	•	-	•	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-	-
Universal Data Systems																													
Sync-Up BSC Communication Soft	-	•	-	-	-	-	•	-	-	-	-	-	•	-	•	-	-	-	-	-	•	•	-	-	-	•	-	•	-
Sync-Up SNA 3270 Communication	-	•	-	-	-	-	•	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	•	-	-	-	-	•	-
Sync-Up SNA 3770 Communication	-	•	-	-	-	-	•	-	-	-	-	-	•	-	•	-	-	-	-	-	-	•	-	-	-	-	-	•	-
Sync-Up SNA 5251 Communication	-	•	-	-	-	-	•	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	-	•	-	-	-	•	-
URGEO Software																													
Apple-Bisync	-	•	-	-	-	-	-	-	•	-	-	-	•	-	-	-	-	-	-	-	-	•	-	-	•	-	•	-	-
VM Personal Computing																													
Relay Gold	•	-	-	•	-	•	-	-	-	-	-	-	•	•	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-
Relay/3270 (Host Product)	•	-	-	•	-	•	-	-	-	-	-	-	•	•	•	-	-	-	-	-	-	-	•	-	-	•	-	-	-
Relay/TSO	-	-	-	•	-	•	-	-	-	-	-	-	•	•	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-
Relay/VM	-	-	-	•	-	•	-	-	-	-	-	-	•	•	•	-	-	-	-	-	-	-	-	-	-	•	-	-	-
Walker, Richer & Quinn																													
Reflection 1	•	•	-	-	-	-	-	-	-	-	-	-	•	-	-	•	•	-	•	-	-	-	-	-	-	-	-	-	-
Reflection 2	•	•	-	-	-	-	-	-	-	-	-	-	•	-	-	•	•	•	-	-	-	-	-	-	-	-	-	-	-
Reflection 3	•	•	-	-	-	-	-	-	-	-	-	-	•	-	-	•	•	-	•	-	-	-	-	-	•	-	-	-	-
Reflection 7+	•	•	-	-	-	-	-	-	-	-	-	-	•	-	-	•	•	-	•	-	-	-	-	-	-	-	-	•	-
Wall Data																													
Datagate PC/3270	•	•	•	-	-	-	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	•	-	-	-	-	•	-
Datagate PC/5250	•	•	•	-	-	-	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	-	•	-	-	-	•	-
DCF II/3270	•	•	•	-	-	-	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	•	-	-	-	-	•	-
DCF II/5250	•	•	•	-	-	-	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	-	•	-	-	-	•	-
Winterhalter																													
DataSYNC/3270	-	•	-	-	-	-	•	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	•	-	-	-	-	-	-
DataSYNC/3780	-	•	-	-	-	-	•	-	-	-	-	-	•	-	•	-	-	-	-	-	-	•	-	-	-	-	-	-	-
DataTalker 3270	-	•	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	•	-	-	-	-	-	-
DataTalker/3780	-	•	-	-	-	-	-	-	-	-	-	-	•	-	•	-	-	-	-	-	-	•	-	-	-	-	-	-	-

Integrating Micros in the Mainframe Environment

Comparison Columns Begin on Next Page

Integrating Micros in the Mainframe Environment

Vendor Name	Access International Inc.	AGS Genasys	Applied Data Research	Applied Data Research
Model	ACCESS 34/36/38	Telios	ADR/Adlib	ADR/PC Datacom
FUNCTION	Host application link, host resource link	Remote terminal emulation	Host application link, host resource link	Host application link
Configuration	Multiuser	Single user	Single user	Single user
COMPONENTS	Micro software/hardware, host software/hardware	Micro software	—	Micro software, host software/hardware
MICROCOMPUTER SUPPORT Systems	All asynchronous devices	IBM PC/XT/AT	IBM PC/XT/AT, 3270 PC	IBM PC/XT/AT
Operating Environment	Asynchronous port	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	62KB, bisynchronous communications connection	96KB	512KB, diskette drive	384KB, dual diskette
Network Compatibility	—	Novell NetWare, Multilink	Ethernet, IBM NETBIOS, Novell NetWare, 3Com networks	Ethernet, IBM NETBIOS, Novell NetWare, 3Com networks
HOST INTERFACE System	IBM System/3X	DEC VAX, Unisys hosts	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	—	—	IBM DOS, OS/VS, IBM MVS	IBM DOS, OS/VS, MVS, CICS
Protocol Support	BSC	—	BSC, SNA, SDLC	BSC, SNA, SDLC
Connection	Controller, comm port	Comm port	Front-end proc., controller, comm port	Front-end proc., controller, comm port
Applications	—	—	Calls to host resident ADR/Roscoe, ADR/Vollie, ADR/The Librarian, TSO programs	Calls to host programs, DBMS access: ADR/Datacom/DB
EMULATION Terminals	IBM 5251	DEC VT52/100, Lear-Siegler ADM-1, TI-910	TTY, DEC VT52/100/220/240, IBM 3101, 3278, 3279, 3274, 3276	TTY, DEC VT52/100/220/240, IBM 3101, 3278, 3279, 3274, 3276
Functions	—	Color/graphics display, function keys, print to disk	Color display, function keys, windowing, user definable kybd.	Color display, function keys, character attributes, print to disk
Concurrent Sessions	64	1	1	1
Physical Connection	RS-232-C	RS-232-C	Twinax, coax, RS-232-C	Twinax, coax, RS-232-C
Access to Micro OS During Host Session	No	No	Yes	Yes
FEATURES File Transfer	Upload, download	Upload, download	Upload, download; host formats: Roscoe and Vollie members, The Librarian	Upload, download; host formats: Datacom/DB; micro formats: DIF, CSV, SYLK
Code Conversion	ASCII to EBCDIC	—	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	—	—	IBM LU 2.1, CXI, AST	IBM LU 2.1, CXI, AST
Programmability	—	Script language, scripted parameters, unattended execution, calls to languages and scripts	Script language	Script language, scripted parameters, unattended execution, calls to other scripts
TRANSMISSION Mode	Asynchronous, Synchronous	Asynchronous	Asynchronous, synchronous	Asynchronous, synchronous
Speed (bps)	300, 600, 1200, 2400, 4800, 9600, 19.2K	300, 600, 1200, 2400, 4800, 9600	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K
SECURITY	Single-level password, multilevel password	—	Multilevel password	Multilevel password
PRICING AND AVAILABILITY Price ($)	Micro software: $5,000; standalone hardware: $7,000	Micro software: $149.95	Micro software: $495	Micro software: $495
Site Licensing Available	—	No	Yes	Yes
Warranty	90 days, 1 year	None	1 year	1 year
Maintenance Contract	Yes	No	Yes	Yes
Date of First Delivery	—	—	April 1987	January 1984
Number Installed	450	—	—	1,500
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers	Direct from vendor	Direct from vendor

Integrating Micros in the Mainframe Environment

Vendor Name	Applied Data Research	Applied Information Systems, Inc.	Aspen Research Incorporated	AST Research
Model	ADR/PC eMail	Burcom	Enter/3270	AST-BSC
FUNCTION	Host application link	Local terminal emulation, remote terminal emulation	Host resource link	Remote terminal emulation
Configuration	Single user	Multiuser	Single user	Single user
COMPONENTS	Micro software, host software/hardware	Micro software	Micro software	Micro software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT, 3270 PC	DEC microVAX	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	—	MS-/PC-DOS	MS-/PC-DOS
Configuration	512KB, diskette drive	—	512KB, hard disk, 3270 terminal emulator	196KB
Network Compatibility	Ethernet, IBM NETBIOS, Novell NetWare, 3Com networks	Unisys poll-select, DECNET	—	—
HOST INTERFACE System	IBM 43XX/30XX	Unisys hosts	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	IBM DOS, OS/VS, MVS, VM, CMS, CICS	—	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS	—
Protocol Support	BSC, SNA, SDLC	Unisys (Burroughs) point-to-point	BSC, SNA, Packet, X.25	BSC
Connection	Front-end proc., controller, comm port	Comm port	—	Controller
Applications	Calls to host resident ADR/eMail Electronic Mail System programs	Calls to host programs	—	—
EMULATION Terminals	TTY, DEC VT52/100/220/240, IBM 3101, 3278, 3279, 3274, 3276	DEC VT52/100, Unisys (Burroughs) MT series	IBM 3278, 3279	IBM 3274
Functions	Color display, function keys, print to disk	Function keys, character attributes, host printer emulation, print to disk	Color display, function keys, character attributes, windowing, user definable kybd., print to disk	Color display, function keys, user definable kybd., host printer emulation, print to disk
Concurrent Sessions	1	1	1	1
Physical Connection	Twinax, coax, RS-232-C	RS-232-C	—	RS-232-C
Access to Micro OS During Host Session	No	No	No	—
FEATURES File Transfer	Upload, download; micro formats: VisiWord, Wordstar	Upload, download; host formats: sequential	Micro formats: Lotus, dBase, ASCII	Upload, download; host formats: TSO edit
Code Conversion	ASCII to EBCDIC	—	—	ASCII to EBCDIC
API Compatibility	IBM LU 2.1, CXI, AST	—	IBM LU 2.1, DCA IRMA	—
Programmability	—	—	Script language, calls to languages	—
TRANSMISSION Mode	Asynchronous, synchronous	Asynchronous, synchronous	Asynchronous, synchronous	Synchronous
Speed (bps)	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	300, 600, 1200, 2400, 4800, 9600, 19.2K	Emulator dependent	300, 600, 1200, 2400, 4800, 9600
SECURITY	Multilevel password	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro software: $195		Micro software: $500	Micro software: $495
Site Licensing Available	Yes	No	Yes	—
Warranty	1 year	30 days	90 days	2 years
Maintenance Contract	Yes	Yes	Yes	—
Date of First Delivery	November 1985	August 1974	June 1986	August 1983
Number Installed	360	250	—	6,000
DISTRIBUTION	Direct from vendor	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs		Direct from vendor, distributors, dealers, retailers, mail order

Integrating Micros in the Mainframe Environment

Vendor Name	AST Research	AST Research	AST Research	AST Research
Model	AST-PCOX	AST-SNA	AST-3708	AST-5251
FUNCTION	Local terminal emulation	Remote terminal emulation	Remote terminal emulation	Remote terminal emulation
Configuration	—	Single user	Single user	—
COMPONENTS	Micro software/hardware	Micro software/hardware	Micro software/hardware	Micro software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	196KB	128KB	64KB	128KB
Network Compatibility	—	—	—	—
HOST INTERFACE System	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX, IBM System/ 3X, DEC VAX, DECsystem	IBM System/3X
Operating Environment	IBM VM, TSO, CMS	IBM MVS, TSO	—	—
Protocol Support	BSC, SNA, SDLC	SNA	BSC	SNA, SDLC
Connection	Controller	Controller	Controller	Comm port
Applications	—	—	—	—
EMULATION Terminals	IBM 3278, 3279	IBM 3278, 3279, 3274	IBM 2780/3780	IBM 5251
Functions	Color display, user definable kybd., host printer emulation, print to disk	Color display, function keys, user definable kybd., host printer emulation, print to disk	Host printer emulation, print to disk	Host printer emulation, print to disk
Concurrent Sessions Physical Connection	1 Coax	1 RS-232-C	1 RS-232-C	1 RS-232-C
Access to Micro OS During Host Session	Yes	Yes	No	—
FEATURES File Transfer	Upload, download	Upload, download	Upload, download	Upload, download
Code Conversion API Compatibility	ASCII to EBCDIC —	ASCII to EBCDIC —	ASCII to EBCDIC —	ASCII to EBCDIC —
Programmability	—	—	—	—
TRANSMISSION Mode Speed (bps)	Synchronous 2.4M	Synchronous 9600	Synchronous 9600, 2.4M	Synchronous 9600
SECURITY	—	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro software: $895	Micro software: $895	Micro software: $895	Micro software: $895
Site Licensing Available Warranty	— 2 years	— 2 years	— 2 years	— 1 year
Maintenance Contract Date of First Delivery Number Installed	— October 1983 5,000	— August 1983 1,200	— October 1983 5,000	— April 1984 3,000
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Attachmate Corporation	Avatar Technologies Inc.	Avatar Technologies Inc.	Avatar Technologies Inc.
Model	3-N-1 System	MacMain Frame DX	PA100G/3270	PA1000G/3270
FUNCTION	Local terminal emulation	Remote terminal emulation, protocol converter	Local terminal emulation	Protocol converter
Configuration	Single user	Single user	Single user	Single user
COMPONENTS	Micro software/hardware, standalone hardware	Micro software, standalone hardware, host software/hardware	Micro software/hardware, host software/hardware	Micro software, standalone hardware, host software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	Apple Macintosh	IBM PC/XT/AT	Apple Macintosh, IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	Apple Finder	MS-/PC-DOS	Apple Finder, MS-/PC-DOS
Configuration	128KB	512KB, communications program	256KB, diskette drive, communications program	256KB, diskette drive, communications program
Network Compatibility	—	AppleTalk	IBM NETBIOS	IBM NETBIOS
HOST INTERFACE System	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	IBM VM, TSO, CMS, CICS	IBM OS/VS, MVS, VM, TSO, CMS, CICS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, CICS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, CICS
Protocol Support	SNA	BSC, SNA, SDLC	BSC, SNA, SDLC	BSC, SNA, SDLC
Connection	—	Controller	Controller	Controller
Applications	—	—	Calls to host programs	—
EMULATION Terminals	IBM 3278, 3279	IBM 3278	IBM 3278, 3279	IBM 3278
Functions	Color display, function keys, windowing, user definable kybd., host printer emulation, print to disk	Function keys, character attributes	Color display, function keys, character attributes, user definable kybd.	Color display, function keys, character attributes, user definable kybd.
Concurrent Sessions	4 host sessions, 2 notepads	1	1	1
Physical Connection	Coax	Coax	Coax	—
Access to Micro OS During Host Session	Yes	—	Yes	Yes
FEATURES File Transfer	Upload, download	Upload, download; host formats: CICS, TSO, CMS	Upload, download; host formats: CICS, TSO, CMS	Upload, download; host formats: CICS, TSO, CMS
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	IBM LU 2.1, DCA IRMA, proprietary	Avatar	IBM LU 2.1	IBM LU 2.1
Programmability	Script language, scripted parameters, unattended execution, calls to languages, calls to other script languages///	Script language, scripted parameters, unattended execution	Script language, scripted parameters, unattended execution	Script language, scripted parameters, unattended execution
TRANSMISSION Mode	Synchronous	Asynchronous	Synchronous	Synchronous
Speed (bps)	2.4M	9600	2.4M	9600
SECURITY	—	Multilevel password	—	Multilevel password
PRICING AND AVAILABILITY Price ($)	Micro software: $1,195	Micro software: $200; standalone hardware: $1,195; host software/hardware: $500	Micro software: $479; host software/hardware: $500; Turbo options: $200	Micro software: $995; host software/hardware: $500; Turbo option: $200
Site Licensing Available	—	Yes	Yes	Yes
Warranty	1 year	1 year	1 year	1 year
Maintenance Contract	—	No	Yes	Yes
Date of First Delivery	November 1985	October 1985	—	March 1987
Number Installed	10,500	—	—	—
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers	Distributors, dealers, retailers, OEMs, VARs	Distributors, dealers, retailers, OEMs, VARs	Distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Barr Systems, Inc.	Barr Systems, Inc.	Cambridge Computer Corporation	Cambridge Computer Corporation
Model	BARR/HASP 208 AB	BARR/HASP	PC73/78	PC77/78
FUNCTION	Remote terminal emulation, network gateway	Remote terminal emulation, network gateway	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation
Configuration	Single user	Single user	Single user	Single user
COMPONENTS	Micro software/hardware	Micro software/hardware	Micro software	Micro software
MICROCOMPUTER SUPPORT				
Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	256KB, diskette drive	256KB, diskette drive	256KB, diskette drive	250KB, diskette drive, IBM BSC Adapter
Network Compatibility	Ethernet, IBM NETBIOS, Novell NetWare, 3Com networks	IBM NETBIOS, Novell NetWare, 3Com networks	—	—
HOST INTERFACE				
System	IBM 43XX/30XX, Control Data CYBER	IBM 43XX/30XX, Control Data CYBER	Honeywell hosts	Honeywell hosts
Operating Environment	IBM MVS, Control Data NOS/RBF	IBM MVS, VM, Control Data NOS/RBF	Honeywell GCOS	Honeywell GCOS
Protocol Support	HASP	HASP	VIP	VIP
Connection	Comm port	Comm port	Comm port	—
Applications	IBM JES2, JES3, RSCS, Control Data NOS/RBF	IBM JES2, JES3, RSCS, Control Data NOS/RBF	Calls to host programs	Calls to host programs
EMULATION				
Terminals	IBM 3777-2	IBM 3777-2	TTY, Honeywell VIP series	Honeywell VIP series
Functions	Color display, function keys, host printer emulation, print to disk	Color display, function keys, host printer emulation, print to disk	Color/graphics display, function keys, character attributes, windowing, user	Color/graphics display, function keys, character attributes, windowing, user
Concurrent Sessions	1	1	2	3
Physical Connection	RJ-11C	RS-232-C	RS-232-C	RS-232-C
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES				
File Transfer	Upload, download; host formats: QSAM	Upload, download; host formats: QSAM	Upload, download; host formats: UFAS	Upload, download; host formats: UFAS, BCD, GFRC
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	—	ASCII to EBCDIC
API Compatibility	—	—	—	Proprietary
Programmability	—	—	Script language, scripted parameters, unattended execution	Script language, scripted parameters, unattended
TRANSMISSION				
Mode	Synchronous	Synchronous	Asynchronous	Synchronous
Speed (bps)	4800	Up to 56K	19.2K	19.2K
SECURITY	—	—	—	—
PRICING AND AVAILABILITY				
Price ($)	Micro hardware and software: $2,290	Micro hardware and software: $1,290	Micro software: $295	Micro software: $350
Site Licensing Available	—	—	Yes	Yes
Warranty	1 year	1 year	90 days	90 days
Maintenance Contract	Yes	Yes	Yes	Yes
Date of First Delivery	September 1983	September 1983	February 1985	January 1984
Number Installed	3,500	3,500	3,000	8,000
DISTRIBUTION	Direct from vendor	Direct from vendor	Direct from vendor	Direct from vendor

Integrating Micros in the Mainframe Environment

Vendor Name	Cambridge Computer Corporation	Carleton Corporation	Carleton Corporation	CCQ Computer Communications, Inc.
Model	PC/240	CQS-Auditlink	CQS-Infolink	CQ-HASTE HASP Emulator
FUNCTION	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation, host resource link	Local terminal emulation, remote terminal emulation, host resource link	Remote terminal emulation
Configuration	Single user	Multiuser	Multiuser	Single user
COMPONENTS	Micro software	Micro software, host software/hardware	Micro software, host software/hardware	Micro software
MICROCOMPUTER SUPPORT				
Systems	IBM PC/XT/AT	Apple Macintosh, IBM PC/XT/AT, 3270 PC, DEC Rainbow, DECMate II, Wang	Apple Macintosh, IBM PC/XT/AT, 3270, DEC Rainbow, Wang PC	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	Apple Finder, IBM MS-/PC-DOS	—	MS-/PC-DOS
Configuration	256KB, diskette drive	256KB, diskette drive	256KB, 340K	256KB, diskette drive
Network Compatibility	—	Ethernet, IBM NETBIOS, 3Com networks, Bridge, Sytek, Ungermann-Bass	Ethernet, IBM NETBIOS, 3Com networks, Bridge, Sytek, Ungermann-Bass	IBM NETBIOS, Novell NetWare
HOST INTERFACE				
System	DEC VAX, DECsystem	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX, IBM System/System/3X, Unisys, Unix-based hosts
Operating Environment	DEC TOPS, DEC VAX/VMS	IBM MVS, IBM VM, IBM TSO, IBM CMS	IBM MVS, VM, TSO, CMS	IBM DOS, OS/VS, MVS, VM, CICS
Protocol Support	—	SNA	SNA	HASP
Connection	Comm port	Controller, communications port	Controller, comm port	Front-end proc., comm port
Applications	—	DBMS access:IDMS, IMS, ADABAS, TOTAL, DataCom/DB, can access virtually any IBM mainframe file	DBMS access: IDMS, IMS, ADABAS, TOTAL, DataCom/DB	Calls to host programs
EMULATION				
Terminals	TTY, DEC VT52/100/220/240, Tektronix 4014	IBM 3101, DEC VT52/100, IBM 3278, IBM 3279	DEC VT52/100, IBM 3101, 3278, 3279	HASP station emulator
Functions	Color/graphics display, function keys, character attributes, windowing, user	Color display, graphics display	Color display, graphics display	Host printer emulation, print to disk
Concurrent Sessions	2	Depends on PC type	Depends on PC type	3
Physical Connection	RS-232-C	Coax	Coax, RS-232-C	RS-232-C, integral synchronous modem
Access to Micro OS During Host Session	Yes	No	No	No
FEATURES				
File Transfer	Upload, download	Upload, download; host formats: CSU, PRN; micro formats: DIF, SYLK	Upload, download; host formats: CSU, PRN; micro formats: DIF, sylk	Upload, download
Code Conversion	—	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	—	—	—	—
Programmability	Script language, scripted parameters, unattended execution	Scripts, unattended execution	Scripts, unattended execution	—
TRANSMISSION				
Mode	Asynchronous	Asynchronous; Synchronous Selectable	Asynchronous, synchronous Selectable	Synchronous
Speed (bps)	19.2K			300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K, 38.4K, 56K
SECURITY	—	—	—	—
PRICING AND AVAILABILITY				
Price ($)	Micro software: $235	Micro software: 500.00 , host software: 32,000.00	Micro software: $500; host software: $40,000	Micro software: $750
Site Licensing Available	Yes	No	No	Yes
Warranty	90 days	90 days	90 days	90 days
Maintenance Contract	Yes	Yes	Yes	Yes
Date of First Delivery	January 1987	April 1986	April 1986	January 1983
Number Installed	200	10	10	3,000
DISTRIBUTION	Direct from vendor	Direct from vendor	Direct from vendor	Direct from vendor, distributors, dealers, retailers

Integrating Micros in the Mainframe Environment

Vendor Name	CCQ Computer Communications, Inc.	CCQ Computer Communications, Inc.	CCQ Computer Communications, Inc.	Chi Corporation
Model	CQ-3270 SNA Remote Emulation	CQ-3770 SNA RJE Emulation	CQ-3780 Bi-sync RJE emulation	Chi DEC/VT100 Emulator
FUNCTION	Local terminal emulation, remote terminal emulation	Remote terminal emulation	Remote terminal emulation	Local terminal emulation
Configuration	Single user	Single user	Single user	Single user
COMPONENTS	—	Micro software	Micro software	Micro software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	512KB, diskette drive	256KB, diskette drive	256KB, diskette drive	256KB, diskette drive
Network Compatibility	IBM NETBIOS, Novell NetWare	IBM NETBIOS, Novell NetWare	IBM NETBIOS, Novell NetWare	—
HOST INTERFACE System	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX, IBM System/3X, DG, DEC VAX, HP, Honeywell, Unisys hosts	DEC VAX, DECsystem
Operating Environment	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS	IBM DOS, OS/VS, MVS, VM, CICS	IBM DOS, OS/VS, MVS, VM, CICS, DEC TOPS, VAX/VMS, DG AOS	DEC TOPS, VAX/VMS
Protocol Support	SNA, SDLC	SNA, SDLC	BSC	—
Connection	Front-end proc.	Front-end proc., comm port	Front-end proc., comm port	Front-end proc., comm port
Applications	—	Calls to host programs	Calls to host programs	Terminal applications
EMULATION Terminals	IBM 3278, 3279, 3274, 3276	IBM 3770	IBM 2780/3780	TTY, DEC VT52/100
Functions	Color display, function keys, character attributes, windowing, user definable kybd., host printer emulation, print to disk	Host printer emulation, print to disk	Host printer emulation, print to disk	Color display, function keys, user definable kybd., host printer emulation
Concurrent Sessions	8	5	1	1
Physical Connection	RS-232-C	RS-232-C, integral synchronous modem	RS-232-C, integral synchronous modem	Uniscope cable
Access to Micro OS During Host Session	Yes	No	No	Yes
FEATURES File Transfer	Upload, download; IBM 3270 PC-compatible file transfer	Upload, download	Upload, download	Upload, download
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC	—
API Compatibility	IBM LU 2.1	—	—	—
Programmability	—	Script language, scripted parameters, unattended execution, calls to other script languages	Script language, scripted parameters, unattended execution, calls to other script languages	—
TRANSMISSION Mode	Synchronous	Synchronous	Synchronous	Asynchronous
Speed (bps)	300, 600, 1200, 2400, 4800, 9600	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K, 38.4K, 56K	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K, 38K, 56K	300, 600, 1200, 2400, 4800, 9600
SECURITY	Single-level password, file encryption	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro software: $450	Micro software: $595	Micro software: $495	Micro software: $135; standalone hardware: $400
Site Licensing Available	Yes	Yes	Yes	Yes
Warranty	90 days	90 days	90 days	90 days
Maintenance Contract	Yes	Yes	Yes	Yes
Date of First Delivery	February 1987	June 1985	December 1984	1985
Number Installed	—	3,000	3,000	—
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers	Direct from vendor, distributors, dealers, retailers	Direct from vendor, distributors, dealers, retailers	Direct from vendor, distributors, dealers, retailers

Integrating Micros in the Mainframe Environment

Vendor Name	Chi Corporation	Chi Corporation	Chi Corporation	Chi Corporation
Model	Chi EMP Sperry/IBM Emulator	Chi Honeywell 77xx/78xx Emulator	Chi IBM/3270 BSC Emulator	ChiLan CS-1 Communications Server-Sperry UTS
FUNCTION	Local terminal emulation, remote terminal emulation	Local terminal emulation	Local terminal emulation	Network gateway
Configuration	Single user	Single user	Single user	Multiuser
COMPONENTS	Micro software/hardware	Micro software/hardware	Micro software/hardware	Micro software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	256KB, diskette drive	256KB, diskette drive	256KB, diskette drive	256KB, diskette drive, NETBIOS-compatible LAN
Network Compatibility	—	—	—	Ethernet, IBM NETBIOS, Novell NetWare, 3Com networks
HOST INTERFACE System	IBM 43XX/30XX, System/3X, Unisys hosts	Honeywell hosts	IBM 43XX/30XX, System/3X	Unisys hosts
Operating Environment	IBM OS/VS, MVS, VM, TSO, CMS, CICS, Unisys (Sperry) OS/1100	Honeywell GCOS	IBM OS/VS, MVS, VM, TSO, CMS, CICS	OS/1100
Protocol Support	BSCUTS (Uniscope)	Honeywell 77xx/78xx	BSC	UTS
Connection	Front-end proc., comm port	Comm port	Front-end proc.	Front-end proc., comm port
Applications	Calls to host programs, dual mainframe access from one PC using UTS	Calls to host programs	—	Calls to host programs
EMULATION Terminals	TTY, IBM 3278, 3279, 3274, 3276, Unisys UTS 20, 30, 40, 60, 400, Uniscope 100, 200	Honeywell VIP series	IBM 3278, 3279, 3274, 3276	Unisys UTS 20, 30, 40, 60, 400, Uniscope 100, 200
Functions	Color/graphics display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Color display, function keys, character attributes, host printer emulation	Color/graphics display, function keys, character attributes, user definable kybd., host printer emulation, print to disk
Concurrent Sessions	2 (2 UTS or 2 IBM)	1	2	32
Physical Connection	Uniscope cable, CCP front-end proc.	Uniscope cable	Uniscope cable	RS-232-C
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES File Transfer	Upload, download; host formats: symbolic elements	Upload, download; host formats: library files	—	Upload, download; host formats: symbolic elements
Code Conversion	—	—	—	—
API Compatibility	UTS	Honeywell	—	—
Programmability	Calls to languages	Calls to languages	—	Calls to languages
TRANSMISSION Mode	Asynchronous, synchronous	Asynchronous, synchronous	Synchronous	Synchronous
Speed (bps)	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	300, 600, 1200, 2400, 4800, 9600	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K
SECURITY	Secure parameters	—	PC-DOS based	Secure parameters
PRICING AND AVAILABILITY Price ($)	Microcomputer hardware and software: $1,295	Micro software: $350	Micro software: $175; standalone hardware: $400	Microcomputer hardware and software: $2,880
Site Licensing Available	Yes	Yes	Yes	Yes
Warranty	90 days	90 days	90 days	90 days
Maintenance Contract	Yes	Yes	Yes	Yes
Date of First Delivery	1986	—	1986	1986
Number Installed	—	—	—	—
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers	Direct from vendor, distributors, dealers, retailers	Direct from vendor, distributors, dealers, retailers	Direct from vendor, distributors, dealers, retailers

Integrating Micros in the Mainframe Environment

Vendor Name	Chi Corporation	Cincom	CLEO Software	Coefficient Systems
Model	Chi Sperry/VTS Emulator	PC Contact	3780 Plus	VTERM II Series
FUNCTION	Local terminal emulation	Host application link	Remote terminal emulation	Remote terminal emulation
Configuration	Single user	Single user	Single user	Single user
COMPONENTS	Micro software/hardware	Micro software/hardware	Micro software, host software/hardware	Micro software
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT, DEC Rainbow, TI Professional	IBM PC/XT/AT	Apple Macintosh, IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	Apple Finder, MS-/PC-DOS	MS-/PC-DOS
Configuration	256KB, diskette drive	128KB	128KB	92KB
Network Compatibility	—	—	—	—
HOST INTERFACE System	Unisys hosts	IBM 43XX/30XX	IBM 43XX/30XX, System/3X, DG, DEC, HP, Honeywell, Unisys, Unix-based hosts	DEC DECsystem
Operating Environment	OS/1100, OS/3, VS-9	IBM DOS, MVS, VM	IBM DOS, DEC VAX/VMS, Honeywell GCOS	—
Protocol Support	UTS (UNISCOPE)	SNA, SDLC	BSC	—
Connection	Front-end proc., comm port	Controller	Comm port	Comm port
Applications	Calls to host programs	Virtual drives on host, DBMS access: Cincom Mantis	—	—
EMULATION Terminals	TTY, Unisys VTS 20, 30, 40, 60, 400, Uniscope 100, 200, SUT	IBM 3278, 3279	IBM 2780/3780	DEC VT52/100, Tektronix 4010
Functions	Color/graphics display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Color display, windowing, user definable kybd., host printer emulation, print to disk	Host printer emulation, print to disk	Function keys, user definable kybd.
Concurrent Sessions	8	1	3	1
Physical Connection	Uniscope cable	Coax, SNA/SDLC	RS-232-C, RJ-11	RS-232-C
Access to Micro OS During Host Session	Yes	—	Yes	—
FEATURES File Transfer	Upload, download; host formats: ASCII, SDF, Program File	Upload, download; host formats: Cincom Mantis; micro formats: Lotus, dBase	Upload, download	Upload, download
Code Conversion	File data to ASCII	ASCII to EBCDIC	ASCII to EBCDIC	—
API Compatibility	UTS	DCA IRMA, CXI	Proprietary	—
Programmability	Unattended execution, calls to languages	—	Scripted parameters, unattended execution, calls to languages	—
TRANSMISSION Mode	Asynchronous, synchronous	Asynchronous	Synchronous	Asynchronous
Speed (bps)	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	1200	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	9600
SECURITY	Secure parameters	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro hardware and software: $745	Micro software: $500; host software: $20,000 to $30,000	Micro software: $625	Micro software: $160
Site Licensing Available	Yes	—	No	—
Warranty	90 days	—	—	90 days
Maintenance Contract	Yes	Yes	No	—
Date of First Delivery	1983	—	1980	1982
Number Installed	—	—	25,000	30,000
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor, distributors, dealers, retailers

Integrating Micros in the Mainframe Environment

Vendor Name	Commtex Inc.	Communications Research Group	Communications Solutions, Inc.	Communications Solutions, Inc.
Model	CA-80 Data Exchange	BLAST	Access/BSC 3270	Access/SNA 3770
FUNCTION	Protocol converter	Remote terminal emulation, host resource link	Remote terminal emulation, network gateway	Remote terminal emulation, network gateway
Configuration	Multiuser	Single user	Single user, multiuser	Single user
COMPONENTS	Standalone hardware	Micro software, host software/hardware	Micro software	Micro software
MICROCOMPUTER SUPPORT				
Systems	All asynchronous devices	Apple Macintosh, Apple II series, IBM PC/XT/AT	IBM PC/XT/AT, Unix systems	IBM PC/XT/AT, Unix systems
Operating Environment	—	Apple Finder, ProDOS, MS-/PC-DOS	MS-/PC-DOS, Unix 3.0, Unix 5.0, Xenix	MS-/PC-DOS, Unix 3.0, Unix 5.0, Xenix
Configuration	—	128KB, diskette drive	128KB, SDLC adapter card	128KB, SDLC adapter card
Network Compatibility	IBM NETBIOS, X.25 Networks	—	Arcnet, Ethernet, IBM NETBIOS, Novell NetWare	Arcnet, Ethernet, IBM NETBIOS, Novell NetWare
HOST INTERFACE				
System	IBM 43XX/30XX, DG, DEC VAX, DECsystem, HP, Unix-based hosts	IBM 43XX/30XX, DG, DEC VAX, DECsystem, HP, Unisys, Unix-based hosts	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, DEC TOPS, VAX/VMS	IBM MVS, VM, DEC VAX/VMS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP
Protocol Support	BSC, SNA, SDLC, X.25	—	BSC	SNA, SDLC
Connection	Front-end proc., comm port	—	Front-end proc.	Front-end proc.
Applications	—	—	—	—
EMULATION				
Terminals	—	Any system using 8-bit full duplex communications	IBM 3278, 3279, 3274, 3276	IBM 3770 RJE
Functions	—	—	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Function keys, host printer emulation, print to disk
Concurrent Sessions	1	1	1	1
Physical Connection	—	—	RS-232-C	RS-232-C
Access to Micro OS During Host Session	—	—	Yes	Yes
FEATURES				
File Transfer	—	—	Upload, download; host formats: Standard IBM	Upload, download; host formats: Standard IBM
Code Conversion	—	—	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	—	—	—	—
Programmability	Unattended execution	—	—	—
TRANSMISSION				
Mode	—	Asynchronous	Synchronous	Synchronous
Speed (bps)	—	19.2K	19.2K	19.2K
SECURITY	Single-level password	—	—	—
PRICING AND AVAILABILITY				
Price ($)	Standalone hardware: $4,000 to $15,000	Micro software: $250; host software: $5,500	Micro software: $200 per node	Micro software: $200 per node
Site Licensing Available	—	—	Yes	Yes
Warranty	—	60-day	6 months	6 months
Maintenance Contract	—	—	Yes	Yes
Date of First Delivery	—	May 1981	June 1984	June 1983
Number Installed	5,000	15,000	—	—
DISTRIBUTION	Distributors, dealers, retailers, OEMs, VARs	Distributors, dealers, retailers		

Integrating Micros in the Mainframe Environment

Vendor Name	Communications Solutions, Inc.	Communications Solutions, Inc.	Communications Solutions, Inc.	Communications Solutions, Inc.
Model	Access/SNA 3270	Access/SNA APPC	Access/DIA	Access/SNADS
FUNCTION	Remote terminal emulation, network gateway	Network gateway	Network gateway	Network gateway
Configuration	Single user, multiuser	Single user, multiuser	Single user	Single user
COMPONENTS	Micro software	Micro software	Micro software	Micro software
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT, Unix systems	IBM PC/XT/AT, Unix systems	IBM PC/XT/AT, Unix systems	IBM PC/XT/AT, Unix systems
Operating Environment	MS-/PC-DOS, Unix 3.0, Unix 5.0, Xenix	MS-/PC-DOS, Unix 3.0, Unix 5.0, Xenix	MS-/PC-DOS, Unix 3.0, Unix 5.0, Xenix	MS-/PC-DOS, Unix 3.0, Unix 5.0, Xenix
Configuration	192KB, SDLC adapter card	256KB, SDLC adapter card	128KB	192KB
Network Compatibility	Arcnet, Ethernet, IBM NETBIOS, Novell NetWare,	Arcnet, Ethernet, IBM NETBIOS, Novell NetWare	Arcnet, Ethernet, IBM NETBIOS, Novell NetWare	Arcnet, Ethernet, IBM NETBIOS, Novell NetWare
HOST INTERFACE System	IBM 43XX/30XX	IBM 43XX/30XX, System/3X, Unisys, Unix-based hosts	IBM 43XX/30XX, System/3X, Unisys, Unix-based hosts	IBM 43XX/30XX, System/3X, Unisys, Unix-based hosts
Operating Environment	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP	IBM CICS	IBM DOS, OS/VS, MVS, CICS	IBM DOS, OS/VS, MVS, CICS
Protocol Support	SNA, SDLC	SNA, SDLC	SNA, SDLC	SNA, SDLC
Connection	Front-end proc.	Front-end proc., comm port	Front-end proc., comm port	Front-end proc., comm port
Applications	—	—	—	—
EMULATION Terminals	IBM 3278, 3279, 3274, 3276	APPC LU 6.2	Document Interchange Architecture	SNA Distribution Services
Functions	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	—	—	—
Concurrent Sessions	6	To LU 6.2 definition	1	IBM SNADS definition
Physical Connection	RS-232-C	RS-232-C, Token-Ring	RS-232-C, Token-Ring	RS-232-C
Access to Micro OS During Host Session	Yes	No	No	No
FEATURES File Transfer	Upload, download; host	Upload, download; host formats: Standard IBM	Upload, download; host formats: DCA	Upload, download; host formats: Standard IBM
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	—	ASCII to EBCDIC
API Compatibility	IBM LU 2.1, proprietary	IBM LU 6.2	—	—
Programmability	—	Scripted parameters, calls to languages, calls to other script languages	Scripted parameters, calls to languages, calls to other script languages	Scripted parameters, calls to languages, calls to other script languages
TRANSMISSION Mode	Synchronous	Synchronous	Synchronous	Synchronous
Speed (bps)	19.2K	19.2K	19.2K	19.2K
SECURITY	—	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro software: $200 per node	Micro software: $200 per node	Micro software: $200 per node	Micro software: $350 to $400 per node
Site Licensing Available	Yes	Yes	Yes	Yes
Warranty	6 months	6 months	6 months	6 month
Maintenance Contract	Yes	Yes	Yes	Yes
Date of First Delivery	August 1982	August 1985	August 1985	March 1987
Number Installed	—	—	—	—
DISTRIBUTION				

Integrating Micros in the Mainframe Environment

Vendor Name	Computer Associates International, Inc.	Computer Corporation of America	Comshare, Inc.	Convergent
Model	Smart Link	PC/204	W/Information Gateway	Cluster Systems-The NGEN Family
FUNCTION	Local terminal emulation, remote terminal emulation, host application link	Remote terminal emulation, host application link	Local terminal emulation, remote terminal emulation, host application link, host resource link	Local terminal emulation, network gateway, host application link, host resource link
Configuration	Single user	Single user	Single user, multiuser	Single user, multiuser
COMPONENTS	Micro software, standalone hardware, host software/hardware	Micro software/hardware	Micro software, host software/hardware	Micro software/hardware, standalone hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT, 3270 PC	IBM PC/XT/AT, NGEN family
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	512KB, DCA IRMA or IBM 5520 adapter card	192KB, diskette drive	512KB, 1MB	256KB, 10MB hard disk
Network Compatibility	—	—	IBM NETBIOS	Arcnet, Ethernet, IBM NETBIOS, CT-NET
HOST INTERFACE System	IBM 43XX/30XX, System/3X	IBM 43XX/30XX	IBM 43XX/30XX, DEC VAX	IBM System/3X, Unisys, Unix-based hosts
Operating Environment	IBM DOS, OS/VS, CICS	IBM DOS, OS/VS, MVS, VM	IBM TSO, CMS, DEC VAX/VMS	IBM DOS, TSO, CICS
Protocol Support	BSC, SNA	Proprietary	BSC, SNA, SDLC	BSC, SNA, HDLC, SDLC, HASP
Connection	Controller, comm port	—	Controller, comm port	Controller, comm port
Applications	Accounting application access: CA/SI General Ledger	—	Calls to host programs, DBMS access: pipelines to VSAM, DB2, IDMS, SQL, TOTAL, CMS	—
EMULATION Terminals	IBM 3278, 3279, 3276, 5251	IBM 3270	TTY, DEC VT52/100, IBM 3101, 3278	TTY, IBM 3278, 3279, 3274, 3276, 2780/3780
Functions	Color display, function keys	Function keys	Color display, function keys, user definable kybd.	Color/graphics display, function keys, character attributes, windowing, user
Concurrent Sessions	1	1	Dependent on host	8
Physical Connection	Twinax, coax	RS-232-C	Coax, RS-232-C	Coax, RS-232-C, RS-422, telephone wire
Access to Micro OS During Host Session	No	—	Yes	Yes
FEATURES File Transfer	Upload, download; host formats: SI General Ledger; micro formats: DIF, PRN	Upload, download	Upload, download; host formats: print files	Upload, download
Code Conversion	ASCII to EBCDIC	—	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	IBM LU 2.1, DCA IRMA	DCA IRMA	DCA IRMA	IBM LU 6.2
Programmability	Scripted parameters	—	Script language, scripted parameters, unattended	Unattended execution, calls to languages
TRANSMISSION Mode	Synchronous	Synchronous	Asynchronous, synchronous	Asynchronous, synchronous
Speed (bps)	Dependent on modem	300, 600, 1200, 2400, 4800, 9600	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K
SECURITY	Through host application	Single-level password	Single-level password, multilevel password	Single-level password, multilevel password
PRICING AND AVAILABILITY Price ($)	Information available upon request	Host software: $10,000; microcomputer software: $500 per copy	Micro software: $450; host software: $900 and up depending on machine size	Micro software: $1,200; micro hardware: $750; host hardware/software: $2,000
Site Licensing Available	Yes	Yes	No	Yes
Warranty	1 year	Full coverage provided	—	90 days
Maintenance Contract	Yes	Yes	Yes	Yes
Date of First Delivery	May 1984	August 1984	July 1985	December 1981
Number Installed	600	—	2,500	50,000
DISTRIBUTION	Direct from vendor	Direct from vendor	Direct from vendor	Distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Cullinet Software, Inc.	Cullinet Software, Inc.	CXI, Inc.	CXI, Inc.
Model	Goldengate	Infogate	PCOX/Gateway COAX	PCOX/Gateway-16
FUNCTION	Local terminal emulation, remote terminal emulation, host application link, host resource link	Local terminal emulation, remote terminal emulation, host application link, host resource link	Network gateway	Network gateway
Configuration	Single user	Single user, multiuser	Single user	Single user
COMPONENTS	Micro software	Micro software	Micro software/hardware	Micro software/hardware
MICROCOMPUTER SUPPORT				
Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	384KB, 2.5MB hard disk	384KB, 1.8MB hard disk	256KB	256KB
Network Compatibility	IBM NETBIOS, Novell NetWare	IBM NETBIOS, Novell NetWare	Arcnet, Ethernet, IBM NETBIOS, Novell NetWare, Corvus Omninet	Arcnet, Ethernet, IBM NETBIOS, Novell NetWare, Corvus Omninet
HOST INTERFACE				
System	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	IBM DOS, OS/VS, MVS, VM, TSO, CMS, CICS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, CICS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS
Protocol Support	BSC, SNA, SDLC, asynchronous	BSC, SNA, SDLC, asynchronous	SNA	SNA, SDLC
Connection	Front-end proc., controller, comm port	Front-end proc., controller, comm port	Controller	Comm port
Applications	Virtual drives on host, calls to host programs, DBMS access: IDMSIR, VSAM, IMS, TOTAL, others via EXTRACT	Virtual drives on host, calls to host programs, DBMS access: IDMS/R, VSAM, IMS, TOTAL, others via EXTRACT	—	—
EMULATION				
Terminals	TTY, DEC VT52/100, IBM 3278, 3279, 3274, 3276	TTY, DEC VT52/100, IBM 3278, 3279, 3274, 3276	IBM 3278, 3279	IBM 3278, 3279, 3274, 3276
Functions	Color/graphics display, function keys, user definable kybd.	Color/graphics display, function keys, user definable kybd.	Color/graphics display, function keys, windowing, user definable kybd., host printer emulation	Color/graphics display, function keys, windowing, user definable kybd., host printer emulation, print to disk
Concurrent Sessions	1	1	5	16
Physical Connection	Coax, fiber optic, RS-232-C	Coax, fiber optic, RS-232-C	Coax	—
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES				
File Transfer	Upload, download; host formats: IDMS/R, VSAM; micro formats: Goldengate, WKS, DIF	Upload, download; host formats: IDMS/R, VSAM; micro formats: Goldengate, WKS, DIF	Upload, download	Upload, download
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	IBM LU 2.1	IBM LU 2.1	PCOX	IBM LU 2.1
Programmability	Script language, scripted parameters, unattended execution, calls to languages, calls to other script languages	Script language, scripted parameters, unattended execution, calls to other script languages	—	Calls to languages
TRANSMISSION				
Mode	Asynchronous, synchronous	Asynchronous, synchronous	Synchronous	Synchronous
Speed (bps)	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	Direct connect	19.2K
SECURITY	Single-level password, multilevel password	Single-level password, multilevel password	—	—
PRICING AND AVAILABILITY				
Price ($)	Micro software: $695; host software: $75,000	Micro software: $300; host software: $75,000	Micro hardware and software: $2,995	Micro hardware and software: $2,595
Site Licensing Available	Yes	Yes	Yes	—
Warranty	90 days	90 days	1 year	1 year
Maintenance Contract	—	—	—	—
Date of First Delivery	October 1984	January 1986	March 1986	—
Number Installed	18,000	3,000	—	—
DISTRIBUTION	Direct from vendor	Direct from vendor	Distributors, dealers, retailers, OEMs, VARs	Distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	CXI, Inc.	CXI, Inc.	CXI, Inc.	CXI, Inc.
Model	PCOX/Gateway-5250	PCOX/Gateway-64	PCOX/Graphics	PCOX/Multi-APA
FUNCTION	Remote terminal emulation, network gateway	Network gateway	Local terminal emulation	Local terminal emulation, remote terminal emulation
Configuration	Multiuser	Single user	Single user	Single user
COMPONENTS	Micro hardware	Micro software/hardware	Micro software/hardware	Micro software
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	512KB	256KB	50KB	425KB
Network Compatibility	Arcnet, Ethernet, IBM NETBIOS, Novell NetWare, Corvus Omninet	Arcnet, Ethernet, IBM NETBIOS, Novell NetWare, Corvus Omninet	IBM NETBIOS	IBM NETBIOS
HOST INTERFACE System	IBM System/3X	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	IBM SSP	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP
Protocol Support	SNA	SNA, SDLC	SNA	SNA
Connection	Comm port	Comm port	Controller	Controller
Applications	Virtual drives on host	—	Virtual drives on host	—
EMULATION Terminals	IBM 5251, 5294	IBM 3278, 3279, 3274, 3276	IBM 3278, 3279, 3276	3179G
Functions	Function keys, character attributes, host printer emulation, print to disk	Color/graphics display, function keys, windowing, user definable kybd., host printer emulation, print to disk	Color/graphics display, function keys, print to disk	Graphics display, function keys, user definable kybd., print to disk
Concurrent Sessions	5	64	2	5 host sessions, 2 notepads
Physical Connection	RS-232-C	RS-232-C	Coax	Coax
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES File Transfer	Upload, download; host formats: sequential, binary; micro formats: DIF, WKS, DBF	Upload, download	Upload, download	Upload, download
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC	—
API Compatibility	IBM LU 2.1	—	IBM LU 2.1, PCOX	IBM LU 2.1, DCA IRMA, PCOX
Programmability	Script language	Calls to languages	Calls to languages	Calls to languages
TRANSMISSION Mode	Synchronous	Synchronous	Synchronous	Synchronous
Speed (bps)	9600	19.2K	Direct connect coax	—
SECURITY	Single-level password, session lock	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro hardware and software: $1,725	Micro hardware and software: $4,595	Micro hardware and software: $1,995	Micro software: $595
Site Licensing Available	—	Yes	—	—
Warranty	1 year	1 year	1 year	1 year
Maintenance Contract	—	—	—	—
Date of First Delivery	January 1987	June 1987	—	May 1987
Number Installed	—	—	—	—
DISTRIBUTION	Distributors, dealers, retailers, OEMs, VARs	Distributors, dealers, retailers, OEMs, VARs	Distributors, dealers, retailers, OEMs, VARs	Distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	CXI, Inc.	CXI, Inc.	CXI, Inc.	CXI, Inc.
Model	PCOX/One-APA	PCOX/Plus	PCOX/Plus Remote	PCOX/Standard
FUNCTION	Local terminal emulation, remote terminal emulation	Local terminal emulation	Remote terminal emulation	Local terminal emulation
Configuration	Single user	Single user	Single user	Single user
COMPONENTS	Micro software	Micro software/hardware	Micro software/hardware	Micro software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	355KB	57KB	170KB	50KB
Network Compatibility	—	IBM NETBIOS	IBM NETBIOS	IBM NETBIOS
HOST INTERFACE System	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP, DEC TOPS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP, DEC TOPS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP
Protocol Support	SNA	SNA	BSC, SNA, SDLC	SNA
Connection	Controller	Controller	Comm port	Controller
Applications	—	—	—	—
EMULATION Terminals	3179G	IBM 3278, 3279, 3276, 3179G	IBM 3278, 3279, 3274, 3276	IBM 3278, 3279, 3276
Functions	Graphics display, function keys, user definable kybd., print to disk	Color display, function keys, character attributes, windowing	Host printer emulation	Color display, function keys, character attributes
Concurrent Sessions	2	2	1 host session, 2 notepads	2
Physical Connection	Coax	Coax	RS-232-C	Coax
Access to Micro OS During Host Session	Yes	Yes	—	Yes
FEATURES File Transfer	Upload, download	Upload, download	Upload, download	Upload, download
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	—	ASCII to EBCDIC
API Compatibility	IBM LU 2.1, PCOX	IBM LU 2.1, DCA IRMA, PCOX	IBM LU 2.1, DCA IRMA, PCOX	DCA IRMA, PCOX
Programmability	Calls to languages	Calls to languages	Calls to languages	Calls to languages
TRANSMISSION Mode	Synchronous	Synchronous	Synchronous	Synchronous
Speed (bps)	Direct connect	Direct connect coax	19.2K	Direct connect
SECURITY	—	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro software: $395	Micro hardware and software: $1,145	Micro hardware and software: $895	Micro hardware and software: $895
Site Licensing Available	—	Yes	Yes	Yes
Warranty	1 year	1 year	1 year	1 year
Maintenance Contract	—	—	—	No
Date of First Delivery	—	April 1983	August 1983	April 1983
Number Installed	—	—	—	—
DISTRIBUTION	Distributors, dealers, retailers, OEMs, VARs	Distributors, dealers, retailers, OEMs, VARs	Distributors, dealers, retailers, OEMs, VARs	Distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	CXI, Inc.	CXI, Inc.	CXI, Inc.	CXI, Inc.
Model	PCOX/3270 PC	PCOX/3270 Remote	PCOX/3270 Upgrade for IRMA	PCOX/5250 Remote
FUNCTION	Local terminal emulation	Remote terminal emulation	Local terminal emulation	Remote terminal emulation
Configuration	Single user	Single user	Single user	Single user
COMPONENTS	Micro software/hardware	Micro software/hardware	—	Micro software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	170KB	170KB	170KB	512KB
Network Compatibility	IBM NETBIOS	IBM NETBIOS	IBM NETBIOS	NETBIOS compatible
HOST INTERFACE System	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX	IBM System/3X
Operating Environment	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP	IBM SSP
Protocol Support	SNA	BSC, SNA, SDLC	BSC, SNA	SNA
Connection	Controller	Comm port	Controller	Comm port
Applications	—	—	—	IBM 5250 API
EMULATION Terminals	IBM 3278, 3279, 3276	IBM 3278, 3279, 3274, 3276	IBM 3278, 3279, 3276	IBM 5251, 5294
Functions	Color display, function keys, windowing, host printer emulation	Color display, function keys, character attributes, windowing, user definable	Host printer emulation	Color display, function keys, character attributes, host printer emulation
Concurrent Sessions	5 host sessions; 2 notepads	6	5 host, 2 notepads	9
Physical Connection	Coax	RS-232-C	Coax	RS-232-C
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES File Transfer	Upload, download	Upload, download	Upload, download	Upload, download; host formats: sequential; micro formats: DIF, WKS, WRK
Code Conversion	ASCII to EBCDIC	—	—	ASCII to EBCDIC
API Compatibility	IBM LU 2.1, PCOX	IBM LU 2.1, PCOX	IBM LU 2.1, DCA IRMA, PCOX/API, All API	IBM LU 2.1
Programmability	Calls to languages	—	Calls to languages	Script language
TRANSMISSION Mode	Synchronous	Synchronous	Synchronous	Synchronous
Speed (bps)	Direct connect coax	19.2K	Direct connect coax	9600
SECURITY	—	—	—	Single-level password, session lock
PRICING AND AVAILABILITY Price ($)	Micro hardware and software: $1,290	Micro hardware and software: $1,190	Contact vendor	Micro hardware and software: $645
Site Licensing Available	—	Yes	Yes	—
Warranty	1 year	1 year	1 year	1 year
Maintenance Contract	—	—	—	—
Date of First Delivery	August 1983	August 1983	August 1984	September 1986
Number Installed				
DISTRIBUTION	Distributors, dealers, retailers, OEMs, VARs	Distributors, dealers, retailers, OEMs, VARs	Distributors, dealers, retailers, OEMs, VARs	Distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	CXI, Inc.	Datability Software Systems, Inc.	Datalex, Inc.	Digital Communications Associates, Inc.
Model	PCOX/5251 Twinax	RAF Remote Access Facility	Passport	IRMA
FUNCTION	Local terminal emulation	Remote terminal emulation, network gateway, host resource link	Local terminal emulation, remote terminal emulation, host resource link	Local terminal emulation, remote terminal emulation
Configuration	Single user	Single user	Single user	Single user
COMPONENTS	Micro software/hardware	Micro software, host software/hardware	Micro software, host software/hardware	Micro software/hardware, host software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT, DEC Rainbow	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	256KB	60KB, diskette drive	256KB, diskette drive	128KB, diskette drive
Network Compatibility	—	Ethernet	—	—
HOST INTERFACE System	IBM System/3X	DEC VAX, DECsystem	IBM 43XX/30XX, System/3X, DEC VAX, Hewlett-Packard hosts	IBM 43XX/30XX
Operating Environment	IBM SSP	DEC TOPS, VAX/VMS	IBM MVS, VM, TSO, SSP, DEC VAX/VMS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP
Protocol Support	—	LAT compatible	TSO, CMS	BSC, SNA, SDLC
Connection	Controller	Comm port	Comm port	Channel adapter, controller
Applications	Virtual drives on host	Virtual drives on host, calls to host programs, DBMS access: Oracle, System 1032, System 1022, ROB	Calls to host programs	—
EMULATION Terminals	—	TTY, DEC VT52/100/220	TTY	IBM 3278, 3279
Functions	Color display, function keys, character attributes, host printer emulation, print to disk	Color display, function keys, user definable kybd., host printer emulation, print to disk	Print to disk	Color display, function keys, character attributes, user definable kybd., print to disk
Concurrent Sessions Physical Connection	7 Twinax	1 RS-232-C, Ethernet transceiver, thin-wire RG58U	1 RS-232-C	1 Coax
Access to Micro OS During Host Session	Yes	Yes	No	Yes
FEATURES File Transfer	Upload, download; host formats: sequential; micro formats: WRK, dBase, WKS	Upload, download; host formats: Standard RMS	Upload, download; host formats: sequential	Upload, download
Code Conversion API Compatibility	ASCII to EBCDIC IBM LU 2.1	— Full remote procedure call	— —	ASCII to EBCDIC DCA IRMA
Programmability	Script language, scripted parameters	Script language, scripted parameters, unattended execution, calls to languages, calls to other script languages	Script language, scripted parameters, unattended execution	—
TRANSMISSION Mode Speed (bps)	Synchronous 1M	Asynchronous 300 to 38K	Asynchronous 300, 600, 1200, 2400, 4800, 9600	Synchronous 2.4M
SECURITY	Single-level password, session lock	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro hardware and software: $795	Micro software: $395; host software: $2,500 to $25,000	Micro software: $250; host software: $2,000	Micro hardware and software: $1,195
Site Licensing Available Warranty	— 1 year	Yes 90 days	No 90 days	No 1 year
Maintenance Contract Date of First Delivery Number Installed	— April 1986 —	Yes April 1986 4,000	Yes October 1981 —	No November 1982 400,000
DISTRIBUTION	Distributors, dealers, retailers, OEMs, VARs	Direct from vendor	Direct from vendor, mail order, OEMs, VARs	Distributors, dealers, retailers

Integrating Micros in the Mainframe Environment

Vendor Name	Digital Communications Associates, Inc.	Digital Communications Associates, Inc.	Digital Communications Associates, Inc.	Digital Communications Associates, Inc.
Model	IRMACOM	IRMALAN DFT Gateway	IRMALAN SDLC Gateway	Smart Alec
FUNCTION	Remote terminal emulation	Network gateway	Network gateway	Local terminal emulation
Configuration	Single user	Multiuser	Multiuser	Single user
COMPONENTS	Micro software/hardware, host software/hardware	Micro software/hardware	Micro software/hardware	Micro software/hardware, host software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	256KB	320KB	320KB	256KB, diskette drive
Network Compatibility	—	Arcnet, IBM NETBIOS, Novell NetWare, Corvus Omninet, 3Com networks	Arcnet, Ethernet, IBM NETBIOS, Novell NetWare,	—
HOST INTERFACE System	IBM 43XX/30XX	—	IBM 43XX/30XX	IBM System/3X
Operating Environment	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS	IBM SSP, CPF
Protocol Support	BSC, SNA, SDLC	SNA	SNA, SDLC	—
Connection	Front-end proc., comm port	Controller	Front-end proc.	Channel adapter
Applications	—	—	—	Virtual drives on host
EMULATION Terminals	IBM 3278, 3279, 3274, 3276, 2780/3780	IBM 3278, 3279	IBM 3278, 3279	IBM 5251
Functions	Color/graphics display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Color/graphics display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Color/graphics display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Color/graphics display, function keys, host printer emulation
Concurrent Sessions	5	5	5	1
Physical Connection	RS-232-C	Coax	RS-232-C	Twinax
Access to Micro OS During Host Session	Yes	Yes	Yes	—
FEATURES File Transfer	Upload, download	Upload, download	Upload, download	Upload, download
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	DCA IRMA	IBM LU 2.1, DCA IRMA	IBM LU 2.1, DCA IRMA	IBM LU 2.1
Programmability	Calls to languages	—	Script language, calls to languages	—
TRANSMISSION Mode	Synchronous	Synchronous	Synchronous	—
Speed (bps)	1200, 2400, 4800, 9600	2.4M	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	—
SECURITY	—	Single-level password	Single-level password	Single-level password
PRICING AND AVAILABILITY Price ($)	Contact vendor	Micro hardware and software: $1,195	Micro hardware and software: $1,195	Micro hardware and software: $895
Site Licensing Available	—	No	No	—
Warranty	1 year	1 year	1 year	1 year
Maintenance Contract	No	No	No	No
Date of First Delivery	—	October 1986	October 1986	—
Number Installed	—	—	—	—
DISTRIBUTION	Distributors, dealers, retailers	Distributors, dealers, retailers	Distributors, dealers, retailers	Distributors, dealers, retailers

Integrating Micros in the Mainframe Environment

Vendor Name	Digital Equipment Corp.	Direct Aid	Diversified Computer Systems	Diversified Computer Systems
Model	DECnet-DOS	The Impersonator	EM220	EM4010
FUNCTION	Local terminal emulation, remote terminal emulation, network gateway	Remote terminal emulation	Local terminal emulation, host application link	Local terminal emulation
Configuration	Single user	Single user	Single user	Single user
COMPONENTS	Micro software	Micro software	Micro software	Micro software
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT, Digital VAXmate, Rainbow	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	384KB, 10M-bps Ethernet (Micom Interlan)	256KB	128KB, diskette drive	256KB, diskette drive
Network Compatibility	Ethernet	IBM NETBIOS	Corvus Omninet, Ungermann-Bass Net/One	Corvus Omninet, Ungermann-Bass Net/One
HOST INTERFACE System	DEC VAX, DECsystem, PDP-11	DG, DEC VAX	DEC VAX, DECsystem, Unix-based hosts	DEC VAX, DECsystem, Unix-based hosts
Operating Environment	DEC TOPS, VAX/VMS, RSX	—	DEC TOPS, VAX/VMS, Honeywell GCOS	DEC TOPS, VAX/VMS
Protocol Support	Ethernet, DDCMP	—	—	—
Connection	Controller, comm port	—	Comm port	Comm port
Applications	Virtual drives on host, calls to host programs, peer-to-peer application	—	—	—
EMULATION Terminals	DEC VT52/100/220/240	TTY, Televideo 950, 912, 931, IBM 3101, DEC VT52/100, DG Dasher, Hazeltime, NCR 7900, Lear-Siegler ADM3A	DEC VT220	DEC VT220, Tektronix 4014
Functions	Color/graphics display, windowing	Color display, function keys, character attributes, windowing, user definable kybd., host printer emulation, print to disk	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Color/graphics display, function keys, character attributes, user definable kybd., host printer emulation, print to disk
Concurrent Sessions	1 per PC	1	1	1
Physical Connection	Coax, RS-232-C	RS-232-C	RS-232-C	RS-232-C
Access to Micro OS During Host Session	Yes	No	—	Yes
FEATURES File Transfer	Upload, download; host formats: RMS	Upload, download	Upload, download	Upload, download
Code Conversion	—	—	—	—
API Compatibility	—	—	—	—
Programmability	—	Scripted parameters, unattended execution, calls to languages	Script keys	Script keys
TRANSMISSION Mode	Synchronous	Asynchronous	Asynchronous	Asynchronous
Speed (bps)	10M bps on Ethernet	300, 1200, 2400, 4800, 9600	300, 600, 1200, 2400, 4800, 9600, 19.2K	300, 600, 1200, 2400, 4800, 9600, 19.2K
SECURITY	Single-level password	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro software: $500; host software requires quote	Micro software: $175	Micro software: $169	Micro software: $249
Site Licensing Available	—	Yes	Yes	Yes
Warranty	90 days	90 days	90 days	90 days
Maintenance Contract	Yes	No	—	—
Date of First Delivery	May 1985	January 1983	October 1984	November 1985
Number Installed	—	2,000	6,000	3,000
DISTRIBUTION	Direct from vendor	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Diversified Computer Systems	Dynamic Microprocessor Associates	Emulex Corporation	Emulex Corporation
Model	EM4105	Formula IV	Emulex/Persyst Coax/3270	Emulex/Persyst PC/3780
FUNCTION	Local terminal emulation, remote terminal emulation	Host resource link	Local terminal emulation, remote terminal emulation	Remote terminal emulation
Configuration	Single user	Multiuser	Single user	Multiuser
COMPONENTS	Micro software	Micro software	Micro software/hardware	Micro software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	350KB, diskette drive	256KB	128KB, diskette drive	128KB, diskette drive
Network Compatibility	Corvus Omninet, Ungermann-Bass Net/One	Novell NetWare	—	—
HOST INTERFACE System	DEC VAX, DECsystem, Unix-based hosts	IBM 43XX/30XX, System/3X	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	DEC TOPS, VAX/VMS	IBM DOS, SSP	IBM TSO, CMS	—
Protocol Support	—	—	SNA, SDLC	BSC
Connection	Comm port	—	Front-end proc., controller	Comm port
Applications	—	—	—	—
EMULATION Terminals	DEC VT220, Tektronix 4105	—	IBM 3278, 3279	IBM 2780/3780
Functions	Color/graphics display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	—	Color/graphics display, user definable kybd.	Function keys
Concurrent Sessions	1	1	1	1
Physical Connection	RS-232-C	—	Coax, RS-232-C	RS-232-C
Access to Micro OS During Host Session	Yes	—	—	—
FEATURES File Transfer	Upload, download	Upload, download	Upload, download	Upload, download
Code Conversion	—	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	—	IBM LU 2.1	—	—
Programmability	Script language	—	—	—
TRANSMISSION Mode	Asynchronous	Asynchronous	—	Synchronous
Speed (bps)	300, 600, 1200, 2400, 4800, 9600, 19.2K	9600	2.35K	9600, 19.2K
SECURITY	—	Multilevel password	—	—
PRICING AND AVAILABILITY Price ($)	Micro software: $349	Micro software: $695	Micro hardware and software: $995	Micro hardware (DCP/88 Communications Coprocessor card): $1,050
Site Licensing Available	Yes	—	—	Yes
Warranty	90 days	—	90 days	90 days
Maintenance Contract	—	—	—	No
Date of First Delivery	June 1987	—	July 1984	June 1983
Number Installed	—	—	2,000	—
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	—	—

Integrating Micros in the Mainframe Environment

Vendor Name	FIG Data Systems	FIG Data Systems	FIG Data Systems	Gateway Microsystems, Inc.
Model	EMU-TEK Five Plus	EMU-TEK Level I	EMU-TEK Level II	MG3270/BSC
FUNCTION	Local terminal emulation, remote terminal emulation	Local terminal emulation	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation
Configuration	Single user	Single user	Single user	Single user
COMPONENTS	Micro software	Micro software	Micro software	Micro software
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	256KB, hard disk	256KB	256KB	256KB
Network Compatibility	—	—	—	—
HOST INTERFACE System	IBM 43XX/30XX, System/3X, DG, DEC VAX, DECsystem, Hewlett-Packard, Honeywell, Unisys, Unix-based hosts	IBM 43XX/30XX, System/3X, DG, DEC VAX, DECsystem, Hewlett-Packard, Honeywell, Unisys, Unix-based hosts	IBM 43XX/30XX, System/3X, DG, DEC VAX, DECsystem, Hewlett-Packard, Honeywell, Unisys, Unix-based hosts	IBM 43XX/30XX, System/3X, DG, DEC VAX, DECsystem, Hewlett-Packard, Honeywell, Unisys hosts
Operating Environment	—	—	—	IBM DOS, MVS, VM, TSO, IMS, CICS
Protocol Support	—	—	—	BSC
Connection	Comm port	Comm port	Comm port	Controller, comm port
Applications	Calls to host programs	Calls to host programs	Calls to host programs	—
EMULATION Terminals	DEC VT52/100, Tektronix 4105	DEC VT52/100, Tektronix 4010	DEC VT52/100, Tektronix 4014VT-640, 4010, 4012	IBM 3278, 3279, 3274, 3276
Functions	Color/graphics display, function keys, user definable kybd., print to disk	Graphics display, function keys, print to disk	Graphics display, function keys, user definable kybd., print to disk	Function keys
Concurrent Sessions Physical Connection	1 RS-232-C	1 RS-232-C	1 RS-232-C	5 RS-232-C
Access to Micro OS During Host Session	No	No	No	Yes
FEATURES File Transfer	Upload, download	Upload, download	Upload, download	—
Code Conversion API Compatibility	— —	— —	— —	— —
Programmability	—	—	—	—
TRANSMISSION Mode Speed (bps)	Asynchronous 300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	Asynchronous 300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	Asynchronous 300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	Synchronous 9600
SECURITY	—	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro software: $495	Micro software: $295	Micro software: $395	
Site Licensing Available Warranty	Yes 30-day money back guarantee	Yes 30-day money back guarantee	Yes 30-day money back guarantee	— —
Maintenance Contract Date of First Delivery Number Installed	Yes August 1983 3,000	Yes August 1983 3,000	Yes August 1983 3,000	— 1983 —
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	

Integrating Micros in the Mainframe Environment

Vendor Name	Gateway Microsystems, Inc.	Gateway Microsystems, Inc.	Gateway Microsystems, Inc.	Grafpoint
Model	MG PCOM/BSC	MG 3270/SNA	MG RJE/BSC	TGRAF-05
FUNCTION	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation
Configuration	Single user	Single user	Single user	Single user
COMPONENTS	Micro software	Micro software	Micro software	Micro software
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	256KB	256KB	256KB	256KB, diskette drive
Network Compatibility	—	—	—	—
HOST INTERFACE System	IBM 43XX/30XX, System/3X, DG, DEC VAX, HP, Honeywell, Unisys hosts	IBM 43XX/30XX, System/3X	IBM 43XX/30XX, System/3X, DG, DEC VAX, HP, Honeywell, Unisys hosts	IBM 43XX/30XX, System/3X, DG, DEC VAX, DECsystem, Hewlett-Packard, Honeywell, Unisys, Unix-based hosts
Operating Environment	IBM DOS, OS/VS, MVS, VM, TSO, IMS, CICS, SSP, DEC VMS, DG AOS, Honeywell	IBM DOS, OS/VS, MVS, VM, TSO, CICS, SSP	IBM DOS, OS/VS, MVS, VM, IMS, CICS, SSP, DEC VMS, DG AOS, Honeywell GCOS	—
Protocol Support	BSC	SNA	BSC	—
Connection	Comm port	Controller, comm port	Comm port	Comm port
Applications	—	—	—	—
EMULATION Terminals	IBM 2780/3780	IBM 3278, 3279, 3276	IBM 2780/3780	DEC VT52/100, Tektronix 4014, 4105
Functions	Function keys, character attributes, user definable kybd., host printer emulation, print to disk	Function keys, character attributes, host printer emulation, print to disk	Function keys, host printer emulation, print to disk	Color/graphics display, function keys, windowing, user definable kybd., print to disk
Concurrent Sessions	1	1	1	1
Physical Connection	RS-232-C	RS-232-C	RS-232-C	RS-232-C
Access to Micro OS During Host Session	—	Yes	—	Yes
FEATURES File Transfer	Upload, download	—	Upload, download	Upload, download
Code Conversion	ASCII to EBCDIC	—	ASCII to EBCDIC	—
API Compatibility	BSC	—	—	—
Programmability	—	—	Script language, scripted parameters, unattended execution	—
TRANSMISSION Mode	Synchronous	Synchronous	Synchronous	Asynchronous
Speed (bps)	9600	9600	9600	19.2K
SECURITY	—	—	—	Proprietary copy protection
PRICING AND AVAILABILITY Price ($)				Micro software: $395
Site Licensing Available	No	No	—	No
Warranty	—	—	—	30-day
Maintenance Contract	—	—	—	No
Date of First Delivery	—	1987	1983	1984
Number Installed	—	—	—	—
DISTRIBUTION				Distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Grafpoint	Grafpoint	Grafpoint	Grafpoint
Model	TGRAF-07	TGRAF-15	TNET	TPort
FUNCTION	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation
Configuration	Single user	Single user	Single user	Single user
COMPONENTS	Micro software	Micro software	Micro software	Micro software
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	256KB, diskette drive	256KB, diskette drive	256KB, diskette drive	256KB, diskette drive
Network Compatibility	—	—	Ethernet, 3Com networks, Ungermann-Bass	—
HOST INTERFACE System	IBM 43XX/30XX, System/3X, DG, DEC VAX, DECsystem, Hewlett-Packard, Honeywell, Unisys, Unix-based hosts	IBM 43XX/30XX, System/3X, DG, DEC VAX, DECsystem, Hewlett-Packard, Honeywell, Unisys, Unix-based hosts	IBM 43XX/30XX, System/3X, DG, DEC VAX, DECsystem, Hewlett-Packard, Honeywell, Unisys, Unix-based hosts	IBM 43XX/30XX, System/3X, DG, DEC VAX, DECsystem, Hewlett-Packard, Honeywell, Unisys, Unix-based hosts
Operating Environment	—	—	—	—
Protocol Support	—	—	—	—
Connection	Comm port	Comm port	Comm port	Comm port
Applications	—	—	—	—
EMULATION Terminals	DEC VT52/100, Tektronix 4014, 4107	DEC VT52/100, Tektronix 4014, 4115	DEC VT52/100, Tektronix 4010, 4014, 4105, 4107, 4115	DEC VT52/100, Tektronix 4010, 4014, 4105, 4107, 4115
Functions	Color/graphics display, function keys, windowing, user definable kybd., print to disk	Color/graphics display, function keys, windowing, user definable kybd., print to disk	Color/graphics display, function keys, windowing, user definable kybd., print to disk	Color/graphics display, function keys, windowing, user definable kybd.
Concurrent Sessions Physical Connection	1 RS-232-C	1 RS-232-C	1 —	1 RS-232-C
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES File Transfer	Upload, download	Upload, download	Upload, download	Upload, download
Code Conversion API Compatibility	— —	— —	— —	— —
Programmability	—	—	—	Script language
TRANSMISSION Mode Speed (bps)	Asynchronous 19.2K	Asynchronous 19.2K	Asynchronous 19.2K	Asynchronous 19.2K
SECURITY	Proprietary copy protection	Proprietary copy protection	Proprietary copy protection	—
PRICING AND AVAILABILITY Price ($)	Micro software: $995	Micro software: $1,995	Microcomputer software: $395 to $1,995	Microcomputer software: $395 to $1,995
Site Licensing Available Warranty	No 30-day	No 30-day	No 30-day	No 30-day
Maintenance Contract Date of First Delivery Number Installed	No 1984 —	No 1984 —	No 1984 7,000	No 1984 7,000
DISTRIBUTION	Distributors, dealers, retailers, OEMs, VARs	Distributors, dealers, retailers, OEMs, VARs	Distributors, dealers, retailers, OEMs, VARs	Distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Hawkeye Grafix, Inc.	Henson Systems Incorporated	Henson Systems Incorporated	Henson Systems Incorporated
Model	COMMX	XE3101	XE7800	XE950
FUNCTION	Local terminal emulation, network gateway	Local terminal emulation, remote terminal emulation, host resource link	Local terminal emulation, remote terminal emulation, host resource link	Local terminal emulation, remote terminal emulation, host resource link
Configuration	Single user	Single user, multiuser	Single user, multiuser	Single user, multiuser
COMPONENTS	Micro software, host software/hardware	Micro software	Micro software	Micro software
MICROCOMPUTER SUPPORT Systems	Apple II series, IBM PC/XT/AT, CP/M-based systems	IBM PC/XT/AT, Wang PC, GRiD, NBI	IBM PC/XT/AT, Wang PC, GRiD, NBI	IBM PC/XT/AT
Operating Environment	Apple ProDOS, MS-/PC-DOS, CP/M-80	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	64KB, diskette drive	128KB, diskette drive	128KB, diskette drive	128KB, diskette drive
Network Compatibility	Ethernet, IBM NETBIOS, Novell NetWare, 3Com networks	—	—	—
HOST INTERFACE System	DG, DEC VAX, DECsystem, Hewlett-Packard hosts	IBM 43XX/30XX, System/3X	Honeywell hosts	IBM 43XX/30XX, DG, DEC VAX, DECsystem, Honeywell, Unix-based hosts
Operating Environment	DEC TOPS, VAX/VMS, DG AOS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP	Honeywell GCOS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP, DEC, DG, Honeywell, Prime
Protocol Support	—	—	—	—
Connection	Comm port	Channel adapter, front-end proc., controller, comm port	Front-end proc., comm port	Comm port
Applications	—	Calls to host programs, OA interface (optional)	Calls to host programs, OA interface (optional)	Calls to host programs
EMULATION Terminals	TTY, Televideo 950, IBM 3101, DEC VT52/100, DG Dasher, HP 2624/45, Wyse 50, Adds	TTY, IBM 3101, 3708	TTY, Honeywell 7200, 7800, 7700	TTY, Televideo 950
Functions	Color/graphics display, function keys, character attributes, windowing, user	Color display, function keys, character attributes, windowing, user definable kybd., print to disk	Color display, function keys, character attributes, windowing, user definable kybd., print to disk	Color display, function keys, character attributes, windowing, user definable kybd., print to disk
Concurrent Sessions Physical Connection	2 RS-232-C	1 RS-232-C	1 RS-232-C	1 RS-232-C
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES File Transfer	Upload, download; host formats: sequential	Upload, download	Upload, download	Upload, download
Code Conversion API Compatibility	ASCII to EBCDIC —	— Proprietary	— Proprietary	— Proprietary
Programmability	Script language, scripted parameters, unattended execution	Script language, scripted parameters, unattended execution, calls to languages, calls to other script languages	Script language, scripted parameters, unattended execution, calls to languages, calls to other script languages	Script language, scripted parameters, unattended execution, calls to languages, calls to other script languages
TRANSMISSION Mode Speed (bps)	Asynchronous 300, 1200, 2400, 4800, 9600, 19.2K	Asynchronous 300, 600, 1200, 2400, 4800, 9600	Asynchronous 300, 600, 1200, 2400, 4800, 9600	Asynchronous 300, 600, 1200, 2400, 4800, 9600
SECURITY	Single-level password, file encryption, transmission encryption	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro software: $99; optional host software: $1,500	Micro software: $79	Micro software: $79	Micro software: $79
Site Licensing Available Warranty	Yes 1 year	Yes —	Yes —	Yes —
Maintenance Contract Date of First Delivery Number Installed	Yes August 1978 20,000	No January 1987 3,500	No January 1987 3,500	No January 1987 3,500
DISTRIBUTION		Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Henson Systems Incorporated	Henson Systems Incorporated	IDEAssociates, Inc.	IDEAssociates, Inc.
Model	CRTXE	XE100	IDEAcomm 5251	IDEAcomm 5251/share
FUNCTION	Local terminal emulation, remote terminal emulation, host resource link	Local terminal emulation, remote terminal emulation, host resource link	Local terminal emulation	Local terminal emulation, remote terminal emulation, network gateway
Configuration	Single user, multiuser	Single user, multiuser	Single user	Multiuser
COMPONENTS	Micro software	Micro software	Micro software/hardware	Micro software
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT, Wang, GRiD, NBI	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	128KB, diskette drive	128KB, diskette drive	128KB, diskette drive	128KB, diskette drive
Network Compatibility	—	—	IDEAcomm 5251/Share	IDEAcomm 5251/Share
HOST INTERFACE System	IBM 43XX/30XX, DG, DEC VAX, DECsystem, HP, Honeywell, Prime	IBM 43XX/30XX, DG, DEC VAX, DECsystem, HP, Honeywell, Unix-based hosts	IBM System/3X	IBM System/3X
Operating Environment	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP, DEC, DG, Honeywell, Prime	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP, DEC, DG, Honeywell	IBM SSP	IBM SSP
Protocol Support	—	—	SSP, CPF	—
Connection	Channel adapter, front-end proc., controller, comm port	Channel adapter, front-end proc., controller, comm port	Comm port	Comm port
Applications	Calls to host programs	Calls to host programs, OA interface (optional)	Virtual drives on host, calls to host programs	Virtual drives on host
EMULATION Terminals	TTY, Televideo 950, IBM 3101, DEC VT52/100, HP terminals, DG Dasher, Honeywell VIP series 7200, 7800	TTY, DEC VT52/100	IBM 5251, 5291, 5292 Model 2	IBM 5251, 5291, 5292 Model 1
Functions	Color display, character attributes, print to disk	Color display, function keys, character attributes, windowing, user definable kybd., print to disk	Color/graphics display, function keys, character attributes, windowing, user definable kybd.	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk
Concurrent Sessions	1	1	4	2
Physical Connection	RS-232-C	RS-232-C	Twinax	RS-232 to PC-based server
Access to Micro OS During Host Session	No	Yes	Yes	—
FEATURES File Transfer	Upload, download	Upload, download	Upload, download	Upload, download
Code Conversion	—	—	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	—	Proprietary	IBM LU 2.1	IBM LU 2.1
Programmability	—	Script language, scripted parameters, unattended execution, calls to languages, calls to other script languages	—	—
TRANSMISSION Mode	Asynchronous	Asynchronous	—	—
Speed (bps)	300, 600, 1200, 2400, 4800, 9600	300, 600, 1200, 2400, 4800, 9600	—	—
SECURITY	—	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro software: $250	Micro software: $79	Micro hardware and software: $895	Micro software: $495
Site Licensing Available	Yes	Yes	—	—
Warranty	—	—	1 year	1 year
Maintenance Contract	No	No	No	—
Date of First Delivery	January 1982	January 1987	—	1986
Number Installed	4,500	3,500	—	—
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Distributors, dealers, retailers	Distributors, dealers, retailers

Integrating Micros in the Mainframe Environment

Vendor Name	IDEAssociates, Inc.	IDEAssociates, Inc.	IDEAssociates, Inc.	Information Builders, Inc.
Model	IDEAcomm 5250/Remote	IDEAcomm 5250/Modem	IDEAcomm 3278	FOCTALK
FUNCTION	Remote terminal emulation	Remote terminal emulation	Local terminal emulation	Local terminal emulation, remote terminal emulation, host application link
Configuration	Single user	Single user	Single user	Single user
COMPONENTS	Micro software/hardware	Micro software/hardware	Micro software/hardware	Micro software, host software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	128KB, diskette drive	128KB, diskette drive	128KB, diskette drive	512KB, diskette drive
Network Compatibility	—	—	—	Ethernet, IBM NETBIOS, Novell NetWare, 3Com networks
HOST INTERFACE System	IBM System/3X	IBM System/3X	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	IBM SSP	IBM SSP	IBM MVS, VM, TSO, CMS, IMS, CICS	IBM MVS, VM, TSO, CMS, CICS, DEC VAX/VMS
Protocol Support	SNA, SDLC	SNA, SDLC	SNA, SDLC	BSC, SNA, SDLC
Connection	Comm port	Comm port	Controller	Controller, comm port
Applications	Virtual drives on host	Virtual drives on host	Virtual drives on host, calls to host programs	DBMS access: all external files and databases accessed by FOCUS
EMULATION Terminals	IBM 5251 Model 12, 5294	IBM 5251 Model 12, 5294	IBM 3278, 3279	
Functions	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Color display, character attributes, user definable kybd., print to disk	Color display, windowing
Concurrent Sessions	9	9	1	1
Physical Connection	RS-232-C	RS-232-C	Coax	Coax, RS-232-C
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES File Transfer	Upload, download	Upload, download	Upload, download	Upload, download; micro formats: DIF, ASCII, PRN, SYLK, WP
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	IBM LU 2.1	IBM LU 2.1	IBM LU 2.1, DCA IRMA	—
Programmability	—	—	—	—
TRANSMISSION Mode	Synchronous	Synchronous	Synchronous	Asynchronous, synchronous
Speed (bps)	2400, 4800, 9600	2400, 4800, 9600	2400, 4800, 9600	300, 1200, 2400, 4800, 9600
SECURITY	—	—	Single-level password	Multilevel password, file encryption
PRICING AND AVAILABILITY Price ($)	Micro software: $795	Micro software: $695	Micro hardware and software: $995	Host software (PC Data export): $5,500 purchase; $175 monthly license
Site Licensing Available	—	—	—	—
Warranty	1 year	1 year	1 year	90 days
Maintenance Contract	No	No	No	No
Date of First Delivery	—	—	—	1985
Number Installed	—	—	—	1,000
DISTRIBUTION	Distributors, dealers, retailers	Distributors, dealers, retailers	Distributors, dealers, retailers	

Integrating Micros in the Mainframe Environment

Vendor Name	Innovative Electronics, Inc.	Integrated Network Systems, Inc. d/b/a INS Corp.	Integrated Network Systems, Inc. INS Corp.	Integrated Network Systems, Inc. d/b/a INS Corp.
Model	Netmaster System	INS SDLC PC Adapter	INS SDLC Gateway PC Adapter	INS 8100 Gateway PC Adapter
FUNCTION	Remote terminal emulation, host application link	Remote terminal emulation	Remote terminal emulation, network gateway	Local terminal emulation, network gateway
Configuration	Single user	Single user	Multiuser	Multiuser
COMPONENTS	Micro software/hardware, host software/hardware	Micro software/hardware	Micro software/hardware	Micro software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	640KB diskette, 30MB hard disk	128KB, diskette, synchronous modem	256KB, diskette, synchronous modem	256KB, diskette, synchronous modem
Network Compatibility	IBM NETBIOS	—	IBM NETBIOS	IBM NETBIOS
HOST INTERFACE System	IBM 43XX/30XX	IBM 43XX/30XX, SNA/SDLC 3270	IBM 43XX/30XX, Any IBM or compatible	IBM 43XX/30XX, 8100
Operating Environment	IBM CICS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, DPCX, DPPX
Protocol Support	SNA	SNA, SDLC	SNA, SDLC	SNA, SDLC
Connection	Front-end proc., comm port	Front-end proc., comm port	Front-end proc., comm port	Channel adapter
Applications	Store ISP Control	Virtual drives on host, DBMS access: Cullinet		Virtual drives on host
EMULATION Terminals	IBM 3278, IBM 3274	IBM 3278, 3279, 3274	IBM 3278, 3279, 3274	IBM 3278, 3279, 3274
Functions	Color display, function keys, character attributes, user definable kybd., host printer emulation	Color display, function keys, windowing, user definable kybd.	Color display, function keys, windowing, user definable Kybd.	Color display, function keys, windowing, user definable Kybd.
Concurrent Sessions Physical Connection	2 RS-232-C	2 host, 1 printer RS-232-C	2 terminal, 1 printer RS-232-C	2 terminal, 1 printer —
Access to Micro OS During Host Session	No	Yes	Yes	Yes
FEATURES File Transfer	Upload, download; host formats: VSAM, sequential	Upload, download; host formats: fixed, variable, undefined	Upload, download; host formats: fixed, variable	Upload, download; host formats: fixed, variable, undefined
Code Conversion API Compatibility	ASCII to EBCDIC —	ASCII to EBCDIC Proprietary	ASCII to EBCDIC Proprietary	ASCII to EBCDIC Proprietary
Programmability	—	Script language, unattended execution	Script language, unattended execution	Script language, unattended execution
TRANSMISSION Mode Speed (bps)	Synchronous 1200, 2400, 4800, 9600	Synchronous 19.2K	Synchronous 19.2K	Synchronous 19.2K
SECURITY	Password for code files	—	—	—
PRICING AND AVAILABILITY Price ($)	Contact vendor	Micro hardware and software: $995	Micro hardware and software: $1,995	Contact vendor
Site Licensing Available Warranty	— 90 days	— 5 years	— 5 years	— 5 years
Maintenance Contract Date of First Delivery Number Installed	Yes May 1983 5	Yes November 1984 —	Yes May 1986 —	Yes June 1986 —
DISTRIBUTION	Direct from vendor	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Integrated Network Systems, Inc. d/b/a INS Corp.	Integrated Network Systems, Inc. d/b/a INS Corp.	Intelligent Technologies	Intelligent Technologies
Model	INS SDLC Loop PC Adapter	INS X.25 PC Adapter	BiSync Exchange 3270	BiSync Exchange 3780
FUNCTION	Local terminal emulation	Remote terminal emulation	Remote terminal emulation	Remote terminal emulation
Configuration	Single user	Single user	Single user	Single user
COMPONENTS	Micro software/hardware	Micro software/hardware	Micro software/hardware	Micro software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	128KB, diskette, synchronous modem	128KB, diskette, synchronous modem	192KB, diskette, synchronous modem	92KB, 360KB
Network Compatibility	—	—	—	—
HOST INTERFACE System	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX, System/3X
Operating Environment	IBM DOS, OS/VS, MVS, VM, TSO, CMS, CICS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, CICS	IBM DOS, OS/VS, MVS, TSO, IMS, CICS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP
Protocol Support	SNA, SDLC	SNA, HDLC	BSC	BSC
Connection	Front-end proc., comm port	Front-end proc., comm port	Front-end proc., comm port	Front-end proc., comm port
Applications	Virtual drives on host	Virtual drives on host	Calls to host programs	—
EMULATION Terminals	IBM 3278, 3279, 3274	IBM 3278, 3279, 3274	IBM 3278, 3279, 3274, 3276	IBM 2780/3780
Functions	Color display, function keys, windowing, user definable Kybd.	Color display, function keys, windowing, user definable Kybd.	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Print to disk
Concurrent Sessions Physical Connection	2 terminal, 1 printer RS-232-C	2 terminal, 1 printer RS-232-C	2 interactive, 1 printer RS-232-C	RJE workstation RS-232-C
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES File Transfer	Upload, download; host formats: fixed, variable, undefined	Upload, download; host formats: fixed, variable, undefined	Upload, download	Upload, download
Code Conversion API Compatibility	ASCII to EBCDIC Proprietary	ASCII to EBCDIC Proprietary	ASCII to EBCDIC High level	ASCII to EBCDIC High level
Programmability	Script language, unattended execution	Script language, unattended execution	Script language, calls to languages	Script language, scripted parameters, unattended execution
TRANSMISSION Mode Speed (bps)	Synchronous 19.2K	Synchronous 19.2K	Synchronous 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	Synchronous 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K
SECURITY	—	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro hardware and software: $1,275	Micro hardware and software: $995	Micro hardware and software: $695	Micro hardware and software: $695
Site Licensing Available Warranty	— 5 years	— 5 Years	Yes 90 days	Yes 90 days
Maintenance Contract Date of First Delivery Number Installed	Yes April 1985 —	Yes May 1986 —	Yes June 1984 5,000	Yes June 1984 5,000
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Intelligent Technologies	Intelligent Technologies	Intelligent Technologies	Intercomputer Communications Corp.
Model	Gateway Exchange	Modem Exchange	SNA Exchange	ICC/FileXpress
FUNCTION	Network gateway	Remote terminal emulation	Remote terminal emulation	Host application link
Configuration	Multiuser	Single user	Single user	Multiuser
COMPONENTS	Micro software/hardware	Micro software/hardware	Micro software/hardware	Micro software, host software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT, Unisys (Burroughs) B2X family
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	64KB, diskette synchronous modem	192KB, diskette drive	192KB, diskette, synchronous modem	512KB
Network Compatibility	Arcnet, IBM NETBIOS, Novell NetWare	—	—	—
HOST INTERFACE System	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX	Unisys hosts
Operating Environment	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS	MCP
Protocol Support	BSC, SNA, SDLC	SNA, SDLC	BSC, SNA, SDLC	Poll select
Connection	Front-end proc., comm port	Front-end proc., comm port	Front-end proc., comm port	Comm port
Applications	Calls to host programs	Calls to host programs	Calls to host programs	Virtual drives on host
EMULATION Terminals	IBM 3278, 3279, 3274, 3276, 3770 RJE	IBM 3278, 3279, 3274, 3276, 3770 RJE	IBM 3278, 3279, 3274, 3276, 3770 RJE	Unisys (Burroughs) MT series
Functions	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	—
Concurrent Sessions	64	5; 4 interactive	5; 4 interactive	—
Physical Connection	RS-232-C	RS-232-C	RS-232-C	RS-232-C
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES File Transfer	Upload, download	Upload, download	Upload, download	Upload, download
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	IBM LU 2.1, IBM LU 6.2, high level	IBM LU 2.1, high level	IBM LU 2.1, IBM LU 6.2, high level	—
Programmability	Script language, calls to languages	Script language, unattended execution	Script language, unattended execution	—
TRANSMISSION Mode	Synchronous	Synchronous	Synchronous	Asynchronous, synchronous
Speed (bps)	600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	4800	600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	38,400 bps
SECURITY	—	—	—	Transmission compression
PRICING AND AVAILABILITY Price ($)	Micro hardware: $1,995 to $3,995	Contact vendor	Micro hardware and software: $895	Micro software: $250; micro hardware: $250 plus terminal emulation; TTY extra
Site Licensing Available	Yes	Yes	Yes	Yes
Warranty	90 days	90 days	90 days	—
Maintenance Contract	Yes	Yes	Yes	Yes
Date of First Delivery	March 1987	April 1986	January 1984	—
Number Installed	5,000	300	5,000	—
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Intercomputer Communications Corp.	IBM	IBM	IBM
Model	ICC/Intercom 102	BSC 3270	Enhanced 5250 Emulation	IBM PC 3270 Emulation program, Version 2.0
FUNCTION	Local terminal emulation, remote terminal emulation	—	Local terminal emulation	Local terminal emulation, remote terminal emulation
Configuration	Single user	Single user	—	—
COMPONENTS	Micro software	Micro software/hardware	Micro software/hardware	Micro software
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT, Unisys (Burroughs) B2x family	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	—	—	—
Configuration	256KB, diskette drive	128KB, diskette drive	128KB, diskette drive	256KB, diskette drive, 3270 adapter
Network Compatibility	—	IBM NETBIOS	IBM NETBIOS	IBM NETBIOS
HOST INTERFACE System	Unisys hosts	IBM 43XX/30XX, System/3X	IBM System/3X	IBM 43XX/30XX
Operating Environment	MCP	IBM TSO, CMS	IBM MVS, VM, TSO, CMS, CICS	IBM MVS, VM, TSO, CMS, CICS
Protocol Support	Poll select	BSC	SNA, SDLC	SNA, SDLC
Connection	Comm port	Controller	Controller	Comm port
Applications	Virtual drives on host	—	—	—
EMULATION Terminals	Unisys (Burroughs) MT series	IBM 3278, 3274, 3276	IBM 5251	IBM 3101
Functions	Color/graphics display, function keys, character attributes, user definable kybd., print to disk	Color display, host printer emulation	Function keys, user definable Kybd., host printer emulation	Color display, function keys, user definable keyboard, host printer emulation
Concurrent Sessions Physical Connection	1 RS-232-C	3 —	3 Twinax, coax	2 Coax
Access to Micro OS During Host Session	Yes	Yes	Yes	—
FEATURES File Transfer	Upload, download	Upload, download	Download	Upload, download
Code Conversion API Compatibility	ASCII to EBCDIC —	ASCII to EBCDIC IBM LU 2.1	ASCII to EBCDIC IBM LU 2.1	ASCII to EBCDIC IBM LU 2.1
Programmability	—	—	—	—
TRANSMISSION Mode Speed (bps)	Asynchronous, synchronous 38,400	Synchronous 9600	Synchronous —	Synchronous 9600, 19.2K
SECURITY	—	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro software: $295; micro hardware (optional): $250	Micro software: $700	Micro software: $160; micro hardware: $595	Micro software: $425
Site Licensing Available Warranty	Yes —	— 90 days	— 90 days	— 90 days
Maintenance Contract Date of First Delivery Number Installed	— — —	— — —	— January 1986 —	— 1986 —
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers	—	Direct from vendor, distributors, dealers, retailers

Integrating Micros in the Mainframe Environment

Vendor Name	IBM	IBM	KEA Systems Limited	KEA Systems Limited
Model	PC Support/36	3101 Emulation Program	ZSTEMpc-VT100	ZSTEMpc-VT220
FUNCTION	Host resource link	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation
Configuration	Multiuser	Single user	Single user	Single user
COMPONENTS	Micro software	Micro software	Micro software	Micro software
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	—	—	MS-/PC-DOS	MS-/PC-DOS
Configuration	256KB, diskette drive, 5250 emulation card	64KB, 2 diskette drives	192KB, diskette drive	192KB, diskette drive
Network Compatibility	—	—	—	—
HOST INTERFACE System	IBM System/3X	IBM 43XX/30XX	DEC VAX, DECsystem, Unix-based hosts	DEC VAX, DECsystem, Unix-based hosts
Operating Environment	—	—	DEC TOPS, VAX/VMS	DEC TOPS, VAX/VMS
Protocol Support	SNA, SDLC	—	—	—
Connection	—	Comm port	Comm port	Comm port
Applications	Virtual drives on host	—	—	—
EMULATION Terminals	—	IBM 3101	TTY, DEC VT52/100	TTY, DEC VT52/100/220
Functions	Function keys, user definable keyboard, host printer emulation, print to disk	Function keys	Color/graphics display, function keys, character attributes, windowing, user definable kybd., print to disk	Color/graphics display, function keys, character attributes, windowing, user definable kybd., print to disk
Concurrent Sessions	—	—	1	1
Physical Connection	—	—	RS-232-C	RS-232-C
Access to Micro OS During Host Session	No	No	Yes	Yes
FEATURES File Transfer	Upload, download; micro formats: DIF & SIF	Upload, download	Upload, download	Upload, download
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	—	—
API Compatibility	IBM LU 2.1	IBM LU 2.1	—	—
Programmability	—	—	Scripted parameters	Scripted parameters
TRANSMISSION Mode	Synchronous	Asynchronous	Asynchronous	Asynchronous
Speed (bps)	—	9600	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K
SECURITY	—	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro software: $280; host software: $700	Micro software: $140	Micro software: $99	Micro software: $150
Site Licensing Available	—	—	Yes	Yes
Warranty	—	90 days	30-day money back	30-day money back
Maintenance Contract	—	—	No	No
Date of First Delivery	May 1985	1982	January 1984	November 1986
Number Installed	—	—	10,000	1,000
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers	Direct from vendor, distributors, dealers, retailers	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	KEA Systems Limited	Lee Data/Datastream Division	Local Data, Inc.	Local Data, Inc.
Model	ZSTEMpc-4014	EXECULINK II and Series 8000	DataLynx/5251	File Lynx/3278
FUNCTION	Local terminal emulation, remote terminal emulation	Remote terminal emulation, protocol converter	Remote terminal emulation	Local terminal emulation, remote terminal emulation
Configuration	Single user	Multiuser	Multiuser	Single user
COMPONENTS	Micro software	Micro software, standalone hardware	Standalone hardware	Micro software
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	192KB, diskette drive	256KB	—	128KB, DataLynx 3274 or 3174 or InterLynx 3278
Network Compatibility	—	IBM NETBIOS	IBM NETBIOS	IBM NETBIOS
HOST INTERFACE System	DEC VAX, DECsystem, Unix-based hosts	IBM 43XX/30XX	IBM System/3X	IBM 43XX/30XX
Operating Environment	DEC TOPS, VAX/VMS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP	IBM SSP, CPF	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP
Protocol Support	—	BSC, SNA, 3270 PC file transfer	SNA, SDLC	BSC, SNA, SDLC
Connection	Comm port	Front-end proc., controller	Comm port	Controller
Applications	—	Calls to host programs	Calls to host programs	Calls to host programs
EMULATION Terminals	—	TTY, IBM 3278, 3279, 3274, 3276	Televideo 950, DEC VT52/100, IBM 3101, 5251	IBM 3278, 3279
Functions	Color/graphics display	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Color display, function keys, character attributes, windowing, host printer emulation, print to disk	Color display, function keys, character attributes, print to disk
Concurrent Sessions Physical Connection	1 RS-232-C	1 RS-232-C	1 RS-232-C	1 RS-232-C
Access to Micro OS During Host Session	—	Yes	—	No
FEATURES File Transfer	—	Upload, download	Upload, download	Upload, download
Code Conversion API Compatibility	— —	ASCII to EBCDIC 3270 PC $IND FILE	ASCII to EBCDIC —	Proprietary —
Programmability	—	—	—	—
TRANSMISSION Mode Speed (bps)	Asynchronous 300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K, 38.4K	Asynchronous, synchronous 300, 600, 1200, 2400, 4800, 9600	Asynchronous, synchronous 300, 600, 1200, 2400, 4800, 9600, 19.2K	Asynchronous 300, 600, 1200, 2400, 4800, 9600
SECURITY	—	Multilevel password, disconnect routines	Multilevel password	—
PRICING AND AVAILABILITY Price ($)	Micro software: $99	Micro software: $100; standalone hardware: $5,000	Micro software: $175; standalone hardware: $1,850	Micro software: $175
Site Licensing Available Warranty	Yes 30-day money back	Yes 1 year	Yes 90 days, 1 year	Yes 90 days
Maintenance Contract Date of First Delivery Number Installed	No December 1985 1,000	No 1985 5,000	Yes October 1985 2,600	Yes — —
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor	Direct from vendor, distributors, dealers, retailers May 1986	Direct from vendor, distributors, dealers, retailers

Integrating Micros in the Mainframe Environment

Vendor Name	Local Data, Inc.	Local Data, Inc.	Local Data, Inc.	Local Data, Inc.
Model	FileLynx/5251	InterLynx/5251	TermLynx II	TruLynx/3270
FUNCTION	Local terminal emulation, remote terminal emulation, host application link	Local terminal emulation, remote terminal emulation, protocol converter	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation, host application link
Configuration	Single user	Multiuser	Single user	Single user
COMPONENTS	Micro software, standalone hardware	Standalone hardware	Micro software	Micro software
MICROCOMPUTER SUPPORT				
Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT, PC, DGI, Zenith Portable	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	128KB, DataLynx 5251 or InterLynx converter	—	33KB, DataLynx 3274 and 3174, or InterLynx 3278	128KB, DataLynx 3274/3174 converter
Network Compatibility	IBM NETBIOS	IBM NETBIOS	IBM NETBIOS	IBM NETBIOS
HOST INTERFACE				
System	IBM System/3X	IBM System/3X	IBM 43XX/30XX, System/3X	IBM 43XX/30XX
Operating Environment	IBM SSP, CPF	IBM SSP, CPF	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP, CPF	IBM OS/VS, MVS, VM, TSO, CMS, IMS, CICS
Protocol Support	SNA, SDLC	SNA	BSC, SNA, SDLC	BSC, SNA, SDLC, X.25
Connection	Front-end proc., controller, comm port	Front-end proc.	Controller	Comm port
Applications	Calls to host programs	Calls to host programs	—	Calls to host programs
EMULATION				
Terminals	IBM 5251	TTY, Televideo 950, IBM 3101, DEC VT52/100/220/240, HP terminals, DG Dasher, IBM 5251	IBM 3278, 3279	IBM 3278, 3279
Functions	Color display, function keys, character attributes, host printer emulation, print to disk	Color display, function keys, character attributes, windowing, host printer emulation, print to disk	Color display, function keys, character attributes, windowing, user definable kybd., print to disk	Color display, function keys, character attributes, user definable kybd.
Concurrent Sessions	Host 5250	1	2	1
Physical Connection	Twinax, RS-232-C	Twinax, RS-232-C	RS-232-C	RS-232-C
Access to Micro OS During Host Session	No	Yes	Yes	Yes
FEATURES				
File Transfer	Upload, download	Upload, download	—	Upload, download; host formats: text/binary; micro formats: text/binary
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	—	—	Local Data	—
Programmability	—	Unattended execution, calls to languages	—	—
TRANSMISSION				
Mode	Asynchronous, synchronous	Asynchronous, synchronous	Asynchronous	Asynchronous
Speed (bps)	9600	300, 600, 1200, 2400, 4800, 9600, 19.2K, 38.4K	300, 600, 1200, 2400, 4800, 9600	300, 600, 1200, 2400, 4800, 9600
SECURITY	—	Multilevel password	—	—
PRICING AND AVAILABILITY				
Price ($)	Micro software: $175	Micro software: $175; standalone hardware: $1,250	Micro software: $100	Micro software: $195
Site Licensing Available	Yes	Yes	Yes	Yes
Warranty	—	Software: 1 year, hardware; 90 days	90 days, 1 year	90 days
Maintenance Contract	Yes	Yes	Yes	Yes
Date of First Delivery	October 1985	September 1985	March 1986	March 1986
Number Installed	—	3,700	—	—
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers	Direct from vendor, distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Local Data, Inc.	Lotus Development Corp.	Mackensen Corporation	Management Science America, Inc. (MSA)
Model	TruLynx/5251	Symphony Link	File Transfer System	Expertlink
FUNCTION	Local terminal emulation, remote terminal emulation, host application link	Host resource link	Host resource link	Local terminal emulation, remote terminal emulation
Configuration	Single user	Single user	Single user	Single user
COMPONENTS	Micro software	Micro software	Micro software, host software/hardware	Micro software
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT, IBM 3270 PC
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	256KB, DataLynx 5251 or InterLynx converter	512KB, hard disk, DCA IRMA adapter	256KB, 3270 terminal emulation hardware	256KB
Network Compatibility	IBM NETBIOS	—	AST PC-Net II	—
HOST INTERFACE System	IBM System/3X	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	IBM SSP, CPF	IBM MVS, VM, TSO, CMS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, IDMS/R	IBM DOS, OS/VS, MVS, VM, IMS, CICS
Protocol Support	SNA, SDLC	BSC, SNA, SDLC	BSC, SNA, SDLC	BSC, SDLC, asynchronous
Connection	Front-end proc., controller, comm port	—	Comm port	Controller, comm port
Applications	Virtual drives on host, calls to host programs	Calls to host programs	Calls to host programs, DBMS access: DL/I, IDMS	—
EMULATION Terminals	IBM 3279	—	IBM 3278, 3279, 3274, 3276, 3174	IBM 3101, 3278, 3279, 3276
Functions	Color display, function keys, character attributes, windowing, user definable	—	Color display, print to disk	Function keys
Concurrent Sessions	2	1	4	1
Physical Connection	Twinax, RS-232-C	—	—	Coax, RS-232-C
Access to Micro OS During Host Session	Yes	—	No	No
FEATURES File Transfer	Upload, download	Upload, download; host formats: TEXT, CLIST (TSO); micro formats: WR1, WRK	Download; host formats: BSAM, QSAM, VSAM; micro formats: sequential	Upload, download
Code Conversion	ASCII to EBCDIC	—	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	IBM LU 2.1	—	IBM LU 2.1, DCA IRMA, IBM LU 6.2, CXI	IBM LU 2.1, CXI
Programmability	Script language, unattended	—	Script language, scripted parameters, unattended execution	Command sequence file
TRANSMISSION Mode	Asynchronous, synchronous	Synchronous	Synchronous	Asynchronous, synchronous
Speed (bps)	19.2K	2.4M	2400, 4800, 9600, 19.2K	300, 600, 1200, 2400, 4800, 9600, 19.2K
SECURITY	—	—	—	Single-level password
PRICING AND AVAILABILITY Price ($)	Micro software: $175	Contact vendor	Micro software: $250; host software: $10,000 to $85,000	Micro software: $3,000
Site Licensing Available	Yes	—	—	Yes
Warranty	90 days	90 days	90 days	1 year
Maintenance Contract	Yes	—	Yes	Yes
Date of First Delivery	September 1986	—	February 1982	1983
Number Installed	400	—	45,000	600
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers	OEMs, VARs	Direct from vendor

Integrating Micros in the Mainframe Environment

Vendor Name	McCormack and Dodge	Micom Systems, Inc.	mdbs, Inc.	Micro Decisionware
Model	Interactive PC Link	Micro7400	WIN/PC	PC/SQL-link
FUNCTION	Host resource link	Protocol converter	Remote terminal emulation, host application link, host resource link	Host application link
Configuration	Single user	Single user, multiuser	Single user	Multiuser
COMPONENTS	Micro software, host software/hardware	Standalone hardware	Micro software/hardware	Micro software, host software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	—	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	—	MS-/PC-DOS	MS-/PC-DOS
Configuration	256KB, diskette drive, DCA IRMA or Forte	—	128KB	320KB, synchronous adapter card
Network Compatibility	Ethernet, IBM NETBIOS, Novell NetWare, 3Com networks	—	Ethernet	Ethernet, IBM NETBIOS
HOST INTERFACE System	IBM 43XX/30XX	—	IBM 43XX/30XX, DG, DEC, Hewlett-Packard, Honeywell, Unisys, Unix-based hosts	—
Operating Environment	IBM OS/VS, MVS, IMS, CICS	IBM DOS, IBM OS/VS, TSO, CMS, IMS, CICS	IBM DOS, MVS, VM, DEC TOPS, VAX/VMS, DG AOS	IBM MVS, VM, TSO, CMS
Protocol Support	BSC, SNA, SDLC	BSC, SNA, SDLC	TCP/IP	SNA, SDLC
Connection	Front-end proc., controller	Controller, comm port	Channel adapter, front-end proc., controller, comm port	Controller, comm port
Applications	—	—	Calls to host programs, file transfer, network mail	DBMS access: DB2, SQL/DS, Honeywell, PDQ, TERADATA, Britton
EMULATION Terminals	IBM 3278, 3279		DEC VT52/100	—
Functions	—	Host printer emulation	Color display, function keys, user definable kybd.	Color display, function keys, windowing
Concurrent Sessions	1	—	1	1
Physical Connection	Coax, RS-232-C	RS-232-C	Coax, fiber optic	Coax, RS-232-C
Access to Micro OS During Host Session	Yes	—	No	Yes
FEATURES File Transfer	Upload, download; host formats: VSAM, IDMS, IMS	Micro formats:	Upload, download	Upload, download; host formats: DB2, SQL/DS; micro formats: DRF, WKS, RBF, WP
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	—	—
API Compatibility	IBM LU 2.1, DCA IRMA	IBM LU 2.1	—	IBM LU 2.1, DCA IRMA, CXI
Programmability	Unattended execution	—	Calls to languages	Script language, calls to languages
TRANSMISSION Mode	Asynchronous, synchronous	—	Asynchronous	Asynchronous, synchronous
Speed (bps)	9600	9600	RS-232-C	—
SECURITY	Multilevel password	—	—	Single-level password
PRICING AND AVAILABILITY Price ($)	Micro software: $1,100; host software: $32,500	—	Contact vendor	Micro software: $295; host software: $14,900
Site Licensing Available	Yes	—	—	Yes
Warranty	—	1 year	90 days	90 days
Maintenance Contract	Yes	—	Yes	Yes
Date of First Delivery	November 1983	December 1983	June 1985	July 1985
Number Installed	650	2,000	—	30
DISTRIBUTION	Direct from vendor	Direct from vendor, distributors, dealers, retailers	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	

Integrating Micros in the Mainframe Environment

Vendor Name	Micro-Integration	Micro-Integration	Micro-Integration	Micro-Integration
Model	Acculink	Bis-Hasp	Bis-3270	Bis-3780
FUNCTION	Local terminal emulation, remote terminal emulation	Remote terminal emulation	Remote terminal emulation	Remote terminal emulation
Configuration	Single user	Single user	Single user	Single user
COMPONENTS	Micro software/hardware	Micro software/hardware	Micro software/hardware	Micro software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	128KB	—	128KB	128KB
Network Compatibility	IBM NETBIOS	IBM NETBIOS	IBM NETBIOS	IBM NETBIOS
HOST INTERFACE System	DEC VAX, DECsystem, PDP-11	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX, System/3X
Operating Environment	DEC TOPS, VAX/VMS, RSX	—	IBM TSO, CICS	—
Protocol Support	—	HASP	BSC	BSC
Connection	Comm port	Comm port	Comm port	Comm port
Applications	—	—	—	—
EMULATION Terminals	TTY, Televideo 950, 925, IBM 3101, DEC VT52/100/102, Lear-Siegler ADM3A	Hasp workstation	IBM 3278, 3279, 3274, 3276	IBM 2780/3780, 3741, 2770
Functions	—	Host printer emulation, print to disk	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Host printer emulation, print to disk
Concurrent Sessions	1	1	—	1
Physical Connection	RS-232-C	RS-232-C	RS-232-C	—
Access to Micro OS During Host Session	No	—	No	No
FEATURES File Transfer	—	—	—	—
Code Conversion	—	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	—	—	—	—
Programmability	Unattended execution	Unattended execution	—	—
TRANSMISSION Mode	Asynchronous	Synchronous	Synchronous	Synchronous
Speed (bps)	19.2K	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K
SECURITY	—	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro hardware and software: $895	Micro hardware and software: $895	Micro hardware and software: $895	Contact vendor
Site Licensing Available	Yes	Yes	Yes	Yes
Warranty	—	—	—	—
Maintenance Contract	—	—	—	—
Date of First Delivery	1980	1980	1983	1979
Number Installed	20,000	5,000	15,000	20,000
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Micro-Integration	Micro-Integration	Micro-Integration	Micro-Integration
Model	Bis-7705	Coaxxsys	Micro-SNA/3270	Micro-SNA/3770
FUNCTION	Remote terminal emulation	Local terminal emulation, remote terminal emulation	Remote terminal emulation	Remote terminal emulation
Configuration	—	—	Single user	Single user
COMPONENTS	Micro software/hardware	—	Micro software/hardware	Micro software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	64KB	64KB	192KB	128KB
Network Compatibility	IBM NETBIOS	—	IBM NETBIOS	IBM NETBIOS
HOST INTERFACE System	Honeywell hosts	IBM 43XX/30XX	IBM 43XX/30XX, System/3X	IBM 43XX/30XX
Operating Environment	Honeywell GCOS	IBM TSO, CICS	IBM TSO, CICS	IBM TSO, CICS
Protocol Support	BSC	—	SNA	SNA
Connection	Comm port	Controller	Comm port	Comm port
Applications	—	—	—	—
EMULATION Terminals	Honeywell VIP 7705	IBM 3278, 3279	IBM 3278, 3279, 3274, 3276	IBM 3770
Functions	—	Color display, function keys, character attributes, user definable kybd., print to disk	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Print to disk
Concurrent Sessions	1	—	—	1
Physical Connection	RS-232-C	Coax	RS-232-C	RS-232-C
Access to Micro OS During Host Session	No	Yes	—	Yes
FEATURES File Transfer	—	Upload, download	—	—
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	—	—	—	—
Programmability	—	Unattended execution	—	—
TRANSMISSION Mode Speed (bps)	Synchronous 300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	— —	Synchronous 300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	Synchronous 300, 600, 1200, 2400, 4800, 9600
SECURITY	—	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro hardware and software: $895	Micro hardware and software: $995	Micro hardware and software: $895	Micro software: $175
Site Licensing Available Warranty	Yes —	Yes —	Yes —	Yes 90 days
Maintenance Contract Date of First Delivery Number Installed	— 1980 20,000	— 1984 10,000	— 1983 5,000	No August 1982 10,500
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, mail order

Integrating Micros in the Mainframe Environment

Vendor Name	Micro-Integration	Micro-Integration	Micro Plus	Micro Plus
Model	Micro-SNA/5250	Twinaxis	BISYNC Gateway Plus	BISYNC 3278/79 Remote Workstation
FUNCTION	Remote terminal emulation	Remote terminal emulation	Network gateway	Remote terminal emulation
Configuration	Single user	Single user	Multiuser	Single user
COMPONENTS	Micro software/hardware	Micro software/hardware	Micro software/hardware	Micro software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	128KB	64KB	256KB, diskette drive	256KB, diskette drive
Network Compatibility	—	—	IBM NETBIOS	IBM NETBIOS
HOST INTERFACE System	IBM System/3X	IBM System/3X	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	IBM SSP	IBM SSP	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP
Protocol Support	SNA	—	BSC	BSC
Connection	Comm port	Controller	Front-end proc.	Front-end proc.
Applications	Virtual drives on host through PC-Support/36, PC-Support/38	Virtual drives on host through PC-Support/36, PC-Support/38	—	—
EMULATION Terminals	IBM 5251, 5294, 5291	IBM 5251, 5292, 5291	IBM 3278/79 models 2,3,4,5	IBM 3278/79 models 2,3,4,5
Functions	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Color display, function keys, character attributes, windowing, user definable kybd., host printer emulation, print to disk	Color display, function keys, character attributes, windowing, user definable kybd., host printer emulation, print to disk
Concurrent Sessions	9	7	Up to 8 per node	Up to 8
Physical Connection	RS-232-C	Twinax	RS-232-C	RS-232-C
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES File Transfer	Upload, download	Upload, download	Upload, download	Upload, download
Code Conversion	ASCII-to-PC-ScanCode	ASCII-to-PC-ScanCode	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	IBM LU 2.1	IBM LU 2.1	Micro Plus	Micro Plus
Programmability	Unattended execution	Unattended execution,	Script language, scripted parameters, unattended execution	Script language, scripted parameters, unattended execution
TRANSMISSION Mode	Synchronous	Synchronous	Synchronous	Synchronous
Speed (bps)	19.2K	1M bps	Up to 56K	Up to 56K bps
SECURITY	Screen/kybd. locking	Screen/kybd. locking	—	—
PRICING AND AVAILABILITY Price ($)	Micro hardware and software: $895	Micro hardware and software: $995	Micro hardware and software: $1,395	Micro hardware and software: $1,395
Site Licensing Available	Yes	Yes	No	No
Warranty	—	—	1 year	1 year
Maintenance Contract	—	—	Yes	Yes
Date of First Delivery	September 1986	November 1984	—	—
Number Installed	2,500	10,000	—	—
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Micro Plus	Micro Plus	Micro Plus	Micro Tempus Inc.
Model	MP01 3278/79 Coax Emulator Plus	SNA Gateway Plus	MP04 3278/79 Emulation	Tempus - Access (Data Extraction Tool)
FUNCTION	Local terminal emulation	Network gateway	Remote terminal emulation	Host application link
Configuration	Single user	Multiuser	Single user	—
COMPONENTS	Micro software/hardware	Micro software/hardware	Micro software/hardware	Micro software, host software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	64KB, diskette drive	256KB, diskette drive	256KB, diskette drive	64KB
Network Compatibility	—	IBM NETBIOS	—	IBM NETBIOS, Novell NetWare
HOST INTERFACE System	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS
Protocol Support	BSC, SNA, 3270 Coax type A	SNA	SNA, SDLC	BSC, SNA, HDLC, SDLC
Connection	Controller	Front-end proc.	Front-end proc.	Controller, comm port
Applications	Virtual drives on host, calls to host programs, application access: MSA, Cullinet	—	—	Virtual drives on host, calls to host programs, HAPI
EMULATION Terminals	IBM 3278/79 models 2,3,4,5	IBM 3278, 3279, 3274 IBM 3278/79 models 2,3,4,5	IBM 3278/79 models 2,3,4,5	IBM 3101
Functions	Color display, function keys, character attributes, user definable kybd., print to disk	Color display, function keys, character attributes, windowing, user definable kybd., host printer emulation, print to disk	Color display, function keys, character attributes, windowing, user definable kybd., host printer emulation, print to disk	Function keys
Concurrent Sessions	—	Up to 8 per node	Up to 8	—
Physical Connection	Coax	RS-232-C	RS-232-C	Coax, RS-232-C
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES File Transfer	Upload, download	Upload, download	Upload, download	Upload, download
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	IBM LU 2.1, DCA IRMA, Micro Plus	Micro Plus	Micro Plus	IBM LU 2.1, DCA IRMA
Programmability	Script language, scripted parameters, calls to languages	Script language, scripted parameters, unattended execution	Script language, scripted parameters, calls to languages	—
TRANSMISSION Mode	—	Synchronous	Synchronous	Asynchronous, synchronous
Speed (bps)	2.4M	Up to 56K	Up to 56K, 2.4M	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K
SECURITY	—	—	—	Multilevel password, file encryption
PRICING AND AVAILABILITY Price ($)	Micro hardware: $1,095	Micro hardware and software: $1,395	Micro hardware: $1,395 with 8 concurrent sessions	Microcomputer software: $9,500 to $13,900
Site Licensing Available	No	—	No	—
Warranty	1 year	1 year	—	1 year
Maintenance Contract	Yes	Yes	Yes	—
Date of First Delivery	—	—	—	1987
Number Installed	—	—	—	6
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Micro Tempus Inc.	Microplot Systems	Mom Corp.	Morris Systems
Model	Tempus-Link	PC-PLOT-IV	PC COM	MSY-3270 Emulation System
FUNCTION	Host application link	Local terminal emulation, remote terminal emulation	Host resource link	Remote terminal emulation
Configuration	—	Single user	Single user	Single user
COMPONENTS	Micro software, host software/hardware	Micro software	Micro software, host software/hardware	Micro software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	—	MS-/PC-DOS
Configuration	64KB	256KB, diskette drive	192KB, 3270 terminal emulation adapter	128KB, diskette drive
Network Compatibility	IBM NETBIOS, Novell NetWare	IBM NETBIOS	—	—
HOST INTERFACE System	IBM 43XX/30XX	DEC VAX	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS	—	IBM OS/VS, MVS, VM, TSO, CMS, CICS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP
Protocol Support	BSC, SNA, HDLC, SDLC	—	BSC, SNA	BSC
Connection	Controller, comm port	—	—	Front-end proc., comm port
Applications	Virtual drives on host, calls to host programs, HAPI	—	Virtual drives on host	—
EMULATION Terminals	IBM 3101	TTY, DEC VT52/100/220/240, Tektronix 4014	—	IBM 3278, 3279, 3276
Functions	Function keys	Color/graphics display, function keys, character attributes, user definable kybd., print to disk	—	Color display, function keys, character attributes, windowing, user definable kybd., host printer emulation, print to disk
Concurrent Sessions	1	—	—	7 (4 display)
Physical Connection	Coax, RS-232-C	Coax, RS-232-C	—	RS-232-C
Access to Micro OS During Host Session	Yes	Yes	—	Yes
FEATURES File Transfer	Upload, download	Upload, download	Upload, download; micro host: DIF	Upload, download; host formats: TSO, CMS data sets
Code Conversion	ASCII to EBCDIC	—	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	IBM LU 2.1, DCA IRMA	—	—	Proprietary
Programmability	—	Script language, scripted parameters	Unattended execution	Script language, unattended execution
TRANSMISSION Mode	Asynchronous, synchronous	Asynchronous	Synchronous	Synchronous
Speed (bps)	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	300, 600, 1200, 2400, 4800, 9600	—	2400, 4800, 9600
SECURITY	Multilevel password, file encryption	—	—	—
PRICING AND AVAILABILITY Price ($)	Contact vendor	Micro software: $149	Micro software: 395 TSO, VM/CMS-$400; CICS-$2,000	Micro hardware and software: $795 to $1,995.
Site Licensing Available	—	Yes	—	No
Warranty	1 year	1 year	90 days	1 year
Maintenance Contract	—	No	—	No
Date of First Delivery	—	April 1981	—	January 1985
Number Installed	1,800	15,000	—	100
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, mail order	—	Direct from vendor

Integrating Micros in the Mainframe Environment

Vendor Name	Multisoft, Inc.	National Information Systems, Inc.	Network Research Corporation	Network Software Associates (NSA)
Model	Super-Link	Teleport II	Fusion Network Software	AdaptSNA RJE
FUNCTION	Host application link	Local terminal emulation, remote terminal emulation, protocol converter	Local terminal emulation, remote terminal emulation, network gateway	Remote terminal emulation, protocol converter, host application link
Configuration	Single user	Single user	Multiuser	Single user
COMPONENTS	Micro software, host software/hardware	Micro software	Micro software	Micro software
MICROCOMPUTER SUPPORT				
Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	384KB, diskette drive	256KB	—	256KB
Network Compatibility	IBM NETBIOS	IBM NETBIOS	Ethernet, IBM NETBIOS, 3Com networks	IBM NETBIOS
HOST INTERFACE				
System	IBM 43XX/30XX, DEC VAX	DEC VAX, DECsystem, Fortune UNIX	DEC VAX, Hewlett-Packard, Unix-based hosts	IBM 43XX/30XX
Operating Environment	IBM DOS, OS/VS, MVS, VM, TSO, CMS, CICS, DEC VAX/VMS	DEC TOPS, VAX/VMS, Fortune UNIX	IBM DOS, DEC VAX/VMS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS
Protocol Support	BSC, SNA, SDLC	—	ICP/IP or XNS, PDN X.25	SNA, SDLC
Connection	Channel adapter, front-end proc., controller, comm port	Comm port	Comm port	Front-end proc.
Applications	Virtual drives on host, calls to host programs	Calls to host programs	Virtual drives on host, calls to host programs	—
EMULATION				
Terminals	TTY, IBM 3278	DEC VT52/100/220/240	DEC VT52/100	IBM 3278, 3279, 3274, 3276
Functions	Color display, function keys, character attributes, windowing, user definable kybd., host printer emulation, print to disk	Function keys, user definable kybd., print to disk	Color/graphics display, function keys, character attributes, windowing, print to disk	Color display, user definable kybd., host printer emulation, print to disk
Concurrent Sessions	—	—	1	5
Physical Connection	Coax, RS-232-C	RS-232-C	Coax, fiber optic, RS-232-C	RS-232-C
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES				
File Transfer	Upload, download, DIF, PRN	Upload, download; host formats: image file; micro formats: image file	Upload, download	Upload, download
Code Conversion	ASCII to EBCDIC	—	—	ASCII to EBCDIC
API Compatibility	IBM LU 2.1, DCA IRMA, proprietary	—	—	AdaptSNA RJE
Programmability	Scripted parameters, calls to languages, calls to other script languages	Script language, unattended execution	Script language	—
TRANSMISSION				
Mode	—	Asynchronous	—	Synchronous
Speed (bps)	—	300, 600, 1200, 2400, 4800, 9600	Network hardware dependent	19.2K
SECURITY	Single-level password	—	Multilevel password	—
PRICING AND AVAILABILITY				
Price ($)	Host software: $48,000 to $68,000	Micro software: $150; host software: $495	Micro software: $350	Micro software: $785; standalone hardware: $245
Site Licensing Available	Yes	Yes	Yes	Yes
Warranty	—	30-day full refund	90 days	90 days
Maintenance Contract	Yes	Yes	No	Yes
Date of First Delivery	October 1985	1981	January 1983	1983
Number Installed	5	250	10,000	2,000
DISTRIBUTION	Direct from vendor	Direct from vendor	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	

Integrating Micros in the Mainframe Environment

Vendor Name	Network Software Associates (NSA)	OBS Software, division of On-Line Business Sys	OBS Software, division of On-Line Business Sys	On-Line Software International, Inc.
Model	AdaptSNA 3270	Excellink	VDAM	Freedisk & Omnilink
FUNCTION	Remote terminal emulation, protocol converter, host application link	Local terminal emulation, remote terminal emulation	Host resource link	Host resource link
Configuration	Single user	Single user	Single user	—
COMPONENTS	Micro software	Micro software, host software/hardware	Micro software, host software/hardware	Micro software
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	—
Configuration	256KB	128KB, diskette drive	128KB, diskette, synchronous adapter card	256KB, 2 diskettes, 3270 adapter card
Network Compatibility	IBM NETBIOS	Ethernet, IBM NETBIOS, Novell NetWare, 3Com networks	Ethernet, IBM NETBIOS, Novell NetWare, 3Com networks	—
HOST INTERFACE System	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS	IBM MVS, VM, TSO, CMSMVS/Wylbur, Native VTAM	IBM MVS	IBM DOS, IBM OS/VS, CICS
Protocol Support	SNA, SDLC	BSC, SNA, SDLC, asynchronous	BSC, SNA, SDLC	—
Connection	Front-end proc.	Front-end proc., controller, comm port	Front-end proc., controller	—
Applications	—	—	Virtual drives on host	Virtual drives on host, calls to host resident programs, DBMS access:IDMS, DL-1
EMULATION Terminals	IBM 3278, 3279, 3274, 3276	IBM 3101, IBM 3278, 3279	IBM 3278, 3279	Depends on interface
Functions	Color display, user definable kybd., host printer emulation, print to disk	Function keys, character attributes, print to disk	Function keys, print to disk	Color display, function keys, user definable keyboard
Concurrent Sessions Physical Connection	3 host, 2 printer RS-232-C	— Coax, RS-232-C	— Coax	— —
Access to Micro OS During Host Session	Yes	Yes	Yes	—
FEATURES File Transfer	Upload, download	Upload, download; host formats: QSAM, BPAM, BSAM; micro formats: DIF, WKS, DBF	Upload, download; host formats: QSAM, BPAM, BSAM	Upload, download
Code Conversion API Compatibility	ASCII to EBCDIC AdaptSNA 3270	ASCII to EBCDIC Excellink	ASCII to EBCDIC —	— —
Programmability	—	Script language, scripted parameters, unattended execution, calls to languages, calls to other scripts	Unattended execution, calls to languages	—
TRANSMISSION Mode Speed (bps)	Synchronous 19.2K	Asynchronous, synchronous 300, 600, 1200, 2400, 4800, 9600	Synchronous 2400, 4800, 9600	— —
SECURITY	—	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro software: $585; standalone hardware: $245	Micro software: $150; host software: $8,750	Micro software: $400; host software: $8,500	Freedisk-495; Omnilink-800
Site Licensing Available Warranty	Yes 90 days	Yes 1 year	Yes 1 year	— 1 year, 30-day trial
Maintenance Contract Date of First Delivery Number Installed	Yes 1983 1,000	Yes October 1983 100	Yes 1983 50	Yes September 1983 150
DISTRIBUTION		Direct from vendor	Direct from vendor	—

Integrating Micros in the Mainframe Environment

Vendor Name	Oracle, Inc.	Pathway Design, Inc.	Pathway Design, Inc.	Pacer Software Inc.
Model	SQL*NET	PcPATH BSC-2870/3780	PcPATH SNA-3270	PcLINK
FUNCTION	Host application link	Remote terminal emulation	Remote terminal emulation	Local terminal emulation, remote terminal emulation
Configuration	Single user	Single user	Single user	—
COMPONENTS	Micro software, host software/hardware	Micro software/hardware	Micro software/hardware	Micro software, host software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	Apple Macintosh, IBM PC AT
Operating Environment	MS-/PC-DOS	—	—	Apple Finder, MS-/PC-DOS
Configuration	640KB, diskette drive	192KB, diskette drive	256KB, diskette drive	512KB, diskette drive
Network Compatibility	Ethernet, IBM NETBIOS, Novell NetWare, 3Com networks	—	—	Ethernet, Corvus Omninet, Apple Appletalk
HOST INTERFACE System	IBM 43XX/30XX, DG, DEC VAX, Unix-based hosts	IBM 43XX/30XX	IBM 43XX/30XX	DEC VAX, Unix-based, Stratus; Prime; Cray
Operating Environment	IBM DOS, MVS, VM, CMS, DEC VAX/VMS, DG AOS Unix System V, Ultrix	—	—	DEC VAX/VMS, DEC ALL-IN-1; Primos;
Protocol Support	SNA, asynchronous	BSC	SNA, SDLC	TCP/IP, Appletalk, Prop
Connection	Comm port	—	—	Comm port
Applications	DBMS access: Oracle, SQL/DS, DB2	—	—	Virtual drives on host
EMULATION Terminals	—	IBM 2780/3780	IBM 3278, 3279, IBM 3274, 3276, IBM 2780/3780	TTY, Televideo 950, DEC VT52/100/220/240, Tektronix 4014, Prime PT200; Stratus V102; ADDS Viewpoint 60
Functions	—	Color display, function keys, user definable Kybd. print to disk	Color display, function keys, windowing, user definable Kybd., host printer emulation, print to disk	Color/graphics display, function keys, character attributes, windowing, user
Concurrent Sessions	—	—	5	8
Physical Connection	Coax, RS-232-C	RS-232-C	RS-232-C	RS-232-C, Omninet; Appletalk; Ethernet
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES File Transfer	Upload, download; host formats: Oracle DBMS	Upload, download	Upload, download	Upload, download; host formats: sequential access methods, MacBinary
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC	—
API Compatibility	IBM LU 2.1, DCA IRMA	—	—	—
Programmability	Script language, unattended	Unattended execution	Unattended execution	Script language, unattended execution
TRANSMISSION Mode	Asynchronous	Synchronous	Synchronous	Asynchronous
Speed (bps)	300, 600, 1200, 2400, 4800, 9600, 19.2K	9600	9600	300, 1200, 2400, 4800, 9600, 19.2K
SECURITY	Multilevel password	—	—	—
PRICING AND AVAILABILITY Price ($)	Contact vendor	Micro software: $595	Micro software: $890	Host software: $2,000 and up (includes mircocomputer software)
Site Licensing Available	No	—	—	Yes
Warranty	90 days	1 year	1 year	1 year
Maintenance Contract	Yes	—	—	Yes
Date of First Delivery	1987	1983	1983	—
Number Installed	—	1,200	25,000	10,000
DISTRIBUTION		—	Direct from vendor	Direct from vendor, distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Packaged Solutions, Inc.	Packaged Solutions, Inc.	Pathway Design, Inc.	Pathway Design, Inc.
Model	BiComm-3270	BiComm 3700	PcPATH BSC-2870/3780	PcPATH SNA-3270
FUNCTION	Remote terminal emulation	Remote terminal emulation	Remote terminal emulation	Remote terminal emulation
Configuration	Single user	Single user	Single user	Single user
COMPONENTS	Micro software/hardware	Micro software/hardware	Micro software/hardware	Micro software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT, Toshiba 3100, DG One	IBM PC/XT/AT, Toshiba 3100; DG One	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	—	—
Configuration	64KB	64KB	192KB, diskette drive	256KB, diskette drive
Network Compatibility	IBM NETBIOS	IBM NETBIOS	—	—
HOST INTERFACE System	IBM 43XX/30XX, System/3X, DG, DEC VAX, DECsystem, Hewlett-Packard, Honeywell, Unisys, Unix-based hosts	IBM 43XX/30XX, System/3X, DG, DEC VAX, DECsystem, Hewlett-Packard, Honeywell, Unisys, Unix-based hosts	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	—	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP, DEC, DG, Honeywell	—	—
Protocol Support	BSC	BSC	BSC	SNA, SDLC
Connection	Comm port	Comm port	—	—
Applications	Calls to host programs	Calls to host programs	—	—
EMULATION Terminals	IBM 3278, 3274, 3276	IBM 2780/3780	IBM 2780/3780	IBM 3278, 3279, IBM 3274, 3276, IBM 2780/3780
Functions	Function keys, user definable kybd.	Function keys, user definable kybd., host printer emulation	Color display, function keys, user definable keyboard, print to disk	Color display, function keys, windowing, user definable keyboard, host printer emulation, print to disk
Concurrent Sessions	—	—	—	5
Physical Connection	RS-232-C	RS-232-C	RS-232-C	RS-232-C
Access to Micro OS During Host Session	No	No	Yes	Yes
FEATURES File Transfer	—	Upload, download	Upload, download	Upload, download
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	—	—	—	—
Programmability	Unattended execution	Unattended execution	Unattended execution	Unattended execution
TRANSMISSION Mode	Synchronous	Synchronous	Synchronous	Synchronous
Speed (bps)	300, 600, 1200, 2400, 4800, 9600	300, 600, 1200, 2400, 4800, 9600	9600	9600
SECURITY	—	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro software: $495; micro hardware: $400	Micro software: $495; micro hardware: $400	Micro software: $595	Micro software: $890
Site Licensing Available	—	—	—	—
Warranty	90 days	90 days	1 year	1 year
Maintenance Contract	—	—	—	—
Date of First Delivery	—	—	1983	1983
Number Installed	—	—	1,200	25,000
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers	Direct from vendor, distributors, dealers, retailers	—	Direct from vendor

Integrating Micros in the Mainframe Environment

Vendor Name	Performance Software Incorporated	Persoft, Inc.	Persoft, Inc.	Polygon Associates, Inc.
Model	Masterlink 3270	SmarTerm 220	SmarTerm 240	Poly-COM/220
FUNCTION	Host resource link	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation
Configuration	Single user	Single user	Single user	Single user
COMPONENTS	Micro software	Micro software, host software/hardware	Micro software, host software/hardware	Micro software
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	—
Configuration	128KB, IBM 3270 emulation	384KB	512KB	192KB, diskette drive
Network Compatibility	—	Ethernet, Ungermann-Bass Net/ONE, Bridge Communications	Ethernet, Ungermann-Bass Net/ONE, Bridge Communications	—
HOST INTERFACE System	IBM 43XX/30XX	Any host recognizing DEC terminals	Any host recognizing DEC terminals	DEC VAX, DEC DECsystem
Operating Environment	IBM DOS, MVS, CICS	—	—	DEC VAX/VMS
Protocol Support	BSC, SNA, SDLC	—	—	—
Connection	—	Comm port	Comm port	Comm port
Applications	—	—	—	Virtual drives on host, calls to host resident programs
EMULATION Terminals	IBM 3278, 3279, 3274, 3276	TTY, DEC VT52/100/220	TTY, DEC VT52/100/220/240, Tektronix 4014	DEC VT52/100/220/240
Functions	—	Function keys, character attributes, user definable kybd., print to disk	Graphics display, function keys, character attributes, user definable kybd., print to disk	Color display, function keys, windowing, user definable keyboard, host printer emulation, print to disk
Concurrent Sessions Physical Connection	— —	— Coax, RS-232-C	— RS-232-C, Ethernet with network option	— RS-232-C
Access to Micro OS During Host Session	—	Yes	Yes	Yes
FEATURES File Transfer	Upload, download; host formats: VSAM; micro formats: DIF, BASIC	Upload, download	Upload, download	Upload, download; host formats: ALL-IN-ONE, EDT, VAXTPU, FMS, VMS
Code Conversion API Compatibility	— —	— —	— —	— —
Programmability	—	Script language, unattended execution	Script language, unattended execution	Unattended execution
TRANSMISSION Mode Speed (bps)	Synchronous 2.4M	Asynchronous 300, 600, 1200, 2400, 4800, 9600, 19.2K	Asynchronous 300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	Asynchronous —
SECURITY	—	—	—	Single-level password
PRICING AND AVAILABILITY Price ($)	Host software: $2,500—one user; $6,500—2 to 5 users;	Micro software: $195	Micro software: $295	Micro software: 200
Site Licensing Available Warranty	— —	Yes 30-day guarantee	Yes 30-day guarantee	— —
Maintenance Contract Date of First Delivery Number Installed	Yes June 1984 —	No April 1985 6,800	No January 1986 8,000	— — —
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers	Distributors, dealers, retailers	Distributors, dealers, retailers	Direct from vendor, distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Polygon Associates, Inc.	Polygon Associates, Inc.	Protocol Computer, Inc.	Protocol Computer, Inc.
Model	Poly-STAR	Poly-COM/240	PCI 1051	PCI 1071
FUNCTION	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation	Protocol converter	Protocol converter
Configuration	Single user	Single user	Multiuser	Multiuser
COMPONENTS	Micro software	Micro software	Standalone hardware	Standalone hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT, ASCII terminal
Operating Environment	—	—	—	—
Configuration	512KB, diskette drive	512KB, diskette, EGA for graphics	256KB, diskette drive	64KB, diskette drive
Network Compatibility	—	—	—	—
HOST INTERFACE System	DEC VAX, DEC DECsystem	DEC VAX, DEC DECsystem	IBM System/3X	IBM 43XX/30XX
Operating Environment	DEC VAX/VMS	DEC VAX/VMS	—	—
Protocol Support	—	—	SNA	BSC
Connection	Comm port	Comm port	Comm port	Controller
Applications	—	Virtual drives on host, calls to host resident programs	—	—
EMULATION Terminals	DEC VT220, DEC VT240	DEC VT52/100/220/240	IBM 5256	IBM 3278, 3286 printer
Functions	Color display, graphics display, windowing, user definable keyboard, host printer emulation, print to disk	Color display, graphics display, function keys, windowing, user definable keyboard, host printer emulation, print to disk	—	—
Concurrent Sessions	—	—	7	—
Physical Connection	RS-232-C	RS-232-C	RS-232-C	RS-232-C
Access to Micro OS During Host Session	Yes	Yes	—	—
FEATURES File Transfer	Upload, download	Upload, download	—	Upload, download
Code Conversion	—	—	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	—	—	—	—
Programmability	Scripts, script-controlled parameters, unattended execution, calls to languages, calls to other scripts	Unattended execution	—	—
TRANSMISSION Mode	Asynchronous	Asynchronous	Asynchronous, synchronous	Asynchronous, synchronous
Speed (bps)	19.2K	—	300, 1200, 2400, 4800, 9600	9600
SECURITY	—	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro software: $300	Micro software: 300	$7,000-7 ports; 3,100-1 port	$7,000-7 ports; 3,100-1 port
Site Licensing Available	—	—	—	—
Warranty	—	—	90 days; 2-year maintenance plan free	90 days
Maintenance Contract	—	—	—	—
Date of First Delivery	—	—	1982	1982
Number Installed	—	—	3,000	—
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs		

Integrating Micros in the Mainframe Environment

Vendor Name	Protocol Computer, Inc.	Quadram Corporation	Rabbit Software Corporation	Rabbit Software Corporation
Model	PCI 1076	Quad3278	RJE-Plus	3270-Plus SNA
FUNCTION	Protocol converter	Local terminal emulation	Remote terminal emulation	Remote terminal emulation
Configuration	Multiuser	—	Multiuser	Multiuser
COMPONENTS	Standalone hardware	Micro software/hardware	Micro software	Micro software
MICROCOMPUTER SUPPORT				
Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC AT	IBM PC AT
Operating Environment	—	—	MS-/PC-DOS	MS-/PC-DOS
Configuration	—	128KB, diskette drive	—	—
Network Compatibility	—	—	IBM NETBIOS	IBM NETBIOS
HOST INTERFACE				
System	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	—	—	IBM DOS, MVS, VM	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS
Protocol Support	SNA, SDLC	BSC, SNA	SNA, SDLC	SNA, SDLC
Connection	Channel adapter, front-end proc., controller	Controller	Comm port	Comm port
Applications	—	—	Calls to host programs	—
EMULATION				
Terminals	IBM 3278, 3276, 3287 printer	IBM 3278, 3279	IBM 3776/3777	IBM 3278, 3279, 3274
Functions	—	Color display, host printer emulation	Character attributes, user definable kybd., host printer emulation, print to disk	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk
Concurrent Sessions	—	—	6	6
Physical Connection	RS-232-C	—	RS-232-C	RS-232-C
Access to Micro OS During Host Session	—	—	No	No
FEATURES				
File Transfer	Upload, download	—	Upload, download; host formats: JES2/Power; micro formats: XENIX	Upload, download; host formats: TSO and CMS; micro formats: XENIX and DOS
Code Conversion	ASCII to EBCDIC	—	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	—	—	—	—
Programmability	—	—	—	Calls to other script languages
TRANSMISSION				
Mode	Asynchronous, synchronous	Synchronous	Synchronous	Synchronous
Speed (bps)	2400, 9600	2.4M	300, 600, 1200, 2400, 4800, 9600	300, 600, 1200, 2400, 4800, 9600
SECURITY	Single-level password	—	Single-level password	Single-level password
PRICING AND AVAILABILITY				
Price ($)	$7,000-7 ports; 3,100-1 port	Micro software: 1,995	Contact vendor	Contact vendor
Site Licensing Available	—	—	—	—
Warranty	90 days	1 year	—	—
Maintenance Contract	—	—	—	—
Date of First Delivery	September 1981	May 1984	May 1986	December 1985
Number Installed	6,800	—	—	—
DISTRIBUTION	—	Distributors, dealers, retailers	OEMs, VARs	OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Rabbit Software Corporation	Rabbit Software Corporation	Ross Systems, Inc.	SAS Institute Inc.
Model	DIA-Plus	APPC-Plus	MAPS/MICROLINK	Base SAS Software
FUNCTION	Host application link	Network gateway, host resource link	Remote terminal emulation, host application link	Remote terminal emulation, host application link
Configuration	Multiuser	Multiuser	Multiuser	Multiuser
COMPONENTS	Micro software/hardware, host software/hardware	Micro software	Micro software, host software/hardware	Micro software, host software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC AT	IBM PC AT	IBM PC/XT/AT	IBM PC/XT/AT, PC/2
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	512KB	512KB	128KB	512KB, 10MB hard disk
Network Compatibility	—	—	Ethernet	Ethernet, IBM NETBIOS, Novell NetWare, 3Com networks
HOST INTERFACE System	IBM 43XX/30XX, System/3X	IBM 43XX/30XX, System/3X	DEC VAX	IBM 43XX/30XX, DEC VAX
Operating Environment	IBM MVS, CICS, SSPDIOSS, Personal Service	IBM MVS, CICS, SSP, DISOSS	DEC VAX/VMS, Unisys	IBM OS/VS, MVS, VM, TSO, CMS, DEC VAX/VMS
Protocol Support	SNA, SDLC	SNA, SDLC	Asynchronous	BSC, SNA, SDLC
Connection	Front-end proc., controller	Front-end proc., controller	Comm port	Front-end proc., controller, comm port
Applications	DISOSS	DISOSS	Calls to host programs, accounting application access: MAPS/GL, MAPS/MODEL	Calls to host programs, DBMS access: SAS system, System
EMULATION Terminals	Displaywriter	Displaywriter	DEC VT52/100	TTY, DEC VT52/100, IBM 3278, 3279
Functions	Function keys, character attributes, windowing, user definable kybd.	—	Function keys, character attributes, user definable kybd., host printer emulation, print to disk	Color display, function keys, windowing
Concurrent Sessions	—	254	Up to VMS Limit	2
Physical Connection	RS-232-C	—	RS-232-C	Coax, RS-232-C
Access to Micro OS During Host Session	No	—	No	Yes
FEATURES File Transfer	Upload, download	Upload, download	Upload, download, DIF	Upload, download; host formats: SAS data sets; micro formats: SAS data sets
Code Conversion	ASCII to EBCDIC	—	—	ASCII to EBCDIC
API Compatibility	—	—	—	IBM LU 2.1, DCA IRMA
Programmability	Scripted parameters, unattended execution	Scripted parameters, unattended execution, calls to languages	—	Script language, scripted parameters
TRANSMISSION Mode	Synchronous	Synchronous	Asynchronous	Asynchronous, synchronous
Speed (bps)	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	300, 600, 1200, 2400, 4800, 9600	300, 600, 1200, 2400, 4800, 9600
SECURITY	Multilevel password	Multilevel password	—	—
PRICING AND AVAILABILITY Price ($)	Contact vendor	Contact vendor	Host and microcomputer software: $5,000 and up	Host software: first-year license fee ranges from $1,500 to $12,000
Site Licensing Available	—	—	Yes	Yes
Warranty	—	—	—	—
Maintenance Contract	—	—	Yes	—
Date of First Delivery	—	—	January 1985	October 1985
Number Installed	—	—	64	1,240
DISTRIBUTION	OEMs, VARs	OEMs, VARs	Direct from vendor	Direct from vendor

Integrating Micros in the Mainframe Environment

Vendor Name	Simware, Inc.	Softel, Inc.	Softronics, Inc.	Software Clearing House, Inc
Model	SIM3278/PC	PC52	Softerm PC	MICROLINK
FUNCTION	Remote terminal emulation	Remote terminal emulation	Local terminal emulation, remote terminal emulation	Local terminal emulation, host application link
Configuration	—	Multiuser	Single user	Multiuser
COMPONENTS	Micro software, host software/hardware	Micro software	Micro software	Micro software
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	—	MS-/PC-DOS, Unix 5.0	MS-/PC-DOS	MS-/PC-DOS
Configuration	192KB, diskette drive	128KB, diskette drive	192KB, diskette drive	512KB, diskette drive
Network Compatibility	—	X25	Ethernet, Novell NetWare, 3Com networks	—
HOST INTERFACE System	IBM 43XX/30XX, DEC VAX	Unix-based hosts	IBM 43XX/30XX, System/3X, DG, DEC VAX, DECsystem, Hewlett-Packard, Honeywell, Unisys, Unix-based, Prime	NCR
Operating Environment	IBM MVS, VM, TSO, CMS	UNIX	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP, DEC, DG, Honeywell, HP, Prime	NCR IMDS, IRX, ITX
Protocol Support	ASCII-based proprietary	—	—	Proprietary
Connection	Comm port	Comm port	Comm port	Comm port
Applications	—	Calls to host programs	Virtual drives on host, calls to host programs	—
EMULATION Terminals	DEC VT52/100, IBM 3278	DEC VT52/100	TTY, Televideo 950, IBM 3101, DEC VT52/100/220, Hewlett-Packard terminals, DG Dasher	NCR 7900-1, ADDS VIEWPOINT
Functions	Color display, user definable keyboard, print to disk	Color/graphics display	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Color display, function keys, character attributes
Concurrent Sessions	12	—	4	—
Physical Connection	RS-232-C	RS-232-C, X.25	RS-232-C	Coax, any RS-232 interface
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES File Transfer	Upload, download	Upload, download	Upload, download; micro formats: WKS, WRK	Upload, download
Code Conversion	—	—	—	—
API Compatibility	—	—	—	—
Programmability	—	—	Script language, scripted parameters, unattended execution, calls to other script languages	Unattended execution
TRANSMISSION Mode	Asynchronous	Asynchronous	Asynchronous	Asynchronous
Speed (bps)	9600	Up to 56K	300, 600, 1200, 2400, 4800, 9600, 19.2K	19.2K
SECURITY	—	—	Single-level password	—
PRICING AND AVAILABILITY Price ($)	Micro software: 250 SIM3278/VM-$9,500 (1 CPU); $5,000 each subsequent	Micro software: $140	Micro software: $195	Contact vendor
Site Licensing Available	—	Yes	No	Yes
Warranty	30-day	—	90 days	30-day free trial
Maintenance Contract	Yes	Yes	No	Yes
Date of First Delivery	June 1984	September 1985	August 1984	—
Number Installed	—	15,000	16,000	—
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers	Direct from vendor	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor

Integrating Micros in the Mainframe Environment

Vendor Name	Software Dynamics Incorporated	Software Synergy, Inc.	Software Synergy, Inc.	Software Synergy, Inc.
Model	SDI 2780/3780	Respond/Async	Respond PC Host	Respond/Quick
FUNCTION	Remote terminal emulation	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation, host resource link	Local terminal emulation, remote terminal emulation
Configuration	—	Single user	Single user	Single user
COMPONENTS	Micro software/hardware	—	Micro software	Micro software
MICROCOMPUTER SUPPORT				
Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	64KB, diskette drive	256KB, diskette drive	384KB, 500K	256KB, diskette drive
Network Compatibility	—	—	—	—
HOST INTERFACE				
System	—	DEC VAX, Hewlett-Packard, IBM minicomputers	—	—
Operating Environment	IBM DOS	—	—	—
Protocol Support	HASP	Asynchronous, RS-232-C	—	Asynchronous RS-232
Connection	—	Comm port	—	Comm port
Applications	—	—	—	—
EMULATION				
Terminals	IBM 2780/3780	TTY, IBM 3101, DEC VT52/100, Hewlett-Packard terminals	TTY	TTY, DEC VT52/100
Functions	Color display, function keys, host printer emulation, print to disk	Color display, function keys, character attributes, print to disk	Color display, function keys, character attributes, print to disk	Color display, function keys, character attributes
Concurrent Sessions	4	1	—	1
Physical Connection	—	RS-232-C	RS-232-C	RS-232-C
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES				
File Transfer	—	Upload, download; host formats: binary; micro formats: binary, text	Upload, download; host formats: binary, text	Upload, download; host formats: binary; micro formats: binary, text
Code Conversion	—	—	—	—
API Compatibility	—	—	—	—
Programmability	—	Script language, unattended execution	Unattended execution	—
TRANSMISSION				
Mode	Synchronous	Asynchronous	Asynchronous	Asynchronous
Speed (bps)	19.2K	300, 600, 1200, 2400, 4800, 9600, 19.2K	300, 600, 1200. 2400, 4800, 9600, 19.2K	300, 600, 1200, 2400, 4800, 9600, 19.2K
SECURITY	Single-level password	—	Single-level password, transmission encryption	—
PRICING AND AVAILABILITY				
Price ($)	Micro hardware and software: SDI 2780/3780, $599	Micro software: $129	Micro software: $195	Micro software: $39
Site Licensing Available	—	Yes	Yes	Yes
Warranty	90 days	6 months	90 days	6 months
Maintenance Contract	—	No	No	No
Date of First Delivery	July 1983	April 1984	January 1986	January 1987
Number Installed	400	—	100	—
DISTRIBUTION	Direct from vendor	Direct from vendor	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor

Integrating Micros in the Mainframe Environment

Vendor Name	Solution Systems	Sterling Software, Dylakor Division	Sterling Software/Systems Software	Sterling Software/Systems Software
Model	ZAP	DYL-ULINK	PC-TRACS 3770	PC-TRACS 3270
FUNCTION	Local terminal emulation, remote terminal emulation, protocol converter	Host application link, host resource link	Remote terminal emulation	Remote terminal emulation
Configuration	Single user	Multiuser	Single user	Single user
COMPONENTS	Micro software	Micro software, host software/hardware	Micro software/hardware	Micro software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	128KB	256KB, 256KB	256KB, diskette drive	256KB, diskette drive
Network Compatibility	—	IBM NETBIOS, Banyan	IBM NETBIOS, 3Com networks	IBM NETBIOS
HOST INTERFACE System	DEC VAX, DECsystem, Unix-based hosts	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	DEC VAX/VMS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP	IBM DOS, OS/VS, MVS, VM	IBM TSO, CMS, IMS, CICS
Protocol Support	—	BSC, SNA, SDLC	SNA, SDLC	SNA, SDLC
Connection	Comm port	Comm port	Controller, comm port	Controller, comm port
Applications	—	Virtual drives on host, calls to host programs	—	—
EMULATION Terminals	DEC VT52/100/102, Tektronix 4014, 4010	TTY, IBM 3101, IBM 3278, 3279, 3274, 3276	IBM 3770 or 8100 terminal	IBM 3278, 3279, 3274, 3276
Functions	Color/graphics display, function keys, windowing, user definable kybd.	Color display, function keys, print to disk	User definable kybd., host printer emulation, print to disk	Color display, function keys, user definable kybd., host printer emulation, print to disk
Concurrent Sessions Physical Connection	— RS-232-C	— Coax, RS-232-C	5 Coax, RS-232-C	3 display, 2 print Coax, RS-232-C
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES File Transfer	Upload, download	Upload, download	Upload, download	Upload, download
Code Conversion API Compatibility	— —	ASCII to EBCDIC IBM LU 2.1, DCA IRMA	ASCII to EBCDIC IBM LU 2.1	ASCII to EBCDIC IBM LU 2.1
Programmability	Script language	Script language, scripted parameters, calls to languages	Script language, scripted parameters, unattended execution	Script language, scripted parameters, unattended execution, calls to languages, calls to other script languages
TRANSMISSION Mode Speed (bps)	Asynchronous Up to 38.4K	Asynchronous, synchronous 1200, 9600, 19.2K	Synchronous 1200, 2400, 4800, 9600	Synchronous 1200, 2400, 4800, 9600
SECURITY	—	Multilevel password	—	—
PRICING AND AVAILABILITY Price ($)	Micro software: $95	Contact vendor	Micro hardware and software: $830	Micro hardware and software: $830
Site Licensing Available Warranty	Yes 30-day money back guarantee	Yes 1 year	— 90 days, 1 year	— 90 days, 1 year
Maintenance Contract Date of First Delivery Number Installed	No April 1985 1,500	Yes — —	— — —	— — —
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor, distributors, dealers, retailers		

Integrating Micros in the Mainframe Environment

Vendor Name	Sterling Software/Systems Software	Sterling Software/Systems Software	Sterling Software/Systems Software	Sterling Software/Systems Software
Model	PC-TRACS 3780	PC-TRACS 6.2	DBase/Answer	Lotus/Answer
FUNCTION	Remote terminal emulation	Remote terminal emulation	Local terminal emulation	Local terminal emulation
Configuration	Single user	Single user	Multiuser	Multiuser
COMPONENTS	Micro software/hardware	Micro software/hardware	Micro software, host software/hardware	Micro software, host software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC XT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	64KB, diskette drive	256KB, diskette drive	256KB	256KB
Network Compatibility	IBM NETBIOS	IBM NETBIOS	—	—
HOST INTERFACE System	IBM 43XX/30XX, System/3X	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	IBM DOS, OS/VS, MVS, VM, CMS	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS, SSP	IBM OS/VS, CICS, IMS/DC	IBM OS/VS, IMS/DC
Protocol Support	BSC	SNA, SDLC	—	—
Connection	Controller, comm port	Controller, comm port	—	—
Applications	JES	—	—	—
EMULATION Terminals	IBM 2780/3780	IBM 2780/3780	—	—
Functions	Host printer emulation, print to disk	—	—	—
Concurrent Sessions	—	—	—	—
Physical Connection	RS-232-C	RS-232-C	—	—
Access to Micro OS During Host Session	No	—	No	No
FEATURES File Transfer	Upload, download; host formats: Print or Punch	Upload, download	Download; micro formats: dBase II/III, Framework	Download; micro formats: Lotus 1-2-3, Symphony
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	—	—
API Compatibility	—	IBM LU 2.1, IBM LU 6.2	—	—
Programmability	Unattended execution, parameters file	—	—	—
TRANSMISSION Mode	Synchronous	Synchronous	—	—
Speed (bps)	1200, 2400, 4800, 9600	1200, 2400, 4800, 9600	—	—
SECURITY	ID verification	—	Multilevel password	Multilevel password
PRICING AND AVAILABILITY Price ($)	Micro hardware and software: $950	Micro software: $495	Micro software: $500; host software: $30,000 per copy	Micro software: $500; host software: $30,000 per copy
Site Licensing Available	—	—	—	—
Warranty	90 days, 1 year	90 days, 1 year	—	—
Maintenance Contract	—	—	Yes	Yes
Date of First Delivery	—	—	—	—
Number Installed	—	—	—	—
DISTRIBUTION			Direct from vendor	—

Integrating Micros in the Mainframe Environment

Vendor Name	Techland Systems, Inc.	Techland Systems, Inc.	Techland Systems, Inc.	Technological Systems Group, Inc.
Model	BlueLynx Advanced Coax	BlueLynx 3270 Remote	BlueLynx 5251	Tepro 4010
FUNCTION	Local terminal emulation	Remote terminal emulation	Local terminal emulation, remote terminal emulation	Remote terminal emulation
Configuration	—	Single user	Single user	Single user
COMPONENTS	Micro software/hardware	Micro software/hardware	Micro software/hardware	Micro software
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	—	IBM PC/XT/AT
Operating Environment	—	—	—	MS-/PC-DOS
Configuration	—	196KB, diskette drive	128KB, diskette drive	128KB, diskette
Network Compatibility	—	—	—	—
HOST INTERFACE System	IBM 43XX/30XX	IBM 43XX/30XX	IBM System/3X	—
Operating Environment	IBM VM, TSO, CMS, CICS	IBM TSO, CMS	—	—
Protocol Support	—	SNA, SDLC	SNA, SDLC	—
Connection	Controller	Comm port	—	—
Applications	—	—	—	—
EMULATION Terminals	IBM 3278, 3279	IBM 3278	IBM 5251	Tektronix 4010
Functions	Color display, function keys	Color display, windowing, host printer emulation, print to disk	Color display, windowing, host printer emulation, print to disk	Graphics display
Concurrent Sessions	—	6	6	—
Physical Connection	—	RS-232-C	—	RS-232-C
Access to Micro OS During Host Session	Yes	Yes	Yes	No
FEATURES File Transfer	Upload, download DIF, SIF	Upload, download; micro formats: Lotus, dBase II, VisiCalc	Upload, download	Upload, download
Code Conversion	—	ASCII to EBCDIC	—	—
API Compatibility	—	—	—	—
Programmability	Script-controlled parameters, unattended execution	Script-controlled parameters, unattended execution	Script-controlled parameters, unattended execution	—
TRANSMISSION Mode	—	Synchronous	Synchronous	Asynchronous
Speed (bps)	—	9600	—	300, 600, 1200, 2400, 4800, 9600
SECURITY	User profiles	User profiles	User profiles	—
PRICING AND AVAILABILITY Price ($)	Micro software: $995; with 3270 keyboard: $1,295	Micro software: $945	Micro software: $695	Micro software: $800
Site Licensing Available	—	—	—	Yes
Warranty	90 days, $25 for 2 year extension	90 days	90 days	—
Maintenance Contract	Yes	Yes	Yes	No
Date of First Delivery	—	—	1982	November 1983
Number Installed	—	—	—	200
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers	Direct from vendor, distributors, dealers, retailers	—	Direct from vendor

Integrating Micros in the Mainframe Environment

Vendor Name	Teknigraphics	Texas Instruments Inc.	Texas Instruments Inc.	2B Enterprises
Model	GRAPH-TEK	Business-Pro	System1100	Microcomputer Information Support Tools (MIST+)
FUNCTION	Local terminal emulation	Local terminal emulation, remote terminal emulation, network gateway, protocol	Local terminal emulation, remote terminal emulation, network gateway, host resource link	Local terminal emulation, remote terminal emulation, host resource link
Configuration	Single user	Single user, multiuser	Single user, multiuser	Single user
COMPONENTS	Micro software	Micro software/hardware, standalone hardware, host software/hardware	Micro software/hardware, standalone hardware, host software/hardware	Micro software
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	256KB, diskette, 3270 adapter board	256KB, diskette, terminal emulation software	256KB, diskette, terminal emulation software	256KB, 5MB hard disk
Network Compatibility	IBM NETBIOS	Ethernet, Novell NetWare, 3Com networks	Ethernet, Novell NetWare, 3Com networks	Ethernet, Sytek
HOST INTERFACE System	IBM 43XX/30XX	Unix-based hosts	Unix-based hosts	IBM 43XX/30XX, DG, DEC VAX, Hewlett-Packard, Unix-based, Perkin/Elmer hosts
Operating Environment	IBM MVS, VM, TSO, CMS	IBM OS/VS, MVS, VM, TSO, CMS, IMS, CICS	IBM OS/VS, MVS, VM, TSO, CMS, IMS, CICS	IBM TSO, DEC VAX/VMS, DG AOSUnix, Perkin/Elmer OS
Protocol Support	BSC, SNA, SDLC	BSC, SNA, HDLC, SDLC	BSC, SNA, HDLC, SDLC	Asynchronous
Connection	Controller	Comm port	Comm port	Comm port
Applications	3270 Host APA Graphics	2780/3780 BSC, 3270/SNA, asynchronous	2780/3780 BSC, 3270/SNA, asynchronous	Calls to host programs
EMULATION Terminals	Tektronix 4014, 4105, IBM 3278, 3279	TTY, TI 931	IBM 2780/3780	TTY
Functions	Color/graphics display	Color/graphics display, function keys, character attributes, host printer emulation	Host printer emulation, print to disk	Print to disk
Concurrent Sessions	—	—	Multiple entry to batch queue	—
Physical Connection	Coax	RS-232-C	RS-232-C	Coax, RS-232-C, Sytek broadband network
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES File Transfer	Download; host formats: Tektronix, HPGL	Upload, download; host formats: XENIX/TI Business Systems	Upload, download	Upload, download
Code Conversion	Proprietary translation	—	ASCII to EBCDIC	—
API Compatibility	DCA IRMA	—	—	—
Programmability	—	—	—	Script language, scripted parameters, unattended execution, calls to languages, calls to other script languages
TRANSMISSION Mode	Synchronous	Asynchronous	Synchronous	Asynchronous
Speed (bps)	2.4M	300, 600, 1200, 2400, 4800, 9600, 19.2K	1200, 2400, 4800	300, 600, 1200
SECURITY	—	—	—	Multilevel password
PRICING AND AVAILABILITY Price ($)	Micro software: $395-mono; $595-color; includes host software	Micro software: $150	Micro software: $700	Micro software: $495
Site Licensing Available	—	No	—	Yes
Warranty	30 days	90 days	90 days	—
Maintenance Contract	No	Yes	Yes	Yes
Date of First Delivery	January 1986	1984	1986	October 1983
Number Installed	—	—	—	—
DISTRIBUTION	Distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Universal Data Systems	Universal Data Systems	Universal Data Systems	Universal Data Systems
Model	Sync-Up BSC Communication Software	Sync-Up SNA 3270 Communication Software	Sync-Up SNA 3770 Communication Software	Sync-Up SNA 5251 Communication Software
FUNCTION	Remote terminal emulation	Remote terminal emulation	Remote terminal emulation	Remote terminal emulation
Configuration	Single user	Single user	Single user	Single user
COMPONENTS	Micro software/hardware	Micro software/hardware	Micro software/hardware	Micro software/hardware
MICROCOMPUTER SUPPORT Systems	IBM 3270 PC, PC RT, IBM Portable	IBM PC/XT/AT, 3270 PC, Portable PC, PC RT	IBM PC/XT/AT, 3270 PC, Portable PC, PC RT	IBM PC/XT/AT, 3270 PC, Portable PC, PC RT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	128KB, diskette drive	320KB, diskette drive	256KB, diskette drive	256KB, diskette drive
Network Compatibility	—	—	—	—
HOST INTERFACE System	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX	IBM System/3X
Operating Environment	IBM DOS	—	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS	IBMOS,SSCP
Protocol Support	BSC, HASP	SNA, SDLC	SNA, SDLC	SNA, SDLC
Connection	Front-end proc., controller, comm port	Front-end proc., comm port	Front-end proc., comm port	Comm port
Applications	—	Calls to host programs	Calls to host programs	Calls to host programs
EMULATION Terminals	IBM 3278, 3279, 3274, 3276, 2780/3780, 3271	IBM 3278, 3274, 3276, 3277	IBM 3776/77	IBM 5150, IBM 5251, 5294, 5291, 5224, 5225, 5256
Functions	Color/graphics display, function keys, host printer emulation, print to disk	Color display, function keys, user definable kybd., host printer emulation, print to disk	Function keys, host printer emulation, print to disk	Color/graphics display, function keys, windowing, user definable kybd., host printer emulation, print to disk
Concurrent Sessions	4	4	—	9
Physical Connection	RJ-11	RJ-11	RJ-11	RJ-11
Access to Micro OS During Host Session	Yes	Yes	No	Yes
FEATURES File Transfer	Upload, download	Upload, download	Upload, download	Upload, download
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	IBM LU 2.1	Sync-Up SNA	—	IBM LU 2.1
Programmability	Script language, scripted parameters, unattended execution, calls to other script languages	—	Unattended execution	Unattended execution
TRANSMISSION Mode	Synchronous	Synchronous	Synchronous	Synchronous
Speed (bps)	2400, 4800, 9600	2400, 4800, 9600	2400, 4800, 9600	2400, 4800, 9600
SECURITY	—	—	—	—
PRICING AND AVAILABILITY Price ($)	Micro software: $325; micro hardware: $625	Micro software: $525; micro hardware: $625	Micro software: $525; micro hardware: $625	Micro software: $525; micro hardware: $625
Site Licensing Available	No	No	No	—
Warranty	1 year	1 year	1 year	1 year
Maintenance Contract	No	No	No	No
Date of First Delivery	December 1985	December 1986	February 1987	March 1987
Number Installed	2,500	750	150	35
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	URGEO Software, Inc.	VM Personal Computing	VM Personal Computing	VM Personal Computing
Model	Apple-Bisync	Relay Gold	Relay 13270 (Host Product)	Relay/VM
FUNCTION	Remote terminal emulation	Local terminal emulation, host resource link	Local terminal emulation, host resource link	Host resource link
Configuration	Single user	Single user, multiuser	Multiuser	Multiuser
COMPONENTS	Micro software/hardware	Micro software, host software/hardware	Micro software, host software/hardware	Micro software, host software/hardware
MICROCOMPUTER SUPPORT Systems	Apple II series	IBM PC/XT/AT, Wang PC, DG ONE, HP150	IBM PC/XT/AT, Wang PC, DG ONE, Hewlett-Packard HP150	IBM PC/XT/AT, Wang PC, DG ONE, Hewlett-Packard HP150
Operating Environment	Apple ProDOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	48KB, diskette drive	192KB, diskette drive	192KB, diskette drive	192KB, diskette drive
Network Compatibility	IBM NETBIOS	IBM NETBIOS, Novell NetWare	IBM NETBIOS, Novell NetWare	IBM NETBIOS, Novell NetWare
HOST INTERFACE System	IBM 43XX/30XX, System/3X, standard bisynchronous	IBM 43XX/30XX	IBM 43XX/30XX	IBM 43XX/30XX
Operating Environment	IBM DOS, OS/VS, MVS, VM, TSO, CMS, IMS, CICS	IBM MVS, VM	IBM VM	IBM VM
Protocol Support	BSC	BSC, SNA, SDLC	—	BSC, SNA, SDLC
Connection	Front-end proc., comm port	Front-end proc., controller, comm port	Front-end proc., controller, comm port	Front-end proc., controller, comm port
Applications	—	Calls to host programs	—	—
EMULATION Terminals	IBM 3278, 3274, 3276, 2780/3780, IBM 3275	TTY, DEC VT52/100, IBM 3278, 3279	TTY, DEC VT52/100, IBM 3278, 3279	TTY, DEC VT52/100, IBM 3278, 3279
Functions	Function keys, character attributes, host printer emulation, print to disk	Function keys, character attributes, user definable kybd., print to disk	Function keys, character attributes, user definable kybd., print to disk	Color display, function keys, character attributes, user definable kybd., print to disk
Concurrent Sessions	—	2	—	2
Physical Connection	RS-232-C	Coax	Coax, RS-232-C	Coax, RS-232-C
Access to Micro OS During Host Session	No	Yes	Yes	Yes
FEATURES File Transfer	Upload, download	Upload, download; host formats: ASCII, EBCIDIC, Binary	Upload, download	Upload, download
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	—	Proprietary	Proprietary	Proprietary
Programmability	Unattended execution, calls to languages	Script language, scripted parameters, unattended execution, calls to languages, calls to other script languages	Script language, scripted parameters, unattended execution, calls to languages, calls to other scripts	Script language, scripted parameters, unattended execution, calls to languages, calls to other script languages
TRANSMISSION Mode	Synchronous	Asynchronous	Asynchronous	Asynchronous
Speed (bps)	2400, 4800, 9600	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K
SECURITY	—	Single-level password, multilevel password, transmission encryption	Single-level password, multilevel password, transmission encryption	Single-level password, multilevel password, transmission encryption
PRICING AND AVAILABILITY Price ($)	Micro hardware: $750	Micro software: $250 to $500	Micro software: $250 to $500; host hardware/software: $10,000 (optional)	Micro software: $250; host hardware/software: $6,500 optional
Site Licensing Available	Yes	—	—	—
Warranty	1 year	90 days	Covered under license agreement	—
Maintenance Contract	Yes	Yes	—	Yes
Date of First Delivery	April 1984	April 1982	April 1982	April 1982
Number Installed	100	40,000	—	—
DISTRIBUTION	Mail order	Direct from vendor, distributors, dealers, retailers, OEMs, VARs	Direct from vendor	Direct from vendor

Integrating Micros in the Mainframe Environment

Vendor Name	VM Personal Computing	Walker, Richer, and Quinn, Inc.	Walker, Richer, and Quinn, Inc.	Walker, Richer, and Quinn, Inc.
Model	Relay/TSO	Reflection 1	Reflection 2	Reflection 3
FUNCTION	Host resource link	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation
Configuration	Multiuser	Single user	Single user	Single user
COMPONENTS	Micro software, host software/hardware	Micro software, host software/hardware	Micro software, host software/hardware	Micro software, host software/hardware
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT, Wang PC, DG ONE, Hewlett-Packard HP150	IBM PC/XT/AT, HP 150, Wang PC	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	192KB, diskette drive	256KB, diskette	256KB, diskette drive	312KB, diskette drive
Network Compatibility	IBM NETBIOS, Novell NetWare	Ethernet, IBM NETBIOS, 3Com networks, Ungermann-Bass, Bridge	Ethernet, 3Com networks, Ungermann-Bass, Bridge	Ethernet, 3Com networks, Ungermann-Bass, Bridge
HOST INTERFACE System	IBM 43XX/30XX	DEC VAX, Hewlett-Packard, Unix-based hosts	DEC VAX, Unix-based hosts	DEC VAX, Hewlett-Packard, Unix-based hosts
Operating Environment	IBM MVS	DEC VAX/VMS, UNIX, Hewlett-Packard MPE, HPU	DEC VAX/VMS	DEC VAX/VMS, UNIX, Hewlett-Packard MPE, HPUX
Protocol Support	SNA, SDLC	—	—	—
Connection	Front-end proc., controller, comm port	Comm port	Comm port	Comm port
Applications	—	File transfer	File transfer	File transfer
EMULATION Terminals	TTY, DEC VT52/100	DEC VT52/100/220, Hewlett-Packard terminals	DEC VT52/100/220	DEC VT52/100/220, Hewlett-Packard terminals
Functions	Color display, function keys, user definable kybd., print to disk	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk	Function keys, character attributes, user definable kybd., host printer emulation, print to disk	Graphics display, function keys, character attributes, user definable kybd., host printer emulation, print to disk
Concurrent Sessions	2	2	2	2
Physical Connection	Coax, RS-232-C	RS-232-C, LAN interface	RS-232-C, LAN interface	RS-232-C, LAN interface
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES File Transfer	Upload, download	Upload, download; host formats: HP MPE, DEC VMS, UNIX	Upload, download; host formats: DEC/VMS	Upload, download; host formats: HP MPE, DEC VMS, most UNIX
Code Conversion	ASCII to EBCDIC	HP, DEC translations	HP, DEC translation	HP, DEC translation
API Compatibility	Proprietary	Custom host program can control remote program	Custom host program can control remote program	Custom host program can control Remote program
Programmability	Script language, scripted parameters, unattended execution, calls to languages, calls to other script languages	Script language, scripted parameters, unattended execution, calls to languages, calls to other scripts	Script language, scripted parameters, unattended execution, calls to languages, calls to other scripts	Script language, scripted parameters, unattended execution, calls to languages, calls to other scripts, Menu interface
TRANSMISSION Mode	Asynchronous	Asynchronous	Asynchronous	Asynchronous
Speed (bps)	300, 600, 1200, 2400, 4800, 9600, 12.4K, 19.2K	300, 600, 1200, 2400, 4800, 9600, 19.2K	300, 600, 1200, 2400, 4800, 9600, 19.2K	300, 600, 1200, 2400, 4800, 9600, 19.2K
SECURITY	Single-level password, multilevel password, transmission encryption	Command file encryption	Command file encryption	Command file encryption
PRICING AND AVAILABILITY Price ($)	Micro software: $250; host hardware/software: $9,500	Micro software: $299; $349 with backup/restore feature	Micro software: $199; $249 with backup/restore feature	Micro software: $399; $449 with backup/restore feature
Site Licensing Available	No	No	No	No
Warranty	—	90 days	90 days	90 days
Maintenance Contract	Yes	No	No	No
Date of First Delivery	October 1985	June 1983	—	June 1985
Number Installed	—	50,000	5,000	—
DISTRIBUTION	Direct from vendor	Direct from vendor, distributors, dealers, retailers	Direct from vendor, distributors, dealers, retailers	Direct from vendor, distributors, dealers, retailers

Integrating Micros in the Mainframe Environment

Vendor Name	Walker, Richer, and Quinn, Inc.	Wall Data, Inc.	Wall Data, Inc.	Wall Data, Inc.
Model	Reflection 7+	DCF II/5250	Datagate PC/5250	Datagate PC/3270
FUNCTION	Local terminal emulation, remote terminal emulation	Local terminal emulation, remote terminal emulation, protocol converter	Local terminal emulation, remote terminal emulation, protocol converter	Local terminal emulation, remote terminal emulation, protocol converter
Configuration	Single user	Multiuser	Multiuser	Multiuser
COMPONENTS	Micro software, host software/hardware	Micro software, standalone hardware	Micro software/hardware	Micro software, standalone hardware
MICROCOMPUTER SUPPORT				
Systems	IBM PC/XT/AT	Apple Macintosh, IBM PC/XT/AT	Apple Macintosh, IBM PC/XT/AT	Apple Macintosh, IBM PC/XT/AT
Operating Environment	MS-/PC-DOS	Apple Finder, MS-/PC-DOS	Apple Finder, MS-/PC-DOS	Apple Finder, MS-/PC-DOS
Configuration	512KB, diskette drive	256KB, diskette, MacBlue terminal emulation	256KB, diskette, MacBlue terminal emulation	256KB, diskette, MacBlue terminal emulation
Network Compatibility	Ethernet, 3Com networks, Ungermann-Bass, Bridge	—	—	—
HOST INTERFACE				
System	DEC VAX, Hewlett-Packard, Unix-based hosts	IBM System/3X, DG, DEC VAX, Hewlett-Packard hosts	IBM System/3X, DG, DEC VAX, Hewlett-Packard hosts	IBM 43XX/30XX, DG, DEC VAX, Hewlett-Packard hosts
Operating Environment	DEC VAX/VMS, UNIX, Hewlett-Packard MPE, HPUX	IBM SSP, DEC VAX/VMS, DG AOS	IBM SSP, DEC VAX/VMS, DG AOS	IBM MVS, VM, TSO, CMS, IMS, CICS, DEC VAX/VMS, DG AOS
Protocol Support	—	SDLC, asynchronous	SDLC, asynchronous	BSC, SNA, SDLC, asynchronous
Connection	Comm port	Controller, comm port	Controller, comm port	Front-end proc., controller, comm port
Applications	File transfer	Terminal emulation and file transfer	Terminal emulation and file transfer	Terminal emulation and file transfer
EMULATION				
Terminals	DEC VT52/100, HP terminals, Tektronix 4010	IBM 5251, 5291, 5292	IBM 5251, 5291, 5292	IBM 3278, 3279, 3274
Functions	Color display, function keys, character attributes, host printer emulation, print to disk	Character attributes, host printer emulation	Character attributes, host printer emulation	Color display, character attributes, host printer emulation
Concurrent Sessions	2		Up to 5 per PC, 5 PCs maximum	Up to 5 per PC, 5 PCs maximum
Physical Connection	RS-232-C, LAN interface	RS-232-C	RS-232-C	RS-232-C
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES				
File Transfer	Upload, download; host formats: Hewlett-Packard MPE, DEC VMS, most UNIX	Upload, download	—	Upload, download
Code Conversion	—	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	Custom host program can control Remote program	IBM LU 2.1	IBM LU 2.1	IBM LU 2.1
Programmability	Script language, scripted parameters, unattended execution, calls to languages, calls to other scriptsMenu interface	Script language, scripted parameters, unattended execution	Script language, scripted parameters	Script language, scripted parameters, unattended execution
TRANSMISSION				
Mode	Asynchronous	Asynchronous, synchronous	Asynchronous, synchronous	Asynchronous, synchronous
Speed (bps)	300, 600, 1200, 2400, 4800, 9600, 19.2K	300, 1200, 2400, 4800, 9600, 19.2K	300, 1200, 2400, 4800, 9600, 19.2K	300, 1200, 2400, 4800, 9600, 19.2K
SECURITY	Command file encryption	Single-level password, multilevel password	Single-level password, multilevel password	Single-level password, multilevel password
PRICING AND AVAILABILITY				
Price ($)	Micro software: $499	Micro software: $95; standalone hardware: $3,995; host software: $400	Micro software: $95; micro hardware: $1,195; host software: $400	Micro software: $95; micro hardware: $1,195
Site Licensing Available	No	Yes	Yes	Yes
Warranty	90 days	90 days, return to factory for repairs	1 year, return to factory for repairs	1 year, return to factory for repair
Maintenance Contract	No	Yes	Yes	Yes
Date of First Delivery	October 1986	December 1985	February 1986	February 1986
Number Installed	10,000	250	75	160
DISTRIBUTION	Direct from vendor	Direct from vendor, distributors, dealers, retailers	Direct from vendor, distributors, dealers, retailers	Direct from vendor, distributors, dealers, retailers

Integrating Micros in the Mainframe Environment

Vendor Name	Wall Data, Inc.	Winterhalter, Inc.	Winterhalter, Inc.	Winterhalter, Inc.
Model	DCF II/3270	DataTalker 3270	DataSYNC/3780	DataSYNC/3270
FUNCTION	Local terminal emulation, remote terminal emulation, protocol converter	Remote terminal emulation	Remote terminal emulation	Remote terminal emulation
Configuration	Multiuser	Multiuser	Single user	Single user
COMPONENTS	Micro software, standalone hardware	Micro software/hardware	Micro software/hardware	Micro software/hardware
MICROCOMPUTER SUPPORT Systems	Apple Macintosh, IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT	IBM PC/XT/AT
Operating Environment	Apple Finder, MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS	MS-/PC-DOS
Configuration	256KB, diskette drive, terminal emulation	64KB	128KB	128KB
Network Compatibility	—	—	—	—
HOST INTERFACE System	IBM 43XX/30XX, DG, DEC VAX, Hewlett-Packard hosts	IBM 43XX/30XX	IBM 43XX/30XX, System/3X	IBM 43XX/30XX
Operating Environment	IBM MVS, VM, TSO, CMS, IMS, CICS, DEC VAX/VMS, DG AOS	IBM OS/VS, MVS, VM, TSO, CMS, CICS	—	IBM DOS, OS/VS, MVS, VM, TSO, CMS, CICS
Protocol Support	BSC, SNA, SDLC, asynchronous	BSC, SNA, SDLC	BSC	BSC, SNA, SDLC
Connection	Front-end proc., controller, comm port	Controller, comm port	Comm port	Comm port
Applications	Terminal emulation and file transfer	Virtual drives on host, calls to host programs	—	Virtual drives on host, calls to host programs
EMULATION Terminals	IBM 3278, 3279, 3274	IBM 3278, 3279, 3274, 3276	IBM 2780/3780	IBM 3278, 3279, 3274, 3276
Functions	Color display, character attributes, host printer emulation	Color display, function keys, character attributes, windowing, user definable kybd., host printer emulation, print to disk	Function keys, windowing, user definable kybd., host printer emulation, print to disk	Color display, function keys, character attributes, user definable kybd., host printer emulation, print to disk
Concurrent Sessions		32 in BSC; 20 in SNA/SDLC	—	2 sessions
Physical Connection	RS-232-C	RS-232-C	—	—
Access to Micro OS During Host Session	Yes	Yes	Yes	Yes
FEATURES File Transfer	Upload, download	Upload, download; host formats: TSO/CMS	Upload, download	Upload, download; host formats: CMS, TSO
Code Conversion	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC	ASCII to EBCDIC
API Compatibility	IBM LU 2.1	IBM LU 2.1	3780	IBM LU 2.1
Programmability	Script language, scripted parameters, unattended execution	Script language	—	—
TRANSMISSION Mode	Asynchronous, synchronous	Synchronous	Synchronous	Synchronous
Speed (bps)	300, 1200, 2400, 4800, 9600, 19.2K	1200, 2400, 4800, 9600, 12.4K, 19.2K	2400, 4800	2400, 4800
SECURITY	Single-level password, multilevel password	Multilevel password, file encryption, transmission encryption	Single-level password, multilevel password, file/transmission encryption	Single-level password, multilevel password, file/transmission encryption
PRICING AND AVAILABILITY Price ($)	Micro software: $95; standalone hardware: $3,995	Micro hardware and software: $1,295	Micro hardware and software: $1,095	Micro hardware and software: $1,595
Site Licensing Available	Yes	No	No	No
Warranty	90 days, Return to factory	1 year	1 year	1 year
Maintenance Contract	Yes	Yes	Yes	Yes
Date of First Delivery	December 1985	June 1984	November 1986	November 1986
Number Installed	600	1,000	100	100
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs

Integrating Micros in the Mainframe Environment

Vendor Name	Winterhalter, Inc.			
Model	DataTalker/3780			
FUNCTION	Remote terminal emulation			
Configuration	Single user			
COMPONENTS	Micro software/hardware			
MICROCOMPUTER SUPPORT Systems	IBM PC/XT/AT			
Operating Environment	MS-/PC-DOS			
Configuration	64KB			
Network Compatibility	—			
HOST INTERFACE System	IBM 43XX/30XX, System/3X			
Operating Environment	—			
Protocol Support	BSC			
Connection	Comm port			
Applications	Virtual drives on host, calls to host programs			
EMULATION Terminals	IBM 2780/3780			
Functions	Host printer emulation, print to disk			
Concurrent Sessions Physical Connection	— RS-232-C			
Access to Micro OS During Host Session	Yes			
FEATURES File Transfer	Upload, download			
Code Conversion API Compatibility Programmability	ASCII to EBCDIC Winterhalter Application Interface Module Script language			
TRANSMISSION Mode Speed (bps)	Synchronous 1200, 2400, 4800, 9600, 12.4K			
SECURITY	Multilevel password, file encryption, transmission encryption			
PRICING AND AVAILABILITY Price ($)	Micro hardware and software: $1,095			
Site Licensing Available Warranty	— 1 year			
Maintenance Contract Date of First Delivery Number Installed	Yes June 1983 2,000			
DISTRIBUTION	Direct from vendor, distributors, dealers, retailers, mail order, OEMs, VARs			