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BLASTing

THE WAY TO SYNCHRONOUS COMMUNICATIONS

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Minicomputer and microcomputer users now have several new options in data communications software. Packages are available that provide the error-free computer-to-computer data transfer that was previously available only on much larger systems. These packages are inexpensive and require little or no additional hardware. Despite their low cost, some of them rival even mainframe products in their reliability, efficiency and ability to cope with new communications media such as satellite links and local-area networks.

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The key factor in the development of these products is that most micros and minis have only asynchronous communications capability. They are equipped with the low-cost interfaces and 300 bit/sec or 1,200 bit/sec modems required for supporting character-at-a-time terminals and printers. They cannot use mainframe data communications protocols such as IBM's Binary Synchronous Communications (BSC), Systems Network Architecture/Synchronous Data Link Control (SNA/SDLC) and X.25 High-Level Data Link Control (HDLC) because these protocols require expensive synchronous interfaces and modems designed specifically for processor-to-processor communications.

Blast also provide these features:
■ Very high resistance to noise by using small transmit blocks and bit-oriented protocol.

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Full-duplex protocols such as Blocked Asynchronous Transmission (Blast) transmit a continuous stream of data blocks while using the other half of the communications channel to receive block acknowledgements simultaneously. This structure is combined with the use of sliding window or pipelining techniques as employed by sophisticated synchronous protocols such as SNA/SDLC and X.25/HDLC. The end result is that full-duplex asynchronous protocols can endure significant propagation delay without losing efficiency. They are suitable for use in a variety of communications environments.

Selective retransmission is a refinement of the sliding window technique that greatly improves performance on noisy lines. With this feature, only the blocks that have errors induced by line noise need to be retransmitted. Without selective retransmission, all blocks that have been transmitted since the bad block must also be retransmitted. This difference can account for as much as an 80% throughput difference on some connections.

Communications Satellite Corp. recently published the results of benchmarks comparing the performance of Blast with the half-duplex Christensen protocol on a satellite link. The tests involved two microcomputers exchanging files via 1,200 bit/sec modems on a dialed telephone call that included a single satellite hop. Blast consistently achieved 50% greater throughput than the Christensen protocol. Furthermore, the throughput of the full-duplex protocol remained high even when line noise was induced by deliberately off-pointing the satellite antenna.

Sophisticated utilities such as

Mom Knows

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MOM can fix you up with the hardware and software to turn your IBM PCs,™ DEC Rainbows,™ Apple Lisas,™ and other micros — as well as terminals — into full-function work stations. Instantly.

MOM, which stands for Marketing of Micros to Mainframes, specializes in distributing sophisticated, state-of-the-art interface equipment. You can depend on her to link your micros to host computers quickly. Efficiently. Problem-free.

MOM's old fashioned when it comes to product reliability, service and support. Her advice is sound. Trust her. MOM suggests only those products that will provide you with the solutions you need. Tell her what your needs are, MOM will tell you the best way to increase productivity as well as keeping costs down.

MOM knows the value of a dollar.

Money doesn't grow on trees. So solutions to today's business communication problems need to be

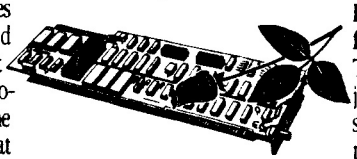
compatible with the next generation of technology. MOM stretches your computer investment dollars by adding processing capabilities to microcomputers and terminals, eliminating the need for additional expensive hardware. Data control is centralized in the mainframe.

Meet a few of MOM's family.

MOM markets a growing number of very impressive hardware and software products. Each one is compatible with a variety of microcomputers.

Meet IRMA.™

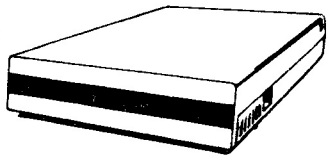
IRMA goes with CHARLIE, the IBM PC or XT.™ IRMA is a Decision Support Interface™ — a printed circuit board



that slips into the PC and provides a direct link to the IBM mainframe computer. IRMA provides full 3278 emulation. She puts you on line with the mainframe — via a coax cable — giving you instant access to the big computer, the prime source of current data.

And then, of course, there's sweet IRMALINE.™

IRMA's sister, IRMALINE, links personal computers — no matter how remote — to IBM 3270 networks. And like her sister, IRMALINE is a Decision Support Interface. She lets you conduct 2-way phone communication with your mainframe via a 3270 terminal, from across town or around the world. IRMALINE connects you direct to your mainframe with a local phone call rather than having to dial long distance. So you save money!



Team IRMALINE with IRMALETTE™ — another member of MOM's family — to get the same data capture functions IRMA provides.

PC/COM.™ The perfect mate for IRMA.

This software system works in conjunction with IRMA to provide high speed transfer of files between the mainframe and the IBM PC or XT. PC/COM's universal file transfer capability is compatible with major IBM operating systems and associated application files. Single function keys provide users with easy-to-use menus to transfer text files, source programs, data and object files between the mainframe and the personal computer.

Users are subject to centralized mainframe control, so security is much tighter. MOM believes in keeping a tight lip.

AVATAR.™ MOM's UNIVERSAL TERMINAL CONVERTER.

AVATAR is MOM's self-contained microprocessor system that converts a terminal into a full-function, stand-alone personal computer. All it takes is a simple cable connection between

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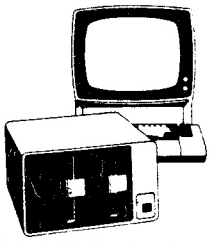
Best.

from micros to mainframe–MOM™ does it all.

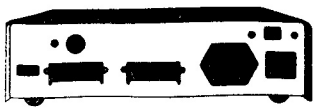
the terminal and the host system. No terminal modification is required. You get PC power on the terminal in addition to your normal terminal capability.

In addition, AVATAR is portable, so it's very easy and efficient to use. Buy AVATAR, and MOM will give you CP/M,® MS-DOS,™ WordStar,™ CalcStar™ and CBASIC™ software. Absolutely free! File transfer software is available as an optional feature.



AVATAR PA1000: Another way to talk to any computer.

The PA1000 protocol converter allows you to connect any asynchronous terminal or PC into an IBM 3270 network and simultaneously into any asynchronous host system. You can do it from either a local or a remote location. The PA1000 has additional ports to which you can attach a printer.



MOM even has a computer.

This small, professional computer in a briefcase caught MOM's eye.

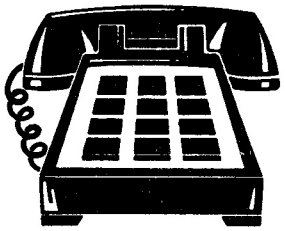
The PC Traveler™ is a full-function IBM-compatible, portable computer. A 28-pound wonder, it comes standard with a gas plasma display for 25 lines/80 characters, 128k RAM memory and an IBM PC-type removable keyboard. The dot matrix impact printer is bi-directional, 132 char-compressed.

The PC Traveler has graphics capability and communication options (300/1200 BPS internal modem). The 8 meg floppy disk is upgradable to 16 megs. The computer uses 16 bit, dual 80186 processors and is 10 times faster than the IBM PC.

Available for delivery, Jan., 1984.

MOM and PATCHES.™

Anything worth preserving is worth protecting, so MOM developed PATCHES. A patented chip protection system insures the integrity of her software. This system allows users to copy MOM's software for their internal use, while a companion chip installed in the PC prevents unauthorized use. PATCHES makes and keeps software and communications private and secure.



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The emerging requirements for communications between low-cost computers can be served effectively without additional hardware by available asynchronous utilities using state-of-the-art protocols to provide sophisticated capabilites. They provide a means to use the common dial-up telephone lines, packet or local-area networks or satellite communications with high efficiency. As some of these protocols become de facto standards, they will provide mixed vendor communications capabilities similar to common synchronous protocols. ■

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