

HEWLETT-PACKARD

EtherSeries™/150 For the HP Touchscreen Personal Computers

Sharing with Others

EtherSeries/150 is a family of integrated hardware and software networking products for the Hewlett-Packard Touchscreen Personal Computers: the Touchscreen and Touchscreen MAX.

Developed by 3Com Corporation, a leader in personal computer networking products, EtherSeries/150 is based on the standard Ethernet local network. It's a fast and powerful system that allows communication and information sharing between Hewlett-Packard Touchscreen Personal Computers, as well as IBM PCs and other EtherSeries-compatible computers.

The EtherSeries/150 products provide you with a network connection and access to a shared Winchester fixed disc, as well as electronic mail services and shared printers. In addition, you can use MS™-DOS commands, application programs, and data files just like you usually do. There's nothing new or different when information is accessed across the network. Except, of course, your capabilities and resources are increased!

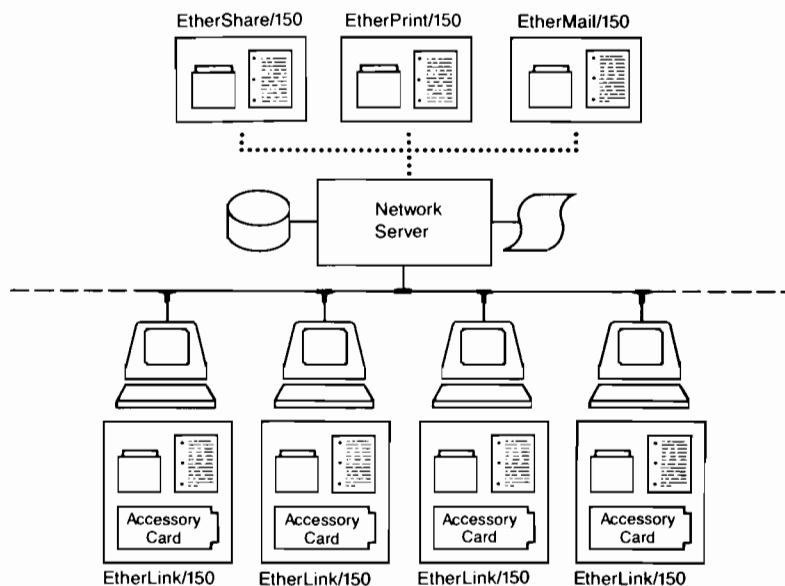
Making the Right Connections

There are four major EtherSeries products for the Hewlett-Packard Touchscreen and Touchscreen MAX:

- **EtherShare™/150** for sharing information storage and work space.
- **EtherPrint™/150** for sharing printers.
- **EtherMail™/150** for fast and efficient electronic mail.
- **EtherLink™/150** includes the hardware and software necessary to access the network.

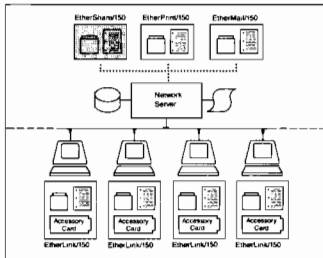
When linked together, the EtherSeries/150 products form the basis for an Ethernet-based Local Area Network (LAN). A sophisticated form of data communications, a LAN helps an organization work more effectively. Network users can share information and costly peripherals while communicating almost instantly with one another. An EtherSeries/150 LAN is easy to install, use and expand. And it's cost-effective, flexible and reliable.

In addition to the EtherSeries/150 products for the HP Touchscreen Personal Computers, EtherSeries products are available from 3Com for the Texas Instruments Professional Computer, the IBM PC and IBM PC compatibles.



EtherSeries/150 Networking System EtherLink/150 hardware attaches the HP Touchscreen or HP Touchscreen MAX to the LAN. EtherShare/150 and EtherPrint/150 system software give the Touchscreen or Touchscreen MAX access to shared discs and printers attached to HP Touchscreen MAX servers. EtherMail/150 applications software allows Touchscreen Personal Computers to exchange electronic messages and transfer data files.

EtherShare™/150



- Allows everyone on the network to share data, text and programs on fast fixed discs.
- Increases personal and organizational productivity.
- Decreases total system cost.
- Provides information exchange among different types of personal computers.
- Utilizes HP *Touch*.

EtherShare/150 is the software component of a 3Com EtherSeries LAN for small, medium and large organizations. Used with 3Com's EtherLink plug-in accessory cards, it allows communication among personal computers connected to the network. EtherShare/150 consists of user and server software.

The server software allows HP Touchscreen Personal Computers, IBM PCs and IBM PC-compatible computers to share fixed-disc storage on one or more network servers.

EtherShare/150 manages the requests of several users who want simultaneous disc access. Data can be made public for many people on the network, shared by a special group, or made private to a single user.

Programs licensed for single-user systems must be installed on a private volume, while programs licensed for multiple user systems may be installed on public volumes.

By sharing a fixed disc, you have access to greater storage capacity and can save or read files much faster than you could with floppy discs. Shared software and data means fewer fixed discs.

EtherShare/150 divides server fixed discs into many volumes much like flexible discs do. You can distinguish between these volumes and local storage devices by assigning different drive

letters (e.g., C., D., E., F.). The user module creates a link between a volume name and the drive letter. After that, a majority of programs on Touchscreen Personal Computers can be loaded and files read or written just as if they were on a local fixed disc.

With multiple programs and data residing on fixed disc volumes rather than on several flexible discs, constant disc swapping is eliminated. Operation of the fixed disc and communications across Ethernet are transparent to MS-DOS and to most application programs.

Specifications

Volume Sizes

Each EtherShare/150 volume can be any size between 64 K byte and 32 M byte in 1 K byte increments, limited only by the disc space available on the server. Each Touchscreen Personal Computer has four drive letters (e.g., C:,D:,E:,F:) available for linkage to any EtherShare/150 volume.

Volume Types

EtherShare/150 has three types of volumes, each of which can have an assigned password:

- A private volume can be read or written by only the creator or owner. It is used to store personal or confidential data and programs licensed for single users.
- A public volume can be read simultaneously by all people on the network. It is used to store programs and utilities all network users need. Files and programs stored on a public volume are write-protected and cannot be changed or erased, except by the volume's creator.
- A shared volume allows network users concurrent access to common data. A semaphore facility is provided to preserve data integrity when two or more people simultaneously attempt to change the same record or file. To fully take advantage of the shared data capability of EtherShare/150, application programs

intended for single users must be enhanced to utilize the semaphore facility.

EtherShare/150 User Software

The user software for the Touchscreen Personal Computer (using operating system B.01.00 or newer) is provided with EtherLink/150. It allows you to access resources on network servers.

EtherShare/150 Server Software

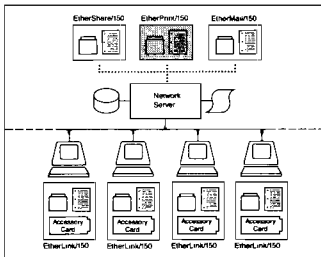
This software requires a Touchscreen MAX with 384 K byte memory, an EtherLink card and operating system B.01.00 or newer. You can install the software yourself and configure it to start up automatically when the Touchscreen is turned on. Menu-driven administrative functions register the server on the network and monitor its status and usage.

The Hewlett-Packard server operates in a dedicated mode, so it cannot be used as a personal computer while it is attached to the network. The server supports EtherPrint/150 and EtherMail/150, which provide printer spooling and electronic mail capabilities.

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

EtherPrint™/150



- Allows you to share printers simultaneously.
- Isolates noisy printers.
- Increases productivity.
- Decreases the cost of providing a high-quality printer to all network users.

EtherPrint/150 software lets people on the network share common printers, eliminating the need for separate printers for each Touchscreen Personal Computer. You can select which printer you want to use—up to two per network server—with simple commands. By sharing printers, organizations can save money, reduce office noise and make specialty printers — like the eight page per minute LaserJet printer — available to all people on the network.

With EtherPrint/150, you can print directly from programs, use the print screen key to print the contents of the displays or use MS-DOS commands to copy a file to the printer. Because its use is transparent, EtherPrint/150 works as if a printer were attached to your Touchscreen or Touchscreen MAX.

With the print-spooling services, each network server running EtherPrint/150 allows many people on the network to send data to a printer simultaneously. As information to be printed is received from a Touchscreen Personal Computer, EtherPrint/150 temporarily stores it on disc. This means you can run other programs without waiting for the printer to finish its current job.

If the printer is in use, output is queued until the printer is free. A banner with your name on it separates your document from those of other users.

Any network server, when equipped with EtherPrint/150, can provide shared printer service. An EtherPrint/150 server can manage two printers. Moreover, an EtherSeries network can handle multiple servers running EtherPrint/150.

EtherPrint/150 supports the following Hewlett-Packard printers attached to a Touchscreen MAX server: the letter-quality LaserJet printer, and the 2932A and 2934A dot-matrix printers. Each attached printer requires use of one RS-232 port.

Specifications

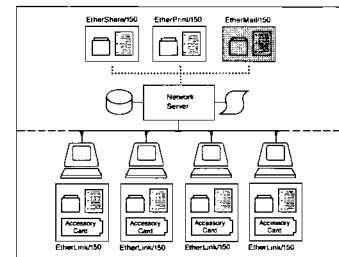
EtherPrint/150 User Software

EtherPrint/150 user software is supplied with the EtherLink/150 plug-in accessory card. EtherPrint/150 has commands that create a link between one of the Touchscreen Personal Computers and a printer on any network equipped with EtherPrint/150 server software.

EtherPrint/150 Server Software

A Touchscreen MAX running EtherShare/150 server software becomes a multifunction network server, and can simultaneously support two serial printers. A Touchscreen MAX with 384 K byte memory, operating system B.01.00 or newer, EtherLink accessory card and EtherShare/150 server software is required.

EtherMail™/150



- Provides rapid electronic mail service.
- Allows files to be sent as attachments to messages.
- Features built-in message editor.
- Utilizes HP *Touch*.

EtherMail/150 provides Touchscreen Personal Computer users the speed and efficiency of electronic mail service. EtherMail/150 means less paper clutter, less noise and motion, and less physical storage space associated with traditional office correspondence.

EtherMail/150 is composed of server and user software, the first of which acts as a post office. In turn, user software makes each Touchscreen Personal Computer an electronic mailbox with message creation and distribution, retrieval and display capabilities. You can access the post office by direct connection to the network.

EtherMail/150 is so easy to learn that you can begin sending messages in minutes. The HP Touch feature is used for message and operation selection. EtherMail/150 means faster information flow because selection memos are composed, edited and proofread in one step.

Upon completion, messages are sent instantly to one or more addressees through distribution lists. At their convenience, addressees find messages waiting the next time they check their electronic mailboxes. The date and time are automatically stamped at the beginning of the message, and the sender is told if the message is not deliverable for any reason.

Messages are created with the screen-oriented message editor which uses the HP Touch feature for cursor positioning and operation selection. Editing features include: word wrap, block move, copy,

delete and more. A paragraph-fill feature automatically adjusts lines after you've added or deleted words or sentences in the middle of a paragraph.

Used as a stand-alone program, the message editor is ideal for writing documents like business letters and short reports that do not require a full-featured word processor.

Attachment files containing text, programs or data may be sent with any EtherMail/150 message. They serve as an easy method of transferring files among Touchscreen Personal Computers. Up to 26 MS-DOS files may be sent to all recipients along with a message.

In multi-server networks, EtherMail/150 automatically delivers messages to all servers equipped with EtherMail software. No network users are excluded, regardless of the server to which they are attached.

EtherMail/150 allows busy professionals to manage their time better, improve communication, and reduce telephone tag.

Specifications

EtherMail/150 User Software

User software for each Touchscreen Personal Computer is loaded across the network from the server. Thus, all Touchscreen Personal Computers use a single copy of the EtherMail/150 program. You can select EtherMail/150 commands using HP Touch. Labels at the bottom of the display show which function is provided when selected. Movement between the menus and display screens happens automatically with touches to the screen.

The EtherMail/150 functions are:

Get Mail	Show a Message
Delete a Message	Save a Message
Reply to Message	Print a Message
Create a Message	Forward a Message
Edit a Message	File a Message
Send a Message	

Messages in the Mailbox

EtherMail 2.1		© Copyright 3Com Corp 1984
1	6-3-84	BobM Publicity
2	6-4-84	NikeH Tips for Better Sales
4	6-4-84	HowardC New Product Ideas
5	6-4-84	LynnM RE: Tips for Better Sales
6	6-5-84	DavidC Market Survey Report
6A	Attachment	REPORT.TXT
8	6-6-84	NikeH Last Month's Sales Figures
10	6-6-84	BobB Our New Mail System
11	6-6-84	BobB Product Availability
Help Read Delete Print 16 1 File Get Create Exit Mail Mail Mail Mail NewMail Mail EM Num Pad 16:16		

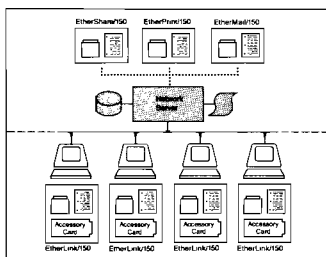
The EtherMail/150 server software functions as a network post office. When messages are sent, the server accepts a copy for the users assigned to it. When you log into the server to use EtherMail/150, you can request delivery of mail waiting in your electronic mailbox through the Get Mail functions. The server then sends the messages to the your system where messages may be read, responded to, forwarded or printed.

EtherMail/150 Server Software

The EtherMail/150 server software requires a Touchscreen MAX with 384 K byte memory, operating system B.01.00 or newer, EtherLink/150 accessory card and EtherShare/150 server software.

When EtherMail/150 is run from a server other than the Touchscreen MAX, EtherMail/150 user software is required. It provides the Touchscreen Personal Computer user-interface for EtherMail/150.

Network Servers



- Allow disc and peripheral sharing.
- Match capability to need and budget.
- Provide flexible system growth.

An EtherSeries network requires at least one network server. A server is a computer with discs and printers that other computers share through the network.

With a Touchscreen MAX network server, even a small organization can enjoy the benefits of networking. Depending upon the application, a Touchscreen MAX can serve two to eight simultaneously active users. While functioning as a server, the Touchscreen MAX cannot be used simultaneously as a workstation.

An EtherSeries network can handle multiple servers; also, Touchscreen MAX and non-HP servers can be intermixed. More servers can be added as needs grow.

Specifications

Touchscreen MAX Server

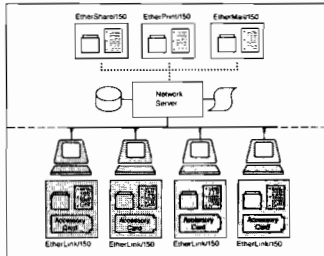
With EtherShare/150 server software, up to seven fixed discs can be made available to all other personal computers on the network. The server software responds to requests from the network for disc access and carries them out swiftly and transparently. A Touchscreen MAX server runs in dedicated mode. This doesn't allow use of the Touchscreen MAX server as a workstation but provides features desired in larger systems, such as electronic mail.

Up to 100 personal computers can be networked per each 300 meter thin cable segment. The Touchscreen MAX network server can serve up to 50 users. But the network functions most efficiently when the Touchscreen MAX serves two to eight simultaneously active users.

With EtherLink/150 and EtherShare/150 a Touchscreen MAX (using operating system B.01.00 or newer) with 384 K byte memory, can function as a network server.



EtherLink™/150



- Provides Ethernet network connection for the Touchscreen Personal Computers.
- Provides access to shared resources, such as discs, printers and software.
- Takes advantage of VLSI technology to provide a user-installable, single-card design.
- Allows communication with other personal computers supported by EtherSeries products, including the IBM PC, IBM PC compatibles and the Texas Instruments Professional Computer.

EtherLink/150 connects personal computers to an EtherSeries network. It enables you to share discs and printers, and information and programs from computers called network servers, and to communicate by means of electronic mail.

A single plug-in accessory card, EtherLink/150, is user-installed in an accessory slot of the Touchscreen or Touchscreen MAX. EtherLink/150 is the Touchscreen connection to the services of EtherSeries, made possible over the Ethernet coaxial cable network. It is compatible with the specification developed by Xerox. With its on-board transceiver, EtherLink/150 transmits and receives data over the network at a rapid 10 million bits per second.

EtherLink/150 can be connected to Ethernet using thin Ethernet cable or using standard thick Ethernet cable. 3Com recommends using thin Ethernet cable because of its low cost and easy installation. Hewlett-Packard distributes and supports only thin Ethernet cable networks for the Touchscreen Personal Computers.

Each EtherLink/150 package includes the software to use the Touchscreen Personal Computers on an EtherSeries network. It includes the Ethernet driver and EtherShare/150 and EtherPrint/150 user programs for linking to a Touchscreen MAX network server's shared discs and printers. At least one server, a dedicated personal computer such as a Touchscreen MAX, must be provided on the network.

A diagnostic program assists with hardware problem-solving and network maintenance.

Specifications

EtherLink/150 may be installed in an available system accessory slot of a Touchscreen Personal Computer. The Touchscreen or Touchscreen MAX must have operating system B.01.00 or newer.

The Hewlett-Packard EtherSeries User's Guide provided with EtherLink/150 describes how to use your Touchscreen or Touchscreen MAX with an EtherSeries network hardware installation. It also provides information on configuration of MS-DOS for use on the network; in addition to sections on EtherShare/150, EtherPrint/150 and EtherMail/150 network services.

EtherLink Card

Size

10.4 x 22.5cm (4.1 x 10 in).
Requires one Touchscreen Personal Computer accessory slot.

Power Requirements

0.95A @ + 5V.
0.17A @ + 12V (with internal transceiver for use with thin Ethernet cable).
0.5 @ + 12V (with external transceiver for use with thick Ethernet cable).

Temperature and Humidity

0° to 55° C, 10 to 90 percent relative humidity, noncondensing.

Network Connections

BNC connector for thin Ethernet coaxial cable and 15-pin, D-series connector for Ethernet transceiver cable.

Electrical Isolation

Network fully ground-isolated for improved noise immunity.

Ethernet Network

Data Rate

10 million bits per second.

Packet Size

512 - 12,144 bits.

Maximum Length of Network

Cable segments up to 304.8 meters (1000 feet) using thin Ethernet cable, 1000 meters (3280 feet) with thick Ethernet cable and 3Com transceivers. Multiple cable segments may be joined with repeaters. *NOTE: Hewlett-Packard does not distribute or support thick cable EtherSeries products.*

Maximum Number of Computers

One hundred personal computers per thin cable segment. Fifty users per Touchscreen MAX server (two to eight simultaneously active users depending on workload).

Access Method

Carrier Sense Multiple Access with Collision Detection (CSMA/CD).

Error Detection

32-bit cyclic redundancy check on each data packet.

Ethernet Cable

Thin Ethernet—0.2 inch in diameter with BNC connectors and on-board transceiver; thick cable—0.4 inch in diameter with external transceiver and transceiver cable. Thin Ethernet cable is easier to route and install. Use of push-on/twist-to-lock connectors makes attachments to EtherLink/150 simple and secure.

Training and Support

Hewlett-Packard Support of EtherSeries Products

To help your organization get started with 3Com EtherSeries, a one-day, on-site training visit by a Hewlett-Packard System Engineer may be purchased. This provides training for:

- **The network administrator** on management of the network. Topics include: startup assistance, adding users, disc backup, network control and problem resolution.
- **The network users** on operation of EtherShare/150, EtherPrint/150 and EtherMail/150, as appropriate to the installation.

Telephone software assistance is available for networks that have one or more HP Touchscreen MAX servers and have Touchscreen Personal Computer or IBM PC user systems. This service is provided to your network administrator by Hewlett-Packard under a Response Center Support Contract.

Hardware service contracts are available from Hewlett Packard or from authorized Hewlett-Packard Personal Computer Dealer Repair Centers for Touchscreen Personal Computer systems—including coverage for EtherLink cards. Service for the 3Com IBM EtherLink cards is available from 3Com.

Contact your local Hewlett-Packard office or an authorized Hewlett-Packard retailer for more information regarding sales and support of EtherSeries products for the Touchscreen Personal Computers. In the U.S., dial 1-800-FOR-HPPC for the name of the Hewlett-Packard retailer nearest you.

Ordering Information



Network Servers

To configure the Hewlett-Packard Touchscreen MAX as a network server, order the following:

- 45660B — Touchscreen MAX (15 M byte fixed disc), with revision B.01.00 or newer operating system
- 45630A — Additional 128K RAM
- 45644A — EtherLink/150 accessory card
- 45645A — EtherShare/150 server software.

The following optional server software packages are also available:

- 45646A — EtherPrint/150 server software
- 45647A — EtherMail/150 server software.

For information on non-Hewlett-Packard software servers, contact:

3Com Corporation
1365 Shorebird Way
P.O. Box 7390
Mountain View, CA 94039
(415) 961-9602

Network Users

To configure a Touchscreen Personal Computer or Touchscreen MAX as a network user, order the following:

- 45650B — *Touchscreen Personal Computer* (3 1/2-inch microfloppy disc drive), with revision B.01.00 or newer operating system.
- OR
- 45660B — *Touchscreen MAX* (15 M byte Winchester disc drive), with revision B.01.00 or newer operating system.

AND

- 45644A — *EtherLink/150 accessory card* (includes a BNC "T" connector).

The user software required to operate EtherShare and EtherPrint is supplied with the EtherLink/150 accessory card. EtherMail/150 user software is supplied with the EtherMail/150 server software package.

User software required for EtherMail in networks not using a Touchscreen MAX server must be purchased separately. In this case, order:

- 45639A — *EtherMail/150 user software* for the Touchscreen Personal Computer, required with non-Hewlett-Packard servers.

Network Accessories

To complete an EtherSeries installation, you'll need to order cables and connectors. For details, please refer to the installation section of the Hewlett-Packard EtherSeries User's Guide.

- 45691A — 7 meter thin Ethernet cable.
- 45692A — 15 meter thin Ethernet cable.
- 45693A — 30 meter thin Ethernet cable.
- 45694A — Custom length thin Ethernet cables (includes connectors).
- 45695A* — Terminator kit.
- 45696A — Barrel connector.
- 45697A — BNC "T" connector.
- 45698A* — Loopback connector.

The loopback connectors are essential in order for you to receive telephone assistance from Hewlett-Packard Response Centers.

Specifications subject to change without notice.

*SPECIAL NOTE: One per network required.

EtherSeries™, EtherLink™, EtherShare™, EtherPrint™, EtherMail™ and 3Com™ are U.S. trademarks of 3Com Corporation. MS™-DOS is a U.S. trademark of Microsoft, Inc.