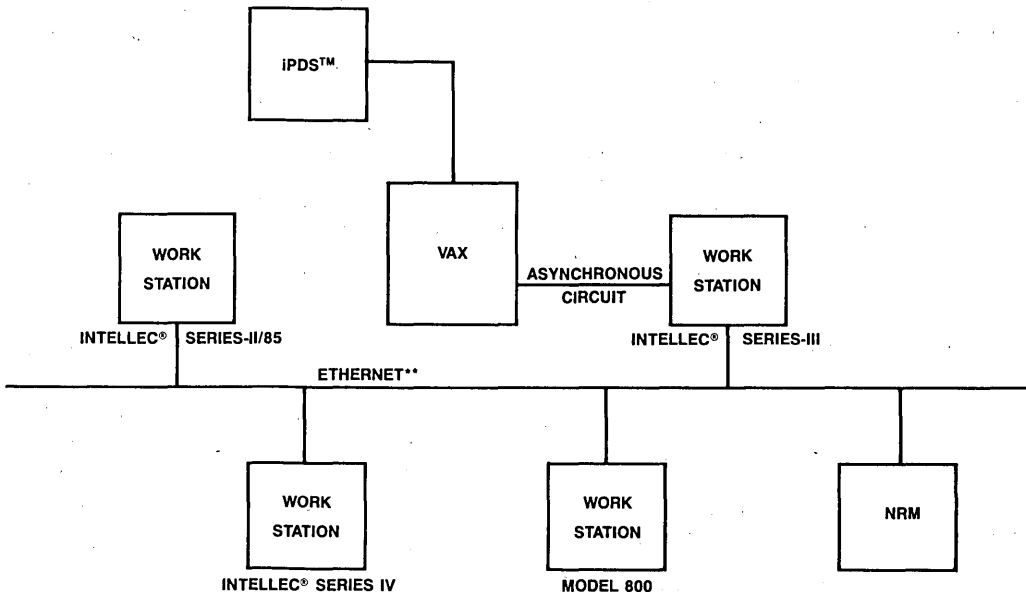




## INTEL ASYNCHRONOUS COMMUNICATIONS LINK

- Communications software for VAX\* host computer and Intel microcomputer development systems
- Compatible with VAX/VMS\* and UNIX† operating systems
- Supports Intel's Model 800, Intellec® Series II, Series III, Series IV and iPDS™ microcomputer development systems
- Supports NDS-II workstations
- Allows development system console to function as a host terminal
- Operates through direct cable connection or over telephone lines
- Software selectable transmission rate from 300 to 9600 baud

Intel's Asynchronous Communications Link (ACL) enables one or more Intel microcomputer development systems to communicate with a Digital Equipment Corporation VAX family computer. The link supports Intel Model 800, Intellec Series II, Series III, Series IV or iPDS™ development systems and NDS-II workstations. Programmers can use the editing and file management tools of the host computer and then download to the Intel microcomputer development system for debugging and execution. Programmers can use their microcomputer development system as a host terminal and control the host directly without changing terminals.



### NDS-II Example

Intel Corporation Assumes No Responsibility for the Use of Any Circuitry Other Than Circuitry Embodied in an Intel Product. No Other Circuit Patent Licenses are Implied. Information Contained Herein Supercedes Previously Published Specifications On These Devices From Intel.

\*VAX and VAX/VMS are trademarks of Digital Equipment Corporation.

†UNIX is a trademark of Bell Laboratories.

\*\*Ethernet is a trademark of Xerox Corp.

## FUNCTIONAL DESCRIPTION

The Asynchronous Communications Link (ACL) consists of cooperating programs: one that runs on the host computer, and others that run on each microcomputer development system. The development system programs execute under the ISIS-II or ISIS-III(N), ISIS-IV, ISIS-II(W) or ISIS-PDS operating system. They invoke the companion program on the VAX-11/7XX, which runs under either the VAX/VMS or UNIX operating system.

The link provides three modes of communication: on-line transmission, single-line transmission, and file transfer. In on-line mode, the development system functions as a host terminal, enabling the programmer to develop programs using the host computer's editing, compilation, and file-management tools directly from the development system's console. Later, switching to file transfer mode, text files and object code can be downloaded from the host to the development system for debugging and execution. Alternatively, files can be sent back to the host for editing or storage. In single line mode, the programmer can send single-line commands to the host computer while remaining in the ISIS environment.

The user can select transmission rates over the link from 300 to 9600 baud. The link transmits in encapsulated blocks. The receiver program validates the transmission by checking record-number and checksum information in each block's header. In the event of a transmission error, the receiving program recognizes a bad block and requests the sender to retransmit the correct block. The result is highly reliable data communications.

## SOFTWARE PACKAGE

The Asynchronous Communications Link Package contains either a VAX/VMS or UNIX compatible magnetic tape, a single 8", double 8", Series-IV 5¼", and PDS 5¼" diskette compatible with the Intel development system, and the *Asynchronous Communications Link User's Guide* containing installation, configuration, and operation information.

## HARDWARE CONNECTION

The Link sends data over an RS232C cable. The communication line from the host computer connects directly to a development system port.

## TELECOMMUNICATIONS USING THE LINK

The ACL is ideal for cross-host program development using a commercial timesharing service. This configuration requires RS232C compatible modems and a telecommunications line. Depending on the anticipated level of usage, wide-area telephone service (WATS), a leased line, or a data communications network may be chosen to keep operating overhead low.

## NDS-II ACCESS USING THE LINK

The ACL is ideal for interconnecting VAX host computers with NDS-II. This configuration requires that an NDS-II workstation be connected to the VAX host computer using the RS232C interface and to NDS-II using the Ethernet interface.

All three modes of communication operate identically on NDS-II. In the on-line mode, the development workstation operates as a host terminal, and concurrently, as an NDS-II workstation. It is an easy transition between the VAX and ISIS operating system environments as LOGON/LOGOFF sequences are not required to re-enter environments.

In file transfer mode, text and object files can be transferred from the VAX directly to the Winchester Disk at the NRM without first copying the files to the workstation local floppy disk. Similarly, files residing on the NDS-II Network File System (the Winchester Disk at the NRM) can be transferred directly to the VAX without using local workstation storage.

Using the EXPORT/IMPORT mechanisms of NDS-II, a network workstation which is not directly connected to the VAX can cause files to be transferred between the VAX and NRM. For example, any NDS-II workstation can "EXPORT" ACL commands to another "IM-



PORT"ing NDS-II workstation which is physically connected to a VAX. The "IMPORT"ing workstation executes the ACL command file causing the desired action to occur.

## VAX ACCESS USING THE LINK

Users who want multiple workstations concurrently

operating as VAX terminals (ONLINE mode) must physically connect each workstation to the VAX. However, users who want multiple workstations to be able to upload/download files, for example, must only physically connect one workstation to the VAX. By using the EXPORT/IMPORT mechanism of NDS-II as described above, the user can have multiple workstations accessing the VAX using only one connection.

---

## SPECIFICATIONS

### Software

Asynchronous Communications Link development system programs

VAX/VMS or UNIX companion program

### Media

Single- or double-density ISIS 8" and Series-IV, PDS 5 1/4" compatible diskette

600-ft. 1600 bpi magnetic tape, VAX/VMS or UNIX compatible

### Data Transfer Speeds

All systems up to 9600 bps

### Online Terminal Mode Speeds

Series II, Series III, Series IV — 2400 bps max  
PDS — 9600 bps max  
Model 800 — equal to or less than the Terminal speed

### Manual

*Asynchronous Communications Link User's Guide*, Order No. 172174-001

### Required Host Configuration

VAX-11/7XX running VAX/VMS (Version 3.2) or fourth Berkeley distribution of UNIX 4.1

### Required Intel Development System Configuration

Model 800, Series II, Series III, Series IV, or iPDS under ISIS

### Required Connection

**RS232C compatible** — cable 3M-3349/25 or equivalent; 25-pin connector 3M-3482-1000 or equivalent

### Recommended Modems for Telecommunications

**300 baud** — Bell\* 103 modem; VADIC† 3455 modem or equivalent

**1200 baud** — Bell 202 modem; VADIC 3451 modem or equivalent

**9600 baud** — Bell 209A (full duplex, leased line) or equivalent

**Note:** Since one of the two Model 800 ports uses a current loop interface, Model 800 users need a terminal or modem that is current loop compatible, or a current loop/RS232C converter.

The Model 800 might require modification by a qualified hardware technician. Intel does not repair or maintain boards with these changes.

---

## ORDERING INFORMATION

### Product Name

Asynchronous Communications Link

### Ordering Code‡

iMDX 394 for VAX/VMS systems

iMDX 395 for UNIX systems

\*Bell is a trademark of American Telephone and Telegraph.

†VADIC is a trademark of Racal-Vadic Inc.

‡See price book for proper suffixes for options and media selection.