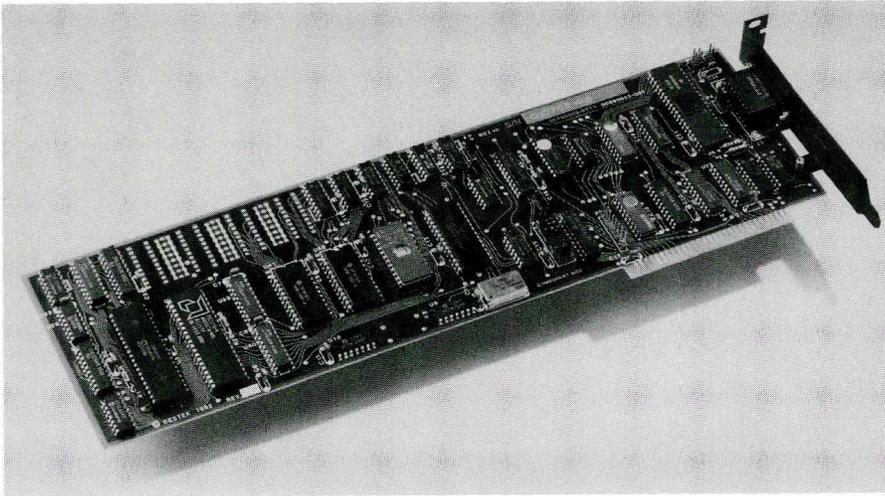




# IBM-PC\* Network Interface Board



- CSMA Protocols
- IBM-PC Compatibility
- 2 megabits/sec network speed
- On-board CPU & communications management firmware
- Media independence

## Introduction

The Destek IBM-PC network NIB100/07 interface board is a high performance, low cost, intelligent communications controller for IBM-PC bus computers. The IBM-PC board is one of a series of compatible bus specific communications boards that permit high speed data transfers among computers of differing bus architectures. The NIB100/07 is used for local area networks with multiple IBM-PC based computers requiring reliable, fast data communications.

## High Performance

The NIB100/07 features a 2 megabit/sec network speed. Data transfers are made at hard disk speeds so that remote network files are transferred as quickly as local files. The 2 megabit speed allows sufficient bandwidth for large networks and diverse network traffic patterns.

## Carrier Sense Multiple Access (CSMA)

Industry standard CSMA protocols with collision avoidance gives maximum flexibility in network configuration. CSMA permits the user to easily add and remove network nodes and optimizes performance for differing traffic patterns. With CSMA the user realizes maximum throughput from the 2 megabit bus speed.

## Bus Technology

The NIB100/071 features a bus topology for the network. Bus topology allows all the nodes in the network to connect to a single coax cable (RG59u). Maximum reliability is gained with bus topology because failure of any one node does not cause the network to fail. Even failure of the transceiver does not cause network failure. Both installation and network changes are easy because connections can be made anywhere on the cable by simple addition of a transceiver. Yet cost is minimizing because the network bus is a single cable without the requirement for a complete cable loop. Up to 350 stations may reside on the same network.

## On-Board Firmware

Destek communications products include a resident CPU with controlling firmware and buffer memory. The host computer is freed from the communication management task and the NIB100/07 has its own memory available to store incoming and outgoing traffic. The host computer can reserve its memory for the increasingly large applications programs while the NIB100/07 stores transient message traffic itself. The firmware includes provisions for guaranteed message service to produce fast, reliable data exchanges.

\*IBM-PC is a trademark of IBM Corporation.

## Media Independence

The NIB100/07 has isolated baseband transceivers for connection to RG-59U network cable serving widely separated hosts. Isolation provides higher performance and independence from power and ground sources. Destek also offers broadband and fiber optics media configurations.

## OPEN SYSTEMS INTERCONNECT (OSI) SUPPORT

### Physical Link Layer

The DESTEK Network Board provides the required electrical characteristics of the Physical Link Layer of the OSI network mode. The purpose of this layer is to insulate the higher level layers from the medium-specific aspects of the coaxial cable. The major functions performed in support of this layer include data encoding and decoding bit stream timing and setting of voltage levels.

### Data Link Layer

The NIU Board contains control firmware that supports the Data Link Layer of the OSI network mode. The major functions performed by the NIU include message packet framing, address recognition, error detection and the processing of acknowledgment frames. This layer interfaces directly to the user's software.

### Network, Transport, Session, Presentation and Application Layers

These higher level layers rely heavily on distinct interfaces to the user's operating system software and can also be very application dependent. For this reason these layers are not implemented by the control firmware on the board. For certain CPU/OS combinations, some of the key "network server" application software is available from Destek. Contact DESTEK for additional details.

## SPECIFICATIONS

### Network Interface Unit I/O Address Range

000<sub>H</sub> to IFF<sub>H</sub>

### Network Addressing Range

0001<sub>H</sub> to FEFF<sub>H</sub>

### Interface Specifications

IBM-PC bus

### Communications Protocol

Bit Stuffing (HDLC/SDLC)

### Access Method

CSMA CA

### Communications Control

Z80A CPU (4 MHz)

Memory (PROM) 4 or 8 K Bytes

(Private-RAM) 4, 8, or 16 K Bytes

### Baseband Network Characteristics

Coaxial Cable Length—Isolated TAP II, 1.0 km (3000 ft.) max;

Transceiver Cable Length—0.6 m (2 ft.) STD, 10 m (32 ft.) max

Nominal Impedance—75 ohms (RG-59U or equiv.)

Number of Stations—350 max

Data Transmission Rate—2 Megabits/sec

### Physical Dimensions

Width —33.02 cm. (13.0 in.)

Height —10.60 cm. (4.0 in.)

Depth — 1.27 cm. (0.5 in.)

Weight— 0.86 kg. (1.9 lb.)

### Power Requirements

±5VDC 1.5A max

### Environmental Specifications

Operating Temperature—0 to 55C

Storage Temperature —25 to 70C

Relative Humidity —90% (non-condensing)

For more information/ordering write or call:

The logo for DESTEK, featuring the word "DESTEK" in a stylized, outlined, sans-serif font. The letters are interconnected, with the 'D' and 'E's having a unique, blocky appearance.

THE DESTEK GROUP  
830 East Evelyn Avenue  
Sunnyvale, CA 94086  
(408) 737-7211



# Destek TurboDos\* Network Driver Version 1.4

## Introduction

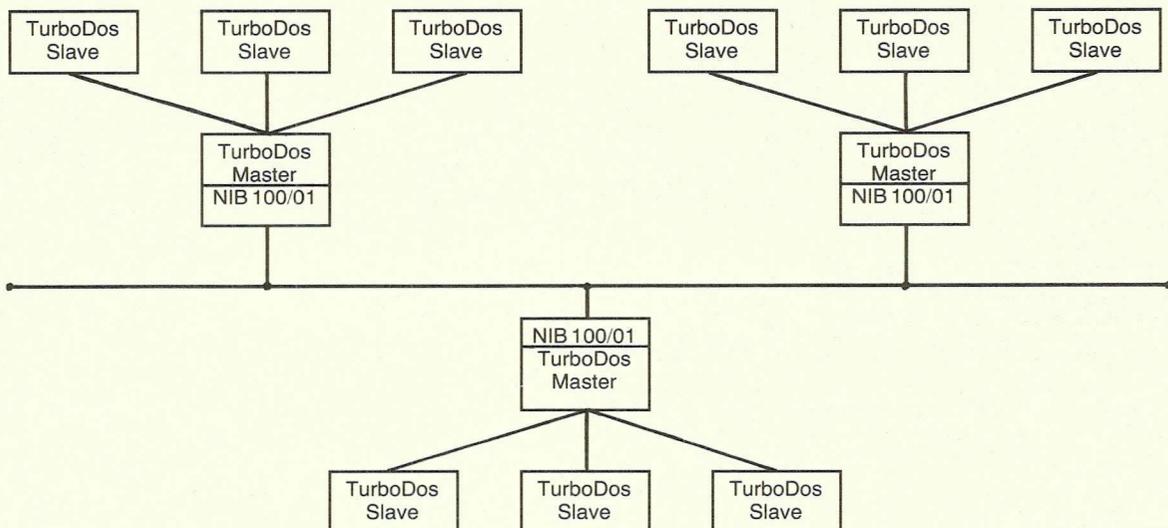
The Destek TurboDos Network Driver is a program that matches the TurboDos operating system with the Destek high performance network boards (NIB 100/01). This high speed data communications connection links multiple TurboDos masters to share capabilities such as files, file servers and printers. These facilities can be shared from separated locations (up to 3,000 ft.) as if they were the same system.

## High Performance

The 2 megabit per second speed of the NIB 100/01 makes data transfers at hard disk transfer speeds and files are transferred as if they were on a local disk. By connecting several masters the user realizes the synergistic effect of a large system with all the facilities of each cluster (master/slave(s)) available to all the users. The TurboDos drivers fully utilize the guaranteed message service in the NIB 100/01 to provide reliable and accurate high speed communications.

## Greater System Utility

The addition of the TurboDos Network Driver and NIB 100/01 to connect separate masters and to share resources creates a total system more useful than individual clusters. Such benefits as electronic mailboxes, shared ques, shared data bases, and accessing different printer types are now available in a large sytem concept. The investment in hardware, software, training and procedures can be preserved in older systems while overall capabilities can grow and 16 bit computers are added.



\*TurboDos is a trademark of Software 2000.

### ISO Support

The International Organization for Standardization (ISO) Open Systems Interconnect Reference Model defines the various standards for reliable data communications. This definition is described in a seven layer model starting with the most rudimentary requirements for physical connection and proceeding through the actual network application programs:

OSI Model	Turbo/Desnet
Physical Data Link Network	NIB 100/01 Destek Driver
Transport Session Presentation	TurboDos
Application	User Application

For TurboDos applications Destek fulfills the requirements of the first three layers with its NIB 100/01, on board firmware and TurboDos Network drivers.

The requirements for the remaining four layers are provided by TurboDos and the specific application programs so that the entire process is transparent to the user.

### Destek Network Driver Package

- Diskette with driver software and instructions files
- User manual
- License agreement
- Warranty registration

For more information write or call:

The logo for Destek, featuring the word "DESTEK" in a stylized, outlined, blue font with a double underline.

The Destek Group  
830 E. Evelyn Avenue  
Sunnyvale, CA 94086  
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