The CoreBuilder 7000HD switch is an integrated switching system for both the core and the edge of the enterprise ATM network.

The 3Com CoreBuilder® 7000HD switch is a uniquely versatile, modular, chassis-based switching system that delivers high performance and high availability for both the core and the edge of an enterprise ATM network.

Configurable as either a pure ATM switch or as an integrated system for both ATM and high-throughput local area network (LAN) switching, the CoreBuilder 7000H D switch provides the full benefits of ATM in the core while also solving the major challenge of ATM networking today—how to connect high-speed Ethernet LANs into an ATM backbone without loss of end-to-end performance.

First to market with high-performance, integrated ATM/LAN switching for Ethernet, Fast Ethernet, and Gigabit Ethernet, the CoreBuilder 7000HD switch is now the most popular platform for solving this networking challenge. Tens of thousands of units are currently proving themselves under harsh, uncompromising conditions in production networks around the world. Based on redundant 5 Gbps full-duplex, nonblocking ATM switching engines and 3Com’s industry leading ZipChip™ ASIC technology for wire-speed packet-to-cell conversion, no other vendor comes close to matching the performance or versatility delivered by the CoreBuilder 7000HD switch for integrated ATM/LAN switching.

This powerful flexibility allows servers, desktops, workgroup switches, and other devices to attach to a CoreBuilder 7000H D switch easily, using either the simplicity of high-speed Ethernet technology or the high functionality of ATM.

Key Benefits (The F.A.C.T.S.)

- **Flexibility**: Simplify internetworking and make virtual networking practical with centralized configuration services, intuitive administration tools, and built-in fast setup wizards.
- **Availability**: Increase reliability and ensure nonstop networking with redundant switching engines and multiple active backbone links for load sharing and fault tolerance.
- **Convergence**: Integrate voice and video with data traffic over the network backbone through advanced Quality of Service (QoS) and traffic management capabilities.
- **Throughput**: Speed up response time for Ethernet-attached clients from distributed applications and servers that are centralized across the backbone by employing the industry’s highest throughput from 10/100 and Gigabit Ethernet to ATM.
- **Scalability**: Progress with ample growth potential in terms of speed, distance, and network size relying on scalable bandwidth, high port density, and multiple interface options that can be directly connected to SONET/SDH and native ATM services.
ATM in the LAN, MAN, and WAN Backbone

To obtain the full benefits of ATM technology, multiple high-speed ATM links (typically at 155 M bps or 622 M bps) are used between CoreBuilder ATM switches delivering all the advanced capabilities required for large-scale LAN and metropolitan area network (MAN) backbones. These capabilities include:

- Easy setup and operation of VLANs with full redundancy
- QoS-aware routing of SVCs
- Dynamic load balancing of traffic across multiple links from the edge to the core
- Automatic fast-failover in case of link outage
- Scalability to huge networks with hundreds of switches over long distances
- Convergence of all types of voice, video, and data traffic over a common fiber backbone

This functionality is also extensible seamlessly over the wide area network (WAN) using traditional high-speed WAN links (DS-3 and E3) or even higher-speed fiber connections. In this way an entire enterprise network can be managed easily as one cohesive, high-availability environment. All of these ATM core capabilities are delivered on the CoreBuilder 7000H D switch using the latest ATM Forum specifications and other industry standards.

3Com's Total ATM Solutions

While it is possible to build an entire enterprise network using only the CoreBuilder 7000H D family, very often other products from 3Com or other vendors will also be used. For instance, the SuperStack II family of rich stackable switches provides a cost-effective and scalable approach to wiring closet design for 10 Mbps or 10/100 M bps Ethernet desktops, using either ATM, Fast Ethernet, or Gigabit Ethernet downlinks to the network core. SuperStack II switches can also provide support for Token Ring access to an ATM network. For growing the core of a large campus or MAN, the CoreBuilder 9000 ATM switch with 15 Gbps of nonblocking, full-duplex capacity is the most scalable, cost-effective ATM switch on the market. It provides a perfect platform for aggregating connections from CoreBuilder 7000H D and SuperStack II switches.

3Com's PathBuilder™ family of ATM access switches enable network convergence and provide connections to PBX telephone switches over standard channelized T1/E1 interfaces, using the ATM Forum's circuit emulation services (CES) specification. The PathBuilder switches also furnish low-speed WAN access with the ability to treat multiple T1/E1 lines as one logical pipe, using ATM Forum inverse multiplexing over ATM (IM A). Integration of Frame Relay with ATM is also an available option. For routing in an ATM environment, 3Com's CoreBuilder 3500 high-performance Layer 3 switch features advanced CoS/QoS support and wire-speed performance. The NetBuilder II™ family of full-featured routers offers ATM interfaces and is well suited for WAN routing at the edge of the ATM MAN. The 3Com ATM Link™ family of network interface cards (NICs) provides connectivity for high-performance ATM-attached servers with multiple LAN E Client support.

Transcend® Network Control Services brings all these products together into an easily manageable, complete solution. Transcend delivers not only graphical interfaces for easy configuration, but also many in-depth diagnostic and troubleshooting tools that penetrate systematically through all physical and logical layers of the network to isolate problems quickly. In addition, many advanced policy-based networking capabilities are provided.

System Hardware

The CoreBuilder 7000H D switch utilizes a space-efficient chassis that fits conveniently into a 19-inch equipment rack. Its six-slot chassis supports up to two front-mounted 90 Amp AC or DC power supplies and a slide-in fan tray with three cooling fans. The compact frame features dual passive backplanes that can sustain cell streams at 20.48 Gbps for scalability. It holds up to two 5 Gbps switch engine modules and four doublewide I/O cards in horizontal slots.

The CoreBuilder 7000H D ASIC-based switching engine is designed with a single-stage, 16x16 crossbar matrix with output buffering to obtain the full aggregate cell transfer rate. A separate onboard i960 RISC (reduced instruction set computing) processor handles all advanced software features for the engine, including switched virtual circuit (SVC) signaling, LAN emulation (LAN E) services, and proactive congestion control. Management access is provided through a 10BASE-T port as well as control terminal and service port RS 232 interfaces on the front panel of the fabric module. Onboard, the switch engine carries 16 M B of memory, which is upgradable to 32 M B with user-serviceable DRAM SIMMs.

Configuration information and connection tables are held in 4 M B of Flash memory. This, too, can be easily upgraded up to 8 M B.

Carrier cards with modular media jacks allow a mix of port types per I/O module. All common, high-speed ATM physical interfaces are supported, including 34 M bps E3, 45 M bps DS-3, 155 M bps OC-3c/STM-1c, and 622 M bps OC-12c/STM-4c. For client and server edge connectivity, integrated LAN modules are available in many popular configurations of Ethernet, Fast Ethernet, and Gigabit Ethernet. Each I/O module is outfitted with buffering levels tailored to the interface type and appropriate for priority-based queuing. With such a flexible design, a single chassis can be configured in an unlimited number of ways to meet almost any ATM networking requirement. The following chart lists the various I/O options and their associated port densities:

<table>
<thead>
<tr>
<th>Interface Type</th>
<th>Speed</th>
<th>Maximum Ports/Module</th>
<th>Maximum Ports/Chassis</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM DS-3/E3</td>
<td>45 Mbps/34 Mbps</td>
<td>4 (+4 OC-3c)</td>
<td>16 (+16 OC-3c)</td>
</tr>
<tr>
<td>ATM OC-3c</td>
<td>155 Mbps</td>
<td>8</td>
<td>32</td>
</tr>
<tr>
<td>ATM OC-12c</td>
<td>622 Mbps</td>
<td>2 (+4 OC-3c)</td>
<td>8 (+16 OC-3c)</td>
</tr>
<tr>
<td>Ethernet</td>
<td>10 Mbps</td>
<td>36</td>
<td>144</td>
</tr>
<tr>
<td>Fast Ethernet</td>
<td>10/100 Mbps</td>
<td>16</td>
<td>64</td>
</tr>
<tr>
<td>Gigabit Ethernet</td>
<td>1 Gbps</td>
<td>4</td>
<td>16</td>
</tr>
</tbody>
</table>
Building Core
The high-availability features of the CoreBuilder 7000HD switch make it perfect for use as an aggregator in the core of medium-sized buildings. Supporting Fast Ethernet and Gigabit Ethernet downlinks from wiring closets, in addition to OC-3c and OC-12c ATM downlinks, its flexibility is unparalleled. Robust interbuilding connectivity is achieved over an active mesh of multiple ATM links ranging from DS-3/E3 up to OC-12c.

Data Center/Server Farms
The CoreBuilder 7000HD switch is the ideal solution for connecting bandwidth-intensive, mission-critical servers directly to the ATM backbone. The CoreBuilder 7000HD switch provides the ability to connect server farms with scalable and redundant high-density OC-3c or OC-12c links. Servers can also be connected with either Fast Ethernet or Gigabit Ethernet links directly into an ATM core for a lower cost connection option.

Wiring Closets
The CoreBuilder 7000HD switch is equally well suited as a wiring closet concentrator, supporting high-density switched 10 Mbps and 10/100 Mbps to the desktop with multiple nonblocking downlinks to the core. The CoreBuilder 7000HD supports standards-based dynamic load-sharing over multiple OC-3c and OC-12c links, eliminating single points of failure over downlink segments.

Robust, Reliable Platform
The CoreBuilder 7000HD switch is ideal for mission-critical operation where uncompromising reliability is essential. The system hardware incorporates support for redundant hot-swappable switching engines with automatic failover, load-sharing redundant power supplies, hot-swappable interface cards, and dual passive backplanes.

Besides fully redundant hardware components, the CoreBuilder 7000HD switch provides redundant, ATM Forum-compliant LAN E services to ensure interruption-free switching of traditional LAN traffic over the ATM backbone. In case of an unforeseen failure of the primary LAN E services, backup services on another CoreBuilder 7000HD switch in the network are instantly activated. The switch also supports resilient mesh topologies with automatic rerouting around failures and dynamic load sharing over redundant links through 3Com’s implementation of the ATM Forum’s Private Network Node Interface (PNNI) 1.0 specification. With the CoreBuilder 7000HD switch, there is no need to compromise on versatility, performance, or reliability when selecting a data center, wiring closet, or building a core switch for an enterprise ATM backbone.

Redundant LAN Emulation Services
The full suite of LAN E Services, including the LAN Emulation Server (LES), Broadcasts Unknown Server (BUS), and LAN Emulation Configuration Server (LECS), are provided internally by the CoreBuilder 7000HD switch. Supporting automatic failover without any requirement for network management system involvement, redundant LES/BUS pairs can be configured on switches throughout the network. Active virtual circuits (VCs) remain up during the failover process, and address resolution for new calls proceeds without a hitch. Furthermore, multiple copies of the LECS may be distributed so that new LAN E Clients can always join an Emulated LAN (ELAN), and nonstop networking is assured.

These integrated services work with all standard LAN E Clients and ensure maximum accessibility, reliability, and performance for all users in the building.
network. And a LANE security option is provided to ensure that only authorized clients can join a given ELAN. Both Ethernet and Token Ring frame types are supported. The switch's integrated Fast Setup utility makes LANE-based network configuration quick and easy.

A single CoreBuilder 7000HD D switch can host up to 16 ELANs, and by hosting ELANs on various switches around the network, the total quantity of ELAN supported grows linearly as your network grows.

To build large ELANs with high broadcast rates or to enable extensive multicast applications such as interactive groupware and video broadcasts, a constant level of specialized performance is required. The high-speed, low-latency Fast BUS card can be added to the system. Based on ZipChip technology, this module increases BUS performance from the standard 12 thousand packets per second (pps) up to 180 thousand pps. This super forwarder can be configured in multiple instances supporting a like number of ELANs.

### Fast BUS configuration options

<table>
<thead>
<tr>
<th>BUS instances</th>
<th>Packets per second</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>15 thousand per BUS</td>
</tr>
<tr>
<td>6</td>
<td>30 thousand per BUS</td>
</tr>
<tr>
<td>4</td>
<td>45 thousand per BUS</td>
</tr>
<tr>
<td>2</td>
<td>90 thousand per BUS</td>
</tr>
</tbody>
</table>

### Interswitch SVC Routing with PNNI

Support for PNNI provides the CoreBuilder 7000HD D switch with the ability to dynamically route calls over the best path between switches in multi-vendor networks. Path determination is based on several factors, including link speed, available bandwidth, capability to support the requested QoS, and switch hop count. The CoreBuilder 7000HD D switch automatically discovers its neighbors and continuously advertises its local topology information. As a link state routing technology, PNNI stores all pertinent information in a topology database that the switch builds and modifies as it learns about changes in its environment. As such, the entire network is kept up to date and no administration is required beyond the initial selection to activate PNNI.

PNNI permits multiple active paths between CoreBuilder 7000HD D switches and the other ATM switches in the network. This allows for load sharing over redundant links and increases network fault tolerance. In case of a link failure, new calls are automatically rerouted over the next best path, and the CoreBuilder 7000HD D switch can begin redirecting existing connections in less than one second using its fast failover mode.

### Standards-Based Switching for Investment Protection

The CoreBuilder 7000HD D switch adheres to current ATM Forum standards. In addition to LANE and PNNI, the switch supports the newest versions of all the appropriate specifications. These include User-to-Network Interface (UNI) 3.0, 3.1, and 4.0 for QoS-based SVC signaling, Traffic Management (TM) 4.0 with advanced ABR support, and Interim Local Management Interface (ILMI) 4.0 for automatic discovery of user and network elements, as well as numerous physical layer specifications. By providing standards-based interfaces to edge devices, routers, and ATM switches, the network can be upgraded simply and cost effectively, without creating system incompatibilities.

### Advanced ATM Switching

The CoreBuilder 7000HD D switch enables the convergence of voice, video, and data onto a single network infrastructure, saving significantly on telephone toll charges and providing a more manageable unified network infrastructure. Videoconference systems and telephone switches can be directly connected over ATM using manually configured permanent virtual circuits ( PVCs) or even dynamically configured QoS-based SVCs if the CODEC or PBX supports UNI 4.0. The CoreBuilder 7000HD D switch supports up to 4,096 virtual circuits, including both PVCs and SVCs. Additionally, VC s of either type can be tunneled through up to eight virtual paths per port.

The switch matrix enables seamless multicast support for applications, such as broadcast video, through simultaneous transmission of multicast cells without cell copying. Real-time multimedia applications run extremely well over the CoreBuilder 7000HD D switch due in part to its very low latency and consistent cell delay variation. Each VC is protected from every other call running on the switch and therefore the applications on these secure connections are not impacted by the behavior of traffic on different VCs. All traffic classes, including Constant Bit Rate ( CBR), real-time and non-realtime Variable Bit Rate ( rt-VBR & nrt-VBR), Available Bit Rate ( ABR), and Unspecified Bit Rate ( UBR), are supported by the system's priority-based queuing scheme. Sensitive CBR traffic such as voice, for example, flows through the switches' high-priority queue, while UBR data traffic utilizes the low-priority queue.

Automatic congestion management features in the CoreBuilder 7000HD D switch work proactively to prevent frame and cell loss. A variety of flow control mechanisms, including Broadcast Suppression, Connection Admission Control (CAC), Explicit Forward Congestion Indication ( EF C1) and Relative Rate ABR, and Cell Loss Priority ( CLP) bit setting, help to throttle traffic and keep frames from being dropped even under intense loads. These techniques ensure maximum throughput over the converged network for all traffic types.

### Industry-Leading LAN-to-ATM Switching

In independent tests, the CoreBuilder 7000HD D switch proved to have the industry's highest throughput from 10/100 and Gigabit Ethernet to ATM. The integration of these technologies is provided by 3Com's industry-leading ZipChip technology. In addition to handling the local LAN switching for the high-density 10BASE-T, 10/100BASE-TX, 100BASE-FX, and 1000BASE-SX interface cards, the ZipChip ASICs provide wire-speed packet-to-cell conversion. Multiple ZipChip ASICs are placed at the backplane interface to the ATM fabric where they work together to share the Segment and Reassembly (SAR) duties. These cards provide flexible LANE Client support that allows LAN ports to be assigned individually to designated ELANs for secure network configurations or grouped together in common ELANs. Either way, with the CoreBuilder 7000HD D, every LANE Client can benefit from...
dynamic load sharing of traffic over all available ATM backbone links because every ATM port supports PNNI. Only in this way can high-speed Ethernet switching be integrated with ATM effectively. Furthermore, the unique architecture of the CoreBuilder 7000HD D switch allows ATM traffic management capabilities, such as ABR flow control, to extend to the edge of the backbone where it is most beneficial to improve throughput and efficiency.

**System Management**

The CoreBuilder 7000HD D switch utilizes a distributed-agent device management model that contributes to scalability and reliability. But to simplify management of the agent hierarchy, the system features a single-point-of-contact mechanism that presents a single IP address to network management systems. As a result, the CoreBuilder 7000HD D switch appears as a tightly coupled agent model for purposes of downloading/uploading configuration files, accessing stored error logs and other tasks. Management of a CoreBuilder 7000HD network can be accomplished with 3Com's Transcend Network Control Services (see sidebar), or with the internal Local Management Agent (LMA) on the switches. For large or complex networks, the use of Transcend management is highly recommended, but most essential functions can be accomplished through the LMA. The LMA is accessed through an RS 232 port on the switch engine or remotely via Telnet through the fabric's Ethernet interface. Fast Setup wizards make it easy to get started in a matter of minutes and an intuitive menu structure guides the user through administrative tasks. A few of the options available from the menu include:

- LAN E Services configuration, including security and redundancy options
- QoS and CAC statistics per port
- Per VC statistics
- PNII statistics and network topology information

For remote monitoring, the CoreBuilder 7000HD D switch supports the following five groups of RMON:

- Statistics
- History
- Packet Capture
- Events
- Alarms

**Award-Winning Performance**

All in all, the CoreBuilder 7000HD D switch provides robust operation and award-winning performance for building backbones, data centers, and wiring closets. With a flexible mix of ATM, Ethernet, Fast Ethernet, and Gigabit Ethernet connections, the system provides unmatched performance and utility. The CoreBuilder 7000HD D switch delivers the scalability, high port density, and redundancy required to support mission-critical core switching—whether aggregating ATM downlinks from edge devices and switching traffic from other ATM switches or supporting client/server applications by moving LAN traffic onto and off of the ATM backbone.

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### Advanced ATM and VLAN Management

3Com Transcend network management and control applications provide comprehensive management of the CoreBuilder 7000HD switch as well as other 3Com ATM devices in the network. Transcend Enterprise Manager for Windows NT and Transcend Network Control Services for UNIX leverage industry standards, open management platforms, and embedded SmartAgent® intelligence within 3Com network devices to provide powerful capabilities for maximizing the benefits of high-performance ATM networks.

**ATM Management**

The ATM management capabilities of Transcend enable effective administration of the physical and logical components of an ATM network. Key features include:

- Automatic discovery, display, and status of ATM physical and logical topologies and components
- ATM network performance measurements
- Mapping of physical infrastructure to emulate and virtual LANs (ELANs and VLANs) for quick configuration and troubleshooting

**LAN Emulation Management**

LANE management within Transcend displays LANE components—LANE topology and performance—and traces LANE paths between clients.

- Establish relationships between LANE clients and servers using LAN Emulation Configuration Server (LECS)
- Trace the path between two segments, showing the LECs and LES in the path

**Virtual LAN Management**

The VLAN capability integrated in the CoreBuilder 7000HD switch allows you to organize network users into logical groups or layer two broadcast domains, regardless of their physical location. VLANs simplify your network management tasks by minimizing subnetwork addresses and the effort required for adds, moves, and changes. In addition, VLANs help optimize traffic patterns and prevent broadcast storms, making networks easier to tune. VLAN management capabilities within Transcend include:

- View VLAN membership by segment for all VLANs
- Move individuals or groups between VLANs simply by point-and-click, drag-and-drop
- Map VLANs to ports on CoreBuilder 7000HD Ethernet interface cards and on other 3Com ATM switches

**Device Management**

Graphical device managers in the Transcend management application allow important administrative functions to be performed on the CoreBuilder 7000HD switch. These functions include the ability to:

- Access comprehensive ATM, Fast Ethernet, and Ethernet port statistics and retrieve device and LEC/LES statistics
- Enable/disable ports, perform VLAN moves, and see status of ports

**Policy Management**

Transcend management software enables the CoreBuilder 7000HD switch to configure its ports to VLANs automatically based on predefined policy or criteria. Currently supported policies for the CoreBuilder 7000HD switch include automatic assignment of ports to a VLAN based on either the MAC address or IP address of the end station.

In addition, Transcend provides administrators with complete control over who accesses the network and the times and locations from where the network was accessed. Therefore, network intrusions are detectable and dealt with automatically.
CoreBuilder 7000HD Switch

Specifications

**CoreBuilder 7000HD Switch**

**Dimensions and Weight**
- Height: 30.5 cm/12 in
- Width: 44 cm/17.25 in
- Depth: 27.5 cm/1 in
- Weight: 19.5 kg/43 lb

**Power Requirements**
- 90 Amp AC/90 Amp DC
- Power Consumption: 450/625 W
- Heat Dissipation: 2,156/2,123 BTU/hour
- Input Voltage Range: 85–256 VAC/36–72 VDC
- Input Frequency: 47 to –63 Hz
- Input Current (typical): 6.8 A at 100 VAC; 3.4 A at 200 VAC
- Inrush Current (typical): 25 A at 100 VAC; 50 A at 200 VAC; 13 A at 48 VDC

**Environmental Ranges**
- Operating Temperature: 0 to 40°C (32 to 104°F)
- Operating Humidity: 10% to 95% noncondensing
- Storage Temperature: -30 to 70°C (-22 to 140°F)
- Storage Humidity: 10% to 95% noncondensing

**10/100/1000 Ethernet Switching Features**
- Full-rate multicast support
- MAC-Layer switching: transparent to all protocols
- Address table size: up to 8,192 MAC addresses per card
- IEEE 802.1d spanning tree support

**ATM Switching Features**
- 5 Gbps nonblocking switch engine
- Full-rate integrated multicast support
- Up to 4,096 VPI/VCI
- 8 virtual paths per port
- PVC support
- SVC signaling compliant with UNI 3.0/3.1 and 4.0
- Auto-configuration with ILMI 3.1/4.0
- Interswitch routing with PNNI 1.0
- ATM Forum LANE 2.0 services and clients (Ethernet and Token Ring)
- Congestion control with Traffic Management 4.0

**Management**
- MIB Support: MIB II, Bridge MIB, ATM MIB, LEC MIB, RMON MIB, Interface Evolution MIB, NCD-CHASS MIB (private)

**Standards Compliance**
- Electromagnetic Compatibility: FCC Part 15, EN 50081-1 (EN 55022 Class B); EN 50082-1 (IEC 801-2, IEC 801-3, IEC 801-4)
- Safety: EN 60950, UL1950, CSA 22.2, TUV, IEEE 821-1, 852-2; PVC UL94-V0; PCB; ANSI/IEEE; RB 276 Class 2

**Ordering Information**

**CoreBuilder 7000HD Chassis Components**
- CoreBuilder 7000HD Kit (chassis with one 5 Gbps switching engine, one enhanced power supply, one fan unit, and base software) 3C37001A
- CoreBuilder 7000HD Chassis Kit (chassis and fan unit only with blank panels) 3C37002A
- CoreBuilder 7000HD Redundant Switching Engine 3C37032
- CoreBuilder 7000HD AC Redundant Power Supply 90A 3C37010A
- CoreBuilder 7000HD DC Redundant Power Supply 90A 3C37027

**ATM Interface Cards**
- CoreBuilder 7000HD 4-port ATM Interface Card (4-port OC-3c/STM-1c multimode; holds up to four additional OC-3c/STM-1c port modules) 3C37152
- CoreBuilder 7000HD 4-port ATM Interface Card (4-port OC-3c/STM-1c single-mode; holds up to four additional OC-3c/STM-1c port modules) 3C37153
- CoreBuilder 7000HD 8-port ATM Interface Card (8-port OC-3c/STM-1c multimode) 3C37158
- CoreBuilder 7000HD 8-port ATM Interface Card (8-port OC-3c/STM-1c single-mode) 3C37159
- CoreBuilder 7000HD OC-12c Carrier Module (unpopulated; holds up to two OC-3c/STM-4c port modules) 3C37180

**ATM Physical Modules/Required Upgrade Kits**
- OC-3c/STM-1c multimode, SC 3C37060/3C37068
- 155 Mbits UTP, RI-45 3C37062/3C37072
- OC-12c/STM-4c multimode, SC 3C37080
- OC-12c/STM-4c single-mode, short reach, SC 3C37081
- T3/DS-3, BNC, for 8-port card 3C37061

**Fast Ethernet Interface Cards**
- 7436 (36 10BASE-T ports, RI-21, and one unpolluted ATM port) 3C37436
- 7437 (36 10BASE-T ports, RI-21 and one ATM OC-3c/multimode port) 3C37437

**Fast Ethernet Physical Modules**
- 7600F (16 10BASE-FX ports) 3C37600
- 7600T (16 10BASE-TX ports) 3C37601
- 7608F (8 100BASE-FX ports; four unpolluted additional module slots) 3C37608
- 7608T (8 100BASE-TX ports; four unpolluted additional module slots) 3C37617

**Fast Ethernet Physical Modules**
- 7600F (16 10BASE-FX ports) 3C37600
- 7600T (16 10BASE-TX ports) 3C37601
- 7608F (8 100BASE-FX ports; four unpolluted additional module slots) 3C37608
- 7608T (8 100BASE-TX ports; four unpolluted additional module slots) 3C37617

**Gigabit Ethernet Interface Cards**
- 7800 (4 1000BASE-SX ports) 3C37800

**Fast BUS High-Performance BUS Module**
- Fast BUS 3C37230

**Extended Memory Upgrade**
- 32 MB memory upgrade for CoreBuilder 7000HD 3C37041

**CoreBuilder 7000HD Software**
- CoreBuilder 7000HD base software 3C37100
- CoreBuilder 7000HD extended software (including PNNI) 3C37101

**Transcend Network Management**
- Transcend Network Control Services for UNIX 3C37850G
- Transcend Enterprise Manager for Windows NT 3C81400