



ONcore FastModule Series – Workgroup Solutions

*Affordable High-Performance Workgroup Solutions for
the ONcore Integrated System*



ONcore 24-Port 10BASE-T
FastModule and ONcore 12-Port
100BASE-TX Workgroup FastModule

Introduction

The 3Com ONcore® Integrated System provides a scalable solution for enterprise networks migrating from today's LANs to switched LANs and ATM. Based on the 3Com BRASICA™ ASIC, the FastModule series provides high-performance switched Ethernet modules for the workgroup while delivering a migration path to advanced networking technologies at the desktop.

The FastModule series features a high-performance switching engine that extends full wire-speed switching

to the desktop, boosts network performance, and eliminates client/ server bottlenecks without expensive desktop or cabling changes. Plug-and-play installation and ease of configuration simplify management tasks. The FastModule series Workgroup solutions include a 24-Port 10BASE-T switched Ethernet module, a 24-Port 10BASE-T switched Ethernet module with a 100BASE-FX downlink, a 12-Port 100BASE-TX Fast Ethernet module, and a 100BASE-FX downlink module.

Key Benefits

- **Workgroup Ethernet Switching** — The FastModule series provides high-density workgroup Ethernet switching modules for cost-effective implementation of switched Ethernet to the desktop.
- **Cost-Effective Fast Ethernet Workgroup Connectivity** — The 12-Port 100BASE-TX module allows network-wide deployment of Fast Ethernet to today's generation of high-performance workstations and PCs.
- **High-Performance Features for Multimedia Applications** — The FastModule series supports bandwidth-

intensive multimedia applications via the 3Com® developed Priority Access Control Enabled (PACE) technology.

- **Complete System Management** — Complete network management is provided by the 3Com Transcend® Enterprise Manager.

- **Complete Fault Tolerance** — The ONcore FastModule series takes full advantage of the ONcore Integrated System architecture, ensuring maximum network availability with no single point of failure.





ONcore FastModule Series Overview

ONcore FastChannel Technology

The 400 Mbps FastChannel architecture in the ONcore System is optimized for high performance and high port density switched Ethernet and Fast Ethernet workgroups at aggressively low pricing. The FastChannel architecture also supports a variety of backbone applications with mid-range bandwidth requirements.

Ethernet and Fast Ethernet FastModules communicate over the FastChannel and then connect to the campus backbone over a choice of backbone downlink options, including Fast Ethernet and ATM. The FastChannel system supports up to 64 VLANs for highly segmented campus networking, as well as PACE™ technology for guaranteed priority, jitter-free multimedia and video applications.

Workgroup Ethernet Switching

The ONcore 24-Port 10BASE-T FastModules, based on the 3Com BRASICA ASIC technology, deliver uniquely affordable switched Ethernet solutions. The FastModules allow you to boost the performance of workgroup PCs, eliminate server bottlenecks, and provide high-speed downlinks to the data center.

The ONcore 24-Port 10BASE-T FastModules offer three software-configurable switching modes to accommodate the needs of different workgroup switching environments. These three modes are:

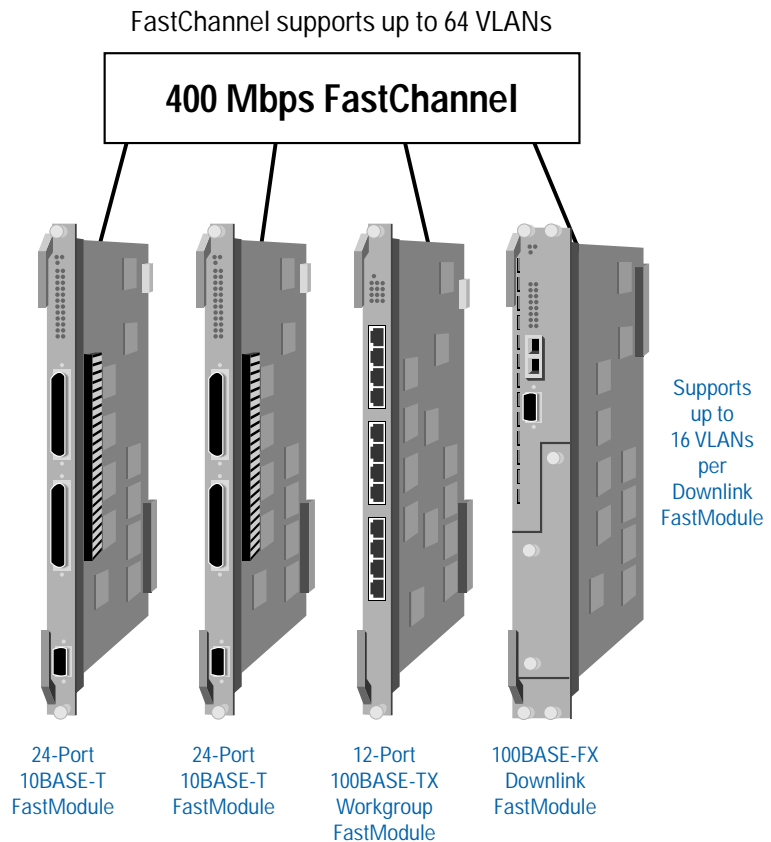
- **Store-and-forward** — stores and completely checks packet integrity before forwarding the packet
- **Cut-through/fast-forward** — provides the highest level of switching performance with the lowest latency: the packet is forwarded immediately after the destination and source addresses are received
- **Cut-through/fragment-free** — combines the performance benefits of cut-through switching with the error protection of store-and-forward

The switching mode performance versus error packet filtering trade-off depends on user requirements and on demands of specific applications and environments.

The ONcore 24-Port 10BASE-T FastModule is ideal for migrating existing 10BASE-T networks, since it requires no changes to desktop workstations. The 24-Port 10BASE-T FastModule can be used for direct desktop connections or for cost-effective microsegmentation of small workgroups.

Cost-Effective Fast Ethernet Workgroup Connectivity

The ONcore 12-Port 100BASE-TX Workgroup FastModule provides cost-effective desktop connectivity with a throughput and response time



FastModules connected to the FastChannel

boost. Workgroups can achieve reduced traffic congestion and increased service levels on the existing network by implementing microsegmented Fast Ethernet. When used in conjunction with other FastModules, the 12-Port 100BASE-FX Workgroup FastModule enables you to design the optimal solution for your network today, and one that will scale as your network grows.

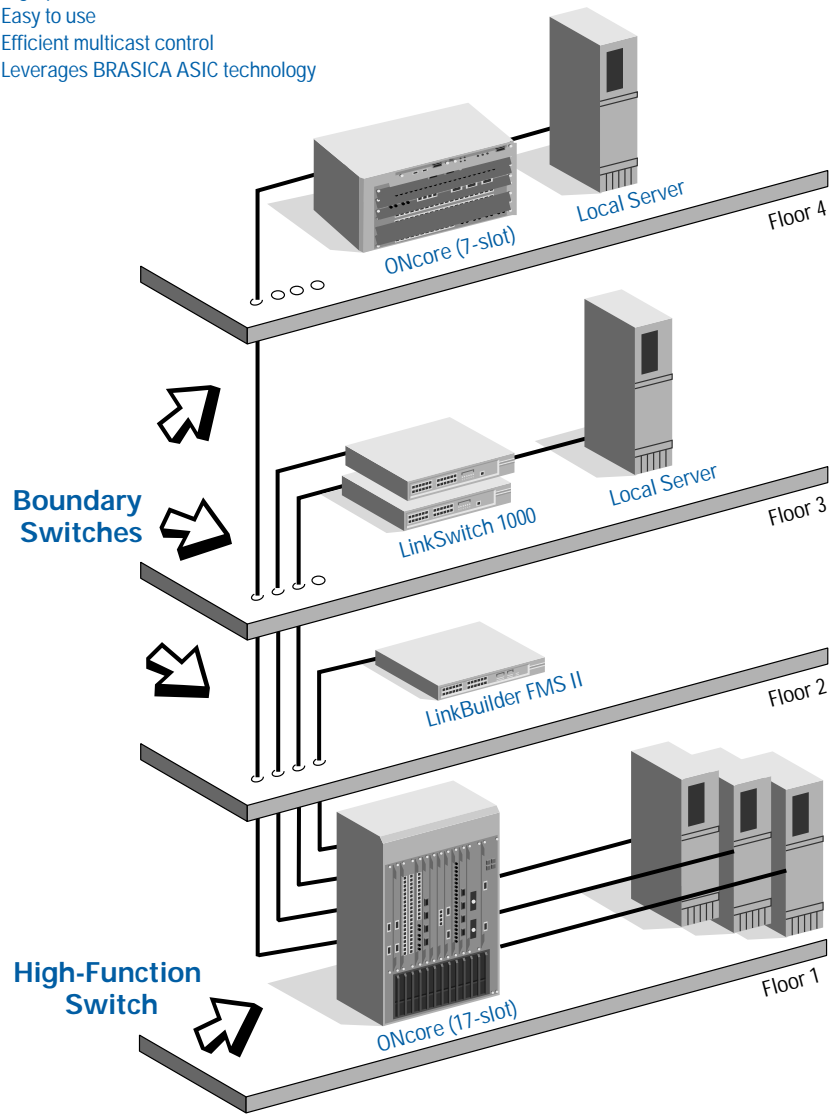
High-Performance Features for Multimedia Applications

The ONcore 24-Port 10BASE-T FastModules incorporate 3Com PACE technology to deliver enhanced multimedia support and data throughput by greatly reducing the collision rate, as well as by lowering bounding latency and jitter on a dedicated Ethernet segment. PACE technology — invented by 3Com and embedded in the BRASICA ASIC — allows you to run multimedia applications on existing Ethernet/Fast Ethernet networks. This technology is readily available to industry partners under license from 3Com.

Multimedia applications can benefit from the dedicated bandwidth provided by PACE technology integrated in FastModules. By delivering 10 Mbps of bandwidth to each port, the desktop user can take advantage of today's latest applications software without suffering from network congestion.

Key Attributes of Boundary Switches

- High-performance at low cost
- Easy to use
- Efficient multicast control
- Leverages BRASICA ASIC technology



Transcend Networking delivers scalability, performance, and simplicity with High-Function and Boundary Switches. When populated with high-performance FastModules, the ONcore hub can serve as a Boundary Switch for Workgroup applications.

Comprehensive System Management

ONcore System-based networks are monitored and managed by a scalable distributed management system, accessible through the 3Com Transcend Enterprise Manager.

3Com offers the Transcend Suite of management applications for configuration, management, and monitoring of 3Com networking products. Available for both the Windows® and UNIX® environments, Transcend supports the HP OpenView®, SunConnect®, SunNet Manager™, and IBM NetView® management platforms. Along with the Transcend graphical management capabilities, the FastModules offer the following capabilities:

- Distributed RMON MIB and interface statistics support — FastModules include an RMON agent monitoring seven groups on each port. Additionally, comprehensive interface statistics are collected in real-time on every port, to provide a detailed view of the network's operation. Transcend software fully supports the configuration and monitoring of RMON and interface statistics to provide a comprehensive view of network activity from a single point of control.
- Ability to baseline and automatically set thresholds for key network parameters.
- Integrated Inventory Management — Each FastModule contains integrated inventory information that can be accessed with a simple command or click of a mouse button. The information provides, at a

glance, revision levels of the hardware and software, memory installed, and user-entered notes.

- Full in-band and out-of-band management through the ONcore Distributed Management Module (DMM) — The DMM provides a central point of control for managing all of the modules installed in an ONcore hub, supports in-band management using SNMP or TELNET, and out-of-band management using SLIP for TELNET and SNMP direct asynchronous terminals.

Complete Fault Tolerance

Mission-critical enterprise networks require the highest level of availability attainable. FastModule solutions for the ONcore Integrated System are designed with no single point of failure. The ONcore hub architecture provides the following fault-tolerant capabilities:

- Load-sharing power supplies with comprehensive power management
- Redundant links, management and controller modules
- Redundant cooling system with temperature monitoring

Distribution of switching capabilities throughout the system provides additional reliability. With a BRASICA ASIC on each FastModule, other FastModules continue to operate even if one module is disabled. Additionally, the ONcore FastChannel backplane has been designed for maximum reliability by using a passive bus, female connectors, and no active components.

ONcore 24-Port 10BASE-T FastModule

The ONcore 24-Port 10BASE-T FastModule, provides 24 switched Ethernet ports for connecting network devices to switched networks using shielded or unshielded twisted-pair cabling. Two Telco-type connectors provide a “no tangles” link to 24 10BASE-T-compliant ports.

ONcore 24-Port 10BASE-T with FX Downlink FastModule

Similar to the 24-Port 10BASE-T FastModule, the 24-Port 10BASE-T with FX Downlink FastModule adds a switched 100BASE-FX downlink for connection to Fast Ethernet backbone networks.

ONcore 12-Port 100BASE-TX Workgroup FastModule

The single slot ONcore 12-Port 100BASE-TX FastModule provides 12 RJ-45 connectors that let you connect network devices to microsegmented Fast Ethernet LANs using category 5 unshielded or shielded twisted-pair cabling. The 12-Port 100BASE-TX FastModule is ideal for workgroups that require high-speed, low latency networking at an affordable price. This module also supports redundant links to increase network availability.

ONcore 100BASE-FX Downlink FastModule

The ONcore 100BASE-FX Downlink FastModule consolidates FastChannel traffic, along with traffic from up to three 10 Mbps Ethernet backplane segments. A 100BASE-FX front panel port allows downlink connections into a switched backbone. Three daughtercard options are available that provide an *additional* downlink port for the module using 100BASE-FX, 100BASE-TX, or 155 Mbps ATM technology.

The 100BASE-FX Downlink FastModule is ideal for consolidating FastChannel workgroup traffic along with 10 Mbps Ethernet traffic within a single ONcore hub. The 100BASE-FX downlink allows connection to your campus backbone for campus-wide communication, and supports up to 16 concurrent Virtual LANs.

ONcore FastModule Series Fast Ethernet Solutions

For high-density Fast Ethernet backbone solutions, the ONcore Integrated System also supports a 7-Port 100BASE-FX/TX FastModule. (See the ONcore FastModule Series — Fast Ethernet Solutions data sheet.)

ONcore SwitchModule Series

For high-function backbone switching solutions, the ONcore Integrated System also supports the SwitchModule series. The SwitchModule series (see the ONcore SwitchModule Series—Switching

Solutions data sheet) supports high density 10BASE-T, 10BASE-FB/FL and FDDI switching solutions for both workgroup and the backbone applications. Together, the FastModule and the SwitchModule series provide the most comprehensive set of switching solutions in the industry, to support workgroup and backbone networking.



Specifications

ONcore FastModule Series — Workgroup Solutions

3Com Corporation
P.O. Box 58145
5400 Bayfront Plaza
Santa Clara, CA 95052-8145
Phone: 800-NET-3Com
or 408-764-5000
Fax: 408-764-5001
World Wide Web:
http://www.3com.com

3Com ANZA
ANZA East: 61 2 9937 5000
ANZA West: 61 3 9653 9515

3Com Asia Limited
Beijing, China: 86 10 8492 5668
Shanghai, China: 86 21 6374 0220
Ext. 6115
Hong Kong: 852 2501 1111
Indonesia: 62 21 523 9181
Korea: 82 2 319 4711
Malaysia: 60 3 732 7910
Singapore: 65 538 9368
Taiwan: 886 2 377 5850
Thailand: 662 231 8151

3Com Benelux B.V.
Belgium: 32 725 02 02
Netherlands: 31 30 6029700

3Com Canada
Calgary: 403 265 3266
Montreal: 514 874 8008
Ottawa: 613 566 7055
Toronto: 416 498 3266
Vancouver: 604 434 3266

3Com European HQ
44 1628 897000

3Com France
33 1 69 86 68 00

3Com GmbH
Czech and Slovak Republics:
42 2 21845 800
Berlin, Germany: 49 30 3498790
Munich, Germany: 49 89 627320
Poland: 48 22 6451351
Switzerland: 41 31 996 14 14

3Com Ireland
353 1 820 7077

3Com Japan
81 3 3345 7251

3Com Latin America
U.S. Headquarters: 408-764-6075
Argentina: 54 1 815 7164
Brazil: 55 11 546 0869
Chile: 56 2 633 9242
Mexico: 52 5 520 7841
3Com Northern Latin America
Miami, Florida: 305-261-3266
Colombia: 57 1 618 4585
Peru: 51 1 422 9971
Venezuela: 58 2 953 8122

3Com Mediterraneo
Milan, Italy: 39 2 253011
Rome, Italy: 39 6 5917756
Spain: 34 1 3831700

3Com Middle East
971 4 349049

3Com Nordic AB
Denmark: 45 39 27 85 00
Finland: 358 0 435 420 67
Norway: 47 22 18 40 03
Sweden: 46 8 632 91 00

3Com South Africa
27 11 807 4397

3Com UK Ltd.
Edinburgh: 44 1312 208228
Manchester: 44 1618 737717
Marlow: 44 1628 897000

ONcore 24-Port 10BASE-T Fast Modules

Connectors: Two 50-pin Telco connectors (12 ports per connector); one DB9 RS-232 connector; one optional 100BASE-FX (SC) fiber connector

Ethernet Switching

Store-and-Forward
Cut-through/fast forward
Cut-through/fragment free
MAC Addresses per module - 512 for the 24-Port 10BASE-T FastModule
4,096 for the 24-Port 10BASE-T and 1-Port 100BASE-FX FastModule
Virtual LAN Support - 16 Virtual Workgroups

Management Access

In-band: SNMP, TELNET (command line interface)
Out-of-band: SNMP, TELNET

Front Panel Indicators

One Module Status LED
One Status LED per port
One Switch State LED

ONcore 12-Port 100BASE-TX Workgroup FastModule

Connectors: 12 RJ-45 shielded connectors supporting 100BASE-TX transmission over 2-pair category 5 UTP cable

Dip Switches: Segment selection and configuration selection

Statistics: Repeater MIB per port

Front Panel Indicators

One Module Status LED
One bipolar Activity/Status LED per port

Management Access via DMM

In-band: SNMP, TELNET (requires 10BASE-T or Downlink FastModule, SwitchModule, or Network Monitoring Card to be installed)

Out-of-band: SLIP (SNMP, TELNET) and Direct Asynchronous Terminals

Cabling Requirements

100 Ohm Category 5 UTP - up to 100 m
100 Ohm STP - up to 100 m

ONcore 100BASE-FX Downlink FastModule

Connectors: One 100BASE-FX SC fiber connector; one optional port that can be configured as 100BASE-FX SC fiber connector, 100BASE-TX RJ-45 shielded connector, or 155 Mbps fiber ATM connector

Front Panel Indicators

One Module Status LED
One Switch State LED
One Status LED per port
One Activity LED per port

Ethernet Switching

Store-and-forward operation
MAC Addresses - 4,096 per FastModule
Virtual LAN Support - 16 Virtual Workgroups

Management Access

In-band: SNMP, TELNET (command line interface)
Out-of-band: SNMP, TELNET

General Specifications for all FastModules

Protocols Supported (does not apply to 12-Port 100BASE-TX FastModule)

IEEE 802.3
IEEE 802.1h
SNMP — RFC 1157
TELNET (via DMM) — RFC 854
TFTP — RFC 1350
ARP — RFC 826
SLIP (via DMM) — RFC 1055

MIBs Supported (does not apply to 12-Port 100BASE-TX FastModule)

MIB II — RFC 1213
RMON MIB — RFC 1757
Bridge MIB — RFC 1493
Ethernet-like MIB — RFC 1643
Interfaces MIB — RFC 1573
3Com MIB

Environmental

Operating Temperature: 0° to 50°C (32° to 122°F)

Humidity: less than 95%, noncondensing

Agency Approvals

EMI Certifications

FCC Part 15, Class A
ICES003
EN55022 (CISPR22), Class A
EN500082-1
EMC Directive 89/336/EEC
VCCI Level 1
EN61000-3

Safety Certifications

UL Listed (1950)
CSA Certified (CSA22.2 No. 950)
TUV GS (EN 60950)
IEC950

Ordering Information

Single-slot, 24-Port 10BASE-T FastModule	3C96524M-TP
Single-slot, 24-Port 10BASE-T with FX (SC) Downlink FastModule	3C96525M-TPFX
Single-slot, 12-Port 100BASE-TX Workgroup FastModule	3C96512M-TX
Dual-slot, 100BASE-FX Downlink FastModule	3C96501M-BFX
100BASE-FX Daughtercard for Downlink FastModule	3C96501D-FX
100BASE-TX Daughtercard for Downlink FastModule	3C96501D-TX
ATM OC-3 Daughtercard for Downlink FastModule	3C96501D-155

To learn more about 3Com products, visit our World Wide Web site at <http://www.3com.com>.

©3Com Corporation 1996. All rights reserved. 3Com is a publicly owned corporation (NASDAQ:COMS). 3Com, ONcore, LinkBuilder, and Transcend are registered trademarks and BRASICA, LinkSwitch, and PACE are trademarks of 3Com Corporation. Unless otherwise indicated, 3Com registered trademarks are registered in the United States and may or may not be registered in other countries. HP and OpenView are registered trademarks of Hewlett-Packard Company; IBM and NetView are registered trademarks of International Business Machines Corporation; Windows is a registered trademark of Microsoft Corporation; Motorola is a registered trademark of Motorola, Inc.; SunConnect is a registered trademark and SunNet Manager is a trademark of Sun Microsystems, Inc.; UNIX is a registered trademark in the United States and other countries, licensed exclusively through X/Open Company, Ltd. Other brand and product names may be trademarks or registered trademarks of their respective owners. All specifications are subject to change without notice.