Matrix™ E1 Workgroup Switches

- 24 fixed 10/100 ports with 1 modular expansion slot or 48 fixed 10/100 ports with 3 modular expansion slots. Expansion slots provide for copper or fiber Fast and Gigabit Ethernet

- Line-rate performance to support bandwidth-intensive applications; standards-based switching and routing support

- Superior Quality of Service (QoS) and industry-leading security

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- **Mixed fixed-modular platform**
  - 24 fixed 10/100 ports with 1 expansion slot (WS-24)
  - 48 fixed 10/100 ports with 3 expansion slots (WS-48)
- **Line-rate performance**
  - 24 Gbps switching capacity; exceeds 6.5 Mpps switching and routing throughput (WS-24)
  - 24 Gbps switching capacity; exceeds 16 Mpps switching and routing throughput (WS-48)
- **Switching and routing support**
  - IEEE 802.1D Spanning Tree; IEEE 802.1w Rapid Reconfiguration Spanning Tree; IEEE 802.1Q VLANs
  - IPv4 Routing with RIP, OSPF and VRRP; IP Multicast with IGMP and DVMRP; Link Aggregation; Port Mirroring
- **Superior Quality of Service**
  - IEEE 802.1p with 4 hardware priority queues per port; Layer 2, 3, 4 traffic classification; hardware-based rate limiting; ToS rewrite support
- **Simplified management**
  - Industry-standard CLI or embedded web server; NetSight™ Atlas; RMON
  - SNMPv3, Telnet Access via SSHv2 encryption
- **Industry-leading security**
  - 802.1X and MAC-based authentication, MAC-based port locking and RADIUS
  - DoS prevention and enhanced ACLs support

Multilayer, "Fixed-Modular" Switch for the Enterprise Edge

Ideal for networks that require high-performance, high-bandwidth connections and robust multilayer features, the Matrix E1 Workgroup Switches (WS) can handle the demanding requirements of bandwidth-intensive enterprise applications such as videoconferencing, distance learning, enterprise resource planning, and disaster recovery as well as simultaneous intranet and Internet connectivity—all at wire speed.

Whether you're upgrading the network infrastructure or expanding it at the edge, the Matrix E1 WS are ideally suited for the wiring closet or data center. Wire-speed performance and industry-leading features allow seamless integration into any small or medium business, or large enterprise network.

Matrix E1 WS include these configurations:

- Matrix E1 WS-24: 24-port 10/100 with one expansion slot

- Matrix E1 WS-48: 48-port 10/100 with three expansion slots

The expansion slots accept a variety of copper and fiber Fast and Gigabit Ethernet expansion modules. All features and functionality are supported on all ports, and any combination of expansion modules may be installed.

Matrix E1 WS perform Layer 2 – Layer 4 packet classification, providing control at the application, port and user levels. With this degree of traffic management, advanced services such as security and prioritization can be used to optimize the network.

Matrix E1 WS ship with full Layer 2 and Layer 3 switching capabilities without the additional licensing cost usually required for equivalent competitive solutions. This routing support enables Matrix E1 WS to improve overall network functionality, reliability, security and performance from the edge to the distribution/core of the network.

Superior Security

With built-in security—authentication, encryption and preventive features—the Matrix E1 is set apart from its competition. From MAC address authentication and MAC port locking to RADIUS and IEEE 802.1X authentication support and Denial of Service prevention, the Matrix E1 allows networks to maintain their integrity by effectively filtering out unauthorized users and applications.

Inherent Flexibility

The flexibility of a mixed fixed-modular platform allows you to match your network media preferences, whether they are fiber Fast Ethernet, high-density copper 10/100 or triple-speed 10/100/1000. The Matrix E1 WS also supports a variety of fiber Gigabit Ethernet expansion modules.

Flexibility also means having the physical resiliency of dual integrated power supplies, as well as the virtual resiliency of standards-based switching and routing failover firmware features such as Spanning Tree (802.1D), Rapid Reconfiguration Spanning Tree (802.1w) and Virtual Router Redundancy Protocol (VRRP).

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Networks that Know

Specifications

Technical Specifications

Switching Mode
Store and forward

Switching Bandwidth
24 Gbps

Routing Throughput
16 Mpps (Matrix E1 WS-48); 6.5 Mpps (Matrix E1 WS-24)

MAC Address Capacity
64,000

VLAN Capacity
4,094

Flash Memory
8 MB

DRAM
64 MB

Power System
AC Input Power (auto-sensing)
85 VAC – 264 VAC
Redundant power supplies

Heat Dissipation
173 BTU/hr maximum (Matrix E1 WS-48)
157 BTU/hr maximum (Matrix E1 WS-24)

ACVA Rating
54 ACVA maximum (Matrix E1 WS-48)
50 ACVA maximum (Matrix E1 WS-24)

System LED Indicators
Power Supply Status
CPU Status
Port Status (link and activity)

System MTBF
>121,000 hours predicted

Media Type Supported
Base System
1H582-51: 48 10/100 RJ45 ports, 3 expansion slots
1H582-25: 24 10/100 RJ45 ports, 1 expansion slot

Expansion Modules
1H-8FX: 8 100Base-FX MTRJ ports
1H-16TX: 16 10/100 RJ45 ports
1G-2TX: 2 10/100/1000 RJ45 ports
1G-2MGBIC: 2 Mini-GBIC slots

Management Access
In band: SNMP, HTTP, Telnet, SSH
Out of band: Serial RS-232 COM port

Physical Specifications

Dimensions
8.9 cm (3.5") H x 44.45 cm (17.5") W x 43.9 cm (17.3") D

Rack Unit Height
2

Weight
8.75 kg (19.23 lb)

Environmental Specifications

Operating Temperature
5° C to +40° C (41° F to 104° F)

Non-Operating Temperature
-30° C to 73° C (-22° F to 164° F)

Operating Humidity
5% to 90% RH, non-condensing

Agency and Standards Specifications

Safety
UL 60950, CSA 60950, EN 60950, EN 60825 and IEC 60950

Electromagnetic Compatibility
47 CFR Parts 2 and 15, CSA C108.8, EN 555022, EN 55024, EN 61000-3-2, EN 61000-3-3, AS/NZS CISPR 22, and VCCI V-3

IEEE Standards
IEEE 802.3
IEEE 802.1D
IEEE 802.1p
IEEE 802.1Q
IEEE 802.1w
IEEE 802.1X

Ordering Information

1H582-51
Matrix E1 Workgroup Switch with 48 10/100 RJ45 ports and three expansion slots

1H582-25
Matrix E1 Workgroup Switch with 24 10/100 RJ45 ports and one expansion slot Expansion Modules

1H-8FX
Expansion module with 8 100FX MMF MTRJ ports for the Matrix E1 WS/GWS

1H-16TX
Expansion module with 16 10/100 RJ45 ports for the Matrix E1 WS/GWS

1G-2TX
Expansion module with 2 10/100/1000 RJ45 ports for the Matrix E1 WS/GWS

1G-2MGBIC
Expansion module with 2 Mini-GBIC slots for the Matrix E1 WS/GWS

Mini-GBIC Modules

MGBIC-LC01
Mini-GBIC with 1000Base-SX port via LC connector

MGBIC-LC03
Mini-GBIC with 1000Base-SX (long-haul 2 km) over multimode fiber via LC connector

MGBIC-LC09
Mini-GBIC with 1000Base-LX port via LC connector

MGBIC-MT01
Mini-GBIC with 1000Base-SX port via MTRJ connector

MGBIC-02
Mini-GBIC with 1000Base-TX port via RJ45 connector

MGBIC-08
Mini-GBIC with 1000Base-LX/LH (long-haul 70 km) port via LC connector

Notes:
1. Expansion slots accept any combination of expansion modules.
2. Only the expansion modules listed in this data sheet are supported by Matrix E1 switches.
3. All ports, including all expansion ports, support all Matrix E1 firmware features, including Layer 3 routing.

Warranty

As a customer-centric company, Enterasys is committed to providing the best possible workmanship and design in our product set. In the event that one of our products fails due to a defect in one of these factors, we have developed a comprehensive warranty that protects you and provides a simple way to get your products repaired as soon as possible.

Service and Support

Enterasys understands that superior service and support is a critical component of *Networks that Know*.™ The Enterasys **SupportNet Portfolio**—a suite of innovative and flexible service and support offerings—completes the Enterasys solution. SupportNet offers all the post-implementation support services you need—online, onsite or over the phone—to maintain your network availability and performance.

Additional Information

For additional information on the Matrix visit **enterasys.com/products/switching**

Contact Information

Contact Enterasys Sales at **877-801-7082** or **enterasys.com/corporate/contact/contact-sales.html**

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