

ETX-26

Ethernet Access Switch



Gigabit Ethernet fiber connectivity with Ethernet Ring Protection Switching

- Ethernet Access switch with three Gigabit Ethernet and six Fast Ethernet ports
- Link resiliency using Ethernet Ring Protection Switching per ITU-T G.8032
- Quality of Service with queue mapping per port, P-Bit, DSCP, or ToS
- Ethernet bridging and switching with VLAN-aware and VLAN-unaware modes, and VLAN stacking
- Compact design with 8.5-inch enclosure

ETX-26 is a compact Ethernet access switch with three Gigabit Ethernet and six Fast Ethernet ports. Featuring non-blocking architecture, small form factor, and low power consumption, the device enables wire-speed data transmission for Layer-2 Ethernet connectivity. It is ideal for providing Ethernet Private Line connectivity and LAN-to-LAN interworking to small and medium enterprises.

Supporting Ethernet Ring Protection Switching (ERPS) per ITU-T G.8032, ETX-26 enables link resiliency to ensure high survivability and service continuity in the event of link failures.

The device features an internal bridge that can operate in VLAN-aware or VLAN-unaware mode. VLAN stacking can be used for traffic separation between different users or services, by defining a service VLAN ID per customer or service. When VLAN stacking is used, a service VLAN tag is added to user traffic and removed from network traffic. Both VLAN ID and VLAN priority can be defined for services.



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PORT COMBINATIONS

ETX-26 offers flexible Ethernet port combinations:

- Six 10/100BaseT Fast Ethernet
- One or three Gigabit Ethernet ports with electrical or optical interfaces.

QoS

Different service types require different levels of QoS to be provided end-to-end. QoS can be defined per subscriber as well as per service. QoS has two aspects: rate limitation and traffic prioritization.

ETX-26 supports four priority queues per Ethernet port with configurable scheduling (strict priority or WFQ). In addition the device supports ingress and egress rate limiting to control the incoming and outgoing traffic bandwidth.

To prioritize user traffic, ETX-26 features up to four separate queues that handle traffic with different service demands, such as real-time traffic, premium data, or best-effort data. In case of congestion, the relevant service receives higher priority at the customer premises.

Traffic can be classified dynamically and mapped to different priority queues according to VLAN priority, DSCP, per port, or ToS. Appropriate QoS can be achieved without customer marking, by mapping different services and different user ports (port-based priority).

NETWORK INTERFACE REDUNDANCY

To ensure high survivability and service continuity, ETX-26 features Ethernet ring protection switching per ITU-T G.8032v1, allowing the device to be connected to an Ethernet ring topology and achieve 50 msec protection restore time in case of link failure.

PROPRIETARY POWER OVER ETHERNET (PoE)

Power over Ethernet is provided on Fast Ethernet ports 5 and 6 if the unit has a 48V DC power supply.

The ETX-26 device with proprietary Power over Ethernet capability can be used to feed the outdoor unit (ODU) of RAD's Airmux-200/400 broadband wireless transmission devices, providing a single indoor device for Ethernet connectivity and ODU power feeding.

DYING GASP

ETX-26 reports power failure (if the unit is connected to AC power), thus enabling the device to properly disconnect from the network with notification of the reason for the service problem.

MANAGEMENT

The unit can be managed using the following ports and applications:

- Local management via an ASCII Terminal connected to the RS-232 port
- Inband management via any Ethernet port
- Remote management via Telnet, Web browser, or an SNMP-based management system.

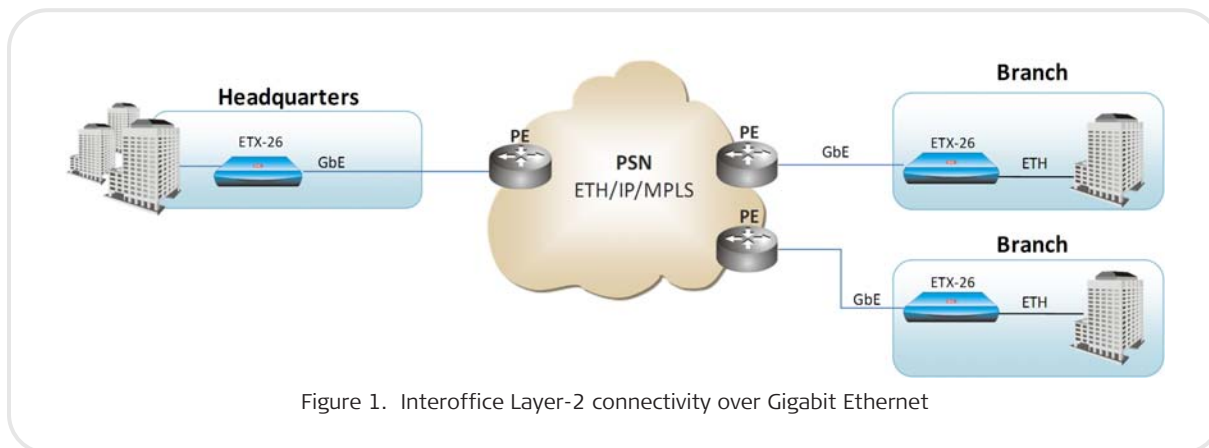


Figure 1. Interoffice Layer-2 connectivity over Gigabit Ethernet

Specifications

ETHERNET INTERFACE

Number of Ports

9

Port Combinations

6 built-in UTP, optionally 1 or 3 SFP/UTP

Type

Fast Ethernet electrical: 10/100BaseT

Gigabit Ethernet electrical:

10/100/1000BaseT

Gigabit Ethernet fiber optic (SFP-based):

100/1000BaseFX

Connector

SFP slot

RJ-45

SFP Transceivers

For full details, see the SFP Transceivers data sheet at www.rad.com

Note: It is strongly recommended to order this device with **original RAD SFPs installed**. This will ensure that prior to shipping, RAD has performed comprehensive functional quality tests on the entire assembled unit, including the SFP devices. RAD cannot guarantee full compliance to product specifications for units using non-RAD SFPs.

INTERNAL BRIDGE

Compliance

IEEE 802.3, 802.3u, 802.1D, 802.1Q, 802.1p

MAC Address Table Size

Up to 8K learned addresses

64 static addresses

Max Frame Size

1,632 bytes

Operation Mode

VLAN-unaware

VLAN-aware including double VLAN

Filtering and Forwarding

Transparent or filtered

Traffic Classification and Priority

Mapping Mode

VLAN priority

ToS

DSCP

Physical port

GENERAL

Diagnostics

Ethernet cable test

Management

Out-of-band: via V.24 (RS-232) DCE port;

DB-9 female connector

Inband: via network or user port

Indicators

PWR (green):

On – ETX-26 is powered up

TST (yellow):

On – Diagnostic loopback is active

ALM (red):

On – One of the Ethernet links is down or a system alarm exists

ETH LINK/ACT (green/yellow):

On (green) – Ethernet link is OK

On (yellow) – Data is being transmitted or received on the Ethernet link

Power

Wide-range AC/DC:

100–240 VAC, 50/60 Hz or

48/60 VDC nominal (40–72 VDC)

DC (PoE option only): -48VDC

Current Protection (PoE)

Max 0.75A

Line Protection (PoE)

Max 15kW

Power Consumption

Max 4W

PoE: Max 36W@48V (on two PoE ports)

Physical

Height: 43 mm (1.7 in)

Width: 217 mm (8.5 in)

Depth: 170 mm (6.7 in)

Weight: 0.5 kg (1.1 lb)

Environment

Temperature:

Regular unit: 0 to 50°C (32 to 122°F)

Temperature-hardened unit:

-40 to 60°C (-40 to 140°F)

Humidity: Up to 90%, non-condensing

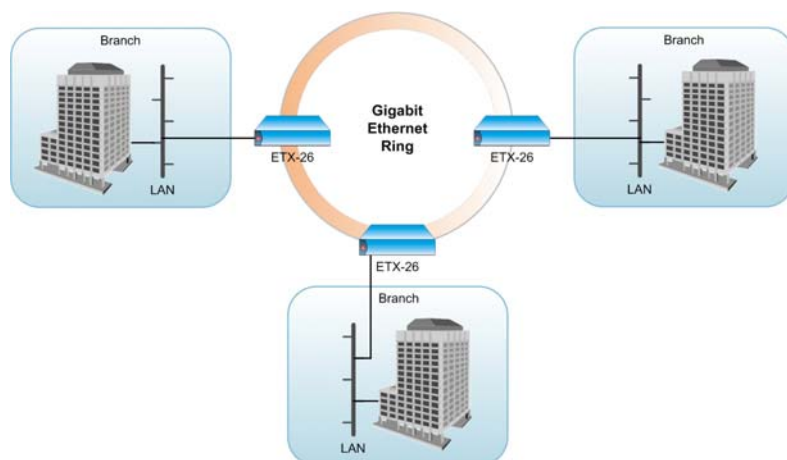


Figure 2. Resilient Ethernet Connectivity

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Ordering

STANDARD CONFIGURATIONS

ETX-26/GESFP

ETX-26/GEUTP

ETX-26/GEUTP/2GESFP

ETX-26/48/GEUTP/2GESFP/POE

ETX-26/48/GEUTP/2GESFP/POE/H

SPECIAL CONFIGURATIONS

ETX-26/!/+1/+2/WIRC/?

Legend

! Power supply (Default=AC/DC wide range power supply):

48 -48V DC power supply

+1 Gigabit Ethernet port

GEUTP Gigabit Ethernet port with electrical UTP interface

GESFP Gigabit Ethernet port with SFP interface

+2 2 Gigabit Ethernet ports

2GEUTP Two Gigabit Ethernet ports with electrical UTP interface

2GESFP Two Gigabit Ethernet ports with SFP interface

WIRC Wireless components (Default=No Power over Ethernet):

POE Power over Ethernet

? Temperature range (Default=Regular temperature range):

H Temperature-hardened

SUPPLIED ACCESSORIES

DC adapter plug

DC terminal block (supplied with option ETX-26/48/GEUTP/2GESFP/POE or ETX-26/48/GEUTP/2GESFP/POE/H)

OPTIONAL ACCESSORIES

RM-35/@

Hardware kit for mounting one or two ETX-26 units in a 19-inch rack

@ Rack mount kit (Default=Both kits):

P1 Kit for mounting one unit

P2 Kit for mounting two units

CBL-DB9F-DB9M-STR

Control port cable

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