EES-1024AF

Layer 2 Ethernet Switch

The EES-1024AF is an intelligent layer 2 switch for workgroup or edge applications. It is equipped with twenty-four 10/100Mbps ports and two expansion slots that accommodate optional 10/100Base-T, 100Base-FX and Gigabit Ethernet modules. These expansion modules provide unparalleled flexibility in supporting the wide variety of uplink infrastructure.

The IEEE 802 standard-based firmware provides a rich set of features and ensures interoperability with equipments from other vendors. In addition, the firmware includes advanced features such as IGMP snooping, broadcast storm control, MAC address filtering, etc. that enhance security and bandwidth utilization.

With its built-in web-based management, the EES-1024AF offers an easy-to-use, platform-independent managing and configuring option. The EES-1024 also supports Simple Network Management Protocol (SNMP) and could be managed via any standard-based management software. For text-based management, the EES-1024AF can also be accessed via Telnet and the console port.

Benefits

Port Trunking Provides Higher Availability

The EES-1024AF supports IEEE 802.1ad with load distribution control and fail over recovery. Up to 8-port port trunking can aggregate bandwidth up to 1600Mbps. The EES-1024AF distributes traffic to each trunk port based on MAC address, and thus balances the traffic load.

VLAN Offers Both Security and Performance

The VLAN feature in the EES-1024AF offers the benefits of both security and performance. VLAN is used to isolate traffic between different users and thus provides better security. Performance is also enhanced by limiting the broadcast traffic to within the same VLAN broadcast domain.

Multicasting and Broadcast Storm Control Optimize Bandwidth Utilization

The IGMP snooping feature forwards traffic only to subscribers that request the multicast traffic. This prevents the unnecessary forwarding of multicast traffic to all subscribers and optimizes bandwidth utilization for bandwidth-consuming application, such as broadcast video.

The broadcast storm control gives system administrators the choice to either forward or discard broadcast packets created by malicious or run-away applications. This prevents unnecessary waste of bandwidth to enhance the bandwidth utilization.

Port Mirroring to Achieve a Better Network Monitoring

Port mirror copies traffic from a specific port to a target port. This mechanism helps track network errors or abnormal packet transmission without interrupting the flow of data across the network.

MAC Address Filtering to Enhance Network Security

A MAC address table is maintained and allows system administrators to define a list of MAC address that can access the network from a particular port. This feature denies access of unauthorized devices to communicate through the switch, and thus highly enhances the network security.

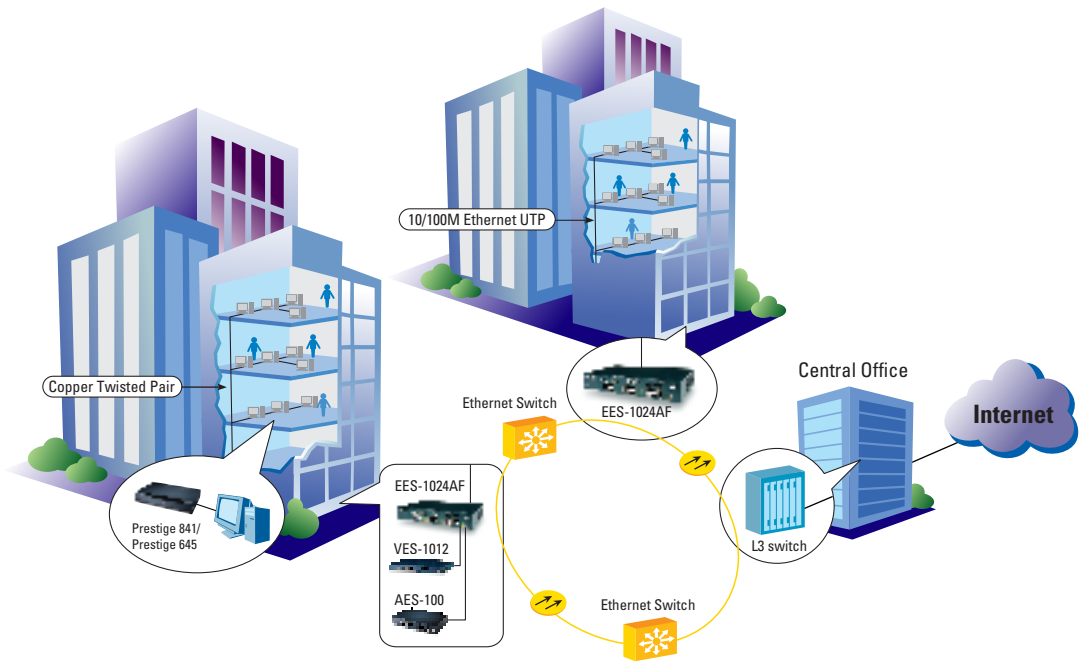
MTU Application

More and more new buildings are built with Ethernet cabling. As service providers bring fiber closer to the end users, the EES-1024AF becomes the ideal solution for delivering broadband service to people working or living insides the buildings.

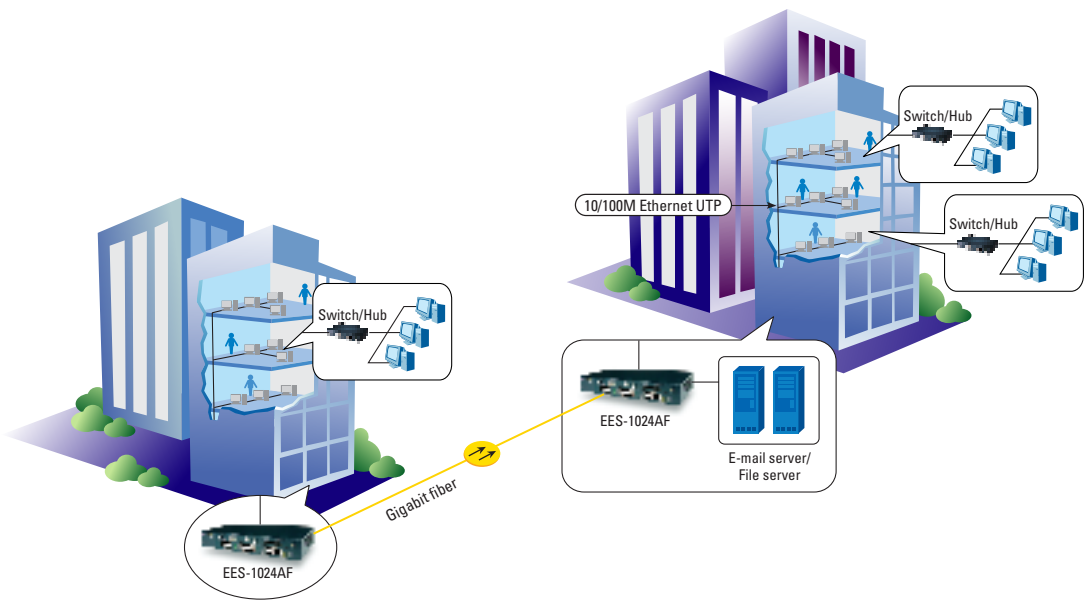
ZyXEL

TOTAL INTERNET ACCESS SOLUTION

Application Diagram



FTTB/MTU Application



Enterprise LAN Application

Features & Specifications

General

Standards

- IEEE802.3 10BASE-T Ethernet (twisted-pair copper)
- IEEE802.3u 100BASE-TX Fast Ethernet (twisted-pair copper)
- IEEE802.3z Gigabit SX/LX
- ANSI/IEEE802.3 Auto-negotiation
- IEEE802.3x Flow Control
- IEEE802.1p Priority Queues
- IEEE802.1Q VLAN
- IEEE802.1d Spanning Tree

Protocol

- CSMA/CD
- 24 10/100BASE-T Ethernet port

Interface

- Two expansion slots. Modules support for 10/100/100Base-T, 100Base-FX, Gigabit 1000Base-SX/LX
- Ethernet: 10Mbps(half duplex) 20Mbps (full duplex)

Data Transfer Rate

- Fast Ethernet: 100Mbps (half duplex) 200Mbps (full duplex)
- Gigabit Ethernet: 2000Mbps (full duplex) (*)

** Available on optional Gigabit Module*

Network Cables

- 10Base-T: 2-pair UTP Cat.3, 4, 5 (100 m) EIA/TIA-586 100-ohm STP (100 m)
- 100Base-TX, 1000Base-T: UTP Cat.5 (100 m max.) EIA/TIA-568 100-ohm STP (100 m max.)
- 100Base-FX: 50/125-micron multi-mode fiber-optics and 62.5/125-micron multi-mode fiber-optics. Max distance up to 2km or longer, refer the label on the module
- 1000Base-SX: 50/125-micron multi-mode fiber-optics (500 m max.) 62.5/125-micron multi-mode fiber-optics (220 m max.)
- 1000Base-LX: 9/125-micron single-mode fiber-optics (10 km max.)

Full/Half Duplex

- Full/half duplex for 10/100Mbps speeds
- Full duplex only for Gigabit speed

Media Interface Exchange

- All ports MDI-II/MDI-X auto-adjustment

Performance & Management

Back Plane

- 12Gbps

Packet Forwarding Rate

- 14880PPS for 10BASE-T
- 148800PPS for 100BASE-TX/FX
- 1488000PPS for Gigabit Fiber/Copper

Switching Method

- Store-and-forward

MAC Address Table

- 4K entries per main switch

Data Buffer

- Main switch: 4KByte (excluding optional modules)
- 8 ports 100Base-TX Module: 256KByte
- 2/4/8 ports Fiber Module: 4MByte
- Gigabit Module: 128KByte

VLAN

- IEEE 802.1Q tag-based VLAN, 4095 Max
- Port-based VLAN

IEEE 802.1p Priority Queues

- 2 queues

Port Trunking

- IEEE802.3ad port trunking 3 groups, each group up to 8 ports

Port Security

- Static MAC address filtering
- MAC address number limitation

Multicasting

- Support IGMP snooping

Broadcast Storm

- Support broadcast storm control

Port Mirroring

- All ports support port mirroring

Management

- One RS-232C console port
- Telnet
- WEB-Based management
- SNMP, SNMP Trap

Management Security

- User ID/Password for Telnet and WEB management authentication
- Up to 4 security accounts

MIBs

- MIB-II (RFC 1213)
- Bridge MIBs (RFC 1493)
- VLAN MIBs (RFC 2674)(*)

Physical & Environmental

Ventilation

- Main Switch: 2 DC fans

Weight

- Main Switch: 4.3Kg
- Optional module: 220 ~ 280g

Dimensions

- Main Switch: 441(L) x 226(D) x 66.5(H) mm
- Optional Switch Modules: 178(L) x 152(D) x 25(H) mm

Power Supply

- 100 ~ 240VAC 50/60Hz internal universal power supply

Power Consumption

- Main switch: 33W max.
- Max 50W with modules

Operating Temperature

- 0˚C ~ 45˚C (32ºF to 113ºF)

Operational Humidity

- 10% to 90% (Non-condensing)

EMI

- FCC Class A
- CE

Safety

- UL

(*) for future release

Expansion Modules

Module	Port Density	Distance
10/100BaseT module		
EM1024A-8TP	8 x 10/100 RJ-45, with Auto MDI/MDI-X	100m
100FX module		
EM1024A-2FX-SC	2 x 100FX (SC, multi-mode)	2km
EM1024A-2FX-SC-15	2 x 100FX (SC, single-mode)	15km
EM1024A-4FX-SC	4 x 100FX (SC, multi-mode)	2km
EM1024A-4FX-SC-15	4 x 100FX (SC, single-mode)	15km
Gigabit module		
EM1024A-SX-SC	1000Base-SX (SC, multi-mode) Module	Depending on types of fiber
EM1024A-LX-SC	1000Base-LX (SC, single-mode) Module	10km
EM1024A-GTP	1000Base-T, UTP/STP RJ-45 Module	100m

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