

Dimension ES-3024

Managed Stackable Layer 2 Switch



The ES-3024 is a managed stackable layer 2 switch for workgroups or WAN edge applications. It is equipped with twenty-four 10/100Mbps ports and two expansion slots that accommodate optional 10/100/1000Base-T, 1000Base-SX or GBIC modules. With the recent growth of Gigabit Ethernet in Metropolitan Area Networks (MAN), expansion modules provide unparalleled flexibility for supporting a wide variety of uplink infrastructures while maintaining a competitive price to performance ratio.

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

With its built-in web-based management, the ES-3024 offers an easy-to-use, platform-independent management and configuration facility. The ES-3024 supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management software. For text-based management, the ES-3024 can also be accessed via Telnet and the console port.

Benefits

Port Trunking Provides Higher Availability

The ES-3024 supports IEEE 802.3ad with load distribution control and fail over recovery. With the exception of expansion slots, up to 8 ports can be aggregated for bandwidth up to 1600Mbps. No matter what modules are used for expansion slots, all traffic is aggregated based on MAC addresses, thus balancing the traffic load.

Clustering Simplifies Network Configuration and Management

The clustering design enables system administrators to configure and manage up to 8 units of the ES-3024 through a single IP address. This enables service providers to start with a minimal initial investment and add more equipment as customers increase. Network expansion can be accomplished without increasing management efforts.

VLAN Offers Both Security and Performance

The VLAN feature in the ES-3024 offers the benefits of both security and performance. VLAN is used to isolate traffic between different users and thus provides better security. Limiting the broadcast traffic to within the same VLAN broadcast domain also enhances performance.

Rate Adaptation Allows Service Differentiation

In order to fulfill the needs of different customers, service providers need a network infrastructure that combines guaranteed performance and flexibility in service provisioning. Rate adaptation on subscriber ports allows increments of 1Kbps, allowing service providers to offer tiered service.

Port Mirroring Achieves a Better Network Monitoring

Port mirroring 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.

Multicasting and Broadcast Storm Control Optimize Bandwidth Utilization

The IGMP snooping feature forwards traffic only to subscribers that request the multicast traffic. This prevents unnecessary forwarding of multicast traffic to all subscribers, therefore optimizing bandwidth utilization for bandwidth-consuming applications 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 bandwidth utilization.

Access Control Enhances Network Security

The ES-3024 supports not only 802.1x port-based access control for subscriber authentication, but also allows system administrators to define a limited number of MAC addresses that can access the network from a particular port. This feature, which denies unauthorized devices from communicating through the switch, highly enhances network security. The ES-3024 also supports the ability to limit the number of users (MAC addresses) that can simultaneously access the network on a per-port basis, allowing service providers to offer flexible billing plans.

Features & Specifications

General

Standard

- IEEE 802.3 10BASE-T Ethernet (twisted-pair copper)
- IEEE 802.3u 100BASE-TX Fast Ethernet (twisted-pair copper)
- ANSI/IEEE 802.3 Auto-negotiation
- IEEE 802.3x Flow Control
- IEEE802.1p Priority Queues
- IEEE802.1Q VLAN
- IEEE802.1d Spanning Tree

Uplink Interface

- Two uplink slots
- Modules: Dimensions: 146 x 66mm; Weight: 215g
 - EM3024-SX-SC: 1x 1000Base-SX, Multi-mode, SC connector
 - LED: LNK: Green LED on/off
ACT: Green LED blink/off
 - EM3024-FX-SC: 1x 100FX, Multi-mode, SC connector
 - LED: LNK/TX: Green LED on/off/blinking
RX: Green LED blinking/off
FDX/COL: amber LED
 - Light on: full duplex
 - Light off: half duplex
 - Light blinking: collision in half duplex
 - EM3024-GTP: 1x 10/100/1000Base-TX (RJ-45)
 - LED: LNK/TX: Green LED on/off/blinking
1000: Green LED on/off/blink
100: Green LED on/off/blink
FDX/COL: amber LED
 - Light on: full duplex
 - Light off: half duplex
 - Light blinking: collision in half duplex
 - EM3024-GBIC: GBIC 3.3V frame
 - LED: LNK: Green LED on/off
ACT: Green LED blink/off

Stacking Interface

- One stacking slot
- Modules: Dimensions: 118 x 110mm; Weight: 252g
 - EM3024S: Stacking module with 2x 1000Base-T ports
 - LED: No

Subscriber Interface

- 24 10/100 Base-TX interfaces
- Auto-negotiation
- Auto-MDIX
- Compliant with IEEE 802.3/3u
- Back pressure flow control for half duplex
- Flow control for full duplex (IEEE 802.3x)
- Connector: RJ-45

Performance & Management

Bridging

- 16K MAC addresses
- Static MAC address filtering/forwarding
- Limited max. number of MAC addresses per port

Switching

- Switching fabric: 12.8Gbps, non-blocking
- Frame size: 1522bytes
- Forwarding frame: 802.3, 802.1q, Ethernet II, PPPoE
- Prevent the forwarding of corrupted packets

STP

- 802.1d spanning tree protocol

VLAN

- Port-based VLAN
- IEEE 802.1Q tag-based VLAN, 4095 Max
- Support GVRP, automatic member registration

IEEE 802.1p Priority Queues

- 4 queues

Port Trunking

- IEEE802.3ad port trunking, static and dynamic (LACP) port trunking
- Fast Ethernet: three groups, up to 8 ports for each group
- Gigabit: one group

Multicasting

- Support IGMP snooping

Rate Limiting

- At 1Kbps increment

Broadcast Storm

- Support broadcast storm control

Port Mirroring

- All ports support port mirroring

Scalability

- 8

System Control

- Alarm/status surveillance
- OAM&P
 - Configuration management
 - Performance management
 - Status management
 - Security management
- Software upgrade and download via console, web, FTP
- System configuration restore and backup
- Self diagnostic

Management

- CLI through console port and telnet
- RS-232C (DB-9) port for local management
- Web-based management
- Status display and event report from web-based management
- SNMP manageable
- Trap
- RMON 1,2,3,9

MIBs

- RFC1213 SNMP MIB II
- RFC2011 IP MIB
- RFC2012 TCP MIB
- RFC2013 UDP MIB
- RFC1493 Bridge MIB
- RFC1643 Ethernet MIB
- RFC1757 Four Group of RMON
- RFC2674 VLAN MIB

Physical and Environmental

Weight

- 5.3Kg

Dimensions

- 440 (L) x 300 (D) x 44.5 (H) mm

LED and switch

- Power (green): on or off
- System (green)
 - Light off: System not ready or failed
 - Light on: System ready and running ok
 - Light flashing: System booting
- Alarm (red): on or off

- S1 (green):
 - Light off: stacking port disconnected or fail
 - Light on: Stacking port link ok
 - Light flashing: traffic go through stacking port
- S2: the same as S1
- 24x 10/100M Ethernet ports
- LNK/ACT: dual-color LED
 - Green light: 10M Ethernet
 - Amber light: 100M Ethernet
 - Light off: port disconnected or link-up failure
 - Light on: Ethernet link ok, color indicates of link is 10 or 100M
 - Blinking: activity
- FDX/COL: amber LED
 - Light on: full duplex
 - Light off: half duplex
- Light blinking: collision in half duplex

Power Supply

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

Power Consumption

- 60W max.

Operating Temperature

- 0°C ~ 45°C (32°F ~ 113°F)

Operational Humidity

- 10% to 90% (Non-condensing)

EMI

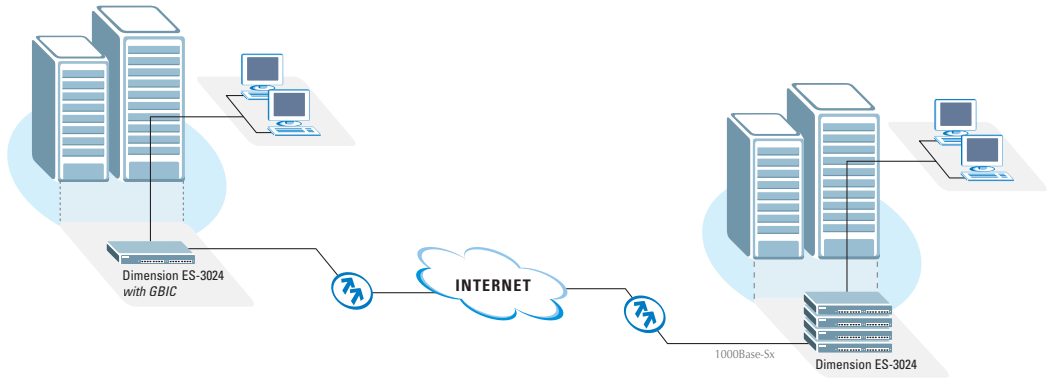
- FCC Part 15 Class A
- EN55022 Class A
- CE

Safety

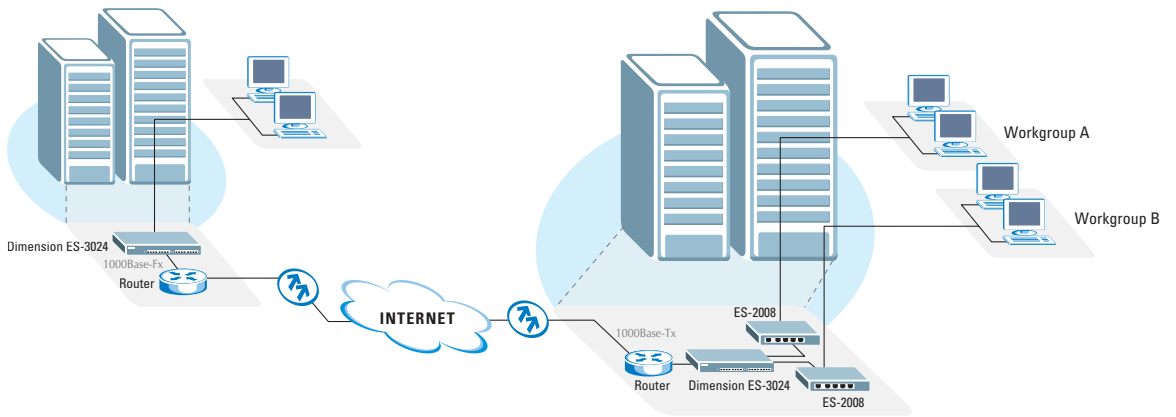
- UL 1950
- CSA C22.2 No. 950
- EN60950

Application Diagram

Access Application



Enterprise/SMB Application



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