ZyXEL

- 24 100BASE-X SFP open slots (ES-3124F)
- 4 GbE SFP slots (ES-3124-4F/ES-3124F)
- Backup Power System (BPS) that minimizes network downtime
- Policy-based QoS optimizes multi-service quality
- IP TV manipulated by MVR and IGMP Snooping v3
- Minimizes channel surfing disturbance with Fast Leave
- 256 Static VLAN and 4K PVID for service VLAN management
- VLAN Stacking (Q-in-Q) support for L2VPN
- Remote management via IEEE 802.3ah (OAM)

Layer 2+ Managed Fast Ethernet Switch

ES-3124
ES-3124-4F
ES-3124F

Premium Access Switch Light Active Ethernet ETTx Service Network

Benefits

Easy ETTx Deployments

ZyXEL's ES-3124, ES-3124F and ES-3124-4F are a series of carrier-class L2+ managed access switches. With robust performance in network resiliency, QoS, IP multicasting and security, the ES-3124 Series is the ideal solution for cable, utilities or municipality operators and service providers to adopt in Active Ethernet ETTx deployments.

ES-3124-4F and ES-3124F both support 4 GbE SFP slots for establishing fiber rings to offer better network resiliency, while ES-3124F has 24 100BASE-X SFP open slots for superior fiber aggregation capability. ES-3124F can be combined with ES-2108-F to form an end-to-end fiber access solution. All above models support the latest single fiber transceiver (BX type) for better system flexibility and easier fiber installation.

Robust and High-Availability System Design

As an alternative power source, BPS prevents the system from total blackouts caused by internal AC power supply failures, and IEEE 802.3ad Link aggregation also reduces network downtime by providing more packet paths and performs bandwidth aggregation on critical paths. The 4G uplink not only provides superb bandwidth, but also forms a high-resiliency ring topology, which greatly improve network uptime and stability.

Secured Service-Level IP TV & VoIP Operations

The ES-3124 Series comes with proven QoS and VLAN functions to ensure smooth operation. For instance, QoS features like multi-layer (L2/L3/L4) ACL, eight priority queues, DSCP and WFQ scheduling algorithm all maximize bandwidth usage and improve network service quality, while MVR and IGMP snooping enables effective IP TV multicasting. In addition, Fast Leave eradicates streaming quality disturbance when users surf between different channels, and bandwidth control with granularity of 64 kbps brings better bandwidth administration to network operators.

Standardized Services Empowered by Service-Aware VLAN

With 256 static VLAN entries, the ES-3124 series sufficiently satisfies the growing need for video, VoIP and access identification functionalities required by converged networks to deliver multiple services. Furthermore, The 4K PVID offers the best flexibility for VLAN configuration, while the L2VPN service is made possible by the VLAN stacking (Q-in-Q) feature.

Strengthened Service Management and Control

The ES-3124 Series supports the 802.3ah operation, administration and maintenance (OAM) standard to facilitate device management and ZyXEL NetAtlas Enterprise EMS software for central management In addition, command-line interface (CLI) and text configuration are also offered for the staff to manage the network more conveniently and effectively.

Specifications

Standard Compliance

- IEEE 802.3 10BASE-T Ethernet
- IEEE 802.3u 100BASE-TX/FX Ethernet
- IEEE 802.3ah 100BASE-LX10 (ES-3124F)
- IEEE 802.3ah 100BASE-BX10-U (ES-3124F)
- IEEE 802.3ah 100BASE-BX10-D (ES-3124F)
- IEEE 802.3ab 1000BASE-T Ethernet
- IEEE 802.3z
- IEEE 802.3x Flow control
- IEEE 802.1w Rapid Spanning tree protocol
- IEEE 802.1s Multiple Spanning tree protocol
- IEEE 802.1p Class of service
- IEEE 802.1Q VLAN tagging
- IEEE 802.1x Port Authentication
- IEEE 802.3ad LACP aggregation
- IEEE 802.1ad VLAN Stacking

Performance

- 12.8 Gbps non-blocking switching fabric
- Switching Forwarding Rate 9.6 Mpps
  (1488000pps/1000BASE-T/1000BASE-X,
  148800pps/100BASE-TX/100BASE-X)
- Wire-speed performance

MAC and Packet Buffer

- 16 K MAC entries
- 32 MB Packet Buffer

Traffic Management and QoS

- Rate Limiting: Rule-based/Port-based bandwidth control, 64kbps granularity
- Supports Two-Rate-Three-Color (CIR/PIR)
- Port-based egress traffic shaping
- Broadcast Storm Control
- Congestion control on all ports
- IEEE 802.1p with 8 priority queues per port for different types of traffic
- WFQ (Weighted Fair Queuing)/WRR (Weighted Round Robin)/SPQ scheduling algorithm
- DSCP to 802.1p priority mapping
- DSCP
- Fast leave
- IGMP snooping v1, v2, v3
- MVR

Link Aggregation

- IEEE 802.3ad LACP link aggregation compliant
- Support static manually port trunking
- Up to 6 aggregation groups, per group support up to 8 ports

Resilient Network

- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
- BPS (Backup Power System)

User Security and Authentication

- MAC filtering per port secures access to each port
- Specific MAC forwarding per port: only specified MAC addresses can access the network (Port Security)
- Limited MAC number per port
- 802.1x port-based authentication, compensated assignment over VLAN and bandwidth for valid access
- IEEE 802.1Q tag-based and port-based VLAN
- Support GVRP, automatic VLAN member registration
- 256 static VLAN, up to 4K dynamic VLAN
- Full range 4K PVID support
- Port isolation
- MAC Freeze
- Intrusion Lock
- VLAN Stacking (Q-in-Q)
- BPDU transparency
- IP Source Guard (DHCP snooping, ARP inspection)
- DHCP relay/DHCP option 82

Network Administration Security

- User name/password required for web/telnet/local console administrators
- Two level security by specific SNMP read/write community
- Multiple Log-in session
- Multiple access authorization management
- SSH v1/v2
- SSL/TLS
- TACACS+
- RADIUS client

Network Management

- Supports ZyXEL iStacking™, up to 24 switches can be managed by one IP address
- Web-based management
- Telnet CLI
- SNMP v1, v2c, v3
- RS-232c Local console
- IP management: static IP or DHCP client
- RMON four RMON groups 1, 2, 3, 9 (history, statistics, alarms, and events) for enhanced traffic management, monitoring, and analysis
- Port mirroring: supports Source/Destination/Both port mirroring

Intelligent ACL (L2/L3/L4 Access List Control)

- Based on MAC address
- Based on VLAN
- Based on IP address
- Based on Protocol type
- Based on TCP/UDP type
- Based on DSCP

MIB Information

- RFC1213 MIB II
- RFC1493 Bridge MIB
- RFC1643 Ethernet MIB
- RFC1757 RMON group 1, 2, 3, 9
- RFC2011 IP MIB
- RFC2012 TCP MIB
- RFC2013 UDP MIB
- RFC2233 ifVHCPacketGroup
- RFC2674 VLAN MIB
- RFC2925 PING-MIB and TRACEROUTE-MIB
- ZyXEL Private MIB for EMS management

Hardware Specifications

- Support of auto-negotiation
- Support of auto MDI/MDI-X
- Console: D-Sub 9 pin Female (DCE)
- Management: 1 out-of-band management RJ-45 port

ES-3124
- Ports: 24 10/100BASE-T, RJ-45 copper ports + 2 GbE copper ports and 2 dual-personality GbE ports (RJ-45 or SFP open slots)

ES-3124-4F
- Ports: 24 10/100BASE-T, RJ-45 copper ports + 2 GbE SFP slots and 2 dual-personality GbE ports (RJ-45 or SFP open slots)

ES-3124F
- Ports: 24 100BASE-X SFP slots + 2 GbE SFP lot and 2 dual-personality GbE ports (RJ-45 or SFP open slots)

Power Requirements

- Input voltage of AC: 100-240 V AC, 50/60Hz
- Input voltage of DC: -48 V ~ -60 V DC
- Max power rating: 60 Watt
- Backup power supply into 12 V DC

Environmental Specifications

- Operating temperature: 0°C ~ 45°C
- Storage temperature: -25°C ~ 70°C
- Operating humidity: 10% ~ 90%, (non-condensing)

Physical Specifications

ES-3124 (28 ports)
24 10/100BASE-T copper ports + 2 GbE copper ports + 2 dual-personality GbE ports

- Dimensions: 438 (W) x 270 (D) x 44.45 (H) mm
- Weight: 3.6 Kg

ES-3124-4F (28 ports)
24 10/100BASE-T copper ports + 2 GbE SFP slots + 2 dual-personality GbE ports

- Dimensions: 438 (W) x 270 (D) x 44.45 (H) mm
- Weight: 3.6 Kg

ES-3124F (28 ports)
24 100BASE-X SFP slots + 2 GbE SFP slots + 2 dual-personality GbE ports

- Dimensions: 438 (W) x 270 (D) x 44.45 (H) mm
- Weight: 3.6 Kg

Operational Information

Gigabit SFP Transceivers

Model Name	Connector Type	Mode	Wavelength	Distance	P/N	EAN Code
SFP-SX	LC	Multi-mode	850 nm	500 m	91-010-064001B	4718937420308
SFP-LX-10	LC	Single mode	1310 nm	10 km	91-010-065001B	4718937420292
SFP-BX1310-10	LC	Single mode	1310 nm (TX) 1490 nm (RX)	10 km	91-010-152001B	4718937504527
SFP-BX1490-10	LC	Single mode	1490 nm (TX) 1310 nm (RX)	10 km	91-010-153001B	4718937504510
SFP-LHX1310-40	LC	Single mode	1310 nm	40 km	91-010-068001B	4718937420452
SFP-ZX-80	LC	Single mode	1550 nm	80 km	91-010-070001B	4718937420469

Fast Ethernet SFP Transceivers (for ES-3124F)

Model Name	Connector Type	Mode	Wavelength	Distance	P/N	EAN Code
SFP-100FX-2	LC	Multi-mode	1310 nm	2 km	91-010-064001B	4718937503919
SFP-100LX-20	LC	Single mode	1310 nm	20 km	91-010-065001B	4718937503926
SFP-100BX1310-20	LC	Single mode	1310 nm (TX) 1550 nm (RX)	20 km	91-010-068001B	4718937503933
SFP-100BX1550-20	LC	Single mode	1310 nm (TX) 1550 nm (RX)	20 km	91-010-070001B	4718937503940

For more product information, visit us on the web www.ZyXEL.com