



**VES-1616F-44**  
16-port DMT VDSL2 Switch



**VES-1624F-44**  
24-port DMT VDSL2 Switch

- Comply with standard VDSL2 DMT Coding for Outstanding Performance
- Two built-in Dual-personality (RJ-45/SFP) Interfaces for Flexible Deployment
- A Policy Rule Setting for Classified Filtering, Ensures Traffic Flow Gets the Requested Treatment in the Network
- IEEE 802.3ad Port Trunking for of Multiple Link Aggregation
- Rich feature set to include Advanced Features Such as IGMP Snooping, "MVR" and MAC Filtering



**16-port/24-port DMT VDSL2 Switch**

VES-1616F-44

VES-1624F-44

## Carrier Grade: Beyond Triple Play

### Benefits

#### DMT Modulation - Standard Compliance and Outstanding Performance

The ZyXEL VES-1616F-44/VES-1624F-44, a DMT (Discrete Multi-Tone)-based VDSL2 solution that allows dynamic rate change depending on current line condition, offers excellent performance even over noisy lines. This eliminates the need for manual and time-consuming rate adjustments to suit the changing network noise conditions. Both IEEE's 802.3ah Ethernet in the First Mile (EFM) Task Force and T1E1.4 Working Group selected DMT as its worldwide VDSL line-coding standard.

#### Port Trunking Provides High Availability

The VES-1616F-44/VES-1624F-44 supports IEEE 802.3ad with load distribution control and fail-over recovery. To balancing traffic loading, the VES-1616F-44/VES-1624F-44 distributes traffic to each trunk port based on the source and destination MAC addresses.

#### Traffic Prioritization Provides Quality Services

Enable IGMP snooping on the VES-1616F-44/VES-1624F-44 to improve service quality for IP multicasting applications. This prevents unnecessary forwarding of multicast traffic to all subscribers, thus optimizing bandwidth utilization for bandwidth-consuming applications such video streaming. In addition, the Multicast VLAN registration (MVR) feature allows the VES-1616F-44/VES-1624F-44 to forward the same video streams to device in specific VLANs. Through this intricate technology, duplicate video streams can be reduced significantly making the VES-1616F-44/VES-1624F-44 your first choice in an MoD environment.

#### Rate Limiting Allows Service Differentiation

You can limit bandwidth on subscriber ports at steps of 64Kbps. This allows service providers to offer tiered service plans.

#### Excellent Configuration and Management Capabilities

The VES-1616F-44/VES-1624F-44 includes a comprehensive set of management tools to streamline your management effort. The Web-based management interface offers an easy-to-use platform, independent management, and configuration options. The VES-1616F-44/VES-1624F-44 supports SNMP and MIBs, both of which can be managed via standard-based management software. In addition to remote management capabilities, a console port is also available for local management.

## Specifications

### Standard Compliance

- IEEE 802.3 Ethernet
- IEEE 802.3u Fast Ethernet
- IEEE 802.3z Gigabit Ethernet
- IEEE 802.3x Flow Control
- IEEE 802.3ad LACP Aggregation
- IEEE 802.1d Spanning Tree
- IEEE 802.1w Rapid Spanning Tree Protocol
- IEEE 802.1Q VLAN tagging
- IEEE 802.1p QoS
- IEEE 802.1x Port Authentication
- IEEE 802.11 MIB

### MIBs

- IEEE 802.11 MIB
- RFC 1213 MIB II
- RFC 1493 Bridge MIB
- RFC 1643 Ethernet MIB
- RFC 1757 Four groups of RMON
- RFC 2674 Q-BRIDGE-MIB and P-BRIDGE-MIB
- RFC 2925 PING-MIB and TRACEROUTE-MIB
- Private MIB (Set/Get/trap etc.), Support trap including cold start, warm start, link down, link up, topology change, new root, etc)

### MAC

- 16K MAC entries

### Traffic Management and QoS

- IEEE 802.1p QoS with 8 priority queues per port
- IEEE 802.1Q tag-based and port-based VLAN
- 256 static VLAN, up to 4K dynamic VLAN
- Support GVRP, automatic VLAN member registration
- IGMP snooping

### User Security and Authentication

- MAC filtering per port secure access to each port
- Specific MAC forwarding per port: only specified MAC addresses can access the network (per lock)

- Limit the number of MAC address per port
- 802.1x port-based security, prevent unauthorized client access to the network
- Private VLAN provides security and isolation between ports on a switch, ensures that the users cannot snoop on each other's traffic

### Network Administration Security

- Username/password required for web/telnet/local console administrators
- Two level security by specific SNMP read/write community
- SSH provides network security by encrypting administration traffic

### Network Management

- Web-based management
- Telnet CLI
- SNMP v1v2c
- RS-232 local console
- IP management: Static IP or DHCP client
- DHCP relay/option 82
- 4 RMON groups 1, 2, 3, 9 (history, statistics, alarms, and events) for enhanced traffic management, monitoring, and analysis
- Support Source/Destination/Both port mirroring

### Management Interface

- Web, Console, Telnet and SNMP

### Performance

- Upstream/Downstream: 100/50 Mbps
- Flexible Design for Gigabit Copper and Gigabit Fiber Connectivity

### Hardware Specifications

- 2 x Dual Personality (RJ-45/SFP slot) GbE interface
- Support auto-negotiation
- 16/24 wire-wrapping pins for VDSL ports
- 16/24 wire-wrapping pins for POTS ports
- Rack Mount: 19" rack mount, 1.5U height
- Console: 1 x RS-232 DB-9

- Alarm: 1 x RS-232 DB-9
- MGMT: 1 x RJ-45
- LEDs:
  - System: PWR/SYS/ALM
  - Per Port: LNK/ACT
  - Port Module: LNK/ACT

### Power Requirements:

- Input voltage of AC: 85 ~ 132VAC/50 ~ 60Hz
- Input voltage of DC: 36 ~ 72VDC
- Max power rating: 85W

### Physical Specifications

#### VES-1616F-44

- Dimensions: 430 (W) x 350 (D) x 65 (H) mm
- Weight: 5 Kg

#### VES-1624F-44

- Dimensions: 430 (W) x 350 (D) x 65 (H) mm
- Weight: 5.1 Kg

### Environmental Specifications

- Temperature: 0°C ~ 50°C
- Humidity: 5% ~ 90% (non-condensing)

### Certification

- FCC, CSA, VCCI, JATE, CISPR22, ITU-T K.21

# Compatible CPE

VDSL2 Modem

P-872H/P-870MH



## Specifications

### VDSL Compliant

- Duplex Method: DMT
- Line Rate: Set by VDSL switch, Asymmetric speeds ranging up to 100/45 Mbps
- Ethernet over VDSL bridging
- ITU-T G.993.1 VDSL
- ITU-T G.993.2 VDSL2
- Band Plan 997 and 998 support
- LR-VDSL2 support
- Power Back-off

### Network Management

- Command-line Interpreter (CLI)
- MAC filtering
- EOC/FTP firmware upgrade (P-870MH)
- EOC/TFTP firmware upgrade (P-872H)

### Support

- IEEE 802.3/3u/3x
- Flow control in full duplex mode
- Back pressure in half duplex mode
- 802.1q VLAN, tag-based and port-based
- 802.1p QoS, 2 queues support
- IGMP snooping
- Broadcast control
- Multicast drop/flooding

### Hardware Specifications

- VDSL port: RJ-11 connector x 1
- Console interface: RJ-11 connector x 1 (P-872H)
- LAN: 10/100 Base-Tx Fast Ethernet port (RJ-45) x 4
- One Reset Button
- One Power on/off Switch
- Status LEDs Indicator (Alarm surveillance)
- Power 18V AC, 1A

### Physical Specifications

- Dimensions: 205 (W) x 160 (D) x 45 (H) mm
- Weight: 470 g

### Environmental Specifications

- Temperature: 0°C ~ 50°C
- Humidity: Less than 95% RH (non-condensing)

### Certification

#### EMC

- FCC Part 15 Class B
- CE-EMC Class B

#### Safety

- CSA-International

For more product information, visit us on the web [www.ZyXEL.com](http://www.ZyXEL.com)

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