

AES-100

ADSL IP DSLAM



The importance of IP infrastructure has been justified by the year-to-year increase of new Internet applications. The adaptation of IP gives service providers much more flexibility and efficiency than traditional ATM infrastructure. New advances in IP networking technologies have been introduced, that have changed the landscape of broadband service offerings.

ADSL (Asymmetric Digital Subscriber Line) is the hottest technology for Internet access, which provides broadband data service over existing copper wires without affecting the conventional voice service. Using DMT line coding, the AES-100 supports up to 8M/1.5Mbps downstream, which is more than 140 times faster than an analog modem and 1M/512kbps upstream for Full-Rate/G.lite standard. This asymmetrical performance makes it ideal for bandwidth-consuming Internet applications where the downstream traffic is typically much higher than the upstream traffic.

The AES-100 is a powerful and innovative IP-based DSLAM with two network modules. Each network module provides eight ADSL ports with built-in POTS splitters, and it uses an Ethernet port for uplink to a Layer 2/3 switch or a broadband router. The compact design makes the AES-100 a perfect solution for both central office collocation and various MTU (Multiple Tenant Unit) markets.

The AES-100 also offers service providers extensive management capabilities. The entire AES-100 is managed using ZyXEL's NetaVista, an element management system (EMS). The information, concerning configuration control, system status, performance index and alarm trap, is forwarded from the AES-100 to the NetaVista, which delivers service providers a "Comprehensive Service Results" report, thus minimizing daily operation costs.

The new advances in the AES-100 enable service providers to turn on broadband service to more customers quickly, and at a lower cost than previously possible.

Benefits

IP-based DSL Offering

Most DSL services are based on ATM infrastructure. Compared to ATM, IP is more efficient and cost-effective for data service delivery. ZyXEL's AES-100, an IP-based DSL access multiplexer (DSLAM), terminates all the ATM circuits and converts the traffic directly into the Internet environment. The deployment of AES-100 can save effort and cost, in regards to ATM backbone investment and maintenance.

VLAN Offers Both Security and Performance

VLAN offers the benefits of both security and performance by limiting the outgoing ports through which an Ethernet frame can be forwarded. When used in the MTU environment, VLAN has been used to identify and to isolate users.

ZyXEL's solutions support both port-based and tag-based VLAN. Port-based VLAN group membership is meaningful only within a single switch. However, tagged VLAN slows the user identities to be carried across switches, allowing service providers to maintain privacy and security throughout the network.

Multicasting Optimizes Bandwidth Utilization

Multicasting design forwards traffic to only those subscribers that request the multicast traffic. This prevents unnecessary broadcast traffic to all subscribers and optimizes bandwidth utilization for bandwidth-consuming video applications.

Compact Design for Limited Space

The AES-100 fits the standard Telecom rack space at a height of 1U. Its compactness is ideal for central office collocation, or in-building installation.

Scalable Platform for Future Expansion

The flexible design of the AES-100 allows service providers to start ADSL service at a minimum cost. As the number of subscribers and applications grow, the additional AES-100 can be added to increase the available customer base.

Features & Specifications

Dimensions

- 439mm(L) x 320mm(D) x 66mm(H)

Weight

- 8.3 KG (2 network modules loaded)

Number of modules

- Two modules in one shelf

Uplink Interface

- One 10/100M Ethernet per module
- RJ-45 connector

ADSL Interface

- 8-Port ADSL per module
- RJ-11 connector

Console

- One console port per module
- DB9 connector

LED & Switch

- System
 - Light off: System not ready or failed
 - Light on: System ready and running ok
 - Light flashing: System booting
- Alarm: Light on & off: Alarm on or off
- ADSL
 - Light on: Link on
 - Light off: Link is not ready or no connection
- Ethernet
 - Link light on: the LAN port link is up
 - Link light off: the LAN port link is down
 - Act light blinking : data is being sent
- Power switch: For power on or off

ADSL Compliance

- Multi-Mode ADSL standard
 - RADSL (DMT T1.413 Issue 2)
 - G.DMT (ITU G.992.1)
 - G.Lite (ITU G.992.2)
 - G.hs (ITU G. 994.1)
- Auto rate adaptation

Switching

- Max. Frame size: 1522 bytes
- Forwarding frame: IEEE 802.3, IEEE 802.1Q tagged frame, Ethernet II

System Control & Maintenance

- Alarm/Status Surveillance
 - Automatic history and status report
 - Alarm/event history
 - LED indication for alarm and system status
- Performance monitoring
 - Line rate
- Configuration
 - VLAN setting
 - ADSL line rate setting (bandwidth control)
 - Firmware upgrade by FTP
 - Configuration backup / restore by FTP
 - Default configuration
- Security
 - Support login authorization
 - Secured hosts for Telnet/ FTP /SNMP
 - MAC address filtering
- Provides non-volatile memory to back-up system database
- System error log
- UNIX syslog
- Self diagnostics
 - DRAM
 - LAN port
 - Line interface loop-back test

Ethernet

- Support 802.3/3u/3x
- Back pressure flow control for half duplex
- Flow control for full duplex (802.3x)

VLAN

- Port-based VLAN
- IEEE 802.1Q tag-based VLAN
- Support GVRP for uplink
- No. of IEEE 802.1Q tag-based VLANs: 255

QoS

- 802.1p Priority preservation

Multicast

- Support IGMP snooping

Bridging

- IEEE 802.1D Transparent Bridge
- 4K MAC addresses

Network Management

- Local console
- Support SNMP v1 & v2
- Support Telnet
- Provide fault, performance, configuration, and security managements

MIB

- RFC 1213 MIB II
- RFC 1493 Bridge MIB
- RFC 2674 Bridge MIB Extensions
- RFC 2662 ADSL Line MIB

Temperature

- Operating: 0 ~ 50°C
- Storage: -25 ~ 70°C

Humidity

- 5 ~ 95% (non-condensing)

Power

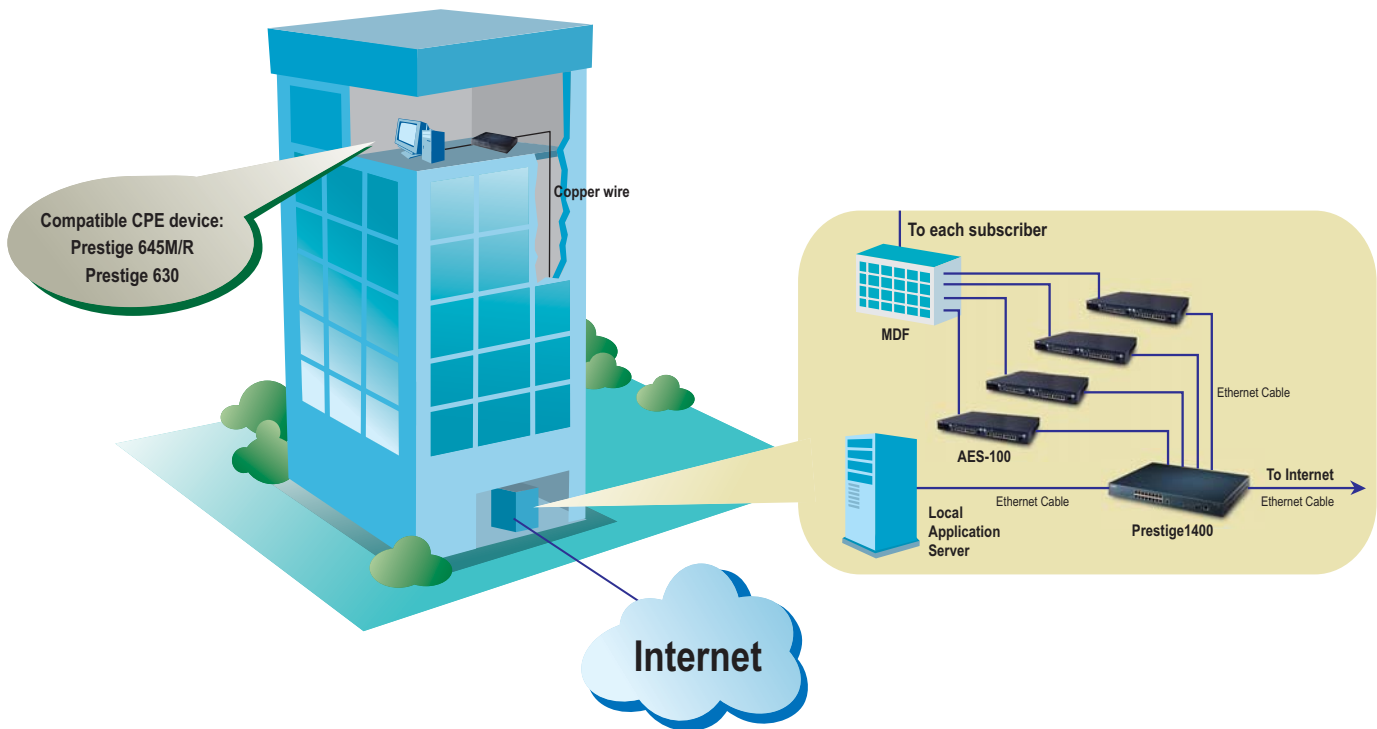
- 100 ~ 240VAC, 60 ±3Hz
- -36 ~ -57 VDC

Certification

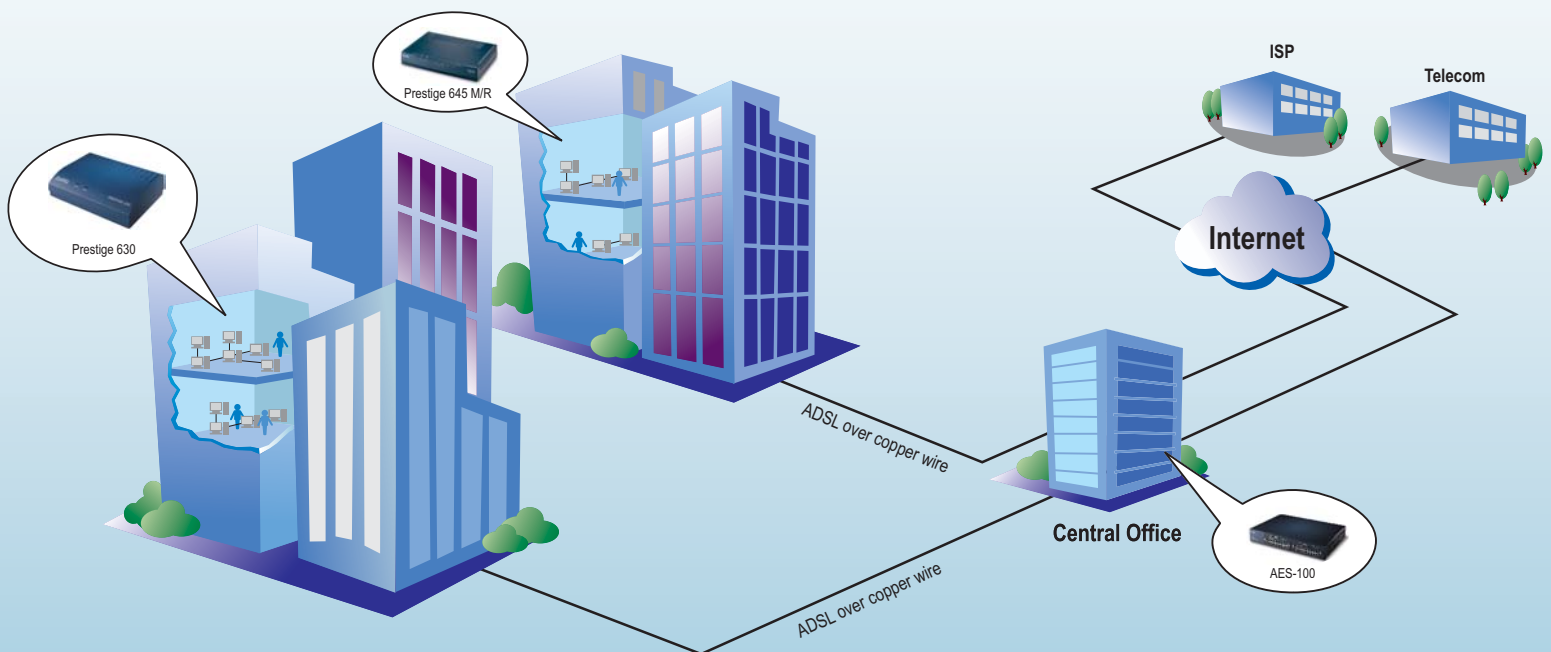
- Safety
 - UL1950
 - CSA C22.2 No. 950
 - EN60950, IEC60950
- EMC
 - FCC Part 15 Class A
 - EN55022 Class A

Application Diagram

MTU Application



Central Office Application



Compatible CPE**Prestige 645M/R**

Multi-Mode ADSL Bridge/Router

**Prestige 630**

ADSL USB Modem

**Features & Specifications****Prestige 645M/R****Dimensions**

- 181mm(L) x 128mm(D) x 37mm(H)

ADSL Interface

- One ADSL Port
- RJ-11 connector

Ethernet Interface

- One 10/100M Ethernet
- RJ-45 connector

Management

- Menu-driven user's interface for text-based management
- Optional Web-based configuration
- Text-based management that can be configured locally via console and remotely via telnet
- TFTP and FTP for Transferring firmware and configuration files
- SNMP MIB support

ADSL Compliance

- Multi-Mode ADSL Standard
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 - G.lite (ITU G. 992.2)
 - G.hs (ITU G. 994.1)
- Auto-negotiating rate adaptation

Temperature

- Operating: 5°C ~ 50°C

Humidity

- 20% ~ 95% (non-condensing)

Power Requirement

- Power input voltage: 100 to 120VAC, 200 to 240 VAC
- Frequency \pm 3 Hz
- Power consumption \leq 10W

Prestige 630**Dimensions**

- 132mm(L) x 87.5mm(D) x 27mm(H)

ADSL Interface

- One ADSL Port (RJ-11 connector)
- One USB Port

Temperature

- Operating: 0°C ~ 40°C

Visual Indicators

- Status LEDs: USB, ADSL

Humidity

- 20% ~ 90%

TOTAL INTERNET ACCESS SOLUTION



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