Operator Logo

ZXHN H168N Product Description

ZXHN H168N Product Description

Version	Date	Author	Reviewer	Notes
A	2014/3/5	Zhanglei		Not open to the third party

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1 Overview

The ZXHN H168N is a VDSL2 access device supporting multiple uplink modes. It provides four Ethernet ports, one USB 2.0 Host port and the wireless user access in compliance with the IEEE802.11b/g/n standard. It can provide the transmission of broadband data service, which is suitable for using in a wide range of both residential (in-home) and commercial (offices, apartments, hotels, warehouses) network applications.

Moreover, it also provides secure wireless encryption modes and firewall to protect network security and support remote network management through TR-069 and Web GUI.

2 Features

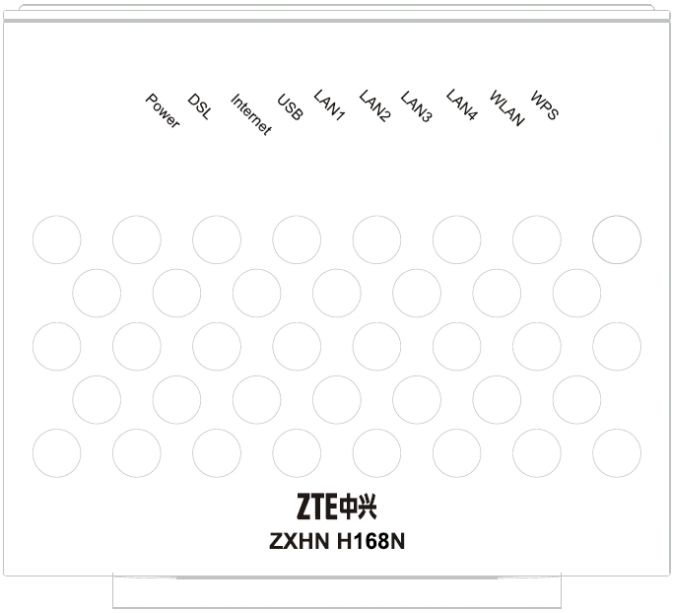
- ITU-T G.993.2 VDSL2 standard （up to profile 30a）and ITU-T G.992.5 ADSL2+ standard.
- G.993.5 (G.vectoring) compliance
- IEEE802.11 b/g/n (2x2 MIMO)
- 3G Dongle uplink/USB Printer
- IPv4 / IPv6 Dual Stack and IPv6 DS-Lite
- DLNA(DMS)/UPnP AV
- L2TP/PPTP/IPSec VPN pass-through
- CoC Tier 2015-2016
- TR069 remote management
- Supports Dual image
- Supports configuration setting through Web GUI

- Supports quick configuration

3 System Architecture

3.1 Product Physical Structure

Figure 3-1 ZXHN H168N Structure



3.2 Hardware Architecture

3.2.1 ZXHN H168N LED

Figure 3-2 ZXHN H168N LED

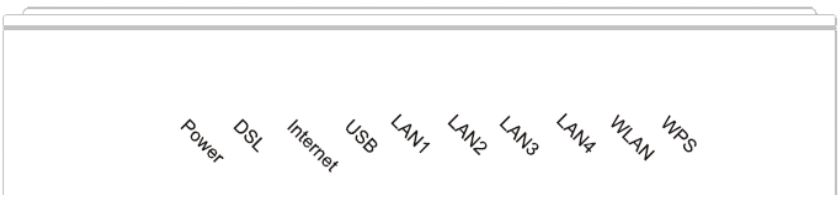


Table 3-1 ZXHN H168N LED

Function	Color	Status	Definition
Power	Green/Red	Off (dark)	No power applied
		Solid Green	Device powered on and working properly.
		Solid Red	Diagnostic/Malfunction/FW upgrade
DSL	Green	Off (dark)	No signal detected on DSL interface
		Solid Green	DSL Line Synched
		Flashing Green	Attempting to Sync and date transmitting Flashing at 2 Hz with a 50% duty cycle when trying to detect carrier signal Flashing at 4 Hz with a 50% duty cycle when the carrier has been detected and the modem is trying to train
Internet	Green/Red	Off (dark)	No internet connection or gateway in bridged mode
		Solid Green	Internet access verified
		Flickering Green	Internet data transmitting through modem
		Solid Red	Internet malfunction
LAN1-LAN4	Green	Off (dark)	Ethernet link down, link not connected
		Solid Green	Powered up device is connected to link
		Flashing Green	Ethernet traffic ongoing
WLAN	Green	Off (dark)	WLAN link down or no link connected
		Solid Green	WLAN link up
		Flashing Green	Data transmission
USB	Green	Off (dark)	No device connected to the USB port
		Solid Green	A device is connected to the USB port

		Green flashing	Data transmission
WPS	Green	Off (dark)	WPS function is off
		Solid Green	A device is connected through WPS
		Flashing Green	WPS is in negotiation state or malfunction

3.2.2 ZXHN H168N Interface

Figure 3-3 ZXHN H168N interface

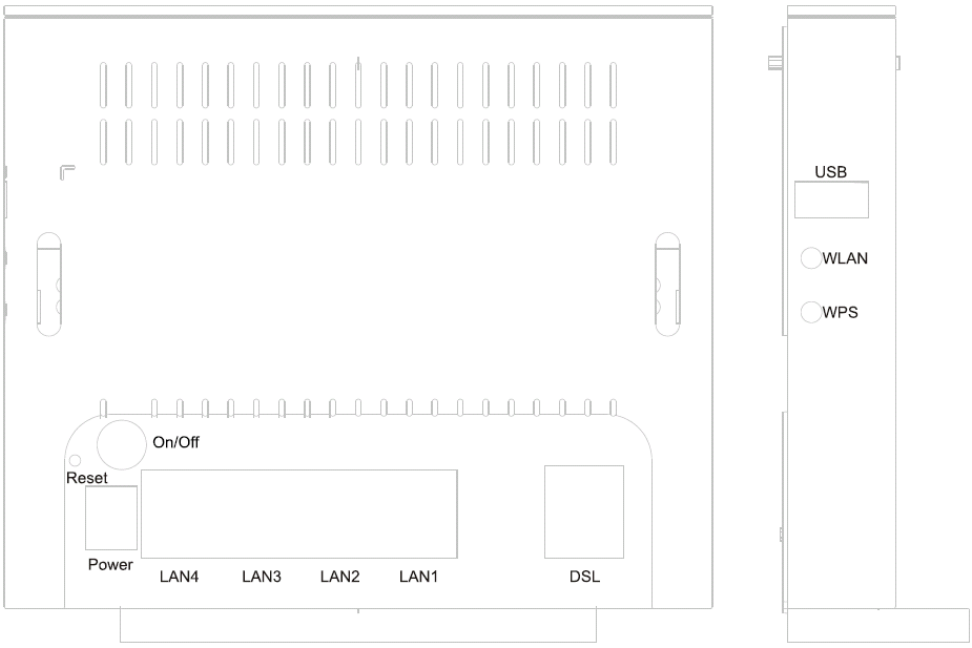


Table 3-2 ZXHN H168N interface

Interface	Function
DSL	RJ-11port：Using the telephone line to connect the modem with the VDSL2 cable or splitter
LAN1-LAN4	RJ-45 port：used to connect the modem to a PC or other network device
WLAN	Enable Wi-Fi function.
WPS	Wi-Fi Protected Setup
Reset	During power-on period, hold on this button for more than 3seconds in succession, reset the current settings to the factory default ones, then the system restarts automatically

Interface	Function
Power	Power supply port, used to connect to the power adapter
On/Off	Power switch
USB	Connect USB storage/printer/3G dongle.

- Interface
  - One WAN port (RJ11)
  - Four 10/100Base-T Ethernet ports (RJ45) support IEEE802.3/802.3u
  - One External Antenna for 802.11b/g/n WLAN
  - One power jack

3.3 Software functions

- Supports ADSL Standards
  - ANSI T1.413 Issue 2
  - ITU G.992.1 (G.dmt) AnnexA/AnnexB(Need customization)
  - ITU G.992.2 (G.lite)
  - ITU G.992.3 (G.dmt.bis) AnnexA/AnnexL/AnnexB(Need customization)
  - ITU G.992.5 AnnexA/AnnexB(Need customization)
  - ITU G.994.1 (G.hs)
  - Fast path and Interleave path
  - Dynamic rate adaptation
- Supports ATM Feature
  - Payload Encapsulation: PPPoE(RFC2516), PPPoA(RFC2364), Bridge, DHCP, STATIC, IPoA

- ATM Forum UNI 3.1/4.0 Permanent Virtual Circuits(PVCs)
- Supports UBR, CBR, rt-VBR and nrt-VBR traffic classes
- Supports VPI range 0-255, VCI range 32-65535
- Up to 8 PVCs maximum
- RFC 2684 LLC- SNAP/VC MUX
- ITUT I.610 ATM OAM F4/F5 Loopback

- VDSL2 Standard
  - ITU-T G.993.2（VDSL2）
- Supports PTM Feature
  - Supports PTM 802.3ah 64B/65B encapsulation
  - Supports Upstream Band Zero (US0)
  - Supports Impulse noise protection（INP）
  - Supports Upstream Power Back-off（UPBO）
  - Supports Downstream Power Back-off（DPBO）
  - Supports Sub-Carrier Blackout
  - Supports RFI Notching
  - Supports Bit Swap
  - Supports virtual noise
  - Supports Double-ends line test
  - Supports 8a/8b/8c/8d/12a/12b/17a/30a profile
- PPP Function

- PAP(RFC 1334)/CHAP(RFC 1994)
- Multiple PPPoE sessions
- Always on/ On demand/ Manual connection

- Wi-Fi Feature
  - Operation Frequency: 2.4GHz
  - 802.11g Only/802.11b Only/802.11n Only/Mixed
  - 2 (Tx) * 2(Rx) MIMO
  - Up to 300Mbits/s PHY data rate
  - Manual/Auto radio channel selection
  - Auto speed selection
  - Multiple ESSIDs (up to 4 SSIDs)
  - WPS push-button
- Wi-Fi Security:
  - 64/128bit WEP encryption
  - WPA/WPA2 Personal
  - WMM(Wireless Multimedia), 802.11e
  - Supports Hide ESSID
- Security
  - Denial of Service (DoS) protection: Ping of Death, SYN Flooding, ARP flooding, Spoofing, LAND, Smurf
  - IP address filter
  - MAC address filter

- URL filter
- Port and protocol filtering
- DMZ
- WAN access control
- Port forwarding (Virtual Server)
- User Privilege: Administrator and User

- IP QoS
  - Supports packet classification based on:
  - IP source address/IP source subnet mask
  - IP destination address/IP destination subnet mask
  - Destination TCP/UDP port number or range of port numbers
  - MAC source address
  - DSCP field
  - Protocol type
  - 802.1P and DSCP remarking based on packet classification
  - 8 Priority Queue
  - Strict Priority
- Management and Configuration
  - Supports TR-069
  - WEB GUI (local and remote management)
  - Firmware upgrade using HTTP

- Factory setting reset
- Supports system log

4 Technical Specifications

4.1 Physical Indices

4.1.1 Mechanical Dimension

- 125mm（L）x 52mm（W）x 112 mm(H)（Housing of H168N）
- 243mm（L）x 168mm（W）x 70 mm(H)（Box of H168N）

4.1.2 Weight

- 160g (Single Device)
- 495g (A Whole Packet of H168N)

4.2 Power

- Idle-sate 4.7W (Including power adapter efficiency)
- On-sate 5.6W (Including power adapter efficiency)

4.3 Working Environment

- Operating temperature: 0℃~40℃
- Humidity: 5%~95%
- Storage temperature: -40℃~70℃
- Power specification

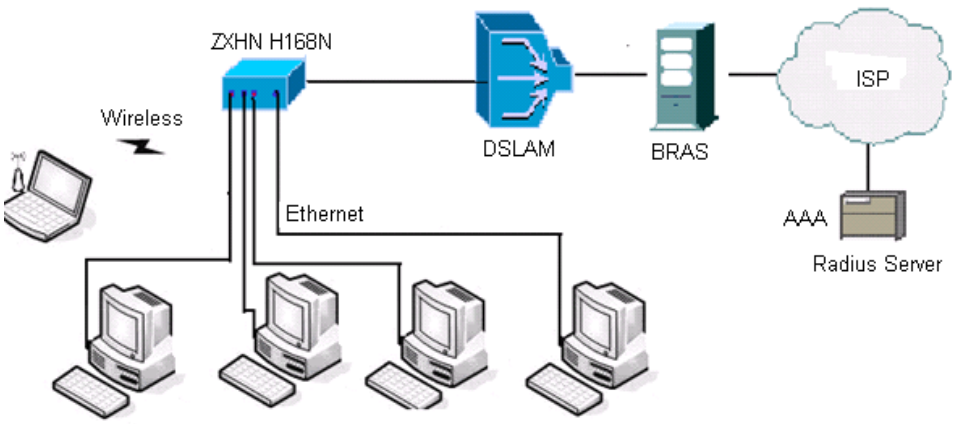
Power adapter: Input: AC 100 V – 240 V, 50Hz/60Hz; Output: DC 12 V, 1.0 A

4.4 Regulatory Approvals and Compliance

- CE certification
- Wi-Fi certification

5 Networking

Figure 5-1 ZXHN H168N network topology chart



6 Glossary

Table 6-1 Glossary

Abbreviations	Full Characteristics
AAL5	ATM Adaptation Layer 5
ADSL	Asymmetric Digital Subscriber Line
ATM	Asynchronous Transfer Mode
BAS	Broadband Access Serve
CHAP	Challenge Handshake Authentication Protocol
DHCP	Dynamic Host Configure Protocol

Abbreviations	Full Characteristics
DNS	Domain Name Server
DSL	Digital Subscriber Line
DSLAM	Digital Subscriber Line Access Multiplexer
IP	Internet Protocol
ISP	Internet Service Provider
LAN	Local Area Network
LLC	Logical Link Control
NAT	Network Address Translation
PPP	Point-to-Point Protocol
PPPoA	PPP over AAL5
PPPoE	PPP over Ethernet
PVC	Permanent Virtual Circuit
TCP	Transmission Control Protocol
UPnP	Universal Plug and Play
USB	Universal Serial Bus