

# ZXHN H168N

## Home Gateway

### User Manual

---

Version: V3.3

ZTE CORPORATION  
NO. 55, Hi-tech Road South, ShenZhen, P.R.China  
Postcode: 518057  
Tel: (86) 755 26770801  
URL: <http://ensupport.zte.com.cn>  
E-mail: [support@zte.com.cn](mailto:support@zte.com.cn)

## LEGAL INFORMATION

Copyright © 2017 ZTE CORPORATION.

The contents of this document are protected by copyright laws and international treaties. Any reproduction or distribution of this document or any portion of this document, in any form by any means, without the prior written consent of ZTE CORPORATION is prohibited. Additionally, the contents of this document are protected by contractual confidentiality obligations.

All company, brand and product names are trade or service marks, or registered trade or service marks, of ZTE CORPORATION or of their respective owners.

This document is provided “as is”, and all express, implied, or statutory warranties, representations or conditions are disclaimed, including without limitation any implied warranty of merchantability, fitness for a particular purpose, title or non-infringement. ZTE CORPORATION and its licensors shall not be liable for damages resulting from the use of or reliance on the information contained herein.

ZTE CORPORATION or its licensors may have current or pending intellectual property rights or applications covering the subject matter of this document. Except as expressly provided in any written license between ZTE CORPORATION and its licensee, the user of this document shall not acquire any license to the subject matter herein.

ZTE CORPORATION reserves the right to upgrade or make technical change to this product without further notice.

Users may visit the ZTE technical support website <http://support.zte.com.cn> to inquire for related information.

Hereby, ZTE Corporation, declares that this Radio LAN device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC .

The ultimate right to interpret this product resides in ZTE CORPORATION.

Serial Number:

Publishing Date :

# Chapter 1

## Safety Precautions

### Usage Cautions

- Read all the safety cautions carefully before using the device.
- Only use the accessories included in the package, such as power supply adapter and battery.
- Do not extend the power cord, otherwise the device will not work.
- The power supply voltage must meet the requirements of the device input voltage (The voltage fluctuation range is less than 10%).
- Keep the power plug clean and dry to prevent any risk of electric shock or other dangers.
- Disconnect all the cables during a lightning storm to prevent the device from damage.
- Power off and unplug the power plug when the device is not in use for a long time.
- Do not attempt to open the covers of the device. It is dangerous to do so when the device is powered ON.
- Do not directly stare at the optical interface to prevent any eye injuries.
- Power off and stop using the device under the conditions such as, abnormal sound, smoke, and strange smell. Contact the service provider for maintenance if the device is faulty.

### Environment Requirements

- Ensure proper ventilation to the device. Place the device away from direct sunlight.
- Keep the device ventilated and dry. Never spill any liquid on the device.
- Do not place any object on the device to prevent any deformation or damage to the device.
- Do not place the device near any source of heat or water.
- Keep the device away from any household appliances with strong magnetic or electric fields, such as microwave oven and refrigerator.

### Cleaning Requirements

- Before cleaning, power off the device, and unplug all the cables connected to the device, such as power cable, optical fiber, and Ethernet cable.
- Do not use any liquid or spray to clean the device. Use a soft dry cloth.

### Environment Protection

- Do not dispose the device or battery improperly.
- Observe the local regulations about the equipment disposal or treatment.

### Environmental Information

The equipment you purchased has required the extraction and use of natural resources for its production. It may contain substances that are hazardous to people's health and to the environment. To

---

---

avoid putting such substances into our environment and to reduce pressure on our natural resources, we ask that you reuse or recycle your end-of-life equipment by using an accredited electronics take-back system.

The symbols below indicate that this product should be reused or recycled and not simply discarded. Please locate and use an appropriate reuse and recycling site.

If you need more information on collection, reuse and recycling systems, contact your local or regional waste administration. You may also contact your equipment provider for more information on the environmental performances of these products.



#### **FCC - PART 68**

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the bottom of this equipment is a label that contains, among other information, a product identifier in the format US: ZTEDL01AHNH168N. If requested, this number must be provided to the telephone company.

This equipment uses the following USOC jacks: RJ-11,RJ-45.

REN (RINGER EQUIVALENT NUMBERS) : 0.1A STATEMENT Notice: The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

#### **ATTACHMENT LIMITATIONS STATEMENT**

Notice: This equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). This is confirmed by marking the equipment with the Industry Canada certification number. The Department does not guarantee the equipment will operate to the user's satisfaction. Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together.

This precaution may be particularly important in rural areas. Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate

#### **FCC Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
  - Increase the separation between the equipment and receiver.
-

---

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

**FCC Radiation Exposure Statement**

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

**Caution!**

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user authority to operate the equipment.

**Warning:**

**Before using the device, read the following safety precautions. ZTE bears no liability to the consequences incurred by violation of the safety instructions.**

# Chapter 2

## Overview

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

## Features

As a routing-capable DSL modem, the ZXHN H168N modem has the following characteristics:

- ITU-T G.993.2 VDSL2 standard (up to profile 30a) and ITU-T G.992.1(G.DMT),G.992.3(ADSL2),G.992.5(ADSL2+) standard.
- ITU-T G.993.5 (G.vectoring) compliance
- Supports IEEE802.11 b/g/n (2x2 MIMO)
- Supports data transmission among VDSL2, Ethernet, and WLAN.
- TR069 remote management
- Supports Dual image
- Supports configuration setting through Web GUI
- Supports bridge/routing mode.
- Supports NAT.
- Supports DHCP Client/DHCP Server.

## Product Specifications

Environmental requirements	Environmental temperature	0°C ~+40°C (32 °F-104°F)
	Humidity	5% - 95% (non-condensing)
Power specifications	Power adapter	Input: AC 100 V~240 V, 50 Hz/60 Hz
		Output: DC 12 V, 1A
Certification		FCC , CE

## Packing List

Component Name	Count

Component Name	Count
ZXHN H168N	1
Splitter	1
Power Adapter	1
RJ-11 telephone cable	2
RJ-45 Ethernet cable	1
User Manual	1

**Notes:** Information provided above is for reference only; actual product appearance may vary.

## System Requirements

Please check the following items before installing the ZXHN H168N.

- VDSL2 Service Subscription

If you have subscribed for the VDSL2 service, your VDSL2 operator will provide you at least one valid IP address through static allocation or dialup dynamic allocation.

- Computer Configuration

Please make sure that the system is equipped with a 10M/100M Ethernet adapter and supports the TCP/IP protocol.

It is recommended to use a computer with the below configurations: Pentium III or a later version, 64M memory, 10G hard disk, graphic accelerating adapter with above 2M display memory, audio adapter, and sound box.

- Operating System

The operating system can be one of the following: Windows 98SE, Windows Me, Windows 2000, Windows XP, Windows Vista, Windows 7, or Windows 8. The Internet Explorer 6.0 or a later version can be used to configure the device.

## Chapter 3

### Installation Preparations

### Hardware Description

### Front Panel

---



Identification	Color	Status Description	Description
Power	Green	Solid green	The ZXHN H168N is powered ON.
		Flashing	Software upgrade
		OFF	The ZXHN H168N is powered OFF.
DSL	Green	Solid green	DSL synchronization is normal and the link connection is normal.
		Fast Flashing	Now in the handshaking process to establish the link connection.
		Slowly Flashing	Physical link exists, however carrier wave has not been detected.
		OFF	Link has not been established.
Internet	Green	Solid green	The connection is established and a correct IP address is obtained.
		Flashing	Currently in data transmission.
		OFF	Internet connection is not established,
WLAN	Green(indicate WLAN)	Solid green	The WLAN RF switch is on.
		Flashing green	Currently in data transmission. Flashing frequency indicates WiFi network traffic.
		OFF	WLAN RF switch is off
	Red (indic-ate WPS)	Solid red	WPS access is successful. This solid-on light will be automatically off after 5 minutes.
		Fast flashing red	The WPS accessing of the WLAN terminal is faulty.
		Slowly flashing red	WLAN terminal is in WPS accessing process.
		OFF	No WPS access or the WPS access of the terminal exceeds 5 minutes.



Identification	Color	Status Description	Description
LAN1 - LAN4	Green	Solid green	LAN connection has been established.
		Flashing	Data transmission is in processing. The indicator flashes according to the LAN traffic.
		OFF	LAN connection has not been established.

## Rear Panel



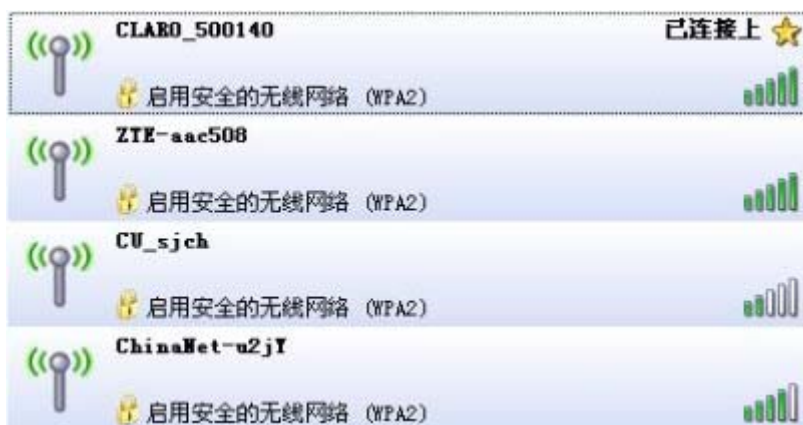
Item	Description
ON/OFF	Power switch
Power	12 V DC power connector
LAN1/LAN2/LAN3	RJ-45 FE Ethernet interface
LAN4/WAN(option)	RJ-45 GE Ethernet interface, WAN interface is optional.
DSL	RJ-11 DSL interface
Reset	Reset button When the power is on, use a needle to press the button for over 2 seconds to restore the default settings.
WLAN	WLAN button Enable/disable the WLAN function.
WPS	WPS button Enable/disable the Wi-Fi protection. When the Wi-Fi protection is enabled, users can access the network automatically.

## Conexión WiFi

Para conectarse a la red WiFi, solo tiene que seleccionar la red indicada en la etiqueta detrás del equipo, e ingresar la contraseña. Por ejemplo, si la etiqueta tuviera el SSID (Nombre de red WiFi):

CLARO\_XXXXXX

, usted observará que esta red disponible cuando esté buscando una red WiFi:



# Chapter 4

## FAQs

FAQ	Solution
All indicators are off after the ZXHN H168N equipment is powered on.	First, make sure that you have inserted the power adapter of the ZXHN H168N into a working power socket and that the ZXHN H168N has been powered on (the switch button is pressed down). When the indicators are still off after the above checks are done, then the cause may be hardware damage. In such cases, you should contact local operators for maintenance. Do not perform maintenance by yourself.
Will VDSL2 affect the telephone conversation quality? Will the internet access rate slow down if one is making phone call and accessing internet at the same time?	VDSL2 separates voices from data through the frequency division multiplexing technology. Therefore, voices and data run in different paths without mutual interference. Neither the access rate nor conversation quality will deteriorate when you are in a call and on line at the same time.
Issue description: Sometimes, the VDSL2 users cannot access internet.	First, check whether the ZXHN H168N is in normal state (check the indicators against this User Manual). If yes, the computer or application network may be faulty, not the VDSL2. If the VDSL2 modem has problems, then check the status of indicators one by one to remove the fault. It is recommended that you check the following points before you seek help from operators: <ol style="list-style-type: none"><li>1. The VDSL2 telephone cable connectors are in good condition.</li><li>2. The VDSL2 is away from the power cable and large-power electronic devices.</li><li>3. No telephone extensions and fax machines are installed between the VDSL2 incoming line and splitter.</li><li>4. The splitter is correctly installed.</li><li>5. The VDSL2 modem is not over-heated.</li></ol>
Password verification failure.	Modem synchronization and connection are normal. However, sometimes the password fails to be verified. Solution: <ol style="list-style-type: none"><li>1. Be noted that the account and password are case sensitive and some</li></ol>

FAQ	Solution
	<p>accounts contain a domain name.</p> <ol style="list-style-type: none"> <li>2. Virtual dialup software. It is possible that sometimes the virtual dialup software is faulty, or conflicts with other software in the operation system. In such cases, it is suggested to re-install the dialup software or replace it with valid software.</li> <li>3. Network adapter drive program may be faulty.</li> <li>4. Did not make payment on time. Pay on time in such cases.</li> </ol>
<p>Why authenticated user names and passwords cannot be re-authenticated?</p>	<p>This problem may be due to the following reasons:</p> <ol style="list-style-type: none"> <li>1. Your account has expired or you are a defaulting subscriber. In such cases, pay the deficit sum.</li> <li>2. You move into a new area. As the account and the path PVC are bundled by some operators, your previous account and password cannot be authenticated after you changed your path.</li> <li>3. One of your accounts logged on successfully and you cannot be re-authenticated as the operator recognized the uniqueness of this account.</li> <li>4. The cause may also be that you failed to deregister your account timely on the Broadband Access Server (BAS) when you were off line abnormally, so the BAS or the billing system deemed that your account was still available. Therefore, your re-login may fail because of uniqueness of your account. In such cases, it is suggested that you re-dial later. If you fail again, then contact the operator for solution.</li> </ol>
<p>What are reasons for VDSL2 synchronization failure (also referred to link down or link establishment failure)?</p>	<p>When the VDSL2 suddenly fails to be synchronized (link down) during application, the cause might be the DSL indicator of the modem is not Constantly On. It is suggested to do check in the following order:</p> <ol style="list-style-type: none"> <li>1. Check the quality of the incoming cables and the incoming cable connectors.</li> <li>2. Install the VDSL2 Modem correctly by following the user guide.</li> <li>3. Ensure the telephone cables are normal and are in good contact with VDSL2.</li> <li>4. Disconnect the splitter and directly connect the VDSL2 Modem to the incoming customer cable end to ensure that the problem is not due to improper installation or incoming customer line quality. When the VDSL2 is synchronized again, it means that the incoming customer part is not installed properly. Re-install it according to the User Guide.</li> <li>5. When the VDSL2 still fails to be synchronized after the VDSL2 Modem has been connected to the incoming customer cable end, then you should contact the operator to check whether there are external line failures/Modem failures.</li> <li>6. If it is the splitter problem, you should call the operator to perform maintenance or replacement.</li> <li>7. The problem may also lie with the operator equipment. Call the operator to confirm it.</li> <li>8. A long connection cable between the splitter and the VDSL2 Modem may cause poor anti-interference performance and poor synchronization. Therefore, the connection cable should not be too long.</li> </ol>

# Chapter 5

## Standards Compliance

The equipment complies with the following DSL standards:

Standard	Note
ITU G.992.1	Asymmetric Digital Subscriber Line (ADSL) transceivers.
ITU G.992.3	Asymmetric Digital Subscriber Line transceivers 2 (ADSL2).
ITU G.992.5	Asymmetric Digital Subscriber Line (ADSL) transceivers-Extended bandwidth ADSL2 (ADSL2+).
ITU G.993.2	Very high speed digital subscriber line transceivers 2 (VDSL2)
ITU G.993.5	Self-FEXT cancellation (vectoring) for use with VDSL2 transceivers
ITU G.994.1	Handshake procedures for Digital Subscriber Line (DSL)Transceivers.
ETSI TS 101 388	Transmission and Multiplexing (TM); Access transmission systems on metallic access cables; Asymmetric Digital Subscriber Line (ADSL) – European specific requirements.