

# ZXHN H167A VDSL CPE User Manual



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# 1 Safety Precautions

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## Notes:

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

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### ■ 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.
- ▶ 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.

### ■ Restrictions in the 5 GHz Band

According to Article 10(10) of Directive 2014/53/EU, the packaging shows that this radio equipment will be subject to some restrictions when placed on the market in Belgium(BE), Bulgaria(BG), the Czech Republic(CZ), Denmark(DK), Germany(DE), Estonia(EE), Ireland(IE), Greece(EL),Spain(ES), France(FR), Croatia(HR), Italy(IT),Cyprus(CY), Latvia(LV), Lithuania(LT), Luxembourg(LU), Hungary(HU), Malta(MT), Netherlands(NL), Austria(AT), Poland(PL), Portugal(PT), Romania(RO), Slovenia(SI), Slovakia(SK), Finland(FI), Sweden(SE), the United Kingdom(UK), Turkey(TR), Norway(NO), Switzerland(CH), Iceland(IS), and Liechtenstein(LI).

The WLAN function for this device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range.

### ■ RF Exposure Information

The Maximum Permissible Exposure (MPE) level is calculated based on a distance of  $d=20$  cm between the device and the human body. To maintain compliance with the RF exposure requirement, a separation distance of 20 cm between the device and the human should be maintained.

### ■ EU Declaration of Conformity

Hereby, ZTE Corporation declares that the radio equipment type ZXHN H167A is in compliance with Directive 2014/53/EU, The full text of the EU declaration of conformity is available at the following Internet address:  
<http://support.zte.com.cn/support/cer/EU>

### ■ 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: ZTEDL01AHNH167A. 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) 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.

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## 2 Product Specifications

The ZXHN H167A is a VDSL2 access device that supports 1.16 Gbps Dual-bandconcurrent 11ac Wi-Fi. It provides High Speed Internet, IPTV services through the VDSL2/ADSL2+ uplink. Those services are delivered by the gateway on your home network to the PCs, STBs, gaming devices and so on via the integrated interfaces: Ethernet, Wi-Fi.

The ZXHN H167A supports Dual-Band concurrent Wi-Fi up to 300 Mbps (IEEE 802.11b/g/n &nbsp;2x2 @ 2.4 GHz) and 867 Mbps(IEEE 802.11ac 2x2 @5 GHz).

Technical Specification	
Dimension	210 mm (L) × 140 mm (W) × 32mm (H)
Certification	CE and Wi-Fi Certification
Power adapter	Input: AC 100 V - 240 V, 50/60 Hz Output: DC 12 V, 1 A
Environment Requirements	
Operation temperature	0 °C - 40 °C (32 °F - 104 °F)
Operation humidity	5% - 95%(non-condensing)

## 3 Hardware Description

■ **Front panel**

Figure 3-1 shows the indicators on the front panel of the ZXHN H167A

Figure 3-1 Indicators on the Front Panel

ZTE

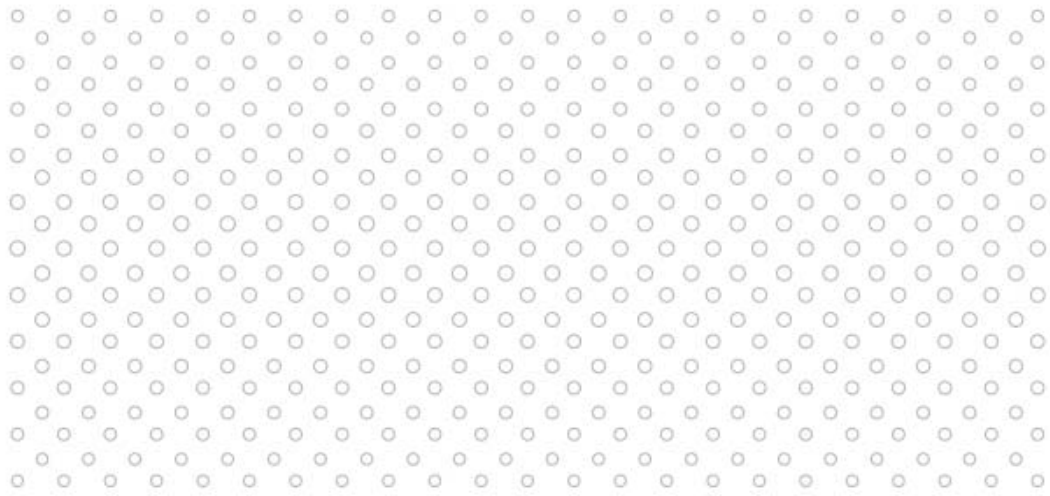


Table 3-1 describes the indicators on the front panel of the ZXHN H167A  
Table 3-1 Indicators on the Front Panel

Indicator	Status	Description
Power	OFF	Power off or the power supply is not connected.
	Solid red	Power on, The system is performing self-detection or the self-detection fails.
	Solid green	The device is power on.
Broadband	OFF	The equipment is not powered on or the WAN port is disabled.
	Solid green	The link is activated.
Internet	OFF	No detected data. The device is powered off.
	Flashing green	Currently in data transmission.
	Solid green	The WAN connection is online. The device has a WAN IP address from IPCP, DHCP or statically configured. LED remains green in the case of disconnection

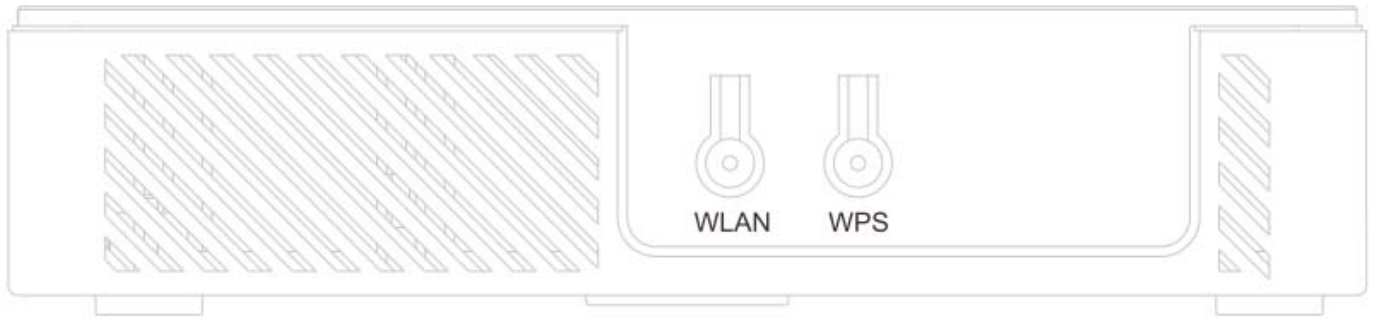
Indicator	Status	Description
		due to idle timeout when PPP dial-on-demand is enabled. Green LED indicates that the routing connection state is up.
	Solid red	The WAN connection is dialing up or fails to get online. Device attempted to become IP connected and failed (no DHCP response, no PPPoE response, PPP authentication failed, no IP address from IPCP, etc).
2.4GHz	OFF	2.4GHz WLAN RF switch is off.
	Flashing green	Currently in data transmission. Flashing frequency indicates 2.4GHz Wi-Fi network traffic.
	Solid green	2.4GHz WLAN RF switch is on.
5GHz	OFF	5GHz WLAN RF switch is off.
	Flashing green	Currently in data transmission. Flashing frequency indicates 5GHz Wi-Fi network traffic.
	Solid green	5GHz WLAN RF switch is on.
WPS	OFF	No WPS access or the WPS access of the terminal exceeds 5 minutes.
	Slow Flashing green	WLAN terminal is in WPS accessing process.
	Fast Flashing green	The WPS accessing of the WLAN terminal is Faulty.
	Solid green	WPS function is on.

### ■ Side panel

Figure 3-2 shows the interfaces and buttons on the side panel of the ZXHN H167A.

Figure 3-2 The Side Panel



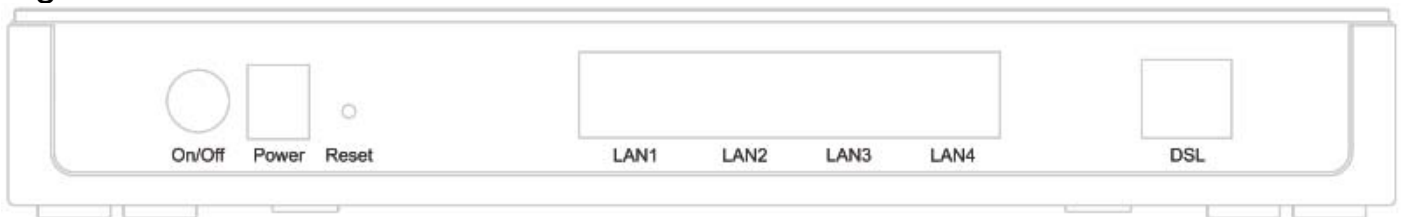


Interface/Button	Description
WLAN	After pushing the button, the WLAN function will be enabled or disabled.
WPS	After pushing the button, the WPS function will be enabled.

### ■ Rear panel

Figure 3-3 shows the interfaces and buttons on the back panel of the ZXHN H167A.

Figure 3-3 The Back Panel



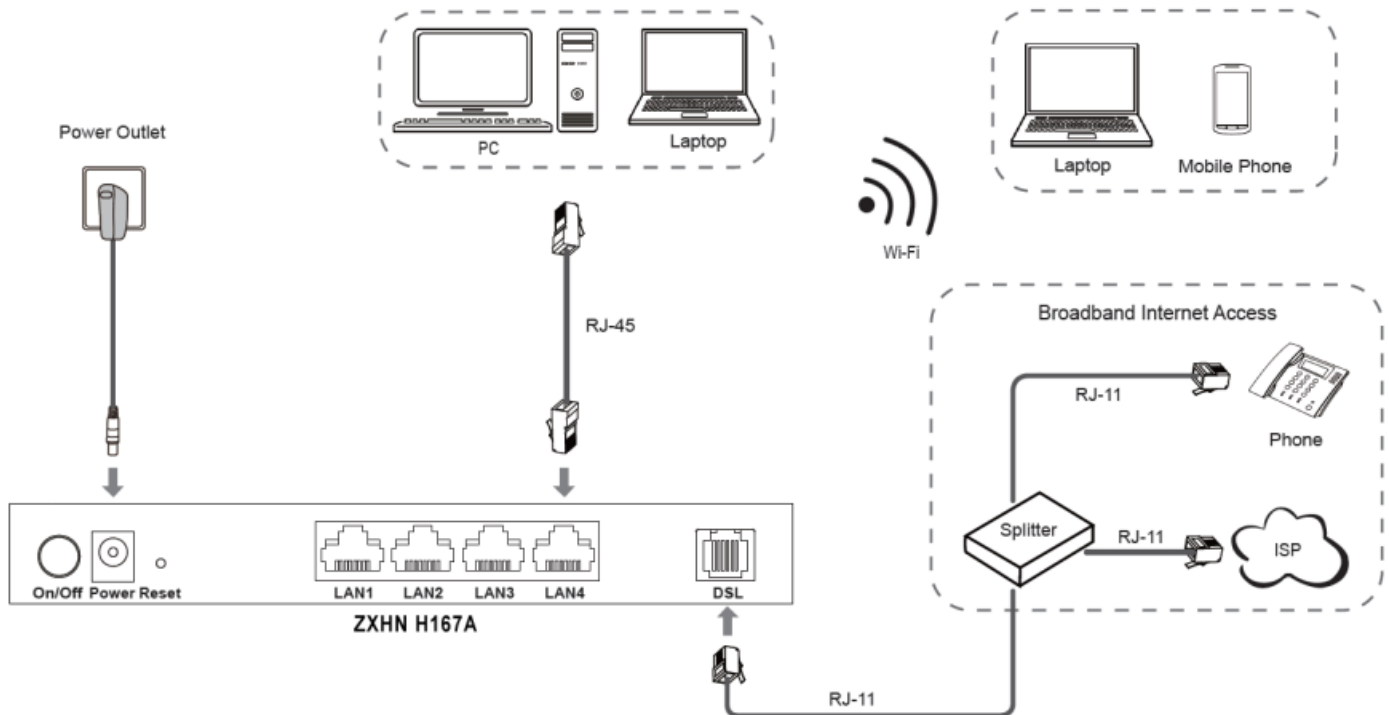
Interface/Button	Description
On/Off	Power switch, to power on or power off the device.
Power	Power supply port, It is connected to the power adapter.
Reset	During power ON period, hold on this button for more than 5 seconds to reset the current settings to the factory default setting, and then the system restarts automatically.
LAN1–LAN4	RJ-45 port. It is used to connect the modem to computer, STBs or other network devices.
DSL	RJ-11 port, it is used to connect the VDSL2, or ADSL2+ uplink access network.

# 4 Hardware Connections

## ■ Hardware Connections

Figure 4-1 shows the devices that are connected to interfaces of the ZXHN H167A

Figure 4-1 Cable Connection



# 4 Troubleshooting

## ■ All indicators are OFF when the equipment is powered ON.

First make sure that you have inserted the power adapter of the ZXHN H167A into a working power socket and that the ZXHN H167A has been powered ON (the switch button is pressed down). If the indicators are still OFF after confirmation of the above items, maybe the hardware is damaged. You may contact local operators for maintenance. Never dismantle the equipment by yourself.

## ■ Will VDSL2 affect the telephone conversation quality? Will making

## **phone calls cause a slow online rate?**

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 fall even if you are in a call and online simultaneously.

### ■ **How to properly install telephone extensions or other devices on the VDSL2 line?**

It is recommended to connect the VDSL2 splitter to the telephone cable first and then connect the phone sets to the splitter interfaces. Installing a telephone directly before the splitter will lead to connection failure between the ZXHN H167A and the device at central office side, or an Internet access failure, or a slow connection speed. Connecting other electronic devices between the user end and splitter may affect the VDSL2 communications (since VDSL2 has a higher requirement for the line quality) and furthermore affect the normal operation of VDSL2. If the phone sets are required to be connected before the splitter, you should serially connect the MicroFilter before the phone sets (Generally, to minimize interference, only one MicroFilter can be connected before the splitter).

### ■ **Sometimes, the VDSL2 users cannot access to the Internet normally**

First check whether the ZXHN H167A is in the normal state (Check the indicators according to this user manual). If yes, the computer or application network may be faulty. This is unrelated with VDSL2. If the ZXHN H167A is abnormal, check the status of indicators one by one to remove the fault.

It is suggested to check the following items before seeking help from operators:

- i. The VDSL2 telephone cable connectors are proper.
- ii. The VDSL2 is away from the power cable and large-power electronic devices.
- iii. No telephone extensions and fax machines are connected between the VDSL2 incoming line and splitter.
- iv. The splitter has been installed correctly.
- v. The ZXHN H167A has good heat dissipation ratio.

### ■ **What are reasons for VDSL2 synchronization failure (also referred as link down or link establishment failure)?**

If the VDSL2 suddenly fails to be synchronized (link down) during application,

usually the Link indicator on the ZXHN H167A will not be ON. It is suggested to check the following steps one by one:

- i. First check the quality of incoming cables and incoming cable connectors.
- ii. Install the ZXHN H167A correctly based on the user guidance. Minimize the number of taps.
- iii. Check whether the telephone cables and VDSL2 are in good connection or whether the telephone cables are normal.
- iv. Try to disconnect the splitter and directly connect the ZXHN H167A to the incoming user cable end. Ensure the problem is not due to improper installation or incoming user line quality. If the VDSL2 can be synchronized again, it means that installation of the incoming user side is improper. Please reinstall it according to the user guide.
- v. If the VDSL2 still fails to be synchronized when the ZXHN H167A is connected to the incoming user cable end, contact the operators to check whether it is due to external line failure or ZXHN H167A failure.
- vi. If the splitter problem is determined, call the operator for maintenance or replacement.
- vii. If the problem is due to the end Office equipment failure, call the operator to confirm it.
- viii. Too long connection cable between the splitter and ZXHN H167A may cause poor anti-interference performance and synchronization difficulty. Therefore, the connection cable should not be too long.