netvox™

Wireless^TM^- Wireless Fall Sensor

Wireless Rechargeable Fall Sensor

User Manual

Software：V4.0

Hardware：V1.2

Table of Content

1. Introduction

Z307 is ZigBee enabled fall sensor and emergency button. It can be worn on waist to detect fall on an elderly people and young children. When fall is detected, it sends alarm message to a pre-registered security system (CIE). This CIE would then instruct other devices in the network to sound or silent alarm with light strobe.

Z307 acts as an end-device in the network which does not perform permit-join other devices to join into the network as a coordinator or a router does.

It can be monitored with any 3rd party ZigBee enabled software or Netvox ZiG-BUTLER software.

2. Appearance

Belt clip

Status indicator（red）
Network indicator（green）

Setting key

Binding key

netvox
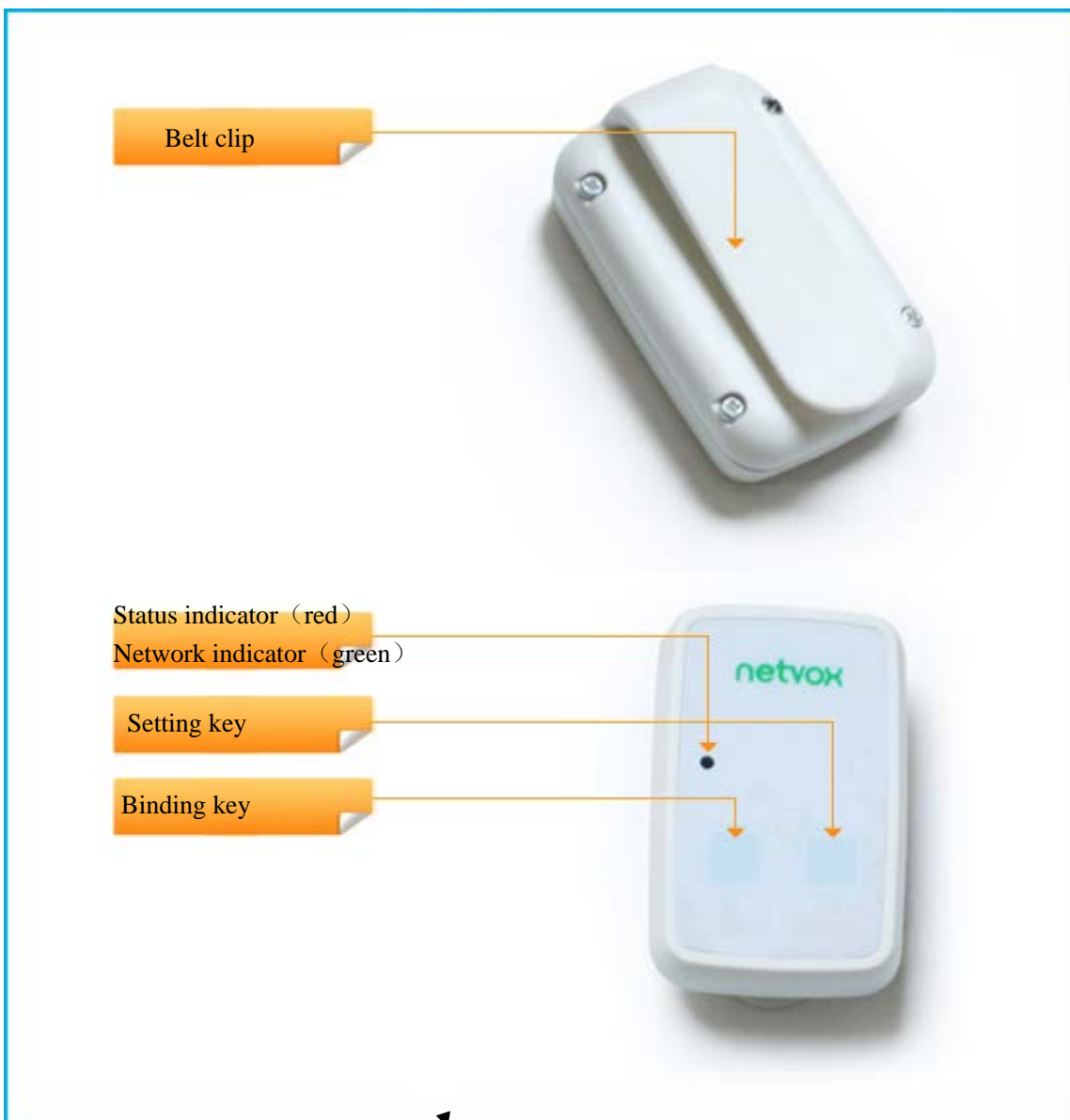
3. Product Character

- ✓ Fully IEEE 802.15.4 compliant (ZigBee Pro)

- ✓ Utilizes 2.4GHz ISM band, up to 16 channels

- ✓ Wireless transmission is up to 200 meters linear distance in open field

- ✓ Simple operation and device configuration

- ✓ Lithium rechargeable battery

4. Setting up

4.1 Turn on / turn off device

In the "OFF" state, press the "Binding button" for 3 seconds till device vibrates once prompted, after releasing the button, the device goes into the "ON" state. If the device has not been added to the Internet, the device will automatically start searching for the Internet. If there is no Internet access, the device will return to the "OFF" state. If the device has found the network or has been to the Internet, it will remain "ON".

In the "ON" state, long press "Binding key" for 15 seconds (the indicator flashes one time on 2nd , 10th second), the device will prompt by vibration at 15th second, and release the button; the device will vibrate once to enter the " OFF" state.

Note: Power off Z307 when not in use is recommended

4.2 Join to the Network

In order for the Z307 to communicate with the ZigBee network, it needs to be added to the ZigBee network first. Operations are as follows:

① Enable permit-join function of coordinator or router in the same channel with Z307.

② Press "Binding Key"for 3 seconds to make the Z307 enter "power-on" state. The device will then actively look for the network and request to join the network of the channel where it is located. The network indicator flashes once to prompt each matched network searching.

③ If joining to the network is successful, the network indicator flashes 5 times, or no action light. If the   time is out to join in the network (about 3min), then it returns to the "off" state. To request joining to network, just repeat the first two steps.

Note: During joining network process of Z307, please ensure that the coordinator and router on the network are in the power supply status until the device completes the registration.

4.3 Automatic Zone Registration (enrollment)

Z307 is a zone device in the security system. Soon after the network join, the next step is to enroll itself into a CIE (Control and Indicating Equipment) –the security system device, to validate Z307 zone alarm feature. The registration will take place automatically soon after the device joined to the network.

*notes: a CIE security system will normally embedded within a device (i.e. a Netvox Z201B coordinator) or it could be a stand-alone CIE device.

Observing security system (CIE) registration:

To ensure enrollment is successful or not, simply read the indicator light flashes.

(1) Right after the network join, Z307 will send an enrollment request to the air. If there is CIE and it has enrolled the red indicator will flash 6 times. The red indicator light flashes 4 times if enrollment failed.

(2) For any reason that Z307 has failed being registered, when fall even happen at anytime Z307 will initiates the enrollment process. The indicator will flash the same as that described in (1).

4.4 Emergency and Position System

How is Z307 triggered

Z307 can be trigger alarm through emergency button and body falling.

Emergency

At the event of emergency, the user may press the emergency button once, the device vibrates once while it sends alarm signal to the security system for strobe light or siren alert.

Fall Detect

When the wearer falls, the device vibrates twice indicating fall detected. The device starts 15 seconds countdown before it sends fall detect alarm signal to the security system for strobe light or siren alert. The user has 15 seconds to cancel the alarm signal to be sent. To cancel the alarm, hold press the emergency button for 2 seconds the alarm will be canceled and will not be sent.

The user may trigger the emergency alarm at any time as they wish. Refer to Emergency in the above.

As described in Automatic Zone Registration section above, Z307 needs CIE to report of fall event. In case that Z307 has not been registered to any CIE device, Z306 will attempt to register itself to a CIE device then report its alarm message at the time of emergency and fall event.

Position Detect

Equipment in the alarm at the same time will also report their current location information, in order for more quickly rescue.

Note: The device must be worn on the user's waist, from top to bottom clip on the belt (as far as possible perpendicular to the ground). At the same time, the device has a built-in sensitive sensor. When moving the device, please use it gently to avoid false triggers.

4.5 Turn on Permit-join Function

After the device joins the network, you can press shortly the "Binding key" to enable the coordinator in the network and the allowed function of all routing devices, allowing time is set to be 60 seconds. If it needs to be turned off immediately, it only needs to be short again within 60 seconds, press the "Binding key".

4.6 Activate the Device

The device is battery powered and is designed to enter sleep mode when not transmitting. Sometimes you would need to collect attribute data during the installation and during the deployment process, you need to force the device to enter active mode.
Operation:
Hold press the binding key and emergency button together until the red light flashes twice then release the key.

The device should automatically broadcast its own short address and IEEE address. Z307 will stay active for 2 minutes.

Note: turn on interval after powering on is 5 min by default setting.

4.7 Low power Notification

The operating voltage of Z307 is between 3.2 to 4.2VDC.
When the battery is bellow operating voltage 3.2V, the red indicator on Z307 will flash once. The device will broadcast low power notification to the network and also sends this battery status to the enrolled CIE device.

4.8 Restore to Factory Setting

Z307 is capable of storing and saving includes network information. If you wish to remove Z307 from an exited network, you would need to clear the information and restore to the factory setting; or if you wish to join Z307 to a new network, a restore to factory default is required.

Operation:
Step 1. Press and hold both binding key and setting key for 5 seconds till the red indicator flashes quickly and the releases.
Step 2. Red indicator flashes 20 time to restore the device to factory setting.

4.9 Sleeping Mode

This device is designed to go to sleeping mode for power-saving in some situations:

A. When it does not find a network to join → Z307 will go to sleeping mode.
B. While the device is in the network → the sleeping period is 5 minutes. It will wake up every 5 minutes to keep online.
C. Once Z307 was joined to a network and by any chance the network is no longer existed or the device is out of the network → Z307 will wake up every 15 minutes to find the network it joined before. It never keeps in sleeping mode and continues to find its network every 15 minutes. This condition would consume up to 30 times power spending compared to normal-operating status. To prevent this unwanted power consumption, we recommend that users manually power off the device.

4.10 Battery Charging

The device is built-in 3.7V lithium rechargeable battery, when the device sends low voltage alarm, please place it on the charger A201 as shown in below figure. Charging indicator of A201 indicates that the device is detected, if the device indicator is not on, press "Binding Key" briefly, or leave the device in "ON" status. If the indicator is not on, please adjust the position of the device . The status light of the device Z307 is on indicates that the battery is charging. After the charging is completed, the status light turns off (charging time is about 5 hours). Please remove the base to save energy. (Note: When using the A201 for charging, please avoid strong light in the room and direct sunlight.)
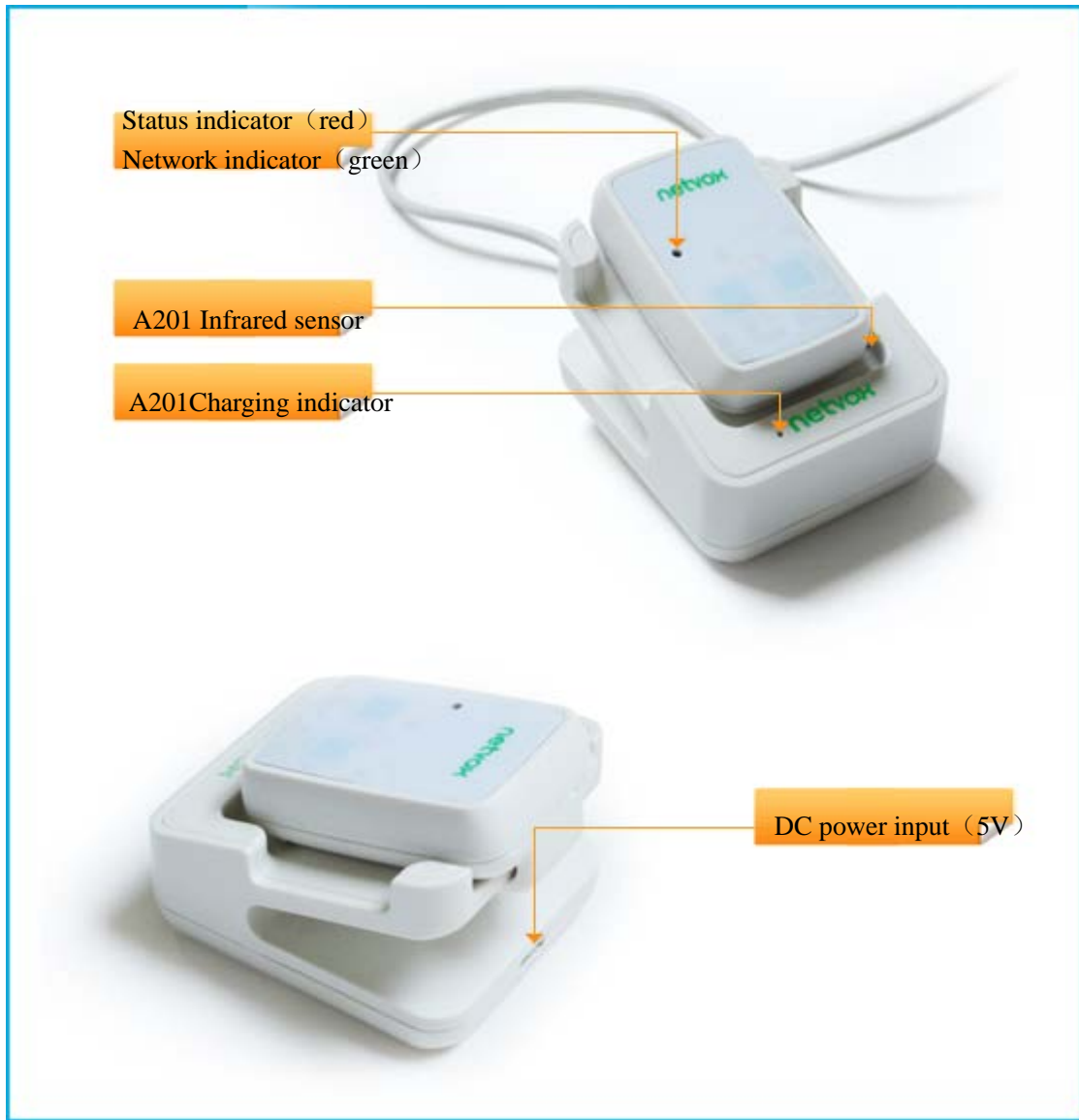
Status indicator（red）
Network indicator（green）
A201 Infrared sensor
A201Charging indicator
DC power input（5V）

Fig. 2.   A201 Appearance

5. ZigBee Description

1. End Point(s)：0x01
2. Device ID：IAS Zone（0x0402）
3. Cluster ID which EndPoint supports

Cluster ID for Z307	
Server side	**Client side**
EP 0x01 (Device ID: IAS Zone(0x0402))	
Basic(0x0000)	*None*
power configure(0x0001)	
Identify(0x0003)	
Commissioning(0x0015)	
Poll Control(0x0020)	
IAS zone (0x0500)	

Diagnostics Information(0x0B05)

（**1**）**Attributes of the Basic Information**

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	*ZCLVersion*	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x03	M
0x0001	*ApplicationVersion*	Unsigned 8-bit integer	0x00 – 0xff	Read only	-	O
0x0002	*StackVersion*	Unsigned 8-bit integer	0x00 – 0xff	Read only	53	O
0x0003	*HWVersion*	Unsigned 8-bit integer	0x00 – 0xff	Read only	20	O
0x0004	*ManufacturerName*	Character string	0 – 32 bytes	Read only	netvox	O
0x0005	*ModelIdentifier*	Character string	0 – 32 bytes	Read only	Z307E3ED	O
0x0006	*DateCode*	Character string	0 – 16 bytes	Read only	-	O
0x0007	*PowerSource*	8-bit Enumeration	0x00 – 0xff	Read only	0x03	M
0x0010	*LocationDescription*	Character string	0 – 16 bytes	Read/write		O
0x0011	*PhysicalEnvironment*	8-bit Enumeration	0x00 – 0xff	Read/write	0x00	O
0x0012	*DeviceEnabled*	Boolean	0x00 – 0x01	Read/write	0x01	O

6. Netvox APP Control

1 After adding Z307 into Netvox system, device information appears on the device management interface of the APP. As shown in Figure 5.1 below, there is one EP information. Click the icon to enter the state of Figure 5.2.

            Fig. 5.1   Fig. 5.2

2. Click the red box in Figure 5.2 above the settings section, configure whether to open the alarm sound. Click to enter the configuration shown in Figure 5.3. Click the red box in the lower right corner of Figure 5.2 section, then enter Figure 5.4, shows the basic information of the device.
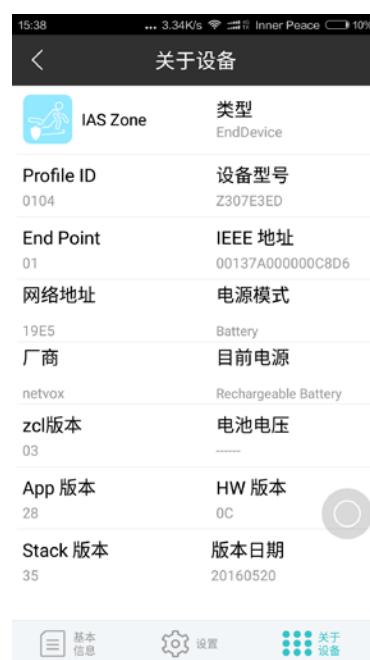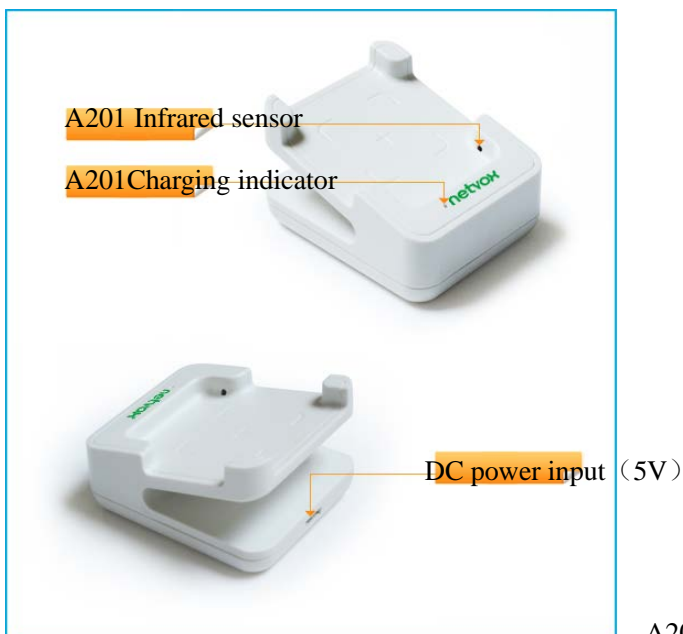

            Fig. 5.3   Fig. 5.4

3. When an alarm occurs, the warning message shown in FIG. 5.5.

Fig. 5.5

7. Related Devices

A201 Infrared sensor

A201Charging indicator

DC power input（5V）

A201：Wireless Charger

Z302C ： Wireless Window Door Sensor and Wireless Glass Break Sensor

Z302D ： Wireless Panic Button

Z201B ： ZigBee HA Coordinator with CIE

8. Important Maintenance Instructions

As the device is not water proof it is recommended to keep the device in a dry place. Liquid and heavy moisture contains minerals that may oxidize the electronic circuitry. In case of liquid spill, please leave the device to completely dry before storing or using.

- Do not use or store the device in a dusty area. Dust may cause electronic parts to destroy.
- Do not use or store the device in an over heated place. Store in a hotter temperature than the suggested maximum temperature may shorten the life span of the device; and may damage the battery and causing the housing to deform.
- Do not use or store the device in a very cold place than the suggested minimum temperature. The water can be condensed inside the device when moving to an area that is higher in temperature. This can severely damage the PCB board and circuitry. This may shorten the life span of the device; damage the battery and cause the housing to deform.
- Do not throw or strongly vibrate the device. This may damage connectivity of the electronic parts and other sensitive components on the PCB board.
- Do not use any strong chemical or washing to cleanse the device.
- Do not use any coloring materials on any removable parts which my cause poor connections and may keep the device from function properly.

All the above applies to the purchased products, battery and other packaged items. If any unusable or damaged items are found please return the product to your nearest authorized repairing center.