User Manual

Combined Interface
Model: Z108A

Table of Contents

1. Introduction

Netvox Z108A, a ZigBee USB Dongle, acts as a coordinator or a router in ZigBee network. It is designed for a computer or a gateway to communicate with ZigBee network. Users can search devices, send commands, control devices, or perform customized scheduling using ZigBee applications.

What is ZigBee?

ZigBee is a short range wireless transmission technology based on IEEE802.15.4 standard and supports multiple network topologies such as point-to-point, point-to-multipoint, and mesh networks. It is defined for a general-purpose, cost-effective, low-power-consumption, low-data-rate, and easy-to-install wireless solution for industrial control, embedded sensing, medical data collection, smoke and intruder warning, building automation and home automation, etc.

2. Product Appearance

3. Specification

- Fully IEEE 802.15.4 compliant

- Utilizes 2.4GHz ISM band; up to 16 channels

- Power supply: USB port

- Receiver Sensitivity: -100 dBm

- Receiving consumption < 30mA

- Transmitting consumption < 42mA

- Up to 350 meters wireless transmission range in non-obstacle space

- Easy installation and configuration

4. Installation

- Plug Z108A into the USB port of a computer or a laptop.

5. Setting up Z108A

5-1. Join the ZigBee Network

Z108A can act as:
   A. Coordinator: After Z108A is powered on, it will create a ZigBee network. After the ZigBee network is built up, the indicator will stay ON. To build a new network, please restore Z108A to factory setting.
   B. Router: Z108A will search and try to join a ZigBee network after it is powered on. The indicator will flash **once** when it finds out a network to join. After Z108A joined a network, the indicator would stay ON. Otherwise, the indicator will be OFF.

5-2. Permit-Join

Z108A is designed to work as a coordinator or a router. To allow other devices to join the ZigBee network, users could enable the Permit-Join feature using ZigBee application. While Permit-Join feature is turned on, the indicator would flash per second.

5-3. Switch Transmission Mode

Z108A performs two transmission modes: the data-transmission mode (default) and the command-transmission mode.

To switch the modes, please use this command format:

02	Cmd=0x0FFE	Len=0x11	Data	CRC

The command to switch to data-transmission mode

"020FFE117777772E6E6574766F782E636F6D2E636ECB"

It is actually "www.netvox.com.cn"

After it switches to data-transmission mode successfully, the stream "021FFE0100E0" is returned.

In data transmission, Z108A broadcasts data wirelessly. Raw data '010203', for example, can be entered and transmitted directly. Raw data can also be received wirelessly without any need of conversion. The data received can be ported to serial connection of, for example, a PC.

The command to switch to command-transmission mode

"020FFE115757572E4E4554564F582E434F4D2E434ECB"

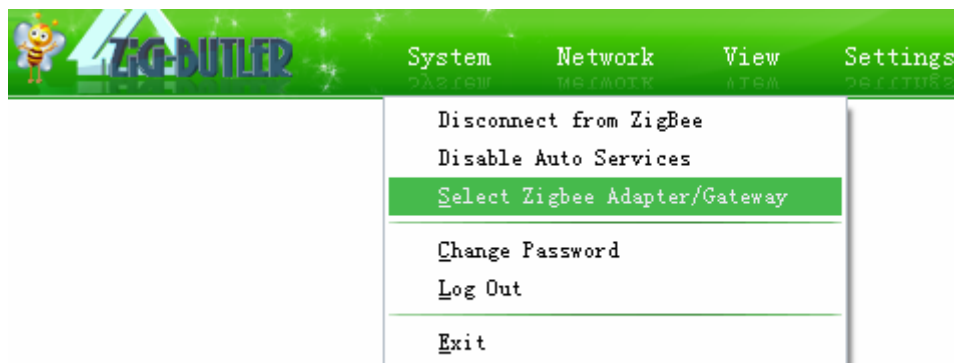It is actually "WWW.NETVOX.COM.CN"

After it switches command-transmission mode successfully, the stream "021FFE0100E0" is returned. The module strictly follows Profile Command to sent and receive control commands.
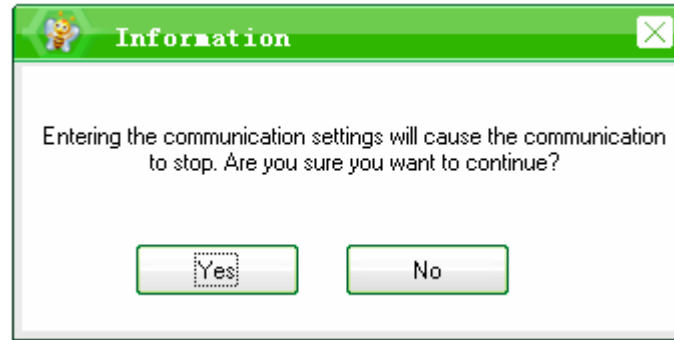
5-4. Control and Management

Users could use ZiG-BUTLER to manage your ZigBee network. From ZiG-BUTLER, you are able to send commands (such as On/Off) to the ZigBee network. Follow the instructions bellow for control and management.
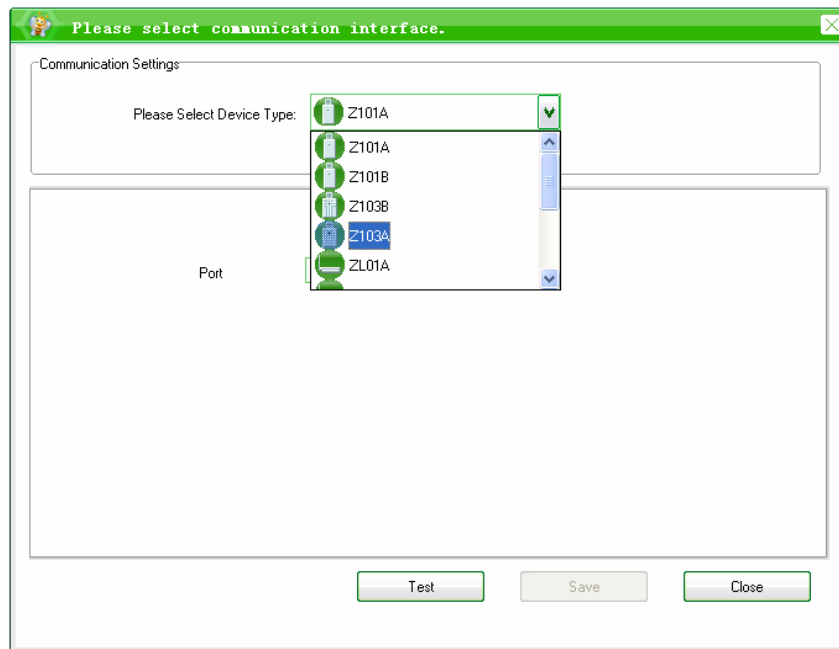
Step1. Run ZiG-BUTLER. Go to **System → Select ZigBee Adapter/Gateway**

Step2. Click **Yes**.
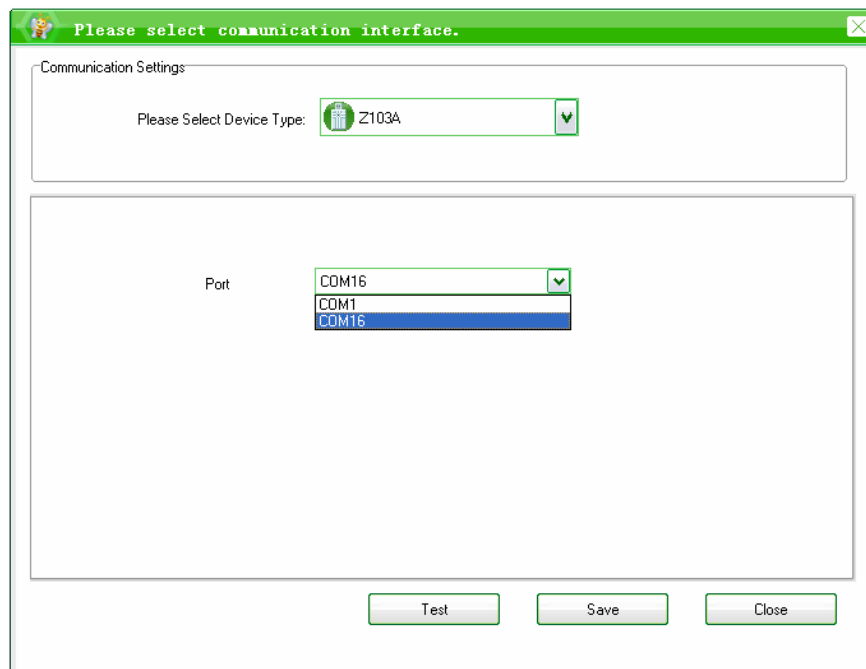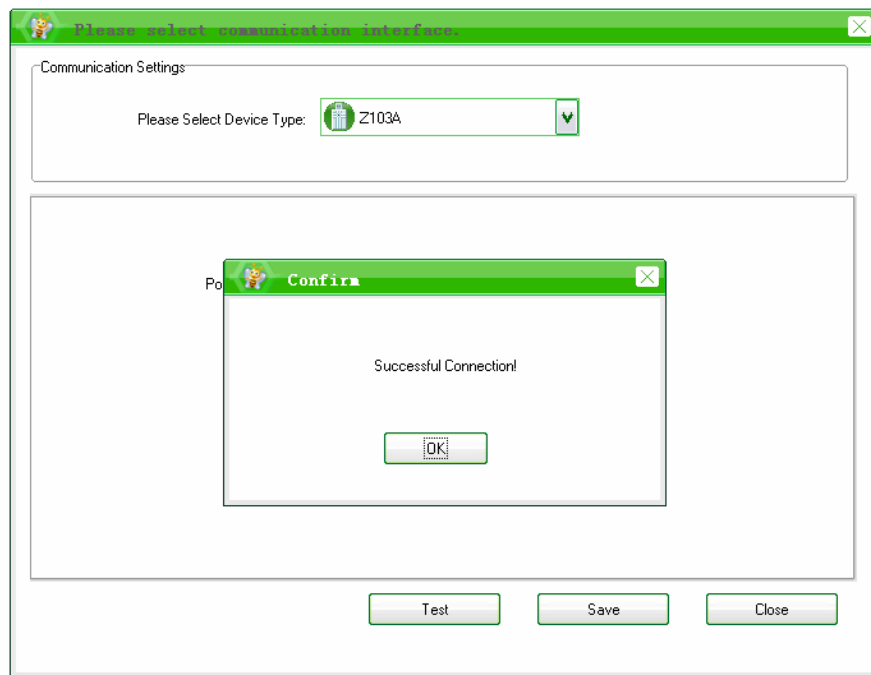

Step3. Choose **Z103** in **Please Select Device Type**.

Step4. Choose **Port** and click **Test**.

Step5. It shows **Successful Connection** when the test is succeeded; otherwise, it shows **Connection Failed**.

Step6. Click **Save** and **Close** to complete the setting..

5-5. Restore to Factory Setting

To restore Z108A to factory setting, please use ZigBee applications.

6. Home Automation Clusters for Z108A

A cluster is a set of related attributes and commands which are grouped together to provide a specific function. A simple example of a cluster would be the On/Off cluster which defines how an on/off switch behaves. This table lists the clusters which are supported by Z108A.

1.End Point(s)：0x0A

2.Device ID：Combined Interface（0x0007）

3.EndPoint Cluster ID

Server side	Client side
Mandatory	
Basic(0x0000)	
Identify(0x0003)	
Commissioning(0x0015)	
Diagnostics(0x0B05)	
Optional	

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	0x0A	O
0x0002	*StackVersion*	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x33	O
0x0003	*HWVersion*	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x0A	O
0x0004	*ManufacturerName*	Character string	0 – 32 bytes	Read only	netvox	O
0x0005	*ModelIdentifier*	Character string	0 – 32 bytes	Read only	Z108E3C/Z 108E3R	O
0x0006	*DateCode*	Character string	0 – 16 bytes	Read only	20140611	O

0x0007	*PowerSource*	8-bit Enumeration	0x00 – 0xff	Read only	0x04	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	M

7. Important Maintenance Instructions

- Please keep the device in a dry place. Precipitation, humidity, and all types of liquids or moisture can contain minerals that corrode electronic circuits. In cases of accidental liquid spills to a device, please leave the device dry properly before storing or using.
- Do not use or store the device in dusty or dirty areas.
- Do not use or store the device in extremely hot temperatures. High temperatures may damage the device or battery.
- Do not use or store the device in extremely cold temperatures. When the device warms to its normal temperature, moisture can form inside the device and damage the device or battery.
- Do not drop, knock, or shake the device. Rough handling would break it.
- Do not use strong chemicals or washing to clean the device.
- Do not paint the device. Paint would cause improper operation.

Handle your device, battery, and accessories with care. The suggestions above help you keep your device operational. For damaged device, please contact the authorized service center in your area.

FCC Statement:

This device 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.
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.
Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.