



ZigBee™-Range Extender

User Manual Range Extender

Model: Z800R

For Home Automation

Range Extender

Other Netvox related devices

Switch controller

- Simple controller Z501 series
- Multiple/Scene controller Z503
- Wall switch ZB02 series
- Light sensing switch Z302B

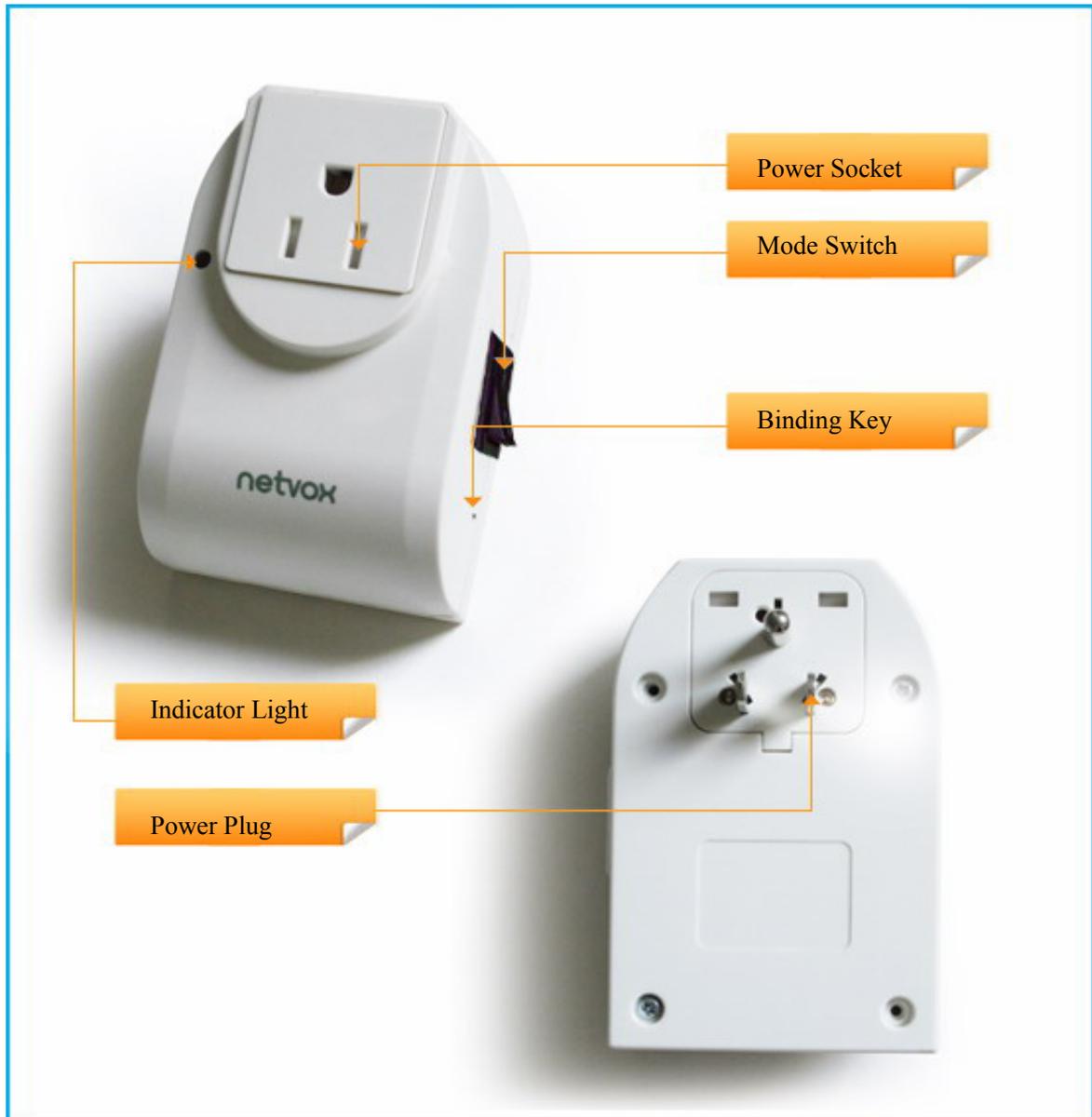


Figure: Z800R (different plug head is provided for different region)

Introduction

NETVOX Z800R is a dedicated network range extender. It is designed to have electrical outlet which inherent the look of its Z800R neighbor. The difference between them is that Z800R doesn't have power consumption monitoring and doesn't support wireless on/off control. User may use it as a simple range extender. Z800R has a manual switch to toggle the AC output to switch appliances attached. It is IEEE802.15.4 ZigBee HA compliant and is applicable in any ZigBee Pro HA Protocol network.

What is ZigBee?

ZigBee is a short range wireless transmission technology which defined for a minimum complexity, low power consumption, low data rate, cost effective wireless solution. ZigBee lies in between wireless markup technology and Bluetooth. ZigBee is based on IEEE802.15.4 standard, the mutual co-ordination between thousands of sensors to exchange data. Sensor to sensor or node-to-node communication is achieved through relays of control data between devices with only a fraction of energy use which denoted for highly transmission efficiency.

Note: Wireless communication, in some real use cases, can be limited by the signal blockage. Please consult your service provider or place of purchase.

Product Specification

- ✓ Fully IEEE 802.15.4 compliant
- ✓ Utilizes 2.4GHz ISM band, up to 16 channels
- ✓ AC Input: 100-250VAC, 50/60HZ power
- ✓ Operating consumption: 15mA/230VAC
- ✓ Up to 150 meters non-obstacle wireless transmission distance
- ✓ Simple operation and device configuration

Setting up the Z800R and network

Setting Up Summary

- (1) Startup and network association
- (2) It is ready to be used.

Step 1. Startup and Network Association

To allow Z800R to function, it must first join to a ZigBee network. When it is given powered it will automatically start searching for an existed network. So before you give power to Z800R make sure it is within the wireless coverage distance (~70 meters or less) and make sure **first** you have the **permit-join feature enabled** either on a coordinator or a router device in the network so that Z800R will join to the network through it then give power to Z800R and it will join into the network by itself.

**On how to enable permit-join please refer to the router or coordinator device user manual*

Operation:

Ensure you have detached any home appliance from Z800R.

Step 1: Make sure you have open up permit-join function (valid for 60 seconds) of a coordinator or a router

Step 2: Now plug in Z800R into AC power socket to power it. Z800R device will start to search for the network within reach.

Step 3: A non-flashing solid light indicates successful otherwise the indicator stays dark.

How to use Z800R

Z800R doesn't support wireless on/off control. 800R can be switched by a mechanical toggle switch attached. Toggle switch may not specifically On or Off in either switch position depends on the previous switch position at last power cycle.

Permit other device to join

Z800R is featured to be a router in the network. It permits other devices to join the network. In normal operation, by default the router device Z800R does not permit any device to join to the network to protect the network from unexpected or unauthorized join attempt. You will need to open up the permit-join on Z800R or on other router device to allow new devices (a router or an end device) to join.

Z800R is capable of holding 6 routers and 14 end devices.

Operation:

1. **Short press the binding key once (must be shorter than 3 seconds of key press).**
2. The permit-join is now enabled for 60 seconds and the indicator light will flash 60 times.
3. Z800R waits the new device to join in automatically. Please note that the maximum waiting time to join is 60 seconds. Repeat the process if you missed the 60 seconds period.

Within the period of 60 seconds, press the binding key twice when you would like to disable the permit-join feature.

Restore to factory setting

Z800R is capable of storing and saving includes network routing information. If you wish to remove Z800R from an exited network, you would need to clear the saved routing information to join to a new network by simply reset the device to restore to the factory setting.

- Step 1.** Remove Z800R from the power socket, use a pin and hold on to the binding key.
- Step 2.** While doing so, plug Z800R back to the power socket to give power then release the pin.
- Step 3.** If restore to factory setting is **successful, you should see the indicator light flashes quickly.** Now the device has restored to the factory setting.

Now if you wish Z800R to join to a new network please power cycle the device again to

put the device into network search mode.

Customizing your customer's device

At the time of power recovery from power outage, by default the device remains *OFF* at the output. This may sometimes cause inconvenience to the user finding the fridge not functioning after the power recovery. Netvox offers End-User requirement before shipment that means we can change the default output position to which you want it; whether power stays **ON**, **OFF** or **remember you previous status** in the time of power recovery, we can make it to suit different home appliance for you. Just let us know in the time of your order.

[Next Page: Device Attributes Description for developers only]

Clusters of Home Automation for Z800R

Home Automation device feature is defined by the endpoint which contains functional clusters. Table 1 lists clusters for the endpoint of Z800R

Table 1: Clusters supported by the endpoint

Cluster for Z800R	
Device ID: Range Extender (0x0008)	
EndPoint: 0x0A	
Server side	Client side
Basic (0x0000)	
Identify (0x0003)	<i>None</i>
Commission (0x0015)	

Attributes of the Basic Information

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	<i>ZCLVersion</i>	8-bit Unsigned integer	0x00 –0xff	Read only	0x03	M
0x0001	<i>ApplicationVersion</i>	8-bit Unsigned integer	0x00 –0xff	Read only	0x0E	O
0x0002	<i>StackVersion</i>	8-bit Unsigned integer	0x00 –0xff	Read only	0x46	O
0x0003	<i>HWVersion</i>	8-bit Unsigned integer	0x00 –0xff	Read only	0x3E	O
0x0004	<i>ManufacturerName</i>	Character string	0 – 32 Bytes	Read only	netvox	O
0x0005	<i>ModelIdentifier</i>	Character string	0 – 32bytes	Read only	Z800R	O
0x0006	<i>DateCode</i>	Character string	0 – 16 bytes	Read only	20120418	O
0x0007	<i>PowerSource</i>	8-bit Enumeration	0x00 –0xff	Read only	0x01	M

Left blank intentionally

ZiG-BUTLER

During device installation, you will go through permit join and device pairing. Most of the time you need to physically access a device that is out of your reach. It becomes handy when you can program through software on a PC wirelessly. Our ZiG-BUTLER allows you to do that. Of course, any other 3rd party ZigBee enabled software is also applicable.

ZiG-BUTLER software is to be installed on a PC. The system needs a Z103 USB dongle or any other ZigBee to PC hardware interface such as a Z202 gateway to communicate with ZigBee network.

Join the device into the network

If your ZiG-BUTLER sees a coordinator or a router device, you should be able to see the icon similar to the one below:

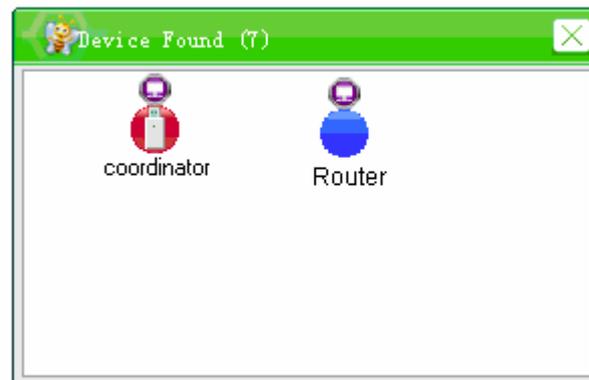


Figure A

-point your mouse to either the coordinator or router device icon and right click. From the menu select **Set PermitJoin On**.

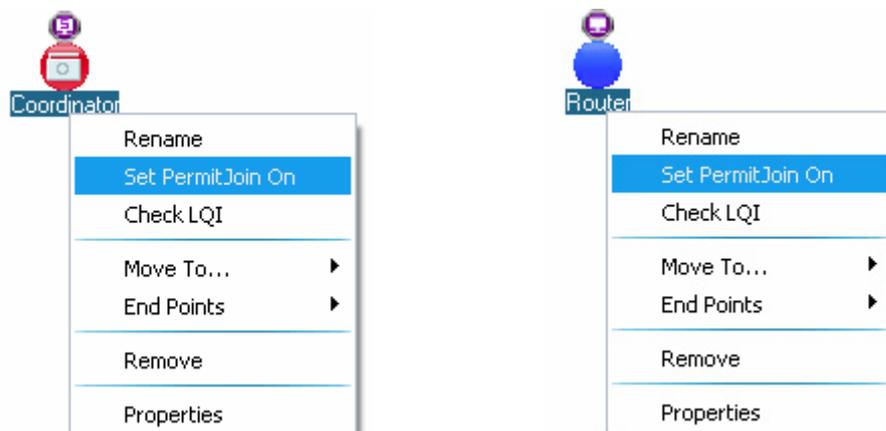


Figure B

**Note that the 6 routers and 14 end-devices rule. (Refer to the user manual of the router device)*

When the device has successfully joined, you should see the device icon appeared in ZIG-BUTLER.

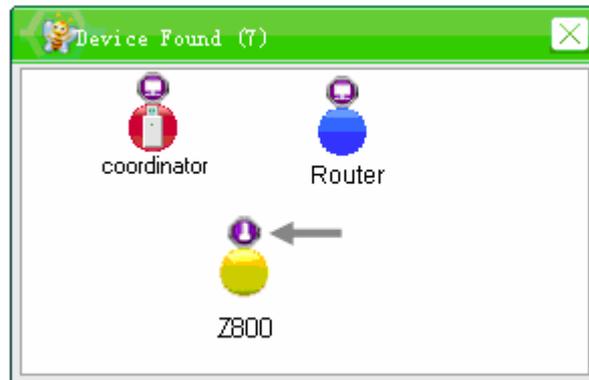


Figure C

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 may 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.

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