



ZigBee™- ZigBee IR Gateway

User Manual

ZigBee IR Gateway

Model: Z211

20140701
FW V2.0 (20130118)
HW V0.3

Table of Contents

1. Introduction.....	3
2. Product Appearance.....	4
3. Specification.....	5
4. Installation Diagram.....	5
5. Setting up Z211.....	6
5.1. Join the ZigBee Network.....	6
5.2. Permit-Join.....	6
5.3. Binding.....	6
5.4. Controls.....	6
5.5. Delete All IR Data.....	6
5.6. Restore to Factory Setting.....	7
6. Home Automation Clusters for Z211.....	8
7. Important Maintenance Instructions.....	10

1. Introduction

Z211 is an infrared gateway equipped with transmitter for infrared control, and it also acts as a router in the ZigBee network. Z211 infrared control system learns IR codes and transmits to control appliances such as DVD player. Z211 is shipped with an extension infrared receiver to be connected to the extension adaptor input of Z211 for extending user remote control.

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: DC 12V
- Standby consumption: $\leq 50\text{mA}$
- Output power: 7dBm
- Infrared: 38kHz
- Infrared transmission range: 30 meters (line of sight)
- Up to 210 meters wireless transmission range in non-obstacle space
- Easy installation and configuration

4. Installation Diagram

- This device is NOT truly waterproof/ resistant and is for indoor use.
- The infrared transmission range is 30-meter (line of sight). It is recommended that installing Z211 on the wall or the ceiling.

5. Setting up Z211

5.1. Join the ZigBee Network

After Z211 is powered on, it will search for an existing ZigBee network and send a request to join the network automatically. While Z211 is under the coverage from a coordinator or a router whose **permit-join feature is enabled**, Z211 will be permitted to join the network. The default permit-join period of time is 60 seconds.

Please refer to the following steps to complete the join:

Step1. Enable the permit-join function (valid for 60 seconds) of a coordinator or a router (please refer to the user manual of the coordinator or the router to enable the permit-join feature).

Step2. Power on Z211, and it will start to search and join the network.

After Z211 is joined successfully, the Network Indicator will stay ON. When it is failed to join the network, the indicator will stay OFF.

5.2. Permit-Join

Z211 is designed to work as a router. To allow other devices to join the ZigBee network, users could enable the Permit-Join feature using the tips:

- A. Press the *Binding Key* to enable the Permit-Join feature. The Network Indicator will flash per second.
- B. The default Permit-Join period of time is 60 seconds.

5.3. Binding

Z211 can be bound with the device which supports IR cluster, like Z103.

Step1. Press and hold the *Binding Key* for 3 seconds.

Step2. Release the *Binding Key* when the network indicator flashes **once**.

Step3. Enable the binding feature of the device which supports IR cluster.

Step4. The indicator flashes **5 times** after the binding is completed; otherwise, it will flash **10 times**.

5.4. Controls

The maximum capacity of IR data:

- ZigbeeToIR → 10240
- IRToZigbee → 256

5.5. Delete All IR Data

A. To delete ZigbeeToIR data:

Press and hold the *IR Key* for 5 seconds. The status indicator will flash **once**. Release the *IR Key* to delete

the ZigbeeToIR data.

B. To delete IRToZigbee data:

Press and hold the *IR Key* for 10 seconds. The status indicator will flash **once**. Release the *IR Key* to delete the IRToZigbee data.

5.6. Restore to Factory Setting

While users would like Z211 to join a new network, a factory reset is required. To restore it to factory setting, please follow the steps:

Step1. Power off Z211.

Step2. Press and hold the *Binding Key*, and then power on Z211.

Step3. After the status indicator shows fast flashes, release the button.

After the factory restore, reboot Z211 to initiate it.

6. Home Automation Clusters for Z211

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 Z211.

1.DEVICE MODEL : Z211

2.DEVICE ID : Range Extender (0x0008)

3.End point(s) : 0x01

4.Endpoint cluster ID :

Server side	Client side
EP 0x01 (Device ID: Range Extender(0x0008)	
Basic(0000)	<i>None</i>
Identify(0003)	
Commissioning(0x0015)	

Attributes of the Basic Device Information attribute set

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	ZCLVersion	8-bit Unsigned integer	0x00 –0xff	Read only	0x03	M
0x0001	ApplicationVersion	8-bit Unsigned integer	0x00 –0xff	Read only	0x0E	O
0x0002	StackVersion	8-bit Unsigned integer	0x00 –0xff	Read only	0x2D	O
0x0003	HWVersion	8-bit Unsigned integer	0x00 –0xff	Read only	0x0A	O
0x0004	ManufacturerName	Character string	0 – 32 Bytes	Read only	netvox	O
0x0005	ModelIdentifier	Character string	0 – 32bytes	Read only	Z211E3R	O
0x0006	DateCode	Character string	0 – 16 bytes	Read only	20130118	O
0x0007	PowerSource	8-bit Enumeration	0x00 –0xff	Read only	0x04 (DC)	M

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0010	LocationDescription	Character string	0 – 16bytes	Read/write	Empty string	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.

Note:

1. Use the product in the environment with the temperature between -10°C and 50°C .

For the following equipment:

CE 0700

Is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC,
The equipment was passed. The test was performed according to the following European standards:

EN 301 489-1 V1.9.2: 2011-09

ETSI EN 301 489-17 V2.1.1: 2009-05

ETSI EN 300 328 V1.7.1:2006-10

EN62311:2008

EN 60950-1:2006+A11:2009+A1:2010+A12:2011

**CAUTION
RISK OF EXPLOSION IF BATTERY IS REPLACED
BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING
TO THE INSTRUCTIONS**