IRHG01
Gateway Hub

User MANUAL

Introduction

IRHG-01 Z-Wave Gateway Hub(Figure.1) is a Z-Wave universal controller that allows you to check and control 5EA kinds of control groups. The 5 control groups are HC1, HC8, HC9, HC11 and HC12. These are checked and controlled remotely by using web-page and support minimal functionality.

Figure 1. IRHG-01

Feature List

Z-Wave plus Gateway Hub is universal controller to control Home control Group of HC1, HC8, HC9, HC11 and HC12 Sensors remotely.

Certification
- KC : Korean Certification
- Z-Wave Plus

Z-Wave
- Device type : Gateway
- Role type : Central Static Controller
- Always ON device
- Control Groups : HC1, HC8, HC9, HC11 and HC12

Power
- Powered by Adapter

LED indication

Working Status	LED Status	LED working Time	LED on (msec)	LED off (msec)
Power Up	ON	continuous	20000	X
	Blinking	continuous	100	500
Working	Blinking	continuous	100	500
At Add/Remove	Blinking	1.5 sec	100	500

Setup and Operations

Product Overview

- Remote Home IoT Gateway using IP Network.
- ZM5101 embedded for supporting Z-Wave plus.
- GUI for users is supported by using web-page.
- Security Enabled Z-Wave Plus Product

1. Add for inclusion

- Pressing the "ADD NEW DEVICE" button in webpage will let IRHG-01 into inclusion mode.

- If the slave is Z-Wave Security 2 device, you need to accept or modify the security class settings. (recommend : the user not change the security class settings.)

- If the slave is Z-Wave Security 2 device for Security 2 Class 1 and 2 devices, you needs to key in the first 5 digits of the DSK.

2. Remove for exclusion

- Pressing the "REMOVE DEVICE" button in webpage will let IRHG-01 into exclusion mode.

3. Remove/Replace Failed Node

- If the added node is determined to be an inactive node, go to the device page and press ADVANCED button will show REPAIR button and press REPAIR button will show Remove/Replace dialog.

4. Set Learn Mode

- This performs the Z-Wave Set Learn Mode network operation. This can only be performed when Z-Ware is not in a network and will typically make Z-Ware an Inclusion or Secondary Controller, in which case, some of its facilities will not be available. To complete an S2 inclusion, the DSK may need to be entered on the including Controller.

5. Reset

- This is the Z-Wave Set Default network operation and a confirmation message appears.
- If this controller is the primary controller for your network, resetting it will result in the nodes in your network being orphaned and it will be necessary after the reset to exclude and re-include all of the nodes in the network. If this controller is being used as a secondary controller in the network, use this procedure to reset this controller only in the event that the network primary controller is missing or otherwise inoperable.

Z-Wave Specifications

- Device Type : Gateway
- Role Type : Central Static Controller

- Command Class Control

Supported
- ✓ COMMAND_CLASS_ASSOCIATION_V2
- ✓ COMMAND_CLASS_ASSOCIATION_GRP_INFO
- ✓ COMMAND_CLASS_CRC_16_ENCAP
- ✓ COMMAND_CLASS_DEVICE_RESET_LOCALLY
- ✓ COMMAND_CLASS_INCLUSION_CONTROLLER
- ✓ COMMAND_CLASS_MANUFACTURER_SPECIFIC
- ✓ COMMAND_CLASS_SECURITY
- ✓ COMMAND_CLASS_SECURITY_2
- ✓ COMMAND_CLASS_SUPERVISION
- ✓ COMMAND_CLASS_TRANSPORT_SERVICE_V2
- ✓ COMMAND_CLASS_POWERLEVEL
- ✓ COMMAND_CLASS_VERSION_V2
- ✓ COMMAND_CLASS_ZWAVEPLUS_INFO_V2

Controlled
- ✓ COMMAND_CLASS_ASSOCIATION_V2
- ✓ COMMAND_CLASS_BASIC
- ✓ COMMAND_CLASS_MULTI_CHANNEL_V4
- ✓ COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION_V3
- ✓ COMMAND_CLASS_CRC_16_ENCAP
- ✓ COMMAND_CLASS_SECURITY
- ✓ COMMAND_CLASS_SECURITY_2
- ✓ COMMAND_CLASS_WAKE_UP_V2
- ✓ COMMAND_CLASS_DOOR_LOCK

- ✓ COMMAND_CLASS_SWITCH_BINARY
- ✓ COMMAND_CLASS_SWITCH_MULTILEVEL
- ✓ COMMAND_CLASS_SENSOR_MULTILEVEL_V4
- ✓ COMMAND_CLASS_THERMOSTAT_MODE
- ✓ COMMAND_CLASS_THERMOSTAT_SETPOINT

- Basic Command Class handling
  - ✓ This product can control a device which supports Basic Command class by sending BASIC OFF[0x00] and ON[0xFF] and between 0x00 and 0xFF from the GUI. This product can receive Basic Command from a device, but it does nothing and just returns ack.

- Devices from multiple manufacturers in one network

  This product can be included and operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers and/or other applications. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.

- The Association Groups available Info
  - Support 1 association group.
  - Grouping identifier : 1, Lifeline
  - Maximum number of devices that can be added to the group: 1.
  - When reset, Device Reset Locally Command Class will send to Lifeline node id.

- Duty Cycle

  This product transmits duty cycle less than 1%, relative to a one hour period.

- Security Enabled Z-Wave Plus Product

This device is a security enabled Z-Wave Plus product that is able to use encrypted Z-Wave Plus messages to communicate to other security enabled Z-Wave Plus products.

● Copy for replication

Controller replication (Copy) is achieved through Inclusion and Set Learn Mode. Controller can transmit protocol replication data automatically.

Technical Specifications

Model No.	IRHG-01
RF frequency	$f_c \pm 29.3$kHz (f_c=920.9 / 921.7 / 923.1MHz)
RF operating distance	Up to 100m outdoor line of sight, in unobstructed environment
HW Composition	ZM5101 is used
Powered by	Adapter
Temperature	Operating : 0^oC ~65^oC Storage : -10^oC ~75^oC

Glossary

Device or Node	Devices and nodes are all terms to describe an individual Z-Wave device. These are all interchangeable when setting up your Z-Wave network
Inclusion	Add a Z-Wave device to the network
Exclusion	Delete a Z-Wave device from the network
Remove	To take a device out of a group, scene or association group while that device still exists in the same Z-Wave network
Network Wide Inclusion(NWI)	Network Wide Inclusion(NWI) enables both end-user friendly, Plug and Play like Z-Wave network installation as well as professional installation scenario where the inclusion process in items of time will be reduced significantly. NWI is a feature supported by a new frame type named Explorer which enables the Z-Wave protocol to implement Adaptive Source Routing.
Z-Wave Network	A collection of Z-Wave devices is controlled by primary and secondary controllers operating on the same system. A Z-Wave network has its own unique ID code so that controllers not in the network cannot control the system.
Primary Controller	The first controller is used to set up your devices and network. Only the Primary Controller can be used to include or delete devices from a network. It is recommended that you mark the primary controller for each network for ease in modifying your network.
Association	Association is used to organize nodes in different groups allowing the device to identify the nodes by a group identifier. The groups can also be copied to other devices.