Rev. 1.0

SHARP

IoT Gateway User's Guide

Model: DN3E6JE088

Introduction

This document describes the 3G Gateway (Model DN3E6JE088) overview and how to use the Z-Wave functionality.

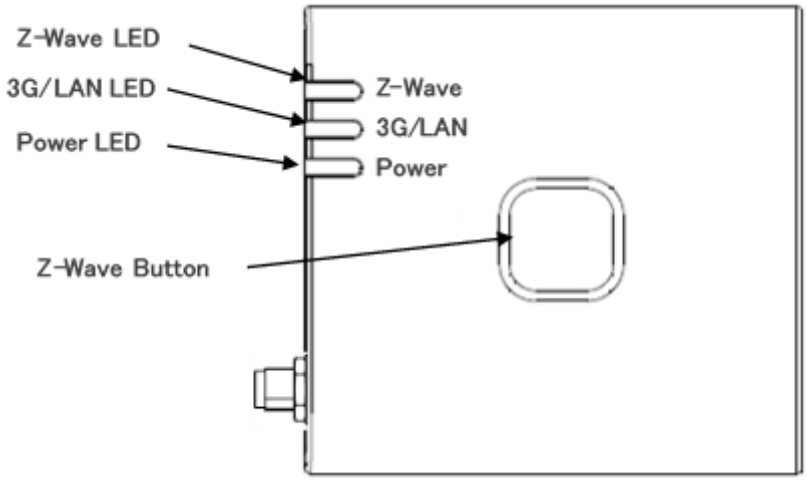
Feature Overview

The 3G Gateway is a Gateway for IoT with functions of 3G and Z-Wave communication. It can collect sensing data from various Z-Wave sensor devices, and upload it to cloud server by 3G function anywhere 3G communication is available.

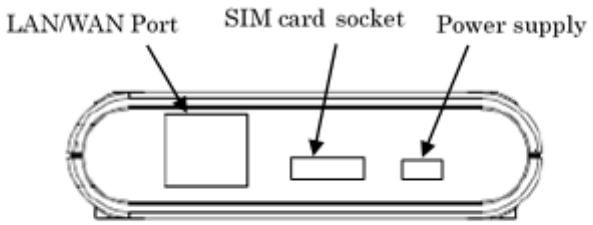
The 3G Gateway has the following general features:

- 3G communication (SIM Free)
- 1 LAN Port
- Z-Wave communication

Product Drawings



Front side



Back side

Installation

The installation of the 3G Gateway is only one step process:

1- Connect AC Adapter to the Gateway and plug it into AC outlet. The Gateway has no Power Switch. It will power up as soon as plugged in the AC Adapter.

If you don't use 3G network connection, the Gateway needs to be connected to internet via LAN port.

LED Normal Operation

- 3G/LAN LED turns ON when 3G connection established.
- Z-Wave LED turns ON when Z-Wave function is ready, and blinks when received a packet.
- Power LED always ON when powered.

Z-Wave Overview

General Information

Device Type

Gateway

Role Type

Central Static Controller (CSC)

Command Class

Support

COMMAND_CLASS_APPLICATION_STATUS

COMMAND_CLASS_ASSOCIATION_V2

COMMAND_CLASS_ASSOCIATION_GRP_INFO

COMMAND_CLASS_CRC_16_ENCAP

COMMAND_CLASS_DEVICE_RESET_LOCALLY

COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2

COMMAND_CLASS_POWERLEVEL

COMMAND_CLASS_SECURITY

COMMAND_CLASS_VERSION_V2

COMMAND_CLASS_ZWAVEPLUS_INFO_V2

Control

COMMAND_CLASS_ASSOCIATION_V2

COMMAND_CLASS_BASIC

COMMAND_CLASS_CRC_16_ENCAP

COMMAND_CLASS_MULTI_CHANNEL _V4

COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION_V3

COMMAND_CLASS_WAKE_UP_V2

COMMAND_CLASS_BATTERY

COMMAND_CLASS_CONFIGURATION

COMMAND_CLASS_DOOR_LOCK_V2

COMMAND_CLASS_INDICATOR

COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2

COMMAND_CLASS_METER_V3

COMMAND_CLASS_NODE_NAMING

COMMAND_CLASS_NOTIFICATION_V8

COMMAND_CLASS_SENSOR_MULTILEVEL_V11

Interoperability

Any products from different manufacturers and product categories can be a part of the same Z-Wave network with the Gateway, and that the different non-battery powered nodes can act as repeaters regardless of manufacturers.

Security Enabled Z-Wave Plus Product

The Gateway is a Security Enabled Z-Wave Plus Product.

Basic Command Class Handling

The Gateway will ignore Basic Commands received from other devices on the Z-Wave network.

Support for Association Command Class

Group id: 1 – Lifeline

Maximum number of devices that can be added to the group: 5

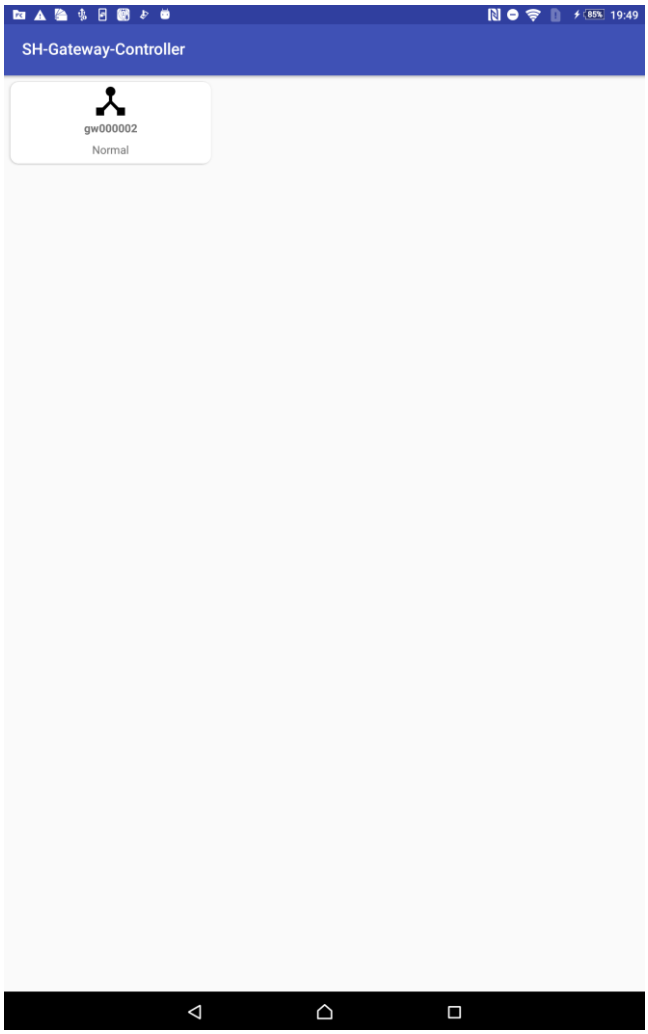
All devices are associated with the group.

Android Controller Application “SH-Gateway-Controller”

Gateway select screen

The icon of the gateway that you can use is displayed.

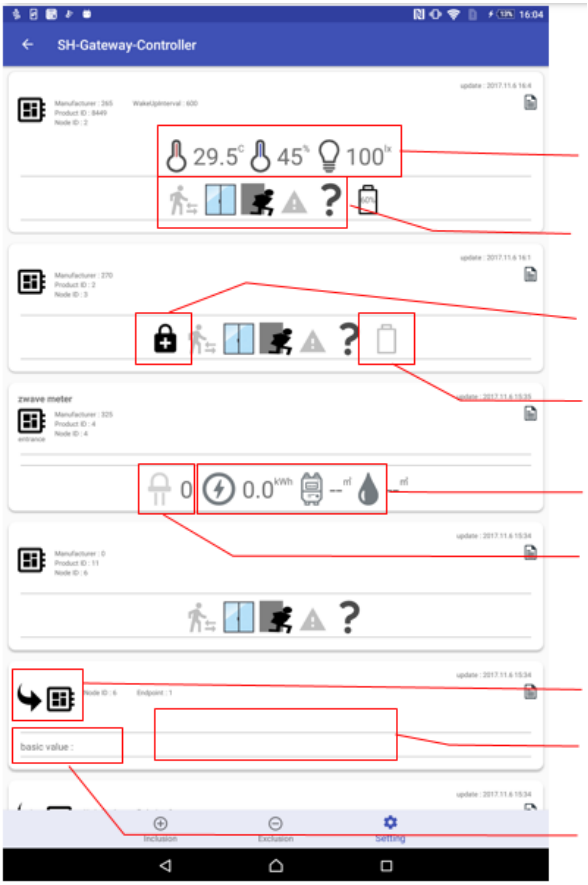
If nothing is displayed, please confirm that the network is correctly set.



Device Viewer

When you select a gateway, the available devices are displayed.

If there is no available device, nothing is displayed.



In the case of a device that supports temperature, humidity or illuminance, the report value is displayed.

Represents the state of Home security.
Represents the current Event according to Notification from the device.

In the case of a device that supports lock / unlock, the lock status is displayed.

The remaining battery power is displayed.

The values of various meters are displayed.
From the left, power meter, gas meter, water meter order.

The value of indicator is displayed.

In the case of a device that has End points, all End points are displayed.

When an unsupported device is detected, no icon is displayed in this area.

The report value of the latest Basic command is displayed.
* For only unsupported devices

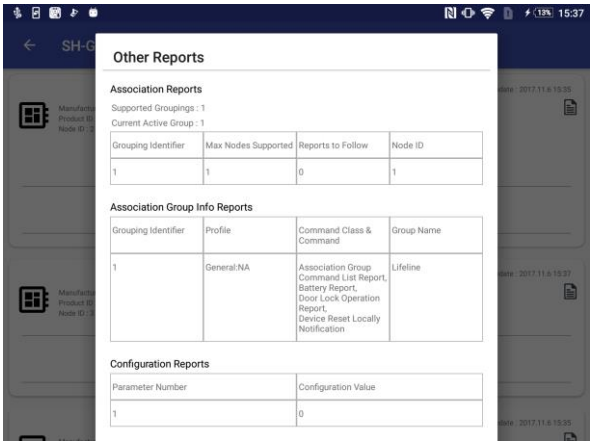
WakeupInterval: The value of Wakeup Interval is displayed.

Manufacture: The Manufacture ID is displayed.
Product ID: The Product ID is displayed.
Node ID: The Node ID is displayed.

By tapping the report icon, a dialog of Association, Association Group Info, Configuration command is displayed.

Node Name

Node Location



Endpoint number is displayed.

Device button

means one device

Device End point button

means End point

Lock status

lock

unlock

Multilevel sensor

means humidity

means temperature

means illuminance

Home security

Motion Detection

Undetected

Detected

Glass Breakage

Undetected

Detected

Intrusion

Undetected

Detected

Tampering

Undetected

Detected

Unknown

Undetected

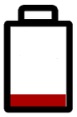
Detected

Battery

Battery level is displayed

100%

Battery level is displayed
as numerical value.



It is displayed when the battery
level is low.

It is displayed when the battery
level is not acquired.

Report button

When the report has been updated,
It is displayed with a red icon.

Indicator

The numerical value is displayed
on the right of the icon.

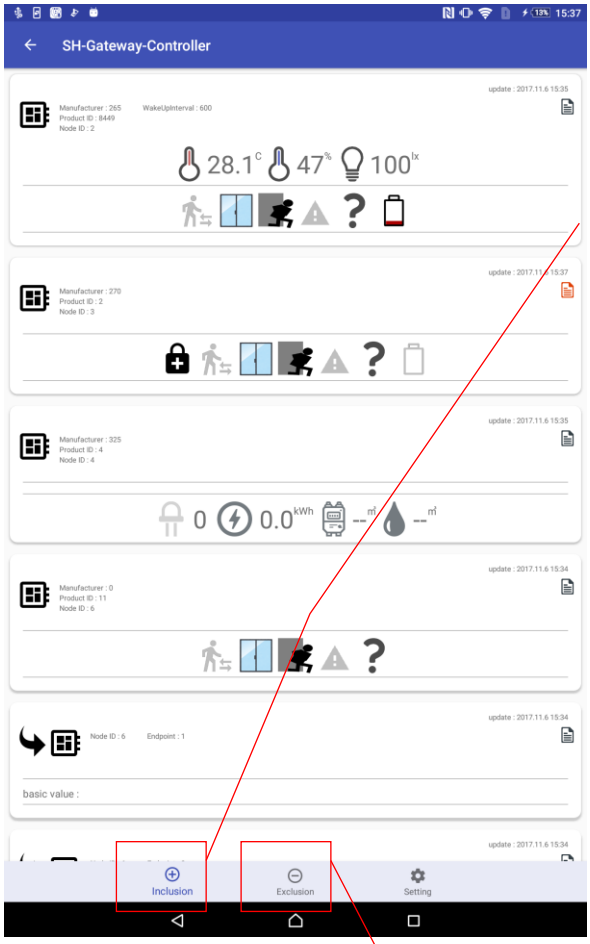
Meter

The value of the power meter is
displayed on the right of the icon.

The value of the gas meter is
displayed on the right of the icon.

The value of the water meter is
displayed on the right of the icon.

Inclusion and Exclusion (Add and Remove)



Inclusion (Adding devices)

To add a device to the Z-Wave network, press “Inclusion” button in Android Controller Application or press the Z-Wave button of the Gateway once. This will put the Gateway into Inclusion mode and Z-Wave LED blinks slowly. Gateway operation dialog appears in Android Controller Application. Gateway operation dialog keeps being displayed during Inclusion mode.

If you want to stop Inclusion, press “Abort” button in Gateway operation dialog, or wait for one minute and Inclusion mode will automatically stop. When Inclusion mode is stopped, Gateway operation dialog will automatically disappear.

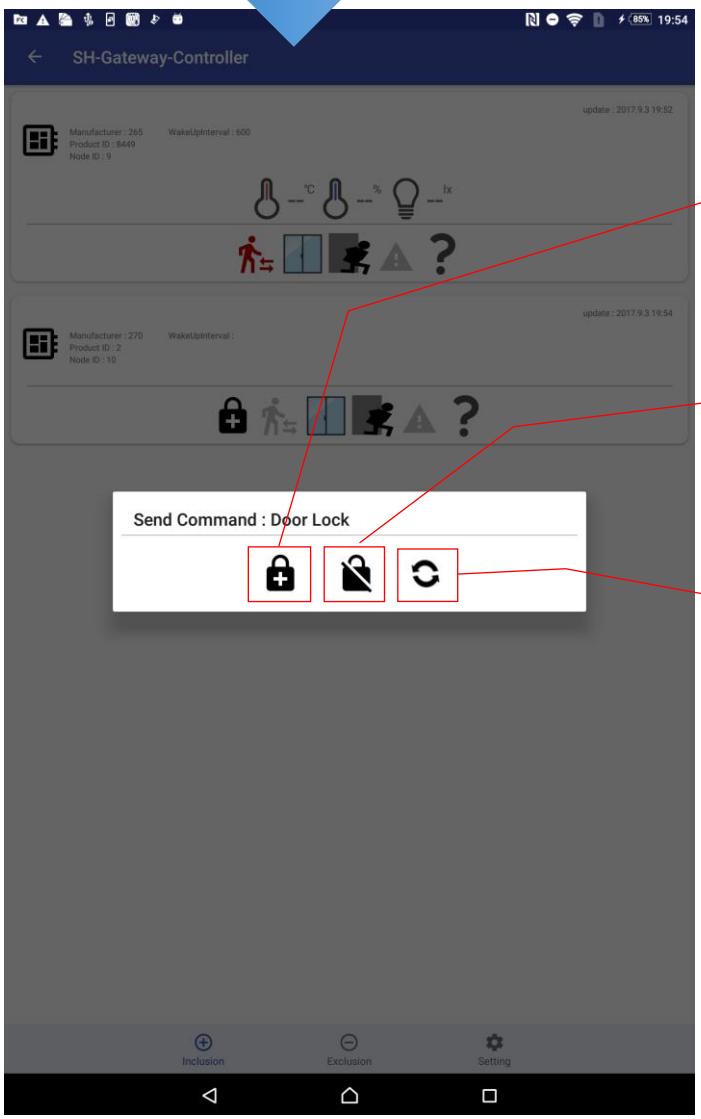
Exclusion (Removing devices)

To remove a device from the Z-Wave network, press “Exclusion” button in Android Controller Application or hold down the Z-Wave button of the Gateway (over 3 seconds). This will put the Gateway into Exclusion mode and Z-Wave LED blinks quickly. Gateway operation dialog appears in Android Controller Application. Gateway operation dialog keeps being displayed during Exclusion mode.

If you want to abort Exclusion, press “Abort” button in Gateway operation dialog, or wait for one minute and Exclusion mode will automatically stop. When Exclusion mode is stopped, Gateway operation dialog will automatically disappear.

Lock/Unlock Operation

When you tap the lock status icon, Lock / Unlock Operation dialog is displayed.

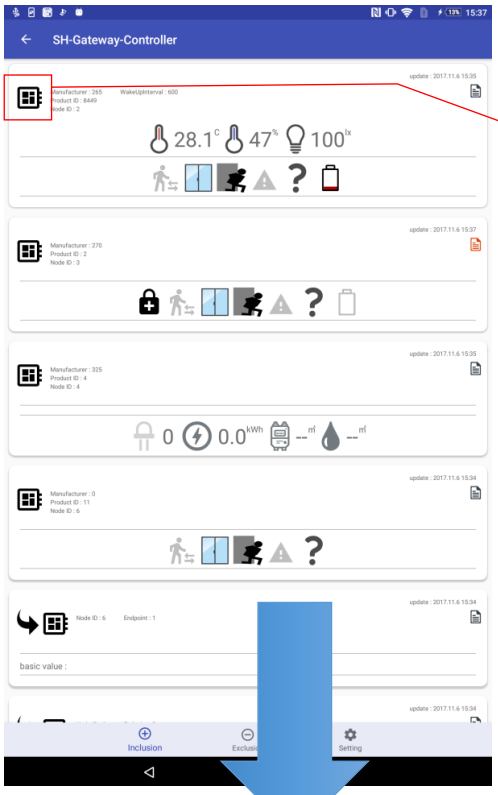


Send an instruction to lock to Gateway.

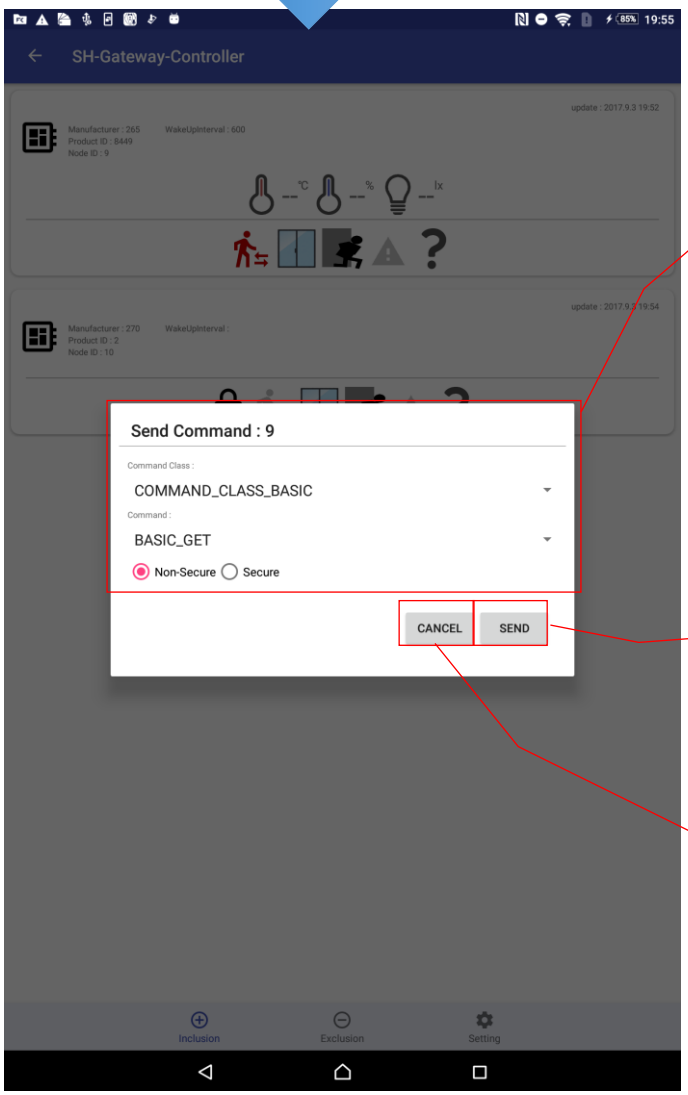
Send an instruction to unlock to Gateway.

Update the lock status.

Send Command



When you tap the Device button, “Send Command” dialog is displayed.

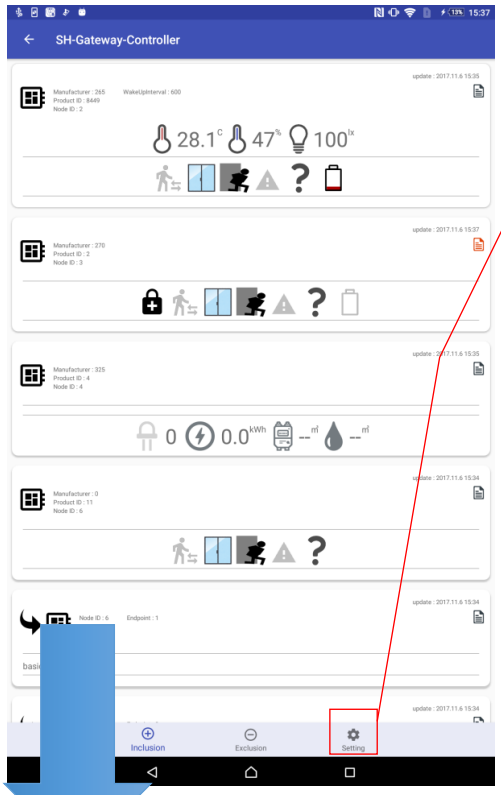


For the tapped device, select the command class and enter necessary information to be transmitted.

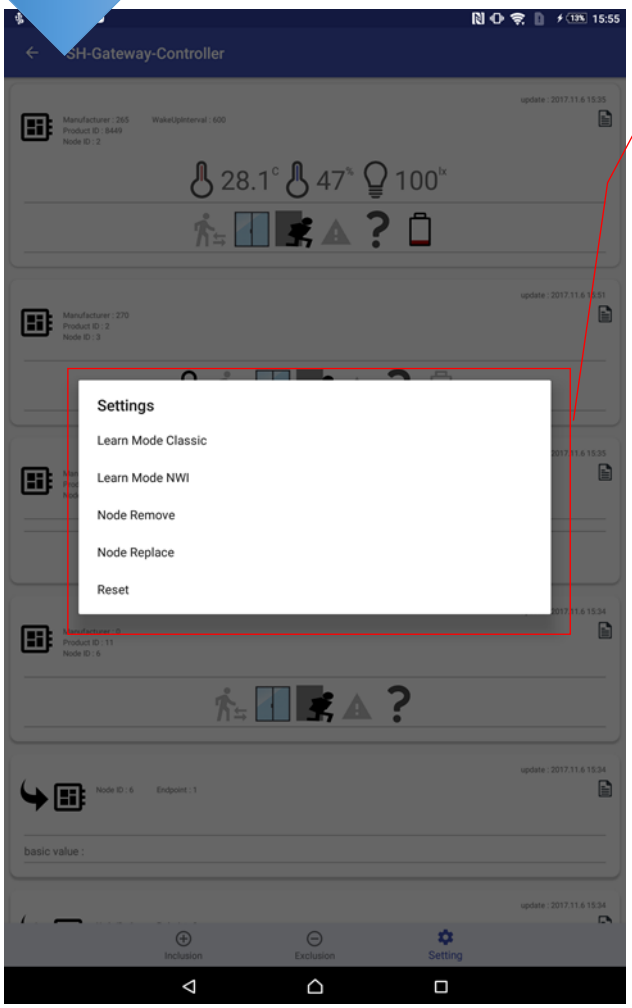
Send the command currently entered.

Cancel (The dialog disappears).

Settings



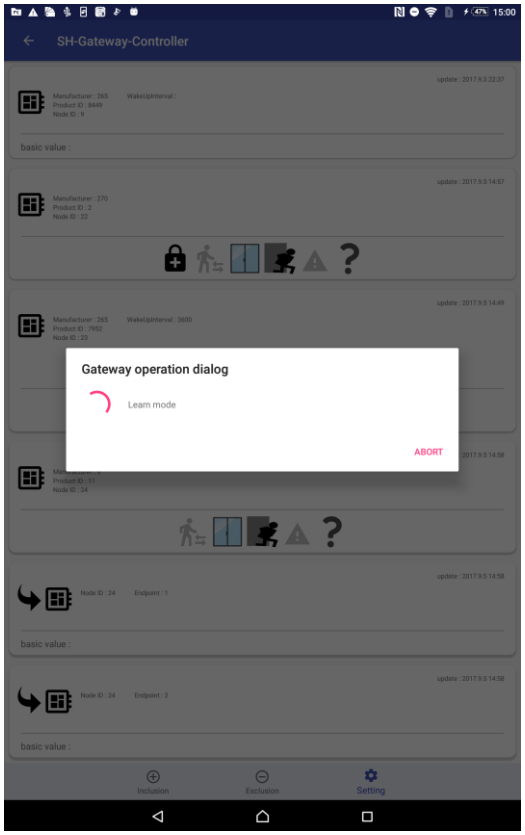
When you tap the Setting button, Settings dialog is displayed.



Select the item you want to set.
When you tap an item, dialog is displayed.

- Learn Mode Classic
  Set the Gateway to Learn Mode(Classic)
- Learn Mode NWI
  Set the Gateway to Learn Mode(NWI)
- Node Remove
  Remove the device with the selected Node ID
- Node Replace
  Replace the device with the selected Node ID
- Reset
  Factory default reset

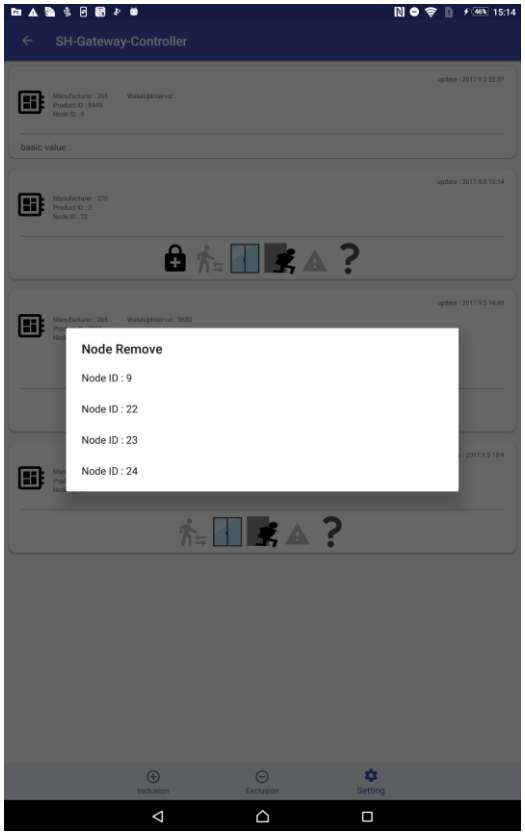
Learn Mode



To add the IoT Gateway into another Z-Wave network as a secondary controller or inclusion controller, press “Learn Mode Classic” or “Learn Mode NWI” in Settings dialog. Gateway Operation dialog appears and keeps being displayed during Learn Mode.

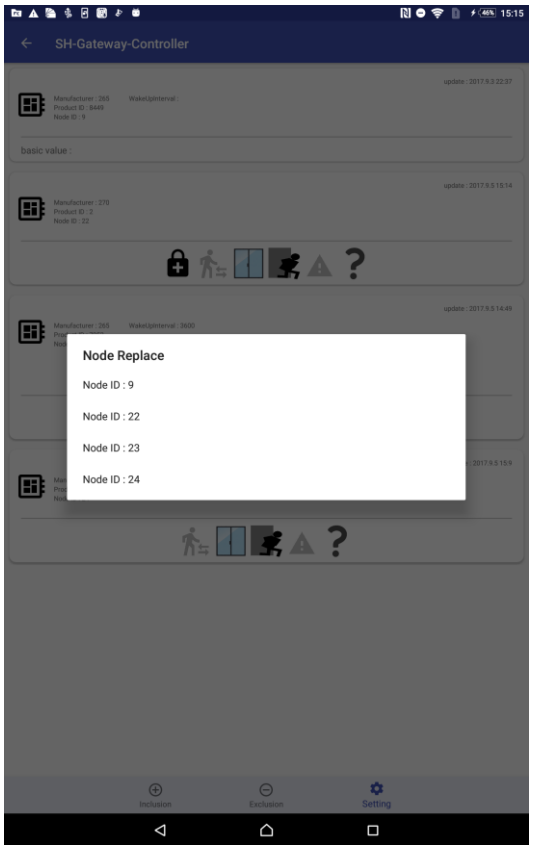
If you want to abort Learn Mode, press “ABORT”. When Learn Mode is stopped, Gateway Operation dialog will automatically disappear.

Node Remove



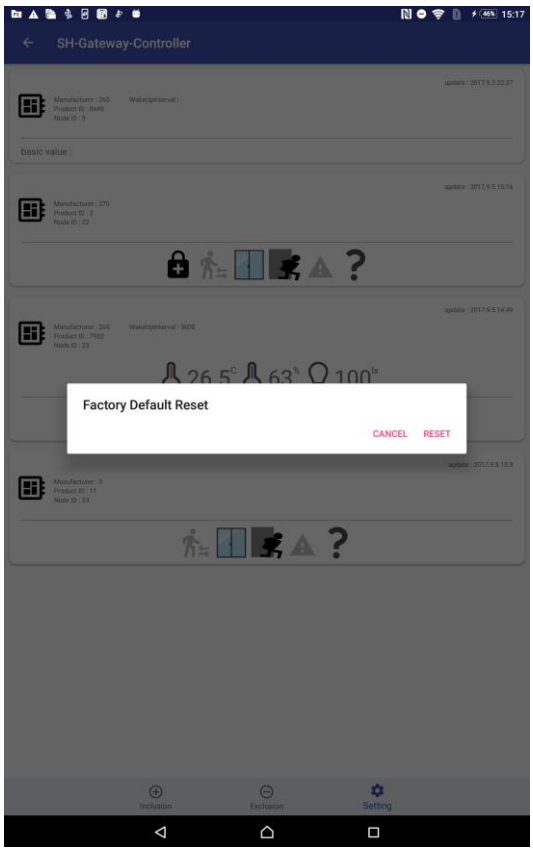
To remove a failing Node from the Z-Wave network, press “Node Remove” in Settings dialog, and tap the Node ID you want to remove in Node Remove dialog.

Node Replace



To replace a failing Node to another equivalent device, press “Replace” in Settings dialog, and tap the Node ID you want to replace in Node Replace dialog. Gateway Operation dialog will appear.

Reset (Factory Default Reset)



Press “RESET” in Factory Default Reset dialog. This will reset the Z-Wave chip and LED blinks, and the Gateway will broadcast the “DEVICE RESET LOCALLY NOTIFICATION” after restart.

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.

Replication (Copy)

In case that the Gateway is already the controller of the Z-Wave network, put the Gateway into Inclusion mode, and put another controller into Learn mode. The Replication will be started and network information will be sent to another controller. In case that the Gateway is included into an existing Z-Wave network, put the Gateway into Learn mode, and put the existing controller into Inclusion mode. The Replication will be started and network information will be received from the existing controller.