

ONU Integrated Service Router

User's Guide

Model: NSD-G1000T

Introduction

This document describes the ONU Integrated Service Router (Model NSD-G1000T) overview and how to use Z-Wave functionality.

Feature Overview

The current product is a home gateway device. IoT devices such as sensors are connected and can be controlled with this device. This device supports various interfaces for the functionalities of Wireless LAN, Bluetooth, Z-Wave and Mobile networks.

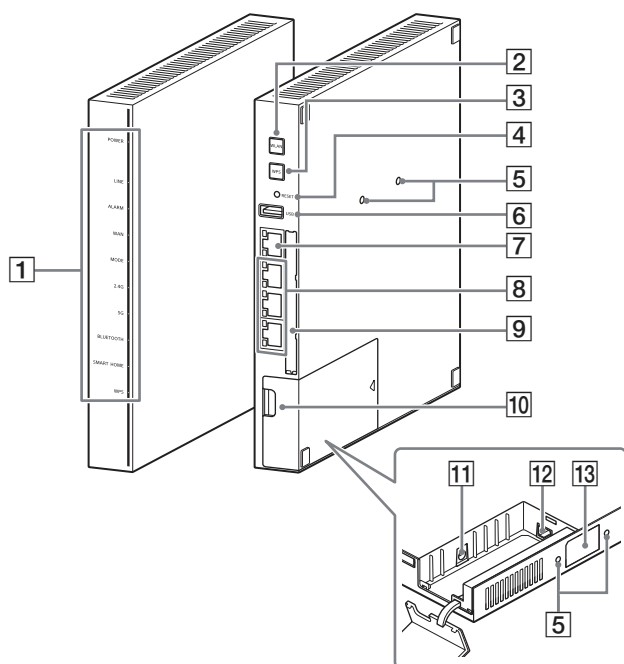
The device can collect sensing data from various Z-Wave sensor devices, and uploading of the data to a cloud server by wired LAN communication is available.

The ONU Integrated Service Router has the following general features:

- 4 LAN Ports
- Wireless LAN client
- Z-Wave communication
- Bluetooth communication

Names of Product Device Parts

The top and bottom view of the product device and parts names are as follows.



No	Part Name
1	System Status Lamp
2	WLAN Button
3	WPS Button
4	Reset Button
5	Mounting Hole
6	USB Port
7	WAN Port
8	LAN Ports
9	LAN Plate
10	Cover
11	DC-IN Jack
12	Optical Fiber Jack
13	SSID Label

Installation

Installation of the ONU Integrated Service Router is only a one step process:

1- Connect an AC adapter to the gateway and plug it into an AC outlet. The gateway has no power switch. It will begin operating as soon as it is plugged into the AC adapter/outlet.

The gateway needs to be connected to the internet via a WAN port.

LED Indication Information

System status LED/Lamp Indicator:

LED Indicator/Lamp Type	Lamp Color and Status	Device Status
POWER	Green Steady State	Power is on
LINE	Green Blinking	Connecting G-PON
	Green Steady State	Connected G-PON
ALARM	Red Steady State	Optical fiber is disconnected
WAN	Green Steady State	Internet is connected via wired LAN
MODE	Green Steady State	G-PON mode
	Red Steady State	IPoE mode
2.4G	Green Steady State	Wi-Fi(2.4GHz) is enabled
5G	Green Steady State	Wi-Fi(5GHz) is enabled
BLUETOOTH	Green Steady State	Pairing with Bluetooth
WPS	Red Blinking	Pairing with WPS
	Red Steady State	Pairing was successful

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_SECURITY_2
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

Securely S2 Supported Command Class

COMMAND_CLASS_ASSOCIATION_GRP_INFO

COMMAND_CLASS_ASSOCIATION_V2

COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2

COMMAND_CLASS_VERSION_V2

Interoperability

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

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 in 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

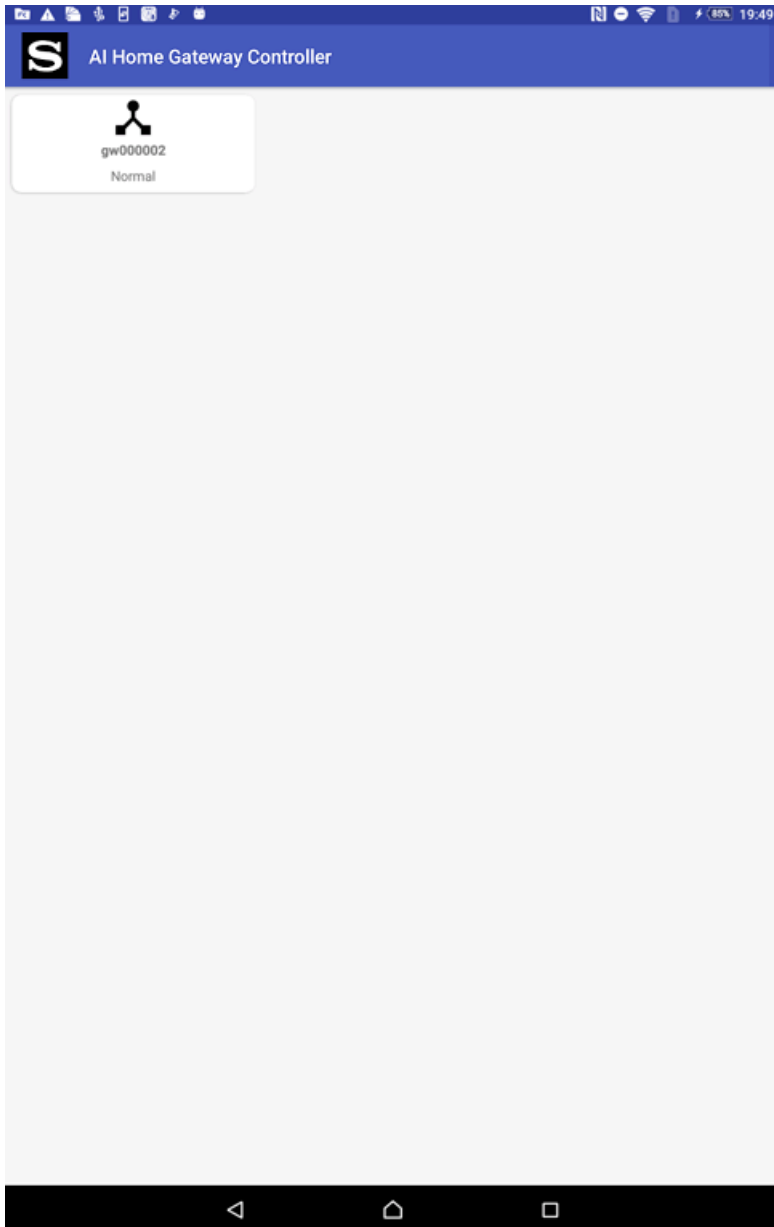
All devices are associated with the group.

Android Controller Application “AI Home Gateway Controller”

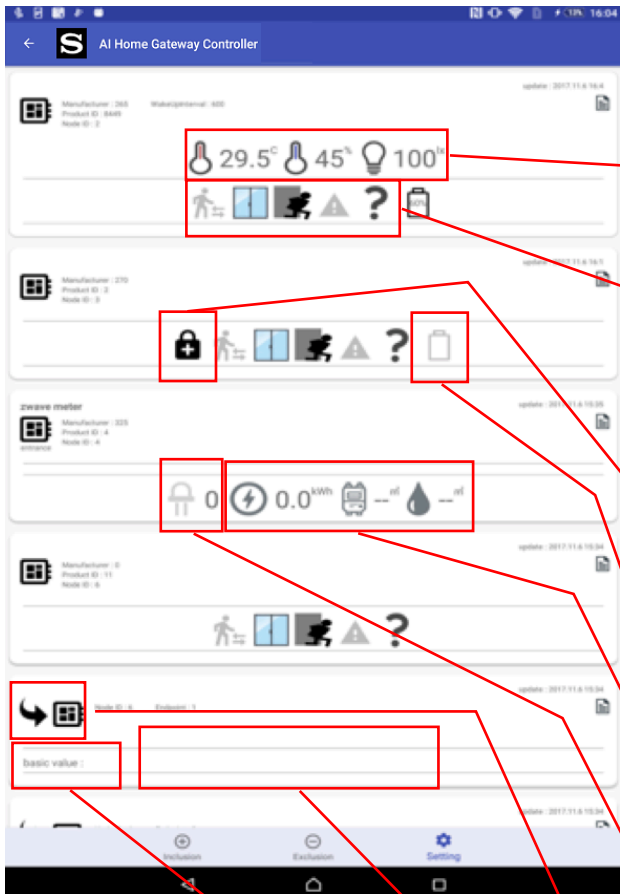
Gateway Select Screen

When an available device is detected that can be used, the icon of the gateway is displayed.

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



Device Viewer



When a gateway is selected, available devices will be displayed. If there are no available devices, nothing will be displayed.

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

These icons represent the state of Home Security. Whichever icon that appears shows the current event according to a notification received from the device.

If a device supports the lock / unlock function, the Lock Status is displayed.

The remaining battery power is displayed.

The values of various meters are displayed.

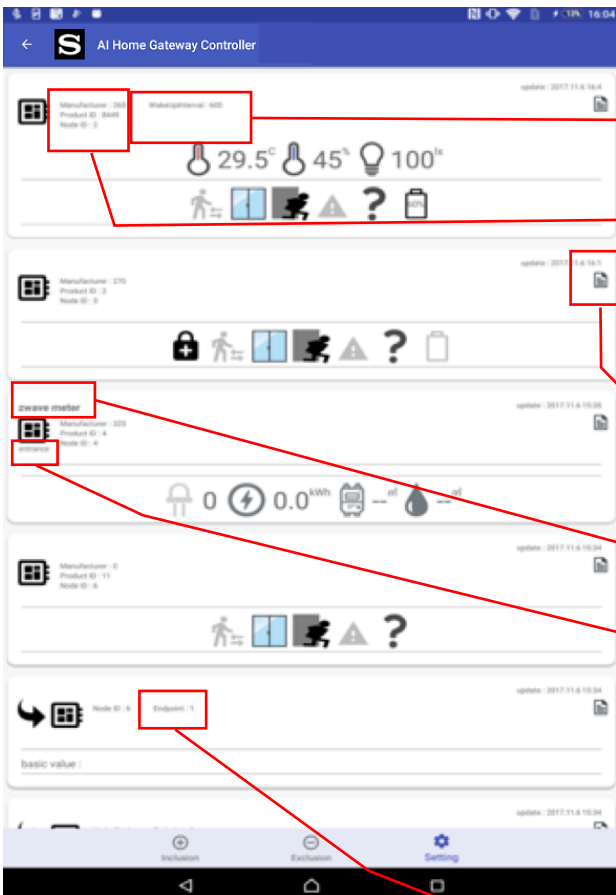
In order from the left: power meter, gas meter, and water meter.

The value of the indicator is displayed.

If a device has end points, all end points are displayed.

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

The report value of the latest Basic Command is displayed. *Only for unsupported devices.



displayed.

Manufacturer: The Manufacturer 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, and Configuration is displayed.

Node Name


Node Location




Endpoint number is displayed.

WakeupInterval: The value of the Wakeup Interval is


Device button
means one device


A square icon with a grid pattern and a small protrusion on the right side, representing a device button.

Device End point button
means End point

A square icon with a grid pattern and a small protrusion on the right side, with a curved arrow pointing to it from the left, representing a device end point button.


Lock status


 lock


 unlock

Two icons representing lock status: a padlock with a plus sign for 'lock' and a padlock with a diagonal slash for 'unlock'.

Multilevel sensor

 means humidity

 means temperature

 means illuminance

Three icons representing multilevel sensors: a thermometer with a blue liquid level for humidity, a thermometer with a red liquid level for temperature, and a lightbulb for 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.

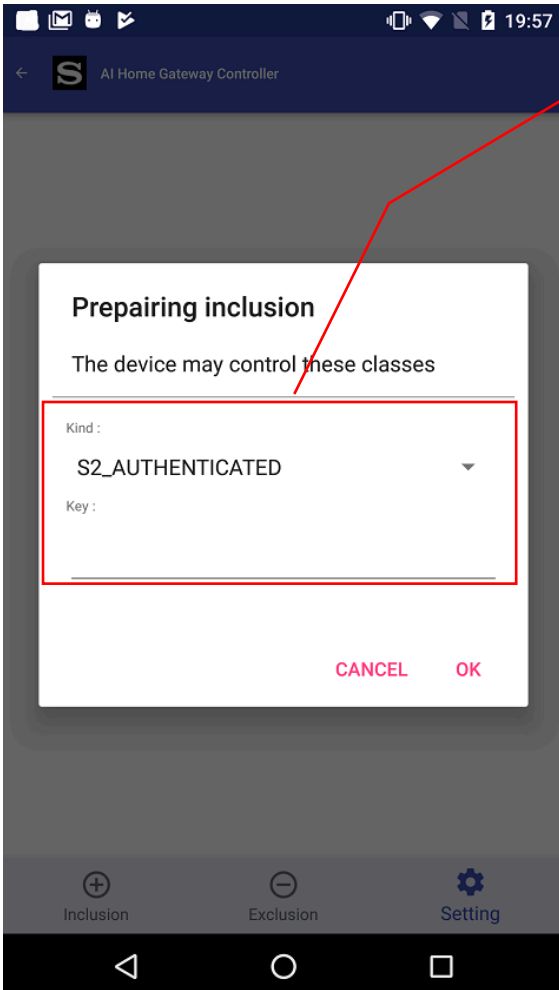
Inclusion (Add)



Inclusion (Adding devices)

To add a device to the Z-Wave network, press the “Inclusion” button in the Android Controller Application. This will put the gateway into Inclusion Mode. Then a gateway operation dialog will appear in the Android Controller Application. The gateway operation dialog will be displayed during the Inclusion Mode.

To stop the Inclusion Mode, press the “Abort” button in the gateway operation dialog, or wait for one minute and the Inclusion Mode will automatically stop. When the Inclusion Mode has stopped, the gateway operation dialog will automatically disappear.



Select the item you want to set.

- S0
- S2_ACCESS
- S2_AUTHENTICATED
- S2_UNAUTHENTICATED

If S2_ACCESS or S2_AUTHENTICATED is selected, enter the value of the key as a 5-digit numeric value.

Exclusion (Remove)

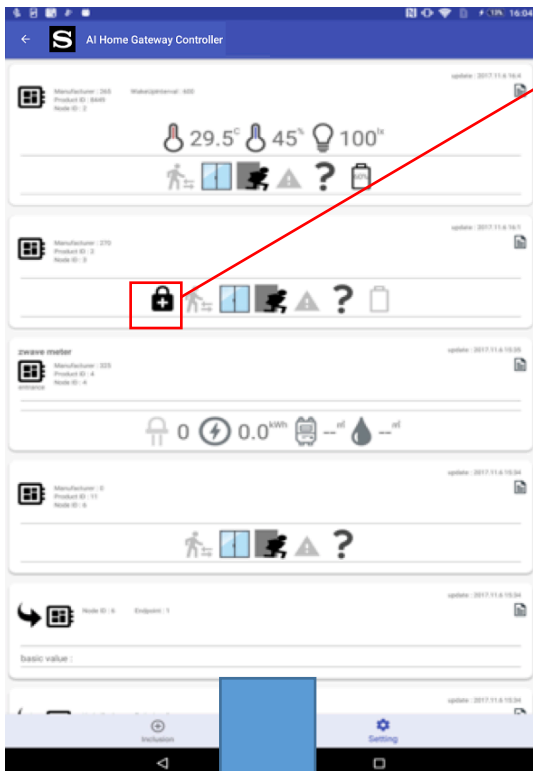


Exclusion (Removing devices)

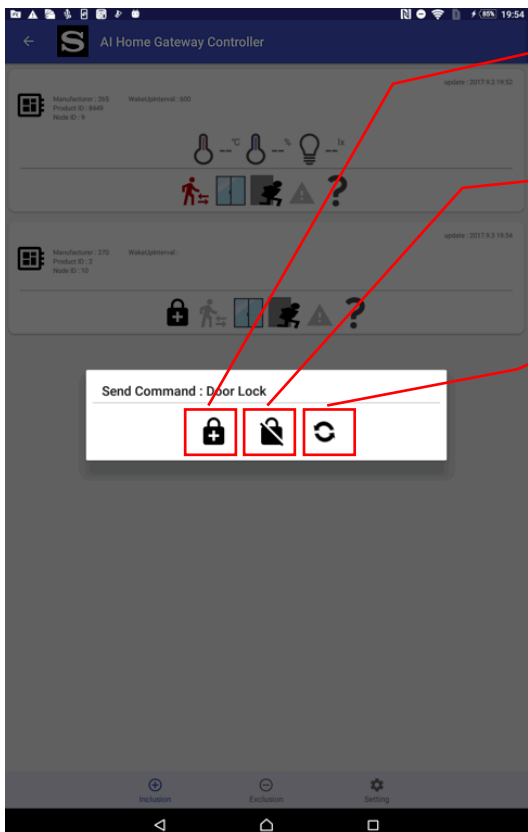
To remove a device from the Z-Wave network, press the “Exclusion” button in the Android Controller Application. This will put the gateway into Exclusion Mode. A gateway operation dialog will appear in the Android Controller Application. The gateway operation dialog will be displayed during the Exclusion Mode.

To abort the Exclusion, press the “Abort” button in the gateway operation dialog, or wait for one minute and the Exclusion Mode will automatically stop. When the Exclusion Mode has stopped, the gateway operation dialog will automatically disappear.

Lock/Unlock Operation



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

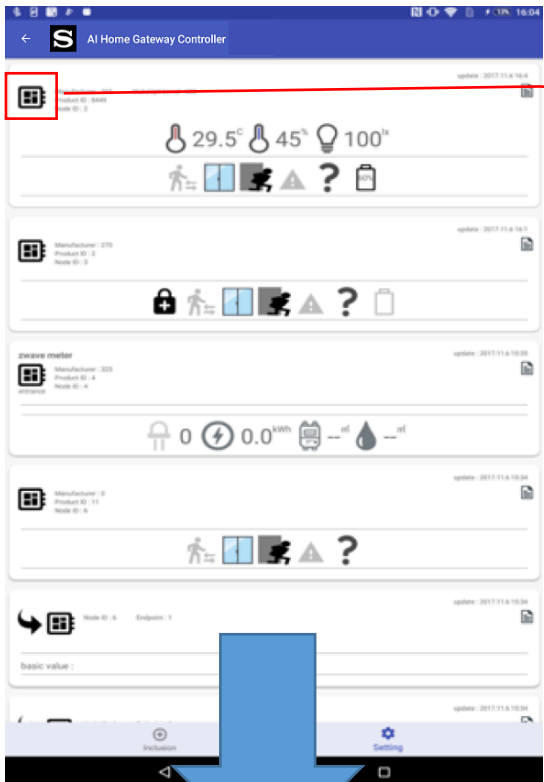


Send an instruction to lock to the Gateway.

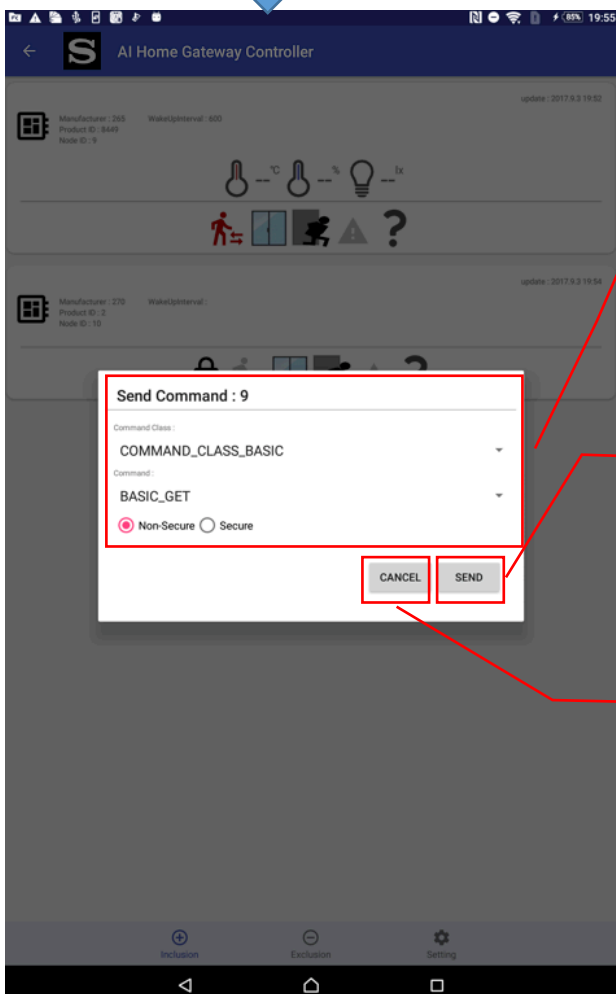
Send an instruction to unlock to the Gateway.

Update the lock status.

Send Command



When the Device button is tapped, the "Send Command" dialog is displayed.



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

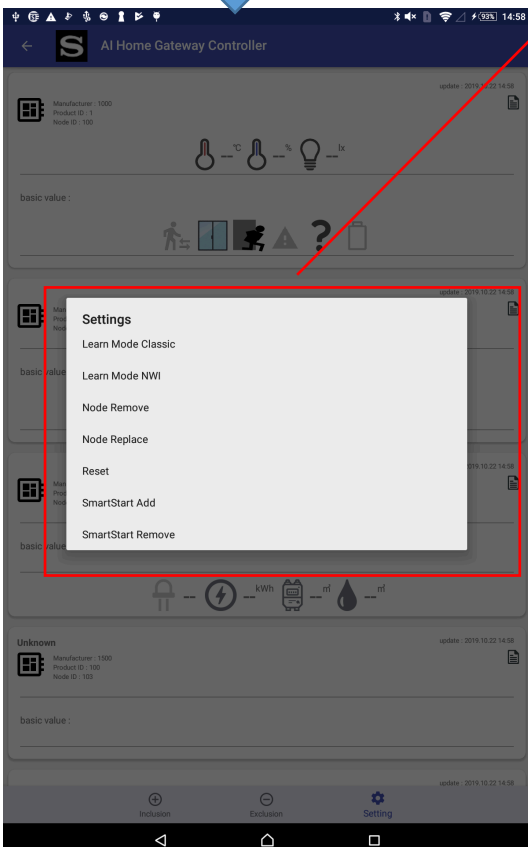
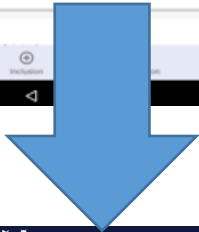
Send the command currently entered.

Cancel (The dialog disappears).

Settings



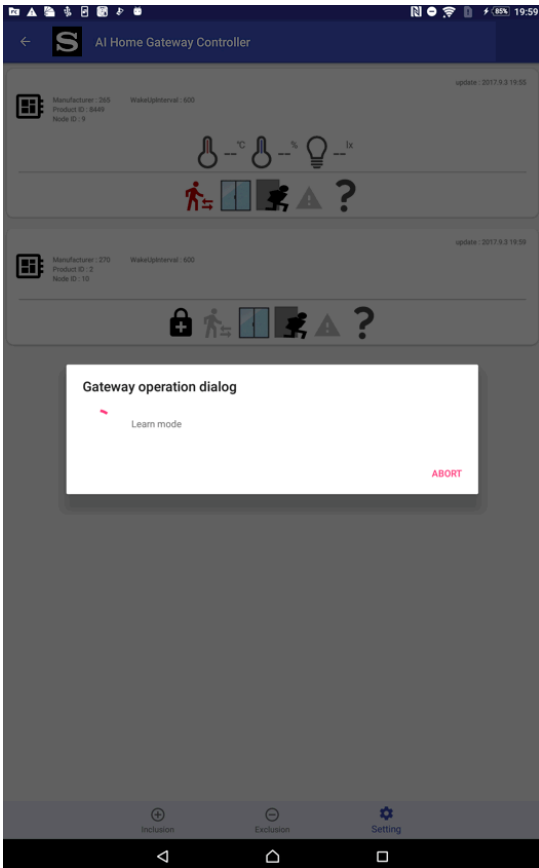
When tapping the Setting button, a Settings dialog will be displayed.



Select an item to be set.
When tapping an item, a dialog will be 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
- SmartStart Add
Scan an QR code to register the DSK
- SmartStart Remove
Scan an QR code to unregister the DSK

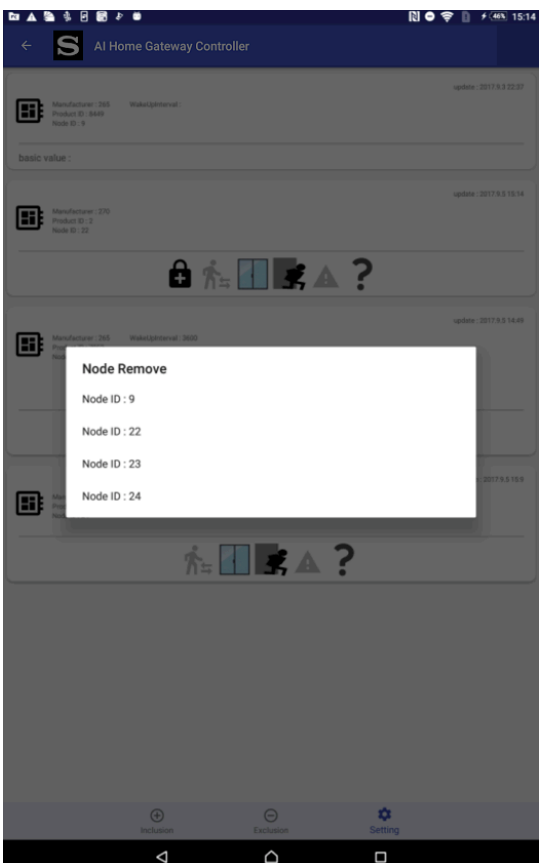
Learn Mode



To add an IoT gateway into another Z-Wave network as a secondary controller or inclusion controller, press “Learn Mode Classic” or “Learn Mode NWI” in the Settings dialog. A gateway Operation dialog will appear and will be displayed during the Learn Mode.

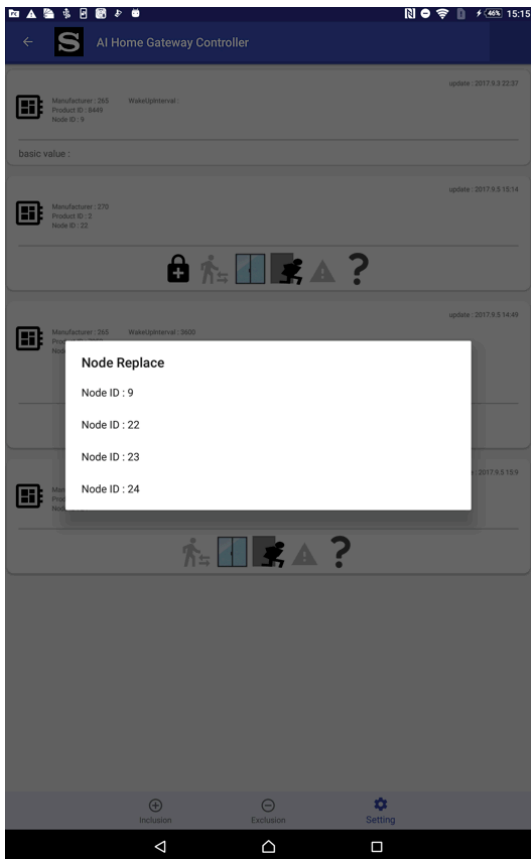
To abort the Learn Mode, press “ABORT”. When the Learn Mode has been stopped, the gateway operation dialog will automatically disappear.

Node Remove



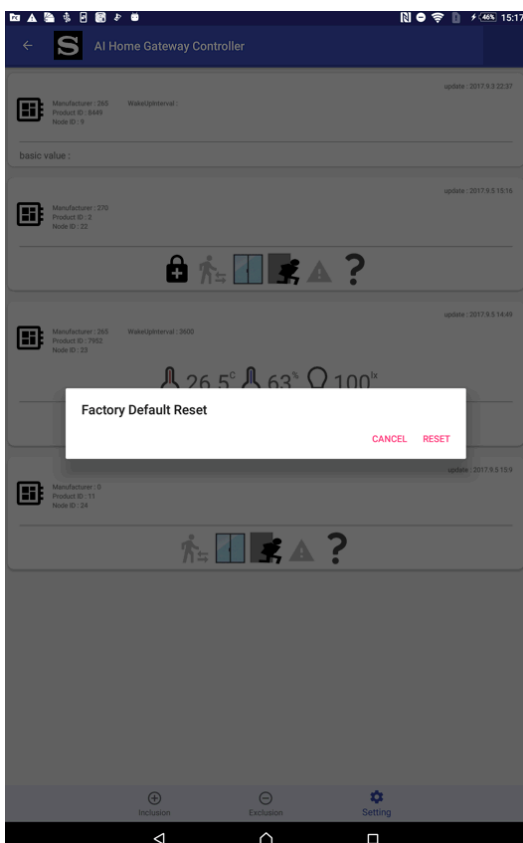
To remove a failing node from the Z-Wave network, press “Node Remove” in the Settings dialog, and tap the Node ID to be removed in the Node Remove dialog.

Node Replace



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

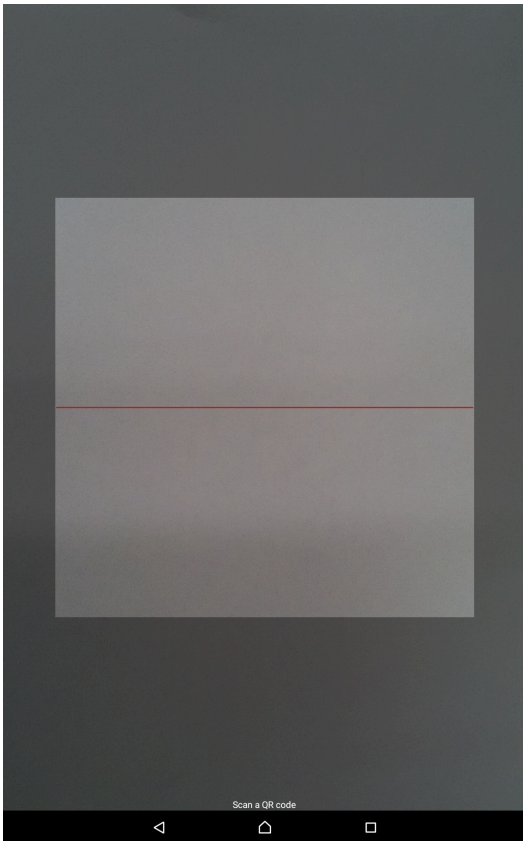
Reset (Factory Default Reset)



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

If this controller is the primary controller for your network, resetting it will result in the nodes in your network becoming 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.

SmartStart Add / Remove



As the camera starts, hold it over the QR code.

Register or Unregister the DSK when you correctly hold the camera over a QR code.

Replication (Copy)

In the event that the gateway is already the controller of the Z-Wave network, put the gateway into Inclusion Mode, and put another controller into the Learn Mode. The Replication will begin and network information will be sent to another controller. In the event that the gateway is integrated into an existing Z-Wave network, put the gateway into Learn Mode, and put the existing controller into Inclusion Mode. The Replication will begin and network information will be received from the existing controller.