

Z-Wave Certification App User Guide

Overview & Limitations

This guide documents explain how to use Z-Wave Certification Application to test Z-Wave functionalities. Z-Wave Certification Application only can be run on android framework, and use IoTService(android service, automatically started when android boot up)
So, if android don't boot up completely, this application couldn't be run properly.

Run Application

1. Turn On Device & Enter Android home.

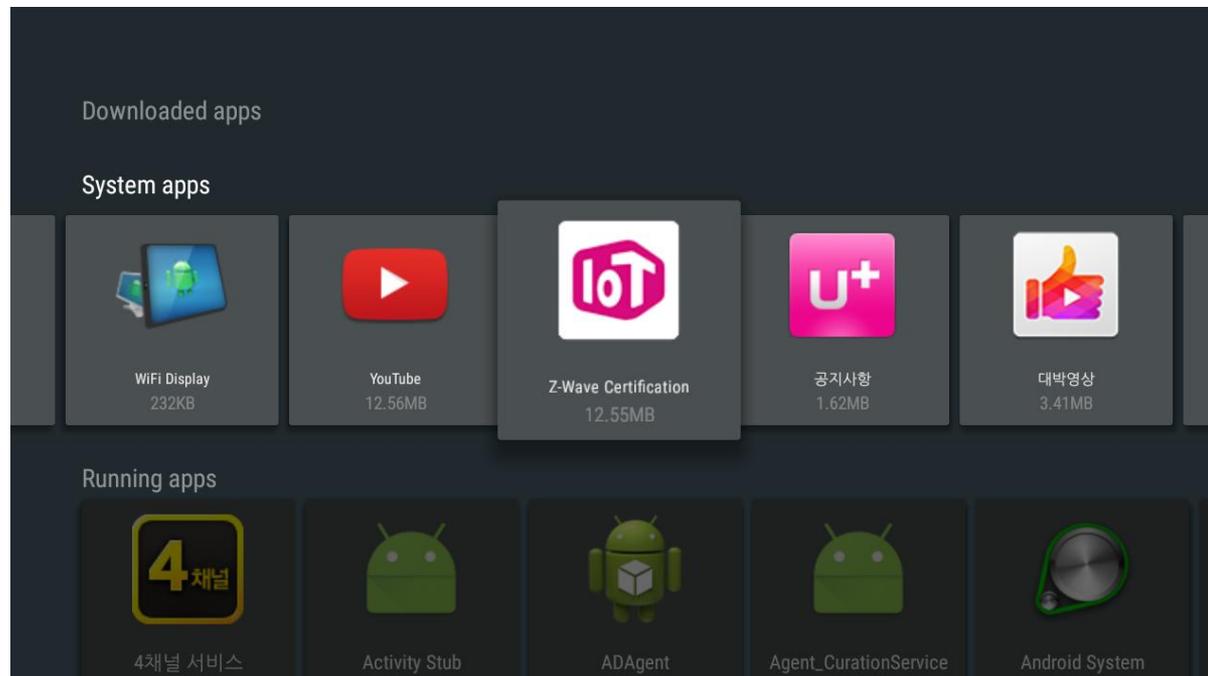
- a. Connect HDMI cable to any TV or Monitor.
- b. Connect Power cable.
- c. Wait some minutes until android boot up.
- d. Push "O" button on remote controller to enter android home.



Run Application

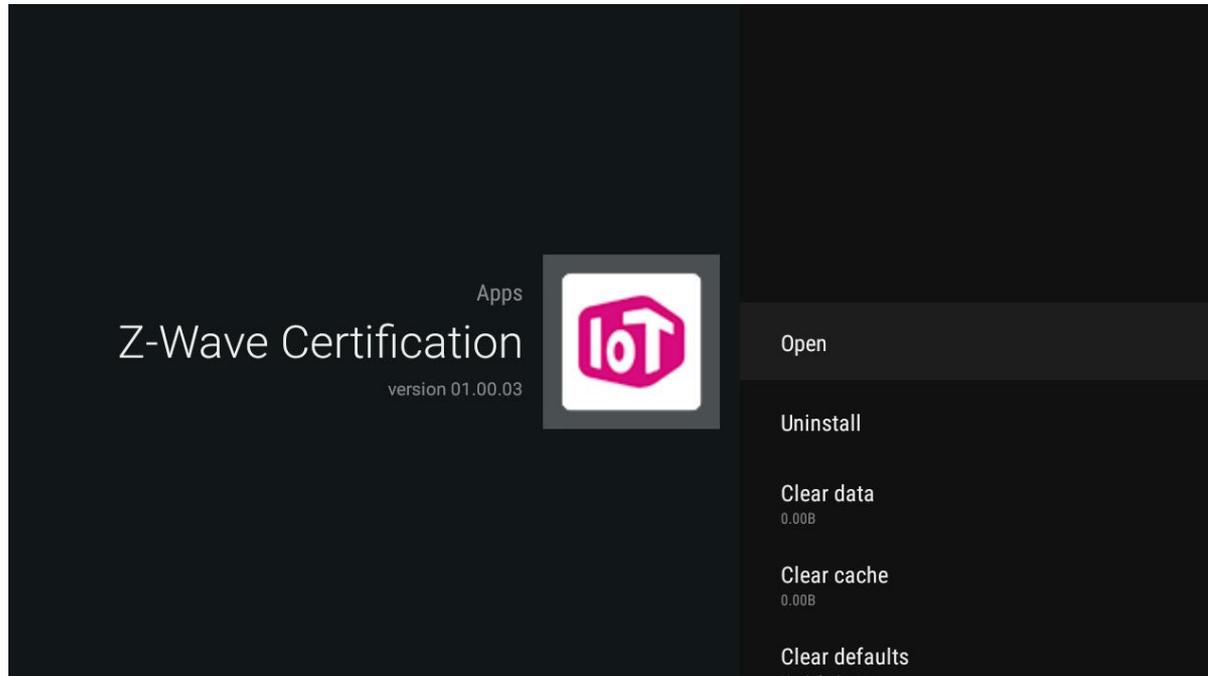
2. How to run Z-Wave Certification

- move : Settings -> Apps -> System Apps -> Run Z-Wave Certification
- Select Z-Wave Certification



Run Application

c. Select "Open"

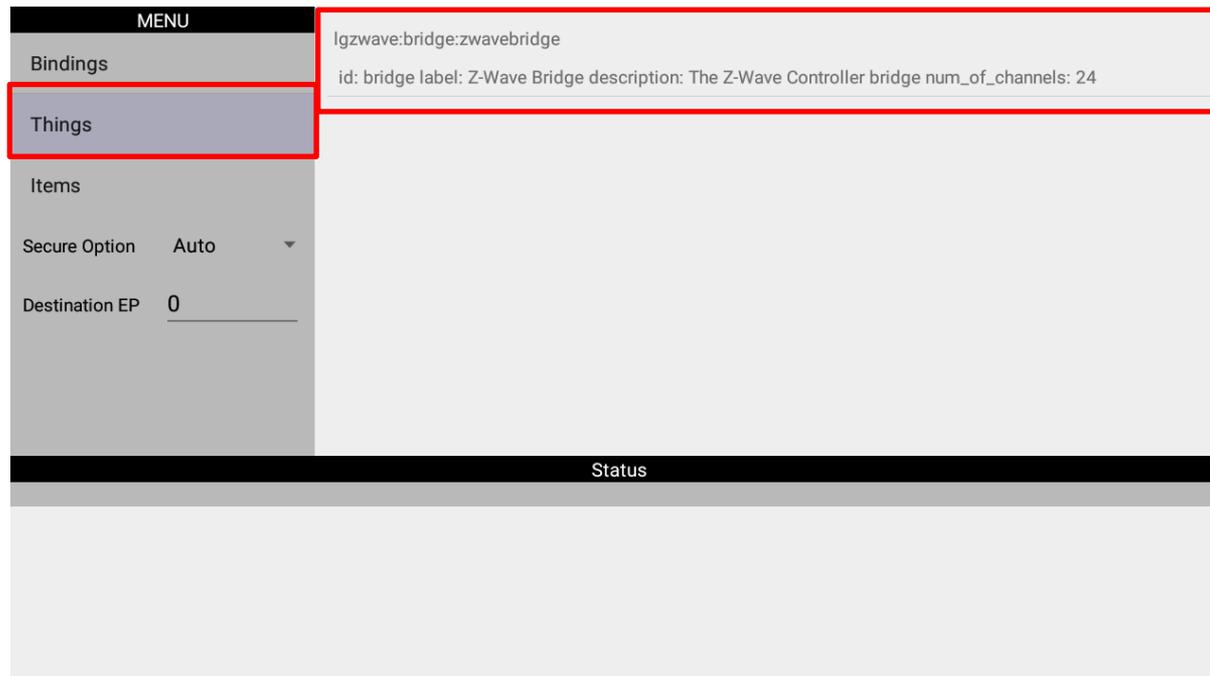


Inclusion & Exclusion

This Chapter describe how to add node for inclusion and remove for exclusion.

1. How to include Z-Wave devices

a. Select "Things" in the left MENU



b. Select "bridge" (lgzwave:bridge:zwavebridge)
- command list will be appeared on the right list.

Inclusion & Exclusion

c. Select "addThing" on the right list

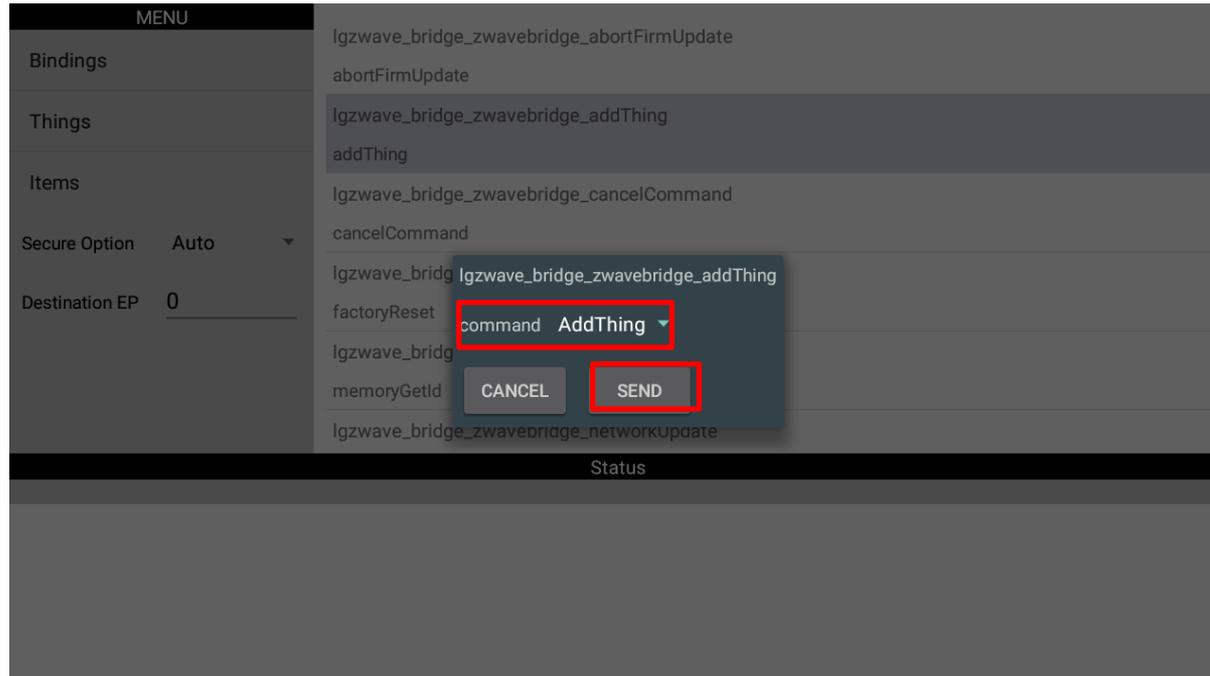
The screenshot shows a Z-Wave controller interface with a 'MENU' on the left and a list of commands on the right. The 'MENU' includes sections for Bindings, Things, Items, Secure Option (set to Auto), and Destination EP (set to 0). The list of commands on the right includes: lgzwave_bridge_zwavebridge_abortFirmUpdate, abortFirmUpdate, lgzwave_bridge_zwavebridge_addThing, addThing, lgzwave_bridge_zwavebridge_cancelCommand, cancelCommand, lgzwave_bridge_zwavebridge_factoryReset, factoryReset, lgzwave_bridge_zwavebridge_memoryGetId, memoryGetId, and lgzwave_bridge_zwavebridge_networkUpdate. The 'addThing' command is highlighted with a red box.

MENU	
Bindings	lgzwave_bridge_zwavebridge_abortFirmUpdate abortFirmUpdate
Things	lgzwave_bridge_zwavebridge_addThing addThing
Items	lgzwave_bridge_zwavebridge_cancelCommand
Secure Option Auto	cancelCommand
Destination EP 0	lgzwave_bridge_zwavebridge_factoryReset factoryReset
	lgzwave_bridge_zwavebridge_memoryGetId memoryGetId
	lgzwave_bridge_zwavebridge_networkUpdate

Status

Inclusion & Exclusion

d. When you select "AddThing", Send Command Dialog popped up.



e. And then Check Command & Push "SEND" Button

f. after that, command will be sent, and wait until attached another Z-Wave node

Inclusion & Exclusion

g. If Node is attached successfully, "success comment" is added Status list.

MENU	
Bindings	lgzwave_bridge_zwavebridge_abortFirmUpdate abortFirmUpdate
Things	lgzwave_bridge_zwavebridge_addThing addThing
Items	lgzwave_bridge_zwavebridge_cancelCommand cancelCommand
Secure Option Auto ▼	lgzwave_bridge_zwavebridge_factoryReset factoryReset
Destination EP 0	lgzwave_bridge_zwavebridge_memoryGetId memoryGetId
	lgzwave_bridge_zwavebridge_networkUpdate

Status
Call : contraller[1] {command:"AddThing"}
Receive : contraller[1] {result:"Success",command:"addThing",Thing uid:"lgzwave:SmartSwitch:zwavebridge:2",Device Type:"ZW_DEVICE",Device Inf:,"Z-WAVE",Device Model Code:"023300490001",Device ID:"0000023349560006"}

Inclusion & Exclusion

g. you can also check in the Thing list by selecting Things on the left MENU

MENU

- Bindings
- Things**
- Items
- Secure Option **Auto**
- Destination EP **0**

lgzwave:bridge:zwavebridge
id: bridge label: Z-Wave Bridge description: The Z-Wave Controller bridge num_of_channels: 24

lgzwave:SmartSwitch:zwavebridge:2
Command Class: 5E 86 72 5A 73 85 59 25 20 7A 8E 60 71 fwFirmwareID2: 02 fwChecksum2: BC fwManufacturerID1: 02 bridge_id: bridge deviceID: 0000023349560006 fwFirmwareID1: 03 description: This is a Switch id: SmartSwitch label: Switch num_of_channels: 38 deviceModelCode: 023300490001 fwManufacturerID2: 33 fwChecksum1: 26

Status

```
{ "result": "Success", "command": "MULTI_CHANNEL_END_POINT_GET" }  
Receive : SmartSwitch[2]  
{ "command": "MULTI_CHANNEL_END_POINT_REPORT", "Dynamic": "00", "Identical": "01", "End Points": "03" }  
Receive : SmartSwitch[2]  
{ "result": "Success", "command": "NOOP" }
```

Inclusion & Exclusion

2. How to exclude Z-Wave devices

- a. Select "Things" in the left MENU
- b. Choose "bridge"

The screenshot shows a user interface for managing Z-Wave devices. On the left, there is a 'MENU' section with several options: Bindings, Things, Items, Secure Option (set to Auto), and Destination EP (set to 0). The 'Things' menu item is selected, and a list of items is displayed on the right. The 'removeThing' option is highlighted with a red box. Below the menu, there is a 'Status' section showing a log of commands and responses.

MENU	nodeList
Bindings	lgzwave_bridge_zwavebridge_otw
Things	otw
Items	lgzwave_bridge_zwavebridge_powerLocallyGet
	powerLocallyGet
	lgzwave_bridge_zwavebridge_powerLocallySet
	powerLocallySet
Secure Option Auto	lgzwave_bridge_zwavebridge_removeThing
Destination EP 0	removeThing
	lgzwave_bridge_zwavebridge_serialApiCapaGet
	serialApiCapaGet

Status

```
{ "result": "Success", "command": "MULTI_CHANNEL_END_POINT_GET" }  
Receive : SmartSwitch[2]  
{ "command": "MULTI_CHANNEL_END_POINT_REPORT", "Dynamic": "00", "Identical": "01", "End Points": "03" }  
Receive : SmartSwitch[2]  
{ "result": "Success", "command": "NOOP" }
```


Inclusion & Exclusion

f. Check "Success Comment"

MENU	
Bindings	nodeList lgzwave_bridge_zwavebridge_otw
Things	otw lgzwave_bridge_zwavebridge_powerLocallyGet
Items	powerLocallyGet lgzwave_bridge_zwavebridge_powerLocallySet
Secure Option	Auto ▾ powerLocallySet
Destination EP	0 lgzwave_bridge_zwavebridge_removeThing removeThing lgzwave_bridge_zwavebridge_serialApiCapaGet serialApiCapaGet

Status

```
{result:"Success",command:"NOOP"}  
Call : contraller[1]  
{command:"RemoveThing"}  
Receive : contraller[1]  
{result:"Success",Thing uid:"lgzwave:SmartSwitch:zwavebridge:2","Device Type":"ZW_DEVICE","Device Inf":"Z-WAVE","Device Model Code":"023300490001","Device ID":"0000023349560006"}
```

Inclusion & Exclusion

g. And also you can see what the Node is excluded on Things list

The screenshot displays a configuration interface for a Z-Wave bridge. On the left, a 'MENU' sidebar contains options: Bindings, Things (highlighted), Items, Secure Option (set to Auto), and Destination EP (set to 0). The main area shows the configuration for 'lgzwave:bridge:zwavebridge' with the ID 'id: bridge label: Z-Wave Bridge description: The Z-Wave Controller bridge num_of_channels: 24'. Below this, a 'Status' section shows a log of events: a successful 'NOOP' command, a call to 'contraller[1]' to 'RemoveThing', and a successful response from 'contraller[1]' with a detailed JSON object: `{\"result\": \"Success\", \"Thing uid\": \"lgzwave:SmartSwitch:zwavebridge:2\", \"Device Type\": \"ZW_DEVICE\", \"Device Inf\": \"Z-WAVE\", \"Device Model Code\": \"023300490001\", \"Device ID\": \"0000023349560006\"}`.

Send & Receive Command

This Chapter describe how to send command to Z-Wave Node. at first, describe full sequence with basic Command, and another command also can be sent like basic Command.

1. Send Basic Command & Receive

a. Choose specific Thing on Things List

The screenshot shows a configuration interface with a 'MENU' on the left and a list of 'Things' on the right. The 'Things' section is highlighted with a red box, showing a specific Z-Wave SmartSwitch device. The interface includes a 'Secure Option' dropdown set to 'Auto' and a 'Destination EP' field set to '0'. A 'Status' bar is visible at the bottom of the main content area.

MENU	
Bindings	lgzwave:bridge:zwavebridge id: bridge label: Z-Wave Bridge description: The Z-Wave Controller bridge num_of_channels: 24
Things	lgzwave:SmartSwitch:zwavebridge:3 Command Class: 5E 86 72 5A 73 85 59 25 20 7A 8E 60 71 fwFirmwareID2: 02 fwChecksum2: BC fwManufacturerID1: 02 bridge_id: bridge deviceID: 0000023349560006 fwFirmwareID1: 03 description: This is a Switch id: SmartSwitch label: Switch num_of_channels: 38 deviceModelCode: 023300490001 fwManufacturerID2: 33 fwChecksum1: 26
Items	
Secure Option	Auto
Destination EP	0

Status

Send & Receive Command

b. Commands List are appeared on the right list

c. Select a Command that you want to call.(at this time, Choose basicCall)

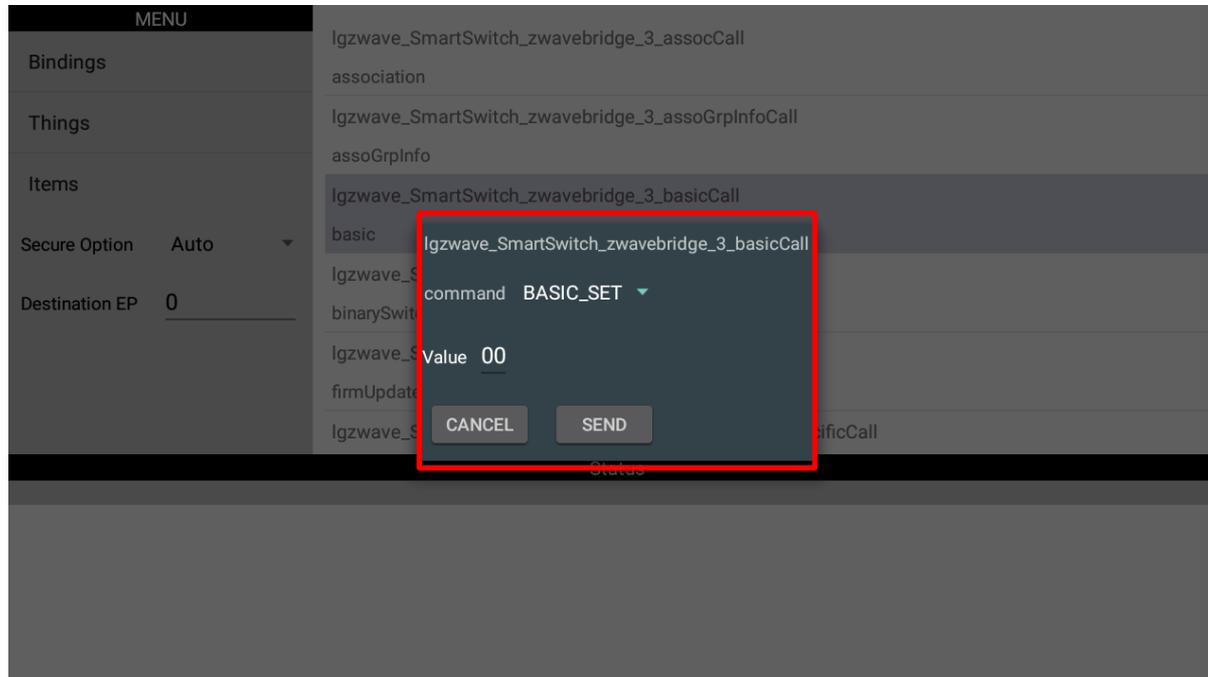
The screenshot displays a control interface with a 'MENU' section on the left and a list of commands on the right. The 'MENU' section includes 'Bindings', 'Things', 'Items', 'Secure Option' (set to 'Auto'), and 'Destination EP' (set to '0'). The command list on the right contains several entries, with 'Igzwave_SmartSwitch_zwavebridge_3_basicCall' highlighted in blue and enclosed in a red rectangular box. Below the command list is a 'Status' section.

MENU	
Bindings	Igzwave_SmartSwitch_zwavebridge_3_assocCall association
Things	Igzwave_SmartSwitch_zwavebridge_3_assoGrpInfoCall assoGrpInfo
Items	Igzwave_SmartSwitch_zwavebridge_3_basicCall basic
Secure Option Auto	Igzwave_SmartSwitch_zwavebridge_3_binarySwitchCall binarySwitch
Destination EP 0	Igzwave_SmartSwitch_zwavebridge_3_firmMdCall firmUpdateMd
	Igzwave_SmartSwitch_zwavebridge_3_manufacturerSpecificCall

Status

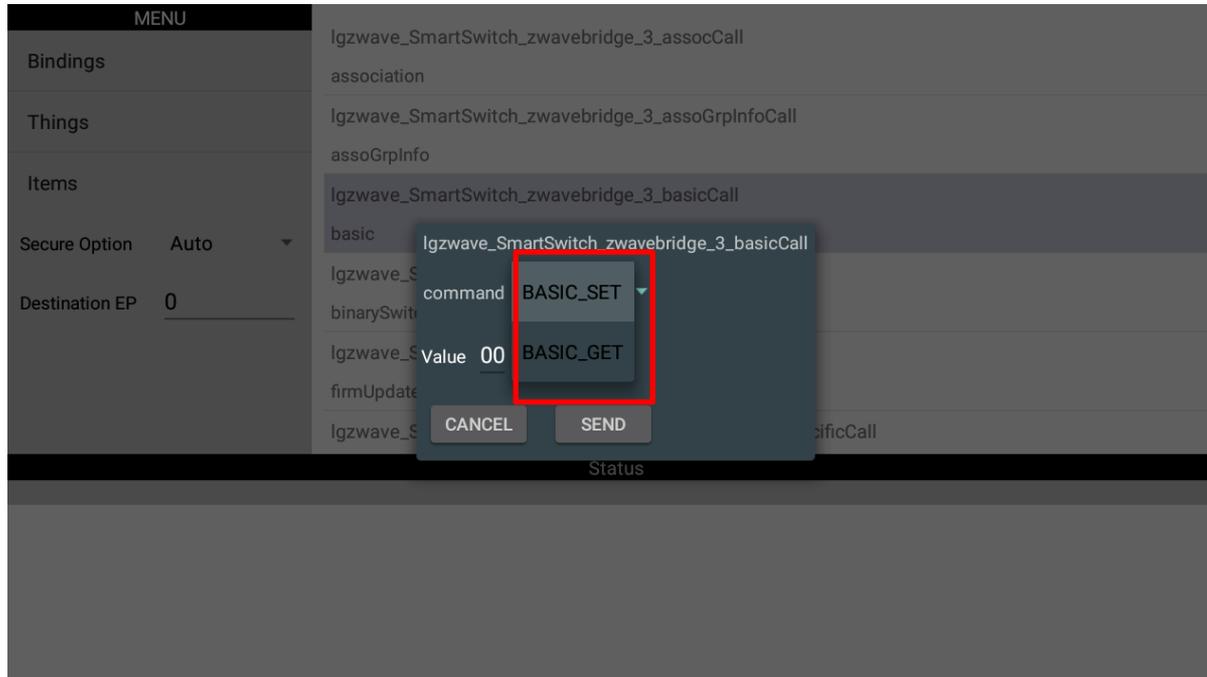
Send & Receive Command

d. "Send Command Dialog" is popped up.



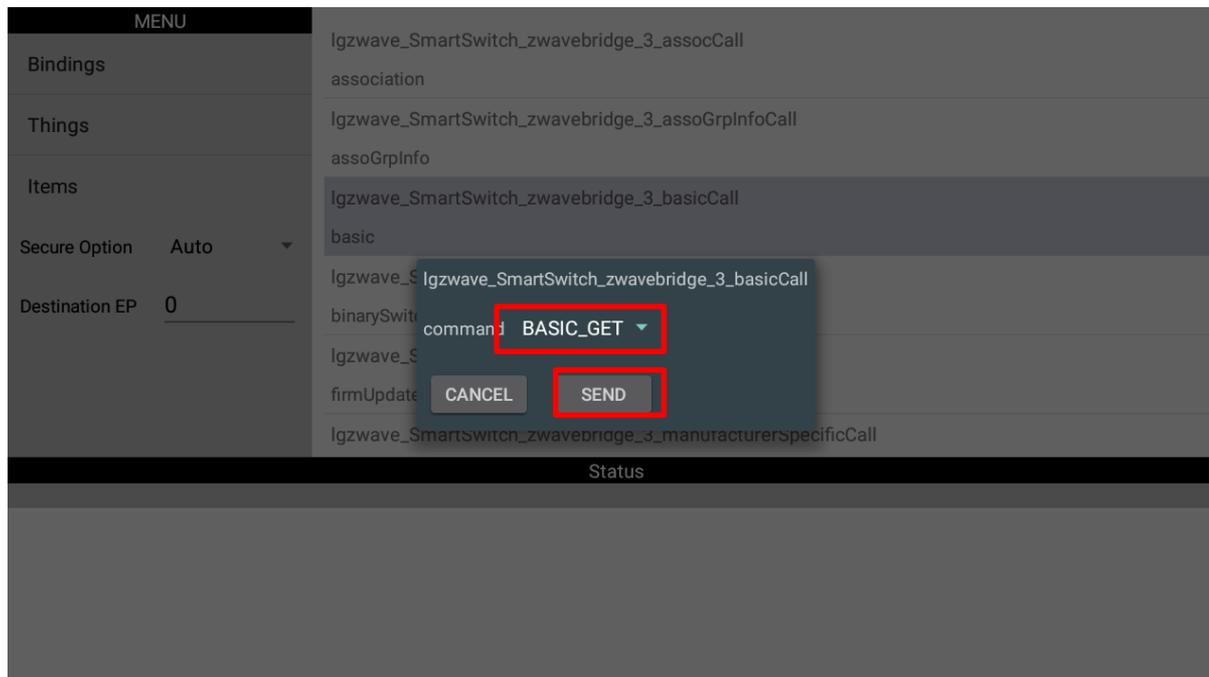
Send & Receive Command

e. Choose Command(BASIC_SET, BASIC_GET)



Send & Receive Command

e. Choose BASIC_GET & PUSH "SEND" Button



Send & Receive Command

e. Check Success comment & Check value

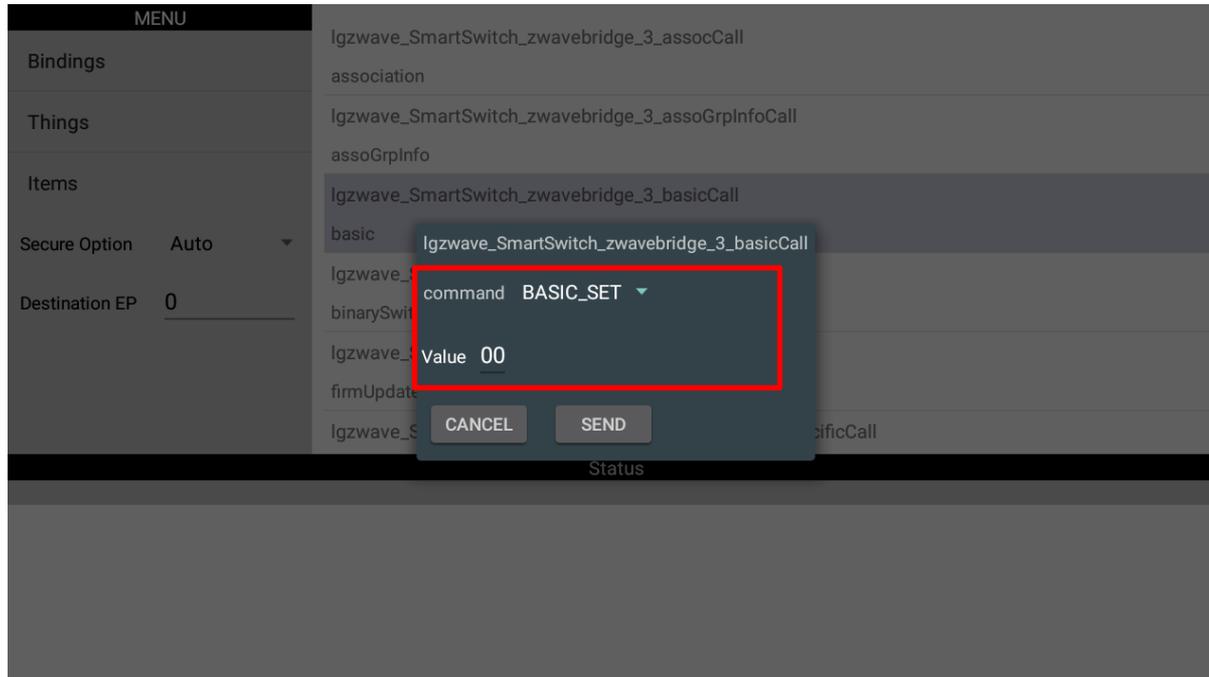
MENU	
Bindings	Igzwave_SmartSwitch_zwavebridge_3_assocCall association
Things	Igzwave_SmartSwitch_zwavebridge_3_assoGrpInfoCall assoGrpInfo
Items	Igzwave_SmartSwitch_zwavebridge_3_basicCall basic
Secure Option <input type="button" value="Auto"/>	Igzwave_SmartSwitch_zwavebridge_3_binarySwitchCall binarySwitch
Destination EP <input type="text" value="0"/>	Igzwave_SmartSwitch_zwavebridge_3_firmMdCall firmUpdateMd Igzwave_SmartSwitch_zwavebridge_3_manufacturerSpecificCall

Status
{ "command": "BASIC_GET", "SecureMode": "Auto" }
Receive : SmartSwitch[3]
{ "result": "Success", "command": "BASIC_GET" }
Receive : SmartSwitch[3]
{ "command": "BASIC_REPORT", "Current Value": "00" }

f. Now Current Value : FF

Send & Receive Command

e. Choose "BASIC_SET" command, Input Value to "00"(Value have to be hexadecimal)



f. Push "SEND" Button

Send & Receive Command

g. Check "Success comment"

MENU	
Bindings	Igzwave_SmartSwitch_zwavebridge_3_assocCall association
Things	Igzwave_SmartSwitch_zwavebridge_3_assoGrpInfoCall assoGrpInfo
Items	Igzwave_SmartSwitch_zwavebridge_3_basicCall basic
Secure Option Auto ▼	Igzwave_SmartSwitch_zwavebridge_3_binarySwitchCall binarySwitch
Destination EP 0	Igzwave_SmartSwitch_zwavebridge_3_firmMdCall firmUpdateMd
	Igzwave_SmartSwitch_zwavebridge_3_manufacturerSpecificCall

Status	
Receive : SmartSwitch[3]	
{result:"Success",command:"BASIC_SET"}	
Receive : SmartSwitch[3]	
{command:"NOTIFICATION_REPORT","V1 Alarm Type":"00","V1 Alarm Level":"00","Notification Status":"FF","Notification Type":"08","Event":"03","Event Parameters Length":"00","Sequence Number":"00"}	
Receive : SmartSwitch[3]	

Send & Receive Command

h. Send BASIC_GET Command & Check Status List

The screenshot displays a configuration interface for a smart switch. On the left, a 'MENU' sidebar lists categories: Bindings, Things, Items, Secure Option (set to 'Auto'), and Destination EP (set to '0'). The main area shows a list of commands, with 'basic' selected. Below this, a 'Status' section shows a log of events. A red box highlights the following log entries:

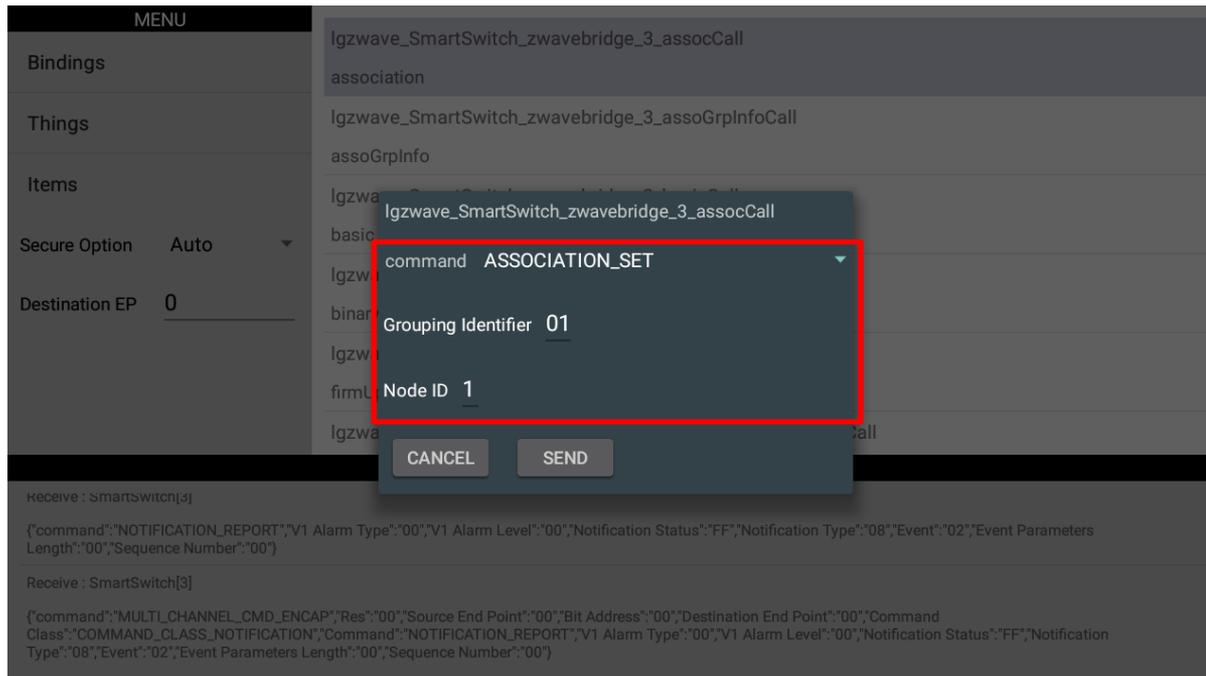
```
Receive : SmartSwitch[3]
{"result":"Success",command":"BASIC_GET"}
Receive : SmartSwitch[3]
{"command":"BASIC_REPORT","Current Value":"FF"}
```

i. Current Value is changed to "00"

Send & Receive Command

2. Send Other Commands & Receive

- Other Commands also can be sent like a basic command, just have different field to be sent. So just fill proper value and then push "SEND" button.
- Commands list only show Command Class, so specific command have to be selected at "Send Command Dialog", value field will be changed according to a command
- All numeric value is sent as hexadecimal.

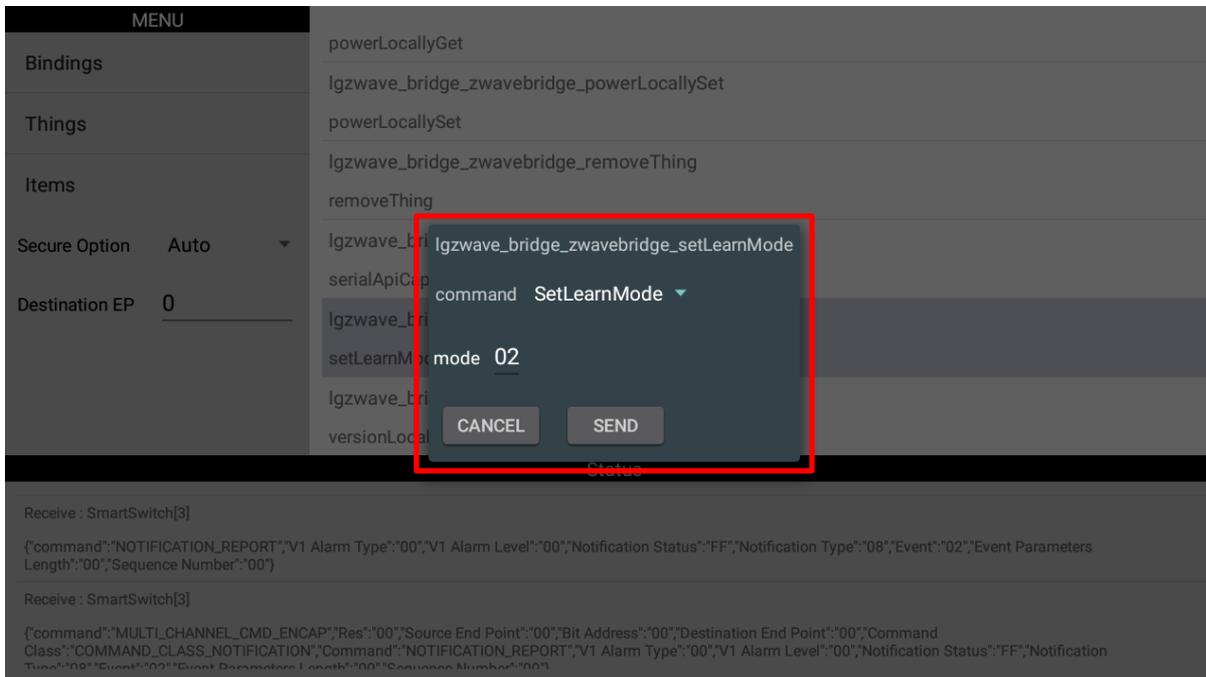


Learn Mode

This Product also can be included a existing network by another controller as an Thing.

“SetLearnMode” helps this functionality

- a. Select “bridge” on the Things list
- b. Select “setLearnMode”(lgzwave_bridge_zwavebridge_setLeanMode)



- c. If another controller ready to get included or excluded, push “SEND” Button

Factory Reset

Z-Wave Network can be reset by call factoryReset Command of bridge.

a. Select "bridge" on the Things list

MENU

Bindings

Things

Items

Secure Option **Auto** ▼

Destination EP **0**

lgzwave:bridge:zwavebridge

id: bridge label: Z-Wave Bridge description: The Z-Wave Controller bridge num_of_channels: 24

lgzwave:SmartSwitch:zwavebridge:3

Command Class: 5E 86 72 5A 73 85 59 25 20 7A 8E 60 71 fwFirmwareID2: 02 fwChecksum2: BC fwManufacturerID1: 02 bridge_id: bridge deviceID: 0000023349560006 fwFirmwareID1: 03 description: This is a Switch id: SmartSwitch label: Switch num_of_channels: 38 deviceModelCode: 023300490001 fwManufacturerID2: 33 fwChecksum1: 26

Status

Receive : SmartSwitch[3]

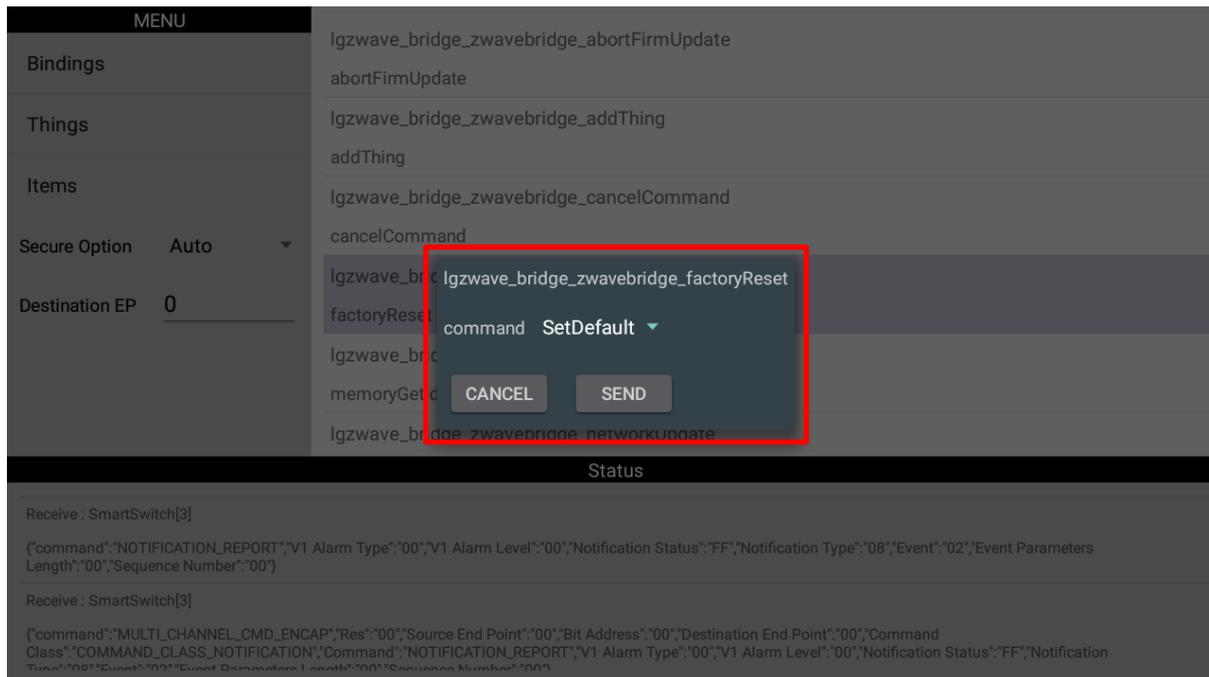
{\"command\":\"NOTIFICATION_REPORT\",\"V1 Alarm Type\":\"00\",\"V1 Alarm Level\":\"00\",\"Notification Status\":\"FF\",\"Notification Type\":\"08\",\"Event\":\"02\",\"Event Parameters Length\":\"00\",\"Sequence Number\":\"00\"}

Receive : SmartSwitch[3]

{\"command\":\"MULTI_CHANNEL_CMD_ENCAP\",\"Res\":\"00\",\"Source End Point\":\"00\",\"Bit Address\":\"00\",\"Destination End Point\":\"00\",\"Command Class\":\"COMMAND_CLASS_NOTIFICATION\",\"Command\":\"NOTIFICATION_REPORT\",\"V1 Alarm Type\":\"00\",\"V1 Alarm Level\":\"00\",\"Notification Status\":\"FF\",\"Notification Type\":\"08\",\"Event\":\"02\",\"Event Parameters Length\":\"00\",\"Sequence Number\":\"00\"}

Factory Reset

- b. Select "factoryReset"
- c. Choose "SetDefault" and Push "SEND" button



Factory Reset

d. Check Network is reset.

The screenshot displays a control interface for a Z-Wave bridge. On the left is a 'MENU' sidebar with options: Bindings, Things (highlighted), Items, Secure Option (set to Auto), and Destination EP (set to 0). The main area shows the bridge ID: 'lgzwave:bridge:zwavebridge' and a description: 'id: bridge label: Z-Wave Bridge description: The Z-Wave Controller bridge num_of_channels: 24'. Below this is a 'Status' section with two log entries from 'SmartSwitch[3]'. The first log shows a 'NOTIFICATION_REPORT' with alarm status 'FF'. The second log shows a 'MULTI_CHANNEL_CMD_ENCAP' command.

```
lgzwave:bridge:zwavebridge
id: bridge label: Z-Wave Bridge description: The Z-Wave Controller bridge num_of_channels: 24

MENU
  Bindings
  Things
  Items
  Secure Option  Auto
  Destination EP  0

Status
Receive : SmartSwitch[3]
{"command":"NOTIFICATION_REPORT","V1 Alarm Type":"00","V1 Alarm Level":"00","Notification Status":"FF","Notification Type":"08","Event":"02","Event Parameters Length":"00","Sequence Number":"00"}
Receive : SmartSwitch[3]
{"command":"MULTI_CHANNEL_CMD_ENCAP","Res":"00","Source End Point":"00","Bit Address":"00","Destination End Point":"00","Command Class":"COMMAND_CLASS_NOTIFICATION","Command":"NOTIFICATION_REPORT","V1 Alarm Type":"00","V1 Alarm Level":"00","Notification Status":"FF","Notification Type":"08","Event":"02","Event Parameters Length":"00","Sequence Number":"00"}
```

Secure Option & Multi Channel Cmd Encap

1. Secure Option

- Application can set secure option, you can select option in drop box list.
- If you select one of option on the drop box list, a command encoded as secure option will be sent.

MENU	
Bindings	manufacturerSpecific
Things	Igzwave_SmartSwitch_zwavebridge_2_multiChannelAssocCall
Items	multiChannelAssociation
Secure Option	Igzwave_SmartSwitch_zwavebridge_2_multiChannelCall
Destination EP	multiChannel
	Igzwave_SmartSwitch_zwavebridge_2_noopCall
	noopCall
	Igzwave_SmartSwitch_zwavebridge_2_notiCall
	notification
	Igzwave_SmartSwitch_zwavebridge_2_powerLevelCall
	powerLevel

Status

Call : SmartSwitch[2]
{\"command\": \"NOOP\", \"SecureMode\": \"Auto\"}

Receive : SmartSwitch[2]
{\"result\": \"Success\", \"command\": \"NOOP\"}

Secure Option & Multi Channel Cmd Encap

2. Multi Channel Cmd Encap

- a. Application can set destination end point.
- b. if Destination EP value is set any number but 0,
A command will be sent as a Multi Channel Cmd Encap

MENU	
Bindings	Igzwave_SmartSwitch_zwavebridge_2_assocCall association
Things	Igzwave_SmartSwitch_zwavebridge_2_assoGrpInfoCall assoGrpInfo
Items	Igzwave_SmartSwitch_zwavebridge_2_basicCall basic
Secure Option Auto ▾	Igzwave_SmartSwitch_zwavebridge_2_binarySwitchCall binarySwitch
Destination EP 0	Igzwave_SmartSwitch_zwavebridge_2_firmMdCall firmUpdateMd
	Igzwave_SmartSwitch_zwavebridge_2_manufacturerSpecificCall

Status
Class::"COMMAND_CLASS_NOTIFICATION";Command::"NOTIFICATION_REPORTING_V1 Alarm Type::"00";V1 Alarm Level::"00";Notification Status::"FF";Notification Type::"08";Event::"02";Event Parameters Length::"00";Sequence Number::"00"
Receive : SmartSwitch[2] {result:"Success",command:"NOOP"}
Receive : SmartSwitch[2] {result:"Success",command:"NOOP"}