

## I. Product Introduction

Z-Wave is an interoperable two-way RF mesh networking technology. The product is designed primarily as a Z-Wave Gateway / Controller to work with other Z-Wave enabled devices.

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

It is suggested to place the product near your home Internet router. Before installing, please check that you have an available Ethernet port in your router and there is an available power socket in the desired location.

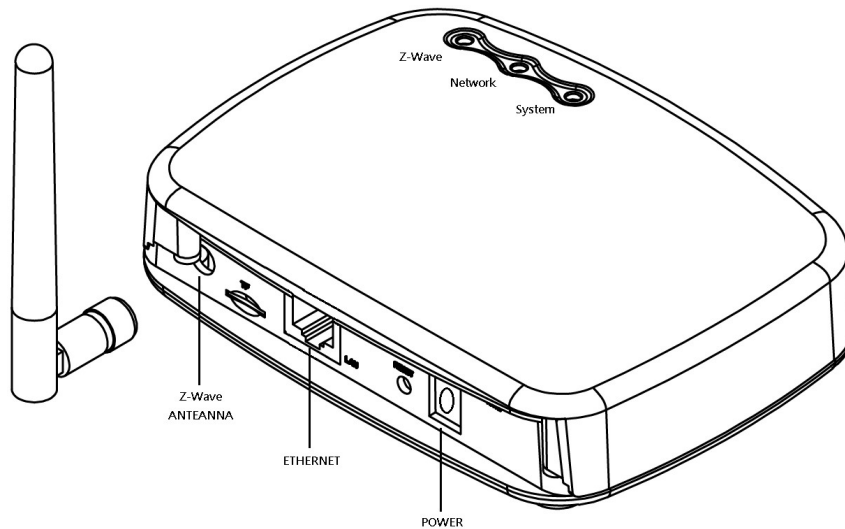


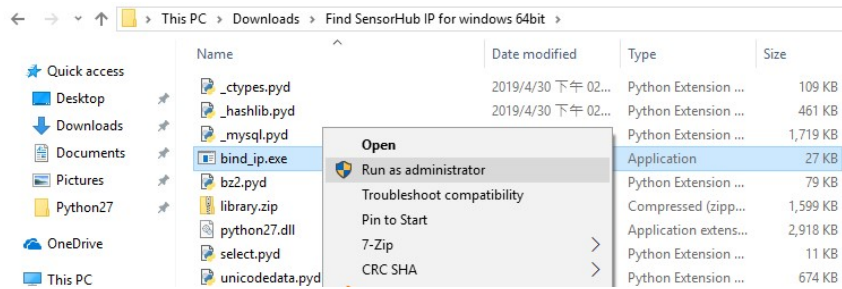
Table 1 Front LEDs Status

LED Status	LED indicator
System led solid green	Gateway current is booting.
System led slowly pulsing green	System ready.
System led quickly pulsing green	Gateway current is factory resetting.
Network led solid green	WAN alive.
Network led solid red	LAN alive but WAN loss connection.
Network led doesn't light up	Gateway doesn't have internet access.
Z-Wave led solid green	Z-wave process is keeping alive.
Z-Wave led doesn't light up	Z-wave application shutdown.

## II. Binding your gateway with computer

Plug the AC adapter and Ethernet cable of your internet modem to the Gateway. Download our application and run as administrator on your PC / laptop ( within the same network with the Gateway ).

[https://drive.google.com/drive/folders/1uxDYwjKzAoxuhQV\\_fPWVrdcRxTWyzS3P?usp=sharing](https://drive.google.com/drive/folders/1uxDYwjKzAoxuhQV_fPWVrdcRxTWyzS3P?usp=sharing)



### III. Access home page

Please use chrome to browse and enter <http://visionsensorhub/webpage/index.html> to control your gateway. If you don't execute bind\_ip.exe you must use IP address connecting to webpage. For example: 192.168.x.x/webpage/index.html.

The default account is **root** and password is **1234**.

### IV. Website Introduction:

- Menu "Home" - displays gateway version and network information.

Current Network Setting	
Mac	9C:65:F9:2A:AF:F1
Mode	dhcp
IPv4	192.168.9.14
Mask	255.255.255.0
Gateway	192.168.9.9

- Menu "SmartStart List" - records Z-Wave S2 device white list and allow user to add in the DSK for the SmartStart devices.

DSK	Status	NodeId	Action

- Menu "Z-Wave Management" - displays Z-Wave sensor network user can control all Z-Wave function.

- Click configuration icon to open detail setting of the node. The supported functions are device dependent.

The screenshot shows the configuration window for Node 7. On the left, there is a node icon with a gear icon for configuration. The node status is 'Switch-0: ON' with an update timestamp of 'Wed May 22 2019 11:01:27'. The main configuration area includes buttons for 'Replace Failed Node', 'Remove Failed Node', and 'Check Failed Node'. Below these are sections for 'Node 7 Information' (Security:50, Application:2.01, Library:3, Protocol:4.05) and 'Association' (Group id: select, Destination Node: select). An 'Association Table' is displayed with one entry: No. 1, Group 1, (Dest.)Node 1, (Dest.)Endpoint 0, and a 'Delete' option. A 'Send Association Setting' button is at the bottom.

- You can see device status history info from bottom icon.

The screenshot shows the history window for Node 14. The node status is 'Switch-0: OFF' with an update timestamp of 'Wed May 15 2019 17:02:18'. The history window is titled 'Node 14 History' and contains a section for 'SWITCH BINARY:'. A table shows the following records:

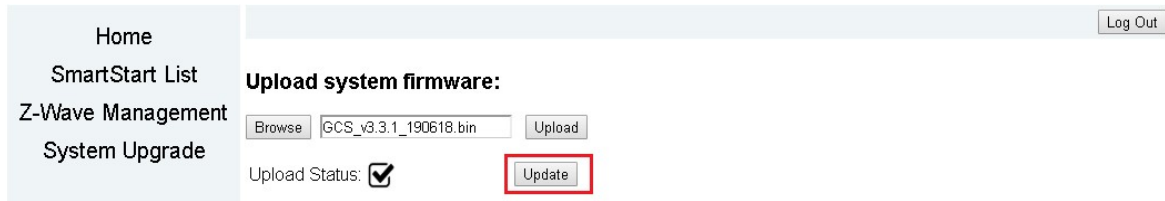
Update	Record
2019-05-15T17:09:52	Endpoint: 0,Status: Off
2019-05-15T17:09:51	Endpoint: 0,Status: On
2019-05-15T17:09:27	Endpoint: 0,Status: Off
...	...

Buttons for 'more' and 'Close' are visible at the bottom of the history window.

- Menu “System Upgrade” - user can download latest firmware from [https://drive.google.com/drive/folders/1uxDYwiKzAoxuhQV\\_fPWVrdcRxTWyzS3P?usp=sharing](https://drive.google.com/drive/folders/1uxDYwiKzAoxuhQV_fPWVrdcRxTWyzS3P?usp=sharing).

The screenshot shows the 'System Upgrade' menu in the user interface. The menu items are 'Home', 'SmartStart List', 'Z-Wave Management', and 'System Upgrade' (highlighted with a red box). The 'System Upgrade' section includes an 'Upload system firmware:' label, a 'Browse' button, a file input field, and an 'Upload' button. Below this is an 'Upload Status:' label. A 'Log Out' button is located in the top right corner.

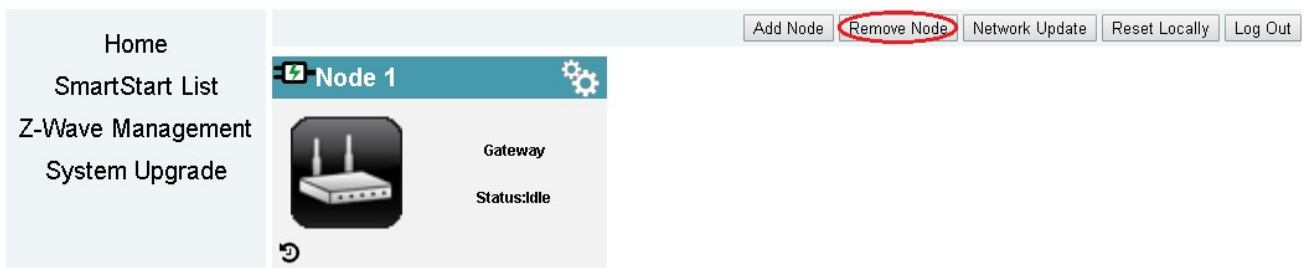
Once the file is uploaded, it will show Upload Status with a tick. Press “Update” to start the updating of the firmware of the Gateway.



## Z-Wave Functionality

### V. Adding Device ( Inclusion )

1) Click button “Add Node” on the webpage.

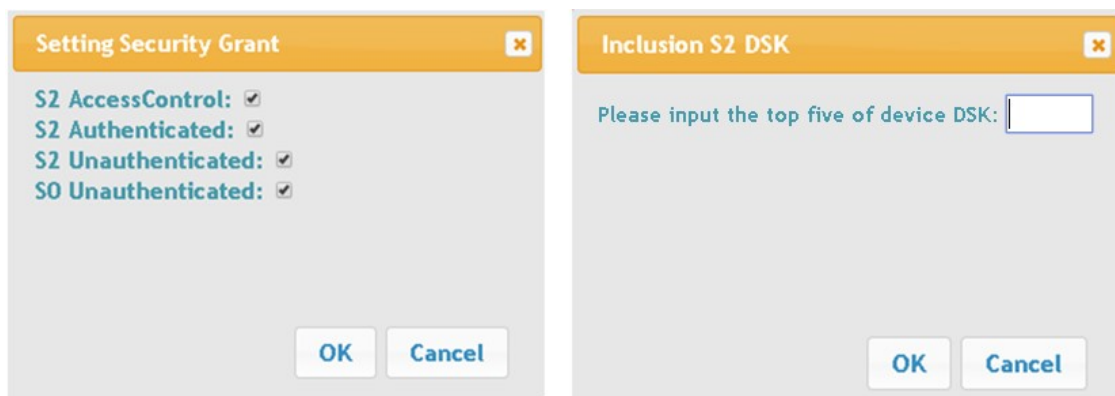


2) System is going to inclusion mode and waiting for user to trigger device inclusion mode. If you would like abort this action just click green bar again.

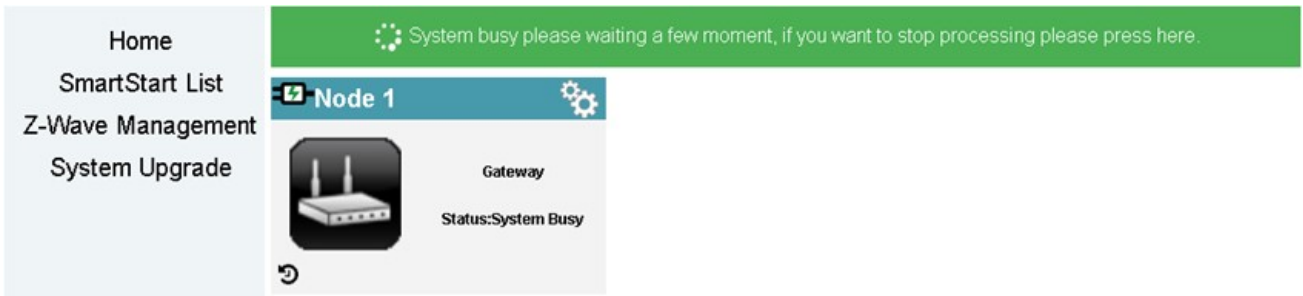


3) After triggering device the gateway will show “Setting Security Grant” if the device support S2 Security. Please choose the security level for the device. If the selection is “S2 Access Control”, the system will prompt user to input the device first 5 digit of the DSK.

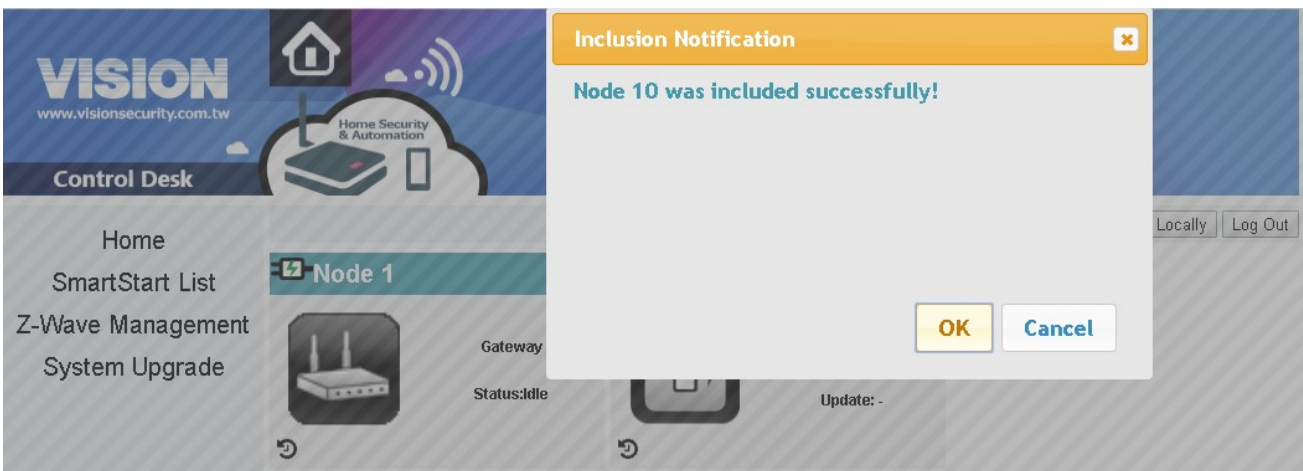
If device only support S0, the gateway will automatically skip “Setting Security Grant” step.



4) Wait for the whole inclusion process to finish, it may take up to 1-2 minutes depending on the device.



5) If successful, the system will show that device included successfully. Otherwise, a failure message will appear.



## VI. Remove Device ( Exclusion )

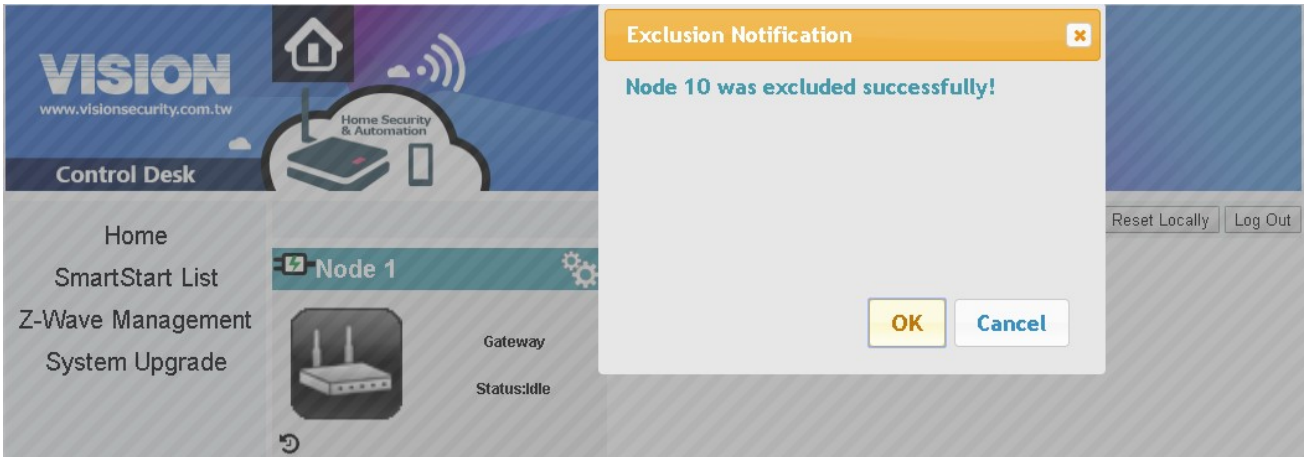
1) Click button "Remove Node".



2) System is going to exclusion mode and waiting for user to trigger the intended device to removal mode. If you would like abort this action just click green bar again.



3) If successful, system will show the exclude node ID on the pop up window.



## VII. Network Replication

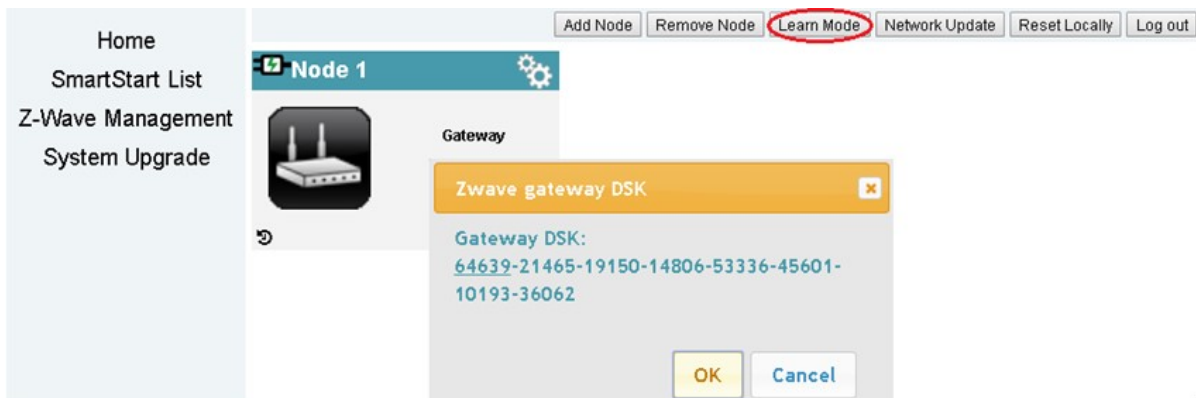
Initiate a replication of network information from your gateway to another controller.

- 1) Start the add device process in Adding Device.
- 2) Follow the manufacturer's instructions of the other **controller** to enable it to go into learn mode.
- 3) Enter DSK code if necessary, and await the whole process to finish.

## VIII. Including the gateway to an existing network

The Z-Wave gateway can also function as a Inclusion / Secondary Controller in an existing Z-Wave network.

- 1) Follow the manufacturer's instructions of the other controller to enable it into Add mode.
- 2) Click "Learn Mode" button. If it is a S2 Controller, the DSK of the Gateway will appear. Please key in the DSK to the other Controller UI when prompted.



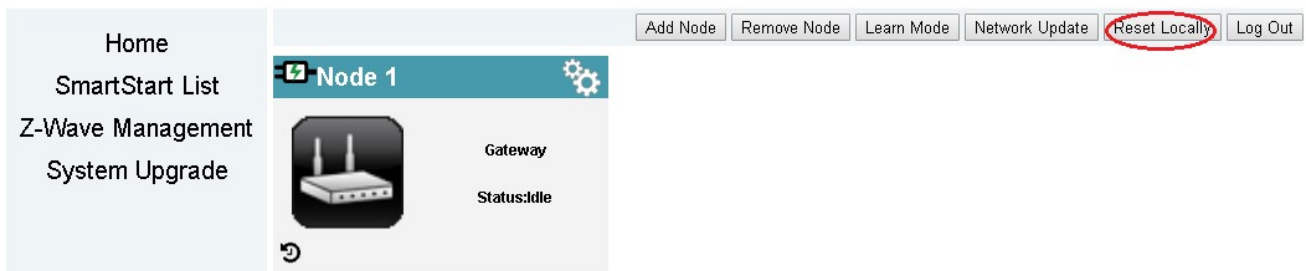
3) When completed, the UI will show the existing Controller and device(s) in the network.



## IX. Factory Default Reset

Factory resets of Z-Wave controller. Do note that once this is done, any device in the Z-Wave network will not be accessible. Hence proceed with caution when doing reset as it is irreversible. 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.

- 1) Select "Reset Locally" button.



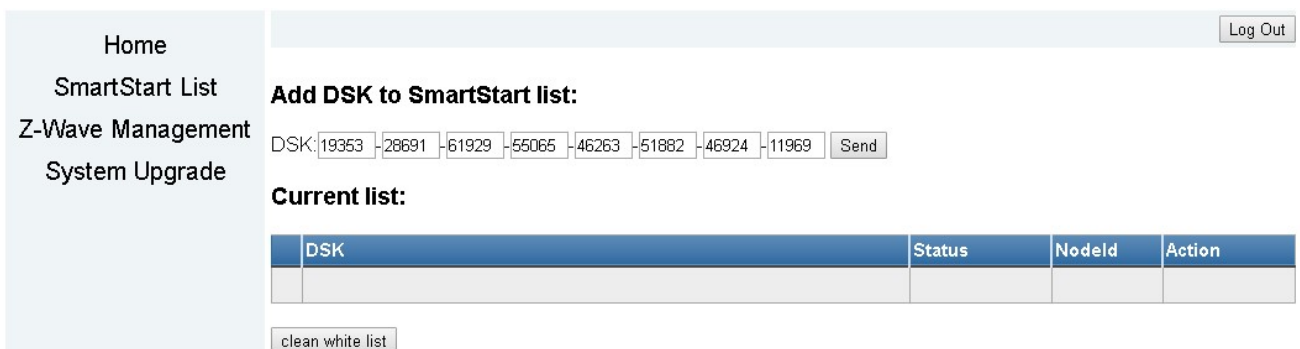
- 2) Confirm the dialog. This will perform a factory reset to the Gateway.



## X. Add/Remove node to SmartStart List

- 1) Click "SmartStart List" from web menu.
- 2) Type in 40 decimals S2 DSK number of the device which user wanted to add in using SmartStart and press "Send".

No further action is required and the SmartStart product will be added automatically within 10 minutes of being switched on in the network vicinity.



Home Log Out

SmartStart List

Z-Wave Management

System Upgrade

**Add DSK to SmartStart list:**

DSK: -------

**Current list:**

DSK	Status	Nodeid	Action
1. 19353-28691-61929-55065-46263-51882-46924-11969	NotIncluded	-.*	<input type="button" value="Remove"/>

3) You can use "Remove" button to remove any DSK or use "clean white list" remove all DSK.

Home Log Out

SmartStart List

Z-Wave Management

System Upgrade

**Add DSK to SmartStart list:**

DSK: -------

**Current list:**

DSK	Status	Nodeid	Action
1. 19353-28691-61929-55065-46263-51882-46924-11969	NotIncluded	-.*	<input type="button" value="Remove"/>

## XI. Additional Information

### *Basic Command Class*

The Gateway does not map the Basic Command Class to any functionality. It ignores Basic Get requests. Basic CC is supported but the device won't perform any further action upon receiving Basic Set Command. In unknown device case we have provide Basic set/get CC to controlled devices.

### *Association Command Class*

The Gateway supports Association Command Class. It has one association group ("Lifeline" group), only one device can be associated to this group. The Gateway will send reset notifications to the associated device when the factory reset is performed on the Gateway.

### *Security Command Class*

The Gateway is a security-enabled device. When a security-enabled Z-Wave device is added to the Gateway's network, its secure communication will be 128-bit AES encrypted. Whether S0 or S2 is used will depend on the included device.



### *Supported Command Classes*

ASSOCIATION_STATUS_V1	TRANSPORT_SERVICE_V2
ASSOCIATION_V2	INCLUSION_CONTROLLER_V1
ASSOCIATION_GRP_INFO_V3	NETWORK_MANAGEMENT_INCLUSION_V3
MANUFACTURER_SPECIFIC_V2	NODE_PROVISIONING_V1
VERSION_V2	POWERLEVEL_V1
ZWAVE_PLUS_INFO_V2	Network Management Basic Node_V2
CRC-16_ENCAPSULATION_V1	Network Management Inclusion_V2
MULTI_COMMAND_V1	Network Management Proxy_V2
SECURITY_0_V1	Network Management Installation and
SECURITY_2_V1	Maintenance_V1
SUPERVISION_V1	

### *Controlled Command Classes*

BASIC_V2	DEVICE_RESET_LOCALLY_V1
BINARY_SWITCH_V2	INCLUSION_CONTROLLER_V1
CENTRAL_SCENE_V3	FIRMWARE_UPDATE_MD_V5
CONFIGURATION_V2	MANUFACTURER_SPECIFIC_V2
DOOR_LOCK_V3	MULTI_CHANNEL_ASSOCIATION_V3
METER_V3	NETWORK_MANAGEMENT_INCLUSION_V3
SENSOR_MULTILEVEL_V11	SECURITY_0_V1
MULTILEVEL_SWITCH_V4	SECURITY_2_V1
NOTIFICATION_V4	SUPERVISION_V1
USER_CODE_V1	POWERLEVEL_V1
ZWAVE_PLUS_INFO_V2	NODE_PROVISIONING_V1
BATTERY_V1	VERSION_V2
TRANSPORT_SERVICE_V2	WAKE_UP_V2
ASSOCIATION_V2	MULTI_CHANNEL_V4
ASSOCIATION_GRP_INFO_V3	ALARM_V1
CRC-16_ENCAPSULATION_V1	