Aeon Labs Minimote

(Z-Wave Remote Controller)

Change history

| Revision	Date	Change Description
1	10/27/2008	Initial draft
2	11/18/2008	Updated Pro Configuration Command Class Definitions
3	02/17/2009	Ability to setup button hold scenes with Configuration Command Class
4	06/09/2009	Updated for 4-Button Minimote
5	07/17/2009	Updated for new Configuration Command Class definitions and support for Association Command Configuration Command Class.

Objective:

The Minimote is a fully functional Z-Wave remote control capable of adding, removing and controlling other Z-Wave devices. It can also become a secondary or inclusion controller to a SIS gateway in the Z-Wave network. Form-factor, industrial design and robust functionality are the major foci. RF range is 100ft. indoors and 300ft. outdoors.

Network setup buttons (such as adding and removing Z-Wave products to the network) are located underneath the bottom-slide door while Z-Wave scene control buttons are easily available to the user on the top of the remote controller.

By taking advantage of the Z-Wave mesh network, commands can be routed to their destination via intermediary "listening" Z-Wave products. Products that are Z-Wave certified can be used and communicate with other Z-Wave certified devices.

The Aeon Labs Minimote is also available in white color.
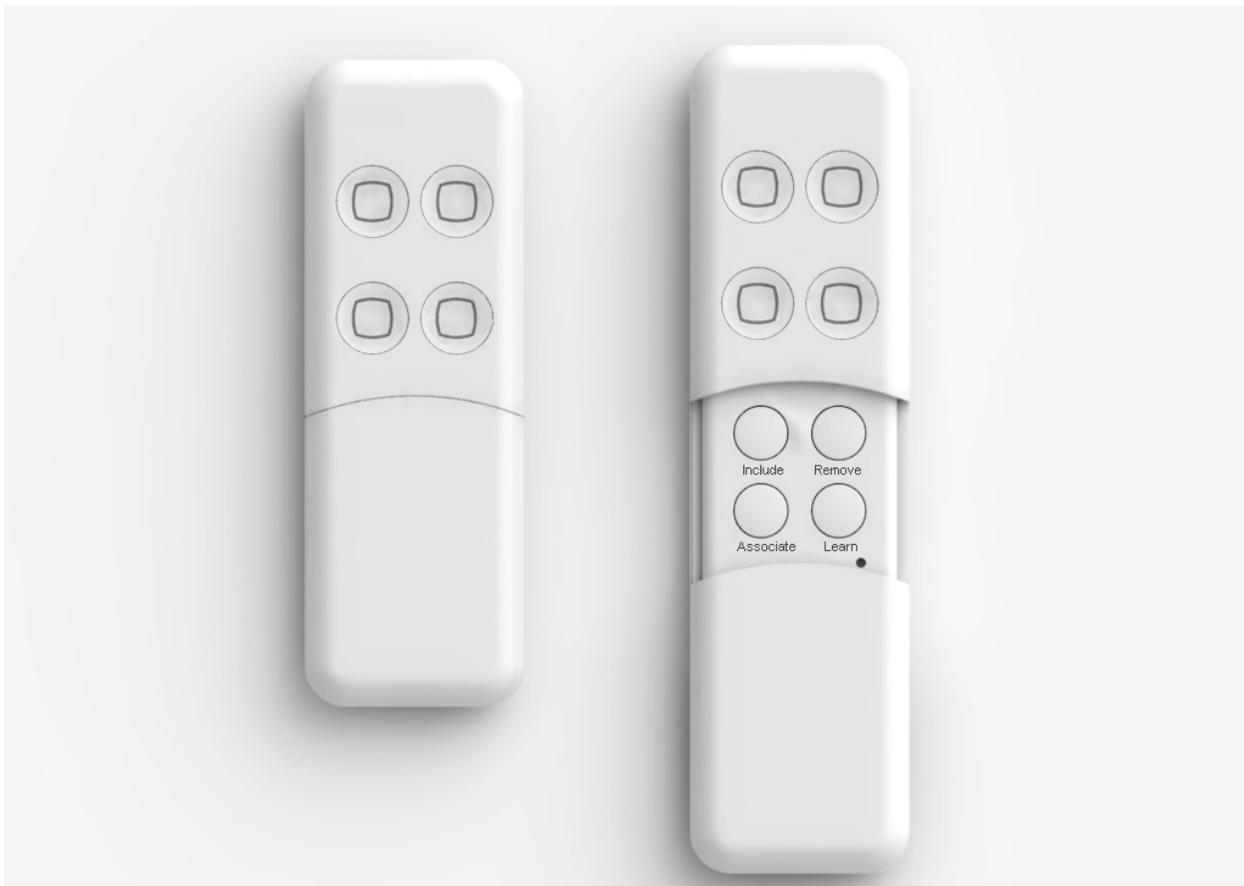
Basic Network Installation Functions:

1) "Include" button – When pressed, the Aeon Labs Minimote remote controller is able to include any other Z-Wave device (both controllers and slaves) within radio range. High power inclusion is implemented. This function only works when the Minimote is a primary remote or inclusion remote to a SIS in the network.

2) "Remove" button – When pressed, the Aeon Labs Minimote remote controller is able to remove any other Z-Wave device (both controllers and slaves) within radio range. High power removal is implemented. This function only works when the Minimote is a primary remote or inclusion remote to a SIS in the network.

3) "Associate" button – When pressed, the Aeon Labs Minimote is able to associate slave devices to sensor type devices such that when sensors are triggered, the devices associated to the sensor will receive Z-Wave data from the sensor. This function works when the Minimote is a primary remote, secondary remote or inclusion remote to a SIS in the network.

4) "Learn" button – When pressed, the Aeon Labs Minimote is able to obtain Z-Wave network information from another controller adding it to a network. Upon a successful "learn", the Minimote will become a secondary or inclusion controller to a SIS in the network.

Basic Groups/Scene Functions:

1) "Group/Scene" buttons (top of enclosure) – When pressed, the Aeon Labs Minimote will execute a scene associated with the particular button pressed. When held, the Minimote is able to dim up/down the dimmable devices associated with that scene.

# Aeon Labs Minimote – Advanced Functions for Developers

<u>Objective:</u>

The Aeon Labs Minimote embodies all the functionalities of a basic Z-Wave remote controller with some added functionalities for Z-Wave Static Controller and Gateway developers.

After a successful "learn", the Minimote will stay awake for a minimum of 10 seconds to receive any information directed to it (i.e. after the Minimote has joined a Z-Wave network).

During the 10 seconds the Minimote is awake, the Configuration Command Class v1 and/or the Association Command Configuration Command Class can be sent by other Z-Wave devices to the Minimote to set up custom Command Classes and Scenes to be sent by the Minimote's buttons (instead of using the default functions of these buttons).

Alternatively, holding the "Learn" button for 3 seconds will trigger the Minimote to broadcast a "Wake Up Notification" (Wake Up Command Class) and stay awake for 10 seconds.
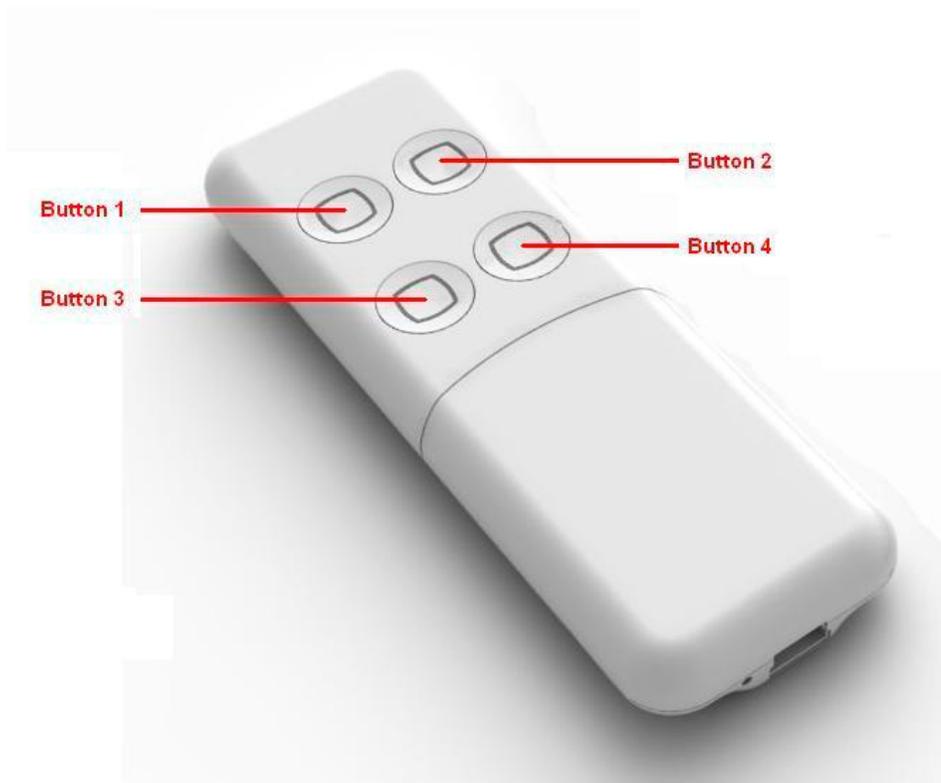
Using the Configuration Command Class:

When using the Configuration Command Class to set up scenes, all values saved will be sent via the Basic Command Class such that most Z-Wave devices can respond. If other (or custom) command classes are required to be sent, please see "Using the Association Command Configuration Command Class" instructions below.

7	6	5	4	3	2	1	0
Command Class = COMMAND_CLASS_CONFIGURATION							
Command = CONFIGURATION_SET							
Parameter Number							
Default	Reserved				Size		
Configuration Value 1							
Configuration Value 2							
…							
Configuration Value N							

- "Default" field (1 bit) – If the default bit is set to 1 the device is set to default factory setting and the configuration values are ignored. If the default bit is set to 0 then the configuration values are used.

- "Size" field (3 bits) – The size field indicates the number of bytes used for the configuration value. This field can take values 1 (001b), 2 (010b) or 4 (100b).

Parameter Numbers for Configuration Command Class Table:

Parameter Number	Button	Function	Configuration Value 1	Configuration Value 2-4
0-19	1 (tap)	Determines what Basic Command Class values are sent to NodeID when the button is pressed during "Scene Mode" (refer to parameter numbers 241-248). All 40 parameters related to the button will be traversed for information in regards to NodeID and Basic Command Class Set values.	NodeID of the device for which the values in Configuration Value 2 will be sent using the Basic Command Class.	Value(s) to be sent using the Basic Command Class.*
20-39	1 (hold)			
40-59	2 (tap)			
60-79	2 (hold)			
80-99	3 (tap)			
100-119	3 (hold)			
120-139	4 (tap)			
140-159	4 (hold)			
160-179	5 (tap)			
180-199	5 (hold)			
200-219	6 (tap)			
220-239	6 (hold)			
241	1	Determines what mode to place the associated button into.	Value that denotes the mode of the button (refer to "Mode Values for Parameter Numbers 241-248" table below).	NA
242	2			
243	3			
244	4			
245	5			
246	6			
247	7			
248	8			

Mode Values for Parameter Numbers 241-248 Table:

Mode Value (Configuration Value 1 for Parameter Numbers 241-248).	Mode Description
0	"Default Mode" – The button on the Minimote uses the factory default functions for operation instead of any special functionality related to the below modes.
1	"Scene Mode" – The button on the Minimote executes a scene from data received for Parameters Numbers 0-239 related to the button being pressed. *
2	"Add Mode" – The button on the Minimote is able to include/add devices into the Z-Wave network.
3	"Remove Mode" – The button on the Minimote is able to remove devices from the Z-Wave network.
4	"Association Mode" – The button on the Minimote is able to associate one device to another.
5	"Learn Mode" – The button on the Minimote is able to allow the Minimote to be included into other Z-Wave networks and to learn Z-Wave netowkr information.

* Note – Buttons 7-8 do not have "Scene Mode".

Using the Association Command Configuration Command Class:

When using the Association Command Configuration Command Class, the Minimote can be setup to send any command class available, even proprietary information.

Each data packet sent by the Minimote can have a maximum payload of 8 bytes.

Note – "Scene Mode" must be enabled for the Minimote buttons to use the Association Command Configuration Command Class via the Configuration Command Class (i.e. Parameter Numbers 240-246 must be set to "Scene Mode". See "Parameter Numbers for Configuration Command Class Table" (above).

7	6	5	4	3	2	1	0
Command Class = COMMAND_CLASS_ASSOCIATION_COMMAND_CONFIGURATION							
Command = COMMAND_CONFIGURATION_SET							
Grouping identifier							
Node ID							
Command length							
Command Class identifier							
Command identifier							
Command byte 1							
..							
Command byte n							

- "Grouping Identifier" field (1 byte) – Matches directly with Parameters Number's 0-239 from the Configuration Command Class. See "Parameter Numbers for Configuration Command Class Table" (above).

- "Node ID" filed (1 byte) - This field contains the node ID within the grouping specified, that should receive the command.

- "Command Length" field (1 byte) – This field specifies the complete command length (including command class and command identifiers). Example: Switch Multilevel Set 0x20. The command length field must be equal to 0x03.

Note – See Section 3.8.3 in the Z-Wave Command Class Spec for further clarifications.