Aeon Labs WallMote Quad

(Z-Wave WallMote)

Change history

Revision	Date	Change Description
1	7/29/2016	Initial draft.
2	8/15/2016	Update
3	8/23/2016	Update
4	9/27/2016	Update parameter 4
5	10/9/2016	Update Section 4.2

Aeon Labs WallMote Quad
Engineering Specifications and Advanced Functions for Developers

Aeon Labs WallMote Quad is a wall controller based on Z-Wave enhanced 232 slave library of V6.61.00.

Aeon Labs WallMote Quad is an intelligent Z-Wave remote controller that mounted on a wall. It has 4 touch buttons that you can easily control the Z-Wave devices in your home network via touching, long pressing or sliding the button areas.
Its surface has a RGB LED to indicate the button actions also accompanied by touch beep and vibration.

The WallMote Quad is also a security Z-Wave plus device and supports the Over The Air (OTA) feature for the product's firmware upgrade.

WallMote Quad can be included and operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers and/or other applications. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.
It also supports Security Command Class and has the AES 128 bit security encryption built right in, so a security enabled controller is needed for fully to utilize its function.

1. Library and Command Classes:

1.1 SDK:6.61.00

1.2 Library:

- Basic Device Class: BASIC_TYPE_ROUTING_SLAVE
- Generic Device class: GENERIC_TYPE_WALL_CONTROLLER
- Specific Device Class: SPECIFIC_TYPE_BASIC_WALL_CONTROLLER

1.3 Commands:

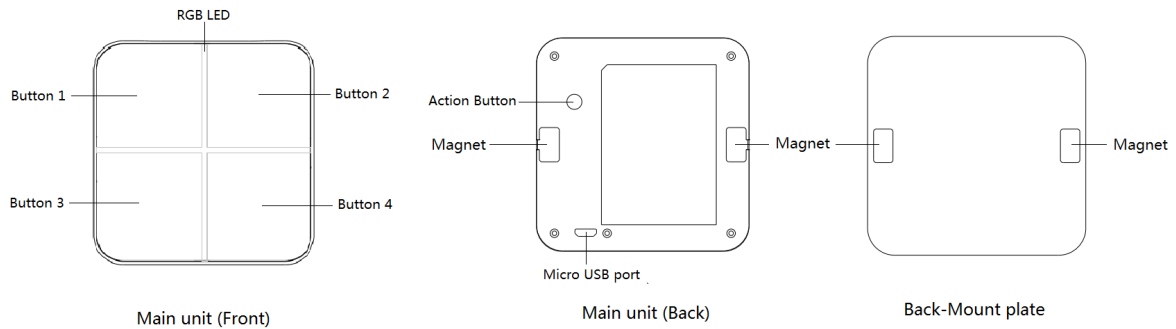|	Non-Security Controller	Security Controller

Node Info Frame	COMMAND_CLASS_ZWAVEPLUS_INFO_V2, COMMAND_CLASS_ASSOCIATION_V2, COMMAND_CLASS_ASSOCIATION_GRP_INFO_V1, COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION_V3, COMMAND_CLASS_MULTI_CHANNEL_V4, COMMAND_CLASS_VERSION_V2, COMMAND_CLASS_CONFIGURATION_V1, COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2, COMMAND_CLASS_DEVICE_RESET_LOCALLY_V1, COMMAND_CLASS_POWERLEVEL_V1, COMMAND_CLASS_WAKE_UP_V2, COMMAND_CLASS_BATTERY V1 COMMAND_CLASS_NOTIFICATION_V4, COMMAND_CLASS_CENTRAL_SCENE_V2 COMMAND_CLASS_SECURITY, COMMAND_CLASS_FIRMWARE_UPDATE_MD_V2, COMMAND_CLASS_MARK, COMMAND_CLASS_SWITCH_BINARY_V2, COMMAND_CLASS_SWITCH_MULTILEVEL_V4,	COMMAND_CLASS_ZWAVEPLUS_INFO V2, COMMAND_CLASS_POWERLEVEL V1, COMMAND_CLASS_SECURITY
Security Command Supported Report Frame	-	COMMAND_CLASS_VERSION V2, COMMAND_CLASS_ASSOCIATION V2, COMMAND_CLASS_ASSOCIATION_GRP_INFO V1, COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION V3, COMMAND_CLASS_MULTI_CHANNEL V4, COMMAND_CLASS_MANUFACTURER_SPECIFICV2, COMMAND_CLASS_DEVICE_RESET_LOCALLY V1, COMMAND_CLASS_WAKE_UP V2, COMMAND_CLASS_BATTERY V1 COMMAND_CLASS_NOTIFICATION V4, COMMAND_CLASS_CENTRAL_SCENE_V2 COMMAND_CLASS_CONFIGURATION V1, COMMAND_CLASS_FIRMWARE_UPDATE_MD V2, COMMAND_CLASS_MARK, COMMAND_CLASS_SWITCH_BINARY V2, COMMAND_CLASS_SWITCH_MULTILEVEL V4,

2. Technical Specifications

Operating distance: Up to 394 feet/120 meters outdoors.

3. Familiarize yourself with your WallMote Quad

3.1 Interface

RGB LED · Button 1 · Button 2 · Button 3 · Button 4 · Main unit (Front) · Action Button · Magnet · Micro USB port · Main unit (Back) · Magnet · Magnet · Back-Mount plate

4. Button functions

4.1 Action Button

Trigger	Description
Click the Action Button one time	1. **Send out a node info frame that does not contain Security CC in the node info list.** 2. **Add WallMote into Z-Wave Network**_(Non-security inclusion)_ 1) Let the primary controller into inclusion mode (If you don't know how to do this, please refer to its manual). 2) Press the Action Button. 3) If your WallMote Quad has been successfully added to your Z-Wave network, its green LED will be solid for 2 seconds and then off. Otherwise, please repeat the process from step 2 3. **Remove WallMote from Z-Wave Network:** 1) Let the primary controller into exclusion mode (If you don't know how to do this, refer to its manual). 2) Press the Action Button. 3) If your WallMote Quad is successfully removed from the Z-Wave network, the LED will become a colourful gradient for a few seconds and then turn off. Otherwise, please repeat the process from step 2. **Note**: If WallMote is removed from Z-wave network, it will be reset to factory default.
Click the Action Button 2 times within 1.5 seconds	1. **Send out a node info frame that contains the Security CC in the node info list.** 2. **Add WallMote into Z-Wave Network**_(Security inclusion)_ 1) Let the primary controller into inclusion mode (If you don't know how to do this, please refer to its manual). 2) Press the Action Button 2 times. 3) The blue LED will be on for 2 seconds. Otherwise, please repeat the process from step 2.

	3. **Remove WallMote from Z-Wave Network:**
	1) Let the primary controller into exclusion mode (If you don't know how to do this, refer to its manual).
	2) Press the Action Button.
	3) If your WallMote Quad is successfully removed from the Z-Wave network, the LED will become a colourful gradient for a few seconds and then turn off. Otherwise, please repeat the process from step 2.
	Note: If WallMote is removed from Z-wave network, it will be reset to factory default.
Press and hold Action Button for 3 seconds and then released	1. Send Wake Up Notification. 2. Toggle on/off 10 minutes wake up state.
Press and hold Action Button for 13 seconds and then released	Enable/disable the touch sound.
Press and hold Action Button for 18 seconds and then released	Enable/disable the touch vibration.
Press and hold Action Button for 20 seconds and then released	**Reset WallMote to Factory Default:** **Note**: 1. This procedure should only be used when the primary controller is missing or inoperable. 2. Reset WallMote to factory default settings will: a) remove WallMote from Z-Wave network; b) clear the Association settings; c) restore the configuration settings to the default.

4.2 Control buttons

Association Group	Control Button	Control commands	Description
1 (Lifeline)	Button 1 to 4	Central Scene Notification	Central Scene control via Button 1 to 4

2	Button 1	Basic Set	On/Off control via Button 1
3	Button 1	Multilevel Switch Set	Dimmer control via Button 1
4	Button 2	Basic Set	On/Off control via Button 2
5	Button 2	Multilevel Switch Set	Dimmer control via Button 2
6	Button 3	Basic Set	On/Off control via Button 3
7	Button 3	Multilevel Switch Set	Dimmer control via Button 3
8	Button 4	Basic Set	On/Off control via Button 4
9	Button 4	Multilevel Switch Set	Dimmer control via Button 4

The priority of destination node that Wake Up Notification will be sent to：

Destination nodes	Priority
The Node configured by Wake up Interval set command	Supreme
First Associated Node	Middle
Broadcast	Low

5. Special rule of each command

5.1 Basic Command Class

When the control button is pressed once, the WallMote will send Basic Set=0x00/0xFF to the associated nodes in association group 2, 4, 6 or 8.

5.2 Z-Wave Plus Info Report Command Class

Parameter	Value
Z-Wave Plus Version	1
Role Type	4 (ROLE_TYPE_SLAVE_PORTABLE)
Node Type	0 (NODE_TYPE_ZWAVEPLUS_NODE)
Installer Icon Type	0x140C (ICON_TYPE_SPECIFIC_DIMMER_WALL_SWITCH_FOUR_BUTTONS)
User Icon Type	0x140C (ICON_TYPE_SPECIFIC_DIMMER_WALL_SWITCH_FOUR_BUTTONS)

5.3 Manufacturer Specific Report

Parameter	Value
Manufacturer ID 1	AEON LABS=0x00
Manufacturer ID 2	AEON LABS=0x86
Product Type ID 1	EU=0x00, US=0x01, AU=0x02 CN=0x1D (29)

Product Type ID 2	0x02
Product ID 1	0x00
Product ID 2	0x82 (130)

5.4 Association Command Class

The WallMote supports 9 association groups. Group 1 is the lifeline group and can add max 1 node. Group 2-9 can add Max 5 nodes.

Association Group	Control Button	Nodes	Send commands
1 (Lifeline)	Button 1 to 4	1	Central Scene Notification
2	Button 1	[1,5]	Basic Set
3	Button 1		Multilevel Switch Set
4	Button 2		Basic Set
5	Button 2		Multilevel Switch Set
6	Button 3		Basic Set
7	Button 3		Multilevel Switch Set
8	Button 4		Basic Set
9	Button 4		Multilevel Switch Set

5.5 Association Group Info Command Class

5.5.1　Association Group Info Report Command Class

Profile:　General: NA (Profile MSB=0, Profile LSB=1)

5.5.2　Association Group Name Report Command Class

Group 1：Lifeline

5.6 Notification Command Class

Notification Type		Notification Events	
Power Management	0x08	Previous Events cleared	0x00
		Battery is charging	0x0C
		Battery is fully charged	0x0D
		Charge battery soon	0x0E
		Charge battery now	0x0F

5.7 Configuration Set Command Class

7	6	5	4	3	2	1	0
Command Class = COMMAND_CLASS_CONFIGURATION							
Command = CONFIGURATION_SET							
Parameter Number							
Default	Reserved				Size		
Configuration Value 1(MSB)							
Configuration Value 2							
....							
Configuration Value n(LSB)							

Parameter Number Definitions (8 bit):

Parameter Number Hex / Decimal	Description	Default Value	Size
0x01 (1)	Enable/disable the touch sound. 0 = Disable 1 = Enable	1	1
0x02 (2)	Enable/disable the touch vibration. 0 = Disable 1 = Enable	1	1
0x03 (3)	Enable/disable the function of button slide. 0 = Disable 1 = Enable	1	1
0x04 (4)	To configure which report will be sent when pressing the buttons. 0 = Send nothing. 1 = Send Central Scene Command Notification 3 = Send Central Scene Command Notification and Configuration report.	1	1
0x5 (5)	To configure which color will be displayed when the button is pressed. Value1 = Red. Value2 = Green. Value3 = Blue. Value4 = Reserved.	0x00 00 FF 00	4

0x21 (33)	Test the LED, buzzer and vibrator. Value1 = Red. Value2 = Green. Value3 = Blue. Value4 = buzzer and vibrator. (1=ON, 0=OFF) Note: This parameter is only used as Set usage.	-	4
0x27 (39)	Set the low battery value Range: 10% - 50%.	20	1
0xFF (255)	1, Value=0x55555555、Default=1、Size=4 Reset to factory default setting and removed from the z-wave network	N/A	4
	2, Value=0、Default=1、Size=1 Reset to factory default setting	N/A	1