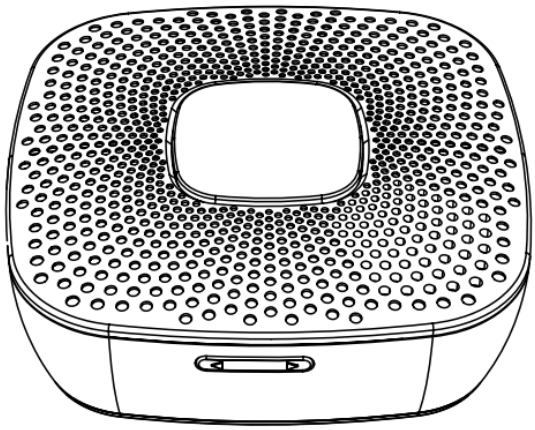
Aeon Labs Garage Door Controller Gen5

(Z-wave Garage Door Controller)



Revision Record:

Revision	Date	Change Description
1	1/16/2015	Initial draft.
2	3/19/2015	Modify Sensor pairing
3	6/03/2015	Update
4	18/8/2015	Update

Aeon Labs Garage Door Controller Gen5
Engineering Specifications and Advanced Functions for Developers

Aeon Labs Garage Door Controller is a smart and wireless Garage Door Control system, you can control the garage door to open, close, or stop moving via wireless signal on your gateway client or phone application.
The Garage Door Controller allows you to configure different alarm sounds to indicate the door's action. Each action alarm sound can be customized. To change or update new alarm sounds for the Garage Door Controller, connect the Garage Door Controller to your PC host with a USB cable and download your sound files to the flash memory (128 MB) of the Garage Door Controller.
It 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 is also a security Z-wave device and supports the Over The Air (OTA) feature for the product's firmware upgrade.

1. Library and Command Classes

1.1 SDK: 6.51.06

1.2 Library

- Basic Device Class: BASIC_TYPE_ROUTING_SLAVE
- Generic Device class: GENERIC_TYPE_ENTRY_CONTROL
- Specific Device Class: SPECIFIC_TYPE_SECURE_DOOR

1.3 Commands Class

	Included Non-Secure Network	Included Secure Network
Node Info Frame	COMMAND_CLASS_ZWAVEPLUS_INFO V2 COMMAND_CLASS_SWITCH_BINARY V1 COMMAND_CLASS_CONFIGURATION V1 COMMAND_CLASS_ASSOCIATION_GRP_INFO V1 COMMAND_CLASS_ASSOCIATION V2 COMMAND_CLASS_MANUFACTURER_SPECIFIC V2 COMMAND_CLASS_VERSION V2 COMMAND_CLASS_FIRMWARE_UPDATE_MD V2 COMMAND_CLASS_POWERLEVEL V1 COMMAND_CLASS_BARRIER_OPERATOR, COMMAND_CLASS_APPLICATION_STATUS,	COMMAND_CLASS_ZWAVEPLUS_INFO V2 COMMAND_CLASS_VERSION V2 COMMAND_CLASS_MANUFACTURER_SPECIFIC V2 COMMAND_CLASS_SECURITY V1 COMMAND_CLASS_MARK V1 COMMAND_CLASS_DEVICE_RESET_LOCALLY V1 COMMAND_CLASS_HAIL V1

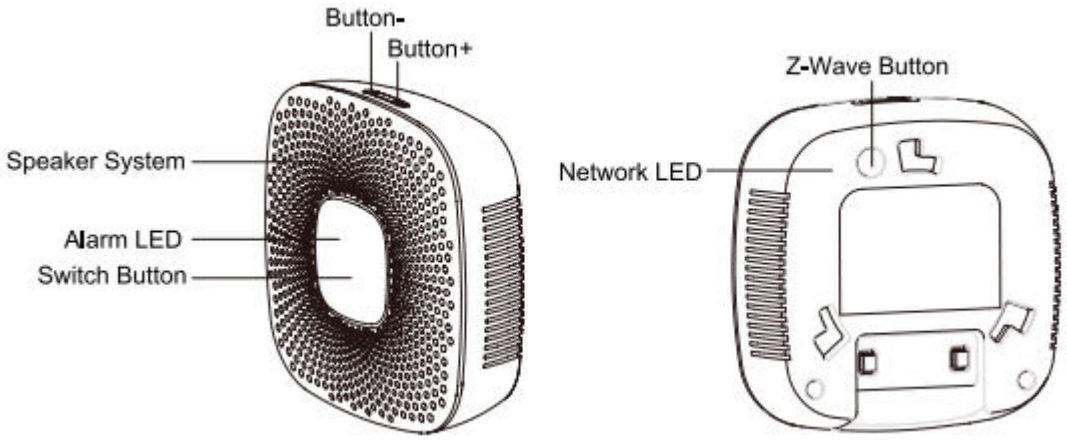
	COMMAND_CLASS_NOTIFICATION_V4, COMMAND_CLASS_SECURITY V1 COMMAND_CLASS_MARK V1 COMMAND_CLASS_DEVICE_RESET_LOCALLY V1 COMMAND_CLASS_HAIL V1	
Security Command Supported Report Frame	-	COMMAND_CLASS_SWITCH_BINARY V1 COMMAND_CLASS_CONFIGURATION V1 COMMAND_CLASS_ASSOCIATION_GRP_INFO V1 COMMAND_CLASS_ASSOCIATION V2 COMMAND_CLASS_FIRMWARE_UPDATE_MD V2 COMMAND_CLASS_POWERLEVEL V1 COMMAND_CLASS_BARRIER_OPERATOR COMMAND_CLASS_APPLICATION_STATUS COMMAND_CLASS_NOTIFICATION_V4

2. Technical Specifications

Operating Distance: Up to 980 feet/300 metres outdoors.

3. Familiarize Yourself with Your Garage Door Controller

3.1 Interface



4. All functions of each trigger

4.1 Functions of Action Button

Button	Trigger	Description
Z-Wave Button	Click one time	**Let Garage Door Controller into inclusion/exclusion Mode.** **Add Garage Door Controller into Z-Wave Network:** 1. Install Garage Door Controller, and connect it to the 5V DC Adapter. 2. Let the primary controller into inclusion mode (If you don't know how to do this, please refer to its manual). 3. Press the Z-Wave Button.

		4. If the inclusion is failed, please repeat the process from step 2. **Remove Garage Door Controller from Z-Wave Network:** 1. Install Garage Door Controller, and connect it to the 5V DC Adapter. 2. Let the primary controller into exclusion mode (If you don't know how to do this, refer to its manual). 3. Press the Z-Wave Button. 4. If the remove is failed, please repeat the process from step 2. **Note**: If Garage Door Controller is removed from Z-wave network, it will be reset to factory default.
	Press and hold 20 seconds and released	**Reset Garage Door Controller to Factory Default:** 1. Make sure the Garage Door Controller is connected to the power supply. 2. If holding time more than one second, the Network LED will fast blink. If holding time more than 20seconds, Network LED will be on for 2 seconds, which indicates the reset operation is successful, otherwise please repeat from step1 to step2. **Note**: 1. This procedure should only be used when the primary controller is inoperable. 2. Reset Garage Door Controller to factory default settings will: a), remove Garage Door Controller from Z-Wave network state; b), delete the Association setting; c), restore the configuration settings to the default.
Switch Button	Click one time	Toggle the door to Open/close/stop.
Button +/-	Click one time	Switch the alarm sound to the next sound.
	Press and hold	Increase or decrease the volume.

5. Special Rule of Each Command

5.1 Z-Wave Plus Info Report Command Class

Parameter	Value
Z-Wave Plus Version	1
Role Type	5 (ZWAVEPLUS_INFO_REPORT_ROLE_TYPE_SLAVE_ALWAYS_ON)
Node Type	0 (ZWAVEPLUS_INFO_REPORT_NODE_TYPE_ZWAVEPLUS_NODE)
Installer Icon Type	0x1E00 (ICON_TYPE_GENERIC_BARRIER_OPERATOR)
User Icon Type	0x1E00 (ICON_TYPE_GENERIC_BARRIER_OPERATOR)

6. Special Rule of Each Commands

6.1 Association CC

The Garage Door Controller supports 2 association groups and Max 5 nodes for each group..

Association Group	Nodes	Send Mode	Send commands
Group 1	0	N/A	N/A
	1 [2,5]	Single Cast	When the state of load(position status) is changed: 1, Set Configuration parameter 80 to 0：Reserved（Default）. 2, Set Configuration parameter 80 to 1：Send Hail CC. 3, Set Configuration parameter 80 to 2: send Barrier operator report CC.
Group 2	0	N/A	N/A
	[1,5]	Single Cast	Forward the Basic Set, Switch Binary Set commands to associated nodes in Group 2 when the Garage Door Controller receives the Basic Set, Switch Binary Set commands from main controller.

6.2 Association Group Info Command Class

6.2.1 Association Group Info Report Command Class

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

6.2.2 Association Group Name Report Command Class

Group 1：Lifeline

Group 2：RetransmitSwitchCC

6.3 Configuration Set Command Class

7	6	5	4	3	2	1	0
Command Class = COMMAND_CLASS_CONFIGURATION							
Command = CONFIGURATION SET/GET/REPORT							
Parameter Number							
Default	Reserved				Size		
Configuration Value 1(MSB)							
Configuration Value 2							
……							
Configuration Value n(LSB)							

Configuration CC(Parameter Number)：

Parameter	Description	Default	Length
0x20(32)	Configure the default startup ringtone.. Value=0, disable the Startup ringtone. Value=others, Enable and select a startup ringtone for the Garage Door Controller..	1	1
0x22 (34)	Sensor Calibration. Calibration Steps: 1. Let the garage door move to full close position. 2. Send this parameter (0x22) with “value=1” to Garage Door Controller.	0	1

	3. Let the garage door move to full open position. 4. Let the garage door move to full close position after the step 3 is completed. After the step 4 is completed, all calibration steps are complete. Note: This process should be implemented when the Garage Door Controller just only has one Sensor is installed on the garage door.		
0x23 (35)	Set the timeout of all calibration steps for the Sensor.	60	2
0x24 (36)	Get the numbers of alarm music.(not support Set CC)	1	1
0x25 (37)	Configure the alarm mode for when the garage door is opening. 1, Value1: configure the frequency of blinking for the Alarm LED， there are 10 levels that 1 to10 level, the minimum frequency is level 1 and the max frequency is level 10. 2, Value2: configure the alarm sound (there are 4 types sound saved in EEPROM and user also can update it). 3, Value3: configure the volume of alarm sound (there are 10 levels, the min volume is 1 level and the max volume is 10 levels). 4, Value4=0, disable the alarm prompt. Value4=1, enable the alarm prompt.	Value1=10 Value2=1 Value3=8	4
0x26 (38)	Configure the alarm mode when the garage door is closing. 1, Value1: configure the frequency of blinking for the Alarm LED， there are 10 levels that 1 to10 level, the minimum frequency is level 1 and the max frequency is level 10. 2, Value2: configure the alarm sound (there are 4 types sound saved in EEPROM and user also can update it). 3, Value3: configure the volume of alarm sound (there are 10 levels, the min volume is 1 level and the max volume is 10 levels). 4, Value4=0, disable the alarm prompt. Value4=1, enable the alarm prompt.	Value1=6 Value2=2 Value3=8	4
0x27(39)	Configuration alarm mode when the garage door is in "unknown" state: 1, Value1: configure the frequency of blinking for the Alarm LED， there are 10 levels that 1 to10 level, the minimum frequency is level 1 and the max frequency is level 10. 2, Value2: configure the alarm sound (there are 4 types sound saved in EEPROM and user also can update it). 3, Value3: configure the volume of alarm sound (there are 10 levels, the min volume is 1 level and the max volume is 10	Value1=4 Value2=3 Value3=8 Value4=0	4

	levels). 4, Value4=0, disable the alarm prompt. Value4=1, enable the alarm prompt.		
0x28 (40)	Configure the alarm mode when the garage door is in closed position. Value 1 to Value 4: the function is the same as parameter 0x27.	Value1=2 Value2=4 Value3=8 Value4=0	4
0x29 (41)	Configuration report for the tamper switch State: 1, Value=0x00: Sensor is not removed 2, Value=0x0F: Sensor is removed Note: 1. The Garage Door Controller will send this configuration report to gateway controller or associated nodes automatically if the Sensor is removed. 2. You can send the value=0x55555555 of this parameter to controller to relieve the alarm state.	0	1
0x2A(42)	Configuration report for the battery state of Sensor: 1, Value=0x00: battery power is much more. 2, Value=0x0F: battery power of Sensor is in low battery. It will report the battery power state to associated nodes automatically when the battery power is in low battery.	0	1
0x2B (43)	Start playing or Stop playing the ringtone: 1, Value=0xff, stop playing ringtone. 2, Value=0x01~0x64, start playing the ringtone that you selected.	0	1
0x2C (44)	Test the volume of the current ringtone. Value=1 to value=10, which map to the volume level 1 to level 10.	—	1
0x2D (45)	Get the environment temperature: The temperature value contains one decimal point. E.g. If the report value=252(0x00FC), the temperature is 25.2℃. Rang is 0 to 500 (0 to 50.0℃).	0	2
0x2F(47)	Define the function of Button- or Button+. Value=0, short pressing the “Button +/-” will be used to adjust the volume of sound. Long pressing the “Button +/-” will be used to switch the sound to the next. Value=1, short pressing the “Button +/-” will be used to switch the sound to the next. Long pressing the “Button +/-” will be used to adjust the volume of sound.	0	1
0x50 (80)	It will send the Hail CC/configuration report CC when the state of garage door is changed: 1, Value=0， reserved. 2, Value=1， send Hail CC。	2	1

	3, Value=2， send Barrier operator report CC。		
0xF1 (241)	Pair the Sensor with Garage Door Controller. Send Configuration Set: Value=0x55555501, which will trigger to start the pairing of Sensor (installed on the top of the garage door), at this time, the Network LED on the Garage Door Controller will blink slowly and then short press Temper Switch back of the Sensor. If pairing is successful, the Network LED will stop blinking and the Garage Door Controller will send the configuration report with value=0x01FF to primary controller/gateway. Otherwise, repeat the operation. **Note:** 1. If you do not press the Temper Switch when starting the pairing mode, the pairing status will keep for 8 second and then exit the pairing status automatically. 2. The Sensor has been paired with the Garage Door Controller after factory.	-	4
0xFC(252)	Enable/disable configuration locked 1, Value=0： Enable. 2, Value=1： Disable.	0	1
0xFF(255)	Default/Size=0x81， Configuration Value=0x00: Reset All configurations to default value. Default/Size=0x84， Configuration Value=0x55555555: Reset to default factory setting and send the Device Reset Locally CC.	—	4

Note：

When you send Configuration get CC to product that will not get the report CC from product if the parameter has no default value.