



**Aeotec LED Bulb**  
(Z-Wave LED Bulb)



## **Engineering Specifications**

The LED Bulb is a switch multilevel device based on Z-wave enhanced 232 slave library of V6.71.01.

This bulb has 2 main color channels available for you to adjust: Warm white and Cold white. You can configure its indication color temperature(2700K~6300K) according to your favour.LED Bulb 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.

The LED Bulb is a security Z-Wave device(S0 and S2 Unauthenticated), so a security enabled controller is needed for take full advantage of all functionality for the LED Bulb. It also supports the Over The Air (OTA) feature for the product's firmware upgrade.

### **Features:**

- Supporting Warm white and Cold white.
- LED indicates the working status.
- Supporting repeater role.
- Supporting firmware OTA.

## 1. Hardware Specifications

Wireless Protocol	Z-Wave
Radio Frequency	908.42MHz(US) 868.42MHz(EU) 921.42MHz(AU)
Communication Distance	40m(LOS)
Modulation Mode	FSK(BFSK/GFSK)
Power(W)	9
Voltage(V)	110~240
CCT(K)	2700~6500
CRI	80
Beam Angle	240
Dimensions(mm)	120*60/118*60

## 2. SECURITY AND NON-SECURITY FEATURES OF LED BULB

1. The function of the LED Bulb as a security and non-security device is identical.
2. When a node includes into a S2 Z-Wave network, the node supports S2 unauthenticated class and so do the supported CCs.
3. Commands List

	Included Non-Secure Network	Included Secure Network
<b>Node Info Frame</b>	5E - COMMAND_CLASS_ZWAVEPLUS_INFO 26 - COMMAND_CLASS_SWITCH_MULTILEVEL 33 - COMMAND_CLASS_SWITCH_COLOR 2B - COMMAND_CLASS_SCENE_ACTIVATION 2C - COMMAND_CLASS_SCENE_ACTUATOR_CONF 70 - COMMAND_CLASS_CONFIGURATION 85 - COMMAND_CLASS_ASSOCIATION 59 - COMMAND_CLASS_ASSOCIATION_GRP_INFO 55 - COMMAND_CLASS_TRANSPORT_SERVICE 86 - COMMAND_CLASS_VERSION 72 - COMMAND_CLASS_MANUFACTURER_SPECIFIC 5A - COMMAND_CLASS_DEVICE_RESET_LOCALLY 73 - COMMAND_CLASS_POWERLEVEL 9F - COMMAND_CLASS_SECURITY_2 98 - COMMAND_CLASS_SECURITY 6C - COMMAND_CLASS_SUPERVISION 7A - COMMAND_CLASS_FIRMWARE_UPDATE_MD	5E - COMMAND_CLASS_ZWAVEPLUS_INFO 55 - COMMAND_CLASS_TRANSPORT_SERVICE 9F - COMMAND_CLASS_SECURITY_2 98 - COMMAND_CLASS_SECURITY 6C - COMMAND_CLASS_SUPERVISION

Security		86 - COMMAND_CLASS_VERSION
Command		72-COMMAND_CLASS_MANUFACTURER_SPECIFIC
Supported		73 - COMMAND_CLASS_POWERLEVEL
Report		5A-COMMAND_CLASS_DEVICE_RESET_LOCALLY
Frame		26 - COMMAND_CLASS_SWITCH_MULTILEVEL 33 - COMMAND_CLASS_SWITCH_COLOR 2B - COMMAND_CLASS_SCENE_ACTIVATION 2C- COMMAND_CLASS_SCENE_ACTUATOR_CONF 70 - COMMAND_CLASS_CONFIGURATION 85 - COMMAND_CLASS_ASSOCIATION 59 - COMMAND_CLASS_ASSOCIATION_GRP_INFO 7A - COMMAND_CLASS_FIRMWARE_UPDATE_MD

### 3. All functions of each trigger

#### LED Bulb is not in the Z-Wave network:

Trigger	Description
OFF→ON	<ol style="list-style-type: none"> <li>1. LED Bulb will flash twice, and send node info frame.</li> <li>2. <b>Add for inclusion</b>(security): <ol style="list-style-type: none"> <li>a) Set the Z-Wave network main controller into learning mode.</li> <li>b) Power cycle once for led bulb.</li> <li>c) Wait a moment, the led bulb should be added to the controller.Then the led bulb will flash once when it has been included into the network.</li> </ol> </li> </ol>

#### LED Bulb is in the Z-Wave network:

Trigger	Description
OFF→ON→ OFF→ON→ OFF→ON	<ol style="list-style-type: none"> <li>1. LED Bulb will light up with previously saved state and send node info frame.</li> <li>2. <b>Remove for exclusion:</b> <ol style="list-style-type: none"> <li>a) Assuming led bulb was added to controller and was power on.</li> <li>b) Set the Z-Wave network main controller into removing mode.</li> <li>c) Led bulb re-power 3 times (between 0.5-2 seconds each time).</li> <li>d) Wait a moment, the led bulb should be removed from the controller.Then the led bulb will flash once, dim to 5% first, and then increased to 100% after 5 seconds.</li> </ol> </li> </ol>
OFF→ON→ OFF→ON→ OFF→ON→ OFF→ON→ OFF→ON→ OFF→ON	<p><b>Reset the device :</b></p> <p>Led bulb re-power 6 times (between 0.5-2 seconds each time); If the 6th power on, the led bulb flashes twice, which means that the resetting is successful.</p>

### 4. Special Rule of Each Command

## Basic Command Class

Basic CC is maps to Multilevel CC

## Association Command Class

LED Bulb supports 1 association group.

Grouping Identifier	Max Nodes	Send Commands
Group 1	0x01	1. When the state of the LED Bulb is changed: 1. Set Configuration parameter 50 to 0: Reserved 2. Set Configuration parameter 50 to 1: Sending Basic Report 2. Device Reset Locally.

## Switch Color Set Command Class

Capability ID	Color
0	Warm White
1	Cold White

**Note:** The warm white is the highest priority, when it is configured to 0, the Cold white configuration values can be activated.

## Configuration Set Command Class

Parameter Number	Description Size	Default Value	Size
0x50	Enable to send notifications to associated devices (Group 1) when the state of LED Bulb is changed. 0 = Nothing. 1= Basic CC report.	0x01	0x01
0x51	Adjusting the color temperature in warm white color component. available value: 0x0A8C-1387 Warm White(0x0A8C(2700k) ~ 0x1387 (4999k))	0x0A8C	0x02
0x52	Adjusting the color temperature in cold white color component. available value:0x1388-0x1964 Cold White (0x1388 (5000k) ~ 0x1964 (6500k))	0x1964	0x02