



## **User manual**

Bluetooth Low Energy products

BLE Dongle / IDB-02S

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## 1. BLE Dongle Description

### 1.1 Introduction

#### - IDB-02S

BLE Dongle / IDB-02S is a controller that controls the output of the SMPS and can control the color temperature and brightness.

It uses the Low Energy Bluetooth 4.0 specification and is supported by both Android and IOS.

The BLE Dongle / IDB-02S has a 4-channel PWM output that controls cool color and warm color.

The color temperature can be adjusted between cool and warm colors and the overall output of the SMPS can be controlled from 0% to 100%.

To use BLE Dongle / IDB-02S, SMPS and gender board are required.

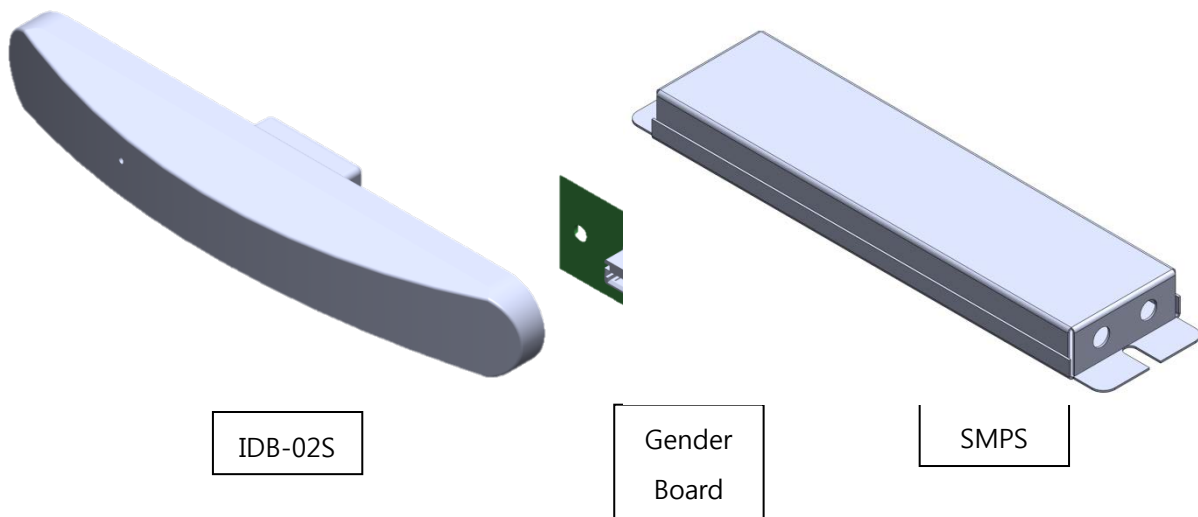
#### - Gender Board

The gender board distributes power and PWM output between the BLE dongle and the SMPS.

If you are using 1ch SMPS, You have to connect 4pin cable on SMPS connect to J3 on gender B/D.

Using 1CH + 2CH, You have to connect 4pin cable on 1ch SMPS to J3(ch1) on gender B/D and 4 pin cable on 2ch SMPS to J4(ch2) on gender B/D.

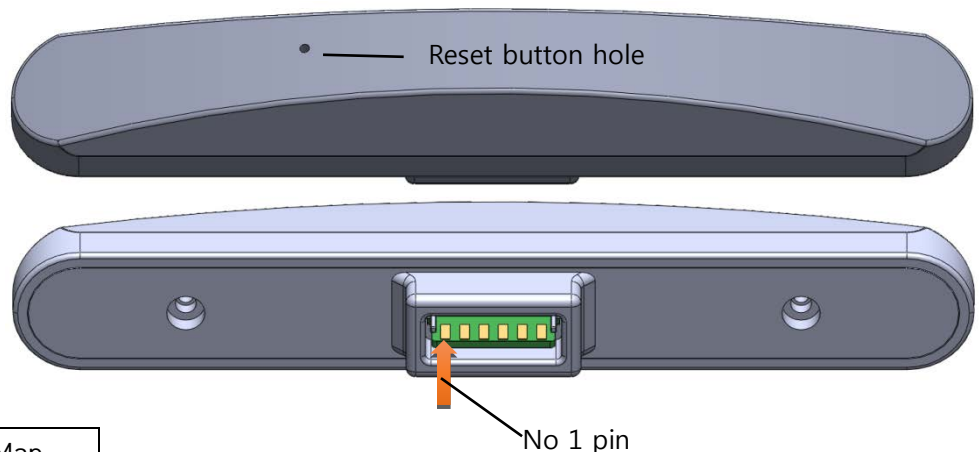
Use a 6-pin card edge connector for the BLE dongle and a 4-pin connector for the SMPS.



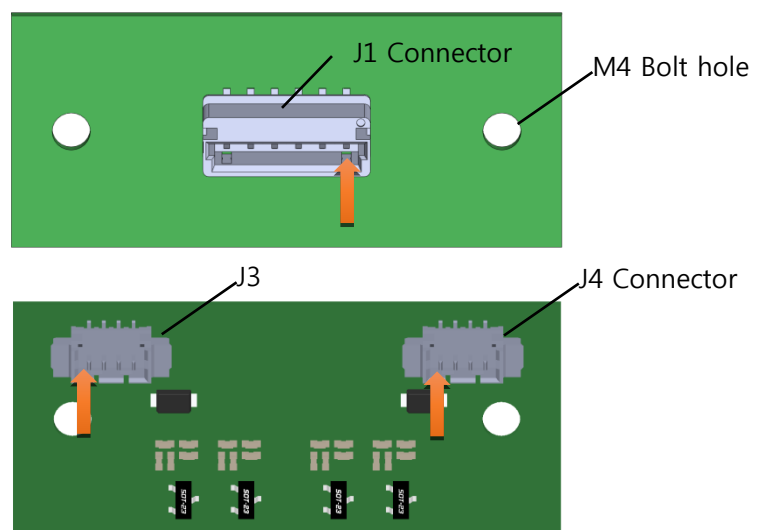
## 1.2 Product Information

SPECIFICATION		
Division	IDB-02S	Remarks
Input Power	DC 3.3V	
Current Consumption	Max. 30mA	
Bluetooth Ver.	Bluetooth Low Energy 4.0	
Communication distance	Max. 50m	
Output	PWM-4CH	1.56KHz
Storage Temperature	-40 ~ 85℃	
Operating Temperature	-10 ~ 45℃	
Certification	KC, CE, FCC, ROHS	
Dongle Size	100mm X 14mm X 21mm	
Gender Size	46mm X 20mm X 10.8mm	

Dongle Pin Map	
No.	Division
1	DC 3.3V
2	GND
3	CH1-CW
4	CH1-WW
5	CH2-CW
6	CH2-WW

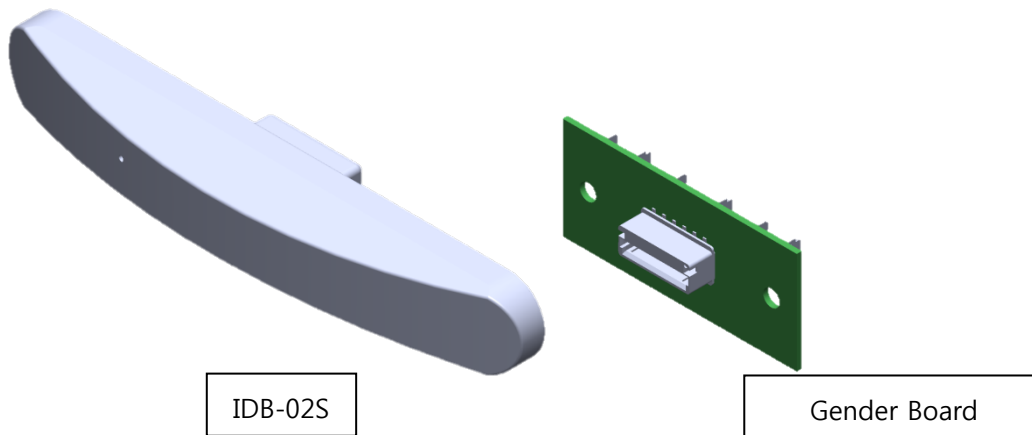


Gender Board Pin Map	
No.	J1 Connector
1	DC 3.3V
2	GND
3	CH1-CW
4	CH1-WW
5	CH2-CW
6	CH2-WW
No.	J3, J4 Connector
1	DC 3.3V
2	GND
3	CW
4	WW



### 1.3 Product Configuration

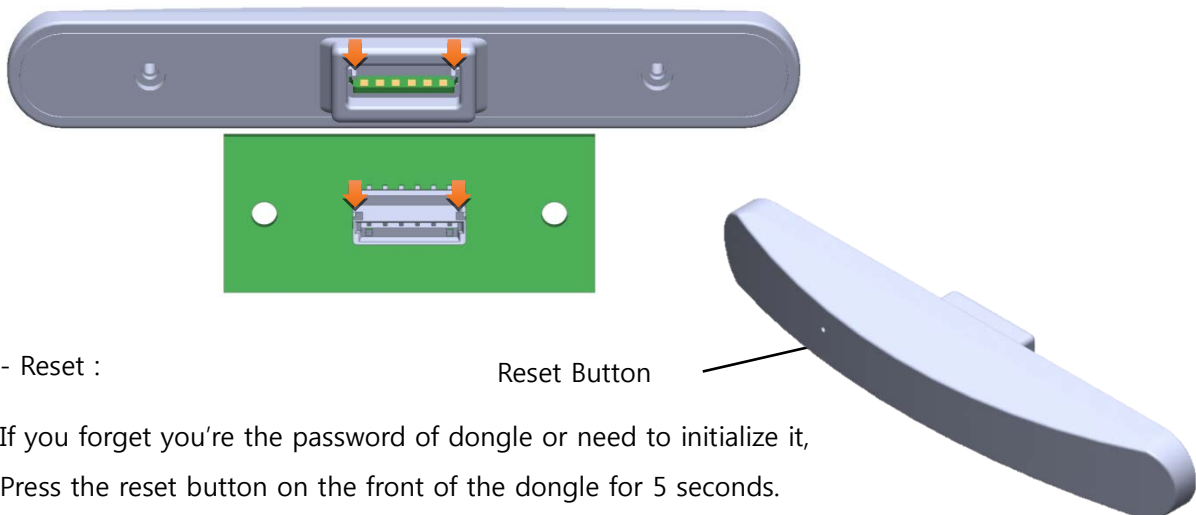
- Components : IDB-02S 1ea / Gender Board 1ea



- How to assembly:

1. Attach the SMPS and the gender board to the lighting case's top side using bolt.
2. Connect the 4 pin cable of the SMPS to the J3 connector (CH1) of the gender board when using 1 channel. When you are using two-channel SMPS, connect each the 4pin cable of SMPS to the connector (CH1, CH2) each.
3. Insert the BLE dongle into the J1 connector of the gender board fixed to the Lighting.

\* NOTICE: The protrusion of IDB-02S connector must be correctly aligned with the hole groove of the gender board. Please reference to the following figures.

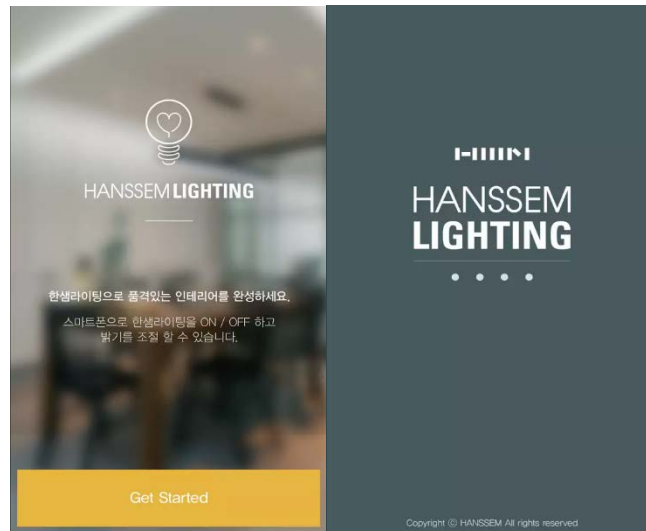


- Reset :

If you forget you're the password of dongle or need to initialize it,  
Press the reset button on the front of the dongle for 5 seconds.  
When the reset is completed, the internal green LED flashes once.  
After the reset is completed, the password is initialized to 0000

## 2. App to use it

### 2.1 Information



It is an application that controls brightness and color temperature of LED lighting using Bluetooth function of smart phone.

The lighting in the room, such as living room, kitchen, study room, etc..., and the smart phones APP are connected using Bluetooth.

It can be used conveniently for LED lighting.

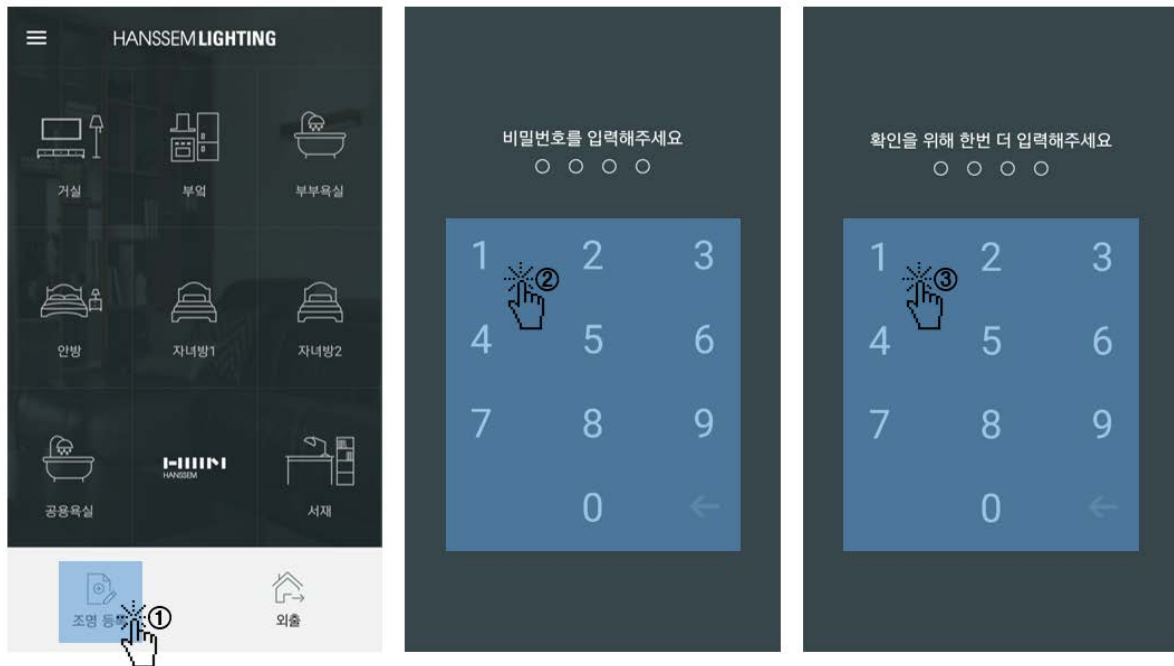
#### Key Features

- Lighting ON / OFF on the smartphone
- Adjust brightness and color temperature of LED lighting (3000k ~ 5700k)
- Outgoing function on the smart phone APP control multiple lights at once
- Control lighting by groups such as living room, kitchen, study room, etc.
- Lights that turn on and off at the time set by using the wake-up and sleep functions

#### ⚠ NOTE

- Applications are being distributed on Android-Play Store and iOS App Store.
- HANSSEM LIGHTING App and HS dongle App use Bluetooth
- Supported Smartphone : Android 4.4 over
- Supported Bluetooth: Bluetooth 4.0 / BLE

## 2.2 Password Setting



Before using the application, the user must set the password of the application to be compatible with the HS dongle(IDB-02S).

- ① Click [Register Lighting] when connected for the first time.
- ② Set up the user's password.
- ③ Confirm the entered password once again.

After completing the above process, you will be able to use the application.

### ⚠ NOTE

- Password can be set only once at the first time
- To change the password, you need to initialize the application settings.
- The password is unique from the moment it is given.
- When the same number is set as the password after the new application is installed, the dongle will remember it and automatically register the lighting.

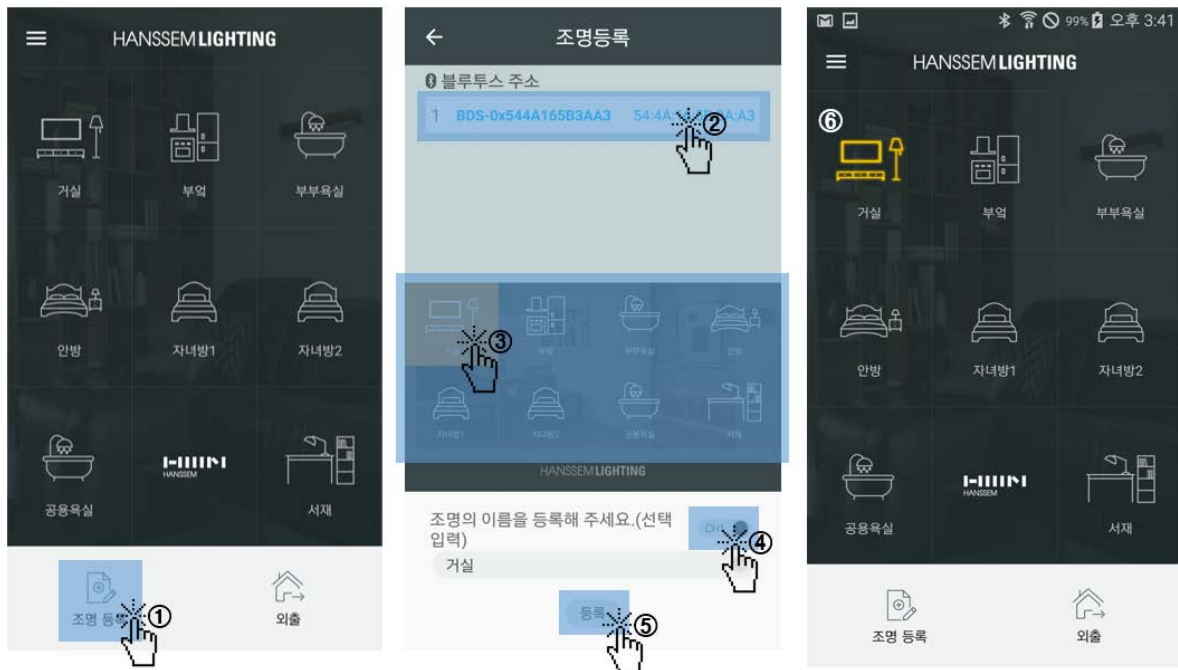
## 2.3 Lighting registration

After the process of setting the password, connection with the HS dongle is possible through registration of the lighting.

You can register the desired HS dongle by clicking the registration light,

This means that the lighting can be controlled by the application.

### - Basic lighting registration



Basic lighting registration refers to the registration only one light on a button icon.

How to register is as follows.

- ① After setting the password of application, click the registration light on the main screen.
- ② Select the desired HS dongle from the list of HS dongles whose power is ON.
- ③ Select the location where the light is installed.
- ④ Select the channel according to the lighting number connected to the dongle.
- ⑤ When you have completed your selection, click Register.
- ⑥ When the registration is completed, the registered icon is displayed in orange color.



## - Multiple lighting registration



Multiple lighting registration means registering multiple lights on one icon button.

How to register is as follows.

- ① With one light already registered, click "register light".
- ② Select the desired HS dongle from the list of HS dongles whose power is ON.
- ③ Select the previously registered icon.
- ④ Select the channel to which the HS dongle to register is connected.
- ⑤ When you have completed your selection, click Register.
- ⑥ After registering, press and hold the registered icon on the main screen.
- ⑦ Confirm that double registration is made in the connection status.

### ⚠ NOTE

You can register up to four lights on one icon.

Icons are enabled or disabled only when all lights are on or all lights are off.

Each lighting can be individually controlled through lighting control.

## 2.4 General Operation

After the lighting registration is completed, The LED lighting with the dongle installed can be operated through the application operation.

The general operation is as follows.

- When using basic lighting



After registering the basic lighting, the LED lights up when you click the icon.

The dongle of lighting sends a signal to the application that it is turned on.

The application receiving this signal will indicate to the icon that the LED light is turned on.

Likewise, pressing the activated icon will turn off the LED lighting.

The dongle of lighting sends a signal to the application that it is turned off.

The application receiving this signal will indicate to the icon that the LED light is turned off.

- When multiple multiple lights



After registering the basic lighting, click on the icon and the registered LED lights will turn on all at once.

An illuminated LED light sends a signal to the application that it is on, and an application that receives this signal indicates that the LED light is active on the icon.

Likewise, pressing the activated icon will turn off the LED lighting.

The dongles of lighting send signals to the application that it is turned off.

The application receiving this signals will indicate to the icon that the LED light is turned off.

- Outgoing button



When you press the out button, all the registered LED lights are turned off at once.

After turning off, the dongle installed on the LED sends a signal to the application that it is off,

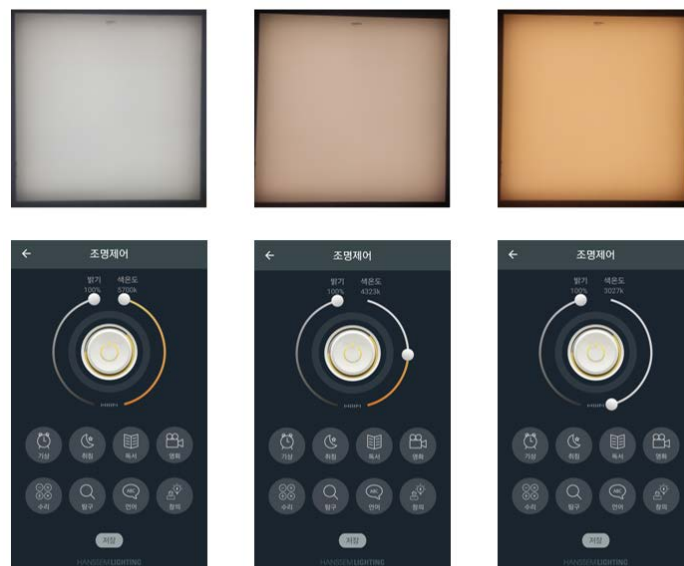
The application receiving the signal changes the activation state of the icon to the inactive state so that the user can confirm it.

## 2.5Lighting control



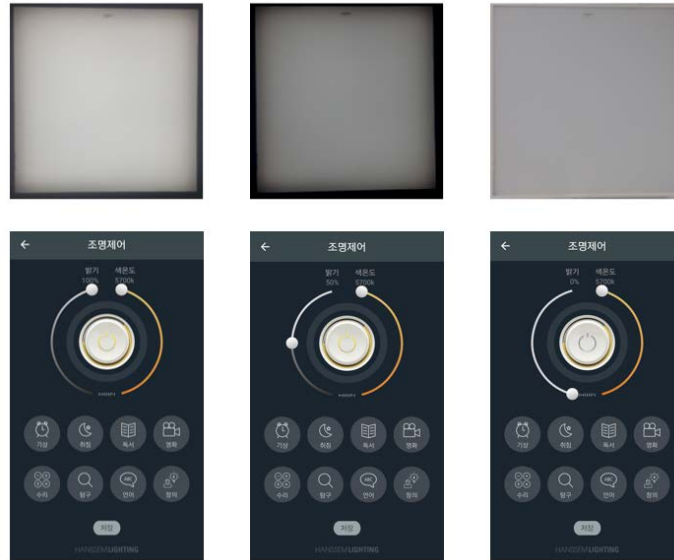
In the lighting control in the connection state, it's possible to turn on/off the led lighting. You can fine tune the color temperature and brightness of a directly connected light. You can register the lighting settings according to the situation. Lighting control can be started by pressing and holding the registered light icon,

### - Color temperature control



You can control the color temperature of registered LED lights through the lighting control function. The color temperature can be adjusted from 3000K to 5700K. The color temperature can be fine-tuned by operating the wheel button.

## - Brightness control



You can control the brightness of registered LED lights through the lighting control function.

The color brightness can be adjusted from 0%(off) to 100%(turn on).

The color brightness can be fine-tuned by operating the wheel button.

## - Registration of lighting setting

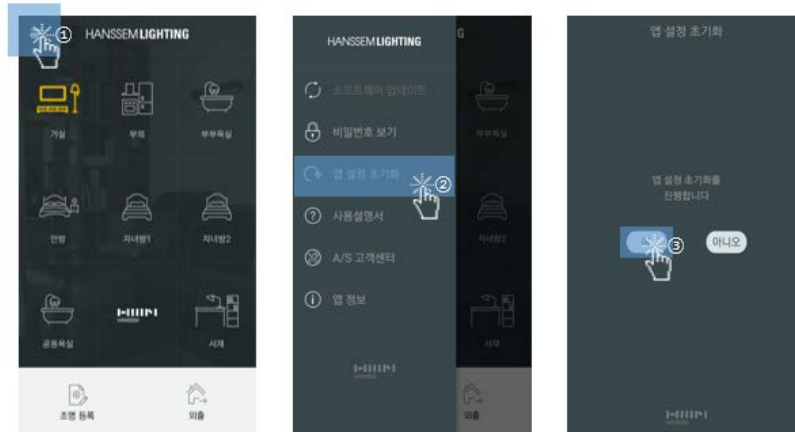


Color temperature and brightness in each situation can be registered in the corresponding icons. In wake up / sleep mode, brightness and color temperature can be adjusted in time.

If you press the icon for a long time, you can save the brightness and color temperature in that situation. If you press the icon for a short time, the brightness and color temperature in that situation are reflected in the lighting.

This function makes it easy to operate the lighting according to the user's environment without extra action.

## 2.6 App settings initialization



When the position of the registered light in the app is changed or deleted, or You initialize the passwords registered in the app, App setting initialization is used.

How to reset app settings

- ① Click the Menu button.
- ② Click the Reset button.
- ③ Click the Yes button.

For a complete initialization and the app it must be restarted.

After initializing the app settings, the password is set to 0000 and the password must be set again.

### ! NOTE

- After initializing the app settings, you must re-register the lighting.
- To change the password of the dongle, press the reset button on the front of the dongle for more than 5 seconds.
- After initializing the password of the dongle, the password is set to 0000, and the location information is initialized.

### 3. Appendix

#### 3.1 Manufacturer Information

Manufacturer : INNOSYS CO.,LTD

Address :INNOSYS CO.,LTD, 1-1107, Ace Dongbaek Tower, 16-4, Dongbaekjungang-ro 16beon-gil, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea. (Zip code : 17015)

Contacts: +82-70-5099-3132

Company Website: [www.innosys-tech.com](http://www.innosys-tech.com)

Location:



#### 3.2 A/S

Address :INNOSYS CO.,LTD,1-1107, Ace Dongbaek Tower, 16-4, Dongbaekjungang-ro 16beon-gil, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea. (Zip code : 17015)

Contacts: +82-70-5099-3132

Company Website: [www.innosys-tech.com](http://www.innosys-tech.com)

E-mail : [innosys.as@innosys-tech.com](mailto:innosys.as@innosys-tech.com)

#### CE Statement

Hereby, we declare that this device is in compliance with the essential requirements and other relevant provisions of directive 1999/5/EC.

#### FCC

This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions.

- 1) This device may not cause harmful interference, and
- 2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**CAUTION :** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

#### FCC RF Radiation Exposure Statement:

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

**NOTE:** THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

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