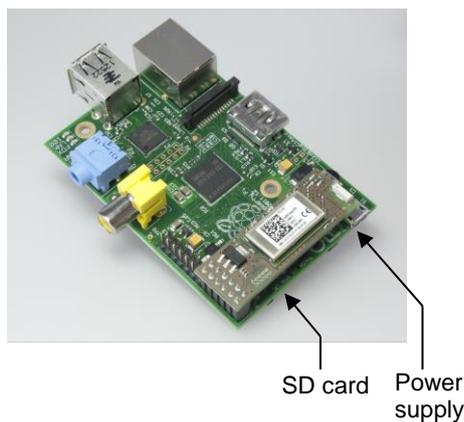


This guide describes how to get started using several components of our wireless light control solution to run a demo application of a wireless light control network. E.g. you already have a Raspberry Pi and you bought the RaspBee shield and one of our wireless electronic ballasts.

Required Components

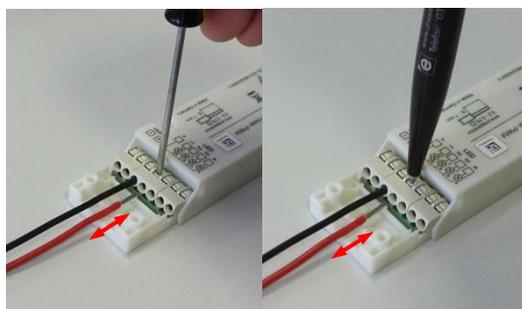
- Raspberry Pi
- RaspBee shield
- Wall power supply with Micro-USB plug ¹
- SD card with Raspbian Linux Distribution ²
- Commercially available LAN-WiFi router
- Ethernet cable
- Wireless electronic ballast(s) (FLS) + appropriate illuminant(s) ³
- Control unit (PC/ smartphone/ tablet) with browser

Hardware Setup – RaspBee Gateway



1. Attach RaspBee shield on Raspberry Pi (attach on extension header at the outer edge, **do not attach displaced!**).
2. Insert SD card.
3. Connect to router via Ethernet cable.
4. Establish power supply (use micro-USB connector beside SD card slot).
5. Initially the LEDs on the RaspBee shield blink green for a short time and then turn continuously red. The booting routine takes approx. 1 minute.
6. Install deCONZ
7. If you got the RaspBee basic, flash firmware onto the shield, see RaspBee User Manual (The RaspBee premium already contains the correct firmware).

Hardware Setup – Wireless Electronic Ballasts FLS-PP Ip



To wire the FLS-PP Ip use conductor with cross-section of **0.2–0.75 mm²** (AWG24–18). Dismantle the cable 6–7 mm.

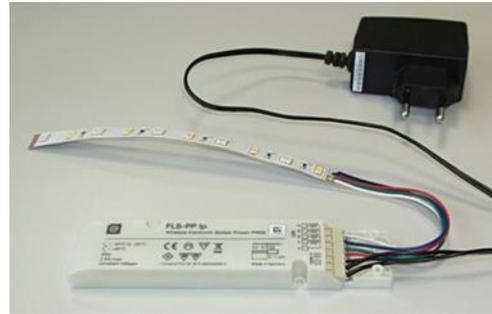
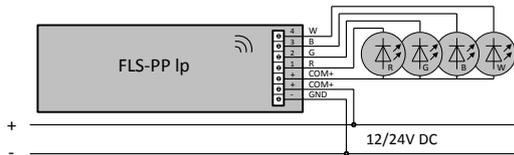
Attention: Insert/remove fine-stranded conductors by **lightly** pressing on push-button with a small screwdriver or pen. Don't use ferrules or tinned wires.

¹ Cell phone charger, PC, or the like. only limited suitable, power supply 5 V, 1.2 A required

² Download from www.raspbian.org

³ Compatibility matrix: <http://www.dresden-elektronik.de/funktechnik/solutions/wireless-light-control/wireless-ballasts/?L=1>

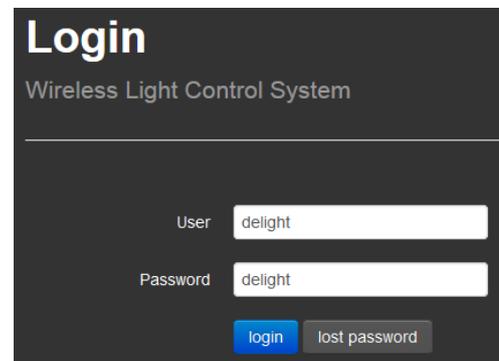
1. Connect FLS-PP Ip with LED stripe.
2. Connect LED Power Supply to both FLS-PP Ip. Initially the illuminants shine monochromatic white.



The combination of FLS-PP Ip and illuminant will be referred to as 'light' below.

Setup Web Application

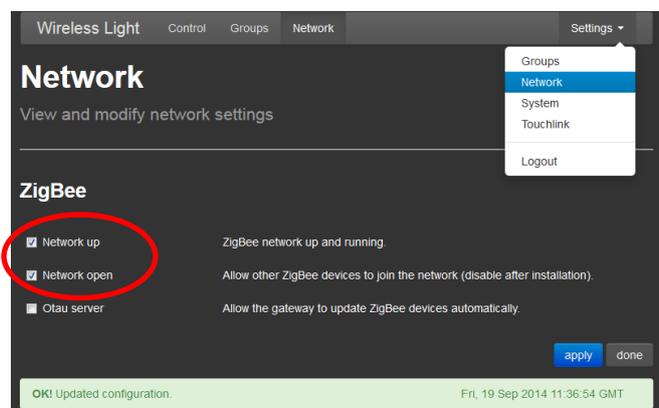
1. Open an actual browser on the control unit (PC, tablet, ...; needs access to the local network).
2. Open the following address (Internet connection necessary): <http://www.dresden-elektronik.de/discover>. Click the gateway-link there.⁴
3. Log in (user name: 'delight', password: 'delight')



Add Lights to Wireless Network

The ZigBee wireless network is closed by default and has to be opened during setup temporarily so that new lights can join the network.

1. Select menu 'Settings | Network' in the upper right corner.
2. Activate 'Network up' and 'Network open'.
3. Click button 'apply'. The message 'OK! Updated configuration.' will be displayed.
4. Wait until the devices join the network (colored illuminants then shine green, monochromatic illuminants don't have a special indicator).
5. **Close network** (remove checkmark in 'Network open' check box) and click apply.
6. Switch back to the main page via button done'.



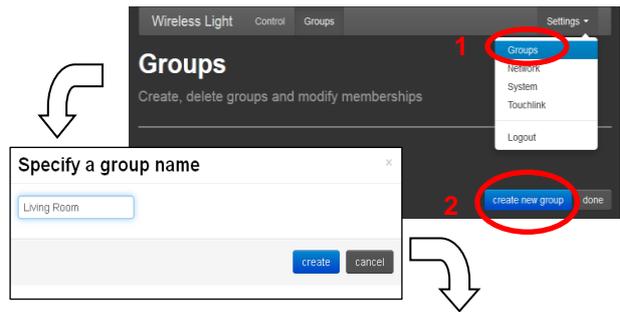
(Don't use backward and forward buttons of your web browser. Use the buttons of the web app instead.)

⁴ Create bookmark of gateway-link for ease of use

Group Lights

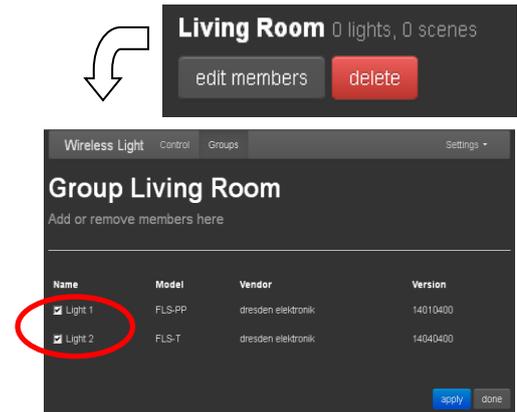
To display and control the lights they have to be assigned to a group at first.

1. Select Menu 'Settings | Groups'.
2. Click button 'create new group'.
3. Enter group name and click button 'create'.



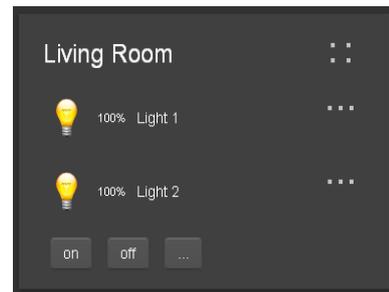
The new group is now displayed, but it is still empty.

4. Click button 'edit members'.
5. In the check boxes, set the checkmark for all lights that shall belong to the group.
6. Click button 'apply'.
7. Switch back to the main page via button 'done'.



8. The group and its associated lights are now shown and can be controlled.

The group membership of the lights can be modified anytime using the group editor.

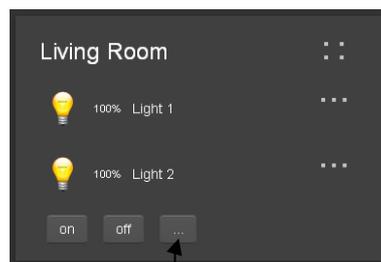


Control Lights

Switch on/off lights separately per bulb symbol

Switch on/off complete group per button

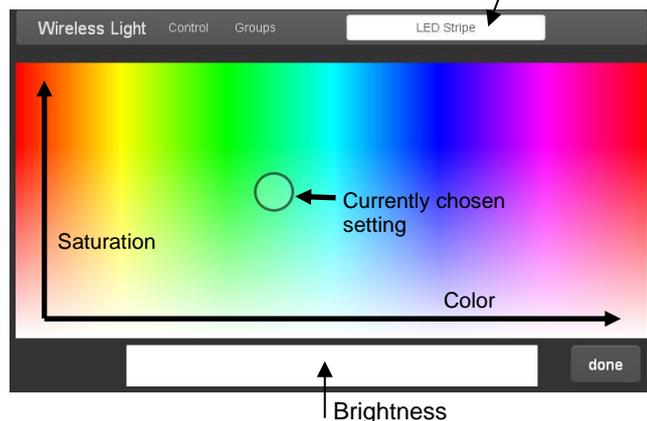
Call up scene editor



Configure color / brightness / saturation of group

Configure color / brightness / saturation of individual lights

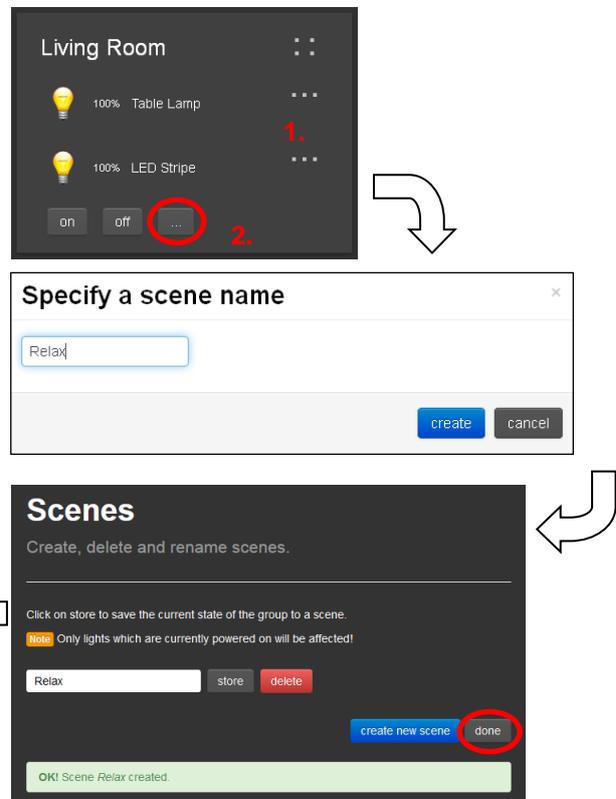
Name of light or group



Create Scenes

By means of scenes complex light settings can be stored and simply be recalled later on at touch of a button.

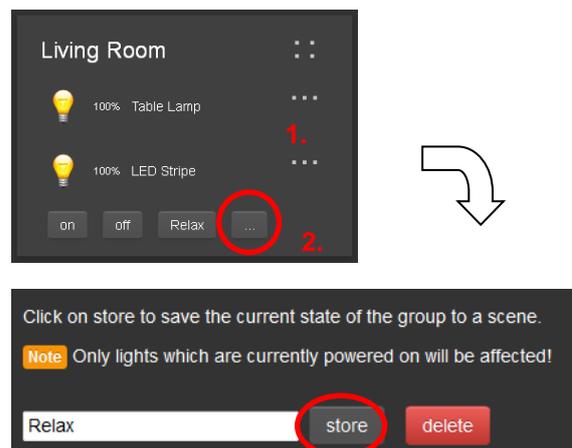
1. Set up lights within the group as desired by clicking on the '...' -sign, at the right of each light and confirm with done.
2. Click Button '...' right next to 'on'/'off' in the group view.
3. Click button 'create new scene'.
4. Assign a name.
5. With 'create' current settings are stored as scene.
6. Switch back to the main page via button 'done'.
7. Scene button is shown next to buttons 'on'/'off' and can be activated by touch on it.



Modify and Delete Scenes

Stored scene settings can also be modified or deleted

1. Configure settings by clicking on the '...' -sign, at the right of each light and confirm with done.
2. Switch in to the scene editor by clicking the '...' -Button at last line.
3. Click button 'store' next to the desired scene. Using 'delete' the scenes can be deleted.



Update Software

To benefit from the ongoing development of the wireless light control application, the gateway will automatically check for updates. If there is a new update available, a corresponding message in the webAPP will appear. The installation of an update is only run after an explicit acceptance. The update procedure may last some minutes depending on the Internet connection and size of the update. After the gateway update is finished, the FLS devices will be automatically updated as well. This takes place in the background, so controlling the system is still possible. When the update transfer is completed, the FLS will be installing and reset for about one minute. In this time the FLS does not react to commands sent. Settings will be maintained.

Reset FLS to Factory Settings

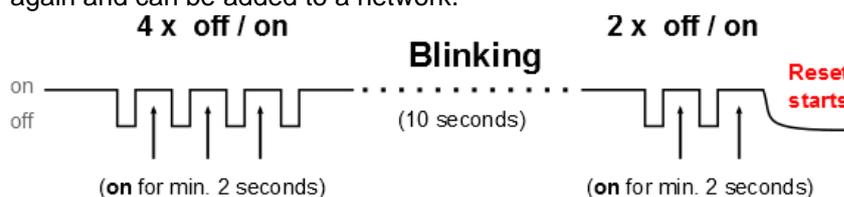
Resetting the FLS is not necessary during normal operation. Only if lights shall join a new network a reset is required. The reset can be done in two different ways:



If light and gateway can be moved within a range of less than 50 cm of each other, a 'touchlink reset' can be performed. Go to the 'Settings | Touchlink' menu and click the 'scan for devices' button once. A progress bar indicates the process. After the scan procedure has been completed, a list of available devices within range gets displayed. Each light should be identified by clicking the 'blink' button first before resetting it. Observe the status of each operation at the bottom of the page. If the target light is not listed, try scanning again.

In the second case, when gateway and lights are installed fixed, the distance between them might be greater than 50 cm. In this case 'touchlink' reset won't work. Proceed with a power cycle sequence as follows:

1. Power cycle 4x with 2 to 20 seconds on time.
2. When switching on for the fourth time: illuminant blinks for 10 seconds.
3. Wait until light stops blinking.
4. Switch on and off again 2x, after approx. two seconds the device begins to restore the factory settings (duration approx. 60 seconds, in this time the light is off). Afterwards the light is operative again and can be added to a network.



Expert Settings

Via the 'General' tab of the system menu you can change the name of your gateway, you can determine a user defined password under 'Account' and unlock the gateway temporarily for searching by third-party apps under 'Apps' with the button 'unlock'. The apps then are allowed to take control of the lights in the network.

Notes

1. Each light can be a member of up to 10 groups.
2. In the user interface any number of groups can be created with each up to 16 scenes.
3. A scene always describes the status of the complete group, i.e. changing the scene affects all lights.
4. If a light is switched off and on again physically, its last settings are restored. If settings per user interface have been changed meanwhile they are ineffective after switching on again.
5. Not existing lights are displayed grayed out / semi-transparent in the user interface.
6. Lights can only belong to one network but to several groups; they rejoin it automatically after switching on again. If a light shall be assigned to a new network it must be reset to factory settings first.
7. For optimum accessibility of your lights we recommend that the gateway is powered on permanently. After reboot the website may have to be loaded again. (Please see section: Reset FLS to Factory Settings.)

Please also note the **Frequently Asked Questions** which can be found on our website:

<http://www.dresden-elektronik.de/funktechnik/service/support/faq/wireless-light-control/?L=1>