PCFdesigns

STAR WARS

Lamp

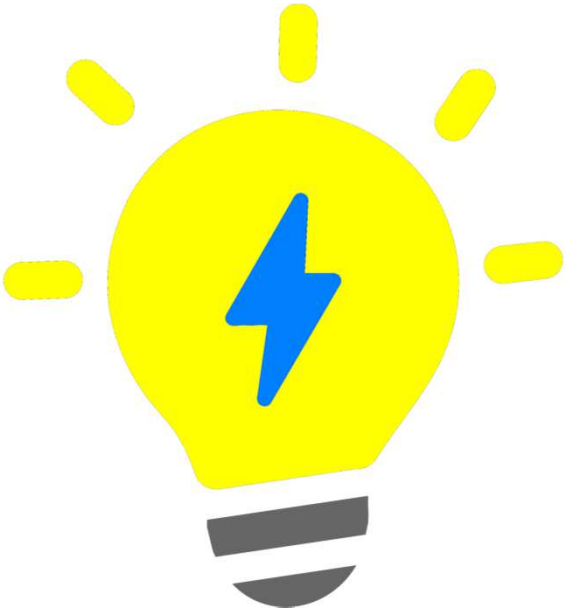
PCFdesigns SW-101 LED Pattern Lamp with Wireless Control

Powered by WLED software

USE AND CARE GUIDE

Lamp version 1.0

WLED version 0.14.0-b1



PCFdesigns
A Brighter Tomorrow

CONGRATULATIONS!

You are now the proud and happy owner of the one and only PCFdesigns STAR WARS Lamp

Your lamp consists of an illuminated column and an illuminated base, both of which are fully user-configurable over wifi using powerful WLED software. With hundreds of effects and dozens of color palettes, your lamp provides a near infinite variety of visual entertainment for your enjoyment and illumination!

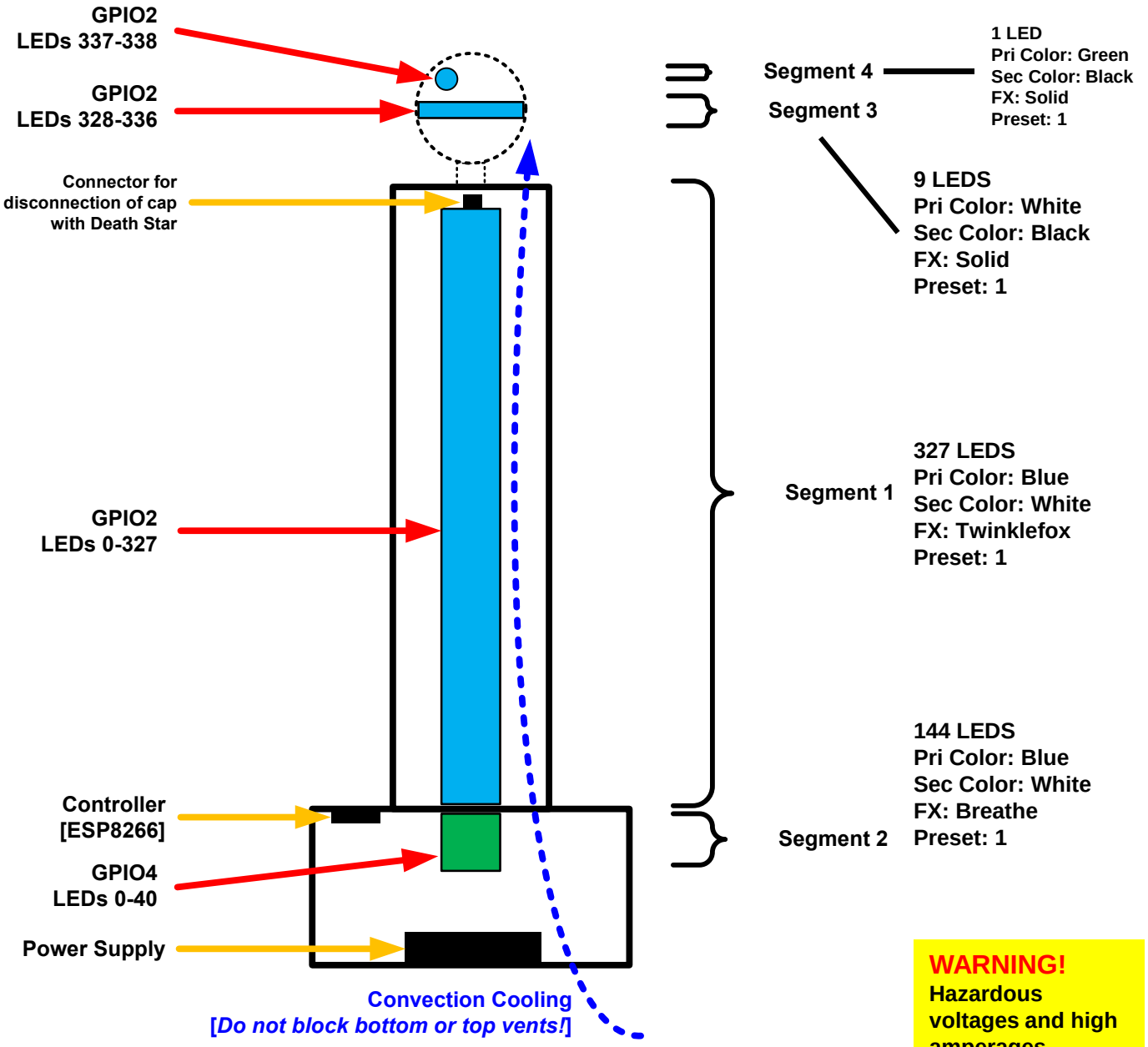
All those lumens require some care and feeding, so be sure to follow the use and care procedures, and especially the safety guidelines, described in the following pages!

Paul Frommeyer
President and CTO
PCFdesigns

Note: These instructions were created for Version 0.14.0-b1 of the WLED software. Your lamp may use an earlier or later version to provide certain features, thus not all instructions features may apply to your software version. Some interpolation may therefore be required when using this guide.

Note: Your lamp has been tested by the manufacturer with a 2-week “burn in” period prior to shipping to assure that all components are functioning correctly and there is no risk of overheating with the default as-shipped power and brightness settings.

Functional Diagram



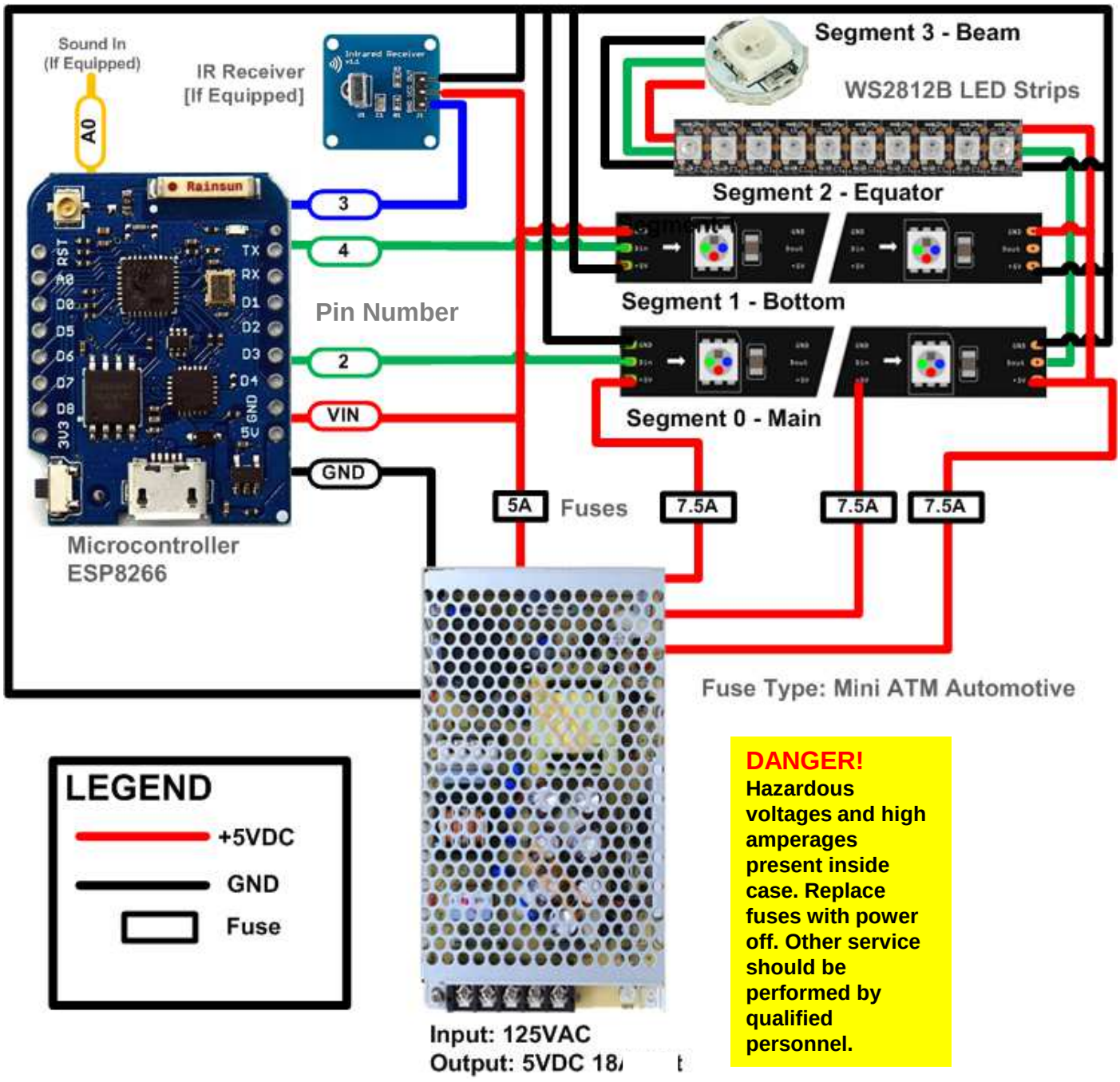
Power Specifications
Input: 125VAC, 2.1A
Output: 5VDC, 18A

Convection Cooling
Never block bottom or top vents!! Do not operate on carpet or other soft surface which could block the vents. Use a large tile, plate, or other hard, flat surface to place the lamp on carpet.

WARNING!
Hazardous voltages and high amperages present inside case. Replace fuses with power off. Other service should be performed by qualified personnel.

If any part of lamp ever grows hot to the touch, immediately disconnect AC power and contact manufacturer!

Wiring Diagram



If ever only part(s) of the lamp illuminate, check the fuses.

Disconnect (unplug) AC power before opening base! *Never operate lamp with base cover removed!*
High voltages and high amperage are present inside the case, with corresponding risk of potential severe burns and fatal shock.

WIFI ACCESS

Accessing your lamp out-of-the-box

If you have not joined your lamp to an existing wifi network, or the configured wifi network is not reachable, your lamp defaults to generating its *own* wifi network (SSID) which you can then access from a phone, laptop, or other computing device which can connect to wifi networks and launch a web browser.

Lamp default wifi SSID: SWJ
Lamp default wifi password: 12345678
Lamp default IP address: 4.3.2.1

Note: If your browser does not launch automatically (wifi captcha) when you first connect to the lamp wifi network, you'll need to manually launch a browser and enter the URL **https://4.3.2.1**. That url will take you the main WLED access page (see *Accessing WLED*).

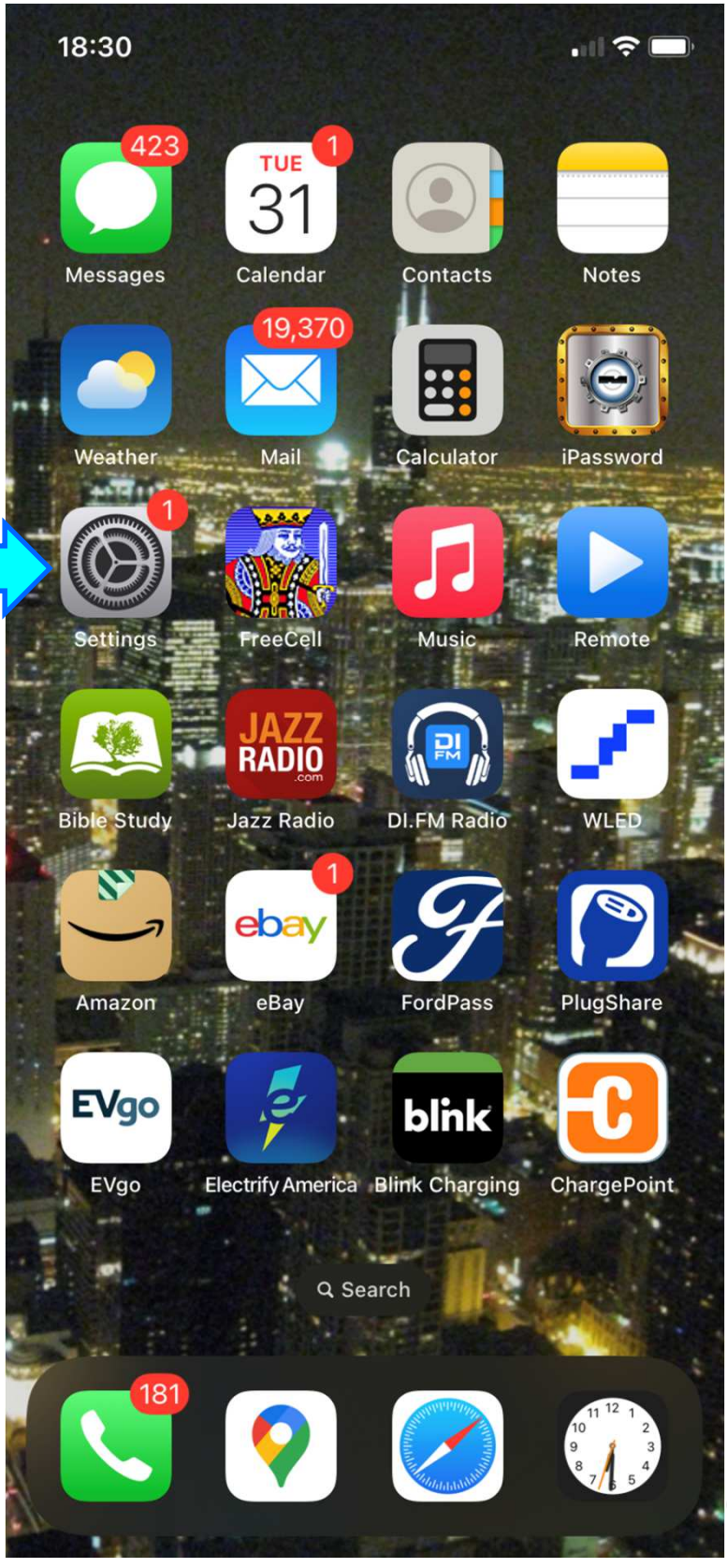
Initial WiFi Configuration

The following examples are shown using iOS on an Apple iPhone.

Procedures for joining a wifi network on Android or Windows will be similar.

[If you have a Mac or Linux computer, presumably you already know what you're about. ☺]

Open the Settings app window on your device

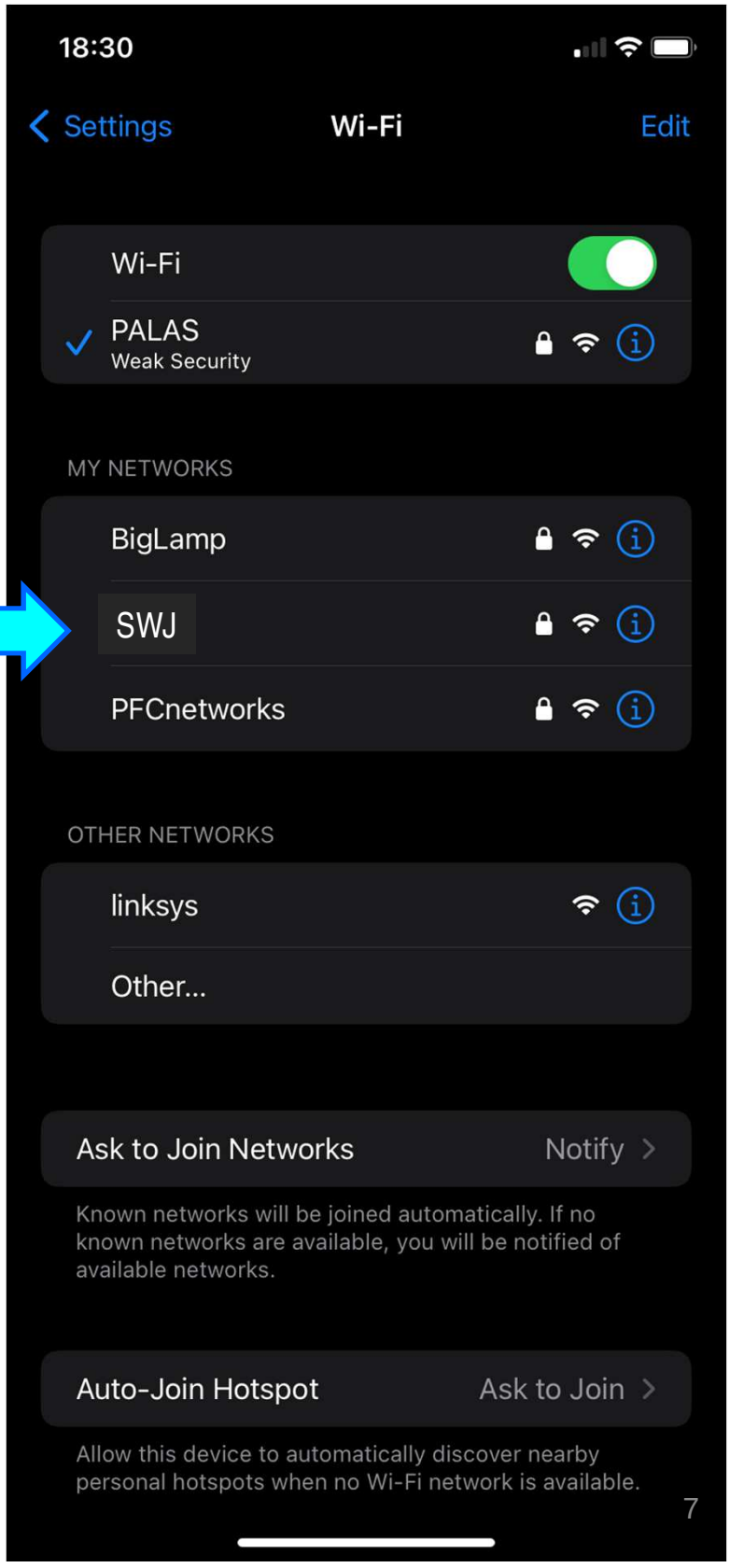


Note: There *are* WLED client applications for Windows, Mac, and Linux. Their use and installation is beyond the scope of this guide.

Connecting To Your Lamp

Find the WiFi network with your SSID, and click on it. Enter the credentials as listed on a previous page.

As soon as your device joins the lamp wifi network, your browser should open and take you the main WLED access page for your lamp. If for some reason it doesn't, you will need to manually open a browser, then enter the URL https://4.3.2.1



Accessing WLED

This is the main WLED access page presented by your lamp. It provides two options:

1 – Go directly to WiFi Settings configuration to join your lamp to an *existing* wifi network. *You should have the app installed before doing this!*

2 – Just configure the lamp without modifying the wifi settings; this allows you to configure your lamp without having to have a wifi network, making it transportable and accessible for friends or guests.

CAUTION!!

Once you join your lamp to a wifi network, you ***must*** either install the WLED app on your device to access the lamp, or *know the IP address assigned to it by the wifi network* in order to access it via web browser (URL will be **https://*wifi_assigned_IP_address***

If you join your lamp to an existing network, it is strongly recommended to use the WLED app if at all possible. The app provides autodiscovery, as well as the ability to apply future software updates

WLED WiFi Configuration

Assuming you have decided to use the WLED app on your phone/device, clicking on the WiFi Settings button will take you to the page at the right.

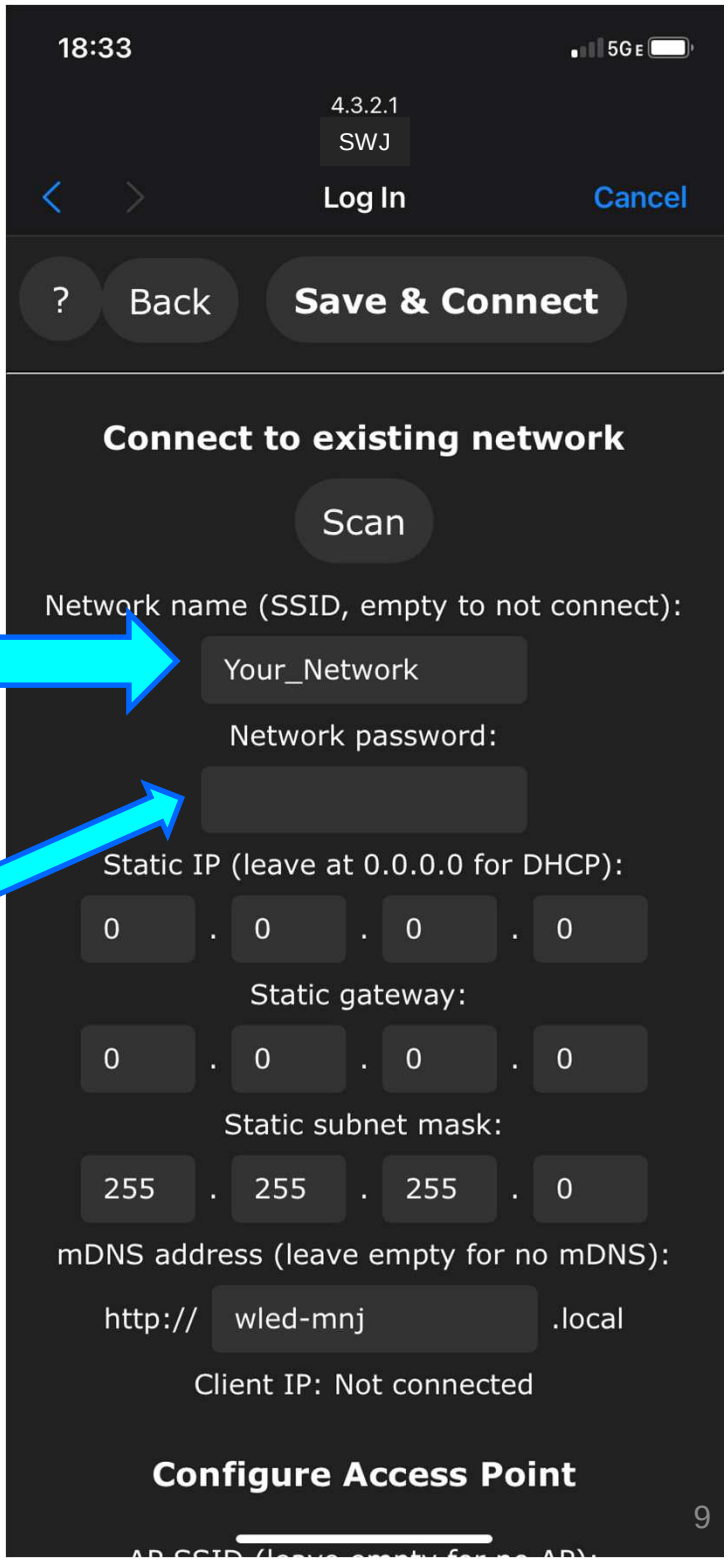
Clicking in the Network Name field should bring up a pop-up menu with a list of all wifi network names (SSID's) discoverable by the lamp. Note that if your wifi signal is weak, the network may not show up. Click on scan to re-check for networks.

Select the SSID you want the the lamp to use.

Next, enter the password *of your wifi network* (not the lamp login!) in that field as shown at right.
When finished entering the information, click on the Save and Connect button to have your lamp will join your wifi network!

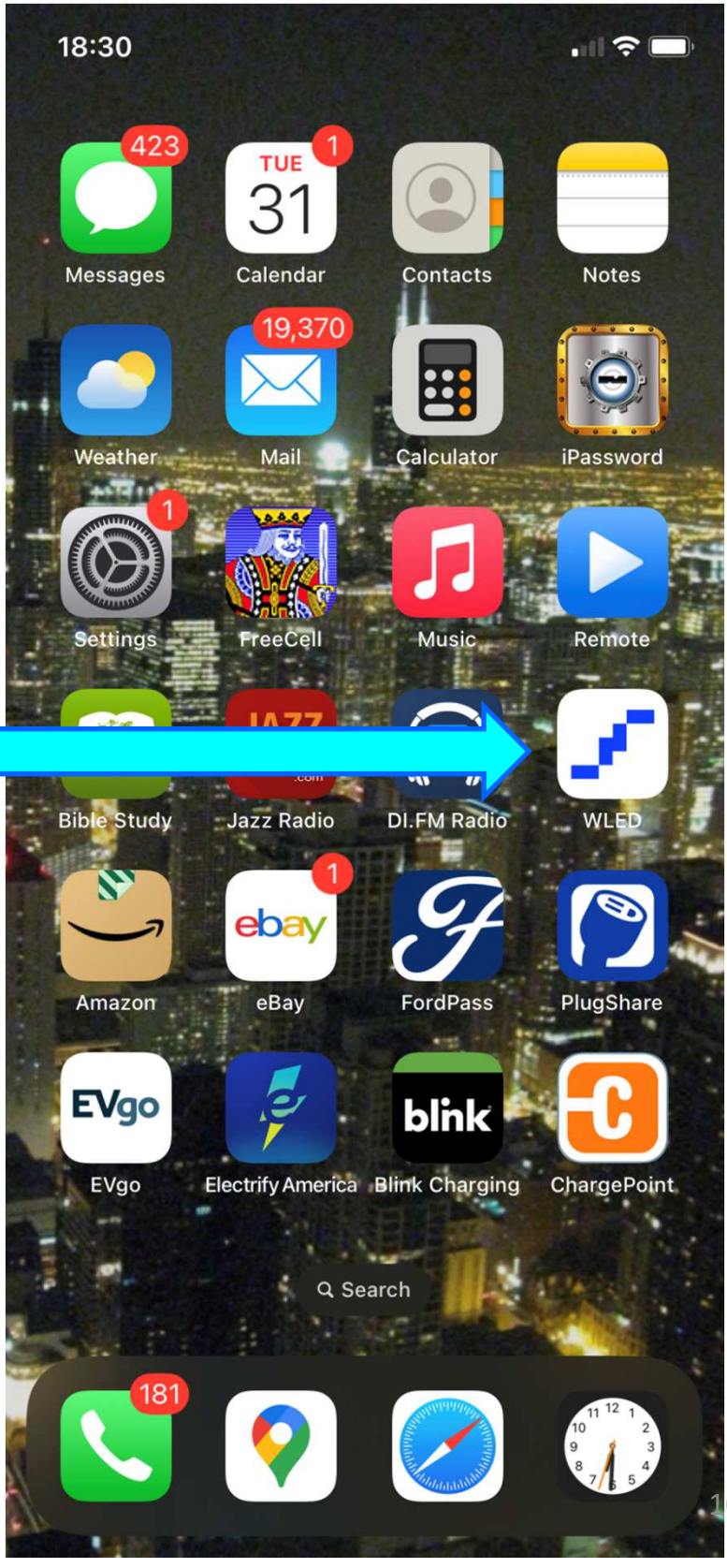
Important: Once it joins an existing network, *the lamp will no longer generate it's own WiFi network and will no longer be accessible in the browser at 4.3.2.1!*

Note: You *might* need to power cycle (unplug/plug) your lamp if it doesn't automatically join your local wifi and/or the app can't find it.



WLED Application

Once you have joined your lamp to an existing WiFi network, you will need to install the WLED client application on your phone if you haven't already done so.



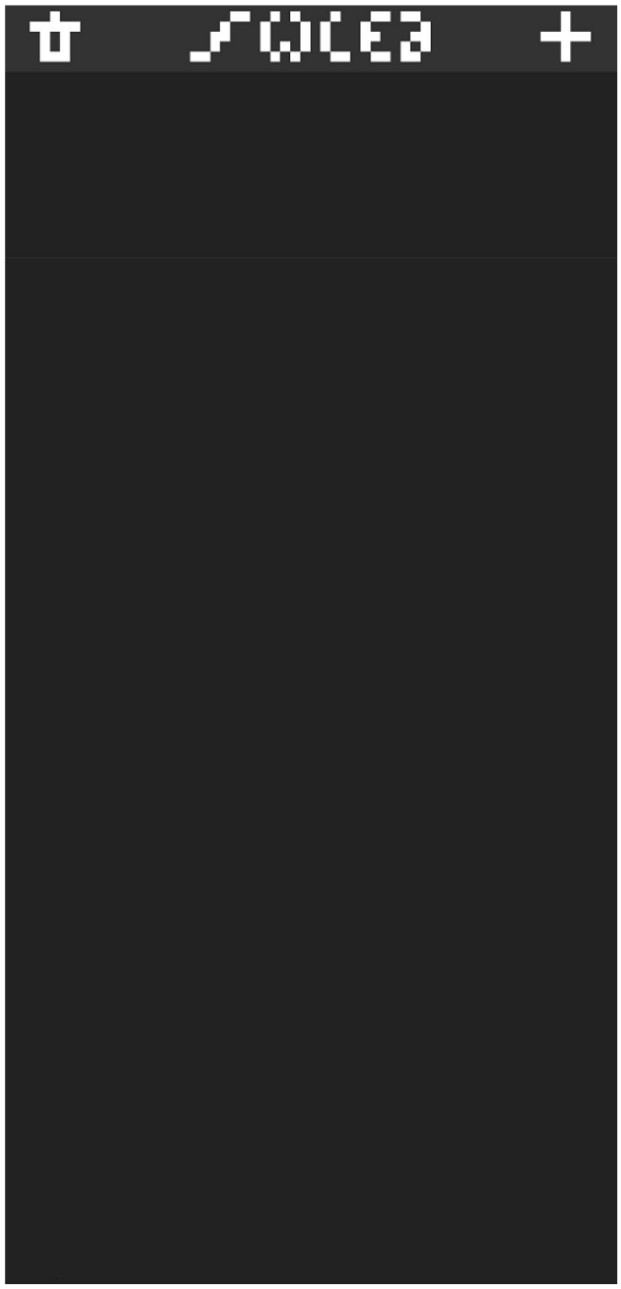
Click/tap on the WLED application to launch.

Without the client application, *you will need to know the IP address* assigned to the lamp by the existing network you joined the lamp to.

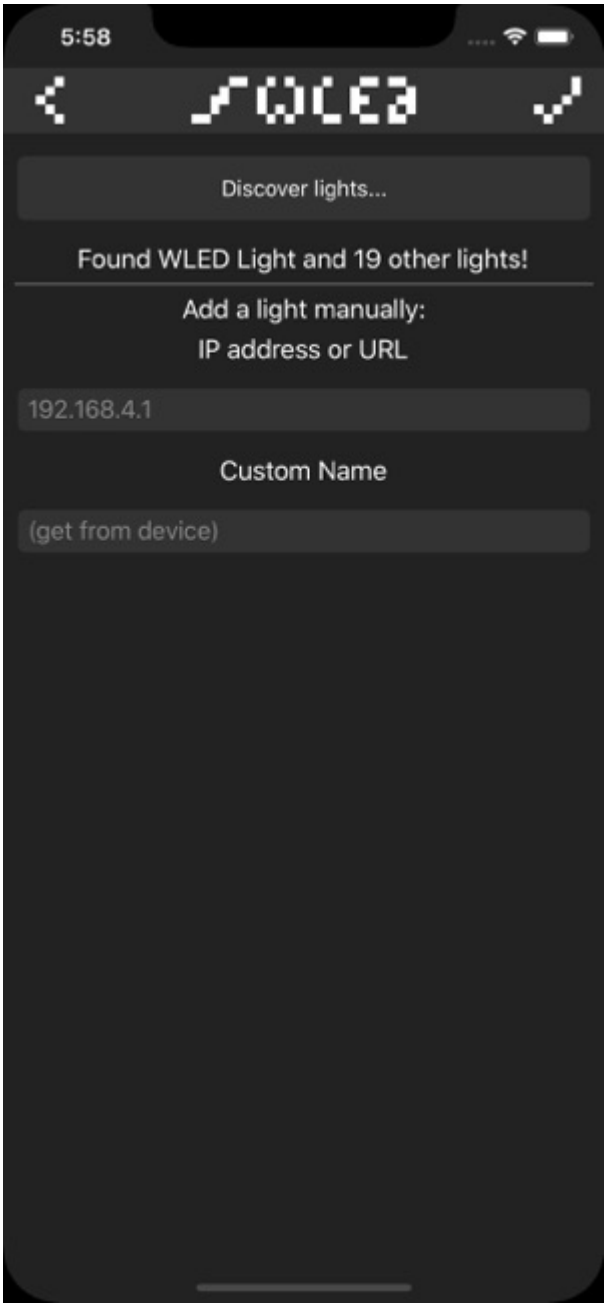
Obtaining this information can be difficult, thus the recommendation to use the app.

Once you have the IP address, you can access the lamp at https://*assigned_IP_address* from any browser (having access to the same wifi.)

Lamp Discovery



When you first launch the app, there won't be any lights listed. Click on the + sign at the upper right which will open the "add light" window.



Click on the "Discover lights…" button. This will cause WLED to search your local wifi network and find the lamp. Make sure the lamp is selected (once discovered) then click on the √ at the upper right.

IMPORTANT! For discovery to work, your phone must ALSO be connected *to the same wifi network* as you have configured the lamp to join!

Basic Color Control

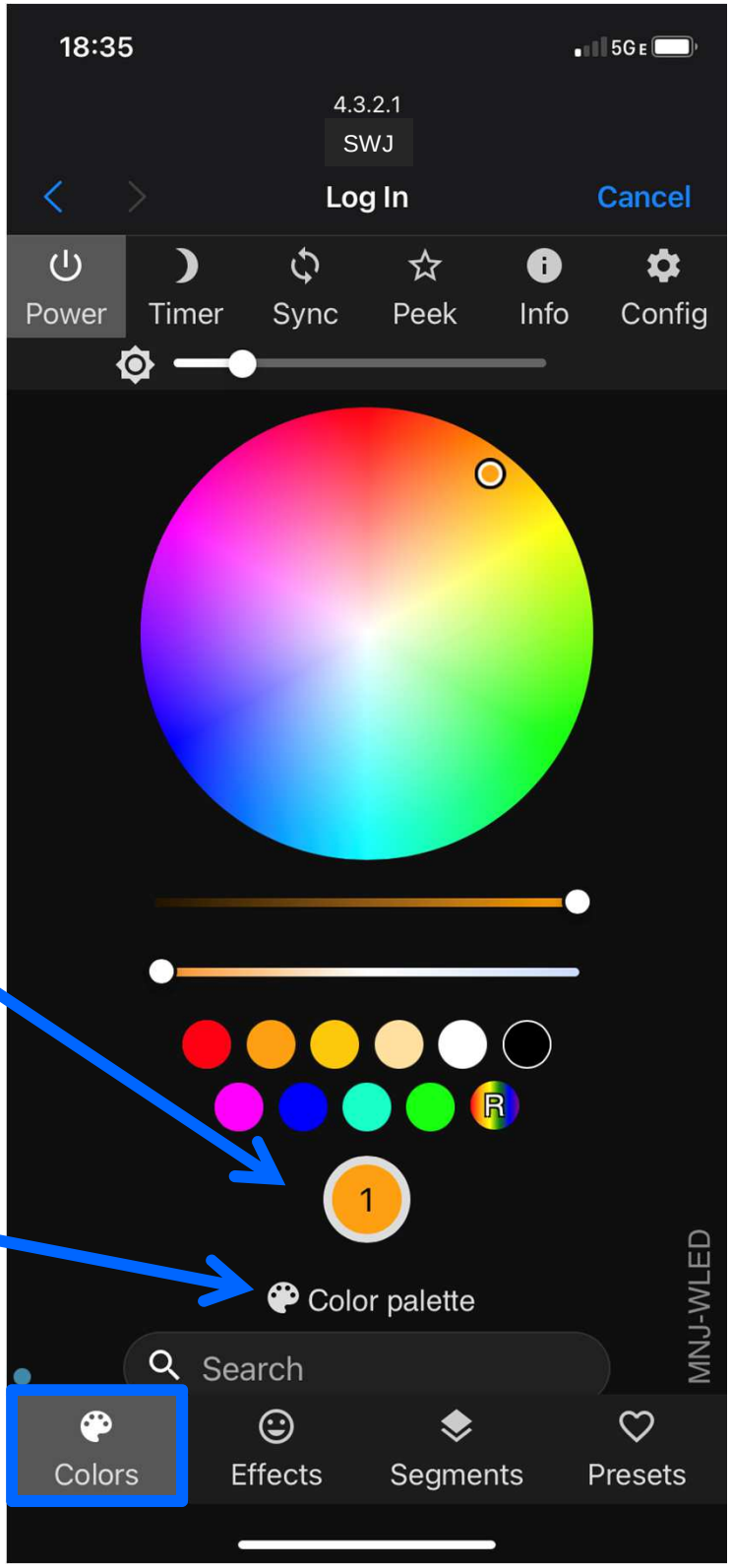
Once your lamp has been added to the WLED application, you can simply click on its entry from the main screen. This will take you to the main WLED control interface window, seen at right.

IMPORTANT: Your lamp has *more than one* LED segment! *Which* segment is affected by the *current* color control settings (or potentially *both* segments) is configured under the Segments pane.

More Color Options

IMPORTANT NOTE
If an Effect (selected under the Effects button) can use only a single color, only one color, the Primary color, will be configurable with the wheel and color buttons. More colors, up to three, will be shown if effects can use them.

The Color Palette button opens the palette configuration menu. As with color selection, which segment(s) a given palette applies to is controlled under the Segments pane



Note: Effects driven palettes are not present in WLED versions prior to 0.14

Primary and Secondary

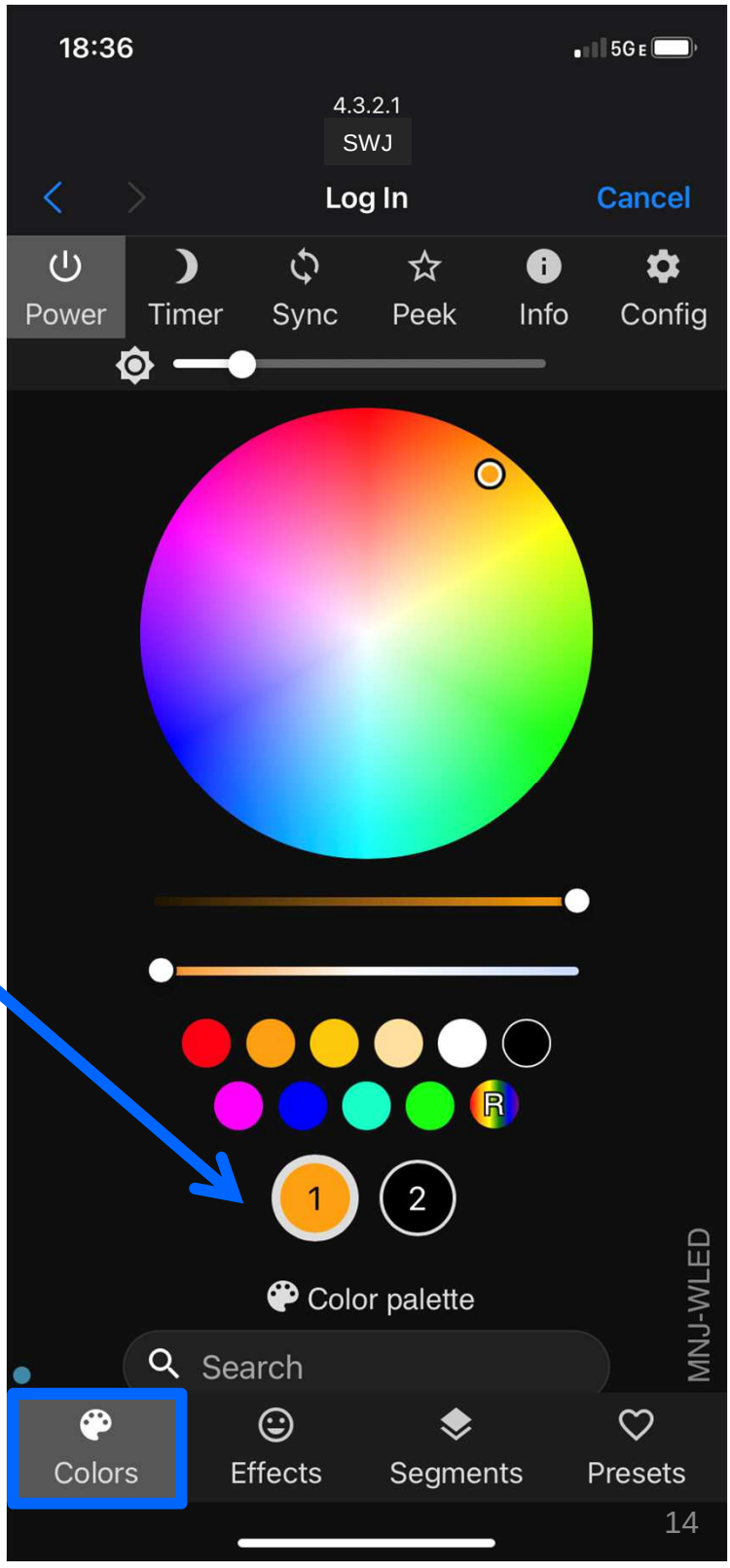
The current effect selected (from the Effects pane) can utilize up to two colors, a Primary (foreground) and Secondary (background) color.

Thus, there are two color configuration buttons available. Which color is being modified by the interface is indicated by a white circle halo around the color.

In this example, the Primary color is ready for configuration.

If the secondary (or tertiary) color is set to black, nothing is displayed, so it is effectively disabled.

Setting the Primary color to black will cause it to act as “negative space” against the background.



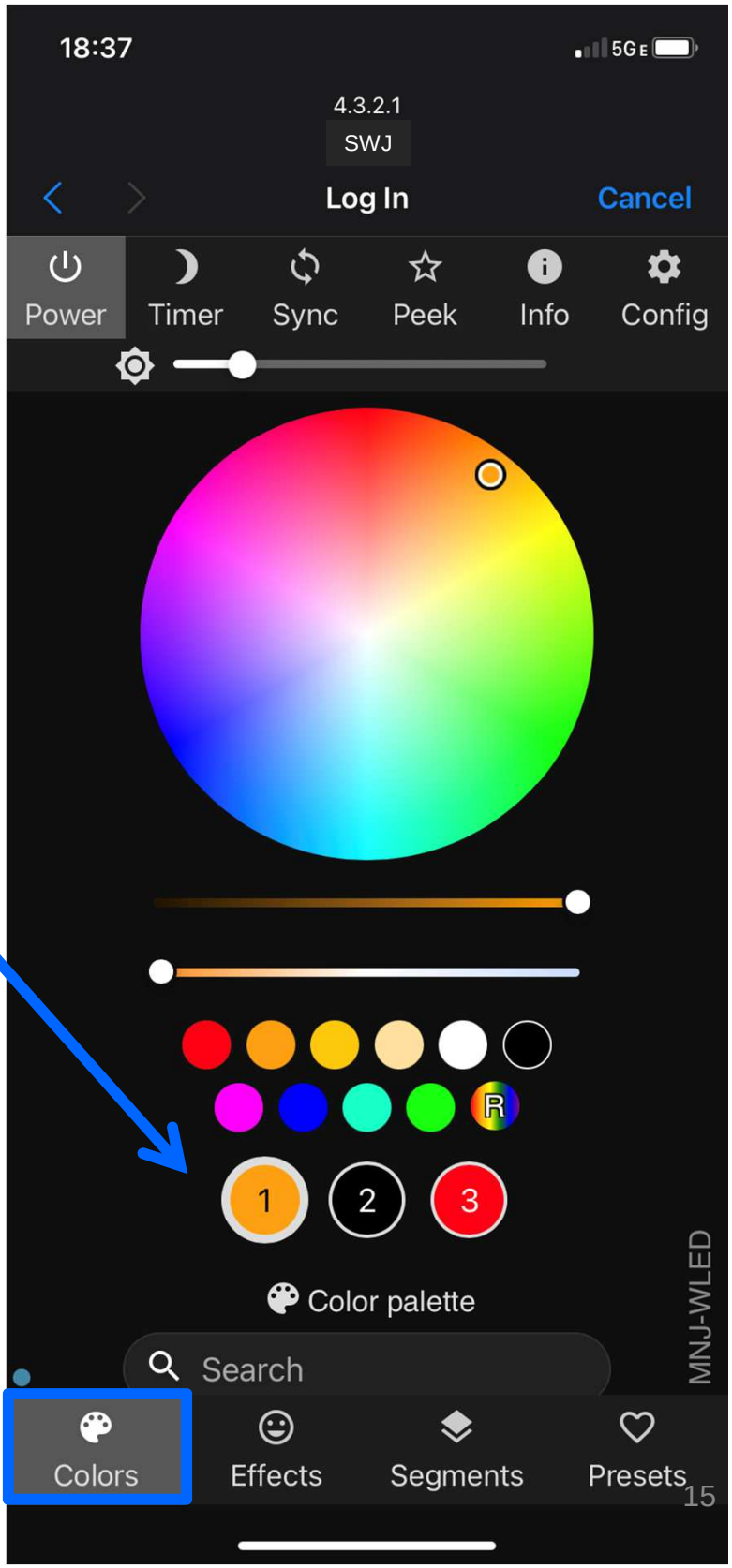
Note: Effects driven palettes are not present in WLED versions prior to 0.14

Tri-Color Effects

And in this example, the current effect selected (from the Effects pane) can utilize up to *three* colors, a Primary (foreground) Secondary (“midground”), and Tertiary (“background”) color.

Thus, there are *three* color configuration buttons available. Which color is being modified by the interface is indicated by a white circle halo around the color.

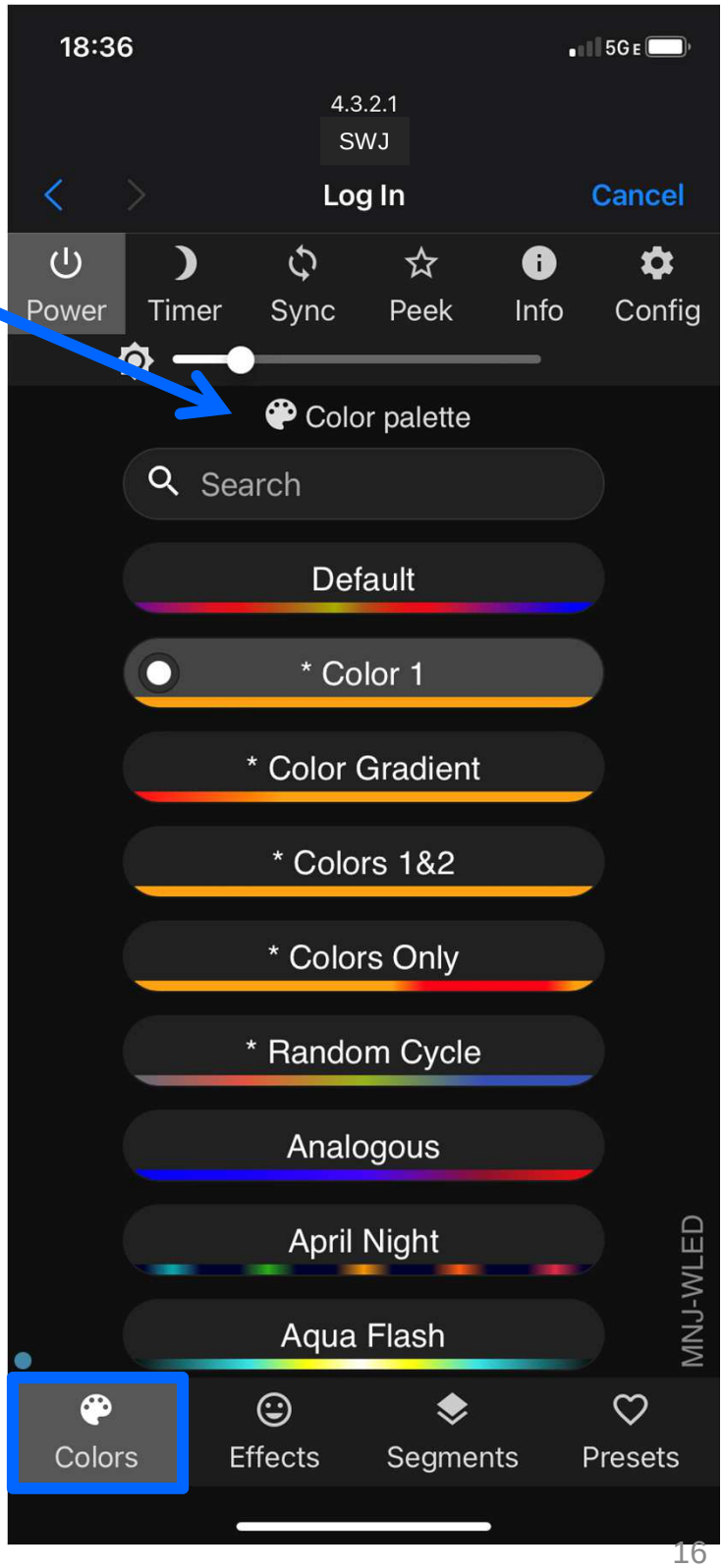
In this example, the Primary color is ready for configuration (white halo), the secondary color is not used (set to black), and the tertiary (background) color has already been set to red.



Note: Effects driven palettes are not present in WLED versions prior to 0.14

The Palette Menu

On *this* pane, <u>Color palette</u> is the *label* for the *menu*, and not a button!



These are all preconfigured palettes. Note that even though some palettes *specify* more than one color, not all *effects* can *use* more than one color!

Click on a palette button to select it and make it the active palette.

Changing the palette can radically alter the behavior of an effect.

By mixing up different effects with different palettes, you have millions of possible luminary experiences at your fingertips!

NB – Yes, it is possible to create your own palettes

Effects!

At last, here is the Effects pane! This is where all the animation magic for your lamp happens!

REMEMBER: *Which* segment is affected by the current FX setting (or even *both* segments) is configured under the Segments pane.

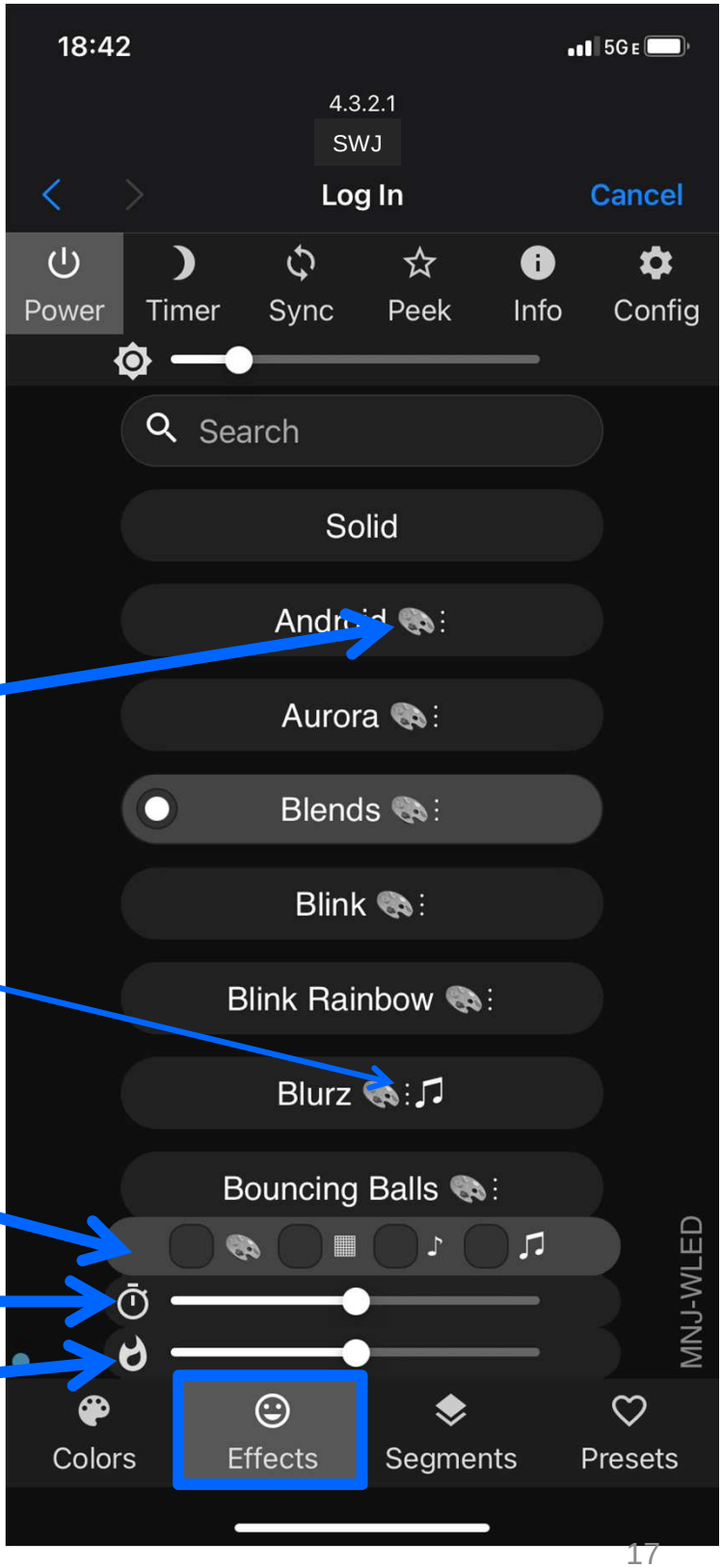
See that palette icon? It means that particular effect makes use of palette settings, that is, it can utilize more than one color. To have an effect utilize *only* one color even if it *can* use more, just set Secondary and/or Tertiary colors to black.

See that musical note? It means that the effect in question is *sound reactive*. If your lamp has been equipped with sound input (still in development at the time this manual was published), the effect will respond to it.

These tickboxes enable the respective features for effects which make use of them.

The watch slider controls effect *speed*

The flame slider controls effect *intensity*



Note: The above granular palette and sound controls are not available in WLED versions prior to 0.14

Segments

This pane controls both which segments are illuminated *and* which segments are configured by the Colors and Effects panes.

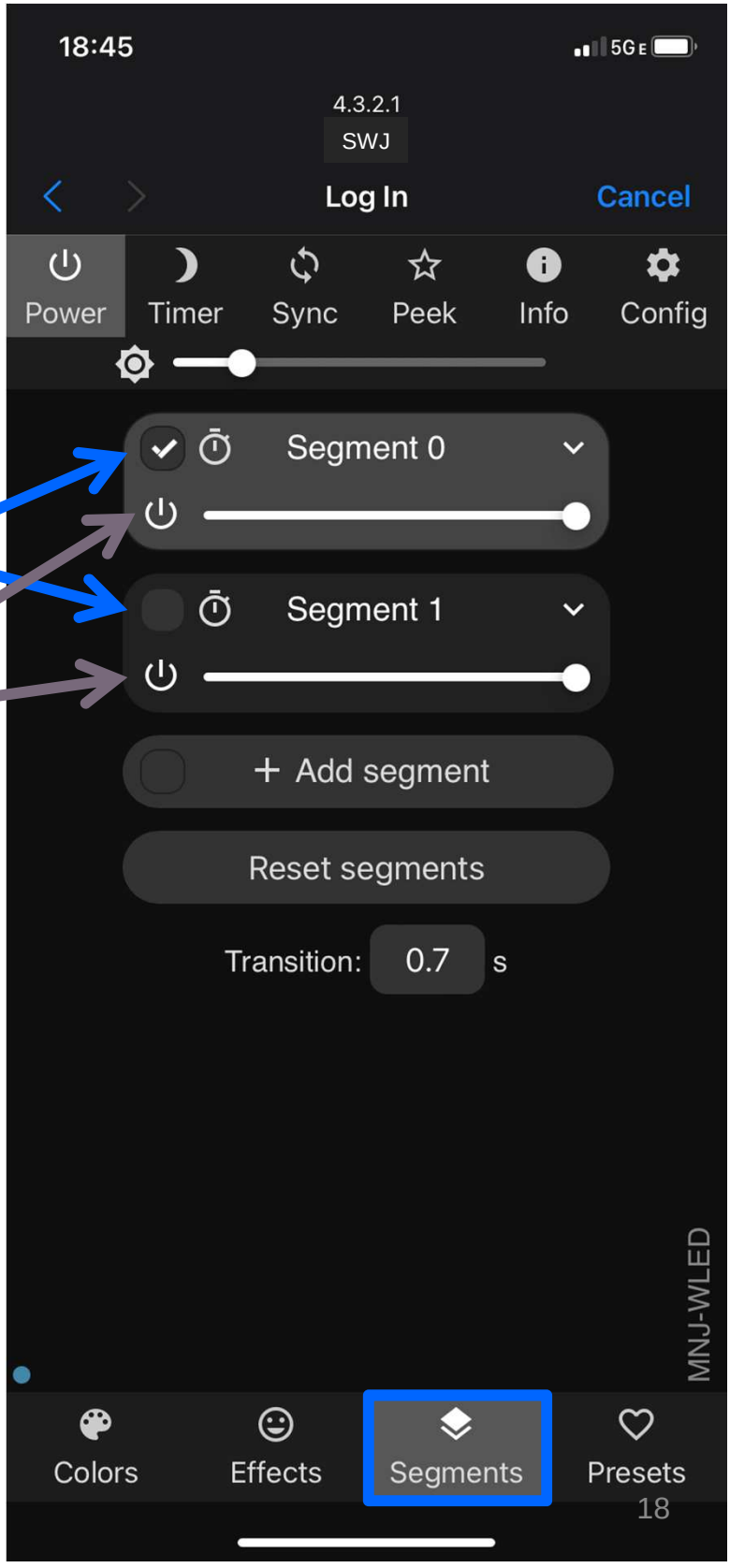
IMPORTANT: *All* segments are configured *simultaneously* if all checkboxes are ticked. This is probably *not* what you want!

The *checkbox* makes a given segment accept configuration settings. Only Segment 0 is selected in this example.

The power buttons *independently* control whether a segment is *illuminated* or not.

You should not normally need to adjust your segment settings.

If you ever decide to alter your segment settings, the original values are available on the Functional Diagram



Presets

This pane is where you select, create, and adjust *presets*.

Presets are buttons which recall all or some of the global lighting configuration of your lamp.

To change lamp settings at different times of day, you must first have a preset defined for each time.

These are “Quck Load” label buttons for instantly accessing frequently used presets.

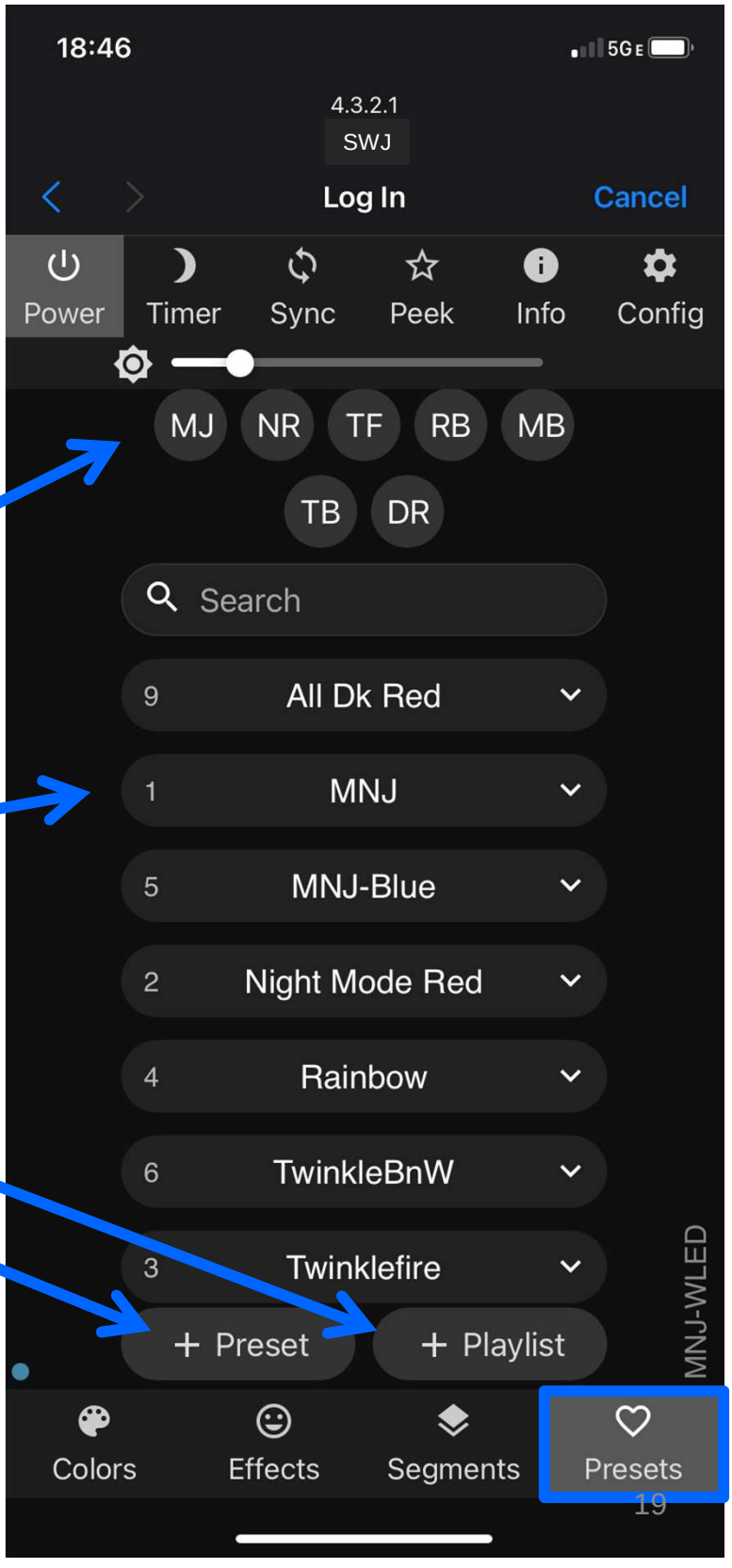
This is a preset button:
- Number of that preset
- Name of the preset
- Details drop-down
Your lamp is configured by default to load Preset#1 at startup/plugin.

This button allows you to assemble presets into a playlist. This is tricky, and not documented in this guide.

Creat/add new presets

IMPORTANT: All segments are configured *simultaneously* if *all* checkboxes have been ticked under Segments. This is probably *not* what you want!

Note: Playlist creation not available before WLED version 0.14



Creating Presets

This pane shows the settings for creating a preset *after* the "+ Preset" button has been clicked

By default, the new preset is labelled with the name of the effect currently running on the active, currently selected segment (see Segments). You should change this to something distinct . The editor automatically opens; later, clicking in the box will edit the name.

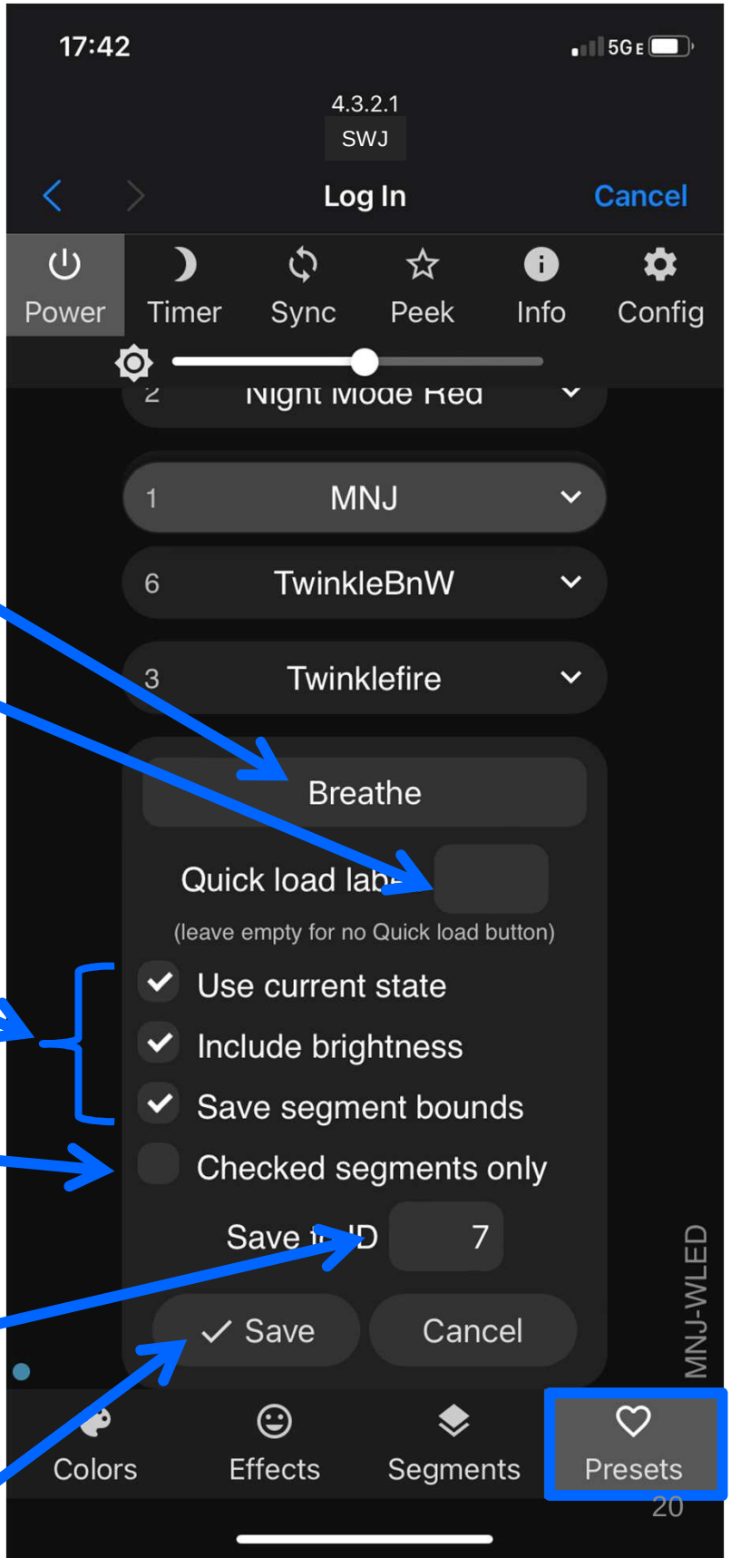
You can add a two character Quick Load label here

In most cases, you want to leave all three of these boxes checked; they will "do what you want to happen", that is, save the global state of the lamp in the preset.

You should probably never check this. It causes the preset to apply to, *and recall*, only the currently active segment

WLED software automatically selects the next available free preset slot number. If you put an existing, occupied slot number here, *it will be overwritten*.

Single-click on Save to create your new preset



Updating Presets

This pane shows the settings for an individual, existing preset

Single-clicking the pencil icon will edit the preset; this preset is already in edit mode.

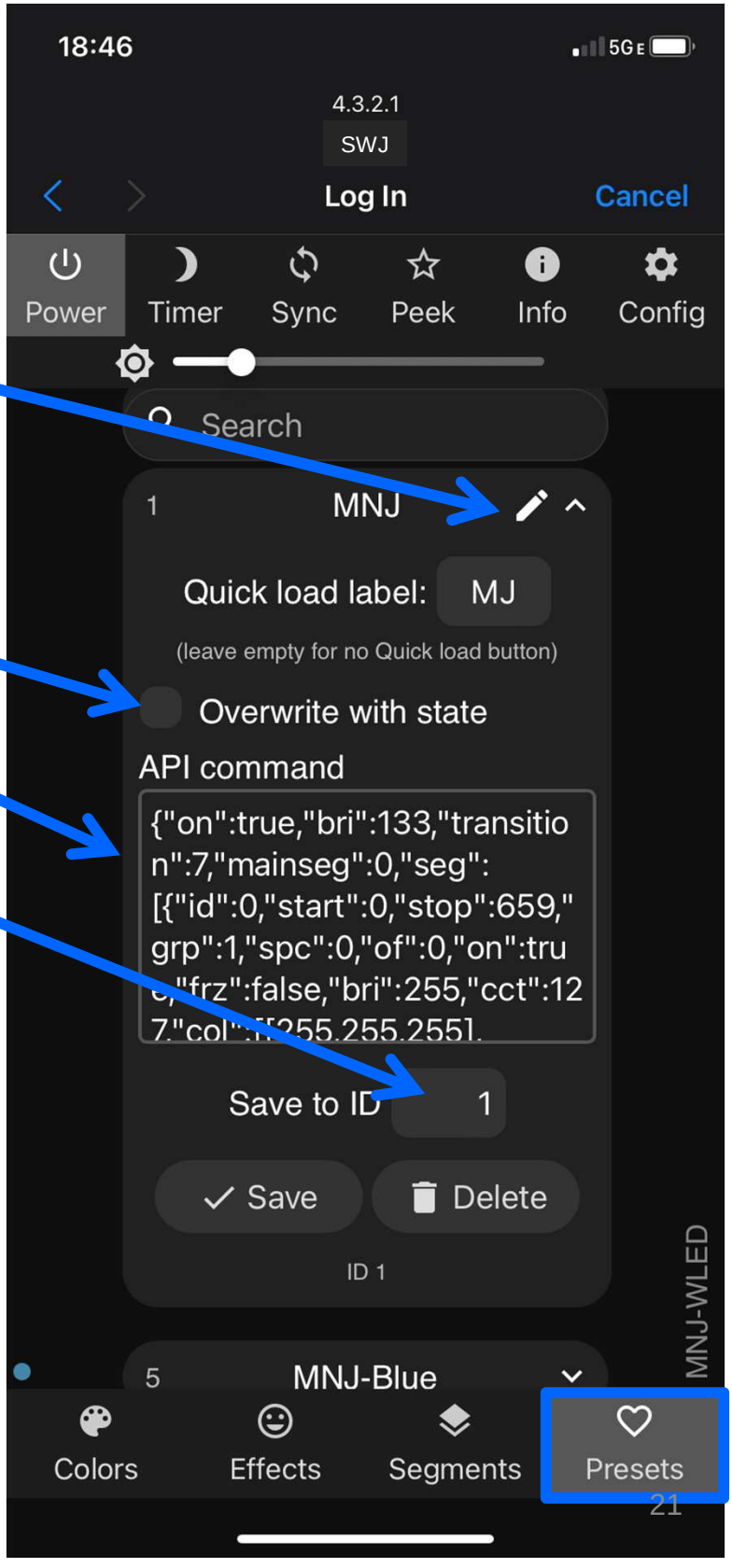
You will want to tick this checkbox if you are *updating* a preset with the current lamp settings.

You will probably never need this JSON command string

You can change the ID number to overwrite a different preset

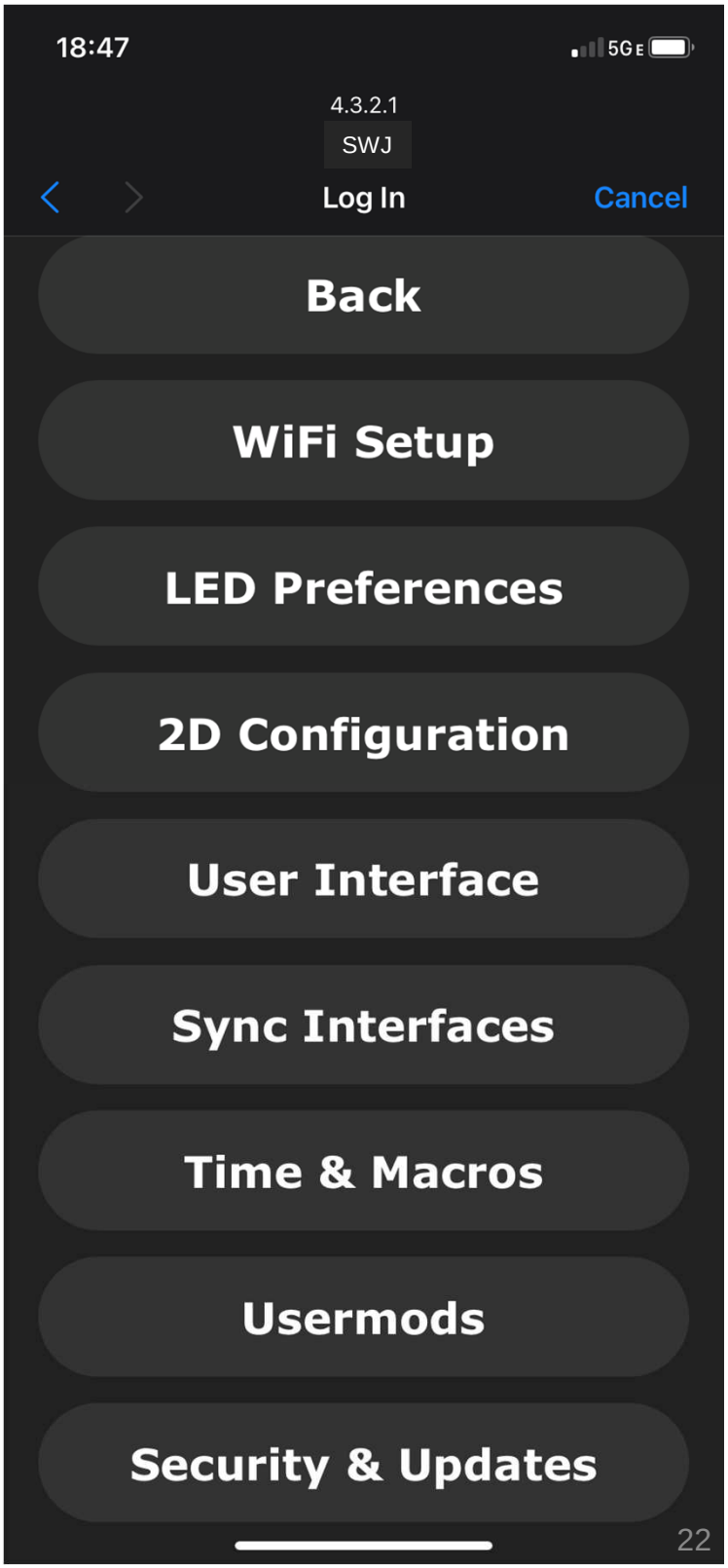
Click on “Save” to update the preset, click on “Delete” to remove it

IMPORTANT: If you make no other changes and do not tick the Overwrite checkbox, nothing will happen when you click Save.



Global Configuration

This is the global config menu reached by clicking on the “gear” icon on any of the configuration panes



Return to lamp control panes

Access the WiFi setup screen

Configure LED preferences

Configure an LED matrix (Not applicable to your lamp)

Modify certain UI operations

Synchronization with other lamps or home automation

Configure timezone, macros, and preset invocation at specified times

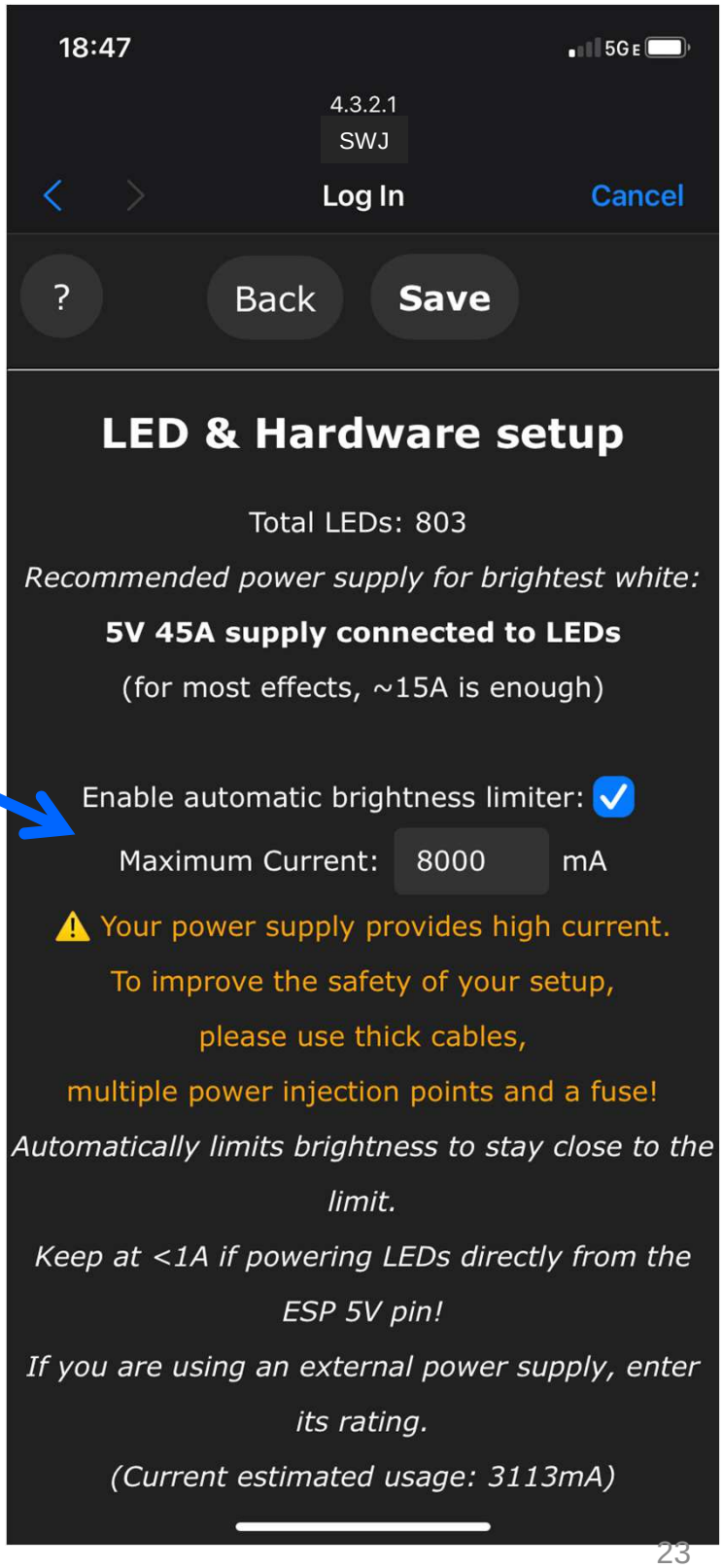
Configure Usermods (Not applicable to your lamp)

Modify interface security and apply software updates

LED Preferences 1

Under normal circumstances, you should never need to access or modify anything on this screen

WARINING!
DO NOT MODIFY THE POWER SETTINGS!
Disabling the automatic brightness limiter or modifying the maximum current value could cause a power overload which could damage your lamp or start a fire!
Contact manufacturer before changing these settings!



The rest of this screen controls the hardware configuration of the microcontroller. You should not normally need to ever change these settings.

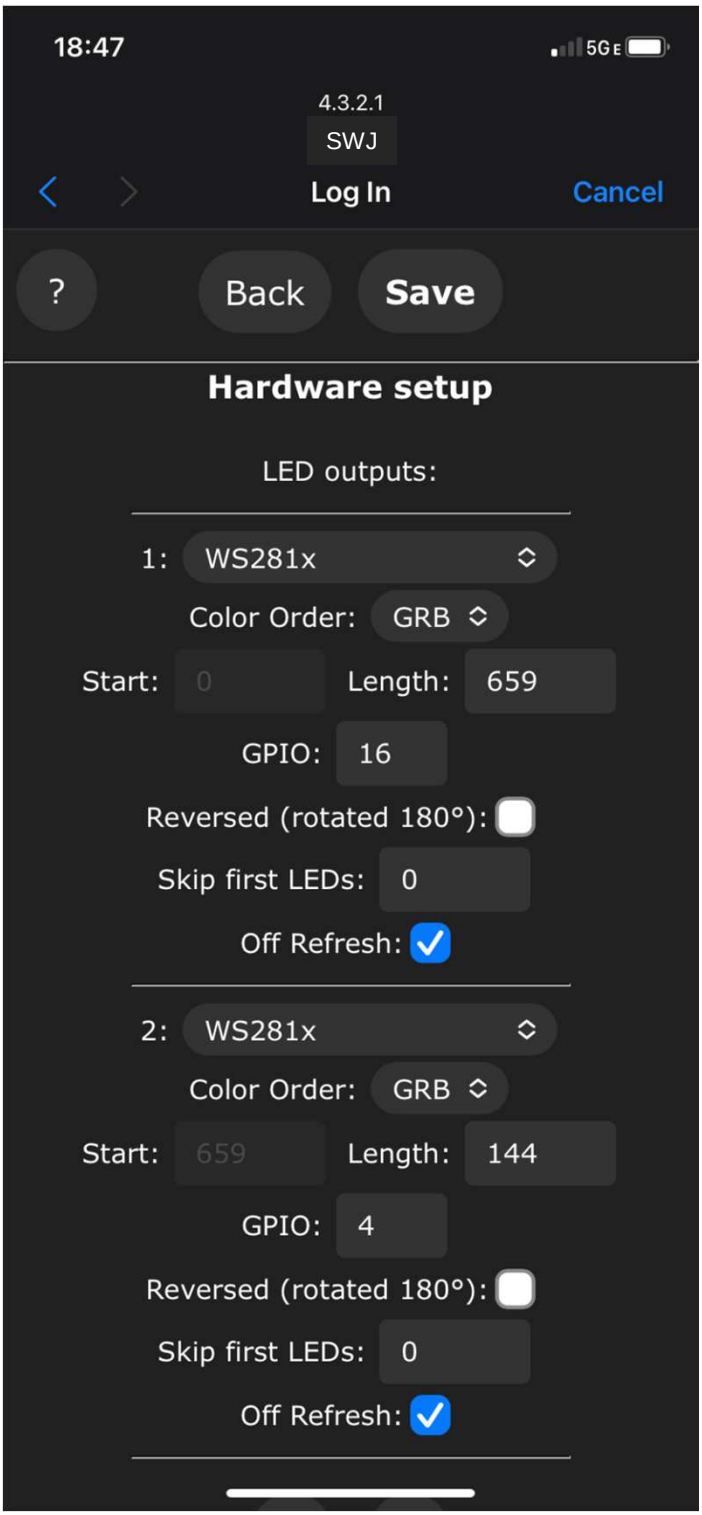
If you ever need to re-enter them, the original GPIO pin configuration is listed on the Wiring Diagram.

Other settings on this screen require advanced knowledge of WLED software operation.

LED Preferences 2

The LED Preferences screen is extensive. Here is the next bit of it, which contains the microcontroller hardware configuration for the physical LED segments of your lamp.

You should not normally ever need to modify these settings.



Note that while segments are listed as Segment 1 and Segment 2 here, in the Segments control pane they show up as Segment 0 and Segment 1, respectively

If you ever need to re-enter them, the original GPIO pin configuration is listed on the Wiring Diagram.

Remaining LED Preferences screen settings require advanced knowledge of WLED software operation and the hardware configuration of your lamp's microcontroller.

LED Preferences 3

The LED Preferences screen is extensive. Here is the next bit of it, which contains the microcontroller hardware configuration for buttons and infrared sensors

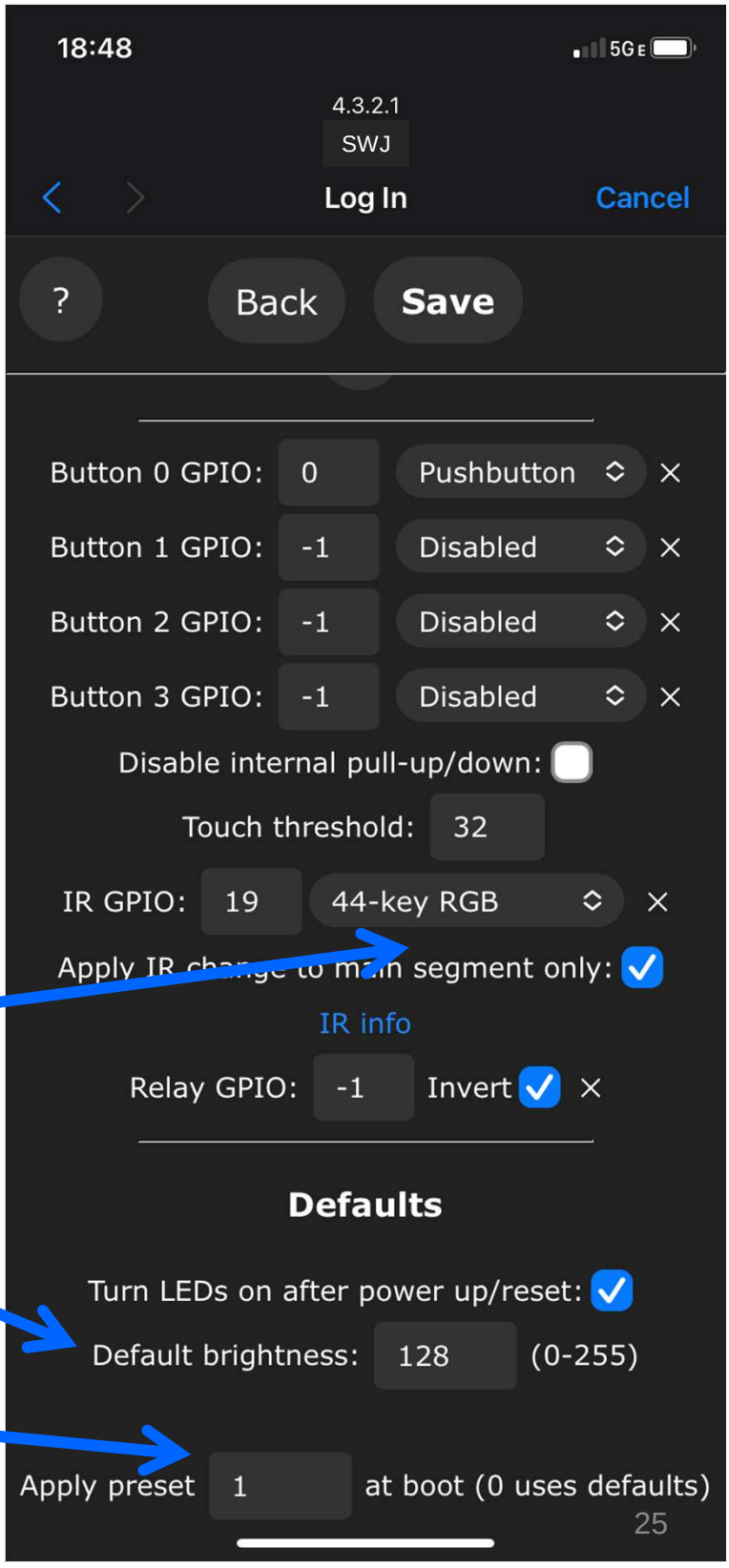
You should not normally ever need to modify these settings.

Most of these remaining settings require advanced knowledge of WLED software operation. Contact the manufacturer for questions or before modifying any settings without explicit instructions.

By changing the type of remote from 44-key to JSON, you can fully customize all key operations. This is very advanced stuff, and is beyond the scope of this guide.

Default brightness the lamp powers up with; don't modify this, modify the settings in the startup preset instead.

This field determines what preset loads when the lamp is first powered up.
You may modify it to use a different preset number if you wish. (The preset *must* already exist!)



Time and Macros 1

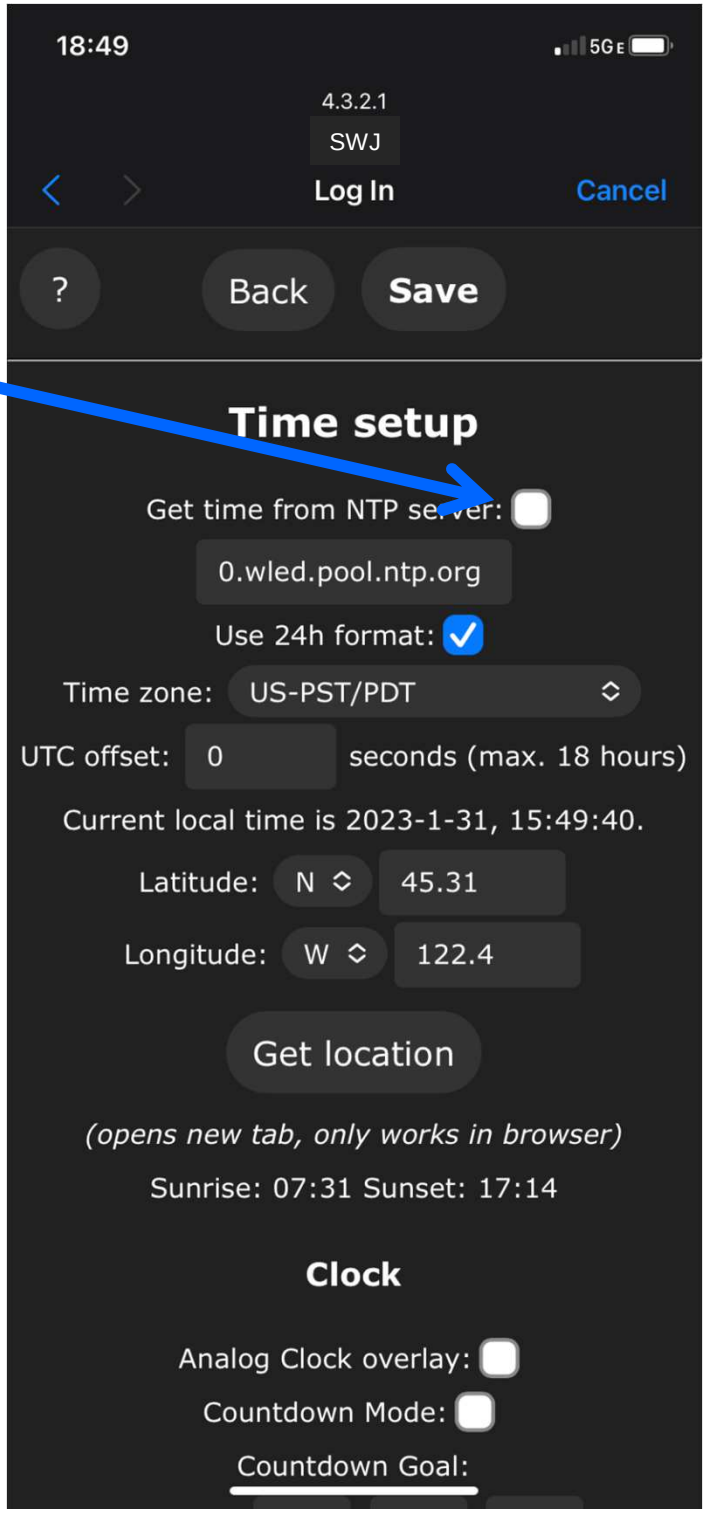
This screen is where time-of-day and time-of-day triggered actions are configured

IMPORTANT: Once you connect your lamp to an existing WiFi network, be certain that this box is checked to have your lamp automatically update its internal clock.

Leave it unchecked if your lamp is not connected to an existing WiFi network. Instead, time will be updated whenever you open the browser interface. This is not terribly reliable though, so WiFi connection is strongly recommended.

Your lamp comes preconfigured for the latitude and longitude of your home address, or the nearest major city (e.g. Portland, OR)

Clock overlays are for circular LED layouts, which your lamp isn't.

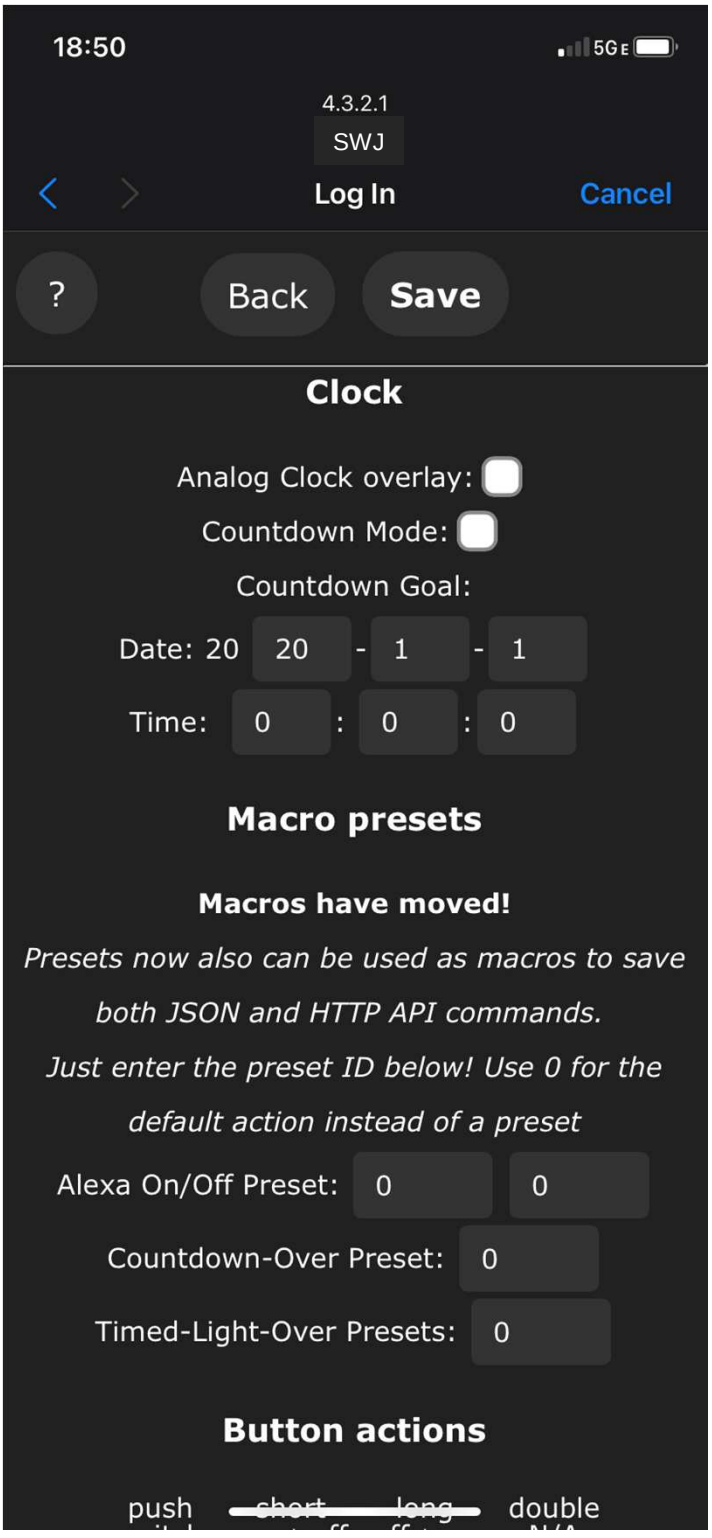


Time and Macros 2

This section of the Time and Macros screen controls analog clock overlays (previously discussed) and preset invocations for Alexa, countdowns, and timer endings.

The next section (not shown) configures button actions, however, since your lamp does not include any buttons, that section is inapplicable for your lamp.

You will probably not need these any of these settings most of the time, if ever.



Time and Macros 3

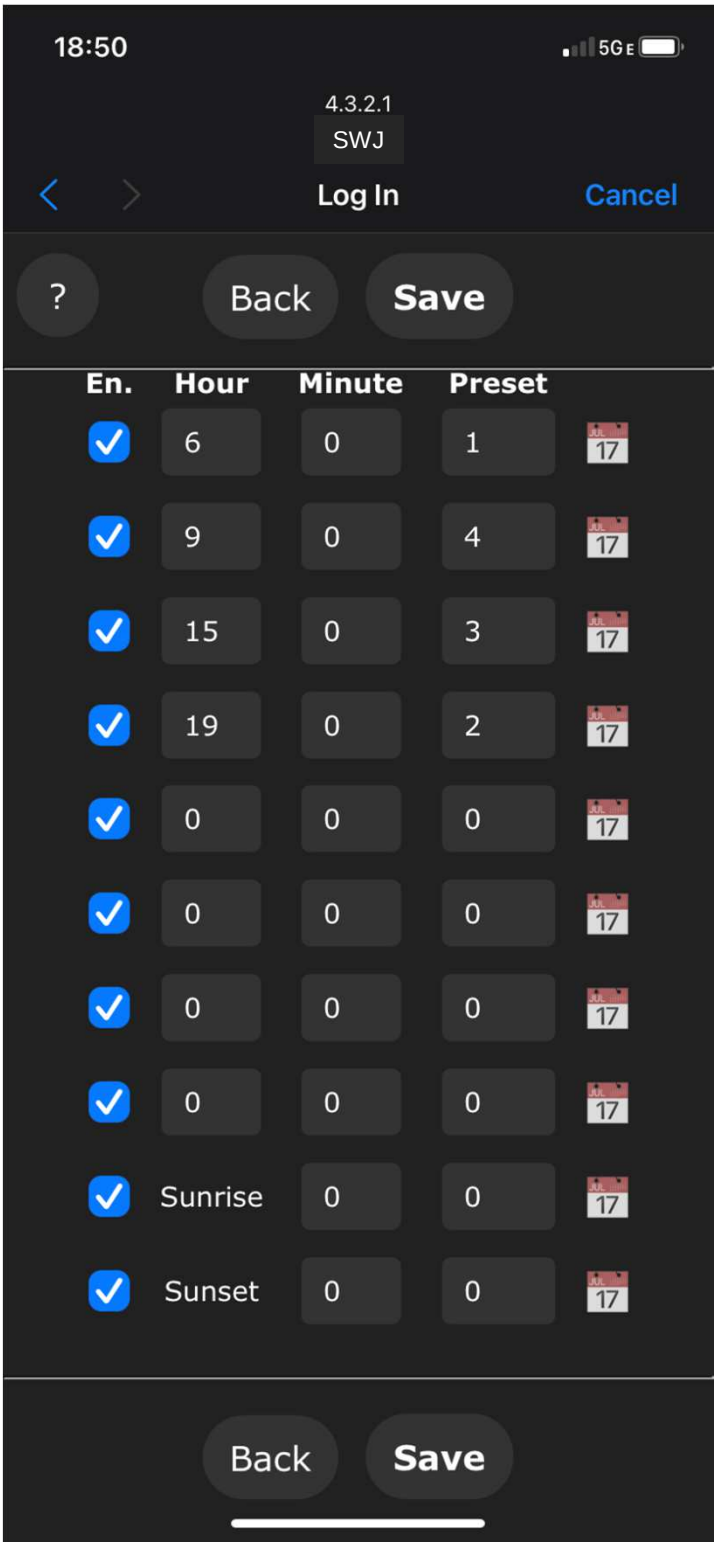
This section is the “meat” of the Time and Macros screen. These settings are where you can specify any preset you wish to take effect at any time of day, or any calendar day.

Note that the entries do not need to be in chronological order. Although since they will *execute* in chronological order, it is suggested that you arrange them that way for convenience in following the schedule of settings you have laid out for the lamp to follow.

Note that hours and minutes are in 24-hour time format; e.g., 18:00 is 6:00PM.

Click on the calendar to access day-based settings for a given entry.

Column labels should make the use of the remaining fields intuitive, with no further explanation necessary.



Preconfigured Presets

Your lamp comes with a number of a number of presets preconfigured and ready for use. All manufacturer created presets will apply settings to both the base and main element of the lamp.

1. **MNJ – Pattern configured to run when lamp is first plugged in; Gold-and-white “Twinklefox” effect for main element, Gold/white “Breathe” effect for base**
2. **Night Mode Red – Nighttime friendly dimmed red; “Blends” effect for main element, “Breathe” effect for base**
3. **Twinklefire – Simulates a fire effect in the main element with “Twinklefox” effect, echoed in the base with “Breathe” effect**
4. **Rainbow – A combination of “Pride 2015” effect for the main element and “Random” color effect for the base**
5. **MNJ-Blue – Adds a touch of blue to the #1 preset with blue as the tertiary color for the main element**
6. **TwinkleBnW – Coruscating blue and white; “Twinklefox” effect on the main element with blue/white “Breathe” effect for the base**
7. **Dsf**
8. **Dsaf**
9. **All Dark Red – Solid colors for both segments, dimmed very dark red for both for use at night**

Caveats

WLED is open source software, and the price of its awesomeness is that there are still odd behaviors and occasional bugs that you may encounter

- **Don’t try to update the software yourself without first conferring with manufacturer technical support as to the best version to update to, and the best workflow to use for updating via the application**
- **Always run WLED behind a router or, preferably, firewall; WLED has not been hardened to maximize network security, so it is possible that a bug could be uncovered which allows the software to be leveraged in an attack. (Of course, this precaution is even *more* true for any Windows computers connecting to your wifi network.)**
- **The outer shade of the main element can be removed for cleaning; use a microfiber cloth with soap and water.**
- **Do not immerse the lamp in water, or get *any* water on the main LED element or in the base**
- **The lamp core can and should be adjusted to center it in the shade; *never let the upper part of the core touch the shade!* The LEDs could get warm enough to melt the shade if they are in direct contact with attendant reduced cooling**
- **Keep the lamp away from excessive heat; high heat can melt the main element shade or the small window bezels in the base**

Support

We hope your new WLED powered Star Wars Lamp will provide you with years of trouble-free operation. However, should you encounter difficulties, you can reach PCFdesigns via the following methods:

- **E-mail: pcfdesigns@palas.com**
- **Cellular SMS: 812-662-5933**
- **Snail Mail:**

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  33 Wildwood Way
  Batesville, IN 47006