DS Lighting System controller HD iOS application user guide 1.0

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1. Introduction

1.1 Requirements

1.1.1 App requirements

- iPad with Wi-Fi
- iPad iOS version 6.1 or later

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1.1.2 Lighting hardware requirements

- DS LED Lighting System PSU (power supply unit)
- DS LED Lighting System Wi-Fi module

1.2 App description

App's aim is to provide a user friendly controller for the DS Led Lighting System. DS LED Lighting System can be operated by using the buttons on PSU or by using an iOS app that connects with DS LED Lighting System over Wi-Fi connection.

App has the same options for changing light as PSU, however, app controls are more intuitive on big screen. App has additional features like presets and lighthead status overview.

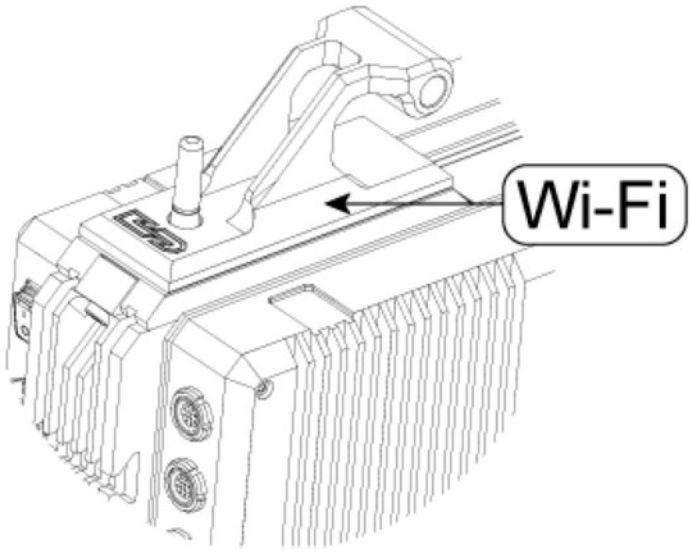
App features

- Group lightheads in different channels
- White, RGBW or RGB wheel touchscreen controls for every channel
- Six preset buttons for saving color settings
- Status view of all connected Power Supply Units (PSUs)
- Satus view of all connected LED lightheads
- Temperature, lighthead cooling fan RPM and Uptime display for each LED lighthead
- White settings color temperature 1500 ... 10000K, intensity 0 ... 100 and tint -30 … 30
- RGBW settings red 0 … 100, green 0 … 100, blue 0 … 100, white 0 … 100
- RGB wheel settings RGB color wheel with intensity slider
- Save scene (all color and channel assignment data)
- Load scene (all color and channel assignment data)
- Lighting system error management

1.3 DS LED Lighting System hardware description

DS LED Lighting System set consists of PSU, three lightheads, Wi-Fi module and other hardware. This short description explains hardware basics that user must know to use iPad app.

1.3.1 Wi-Fi module and possible connection modes



DS LED Lighting System PSU with Wi-Fi module

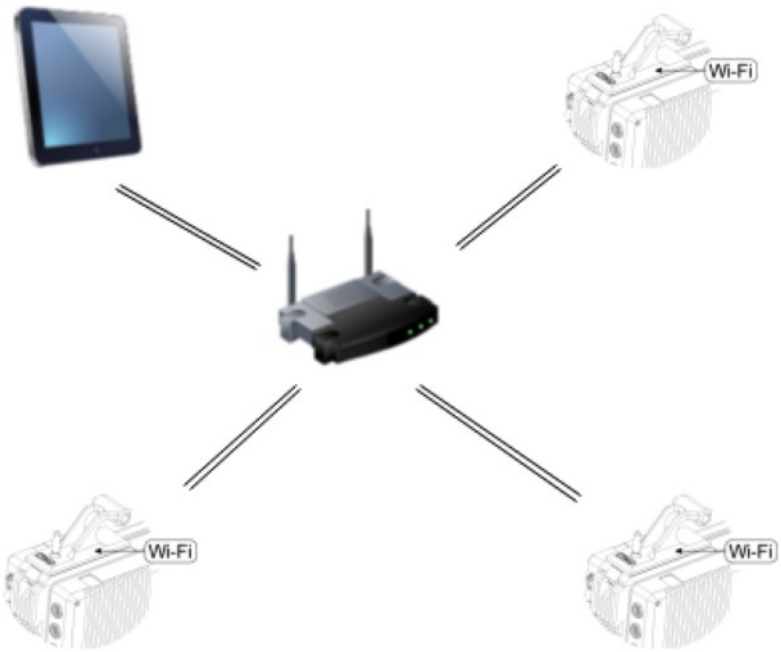
Wi-Fi module is mounted on PSU unit.
Wi-Fi module has to be correctly installed because application needs Wi-Fi connection to communicate with PSU.

Wi-Fi module can be used in MASTER or SLAVE mode.

In MASTER mode DS LED Lighting System Wi-Fi module is working as a Wi-Fi router and iPad can connect directly to DS LED Lighting System Wi-Fi module.

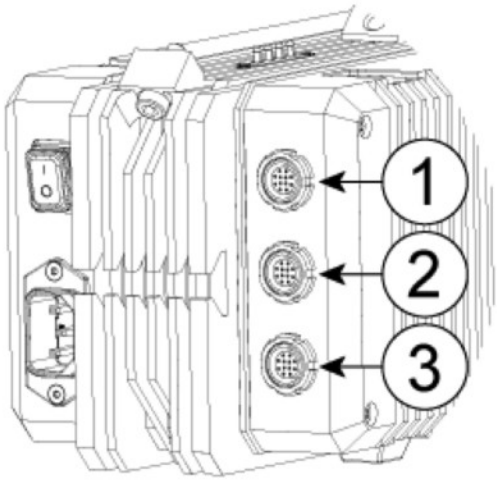
iPad is directly connected to DS LED Lighting System Wi-Fi module.

In SLAVE mode DS LED Lighting System Wi-Fi module connects to third party Wi-Fi router. iPad also connects to third party Wi-Fi router. This setup enables iPad to control multiple DS LED Lighting System PSUs.



Three DS LED Lighting System Wi-Fi modules connected to third party router.

1.3.2 PSU lighthead ports numbering



One PSU has three ports for lighthead cables. Ports are numbered 1 to 3 from up to down. Application enables user to control each lighthead color individually. To achieve expected results user must understand correlation between physical PSU ports and ports displayed in application software.

1.3.3 Wi-Fi module configuration as MASTER

In default setting Wi-Fi is in MASTER mode (note text MASTER on the screen). It means that Wi-Fi module is working as a router.

“DS Light” is SSID.
To change MASTER mode settings or switch to SLAVE mode use up and down keys to select row SETUP and press OK button.

MASTER mode settings are displayed.

First row MASTER has arrows pointing left and right. It means that there are other options available. Here user can change between MASTER and SLAVE mode.

To change SSID use up and down keys to select row NAME. Use rotary button to change letters by turning the button. Push down on rotary button to delete selected character.

Select CHANNEL row to change Wi-Fi channel if needed. Use left and right buttons to change the value.

To save MASTER or SLAVE settings and return to previous menu use up and down keys to move to the bottom row as shown on picture and press OK.

Now settings are saved and Wi-Fi module starts with configured settings.

1.3.4 Wi-Fi module configuration as SLAVE

To configure Wi-Fi module as SLAVE user needs to know third party router SSID and password (if used), because in SLAVE mode Wi-Fi module works as a Wi-Fi client that connects to third party router.

Enter setup mode as described above and use left and right buttons to change first row from MASTER to SLAVE.

Use up and down keys to move to different rows and rotary button to change (rotate) or delete (push down) values.

Row NAME value (PSU 1) is used to identify Wi-Fi module. It is shown on PSU screen and in iPad app.

Next user has to choose third party router Wi-Fi network from available networks.

Select row NETWORK and press OK.

All available Wi-Fi networks are displayed on the screen.

To refresh network list push down on rotary button. Refresh can take few seconds.

Use up and down keys to select third party network (DS LightR) and press OK to select this Wi-Fi network.

Next step is to enter Wi-Fi network password. Password minimum length is 8 characters.

Use rotary button to insert characters by rotating. Push down on rotary knob to delete selected character.

Use left and right buttons to select another character.

When password (12345678) length is at least 8 characters OK is displayed on the screen.

Move down on the last row and press OK to save and activate new Wi-Fi settings.

1.3.5 Wi-Fi errors when Wi-Fi module is in SLAVE mode

Error CAN'T JOIN indicates problem with Wi-Fi network selection. Network DS LightR is not available.

To fix that error go to setup and change the network. Use refresh button to refresh Wi-Fi networks list.

Error WRONG PASS indicates that Wi-Fi network DS LightR has different password than user entered.

To fix that error go to setup and change the password. Use rotary knob to change and delete characters. Use right knob to move right to check if there are some hidden characters that did not fit on the PSU screen.

1.3.6 PSU app connection indicator when Wi-Fi module in MASTER mode

PSU display shows Wi-Fi module SSID (Service set identifier (SSID) is a human-readable string and thus commonly called the "network name"). By default, SSID is “DS Light”. To connect iPad to network “DS Light” user must choose this network in the iPad General Settings menu.

When app successfully connects to PSU, antenna sign (1) is displayed on PSU screen. This means that iPad application is connected to PSU and can control all connected lightheads.

2. Connecting iPad to DS LED Lighting System

2.1 Download DS Lighting System controller HD app from App Store

Go to App Store and search for an app named “DS Lighting System controller HD”. Download and install the app. For instructions look your iPad user guide.

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2.2 Choosing DS LED Lighting System Wi-Fi network

Choose DS LED Lighting System Wi-Fi network from available networks. You can see the DS LED Lighting System Wi-Fi SSID on the PSU screen (1.3.2).

DS LED Lighting System Wi-Fi module default IP address is 1.2.3.4.
Connected client (iPad) can get IP address in the range of 1.2.3.14 to 1.2.3.20.

2.3 Launch iPad app

After connecting to DS LED Lighting System Wi-Fi network, launch DS LED Lighting System controller app by clicking DS Lighting app icon.

At the app upper right corner you can see the PSU’s connection state. There are three states.

1. Wi-Fi to PSU error (red) - app is connected to DS LED Lighting System Wi-Fi module but there is no connection to PSU.
2. Reconnecting (yellow) - app is trying to connect to Wi-Fi module.

3. Connected (green) - app made connection with PSU over the Wi-Fi module. You can start using the app.

If connection state does not change to connected after a few seconds see troubleshooting section 4.1.4 .

If connection state changes from “Connected” to something else then wait for few seconds. If connection state does not change to “Connected” see troubleshooting section 4.1.4 .

3. Using app controls

3.1 Definitions

In lighting system light is described two ways.

1. White light is described by color temperature, tint and intensity.
2. Colored light is described by RGBW components.

RGBW means red, green, blue and white.

3.2 Channel buttons

Channel button lets user choose one channel to manipulate with light control knobs. Default channel is channel one.

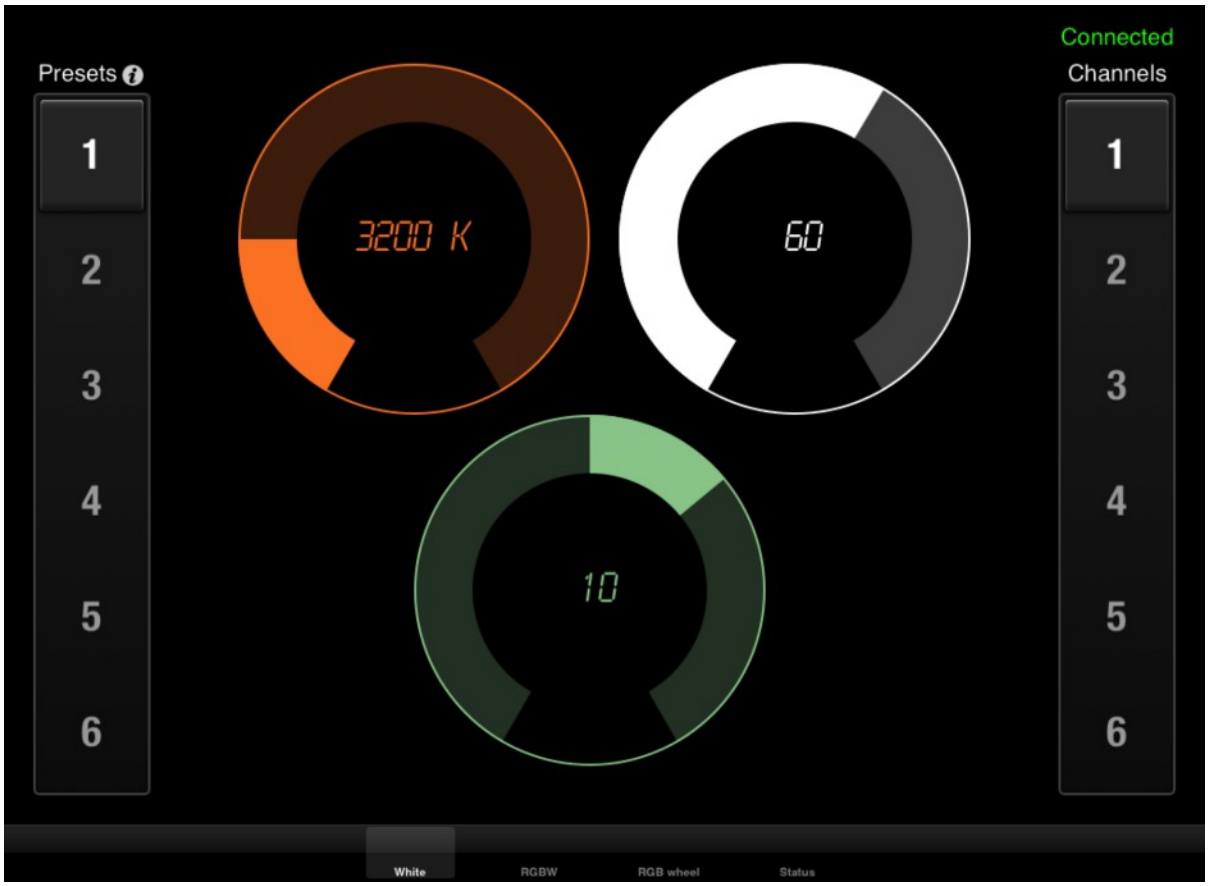
You can group lightheads into six channels (3.6). One lighthead can be simultaneously only in one channel.

3.2 Preset buttons

To save current light settings under button 1 hold down preset button 1 until saving process spinner turns green. Preset is saved.

To load a preset, push preset button once. Preset values will appear on the screen.

3.3 White view tab



White view has three round knobs. Drag your finger on the knob to change value.

1. Temperature knob enables changing color temperature in the 1500 … 10000K range. Default value 1500K.
   Double tap is 3200K and triple tap is 5600K.

2. Intensity knob enables intensity change from 0 to 100. Default intensity is 0 - lightheads are switched off.
   Double tap is 50 and triple tap is 100.

3. Tint knob enables tint change in the -30 … 30 range. Default value is 0.
   Double and triple tap are 0.

3.4 RGBW view tab

RGBW view has four round knobs for red, green, blue and white. Drag finger on the knob to change value.

Each round knob represents its color. Red knob enables red adjustment in the range 0 … 100, green knob enables green adjustment in the range 0 … 100 etc.
Default value for RGBW knobs is 0.

Button in the center of the screen enables user to hide or unhide RGB knobs. When user hides RGB knobs then user can control only white knob. This mode is meant to be used with lightheads that have only white LEDs.

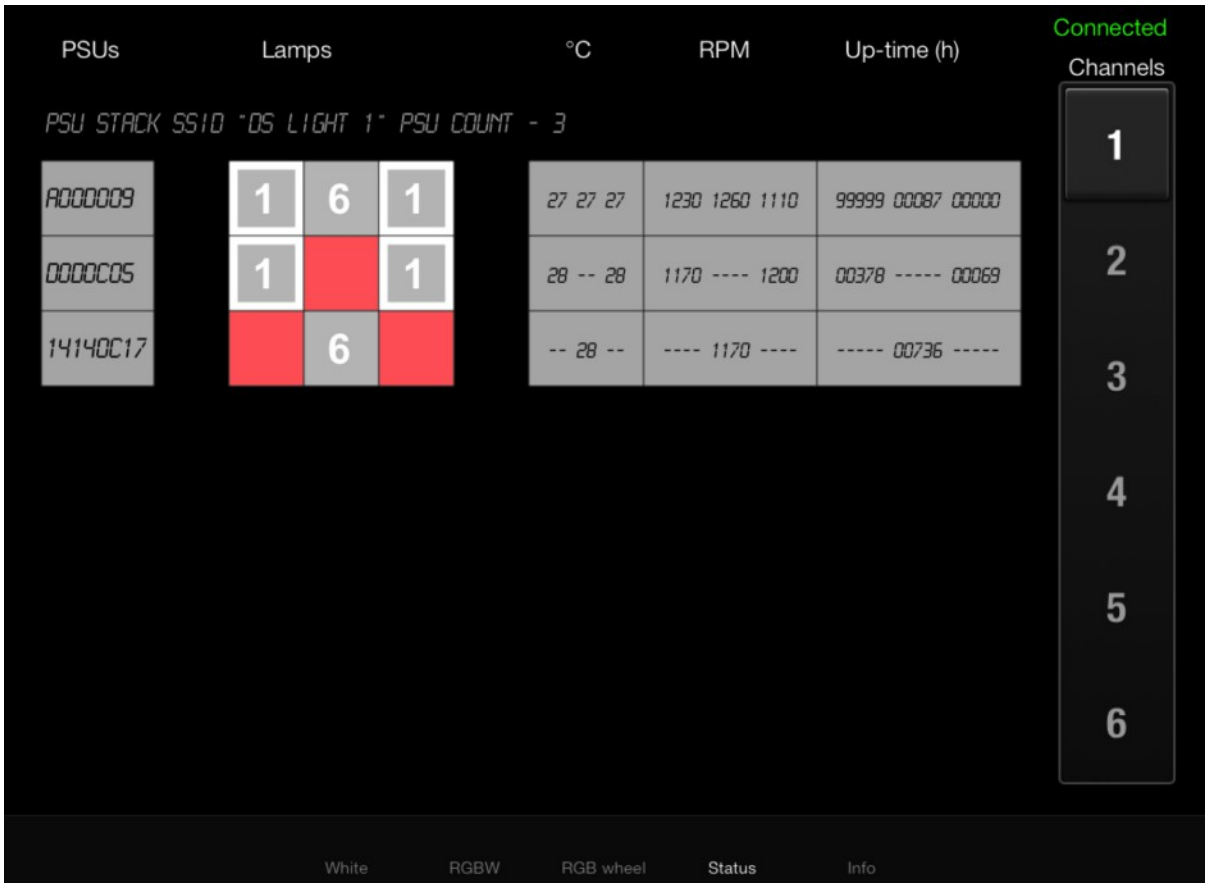
3.5 RGB wheel view tab

RGB wheel has color wheel with red, green and blue (no white adjustment). Drag finger on the wheel to change light color. Magnifying glass shows the color that is under users fingertip.

Intensity slider (under the color wheel) lets adjust selected RGB values (selected point on the RGB wheel) intensity together. If intensity is 0 then lightheads are switched off. Default value is 0 - lightheads are switched off.

NB! RGB wheel has only RGB components.

3.6 Status view tab



If lighthead button background is silver or blue, it means that lighthead is connected. If background is red, lighthead is not connected to PSU.
Lighthead background indicates lighthead type

- silver - lighthead with RGBW leds.
- blue - lighthead with white leds only.

Status view lets user group lightheads into channels. To group lightheads into a channel, tap the channel button and then tap a connected lighthead. Lighthead button number will then change to selected channel. If needed, it is possible to add more lightheads to the same channel by tapping other connected lighthead buttons.

If user wants to find out where lighthead is and identify it, user can tap lighthead button until button shows letter F (flashing). Lighthead starts flashing, signaling its location. To stop flashing, tap lighthead button again.

Each PSU has three lightheads. PSU lighthead buttons starting from left. First is lighthead 1, next is lighthead 2 and lasti is lighthead 3 (1.3.2 PSU lighthead ports numbering).

On the picture you can see five columns of data about PSUs.

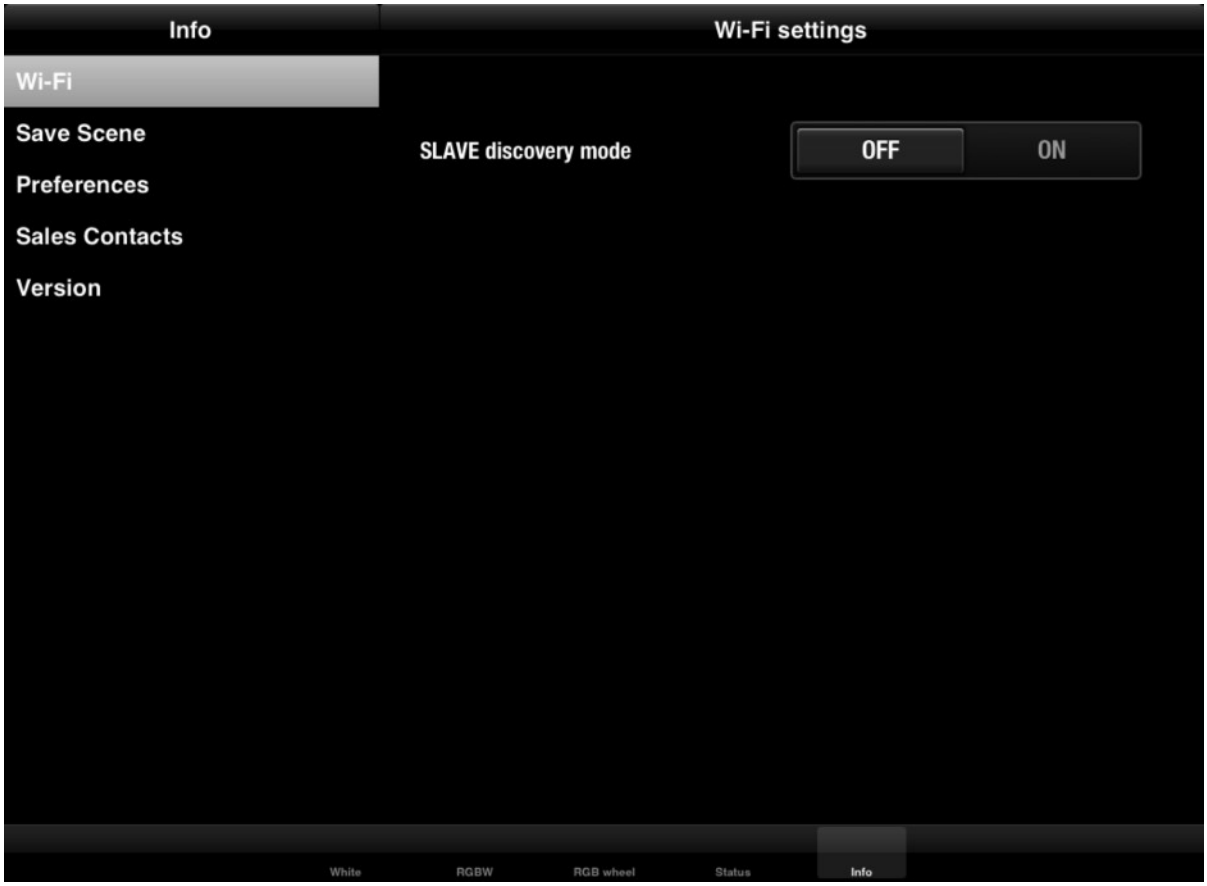
1. First column PSUs shows PSU unique serial number. Above serial numbers is Wi-Fi module SSID “DS LIGHT 1”.
2. Lightheads column displays each PSU lighthead. Picture first row PSU “A000009” has three lightheads connected. First one is in channel 1, second in channel 6 and third in channel 1.
3. °C column displays each lighthead operating temperature.
4. RPM column displays each lighthead cooling fan speed.
5. Uptime displays switched on time for each lighthead in hours.

View is refreshed after 10 seconds or sooner if lightheads are connected or disconnected. If you see that one PSU is missing from status screen wait 15 seconds and if it does not appear look troubleshooting section 4.2.1 .

3.7 Info tab

Info tab displays additional information and settings.

3.7.1 Wi-Fi settings



PSUs Wi-Fi module can be used in two modes.

1. Wi-Fi module in master mode

Master mode means that DS LED Lighting System Wi-Fi module works as router and iPad can connect directly to DS LED Lighting System Wi-Fi network from available networks 2.2

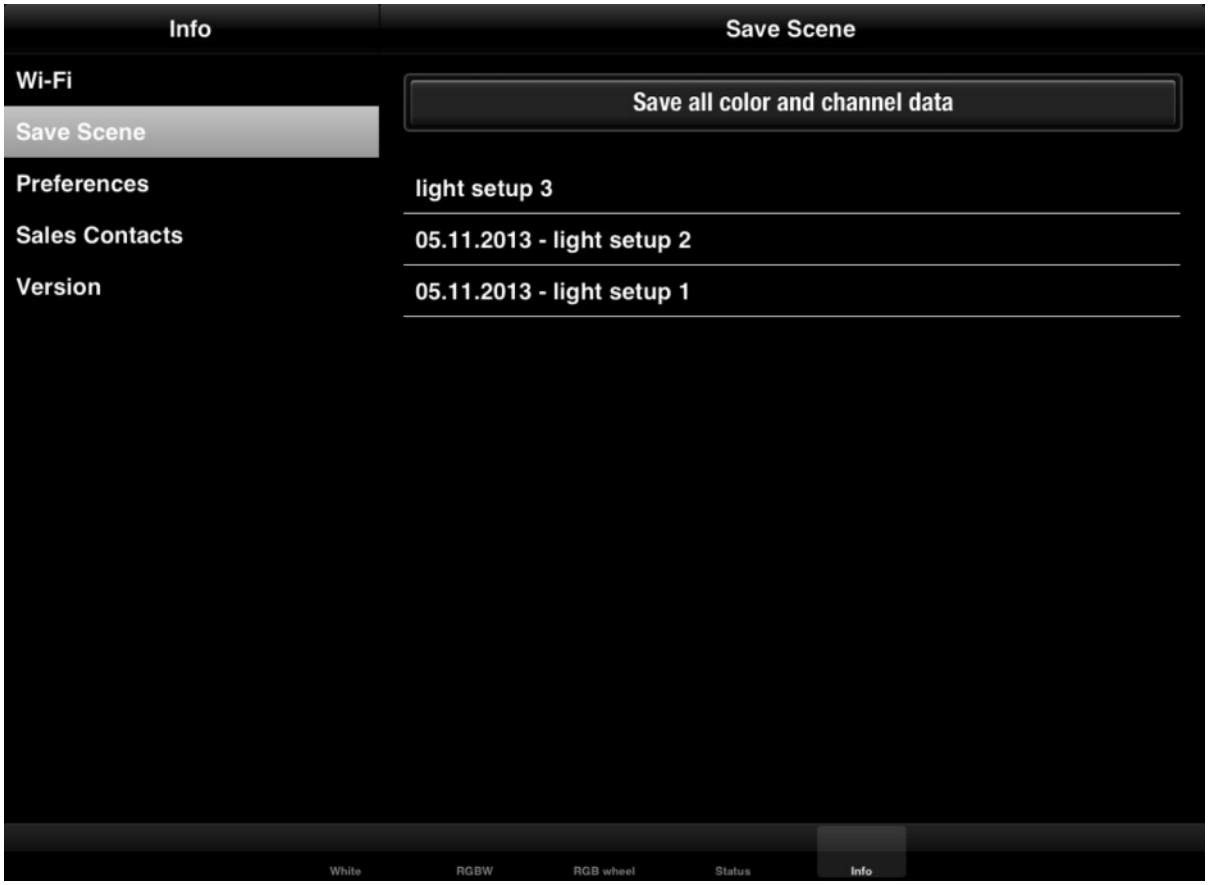
2. Wi-Fi module in slave mode

Slave mode means that DS LED Lighting System Wi-Fi module works as Wi-Fi client. In this mode DS LED Lighting System Wi-Fi module connects to third party router and cannot be directly accessed from iPad. iPad has to connect to the same third party router first and after that iPad can connect to DS LED Lighting System Wi-Fi module(s).

Slave discovery mode default setting is off - DS LED Lighting System Wi-Fi module is used in master mode.

If all DS LED Lighting System Wi-Fi modules are in slave mode then iPad slave discovery mode has to be turned on to discover all DS LED Lighting System Wi-Fi modules connected to same third party router.
Discovery process can take up to 60 seconds. Discovered modules appear on Status tab. If after 60 seconds there is nothing on Status tab look troubleshooting section 4.1.4 .

3.7.2 Save Scene



Save Scene enables saving and loading all color and channel data. It means that all channel assignments and all colors for all available channels are saved and can be loaded when needed.

NB! This data is deleted when this app is deleted from device.

To save all color and channel data use button “Save all color and channel data”. It opens pop-up and asks user to enter name for saved data. By default name beginning is filled with current date but it can be deleted by doing select all and then cut. Name must be at least one character otherwise data cannot be saved.

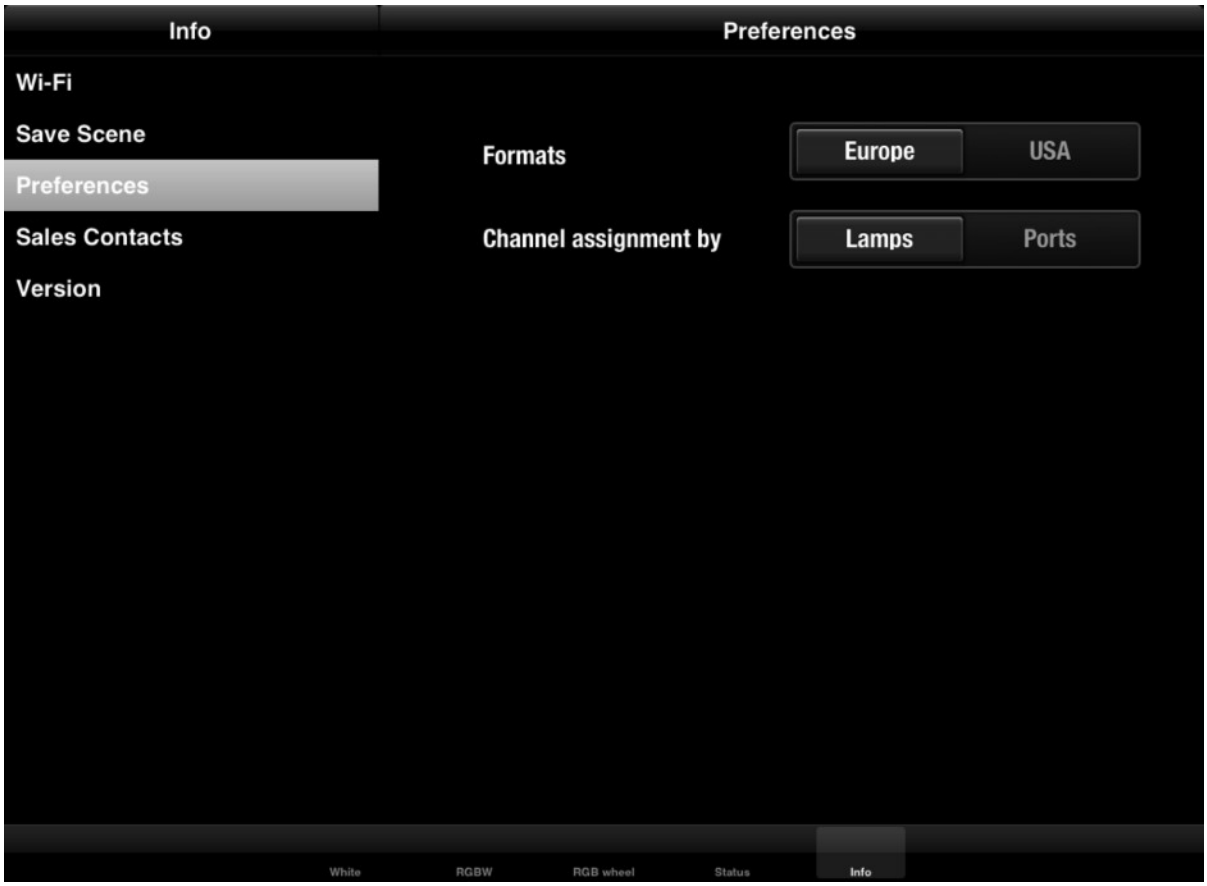
After data is successfully saved it appears under save button. Last save is displayed first.

To load saved data tap saved data button(example - tap on button “light setup 3”). It opens pop-up that enables user to load, rename or delete selected saved data.
There is also selection “Delete all” that enables user to delete all saved data with one selection.
NB! There is no undo option, deleting is permanent.

If user selected load then all channel assignment and channel color data is loaded but lightheads color does not change automatically. User must select White, RGBW or RGB wheel tab to change lightheads to saved settings.
There is no limit how many times saved data can be loaded.

Because there is color transition from White tab to RGBW tab and from RGB wheel tab to RGBW tab user must select the tab that was used to set color before saving.
(example - if user changed color on RGBW tab and saved it and then after loading selected White tab, then White tab saved color is transferred to RGBW tab overwriting the loaded RGBW tab data. In this situation user should select RGBW tab after loading saved data).
If user selects wrong tab by mistake then user should load data again and then select correct tab.

3.7.3 Preferences



Preferences allows user to change formats and channel assignment loading.

Two format options

1. Europe - Status tab lighthead temperature in Celsius. Save Scene save name date format dd.mm.yyyy
2. USA - Status tab lighthead temperature in Celsius. Save Scene save name date format mm/dd/yyyy

Two channel assignment options

“Channel assignment by” enables user to select how channel assignment is done when channel assignment data is loaded.

1. Lightheads - when channel assignment data is loaded then channel is assigned by lighthead id. In this mode it does not matter where lighthead is connected it always gets its channel assignment.
2. Ports - when channel assignment data is loaded then channel is assigned by PSU lighthead ports. In this mode PSU is identified and channels are assigned to lightheads by PSU lighthead ports where each lighthead is connected.

3.7.4 Sales Contacts

Sales contacts information.

3.7.5 Version

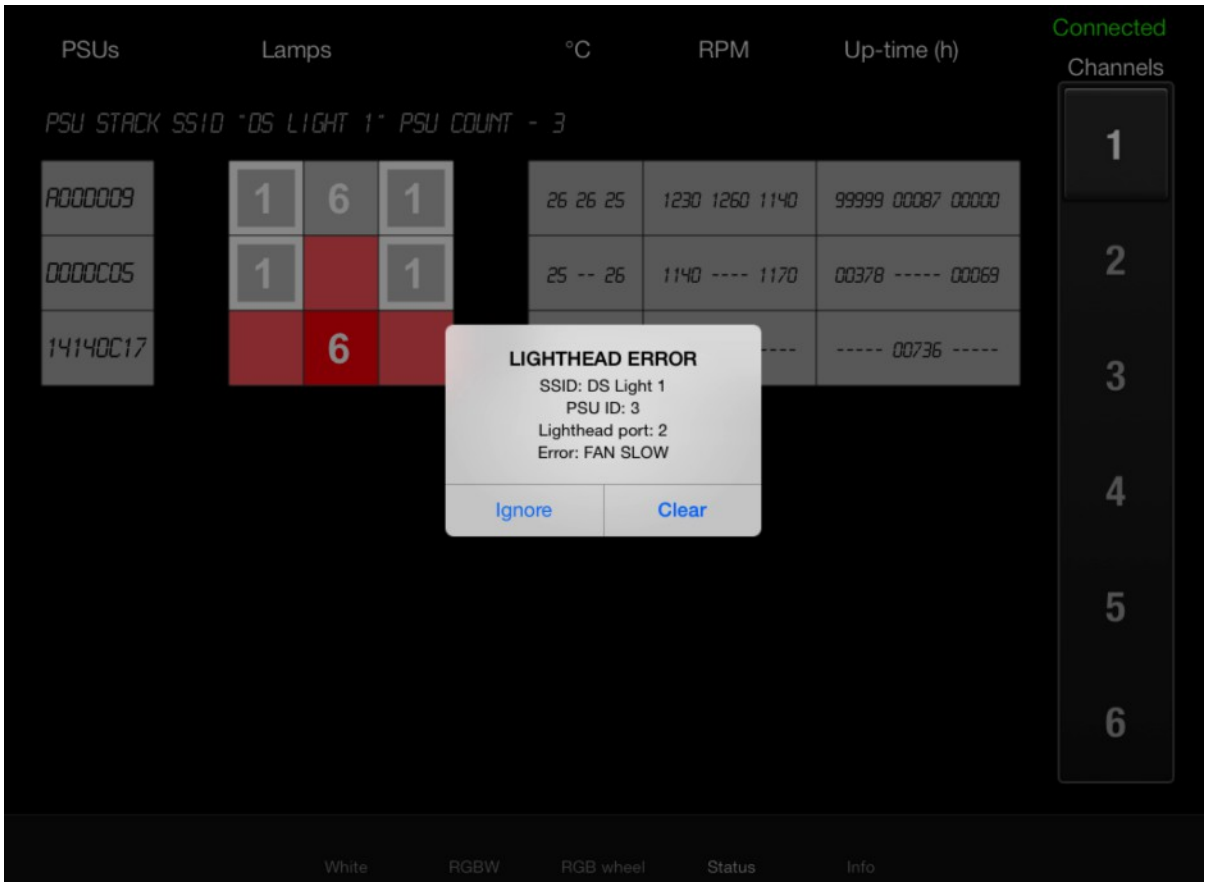
Selection displays application version. This version number enables to identify application version for troubleshooting or technical support.

3.7.6 User Guide

Selection displays user guides that are available from inside the app.
User guide opens on the top of the app. Select done to return to app.

3.8 Error management

When PSU sends error data to iPad, popup window with error description is displayed. Popup window has information to help user locate the problem. SSID value identifies the stack where error appeared. PSU ID identifies PSU location in the stack. Top PSU ID is 1 and one below it has ID 2 etc.
Lighthead port identifies PSU port where lighthead is connected.
Error displays error message(s).



When lighthead has error(s) error information is displayed. Lighthead background turn to dark red (one lighthead in channel 6 with dark red background). If user selects “Ignore” lighthead background stays dark red. To access error message again user must tap on lighthead with dark red background.
Same logic applies to PSU errors. If PSU has error(s) error information is displayed and unique serial number field background turns to dark red.

If user selects “Clear” error is cleared. If user selects “Ignore” error is ignored and user can continue without dealing with errors.

4. Troubleshooting

4.1 Wi-Fi connection problems

4.1.1 Error message ERW001

When Wi-Fi connection error ERW001 “Wi-Fi is turned off. Turn Wi-Fi on and try again!” is displayed go to iPad Wi-Fi settings and turn Wi-Fi connection on.

4.1.2 Error message ERW002

When Wi-Fi connection error ERW002 “Please check that you are connected to DS LED Lighting System Wi-Fi and try again!” is displayed go to iPad Wi-Fi settings and connect to DS LED Lighting System Wi-Fi module.
This error is displayed when iPad is connected to another Wi-Fi network and application cannot connect to DS LED Lighting System Wi-Fi module.

4.1.3 Error message ERW003

When Wi-Fi connection error ERW003 “Wi-Fi connection lost. Check if DS LED Lighting System Wi-Fi is on!” is displayed check DS LED Lighting System PSU with Wi-Fi module is switched on. This error appears if DS LED Lighting System PSU with Wi-Fi module is switched off and iPad does not connect automatically to another available Wi-Fi network.
If DS LED Lighting System PSU with Wi-Fi module was switched off switch it back on and wait. Connection should restore within 60 seconds. If it does not happen check other troubleshooting options.

4.1.4 Connection state does not change to connected

If connection state stays “Wi-Fi to PSU error” (red), then check WiFi module connection to PSU. Check that there is no foreign objects or debris that interfere with PSU and Wi-Fi module connection. Make sure that Wi-Fi module is secured to PSU with bolt connection.
If there is still no change in connection state use 4.3

if connection state stays Reconnecting (yellow) and application did not give any error messages with instructions how to resolve connection problems check that you are connected to DS LED Lighting System Wi-Fi network and if you are use troubleshooting section 4.3

4.1.4 Wi-Fi slave discovery mode does not discover Wi-Fi modules and PSUs

If “SLAVE discovery mode” is turned on and after 60 seconds there are no Wi-Fi modules and PSUs visible on Status tab:

1. Check that DS LED Lighting System Wi-Fi module(s) are in SLAVE mode and connected to third party router.
2. Check for error messages on PSU screen. (DS LED Lighting System PSU with Wi-Fi module).
3. Check that iPad is connected to the same third party router.
4. Restart iPad app.
5. Restart DS LED Lighting System PSU with Wi-Fi module(s).
6. Restart third party router.
7. Check third party router settings and use router tools to display and check network connections.(Requires access to third party router).

4.2 Status tab problems

4.2.1 PSU is missing from status tab

If PSU is missing from status screen

1. Check that all PSUs are switched on.
2. Check that all PSUs are connected together with bolt connection.
3. Check that there is only one master PSU in one stack. In PSU stack top PSU is master. Master status is indicated with green led and all other PSUs in the stack are slaves and their status is indicated with amber led. PSU status led is located at the front face and blinks if there is communication between PSUs. There can be only one master PSU with green status led in one PSU stack. If there are more than one master then there is bad connection between PSUs. Check that there is no foreign objects or debris that interfere with PSU to PSU connections. Make sure that all bolt connections are fastened correctly.
4. If all PSU status leds indicate correct statuses then change light from DS Lighting application. This change should trigger status led blinking on all PSUs. If there are status leds that do not blink then they mark non-responsive PSUs. Check non-responsive PSUs connections and switch them off and then on again. If they remain non-responsive remove them from stack.

4.3 If all other troubleshooting options fail

If all other troubleshooting options fail to restore application normal operation follow these instructions.

1. Switch off DS LED Lighting System PSU with Wi-Fi module.
2. Turn iPad off. Press and hold the Sleep/Wake button for a few seconds until the red slider appears, then drag the slider.
3. Switch on DS LED Lighting System PSU with Wi-Fi module.
4. Turn iPad on. Press and hold the Sleep/Wake button until the Apple logo appears.
5. Go to iPad Wi-Fi settings and connect with DS LED Lighting System WiFi network.
6. Launch DS Lighting iPad application.