BALDRICK BOARDS · MANUAL & DOCS

BaldrickScene Manual

Everything you need to wire, network and run your BaldrickScene — from first power-up to your first show.

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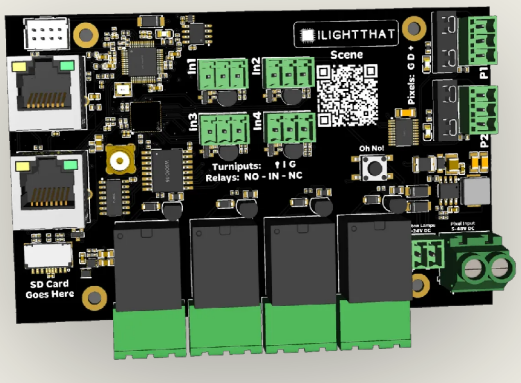

Getting started

You've just got your board through the post and you are really excited about getting started! WE KNOW, We've been there. These easy to follow steps will get you started in minutes!

> **Safety First**
>
> Always ensure your power supply is disconnected before making any connections. Double-check all wiring before powering on.

Step 1: Plugging in Your Controller

Always Use a Power Supply

> **WARNING**
>
> Never, ever EVER EVER plug your controller directly into the wall outlet, it will go bang and you'll have to buy another one and explain to your partner what that burn mark on the kitchen table is. You'll notice that a British plug has three wires and our power jacks inputs only have two - that's because you need to put a power supply in between them. We recommend the use of `Meanwell Power Supplies`.

The BaldrickScene has two power inputs:

- **Pixel Input (5v - 48v DC)** - The big screw terminal. Match this to the voltage of your pixels.

- **Button Lamps (5v - 24v DC)** - The small connector next to it, which powers the lamps on any buttons plugged into the Turniput ports. Choose a voltage that suits your lamps.

Step 2: Installing the Firmware

Initial Firmware Setup

When your controller arrives it will be in a 'sleeping state' - you just need to plug it into your network and head to `http://baldrickboard.local` (if your DNS doesn't accept that then just look for it on your network).

How to Install

To put it simply, press the button that says *Lets Go* then go and have a brew, the controller will connect to our server, download the latest firmware and automatically install it, once it's done the page will refresh and you can start connecting things.

> **Tip**
>
> You must plug the board into your network with an Ethernet cable for the initial firmware download (or make sure your computer can give it an IP address and internet access).

How Do I Update After That?

When you go to the Web interface and look at the stats section, you'll see the version number, if there is a new version, you can click that and it will automatically update in a similar interface to how this initial install works.

Step 3: Connecting Pixels

We recommend adding `pigtails` to your controller rather than pixels directly.

The two pixel ports, **P1** and **P2**, use 3 port Phoenix connectors, ordered as printed on the board:

1. **G (GROUND)** - The negative wire of your pixels (this is BLACK)
2. **D (DATA)** - The data in wire of your pixels (this is YELLOW)
3. **+ (LIVE)** - The positive wire of your pixels (this is RED)

> **Note**
>
> The colour suggestions are for BALS pixels, if you are buying from somebody else... then ask them.

Step 4: Connecting Relays

Each of the four relays has three terminals, marked on the board as **NO - IN - NC**:

- **IN** - The common terminal. One side of your circuit always goes here.
- **NO (Normally Open)** - Use IN and NO when you want the circuit broken at rest and made when the relay is activated. This is what you'll want most of the time, for a bubble machine or a string of lights.

- **NC (Normally Closed)** - Use IN and NC when you want the circuit made at rest and broken when the relay is activated.

The simplest way to wire something in is to take a wire, cut it, and put one side into **IN** and the other into **NO**. That wire could be:

- A live wire in a cable feeding a string of mains powered lights
- The power wire going into a “dumb” snow/smoke/bubble machine
- A 0v signal or control wire on a device that has a “button to activate”

> **Power Limitations**
>
> Each relay is rated up to **8A and 300V (AC/DC)**. If you are planning to connect something powerful like a snowmachine, make sure that it will not draw more than **8amps of power** (at 240v, that is about 2000w, or at 100v for the US folk, it is about 800w), as the relays may get hot, melt or get stuck closed if you pull too much current (thats bad news!).

> **Safety Warning**
>
> **BE CAREFUL, DO NOT DO ANY OF THIS WITH ANYTHING PLUGGED IN.**

Step 5: Connecting Turniputs

The four Turniput ports, **In1** to **In4**, let a button, motion sensor, reed switch, beam break or other input device trigger anything on the board through The Turnip Network. Each port is marked with a lamp symbol, **I** (input) and **G** (ground). The lamp terminal is powered from the Button Lamps input, so your button can light up too. Find out more on the Turniput page.

Step 6: xLights Connection

You can connect directly with xLights, look for BaldrickScene under ILightThat. From here you can push your settings directly to the controller.

You can either:

- Click **Discover** and xLights will automagically find the BaldrickScene.
- Add the board manually by selecting *ILightThat* as a vendor and *BaldrickScene* as the Model. You will then need to put the IP Address in manually.

Step 7: Adding More Boards

The two Ethernet ports are joined by a built-in switch. Plug your show network into one and run a cable from the other to your next board, instead of running a cable back to your network switch for each one.

Technical specifications

At a glance

Specification	Value
Relais	4 x tot 8A en 300V (AC/DC), NO / IN / NC-contacten
Inputs	4 Turniput-poorten
Pixeluitgangen	2 smart-poorten
Kanalen per poort	`2250` (750 RGB-pixels bij 40fps)
Ethernet	2 x 100Mb-poorten met switch op het board om door te lussen
WiFi	Op het board met aansluiting voor externe antenne
Voedingsingang	`5-48V DC` pixelingang, plus 5–24V DC voor knoplampjes
Opslag	SD-kaartsleuf (fseq-afspelen gepland voor de volgende firmware)
Protocollen	DDP, Art-Net, E1.31, sACN
Montage	Medium formaat, past op Baldrick8-bases
Integratie	Volledige xLights-ondersteuning

Board components

1. **QR Code** — An easy to scan QR code which will take you to these docs for easy troubleshooting.
2. **Pixel ports (P1 and P2)** — 3 port Phoenix connectors, ordered G (Ground) D (Data) + (Positive / Voltage).
3. **Fuse holders** — One for each pixel port, prefilled with 7.5A fuses and easy to get to when you need to change one.
4. **Turniput ports (In1 to In4)** — Connect buttons and sensors to trigger effects and relays. Ordered lamp, I (Input), G (Ground).
5. **Relays 1 to 4** — Up to 8A and 300V (AC/DC), with NO - IN - NC terminals. See Connecting Relays.
6. **Pixel Input** — 5v - 48v DC, steps down to power the components and powers your pixels.
7. **Button Lamps input** — 5v - 24v DC, powers the lamp terminal on each Turniput port.
8. **Ethernet ports** — Two 100Mb ports joined by a built-in switch. Plug one into your show network and use the other to daisy-chain to your next board.
9. **Oh No! button** — Did you break our board? Press and hold this for 10 seconds on boot to reset to factory settings.

0. **WiFi antenna connector** — Screw on an external WiFi antenna for CunningFX, Busk Board and board control over WiFi.
1. **SD card slot** — For future expansion. Playing fseq files from the card should arrive in the next version of the firmware.

> **Mounting holes**
>
> The BaldrickScene has the same medium footprint as the Baldrick8, so you can reuse your Baldrick8 bases and mounts. **DO NOT DRILL out** these holes to make them fit the screws you've got already, doing this will void any warranty.

Web interface

Every BaldrickScene has a web UI. This page is what the buttons and pages actually do.

> **Screenshots**
>
> The BaldrickScene shares its web interface with the rest of the Baldrick family, so the screenshots on this page come from the Baldrick8, BaldrickSwitchy and BaldrickInput8.

Stats Dashboard

System Information

The Stats board gives you a heads up as to what's going on with your controller.

Uptime

Tells you how long your controller has been powered on *(this is useful in June to remind you that you forgot to turn it off over christmas)*

Frame Rate

This lets you know what the FPS (Frames Per Second) the controller is currently outputting. **The BaldrickScene has been optimised to output up to 2250 channels per pixel port (which is 750 RGB pixels at 40fps)**

Streaming State

Will indicate if the board is receiving data from a specific IP address and what type of data. **The board will also show if two IPs are streaming to the board at the same time which is very useful for debugging those pesky problems.**

Network Throughput

Like the FPS, this gives you an indication of the volume of network traffic passing through the controller, this should help with debugging.

Temperature

With an onboard sensor, this gives you an indication of the board temperature *(in Celsius because water freezes at 0, not 32.. how does that make sense?)*

Generally, PCBs and components are good for -40 to +85°C. Anything below 60°C on this board is fine and nothing to worry about. If the temp is above that, try blowing on it like you would a hot chip out of the oven.

Firmware Version

The BaldrickScene is pretty new in the world of controllers and we've got a LOT of features left to add, this will let you know your current version and if there is a version to upgrade to.

(clicking the new version will upgrade it in place then restart the controller)

IP Address

It would be pretty silly to have a controller information box without showing you the IP Address of the controller wouldn't it? That would be like launching a controller without being able to manage the networking.

Test Mode

Quick Testing & Troubleshooting

Test mode is one of the most important features of the Baldrick Board. If it's two hours before switch on and something is going wrong, YOU NEED CLEAR INFORMATION QUICKLY.

Colour Presets

We've created a bunch of presets to help you with your testing but we got bored with just writing colours so we thought we'd have some fun with the names.

Brightness Control

Sometimes 100% is too much *Have you done those power calculations correctly?* so we give you the choice of brightness.

Apply to Specific Areas

Select your port (or all ports) then select if you want ALL configured pixels, 750 RGB pixels or 50 pixels.

Relays

At the moment we only have one preset, **Alternate Relay** which alternates between on and off every second, but you can see we've made that Presets box into a dropdown as we know we'll think of some later.

Port Configuration

Manual Port Setup

I'll be honest, the BaldrickScene is designed on the basis that 99% of the time you'll be pushing config directly from xLights to the board so you should *never* have to play with this section.

But if you do, you can drill down into each port, monitor and configure the models, the pixel count and brightness.

Relay Configuration

Manual Relay Setup

Whilst we expect much of the configuration to be pushed from xLights, you can directly add your devices to the BaldrickScene from this section.

It's a simple interface with only a name and a trigger threshold.

Turniput Configuration

External Input Triggers

The BaldrickScene comes with four Turniput ports to attach external triggers (buttons, beam breaks, motion sensors) that can be configured when triggered to do a multitude of tasks.

Available Actions

```
<h6 id="fpp-integration">FPP Integration</h6>
<p>Control FPP (Falcon Pi Player) instances, change volume, play songs/playlists, or call FPP API directly.</p>
<h6>Toggle Test Mode</h6>
<p>Quickly enable any test mode at a specific brightness for quick prop testing.</p>
<h6>BaldrickSwitchy Control</h6>
<p>Turn on/off BaldrickSwitchy ports for specific durations (bubble machines, snow machines, etc.).</p>
<h6>BaldrickDMX Presets</h6>
<p>Activate preset commands on your BaldrickDMX for moving heads, effects, etc.</p>
<h6 id="http-url-calls">HTTP URL Calls</h6>
<p>Call web APIs from simple triggers - perfect for custom integrations.</p>
<h6>Do Nothing</h6>
<p>Sometimes you set an input to do something and think "oh actually no, that's not what I want."</p>
```

Networking Configuration

Good Defaults, Easy Config

Hostname

The default hostname is baldrickboard (hence baldrickboard.local). If you have one BaldrickScene then it's completely fine to keep this as it is, however if like us you want to collect a few of them, then we'd recommend you change this to something like *frontgarden* or *upstairsroof*

(Just a reminder that hostnames should be lowercase without spaces)

DHCP / STATIC

The default option is DHCP (which is Dynamic Host Configuration Protocol but you don't need to know that) which basically means your router or computer gives the board an I.P. address. This is great for initial setup but when you want to run a show it's best to switch it to STATIC, that's where your controller tells the router / computer "This is my IP".

IP Address

Set this to the IP address that you want the controller to be fixed to.

Subnet Mask & Gateway

It is more than likely that you can copy the Subnet Mask (the size of your network) and the Default Gateway (the exit point of your network) from the output of an IPconfig check.

DNS Server

DNS wise, typically, your default gateway is your router IP, and that more often than not, can provide your network with DNS. However, some people like to use "outside 3rd parties" DNS like google or cloudflares DNS. If you don't know about this, its probably best just to stick to DHCP.

Turnip Network

The Turnip Network

The Baldrick family of boards have developed with *ease of use* as one of the core principles, this lead the creation of 'The Turnip Network'.

The BaldrickBoards will find each other on the network, allowing you to easily switch between them when doing configuration.

Test Sync allows you to enable test mode on one Baldrick board and all the others in that series will follow (so when you turn Hodgical Test Mode on one Baldrick8, it will turn on the rest of them).

Some of the Baldrick boards have buttons (or Turniputs) and these allow integration with not only all the other boards in the family, but also FPP and web hooks!

It's what those people in business suits call 'synergy'!

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Data Settings

Protocol Configuration

::: figure

DDP Start Channel

Configure the starting channel for DDP (Distributed Display Protocol) communication.

sACN/ArtNet Start Universe

Set the starting universe for sACN (Streaming ACN) and ArtNet protocols.

sACN/ArtNet Channels Per Universe

Configure how many channels are used per universe for sACN and ArtNet protocols.