

Quick Setup Guide

Kulp Lights K8 / K16 / K32 V4

Basic, Pro & Max

All V4 controllers require a PocketBeagle 2 and a Micro SD card with Falcon Player (FPP) installed. The controller will not operate without the PocketBeagle 2 correctly installed and powered from the main board.

1. Unpacking and Handling the Controller

Unpack the controller and place it on a stable, flat, non-conductive surface.

When handling the controller:

- Only touch the edges of the circuit board
- Avoid touching components, pins, or connectors
- Take extra care to prevent electrostatic discharge (ESD)

ESD Safety:

- Do not handle the controller on carpet or static-prone surfaces
- Discharge yourself by touching a grounded metal object before handling
- If available, use an anti-static wrist strap

2. Installing the PocketBeagle 2 and SD Card

The Kulp Lights V4 controllers require a PocketBeagle 2 to operate.

The controller will not function without it installed.

1. Remove the PocketBeagle 2 from its packaging.
2. Insert a Micro SD card flashed with the latest stable version of Falcon Player (FPP) into the Micro SD slot on the PocketBeagle 2.
3. Orient the PocketBeagle 2 so that:
 - a. The USB-C connector is facing the right side of the controller
 - b. The pin headers align with the header on the controller
4. Carefully place the PocketBeagle 2 onto the pin headers.
5. Press down gently and evenly until the PocketBeagle 2 is fully seated.

Do not force the board into place and make sure all pins are aligned before pressing. Bent pins may permanently damage the controller or PocketBeagle.

3. Power Supply

The controller requires a stable, regulated DC power supply capable of delivering a constant and correct voltage under load.

The power supply must include:

- Proper voltage regulation
- Built-in over-voltage and under-voltage protection
- Internal filtering capacitors for stable output

We strongly recommend using industrial-grade power supplies from Mean Well, specifically the LRS, RSP, or UHP series.

Cheap or generic power supplies often lack proper regulation, protection circuits, and filtering capacitors.

Using such power supplies may cause unstable operation, network failures, pixel errors, or permanent damage to the controller.

Always use a high-quality regulated DC power supply with sufficient current capacity.

4. Powering the controller

The Kulp Lights V4 controllers do not contain voltage selection jumpers.

The input voltage is equal to the output voltage.

This means:

- The power supply voltage must match the pixel voltage
- 5V pixels require a 5V power supply
- 12V pixels require a 12V power supply
- 24V pixels require a 24V power supply

Applying the wrong voltage will permanently damage the controller and connected pixels. Always verify pixel voltage and power supply voltage before connecting power.

5. Connecting Power Supply to the Controller

The controller requires main board power in order to operate correctly.

Only one power input terminal block is required to power the onboard electronics and networking.

Required Power Input by Model

The following input screw terminal must be powered:

- K16 and K32: Input supplying ports 1–4
- K8: Input supplying ports 5–8

Other power input terminals may remain unpowered if those ports are not used.

Power Connection

1. Verify that the power supply voltage matches the required pixel voltage.
2. Make sure the power supply is turned OFF.
3. Connect the power supply to the required input terminals:
 - a. Positive (+) to V+
 - b. Negative (-) to G / V-
4. Turn ON the main power supply.
5. Allow approximately 1–2 minutes for the system to boot completely.
The first boot may take longer.

Do not disconnect power during startup.

6. Connecting to the Network

For initial configuration, a wired Ethernet connection is strongly recommended.

1. Connect an Ethernet cable from the controller to your network router or switch.
2. The controller must be connected to a network with an active DHCP server.
3. Wait until the controller has finished booting.

From a computer on the same network:

1. Open a web browser.
2. Enter: `http://fpp.local`
If this does not work:
3. Find the IP address assigned to the controller in your router.
4. Open: `http://<controller-ip-address>`
The Falcon Player (FPP) web interface should now appear.

7. Connecting Pixel Strings

1. Turn OFF the power supply.
2. Connect a pixel string to an output port:
 - a. G = Ground
 - b. D = Data
 - c. V = Voltage
3. Verify correct connector orientation before applying power.

Never connect or disconnect pixels while power is applied. Reversed connectors may damage the controller and connected pixels.