

Lumenier Pill LED Betaflight Configuration

Pre-requisites:

- LED power wires should be properly soldered to pads that provide the correct voltage. It is recommended to solder the LED power wires directly to the ESC battery pads: **3S to 6S ONLY**.
- LED signal wire should be soldered to a pad in the flight controller that have a “timer” such as: LED pad, Motor pads, Servo pads.
- Flash your quad with the latest Betaflight firmware making sure you select the “Servos” and “LED Strip” options. **Figure 0-1**

The screenshot displays the Betaflight Firmware Flasher web interface. The left sidebar contains navigation links: Welcome, Privacy Policy, Documentation & Support, Options, and Firmware Flasher (highlighted with a red arrow). The main content area is divided into several sections:

- General Settings:** Includes checkboxes for 'Enable Expert Mode', 'Show release candidates', and 'Full chip erase'. It also features dropdown menus for 'Development', 'MATEKH743', and '4.5.1 [27-Jul-2024]'. A 'Manual baud rate' is set to 256000.
- Build Configuration:** Contains 'Radio Protocol' (CRSF), 'Telemetry Protocol' (Automatically Included), and 'Motor Protocol' (DSHOT). The 'Other Options' section includes buttons for 'Acro Trainer', 'GPS', 'LED Strip' (circled in red), 'OSD (SD)', 'OSD (HD)', 'Pin 1', 'Servos' (circled in red), and 'VTX'.
- Release and Build info:** Shows target details: Target: MATEKH743, Manufacturer ID: MTKS, Version: 4.6.0-dev, MCU: STM32H743, Date: 31-Dec-9999 00:00, and Configuration Filename: [default].
- Cloud Build Details:** Status is 'processing' with a progress bar and a 'Cancel' button.
- Recovery / Lost communication:** A yellow banner with instructions: 'If you have lost communication with your board follow these steps to restore communication: Power off' and a 'Please load firmware file' button.

A red arrow points to the 'Firmware Flasher' menu item in the left sidebar. Two red circles highlight the 'LED Strip' and 'Servos' options in the 'Other Options' section of the 'Build Configuration' area.

Figure 0-1

Example using the LED pad on the Flight Controller

1.1 Solder The LED signal wire to the LED pad in the Flight Controller.

1.2 Go to the CLI and type: **RESOURCE** and the hit enter. **Figure 1-2.**

1.3 Find the pins for the **LED_STRIP 1 (A08)** and **SERVO 1 (E05)** and write then down. **Figure 1-3.**

NOTE: in this example A08 is assigned to the LED_STRIP 1 and E05 to the SERVO 1. THESE pins will be different in your Flight Controller

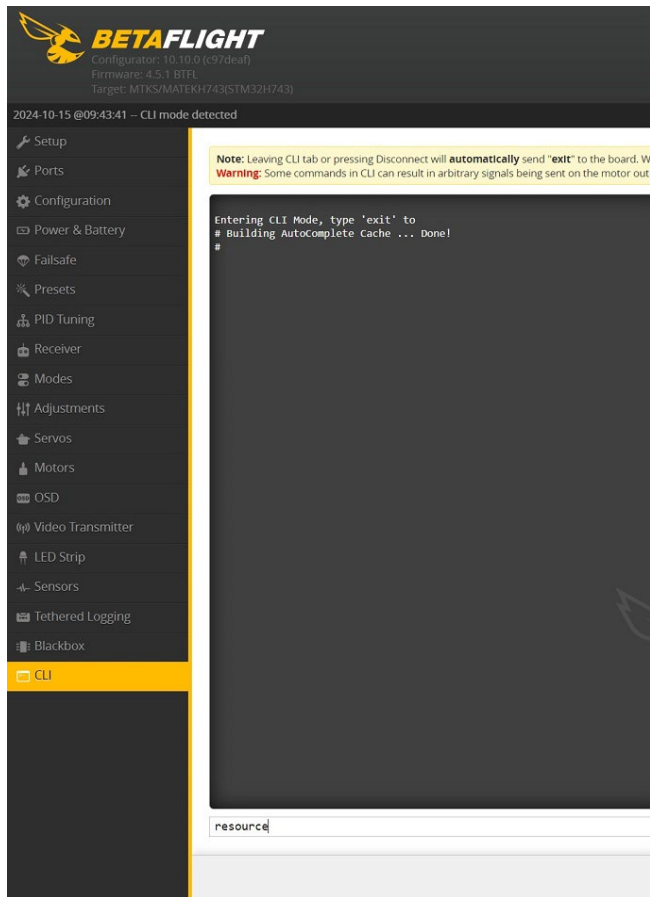


Figure 1-2

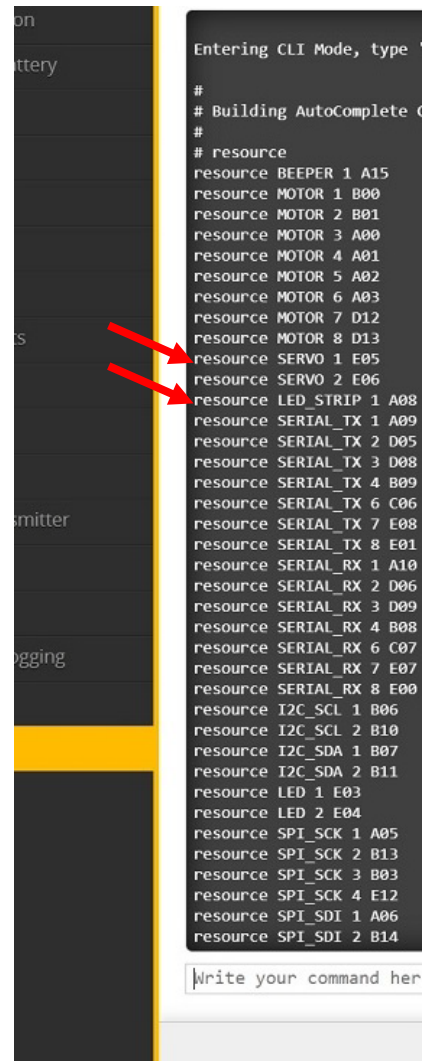


Figure 1-3

1.4 Free both resources by typing in the CLI: **resource led_strip none** and then hit enter.
Figure 1-4.

1.4.1 Repeat the previous step for the servo 1: **resource servo 1 none** **Figure 1-5.**

```
resource SDIO_CMD 1 D02
resource SDIO_D0 1 C08
resource SDIO_D1 1 C09
resource SDIO_D2 1 C10
resource SDIO_D3 1 C11
resource PINIO 1 D10
resource PINIO 2 D11
resource OSD_CS 1 B12
resource GYRO_EXTI 1 B02
resource GYRO_EXTI 2 E15
resource GYRO_CS 1 C15
resource GYRO_CS 2 E11

# resource servo 1 none
Resource is freed

resource led_strip none
```

Figure 1-4

```
resource PINIO 1 D10
resource PINIO 2 D11
resource OSD_CS 1 B12
resource GYRO_EXTI 1 B02
resource GYRO_EXTI 2 E15
resource GYRO_CS 1 C15
resource GYRO_CS 2 E11

# resource servo 1 none
Resource is freed

resource servo 1 none
```

Figure 1-5

1.8 Re-assign the **pin A08** (pin will be different in your setup) to servo 1 by typing: **resource servo 1 A08**.

Figure 1-6.

1.9 type “save” and press enter **Figure 1-7.**

```
resource GYRO_EXTI 1 B02
resource GYRO_EXTI 2 E15
resource GYRO_CS 1 C15
resource GYRO_CS 2 E11

# resource servo 1 none
Resource is freed

# resource led_strip none
Resource is freed

resource servo 1 A08
```

Figure 1-6

```
# resource servo 1 none
Resource is freed

# resource led_strip none
Resource is freed

# resource servo 1 A08
Resource is set to A08

save
```

Figure 1-7

1.8 Go to the “SERVOS” tab in Betaflight Configurator and select the channel where you have assigned your 3-position switch. In this example Aux 2 channel have been assigned for the 3-position switch. Make sure you select the channel in the corresponding SERVO 1 row.

Figure 1-8.

1.9 Type the correct parameters in the MIN, MID, and MAX taps for the functions of the LED:
Figure 1-8. (blue marks)

50% power: 1100 +/- 55
100% power: 1300 +/- 65
OFF: 1500 +/- 75
Strobe: 1800 +/- 90

1.10 Plug your battery in and run a test. You should see the servo channel 1 moving when you flip the 3-position switch back and forth and your LED turning ON and OFF. **Figure 1-8. (Green arrow)**

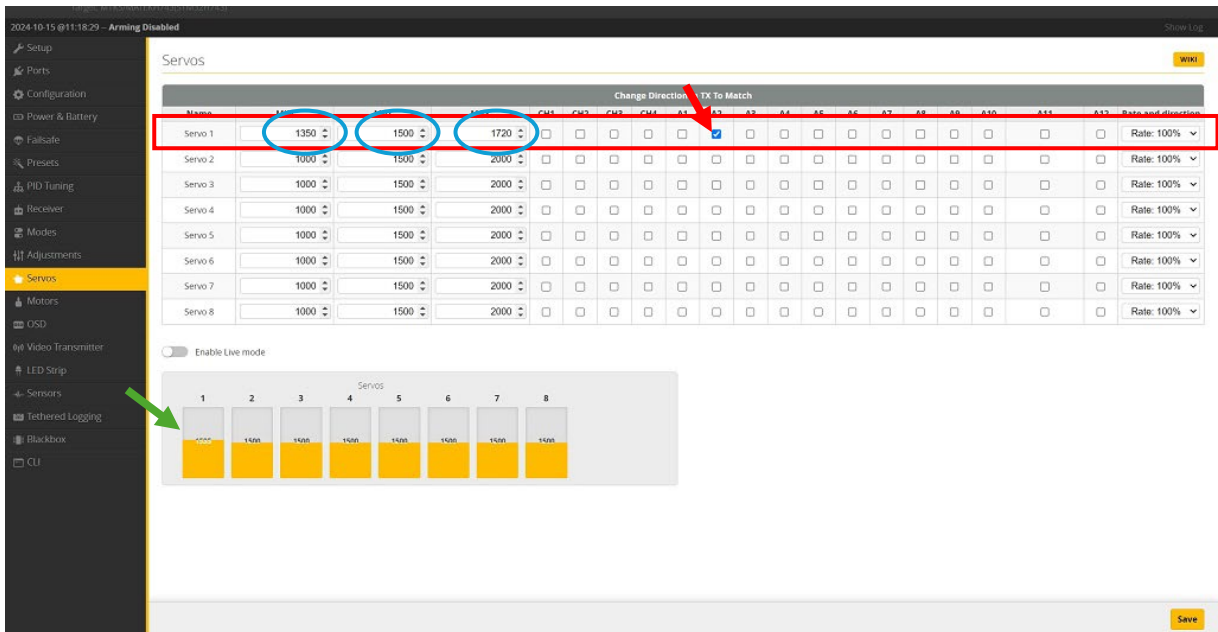


Figure 1-8