# SCE2-MOTION

Fully integrated 4 axis motion controller for automated photography


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# Overview

**SCE2-MOTION** is a compact controller designed for robotic photography, controls motor actuators , and triggers DSLR camera. It is based on 4 channel stepper motor controller SCE2-M module. The controller is running open-source GRBL firmware capable of advanced scripting and complex movements.



# Dimensions

Compact design with extra heat dissipation capabilities.

- Dimensions: 64 x 58 x 16.5mm
- Weight: 87g

# Control software

**SCE2-MOTION** can be controlled by any G-code sender like Candle, Universal-G-Code-Sender , and many more. Most of these software packages lack the g-code generator part. So highly specialized open-source programs had to be created from scratch.

## RSB1 360 product photography

- Source code on GitHub
- Windows releases also on GitHub
- More details about motion control software

Code is written with Python it can be run on any modern operating system, even Raspberry Pi

# Default GRBL settings

Each actuator combination needs individual settings to be fine tuned. Below settings are for:

- **RSB1** connected to X axis
- **LSA1** connected to Y axis

GRBL settings for fastest speed under light load:

```
$0=6
$1=255
$2=0
$3=31
$4=1
$5=0
$6=0
$10=19
$11=0.010
$12=0.002
$13=0
$20=0
$21=0
$22=1
$23=15
$24=50.000
$25=200.000
$26=250
$27=5.000
$30=1000
$31=0
$32=0
$100=111.110
$101=5039.370
$102=111.110
$103=111.110
$110=20000.000
$111=2000.000
```

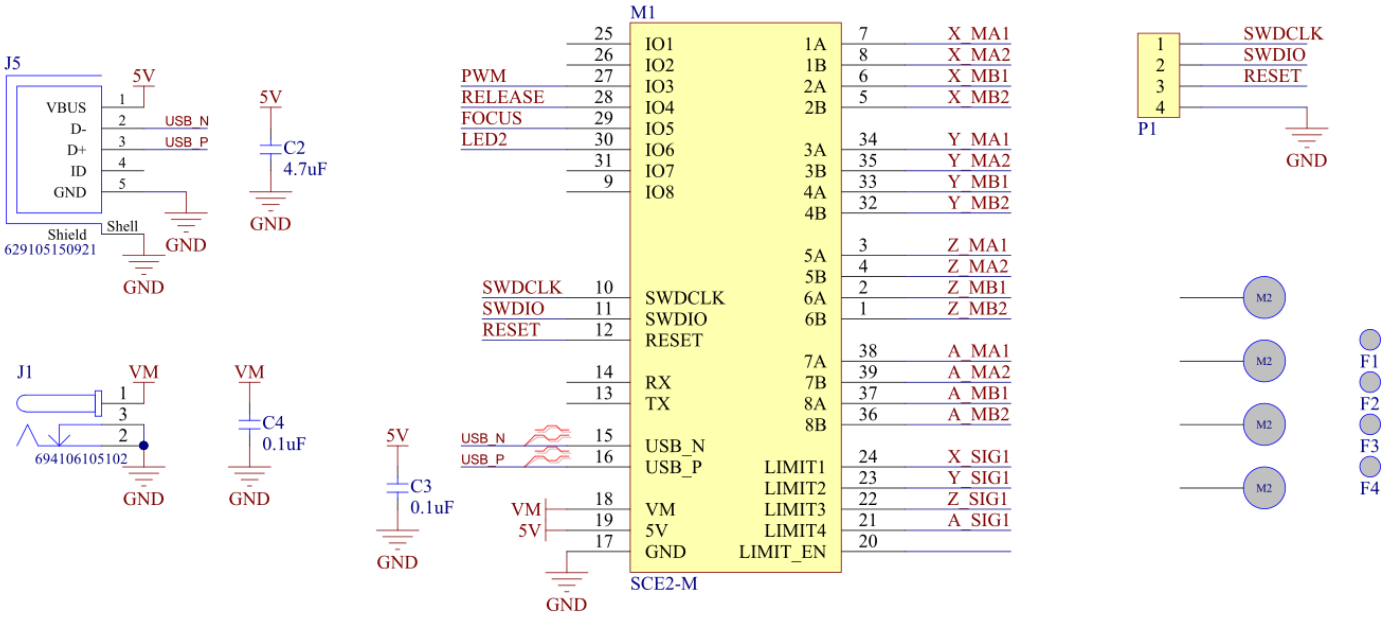
```
$112=20000.000
$113=20000.000
$120=2000.000
$121=100.000
$122=2000.000
$123=2000.000
$130=360.000
$131=90.00
$132=360.000
$133=360.000
```

# Firmware

Firmware is open-source GRBL based running on STM32 microcontroller.

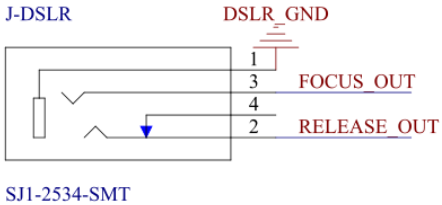
# Schematics

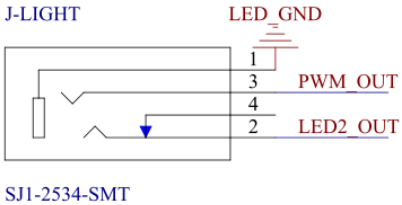
## SCE2-M module

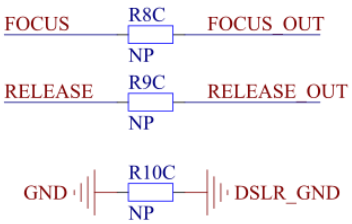


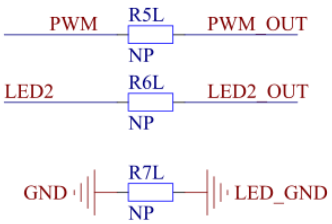

## DSLR control headers

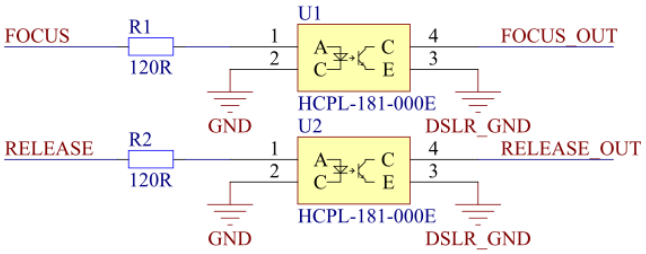
SCE2-MOTION has 4 outputs available. Controller is shipped with connected optocoupers (safe to connect to expensive DSLR camera). But for ease of customization control signals can be wired directly. See not populated resistors.

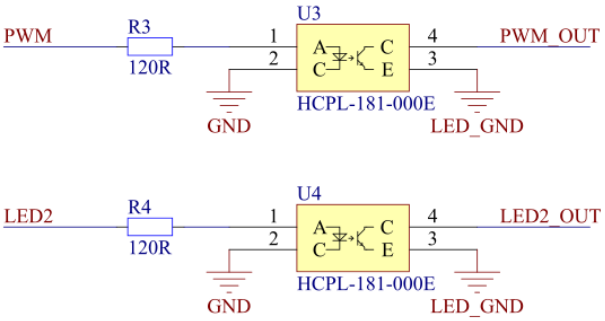


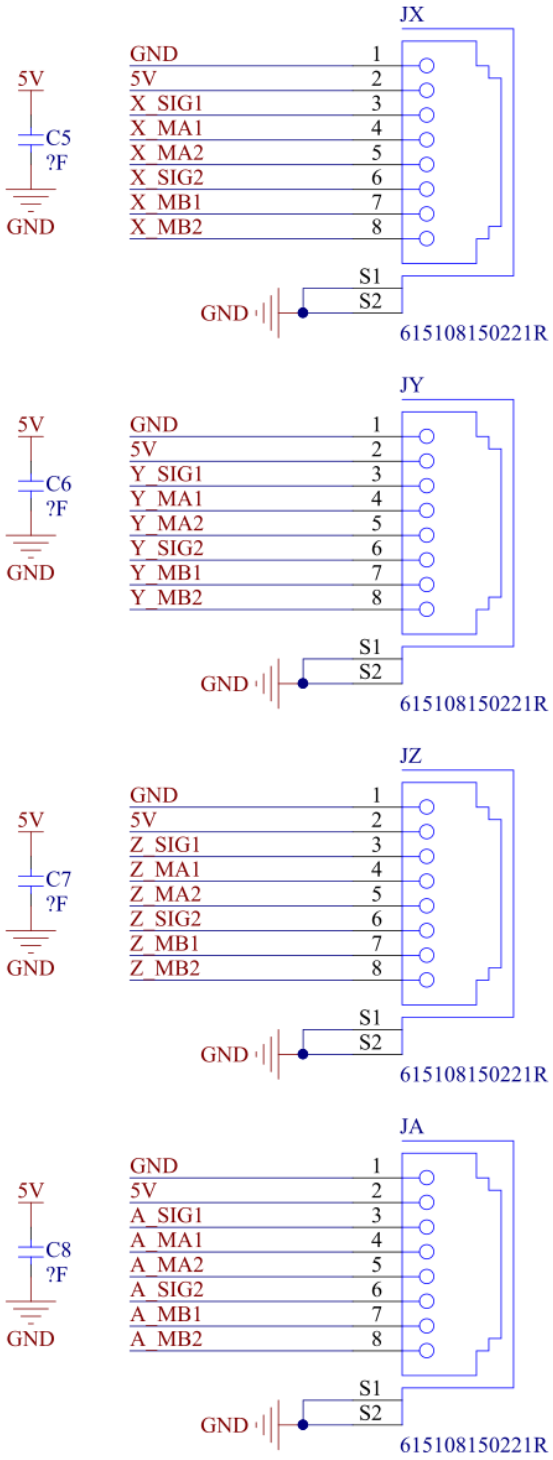



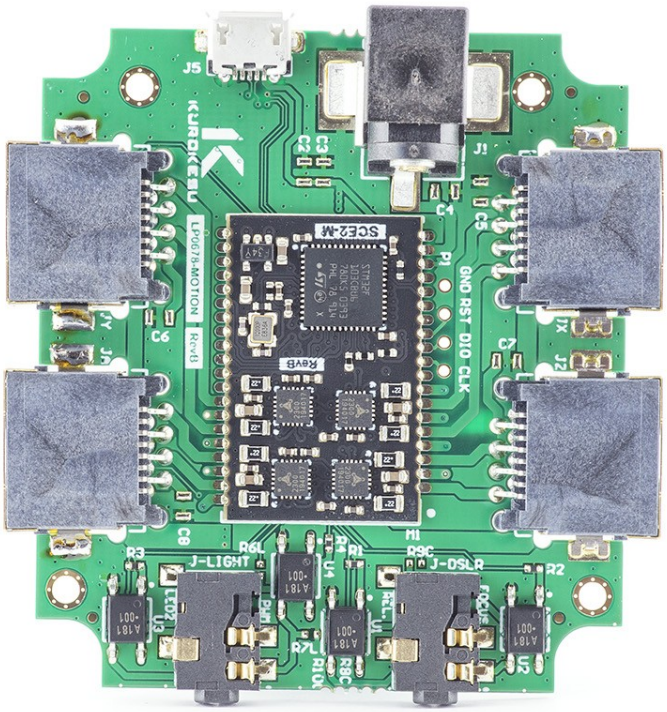




# Motor RJ45 headers




Top PCBA view


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# Power supply

Controller can drive up to 1.2A per channel, thus max power demand when all 4 motors are driven at 100% power will not exceed 5A @ 9V DC.