SCE2-MOTION

FULLY INTEGRATED 4 AXIS MOTION CONTROLLER
FOR AUTOMATED PHOTOGRAPHY

## DATASHEET

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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
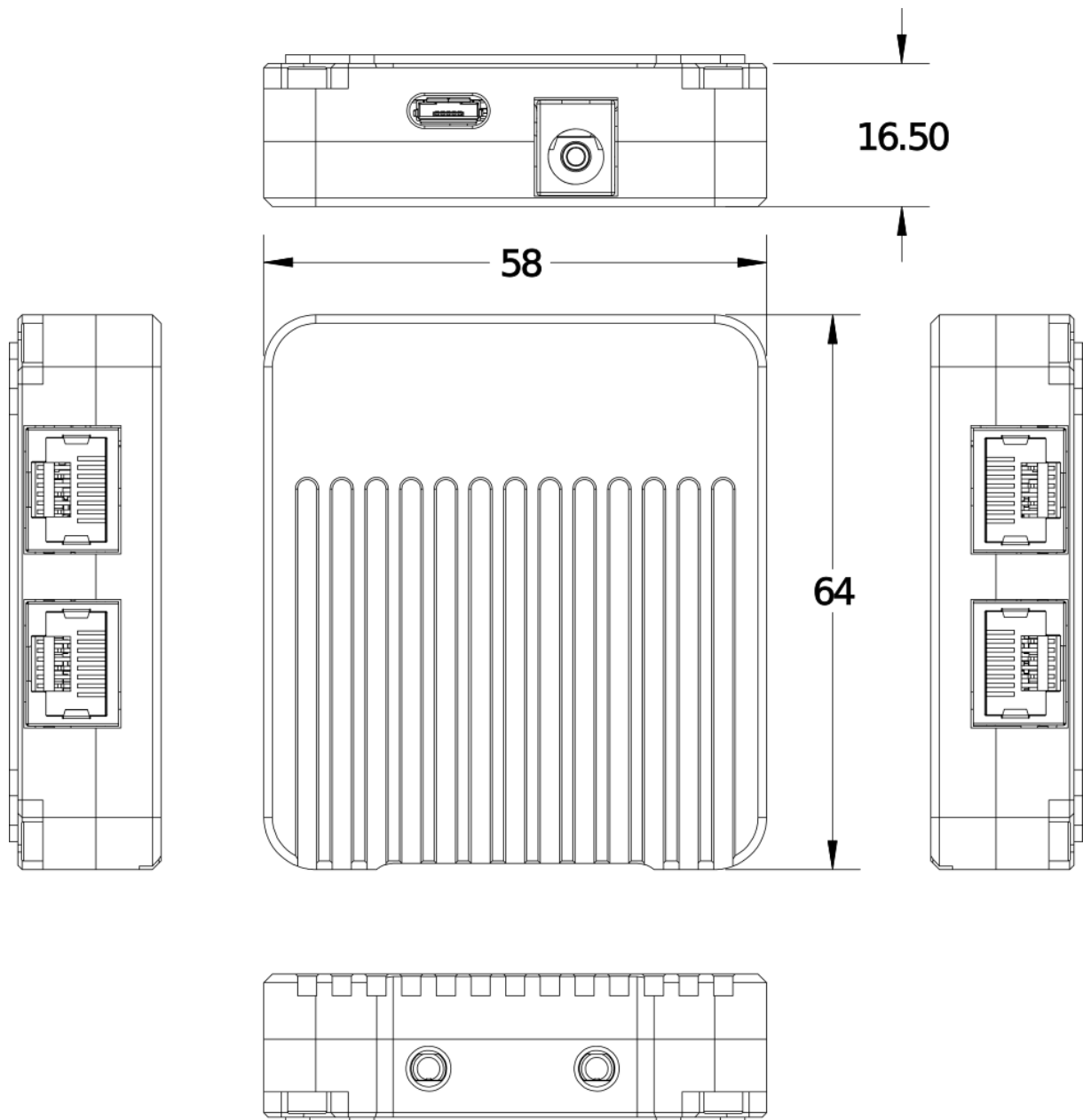
Control software

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
```
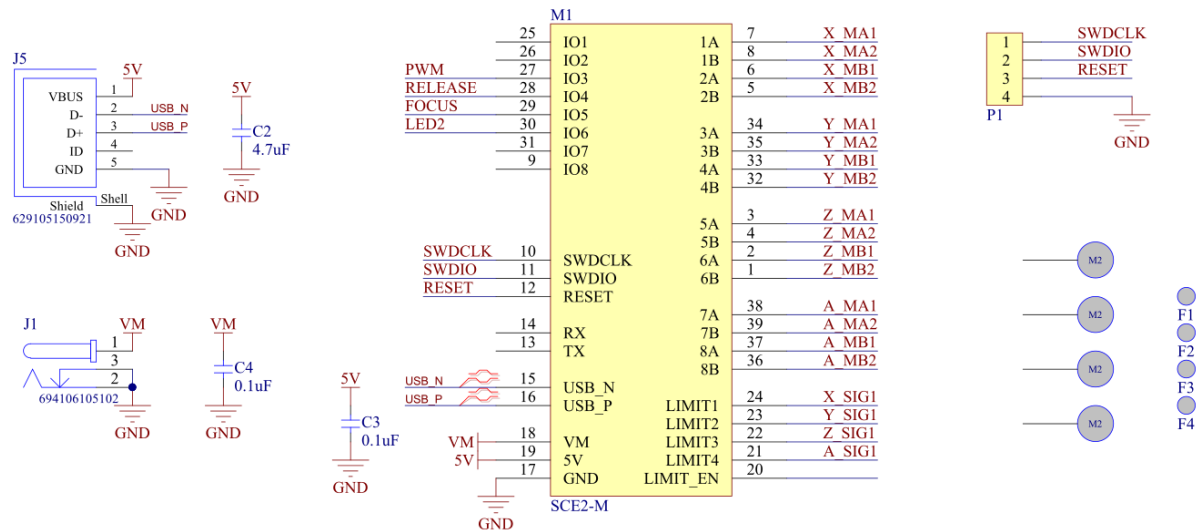
```
$132=360.000
$133=360.000
```

Firmware

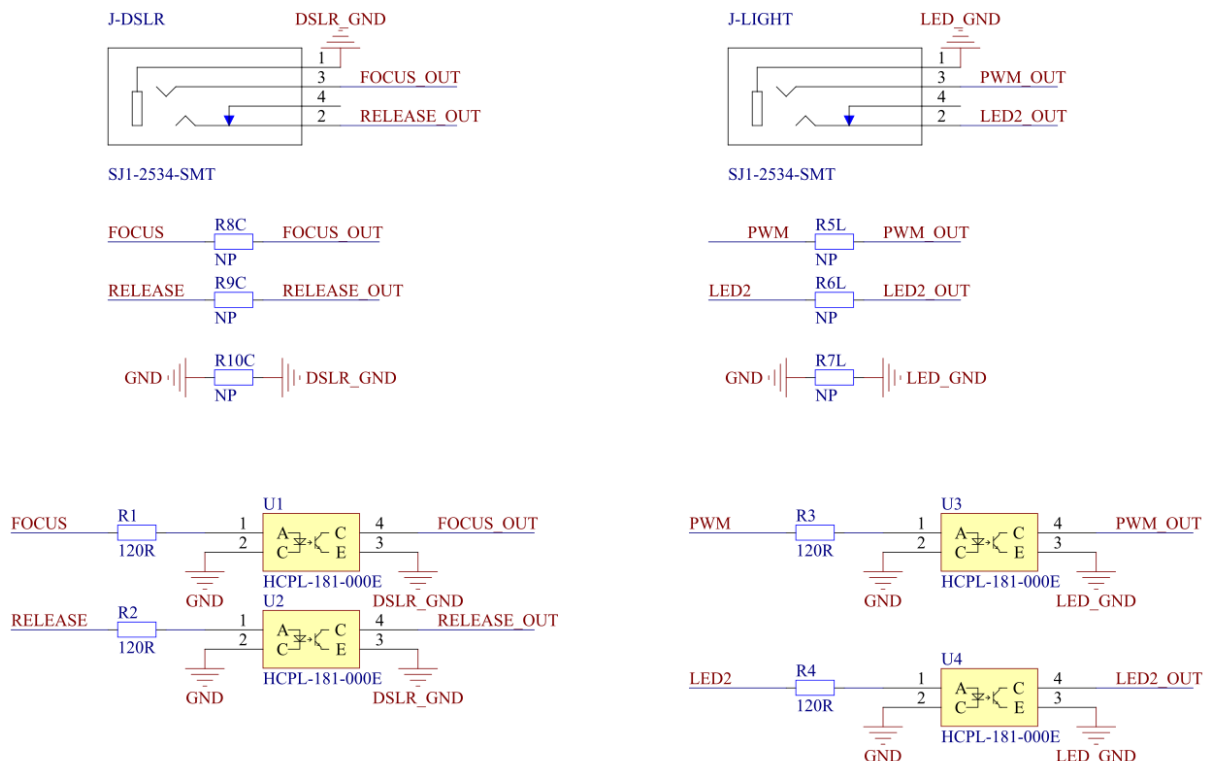Firmware is open-source GRBL based running on STM32 microcontroller.
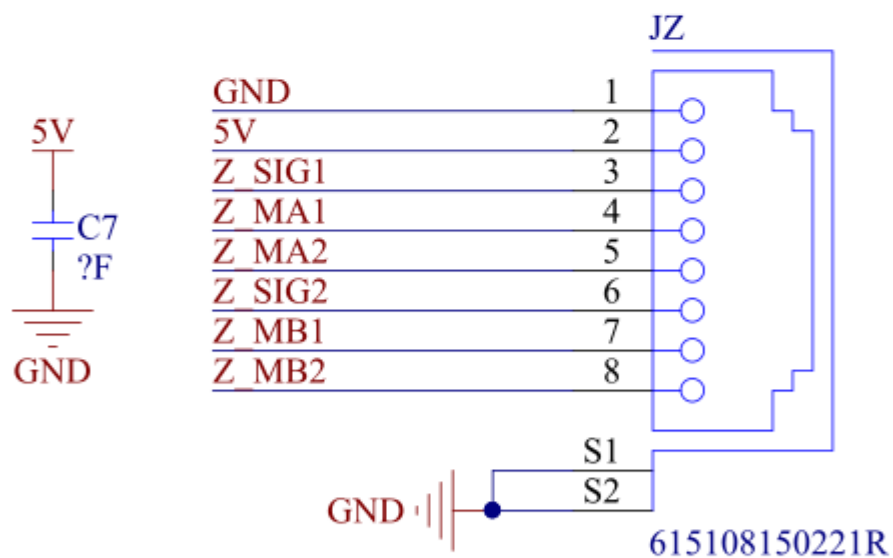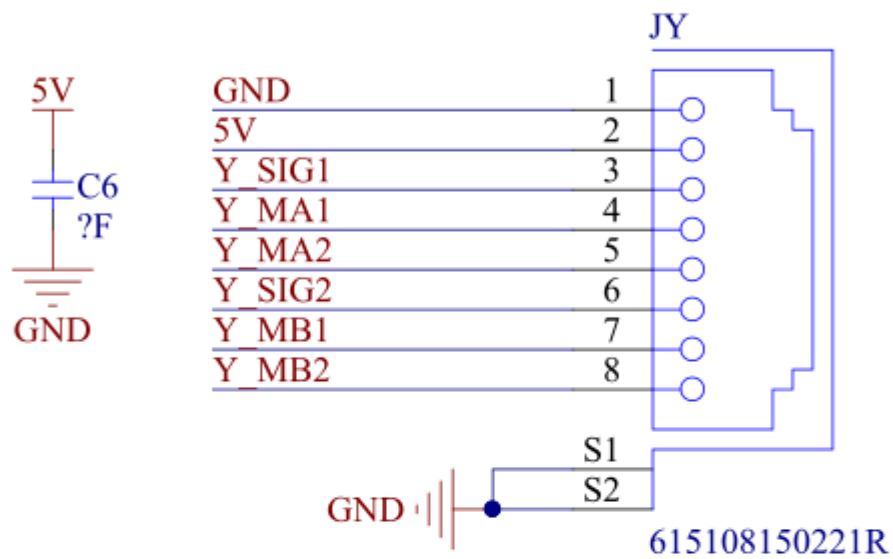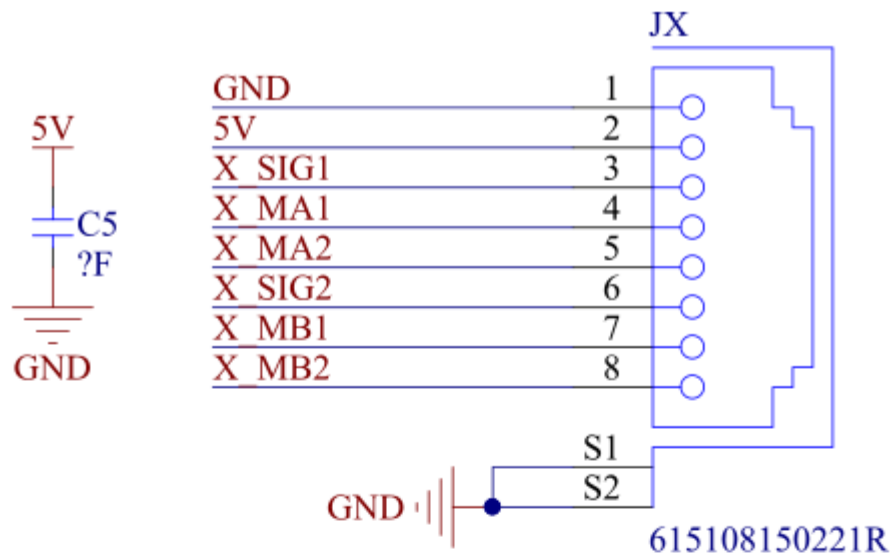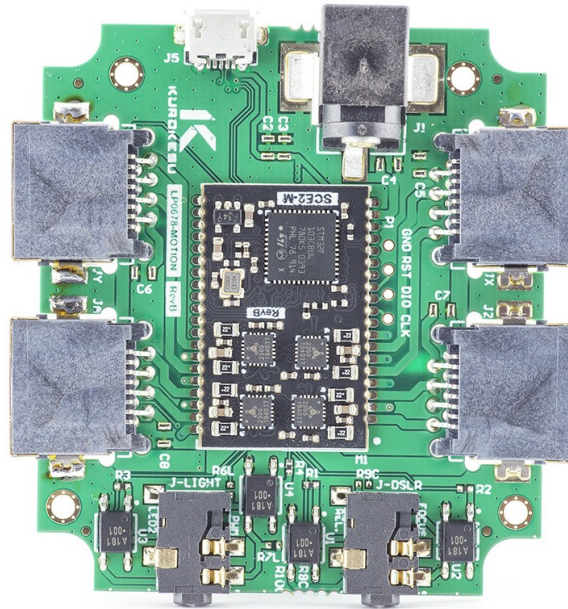
Schematics

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

JX

5V		GND	1
		5V	2
C5		X_SIG1	3
?F		X_MA1	4
		X_MA2	5
		X_SIG2	6
GND		X_MB1	7
		X_MB2	8

S1
GND — S2

615108150221R

JY

5V		GND	1
		5V	2
C6		Y_SIG1	3
?F		Y_MA1	4
		Y_MA2	5
		Y_SIG2	6
GND		Y_MB1	7
		Y_MB2	8

S1
GND — S2

615108150221R

JZ

5V		GND	1
		5V	2
C7		Z_SIG1	3
?F		Z_MA1	4
		Z_MA2	5
		Z_SIG2	6
GND		Z_MB1	7
		Z_MB2	8

S1
GND — S2

615108150221R

Top PCBA view

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.