Arduino XY-Stage Controller

# Wiring

Figure 1 shows the wiring of the Arduino to the stepper motor drivers (Signal) and the 4 end stops (S1-S4). Wiring to the specific pins is important for the Arduino program to work, if you want to switch the pins, ensure the pins in the Arduino code are switched as well.

# 

Figure 1. Wiring of the Arduino to TB6600 Stepper motor drivers and ends stops

# Serial Commands

Set up a serial connect with 9600 Baud Rate.

Serial commands are sent in the following format:

xccdddd;

Where x is the axis, 0 or 1; cc is the command; and dddd is a value; each command is terminated with a semicolon (;). Multiple commands can be sent and the Arduino will wait for a new line (\n\r) to start processing the commands.

## Home

To home or zero the motors to the negative direction, send the command “0or”. **Example**: 0or; will zero the device.

## Move (Relative)

Moving relative requires an axis, the command pr and the magnitude that can be either positive or negative. The magnitude should be passed in millimeters. **Example:** 0pr10; will move the x axis 10 mm, 1pr-20.5 will move the y axis 20.5 mm in the negative direction.

## LED Light

Light is turned on with a relay. Use 0lo0 to turn off the light and 0lo1 to turn on the light.