Setup Guide for Dual Brushless Motor Board

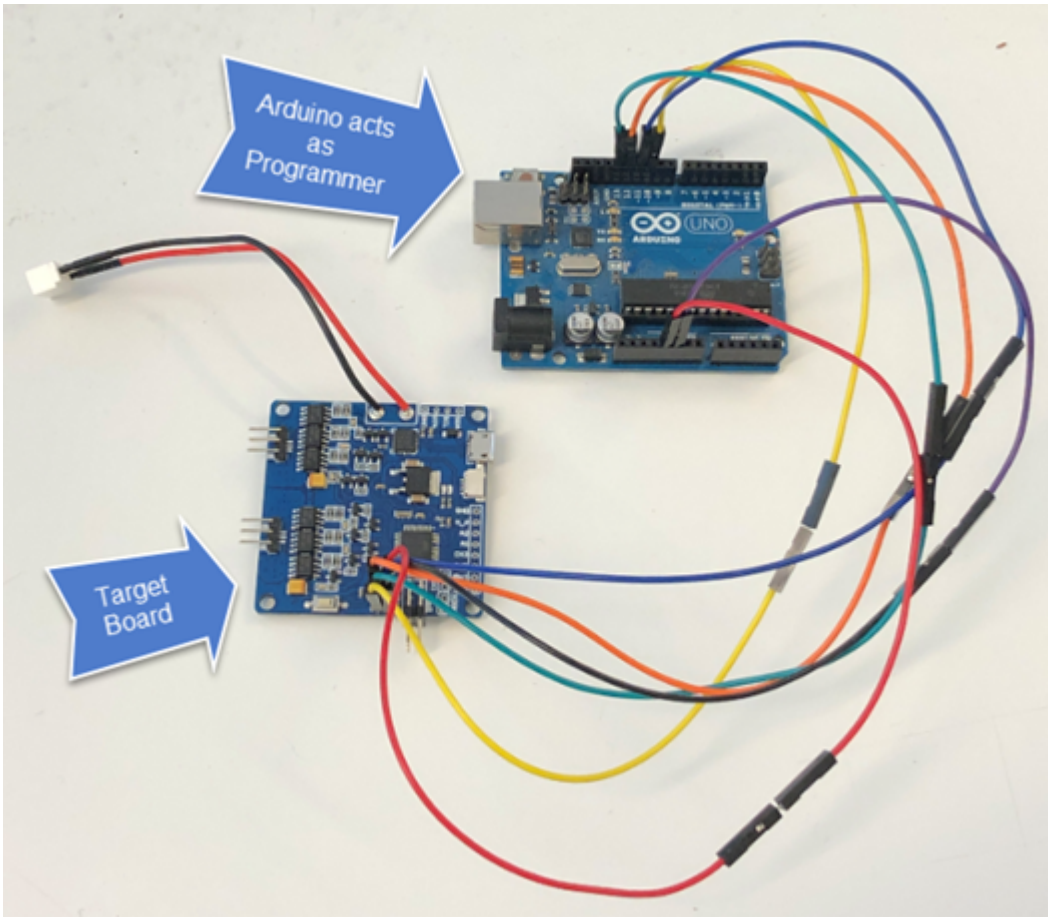
Thanks for your support!

If you are experiencing difficulties when trying to download your code, please try the following:

(Requires soldering and an additional Arduino UNO to be used as a programmer).

Overview:
We will connect to the board and burn a “bootloader”. For this, we will be using an Arduino UNO board as a programmer. The Arduino UNO will be known as the **Programming Board**, and the Dual Brushless Motor Board as the **Target Board.**

A specific program will be downloaded into the Programming Board, this enables the burning of the bootloader onto the Target Board.

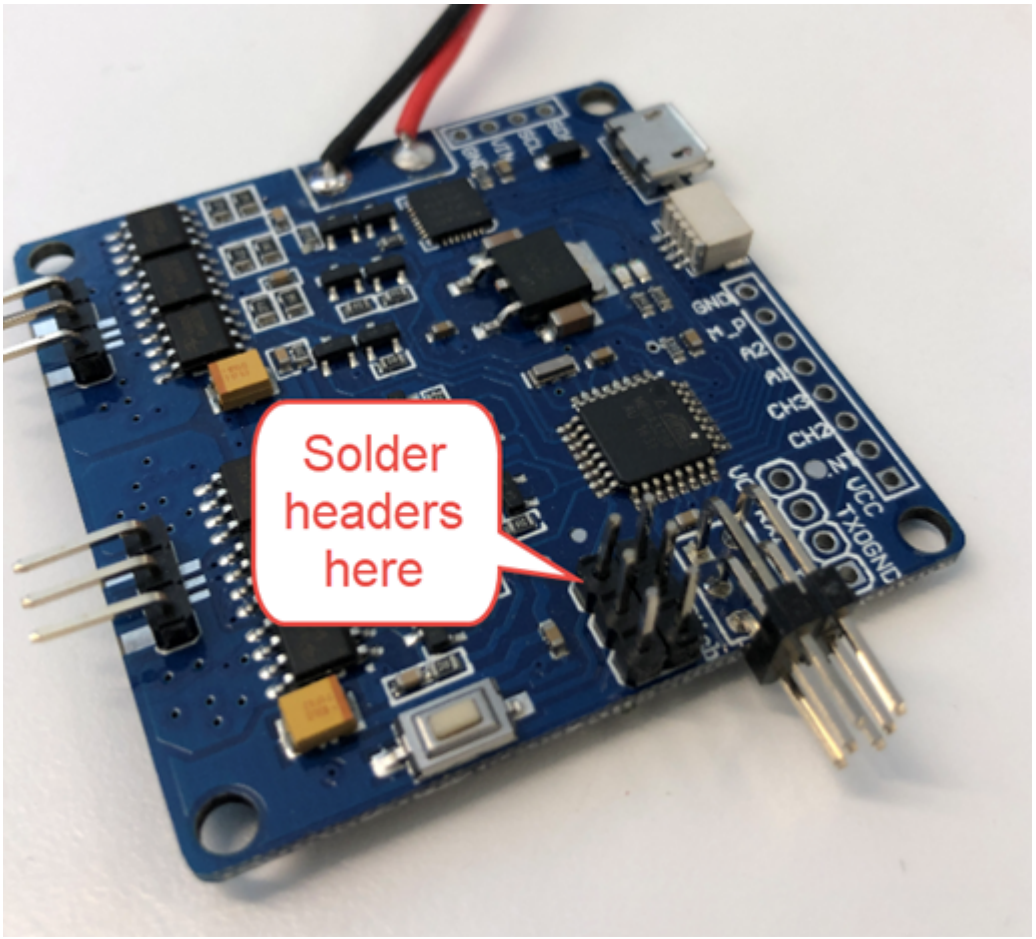


The process is simple and logic:

A. **Make connections between Programming Board and Target Board**
B. **Download program onto Programming Board**
C. **Burn bootloader onto Target Board**

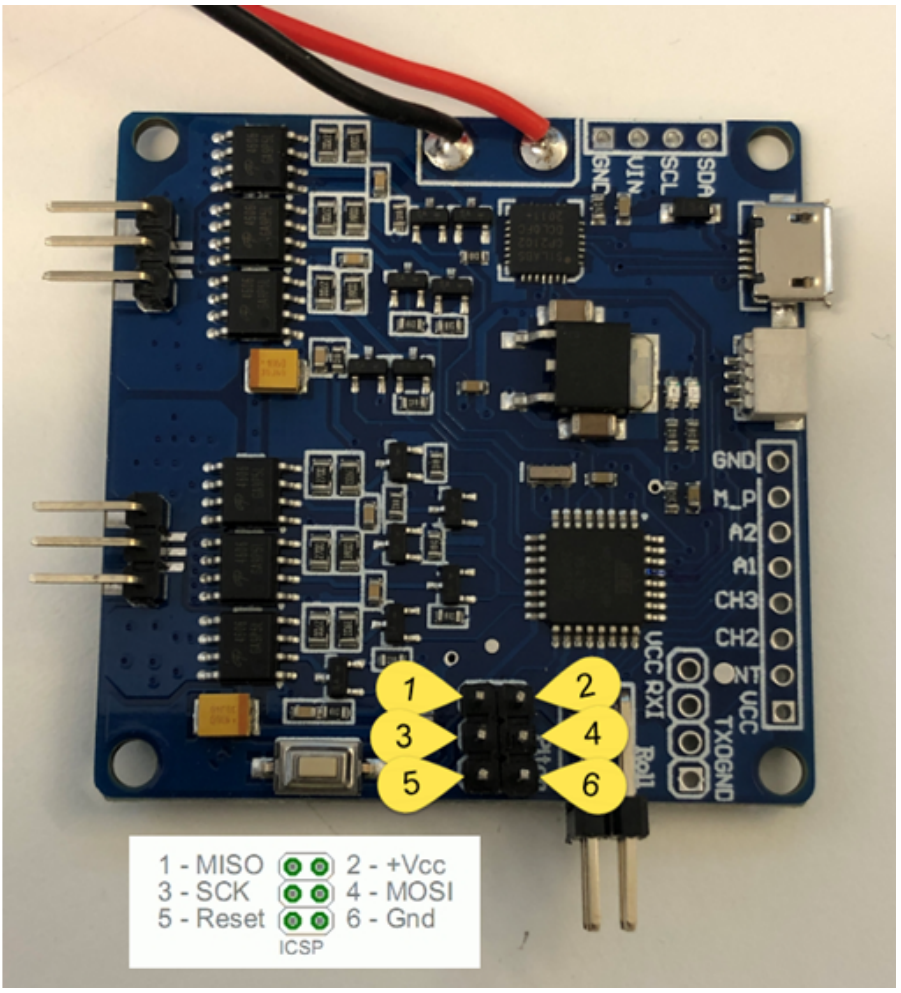
A. Making connections between Programming Board and Target Board

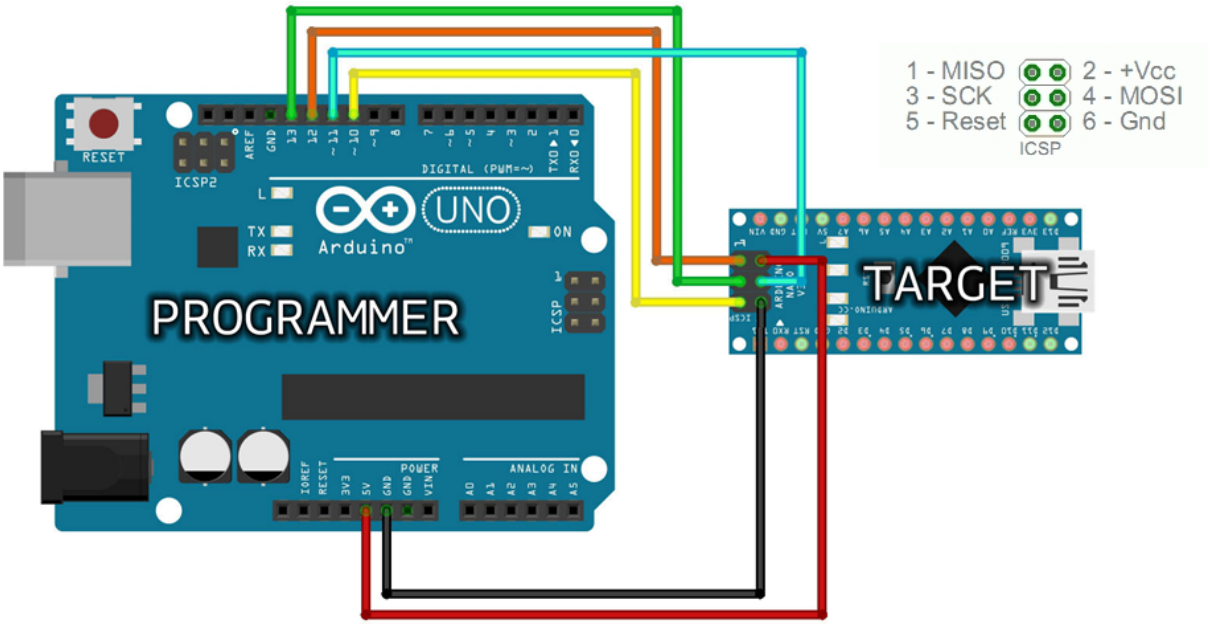
To connect both boards (Arduino UNO and Dual Brushless Motor Board) we can use a header, alternatively, you can solder cables directly.



Once headers are in place, we can connect both boards:

Arduino	Target Board
pin 10	5 - RESET
pin 11	4 - MOSI
pin 12	1 - MISO
pin 13	3 - SCK
5V	2 - +Vcc
GND	6 - Gnd

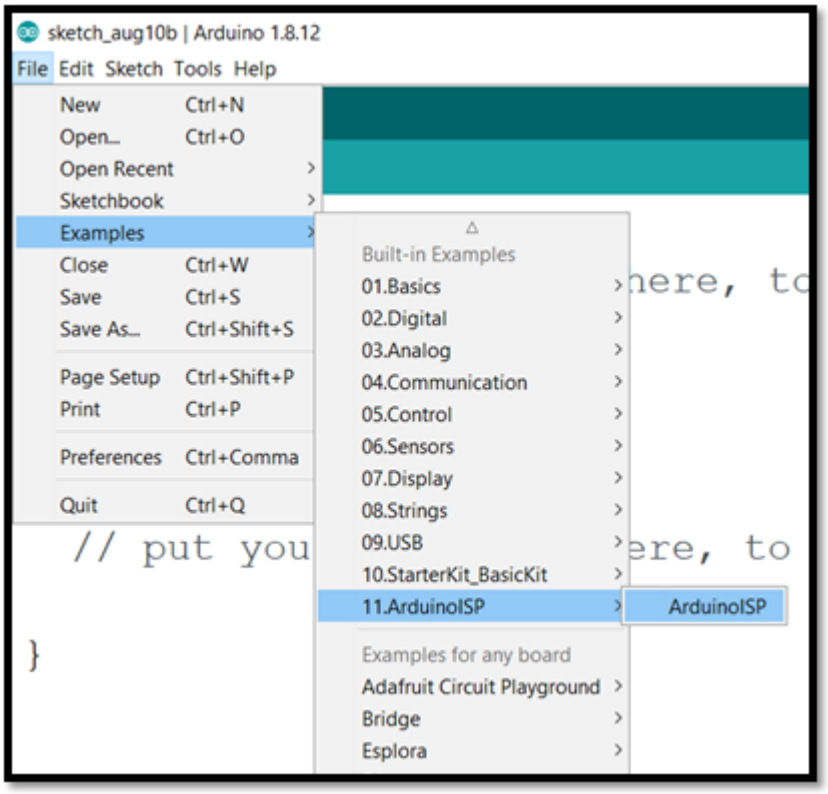


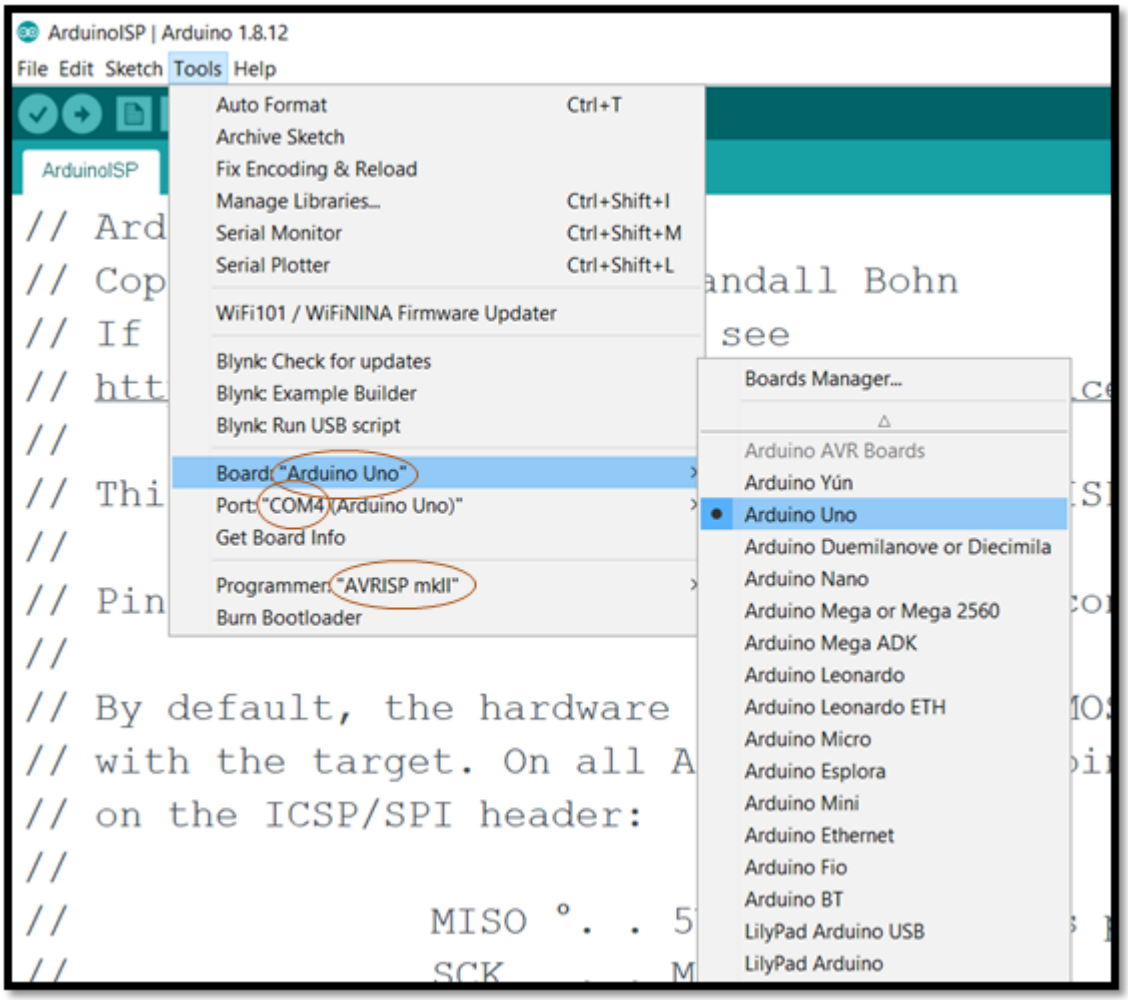


B. Download program onto Programming Board

1. Connect a USB cable to the Arduino UNO (Programming Board) and to your computer and open the Arduino IDE software (in this example it is version 1.8.12).
2. Under Examples, open the ArduinoISP program **[File/Examples/11.ArduinoISP/ArduinoISP]**
3. Under Tools, configure the Arduino IDE for the Programming Board: Select Arduino UNO **[Tools/Board/Arduino UNO].**
4. Select which COM it is connected to (in this example we use COM4) **[Tools/Port/COM?]**
5. Select which Programmer to use, in this case **AVRISP mkII [Tools/Programmer/AVRISP mkII]**
6. Press "**Upload**" to program the Arduino UNO with this code.

Now the Arduino UNO (Programming Board) has the code needed for the next step.



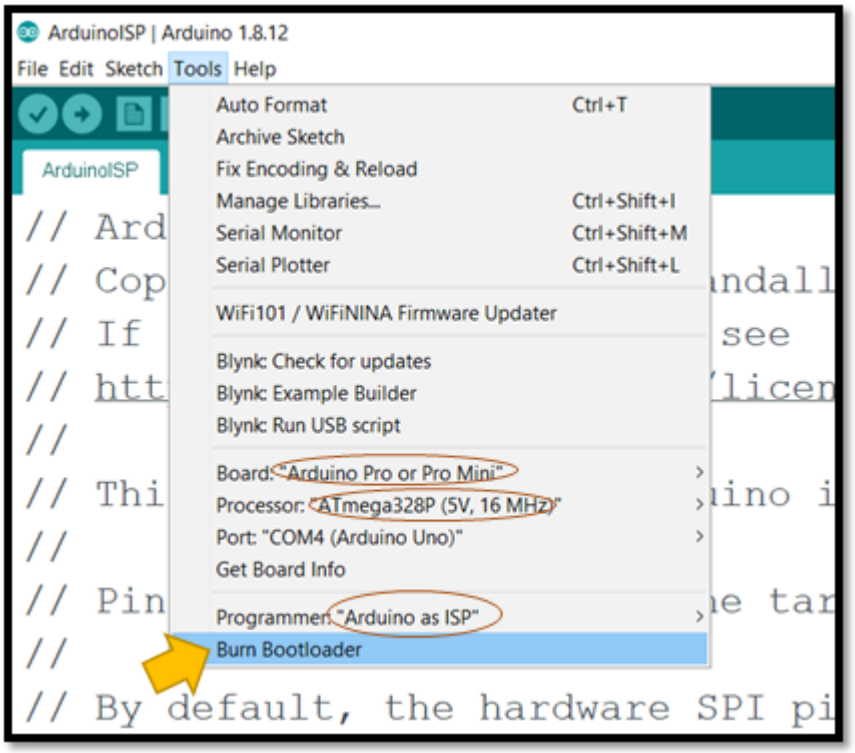

ArduinoISP | Arduino 1.8.12
File Edit Sketch Tools Help
ArduinoISP
Auto Format Ctrl+T
Archive Sketch
Fix Encoding & Reload
Manage Libraries... Ctrl+Shift+I
Serial Monitor Ctrl+Shift+M
Serial Plotter Ctrl+Shift+L
WiFi101 / WiFiNINA Firmware Updater
Blynk Check for updates
Blynk Example Builder
Blynk Run USB script
Board: "Arduino Uno"
Port: "COM4 (Arduino Uno)"
Get Board Info
Programmer: "AVRISP mkII"
Burn Bootloader
Boards Manager...
Arduino AVR Boards
Arduino Yún
Arduino Uno
Arduino Duemilanove or Diecimila
Arduino Nano
Arduino Mega or Mega 2560
Arduino Mega ADK
Arduino Leonardo
Arduino Leonardo ETH
Arduino Micro
Arduino Esplora
Arduino Mini
Arduino Ethernet
Arduino Fio
Arduino BT
LilyPad Arduino USB
LilyPad Arduino
// By default, the hardware
// with the target. On all A
// on the ICSP/SPI header:


ArduinoISP | Arduino 1.8.12
File Edit Sketch Tools Help
Upload
ArduinoISP
// ArduinoISP
// Copyright (c) 2008-2011
// If you require a license,
// http://www.opensource.org
// This sketch turns the Ard

C. Burn bootloader onto Target Board

In this last step we change some configurations to match those of our **Target Board**, and then we burn the bootloader through the **Programming Board.**

1. In Tools, change the Board parameter to “**Arduino Pro or Pro Mini**” **[Tools/Board/Arduino Pro or Pro Mini]**
2. A “Processor” setting will appear when Arduino Pro is selected, set this to: “ATmega328P (5V, 16MHz)” **[Tools/Processor/ATmega328P (5V, 16MHz)]**
3. The Port should be the **same** as in the previous step so do NOT change this setting (for this example it is still COM4.)
4. Programmer should be changed into “Arduino as ISP” **[Tools/Programmer/Arduino as ISP]**
5. Once all of this is in place, press “Burn Bootloader”, the process should take about a minute.



***When done, change the Programmer settings back to “AVRISP mkII” [Tools/Programmer/AVRISP mkII].**

Now you are ready to program your Dual Brushless Motor Board as any other Arduino, disconnect it from the Programming Board (it is no longer needed), and plug it to the computer using a USB cable and Upload some programs (remember to select “Arduino Pro” in the Board selection).

Good Luck!