Brushless-Motor Wireless Car

status active

Brushless-Motor Wireless Car

Table of Contents

About

This repo contains

- Firmware
- Detailed instructions

for Brushless-Motor Wireless Car.

Getting Started

These instructions will get you a copy of the project up and running on your system.

Prerequisites

Things you need to install the FW.

```
- Arduino IDE
```

Installing

A step by step series that tell you how to get the Firmware and Backend running

ESP32 Configuration

You should have Arduino IDE Installed

1. Copy the contents of the libs folder to the libraries directory of your Arduino
    1. If you are using windows, the libraries directory will be Documents/Arduino/libraries
2. Open Arduino IDE.

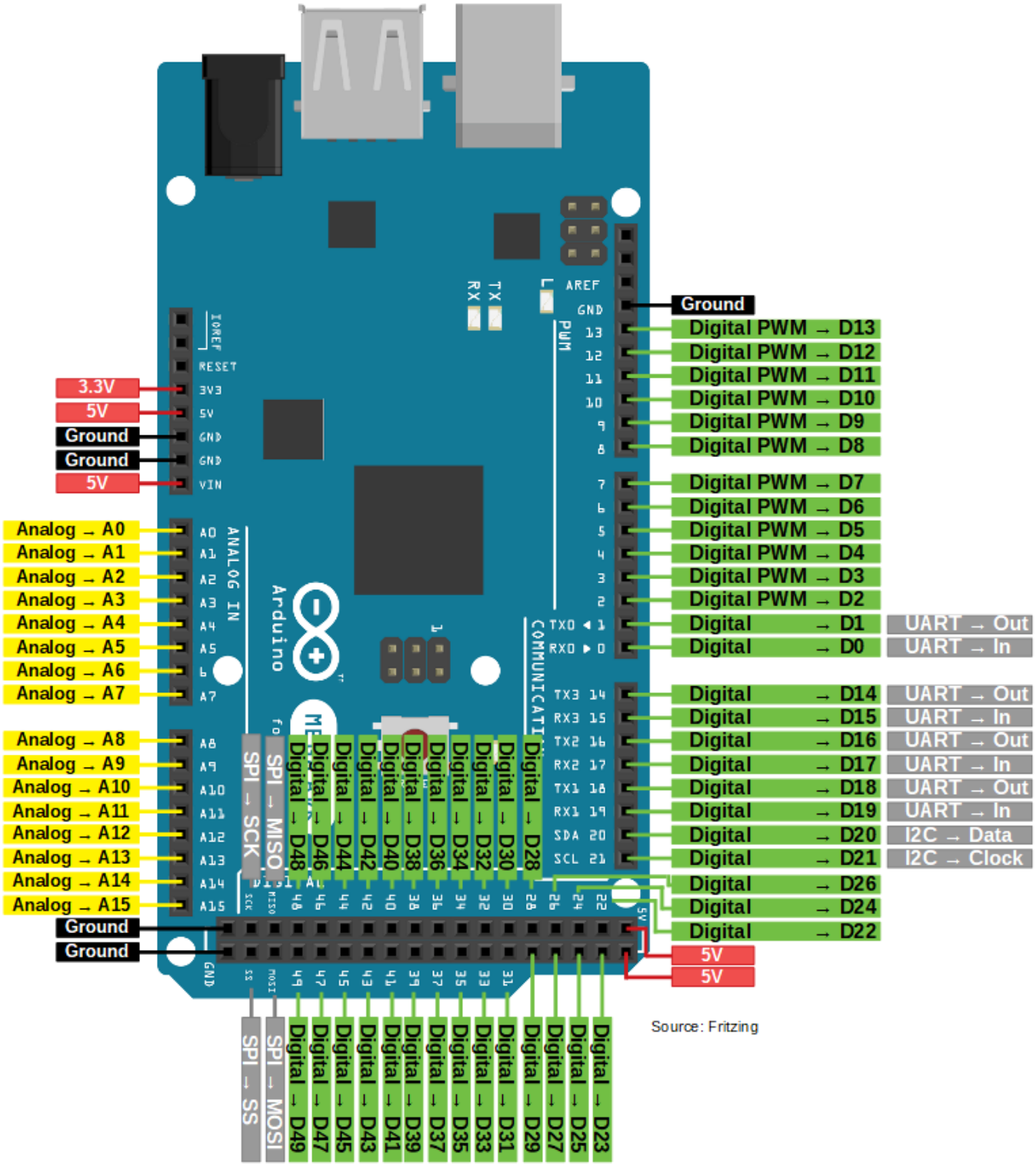
ESP32 Node FW Uploading

1. Select Arduino Mega or Mega 2560 from Tools->Board->Arduino AVR Boards
2. Select the correct port from Tools->Port
3. Then open Firmware.ino file,
4. Now Upload the Code to your Arduino Mega by pressing CTRL+U
5. Your Arduino Mega is now ready to be used.

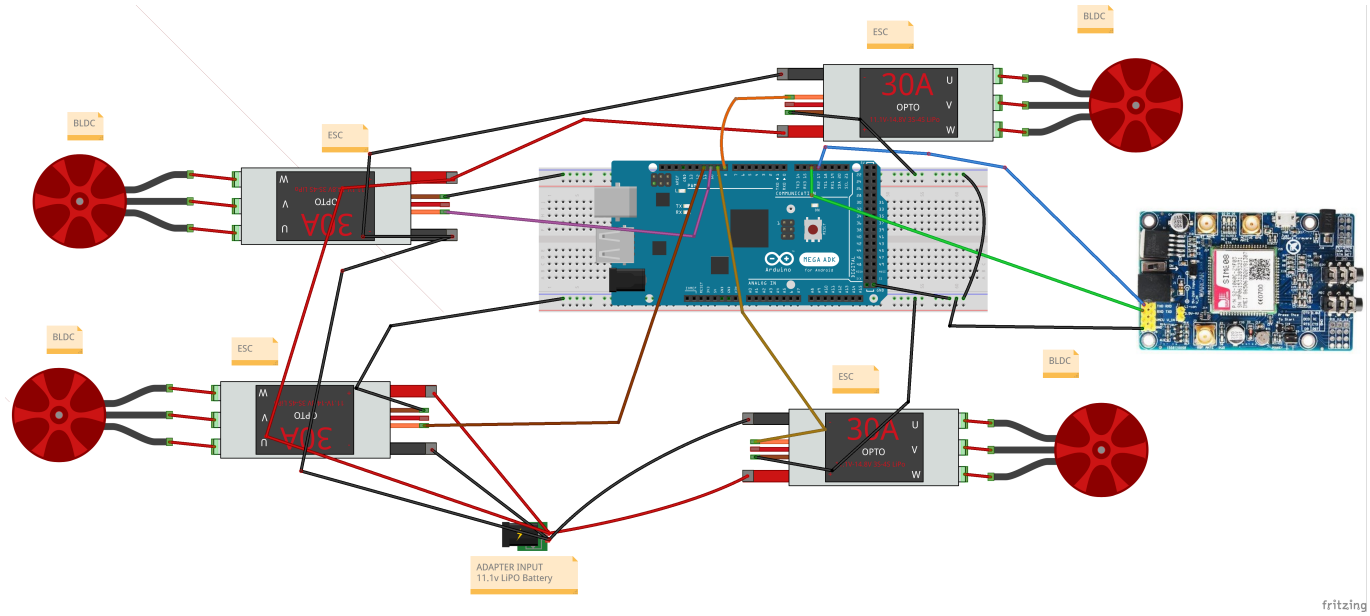
Circuit

Arduino Mega Pinout

Follow the pinout diagram given below to connect different components to your Arduino Mega board.


Ground
Digital PWM → D13
Digital PWM → D12
Digital PWM → D11
Digital PWM → D10
Digital PWM → D9
Digital PWM → D8
Digital PWM → D7
Digital PWM → D6
Digital PWM → D5
Digital PWM → D4
Digital PWM → D3
Digital PWM → D2
Digital → D1
UART → Out
Digital → D0
UART → In
Digital → D14
UART → Out
Digital → D15
UART → In
Digital → D16
UART → Out
Digital → D17
UART → In
Digital → D18
UART → Out
Digital → D19
UART → In
Digital → D20
I2C → Data
Digital → D21
I2C → Clock
Digital → D26
Digital → D24
Digital → D22
5V
5V
3.3V
5V
Ground
Ground
5V
Analog → A0
Analog → A1
Analog → A2
Analog → A3
Analog → A4
Analog → A5
Analog → A6
Analog → A7
Analog → A8
Analog → A9
Analog → A10
Analog → A11
Analog → A12
Analog → A13
Analog → A14
Analog → A15
Ground
Ground
SPI → SCK
SPI → MISO
SPI → SS
SPI → MOSI
Source: Fritzing

Circuit



Pin Connections

```
Pin connection details
```

SIM808

SIM808 Connections

SIM808 Pins	Arduino Mega Pins
TX	RX2
RX	TX2
GND	GND

ECS

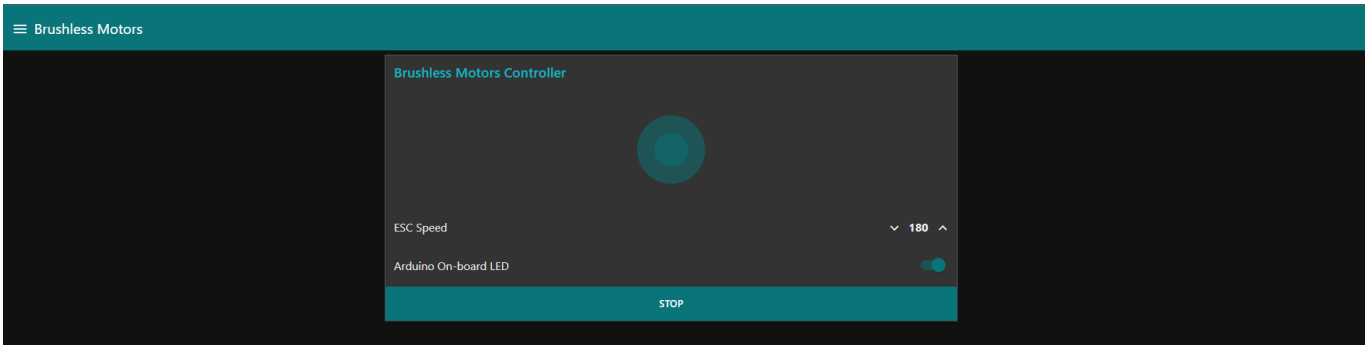
ECS Connections

ECS Pins	Arduino Mega Pins
ESC1 DATA	D8
ESC2 DATA	D9
ESC3 DATA	D10
ESC4 DATA	D11

- All ESC GND pins should be connected to the Arduino Mega GND pins.

Usage

1. Open Firmware folder and open networkAPN.h file.
2. Put your SIM Card APN details in the file. You can get APN details of your SIM card from the website of your network provider.
3. Open Firmware.ino file.
4. Upload the code to your Arduino MEGA.
5. Now connect the battery to the ESCs and use dashboard to move the motors.
6. Dashbaord Link: https://nodered-proxy.production.wrapdrive.tech/ui/



List of Components

Following components are used to make this project

1. 4x ESC ○ https://www.amazon.com/RC-Brushless-Electric-Controller-bullet/dp/B071GRSFBD/ref=sr_1_1?keywords=esc&qid=1639564576&sr=8-1
2. 4x Brushless Motors ○ https://www.amazon.com/DYS-1300KV-Brushless-Multicopters-Helicopter/dp/B077HLPP4N/ref=sr_1_6?keywords=brushless+motor&qid=1639564659&sr=8-6
3. Arduino Mega ○ https://www.amazon.com/ARDUINO-MEGA-2560-REV3-A000067/dp/B0046AMGW0/ref=sr_1_1?keywords=arduino+mega&qid=1639564701&sr=8-1
4. 11.1v LiPo ○ https://www.amazon.com/Airsoft-Battery-Rechargeable-1400mAh-Tamiya/dp/B09G6B1RKB/ref=sr_1_8?keywords=11.1v+lipo&qid=1639564730&sr=8-8
5. 3S LiPo Charger ○ https://www.amazon.com/HTRC-Battery-Balancer-Charger-7-4-11-1V/dp/B073WSDCZM/ref=sr_1_8?keywords=lipo%2Bcharger&qid=1639564784&sr=8-8&th=1
6. 5v SIM808 GPRS Module ○ https://www.amazon.com/Development-Antenna-Arduino-Raspberry-Support/dp/B07TS7BSP7/ref=sr_1_4?keywords=arduino%2Bgprs&qid=1639565048&sr=8-4&th=1

🔨 Built Using

- Arduino - Embedded Framework and IDE - For Sensor Node Design

✍️ Authors

- @Nauman3S - Development and Deployment