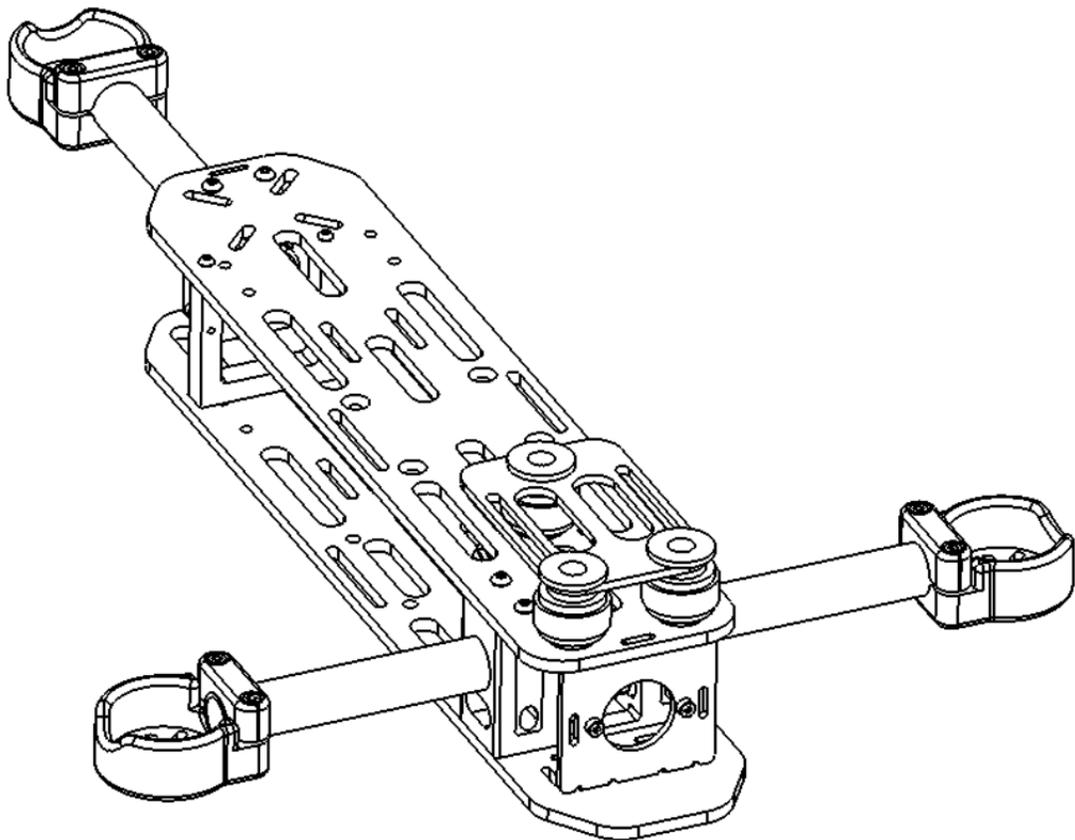# VECTORQUADS

VTC250 WIRING & SETUP GUIDE
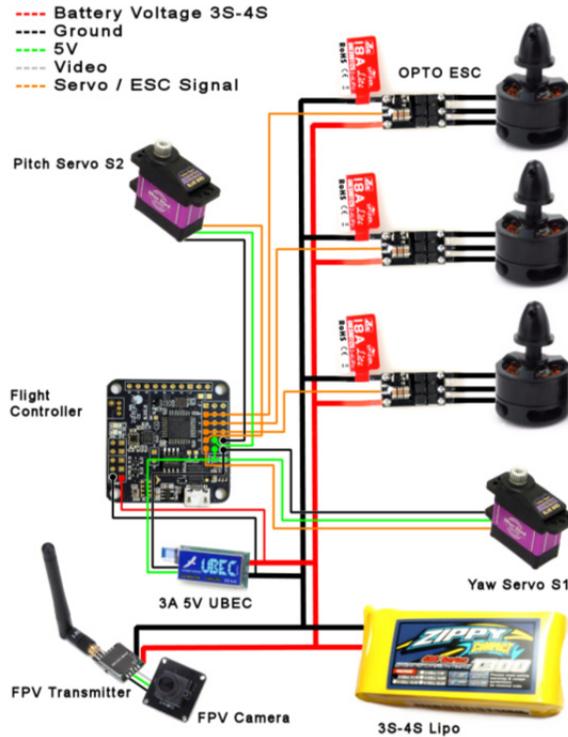

Product ID. : VTC250
Ver. : 1.00

VECTORQUADS

Wiring Setup

This section illustrates the interconnection setup for the VTC250. Feel free to modify this setup and parts as you see fit.
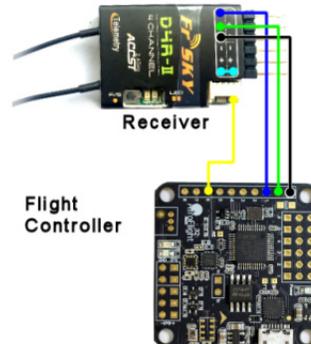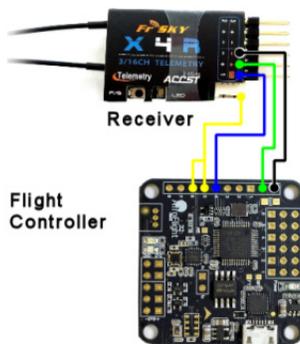
Power System Diagram

Use 16-18 AWG silicone wire for main battery leads and 20 AWG for ESC power lines.

Connecting X4R-SB Receiver to FC (SBUS)   Connecting D4R-II Receiver to FC (PPM)

VECTORQUADS

Cleanflight Configuration with Telemetry

The following series of screen captures show the basic settings employed if using components from the recommended parts list above. Refer to the Cleanflight manual for details on various features and settings not covered in this guide.

Download and flash your FC with the latest release of TriFlight from
https://github.com/lkaino/Triflight/releases/
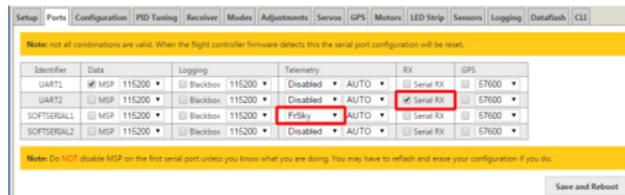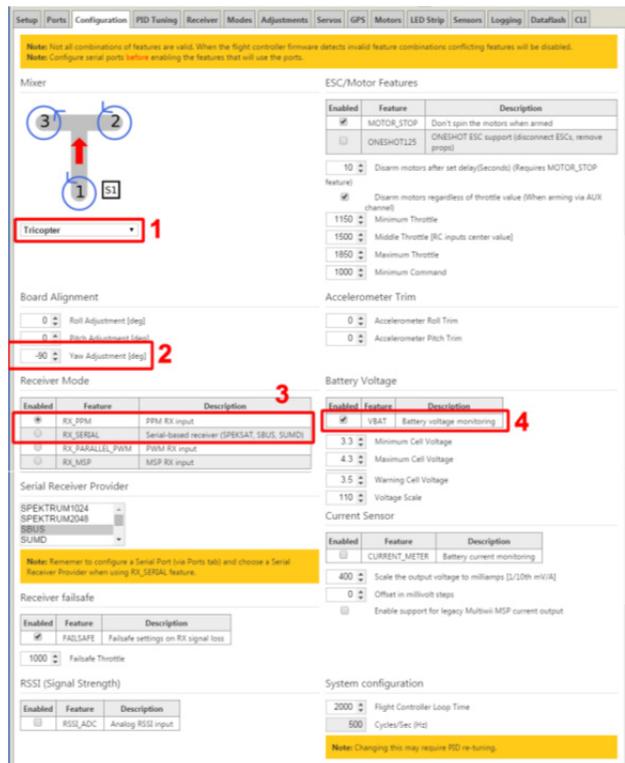
Ports

Activate SOFTSERIAL on the Configuration tab in order to see the 2 additional SOFTSERIAL ports. Select FrSky if using the D4R-II or SmartPort if using the X4R-SB or XSR receivers.

Configuration

Note that the numbers do not indicate the order in which items are to be activated.

1. Ignore this setting. It will be set as "Custom Tricopter" through CLI commands.

2. Depending on the orientation of your Flight Controller, make sure to adjust the yaw value.

3. Select RX_PPM if using the D4R-II receiver or RX_SERIAL for either the X4R-SB or XSR receivers.

4. Activate the battery voltage monitor if using telemetry.
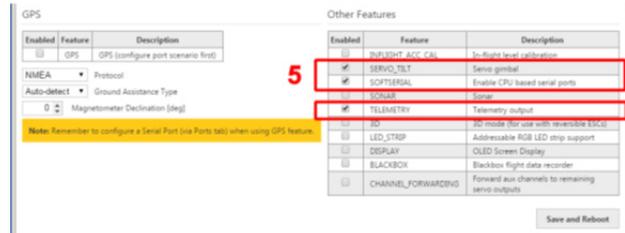
5. Activate SERVO_TILT and use SOFTSERIAL and TELEMETRY for telemetry output.

Servos

Assign the A1 aux servo channel to the Servo 0 output on the FC. This aux input will be used to control the rotor pitch.
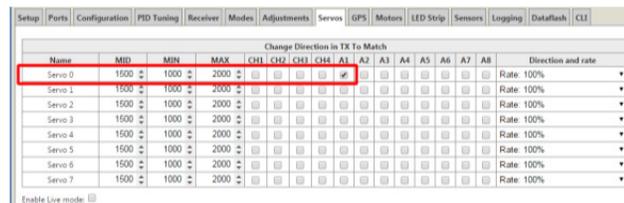
CLI

On the CLI tab, copy and paste the following list of commands.

In order for the FC to properly mix the motors based on the frame layout, enter the following commands:

mixer customtri
mmix reset
mmix 0 1 0 1 0
mmix 1 1 -0.541 -0.5 0
mmix 2 1 0.541 -0.5 0

Set servo PWM rate to 250 only of using digital servos. Leave this value at 50 if using analog servos.

set servo_pwm_rate = 250

The telemetry signal if used will be in the correct format that the receiver can understand by entering the following command:

set telemetry_inversion = ON

```
# mixer
Mixer: CUSTOMTRI

# mmix
Motor   Thr    Roll    Pitch   Yaw
#0:    1.000   0.000   1.000   0.000
#1:    1.000  -0.541  -0.500   0.000
#2:    1.000   0.541  -0.500   0.000

# get servo_pwm_rate
servo_pwm_rate = 250

# get telemetry_inversion
telemetry_inversion = ON

# get deadband
3d_deadband_low = 1406
3d_deadband_high = 1514
alt_hold_deadband = 40
deadband = 5
yaw_deadband = 9
3d_deadband_throttle = 53252
accxy_deadband = 40
accz_deadband = 40
```

VECTORQUADS

You may also wish to adjust the deadband depending on how much jitter is present on RC channel inputs.

set deadband = 5
set yaw_deadband = 5

Finally type "save" to permanently store these settings. Once saved you can type "mmix", "get telem, "get deadband" and "get servo" to verify that the settings have been properly stored.

VECTORQUADS

Transmitter Configuration

Controlling the tilt rotor pitch servo is accomplished by assigning your pitch stick input to an aux channel on the transmitter. On the flight controller side, assign this aux input channel to control the tilt rotor pitch servo.

In order to maintain level flight, set a fixed value for the elevator input to 0 or midpoint on the transmitter. Do not assign this channel to any stick inputs. This will tell the flight controller to maintain level flight at all times.