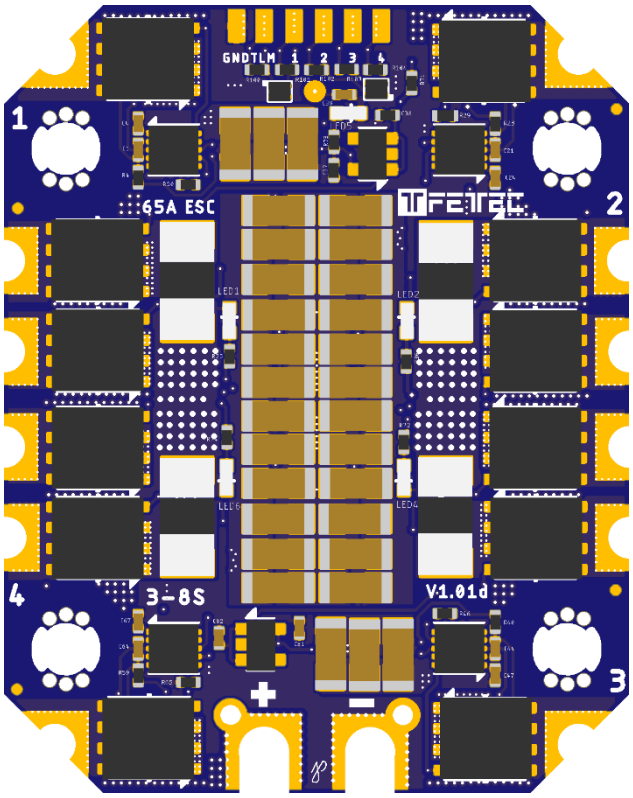
FETtec 4in1 ESC 65A

Manual



Introduction

Thank you for purchasing the FETtec 4in1 ESC 65A.

Features

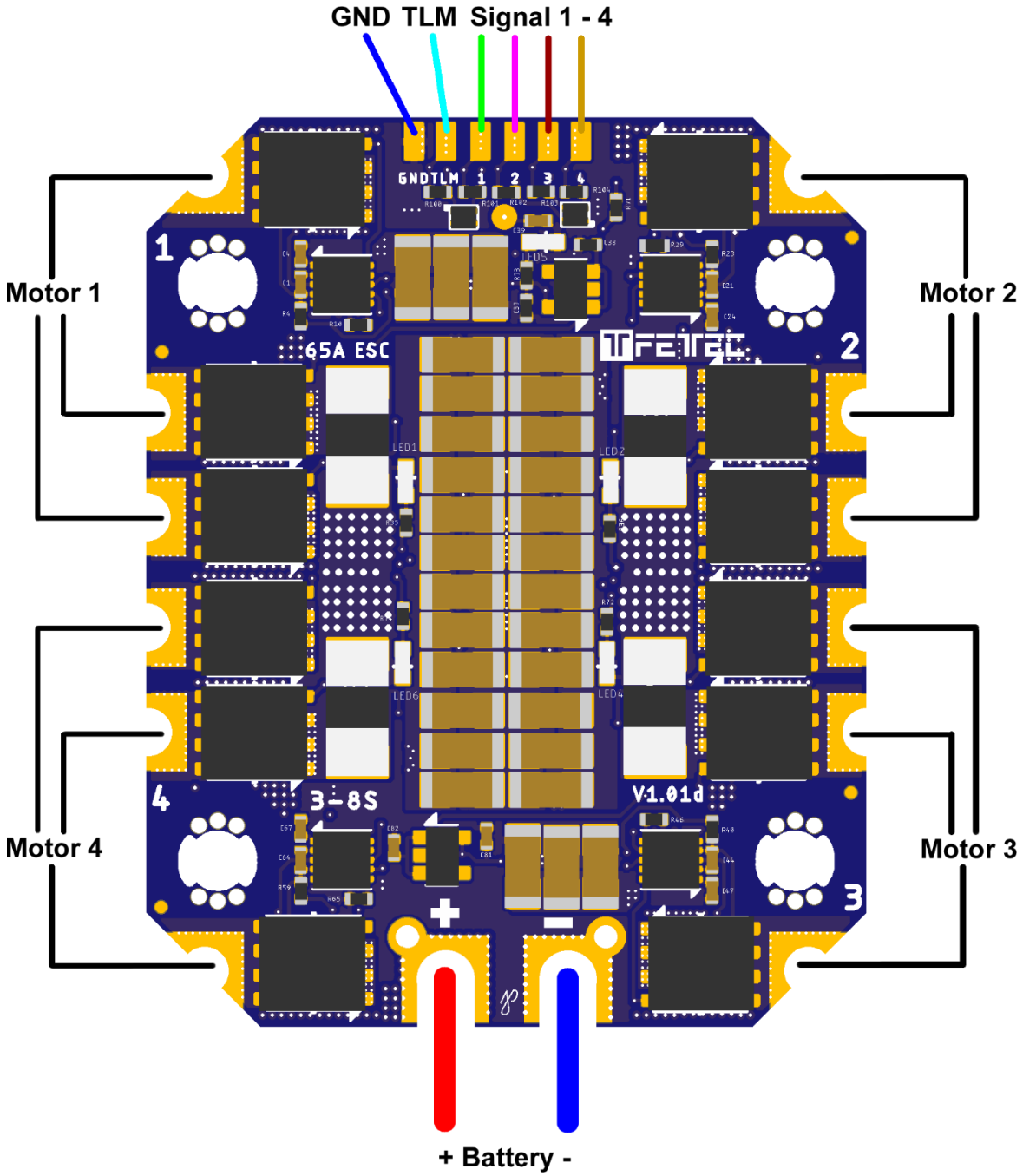
- Active current limiting @ 65A
- Input voltage: 3S-8S
- High quality 40V MOSFETs
- STM32G071 @ 64MHz
- 128 kHz Motor PWM
- Automatic input signal detection
  - Dshot 300-2400
  - PWM
  - OneShot 42/125
  - Onewire
  - S2M
- KISS FC Passthrough
- Betaflight Passthrough

Safety warning

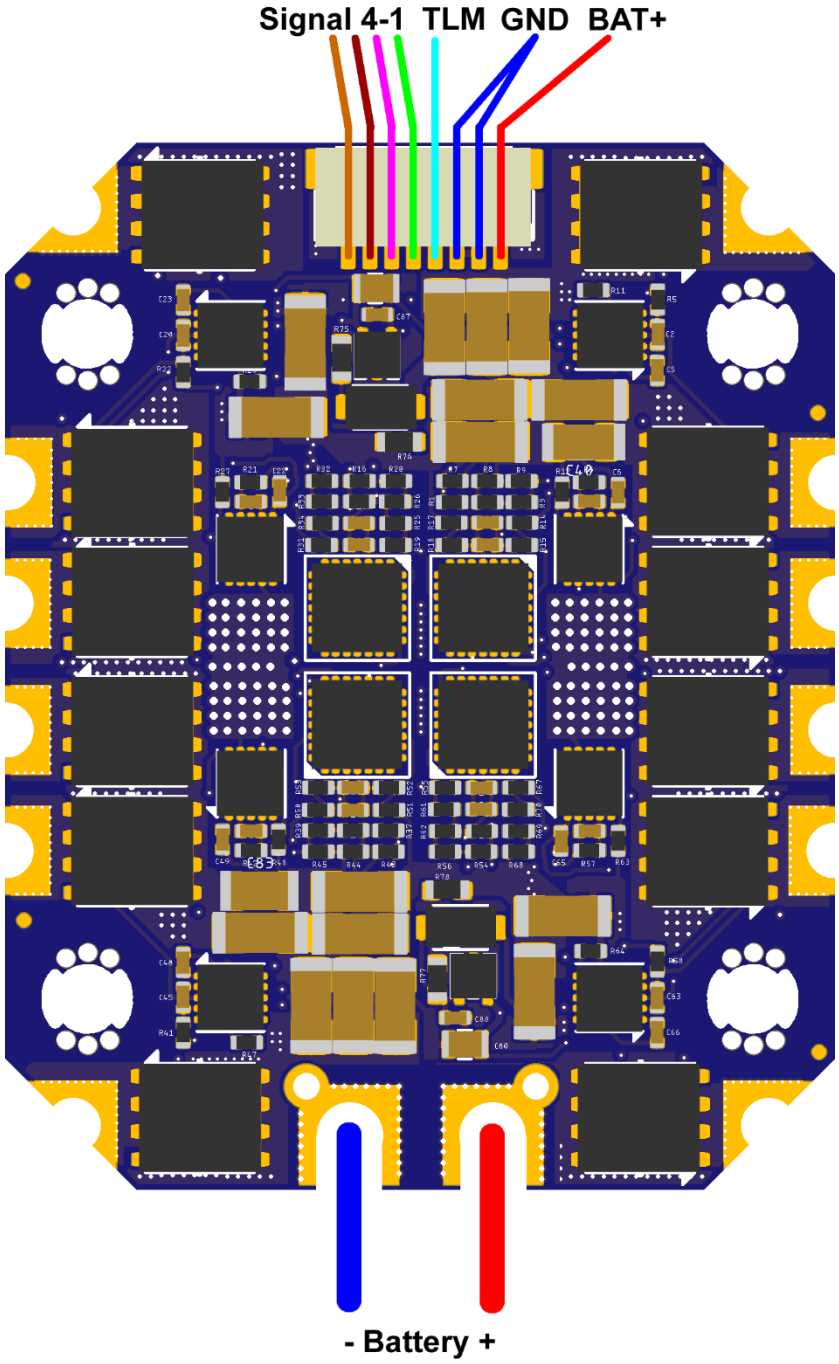
- Remove propeller before flashing and configuration!
- The ESC can heat up to 100°C and more
- Please ensure that there is enough space and airflow to prevent any damage because of overheating
- Please check periodically for firmware updates in the FETtec Configurator
- Do not file the mounting holes as this may cause damage

Connection Diagram

Layout Top



Layout Bottom



TLM - Telemetry (Serial)
GND - Reference Signal Ground
Bat+ - Battery+

Connection to FC

4 - 6S

For usage an additional capacitor with the following specification is required.

Minimum 470uF

50V

ESR < 1ohm

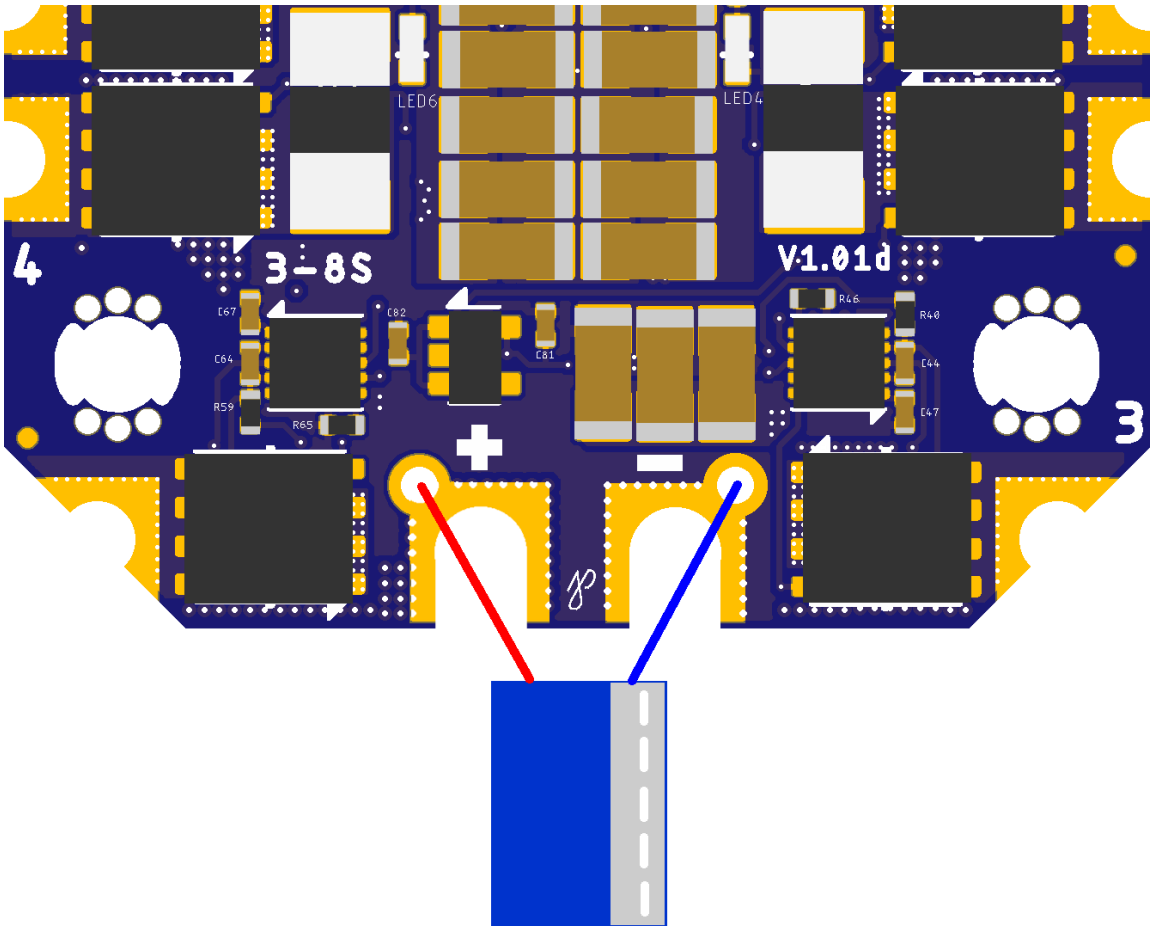
We recommend to use the provided capacitor which comes with the ESC.

Note: A bigger cap with only 35V might not suffice.

8S

Its necessary to use the cap

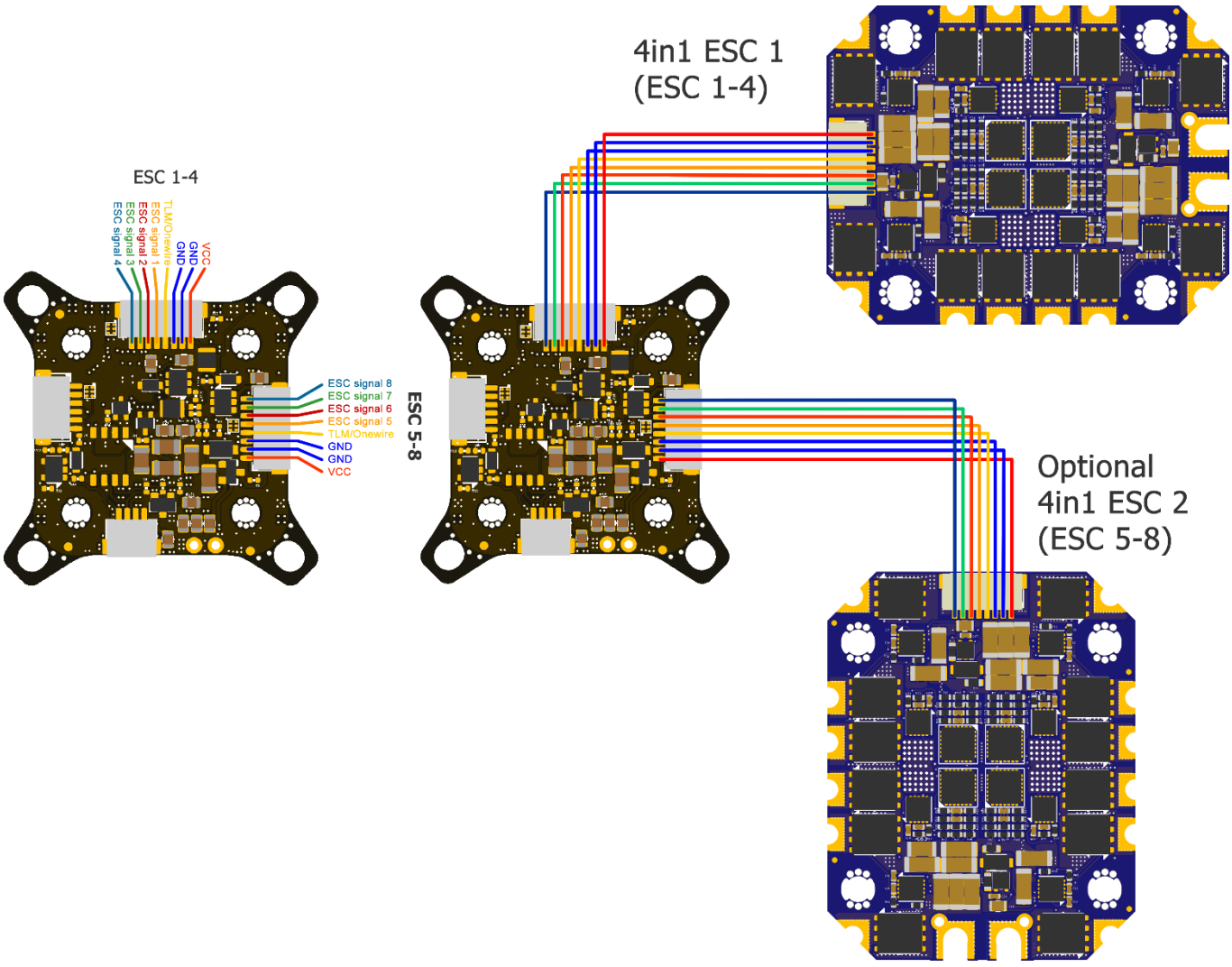
The used FC must be able to run on 8s. The FETtec FCs need an extra BEC



FETtec FC

Use the 8pin cable which comes with the FETtec 4in1 ESC 65A to connect it to the FETtec FC

(It is possible to use 2 ESCs for a build with more than 4 motors.
If you only use 4 motors, please use the connector 1)

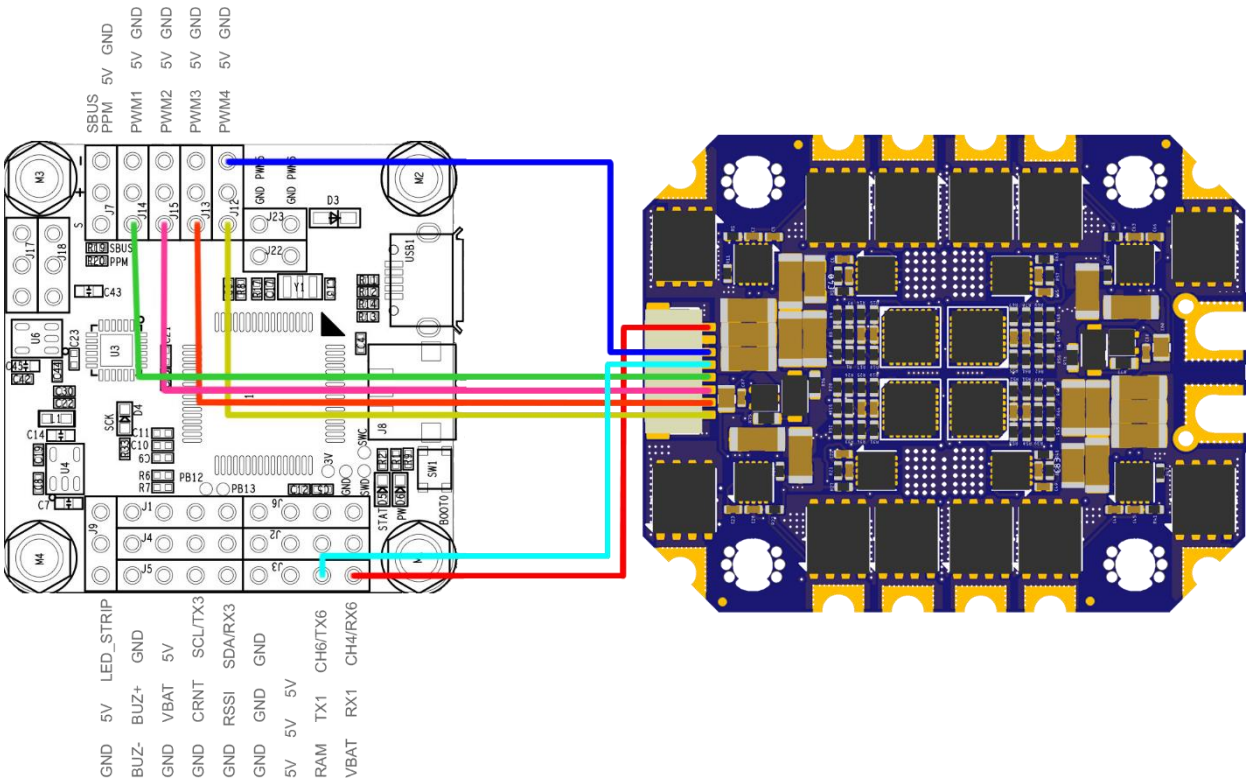


Betaflight FC

Connection

Signal 1 - 4 have to be connected to the corresponding FC Motor outputs.

The TLM wire has to be connected to an available serial TX pin.



Configuration

In order to utilize ESC provided current and voltage sensor the following settings need to be applied to Betaflight. (Feature, motor protocol and meter can be configured through the GUI itself). In addition, the correct serial port need to be selected and assigned to ESC sensor.

Ports

WIKI

Note: not all combinations are valid. When the flight controller firmware detects this the serial port configuration will be reset.
Note: Do NOT disable MSP on the first serial port unless you know what you are doing. You may have to reflash and erase your configuration if you do.

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	115200		Disabled AUTO	Disabled AUTO	Disabled AUTO
UART1	115200		Disabled AUTO	Disabled AUTO	Disabled AUTO
UART2	115200		Disabled AUTO	Disabled AUTO	Disabled AUTO
UART3	115200		Disabled AUTO	ESC AUTO	Disabled AUTO

feature ESC_SENSOR
set motor_pwm_protocol = DSHOT600
set current_meter = ESC
set battery_meter = ESC
set esc_sensor_halfduplex = ON

FETtec Configurator

Please update your ESC periodically with the current Firmware version.

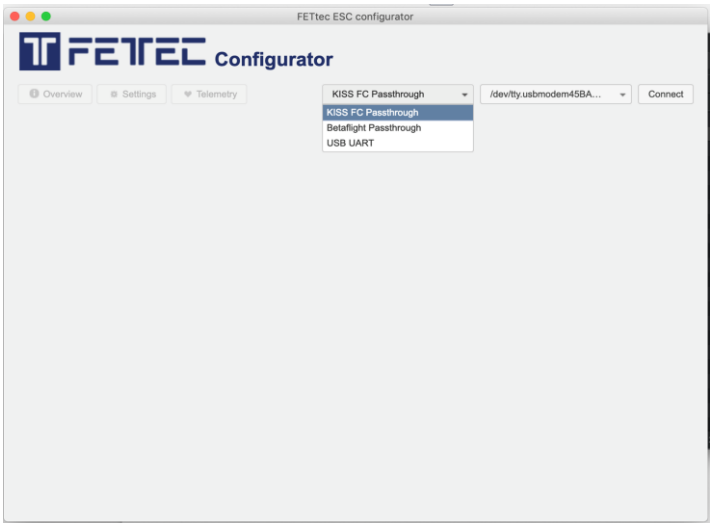
The ESC configuration tool is available at https://gui.fettec.net/ESC/index.html

The ESC firmware is available in remote or for download at https://github.com/FETtec/ESC-Firmware

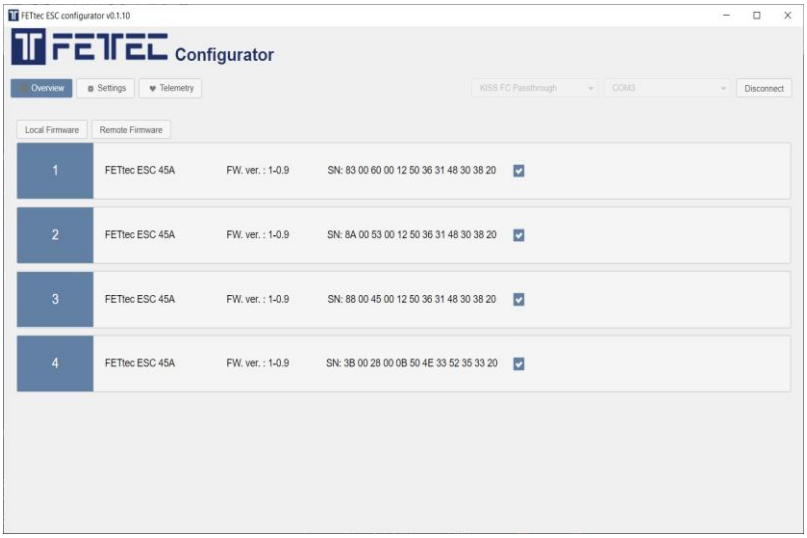
FC passthrough is available for the following platforms:

- KISS FC – Firmware 1.3-RC36j (or higher)
- Betaflight 4.1 firmware (Minimum requirement for Onewire is STM32F4)

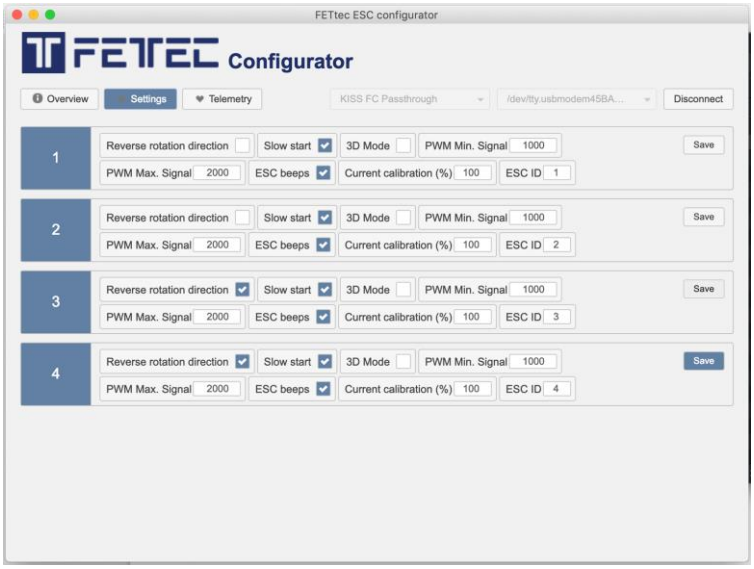
Settings



Mainpage to connect to the ESC. Please select correct connectivity type and serial/COM port.

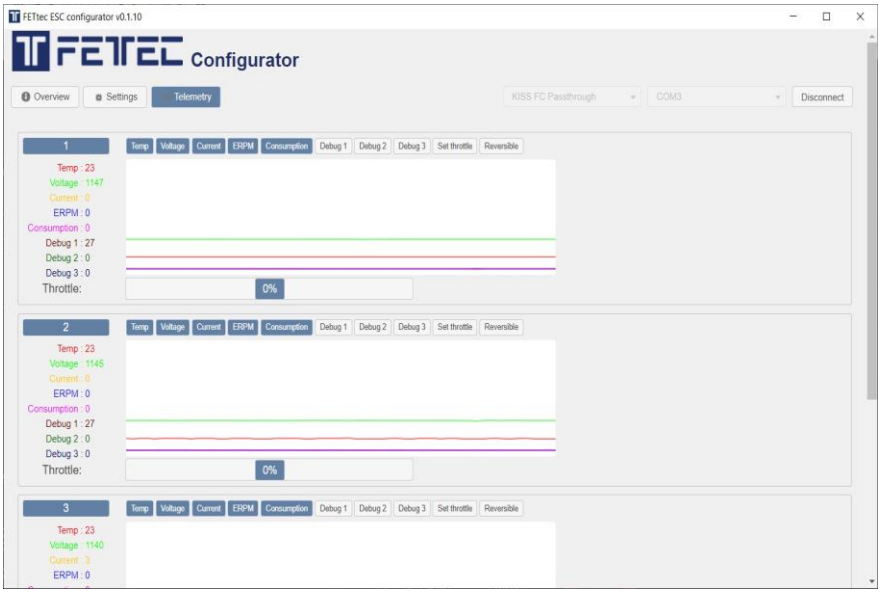


The **Overview** page allows to flash individual ESCs



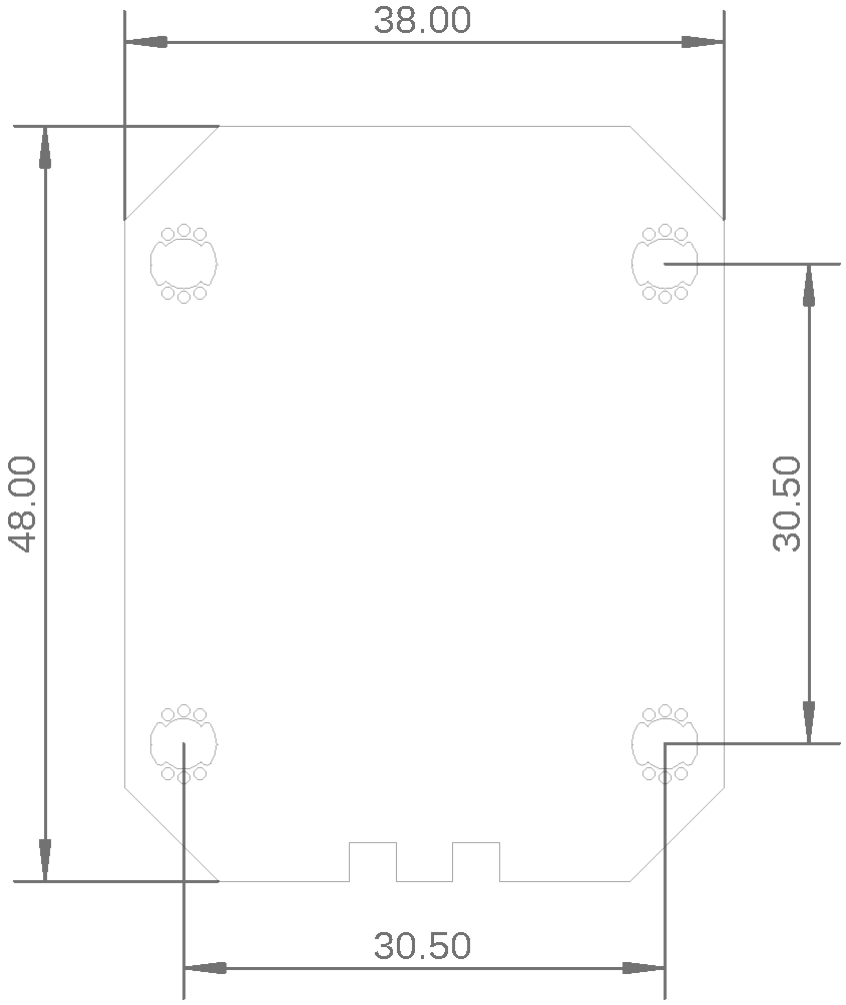
The **Setting** page allows to adjust all available ESC parameter

- Reverse rotation direction
- Slow start
- 3D mode
- PWM min & max signal
- ESC Beep enabled
- Current calibration
- Individual ESC ID (for use on onewire protocol)



In **Telemetry** page you can spin the motors, view and debug the Motor telemetry.

Dimension (in mm)



Maximum outside dimensions: 38 x 48mm

Mounting hole arrangement: 30,5 x 30,5mm with M3 mounting hole (expandable to M4)

Weight: 13,6g

You can use a screw driver and force it into M4 by rotating it inside the hole carefully.
Do not file the mounting holes as this may cause damage!