



Mini CC3D Revolution Setup Guide



This mini CC3D Revo 32 bit flight controller is the latest Nano size autopilot using the STM32F4 series, 210MIPS ARM Micro-controller. The STM32F4 controller contains a hardware floating point unit (FPU), which is a huge advancement for hobby-class autopilots.

The FPU allows precise, low-latency processing of real-life measurements using advanced attitude estimation algorithms. It is a full 10DOF controller with gyroscope, accelerometer, magnetometer and pressure sensors all built into a mini size. Perfect for hobbyists who are into micro and mini size.

Despite its size the mini CC3D has a fantastic range of functions to manage all of your flight parameters. It is a state of the art flight control computer with autopilot. Intended for use with multirotors, helicopters and fixed wing aircraft in fact in any RC application where stability and navigational systems are required.

Features:

- About half the size of the regular Open Pilot CC3D, but with the same functionality.
- The CC3D provides a crisp feel when flying tricopters, quads, hexas, octocopters, and even fixed wing planes.
- Powerful STM32F4 32-bit micro-controller running at 100 MHz with 128KB Flash and 20KB RAM.
- 3-axis high-performance MEMs gyros and 3-axis high-performance MEMs accelerometer.
- 4 layer PCB for superior electrical noise reduction and flight performance.
- Software support for Windows, Mac and Linux.
- Direct high speed USB support with no drivers required.
- Spektrum satellite receiver support.
- Futaba S-BUS hardware support.
- Innovative Flexi-port technology for superior port flexibility.
- 4Mbits on-board EEPROM for configuration storage.
- This Mini CC3D board comes in a high quality, protective case.
- Horizontal pin configuration.

Specifications:

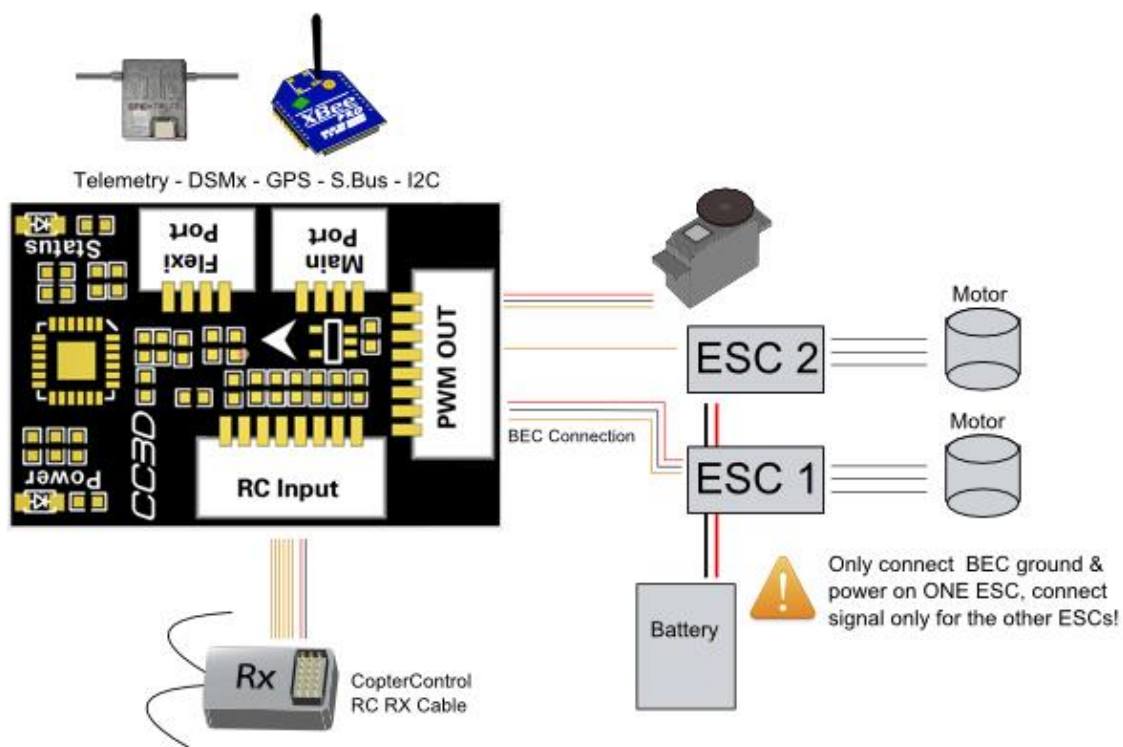
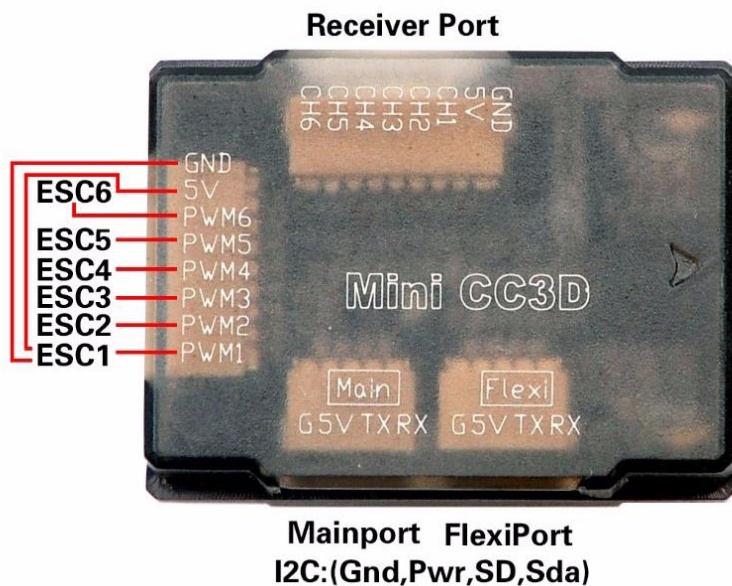
- STM32 F4 Micro controller running at 100MHz
- Invensense MPU-6000 Gyro/Accel
- MS5611 baro
- HMC5883 M
- Main port
- Flexi Port (serial or I2C port)
- Rc input port
- Pwm output port
- Comes with Case

Dimensions:

Case: 30mm x 23mm x 9mm.

Weight: 5g (includes case)

Mini CC3D Board Layout



Connection Diagram

RC INPUT

The RC INPUT port uses an 8 pin JST-connector and is designed to perform several different functions. The port is used for control input and output and can be configured to serve 6 PWM inputs or outputs. A mixture of other modes can also be configured. Refer table below for connections.

Pin	Color	PWM Function	PPM Function	PPM+Telemetry Function	PPM+Outputs Function	Outputs Function	Telemetry Function
1	Black	Ground	Ground	Ground	Ground	Ground	Ground
2	Red	Vcc	Vcc	Vcc	Vcc	Vcc	Vcc
3	White	PWM Input 1	PPM Input 1-8	PPM Input 1-8	PPM Input	PWM Output 12	
4	Blue	PWM Input2			PWM Output 7	PWM Output 7	
5	Yellow	PWM Input 3		Telemetry TX	PWM Output 8	PWM Output 8	Telemetry TX
6	Green	PWM Input 4		Telemetry RX	PWM Output 9	PWM Output 9	Telemetry RX
7	Orange	PWM Input 5			PWM Output 10	PWM Output 10	
8	Grey	PWM Input 6			PWM Output 11	PWM Output 11	

Main port & Flexi port

Color	Flight controller	GPS
Black	GND	GND
Red	VCC	VCC
Blue	TX	RX
Orange	RX	TX

PWM Output

Color	Flight controller
Black	GND
Red	VCC
White	PWM1
Blue	PWM2
Yellow	PWM3
Grey	PWM4
Green	PWM5
Orange	PWM1

Note:

These are the PWM outputs that go to the servos or Esc's. Power is applied thru only Pin 1.

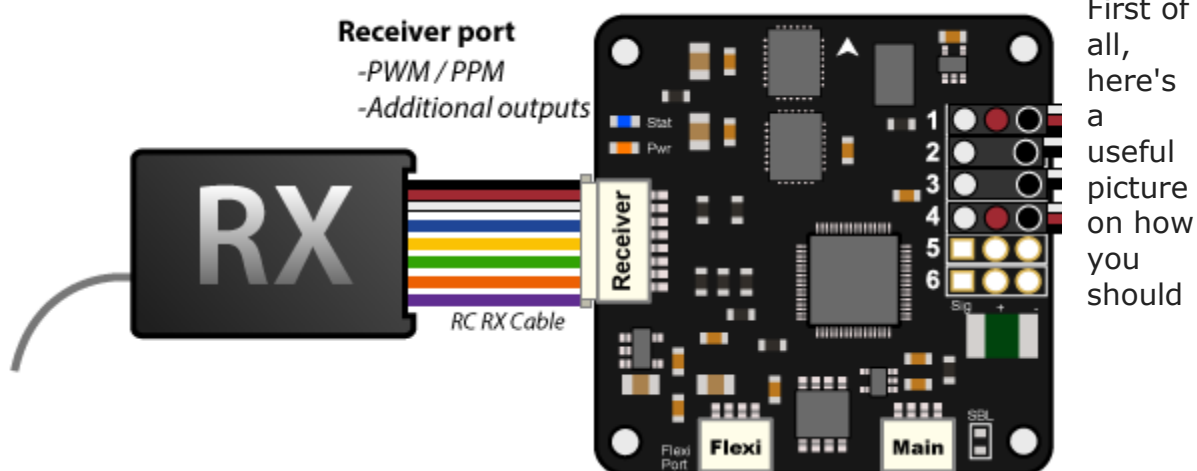
PWR port

Color	Flight controller
Black	GND
Red	VCC
Orange	Current Input
Green	Volt Input

[How to Setup Current/Voltage Sensor](#)

This port can be configured to accommodate an Autopilot current sensor and a low cost Sonar sensor such as the HC-SR04. It can also be used as a general purpose input/output port or as a one or two channel analog input port.

Receiver Cable Pinout

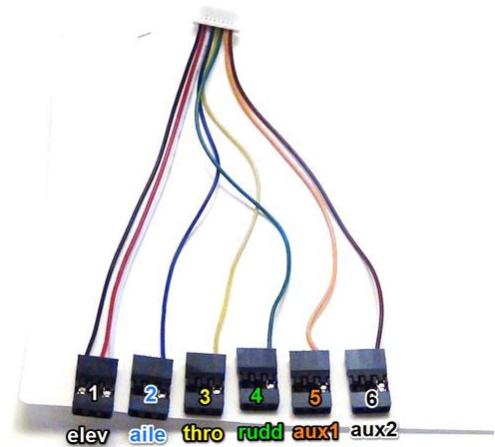


connect your CC3D to your receiver as sometimes the colors can vary depending on where you purchased your CC3D board from.

If you are using a PPM receiver you will only need to connect cable 1 (the three wire connector with white, red, and black connectors). If you have a PWM receiver then you will need to connect the cables in the correct order to your receiver. The image below shows the cable numbers and where they need to connect to your receiver. The numbers on the image below correspond to what channel they should be connected to.

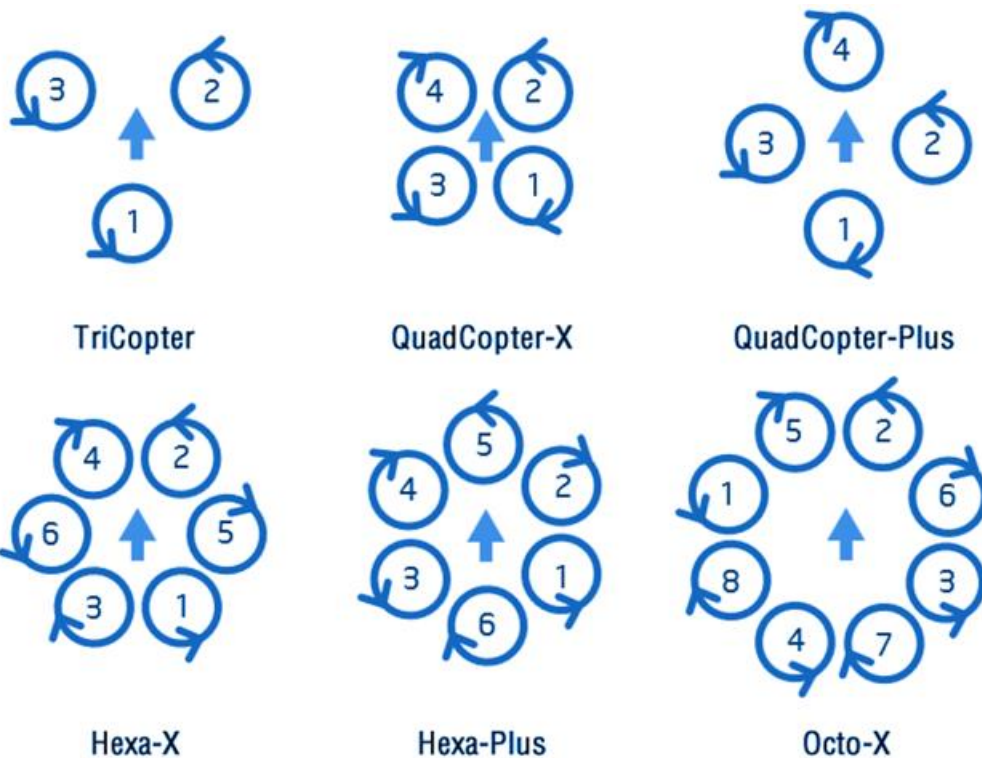
www.Hyperion-world.com

Depending on the type of receiver you use, the ports will either be labelled 1-6 or by the names you see above. If you plug these into the receiver as the picture shows, you shouldn't go wrong. Also note that depending who you buy your CC3D controller from the colors might vary, however.



CC3D Motor Order and Direction

It's also very useful to know the motor orientation for the CC3D, so that you attach the motors the right way and for connecting the ESCs to the CC3D board correctly. This is the motor orientation for the various multirotor configurations:



For a quad copter example in the image above - We see the motors labelled 1-4 and the ESCs are connected following this labelling. For example, the ESC for motor 1 is connected to the pins on the CC3D labelled 1.

LED sequence and Fine Tuning your CC3D flight controller

For those of you that have progressed though the basic setup easily and want to go on and fine tune your CC3D, please follow the link below.

www.Hyperion-world.com

<http://www.dronetrest.com/t/cc3d-flight-controller-guide/830>

Windows NSIS installer:

<http://www.openpilot.org/wp-content/uploads/OP-Downloads/OpenPilot-RELEASE-15.05.2-win32.exe>

Mac OS X distribution image:

<http://www.openpilot.org/wp-content/uploads/OP-Downloads/OpenPilot-RELEASE-15.05.2-osx.dmg> Linux 64 bit

Debian package:

http://www.openpilot.org/wp-content/uploads/OP-Downloads/openpilot_15.05.2-1_amd64.deb

Notes: Configuration and debugging methods are almost same like CC3D Revolution, please view [Open pilot Wiki](#) for more information

Full configurations instructions can be found in the Open Pilot manual:

http://opwiki.readthedocs.org/en/latest/user_manual/index.html