# Sp racing f3 manual

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Cleanflight The Seriously Pro Racing F3 board (SPRacingF3) is the first board designed specifically for Cleanflight. Buying boards directly from SeriouslyPro/SP Racing and official retailers helps fund the development of Cleanflight, this is the reason seriously pro boards exist! Official retailers are always listed on SeriouslyPro.com website. Full details are available on the website, here: equipment features No compromise I/O. Use all the features all the time; For example, Connect OSD and SmartPort, SBus, GPS and LED strip, battery monitoring and sonar - all at the same time! On-board on-board flight recorder -- optimize the setting and see the results of your installation without guessing. (Acro and Deluxe) The next-generation STM32 F3 processor with a hardware floating point unit for efficient flight calculations and a faster core of the ARM-Cortex M4. Stackable design - Perfect for integrating with OSDs and distribution boards. 16 PWM I/O lines for ESCs, Servos and outdated receivers. 8 available on standard pin blanks. 8 through side connectors. Supports SBus, SumH, SumD, Spektrum1024/2048, XBus, PPM, PWM receivers. External inverters are not required (embedded). Dedicated outlet for programmable LEDs - great for orientation, racing and night flights. Dedicated I2C port to connect OLED display without the need for a flight battery. Battery monitoring ports for voltage and current. Buzzer port for audible warnings and notifications. Solder pads in addition to connectors for Sonar, PPM, RSSI, Current, GPIO, LED band, 3.3v, developer friendly port debugging (SWD) and download mode of choice, unbrickable loader. A symmetrical design for super neat wiring. Wire with pins, JST-SH connectors or pad solders. Use either right-cornered or straight pin-heads. The barometer is installed at the bottom of the board for light wind insulation. The serial RX TX 5v Ports 5v Tolerant Notes 1 USART1 PA10 PA10 YES is internally connected to a USB port via CP2102 IC. Also available on the USART1 JST connector and on through the pin holes. 2 USART2 PA15 PA14 YES is only available at USART2 JST. 3 USART3 PB11 / IO2_3 PB10 / IO2_4 NO available at IO_2, USART3 JST port and through the pin hole. You can't use SWD and USART2 at the same time. You may run into flashing problems if you have something connected to the USART1 RX/TX pins. Powering other devices and/or disabling them. Pinouts Full pinout details are available in the guide, here: IO_1 8 contact IO_1 has the following pinouts when used in RX_PARALLEL_PWM mode. Pin Function Notes 1 Earth 2 VCC_IN voltage as supplied by BEC. 3 RC_CH1 4 RC_CH2 5 RC_CH5 6 RC_CH6 7 LED_STRIP Turn on feature LED_STRIP 8 VCC 3.3v outlet for low CURRENT applications only when RX_PPM/RX_SERIAL IO_1 pinout is the following. Pin Function Notes 1 Earth 2 VCC_IN voltage as supplied by BEC. 3 RX_PPM Turn on RX_PPM 4 GPIO 5 5 6 SoftSerial1_TX 7 LED_STRIP Turn on feature LED_STRIP 8 VCC 3.3v outlet for THE LOW CURRENT app only IO_2 8 contact connector IO_2 has the following pinouts when used in RX_PARALLEL_PWM mode. Pin Function Notes 1 Earth 2 VCC_IN voltage as supplied by BEC. 3 RC_CH3 4 RC_CH4 5 RC_CH7/SONAR_TRIG 6 RC_CH8/SONAR_ECHO 7 ADC_1 The current 8 ADC_2 RSSI sensor when RX_PPM/RX_SERIAL used IO_2 pinout is as follows. Pin Function Notes 1 Earth 2 VCC_IN voltage as supplied by BEC. 3 RX_SERIAL UART3 RX 4 UART3_TX 5 SONAR_TRIG/SoftSerial2_RX Turn ON SONAR/SOFTSERIAL 6 SONAR_ECHO/SoftSerial2_TX Turn on SONAR/SOFTSERIAL 7 ADC_1 Current sensor 8 ADC_2 RSSI UART1/2/3 Pin Function Notes 1 Ground 2 VCC_IN Voltage Supplied BY BEC. 3 TXD 4 RXD I2C Pin Function Notes 1 Ground 2 5.0v Voltage, supplied by BEC OR USB, always on 3 SCL 4 SDA SWD Port can not be used at the same time as UART2. Pin Feature Notes 1 Earth 2 NRST 3 SWDIO 4 SWDCLK Built with MkDocs using a theme provided by Read The Papers. This guide guides you through the full configuration of the sp F3 flight controller to BetaFlight, step by step. We'll cover everything from installing BetaFlight GUI software to setting flight modes for your quadcopter. If you have followed our beginner guide on how to build a Martian FPV Racing quadcopter, you will be sent here after completing most of the build. Don't worry, the configuration process isn't as complicated as it sounds, assuming you follow the steps in this guide. This guide will cover: Installing betaFlight GUI software; Connecting the flight controller and updating the drivers; Firmware upgrade on sp F3 Acro flight controller; Calibration of the accelerometer; Setting up a radio receiver and tying the receiver; Setting up engines and testing them; Set up BLHeli ESC settings Set up flight modes. Install BetaFlight GUI First Things First, if you don't already have betaFlight GUI software (Chrome App) on your computer, you'll need to install it through the Chrome web store. This app is used to customize the flight controller. ⚠In any configuration of your drone, please make sure the propellers are removed from your quad bike! Connect to the Martian Flight Controller Connect the Flight Controller (FC) on a Martian computer to your computer using a USB micro-cable. Once connected, some LEDs will illuminate on the FC to indicate that it has power (via a USB connection). Do not use a USB hub because sometimes they do not provide enough power to power the flight controller on the quadcopter. With the BetaFlight GUI App, you should be able to connect to the drone by clicking the connection button. Assuming you have the right drivers, the software will connect to your If you got an error, try choosing another COM port from the drop menu. If you still can't connect (or you can't even choose a connection button), then most likely the driver problem is on your computer. I suggest you check our driver retainer to get the right driver (and driver version) installed on your computer. Alternatively, you can try another USB cable, or USB port on your computer, in case. Once connected, you should see something like the image above. You will see a 3D model of the quadcopter that has to move as you move your actual quadcopter. At this point we have confirmed that the dispatcher is working and if you still can't connect, please add a comment below so we can help you. Now we'll move on to upgrading the firmware and setting up the flight controller. Updating firmware on the SP F3 Flight Controller Although it is not strictly required, it is always a good idea to install the latest firmware on your FC. To do this, you disable the flight controller (click the disconnect button in the upper right-right to the right of the Betaflight GUI). This will allow the Firmware Flasher tab, which we use to update the firmware. Download the firmware on the Flasher firmware tab, you must first choose the SPRACINGF3 board (since it is the flight controller we use on the Martian quadcopter). Then, below that, you can choose which version of the firmware you want to load on the board. It is best to choose the last stable version - at the time of this guide it is 3.2.0. Once you've chosen the firmware, you can press the firmware load button (online) at the bottom of the screen and BetaFlight will download the firmware to your computer. After that, you'll see that the Flash Firmware button can be pressed. Don't click on it just yet as we first need to turn on the download mode on the flight controller. Download mode is a special mode that allows you to flash firmware on the flight controller. Fortunately, the process of enabling the download mode is pretty simple. All you have to do is short two loader pins (as shown below) as you connect the flight controller to your computer. I usually use some metal needle nose tweezers to make short shoes, but anything conductive (such as some wires, paperclips, etc.) will work. You just need to create an electric connection between the two boot pins. Flash Firmware Now that the board is connected to COMPUTHER in download mode, you just need to press the Flash Firmware button. If this is successful, you will see the bar of progress at the bottom of the launch page and once completed, the board will restart. If it works right away, it's great! This is usually not the case, however. You usually need to change a few settings. This is the process I follow: Go back to the page and turn on Flash on Connect (first choice No reboot sequence) and Full Chip Erase for good measure. Turn off the board and plug it in again (still in download mode). BetaFlight will try to flash firmware automatically when connected. Didn't work anymore? Hit 'Flash Firmware' again just to make sure. Last but not, If you've been through it all, disable the board again and choose the Baud Rate Guide (while saving other options You can also try slower baud speed just to triple sure. Connect the board again and hey presto! Hopefully the firmware is being flashed. If you're still having trouble, make a quick video about what you're doing and post it on our forums and one of us will help you! Once completed, be sure to make sure the boot pins are no longer connected so that the board can start as normal. At this point, you can congratulate yourself as you just flashed the firmware on your flight controller. This process can be repeated when a new firmware is released to keep your flight controller on the cutting edge. Now we move on to the configuration of your board. Calibrate the accelerometer When your flight controller is placed to you, it can take a few strokes (especially if the courier decides to play football with parcels between deliveries ...). Therefore, sensitive IMU units may need to be recalibrated. Fortunately, it's super easy, as it's just pressing a button in BetaFlight. By simply connecting to the board via Betaflight and on the set-up tab, you'll see the accelerometer calibration button. Before pressing this button, just place the quadcopter on the surface you know is the level (thus providing the flight controller itself level) and make sure that there are no vibrations or micro movements. Then just click the accelerometer calibration button on the Setup Tab tab. **!** If you follow our guide step by step, at this point your Martian cannot be fully assembled, so when it is on the table, make sure that the board itself is on a level before calibrating the accelerometers. Set up the radio At the moment, you must now get the radio setup and tied to the receiver on the Martian quadcopter. Unfortunately, installing stock on the radio is not ideal for FPV quadcopters, so we need to change a few things. Instead of repeating it all over again in this article, you should head over to our Flysky Radio installation guide, which covers how to get a radio setup and also connected to the receiver on The Martian. Once you've set up the radio and communicate with the receiver, you'll need to tell the dispatcher which receiver you're using and where it's connected. Following our guide, we connected the receiver to the port of UART2. The first thing we need to do is include a serial RX on UART 2 as part of the BetaFlight Ports tab. You then need to go to the configuration tab and let BetaFlight know that you are using a serial receiver and that type of iBUS. Don't forget to press the Save and Reboot button to apply the settings to the board. Testing a receiver is a good idea now to make sure everything is working properly. To do this, you go to the receiver tab in BetaFlight. On this tab, you will see a bunch of bars that represent the entrances from your radio. When moving a stick on the radio, the appropriate bar should move on the screen. For example, when you move traction the thrust of the channel must move. You Are You Discover that when moving a stick on the radio, a channel that does not match that stick moves across the screen. For example, you can move the traction stick on the radio, but the roll channel moves across the screen. You will need to fix this, and this is done by changing the display channel. We have a video here taking you through the process of changing the display channel. This is a video for CleanFlight software, but the process is exactly the same in BetaFlight. If you see nothing moving, make sure your battery is connected to the Martian (so the receiver has power) and of course that your radio is on. If both are on, I suggest you try rebind your receiver to the radio (according to our FlySky radio installation guide mentioned before). Another thing to check is to ensure that your radio settings are properly configured in BetaFlight as advised previously. Setting up and testing the engines Part of the flight controller setting involves making sure it communicates with ESCs/engines correctly. We need to set the optimal protocol for the flight controller, and you do it in the configuration tab, where there is a box called ESC/Motor Features. Here we have to install the ESC/Motor protocol on Dshot600. This ensures that the engines and the ESC will work as quickly as possible. Once you've chosen, be sure to press the Save and Reboot button to save the settings on the flight controller. Although we have the battery plugged in and the props removed, it is a good idea to check the engines. You do this through the engine tab in BetaFlight. ⚠Meik is sure that the propellers are removed before testing the engines for your own safety! Here you need to choose a master switch, thereby arming the engines. Now you can test the engines individually or all at once. We check that the engines are connected in the correct order. Using the chart below, when you turn on Engine 2, you will need to confirm that Engine 2 is spinning, and that it rotates the right way (counterclockwise). Repeat this for the rest of the engines taking note of which engines are rotating the wrong way around as we can fix this on the next step. If you follow our guide build, chances are you will find that the engines 2 and 3 are spinning the wrong way around. If you find that one of the engines is not working at all, please double check that your battery is plugged in and fully charged. Otherwise, double-check the solder. Using the BLHeli Configurator for the reverse direction of the engine rotation ⚠Meik sure that the propellers are removed whenever you change the ESC settings! BLHeli Configurator is another Chrome app that you need to install to set up ESC settings. The good thing here is that you can connect to ESCs via a USB cable connected to a Martian flight controller. With Connected to your computer and connected by a battery, make sure you are disconnected from BetaFlight. Now click the connection button in the BLHeli configurator. Once connected, click Read Settings to download ESC information. The left column shows the settings common to all four ESC. In this section, you need to make sure brake on Stop is on. The right column shows special ESC settings of 1,2,3,4. In our example, we must now choose the reverse for ESC 2 and 3, so that these spin engines are the right way to go. Then don't forget to click Write Settings to save settings for ESCs. You can also use the BLHeli Configurator to flash new firmware on ESCs, but for now, you don't need to worry about it. Set up flight modes before you go out and fly, you have to adjust the flight modes for your quadcopter. Assuming you're reading this section as a beginner, I suggest you customize flight modes to suit our beginner flight modes article. And that's it! Once all flight modes are set up, if you follow our Martian III 220 Build Guide you should return to the Final Touches section of the article to finish. Happy flight! Fly! sp racing f3 manual pdf. sp racing f3 manual español. sp racing f3 evo manual. sp racing f3 evo brushed manual. sp racing f3 mini manual. sp racing f3 osd manual. sp racing f3 brushed manual. sp racing f3 osd acro manual


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