F4 Flight controller Specifications:

-STM32 F405　MCU, Runs Inav 1.9 firmware

-SBUS/PPM AND Spketrum DSMX Ports

-**Input voltage Lipo(2-6S)**

-Drag and Drop OSD configured via INAV Configurator

-On-board Video Filter(only can supply 5V to VTX and Camera)

-MPU6000　6 axis SPI Gyro & Accelerometer

-Only 36x36mm, mount holes 30.5x30.5mm

-Barometer BMP280

-SD Card slot

-5v3a SBEC

-Uart 1 for GPS, Uart 3 for compass，Uart 6 for Receiver,

-Soft serial 1 for S.Port telemetry **(Need to flash special firmware, see below)**

GPS Specifications:

-Quick satellite searching, only need 15s to find 7 satellite in open space

-Built-in compass

-Support GPS+BD+SBAS, or GPS+GLONASS+SBAS

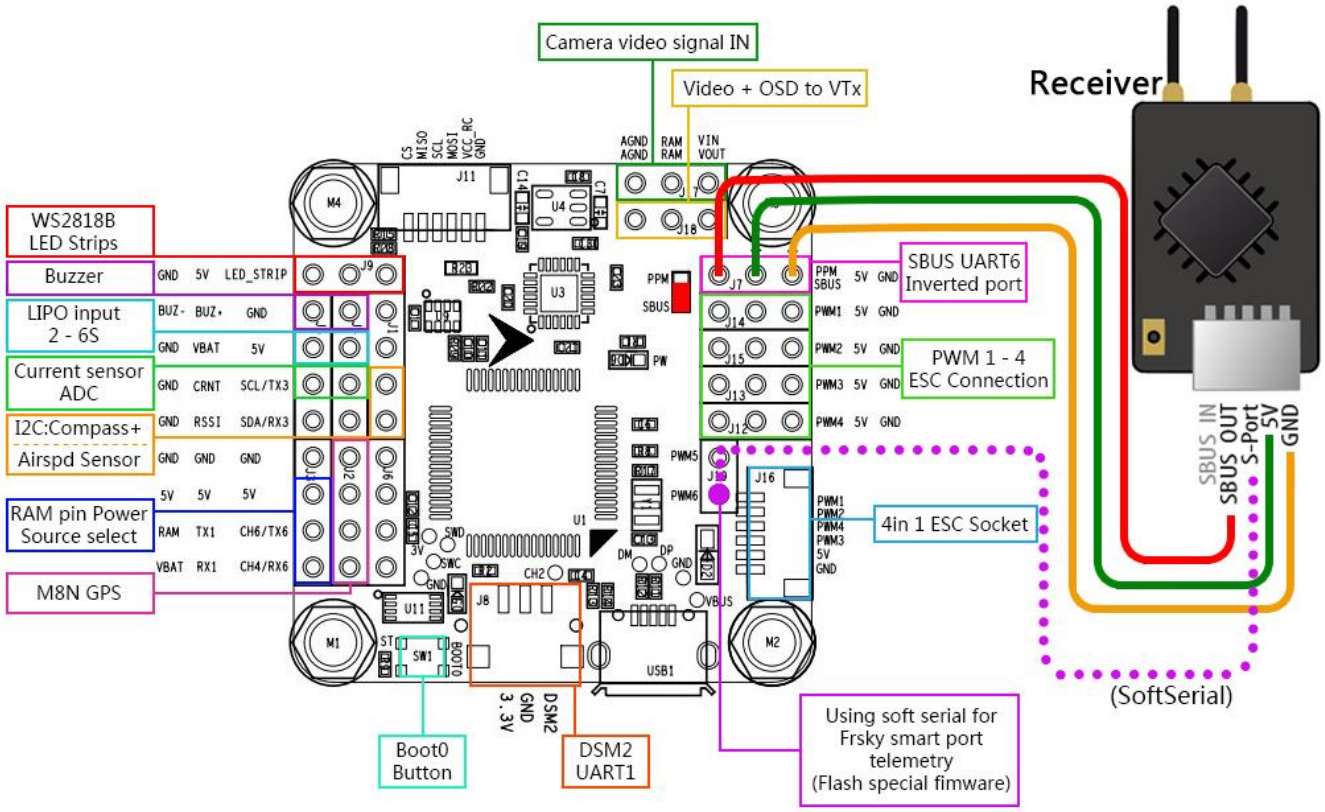
-Wire order: Black(GND), Red(+5V), Green(TX), Yellow(RX), Orange(SCL), White(SDA)

-Size φ55mm*14mm

-Weight 35g

-Number of satellites : Up to 26

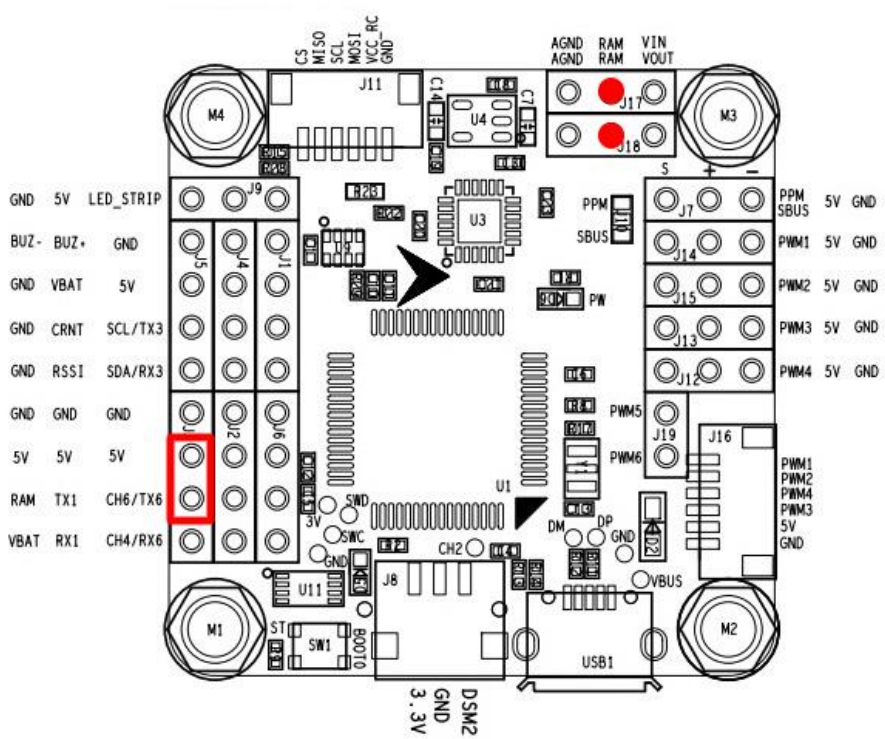
Flight controller connection diagram:



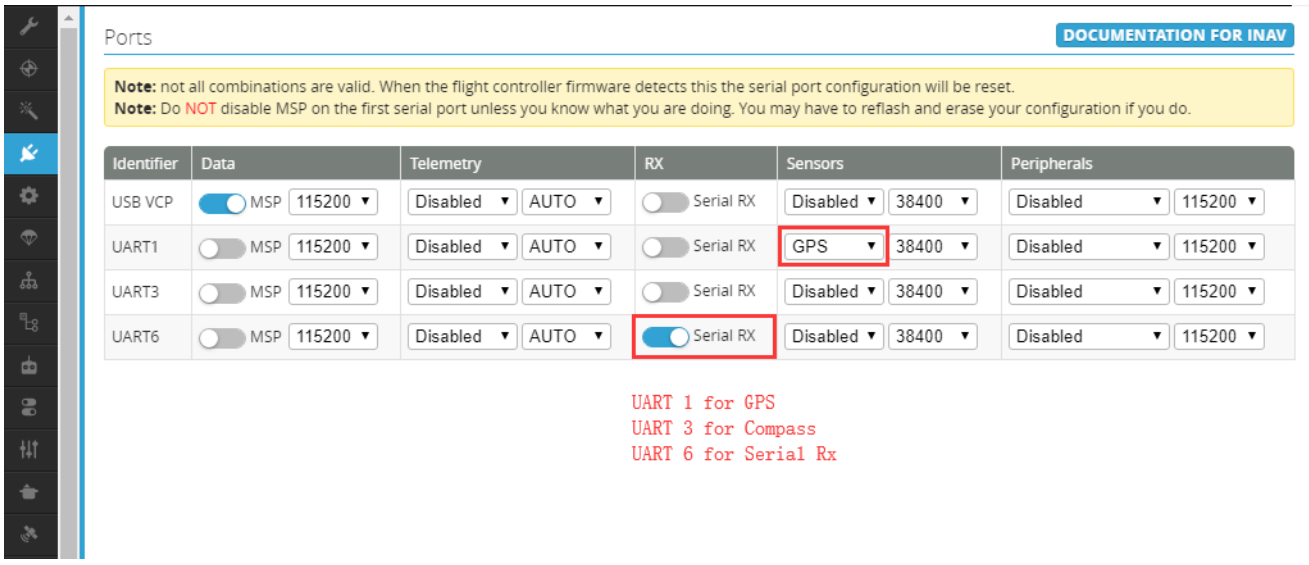
RAM/Power source for VTX and Camera jumper

The RAM pin, was connect to nothing, just the 3 RAM pin are passthrough.

There are 3 pin jumper next to UART1, which you could power the RAM pins by 5V, short bridge “RAM” & ”5v” pins, don’t select “VBAT” Pin.

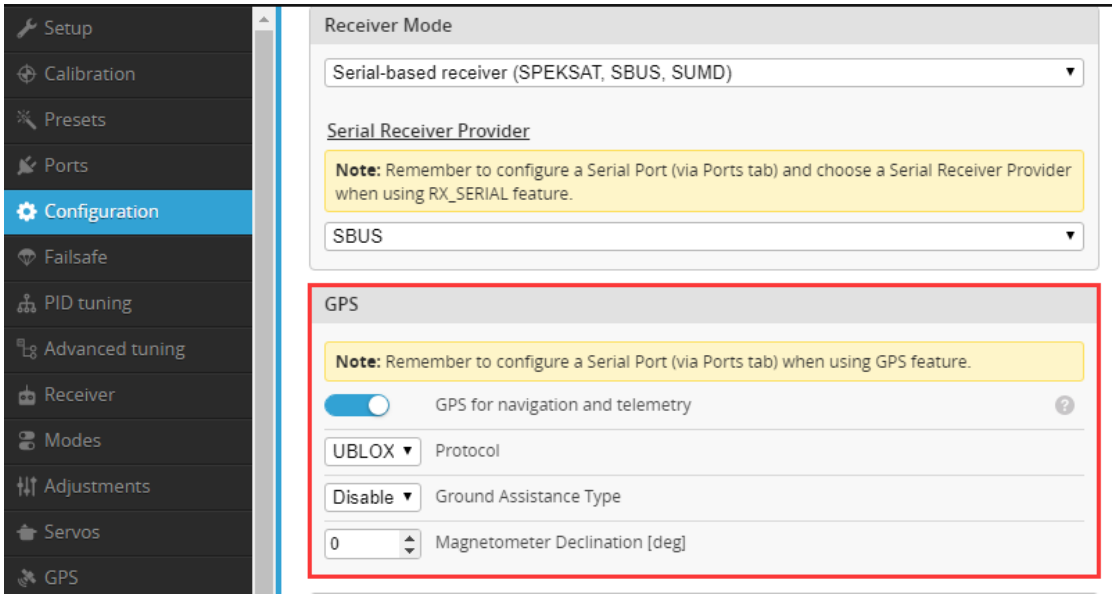


Ports setting:



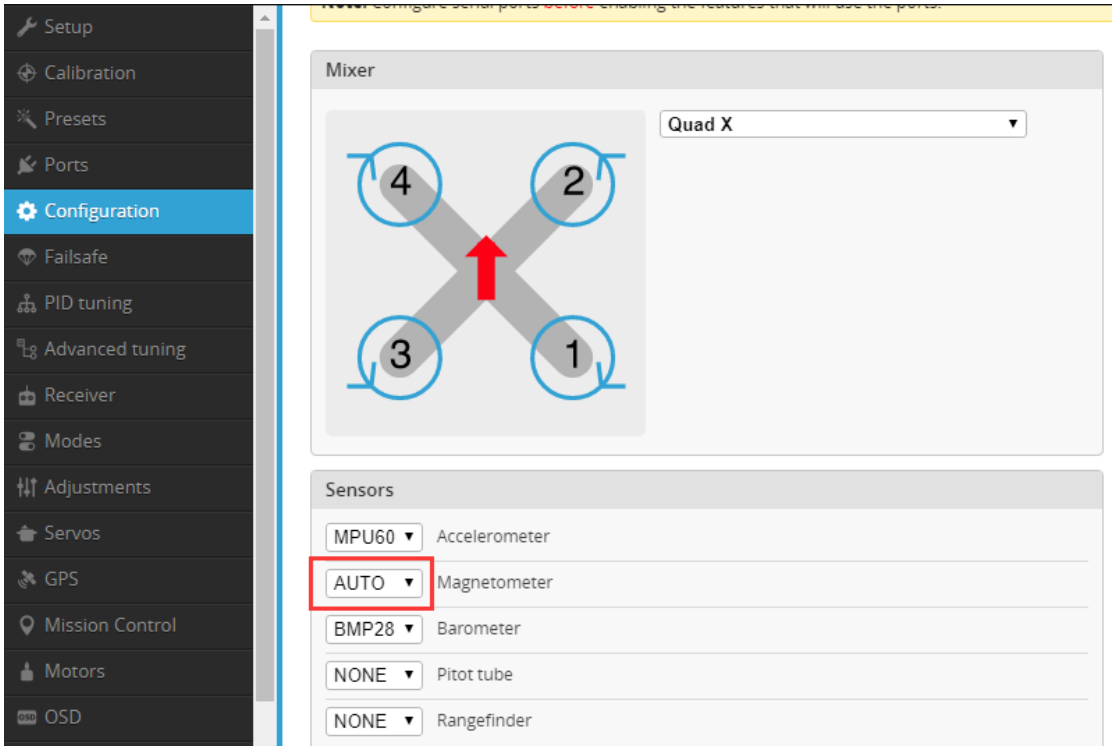
GPS is pre-solder to UART 1, Compass is pre-solder to UART 3, please enable GPS for UART 1.

GPS Setting:



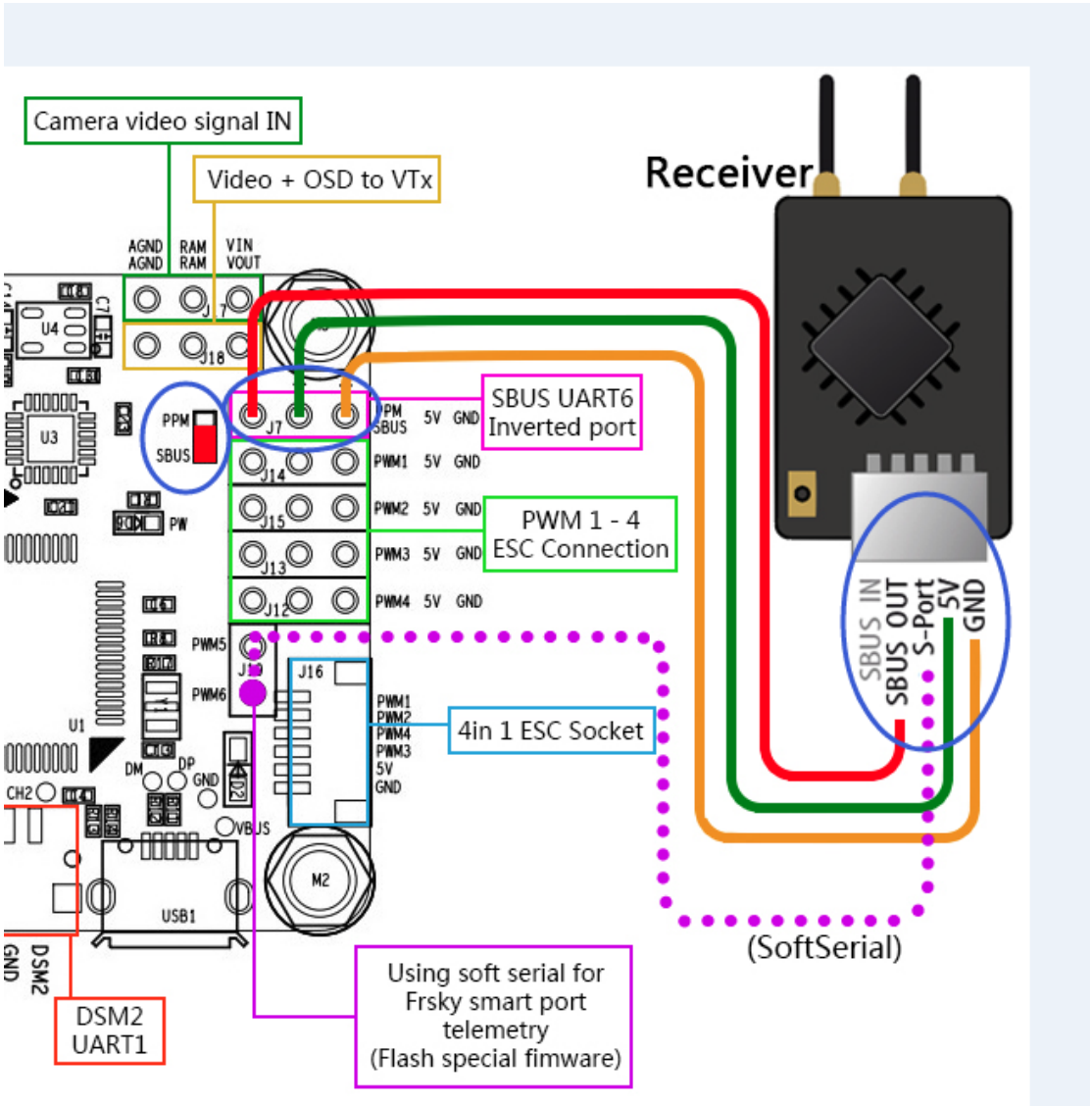
Compass Setting:

Select “AUTO” for your magnetometer, then Save and Reboot.

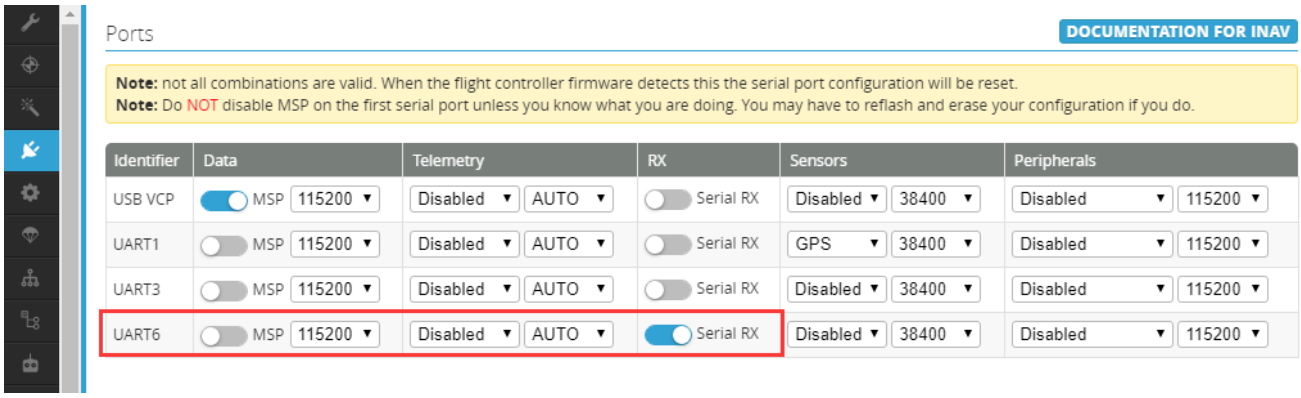


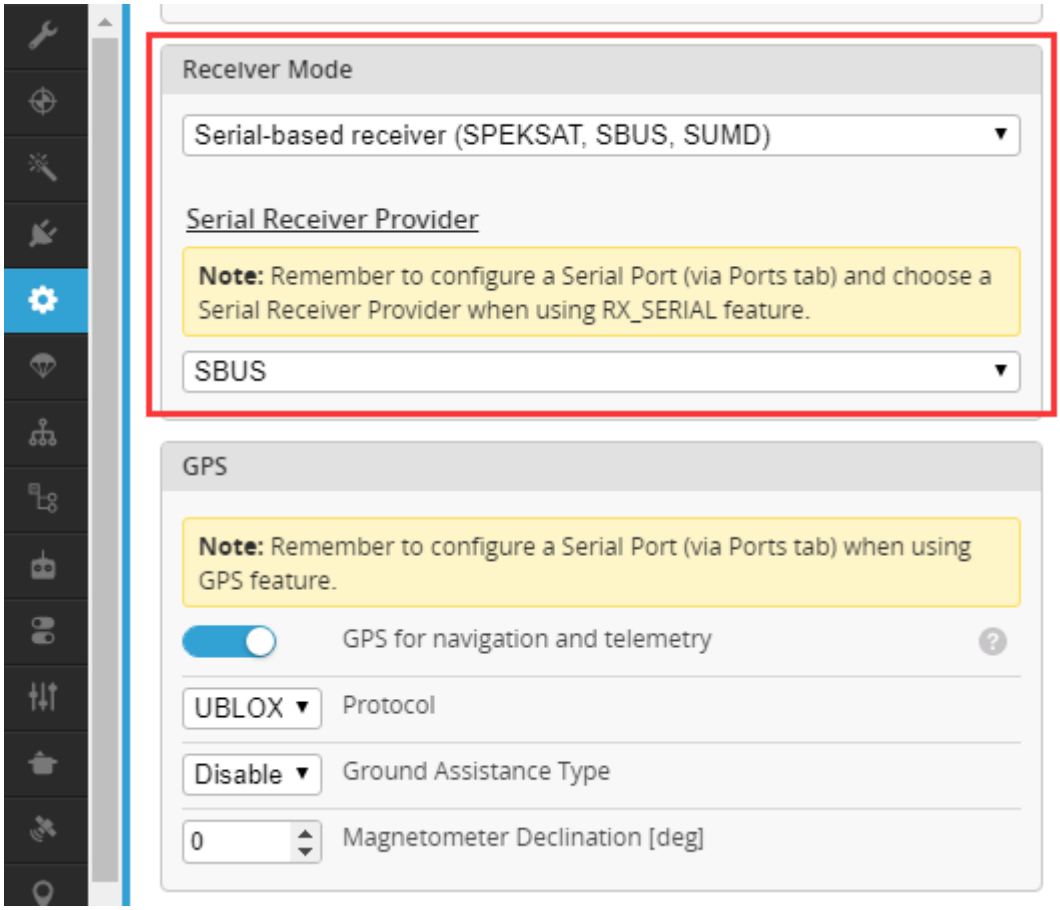
Receiver setting:

Connecting your receiver to the FC is not much different from any other flight controller. You connect your serial receivers (SBUS, IBUS) and PPM receivers to the pin on J7 which corresponds to UART6. To connect a Spektrum receiver this connects to the dedicated Spektrum satellite connector on J8 (corresponds to UART1)



Sbus receiver/Ibus receiver/PPM receiver please enable Serial RX for UART6





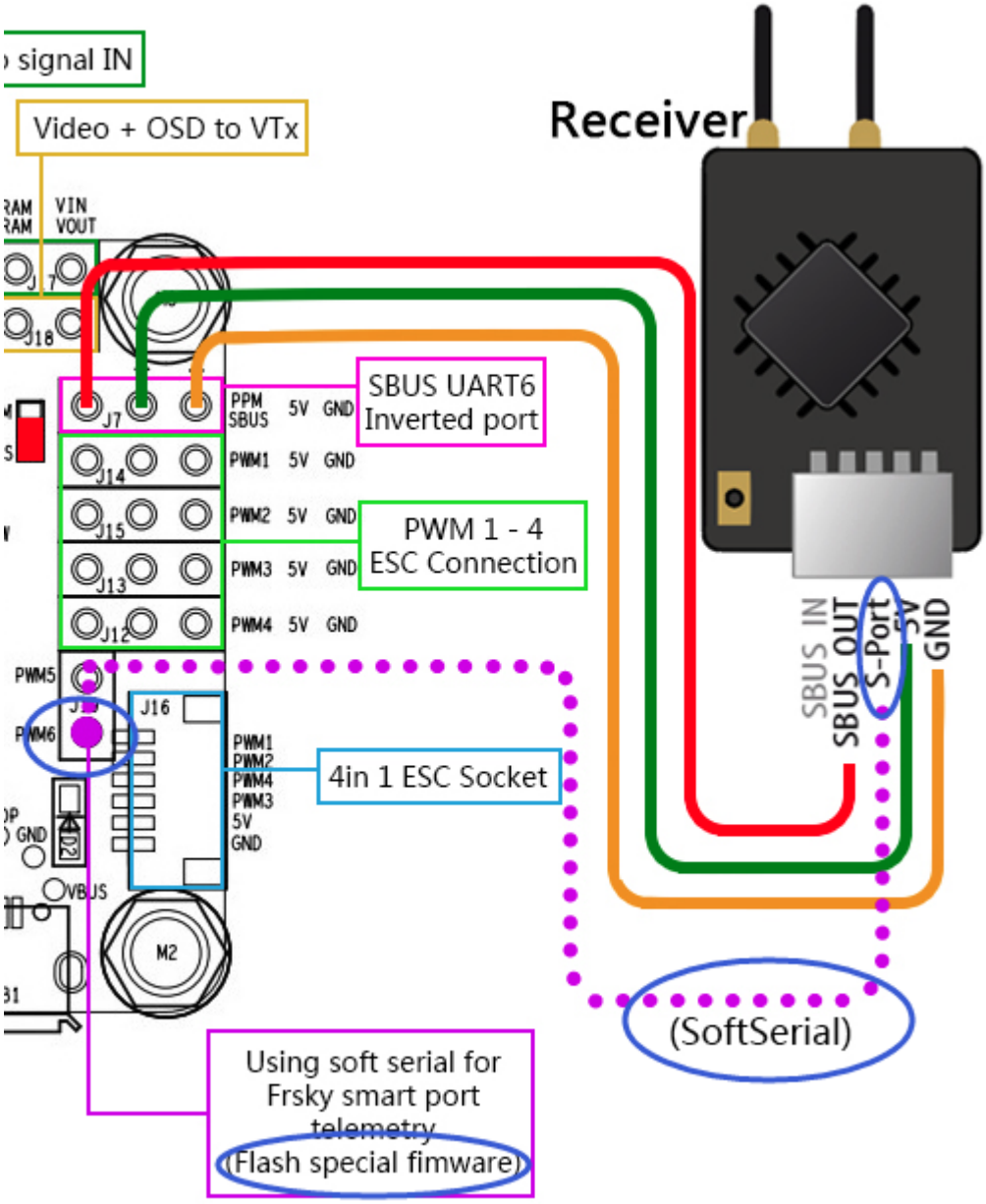
Using FrSky Smart Port telemetry via softserial

Smart port telemetry as shown in the connection diagram (violet wire) will let you send telemetry data back to your Taranis radio. However, the problem on the FC is that there's no other serial port for connection. To overcome this you simply need to use soft serial PWM6 port.

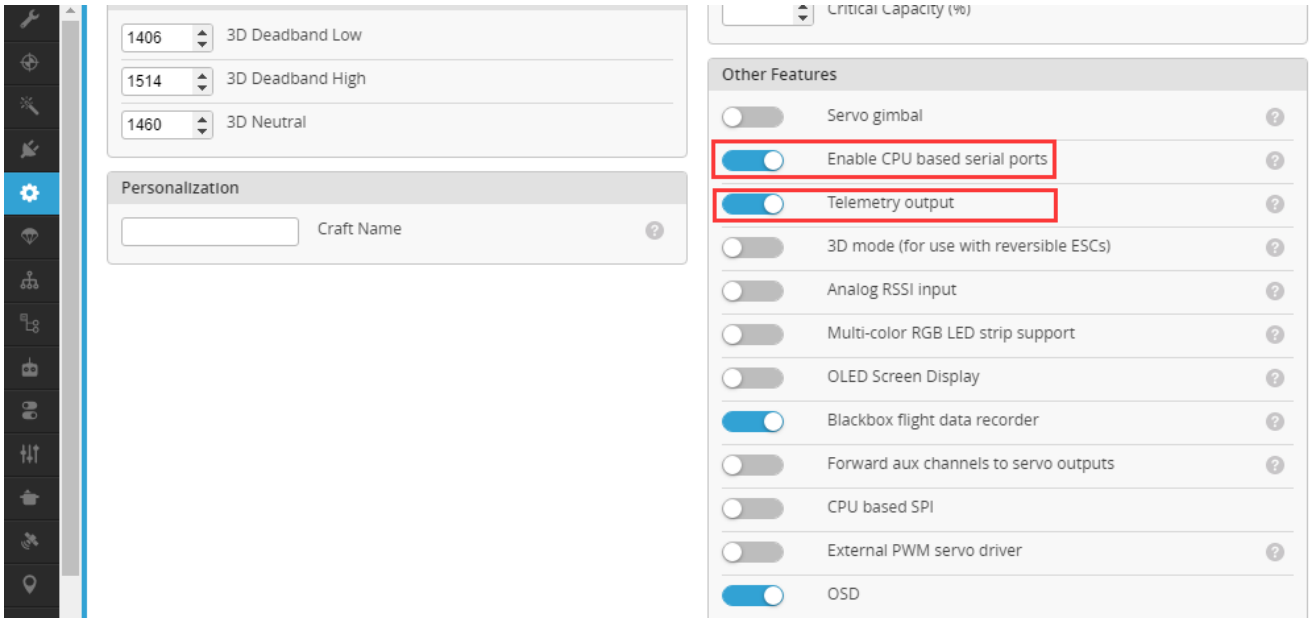
If you want to use this function, please flash the below special firmware, because the official inav firmware does not support this function for this FC.

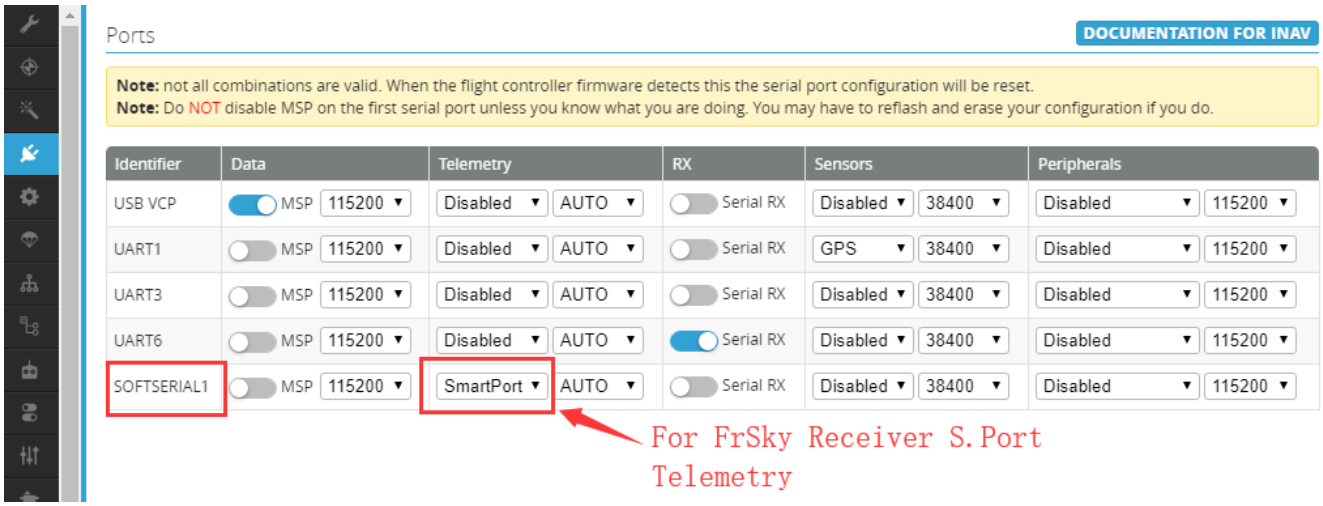
Firmware Link:
https://www.dropbox.com/s/y972v0ywp8dqnkp/inav_1.9.1_F4_for%20S.Port.hex?dl=0

After successfully flashing the firmware, connect S.Port of receiver to the PWM6 port of FC.



Then enable the softserial feature on the configuration tab.





Sensor calibration and more setting guide:
https://github.com/iNavFlight/inav/wiki/Sensor-calibration
https://github.com/iNavFlight/inav/blob/master/docs/Board%20-%20Omnibus%20F4.md