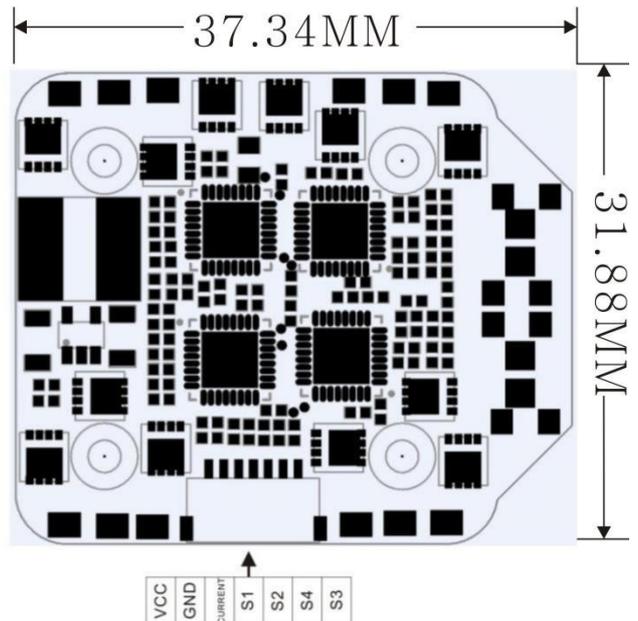
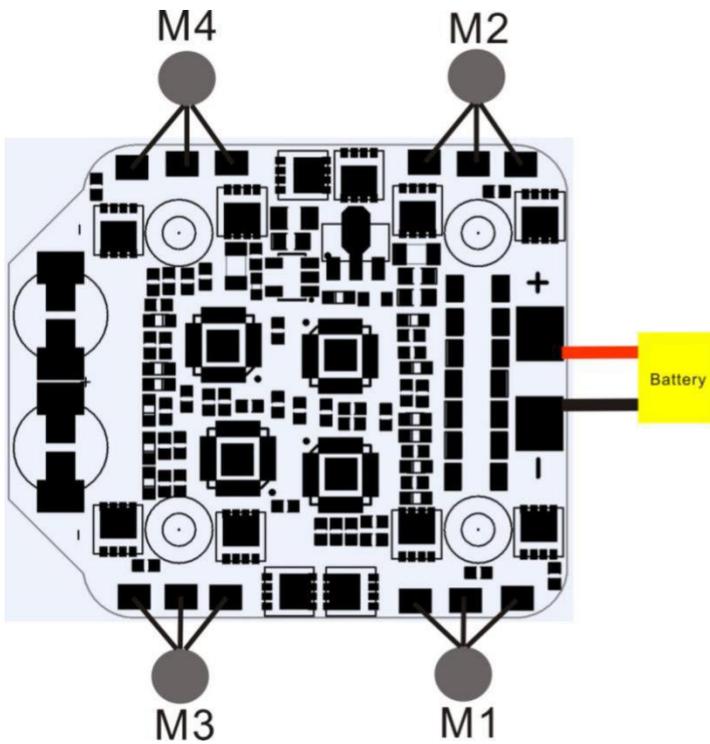
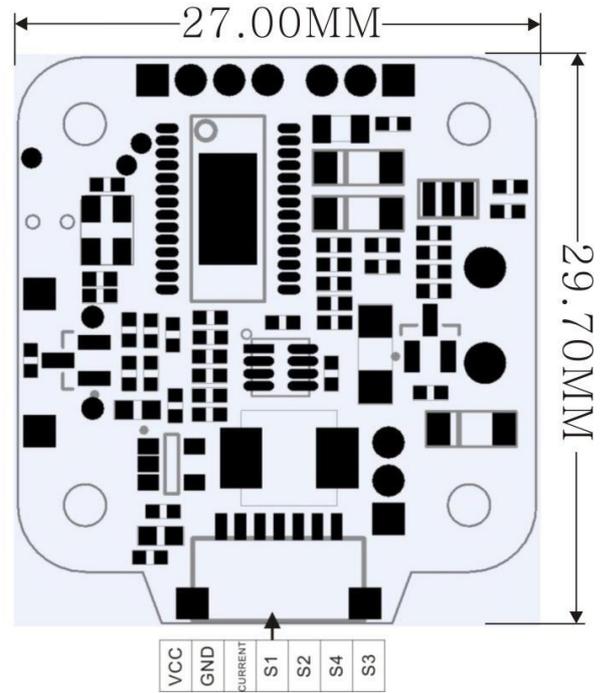
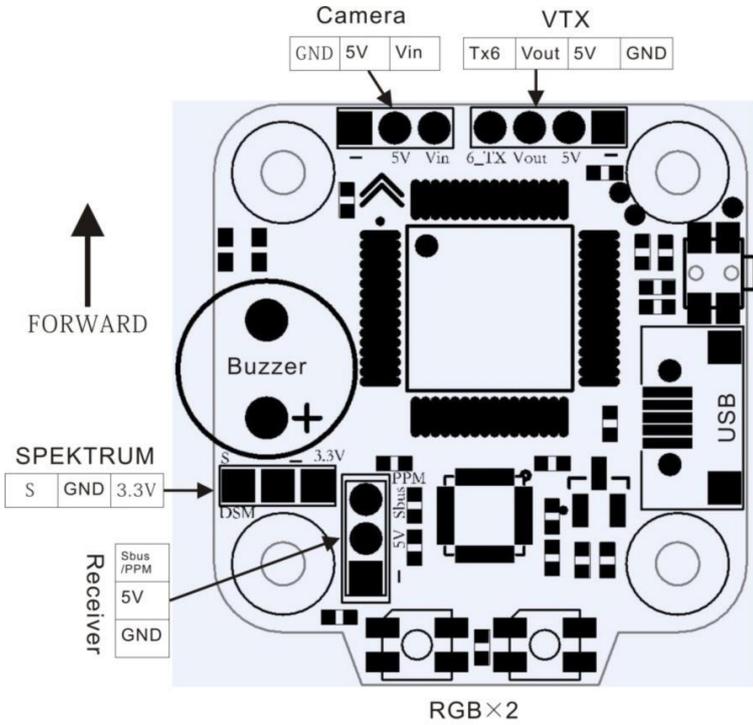


Magnum Mini F4 35A Manual - V1.5

(OMNIBUSF4 Firmware)



Key Switch Method

Nixie tube alternates to display frequency groups and frequency points, using "." to display high power. If "." lights up, it represents high power of 200mW, but going out means low power of 25mW.

1. Entry / Exit menu

- (1) Press 5S and hold for a while to enter the menu.
- (2) Press 5S again for a while to save parameters and exit the menu.

2. Choose menu

After entering menu, click button to switch frequency group(b)/ frequency point(C)/power(P).

3. Enter/Exit Parameters

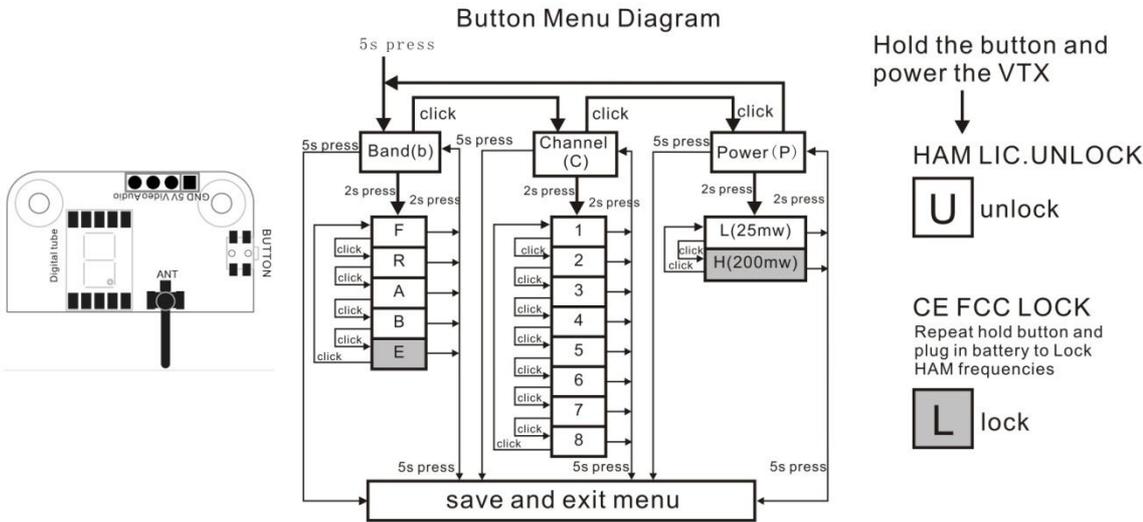
- (1) After choosing menu, press 2S and hold for a while to enter parameter option.
- (2) Press 2S again for a while to exit parameter option and back to menu option.
- (3) Press 5S for a while to save parameters and exit menu.

4. Choosing Parameters

After entering parameters, click button to choose parameters.

5.0 power setting

Under normal display, double click on the button can turn off the power output.



CE and FCC unlicensed user chart

FR \ CH	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	
F	5740	5760	5780	5800	5820	5840	5860	—	MHz
R	—	—	—	5769	5806	5843	—	—	MHz
A	5865	5845	5825	5805	5785	5765	5745	—	MHz
B	5733	5752	5771	5790	5809	5828	5847	5866	MHz
E	—	—	—	—	—	—	—	—	MHz

VTX Power
25mW
—

***Unlocked FCC HAM licensed user chart**

FR \ CH	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	
F	5740	5760	5780	5800	5820	5840	5860	5880	MHz
R	5658	5695	5732	5769	5806	5843	5880	5917	MHz
A	5865	5845	5825	5805	5785	5765	5745	5725	MHz
B	5733	5752	5771	5790	5809	5828	5847	5866	MHz
E	5705	5685	5665	—	5885	5905	—	—	MHz

VTX Power
25mW
200mW

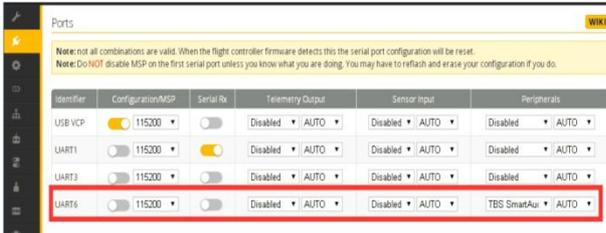
*From the factory this video transmitter is designed to operate within CE and FCC unlicensed users specifications. Unlocked features of this video features requires user have applicable HAM radio license or prior consent from FCC.

By purchasing this equipment, the user is agreeing that they understand these responsibilities and will operate the equipment legally.

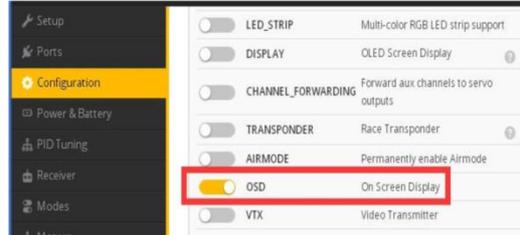
Emax cannot be held responsible for your actions if you purchase and/or use this product in violation of your government's regulations.

Parameter Adjustment Ways of Betaflight OSD

1. Firstly, connecting the Audio, Video, 5V, GND on VTX module separately to Tx, Video Out, 5V and GND that integrated on OSD module without UART port. Secondly, using a USB cable to connect Flight Control to PC and run Betaflight program
2. Firstly, after entering Port Option, choose UART Port (such as UART6) that connected to RX of VTX module, and then choose TBS SmartAudio in Peripherals list that corresponding to UART and save, as shown in Figure 1. Secondly, entering Configuration option to open OSD display function, as shown in Figure 2. Finally, to finish the configuration of VTX serial ports on flight control.



1

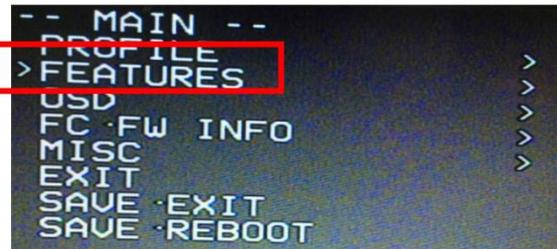


2

3. To power flight control and camera, the receiving screen will display like the 3rd image once it is opened.
4. Please follow Screen Tips to make an operation: THR MID+ YAW LEFT+ PITCH UP to enter OSD parameter adjustment menu. as shown in Figure 4.

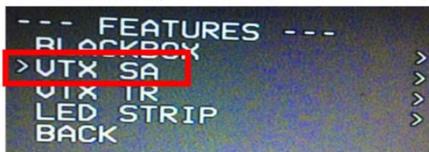


3

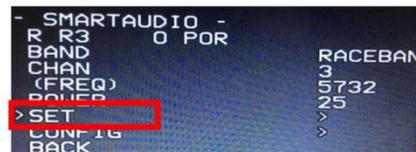


4

5. In the menu interface, switching PITCH up/down to choose menu option. Move the cursor to "FEATURES" and stir Roll stick right to enter next menu. Using PITCH stick to move cursor to "VTX SA", as shown in Figure 5. Then pull ROLL stick right to enter VTX configuration menu, as shown in Figure 6.

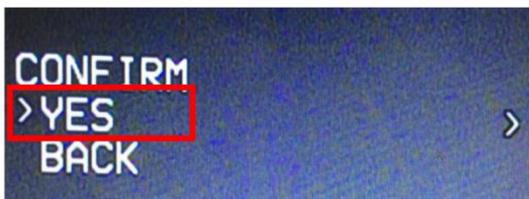


5



6

6. In the menu of VTX SA, we can configure the BAND, CHAN and POWER. Pulling the PITCH stick to move cursor up and down to choose VTX options that need setting. While pulling ROLL stick left and right to change the corresponding parameters. Once the parameters is set, moving the cursor to "SET", then turn ROLL stick right to enter "SET" and choose "YES" and turn ROLL stick right to save setting parameters, as shown in Figure 7.
7. In the menu of VTX SA, moving cursor to "CONFIG" to enter menu; While moving cursor to "PIT FMODE" and pulling ROLL stick right can turn off the VTX power, as shown in Figure 8.



7



8

Remark: Because the power of VTX module only has 25mW and 200mW, so if you want to change power to 500mW or 800mW, the actual power will be set to 200mW.

weight specification

- Total weight: 17.21g

Flight controller

(OMNIBUSF4 Firmware)

- STM32F405 MCU
- MPU6000 accelerometer/gyro (connected via SPI)
- On-board OSD
- On-board Buzzer
- Integrated 5V/3A BEC
- Dedicated PPM/ Sbus receiver input
- 30x27mm board with 20mm mounting holes.

ESC

- Continuous current 35A (max burst 40A)
- Supply voltage 2-6S Lipo(1700kv Motor LIMIT for 6S)
- STM32F051K6U6 MCU
- BLHeli_32 firmware,support DSHOT,MULTISHOT,ONESHOT125
- Top quality MOSFET
- 3oz high TG PCB board
- 32x37mm board with 20mm mounting holes.
- Current Sensor

VTX

- Frequency band:5658-5945MHz (FCC Compliant Channels / with HAM unlock)
- TBS Audio Control
- Channel:37
- Transmit power:13dBm/23dBm(25mW/200mW)
- Supply voltage:4.5V-5.5V
- Antenna port :50Ω



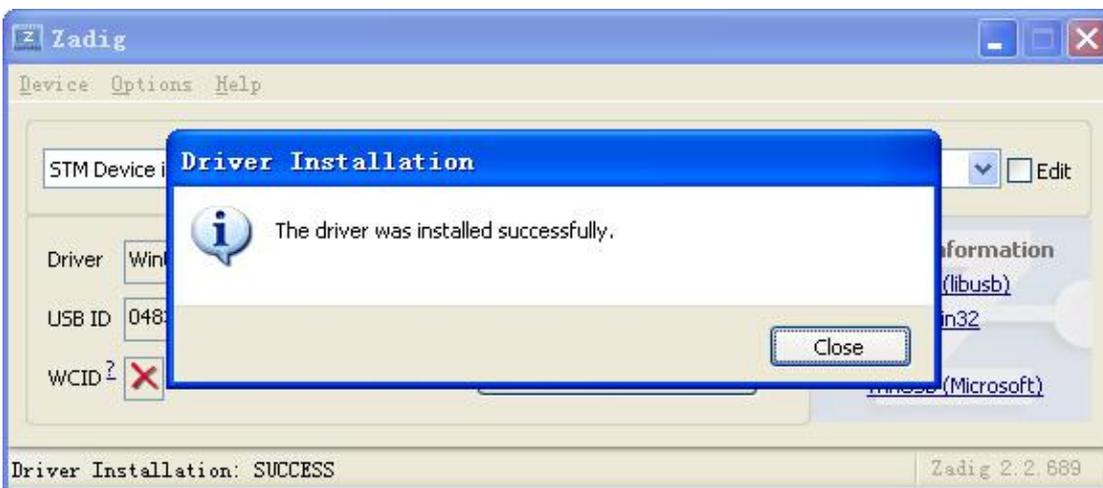
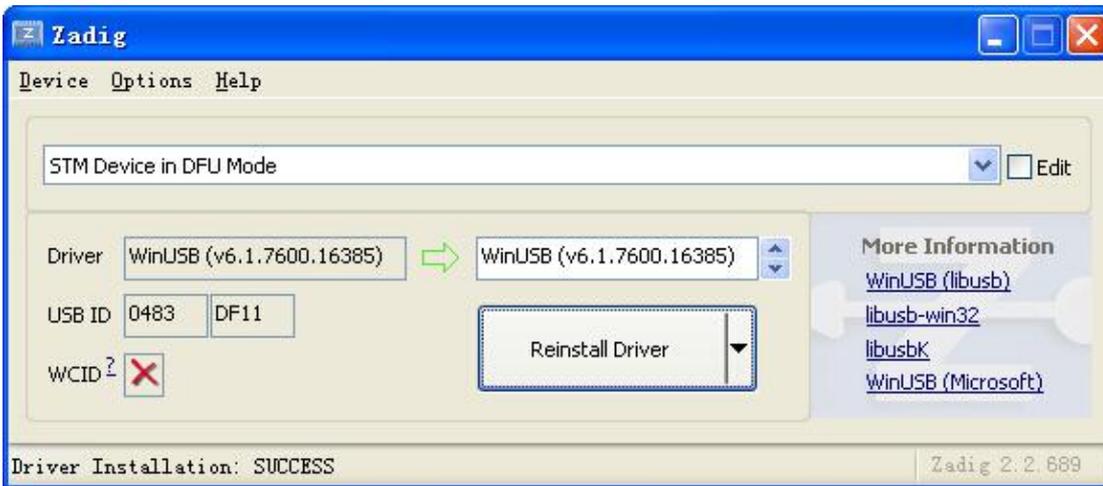
Via Device Firmware Upload (DFU, USB) -windows

Required Software:

- A OMNIBUSF4.hex file (for flashing).
- Zadig USB driver installation -> <http://zadig.akeo.ie/>
- Betaflight Configurator

Flashing steps:

- Place the board into DFU mode by boot button on top of the board. Your device will be detected as a STM Device in DFU mode (or STM BOOTLOADER).
- Load up Zadig USB driver and select the STM DFU or STM BOOTLOADER device (if it is not listed please confirm step 1, and / or select "Options / View All Devices" in the Zadig menu. Install the WinUSB driver.



Virtual Communications Port

The F3 Magnum utilises the STM32 Virtual Com Port (VCP). This allows the UARTs on board to be utilised whilst the USB is connected. This requires the STM VCP driver to be installed in order for the VCP to be recognised.

The STM32 VCP driver can be downloaded here --> <http://www.st.com/web/en/catalog/tools/PF257938>

NOTE: Once you download and run the installation it has **not** installed the driver, merely unpacked the choice of drivers. Locate the installation directory and then run the EXE file pertaining to your system.

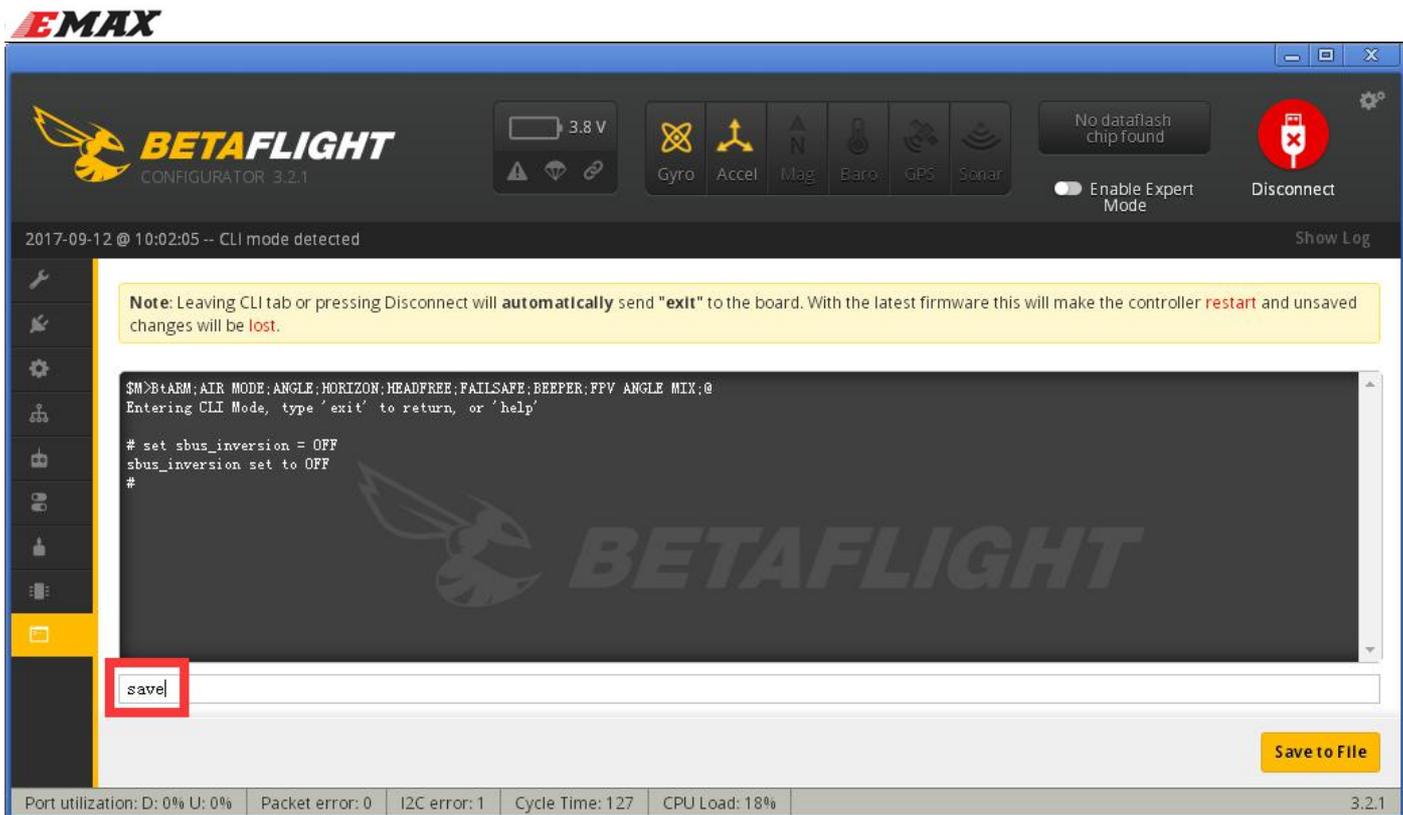
e.g. C:\Program Files (x86)\STMicroelectronics\Software\Virtual comport driver\Win8\ <- will have two files present. One for 64 bit systems and one for 32 bit systems.

- Betaflight Configurator

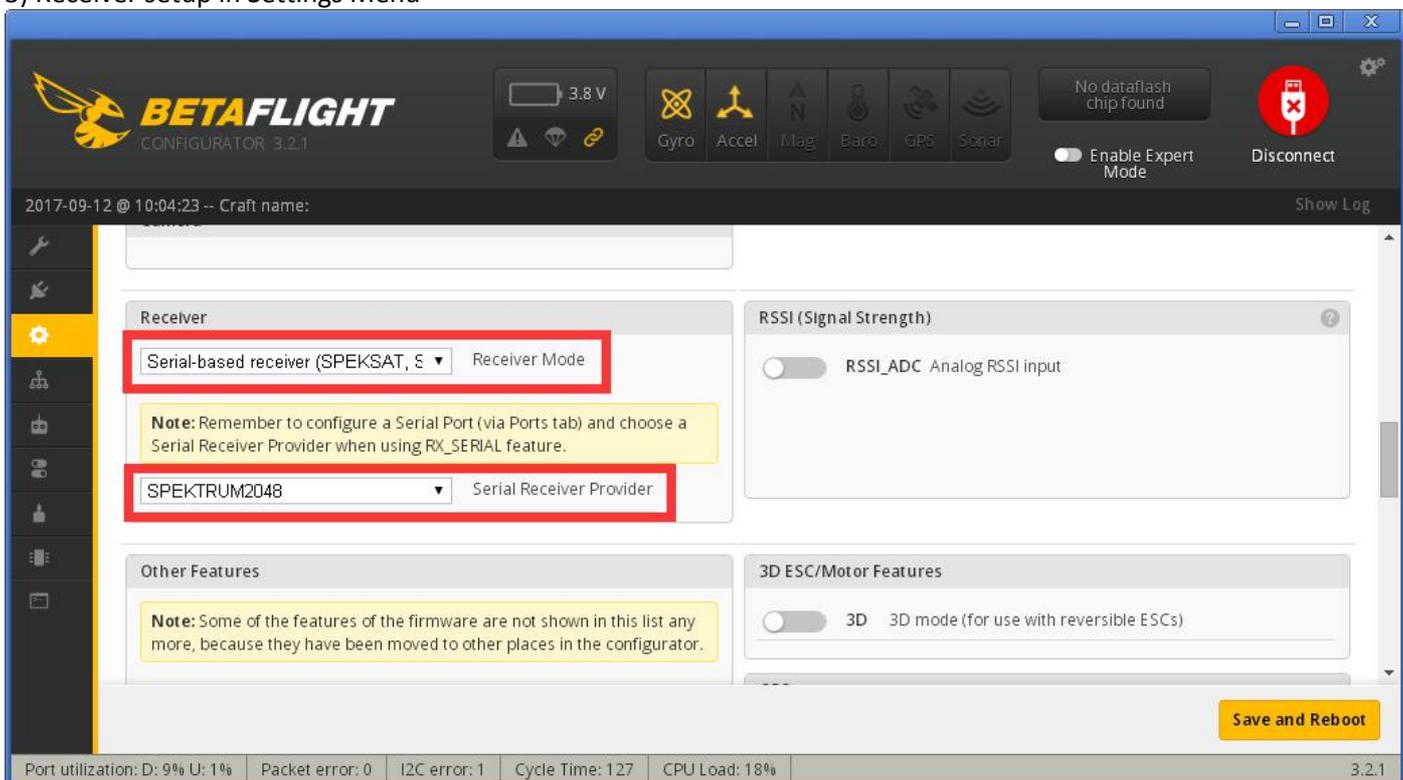
SPEKTRUM Receiver settings (if your radio is FrSky skip steps 1-2)

1) Turn off Sbus inversion in CLI tab by typing the command in red box below then hit “Enter” on keyboard.

2) Once command has been recognized you must type in “save” and hit “Enter” key before exiting CLI menu



3) Receiver setup in Settings Menu



In "Receiver Mode" box please choose "Serial based receiver". In the "Serial Receiver Provider" box please select the protocol that is compatible with your radio system. "SBUS" is most common for FrSky or Futaba radios and "Spektrum2048" for DSM radios.

Port settings for all Serial Based Receivers:

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	<input checked="" type="checkbox"/> 115200	<input type="checkbox"/>	Disabled	AUTO	Disabled	AUTO	Disabled	AUTO
UART1	<input type="checkbox"/> 115200	<input checked="" type="checkbox"/>	Disabled	AUTO	Disabled	AUTO	Disabled	AUTO
UART3	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled	AUTO	Disabled	AUTO	Disabled	AUTO
UART6	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled	AUTO	Disabled	AUTO	TBS SmartAur	AUTO

Save and Reboot