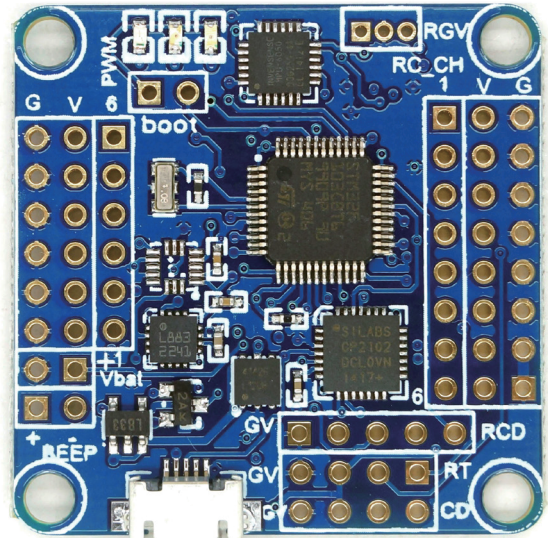
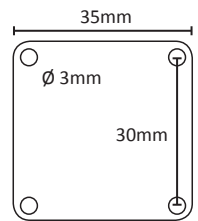


# Naze32 10dof

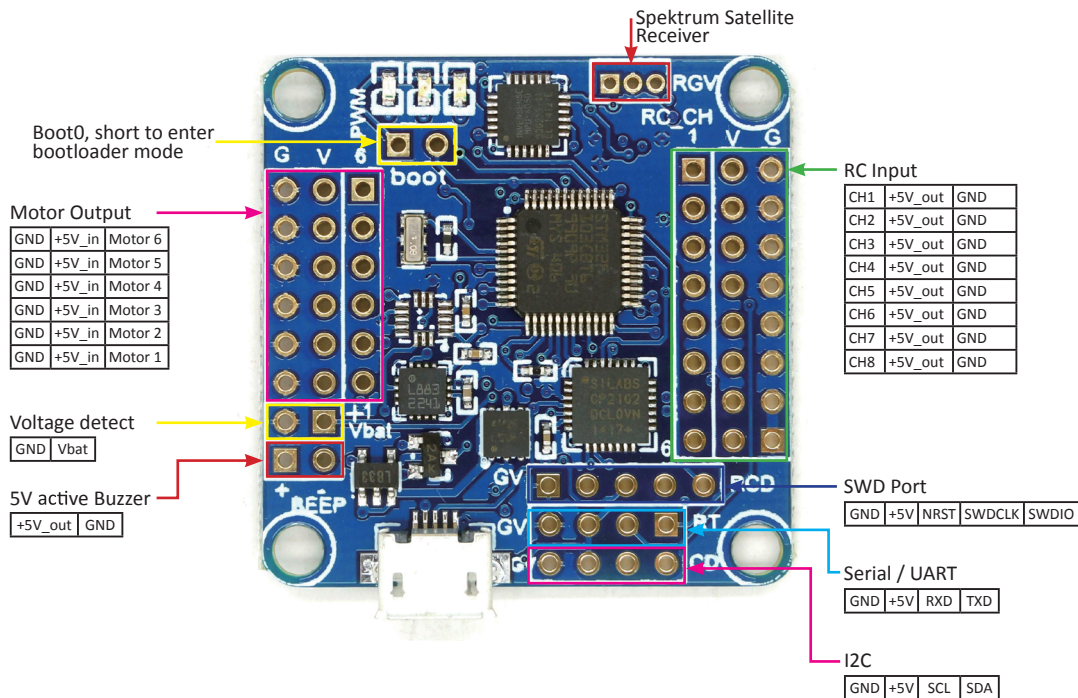
- 36x36 mm
- 3-axis MEMS gyro + accelerometer (MPU6050)
- 3-axis magnetometer (HMC5883L)
- Pressure sensor (MS5611)
- Flexible motor outputs, support various airframe types
- Quad/Hexa/Tri/Bi/Y4/Y6/Octo/Camera Gimbal. (Default is Quad-X)
- Up to 8 ch RC input - supports standard receivers (PWM), PPM Sum receiver (FrSky, etc), or Spektrum Satellite receiver.
- Battery voltage monitoring
- Modern 32-bit processor running at 3.3V/72MHz (STM32F103CB).
- Onboard MicroUSB for setup and configuration
- MultiWii-based configuration software for easy setup
- rev4 hardware



\* The difference between 10dof and 6 dof version are compass and barometer, the 6 dof version HASNT HMC5883L and MS5611.

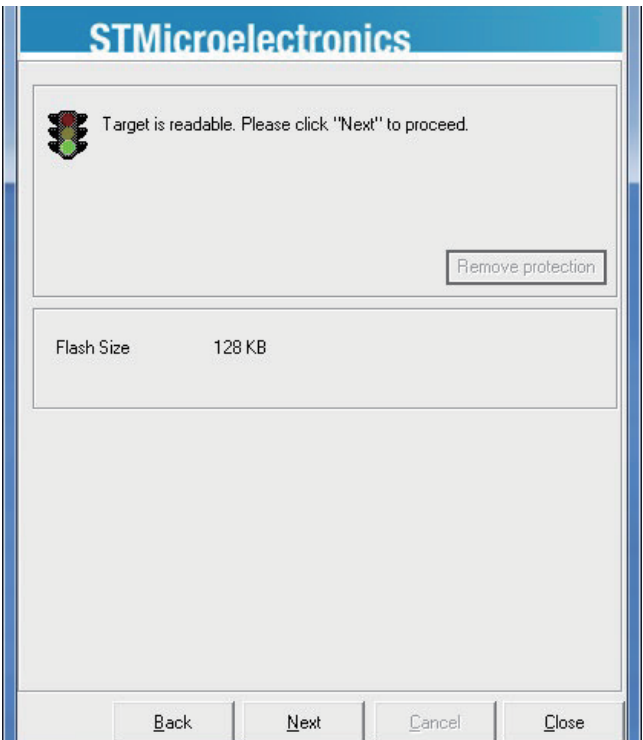
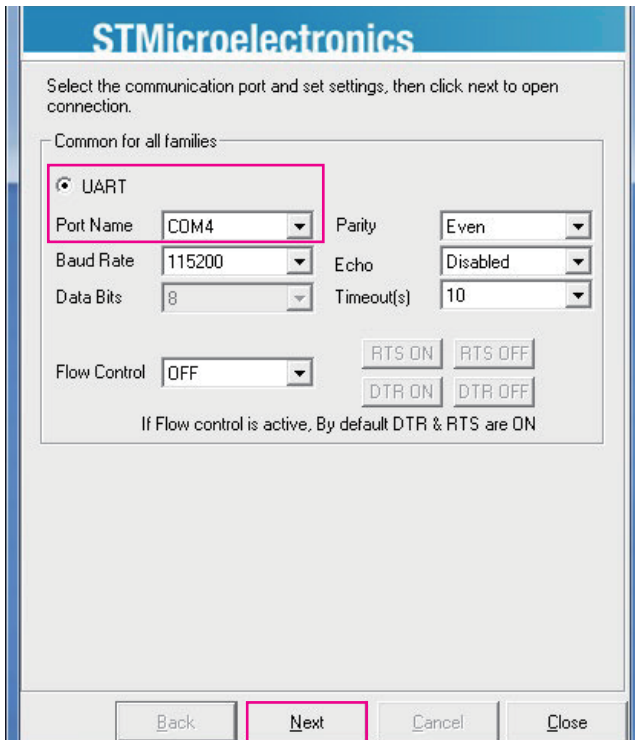
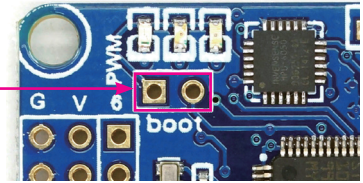


## Connection diagrams

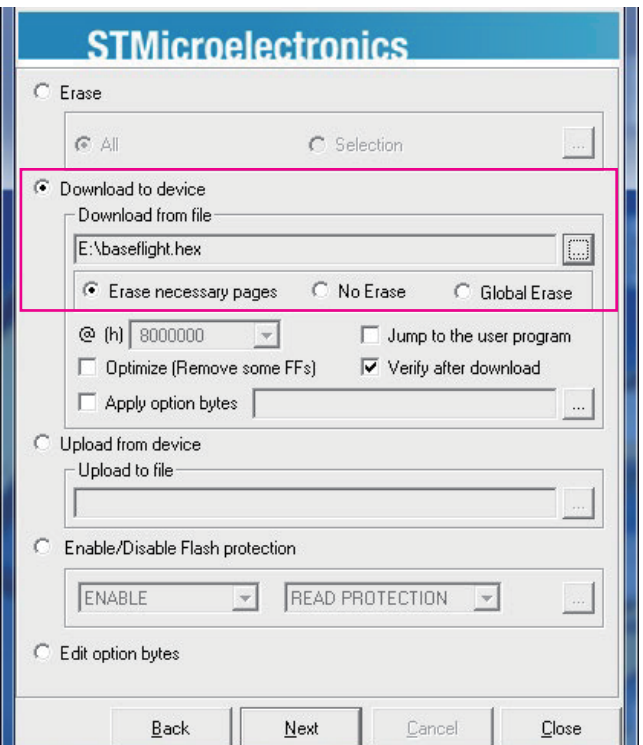
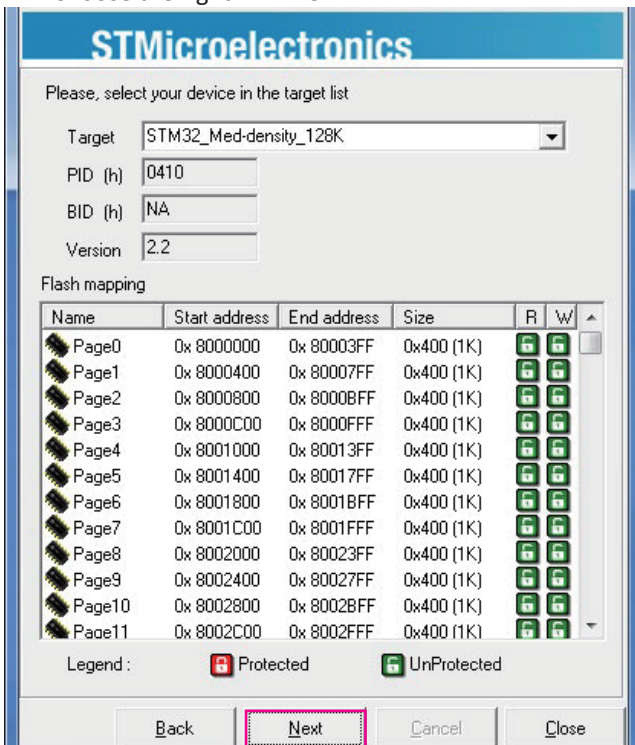


# Firmware update

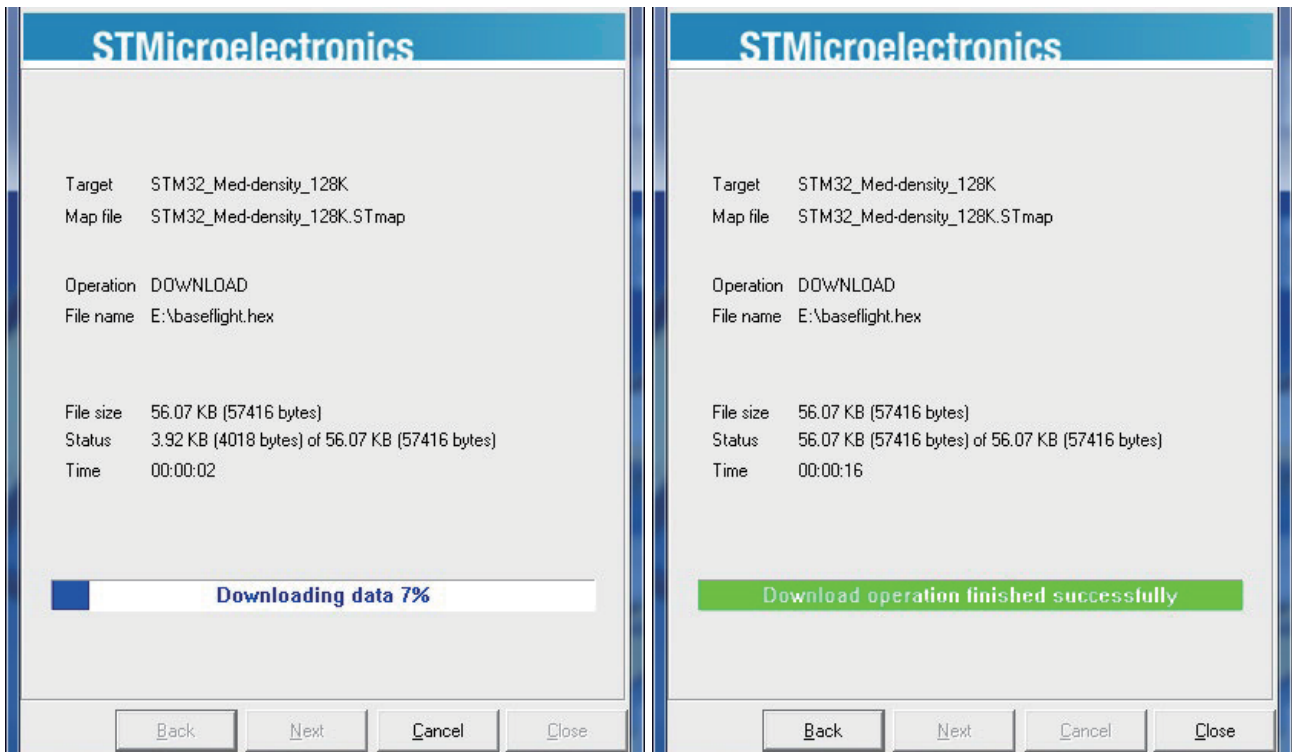
- Short boot 0
- Connect to computer over USB
- Download the newest firmware from: <https://code.google.com/p/afrodevices/downloads/list>
- Open STM32 Flash Loader Demonstrator
- 5. Choose the COM port and NEXT



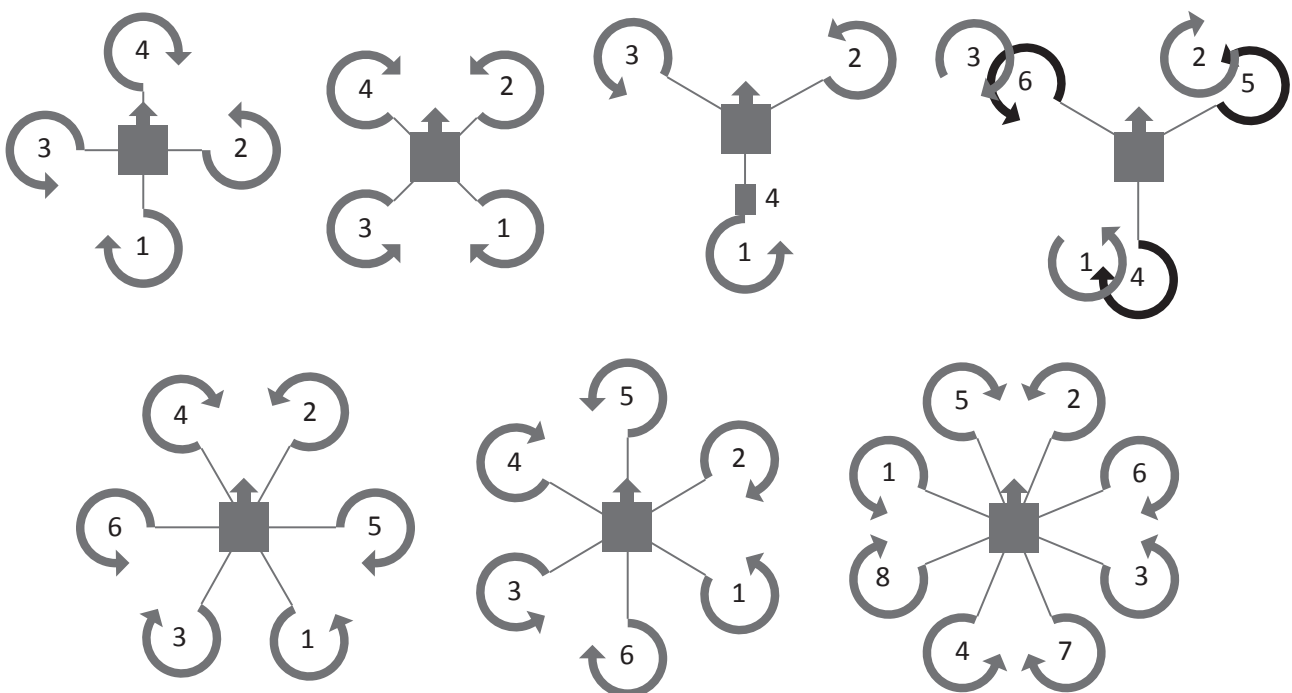
- Choose the right HEX file



- Flash, then it should be done



## Motor Connection:

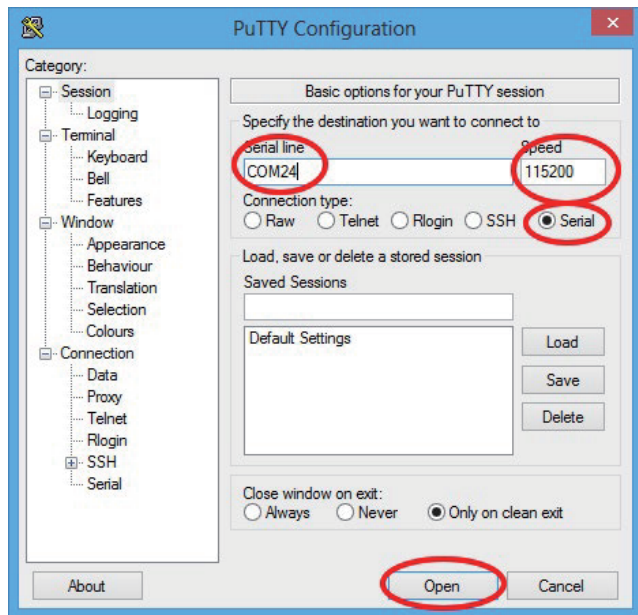


## General Setting

- Install the driver for USB to UART CP2102
- Connect the board to computer
- Open Putty.exe

Download PuTTY from

<http://www.chiark.greenend.org.uk/~sgtatham/putty/>



- -choose serial
- -choose your com port(its may different as your computer, have a look in the device manager)
- -Speed 115200
- -click on "open" button
- it opens a Command Prompt
- type "#" to activate the input
- You can Enter the commands now.

Command line is interactive, and most commands will print something in return.

Available commands:

help	print out a list of all commands with short description of each
defaults	reset all settings to built in defaults, and reboot
feature	enable, disable, or list enabled features (such as CPPM input, GPS, etc)
map	configure RC channel mapping for CPPM and standard receiver
cmix	create custom motor mix for non-standard airframe type
mixer	set or show current multicopter mixer (such as Quad-/Hexa-/etc)
set	set or list available parameters. Many settings are available.
status	print out system status (voltage, uptime, enabled sensors, etc)
version	print out firmware version and build date/time
save/exit	savesettings and reboot

**WARNING** Any changes to settings in cli, in particular related to motor output (throttle values, etc) are accepted REALTIME and may result in motors starting up without warning. Always configure with props disconnected or when model is only powered by USB.

Common usage examples:

To enable CPPM receiver, enable PPM feature:

```
# feature ppm
```

```
# save
```

To disable battery voltage monitoring, disable VBAT feature:

```
# feature -vbat
```

```
# save
```

To enable camera stabilization and change mixer to Quad-Plus:

```
# mixer quadp
```

```
# feature servo_tilt
```

```
# save
```

To configure CPPM receiver for EATR channel order and swap AUX1/2:

```
# map EATR2134
```

```
#save
```

Settings are applied real-time, however not saved until 'save' or 'exit' command is executed.



## Notice

Few things need to be done to ensure smooth flying experience. The guidelines below should cover most common setup issues. Do not move the model while plugging in the battery and during the first few seconds after power-up. Gyro must be idle, or else initial calibration will be wrong. Alternatively, make sure to execute the "Gyro Calibration" stick sequence prior to arming.

First flight should always be in gyro-only mode. Do not enable auto-level, baro, headfree, etc until you know what you're doing. If model immediately flips on take off, double-check board orientation (front facing), each motor number, rotation direction, and type of prop installed. Refer to "Motor Mixer" chapter for details. Trim transmitter once, and never trim in-flight. Connect to GUI, and subtrim on transmitter until all channels are centered at 1500. If using Futaba gear, center might be 1520. In that case, set midrc value in config to 1520, then subtrim to center all channels at 1520. Do not use trim in flight for either gyro or auto-level mode. Use acc-trim function. Cover the barometer with open-cell foam and keep it away from direct sunlight. Placing the flight controller in a plastic enclosure of some kind is recommended.

Download the newest GUI from :<https://code.google.com/p/mw-wingui/>.