



# PhoeniX

Quickstart Manual V1.0

2018/07/1

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## **Warning, disclaimer:**

**CAUTION:** This radio controlled RC Quadcopter is not a toy. This product is for a radio controlled (RC) quadcopter. Improper operation, maintenance or assembly can potentially cause a RC quadcopter to pose a danger to persons or objects including but not limited to the possibility of causing serious physical injury and even death.

Moving components can present a hazard to operators, and anyone or anything that could be in the flying area of the RC Quadcopter.

Under no circumstance should a minor be allowed to operate this RC Quadcopter without the approval, monitor and direction of his parent or legal guardian who takes full responsibility for all of the minor's actions.

This product is intended for being operated by experienced mature RC Quadcopter pilots under controlled safety conditions and on locations properly authorized and setup for safe flying and away from other people.

Do not operate an RC Quadcopter within the vicinity of electrical power lines during inclement weather or near crowds of people.

The manufacturer and/or its distributors assume no responsibility or liability whatsoever for any damages including but not limited to ones generated by incidental or consequential damages.

The operator of the RC Quadcopter assumes all responsibility and liability that result from the correct or incorrect operation of the RC Quadcopter.

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## Summary:

We are so proud of launching our newly designed GEP-PX2.5 Phoenix which is a mini size drone for free style maneuver or indoor/outdoor racing. Three different size can satisfy your flying style. They are 2 inches, 2.5inches and 3 inches. All are capable of using from 450mAh to 650mAh Li-Po battery.

In order to make it more strong in the whole design so that 7075 aluminium frame is used for lens and electronics protection. Also 3D print TPU tail light module will give you a cool feeling when flying at night.

The main frame is used the stiffness 3k carbon fibre in 3mm thickness and well matching with 7075 aluminium lens protection frame to ensure durability and strength of the whole flying machine. Also you can place your battery in upper or lower deck to change your flying characteristics.

A well matched combination give you a powerful and accurate control you have ever had. The power come from SpeedX GR1106-4500kv and Gemfan2540-3 propeller. STABLE F4 Towe 12A flight control board which is easy to install and program. To give more insane flying it also support

4s Li-Po battery. This combination is already more than enough for you to win in any race.

## Specifications:

Brand Name: GEPRC

Model: Phoenix

Wheelbase: 125mm

Firmware: betaflyght\_3.2.1\_OMNIBUSF4SD

Input Voltage: support 2-4S Lipo



Motor:GR1106 4500kv

Propeller:Gemfan 2540 (8 pairs)

Weight: 93.4 grams without battery or props

Receiver: Frsky XM Plus (ONLY BNF INCLUDE)

## **Frame: GEPRC GEP-Phoenix**

Carbon:Full 3K carbon fiber Twill

CNC:High precision CNC 7075

Wheelbase: 125mm

Thickness of bottom plate: 3mm

Thickness of side plate: 1mm

## **Flight Controller: SPAN F4 Tower AIO**

MCU: STM32F405

MPU: MPU6000

ESC: 12A \* 4 BLHeli\_s (Dshot 150/300/600) support 2~4S LiPo

VTX:5.8GHz (48 Channel) (OFF/25/100/200mW)

## **You might need the following equipment to fly**

- Remote control: You can choose: Frsky X9d or something like that
- Goggle: Such as FatShak V2 or something like that

Battery: The novice recommends using the 3s 450-650mah battery. Professional flying professionals recommend 4s 450mah-650mah

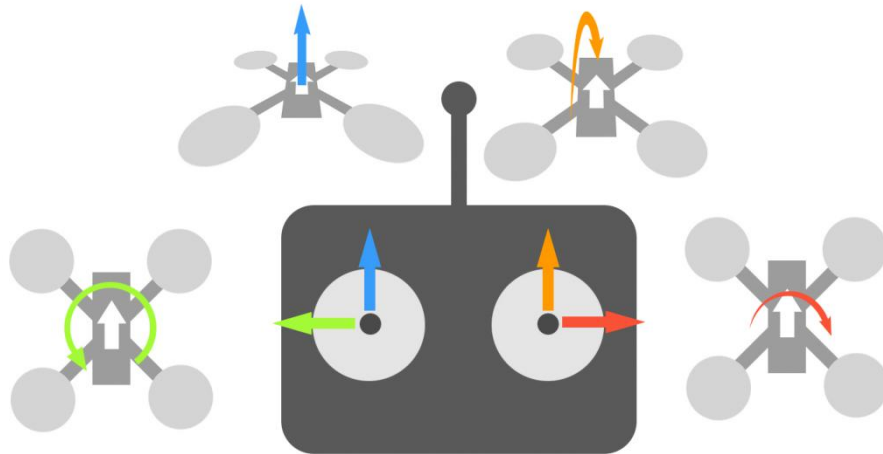
## Features:

1. Use of the gep-px2.5 frame, strong fall resistance, all 3k carbon plate, 7075 aluminum alloy protection lens
2. Also you can place your battery in upper or lower deck to change your flying characteristics
3. Using STABLE F4 Tower (GEP-F4-BL\_S12a-VTX58200-m) V1.4 small flying Tower, simple installation and STABLE function
4. The GEPRC team carefully calibrated the PID to ensure reliability and stability, and the binding flew
5. High efficiency GR1106 4500kv motor, with Gemfan 2540 propeller
6. Runcam Micro Swift 2.1mm lens for clarity
7. BlheliS 12A ESC ensures power output
8. VTX 5.8g, Power 0/25/100/200mW can select

**Important tip: before commissioning, please remove the propeller**

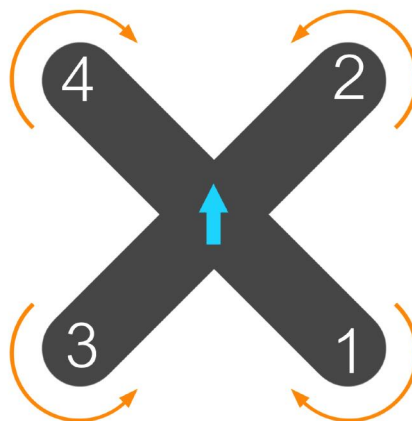
## 1、 Basic knowledge

- The GEP-PX2.5 is a 2.5 inch propeller drone. This is not a toy. If done incorrectly, it can harm the human body.
- The GEP-PX2.5 is using the Betaflight firmware flight control, and the introduction of Betaflight can be referred to the second part.
- The way to type the rudder, as shown below :



■

- The order and direction of the motor:



- The manufacturer recommends a 3s 550mAh battery flight , but can also fly with the 4s (450mAh-650mAh).
- GEP-PX2.5 does not recommend flying in crowded places to avoid hurting people.
- if you want to feel FPV (first person vision), please flying with video glasses.

## 2、 Install Betaflight

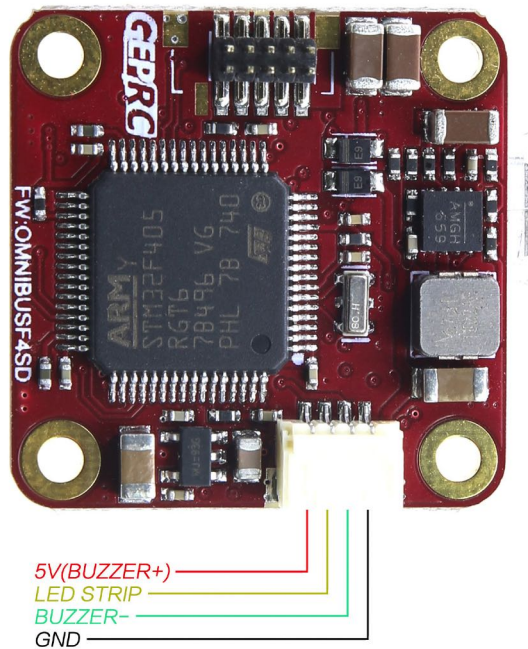
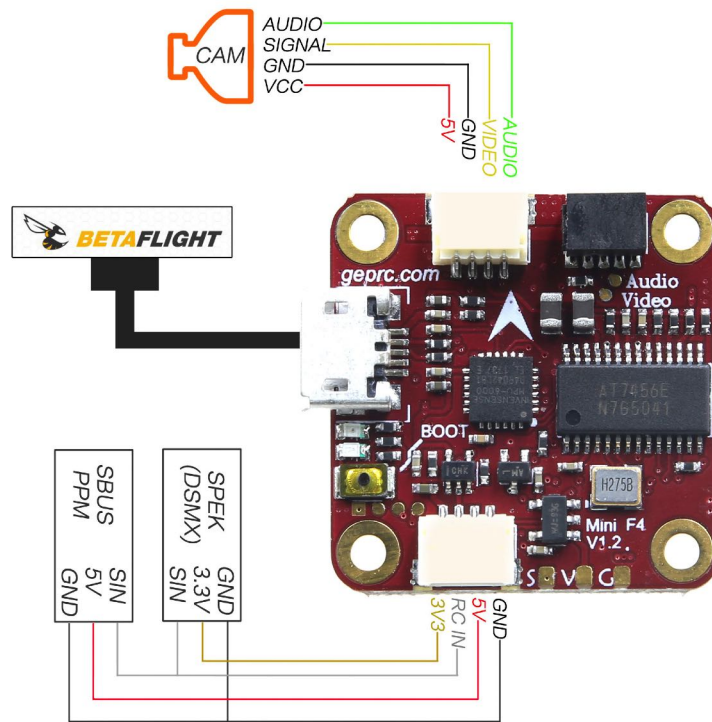


- Betaflight is an open source flight control procedures, specific introduction can refer to website:  
<https://github.com/betaflight>
- for the firmware required by Elegant, please click the following link to download the firmware name: **[betaflight\\_3.2.1\\_OMNIBUSF4SD.hex](#)**
  - Latest version of firmware download website:<https://github.com/betaflight/betaflight/releases>
  - Be sure to download the **[betaflight\\_3.2.1\\_OMNIBUSF4SD.hex](#)** version.
- Install driver and ground station Betaflight
  - <https://github.com/betaflight/betaflight/wiki/Installing-Betaflight>
  - Ground station Betaflight - Configurator download address (you need to install Chrome browser) :
    - ◆ <https://chrome.google.com/webstore/detail/betaflight-configurator/kdaghagfopacdnghbohiknlhcocjccjao/reviews>

## 3、 Install the Receiver

- If you choose the BNF version, you can Bind use the frequency and do not need to install the receiver again.
- if you choose the PNP version, you will need to install the receiver on your own, Please click the following steps to connect (such as the Frsky r-xsr receiver) :
  - **note:must dismantle propeller for debugging.**
  - Open the screws of the Elegant, open the top vtx board, and you can see the flight control board on the second floor.
  - The flight control board will have three welding locations: 5V,GND,S.Bus, Welding in the corresponding position
  - Finally, fix the receiver and lock the corresponding screw
  - As shown in the picture below:

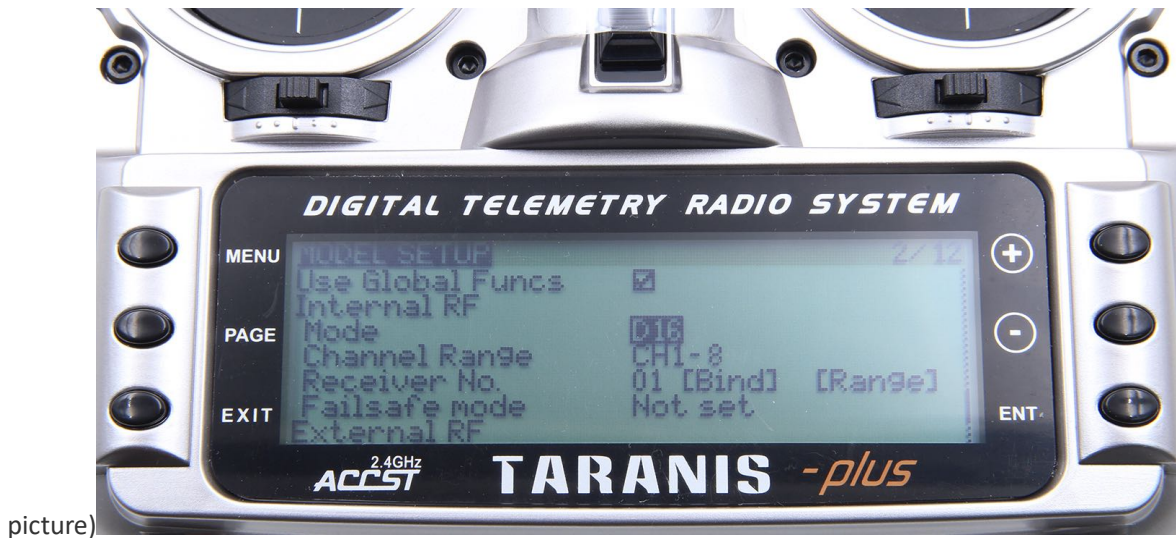




## 4、 Bind the Receiver

- Each manufacturer's receiver is not identical to the frequency, now take the r-xsr receiver of Frsky as an example. Other manufacturers' receivers please refer to the corresponding manufacturer's frequency information.

- 1 : Power on X9D —— Short press MENU —— Press PAGE turn to second page(such as below



- 2 : Move the cursor to the "Mode" option , "Mode" option the working mode of XJT can be switched. There are three types of D16, D8, and LR12 respectively. Please select according to your receiver:

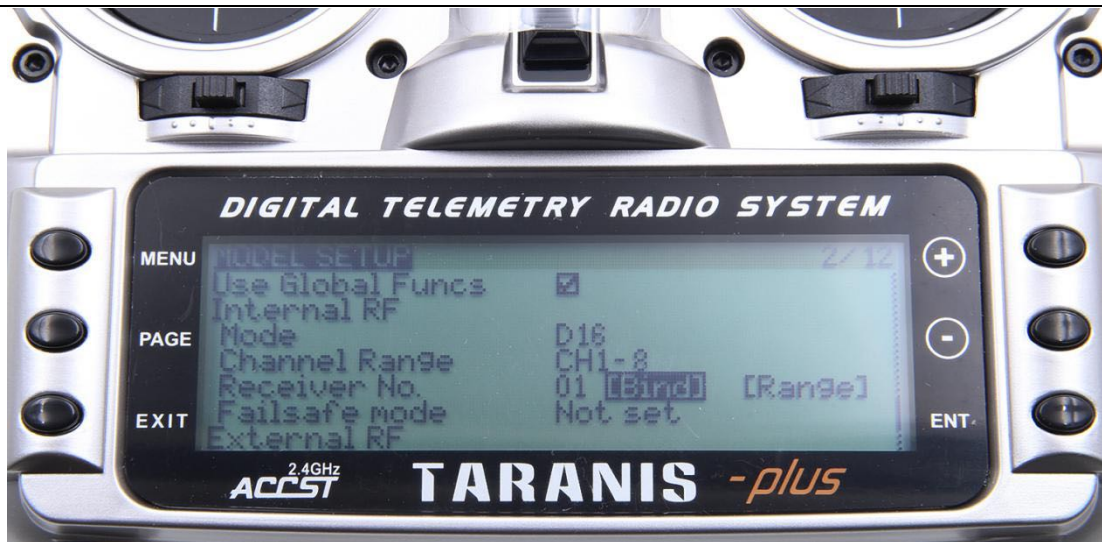
System : Compatible receiver

D16 : X8R, X6R, X4R, XSR and other X series receivers

D8 : D8R, D4R and other D series receiver, V series ii receiver and X8R, X6R D8 mode

LR12 : L9R receiver

- 3 : Move the cursor to the "Bind" option, and click ENTER. "Bind" is in a scintillating state and is entering the bind the receiver state



Bind order :

Press F/S button(The Receiver) — Put through power supply — The light of the receiver green, red light flash — Press ENTER at Frsky X9D “Bind” — Unplug the power and rewire (he light of the receiver green, red light flash, That’s ok).

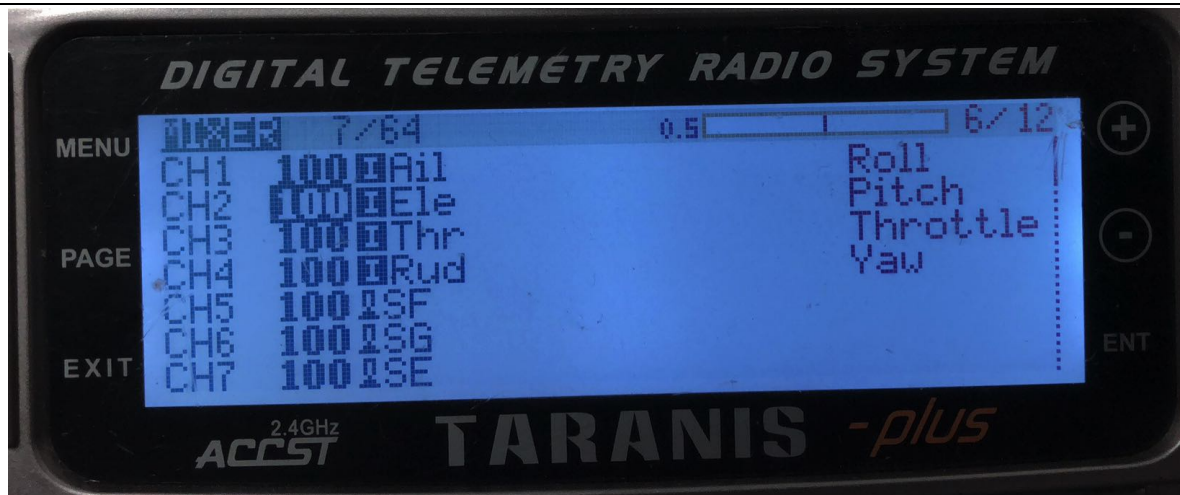
## 5、 Set the Radio

- You need to set the radio so that you can control the Drone.
- This is use MODE2
  - Create a new MODE2 model
  - Then open the necessary channels to the remote control (please see picture below)

Channel	Function	operation
Channel 5(2 switch)	Unlock	0 unlock , 1 lock
Channel 6(3 switch)	Control Drone posture	0 Rate , 1 Angle , 2 Horizon
Channel 7(2 switch)	Control Buzzer	0 Buzzer on , 1 Buzzer off

Set up as picture below:





## 6、 How to unlock

**Note: when the test motor turns, the propeller must be unloaded**

- Unlock type
  - The throttle to the minimum
  - Knock down 5 channels to unlock

## 7、 Set up the VTX

1. Set the Channel. In standby mode, press and hold the key for 3 seconds, the blue LED flashes, short press, change the channel value. Every time 1 press will change the CH, followed by 1CH to 8CH cycles.
2. Set the Band. In the channel setting mode, press and hold the key for 3 seconds, the green LED flashes, briefly presses, changes the frequency group value. Every time 1 press will change the band, and then the A band to F band loop.
3. Set the Power. In the band setting mode, press and hold the key for 3 seconds, the red LED flashes, short press, change the output power value. Every time 1 press will change the power, followed by 25mW / 100mW / 200mW cycle.

4. frequency table:

	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
Band A	5865	5845	5825	5805	5785	5765	5745	5725
Band B	5733	5752	5771	5790	5809	5828	5847	5866
Band E	5705	5685	5665	5645	5885	5905	5925	5945
Band F	5740	5760	5780	5800	5820	5840	5860	5880
Band H	5362	5400	5436	5473	5510	5547	5584	5620
Band R	5658	5695	5732	5769	5806	5843	5880	5917

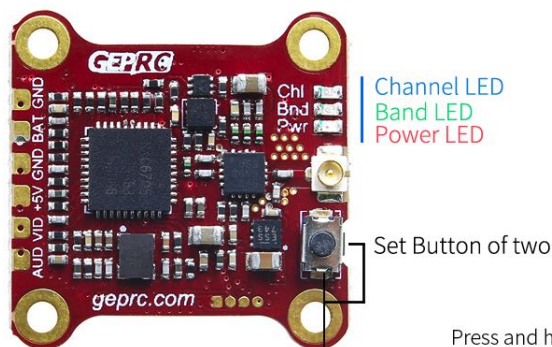
## 5. VTX LED display

5.1. **BLUE:** Frequency channel display, the time of flash represents 1 to 8 channels, 1 = CH1, 2 = CH2, ... 8 = CH8.

5.2. **GREEN:** Frequency Band display, the number of flashes represents the frequency group from A to R, 1=A, 2=B.....6=R

5.3. **RED:** Power output display, 1 = 25mW, 2 = 100mW, 3 = 200mW.

How to turn VTX on or off: In the working state, quickly double-click the set button, RED / GREEN / BLUE sync flash, VTX can be turned off, and also quickly double-click of the key to turn on the VTX output.



## How to use VTX?

SET  
VTX

Press and hold the key  
for 3 seconds

Set the Channel

**BLUE:** Frequency channel display, the time of flash represents 1 to 8 channels, 1 = CH1, 2 = CH2, ... 8 = CH8.

Press and hold the key  
for 3 seconds

Set the Band

**GREEN:** Frequency Band display, the number of flashes represents the frequency group from A to R, 1=A, 2=B.....6=R

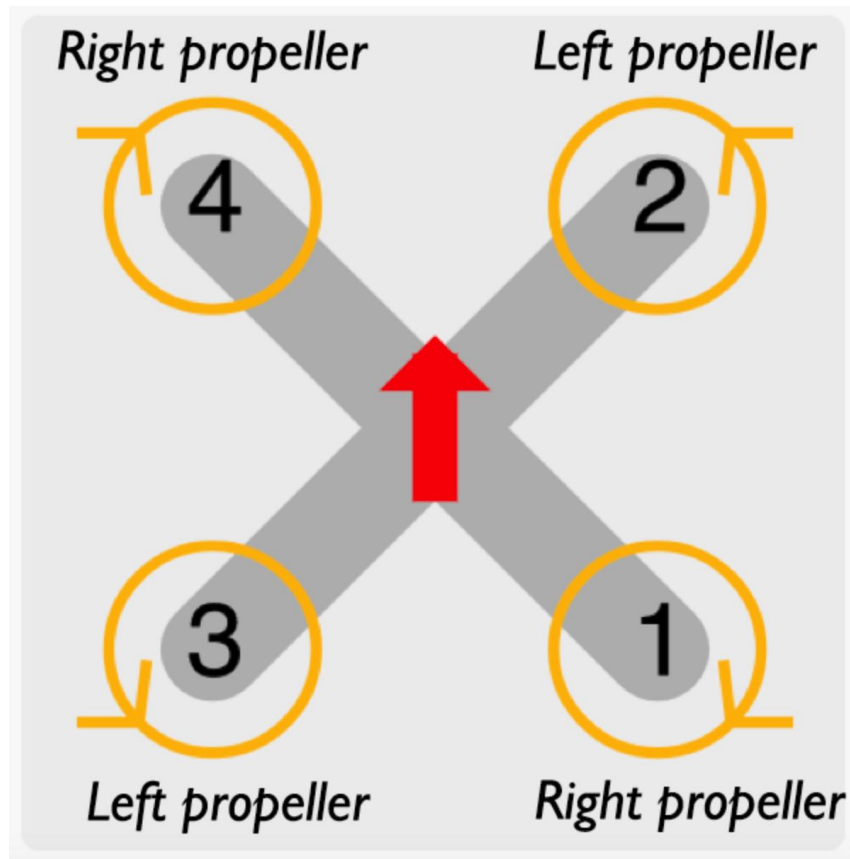
Press and hold the key  
for 3 seconds

Set the Power

**RED:** Power output display, 1 = 25mW, 2 = 100mW, 3 = 200mW.

## 8、 Install Propeller

- The propeller is divided into two types: Left and Right.
- Install as shown. Notice the positive and negative directions



## 9、 Contact us

Site :<http://www.geprc.com>

Email:[info@geprc.com](mailto:info@geprc.com)

Facebook page: <https://www.facebook.com/geprc/>

Facebook Group: <https://www.facebook.com/groups/566794893526546/>

Instagram: <https://www.instagram.com/geprc/>