



MARK 2

Quickstart Manual V1.0

2018/08/1

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:

Mark 2 is one of the most popular freestyle drone in the world. It's design is following freestyle flying expert Johnny and Mr Steele experience.No matter from the chassis down to the position of lens, antenna. It could be the best choice for freestyle manuver.We specially added red and silver colour for your choice. Moreover, many 3D printing parts are specially designed for antenna for both 2.4G and 5.8G and fitting of rear LED assembly. Colourful LED give you a cool feeling at night flying.

Mark2 (BNF/PNP) Include Mark 2 Frame,SPAN F4 40ATower(F405 flight controller, ESC BLHeli_s 40A, VTX 5.8Ghz 0/25/200/600mW),Pagoda2 RHCP antenna, RunCam Swift2 2.1mm camera,Equipped with multiple 3D printing accessories.The overall performance is assembled and debugged by the GEPRC team, which can fly as long as it is on the frequency.

We are offer two version PNP(without receiver) and BNF(with Frsky receiver).

Specifications:

Brand Name: GEPRC

Model: Mark2

Wheelbase: 230mm

Firmware: betaflight_3.2.5_OMNIBUSF4SD

Input Voltage: support 2-5S Lipo

Motor:GR2207 2400kv

Propeller:GEP5040*3 (10 pairs)

Weight: 330 grams without battery or props

Receiver: Frsky R-XSR (ONLY BNF INCLUDE)

Frame: GEPRC GEP-Mark2

Carbon:Full 3K carbon fiber Twill

CNC:High precision CNC 7075

Wheelbase: 230mm

Thickness of bottom plate: 2mm

Thickness of top plate: 2mm

Thickness of lens plate: 2mm

Thickness of arms plate:4mm

Flight Controller: SPAN F4 Tower AIO

MCU: STM32F405

MPU: MPU6000

ESC: 40A * 4 BLHeli_s (Dshot 150/300/600) support 2~5S LiPo

VTX:5.8GHZ (48 Channel) (OFF/25/200/600mW)



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 1300-1800mah battery. Professional flying professionals recommend 4s 1300mah-1800mah

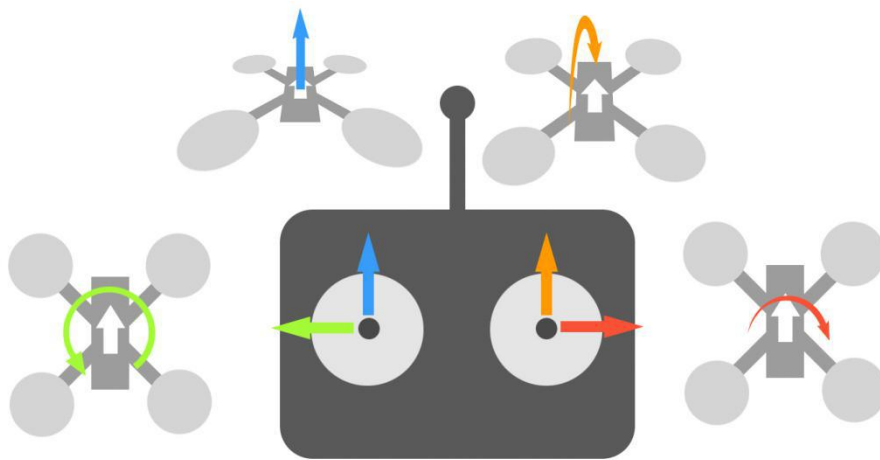
Features:

- GEP-Mark2 Frame, All 3k carbon fiber board, sturdy and durable Use mature and stable
- Mainstream Freestyle frame, mechanical appearance design
- Use SPAN F4 Tower AIO fly Tower latest version, function is more optimized
- The GEPRC team carefully calibrated the PID to ensure reliability and stability, and the binding flew
- High efficiency GR-2207 2400kv motor, with GEP-5040 propeller, achieve perfect output
- Use the Pagoda2 antenna to determine the image quality
- RunCam Swift 2 lens for clarity

Important tip: before commissioning, please remove the propeller

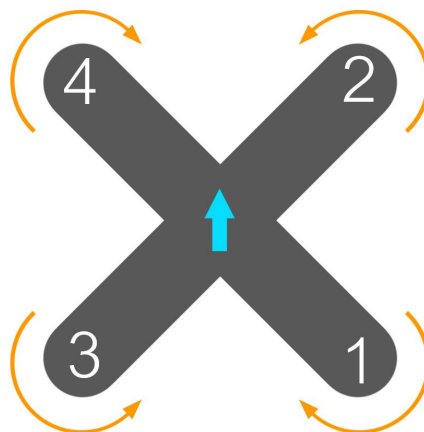
1、 Basic knowledge

- The Mark2 is a 5 inch propeller drone. This is not a toy. If done incorrectly, it can harm the human body.
- The Mark2 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 4s 1500mAh battery flight , but can also fly with the 4s (1300mAh-1500mAh).
- Elegant 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_3.2.5_OMNIBUSF4SD.hex**
 - Latest version of firmware download website:<https://github.com/betaflight/betaflight/releases>
 - Be sure to download the **betaflight_3.2.5_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:

GEP R C

SPAN TOWER

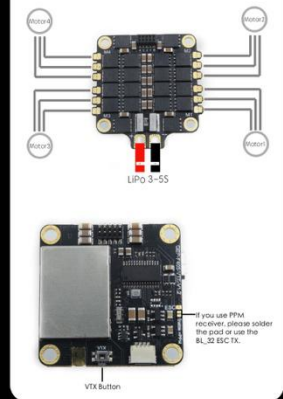
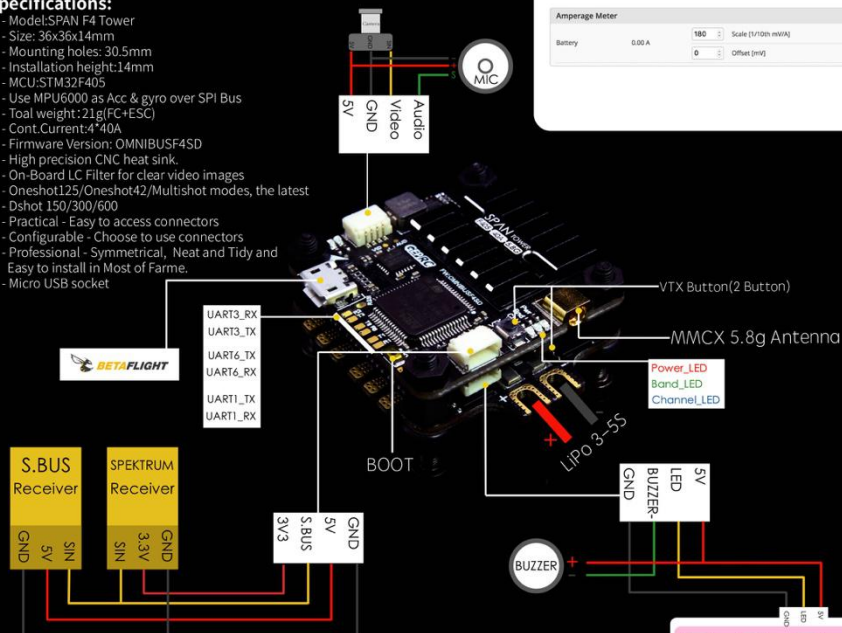
F405 40A 5.8G




Manual

V1.0

Specifications:

- Model: SPAN F4 Tower
- Size: 36x36x14mm
- Mounting holes: 30.5mm
- Installation height: 14mm
- MCU: STM32F405
- Use MPU6000 as Acc & gyro over SPI Bus
- Total weight: 21g (FC+ESC)
- Cont. Current: 4*40A
- Firmware Version: OMNIBUSF4SD
- High precision CNC heat sink.
- On-Board LC Filter for clear video images
- OneShot125/OneShot42/Multishot modes, the latest
- Dshot 150/300/600
- Practical - Easy to access connectors
- Configurable - Choose to use connectors
- Professional - Symmetrical, Neat and Tidy and
- Easy to install in Most of Frame,
- Micro USB socket





Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	 115200		Disabled AUTO	Disabled AUTO	Disabled AUTO
UART1	 115200		Disabled AUTO	Disabled AUTO	Disabled AUTO
UART3	 115200		Disabled AUTO	Disabled AUTO	IBC Tramp AUTO
UART6	 115200 		Disabled AUTO	Disabled AUTO	Disabled AUTO

Amperage Meter

Battery 0.00 A

180 Scale [1/10th mV/A]

0 Offset [mV]

- | | | |
|-------------------------------------|---------------------------|---|
| <input checked="" type="checkbox"/> | TELEMETRY | Telemetry output |
| <input checked="" type="checkbox"/> | LED_STRIP | Multi-color RGB LED strip support |
| <input checked="" type="checkbox"/> | DISPLAY | OLED Screen Display  |
| <input type="checkbox"/> | CHANNEL_FORWARDING | Forward aux channels to servo outputs |
| <input type="checkbox"/> | TRANSPONDER | Race Transponder  |
| <input type="checkbox"/> | AIRMODE | Permanently enable Airmode |
| <input checked="" type="checkbox"/> | OSD | On Screen Display |

<p>Press and hold the key for 3 seconds</p> <p>Set the Channel</p>	<p>BLUE: Frequency channel display, the time of flash represents 1 to 8 channel, 1 = CH1, 2 = CH2, ... 8 = CH8. (Short Press)</p>
<p>Press and hold the key for 3 seconds</p> <p>Set the Band</p>	<p>GREEN: Frequency Band display, the number of flashes represents the frequency group from A to H, 1=A, 2=B, ... 8=H. (Short Press)</p>
<p>Press and hold the key for 3 seconds</p> <p>Set the Power</p>	<p>RED: Power output display, 1 = 25mW, 2 = 200mW, 3 = 500mW. (Short Press)</p>

	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	5625	5605	5585	5565
Band F	5740	5760	5780	5800	5820	5840	5860	5880
Band R	5658	5685	5732	5689	5806	5843	5880	5917
Band H	5362	5399	5436	5473	5510	5547	5584	5621

Frequency table



Betaflight-Configurator

Betaflight-Firmware
OMNIBUSF4SDBLHeli - Configurator
G. M. 3.0 version

www.geprc.com

How to turn VTX on and off?

How to turn VTX on and 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 open the VTX output.

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Instagram

instagram.com/geprc

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 ~~t~~he working mode of XJT can be switched. There are three types of D16, D8, and LR12 respectively. Please select according to your receiver:

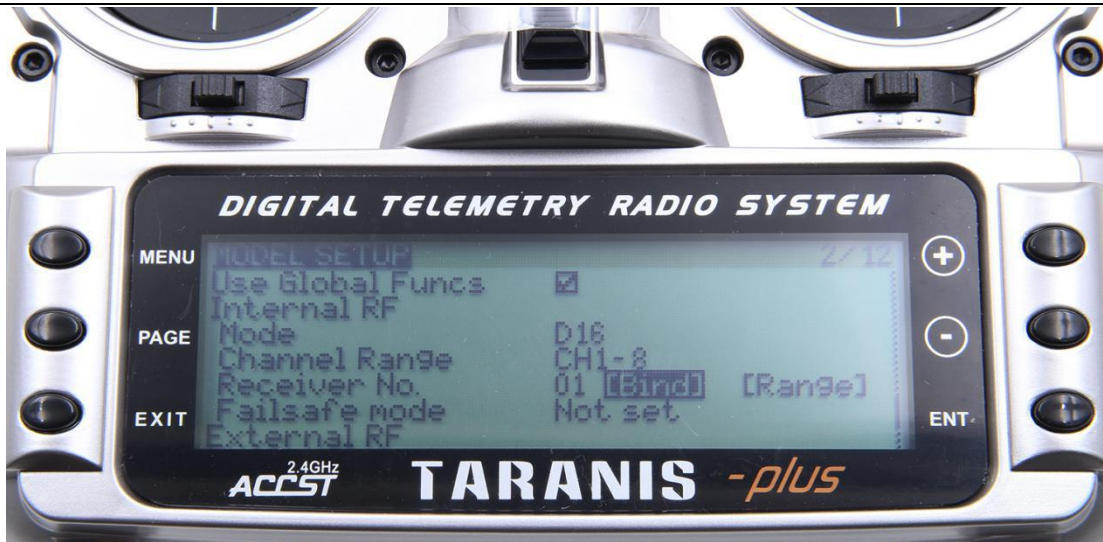
System : Compatible receiver

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 :

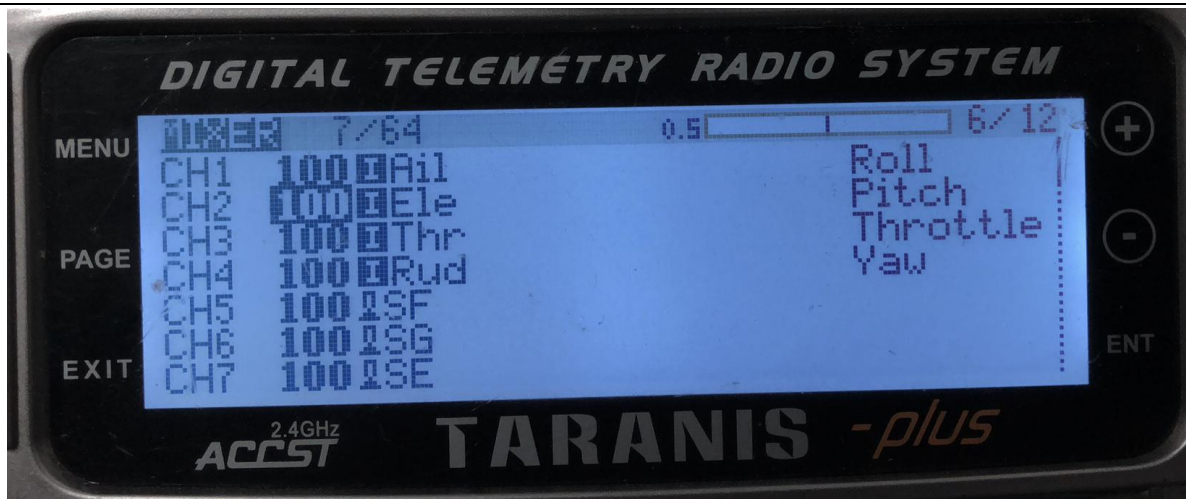
Press F/S button(The Receiver) — Put through power supply — The light of the receiver green, red light flash — Press ENTER at Frsky X9D “Bind” — Unplug the power and rewire (he light of the receiver green, red light flash, That’s ok).

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 / 600mW 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 R	5658	5695	5732	5769	5806	5843	5880	5917
Band H	5362	5399	5436	5473	5510	5547	5584	5621

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=H

5.3. RED: Power output display, 1 = 25mW, 2 = 100mW, 3 = 600mW.

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.

SET
VTX

Press and hold the key for 3 seconds
Set the Channel

Press and hold the key for 3 seconds
Set the Band

Press and hold the key for 3 seconds
Set the Power

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

GREEN: Frequency Band display, the number of flashes represents the frequency group from A to H, 1=A, 2=B.....6=H. (Short Press)

RED: Power output display, 1 = 25mW, 2 = 200mW, 3 = 600mW. (Short Press)

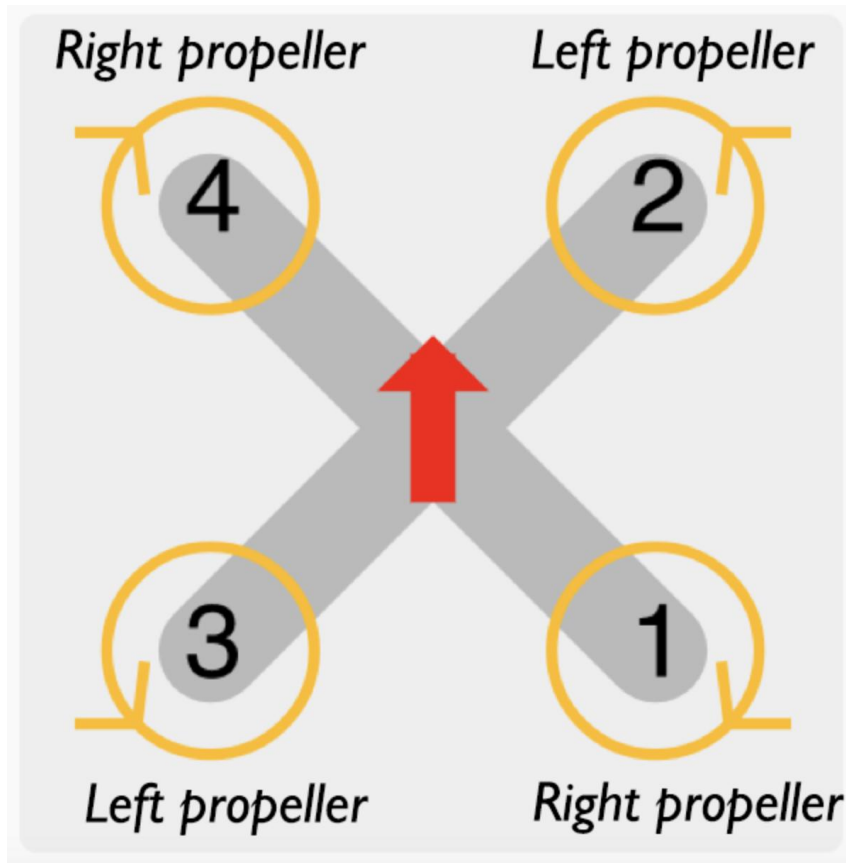
Frequency table

Note: Antennas must be installed before working.

	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 R	5658	5695	5732	5769	5806	5843	5880	5917
Band H	5362	5399	5436	5473	5510	5547	5584	5621

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

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

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

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