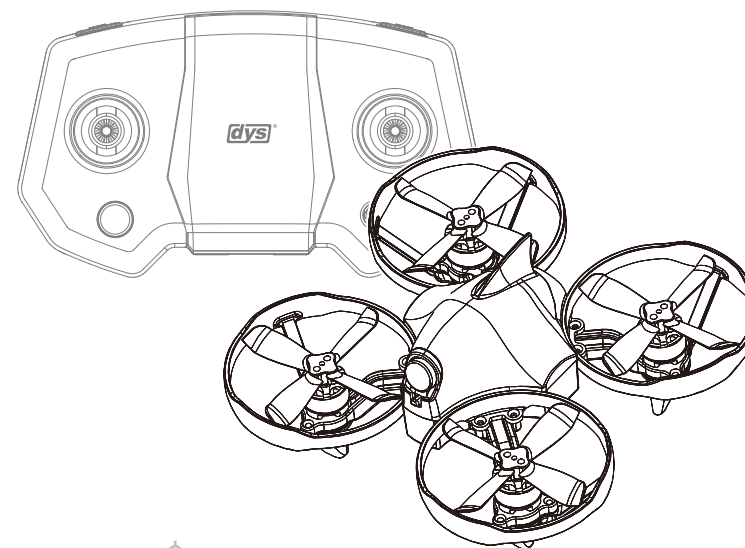




Manual of

SHARK MAKO-RTF



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Brief Introduction

- * Shark Mako drone is designed for hobbyist who love FPV race, aerobatic flight etc.
- * Brand-new design concept, high performance F4 flight control system, high precision IMU and new generation CUP design. Not only perfect integrated distribution board with flight control, but also with OSD, current sensor, voltmeter etc.
- * Built-in 2.4G receiver, 5.8G 25-200mw 40CH VTX and 3DBI antennas, 150° wide angle give you fresh FPV experience.
- * PC material frame body which with light weight, high toughness and durable etc features. Perfect match for the motor and esc.
- * The drone equipped with 4pcs motor guards to reduce the damage during flight.

Function Introduction

- * Perfect stack set design integrated flight control, OSD, distribution board.
- * BETAFLIGHT firmware FC which can modify the setting by users.
- * Built-in 4-in-1 F18A esc, Onshot/Mulshot/Dshot support.
- * 2.4G remote control and receiver, D8 protocol support, remote control distance is 500m.
- * On-board 5.8G 40CH VTX, adjustable 25-200MW, 500m control distance, adjust the setting via OSD.
- * 150° wide angle FPV lens which can suitable for different environment
- * LED tail light for night flight and race.
- * Built-in buzzer for warning

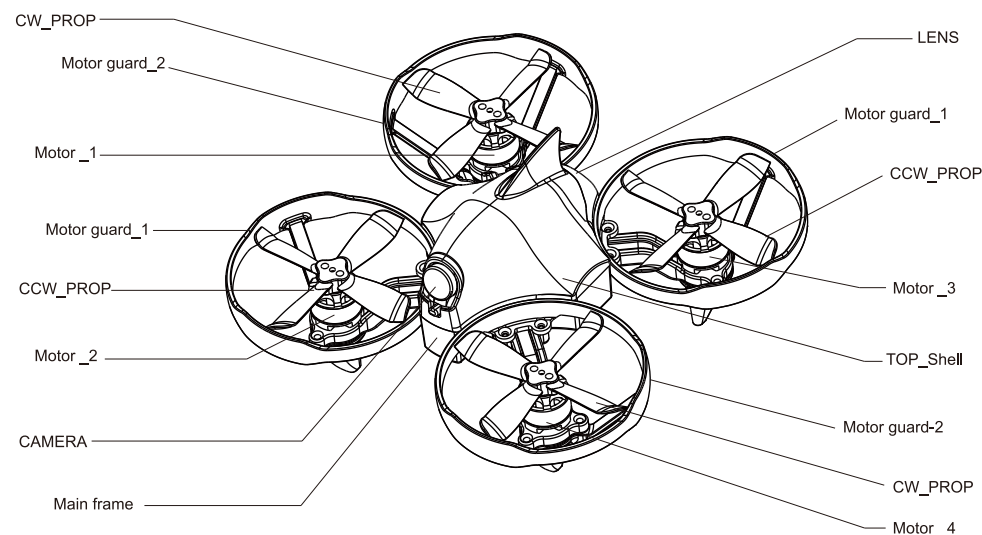
Safety Note

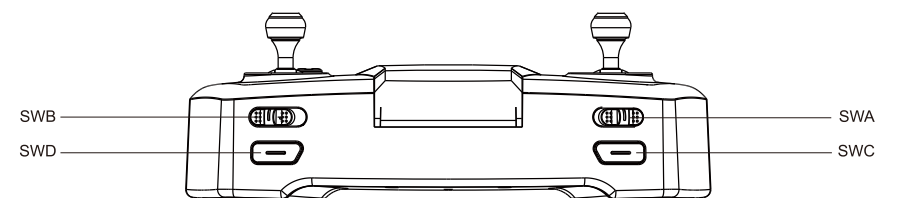
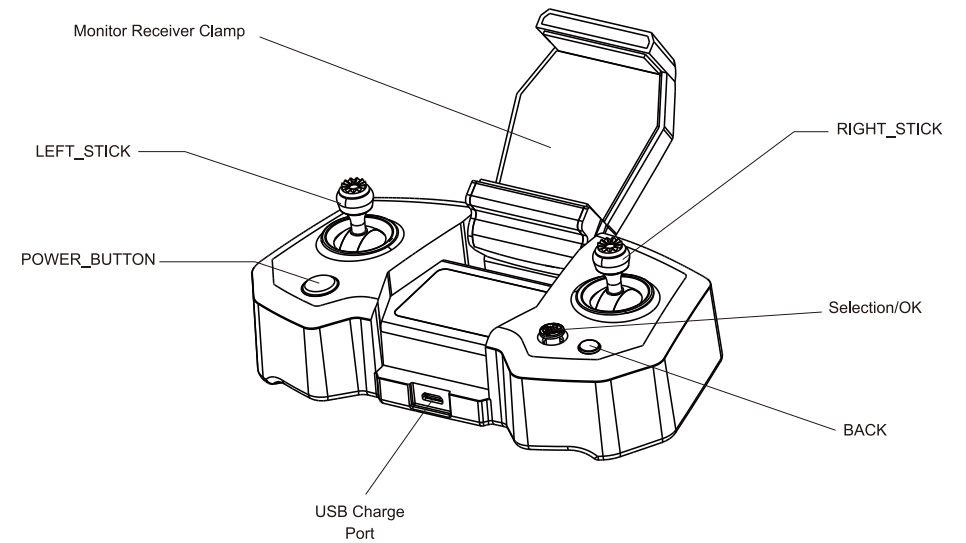
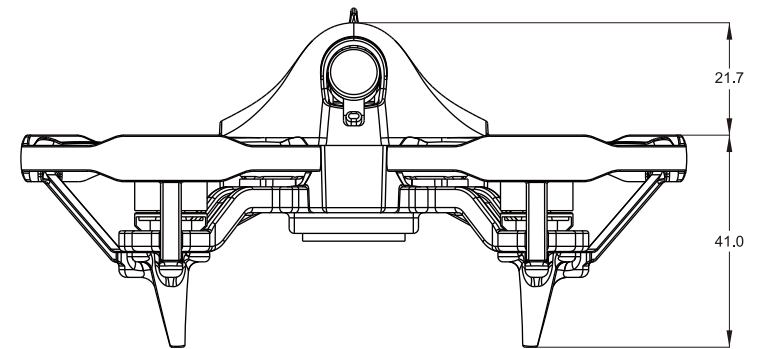
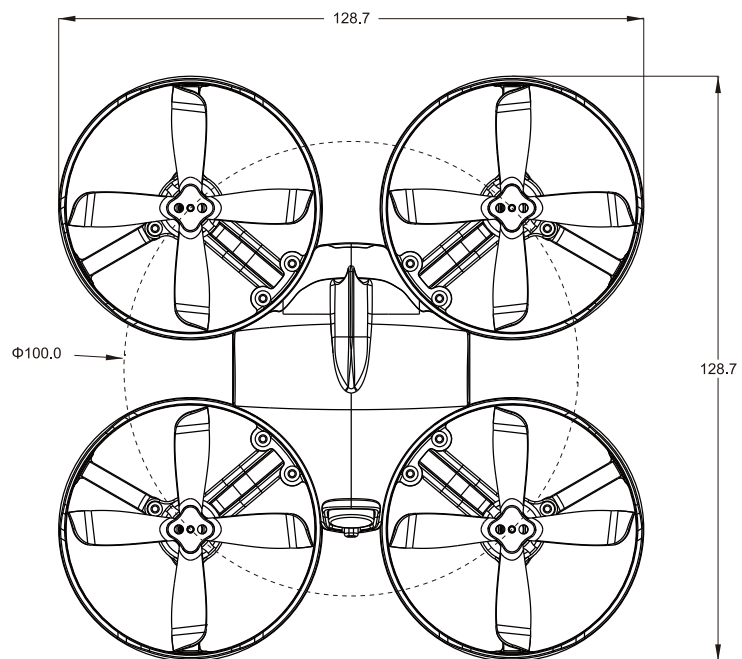
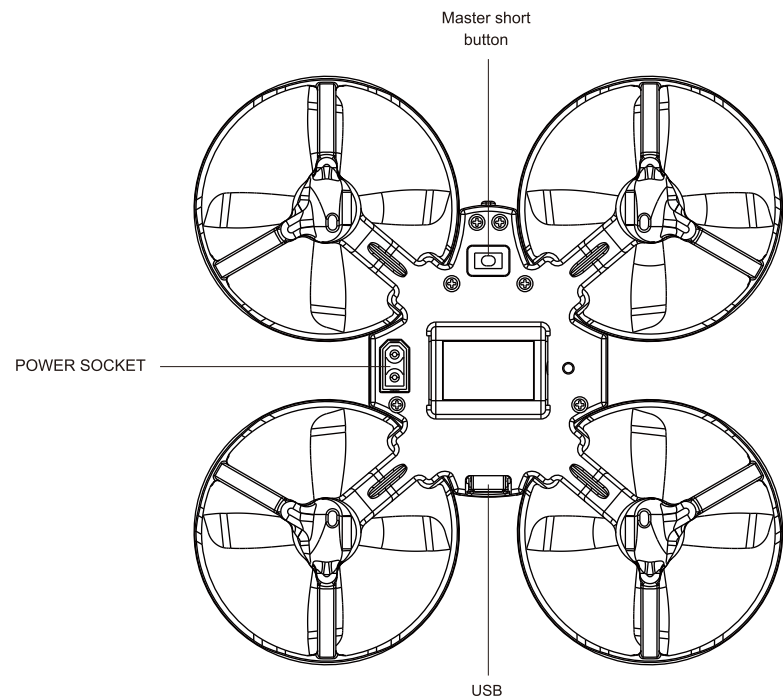
1. Improper operation may result in personal injury and property losses, please read this manual carefully before flight and operate as instructions .
2. Please observe relevant laws and regulations before flight. Stay away from people, animal and other items may cause damage to avoid personal injury or property losses.
3. Please do not fly in rainy, foggy, windy or extreme weather.
4. Please do not close to river, pond or lake to use this product.
5. Please do not use this product in the area with strong signal interference(like high-tension wire, communication and broadcast area and other radios etc.) to avoid unstable operation or out of control.
6. Please do not touch the drone during flight.
7. Please ensure no other device with same frequency nearby while operation, use the same frequency device meanwhile will cause out of control or image loss, even serious failure for the drone or personal injury.
8. Please check whether the battery is full charge or not before flight.
9. Please store the lipo battery in fireproof container if long time no use of this product.

Basic Data

Wheelbase: 100mm
Weight: 93g (without battery)
Flight control: F4
Motor: BE1104-5400KV
ESC: 4IN1-F18A
Propeller: mini 4 blade (2035)
Lens: 150°NTSC
VTX: 5.8G/40CH/25-200MW
VTX distance: 500m
VTX antenna: 3DBI
Battery: 3S 11.1V 25C 600mAh
Battery size: 55*27*18mm
Flight time: 5 mins
Remote control: 2.4G D8
Remote control distance: 500m

Diagram





Operation Instruction

1. Get ready to fly

- 1) Keep all the switches (SWA、SWB、SWC、SWD) and sticks (Left Stick, Right Stick) in the right place. (Default position: all the switches --- left, left stick --- bottom, right stick --- neutral)
- 2) Please check all the batteries are full charged.
- 3) Turn on remote control (see the remote control settings for details)
- 4) Plug-in the drone battery
- 5) Adjust the VTX frequency(see the VTX setting for details)
- 6) Please put the drone on the flat land and make sure the drone tail towards you

2. Start to fly

- 1) SWA go rightward, sound “Di~Di” mean unlock
- 2) Push the throttle slightly, the drone start to fly
- 3) SWC is flight mode switch, there are three modes for selection: self-stabilization, half steady, manual, defaulted self-stabilization mode

3. Landing

- 1) After landing on the flat land, SWA go leftward to lock
- 2) Disconnect the battery and then turn off remote contro

4. Notes

- 1) Turn on RC first, then power on the drone before flight. Disconnect the battery of the drone, then turn off RC after landing. This is for the drone being controlled to avoid accident.
- 2) Before unlock, please ensure the throttle at the lowest and the drone is at level position.
- 3) The flight control system of this drone with built-in voltage detection and buzzer, which can inspect the battery voltage in real time. While the battery voltage lower than the voltage alarm, buzzer will alarm to remind you to change the battery; The proper way is to land the drone and exchange the battery, then fly again. If continue flying with buzzer alarm, it may cause drone crash or battery overdischarge.

Remote Control

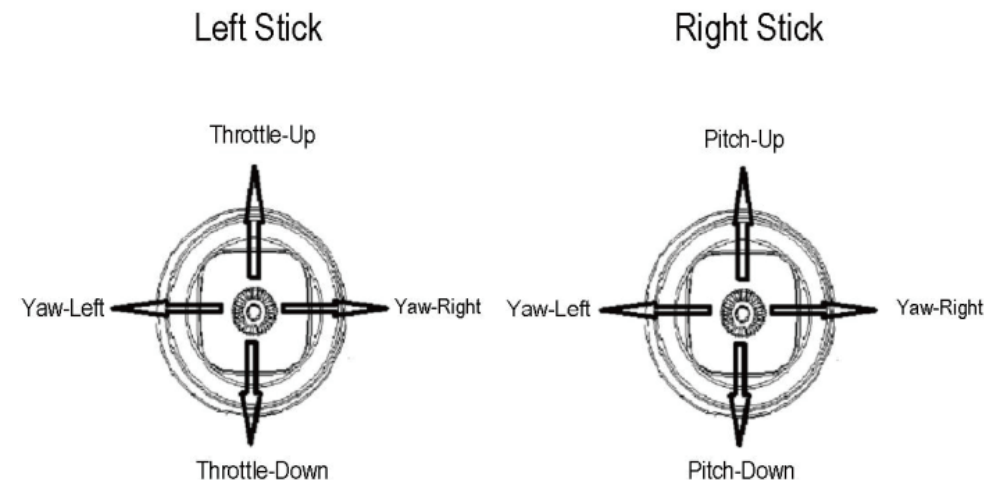
It is OPENTX firmware, compatible the receiver with D8 protocol.

- 1) **SWA:** Unlock switch, switch on left for lock, switch on right for unlock.
- 2) **SWB:** OSD switch, turn on to “OFF”, no flight data will display.
- 3) **SWC:** Flight mode, left--- self-stabilization, middle--- half steady, right--- manual
- 4) **SWD:** Beeper, when press the button, the beeper on the drone will with sound “DiDiDi” for seeking the drone while crash.

Status indicator: Green constantly lighting means binding successfully for the RC with drone; Blink green quickly means no signal; Blinks red slowly means low battery.

Buzzer: Prompt tone will appear once bind successfully. It will alarm if low battery or throttle stick do not stay on the lowest when starting up.

Stick: Default setting is Mode 2 (Left throttle)



Starting up: Short press power button, red light always on, then long press power button for 3 seconds, blue light blinks and indicator light turn green means starting up.

Code matching/Bind: Code matching/Bind already for remote control with receiver before leaving factory. If need to re-bind, please follow below,

- 1) It will get into bind once the drone power on for 6 seconds.
- 2) Enter the menu of RC, select “Setup” of seventh, select “Bind” into code matching.
- 3) Power off the drone once finished, then power on again.
- 4) Prompt tone of RC will appear once power on the drone. Green indicator light always on means bind successfully, blinks green quickly means bind unsuccessfully.

Power off: Long press power button, it will power off once three different color blink alternately.

Battery charge: Please charge the battery if it is your first time to use or long time no use.

Charge status: Blinks green quickly means charging; Green constantly lighting means fully charged.

Low battery status: If low battery, red light of power button will flash slowly and alarm, then should charge to continue.

VTX Setting


It need to choose the right frequency to display on FPV device (FPV goggle or FPV display), two important data for the VTX: frequency band(FR) and Channel(CH).

1) Stick operation option

Throttle neutral, direction on the left; Roll neutral, pitch up   : Enter OSD main menu

Roll neutral, pitch up   : Upward selection

Roll neutral, pitch down   : Downward selection

Pitch neutral, roll on the left   : Leftward selection

Pitch neutral, roll on the right   : Confirm (rightward selection)

Throttle neutral, direction on the left(right)     : Exit

2) Frequency and power setting

Enter OSD main menu, select "FEATURES", and select "VTX SA" to VTX setting menu. You can check the current frequency and power.(Factory default: A1 5865M 25MW)

BAND: Optional change frequency band (ABEFR)

CHAN: Optional change frequency point (12345678)

POWER: Optional change power (25-200MW)

After finished setting, select "SET" to save, then back to OSD main menu to select "EXIT" to exit the OSD page.

Remote control can adjust all setting via OSD (like PID, OSD data etc)

Code Table

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

Operation info of Charger

1) Info of battery cable

2Pin cable is power output. 4Pin cable is for charge.

Power cable: plug-in drone's power socket

Charge cable: for 11.1V charger port

2) Introduction of Charger

Red light is for power indicator. Green light is for battery charging indicator.

a. Red light: Constantly lighting means power working properly

b. Green light: Blinks slowly means charging;

Constantly lighting means fully charged.

Charge operation: plug the power adapter into charger round hole first, then connect with power socket, red constantly lighting means charger working properly. Then plug the battery balance head with charge port with 11.1V mark (on the right side of charger), and green light blinks. Once finished charge, it will be green constantly lighting.

Lipo

1. Please do not open, take apart or repair the battery by yourself.
2. Please do not press, throw or impale the battery.
3. Please do not use the battery in high or low temperature environment.
4. Please stay away from the heat, and do not charge the battery immediately after using.
5. Please do not charge the battery with other type chargers.
6. Please stop using if the battery damaged.
7. Please store the battery separately when no use. If long time no use, please ensure discharge one time every 1-2 months to protect the battery.
8. Please store the battery in a cool dry surrounding.

Disclaimer

Thanks for purchasing this product. Please read this disclaimer and manual carefully before using, know about your legal rights, responsibilities and safety instruction. Otherwise, it will cause property loss, safety accident and personal injury. Once use this product, it is deemed that you already understood, approved and accepted all contents of this manual, please use this product strictly according to this manual. We have no responsibility of any damage which caused by improper usage, installation, modification(including unspecified parts like motor, esc, propeller etc).

Without prior notice if any updated of this manual. If you have any unsolvable problem during using, please contact our agents or our customer service for help.