TYPHOON H3

CO-ENGINEERED WITH Leica

USER MANUAL V1.0

YUNEEC

CONTENTS

Product Profile

Introduction

The TYPHOON H3 provides high-end image quality combined with the reliability and automated flight modes every photo and videographer desires. The TYPHOON H3 hexacopter is equipped with a 1" camera with 4K video resolution, a PX4-based flight controller, flight modes from Follow Me and Point of Interest to Curve Cable Cam. Relevant core areas of the TYPHOON H3 have been completely redesigned to provide more reliability and power for your everyday needs.

Specifications

Aircraft	
Product Name	APV System
Model	TYPHOON H3
Max Takeoff Weight	70.55oz (2000g)
Dimensions	21.9x19.1x12.0in (556x485x305mm)
Diagonal Size (Propellers Excluded)	20.4in (520mm) (Six Rotors)
Propeller Size	9.8in (248mm)
Propeller Pitch	5.7in (145mm)
Max Ascent Speed	8.9mph (4m/s)
Max Descent Speed	5.6mph (2.5m/s)
Max Speed	Sport: 44.7mph (72km/h), Angle: 31.1mph (50km/s)
Max Tilt Angle	Sport mode: 35°, Angle: 35°
Max Angular Speed	150°/s
Max Service Ceiling Above Sea Level	16404ft (5000m) (Tested)
Max Flight Time	Approx. 25min
Operating Temperature Range	32° to 104°F (0° to 40°C)
Satellite Positioning Systems	GPS
Operating Environment	Regular Flight Condition, No Transparent Obstacles
Sensor	Ultrasonic Sensor
Flight Speed	8.9mph (4m/s)
Motor Type	Permanent Magnet Brushless DC motor
Motor KV	730
Motor Max Watt	180W (Rated Power)
Motor Max Speed	7500rpm

ESC Power (max)	25A
ESC Voltage	12V~20V

Flight Battery

Type	LIPO 4S
Capacity	5250mAh
Voltage	15.2V
Energy	79.8Wh
Net Weight	20.5oz (580g)
Charger	SC4000-4H
Charging Time	Approx. 1.5h-2h
Max Charging Current	5A
Max Discharging Rate	50A

ST16S Ground Station

Product Name	Personal Ground Station
Model	ST16S
Operating System	Android™
Number of Channels	16
Control Transmission Distance/Range	Up to 1 mile (1.6Km) (Optimum condition)
Video Link Frequency Band	5.8GHz WiFi
Video Transmission Distance/Range(Optimum Conditions)	FCC Compliance: up to 1.2mile (2km) CE Compliance: up to 1.2mile (2km)
LCD Screen Size	7in
Built-in Battery Voltage/Capacity	3.6V 8700mAh 31.32Wh Li-ion
Max Charge Current	1A

ION L1 PRO Gimbal Camera

Product Name	3-Axis Gimbal Camera
Model	ION L1 PRO
General	
Dimensions	5.1x3.1x5.1in (129x80x130mm)

Weight	13.2oz (375g)
Operating Temperature	32° to 104°F (0° to 40°C)
Storage Temperature	14° to 122°F (-10° to 50°C)
SD Card Max/Min Capacity	128GB
Gimbal	
Stabilization	3-axis (tilt, roll, pan)
Angular Vibration Range	±0.02°
Mount	Detachable
Max Angular Velocity	Pitch: 30°/s, Yaw: 120°/s
Camera	
Controllable Range	Pitch: -110° to +30°
Sensor	1 in CMOS, Effective Pixels: 20MP
Lens	FOV 91° F/2.8, 23mm Format Equivalent
Photo Resolutions	3:2, 5472×3648 4:3, 4864×3648 16:9, 5472×3080
Video Resolutions	H.264 4096×2160 (24/25/30/48/50/60fps) 3840×2160 (24/25/30/48/50/60fps) 2720×1530 (24/25/30/48/50/60fps) 1920×1080 (24/25/30/48/50/60/120fps) 1280x720 (24/25/30/48/50/60/120fps) H.265 4096×2160 (24/25/30fps) 3840×2160 (24/25/30fps) 2720×1530 (24/25/30/48/50/60fps) 1920×1080 (24/25/30/48/50/60/120fps) 1280x720 (24/25/30/48/50/60/120fps)
Photo Formats	JPEG, DNG, JPEG＋DNG
Video Formats	MP4
Photography Modes	Single, Burst (3/5/7), Interval (2s, 3s, 5s, 7s, 10s, 15s, 20s, 30s, 60s), AEB(±0.3, ±0.7), Panorama(Horizon,Sphere)
Exposure Mode	Auto Exposure, Manual Exposure,ISO Priority, Shutter Priority
Exposure Compensation	±3.0
ISO Range	100 – 6400
Electronic Shutter Speed	4 – 1/8000s
White Balance	Auto,Lock,Daylight,Cloudy,Shade, Incandescent, Sunrise,Custom(2000-12000K)
Metering Mode	Spot Metering, Center Metering, Average Metering

Overview
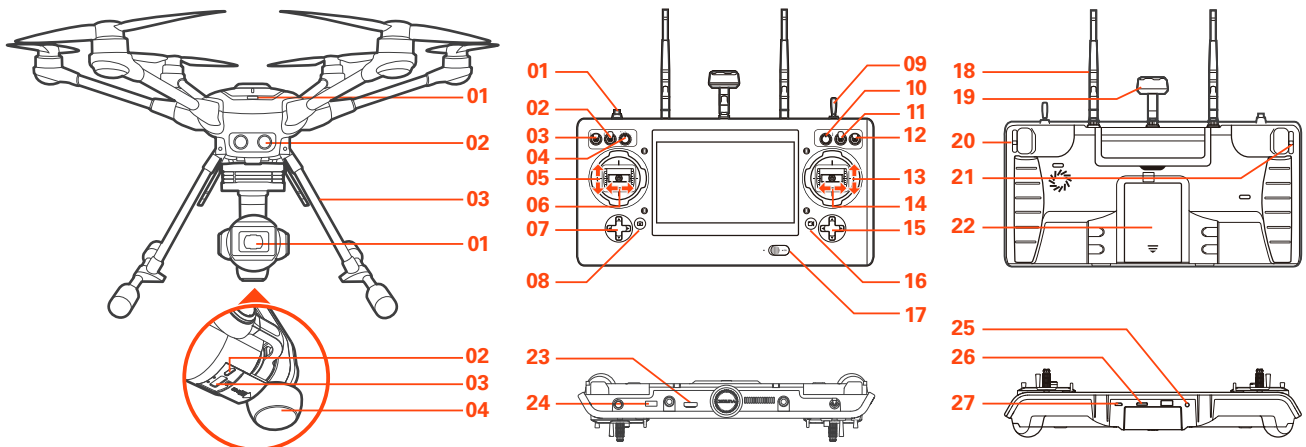
TYPHOON H3

01 Power Switch
02 Sonar
03 Retractable Landing Gear

ST16S

01 Start/Stop Motor Button
02 Gimbal Pan Mode Switch
(Follow Mode/Follow Pan
Controllable Mode/Global Mode)
03 Gimbal Tilt Mode Switch
(Angle Mode/Velocity Mode)
04 Gimbal Pan Control Knob
05 Throttle/Altitude Control (Mode 2)
Elevator/Pitch Control (Mode 1)
06 Rudder/Yaw Control
(Mode 2 and Mode 1)
07 Left Trim(UP & Down EV value trim/
Left & Right digital Zoom)
08 Take Still Photo Button
09 Landing Gear Switch
10 Custom Setting Button
11 Obstacle Avoidance Switch

ION L1 PRO

01 Camera Lens
02 USB Port
03 Micro SD Card Slot
04 5GHz Antenna

12 Flight Mode Selection Switch
13 Elevator/Pitch Control (Mode2)/
Throttle/Altitude Control (Mode 1)
14 Aileron/Roll Control
(Mode 2 and Mode 1)
15 Right Trim (Cruise Speed Trim)
16 Start/Stop Video Recording Button
17 Power Switch
18 2.4GHz Antenna
19 5GHz Antenna
20 Proportional Control Rate Slider
21 Gimbal Tilt Control Slider
22 Battery
23 HDMI
24 USB Port
25 Headset Port
26 Micro SD Slot
27 Micro USB Port
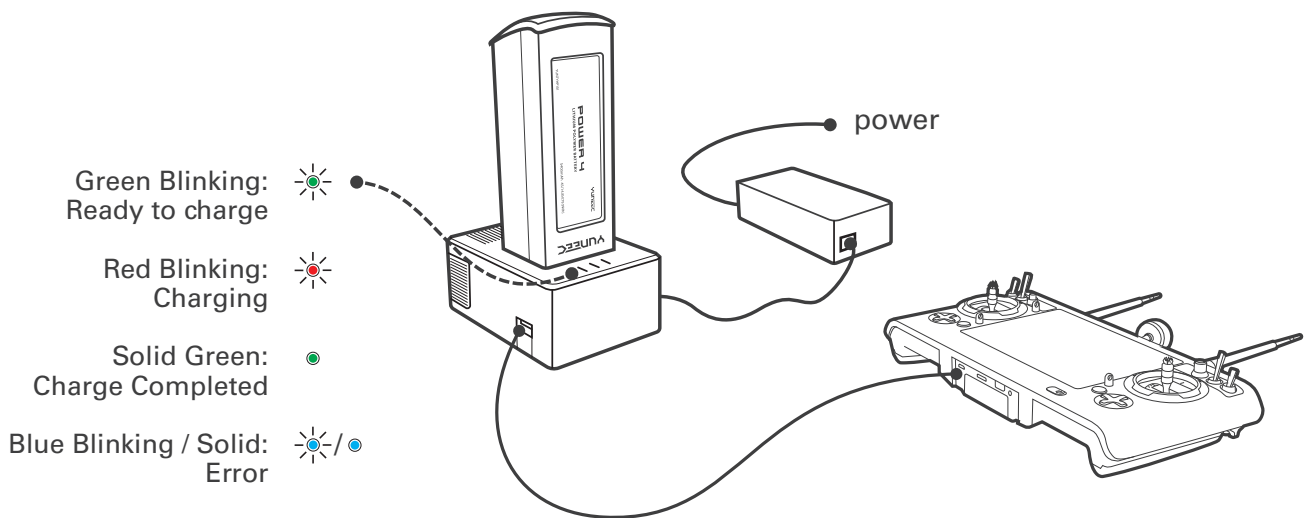
Aircraft

Charging

Power the desktop charger from a 100-240V AC outlet using the AC adapter/power supply, or from a 12V-17.4V DC accessory socket/cigarette lighter receptacle in an automobile using the included adapter. Plug the aircraft battery into the charger port as illustrated.

A green blinking LED indicates the charger is powered on and ready to charge, and a red blinking LED indicates the battery is charging. It will take approximately 2.5 hours to charge a fully discharged (not over-discharged) battery. A solid green LED indicates the battery is fully charged. Alternating blinking and solid blue LED lights indicates Error.

Be certain to never completely drain a TYPHOON H3 battery. Batteries should be stored at 30-50% charge, and never stored at full charge.
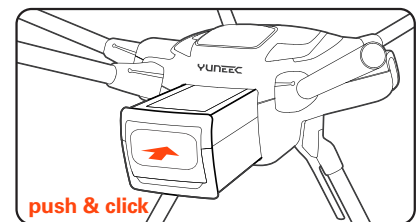
WARNING: All instructions and warnings must be followed exactly to prevent property damage and/or serious injury as the mishandling of Li-ion/LiPo batteries can result in a fire.

NOTICE: Yuneec offers a dual port quick charger (DY5, YUNDY3) that will charge your batteries faster, and includes a storage function to either charge or discharge your battery to the safe storage percentage. To purchase it, please visit www.yuneec.com

power

Green Blinking:
Ready to charge

Red Blinking:
Charging

Solid Green:
Charge Completed

Blue Blinking / Solid:
Error

Installing the Battery

Push the battery into the battery compartment until hearing a 'click'.


push & click

Unfolding the Arms

Once the TYPHOON H3 has been removed from the storage/transport case, lock the arms in place. Gently lift the arms until a click is heard.

To unlock the arms, press the PRESS button on the base of the arms. On new systems, it may be necessary to release the arms while lifting up on the bottom of the motor with one hand and pressing the Press button with the other. Doing so relieves some of the pressure on the locking system.

NOTICE: Do not depress the PRESS button on the arms while unfolding and locking them into place; doing so may cause the arms to not engage the locking system.

unfold & click
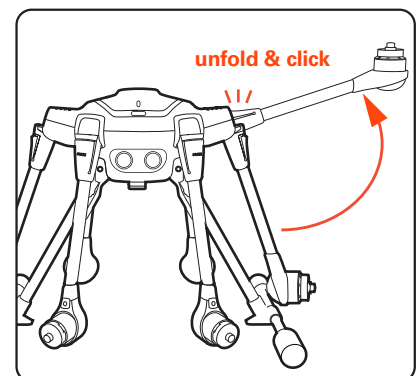
Compass Calibration

CAUTION: Do not calibrate the compass in parking garages, close to buildings or near roads with a metal core. For optimum performance, only calibrate TYPHOON H3 in open spaces, far away from power lines and other metal structures or concrete buildings.
NOTICE: Be sure to perform the compass calibration procedure at least 11 feet away from the nearest cell phone or other electronic devices to ensure proper calibration.

STEP 1: Power on the ST16S Ground Station first and then the aircraft, and make sure they are connected correctly. If they are not connected correctly, the telemetry data will not display on the screen.
STEP 2: Tap the System icon[⚙] on the top right corner on the ST16S, and then enter the aircraft setting interface by tapping [冇冇], select the Compass Calibration.

STEP 3: Lift the TYPHOON H3 airframe straight and level. When the LEDs on two motors start to blink green as illustrated, turn it forward as shown by the red arrow until a tone is heard and the two LEDs turn off.
STEP 4: Repeat this procedure for all six positions.
If the calibration has been successful, the LEDs under six motor arms will turn green ,also the ST-16S will pop-up ″ Compass calibration completed″ on the screen.
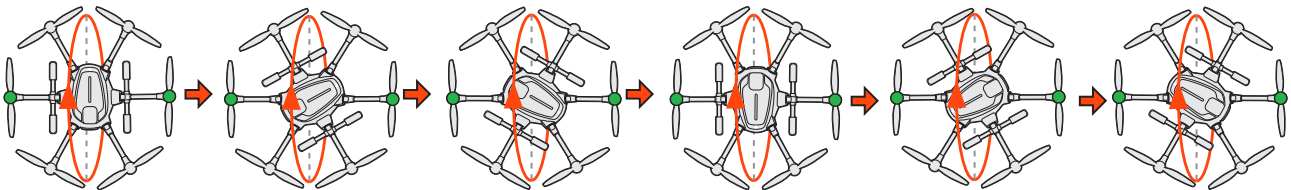
IMPORTANT: If the calibration has failed, all LED Status Indicators will blink red rapidly and the controller will pop-up a "Compass calibration failed "on the screen, you must repeat the calibration process. If the calibration continues to fail, either the site of calibration is unsuitable or the compass is defective. Refer to YUNEEC service center.

Installing the Propellers

Each arm of the TYPHOON H3 has a letter A or letter B labeled on it. "A" arms have black center buttons; "B" arms have white center buttons.
Each propeller has an A or B label etched into the blade. "A" propellers cannot be attached to "B" motors, nor can "B" propeller be mounted to an "A" motor.
Match the A propellers with the A arms (black center button) and the B propellers with the B arms (white center button). Place the prop on the motor, lightly press down and while holding the motor and turn the prop a quarter turn. A click will be heard and the center button will slightly pop up. Hold the motor and test propeller security to assure a locked propeller.

Disassembling the propellers
Press and hold the center button into the mounting plate, and then rotate the propeller in the direction the arrow points to.
IMPORTANT NOTICE: Always check the props for damage and rough edges. Damaged props may cause in flight vibrations causing unwanted flight characteristics. Propellers should be replaced every 20 flight hours.
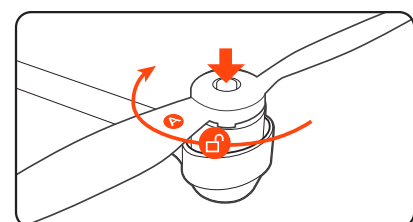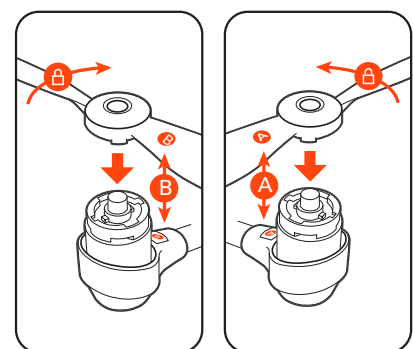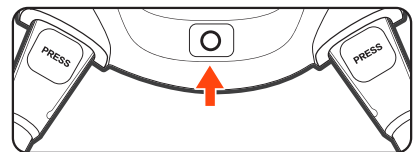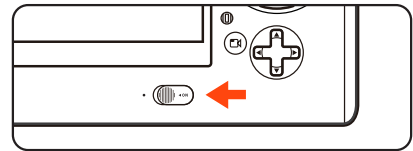
Placement before Takeoff

WARNING: Always operate the TYPHOON H3 in open areas (approximately 10000 square feet/930 square meters or more) that are free from people, vehicles, trees and other obstructions. Never fly near or above crowds, airports or buildings.

Never attempt to operate TYPHOON H3 nearby tall buildings/obstructions that do not offer a clear view of the sky (a minimum clearance of 100°).

Be sure to place the TYPHOON H3 on a level and stable surface before powering ON the TYPHOON H3 Aircraft and the ST16S Ground Station.

IMPORTENT NOTICE: STEP BACK APPROXIMATELY 26 FEET (8 METERS) BEHIND THE TYPHOON H3.

NOTICE: Pilots are recommended to take off the aircraft in Angle Mode. If the pilot takes off the aircraft in Smart Mode, make sure to keep the air craft 32.8ft (10m) away from the pilot.

NOTICE: For the best performance, the 5.8GHz patch antenna should be pointed to the aircraft.
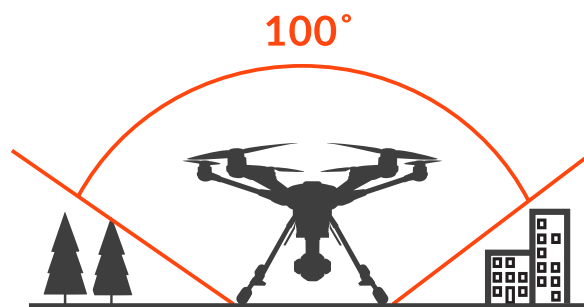
Powering ON/OFF

NOTICE: Please make sure all firmware is the latest version. Firmware and the user manual may be downloaded from web site: www.yuneec.com. The quick start guide does not replace the user manual. Turn on the ST16S, and then press the power button on TYPHOON H3. Release the button when the aircraft emits a rising tone. Power on the ST16S before powering on the UAS.

NOTICE: If the Screen pops up a initialization failed on the screen. The aircraft needs to be powered on again. To power off the aircraft, press and hold the power button until the aircraft emits a falling tune.

POWERING ON ST16S

POWERING ON TYPHOON H3
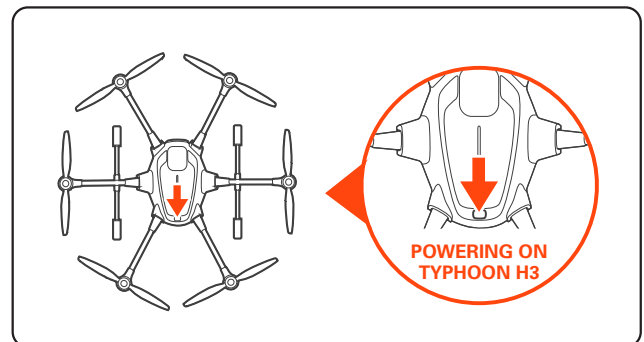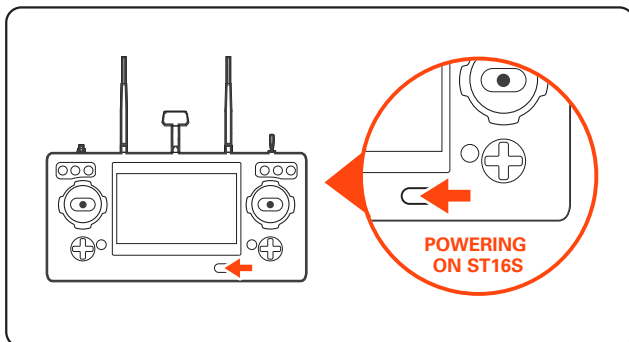
Binding

Binding the aircraft and ST16S

NOTICE: The aircraft and ST16S Ground Station are already bound out of factory. There is no need to bind them. Pilot can follow the steps below if binding is needed.

STEP 1: Power on the TYPHOON H3. After initialization completes, the two LEDs on rear arms will blink blue.

STEP 2: Lift the aircraft upside down until all LEDs blink yellow quickly, and then turn the aircraft back on straight and level ground.

STEP 3: Switch on the ST16S Ground Station. Wait a few seconds for all systems to be boot up.

STEP 4: Tap the settings icon [⚙] on the right top corner of the ST16S. Select the icon [📶] and slid to the "Drone" selection.

STEP 5: Tap the refresh icon [↻], and then tap OK to unbind RC link. Select the corresponding receiver listed in the column. Wait until a tip pops up to indicate the binding is completed.

Binding the aircraft and ION L1 PRO

Step 1.

Switch on the ST16S followed by the TYPHOON H3 aircraft.

Step 2.

Tap the[⚙]on the top right corner on the main interface of ST16S, then tap the[📶]on the switching interface.

Step 3.

Tap the serial number of the ION L1 PRO when the following window pops up. (If multiple Yuneec UAS are used,check the ID number on the side of each camera to assure correct camera selection/binding).

Step 4.

Using the password "1234567890", authorize the camera and tap "OK" to confirm.

NOTICE: If the connection process is delayed, close the pop up window and then repeat the above steps.
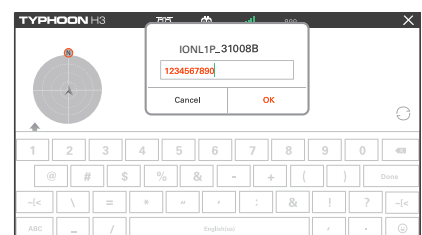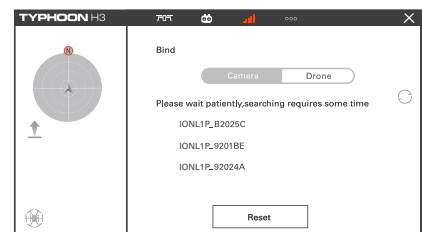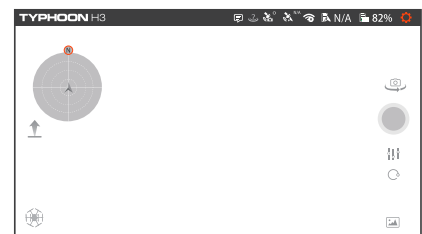
Takeoff

Option 1

Press and hold the START/STOP button until the aircraft boot up. Step back approximately 26 feet (8 meters) behind TYPHOON H3. When there is suitable GPS signal for both the ST16S Ground Station and TYPHOON H3, slowly raise the left-hand stick to slightly above the center position. The aircraft will take off and climb slowly (or raise the stick further until it does). Allow the stick to return to the center position when the aircraft reaches the desired altitude.
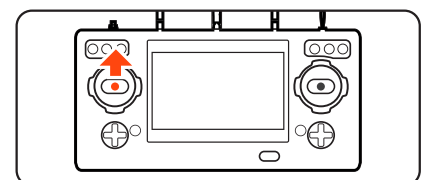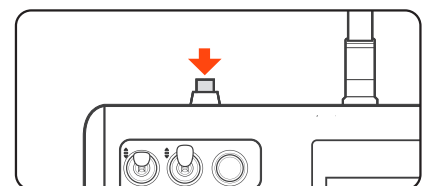
Option 2

Press the icon (⬆), then slide the sliding block, and the aircraft will take off. Then the icon (⬆) will turn Point-to-Land icon (⬇).
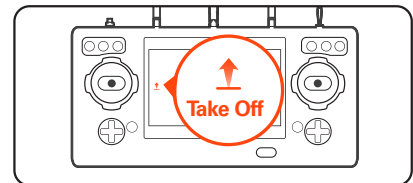
Retracting the Landing Gear
Raise the landing gear control using the landing gear control switch on the ST16S.

Flight Modes

SPORT MODE
ANGLE MODE
RTL MODE
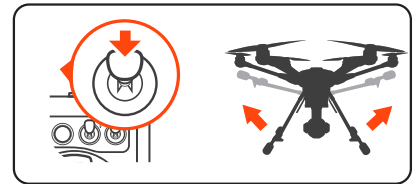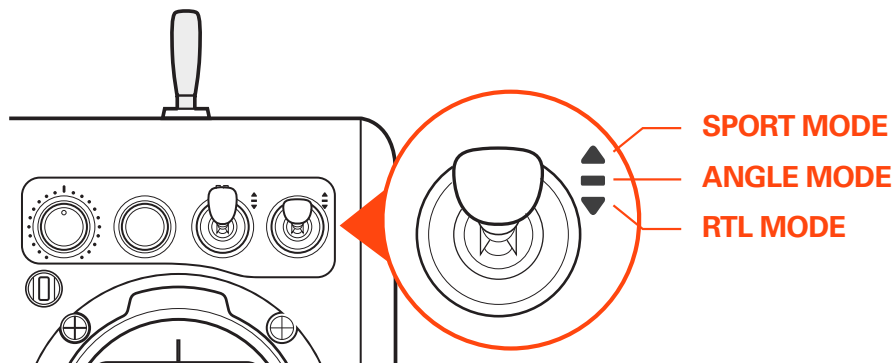
Angle Mode

If the Flight Mode selection switch is in the center position, then the aircraft is in Angle Mode. In this mode the aircraft moves in line with the joystick, in the direction in which the nose is pointed. So, if you move the right stick to the left, the TYPHOON H3 will tilt to the left and thus move to the left. That is assuming that the nose is pointing away from you. If the nose is pointing towards you, the aircraft will move to the right from your point of view.
NOTICE: TYPHOON H3 will hold its position automatically when GPS is on (if there is sufficient GPS signal) and it will retain the altitude level if the left stick is in the middle position.
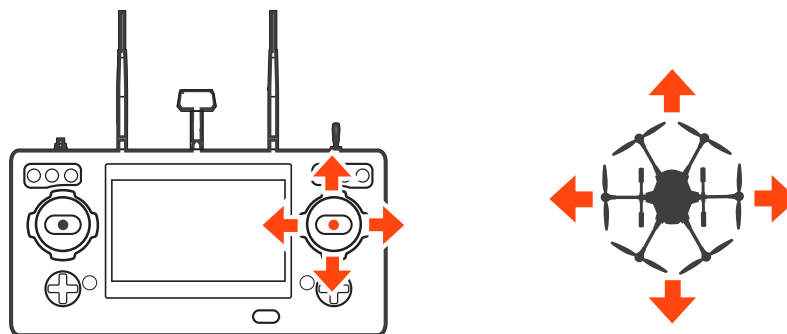
Exp curve function in Angle mode

This function is used to adjust the Operational Curve of joystick function (throttle, aileron, elevator and rudder) in Angle flight mode, so as to achieve the most user-friendly airplane control feel.

1.Click the settings button[⚙]at the top right to find "Flight Control Settings" in the aircraft options and open this menu.

TYPHOON H3

Flight Manual Mode

Compass Calibration   >

Flight Control Settings   >

Cruise Speed 7m/s   2m/s ——————— 10m/s

Other Settings
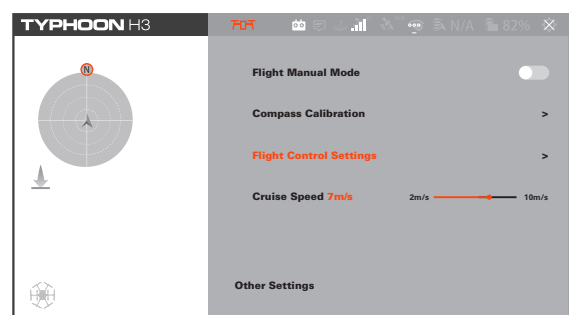
2.Interface introduction.

1）The curve on the left is the throttle Exp curve；

2）The middle curve is the direction Exp curve

3）The curve on the right is the Exp curve shared by aileron and elevator

4）The parameters of the current curve are marked in the rectangular lattice below each curve

5）Reset button
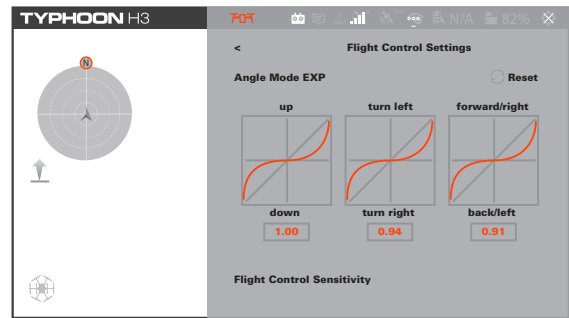
3.Setting introduction

Power on the aircraft and remote control before setting. Wait until the camera, aircraft and remote control are connected before using this function normally

1）For sliding setting, the three curves can be set by sliding directly with fingers. Press and hold the curve to be adjusted with fingers, then drag it up and down until the curve reaches the desired shape, and then release your hand to complete the setting.
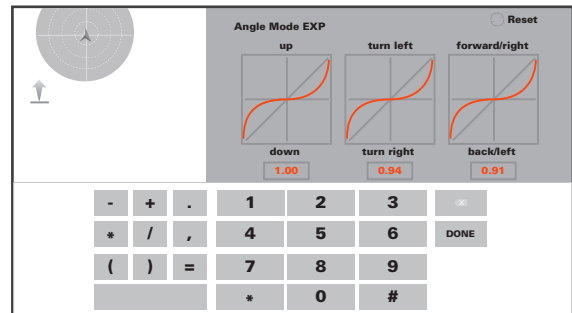
2）Parameter setting: parameters under the coordinate system can be directly set for three curves to achieve the setting purpose. Click the parameters under the curve coordinate system to be set, and then the screen will pop up the keyboard. The user can input parameters as required to accurately change the Exp curve. After setting, click Done to save the current setting.

NOTICE: the parameter settings range from 0 to 1.

3）Click Reset in the upper right corner and click Yes in the pop-up box to restore all three curves to the factory settings.
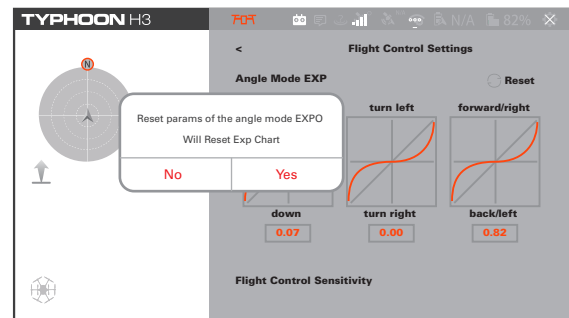
4）After setting, green √ will pop up on the screen, indicating that the setting is successful and effective, otherwise the setting will not take effect, please reset.

Flight Control Sensitivity function

This function can adjust the sensitivity of the control to achieve the most user-friendly aircraft handling feel

1.Click the settings button at the top right, find "flight control settings" in the aircraft options, open this menu, and then slide down to find the flight control sensitivity function

2.Interface introduction

1）The top slider sets the slider for attitude sensitivity；

2）The middle slider sets the slider for brake sensitivity；

3）The bottom slider sets the slider for Yaw sensitivity.

4）Reset button.
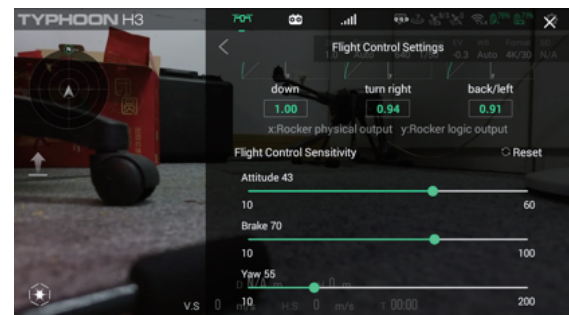
3.Setting introduction

Before setting, power on the aircraft and remote controller, and wait for the camera, aircraft and remote controller to be connected before use of this function.

1) If we slide the attitude sensitivity slider to the right, the attitude control of the aircraft will become more sensitive, and it will take shorter time for the aircraft to reach the desired attitude from hovering state; otherwise, if we slide to the left, the attitude control of the aircraft will become more sluggish, and it will take longer for the aircraft to reach the desired attitude from hovering state;
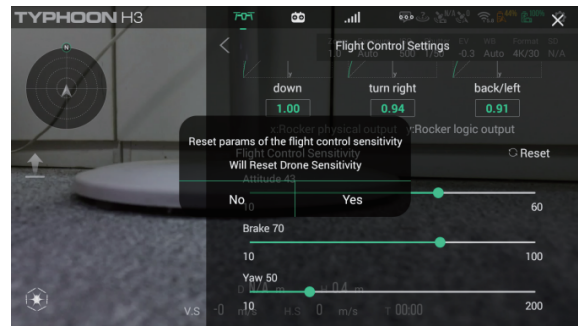
2) If you slide the brake sensitivity slider to the right, the aircraft's brake will become more sensitive. It will take a shorter time for the aircraft to recover from the motion state to the hovering state, and the stopping distance will also be shorter. If you slide the slider to the left, the aircraft's brake will become more sluggish. It will take a longer time for the aircraft to recover from the motion state to the hovering state, and the stopping distance will also be longer;

3) When sliding the directional sensitivity slider to the right, the angular velocity of aircraft spin will be increased under the same rudder input compared with that before sliding; otherwise, when sliding the slider to the left, the angular velocity of aircraft spin will be decreased under the same rudder input compared with that before sliding;

4) Click Reset in the upper right corner and click Yes in the pop-up box to restore all three sliders to the factory settings;

5) After setting, green √ will pop up on the screen, indicating that the setting is successful and effective. Otherwise, the setting will not take effect. Please reset.

NOTICE: This setting should only be set for experienced pilots and on their own responsibility.

Cruise control function in angle mode

This function is used to assign a fixed speed to the aircraft in angle mode, so that the aircraft can automatically run at a stable speed, so as to obtain smooth and stable video.

1) Take off and hover after angle mode with GPS positioning;

2) Press the up key of the right trim, the aircraft will move forward at a slow and constant speed, and press again, the aircraft will move forward at a faster speed until the maximum value of the trim is reached;

3) Press the down key of the right trim, the aircraft will move backward at a slow speed and constant speed, and press again, the aircraft will fly backward at a faster speed until the maximum value of the trim is reached;

4) Press the right button of the right trim, and the aircraft will move right at a slow speed and constant speed. Press the right button again, and the aircraft will fly to the right at a faster speed until the maximum value of the trim is reached;

5) Press the left key of the right trim, the aircraft will move left at a slow speed and constant speed, and press again, the aircraft will fly left at a faster speed until the maximum value of the trim is reached.

NOTICE: when the aircraft is in constant speed cruise state, press the trim key in the opposite direction to slow down the aircraft. Press in the opposite direction repeatedly or continuously to slow down the aircraft to hover or even reverse direction constant speed cruise.

NOTICE: when the aircraft is in constant speed cruise state, it can exit from constant speed cruise mode by moving pitch and aileron joysticks substantially or switching flight mode
As shown in the figure, after the aircraft enters the constant speed cruise mode, the screen will display the trim display as shown in the figure below, indicating the trim amount.

RTL Mode

When the Flight Mode selection switch is in the bottom position, TYPHOON H3 will be in RTL (also known as Return to Land) Mode.
In RTL Mode the GPS connectivity will fly back TYPHOON H3 in a straight line in the direction of the pilots' current location, and automatically land within 13-26ft (4-8m) of the pilot. It can be helpful for pilots that lose orientation during flight. Simply activate RTL Mode until TYPHOON H3 automatically moves toward the home position, and once you've confirmed orientation switch back to Angle Mode. If the TYPHOON H3 ever loses the link with the ST16S Ground Station it will automatically enter RTL Mode.
NOTICE: If the signal of remote control is lost, TYPHOON H will automatically return to home point and hold its position (with a suitable GPS signal/lock) over the home position except for low battery.
Before switching to RTL Mode, press the Setting Calibration button on the right top corner of the screen. Select Aircraft setting icon 포터 and set a height as the desired altitude, and then RTL Mode can be activated. The flight path is as follows:
1. When the flight height of the aircraft is lower than the desired altitude, it will climb to the desired altitude vertically first, then fly back at the current height and descend vertically within 13-26ft (4-8m) of the pilot until it lands automatically.
2. When the flight height of the aircraft is higher than the desired altitude, it will fly back at the current height, and then descend vertically within 13-26ft (4-8m) of the pilot until it lands automatically.

PILOT   8m (HOME)   HORIZONTAL DISTANCE FROM PILOT
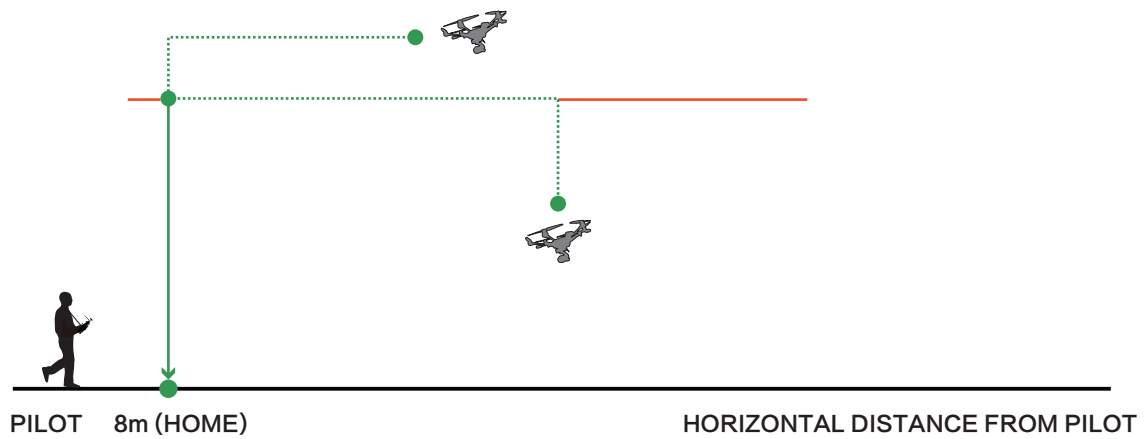
NOTICE: The default home altitude is 20m (65.6ft). But after the home altitude is reset, the latest data will be saved as the new default home altitude.

NOTICE: Users can control pitch, roll and yaw directions during descent.

NOTICE: After the Home Mode is activated, the aircraft will point its nose to the home point automatically. After the aircraft arrives to the home point and begins to descend, it will turn its tail pointing to the pilot.

CAUTION: You must be certain there is no obstacle in the RTL flight path otherwise TYPHOON H3 may come into contact with them and crash.

WARNING: RTL Mode only works when TYPHOON H3 has a suitable GPS signal/lock. If TYPHOON H3 loses GPS signal/lock it will switch to Angle (Pilot) Mode automatically.

Manual Mode

I. Power on the controller and drone waiting for the communication established.

II. Tap setting icon[⚙].

III. Switch on the Manual mode in the Drone Setting menu.

IV. Once the Manual mode was switched on there is a M shows on the Flight mode indicator , and the rear motor led will turn blue

NOTICE: When using Manual Mode you can take off before the drone was located by GPS system. But the drone can't hover by itself. The pilot must trim the joystick manually and continuously otherwise the drone will drift away.

NOTICE: Even if the Manual mode has been switched on , The Drone position system will still enabled in follow conditions.

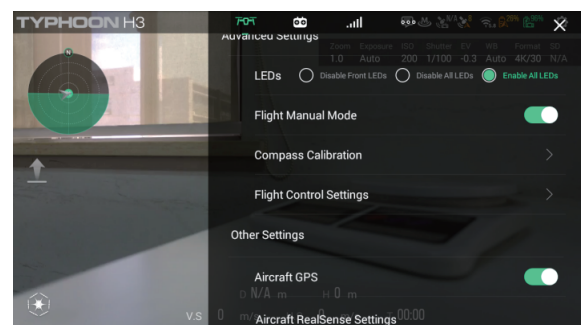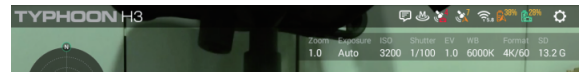1.The drone fly in to the No-fly zone , the drone will switch to Angle mode automatically to prevent you fly the drone into the No-fly zone.

2.Low battery , the drone will switch to Home mode or Auto Landing mode.

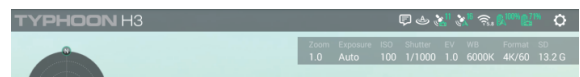**NOTICE:** The Typhoon H3 drifts away from the wind when the pilot is not steering. Crashes are also excluded from the guarantee.
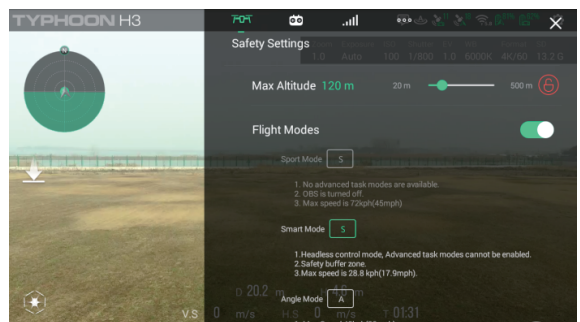
SMART MODE

I. Power on the controller and drone waiting for the communication established.

II. Waiting Drone and controller located by GPS , the GPS count must at least 10.

III. Tap setting icon[   ], and slide the Flight Modes Switch to right the Smart Mode icon will turn green.

17

IV. When the Distance between the Drone and pilot is longer than 8m ,Push the S4 switch to the front the drone will enter the Smart mode. There is a green S shows on the Flight mode indicator , and the rear motor led will also turn green.
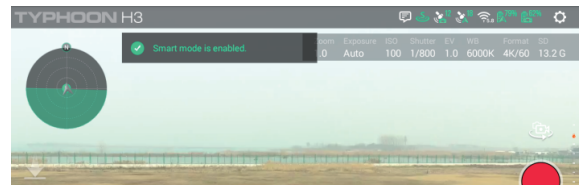
NOTICE: When the Smart mode is enabled the drone will enter the Headless flight control mode.

NOTICE: When the remote controller GPS count is less than 10, the drone will quit the Smart mode automatically. If need switch on smart mode again, please wait until the remote controller GPS count is more than 10 then slide the Flight mode switch to right again to enable the Smart mode.

Drone Settings

1. Turn on the aircraft and the remote control and wait for the two to be connected.

2. Click the settings button[⚙].

3. Select the aircraft setting switch to enter the aircraft setting page
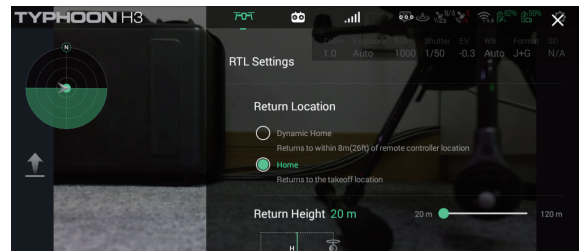
4. Page introduction

I. Return setting

1. Setting of return location
1）Dynamic Home: after selecting the dynamic return point, the aircraft will automatically return to the home point based on the position of the remote control when the return key is switched on;
2）Home: select home point to return, the aircraft will take the take-off point as the home point for automatic return.

2. Setup method
Click the circle in front of the dynamic home or home to set. After setting, the remote control screen will pop up green √, indicating that the setting is successful.

3. Return Height setting
Directly slide the return height setting slider to set the return height. Once the hand leaves the screen, the setting is completed. After the setting, the remote control screen will pop up a green √, indicating that the setting is successful.

II. Safety Setting

The maximum relative flight height of the aircraft can be set in the safety settings. Before unlocking, the height setting range is 20-120m; after unlocking, the height setting range is 20-500m.

1.Setup method

Directly slide the maximum relative flight height setting slider to set the maximum relative flight height. Once the hand leaves the screen, the setting is completed. After the setting, the remote control screen will pop up a green √, indicating the setting is successful.

2.Unlocking method

Click the lock icon on the right, and then click the Agree button in the pop-up box to unlock. If you do not agree with the exemption prompt in the pop-up box, please click the disagree button, and the height limit of the aircraft will not be unlocked. After unlocking, the lock icon turns to red open, indicating that the height limit unlocking is successful, and the height limit range is expanded to 20-500m.

NOTICE: if you need to lock again, click the red unlock icon to adjust the maximum height to 120m
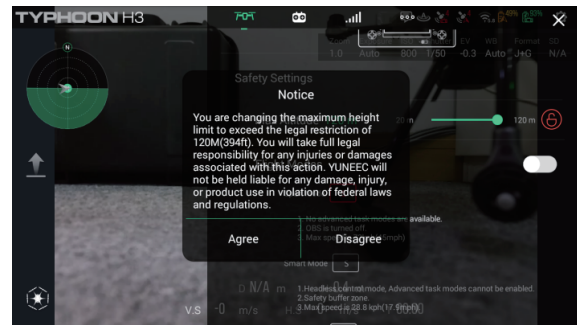
III. Advanced settings

LED lamp

Through the setting of LED light, the user can turn on the LED light on the aircraft arm, especially in the use scene of night shooting, which can effectively avoid the influence of the LED light on the aerial photography effect

The user can set the on / off of the aircraft arm light by clicking the circle in front of the disable front light, disable all lights and enable all lights.

IV. Other settings

1. Aircraft GPS

After sliding, the GPS switch can be turned off. The aircraft GPS will not intervene in the aircraft flight. The aircraft control mode is the same as that in angle mode. You need to see the nose direction to operate correctly. Otherwise, there will be the risk of wrong rudder, flying loss and collision with foreign matters. After turning off the GPS switch, any functions and modes that need to use GPS will not operate. Please be careful to fly, usually only in GPS module Or when the geomagnetic module is strongly interfered and the aircraft is out of control, it will be considered to turn off the GPS and drive the UAV manually. Generally, do not turn off the GPS switch.

2. Aircraft realsense settings

Click the circle in front of the option to select whether the realsense module is installed. By default, the realsense module is not installed in the factory of the thypoon H3 aircraft. Please keep the option to Realsense Disable in the setting menu.

Task Mode

Tap the icon ⊕ on the left bottom of the screen, and then you will enter task modes: CCC, Follow me, Journey, Orbit, Team Mode.

NOTICE: When the voltage of the aircraft is lower than 30%, the TYPHOON H3 will exit TASK mode and the functions under the TASK mode won't be activated.

CCC (Curve Cable Cam)

Curve Cable Cam allows you to create an invisible route for TYPHOON H3 to fly along. Once the pilot sets the points, TYPHOON H3 will fly the set coordinates while remembering the heading.
NOTICE: The direct distance between every two waypoint should be more than 26 feet (8 meters).
Tap the CCC to enter the Curve Cable Cam function. Choose Set waypoints.

(+) : Tap '+' to create a new point recording the current flying position.

(−) : Tap'-' to delete the last point created during the flight.

NEXT : Tap the NEXT icon and Execute CCC interface will be entered.
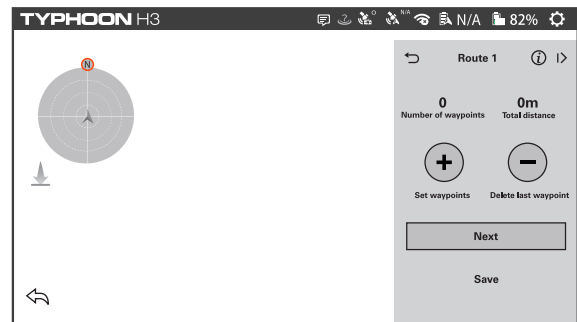
Save: Tap Save and the current route will be saved. The name of waypoints can be defined by the pilot.
Start: Tap Start, TYPHOON H3 will fly back to waypoint 1 automatically.
[❙❙]: When the pilot taps the [❙❙], the icon will become [▶]and the CCC function will be paused. When tapping it again, the [▶] will become [❙❙], the copter will continue the CCC function. The pilot can exit the function by tapping[⊕]icon or switching flight mode.

NOTICE: when executing the CCC function, switching the gimbal Pan mode to global mode to control the gimbal pan by drone roll joystick and gimbal tilt by drone pitch joystick.
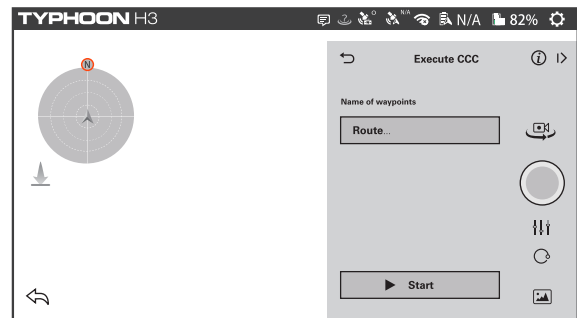
Follow Me

The Follow Me function allows TYPHOON H3 to follow the pilot, adjusting its location to the location of the ST16S Ground Station. This function is enabled when ST16S's GPS positioning has been acquired, and TYPHOON H3 is using shared GPS signal with the ST16S Ground Station.
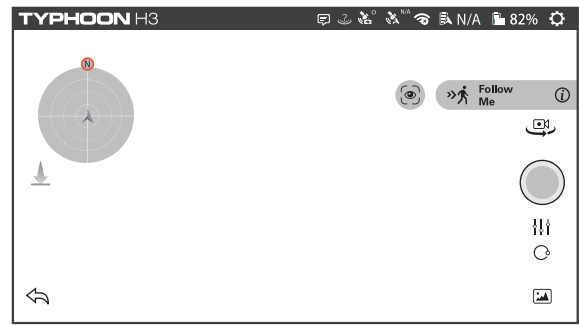
Watch me

Watch me enables the camera to keep tracking the remote controller no matter where and how it moves as the camera can automatically tilt its angle according to the controller.
Press the Icon[👁], and it will turn green[👁]. Follow me displayed in the right bar will display 'Watch Me'.

NOTICE: When the Watch/Follow mode is enabled the drone will enter the Headless flight control mode. you need towards the drone all the time to get the correct direction control.

NOTICE: When executing Watch Me function, we suggest you switch the gimbal tilt mode to angle mode and gimbal pan mode to follow mode, then position the gimbal tilt slider and gimbal pan knob to the centre position,to make sure the pilot are in the centre of the video, or you can use the gimbal tilt slider and gimbal pan knob as a trim of your gimbal angle.
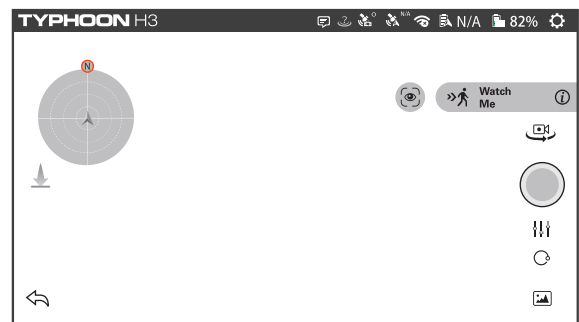
Journey

Journey function enables TYPHOON H3 to capture the perfect aerial selfie or any scenic shot much easier and faster. Depending on the pilot's desired setting, TYPHOON H3 will go up, out and return.
Tap Journey to enter the journey function.
Distance can be adjusted manually between 32.8ft and 295.3ft, and speed between 3.3 ft/s and 32.8 ft/s.
📹 : Taking photos or recording video can be switched by tapping [📷] and [📹] icons.
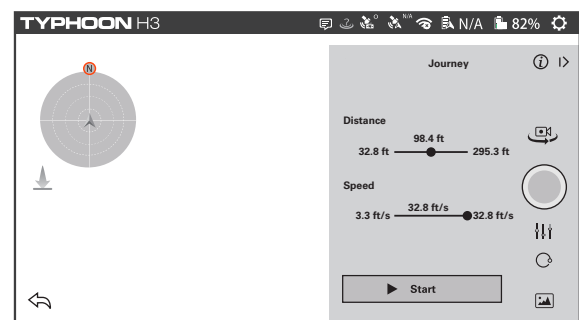
POI

Point of Interest allows the pilot to select a subject they would like to orbit and have TYPHOON H3 orbit that subject autonomously.
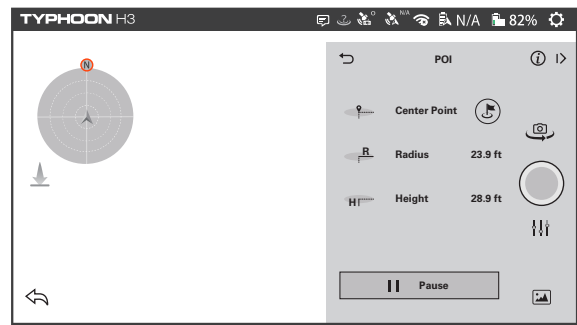
Tap the [🚩] icon to set a center point and set an ideal radius by controlling the joystick. The height and radius data will be calculated automatically and indicated. Press the Start icon and push the Aileron/Roll control stick, the aircraft will begin to execute POI. The Start icon will become the Pause icon. The pilot can pause the the task by tapping it.

Orbit

When Orbit Me is enabled, TYPHOON H3 flies a circular path around the pilot. Press ORBIT to enter the Orbit me function.
The center point will be the position where the ST16S is by default. Set an ideal radius by controlling the joystick. The height and radius data will be calculated automatically and indicated. Press the Start icon and push the Aileron/Roll control stick, the aircraft will begin to execute POI. The Start icon will become Pause icon. The pilot can pause the the task by tapping it.

NOTICE: When executing the Orbit function, we suggest you switch the gimbal tilt mode to angle mode and gimbal pan mode to follow mode, then position the gimbal tilt slider and gimbal pan knob to the centre position,to make sure the pilot are in the centre of the video, or you can use the gimbal tilt slider and gimbal pan knob as a trim of your gimbal angle.

NOTICE: When executing the Orbit/POI function the pilot can change the flight altitude，speed，and radius by using the drone throttle,roll,and pitch joysticks.

Team mode

I. Power on the controller and drone waiting for the communication established.

II. Power on a new controller , wait until it finishes boot up

III. Open the Advanced mode menu, and tap the Team mode on both master and slave remote screen.

IV. Slide the switch from the mast to slave on the slave remote screen , and tap the ID of the master remote for binding.

NOTICE: Make sure that the slave remote hasn't connected to any WiFi before switching to slave remote
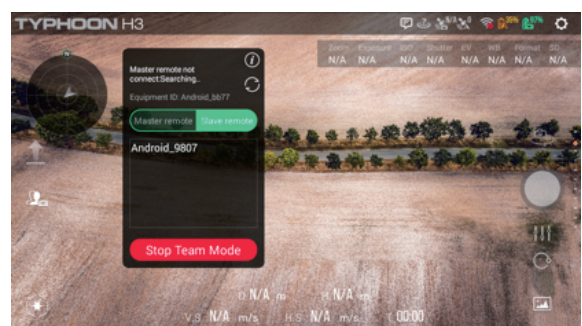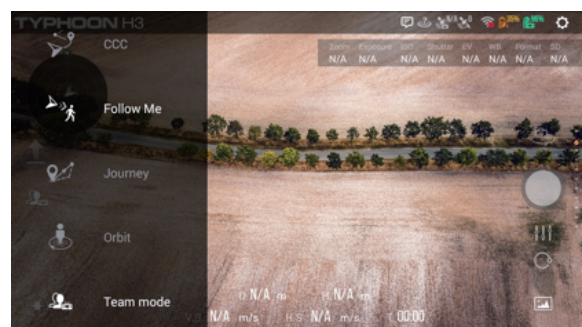
V. If it's the first time you bind the slave remote to the mast remote , please tap the Accept button on the mast remote screen.
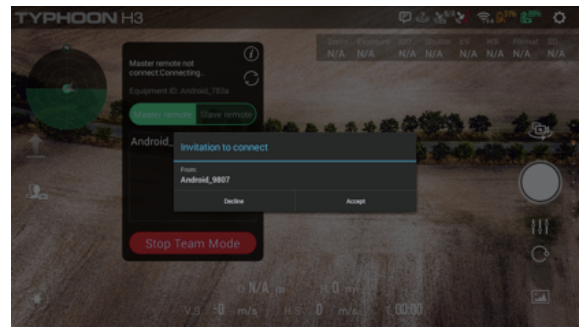
VI. Bind finished

Master remote
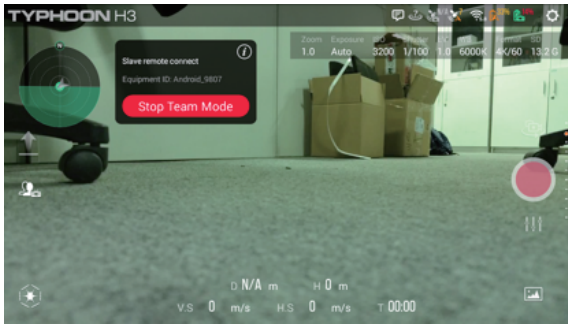
Slave remote
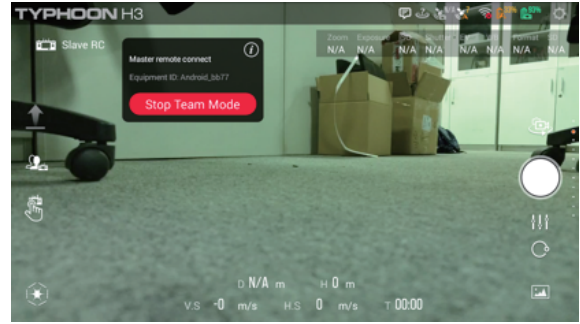
NOTICE: Tap Stop Team Mode Button you can exit team mode ,no matter on the Master remote or the Slave remote

VII. Operation Method
1. Master remote can only control the drone , can't control the gimbal and camera.
2. Tap the gimbal operation method select button , you can select the gimbal operation mode
2.1Same with the single remote mode
2.2 Joystick control mode, drone pitch joystick controls the gimbal tilt; drone roll joystick controls gimbal pan direction.

Landing

There are three ways to land the aircraft:
1. Position the TYPHOON H3 above the area where you would like to land. Lower down the retract-able landing gear, and then slowly lower the left-hand stick to below the center position. TYPHOON H3 will descend slowly and land.
2. Activate Home Mode and TYPHOON H3 will automatically fly itself back to the home point and land.
3. Press the icon (🛬), then slide the sliding block, and the aircraft will land automatically.
WARNING: Always land as soon as possible after the first low level voltage battery warning, or land immediately after the second level low voltage battery warning by the Motor LED Status Indicators flashing rapidly.

After Landing

ALWAYS turn off TYPHOON H3 BEFORE turning off the ST16S Ground Station. Then remove the battery from TYPHOON H3 and allow it to cool to ambient/room temperature before recharging.
NOTICE: If the signal of the remote control is lost, TYPHOON H3 will automatically return to the home point and hold its position (with a suitable GPS signal/lock) over the home position (except for low battery).

Remote Controller

ST16S Charging

Charge the ST16S battery by using supplied USB cable and inserting it into the Micro USB port on the charger. It will take approximately five hours to charge a fully discharged battery.
WARNING: Do not leave the battery in the charger after the battery is fully charged.

Flight Control

The default flight control is known as Mode 2. The left stick controls the aircraft's altitude and heading, while the right one controls its direction movements.
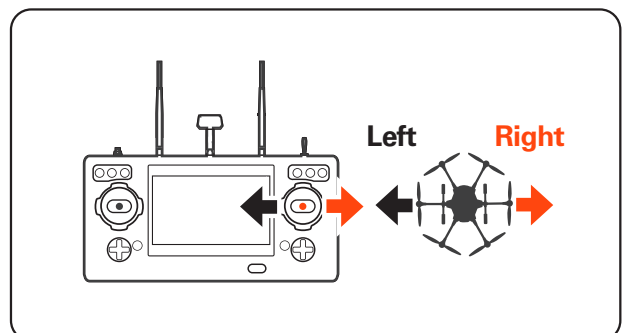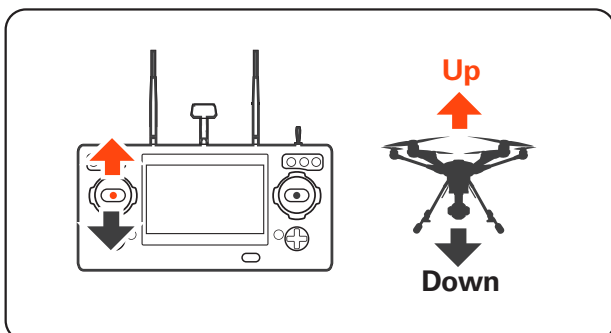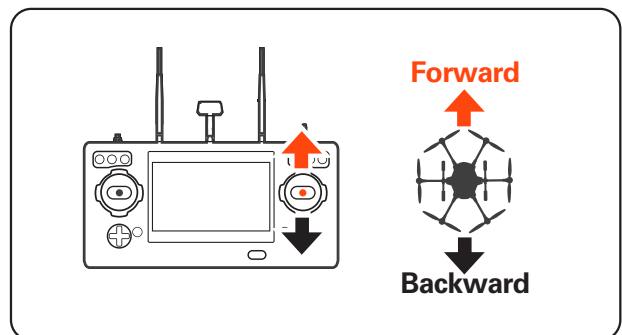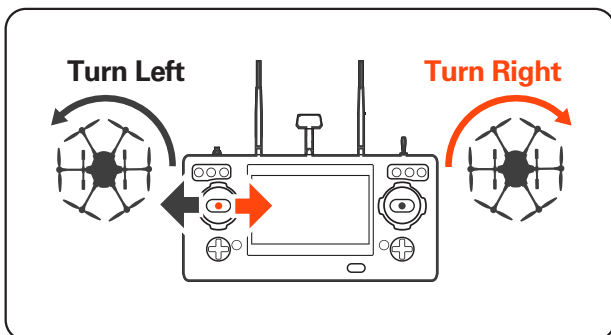
Proportional Control Rate Slider

The Proportional Control Rate Slider located on the right side of the ST16S Ground Station allows you to set the overall climb/descend and directional control rates.

Fly low and slow initially. Slow (Low Speed) position, the lowest control rates, is ideal for precision flight. High-speed (High Speed) position is used when transiting broad areas.
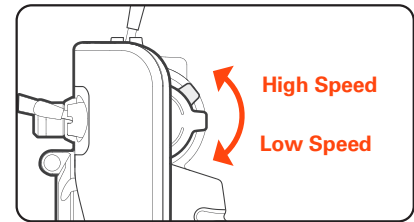
Remote Control Setting

1. Open the remote control and wait for the remote control to start.
2. Click the settings button.

3. Turn on the remote control setting switch to enter the remote control setting page

I.Mode switching
The factory default joystick mode is mode 2, also this user manual is described in the mode 2 joystick mode. The user can select the mode according to his own operation habits.

II.Hardware monitor function
Click the RC monitor key to open the remote control hardware monitor

Under normal circumstances, when you move the joysticks, knobs, switches on the remote control, or press the button, or trim, the monitor will have the corresponding changes to display the input of the channel currently being moved, so as to detect whether the hardware input of the remote control is normal.
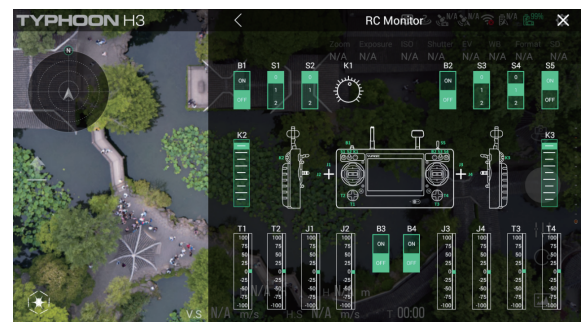
III. Aux (B2) key user custom function

Users can customize the function of the key

1. None, there will be no change in settings after pressing.

2. Photo mode: click the circle in front of photo mode to define the function of this key to the switch function of photo mode. After setting, when the camera is in the photographing mode, press the aux (B2) key once, the camera's photographing mode will switch to the photographing mode once according to the sequence of single, burst, interval, AEB and panoramic until all the photographing modes are switched, and then start again from the single;

3. Exposure mode, click the circle in front of exposure mode, and define the function key to the exposure mode switching function. After setting, press the aux (B2) key once, and the camera's exposure mode will switch one exposure mode in the order of auto, manual, ISO priority and shutter priority until all exposure modes are switched, and then start again automatically.

General settings

I. Turn on the aircraft and the remote control and wait for the two to be connected.
II. Click the settings button

III. Open the general setting switch to enter the general setting page

IV. Interface introduction

1. Units
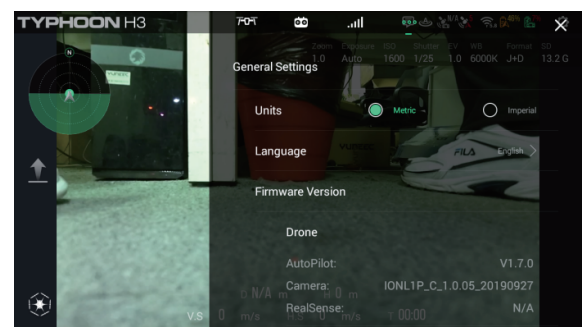Users can switch between metric and imperial units. Click the circle in front of metric or imperial to complete the setting of units

2. Language

This remote control equipment provides two languages to choose from: Simplified Chinese and English. Click the language menu, and then select simplified Chinese or English as required. After setting, the corresponding language will be marked with green √ to identify the currently selected language.
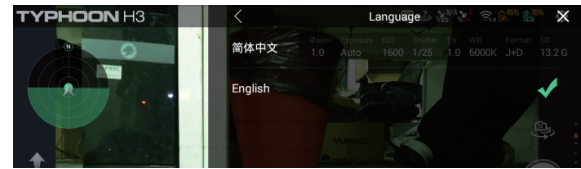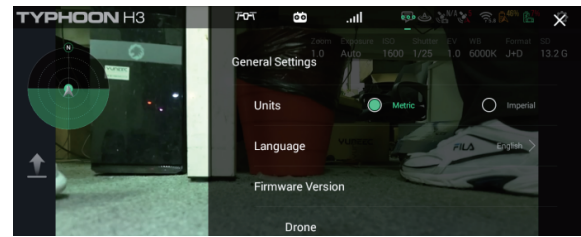
3. Firmware version

This menu can display the firmware versions of the remote control, autopilot, gimbal and camera in detail for the convenience of users.

Drone

1) AutoPilot firmware version

AutoPilot firmware is the firmwarefor the onboard flight controller, it determines the drone's react of your input and flight quality etc. It take over almost all items related to the flight. For your flight safety we suggest you use the latest version released by Yuneec officially.

2) Camera firmware version

The Camera firmware version showed on the screen displays the Mega firmware update package which you downloaded and used for the OTA update. The Mega firmware update package contains all firmware needed for the done update process (Autopilot, Gimbal and Camera). From that we can know what the firmware you are using indeed for better customer service. It also show the camera model, district type and built date for further check.

3) Realsense Version

The Typhoon H3 do not carry with the Realsense module so the firmware version should shows N/A.

Remote Controller

1) System

It shows the controller's operating system version.

2) App

The version for the FlightMode 2.0 App which used for control the drone in your remote directly.

4. Software update

For the remote control, autopilot, gimbal and camera firmware version remote wireless upgrade.

5. Product ID

The unique ID code when the product leaves the factory, which is used for product identification.

Camera Control

Gimbal Camera Tilt Control

There is a gimbal tilt mode switch on ST16S labeled "S1." When the switch is in up/middle position, the ION L1 PRO (or other gimbal system) gimbal camera is in Angle Mode. Use the slider (C) on the under-left side of the ST16S to set the tilt position of the gimbal camera. When the S1 is in the bottom position, the gimbal camera is in Velocity Mode. When the slider (C) is in the middle position, it means the velocity rate is 0 for the ION L1 PRO, disabling tilt. When the slider (C) is above the middle position, the ION L1 PRO will enable upward tilt/angle. When the slider (C) is below the middle position, the ION L1 PRO will enable downward tilt. The distance between the slider (C) and the middle position determines the tilt speed, the further distance, the faster the tilt speed.
CAUTION: Video recording must be stopped to take still photos. It will take approximately 1-2 seconds to capture a still photo and before another image may be taken.
CAUTION: Always stop recording video before powering down TYPHOON H3 to avoid loss of video data.
NOTICE: Only when in Velocity mode may the gimbal camera be tilted upwards 30°maximum.

Gimbal Camera Pan Control

The gimbal pan mode switch on ST16S (S2) enables the Follow Mode. When the switch position is UP, the gimbal camera is in Follow Mode. The pan control of the gimbal camera is disabled when the switch position is UP. The gimbal camera will adjust its pan direction per the aircraft's movements. When the switch is in the middle position, the gimbal camera is in Follow Pan Controllable Mode, the gimbal camera will adjust its pan direction per the aircraft's movements. Use the Pan Control Knob to set the pan position of the gimbal camera. When the switch position is down, the gimbal camera is in Global Mode. The pan direction of the gimbal camera will be fixed regardless of the aircraft's movements. Use the Pan Control Knob to set the pan position of the gimbal camera.

Button A = Taking pictures
Button B = Start/Stop Recording videos
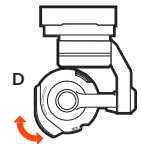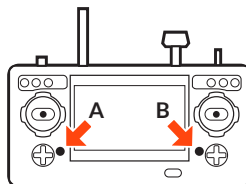
Gimbal Control Setting

1. Open the remote control and wait for the remote control to start
2. Click the settings button
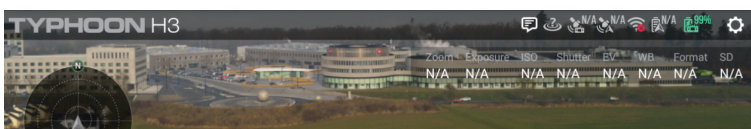
3. Turn on the remote control setting switch to enter the remote control setting page
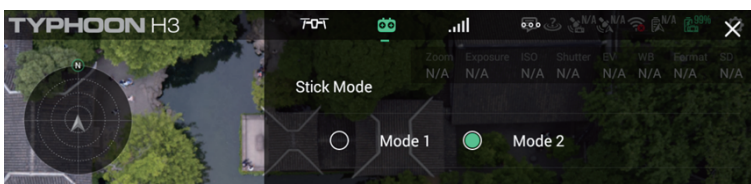
4. Scroll to the bottom of the directory and click on the gimbal control setting menu.
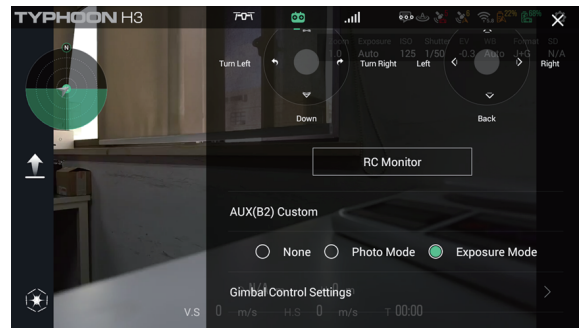
5. Enter the gimbal control setting interface as shown in the figure below.

6. Setup of the Expo Curve setting of the tilt control of the gimbal.

This function is used to adjust the operational curve of the slider for the tilt control slider in the tilt velocity mode of the gimbal, so as to achieve the most user-friendly feeling of the tilt control of the gimbal.

Setup method
Power on the aircraft and remote control before setting. Wait until the camera, aircraft and remote control are connected before using this function normally.

1) Slide setting: the curve can be set by directly sliding with fingers. Press and hold the curve with fingers, then drag it up and down until the curve reaches the desired shape, then release your hand, and then click Save to finish the setting;
2) Parameter setting: the curve can directly set the parameters under the coordinate system to achieve the setting purpose. Click the parameters under the curve coordinate system, and then the screen will pop up the keyboard. The user can input parameters as required to accurately change the expo curve. After setting, click done, and then click Save to save the current setting.
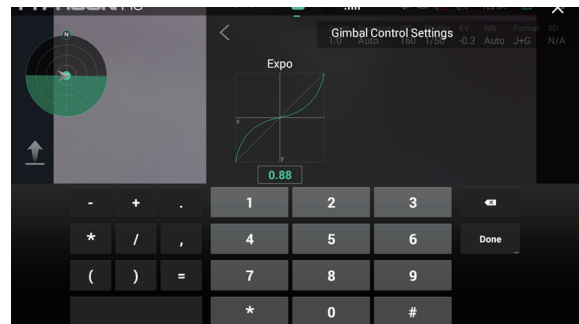
The X axis shows the angle difference that the current position of your gimbal tilt control silder with it mid position, the furthet from the origin the bigger difference it is. While the Y axis shows the gimbal tilt velocity output, also the further from the origin the bigger gimbal tilt velocity output it is. The green curve is the current curve.

For example as the picture shown above , the parameter is 0.88 , from the curve we can know that in the period of a little difference input (close to the origin) the curve is flat and the gimbal tilt angular acceleration is very small. This means in this period if you give more or less difference input the tilt velocity can only increase or decrease a little. Contrarily if the difference input is in the end stages

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(far away from the origin on both sides) we can found that the curve is very steep, the gimbal tilt angular acceleration will be much bigger than before. This means when you already have a big difference input and even if you only give more or less input a little bit, it will course large gimbal tilt velocity increase or decrease.In other words the steeper the curve is the more sensitive you will feel.

NOTICE: the parameter settings range from 0 to 1.

7. Ratio setup
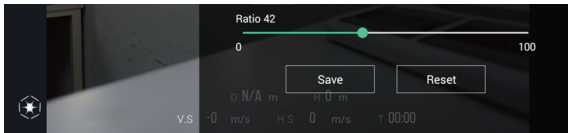
This function is used to adjust the maximum and minimum output of the slider for the tilt control slider in the tilt velocity mode of the gimbal, so as to achieve the most user-friendly feeling of the tilt control of the gimbal. The bigger the ratio is the faster max tilt velocity it can achieve and vice versa.

Setup method
According to the actual use needs, slide the ratio slider left or right and click Save to save the settings.

1) The more the slider to the left, the smaller the scale is, the smaller the change range of the actual output velocity of the gimbal tilt control slider is, and the lower the tilt angular velocity of the gimbal is, under the same rudder input and Expo curve;
2) The more the slider is to the right, the larger the scale is, the larger the change range of the actual output velocity of the gimbal tilt control slider is, and the greater the tilt angular velocity of the gimbal is, under the same rudder input and Expo curve.

8. Reset
Click the reset button to restore the Expo curve and ratio value to the factory settings.

IONL1 PRO Camera Instructions

I. interface description

1. Photo mode interface description
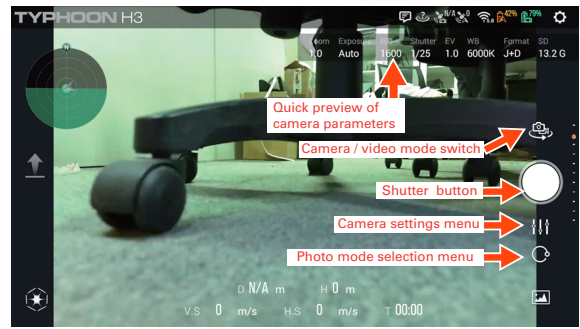
2. Video mode page description
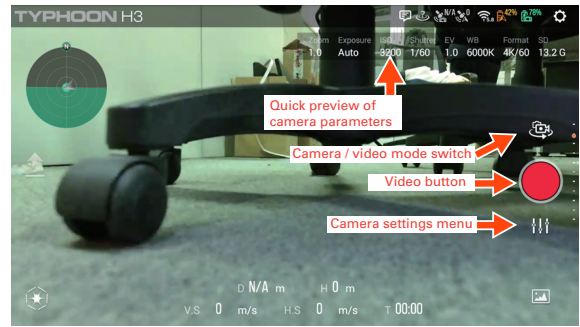
3. Page overview

3.1 Quick preview of camera parameters
From left to right, display the current digital zoom magnification, exposure mode, ISO, shutter speed, exposure compensation, white balance, Photo format, SD card remaining capacity and other camera common parameters of the camera quickly, and users can quickly understand the current camera settings.

3.2 Camera / video mode toggle button
Click "camera icon" in the shooting mode to switch the camera mode to the recording mode, and click "camera icon" in the recording mode to switch the recording mode to the shooting mode.

3.3 Shutter / video button
Click to trigger camera shooting / recording function.

3.4 Camera settings menu
Click to open the camera setting menu and set the camera parameters.

3.5 Photo mode switch
Click the switch button of photographing mode to select between single, interval, burst, AEB and panoramic.

II.Camera settings menu description

Exposure parameter setting

Click the camera setting menu, pop up a dialog box, and select "aperture icon" to enter the camera exposure parameter setting page.

ISO

The default exposure mode of the camera is auto exposure, so the switch on the right side of the ISO is auto mode by default. In auto mode, the ISO cannot be adjusted manually. The ISO can only be adjusted manually after the auto mode is turned off.

After the automatic ISO is turned off, the left and right arrow signs appear in the ISO slider. The user can drag the ISO slider to set the ISO parameters of the camera. The higher the ISO is, the more sensitive the camera is to light. The sensitivity range is 100 to 6400.

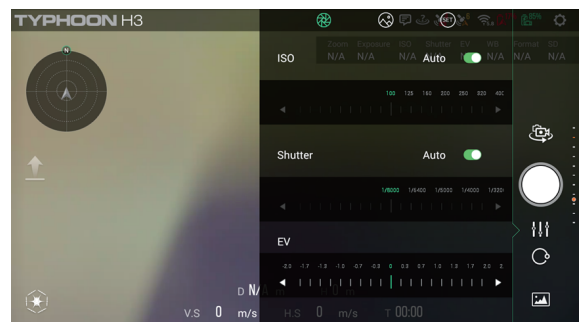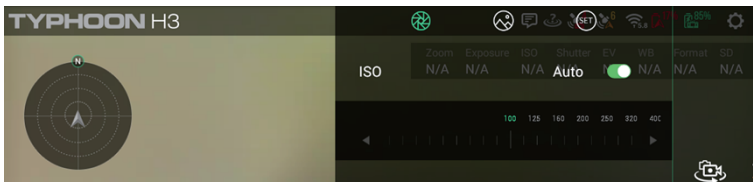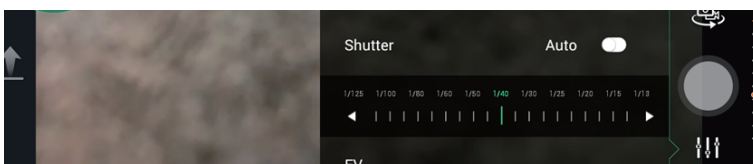**NOTICE:** when the ISO and shutter are both in automatic mode, the exposure mode of the camera is in automatic mode; when the ISO is in manual mode and the shutter is in automatic mode, the exposure mode of the camera is in ISO priority mode; the camera will adjust the shutter time to ensure normal exposure while maintaining the ISO set manually; when the ISO and shutter are both in manual mode, the camera Enter the manual exposure mode, and fully expose according to the parameters entered by the user.

Shutter

The default exposure mode of the camera is auto exposure, so the switch on the right side of the shutter is auto mode by default. In auto mode, the shutter cannot be manually adjusted, and the shutter time can only be manually adjusted after the auto mode is closed.

After the automatic shutter is closed, the left and right arrow signs appear in the shutter slider. The user can drag the shutter slider to set the exposure time parameter of the camera. The exposure time range is 1 / 8000 to 4 seconds in the shooting mode and 1 / 8000 to 1 / 30 seconds in the recording mode.

NOTICE: when the ISO and shutter are both in automatic mode, the exposure mode of the camera is in automatic mode; when the shutter is in manual mode and the ISO is in automatic mode, the exposure mode of the camera is in shutter priority mode; the camera will adjust the ISO to ensure normal exposure while maintaining the manually set shutter time; when the ISO and shutter are both in manual mode, the camera enters the manual exposure mode, and the exposure is completely in accordance with the parameters entered by the user.

NOTICE: exposure mode with ISO or aperture priority is only available in photographing mode. If the user selects recording mode, only two exposure modes, automatic and manual, are available.

Exposure compensation

In auto exposure mode, the user can adjust the light and shade of the picture by sliding the exposure compensation value slider.

Photo / video parameter setting
Click the camera setting menu, pop up a dialog box, and select "landscape icon" or "play key icon" to enter the photo / video parameter setting page.
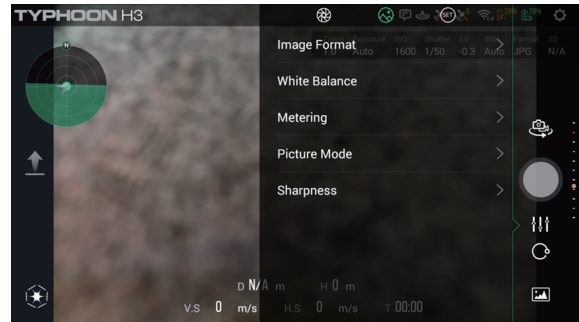
Photo / Video Format

1. Enter the photo parameter setting menu in photo mode

1.1. Photo resolution, ION L1 PRO gimbal camera provides the following three different photo resolutions for users to choose, directly click the required resolution to select.
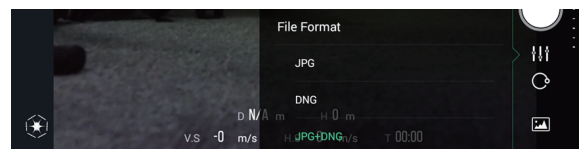
1.2 Image quality: users can choose among normal, high-definition and ultra high-definition picture quality, and directly click the required picture quality to choose.
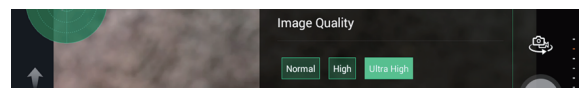
1.3 File Format: users can select the file format of file record in JPG, DNG and JPG + DNG photo formats, and directly click the required file to select.

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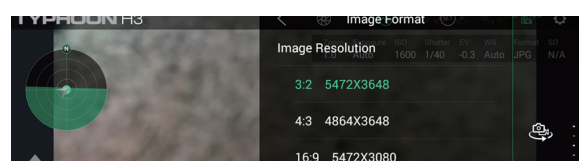
2. Enter video parameter setting menu in video recording mode
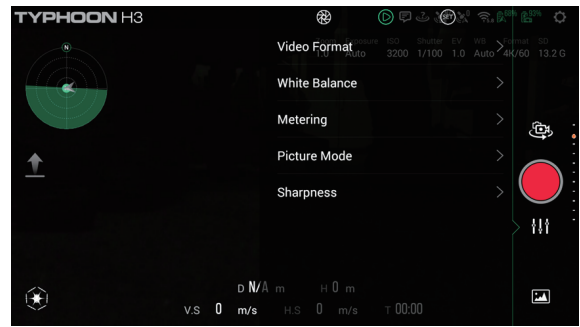
2.1 Video format

ION-L1 PRO gimbal camera provides the following video formats for users to choose from

H264 coded format	H265 coded format
4K 4096X2160 24/25/30/48/50/60frame	4K 4096X2160 24/25/30frame
4K 3840X2160 24/25/30/48/50/60frame	4K 3840X2160 24/25/30frame
2.7K 2720X1530 24/25/30/48/50/60frame	2.7K 2720X1530 24/25/30/48/50/60 frame
1080P 1920X1080 24/25/30/48/50/60/120frame	1080P 1920X1080 24/25/30/48/50/60/120frame
720P 1280X720 24/25/30/48/50/60/120frame	720P 1280X720 24/25/30/48/50/60/120frame

The setting method is as follows:

STEP 1: Enter the video parameter setting menu and click video format

STEP 2: Select video resolution as required
NOTICE: there are 4096x2160 and 3840x2160 two choices for 4K resolution.
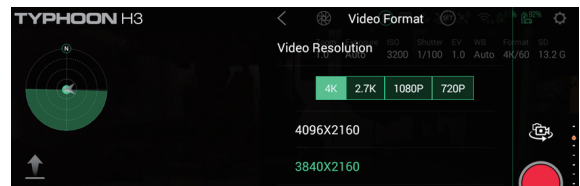
STEP 3: Select frame rate
NOTICE: due to different video resolutions and coded format, the optional range of frame rate will be different, as shown in the above figure. The grayed frame rate option indicates that this frame rate cannot be selected under this resolution and coded format. The light green background indicates the optional frame rate, and the dark green background indicates the currently selected frame rate.
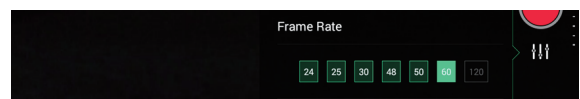
STEP 4: Select coded format
NOTICE: That in the process of one-time setting, the video resolution and frame rate must be set before the camera can record the user's setting of video resolution, otherwise, because the parameters set are incomplete, the camera will not record the setting of video format.
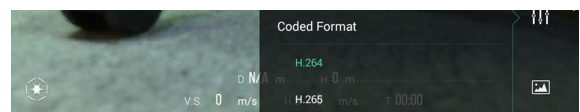
5. White Balance

The ION-L1 PRO gimbal camera provides the following white balance modes to choose.
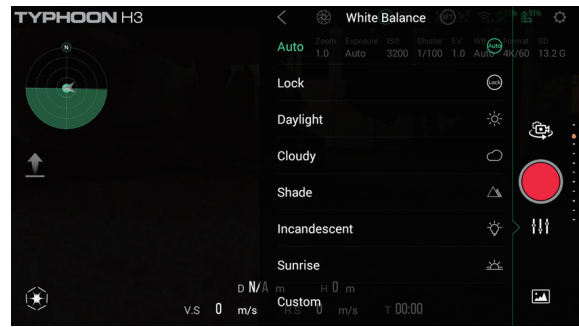
Click the custom menu, the color temperature slider will pop up below, and the user can choose the camera white balance setting within the range of 2000K to 12000k.
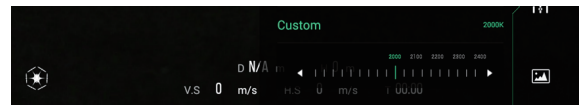
6.Metering

ION L1 PRO camera provides three different metering modes: Spot metering, average metering and center metering.
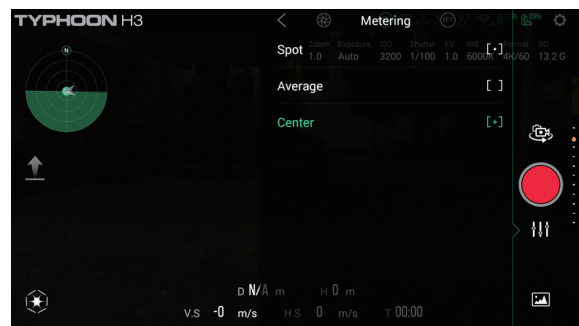
After selecting the spot metering, the user can select the metering area on the screen. After clicking the area, the spot metering icon will appear, indicating that the camera is metering with the exposure conditions of the area.
NOTICE: the metering mode only affects the exposure of the camera in the exposure mode of automatic exposure or semi-automatic exposure (sensitivity priority or shutter priority). In the manual exposure mode, the camera only exposes according to the exposure parameters set manually by the user.
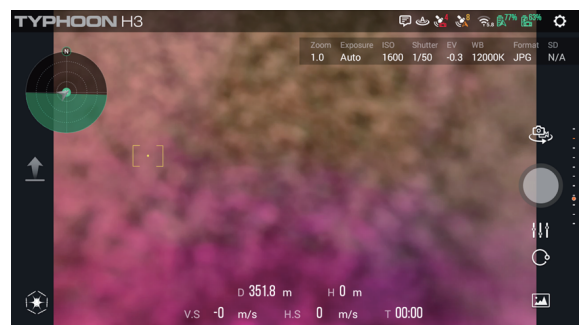
7. Picture mode

7.1 Picture mode menu in photo mode

The ION-L1 PRO gimbal camera provides the following white balance modes to choose.

In Photo mode, ION L1 PRO gimbal camera provides five modes: normal, vivid, WDR, B&W and custom. After the user selects custom mode, three slide ways of brightness, contrast and saturation will pop up for user-defined settings.
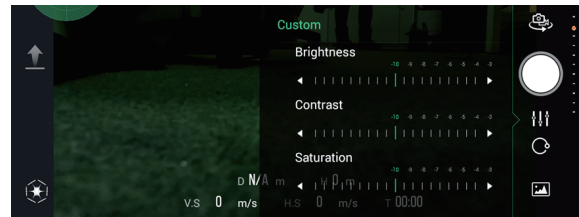
7.2 Picture mode menu in video mode

Compared with the photographing model, this menu in the video recording mode has a 10 bit log option. After this option is selected, the camera will record the original video data, no longer process the sampling data, and the picture will also show a gray color to save the most and the most original picture details. The users is required to process the video data captured by themselves.
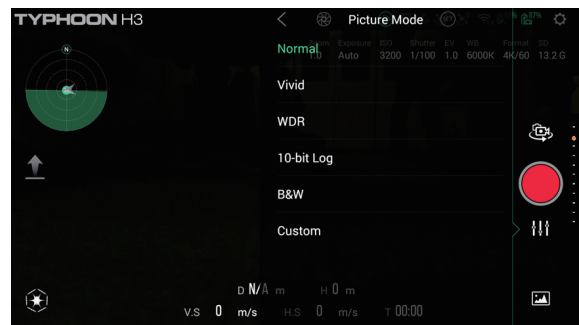
8.Sharpness

ION L1 PRO gimbal camera provides three different sharpness options for users to choose from: low, medium and high.
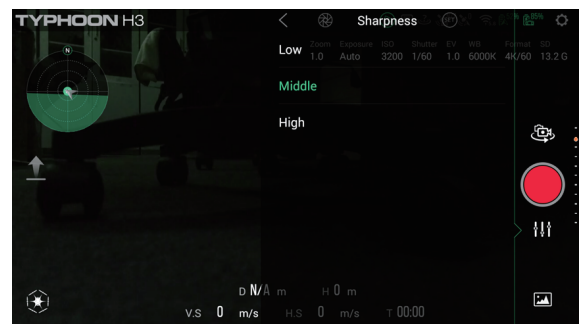
Camera General Setting
Click camera setting menu, pop up dialog box, select "set icon" to enter camera setting page.

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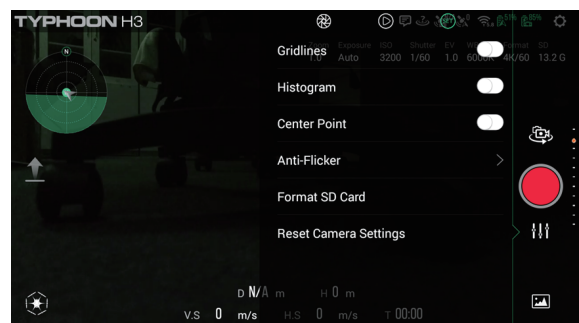
9. Gridlines

Turn on the gridline switch, and the gridline auxiliary user composition will appear on the screen.
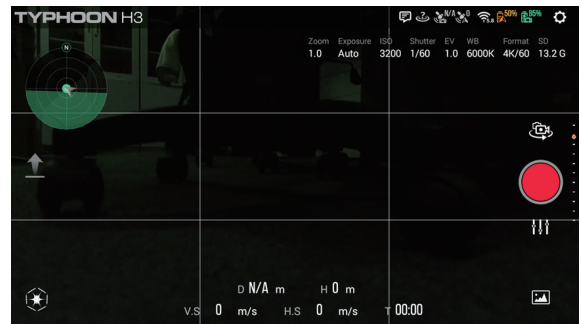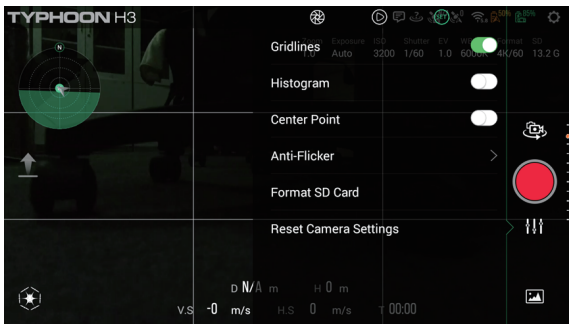
10. Histogram

Turn on the histogram switch, and the exposure histogram will appear on the screen to assist the user to judge the exposure.
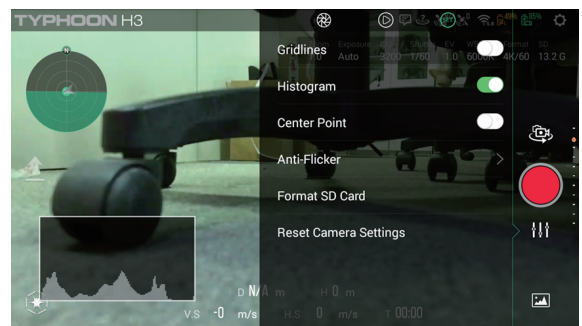
11. Center point

Turn on the center point switch, the cross line appears in the center of the screen to assist the user in composition.

12. Anti-Flicker

This function will enable the camera to shoot a stable picture under the stroboscopic light source (such as incandescent lamp). The options are automatic, 50Hz and 60Hz. The user can choose according to the actual needs to achieve the best picture effect.

13. Format SD card

Click Format SD card to pop up the following confirmation pop-up box, click YES camera to format SD card
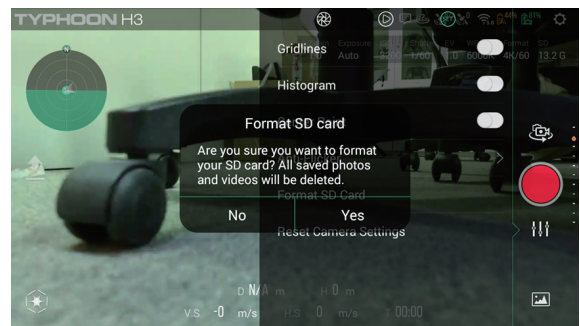
14. Reset camera settings

After clicking reset the camera settings, the following confirmation pop-up box will pop up. Click YES to restore the camera to the factory settings.

Gallery Function

The main function of Gallery preview enables UAV to see the pictures and videos taken by itself on the remote control without pulling out the SD card in the camera. It realizes that UAV can check the aerial effect of its own aerial photos without landing, so that users can quickly reshoot for the unsatisfactory photos or videos, greatly improving the efficiency of aerial photos of UAV.

1.Click the photo icon in the lower right corner to enter the gallery function

2.Gallery

Click the Gallery button to enter the Gallery function by default. You can choose to browse the picture or video through the Image and video selection slider at the top of the screen.
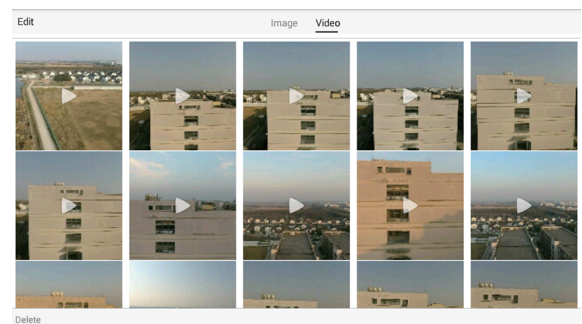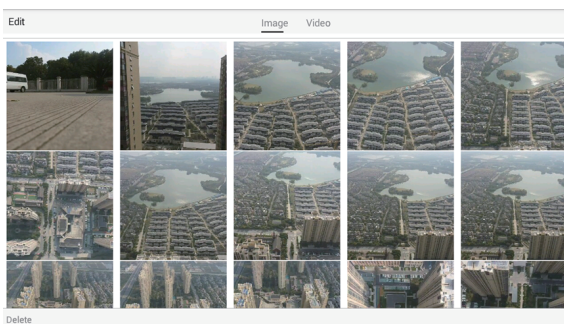
Under this function, you can preview the photos or videos taken before. Click the Edit button in the upper left corner. The original Edit button will become the Cancel button. A circle will appear in the lower right corner of the picture or video in the preview menu. Click the picture you want to select to select. A √ icon will appear in the lower right corner after the picture is selected to indicate that the current picture has been selected. In the edit mode, you can click the upper right corner Press the select all or Select None button in the corner to quickly select photos or videos. Click the Delete button in the lower left corner to delete the selected photos. Click the Cancel button to exit the gallery editing function.

NOTICE: the Delete button in the gallery will only delete the screenshot / recording file stored in the remote control, and will not delete the file stored in the SD card.
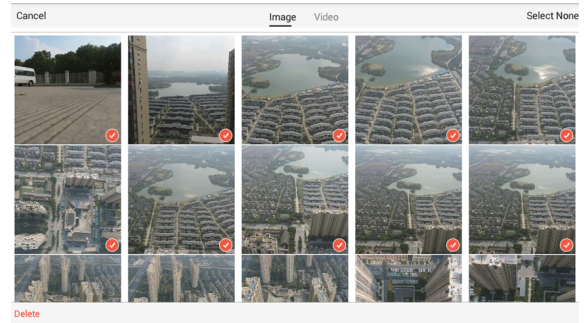
3. Photo Preview
Click the photo to be enlarged and previewed in non editing state to enter the preview of single photophoto.
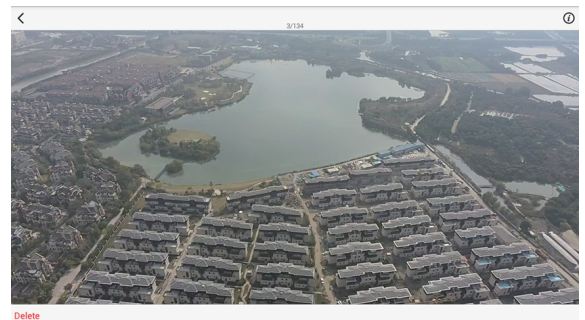
Click the back button in the upper left corner to return to the upper menu. Click the information icon in the upper right corner to display the information (time and resolution) of the screenshot.
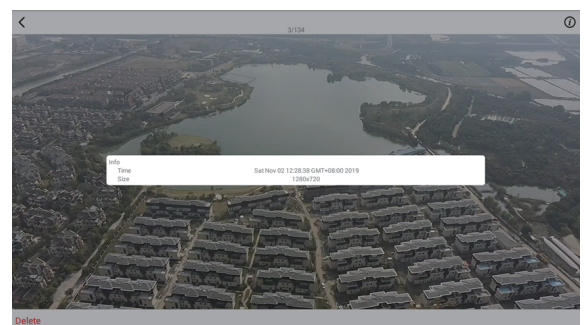
Click Delete to delete the currently browsing photo.

NOTICE: the Delete button in the gallery will only delete the screenshot / recording file stored in the remote control, and will not delete the file stored in the SD card.

4. Video Preview

Click the video to enlarge the preview in the non editing state to enter the preview of a single video Click the back button in the upper left corner to return to the upper menu, click the information icon in the upper right corner to display the screen recording information (time and resolution); click the play button in the center of the screen to play the preview video, click the Delete button to delete the currently playing video.
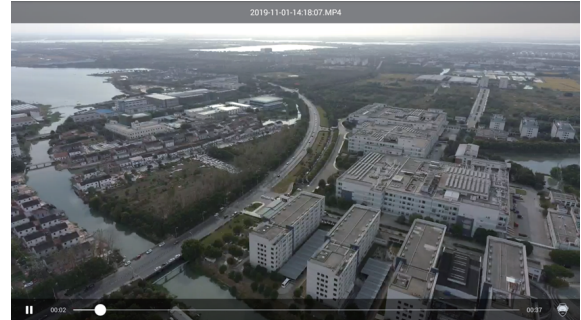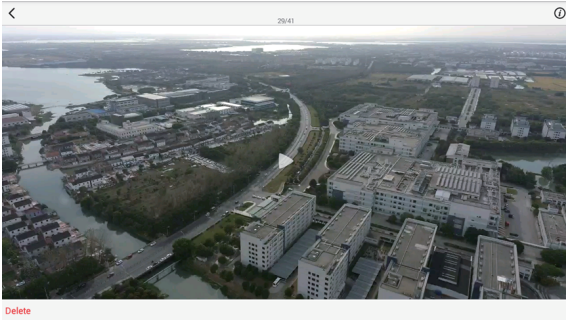
NOTICE: the Delete button in the gallery will only delete the screenshot / recording files stored in the remote control, and will not delete the files stored in the SD card.

Appendix

Upgrading the Firmware

STEP 1: Tap the system settings icon[⚙] on the right top of the screen, and then select the icon (∘∘∘). Scroll down and tap Check for updates.
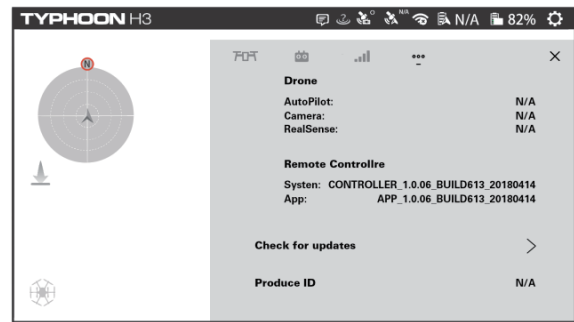
STEP 2: Choose an available WiFi, input the password and tap OK.

STEP 3: When Available Updates displayed on the screen, tap the Download icon. Wait for a few minutes till a 100% completed circle is displayed, which means the download completes.
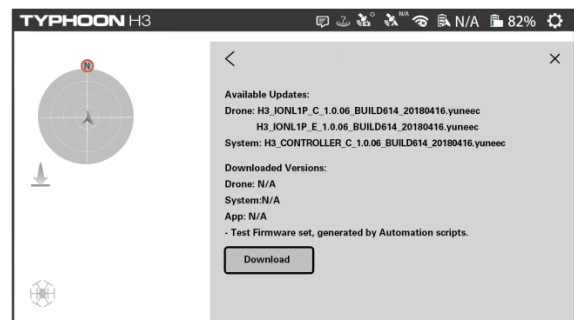
STEP 4: Switch on the aircraft first, and then return back to the main interface of the screen. Find system settings icon [⚙], tap the icon [▪▪▪], and then choose the ION L1 PRO gimbal camera.
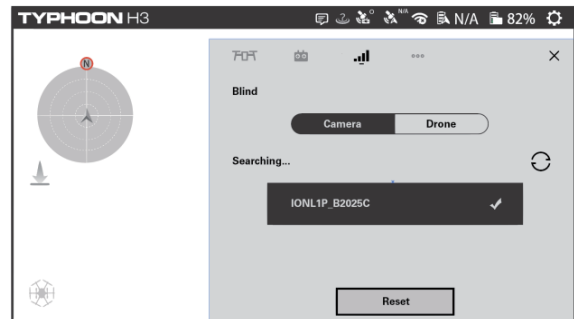
STEP 5: Return back to the main interface, repeat the step 1 (tap the system settings icon[⚙]on the right top of the screen, and then select the icon (∘∘∘). Scroll down and tap Check for updates.) , and tap Update icon to upgrade the gimbal camera.
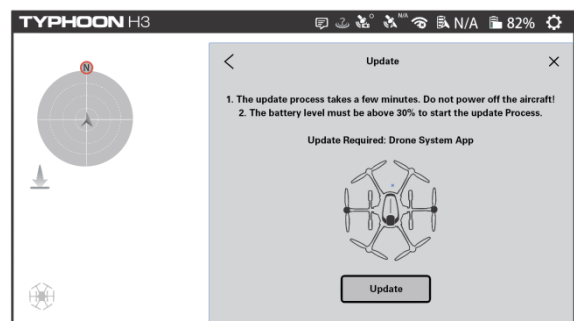
NOTICE: The battery level must be above 30% to start the update process.
NOTICE: It requires a SD card in the camera when updating the gimbal camera.
After the above steps, wait for a few minutes until the aircraft, the gimbal, the camera and the remote control give the following hints in turn: you will hear the aircraft emit the acknowledgement tone, the same one you hear when you switch the system on; the gimbal completes its initialization; the LED indicator status of ION L1 PRO camera changes from blinking purple slowly to being solid green; the remote control restarts and automatically returns back to its main interface, which indicates that the updating process is completed and successful.

LED Status Indication

All the LEDs mentioned are numbered as shown.

The color of the icon indicates the color of the LED.

☀ indicates the LED flashing.

◉ indicates the LED solid on.

STATUS	②	⑤	①	⑥	③	④
Initiate Compass Calibration	☀ (green)	❷❺ → ❸❻ → ❹❶ → ❺❷ → ❻❸ → ❶❹				
Accelerometer/ Gyro Calibration Completed			☀ (green)			
During Initialization			● (blue)			
The Aircraft is in Binding Mode			☀ (yellow)			
Calibration Failed			☀ (red)			
Binding Failed	◉ (red)	◉ (green)		◎	☀ (blue)	
The Aircraft is in Sport Mode	◉ (red)	◉ (green)		◎	● (red)	
The Aircraft is in Angle Mode (without GPS lock)	◉ (red)	◉ (green)		◎	☀ (purple)	
The Aircraft is in Angle Mode (with GPS lock)	◉ (red)	◉ (green)		◎	● (purple)	
The Aircraft is in RTL Mode	◉ (red)	◉ (green)		◎	● (yellow)	
The Aircraft is in Task Mode	◉ (red)	◉ (green)		◎	● (green)	
First / Second Level Low Voltage Battery Warning	◉ (red)	◉ (green)		◎	☀ (red)	
Compass Alarming	◉ (red)	◉ (green)		◎	☀ (orange)	
The Aircraft is in No-Fly Zone	◉ (red)	◉ (green)		◎	☀ (blue)	
OBS. Function Activated	◉ (red)	◉ (green)	☀ (red)		● (purple)	

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Damage and/or injury caused by unauthorized change settings and/or parameters;

Damage and/or injury caused by modify and/or add parts;

Damage and/or injury as well as violation of legal regulations caused by ignoring the low voltage battery warning;

Damage and/or injury caused by knowingly and negligibly flying with a damaged model or one which is unfit to fly, e.g. due to dirt, water penetration, coarse particles, oil or a model which has not been correctly or completely assembled or if the main components exhibit visible damage, defects or missing parts;

Damage and/or injury as well as violation of legal regulations caused by use of the product in a no-fly zone, e.g. next to an airfield, above a motorway or a natural conservation area;

Damage and/or injury as well as violation of legal regulations caused by operating the model in a magnetic field (e.g. high voltage lines, electricity/ transformer stations, radio towers, mobile phone masts etc.), a strong wireless signal environment, no-fly zones, poor visibility and in the event of vision impairments or other impacts on the pilot which are left unchecked etc;

Damage and/or injury brought about through a violation of the legal regulations for operating the model, in unsuitable weather conditions, e.g. rain, wind, snow, hail, storms, hurricanes etc;

Damage and/or injury as well as violation of legal regulations caused by force majeure, e.g. collision, fire, explosion, flooding, tsunami, landslide, avalanche, earthquake or other forces of nature;

Damage and/or injury as well as violation of legal regulations caused by the illegal or immoral use of the model, e.g. capturing videos or recording data which infringes upon/harms the privacy of other people;

Damage and/or injury as well as violation of legal regulations caused by incorrect use of the batteries, protection systems, chargers or aircraft;

Consequential damage caused by the incorrect operation of any kind of system components and accessory parts, especially memory cards, whereby image or video material from the camera can become defect;

Any non-compliance with legal obligations, personal injury, material damage and environmental damage caused by use and a failure to comply with the local laws and regulations;

Damage and/or injury as well as violation of legal regulations caused by hazardous use without sufficient practical experience;

Damage and/or injury as well as violation of legal regulations caused by flying in legally defined no-fly zones.

Further losses which do not fall within the scope of use defined by Yuneec as improper.

This product is designed for both professional use and personal private use. The national and international laws and regulations in force as the time of taking off must be adhered to.

Collection and Processing of Data

Yuneec may collect navigation information such as GPS data to help improve our products.
We may also collect Depth Map information and Infrared Image information from your drone delivered to our service center for repair and maintenance service or any other service.
We may also collect other information such as device information, server log information, etc. We may also collect personal information used in registration if you choose to become a registered user and any other information user provided to Yuneec. We may also collect information which user send to other users, and the recipients and senders of such information.
We reserve the right to disclose your information if required to do so by law or in the good-faith belief that such disclosure is needed to comply with applicable laws, for example in response to a court order, judicial subpoena, warrant or request from government, or otherwise cooperating with government agencies or law enforcement.
We also reserve the right to disclose your information that we believe in good faith is necessary or appropriate to: (i) protect ourselves or others from fraudulent, unlawful, or abusive activities; (ii) take precautions against potential liability; (iii) protect the security of the Yuneec Apps embedded into or downloaded onto your drone or any associated equipment and services; (iv) protect the legal rights of ourselves or any others.
Any information we collected maybe disclosed or transferred to an acquirer, successor or assignee as part of any potential merger, acquisition, debt financing or other activities that involves transfer of business assets.
We may make the aggregated non-personal information of the users available to third parties for various purposes, including (i) complying with various report obligations; (ii) marketing efforts; (iii) analyzing product safety; (iv) understanding and analyzing our users' interests, habits, usage pattern for certain functionalities, services, content, etc.

Battery Warnings and Usage Guidelines

WARNING: Lithium Polymer (LiPo) batteries are significantly more volatile than alkaline, NiCd or NiMH batteries. All instructions and warnings must be followed exactly to prevent property damage and/or serious injury as the mishandling of LiPo batteries can result in fire. By handling, charging or using the included LiPo battery you assume all risks associated with LiPo batteries. If you do not agree with these conditions please return the complete product in new, unused condition to the place of purchase immediately.
You must always charge the LiPo battery in a safe, well-ventilated area away from flammable materials. Never charge the LiPo battery unattended at any time. When charging the battery, you must always remain in constant observation to monitor the charging process and react immediately to any potential problems that may occur.
After flying/discharging the LiPo battery you must allow it to cool to ambient/room temperature before recharging.
To charge the LiPo battery you must use only the included charger or a suitably compatible LiPo battery charger. Failure to do so may result in a fire causing property damage and/or serious injury.
If at any time the LiPo battery begins to balloon or swell, discontinue charging or discharging immediately. Quickly and safely disconnect the battery, then place it in a safe, open area away from flammable materials to observe it for at least 15 minutes. Continuing to charge or discharge a battery that has begun to balloon or swell can result in a fire. A battery that has ballooned or swollen even a small amount must be removed from service completely.
Do not over-discharge the LiPo battery. Discharging the battery too low can cause damage to the battery resulting in reduced power, flight duration or failure of the battery entirely. LiPo cells should not be discharged to below 3.0V each under load.
Store the LiPo battery at room temperature and in a dry area for best results.
When charging, transporting or temporarily storing the LiPo battery the temperature range should be

from approximately 40–120 ° F (5–49 ° C). Do not store the battery or aircraft in a hot garage, car or direct sunlight. If stored in a hot garage or car the battery can be damaged or even catch fire.

Never leave batteries, chargers and power supplies unattended during use.

Never attempt to charge low voltage, ballooned/swollen, damaged or wet batteries.

Never allow children under 14 years of age to charge batteries.

Never charge a battery if any of the wire leads have been damaged or shorted.

Never attempt to disassemble the battery, charger or power supply.

Never drop batteries, chargers or power supplies.

Always inspect the battery, charger and power supply before charging.

Always ensure correct polarity before connecting batteries, chargers and power supplies.

Always disconnect the battery after charging.

Always terminate all processes if the battery, charger or power supply malfunctions.

General Safety Precautions and Warnings

WARNING: Failure to use this product in the intended manner as described in the quick start guide and instruction manual can result in damage to the product, property and/or cause serious injury. A Radio Controlled (RC) multirotor aircraft, APV platform, drone, etc. is not a toy! If misused it can cause serious bodily harm and damage to property.

WARNING: As the user of this product you are solely and wholly responsible for operating it in a manner that does not endanger yourself and others or result in damage to the product or the property of others.

Keep your hands, face and other parts of your body away from the spinning propellers/rotor blades and other moving parts at all times. Keep items that could impact or become entangled away from the propellers/rotor blades including debris, parts, tools, loose clothing, etc.

Always operate your aircraft in open areas that are free from people, vehicles and other obstructions. Never fly near or above crowds, airports or buildings.

To ensure proper operation and safe flight performance never attempt to operate your aircraft nearby buildings or other obstructions that do not offer a clear view of the sky and can restrict GPS reception.

Do not attempt to operate your aircraft in areas with potential magnetic and/or radio interference including areas nearby broadcast towers, power transmission stations, high voltage power lines, etc.

Always keep a safe distance in all directions around your aircraft to avoid collisions and/or injury. This aircraft is controlled by a radio signal subject to interference from many sources outside your control. Interference can cause momentary loss of control.

To ensure proper and safe operation of the automatic landing function in Return Home Mode you must start the motors with the aircraft in an open space and achieve a proper GPS lock.

Do not attempt to operate your aircraft with any worn and/or damaged components, parts, etc. including, but not limited to, damaged propellers/rotor blades, old batteries, etc.

Never operate your aircraft in poor or severe weather conditions including heavy winds, precipitation, lightning, etc.

Always begin to operate your aircraft with a fully charged battery. Always land as soon as possible after the first level low voltage battery warning or land immediately after the second level low voltage battery warning.

Always operate your aircraft when the voltage of the battery in the transmitter/personal ground station is in a safe range (as indicated by the LED status indicator light of the transmitter/personal ground station).

Always keep the aircraft in clear line of sight and under control, and keep the transmitter/personal ground station powered on while the aircraft is powered on.

Always move the throttle control stick down fully and turn off the power in the event the propellers/rotor blades come into contact with any objects.

Always allow components and parts to cool after use before touching them and flying again.

Always remove batteries after use and store/transport them per the corresponding guidelines.

Avoid water exposure to all electronic components, parts, etc. not specifically designed and protected for use in water. Moisture causes damage to electronic components and parts.

Never place any portion of the aircraft or any related accessories, components or parts in your mouth

as doing so could cause serious injury or even death.

Always keep chemicals, small parts and electronic components out of the reach of children.

To ensure safe fly, it is recommended to install the propeller protectors when operating the aircraft indoors or nearby crowds.

Carefully follow the instructions and warnings included with this aircraft and any related accessories, components or parts (including, but not limited to, chargers, rechargeable batteries, etc.).

Camera Usage Warnings

NOTICE

For the latest product information, please check our official website: **www.yuneec.com**.

WARNING

Do not expose the lens of the camera to extreme light sources.

Do not operate the camera in the rain or in environments with high humidity.

Do not try to repair the camera. Repairs must go to an authorized service center.

WARNING

Read the entire instruction manual to become familiar with the features of the product before operating.

Do not use with incompatible components or alter this product in any way outside of the instructions provided by Yuneec.

Failure to use this product in the intended manner as described in instruction manual can result in damage to the product, property and/or cause serious injury.

FCC Statement

This equipment has been tested and found to comply with the limits for Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RF Exposure Warning

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

IC Radiation Exposure Statement for Canada

This device complies with Industry Canada license-exempt RSS standard (s).Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.Le présentappareilestconforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitationestautorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareildoit accepter tout brouillageradioélectriquesubi, mêmesi le brouillageest susceptible d'encompromettre le fonctionnement.
This equipment complies with IC RSS-102 radiation exposure limit set forth for an uncontrolled environment. Cetéquipementrespecte les limitesd'exposition aux rayonnements IC définies pour un environnement non contrôlé.

NCC Warning Statement

本產品符合低功率電波輻射性電機管理辦法 第十二條 ~ 第十四條等條文規定：
* 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。
* 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。
前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

CE Warning Statement

This device meets the EU requirements on the limitation of the general public to electromagnetic fields by way of health protection.
EU Operation Frequency (The Maximum Transmitted Power)
ST16S Remote Controller:
2.4G: 2405-2475MHz (20dBm);
2.4G Wifi: 2412-2472MHz (20dBm);
5G Wifi: 5560-5580MHz (27dBm), 5680-5700MHz (27dBm)
TYPHOON H3:
2.4G:2405-2475MHz (20dBm)
ION L1 PRO:
5G Wifi: 5560-5580MHz (27dBm), 5680-5700MHz (27dBm)

EU Compliance Statement

Hereby, Yuneec International (China) Co., Ltd. declares that this device is in compliance with the essential requirements and other relevant provisions of the RED Directive 2014/53/EU. The full text of the EU Declaration of Conformity is available at the following internet address: http://yuneec/de-downloads
Please visit the address above and enter corresponding product page.

YUNEEC