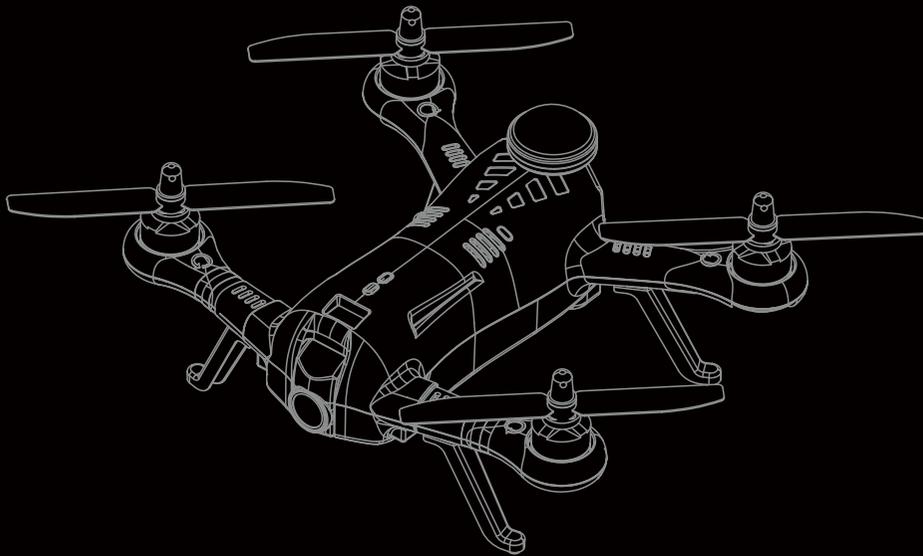


X230

User Manual

V1.0



Disclaimer and Warning

Thank you for purchasing X230.

Please read this instruction manual carefully before using this product. By using this product, you hereby agree to this disclaimer and signify that you have read it in full.

Please strictly adhere to this manual as the manufacturer has no control over the use of the product or it's set up or final assembly once sold.

Modification of this craft, such as using other motors , escs , propellers, ect. will result in no liability on our part. No liability will be assumed or accepted for any resulting damage or injury.

For personal safety and because electrical signal interference problems could occur, please do not fly this craft inside as it may become unstable.

Any parts of this manual is subjected to change without prior notice.

Any problems with this frame please contact with us or authorized agents.

Introduction

Brief introduction

The X230 mutlicopter kit consists of a multicopter, remote control (TX) and other parts necessary for flight are included .

The forward looking HD FPV camera located at the nose of the craft can transmit up to 1000 meters, (within operating range of the TX).

Character

Frame:

Built-in 120° wide angle and 1920 x 1080P HD camera to get the high quality shooting;
Camera connect with TS832 wireless 5.8G transmitter directly to achieve wireless transmission in aerial photography;

Equipped with 2200mAh smart flight battery. Choose the high energy density cell and industry-leading advanced BMG(battery management system);

Flip 360° steadily;

Real-time transmission for FPV action video.

Remote control:

Built-in video transmitter to improve the transmission quality and reliability of communication;

Equipped with camera and operation button to control easily.

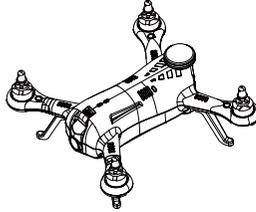
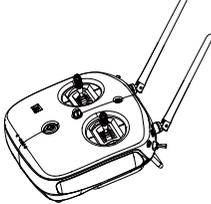
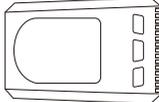
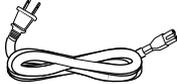
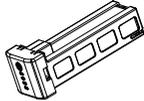
Flight attentions

1. Please do not fly in bad weather such as rain, snow, sleet etc. as the craft is not water proof and will not tolerate getting wet .
2. Please make sure all the parts work properly without aging or damage before flight.
3. Please ensure the propeller and arm mounted properly and firmly before flight.
4. Please be safety minded and do not fly near people , pets, trees, objects, buildings, high voltage wires ect..
5. Please us the included battery.
6. Please do not close to or touch the motor or propeller once operation.
7. Please us the included parts with this frame only.
8. Please do not fly in the no-fly zone with legal and regulation stated.
9. This product is recommended for use by experienced hobbyists recommended age for use by beginner is 14 years of age or older.

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Box list

Multicopter 230 1Set	Remote control 1Set
	
ABS propeller 5030 X2set	4 pins connection wire
	
Balance charger X1pcs	Charger cable X1pcs
	
Multicopter battery X1pcs	Adapter X1pcs
	
Screw bag X1	

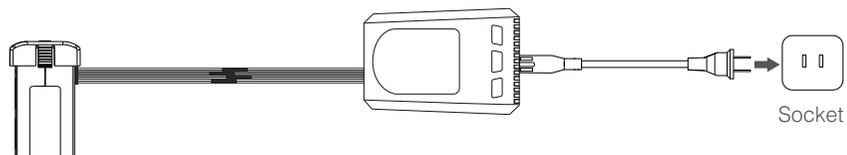
Battery preparation

Please charge the multicopter battery and remote control battery before flight.

Multicopter battery charge

Please use the included charger to charge the included battery.

1. Connect the charger with supply socket (Use the adapter if needed).
2. Keep the battery OFF while connect battery with specified charger.
3. The battery indicator light will keep blinking and show the power while charging (Refer to the indicator light table).
4. Full charge once the charger indicator light turn red from green. Disconnect the battery from the charger.

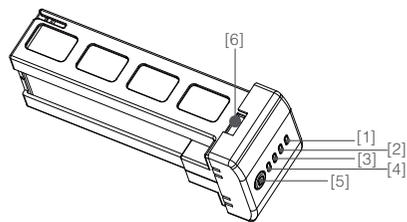


Smart battery function	
Balance charge protection	Balance the inner cell voltage automatically to protect the battery.
Power indicator	Battery comes with power indicator light to show the battery percentage.
Overcharge protection	Overcharge will damage the battery. It will stop charging when battery voltage up to 12.6V.
Overdischarge protection	Overdischarge will damage the battery. It will switch off output when battery voltage lower than 10.9V.
Short-circuit protection	It will switch off output to protect battery when short-circuit detected.
Sleeping protection	When the battery is turned on, it will be sleeping within 10mins without power need.
Charging temperature protection	It will stop charging while the temperature under 0°C or exceed 55°C.

Battery	
Type	LiPo
Capacity	3S~11.1V 2200mAh
Charging temperature	0°C~45°C
Discharging temperature	-15°C~50°C
Charing/Discharging relative humidity	< 80%

- ⚠️ • Please read carefully and strictly abide by this manual, disclaimer and the sticker requests before using the battery.
 • Please charge the battery with the assorted charger. Manufacturer assumes no liability for damage(s) or injures incurred by using other chargers.

Battery usage

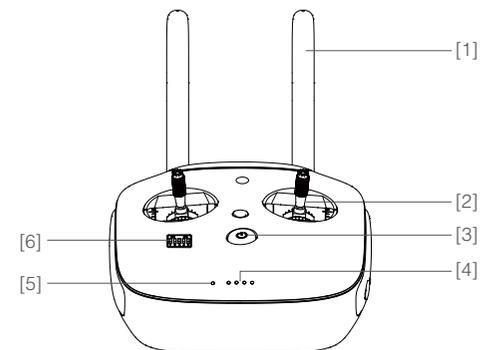


- [1]、[2]、[3]、[4] LED indicator light
- [5] Battery power key(with built-in power indicator light)
- [6] Charger port

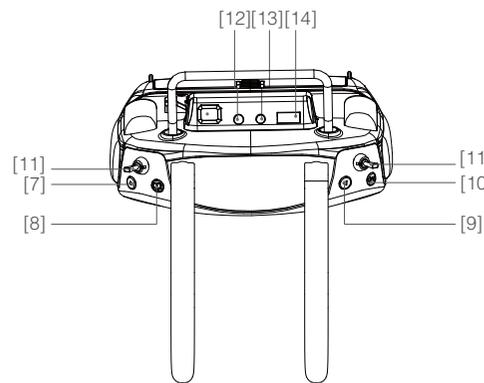
Power status: While power is off, short press power key 1 time to check the curren battery.
 Turn on: While power is off, short press power key 1 time, press 2 seconds again to turn on.
 Turn off: While power is on, short press power key 1 time, press 2 seconds again to turn off.

Remote control

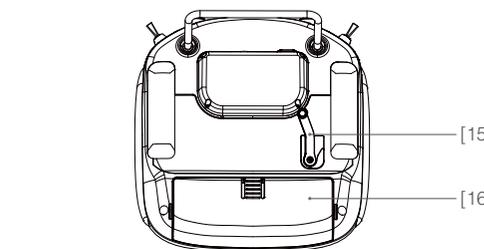
Suppose to control flying maneuver within 1000 meters communication distance with assorted remote control. Equipped with function keys to control camera and multicopter to shoot freely. The real-time shooting can be showed on the mobile device(monitor) by remote control with built-in 5.8G wireless transmitter and multicopter with built-in 5.8G transmitter.



- [1] Antennas
Signal transmission for copter and transmitter
- [2] Joystick/Rod
Control flight direction
- [3] Power switch
- [4] Power indicator light
(1 bar means 25%)
- [5] Remote control operation light
The light will be on once power on
- [6] Transmitter frequency display



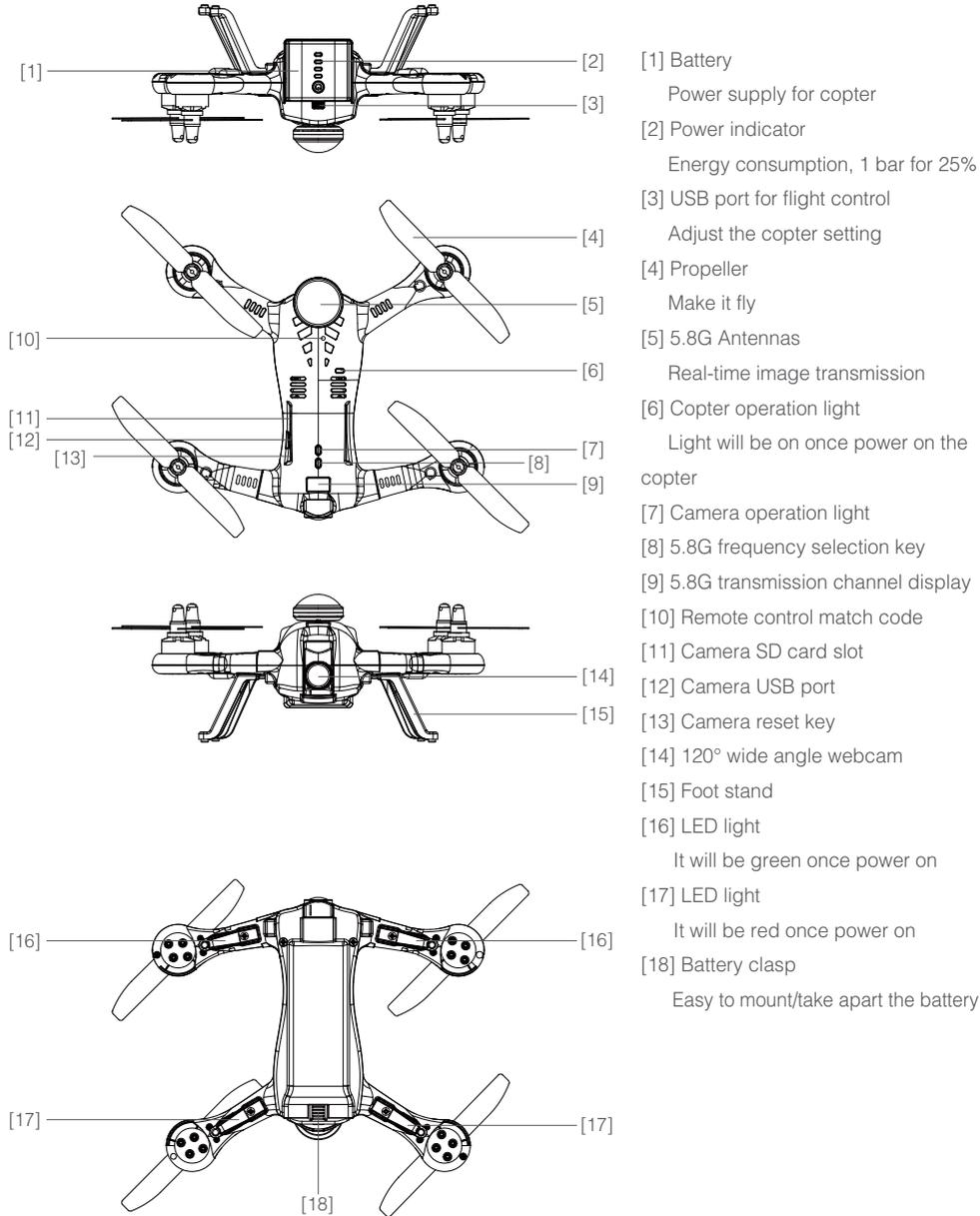
- [7] Video key
Start/Stop video
- [8] Photo key
Photo function
- [9] Playback key
Playback mode
- [10] Camera function key
Back to previous while playback
- [11] 3 section switch for remote control



- [12] AV output
- [13] 12V voltage output and battery charge for remote control
- [14] 4pin USB with 5V and AV output
- [15] Adjustment slider for camera tilt angle
Control camera up and down
- [16] Battery cover for remote control

Multicopter

Multicopter comes with propeller 5030, Black CCW and silver CW for propeller nut.
 Built-in 120° wide angle camera, connect the webcam with TS823 wireless 5.8G transmitter directly for FPV wireless transmission.
 Built-in high capacity rechargeable lipo battery to achieve 10mins high speed flight time.

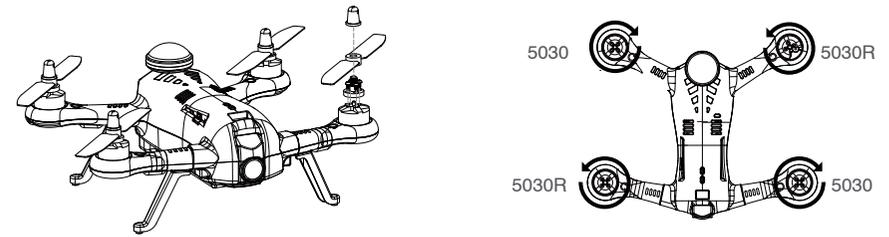


Propeller installation

Propeller	5030	5030R
Sketch		
Mounting position	Mount black prop nut on the motor	Mount silver prop nut on the motor
Arm symbol	CW to disassemble prop nut. CCW to disassemble prop nut.	

Installation method:

1. Disassemble the prop nut as per arm symbol, black prop nut for propeller 5030, silver prop nut for propeller 5030R;
2. Tighten up the prop nut as the opposite direction of arm symbol.



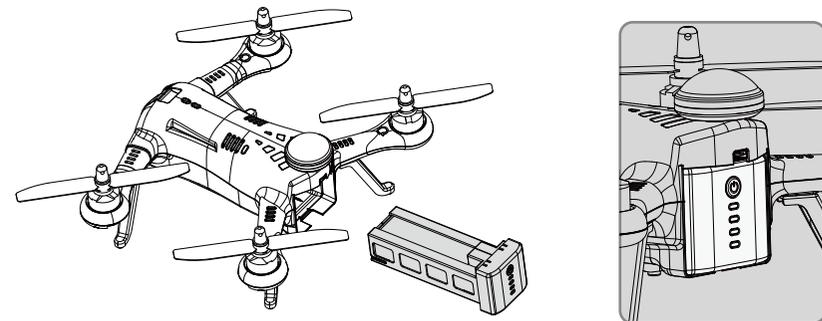
- ⚠ Please ensure the copter can fly properly with proper propeller installation.
- Please pay attention while mount the propeller to avoid scratch.
- Please use the assorted propeller with the copter.
- Please purchase the same type propeller if needed.

Disassemble method

Hold the motor with hand, unscrew the prop nut with arm symbol direction to disassemble the propeller.

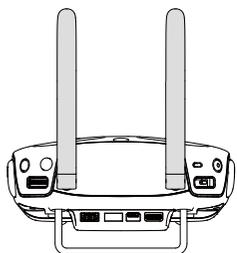
Battery installation

Plug the battery into the battery case as picture shows.

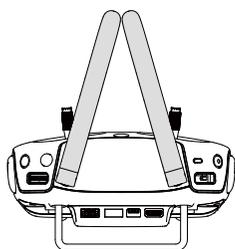


Remote control preparation

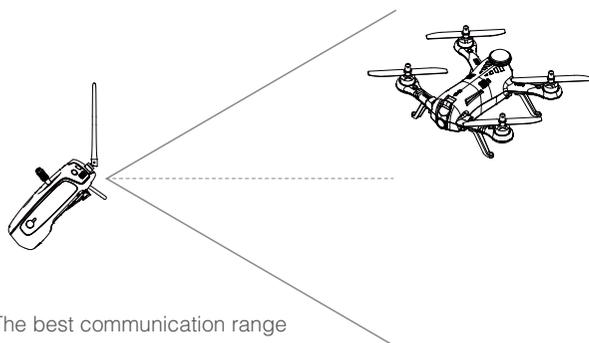
Unfold the remote control antennas and set position. The best communication range for remote control signal as below:



Strong signal



Weak signal



The best communication range



- Make sure the copter is in best communication range while operation.
- Adjust the direction or distance between pilot and copter appropriately to ensure the copter in the best communication range.

Remote control usage

The maximum communication distance in 2.4Ghz frequency band is 1000 meters. Integrated with 5.8G transmitter to support output real-time image for mobile device(monitor) directly as well as combination with camera function key. This remote control meets the CE and FCC standards.

Operation tips

The remote control rod divide into two control methods American and Japanese according to usage habit. Suggest to use American control method for beginners.

American control method: Left rod to control the throttle.

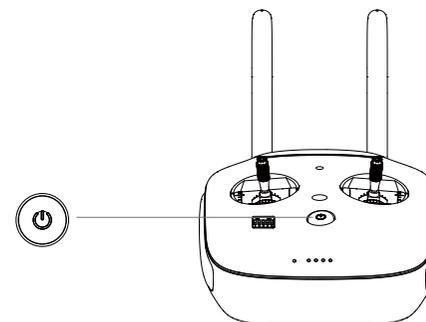
Japanese control method: Right rod to control the throttle.

ON & OFF

Built-in 3S 1800mAh rechargeable battery, check the current by battery indicator light.

Turn on remote control as followings,

1. Short press power button 1 time to check the current battery. Please charge the remote control once low battery.
2. Short press power button 1 time, then long press more than 2s to turn on remote control.
3. Check the remote control status according to notification tone. Green indicator light keep on to connect successfully.
4. Repeat the step 2 to turn off remote control.



Camera control

Users can real-time control the camera remotely to shoot by " adjustment slider for camera pitch angle", "Photo key", Video key", "Playback key" and "Camera setting key". (Detailed key position see remote control on P6)

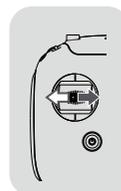
Multicopter control

American control method is defaulted mode before leaving the factory, take an example for American control method in this manual.



Throttle rod to control copter up and down.

The copter will rise while push up the rod; Fall while pull down the rod.(Push or pull the rod slowly to avoid rise or fall rapidly.



Yaw rod to control direction

The copter will rotate clockwise while slide to left; Rotate counterclockwise while slide to right. The copter will stay there while the rod in the middle.

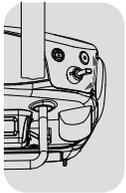
Move the rod to control the rotation speed, the more you move the rod, the faster rotation speed will be.



Pitch rod to control the copter fly forward and backward
 The copter will fly forward while push up the rod, Fly backward while pull down the rod.
 The copter will stay there while the rod in the middle.
 Move the rod to control tilt angle forward and backward, the more you move the rod,
 the more tilt angle will be, and the faster the copter will be as well.



Roll rod to control fly to left and right
 The copter will fly to left while push the rod to left; The copter will fly to right while push
 the rod to right. The copter will stay level while the rod in the middle.

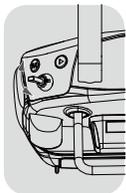
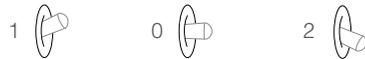


Slide this switch to control flight mode, detailed flight mode switch as below, different
 modes for different switch position.

Mode 0 (Manual): All the flight lines and attitude are controlled by pilot with remote
 control rod in manual mode. (Do not suggest to beginner)

Mode 1(Auto-stable): The flight attitude is auto-stable by flight control.

Mode 2(3D): The copter is in full manual mode. Pilot can control the copter to flip by
 remote control rod.



Slide this switch to set 3 different flight data and sensitivity. (Custom settings)



Flight

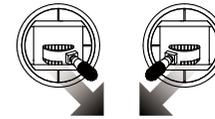
Inspection before flight

1. Whether enough power for remote control, smart battery and mobile device(Monitor).
2. Whether all the propellers work properly, please change if any aging, damage or out of shape.
3. Whether the propellers mounted properly and firmly.
4. Make sure the camera with SD card.
5. Whether camera works properly once power on.
6. Whether the motors can work properly once starting up.
7. Whether the monitor can work properly.

Manual start/stop motor

Start motor

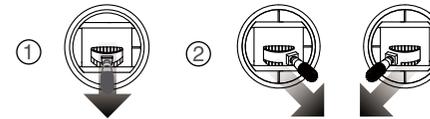
Start motor as per below, loosen rod immediately once the motor start rotation.



Stop motor

Two methods to stop motor after starting.

1. While the copter landing on the ground, push the throttle rod to the lowest position pic 1, then
 operate the rod as pic 2, the motor will be stopped immediately and then loosen the rod.
2. While the copter landing on the ground, push the throttle rod to the lowest position and stay 3s to
 stop the motor.



Pleased do not use the rod while flying, otherwise, the copter will stop working in the air.

Basic flight

Basic flight steps:

1. Keep the copter on the flat and wide ground, pilot should stand behind the copter.
2. Turn on remote control and copter smart battery.
3. Connect mobile device(monitor) with copter X230.
4. The copter can be safe flight while the green indicator light keep blinking. Start the motor with
 operation rod.
5. Push up the throttle rod slowly to fly the copter steadily.
6. Adjust the camera tilt angle by adjustable slider.
7. Shooting by photo key and video key.
8. Pull down the throttle rod slowly to land on the ground steadily.
9. Once landed, pull the throttle rod to the lowest position and stay over 3s to stop the motor.
10. Turn off copter and remote control while stop motor.

Appendix

Specification

Multicopter	
Model	X230
Weight(include battery)	500g
Max. take-off weight	800g
Hovering(safe flight)	Vertical: 0.5m; Horizon: 2.5m
Max. rotation angular speed	Tilt axis: 300°/s, Yaw axis: 150°/s
Max. tilt angle	360°
Max. rise rate	5m/s
Max. falling speed	4m/s
Max. level flight speed	30m/s
Max. flight altitude	500M
Max. speed for tolerable wind	6m/s
Flight time	About 10min
Battery	3S 2200mAh 11.1V
Propeller	5030
Working temperature	-10°C ~40°C

Remote control	
Name	
Working frequency	922.7~927.7MHz(Japanese version) 5.725~5.825GHz(Other version) 2.400~2.483 GHz
Signal effective range(outdoor non-interference)	1KM
FIRP	10dBm@900M 13dBm@5.8G 20dBm@2.4G
Video output port	AV
Power supply	Built-in lithium battery
Charge mode	Assorted
Coordination function	Multi-interconnection supported
Working consumption	9 W
Working temperature	-10°C ~40°C
Storage temperature	Storage time within 3 months: -22°C ~45°C Storage time more than 3 months: 22°C ~28°C
Charge temperature	0°C ~40°C
Battery	1800 mAh LiPo 3S

HD80 camera

Image Sensor	Type	1/3" CMOS 3.4 MP (Aptina AR0330CS)
	Effective Pixels	3.4Mp (3:2) and 3.15Mp (4:3)still images
	Output Pixels	2304(H) x 1536(V); (entire array): 5.07mm(H) x 3.38mm(V) 2048(H) x 1536(V) (4:3, still mode) 2304(H) x 1296(V) (16:9, sHD mode)
Lens	Focal Length	Lens f= 2.6mm
	F No.	F= 2.5
	F.O.V(D)	125°
LCD Display	88 Digital Tube Display	
Viewfinder	Optical Viewfinder	No
Focusing	Type	Fixed
LED	Modes	No
Exposure	Auto	
White Balance	Auto	
Video Size	1920x1080P 30 fps	
Audio	Mic Equipped	
Storage	Media	Internal memory: no internal memory External memory: supporting SDHC Card up to 32GB
	File Format	Photo : JPEG Audio : PCM 8KHZ 16bit Video : H.264 High Profile Level 4.2 MOV
	Image Size 5Mp	5M (2592x1944)
5.8G Transmitter	Build-in 5.8G 200mW wireless AV Transmitter	
Interface	USB 2.0 : Recharging/File Transfer	
Dimensions (W*H*D)	L: 60mm, W: 41mm, H:24.7mm (with lens part will be 30mm)	
Support	Mass Storage Driver Windows XP(Service pack 2) or later Mac OS X 10.4.11 or later	

System Requirements

For Windows	<ul style="list-style-type: none"> *PC with processor better than Pentium 4 3.2GHz *Windows XP(Service pack 2) or later *Minimum 1 GB System RAM *Minimum 256 MB RAM Video Card *USB port, CD-ROM drive *1024*768 pixels, 32-bit color display compatible monitor
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