EasyPilot RTF



Thanks for purchasing the Easypilot. Designed in California, assembled in China.

Disclaimer

Please read the disclaimer carefully before using this product. By using this product, you hereby agree to this disclaimer and signify that you have read them carefully and completely. This product is not suitable for people under the age of 14.

Please read the instruction manual and warnings carefully. Before every flight, make

sure the battery is fully charged and power connections are secure. DO NOT fly around crowds, children, animals or objects. EMAX ACCEPTS NO LIABILITY FOR DAMAGE(S) OR INJURIES INCURRED DIRECTLY OR INDIRECTLY FROM THE USE OF THIS PRODUCT.

Precautions

Please follow the instructions to assemble and to operate this product in a proper way.

Pilots do not use this product if you have physical or mental illness, dizziness, fatigued, or use while under the influence of alcohol or drugs.

Please fly in a safe area away from people.

Do not modify or use other parts and accessories not approved for the use of EMAX.

Do not use this product in harsh environments (such as winds, rain, lightning, snow, etc.).

Do not use this product in a strong electromagnetic environment.

Support

Please visit emax-usa.com or emaxmodel.com for any updates or support needs.

Product specification

Easypilot	Parameter
Diagonal wheelbase (without paddles)	82.5mm
Maximum size of the aircraft (without antenna, cable tie)	134mm
Aircraft weight (without battery)	35g
Motor	0816

Propeller	AVAN Tiny 40mm four-bladed paddle				
Main Flight Controller	4 in one 3A ESC EMAX 2.4G receiver				
Camera	600TVL CMOS camera				
Transmitter	25mW Adjustable frequency 37CH. Ham radio license required for use in North America.				
Battery	1 Cell 450 mAh HV lipo battery				
Radio					
Maximum appearance size	182*135*82(mm)				
weight (without battery)	210g				
Number of channels	6 Channels				
Transmission frequency	2.4GHz ISM Band (2400MHz~2483.5MHz)				
Output Power	18dbm				
Modulation	GFSK				
battery	1 cell 18650 lipo battery				
Goggle					
Maximum appearance size	140×153×90(mm)				
weight	390g				
Resolution	480×272				
battery	1 cell 18650 lipo battery				

Product list

- 1. Easypilot ×1
- 2. Radio×1
- 3. Goggle×1
- 4. Instruction manual ×1
- 5. Emax 1s HV 450mAh×1
- 6. Charger×1
- 7. Extra Propeller Set (2x CW, 2x CCW)
- 8. Screwdriver×1
- 9. Goggle battery case × 1

Easypilot Structure





Battery and Charging

This is a 6 channel 2.4 GHz radio, The radio is powered with an 18650 battery. The radio comes with the battery installed; however if a reinstall is needed make sure the negative side is on the side touching the spring of the radio. The radio can be charged with a micro usb cable attached right below the speaker and power button.



Operation

Power

Power on and off by holding the power button for 2 seconds. When the radio is turned on, the green light is always on, indicating that the battery is fully charged. When the red light is on, the battery voltage is lower than 3.5V. When the red light flashes and the buzzer alarm indicates that the voltage is lower than 3.3V. Need to charge the radio immediately.

Binding

The radio comes already bound to easypilot in the ready to fly kit. If binding is necessary follow these steps:

- 1. Make sure the easypilot and radio are powered off.
- 2. Press and hold the radio throttle trim down and pitch trim down buttons on the radio and turn easypilot on. When the green light flashes quickly then release all buttons .
- 3. Bring the radio and the easypilot close and power on the easypilot then the green light of the radio will steady light.
- 4. Power off the easypilot and power on again, the bind is completed.

Trim

There are trim buttons for each axis on each gimbal. Each trim adjustment will beep the radio and a longer beep indicate the center trim. Adjust roll and pitch trim when hovering to achieve a stable hover with no gimbal input.

Gimbal Calibration

The radio comes already pre-calibrated; however, recalibrating can help troubleshoot some problems.

1. Make sure the radio are powered off.

- 2. Press and hold the yaw trim right and the roll trim left buttons . Then power on the radio, when the radio red light flashes quickly then release all the buttons.Do not touch any of the radio levers at this time.
- 3. After the red light flashes quickly 2S, the red light changes to a slowly flashing state. At this time, manually shake the rocker to the maximum range, and then cycle two times.
- 4. Click the power switch button, the green light is always on,at the same time,the buzzer will beep, Then the gimbal calibration is completed.

Goggles



Battery and Charging

The battery cartridge comes preinstalled with a 18650 battery. If a battery reinstall is required please use caution making sure to install with the correct polarity. The battery can be charged in the cartridge with a micro USB cable. When the battery is charging the indicator light is green. The indicator light will turn red when charging is complete.

Installation of battery + Charge Indicator light

Assembly

Minimal assembly is required for proper operation of the goggles. Follow the steps below.

- 1. Attach the two supplied antennas by screwing them on to the SMA connection point.
- 2. Place the battery cartridge in the sleeve on the backside of the head strap.
- 3. Feed the power lead through the loop on the top side of the head strap and plug in the power lead to the port on the goggles. This will power the goggles.

4. Please remove antennas and power lead when traveling/storing the goggles.

Operation Power

Power on the goggles by plugging in the power lead from the battery cartridge. Power off by unplugging the power lead from the battery cartridge.

Video Channel Selection

There are 2 buttons (CH and FR) that can manually select the correct channel and frequency band. The table below shows the channel and frequency band map with the respective frequency number. This is the recommended way to change channels to the correct frequency on easypilot. The CH button will cycle through the channel number (1-8) while the FR button will cycle through the frequency band (A,B,E,F,R,H). The frequency band and channel number will be shown in the upper left corner of the screen when cycling through channels.

Tip: Make sure easypilot is powered on. When cycling through channels it will be easier to spot the correct one with the video feed from easypilot.

FRCH	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	
А	5865	5845	5825	5805	5785	5765	5745	5725	MHz
В	5733	5752	5771	5790	5809	5828	5847	5866	MHz
Е	5705	5685	5665	—	5885	5905	—		MHz
F	5740	5760	5780	5800	5820	5840	5860	5880	MHz
R	5658	5695	5732	5769	5806	5843	5880	5917	MHz

Caution: Make sure the goggles are on the correct channel that easypilot is on. Video Channel Auto Scanning

There is a scanning function on the goggles to aid in finding which channel easypilot is on. First power on easypilot then press the "A" button to start the auto scan mode. This mode will cycle through all channels and select the channel with the best video reception. The frequency band and channel number will be shown in the upper left corner of the screen when cycling through channels.

Caution: If using this feature with multiple easypilot (or other drones with a vtx) powered on, autoscan may select the wrong drones channel. We recommend manually selecting the correct channel to prevent mismatch errors.

Screen Adjustments

The menu button ("M") will bring up a menu where you can adjust brightness, contrast, saturation, and language. To cycle through menu options, press the menu button again. With the current selection highlighted, adjustments can be made pressing the "FR" button to increment and "CH" to decrement. The menu will close automatically after 3 seconds if no input was detected.

Charger Charge battery of Easypilot

- 1. Pull out the battery from the Easypilot.
- 2. Take out the battery charger, and insert the battery power port to the charger.

- 3. Connect the charger with the computer USB port. While charging, the LED will light up; when fully charged, the LED will light off; when the battery take off, the LED will flash.
- 4. Reconnect the battery to the Easypilot.

CAUTIONS WHEN CHARGING

- 1. When charging, please put this product on a dried or ventilated area and keep it far away form heat source or explosive product.
- 2. When charging, please remove the batteries from the Easypilot. Then charging process should be supervised by an adult so as not to cause an accident.
- 3. After flying, please do not charge the battery if the surface temperature is still not cool. Otherwise it may cause a swollen battery or even a fire hazard.
- 4. A battery when not in use for a long time will lose its charge automatically. Charging or discharging too often may reduce the life of the battery.

Flight

Always use caution when flying and operate in an open and controllable area. Please learn the flight controls first before powering on the aircraft to fly.

Fly Easypilot

Start by powering on your Radio and Goggles. Easypilot comes already bound to your radio and on the right video channel matched with your goggles. Power on easypilot by sliding the battery into the battery tray and plugging it in. Once the battery is plugged in, set easypilot on a stable surface so it can calibrate. Calibration takes a few seconds then easypilot is ready to fly. Easypilot can fly for 4 minutes on a fully charged battery. The easypilot will landing when the battery reaches 3.3v.



Arming

Arming refers to setting easypilot to a fly ready state. When easypilot is powered on first it will not spin up the propellers until it is armed. Arm the aircraft by first moving throttle to the bottom position. Then move the left switch of the radio to its top position upwards.



In the event of a crash always disarm immediately. Failure to disarm in a timely manner can damage easypilot.

Always disarm easypilot before handling it. Disarm easypilot by setting the arm switch to its top position .

Flying Modes

The right switch on the radio controls the different flight modes of easypilot. There are 3 modes: easy, intermediate, and advance. The switch in its first position downward is easy mode, second position is intermediate, and third position is advanced.



Easy Mode: While in this mode the internal barometer helps maintain the altitude of the aircraft. When the throttle signal is pushed to the maximum, the easypilot will increase the altitude at a fixed speed. When the throttle is pushed to the minimum, the airplane will reduce the altitude at a fixed speed. The altitude of all other throttle positions remains unchanged. This mode limits flight angle for a slow flight speed.

Radio Stick Controls(Easy Mode)

The left stick controls throttle of easypilot. The right stick controls pitch and yaw of the aircraft.

Left Stick Diagram



Intermediate Mode: While in this mode the internal barometer helps maintain the altitude of the aircraft. The gyroscope achieves the stability of the easypilot. This mode has limited angle and a slow flight speed. In this mode yaw is independent from roll stick and the easypilot like FPV quadcopter.

Radio Stick Controls(Intermediate Mode)

The left stick controls throttle and yaw direction of easypilot. The right stick controls pitch and roll of the aircraft.

Left Stick Diagram



Advance Mode: This is the advanced flight control mode in which the barometer is not used to maintain altitude to allow for more precise flying. The angle limit is increased to allow faster movements.

Radio Stick Controls(Advance Mode)

The left stick controls throttle and yaw direction of easypilot. The right stick controls pitch and roll of the aircraft.

Left Stick Diagram



Line of Sight Flying

To learn how to fly easypilot start by flying it line of sight (no goggles yet). Power on easypilot and set it down in a cleared room. Arm easypilot then Control the throttle according to different modes. Work on maintaining a constant altitude.

First Person View (FPV) Flying

Make sure easypilot and the goggles are on the same vtx channel and that you have a clear area to fly around in. Apply the same principals learned when flying easypilot line of sight except now work on flying in a forward direction while maintaining a controlled constant altitude. It is easier to learn flying FPV by always moving in a forward direction so always apply a slight amount of pitch using your right thumb stick. You can steer easypilot like a car using yaw on the left thumb stick.

Tips: Easypilot can fly for a maximum of 4 minutes. When the battery reaches 3.3v, Then the easypilot will be landing due to low voltage.

How to land your easypilot

Easy Mode&Intermediate Mode: Pull the throttle signal to the lowest throttle, the product will slowly landing on the ground and motor will shut down finally.Finally arm the easypilot.

Advance Mode: After playing, control the drone to the ground and keep the throttle at the lowest position until the motor stop working. Finally arm the easypilot.

Gyro calibration

- 1. Power on the easypilot and radio, makesure the easypilot disarm .
- 2. Change the mode button from easy to advance 6 times, the green light of the easypiot is trun always on.
- 3. Then we should wait 5 seconds, the green light of the easypiot is trun off. the calibration is complete.



Easypilot VTX Settings

Vtx Schematic and Button Diagram



VTX Channel Settings with the Button

1. Normal display

All LEDs on the VTX are normally off until the button is pressed. To check band and channel status click the button once quickly, and LED starts to indicate frequency band and frequency channel. First indicate the frequency band and then indicate the frequency channel. After all 2 rounds of LED display cycles, all LED will be off.

2. Menu Entry / Exit

(1)Press the button and hold for 5s to enter the menu. After entering the menu, ban d LED lights up.

(2)Press the button and hold for 5s again to save parameters and exit the menu. Aft er saving and exiting the menu, all LED goes out.

3.Enter/Exit Band / Channel option

(1) After entering menu, short click button to switch frequency group band / frequency point, and the LED of the corresponding menu is lit.

(2) Press the button and hold for 2s to enter frequency group band / channel option.

(3) Press the button and hold for 2s again to exit frequency group band / channel op tion and return to the menu.

4. Band / Channel parameter change

After entering frequency group band / channel option, short click button to change the parameter.

Button Menu Diagram Button Menu Diagram



Factory Locked Configuration (≤ 25mW Output)

FRCH	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	
А	5865	5845	5825	5805	5785	5765	5745	—	MHz
В	5733	5752	5771	5790	5809	5828	5847	5866	MHz
Е	-	—	-	-	-	—	—	—	MHZ
F	5740	5760	5780	5800	5820	5840	5860	—	MHz
R	—	—	—	5769	5806	5843		—	MHz

FCC: Ham radio license required for use in North America.

EU/CE: Frequencies limited to prevent transmitting outside of designated CE frequencies.

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FRCH	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	
А	5865	5845	5825	5805	5785	5765	5745	5725	MHz
В	5733	5752	5771	5790	5809	5828	5847	5866	MHz
Е	5705	5685	5665	—	5885	5905	—	—	MHz
F	5740	5760	5780	5800	5820	5840	5860	5880	MHz
R	5658	5695	5732	5769	5806	5843	5880	5917	MHz

User Unlocked Configuration (Adjustable Output)

FCC: Ham radio license required for use in North America. E band Channels 4, 7, and 8 limited to prevent transmitting outside of designated amateur radio frequencies. Adjustable video output power only available on select models.

EU/CE: Do not use Use Unlocked Configuration.

* By purchasing this product, the user is agreeing that he/she understands these responsibilities and will operate the equipment legally. EMAX cannot be held responsible for a user's actions purchasing and/or using this product in violation of the governmental regulations.

Trouble shooting

1. When pushing the throttle signal does not improve the flying height or the flight in the primary mode is not possible, it may be caused by low battery or battery damage.

2.If the easypilot is still flying to one side dramatically or spinning while hovering. Please switch off the power of both the easypilot and transmitter and then repeat the pre-flying steps or please recalibrate the gyroscope. For the calibration method, please refer to the gyroscope calibration.

Thank you for purchasing our product! Enjoy Flying Easypilot.



Please pay attention to your surroundings. Not Recommended for persons under 14 years of age.

Please check FAA guidelines and/or "Know before you Fly" be fore using this product.