

1. User Information

Note: All instructions, warranties and other related documents are subject to change. For current product literature see www.tobyrich.com/support.

In various countries, there is a compulsory insurance requirement, also for model and toy airplanes. In any case, please inquire with your liability insurance and, in case of doubt, ensure that you are insured for the operation of such planes.

1.1. Data protection

The SmartPlane Pro App does not store any personal data, without express permission.

1.2. Definition of Terms

The following terms are used throughout the product literature to determine the hazard levels in dealing with the product:

NOTE:	Refers to useful information.
CAUTION:	Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury.
WARNING:	Indicates a potentially hazardous situation, which, in case of non-compliance with the instructions, may result in severe injury.

WARNING: Read the ENTIRE instructions manual to familiarize yourself with the functions of the product before commissioning. Incorrect handling can damage the product and personal property and cause serious injury.

This is a technically demanding product for hobby use. It must be handled with caution and prudence and requires some basic manual skills. Failure to use the product in a safe and circumspect manner could result in injury or damage to the product or other property. Do not attempt to disassemble the product without the consent of the manufacturer, to use it with incompatible components, or to modify it at will. This manual contains safety instructions as well as operating and maintenance instructions. To ensure correct operation and to avoid damage or serious injury, it is imperative that you read all the instructions and warnings in this manual before commissioning and follow them.

1.3. Warnings and safety instructions

- » Always keep a safety distance on all sides around the model to avoid collisions or injuries. This model is controlled by a radio signal, which can be disturbed. These disturbances can lead to loss of control.
- » Always keep a safety distance to public roads and high voltage cables.
- » Always operate your model on open terrain, far from automobiles, traffic and people.
- » Keep a distance to airports of at least 1 mile.
- » Always pay attention to the wind, the weather and obstacles.
- » Always follow the instructions and warnings for this model and all related accessories

(rechargeable batteries etc.).

- » Avoid any water contact. Humidity damages the electronics.
- » Never put parts of your model in the mouth as this will cause serious injury, even death.
- » Never operate your model with a non-charged smartphone or tablet.
- » Keep your model always in sight and under control.
- » Observe the legal requirements for maximum altitude.
- » Always use fully charged batteries.
- » Always keep all parts clean.

- » Never operate the airplane with damaged wiring.
- » Never touch moving parts.
- » Caution: Long hair can catch in the SmartPlane Pro^{FPV+} Propeller.
- » Take out liability insurance before use.
- » You will take part in the general air transport with your aircraft. If you want to use your aircraft commercially, you need an ascension permit.
- » The remote control (e.g., smartphone, tablet) must always be switched on while the aircraft is connected.
- » Never touch the rotating propeller.

Be sure to check the drones regulations applicable to your country for specific national rules and regulations regarding the operation of unmanned aerial vehicles.

2. Checklists: Flight preparation and follow-up

2.1. Preparation of the first flight

- Remove the contents of the package and check it thoroughly for damage and functional integrity.
- Read these instructions thoroughly.
- Charge the battery (s. chapter 3.1.).
- Download and install the App from the App Store or Google Play Store (search term "SmartPlane Pro TobyRich").
- Search for a large open space for your first flights, and choose a windstill day to check the flight behavior of the SmartPlane Pro^{FPV+}.
- Perform the Preflight Check (s. chapter 2.2.).
- Switch on the aircraft and connect it to the app (s. chapter 3.3.).

2.2. Preflight Check

(to be carried out before each flight)

- Check whether the propeller can rotate freely.
- Check the rudder for free movement.
- Align the antenna vertically.
- Use a fully charged battery.
- Use a fully charged Smartphone.
- Turn your smartphone on loud to get acoustic warnings and tips.
- Caution: Turn your smartphone on in flight mode. Otherwise, the connection will interrupt for incoming calls.

2.3. Maintenance after the flight

- Remove the battery from the aircraft
- Charge the battery (at least every 3 months).
- Repair or replace any damaged parts.
- Keep battery and SmartPlane Pro^{FPV+} separate from each other.
- Store and transport the SmartPlane Pro^{FPV+} exclusively in its packaging, in order to prevent damage.

3. Operation

This product is a stunt and racing plane. It has highly developed sensors inside the aircraft, which enable active position control and flight stabilization. This results in smoother flying, allows beginner-friendly flying as well as automatic stunts at the push of a button. Throughout the flight, the sensors inside the aircraft permanently analyse the position in the airspace and calculate necessary compensatory movements of the rudders. The positioning system is already active before takeoff.

3.1. Charging the battery

To charge the supplied battery pack, insert it into the USB charger device and plug it into a USB port, such as a computer, laptop or via a USB wall plug adapter. If you use the USB port of your computer for charging, make sure that the computer is turned on. At least 5V at 250 mA is required. You can also use a 5V 1A output. The battery is fully charged as soon as the red LED ceases to light up.

Important: Charge the battery at least every 3 months.



3.2. Download the SmartPlane Pro App

Search for the terms "TobyRich SmartPlane Pro" in the App Store or on Google Play and download the app to your smartphone or tablet.

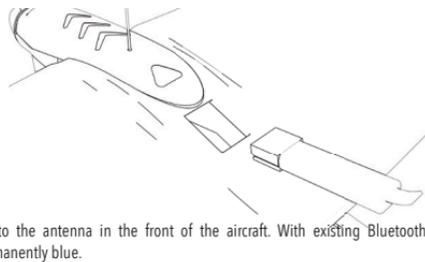


2.4. SmartPlane Pro^{FPV+} specifications

Flight time	Weight	Charging time
approx. 12 min	1.2 oz	20 min
Length	Wingspan	Battery
13 in	11.8 in	LiPo 185 mAh

3.3. Switch on the SmartPlane Pro^{FPV+}

1. To connect the SmartPlane Pro^{FPV+}, plug the charged battery into the battery bay of the aircraft up to the limit stop. The LED on the plane flashes blue now.
2. Enable Bluetooth in the smartphone settings and start up the SmartPlane Pro App.
3. Keep your smartphone close to the antenna in the front of the aircraft. With existing Bluetooth connection, the LED is now permanently blue.



3.4. Control

3.4.1. Tilt mode

With two simple hand movements, the App allows for comfortable and easy control of the SmartPlane Pro^{FPV+}. Only one hand is needed for this. The smartphone needs to be held flat and horizontal for takeoff.



- » **Speed / flight altitude:** The thumb control is used to move the thrust regulator on the display of your smartphone. If this is pulled up, the plane gains speed. A downward movement reduces this. The altitude of the Smart Pro plane can be adjusted via the speed.
- » **Spiralling:** Through a slight tilting of the smartphone (See picture) to the left or right, the SmartPlane Pro will start spiralling.

See also the explanations in the videos at www.tobyrich.com/support.

3.4.2. Joystick-Mode

Position the joystick over the right circle. Press the two suction cups on firmly to secure the position. Use your left thumb to operate the thrust controller. Use the Joystick to steer left and right.



IMPORTANT: Before installing the joystick, clean the smartphone screen with a suitable cleaning cloth, e.g. a microfiber cloth.

For more tips and tricks, check out the tutorial in the SmartPlane Pro app.

3.4.3. Stunts

Through the use of control gestures, you can have your SmartPlane Pro^{FPV+} run various stunts and aerobic maneuvers. Part of the aerobic maneuvers ends automatically after activation →. Other aerobic maneuvers, on the other hand, must be terminated by repeating the control gesture ↺. Under settings > Stunt-Editor you can assign an aerobic maneuver to each gesture. The SmartPlane Pro App is available at the time of launch with the following control gestures and aerobic maneuvers (TobyRich is constantly working on further stunts):

control gestures

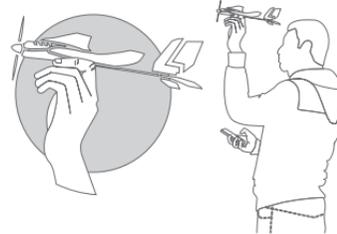
Upflick	Downflick	Double Tap
Flick the smartphone abruptly toward your body	Move the smartphone abruptly toward the ground	Touch the screen twice in rapid succession
Standard setting: Change between Helicopter and Hover Mode	Standard setting: Boost	Standard setting: Change between Airplane and Helicopter Mode

aerobic maneuvers

Airplane Mode ↺	Helicopter Mode ↺	Hover Mode ↺
The SmartPlane Pro ^{FPV+} flies forward horizontally with normal speed. This mode is recommended for the outdoor flight.	The SmartPlane Pro ^{FPV+} flies forward horizontally with normal speed at a 45 ° angle. This mode is recommended for the indoor flight.	The SmartPlane Pro ^{FPV+} flies vertically on the spot and rotates around its own axis.
Boost →	Circle Mode ↺	Looping →
The SmartPlane Pro ^{FPV+} gets a speed boost for a couple of seconds. This is e.g. useful to fly against the wind.	The SmartPlane Pro ^{FPV+} flies circles autonomously.	The SmartPlane Pro ^{FPV+} makes a Looping. IMPORTANT: Fly at a sufficient altitude!

3.4.4. Start

Hold the aircraft in one hand and the smartphone in the other hand. To start the aircraft, tap the start button, and gently push the airplane forward at the start signal of the app. In buildings, you should start in helicopter mode and throw the aircraft forward very gently / slowly at a 45 ° angle. Make sure in any case that there is enough space available for your first takeoffs!



3.5. Flight

Always choose a wide open area for the flight with your SmartPlane Pro^{FPV+}. Ideal would be to fly on a designated airfield. If this is not the case, do not allow the aircraft to fly near houses, trees, pipes, waterways and building structures. Flights should also be avoided in areas where many people are present, e.g. in busy parks, on school yards or football pitches. Find out about local laws and regulations before you choose a place for your flight.

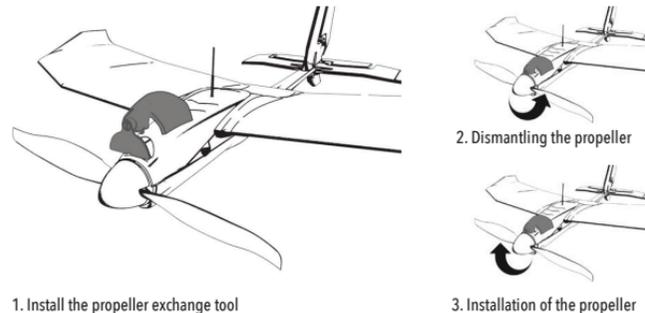
If there is a problem in flight, or if you are unsure about the flight, just use your finger to turn off the engine completely. Also, tilt the smartphone all the way to the right or left to get a sharp curve in the respective direction. Through these measures, the SmartPlane Pro^{FPV+} will begin to drop at maximum speed in a spiral.

3.6. Switch off

To turn off the airplane, remove the battery from the aircraft.

3.7. Replace propeller

To change the propeller, insert the supplied propeller exchange tool into the gap between the propeller and the aircraft body and push it down firmly with the thumb. Embrace the aircraft while doing this so that the propeller is free to rotate. To release it, turn it counter-clockwise until it has come off the plane. Then insert the replacement propeller onto the engine-axis and turn it clockwise until it presses the replacement tool slightly against the aircraft body. Then remove the replacement tool again. It is important to slightly clamp the plate of the replacement tool. The gap between the propeller and the aircraft must be set exactly to ensure proper functioning and durability. A video tutorial is available at: www.tobyrich.com/support.



1. Install the propeller exchange tool

2. Dismantling the propeller

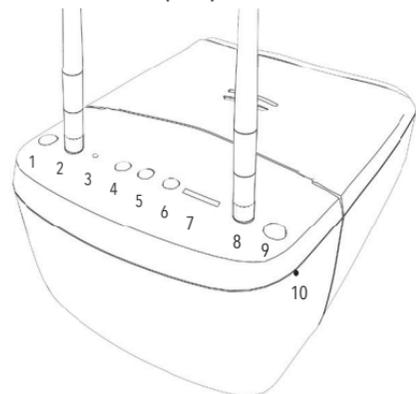
3. Installation of the propeller

3.8. Bluetooth connection

Note: The Bluetooth connection can be interrupted outside a distance of 100 meters. Avoid this condition. The app warns you acoustically before reaching the maximum range. Turn around no later than at this time. In the case of loss of connection, an emergency stop of the aircraft is carried out and it glides to the ground.

4. Usage of live video transmission (FPV)

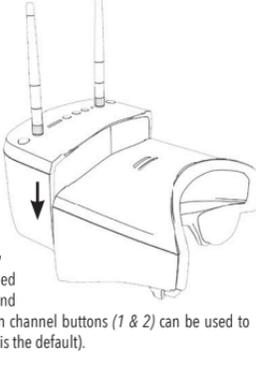
1. Take Pictures (short actuation)
Take Videos (long actuation)
2. Antenna thread 1
3. Battery indicator
4. Set the reception channel
5. On / off switch
6. Change monitor settings (long actuation),
Change input source (short actuation)
7. MicroSD Card
8. Antenna thread 2
9. Automatic station search
10. Charging socket



4.1. Preparing the video goggles

The SmartPlane Pro ^{FPV+} comes with video goggles with built-in display and video receiver. The unit can be worn as goggles on your head, or be used as a simple monitor. The optics must be mounted on the monitor for use as video goggles.

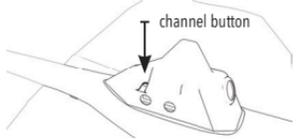
Before use, the battery in the goggles must be fully charged with the included USB cable (10). The LED (3) on the front of the goggles is lit up red during the charging process. When the battery is full, the LED turns green. The rod antenna must always be attached to the goggles (2 & 8). Switch the goggles on and off by pressing and holding down (for 3 seconds) (5) the power button. The reception channel buttons (1 & 2) can be used to switch between the channels (Raceband channel 1 to 8, channel 3 is the default).



4.2. Preparing the video camera in the SmartPlane Pro ^{FPV+}

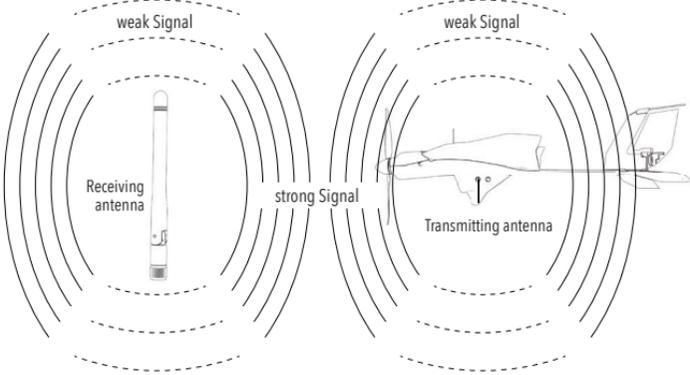
The video function must be activated in the SmartPlane Pro ^{FPV+} before the first commissioning! To do so, start the SmartPlane app and plug the battery into the aircraft. When you first connect Smartphone and SmartPlane Pro ^{FPV+} you can agree to the terms of use and thus enable video transmission.

The camera in the SmartPlane Pro ^{FPV+} transmits an analogue video signal without sound on one of four raceband channels (Raceband 3, 4, 5, 6; Frequency 5732 MHz, 5769 MHz, 5806 MHz, 5843 MHz). By default, channel 3 (5732 MHz) is set in the SmartPlane Pro ^{FPV+} and in the video goggles. Up to four SmartPlane Pro ^{FPV+} can be used simultaneously. The channels cannot be used in double occupancy. The channel is changed by briefly pressing the channel button on the bottom of the airplane. In the process, the video transmitter changes through the four available channels. Correspondingly, the channel must also be selected in the video goggles by actuating the reception channel button (4).



4.3. General notes on the use of FPV

The video signal is transmitted analogously on the 5.8 GHz band. Therefore, the transmission does not abruptly reach the range limit, but gets poorer continuously. If you see increasing noise in the image, fly back to yourself to prevent a complete failure. The overall transmission quality is strongly dependent on the environment (e.g., disturbing reflections on walls and inside buildings, influence of WLAN routers, etc.). Never aim at the model with the antenna, because the reception performance of the antenna is worst in this orientation! The best reception is with parallel oriented antennas.



5. Warnings and specifications for the battery

The SmartPlane Pro ^{FPV+} is equipped with a lithium polymer battery (LiPo).

Caution: All instructions and warnings must be followed strictly. Failure to handle LiPo batteries correctly can result in fire, personal injury and / or property damage.

- » Do not modify the battery.
- » Do not use or store the SmartPlane Pro ^{FPV+} or the battery near a source of heat, such as a fire or heating.
- » Do not throw or hit the SmartPlane Pro ^{FPV+} or the battery against a hard surface.
- » Use only the included charger to recharge the battery.

Important: Charge the battery at least every 3 months.

6. Disposal of waste electrical and electronic equipment in the European Union

 Disposal of electrical and electronic equipment and components
This product contains rechargeable batteries. In the interest of protecting the environment, please do not dispose of the product with its battery in the household waste at the end of its useful life. Disposal can take place at approved recycling or disposing locations in accordance with the local regulation.

7. CE-Information

 Hereby, TobyRich GmbH, D-28217 Bremen declares that the device SmartPlane Pro ^{FPV+} (SPFP02-017) when used as intended, is in compliance with the basic requirements and other relevant provisions of Radio Equipment Directive (RED) 2014/53/EU. The declaration of conformity can be found on the Internet at www.tobyrich.com/en/support/doc.

 Not suitable for children under 14 years of age. This is not a toy. Please read the operating instructions before use. As a Class 1 device, sales and operation are permitted in all countries of the EU.

8. FCC-Information

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for Class B digital device, pursuant to 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 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 the receiver.
- » Connect the equipment into 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.

9. Troubleshooting

The LED lights up red.

The aircraft has detected a problem. Check the error message in the app and fix the error if necessary.

The propeller is blocked.

1. Make sure that no fibers (hair, grass, etc.) are wrapped around the shaft.
2. If the propeller rubs against the nose of the aircraft, loosen it with the propeller-exchange tool (s. chapter 3.7.)

The rudder is blocked.

If the rudder cannot be moved, it has probably jumped out and must be hooked up again carefully:

1. Insert the top hinge first.
2. Then, snap in the lower part of the hinge.



The app crashes.

1. Verify that you have uploaded the latest version of your Android or iOS operating system.
2. Delete the SmartPlane Pro app and download the app again.
3. Restart your smartphone.
4. Turn Bluetooth off once and then on again. Turn off the wireless LAN, too.

The battery does not charge.

1. Always ensure that the battery is fully charged at least every 3 months. Failure to do so may result in permanent damage to the battery. In this case, it must be replaced. You can get a replacement battery at www.tobyrich.com
2. Plug the battery charger into another USB port. Some computers turn off the USB ports when they are inactive. Also ensure that the socket adapter is functional.
3. Check whether the LiPo battery is correctly inserted into the battery charger. In case of doubt, check out our tutorials at www.tobyrich.com/support an.

Something is broken.

1. Parts of the fuselage, wing and tailplane can be repaired using commercially available EPP adhesives. Follow the instructions given by the adhesive manufacturers when doing so.
2. Parts made of hard plastic can usually be repaired with superglue.

Caution: Never glue parts of the propeller! Replace the propeller immediately in case of a defect! (See chapter 3.7.)

Note: Also be careful with the use of glue near the rudder hinges. These must not be glued, since in this case the aircraft is no longer airworthy.

For additional troubleshooting information, please visit www.tobyrich.com/support

10. Warranty

For information about warranty conditions, refer to the general terms and conditions of the retailer where you purchased the SmartPlane Pro ^{FPV+}.

Keep the receipt safe as a purchase receipt! The warranty for all products is limited to the countries in which the product was originally offered. You can find the conditions of the worldwide warranty under www.tobyrich.com/en/support/warranty.

Keep these instructions in a safe place as they contain important information.

Questions? Assistance? Problems?

Go to: www.tobyrich.com/en/support

support@tobyrich.com

www.tobyrich.com

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SmartPlane Pro ^{FPV+}

app controlled VR plane



Instruction manual

- English -

www.tobyrich.com



SPFP02-017

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