

RISE™ INDURFIN

130 RACER



INSTRUCTION MANUAL

WARNING

Please read and understand this manual, the operation and all safety aspects required for the safe operation of the product. Before use, if you feel that this product is not for you, please return it to the place of purchase.

Manual Specifications and Description Changes

The instruction manual, warranties, and other associated documentation are subject to change without notice. Hobbico assumes no responsibility for inadvertent errors to this manual.



WARNING! This product includes a lithium polymer (LiPo) battery. Improper handling may result in FIRE! You are responsible for following all safety precautions as outlined in this instruction manual.

INTRODUCTION

Thank you for purchasing the INDORFIN 130 RACER. We want the time you spend with your new R/C quadcopter to be fun and successful, so please read the entire manual before beginning setup. If for any reason you think this R/C model is not for you, return it to the dealer immediately. Your dealer cannot accept returns on any model after final assembly.

For the latest technical updates or manual corrections for the INDORFIN 130 RACER please visit the RISE web site at www.explore-rise.com. If there is any new technical information, changes or important updates to this model, a “tech notice” box will appear on the page. Click the “tech notice” box to learn more.

LITHIUM BATTERY WARNING!



This product includes a lithium polymer (LiPo) battery. Improper handling could result in **FIRE!** A lithium battery fire has the potential to ignite surrounding areas and may cause property damage or cause personal injury.

For safe LiPo handling, follow all of these guidelines. If you are unable to follow these guidelines, return this product to the place of purchase.

- **MOST IMPORTANT! NEVER** leave the charger and LiPo battery unattended while charging.
- Keep out of reach of children!
- **NEVER** charge a LiPo battery on a flammable surface or near combustible materials.
- **NEVER** charge inside a vehicle or at a location that could be damaged in the event of a LiPo fire.
- Do not charge or use a battery that is deformed, bent, crushed or has any type of visible damage.
- Only use the included factory approved charger with this LiPo battery.
- **ALWAYS** keep a supply of sand accessible when charging. Dumping sand on the battery will assist in extinguishing a LiPo chemical fire.
- It is normal for the charger to become warm to the touch. However, disconnect the battery and unplug the charger **immediately** if either becomes hot, begins to swell, or smoke!
- Disconnect the battery and unplug the charger if the charge time **exceeds 2 hours**.
- **ALWAYS** disconnect the battery and unplug the charger after the charge is complete.
- **ALWAYS** disconnect and remove the battery from your model **immediately** following operation.
- **ALWAYS** store/transport LiPo batteries in a **fireproof container** away from combustible materials.
- **NEVER** put a LiPo battery in the pocket of any clothing.
- Keep LiPo batteries out of reach of animals. A punctured battery may cause a fire.

- Do not use the included charger for any battery other than the one included with this model.
- In the event of a crash, place the battery into a **fireproof container** immediately. Examine the battery for damage before further use.
- Only operate and store batteries between 40-110° F (4-43° C).
- **NEVER** allow the battery temperature to exceed 140° F [60° C] during operation.
- **NEVER disassemble or modify a battery**, its wiring, or puncture cells, as this may result in fire.
- Do not allow the battery to short circuit by touching exposed wires together.
- Stop the operation of your model immediately when the battery power is low. A battery failure can occur when attempting to recharge an over-discharged battery.
- LiPo batteries **must always** be recycled or disposed of properly.

WARRANTY

RISE™ guarantees this kit to be free from defects in both material and workmanship at the date of purchase. This warranty does not cover any component parts damaged by use or modification. In no case shall RISE's liability exceed the original cost of the purchased kit. Further, RISE reserves the right to change or modify this warranty without notice. In that RISE has no control over the final assembly or material used for final assembly, no liability shall be assumed nor accepted for any damage resulting from the use by the user of the final user assembled product. By the act of using the user assembled product, the user accepts all resulting liability. If the buyer is not prepared to accept the liability associated with the use of this product, the buyer is advised to return this kit immediately in new and unused condition to the place of purchase.

To make a warranty claim, please contact our support team at
www.explore-rise.com/support

SAFETY PRECAUTIONS



Failure to follow these safety precautions may result in injury to yourself and others.

- Keep your face and body as well as all spectators away from the rotating plane of the blades whenever the battery is connected. Keep loose clothing, shirt sleeves, ties, scarfs, long hair or loose objects such as pencils or screwdrivers that may fall out of shirt or jacket pockets away from the rotors. The spinning blades of a model quadcopter can cause serious injury. When choosing a flying site for your INDORFIN 130 RACER, stay clear of buildings, trees and power lines. **AVOID** flying in or near crowded areas. **DO NOT** fly close to people or pets. Maintain a safe distance from the quadcopter.
- Your INDORFIN 130 RACER should not be considered a toy. Because of its performance capabilities, the INDORFIN 130 RACER, if not operated correctly, could cause injury to you or spectators and damage to property.

- **DO NOT** alter or modify the model. Doing so may result in an unsafe or unflyable model.
- When and if repairs are necessary you must correctly install all components so that the model operates properly on the ground and in the air. Please check the operation of the model before every flight to insure that all equipment is operating and that the model has remained structurally sound. Be sure to check connectors and the propellers before each flight. Replace them if they show any signs of wear or fatigue.

KNOW BEFORE YOU FLY

As a new owner of an unmanned aircraft system (UAS), you are responsible for the operation of this vehicle and the safety of those around you. Please contact your local authorities to find out the latest rules and regulations.



Federal Aviation Administration
faa.gov/uas

AMA

We urge you to join the AMA (Academy of Model Aeronautics) and a local R/C club. The AMA is the governing body of model aviation and membership is required to fly at AMA clubs. Though joining the AMA provides many benefits, one of the primary reasons to join is liability protection. Coverage is not limited to flying at contests or on the club field. It even applies to flying at public demonstrations and air shows. Failure to comply with the Safety Code may endanger insurance coverage. Additionally, training programs and instructors are available at AMA club sites to help you get started the right way. There are over 2,500 AMA chartered clubs across the country. Contact the AMA via the Internet at: www.modelaircraft.org



IMPORTANT: Two of the most important things you can do to preserve the radio controlled aircraft hobby are to avoid flying near full-scale aircraft and avoid flying near or over groups of people.

FEATURES

- 130 class racing quad
- Modular Oneshot125 speed controls, no soldering required
- 4100Kv 1104 size Brushless motors
- Ready to fly, no building required
- Flight Controller is pre-programmed, no setup needed
- 600TVL FPV Camera
- 200mW 40 channel VTX (25mW is available)

DIMENSIONS

Size: 135mm (5.3 in.) diagonal motor to motor

Width: 127mm (5.0 in.)

Length: 108mm (4.3 in.)

Height: 47mm (1.9 in.)

Prop: 70mm (2.75 in.) 3 blade propeller diameter

Weight: 106g (3.7 oz.) without battery

Indorfin RTF Racer Contents

- RISE Indorfin Racer
- Transmitter
- FPV Goggle and Monitor with antenna
- Goggle Foam
- 740mA 3s LiPo
- 2S/3S LiPo Charger with AC adapter
- Spare Props
- Prop Guards

- AA batteries
- Screwdriver

Indorfin FPV-R Racer Contents

- RISE Indorfin Racer
- 740mA 3s LiPo
- Spare Props
- AA batteries
- Screwdriver
- Receiver Cable

SETUP

UNBOXING

Remove the contents of the box and become familiar with the included parts. To easily remove the transmitter from the packaging, push outward at the location shown while lifting up on the transmitter from the same side.



LOW BATTERY ALARM

When the flight battery voltage gets low, the drone will beep to indicate that it needs to land soon.

WARNING – Do not continue flying the Indorfin until the battery voltage is too low for the drone to stay in the air. The battery can be damaged if the voltage drops below 3.0 volts per cell (9 volts).

BETAFLIGHT CONFIGURATOR INSTALLATION

The Indorfin flight controller has Betaflight firmware loaded. To test the controls and make changes to the settings, the Betaflight Configurator app must be loaded on your PC. Download and install the Betaflight Configurator app from the Chrome Web Store. Open the app and click on the link for the latest CP210x driver. Install the driver and connect the Indorfin to your PC with a micro USB cable (not included). After the drone is connected to your PC, select the COM port in in the Betaflight

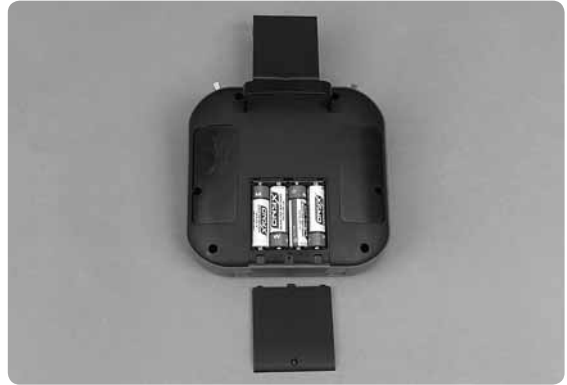
drop down box and click on the Connect Button. The app will display a virtual model of the drone when it is connected.

Betaflight has a link to the Wiki that describes the features of the app. There are also several videos that explain how to setup and use Betaflight. Search for the Betaflight version you are using.

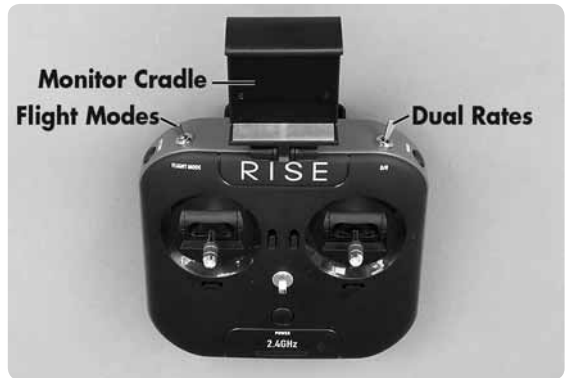
The flight battery will be needed to power the Indorfin if the receiver connections or the motors are being tested. **NOTE: Always remove the props from the Indorfin before connecting it to Betaflight when it is powered with the flight battery.**

RISE RISJ2000 RADIO SETUP

Insert 4 AA batteries in the battery compartment in the back of the transmitter.



Turn on the transmitter and connect the flight battery. After the Indorfin beeps 3 times, check the Receiver status LED on the bottom of the drone. If it is flashing slowly, the receiver is not linked to the transmitter. Please refer to the "Linking the Indorfin FPV-R to Vusion Transmitter" section on page 7 to link the transmitter and receiver.



NOTE: Always turn on the RISE RISJ200 transmitter **before** connecting the battery to the Indorfin.

BATTERY CHARGING

(RISE2023 Balance Charger & RISE2024 Charge Adapter)

The battery will need to be charged before the first flight.

Plug the AC wall adapter into a 120V outlet and connect the balance charger to the wall adapter. The power LED will illuminate solid RED. Plug the white balance plug on the battery to the 3S port on the charger. When charging, the charge

status LED will illuminate solid RED. When charge is complete the LED will change to solid GREEN. Typical charge time of a depleted battery is approximately 75 minutes.

NOTE: A blinking red charge status LED indicates a charging error.



- **NEVER** leave the battery unattended while charging.
- **ALWAYS** unplug the charger from the outlet and the battery when charging is complete.
- **NEVER** charge a puffed or damaged battery.

NOTE: It is normal for the charger to get warm during the charging process.

BATTERY INSTALLATION

Open the battery compartment cover and insert the battery with the leads at the bottom of the compartment so the wires will be below the props.

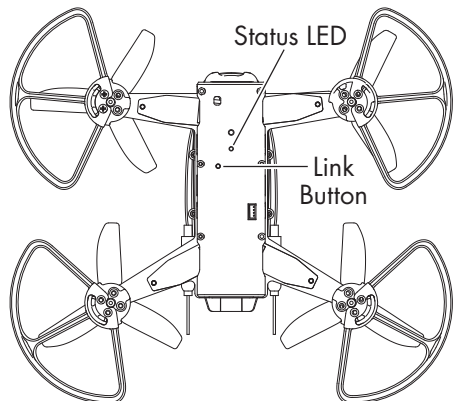


LINKING THE INDORFIN FPV-R TO THE RISE J2000 TRANSMITTER

The Indorfin FPV-R can be linked to the RISE J2000 transmitter included with the Vusion 250, House Racer, etc.

To link the drone to the J2000 transmitter:

1. Remove the propellers for safety.
2. Connect the flight battery to the Indorfin.
3. Press the RX link button until the status LED flashes rapidly.
4. Turn on the transmitter. The status LED will become steady when linked.



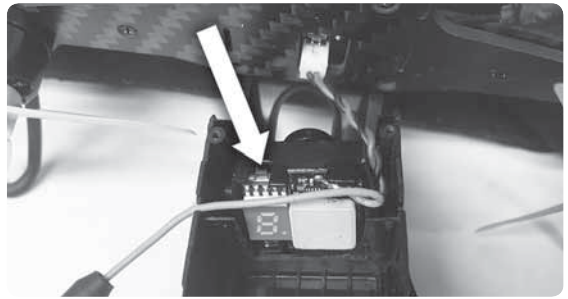
FPV CAMERA

The Indorfin has a built in FPV camera and a 40 channel VTX that transmits on the A, B, E, F and R bands. Your monitor or goggle must be set to the correct band and channel to display the video feed from the camera. If a Tactic FPV-RM2 LCD monitor is being used:

1. Power up the Indorfin.
2. Attach the FPV monitor antenna and turn on the monitor.
3. If the monitor is not displaying a signal from the drone, hold the "B" button on the monitor for 2 seconds and release it. The monitor will scan all the channels and lock onto the closest signal.
4. Place the monitor in the cradle on the transmitter or inside the goggle.

If the band or channel on the VTX must be changed –

1. Remove the 6 screws that hold the upper body to the chassis and turn the part over so the bottom of the camera is exposed.



2. Power up the drone and hold the camera button for a second to change the band. A quick tap on the button will change the channel. The camera LED will display a letter for the band and a number for the channel that is selected.
3. Replace the upper body when the desired band and channel have been selected.

Lines and static on the feed from the FPV camera are normal and will be more frequent as the Indorfin gets farther from the pilot. The typical FPV range is around 200 yards depending on how close sources of interference like Wi-Fi routers are to the flying area. If you have access to large open area to fly, replacing the antenna on the monitor with a circular polarized antenna like the Tactic FPV Cloverleaf Antenna (TACZ5305) will increase the FPV range.

IMPORTANT NOTICE! The Indorfin with the 200mW VTX requires a HAM Technicians license to operate legally in the USA. This involves a 35-question multiple-choice test and a small fee. You can contact an amateur radio club in your area for assistance or visit this link:

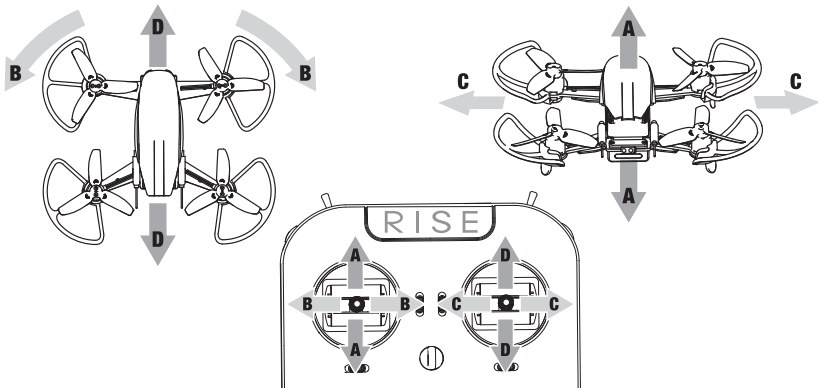


http://wireless.fcc.gov/services/index.htm?job=licensing_2&id=amateurarrl.org/getting-licensed

Customers outside of the USA should understand and follow all telecommunications or other regulations in your area.

FLYING

FLIGHT CONTROLS



DUAL RATES

The stock transmitter for the Indorfin has two settings for the sensitivity of the controls. When the switch is pushed toward the back of the controller, it is in the high rate position. The controls are at the maximum sensitivity.

Low Rates – when the switch is pulled forward, it is in the low rate position. The controls are at the least sensitivity.

If more or less sensitivity is desired, the control rates can be changed in Betaflight on the PID Tuning page. Increase the RC Rate to make the controls less sensitive at mid-stick. There is one setting that adjusts both the pitch and roll rates. Increase the Super Rate to make the controls more sensitive at full stick.

FLIGHT MODES

The Indorfin has 3 different flight modes.

Mode 1 – Angle Mode: (Accelerometers On) Angle Mode is for the pilot that is moving up from an entry level drone. This mode will level the Indorfin when the right stick is centered. It also has a maximum tilt angle of 55° so the drone cannot flip upside down.

Mode 2 - Horizon Mode: (Accelerometers On) Horizon Mode should be selected when the pilot wants to flip and roll the Indorfin but still have the drone level itself. There are no limits on the tilt angle in this flight mode.

To flip or roll the Indorfin, move the right stick as far as possible in the direction that you want to flip. At the same time, advance the throttle to 100%. When the drone has rotated 90°, reduce the throttle to about 25% and center the right stick. When the Indorfin is at 270°, move the throttle back up to midstick.

Mode 3 – Acro Mode: (Accelerometers Off) Acro Mode is for the pilot that wants the Indorfin to be as maneuverable as possible. The Indorfin will NOT level itself in this flight mode and there are no limits on the tilt angle.

ACRO-MODE FLIGHT

To hover, quick movements with right stick in the opposite direction of any drifting will be needed to keep the Indorfin level.

To fly the Indorfin in this mode, move the right stick in the desired direction and adjust the throttle position as needed to maintain the Indorfin's altitude. Move the right stick back to center and hold the throttle at its current position to maintain that speed and direction. To reduce the drone's speed, move the right stick the opposite direction. When the drone is moving at the desired speed, center the right stick.

The technique for flips is the same as in Horizon Mode.

You should be comfortable flying and flipping in Horizon Mode before attempting to fly in Acro Mode. When learning to fly in this mode, take off in Angle or Horizon mode and switch to Acro when you are in the air. Be prepared to switch back to Horizon mode when you get into trouble. Fly over tall grass to help protect the Indorfin from crash damage. The dual rate switch should be in the low rate position to help keep the drone's speed low.

FPV FLIGHT

Flying FPV can be difficult because it is hard to determine altitude with just the camera. Practice with a spotter so they can provide warnings and assist with locating the drone when it crashes. If possible, fly in an open area with tall grass to help protect the Indorfin from crash damage.

Stay low, use low rates and mode 1 or 2 until you can control the drone's height without assistance. When you are comfortable flying in an open area, practice flying a pre-set course.

MOTOR ARMING - D/R HIGH, YAW RIGHT, FULL DOWN THROTTLE

While the throttle is at its lowest setting, hold the yaw control to the right to arm the motors. The Indorfin will beep to indicate that the motors are armed, but the motors will not spin until the throttle stick has been moved up. The motors cannot be armed while the dual rate switch is in the low rate position. If flying with the controls in low rate mode, arm the motors while the switch is in high rates and select low rates after the motors are armed.

To disarm the motors, move the throttle to its lowest setting and hold the yaw control to the left. The motors will disarm automatically if the throttle is held down for 5 seconds. The dual rate switch must be in the high rate position so the yaw control can disarm the motors.

TAKEOFF AND LANDING

Turn on the transmitter and connect the flight battery to the Indorfin. Place the drone on a level surface and let it calibrate the sensors. The flight controller must not move for a few seconds to allow it to complete the setup procedure. The Indorfin will beep three times when it is ready to fly.

Arm the motors by holding the left stick in the lower right corner until the Indorfin beeps once. The motors are now armed. The motors will not spin until the throttle is above 0%. Advance the throttle until the motors start to spin. After verifying that all 4 motors are spinning, continue moving the throttle up until the drone is at least 2 feet above the ground. Note: the motors will automatically disarm if the throttle is left at 0% for 5 seconds.

To land, hover the Indorfin over the landing spot and slowly reduce the throttle. When the drone is on the ground, hold the left stick in the lower left corner until the drone beeps. Always remove the battery and charge it when the flight is completed. Note: if the throttle is held at 0% for 5 seconds, the motors will disarm automatically.

FAILSAFE/BEACON

The Indorfin flight controller is programmed to stop the motors within 2 seconds of losing the signal from the transmitter so the drone cannot fly off. The Indorfin will beep every second when in failsafe mode. If you are having problems locating the drone after a crash, try turning off the transmitter and listen for the beeps.

LOW BATTERY ALARM

When the flight battery voltage gets low, the drone will beep to indicate that it needs to land soon.

WARNING – Do not continue flying the Indorfin until the battery voltage is too low for the drone to stay in the air. The battery can be damaged if the voltage drops below 3.0 volts per cell (9 volts).

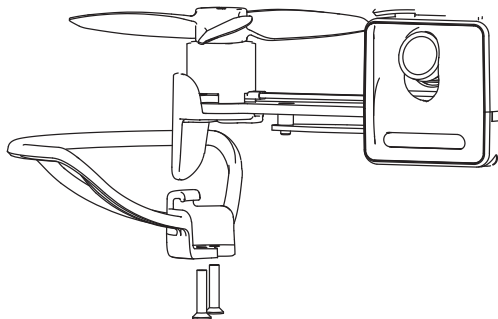
MAINTENANCE

INSTALLING PROP GUARDS

To install the prop guards, remove the two 5mm motor mount screws next to the landing gear.

Slide the prop guard over the landing gear and snap it on the top of the arm.

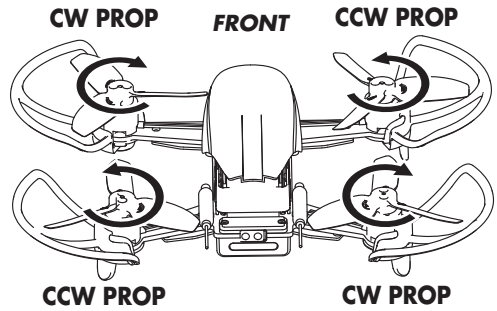
Install (2) 8mm screws to hold the prop guard in place.



NOTE: A little thread lock compound should be applied to the new screws to help prevent the screws from coming loose.

PROPELLER REPLACEMENT

The propellers should be checked for damage after each flight. If the Indorfin is suddenly making a strange noise while in flight, a damaged prop is the most likely cause for the vibration. Also, make sure that the screws that hold the propellers in place are not loose. If the screws will not remain tight, put a little thread locking compound just on the last two threads of the screw.



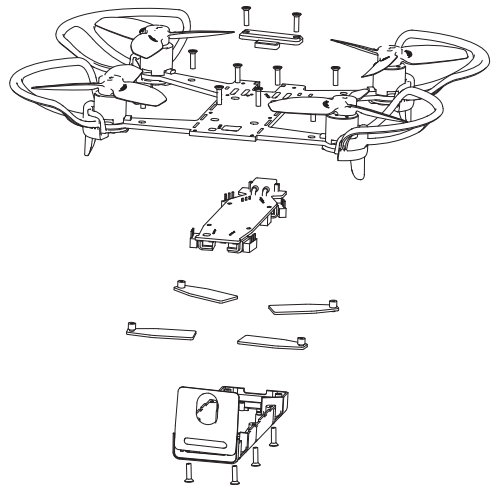
The CW props should be installed on the front left and rear right motors marked 1104 – 4100KV CW.

The CCW props should be installed on the front right and rear left motors marked 1104 – 4100KV CCW.

FLIGHT CONTROLLER REPLACEMENT

If the flight controller has been damaged and needs to be replaced:

1. Remove the 6 screws that hold the Upper and Lower Body parts to the frame.
2. Unplug the camera and put the upper body aside.
3. Remove the flight battery connector cover.
4. Remove the bottom case from the frame.
5. Remove the 4 speed controls from the arms.
6. Remove the 4 screws that hold the flight controller to the frame.
7. Remove and replace the flight controller.
8. Reverse these steps to re-assemble the drone.



ESC REPLACEMENT

To replace an ESC, remove the 6 screws that hold the Upper and Lower Body parts to the frame:

1. Unplug the camera and put the upper body aside.
2. Remove the flight battery connector cover.
3. Remove the Bottom Cover from the frame.
4. Remove the screw holding the ESC to the arm.
5. Unplug the motor from the ESC.
6. Pull the ESC from the socket on the board.
7. Install the new ESC and reverse these steps.
8. Calibrate the ESC using the Betaflight Motors screen.

ESC CALIBRATION

The ESCs should be calibrated after any of them have been replaced. To calibrate the ESC:

1. Remove the propellers.
2. Connect the Indorfin to the Betaflight app on your PC. Do NOT plug the battery into the drone.
3. Open the Motors screen.
4. Read the Motor Test Mode Notice and click on the "I understand" button to activate the controls.
5. Move the Master control up to its highest setting.
6. Plug the flight battery into the Indorfin.
7. When the ESC stops beeping, move the Master control to its lowest setting.
8. Slowly move the Master control up again and verify that all four motors start to spin at the same time.



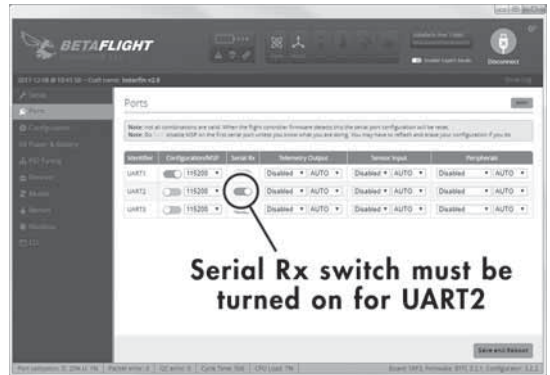
EXTERNAL RECEIVERS

An external receiver can be connected to the Indorfin using the 4 pin port on the bottom of the drone and the RX Extension cable (RISE2141).

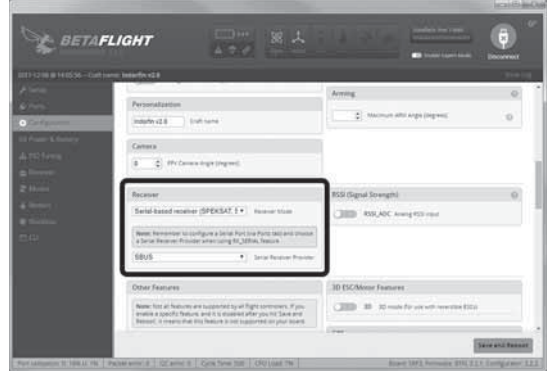
Serial Receivers – S.Bus, DMX, I-bus, etc. receivers should use the ground (black wire), power (red wire), and the S.Bus (white wire) connectors on the cable. The S.Bus wire goes to the signal pin on the receiver. The yellow wire is not used with these receivers.

Connect the Indorfin to Betaflight and make the following changes.

The Serial Rx switch must be turned on for UART2 on the Ports page.

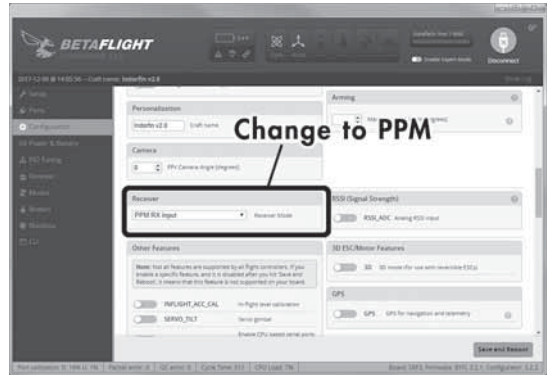


The appropriate Serial Receiver Provider must be selected on the Configuration page in the Receiver section.



PPM Receivers will use the ground (black), power (red), and PPM (yellow) wires on the RX cable. The PPM wire goes to the signal pin on the receiver. The white wire is not used.

Connect the Indorfin to Betaflight and change the Receiver Mode on the Configuration page to PPM.

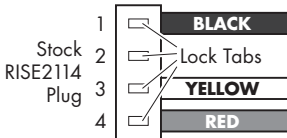


PWM Receivers will need to use a PWM to PPM converter. The same wires used with the PPM Receiver can be soldered to the PPM cable that comes with the converter. Another option is order the RISE Camera Cable (RISE2114). The wires will have to be moved for the cable to work correctly.

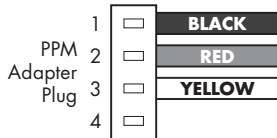


Connect the Indorfin to Betaflight and change the Receiver Mode on the Configuration page to PPM.

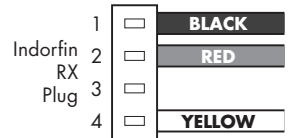
RISE2114 Cable Modifications



To remove a wire, carefully lift the Lock Tab with a hobby knife or screwdriver and pull the wire out of the plug.



To make the **PPM Adapter Plug**, move the Red wire from the #4 position to #2.



To make the **Indorfin RX Plug**, move the Red wire from the #4 position to #2, then move the Yellow wire to #4.

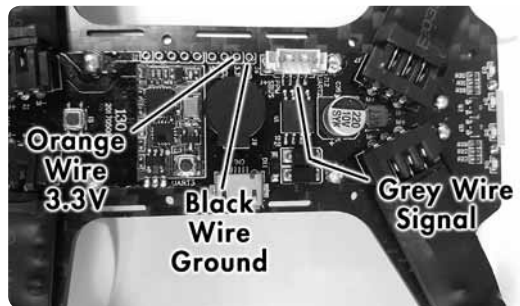
Futaba SBE-1 PWM to S.bus adapter can also be used if you have a PWM receiver. Connect your receiver to the adapter as described below. Connect the adapter to the Indorfin using the Black, Red and white wires on the RX Extension cable.

Aileron – Channel 1 on the adapter
 Roll – Channel 2
 Throttle – Channel 3

Yaw – Channel 4
 Aux 1 – Channel 5
 Aux 2 – Channel 6

Connect the Indorfin to Betaflight and make the changes on the Ports and Configuration pages as described earlier for a serial receiver.

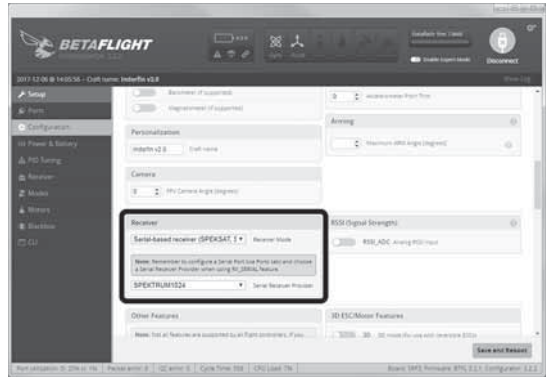
Spektrum Satellite Receivers will need a cable like the 6" Remote Receiver Extension – SPM9010 that can be cut and soldered to the flight controller.



On the Betaflight Ports page, the Serial Rx button for UART2 needs to be turned on and the one for UART3 turned off.



On the Betaflight Configuration page, the appropriate Spektrum receiver must be selected in the Serial Receiver Provider part of the Receiver section (DSMX=2048 or DSM2=1024).

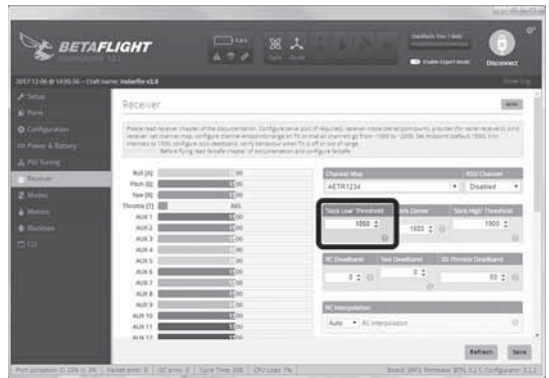


On the Betaflight Receiver page, the Channel Map needs to be changed to Spektrum. To bind the Rx to the Tx, go to the Betaflight CLI page and type the following

```
set spektrum_sat_bind = 9 if you have a DSMX satellite receiver
set spektrum_sat_bind = 5 if you have a DSM2 satellite receiver
save
```

After the flight controller has rebooted, unplug the USB cable and plug it back in after a second. The LED on the receiver should start blinking to indicate it is in bind mode. Turn on the Tx while holding the bind button. When the process is complete, the LED on the receiver should stop flashing.

Go back to the Receiver page and verify that inputs from the Tx are being received. Check the lowest value for the throttle. The setting in the "Stick Low" Threshold window must be greater than the lowest value for the throttle. If the throttle (and other controls) do not go below 1100, the travel setting in the transmitter may need to be increased before the "Stick Low" Threshold is changed. Click on the Save button to save any changes in the Flight Controller.



After control inputs are being received on the Receiver page, go back to the CLI page and type the following to turn off the bind mode.

```
set spektrum_sat_bind = 0
save
```

CONTROL INPUT TESTING

After a new receiver is connected, use the following procedure to test the flight controls. If any control is moving in the opposite direction, reverse that channel in

your transmitter.

1. Remove the props from the Indorfin.
2. Open the Betaflight Configurator app.
3. Connect the Indorfin to the PC with a micro USB cable.
4. Connect the flight battery to the Indorfin.
5. Go to the Receiver page.
6. Select the appropriate Channel Mapping option. The graphs for roll and yaw channels should move to the right when the sticks are moved to the right. The graphs for the pitch and throttle channels should move to the right when the sticks are moved up. The movement of the virtual model can also be used to verify the correct control inputs are being received.
7. Arm the motors by holding the left stick in the lower right corner. After the Indorfin beeps, advance the throttle and verify that all 4 motors are spinning. Disarm the motors by holding the left stick in the lower left corner.
8. Push the flight mode switch toward the back of the transmitter (stability mode). The channel 5 graph (aux1) should be to the right.

If all the controls are responding correctly, unplug the Indorfin, disconnect the battery and install the props.

CALIBRATE ACCELEROMETERS

If the Indorfin has been crashed or will not remain level when hovering, the accelerometers may need to be calibrated. Connect the Indorfin to your PC and open Betaflight. When the drone is connected, place it on a level surface and click on the Calibrate Accelerometer button at the top of the screen. When the calibration is complete, the pitch and roll values should be less than 1.0 deg.

BLACKBOX RECORDING

The Indorfin has an onboard flash memory chip that can record several minutes of flight data. To use this feature:

1. Open the Blackbox page in Betaflight.
2. Set the Blackbox logging device to Onboard Flash.
3. Set the Blackbox logging rate to 500 HZ. This rate will not affect the CPU performance.
4. Click on the "Save flash to file" button to save previously recorded data if needed. Click the "Erase flash" button to make room for new data. The Blackbox will start to record as soon as the motors are armed.

To view the data, download the Betaflight Blackbox Explorer from the Chrome Web Store. Open the app and follow the directions to view and analyze your flight data. There are links to several sources for assistance in the app and videos can be found on YouTube.

RESTORE BETAFLIGHT SETTINGS

Before making a change to any settings in the Betaflight app, please use this procedure to save the current configuration so it can be restored if needed.

The Restore button does not update any of the changes made with the CLI. Please use the following procedures to save and reload all of your current settings –

1. Open the CLI page
2. Type “DIFF ALL” and tap the “Enter” key
3. Click on the Save to File button in the lower right corner of the screen. This will save a text version of all the changes that have been made to Betaflight.

To restore settings that were saved earlier:

1. Open a previously saved text file
2. Select and copy “name Indorfin v2.0” and all the text below that line
3. Paste the settings in the data entry box at the bottom of the screen and tap the “Enter” key. If the file is several pages long, copy and paste 15 – 20 lines at a time. The text that was pasted should appear in the CLI window.
4. Type “SAVE” and tap the “Enter” key to update the Betaflight settings

TROUBLESHOOTING

PROBLEM: The Indorfin will not arm the motors.

SOLUTION: (1) The transmitter dual rate switch is in the “Low Rates” position. Move the switch to High Rates.

SOLUTION: (2) The Indorfin Rx is not linked to the Tx. Check the Rx Status LED on the bottom of the Indorfin. If it is flashing, follow the linking procedure on page 7.

PROBLEM: The transmitter is beeping constantly and the right LED is flashing.

SOLUTION: The AA batteries need to be replaced.

PROBLEM: The balance charger status LED is flashing.

SOLUTION: The flight battery voltage is too low. Unplug the battery and let it rest for an hour. If the LED on the charger still flashes after allowing the battery to recover, you may need to replace the battery.

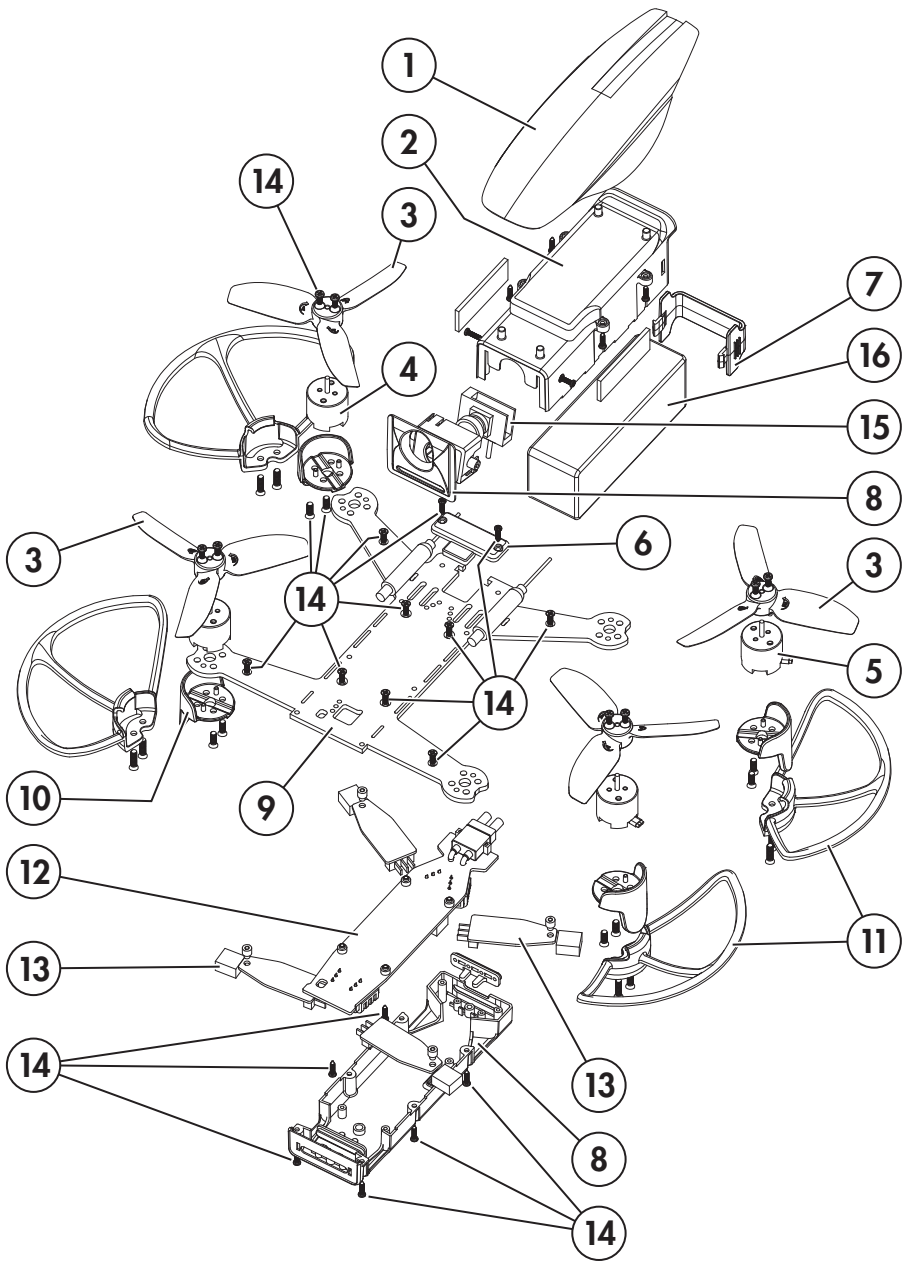
PROBLEM: The Indorfin flips over when attempting to take off

SOLUTION: (1) Make sure all 4 motors are spinning.

SOLUTION: (2) Check the motors by manually spinning each prop. If one or more motors do not spin freely, check the motor for damage.

SOLUTION: (3) Check the props for damage and verify that they are mounted on the correct motor. Please refer to the Propeller Replacement section on page 11.

EXPLODED VIEW



REPLACEMENT PARTS

| Key # | Stock No. | Description |
|-------|-----------|---------------------------------|
| 1 | RISE2125 | Canopy Indorfin 130 |
| 2 | RISE2126 | Battery/Camera Frame Indorfin |
| 3 | RISE2127 | 3-Blade Prop Set Indorfin 130 |
| 4 | RISE2128 | Motor 1104-4100Kv CW Indorfin |
| 5 | RISE2129 | Motor 1104-4100Kv CCW Indorfin |
| 6 | RISE2130 | Battery Plug Support Indorfin |
| 7 | RISE2131 | Battery Door Indorfin 130 |
| 8 | RISE2132 | Bottom Case w/Cam/LED Cover |
| 9 | RISE2133 | Carbon Fiber Frame Indorfin |
| 10 | RISE2134 | Landing Feet w/Motor Screws 130 |
| 11 | RISE2135 | Prop Guards Indorfin 130 |
| 12 | RISE2136 | F3 FC w/Betaflight Indorfin |
| 13 | RISE2137 | ESC OneShot 3amp Indorfin 130 |
| 14 | RISE2138 | Screw Set Indorfin 130 |
| 15 | RISE2139 | 200mW Vtx Camera Indorfin 130 |
| 15 | RISE2140 | 25mW Vtx Camera Indorfin 130 |
| 16 | ONXP2125 | LiPo 3S 11.1V 740mAh 20C XT30 |

Parts and Accessories not on the Diagram

| Stock No. | Description |
|-----------|-----------------------------------|
| RISJ2000 | Transmitter 6-Channel 2.4GHz |
| RISE2141 | RX Extension Cable 4-Pin Indorfin |
| TACZ5152 | FPV-RM2 40CH 5.8GHz Monitor |
| TACZ5200 | FPV-G1 Goggles W/O Monitor |
| TACZ5610 | FPV-G1 Head Strap |
| TACZ5612 | FPV-G1 Face Plate Foam |

Optional Parts and Accessories

| Stock No. | Description |
|-----------|--|
| ONXP5720 | Charge Lead Banana plug to XT30 |
| TACZ1010 | 4G Class 10 Micro Memory Card |
| TACZ5300 | FPV 5.8GHz RP-SMA TX Antenna Short 110mm 3dB |
| TACZ5305 | FPV 5.8GHz Cloverleaf Antenna 3dB |
| TACZ5600 | FPV-RM2 Sun Shield |
| TACZ5602 | FPV-RM2 Tripod Mount |
| TACZ5604 | USB Micro SD Card Reader |
| TACL0625 | TR625 6-Channel SLT Receiver Twin Antennas |
| TACJ2660 | TTX660 6-Channel SLT Computer Transmitter |
| DTXP4225 | Onyx 225 AC/DC Balancing Charger |
| DTXP4235 | Onyx 235 AC/DC Advanced Balancing Charger |
| RISE8100 | FPV Racing Gate 700mm |
| RISE8101 | FPV Racing Gate 1300mm |
| RISE8102 | FPV Racing Gate Cube |
| RISE8120 | FPV racing Gate Combo |
| RISPO001 | Race Gate System Indoor/outdoor |
| RISPO002 | Ring Race Gate Indoor/Outdoor |
| RISPO003 | Checkered Flag Race Gate Indoor/Outdoor |
| RISPO004 | Pylon Race Gate Indoor/Outdoor |
| RISPO005 | Elevated Race Gate Indoor/Outdoor |
| RISPO006 | Arch Race Gate Indoor/Outdoor |
| RISPO007 | LED Ring Race Gate Indoor/Outdoor |

FCC IC PRECAUTIONS

Indorfin 130

Brand: RISE

Part Number: RISE0210, RISE0211

FCC: IYF0211

IC: 11104A-0211

RISE J2000 Transmitter

Brand: RISE

Part Number: RISJ2000

FCC: IYFJ2000

IC: 11104A-RISJ2000

IC RSS Warning

This device complies with Industry Canada licence-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.

IC Radiation Exposure Statement

This equipment complies with IC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC Radiation Exposure Statement

This device complies with part 15.249 of the FCC rules. Changes or modifications not expressly approved by RISE will void the user's authority to operate this Tx. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a 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 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 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.
- This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

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 2904 Research Road
 Champaign, IL USA 61822



CE COMPLIANCE INFORMATION FOR THE EUROPEAN UNION

Instructions for Disposal of Waste Equipment by Private Users in the European Union:

This symbol on the product or its packaging indicates this product must not be disposed of with other household waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or location where you purchased the product.

Declaration of Conformity:

Product: RISE 2.4GHz 6-Channel Tx Rx

Item number: RISJ2000 J2000

The object of the declaration described here are in conformity with the requirements of the specifications listed below, following the provisions of the European 2006/95/EC Low Voltage Directive:

EN 60950-1:2013 Safety

The object of the declaration described here are in conformity with the requirements of the specifications listed below, following the provisions of the European R&TTE directive 1999/5/EC:

EN300 328 V1.9.1.

Technical requirements for radio equipment

EN 300 328 V1.9.1 (2015-02);

EN 301 489-1 V1.9.2 (2011-09);

EN 301 489-3 V1.6.1 (2013-08);

EN 62479:2010

RISETM
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