

Hitec Quad ***Racer280***

Ready to Fly FPV Racing Drone



Operator's Manual

Get ready to bring the raceway to the airways with your new Hitec Quad Racer 280 FPV multi-rotor! Our high-performance, styled-for-stealth quad is driven by four 2204 (2300KV) brushless motors for incredible speed and stability. With its 6-channel transmitter and 4.3" LED FPV monitor, you will experience real-time excitement and exhilarating imagery. The efficient propulsion and lightweight frame of this all-in-one, ready-to-fly package allows you to enjoy lengthier flight times. FLY in the blink of an EYE!

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The QUAD RACER 280 is not a toy and is not suitable for use by children under the age of 14. Additionally, the QUAD RACER 280 is an FPV racing type multi-rotor and requires some skill to fly. If you have never flown an FPV racing type multi-rotor, it is recommended you seek out help before attempting to fly it on your own.

⚠ **WARNING: SPINNING PROPELLERS CAN CAUSE SERIOUS INJURIES**

It is recommended that you wait to install the propellers until you are finished setting up your drone and are ready to fly.

Hitec RCD USA accepts no liability or responsibility for injuries or damages incurred by the use of the QUAD RACER 280. OPERATE RESPONSIBLY!

Flying Safely

Recreational or commercial use? Using a drone in connection with a business is considered to be commercial use by the FAA. This includes but is not limited to:

- Real estate, wedding or other photography
- Inspection or survey services
- Film or television production

Visit faa.gov/uas for more information. Go to knowbeforeyoufly.org to stay up to date on how and when you can fly your drone.

Know Your Surroundings

Some municipalities prohibit the operation of remote controlled aircraft within public spaces such as parks and school grounds. There are rules of the air you need to know. Always check with local authorities before you fly your drone and keep the following in mind:

- ⚠ Always fly below 400 feet
- ⚠ Avoid flying over groups of people and stadium events
- ⚠ Never fly within 5 miles of an airport without contacting airport authorities and the airport's traffic control facility
- ⚠ Keep well away from emergency response efforts such as fires
- ⚠ Avoid flying near other aircraft
- ⚠ Be aware of FAA airspace requirements faa.gov/go/uastfr
- ⚠ Never fly under the influence

Battery Charging Safety

- ⚠ NEVER LEAVE YOUR CHARGER UNATTENDED WHILE IN OPERATION.
- ⚠ NEVER CHARGE ON OR AROUND COMBUSTIBLE MATERIALS.
- ⚠ NEVER CHARGE A DAMAGED BATTERY PACK.
- ⚠ IT IS HIGHLY RECOMMENDED THAT YOU KEEP AN OPERABLE "CLASS A" FIRE EXTINGUISHER IN THE CHARGING AREA.
- ⚠ **FAILURE TO FOLLOW THESE WARNINGS CAN BE CONSIDERED NEGLIGENCE BY THE OPERATOR AND MAY NEGATE ANY CLAIMS FOR DAMAGES INCURRED.**

PACKAGE CONTENTS

1. Quad Racer 280 with preinstalled Motors, Speed Control, Receiver, Flight Control System, FPV Camera and Video Transmitter.
2. Clear Paintable Canopy and Clips
3. Mushroom Antenna for VTX
4. 2 sets of Propellers (8pcs)



Quad Racer 280 FPV Drone



Clear Paintable Canopy



5.8G Video Transmitter



Mushroom Antenna



4.3" LCD FPV Monitor



Monitor Antenna



2.4G Transmitter



Propellers (8 pcs)



LiPo Battery Charger



2000mAh 3S LiPo Battery



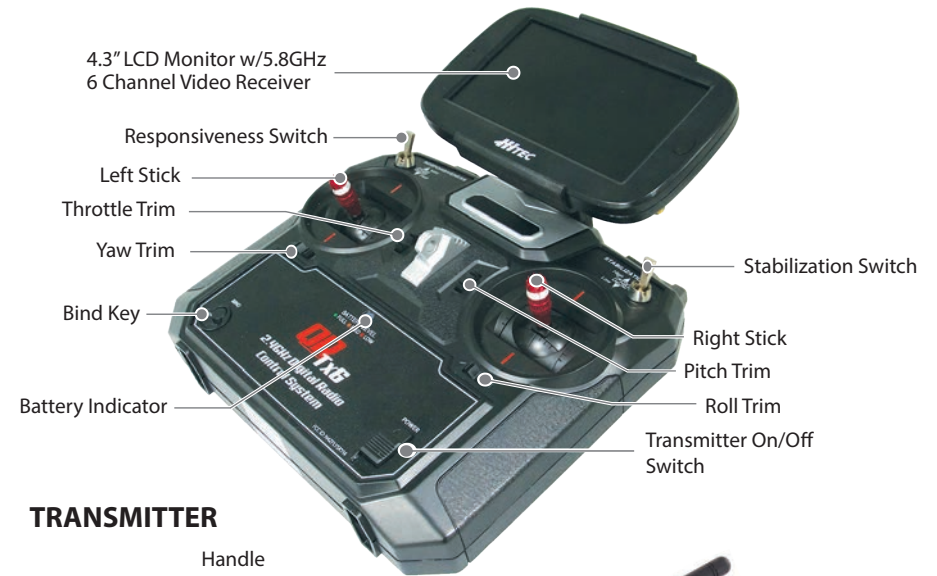
AA Battery x 4



L Wrench

5. 2000 mAh 3S LiPo Battery
6. 2.4 GHz 6 Channel Transmitter
7. 4.3" Video Monitor & Antenna
8. Battery Charger w/AC Power Cord
9. 4 x AA Alkaline Batteries
10. L Wrench

PRODUCT LAYOUT

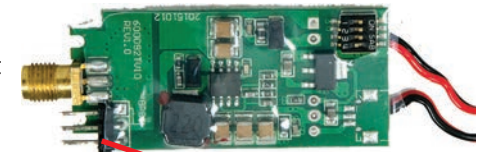


TRANSMITTER



VIDEO TRANSMITTER

The video transmitter output can be set at either 25mw or *200mw. The higher output can improve video quality.



200mw Mode

***WARNING: FCC LICENSE MAY BE REQUIRED TO USE THIS PRODUCT.** FPV Video transmitters with an output power greater than 25mW require a HAM license to operate legally in the USA. Go to the Amateur Radio Relay Network web page at www.arrl.org. for more information.

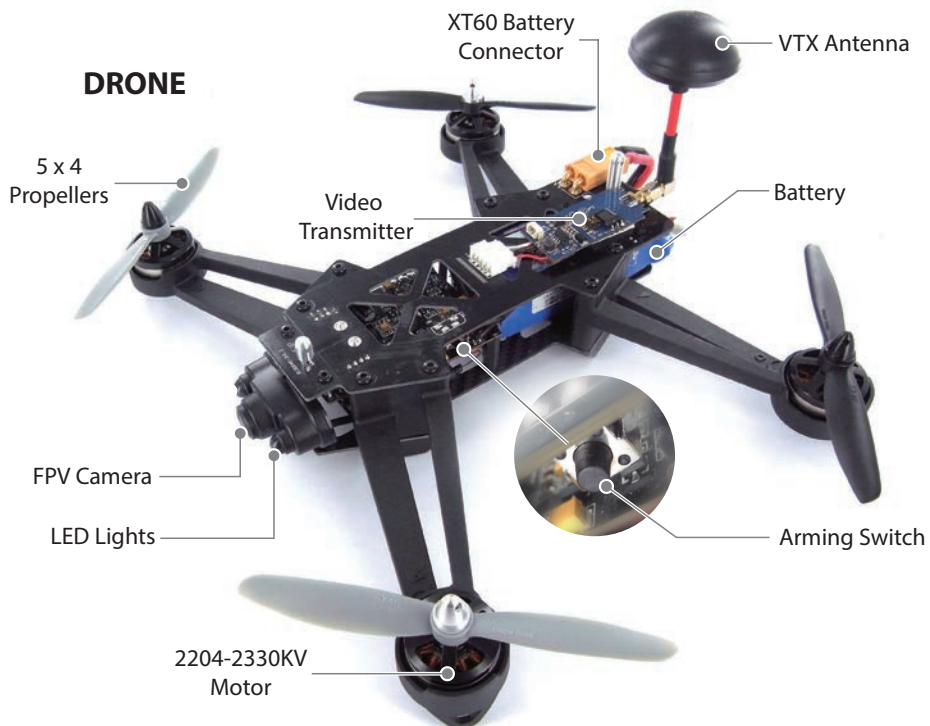
SPECIFICATIONS

Size and Weight		Flight Controller	
Size Class	280mm	IMU	Invensense 6050 3 Axis Gyro + 3 Axis Accelerometer
Weight	405g w/o Battery	CPU	STM32FO31K4 32 bit ARM
Power System		FPV System	
Brushless Motors	2204 2300KV	Video Camera	300K Pixels 135° Field of View
Propeller Size	5 x 4	Video TX	25mw/200mw 5.8GHz
ESC Rating	12A cont. 17A Max.	Monitor	4.3" TFT LCD 480 x 272
Battery	2000mAh LiPo	Channels	6 5.745~5.845 20Mhz Spacing
Flight Time	Up to 12 Minutes		

LiPo CHARGER



DRONE



Once you have unpackaged your Quad Racer 280 FPV drone, there are a few steps to complete before you are ready to fly. You need to charge both the power battery and the video monitor battery, attach the propellers, mount the video monitor and set the channel on both the VTX and video monitor. The following section will guide you through the processes. Please follow the directions carefully to ensure a successful first flight.

CHARGING THE BATTERIES

Power Battery

The Quad Racer 280 includes a 3 Cell 2000 mAh power battery and the QRc3 AC powered charger for charging it. Please use the following procedures in order to safely and properly charge your power battery.

1. Plug the power cord into the charger and plug the other end into a 100-240V wall socket. All LEDs will flash green and red indicating the charger is ready to charge.
2. Insert the battery's balance lead into the 3S charging port on the front of the charger. After a couple of seconds, the charger will detect the voltage in the battery and commence charging.
3. When charging, all 3 LEDs should be illuminated red. Once all 3 LEDs are illuminated green, the charge process is complete.

NOTE: If you unplug the battery while charging, the charger stops automatically.



Your connection should look like this when charging your battery

Error Messages: If the charger encounters a problem, all LEDs will flash red in some type of sequence. If this happens, immediately disconnect the battery and AC power cord.

LED Indicator	Cause of Error
All LEDs flash red once in 1 second intervals	The battery is connected incorrectly
All LEDs flash red twice in 1 second intervals	There is an overload situation or short circuit
All LEDs flash red 4 times in 1 second intervals	The voltage of a single cell is too high or too low
All LEDs flash red 6 times in 1 second intervals	Indicates a 300mv voltage difference in the pack

FPV Monitor Battery (charger not included)

The FPV monitor contains an internal rechargeable battery that can be charged using a Mini USB charger like those used for cell phones. An LED indicator light will glow red while charging, changing to green when fully charged.

INSTALL THE VTX ANTENNA

To install the video transmitter antenna, first screw the antenna into the transmitter. Once the antenna is on, use a small wrench to tighten it 1/4 of a turn. **DO NOT OVER TIGHTEN.**



ATTACH THE MONITOR TO THE TRANSMITTER

The Quad Racer 280 comes with a high resolution monitor that conveniently attaches to the transmitter.



Attach the antenna to the monitor



Place the monitor on the transmitter mount



With monitor in place, now install the 4 AA batteries in the transmitter.

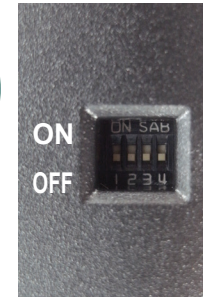
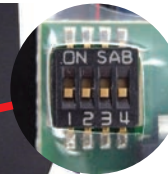
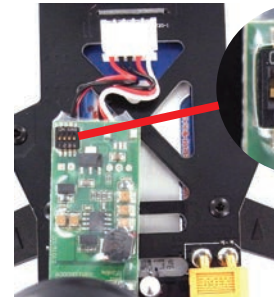


Insert the screw and tighten the nut

SETTING THE VTX FREQUENCY

The frequency of the video transmitter and monitor are set at the factory. If you need to change the frequency, to avoid interfering with other users, you can do this by using the DIP switches on the transmitter and monitor. Only the first 3 switches are used to change the frequency; the fourth switch does nothing.

NOTE: Both the Transmitter and Monitor must be on the same frequency.



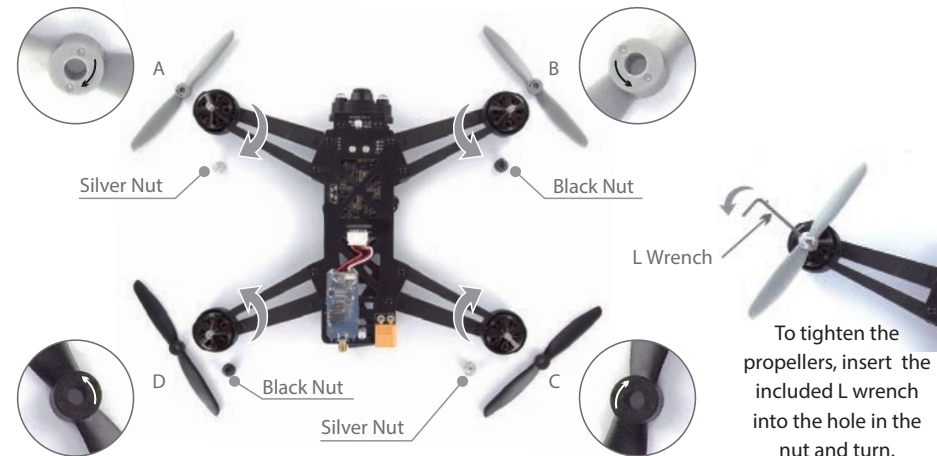
	1	2	3	Frequency
CH1	OFF	OFF	OFF	5.845 GHz
CH2	ON	OFF	OFF	5.825 GHz
CH3	OFF	ON	OFF	5.805 GHz
CH4	ON	ON	OFF	5.785 GHz
CH5	OFF	OFF	ON	5.765 GHz
CH6	ON	OFF	ON	5.745 GHz

CAUTION: You should be aware of local regulations before flying your Quad Racer 280. Transmitting outside a legal band may be prohibited in your area.

ATTACH THE PROPELLERS

CAUTION: Never work on the motors or propellers while the battery is plugged in. Propellers are sharp and can cause injury or damage. It is best to completely remove the battery while installing the propellers.

To install the propellers correctly, you must match the propeller direction with the direction marking on the arm. The picture below shows the proper way to mount the propellers.



To tighten the propellers, insert the included L wrench into the hole in the nut and turn.

INSTALLING THE BATTERY

Install the battery by sliding it into the battery compartment. Thread the Velcro strap through the slot in the bottom and pull tight.



Now plug in the battery as shown in the picture to the right.

CAUTION: Once the battery is plugged in, the system is powered up. Use care when handling to avoid injury.

PREPARING FOR FLIGHT

With everything assembled, it's time to prepare for your first flight. Replace the canopy and secure it with the two clips. For your first flight, we recommend the RESPONSIVENESS be set to "Mild" and the STABILIZATION be set to high. You can change this once you become familiar with how the Quad Racer 280 handles in flight.

PREFLIGHT CHECKLIST

1. Is the Power Battery fully charged?
2. Are the transmitter batteries full? (Never fly when the low indicator is lit)
3. Are the VTX and Monitor on the same frequency?
4. Do you have a clear area free of obstacles to fly in?
5. Do you understand the methods of controlling the drone?
6. Make sure others are clear of the drone before starting the motors.

POWERING ON THE QUAD RACER 280

Now that you've completed your preflight checklist you are ready to fly. It is important to read through the next two sections prior to actually flying so that you understand the power on sequence, the drone starting procedure, as well as how the transmitter controls affect your control of the drone.

POWER ON SEQUENCE: It is important to use the proper power on sequence, as failure to do so may result in injury to yourself and damage to your drone. The following describes the proper steps to power on your drone.

1. Turn on transmitter



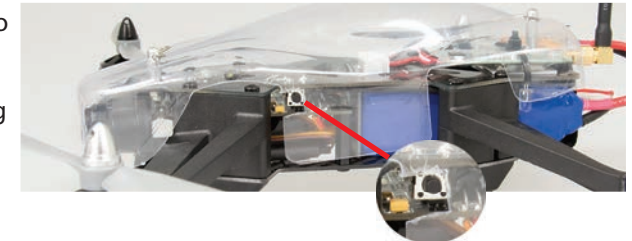
2. Turn on the FPV Monitor



3. Turn on the Quad Racer 280

Push the arming switch to turn the QR280 ON.

Push and hold the arming switch for more than 5 seconds to turn the QR280 OFF.



4. Starting and Stopping the Motors



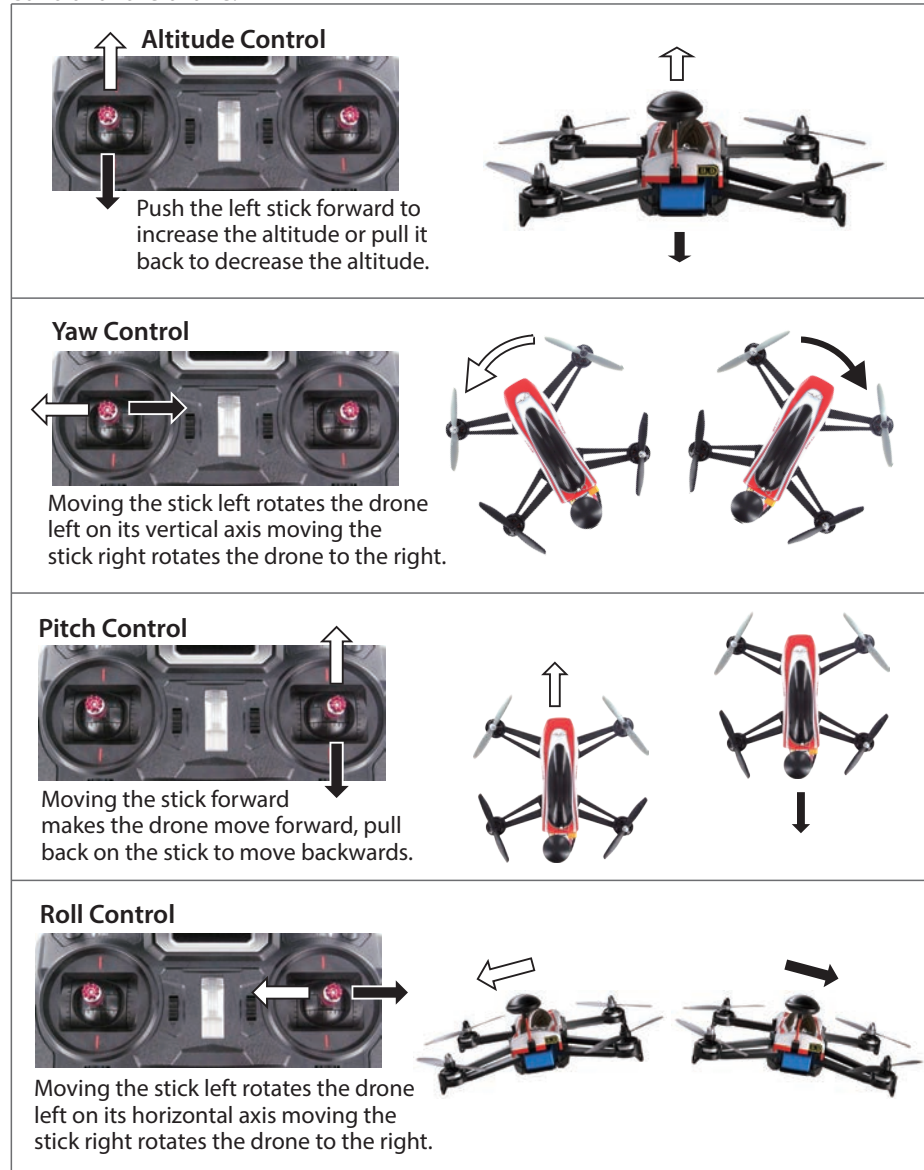
A common start command is used to start the Quad Racer 280. To execute the command, move both sticks to the lower center position as shown until the motors start.



Once the drone has landed hold the throttle to the lowest position for 10 seconds and the motors will stop.

CONTROLLING THE QUAD RACER 280

The Quad Racer 280 includes a transmitter setup as Mode 2 where the Throttle and Yaw controls are on the left control stick and the Pitch and Roll controls are on the right control stick. The images below explain how each stick movement affects the control of the drone.

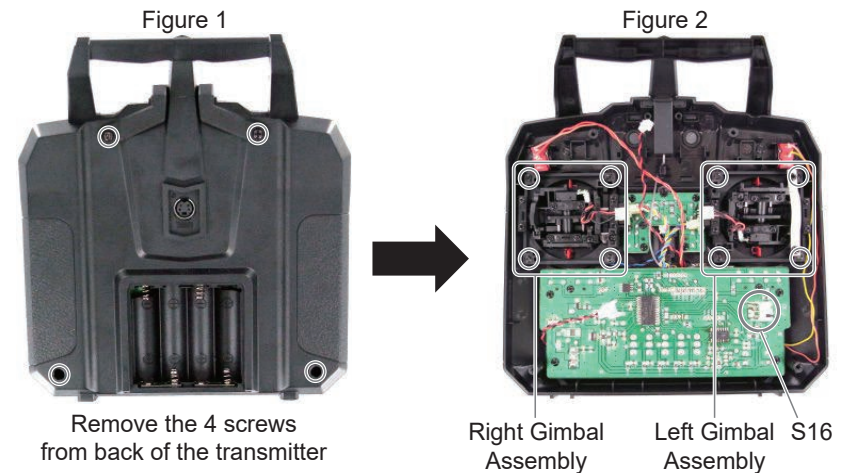


WARNING: It's best to use minute control inputs until you become familiar with the flight characteristics of the Drone Racer 280.

TRANSMITTER MODE CHANGE

Some users may want to use the transmitter in Mode 1 configuration rather than the standard Mode 2 that is the normal configuration. The following instructions outline how to change the transmitter from Mode 2 to Mode 1.

1. Remove the batteries. Then, using a screw driver, remove the four screws on the back of the transmitter (Figure 1).
2. Gently unplug the battery and trainer cable from the back of the transmitter case and set the back aside.
3. Identify the S16 jumper on the right side of the transmitter, in stock. In normal Mode 2 configuration the jumper is on the L side. Remove the jumper and replace it on the R side.
4. Using a small Phillips screwdriver, remove the eight screws holding the gimbal assemblies in place.
5. Now switch the positions of the gimbals, while being careful not to damage the wires. Secure them by replacing the eight screws.
6. Plug the battery and trainer cables back in to the back of the transmitter case and replace the four screws securing the back of the transmitter. Replace the batteries.
7. Turn on the transmitter and move the stick to check for proper operation.



In Mode 1 configuration the sticks control the following functions

Left Stick

Left or right movement controls the Yaw
Back or forward movement controls the Pitch

Right Stick

Left or right movement controls the Roll
Back or forward movement controls Altitude



Motor Arm Set #61117

Motor CW #61118
Motor CCW #61119

Propeller Set # 61128

Speed Controller Board #61120

Receiver Flight Control Unit # 61128

Top CF Board w/PD #61123

Bottom CF Parts #61124

Plastic Parts Set # 61141

Screw Set #61130

VTX Antenna #61126

Video Transmitter #61122

Camera Assembly #61121

2 Pieces Each

Propeller Nuts #61142

Clear Canopy #61127

Canopy Mounts #61143

Power Battery 2000mAh 3S LiPo #61125

ONE YEAR LIMITED WARRANTY

For a period of one year from the date of purchase HITEC RCD USA, INC. shall REPAIR OR REPLACE, at our option, defective equipment covered by this warranty, otherwise the purchaser and/or consumer is responsible for any charges for the repair or replacement of the Quad Racer 280. This warranty does not cover cosmetic damages and damages due to acts of God, accident, misuse, abuse, negligence, improper installation, or damages caused by alterations by unauthorized persons or entities. This warranty only applies to the original purchaser of this product and for products purchased and used in the United States of America, Canada and Mexico. Plastic cases are not covered by this warranty.

THIS WARRANTY IS IN LIEU OF ANY AND ALL OTHER WARRANTIES, WHETHER FOR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND WHETHER EXPRESS OR IMPLIED. REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY. HITEC RCD, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY RELATING TO THIS PRODUCT. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY. REPAIR AND SERVICE.

To have your Quad Racer 280 serviced:

1. Visit the Hitec website at www.hitecrd.com and download the service request form (under Support section).
2. Fill out the service request form completely and include a copy of your original receipt showing the purchase date.
3. Package your product in its original packaging or use a suspension-type packaging (foam peanuts or crumpled newspaper). Hitec RCD shall not be responsible for goods damaged in transit.
4. Ship prepaid (COD or postage-due returns will not be accepted) via a traceable common courier (UPS, insured parcel post, FedEx, etc.) to:

Hitec RCD USA, Inc.
Customer Service Center
12115 Paine St.
Poway CA 92064

REGULATORY INFORMATION



This symbol indicates that when this type of electronic device reaches the end of its service life, it cannot be disposed of with normal household waste and must be recycled. To find a recycling center near you, refer to the internet or your local phone directory for electronic waste recycling centers.

STATE OF CALIFORNIA PROPOSITION 65 WARNING:

This product contains chemicals known to the State of California to cause cancer. Use caution when handling this product and avoid exposure to any electronic components or internal assemblies.

FCC Information

Transmitter

Manufacturer: FlySky Co, LTD
Model Name: FS-i4
Operating Frequency: 2.4 GHz
FCC ID: N4ZFLYSKYI4

Video Transmitter

Manufacturer: SKYRC Technology Co. LTD
Model Name: SOKAR
Operating Frequency: 5.8 GHz
FCC ID: REY-SOKAR

These devices comply with part 15 of the FCC Rules. 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.

Drone Registration

At the time this manual was printed users of drones like the Quad Racer 280 are required to be registered with the by the FAA. For more information visit the registration website at <http://federaldroneregistration.com/>.

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