

VEKTOR 280

FPV RACING DRONE



OWNER'S MANUAL

AGES
14+

HITEC

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Congratulations on purchasing Hitec's Vektor 280.

Be prepared to zip through the skies with swift, fearless precision! Our high performance FPV racer features a compact, integrated circuit board system for reduced weight and a sturdy, quality-constructed carbon fiber frame for durability and resilience.

Completely assembled for your convenience, the Vektor 280 takes flight in minutes and will have you speeding like a superhero in a flash.

Warnings and Safety Notes

The Vektor 280 is not a toy and is not suitable for use by children under the age of 14. Additionally, the Vektor 280 is a high performance FPV racing drone and requires some skill to fly. If you have never flown an FPV racing drone, 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 Vektor 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/uasfr
- Never fly under the influence

FAILURE TO FOLLOW THESE WARNINGS CAN BE CONSIDERED NEGLIGENCE BY THE OPERATOR AND MAY NEGATE ANY CLAIMS FOR DAMAGES INCURRED.

Features

- Completely Assembled 280 class FPV Racing Quad
- Integrated System Board puts the ESC's, Flight Controller and Video Transmitter on a Single Board to reduce weight

- High Quality Carbon Fiber Frame with 3mm Arms
- Four 20 Amp Speed Controls with SimonK OneShot Setting
- Open Pilot CC3D Flight Controller
- 5.8GHz 600mw* Video Transmitter
- Bright Intelligent LED System
- Low Battery Warning Feature
- Drone Finder Function

*** 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.

Package Contents

Completely Assembled Vektor 280 FPV Racing Drone

Complete with preinstalled brushless motors, speed controls, flight controller and system management board), FPV Camera and Video Transmitter.

Required to Complete

- 3 4S 1400 2300mAh LiPo Power Battery with XT60 Connector
- Radio System with at least 5 Channels w/Micro Receiver
- 5.8GHz Video Receiver
- Video Display or Goggles

Required to Complete

Size and Weight

Size Class: 280mm
Weight w/o Battery: 348g

Power System

- Brushless Motors – 2204 2150KV
- Propellers - 6 x 3
- ESC's – 20A w/SimonK OneShot
- Flight Time: 9-12 minutes

Flight Control System

CC3D Atom with Open Pilot

- Powerful STM32 32-bit MCU with 128KB Flash and 20KB RAM
- MPU6000 3 Axis Gyroscope / Accelerometer
- Software supports for Windows, Mac and Linux
- Works with PWM, PPM, Spektrum® satellite and S-Bus Receivers

Receivers

FPV System

- Video Camera - 400K Pixels 135° Field of View
- Video TX – 600mw 32 Channel 5.8GHz

Product Layout



The Vektor 280 comes completely assembled; to prepare for flight, you just need to install your receiver and battery.

Receiver Installation

- Make sure your receiver is bound to your transmitter before installation.
- The flight controller in the Vektor 280 supports PWM, Spektrum® satellite and S-Bus type receivers. It is best to install your receiver in the front of the model behind the camera.
- Connect the receiver to the flight controller using the attached cables. The cables marked S are for S-bus receivers and the numbered ones are for PWM. You can remove the set of cables that you are not using.

Battery Installation

- Slide the battery into the battery compartment.
- Move the battery forwards or backwards so that the balance of the drone is in the center.
- Secure the battery with the Velcro Strap.
- **DO NOT PLUG IN THE BATTERY AT THIS TIME.**

Connecting the Receiver

Refer to the following instructions to connect your receiver to the flight control.

CAUTION: The power out voltage is regulated at 5.0VDC. This works with most receivers on the market today, but you should check your receiver manual to be sure it will work properly at this voltage.

PWM Receivers

Connect your receiver to the numbered connector. The connectors are marked and should plug into the corresponding channel output on your receiver. Refer to the following chart for color cross reference.

Connector	Receiver Output
#1 Black, Red, White	Ground(-), Power out(+) Signal
#2 Blue	Channel 2
#3 Yellow	Channel 3
#4 Green	Channel 4
#5 Orange	Channel 5
#6 Purple	Channel 6

S-Bus or Spektrum® Satellite Receivers

Connect the plugs marked S to your receiver as shown in the chart below.

Connector Color	S BUS	Spektrum®
Black	Ground(-), Power out(+) Signal	Ground (-)
Red	Channel 2	Power Out (+)
Blue	N/A	N/A
Yellow	TX Signal	TX Signal

CC3D Configuration

WARNING: SPINNING PROPELLERS CAN CAUSE SERIOUS INJURIES

It is recommended that you remove the propellers while you are setting up your drone.

The flight controller must be configured to match your receiver. The flight controller uses Open Pilot ground control software. The open Pilot configuration suite is available for download at www.openpilot.org. Follow the instructions in the software to configure your flight controller.

WARNING: If you reset the CC3D flight controller, you will need to go in and adjust the **ROLL** attitude. It must be set to 180 for proper operation.

Flying the Vektor 280

- Turn on your transmitter and make sure all the trims are in their neutral position, all the function switches are in their off position and the throttle stick is in its lowest position.
- Place the Vektor 280 on a flat surface and connect the battery. You will hear a series of beeps as the system initializes, once it stops you are ready to take off.

Unlock/Lock the Motors

Unlock the Motors: To lock the motors, push the stick down and move the rudder to the right. The motor should now be locked. You can test it by moving the throttle stick slowly up, the motors should not start.

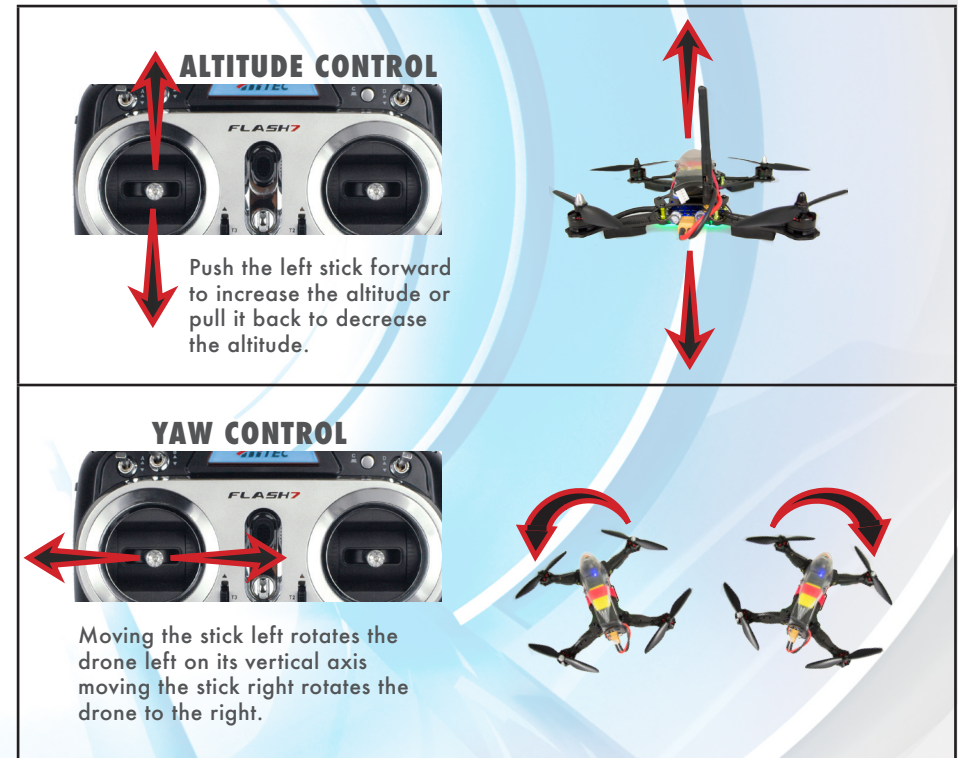
WARNING: SPINNING PROPELLERS CAN CAUSE SERIOUS INJURIES

Locking the Motors: To lock the motors, push the stick down and move the rudder to the right. The motor should now be locked. You can test it by moving the throttle stick slowly up, the motors should not start.

NOTE: The motors are locked by default once the battery is unplugged and the system reinitialized.

Controlling the Vektor 280

Refer to the following to see how stick inputs affect the movements of the drone.



PITCH CONTROL

Moving the stick forward makes the drone move forward, pull back on the stick to move backwards.

ROLL CONTROL

Moving the stick left rotates the drone left on its horizontal axis moving the stick right rotates the drone to the right.

Aerobatic Manuevers

More advanced fliers can perform flips and rolls using one of the transmitter channels for flight modes.

WARNING: Do not perform aerobatic manuevers near yourself or other people. You should use a wide open space with plenty of room to correct any errors that may occur.

Forward and backward rolls: Activate the Flight Mode by putting the transmitter switch in the active position. Push the Elevator stick forward to roll forward or pull back on the stick to roll backwards.

NORMAL FLIGHT MODE



Put the FMOD(FMD) Switch to "0" position:

ROLL FLIGHT MODE



Put the FMOD(FMD) Switch to "2" position:



MODE 1



Throttle stick on the right

MODE 2



Throttle stick on the Left

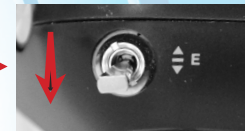
Left and Right Rolls: Activate the Flight Mode by putting the transmitter switch in the active position. Push the Aileron stick left to roll left or push to the right on the stick to roll to the right.

NORMAL FLIGHT MODE

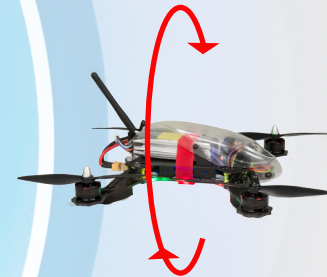


Put the FMOD(FMD) Switch to "0" position:

ROLL FLIGHT MODE



Put the FMOD(FMD) Switch to "2" position:



MODE 1



Throttle stick on the right

MODE 2



Throttle stick on the Left

Using the FPV System

The Vektor 280 includes a 400,000 Pixel FPV camera and *600mw Video Transmitter. In order to use this system, you need to have some type of receiving device and display

monitor or goggles. Additionally, both devices must be set to the same frequency. The following instructions describe how to set the transmitting frequency on the Vektor 280.

- A. Remove the 4 screws that attach the canopy to the frame.
- B. Remove the 8 screws that secure the top frame
- C. Set the frequency using the frequency DIP switch according to the frequency chart on the following below

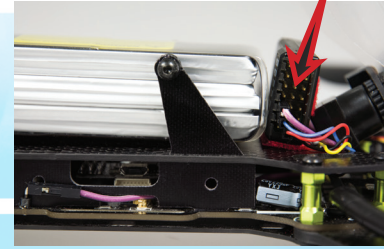
Frequency Chart

CH00 5.725GHz	CH08 5.733GHz	CH16 5.705GHz	CH24 5.740GHz
CH01 5.745GHz	CH09 5.725GHz	CH17 5.685GHz	CH25 5.760GHz
CH02 5.765GHz	CH10 5.771GHz	CH18 5.665GHz	CH26 5.780GHz
CH03 5.785GHz	CH11 5.790GHz	CH19 5.645GHz	CH27 5.800GHz
CH04 5.805GHz	CH12 5.809GHz	CH20 5.885GHz	CH28 5.820GHz
CH05 5.825GHz	CH13 5.828GHz	CH21 5.905GHz	CH29 5.840GHz
CH06 5.845GHz	CH14 5.847GHz	CH22 5.925GHz	CH30 5.860GHz
CH07 5.865GHz	CH15 5.866GHz	CH23 5.945GHz	CH31 5.880GHz

- D. Check to make sure that the equipment functions properly and you can receive the images clearly.
- E. Replace the top frame and reattach the canopy.

NOTE: You need at least a 6 Channel radio and a receiver with at least one available PWM channel to use this function. This feature needs to be assigned to a channel other than 1 - 5.

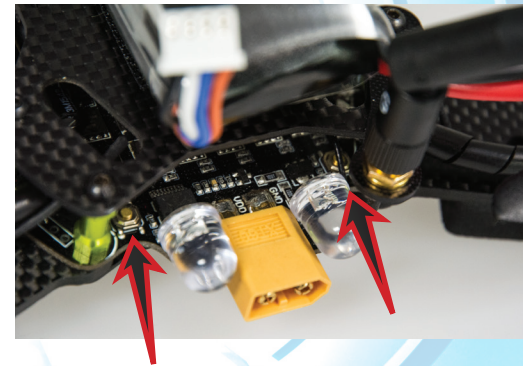
Plug the purple wire that is attached to the multi-function



board into an available PWM channel on your receiver. When the battery is plugged in, you turn this channel on and the beeper will beep, alerting you to the location of the Vektor 280.

Using the Intelligent LED System

The Vektor 280 has a unique LED lighting system that allows the user to customize the way the LEDs on the bottom of the drone function. You can change the brightness as well as the function of the LEDs.



There are 3 brightness settings and 4 function settings.

Using the Drone Finder Function

The Vektor 280 has a Drone Finder function that helps you locate your drone should it go down in an area where it can't be seen. The following describes how that function is used.

Low Battery Warning

When the battery on the Vektor 280 gets low, the two low battery warning LEDs on the back of the drone will begin to flash. This indicates it's time to end your flight and land.

Replacement Parts

61132 - Clear Canopy

61133 - Arm Set Left

61134 - Arm Set Right

61135 - Control Board

61136 - CC3D Flight Controller

61137 - Motor CW

61138 - Motor CCW

61139 - Prop Set (4pcs)

61140 - Camera

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Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

Warranty Service and Repair

ONE YEAR LIMITED WARRANTY For a period of one year from the date of purchase, HITEC RCD USA, INC. shall REPAIR OR REPLACE, at HITEC RCD, INC's 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 equipment. 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 HITEC RCD, INC. products who purchased and used the products in the United States of America, Canada and Mexico. Batteries, plastic cases and gears are not covered by this warranty.

THIS WARRANTY IS IN LIEU OF ANY AND ALL OTHER WARRANTIES, WHETHER FOR MERCHANTABILITY OR

Service and Repair Information

To have your Hitec product serviced:

1. Visit the Hitec website at www.hitecrcd.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**

The image features a futuristic, blue-toned tunnel with a central bright light source. The tunnel's walls are composed of various geometric shapes and lines, creating a sense of depth and perspective. The HITEC logo is centered in the middle of the tunnel, appearing as a semi-transparent watermark. The logo consists of a stylized 'H' with a curved orange and white element, followed by the letters 'ITEC' in a bold, italicized sans-serif font.

HITEC