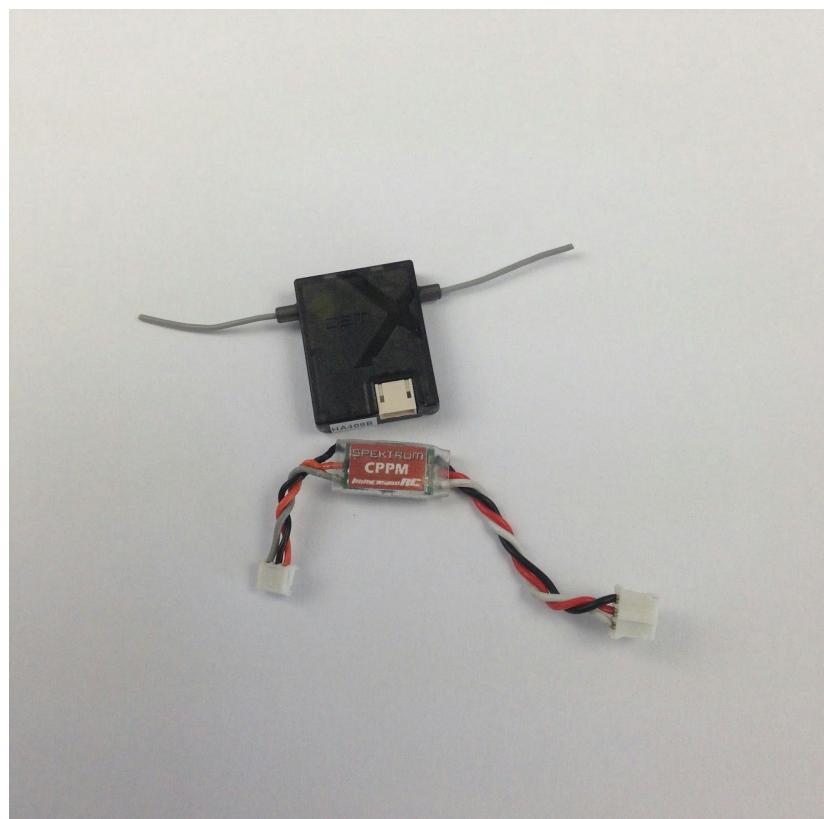


Vortex PPM Converter Cable

Instruction manual - International edition

Rev 1.0 - 1st Nov 2015



ImmersionRC
REAL VIRTUALITY

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Features

- Spektrum or SBUS compatible input
- 8 Channel PPM output
- Powers receiver from PDB through cable:
 - SBUS cable: 5V
 - Spektrum cable: 3.3V

Overview

Miniquads usually only need a single connection from the receiver to the flight controller, that contains all the channel information to control all the functions of the quad. This information is often received by the flight controller as combined PPM signal.

Recent receivers can output their control information in some serial formats that are not always recognised by the flight controller, like Spektrum Satellite protocol or SBus protocol.

The PPM converter converts these protocols to CPPM which is recognised by the ImmersionRC Vortex and other flight controllers.

Package Contents

- Spektrum or SBUS PPM Cable, depending on the version you order

Instructions on use

Physical setup

Plug the converter cable into the Vortex PDB ppm connector and into the receiver.

Remote setup

Different remotes use different center and endpoints in their serial signal, so it's important to adapt those in your setup so that the flight controller gets the correct signal.

The best procedure for that is to plug your Vortex to your computer and look at the receiver page of the CleanFlight configurator software. That page will show you the position of the controls it receives from the receiver through the PPM adapter page.

What CleanFlight configurator expects is this:

minimum stick position	1000
center stick position	1500
max stick position	2000

Go through all stick positions and set the centerpoint (also called subtrim) and endpoints on each control to set them so that their movement in CleanFlight Configurator matches the above values.



Remove the propellers from your quadcopter when testing control positions with the flight controller. You can inadvertently arm your motors and get hurt.

Flight Controller setup

Receiver setup

The Flight Controller has to be configured to receive data as CPPM. On the Vortex, this is the default setup.

Failsafe Setup

The PPM converter does not handle failsafe. And some small receivers don't handle failsafe settings either, so it's good to check and set failsafe in the flight controller to be sure that it behaves like you expect it.

When the PPM converter detects failsafe from the receiver (not receiving data), it stops sending out PPM. CleanFlight detects this as failsafe and either goes into auto-level and landing mode or shuts off the motors, depending of settings.

See the following CleanFlight CLI commands in the CF documentation:

- set failsafe_delay
- set failsafe_off_delay

Setting failsafe_off_delay to 0 would make the flight controller to turn the motors off when it detects a failsafe. This is a good setting for a sturdy racing quad, as it will avoid it flying to far away when losing reception. But be careful where you fly, as this will make your quad drop out of the sky.

Be aware that some CleanFlight versions (before 1.10) had a bug in their handling of failsafe and put full throttle to the motors when in failsafe. This can result in a fly-away of your quad.

You can test your failsafe by turning off the remote when motors are turning slowly, to see how your quad reacts. Do this test with propeller removed, as it can make the quad react in an uncontrolled way if configured wrong.

Frequent issues

All values in CleanFlight Configurator receiver tab are at 1500.

CleanFlight recognises PPM between some limit values. PPM signal outside of those limits is flagged as invalid. When the remote endpoints are set wrong, the extreme values might make it look invalid to cleanflight. Set the endpoints correctly on the remote to avoid that.

Some remote send out some channels that can't be controlled from the remote. Sometimes, those values are at extremes that make CleanFlight think that the PPM data is invalid. To avoid those channel values

My quad seems to want to turns on one side.

Check the center value of your sticks. Centers on Futaba remotes are at 1520. CleanFlight expects 1500. Look for "Center" or "Subtrim" values on the remote and modify them until the stick position shows 1500 in CleanFlight Configurator when sticks are centered.

Support

First line of support is done by the reseller. If you encounter any problems with your ImmersionRC product contact them first.

For support on issues involving equipment from other brands and also general support for ImmersionRC products, the best place to go is the ImmersionRC section of FPVlab.com. We actively monitor this forum and provide support here.



Directions on safety

ImmersionRC advocates the safe use of their products, always make sure your equipment is in proper working order, is checked prior to every flight and that you are familiar with and respect the equipment's capabilities and limitations. Do NOT fly recklessly, do NOT fly near airports, freeways, towns, people, etc, basically anywhere where a equipment failure or pilot error can result in injury or damage to people and/or property.

Warranty

For warranty claims or repair requests please consult the retailer that you purchased this product from, they will be able to help you with your warranty claim or repair request.

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