

Innovator PC software overview

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These settings and suggestions are not sanctioned by ACE or Thunder Tiger and are simply a quick overview of the PC settings and functions based on my experience with the software

It is the responsibility of the end user to always verify their helis settings on the bench before flight

System setting

1) Helicopter Info setting:

This page will default to the current baseline factory setup of your heli.

Always update this page if optional parts (FG fuselage, CF blades, etc) are used as some of these changes will control the minimum and maximum RPM the heli governor will attain and other ICS functions.

2) TX card:

The heli has the option to use alternate TX's along with a special Innovator Module. The TX types that can be used are, Futaba, Sanwa and JR as long as the TX accepts 2.4 Ghz modules on them.

Nothing is configured here if using the stock TX

3) Helicopter Status:

This page will show the current battery and ESC temp, cell voltage and positions of the switches and trims on the TX in real time but ONLY if the heli is plugged into the PC software while the battery is installed. The individual battery id will also be shown

This is useful to see the individual cell voltage of the battery packs to make sure the packs are balanced correctly and the cells are the same voltage.

4) Auto Power Off:

The TX will beep and turn itself off after a predetermined time but **ONLY** once its sees the battery removed from the heli. It is not possible to turn off the TX while the heli is stilled powered.

5) Calibration:

The TX and RX calibration needs no attention if flying with the stock TX unless the heli data “Reset” tab has been used to reset the heli to factory settings

Servo calibration should be done after a crash or if repairs to inner workings of the servos are made.

6) Reset:

Resets the heli back to its original data settings

Control setting

1) Flight mode:

For the MD530 leave the flight style to “Normal-Hov. The Flight Mode SW will allow you to turn on or off the flight mode switch on the TX that toggles between mode 0 and 1. Default is on

2) CP Curve:

This is a traditional 5 point pitch curve that allows you to set where the heli will hover and maximum positive pitch at high stick and negative pitch at low stick. The default settings on the MD530 have very little negative pitch and this will make the heli hard to pull down if pulled up in wind.

Points 1,2 will control the negative pitch transition, point 3 is your hover pitch and points 4,5 you transition to maximum pitch. The heli should start to hover at just about 50-70% throttle stick position. Adjust point 3 up or down to control this. For inexperienced flyers 2-4 degrees of negative pitch should be fine. You do not want so much negative pitch that the heli is

“slammed” into the ground when the stick is lowered. Maximum pitch of 8-10 degrees while learning should also be fine. ALWAYS check the pitch at low, mid and full stick using a pitch gauge on the bench BEFORE ever powering the heli up!! A heli will begin to lift at about 5 degrees pitch and you do not want to find out that your curve settings have 7 degrees pitch in them at full low stick once the heli spins up and flies away out of control!!

Using the flight mode 0 and 1 you can set two different pitch curves and toggle between them using the switch on the TX. I use a milder curve for calm day flying and a curve with more negative and positive pitch for more windy days.

3) Throttle curve

The throttle curve determines the motor RPM transition when the throttle stick is raised. If using the Governor mode which is defaulted, the throttle curve does nothing. If you choose to fly the heli with the governor disabled, you will need to set this curve to your liking. CP helis do not like a linear curve which is defaulted. They fly better with a constant RPM so it's common to set a throttle CP throttle curve to a value such 0%-100%-100%-100%-100% or whatever maximum value and RPM you want. A linear curve will make a heli behave more like a FP heli which is not desirable on a CP.

I suggest you set the Autorotation SW to “Action” on the 530. This will make the LT switch on the TX a throttle kill switch. It will also allow you to power up the heli and move the blades using the throttle stick to check minimum and maximum pitch with a gauge without the blades spinning.

4) Governor

The factory setting for this heli is governor mode. The heli will spin up to the pre set RPM value and will automatically maintain this RPM during flight as the load on the heli changes due to increase or decrease in pitch. This means the throttle stick is essentially only changing the pitch when moved up and down. The minimum and maximum RPM values that can be used are determined by the type of blades that the Helicopter Info setting

tab has chosen.

The factory settings are 1500 RPM for flight mode 0 and 1700 RPM for mode 1. Too low RPM settings will make a CP heli unstable, sluggish and also cause the tail to “bob.” 1800 RPM is the maximum RPM that can be used for the factory foam blades. When using governor mode you **MUST** always raise the throttle trim fully up before flying to always keep power going to the rotors. Failure to do this will cause the motor to shut down if you pull the throttle stick too low in flight and it will take 3-5 seconds to throttle back up.....Crash!!

Once again there are two flight modes and two governor RPM values that can be set for use with the TX switch.

I have no experience at this time modifying the governor gain or other settings but have had no reason to alter these at this point

5) Control rate:

These settings determine how the heli will “feel” and respond in hover and flight. Rate determines the servos maximum travel. You can use values less than 100% to keep the heli from moving too aggressively when cyclic commands are given. Be careful not to get these values too low or you will not have enough servo movement to avoid a crash.

Exponential determines how quickly the servos will move at center stick i.e. Hovering. Expo does not affect the maximum servo travel at full stick deflection which is determined by rate. The higher the % of expo, the less sensitive the heli will be when making small stick movements while hovering. Using too high of an expo values will make the heli respond very slowly in hover and hard to hold in one spot. Negative % values will increase the sensitivity of the sticks while hovering.

The Neutral Offsets are subtrim for each cyclic function to trim out heli drift.

On rudder and Aileron – values move the heli to the LT and + values to the RT. On the Elevator – values move the heli forward and + values back. Two flight mode settings are available

6) Gain:

Gyro gain will determine how sensitive the heli is to rudder commands and headlock gain determines how well the heli holds a heading when affected by wind or non rudder movements. The factory settings work well. Do not raise the gain too high or the tail will “hunt” or wag quickly

7) Data Logger:

This allows you to download to the most recent flight data. You must connect the heli with the battery in to see the battery ID but this is not required to see the other flight data.

The flight data is automatically saved in file and you can pull old flights back into the log using the “File” button. Use the “Helicopter” button for reading the current flight in the heli ICS. The Memory Clear button will clear the flight data from the heli ICS but sometimes it takes 20+ seconds and then a confirm delete box will appear.

8) Alarm:

The alarm tab allows you to set up the values used for startup and low voltage warning. There are only two values that routinely will need to be changed to the user’s preference. The “Initial Voltage” setting determines how much the battery must be charged before the heli will arm. The factory setting is 12.2V so this means that the heli will not arm unless the battery is practically 100% charged. This value can be lowered if you wish to be able to start the heli with a slightly lower charge rate. The “Amount of battery remainder” is the low voltage cutoff warning and it can be configured to use voltage, Mah used or time. You can choose to have the tail wag quickly (yawing alarm) or have the main rotor pulse RPM once the heli hits LVC. You can also set the strength of this pulsing by changing the % value. The factory setting is 10.6V for the MD530 but I tested this value and this consistently uses more than 80% of the pack capacity which is not good for lipos. I suggest raising this limit to 10-7 to 10.8V to keep the pack usage below 80%

There is no way to turn off the beeping sounds the heli makes during flight.

Moving and saving the data

When connecting the heli to use the software, use the “Heli” icon to read directly the settings in the heli ICS. The “File” Icon will take you to the settings folders and any custom folders you may have saved. The 3D folder is for the EXP model, the FC3 are settings for sanctioned FC3 flying event styles and the “Normal” folder is the MD530 files.

The Norm-Hov file is the factory 530 file. Once you have modified your settings within the PC software to your liking, you will want to use the “File” icon under the Data Transmission heading. This will allow you to save this custom file with a new name, otherwise you will loose all your adjustments once you close the software. Using the “Heli” icon under data Transmission send your changes directly into the heli. I always send my changes to the heli first and then also save the file so I have a permanent copy of the file. Your custom file will be found in the “Normal” folder

The simulator in the PC software is a free sim software that has been around for years and is not optimal. It does not fly like any real heli that I have ever owned so I think its functionality as practice tool is quite limited other than learning what stick does what.