



Product Functions

• Battery Management System

It was a built in Battery Management System function of the speed controller. The power cut off timing was based on the cell number and continues output current of the battery. There were 2 options defined in the battery management system in all series controllers. 1 option is for Li-Polymer batteries and 1 option for using with NiMH battery. The battery management system allows you to protect your batteries from over discharge and moreover to extend the lifetime of your batteries.

• Flying Mode

The flying mode offers you different options for different aircrafts. You could choose from Airplane, Glider, Helicopter without governor and Helicopter with governor.

Set Up Procedure

1. To enter set up mode and throttle curve initiation

Due to the signal differentiation amount different remote control brands, it is strongly recommended to run the throttle curve initiation process whenever set up a new aircraft.

- I. Shifting the throttle position to the full throttle/full speed.
- II. Power on the transmitter
- III. Power on the speed controller, the motor will come up with acknowledge tones
♪-♪-♪-♪-♪-♪
- IV. Moving the throttle position to the minimum/stop position, the motor will come up with acknowledge tones ♪-♪-♪-♪

This procedure was to calculate the throttle range by the microprocessor in order to optimize the throttle curve and the smoothness of operation. When finish the initiation process, we could simply shut down the power in the system is intend to use other factory default settings. If not, simply waiting for 1 second. The system will enter the set up mode.

2. Battery Management System

The step will enter battery management system. This section offers 2 options for using with either NiMH or Li-Polymer battery. The motor will come up the corresponding tones as indicator. The following is the indication with graphic reference.

- Standard discharge protection for Li-Polymer (Factory Default) ♪-♪
- +5V cut-off protection for Ni-MH ♪-♪♪

When intend to choose one of above options, simply position the throttle stick from minimum/stop to maximum/full throttle after the indication tone. The next step is to position the throttle stick back to the minimum/stop position to confirm. If there is no need to enter next set up section, you could simply shut down the power. The selection was stored into the microprocessor when the throttle stick was in confirmation position. If there is need to enter next set up section, simply wait for the next tone.

3. Flying Mode

Following by the battery management system, the system will enter flying mode setting. This section offers 4 options. They were Airplane, Glider and Helicopter without Governor/with Governor. The motor will come up the corresponding tones as indicator. The following is the indication with graphic reference.

- Aircraft (Factory Default) ♪-♪
- Glider ♪♪-♪♪
- Helicopter with Governor ♪♪-♪♪♪
- Helicopter without Governor ♪♪-♪♪♪♪

When intend to choose one of above options, simply position the throttle stick from minimum/stop to maximum/full throttle after the indication tone. The next step is to position the throttle stick back to the minimum/stop position to confirm. Then you could simply shut down the power. The selection was stored into the microprocessor when the throttle stick was in confirmation position. The controller is now ready to fly.

More about Battery Management System

This section is to give you more details of the smart design of battery management system in order to help you to utilize the function. Technically the power cut off timing was based on the cell number and continues output current of the battery. The microprocessor will calculate the timing and to cut the power with two steps. Because the late stage of each battery discharge cycle has quick voltage change, such function will provide a safe process during the operation.

1st step: enabled when the single cell reaches the low point, the motor will be forced to lower the RPM by microprocessor

2nd step: enabled when the single cell reaches the lowest point defined in the system, the motor will be completely cut off. To regain the power, the user needs to adjust the throttle stick to the "stop" position until the battery voltage comes back to the safe level.

The following were the detailed definition of each option in battery management system.

- NiMH battery
+5.0 volt cut off
- Li-Polymer standard discharge (Factory Default)
1st step voltage @ **2.9V**
2nd step voltage @ **2.6V**

Caution!!

High power motor systems could be very dangerous. High current could generate heat on wires, batteries, and motors. Always follow the instruction and use proper tools to set up the system within safe range. Always fly at a designed field with caution even though this controller is equipped with safety arming program.