

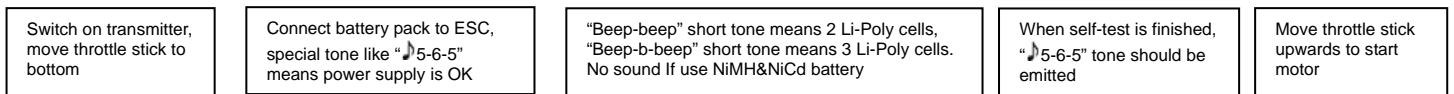
# DUALSKY® XController Brushless ESC Programming Instructions

Thank you for purchasing the DUALSKY Electronic Speed Controller (ESC) for sensorless brushless motor. This is a very high performance power system component for an RC model, please read this manual carefully.

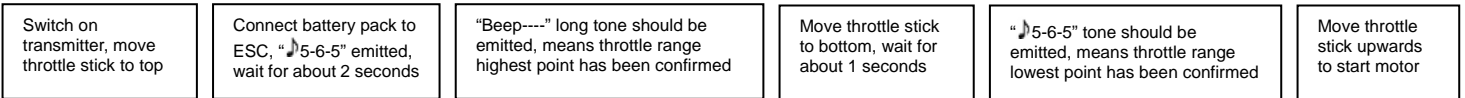
## ESC Settings:

- Brake(DLBM *New*) Settings:** Brake Disabled / Brake Enabled, default is Brake Disabled.
- Battery Type:** Li-xx(Li-ion or Li-poly) / Ni-xx(NiMh or Nicd), default is Li-xx. (Please ensure correct battery is selected to allow correct operation of low voltage protection mode)
- Low Voltage Protection Mode(Cutoff Mode):** Power Reducing / Power Cutoff, default is Power Reducing.
- Low Voltage Protection Threshold(Cutoff Threshold):** Low / Medium / High, default is Medium.
  - For Li-xx battery, number of battery cells are sensed automatically, low / medium / high cutoff voltage for each cell are: 3.0V/3.2/3.4V.
  - For Ni-xx battery, low / medium / high cutoff voltages are 0%/50%/60% of the startup voltage.
- Startup Mode:** Normal / Super-soft, default is normal startup.  
Normal is good for fixed-wing aircraft. Super-soft is good for helicopters, the initial speeds of super-soft mode are quite slow, 6 secs(super-soft startup) from startup to full speed, if throttle is closed and opened again within 3 seconds after the first startup, the startup will be in normal mode to avoid the chances of a crash caused by slow throttle response in aerobatic flight
- Timing:** Low(0) / Medium(10) / High(20), default is Medium.  
In normal cases, low timing can be used for most motors. But for high efficiency, we recommend the **Low** timing for 2 poles motor and **Medium** timing for 6 poles and above. For higher speed and large outrunner brushless, the **High** timing could be used.
- Governor (DGM *New*):** Off – Governor function disabled / On – Enable the Governor Mode. Default is Off. When the Governor mode is On, throttle journey means motor RPM, not power output.

## Normal startup procedure:



## Throttle range setting: (Throttle range should be set each time when using a new transmitter)

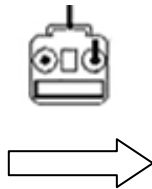


## Programming with transmitter(4 Steps):

- Enter programming mode
- Select items
- Set item value
- Exit programming

**1. Enter programming mode**

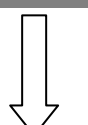
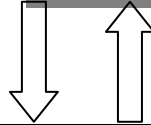
- Switch on transmitter, move throttle stick to top, connect the battery pack to controller
- Wait for 2 seconds, the controller should emit long tone like "beep-----"
- Wait for another 5 seconds, special tone like "♪5-6-5" should be emitted, this means programming mode is entered



**2. Select items:**  
After entering programming mode, you can hear 8 tones in a loop in following sequence. After one tone within 3 seconds, if you move the throttle stick to bottom, then this item is selected.

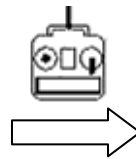
|                            |                  |                |
|----------------------------|------------------|----------------|
| 1. "beep"                  | brake            | (1 short tone) |
| 2. "beep-beep"             | battery type     | (2 short tone) |
| 3. "beep-b-beep"           | cutoff mode      | (3 short tone) |
| 4. "beep-b-b-beep"         | cutoff threshold | (4 short tone) |
| 5. "beep-b-b-b-beep"       | startup mode     | (5 short tone) |
| 6. "beep-b-b-b-b-beep"     | timing           | (6 short tone) |
| 7. "beep-b-b-b-b-b-beep"   | <b>Governor</b>  | (7 short tone) |
| 8. "beep-b-b-b-b-b-b-beep" | exit             | (8 short tone) |

\* Some small ESCs haven't this function.



**3. Set item value:**  
You will now hear tones in loop. Set the value matching to a tone by moving the throttle stick to the top, when this has been confirmed you can hear the special tone "♪5-6-5" this means the value has been set and saved. (Keeping the stick at top, you will go back to step 2 and you can select the other items; Moving the stick to bottom within 2 seconds, you will exit the programming mode). The bolded texts are the default value.

| Tones               | "beep-"<br>1 short tone | "beep-beep-"<br>2 short tones | "beep-beep-beep"<br>3 short tones |
|---------------------|-------------------------|-------------------------------|-----------------------------------|
| Brake               | Off                     | On                            |                                   |
| Battery type        | <b>Li-ion / Li-poly</b> | NiMh / Nicd                   |                                   |
| Cutoff mode         | <b>Reduce power</b>     | Shut down                     |                                   |
| Cutoff threshold    | Low                     | <b>Medium</b>                 | High                              |
| Startup mode        | Normal                  | Super soft                    |                                   |
| Timing              | Low                     | <b>Medium</b>                 | High                              |
| Governor <i>New</i> | <b>Off</b>              | On                            |                                   |



**4. Exit programming**

There are 2 ways to exit programming:

- In step 3, after special tone "♪5-6-5", move throttle stick to bottom within 2 seconds.
- In step 2, after "8 short tone", move throttle stick to bottom within 3 seconds.