

SP Programming for Low Voltage SP 50, SP 60, and SP 80 :

- 1.) Temporarily Remove the propeller, or secure the airplane in case of accidental motor start.
- 2.) Power on transmitter, move throttle to the full **ON** position.
- 3.) Connect your battery to your model.
- 4.) You will hear the controller beep in sets of three each of 1-6 beeps. Move the throttle to the **CENTER** to select one of the following 6 options. Once selected, it will beep in long and short beeps according to the tables below. To select the final option to program the ESC move the throttle back to the full **ON** position.

1 beep: Cut-Off Voltage Settings	
1 short, 1 long	Auto NiMH, 0.8V per cell
1 short, 2 long	7S Lipo 21V Cutoff
1 short, 3 long	6S Lipo 18V Cutoff
1 short, 4 long	5S Lipo 15V Cutoff
1 short, 5 long	4S Lipo 12V Cutoff
1 short, 6 long	3S Lipo 9V Cutoff
1 short, 7 long	2S Lipo 6V Cutoff

2 beeps: Throttle Range Settings	
2 short, 1 long	Auto Throttle calibration
2 short, 2 long	1.1ms to 1.8ms
2 short, 3 long	Hard Start
2 short, 4 long	Soft Start

3 beeps: Brake Settings	
3 short, 1 long	Brake Off
3 short, 2 long	Soft Brake
3 short, 3 long	Medium Brake
3 short, 4 long	Hard Brake

4 beeps: Motor Direction and Cut-Off Type	
4 short, 1 long	Normal Direction
4 short, 2 long	Reverse Direction
4 short, 3 long	Soft Cut-Off
4 short, 4 long	Hard Cutt-Off

5 beeps: Timing Settings	
5 short, 1 long	1° for 2-4 pole motors
5 short, 2 long	7° for 6-8 pole motors
5 short, 3 long	15° 10-14 pole motors
5 short, 4 long	30° 10-14 pole fast

6 beeps: PWM Settings	
6 short, 1 long	8KHz
6 short, 2 long	16KHz

- 5.) After selecting the option the ESC will make a confirmation tone, then it goes back to step 4 so you can program other options. Once you are done push the throttle stick down to the **OFF** position. This will save the settings and initialize the ESC.

CAUTION! After setting a programming option unplug the battery. The ESC is ARMED at this time and throttle ON will make the motor turn. The ESC is now programmed. It will store the settings until you change them.

Please be careful, RC motors with propellers can be very dangerous. Always treat live motors as though they may spin at any time.