



KINETIC 1S BOOSTING METHODS INFORMATION

To answer some of the questions and misconceptions about boosting methods for the Kinetic 1S, we have compiled this information to help our customers and drivers.

Kinetic 1S requires a 2S battery that only supplies power to the internal 3amp BEC circuit. The BEC is a linear regulator that has a very fast response time to changing loads. This response time is also known as transient response and the Kinetic BEC is on the order of 1- 3uS, more than fast enough for RC servos.

Single cell boost circuit is a type of switching power supply that takes the 1S cell's 4.2 volts and boosts it up to 6 volts. To accomplish this task, the power supply uses a complex circuit with an inductor, power mosfet and capacitors. This cycle takes the input and converts to a higher output voltage. The cycle is then continually repeated, so if there is a sudden change in load current, the transient response time of the circuit is much slower (100us – 300uS). Therefore, it may have a hard time catching up with varying demand.

As the 1S cell gets closer to a discharge state, the boost circuit has a difficult time keeping the output voltage at a constant 6 volts, especially during hard acceleration. Testing has shown that when the drive motor is drawing a lot of current, a boost circuit may have trouble keeping the output voltage stable. For example, a 10.5 turn motor with 40 degree electrical timing applied will draw approximately 47 amps. At this load, the 1S Lipo voltage will drop during cornering and the booster output voltage may dip, causing the steering servo to glitch.

This information can also be applied when using 1S on the Kinetic 2S.