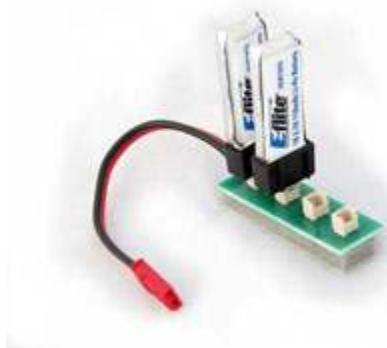


NEWS - What's happening at TME

A lot has been going on during the summer.

NEW ULTRA-Micro Battery Adapter!



We showed them at the Toledo Show this year and it was a hot item from the start. If you have caught the fever of these little Micro-Flyer RC Flyers like ParkZone's Vapor™, Ember™, Ember 2 and Sukhoi, and E-flite's Blade® mCX and other small Kyosho Minium Series flyers, you undoubtedly have acquired several of these little batteries and experienced their thirst to be charged.

The chargers that come with them eat up AAA batteries while charging most batteries at over 3C! The result is a lot of dead AAA batteries and a shortened life span on these little batteries.

THE SOLUTION? Most of us have been in this hobby a while and it is evidenced by the demand for Bind and Fly versions of these aircraft that bind to our fancy multi memory transmitters. Well that means that many of us most likely already own a decent LIPO charger (like the Xtrema! :)) and we really don't want to lug around yet another charger, especially one that eats AAA batteries and shortens the life of our battery.

The answer is simple, the Ultra-Micro Battery adapter connects to your charger via a standard JST connector and allows you to charge up to 4 of these little batteries at once. Now YOU can set the charge current to 1C and get maximum life out of these batteries. And even though you are charging slower you are charging 4 of them at once which means you have more than made up for the time you lost! And the best part is they cost only \$9.95 !!! If 4 batteries at once aren't enough then buy 2, connect in parallel and charge 8 batteries, 12 batteries, or more! For more information [go here](#)

HOW TO VIDEOS!

We have been creating videos offering tips and to help our customers use our Xtrema products. Look for more operational and tips videos in the near future.

Click the play icon on the video below to see all our videos. [Check us out on YouTube](#)

Xtrema Tips - Field Solutions



One of my good friends and early Xtrema beta tester , George Hicks, sent us a picture of his setup for charging multiple packs while out at the field. You can see the he has all his adapters and extensions as well as his charger, balancers, BIMs and batteries neatly attached with Velcro to the board. With this setup he can charge multiple packs simultaneously even if they are of different capacities. If you would like more information on how to do this, [check out our videos on YouTube](#)



Here is another way to make your setup look neat. Simply add Velcro to the side of the Xtrema charger in order to keep the BIM and Balancer in a neat and convenient spot. A second balancer can be added when needed and may even be Velcroed on top of the first balancer.

Why a wattmeter?

We see our charger in many fields across the country and one thing we notice is that the wattmeter is still taped

up or has wire nuts and is not set up for use. While you may not think of a wattmeter as an everyday gadget you would be surprised how we end up using ours almost every day. Especially when you are the person helping your buddies out at the field. Below are some questions that your Xtrema's wattmeter can answer almost every day you fly.

Note: If you need a basic understanding of volts amps and watts please read our short [Basics of Electrics \(without Math\)](#) first.

Which pack did I just use? Ever fly and take out your battery, start talking to your friends and then notice you laid it in your battery box along with all your other fully charged batteries? The wattmeter is actually a voltmeter and ammeter that multiplies the two together to give you watts. A voltmeter with a battery connector is what you need in a situation like this. Quickly test and determine which packs are low and you know the ones you used.

Why are my batteries or speed controller getting hot to the touch! Batteries and speed controllers get hot for basically 3 reasons. You may not have proper ventilation, You are

drawing too many AMPS, or the internal resistance has gone up. How can you tell which one it is? I thought you would never ask. Lets say you have a 1,000mah battery with a discharge capacity of 20C continuous or a speed controller rated 20 amps. That means it should be able to deliver 20 AMPS solidly and not get too warm with adequate airflow.

OK so now we hook up the wattmeter on a freshly charged battery and we measure at full power running wide open.

If you measure under 20 amps and your voltage is staying up nicely, then most likely you don't have adequate ventilation or some transistors have opened up in your speed controller causing the internal resistance of the controller to go up.

If you're under 20 AMPS but your running battery voltage is only a little over 3 volts per cell then this is a significant voltage drop that tells you the internal resistance of your batteries is very high which signals the end of their life for running high powered motors. (they are probably still good for low current applications around the house)

If you are drawing OVER 20 amps then either your prop is too big in pitch or diameter or your motor may have some shorted windings.

Why does my controller keep cutting off?

This question is similar to solve as the one above. Your speed controller should shut off when your cells drop to below 3 volts per cell. For example a 3 cell pack should cut off when the pack voltage goes below 9 volts. Lets assume a 3s - 1,000 mah 20C battery like the example above. If your current is under 20 Amps but your voltage is going below 9 volts then your battery is shot! It can no longer maintain a voltage below the max specified discharge rate. If however your battery is producing way over 20 AMPS and the voltage starts out high but quickly drops to below 9 volts then you are destroying your battery with an excessive load. If this is the same prop you have used for years most likely your motor has a short. If not reduce the size of the prop to what the manufacturer recommends for the number of cells you are running.

But what if your voltage is nice and high and your amps are nice and low and your motor still wants to quit? This usually indicates a stalled servo pulling excessive current from speed controllers that have built in BEC, (battery eliminator circuit) to power the receiver and servo, is overheating and cutting off. Check to see if you have a binding servo or one that feels hot. Sometimes a bad gear in the servo can make a servo start drawing ridiculous current. Especially a digital servo gone bad.

Which is the best prop for my plane?

This question is always answered by flying the plane. But when you make a change to the prop you are making a change to the power that you are forcing the motor to produce. Electric motors are willing servants. Just because they are rated at say 50 watts doesn't mean they can't produce 75 watts! (for a while!) Put a big prop on a glow engine and it may not even start. Do the same thing to an electric motor and it will fry its brains trying to turn that big prop.

So while your are playing around with prop sizes do your motor a favor and check to see that the combination does not exceed the watt rating and current rating of the motor. As you exceed the current rating (even if you are within the watts), you are forcing the motor into an area of inefficiency and this inefficiency will cause the motor to run hot.

So what do you do if you find two props that fly your plane perfectly but one draws 20% less current than the other? Well that is a perfect display of how a wattmeter can help you spot the more efficient propeller. If you go with the prop that draws 20% less current you may get about 20% more flight time and all your components will run cooler and more efficiently which means a LONG life.

Is my new airplane configuration going to damage my batteries or speed controller?

This is the number one reason to use a wattmeter. At least this one time just before the maiden flight. Why? You have spent good money and time building your model and you have gone with all the recommendations or maybe only one slight modification and it would be a shame that a faulty component or poor substitution will create a surprise landing or possibly damage your battery, speed controller or motor.

So what do you check for? Here is a check list...

Is the current at WOT below battery C rating times its mah?

Is the current at WOT below max rating of ESC?

Is the current at WOT below max rating of motor?

Is a fully charged battery staying well above cell count times 3.0 volts?

Is the power enough for the type of flying you expect to do?

- Powered Glider / Scale - 50 watts/pound
- Trainer - Slow Flyer - 70-90 watts/pound
- Fast Warbird / Sport Aerobatic - 90-110 Watts/pound
- Advanced Aerobatic - High Speed 110-130 Watts/pound
- Light loaded 3D / Racer - 130-150 watts/pound
- EDF Jet / Unlimited 3D - 150-200 watts/pound

Your actual results may be a little above or below the recommendations above but you should not be off very far from the expectation that you have for performance.

Smoke Tips

Keeping prime is the key to reliable smoke. When things are going smoothly few things are as enjoyable as putting on an airshow filled with smoke from your favorite show plane. However nothing can be more frustrating than having a system that doesn't work reliably every time. On the ground you can hear the pump coming on and off every time you flip the switch so you pull your hair out to figure out why it doesn't work all the time.

The truth is that if the smoke pump loses its prime it is because it sucked a big air bubble. Many types of fluid pumps are less efficient when pumping air than when they pump a fluid. Our pump is no exception. It is hard to re-prime the pump while the engine is running. You always want to prime the smoke oil before you crank up your engine.

So how do we figure out what caused the pump to lose prime. Well first realize that in a normal pump there are only two nipples that can let air in. The intake nipple of the pump and the output nipple. A bouncing clunk line in the tank can cause the pump to get a gulp of air on the input nipple. This can happen at any time while the smoke is ON. A leak in the clunk line or a leak in



any of the tubing leading to the pump can cause this type of prime loss.

The other way that air can get in is from the output nipple. This cannot happen while pumping smoke oil, but rather it seeps in while the pump is OFF between the lines of smoke. This is the reason we have a check valve. It prevents fluid from backing out of the pump and letting an air bubble come from the muffler and into the pump. If your check valve is defective or if it is not a flapper valve or spring loaded check valve it will not work. Also silicone flapper valves (like YS check valves) dissolve in the smoke oil after a few flights. Our [High Volume Check valve](#) is specifically manufactured to withstand the types of oils used for smoke

New Xtrema Balancer Firmware - FREE updates for Life!

Back in March we released a beta version with new features for the Balancer. It also required a change to the Xtrema Charger firmware as well. We will soon be making this an official production release and all new units purchase will have these features. If you did not get notification of the update and want to be notified when we first come out with new features then you must also be signed up on the [Xtrema Update Notification](#) list.

Both our balancer and our charger are guaranteed against planned obsolescence. Our free updates for life program is simple. If we add a new feature via an update and you would like to upgrade your equipment you may simply return it to us for a free update. Only a nominal charge for return postage is requested.

You may also bring it to any of the shows or events we attend and we can update your unit there for free. Also many of our dealers or your friends may have the required data cable and they can update your charger from the latest code posted on our web site. For the ultimate in convenience and to unlock the extra computer features our products have you can purchase a data cable (part # XTR-USB and XTR-232) and update it yourself.

If you would like to be alerted of new updates, you can [sign up](#) to be on our update list and get informed any time we release a new product improvement. Your privacy is always respected and your email address will never be sold or rented to a third party. You will be able to remove yourself from the list at any time.