

# Xtrema QUICK START

## Instructions (V1.0.0 – 1.3.x) (rev 2/8/2008)

**NOTE: The CD packed with your Xtrema has the full operator's manual. The latest manual can be downloaded by going to [www.theXtrema.com](http://www.theXtrema.com). Please sign up to be notified of future updates.**

### PRECAUTIONS - WARNINGS - PLEASE READ ALL OF THESE!

- **DO NOT CHARGE Lithium Polymer / ION batteries unattended. Ever!**
- **USE POLARIZED CONNECTORS on the motor and battery to prevent reversal of leads. Red to (+) and black to (-)** Although we have circuitry to protect the Xtrema, in certain situations serious damage to Motor, speed controller, battery and the Xtrema may result. Make sure that your connectors can handle the maximum amps your motor can draw. The Xtrema can safely measure 50 amps continuous and up to 100 amps for short durations when used as a Wattmeter.
- **DO NOT CHARGE** inside a **vehicle**
- **DO NOT CHARGE** in **direct sunlight**
- **DO NOT CHARGE** when ambient **temperature** is very **HIGH or LOW**.
- **DO NOT CHARGE** when Li battery pack is **hot or near flames**
- **DO NOT USE an Automobile battery charger** for the input power source. **Use a regulated 12 to 13.8V DC supply or a 12 Volt Lead Acid battery capable of providing up to 20 amps** when charging at the maximum charge capacity. Your supply must maintain a minimum of 10.5V to a max of 15V to operate.
- **DO NOT CONNECT EXTERNAL EQUIPMENT WITH COMMON GROUNDS.** All three (-) Negative wires on the Xtrema are at slightly different potentials.
- Xtrema CASE may get **HOT** when charging at high current.

## GENERAL OPERATION

Up ▲ or down ▼ buttons on the joystick select menu or value options  
Left ◀ goes back to previous selection , right ▶ button accepts option and goes to next step  
You will need to carefully solder a matching connector to the bare wires labeled BATTERY and MOTOR on the Xtrema.

## CHARGING a Lithium (Li) Battery

### Connect the Xtrema to charge a battery

- 1 Connect the red (+) and black (-) Xtrema inputs directly to a 12Volt automobile battery or regulated power supply. Be careful to observe polarity.
- 2 Connect the Li Po battery to the connector labeled "BATTERY". CAUTION: Insure that there is nothing connected to the "MOTOR" connector because the battery voltage will be present there.
- 3 You may now optionally connect up to two separate safety options. The Xtrema includes a temperature probe that may be connected to your battery using the provided hook and loop strap. We recommend always using the temperature probe for maximum safety during charge.

Beginning with version 1.3.0 and up we also have an optional cell balancing system consisting of up to two Balance Interface Modules and up to four Xtrema Balancers that connect to the balancing plug(s) on your battery. For your safety, please read the full manual available on the included CD with you Xtrema or download it online at [www.theXtrema.com](http://www.theXtrema.com) for complete instructions on how to connect and use the balancer(s).

### Set to Li Charge mode

- 4 "Li Charger" should be selected on the display. (If not push the up ▲ or down ▼ buttons on the joystick until it is selected.) Press the joystick to the right ▶ to enter Li Charger mode.

### Select the cell count and milliamp

- 5 You will see four battery pack configurations that can be customized and remembered by the Xtrema. These can represent four of your most common pack configuration. Use the up ▲ or down ▼ buttons on the joystick to pick

the pack you want. If none of them match, pick any one of the four you want to change. In the next step, you will be able to change the values to match your battery. Your setting will be automatically remembered the next time you enter this menu. Press the right ► button when you have made your selection.

- 6 You now have an opportunity to change the cell count. If the cell count is correct then simply press the right ► button to continue. If not, you can change the cell count at this point by using the up ▲ or down ▼ button until the cell count you want is displayed. Notice that holding the button down will rapidly advance through the numbers. When the cell count you want is displayed press the right ► button to continue.
- 7 You now have an opportunity to change the milliamps. For most Li batteries this is normally set to 1C or basically the milliamp rating of the battery or less. If the milliamp charge rate is correct then simply press the right ► button to continue. If not you can change the milliamps at this point by using the up ▲ or down ▼ buttons until the milliamps you want is displayed. Notice that holding the button up or down will rapidly advance through the numbers. When the milliamps you want is displayed press the right ► button to continue.

## Start the Charge

- 8 The Xtrema will give you one last chance to abort before charging. It will calculate the Li voltage based on cell count and display the charge current that you have selected. **DO NOT MISS THIS LAST OPPORTUNITY TO CHECK YOUR SETTINGS. Wrong settings may cause Li batteries to burst into FLAMES!** If all is OK, then start the charge by pressing the right ► button to continue. You may abort the charge at any time by pressing any key ▲▼◀▶. When the charge has terminated, either by a fail mode, user abort, or successful completion, the display will freeze with the terminating values and the STATUS code will appear at the top right of the LCD. You may hit any key ▲▼◀▶ to go back to the Update Memory display. You may then start another charge cycle (starting at step 6) or you may press the left◀ button to return to the main menu. In an emergency you may rapidly pull out the battery to stop a charge. However, this is NOT a recommended way to abort the charge.

## Using the Wattmeter

### Connect the Xtrema in between battery and motor

1. Connect the red (+) and black (-) Xtrema directly to a 12Volt automobile battery or regulated power supply. Be careful to observe polarity.
2. Connect the Li battery to the connector labeled "BATTERY"
3. Connect your speed controller and motor to the connector labeled "MOTOR"
4. You may optionally connect the temperature probe to the battery or your motor using the hook and loop strap for monitoring purposes.

### Set to Wattmeter mode

5. "Wattmeter" should be selected on the display. (If not push the up ▲ or down ▼ buttons on the joystick until it is selected.) Press the joystick to the right ► to enter Wattmeter mode.
6. You are now able to measure Watts, amps, volts, temperature and even horsepower. Pressing the right ► button will allow you to toggle into the [STORED] mode which will display peak amps, minimum voltage, max temperature as well as the calculated watts and horsepower.
7. Press the left◀ button to return to the main menu.

## WARRANTY

### LIMITED WARRANTY

The Xtrema is warranted to the original purchaser for 3 years from the date of purchase to be free from defects in material and workmanship. During this period Tejera Microsystems Engineering Inc. will repair or replace, at their discretion, the defective unit. Warranty is not transferable and is therefore limited to the original purchaser of the unit. This warranty does not apply to any unit which has been abused, improperly installed, improperly used, used for purposes other than those purposes for which the unit was designed, handled roughly, damaged in shipment, nor to any unit which has been altered or repaired by unauthorized personnel. Under no circumstances will the buyer be entitled to incidental or consequential damages. Warranty coverage also requires proof of purchase date unless ordered direct from the manufacturer. This Limited Warranty gives you specific legal rights; you may also have other rights which vary from state to state.

### WARRANTY PROCEDURE:

A minimum charge of \$7.00 to cover shipping and handling is required on all returned units after the first 30 days, and should be enclosed with the unit. Be sure to enclose your Bill of Sale as proof of purchase with the unit. (A legible photocopy is acceptable.) In the event that the work is not covered under the warranty, TME will attempt to contact the owner unless special instructions or a credit card number are received with the unit.

**FREE LIFETIME UPDATES:** The Xtrema carries free firmware updates for the life of the product. For your convenience, downloadable updates will be made available online at [www.theXtrema.com](http://www.theXtrema.com) or [www.TMEnet.com](http://www.TMEnet.com). Activate your warranty online to receive product updates and upgrades! Go to: [www.TMEnet.com/register](http://www.TMEnet.com/register) A special data cable will be required for your computer to connect to the Xtrema (not included) Alternately you may return the Xtrema to us with \$7.00 for return shipping to be updated at no charge.

### REPAIRS:

For out of warranty repairs the standard repair fee per unit is up to 50% of the current list price plus \$7.00 shipping and handling charges. You may prepay by check, MO, VISA, MASTER CARD or DISCOVERY

**ALL RETURNS MUST BE SENT TO:** Tejera Microsystems Engineering, Inc., 11705 Boyette Rd #418, Riverview, Florida 33569 carefully pack and ship the unit via the post office, UPS or FED EX, fully insured and prepaid.