

# INSTRUCTIONAL MANUAL

## MULTI-CHEMISTRY CHARGER

### PART NO. 44253



## INTRODUCTION

Congratulations for purchasing the Hitec X1 Nano battery charger. Our easy-to-operate 50-watt AC charger is the economical and efficient choice for those of you on the go. Capable of charging the most popular battery chemistries, including the latest LiPo High Voltage cell packs, the X1 Nano is your mini friend with maximum power.

## WARNINGS

Please read this entire operating manual before using the X1 Nano Charger. If you are unsure of its proper operation after reading the manual, please seek advice from an experienced hobbyist or someone familiar with proper battery charging procedures.



Warning

**THE CHARGING AND DISCHARGING OF RC HOBBY BATTERIES CAN BE DANGEROUS. FAILURE TO FOLLOW THESE EXPLICIT WARNINGS CAN RESULT IN PROPERTY DAMAGE AND/OR LOSS OF LIFE.**

- ⚠ NEVER LEAVE YOUR CHARGER UNATTENDED WHILE IN OPERATION.
- ⚠ NEVER CHARGE ON OR AROUND COMBUSTIBLE MATERIALS.
- ⚠ NEVER CHARGE A DAMAGED BATTERY PACK.
- ⚠ LOW COST, NO-NAME BATTERY PACKS POSE THE MOST DANGER. WE RECOMMEND YOU ONLY USE BATTERY PACKS THAT ARE SOLD AND WARRANTIED BY A REPUTABLE COMPANY.
- ⚠ IT IS HIGHLY RECOMMENDED THAT YOU UTILIZE A SAFETY DEVICE SUCH AS A STEEL CASE OR LIPO SACK™ WHILE CHARGING LITHIUM CHEMISTRY BATTERIES.
- ⚠ IT IS HIGHLY RECOMMENDED THAT YOU KEEP AN OPERABLE “CLASS A” FIRE EXTINGUISHER IN THE CHARGING AREA.



Warning

**FAILURE TO FOLLOW THESE WARNINGS CAN BE CONSIDERED NEGLIGENCE BY THE OPERATOR AND MAY NEGATE ANY CLAIMS FOR DAMAGES INCURRED.**

Hitec RCD USA will not be held responsible for any damages or injuries that may occur by persons who fail to follow these warnings or who fail to properly follow the instructions in this manual.

## SAFETY NOTES

These warnings and safety notes are of the utmost importance. You must follow these instructions for maximum safety. Failure to do so can damage the charger and the battery and in the worst cases, may cause a fire.

- ⚠ The allowable AC input voltage is 100 -240V AC.
- ⚠ Keep the charger away from dust, damp, rain, heat, direct sunlight and excessive vibration.
- ⚠ If the charger is dropped or suffers any type of impact, it should be inspected by an authorized service station before using it again.
- ⚠ Make sure you know the specifications of the battery to be charged or discharged to ensure it meets the requirements of this charger. If the program is set up incorrectly, the battery and charger can be damaged. Never place a charger on a car seat, carpet or similar surface. Keep all flammable volatile materials away from the operating area.
- ⚠ Fire or explosion can occur due to overcharging.
- ⚠ To avoid a short circuit between the charge lead, always connect the charge cable to the charger first, then connect the battery. Reverse the sequence when disconnecting.

### NEVER ATTEMPT TO CHARGE OR DISCHARGE THE FOLLOWING TYPES OF BATTERIES:

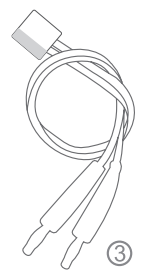
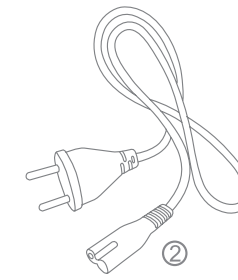
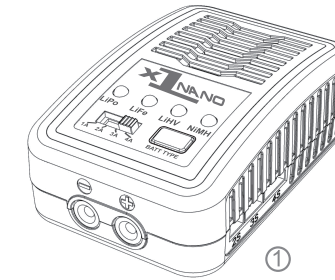
- ⚠ A BATTERY FITTED WITH AN INTEGRAL CHARGE CIRCUIT OR PROTECTION CIRCUIT.
- ⚠ A BATTERY PACK WHICH CONSISTS OF DIFFERENT TYPES OF CELLS (INCLUDING DIFFERENT MANUFACTURERS’ CELLS).
- ⚠ A BATTERY THAT IS ALREADY FULLY CHARGED OR JUST SLIGHTLY DISCHARGED.
- ⚠ NON-RECHARGEABLE BATTERIES (THESE POSE AN EXPLOSION HAZARD).
- ⚠ A FAULTY OR DAMAGED BATTERY
- ⚠ BATTERIES INSTALLED IN A DEVICE OR WHICH ARE ELECTRICALLY LINKED TO OTHER COMPONENTS
- ⚠ BATTERIES THAT ARE NOT EXPRESSLY STATED BY THE MANUFACTURER TO BE SUITABLE FOR THE CURRENTS THE CHARGER DELIVERS DURING THE CHARGE PROCESS

## SET CONTENTS

1.) HITEC X1 NANO CHARGER

2.) AC POWER CORD

3.) XT60 CHARGE CABLE



## SPECIFICATIONS

X1 Nano Specifications	
AC Input	100 - 240 Volts AC
Battery Type / Cell Count	LiPo, LiFe and LiHV / 2 4S NiMH:6 - 8S
Charge Circuit Power	50 Watts
Selectable Charge Currents	1, 2, 3 or 4 Amps ± 10%
Current Drain for LiPo Balancing	300 mA per cell
Cell Termination Voltage	LiPo: 4.2 ± 0.02 / LiFe: 3.6V ± 0.02V LiHV: 4.35 ± 0.02 / NiMH: -ΔV
Net Weight	6.6 oz (188 g)
Dimensions	2.7 x 4.3 x 1.6 in (69.4 x 110.7 x 40.5 mm)

## TROUBLESHOOTING

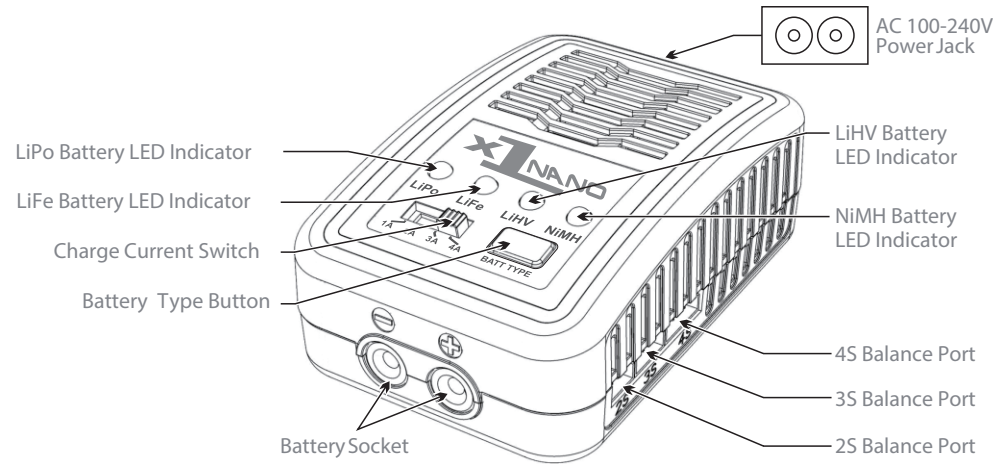
If there is an error, all four status LED of the charge will blinking

LED Blinking Times	Problem	Solution
1	Connection break or wrong connection	Check the connection between the charger and the battery.
2	Polarity (+ and -) connections of battery are incorrect	Make sure the charge lead is connected properly to the charger to ensure it is wired correctly
3	Dead cell or imbalance between cells is too high	Safely dispose of damaged battery
4	Over current protection	Decrease charge rate to safe level for the battery pack, or dispose of shorted battery

Once the error condition has been resolved, press “BATT TYPE” button to reset the charger. If the error can not be solved, please disconnect the power cord from the wall socket and unplug the battery from the charger.

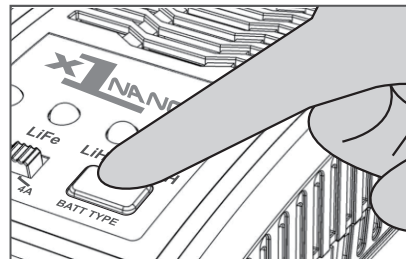
## OPERATION SETUP

The X1 Nano is an AC only charger capable of charging Lithium Polymer (LiPo) and LiHV) Lithium Ferrite (LiFe) and Nickel Metal Hydride (NiMH) type batteries. Refer to the following instructions on how to operate your charger.



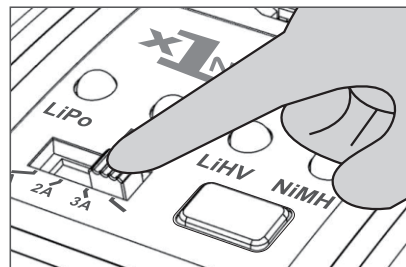
- (1) Plug the AC power cord in the X1 Nano and a wall socket. All the LEDs will light briefly, the battery type LED will flash green and red which indicates the charger is ready to use.

- (2) Select the battery type, either LiPo, LiFe, LiHV or NiMH, by pressing the BATT TYPE button. The LED will alternately flash red and green on the battery type you have chosen.



Select Battery T

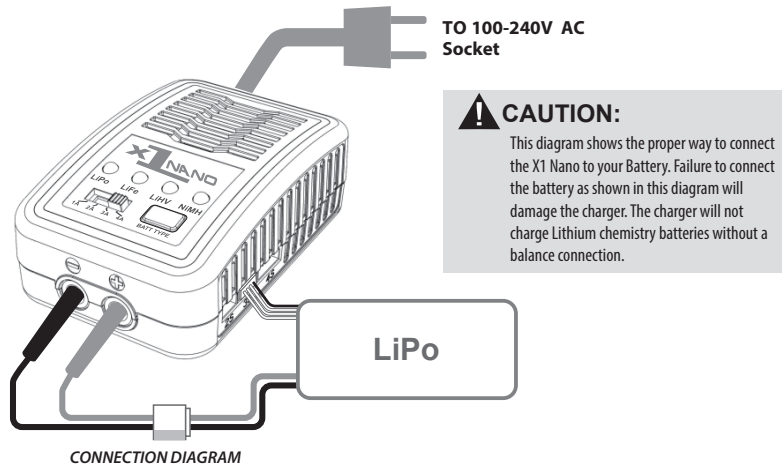
- (3) Selecting the charge current. The X1 Nano has four charge current settings, either 1, 2, 3 or 4 amps (1000, 2000, 3000 or 4000mAh). The recommended charge rate is 1C, whereas battery capacity in mAh equals the charge current in mA.



Select Charging Current

**EXAMPLE:** If you have a battery pack with a capacity of 2400mAh the 1C charge rate is 2400mA or 2.4A so you would choose the 2A charge current. If you are charging a pack with a capacity of 2750mAh the 1C charge rate is 2750 mA or 2.75A so you would charge at the 3 amp setting.

- (1.) Connect the battery main power connector to the charge lead that is plugged into the main charge outputs on the front of the charger.
- (2.) Plug the balance socket into the appropriate (2S, 3S or 4S) balance port on the side of the charger as shown in the illustration below.



- (3.) The charger will automatically begin charging once the balance connector is plugged in. The charge status LED will glow in a color according to the "Charge Status Chart" indicating that the battery is charging.

When the battery is fully charged, the charge status LED will glow a constant green. Unplug the battery from the charger and the charge status LED will flash green which indicates the charger is ready to charge another battery.

### NiMH BATTERIES:

- (1.) Connect the battery's main power connector to the charge lead that is plugged into the main charge outputs on the front of the charger.
- (2.) Press and hold the BATT TYPE button for two seconds. The charge status LED will glow in a color according to the "Charge Status Indicator Chart" indicating that the battery is charging.

When the battery is fully charged, the charge status LED will glow a constant green. Unplug the battery from the charger and the charge status LED will flash green which indicates the charger is ready to charge another battery.

## CHARGE STATUS INDICATORS

LED green and red blinking	The charger is ready to charge
LED glows constant red	Battery capacity is less than 25% charged
LEDs blinking red	Battery capacity is between 25% and 50% charged
LED glows constant yellow	Battery capacity is between 50% and 75% charged
LED blinking green	Battery capacity is between 75% and 99% charged
LED glows constant green	Battery is fully charged

**LIABILITY EXCLUSION:** This charger is designed and approved exclusively for use with the types of batteries stated in this Instruction Manual. Hitec RCD, USA accepts no liability of any kind if the charger is used for any purpose other than that stated. We are unable to ensure that you follow the instructions supplied with the charger, and we have no control over the methods you employ for using, operating and maintaining the device. For this reason, we are obliged to deny all liability for loss, damage or costs which are incurred due to any misuse or operation of our products. Unless otherwise prescribed by law, our obligation to pay compensation, regardless of the legal argument employed, is limited to the invoice value of Hitec RCD, USA products which were immediately and directly involved in the event in which the damage occurred.

**ONE YEAR LIMITED LIABILITY:** For a period of one year from the date of purchase HITEC RCD USA, INC. shall REPAIR OR REPLACE, at our option, defective equipment covered by this warranty, otherwise the purchaser and/or consumer is responsible for any charges for the repair or replacement of the charger. This warranty does not cover cosmetic damages and damages due to acts of God, accident, misuse, abuse, negligence, improper installation, or damages caused by alterations by unauthorized persons or entities. This warranty only applies to the original purchaser of this product and for products purchased and used in the United States of America, Canada and Mexico. Plastic cases are not covered by this warranty.

**SERVICE AND REPAIR INFORMATION:** To have your Hitec charger serviced:

- (1.) Visit the Hitec website at [www.hitecrd.com](http://www.hitecrd.com) and download the service request form (under the Support section).
- (2.) Fill out the service request form completely and include a copy of your original receipt showing the purchase date.
- (3.) Package your product in its original packaging or use a suspension-type packaging (foam peanuts or crumpled newspaper). Hitec RCD shall not be responsible for goods damaged in transit.
- (4.) Ship prepaid (COD or postage-due returns will not be accepted) via a traceable common courier (UPS, insured parcel post, FedEx, etc.) to:

**Hitec RCD USA, Inc., Customer Service Center, 12115 Paine St., Poway CA 92064**



This symbol indicates that when this type of electronic device reaches the end of its service life, it cannot be disposed of with normal household waste and must be recycled. To find a recycling center near you, refer to the internet or your local phone directory for electronic waste recycling centers.

**STATE OF CALIFORNIA PROPOSITION 65 WARNING:** This product contains chemicals known to the State of California to cause cancer. Use caution when handling this product and avoid exposure any electronic components or internal assemblies.

**FCC CONFORMITY:** This product conforms to FCC Part 15B Title 47 of Telecommunication Act Subpart B - Unintentional Radiators