

HITEC RDX2mini



AC DUAL BALANCE CHARGER INSTRUCTION MANUAL

WARNING: THE CHARGING OF RC HOBBY BATTERIES CAN BE DANGEROUS. FAILURE TO FOLLOW THE INSTRUCTIONS AND WARNINGS IN THIS MANUAL MAY RESULT IN PROPERTY DAMAGE AND/OR LOSS OF LIFE.

Table of Contents

Table of Contents:

Introduction	03
Warning and Safety Notes	04
Product Layout	07
Input Functions	08
Specifications Features	09
Charger Connections	11
Program Flow Chart	12
Charger Operations	13
Memory Set and Call - Out	16
Battery Resistance Meter	18
Warning and Error Messages	19
System Setting	20
Commonly Used Terms	22
Conformity Declarations	24
Disposal and Prop 65 Warning	25
Warranty and Service	27

Introduction

Congratulations on your choice of the RDX2 Mini charger from Hitec RCD. The RDX2 Mini is a high-performance, microprocessor-controlled charger with battery management capabilities that are suitable for use with most popular battery types. The RDX2 Mini also features integrated balancing for two-four cell, Lithium-Polymer (LiPo), Lithium-Ferrite (LiFe) and Lithium-Ion (Li-Ion), as well as the latest high voltage Lithium-Polymer (LiHV) batteries. Although simple to operate, the RDX2 Mini does require some background knowledge for successful and safe operation.

Please read this entire operating manual before using the RDX2 Mini 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.

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

Hitec RCD 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.



Warning



Tip

Warning: Be sure to read this section for your own safety.

Caution: Be sure to read this section to prevent accidents and damage to your charger.



Note



Caution

Tip: This section will help you maximize the performance of your charger.

Note: This section will provide more detailed explanations.

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.

Warning and Safety Notes



NEVER LEAVE THE CHARGER UNATTENDED WHILE IT IS CONNECTED TO ITS POWER SOURCE. IF ANY MALFUNCTION IS FOUND, TERMINATE THE PROCESS AT ONCE AND

Warning REFER TO THE OPERATION MANUAL.



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.



This charger and the battery should be put on a heat-resistant, non-flammable and non-conductive surface.



Never place a charger on a car seat, carpet or similar surface. Keep all flammable, volatile materials away from the operating area.



Make sure you know the specifications of the battery to be charged to ensure it meets the requirements of this charger. If the program is set up incorrectly, the battery and charger can be damaged.



Fire or explosion can occur due to overcharging.



To avoid a short circuit between the charge lead, always connect any charge adapters to the charger first, then connect the battery. Reverse the sequence when disconnecting.



Never attempt to charge the following types of batteries:

- A battery fitted with an integral charge circuit or a protection circuit
- A battery pack which consists of different types of cells (including different manufacturer's cells)
- A battery that is already fully charged or just slightly discharged and 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

Warning and Safety Notes Continued

PLEASE BEAR IN MIND THE FOLLOWING POINTS BEFORE YOU COMMENCE CHARGING:

- Did you select the appropriate program suitable for the type of battery you are charging?
- Did you set up the adequate current for charging?
- Have you checked the battery voltage? Lithium battery packs can be wired in parallel and/or in series, i.e. a 2-cell pack can be 3.7V (in parallel) or 7.4V (in series).
- Have you checked that all connections are firm and secure?
- Make sure there are no intermittent contacts at any point in the circuit.

Standard Battery Parameters

	LiPo	LiPo HV	Lilon	LiFe	NiCd	NiMH	Pb
Nominal Voltage	3.7V/cell	3.8V/cell	3.6V/cell	3.3V/cell	1.2V/cell	1.2V/cell	2.0V/cell
Max. Charge Voltage	4.2V/cell	4.35V/cell	4.1V/cell	3.6V/cell	1.5V/cell	1.5V/cell	2.46V/cell
Storage Voltage	3.8V/cell	3.85V/cell	3.7V/cell	3.3V/cell	n/a	n/a	n/a
Allowable Fast Charge	≤ 1C	≤ 1C	≤ 1C	≤ 4C	1C-2C	1C-2C	≤ 0.4C
Min. Cell Voltage	3.0-3.3V/cell	3.1-3.4V/cell	2.9-3.2V/cell	2.6-2.9V/cell	0.1-1.1V/cell	0.1-1.1V/cell	1.8V/cell



Warning

WHEN ADJUSTING YOUR RDX2 MINI CHARGING PARAMETERS, BE SURE YOU SELECT THE PROPER BATTERY TYPE AND CELL VOLTAGE FOR THE TYPE OF CELL YOU ARE CHARGING. CHARGING BATTERIES WITH THE WRONG SETTINGS MAY CAUSE THE CELLS TO BURST, CATCH FIRE OR EXPLODE.

Warning and Safety Notes Continued

Charging

Before charging your batteries, it is critical that you determine the maximum allowable charge rate for your batteries. The RDX2 Mini is capable of charging at high rates that may not be suitable or safe for your particular batteries. For example, Lithium cells are typically safe to charge at 1C, or the total mAh ÷ 1000. A 1200mAh battery would have a 1C charge rate of 1.2 amps. A 4200mAh battery would have a 1C charge rate of 4.2 amps. Some manufacturers are offering Lithium cells that can be charged at greater than 1C but this should ALWAYS be verified before charging a Lithium battery at rates higher than 1C.

Voltage is just as critical as the charging amperage rate and this is determined by the number of cells in series, or "S". For example, a 3S LiPo is rated at 11.1 volts ("S" multiplied by a single LiPo cell with a nominal voltage of 3.7 volts DC. 3 cells x 3.7 volts each equals 11.1 volts DC).

Connect the battery's main leads to the charger output: red is positive and black is negative. Keep in mind that the gauge or thickness of your charging leads from the RDX2 Mini to your battery must be of an acceptable current rating to handle the applied charge current. For maximum safety and charging effectiveness, always match or exceed the main battery lead rating when assembling or selecting your charging leads. If you charge a battery at a high current rate (amperage) with a charging lead not rated for the chosen amperage, the wire could get hot, catch fire, short out and/or potentially destroy your battery and the charger.

When in doubt, always use a higher gauge wire (lower AWG number). It is common to see charging leads constructed of 14AWG, 16AWG or 18AWG wire. Always refer to recommendations from your battery manufacturer for your specific battery type and size before initiating a charge or discharge process.

Do not attempt to disassemble or modify Lithium or Lead-Acid battery packs.

Product Layout

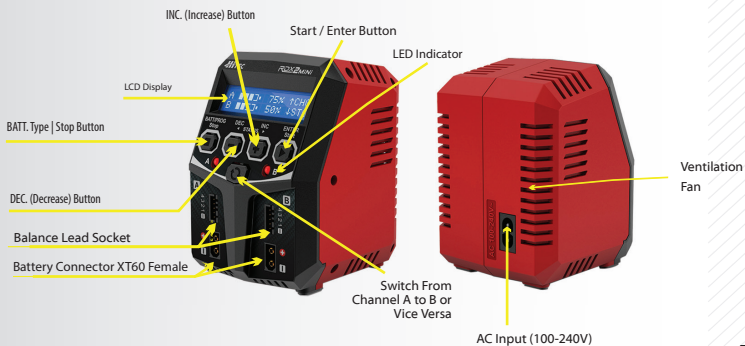


1. RDX 2 Mini Charger

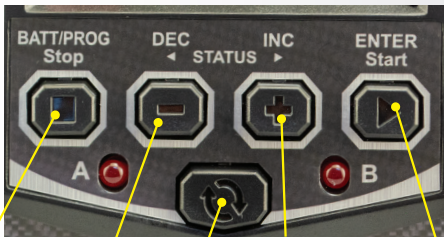
3. T-Type Connector

2. AC Cord

4. T-Type Connector



Input Functions



BATT. Type/Stop Button

Stop the progress of the current action or cycle back to the previous step / screen.

DEC. Button

Scroll through available menus or decrease parameter values.

CHANNEL button

It is used to switch from Channel A to B or vice versa.

INC. Button

Scroll through available menus or increase parameter values.

Enter/Start Button

Used to enter parameter or store parameter on screen & start charging.

BATT PROG / STOP Button:

Stop a function in-progress or to go back to previous step/screen.

DEC Button:

Scroll through menus or decrease the parameter value.

INC Button:

Scroll through the menus or increase the parameter value.

ENTER/ START Button:

Used to enter parameter or store parameter on screen & start charging.

CHANNEL Button:

It is used to switch from Channel A to B or vice versa.

When changing a parameter value in the program, press the START/ENTER button to make it blink, then change the value by pressing the DEC and INC button. The value will be stored by repressing the START/ENTER button. If there is a second parameter to edit on the same screen, it will begin blinking after you confirm the first parameter value. When starting the charge process, press and hold the START/ENTER button for 3 seconds. When stopping the charge process or go back to previous step/screen, press the BATT PROG/STOP button once.

When you first power the charger on, it displays the last parameters used. From here you can change the battery type or press enter to change the charge parameters, charge current rate and/or battery cell count. If you are charging a battery identical to the last one used, then simply press and HOLD the start button for 3 seconds to begin that process.

Specifications | Features

AC Input Voltage	100 - 240V
Charge Power	50W x 2
Charge Current Range	0.1-5.0A
Balancing Port Current Drain	300mA/CELL
Trickling Charging Current	50mA-300mA & OFF
NiCd/NiMH Battery Cell Count	6-8 Cells
LiPo/LiHV/LiFe/Lilon Cell Count	2-4 Cells
Pb Battery Voltage	6/12V
Net Weight	500g
Dimensions	100 x 90 x 127mm

Battery Memory (Data Store/Load):

The RDX2 Mini is capable of storing up to 10 different charge profiles for your convenience. Users can keep the data pertaining to any program setting for any battery to facilitate seamless charging. Saved profiles can be accessed and recalled as necessary.

Terminal Voltage Control(TVC):

For experienced users ONLY, the charger's end voltage can be reset.



**Default setting is recommended. ONLY change in a controlled environment
ALWAYS monitor the battery during charge process.**

Warning

Twin-Channel Charger:

Hitec's RDX2 Mini allows you to plug two batteries into the charger simultaneously. The batteries being charged do not need to have the same configuration. You can connect different battery chemistries (NiMH/ NiCd/LiPo/LiFe/Lilon/LiHV/Pb) into any of the charging ports.

AGM (Absorbed Glass Mat) Mode (PB only):

Use this mode to charge your AGM batteries.

Cold Charge Mode (PB only):

Use this mode for charging your standard PB battery in cold conditions.

Battery Icon & Percentage of Charge Display:

The battery charge percentage is displayed in real time.

Specifications | Features Continued

Internal Independent Lithium Battery Balancer:

The RDX2 Mini employs an individual-cell-voltage balancer. It is not necessary to connect an external balancer for balance charging.

Adaptable to Various Types of Lithium Batteries:

The RDX2 Mini will charge a variety of Lithium batteries such as Li-Ion, LiPo, LiFe and the new higher voltage LiHV batteries.

Multiple Lithium Battery Charge Modes

The RDX2 Mini features three methods of charging: Regular charge, Balance charge and Storage charge modes. We highly recommend using balance charge as it is the safest and best way to charge Lithium chemistry batteries. If you plan on not using your Lithium chemistry batteries for an extended period of time, Storage charge mode is recommended to optimize your packs for long term storage and maximum lifespan. ***For storage, you must start with a pack already discharged below 50%.**

Re-Peak Mode of NiMH/NiCd Battery:

In Re-Peak charge mode, the charger can peak charge the battery once, twice, or three times in a row automatically. This function is useful for ensuring a full battery charge.

Delta-Peak Sensitivity for NiMH/NiCd:

This automatic charge termination program is based on the principle of the Delta-peak voltage detection. When the battery's voltage exceeds the threshold, the process will be terminated automatically.

Battery Meter/Battery Resistance:

The user can check the battery's, highest, lowest and total voltage; as well as each individual cell's voltage. The user can also check the battery's total internal resistance and the internal resistance of each cell.

Capacity Cut-Off Limit:

This feature allows the user to set a limit for the maximum mAh's that can be put into the pack. Once this limit is reached, the charge process will automatically terminate, and "OVER CHARGE CAPACITY LIMIT" will be displayed. Default is 5000mAh so set this accordingly to the rated capacity of the pack. To ensure the pack gets fully charged, this setting should be at least 10% higher than the rated capacity on the pack or turned to off.

Safety Timer:

Protect your battery by setting a maximum time limit for charging. Default is 120 minutes. Adjust as needed depending on charge rate.

Charger Connections

1.) Connecting to Power Source:

The RDX2 Mini is an AC charger only. Please insert the AC power cord to the wall socket (100-240V) directly to power it on.

2.) Connecting the Battery:

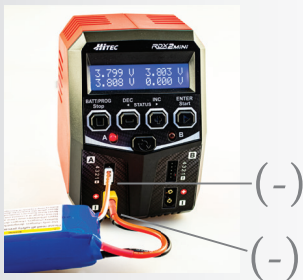
NOTE: Before connecting any battery, it is absolutely essential to check one last time that the parameters were set correctly. If the settings are incorrect, the battery may be damaged and, in worse case scenarios, could even burst into flames or explode.

Connect your battery's connector to the XT60 output on the charger (use adapter as needed)

3.) Balance Socket: For Lithium Batteries in all modes

The balance wire attached to the battery must be connected to the charger, with the black wire aligned with the negative marking. Take care to maintain correct polarity (See wiring diagram below).

This diagram shows the correct way to connect your battery to the Hitec RDX2 Mini when charging in the balance charge program mode.



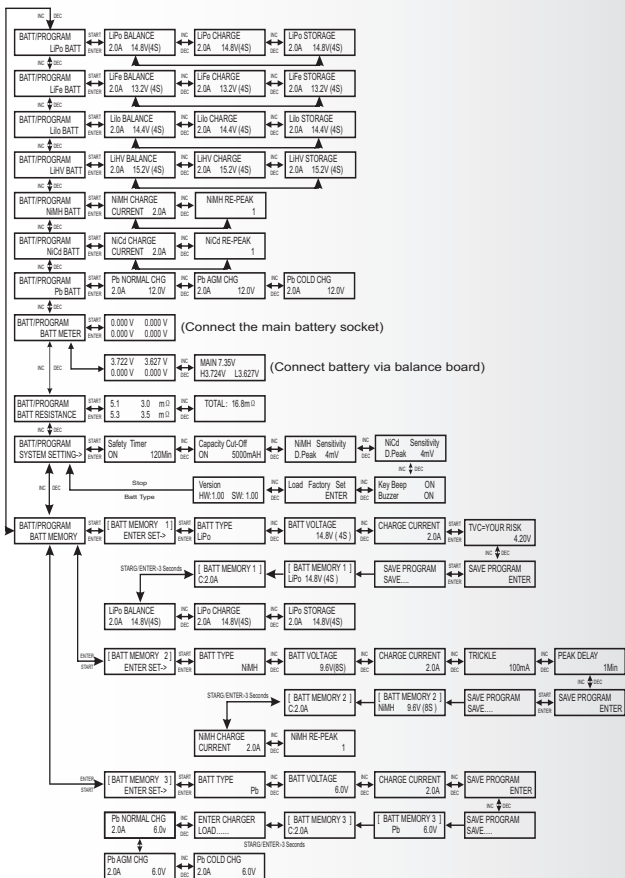
(Negative wire is black)

WARNING:

Failure to connect as shown in this diagram will damage your charger. Note the polarity with the black (-) wire to the downward side of each connection.

The user can check the battery's total voltage, the highest and lowest, as well as each cell's voltage.

Program Flowchart



Charger Operations

Initial Setup of the Charger:

After connecting the battery, you are now ready to setup the charger to charge your specific type of battery. When the charger is first powered on, you will enter the BATT/PROGRAM by default. Select the type of chemistry cells you want to charge and hit the start button. Change the settings to match the voltage and charge rates for the battery you are charging based on the following instructions. These setting will be stored as the default after that so if you charge the same or identical packs you won't need to change them. Always double check that these settings are correct before starting the charge process.



Warning

BEFORE SELECTING AN OPERATION, IT IS CRITICAL THAT YOU KNOW THE TYPE OF BATTERY YOU ARE WORKING WITH AND WHAT THE MANUFACTURER'S RECOMMENDATIONS ARE FOR CHARGING. FAILURE TO FOLLOW THE MANUFACTURERS RECOMMENDATIONS CAN RESULT IN DAMAGE TO THE BATTERY AND POSSIBLE EXPLOSION.

Available Operations:

Depending on the battery type, different operations will be available. This chart shows which operations are available for the different types of batteries the RDX2 Mini is capable of working with.

Batt Type	Operation Program	Description
LiPo LiHV Lilon LiFe	BALANCE	This mode for balancing the voltage of Lithium-polymer battery cells while charging.
	CHARGE	This charging mode is for charging LiPo/LiHV/LiFe/Lilon battery in normal mode.
	STORAGE	This mode for balancing the voltage of Lithium-polymer battery cells while charging.
NiMH NiCd	CHARGE	The charger will charge NiMH and NiCd batteries using the charge current set by user.
	RE-PEAK	In re-peak charge mode, the charger can peak charge the battery once, twice or three times in a row automatically. This is good for confirming the battery is fully charged, and for checking how well the battery receives fast charges.
Pb	NORMAL CHG	This mode is for charging Pb battery
	AGM CHG	This mode is for charging AGM battery.
	COLD CHG	This mode is for charging Pb battery in cold days when the temperature is 41°F to -4°F

Charger Operations Continued



Warning

BEFORE YOU BEGIN CHARGING YOUR BATTERY, MAKE SURE YOU HAVE READ AND UNDERSTAND ALL OF THE WARNINGS AND SAFETY INFORMATION CONTAINED ON PAGES 3-8.



Caution

DURING CHARGING, THE BATTERY SHOULD BE PLACED INSIDE A FIRE PROOF/RETARDANT BAG AND ON A FIRE PROOF SURFACE, AWAY FROM OTHER COMBUSTIBLE OBJECTS.

The following steps describe how to manually setup the RDX2 Mini:

BATT/PROGRAM
LiPo BATT

↓ START/ENTER

LiPo BALANCE
2.0A 11.1v (CS)

↓ START/ENTER

LiPo BALANCE
2.0A 11.1v (CS)

↓ START/ENTER

LiPo BALANCE
2.0A 11.1v (CS)

↓ START/ENTER

BATT/PROGRAM Select: Press INC and DEC to scroll through all programs and press START/ENTER to enter the LiPo BATT Program.

Mode Select: Press INC and DEC to scroll through all modes and press START/ENTER to enter LiPo Balance Charge Mode.

Battery Setting: Press START/ENTER. The current value will start to blink, Press INC and DEC to change the value and press START/ENTER to confirm your setting.

At the same time, the battery cell's number will start to blink. Press INC and DEC to change the value and press START/ENTER to confirm your setting.



Warning

BEFORE STARTING THE PROCESS MAKE SURE YOU HAVE SETUP THE CHARGER PROPERLY. NEVER LEAVE THE CHARGER UNATTENDED WHILE IT IS IN OPERATION.

LiPo BALANCE
2.0A 11.1v (CS)

↓ START/ENTER
> 3 SECONDS

BATTERY CHECK
• • • • •

↓

R: 3SER S: 3SER
CANCEL (STOP)

↓

Program Start: Press and hold START/ENTER for 3 seconds to start the program.

The charger is detecting the number of cells. **R** shows the number of cells detected by the charger and **S** is the number of cells set by the user at the previous screen. If the numbers are not identical, press STOP to go back to the previous screen and recheck the number of cells in the battery pack before proceeding.

Charger Operations Continued

R: 3SER S: 33SER
Confirm (Enter)

↓ START/ENTER

R shows the number of cells detected by the charger and S is the number of cells set by you at the previous screen. If both numbers are identical, press START/ENTER to start the charging process.

■■■■ 91% 12.14V
1.5A 00:50:12

Charging Status Monitor

During the charge process, the real-time status will be shown on screen.

A: ■■■■ 25% BAL
B: NiMH 6.3V CHG

If the user charges two batteries simultaneously, this screen will display after the twin-channels have been working for 10 seconds.

■■■■ 91% 12.14V
1.5A 00103mAh

The user can push the channel button to view the full charge status of either A or B port.

■■■■ 91% 12.14V
1.5A 00:50:12

Real-time status: battery icon, percentage of charge, charge current, battery voltage, elapsed time & capacity.

↓ INC ▶

4.070 4.060V
4.110 0.000V

Voltage of each cell in the battery pack when the battery is connected with the balance lead.

↓ INC ▶

LiPo BALANCE
2.0A 11.1v (3s)

◀ ↓ DEC

End Voltage
12.6V(3S)

Final voltage when program ends.

◀ ↕ DEC

Safety Timer
ON 120 Min

Safety timer ON and duration of time in minutes.

◀ ↕ DEC

Capacity Cut-Off
ON 5000mAh

Capacity cut-off ON and the setting value capacity is displayed.

Memory Set and Call Out

The charger can store up to 10 different charge profiles for your convenience, and the stored profiles can be recalled quickly without having to go through the setup process. To program, press START/ENTER to make it blink then change the value with INC or DEC. The value will be stored by pressing START/ENTER once.



Note

All following screens are taking 2S(7.4V) LiPo battery as the example.

[BATT MEMORY 1]
ENTER SET ->



Enter the battery memory program:

10 different charge profiles can be stored.

BATT TYPE
LiPo



Set the battery type: (LiPo/LiHV/LiFe/Lilon/NiMH/NiCd/Pb).

BATT VOLTS
7.4V (2S)



Set the voltage and number of cells (2S-4S).

CHARGE CURRENT
4.9A



Set the charge current (0.1-5.0A).

TVC = YOUR RISK
4.20V



Set the terminal voltage (4.18 -4.25V).



Warning CHANGING THE TERMINAL VOLTAGE IS ONLY INTENDED FOR EXPERT USERS, ANY CHANGES TO DEFAULT SETTINGS ARE COMPLETELY AT YOUR OWN RISK.

SAVE PROGRAM
ENTER



Press ENTER to save program.

SAVE PROGRAM
SAVE...



Enter the battery memory program:
10 different charge profiles can be stored.

[BATT MEMORY 1]
LiPo 7.4V (2S)



Indicate the battery type and battery cell of the saved profile.

Memory Set and Call Out Continued

↓

[BATT MEMORY 1]
C: 4.9A

↓ START/ENTER
> 3 SECONDS

Indicate the charge current of the saved profile. Press the START/ENTER for 3 seconds to call out memory.

Battery Memory Call Out

LiPo BALANCE CHG
4.9A 7.4V (2S)

Press the START/ENTER for 3 seconds to call out memory.

↓

BATTERY CHECK
.....

↓

R: 2SER S: 2SSER
Confirm (Enter)

R shows the number of cells detected by the charger and S is the number of cells set by you at the previous screen. If both numbers are identical, press START/ENTER to start the charging process.

↓

■■■■ 91% 8.14V
4.9A 00:50:12

Battery Resistance Meter

The user can check the battery's total resistance.

Please connect the balance wire attached to the battery to the balance socket and the XT60 male connector to the XT60 female connector in front of the charger.



BATT/PROGRAM
BATT RESISTANCE



START
ENTER

BATTERY CHECK
* * * * *

6.7 12.8mΩ
0.0 0.0mΩ



INC ▶

TOTAL: 19.5mΩ

Press the START/ENTER button to access the Lithium Battery Meter program.

Indicates each cell's resistance.

The display indicates the total resistance.

Warning and Error Messages

In case of an error, the screen will display the cause of the error and emit an audible sound.

Reverse Polarity

Incorrect polarity connected.

Connection break

The battery connection is interrupted.

CONNECT ERROR
CHECK MAIN POINT

The battery connection is wrong.

BALANCE WIRES
NOT CONNECTED

The balance wires are not connected while charging in balance mode.

INT. TEMP. TOO HI

The internal temperature of the unit is too high.

OVER CHARGE
CAPACITY LIMIT

The battery capacity is more than the maximum capacity set by the user.

OVER TIME LIMIT

The charging time is longer than the maximum charging time set by the user.

CONTROL FAIL

Battery pack voltage is lower than 5 volts. The RDX2 Mini cannot charge a pack with a voltage of less than 5v.



CELL ERROR

The balance connection is reading a different number of cells vs. what was selected.

System Setting

When powered on for the first time, your RDX2 Mini charger will load with default values in the programmable user settings. The screen displays the following information in sequence and the user can change the value of the parameters on each screen.

When you are ready to change the parameter values in the program, press START/ENTER to make it blink, and then select the appropriate values with INC or DEC. Store the value by pressing START/ENTER once.

ITEM	SELECTION	DESCRIPTION
	OFF/ON 1-720 Min	When you start a charge process, the integral safety timer automatically starts running at the same time. It is programmed to prevent overcharging of the battery if it proves to be faulty, or termination circuit cannot be determined if battery is full. The value for the safety should be generous enough to allow charging of the battery.
	OFF/ON (100-50000mAh) Cut-off: 5000mAh	This program sets the maximum capacity that will be supplied during the battery charge. If the delta voltage is not detected, or if the timer expires for any reason, this will automatically stop the charge process upon reaching the selected value.

Advanced System Set Up

ITEM	SELECTION	DESCRIPTION
NiMH Sensitivity D.Peak 4mV	Default: 4mV/Cell 3-15mV/Cell	This program is for NiMH/NiCd batteries only. When the charger detects the delta peak value reaches the value you set, the charger will say the battery is fully charged.
NiMH Sensitivity D.Peak 4mV		
Key Beep ON Buzzer ON	OFF/ON	The beep sounds with the press of each button to confirm your action. The beep or melody sounds at various times during operation to alert different mode changes.
Load Factory Set ENTER		Press and hold the Start/ENTER button to load all of the factory default settings.
Version HW: 1.00 SW: 1.10		This screen indicates the hardware and firmware version currently installed.

Commonly Used Terms

A, mA: Unit of measurement relating to a charge or discharge current. $1000\text{ mA} = 1\text{ A}$ (A = Ampere, mA = Milliampere).

Ah, mAh: Unit of measurement for the capacity of a battery (Amperes x Time Unit; h = hour). If a pack is charged for one hour at a current of 2A, it has been fed 2Ah of energy. It receives the same quantity of charge (2Ah) if it is charged for 4 hours at 0.5A, or 15 minutes (=1/4 hour) at 8A.

'C' - Rating: Capacity is also referred to as the 'C' rating. Some battery suppliers recommend charge and discharge currents based on the battery 'C' rating. A battery's '1C' current is the same number as the battery's rated capacity number, but noted in mA or amps. A 600mAh battery has a 1C current value of 600mA, and a 3C current value of (3 x 600mA) 1800mA or 1.8A. The 1C current value for a 3200mAh battery would be 3200mA (3.2A).

Final Charge Voltage: The voltage at which the battery's charge limit (capacity limit) is reached after which the charge process switches from a high current to a low maintenance rate (trickle charge). From this point on, any further high current charging would cause overheating and eventual terminal damage to the pack.

Nominal Voltage (V): The nominal voltage of the battery pack can be determined as follows:

- **NiCd or NiMH:** Multiply the total number of cells in the pack by 1.2. An 8-cell pack will have a nominal voltage of 9.6 volts (8 x 1.2).

Commonly Used Terms [cont.]

- **LiPo:** Multiply the total number of cells in the pack by 3.7. A 3-cell LiPo wired in series will have a nominal voltage of 11.1 volts (3×3.7).
- **Lilon:** Multiply the total number of cells in the pack by 3.6. A 2-cell Lilon wired in a series will have a nominal voltage of 7.2 volts (2×3.6).
- **LiFe:** Multiply the total number of cells in the pack by 3.3V. A 2-cell LiFe wired in a series will have a nominal voltage of 6.6 volts. (2×3.3).
- **LiHV:** Multiply the total number of cells in the pack by 3.8V. A 3-cell LiHV wired in a series will have a nominal voltage of 11.4 volts. (3×3.8).



Note

If the nominal voltage of the battery is not printed on the battery's label, consult your battery manufacturer or supplier. Do not attempt to guess the rated voltage of the battery.

Conformity Declarations

Hitec's RDX2 Mini satisfies all relevant and mandatory CE directives and complies with FCC Part 15 Subpart B: 2010.

For EC directives: The product has been tested to meet the following technical standards:

Test Standards	Title	Result
EN 55014-1:2017 Electromagnetic compatibility	Requirements for Household Appliances, electric tools, and similar apparatus –Part 1: Emission	Conform
EN 55014-2:2015 Electromagnetic compatibility	Requirements for Household Appliances, electric tools, and similar apparatus – Part 2: Immunity-Product family standard	Conform
EN 61000-3-2:2014 Electromagnetic compatibility (EMC)	Part 3-2: Limits-Limits for harmonic current emissions (equipment input current up to and including 16 A per phase	Conform
EN 61000-3-3:2013 Electromagnetic compatibility (EMC)	Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current \leq 16 A per phase and not subject to conditional connection	Conform

Test Standards	Title	Result
EN 60335-2-29:2004+A2:2010+A11:2018 to be used in conjunction with EN 60335-1:2012+A11:2014+A13:2017	Safety of household and similar electrical appliances	Conform

Test Standards	Title	Result
IEC 60335-2-29:2002(Fourth Edition) +A1:2004 +A2:2009 for use in conjunction with IEC 60335-1:2010 (Fifth Edition) +A1:2013	Safety of household and similar electrical appliances Particular requirements for battery chargers	Conform

Test Standards	Title	Result
FCC Rules Part 15 Subpart B	Unintentional Radiators	Conform

Disposal and Prop Warning



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 to any electronic components or internal assemblies.

Warranty and Service

LIABILITY EXCLUSION:

This charger is designed and approved exclusively for use with the types of batteries stated in this Instruction Manual. Hitec RCD 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 products which were immediately and directly involved in the event in which the damage occurred.

ONE YEAR LIMITED WARRANTY:

For a period of one year from the date of purchase HITEC RCD 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.

THIS WARRANTY IS IN LIEU OF ANY AND ALL OTHER WARRANTIES, WHETHER FOR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND WHETHER EXPRESS OR IMPLIED. REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY. HITEC RCD, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY RELATING TO THIS PRODUCT. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR

Warranty and Service Continued

A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY. REPAIR AND SERVICE.

To have your Hitec charger serviced:

1. Visit the Hitec website at www.hitecrcd.com and download the service request form (under 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 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
9320 Hazard Way, Suite D.
San Diego, CA 92123**

