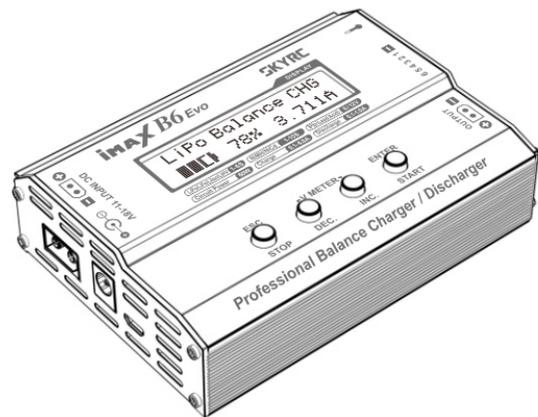


IMAX B6 Evo

Professional Balance Charger / Discharger

Instruction Manual

[Version 1.00]



This content is subject to change.

Latest version can be downloaded
from www.skyrc.com



If you have any question about this document, please contact
SkyRC by sending a message to info@skyrc.cn
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SKYRC

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WARNING:

- Never leave the charger unattended when charging the battery.
- LiPo batteries pose a severe risk of fire if not properly handled.

Welcome:

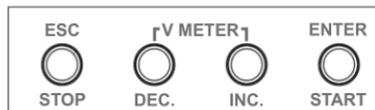
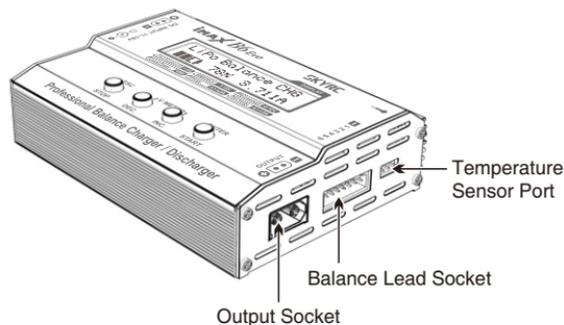
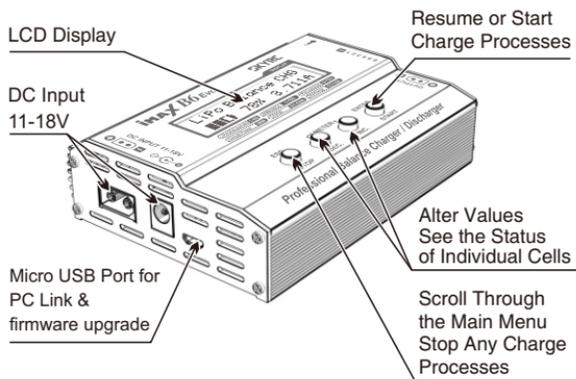
To enjoy your RC activities, you really need a good helper to charge your batteries well, while SKYRC endeavors to be the one you can rely on. Hard work pays off: SKYRC iMAX B6 Evo charger is finally available. Traditional design with brand new but simple intelligent firmware, we hope that this charger will be just the right one to help you have better performance in RC field.

Features:

The charger supports multi chemistry batteries, such as LiPo, LiFe, LiHV, LiION, NiMH, NiCd and Pb (Including Pb AGM battery). Interface of the charger is simple: there are only 10 programs and system setting, users can look through the menu easily within seconds. 8 of the 10 programs are preset for practical applications. Besides, it can perform as a power supply for other DC equipment. Ambitious users can calibrate their battery voltage as per their experience or multimeter, maximize their battery performance.

Pleasure be sure to read the INSTRUCTIONS, WARNINGS and SAFETY PRECAUTIONS before the first use. Always bear in mind not to mis-handle the batteries or battery chargers to avoid explosion or fire.

Mishandling batteries and battery chargers is extremely dangerous, which may cause fire and explosion.

**ESC/STOP Button:**

Stop current process or go back to previous step/screen

DEC Button:

Go through the menu or decrease the parameter value

INC Button:

Go through the menu or increase the parameter value

ENTER/START Button:

Confirm the setting or start the process

DEC+INC Button:

Check the battery voltage

ESC+DEC Button:

Enter into voltage calibration interface.

Warning and Safety Precautions

- ❗ Never leave the charger unattended when it is connected to power. If any malfunction, terminate the process at once and refer to the operation manual.
- ❗ Pls make sure the correct program and settings are chose and set. Incorrect program or setting may damage the charger or cause fire or explosion.
- ❗ Never charge or discharge any battery having evidence of leakage, expansion/swelling, damaged outer wrapper or case, color-change or distortion.
- ❗ Use the original adapter and cord for power supply. To reduce the risk of damage to the power cord, always pull by connector rather than the cord. The allowable DC input voltage is 12-18V DC.
- ❗ Do not operate the device if it appears damaged in any way.
- ❗ Do not expose the device to direct sunlight, heating devices, open flames; Avoid extreme high or extreme low ambient temperature and sudden temperature changes.
- ❗ Do not expose the device to rain, water, moisture, high humidity, or dust due to risk of fire and corrosion. The device should only be used at normal indoor room conditions.
- ❗ Operate on a hard flat nice clean smooth heat-resistant nonflammable nonconductive surface in a well-ventilated area. Never place the device on a carpet, car seat, or similar. Keep all the inflammable volatile substances away from operating area.
- ❗ Avoid mechanical vibration or shock as these may cause damage to the device.
- ❗ Do not short circuit the components or the device. Do not allow metal wires or other conductive material into the charger.
- ❗ Do not touch hot surfaces. The rechargeable batteries or the device may become hot at full load or high power charging/discharging.

Warning and Safety Precautions

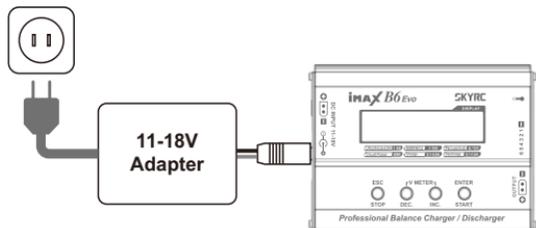
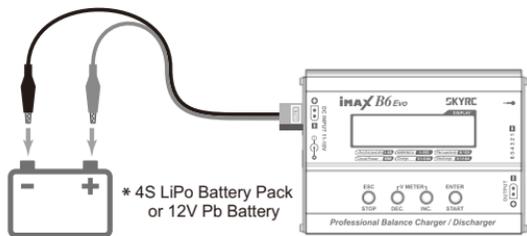
- ❗ Make sure you know the specifications of the battery to be charged or discharged to ensure it meets the requirements of this charger. Incorrect program setting may damage the battery and charger, or even worse, cause fire and explosion.

Standard Battery Parameters

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

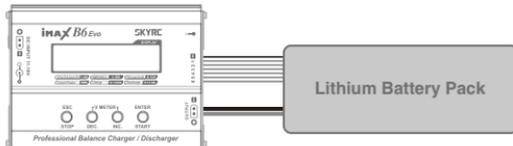
1. Connecting to power source

12V DC Battery / Power Adapter Output DC 11-18V



2. Connecting the battery

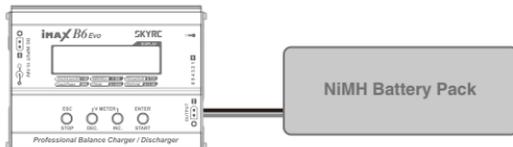
1) Lithium Battery Connection



Always remember to connect in the correct polarity. And it is highly recommended to charge your Lithium battery in balance mode for better performance and safety reason.

Please refer to above wiring diagram, which shows a correct way for Lithium battery connection in the balance charge mode.

2) NiMH/NiCd or Pb Battery Connection



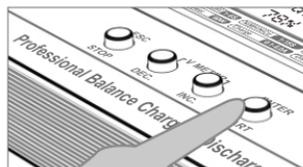
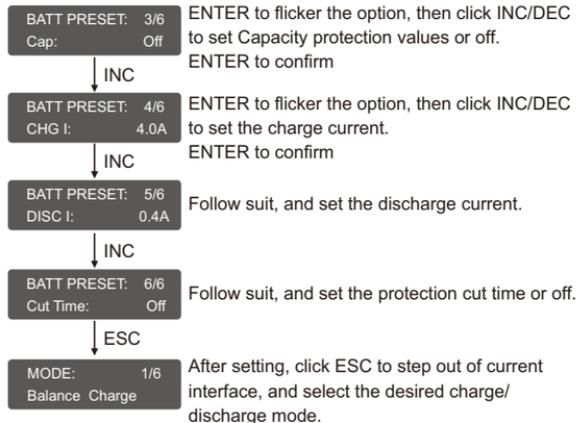
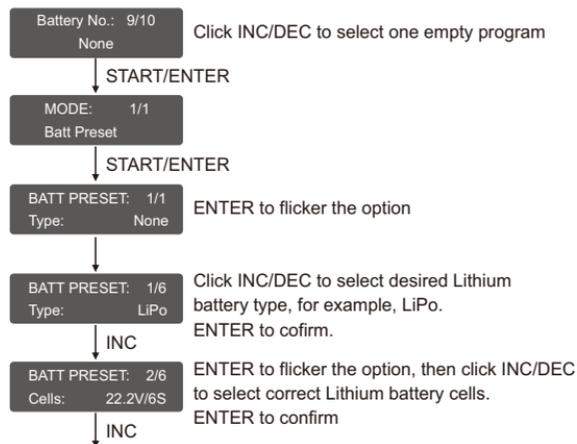
Charging Program

Depends on different battery type, the operation programs are different.

| Batt Type | Operation Program | Description |
|-------------------------------|-------------------|--|
| LiPo LiHV Lilon LiFe | Balance Charge | Charge the battery and balance the battery cell voltage during charging |
| | Fast Charge | |
| | Charge Non Bal | Enable to charge the battery without balance lead connected |
| | Discharge | Discharge the battery to certain voltage level |
| | Storage | Charge or discharge the battery to certain voltage level for storage |
| NiMH NiCd | Charge | Charge the battery to the full |
| | Discharge | Discharge the battery to certain voltage level |
| | D&C Cycle | |
| | Re-Peak | Peak charge the battery once, twice or three times in cycle automatically. |
| Pb/ Pb AGM | Charge | Charge the battery |
| | Discharge | Discharge the battery |

- Do not overcharge nor over discharge batteries.
- Remove the battery and unplug the charging unit from the power source when not in use
- Opening, disassembling, modifying, tampering with the unit may invalidate its guarantee, check warranty terms.
- Do not misuse in any way! Use for intended purpose and function only.
- Before charging, always connect the charging leads to the charger first, then connect to the battery. After charging finishes, remove the battery first.
- As the first 8 programs are occupied and preset, below operation instructions will be based on empty program, for example, program 9 or 10.

Lithium Battery Program (LiPo/LiFe/Lilon/LiHV)



Press and hold START/ENTER for seconds to start the program.

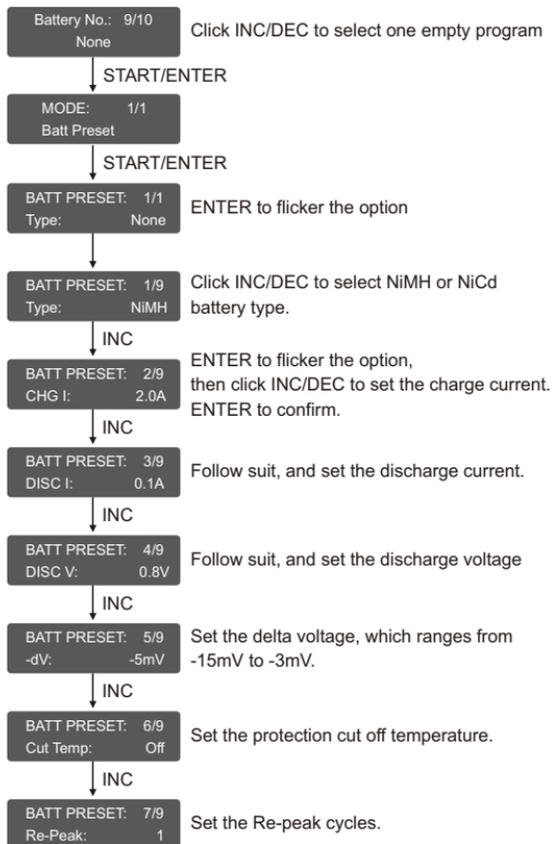
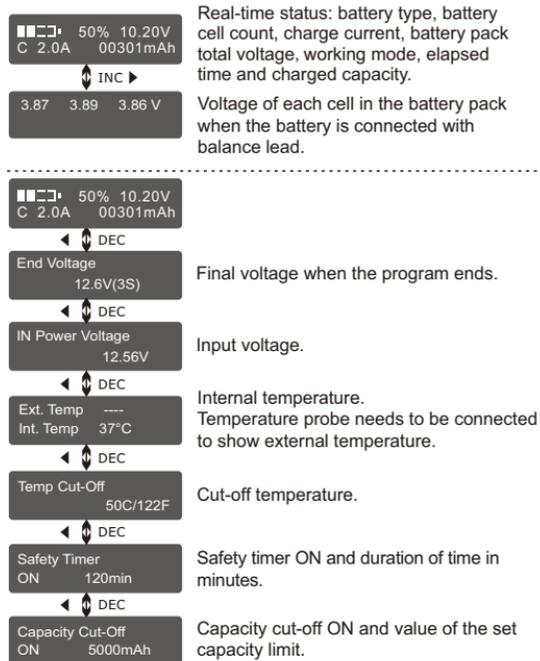
Press ESC/STOP to terminate current process when anything unexpected occurs.

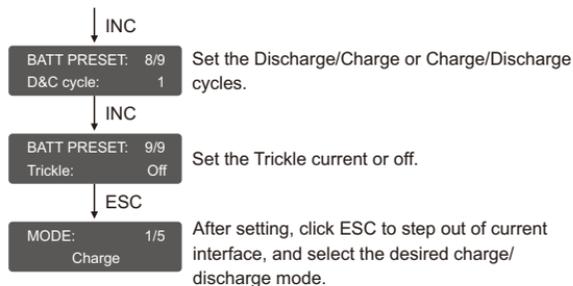


If you would like to modify the setting, go back to Batt Preset and refresh the setting manually.

VARIOUS INFORMATION DURING THE PROCESS

Press INC or DEC during the charging or discharging process to view further pertinent information on the LCD screen.

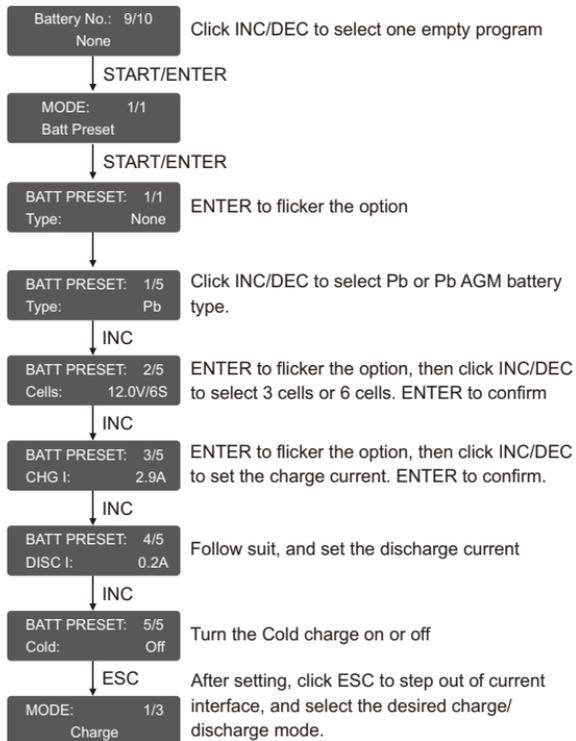




Press and hold START/ENTER for seconds to start the program.

Press ESC/STOP to terminate current process when anything unexpected occurs.

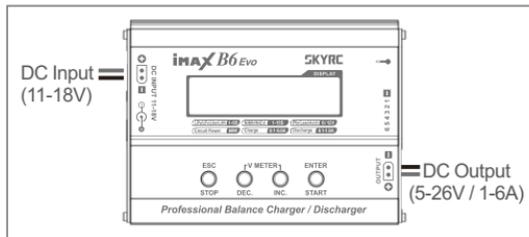
If you would like to modify the setting, go back to Batt Preset and refresh the setting manually.



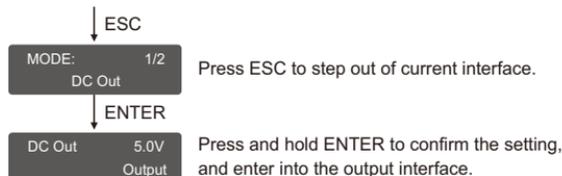
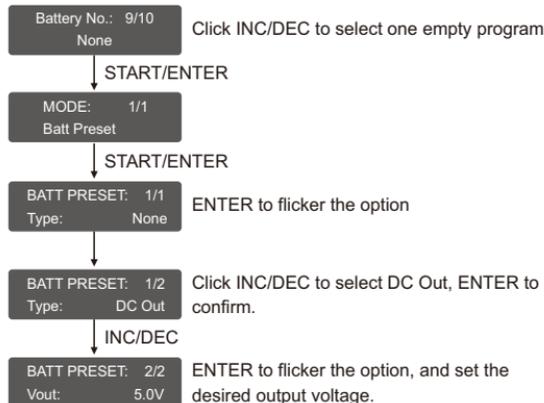
Press and hold START/ENTER for seconds to start the program. Press ESC/STOP to terminate current process when anything unexpected occurs.

If you would like to modify the setting, go back to Batt Preset and refresh the setting manually.

B6 Evo charger is integrated with DC/DC Converter function. The function is helpful for those who need to power their DC equipment. Its DC output voltage ranges from 5.0V to 20.0V, users are free to set desired output voltage for their DC tools.



To activate and enjoy this function, follow below steps:



Warning: It is highly recommended NOT to do calibration unless necessary. SKYRC will not be liable for the consequences caused by calibration.

To maximize their battery performance in competition, ambitious users may like to calibrate the battery voltage as per their experience or multi meter.

Please follow below steps for safe and smooth calibration with one 6S LiPo battery.

- i. Press and hold ESC/DEC button at the same time, then connect to power source to power up.
- ii. The screen will light up and notify you to connect a 6S battery.
- iii. After connecting the battery, calibrate the cell voltage cell by cell.

It will be operated with the default value of the essential user settings when it is powered on for the first time. The screen displays the following information in sequence and the user can change the value of parameter on each screen.

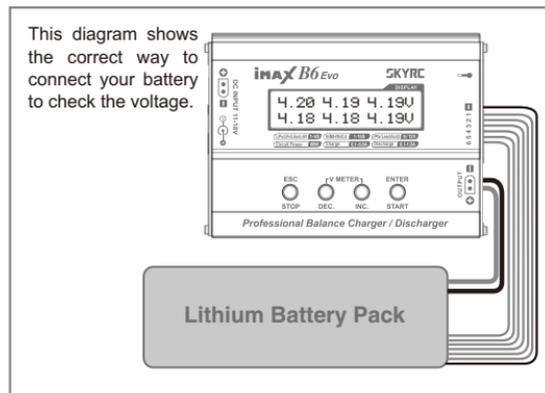
When you are willing to alter the parameter value in the program, press START/ENTER to make it blink then change the value with INC or DEC. The value will be stored by pressing START/ENTER once.

| ITEM | SELECTION | DESCRIPTION |
|--------------------------------|---|---|
| Safety Timer ON 120Min | OFF/ ON (1-720 Min) | When you start a charge process, the integral safety timer automatically starts running at the same time. This is programmed to prevent overcharge the battery if it proves to be faulty, or if the termination circuit cannot detect the battery full. The value for the safety timer should be generous enough to allow a full charge of the battery. |
| Capacity Cut-Off ON 5000mAh | OFF/ ON (100-50000mAh) | This program sets the maximum charge capacity that will be supplied to the battery during charge. If the delta peak voltage is not detected nor the safety timer expired by any reason, this feature will automatically stop the process at the selected capacity value. |
| Temp Cut-Off ON 50 C 122 F | OFF/ ON (20°C/68°F - 80°C/176°F) | The battery's internal chemical reaction will cause the temperature of the battery to rise. If the temperature limit is reached, the process will be terminated. |
| Temperature Unit Celsius | Celsius Fahrenheit | You can choose the temperature displayed by Celsius or Fahrenheit as you like. |
| Rest Time CHG>DCHG 10Min | 1-60Min | A rest time allowing the battery to cool down between charging/discharging cycle. |

| ITEM | SELECTION | DESCRIPTION |
|------------------------------------|-------------------------------------|--|
| NiMH Sensitivity D.Peak Default | Default: 4mV/Cell 3-15mV/Cell | This program is for NiMH/NiCd battery only. When the charger detects the delta peak value reaches the value you set, the charger will say the battery is fully charged. |
| NiCd Sensitivity D.Peak Default | | |
| Key Beep ON Buzzer ON | OFF/ON | The beep sounds at every time touching the buttons to confirm your action. The beep or melody sounded at various times during operation to alert different mode changes. |
| DC Input Low Cut-Off 11.0U | 10-12V | There will be error message when DC input voltage is lower than the reset value. |
| Load Factory Set Enter | | Press ENTER to load factory default setting. |
| Version HW: 1.00 SW: 1.04 | | It indicates the hardware and firmware version. |

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

Please connect the battery to the charger main battery lead to battery socket and balance wires to balance socket.



BATT/PROGRAM
BATT METER

Press the START/ENTER to enter the Lithium Battery Meter program.

START
ENTER

4.20 4.19 4.19 U
4.18 4.18 4.19 U

The screen indicate each cell's voltage.

INC

MAIN 25.13U
H4.200U L4.182U

The screen indicate the total voltage, the highest voltage and the lowest voltage.

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

REVERSE POLARITY

Incorrect polarity connected.

CONNECTION BREAK

The battery is interrupted.

CELL NOT MATCH

The battery cell you sent is different from what charger detected.

VOLT ERROR

Battery voltage wrong.

CELL VOLT ERROR

One cell voltage of your battery is too high.

WRONG BATT TYPE

Wrong battery type.

SUPPLY VOLT
TOO HIGH

Input voltage higher than 18V

SUPPLY VOLT
TOO LOW

Input voltage less than 11V

INTERNAL TEMP .
TOO HIGH

The internal temperature of the unit goes too high.

BATT TEMPERATURE
TOO HIGH

The external temperature of the battery goes too high.

OVER CHARGE
CAPACITY LIMIT

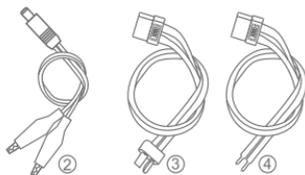
The battery capacity is more than the maximum capacity which the user sets.

OVER TIME LIMIT

The charging time is longer than the maximum charging time which the user sets.

THE SET CONTAINS

1. SKYRC B6 V2 Charger
2. DC Input Cable
3. Dean Charging Cable
4. Bare charging cable
5. Instruction Manual



RECOMMENDED ACCESSORIES



Tamiya Charging Cable
SK-600023-12



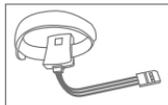
Dean Charging Cable
SK-600023-15



4mm/5mm Bullet
Charging Cable for 2S Battery
SK-600023-14



Ec3 Charging Cable
SK-600023-13



Temperature Sensor
SK-600040-01

- DC Input Voltage: 11-18V
- Display Type: 2x16 LCD
- Case Material: Aluminium
- Case Size: 115x84x31mm
- External Port: 1-6S Balance Socket-XH, Temperature Probe Socket, Battery Socket, DC Input.
- Delta Peak Detection for NiMH/NiCd: 3-15mV/cell / Default: 4mV/cell
- Battery Cutoff Temperature: 20°C/68°F-80°C/176°F(adjustable)
- Charge Voltage: NiMH/NiCd: Delta peak detection

| | |
|-----------------------|----------------------|
| LiPo: 4.18-4.25V/cell | Pb Normal: 2.4V/cell |
| LiHV: 4.25-4.35V/cell | Pb AGM: 2.45V/cell |
| LiFe: 3.58-3.7V/cell | Pb Cold: 2.45V/cell |
| Lilon: 4.08-4.2V/cell | |
- Balance Current: 300mA/cell
- Reading Voltage Range: 0.1-26.1V/cell
- Battery Types/Cells: LiPo/LiHV/LiFe/Lilon: 1-6cells
NiMH/NiCd: 1-15cells
Pb: 2-20V
- Battery Capacity Range: NiMH/NiCd: 100-50000mAh
LiPo/LiHV/LiFe/Lilon: 100-50000mAh
Pb: 100-50000mAh
- Charge Current: NiMH/NiCd/LiPo/LiHV/LiFe/Li-ION/Pb: 0.1A-6.0A
DJI Mavic/TB4X: 4A
- Safety Timer: 1-720minutes off
- Charge Wattage: 60W
- Discharge Current: 0.1A-2.0A
- Discharge Cut-off Voltage: NiMH/NiCd: 0.1-1.1V/cell

| | |
|---------------------|----------------------|
| LiPo: 3.0-3.3V/cell | LiHV: 3.1-3.4V/Cell |
| LiFe: 2.6-2.9V/cell | Lilon: 2.9—3.2V/cell |
| Pb: 1.8-2.0V/cell | |
- Discharge Wattage: 5W
- Balance Cells: 2-6 cells
- Memory: 10 different charge/discharge profiles
- Charge Method: CC/CV for lithium types and lead (Pb) batteries
Delta-peak Sensitivity for NiMH/NiCd.

SkyRC B6 V2 satisfy all relevant and mandatory EC directives and FCC Part 15 Subpart B.

| Test Standards | Title | Result |
|--------------------------------------|--|---------|
| EN 55014-1:2006 + A1:2009+A2:2011 | Electromagnetic compatibility-Requirements for household appliances, electric tools and Similar apparatus – Part 1: Emission | Conform |
| EN 55014-2:1997+ A1:2001+ A2:2008 | Electromagnetic compatibility-Requirements for household appliances, electric tools and Similar apparatus – Part 2: Immunity-Product family standard | Conform |

| Test Standards | Title | Result |
|------------------------|-------------------|---------|
| FCC Part 15, Subpart B | Radiated Emission | Conform |

 This symbol means that you must dispose of electrical from the General household waste when it reaches the end of its useful life. Take your charger to your local waste collection point or recycling centre. This applies to all countries of the European Union, and to other European countries with a separate waste collection system.

FCC Note:

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications or change to this equipment. Such modifications or change could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.

Commonly used terms

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

Final discharge voltage: the voltage at which the battery's discharge limit is reached. The chemical composition of the batteries determines the level of this voltage. Below this voltage the battery enters the deep discharge zone. Individual cells within the pack may become reverse polarized in this condition, and this can cause permanent damage.

A, mA: unit of measurement relating to charge or discharge current. 1000 mA = 1 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 2 A, it has been fed 2 Ah of energy. It receives the same quantity of charge (2 Ah) if it is charged for 4 hours at 0.5 A, or 15 minutes (=1/4 h) at 8 A.

'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).

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. A 8-cell pack will have a nominal voltage of 9.6 volts (8x1.2).

-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 (3x3.7).

-Lilo: multiply the total number of cells in the pack by 3.6. A 2-cell Lilo wired in series will have a nominal voltage of 7.2 volts (2x3.6).

-LiFe: multiply the total number of cells in the pack by 3.3. A 4-cell Lilo wired in series will have a nominal voltage of 13.2 volts (4x3.3).

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

Liability exclusion

This charger is designed and approved exclusively for use with the types of battery stated in this Instruction Manual. SkyRC 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 the incompetent or incorrect use and operation of our products, or which are connected with such operation in any way. Unless otherwise prescribed by law, our obligation to pay compensation, regardless of the legal argument employed, is limited to the invoice value of those SkyRC products which were immediately and directly involved in the event in which the damage occurred.

Warranty and service

We guarantee this product to be free of manufacturing and assembly defects for a period of one year from the time of purchase. The warranty only applies to material or operational defects, which are present at the time of purchase. During that period, we will repair or replace free of service charge for products deemed defective due to those causes.

This warranty is not valid for any damage or subsequent damage arising as a result of misuse, modification or as a result of failure to observe the procedures outlined in this manual.

Note:

1. The warranty service is valid in China only.
2. If you need warranty service overseas, please contact your dealer in the first instance, who is responsible for processing guarantee claims overseas. Due to high shipping cost, complicated custom clearance procedures to send back to China. Please understand SkyRC can't provide warranty service to overseas end user directly.
3. If you have any questions which are not mentioned in the manual, please feel free to send email to info@skyrccn