



## **CM210 Balance Charger**

**(for 2S LiPo battery)**

### **User Manual**



**Note: To ensure the safe use of CM210, please read this manual carefully before use.**

## **Contents**

1. Safety Precautions .....	3
2. Functions .....	4
3. Specifications .....	5
4. Instructions for Use .....	5
5. LED Indicator Status .....	6
6. Voltage Calibration of CM210 .....	7
7. Troubleshooting for Common Problems .....	7

## 1. Safety Precautions

- (1) Please read this manual carefully before using to make sure CM210 is safely operated.
- (2) Please connect CM210 to the power supply first, and then connect the 2S LiPo battery for charging.
- (3) Keep the charger always away from children and pets.
- (4) Keep the charger supervised when charging.
- (5) If the battery has any abnormalities such as leakage, bulging, peeling of the outer skin, color change or deformation, please do not charge.
- (6) Do not refit or disassemble the charger.
- (7) Do not keep the charger or battery close to a combustible material while in use.
- (8) Do not try to charge "non-rechargeable" dry cells.

Thanks for choosing RadioLink CM210 balance charger. To fully enjoy the benefits of this product and ensure safety, please read the manual carefully. If any problems found during the operation process, either way listed below can be used as online tech support.

- (1) Send mails to [after\\_service@radiolink.com.cn](mailto:after_service@radiolink.com.cn) and we will answer your question at the earliest.
- (2) Send private message to us on our Facebook page or leave comments on our YouTube page.
- (3) If the product is purchased from the local distributor, you can also ask them for support and repair as prefer.

**Note: Do not allow children (Less than 14 years old) to touch this product. This product is not a toy. Please be careful when operating in scenes where children are present.**

## 2. Functions

- (1) Low-power precharge: When it is detected that the voltage of a single cell of the battery is lower than 3.0V, a small current is used to activate the battery to restore the battery capacity.
- (2) Fast charge: When it is detected that the voltage of a single cell of the battery is higher than 3.0V and lower than 4.16V, 1.5A is used to charge the battery.
- (3) Trickle charging: When it is detected that the voltage of a single cell of the battery is higher than 4.16V, 0.8A is used to charge the battery to make the battery fully charged and avoid overcharging.
- (4) Temperature control: When it is detected that the board temperature is higher than 75 degrees Celsius, the charging current will be reduced to 2/3 of the predetermined current to lower the board temperature, and when it is detected that the board temperature is lower than 70 degrees Celsius, predetermined current will be restored to charge the battery.
- (5) Power supply protection: When it is detected that the power supply voltage drops to 3.7V, the current current is set to a predetermined current to adapt to various charging heads of different specifications.
- (6) Balance charging: When the battery voltage is charged to 4.16V, if it is detected that the voltages of the two batteries are not equal, the balance charging is turned on to ensure that the battery voltages are consistent.
- (7) Charging alarm: When there is no current detected for a long time, charging will be automatically stopped, and the red LED will flash to indicate abnormality.
- (8) Charging time: About 40 minutes for a 500mAH 2S battery.
- (9) Voltage precision: The full voltage is  $4.20V \pm 0.02V$ .
- (10) Charging efficiency: Higher than 82%.

### 3. Specifications

Size: 40.5\*21\*15 mm

Weight: 9g

Input Voltage: 5V

Supporting Battery: 2S LiPo battery

Charging Precision: 0.02V

Charging Voltage: Max. 4.2V for each battery cell

Charging Current: 1.5A

Balance Current: 0.8A

Max. Output Power: 20W

Power Supply Input Port: USB Type-C Input

Charging Port Interface: 2S battery balance port

Working Modes: Charging Mode, Balance Mode, Repair Mode (Self-adaptive, with no need to set it)

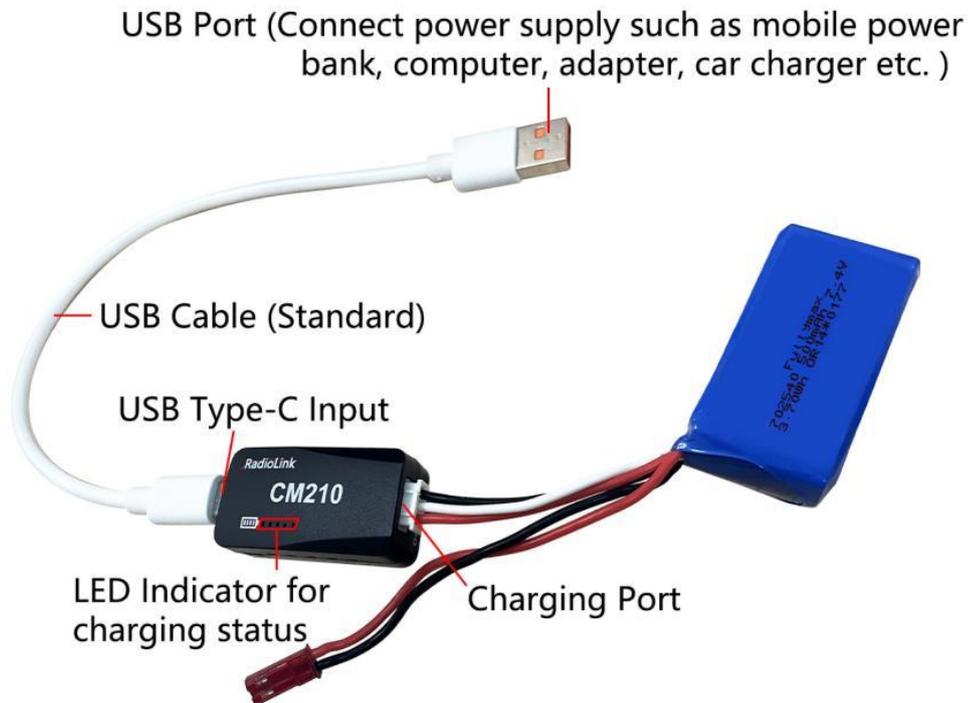
### 4. Instructions for Use

1 . Insert one end of the standard USB cable into the Type-C input port of the CM210 charger (as shown in the picture below), and then connect the other end of the USB cable to power supply equipment such as power bank, computer, mobile phone adapter, etc.. After the right connection, the red LED indicator will be always on.

2 . Insert the balance port of the standard 2S lithium battery of A560 into the charging port of CM210 (as shown in the picture below). Then the green LED indicator starts flashing, which means it starts to charge the battery. (Note: The green LED indicator flashes during the charging to indicate normal charging; If the red LED indicator flashes during the charging to indicate abnormal charging. Please reconnect battery and cable to troubleshoot the abnormality.)

3 . When all four LED indicators turn solid green, the battery is fully charged, and the charger will automatically stop charging.

4 . Remove the battery and then disconnect the power supply.



## 5. LED Indicator Status

LED color	Status	Meaning
Red	Flash	The charger detects abnormality.
	Always on	No battery is connected.
Green	All four green LEDs flash once.	The charger is powered on.
	The first green LED flashes, and the other LEDs are off.	The battery voltage is lower than 7.4V.
	The first green LED is always on, and the second green LED is flashing. The other LEDs are off.	The battery voltage is lower than 7.8V.
	The front two green LEDs are always on, and the third green LED is flashing. The other	The battery voltage is lower than 8.2V.

	LEDs are off.	
	The front three green LEDs are always on, and the fourth green LED is flashing. The other LED is off.	The battery voltage is lower than 8.4V.
	All four green LEDs are always on.	The battery is fully charged.

## 6. Voltage Calibration of CM210

Three power supplies are required. Two 5V power supplies at the battery end, with 0.1A current. When the battery end is connected, turn on the battery end power supply. The voltage of the charging end power supply is set to 5V, with 3A current. When the power supply end is connected, turn on the charging end power supply. Then the MCU runs the calibration program inside . When all the green LED indicators are on at the same time and then go out, the calibration is completed

## 7. Troubleshooting for Common Problems

1. After the charger is powered on, the red light flashes just after inserting the battery or within 1 minute.
  - A. The current detection resistor is burned out, and the MCU detects that the current is too large.
  - B. The switch tube is damaged, so it is unable to switch normally. There is no current output or the output current of the power supply is too small.
2. After the charger is powered on, insert the battery and charging works normally for a period of time, and then the red light flashes.
  - A. The output current of the power supply is too small, or the battery is damaged.

Solution: Replace the power supply or battery to charge it again, if the abnormal phenomenon still occurs, the charger is damaged.

**Thank you again for choosing RadioLink product.**