

## CUSTOMER SERVICE

We are please to assist you with any question by email or phone. Customer service hours are from 9 am to 6 pm (Beijing Standard Time) during the Monday to Friday. Emailed questions will be answered as soon as possible.

## WARRANTY

UNIWORLD HOBBYTECH provide a period of one year product warranty from the date 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 use guideline in this manual.

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Your best R/C power solution

# INSTRUCTION MANUAL

**C**SERIES  
**CLASS**

Please read this manual before use

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The company's products are subject to change without notice. If the product parameters are inconsistent with this manual, please prevail in kind. The Company reserves the right of final interpretation of this information.

## SPECIFICATION

INPUT VOLTAGE	DC 10-30V(C606 10-20V)
DISPLAY	1602 LCD
BATTERY SUPPORT	LiPo, LiHV, LiFe 1-6S
	NiCd, NiMH 1-18S
	Pb 1-12S(2-24V)
CHARGE POWER	
C606	60W MAX
C610/C610AC	120W MAX
C615	300W MAX
CHARGE CURRENT	
C606	0.1 - 6.0A
C610/C610AC	0.1 - 10.0A
C615	0.1 - 15.0A
DISCHARGE POWER	
C606	5W
C610/C610AC	15W
C615	20W
DISCHARGE CURRENT	
C606	0.1 - 2.0A
C610/C610AC	0.1 - 5.0A
C615	0.1 - 5.0A
BALANCE CURRENT DRAIN	
C606	0.5A MAX
C610/C610AC	0.5A MAX
C615	0.6A MAX
EXTRAFUNCTION	DC Power/LiXx balancer/IR checker/Servo tester
FIRMWARE UPGRADE SYS	TTL to USB device
PC UPPER SOFTWARE	POWER GENIUS software
LANGUAGE	4 languages(english/ 3 optional)
EXTERNAL TEMP SENSOR	
SERIES DATA PORT	Futaba 3Pin Port
SERVO TESTING PORT	
MEMORY SETS	9 sets

## BATTERY&amp;MAX CHARGE CURRENT

BATT TYPE	S	STAN DARD VOLT	MAX CHG VOLT	MIN DCHG VOLT	BATT TYPE	S	STAN DARD VOLT	MAX CHG VOLT	MIN DCHG VOLT
LiPo	1	3.7	4.2	3.0	LiFe	1	3.3	3.6	2.0
	2	7.4	8.4	6.0		2	6.6	7.2	4.0
	3	11.1	12.6	9.0		3	9.9	10.8	6.0
	4	14.8	16.8	12.0		4	13.2	14.4	8.0
	5	18.5	21.0	15.0		5	16.5	18	10.0
	6	22.2	25.2	18.0		6	19.8	21.6	12.0
LiHV	1	3.8	4.35	3.0	NiMH	1	1.2	1.6	0.8
	2	7.6	8.70	6.0		2	2.4	3.2	1.6
	3	11.4	13.05	9.0		3	3.6	4.8	2.4
	4	15.2	17.40	12.0		4	4.8	6.4	3.2
	5	19	21.75	15.0		5	6	8	4.0
	6	22.8	26.10	18.0		6	7.2	9.6	4.8
Pb	1	2	2.45	1.5		7	8.4	11.2	5.6
	2	4	4.90	3.0		8	9.6	12.8	6.4
	3	6	7.35	4.5		9	10.8	14.4	7.2
	4	8	9.80	6.0		10	12	16	8.0
	5	10	12.25	7.5		11	13.2	17.6	8.8
	6	12	14.70	9.0		12	14.4	19.2	9.6
	7	14	17.15	10.5		13	15.6	20.8	10.4
	8	16	19.60	12.0		14	16.8	22.4	11.2
	9	18	22.05	13.5		15	18	24	12.0
	10	20	24.50	15.0		16	19.2	25.6	12.8
	11	22	26.95	16.5		17	20.4	27.2	13.6
	12	24	29.40	18.0		18	21.6	28.8	14.4
					NiCd	Same as NiMH			

Charge current=charge power/battery voltage ≤MAX charge current

## CAUTION AND NOTES

- ▲ The charger model with AC can work under AC power supply, without AC can only work under DC power supply, never connect the charger to the AC power supply.
- ▲ The charger is ONLY suitable for charging the rechargeable LiPo, LiHV, LiFe, NiCd, NiMH and Pb batteries. Never attempt to charge the dry cells or the other type batteries. Charge other types of batteries may cause fire or explosion.
- ▲ Setup the Input Power Limit/Low Input VOLT Cutoff correctly in the USER SETTING for the DC power supply.
- ▲ Offer a sufficient power to the charger if needed the max charge power.
- ▲ Pay attention to the charger during use. Do not leave the charger unattended.
- ▲ Never charge the dead or damaged batteries.
- ▲ Do not use a too long, too small, or damaged wires.
- ▲ Do not use the charger close by a flammable object. Use only in well-ventilated areas.
- ▲ Do not allow water, moisture or foreign objects into the charger.
- ▲ Do not use in humid locations. Do not operate with wet hands.
- ▲ Do not attempt to disassemble the charger.
- ▲ Do not use the charger on fleecy materials, such as carpets, blankets, beds and cushions.
- ▲ Do not block the cooling fan and the air inlet.
- ▲ Strongly recommend balancing Lithium packs. An unbalanced pack may damage during discharging.
- ▲ General default charging current is 1C. Read the manual of the battery and setup the suitable current to charge the battery. Higher charge/discharge current will damage the battery, even cause a fire.

## MAIN MENU

PROGRAM 1/5  
Battery APP

Enter this program, you can set the work mode(Balance Charge/Charge/Storage/Discharge) and parameter of the batteries. See Page6-11 for the details.

PROGRAM 2/5  
Memory APP

Enter this program, you can load 9 sets memories that the charger had worked, you can modify the work mode, or start working directly. See Page12 for the details.

PROGRAM 3/5  
User Setting

Enter this program, you can set the parameter of the charger, some important parameter will affects the work performance of the charger . See Page13-14 for the details.

PROGRAM 4/5  
Extra Function

Enter this program, you can generate the extra functions of the charger, such as Meter LiXx Battery Status, Meter Internal Resistance, LiXx Balancer...etc. See Page15-16 for the details.

PROGRAM 5/5  
Monitor

Enter this program, you can see the value of the charger and the battery. See Page17 for the details.

## LiXx BATTERY APPLICATION

Select the battery type

Press +/- to move  
Press ENTER to select  
Press EXIT to quit  
Item flash while being selected

LiPo LiHV LiFe  
NiMH NiCd Pb

LiPo/LiIo/LiFe are the same mode of charge and discharge , only the termination voltage are different. So we introduce LiPo as representation.

LiPo BAL\_CHG AS BALANCE CHARGE: With this mode, the charger will charge the battery to the termination voltage and balance each cell of the battery pack. Balance port of the battery must be connected.

LiPo Charge 3S CHARGE: With this mode, the charger will charge the battery to the termination voltage by CC-CV mode, and stop at the CVI setting current.

LiPo Storage 3S STORAGE: With this mode, the charger will charge or discharge the battery to the storage voltage.  
(LiPo: 3.85V/S LiHV: 3.95V/S LiFe: 3.45V/S)

LiPo DCHG 3S DISCHARGE: With this mode, the charger will discharge the battery to the termination voltage. CV discharge below 0.1A.

Press ENTER to select  
Press +/- to alter  
Press EXIT to quit  
Item flash while being selected

## Warning :

TVC/C (Termination Voltage Control per Cell)

(See page 3 for the detail) Alter this value can increase/decrease the termination voltage of a battery in the end of charge/dicharge(For example: normal LiPo charge TVC/C is 4.20V, LiHV is 4.30-4.40V). Over charge/discharge will destroy the battery. Please alter the value according to the battery type, if you do not understand, please get the info from your battery supplier.

Press ENTER for 2 seconds to generate save interface before start working.

No save , just start Save to Mem[1] Start Save&Start Position of Memory  
Save and start

Press +/- to move  
 Press ENTER to select  
 Press EXIT to quit  
 Item flash while being selected

### Working interface

Battery type and cell count  
 Alternate Show  
 Work mode  
 BAL Balance Charge  
 CHG Charge  
 STO Storage  
 DSC Discharge

LiPo 2.2A 22.20V 998 038:38  
 Current Battery Voltage  
 Capacity Timer

Press Stop to stop working

### Main scene

Press STATUS LiPo 2.2A 22.20V 998 038:38 Press STATUS

Sub scene  
 Press Exit to return main scene

Target Voltage  
 C: 4.20V T: 25.20V

In. TEMP Ex. TEMP  
 30 °C 30 °C

Fan Status on

Cell voltage  
 C1 C2 C3  
 3700 3700 3700 mV  
 3700 3700 3700 mV  
 C4 C5 C6  
 Cell resistance  
 C1 C2 C3  
 10 10 10 mΩ  
 10 10 10 mΩ  
 C4 C5 C6

### Work Finished

Show alternated between battery type/cell count with finish.

Li6S 0.5A 25.20V CHG 1968 088:38 Press STATUS 4200 4198 4202 mV 4198 4202 4202 mV  
 Finish

## NiMH/NiCd BATTERY APPLICATION

Press ENTER to select  
 Press +/- to alter  
 Press EXIT to quit  
 Item flash while being selected

NiMH Charge 1.0A -DV: 7mV CHARGE: With this mode, the charger will automatically detect the cell count of the battery and charge the battery to full.

NiMH DCHG 9S 1.0A TVC/C1.00V DISCHARGE: With this mode, the charger will discharge the battery to the termination voltage.

Battery Tyep: NiMH/NiCd Charge  
 current NiMH Charge 1.0A -DV: 7mV -Delta Voltage

Battery Tyep: NiMH/NiCd Discharge  
 current NiMH DCHG 9S 1.0A TVC/C1.00V Cell Count TVC/C

### Warning :

-DV (Minus Delta Votage)  
 Character of NiMH/NiCd. The voltage will fall down when the batter close to full during being charged. The charger judge full according to value of the voltage fall down.  
 Please alter the -DV value according to the parameter of the battery, if you do not understand, please use default setting, or get info from the battery supplier.

Press ENTER for 2 seconds to generate save interface before start working.

No save , just start Save to Mem[1] Start Save&Start Position of Memory  
Save and start

Press +/- to move  
 Press ENTER to select  
 Press EXIT to quit  
 Item flash while being selected

### Working interface

Battery type and cell count  
 Alternate Show  
 CHGCharge  
 DSCDischarge

Current Battery Voltage

NiMH 1.0A 22.20V  
 CHG 598 038:38

Capacity Timer

Press Stop to stop working

### Main scene

Press STATUS

NiMH 1.0A 22.20V  
 CHG 598 038:38

Target Voltage  
 C: N/A T: N/A

In. TEMP Ex. TEMP  
 30 °C 30 °C

Fan Status  
 on

Sub scene  
 Press Exit to return main scene

### Work Finished

Show alternated between battery type/cell count with finish.

NiMH 0.5A 25.20V  
 CHG 1168 088:38  
 Finish

## Pb BATTERY APPLICATION

Press ENTER to select  
 Press +/- to alter  
 Press EXIT to quit  
 Item flash while being selected

Pb Charge 6S CHARGE: With this mode, the charger will automatically detect the cell count of the battery and charge the battery to full.  
 2.2A TVC/C2.40V

Pb DCHG 6S DISCHARGE: With this mode, the charger will discharge the battery to the termination voltage.  
 2.2A TVC/C1.60V

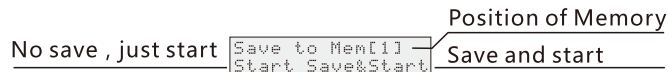
Pb Trickle 6S With this mode, the charger will charge the battery to the termination voltage then stop, and will recharge the battery when the battery's voltage below termination, to keep the battery always in the full status.  
 2.2A TVC/C2.40V

Battery Tyep: Pb Charge Cell Count  
 current Pb Charge 6S TVC/C  
 2.2A TVC/C2.40V

Battery Tyep: Pb Discharge Cell Count  
 current Pb DCHG 6S TVC/C  
 2.2A TVC/C1.60V

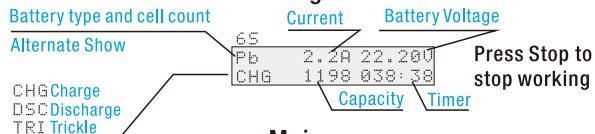
Battery Tyep: Pb Trickle Cell Count  
 current Pb Trickle 6S TVC/C  
 2.2A TVC/C2.40V

Press ENTER for 2 seconds to generate save interface before start working.

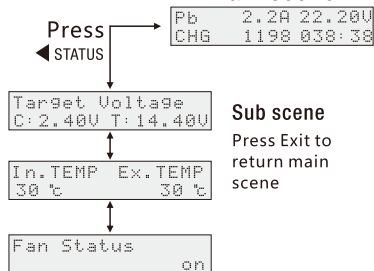


Press +/- to move  
Press ENTER to select  
Press EXIT to quit  
Item flash while being selected

### Working interface



### Main scene



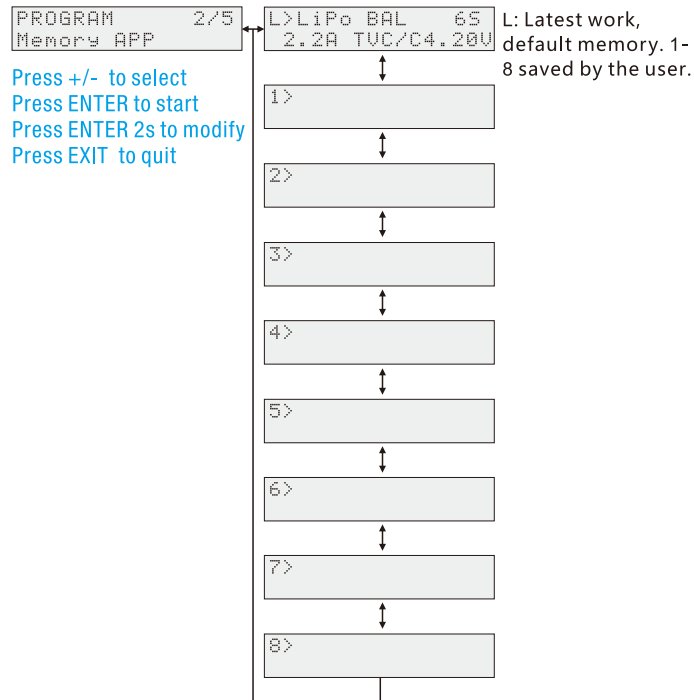
### Work Finished

Show alternated between battery type/cell count with finish.

Pb 0.5A 25.20V  
CHG 1968 088:38  
Finish

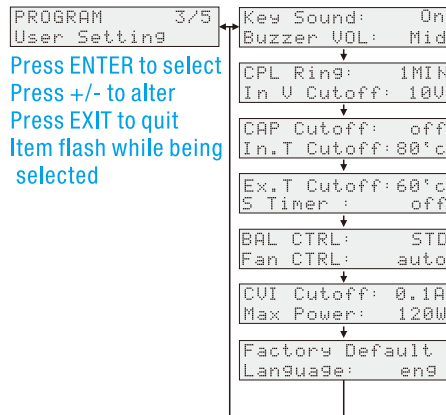
## MEMORY

### Menu Chart



## USER SETTING

## Menu Chart



**Key Sound** Turn on/off of the key sound.default: On .

Key Sound: On  
Buzzer VOL: Mid

**Buzzer VOL**Set the volume of the buzzer, off/Low/MID/High optional, Default: MID

**Complete Ring** In this menu, you can set the completion ring, 1-10 minutes/off/always optional. Default: 1Min

CPL Ring: 1MIN  
In V Cutoff: 10V

**Input V Cutoff** Set the cutoff input voltage of the power supply of the charger to protect your power supply. The charger will cutoff working when input voltage lower than the setting value. Range from 10.0-30.0V, Default: 10.0V

## CAPA Cutoff

CAP Cutoff: off  
In.T Cutoff: 80 °C

Set the cutoff capacity to protect your battery. The charger will cutoff working when the capacity is more than the setting value. On/Off optional, range from 0.1-99Ah off, Default: off

## In.TEMP Cutoff

Set the cutoff internal temperature to protect your battery. The charger will cutoff working when the external temperature is higher than the setting value(a external temperature sensor is needed). On/Off optional, range from 30-80°C, Default: 80°C

Set the cutoff external temperature to protect your battery. The charger will cutoff working when the external temperature is higher than the setting value(a external temperature sensor is needed). On/Off optional, range from 30-80°C, Default: 80°C

## Ex.TEMP Cutoff

Ex.T Cutoff: 60 °C  
S Timer: off

## Safety Timer

Set a safety time to protect your charger and battery. The charger will cutoff working when the safety time is up to the setting value. On/Off optional, range from 10-720 minutes, Default: off

## Balance CTRL

BAL CTRL: STD  
Fan CTRL: auto

Balance control of LiPo/LiIo/LiFe, you can set the balance control to meet your demand. Standard/Fast/Accurate optional. Default: Standard

## Fan Control

\*Fast: Balance speed fastest, less accurate  
\*Accurate: Balance speed lowest, more accurate  
\*Standard: balance speed and accurateness between Fast and Accurate

Cooling fan control mode: AUTO: automatically controlled by the charger. Always: Always on during the charger working.

## Max CHG Power

CVI Cutoff: 0.1A  
Max Power: xxxW

Set the charge power limit to meet your power supply. The charge will work under the setting value. Range from 50-MAX, Default: MAX

## CV I Cutoff

Cutoff current of constant voltage charge stage . Range from 0.1-1.0A, Default: 0.1A

**Load Factory Default** Reset factory default setting.

Factory Default  
Language: eng

## Language

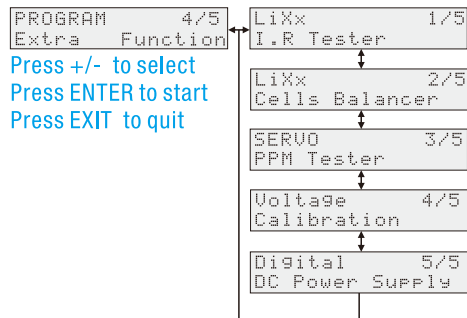
Language select.

- 1: English
- 2: Optional



## EXTRA FUNCTION

### Menu Chart



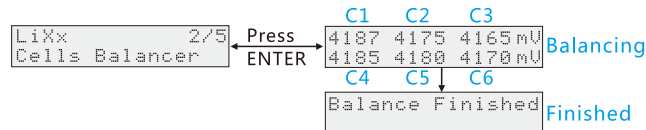
#### 1, LiXx Internal resistance tester:

2-6S battery are supported, must connect both main port and balance port.

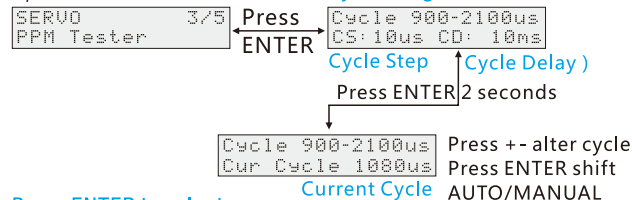


#### 2, LiXx balancer

2-6S battery are supported, must connect balance port.



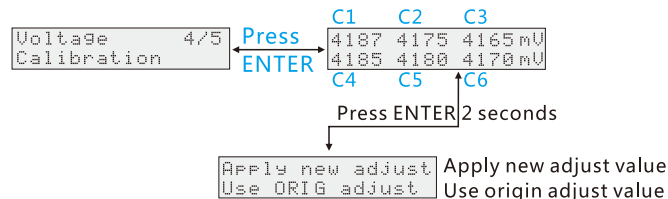
#### 3, Servo PPM tester



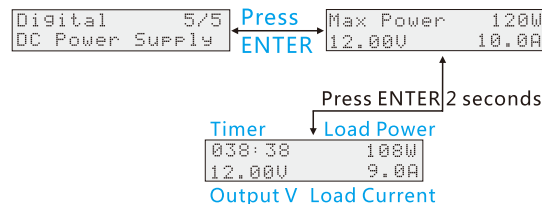
Press ENTER to select  
Press +/- to alter  
Press EXIT to quit  
Item flash while being selected

#### 4, Voltage Calibration

2-6S battery are supported, must connect balance port.

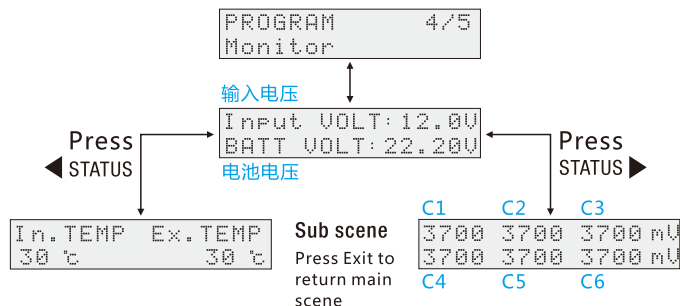


#### 5, Digital DC Power Supply



## MONITOR

## Menu Chart



## ERROR CODE

INPUT VOLT HIGH  
NOT IN XX-XXVCELL VOLT LOWER  
CHECKINPUT VOLT LOWER  
NOT IN XX-XXV

FULL BATTERY

CONNECT BALANCE  
PORT

EMPTY BATTERY

BATTERY  
DISCONNECTBATTERY CAN NOT  
BE CHARGEDREVERSE POLARITY  
CHECKOVER Ext. TEMP  
CUTOFFBATTERY VOLT  
HIGHEROVER Int. TEMP  
CUTOFFBATTERY VOLT  
LOWER

SAFETY TIME OUT

CELL COUNT ERROR  
CHECKOVER CAPACITY  
CUTOFFCELL VOLT HIGHER  
CHECKTHIS DEVICE IS  
NOT SUPPORTED