Super Parameter Programmer

SPP-01

Dear user:

Thank you very much for selecting our product!

This manual offers important information and suggestions about use and troubleshooting, etc. Please read this manual carefully before using the product.

Warranty: The product is warranted to be free from defects for a period of two years from the date of shipment to the original end user.

Contents

1 Important Safety Information

This manual contains important safety, setting and operating instructions for SPP-01. Save these instructions.

- Please inspect the product thoroughly after it is delivered. If any damage is seen, please notify the shipping company or our company immediately.
- Read of the instructions and cautions in the manual before using.
- Keep the product away from rain, exposure, severe dust, vibrations, corrosive gas and intense electromagnetic interference.
- Do not allow water to enter the controller.
- Do not disassemble or attempt to repair it.

2 General Information

2.1 Product Characteristic

Super parameter programmer (SPP-01) is the simple, efficient and practical accessory for parameter configuration with the easy one button operation. Due to the new standard communication protocol, it applies to stand-alone or multi-parallel products. The features of the SPP-01 are listed below.

- One button and one indication led are designed for simplicity and easy-to-operate.
- RS232 (TTL), RS485 and USB communication are supported.
- SPPPCTools PC software is used to configure and backup parameters

visually, rapidly and conveniently.

- Dual power supply design. SPP-01 can be powered by battery or Micro-USB cable applying for various environments.

2.2 Main Functions

- Parameter configuration function

  Load the parameter configuration to the SPP-01 via SPPPCTools PC software and then update the device's parameters through SPP-01 with easy one button.

- Data transparent transmission function.

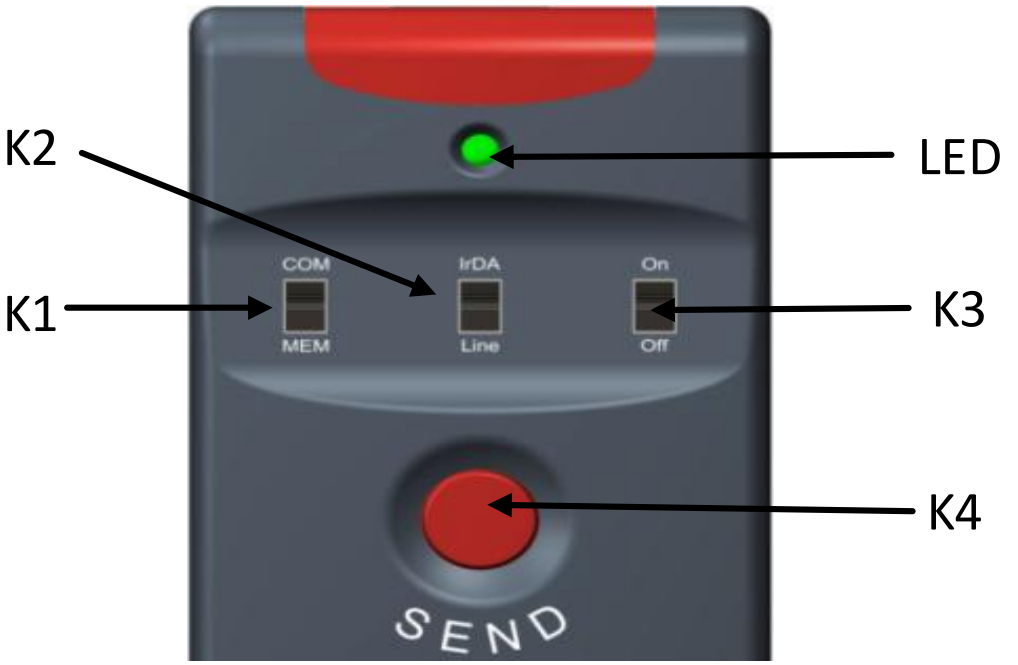
  SPP-01 can be used as the communication converter to connect the device and Solar Station Monitor, a PC software, to establish remote monitoring.

2.3 Recommendation

DCCPxxxxDP (R), LSxxxxB (PL), VSxxxxB, TracerxxxxB (PL) and iTracerxxB series products are supported to update the configuration by SPP-01. Please confirm whether to support before purchasing.

3 Features

3.1 Features

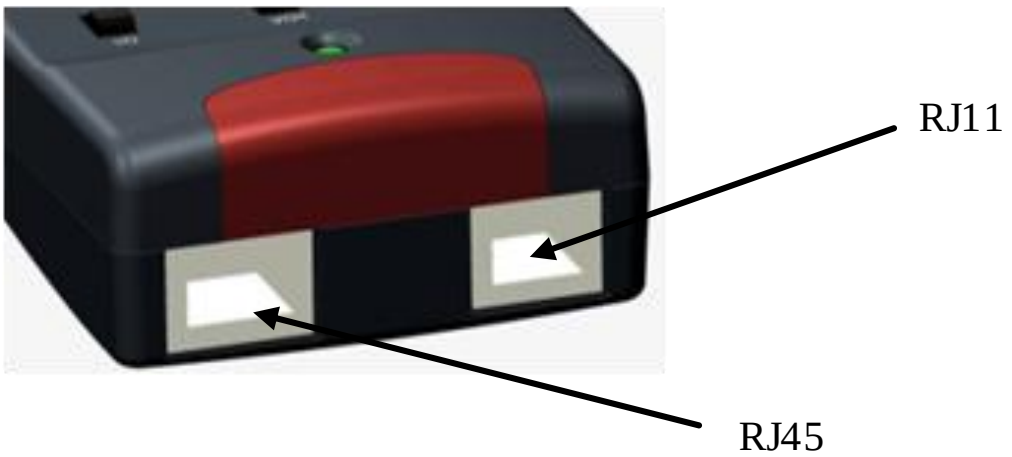


Description	Operation	Remarks
K1（Toggle switch1）	COM	Communication converter mode
	MEM	Parameter configuration mode
K2（Toggle switch 2）	Line	Wire communication mode
	IrDA	Reserved
K3（Toggle switch 3）	On	Power on
	Off	Power off
K4（Water proof key 4）	Press the button	Press the key to enter configuration mode (the indicator led is on), click it again to update the configuration.
	Press and hold the button	Test "Turn on" or "Turn off" the load.
Indicator led and buzzer	Configuration mode	The indicator led is on without a beep.
	Update	The indicator led flashes once

	successfully.	with one short beep.
	Communication error	The indicator led flashes twice with two short beeps.
	The model is not matched or the irrational configuration	The indicator led flashes triple with three short beeps.
	Test	The indicator light flashes for several times with one long beep.

Note:

1. Press and hold the button for three seconds to alternately turn on or turn off the load in the testing mode. After 3 minutes, the device will quit the test mode automatically.
2. In the testing mode, the SPP-01 can switch the load no matter whether it has loaded the configuration or not.



Description	Operating	Remarks
RJ11 interface	Connect the controller with the CC-TTL-TTL-150U communication cable	Update device configure
RJ45 interface	Connect the controller with the CC-RS485- RS485-150U communication cable	Update device configure
USB interface	Connect to the PC with the CC-USB-USB-150U communication cable	Update SPP01 configure
RTC battery holder	Battery for real-time time clock	Type: CR1220
Battery compartment	3 batteries	Size AAA

3.2 Power Supply and Startup

The SPP-01 is powered by following three methods:

1. Get power via the USB data cable from USB interface.

2. Get power via exclusive data cable from the device.

3. Get power from 3 batteries (size AAA).

Starting SPP-01: The SPP-01 is powered on by toggling K3 switch to "ON"

Operating status	**Phenomena**
Normal startup	The green light flashes once with one beep.
No data available in SPP-01	The green light flashes for several times with several beeps.

4 Software Operation

4.1 Software Operating Environment

➢ Hardware Environment

- A Pentium 4-compatible PC
- At least 512Mbyte of RAM and 55Mbyte of free disk space

➢ Software Operating Environment

The recommended operating system is as follows:

- Windows XP (32bit), Win7 (32bit/64bit), Win8 (32bit/64bit)
- Installing component: Windows Installer3_1, DotNetFX40.

4.2 Software Installation and Uninstalling

➢ Installing the software

Open directory "SPPPCSoftwareV3.77", and double click "setup.exe", after the computer start carry on the software gearing.

➢ Uninstalling the software

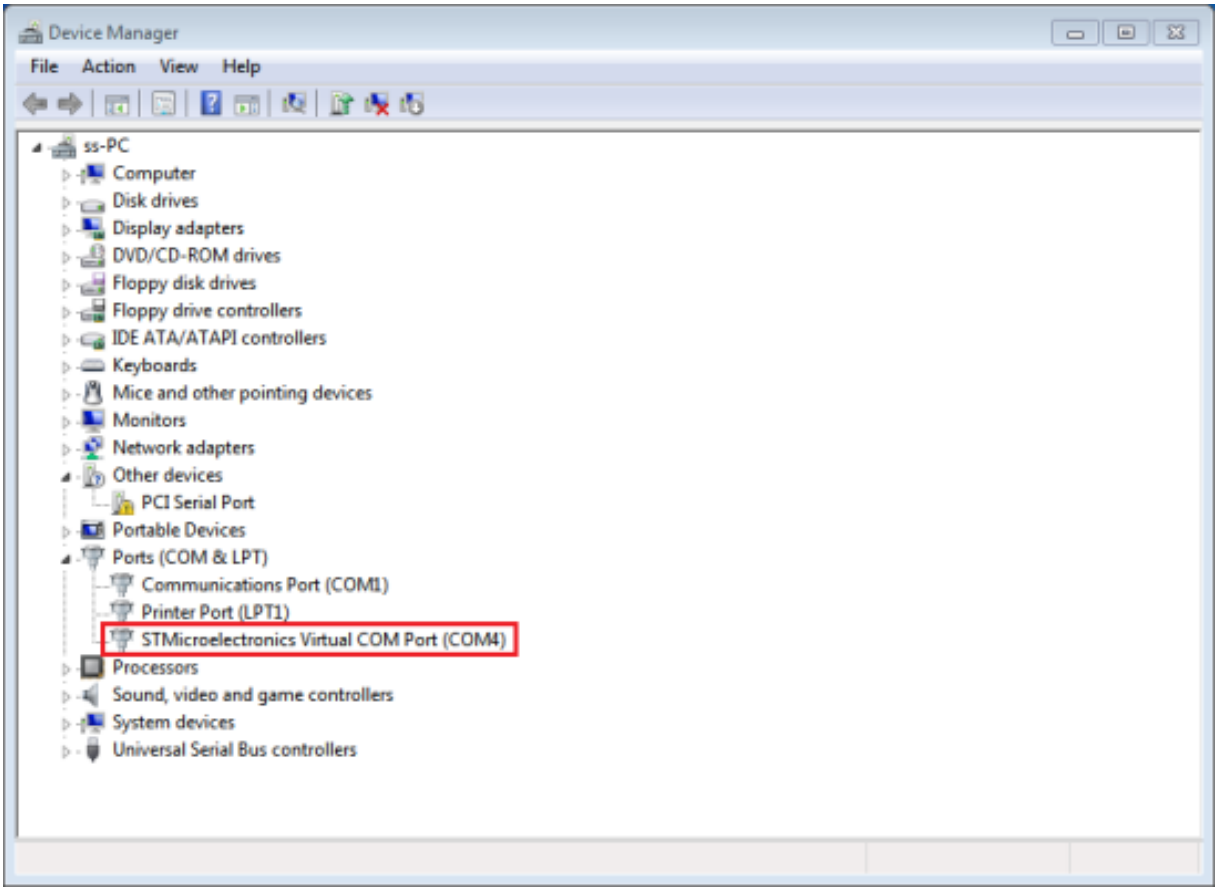
Click the Start >Control Panel >Add or delete programs> SPP > Delete.

4.3 Software Operating Instructions

➢ Get serial port number for SPP-01

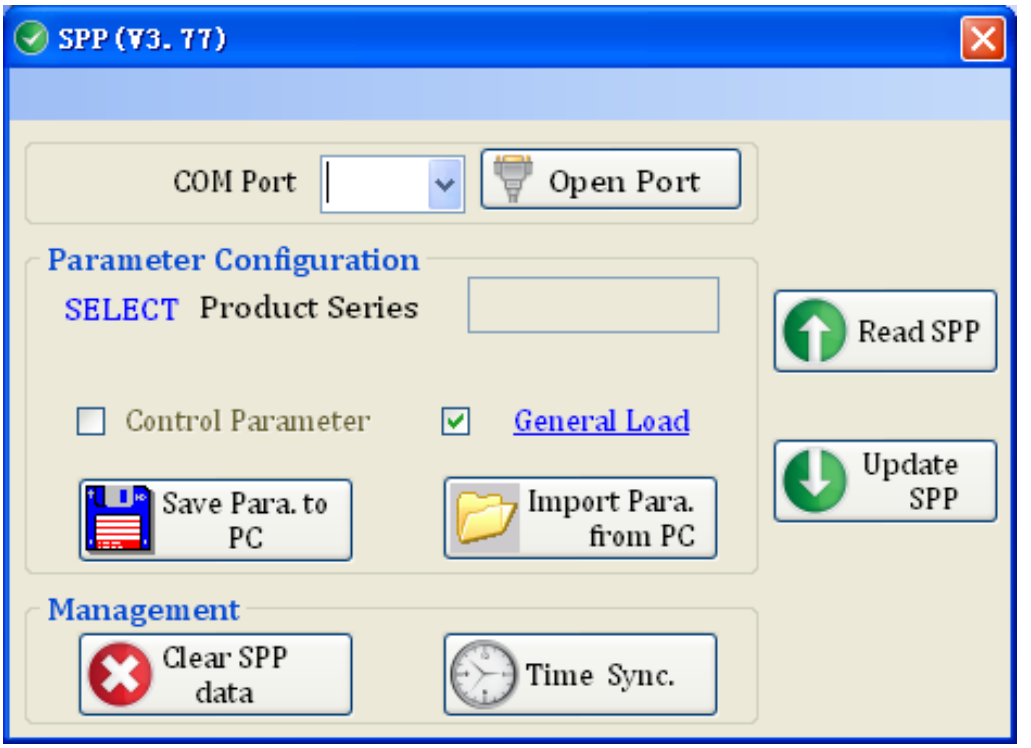
1. Connect the device: Connect SPP-01 to the PC with the Micro-USB cable and turn K3 switch to "ON" position. The SPP-01 starts normally with indicator led flashing once and a short beep.

2. Install SPP-01 serial port driver: Open directory "SPP USB Driver" and run "Setup.bat" file to install the driver.
3. Right click "My computer > Property > Hardware > Device manager" to pop up a device manager window, seeing the figure below:



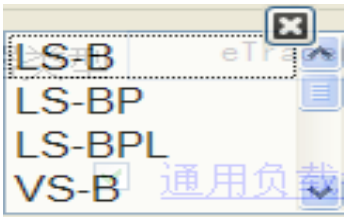
Note: The serial port number selected in the figure above is the serial port number of SPP-01 (COM8).

➢ Main interface

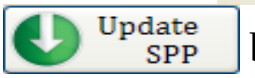


Parameter configure:

1. Double click software icon  to pop up configuration interface of SPP-01.
2. The software will automatically open the port after selected serial port of SPP-01(the button caption will change from "open port" to "close port")
3. The following dialog box will be popped up automatically by clicking "SELECT" tag:



Double click to select device (the configuration content will be changed automatically).

4. Configure relevant parameters by clicking "Control Parameters", "General Load", "LED Load" in the frame of Parameter Configuration and "Time Sync" in the Management. After configuring parameters, click "OK" to quit and return to main interface (For the parameters without configuration, uncheck the box" ☐ ").
5. After configuration, click 

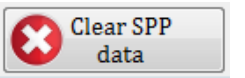
button to load configuration into SPP-01 device (a corresponding dialog box will be popped up to prompt whether loaded successfully or not).

Reading parameter data

If the configuration has been loaded to the SPP-0, click 

button to upload the configuration in SPP-01 to PC, and refresh the corresponding parameter configuration in "Parameter configuration" frame, such as Control Parameter, General Load or LED Load, Time Sync so as to view and modify the parameters.

Data clearing

If it is required to clear configuration in SPP-01, click 

button directly.

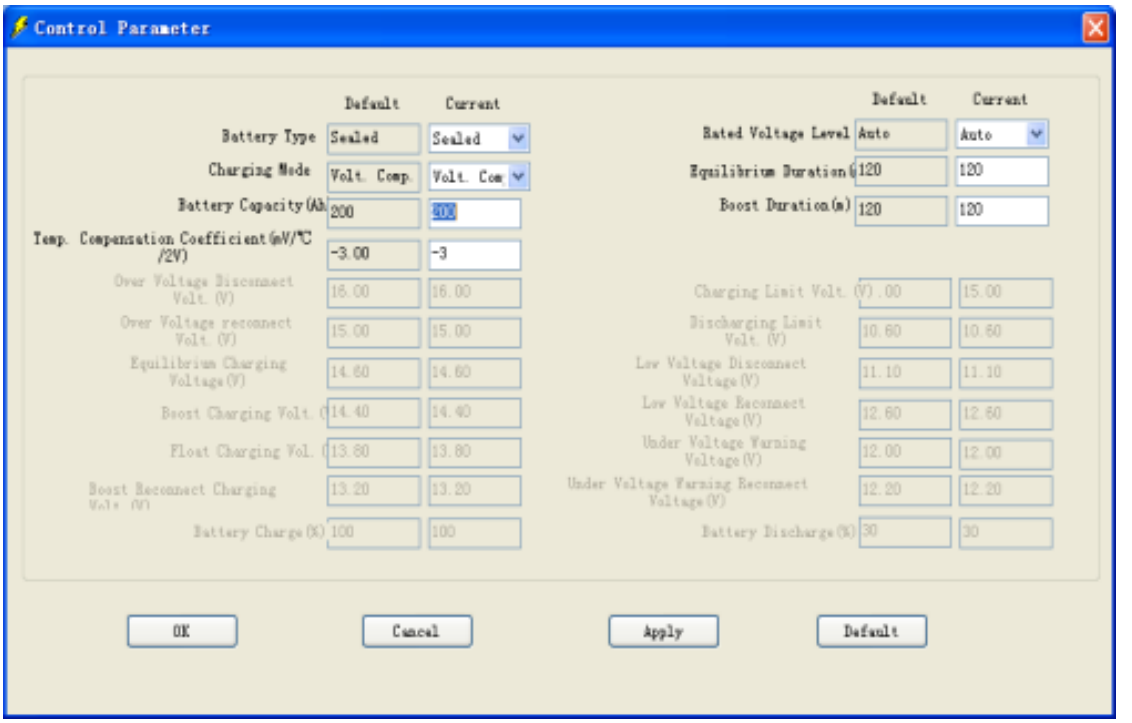
Importing and exporting parameter configuration

If it is required to backup parameter configuration, click 

button to save the configuration as a text file with extension of .TXT. If it is required to import configuration backed up previously, click 

button to load corresponding TXT file to upload the configuration.

➢ Control Parameter



Battery type

Battery type	Notes
Sealed (default)	Fixed controlling voltage, unable to be modified
Gel	Fixed controlling voltage, unable to be modified
Flooded	Fixed controlling voltage, unable to be modified
User	Users can modify voltage controlling points.

Charging Mode

Charging mode	Notes
Voltage compensation	Voltage control charging (default)
SOC	Set the charge and discharge SOC target values for battery charge and discharge control

Other Control Parameter

Parameters	Default	Range
Battery Ah	200Ah	1~9999Ah
Temperature compensation coefficient	-3mV/℃/2V	-9~-0mV
Rated Voltage	Auto	Auto/12V/24V/36V/48V
Battery charging	100%	100%(SOC Mode)
Battery discharging	30%	10~80%(SOC Mode)

Note: Battery charging voltage ≥ Battery discharge+10% or battery discharge value ≤ Battery charge-10% value

Battery Voltage Parameters (values are in 12V system at 25℃, please double in 24V, triple in 36 V, and quadruple in 48 V system）

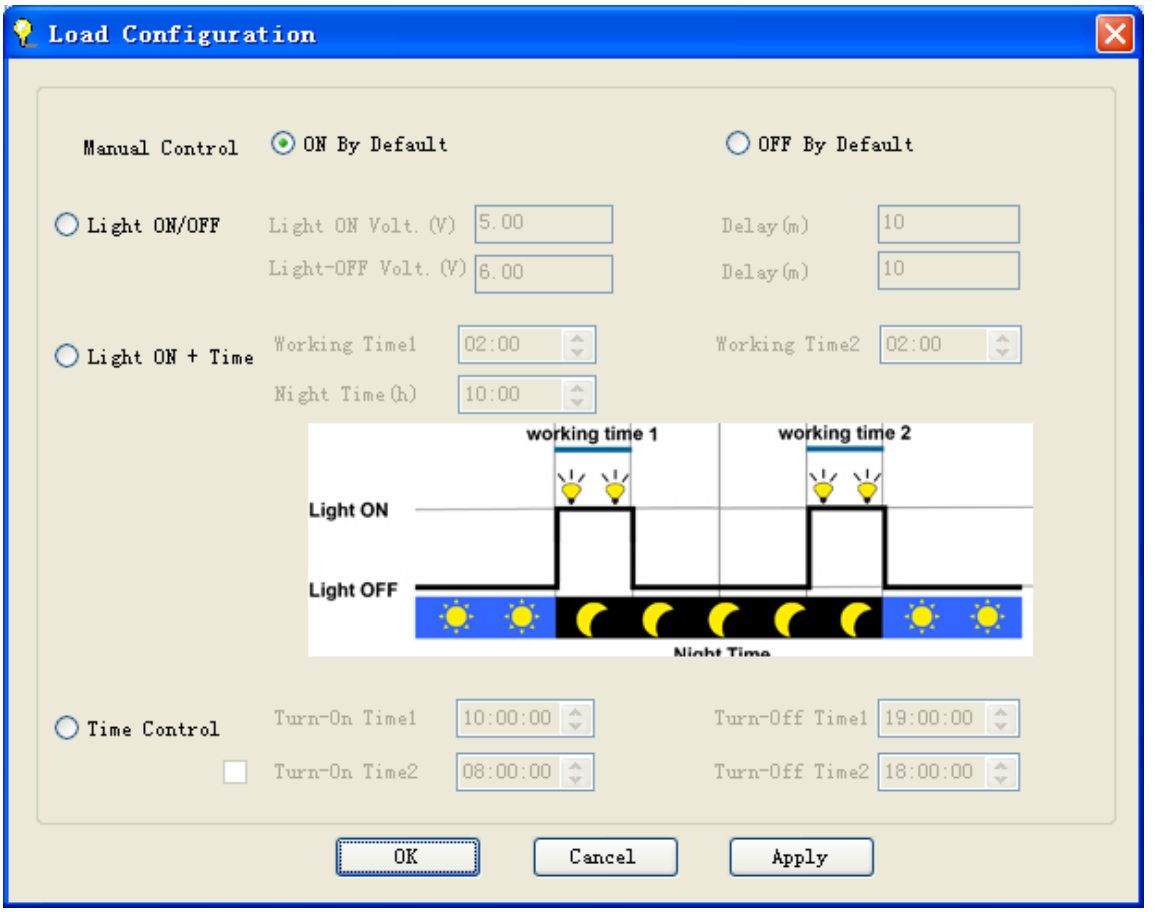
Battery type	Sealed	Gel	Flooded	User
High Volt Disconnect	16V	16V	16V	9~17V
Charging Limit Voltage	15V	15V	15V	9~17V
Over Voltage Reconnect	15V	15V	15V	9~17V
Equalize Charging	——	14.6V	14.8V	9~17V

Boost Charging Voltage	14.2V	14.4V	14.6V	9~17V
Float Charging Voltage	13.8V	13.8V	13.8V	9~17V
Boost Return Voltage	13.2V	13.2V	13.2V	9~17V
Low Voltage Reconnect	12.6V	12.6V	12.6V	9~17V
Under Voltage Recover	12.2V	12.2V	12.2V	9~17V
Under Voltage Warning	12V	12V	12V	9~17V
Low Voltage Disconnect Voltage	11.1V	11.1V	11.1V	9~17V
Discharging Limit Voltage	10.6V	10.6V	10.6V	9~17V
Equalize Duration	——	120 Min.	120 Min.	0~180 Min.
Boost Duration	120 Min.	120 Min.	120 Min.	10~180 Min.

Note: The following rules must be observed when modify the parameters value in user battery type (factory default value is the same as sealed type):

- High Volt Disconnect > Charging limit voltage ≥ Equalization voltage ≥ Boost voltage ≥ Float voltage > Boost return voltage
- High Volt Disconnect > Over Voltage Reconnect
- Low Voltage Reconnect > Low Voltage Disconnect ≥ Discharging Limit Voltage
- Under Voltage Warning Reconnect > Under Voltage Warning ≥ Discharging Limit Voltage
- Boost Reconnect Charging voltage ＞ Low Voltage Disconnect

➢ Load Configuration



Load Mode

- **Manual** (load can be switched by manual button or remote control command)

On by default	Controller switches on the load output once initialized and keep constant output on condition that the battery is enough electricity and no abnormal situation.

Off by default	Controller keep the load output off before, during and after initialized. The load can be switched on only when doing "Manual On by default" operation and the battery is enough electricity and no abnormal situation.

- **Time Control**

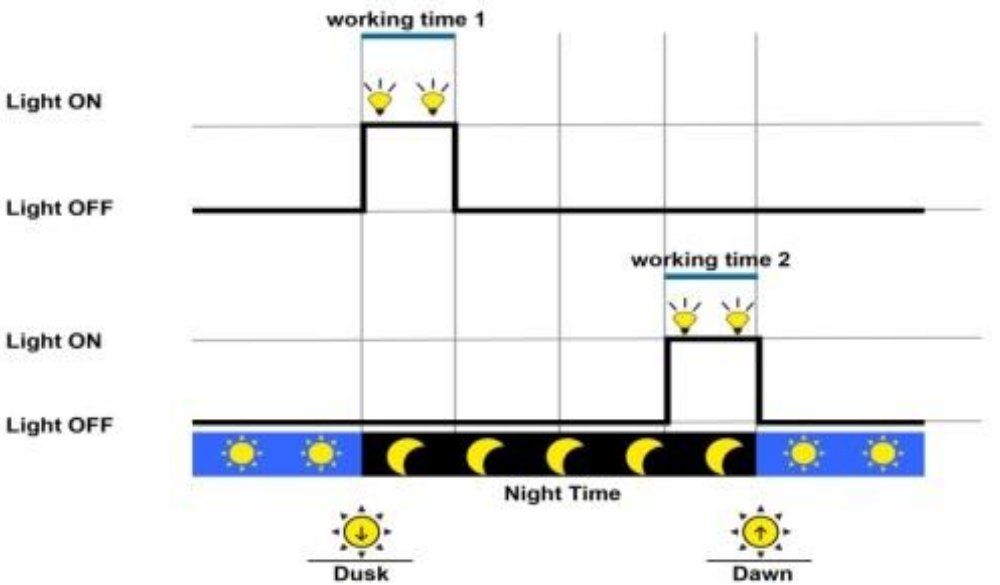
Time1（T1）	Control on/off time1 of load through real-time clock mode.
Time2（T2）	Control on/off time2 of load in dual time mode.

- **Light ON/OFF**

Light ON Voltage	When input voltage of solar module goes below light ON voltage, the solar controller will recognize the starting voltage and turn on the load after pre-set time delay when the battery power is enough and the controller works well.
Light OFF Voltage	When input voltage of solar module goes above light OFF voltage, the solar controller will recognize the starting voltage and turn off the load after pre-set time delay.
Delay Time	The confirmation time for Light signal. During the period, if light signal voltage continues matching Light ON/OFF voltage, it will carry out corresponding actions（The time adjustment range:0~99mins.

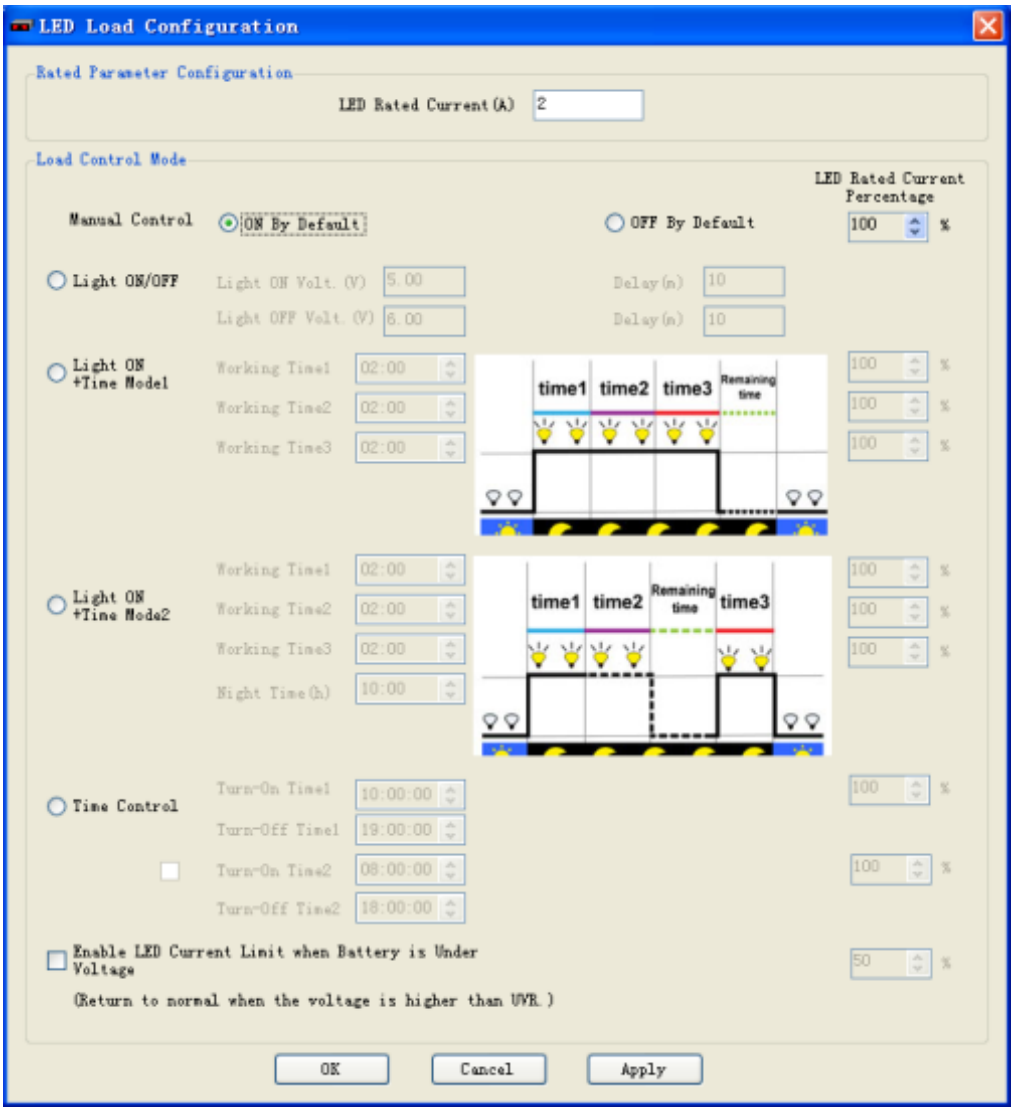
- **Light ON+ Timer**

Working Time 1（T1）	Load working period after light control turns ON load
Working Time 2（T2）	Load working period before light control turns OFF load
Night Time	The controller calculated the total length of the night by self-learning. The time should be more than 3 hours



Light Control +Time Model Diagram

➢ LED Load Configuration



- **LED Load parameter**

Parameter	Remark
LED Rated Current	Rated output current.
LED Rated Current Percentage	Set up the parameter of the rated current percentage of the corresponding operating period of the controller; the controller will control the LED load output current according to this value.

Battery Under Voltage Control	When the battery is under this voltage, the output current will be half; when the voltage of the battery goes above it, the controller will resume the set current value automatically.

- **Manual Control**(load can be switched by manual button or remote control command)

Manually On By default	Controller switches on the load output once initialized and keep constant output on condition that the battery is enough electricity and no abnormal situation.
Manually Off By default	Controller keep the load output off before, during and after initialized. The load can be switched on only when doing "Manual On by default" operation and the battery is enough electricity and no abnormal situation.

- **Time Control**

Time1（T1）	Control on/off time1 of load through real-time clock mode.
Time2（T2）	Control on/off time2 of load in dual time mode.

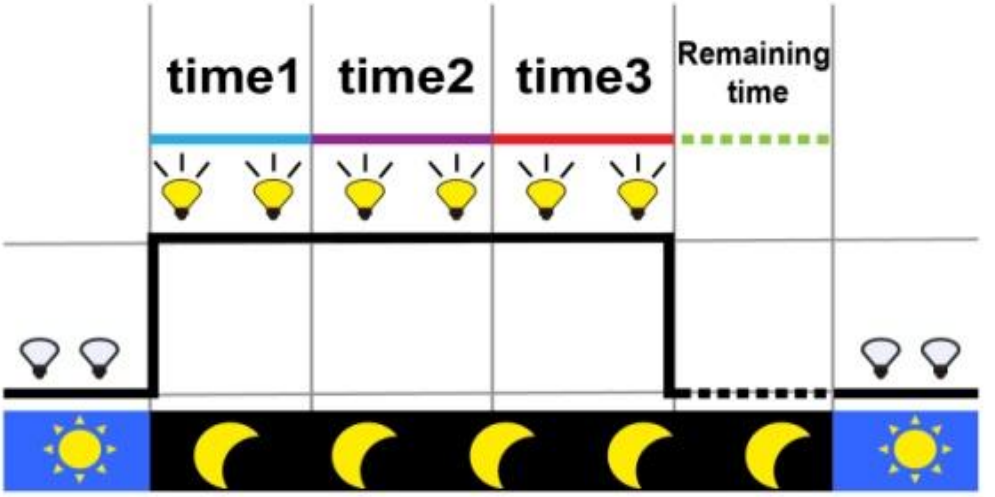
- **Light ON/OFF**

Light ON Voltage	When input voltage of solar module goes below light ON voltage, the solar controller will recognize the starting voltage and turn on the load after pre-set time delay when the battery power is enough and the controller works well.

Light OFF Voltage	When input voltage of solar module goes above light OFF voltage, the solar controller will recognize the starting voltage and turn off the load after pre-set time delay.
Delay Time	The confirmation time for Light signal. During the period, if light signal voltage continues matching Light ON/OFF voltage, it will carry out corresponding actions（The time adjustment range: 0~99mins.

- **Light Control +Time Model 1**

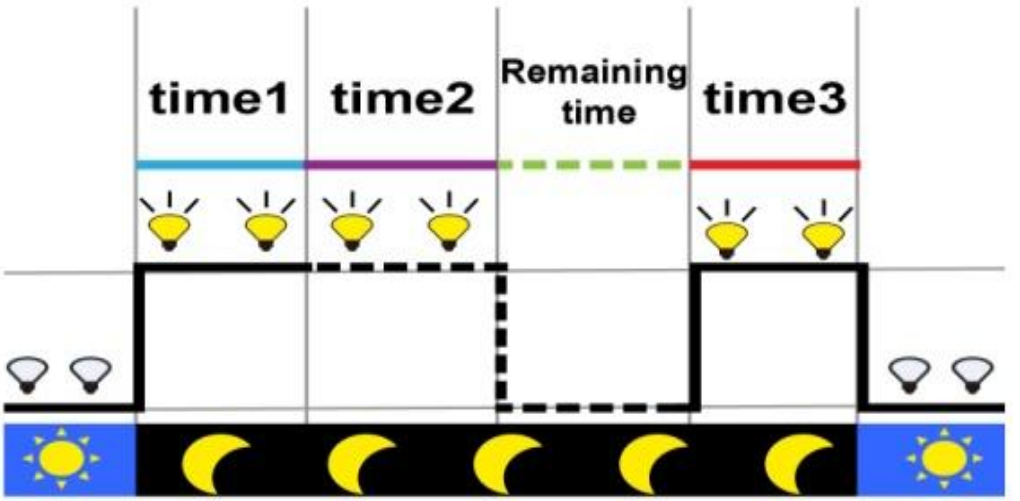
Work Time1 (T1)	Load working period after light control turns ON load.
Work Time2 (T2)	The running hour of the load after the end of the work time1.
Work Time3 (T3)	The running hour of the load after the end of the work time2.



Light Control +Time1 Mode1 diagram

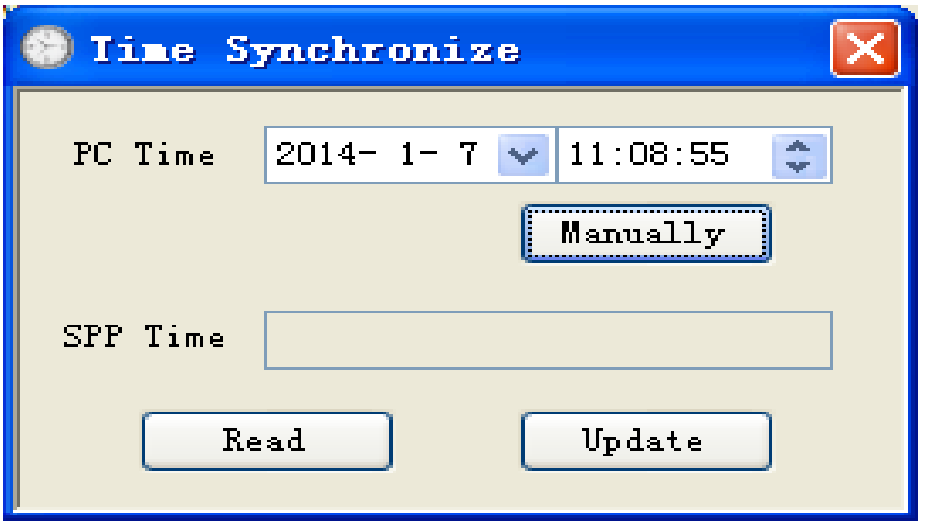
- **Light Control +Time Model 2**

Work Time1 (T1)	Load working period after light control turns ON load.
Work Time2 (T2)	The running hour of the load after the end of the work time 1.
Work Time3(T3)	Load working period before light control turns off load.
Night Time	The controller calculated the total length of the night by self-learning. The time should be more than 3 hours.



Light Control +Time2 Model diagram

➢ Time Synchronize



Parameters	Remarks
PC time	Display PC time by default; Edit the time by clicking "Manually".
SPP time	Display real-time clock of SPP-01.

The current PC time data can be directly update to SPP-01 by clicking "Update" button; click "Manually" button to edit the values; click "Read" button to get the time from SPP-01 and display in "SPP Time" text box.

5 Specification

5.1 Hardware Configuration

Items	Descriptions
Indicator light	1 green LED indicator
RTC clock	The real-time clock will not be lost when the backup battery is installed. Please replace the batteries when the time of SPP-01 is not correct.
Power supply	From three AAA (7#) batteries; From Micro-USB cable via PC USB power; From exclusive data cable via the controller.
Buzzer	One built-in buzzer to prompt that communication is right or wrong.
Communication port	RJ11（TTL）, RJ45（RS485）, Micro-USB（USB）

5.2 SPP-01 Parameter

Parameter	Rated
Power Supply Voltage	5.0V
Static Current	< 40 mA
Communication Baud	115200bps
Working temperature	-25℃～+55 ℃
Enclosure	IP30
Overall dimension	109 mm*60 mm*33mm
Net weight	80.1g

6 SPP-01 Overall Dimension