



IoT Solar Light Controller User Manual

NJ-iot401U-zhaga

Xiamen Net-Join IoT Technology Co., Ltd.

<https://web.net-join.com/>

1. Product Overview

The NJ-iot401U-zhaga is a 4G Cat.1 communication module designed for integration with solar street light controllers. It enables remote monitoring, parameter configuration, and real-time data acquisition via cloud platforms. The module supports both TTL and RS485 serial interfaces, ensuring broad compatibility with mainstream solar controllers. It features a Zhaga compliant interface for standardized LED lighting interoperability.

2. Core Functions and Advantages

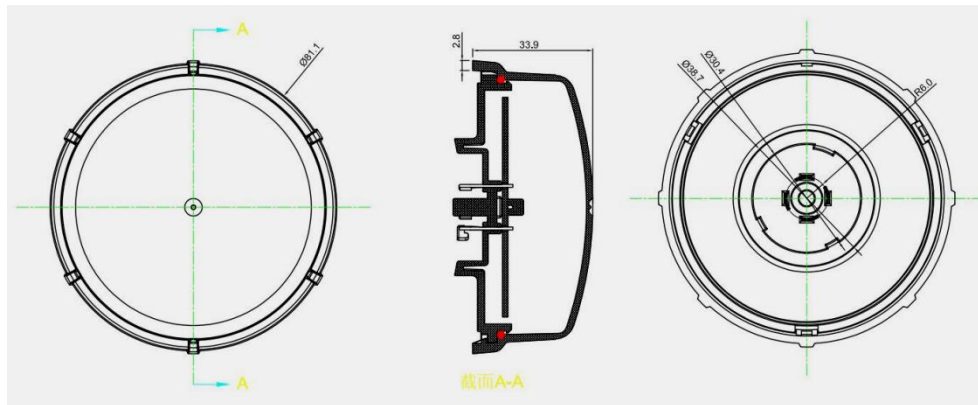
1. Built-in 4G Cat.1 wireless cellular communication
2. Wide input voltage compatibility: 3.2V / 12V / 24V DC
3. Standard Zhaga interface for smart lighting interconnection
4. TTL UART & RS485 serial ports, compatible with most mainstream solar controllers
5. Multi-terminal remote management: PC web platform + WeChat Mini Program + Mobile APP
6. Supports remote on/off control and power regulation of the load.
7. Real-time data acquisition: voltage, current and power of battery, load and solar panel
8. Multi-dimensional fault alarm: battery fault, solar panel fault, load fault
Batch & single device parameter remote configuration & query
9. The module supports base station positioning
10. Support remote OTA firmware upgrade

3. Product Dimensions

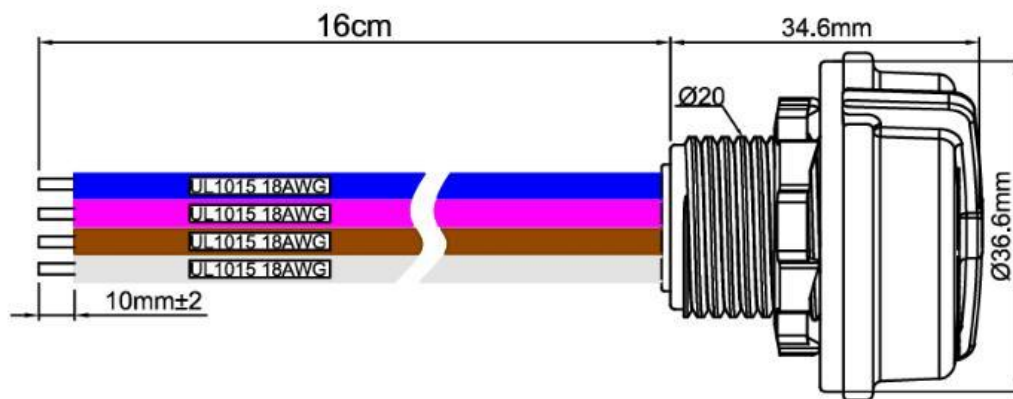
3.1 Product Dimension Parameters

Outer Size: L × W × H : 81.1 mm × 33.9 mm

Net Weight: ≈0.1kg



Top View



Side View

3.2 Product Outline



4. Product Parameters

4.1 Product Model Table

Model No.	Power Supply	SIM Card & Applicable Region	Core Interface
NJ-iot401G	3.2V/12V/24V DC	Available worldwide	TTL UART / RS485
NJ-iot401	3.2V/12V / 24V DC	Surface-mounted China Mobile SIM, China	TTL UART / RS485
NJ-iot401-zhaga	3.2V/12V / 24V DC	Standard Zhaga interface, China	TTL UART / RS485
NJ-iot401U-zhaga	3.2V/12V / 24V DC	Standard Zhaga interface, Europe, Africa, Asia	TTL UART / RS485

Supports 3.2V DC supply. For this option, please contact Net-Join Technical Support or Sales

4.2 Technical Parameters

Parameter	Specification
Communication Standard	4G LTE Cat.1
No-load loss	10 mA (12V);6 mA (24V)
Power supply	3.2V/12V/24V
Supported Frequency Bands	FDD: B1 / B3 / B7 / B8 / B20 / B28
Applicable Regions	NJ-iot401U-zhaga: Europe, Africa, Asia NJ-iot401-zhaga: China
SIM Card Type	Standard Nano SIM card / Surface-mounted SIM card
Network Registration Time	≤ 30s (under good signal conditions)
Data Transmission Protocol	MQTT / TCP / IP
Operating Temperature	-35°C ~ +65°C
IP Rating	IP65

4.3 LED Status Indication

Indicator	Blink Mode	Status Description
Green Network LED	Ultra-slow blink (0.3s ON / 5s OFF)	No SIM card detected
Green Network LED	Slow blink (0.3s ON / 2s OFF)	Power-on initialization in progress
Green Network LED	Medium blink (0.3s ON / 1s OFF)	Connecting to cellular network
Green Network LED	Fast blink (0.1s ON / 0.1s OFF)	Network registered successfully, device online

5. Wiring Method



IoT Controller Connection Diagram

6. Mobile App

The Net-Join Solar IoT Controller supports access via mobile APP and PC terminal

Method 1: APP Download

① For Android Devices

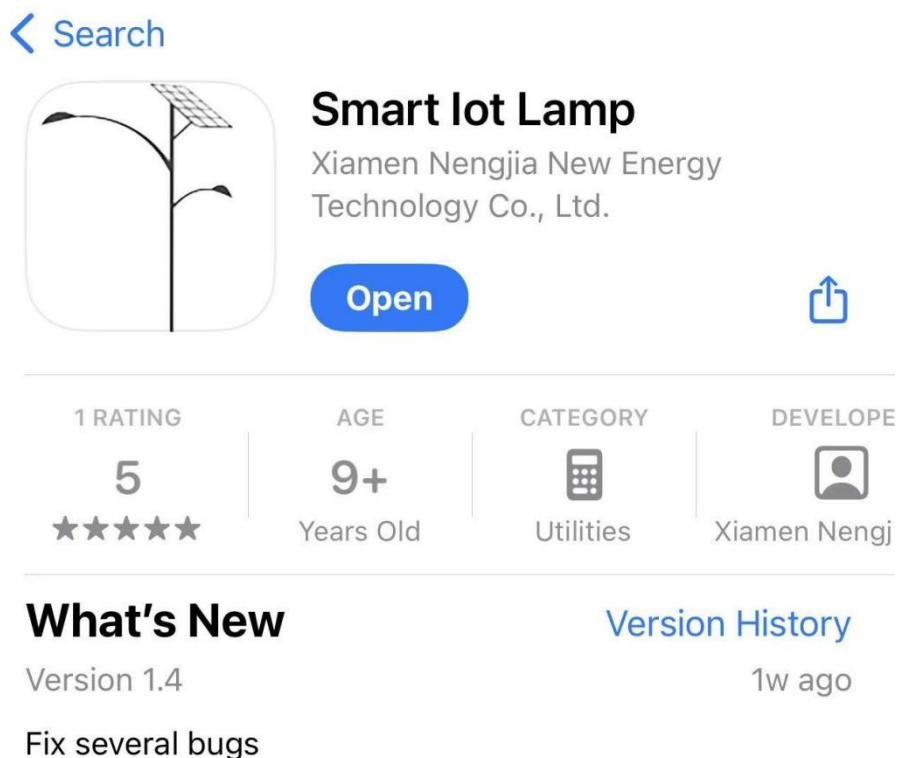
APP Download Link: <https://iot.xmnengjia.com/download/NetJoin.apk>

Or scan the QR code below:



② For iOS Devices

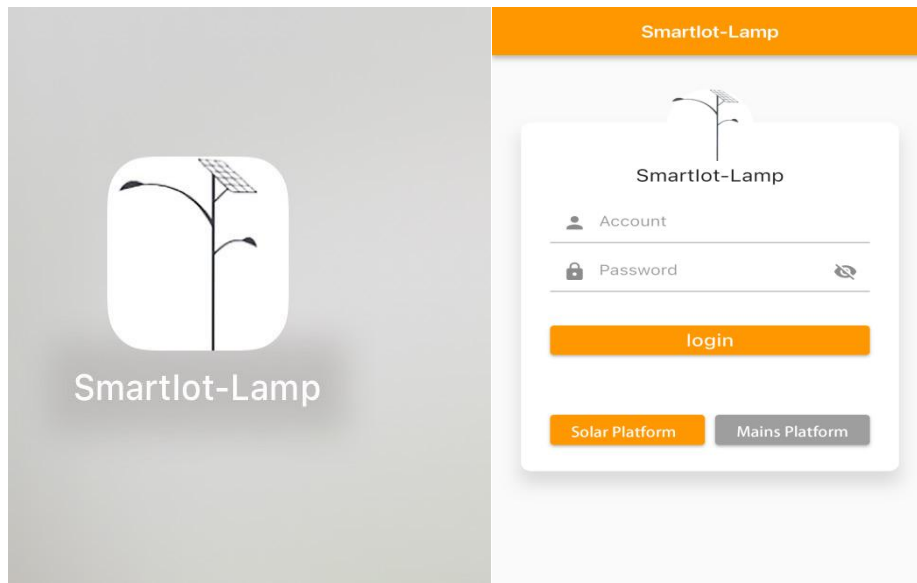
Please search for "Smart lot Lamp" in the App Store



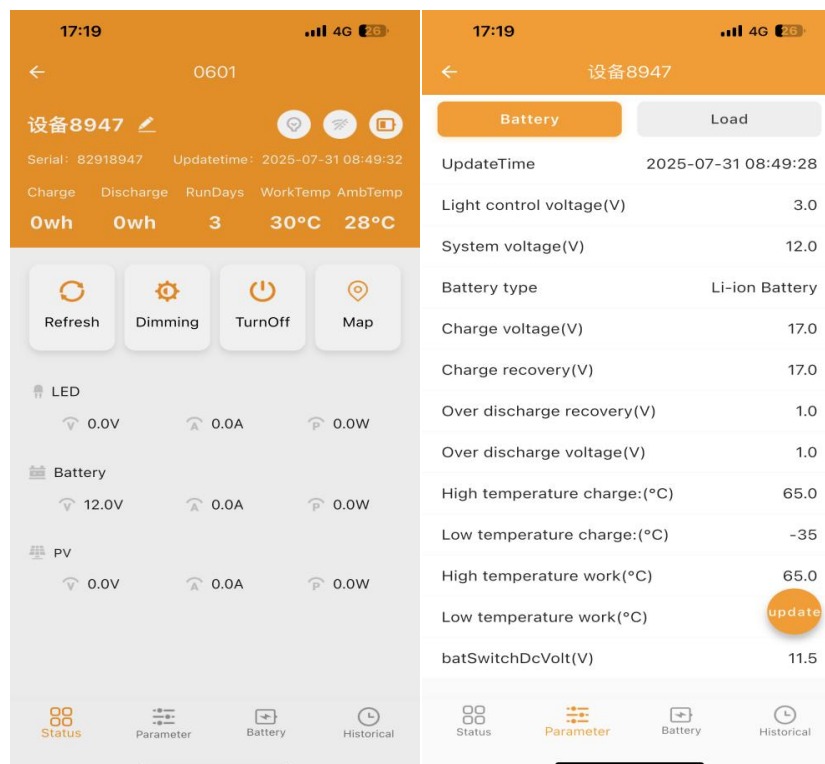
Method 2: Log in via the computer website

<https://solar.xmnengjia.com/#/login>

7. 7.Display on App

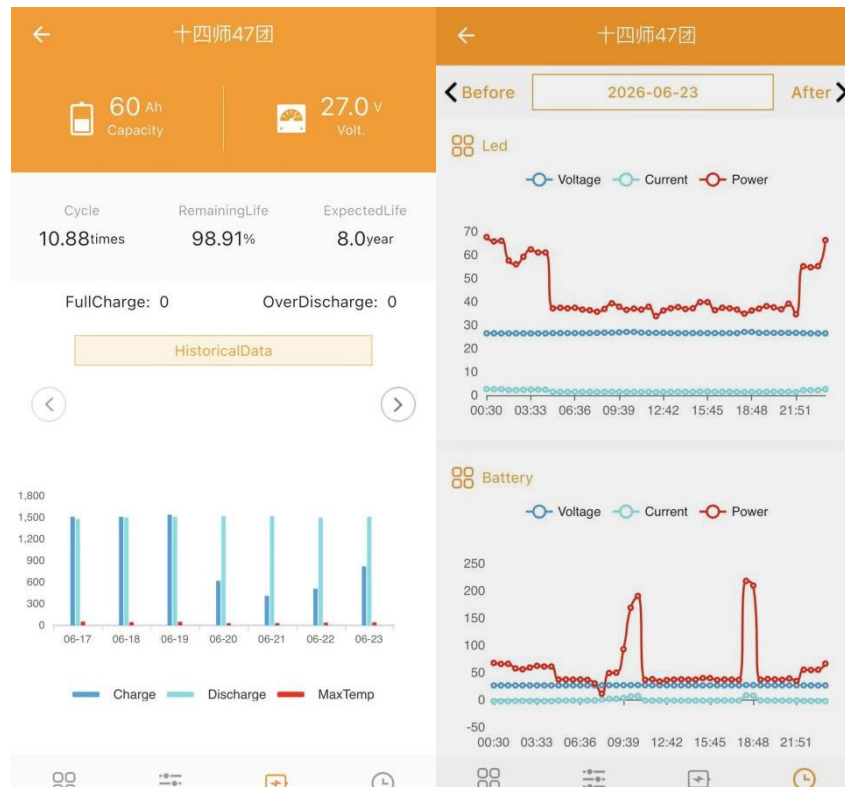


Enter account number and password, click login, enter the solar IOT system, you can see the account information and the account of the subordinate user.



By clicking on a device to select a device in the device list and enter the device information interface, you can update, dim, switch, and view the map of the device.

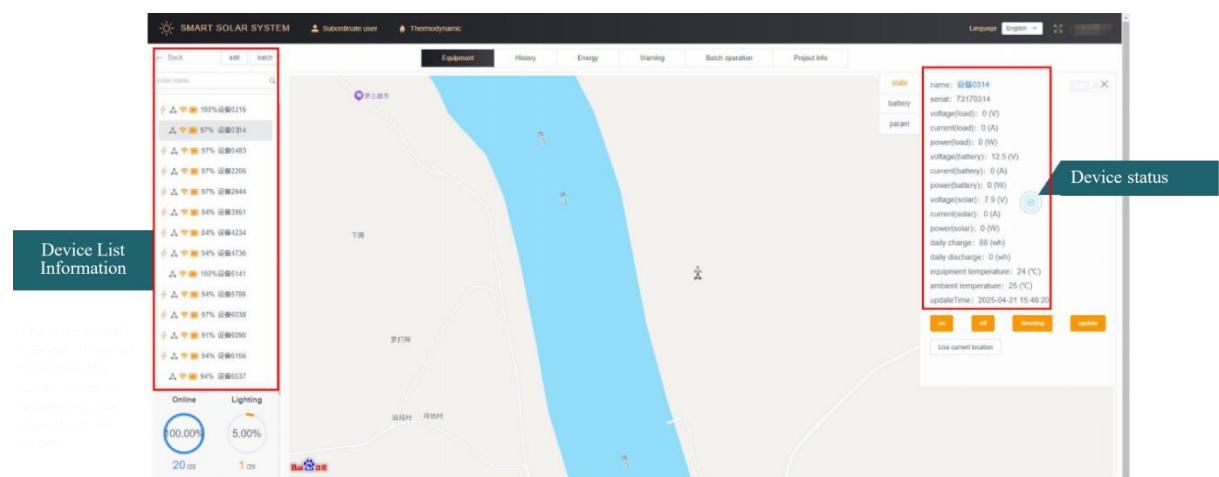
In the interface of parameters, you can send down parameters and update parameters.



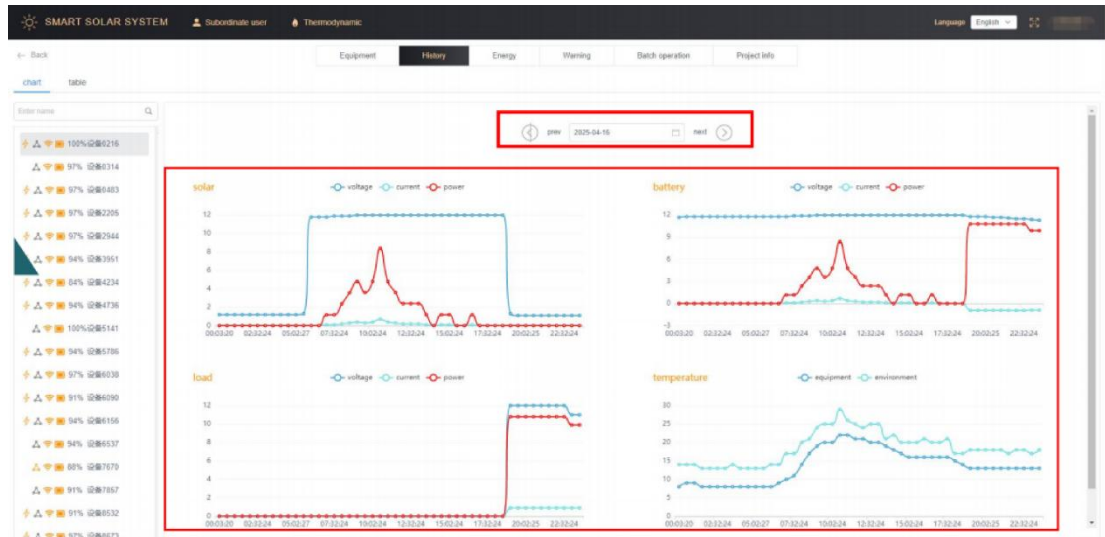
Click the battery to view the historical data of the battery, and view the corresponding historical working time, historical power generation/discharge(wh).

In the interface of historical data, you can select the device and date to view the data table graphs (voltage,current, power and temperature)of solar panels, batteries, load sand temperatures.

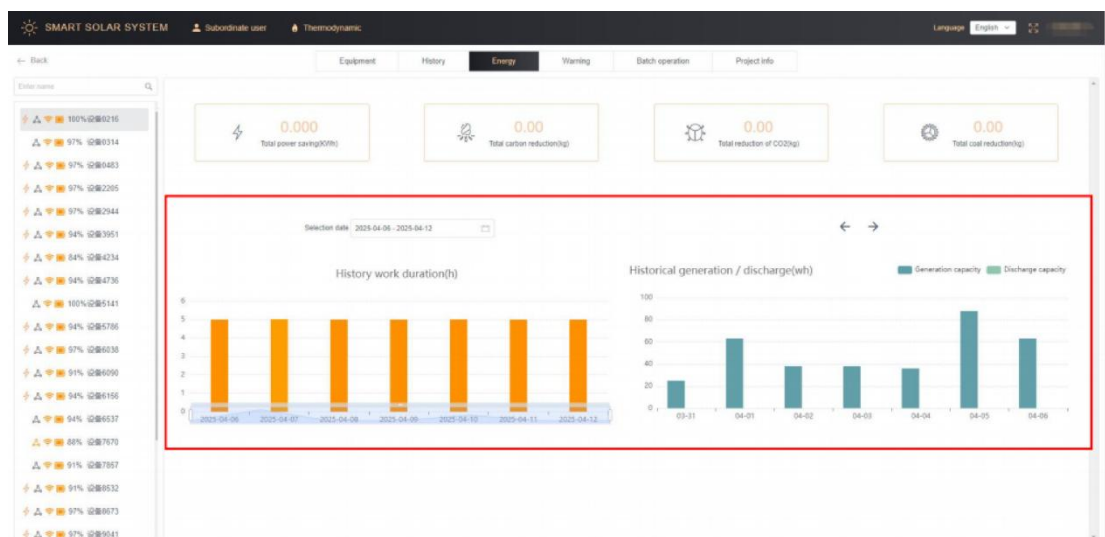
7. Display on PC side



- Check the signal strength of the IoT controller, the online status of monitoring, the capacity of the battery
- Check voltage, current, and power of loads, batteries, solar panels, equipment temperature, ambient temperature



- Historical status of the device: Select the time to view the voltage, current and power of the solar panels, batteries, loads, temperatures



- Charging and discharging conditions: View historical operating hours, historical power generation/discharge of the device

SMART SOLAR SYSTEM Subordinate user Thermodynamic Language: English

← Back Equipment History Energy **Warning** Batch operation Project info

Enter name

Equipment Name	Content	Status	Time	Handle
设备409	Low-voltage protection	Unreated	2025-03-15	Handle
设备4038	Low-voltage protection	Unreated	2025-03-15	Handle
设备463	Low-voltage protection	Unreated	2025-03-15	Handle
设备873	Low-voltage protection	Unreated	2025-03-15	Handle
设备4216	Low-voltage protection	Unreated	2025-03-15	Handle
设备1156	Low-voltage protection	Unreated	2025-03-15	Handle
设备2205	Low-voltage protection	Unreated	2025-03-15	Handle
设备1014	Low-voltage protection	Unreated	2025-03-15	Handle
设备4089	Low-voltage protection	Unreated	2025-03-14	Handle
设备6537	Low-voltage protection	Unreated	2025-03-14	Handle
设备4038	Low-voltage protection	Unreated	2025-03-14	Handle
设备4216	Low-voltage protection	Unreated	2025-03-14	Handle

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- Alarm List: The alarm list is reported to the platform, and the alarm list is sent to the operation and maintenance personnel through the form of SMS



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