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# Suiming Enterprise Group

## Intelligent Solution

**AUGUST. 31th. 2018**

**GUANGDONG SUIMING PHOTOELECTRIC CO., LTD.**

# Section10. Intelligent Solution

燧明企业的智能解决方案

我司自主研发的智能路灯管理系统结合了最新的无线通信、互联网和云计算等技术，让城市道路照明工程更加智能，环保和节能，并通过标准化的技术接口，大大降低了整个照明工程的复杂度和工程成本。公司陆续推出的智能照明控制产品，将广泛应用于市政道路、隧道、厂区、办公室、风景区、商业场所、居民小区、家居环境等场所。

公司技术创新以国内市场为立足点，深入结合国际市场变化和行业技术发展趋势，持续推出技术领先的产品，可为客户提供“设计+研发+制造+产品+销售+服务”的一体化服务，以先进和专业的技术服务满足用户的需求。

**Suiming Group**
**Intelligent Solution**

Suiming’s self-developed intelligent street lamp management system combines the latest wireless communications, Internet and cloud computing technologies to make city road lighting projects more intelligent, environmentally friendly and energy efficient. Through the standardized technology interface, greatly reducing the complexity of the entire lighting project. And engineering costs. The company's smart lighting control products will be widely used in municipal roads, tunnels, factories, office buildings, scenic spots, commercial areas, residential areas, home environment and other places.

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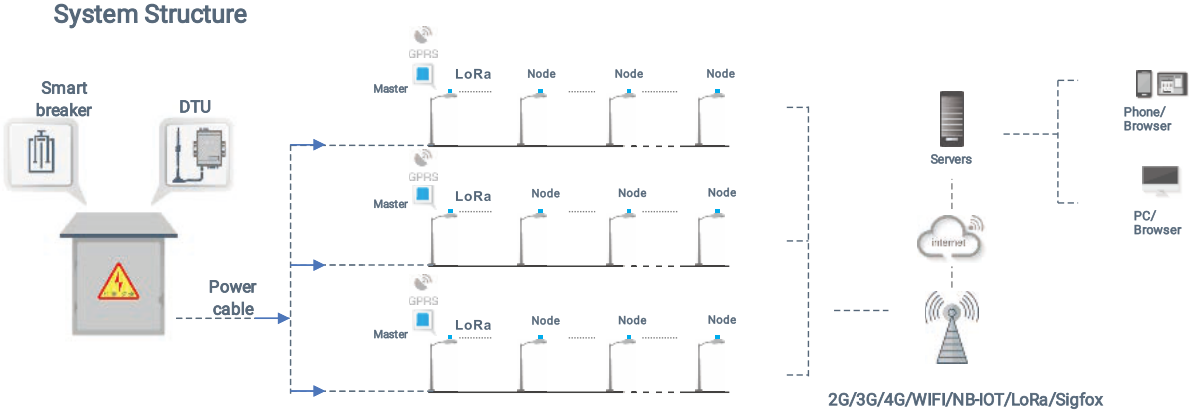
## Function

### Features

Wireless | Smart Control | Standard Interface | Energy Reduction | Low Cost | Open platform

### System Structure




## System

### Smart Control


1.Product Features

1.1 Long Distance Access：

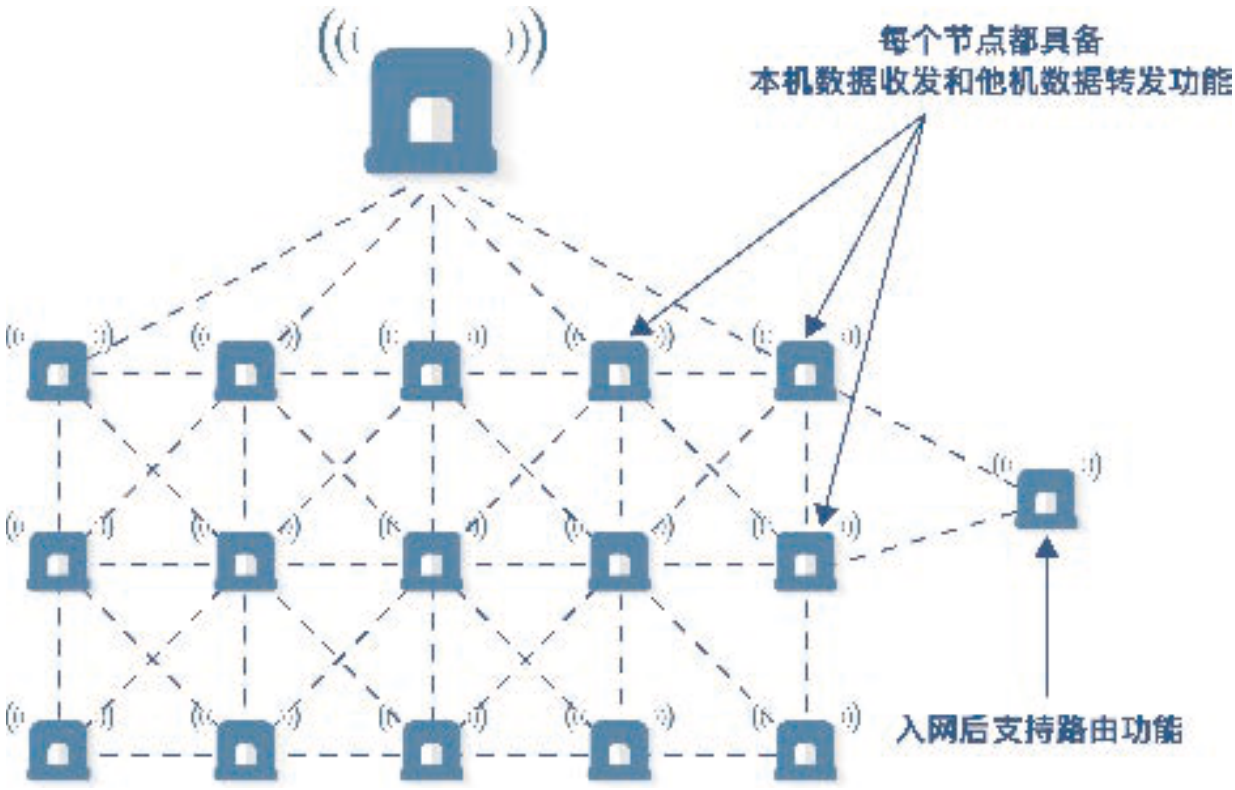
Single LoRa wireless base station can cover radius of few kilometers to more than ten kilometers, achieving long-distance control of lighting equipment.

1.2 Stable Transmission：

Frequency hopping transmission, anti-interference ability. Random key encryption transmission, high security level.

1.3 Visual Management：

Based on the standard LoRaWAN protocol, visual management of light information, one staff can manage thousands of lights in multiple regions, the number of lights in each region, lamp status, installation location, installation time and other information are clear and unambiguous.




## System

### Single Light Smart

**Constant illumination ：**

The illuminance of the street light is automatically adjusted according to the change of the ambient light intensity, and the brightness radiated to the ground is maintained at a constant illuminance value

**Midnight light ：**

In the local mode, the night span of the first 10 days is automatically collected as the time base for the midnight dimming; in the remote control mode, the midnight dimming time period and brightness ratio can be customized, which can effectively save energy

**Optical decay compensation ：**

Automatically compensates according to the decay rate of the conventional LED, and can adjust the compensation rate remotely for different lamps to ensure that the highest brightness is kept at a stable value, which can effectively guarantee the security illumination and extend the lamp life

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# System

## Energy saving and environmental protection

### Electricity fee data statistics

- Take the example of a city with 10,000 street lights. Turn on the lights 11 hours per day on average. The electricity fee is 0.86 RMB/kWh.

| Item | Traditional lamp power consumption | First energy saving | Secondary energy saving | Comprehensive energy saving |
|---|---|---|---|---|
| | 250W HPS | 100W Traditional LED | UMELINK Smart LED | |
| Annual power consumption (kWh) | 11041300 | 4015000 | 2796600 | 8244600 |
| Annual electricity fee（RMB） | 9495475.00 | 3452900.00 | 2405106.86 | / |
| Annual electricity savings （RMB） | / | 6042575.00 | 1047793.14 | 7090368.14 |
| Energy saving rate | / | 64% | 30% | 75% |

Note：The second energy-saving power 70W is dynamic power, that is, the light intensity is gradually selected according to the environmental changes at different time periods. 。

## Energy saving and environmental protection

### Annual maintenance fee saves 3.73 million RMB

| | Item | Life (h) | Annual frequency | Cost unit price | | | Total |
|---|---|---|---|---|---|---|---|
| | | | | Light | Labor | Mechanical loss | |
| Traditional control | Traditional light | 12000 | 0.33 | 100.00 | 500.00 | 1000.00 | 5353333.33 |
| | Inspection situation | | 52 | 0.00 | 333.33 | 1220.00 | 80773.33 |
| | | | | | | Annual maintenance fee | 5434106.67 |
| | Item | Life (h) | Annual frequency | Cost unit price | | | Total |
| | | | | Light | Labor | Mechanical loss | |
| 智慧监控 | LED Light | 40000 | 0.10 | 200.00 | 500.00 | 1000.00 | 1706375.00 |
| | Inspection situation | | 0 | 0.00 | 333.33 | 1220.00 | 0.0 |
| | | | | | | Annual maintenance fee | 1706375.00 |

### Annual savings of standard coal 2836T， Reduce CO2 emissions 7069T

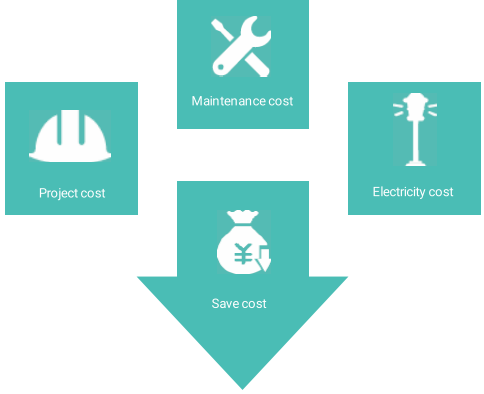
| Item | Saving standard coal | Reduce CO2 emissions |
|---|---|---|
| Annual energy saving and emission reduction (T) | 2836 | 7069 |

Note： BP statistics ： A、1kwh≈ Consumption of 0.34Kg coal B、1T coal combustion ≈ emission 2.62T CO2

## Save Costs

Longer life
Higher maintenance efficiency
Easy function upgrade

Low equipment cost
Few cables
Few ground construction
Especially suitable for non-inflection engineering of street lamps




Energy saving

# Cloud Function

## Cloud Functions


### Login Interface

Login screen

The background represents the current area's 3D map switchable in English and Chinese

Account

Password

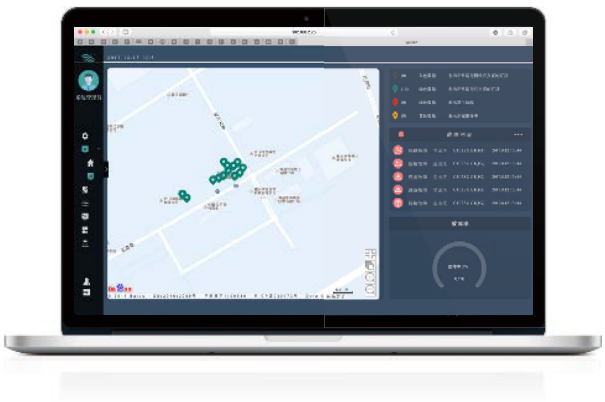
Remember

Recover password

Background positioning

Chinese and English switching

## Cloud Functions



### Data collection and operation monitoring

Realize the timing collection of the data of electrical parameters, state variables, and events of smart street lamps, and provide basic data support for equipment operation monitoring, fault diagnosis, and energy-saving analysis. The current design acquisition cycle is once every 10 minutes.

Real-time street light status


Failure rate

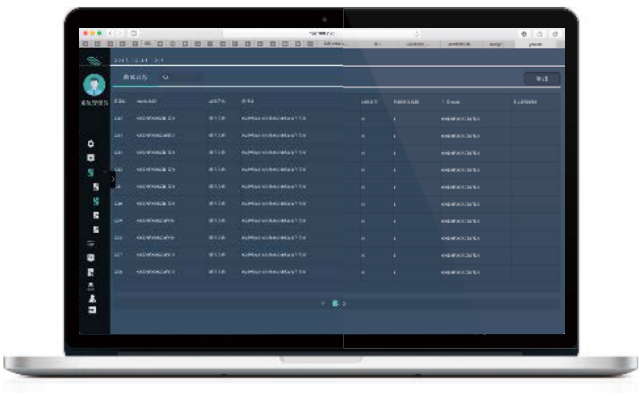
## Cloud Functions

### Log Statistics

Rich log statistics content, according to different categories of automatic classification statistics and click on different parameters to change the sorting mode, support fuzzy / precise search and a key export function.

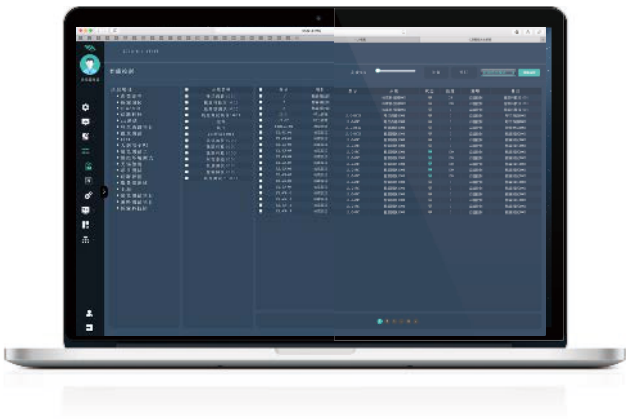

Log statistics type


Fault information



# Cloud Function

## Cloud Functions



### Remote Control

Realize the remote control of the light controller and the switching of the local light sensor operating mode. The lighting controller can automatically work according to the external lighting environment or perform temporary remote control such as opening, closing, dimming, etc., and can also choose custom strategies for more complex control. Synchronize all status information of the lighting controller in real time

Manually adjust switches and luminosity or selectable strategies