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SMART POLE

QP-SPY203-TA





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- SMART LIGHTING
- WEATHERSTATION
- EMERGENCY CALL
- BROADCASTING SPEAKER
- ADVERTISING SPOTLIGHT
- HD CAMERAS
- WIRELESS AP WIFI



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→ FUNCTIONS OF QUANTUM POWER SMART POLE SYSTEM



LED DISPLAY



WIRELESS(APWIFI)



HD CAMERAS



SMART LIGHTING



EMERGENCY CALL



**BROADCASTING
SPEAKER**



WEATHERSTATION



CHARGING STATION



**SMART GARBAGE
CLASSIFICATION**



**SMART MANHOLE
COVER**





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→ FUNCTIONS OF QUANTUM POWER SMART POLE SYSTEM

SMART POLE & SMART CITY

- 1. SMART CITY CONTROL SYSTEM CLOUD-BASED STRUCTURE THAT SUPPORTS HIGH CONCURRENT DATA ACCESS .**
- 2. FAST AND SEAMLESS ACCESS TO THIRD-PARTY SYSTEMS, SUCH AS SCCS SMART CITY SYSTEM ACCESS .**
- 3. DISTRIBUTED DEPLOYMENT SYSTEM WHICH CAN EXPAND RTU CAPACITY EASILY .**
- 4. A VARIETY OF SYSTEM SECURITY PROTECTION STRATEGIES TO ENSURE THE SOFTWARE SECURITY AND STABLE OPERATION .**
- 5. BOOT SELF-RUNNING SERVICE SUPPORT .**
- 6. SUPPORT A VARIETY OF DATABASE CLUSTERS AND LARGE DATABASES, AUTOMATIC DATA BACKUP .**
- 7. CLOUD SERVICE TECHNICAL SUPPORT AND MAINTENANCE .**

→ **SCCS STRUCTURE**

Smart lighting cloud control system (SCCS) is a web-based solution with advanced communication and easy integration with existing installations, can monitor individual luminaries up to millions of points of light. It facilitates reduction in power consumption CO₂ emission and light pollution and moreover an optimized maintenance planning.

• **THE SYSTEM FEATURES**

- Fault alarms
- Easy installation
- Lamp and line status
- Power quality metering
- Remote monitoring (turn on/off, dimming, data query, etc)

• **COST SAVINGS**

ENERGY AND COST SAVINGS RESULT FROM:

- Dimming at off-peak traffic hours
- Reduced maintenance costs
- Burn hour optimization
- Accurate switch ON/OFF

• **CO₂ REDUCTIONS**

REDUCING THE COSTS AND CO₂ EMISSIONS OF STREETLIGHTS IS A NECESSARY CHALLENGE FOR MOST UTILITIES AND DISTRIBUTION COMPANIES WHO FACE:

- Rapidly increased electricity costs
- CO₂ reduction requirements
- Growing electricity demands

• **FUNCTIONS**

- Cloud-based structure that supports high concurrent data access
- Distributed deployment system which can expand RTU capacity easily
- Fast and seamless access to third-party systems, such as smart city system access
- A variety of system security protection strategies to ensure the software security and stable operation
- Support a variety of large databases and database clusters, automatic data backup
- Boot self-running service support
- Cloud service technical support and maintenance

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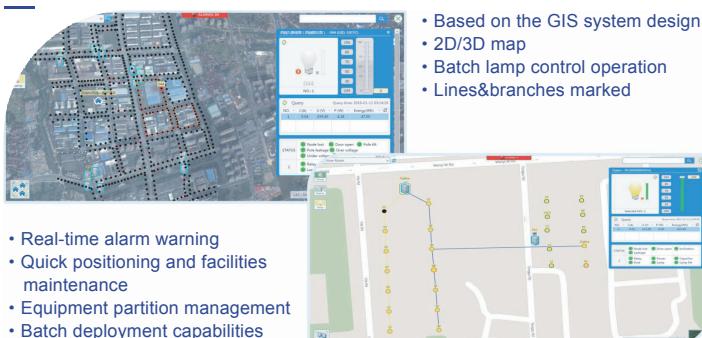
→ FUNCTIONS OF QUANTUM POWER SMART POLE SYSTEM

- ✓ Distributed deployment ,extendable RTU space
- ✓ Keep the entire street lighting system in view
- ✓ Easy to integrate with the third party system
- ✓ Support multiple communication protocols
- ✓ Convenient management entry
- ✓ Cloud based system
- ✓ Elegant design

 Login of Nassli lighting
smart pole operating system

Data of smart pole

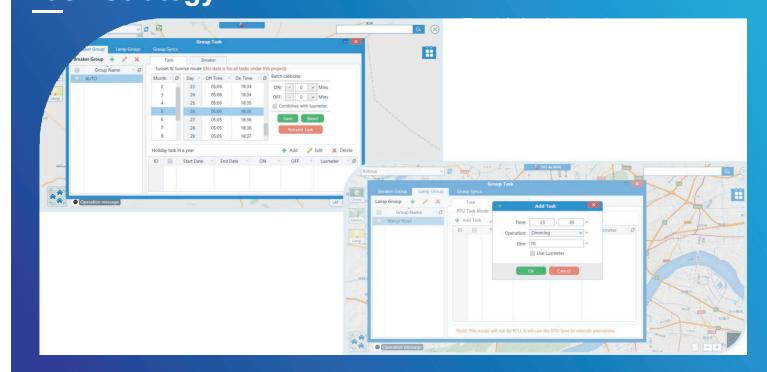
GEOGRAPHIC INFORMATION SYSTEM



- Based on the GIS system design
- 2D/3D map
- Batch lamp control operation
- Lines&branches marked

- Real-time alarm warning
- Quick positioning and facilities maintenance
- Equipment partition management
- Batch deployment capabilities

Task Strategy



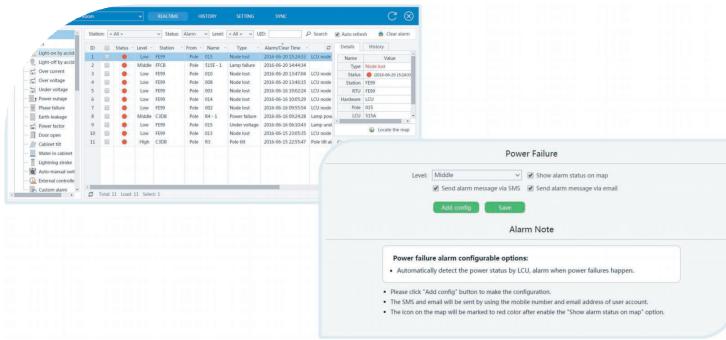
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ALARM SYSTEM



The screenshot shows the Quantum Power Alarm System interface. On the left, a list of alarms is displayed with columns for ID, Name, Level, Status, Alarm, From, To, Type, Alarm/Close Time, and Details. A specific alarm for 'Power Failure' is selected. On the right, a configuration dialog for 'Power Failure' is open, showing 'Power failure configurable options' with checkboxes for 'Automatically detect the power status by LCU, alarm when power failures happen.', 'Send alarm message via SMS', and 'Send alarm message via email'. Buttons for 'Add config', 'Save', and 'Cancel' are at the bottom.

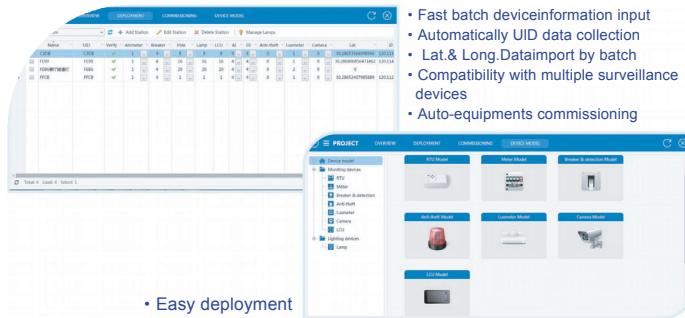
ENERGY REPORT



The screenshot shows the Quantum Power Energy Report interface. It includes a 'General Report' section with a table of data and a 'PROJECT' section with a table of projects. Below these are several charts: 'LIGHTING RATE' (a pie chart), 'ENERGY SAVING' (a pie chart), and a 'THE USE OF ELECTRICITY' section with a bar chart showing '153248.464kWh', '32457.032kWh', and '1207.843kWh' for today. The interface also features a 'REPORT' section with a 'Date/ Month/ Year' dropdown and a 'STATISTICS OF THIS MONTH' section with a circular chart.

- Real-time energy consumption monitoring
- Energy saving rate, light rate statistics
- Electricity cost reference

ASSETS MANAGEMENT

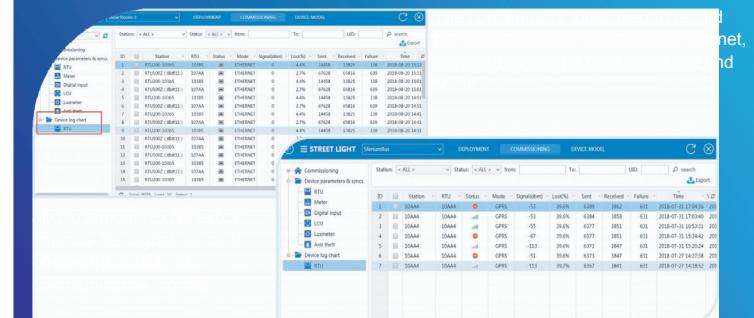


The screenshot shows the Quantum Power Assets Management interface. It includes a 'PROJECT' section with a tree view of project components like 'PROJECT', 'OVERVIEW', 'DEPLOYMENT', 'COMMISIONING', and 'DEVICE MODEL'. Below this are sections for 'DEPLOYMENT', 'COMMISIONING', and 'DEVICE MODEL'. A 'Device log chart' section is highlighted with a red box. A note at the bottom left says '• Easy deployment'.

- Fast batch device information input
- Automatically UID data collection
- Lat. & Long. Data import by batch
- Compatibility with multiple surveillance devices
- Auto-equipments commissioning

• Datarecords saved for more than 30 years

The Concentrator Log



The screenshot shows the Quantum Power Concentrator Log interface. It includes a 'STREET LIGHT' section with a table of data and a 'DEVICE LOG CHART' section. The 'DEVICE LOG CHART' section has a table with columns: ID, Name, RTU, Status, Model, Signaled, LastTS, Sent, Received, Failure, and Time.

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→ CORE EQUIPMENT

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WEATHERSTATION

Collect and send data to monitoring center by concentrator, such as weather, temperature, humidity, lighting, PM2.5, noise, rainfall, wind speed, etc.

SMART LIGHTING CONTROLLING SYSTEM

Remotely control (ON/OFF, dimming, data collecting, alarm etc.) in real time by computer, mobile phone, PC, PAD, support communication modes like NB-IoT, LoRa, Zigbee etc.

BORADCASTING SPEAKER

Upload a radio audio file or post emergency information from the control center, so that people nearby can understand what happened

HD CAMERAS

Monitor traffic, security lighting, public equipments through cameras & surveillance system on the pole.

ADVERTISING SPOTLIGHT

Create your unique advertisement, enhance the image and attract more people. The investment area projected is larger, more prominent, more environmentally friendly and more saving.

WIRELESS AP(WIFI)

Provide WiFi hotspot for different distances.

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WEATHERSTATION

Shell material: ASA engineering plastics

Response time: less than 30 seconds

Storage conditions: -40~60°

Standard wiring length: 3 meters

The farthest lead length: RS485 1000 meters

Protection level: IP65

Stability: less than 1% during the sensor life cycle

Working environment: temperature -30°70°, working humidity: 0-100%

Warm-up time: 30 seconds (SO2\NO2\CO\O3 3 hours)

Working current: DC12V≤40mA(HCD6815)-DC12V≤125mA(HCD6820)

Power consumption: DC12V≤0.5W(HCD6815); DC12V≤1.5W(HCD6820)

Output: RS485, MODBUS communication protocol

Life: Except for SO2\NO2\CO\O3\P M2.5\PM10

(1 year in normal environment, high pollution environment is not guaranteed),
the life span is not less than 3 years.

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→ TECHNICAL DATA

Measure item	Principle	Range	Resolution	Range
Atmospheric temperature	Energy gap method	-40-60 °C	0.01 °C	±0.3 °C (V=25 °C)
Atmospheric humidity	Capacitance method	0-100%RH	0.01%	±3%RH (10%-80%, No condensation)
Atmospheric pressure	Piezoresistive	500-1100hPa	±0.5hPa (0-30 °C) (950-1100hPa)	0.1hPa
Wind speed	Ultrasonic	0-60m/s	± (0.3+0.03V) M/S; V≤30M/S ± (0.3+0.05V) M/S; V≥30M/S	0.01m/s
Wind direction	Ultrasonic	0-359.9°	±3° (When wind speed = 10m/ S)	0.1°
PM2.5	Laser way	0-1000µg/m³	1µg/m³	±10% (<500µg)
PM10	Laser way	0-1000µg/m³	1µg/m³	±10% (<500µg)
Noise	Electret capacitance	30-130dB	0.1dB	±1.5dB

Power consumption	<1W@12V
Ingress Protection	IP65
Main materia	ASA+engineering plastics
Mounting frame	1.5m, 3m Pole, 1.8m tripod

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I. PRODUCT INTRODUCTION:

IP sound column system networking through Internet/WAN. Changing the traditional LAN networking mode, the audio import is convenient and fast, and the functions of high-definition video, two-way intercom, audio and video recording, electronic map display, and remote control of mobile phone APP for broadcasting are managed by different levels of authority. It is suitable for shopping malls, supermarkets, school classrooms, parks, outdoor homes, village broadcasts, companies and enterprises, unattended parking lots and other venues.

II. PRODUCT FEATURES:

- Support LAN, Internet and 4G hybrid networking (optional)
- Real-time broadcast, scheduled broadcast and file broadcast.
- Text-to-speech broadcasting and recording broadcasting
- Time-sharing broadcast and alarm broadcast
- Support video linkage (optional)
- IO external contact broadcasting is supported
- Support linkage output
- High quality loudspeaker
- Spray-painted aluminum alloy shell, car paint process, no rust and more waterproof.
- IP network architecture, spanning network segments and routes
- Monitoring function (camera can be installed)
- Broadcast call function
- APP remote control, broadcasting

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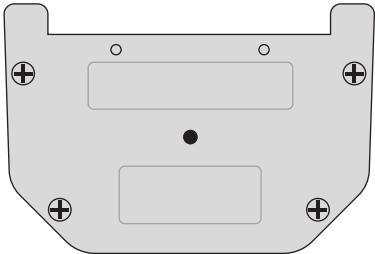
III.TECHNICAL PARAMETERS:

Processor	High performance embedded SOC processor
operating system	Embedded LINUX operating system
rated power	30W
video compression	H.264/30FPS
audio input	Built-in high sensitivity omnidirectional microphone
audio output	Built-in speaker+1×LINE OUT
Compression standard	G.711 G.713 GSM PCM
Compression rate	32KBPS/8KBPS/64KBPS
acoustic fidelity	Professional echo cancellation and noise suppression
ethernet	10M/100M adaptive
network protocol	TCP/IP
Wangkou	10/100M adaptive Ethernet port
Linkage interface	3. DNP
Power Supply	DC 12V 2A
power consumption	≤30W
Appearance size	380mm*110mm*100mm
Working temperature	30°C~70°C

IV.DRAINAGE DESIGN:

Drainage tray design in the bottom

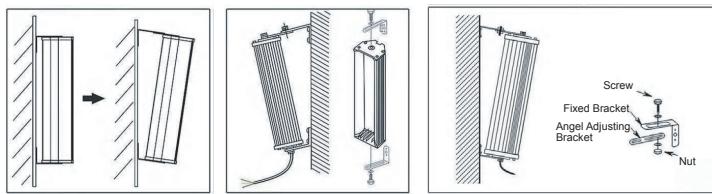
Avoid internal water accumulation,
increase the service lifespan effectively



Drain hole

V. INSTALLATION METHOD:

1. Install two φ8MM screws in an appropriate position, install the bracket and fix the sound column according to the figure below. Extend the upper bracket with the attached accessories if necessary, so as to adjust the depression Angle of the sound column;
2. Connect the audio cable;
3. Adjust the Angle of the sound column and check if the installation is firm and reliable.



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HD CAMERAS

The highest resolution is 1920×1080@25fps At this resolution, real-time images can be output.

Support backlight compensation, strong light suppression,

3D digital noise reduction, digital wide dynamic, and adapt to different monitoring environments.

Support white light infrared double complementary light, with infrared light up to 30m and white light up to 30m.

Support TE-TDD/LTE-FDD4G wireless network transmission support fluorite platform access.

Comply with IP66 dustproof and waterproof design, with high reliability.

Support up to 256 GB Mi cro SD/Micro SD HC/Micro SDXC card local storage.

Support two-way voice intercom (only supported for - T model).

1 built-in microphone, HD pickup: 1 built-in speaker.

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ADVERTISING SPOTLIGHT

Exquisite appearance design, the lamp body is made of aviation grade extruded aluminum profile, and the surface is anodized and sandblasted to ensure the stable and reliable product quality.

The lamp light source adopts imported OSRAM lamp beads, the quality of international brand products is more guaranteed, and the heat dissipation adopts honeycomb air cooling mode, which is more safe and reliable.

The rotating mechanism adopts Taiwan high-performance DC stepping motor and high-precision gear transmission mechanism, which makes the picture conversion more stable and smooth. It is easy to install, and the pattern can be rotated.



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→ TECHNICAL PARAMETERS:

Model	35w,45w,55w,65w,85w, 100w
luminous Flux`	3500lm/4500lm/5500lm/8500lm/10000lm
CCT	8000k-8500k
CRI	85Ra
Forward Voltage	24-36V
audio output	Built-in speaker+1×LINE OUT
Compression standard	G.711 G.713 GSM PCM
Operating Temp	-40 ~ 60°C
Lighting Resource	High power LED
Adjustable Angle	0-180°
Light source	>30,000hurs
Projection Distance	1-8 meters
Lens size	37mm
Power Supply	AC to Dc Constant current
Image Lens	High definition optical lens 4
Cooling method	Aviation cold aluminum
Weight	1.6-2.6kg

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PRODUCT DESCRIPTION:

The HX-CPE830 is a 300Mbps outdoor remote wireless AP/CPE that uses a high-performance operational-level Qualcomm chip Atheros9531 and a built-in 14dBi high-gain omnidirectional antenna to receive and transmit distances up to 2,000 meters.

This product supports bridging and required WAN functions, enabling long-distance wireless access, in addition, internet work access mode is PPPOE, dialing, static IR and DCHP functions, suitable for net working and wireless coverage.

HX-CPE830 uses dust-proof and waterproof shell, which can work in various outdoor environments, and also supports POE power supply and remote reset functions for convenient management.

HX-CPE830 uses dust-proof and waterproof shell, which can work in various outdoor environments, and also supports POE power supply and remote reset functions for convenient management.



Support 64 users access, 40 + users at the same time, meet the small and medium-sized squares / parks / scenic spots / villages, etc WiFi coverage

Designed for outdoor wireless transmission with a transmission distance > 2km

It can be managed remotely through the cloud platform to facilitate engineering maintenance and management, and reduce the cost of labor time and material resources



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Hardware process	
Model	HX-CPE830
The main chip	Qualcomm QCA9531
Memory	64MB DDR2 RAM
Flash	16MB
Device interface	Double 10 / 100 Mbps adaptive wired network interfaces
	One reset button to restore the default Settings
	One DC power interface for 12V DC local power supply
Antenna	Antenna gain: 2 * 14 dbi omnidirectional antenna
Power adapter	24V POE DV 12V
Power dissipation	<10W
LED lamp	POWER light*1; WiFi light*1; WAN portal*1; LAN portal*1 Signal strength lights*1: DS1, DS2, DS3, DS4
size	257 * 87 * 38mm (long * wide * high)

Radio frequency characteristics			
Transmission rate	300Mbps		
Modulation mode	OFDM = BPSK,QPSK, 16-QAM, 64-QAM DSSS = DBPSK, DQPSK, CCK		
Characteristics	802.11b/g/n 2.412GHz-2.484GHz Korea, Japan, ETSL FCC communication channel is available		
Receiving sensitivity	802.11n(2.4GHz)	802.11g	802.11b
	-90dBm @ MCS0	- 90dBm @ 6Mbps	- 95dBm @ 1Mbps
	-72dBm @ MCS7	- 72dBm @ 54Mbps	- 90dBm @ 11Mbps
	-90dBm @ MCS8		
	-68dBm @ MCS15		
Launch power	802.11n(2.4GHz)(±1.5dBm)	802.11g(±1.5dBm)	802.11b(±1.5dBm)
	28dBm@MCS0~2/MCS8~10	28dBm @ 6~24Mbps	28dBm@1~11Mbps
	28dBm@MCS3/MCS11	27dBm @ 36Mbps	
	27dBm@MCS4/MCS12	27dBm @ 48Mbps	
	27dBm@MCS5/MCS13	26dBm @ 54Mbps	
	26dBm@MCS6/MCS14		
	26dBm@MCS7/MCS15		



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Software features	
Work pattern	Client mode / AP mode
Modulation mode	IEEE 802.3(Ethernet)
	IEEE 8023u(Fast Ethernet)
	IEEE 802.11b/g/n(2.4G WLAN)
Wireless setting	Intelligent channel
	Distance control of 802.1 x ACK time output
	VAP (virtual AP), with up to 4 configurations
	BSSID
Wireless safety	WEP security mechanism supports 64/128/152 -bit WEP security password
	WPA / WPA 2 security mechanism (WPA-PSK using TKIP or AES)
	WPA / WPA 2 security mechanism (WPA-EAP using TKIP)
	Hide the SSID, the security mechanism
System Settings	WEB Configuration (HTTP / Remote Landing)
Software upgrading	The WEB Web page or the TFTP to upgrade the software
User management	Users and passwords can be configured
System monitoring	Device and network status statistics
Daily record	Provide local logs, host logs, and file transfer logs
Restore Settings	The production default settings can be restored
Backup function	Backup the system configuration to restore various user configurations when needed
Service environment	Work temperature: -40 °C ~+55 °C Storage temperature: -40 °C ~+70 °C Work humidity: 5%~ 95%RH does not condense Storage humidity: 5%~ 95%RH does not condense

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→ EMERGENCY CALL SYSTEM



While clicking the Emergency Call, the RGB Status light will be started to play a effect of deterrent and guidance to the location of law enforcement personnel. www.nassli-led.com.sa

I. PRODUCT FEATURES:

- 1.High-definition camera, active real-time monitoring;
- 2.Full duplex voice intercom, no echo howling;
- 3.Built-in high sensitivity microphone, 5 meters long-distance intercom;
- 4.Adopting dynamic noise reduction algorithm, it can pick up sound clearly in high noise environment;
- 5.Advanced digital echo cancellation technology can completely eliminate the echo and prevent howling;
- 6.The design of the surrounding waterproof groove is integrated, and it is weatherproof outdoors;
- 7.Design of lightning protection and automatic power supply recovery device;
- 8.Waterproof metal button, the button is always on, it can be clearly seen outdoors and at night, and it has 100,000 service lives, which can resist impact and shock.



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II. PRODUCT PARAMETERS:

Dimensions : 207*126*39.5 mm

Power supply : 12v 2A

Power consumption : ≤ 8W

Network interface : standard RJ45

Protocol supported : TCP/IP DHCP

Network communication rate : 10/100Mbps

Interface : power input, 1 audio output, 3 short-circuit inputs, 2 output interfaces, 1 RJ45.

Audio format : MP3/WAV

Audio sampling rate : 8k ~ 48 khz

Audio code stream : 22.050KHz~44.1KHz

16bit. Code rate : 16kbps-4000kbps

Audio coding : G.711, G.713 PCM

Signal to noise ratio : >70dB

Built-in speaker : 4 Euro 3W

Built-in MIC : -50dB

Keys : high-strength metal anti-damage key

Camera : 720P COMS digital camera

Video resolution : 720P

Lighting compensation : full-automatic night lamp compensation

Button : high-strength metal anti-damage button

Video saving format : MP4

Working temperature : -30°C~+70°C

Protection grade : IP65

III. SUPPORTED FUNCTIONS:

1. All-digital audio-video intercom, using TCP/IP network transmission technology, compresses audio-video signals and transmits them in LAN/WAN in the form of data packets to realize pure digital bidirectional audio transmission or single bidirectional audio-video transmission.
2. The integrated system scheme configuration consists of system server software, multi-screen soft ware, telephone agent software and integrated IP network intercom terminal.
3. Multi-level management structure: The system has a multi-level management structure, which can unify the networking of multiple duty rooms at different levels; The system can be accessed by the other party with Ethernet, which supports cross-network segment and cross-routing, and can be connected to the Internet.
4. Support high-definition image resolution up to 1280*720, and adapt to the network bit stream technology.
5. Support 1500 terminals;
6. Digital audio and video recording: The server software records and videos the call process, and can record the call and call time.
7. Unlocking function: The system supports two electric locks for each terminal.
8. Broadcasting function: The seating software can broadcast and shout to its intercom terminals in the whole area, and the monitoring center can remotely patrol all monitoring outlets in the city. When suspicious signs are found, it can remotely shout to criminals, and at the same time, it can remotely turn on auxiliary equipment such as police whistle to deter criminals;
9. Monitoring: It can monitor the field situation around the intercom terminal; When monitoring, the intercom terminal can be unaware.
10. Remote automatic upgrade: the firmware of the equipment can be automatically upgraded through the system software.
11. Linkage control: TCP instruction, UDP instruction, RS485 interface and switch interface are provided.
12. Support alarm map display; When calling any alarm help point, the local voice prompts and flashes on the map.
13. Support graded and divided authority management;

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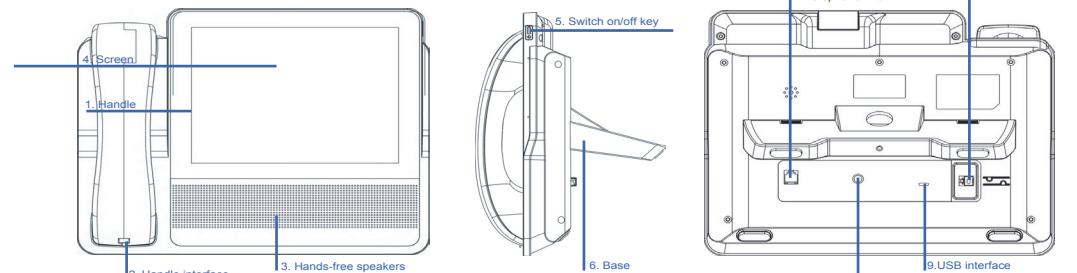
→ EMERGENCY CALL SYSTEM-VIDEO INTERCOM PAGING CONSOLE

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I. PRODUCT OVERVIEW

- Model name: DH-Z19G1/DH-P19G1
- Scope of application: This product is suitable for management center, residential property parking lot duty room, etc.
- Type and specification: eight-inch horizontal screen display.
- Use environment: put it indoors at normal temperature and humidity.
- Unpacking configuration: 1 power adapter, 1 base, 1 handle, 1 handle wire, manual and warranty card.

II. APPEARANCE AND INTERFACE

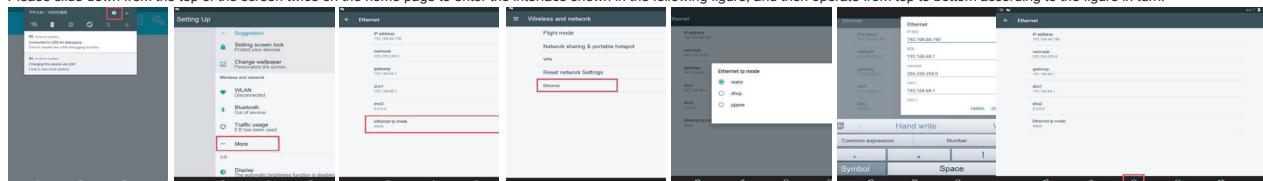


1 . Handle	Off-hook and call
2 . Handle interface	Call handle interface, please use the matching handle to ensure the call quality.
3 . Hands-free speakers	Used in hands-free telephone conversation.
4 . Screen	Dial telephone and other operating areas
5 . Switch on/off key	Intelligent cloud seat management machine
6 . Base	Support the phone to place the desktop.
7 . Telephone line interface	RJ111 telephone line interfaces are used to connect PSTN telephone lines.
8 . Power cord interface	12V power input. As the phone requires high power supply, please use the original power supply for charging, otherwise it will affect the normal telephone voice effect.
9 . USB interface	Can be connected to computers and other devices.
10 . Handle interface	Call handle interface, please use the matching handle to ensure the call quality.

Technical Specifications And Parameters	
Parameter	Characteristic Description
Monitor	8 inch 1024*768
Touch screen	G+G capacitive screen 5-point touch
WIFI	2.4G WIFI network
Usb interface	Micro usb OTG 2.0
Handle interface	RJ9 standard

III. EQUIPMENT NETWORK CONFIGURATION

Please slide down from the top of the screen twice on the home page to enter the interface shown in the following figure, and then operate from top to bottom according to the figure in turn.



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→ SMART GATEWAY

I. PRODUCT BRIEF

BS-IoT-8QM-LC is the third-generation smart street light gateway independently developed and produced by Nassli. It is a new type of outdoor remote center specially developed and manufactured to meet the needs of smart end users for remote intelligent control of equipment. The control equipment is upgraded and improved on the basis of the previous generation smart gateway. The gateway has a built-in single-lamp controller with 4Gcat.1 communication, stable signal, 99.9% online rate, high integration, reserved multi-function interface, can be connected to More sensors and devices can use 2G/3G/4G network, Ethernet network and WIFI network to provide users with long-distance big data transmission function, connect to the cloud, control power supply output, strong edge computing capability, reserved interface, for two Secondary development, more powerful functions provide stable support. This product integrates a 2.4GHz IEEE802.11b/g/nWI-FI transceiver and is equipped with MediaTek MT7621AT's dual-core 880MHz CPU, 4GBEMMC flash memory, 4 high-speed Ethernet ports EthernetPHY), HNAT memory accelerator, and multiple general purpose I/O With Linux (Ubuntu14.04) as the software support platform, it also provides 1*RS485 interface, 8, Ethernet LANs, 1 Ethernet WAN and 2 WIFI interfaces, 2 Gigabit fiber ports, 1 AC220V output, 2 DC12V/3A output, 1 channel DIM output, can be connected to a variety of Ethernet devices, serial devices, WIFI devices, etc. at the same time, to achieve transparent data transmission and routing functions. The design of BS-IoT-8QM-LC fully considers versatility and stability. Based on the technical architecture design of the Internet of Things, it can meet the data collection and intelligent control of smart terminal equipment, and at the same time has a certain degree of scalability, which is convenient for existing hardware. Implement new device access

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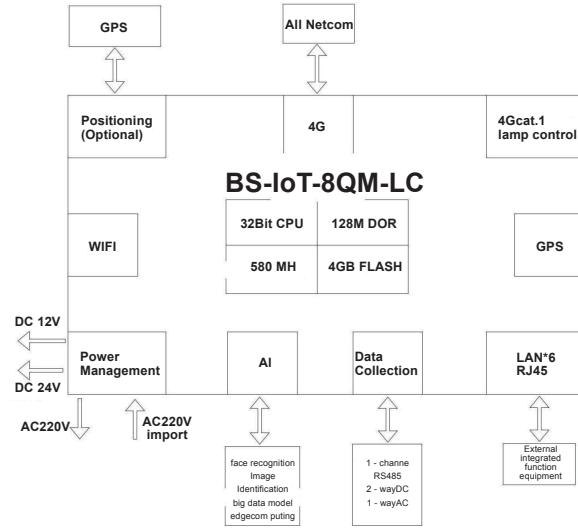
→ SMART GATEWAY

II. PRODUCT FUNCTION

Built-in 4Gcat.1 single lamp controller, the equipment online rate is as high as 99.99%, with great stability and reliability

- Support WIFI, 4G, Gigabit Ethernet port, Gigabit fiber port to connect to Ethernet in various ways.
- Equipped with 2 optical fiber interfaces, with two-layer networking capability, suitable for ring and interactive chain networking scenarios. In the case of insufficient network ports, the number of network ports can be increased by adding switching communication components.
- Support three Netcoms, compatible with 2G/3G/4G networks of China Telecom, China Mobile and China Unicom.
- Support Microsim card, adopt anti-drop mechanism.
- Wired and wireless backup each other to ensure normal and stable data transmission, intelligently switch network backup, store data offline when the network is disconnected, and resume data transmission after the network is restored.
- Powerful WIFI function, support AP, STA, Repeater mode to switch freely.
- Rich protocols, easy to connect, transparent data transmission, MODBUS RTU to TCP/IP, MQTT. Support active polling of MODBUS devices in different address segments, making the operation easier.
- Using industrial-grade high-speed 4G wireless communication module, equipped with 32-bit high-performance processor, the information collected by the front end is more timely and accurate.
- Industrial design, aluminum alloy shell, in the face of various outdoor environments, industrial environments and strong interference, it can work stably 7X24 hours without interruption.

III. PRODUCT ARCHITECTURE



Product parameters		
Specification	Parameters	Remark
Mode	BS-IoT-8QM-LC	Gateway (Smart Light Pole)
Single light controller	4Gcat.1	Built-in single light controller
Sensor	Temperature sensor, humidity sensor	Built-in
Network format	1 WAN port 4G 2-way fiber port	10/100/1000 adaptive 4G/3G/2G full Netcom Support ring network
Power input	Scope	110~265V/30A
Waterproof level	IP65	IP65
Size	LxWxH(mm)	375mm*113mm*81mm
Temperature	Storage temperature -40~85 Working temperature -25~70	Storage temperature -40~85 Working temperature -25~70
4G	Working frequency	FDD LTE: B1/B3 TDD LTE: B38/B39/B40/B41 TDSCDMA: B34/B39 CDMA2000 1xEVDO: B20 GSM: 900/1800MHz
	Transmission rate	LTE-FDD: Max 100Mbps(DL) Max 50Mbps(UL) LTE-TDD: Max 61Mbps(DL) Max 18Mbps(UL) SCDMA-TD: Max 4.2Mbps(DL) Max 2.2Mbps(UL) CDMA: Max 5.4Mbps(DL) Max 14.7Mbps(UL) GPRS: Max 85.6Kbps(DL) Max 85.6Kbps(UL)
	Transmit power	FDD LTE: 23dbm±2db TDD LTE: 23dbm±2db TDSCDMA: 24dbm +1/-3db GSM 900MHz: 33dbm±2dbm GSM 1800MHz: 30dbm±2dbm
	Receive sensitivity	LTE B1: -97dbm(20M) FDD B3: -96dbm(20M) TDD B38: -94dbm(20M) TDD B39: -94dbm(20M) TDD B40: -94dbm(20M) TDD B41: -93.5dbm(20M) TDSCDMA B34: -110dbm TDSCDMA B39: -110dbm CDMABCO: -108dbm GSM900: -110dbm GSM1800: -109dbm
WIFI	Frequency band	Support IEEE802.11b/g/n
	Bandwidth	Up to 300Mbps
	Power	20dbm
System	CPU	Marvell88F3720 ARMA53 Dual Core 1Ghz
	RAM	1GB
	FLASH	4GB EMMC