Maxlong

Products and Solutions

Briefing Speaker：JerryPeng ｜Briefing Date：2022-09-12

Products and Solutions

Hardware

- 4G Controller
- LoRa Controller/Converter/Module /Antenna
- Pi CM4 Multi-functions Controller
- 5G Controller
- Analog Input Modbus Gateway
- Modbus RTU with 4DI / 3DO
- LoRa Digital IO Controller
- SIP Phone
- LoRa Module
- 4G/5G LTE Module
- Sensors
- Indoor/ Outdoor Antenna & RF Cable Assemblies

Software

- Controller customized software development.
- Field devices to database and web presentation project development (using LTE to build long-distance VPN network)
- 4G VPN Gateway
- Modbus Gateway
- DO Alert Line Notification
- Intelligent Streetlight Solution Management Platform.

Field applications

1. Modbus Data collection
2. Temperature and humidity monitoring of plant equipment
3. Power monitoring (equipment energy consumption, carbon reduction....)
4. Industrial Air Pollution Monitoring
5. Agricultural Applications (Water & Soil Sensing....)
6. Use LTE to build PLC long-distance VPN network
7. PLC Wireless Monitoring
7. Sola Energy Wireless Monitoring
8. IP cam Wireless Video Transmission

System Architecture

Smart City

IoT Solutions

Industry Automation

Applications

Street Light Server

VPN Server

MaxLong API Server

Cloud Services

4G

4G

4G

VPN/4G Gateway

LoRa-to-4G / RTU-to-4G Gateway

LoRa

RS-485

RS-232/RS-485

RJ-45

4G Lighting

IP CAM

LoRa Smart Plug

Power Meter + LoRa Converter

PLC

Power Meter

Thermometer/CO2

Distributed building inverters data collection

- Solving issues：Distributed building inverters data collection
- Solutions：Using LoRa Wireless transmission
- Method：

1. Distributed building inverters via Grouped LoRa Network transmit inverters data to LoRa+4G controller and sent back to cloud database.
2. Solved solar energy inverter data between distributed building.
3. **Save time and cost of construction**
4. **Wiring, and install quickly**

LoRa Over RS485

Invertor of various brands

Using 4G LTE established Remote PLC network

- Solving issues： Solved the system problems of PLC wiring and communication
- Solutions：Using 4G LTE VPN tunnel of controller for data exchange via cloud
- Methods：

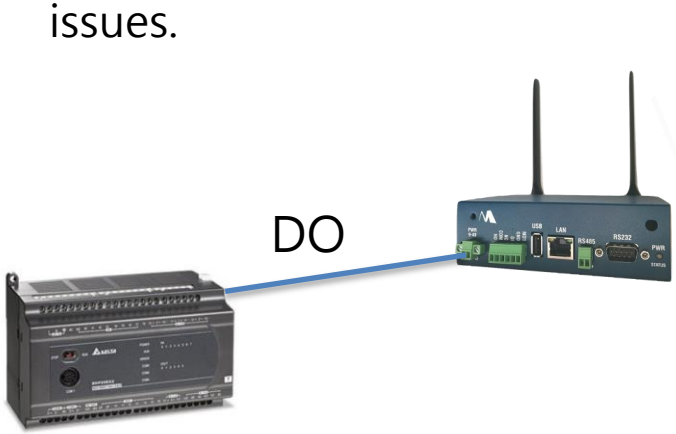
1. The controller is set as VPN CLIENT to establish a connection to Maxlong cloud server
2. Cloud Server assists in the exchange of packets, direct connection and establishment of VPN Tunnel structure to form a local area network between PLC and PLC
3. Support Layer 2
4. Solved long-distance construction and wiring issues

Line Notification System

Features

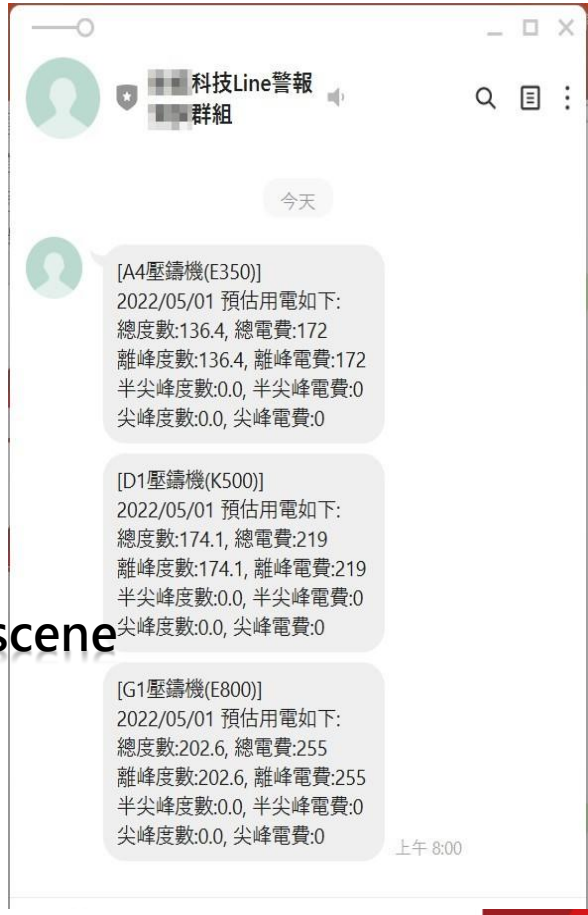
- **Solving issues**：Plant equipment DO output, such as: power contract Overload, abnormal water level,equipment failure alarm, equipment room alarm.
- **Solutions**：Using Line Box Controller.
- **Method:**

1.The controller is connected to the Internet via 4G or wired network for LINE APP alarming.
2. Only power and DO points are required on site.
3. Alerts immediately when an alarm condition is reached.
4.If there is no abnormality, it will be reported regularly every day,
5. Solve the problem of not being able to control the on-site status and abnormal automatic alarm issues.



Line box Energy Consumption Notification Solution Architecture

Electricity meter+LoRa over RS485



Line box Energy Consumption Notification Solution real scene

https://youtu.be/g1UScoCrwKs 現場連結影片

Factory Environmental Monitoring data Collection

- **Solving issues：** Solve the collection requirements of environmental information scattered in the factory area, inverter cross-building data, factory machine energy consumption and utilization rate data.
- **Solutions：** Wireless transmission via LoRa
- **Methods：**

1. Various sensors、 inverters and electricity meters scattered in the factory, the response data is transmitted to the server through LoRa
2. Solve the problems that the sensor data collection site cannot be wired in the factory and flexible construction requirements.
3. **Save time and cost of construction and wiring, and install quickly**

LoRa+4G Controller

RS485 data transmit via LoRa

Various brands of Sensors

Collection of power consumption information and energy monitoring of machines in the factory.

- **Solving issues** ：Collection of power consumption information and energy monitoring of machines in the factory area
- Solutions：Electricity meter data transmit via LoRa.
- Methods：

1. Electricity meters data on machines transmit to the controller through LoRa and pass to the Database.
2. Solve the difficulty of on-site communication and high wiring costs.

Global Warming

Energy saving and carbon reduction

LoRa+4G controller

RS485 data transmit via LoRa

Various Brands of electricity meter

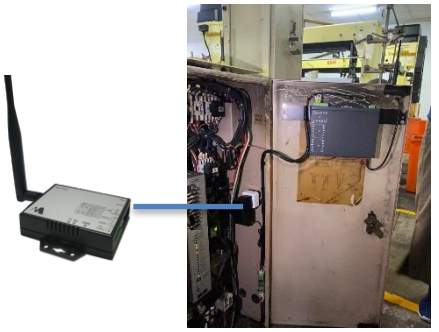
Textile machine operation data collection

- **Solving issues** ： The system integrator cannot wire to the textile machine for data collection
- Solutions：Operation data transmits via LoRa.
- Methods：

1. The sensing information in the textile machines is transmitted to the controller through LoRa and passed to the database.
2. Solve the problems that the textile factory cannot be wired in the factory.

LoRa+4G Controller

RS485 data transmit via LoRa

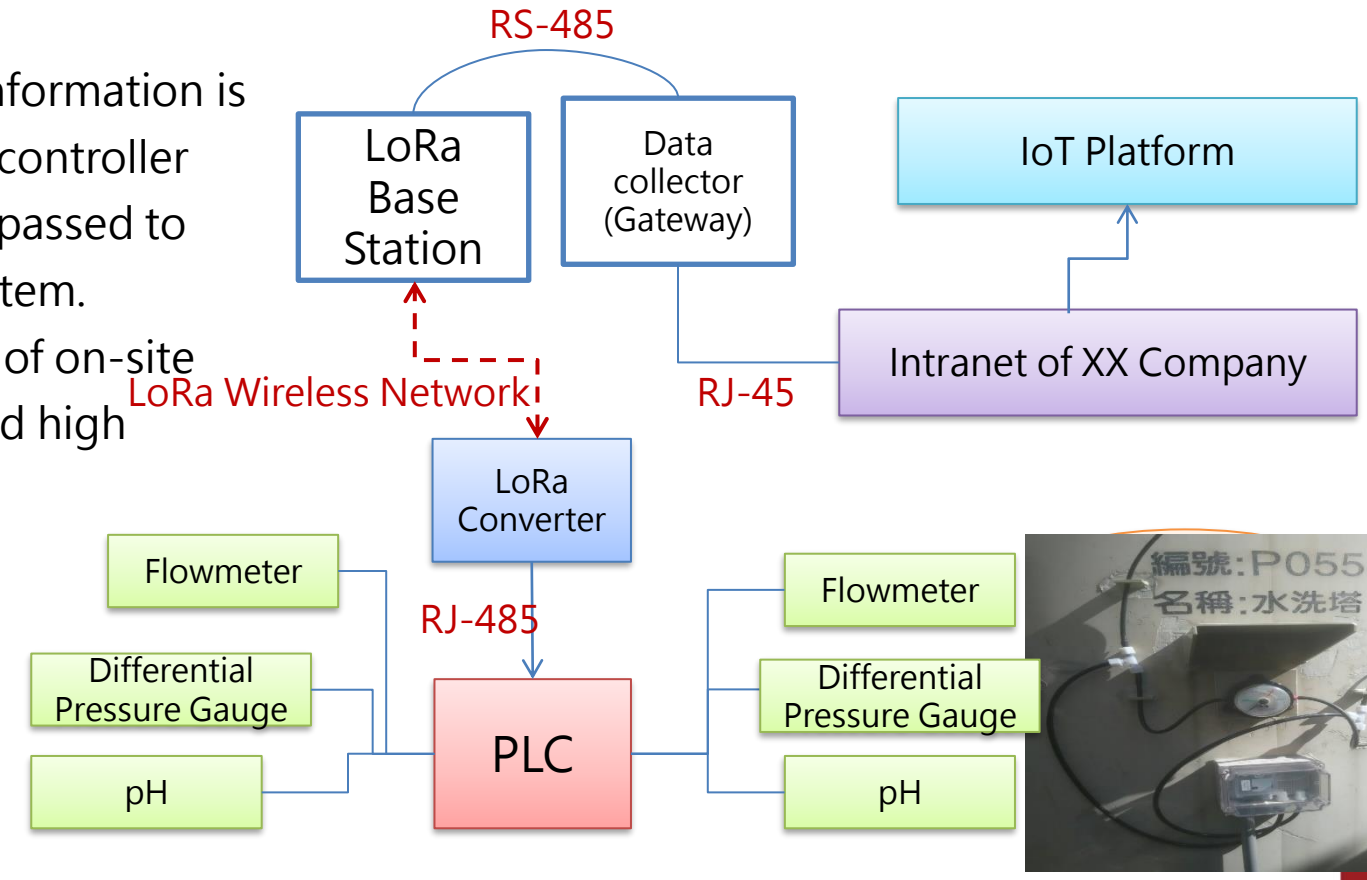


Textile machine

Air Pollution Monitoring Integration System Across Multiple Factories

- **Solving issues** ： Cross-factory and cross-building air pollution system data collection and monitoring
- Solutions：PLC data transmits via LoRa
- Methods：

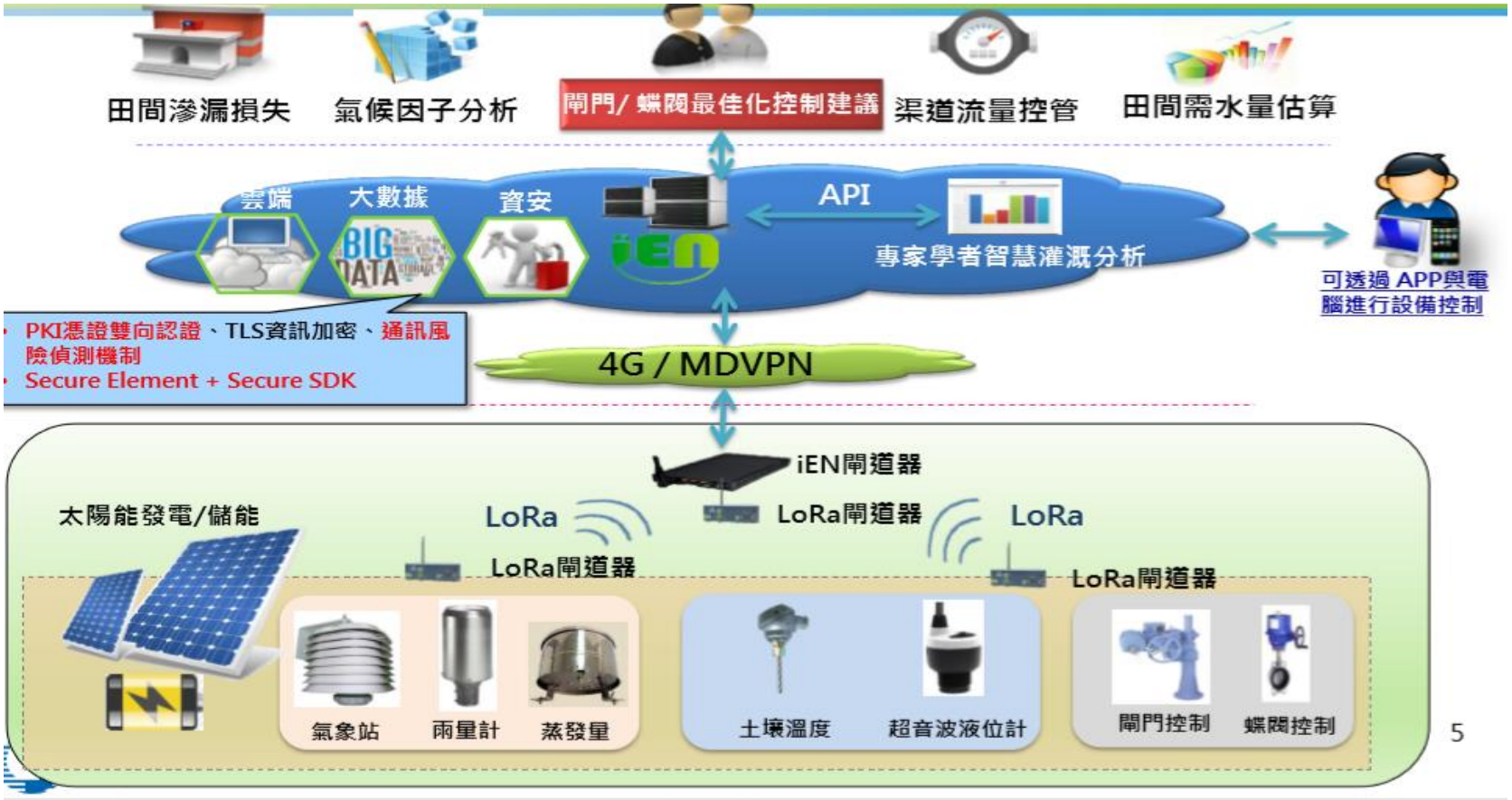
1. Air pollution PLC information is transmitted to the controller through LoRa and passed to the monitoring system.
2. Solve the difficulty of on-site communication and high wiring costs.



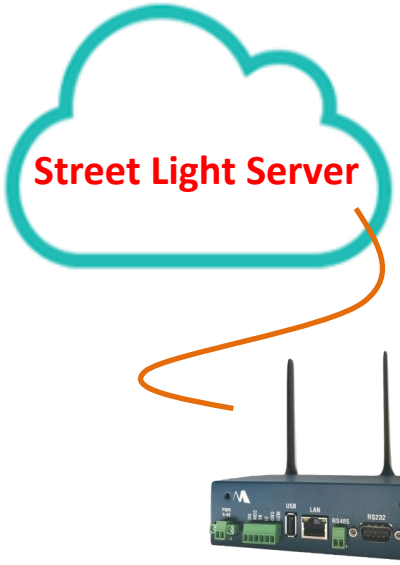
LoRa Agriculture Application Architecture

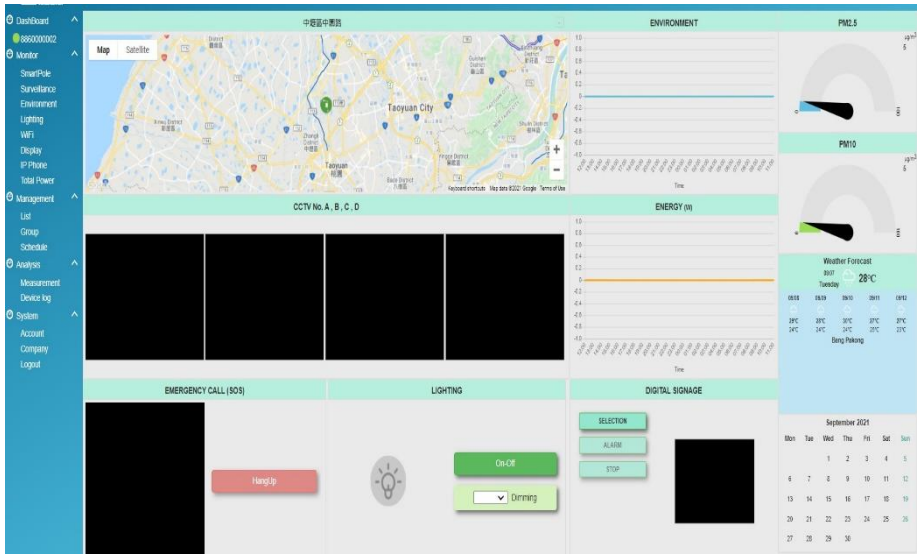
- **Solving issues** ：Data collection from sensors in farm fields
  Solutions：LoRa wireless transmission
- Methods：

1. The sensing information in the field is transmitted to the controller through LoRa and passed to the database.
2. Solve the difficulty of on-site communication and high wiring costs.



Intelligent Streetlight Solutions





NEMA socket

SIP Phone

Temperature and Humidity
+PM2.5 sensor

LoRa Converter

Water level gauge

Intelligent Streetlight Checklist

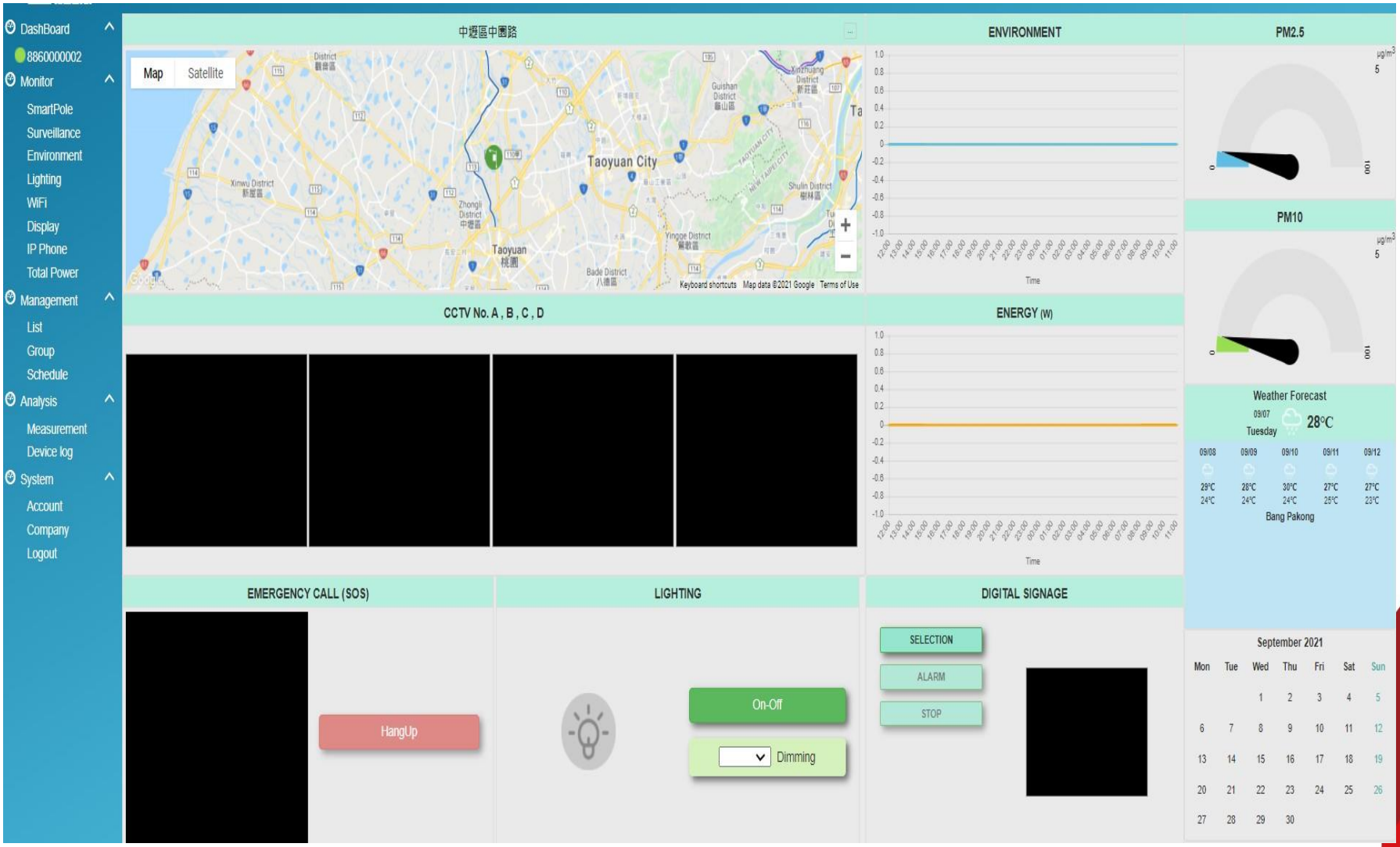
1. System functions and web page presentation
2. Data Collection
3. Controller
4. LoRa NEMA Socket streetlight controller
5. Various sensor integration

Duplicate sucessful cases

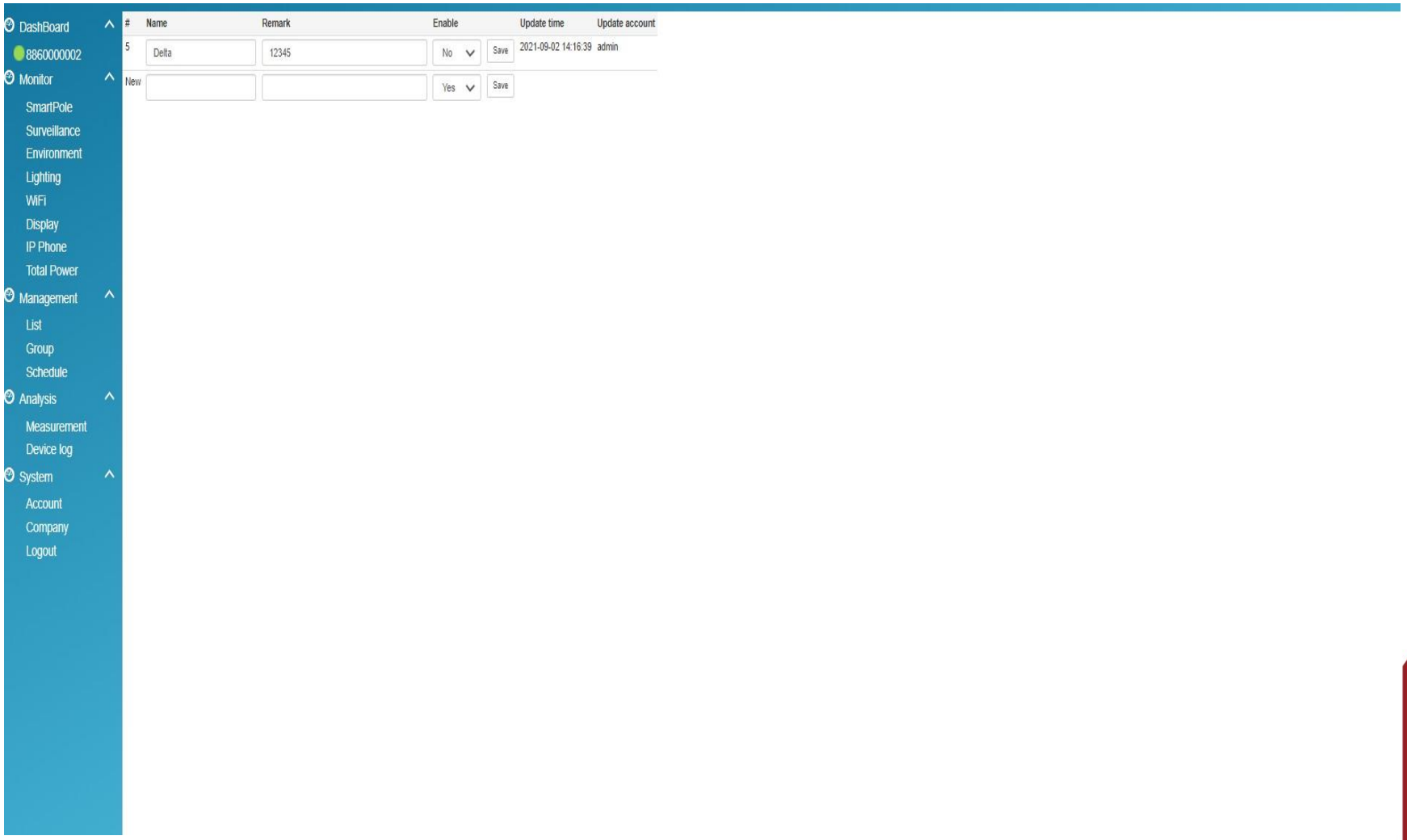
1. **Energy Management**
2. **Equipment utilization rate**
3. **Controller**
4. **LoRa NEMA Socket streetlight controller**
5. **Various sensor integration**

Login Screen

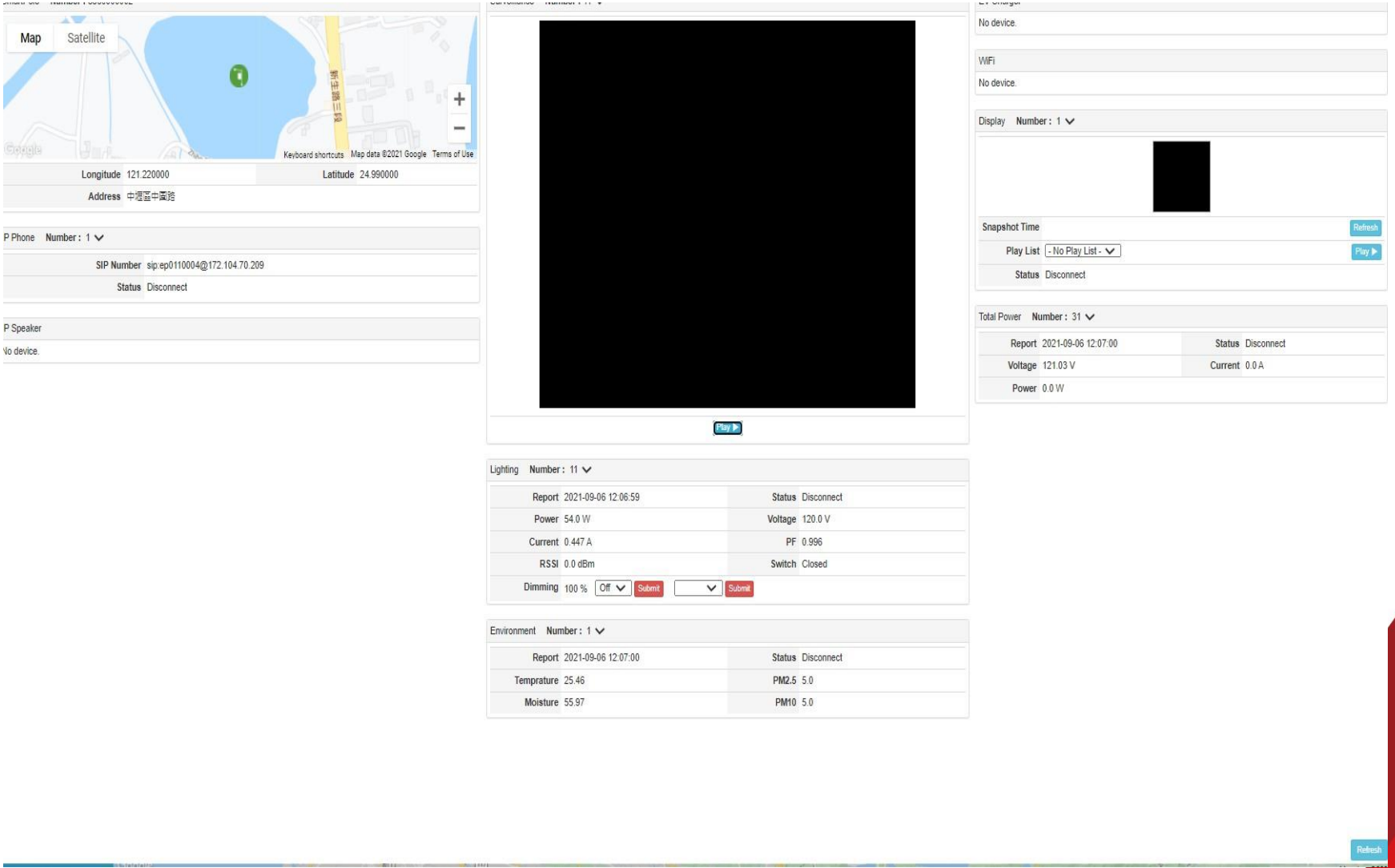
Homepage



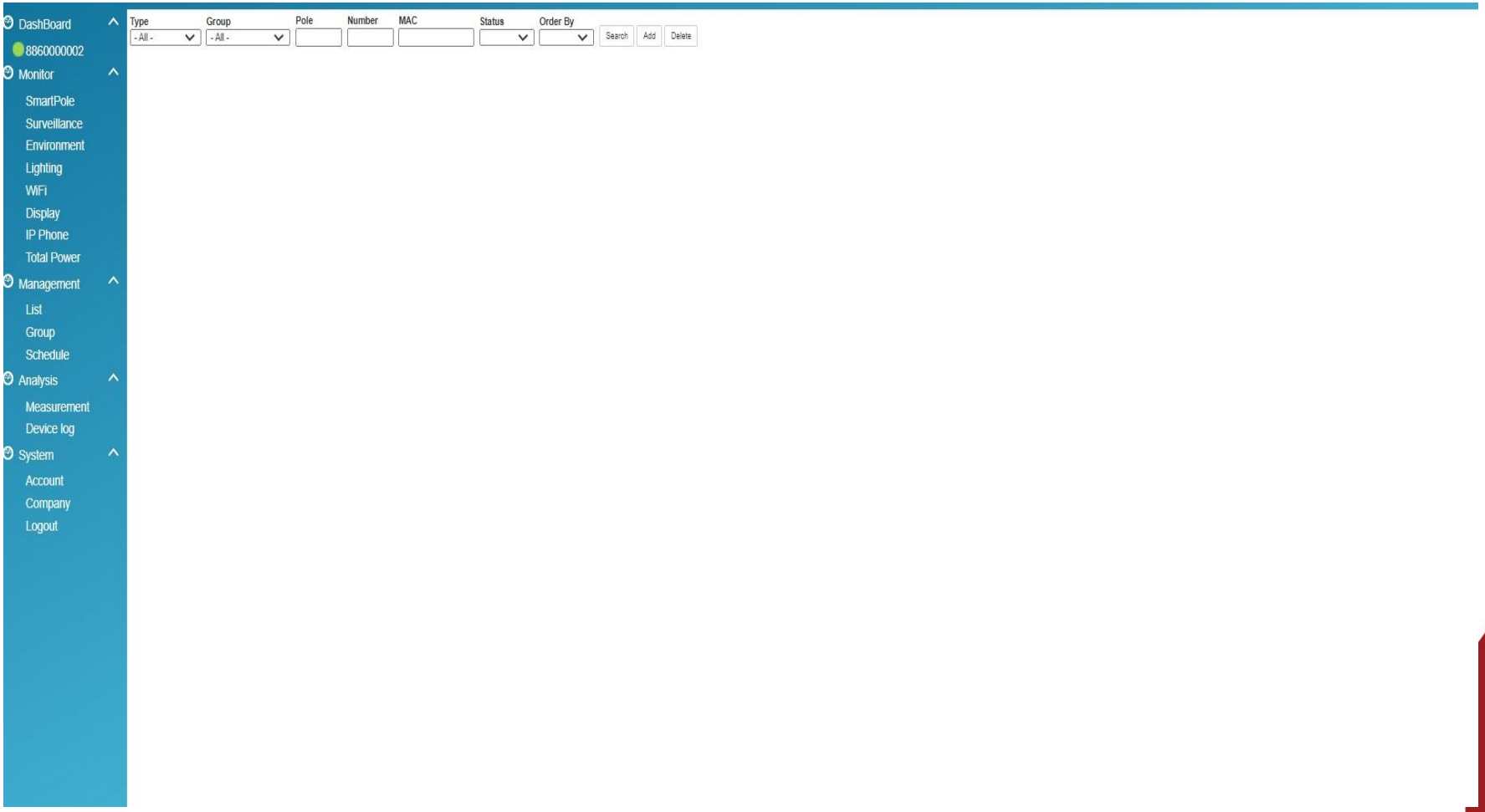
Various function menus and settings



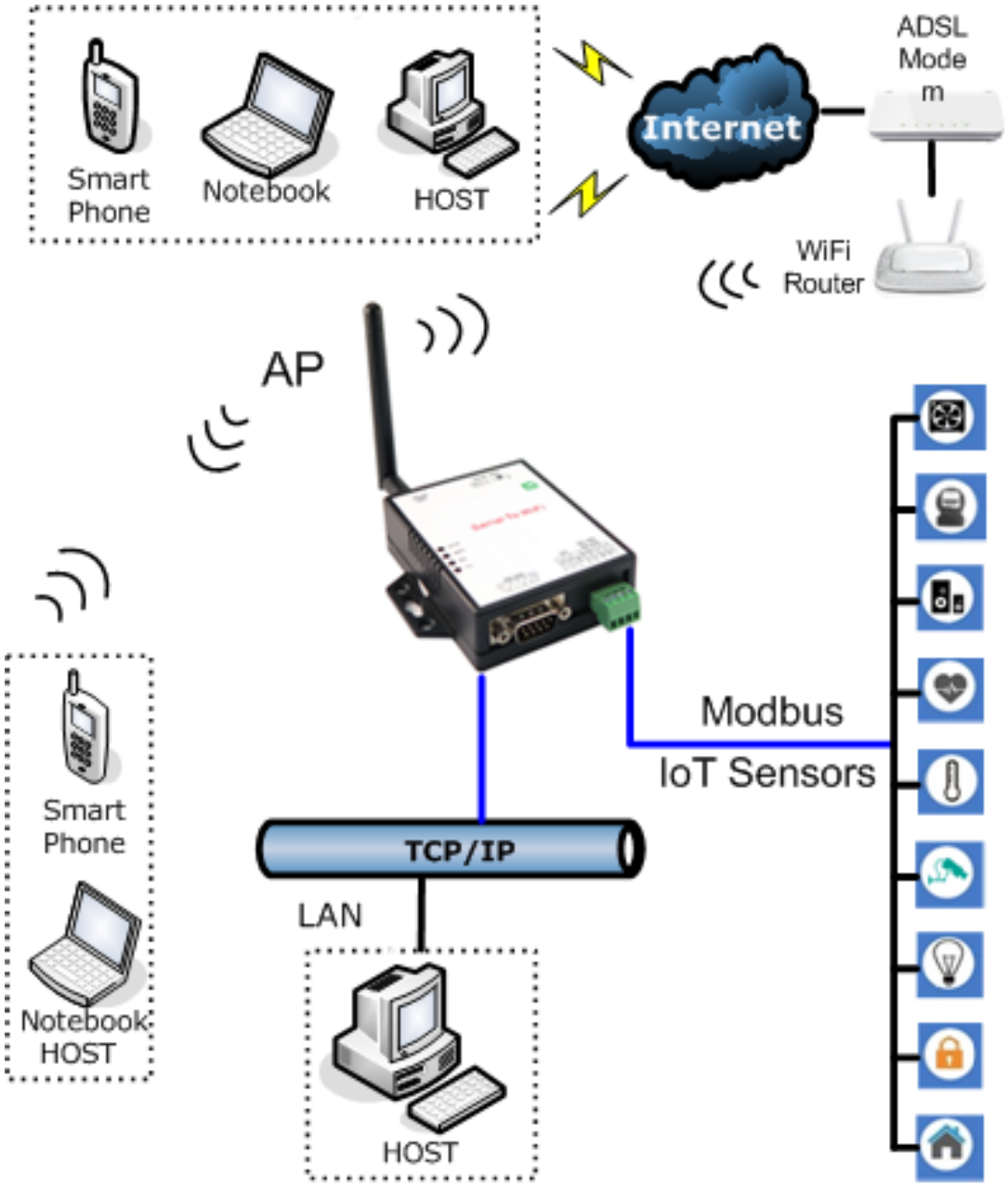
Single site system information



Add, Modify, Check, Query



Modbus TCP to Modbus System Architecture



Case Study

LoRa Application in Textile Industry

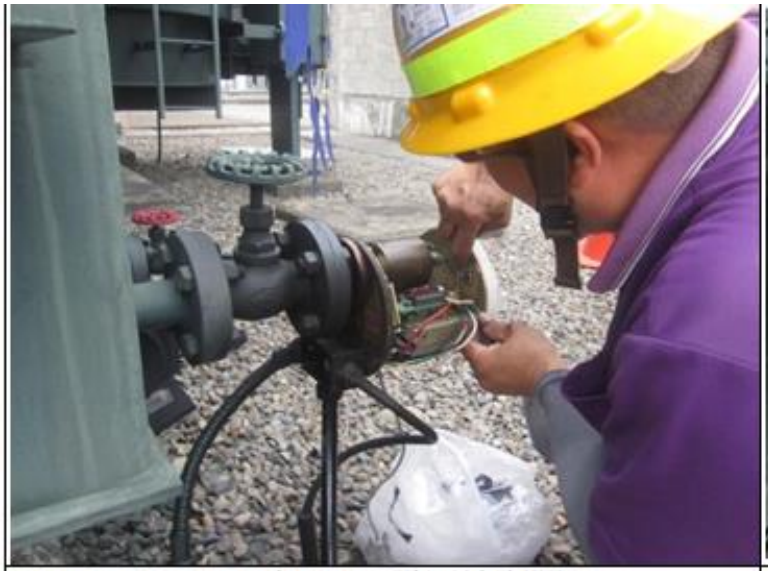
Taipower LoRa Base Station

說明：LoRa 基站安裝

說明：LoRa 基站安裝完成

說明：LoRa 基站電源開關

Taipower LoRa TCG Field Case



說明：#1 ATRR 相 TCG 電源線配置

說明：#1 ATRR 相 TCG 電源線、訊號線配置

說明：#1 ATRR 相 LoRa 配置

Real-time data capture without manual meter reading

說明：#1 ATRR 相 TCG 安裝完成

Line Box Notification Field Case

High risk environment can be set to report at regular intervals via Line App, and provide real-time alarms to reduce the occurrence of disasters.

Electronic factory air pollution LoRa monitoring system

LoRa Agricultural Applications

LoRa Solar power monitoring

LoRa Technical Features

Features	Descriptions
Communication Technology	LoRa 862~932 MHz Transparent mode or Modbus （None LoRa WAN Protocol）
Transmission Mode	Multiple endpoints form a broadcast domain according to frequency bands. Only one endpoint can send data at a time（Similar to traditional walkie-talkie design） Only suitable for 1 Master + n Slaves application
Data transmission rate	Each packet can carry a maximum of 255 bytes of data Up to 5 packets per second(Depends on packet size)
Convert interface of Gateway	Ethernet ,RS-232 , RS-485, 4G(Option)
Converter interface of Serial	RS-232 and RS-485
Line of sight transmit distance test	The height of both ends is 100cm, and the line of sight is 2 kilometers.

Maxlong LoRa Converter Advantage

1. Plug and Play
2. Easy to Configuration
3. Provide RS232, RS485, flexible use
4. Build a network using the broadcast method without pairing
5. Simple construction and maintenance
6. Real time reply(No need to wait 50-150 seconds)
7. Completed range of models (Indoor and Outdoor)
8. Provide a series of indoor and outdoor antennas
9. Provide wireless pairing and change parameters

Products overview

MaxLong Technology Co., Ltd

Provide customized hardware and software services
The Best choice for IoT city

SLG1211A

> SDK platform provides User development bonus
> Com Port is convenient to use
(RS232 uses DB9 standard interface, RS485 uses TB interface)
> Built-in Micro SD card Storage can record and store data
> The same platform product portfolio is flexible
(3G/4G/Modbus/GPS/TCP TO RTU/VPN)
> Remote software update software through the network
> Special treatment can be dustproof and waterproof

- Industrial grade hardware design for harsh environment
- Support Message Queue technology(MQTT), connected with cloud and mobile devices
- Designed for machine to machine communication taking advantage 3G/4G and WAN port for internet access
- Provide a variety of serial interfaces and GPIO feature
- Controller support wide voltage input
- When power failure, the Li-ion battery can ensure controller alive
- Built SD port to sure the data save when wireless is disconnect

SKY LoRa Gateway SLG1211A Specifications

Main Chip
LoRa Transmission : Semtech SX1272
Soc : 1 GHz Sitara ARM Cortex®-A8
Memory: -DDR3 512M Bytes
-NAND Flash 256M Bytes
Operating System: GNU Linux

LoRa
Frequency: 862~932MHz
Frequency Accuracy: ± 10KHz
Modulation: LoRa
Transmit Power: 2~+20dBm
Data Rate: 0.244~18.2Kbps(LoRa)
High Sensitivity: down to -137dBm
Communication Distance: 2Km
Antenna Impedance: 50ohm

USB Port
1 Port USB Host

Serial Port
RS232/RS485:
-1 port RS232 with DB9
(Full Duplex of RS232 /Baud Rate up to 115K bps)
-1 port RS485 with TB5
(Half Duplex of RS485/Baud Rate to 115K bps)

Network
Ethernet: 1*10/100/1000 Base-TX LAN port
Protocal: TCP, UDP, HTTP, SNTP, DHCP, FTP, PPP, IPv4

DI/DO
125 Vac @0.5A, 24 Vdc @1A
Output: 1*Relay Dry Contacts, Terminal Block
Input: 1*Dry Contacts, Terminal Block

Configurations and Management
WEB: Support HTML web control interface
CGI: Support CGI control interface
Firmware: Lan port Support system firmware upgrade

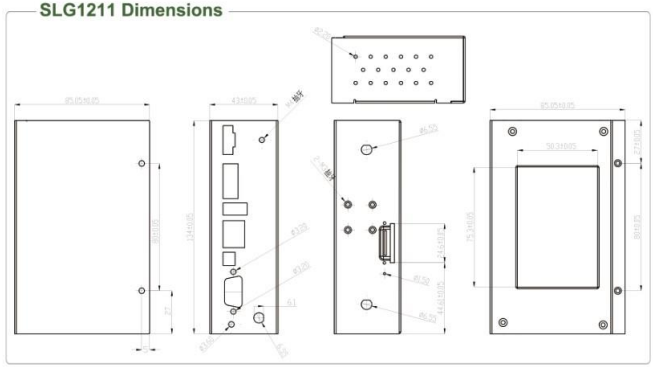
Power Source
Supply Voltage: +9~48 VDC, Terminal Block
Power Consumption@12V: Max 12W

Environment
Operating Temperature: -10℃~70℃

Mechanism
Dimensions: W*H*D: 43*135*96 (mm)
Weight: 450 ± 5g

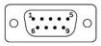
Option
3G: -HSPA data rate (Mbps)=3.6(DL)
-UMTS data rate (Kbps)=384(DL)/384(UL)
-LTE-FDD Max 10M (DL)/ Max 5M (UL)
4G: -HSPA data rate (Mbps)=14.4(DL)/5.76(UL)
-UMTS data rate (Kbps)=384(DL)/384(UL
-LTD-FDD Max 150Mbps (DL) Max 50Mbps (UL)
-LTE-TDD Max 130Mbps (DL) Max35Mbps (UL)
Battery Supply: Li-ion 1400mAh

SLG1211 Dimensions



Pin Assignment

DB9 male connector



PIN	RS-232
1	
2	RXD
3	TXD
4	
5	
6	
7	RTS
8	CTS
9	

Ordering Information

Model	Description
SLG1211A	LoRa Gateway
SLG1211A-4G	LoRa 4G Gateway
SLG1211A-4G-Modbus	LoRa 4G Gateway Modbus RTU to TCP

Options of Bands/Frequencies (MHz)

Option	4G	
	FDD LTE	TDD LTE
E	B1(2100),B3(1800), B5(850),B7(2600), B8(900),B20(800)	B38(2600), B40(2300), B41(2500)
A	B2(1900),B4(1700), B12(700)	
AU	B1(2100),B2(1900), B3(1800),B4(1700), B5(850),B7(2600), B8(900),B28(700)	B40(2300)
J	B1(2100),B3(1800), B8(900),B18(850), B19(850),B26(850)	B41(2500)

SLC-NEMA01

NEMA Controller

Electrical Parameter Monitor : Vrms(V)、Irms(I)、Power Factor(PF)、Power(W) 、RSSI(dBm)
Light Control : On、Off、Dimming(0-10Vdc)
LoRa Transmission : Semtech SX1272
LoRa Frequency : Frequency Band: 902~928MHz
LoRa Frequency Accuracy ± 10KHz
RoLa Transmission Power : 2~+20dBm
LoRa Data Rate : 0.244~18.2Kbps
LoRa Sensitivity : down to -137dBm
LoRa Communication Dist. : 2Km
AC Input Voltage : Single Phase, 110~277Vac / 50-60Hz
Max. Switching Load : Max. 1.2A @220Vac
Power Consumption : Max. 2W
Surge Protection : 4KV
Enclosure : IP66 (on NEMA Socket)
Dimensions : ψ85 x 108mm
Weight : 215g
Storage Temperature : -20℃ ~ +80℃
Operating Temperature : -10℃ ~ +70℃
Operating Humidity : 0 ~ 95%

LoRa Converter SLC485

Industrial IoT loRa Converter SLC485 Specifications

Main Chip
LoRa Transmission : Semtech SX1272
Soc : Cortex®-M0
Memory: Flash 128K

LoRa
Frequency: 862~932MHz
Frequency Accuracy: ± 10KHz
Modulation: LoRa
Transmit Power: 2~+20dBm
Data Rate: 0.244~18.2Kbps(LoRa)
High Sensitivity: down to -137dBm
Communication Distance: 2~5Km
Antenna Impedance: 50ohm

Serial Port
RS232/RS485:
-Half Duplex of RS232
Baud Rate to 9600、19200、38400、57600、115200bps
-Half Duplex of RS485
Baud Rate to 9600、19200、38400、57600、115200bps

Configurations and Management
Firmware: Com port support system firmware upgrade

Power Source
Supply Voltage: +5~24VDC Terminal Block
+5V Micro USB
(alternative)

Power Consumption
Standby: 5V,16.63mA
12V,6.97mA
24V,4.03mA
Transmission: 5V,17.35mA
12V,41.95mA
24V,21.73mA

Environment
Operating Temperature: 0℃~50℃

Mechanism
Dimensions: W*H*D: 27*89*68 (mm)
Weight: 82± 5g
Download Tool: https://www.maxlong.com.tw/product-detail/slc485/

LoRa Converter SLC922

LoRa Converter SLC922 Specifications

Main Chip
LoRa Transmission : Semtech SX1272
Soc : Cortex®-M0
Memory: Flash 128K

LoRa
Frequency: 862~932MHz
Frequency Accuracy: ± 10KHz
Modulation: LoRa
Transmit Power: 2~+20dBm
Data Rate: 0.244~18.2Kbps(LoRa)
High Sensitivity: down to -137dBm
Communication Distance: 2Km
Antenna Impedance: 50ohm

Serial Port
RS232/RS485:
-1 port RS232 with DB9 or 1 port RS485 with TB5 (S/W Jump select)
-Half Duplex of RS232 Baud Rate to 9600、19200、38400、57600、115200bps
-Half Duplex of RS485 Baud Rate to 9600、19200、38400、57600、115200bps

DI/DO
125 Vac @0.5A, 24 Vdc @1A
Output: 1*Relay Dry Contacts, Terminal Block
Input: 1*Dry Contacts, Terminal Block
Data Rate: 0.244~18.2Kbps (LoRa)
High Sensitivity: down to -137dBm
Communication Distance: 2Km
Antenna Impedance: 50ohm

Configurations and Management
Firmware: Com port support system firmware upgrade

Power Source
Supply Voltage: +9~24VDC, Terminal Block
Power Consumption@12V: Max 3W

Environment
Operating Temperature: -20℃~70℃

Mechanism
Dimensions: W*H*D: 43*135*96 (mm)
Weight: 400 ± 5g

SEW832-2 DIO

4G IoT

Features

- Built-in MediaTek smart 7688
- Linux OpenWrt OS
- Wide Range Input Power (DC 9 ~ 32V)
- Edge Computer with Multiple I/O Interfaces
- Low Cost Solution or 4G IoT
- Ethernet + WiFi + 4G + Serial + DIO

System

- CPU
- RAM
- ROM
- OS

Connectivity

- Ethernet 10 /100 M bps (Auto Detecting)
  Built-in 1.5KV Magnetic Isolation
- WiFi 2.4G WiFi IEEE 802.11 b / g / n
  Support AP / Station
- 4G LTE / NB-IoT(Option)

*Mini-PCIe : USB 2.0 for 4G / NB-IoT
*Nano SIM * 1

Interface USB2.0 (on PCB)
I2C Interface * 1 (For RTC)
SD Card Interface : micro SD card (For storage)

Digital Input / Digital Output

- Digital Input * 2 Pins (Active High / Active Low Selectable)
  Dry contact : Logic level 0 : close to GND , Logic level 1 : open
  Wet contact : Logic level 0 : 0 ~ 3 V, Logic level 1 : 5 ~ 12 V
- Digital Output * 2 Pins (Active High / Active Low Selectable)
  120VAC @2A, 240VAC @1A, 24VDC @3A

Mechanical & Environment

Operating Temperature : - 20 ℃ ~ 70 ℃
Storage Temperature : - 25 ℃ ~ 80 ℃
Dimensions : 180 * 120 * 35 mm (W * D * H)
Weight : 950 gm
RoHS : Compliant with RoHS

Power DC 9 ~ 32V, 1000mA 500mA@12V (Support DC Jack & Terminal Input)

Serial Port

Port 1 : RS-232/422/485 * 1
Port 2 : RS-422/485 * 1
Speed : 300 bps ~ 230.4 K bps
Parity : None, Odd, Even, Mark, Space
Data Bit : 5, 6, 7, 8 ; Stop Bit : 1, 2
RS-232 Pins : Rx, Tx, GND
RS-422 : Rx+, Rx-, Tx+, Tx- (Surge Protect)
RS-485 : Data+ , Data- (Surge Protect)
15KV ESD for all signals
Console port : UART – RX+TX+GND

LED SYS , WiFi, 4G
LAN-ACK, LINK , Serial 0 RX + TX
Serial 1 RX+TX, DO * 2 + DI * 2

Others RTC : Real Time Clock * 1 (Battery Backup)
Buzzer * 1
Reset Button * 1
4G LTE Reset GPIO * 1

Warranty Warranty period : 1 year

Order Information

WPC-832-4-DIO-4G : 4G Model
WPC-832-4-DIO : Without 4G

SAI140 Analog Input Modbus Gateway

TYPE Information

AI-140-16 : 4~20 ma * 2 Channels, 0~10V * 2 Channels
AI-140-16-A : 4~20 ma*4 Channels
AI-140-16-V : 0~10V *4 Channels

Hardware

- CPU：8-bit CPU
- RAM：64K bytes SRAM
- ROM：256K bytes Flash ROM

Analog Input

- 16 bits resolution
- Support 0~10V , 4~20 mA

Serial Port * 1 port

- Port：RS- 485 * 1 Port (Terminal Block)
- Speed：300 bps ~ 115.2 Kbps
- Parity：None
- Data Bit：8
- Stop Bit：1
- Surge Protect

Support Modbus RTU

Watch Dog Function

Power Input：DC 9 ~ 24 V , 200mA @ 12VDC

support DC Jack & Terminal Block

LED Lamp： PWR , Rx , Tx

Environment

•Operating Temperature: -10℃ ~ +70℃

•Storage Temperature : -20℃~ +85℃

Dimension：90 * 60 * 20 mm (W * D * H)

Din-Rail and Panel mounting options

Regulatory Approval：

- CE / FCC
- RoHS

Warranty：1 year

SDIO43 Modbus RTU with 4DI / 3DO

Features

- Act as a Modbus Slave device receiving command from Modbus Master
- Support 4 DI / 3 DO
- Utility support for configuration

Specifications

Hardware

CPU : 8 bits CPU
RAM : 2 KB SDRAM
ROM : 32 KB Flash ROM

Software Features

Protocol : Modbus RTU
OS Supported : Win 10
Configuration : Window Utility

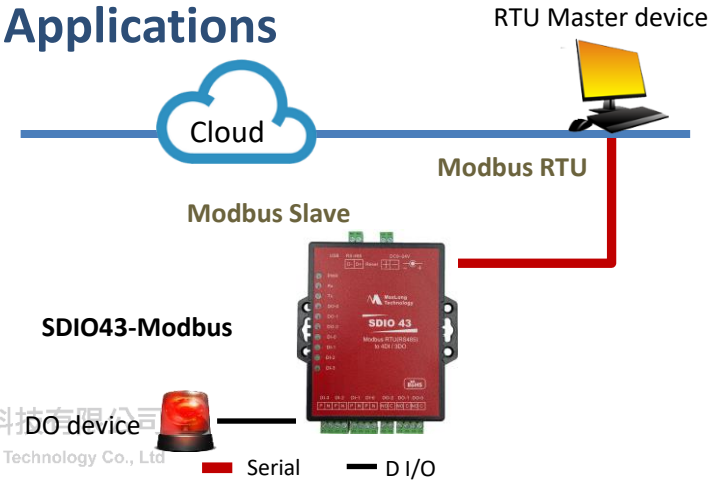
Serial Interface (to control DIO)

Port number :1/Port Type :RS-485
Connector :2-pin Terminal Block
Speed :9600 bps ~ 115.2 Kbps
Parity :None , Odd , Even
Data Bit : 8/Stop Bit :1 , 2
Protection :RS-485 Surge Protection Built in 15KV ESD protection for all signals

Digital I/O

Digital Input :4 (active High / Low selectable)
Digital Output :3 (active High / Low selectable)
DO x 3 : Relay output, 125V AC@0.5A, 30V DC@1A
DI x 4 : 3000 VDC Isolation Protect
Wet contact : Logic level 0 : 0 ~ ˇ32 V , Logic level 1 : 5 ~ 20 V
Dry contact Logic level 0 : close to GND
Logic level 1 : open

Applications



SE332 2-Port Serial To Ethernet Converter

Features

- Support Multiple TCP connections
- Support TCP Server / TCP Client / UDP / Virtual COM / Paring
- Suport DDNS, PPPoE
- Built in termination resistor
- Web Browser configuration
- Easy installation Windows utility
- On line F/W upgrade

Specification

Hardware

CPU :RISC CPU, 16 bits, 100 MHz,
RAM :2MB Internal SDRAM
ROM :256K bytes Flash ROM
Watchdog :Built in H/W Watchdog timer

Ethernet

Port number : 1
Port Type : RJ-45 Connector
Speed : 10 / 100 Mbps (Auto Detect)
Protocol : ARP, IP, ICMP, UDP, TCP, HTTP, DHCP, TELNET DDNS, PPPoE
Mode : TCP Server / TCP Client / UDP / Virtual Com / Pairing
Setup : HTTP Browser Setup (IE, Chrome, Firefox)
Security : Login Password
Protection :Built-in 1.5KV Magnetic Isolation

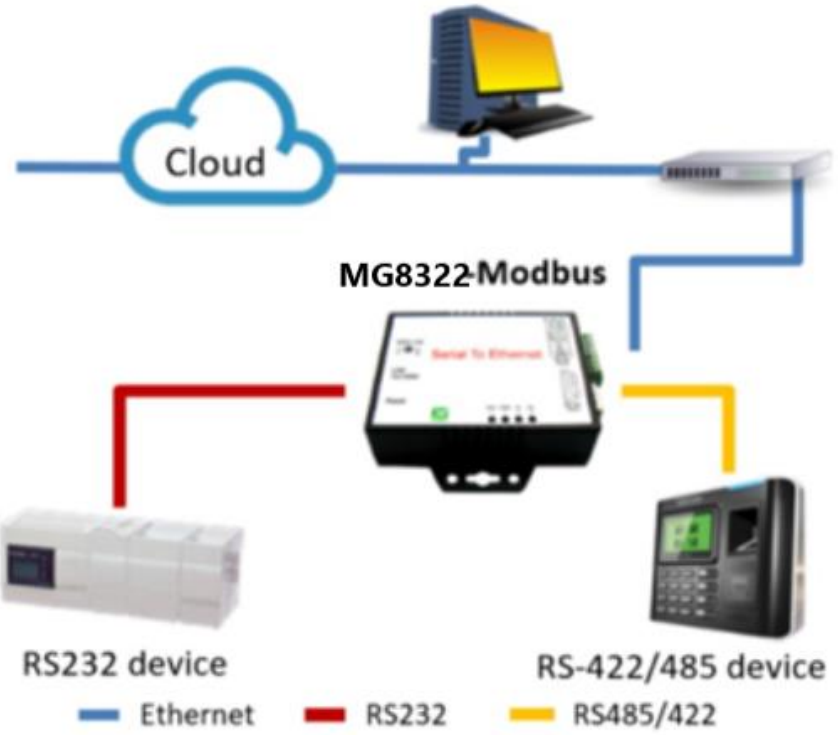
Serial Interface

Port number :2
Port Type : RS-232 x 1 Port (DB9) ,
RS-422/485 x 1 Port (Auto Detect)
Connector : Male DB9 / 4-pin Terminal Block
Speed :110 bps ~ 230.4 Kbps
Parity :None , Odd , Even , Mark , Space
Data Bit : 5, 6 , 7 , 8/Stop Bit : 1 , 1.5 ,2
Port 1 RS-232 :Rx , Tx , GND , RTS , CTS , DTR , DSR , DCD
Port 2 RS-232 :Rx , Tx , GND
RS-422 :Rx+ , Rx- , Tx+ , Tx-
RS-485 :Data+ , Data-
Built–in :RS-422/485 pull high / low Resistor
Protection :422/485 Surge Protection
Built in 15KV ESD protection for all signals

MG8322 Modbus Gateway

Specification

- Support Modbus TCP to Modbus RTU/ASCII Networks
- 4 Modbus modes selectable
- Suport 1x Master or 1x Slave mode
- Web Browser configuration
- Easy installation Windows utility
- Watchdog function



System

- CPU: 32-bit ARM Cortex-M4 CPU, 120 MHz
- RAM:128K bytes SRAM
- ROM: 512K bytes Flash ROM
- OS: µClinux OS

Ethernet

- Port number : 1
- Port Type : RJ-45 Connector
- Speed : 10 / 100 Mbps (Auto Detect)
- Protocol : ARP, IP, ICMP, UDP, TCP, HTTP, DHCP
- Mode : TCP Server / TCP Client / UDP / Virtual Com / Pairing
- Setup : HTTP Browser Setup (IE, Chrome, Firefox)
- Security : Login Password
- Protection : Built-in 1.5KV Magnetic Isolation

Serial Ports

- Port number : 2
- Port Type : RS-232 x 1 Port (DB9) ,
- RS-422/485 x 1 Port (Auto Detect)
- Connector : Male DB9 / 4-pin Terminal Block
- Speed : 300 bps ~ 230.4 Kbps
- Parity : None , Odd , Even , Mark , Space
- Data Bit : 5, 6 , 7 , 8
- Stop Bit : 1 , 2
- Port 1 RS-232 : Rx , Tx , GND
- Port 2 RS-422 : Rx+ , Rx- , Tx+ , Tx-
  RS-485 : Data+ , Data-
- Built–in : RS-422/485 pull high / low Resistor
- Protection : 422/485 Surge & Over Current Protection
- Built in 15KV ESD protection for all signals

Other Features

- **LED:** SYS (PWR), DI/DO, Port-2, Port-1
- Built in H/W Watchdog timer

Power

- Input: DC 9 ~30V, 300mA@ 12VDC
- Consumption < 4W
- DC Jack & 2-pin Terminal Block.

Mechanical and Environment

- Dimensions: 90 * 60 * 25 mm (W * D * H)
- Temperature : Operating: 0°C ~ 70°C (32°F ~ 158°F)
- Storage: -20°C ~ 80°C (-4°F ~ 176°F)
- Humidity : Operating: 10% ~ 95% non-condensing
- Storage: 5% ~ 95% non-condensing

Software Features

- OS Supported : Windows 2000/2003/XP/Vista/Win 7/8/10
- Configuration : Window Utility, Web Browser
- **Support** Modbus TCP To Modbus RTU / ASCII Slave, Modbus RTU / ASCII To Modbus TCP Slave

Warranty

- Warranty period : 1 year.

SEW832 2-Port Modbus TCP to Modbus

Specification

Hardware

- CPU : MT7688AN MIPS CPU, 580 MHz
- RAM : 128M Bytes DDR2 RAM
- ROM : 32M Bytes Flash ROM
- OS : OpenWrt Linux OS

Serial Ports *2

- Port : RS-232 *1
- Port : RS-422 / 485 *1 (Surge Protect)
- Speed: 300 bps ~ 921.6 K bps
- Parity: None , Odd , Even
- Data Bit: 5 , 6 , 7 , 8
- Stop Bit : 1 , 2
- RS-232 Pins : Rx , Tx , GND
- RS-422 : Rx+ , Rx- , Tx+ , Tx- (Surge Protect)
- RS-485 : Data+ , Data- (Surge Protect)
- 15KV ESD for all signals

Features

- TCP to RTU support 8 simultaneous TCP Master,
- RTU to TCP support 8 TCP Slaves on each port.
- Software support :
  TCP to RTU Slaves, RTU to TCP Slaves,
  TCP to ASCII Slaves, ASCII to TCP Slaves
- Supports 802.11b/g/n and Ethernet, Two Ips
- Web Browser configuration
- Easy installation Windows utility
- On line F/W upgrade

Ethernet

- Port Type : RJ-45 Connector
- Speed : 10 /100 M bps (Auto Detecting)
- Protocol: ARP, IP, ICMP, UDP, TCP, HTTP, DHCP,
- Protocol: DNS, NTP
- Mode : TCP Server / TCP Client / UDP
- Setup : HTTP Browser Setup (IE, Chrome, Firefox)
- Security : Setup Password
- Protection : Built-in 1.5KV Magnetic Isolation

WiFi

- Tx Power 11b : Max. 22dBm
- Tx Power 11g/n : Max. 19dBm
- Rx Sensitivity : -76dBm@54Mbps; -89.5dBm@11Mbps
- Tx Rate : Max. 54Mbps with auto fallback
- Tx Distance : Up to 100m

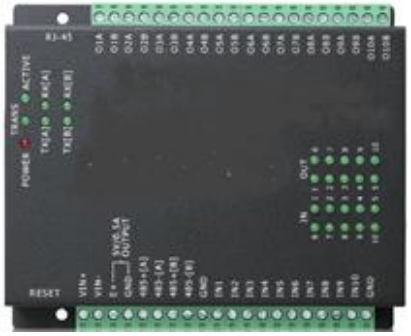
SLDIO201 LoRa Digital I/O Controller

Specification

- **Digital I/O**
  - Digital Input * 2 3000VDC Isolation Protect (Active High /Active Low Selectable)
    Dry contact : Logic level 0 : close to GND ,
    Logic level 1 : open
    Wet contact : Logic level 0 : 0~3 V ,
    Logic level 1 : 10 ~ 30 V
  - Digital Output * 2
    Relay (Active High /Active Low Selectable)
    120V AC@10A , 240V AC@7A , 24V DC@10A
- Setup Tool : Windows Utility
- Power : DC 9 ~ 24V / 150ma @ 9V , 60ma @ 24V
- Led Lamp : SYS (red) , Pairing (green) , Rx(red) , Tx(green)
- Environment: Operating Temperature:-10℃～70℃
  Storage Temperature:-20℃～85℃
- Dimensions : 160 * 90 * 25 mm (W * D * H)
- Weight : 350 gm (not include power)

- LoRa Digital I/O Controller
- CPU : 32 bits MCU ,40 MHz , 16KB SRAM, 128KB Flash ROM
- Support Modbus Protocol
- **LoRa** : Semtech SX1272
  - Freq. : ISM band 862 ~ 936MHz
  - Receiver Sensitivity : -137 dBm
  - Transmit Output Power : 20 dBm
  - Sleep Current : 3uA (at power down state)
  - TX current < 140 mA@20 dbm , RX current < 10 mA
  - Security processor (128/192/256 bits AES)
  - Packet engine up to 256 bytes with CRC
  - Antenna : SMA Type , 2 dBi , changeable
  - Distance : Up To 5000 Meters in free space
  - Data Rate : 0.244 ~ 18.2K bps (LoRa) / 300 K bps (FSK)
  - Application mode : Star

SEIO332-10DI 10DO



TCP remote 10 DI / 10 DO Controller work with http and Modbus commands

System
- CPU : 16 bits, 100 MHz
- RAM : 2MB SDRAM
- ROM : 512KB ROM
- Watchdog

DI / DO
- Mode : TCP Server / TCP Client / UDP
- 10 isolated DI, 10 isolated DO
- DI/DO Isolation 2500VDC
- DI Overload protection 70VDC, dry contact
- DO Contact rating: AC 120V@0.5A, DC 30V@1A.
- DO Transformation time: 10msec.
- I/O mapping settings
- E-mail Alert

Mechanical and Environment
- Operating Temperature : -0℃ ~ 65℃
- Storage Temperature: -20℃ ~ 85℃
- Humitidy: 5~95%RH
- Dimensions : 135 * 115 * 35 mm (W * D * H)
- Weight : 525 ± 5gm

Power
- DC 9~30V, 500mA Terminal Input

Features
- TCP remote controlled 10 DI / 10 DO
- Web Browser configuration
- LED status indication
- E-mail Alert
- Easy installation Windows utility
- On line F/W upgrade
- Support CGI & Modbus TCP/RTU commands

Ethernet
- Port Type : RJ-45 Connector
- Speed : 10 /100 M bps
- Protocol: ARP, ICMP, TCP, HTTP, IP, DHCP,
- Protocol: DNS, NTP, PPPoE
- Mode : TCP Server / TCP Client / UDP
- Setup : HTTP Browser Setup (IE, Chrome, Firefox)
- Security : Setup Password
- Protection : Built-in 1.5KV Magnetic Isolation
- Maximum sessions: 3

Serial Ports (#B)
- Port : RS-485 *1
- Speed: 1200 bps ~ 230.4K bps or user defined
- Parity: None , Odd , Even, Mark, Space
- Data Bit: 5 , 6 , 7 , 8
- Stop Bit : 1 , 2
- RS-485 : Data+ , Data-
- RTS/CTS, XON/XOFF

Other Features
- Led Lamp : POWER, ACTIVE, RX, TX, LAN

Warranty
- Warranty period : 1 year.

MaxLong
TechnologyCo., Ltd

Provide customized hardware and software services
The Best choice for IoT city

ModbusLoRa AI (SLAI 140)

> Plug and play
> Easy to set up
> 0-10V 2ch 4-20mA analog in put
> Simple construction maintenance and operation
> Instant return (NO waiting time)
> Indoor/Outdoor models are complete
> Complete indoor and outdoor antenna available

Communication technology : LoRa 862~932 MHz pass through mode or Modbus. (non-LoRa WAN protocol)

RoHS

0℃ 50℃

Transmission mode : Multi-end points form a broadcast network according to the frequency band, and only one end point can send signals at a time (similar to the traditional Walkie-talkie design),only suitable for one Master+n Slaves applications.

Communication Flow : Maximum load 255 bytes per packet data.

ModbusLoRa AI Specifications

LoRa Main Chip

LoRa Transmission : Semtech SX1272
Soc : Cortex® -M0
Memory: Flash 128K
Frequency: 862~932MHz
Frequency Accuracy: ±10KHz
Modulation: LoRa
Transmit Power: 2~+20dBm
Data Rate: 0.244~18.2Kbps(LoRa)
High Sensitivity: down to -137dBm
Communication Distance: 2~5Km
Antenna Impedance: 50ohm

Analong Main Chip

CPU : 8-bit CPU
RAM : 64K bytes SRAM
ROM : 256K bytes Flash ROM
Memory: Flash 128K
4~20 mA * 2 Channels
0~10V * 2 Channels
16 bits resolution

Power Source

Supply Voltage: +9~24VDC Terminal Block

Power Consumption

Standby: 12V, 6.97mA
24V, 4.03mA
Transmission: 12V,41.95mA
24V,21.73mA

Environment

Operating Temperature: -10℃~60℃

Mechanism

Dimensions: W*H*D: 27*89*68 (mm)
Weight: 100 ±5g

SKY AH100
Ethernet Extender

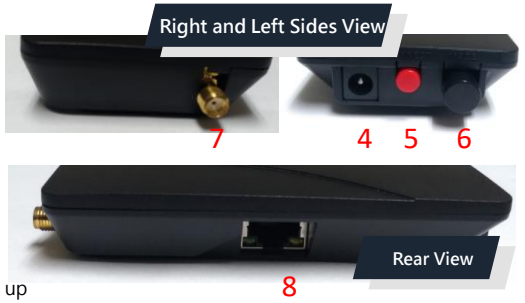
Specification / Description

1. The SKY AH100 uses the sub-1GHz ISM band to build a long-range ultra-low power consumption WiFi network.
2. AH100 supports two operation modes: AP mode and STA.
3. The user can easily set the operating mode using the mode selection button.
4. For ease of use and installation, the AH100 provides a pairing button to establish a WiFi network instead of complicated manual setup.
5. An AP can support multiple STA connections at the same time. The total number of STAs depends on the number of transmissions and the application. Therefore, the best overall performance can be obtained with an appropriate number of STAs.

Specification	
Frequency	915MHz (US) (902MHz~928MHz)
Modulation	OFDM with BPSK, QPSK, 16QAM, 64QAM
Data Rate	150Kpbs ~ 15Mbps
Channel Bandwidth	1/2/4/8 MHz
Antenna Connector	SMA
Interface	RJ45
LED	PWR x 1 / Connect x 1 / RSSI x 3
Button	AP/STA Mode x 1 / Pairing x 1
DC Jack	5V~12V@1A
Operating Temperature	-20~70℃
Storage Temperature	-30~70℃
Accessory	
Antenna	Dipole antenna with peak gain 2dB

Appearance

The appearance of SKY AH100 is shown as below.

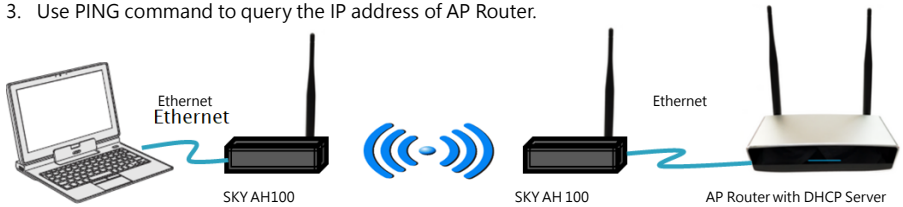


1. LED PWR：red, power on
2. LED CONNECT ： green, connection links up
3. LED RSSI ： blue, RF signal strength
4. DC Jack
5. Pairing Button
6. AP/STA Mode Button: press the button to AP mode, otherwise, the device is in STA mode
7. SMA Connector
8. RJ45 Connector

Quick Test of Bridge

To quick test the connection of SKY AH100, set up the test environment as Figure 4.

1. Check the LED “CONNECT” to see if the connection has been established.
2. Check NB’s IP address that is got from AP Router.
3. Use PING command to query the IP address of AP Router.



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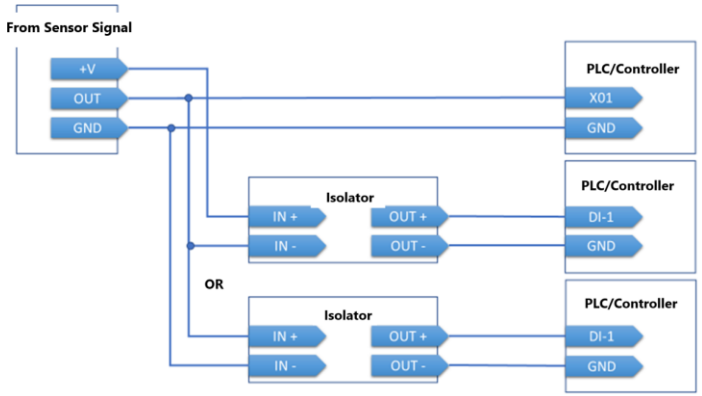
MaxLong Technology Co., Ltd

Features

1. Protection between Heterogeneous Interfaces
2. The signal output of the machine Sensor is generally not too high, and the SMB capturing signal will also divide a certain amount of current. Therefore, the protection isolator designed and installed between the Sensor and the SMB is an adjustment device with a shunt design to avoid affecting the original controller of the machine, and will not cause misjudgment of action.
3. The product NOP1 also has optical coupling isolation and controllable current shunt
4. The product NOP4 has optical coupling and isolated common cathode and common anode



4 Channel Isolator(NOP104)Dix4

Specification	
Input loop	4CH
Withstand signal voltage(Note#1)	2.7~38V
Current consumption	10.25mA (max)
Output Signal	open collector (開集極) 2V-35V,50mA (Max)
Built-in polarity protection circuit	Common negative or common positive acceptable
Isolation protection voltage	5000Vrms
Input Polarity protection	Yes
Intput Reverse voltage protection Voltage	100V
Output Reverse voltage protection Voltage	40V
Operating Environment	-10~60℃ / 0~95%RH, non-condensing
Storage Temperature	-20~70℃
Dimension	69.25(L)*18.4(W)*13(H)mm

**Note(1) Input voltage over 38V will burn

Instructions:

1. To confirm that the input 4 signal sources should be common cathode or common anode 。
2. Note that excessive input signal may cause breakdown and burnout.
3. Fix the connector with heat shrinkable film.

Single Channel Isolator(NOP101) Dix1

Specification	
Input loop	1CH
Withstand signal voltage(Note#1)	2.7~60V
Current consumption	1.13mA (max)
Output signal of信號開集極負載	open collector 2V-35V,50mA (Max)
Isolation protection voltage	5000Vrms
Input Polarity protection	No
Input Reverse voltage protection Voltage	100V
Output Reverse voltage protection Voltage	40V
Operating Environment	-10~60℃ / 0~95%RH, non-condensing
Storage Temperature	-20~70℃
Dimension	69.25(L)*6.9(W)*11.2(H)mm

**Note (1) First, adjust VR1 clockwise to the maximum and then input the voltage 60V, otherwise burned.

Instructions:

1. First, adjust VR1 clockwise to the maximum and then input the voltage 60V,
2. Trigger the signal at the input terminal (the output terminal may not be able to output the signal at this time).
3. Adjust VR1 slightly counterclockwise until the output terminal gets a signal, and then adjust more than a little after getting the signal.

4. Note that excessive input signal may cause breakdown and burnout.

5. Fix the connector with heat shrinkable film and Protect VR Parameters。

LoRa Sensor series

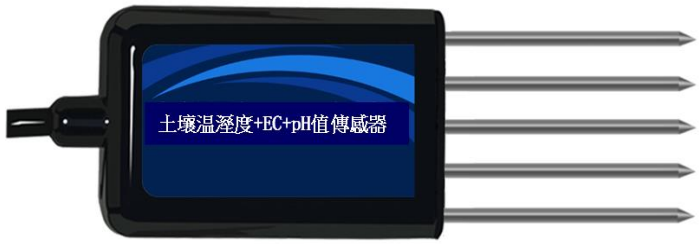
PM2.5

Temperature and Humidity Sensor

CO2

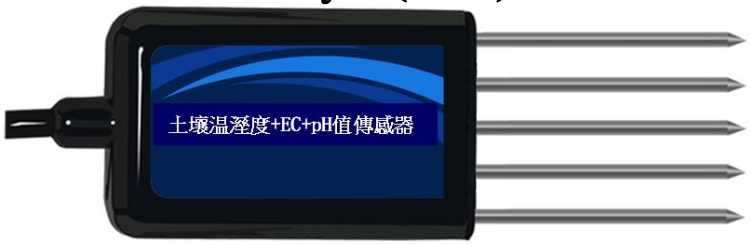
CO

VOC



Soil Temperature and Humidity+ EC +Soil pH Sensor

Soil Temperature and Humidity、soil volumetric moisture content、 Soil Conductivity （EC ）、Soil PH Sensor



Specification:

Measurement parameters：Soil temperature, soil volumetric water content, soil conductivity (EC value), soil pH
Units of measurement ：℃；%(m3/m3)； μS/cm；pH
Temperature range ：－30～70℃（Customizable 0～50℃ or any other range ）
Moisture range ：0～100%（Selectable range include 30%，50% etc. or any other range）
Conductivity range ：0～2000μS/cm，0～10000μS/cm，0～20000μS/cm
pH range ：3～10pH
Accuracy ：±0.2℃；0～50%（m3/m3） within the range ±2%（m3/m3）；±2%；±0.2pH
Resolution ：0.1℃；0.1%；1μS/cm；0.01pH
Output Singal ：RS485（Standard Modbus-RTU Protocol，Default device ID：01）
Power supply ：7～24V DC
Operating Temp. ：－30℃～70℃
Stability time ： 3 seconds response time <1 second after power-on
Physical Parameters：
Probe Material: 316L Stainless Steel
Sealing material: ABS engineering plastic, epoxy resin, waterproof grade IP68
Cable specification: Standard 2 meters (other cable lengths can be customized, up to 1200 meters)

Temperature and humidity sensor MTH-503S4D

Features

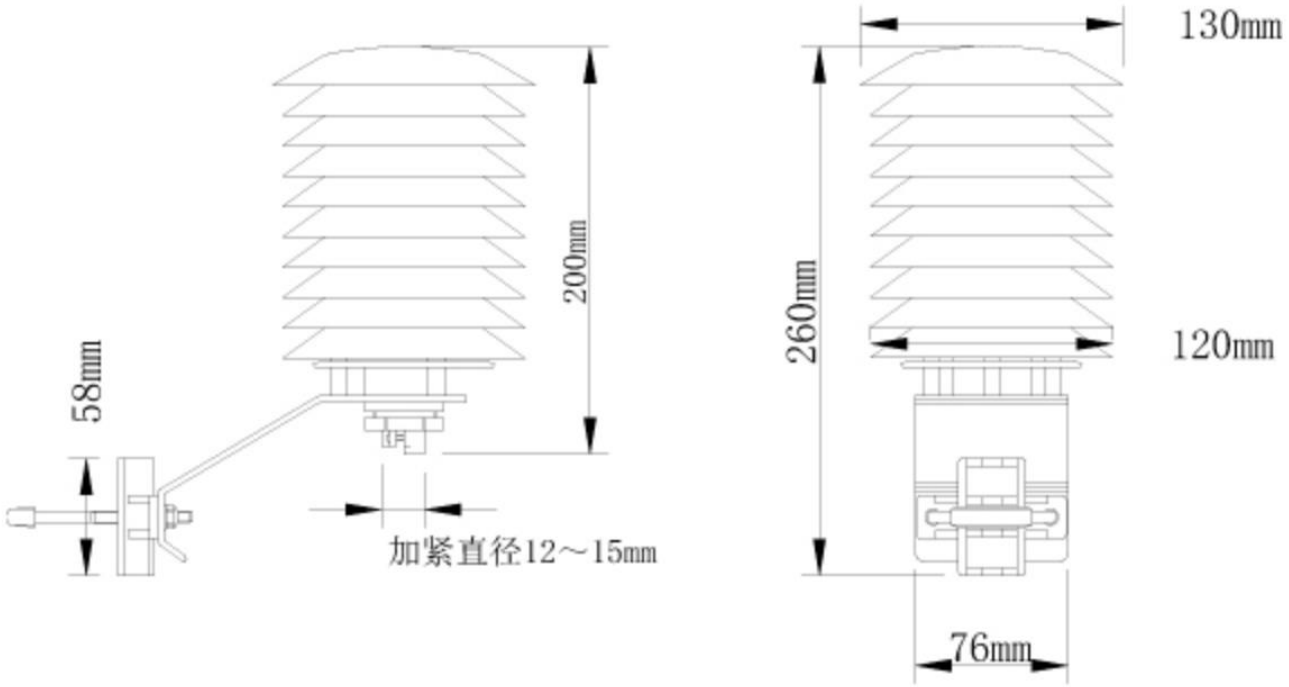
- Fast signal response, high accuracy, good reproducibility and good stability
- Adopt microelectronic circuit design, compact, power saving, anti-noise
- Modbus RTU Protocol
- Provide LoRa wireless transmission options for easier installation
- Industrial grade enclosure for outdoor use
- CE, FCC Certification

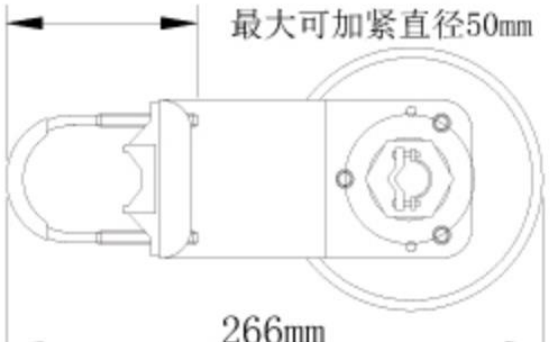
Applications

The MTH-503S4D temperature and humidity sensor adopts high-precision temperature and humidity sensing components and miniature electronic circuit design, which has high stability and is suitable for air-conditioning systems in commercial buildings, offices, computer rooms, restaurants or homes. In addition to a variety of output signals, this sensor can also be equipped with an LCD liquid crystal display, which can be used for on-site synchronous display. In terms of installation methods, wall-mounted, ducted, external air and separate types are available, and the applicable style can be selected according to the on-site environmental conditions.

產品型號	MTH-503S4D
量測功能	溫 度 + 溼 度
信號輸出	4~20mA, 0~10V/0~5V/1~5V, RS485,LoRa (P to P) 適用頻率: 868.0 ~ 912.9 MHz
安裝方式	壁掛式/ 風管式/ 外氣式/ 分離式
負載電阻	電流輸出: RL<500Ω at 24V DC/ 電壓輸出: RL>2.5KΩ at 24V DC
電壓/電流輸出(值域範圍選擇)	T: 0~100℃, 0~50℃, -50~+50℃ H: 0~100%RH
RS485/LoRa 輸出(值域範圍)	T:-40℃~100℃ H:0~100%RH
精確度(at 25℃/55%RH)	A: T:±0.2℃ H:±2%RH B: T:±0.3℃ H:±3%RH
感測元件	CMOSens sensor
反應時間	< 10 sec. (20% to 80% of range)
防潮等級	壁掛式: IP30; 風管式/外氣式/分離式: IP65
LCD 顯示	選配
電源供應	DC 12 ~ 36V (輸出信號 0~10V/0~5V/1~5V, RS485/LoRa) ; DC 15 ~ 36V (輸出信號 4~20 mA) ; AC 24V(50/60HZ
尺寸(mm)	壁掛式: 113.57(H)x80.00(W)x28.79(D) ; 風管式/外氣式/分離式: 137.5(H)x99.0(W)x40.4(D) ; 探頭長度: 風管式 Ø15x300.0、外氣式 Ø15x60.0 ; 分離式線材長度 3360
感測器外殼材質	防火型ABS
戶外防水盒材質	PVC
戶外防水盒重量	530g
使用環境溫度	溫度 : -20 ~ +60℃ ; 溼度 : 0 ~ 95%RH (無結露)
認證	CE, FCC

Outdoor waterproof Housing Dimension





Multi-gas Detector MTG300-08

Features

1. With high sensitivity, fast response and effective Water vapor resistance, high stability, service life Longevity and other characteristics.

2. Using high-precision data acquisition chip, advanced manufacturing process and surface mount technology to ensure the measurement data is accurate and reliable.

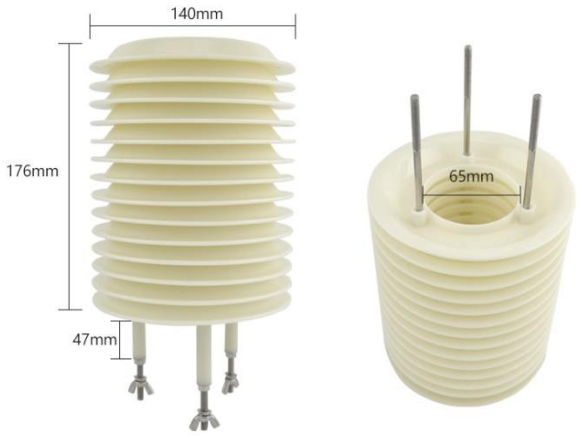
3. Suitable for most general environmental sensing and monitoring Complete parameters and accurate data.

4. Monitoring parameters, can be customized according to requirements, up to 5-6 parameters (including air temperature, air humidity degree, CO2 concentration, CO concentration, formaldehyde, oxygen, PM1.0/2.5/10.0, atmospheric pressure, ozone , volatile organic compounds, air quality, etc.

Item	Technical Specification		
	Range	Resolution	Accuracy
Temperature	－30℃～70℃	0.1℃	±0. 2℃
Humidity	0～100%RH	0.1%RH	±3%RH
Illuminance	0～200K Lux	10 Lux	±5%
Dew point temperature	－100℃～40℃	0.1℃	±0. 3℃
Air pressure	600～1100hPa	0.1hPa	±0.5hPa
CO_2	0～5000ppm	1ppm	±75ppm＋2%rdg
Civil CO	0～500ppm	0.1ppm	±2%FS
PM1.0/2.5/10	0～1000μg/m3	1μg/m3	±3%FS
TVOC	0～5000ppb	1ppb	±3%
CH_2O	0～5000ppb	10ppb	±3%
O_2	0～25%VOL	0.1%VOL	±2%FS
O_3	0～10ppm	0.01ppm	±2%FS
Air quality	0～10mg/m3	0.05 mg/m3	±2%FS
NH_3	0～100ppm	1ppm	±2%FS
H_2S	0～100ppm	1ppm	±2%FS
NO	0~250ppm	0.1ppm	±3%FS
NO_2	0～20ppm	0.1ppm	±2%FS
Odour	0～50ppm	0.01ppm	±2%FS
SO_2	0～20ppm	0.1ppm	±2%FS
Cl_2	0～10ppm	0.1ppm	±2%FS
Civil gas	0～5000ppm	50ppm	±3%LEL
Supply	12-24VDC		
Output	RS485		
Warm Up Time	3min		
Response Time	<1s		
Stability	<±1%FS		
Repeatability	<±2%FS		
Operating Temperature	-20℃-+60℃@15-80%RH		
Storage	-40-70℃@20%-90%RH		
Shell Material	ABS		

DIMENSION

Unit:mm



PM1.0/2.5/10 Dust + temperature and humidity sensor PM1250

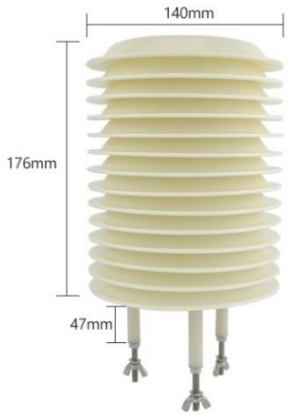
1.With high sensitivity, fast response, can effectively resist water vapor,features such as high stability and long service life.

2.Using high-precision data acquisition chip, advanced manufacturing process And surface mount technology to ensure accurate and reliable measurement data.

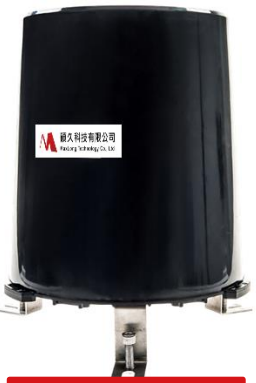
3.It is suitable for most general environmental sensing, and the data is accurate.

4.Monitoring parameters include PM1.0/2.5/10.0.

Item	Technical Specification		
	Range	Resolution	Accuracy
Temperature	－30℃～70℃	0.1℃	±0.2℃
Humidity	0～100%RH	0.1%RH	±3%RH
PM1.0/2.5/10	0～1000μg/m3	1μg/m3	±3%FS
Output	RS485		
Warm Up Time	3min		
Response Time	<1s		
Stability	<±1%FS		
Repeatability	<±2%FS		
Operating Temperature	-20℃-+60℃@15-80%RH		
Storage	-40-70℃@20%-90%RH		
Shell Material	ABS		



Rain Gauge MR400-04



MR400-04 Rain sensor is a hydro-Meteorological measuring instrument,Used to measure rainfall and convert rainfall into pulse signal output.Insect-proof net design to prevent clogging of the nozzle, built-in level bubble. the senseThe detector can be used in meteorology, hydrology, agriculture, forestry, field monitoring stations, etc.industry. With the data recorder, it can monitor the rainfall, rainfall intensity, rainfall timelength to measure.

Features

- Small size, easy to use.
- High precision and good stability.
- The rain inlet is designed with a filter to prevent leaves And debris such as insects get into the rain sensor to work.
- Well made with little resistance.
- Housing is made of high-strength ABS material.
- The sockets have insect nets.

Applications

- Weather monitoring
- Hydrological monitoring
- Natural Disaster Monitoring
- Agricultural Meteorology
- Climate research
- Weather station
- Crop monitoring.

Specification

Parameter	Technical Indicators
Rain bucket	Diameter：φ200mm，Height：271mm
Measured rainfall intensity	Maximum：4mm/min
Allowable rainfall intensity	Maximum：8mm/min
Resolution	0.2mm
Accuracy(2mm/min)	±4%
Maximum load voltage	30VDC（Impulse output）
Maximum load current	20mA
Output	Impulse（@10kΩ&0.01uF），RS485（12-24VDC Power supply）
Operating Temp.（無凝結）	0-60℃@0%-100%RH
Material	Rain Gauge Buckets and Tipping Buckets：ABS，Support bracket：304SS
Weight（Net）	2kg

Illuminance MeterMI201-01

MI210-01The illuminance sensor is a high-sensitivity sensor that can detect weak light sources, wide measurement range, high precision, waterproof and good performance ,simple to use, easy to install sensor. Wide range of application.Especially suitable for agricultural greenhouses, urban lighting and other occasions.

Features

- High sensitivity.
- Suitable for various harsh environments
- High precision and wide measurement range.
- Small in size.
- Easy to install.

Applications

- Agricultural Meteorology
- Intelligent Building
- Greenhouse Control
- weather station
- Crop monitoring.

Specification

Parameter	Technical indicators	
Range	0-2000lux,0-20klux,0-200klux (Optional)	
Spectral range	380-780nm	
Power supply	5VDC,12-24VDC	
Output	4-20mA,0-5V,0-10V	RS485
Accuracy	<±5%FS	<±4%FS
Response time	1s	
Temperature drift	±0.2%/℃	
Repeatability	<1%FS	
Display	LCD Optional (ABS housing)	
Operating Temp.	-40℃-+75℃	
Weight (Net)	170g	
Housing Material	ABS or Metal housing (Optional)	

Sound Level Meter MS300-06

The noise sensor is a digital and modular multi-function sound level meter. Using digital signal processing chip and digital detection technology, it has the characteristics of high reliability, good stability, wide frequency band, and no need to switch range. It can be widely used in industrial noise measurement of various machines, vehicles, ships, electrical appliances, etc., and can also be used for environmental noise Measurement, labor protection, industrial hygiene and other industries.

Features

- High sensitivity
- Fast response
- Low power consumption
- Good stability
- long lasting 。

Applications

- Environmental Quality Monitoring
- Smart home
- Warehousing
- Public places
- Labor protection
- Animal husbandry

Specification

Parameter	Technical Indicators
Range	30-130dB
Accuracy	±3dB@23±5℃，@ 94dB(1kHz)，Meet IEC 61672 Standard Type 2
Response Band	31.5Hz - 8kHz.
Connector	B&K 4226
Microphone	Condenser microphone，Dimension：0.5 inch
Power supply	5VDC,12-24VDC
IP rating	IP65
Output	RS485,RS232
Power consumption	<20mW
Response Time	<200ms
Operating Temp.	-10℃-+50℃@5-80%RH
Storage Temp.	-40-70℃@20%-90%RH
Housing Material	ABS & Aluminum alloy

Two-Button

SIP Video Door Phone

SKY-83

HD Audio

1080P HD Camera

Unlock door with DTMF

1080P HD PoE

Overview

The SKY-83 is an Two-button SIP Door Phone with the integrated HD camera and advanced audio system. It supports H.264 video compression format and delivers excellent video quality in 1080p video resolutions. with the DP73 touch screen control pad, you can speak to visitors and view video from camera at any time.

The SKY-83 offers keyless control and convenience for the users opening the door without a key. The door can be open remotely if there is an electronic door lock. It's ideal for control communication and security over internet such as business, institutional and residential applications .

Video Features

- 3M Pixels color CMOS camera
- Maximum image transfer rate: 1080p -30fps
- Video Codec: H.264
- Resolution: up to 1280 x 720
- Viewing Angle: 80° (H), 60° (V)
- Minimum Illumination: 0.1lux

Access Control

- Dual SIP line, Dual SIP servers
- Door Access: DTMF tones
- Door Phone features:
- Full-duplex
- Default auto answer
- Action URL/Active URI remote control
- Speed Dial

Administration Features

- Auto provisioning: FTP/TFTP/HTTP/HTTPS/PnP
- HTTP/HTTPS Web Management
- Configuration keypad-based management
- SNMP/TR069
- NTP/Daylight Saving Time
- Firmware Upgrade via Web
- Syslog
- Configuration backup/restore

Environments

- Operating Temperature:-20~65 ℃
- Storage Temperature: -40~70 ℃
- Relative Humidity: 10~90%

Audio Features

- HD voice
- Two-way audio stream
- Wideband codec: G.722
- Narrowband codec: PCMA, PCMU,
- G.729, G723_53, G723_63, G726_32
- Echo cancellation with G.168
- Voice activity detection (VAD)
- Comfort noise generator(CNG)
- Built-in Micro and speaker
- Acoustic echo cancellation audio output

Protocols & Network

- SIP v1 (RFC2543), v2 (RFC3261)
- SIP over TLS, SRTP
- RTSP
- TCP/IPv4/UDP
- RTP/RTCP, RFC2198, 1889
- HTTP/HTTPS/FTP/TFTP
- ARP/RARP/ICMP/NTP
- DNS SRV/ A Query/NATPR Query
- Primary /Secondary DNS
- STUN, Session timer
- 802.1p/q, DSCP,802.1x
- DHCP/Static/PPPoE
- DTMF Mode: In-Band, RFC2833 and SIP INFO

Physical Specifications

- 2 call button
- Aluminum surface, Metal bottom shell
- Power Supply: DC 12V1A or 802.3af PoE
- Power Requirements: 802.3af PoE class 3
- IEEE 802.3af Power-over-Ethernet
- 1xRJ45 10/100M Ethernet jacks
- Wall-mounted installation
- Dimensions: 200*120*38 mm

Phisical Interface

- 1 port 100M/10M RJ45 Ethernet, POE
- 1 port Ethernet camera interface， support H264/H265
- 2 ports delay output
- 2 ports sensor short circuit input
- 2 ports exit button
- 1 port recording output
- 1 port 8Ω speaker
- 1 port analog audio output
- 1 port external audio input
- 1 port MIC
- 1 port tamper proof detection
- 1 port weigand card reader
- 1 port RS232
- 2 ports DSS key

SG2245

Multifunction controller

5G AI IoT

High performance

The core adopts industrial Broadcom BCM2711, which has 4 core computing capabilities and can perform AI extreme data edge computing 。

Features

- Built-in Raspberry Pi CM4
- Wide Range Input Power (DC 9 ~ 32V)
- Multiple I/O Interfaces
- Powerful Computing capability
- CPU Heatsink Transfer Heat To Metal Housing
- M.2 key B for 5G (Default)
- M.2 key M for PCIe SSD / AI (optional)
- Mini-PCIe (for 4G/NB-IoT/LoRa)

Great flexibility(Optional):

1.Use LTE 4G/5Gmodules to achieve high transmission, low latency, and meet field applications .

2. Use the LoRa module to become a LoRa controller. After collecting local data, it communicates with the cloud through the mobile network.

3. USB 3.0 can be connected to AI nerve stick for high-speed computing.

Order Information

- SG2245
- SG2245-5G
- SLG2245 LoRa
- SLG2245-5G

Multifunctional

With 2 Ethernet networks, 2 RS232 or 2 RS485 and 1 DO, 5 DI, to meet the different needs of each field.

System	
CPU	Broadcom BCM2711 QuadCore Cortex A72 (ARM v8) 64 bits SoC @ 1.5G
RAM	2 G Bytes LPDDR4 SDRAM
ROM	8 G Bytes EMMC Flash Memory
GPU	VideoCore VI (OpenGL ES 3.0, H.265 HEVC (4Kp60fps decode), H.264(1080p60fps decode)
OS	Linux OS

Connectivity	
Wireless	Wifi 802.11b / g / n / ac (2.4/5GHz) (optional) Bluetooth 5.0 BLE (optional)
5G	M.2 key B USB 3.0 / PCI-E for 5G (optional)
4G	Mini-PCIe : USB 2.0 for 4G / NB-IoT / LoRa · **(optional)** Nano SIM Slot for 5G / 4G / NB-IoT
Ethernet	10/100/1000 Mbps Giga Lan * 1 (RJ45) · 10/100Mbps * 1 (RJ45)

Interface
USB 3.0 * 2, USB 2.0 * 2 · **(optional)** M.2 key M for PCIe SSD

Serial Port
Port 1: RS-232/422/485 * 1 · Port 2: RS-232/485 * 1

Digital Input / Digital Output	
Digital Input	**Digital Output**
Digital Input * 5 Pin (Active High / Active Low Selectable) Dry contact : Logic level 0 : close to GND , Logic level 5 : open Wet contact :Logic level 0 : 0 ~ 3 V, Logic level 1 : 10 ~ 30 V	Digital Output * 1 Pin (Active High / Active Low Selectable) 120VAC @0.5A, 240VAC @0.25A, 30VDC @1A

Video Output
Micro HDMI * 1 (4Kp60fps with audio)

Mechanical & Environment	
Operating Temperature : - 20 ℃ ~ 75 ℃ Storage Temperature : - 25 ℃ ~ 80 ℃	Dimensions : 170 * 110 * 30 mm (W * D * H) Weight : 950 gm Housing : Metal.

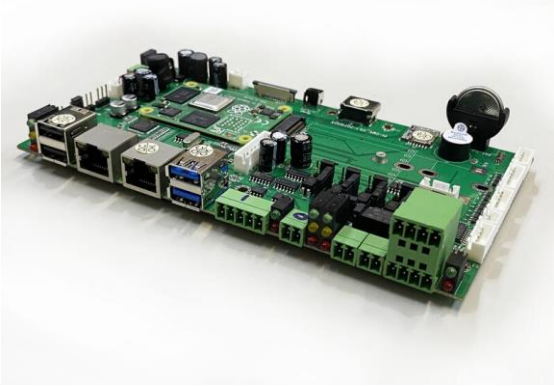
Power
DC 9~32V, 1000mA@12V (DC Jack or Terminal Input)

LED
PI PWR / EMMC / Serial / DI / DO / SYS-Customer defined / 5G / 4G

Othe rs	
RTC : Real Time Clock * 1 (with Battery) Buzzer * 1 Watch Dog Timer	Reset Button * 1 MIPI CSI 2-lane * 1 (optional) Fan - DC 12V (optional)

Warranty
Warranty period : 1 year

Raspberry Pi Computing Module Core Board Backplane - Compute Module 4 I/O Board



Features

Compute Module 4 IO Board is a backplate that can be used with the Raspberry Pi Compute Module 4. · Can be used as a development system for the Compute Module 4 and integrated into end products as an embedded board · it can also be quickly created using off-the-shelf components such as PCIe modules.

Applications

Embedded Design & Development, Electronics Design, Industrial, IIoT (Industrial Internet of Things), IoT (Internet of Things)

Connectivity	
Wireless	Wifi 802.11b / g / n / ac (2.4/5GHz) (optional) Bluetooth 5.0 BLE (optional)
5G	M.2 key B USB 3.0 / PCI-E for 5G (optional)
4G	Mini-PCIe : USB 2.0 for 4G /NB-IoT / LoRa ,(optional) Nano SIM Slot for 5G /4G/NB-IoT
Ethernet	10/100/1000 Mbps Giga Lan*1 (RJ45) , 10/100Mbps * 1 (RJ45)

Interface
USB 3.0* 2, USB 2.0 * 2 , (optional) M.2 key M for PCIe SSD

Serial Port
Port 1:RS-232/422/485 *1 , Port 2: RS-232/485 *1

Digital Input	Digital Output
Digital Input * 5 Pin (Active High / Active Low Selectable) Dry contac Logic level 5 : open ct : Logic level O : close to GND Wet contact : Logic level 0: 0 ~ 3 V. Logic level 1: 10 ~ 30 V	Digital Input * 1 Pin (Active High / Active Low Selectable) 120VAC @0.5A A, 240VAC @0.25A 30VDC@IA

Mechanical & Environment	
Operating Temperature	- 20 *C ~ 75 °C
Storage Temperature	- 25 "C ~ 80 °C
Dimensions	170mm x 110mm (W x D)

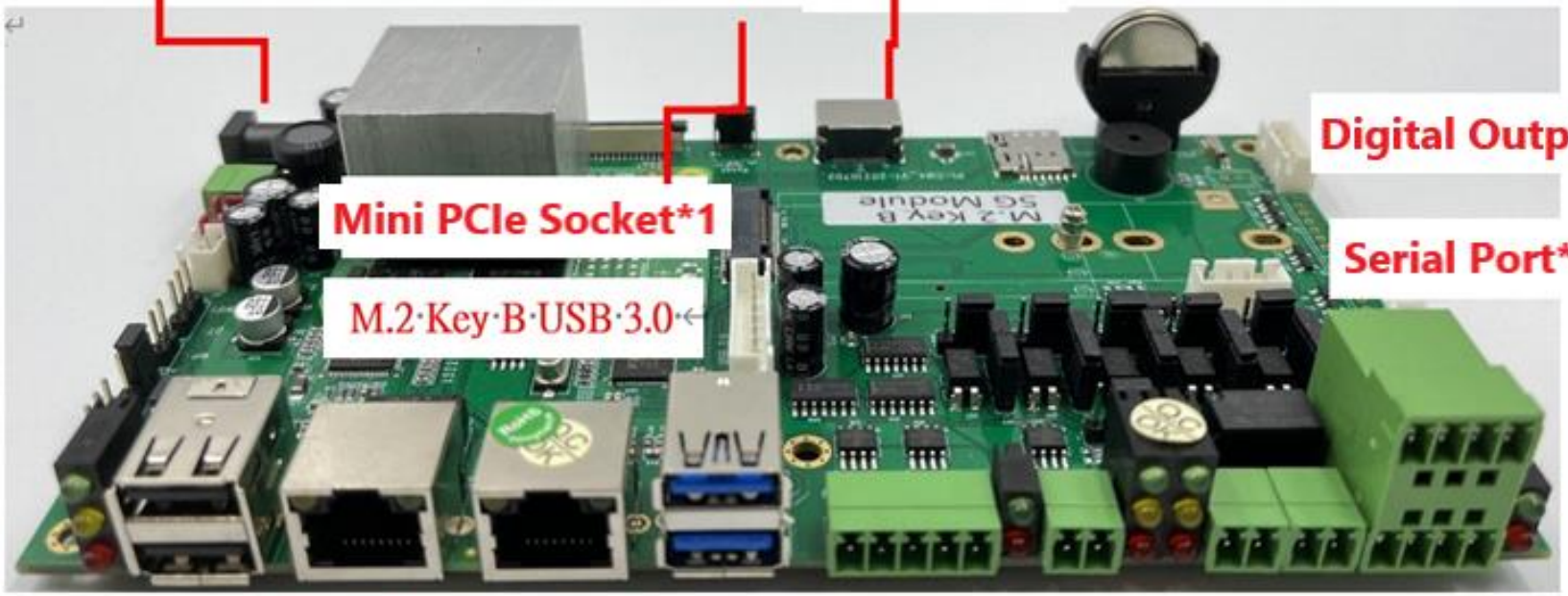
Power
DC 9~32V, 1000mA@ 12V (DC Jack or Terminal Input)

LED
PI PWR/EMMC /Serial / DI / DO / SYS- Customer defined / 5G / 4G

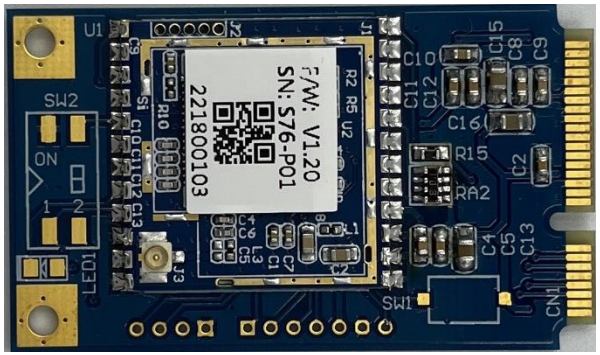
Others	
RIC : Real Time Clock* 1 (with Battery)	Reset Button*1
Buzzer*1	MIPI CSI 2-lane*1(optional)
Watch Dog Timer	Fan - DC 12V (optional)

Warranty
Warranty period : 1 year

Raspberry Pi Computing Module Core Board Backplane - Compute Module 4 I/O Board

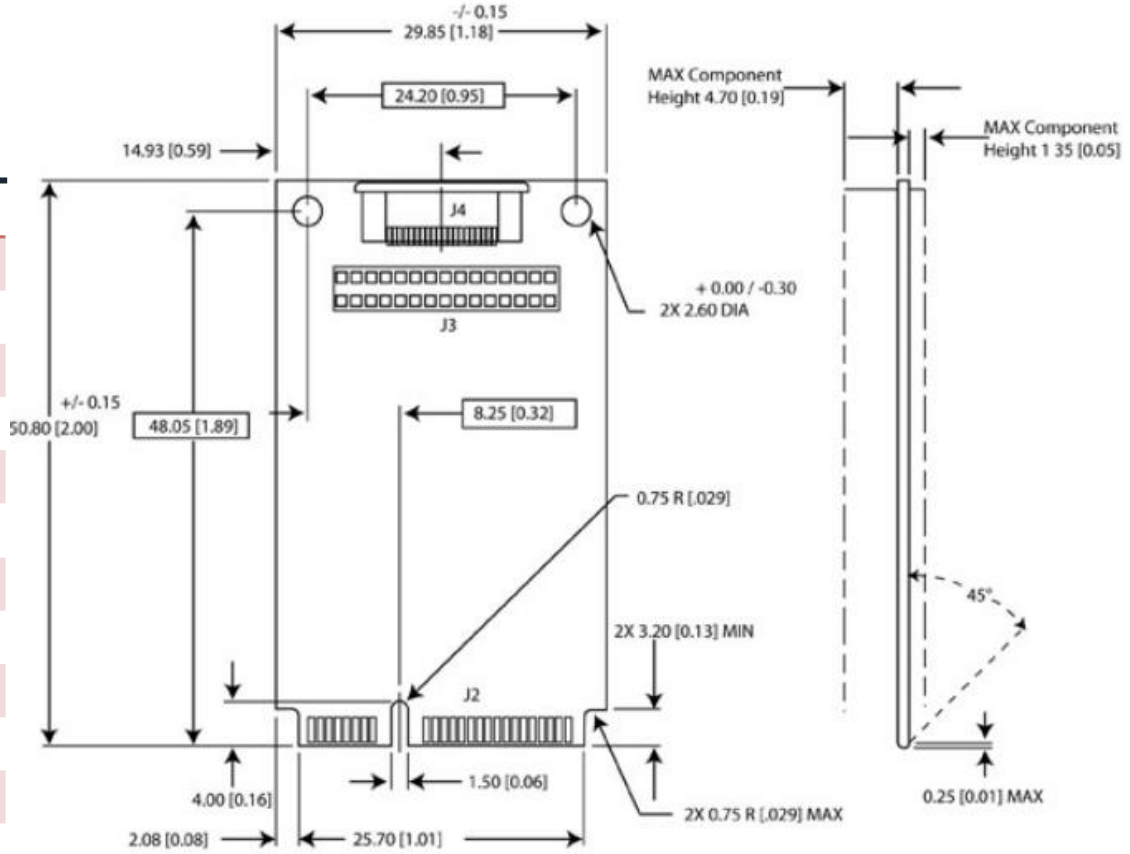


Sky LoRa S76-P01 mini PCIe

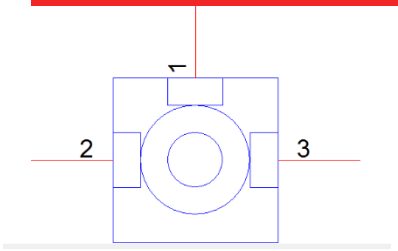


Transceiver	SX1276
MCU	AcSiP STM32L073xZ
Operating supply voltage	3.3V
Frequency	EU868/US915 MHz
Band Width	62.5~500KHz
Modulation	LoRa/GFSK/FSK/OOK/MSK/GMSK
Transmit power	+20dBm max.
Sensitivity	Down to -137dBm
Data rate	300Kbps(FSK)
Communication distance	10Km
Antenna impedance	50Ω
Operating temperature	-40°C ~ +85°C
Storage temperature range	-50°C ~ +105°C
Dimension	50.80mm×29.85mm×6.30mm

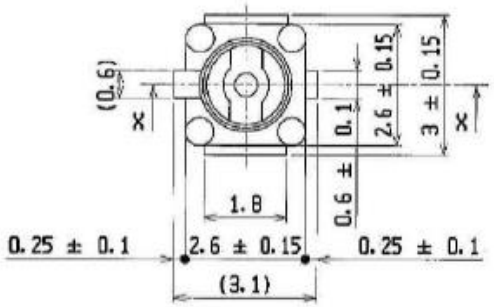
Mini PCIe size

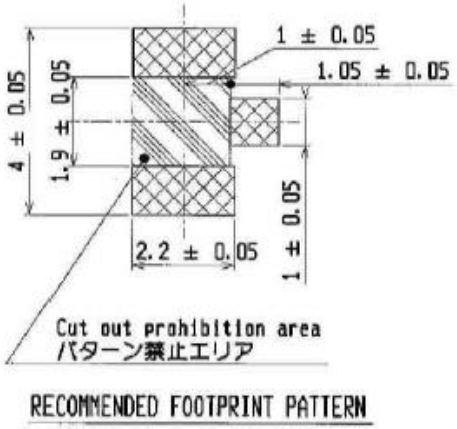


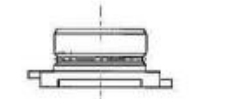
IPEX Connector

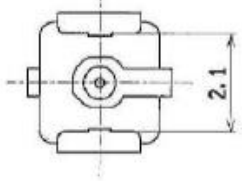


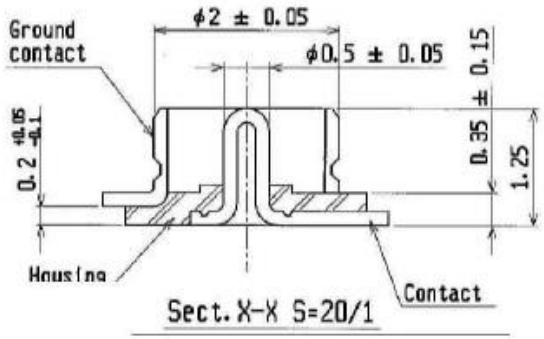
PIN	Definition
1	RF_IN
2	GND
3	GND











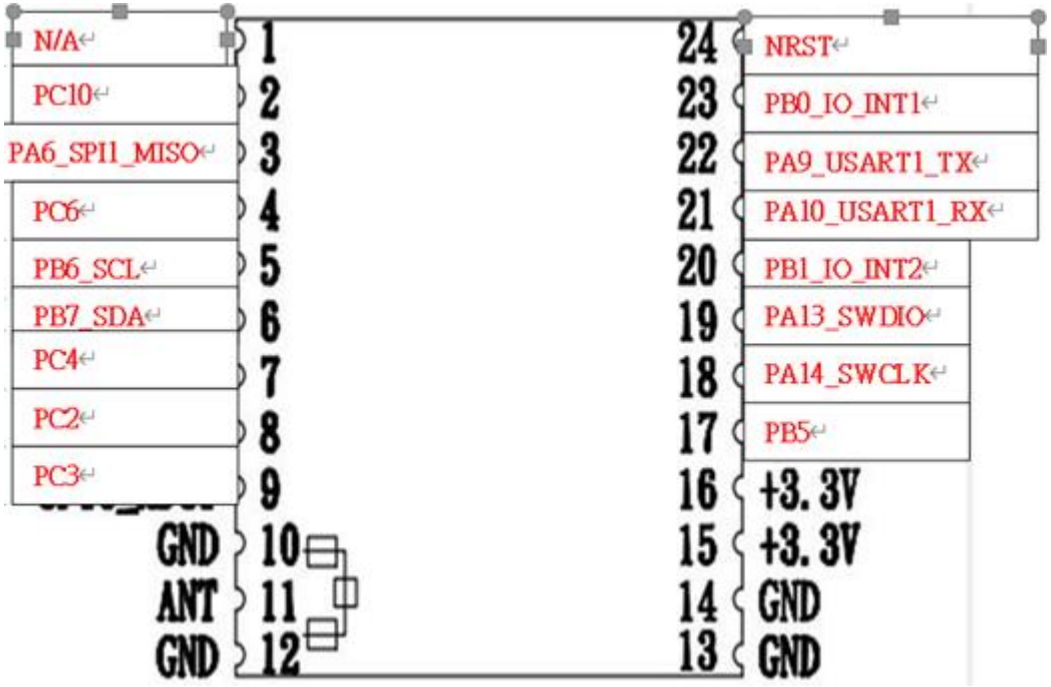
Pinout

PIN#	PIN NAME	PIN#	PIN NAME
1	N/A	27	N/A
2	3.3V	28	N/A
3	N/A	29	N/A
4	GND	30	N/A
5	N/A	31	N/A
6	N/A	32	N/A
7	N/A	33	N/A
8	N/A	34	GND
9	GND	35	GND
10	N/A	36	SUBD-
11	UART_RX(選)	37	GND
12	N/A	38	SUBD+
13	ART_RX(選)	39	3.3V
14	N/A	40	N/A
15	GND	41	3.3V
16	N/A	42	N/A
17	N/A	43	GND
18	GND	44	N/A
19	N/A	45	N/A
20	Cfg	46	N/A
21	GND	47	N/A
22	RESET(選)	48	N/A
23	N/A	49	N/A
24	3.3V	50	GND
25	N/A	51	N/A
26	GND	52	3.3V

Sky LoRa S76-P01

Transceiver	SX1276
MCU	AcSiP STM32L073xZ
Operating supply voltage	3.3V
Frequency	EU868/US915 MHz
Band Width	62.5~500KHz
Modulation	LoRa/GFSK/FSK/OOK/MSK/GMSK
Transmit power	+20dBm max.
Sensitivity	Down to -137dBm
Data rate	300Kbps(FSK)
Communication distance	10Km
Antenna impedance	50Ω
Operating temperature	-40°C ~ +85°C
Storage temperature range	-50°C ~ +105°C
Dimension	23.5mm×23.2mm×3.1mm

PIN Definition



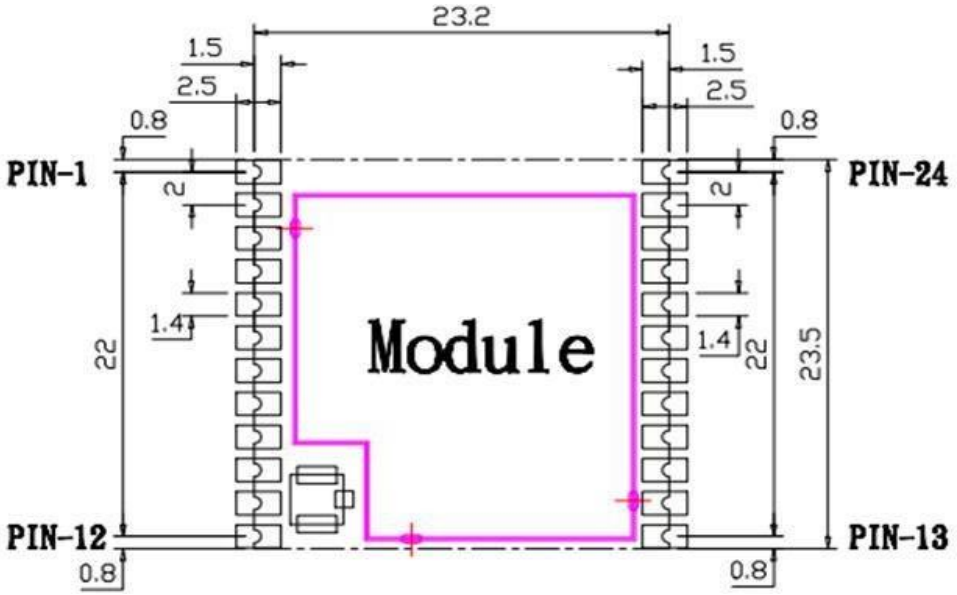
Note

- The module transmission data rate will affect Transmission distance, the higher the data rate, the closer the distance, and the lower the receiving sensitivity.
- The supply voltage to the module will affect TX power, in the operating supply voltage range, the lower the voltage to get the lower the TX power.
- The antenna will strongly affect the communication distance, please select matched antenna and connect it correctly.
- The module mount will affect the communication distance.

Pin Configuration

PIN#	PIN NAME	Function Description
1	N/A	N/A
2	PC10	For RS485/1:RS485 Tx, 0: RS485 Rx
3	PA6_SPI1_MISO	GPIO
4	DO1	ModBus-1, DO
5	PB6_SCL	Channel Scan
6	PB7_SDA	Channel Scan
7	PC4	GPIO
8	PC2	GPIO
9	PC3	Cfg Mode(0)/Normal Mode(1) Sel
10	GND	GND
11	ANT	ANT
12	GND	GND
13	GND	GND
14	GND	GND
15	+3.3V	+3.3V
16	+3.3V	+3.3V
17	DO2	GPIO
18	PA14_SWCLK	S/W GPIO - P01, ModBus-2, DO
19	PA13_SWDIO	S/W GPIO - P03, ModBus-2, DI
20	DI2	GPIO
21	PA10_USART1_RX	Pass Through UART RX
22	PA9_USART1_TX	Pass Through UART TX
23	DI1	ModBus-1, DI
24	NRST	Reset

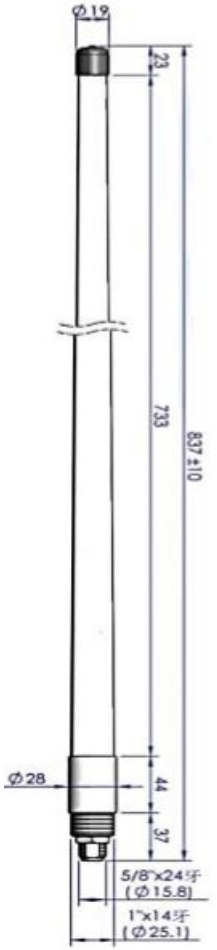
PCB Dimension



Note

- The module power supply voltage is recommended work at DC3.3V.
- The module interface uses half circle pad to soldering on the system PCB board, the GND must soldering to the system digital GND reliably, or use connector to connect main-board.
- The antenna must get to the module’ s ANT pin as close as possible.

LoRa LTE 5G Antenna and



Thank you for your time and attention.

碩久科技有限公司
MaxLong Technology Co., Ltd