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LoRa Watch Pager ACLW4



Product Features

•Based on LoRa™ Spread Spectrum Modulation Technology
•CAD Intermittent Listening Reception
•420~450MHz License-Free Band (Other bands customizable)
•Reception Sensitivity as high as -135dBm
•Full Chinese, English, and Numeric Display
•High-Precision Perpetual Calendar Clock
•Visual Operation Interface
•Capacitive Touch Screen
•630mAh Large Capacity Battery with Intelligent Charging Management
•Can store 128 received messages (FIFO principle).
•Can set 10 group addresses for reception.
•Can receive individually by watch, by group, or by broadcast.
•Can select and send acknowledgment codes via keys.
•Can confirm tasks at the host.
•Reception range: 1.5-2 km in open areas.

Application Fields

•Restaurants & Hotels, Meeting Notifications, Task Assignment;
•Police Security, Property Security, Railway Inspection;
•Nurse Duty, Elderly Call, Pool Lifeguarding;
•Construction, Coal Mine Operations, Production Management;



Product Overview

The wireless paging watch is a high-performance, ultra-long standby time, long-range receiving color display watch terminal. It can display full Chinese, English, and numbers. Supports mixed reception and display of GBK and ASCII codes, greatly improving the scope of customer use.

In terms of hardware, it consists of a high-performance RAM core, a spread spectrum chip, and a high-precision clock. High-performance hardware and a highly sensitive touch screen provide reliable assurance for the stable operation of the entire unit.

In terms of software, it adopts a mechanism of CAD listening detection, dynamic display, and timeout sleep, extending the watch's standby time.

Moreover, the appearance design adopts industrial-grade design standards, making it aesthetically pleasing and elegant.

Fast transmission, high stability, strong penetration

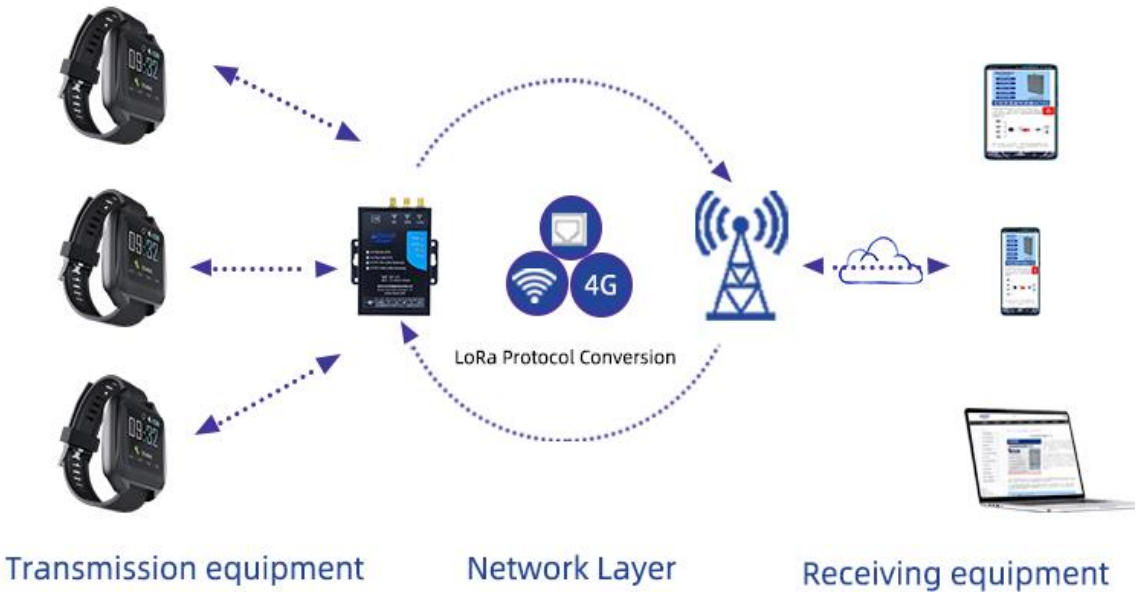


LoRa Watch Pager ACLW3



Product Features

•Based on LoRa™ Spread Spectrum Modulation Technology
•CAD Gap Listening Reception
•420~450MHz License-Free Band (Other bands customizable)
•Receive Sensitivity up to -135dBm
•Full Chinese Character, English, and Number Display
•High-Precision Perpetual Calendar Clock
•Visual Operation Interface
•460mAh Ultra-Large Capacity Battery with Intelligent Charging Management
•Can store 128 received messages (First-In-First-Out principle)
•Can set 10 group addresses for reception
•Can receive via Single Watch, Group, or Broadcast
•Can select and send acknowledgment codes via keys
•Can confirm tasks via the host
•Open-field reception range of 1-2 km



Product Overview

The wireless paging watch is a high-performance, ultra-long standby, long-range receiving color display watch terminal. It supports full display of Chinese, English, and numbers. It receives and displays GBK and ASCII mixed codes, significantly enhancing the user's application scope.

Hardware-wise, it consists of a high-performance RAM core, a spread spectrum chip, and a high-precision clock. This high-performance hardware provides reliable assurance for the stable operation of the entire device.

Software-wise, it employs a mechanism of CAD detection, dynamic display, and timeout sleep, improving the watch's standby duration.
Moreover, the appearance design adopts industrial-grade standards, being aesthetically pleasing and elegant.

Application Fields

•Restaurants & Hotels, Meeting Notifications, Task Assignment;
•Police Security, Property Security, Railway Inspection;
•Nurse Duty, Elderly Call, Pool Lifeguarding;
•Construction, Coal Mine Operations, Production Management;

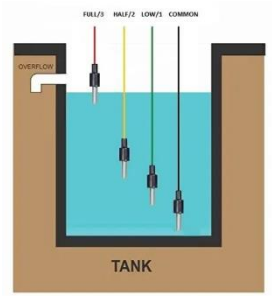
4G Wireless Water Leak Sensor _AC107



Product Features

•4G Full-Network Compatibility: Supports China Mobile/Unicom/Telecom 4G Cat1 networks for seamless IoT platform access.
•Ultra-Low Power Design: Standby current ⩽8μA; ⩾5-year battery life with default reporting intervals.
•Multi-Level Alarms: Local voice alerts + platform push + phone call/SMS notifications (optional).
•Ingress Protection: IP53-rated dust/water resistance.

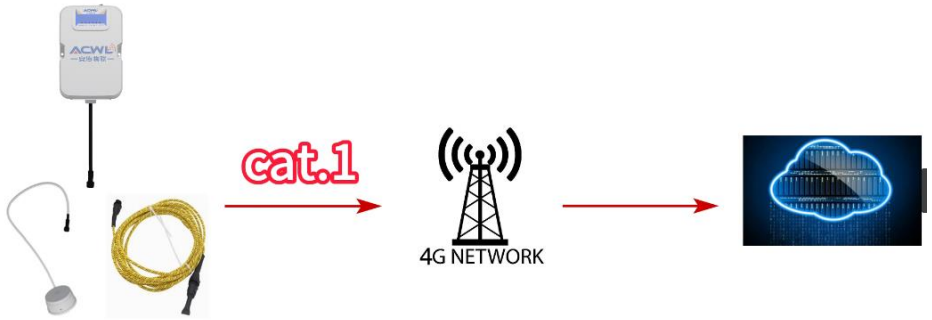
Item	Specification
Power Supply	3.6V Lithium Thionyl Chloride Battery
Communication	4G CAT1
Response Time	⩽1 second
Operating Temp.	-45℃ to +85℃
Standby Current	⩽8μA
Dimensions	75×30×105mm
Protection Rating	IP53
Installation	Vertical mount, screw-fixed





Product Overview

The 4G Water Leak Sensor is an intelligent monitoring device based on Cellular IoT (4G Cat1) technology, designed for real-time detection of liquid leakage (e.g., pipe bursts, server room seepage, warehouse flooding). It transmits water level alarms to cloud platforms or user mobile devices via 4G networks, supporting remote monitoring and multi-level alarm linkage. Ideal for unattended environments like data centers, warehouses, basements, and electrical rooms.




Leak Sensing Cable


Detection Probe


RVV Multi-Core Cable

RS485 Wireless Data Logger



AC220-LoRa/NB_IoT

Product Features

1.Data Logger can enter sleep mode with ultra-low power consumption; Standby current < 10μA.
2.Built-in high-capacity lithium battery for power supply, equipped with a solar panel to ensure long-term stable operation.
3.IP67 waterproof design, dedicated mounting bracket, screw fixing, compact size, easy installation.
4.Acquisition interval can be set; data from sensor end is periodically detected and reported to the cloud platform or received by other devices.
5.Parameters of the data logger and sensors can be modified remotely (except LoRa communication parameters).
6.For commonly used pressure and level sensors, relevant data can be directly queried on our company's cloud platform (PC or mobile), enabling remote control and management (apply for a username and password from sales personnel for access).
7.For sensor specifications not currently supported, the logger can transparently transmit data directly to the cloud platform or other receiving devices; users parse the sensor data themselves, with our company providing support.
8.The data logger supports customization; customers provide the relevant sensor for interfacing and apply to sales personnel for customization services.
9.Positioning is supported, with positioning information updated once per day.

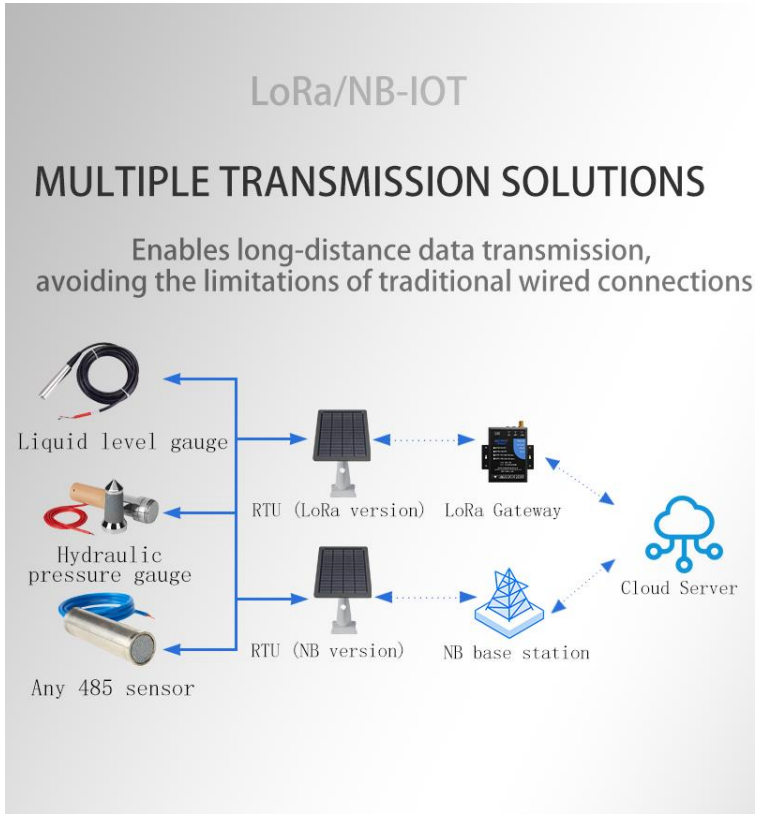
Wireless data transmission utilizes two solutions: LoRa and NB-IoT:

•LoRa Solution (AC220L): Based on Semtech's low-power long-range LoRa spread spectrum wireless data transmission solution (SX1278), signal coverage up to 1km.
（Level Meter/Level Gauge/Flow Meter/Pressure Gauge/Pressure Meter/Other Sensors ---LoRa Collector AC220L --- Gateway --- Cloud Server --- WEB/APP）

•NB-IoT Solution (AC220N): Based on MTK high-performance NB-IoT chip, supports all major carrier networks (China Mobile, China Telecom, China Unicom). Low-power design; data is uploaded directly to the user's cloud platform via NB base stations.
（Level Meter/Level Gauge/Flow Meter/Pressure Gauge/Pressure Meter/Other Sensors ---NB Collector AC220N --- Gateway --- Cloud Server --- WEB/APP）

Product Overview

The RS485 Wireless Data Logger can connect to any device with a 485 interface, periodically access connected sensors to collect data, and achieve long-distance, ultra-low-power wireless transmission. It is widely applicable in fields requiring data acquisition and monitoring for sensors such as pressure, level, flow, etc.



Wireless Smoke Alarm AC102

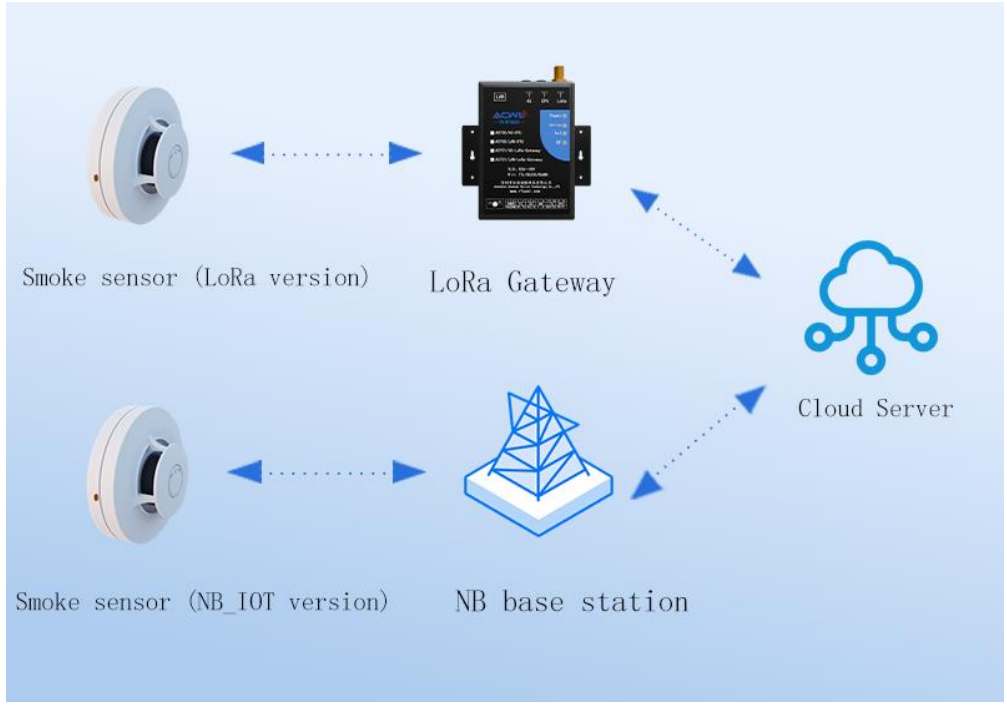




Wireless data transmission adopts two schemes: LoRa and Cat1:

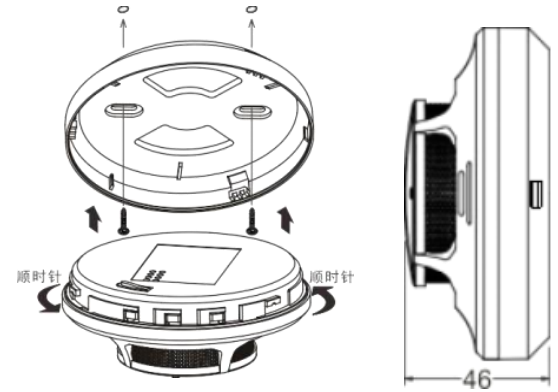
LoRa Scheme (AC102L): Based on Semtech's low-power long-range LoRa spread spectrum wireless data transmission solution Sx1278, featuring sleep wireless wake-up function, signal coverage 1km.

Cat1 Scheme (AC102N): Based on MTK high-performance Cat1 chip, Full Netcom network standard, compatible with the three major carrier networks, low-power design. Data is directly uploaded to the user's cloud platform via NB base station.



Product Overview

The photoelectric smoke fire detector (hereinafter referred to as: smoke alarm) is an alarm that detects fire through smoke. When smoke is generated and reaches a certain concentration, the alarm will emit audible and visual alarm signals to remind you to take appropriate measures, effectively protecting the lives and property safety of you and your family. The alarm adopts photoelectric smoke sensing components and excellent production processes, featuring stable operation, aesthetically pleasing appearance, and no need for debugging. It can be widely used in residences, lounges, cafes, dance halls, equipment rooms, and other places for fire safety alarm monitoring. The alarm has a built-in high-volume buzzer that emits a high-decibel sound after alarming. It also transmits remotely to the control center wirelessly. The alarm probe is powered by a 3V non-removable lithium-manganese battery (CR123A), featuring ultra-low power consumption, self-test function, and low battery voltage warning function. The wireless transmission part is powered by two ER14505 lithium thionyl chloride batteries with an ultra-low power consumption design. Continuous working time can reach over 5 years.



Wireless Temperature & Humidity Sensor



AC103 Card-Type

Product Features

Utilizes the high-performance, low-power STM8L microcontroller for both sensor data acquisition and wireless data transmission. Users can set acceptable temperature and humidity ranges; if readings exceed these ranges, the sensor will alarm and report, providing convenience for customers. The device also features local storage, saving each uploaded data point locally with a maximum capacity of 10,000 records, facilitating customer queries.

Equipped with a built-in low-power, high-precision digital temperature and humidity sensing chip. Measurement and accuracy ranges:
oTemperature: ±0.5°C (max) @ -10°C to 85°C, Range: -40°C to +125°C
oHumidity: ±5% RH (max) @ 0 - 90% RH, Range: 0% to 100% RH.

Wireless data transmission employs two solutions: LoRa and NB-IoT:
oLoRa Solution (AC103L): Based on Semtech's low-power, long-range LoRa spread spectrum wireless data transmission solution Sx1278. Features sleep mode with wireless wake-up capability. Signal coverage: 1km.

oNB-IoT Solution (AC103N): Based on MTK's high-performance NB-IoT chip. Supports all major carrier networks nationwide. Low-power design. Data is uploaded directly to the user's cloud platform via NB base stations.

Features a built-in 4200mAh rechargeable lithium battery for ultra-long battery life and reusability. Card-type ultra-thin design, compact size, and easy installation. Widely applicable in IoT scenarios requiring temperature and humidity monitoring and alarms, such as communication equipment rooms, factory production lines, pharmaceutical warehouses, large logistics warehouses, agricultural greenhouses, flower greenhouses, archives, museums, HVAC control, etc.



Wireless Temperature & Humidity Sensor



LoRa Version: AC103L
CAT1 Version: AC103N

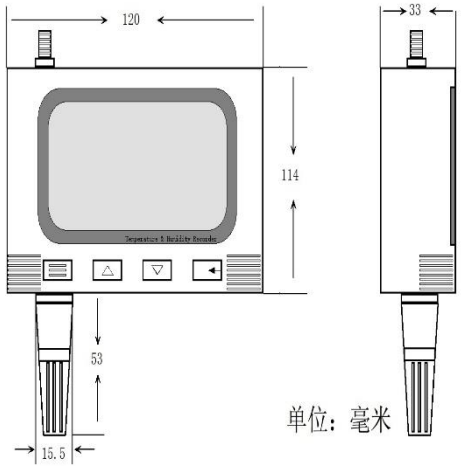
Product Features

Parameter	LoRa Version (AC103L)	CAT1 Version (AC103N)
Frequency	433MHz, 490MHz	Full network compatibility
Range	1km (LOS)	Unlimited (4G coverage)
Power	5000mAh Li-ion (HT/LT battery optional)	
Charging Port	Mini-USB (Red/blue LED indicators)	
Temp. Range/Accuracy	-40°C~60°C (LT battery), -10°C~60°C (standard); ±0.5°C	
Internal Storage	10,000 records	
Humidity Accuracy	0–99% RH, ±5% RH	
Sleep Current	10μA	
Configuration	USB cable	
Reporting Interval	1–65,536 min (0 = disabled)	
Sampling Interval	LoRa: 10s; CAT1: 1 min (red LED blinks)	
Alarm Threshold	Configurable; 3 alerts/minute if triggered	
Dimensions/Weight	120×114×13.5mm, 250g (w/battery)	
Screen Temp. Range	-20°C to 65°C	
Operating Temp.	-20°C to 75°C	
Operating Humidity	10–90% RH (non-condensing)	
Storage Temp.	-40°C to 85°C	
Storage Humidity	≤95% RH (non-condensing)	

Product Overview

Equipped with STM8L ultra-low-power MCU for data acquisition and wireless transmission. Users can set customized T/H thresholds – exceeding these triggers immediate alarms. Features local storage for up to 10,000 records for data verification.
Precision Specifications:
•Temperature: ±0.5°C (max) @ -10°C to 85°C; Range: -40°C to +125°C
•Humidity: ±5% RH (max) @ 0-90% RH; Range: 0-100% RH
Wireless Technologies:
•LoRa Version (AC103L):
Semtech Sx1278 chip for long-range (1km), low-power communication. Supports wireless wake-up.

•CAT1 Version (AC103N):
MTK CAT1 chip for 4G connectivity. Compatible with all major carriers. Direct cloud upload.
Key Features:
•5000mAh rechargeable Li-ion battery (extended runtime)
•Wall-mount design (compact, easy installation)
•Applications: Server rooms, warehouses, greenhouses, archives, museums, HVAC control



Platinum Resistance Temperature Collector AC105





PT100 Three-Wire



PT100 Four-Wire

Product Features

Item	Parameter Value
Power Supply	4.2V Lithium Battery (Rechargeable)
Communication	4G CAT1
Operating Temperature	-15°C ~ +65°C
Measuring Range	-200°C ~ +850°C
Measuring Accuracy	0.1°C (PT1000/PT100 Four-Wire)
	0.3°C (PT100 Three-Wire)
Response Time	60 Seconds
Standby Power	≤8μA
Housing Dimensions	75*30*105mm
Protection Rating	IP53
Installation Method	Vertical Mounting, Screw Fixation

Product Overview

The Platinum Resistance Temperature Collector is a high-precision temperature monitoring device based on platinum resistance sensors (PT100/PT1000), designed for real-time detection of ambient or equipment temperature (e.g., industrial equipment, laboratories, storage environments). The device pushes temperature data to cloud platforms or user mobile phones via 4G network, supporting remote monitoring and multi-level alarm linkage. It is suitable for scenarios requiring high-precision temperature monitoring.

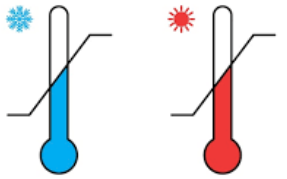
Product Features
High-Precision Measurement: Utilizes platinum resistance sensors, measuring range -200°C ~ +850°C, accuracy ±0.1°C.

4G Full Netcom: Supports China Mobile/Unicom/Telecom 4G Cat1 network, seamlessly accessing IoT platforms.

Low-Power Design: Standby current ≤8μA, default reporting cycle battery life ≥3 years.

Multi-Level Alarm: Supports platform push + mobile phone call/SMS notification (optional).

Dust & Water Resistance: IP53 protection rating.



-200°C ~ +850°C

Vibrating Wire Collector to 485



AC104-16A



AC104-1A



AC104-4A



AC104-8A

Parameter Specifications

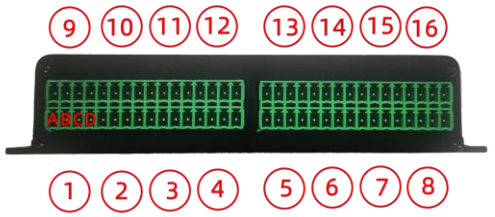
(1) High-Voltage Excitation Acquisition Parameters
•External Power Supply: 6~24V
•Standard 485-Modbus Protocol
•Average Device Current: 50mA (Default acquisition cycle: 5S)
•Acquisition Capture Time: ≤2S
•Temperature Sensor Type: NTC (Default 3KΩ)
•Temperature Acquisition Accuracy: 0.5℃
•Temperature Acquisition Range: -10℃~80℃
•Vibrating Wire Acquisition Resolution: 0.01Hz
•Vibrating Wire Acquisition Accuracy: ≤0.1Hz
•Vibrating Wire Excitation Voltage: ≥150V
•Excitation Method: Pulse Excitation
•Vibrating Wire Frequency Acquisition Range: 600Hz~6kHz
•IP65 Waterproof Rating
•Push-in terminal block wiring, convenient for on-site construction.
(2) Low-Voltage Sweep Frequency Acquisition Parameters
•External Power Supply: 6~24V
•Standard 485-Modbus Protocol
•Average Device Current: 50mA (Default acquisition cycle: 5S)
•Acquisition Capture Time: ≤2S
•Temperature Sensor Type: NTC (Default 3KΩ)
•Temperature Acquisition Accuracy: 0.5℃
•Temperature Acquisition Range: -10℃~80℃
•Vibrating Wire Acquisition Resolution: 0.01Hz
•Vibrating Wire Acquisition Accuracy: ≤0.1Hz
•Vibrating Wire Excitation Voltage: ≤5V
•Excitation Method: Multi-band sweep frequency to excite resonance
•Vibrating Wire Frequency Acquisition Range: 600Hz~6kHz
•IP65 Waterproof Rating
•Push-in terminal block wiring, convenient for on-site construction.

Product Overview

The Vibrating Wire Transmitter is a specialized device for collecting vibrating wire signals and converting them into MAX485 signals, outputting via the Modbus protocol. The transmitter collects and stores the variation data of vibrating wire sensors and temperature data from sensors embedded in structures such as building beams, bridges, and steel towers. The data is then transmitted to the master control device via the MAX485 signal. This product offers two acquisition modes, providing users with more flexible choices:

High-Voltage Excitation: This mode excites the vibrating wire sensor with a high voltage, offering higher stability. It is particularly suitable for short-term monitoring scenarios requiring strict accuracy, but long-term use may shorten the equipment lifespan.

Low-Voltage Sweep Frequency: This mode employs low-voltage sweep frequency technology. While its stability is slightly lower than the high-voltage mode, it has a longer lifespan and is more suitable for application scenarios requiring long-term continuous monitoring.





Wireless Vibrating Wire Collector



AC104_8B_CAT1 for 8-Channel Vibrating Wire Collector



AC104_4B_LoRa for 4-Channel Vibrating Wire Collector

Technical Specifications

Parameter	LoRa Solution	NB-IoT/CAT1 Solution
Frequency	433MHz, 490MHz	Carrier network (full compatibility)
Range	1km (LOS)	Coverage-dependent
Power Source	Built-in rechargeable Li-Al battery (4.2V)	
Battery Capacity	9000mAh (rechargeable)	
Data Uploads	10,000+ uploads (full charge)	
Internal Storage	8,000 records (cyclic storage)	
Current	Sleep: 10μA Beidou: <45mA Data acquisition: <100mA Transmit: <120mA	Sleep: 20μA Beidou: <45mA Data acquisition: <100mA Network: <700mA Upload: <300mA
Frequency Range	200Hz–6000Hz (±0.1Hz, 0.01Hz res.)	
Temperature	Sensor: 3kΩ Range: -20°C–70°C (±0.5°C)	
Sampling Interval	Configurable (0–65,535 minutes)	
Functions	Auto Beidou positioning (24h update) Multi-server TCP support Vibrating wire frequency collection	
Configuration	UART-TTL (Mini-USB interface)	
Housing	IP-rated plastic	
Dimensions	168 × 93 × 60 mm (1kg)	
Environment	-15°C–60°C (95% RH) Extended: -20°C–75°C	
Compliance	GB/T 13606-2007, JJF 1401-2013	

Product Overview

The eight-channel vibrating wire collector is designed to acquire vibrating wire signals. It periodically collects frequency variations (from embedded sensors in structures like beams, bridges, and steel towers) and temperature data, transmitting them to cloud servers via LoRa, NB-IoT, or CAT1 technologies. The server processes, stores, and visualizes this data, providing critical insights for infrastructure, smart cities, and safety monitoring.

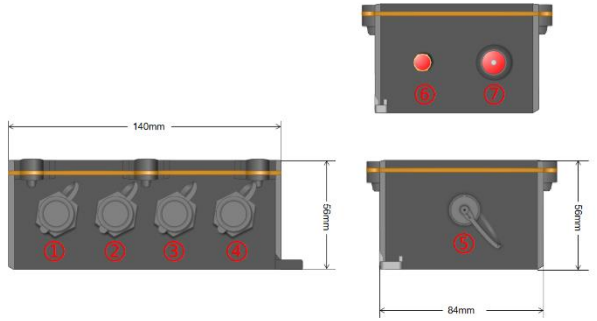
Wireless Solutions:

•LoRa Solution: Based on Semtech's low-power, long-range Sx1262 chip. Range: 1km (LOS).

•NB-IoT/CAT1 Solution: Uses carrier networks (China Mobile/Telecom/Unicom). Data uploads directly to cloud platforms via NB/CAT1 base stations.

Features:
•Electronic encoding, remote parameter configuration (e.g., sampling intervals).
•Local storage for 8,000+ records.
•Temperature drift compensation.
•IP-rated waterproof enclosure, easy installation.

Applications: Bridges, buildings, pipelines, tunnels, and IoT monitoring scenarios.



Wireless Dual-Axis Tiltmeter



LoRa Version: AC108L
CAT1 Version: AC108N



Sensor Specifications

Specification	LoRa Scheme	CAT1 Scheme
Comm Frequency	433MHz/490MHz/868MHz/915MHz	All major carrier networks
Comm Distance	Open field line-of-sight 3.5km	Unlimited within CAT1 signal coverage
Avg Power Consumption	Supply 3.7V, Report interval 30min, Avg current 100uA	Supply 3.7V, Report interval 30min, Avg current 120uA
History Storage	8000 records (locally readable) Server can access history storage records	8000 records (locally readable) When no signal, saves last 40 records; retransmits upon signal recovery.
Power Supply	Built-in high-performance 4.2V rechargeable battery (Battery capacity 7500mAh) External solar charging (Max charging current 5V & 150mA)	
Operating Time	Without solar charging: 7500mAh battery: LoRa can transmit 20,000 times; CAT1 version can transmit 10,000 times.	
Positioning Param	Supports BeiDou and GPS Positioning accuracy ⩽2.5M (CEP50, open area) (Note: LoRa itself lacks GPS, positioning info added at gateway)	
Operating Current	Sleep current <10uA GPS/BeiDou positioning current <20mA (once per day) Tilt sensor data acquisition current <5mA Wireless transmission current: LoRa <120mA; CAT1 <500mA	

Product Overview

The Dual-Axis Tilt Sensor utilizes an industrial-grade MCU and low-power wireless transmission technology (CAT1/LoRa) to periodically acquire the attitude angle of objects. Equipped with a built-in high-capacity lithium battery and self-contained solar charging, it ensures long-term stable operation without power failure concerns. Based on user-configured acquisition cycles, angle alarm thresholds, zero-point calibration, status heartbeat packets, and other functions, the sensor periodically reports data to the cloud server. Users can remotely monitor on-site facility and equipment status promptly, enabling safety monitoring, early warning, and maintenance for large-scale engineering facilities and equipment, achieving multiple intelligent management functions. Designed to industrial-grade standards, the sensor features high precision, high reliability, and high stability, making it widely applicable in buildings, bridges, tunnels, large-scale engineering equipment, and other locations.

Easy Installation
•Remote Data Transmission
•Low Battery Reminder

Parameters of field devices can be modified remotely via wireless transmission. The device features local data storage, enabling remote queries for convenient tracking and maintenance of on-site device usage.

The sensor incorporates temperature drift compensation and local data saving functions in case of network disconnection or transmission failure.

The housing structure is made of high-strength aluminum alloy material with a sealed dustproof, waterproof, and corrosion-resistant design (IP67 protection rating). The product features easy installation, simple debugging, usage, and maintenance. It is widely suitable for various leveling work scenarios such as building construction, geological exploration, municipal engineering, hydropower, bridges and tunnels.

High-Precision 485 Tiltmeter



AC108B



Technical Specifications

Item	Parameter
Measuring Axes	Dual-axis (X/Y)
Measuring Range	±90°
Resolution	High Precision: 0.001° Low Precision: 0.1°
Accuracy	High Precision: ±0.005° (within 0-5° range) ±0.01° (within 5-15° range) Low Precision: ±0.25° (within 0-5° range) ±0.5° (within 5-15° range)
Output Interface	RS-485 (Supports Modbus RTU)
Communication Baud Rate	1200-115200bps (Default: 9600)
Supply Voltage	DC 6-24V (Recommended: 12V)
Operating Temperature	-40℃ ~ +85℃
Protection Rating	IP67 (dustproof and waterproof)
Mounting Method	Horizontal/Vertical installation, screw mounting

Product Overview

The 485 Inclinometer Sensor is a high-precision angle measurement device based on MEMS (Micro-Electro-Mechanical Systems) technology. It incorporates a Kalman filtering algorithm and integrates an RS-485 digital communication interface. It can monitor the tilt angle of an object in single-axis or dual-axis directions in real-time. Suitable for construction machinery, bridge monitoring, geological hazard warning, platform leveling, and other scenarios.

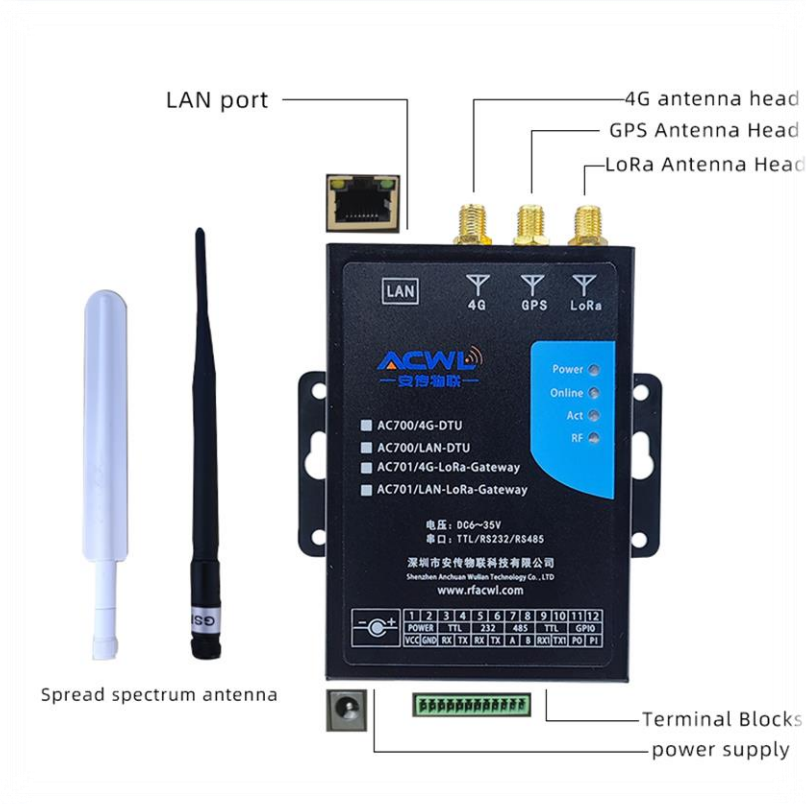
Product Features

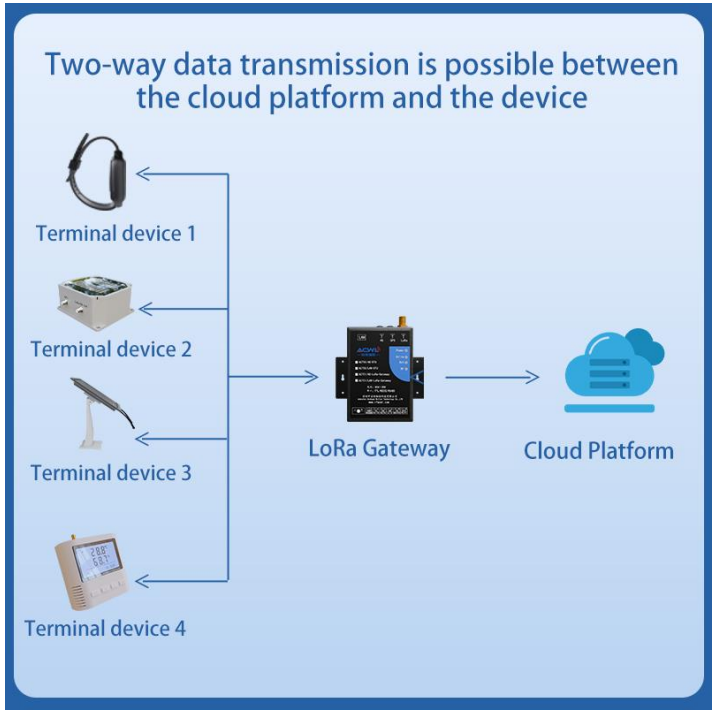
•High-Precision Measurement: Resolution up to 0.001° (High Precision), 0.1° for Low Precision model. Accuracy ±0.005° (typical) (High Precision), ±0.25° for Low Precision model.
•Wide Measuring Range: X±90° / Y±90°.
•Digital Output: Supports RS-485 communication, compatible with Modbus RTU protocol.
•Anti-Interference Design: IP67 protection rating, suitable for harsh environments.
•Low Power Consumption: Operating current < 20mA (6-24V wide voltage power supply).

Falling Stone Protection Guardrail Alert



LoRa Gateway (Host)
AC701





Product Overview

This is a wireless data transmission gateway for LoRa to 4G/RJ45 (Ethernet port). It is specifically designed to convert LoRa data or serial port data into TCP data, or convert TCP data into LoRa data or serial port data, enabling transmission via wireless communication networks. It is a wireless relay device. The hardware includes main components such as the controller unit, communication modules (4G module, LoRa module, Ethernet module), power management module, and interface conversion circuits.

This wireless gateway adopts an industrial-grade high-performance 32-bit communication processor, supported by an embedded OS real-time operating system software platform. It embeds the standard TCP/IP protocol stack and supports transparent transmission of serial port data. WDT (Watchdog Timer) design ensures system stability. It features a complete anti-disconnect mechanism to guarantee the gateway is always online. The SIM/UIM card interface has built-in 15KV ESD protection. It can be used with our company's LoRa terminal modules or LoRa finished products.

The gateway provides TTL/RS232/RS485 communication interfaces, supporting common baud rates from 1200-115200bps, and common parity settings like 8N1, 8O1, 8E1. It can directly connect to serial devices to achieve transparent data transmission. Additionally, it provides an independent TTL interface for parameter configuration. Using our company's matching parameter configuration software, gateway parameters can be flexibly configured. Encased in a metal housing with IP30 protection rating, featuring external wiring terminals and a wide voltage design (DC 5-24V), it facilitates installation in industrial application sites. Supports serial software upgrade and server remote maintenance.

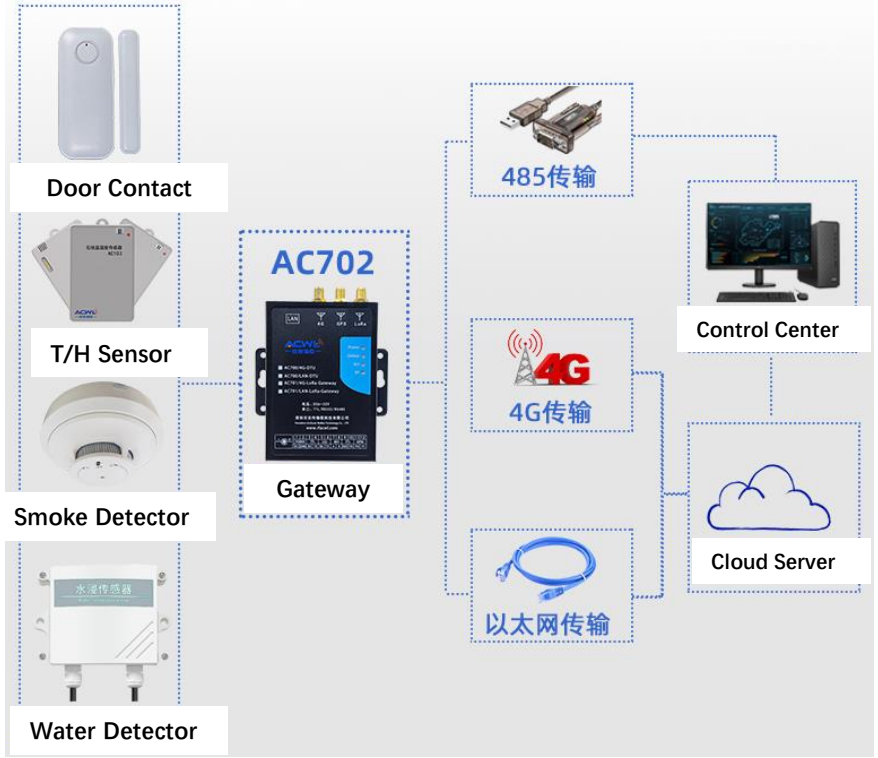
This gateway serves as a bridge connecting terminal modules or finished products with the cloud platform server for data exchange. The protocol is open, allowing direct connection to the customer's cloud platform or third-party platforms like Alibaba IoT Cloud Platform, facilitating the IoT integration of the customer's products.

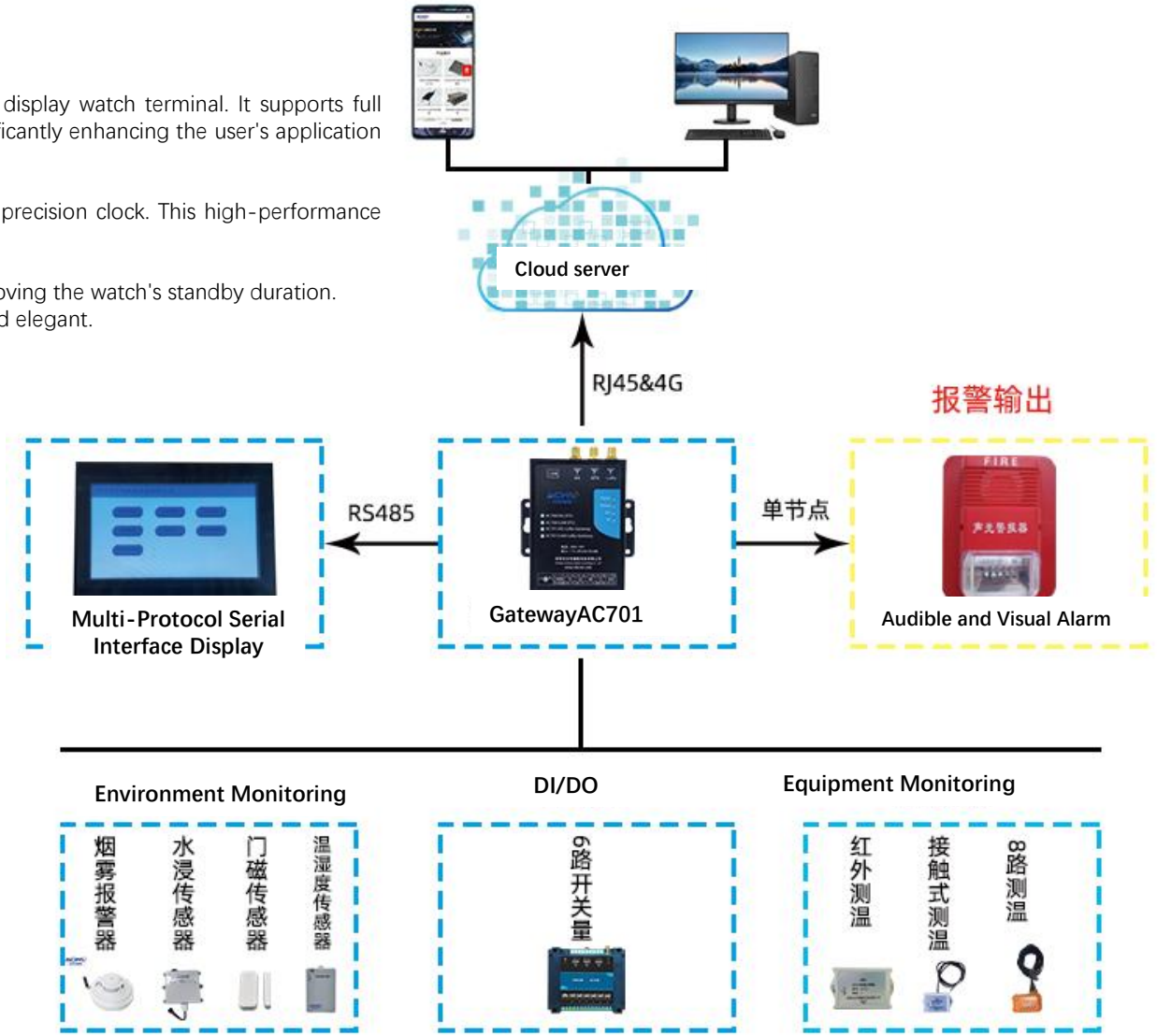
LoRa Gateway (Host)
AC702

The wireless paging watch is a high-performance, ultra-long standby, long-range receiving color display watch terminal. It supports full display of Chinese, English, and numbers. It receives and displays GBK and ASCII mixed codes, significantly enhancing the user's application scope.

Hardware-wise, it consists of a high-performance RAM core, a spread spectrum chip, and a high-precision clock. This high-performance hardware provides reliable assurance for the stable operation of the entire device.

Software-wise, it employs a mechanism of CAD detection, dynamic display, and timeout sleep, improving the watch's standby duration. Moreover, the appearance design adopts industrial-grade standards, being aesthetically pleasing and elegant.





Switch Input/Output Monitoring Device



AC109

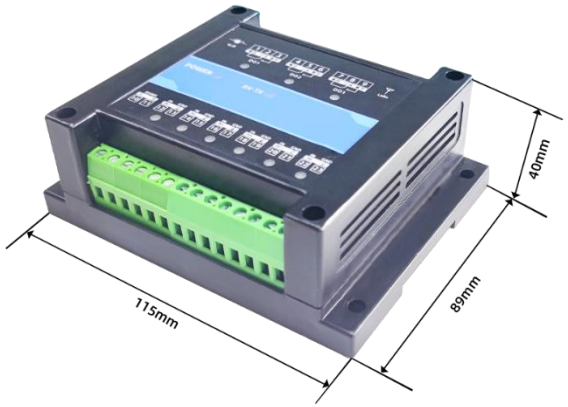
Product Features

LoRa modulation method, high anti-interference performance.
Frequency is configurable, allowing multiple groups to operate simultaneously.
Supports Modbus protocol.
Supports 3 dry contact outputs.
Supports 6 inputs.
Supports one RS485 transmission port.
DIN rail mounting for standardized operation.
Dedicated configuration software provided for easy parameter modification by customers.
Maximum transmit power selectable: 100mW or 2W.
Receive sensitivity: -148dBm.
Wide voltage input: 6V-36V.
Operating temperature: -40℃~85℃.

Parameter	Transmit Power 100mW	Transmit Power 2W
Input Voltage	5V-36V	5V-36V
Standby Current	20mA	20mA
Transmit Power	100mW (20dBm)	2W (33dBm)
Transmit Current	[60mA@12V]{.mark}	[500mA@12V]{.mark}
Receive Sensitivity	-148dBm @500bps	-148dBm @500bps
Serial Port Baud Rate	1200~115200bps	1200~115200bps
Serial Port Parity	8E1/8O1/8N1 (Selectable)	8E1/8O1/8N1 (Selectable)
Response Time	Timely	Timely
Operating Humidity	10% ~ 90% RH, non-condensing	10% ~ 90% RH, non-condensing

Product Overview

The AC109 is a switch input/output device compatible with the Modbus protocol. For wireless transmission, it utilizes LoRa modulation technology, enhancing transmission anti-interference and long-distance capabilities. In terms of switch I/O, it features 3 dry contact outputs, 3 dry contact inputs, and 3 level inputs (3V to 24V) with detection capability. It also retains wireless transparent transmission functionality, making it highly suitable for applications in industrial control fields. This product can be used in complex environments such as equipment rooms, electrical cabinets, and other places with high magnetic fields. It is designed for DIN rail mounting, facilitating installation in standard settings.



Application Fields

Switch remote control •
Security systems •
Power automation telemetry •
Wireless remote control and telemetry •
Building and residential automation and security •
Access control systems

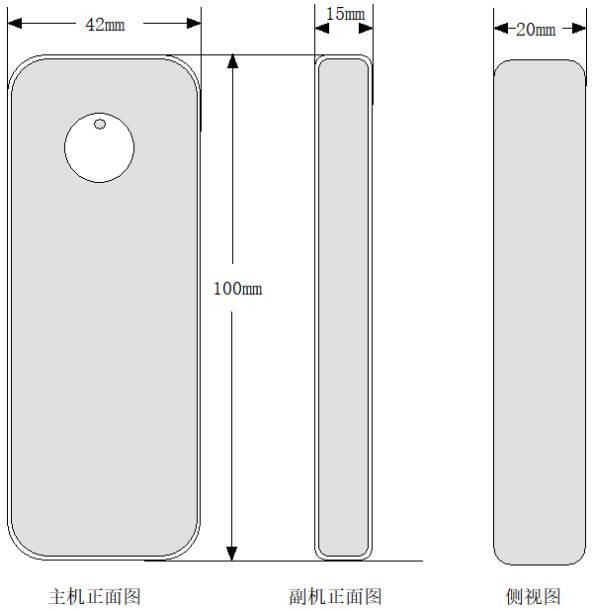
Lora Wireless Door Sensor



AC109

Product Features

•Lora modulation method, high anti-interference performance.
•Frequency can be set, allowing multiple groups to work simultaneously.
•Gateway supports Modbus protocol.
•Simple installation, using 3M adhesive tape.
•Supports heartbeat signal, allowing awareness of door/window status.
•Dedicated configuration software for easy parameter modification by customers.
•Maximum transmit power selectable up to 100mW.
•Receiving sensitivity -148dBm.
•Powered by AA batteries, user-replaceable.
•Operating temperature -20℃ ~ +80℃.
•Wireless Frequency: 420MHz ~ 450MHz
•Operating Voltage: 2.7V ~ 3.6V
•Sleep Current: ⩽ 5μA
•Operating Temperature: -20℃ ~ +80℃
•Product Weight: 70g
•Transmission Method: Lora
•Alarm Current: ⩽ 10mA
•Service Life: Approximately 3 years
•Operating Humidity: ⩽ 95% RH
•Product Dimensions: 100*42*20 (mm)



Product Overview

The AC110 is a wireless door sensor device. Its main function is to detect the status of doors and windows and wirelessly notify the host. The host is a wireless receiver, AC702, which analyzes, processes, and saves the information sent by the door sensor. Customers can read the door/window open/close status or device status via the Ethernet port or 485 serial port using the standard Modbus protocol. In terms of wireless transmission, it uses Lora modulation technology, enhancing anti-interference performance and long-range capability. This door sensor is designed with low power consumption, using standard AA batteries. Two batteries can last for up to 3 years, and customers can replace the batteries themselves.

Application Fields

•Equipment Rooms
•Security Systems
•Hotels, Warehouses
•Smart Buildings
•Automation and Security
•Access Control Systems

Wireless Remote Control



AC121

Product Features

•Based on LoRa™ Spread Spectrum Modulation Technology
•CAD Gap Listening Reception
•420~450MHz License-Free Band (Other bands customizable)
•Receive Sensitivity up to -135dBm
•Full Chinese Character, English, and Number Display
•High-Precision Perpetual Calendar Clock
•Visual Operation Interface
•460mAh Ultra-Large Capacity Battery with Intelligent Charging Management
•Can store 128 received messages (First-In-First-Out principle)
•Can set 10 group addresses for reception
•Can receive via Single Watch, Group, or Broadcast
•Can select and send acknowledgment codes via keys
•Can confirm tasks via the host
•Open-field reception range of 1-2 km

Parameter	Specification
Solution	LoRa
Frequency	433MHz, 490MHz
Range	500m line-of-sight (open area)
Power Supply	Built-in 420mAh rechargeable Li-ion battery
Charging Port	Mini-USB (Red LED on during charging, off when fully charged)
Buttons	Up to 3 buttons (configurable as 1/2/3 buttons)
Quiescent Curren	10μA
Configuration	Mini-USB (dedicated setup cable)
Button Mode	Trigger interrupt
Size & Weight	79×38×13mm, 29g (incl. battery)
Housing	Plastic (ABS+PC)
Operating Temp.	-20℃ to 60℃

Product Overview

Utilizes a high-performance, low-power microcontroller. Buttons wake the device via terminal interrupt. Button encoding IDs are user-configurable, and key values are distinguishable via protocol. Features ergonomic design and superior button performance.

Application Fields

Remote operation data transmission and reception



Single-Channel Contact Temperature Measurement Controller



AC130

Product Features

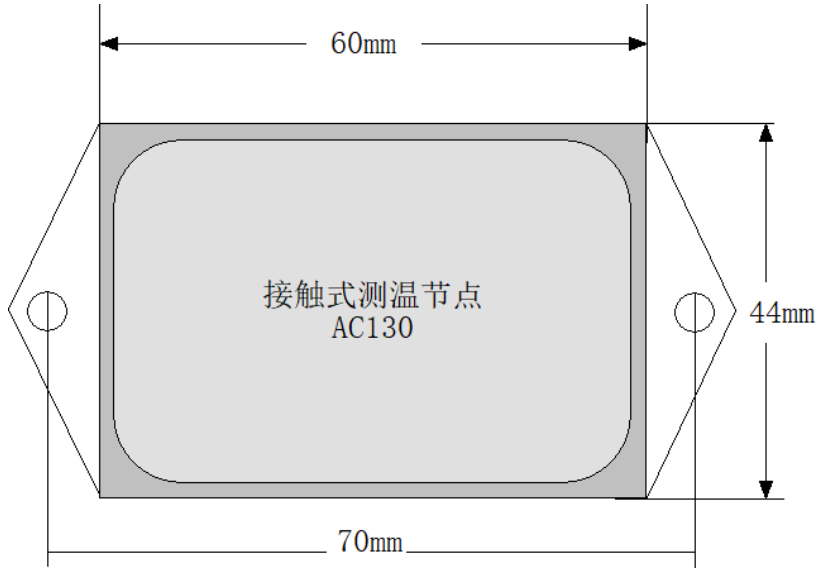
•LoRa modulation, high anti-interference performance.
•Configurable frequency, allowing multiple groups to work simultaneously.
•Gateway supports Modbus protocol.
•Simple installation, fixed with screws.
•Configurable acquisition cycle.
•Dedicated configuration software for easy parameter modification by customers.
•Maximum transmit power selectable up to 100mW.
•Receiving sensitivity -148dBm.
•Powered by ER14505 battery, user-replaceable.
•Operating temperature -20℃ ~ +80℃.
•Wireless Frequency: 420MHz ~ 450MHz
•Operating Voltage: 2.7V ~ 3.6V
•Sleep Current: ≤5uA
•Operating Temperature: -20℃ ~ +80℃
•Product Weight: 70g
•Transmission Method: LoRa
•Alarm Current: ≤10mA
•One battery can support up to 200,000 acquisitions
•Operating Humidity: ≤95% RH
•Product Dimensions: 60*45*25mm

Application Fields

•Equipment Rooms
•Security Systems
•Hotels, Warehouses.
•Smart Buildings
•Automation and Security
•Access Control Systems

Product Overview

The AC130 is a wireless single-point temperature measurement node. It is primarily used for monitoring the temperature of equipment or machinery and transmits the temperature data wirelessly to a host. The host is a wireless receiver, the AC702, which analyzes and stores the information from the single-point temperature sensor. Third-party devices can read the temperature node information via a standard Modbus protocol through an Ethernet port or 485 serial port. In terms of wireless transmission, LoRa modulation technology is used, enhancing anti-interference performance and long-range capability. This temperature measurement node features a low-power design, powered by an ER14505 battery, which customers can replace themselves.



Infrared Temperature Controller



AC131

Product Features

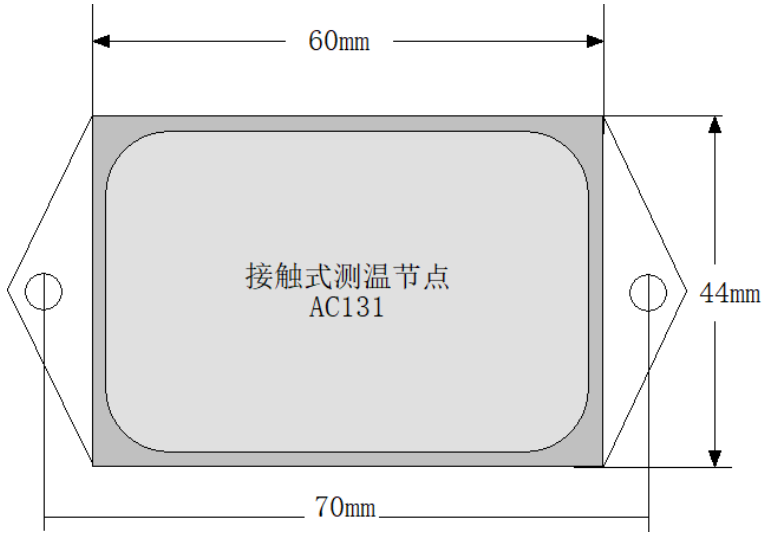
•Lora modulation method, high anti-interference performance.
•Frequency can be set, allowing multiple groups to work simultaneously.
•Gateway supports Modbus protocol.
•Simple installation, fixed with screws.
•Configurable acquisition cycle.
•Dedicated configuration software for easy parameter modification by customers.
•Maximum transmit power selectable up to 100mW.
•Receiver sensitivity -148dBm.
•Powered by ER14505 battery, user-replaceable.
•Operating temperature -20℃ ~ +80℃.
•Wireless Frequency: 420MHz ~ 450MHz
•Operating Voltage: 2.7V ~ 3.6V
•Sleep Current: ≤ 5μA
•Operating Temperature: -20℃ ~ +80℃
•Product Weight: 60g
•Transmission Method: Lora
•Alarm Current: ≤ 10mA
•Battery can support 50,000 acquisition cycles]{.mark}
•Operating Humidity: ≤ 95% RH
•Product Dimensions: 60*45*25mm
•Infrared Temperature Measurement Distance: 10CM (standard sensor), longer distances can be customized.

Application Fields

•Equipment Rooms
•Security Systems
•Hotels, Warehouses.
•Smart Buildings
•Automation and Security
•Access Control Systems

Product Overview

The AC131 is a wireless temperature measurement node primarily used for monitoring the temperature of equipment or machinery. It wirelessly transmits the equipment temperature to a host. The host is a wireless receiver, AC702, which analyzes and stores the information from the single-point temperature measurement. Third-party devices can read the temperature node information via a standard Modbus protocol through an Ethernet port or 485 serial port. In terms of wireless transmission, it uses Lora modulation technology, enhancing anti-interference performance and long-range capability. This temperature measurement node features low-power design, powered by an ER14505 battery, which customers can replace themselves.

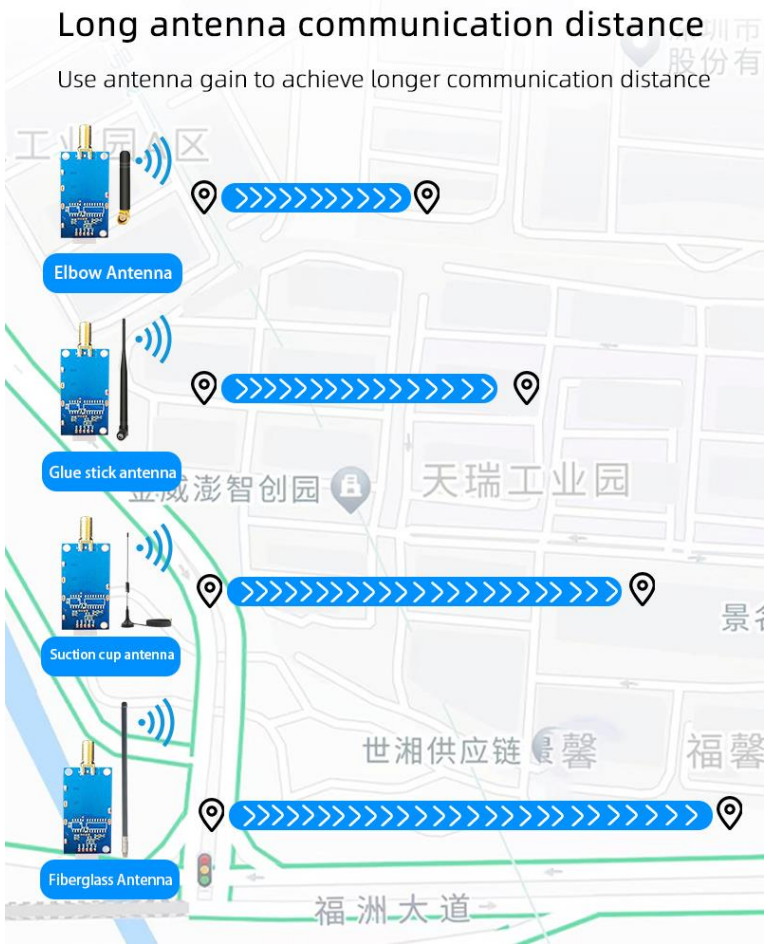


Antenna









Model: Fiberglass Antenna

- **Gain**: 6dBi
- **VSWR**: ≤1.2
- **Frequency**: 433MHz/490MHz/868MHz (selectable)



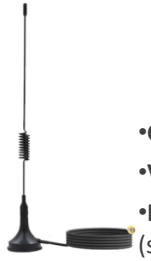
Model: Rod-type Foldable Antenna

- **Gain**: 3.5dBi
- **VSWR**: ≤2
- **Frequency**: 433MHz/490MHz/868MHz (selectable)



Model: Compact Rod Antenna

- **Gain**: 2.5dBi
- **VSWR**: ≤2.5
- **Frequency**: 433MHz/490MHz/868MHz (selectable)



Model: Suction Cup Antenna

- **Gain**: 3.5dBi
- **VSWR**: ≤1.5
- **Frequency**: 433MHz/490MHz/868MHz (selectable)

Remote BTS Tower Monitoring System





LoRa Watch



Instant Security Patrol

Door Contact

Temperature and Humidity Sensor

Wireless High-Precision Tilt Sensor

Dam Monitoring System

Understanding changes in a dam's vibrating wire signals helps monitor and maintain its safety. By analyzing data collected from vibrating wire sensors, parameters such as stress, strain, and pore water pressure within the dam can be assessed. This enables the timely detection and treatment of potential safety hazards, such as seepage and structural deformation, ultimately ensuring the safe and stable operation of the dam and the security of surrounding areas.

Vibrating Wire to RS-485 Transmitter



Temperature and Humidity Sensor



Inclinometer Sensor



Wireless Tilt Sensor



Water Level Detector



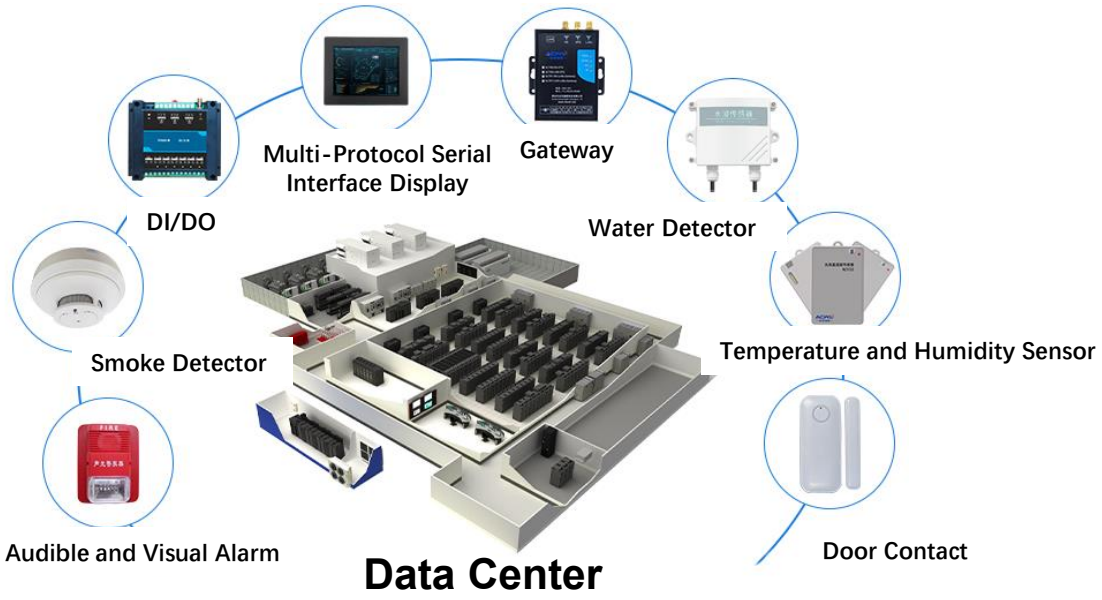
LoRa Watch

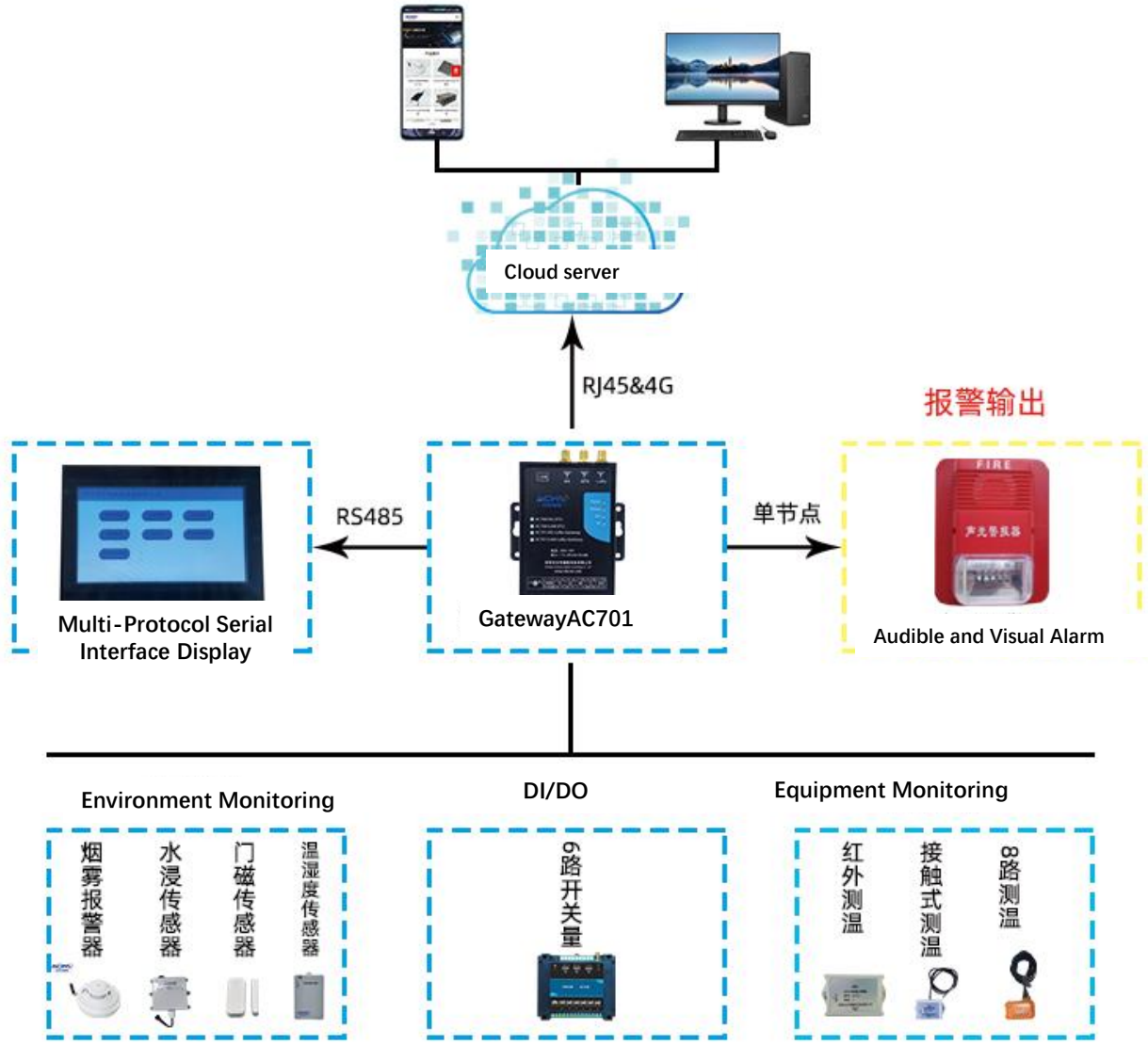


Wireless Vibrating Wire Data Collector



Data Center Computer Room Environmental Monitoring System Solution





Thanks to our strong
LoRa technological capabilities,
we look forward to collaborating with you
to develop new IoT products.

Below are the LoRa modules and RF products.

LoRa Module-SX1268



AC600A_2W

Module Specifications
Wireless Solution: SX1268
Modulation Method: LoRa
Power Supply: DC 5V - 5.5V
Carrier Frequency: 410MHz - 510MHz
Data Flow: Half-Duplex (Can transmit or receive, but not simultaneously)
Antenna Connector: Pad & APX Connector (50Ω Impedance)
Transmission Distance: 4Km - 4.5km (Average in open area, line-of-sight, rate 0.3kbps)
Power Consumption: Transmit ⩽ 1.2A, Receive ⩽ 5mA, Sleep ⩽ 1μA
Transmit Power: ⩽ 2W (33dBm)
Wireless Data Rate: ⩽ 21.88kbps & ⩾ 0.3kbps (LORA modulation mode)
Communication Interface: 4-wire SPI interface (Pad pitch 1.5mm, castellated holes/pads)
Operating Temperature: -40℃ ~ +85℃
Relative Humidity: 95% (non-condensing)
Dimensions: 21mm × 18mm × 2.4mm



AC600A_100mW

Module Specifications
Wireless Solution: SX1268
Modulation Method: LoRa
Power Supply: DC 2.1V -3.6V
Carrier Frequency: 410MHz - 510MHz
Data Flow: Half-Duplex (Can transmit or receive, but not simultaneously)
Antenna Connector: Pad & APX Connector (50Ω Impedance)
Transmission Distance: 4Km - 4.5km (Average in open area, line-of-sight, rate 0.3kbps)
Power Consumption: Transmit ⩽ 100mA, Receive ⩽ 5mA, Sleep ⩽ 1μA
Transmit Power: ⩽ 120mW (22dBm)
Wireless Data Rate: ⩽ 21.88kbps & ⩾ 0.3kbps (LORA modulation mode)
Communication Interface: 4-wire SPI interface (Pad pitch 1.5mm, castellated holes/pads)
Operating Temperature: -40℃ ~ +85℃
Relative Humidity: 95% (non-condensing)
Dimensions: 21mm × 18mm × 2.4mm

Module Introduction

This is an RF wireless module developed based on the SX1268. The module enables both transmission and reception functions. It employs the most advanced spread spectrum modulation method, featuring extremely high receiving sensitivity. Therefore, under the same transmission power, it offers lower power consumption, longer range, and stronger anti-interference capability compared to other wireless solutions. The module does not include a microcontroller (MCU) and only provides an SPI communication interface. Users do not need extensive RF knowledge or hardware debugging. Simply debug the underlying SPI communication, understand the meaning of the corresponding functions, and the logical relationship of data reception and transmission. This allows easy application of the module to achieve wireless functionality for your products. Our company provides driver code, hardware, development boards, and technical support.

LoRa Module-SX1268



AC600T_100mW



AC600T_2W

Product Features

LoRa™ Spread Spectrum modulation or GFSK modulation selectable.
Half-duplex communication, transparent serial data transmission.
380---510MHz license-free band, other frequency bands customizable.
Standard transmit power 33dBm, 7 levels adjustable.
Receiving sensitivity up to -148dBm, maximum transmit power +21dBm/33dBm.
Utilizes efficient Forward Error Correction coding and frequency hopping mechanism, offering strong anti-interference capability and low bit error rate.
Supports serial port wake-up, enabling data transmission and reception at any time without periodic wake-up intervals.
CAD detection of LoRa™ signals to prevent false wake-ups.
Supports Over-the-Air (OTA) and serial port firmware upgrades.
Can dynamically read the RSSI value of received data packets.
Multiple commands for monitoring channel occupancy.
Parameters can be modified via commands.
Flexible parameter configuration via software or MCU commands.
SMT package for convenient embedded installation.
Built-in watchdog ensures long-term reliable and stable operation.
Open field effective communication distance up to 3.5-4.5 kilometers / 6.5-10 kilometers.

Level	1	2	3	4	5	6	7
Power	4dBm	7dBm	10dBm	13dBm	16dBm	19dBm	21dBm

Level	1	2	3	4	5	6	7
Power	18dBm	19dBm	21dBm	24dBm	27dBm	30dBm	33dBm

Application Fields

Smart Home, Intelligent Transportation, Sensor Networks;
Industrial Automation, Agricultural Modernization, Building Intelligence;
Automatic Meter Reading (AMR) systems for water, electricity, gas, heating, etc.;
Equipment information collection for water conservancy, oil fields, mines, meteorology, etc.;
Street light control, grid monitoring, wind-solar hybrid systems;
Industrial equipment data wireless transmission and industrial environment monitoring;
All other situations requiring wireless replacement of wired communication.

Product Overview

The AC600T is a high-performance, low-power, long-range micro-power star-type wireless networking module. It features internal automatic spread spectrum calculation and preamble CRC error correction, does not alter user data or protocols, and uses a half-duplex transparent transmission mechanism to enable wireless replacement of wired serial port transmission. It is suitable for low-power applications such as wireless water meters, gas meters, and sensors.
The module's RF chip is based on spread spectrum and frequency hopping technology, offering superior stability, anti-interference capability, and receiving sensitivity compared to existing GFSK modules. Equipped with a low-power, high-speed processor, it delivers improved data processing capability and operational speed.
Users can flexibly configure the module's operating frequency, serial port baud rate, spreading factor, bandwidth, and other parameters according to actual needs through the configuration software provided by our company. The operation is simple and user-friendly.

LoRa Module-SX1268



AC600D_TTL_100MW
AC600D_232_100MW
AC600D_485_100MW
AC600D_TTL_2W
AC600D_232_2W
AC600D_485_2W



Product Introduction

The AC600D_2W is a high-performance, low-power, long-range micro-power RF wireless data transceiver. It features internal automatic spread spectrum calculation and preamble CRC error correction processing. It does not alter any user data or protocols and employs a half-duplex transparent transmission mechanism, achieving the function of wireless replacement.The radio's RF chip is based on spread spectrum frequency hopping technology, surpassing existing GFSK radios in stability, anti-interference capability, and receiver sensitivity. It is equipped with a low-power M0 high-speed processor, enhancing data processing capability and computational speed.

Users can flexibly configure the radio's operating frequency, serial port baud rate, spreading factor, coding rate, and bandwidth according to actual requirements using our provided configuration software. The operation is simple and convenient.

Both the software and hardware of the radio adhere to industrial-grade design standards, featuring robust protection measures. This ensures stable and reliable operation in harsh environments. The radio is designed with multiple interface options, including industrial-grade RS485, RS232, and TTL. It supports a wide input voltage range of 6V to 32V and offers both DIN rail and wall-mounting installation methods, making it fully suitable for industrial data transmission applications.

Specifications

Based on LoRa^TM^ spread spectrum modulation technology.
Half-duplex communication, transparent serial data transmission.
420~450MHz license-free frequency band. Other bands available upon request.
Production requires no debugging. Wide operating voltage range: 6V-35V DC.
Micro-power transmission: Standard 100mW and 2W power levels, both adjustable in 7 steps.
Receiver sensitivity as high as -148dBm. Maximum transmit power: +20dBm (100mW) or +33dBm (2W).
Utilizes efficient Forward Error Correction (FEC) coding and frequency hopping mechanisms for strong anti-interference capability and low bit error rate.
Supports serial port wake-up for instant data transmission/reception; no periodic wake-up time.
Supports Over-The-Air (OTA) firmware upgrade and serial port module upgrade.
Can dynamically read the RSSI value of received data packets.
Multiple commands to monitor channel occupancy.
Parameters can be flexibly set via configuration software or MCU commands.
Built-in watchdog timer ensures long-term reliable and stable operation.
Effective open-terrain communication range: approx. 3~4 km @ 100mW, approx. 6~8 km @ 2W.
Wall-mounting and DIN rail installation options for convenient field installation.

Application Fields

Smart Home, Smart Transportation, Sensor Networks;
Industrial Automation, Agricultural Modernization, Building Automation;
Automatic Meter Reading (AMR) systems for Water, Electricity, Gas, Heating;
Information collection for Water Conservancy, Oil Fields, Mines, Meteorological equipment;
Streetlight Control, Power Grid Monitoring, Wind-Solar Hybrid Systems;
Industrial equipment data wireless transmission and industrial environment monitoring;
Any other situation requiring wireless replacement of TTL/RS232/RS485 wired communication.

LoRa Module-SX1278



Industrial Data Radio
AC800D

Product Features

> Based on LoRa™ spread spectrum modulation technology.
> Half-duplex communication, serial port data transparent transmission.
> 420~450MHz license-free frequency band, other frequency bands customizable.
> Production requires no debugging; 6V-35V wide voltage range.
> Micro-power transmission, standard 100mW, 7 levels adjustable.
> Receiving sensitivity as high as -148dBm, maximum transmit power +20dBm.
> Uses efficient forward error correction coding technology and frequency hopping mechanism, strong anti-interference capability, low bit error rate.
> Supports serial port wake-up, data can be sent/received at any time, no periodic wake-up time required.
> Supports Over-The-Air (OTA) upgrade and serial port module upgrade.
> Can dynamically read the RSSI value of received data packets.
> Multiple commands to monitor air channel occupancy.
> Radio parameters can be flexibly set via software or microcontroller commands.
> Built-in watchdog ensures long-term reliable and stable operation.
> Effective communication distance in open areas can reach 3~4 kilometers.
> Interface hardware switching for convenient field installation.

Application Areas

> Smart home, smart transportation, sensor networks;
> Industrial automation, agricultural modernization, building intelligence;
> Automatic meter reading systems for water, electricity, gas, heating;
> Equipment information collection for water conservancy, oil fields, mines, meteorology, etc.;
> Street light control, power grid monitoring, wind-solar hybrid systems;
> Industrial equipment data wireless transmission and industrial environment monitoring;
> Any other situation requiring wireless replacement of TTL/RS232/RS485 wired communication.

Product Overview

The AC800D is a high-performance, low-power, long-distance micro-power RF wireless data transceiver radio. It features internal automatic spread spectrum calculation and preamble CRC error correction processing. It does not alter any user data or protocols and adopts a half-duplex transparent transmission mechanism, achieving the function of wireless replacement.

The radio's RF chip is based on spread spectrum frequency hopping technology, surpassing existing GFSK radios in stability, anti-interference capability, and receiving sensitivity. Configured with an STM low-power high-speed processor, data processing capability and operation speed are both improved.
Users can flexibly configure the radio's operating frequency, serial port baud rate, spreading factor, coding rate, and spread spectrum bandwidth parameters according to actual needs using our company's configuration host computer software. Operation is simple and convenient.

Both the software and hardware of the radio are designed to industrial-grade standards with strong protection measures, ensuring stable and reliable operation in special environments. The radio is designed with multiple interfaces: industrial-grade RS485, industrial-grade TTL, and standard DB9 RS232 serial port. With a wide voltage input range of 6-35V, it is a data transmission radio fully suitable for industrial applications.

LoRa Module-SX1278



Micro Power Spread Spectrum Wireless Module AC800IL

Product Features

>Based on LoRa™ Spread Spectrum Modulation Technology.
>Half-duplex communication, transparent serial data transmission.
>420–450MHz license-free band, other bands customizable.
>No debugging required during production. Wide voltage range: 3.4-5.5V, customizable 2.1-3.6V.
>Low power transmission, standard 100mW, 7 levels adjustable.
>Receiver sensitivity up to -148dBm, maximum transmit power +20dBm.
>Uses efficient Forward Error Correction (FEC) coding and frequency hopping mechanism, strong anti-interference capability, low bit error rate.
>Supports serial port wake-up, ready to send/receive data at any time, no periodic wake-up time.
>Supports Air Wake-up, waking user equipment via the AUX signal from the module.
>CAD detects LoRa™ signals to prevent false wake-up.
>Supports Over-the-Air (OTA) upgrade and serial port upgrade.
>Can dynamically read the RSSI value of received data packets.
>Multiple commands for monitoring channel occupancy.
>Operating mode can be switched via commands.
>Flexible parameter setting via software or MCU commands.
>2.0 wiring terminal supports TTL/RS232/RS485 level signals.
>Built-in watchdog ensures long-term reliable and stable operation.
>Effective communication distance in open areas can reach 3–5 kilometers.

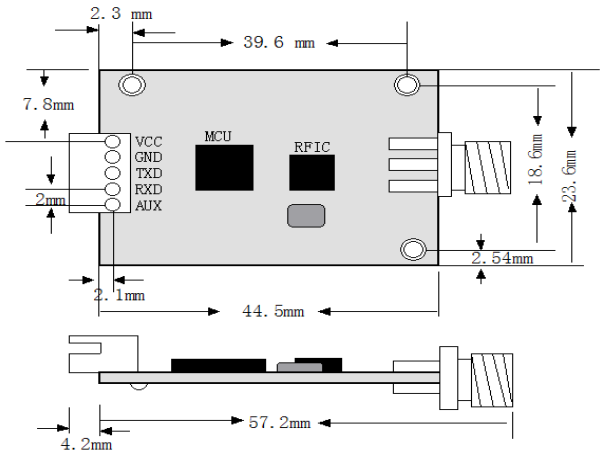
Application Fields

>Smart Home, Smart Transportation, Sensor Networks;
>Industrial Automation, Agricultural Modernization, Building Intelligence;
>Automatic Meter Reading Systems for Water, Electricity, Gas, Heating;
>Information Collection for Hydropower, Oil Fields, Mines, Meteorology, etc.;
>Street Light Control, Power Grid Monitoring, Wind-Solar Hybrid Systems;
>Industrial Equipment Data Wireless Transmission and Industrial Environment Monitoring;
>All other situations requiring wireless replacement of TTL/RS232/RS485 wired communication.

Product Overview

The AC800IL is a high-performance, low-power, long-range micro-power RF wireless data transceiver module. It features internal automatic spread spectrum calculation and preamble CRC error correction, without altering any user data or protocols. Using a half-duplex transparent transmission mechanism, it achieves the function of wireless cable replacement.

The module's RF chip is based on spread spectrum and frequency hopping technology, surpassing existing GFSK modules in stability, anti-interference capability, and receiver sensitivity. It is equipped with a low-power STM high-speed processor, improving data processing capability and operational speed. Users can flexibly configure the module's operating frequency, serial port baud rate, spreading factor, effective data rate, and spread spectrum bandwidth parameters according to actual needs through our provided PC configuration software. The operation is simple and convenient.



LoRa Module-SX1278



Industrial Data Radio
AC800MD_100mW
AC800MD_2W

Product Features

>Based on LoRa™ spread spectrum modulation technology.
>Half-duplex communication, transparent serial data transmission.
>420–450MHz license-free band, other bands can be customized.
>No debugging required during production, wide voltage range 6V-35V.
>Micro-power transmission, standard 100mW/2W, 7 levels adjustable.
>Receiving sensitivity up to -138dBm, maximum transmitting power +21/+33dBm.
>Uses efficient Forward Error Correction (FEC) encoding technology and frequency hopping mechanism, strong anti-interference capability, low bit error rate.
>Supports serial port wake-up, ready to send and receive data at any time, no periodic wake-up time.
>Parameters can be flexibly set via software or MCU commands.
>Built-in watchdog ensures long-term reliable and stable operation.
>Effective communication distance in open ground can reach 3.5~5.5/10~12 kilometers.
>Interface hardware switching for convenient field installation.

Application Fields

>Smart Home, Intelligent Transportation, Sensor Networks;
>Industrial Automation, Agricultural Modernization, Building Intelligence;
>Automatic Meter Reading Systems for Water, Electricity, Gas, Heating;
>Equipment Information Collection for Water Conservancy, Oil Fields, Mines, Meteorology, etc.;
>Street Light Control, Power Grid Monitoring, Wind-Solar Hybrid Systems;
>Industrial Equipment Data Wireless Transmission and Industrial Environment Monitoring;
>All other situations requiring wireless replacement of TTL/RS232/RS485 wired communication.

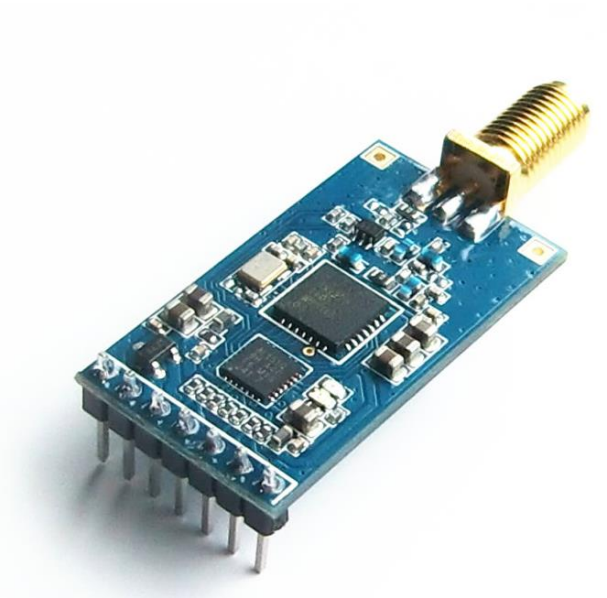
Product Overview

The AC800MD is a high-performance, low-power, long-range micro-power RF wireless data transceiver radio. It features internal automatic spread spectrum calculation and preamble CRC error correction processing, does not alter any user data or protocols, and employs a half-duplex transparent transmission mechanism, achieving the function of wireless replacement.

The radio's RF chip is based on spread spectrum and frequency hopping technology, surpassing existing GFSK radios in stability, anti-interference capability, and receiving sensitivity. It is configured with a low-power STM high-speed processor, improving data processing capability and operational speed.
Users can flexibly configure the radio's operating frequency, serial port rate, spreading factor, effective data ratio, and spread spectrum bandwidth parameters through our provided PC software according to actual needs. The operation is simple and convenient.

Both the software and hardware of the radio are designed to industrial-grade standards with strong protection measures, ensuring stable and reliable operation in special environments. The radio is designed with multiple interfaces, including industrial-grade 485, industrial-grade TTL, and a standard DB9 serial port (232). With a wide voltage input range of 6–35V, it is a data transmission radio fully suitable for industrial applications.

LoRa Module-SX1278



Low Power Spread Spectrum Wireless Module
AC800T

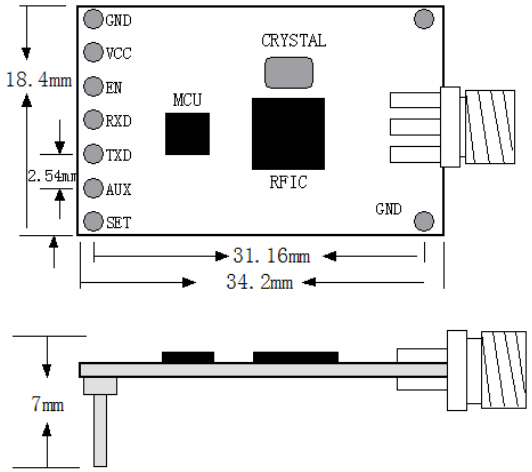
Product Features
>Based on LoRa™ Spread Spectrum Modulation Technology.
>Half-duplex communication, transparent transmission of serial port data.
>420~450MHz license-free frequency band, other frequency bands customizable.
>No debugging required during production, wide voltage range of 3.4-5.5V, customizable for 2.1-3.6V.
>Micro-power transmission, standard 100mW, 7 levels adjustable.
>Receiving sensitivity up to -148dBm, maximum transmission power +20dBm.
>Uses efficient Forward Error Correction coding technology and frequency hopping mechanism, strong anti-interference ability, low bit error rate.
>Supports serial port wake-up, ready to send/receive data at any time, no periodic wake-up time.
>Supports over-the-air wake-up, wakes user equipment via the AUX signal provided by the module.
>CAD detection of LoRa™ signals prevents false wake-ups.
>Module operating mode can be switched via commands.
>Module parameters can be flexibly set via software or MCU commands.
>2.54 standard pin header interface, convenient for embedded installation.
>Built-in watchdog ensures long-term reliable and stable operation.
>Effective communication distance in open areas can reach 3~5 kilometers.

Application Fields
>Smart Home, Smart Transportation, Sensor Networks;
>Industrial Automation, Agricultural Modernization, Building Intelligence;
>Automatic Meter Reading (AMR) systems for water, electricity, gas, heating meters;
>Information collection for equipment in water conservancy, oil fields, mines, meteorology, etc.;
>Street light control, power grid monitoring, wind-solar hybrid systems;
>Industrial equipment data wireless transmission and industrial environment monitoring;
>All other situations requiring wireless communication to replace wired communication.

Product Overview
The AC800T is a high-performance, low-power, long-range micro-power star wireless networking module. It features internal automatic spread spectrum calculation and preamble CRC error correction processing, without altering any user data or protocols. Utilizing a half-duplex transparent transmission mechanism, it enables serial port wireless transceiver functionality to replace wired transmission. It is suitable for low-power applications such as wireless water meters, gas meters, sensors, etc.

The module's RF chip is based on spread spectrum and frequency hopping technology, surpassing existing GFSK modules in stability, anti-interference capability, and receiving sensitivity. Configured with a low-power, high-speed processor, it offers improved data processing capability and operational speed.

Users can flexibly configure the module's operating frequency, serial port rate, spreading factor, spread spectrum bandwidth, and other parameters according to actual needs using the PC configuration software provided by our company. The operation is simple and convenient.



LoRa Module-SX1278



Industrial Data Radio
AC900D

Product Features

•Based on LoRa™ spread spectrum modulation technology.
•Half-duplex communication, transparent serial data transmission.
•420~450MHz license-free frequency band, other bands customizable.
•Production requires no debugging, 6V-35V wide voltage range.
•Micro-power transmission, standard 500mW, 7 levels adjustable.
•Receiving sensitivity up to -148dBm, maximum transmit power +27dBm.
•Utilizes efficient Forward Error Correction (FEC) coding and frequency hopping mechanism, strong anti-interference capability, low bit error rate.
•Supports serial port wake-up, ready to send/receive data anytime, no periodic wake-up time.
•Supports over-the-air (OTA) and serial port module upgrades.
•Can dynamically read the RSSI value of received data packets.
•Multiple commands to monitor air channel occupancy.
•Radio parameters can be flexibly set via software or MCU commands.
•Built-in watchdog ensures long-term reliable and stable operation.
•Effective communication distance in open areas can reach 6~10 kilometers.
•Interface hardware switching for convenient field installation.

Application Fields

•Smart Home, Smart Transportation, Sensor Networks;
•Industrial Automation, Agricultural Modernization, Building Intelligence;
•Automatic Meter Reading Systems for Water, Electricity, Gas, Heating;
•Equipment Information Collection for Water Conservancy, Oil Fields, Mines, Meteorology;
•Street Light Control, Power Grid Monitoring, Wind-Solar Hybrid Systems;
•Industrial Equipment Data Wireless Transmission and Industrial Environment Monitoring;
•Any other situation requiring wireless replacement of TTL/RS232/RS485 wired communication.

Product Overview

The AC900D is a high-performance, low-power, long-distance micro-power RF wireless data transceiver. It features internal automatic spread spectrum calculation and preamble CRC error correction processing. It does not alter any user data or protocols and employs a half-duplex transparent transmission mechanism, enabling the function of wireless replacement.

The radio's RF chip is based on spread spectrum frequency hopping technology, surpassing existing GFSK radios in stability, anti-interference capability, and receiving sensitivity. It is configured with an STM low-power high-speed processor, enhancing data processing capability and computational speed.

Users can flexibly configure the radio's operating frequency, serial port rate, spreading factor, effective data ratio, and spreading bandwidth according to actual needs through the configurable host computer software. The operation is simple and convenient. Both the software and hardware of the radio are designed to industrial-grade standards with robust protection measures, ensuring stable and reliable operation in special environments. The radio features multiple interfaces: industrial-grade 485, industrial-grade TTL, and a standard DB9 serial port (232). With a wide voltage input range of 6~35V, it is a data radio fully suitable for industrial applications.

LoRa Module-SX1278



Micro-power Spread Spectrum Wireless Module AC900IL

Product Features

•Based on LoRa™ spread spectrum modulation technology.
•Half-duplex communication, serial port data transparent transmission.
•420~450MHz license-free frequency band, other frequency bands customizable.
•No debugging required during production, wide voltage range of 5-15V.
•Micro-power transmission, standard 500mW, 7 levels adjustable.
•Receiving sensitivity up to -148dBm, maximum transmit power +27dBm.
•Uses efficient forward error correction coding technology and frequency hopping mechanism, strong anti-interference capability, low bit error rate.
•Supports serial port wake-up, data can be sent and received at any time, no periodic wake-up time.
•Supports aerial wake-up, provides AUX signal through the module to wake up user equipment.
•CAD detects LoRa™ signal to prevent false wake-up.
•Capable of Over-The-Air (OTA) upgrade and serial port upgrade of the module.
•Can dynamically read the RSSI value of received data packets.
•Multiple commands to monitor channel occupancy.
•Can switch module operating modes via commands.
•Module parameters can be flexibly set via software or microcontroller commands.
•2.0 pin header supports TTL/RS232/RS485 level signals.
•Built-in watchdog ensures long-term reliable and stable operation.
•Effective communication distance in open ground can reach 6~10 kilometers.

Application Fields

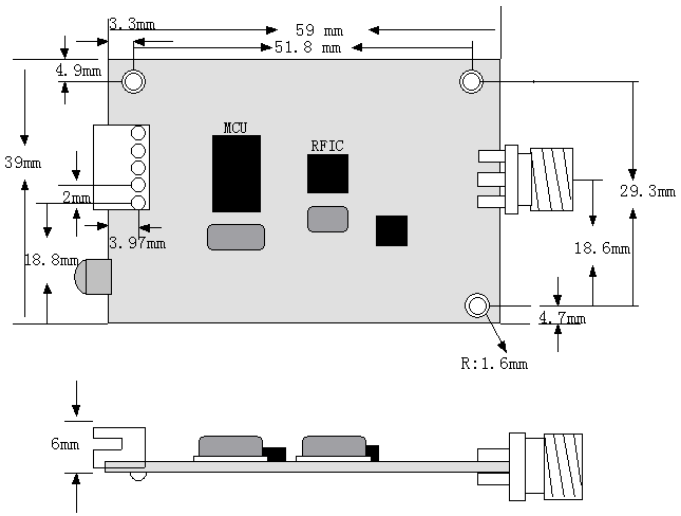
•Smart home, intelligent transportation, sensor networks;
•Industrial automation, agricultural modernization, building intelligence;
•Automatic meter reading systems for water, electricity, gas, heating;
•Equipment information collection for water conservancy, oil fields, mines, meteorology, etc.;
•Street light control, power grid monitoring, wind-solar hybrid systems;
•Industrial equipment data wireless transmission and industrial environment monitoring;
•Any other situation requiring wireless replacement of TTL/RS232/RS485 wired communication.

Product Overview

The AC900IL is a high-performance, low-power, long-range micro-power RF wireless data transceiver module. It features internal automatic spread spectrum calculation and preamble CRC error correction processing, does not alter any user data or protocols, and employs a half-duplex transparent transmission mechanism, enabling wireless replacement functionality.
The module's RF chip is based on spread spectrum frequency hopping technology, surpassing existing GFSK modules in stability, anti-interference capability, and receiving sensitivity. Configured with a low-power, high-speed STM processor, its data processing capability and operational speed are both improved.

The module has multiple communication modes that can be set, with different power consumption corresponding to different modes. This facilitates applications in low-power scenarios.

Users can flexibly configure the module's operating frequency, serial port rate, spreading factor, coding rate, and spread spectrum bandwidth parameters according to actual needs through the host computer software provided by our company. The operation is simple and convenient.



LoRa Module-SX1278



Micro-power Spread Spectrum Wireless Module AC-900IW

Product Features

•Based on LoRa™ spread spectrum modulation technology.
•Half-duplex communication, serial port data transparent transmission.
•420~450MHz license-free frequency band, other frequency bands customizable.
•No debugging required during production, wide voltage range of 5-15V.
•Micro-power transmission, standard 500mW, 7 levels adjustable.
•Receiving sensitivity up to -148dBm, maximum transmit power +27dBm.
•Uses efficient forward error correction coding technology and frequency hopping mechanism, strong anti-interference capability, low bit error rate.
•Supports serial port wake-up, data can be sent and received at any time, no periodic wake-up time.
•Supports aerial wake-up, provides AUX signal through the module to wake up user equipment.
•CAD detects LoRa™ signal to prevent false wake-up.
•Capable of Over-The-Air (OTA) upgrade and serial port upgrade of the module.
•Can dynamically read the RSSI value of received data packets.
•Multiple commands to monitor channel occupancy.
•Can switch module operating modes via commands.
•Module parameters can be flexibly set via software or microcontroller commands.
•2.0 terminal block supports TTL/RS232/RS485 level signals.
•Built-in watchdog ensures long-term reliable and stable operation.
•Effective communication distance in open ground can reach 6~10 kilometers.

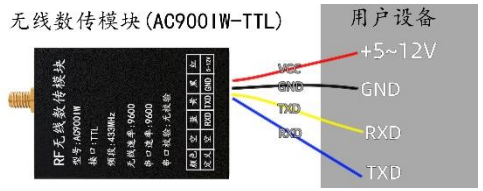
Application Fields

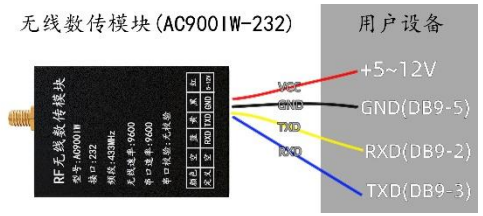
•Smart home, intelligent transportation, sensor networks;
•Industrial automation, agricultural modernization, building intelligence;
•Automatic meter reading systems for water, electricity, gas, heating;
•Equipment information collection for water conservancy, oil fields, mines, meteorology, etc.;
•Street light control, power grid monitoring, wind-solar hybrid systems;
•Industrial equipment data wireless transmission and industrial environment monitoring;
•Any other situation requiring wireless replacement of TTL/RS232/RS485 wired communication.

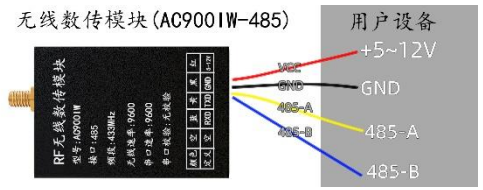
Product Overview

The AC-900IW is a high-performance, low-power, long-range micro-power RF wireless data transceiver module. It features internal automatic spread spectrum calculation and preamble CRC error correction processing, does not alter any user data or protocols, and employs a half-duplex transparent transmission mechanism, enabling wireless replacement functionality.
The module's RF chip is based on spread spectrum frequency hopping technology, surpassing existing GFSK modules in stability, anti-interference capability, and receiving sensitivity. Configured with a low-power, high-speed STM processor, its data processing capability and operational speed are both improved.

Users can flexibly configure the module's operating frequency, serial port rate, spreading factor, effective data ratio, and spread spectrum bandwidth parameters according to actual needs through the host computer software provided by our company. The operation is simple and convenient.







LoRa Module-SX4423



Low-Power Wireless Data Radio AC100D

Product Features

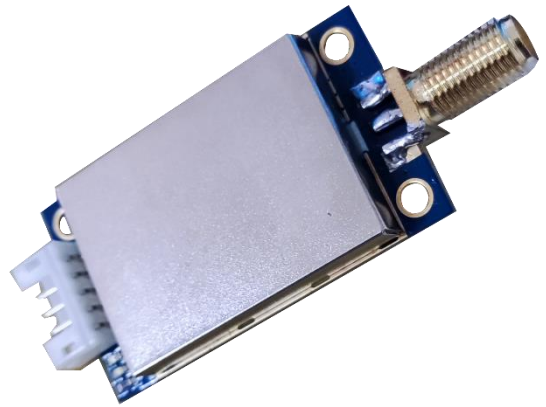
•Medium power transmission, standard 100mW, 7 levels adjustable.
•Low cost, high performance, high reliability.
•GFSK modulation, half-duplex communication. Air interface transmission/reception switching, connection, and control are automatic.
•Operating Frequency Band: 433 MHz (Other channels customizable).
•High receiving sensitivity up to -121dBm.
•Transmission distance over 1000 meters (can reach 1.5Km in open, unobstructed, interference-free areas).
•Transmit operating current < 120mA, maximum transmit power up to 20dBm.
•Receive operating current < 30mA.
•Standard configuration provides 32 channels, meeting various user communication combination needs. Users can configure via software, strong channel expansion capability.
•Communication Data Rate: 1.2kbps - 57.6kbps, configurable by user via software.
•No debugging required during production. Standard operating voltage 5V-35V.

Application Fields

•Wireless Queuing Equipment, Hotel Electronic Door Locks, Biometric Access Control Management Systems.
•Medical and Electronic Instrumentation Automation Control.
•Intelligent Teaching Equipment, Baby Monitoring, Hospital Ward Call Systems.
•Home Appliance and Lighting Smart Control.
•Security Alarms, Smart Cards, Railway Locomotive Remote Detection.
•Water, Electricity, Gas, Heating Automatic Meter Reading & Billing Systems or Reactive Power Compensation and Grid Monitoring.
•Wireless Conference Voting/Scoring Systems, PDA Terminals, Wireless Ordering Systems.
•LED Display Wireless Text/Image Transmission and Wireless Control.
•Electronic Scales, Wireless Crane Scales, Vehicle Monitoring, Aging Equipment Detection.
•Industrial Equipment Data Wireless Transmission and Industrial Environment Monitoring.
•Video Surveillance PTZ Control, Access Control Attendance Card Readers.
•Meteorological/Oil Well/Hydraulic Equipment Information Collection and Natural Environment Monitoring.
•Mine Personnel Attendance & Positioning Systems; Gas Detection & Alarm; Regional Positioning for Important Assets (Instruments, Goods, Medical Equipment) and Personnel; Logistics Supply Chain Management.
•Wind Power Street Light Wireless Control, Solar Photovoltaic Inverter Data Monitoring.

Product Overview

The AC100D is a highly stable, low-power, cost-effective wireless data radio employing GFSK modulation for enhanced wireless data stability. It is a transparent transmission module, performing wireless data transmission without altering any customer data or protocols. For reliability, the software incorporates numerous detection measures to ensure the module never freezes or becomes unresponsive under any circumstances, fully adhering to industrial-grade design standards. Compared to typical modules, this module features wide input voltage range, high sensitivity, long transmission distance, high communication rate, and automatically handles communication protocol conversion and data transceiver control internally. Users can flexibly configure the module's serial rate, operating channel, transmit power, communication data rate, and other parameters via the host configuration software provided by our company according to their needs.



Low-Power Wireless Data Transmission Module AC100IL

LoRa Module-SX4423



Low Power Wireless Data Radio AC500D

Product Features

•Medium Power Transmission: Standard 500mW, 7 levels adjustable.
•Low Cost, High Performance, High Reliability.
•GFSK Modulation, Half-Duplex Communication. Air interface RX/TX switching, connection, and control are automatic.
•Operating Frequency Band: 433 MHz (Other frequencies customizable).
•High Receive Sensitivity: Up to -121dBm.
•Transmission Distance: Over 3000 meters (Up to 4.5Km in open areas without interference).
•Transmit Operating Current: Less than 500mA. Max Transmit Power: Up to 27dBm.
•Receive Operating Current: Less than 30mA.
•Standard Configuration: Provides 8 channels to meet various communication combination needs. User configurable via software with strong channel expansion capability.
•Communication Rate: 1.2kbps - 57.6kbps, user configurable via software.
•Production requires no debugging. Standard Operating Voltage: 6V-35V.

Application Fields

•Wireless Queuing Equipment, Hotel Electronic Door Locks, Biometric Access Control Systems.
•Medical and Electronic Instrumentation Automation Control.
•Smart Teaching Equipment, Baby Monitoring, Hospital Ward Call Systems.
•Home Appliance and Lighting Smart Control.
•Burglar Alarm, Smart Cards, Railway Locomotive Remote Monitoring.
•Water, Electricity, Gas, Heating Automatic Meter Reading/Billing Systems or Reactive Power Compensation & Grid Monitoring.
•Wireless Conference Voting/Scoring Systems, PDA Terminals, Wireless Ordering Systems.
•LED Display Wireless Text/Image Transmission and Wireless Control.
•Electronic Scales, Wireless Crane Scales, Vehicle Monitoring, Aging Equipment Testing.
•Industrial Equipment Data Wireless Transmission and Industrial Environmental Monitoring.
•Video Surveillance Pan/Tilt Control, Access Control Card Readers.
•Meteorological/Oil Well/Hydraulic Equipment Information Collection and Natural Environment Monitoring.
•Mine Personnel Attendance & Positioning Systems; Gas Detection & Alarm; Area Positioning for Important Assets (Instruments, Goods, Medical Equipment) and Personnel; Logistics Supply Chain Management.
•Wind Power Street Light Wireless Control, Solar Photovoltaic Inverter Data Monitoring.

Product Overview

The AC500D is a highly stable, low-power, cost-effective wireless data radio utilizing GFSK modulation to enhance wireless data stability. As a transparent transmission module, the AC500D performs wireless data transmission without altering the customer's original data or protocol. Regarding stability, the software incorporates numerous detection mechanisms to ensure the module never crashes or becomes unresponsive under any conditions, fully adhering to industrial-grade design standards. Compared to typical modules, the AC500D offers a wide input voltage range, high sensitivity, long transmission distance, high communication speed, and features internal automatic protocol conversion and data transceiver control. Users can flexibly configure the module's serial baud rate, operating channel, transmit power, communication rate, and other parameters using our provided host computer software according to their needs.



Low-Power Wireless Data Transmission Module AC500IW



Low Power Wireless Data Transmission Module AC500IL

LoRa Module-SX6601





Low Power Spread Spectrum Wireless Module
AC6601-2W
AC6601-100mW

Product Features

•Based on LoRa™ Spread Spectrum Modulation Technology.
•Half-duplex communication, transparent transmission of serial port data.
•420---450MHz license-free frequency band, other frequency bands customizable.
•Standard power transmission, standard 100mW/2W, 7 levels adjustable.
•Receiver sensitivity up to -148dBm, maximum transmit power +21dBm/+33dBm.
•Uses efficient Forward Error Correction coding technology and frequency hopping mechanism, strong anti-interference ability, low bit error rate.
•Supports serial port wake-up, ready to send/receive data at any time, no periodic wake-up time.
•CAD detection of LoRa™ signals prevents false wake-ups.
•Module operating mode can be switched via commands.
•Module parameters can be flexibly set via software or MCU commands.
•SMT package, convenient for embedded installation.
•Built-in watchdog ensures long-term reliable and stable operation.
•Open field effective communication distance can reach 2.5-3.5 kilometers/6-8 kilometers.

Level	1	2	3	4	5	6	7
Power	100mw	200mw	300mw	500mw	1w	1.5w	2w

Level	1	2	3	4	5	6	7
Power	4dBm	7dBm	10dBm	13dBm	16dBm	19dBm	21dBm

Application Fields

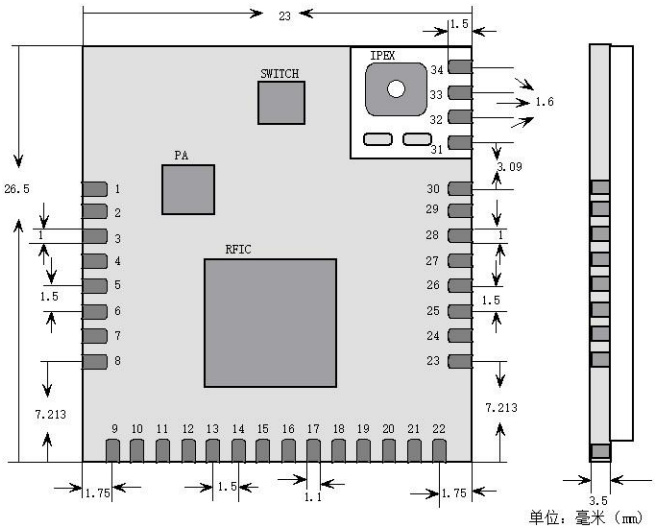
•Smart Home, Intelligent Transportation, Sensor Networks;
•Industrial Automation, Agricultural Modernization, Building Intelligence;
•Automatic Meter Reading (AMR) systems for water, electricity, gas, heating meters;
•Information collection for equipment in water conservancy, oil fields, mines, meteorology;
•Street light control, power grid monitoring, wind-solar hybrid systems;
•Industrial equipment data wireless transmission and industrial environment monitoring;
•All other situations requiring wireless communication to replace wired

Product Overview

The AC6601 is a high-performance, low-power, long-range micro-power star network wireless module. It features internal automatic spread spectrum calculation and preamble CRC error correction processing, without altering any user data or protocols. Using a half-duplex transparent transmission mechanism, it enables serial port wireless transceivers to replace wired transmission, making it suitable for low-power applications such as wireless water meters, gas meters, sensors, etc.

The module's RF chip is based on spread spectrum and frequency hopping technology, surpassing existing GFSK modules in stability, anti-interference capability, and receiver sensitivity. It is configured with a low-power, high-speed processor, improving data processing capability and operation speed.

Users can flexibly configure the module's operating frequency, serial port rate, spreading factor, bandwidth, and other parameters according to actual needs using the PC configuration software provided by our company. The operation is simple and convenient.



LoRa Module-SX6601



Wireless LORA Radio
AC6601D-485-150mW
AC6601D-485-2W
AC6601D-232-150mW
AC6601D-232-2W
AC6601D-TTL-150mW
AC6601D-TTL-2W

Product Features

•Based on LoRa™ Spread Spectrum Modulation Technology.
•Half-duplex communication, transparent transmission of serial port data.
•420---450MHz license-free frequency band, other frequency bands customizable.
•Standard power transmission, standard 100mW/2W, 7 levels adjustable.
•Receiver sensitivity up to -148dBm, maximum transmit power +21dBm/+33dBm.
•Uses efficient Forward Error Correction coding technology and frequency hopping mechanism, strong anti-interference ability, low bit error rate.
•Supports serial port wake-up, ready to send/receive data at any time, no periodic wake-up time.
•CAD detection of LoRa™ signals prevents false wake-ups.
•Module operating mode can be switched via commands.
•Module parameters can be flexibly set via software or MCU commands.
•SMT package, convenient for embedded installation.
•Built-in watchdog ensures long-term reliable and stable operation.
•Open field effective communication distance can reach 2.5-3.5 kilometers/6-8 kilometers.

Level	1	2	3	4	5	6	7
Power	100mw	200mw	300mw	500mw	1w	1.5w	2w

Level	1	2	3	4	5	6	7
Power	4dBm	7dBm	10dBm	13dBm	16dBm	19dBm	21dBm

Application Fields

•Smart Home, Intelligent Transportation, Sensor Networks;
•Industrial Automation, Agricultural Modernization, Building Intelligence;
•Automatic Meter Reading (AMR) systems for water, electricity, gas, heating meters;
•Information collection for equipment in water conservancy, oil fields, mines, meteorology;
•Street light control, power grid monitoring, wind-solar hybrid systems;
•Industrial equipment data wireless transmission and industrial environment monitoring;
•All other situations requiring wireless communication to replace wired

Product Overview

The AC6601 is a high-performance, low-power, long-range micro-power star network wireless module. It features internal automatic spread spectrum calculation and preamble CRC error correction processing, without altering any user data or protocols. Using a half-duplex transparent transmission mechanism, it enables serial port wireless transceivers to replace wired transmission, making it suitable for low-power applications such as wireless water meters, gas meters, sensors, etc.

The module's RF chip is based on spread spectrum and frequency hopping technology, surpassing existing GFSK modules in stability, anti-interference capability, and receiver sensitivity. It is configured with a low-power, high-speed processor, improving data processing capability and operation speed.

Users can flexibly configure the module's operating frequency, serial port rate, spreading factor, bandwidth, and other parameters according to actual needs using the PC configuration software provided by our company. The operation is simple and convenient.



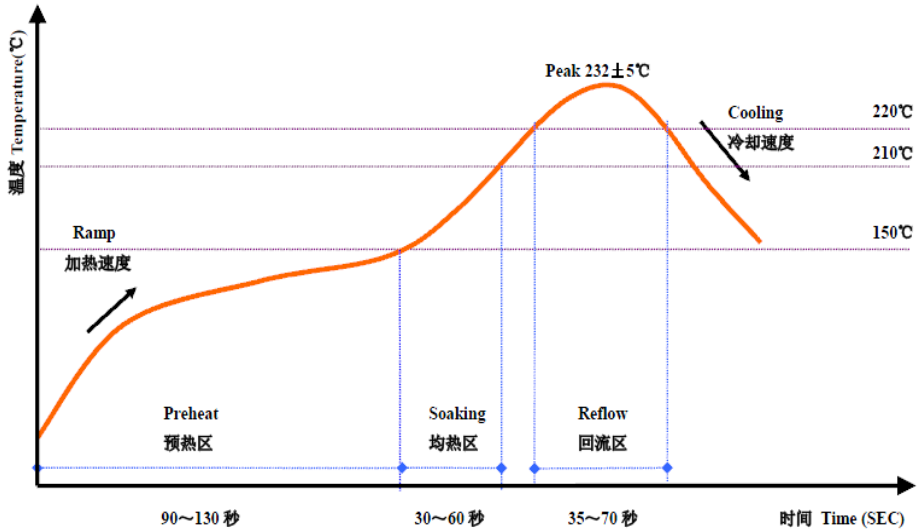
LoRa Module-LCC68





Low Power Spread Spectrum Wireless RF Module
AC601A-2W
AC601A-100mW

Reflow Soldering Temperature Profile Reference

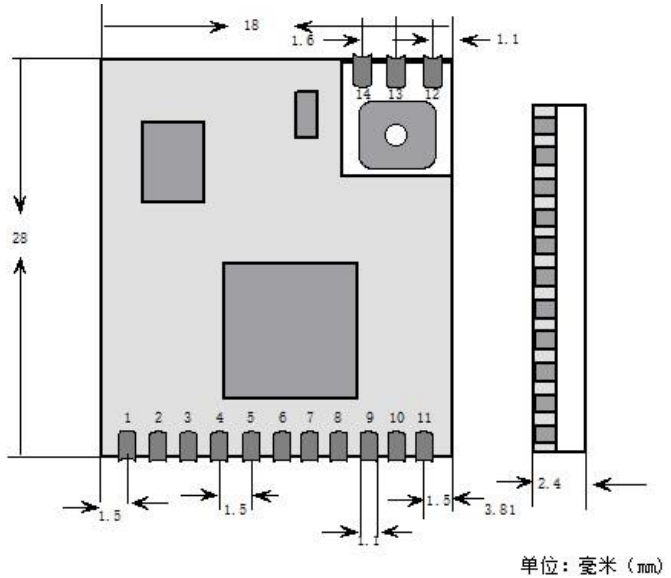


Module Specifications

- Wireless Solution: LCC68
- Modulation Method: LoRa
- Power Supply:DC 2.1V-3.6V / DC 5V-5.5V
- Carrier Frequency: 410MHz-510MHz
- Data Flow: Half-duplex (Can send and receive, but not simultaneously)
- Antenna Connector: Pad & APX Connector (50-ohm impedance)
- Transmission Distance: 2Km-2.5km, 4Km-5km (Open ground average, line-of-sight, rate 1.758kbps)
- Power Consumption: Transmit ⩽ 1.2A, Receive ⩽ 5mA, Sleep ⩽ 1uA
- Transmit Power: ⩽ 150mW (21dBm), ⩽ 2W (33dBm)
- Wireless Data Rate: ⩽ 21.88kbps & ⩾ 1.758kbps (LORA modulation mode)
- Communication Interface: 4-wire SPI interface (Pad pitch 1.5mm, castellated holes)
- Operating Temperature: -40℃ ~ +85℃
- Relative Humidity: 95% (Non-condensing)
- Dimensions: 28mm * 18mm * 2.4mm

Product Overview

This is an RF wireless module developed based on the LCC68, capable of transmitting and receiving functions. It utilizes the most advanced spread spectrum modulation method, featuring extremely high receiver sensitivity. Therefore, under the same transmit power, it offers lower power consumption, longer distance, and stronger anti-interference capability compared to other wireless solutions. The module does not include a microcontroller and only provides an SPI communication interface. Users do not need extensive RF knowledge or hardware debugging. By simply debugging the underlying SPI communication and understanding the corresponding function meanings and the logical relationship of data reception and transmission, one can easily apply this module to achieve product wirelessization. Our company provides driver code, hardware, development boards, and technical support.



LoRa Module-LCC68



AC601D-485-150mW
AC601D-485-2W
AC601D-232-150mW
AC601D-232-2W
AC601D-TTL-150mW
AC601D-TTL-2W

Product Features

•Based on LoRa™ Spread Spectrum Modulation Technology.
•Half-duplex communication, transparent transmission of serial port data.
•420~450MHz license-free frequency band, other frequency bands customizable.
•Production requires no debugging, 6V-35V wide voltage range.
•Micro-power transmission, standard 100mW and 2W levels, and 7 levels adjustable.
•Receiver sensitivity up to -148dBm, maximum transmit power +20dBm or +33dBm.
•Uses efficient Forward Error Correction coding technology and frequency hopping mechanism, strong anti-interference ability, low bit error rate.
•Supports serial port wake-up, ready to send/receive data at any time, no periodic wake-up time.
•Supports Over-the-Air upgrade and serial port upgrade.
•Can dynamically read the RSSI value of received data packets.
•Multiple commands to monitor air channel occupancy.
•Radio parameters can be flexibly set via software or MCU commands.
•Built-in watchdog ensures long-term reliable and stable operation.
•Open field effective communication distance up to 3~4 km & 100mW; 2W can achieve 6~8 km.
•Wall-mount and DIN rail installation options for convenient field installation.

Application Fields

•Smart Home, Intelligent Transportation, Sensor Networks;
•Industrial Automation, Agricultural Modernization, Building Intelligence;
•Automatic Meter Reading (AMR) systems for Water, Electricity, Gas, Heating;
•Information collection for equipment in Water Conservancy, Oil Fields, Mines, Meteorology;
•Street Light Control, Power Grid Monitoring, Wind-Solar Hybrid Systems;
•Industrial equipment data wireless transmission and industrial environment monitoring;
•All other situations requiring wireless replacement of TTL/RS232/RS485 wired communication.

Product Overview

The AC601D is a high-performance, low-power, long-range micro-power RF wireless data transceiver station. It features internal automatic spread spectrum calculation and preamble CRC error correction processing, without altering any user data or protocols. It uses a half-duplex transparent transmission mechanism to achieve wireless replacement functionality.
The radio's RF chip is based on spread spectrum and frequency hopping technology, surpassing existing GFSK radios in stability, anti-interference capability, and receiver sensitivity. Configured with a low-power M0 high-speed processor, its data processing capability and operational speed are improved.

Users can flexibly configure the radio's operating frequency, serial port rate, spreading factor, effective data ratio, bandwidth, and other parameters according to actual needs using our PC configuration software. The operation is simple and convenient.

The radio's software and hardware are designed to industrial-grade standards with robust protection measures, ensuring stable and reliable operation in special environments. The radio is designed with various interface conversions, including industrial-grade 485, serial port 232, and TTL, and supports 6-32V wide voltage input with both DIN rail and wall-mount installation options, making it fully suitable for industrial data transmission applications.



LoRa Module-LCC68





Low Power Spread Spectrum Wireless Module
AC601T_2W
AC601T_100mW

Product Features

- •LoRa™ Spread Spectrum modulation or GFSK modulation selectable.
- •Half-duplex communication, transparent transmission of serial port data.
- •380---510MHz license-free frequency band, other frequency bands customizable.
- •Standard power transmission, standard 21dBm/33dBm, 7 levels adjustable.
- •Receiving sensitivity up to -129dBm, maximum transmitting power +21dBm / +33dBm.
- •Uses efficient Forward Error Correction coding technology and frequency hopping mechanism, strong anti-interference ability, low bit error rate.
- •Supports serial port wake-up, ready to send and receive data at any time, no periodic wake-up time.
- •CAD detection of LoRa™ signal to prevent false wake-up.
- •Supports Over-The-Air (OTA) upgrade and serial port upgrade of the module.
- •Can dynamically read the RSSI value of the received data packet.
- •Multiple commands to monitor air channel occupancy.
- •Parameters can be modified via commands.
- •Module parameters can be flexibly set via software or MCU commands.
- •SMT patch packaging, convenient for embedded installation.
- •Built-in watchdog ensures long-term reliable and stable operation.
- •Open effective communication distance can reach 2.5-3.5 kilometers / 5-6 kilometers.

Level	1	2	3	4	5	6	7
Power	17dBm	18dBm	21dBm	24dBm	27dBm	30dBm	33dBm

Level	1	2	3	4	5	6	7
Power	4dBm	7dBm	10dBm	13dBm	16dBm	19dBm	21dBm

Application Fields

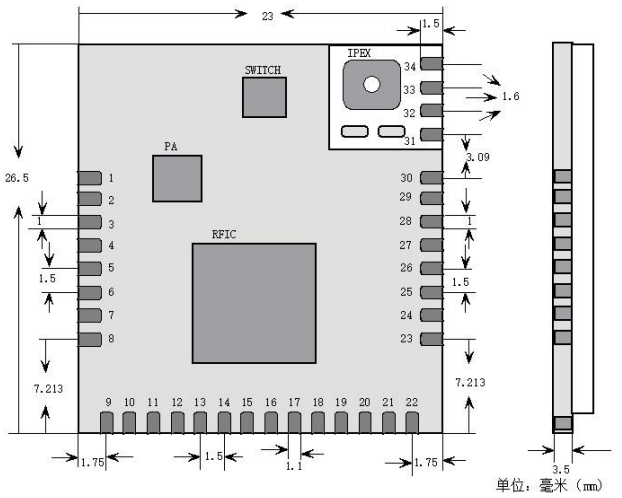
- •Smart Home, Smart Transportation, Sensor Networks;
- •Industrial Automation, Agricultural Modernization, Building Intelligence;
- •Automatic centralized meter reading systems for water, electricity, gas, heating, etc.;
- •Information collection for equipment in water conservancy, oil fields, mines, meteorology, etc.;
- •Street light control, power grid monitoring, wind-solar hybrid systems;
- •Industrial equipment data wireless transmission and industrial environment monitoring;
- •All other situations requiring wireless communication to replace wired communication.

Product Overview

The AC601T is a high-performance, low-power, long-range micro-power star-shaped wireless networking module. It features internal automatic spread spectrum calculation and preamble CRC error correction processing, without altering any user data or protocols. Utilizing a half-duplex transparent transmission mechanism, it enables serial port wireless transceivers to replace wired transmission. It is suitable for low-power applications such as wireless water meters, gas meters, and sensors.

The module's RF chip is based on spread spectrum and frequency hopping technology, surpassing existing GFSK modules in stability, anti-interference capability, and receiving sensitivity. It is configured with a low-power, high-speed processor, improving data processing capability and operational speed.

Users can flexibly configure the module's operating frequency, serial port rate, spreading factor, spreading bandwidth, and other parameters according to actual needs through the host computer software provided by our company. The operation is simple and convenient.



LORA Development Board









Specifications

Item	Content	
Hardware Version	LORA	Supports relevant domestic frequency bands
Supported Bands	LORA	150MHz~960MHz (Theoretical frequency range)
		Typical application bands: 433MHz (Common in Asia and some regions), 868MHz (Europe), 915MHz (North America and other regions)
Theoretical BW	LORA	Low bandwidth configurations: e.g., 7.8 kHz, 10.4 kHz, 15.6 kHz, 20.8 kHz
		Medium bandwidth configurations: e.g., 31.25 kHz, 41.7 kHz, 62.5 kHz, 125 kHz
		High bandwidth configurations: e.g., 250 kHz and 500 kHz
Transmit Power	LORA	Built-in power amplifier, adjustable output power typically from -9 dBm to +22 dBm.
Processor	Industrial-grade high-performance GD32 processor, M4 core	
Data Serial Port	TTL, external Type-C port	
	Default 115200bps common baud rate, can be changed as needed	
Power Interface	DC power interface (round hole)	
Voltage Range	DC 12V	
Peak Current	6-34mA@12V-DC	
Enclosure	PVC enclosure, high protection level.	
	Enclosure is safely isolated from the system, especially suitable for industrial control sites.	
Size & Weight	7.8mm*4.8mm; 22.7g (excluding accessories).	
Operating Temp.	Normal operating temperature 1: -20 °C ~ +75 °C	
	Extended operating temperature 2: -30 °C ~ +85 °C	
Storage Temp.	-45~+125ºC (-40~+185ºF) 95% RH (non-condensing)	

Product Introduction

This product is based on a GD32F310 series MCU and an SX1262 LoRa module, designed for wireless data transceiver functionality, primarily achieving the following:

•Wireless Data Transceiving: Data transmission and reception via the LoRa module, with external interrupt responses for transmission complete (TX_DONE) and reception complete (RX_DONE) events.

•Parameter Configuration: Provides multiple parameter configurations including frequency, spreading factor, bandwidth, coding rate, power, etc., supporting flexible wireless parameter adjustment.

•SPI Communication Driver: Utilizes software-emulated SPI protocol for data transmission with the SX1262 chip, including register operations, command sending, and buffer read/write.

•State Switching: Implements switching between transmit, receive, sleep, and other states, while supporting RF switch and power amplifier output control.

•Serial Port Debugging: Uses USART for data debugging, status output, and button-triggered data sending (combined with button processing and LED indicators).

This product is a low-power, high-performance Sub GHz wireless transceiver employing advanced LoRa modulation technology. It is suitable for various short-range wireless data transmission applications and supports an external Type-C serial port for real-time data viewing. It also supports user development. Our company provides two RF modules with different power levels: 100mW and 2W. Users can choose the module power level according to different environments. Furthermore, this development board supports debugger debugging, allowing users to develop related functions themselves.

Remote Terminal Unit
AC700-RTU





Specifications

The AC700-RTU is a meticulously developed Remote Terminal Unit that integrates outstanding performance with high reliability, deeply customized for IoT application scenarios in various fields such as industrial automation, environmental monitoring, and energy management.
•In industrial automation, it can monitor real-time operating parameters of various production line stages, such as equipment speed, pressure, and temperature, aiding in precise control and efficient operation of production processes, ensuring stable product quality and reducing production failures.
•In environmental monitoring scenarios, it can collect and transmit key indicators in real-time, such as pollutant concentrations in the atmosphere, pH of water quality, and soil humidity, providing accurate data support for environmental protection and ecological management.
•In energy management, it can monitor parameters like voltage, current, power factor of power systems, and energy consumption of various energy equipment in real-time, enabling optimized allocation and efficient utilization of energy, effectively reducing energy costs.

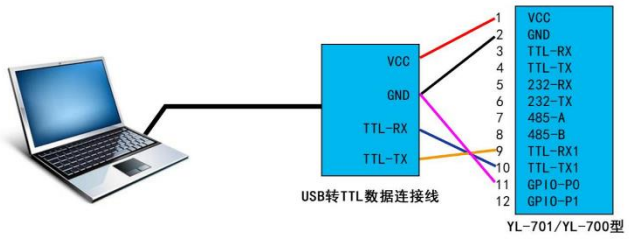
Its design philosophy revolves around user needs, aiming for simplicity, ease of use, high integration, and flexible expandability.
•Simplicity and Ease of Use are reflected in the convenience of configuration operations. Even non-professional technical personnel can easily complete device parameter settings through an intuitive configuration interface.
•High Integration manifests as the consolidation of multiple functional modules within a compact chassis, reducing the device's footprint and lowering the complexity of system setup.
•Flexible Expandability allows the product to be conveniently upgraded and expanded in both hardware and software according to actual application requirements, providing users with long-term value and investment protection.
It enables efficient on-site data collection, intelligent processing, and stable remote transmission, serving as the core link connecting field devices and monitoring centers, providing strong support for achieving intelligent and remote management.

Product Introduction

Item	Content
Hardware Version	CAT1
Supported Bands	LTE-FDD: B1/B3/B5/B8 LTE-TDD: B34/B38/B39/B40/B41
Theoretical Bandwidth	CAT1 LTE-FDD: Max Downlink 10 Mbps, Max Uplink 5 Mbps LTE-TDD: Max Downlink 8.96 Mbps, Max Uplink 3.1 Mbps
Transmit Power	CAT1 LTE-FDD Bands: Class 3 (23 dBm ±2 dB) LTE-TDD Bands: Class 3 (23 dBm ±2 dB)
Processor	Industrial-grade GD32 processor, M3 core
Data Serial Port	UART-TTL/RS232/RS485: Supports common serial rates: 1200-115200 bps; Supports data formats: 8N1, 8O1, 8E1;
Antenna Interface	Standard SMA female connector (external thread, internal pin), 50 Ohm characteristic impedance;
SIM/UIM Card Interface	Standard drawer-type user card interface; Supports 1.8V/3V SIM/UIM cards, built-in 15KV ESD protection;
Power Interface	2P terminal block, built-in reverse polarity protection and overvoltage protection;
Power Range	DC 6V-24V, >1A
Standby Current	50-90mA @12VDC; 115-165mA @5VDC
Peak Current	1A-1.5A @12VDC; 1.5-2A @5VDC
Enclosure	Aluminum alloy housing, protection grade IP30. The housing and system are safely isolated, making it particularly suitable for industrial control sites.
Mounting	Wall mounting or DIN rail.
Dimensions & Weight	76mm*31mm*21.8mm; 54.5g (excluding accessories).
Operating Temperature	Normal Operating Temp 1: -35 °C ~ +75 °C Extended Operating Temp 2: -40 °C ~ +85 °C
Storage Temperature	-45~+125ºC (-40~+185℉) 95%RH (non-condensing)

Data Transfer Unit
AC700-DTU





Product Introduction

This is a simple data transmission DTU (Data Transfer Unit) that converts serial port data into 4G data for transmission to a designated private cloud server. It can interface with servers using TCP/IP protocol, MQTT protocol, or connect to public clouds like Alibaba Cloud. The DTU hardware primarily consists of a power management module, MCU control unit, interface conversion circuitry, and a wireless communication module.

This DTU employs an industrial-grade high-performance 32-bit communication processor, supported by an embedded real-time OS (Operating System) software platform. It embeds a standard TCP/IP protocol stack and supports transparent serial data transmission. A WDT (Watchdog Timer) design ensures system stability. It features a complete anti-disconnection mechanism to guarantee the gateway is always online. The SIM/UIM card interface has built-in 15KV ESD protection.

The gateway provides TTL/RS232/RS485 communication interfaces, supports common baud rates from 1200 to 115200 bps, and supports common parity settings like 8N1, 8O1, 8E1. It can be directly connected to serial devices to achieve transparent data transmission. The gateway parameters can be flexibly configured using the accompanying parameter configuration software. Encased in a metal housing with IP30 protection rating, it features external wiring terminals, a wide voltage DC 6-36V design, and supports both clip-on mounting and DIN rail mounting for convenient industrial field installation. Supports firmware upgrades via serial port and remote maintenance via server.

This DTU serves as a bridge connecting terminal modules or finished equipment to cloud platform servers. It can use open protocols to connect directly to a customer's cloud platform or integrate with third-party platforms like Alibaba IoT Cloud, facilitating the IoT integration of the customer's products.

Specifications

Item	Content
Hardware Version	CAT1
Supported Bands	CAT1 LTE-FDD : B1/B3/B5/B8 LTE-TDD : B34/B38/B39/B40/B41
Theoretical Bandwidth	CAT1 LTE-FDD: Max Downlink 10 Mbps, Max Uplink 5 Mbps LTE-TDD: Max Downlink 8.96 Mbps, Max Uplink 3.1 Mbps
Transmit Power	CAT1 LTE-FDD Bands: Class 3 (23 dBm ±2 dB) LTE-TDD Bands: Class 3 (23 dBm ±2 dB)
Processor	Industrial-grade GD32 processor, M3 core
Data Serial Port	UART-TTL/RS232/RS485: Supports common serial rates 1200-115200bps; Supports data formats 8N1, 8O1, 8E1;
Antenna Interface	Standard SMA female connector (external thread, internal pin), 50 Ohm characteristic impedance;
SIM/UIM Card Interface	Standard drawer-type user card interface; Supports 1.8V/3V SIM/UIM cards, built-in 15KV ESD protection;
Power Interface	Terminal block, built-in reverse polarity protection and over-voltage protection;
Power Range	DC 6V-24V, 1A or higher
Standby Current	50-90mA@12VDC; 115-165mA@5VDC
Peak Current	1A-1.5A@12VDC; 1.5-2A@5VDC
Enclosure	Aluminum alloy housing, protection rating IP30. The housing is isolated from the system, making it especially suitable for industrial control sites.
Mounting	Clip-on or DIN rail.
Dimensions & Weight	76mm*31mm*21.8mm; 150g (excluding accessories).
Operating Temperature	Normal Operating Temp 1: -35 °C ~ +75 °C Extended Operating Temp 2: -40 °C ~ +85 °C
Storage Temperature	-45°C ~ +125°C (-40°F ~ +185°F), 95% RH (non-condensing)