

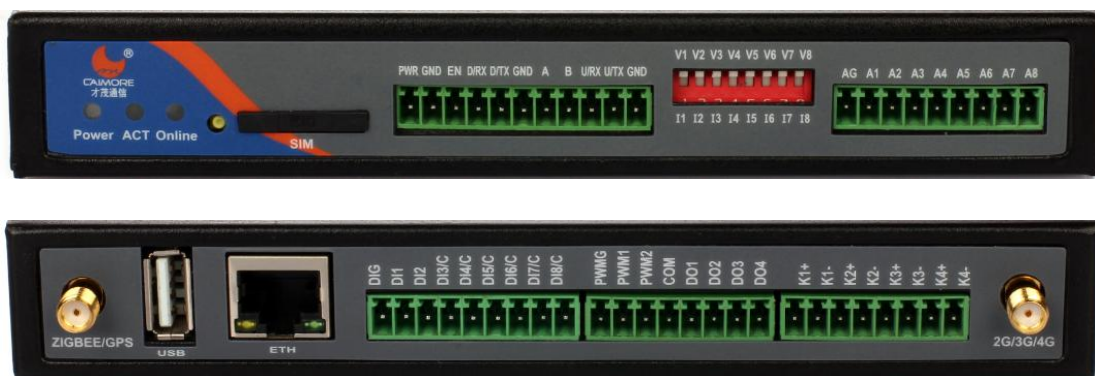
## Product Introduction

- ◆ **CAIMORE RTU** is produced by independent research and development and has the functions of data collection, remote control and wireless communication. It integrates analog signals acquisition, digital input, digital output, count, wireless data communication, and it can directly access all kinds of analog signals, level signal, dry contact and pulse signal output by sensor, standard transducer signal, instrument etc., which is the best choice of implementing wireless monitoring.
- ◆ **CM550** series adopts high-performance industrial 32-bit communication processor and industrial wireless module. It is embedded with real-time operating system to provide on-line maintain technology for software support platform device. Meanwhile, it also provide RS232 and RS485 interface to achieve the acquisition of analog signal and digital signal.
- ◆ This product has been widely used in industries as water alarm, base station alarm, power meter reading, water meters reading, heating network monitoring, gas monitoring, water monitoring, environmental testing, meteorological monitoring, seismic monitoring, traffic control, etc.







# Technical Parameters

## Device Interface Diagram



## CM550-55 Accessories

			
Power Connector	Ethernet Cable	Serial Port Cable	Antenna

<b>Model NO.</b>	<b>CM550-55F</b>
<b>Cellular Parameters</b>	
<b>Network</b>	LTE-FDD/HSPA+/UMTS/HSDPA/HSUPA/WCDMA/EDGE/GSM
<b>Standards and Frequency Bands</b>	EGSM 900 Power Class 4 2W, 33dBm
	GSM 1800 / 1900 Power Class 1 1W, 30dBm
	EDGE Power Class for 900MHz Class E21 27dBm, 0.5W
	EDGE Power Class for 1800 / 1900MHz Class E21 26dBm, 0.4W
Others. (It depends on area and country.)	
<b>Coding Scheme</b>	HSPA+ / DC-HSPA+ / GPRS / EDGE
<b>Communication Bandwidth</b>	100 Mbps DL within 20 MHz bandwidth
	(Peak DL data rate in 10 MHz bandwidth: 70 Mbps (approx.) for Cat 3 device)
<b>Transmit Power</b>	50 Mbps UL within 20 MHz bandwidth
	<24dBm

<b>Receive Sensitivity</b>	<-109dBm		
<b>Advanced Features</b>			
<b>Dial to Internet</b>	Static IP or SIM(support APN/VPDN)		
<b>Data Center</b>	Support dual data center backup and multiple data center (8) to receive data		
<b>Keep Online</b>	Intelligent anti-dropping, support online detection, online maintenance, and automatic redial of offline, ensuring that the device is always online.		
<b>Remote Wake Up</b>	Voice / Data / SMS / Timing		
<b>DDNS</b>	Dyndns / 88ip / Oray		
<b>VPN</b>	GRE / IPSEC / L2TP / PPTP		
<b>Network Protocol</b>	TCP / UDP		
<b>Datacenter Protocol</b>	RTU Management Platform / MODBUS		
<b>System Access</b>	Telnet		
<b>Interface</b>			
<b>Switch/Counter Input</b>	Switch	8 ch.	DIG & DI1 ~ DI8
	Counter	6 ch.	DI3 ~ DI8
<b>Analog Input</b>	8 ch.		AG & AI1 ~ AI8
<b>PWM Output</b>	2 ch.		PWMG & PWM1 ~ PWM2
<b>Relay Output</b>	4 ch.		K1 ~ K4(+/-)
<b>Optocoupler/Digital Output</b>	4 ch.		COM & DO1 ~ DO4
<b>RS232(Debug)</b>	1 ch.		D/RX & D/TX & GND
<b>RS232(Communicating)</b>	1 ch.		U/RX & U/TX & GND
<b>RS485(Communicating)</b>	1 ch.		A & B
<b>Ethernet Port</b>	1 ch.		
<b>Hardware System</b>			
<b>CPU</b>	Industrial high performance embedded processing CPU		
<b>MMU</b>	CPU with MMU memory management unit, can prevent memory overflow		
<b>FLASH</b>	16MB		
<b>SDRAM</b>	128MB		
<b>Operation System</b>			
<b>OS</b>	Linux		
<b>Power Supply</b>			
<b>Supply Voltage</b>	DC6V ~ 32V		
<b>Standard Power Supply</b>	DC9V/1500mA		
<b>Communication Current</b>	Average Communication Current: 0.2A@+9VDC Communicating Instantaneous Peak Current: 1.0A@+9VDC		
<b>Standby Current</b>	<0.15A@+9VDC		
<b>Physical Features</b>			
<b>Shell</b>	Metal shell: metal case, anti-radiation, anti-interference; shell and system security isolation, lightning protection design; meet the power requirements of safety regulations; protection rating IP30; particularly suit for harsh industrial control environments.		
<b>Product Dimension</b>	167*104*26mm(Antenna and fixer are not included)		
<b>Package Size</b>	350*215*88mm		
<b>Weight</b>	0.52Kg		
<b>Other Parameters</b>			
<b>Operating Temperature</b>	-25°C ~ +70°C		
<b>Storage Temperature</b>	-40°C ~ +85°C		

## Relative Humidity

95%(No condensation)

## Peripheral Interface Signal Definition

NO.	Name	Function	Default Function	Extension
1	PWR	Power	Power input positive pole, built-in power inverter protection and over-current protection, voltage range DC 6V to DC 32V.	-
2	GND		Power input negative pole	-
3	EN	Enable Pin	During the normal operation of RTU, when the Power input pin positive voltage is applied to this pin (the same voltage as PWR pin), the entire RTU will be cut off and the Power lights will go out. When the pin is applied with 0V voltage or suspended, the RTU is normally energized.	-
4	D/RX	RS232(Debug)	Data receiver pin	-
5	D/TX		Data sender pin	-
6	GND		Ground	-
7	A	RS485 (Communicating)	RS485 communication interface positive pole	-
8	B		RS485 communication interface negative pole	-
9	U/RX	RS232 (Communicating)	Data receiver pin	-
10	U/TX		Data sender pin	-
11	GND		Ground	-
12	DIG	Switch Input / Counter Input	Ground	Ground
13	DI1			-
14	DI2			-
15	DI3/C		Switch input 1~8 Input range: low level is 0-3.3V, high level is 5-30V	Counting channel 1~6 Counting frequency is 0~1KHz
16	DI4/C			
17	DI5/C			
18	DI6/C			
19	DI7/C			
20	DI8/C			
21	PWMG	PWM	Ground	-
22	PWM1		PWM output 1~2, open collector output, maximum support 30V, maximum current is 40mA, maximum power is 125mW, output frequency is 0~1KHz, duty ratio adjustable.	-
23	PWM2			-
24	COM	Optocoupler Output / Digital Output	Common	-
25	DO1		Optocoupler output 1~4, remote control output high and low level, square wave.	-
26	DO2			-
27	DO3		Open collector output, maximum support 30V, maximum current is 40mA, maximum power is 125mW, output frequency is 0~1KHz, duty ratio adjustable.	-
28	DO4			-

29	K1+	Relay Output	Drive capability 5A/30VDC,5A/250VAC	-
30	K1-			-
31	K2+			-
32	K2-			-
33	K3+			-
34	K3-			-
35	K4+			-
36	K4-			-

37	AG	Analog Input	Ground	-
38	A1			-
39	A2			-
40	A3			-
41	A4			-
42	A5			-
43	A6			-
44	A7			-
45	A8			-

#### Parameter specification of peripheral interface signal

<b>RS232</b>	Data Bit: 8
	Stop Bit: 1/2
	Parity: None / Odd / Even / SPACE / MARK
	Serial Speed: 300~230400bits/s
<b>RS485</b>	Data Bit: 7/8
	Stop Bit: 1/2
	Parity: None / Odd / Even / SPACE / MARK
	Serial Speed: 300~230400bits/s
<b>Ethernet Port</b>	1 10/100 base-t Ethernet port, Ethernet IEEE 802-3, 802-2; Built-in 1.5kv electromagnetic isolation protection.
<b>Indicator</b>	Online / ACT / Power
<b>Antenna Interface</b>	Standard SMA cathode antenna interface, characteristic impedance 50 ohm; can choose an extension cord of 3M/5M/10M/15M
<b>UIM Interface</b>	1.8V/3V/5V standard putter user card interface with built-in 15KV ESD protection
<b>Power Interface</b>	Terminal interface, built-in power inverter protection and overcurrent protection

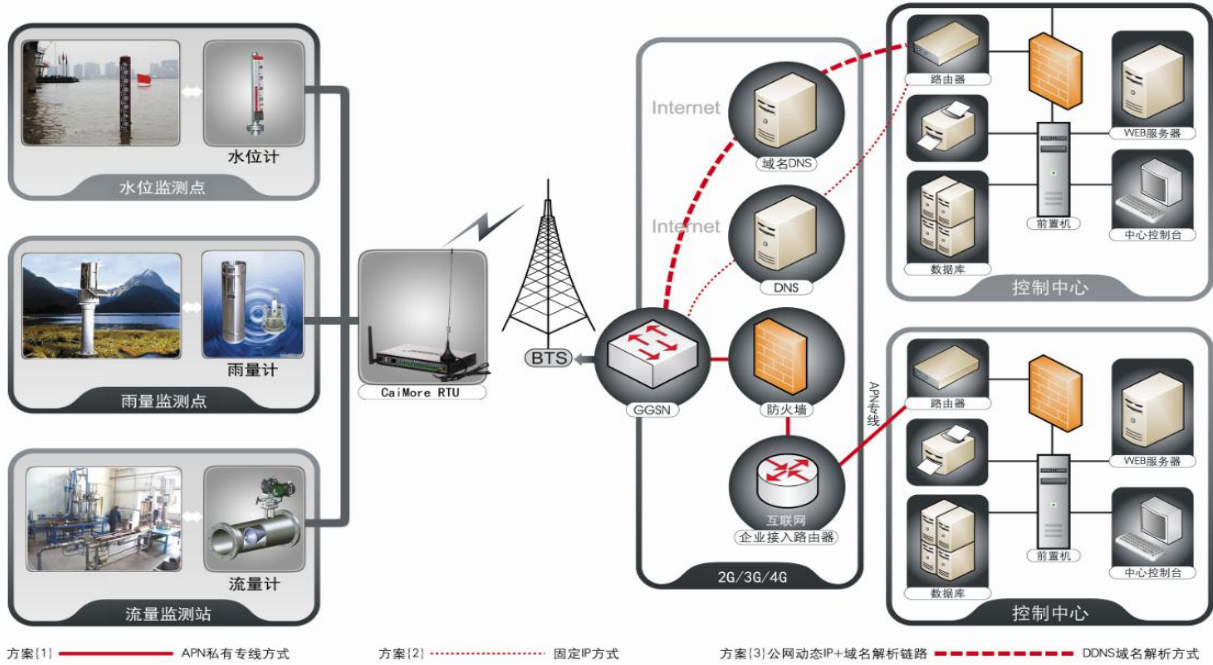
#### GPS Parameters

<b>Module</b>	Industrial GPS wireless module is adopted.
<b>Receiver Type</b>	Receive GPS, 50 channels, L1 frequency, 1.023 MHZ chip speed, C/A code 1.023 MHZ chip speed; Support SBAS: WAAS and EGNOS, MSAS Compatible with GALILEO
<b>Location Accuracy</b>	Position: 2.5m CPE SBAS: 2.0m CPE
<b>Speed Accuracy</b>	< 0.01 m/s(high speed) < 0.01°(heading), 50% (@ 30 m/s)
<b>Timing Accuracy</b>	1 ms to synchronize GPS time
<b>Capture Time</b>	Cold start: 27S; Auxiliary start :<3 seconds; Hot start: <1 second
<b>Data Format</b>	NMEA-1083, SiRD Binary

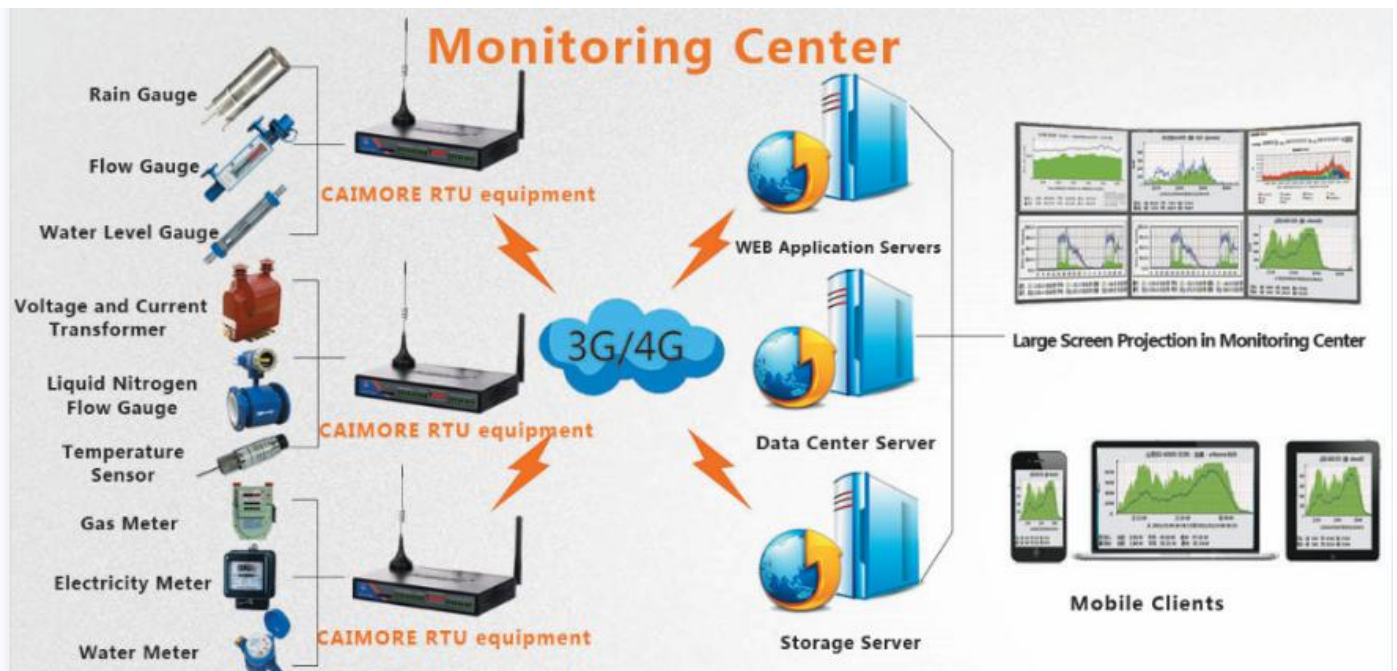


# Product Application

## 1. Application in water conservancy industry



## 2. Topology Diagram of Caimore RTU



## Typical application

### Power Industry

- ◇ Street lamp monitoring
- ◇ Meter monitoring
- ◇ Computer room monitoring
- ◇ Automatic remote control system for power distribution network
- ◇ Remote meter reading

### Transportation Industry

- ◇ Traffic instructions
- ◇ Vehicle induction
- ◇ Highway monitoring
- ◇ Traffic light control and photo transmission

### Water conservancy industry

- ◇ Water conservancy monitoring
- ◇ Real-time transmission monitoring of water supply network
- ◇ Water monitoring

### Environment, meteorology, oil field and other industries

- ◇ Monitoring of key pollution sources
- ◇ Environmental monitoring
- ◇ Weather monitoring
- ◇ Real-time noise monitoring
- ◇ Oilfield monitoring
- ◇ Heat network monitoring
- ◇ Coal monitoring
- ◇ Earthquake monitoring
- ◇ All kinds of PLC with serial port or 485 interface;
- ◇ DTU realizes wireless data transmission



## Corporate Qualification

Item	Content
<b>Corporate Honor</b>	<p>2011, it was rated as "the best supplier for customer satisfaction in China's industrial control industry"; the company's GPRS DTU product was rated as "innovative product award".</p> <p>2012, the company became a member of "China Quality Travel".</p> <p>2013, the company became a member of the "Technical Innovation Strategic Alliance of Intelligent Power Transmission and Distribution Equipment Industry".</p> <p>2014, it was rated as an innovative pilot enterprise .</p> <p>2014, the company's Zhanjiang WIFI coverage project was awarded the "Sample Engineering Award" by the 13th China Automation Annual Conference.</p> <p>2015, its video products were rated as "Top Ten Video Transmission Enterprises" by China's industrial control industry.</p> <p>2015, the noise monitoring project was awarded the "Sample Project Award" by the 14th China Automation Annual Conference.</p> <p>2015, its video products were rated as "Top Ten Video Transmission Enterprises" by Huaqiang Security Network.</p> <p>2016, the video products was rated by Huaqiang Security Network as "2015-2016 High-quality Supplier in China's Security Industry".</p> <p>2016, it was rated as the "best supplier of charging equipment parts" by charging pile communication equipment.</p> <p>2016, won the " Product Gold Award of 2016 7th Guangzhou International New Energy Automobile Industry Exhibition ".</p> <p>2016, The 3rd China Good WIFI Organizing Committee awarded Caimore "2016 Best WIFI Industry Application Solution Provider".</p> <p>2018, the company's industrial router was rated as "China's Top Ten Industrial Router Brands", and DTU was rated as "China's DTU Top Ten Brands"</p> <p>2018, it was rated as a key listed reserve enterprise in Xiamen City.</p> <p>2019, it was rated as a key listed reserve enterprise in Xiamen City.</p> <p>2019, it was rated as a key listed reserve enterprise in Fujian Province.</p> <p>2019, Shortlisted for China Telecom Corporation Limited, DICT solution partner of Shanghai branch</p> <p>2020, Selected as a key listed reserve company in Xiamen</p>
<b>High-tech Enterprise</b>	<p>2009, it was recognized as a high-tech enterprise by the country</p>
<b>Double-soft</b>	<p>2010, it was recognized as a double-soft enterprise by the country</p>

<b>Enterprise</b>	
<b>Occupational Health and Safety Management System Certification</b>	ISO9001:2015 quality management system conforms to the standard ISO14001:2015 environmental management system conforms to the standard ISO45001:2018 occupational health and safety management system conforms to the standard
<b>Copyright</b>	The company has 7 patented technology certificates to maintain equipment stability and 31 software copyright certificates.
<b>Offices</b>	Nine regional offices have been established nationwide to provide customers with close and considerate services.
<b>Registered Capital</b>	The company has a registered capital of 20.58 million; it is a key high-tech enterprise supported by Xiamen City.
<b>Historical Accumulation</b>	18 years of industry R&D accumulation and industry application test.