CM550-56

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.
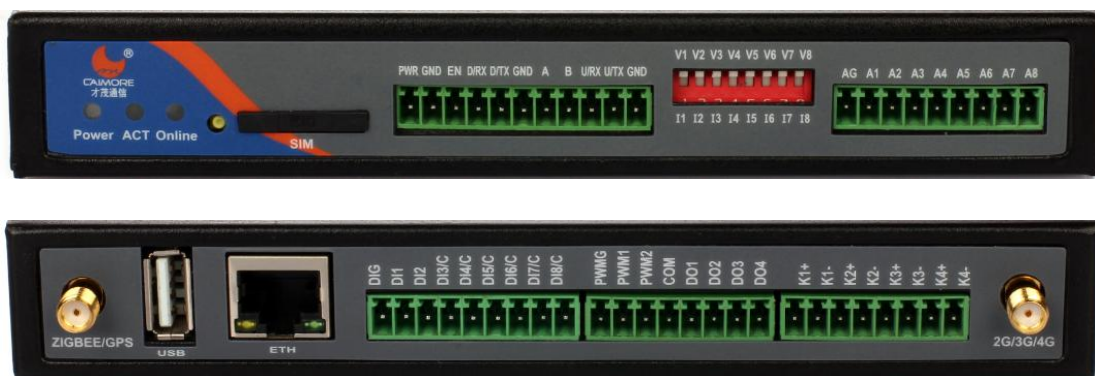
◆ **CM550** series adopts high-performance industrial 32-bit communication processor and industrial wireless module. It is embedded with real-time operating system to provide on-line maintain technology for software support platform device. Meanwhile, it also provide RS232 and RS485 interface to achieve 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

CM550-56 Accessories

| Power Connector | Ethernet Cable | Serial Port Cable | Antenna |

Model NO.	CM550-56F			
Cellular Parameters				
Network	LTE-FDD/HSPA+/UMTS/HSDPA/HSUPA/WCDMA/EDGE/GSM			
Standards and Frequency Bands	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.)			
Coding Scheme	HSPA+/ DC-HSPA+ / GPRS / EDGE			
Communication Bandwidth	100 Mbps DL within 20 MHz bandwidth			
	(Peak DL data rate in 10 MHz bandwidth: 70 Mbps (approx.) for Cat 3 device)			
	50 Mbps UL within 20 MHz bandwidth			
Transmit Power	<24dBm			

Receive Sensitivity	<-109dBm		
Advanced Features			
Dial to Internet	Static IP or SIM(support APN/VPDN)		
Data Center	Support dual data center backup and multiple data center (8) to receive data		
Keep Online	Intelligent anti-dropping, support online detection, online maintenance, and automatic redial of offline, ensuring that the device is always online.		
Remote Wake Up	Voice / Data / SMS / Timing		
DDNS	Dyndns / 88ip / Oray		
VPN	GRE / IPSEC / L2TP / PPTP		
Network Protocol	TCP / UDP		
Datacenter Protocol	RTU Management Platform / MODBUS		
System Access	Telnet		
Interface			
Switch/Counter Input	Switch	8 ch.	DIG & DI1 ~ DI8
	Counter	6 ch.	DI3 ~ DI8
Analog Input	8 ch.		AG & A1 ~ A8
PWM Output	2 ch.		PWMG & PWM1 ~ PWM2
Relay Output	4 ch.		K1 ~ K4(+/-)
Optocoupler/Digital Output	4 ch.		COM & DO1 ~ DO4
RS232(Debug)	1 ch.		D/RX & D/TX & GND
RS232(Communicating)	1 ch.		U/RX & U/TX & GND
RS485(Communicating)	1 ch.		A & B
Ethernet Port	1 ch.		
Hardware System			
CPU	Industrial high performance embedded processing CPU		
MMU	CPU with MMU memory management unit, can prevent memory overflow		
FLASH	16MB		
SDRAM	128MB		
Operation System			
OS	Linux		
Power Supply			
Supply Voltage	DC6V ~ 32V		
Standard Power Supply	DC9V/1500mA		
Communication Current	Average Communication Current: 0.2A@+9VDC Communicating Instantaneous Peak Current: 1.0A@+9VDC		
Standby Current	<0.15A@+9VDC		
Physical Features			
Shell	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.		
Product Dimension	167*104*26mm(Antenna and fixer are not included)		
Package Size	350*215*88mm		
Weight	0.52Kg		
Other Parameters			
Operating Temperature	-25ºC ~ +70ºC		
Storage Temperature	-40ºC ~ +85ºC		

	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		Switch input 1~8 Input range: low level is 0-3.3V, high level is 5-30V	-
14	DI2			-
15	DI3/C			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. Open collector output, maximum support 30V, maximum current is 40mA, maximum power is 125mW, output frequency is 0~1KHz, duty ratio adjustable.	-
26	DO2			-
27	DO3			-
28	DO4			-

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

37	AG		Ground	-
38	A1			-
39	A2			-
40	A3			-
41	A4	Analog Input	Analog input 1~8, resolution up to 16bit, input voltage (-10V ~ +10V), input current (0~20mA), accuracy is ±0.5%.	-
42	A5			-
43	A6			-
44	A7			-
45	A8			-

Parameter specification of peripheral interface signal	
RS232	Data Bit: 8
	Stop Bit: 1/2
	Parity: None / Odd / Even / SPACE / MARK
	Serial Speed: 300~230400bits/s
RS485	Data Bit: 7/8
	Stop Bit: 1/2
	Parity: None / Odd / Even / SPACE / MARK
	Serial Speed: 300~230400bits/s
Ethernet Port	1 10/100 base-t Ethernet port, Ethernet IEEE 802-3, 802-2; Built-in 1.5kv electromagnetic isolation protection.
Indicator	Online / ACT / Power
Antenna Interface	Standard SMA cathode antenna interface, characteristic impedance 50 ohm; can choose an extension cord of 3M/5M/10M/15M
UIM Interface	1.8V/3V/5V standard putter user card interface with built-in 15KV ESD protection
Power Interface	Terminal interface, built-in power inverter protection and over-current protection
ZIGBEE Parameters	
Module	Industrial ZIGBEE wireless module is adopted.
Frequency Segment	2405MHz ～ 2480MHz
Chip	CC2530F256+CC2591
Communication Protocol Standard	IEEE 802.15.4
Network Topology	Reticulation
Modulation Mode	DSSS(O-QPSK)
Data Transfer Rate	250Kbps
Communication Range	2000m (largest)

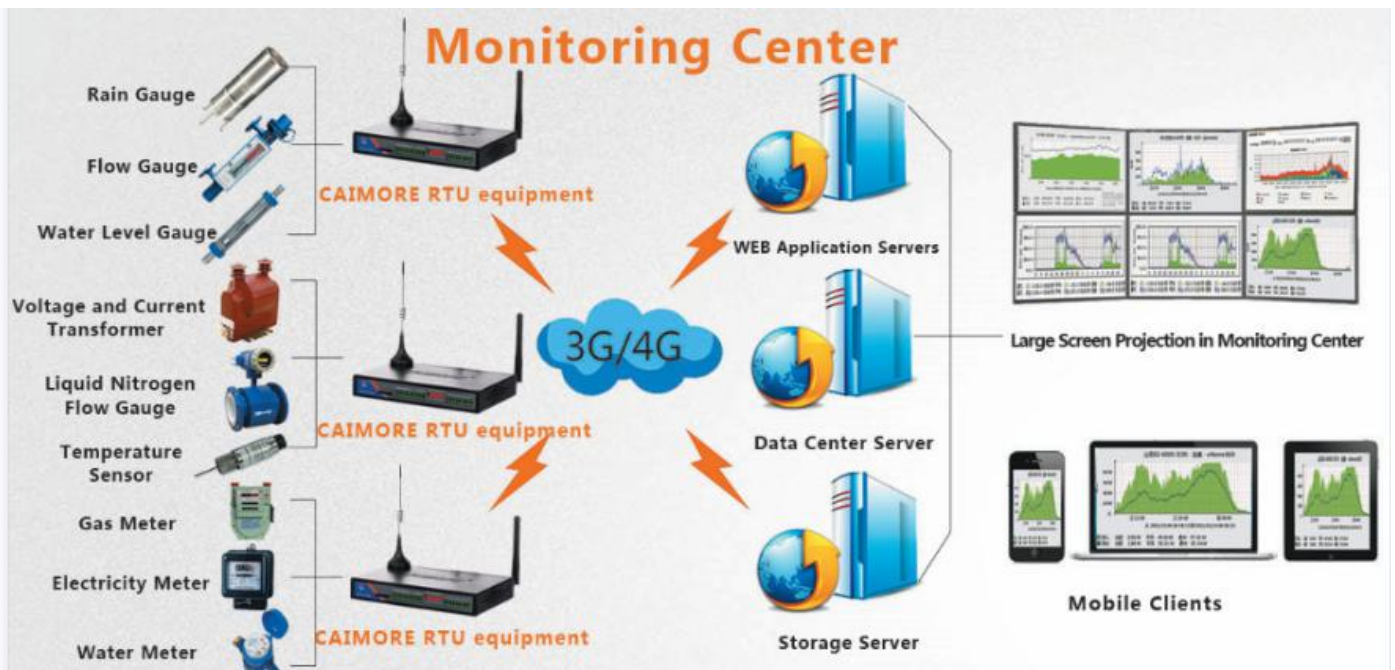|	
Transmit Power	<20dBm
Receive Sensitivity	<-98.8dBm
Addressing Mode	64-bit IEEE address, 8-bit network address
Data Encryption	128bit AES
Error Check	CRC16/32
Channel Access	CSMA-CA and time-slotted CSMA-CA
Channel Number	16

Installation Dimension
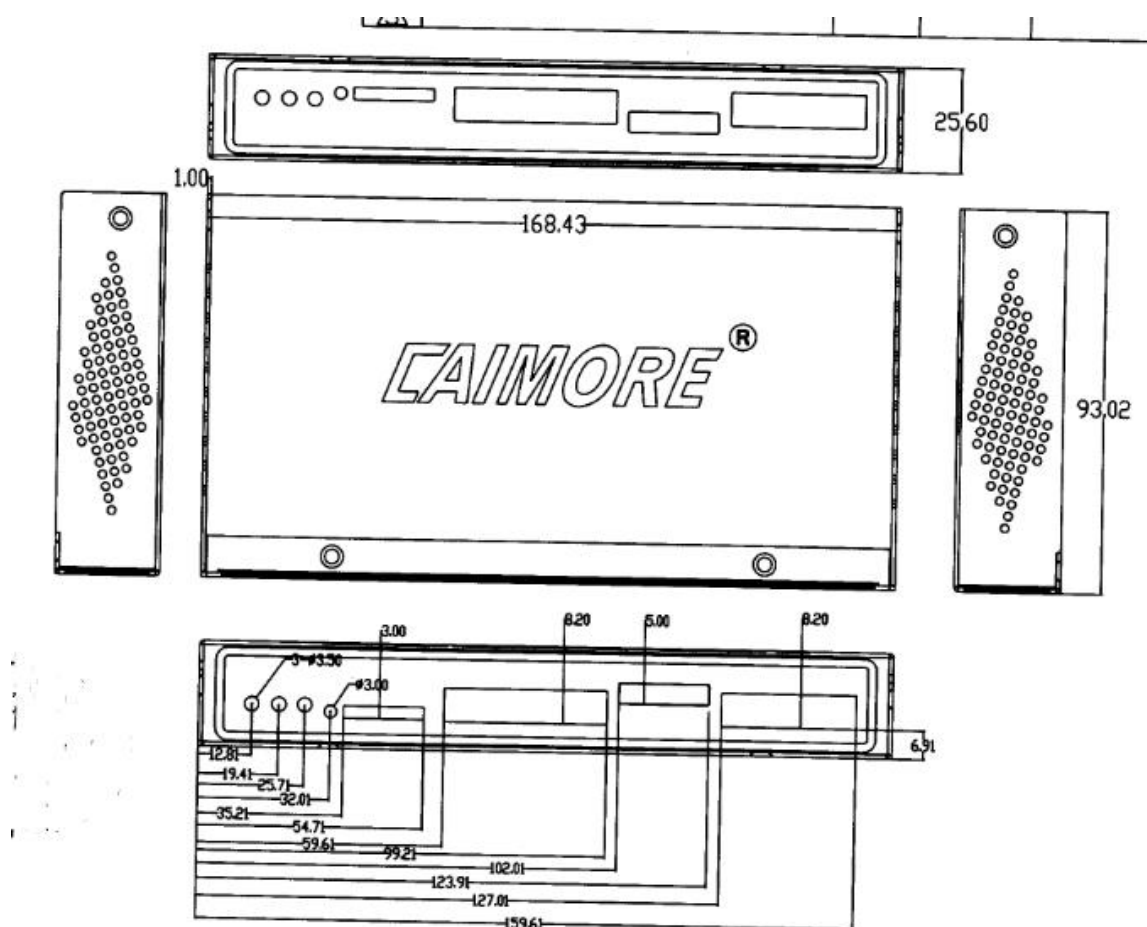
Product Application

1. Application in water conservancy industry
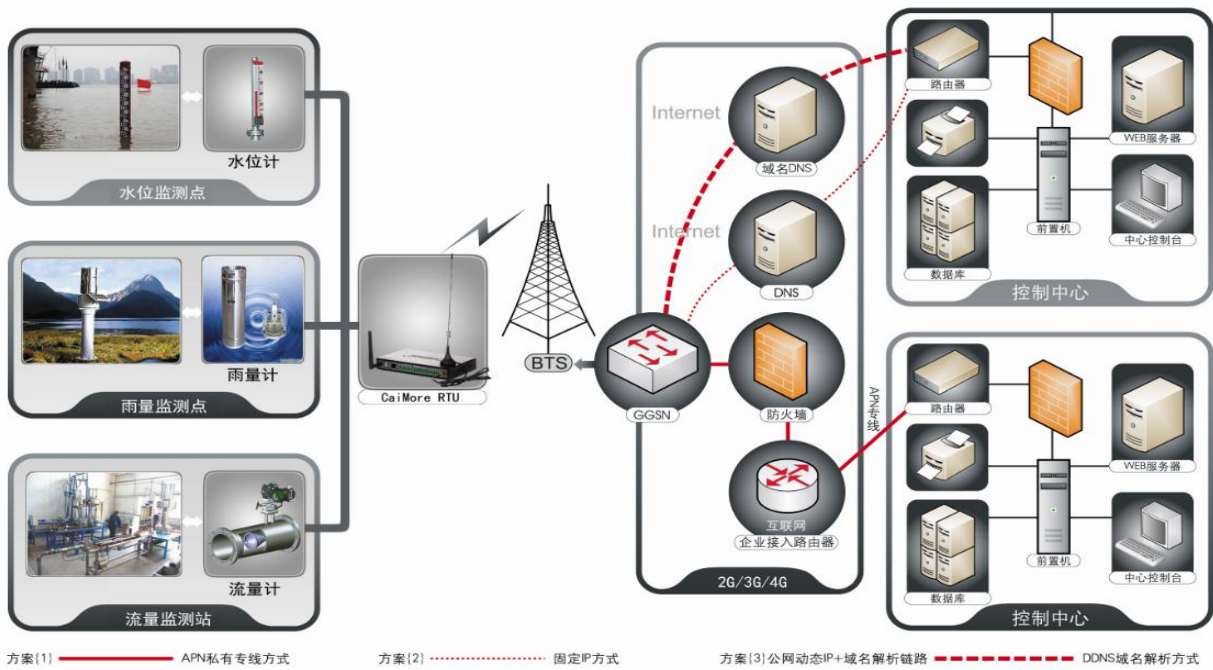
2. Topology Diagram of Caimore RTU

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

Double-soft Enterprise	2010, it was recognized as a double-soft enterprise by the country
Occupational Health and Safety Management System Certification	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
Copyright	The company has 7 patented technology certificates to maintain equipment stability and 31 software copyright certificates.
Offices	Nine regional offices have been established nationwide to provide customers with close and considerate services.
Registered Capital	The company has a registered capital of 20.58 million; it is a key high-tech enterprise supported by Xiamen City.
Historical Accumulation	18 years of industry R&D accumulation and industry application test.