INDUSTRIAL CONNECTIVITY / ENGLISH TECHNICAL DOCUMENT

CM510-62G-62C

Installation and configuration manual



Original source photograph

Source V1.4 | 2019-06-05 | English review edition | 20 October 2026

REVIEW EDITION - translated from the supplied Chinese document. Source inconsistencies and optional features are retained. See the final review checklist.

Inside this document

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Notices, support and document revisions

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Source technical support: Room 302, No. 23-1 Wanghai Road, Software Park Phase II, Xiamen; +86-592-5908952 / 5908953; fax +86-592-5975885; support@caimore.com. Main page footer gives Units 901/904, No. 63 Chengyi North Street, Software Park Phase III. Contacts are translated as printed, not confirmed current.

Revision history

Version	Change	Date	Author / approval
V1.0	First formal release	2016-01-15	Luot / Liugb
V1.2	CDMA and SMS configuration added	2016-06-25	Luot / Liugb
V1.3	Firmware downloading and configuration added	2019-04-29	Liugb / Liugb
V1.4	Registration/heartbeat instructions	2019-06-05	Liugb / Liugb

1. Product overview, system and features

Source pp. 5-7

Industrial terminal for transparent single-center TCP wireless transfer, with RS232/RS485 field interfaces, real-time OS and embedded protocol stack. Applications include electricity/water metering, heat/gas/water monitoring, environmental/oil/security/weather/seismic monitoring, traffic and industrial remote control.

CM510-62G uses GPRS; CM510-62C uses CDMA. Source reports Mo'er 80 °C/85% RH and -40 °C four-hour continuous data tests, salt mist, free fall and vibration; these are not operating limits.

- Three-level protection combines software/CPU watchdog, external hardware watchdog and System Watch Protect (SWP) as described. VWM and multiple software/hardware watchdogs are also listed; no recovery-time guarantee is supplied.
- Automatic/manual DNS; TCP/IP stack; source-listed 3000 V electrical testing; 15 kV serial and SIM ESD protection; 7-32 V power with reverse-polarity, overvoltage and overcurrent protection.

- Fixed-IP/dynamic-domain center, APN, online detection/redial, serial upgrades, AT commands and heartbeat support. Dedicated debug serial permits diagnostics while field equipment remains connected.
- Metal enclosure with electromagnetic shielding, isolation/lightning design and source IP41 rating. Sleep/low-power operation and SMS/remote configuration are described. Source SCADA examples are RealInfo/Zijin Bridge, KingView and ForceControl.

System components

Parameter	Source specification
CPU	Source says 32-bit ARM7.
Memory	48 kB SDRAM / 256 kB Flash
Wireless module	Industrial GPRS or CDMA module.

1.5 Operating principle and 1.6 Technical specifications

Source pp. 6-8

Serial data passes through the processor/protocol stack and wireless modem to the remote data center. The source diagrams also show peripheral ports; fitted interfaces and behavior must be confirmed for the supplied model.

Serial, power and environment

Parameter	Source specification
Antenna / SIM	50-ohm SMA female; automatic 3 V / 1.8 V SIM detection.
Serial	RS232/RS485; 8 data bits; none/odd/even parity; 1/1.5/2 stop bits; no flow control.
Baud rates	300/600/1200/2400/4800/9600/14400/19200/38400/5600/57600/115200 as printed. 5600 requires confirmation.
Supply	7-32 V input; 9 V DC / 1.5 A standard adapter.
Current	Communication 52 mA at 9 V; registration peak 120 mA at 9 V; standby <30 mA at 9 V; sleep <10 mA at 9 V. Generic values not separated by modem.
Networks	GSM/GPRS 850/900/1800/1900 MHz; CDMA 800 MHz.
Centers	One center; TCP only, transparent or CAIMORE protocol.
Body	93 x 62 x 23 mm; excludes antenna mounting.
Environment	Operating -30 to +75 °C; storage -40 to +90 °C; 95% RH non-condensing.

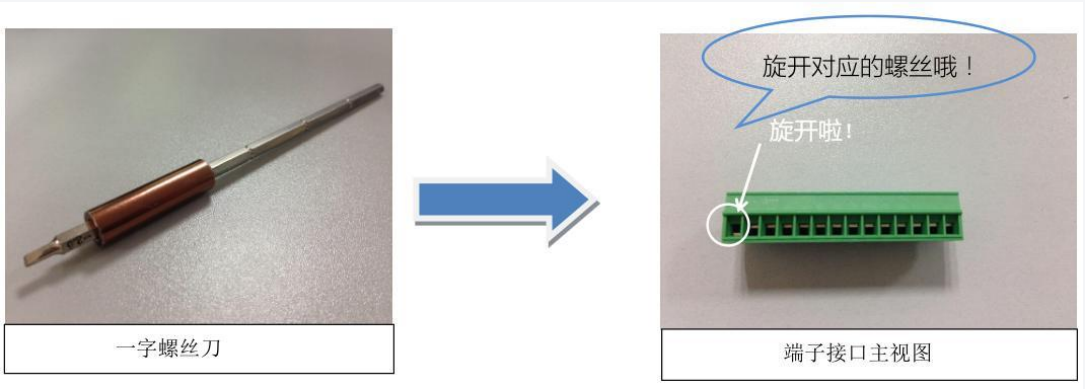
Parameter	Source specification
Sleep caution	At 115200 bit/s while sleeping, downstream serial reception may be abnormal. Choose another rate or disable sleep.

2. Installation, wiring and connector definitions

Source pp. 8-11

Install with power removed under qualified engineering guidance. Check accessories against the order and preserve packaging for transport. The communication serial handles data, configuration and firmware download; the extra serial handles debug information. Confirm signal orientation and electrical levels against actual hardware.

The source shows stripped wires inserted into the detachable terminal block, connection checks and terminal insertion into the DTU. Check polarity and connections before power is applied.



Original terminal wiring reference

Connector pin definitions

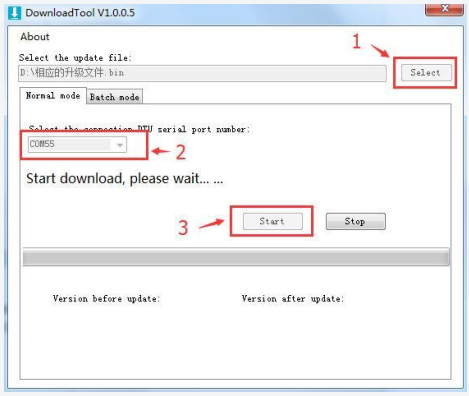
Pin	Signal	Function
1 / 2	POWER / GND	7-32 V input / power ground.
3 / 4	485A / 485B	RS485 A/B.
5 / 6	RXD / TXD	RS232 receive input / transmit output; communication, configuration and download.
7	GND	Shared communication/debug ground.
8 / 9	DRX / DTX	RS232 debug receive input / transmit output; 115200,8,1,N.

Pin	Signal	Function
10	SW	Reserved enable input: 0 V OFF, floating/high ON. Confirm electrical limits.
11-14	IO1-IO4	Digital input/output; I/O status and control, as listed in this manual.

3. Firmware downloading

Source pp. 12-14

- 1. Open DownloadTool.exe.
- 2. Click Select and choose the matching upgrade .bin file. Select the COM port connected to the DTU communication serial.
- 3. Click Start and wait for Start download,please wait....
- 4. Power-cycle the DTU. A progress bar appears during download.
- 5. Wait for Download completed. Use firmware supplied for the exact hardware.



Original download-tool screenshot

4.1 Local and 4.2 Remote configuration

Source pp. 15-18

- Local: open the tool and select Serial Configuration. Select the correct COM port, click Open, then power-cycle the DTU.
- Successful reading of factory/default parameters indicates configuration mode. If reading fails, contact support. Modify values, click Save Parameters, then restart.
- Remote: open Remote Configuration on the server computer; listen on the appropriate port and wait for the DTU connection. This manual describes TCP operation.

- When connected, read/modify the parameters, save, wait for the successful-save prompt and restart the DTU so the settings take effect.

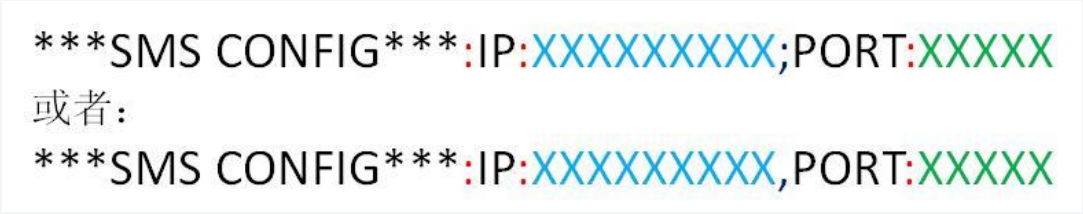


Original configuration-tool reference

4.3 SMS IP and port configuration

Source p. 19

Firmware CM510-62X V1.2.0 and later supports SMS IP/port configuration. Send either format below to the DTU SIM using the source punctuation. The DTU processes the message within one minute, changes parameters, replies Successfully modified:IP:XXXX;PORT:XXXX, restarts and connects to the new center. Weak signal may delay replies; an incorrect SMS center number can prevent success replies.



Original SMS configuration reference

Source formats

Parameter	Source specification
Semicolon form	***SMS CONFIG***:IP:XXXXXXXXXX;PORT:XXXXX
Comma form	***SMS CONFIG***:IP:XXXXXXXXXX,PORT:XXXXX

4. Registration and heartbeat customization

Source pp. 19-20

Registration is the first data sent to the server on connection and can identify the device ID and SIM number. Heartbeats maintain the connection and allow network-loss detection. Edit Custom Registration Packet or Custom Heartbeat Packet using these rules.

Packet settings

Parameter	Source specification
Default	<DEFAULT> or blank sends the default packet. A later note instead says enter DEFAULT without brackets; firmware syntax NEEDS_VERIFICATION.
Disable	<NONE> disables the packet. A later note instead says enter NONE.
Custom text	Enter the required literal string; tokens <ID>, <PHONE> and <IP> may be combined with other characters.
Visible bytes	abc or 0x610x620x63.
Non-visible bytes	TAB = 0x09.
Source example	abc<ID><PHONE><IP>0x10 or 0x610x620x63<ID><PHONE><IP>0x10. The source calls 0x10 a carriage return; retain the example but verify this discrepancy before use.

5. Supply and connection checks; Appendices 1-4

Source pp. 21-23

Source supply: 9 V DC / 1.5 A, 7-32 V range. Manufacturer recommends capacity above 1 A at 9 V because cellular registration, approximately within 30 seconds after power-on, creates rapid current peaks; weaker signal increases demand. This matters especially with battery power.

Connect and check the antenna, serial cable and valid SIM before power-on. POWER should illuminate. Reference current figures are measured under normal signal conditions and vary with signal strength.

Indicators

Parameter	Source specification
Online	Off before dialing and in low-power mode; 500 ms on / 500 ms off while connecting to center; steady on when connected.
ACT: SIM fault	Four flashes then a long off interval, repeating every 2 seconds.
ACT: attachment failure	Three flashes then long off, every 2 seconds; account arrears are a possible cause.

Parameter	Source specification
ACT: signal when connected	0-31: 31 steady on; 21-30 at 100 ms; 11-20 at 500 ms; 1-10 at 1 second; no signal off.

AT commands

Parameter	Source specification
ATE0 / ATE1	Echo off / on.
AT+CSQ	Signal strength.
AT+CPIN?	SIM status; original uses a full-width question mark.
AT+CREG?	Network attachment status; CM510-62X.
ATI	Module information; CM510-62X.

Appendix interface notes

Parameter	Source specification
Serial	8 data bits; 1/1.5/2 stop bits; none/odd/even parity; 300-115200 bit/s; no flow control. Appendix warns of abnormal 115200 bit/s serial reception during sleep; use a different rate or disable sleep.
Indicators	POWER, ACT and Online.
Antenna	SMA female, 50 ohm; optional 3/5/10/15 m extension cables.
SIM	1.8/3/5 V push-type card interface; source-listed 15 kV ESD protection.
Power connector	Standard 3-pin locomotive-style power socket, as described. Confirm actual connector with hardware.

Troubleshooting

Parameter	Source specification
No POWER	Check cables and supply against requirements; an incorrect supply can damage the DTU.
No Online	Check coverage/signal, SIM installation/validity, center-server operation and firewall TCP filtering.

Parameter	Source specification
Normal LEDs, no data	Check operator data service, center IP/domain and communication port. Source specifically mentions GPRS service coverage; apply the actual modem/network.
Cannot enter configuration	Connect communication serial to PC, select COM, click Open, then power-cycle the DTU; inspect serial cable.

Appendices 5-6. TCP protocol and operator reference

Source p. 23

In TCP mode the DTU sends registration on its first server connection. If there is no server data exchange for 60 seconds it sends a heartbeat. The heartbeat is one byte FE; when FE occurs in data the source uses escaping. Obtain the escape rules from manufacturer support before building a center.

When using the CAIMORE demo with a customized registration packet, the source recommends keeping the registration length at 21 bytes.

Default TCP registration

Parameter	Source specification
ID	4 bytes; source describes an 8-hex-digit ID.
PHONE_NUMBER	11 bytes; ASCII phone number.
0	1 byte separator.
IP_ADD	4 bytes; dynamic IP in hexadecimal.
ETX	1 byte, 0x00.

Historical China operator examples

Operator	Network	APN	User	Password
China Mobile	GPRS / 2G	CMNET	None	None
China Unicom	GPRS / 2G	UNINET	None	None
China Telecom	CDMA / 2G	None	card	card

Source contact details

Source p. 24

Contact

Parameter	Source specification
Company	Xiamen CAIMORE Communication Technology Co., Ltd.
Phone / fax	+86-592-5902655 / +86-592-5975885
Postal code	361009
Website / email	www.caimore.com / caimore@caimore.com

Translation and source review notes

Editorial notes

English review translation of the supplied Chinese document. Repeated page furniture, repeated tables and repeated configuration actions are consolidated. Chinese software screenshots are original visual references with English explanations. No device, firmware or certificate testing has been performed. NEEDS_VERIFICATION marks unresolved source statements.

Review checklist

Topic	Review note
Cross-document parameters	Keep manual values separate from the datasheet. Manual body 93 x 62 x 23 mm, storage -40 to +90 °C and 1.5 A adapter differ from datasheet. I/O control versus reserved pins also differs.
Source ambiguities	5600 baud; DEFAULT/NONE bracket syntax; 0x10 called carriage return. Generic sleep/current numbers do not distinguish the CDMA model; the datasheet has separate values.
Protocol implementation	No escape/byte-order/firmware semantics invented. Reference command names checked; no commands sent to a device.
Historical information	Contacts, Windows tools, 2G networks and APNs are translated source-era references; compatibility and regional service require review.
Claims and scope	Source certification, reliability, always-online and software compatibility claims are not independently verified. Confirm exact hardware, firmware and regional modem before public release.
Publication status	English review edition; not uploaded. Confirm technical discrepancies before approving a public edition.