INDUSTRIAL CONNECTIVITY / ENGLISH TECHNICAL DOCUMENT

CM510-13X Series

Industrial cellular data transfer unit



Original source photograph

Source revision not stated | 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

Product scope / Technical data / Interfaces and installation / Functions and configuration / Source review notes

Product overview and model selection

Source pp. 1-2

The CM510-13X Series is an industrial wireless terminal for transparent TCP/UDP data transfer between field PLCs/industrial equipment and a remote data center. It supports cellular networks supplied by China Mobile, China Unicom and China Telecom according to the ordered variant.

F variants list GPRS/CDMA/WCDMA/TD-SCDMA/EDGE/FDD-LTE/TDD-LTE; T variants list LTE/GSM. Network availability outside the source market must be checked against the actual module and operator.

The source describes an ARM9 industrial processor, large memory, a proprietary TCP/IP stack and connection maintenance.

Source model table

Model	Connection	Network	RS232	RS485	TTL	Buffer
CM3160V	15-pin VGA-style connector (serial/power use; not a video interface)	GPRS	Yes	Yes	Yes	8K
CM510-13F	15-pin VGA-style connector (serial/power use; not a video interface)	Seven-mode cellular	Yes	Yes	Yes	8K
CM510-13T	15-pin VGA-style connector (serial/power use; not a video interface)	4G/GSM	Yes	Yes	Yes	8K

Industrial design and reliability

Source pp. 2-3

- Industrial embedded processor and wireless module; real-time operating system and TCP/IP stack. PCB layout follows the source-listed 20H/3W principles with Shengyi board materials and selected industrial components.
- Software protection, CPU watchdog and Virtual Man Watch (VWM) monitor operation and recover from abnormal network/system conditions. Reconnection and always-online statements describe source intent, not guaranteed

uptime.

- Push-type 1.8 V / 3 V / 5 V UIM/SIM interface and serial interfaces have source-listed 15 kV ESD protection. Confirm actual model interfaces before connection.
- Automatic DNS acquisition; TCP/IP communication; industrial EMC/EMI design. The source cites a 3000 V electrical test and FCC/CE/CCC/RoHS statements for wireless modules; certificate identities and product scope require verification.
- Metal enclosure with EMI shielding, isolated enclosure/system and lightning-protection design; source IP41 rating.
- Flash 64 Mbit and SDRAM 256 Mbit; source explicitly says memory varies by model.

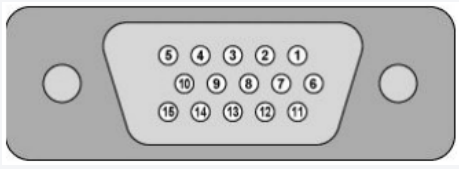
Functions, configuration and software

Source pp. 3-4

- Transparent TCP/UDP transfer; dual-center backup and simultaneous delivery to up to four centers; APN/VPDN; fixed-IP and dynamic-domain access.
- Online detection, connection maintenance and automatic redial; SMS/call/data activation with idle timeout disconnection to reduce traffic and power use.
- SMS remote configuration/control and alarm reporting; packet transmission status; standard AT command interface; serial software upgrade; conventional dial-up modem use.
- Source lists Linux, UNIX and Windows support. GUI tools provide quick/batch configuration; C#, VC, VB and Delphi center software, DLLs and development documentation.
- SCADA integration includes KingView and ForceControl; source driver selection is CAIMORE (Sangrong) or Sangrong. Serial diagnostics, network-speed tests and selectable debug output assist fault location. Third-party software licensing is separate.
- Source describes RS232, RS485, TTL, RS422 and USB interface options. Confirm the supplied electrical interface and connector pinout; do not infer all options are simultaneous.

Connector definitions

Source pp. 4-5



Original connector orientation reference

Pin definitions

Pin	Signal	Function
1	Online	0 V disconnected, 3.3 V connected; output.
2 / 3	RXD / TXD	RS232 receive input / transmit output.
4 / 6 / 7 / 8 / 14 / 15	NC / unused	Unused as listed.
5	GND	Signal ground.
9	SW	Input -10 to 0 V or floating ON; 3.3-30 V OFF. Input range -10 to +30 V.
10 / 11	TTL_RXD / TTL_TXD	TTL input / output, 0-3.3 V.
12 / 13	485A / 485B	RS485 A / B.

Interfaces and radio specifications

Source pp. 4-6

Serial and peripheral interfaces

Parameter	Source specification
Serial	RS232, RS485 and TTL as listed in the model table. 8 data bits; 1/2 stop bits; 110-115200 bit/s; none/odd/even/SPACE/MARK parity; no flow control, RTS/CTS hardware flow or XON/XOFF software flow.
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.

Radio bands and performance

Parameter	Source specification
LTE FDD	B1/B3
LTE TDD	B39/B40/B41
Legacy modes	TD-SCDMA B34/B39; WCDMA B1; CDMA2000 1X/EVDO B5. These three groups are not supported by the T variants in the source. GSM/GPRS/EDGE B3/B8.
Power classes	Class 4: 2 W at 850/900 MHz; Class 1: 1 W at 1800/1900 MHz. EGSM900 +33 dBm (class 4); DCS1800 +30 dBm (class 1); EDGE900 +27 dBm and EDGE1800 +26 dBm (class E2); TD-SCDMA/UMTS/CDMA-EVDO/LTE +23 dBm (class 3).
Receive sensitivity, as printed	2G/3G <107 dBm (minus sign absent in source). LTE: B1 <-98; B3 <-95; B3 <-98; B40 <-98; B41 <-96; test bandwidth 10 MHz. Duplicate B3 and missing 2G/3G sign NEEDS_VERIFICATION.

Power, mechanics and environment

Source p. 6

Power

Parameter	Source specification
Input	7-32 V DC; reverse-polarity, overvoltage and overcurrent protection.
Standard adapter	9 V DC / 1330 mA
Communication current	60 mA at 12 V DC
Standby current	25 mA at 12 V DC

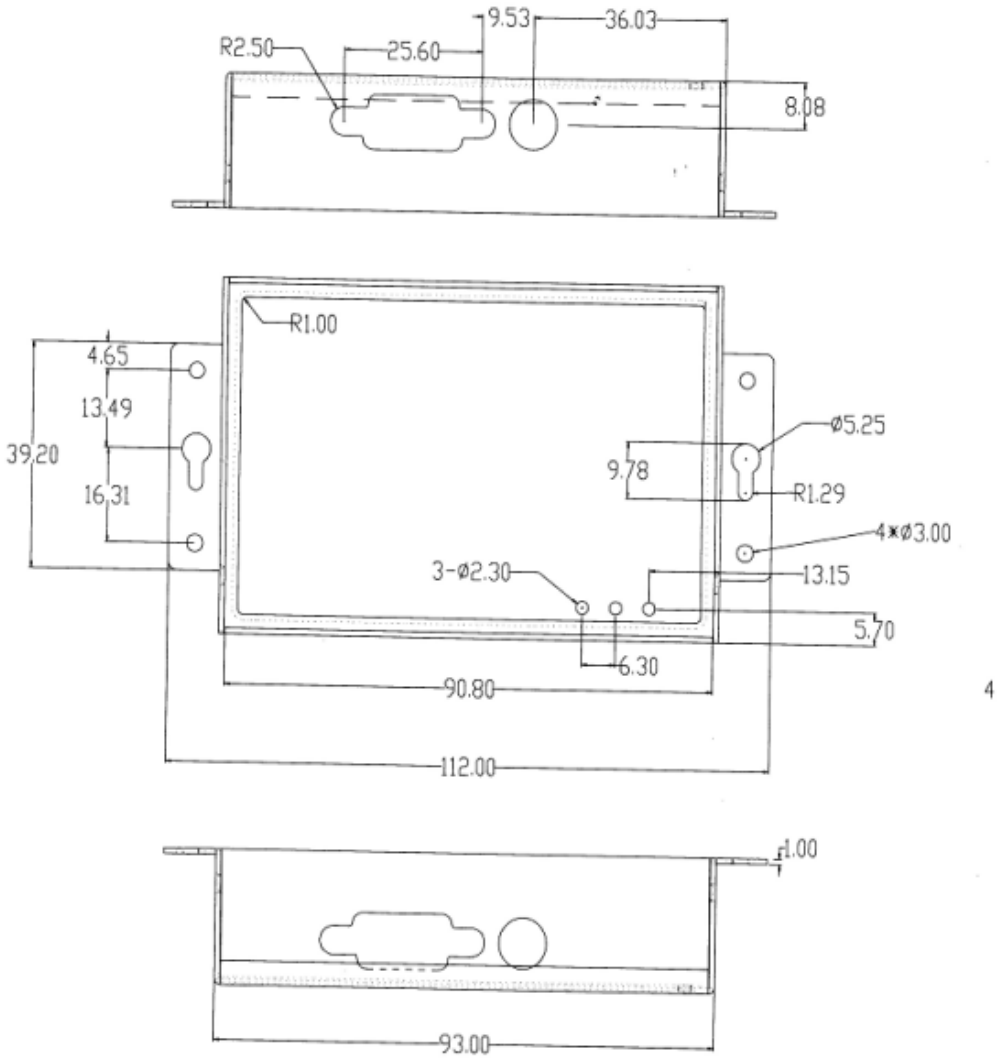
Mechanical / environment

Parameter	Source specification
OS	Real-time OS in the specification table.
Enclosure	Metal; source IP41.
Body	100 x 62 x 24 mm excluding antennas and fixtures; actual model governs.
Package	298 x 226 x 60 mm; actual model governs.

Parameter	Source specification
Weight	0.41 kg
Operating	-30 to +75 °C
Storage	-45 to +90 °C
Humidity	95% RH, non-condensing.

Installation drawing

Source p. 7



Original source dimensional drawing; check numeric labels and supplied revision before integration.

Applications and system architecture

Source pp. 7-10

The source illustrates field equipment > DTU > cellular base station / operator network > data center. Sensors, controllers, supervisory software, server infrastructure and third-party platforms are integration components.

Application examples

Parameter	Source specification
Power and utilities	Power monitoring; street-light monitoring; meter monitoring; equipment-room monitoring; distribution-network automation and remote control; remote meter reading.
Transportation	Traffic guidance; vehicle guidance; highway monitoring; traffic-light control and image transmission.
Water	Water-resource monitoring; real-time water-supply network monitoring.
Environment, meteorology and oilfields	Key pollution-source monitoring; environmental monitoring; weather monitoring; real-time noise monitoring; oilfield monitoring; heat-network monitoring; coal and gas monitoring; earthquake monitoring.
Serial equipment	Wireless data transmission for domestic and international PLCs with serial or RS485 interfaces; DTU data transmission.

Company profile and historical recognition

Source pp. 10-11

The following company information is translated from the supplied document and describes the source-era profile. Awards, counts and certifications have not been updated to the present day. English award names are descriptive translations.

Company honors

Year	Recognition stated in source
2011	Named a "Best Supplier for Customer Satisfaction in China's Industrial Control Industry"; the company's GPRS DTU received an "Innovative Product Award".
2012	Became a member of China Quality Long March.
2013	Became a member of the Strategic Alliance for Technological Innovation in the Intelligent Power Transmission and Distribution Equipment Industry.

Year	Recognition stated in source
2014	Recognized as an innovative pilot enterprise. The Zhanjiang Wi-Fi coverage project received a "Model Engineering Project Award" at the 13th China Automation Annual Conference.
2015	Video products were named among the "Top Ten Video Transmission Enterprises" by China Industrial Control and by Huaqiang Security Network. The noise-monitoring project received a "Model Engineering Project Award" at the 14th China Automation Annual Conference.
2016	The video product line was named a "2015-2016 Quality Supplier in China's Security Industry" by Huaqiang Security Network. Charging-pile communication equipment received a "Best Charging Equipment Component Supplier" award.
2016	Received a product gold award at the 7th Guangzhou International New Energy Automobile Industry Exhibition. The organizing committee of the 3rd China Good Wi-Fi event named CAIMORE a "2016 Best Wi-Fi Industry Application Solution Provider".
2018	Industrial routers and DTUs were named among China's top ten brands in their respective categories. Recognized as a key reserve enterprise for public listing in Xiamen.
2019	Recognized as a key reserve enterprise for public listing in Xiamen and Fujian Province. Selected as a DICT solution partner of China Telecom Corporation Limited, Shanghai Branch.
2020	Recognized as a key reserve enterprise for public listing in Xiamen.

Company qualifications

Parameter	Source specification
High-tech enterprise	Recognized nationally as a high-tech enterprise in 2009.
Dual-software enterprise	Recognized nationally as a dual-software enterprise in 2010.
Management systems listed	ISO 9001:2015 quality management; ISO 14001:2015 environmental management; ISO 45001:2018 occupational health and safety management.
Intellectual property	7 patented technologies for device stability and 31 software copyright certificates.
Regional offices	9 regional offices across China, providing nearby customer service.
Registered capital	RMB 20.58 million. The source identifies CAIMORE as a high-tech enterprise supported by Xiamen.
Industry experience	18 years of industry R&D accumulation and application experience, as stated in the source.

Contact information

Parameter	Source specification
Company	Xiamen CAIMORE Communication Technology Co., Ltd.
Address as printed in source	Units 901 and 904, No. 63 Chengyi North Street, Software Park Phase III, Xiamen, China
Telephone / fax	+86-592-5902655 / +86-592-5975885
Website / email	https://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
Radio table	Duplicate B3 sensitivity entries; 2G/3G sensitivity lacks a minus sign. Source module certifications are not a complete-device approval.
Interface scope	SW/Online functions are optional and hardware-dependent. RS422/USB options mentioned in general text are not defined by the listed pin table.
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.