INDUSTRIAL CONNECTIVITY / TECHNICAL DATASHEET

CM520-59F-L

Compact two-port industrial Wi-Fi router



Original source photograph



Original source photograph

Source filename v2.3 | English review edition | 18 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

Overview and configuration / Functions / Interfaces / Radio specifications / Power and mechanics / Applications / Company profile / Source review notes

Product overview and model

Source p. 1

The CM520-59F-L is an industrial two-port gateway with an open software architecture, metal enclosure, two RJ45 Ethernet interfaces, 2G/3G/4G WAN connectivity and 2.4 GHz Wi-Fi.

Functions include VPN networking, IPTABLE firewall controls, routing tables, DHCP server/client, SNAT/DNAT, DMZ, network diagnostics, user management, APN/VPDN, automatic dialing at power-up and automatic link maintenance.

Integrated-chip Wi-Fi is described as reducing power consumption and improving stability and consistency compared with an external Wi-Fi module.

Applications include SME Internet access, vehicle Wi-Fi, ATM monitoring, financial/postal transactions, smart grids, transport, environmental/fire/security/water monitoring, public safety, advertising, surveying, industrial control, oilfields/mines, earthquakes, weather, instruments, meter reading, heat networks, charging piles and self-service equipment.

Model row

Parameter	Source specification
Model	CM520-59F-L
Network / interfaces	4G multi-network support, as stated; Ethernet interfaces.
RS232 / RS485	No / No.
Memory	16 MB Flash / 128 MB SDRAM.
Wi-Fi	Supported.

Industrial design

Source p. 2

- Industrial 32-bit CPU at 650 MHz; 32 KB data cache (D-cache) and 64 KB instruction cache (I-cache) improve data and instruction access.
- Industrial wireless module for stable transmission and interference resistance.
- PCB design follows the source's "3H and 3W" principles, using high-quality board materials and selected industrial components.
- Ethernet interfaces include 1.5 kV electromagnetic isolation.
- Metal enclosure with interference shielding; IP30; lightning-protected antennas; wide-temperature design intended for harsh industrial environments.
- 7-32 V DC input with reverse-polarity, overvoltage and overcurrent protection; SIM/UIM 15 kV ESD protection.

Reliability

Source p. 2

- System protection adds Virtual Man Watch (VWM) monitoring to software protection. On network or strong-interference exceptions the device performs a full reset to reduce the need for an on-site power cycle. This source does not describe a separate CPU watchdog layer.
- The 1.8 V / 3 V / 5 V push-type UIM/SIM interface includes 15 kV ESD protection.
- The source describes a metal enclosure with electromagnetic-interference shielding, lightning protection and isolation between the enclosure and system, designed for industrial environments and power-safety requirements. IP30 is stated for this series.
- The source states that wireless modules have CGD, FCC or CE certification. "CGD" is reproduced as written; the certification name and model-specific scope need verification.
- A high-speed industrial CPU processes protocol conversions and is described as addressing false-online, unresponsive and crashed states. The MMU is intended to prevent memory-related instability.
- 16 MB Flash, expandable to 32 MB, and 128 MB SDRAM provide transmit-data buffering and space for large received packets. The source describes a complete TCP/IP stack and reduced disconnection probability.
- The source reports a 3000 V electrical test and favorable EMC/EMI performance, CE certification and EMC testing. It also cites a 2010 customer-satisfaction supplier award. Test conditions, certificates and the award date require source review before publication.

Functions and commissioning

Source p. 3

- 2G/3G/4G cellular dialing; VPN including PPTP, L2TP and IPsec; TCP/IP, UDP and ICMP.
- Online checks, link maintenance, automatic redial, IPTABLES firewall and packet filtering.
- DHCP/DHCPD; NAT including SNAT/DNAT; DMZ; APN/VPDN; SSH; factory reset; local configuration and local upgrades.
- Factory default settings support quick commissioning with few or no parameter changes, depending on the installation.
- A graphical configuration tool provides quick configuration.
- The product manual provides quick-configuration instructions.
- SYSLOG output supports inspection of operating logs and fault analysis. Serial debugging software provides different diagnostic-output levels to help locate problems.
- The generic source network list includes GSM, GPRS, EDGE, WCDMA, EVDO, TD-SCDMA and LTE TDD/FDD; actual support depends on the fitted modem.

Interfaces and accessories

Source pp. 3-4



Front interfaces



Rear interfaces

External interfaces

Parameter	Source specification
Ethernet	2 x 10/100 Mbps Base-T; IEEE 802-3 / 802-2 as printed; 1.5 kV isolation.
WAN/LAN	One WAN/LAN port, default WAN, switchable to LAN; one additional LAN port.
Cellular antenna	1 x SMA female, 50 ohm; optional 3/5/10/15 m extension leads.
Wi-Fi antenna	1 x SMA female, 50 ohm.
UIM	1.8/3/5 V push-type interface; 15 kV ESD protection.
Power	Standard round socket.
Indicators	POWER, ONLINE and WIFI.
RESET	Restore factory defaults.
Serial interfaces	Model table explicitly marks RS232 and RS485 unsupported. Generic serial-debugging/PLC application text does not establish physical serial interfaces.

Accessories

Parameter	Source specification
Illustrated	Power adapter, Ethernet cable and optional antennas.

Cellular and Wi-Fi parameters

Source pp. 4-5

Cellular parameters

Parameter	Source specification
Wireless module	Industrial-grade module.
TDD frequency group	LTE TDD: 2600/2300 MHz; UMTS: 2100/900 MHz; GSM: 850/900/1800/1900 MHz; UMTS Rx diversity: 2100/900 MHz.
FDD frequency group	LTE FDD: 2600/2100/1800/DD800 MHz (DD800 reproduced as printed); UMTS and UMTS Rx diversity: 2100/900 MHz.
Radio schemes	LTE/UMTS/HSPA+/HSDPA/HSUPA/WCDMA/EDGE/GSM
TDD rates	LTE TDD: DL 68 Mbps / UL 17 Mbps; DC-HSPA+: DL 42 Mb/s (Category 24); HSPA+: DL 28 Mb/s (Category 18); HSDPA: DL 14.4 Mb/s (Category 8); HSUPA+: DL 5.76 Mb/s (Category 6), as printed; WCDMA CS: UL/DL 64 kbps; WCDMA PS: UL/DL 384 kbps.
FDD rates	LTE FDD: DL 100 Mbps / UL 50 Mbps; other DC-HSPA+, HSPA+, HSDPA, HSUPA+ and WCDMA values are the same as the TDD table.
Transmit power	LTE: 23 dBm; WCDMA/HSDPA: 24 dBm.
Receiver sensitivity	<-109 dBm
Source-listed module functions	Data, voice, SMS and fax.

Wi-Fi parameters

Parameter	Source specification
Module	Integrated chipset Wi-Fi module, described as highly integrated and stable.
Standards / rates	802.11 b/g/n; 6/9/12/18/24/36/48/54 Mbps; maximum stated 300 Mbps.
Encryption	WEP, WPA and WPA2; source lists 802.11i 4.0, TKIP, AES and CCMP hardware security engines.
Modes	AP and repeater.
Coverage claim	Up to 100 m outdoors without obstructions; test conditions not specified. NEEDS_VERIFICATION.

Hardware, power and environment

Source p. 6

Hardware

Parameter	Source specification
CPU	650 MHz industrial embedded processor; industrial-design list gives 32 KB D-cache and 64 KB I-cache.
MMU	Memory-management unit for overflow-related exception protection.
Flash / SDRAM	16 MB / 128 MB; reliability section states Flash expandable to 32 MB.

Power

Parameter	Source specification
DC input	7-32 V; reverse-polarity, overvoltage and overcurrent protection.
Standard supply	9 V DC / 1.5 A
Communication current	Average 300 mA at +9 V DC; registration peak 1.0 A at +9 V DC.
Standby	Average <200 mA at +9 V DC.

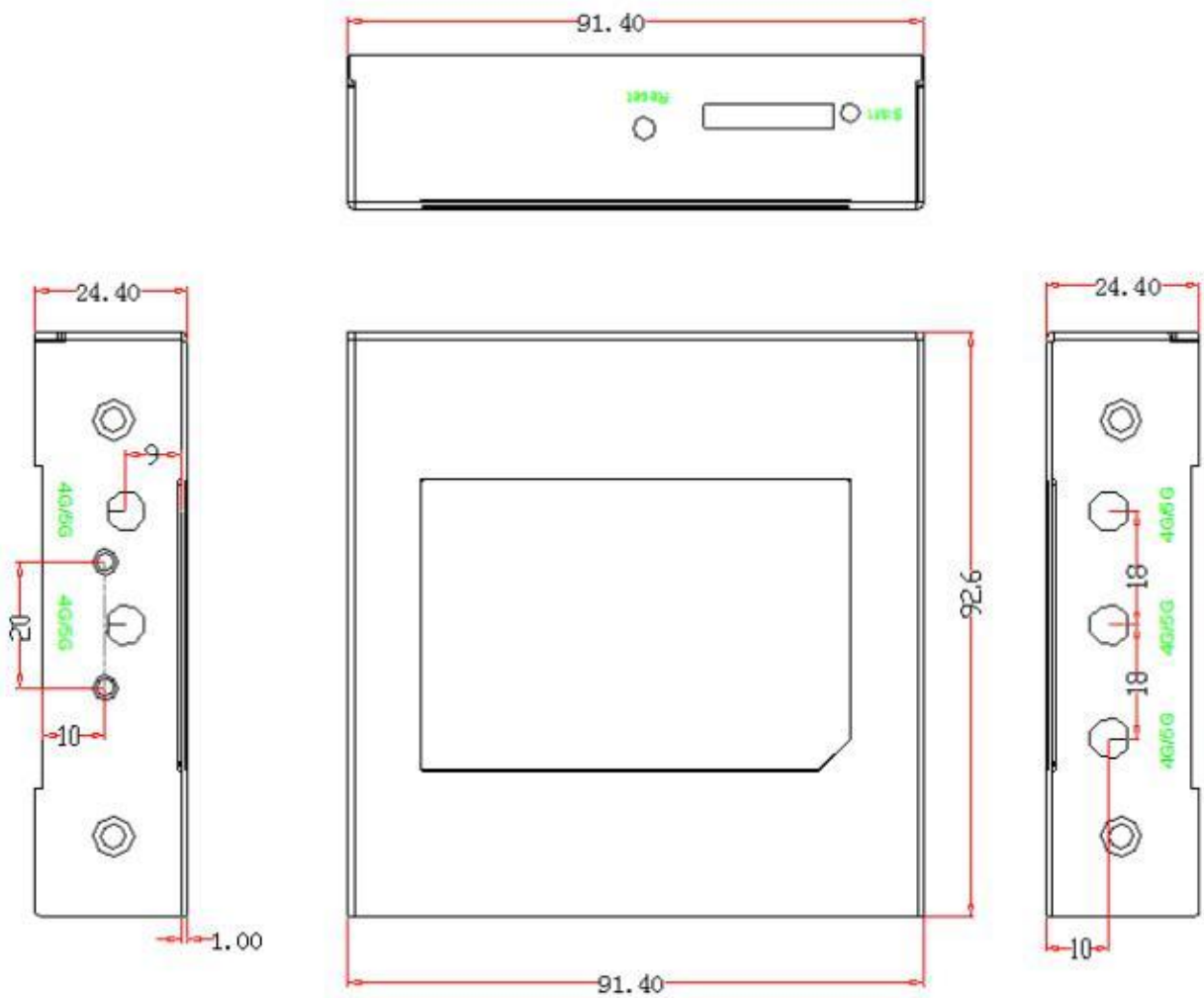
Mechanics and environment

Parameter	Source specification
Enclosure	Metal, shielding, enclosure/system isolation, lightning protection and IP30.
Body	91.4 x 92.6 x 24.4 mm, tolerance +/-0.5 mm; excludes antennas and mounting hardware.
Package	350 x 215 x 88 mm
Weight	276 g, tolerance +/-10 g.
Product life-cycle statement	5 years, as stated. The source does not define warranty period, availability commitment or service-life conditions. NEEDS_VERIFICATION.
Operating temperature	-35 to +75 °C
Storage	-40 to +85 °C

Parameter	Source specification
Humidity	95%, non-condensing.

Installation drawing

Source p. 7



Original manufacturer drawing; compare individual marked extents with the stated body size before installation.

Application architectures

Source pp. 8-10

Traffic-signal networking

Parameter	Source specification
Platforms	Traffic command/dispatch; signal control/management databases, communications services and clients.
Control / publishing	Adaptive-control services, information publishing, firewall and public-information services.
Back end / field	Servers, communications/database services and simulated signal equipment; operator network and CAIMORE field routers connected to traffic equipment.

Distribution-room environmental monitoring

Parameter	Source specification
Users	Mobile services, centralized control platform, electrical supervision, power bureau and maintenance personnel.
Network / platform	Power private network; site management platform with firewall, management server and desktop controller; local LAN.
Inspection	Rail-mounted robot and CAIMORE router.
Environment / controls	Temperature/humidity, gas, standing water and illuminance; alarms and fan, water-level and lighting control.
Security	Video surveillance and access control.
Online monitoring	Partial discharge, switchgear temperature and electrical measurements.

Environmental online monitoring

Parameter	Source specification
Field monitoring stations	VOC detector, camera, vacuum pump, dust/humidity filter, circuit-breaker protection, CAIMORE wireless module, power supply, drying agent, infrared monitoring and flowmeter. Two example monitoring stations are shown.
Communications	Operator cellular network and Internet; the generic diagram labels 4G/5G, but the 59F-L source specifies 2G/3G/4G, not 5G.

Parameter	Source specification
Services / users	Web service, LED display, environmental monitoring center, mobile app and user-access terminal.

Typical applications

Source p. 11

Application examples

Parameter	Source specification
Internet access	Small and medium enterprise wireless access; household wireless Internet.
Power and utilities	Power monitoring; street-light monitoring; meter monitoring; equipment-room monitoring; distribution-network automation and remote control; remote meter reading.
Power: additional example	Charging-pile monitoring.
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	The source lists PLC/serial/RS485 and DTU applications generically; the 59F-L model row explicitly has no RS232/RS485 ports. External integration applicability NEEDS_VERIFICATION.
Self-service equipment	Parcel lockers, vending machines and recycling equipment.

Company profile and historical recognition

Source pp. 11-12

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.
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.

Parameter	Source specification
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 review; not additional manufacturer specifications

English review edition translated from the supplied Chinese source. Optional features and variant differences are retained. Manufacturer images and numeric drawings preserve the original hardware details; application architectures are reformatted in English. NEEDS_VERIFICATION marks an unresolved source ambiguity. No absent specification has been invented.

Review checklist

Source / topic	Review note
Model capability	No RS232 or RS485 in the model row. Generic serial diagnostics and PLC/DTU application wording must not be promoted as physical serial interfaces.
Cellular scope	Source specifies 2G/3G/4G. Generic application image marked 4G/5G does not establish 5G capability.
Lifecycle wording	Five-year product lifecycle statement is undefined; do not translate it into a five-year warranty or guaranteed supply period.
Mechanics / source claims	Confirm drawing extents against 91.4 x 92.6 x 24.4 mm +/-0.5 mm; retain weight 276 g +/-10 g. DD800, HSUPA+ wording, CGD, coverage, voice/fax and certificate/test scope require review.
Source-era statements	Company office, patent, software-copyright and years-of-experience counts differ among the supplied documents. Each translation preserves its own source counts rather than combining them into a new current company profile.
Certificates and historic awards	Certification and award statements are translations of source material, not independent verification. No certificate numbers were supplied; CGD and Mo'er naming are not expanded into assumed issuing bodies.
Publication status	This English review edition is prepared for technical/editorial review. Resolve the identified source discrepancies before replacing the review status with a public website release.