INDUSTRIAL CONNECTIVITY / TECHNICAL DATASHEET

CM520-8BF

Single-modem dual-SIM industrial router



Original source photograph



Original source photograph

Source revision not stated | mixed 8BF / 8CF / 8B-8C identification | English review edition | 18 October 2026

MODEL IDENTITY REVIEW - cover says 8BF; overview and appendix name 8CF; view captions name 8B/8C. Confirm the intended model before website publication.

Inside this document

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

Source identity and product overview

Source pp. 1-2

Source identity notice: the supplied filename and cover identify CM520-8BF. The overview identifies CM520-8CF, while the appearance/accessory captions identify the CM520-8B/8C family. These are retained as source discrepancies. This review edition must not be assigned to an exact public model page until the intended hardware is confirmed.

The source describes an industrial 4G/3G wireless gateway with a metal enclosure, two RJ45 Ethernet interfaces and Wi-Fi. Local IEEE 802.11 a/b/g/n and cellular 4G/3G access are combined with VPN and Wi-Fi authentication.

An industrial communications processor and embedded real-time operating system implement logical-link through application-layer protocols. Functions include PPTP + L2TP + MPPE and IPsec + GRE, IPTABLE firewall, static/dynamic routing, PPP client, DHCP server/client, DDNS, SNAT/DNAT, DMZ, web configuration, APN/VPDN, power-on dialing, link maintenance and scheduled connection/disconnection.

Two SIM slots are provided. Portal authentication methods listed are WeChat, SMS and one-click login. Portal service/backend requirements are not described.

The source describes integrated-chip Wi-Fi, lower power consumption than an external module, improved stability/consistency and a Wi-Fi power amplifier intended to improve wall penetration and range. It cites patented online-maintenance technology, industrial construction and 12 years of industrial application experience.

Source-listed qualifications include CE, RoHS, E-mark, Mo'er high/low-temperature testing, CCC, MIIT network-access permit and CRCC; a 3000 V electrical test and CGD/FCC/CE wireless-module certification are also claimed. Scope and certificates NEEDS_VERIFICATION.

Applications include SME 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, earthquake/weather/instrument monitoring, meter reading, heat networks, charging piles and self-service equipment. The source slogan translates as CAIMORE Communications - connecting the world.

Product views and accessories

Source p. 3



Overall view, source caption CM520-8B/8C



Front interfaces



Rear interfaces

Accessories

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

Industrial design and reliability

Source pp. 4-5

- Industrial embedded CPU, 533 MHz, with 32 KB D-cache and 64 KB I-cache.
- Industrial wireless module; Linux 2.6 with MMU and complete TCP/IP stack; industrial PCB following stated 3H/3W principles; selected industrial components.
- 1.5 kV Ethernet isolation; metal shielding, lightning-protection design, wide-temperature design and IP30 in the industrial-design section.
- Proprietary online maintenance, online checks, automatic redial and reset after abnormal operation.
- Three-layer system protection adds Virtual Man Watch (VWM) monitoring to software protection and the CPU watchdog timer (WDT). On a network or interference-related exception, the device can perform a full reset, intended to provide recovery without an on-site power cycle.
- The 1.8 V / 3 V / 5 V push-type UIM/SIM interface includes 15 kV ESD protection.
- RS232 serial-port protection is stated as 15 kV ESD.
- Metal enclosure with shielding, isolated enclosure/system and lightning-protection design; power-safety requirements. IP41 appears in the reliability text, conflicting with IP30 elsewhere: NEEDS_VERIFICATION.
- 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.
- High-speed protocol processing addresses false-online, unresponsive and crashed states. MMU management is described as preventing memory-related instability.
- The TCP/IP protocol stack is intended to improve communication performance and reduce disconnections.
- 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.
- Flash 128 Mbit and SDRAM printed as 1GMbit in reliability text; later hardware table states 1 Gbit SDRAM. Large-packet buffering is described.

Commissioning and software functions

Source pp. 6-7

- 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.
- Graphical batch configuration; the source cites twelve years of product accumulation.
- Local 802.11 a/b/g/n Wi-Fi and 3G/4G WAN, with WAN VPN and Wi-Fi authentication for local-to-wide-area connectivity.
- Wireless video surveillance and moving-image transmission; Ethernet data and routing; serial TCP/UDP transparent transfer or serial configuration.
- The software-function list names PPTP and GRE. The overview additionally names PPTP/L2TP/MPPE and IPsec/GRE; actual firmware support NEEDS_VERIFICATION.
- Online detection/maintenance and automatic redial; IPTABLES firewall and packet filtering; scheduled connection/disconnection; static/dynamic routing.
- TCP/IP, UDP, ICMP, SMTP, HTTP, POP3, OICQ, Telnet and FTP.
- Wi-Fi encryption is written as WAP and WAP 2.0, with TKIP/AES/CCMP engines. Intended security-protocol wording NEEDS_VERIFICATION.
- QoS bandwidth management; DHCP/DHCPD; SNAT/DNAT; DDNS with PeanutHull, 88IP and dyndns; DMZ; APN/VPDN.
- Local/remote web configuration; configuration save/restore and batch configuration; Telnet shell management.
- Multiple terminals share the PPP WAN connection; dialing supports automatic IP, specified IP and specified local/peer IP.
- COM/SYSLOG diagnostics; local serial upgrades; remote TFTP upgrades; real-time clock; SNMP remote management.
- Linux and Windows support is stated without defining management-host versus device-OS scope. The actual device-OS section names Linux 2.6. NEEDS_VERIFICATION.
- Bandwidth controls include separate upload/download limits, aggregate limits and equal sharing among users; the last source phrase is truncated.

Hardware system and interfaces

Source p. 8

Hardware and operating system

Parameter	Source specification
CPU	533 MHz industrial embedded processor with MMU.
Flash	128 Mbit, expandable to 256 Mbit.
SDRAM	1 Gbit.
Operating system	Linux 2.6.

External interfaces

Parameter	Source specification
Ethernet	2 x 10/100 Base-T ports, both grouped under the source label LAN1; IEEE 802-3 / 802-2 as printed; 1.5 kV isolation. Exact WAN/LAN role assignment is not specified.
Serial	The source lists serial settings without identifying the fitted electrical interface or number of channels: Data bits: 7/8; stop bits: 1/2; parity: none/odd/even/SPACE/MARK; 110-230400 bit/s; no, RTS/CTS hardware or XON/XOFF software flow control.
Indicators	POWER and ONLINE.
Antenna	SMA female, 50 ohm; optional 3/5/10/15 m extensions.
SIM	2 x push-type SIM slots, 1.8/3/5 V; 15 kV ESD protection. One modem / dual-SIM, not two simultaneous cellular modems.
Power	Standard round socket.
RESET	Restore factory defaults.

Power and physical characteristics

Source p. 9

Power

Parameter	Source specification
DC input	5-32 V DC, with reverse-polarity, overvoltage and overcurrent protection.
Standard supply	9 V DC / 1.5 A
Communication current	Average 390 mA at +9 V DC; registration peak 1.0 A at +9 V DC.
Standby	Average <56 mA at +9 V DC.

Mechanics

Parameter	Source specification
Enclosure	Metal, shielding, enclosure/system isolation, lightning-protection design and IP30 here. Reliability section instead says IP41.

Parameter	Source specification
Body	130 x 104 x 25 mm, excluding antennas and mounting hardware. The appendix shows a different dimension set.
Package dimensions	Source cell is blank; not specified.
Weight	0.5 kg.

Cellular, Wi-Fi and environment

Source pp. 9-11

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 and SMS.

Wi-Fi parameters

Parameter	Source specification
Module	Integrated chipset Wi-Fi module, described as highly integrated and stable.
Standards / rates	802.11 a/b/g/n; 6/9/12/18/24/36/48/54 Mbps; maximum stated 300 Mbps.
Encryption	Source wording: WAP, WAP 2.0 and 802.11i 4.0 / TKIP / AES / CCMP. WAP appears to be inconsistent encryption terminology; intended WPA/WPA2 meaning NEEDS_VERIFICATION. Not silently corrected.
Modes	AP mode.
Coverage claim	Up to 150 m outdoors without obstructions; conditions are not specified. NEEDS_VERIFICATION.

Environment

Parameter	Source specification
Operating temperature	-30 to +70 °C
Extended operation	-35 to +75 °C
Storage	-40 to +85 °C
Relative humidity	95%, non-condensing.

Indicator definitions

Source p. 12

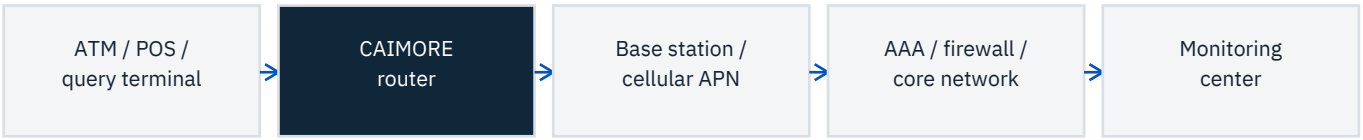
LED status

LED	State	Meaning
Power	On	Device power normal
Power	Off	Device not powered
Online	On	Device registered on the network
Online	Off	Device not registered on the network

Application architectures

Source pp. 12-13

FINANCIAL TRANSACTION / TRAFFIC-CONTROL ACCESS



VIDEO MONITORING / DATA TRANSMISSION



English redraw of source schematics. Detailed source components are listed in the tables.

Vehicle Wi-Fi advertising operations

Parameter	Source specification
Vehicle equipment	Vehicle router providing Wi-Fi to passenger smartphones/tablets and vehicle displays.
Services	Operator/Internet connectivity and remote advertising/content services as illustrated.

Financial transaction / traffic-control architecture

Parameter	Source specification
Field devices	ATM; query/payment terminal; POS/payment terminal.
Local connection	RJ45 Ethernet to a CAIMORE router.
Cellular access	Base stations and operator cellular/private APN network.
Network services	Switches/routers, firewalls and AAA authentication servers.
Monitoring center	Management/application and database servers, connected to a supervisory agency or higher-level department as shown.

Video monitoring / transmission architecture

Parameter	Source specification
Source endpoints	Cameras and local monitoring equipment in the sectors illustrated.
Access path	CAIMORE router, base station and operator wireless network.
Core network	Switch/router, firewall, Internet/private network and data acquisition/forwarding services.
Monitoring endpoints	Mobile terminal, workstation and central monitoring display.

Typical applications

Source p. 14

Applications

Parameter	Source specification
Internet access	Small and medium enterprises, households and vehicle Wi-Fi, as generic source application examples. Built-in Wi-Fi applicability must be confirmed for each model.
Power and utilities	Power monitoring; street-light monitoring; meter monitoring; equipment-room monitoring; distribution-network automation and remote control; remote meter reading. 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	Wireless data transmission for domestic and international PLCs with serial or RS485 interfaces; DTU data transmission.
Self-service equipment	Parcel lockers, vending machines and waste-recycling equipment.

Company profile and historical recognition

Source pp. 1, 15

Company information below preserves this document's historical profile, which differs from newer documents. Award titles are descriptive English translations; no new present-day corporate claims are inferred.

Company honors through 2016

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".

Qualifications and company profile

Parameter	Source specification
High-tech enterprise	National high-tech enterprise recognition in 2010.
Dual-software enterprise	National recognition in 2010.
Intellectual property	2 patented technologies for device stability and 26 software copyright certificates.
Offices	9 regional offices across China.
Registered capital	RMB 12.8 million; described as a Xiamen-supported high-tech enterprise.

Parameter	Source specification
Industry experience	16 years, as stated in the company table. Product overview and commissioning text instead cite 12 years.

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
Postal code	361009
Source cover telephone discrepancy	Cover body prints 0592-590265, missing a digit; repeated page headers give +86-592-5902655, retained in this translation.

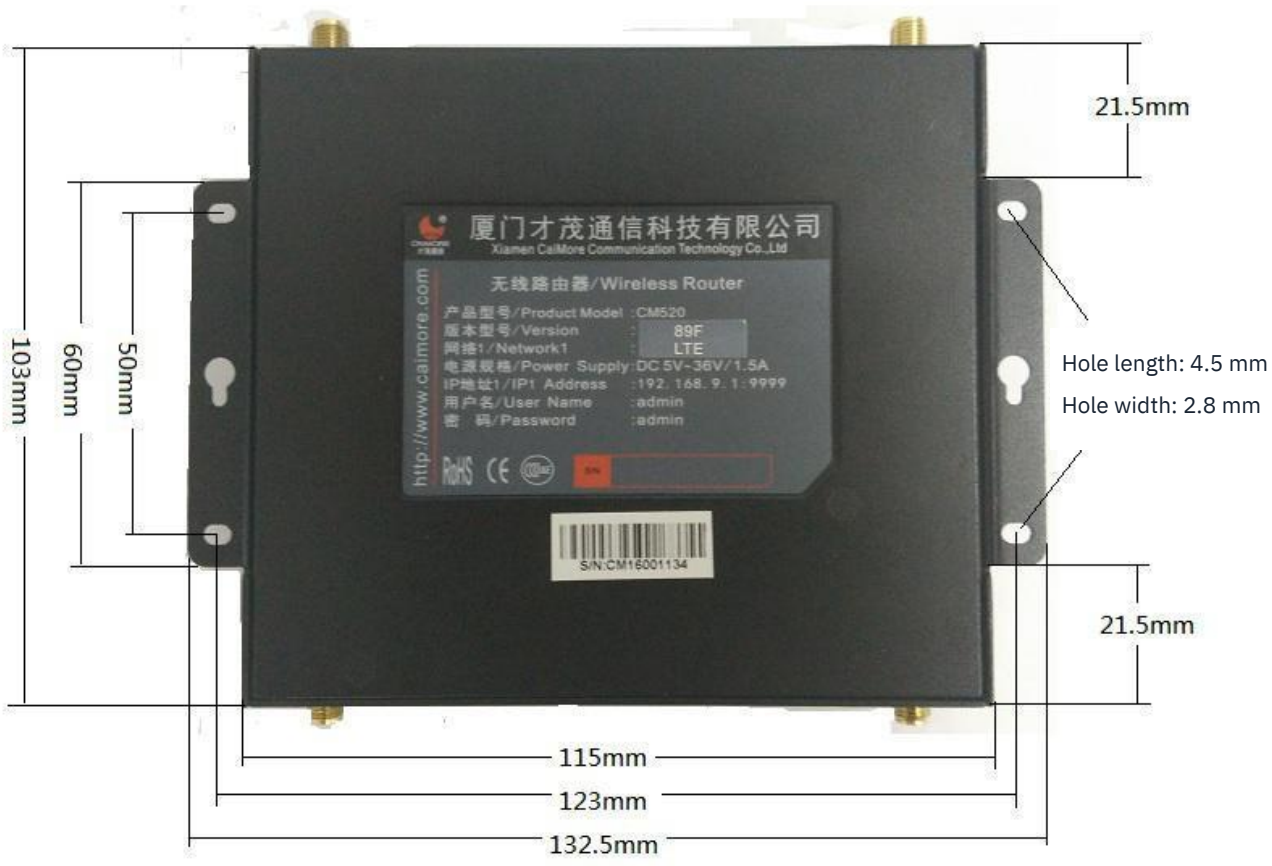
Appendix 1. Source 9344-board dimensions

Source p. 16

The appendix is labeled 9344 small board and shows the product rear view. The photographed label contains a model/revision identifier whose applicability must be confirmed. The numeric labels are transcribed below; they have not been reconciled with the 130 x 104 x 25 mm body table.

Mounting instructions are not supplied. Use a confirmed drawing for the exact ordered hardware before machining or installation.

Product rear view



Original appendix image with numeric labels; tiny bilingual product-label text is part of the source photograph.

Original appendix annotations

Parameter	Source specification
Horizontal dimensions	115 mm, 123 mm and 132.5 mm, at the separate marked extents.
Vertical dimensions	103 mm overall marked span; 60 mm and 50 mm marked hole spans.
Offset	21.5 mm at each marked end.
Hole annotations	Slot length 4.5 mm; slot width 2.8 mm.
Thickness annotation	24.5 mm.
Reference	The appendix does not establish which annotated extent supersedes the earlier body dimensions. NEEDS_VERIFICATION.

Translation and source review notes

Editorial notes; not additional manufacturer specifications

This English review edition follows the supplied Chinese file. Repeated page furniture is consolidated; application diagrams are expressed in English architectures and tables. Manufacturer photographs and numeric drawings retain their original hardware details. Unresolved contradictions are marked NEEDS_VERIFICATION. No missing specification has been invented.

Review checklist

Source / topic	Review note
Critical model identity	Cover/filename 8BF, overview 8CF and view captions 8B/8C. The appendix photograph may depict another revision. Exact model association must be confirmed; no invented model-selection table.
Body / drawing	Body table 130 x 104 x 25 mm; appendix labels 115/123/132.5 mm, 103 mm and 24.5 mm at different extents. Do not substitute one as the definitive body size.
IP rating	IP30 in design/physical tables vs IP41 in reliability. NEEDS_VERIFICATION.
Wi-Fi terminology	WAP/WAP 2.0 appears where encryption is discussed. Intended WPA/WPA2 wording requires confirmation.
Ports / missing data	Serial electrical standard and port count not identified in the interface table; Ethernet role assignment unclear; package-size cell blank. No values inferred.
Firmware / services	Overview lists more VPN protocols than the detailed function list; Portal backend and certification coverage are unspecified. Linux/Windows statement does not establish Windows as router OS.
Historical company facts	This source gives 2010 high-tech recognition, RMB 12.8 million, 2 patents, 26 copyrights and 16 years of experience; these differ from newer sources and are retained independently.
Contact typo	Cover telephone misses a digit; repeated page headers consistently give +86-592-5902655. Source postal code is 361009.
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.