INDUSTRIAL CONNECTIVITY / ENGLISH TECHNICAL DOCUMENT

CM580-59F

RK3399 embedded industrial computer



Original source photograph

Source revision not stated | English review edition | 21 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 configuration

Source p. 1

CM580-59F is an integrated industrial computer built on Rockchip RK3399 and an ARM/Android application environment, for demanding industrial and public-space applications.

- 3D, VR, face recognition and digital-signage terminals.
- Industrial field control and data acquisition.
- Financial POS and vehicle control terminals.
- Unattended intelligent terminals.
- Human-machine interaction and intelligent retail.

Model configuration

Model	CPU	OS	Dual display	Outputs	Wi-Fi	Enclosure	Ethernet
CM580-59F	RK3399	Android 7.1.2 / Linux	Supported	LVDS / HDMI	Optional	Optional	Gigabit

Processor and graphics platform

Source p. 2

- Rockchip RK3399 big.LITTLE architecture: two Cortex-A72 and four Cortex-A53 cores, with independent NEON coprocessor support; up to 2 GHz.
- Quad-core ARM Mali-T860 graphics; source-listed smart overlay, ASTC and local pixel storage/bandwidth compression technologies.
- The source claims 4K VP9 and 4K 10-bit H.265/H.264 decoding up to 60 fps, 4K x 2K 60 fps H.264/H.265/VP9 and 1080p 30 fps H.264/MVC/VP8; JPEG and image pre-/post-processing.
- Source platform expansion includes UART, LVDS, audio, USB, Type-C, Gigabit Ethernet, TF, GPIO, I2C, SPI, I2S and HDMI. An expansion list does not establish that every platform signal is exposed on the delivered product.
- Source platform advantages include dual USB 3.0 Type-C support with display/audio/video output, dual ISP processing at 800 MPix/s and simultaneous dual-camera/3D-depth processing; verify actual exposed ports.
- LVDS at 1920 x 1080 with independent dual display; HDMI 2.0 and H.265/H.264/VP9 4K60 decoding/display; internal PCI-e Wi-Fi/storage expansion; Android/Linux compatibility as source-listed.

Hardware views

Source pp. 1, 3, 5-6



Original source connector view



Original source connector view

Computing and functional specifications

Source pp. 3-5

Processor and memory

Parameter	Source specification
CPU	RK3399: 2 x Cortex-A72 + 4 x Cortex-A53; up to 2 GHz.
RAM	LPDDR3, default 4 GB; expandable to 8 GB as stated.
Storage	On-board eMMC, default 16 GB; 32/64/128 GB options.

Functional interfaces

Parameter	Source specification
Indicators	Power, system and 4G in table; overview instead describes power, Wi-Fi and 4G.
Keys	Factory restore and Back; connector legend also lists RESET.
Audio	3.5 mm headphone and microphone sockets with headphone detection; dual-channel 8-ohm, 15 W external speaker interface.
Serial	1 debug serial port, 4 RS232 and 1 RS485.
USB	6 standard USB 2.0; 1 Type-C OTG/programming interface; 1 USB 3.0.
SIM	Push-type SIM slot.

Parameter	Source specification
Positioning	GPS/BeiDou dual-mode positioning, optional with the 4G module.
Ethernet	1 x 10/100/1000 Mbit/s RJ45.
Cellular	Mini PCIe interface; optional 3G/4G/5G module.
Wi-Fi / Bluetooth	On-board 2.4 GHz 802.11 b/g/n with hotspot; Bluetooth 4.0; model table labels Wi-Fi optional.
TF storage	8/16/32/64/128 GB cards listed.
HDMI	1 HDMI, 1080p60 and 4K x 2K 60 Hz output as claimed.
LVDS	Dual LVDS, 1080p, direct 50/60 Hz LCD drive.
Graphics APIs / video	OpenGL ES 1.1/2.0/3.0/3.1, OpenVG 1.1, OpenCL, DX11; 4K VP9 and 10-bit H.265/H.264 up to 60 fps; 1080p VC-1/MPEG-1/2/4/VP8 decoding; 1080p H.264/VP8 encoding.
RTC / watchdog	On-board RTC battery; scheduled power on/off; software watchdog restarts abnormal systems.

Power, mechanics and environment

Source pp. 4-5

Source parameters

Parameter	Source specification
Supply	12 V DC; reverse-polarity, overvoltage and overcurrent protection; standard 12 V / 3 A adapter.
Standby current	330 mA at 9 V; 250 mA at 12 V; 125 mA at 24 V. These voltages do not establish an approved wide input range.
Maximum working current	660 mA at 9 V; 500 mA at 12 V; 250 mA at 24 V.
Dimensions	188.4 x 131.4 x 35 mm
Operating	-20 to +65 °C
Storage	-40 to +80 °C

Parameter	Source specification
Humidity	95% RH, non-condensing.

External connector legend

Source pp. 5-7

Labels A-S

Parameter	Source specification
A / B	DC 2.5 mm 12 V input / power, Wi-Fi and 4G indicators.
C / D / E	4 RS232 sockets / HDMI / Back key.
F / G	6 USB 2.0 sockets / Gigabit Ethernet.
H / I	Speaker: R+, R-, L-, L+ from left to right / 3.5 mm headphone and microphone.
J	RS485 and GPIO: B, A, GND, GPIO1, GPIO2 from left to right.
K / L / M	Wi-Fi/BT antenna / Type-C programming / RESET.
N / O / P	LVDS / screen backlight / USB 3.0.
Q / R / S	Cellular antenna / push-type SIM / push-push TF.

Connector pin definitions

Source pp. 6-9

Directions refer to the source photographs. Confirm connector orientation, voltage and cable before wiring.

Power / speaker / RS485

Parameter	Source specification
Power	2.5 mm DC jack; 12 V / 3 A.
Speaker, left to right	PH2.0 4P: R+ / R- / L- / L+.
RS485/GPIO, left to right	2.54 mm 5P: 485B / 485A / GND / GPIO1 / GPIO2.

Backlight 6-pin, source left-to-right

Pin	Source signal
1	+12VDC
2	+12VDC
3	LCDBKL_EN
4	LCDPWM
5	GND
6	GND

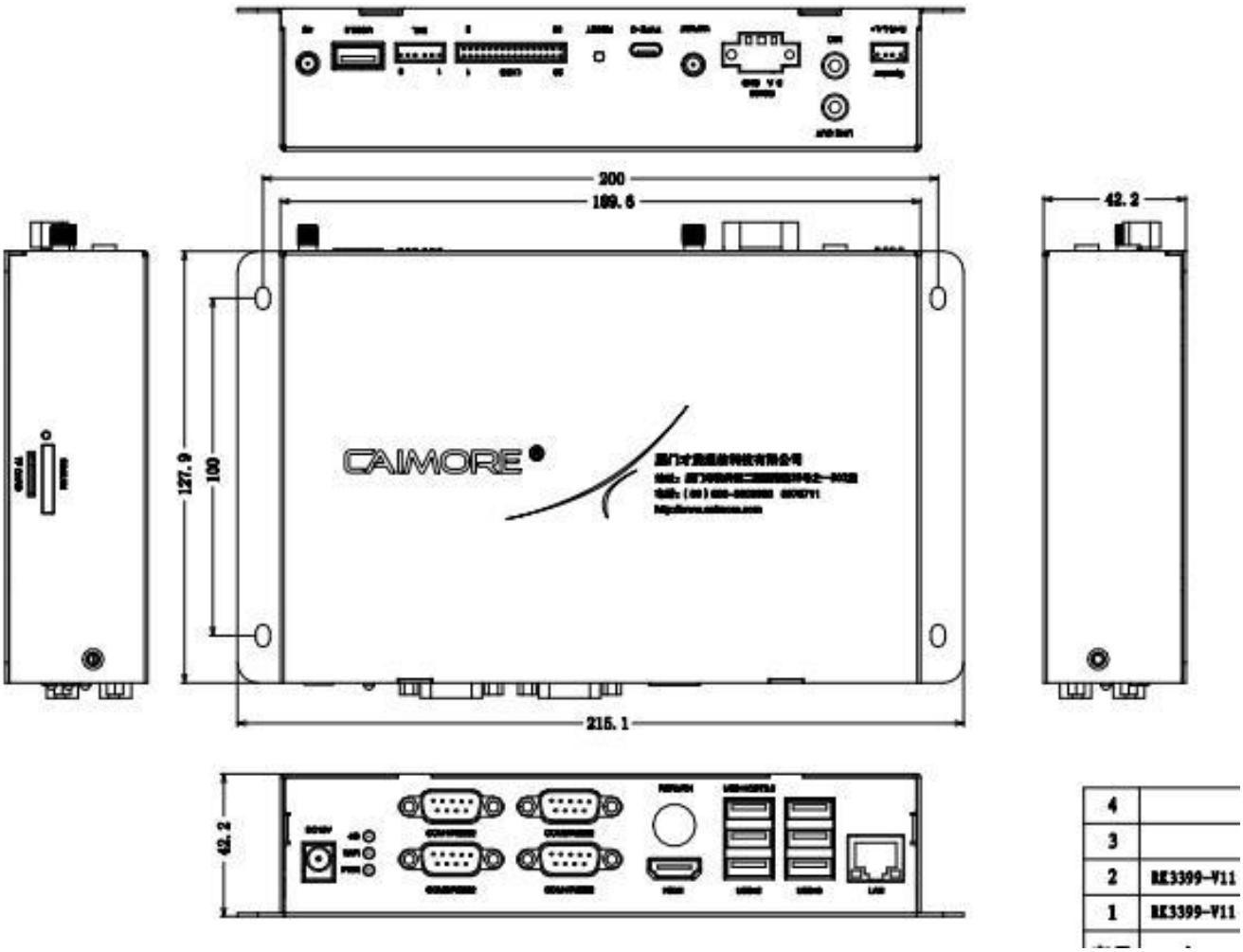
LVDS 30-pin, source numbered 30-to-1 left-to-right

Pin	Source signal
1	VCC
2	VCC
3	VCC
4	GND
5	GND
6	GND
7	LVDS0_TX0_NEG
8	LVDS0_TX0_POS
9	LVDS0_TX1_NEG
10	LVDS0_TX1_POS
11	LVDS0_TX2_NEG
12	LVDS0_TX2_POS
13	GND
14	GND

Pin	Source signal
15	LVDS0_CLK_NEG
16	LVDS0_CLK_POS
17	LVDS0_TX3_NEG
18	LVDS0_TX3_POS
19	LVDS1_TX0_NEG
20	LVDS1_TX0_POS
21	LVDS1_TX1_NEG
22	LVDS1_TX1_POS
23	LVDS1_TX2_NEG
24	LVDS1_TX2_POS
25	GND
26	GND
27	LVDS1_CLK_NEG
28	LVDS1_CLK_POS
29	LVDS1_TX3_NEG
30	LVDS1_TX3_POS

Installation drawing

Source p. 9



Original source mechanical drawing; dimensions in mm

Applications and system architecture

Source pp. 9-11

The source shows parcel lockers, card readers, barcode/identity devices and Internet-connected control. In the parcel workflow, a courier enters a code, opens a locker, deposits the parcel and closes the door; collection uses a card/code to open the locker, retrieve the parcel and close it. A separate illustrated collection flow shows card scan, password entry, opening, loading and closing. These diagrams describe example applications, not a guaranteed complete software package.

Other source examples

Parameter	Source specification
Unattended control	Industrial terminals, kiosks and intelligent retail.
Human-machine interaction	Touch/display interfaces and public-space terminals.

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.

Year	Recognition stated in source
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 22.80 million, as printed in this source.
Industry experience	16 years, as printed in this 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

English translation of the supplied Chinese document. Repeated headings, page furniture and repeated feature text are consolidated. Original hardware figures and screenshots are retained with English explanations. NEEDS_VERIFICATION identifies inconsistent or incomplete source information. No hardware, firmware, electrical, codec, certification or compatibility testing has been performed.

Review checklist

Topic	Review note
Power / indicators	12 V-only supply entry versus 9/24 V current measurements; verify approved input. Wi-Fi/system LED wording differs.
Revision differences	This datasheet differs from the separate 3399 software manual in memory/storage options, audio, Wi-Fi, input range, temperature and RS485 count. Do not combine them into a single guaranteed configuration.
Platform claims	USB Type-C/ISP/PCIe and codec/API descriptions require board/firmware confirmation; optional components are not guaranteed fitted.
Publication	English review edition; not uploaded. Confirm unresolved specifications before issuing a public datasheet.
Source claims	Historical company information, certifications and performance statements are translated as source claims, not independently verified results.