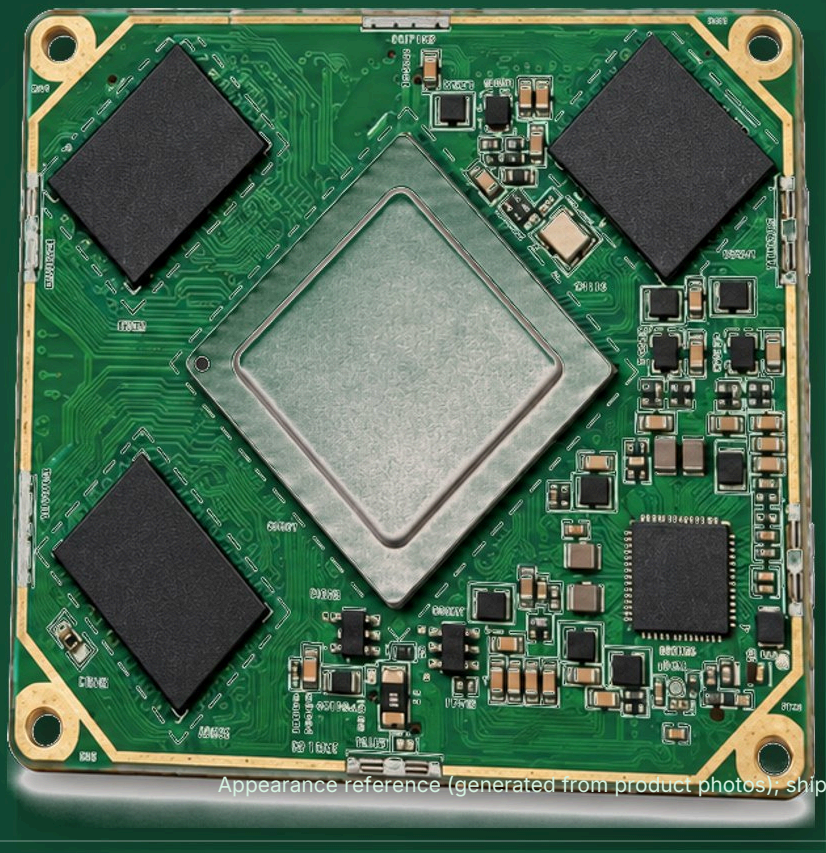
EQIO

WJ-MRK

PRODUCT MANUAL

RK3588M Compute Board

Rockchip RK3588M 8-core processor



Appearance reference (generated from product photos); shipped units may differ.

Measurement and control, made easy.

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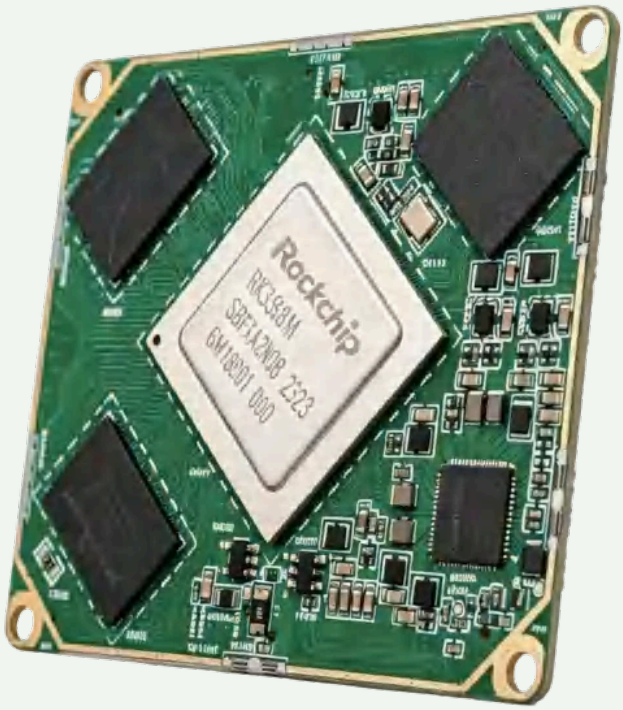
Easy · Quick · Input · Output

01 OVERVIEW

RK3588M Compute Board

Control and payload main board · Embedded terminal · Edge computing · Multi-display display · Rockchip

WJ-MRK uses RK3588M 8-core compute platform, standard 8GB LPDDR4X and 128GB eMMC, via can removal board-to-board connector and carrier connect, used for embedded compute and multi-display display integrates.
HDMI, MIPI and eDP connect capability can together with carrier organize display HMI, compact board outline suited to embedded equipment internal. Compute module and peripherals carrier separate, facilitates industrial terminal, display equipment and data processing node arrangement I/O.



Product appearance reference; shipped units may differ.

Key features

- 60 × 50mm compact core board
- RK3588M 8-core processor
- 8GB LPDDR4X、128GB eMMC
- Can removal 320 pin board-to-board connector
- HDMI, MIPI and eDP display connection

02 FUNCTIONS

Functions and engineering value

Can removal core compute unit

60 × 50 × 4.2mm core board via 320 pin board-to-board connector and carrier together with, centralized provides RK3588M compute, memory and storage resources. Can removal structure facilitates core compute and product peripherals design separate, mechanical fixed and connector together with still requires from carrier solution confirm.

Multi type display connection resources

Published parameters lists 2-ch HDMI, 2-ch MIPI display and 2-ch eDP display connection, and supports multi-display secondary display. Carrier can around target display selection actual connect solution, but display combination, resolution, timing and at the same time operation conditions should combined with pins multiplexed and driver data confirm.

Memory version and system adapts

Standard 8GB LPDDR4X and 128GB eMMC, memory can expansion to 16GB, provides Kylin, UnionTech and Ubuntu system solution. Application must follow memory version and system image verification, power requirements 3.4–5.5V and current capability at least 5A.

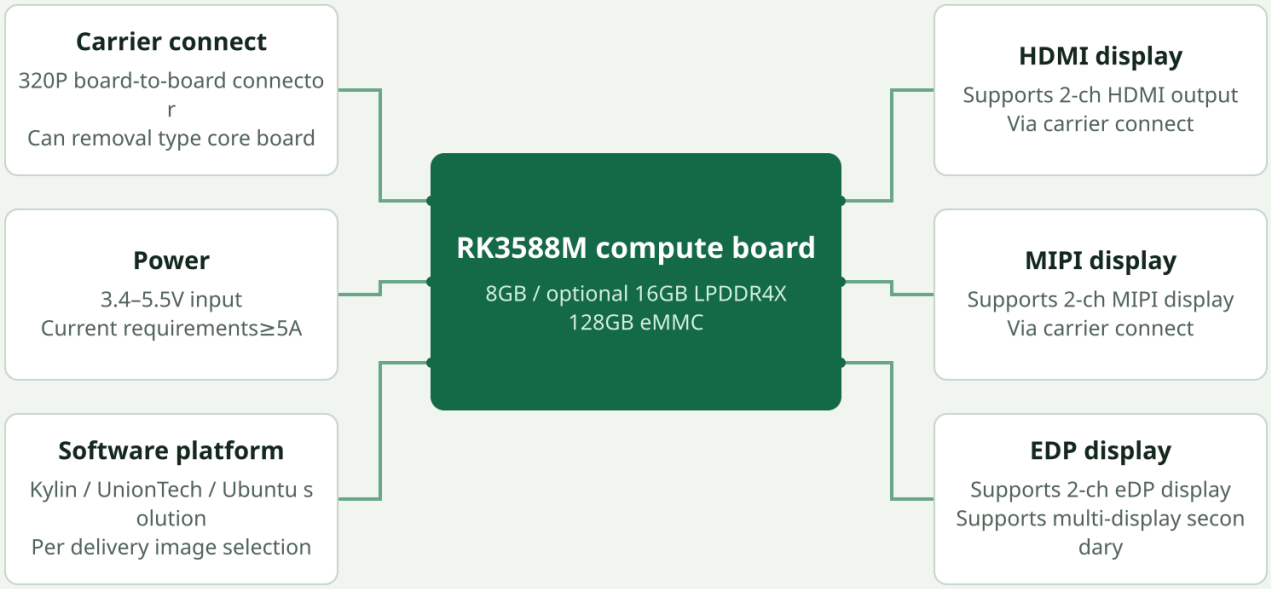
The functional notes explain the product’s role from published configuration. Optional functions, software and peripherals follow the project definition. Chip capability is not the same as implemented I/O.

03 ARCHITECTURE

Product functional architecture

FUNCTIONAL BLOCK DIAGRAM

WJ-MRK



Functional relationships · lines do not show internal circuits, pins or dedicated bus topology

From published specification illustrative functional grouping, does not show internal circuits, on-board bus or signal routing; I/O direction actual protocol shall prevail. Display combination and at the same time operation conditions should check carrier, pins multiplexed and driver configured with.

Platform and I/O

Core board uses RK3588M 8-core CPU, Mali-G610 MC4 and rated 6 TOPS NPU, standard 8GB LPDDR4X and 128GB eMMC, memory optional 16GB. Core board I/O via 320P board-to-board connector and carrier together with, not can chip resources etc.same to can directly external product port.

> **Reading the diagram**
>
> Solid lines show published functional relationships, not on-board buses, bridge chips or connector pins. Optional controllers, radios, storage and software follow the configuration and interface files.

04 SPECIFICATIONS

Technical specifications

Compiled from published product data. Batch, I/O and environmental ratings follow the order confirmation.

Core system

CPU	Rockchip RK3588M, 4 × Arm Cortex-A76 + 4 × Arm Cortex-A55, 8-core
System memory	8GB LPDDR4X (supports expansion to 16GB), standard eMMC5.1 128GB
GPU	Mali-G610 Mc4
NPU performance	6 TOPS
Operating system	Kylin OS V10/UnionTech military version V20/Ubuntu20.04

Mechanical specifications and system requirements

Dimensions	60mm long *50mm wide *4.2mm high

I/O and expansion

Display output	Supports 2-chHDMI output, 2-chMIPI display, 2-chEDP display, supports multi-display secondary display
Connect method	BDB board-to-board connector can removal type core board, pins up to 320P

Environmental conditions

Operating temperature	-40°C ~ 60°C (operating temperature)
Operation voltage	3.4-5.5V, current requirements≥5A

05 COMPONENTS

Processor and device specifications

Device figures come from vendor publications and describe the chip or module. The implemented product follows the specification tables. Optional devices are supplied with the selected configuration.

Rockchip RK3588M

Process	8 nm
CPU structure	4 × Cortex-A76 + 4 × Cortex-A55, 8-core
NPU rated	6 TOPS
SoC display engine capability	8K display/video, native seven display display capability
SoC native Type-C controller	2-ch
SoC imaging processing resources	Dual 16M ISP, at least 12-ch camera supports

Sources: Rockchip, Rockchip release RK3588M intelligent vehicle-mounted surround view solution.

06 APPLICATIONS

From product capability to applications

Embedded people unit terminal

Core board provides compute and system run resources, custom carrier arrangement display, power and already confirm peripherals brought out. HDMI, MIPI and eDP can should different display solution, suited to equipment internal build HMI, I/O connect and display driver should first via prototype verification.

Multi-display information display equipment

Can according to data in multi-display secondary display capability planning status display, operation display or information display, and selection combined suited display interfaces. Each display resolution, refresh rate and combination whether at the same time can use requires performs production unit verification, not can chip all display upper limit directly overlay product display capability.

Equipment core platform development

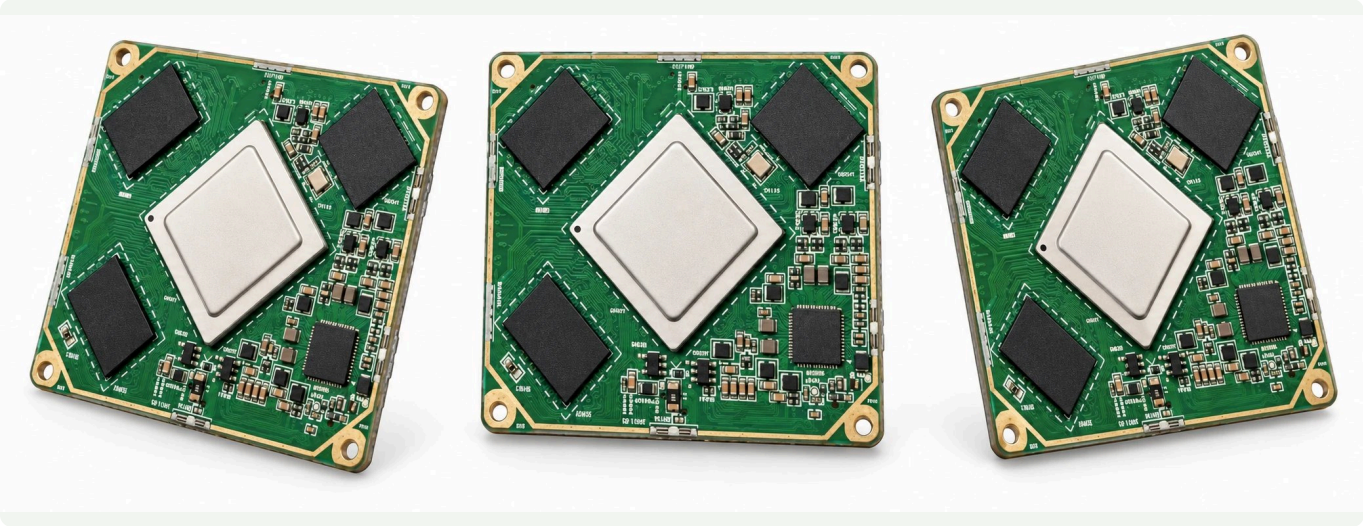
320 pin can removal connect use compute unit and carrier development can role split, 60 × 50mm board outline suited to compact equipment. Project optional select 8GB or 16GB memory version and deployment should system, carrier power quality, mechanical support and cooling path should follow product form unified design.

Integration checks

Carrier connect	Confirm 320P connector model, pinout definition, plug combined height and mechanical fixed method.
Display combination	Check HDMI, MIPI, eDP multiplexed relationship and target multi-display timing.
Power conditions	Guarantee 3.4–5.5V input and ≥5A current capability, verification on electrical timing and ripple.
System version	Confirm 8GB/16GB memory and operating system image, BSP and driver range.

07 CONFIGURATION

Appearance, configuration and selection



Multi-angle reference (generated from product photos); shipped units may differ.

Configuration

Provides 8GB and 16GB memory solution, uses 3.4–5.5V power, current capability at least 5A.

Memory	8GB; supports expansion to 16GB

Selection guide

Order confirmation	Batch, I/O and environmental ratings follow the order confirmation
Published data	Compiled from published product data; EQIO provides selection and system integration
Configuration talk	Share the application, I/O count, environment and software so a configuration can be proposed

Request a quotation and selection support

Email lyping@eqio.com Phone +86 182 8191 2988
Web eqio.com

EQIO

Easy · Quick · Input · Output

BRAND

Measurement and control, made easy.



EQIO product family · concept rendering

Brand story

EQIO builds measurement and control products and systems. The name stands for Easy Quick Input Output: Easy is a clear structure that is quick to learn, Quick is a direct path to efficient delivery, and Input / Output is every link between the device under test and the control system.
The soft single-cycle wave inside the Q links the brand to signals, acquisition and I/O. “Measurement and control, made easy” is our promise for every selection, integration and delivery.

What we do

Products

Data acquisition, test instruments, control and I/O, modular platforms, software, cables

Systems

Configured to the measurand, channels, accuracy and software, from design to commissioning

Support

Selection advice, training, maintenance and calibration

How we deliver

01
Requirements

02
Solution design

03
Build & integration

04
Factory test

05
Delivery & training

06
Ongoing support

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