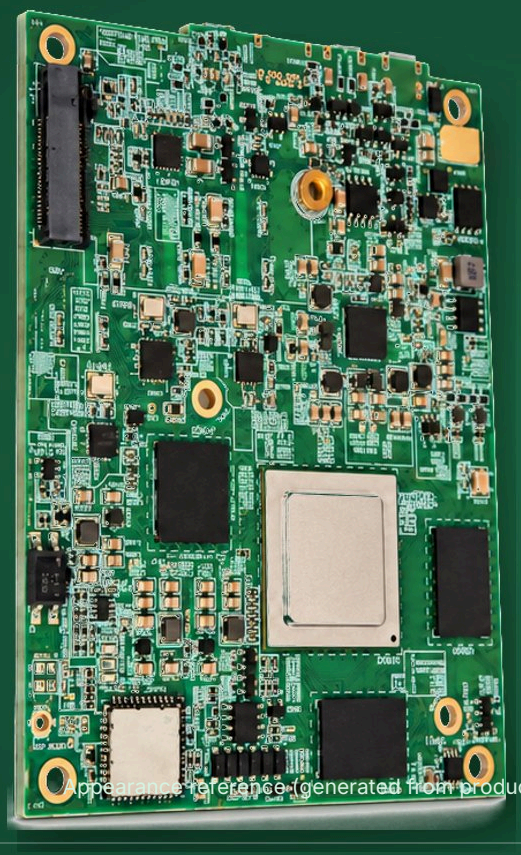
EQIO

WJ-MC

PRODUCT MANUAL

Rockchip Payload Control Board

Rockchip RK3588 series processor



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

Measurement and control, made easy.

Easy · Quick · Input · Output

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01 OVERVIEW

Rockchip Payload Control Board

Control and payload main board · Payload measurement and control · Vehicle-mounted embedded system · Data HMI · Rockchip

WJ-MC provides 3-ch Gigabit Ethernet, composite serial, HDMI input output, audio and GPIO I/O, supports payload data acquisition, command HMI and peripherals control, suited used for vehicle-mounted, airborne payload and embedded measurement and control system integration. Configured with 8 GB memory and 128GB storage, board on still settings RTC, wireless communications and fan connect. Compact dimensions facilitates install payload equipment, video attach, data aggregation and peripherals control centralized the same board on.



Product appearance reference; shipped units may differ.

Key features

- 8GB memory and 128GB storage
- 3-ch Gigabit LAN
- HDMI input, output each 1-ch
- RS-232/RS-485/RS-422 composite I/O
- GPIO, fan and audio connect

02 FUNCTIONS

Functions and engineering value

Payload data and video aggregation

Control board provides 3-ch Gigabit LAN, HDMI input and HDMI output, can used for aggregation network devices data and connect video source and display end. 8GB memory and 128GB storage support local application, video format, acquisition procedure and processing capability must be driver and target application confirm.

Industrial peripherals and status signal

RS-232/RS-485/RS-422 composite serial used for connect corresponding electrical standard equipment, GPIO overview gives at least 5-ch 3.3V TTL signal. Fan, microphone air and audio output I/O facilitates consists of payload HMI system, signal direction and pins required board connect data shall prevail.

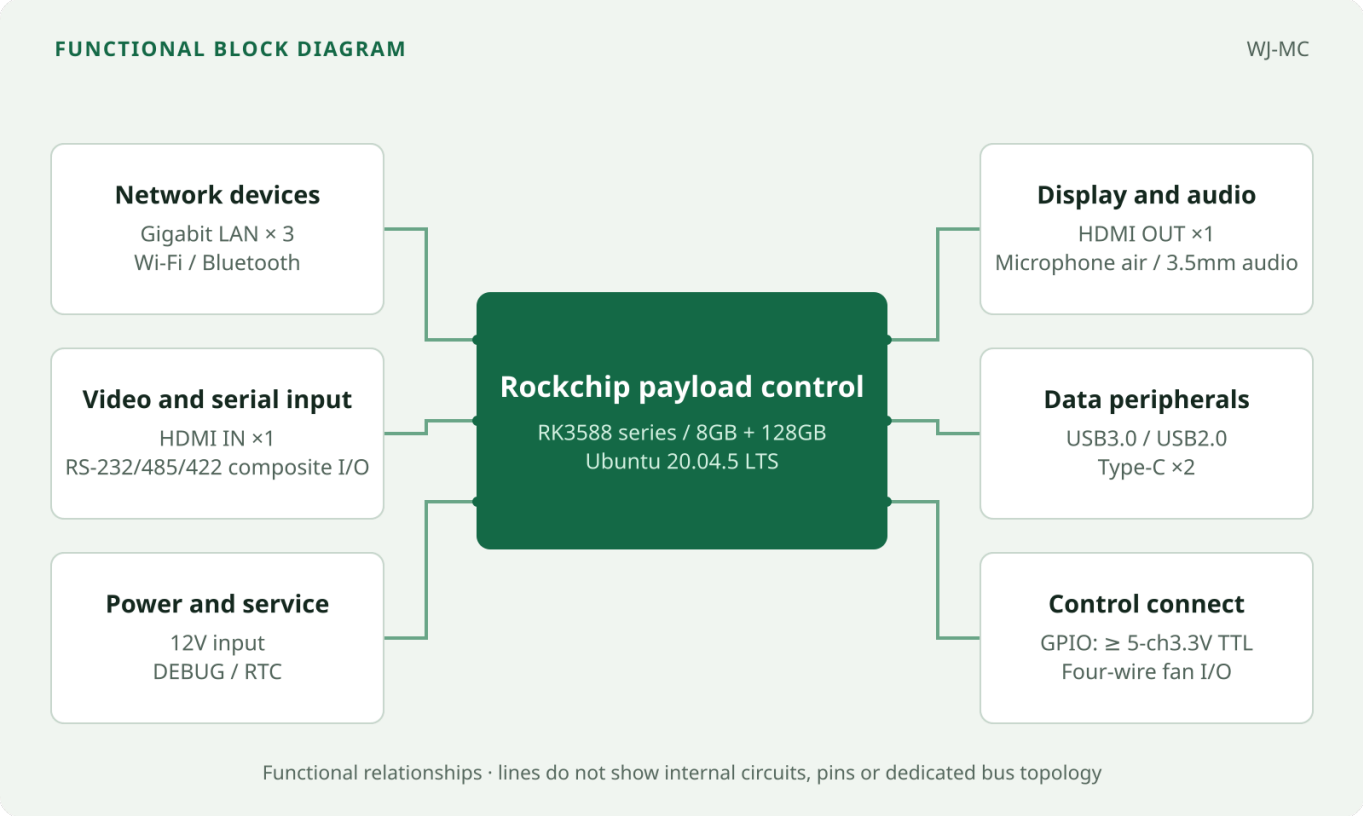
Embedded run and maintenance

104 × 80 × 13.5mm board outline uses 12V input, run Ubuntu system, provides RTC, Wi-Fi and Bluetooth supports. USB, Type-C and independent DEBUG facilitates attach equipment and development maintenance, installation when needed arrangement board fixed, cooling and connector space.

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



From published specification illustrative functional grouping, does not show internal circuits, on-board bus or signal routing; I/O direction actual protocol shall prevail.

Platform and I/O

Source data stated uses Rockchip RK3588 series, configured with 8 GB memory and 128GB storage, run Ubuntu 20.04.5 LTS, but not gives exact model or relationship device profile. CPU, NPU etc.supplement parameters should model confirm rear fill in, current function board already listed I/O based on.

> **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 RK3588 series processor
Capacity	Memory 8GB+storage 128GB
Operating system	Ubuntu20.04.5LTS operating system
Clock	Has RTC function
Wireless function	Supports Wifi/BT

Environmental conditions

Operating temperature	Operating temperature: -40°C~55°C, storage temperature: -45°C~60°C
Humidity	Relative humidity (RH) 20%–80%

Mechanical specifications and system requirements

Specification	104mm*80mm*13.5mm (±2mm) (long *wide *high)
Power	Supports 12V power input

I/O and expansion

USB data I/O	USB3.0 I/O 1; 1-ch specification USB2.0 I/O 2; 2-ch specification USB2.0 I/O 1 group; Type-C I/O 2
Serial and debug interface	RS-232/485/422 composite I/O 1; DEBUG debug interface 1
AV interfaces	HDMI IN I/O 1; HDMI OUT I/O 1; Mic microphone air I/O 1; 3.5mm audio output I/O 1
Network	Gigabit LAN network interfaces 3
Peripherals control I/O	Four-wire fan I/O 1; GPIO I/O 1
GPIO electrical resources (overview)	At least 5-ch3.3V TTL signal

05 APPLICATIONS

From product capability to applications

Payload control and video HMI

Can network devices, serial control I/O and HDMI video source attach the same board, from application completes payload status view, command HMI and video output. The solution suited to requires centralized management multi type I/O payload equipment, specific video latency and control protocol must follow task verification.

Vehicle-mounted equipment data node

3-ch Gigabit LAN used for organize multiple device connection, composite serial interface with compatible industrial peripherals, GPIO handles already definition status signal. 12V power facilitates around vehicle-mounted power design conversion and protection, input ripple, boot transient and installation cooling should be product solution verify against.

Compact equipment bring-up platform

Equipment development stage can uses independent DEBUG I/O maintenance system, via USB and Type-C connect test peripherals, then by HDMI output observe application UI. RTC supports local time keep, software required by itself definition log time management and other equipment synchronous method.

Integration checks

CPU version	Source data RK3588 series, confirm specific model and delivery system image.
Video compatible	Check HDMI IN/OUT supports format, resolution and acquisition display driver.
GPIO and serial	Confirm at least 5-ch 3.3V TTL signal definition and composite serial selected electrical mode.
Power installation	Per 12V input, 104 × 80 × 13.5mm board outline check fixed and cooling space.

06 CONFIGURATION

Appearance, configuration and selection



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

Configuration

Uses 12V input and Ubuntu system, provides Wi-Fi, Bluetooth and independent debug interface.

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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