EQIO

WJ-T8S

PRODUCT MANUAL

8-inch Unmanned Systems Control Terminal

Rockchip RK3588 8-core 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

8-inch Unmanned Systems Control Terminal

Control terminal · Unmanned systems control · Industrial inspection · Mobile display-control · Rockchip

WJ-T8S uses Rockchip RK3588 8-core platform, equipped with 8-inch high-brightness display and dual Hall joysticks, integrates programmable keys, serial, USB and Gigabit Ethernet I/O, used for unmanned systems operation, status display and payload HMI.

10 programmable keys, shoulder keys, three-position switch and rotary encoder operation provides role split, Type-C, audio and Micro HDMI used for peripheral connection. Portable housing together with quick battery swap, suited to field shift rotation.



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

Key features

- 8-inch 1920 × 1200 high-brightness panel
- Dual Hall joysticks and 10 function keys
- 8GB memory and 128GB storage
- RS-232/RS-422 and Gigabit Ethernet
- 7.4V battery quick swap

Applications

Unmanned systems control

Industrial inspection

Mobile display-control

02 FUNCTIONS

Functions and engineering value

Integrated handheld control

8-inch 1920 × 1200 high-brightness panel and dual Hall joysticks centralized layout, 10 programmable keys, 4 shoulder keys, three-position switch and 2 encoder can assign common operation. Suited to the same terminal view equipment status and input control command, specific key mapping defined by application software.

Industrial I/O and communications

Circular connector centralized connect RS-232/RS-422, USB and 1-ch Gigabit Ethernet, standard Type-C, Micro HDMI and audio I/O used for expansion peripherals. Supports combined with 4G/5G, BeiDou and ad-hoc radio solution configured with communications link, module combination and application protocol to be confirmed per project.

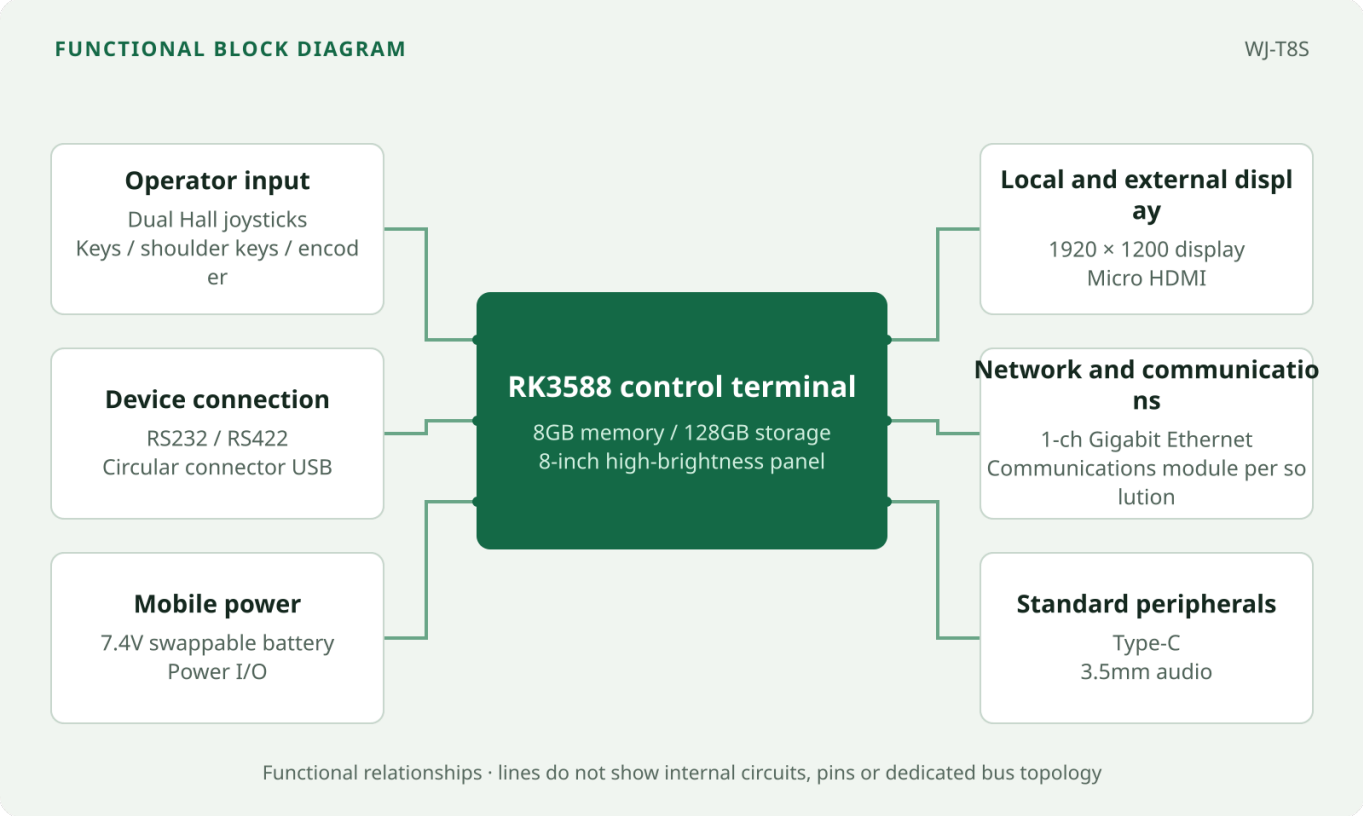
Mobile compute and battery swap

RK3588 8-core platform configured with 8 GB LPDDR4X and 128GB eMMC, can hosts operator UI, status data and local logging. 7.4V battery supports quick-swap, housing weight less than 1.5kg, suited to frequent portable use and battery rotation field operation.

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

Uses RK3588 8-core processor, product configured with 8 GB LPDDR4X and 128GB eMMC. Device profile lists 4 × Cortex-A76 and 4 × Cortex-A55, Mali-G610 MC4 and 6 TOPS rated NPU capability; chip native I/O and peak figures are not to external terminal I/O or measured inference performance.

> **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 3588 8-core processor
Memory / storage	Standard 8GB LPDDR4X RAM; 128GB EMMC5.1
Display	8-inch high-brightness display, resolution 1920*1200, sunlight readable

Mechanical specifications and system requirements

Dimensions / weight	297±1.5mm (L) × 172.5±1.5mm (W) × 50.5±1.5mm (H), weight＜1.5kg
Environmental ratings	Operating temperature: -40°C~60°C; ingress protection: IP65 meets road-transport vibration and shock
Battery voltage and swap	7.4V, supports quick-swap

I/O and expansion

Control peripherals	2*Hall joystick, 10*programmable keys, 4*shoulder keys, 1*three-position switch, 2*rotary encoder
I/O specification	Circular connector 1: RS-232/422/2*USB, circular connector 2: 1-ch Gigabit Ethernet port, power I/O*1, SMA antenna I/O*1 standard interfaces: 1*type-c/3.5mm audio/micro HDMI
Data and video radio	Supports 4g/5g/BeiDou/ad-hoc radio communications

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 RK3588

Manufacturing process	8 nm
CPU architecture	4 × Arm Cortex-A76 + 4 × Arm Cortex-A55, 64-bit 8-core
Clock reference	Up to 2.4GHz
Graphics processor	Arm Mali-G610 MC4, integrates 2D graphics acceleration
Graphics and compute API	OpenGL ES 3.2；Vulkan 1.1；OpenCL 2.0
NPU rated peak	6 TOPS
NPU structure and accuracy	3-core NPU; supports INT4/INT8/INT16/FP16/BF16/TF32
Memory controller	LPDDR4/LPDDR4X/LPDDR5, 4-channel × 16bit
L3 cache	3 MB
Native storage interfaces	eMMC 5.1、SD3.0/MMC4.5

Rockchip RK3588 (continued)

PCIe3.0-channel combination	1×4 / 2×2 / 4×1
Native Gigabit Ethernet MAC	2-ch
Native low-speed controller	10×UART、6×SPI、9×I2C
Video decode upper limit note	H.265/H.264/AV1/AVS2 etc.format, up to 8K@60fps, per en code format and code stream configured with
Video encode upper limit	H.264/H.265 up to 8K@30fps
Chip display interfaces	EDP, DP, HDMI2.1, MIPI, multi-display display engine
Video input	MIPI CSI-2/DVP; HDMI2.0 RX up to 4K@60fps

Sources: Rockchip, Rockchip RK3588 official product specification; Rockchip, RK3588 Brief Datasheet V1.0 2025-08-28; Rockchip, Rockchip Toybrick TB-RK3588X development board released.

06 GALLERY

Appearance and scene

Reference views



Product appearance reference; shipped units may differ.

Scene



Application illustration (not a product photo).

07 APPLICATIONS

From product capability to applications

Field control of unmanned systems

Can dual joystick used for continuous control, shoulder keys and encoder assign to payload switch, parameters adjust etc.software function; 8-inch display display video or telemetry UI. Via network or serial interface with equipment control system, actual control permission, command protocol and link-loss handling defined during system integration.

Mobile industrial inspection terminal

Inspection personnel can high-brightness panel on view equipment status, task list and live video, and uses USB or industrial serial connect peripheral equipment. IP65 and source data gives wide temperature conditions field deployment provides based on, connector mating status and cables protection should still be included in product inspection.

Portable equipment bring-up

Gigabit Ethernet and RS-232/RS-422 facilitates attach DUT equipment, Micro HDMI can connect external display unit auxiliary multi people view. 8GB memory and 128GB storage can used for run bring-up application and save log, suited used for requires handheld operation, short-range mobility and battery rotation workstation.

Integration checks

Communications fit	Confirm 4G/5G, BeiDou or ad-hoc radio module option, antenna and target protocol.
Control mapping	Confirm joystick, shoulder keys, switch and encoder software key assignment and safety interaction.
Power and I/O	Check 7.4V battery, battery swap procedure and 2 circular connector pinout and signal level.
Installation and environment	Per 297 × 172.5 × 50.5mm and IP65, -40–60°Cconditions verify against used environment.

08 CONFIGURATION

Configuration, options and selection

Configuration

Provides 4G/5G, BeiDou and ad-hoc radio communications attach supports, can combined with field communications solution configured with.

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

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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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