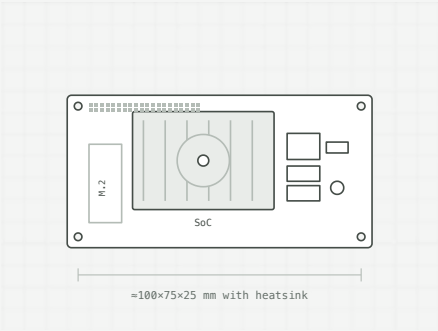
PH-K01 — RK3588 board

PH-K01 — ПХ-K01 in Russian documents

Single-board computer on Rockchip RK3588 for embedding: 8 GB, 6 TOPS NPU, 2.5GbE, 4×USB (2×3.0), HDMI, 2×MIPI CSI, Wi-Fi 6 / BT 5.2, NVMe with system image — no enclosure or power supply.

AVAILABILITY	LEAD TIME	MINIMUM ORDER (MOQ)	PRICE
in stock	**in stock — ships in 1–3 business days; batch of 10+ units — 2–4 weeks**	**1 unit; batch — from 10 units**	**on request, RUB excl. VAT**



PH-K01
diagram; photo — after the first samples

Outline drawing; product photos are on the product page. Dimensions: ≈100×75×25 mm with heatsink.

- Rockchip RK3588 (4×A76 + 4×A55), 6 TOPS INT8 NPU, 8 GB (16 GB — option)
- 1×2.5GbE, 2×USB 3.0 + 2×USB 2.0 + USB-C, HDMI 2.1, 2×MIPI CSI, Wi-Fi 6 / BT 5.2, 40-pin, RTC
- M.2 2280 NVMe 128 GB with system image; microSD
- Heatsink included; heatsink enclosure, PSU and fan — options; ≈100×75 mm, standoff holes

Typical uses: embedding in your own device · control cabinet · robot and AGV · test bench and development.

1. Purpose

Single-board computer (SBC) on the eight-core RK3588 with a 6 TOPS NPU: 8 GB of memory, an M.2 slot with NVMe and our system image, a 2.5GbE port, four USB ports (two USB 3.0), HDMI, two MIPI CSI connectors for PH-Cam-M cameras, 40-pin header, Wi-Fi 6 and Bluetooth 5.2 on board. For teams building their own device, cabinet or robot: enclosure, power and mounting are yours or from the options. Same system image and OTA updates as PH-K40.

> **Straight talk:** The board configuration is fixed in the batch product passport; the table shows the base configuration. The board is open: temperature and reliability depend on your enclosure and airflow, so instead of "−40…+70" we provide a thermal test method. Need a ready-to-run device — PH-K40; need it cheaper and simpler — PH-K30 on the RK3576.

2. Platform

SoC / accelerator	Rockchip RK3588 — 4×Cortex-A76 2.4 GHz + 4×Cortex-A55, 3-core NPU, Mali-G610 GPU

TOPS INT8 dense	6 TOPS INT8 dense method: Rockchip datasheet, RKNN 2.3.x
Memory	8 GB LPDDR4x (base); 16 GB — option
Storage	M.2 2280 NVMe 128 GB with system image; microSD

3. Interfaces

USB	4×USB Type-A (2×USB 3.0 + 2×USB 2.0), 1×USB-C (power / OTG)
Ethernet / PoE	1×2.5GbE RJ-45
RS-485 / CAN / RS-232	UART / I2C / SPI on the 40-pin header; RS-485 / CAN — adapter or HAT
GPIO / relay	40-pin header (Raspberry Pi-compatible pinout), power / reset / maskrom buttons, RTC with battery
M.2	2×M.2 M-key 2280 (NVMe, PCIe 3.0 ×2 each); M.2 B-key (USB) with a SIM slot
Video output	HDMI 2.1 (up to 8K30)
Wi-Fi / BT / LTE	yes: Wi-Fi 6 / BT 5.2 on board the module is soldered on the board; wired network — 2.5GbE

4. Power and thermal

Power input	USB-C PD 9–20 V; power supply not included (USB-C PD 45 W adapter — option)
Power consumption (typical)	≈5 W at 2×1080p streams
Power consumption (peak)	≤15 W with NVMe and peripherals
Cooling	heatsink included; 4-pin PWM fan — option; in a closed enclosure — per thermal test
Enclosure temperature in a closed cabinet at +40 °C ambient	measured after the first sample is tested; we publish the measurement, not a datasheet value

5. Mechanical

Dimensions	≈100×75×25 mm with heatsink
Weight	≈110 g
Mounting	4 holes for M2.5 standoffs (drawing — in the product passport); heatsink enclosure and DIN-rail bracket — options
Connectors	standard RJ-45 / USB / HDMI, USB-C (power), 40-pin, 22-pin CSI

6. Environment and protection

Operating temperature	0…+50 °C without enclosure (board reference); in your enclosure — per thermal test, method — /en/testing/

Ingress protection	none — open board
Vibration / shock	not rated; board on standoffs, connectors without locking

7. Bench measurements

Measurements are expected with the first samples. What we measure: FPS INT8 YOLOv8n; FPS INT8 YOLOv8s; FPS INT8 YOLO11n; FPS INT8 YOLO11s; FPS INT8 ResNet50; FPS INT8 OCR (PP-OCRv4 rec); 1080p streams; accuracy after quantization.

measured with the first samples on the test bench; method — /en/testing/

8. Configuration options

Option	Price
8 GB, 128 GB NVMe, heatsink — base	base
16 GB RAM	on request
Aluminum heatsink enclosure with power button	on request
USB-C PD 45 W power adapter	on request
4-pin PWM fan	on request
RK3588 SoM + carrier board for your own design made to order	made to order, price in the quotation

Prices for 1 / 10 / 100 units and for options — in the quotation within 2 business days, valid 30 days. The contract includes a price revision formula tied to the Bank of Russia exchange rate and the DRAM index.

9. What's included

- Board with 128 GB NVMe and system image, heatsink, M2.5 standoffs
- Ready-to-run Linux system image: NPU and camera drivers, runtimes, Docker — your model is deployed as a container
- OTA updates of the image and the model with rollback — from your network, no cloud of ours
- Connects only to the addresses you set: we keep no cloud and no keys of ours in the image; no video is stored on the device
- 1-year warranty, replacement unit or spares; product passport (Russian regulatory data sheet); EAC declaration — in progress

10. Compatibility

Cameras	PH-Cam-M (MIPI CSI) — up to 2 units; PH-Cam-K (USB) — up to 2 units; PH-Cam-S / PH-Cam-O (PoE) — via a switch or injector
Power / PSU	USB-C PD 45 W adapter (option); 12/24 V onboard power via DC/DC to USB-C PD (option)

Runtimes	RKNN-Toolkit2 2.3.x (NPU); ONNX Runtime; Docker / containerd

11. Updates and support

Image updates and system-component fixes — free during the warranty (1 year), delivered from your network; afterwards — under a support contract.

12. Documents and origin

EAC declaration	in progress — declaration issued to Pikhta Tech LLC, in progress
Datasheet	this document: PDF v0.9 and the web version on this website
Product passport	in progress — single template, PDF with each delivery
Vendor security questionnaire	on request — under NDA
Origin and our part	Rockchip SoC — China; board — contract manufacturer (ODM, China) built to our specification, under the Pikhta part number; system image, incoming inspection and kitting — in Russia; EAC declaration is issued to Pikhta Tech LLC.

13. Chip and sensor vendor documentation

- Rockchip RK3588 — product page (RK3588S is an RK3588 variant with the same cores, GPU and NPU but a smaller interface set (PCIe 2.1 ×1, fewer USB 3 and MIPI lanes)): https://www.rock-chips.com/a/en/products/RK35_Series/2022/0926/1660.html
- RK3588 Brief Datasheet (PDF, Rockchip): https://www.rock-chips.com/uploads/pdf/2022.8.26/192/RK3588%20Brief%20Datasheet.pdf
- RKNN-Toolkit2 (GitHub airockchip) (model conversion for the NPU, RKNN documentation): https://github.com/airockchip/rknn-toolkit2

We do not host third-party documents — links to official pages only; full chip datasheets are available from the vendor or its distributor.