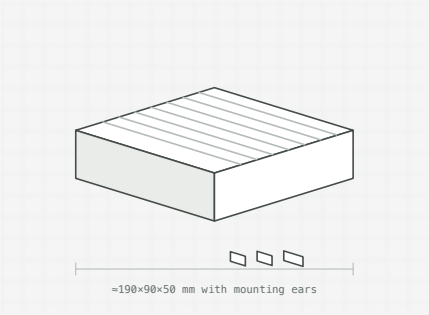
PH-K40 — RK3588 box

PH-K40 — ПХ-К40 in Russian documents

Fanless edge computer on Rockchip RK3588S (reduced-I/O variant of the RK3588): 6 TOPS NPU, 8 GB RAM / 64 GB eMMC, no radio, 12/24 V. At the workstation, in the control cabinet, under the operator console.

AVAILABILITY	LEAD TIME	MINIMUM ORDER (MOQ)	PRICE
build to order, 2–4 weeks	**2–4 weeks**	**1 unit; batch — from 10 units**	**on request, RUB excl. VAT**



PH-K40
diagram; photo — after the first samples

Outline drawing; product photos are on the product page. Dimensions: ≈190×90×50 mm with mounting ears.

- Rockchip RK3588S, 6 TOPS INT8 dense NPU, 8 GB / 64 GB eMMC (16 GB — option)
- ≈190×90×50 mm with mounting ears, passive cooling, 12 V (9–24 V)
- 2×USB 3.0 + GbE, M.2 NVMe, RS-232, GPIO, watchdog, RTC
- Options: M.2 NPU accelerator +24 TOPS, industrial version −40…+70 °C with CAN / RS-485

Typical uses: terminal and workstation · control cabinet · production line and quality inspection · operator console · small site with 1–4 cameras.

1. Purpose

The main device in the catalog — a compact fanless computer for on-site inference (machine vision, control cabinet, production line): metal heatsink enclosure, eight-core RK3588S with NPU, two USB 3.0 ports for cameras, Gigabit Ethernet, NVMe for storage. Takes 1–2 USB cameras or IP cameras over the network and runs your model on the NPU in a container. No radio: network over cable. Industrial version (−40…+70 °C, CAN, RS-485) — see the options below. Need a board for your own enclosure — PH-K01; need CUDA — PH-J31.

> **Straight talk:** The enclosure and board come from a contract manufacturer (ODM), built to our specification, under the Pikhta part number, with our system image and incoming inspection. Our own design documentation for the enclosure and mounting is produced per customer project.

2. Platform

SoC / accelerator	Rockchip RK3588S — 4×Cortex-A76 2.4 GHz + 4×Cortex-A55, 3-core NPU

TOPS INT8 dense	6 TOPS INT8 dense method: Rockchip datasheet, RKNN 2.3.x; NVIDIA publishes sparse figures — the numbers are not directly comparable, we compare FPS on the same models
Memory	8 GB LPDDR4x (base); 16 GB — option
Storage	64 GB eMMC + M.2 2242 NVMe (256 GB option; with an M.2 accelerator installed, the system stays on eMMC)

3. Interfaces

USB	2×USB 3.0 Type-A (UVC cameras), 1×USB-C (service, flashing)
Ethernet / PoE	1×GbE RJ-45
RS-485 / CAN / RS-232	RS-232 (attached PC / service); RS-485 and CAN — in the industrial version
GPIO / relay	2×GPIO, 1×relay (option), reset button, status LED
M.2	M.2 M-key 2242, PCIe 2.1 ×1 — NVMe or M.2 NPU accelerator (single slot; card form factor to match the box slot); M.2 2230 E-key for Wi-Fi — depends on the enclosure variant
Video output	HDMI 2.0 — service
Wi-Fi / BT / LTE	none no radio modules by design: no FSB notification needed, fewer security questions on site; network over cable. A Wi-Fi module is an option, imported with notification.

4. Power and thermal

Power input	12 V DC (9–24 V), 5.5×2.1 mm jack; 12 V 2 A adapter included; 802.3at PoE splitter — option
Power consumption (typical)	≈6 W at 2×1080p streams
Power consumption (peak)	≤12 W
Cooling	passive, heatsink enclosure
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	≈190×90×50 mm with mounting ears
Weight	≈600 g
Mounting	desk / wall (mounting ears included); VESA 75/100; DIN rail and terminal-pedestal bracket — options
Connectors	screw-lock / latching connectors, cable tie included

6. Environment and protection

Operating temperature	0…+50 °C (in a closed cabinet); storage −20…+60 °C; industrial version −40…+70 °C
Ingress protection	IP40
Vibration / shock	EN 60068-2-6 (vibration), EN 60068-2-27 (shock) — test report with the first samples

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 / 64 GB eMMC — base	base
16 GB RAM	on request
256 GB NVMe	on request
M.2 NPU accelerator Axera AX8850 (+24 TOPS INT8, 16×1080p decode) PH-M24 card in the box's M.2 slot instead of NVMe (the system stays on the 64 GB eMMC), installed and tested; a second runtime stack (AXCL); for heavy models and VLMs	on request
Industrial version: RK3588J, −40…+70 °C, CAN ×2, RS-485, 9–36 V, die-cast enclosure indicative; lead time 4–6 weeks	on request
Wi-Fi 6 / BT — M.2 E-key module, with notification 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

- Device, 12 V 2 A adapter, mounting ears, cable tie
- 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-K (USB, global shutter) — up to 2 units; PH-Cam-S / PH-Cam-O (PoE) — over the network via a switch or injector; any 1080p UVC camera (profile not guaranteed)
Power / PSU	12 V 2 A adapter (included); 802.3at PoE splitter (option); 9–36 V onboard power — industrial version
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
FSB notification	not required — no radio modules
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 and enclosure — contract manufacturer (ODM, China) 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.