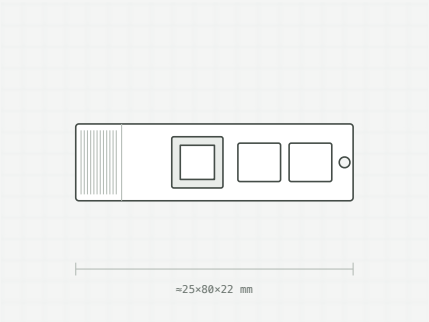
PIKHTA TECH LLC · HTTPS://FIRAI.RU · DATASHEET V0.9 DATED 3 OCT 2026

PH-M20 — M.2 accelerator RK1828

PH-M20 — ПХ-M20 in Russian documents

M.2 M-key 2280 card with the Rockchip RK1828 NPU: 20 TOPS INT8, 5 GB on the card, LLMs up to 7B — the same RKNN / rkllm stack as the RK3588; for the PH-K40 / PH-K01 slot.

AVAILABILITY	LEAD TIME	MINIMUM ORDER (MOQ)	PRICE
made to order, lead time in the quotation	**in the quotation, subject to card availability at the manufacturer**	**1 unit; batch — from 10 units**	**on request, RUB excl. VAT**



PH-M20
diagram; photo — after the first samples

Outline drawing; product photos are on the product page. Dimensions: ≈25×80×22 mm (M.2 2280, with heatsink and fan).

- Rockchip RK1828: 20 TOPS INT8 dense, 5 GB of memory on the card, LLMs up to 7B
- One stack with the RK3588 host: RKNN-Toolkit and rkllm — no second converter
- M.2 M-key 2280, PCIe; heatsink with fan; hosts — PH-K40 / PH-K01
- Language and multimodal models at the edge: Qwen, MiniCPM-V, InternVL — from the rkllm list

Typical uses: LLM and VLM at the edge · heavy model on the PH-K40 / PH-K01 in a single RKNN stack · test bench and development.

1. Purpose

An accelerator from the same ecosystem as the host: Rockchip RK1828 — 20 TOPS INT8, RISC-V cores and 5 GB of memory on the card; models are prepared with the same RKNN-Toolkit and rkllm as for the RK3588. Chosen when you want one toolchain across the device and the card, or a language model up to 7B at the edge: by Rockchip's measurements, Qwen2.5-1.5B on the card responds 8–10× faster than on the RK3588 NPU. Fits the PH-K40 (as a box option) and the PH-K01 (in place of the NVMe drive, with the system image on microSD); in x86 PCs — on request, after driver verification. Video is decoded by the host.

> **Straight talk:** Twice the price of the PH-M24 and without a video decoder of its own: chosen for the single RKNN / rkllm stack and language models at the edge. For pure machine vision the PH-M24 is usually enough. Power draw and operation in x86 PCs — after sample verification.

2. Platform

SoC / accelerator	Rockchip RK1828 — 20 TOPS INT8 NPU, RISC-V cores, memory on the card
TOPS INT8 dense	20 TOPS INT8 dense method: Rockchip datasheet; FPS and tokens/s measured in the PH-K40 — test bench
Memory	5 GB on the card
Storage	not applicable — uses the host's storage

3. Interfaces

USB	not applicable — cameras connect to the host
Ethernet / PoE	not applicable — host network
RS-485 / CAN / RS-232	not applicable
GPIO / relay	none
M.2	M.2 M-key 2280, PCIe (in the PH-K40 — PCIe 2.1 ×1); 2242 form factor for the PH-K40 slot — made to order
Video output	none
Wi-Fi / BT / LTE	none card without radio modules — no FSB notification required

4. Power and thermal

Power input	3.3 V from the M.2 slot
Power consumption (typical)	≈5 W (to be confirmed on a sample)
Power consumption (peak)	≤10 W (to be confirmed on a sample)
Cooling	heatsink with fan on the card
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	≈25×80×22 mm (M.2 2280, with heatsink and fan)
Weight	≈20 g
Mounting	standard M.2 screw
Connectors	M.2 M-key connector

6. Environment and protection

Operating temperature	0…+60 °C (card datasheet); in a closed enclosure at +40 °C — test-bench measurement
Ingress protection	not applicable (inside the device)
Vibration / shock	not applicable; in the PH-K40 — screw-mounted

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
RK1828, 5 GB, heatsink — base	base
Installed and tested in the PH-K40 when ordering the box ordered as a PH-K40 box option	no surcharge
2242 form factor / low-profile heatsink for the PH-K40 slot made to order	made to order, price in the quotation
Installation in the PH-K01 (in place of NVMe, system image on microSD) 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

- Card with heatsink, M.2 screw, installation guide
- Card driver and runtime — in the PH-K40 / PH-K01 image; for x86 PCs on Linux — a driver package and a container
- Driver and runtime updates — together with the host image, from your network
- 1-year warranty, replacement card or spares; product passport (Russian regulatory data sheet); EAC declaration — in progress

10. Compatibility

Cameras	host cameras: PH-Cam-K (USB) — on the PH-K40 and PH-K01, PH-Cam-M (MIPI CSI) — on the PH-K01; IP cameras — decoded by the RK3588 host
Power / PSU	M.2 M-key slot with ≥10 W of power

Runtimes	RKNN-Toolkit2 (card NPU) and rkllm (LLM / VLM); ONNX → RKNN; Docker / containerd

11. Updates and support

The card's driver and runtime are updated together with the host image (free during the warranty, from your network); on x86 PCs — as a package.

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	SoC — Rockchip (China); card — contract manufacturer (ODM, China) under the Pikhta part number; drivers, incoming inspection and verification in the hosts — in Russia; EAC declaration is being issued to Pikhta Tech LLC.

13. Chip and sensor vendor documentation

- Rockchip RK182X — product page: https://www.rock-chips.com/a/en/products/RK18_Series/2025/1114/2114.html
- RKNN-LLM (GitHub airockchip) (LLM / VLM on the Rockchip NPU): https://github.com/airockchip/rknn-llm
- RKNN-Toolkit2 (GitHub airockchip): 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.