seeed studio

INDUSTRIAL PRODUCT DATASHEET

reComputer RK3576-20 | Open Rockchip AI Box tailored for AI Application Development

The reComputer RK3576-20 is an open Rockchip AI box with a 6 TOPS NPU and reComputer AI Lab for fast edge AI development and deployment.

SKU	UPDATED	PRICE
100062096	2026-09-22 08:30:44	$159.00(Excl. VAT)

Overview

The reComputer RK3576-20 is an open-source 8-core Linux AI box built on the Rockchip RK3576 with 4GB RAM, featuring a 6 TOPS NPU and Seeed's reComputer AI Lab for one-click edge AI deployment. It comes with Armbian pre-installed, supports Ubuntu, Android, Debian, and offers M.2/miniPCIe expansion and simultaneous 3-display output for smart vision systems, voice-enabled devices, AI agents, robotics, and industrial edge applications.

Key Features

This product is more than an open-source 8-core Linux AI box. Built on the powerful **Rockchip RK3576 4GB RAM**, it is designed to make edge AI development and deployment faster and easier.
To improve the developer experience, Seeed offers **reComputer AI Lab** — a platform that helps you deploy AI applications with **one-click tools and ready-to-use resources**. It includes optimized edge AI model demos for **CV, LLM, VLM, STT, and TTS**, interactive tutorials, deployment tools, containerized applications, and community projects to speed up development on Rockchip.
With rich I/O, multiple OS support, wireless expansion options, and active cooling, this compact AI box is ready for a wide range of edge AI workloads.It is ideal for smart vision systems, voice-enabled devices, AI agents, robotics, and industrial edge applications.

Feature 1：Based on Powerful RK3576 Processor

The reComputer RK3588 features an advanced CPU architecture with

- 4 × Cortex-A72 @2.2GHz
- 4 × Cortex-A53 @2.0GHz
- LPDDR5 (4GB/8GB/16GB)
- ARM Mali GPU-G52 MC3

Feature 2：6 TOPS NPU Embedded

With a built-in **6 TOPS NPU**, it delivers efficient AI inference directly on the device, reducing latency and enhancing privacy without relying on the cloud.
AI performance highlights include:

- Vision CNN: YOLO11@77.9FPS(640*640)
- LLM: capable for deepseek-r1-distill-qwen 7b support
- VLM: capable for qwen2.5-vl 3b
- STT: whisper_base_20s (RTF 0.218) with real-time processing support
- TTS：mms_tts_eng_200 （RTF 0.069) with real-time processing support

Check the details of the **benchmark**.

Feature 3：Compute Power & Storage & Wireless Connectivity Expandable

It offers flexible expansion through
a) 1 × M.2 M Key: PCIe 2.1x1, supports SSD expansion and AI accelerators such as Hailo and Rockchip, up to 26TOPS
b) 1 x miniPCIe for wireless expansion, like 4G LTE, LoRaWAN, Wi-Fi HaLow

Feature 4：Broad Model & Framework Support

It also supports a wide range of popular AI models, From **computer vision** and **speech** to **LLM-powered edge intelligence**, including: YOLO, MobileNet V2, RetinaFace, CLIP, Whisper, DeepSeek-R1, Qwen2-VL，.....
Framework support includes: ONNX, PyTorch, TensorFlow, TensorFlow Lite, Caffe, Darknet，.....
Toolchain support: RKNN-Toolkit2
This broad compatibility makes it easy to migrate existing models and build integrated edge AI applications across Perception AI, Generative AI, Agent and Physical AI.

Feature 5：Get Started in Seconds with reComputer AI Lab

Deploying AI at the edge is often complicated — from environment setup and model conversion to performance optimization. To simplify this process, Seeed created **reComputer AI Lab,** a developer platform designed to lower the barrier to edge AI development.
It provides a complete collection of optimized AI model demos for CV, LLM, and VLM, along with interactive tutorials, deployment tools, containerized AI applications, project examples, and community resources. It is built to accelerate AI development and deployment on **Rockchip, Raspberry Pi, and NVIDIA Jetson** platforms.
For Rockchip users, reComputer AI Lab includes ：

1. **Ready-to-Use Models**

Access pre-optimized models without starting from scratch. AI Lab includes models such as **YOLO11, MobileNet, CLIP, and Whisper**, optimized for Rockchip platforms. With the **RKLLM toolchain**, it also supports edge LLM deployment.

1. **One-Command Deployment Tools**

Skip complex build environments and speed up deployment with one-command tools. With Seeed-optimized **RKNN-Toolkit2**, models can be converted from **ONNX to NPU deployment** in just minutes, making AI application deployment faster and easier.

1. **Comprehensive Tutorials, Projects, and Community**

From basic NPU benchmarking to real-world applications such as **YOLO11-based industrial detection**, AI Lab provides step-by-step guides, practical project examples, and community support to help developers build faster.

Feature 6： Pre-installed Armbian and Multi-OS

The device comes with **Armbian pre-installed** for a fast out-of-the-box experience.
With the help of Armbian, we are able to provide long-term maintained system images, security updates, encrypted OS options, and OTA upgrade support for production-ready deployment.
It also supports multiple operating systems through the Rockchip ecosystem, giving developers more flexibility across different projects, Ubuntu, Android, Debian.

Feature 7：Simultaneous 3-Display Output with 8K Video Capability

The reComputer RK3576 Series supports **simultaneous 3-display output**, giving developers more flexibility for digital signage, control centers, smart retail, and multimedia systems.
Supported output interfaces include:

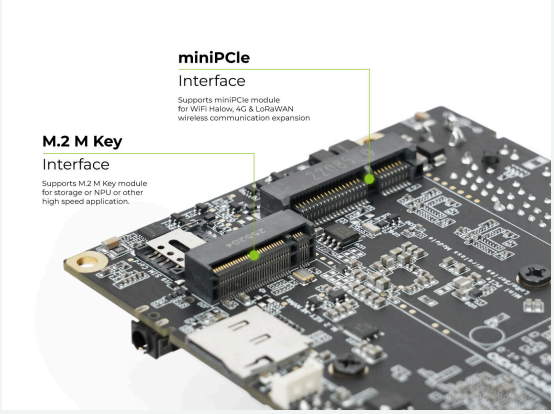
- **HDMI**
- **MIPI DSI**
- **Type-C (DP Alt Mode)**

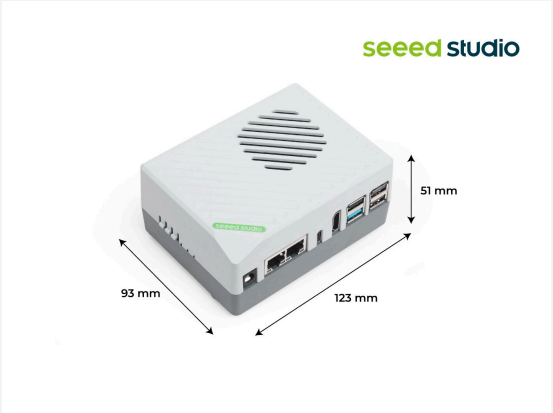
It also offers strong multimedia capabilities:

- Up to **4K@60fps** video encoding with **H.265 / H.264**
- Up to **8K@30fps** video decoding with **H.265 / H.264 / AV1 / AVS2**

This makes it ideal for high-resolution AI vision and multimedia applications.

Product Gallery



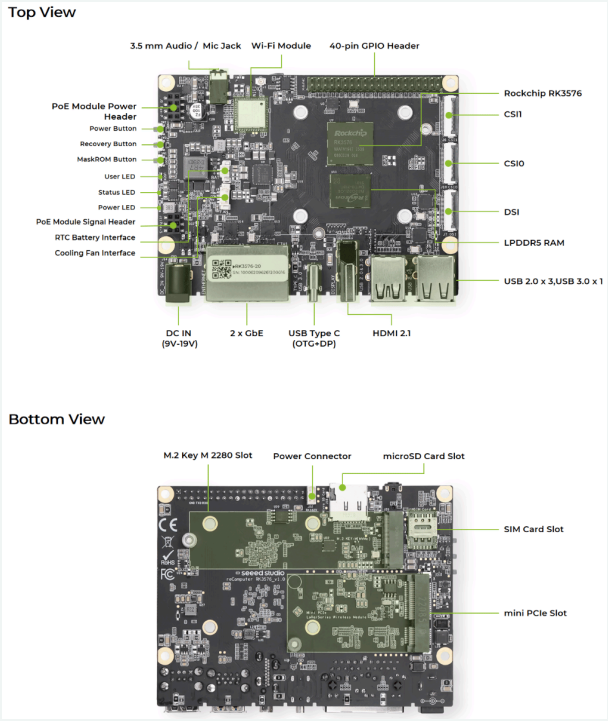


Specification

	reComputer RK3576	reComputer RK3588
SKU	4GB RAM：100062096 8GB RAM：100052518	8GB RAM：100071234 16GB RAM：100086238

CPU	4x Cortex-A72@2.2GHz 4x Cortex-A53@2.0GHz	4x Cortex-A76@2.4GHz 4x Cortex-A55@1.8GHz
GPU	ARM Mali-G52 MC3	ARM Mali-G610 MC4
NPU	INT8@6TOPS; Supporting INT4/8/16/FP16/BF16/TF32 mixed operations	
Operating System	Debian 12	
RAM	LPDDR5: 4GB/8GB/16GB	LPDDR5: 8GB/16GB/32GB
Power Input	9V-19VDC	
PoE (as powered device)	1x PoE PD	1x PoE PD
Button	1x Power; 1x Recovery; 1x MaskROM	
Ethernet	1x Gigabit Ethernet 1x Gigabit Ethernet with PoE support*	1x 2.5 Gigabit Ethernet 1x 2.5 Gigabit Ethernet with PoE support*
USB	1x Type A USB 3.0 3x Type A USB 2.0 1x Type C for OTG & DP	4x Type A USB 3.0 1x Type C for OTG & DP
HDMI	1x HDMI 2.0	2x HDMI 2.1;1x HDMI 2.0 Input
SIM Card	1x nano SIM Card Slot	
SD Card	1 x microSD card slot	
SSD Card	PCIe2.1x 1 for NVMe SSD or AI Accelerator	PCIe3.0x 4 for NVMe SSD or AI Accelerator PCIe2.1x 1for NVMe SSD or AI Accelerator
LED	1x Power; 1x Status; 1x User	
Buzzer	1	1
Wi-Fi	Onboard WiFi6 & BT5.4 with FPC Antenna	
BLE		
LoRa	USB LoRa®*/SPI LoRa®*	USB LoRa®*/SPI LoRa®*
4G/5G Cellular	4G LTE*	4G LTE*
Certification	FCC/CE/TELEC/RoHS	
Operating Temperature	0~60°C	0~55°C
Storage Temperature	-20~90 °C	-20~90 °C
Operating Humidity	10~95% RH	10~95% RH
RTC	1x 2PIN	1x 2PIN
Heat Dissipation	Heatsink with Fan	
Enclosure Material	ABS Plastic	
Warranty	1 year	

Hardware Overview



Applications

- **Generative AI:** Run LLMs, Stable Diffusion, and other generative models locally at the edge.
- **Robotics:** Enable autonomous navigation, SLAM, and real-time object detection for robots.
- **Smart Retail:** Analyze customer behavior, manage inventory, and improve store operations in real time.
- **Smart City:** Video analytics for traffic management, parking, and public safety.
- **Industrial Automation:** Machine vision for defect detection, process control, and predictive maintenance.
- **Healthcare:** Medical image analysis and patient monitoring at the edge.
- **Agriculture:** Precision farming, crop health monitoring, and yield prediction.
- **AIoT:** Connect and analyze data from IoT devices with edge AI computing.

Part List

reComputer RK3576-20	x1
12V/3A Power Adapter (with 1x US/EU/UK/AU Plugs)	x1
32GB microSD Card	x1
User Manual	x1

Compliance & Logistics

HSCODE	8471504090
USHSCODE	8517180050
UPC	
EUHSCODE	8471707000
COO	CHINA

Resource Links

- https://www.seeedstudio.com/reComputer-RK3576-20-p-6816.html
- reComputer RK35XX Series Flyer
- reComputer RK3576 Schematic
- recomputer_rk3576 Top Cover ABS
- recomputer_rk3576 Bottom Cover ABS
- reComputer RK3576 User Manual

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