

INDUSTRIAL PRODUCT DATASHEET

reComputer RK3576 Dev Kit | Compact Rockchip Industrial Edge AI Platform

The reComputer RK3576 Dev Kit is a compact Rockchip industrial edge AI platform combining an 8-core CPU and 6 TOPS NPU with rich I/O and reComputer AI Lab for faster edge AI prototyping and system validation.

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100008205

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PRICE

\$219.00(Excl. VAT)



Overview



The reComputer RK3576 Dev Kit combines the RK3576 Compute Module and an IO Board into a complete development platform for edge AI prototyping and system validation. It features an 8-core CPU, 6 TOPS NPU, M.2 expansion, Gigabit Ethernet with PoE PD, HDMI, USB-C DisplayPort, MIPI DSI/CSI, USB, GPIO, audio, and storage interfaces, and is supported by reComputer AI Lab for faster deployment of computer vision, LLM/VLM, and speech AI workloads.

Key Features

The **reComputer RK3576 Module Dev Kit** combines the RK3576 Compute Module and a feature-rich IO Board into a complete development platform for edge AI prototyping and system validation.

Powered by an **8-core CPU and 6 TOPS NPU**, the kit provides **M.2 expansion, Gigabit Ethernet with PoE PD, HDMI, USB-C DisplayPort, MIPI DSI, MIPI CSI, USB, GPIO, audio, and storage interfaces**, enabling developers to quickly evaluate computing performance, AI workloads, peripherals, and system architecture.

Together with **reComputer AI Lab**, developers can accelerate the deployment of computer vision, large language models, vision-language models, and speech AI before moving to custom carrier board development.

Feature 1: Complete Rockchip RK3576 Evaluation Platform

Move from a bare compute module to a complete development platform without designing a custom carrier board at the beginning of your project.

The Dev Kit combines the **Rockchip RK3576 Compute Module** with an **IO Board** that exposes the module's key interfaces through standard connectors, allowing developers to evaluate hardware, software, peripherals, and system architecture on one platform.

- RK3576 Compute Module and IO Board in one kit
- Ready for hardware and software evaluation
- Simplifies peripheral and interface validation
- Reduces early-stage custom carrier board development
- Provides a reference platform for future product integration

Use the Dev Kit to validate the system first, then move to a custom carrier board when the product architecture is confirmed.

Feature 2: 8-Core Computing with 6 TOPS Edge AI

At the core of the Dev Kit is the Rockchip RK3576 processor, combining heterogeneous CPU computing with dedicated hardware AI acceleration.

8-Core CPU

The reComputer RK3576 Dev kit 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

6 TOPS NPU

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.

- **Vision CNN:** YOLO11@77.9FPS(640*640)
- **LLM:** capable of deepseek-r1-distill-qwen 7b support
- **VLM:** capable of 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. reComputer AI Lab for Faster AI Deployment

The Dev Kit is supported by **reComputer AI Lab**, providing a streamlined workflow for model conversion, deployment, and evaluation on the Rockchip RK3576 platform.

It supports a wide range of edge AI workloads, including:

- **Computer Vision**: Object detection, segmentation, tracking, and video analytics
- **LLM & VLM**: Local language and multimodal AI applications with models such as DeepSeek and Qwen
- **Speech AI**: Offline speech recognition and voice interaction with models such as Whisper

With containerized and simplified deployment workflows, **reComputer AI Lab** reduces environment setup and helps developers move from AI models to on-device evaluation faster. [Explore reComputer AI Lab →](#)

Feature4. Rich I/O and High-Speed Expansion

The Dev Kit exposes a broad range of Rockchip RK3576 interfaces for connecting storage, displays, cameras, networking, sensors, and other embedded peripherals.

1. M.2 NVMe Storage and AI Expansion

The onboard **M.2 M-Key 2280 slot** provides **PCIe 2.1 ×1 connectivity**.

It can be used with:

- SSD
- M.2 AI accelerator

This makes it easy to expand storage capacity or evaluate additional hardware acceleration during product prototyping.

2. 40-Pin GPIO Expansion

A **40-pin GPIO expansion header** provides convenient access to general-purpose interfaces for connecting sensors, actuators, controllers, and other embedded peripherals.

It enables developers to quickly build physical prototypes without designing additional interface hardware during early-stage validation.

3. Additional Native Interfaces

The Dev Kit also provides interfaces including:

- **USB ; GPIO ; Audio ; Storage ; MIPI CSI ; MIPI DSI ; HDMI ; USB-C DisplayPort ; Gigabit Ethernet**

Feature 5: Unlock the Raspberry Pi Expansion Ecosystem

This Dev Kit supports compatible Raspberry Pi peripherals

- **Vision**: Raspberry Pi Camera Module 3
- **Display**: Official 7-inch DSI Display
- **Power & Expansion**: PoE+ HAT and other compatible accessories

Build flexible solutions for machine vision, interactive displays, and Power over Ethernet applications.

Feature6. Gigabit Ethernet with PoE PD

The Dev Kit provides a **native Gigabit Ethernet RJ45 port** for high-bandwidth network connectivity.

Integrated **IEEE 802.3at PoE PD** support enables both power and network connectivity through a single Ethernet cable.

This is especially useful when prototyping **smart cameras, AI terminals, gateways**, and remotely deployed edge devices.

Feature7. High-Resolution Video Processing

The RK3576 integrates dedicated video processing hardware for high-resolution multimedia and vision applications.

1. Video Decoding

Supports up to:

- **8K @ 30fps:** H.265 / VP9 / AV1 / AVS2
- **4K @ 60fps:** H.264

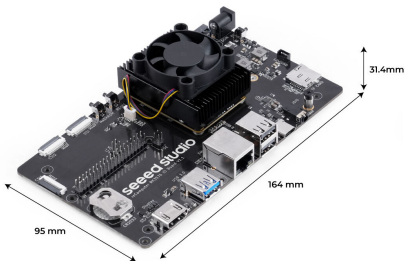
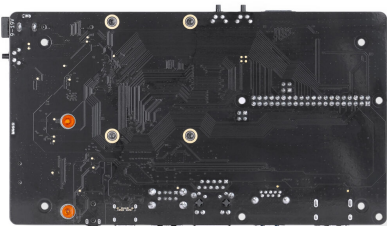
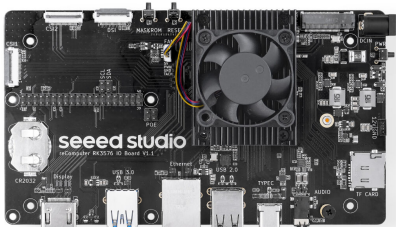
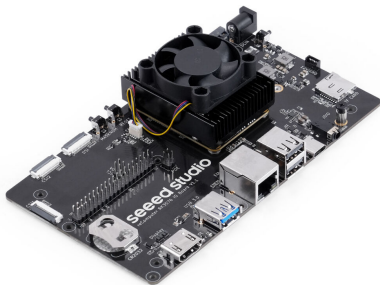
2. Video Encoding

Supports up to:

- **4K @ 60fps:** H.265 / H.264

These capabilities make the platform suitable for high-resolution video analytics, smart cameras, multimedia terminals, and other video-intensive edge applications.

Product Gallery



Specification

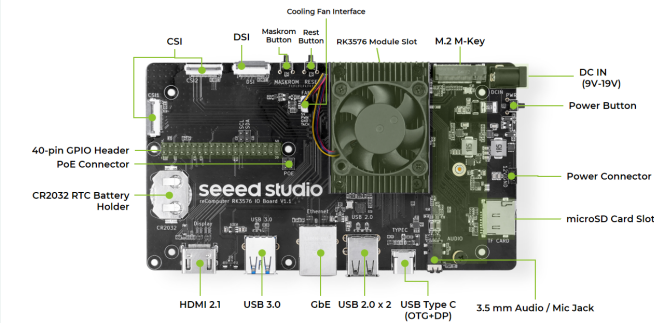
Parameter	Description
Hardware Specification	

Product Series	reComputer RK3576 Module Dev Kit	reComputer RK3576 Module Dev Kit with RK1820 AI Accelerator
SOC	Rockchip RK3576	
CPU	4x Cortex-A72@2.2GHz + 4x Cortex-A53@2.0GHz	
GPU	ARM Mali-G52 MC3	
NPU	INT8@6TOPS	RK3576 NPU: INT8 @ 6 TOPS RK1820 AI Accelerator: up to 20 TOPS (INT8)
Operating System	Armbian (pre-installed), Debian, Ubuntu, Android 14+, and balenaOS support	
RAM	LPDDR5: 8GB	
Onboard Storage	eMMC: 64GB	
System Specification		
Power Input	DC 9V~19V	
PoE	1 x PoE PD*	
Power	Yes	
Reset	Yes	
MaskROM	Yes	
Interface		
Ethernet	1x Gigabit Ethernet with PoE support(Additional PoE Module Required)	
USB	1 × USB 3.0 Type-A, 2 × USB 2.0 Type-A	
	1 × USB-C for USB OTG & DisplayPort	
Display	1x Display; 1x DPI.4 via USB Type C port ; 1x 4-lane MIPI DSI(22pin)	
GPIO	1x 40-Pin Expansion header	
SD Card	1x Micro SD Card Slot	
M.2 Slot	1x M.2 Key M 2280 slot (PCIe 2.1x 1), supporting either an NVMe SSD or an AI accelerator	
LED	1x Power; 1x Status	
Button	1x Power; 1x Reset; 1x MaskROM	
Audio	1x 3.5mm Headphone Jack with Microphone Input	
CSI Camera	1x 4-lane MIPI CSI(22pin) ; 1x 2-lane MIPI CSI(22pin)	
Fan Connector	1 × 4-pin PWM fan connector	
RTC Backup	1 × CR2032 RTC battery holder	
Power Input	9~19V DC via DC jack or 2-pin power header	
Wireless Communication		
Wi-Fi	Onboard WiFi6 with FPC Antenna	
BLE	BT5.4 with FPC Antenna	
Ambient Conditions		
Operating Temperature	0 ~ 65°C	
Others		
Heat Dissipation	Fan	
Warranty	1 years	
Production Lifetime	Until January 2036	
Statement	Options marked with * require additional purchase according to the accessories list.	

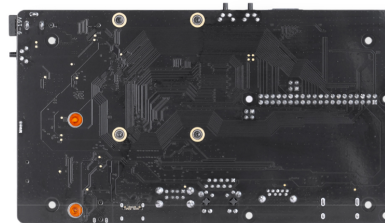
Hardware Overview

Mainboard Overview

Top View



Bottom View



Applications

- **Build Vision-Enabled Edge Products:** Prototype camera-based products for inspection, monitoring, retail analytics, and other real-time on-device vision applications.
- **Create Private Multimodal AI Devices:** Develop local AI assistants that combine language, vision, and voice processing while keeping sensitive data on-device.
- **Accelerate Custom Edge AI Product Development:** Validate the AI software stack and overall product architecture before moving from the Dev Kit to a custom carrier board.

Part List

reComputer RK3576 Module 0864	x1
reComputer RK3576 Module IO Board	x1
12V/3A Power Adapter (with 1x US/EU/UK/AU Plugs)	x1
32GB microSD Card	x1
Active Cooling System (Heatsink & Fan, pre-assembled)	x1
Wi-Fi/BT FPC Antenna	x1
Wi-Fi/BT External Rod Antenna	x1

Compliance & Logistics

HSCODE	8471504090
USHSCODE	8517180050
UPC	
EUHSCODE	8471707000
COO	

Resource Links

- <https://www.seeedstudio.com/reComputer-RK3576-Module-Dev-Kit-p-6952.html>
- [reComputer RK3576 Module Schematic](#)
- [reComputer RK3576 Module IO Board Schematic](#)

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