

Rockchip RK3588

High performance, low power AIoT processor



Processor

Processor	Rockchip RK3588
Core	ARM Cortex-A76 (2.4 GHz) / Cortex-A55 (1.8 GHz)
GPU	ARM Mali-G610 MC4, OpenGL ES 1.1/2.0/3.1/3.2, Vulkan 1.1, 1.2, OpenCL 1.1, 1.2, 2.0
NPU	6 TOPS (int4/int8/int16/FP16/BF16/TF32)
Cache	4x LPDDR4X (2x 32GB)
IO	802.11 ax/ac/a/b/g/n, 12 USB, 5.0

Connectivity

Network	12x Ethernet (2x 2.5G)
Storage	1x TF, 1x PCIe
Serial	1x UART
Display	CR1220, 2x UART
Video	1x10/100/1000 RJ45, 802.11 ax/ac/a/b/g/n, 1x USB3.0, 1x USB2.0, 1x USB2.0 (4x), 1x LED
Camera	1x MIPI (32x), 1x EDP (30x), 1x HD (HD 2.1 8K@60), 1x DP (DP1.4 4K@60), 1x MIPI-CSI ((1x), 1x HD 2.0 4K@60)
Expansion	1x L/R (3.5x), 7x GPIO (3.3V), 4x I2C (3x), 1x SPI, 2x I2S, 5x I2S

Other Features

High-Performance AI Development Board

The RK3588 is a flagship AIoT chip built on 8nm LP process, featuring an octa-core CPU (up to 2.4GHz), ARM Mali-G610 MP4 GPU, and a 6TOPs NPU for AI acceleration. It also integrates a 48MP ISP with HDR & 3DNR, supporting major deep learning frameworks for enhanced AI performance.



RK3588
Octa-core CPU



Mali-G610
MC4 1GHz GPU



6Tops
NPU



8K
8K Codec
H.265 HEVC



4~32GB RAM
8~128GB ROM



WiFi6
1000M LAN



BT5.x



Android/Linux

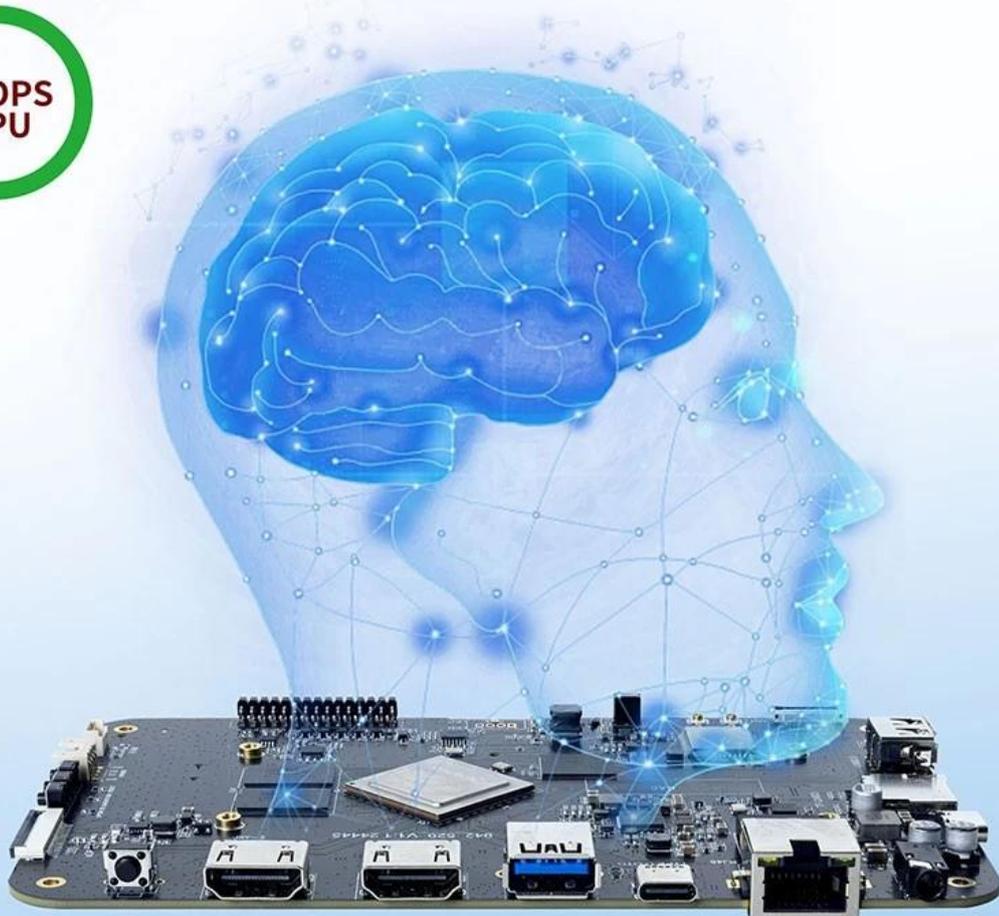
RK3588---Next-Generation Flagship AIoT CPU

Powered by the RK3588 octa-core 64-bit chipset, with ARM Mali-G610 MP4 GPU and 6TOPs AI NPU for superior AI performance and expanded possibilities.



6 TOPS Powerful Computing Boosts AI Applications

Powerful NPU with 6TOPS performance, supporting INT4/INT8/INT16 operations. Compatible with TensorFlow, MXNet, PyTorch, Caffe, and more. Efficiently accelerates convolution and traditional image processing operations like Gaussian filter, median filter, Laplacian, and Sobel, ideal for edge computing and vision control applications.



8K Video Encoding & Decoding

Supports 8K@60fps H.265/VP9 decoding and 8K@30fps H.265/H.264 encoding, with up to 32x 1080P@30fps decoding and 16x 1080P@30fps encoding. Delivers stunning 8K video quality.



32GB Large RAM & 128GB EMMC

Up to 32GB RAM and 128GB eMMC storage, surpassing previous memory limits for faster response and meeting the demands of high-memory, high-storage applications.



32GB
128GB

Rich Expansion Interfaces

Multiple video output and input interfaces support simultaneous 8K@60fps video output and 4K@60fps video input. It also supports quad-screen display for high-definition interactive scenarios. The board offers rich expansion interfaces for diverse industry applications.



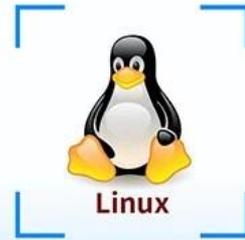
Powerful Network

Onboard Gigabit Ethernet, dual-band WiFi 6 (2.4GHz/5GHz), and Bluetooth 5.3 ensure seamless network connectivity and flexible support for various application needs.



Open System Architecture

Multi-system compatibility supporting Android 12 and Debian 11, with deep customization of the Linux kernel for remote upgrades and management, enhancing operational efficiency and ease.



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Rockchip RK3588 processor ARM (Cortex-A76 Cortex-A55) 2.4 GHz Mali-G610 NPU 6 TOPs LP.

*LCD: MIPI EDP I2C.

*TF PCIE UART GPIO

UART GPIO

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Android TV Box Rockchip RK3588

