

# Ultra HD Rockchip RK3588 Octa-Core 4GB 32B



Rockchip RK3588	Rockchip RK3588 ARM Quad-Core Cortex-A76 @2.4GHz Quad-Core Cortex-A55@1.8GHz 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
CPU	6 int4/int8/int16/FP16/BF16/TF32
RAM	4GB LPDDR4X (2GB-2 32GB)
Storage	32G
Network	802.11 ax/ac/a/b/g/n
Audio	12
Video	5.0

Connectivity	Type-C (12V/2A)
Storage	1 - TF 1 - PCIe
Expansion	1 - CR1220
Serial	2 - UART
Network	1-10/100/1000 Mbps RJ45 802.11 ax/ac/a/b/g/n
USB	1 - USB3.0 1 - USB2.0 1 - USB2.0 4
LED	1 - LED
Display	1 - MIPI 32 1 - EDP Dual-cChannel 30
Video Output	1 - HD 8K @ 60Hz 1 - DP DP1.4 4K @ 60Hz
Camera	1 - MIPI-CSI 1 - HD 4K @ 60Hz
Power	1 - L/R (3.5V) 1 - 7 - GPIO, 3.3V 4 - I2C, 3V
Other	1- 2- 1-5V

Additional specifications and details for the Rockchip RK3588 processor.

Video Codec: MPEG-1, MPEG-2, MPEG-4, H.263, H.264, H.265, VC-1, VP9, VP8, MVC AV1@MMU  
H.264 AVC/MVC Main10 L6.0: 8K@30fps(7680-4320);  
VP90/2 L6.1: 8K@60fps(7680-4320);  
H.265 HEVC/MVC Main10 L6.1: 8K@60fps(7680-4320);  
AVS2 0/2 L10.2.6: 8K@60fps(7680-4320);  
AV1 8/10 L5.3: 4K@60fps(3840-2160);  
MPEG-2 MP 1080p@60fps(1920-1088);  
MPEG-1 MP 1080p@60fps(1920-1088);  
VC-1 AP 3: 1080p@60fps(1920-1088);  
VP8 2 - 1080p@60fps(1920-1088)  
Audio Codec: MP3,AAC,FLAC,WAV  
Chipset: RTL8111HS

Network

Network

Network: 10/100/1000 Mbps  
Chipset:

AP6275P

WiFi:

802.11ax/ac/a/b/g/n 2.4 Gbps

2.4GHz 5GHz

Network

MU-MIMO

BT:

5.BT 5.0 BT

BLE (Bluetooth Low Energy)

BT

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Display

HDMI\_TX 8K@60fps(7680x4320)

EDP 4K@60fps(3840x2160)

MIPI\_CSI 4K@60fps(3840x2160)

DP(type-c) 4K@ 60fps(3840x2160)

Display

HDMI\_RX 4K@60fps(3840-2160)

MIPI\_DSI (Dual Lane)

PIP (Picture in Picture)

Chipset: HYM8563

Display

# 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**

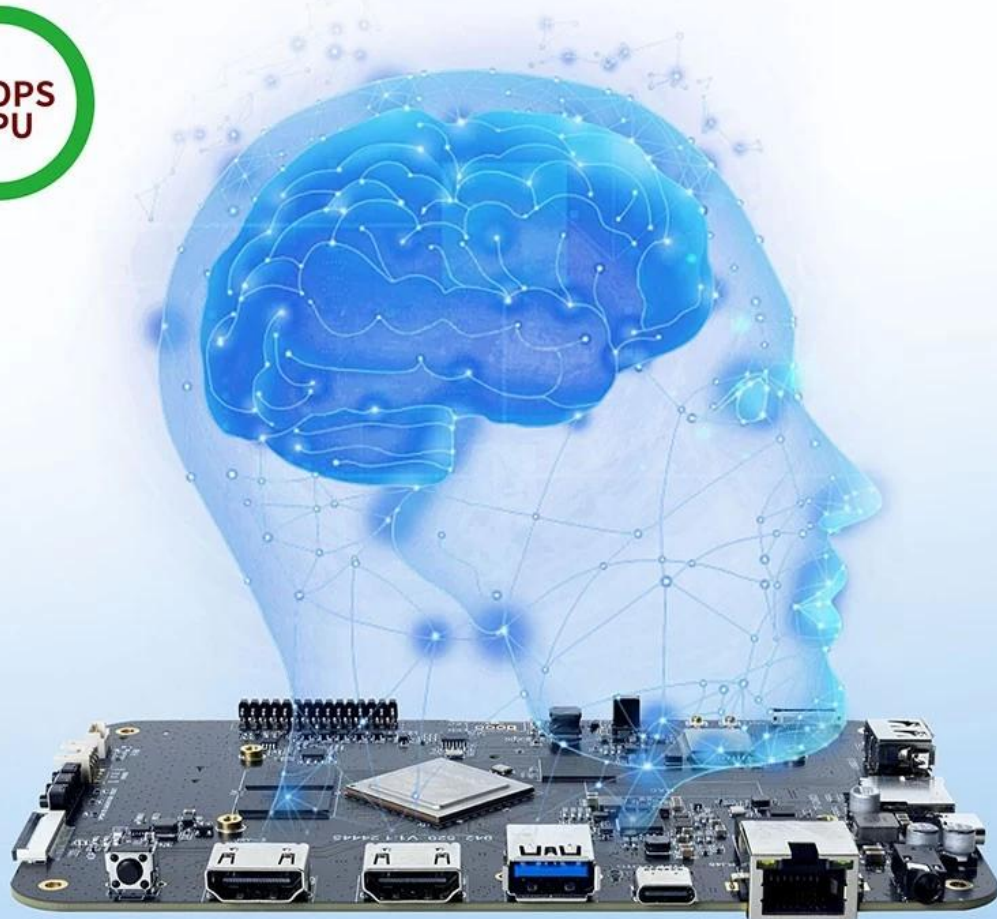
# RK3588---Next-Generation Flagship AIoT CPU

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.





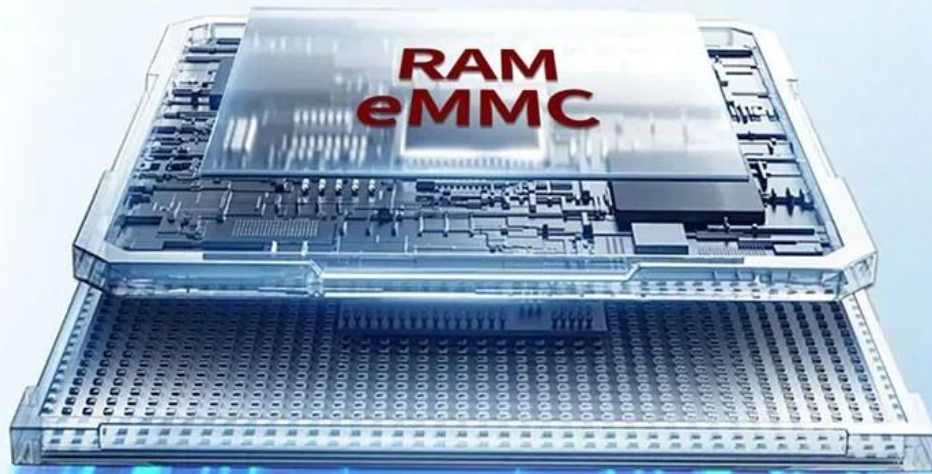
## 8K Video Encoding & Decoding

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

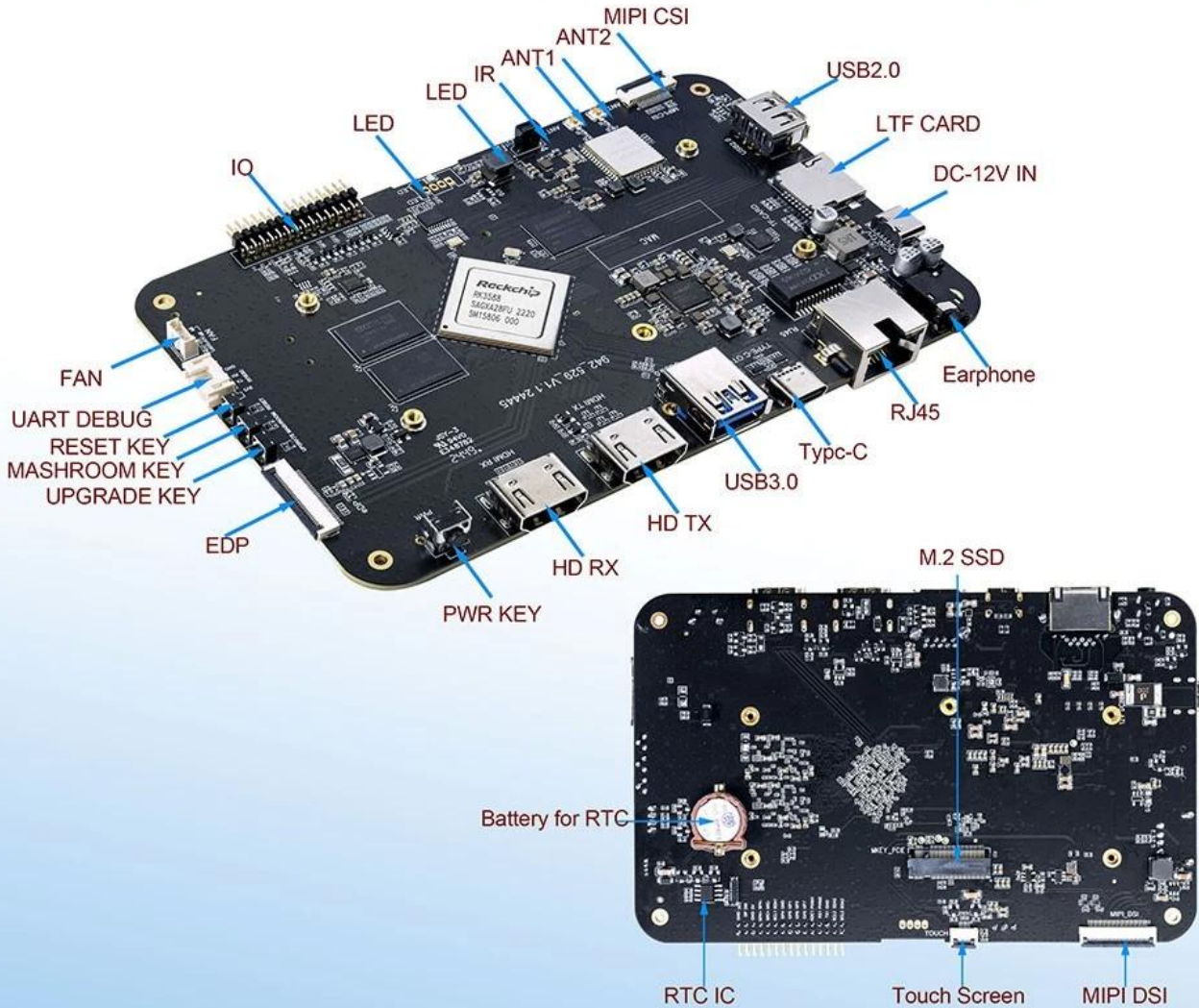
Up to 32GB RAM and 128GB eMMC storage, surpassing previous memory limits for faster response and meeting the demands of high-memory, high-storage applications.



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.



- CPU ARM Octa-core RK3588 (Quad Core Cortex-A76 Quad Core Cortex-A55)  
2.4 GHz GPU Mali-G610 Quad Core  
NPU 6TOPs
- : 8nm LP
- LCD : MIPI , EDP
- I2C
- TF PCIe
- UART GPIO
- Android 12

**8K CPU Octa-Core Rockchip RK3588, RAM 4GB ROM 32GB**

Rockchip RK3588 Octa-Core CPU  
Cortex-A76  
Cortex-A55  
G610 MP4 GPU  
8K

**CPU Octa-Core Rockchip RK3588**

Rockchip RK3588 Octa-Core CPU  
Cortex-A76  
Cortex-A55  
G610 MP4 GPU  
8K

4GB

32GB ROM

**4GB 32GB ROM**

Android  
Google Play Store

**8K Ultra HD**

8K  
HDR10

**AI**

Rockchip RK3588 AI  
AI

**Android**

Android  
Google Play Store

- 6
- 5.0
- HDMI2.1
- USB-C USB 3.0

- 8K
- 
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- **AI 功能:** 支持 AI 人脸识别、AI 语音助手、AI 图像识别等应用
- **AI 芯片:** 搭载 AI 芯片，支持 AI 应用开发

支持 AI 人脸识别、AI 语音助手、AI 图像识别等应用  
搭载 AI 芯片，支持 AI 应用开发

支持 AI 人脸识别、AI 语音助手、AI 图像识别等应用

**8K Ultra HD** 超高清视频播放，支持 AI 图像识别、AI 语音助手、AI 人脸识别等应用

支持 AI 人脸识别、AI 语音助手、AI 图像识别等应用

支持 AI 人脸识别、AI 语音助手、AI 图像识别等应用 **Ultra HD** 超高清视频播放 **CPU Octa-Core Rockchip RK3588, RAM 4GB ROM 32GB**

支持 AI 人脸识别、AI 语音助手、AI 图像识别等应用  
支持 AI 人脸识别、AI 语音助手、AI 图像识别等应用