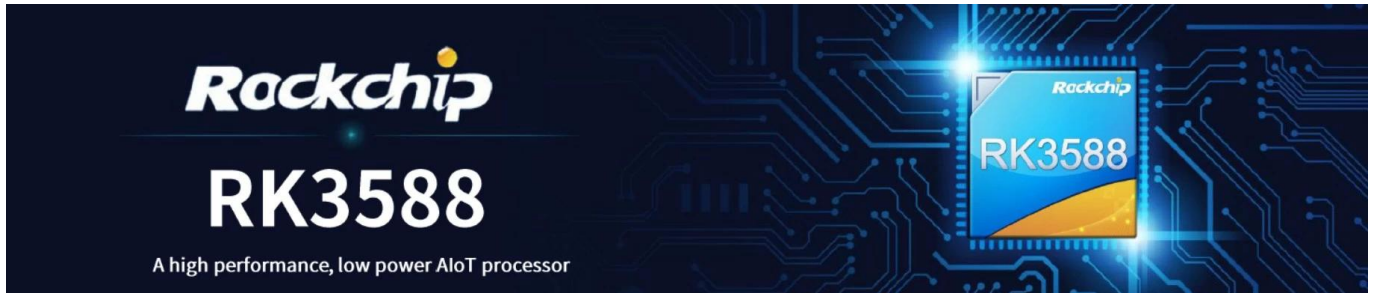


# Smart TV Box with Rockchip RK3588 Octa-Core 8K Ultra HD



## Specifications

Model No.	Rockchip RK3588 Smart TV Box
CPU	Rockchip RK3588 Octa-Core ARM, Quad-Core Cortex-A76 @2.4GHz and Quad-Core Cortex-A55@1.8GHz
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 Embedded high performance 2D image acceleration module
NPU	6 TOPS (Supports int4/int8/int16/FP16/BF16/TF32 Acceleration)
RAM	4GB LPDDR4X (2GB*2, Supports up to 32GB)
ROM	32G
WiFi	Built-in WiFi Module, 802.11 ax/ac/a/b/g/n
OS	Android 12
Bluetooth	Bluetooth 5.0

## Hardware Interface

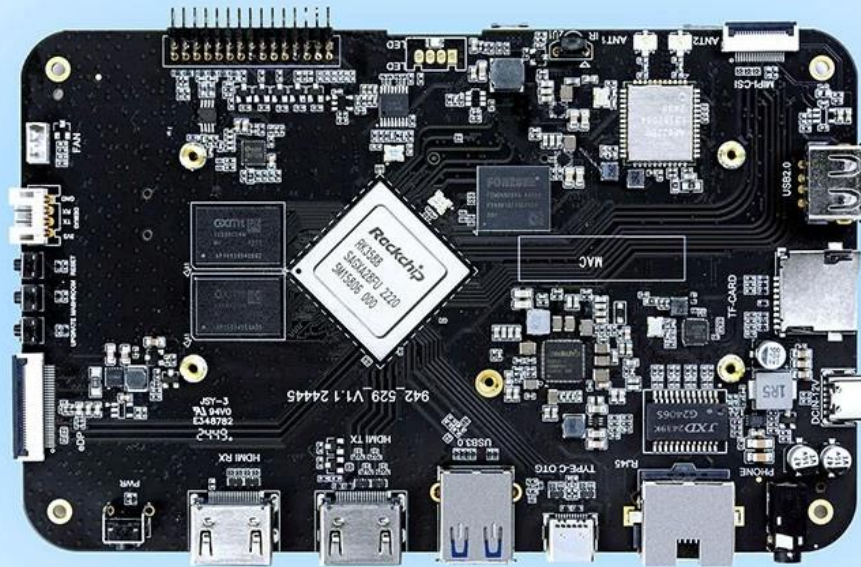
Power input	Type-C Port (12V/2A)
Storage Extension	1*TF Card Slot 1*PCIE Hard Disk Data Port
Remote Control	1* Infrared Remote Control Receiver
RTC Battery	CR1220 Button Battery Onboard
Serial Port	2*UART Serial Port
Ethernet	1* 10/100/1000 Mbps RJ45 Port
WiFi	Built-in WiFi Module, 802.11 ax/ac/a/b/g/n
USB Port	1*USB3.0 Port 1*USB2.0 Port 1* USB2.0 Port Reserved 4-Pin socket
LED Indicator	1*Three-Color LED Indicator
LCD Interface	1*Four-Channel 32-Pin Sequential MIPI interface 1*Dual-channel 30-Pin Sequential EDP interface
Video Output Interface	1*HD Output Port, Support HD 2.1 up to 8K@60Hz output 1*DP Output Port, Support DP1.4 up to 4K@60Hz output
Video input	1*MIPI-CSI (dual-channel) 1*HD input Port, Supports up to HD 2.0 4K@60Hz input 1*MIC
Audio interface	1*L/R, Left and Right Sound Channel Output (3.5mm Headset Port) 1*SPK 7*GPIO, 3.3V Voltage 4*I2C, 3V Voltage, Support Touch Screen
Other interfaces	1*ADC 2*PWM 1*5V Cooling Fan

## Software Performance

Video&Audio CODEC	<p>Decoding Performance:  Supports MPEG-1, MPEG-2, MPEG-4, H.263, H.264, H.265, VC-1, VP9, VP8, MVC and AV1@MMU embedded real-time video decoding;  Multi-channel parallel decoding, supporting lower resolutions;  H.264 AVC/MVC Main10 L6.0: support 8K@30fps(7680*4320);  VP9 Profile0/2 L6.1: Support 8K@60fps(7680*4320);  H. 265 HEVC/MVC Main10 L6.1: support 8K@60fps(7680*4320);  AVS2 Profile 0/2 L10.2.6: Support 8K@60fps(7680*4320);  AV1 main configuration file 8/10bit L5.3: Support 4K@60fps(3840*2160);  The MPEG-2 supports up to MP: 1080p@60fps(1920*1088);  The MPEG-1 supports up to MP: 1080p@60fps(1920*1088);  VC-1 supports up to AP level3: 1080p@60fps(1920*1088);  VP8 version2 1080p@60fps(1920*1088)  Multi-Channel Audio Decoding: MP3,AAC,FLAC,WAV and other mainstream audio formats.</p>
Ethernet	<p>Module: RTL8111HS  Performance: Support 10/100/1000 Mbps, providing stable and fast wired connection performance.  Function: Support auto-negotiation function to automatically identify and configure network speed and duplex mode.</p>
WiFi & BT	<p>Module: AP6275P  WiFi specifications:  Support 802.11ax/ac/a/b/g/n for high-speed wireless network connectivity of up to 2.4 Gbps.  Support 2.4GHz and 5GHz dual frequency bands, optimize signal intensity and interference minimize.  Support MU-MIMO technology to improve the data transmission efficiency during multi-user connection.  BT specifications:  □BT 5.0, support all traditional BT features and high-speed transmission.  □Support BLE (bluetooth low energy) technology.  □Support multiple BT devices to connect simultaneously, ensuring stable connections and efficient communication..</p>
Display Output	<p>HDMI_TX supports up to 8K@60fps(7680x4320).  EDP supports up to 4K@60fps(3840x2160).  MIPI_CSI supports up to 4K@60fps(3840x2160).  DP(type-c) supports up to 4K@ 60fps(3840x2160).  Can be applied scene multi-screen display, different screen multi-display.</p>
Input source	<p>HDMI_RX supports up to 4K@60fps(3840*2160).  MIPI_DSI(for camera)  Suitable for PIP (picture-in-picture),conference machines and embedded external input source applications.  Chipset: HYM8563</p>
RTC	<p>This chip can maintain time operation through an external battery when the system is powered off, making it suitable for any application scenario that requires continuous tracking of time after power failure. It has basic alarm and timer functions, allowing you to set wake-up commands, which can be applied to timed on/off operations.</p>

# 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 Codec**  
H.265 HEVC



**4~32GB RAM**  
**8~128GB ROM**



**WiFi6**  
**1000M LAN**



**BT5.x**



**Android/Linux**

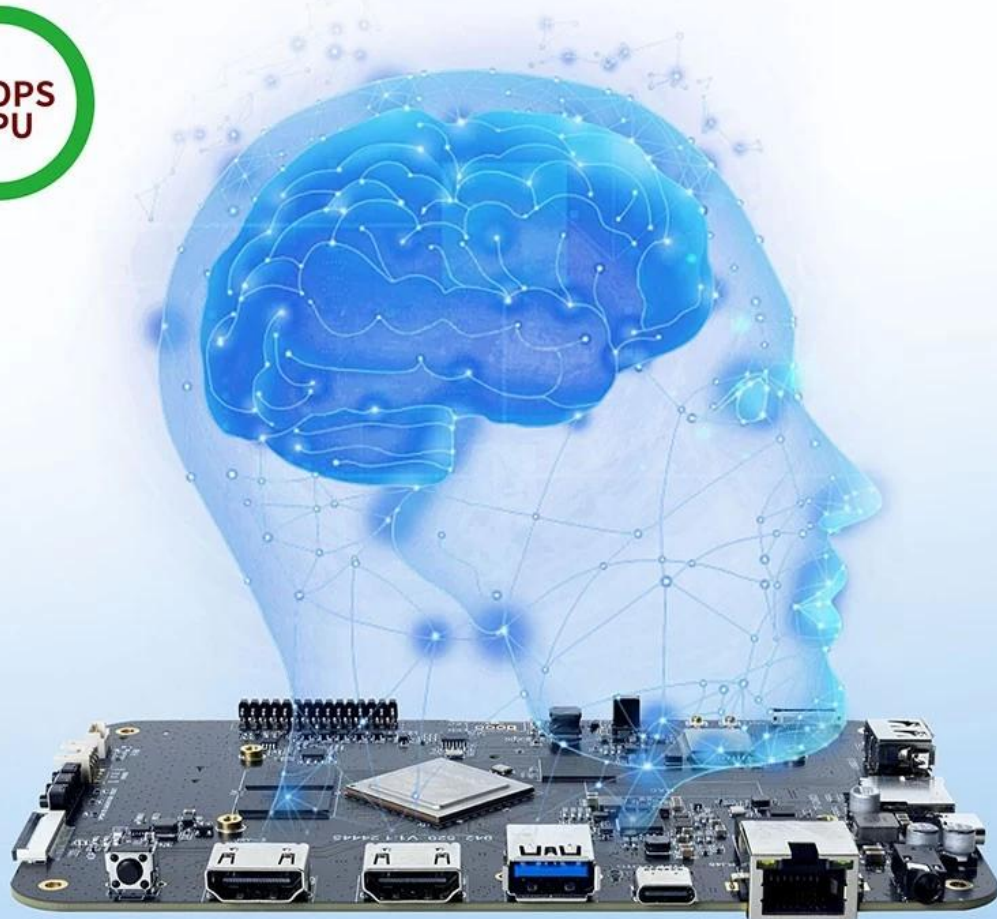
# RK3588---Next-Generation Flagship AIoT CPU

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.



## Main Features

- \*The CPU is RK3588 Octa-core ARM processor (Quad Core Cortex-A76 and Quad Core Cortex-A55), with a maximum main frequency up to 2.4 GHz. It features with quad core Mali-G610 GPU, NPU computing power reaches 6TOPs with powerful performance.
- \*Manufacturing process: 8nm LP.
- \*With various LCD screen interfaces: four-channel MIPI, dual-channel EDP.
- \*Touch screen supporting the I2C interface.
- \*Support for TF card or PCIE drives as an additional storage extension.
- \*With multiple input and output extension, dual-channel UART serial port and seven-channel GPIO for input and output.
- \*With Android 12 OS

The **Smart TV Box with Rockchip RK3588 Octa-Core Processor** redefines entertainment and

professional applications with cutting-edge features and robust performance. Designed to deliver unparalleled functionality, this TV box is perfect for users seeking high-resolution streaming, AI capabilities, and advanced multitasking.

### **Powered by Rockchip RK3588**

At the heart of this smart TV box is the **Rockchip RK3588 Octa-Core processor**, combining four Cortex-A76 and four Cortex-A55 cores for optimal performance and energy efficiency. The integrated **Mali-G610 MP4 GPU** ensures stunning graphics, enabling smooth playback of 8K content and immersive gaming experiences.

### **8K Ultra HD Clarity**

Experience visuals like never before with **8K Ultra HD resolution**. This TV box supports detailed, vibrant, and lifelike imagery, making it perfect for streaming, video playback, and professional-grade digital displays. HDR10+ support enhances contrast and color accuracy, delivering a premium viewing experience.

### **AI-Enhanced Functionality**

Harness the power of AI with features like facial recognition, voice control, and real-time data processing. The Rockchip RK3588's AI capabilities unlock innovative applications, from smart home automation to interactive business solutions, making it a versatile tool for various industries.

### **Seamless Android OS**

Running on **Android OS**, this TV box offers an intuitive interface and access to a broad library of apps via the Google Play Store. Whether for entertainment or professional tasks, Android provides flexibility, customization, and compatibility for users across all sectors.

### **Enhanced Connectivity**

With **WiFi 6**, **Bluetooth 5.0**, and **Gigabit Ethernet**, this TV box ensures high-speed, stable connections for streaming and multitasking. Its versatile connectivity options include **HDMI 2.1**, **USB-C**, and **PCIe** ports, enabling seamless integration with external devices like cameras, storage drives, and monitors.

### **Applications Across Sectors**

This smart TV box caters to a wide range of applications:

- **Home Entertainment:** Stream movies, play games, and access apps in stunning 8K clarity.
- **Digital Signage:** Create dynamic advertisements and information displays for retail or public spaces.
- **AI-Powered Applications:** Use its AI capabilities for machine learning, data analysis, or software testing.
- **Education:** Deliver engaging and interactive educational content.
- **Business Operations:** Support video conferencing, presentations, and real-time analytics.

### **Compact and Durable Design**

The TV box's sleek and compact design makes it a perfect fit for any environment. Its durable construction ensures reliability for long-term use, whether for continuous digital signage or daily home entertainment.

### **Energy Efficiency**

Despite its high performance, the TV box is energy-efficient, reducing power consumption and minimizing its environmental impact. This makes it ideal for 24/7 applications like signage or AI-driven tasks.

### **Why Choose This Smart TV Box?**

Combining advanced hardware with versatile software, the **Smart TV Box with Rockchip RK3588** offers unmatched performance and flexibility. Whether for personal or professional use, its cutting-edge features and intuitive operation ensure an exceptional user experience.

### **Conclusion**

The **Smart TV Box with Rockchip RK3588 Octa-Core Processor** is the ultimate solution for modern digital needs. From immersive home entertainment to innovative business applications, its powerful performance, stunning visuals, and advanced connectivity set a new standard for smart devices.