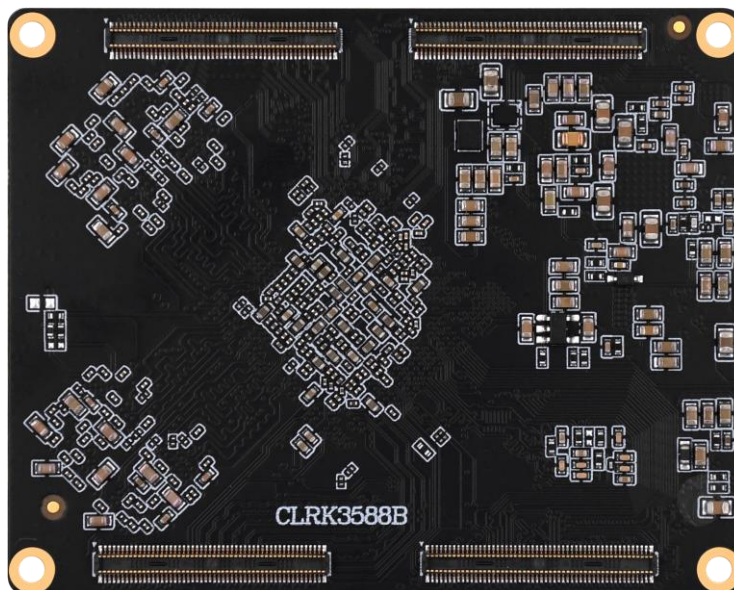
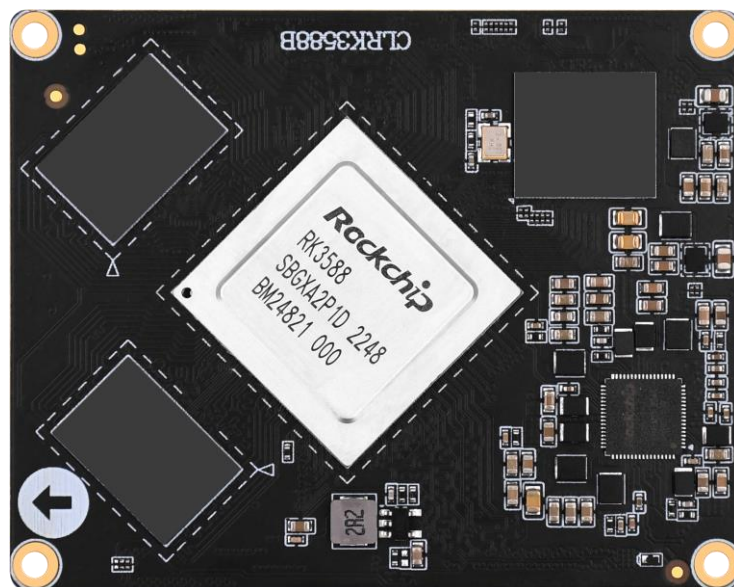


# ATK-CLRK3588B

## Core Board Specification

V1.2



**1. Shopping:**TMALL: <https://zhengdianyuanzi.tmall.com>TAOBAO: <https://openedv.taobao.com>**2. Download**Address: <http://www.openedv.com/docs/index.html>**3. FAE**Website : [www.alientek.com](http://www.alientek.com)Forum : <http://www.openedv.com/forum.php>Videos : [www.yuanzige.com](http://www.yuanzige.com)

Fax : +86 - 20 - 36773971

Phone : +86 - 20 - 38271790



## **Disclaimer**

The product specifications and instructions mentioned in this document are for reference only and subject to update without prior notice; Unless otherwise agreed, this document is intended as a product guide only, and none of the representations made herein constitutes a warranty of any kind. The copyright of this document belongs to Guangzhou Xingyi Electronic Technology Co., LTD. Without the written permission of the company, any unit or individual shall not be used for profit-making purposes in any way of dissemination.

In order to get the latest version of product information, please regularly visit the download center or contact the customer service of Taobao ALIENTEK flagship store. Thank you for your tolerance and support.

**Revision History:**

Version	Version Update Notes	Responsible person	Proofreading	Date
V1.0	release officially	ALIENTEK Linux Team	ALIENTEK Linux Team	2024.05.01
V1.1	Correct errors in the text	ALIENTEK Linux Team	ALIENTEK Linux Team	2024.07.31
V1.2	1. Remove the relevant description of CAN 2. Correct the incorrect words in the description 3. Add the data of the industrial wide-temperature core board	ALIENTEK Linux Team	ALIENTEK Linux Team	2025.04.10

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## Chapter 1. Core board overview

### 1.1 Core board introduction

The ATK-CLRK3588B core board is a high-performance core board meticulously developed by the ALIENTEK team based on the RK3588 chip from Rockchip. It is specifically designed for embedded Android, Linux, and OpenHarmony operating systems, featuring outstanding computing capabilities and a rich set of features. This core board is mainly targeted at custom markets in industries such as IoT gateways, NVR storage, high-end industrial control tablets, industrial inspection, industrial control boxes, edge computing, artificial intelligence, and robot vehicle dashboards.

The ATK-CLRK3588B core board offers two specification versions:

- ◎ Commercial grade version:
  - 4GB LPDDR4X + 32GB eMMC
  - 8GB LPDDR4X + 64GB eMMC
  - 16GB LPDDR4X + 128GB eMMC
- ◎ Industrial wide-temperature version:
  - 4GB LPDDR4X + 32GB eMMC
  - 8GB LPDDR4X + 64GB eMMC

This series of products adopt LPDDR4X memory and eMMC storage, providing multiple configuration options ranging from basic to high-performance, which can meet the requirements of various development scenarios. The industrial-grade version is particularly suitable for applications in harsh environments.

The main features of the Rockchip RK3588 chip are as follows:

- ◎ A high-performance, low-power general-purpose SOC, using 8nm advanced process.
- ◎ CPU aspect: Adopting Rockchip RK3588 octa-core flagship processor, 4 Cortex-A76 + 4 Cortex-A55, with the maximum frequency up to 2.4GHz (The maximum operating frequency of the RK3588 chip is subject to the actual frequency used in the chip).
- ◎ Image processing aspect: Built-in 3D GPU (Mali-G610 MC4), supporting OpenGL ES1.1/2.0/3.1/3.2, OpenCL1.1/1.2/2.0 and Vulkan 1.1/1.2, embedded high-performance 2D image accelerator module and image enhancement processor.
- ◎ Neural processing unit aspect: Three-core architecture NPU, with a computing power of up to 6.0TOPS, supporting int4/int8/int16/FP16/BF16/TF32, supporting deep learning frameworks: TensorFlow, Caffe, Tflite, Pytorch, Onnx NN, Android NN, etc.
- ◎ Video encoding and decoding aspect: Built-in multiple powerful hardware engines, supporting H.264, VP9: 8K@30fps, H.265, AVS2: 8K@60fps, AV1: 4K@60fps video decoding; supporting H.264/H.265 8K@30fps video encoding.
- ◎ Supports high-quality JPEG encoding.
- ◎ Image signal processing aspect: Built-in 48MP ISP, implementing multiple algorithm accelerators, such as: 3A, FPN, BLC, DPCC, CAC, HDR, 3DNR, gamma correction, fisheye correction, etc. Supports multi-camera input.
- ◎ Supports multiple display interfaces, multi-screen separate display.

The core board and base board of ALIENTEK ATK-CLRK3588B use a 400Pin board-to-board (BTB) interface form, with a total of 122 GPIOs (reusable for other functions), 173 other function pins

(HDMI, PCIE, USB, MIPI screen, MIPI camera, ADC, SATA, etc.), and 9 power pins (power supply pins for the core board and core board PMIC output power pins, excluding GND).

The core board provides rich development documents and software resources, and the software resources are open. To improve the development efficiency and shorten the development cycle, ALIENTEK specially compiled a series of materials that will be used in development stages for core board users, involving schematics, base board design materials, mechanical structure, component packaging, connector specifications, factory system image source code, compiler, software packages, etc., to facilitate development.

Enterprise customers of batch core board companies can contact the Linux technical support staff of the official Taobao platform "ALIENTEK" to establish an enterprise WeChat technical support group specifically dedicated to serving enterprise customers. Through this exclusive channel, we are committed to providing customers with more efficient and professional technical support services, ensuring that customers can receive timely and accurate answers and assistance during their usage.

## **1.2 Purchase Channels**

ALIENTEK Official Store:

<https://zhengdianyuanzi.tmall.com>

## Chapter 2. Core board hardware parameters

### 2.1 Hardware parameters

Parameter term	Parameter	Note
Size	68mm*54mm	length * width
CPU	Rockchip RK3588(Commercial grade) Rockchip RK3588J(Industrial wide-temperature range)	BGA1088 package
Memory	4/8/16 GB LPDDR4X	Patch encapsulation. Affected by chip supply, there may be a variety of different manufacturers of chips, all the actual patch model shall prevail.
Storage	Commercial grade: 32/64/128 GB Industrial wide-temperature range: 32/64 GB	Patch encapsulation. Affected by chip supply, there may be a variety of different manufacturers of chips, all the actual patch model shall prevail.
Power management chip	RK806-1	
Voltage of operation	Continuous voltage input: 4.0V	
Power consumption (1)	≥1.8W	Static power consumption, which depends on the peripherals
Operating temperature	Commercial grade: 0°C ~ +70°C Industrial wide-temperature range: -25°C ~ +75°C	
Pin number	400 Pin	
Pin spacing	0.4mm	Center spacing of the pins on the core board
Core board connection mode	Board-to-Board (BTB)	Connector: DF40C-100DS-04V(51)
PCB process	10 layers, gold-sinking process, independent grounding signal layer	Using lead-free process

Note: (1) The power consumption data of the core board is input by the environment 12V/2.5A, only connected to the serial port UART2, no other peripherals. The specific power consumption data depends on the peripherals connected to the development board.



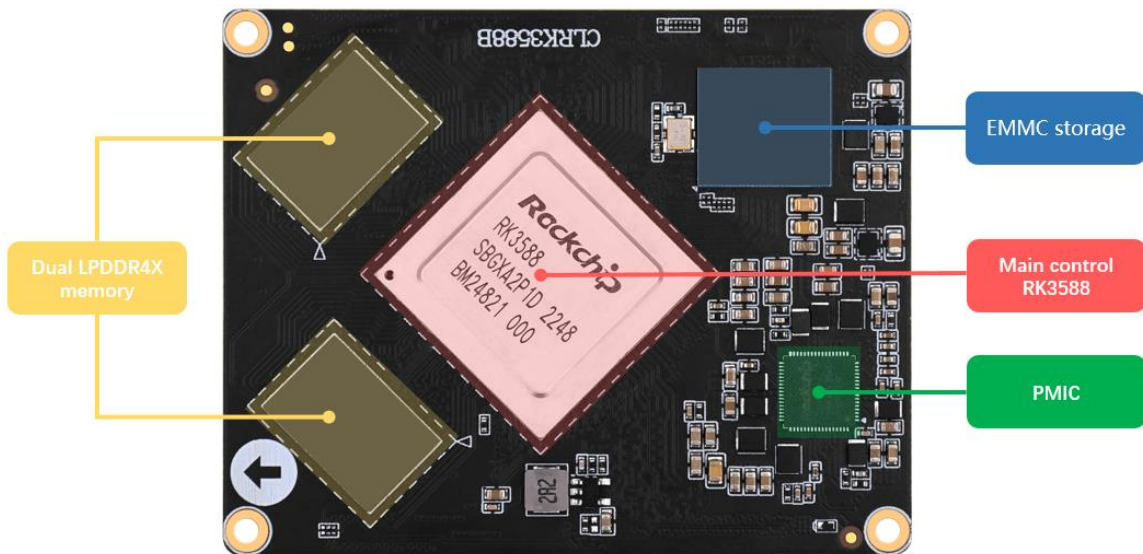


Figure 2.1-1 Front resources of the core board

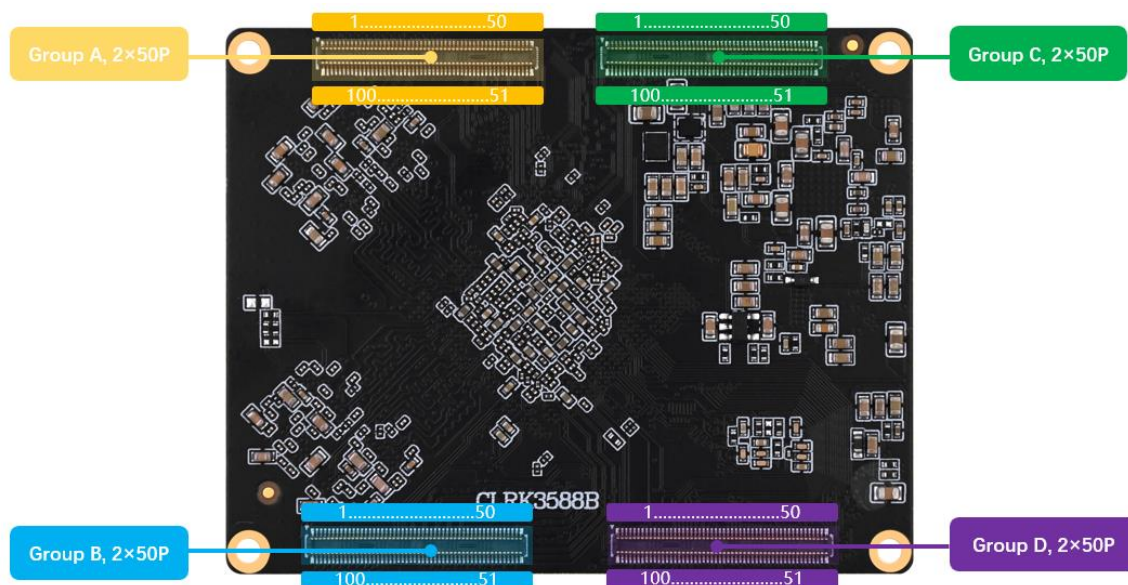


Figure 2.1-2 Core board pin description

## 2.2 Parameters of RK3588 chip

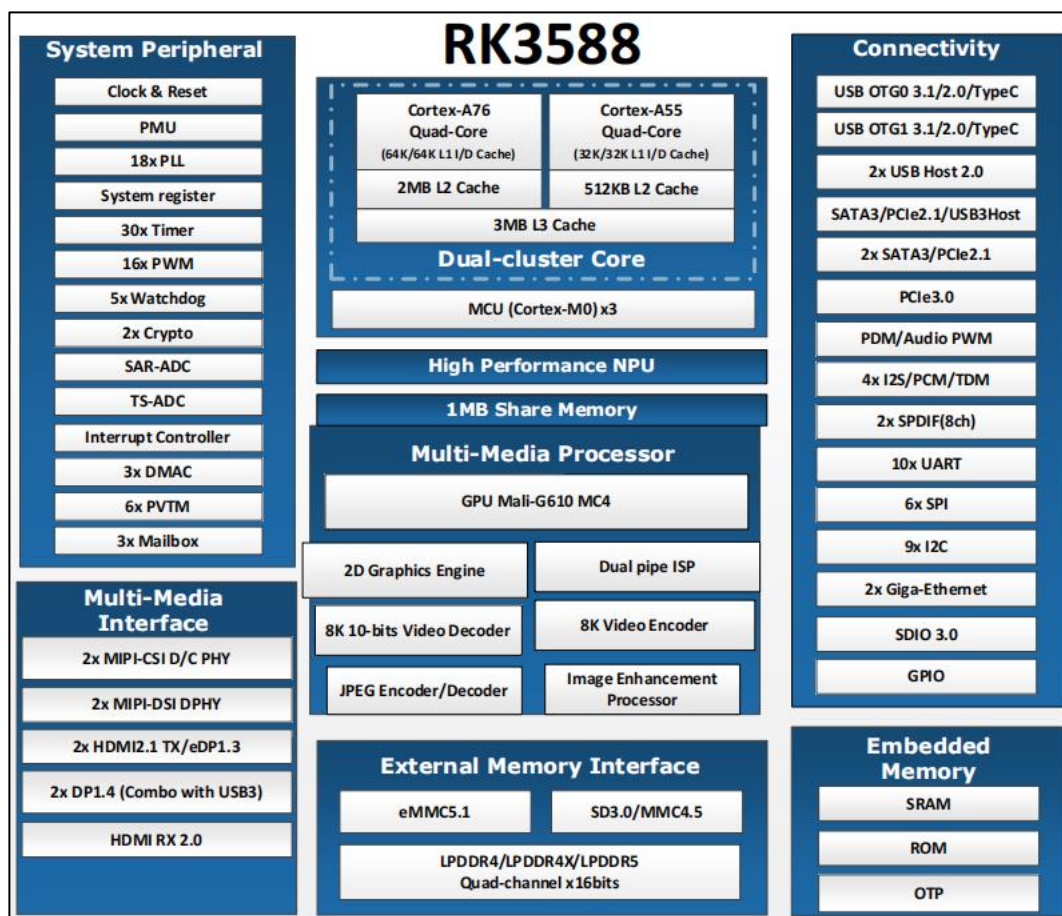


Figure 2.2-1 Chip resources

Main resources of the RK3588 chip:

RK3588 Main control chip resources	
Processor	Four-core Cortex-A76 + four-core Cortex-A5
GPU	ARM GPU (Mali-G610 MC4) supports OpenGL ES 1.1/2.0/3.1/3.2, OpenCL 1.1/1.2/2.0, and Vulkan 1.1/1.2. It incorporates a high-performance 2D graphics accelerator module and an image enhancement processor.
NPU	6.0 TOPS computing power, tri-core architecture, supports int4/int8/int16/FP16/BF16/TF32
ISP	2×ISP (ISP0/ISP1), supports HDR, 2DNR, 3DHR Supports 48M: 8064×6048 @ 15fps Supports 32M: 6528×4898 @ 30fps Supports 16M: 4672×3504 @ 30fps
Video decoder	<ul style="list-style-type: none"> <li>■ H.264、VP9: 8K@30fps (7680x4320)</li> <li>■ H.265、AVS2: 8K@60fps (7680x4320)</li> <li>■ AV1 : 4K@60fps (3840x2160)</li> </ul>
Video encoder	■ H.264、H.265: 8K@30fps
JPEG decoder	Maximum support: 35535 × 65535

	Support YUV400/YUV411/YUV420/YUV422/YUV440/YUV444 Up to 1080P at 280fps, with 560 million pixels per second
JPEG encoder	Maximum support: 8192x8192 (67 megapixels) Maximum resolution: up to 90 million pixels per second
Video input interface	Support two MIPI DC (DPHY/CPHY) combinations Each MIPI DPHY V1.2, with 4 channels, each channel up to 2.5 Gbps Each MIPI CPHY V1.1, with 3 channels, each channel up to 2.5 Gbps
	Support four MIPI CSI DPHYS Each MIPI DPHY V1.2 has 2 channels, with a maximum speed of 2.5 Gbps per channel Support 2 DPHYS to form a 4-channel system
	Support for MIPI camera combination 2 MIPI DCPHY + 4 MIPI CSI DPHY (2 channels), a total of 6 camera inputs 2 MIPI DCPHY + 1 MIPI CSI DPHY (2 channels), a total of 5 camera inputs 2 MIPI DCPHY + 2 MIPI CSI DPHY (4 channels), a total of 4 camera inputs
	Support DVP interface 8/10/12/16-bit standard DVP interface, with maximum data input rate of 150 MHz Support BT.601/BT.605 and BT.1120 VI interfaces
	Supports HDMI RX interface HDMI 2.0 mode: 3.4Gbps ~ 6Gbps HDMI 1.4 mode: 250Mbps ~ 3.4Gbps Supports HDCP 2.3 and HDCP 1.4
	Support HDMI/EDP TX Support two HDMI/EDP TX interface combinations, but both cannot work simultaneously HDMI TX supports a resolution of 7680×4320 at 60Hz, supports bandwidths of 3, 6, 8, 10 and 12 Gbps, and supports HDCP 2.3 EDP TX supports a 4K resolution at 60Hz, supports bandwidths of 1.62 Gbps, 2.7 Gbps and 5.4 Gbps, and supports HDCP 1.3
	Support DP TX Support 2 DP TX 1.4a interfaces, capable of connecting to USB3.1 Gen1 Each interface supports 1/2/4 channels Supports resolution of 7680×4320@30Hz Supports HDCP 2.3 and HDCP 1.3
Display output interface	Supports MIPI DSI Supports 2 MIPI DPHY 2.0 or CPHY 1.1 interfaces The DPHY supports 4 data channels, with the maximum data rate of each channel being 4.5 Gbps The CPHY supports 3 data channels, with the maximum data rate of each channel being 2.0 Gbps Supports the highest 4K@60Hz resolution
	Supports BT.1120 output

	Supports RGB format (up to 8bit), data speed up to 150MHz Supports up to 1920×1080 @ 60Hz
Audio interface	Supports 8 lanes I2S0/I2S1, 2 lanes I2S2/I2S3 Supports TX and RX, audio resolution ranging from 16 to 32 bits, with the maximum sampling rate of 192 KHz
	Support SPDIF0/SPDIF1 Support 2×16-bit audio data storage Support 16/20/24-bit linear PCM transmission and non-linear PCM transmission
	Support PDM0/PDM1 The audio resolution is 16 to 24 bits, and the maximum sampling rate is 192 KHz.
SDIO interface	Compatible with SDIO 3.0 protocol 4-bit data bus width
Ethernet interface	Support two GMAC, with data transmission rates of 10/100/1000M Support RGMII/RMII interface output Support full-duplex or half-duplex
USB 3.1 Gen1	Supports USB 3.1 Gen1, equivalent to USB 3.2 and USB 3.0, with the maximum data rate of 5 Gbps 2 USB 3.1 OTGs, shared with DP TX (USB3OTG_0 and USB3OTG_1) 1 USB 3.1 HOST, shared with PIPE PHY2 (USB3OTG_2)
USB 2.0 HOST	Supports two USB 2.0 HOSTs Supports high-speed (480Mbps), full-speed (12Mbps), and low-speed (1.5Mbps) modes
PCIE 2.1 interface	Three PCIE 2.1 controllers, sharing the same resources with SATA 3.0 and USB 3.1 controllers Each PCIE 2.1 interface supports 1 lane
SATA interface	Three SATA controllers, shared with PCIE 2.1 and USB3.1 controllers Each SATA interface supports one port and has a maximum data rate of 6 Gbps
PCIE 3.0 interface	Supports 4-channel PCIE 3.0 The maximum data rate supported is 8 Gbps Supports 4 combination modes: 1×4 lanes, 2×2 lanes, 4×1 lanes, 1×2 lanes + 2×1 lanes
SPI	5 SPI controllers Each controller supports two chip select outputs Supports serial master, serial slave modes, and is software-configurable
I2C	Nine I2C master controllers Supporting 7-bit and 10-bit address modes Data transmission rate in fast mode is 400K bits per second
UART	10 UART interfaces Built-in 2 64-bit FIFOs, supporting TX and RX transmission The maximum baud rate is 4 Mbps Supports automatic flow control mode

PWM	16 on-chip PWMs Among them, PWM3, PWM7, PWM11, and PWM15 can be used for infrared applications
ADC	8 SARADCs Support 12-bit resolution, with a sampling rate of up to 1MS/S
Package	FCBGA1088L

Note: These are the parameter values of the chip data sheet resources, not the available resource parameters of the core board. The author has roughly described the peripheral attributes here. For more detailed information, please refer to the data sheet of RK3588.

## 2.3 Reusable Resources of Core Board Pins

The core board has connected all the IOs on the processor. Users can design their own baseboards according to their own needs to utilize the IO resources on the core board and convert the IOs into the functions they require. The default factory firmware of the core board only supports the functions described in Section 2.3 and cannot be directly used for other re-usable functions. The firmware for re-usable functions needs to be developed separately. The pin re-usage table can be referred to in the reference disk.

According to the peripheral functions, the following lists the maximum number of individual peripherals that the ATK-CLRK3588B core board can re-use. The specific selection can be combined with the data sheet of the chip. The reference is from the data sheet of the RK3588 chip (The maximum number of individual peripherals refers to the maximum number of a certain peripheral that the core board can use without using other peripherals).

Pin peripheral functions	Maximum number of multiplexing for a single peripheral device	Note
MIPI camera interface	4	2 MIPI DCPHY + 2 MIPI CSI DPHY (4 channels)
HDMI RX interface	1	Supports HDCP 2.3 and HDCP 1.4
MIPI screen interface	2	2 MIPI DPHY2.0
HDMI screen interface	2	2 HDMI TX, up to 7680×4320 @ 60Hz
PWM	16	IR applications are recommended to use PWM3/PWM7/PWM11/PWM15
I2S	4	I2S0/I2S1 are 8 channels, I2S2/I2S3 are 2 channels
SDIO	1	Compatible with SDIO 3.0, 4-bit data bus width
Ethernet	2	10/100/1000M Ethernet controller
USB 2.0 HOST	2	Usable as USB HUB expansion
USB 3.0 OTG	2	Shared with DP TX (USB3OTG_0 and USB3OTG_1)
USB3.0 HOST	1	Shared with PIPE PHY2 (USB3OTG_2)
PCIE2.0	1	Supports 5Gbps data rate

PCIE3.0	1	Supports 8Gbps data rate
SATA	1	Supports eSATA
SPI	6	Supports serial master and serial slave modes, configurable via software
I2C	9	Supports 7-bit and 10-bit address modes
UART	10	Maximum baud rate is 4 Mbps
SARADC	8	Supports 12-bit resolution, sampling rate up to 1 MS/S

Note: The ATK-DLRK3588B development board and the ATK-CLRK3588B core board only support the modules and accessories sold by the official store of ALIENTEK Technology. For other items, users need to develop them themselves or communicate and learn in the group. Currently, all the materials provided by ALIENTEK Technology are stored in the cloud drive of the official download center of ALIENTEK Technology.



## Chapter 3. Core board software resources

### 3.1 Factory system software resources

The factory Linux system software resources are shown in Table 3.1 below:

Table 3.1 Development board factory Linux system software resources

Types	Description	Note
U-Boot	The version is 2017.09	Provide source code
Linux Kernel	The version is 5.10	Provide source code
Buildroot	The version is 2021.11	Provide source code
Qt5	The version is 5.15.8	Provide source code
Cross compiler	aarch64-buildroot-linux-gnu	For compiling the root file system and upper-layer applications
	gcc-arm-10.3-2021.07-x86_64-aarch64-none-linux-gnu	For compiling U-Boot and Linux Kernel
System burn method	Upper computer programming/programming upload	Provide a user guide
MIPI LCD driver	MIPI DSI driver	Provide source code
Touch	GT9xx capacitive screen touch screen (only available at ALIENTEK)	Provide source code
Network	The Gigabit Ethernet PHY is YT8531	Provide source code
USB HOST	Two USB HOST 2.0 interfaces	Provide source code
4G/5G module	Supports Quectel 5G module RM500U, Quectel 4G module EM05, Fibocom FG132-GL	Provide source code
PMIC	RK806-1 power management chip	Provide source code
Function button	ADC realizes 4 function keys	Provide source code
UPDATE button	Upgrade function	Provide source code
RESET button	Reset function	Provide source code
PWRON button	Hibernation function	Provide source code
External RTC	AT8563 RTC chip	Provide source code
Six-axis sensor (I2C)	SH3001, I2C interface	Provide source code
TF card/EMMC	SDMMC driver	Provide source code
LED	GPIO	Provide source code
Audio	Power chip RK809 has built-in audio	Provide source code
USB WIFI&BT	RTL8733BU, supports WIFI6	Provide source code
Serial port	USB debugging serial port, RS232, RS485	Provide source code
USB 3.1 TypeC	Supports OTG function	Provide source code
ADC	ADC driver	Provide source code

MIPI CSI	Supports IMX415	Provide source code
PWM	LCD PWM backlight	Provide source code
HDMI	Two HDMI outputs and one HDMI input	Provide source code
PCIE WIFI&BT	E_KEY socket interface	Provide source code
PCIE SSD	M_KEY socket interface	Provide source code
SATA	Supports SATA hard drives	Provide source code

Table 3.1.1 The factory-installed Linux system software resources of the development board

The Android system software resources at the time of factory shipment are as shown in the table below:

Types	Description	Note
U-Boot	The version is 2017.09	Provide source code
Linux Kernel	The version is 5.10	Provide source code
Android	Provide the source code of Android 12 and Android 13	Provide source code
System burn method	Upper computer programming/programming upload	Provide a user guide
MIPI LCD driver	MIPI DSI driver	Provide source code
Touch	GT9xx capacitive screen touch screen (only available at ALIENTEK)	Provide source code
Network	The Gigabit Ethernet PHY is YT8531	Provide source code
USB HOST	Two USB HOST 2.0 interfaces	Provide source code
4G/5G module	Supports Quectel 5G module RM500U, Quectel 4G module EM05, Fibocom FG132-GL	Provide source code
PMIC	RK806-1 power management chip	Provide source code
Function button	ADC realizes 4 function keys	Provide source code
UPDATE button	Upgrade function	Provide source code
RESET button	Reset function	Provide source code
PWRON button	Hibernation function	Provide source code
External RTC	AT8563 RTC chip	Provide source code
Six-axis sensor (I2C)	SH3001, I2C interface	Provide source code
TF card/EMMC	SDMMC driver	Provide source code
LED	GPIO	Provide source code
Audio	Power chip RK809 has built-in audio	Provide source code
USB WIFI&BT	RTL8733BU, supports WIFI6	Provide source code
Serial port	USB debugging serial port, RS232, RS485	Provide source code
USB 3.1 TypeC	Supports OTG function	Provide source code
ADC	ADC driver	Provide source code
MIPI CSI	Supports IMX415	Provide source code
PWM	LCD PWM backlight	Provide source code
HDMI	Two HDMI outputs and one HDMI input	Provide source code
PCIE WIFI&BT	E_KEY socket interface	Provide source code



PCIE SSD	M_KEY socket interface	Provide source code
SATA	Supports SATA hard drives	Provide source code

Table 3.1.2 Software Resources of the Factory-Prepared Android System for the Development Board

This is the end of the explanation about the software resources for the ALIENTEK ATK-CLRK3588B development board. We will continue to update the software resources.

## Chapter 4. Core board certification instructions

### 4.1 FCC certification



**GTG**  
Global Testing Group

**ATTESTATION OF CONFORMITY**

No. 24AE041167F002

The device bearing the trade name and model specified below has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified.

Report No. : E04A24041167F00201

Applicant : Guangzhou Xingyi Electronic Technology Co., Ltd

Address : Room 805-808, Room 801, Building 4, No. 1, 3, and 5, Kesheng Road, Guangzhou Private Science and Technology Park, No. 1633 Beital Road, Baiyun District, Guangzhou City

Manufacturer : Guangzhou Xingyi Electronic Technology Co., Ltd

Address : Room 805-808, Room 801, Building 4, No. 1, 3, and 5, Kesheng Road, Guangzhou Private Science and Technology Park, No. 1633 Beital Road, Baiyun District, Guangzhou City

Description of Product : RK3588 Core Board

Model No. : ATK-CLRK3588B

Trade Mark : ALIENTEK

Rating : DC12V, 2.5A

Test Standards : FCC 47 CFR Part 15 Subpart B

**FCC**

**Test Laboratory**  
Shawn Wen  
Laboratory Manager  
Date of Issue: May 29, 2024

This attestation of conformity is based on a single evaluation of the submitted sample(s) of the above mentioned product. It does not imply an assessment of the production of the products.

Guangdong Global Testing Technology Co., Ltd.  
Room 101-105, 203-210, Building 1, No 2, Kaiji Road, Songshan Lake Park, Dongguan city, Guangdong, People's Republic of China, 523808  
Web: [www.gtgroup.com](http://www.gtgroup.com) E-mail: [info@gtgroup.com](mailto:info@gtgroup.com) Tel: 86-4007558668

1

Figure 4.1-1 FCC Certification

## 4.2 CE certification



Global Testing Group

## ATTESTATION OF CONFORMITY

**No. 24AE041167E001**

The submitted sample of below equipment has been tested in according to Electromagnetic Compatibility Directive 2014/30/EU with the following standards. The test report(s) show that the product complies with standard(s) recognized as giving presumption of compliance with the principal protection requirement of the EC Council Directive of 2014/30/EU.

<b>Report No.</b>	: E04A24041167E00101
<b>Applicant</b>	: Guangzhou Xingyi Electronic Technology Co., Ltd
<b>Address</b>	: Room 805-808, Room 801, Building 4, No. 1, 3, and 5, Kesheng Road, Guangzhou Private Science and Technology Park, No. 1633 Beitai Road, Baiyun District, Guangzhou City
<b>Manufacturer</b>	: Guangzhou Xingyi Electronic Technology Co., Ltd
<b>Address</b>	: Room 805-808, Room 801, Building 4, No. 1, 3, and 5, Kesheng Road, Guangzhou Private Science and Technology Park, No. 1633 Beitai Road, Baiyun District, Guangzhou City
<b>Description of Product</b>	: RK3588 Core Board
<b>Model No.</b>	: ATK-CLRK3588B
<b>Trade Mark</b>	: ALIENTEK
<b>Rating</b>	: DC12V, 2.5A
<b>Test Standards</b>	: EN 55032:2015/A1:2020 EN 55035:2017/A11:2020

After preparation of the necessary technical documentation as well as the EU declaration of conformity, the CE marking as below can be affixed on the product if all relevant effective EU-directives or regulations related to CE marking have been complied with. The EU declaration of conformity is issued under the sole responsibility of the applicant or manufacturer.

CE



Shawn Wen  
Laboratory Manager  
Date of Issue: May 29, 2024

This attestation of conformity is based on a single evaluation of the submitted sample(s) of the above mentioned product. It does not imply an assessment of the production of the products.

**Guangdong Global Testing Technology Co., Ltd.**  
Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park, Dongguan city, Guangdong, People's Republic of China, 523808  
Web: [www.gtgroup.com](http://www.gtgroup.com) E-mail: [info@gtgroup.com](mailto:info@gtgroup.com) Tel: 86-4007558988

Figure 4.2-1 CE Certification

## 4.3 RoHS certification

**UONE**

**CERTIFICATE OF CONFORMITY**

**No.:U00901240412614E**

Applicant : Guangzhou Xingyi Electronic Technology Co., Ltd  
 Address : Room 805-808, Room 801, Building 4, No. 1, 3, and 5, Kesheng Road, Guangzhou Private Science and Technology Park, No. 1633 Beitai Road, Baiyun District, Guangzhou City

Manufacturer : Guangzhou Xingyi Electronic Technology Co., Ltd  
 Address : Room 805-808, Room 801, Building 4, No. 1, 3, and 5, Kesheng Road, Guangzhou Private Science and Technology Park, No. 1633 Beitai Road, Baiyun District, Guangzhou City

Trade Mark : 正点原子  
 Sample Name : RK3588 Core Board  
 Model No. : ATK-CLRK3588B

The submitted sample of the above mentioned product has been tested and found to comply with the following European Directive:

**RoHS Directive 2011/65/EU & (EU) 2015/863**

The standard(s) used for showing compliance with the essential requirements:

Applicable Standard(s)	Test Report(s) Number
IEC 62321-1:2013, IEC 62321-2: 2021 IEC 62321-3-1:2013 IEC62321-4: 2013+A1:2017, IEC 62321-5:2013 IEC 62321-6:2015, IEC 62321-7-1: 2015 IEC 62321-7-2: 2017, IEC 62321-8: 2017	U00901240412614E

This certification is part of the full test report(s) and should be read in conjunction with it. The certificate is based on a single evaluation of one sample of above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab logo. Other CE marking directives may apply have not been considered during the RoHS assessment.

As specified by applicant, to test content in the selected materials of the submitted samples. Test results are used only for the selected material of the sample.

**CE** **RoHS**

Shen Zhen UONE Test Co., LTD.  
 Unit 4B, Building 84, China Merchants Guangming Science Park, Guangming Road 3009, Guangming New District, Shenzhen  
 Tel: 0755-23695858 Fax: 0755-23699878 Email: [sales@uonetest.com](mailto:sales@uonetest.com) <http://www.uonetest.com>

**UONE**  
 Apr 18, 2024  
 TESTING SERVICE

Figure 4.3-1 RoHS Certification



## 4.4 Electromagnetic Compatibility Test - Commercial Grade



产品测试报告

## 测试报告总结

产品信息	产品名称	ATK-DLRK3588B 底板 ATK-CLRK3588B 核心板（商业级）		
	产品型号	ATK-DLRK3588B ATK-CLRK3588B		
	额定参数	输入电压：DC12V；输入电流：300mA（带屏）		
	产品编号	——		
	制造单位	广州市星翼电子科技有限公司		
	检前产品描述	完好	样品数量	3PCS
试验信息	试验日期	2024/06/01		
	测试项目	静电放电抗扰度试验、电快速瞬变脉冲群抗扰度试验		
	检验依据	1. GB/T 17626.2-2018, 电磁兼容 试验和测量技术 静电放电抗扰度试验 2. GB/T 17626.4-2018, 电磁兼容 试验和测试技术 电快速瞬变脉冲群抗扰度试验		
	试验环境条件	温度：28℃；湿度：55%RH		
	测试场地	广州市星翼电子科技有限公司测试实验室		
结论	根据检验依据所列标准及要求，受检样品所试验的项目全部符合要求。			
备注				

测试：\_\_\_\_\_ 审核：\_\_\_\_\_ 批准：\_\_\_\_\_

日期：\_\_\_\_\_ 年 \_\_\_\_\_ 月 \_\_\_\_\_ 日

Figure 4.4-1 Electromagnetic Compatibility Test Report - Commercial Grade

## 4.5 Reliability Test Report - Commercial Grade


产品测试报告

## 测试报告总结

产品信息	产品名称	ATK-DLRK3588B 底板 ATK-CLRK3588B 核心板（商业级）		
	产品型号	ATK-DLRK3588B ATK-CLRK3588B		
	额定参数	输入电压：DC12V，输入电流：160mA		
	产品编号	——		
	制造单位	广州市星翼电子科技有限公司		
	检前产品描述	完好	样品数量	3PCS
试验信息	试验日期	2024/05/17		
	测试项目	低温工作、低温储存、冷热冲击、恒定湿热、温度循环		
	检验依据	1. GB/T 2423.1-2008 电工电子产品环境试验 第2部分：试验方法 试验 A：低温 2. GB/T 2423.3-2006 电工电子产品环境试验 第2部分 试验方法 试验 Cab：恒定湿热试验 3. GB/T 2423.22-2012 环境试验 第2部分 试验方法 试验 N：温度循环变化		
	试验环境条件	0℃ ~ +70℃；85%RH		
	测试场地	广州市星翼电子科技有限公司测试实验室		
结论	根据检验依据所列标准及要求，受检样品所试验的项目全部符合要求。			
备注				

测试：\_\_\_\_\_ 审核：\_\_\_\_\_ 批准：\_\_\_\_\_

日期：\_\_\_\_\_ 年 \_\_\_\_\_ 月 \_\_\_\_\_ 日

Figure 4.5-1 Reliability Test Report - Commercial Grade

## Chapter 5. Core Board Structural Dimensions

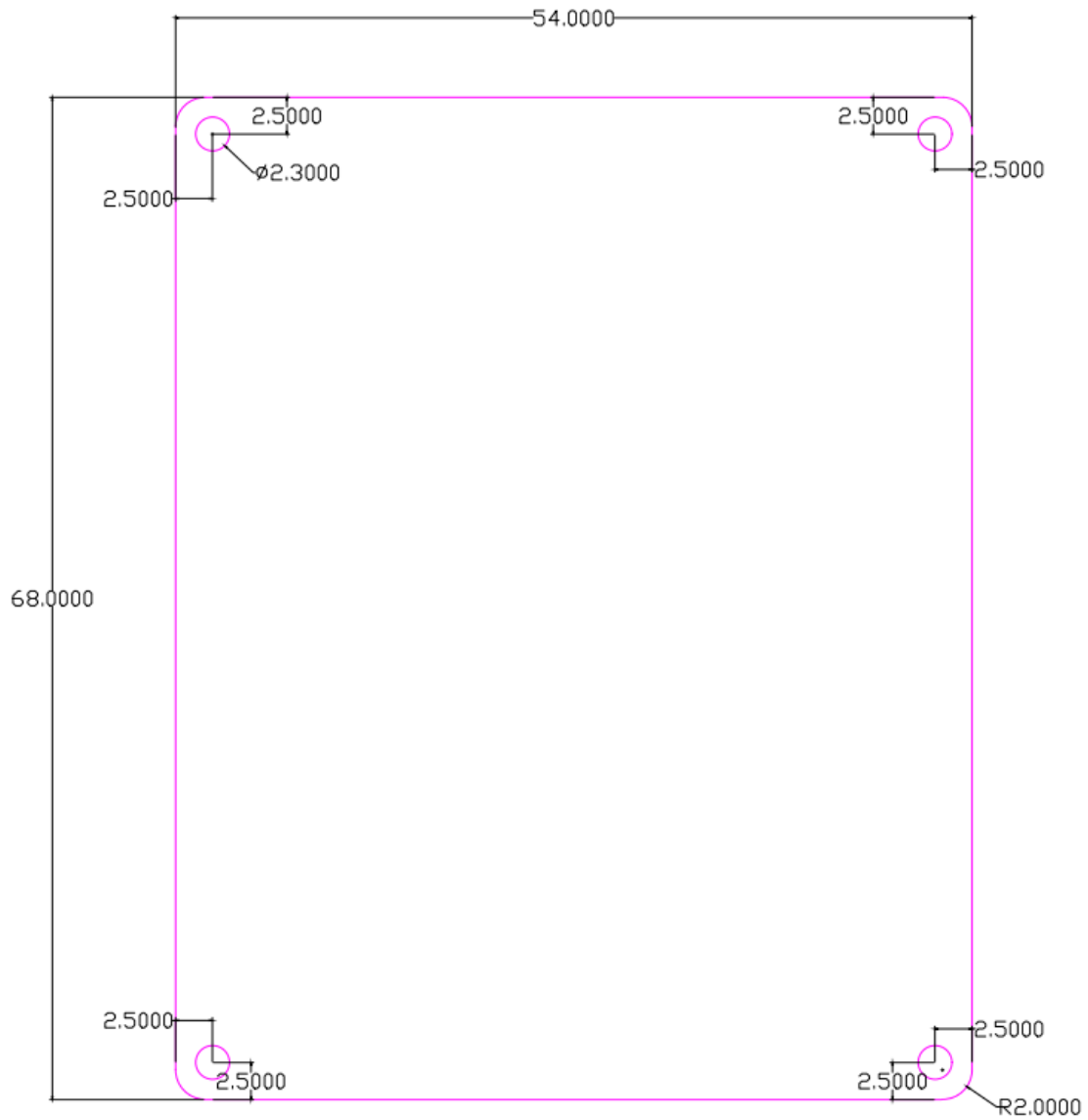


Figure 4.5-1 Core board structure size diagram

## Chapter 6. Development materials

Download development materials:

<http://www.openedv.com/docs/boards/arm-linux/index.html>

Note: The development board information will be continuously updated according to customer requirements, and the online disk content is the actual final version.

The development materials are written based on the ATK-DLRK3588B development board. Please use the development board for project research and testing.

Development Board Information Directory:

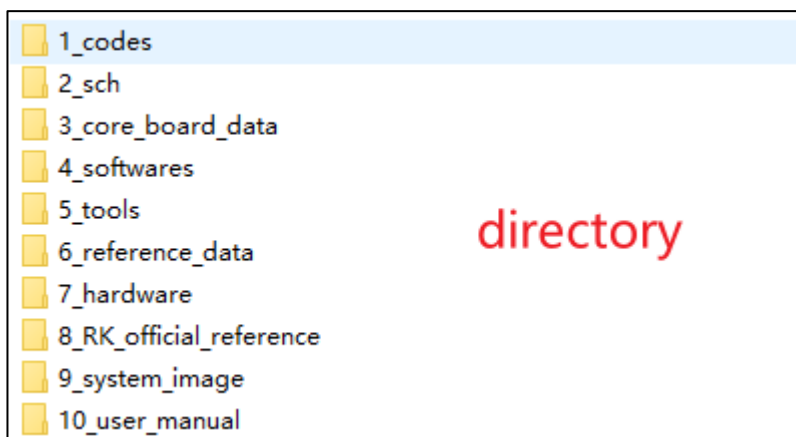


Figure 4.5-1 Development board catalog

The core board information is based on the RK3588 core board of the store and extracted from the ATK-DLRK3588B development board information. It is designed to be easily downloadable and used by users independently.

Core board information directory:

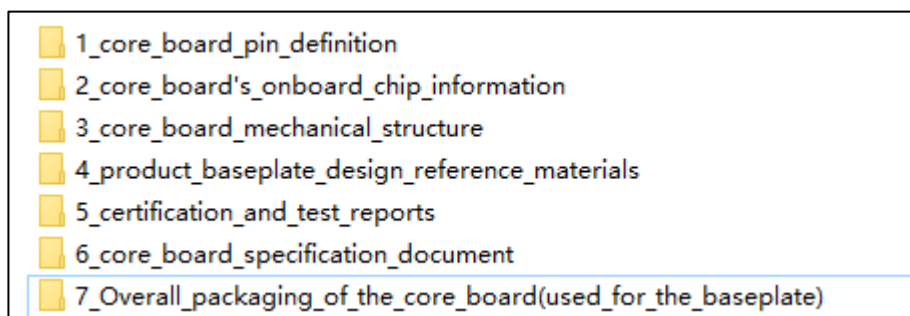


Figure 4.5-2 Core Board Information List



## Chapter 7. Optional accessories

### 7.1 ATK-DLRK3588B development board

Purchase link:

<https://zhengdianyuanzi.tmall.com>

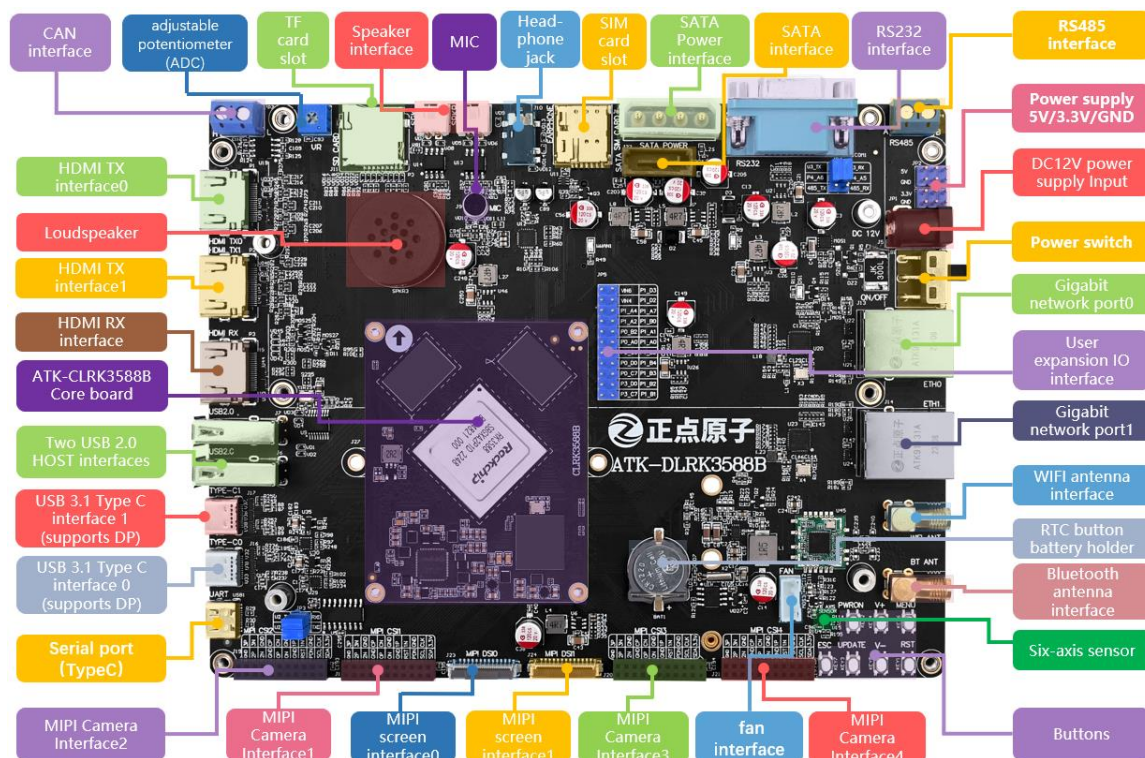


Figure 7.1-1 ATK-DLRK3588B development board

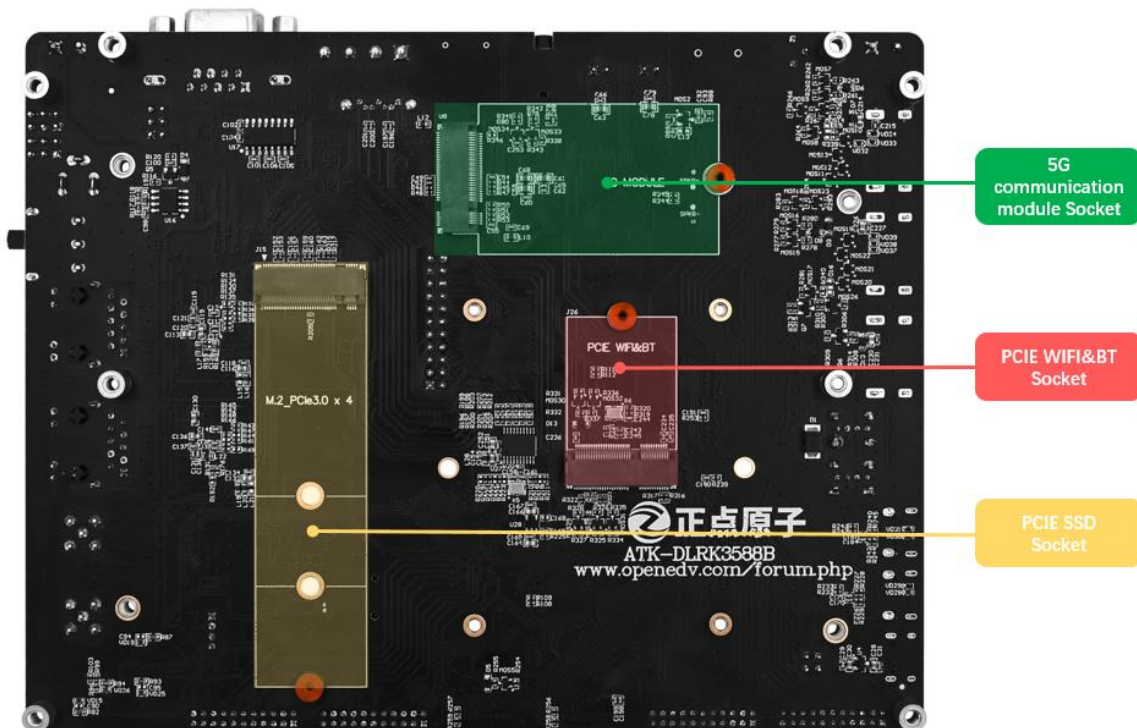


Figure 7.1-2 The back of the ATK-DLRK3588B development board

## 7.2 Module Accessories

The following accessories can all be purchased at the ALIENTEK store.

<https://zhengdianyuanzi.tmall.com>

MIPI camera	IMX415
MIPI screen	5.5-inch 1080×1920, 5.5-inch 720×1080, 10.1-inch 800×1280
Baseboard connector (connected to the main board)	DF40C-100DS-04V(51)
Other accessories	USB serial port converter three-in-one module (RS232, RS485, TTL), USB Type-C cable
Core board cooling	Development board cooling fan kit

## Chapter 8. Precautions and maintenance

### Notes

- Do not plug and unplug peripheral modules with power!
- Before using the product, please carefully read this manual and related development manuals, and pay attention to the applicable matters of the platform.
- Follow all instructions and warnings on the product.
- Please use this product in a cool, dry and clean place.
- Please keep the product dry. If any liquid splashes or soaks, power off immediately and let dry thoroughly.
- Do not use organic solvents or corrosive liquids to clean the product.
- Do not use or store this product in dusty, dirty and messy environment.
- If not used for a long time, please package this product, pay attention to moisture-proof and dust-proof.
- Pay attention to the ventilation and heat dissipation of the product during use to avoid component damage caused by excessive temperature during operation.
- Do not use this product in alternating hot and cold environment to avoid dew damage to components.
- Do not treat this product roughly, drop, knock or shake violently may damage the line and components.
- Pay attention to anti-static when using this product.
- FPC flexible cable is fragile, when plugging cable, pay attention to check whether the metal at both ends of the cable is misplaced and falling off.
- All products have passed the product test before shipment. Please use the development board corresponding to the ALIENTEK for power on test for the first time.
- Do not repair or disassemble the company's products by yourself. If the product fails, please contact the company in time for maintenance.
- Unauthorized modification or use of unauthorized parts may damage the product, the resulting damage will not be repaired.

## **Chapter 9. After sales service**

### **9.1 Terms of after-sales service**

1). After receiving the goods, please open them in front of the express, and sign after acceptance. If you find that the goods are less after signing, take photos in time and contact the seller's customer service to explain the situation within 15 days. If the feedback is lack of goods after 15 days, we will not reissue the goods. Other reasons notwithstanding).

2). 15 days -1 month: we are responsible for the return freight repair of product problems. Human factors damage expensive main chip or LCD screen, touch screen. The buyer needs to pay the cost and one time shipping fee, no maintenance fee.

3). 1-3 months: the problem of the product itself (non-human factors), we are responsible for the delivery of the past freight maintenance. If the main chip is burned out and the LCD screen and touch screen are damaged, the buyer needs to pay the cost, and the maintenance fee is not charged.

4) After 3 months: the buyer shall bear the return freight and the cost of chip, LCD screen and touch screen. No service charge.

### **9.2 After-sales Support**

Technical support:

QQ group: ALIENTEK Rockchip Communication group

ALIENTEK RK3588 User Group (order number required)

Taobao shop: ALIENTEK flagship store

Forum: <http://www.openedv.com/forum-277-1.html>