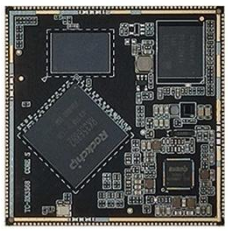


TC-RK3568 Stamp Hole Core board

SOM3568 is a high-performance core board designed by Shenzhen Thinkcore based on the RK3568 micro processor of Rockchip. The CPU adopts a quad core 64 bit Cortex-A55, 22nm advanced technology, and the main frequency is up to 2.0GHz; Integrated ARM G52 2EE GPU, fully compatible with OpenGL ES 1.1/2.0/3.2, OpenCL 2.0, Vulkan 1.1, etc; Built in the third generation NPU RKNN developed by Rockchip Micro, the computing power is 0.8Tops, and it supports deep learning frameworks such as caffe, TensorFlow, mxnet, etc. The model can be converted with one click.

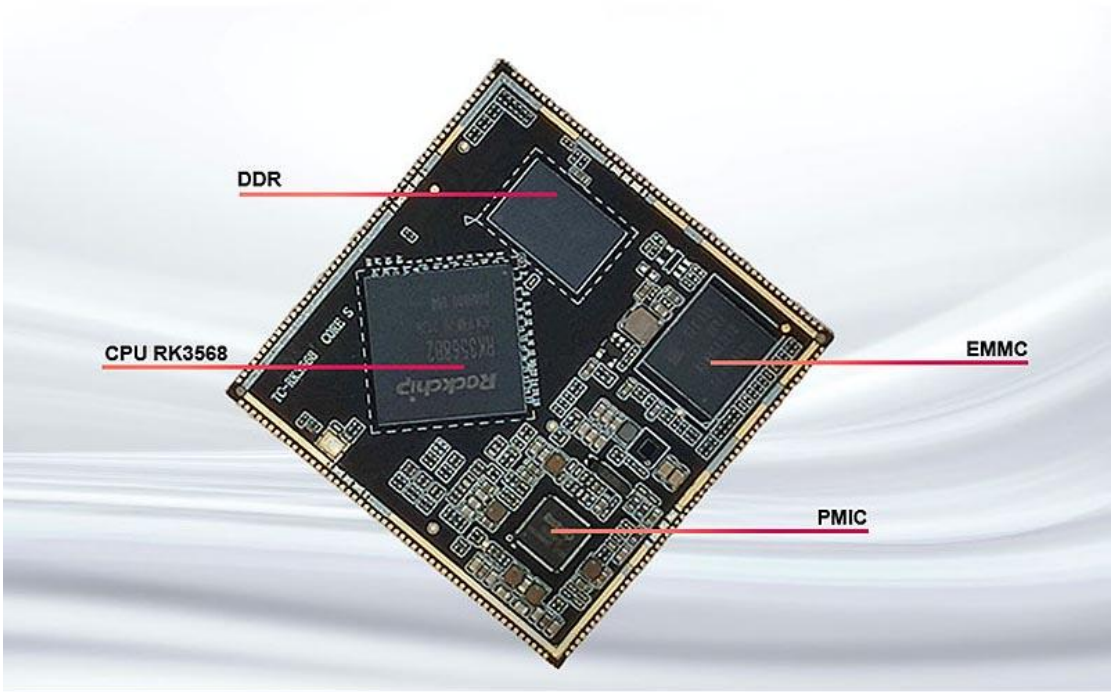
It has excellent video processing performance and supports 4K 60fps H.265/H 264/VP9 video decoding, supporting 1080P 60fps H.265/H 264 video encoding, supporting 8M ISP HDR.

The SOM3568 can be configured with a maximum memory capacity of 8GB, up to 32Bit width, and a frequency of up to 1600MHz; Support full link ECC, make data more secure and reliable, and meet the requirements of large memory product application scenarios.

It has rich interface resources, supports two-way GMAC, expandable 10/100/1000Mbps network interface, supports two-way PCIE GEN3.0 interface, and has UART/SPI/I2C/SDIO and other common interfaces.

The SO-DIMM interface standard is adopted to make the product more stable, reliable and convenient for engineers to design products based on modules, so that the product can be quickly launched.

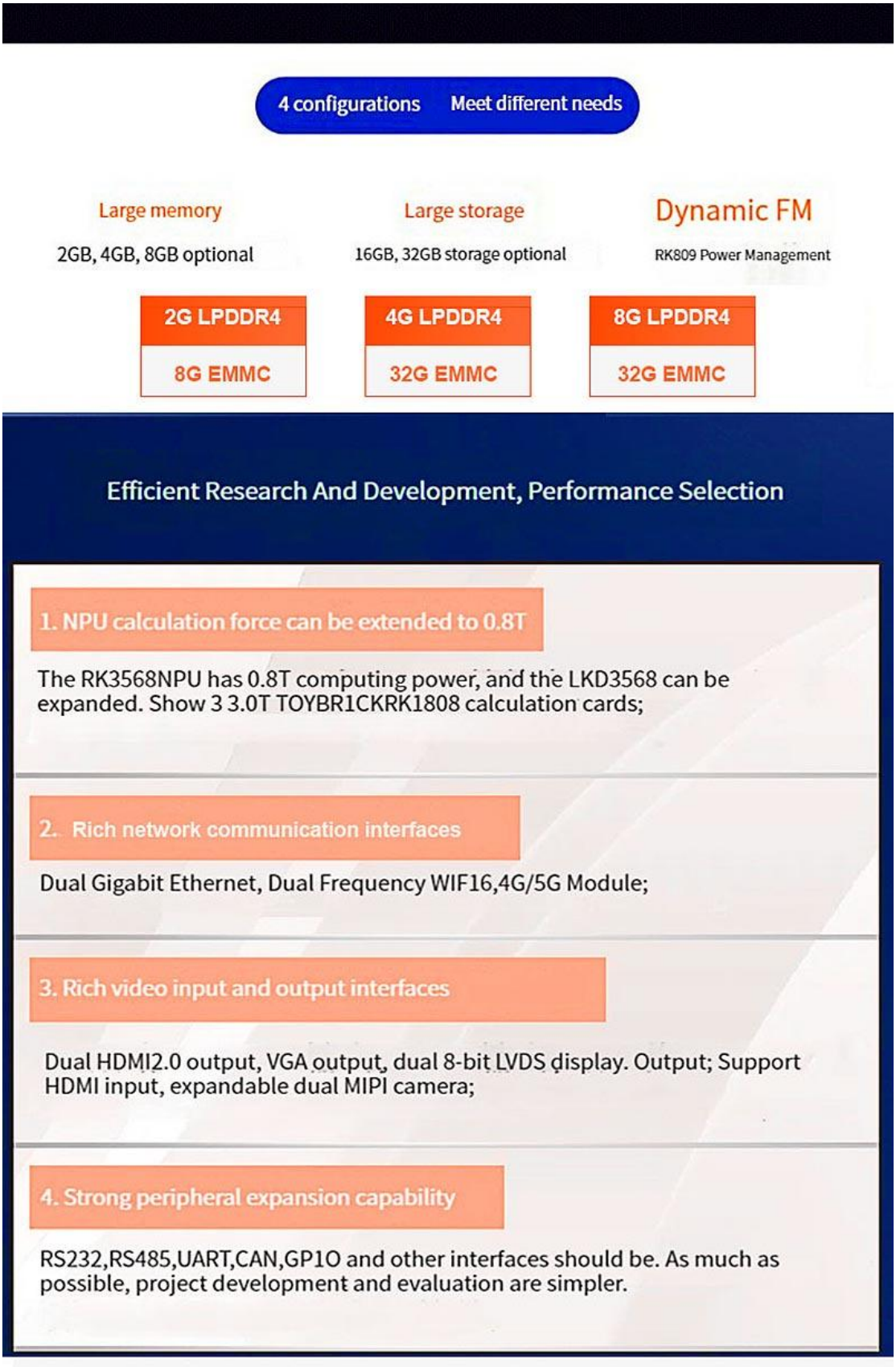
SOM3568 supports Android 11, Ubuntu, Debian10, Buildroot+QT and other systems with excellent real-time performance. It is widely used in IoT gateway, edge computing, cloud terminal, intelligent NVR, industrial control, face gate, vehicle mounted central control and other scenarios. It is equipped with complete development materials and mature application solutions, which can reduce the threshold of customer research and development and shorten the product research and development cycle.



Efficiency Neural Network NPU boosts Universal Industrial embedded Application Aialization


With 0.8tops computing power, trillions of operations per second can be realized at low power consumption
NPU
Powerful decoding and encoding ability
4K
60 frame frequency decoding
H.265/H.264/VP9/VP8
Simultaneous Decoding of H.265/H.264/VP9/VP8 Multichannel Video Source
TC-RK3568 has powerful video coding and decoding capabilities, high performance VPU supports 4K60 frame video decoding, multi-view time code: H.265/H.264/VP9/VP8 video decoding and 1080p100fps H.265/H.264/VP9 machine frequency coding
Normal
4K


Support for same display and
different display output


4 configurations Meet different needs
Large memory
2GB, 4GB, 8GB optional
Large storage
16GB, 32GB storage optional
Dynamic FM
RK809 Power Management
2G LPDDR4
8G EMMC
4G LPDDR4
32G EMMC
8G LPDDR4
32G EMMC
Efficient Research And Development, Performance Selection
1. NPU calculation force can be extended to 0.8T
The RK3568NPU has 0.8T computing power, and the LKD3568 can be expanded. Show 3 3.0T TOYBR1CKRK1808 calculation cards;
2. Rich network communication interfaces
Dual Gigabit Ethernet, Dual Frequency WIF16,4G/5G Module;
3. Rich video input and output interfaces
Dual HDMI2.0 output, VGA output, dual 8-bit LVDS display. Output; Support HDMI input, expandable dual MIPI camera;
4. Strong peripheral expansion capability
RS232,RS485,UART,CAN,GP1O and other interfaces should be. As much as possible, project development and evaluation are simpler.

Multi-screen Display

Three-screen displayEffectively Improve the Expansion of Industry Customization

Supports HDMI2.0, EDP, LVDS, RGB, MIPI-DSI signal interfaces

RK3568 can realize three-screen display, which mainly depends on the built-in VOP controller of RK3568 chip, Supporting simultaneous output of three videos can effectively improve the scalability of industry customization.

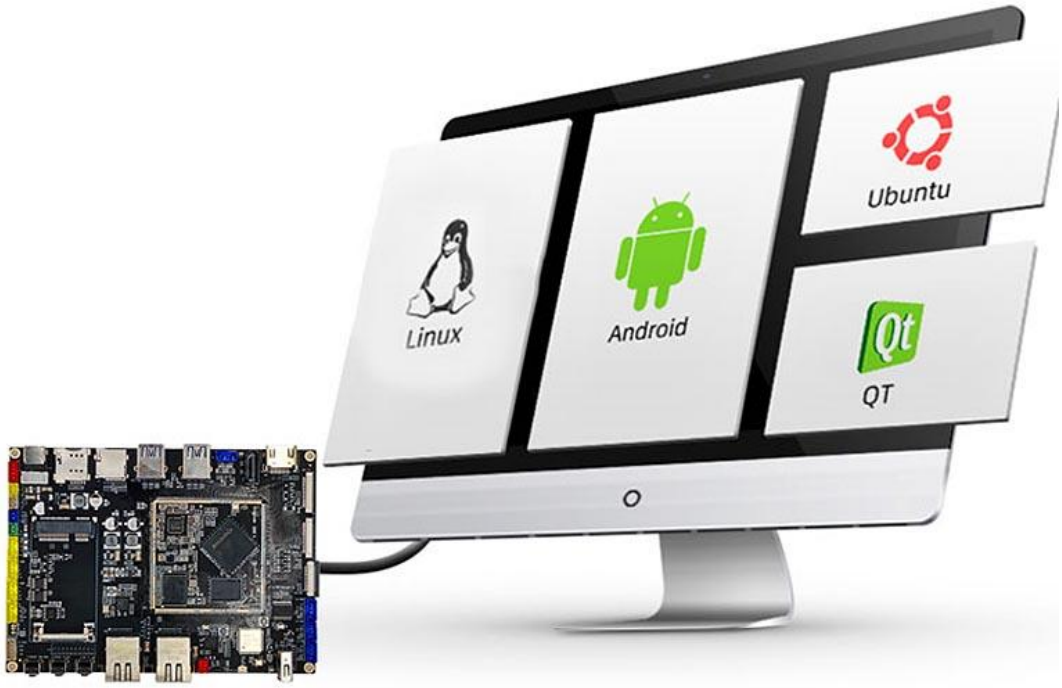
NVR Solution

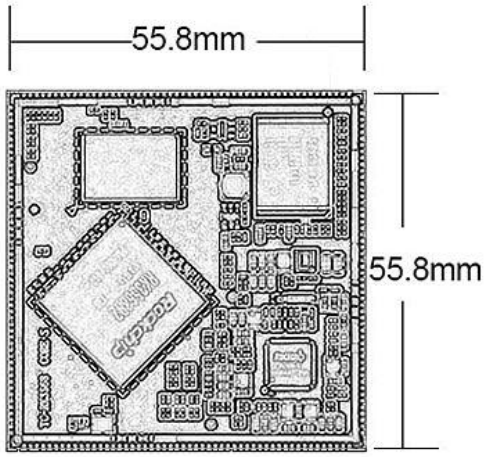
Enabling AI hard disk Video Recorder

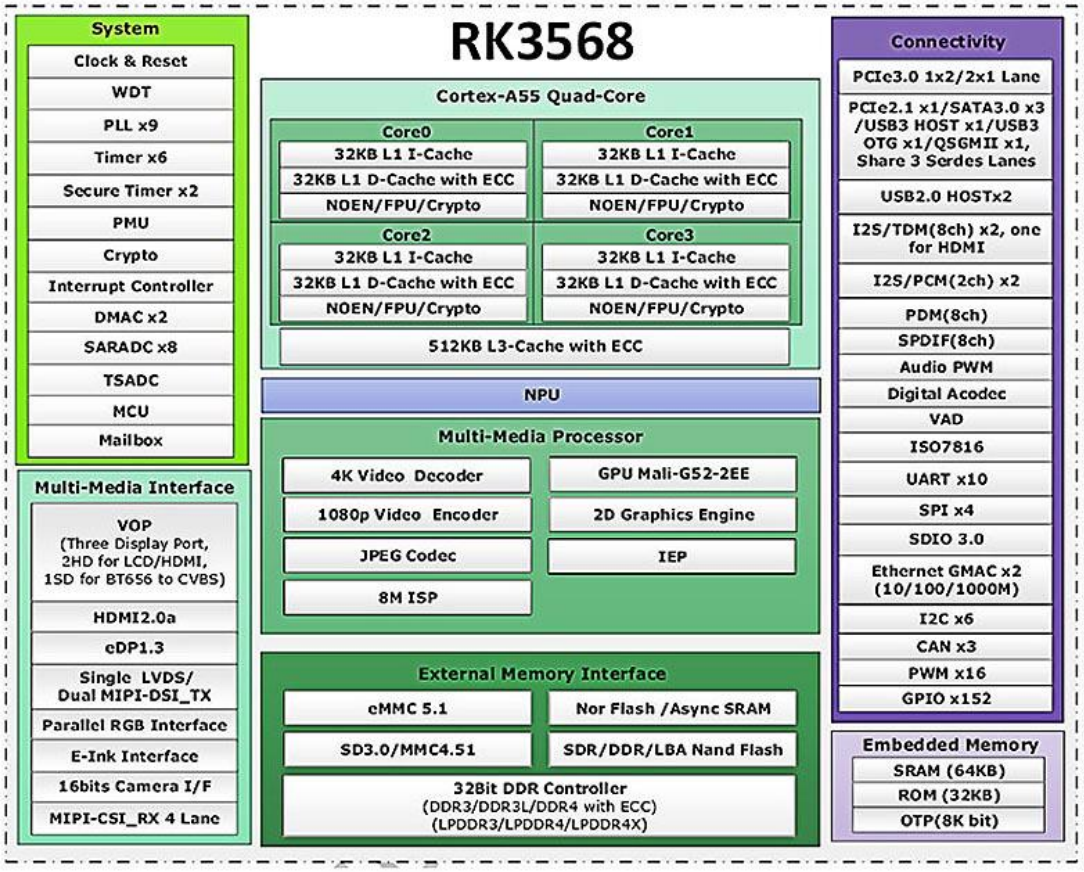
In the process of digitalization, networking: high cleaning and intelligent development of video surveillance system, the market demand of network video surveillance is increasing day by day. With the development of security industry, especially the safe city, intelligent transportation and other projects, the monitoring scene is becoming more and more complicated. The application of grilled hard disk video recorder (NVR/XVR) after the dispersion of monitoring points is gradually expanded, and its performance requirements are constantly improved. In this regard, Xun supports a new security back-end hard disk video recorder NVR/XVR chip scheme on RK3568.

Support 3 OS customization

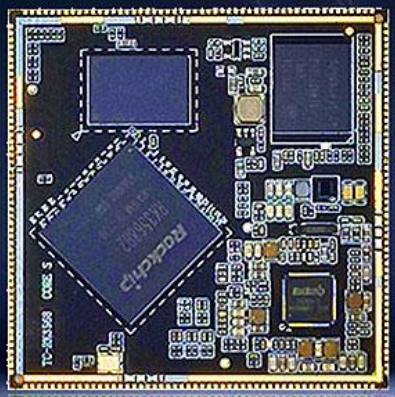
Android 11/Ubuntu /Debian




55.8mm
55.8mm


RK3568
System
Clock & Reset
WDT
PLL x9
Timer x6
Secure Timer x2
PMU
Crypto
Interrupt Controller
DMAC x2
SARADC x8
TSADC
MCU
Mailbox
Multi-Media Interface
VOP
(Three Display Port,
2HD for LCD/HDMI,
1SD for BT656 to CVBS)
HDMI2.0a
eDP1.3
Single LVDS/
Dual MIPI-DSI_TX
Parallel RGB Interface
E-Ink Interface
16bits Camera I/F
MIPI-CSI_RX 4 Lane
Cortex-A55 Quad-Core
Core0
32KB L1 I-Cache
32KB L1 D-Cache with ECC
NOEN/FPU/Crypto
Core1
32KB L1 I-Cache
32KB L1 D-Cache with ECC
NOEN/FPU/Crypto
Core2
32KB L1 I-Cache
32KB L1 D-Cache with ECC
NOEN/FPU/Crypto
Core3
32KB L1 I-Cache
32KB L1 D-Cache with ECC
NOEN/FPU/Crypto
512KB L3-Cache with ECC
NPU
Multi-Media Processor
4K Video Decoder
GPU Mali-G52-2EE
1080p Video Encoder
2D Graphics Engine
JPEG Codec
IEP
8M ISP
External Memory Interface
eMMC 5.1
Nor Flash /Async SRAM
SD3.0/MMC4.51
SDR/DDR/LBA Nand Flash
32Bit DDR Controller
(DDR3/DDR3L/DDR4 with ECC)
(LPDDR3/LPDDR4/LPDDR4X)
Connectivity
PCIe3.0 1x2/2x1 Lane
PCIe2.1 x1/SATA3.0 x3
/USB3 HOST x1/USB3
OTG x1/QSGMII x1,
Share 3 Serdes Lanes
USB2.0 HOSTx2
I2S/TDM(8ch) x2, one
for HDMI
I2S/PCM(2ch) x2
PDM(8ch)
SPDIF(8ch)
Audio PWM
Digital Acodec
VAD
ISO7816
UART x10
SPI x4
SDIO 3.0
Ethernet GMAC x2
(10/100/1000M)
I2C x6
CAN x3
PWM x16
GPIO x152
Embedded Memory
SRAM (64KB)
ROM (32KB)
OTP(8K bit)

TC-RK3568 Stamp Hole Core Board



Quad-core A55 Processor

Equipped with four-core 64-bit CotexB-A55 processor, 22nm advanced technology, main frequency up to 2.0GHz

Quad-core A55 processor

22nm advanced technology

frequency up to 2.0GHz