

# 64bit Quad-core Tablet Solution

Competitive Processor for 2K Display Out Tablet

## Overview

Allwinner A63 processor is a 64-bit chip that features a Quad-core ARM Cortex™-A53. As part of Allwinner's continual commitment to the tablet market, A63 will power high-end tablet devices. A63 is significantly cost effective and well balanced between high performance and power efficiency.

Allwinner's solutions are heavily optimized to provide users with the best possible combination of value and performance. To that end, the key features such as 4K decoding, power consumption and higher resolution have been continuously improved. Leveraging our experience in video and image software optimization, we aim to deliver a premium viewing experience for the end-users.

## Highlights



### 4K decoding

With more and more devices supporting 4K video recording, the content of 4K is increasing. Allwinner A63 processor will enable users access to enjoy this content, which supports 4K video decoding and 2K display out. With a more powerful CPU and GPU, users will enjoy a seamless experience and smooth delivery of content.



### Ultra FHD display

Supports dual channel MIPI DSI, up to 2560x1600@60fps.  
Supports eDP with 1/2/4 lane configurable, up to 2560x1600@60fps.



### Low power consumption

With all mobile computing devices, battery life is a key factor in the overall user experience. By optimizing various cores for different tasks, we aim to get the best possible performance from our processors. This also helps to keep heat dissipation to a minimum and stops devices running too hot. In addition to hardware optimization, we also use software to boost the systems performance without increasing the overall power consumption. Low power consumption gives more flexibility to devices manufactures and they can use smaller and lighter batteries allowing for more compact and slim line products.



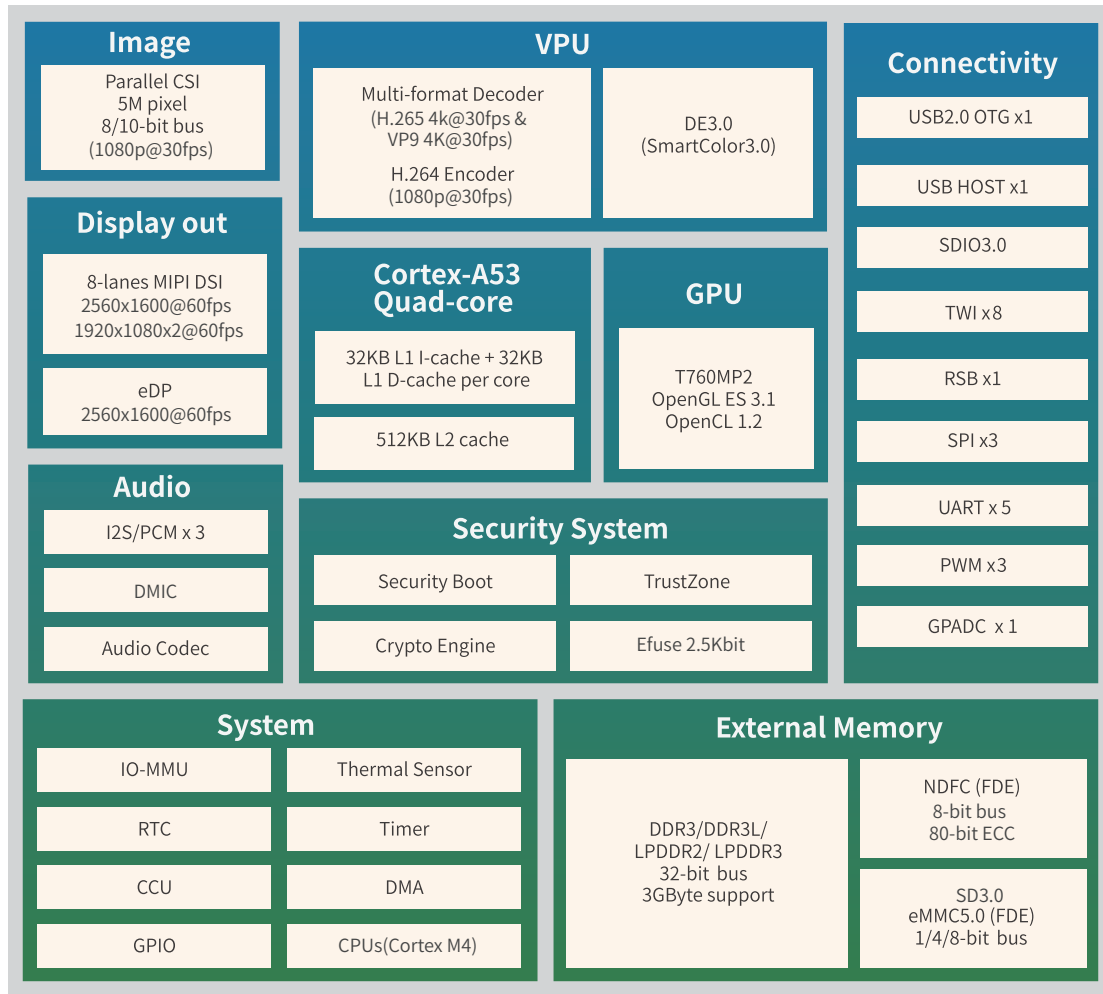
### High level of integration

Due to the high level of integration, the PCB board will be more compact which reduces the quantity of system components and the cost of the BOM. Additionally, A63 also supports various peripherals which give manufacturers more flexibility when designing products.

# Features

CPU	<ul style="list-style-type: none"><li>• Quad-Core ARM Cortex™-A53</li><li>• 32KB L1 I-cache + 32KB L1 D-cache per core</li><li>• 512KB L2 cache</li><li>• Low-power CoolFlex™ power management architecture</li></ul>
GPU	<ul style="list-style-type: none"><li>• Mali-T760</li><li>• Supports OpenGL ES 3.2/3.1/3.0/2.0/1.1, DirectX 11.1, OpenCL 1.2/1.1 and Renderscript</li></ul>
Memory	<ul style="list-style-type: none"><li>• Supports 32-bit DDR3/DDR3L/LPDDR3/LPDDR2</li><li>• Supports eMMC 5.0,support Full Disk Encryption(FDE)</li><li>• Supports 8-bit TLC/MLC/SLC/EF NAND flash with 80-bit ECC, supports FDE</li></ul>
Video	<ul style="list-style-type: none"><li>• Supports HEVC decoder 4K@30fps</li><li>• Supports VP9 decoder 4K@30fps</li><li>• Supports H.264 decoder 4K@30fps</li><li>• Supports multi-format 1080p@60fps video playback, including VP8,MPEG1/2, MPEG4 SP/ASP L5, H.263,WMV9/VC-1</li><li>• Supports H.264 HP encoder 1080P@30fps</li><li>• Supports macro block bit rate control</li><li>• Supports JPEG encoder 4096x4096</li></ul>
Camera	<ul style="list-style-type: none"><li>• Supports 8/10bit DC interface</li><li>• Supports BT656 interface</li><li>• Supports ITU-R BT.656 time-multiplexed format</li><li>• Supports image crop function</li><li>• Maximum still capture resolution for parallel interface to 5M</li><li>• Maximum video capture resolution for parallel interface to 1080P@30fps</li></ul>
Audio	<ul style="list-style-type: none"><li>• Supports stereo ADC and DAC</li><li>• Supports five analog audio inputs and three analog audio outputs</li><li>• Capless headphone driver</li></ul>
Display	<ul style="list-style-type: none"><li>• Supports output size up to 2560x1600</li><li>• Supports edge-direction interpolation and sharpness enhancement for video playback</li><li>• Supports SmartColor3.0 post processing for an excellent display experience</li><li>• Supports Frame Packing/Top-and-Bottom/Side-by-Side Full/Side-by-Side Half 3D format data</li></ul>
Connectivity	<ul style="list-style-type: none"><li>• USB Host, USB 2.0 OTG</li><li>• SDIO 3.0,RSB</li><li>• 8x TWI,3x SPI,</li><li>• 5x UART,3x PWM</li><li>• GPADC</li></ul>
OS	<ul style="list-style-type: none"><li>• Android 7.0 and above</li></ul>
PMIC	<ul style="list-style-type: none"><li>• Customized AXP802</li></ul>
Package	<ul style="list-style-type: none"><li>• FCBGA 463</li><li>• 15mm x 15mm size,0.65 pitch,0.35 ball size</li></ul>
Process	<ul style="list-style-type: none"><li>• 28nm HPC</li></ul>

# Block Diagram



## ABOUT ALLWINNER

Allwinner Technology is a leading fabless design company dedicated to smart application processor SoCs and smart analog ICs. Its product line includes multi-core application processors for smart devices and smart power management ICs used by brands worldwide.

With its focus on cutting edge UHD video processing, high performance multi-core CPU/GPU integration, and ultra-low power consumption, Allwinner Technology is a mainstream solution provider for the global tablet, internet TV, smart home device, automotive in-dash device, smart power management, and mobile connected device markets. Allwinner Technology is headquartered in Zhuhai, China.

## CONTACT US

For more product info, please contact [service@allwinnertech.com](mailto:service@allwinnertech.com), or scan the QR code to follow us on Wechat.

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