Allwinner Technology

H8: The Most Cost-efficient 8-Core Processor for Gaming & OTT Boxes

Overview

Allwinner H8 is a high performance OCTA-core application processor based on eight ARM Cortex-A7 cores that targets at middle range gaming and OTT box markets.

With eight Cortex-A7 cores that runs at 2.0GHz, and Imagination's PowerVR SGX544 GPU that runs at up to 700MHz, H8 is capable of outstanding graphic processing capability, providing OTT box users with fluid UI and excellent gaming experiences. It also supports multi-format 1080p@60fps video processing, and supports HEVC/H.265 video decoding. Allwinner's latest SmartColor display technology is also supported by H8 to deliver better image quality.
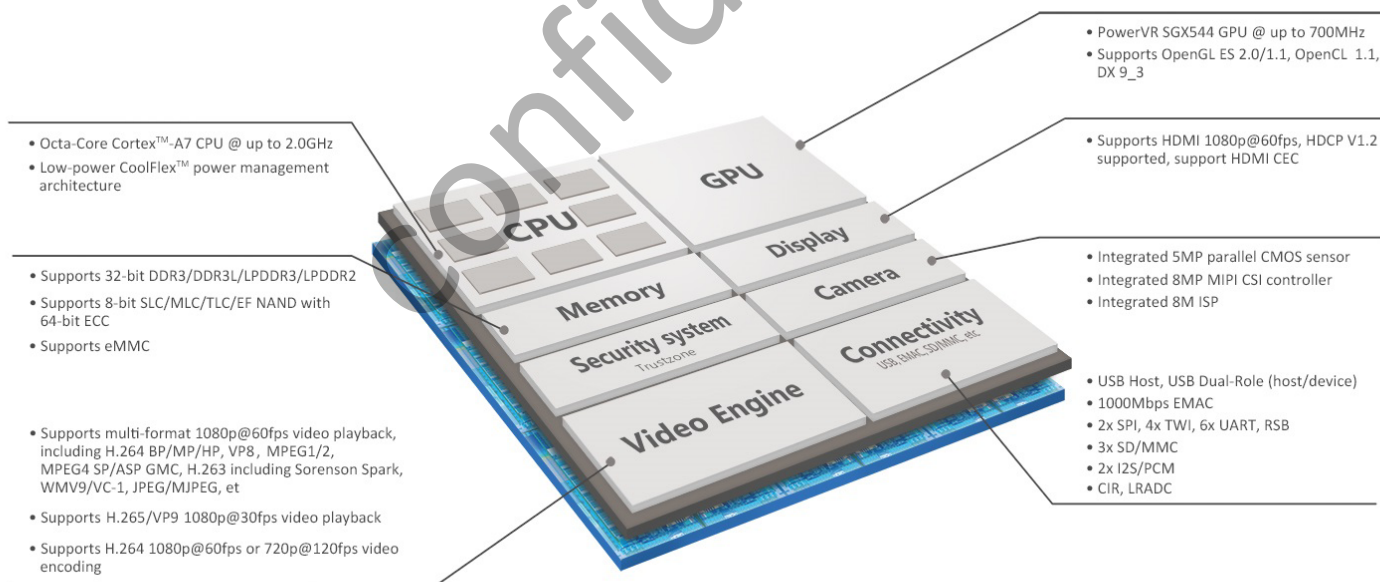
 H8 features TSMC's latest 28nm HPC fabrication process to deliver remarkable system performance with low heat emission.

Features

CPU	• Octa-Core Cortex^{TM}-A7 CPU @ up to 2.0GHz • Low-power CoolFlex^{TM} power management architecture
GPU	• PowerVR SGX544 GPU @ up to 700MHz • Supports OpenGL ES 2.0/1.1, OpenCL 1.1, DX 9_3
Memory	• Supports 32-bit DDR3/DDR3L/LPDDR3/LPDDR2 • Supports 8-bit SLC/MLC/TLC/EF NAND with 64-bit ECC • Supports eMMC
Video	• Supports multi-format 1080p@60fps video playback, including H.264 BP/MP/HP, VP8, MPEG1/2, MPEG4 SP/ASP GMC, H.263 including Sorenson Spark, WMV9/VC-1, JPEG/MJPEG, etc • Supports H.265/VP9 1080p@30fps video playback • Supports H.264 1080p@60fps or 720p@120fps video encoding
Display	• Supports HDMI 1080p@60fps, HDCP V1.2 supported, support HDMI CEC
Camera	• Integrated 5MP parallel CMOS sensor • Integrated 8MP MIPI CSI controller • Integrated 8M ISP

Connectivity	• USB Host, USB Dual-Role (host/device) • 1000Mbps Ethernet MAC • 2x SPI, 4x TWI, 6x UART, RSB • 3x SD/MMC • 2x I2S/PCM • CIR, LRADC
OS	• Android 4.4 and above
PMIC	• Customized AXP818 PMIC
Package	• FCBGA 345 • 14mm x 14mm size
Process	• TMSC's 28nm HPC

Block Diagram

- Octa-Core Cortex™-A7 CPU @ up to 2.0GHz
- Low-power CoolFlex™ power management architecture

- Supports 32-bit DDR3/DDR3L/LPDDR3/LPDDR2
- Supports 8-bit SLC/MLC/TLC/EF NAND with 64-bit ECC
- Supports eMMC

- Supports multi-format 1080p@60fps video playback, including H.264 BP/MP/HP, VP8，MPEG1/2, MPEG4 SP/ASP GMC, H.263 including Sorenson Spark, WMV9/VC-1, JPEG/MJPEG, et
- Supports H.265/VP9 1080p@30fps video playback
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- PowerVR SGX544 GPU @ up to 700MHz
- Supports OpenGL ES 2.0/1.1, OpenCL 1.1, DX 9_3

- Supports HDMI 1080p@60fps, HDCP V1.2 supported, support HDMI CEC

- Integrated 5MP parallel CMOS sensor
- Integrated 8MP MIPI CSI controller
- Integrated 8M ISP

- USB Host, USB Dual-Role (host/device)
- 1000Mbps EMAC
- 2x SPI, 4x TWI, 6x UART, RSB
- 3x SD/MMC
- 2x I2S/PCM
- CIR, LRADC

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. In addition, Allwinner focuses 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. It is headquartered in Zhuhai, China.