

AX8850 is a high-performance, energy-efficient digital SoC. It integrates an octa-core A55 CPU and a powerful NPU capable of 72.0 TOPS @ INT4 or 18.0 TOPS @ INT8. It supports H.264/H.265 encoding and decoding, 64-bit LPDDR4x, eMMC v5.1/SPI Flash, dual Ethernet, one USB 3.0, dual USB 2.0, and dual HDMI outputs.

AX8850 enables you to unlock greater value in edge computing applications, particularly in the intelligent upgrade of consumer electronics.

AX8850



Features

CPU

- Octa-core Cortex A55 1.7 GHz
- 32KB I-Cache
- 32KB D-Cache
- Supports NEON acceleration
- Integrated with FPU

NPU

- Supports up to 72.0TOPs@INT4 or 18.0TOPs@INT8
- Supports MAU
- Supports IVE

DSP

- Dual-core VDSP
- 32KB I-Cache
- 16KB D-Cache

Video Encoding

- H.264 HP/MP/BP Level V5.1 encoding
- H.265 MP Level V5.0 encoding
- Supports I/P frames for H.264/H.265 format
- Max. encoding capability: 8k@30fps
- Real-time multi-stream H.264/H.265 encoding capability: 7680×4320@30fps+1080p@30fps
- JPEG capture performance: 3840×2160@200fps
- Supports bitrate control modes of CBR, VBR, AVBR, CVBR, FIXQP, and QPMAP
- Supports encoding up to 8 ROIs
- Supports output bitrate up to 200 Mbps

Video Decoding

- H.264 HP/MP/BP Level V5.2 decoding
- H.265 MP Level V5.1 decoding
- Supports decoding up to 8K@30fps
- Supports 16-ch 1080p@30fps decoding
- JPEG decoding performance: 3840×2160@120fps
- Supports decoding up to 300 Mbps

Video and Image Processing

- Supports video and graphic output anti-flicker processing
- Supports video zooming
- Pre-processing OSD overlay in 12 regions before encoding
- Supports input image rotation
- Supports image splicing
- Supports video and image cropping



Hardware

Video Output

- Supports 2-ch HDMI 2.0b
- Supports up to 2-ch 4K@60 fps

Other Interfaces

- Supports multiple I2S, I2C, SPI, and UART interfaces

Storage Interface

DDR interface

- 64-bit LPDDR4/LPDDR4x interface
- Supports up to 4266 Mbps
- Capacity up to 32 GB

SPI Flash

- Supports SPI Nor Flash
- Supports SPI Nand Flash

eMMC Interface

- Supports eMMC 5.1
- Up to 2 TB

Peripheral Interface

Ethernet

- Supports 2-ch Ethernet
- Supports RGMII and RMII

USB

- Supports 1-ch USB 3.0 and 2-ch USB 2.0
- Supports Host/Device mode

PCIe/SATA Multiplexed Interface

- 2-ch PCIe 2.0 x2, supports RC/EP mode
- Or 4-ch SATA 3.0, supports SATA and PM



WeChat
Subscription



AXERA
Official Website



Security

SiP Security Module

- Supports secure boot
- Hardware implementation of AES, DES, and 3DES encryption algorithms
- Hardware implementation of SHA-1, SHA-224/SHA-256
- Supports booting from eMMC
- Supports booting from SPI Nor Flash
- Supports booting from SPI Nand Flash
- Supports booting from PCIe



Startup



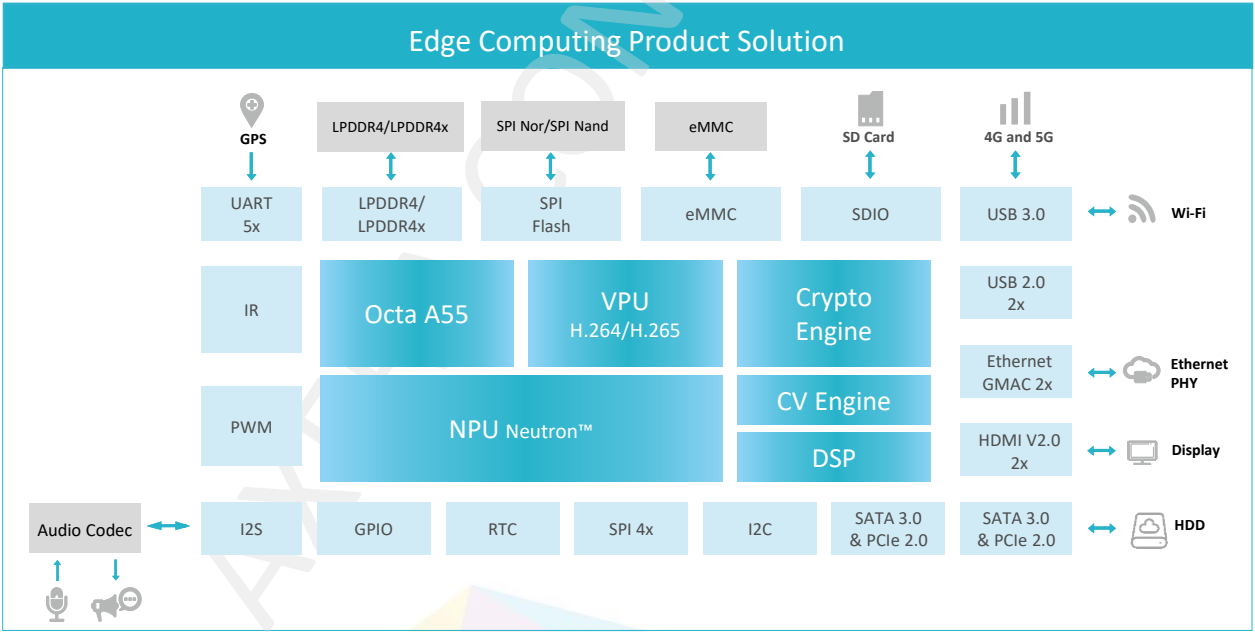
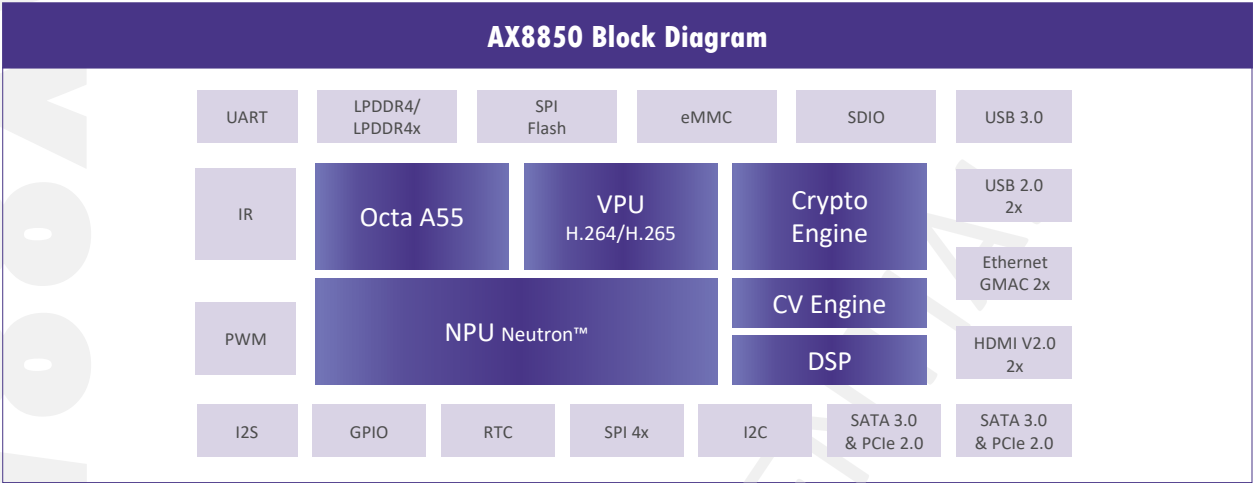
Physical Spec

Operating voltage:

- Core voltage: 0.8 V
- LPDDR4(x) voltage: 1.1V, 0.6V
- IO voltage: 1.8V, 3.3V

Packaging

- 16mm × 16mm FC-SP



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