

The A256S (AX8860P SOM) is a compact computing module designed for edge AI applications. It integrates the AX8860P processor, memory, storage, and power circuitry into a single module. The module connects to the carrier board via a 644-pin LPCAMM2 connector. This modular design separates the core computing platform from application-specific hardware, simplifying carrier board design while enabling reuse across diverse applications.

## A256S



### Overview

#### CPU

- 16-core Cortex A55 @ 1.65 GHz
- L1: 32 KB I/D-cache per core
- L2: 64 KB cache per core
- L3: 1024 KB
- Supports GIC-600, NEON, FPU, and TrustZone

#### NPU

- 256 TOPS
- Native support for mixed precision: INT4/8/16, FP4/8/16, BF16
- Supports multi-batch inference and IVE
- Supports CNN, Transformer, LLM/VLM/VLA/Omni

#### Video Decoding

- H.264 & H.265: 64 × 1080P @ 30 fps
- Resolution up to 8K (7680 × 4320)

#### Video Encoding

- H.264 & H.265: 16 × 1080P @ 30 fps
- Resolution up to 8K (7680 × 4320)

#### Image Codec

- JPEG: 1080P @ 720 fps encoding and decoding
- Resolution up to 32768 × 32768

#### Video Preprocessing

- Supports image CSC, Resize, and up to 3 streams
- Supports crop, rotate, flip, mirror, and contrast/hue/saturation adjustment



### Hardware Specs

#### DDR

- LPDDR5/LP5X, 256 bits
- 8533 Mbps
- Supports 32/64/128 GB

#### SPI Flash

Nor Flash 16 MB (DDR configuration of 128 GB)

#### eMMC

64 GB (DDR configuration of 32 GB/64 GB)

#### Ethernet & USB 3.2 & PCIe 3.0 Combo

1 × PCIe 3.0 × 1 lane / USB 3.0 / 10 Gigabit Ethernet Combo

#### USB

- Supports 1-ch USB 2.0
- Supports Host/Device mode

#### PCIe

3 × PCIe 5.0 × 4. Supports RC/EP mode.

#### Other Modules

I2S, I2C, SPI, Uart...



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### Security

#### Built-in security module

- Supports secure boot
- Hardware implementation of AES, DES, and 3DES
- Hardware implementation of SM2/3/4, SHA-1, SHA-224/SHA-256



### Start-up

#### Boot mode

- Supports booting from eMMC
- Supports booting from SPI Nor Flash
- Supports booting from SPI Nand Flash
- Supports booting from PCIe



### Interfaces

#### Packaging

78 mm × 78 mm



WeChat  
Subscription  
Account

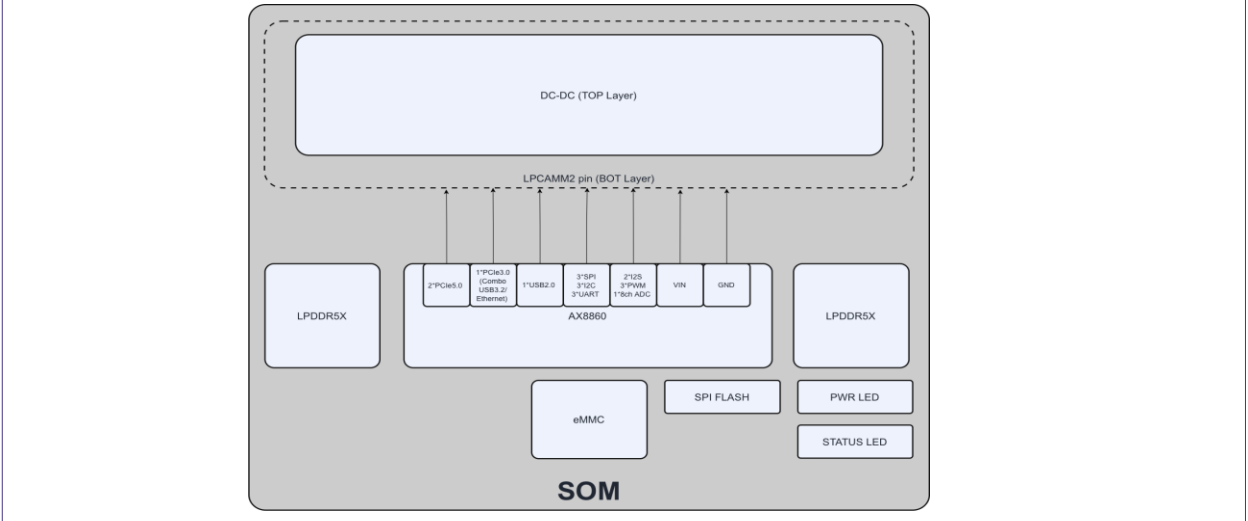


Official  
Website

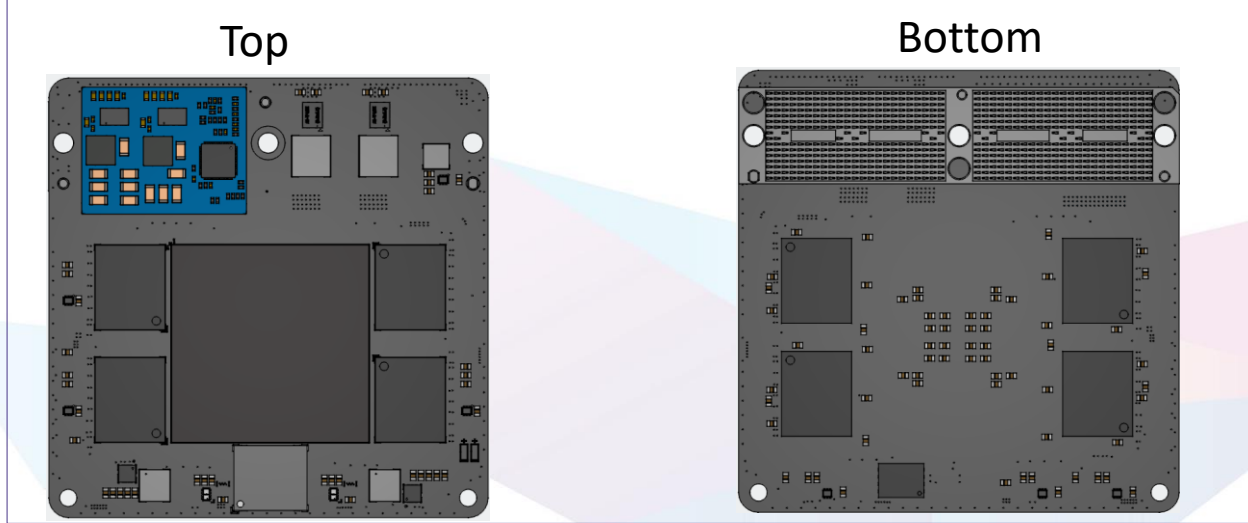
| Model/TPS       | Prefill TPS (4096 token input)<br>(W4A16) | Decode TPS (1024 token output)<br>(W4A16) |
|-----------------|-------------------------------------------|-------------------------------------------|
| Qwen3.5-9B      | 4428                                      | 47                                        |
| Qwen3.8-27B     | 1316                                      | 15                                        |
| Qwen3.5-35B A3B | 6230                                      | 80                                        |

| Model        | Batch = 1, FPS | Model    | Batch = 1, FPS |
|--------------|----------------|----------|----------------|
| ViT-L-14-336 | 190            | ResNet50 | 4300           |
| YOLO26s      | 1450           |          |                |

**A256S Product Diagram**



**A256S**



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