

AX630C is an ultra-high definition intelligent IPC SoC developed by Axera for the industrial market. Integrated with the cutting-edge AXProton 4.0 AI-ISP, this night-vision chip supports 4k@30 fps real-time video. Equipped with AXNeutron 4.0 high-performance optimized NPU engine, AX630C takes a leading role in the high-quality image processing and analysis. This chip also provides reliable and easy-to-use SDK,

AX630C



Feature

CPU

- Dual Cortex A53 @ 1.2 GHz
- 32 KB I-Cache
- 32 KB D-Cache
- 256 KB L2 Cache
- Neon acceleration
- Integrated FPU

NPU

- Max. 12.8 TOPs @INT4, or 3.2 TOPs @INT8
- Supports mixed precision
- Supports multiple mainstream deep learning frameworks

ISP

- Max. 4K @ 30 fps AI ISP
- Supports 3A (AF, AWB, AE)
- Supports image information statistics
- Supports AI-3DNR, 3DNR
- Supports AI-RLTM
- Supports 2f HDR
- Supports FPN removal and DPC
- Supports lens shading correction
- Supports image enhancement
- Supports dehazing
- Supports fisheye correction
- Supports DIS and EIS

Video Encoding

- H.264 HP/MP/BP Level 5.1
- H.265 MP Level 5.0
- I-/P-frames
- Real-time multi-stream H.264/H.265 encoding: 4K@30 fps + 1080p@30 fps + 720p@30 fps
- CBR/VBR/FIXQP bit rate control mode
- 8 ROI encoding
- JPEG snapping performance: 3840 × 2160@40 fps

Video Decoding

- H.264 HP/MP/BP: Level 4.2
- Max. decoding performance: 1080p @ 60 fps
- I-/P-/B-frames
- JPEG decoding: 1080p @ 60 fps

Video and Image Processing

- Customizable position and number of OSD overlays
- Supports mosaic
- Supports bitmap
- Supports video and image crop

Peripherals

Video Interfaces

- VI
- 1 × 4 Lane or 2 × 2 Lane MIPI
- Up to 2.5 Gbps per lane
- Supports Sub-LVDS

VO

- 1-ch MIPI DSI
- Up to 1080p @ 60 fps output

Memory Interfaces

- DDR Interface
- 32-bit DDR4/LPDDR4(x), with a max. capacity of 4 GB
- Up to 3200 Mbps

SPI Flash Interface

- Supports SPI Nor Flash
- Supports SPI Nand Flash

eMMC v5.1 Interface

- Max. capacity of 2 TB

Ethernet

- One Gigabit Ethernet ports
- RGMII, and RMII modes
- Supports TSO, UFO, and COE
- SiP RMII ePHY

USB

- One USB 2.0
- Supports Host or Device

Other Interfaces

- Built-in audio codec with I2C support
- Supports multiple I2C, SPI, and UART interfaces

Security

- Secure boot
- Memory safety isolation
- Hardware-based encryption algorithms, including AES, DES, and 3DES
- Hardware-based HASH algorithms (SHA-1, SHA-224, and SHA-256)

Startup

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

Physical Spec.

Operating Voltage

- 0.8 V core voltage
- 1.2 V DDR4 interface voltage
- 1.1 V LPDDR4 interface voltage
- 1.8 V/3.3 V I/O voltage

Package

- 13 mm × 13 mm LFBGA



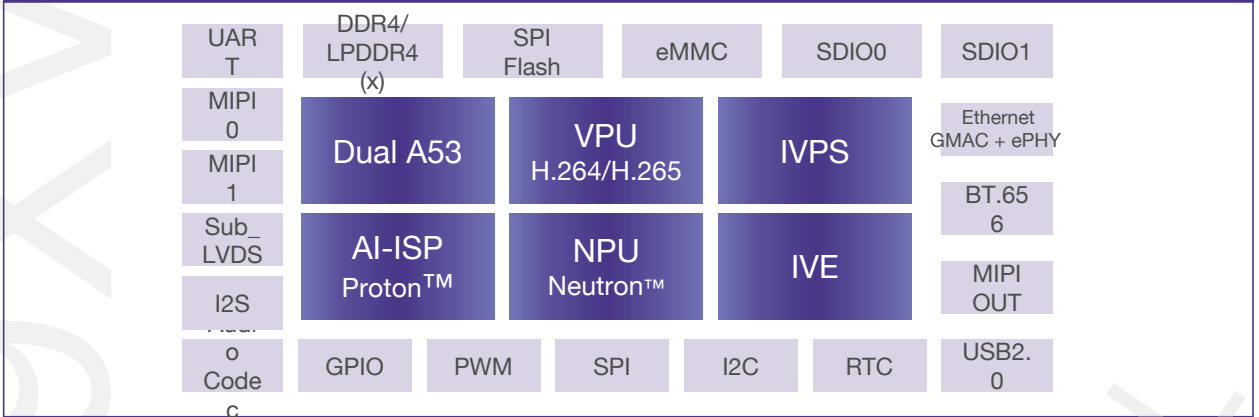
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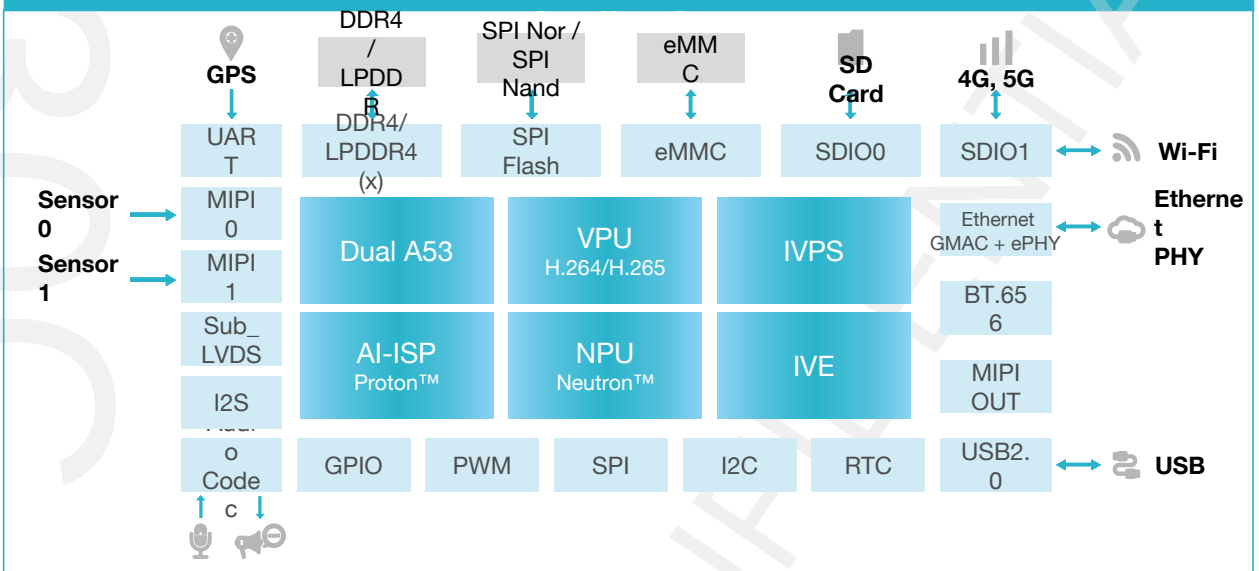
AXERA Official Website

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AX630C Block Diagram



Camera Solution for Industrial



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