



WM8845: Ultra-High Definition Intelligent IPC SoC for Industrial Applications

WM8845 is a powerful intelligent IPC SoC for the industrial market, delivering **ultra-high-definition performance** for demanding applications. Featuring the **cutting-edge Aurosense 4.0 AI-ISP**, this chip enables **4K@30fps real-time video capture**, even in low-light conditions, ensuring exceptional image clarity and precision.

Powered by the **Neo 4.0 high-performance NPU engine**, WM8845 leads the way in **advanced image processing and analysis**, offering unparalleled quality and efficiency. Additionally, it comes with a reliable and user-friendly SDK, streamlining development and empowering your efficient mass production.

Features	
CPU	● Cortex A53 1.2 GHz ● 32KB I-Cache ● 32KB D-Cache ● 256KB L2 Cache ● Neon acceleration ● Integrated FPU
NPU	● Max. 12.8 TOPs @INT4, and 3.2 TOPs @INT8 ● Supports multiple mainstream deep learning framework ● Supports IVE
ISP	● Max. 4K@30fps AI ISP ● Supports 3A (AF, AWB, AE) ● Supports AI-3DNR, 3DNR ● Supports AI-RLTM ● Supports 2f HDR ● Supports FPN removal and DPC ● Supports fisheye correction ● Supports DIS and EIS ● Supports defogging ● Supports lens shading
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

Features

	● 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@60fps
Video and Graphic Processing	● Customizable position and number of OSD overlays ● Supports mosaic ● Supports bitmap

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	SDRAM Interface	● 32-bit DDR4/LPDDR4(x), with a max. capacity of 4 GB ● Up to 2666 Mbps
	SPI Flash Interface	● Supports SPI Nor Flash ● Supports SPI Nand Flash
	eMMC Interface	● eMMC V5.1 ● Max. capacity of 2 TB
Ethernet		● 1 gigabit Ethernet port ● RGMII, and RMII modes ● Internal PHY supports RMII
USB		● One USB 2.0 ● Supports Host or Device
Other Interfaces		● I2S codec interface ● I2C, SPIs, and UART

Security

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

Startup

- Boot from eMMC, SPI Nor Flash, and SPI Nand Flash

Physical Specs

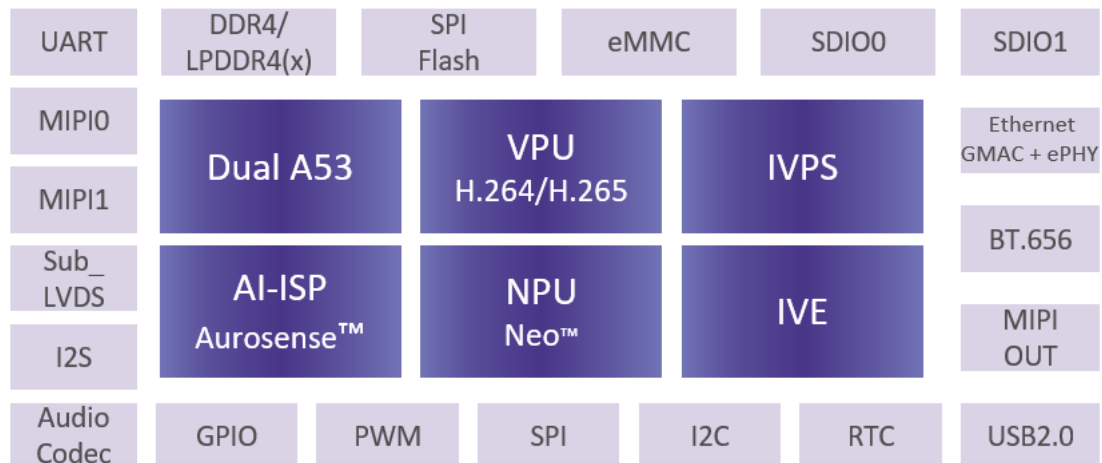
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|-------------------|---|
| Operating Voltage | <ul style="list-style-type: none">● 0.8V core voltage |
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- 1.2V DDR4 interface voltage
- 1.1V LPDDR4(x) interface voltage
- 1.8V/3.3V I/O voltage

Package

- 14 mm × 14 mm FC-CSP

WM8845 Block Diagram



AI IP Camera Solution

