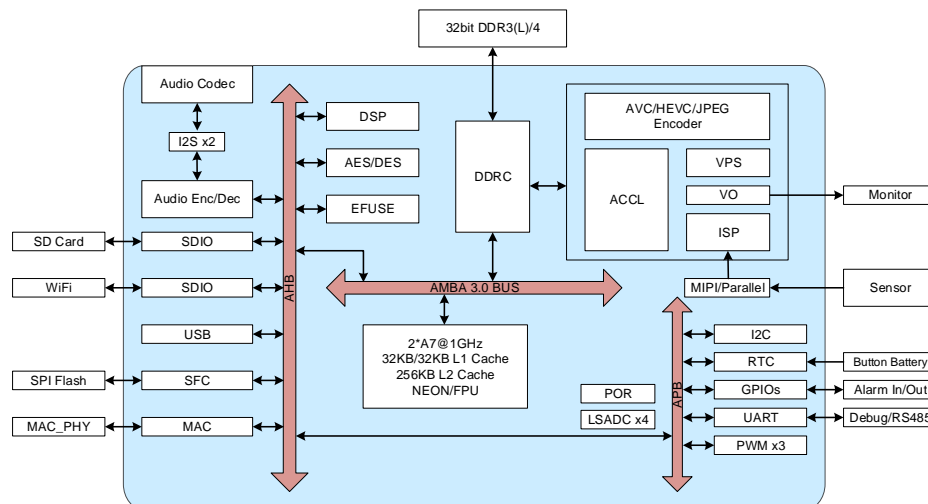


XS7320 is a high-performance digital SoC designed specifically for smart IPC (IP Camera) applications. It features advanced ISP technology and state-of-the-art H.265 (HEVC), H.264, and JPEG encoders. The chip integrates DDR3/3L/4 memory (2133 Mbps), USB 2.0, POR, RTC, and audio codec. It also supports a wide range of interfaces, including MIPI, I2C, SPI, GPIO, and UART, and provides output for commonly used peripheral clocks. XS7310 supports high-definition CMOS sensor input, which is processed by the ISP, followed by video preprocessing and compression via the audio/video encoder, enabling triple stream output. Equipped with a built-in CPU, GPU (supporting OpenVX/OpenCL), and a CNN hardware acceleration unit, the chip can handle mainstream intelligent applications such as facial recognition and license plate recognition.



## ● Processor

- Dual-core ARM Cortex-A7@1GHz, 32KB I-Cache, 32KB D-Cache, 256KB L2 Cache
- Integrated FPU. Supports NEON acceleration.

## ● Video Encoding

- Real-time multi-stream H.265/H.264 encoding capability: Up to (4K + 1080P + D1)@30 fps
- Supports CBR/VBR bitrate control.
- Supports ROI encoding
- Supports smart encoding

## ● JPEG Encoding

- Supports JPEG Baseline encoding: Snapping up to 4K@10 fps

## ● Audio Encoding

- Supports audio codec of G711 A/U, G726, and AAC
- Supports AEC for voice intercom

## ● Intelligent Analysis

- Supports deep learning CNN acceleration and standard CAFFE and Tensorflow network models
- 192 INT16 and 768 INT8 MAC addresses
- Computing capability up to 1 TOPS

## ● Video and Image Processing

- Supports frame rate control of 1 to 60 fps
- Image cropping and scaling from 1/16x to 16x
- Supports privacy masking for up to 8 independent

## ● ISP

- Supports static & dynamic bad pixel correction and black level correction
- Supports raw domain 2D de-noising and YUV domain 2D/3D de-noising
- Supports digital gain control, lens shading correction, and strong light suppression
- Supports 3A (AE, AWB, and AF)
- Supports 2F-1 HDR and LWDR
- Supports GIC, color correction, and GAMMA correction
- Supports edge enhancement, defogging, and digital light supplement

## ● Video Interface

- Supports 1 × 4 or 2 × 2 lane MIPI and parallel interface input
- Supports BT.1120 input and output
- Supports 1-ch 16/18/24-bit RGB parallel LCD output
- Supports MIPI DSI TX output
- Supports 1-ch CVBS video output (PAL and NTSC formats)

## ● Audio Interface

- Built-in audio codec. Supports up to 24-bit, 96kHz sampling

regions

- Supports OSD and BMP graphic overlay
  - Supports image rotation and flipping (mirroring)
  - Supports LDC (Lens Distortion Correction)
- Supports I2S interface for external audio codec
  - **Network Interface**
    - Ethernet MAC interface supports MII, RMII, and RGMII modes and full-duplex/half-duplex operation of 10/100/1000 Mbps
  - **Packaging**
    - 14.3 mm × 14.3 mm, 396 pins, pin-to-pin distance of 0.65 mm, TFBGA