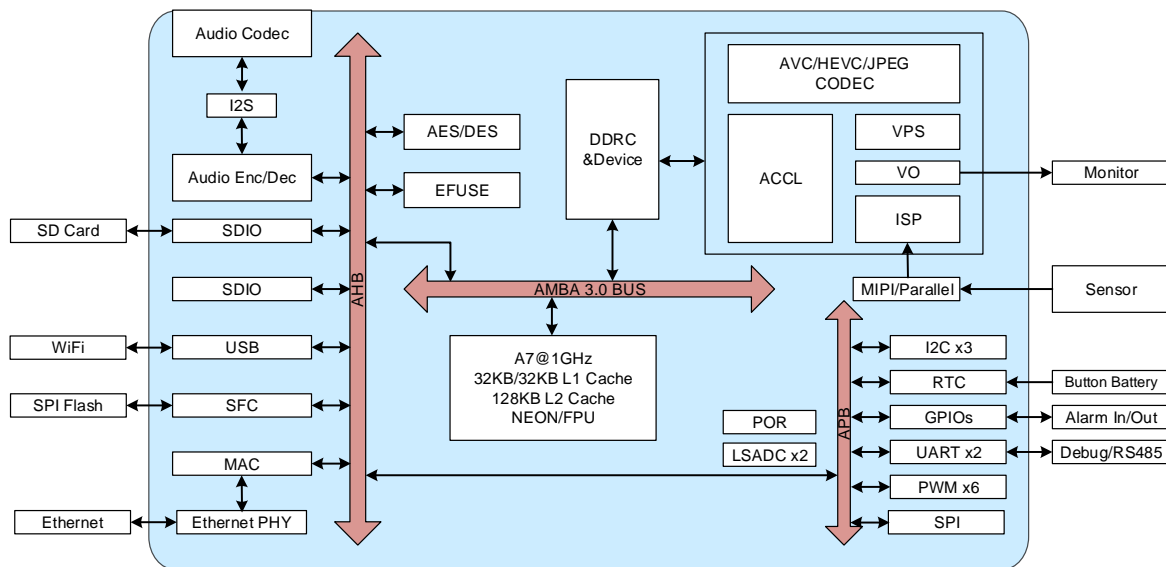


XS7312Q is a digital SoC designed specifically for smart IPC (IP Camera) applications in consumer electronics. It features advanced ISP technology and state-of-the-art H.265 (HEVC), H.264, and JPEG encoders. The chip integrates USB 2.0, POR, RTC, Audio Codec, and EPHY, with a memory chip of 1 Gb. It also supports a wide range of interfaces, including MIPI, I2C, SPI, GPIO, and UART, and provides output for commonly used peripheral clocks. The built-in intelligent module processor can be used for detection including face, human, and license plate, and major smart applications such as border and line crossing warning.



- **Processor**
 - Single-core ARM Cortex-A7@1GHz, 32KB I-Cache, 32KB D-Cache, and 128KB L2 Cache
 - Integrated FPU. Supports NEON acceleration.
- **Video Encoding**
 - Real-time multi-stream H.265/H.264 encoding capability: Up to (5M + D1)@20 fps
 - Supports CBR/VBR bitrate control.
 - Supports ROI encoding
 - Supports smart encoding
- **JPEG Encoding**
 - Supports JPEG Baseline encoding: Snapping up to 5M@5 fps
- **Audio Encoding**
 - Supports audio codec of G711 A/U, G721, and AAC
- **Intelligent Analysis**
 - Built-in smart processing for deep learning of 0.5T computing capability
 - Detection for face, human, and vehicle; border and line crossing warning
- **Video and Image Processing**
 - Supports frame rate control of 1 to 60 fps
 - Supports image cropping and scaling from 1/16x to
- **ISP**
 - Supports static & dynamic bad pixel correction and black level correction
 - Supports 2D and 3D noise reduction
 - 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 × 2 lane MIPI and parallel interface input
 - Supports 1-ch 8-bit LCD output
- **Audio Interface**
 - Built-in audio codec. Supports up to 24-bit, 96kHz sampling
 - Supports I2S interface for external audio codec
- **Network Interface**

16x

- Supports privacy masking for up to 8 independent regions
 - Supports OSD and BMP graphic overlay
 - Supports image rotation and flipping (mirroring)
- Built-in 10/100M Ethernet PHY
 - **Packaging**
 - 9 mm × 9 mm and QFN88