VC3809 is a high performance Image Signal Processor chip targeting for high quality video cameras. It comes with high quality Image Signal Processing (ISP) unit and a H.264 / MJPEG compression engine. Its flexible sensor interface can support most common CMOS image sensors in the market. It also comes with various IO connections suitable for many different applications.

KEY FEATURES

CPU + Memory

Built-in ARM-926 @ 400MHz

Built-in L1 Cache 16KB (x2)

Support external SPI serial flash memory

Support external DDR-2 / DDR-3

Sensor Interface

Support CMOS Image Sensors

Support sensors with RAW / YUV output

Support two parallel sensor interfaces

Support one dual-lane MIPI interface

Programmable sensor clock output

Support I2C/SPI for sensor configuration

ISP / IPP

Built-in 10-bit ISP

Support AE/AWB/AF

Support Gamma / Brightness / Contrast

Support Sharpness / Edge Enhancement

Backlight / Lens-Shading Compensation

Support Advance DPD&DPC

Support WDR

Support 3D Noise Reduction

Support Motion Detection

Support Face Detection

Compression Engine

Built-in MJPEG compression engine

Built-in H.264 compression engine

Support H.264 High Profile

Support multiple compressed video stream

Video Capability

Standard	Resolution	YUY2	MJPEG	H.264
VGA	640x480	30fps	60fps	60fps
HD-720	1280x720	12fps	60fps	60fps
HD-1080	1920x1080	4fps	30fps	30fps
2.0MP	1600x1200	4fps	30fps	30fps
5.0MP	2592x1944	2fps	15fps	N/A
8.0MP	3264x2448	1fps	10fps	N/A
10MP	3664x2748	1fps	7fps	N/A
12MP	4000x3000	1fps	5fps	N/A

Audio Features

Support multiple I2S audio codec.

Built-in PDM interface for digital audio mic.

Support Microphone Array
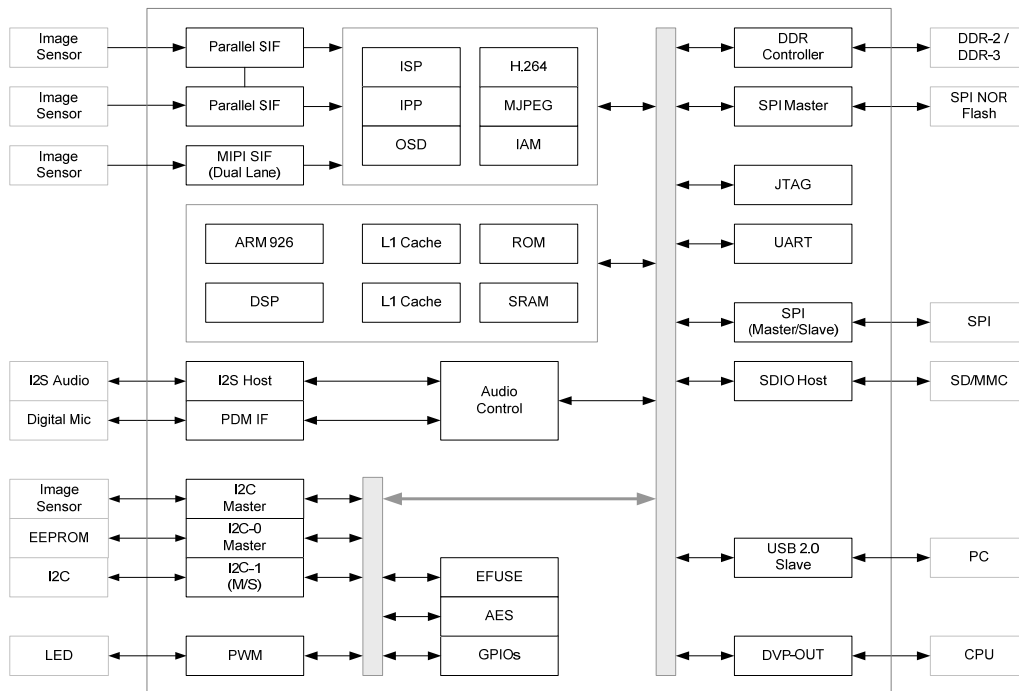
I/O

USB 2.0 HS - Device (UVC / UAC)

I2C (4 master + 1 slave)

SPI (3 master + 2 slave)

UART (x5) / PWM (x9) / SDIO (x2)

PDM (x2) / I2S (x3)

Video Out (x1)

Package Information

Part Number	VC3809BZNA
Package Type	BGA-352pins
Size	15x15mm

Chip Block Diagram

Application Diagram