Overview

The Ambarella H2 Video SoC for consumer applications integrates an advanced image sensor pipeline (ISP), H.265 10-bit (HEVC-10) and H.264 (AVC) encoders, and a powerful Quad core ARM® Cortex™-A53 CPU for advanced analytics, flight control, WiFi streaming, and other user applications.

Targeting the next generation of consumer applications such as connected drones, sports cameras, and 360° (VR) cameras, the H2 delivers up to 4K-video recording at 90fps or equivalent performance while streaming a second, live, mobile-resolution video over a WiFi network for preview or sharing.

Equipped with dedicated hardware, H2 can support 3D Electronic Image Stabilization (EIS) up to 4Kp60, and multi-exposure High Dynamic Range (HDR) capture up to 4Kp60.

A unique architecture and 14-nm process technology minimizes H2 power consumption while maximizing performance.

Key Features

**Flexible Low-Power Platform**
- Quad core ARM® Cortex™-A53 CPU up to 1 GHz
- Fast Boot ThreadX / Linux Dual OS
- 14-nm low-power CMOS Process

**High Resolution and Frame Rate Image Processing**
- 4Kp90 video encoding (AVC)
- 4Kp60 10-bit video encoding (HEVC-10)
- Hi-ISO still capture and video processing
- High Dynamic Range multi-exposure capture up to 4Kp60
- Simultaneous second stream
- 3D Electronic Image Stabilization (EIS) with 6-axis correction (translational, pitch, yaw, and roll) and shutter correction up to 4Kp60
- Dual processing pipe for Drone Optical Flow, 360° cameras, and other multi-sensor applications

**Wireless Connectivity and Video Streaming Options**
- USB Host for 4G Module Connectivity
- DMA UART for Bluetooth (BT) Module Connection
- Dual Encode for On-The-Fly Mobile Resolution Streaming

Block Diagram

The diagram below illustrates a camera design based on the Ambarella H2 device.
Ambarella H2 Product Brief

H2 Consumer Applications Development Platform

The H2 Consumer Applications Development Platform contains the necessary tools, software, hardware and documentation to develop a small form factor camera.

Evaluation Kit (EVK)

- H2 main board with connectors for sensor/lens board, peripherals
- Sensor board: Omnivision, Sony, and others
- Data sheet, BOM, schematics, and layout
- Reference application with C source code

Software Development Kit (SDK)

- Dual OS ThreadX/Linux with patches, drivers, tools, and application source code
- Royalty-free libraries for ISP, 3A, dewarp, and codecs
- Image tuning and manufacturing calibration tools
- Detailed documentation with programmer's guide, application notes

Contact  www.ambarella.com/about/contact/inquiries.html