oclea
by Teknique

CV2 µSOM

The Oclea™ CV2 System on Module (µSoM) combines the Ambarella™ CV2 SOC, DRAM, FLASH, and key peripherals together in a single package enabling the next generation of computer vision applications in automotive and industrial robotics with stereo vision and object detection, tracking and classification.

The integrated CV2 processor combines image processing, up to 4Kp60 or 8Kp15 video encoding, and CVflow™ computer vision processing into a single, high-performance yet still low-powered design enabling products that operate 'on the edge' of the network and requires no external on-premise or cloud data processing. Therefore: operating costs are lowered, the reduced latency enables real-time decision making, and privacy is enabled by reducing the sharing of data.

The flexible Oclea SDK* provides a Linux-based framework and an environment based on GStreamer and includes pre-defined demonstration applications that allow your software team to start immediate development.

The Oclea™ software platform also includes integrations with leading CNN/DNN frameworks, 3rd party analytics, and cloud service providers, and provides a rich set of APIs that enable a range of product customization options.

High Performance, Low Power
Combining the advanced 10 nm fabrication process, the CV2 SoC's high performance and Teknique's highly optimized board design makes this the highest performance SoM in Oclea's range while still offering a low-power solution compared to similarly performing products.

Powerful Multi-Format Video Processing
Up to 6 Camera inputs and 2 video outputs. 4Kp60 / 8Kp15 video encoding performance provides high quality video with efficient H.264 and H.265 encoding.

Computer Vision Engine
Built in hardware acceleration for CNN and DNN networks using CVFlow™ processing with the Oclea™ SoM for detection, classification, tracking, and more.

Advanced Image Processing
Electronic image stabilization, HDR, hardware de-warping engine support, and 2D/3D Noise correction for excellent low-light image quality.

The Oclea™ CV2 µSoM
Size 35 x 65 x 3.9mm • **Weight** 8g
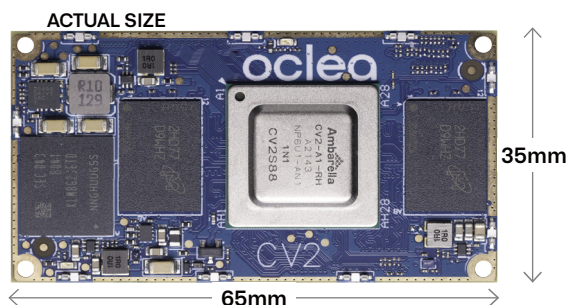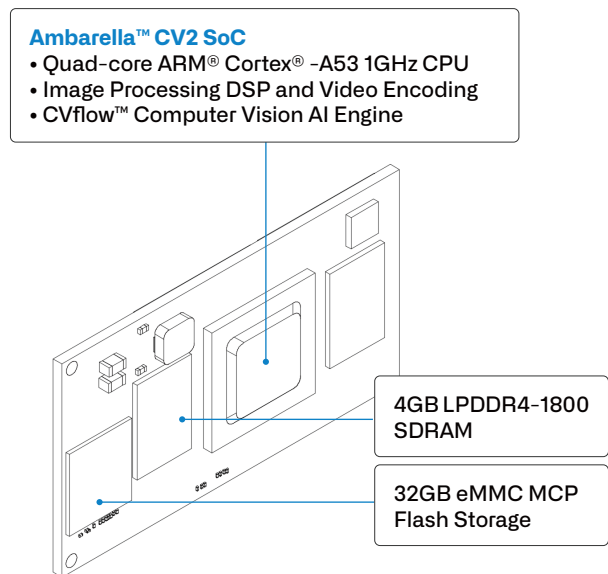
Ambarella™ CV2 SoC
- Quad-core ARM® Cortex® -A53 1GHz CPU
- Image Processing DSP and Video Encoding
- CVflow™ Computer Vision AI Engine

4GB LPDDR4-1800 SDRAM

32GB eMMC MCP Flash Storage

ACTUAL SIZE

35mm

65mm

MAIN COMPONENTS

Ambarella™ CV2 SoC
- Quad core ARM Cortex A53 1GHz CPU
- Image Processing DSP and Video Encoding DSP
- CVflow Computer Vision AI Engine
- Stereo Disparity Engine

Memory and Storage
- 32GB eMMC MCP Flash
- 4GB LPDDR4 1800MHz RAM, 64-bit wide bus
- SDIO Interface available to Main Board

INPUT/OUTPUT INTERFACES

Rich Video Sensor Interface
- 2x 8-lane MIPI image sensors, or
- 6x 4-lane MIPI image sensors

Video Out
- HDMI 2.0
- MIPI CSI-2 / MIPI DSI
- 16-bit parallel video out

USB 2.0 Host/Device

Gigabit Ethernet

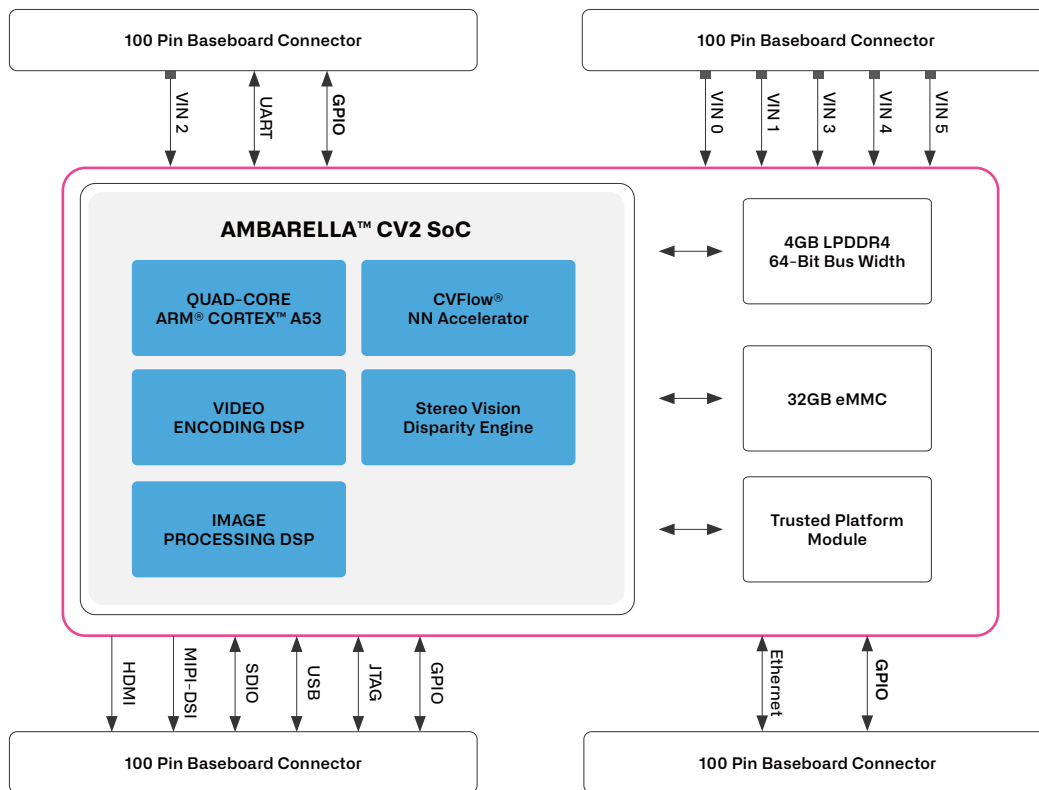### Many Additional Peripherals
- UART, I2C, GPIO, I2S, PWM, etc

SDK

Mature and Highly Programmable Software Development Kit (SDK)
- Custom build your Oclea OS using the Yocto Project® build tools
- Linux Version 5.4
- Gstreamer framework with sample demo applications in full source
- Includes integrations with leading CNN/DNN frameworks and 3rd party analytics
- Mature and extendable REST API for cloud service integration
- Rich set of APIs that enable a wide range of product customizations

A NOTE ON SENSOR SUPPORT Please check with your Sales Representative regarding Image Sensor options and Video Input support. New sensors or video input support may require NRE or custom engineering services.

The Oclea™ CV2 µSoM Block Diagram

PB-USOM-CV2-2.1

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Contact us today
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