

# CV72 $\mu$ SoM

The Oclea CV72 System on Module ( $\mu$ SoM) combines the Ambarella™ CV72 SOC, DRAM, Flash, and key peripherals together in a single package enabling the next generation of computer vision applications. Target applications include Security, Robotics and Instrumentation.

The integrated CV72 processor combines image processing, up to video encoding, and CVflow™ computer vision processing into a single low-powered design. These abilities enable products that operate on the edge of the network - removing the reliance on any 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 Oclea SDK\* allows rapid application development using common technologies - The Yocto Project for managing builds, Gstreamer for managing the image processing pipeline. The included demonstration applications have source code provided and 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.

KEY FEATURES

### High Performance, Low Power

Combining the next generation 5 nm fabrication process, the CV72 SoC's high performance and Technique'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 3 Camera inputs and 2 video outputs. 4Kp60+ 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

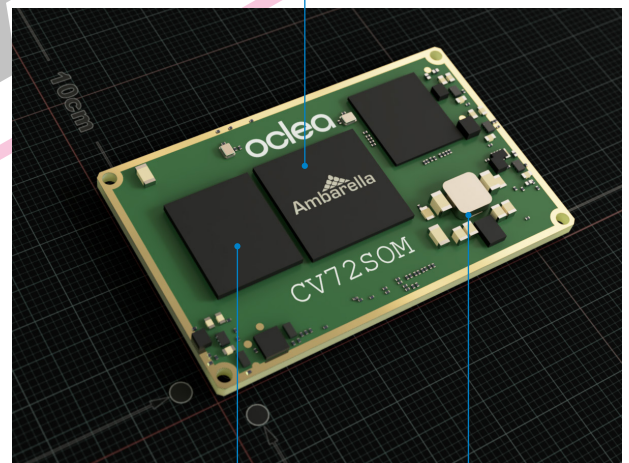
Electronic image stabilization, HDR, hardware de-warping engine support, and 2D/3D Noise correction for excellent low-light image quality.

### Oclea CV72 $\mu$ SoM

Size 56 mm x 35 mm • Weight - g

#### Ambarella CV72 SOC

- Dual Core ARM Cortex-A76 CPU
- CVflow Computer Vision and Deep Learning Accelerator
- ISP and Encoder up to 4Kp60+ HEVC

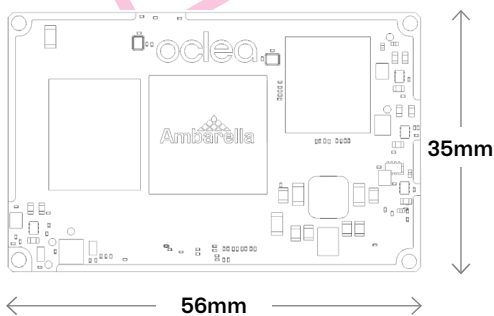


#### Integrated Memory

- 4GB DDR5 RAM
- 32GB Storage

#### Video I/O

- 12 Lanes MIPI CSI/2 input
- HDMI 2.0 output



**MAIN COMPONENTS**

**Ambarella™ CV72 SoC**

- Dual core ARM® Cortex™-A76 1.6GHz CPU
- Single core ARM Cortex-M3 576MHz Low power CPU
- Image Processing DSP and Video Encoding DSP
- CVflow 3.0 Computer Vision AI Engine

**Memory and Storage**

- 4GB LPDDR5 RAM, 32-bit wide bus
- 32GB eMMC MCP Flash
- SDIO Interface available to Main Board
- RAM self refresh mode with SOC powerdown

**INPUT/OUTPUT INTERFACES**

**Video Sensor Interface**

- 3x 4-lane MIPI image sensors, or
- 1x 8-lane + 1x 4-lane MIPI

**Video Out**

- HDMI 2.0
- MIPI CSI-2 / MIPI DSI

**USB**

- USB 3.0 Host / Device Mode
- USB 2.0 Device Mode

**Gigabit Ethernet**

- 2x Gigabit Ethernet RGMII

**PCI Express**

- 1x 1-lane PCIe Gen 3

**Peripherals**

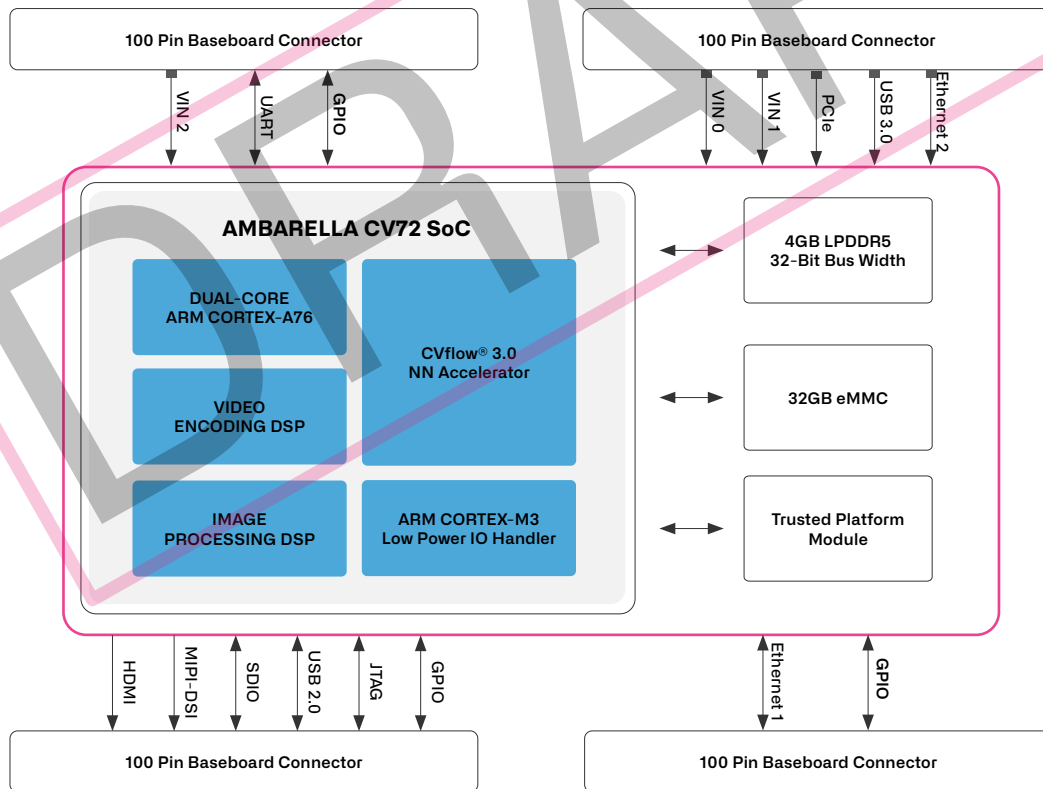
- SDIO, GPIO, UART, I3C, I2S, PWM @ 1V8
- ADC @ 3V3

**SDK**

**Mature and Highly Programmable Software Development Kit (SDK)**

- Custom build your Oclea OS using the Yocto Project® build tools.
- Linux Version 5.x
- Gstreamer framework with sample demo applications in full source.
- Includes integrations with leading CNN/DNN frameworks and 3rd party analytics.
- Micro service based software architecture.

**Oclea CV72 µSoM Block Diagram**



Oclea\_PB-USOM-CV72-DRAFT.0

DRAFT DOCUMENT - ALL SPECIFICATIONS SUBJECT TO CHANGE

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