oclea
by Teknique

CV25 µSOM

The Oclea™ CV25 System on Module (µSoM) combines the Ambarella™ CV25 SoC, DRAM, FLASH, and key peripherals together in a single package enabling the next generation of computer vision applications in precision agriculture, smart security, retail, and automotive markets.

The integrated CV25 processor combines image processing, 4Kp30 video encoding, and CVflow™ computer vision processing into a single, 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, and the reduced latency is an advantage for products requiring real-time decision making.

Teknique's flexible 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.

Powerful Multi-Format Video Processing
4Kp30 + 480p30 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.

Ultra Low Power
Combining the CV25 SoC's advanced 10 nm fabrication process with Teknique's highly optimized board design provides a very low power platform for your next generation product.
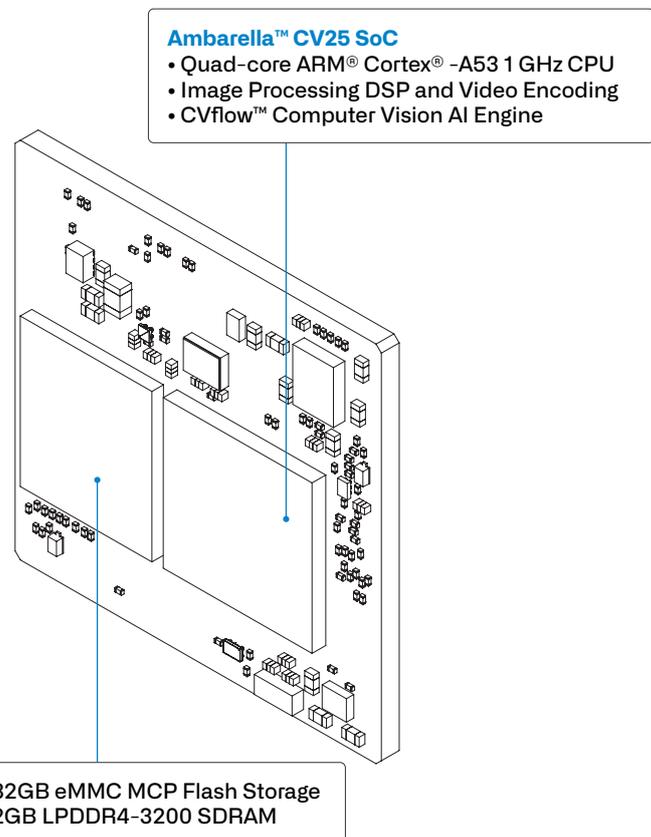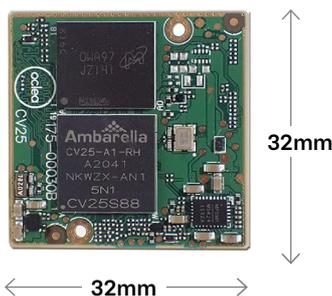
Advanced Image Processing
Electronic image stabilization, HDR, hardware de-warping engine support, and 2D/3D Noise correction for excellent low-light image quality.

The Oclea™ CV25 µSoM
Size 32 x 32 x 3.9 mm • **Weight** 8g

Ambarella™ CV25 SoC
• Quad-core ARM® Cortex® -A53 1 GHz CPU
• Image Processing DSP and Video Encoding
• CVflow™ Computer Vision AI Engine

32GB eMMC MCP Flash Storage
2GB LPDDR4-3200 SDRAM

ACTUAL SIZE

32mm

32mm

The SDK is available with purchase of the Oclea™ EVK - please refer to the Oclea™ EVK product brief for more detail.

MAIN COMPONENTS

Ambarella™ CV25 SoC
- Quad-core ARM® Cortex®-A53 1 GHz CPU
- Image Processing DSP and Video Encoding DSP
- CVflow™ Computer Vision AI Engine

Memory and Storage
- 32GB eMMC MCP Flash
- 2GB LPDDR4 1600MHz DRAM
- SDIO Interface Available To Main Board

INPUT/OUTPUT INTERFACES

Rich Video Sensor Interface
- Primary Sensor Input
  - up to 8 Lane SLVS/MIPI
  - 8 bit parallel LVDS
- Secondary Sensor Input
  - up to 4 Lane SLVS/MIPI
- Third Sensor Input
  - up to 2 Lane SLVS/MIPI
- Multi-VIN is shared between 8 lanes
- Maximum Input Rate - 504MPixels/s

USB 2.0 Host/Device
HDMI 1.4
Gigabit Ethernet
Many Additional Peripherals
- UART, I2C, GPIO, I2S, PWM, etc

POWER CONSUMPTION AND SDK
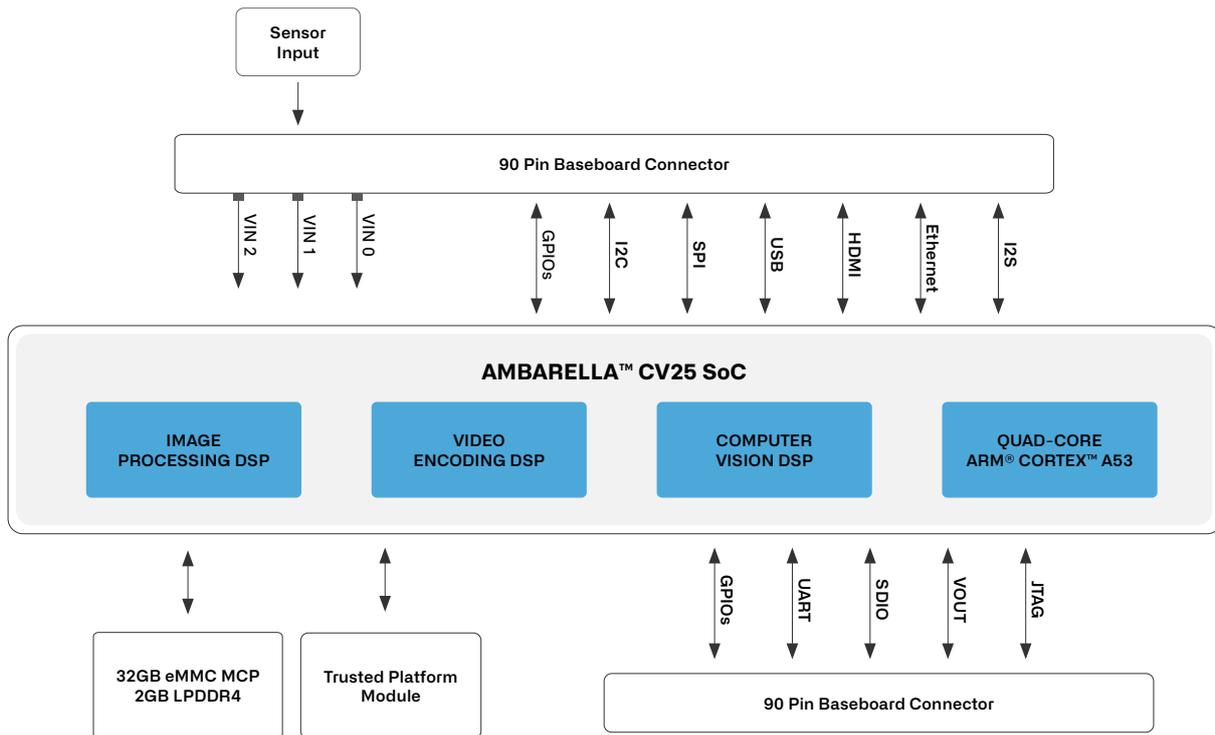
Lab measured power consumption
- 1080p input with H.265 encoding = 2.7W

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™ CV25 µSoM Block Diagram

Contact us today
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oclea.com