PRODUCT BRIEF

CV28 µSOM (32x32mm)

The Oclea™ CV28 System on Module (µSoM) combines the Ambarella™ CV28 SoC, DRAM, FLASH, and key peripherals together in a single package enabling the next generation of ultra low-power vision-AI applications in precision agriculture, smart security, retail, and automotive markets.

The integrated CV28 processor combines image processing, 5MP30 HEVC 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.

KEY FEATURES

Powerful Multi-Format Video Processing
5MP30 HEVC + 720P30 HEVC + 3MP1 MJPEG video encoding performance provides high quality video with efficient H.264 and H.265 encoding.

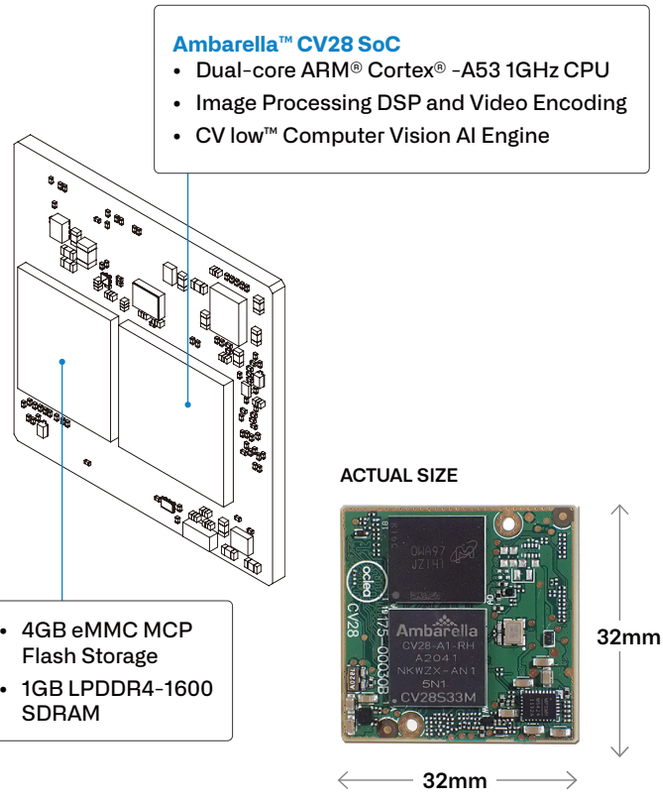
Computer Vision Engine
Built in hardware acceleration for CNN and DNN networks using CVFlow™ processing with the Oclea™ SoM for detection, classification, tracking, and more.

Ultra Low Power
Combining the CV28 SoC's advanced 10 nm fabrication process with Teknique's highly optimized board design provides a very low power < 1W vision-AI platform for your next generation product.

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

Oclea 32x32mm Form Factor
The CV28 32x32 is a drop-in replacement for the Oclea S5L µSoM or Oclea CV25 µSoM. Full mechanical, electrical and software compatibility allows for an easy upgrade path and product differentiation.

The Oclea™ CV28 µSoM
Size 32 x 32 x 3.9 mm • **Weight** 8g



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

Draft only. Detail subject to change

GENERAL SPECIFICATIONS

MAIN COMPONENTS

Ambarella™ CV28 SoC
- Dual-core ARM® Cortex® -A53 1GHz CPU
- Image Processing DSP and Video Encoding DSP
- CVflow™ Computer Vision AI Engine

Memory and Storage
- 4GB eMMC MCP Flash
- 1GB LPDDR4-1600 SDRAM
- 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 – 420MPixel/s

USB 2.0 Host/Device

MIPI-CSI/DSI Output Interfaces

Gigabit Ethernet

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

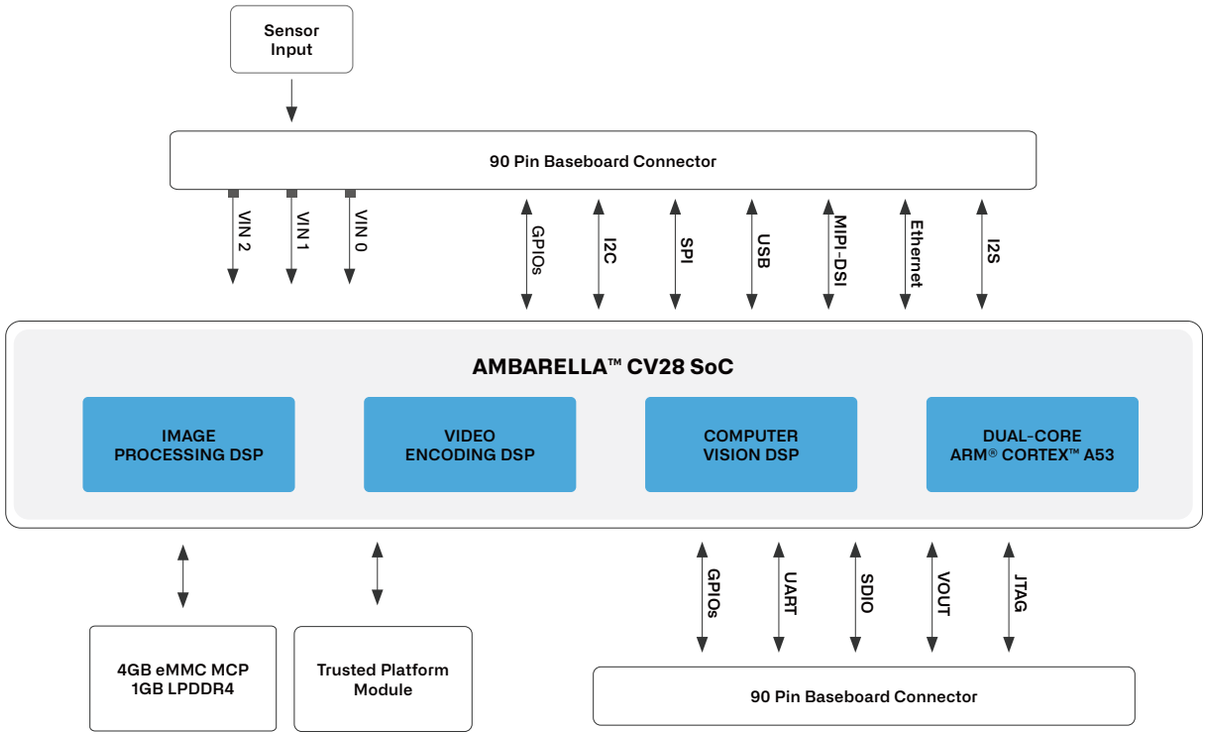
POWER CONSUMPTION AND SDK

Lab measured power consumption
- 1080p input with H.265 encoding = 0.8W

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™ CV28 µSoM Block Diagram



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