oclea
by Teknique

CV22 µSOM

The Oclea™ CV22 System on Module (µSoM) combines the Ambarella™ CV22 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 CV22 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.

Great Power, Great Efficiency
4Kp30 HEVC + 1080p30 HEVC + 4Kp4 MJPEG encoding 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.
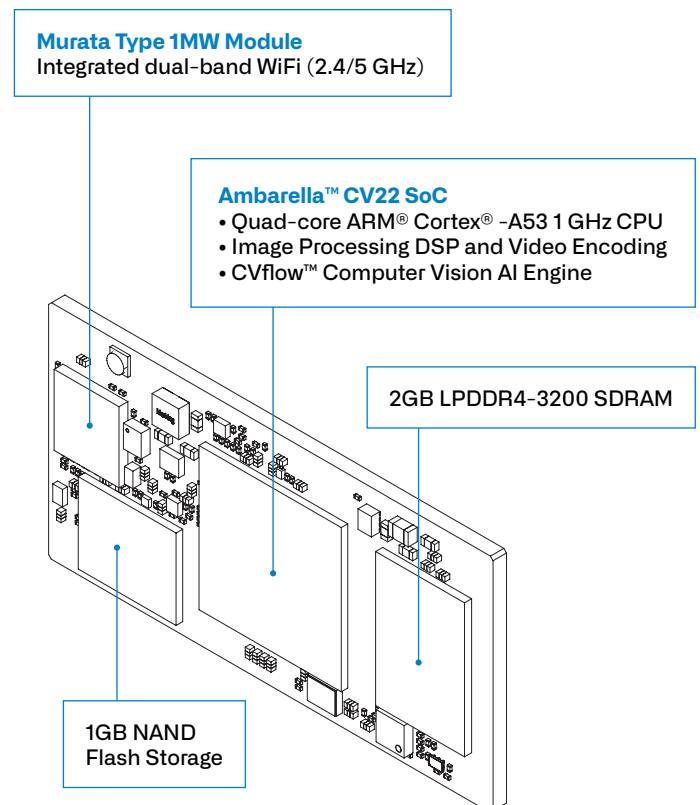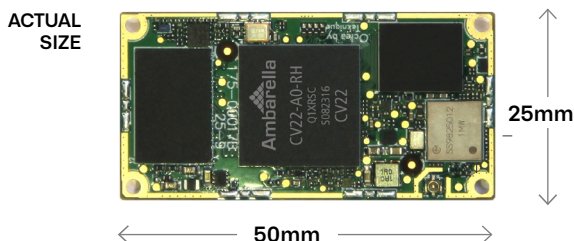
Simplicity
Teknique's SDK* simplifies development of your vision product and runs on Linux, with popular integrations already done for you – so you can start your development immediately.

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

The Oclea™ CV22 µSoM
Size 25 x 50 x 3.7 mm • **Weight** 8g

Murata Type 1MW Module
Integrated dual-band WiFi (2.4/5 GHz)

Ambarella™ CV22 SoC
• Quad-core ARM® Cortex® -A53 1 GHz CPU
• Image Processing DSP and Video Encoding
• CVflow™ Computer Vision AI Engine

2GB LPDDR4-3200 SDRAM

1GB NAND Flash Storage

ACTUAL SIZE

25mm

50mm

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

GENERAL SPECIFICATIONS

MAIN COMPONENTS

Ambarella™ CV22 SoC
- Quad-core ARM® Cortex®-A53 1 GHz CPU
- Image Processing DSP and Video Encoding DSP
- CVflow™ Computer Vision AI Engine

Memory and Storage
- 1GB NAND Flash
- 2GB LPDDR4 1600 MHz DRAM
- Micro-SD Card (SDIO)

Murata Type 1MW WLAN + BT Module
- Dual-Band WiFi (802.11abgnac / 2.4/5 GHz)
- Bluetooth (V5.0 BR/EDR/LE)

INPUT/OUTPUT INTERFACES

Rich Video Sensor Interface
- Primary Sensor Input
    - up to 8 Lane MIPI
- Secondary Sensor Input
    - up to 4 Lane MIPI
- With SERDES Front End
    - Support for up to 4 Image Sensors
- Maximum Input Rate - 540 MPixels/s

USB 2.0 Host/Device

HDMI 1.4 and MIPI-DSI Interfaces

Gigabit Ethernet

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

POWER CONSUMPTION AND SDK
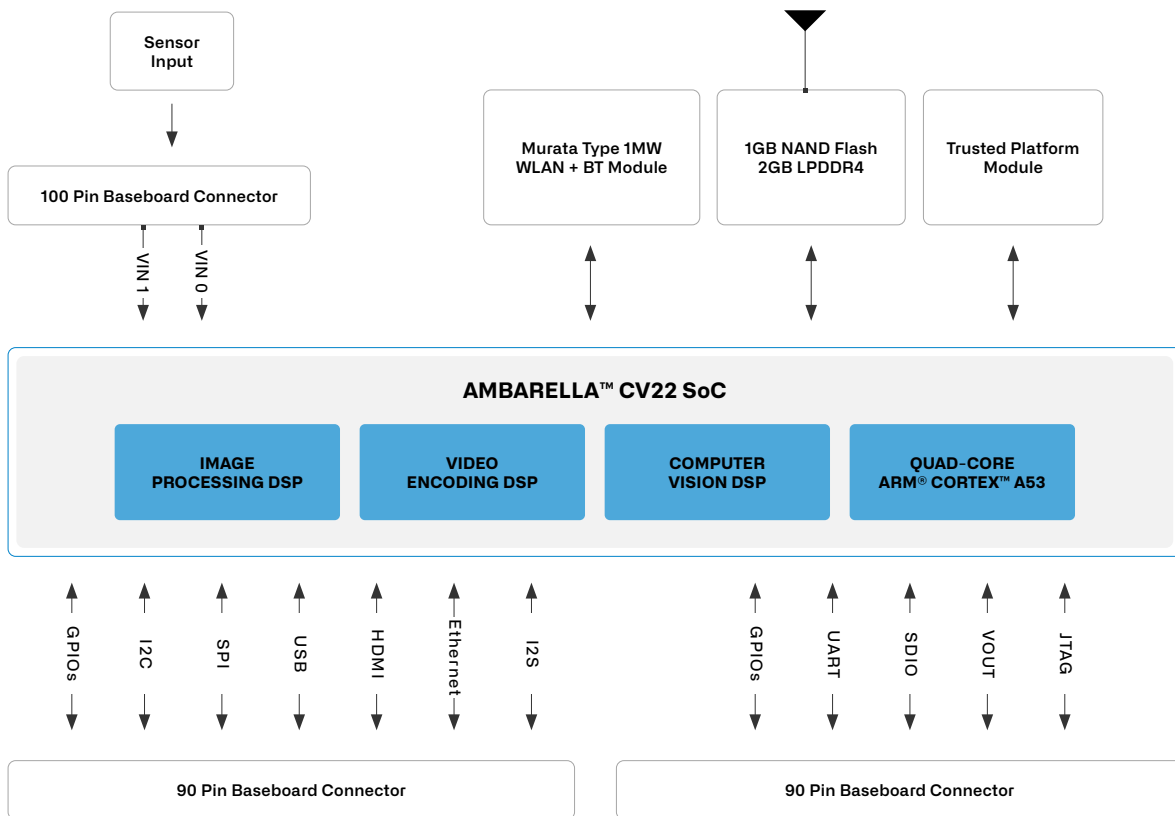
Lab measured power consumption
- 4K input with H.265 encoding - 3.3W

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™ CV22 µSoM Block Diagram

Contact us today
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oclea.com