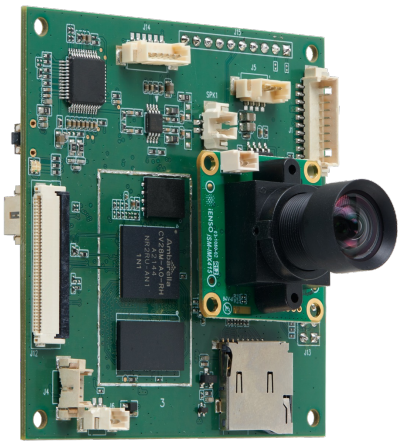
VISION AI CLOUD SECURITY

Embedded Vision Camera Platform



iVS-CV28

Unlock the full potential of vision data for your application.

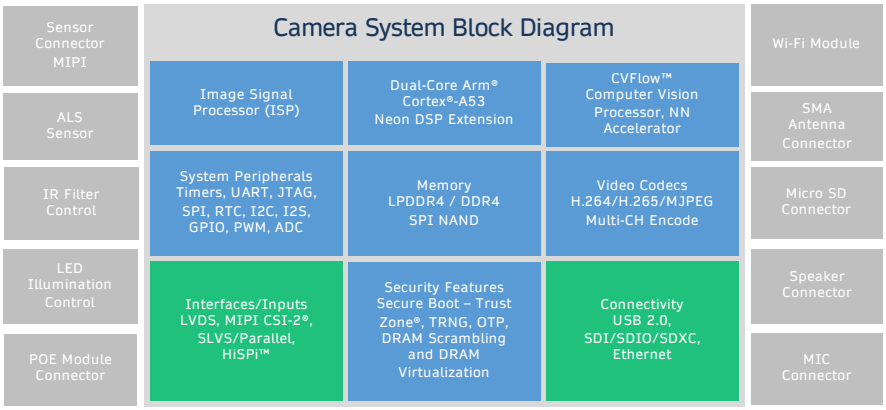
Embedded, modular, cloud-connected, and secure – iENSO develops and delivers vision systems for any application.

CVflow

Key features:

- Ambarella™ CV28m SoC based
- Dual-core Arm ®Cortex®-A53 up to 1 GHz
- Up to 4Kp30 maximum encoding performance
- CNN / DNN inference acceleration for detection, classification, and more
- +320 MPixel/s input rate
- Multi exposure HDR
- RTC
- 180° fisheye lens distortion correction
- MIPI sensor with LED illumination and IR filter control
- H.265/HVEC, H.264, MJPEG encoding
- Support for 16-bit LPDDR4(x) / DDR4
- Secure boot with TrustZone® and secure memory
- Broad image sensor support
- Based on 10nm low-power CMOS process

Camera System Block Diagram



Give your vision the edge

- Application-based turnkey embedded vision solutions
- Edge AI for powerful on-device decision-making
- Flexible Cloud platform and end-to-end security

iENSO

202506V1.51

HARDWARE SPECIFICATIONS - iVS-CV28

Featuring Ambarella CV28 Vision AI SoC

Processor	• Dual-core Arm® Cortex®-A53 up to 1 GHz • NEON™ SIMD and FPU acceleration • 10 nm low-power CMOS
Sensor I/O	• MIPI CSI-2, sLVDS, SLVS • Supports up to 8MP CMOS image sensor
Advanced Image Signal Processing	• Up to 320 Mpixel/s maximum pixel rate • Lens shading correction • Multi-exposure HDR • 3D motion compensated temporal filtering (MCTF) • Digital PTZ • OSD engine, overlays, privacy mask • Crop, mirror, flip, rotation • Geometric lens distortion correction • Gamma compensation and color enhancement
Video Processing	• H.265 / HEVC, H.264, MJPEG • Up to 4KP30 encoding performance • Dynamic region of interest (ROI) encoding per frame • Multiple CBR and VBR rate control modules
AI Power Intelligence Video Analytics	• CVFlow® vision processor for CNN/DNN edge analytics • Pre-integrated AI Detectors or provide your own • Can utilize models trained with industry-standard tools such as Caffe, TensorFlow or PyTorch
Networking & Connectivity	• Wi-Fi 802.11 2.4/5GHz • Ethernet PoE Module (optional)
Audio	• Audio Codec • Line In and Line Out
Memory	• Up to 8Gb LPDDR4 DRAM • 4Gb NAND Flash
Other Interfaces	• USB 2.0 (Device / Host configurable) • Micro SD • LED flash control • IR filter control
Security	• AES / SHA1 / SHA2-256 crypto acceleration • Secure boot with TrustZone® and secure memory, TRNG, OTP, DRAM scrambling and virtualization
Power In	• 12 VDC +/- 15% • PoE with PoE module option
Physical	• Board size - 42 x 42 (mm) / 1.7 x 1.7 (inch) • Custom board size available
Environmental	• Operating temperature: -20°C to 50°C • Operating humidity: 5% to 90%
OS	• Linux support (Yocto)
Camera Modules	• Image sensor modules up to 8MP/4K • Thermal sensor module options • Multiple lens options • IR or white LED illumination options • IR Filter for night vision options

SECURITY / ACCESS CONTROL

AGRICULTURE AUTOMATION

HOME AUTOMATION

SMART APPLIANCES

CONSUMER IoT

Ambarella®
AI envisioned™

Additional information:

For compatible image sensor modules (iSM's) contact us at vision@ienso.com

iENSO

www.ienso.com

Established in 2003, iENSO's cutting-edge Embedded Vision Platform as a Service (EVPaaS) platform empowers you to customize an embedded vision solution – integrating hardware, software, and connectivity – to transform your product concept into reality.

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