



VISION



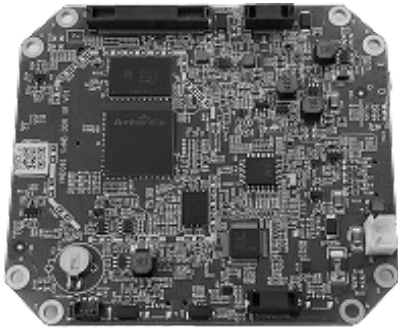
AI



CLOUD



SECURITY



Embedded Vision Camera Platform

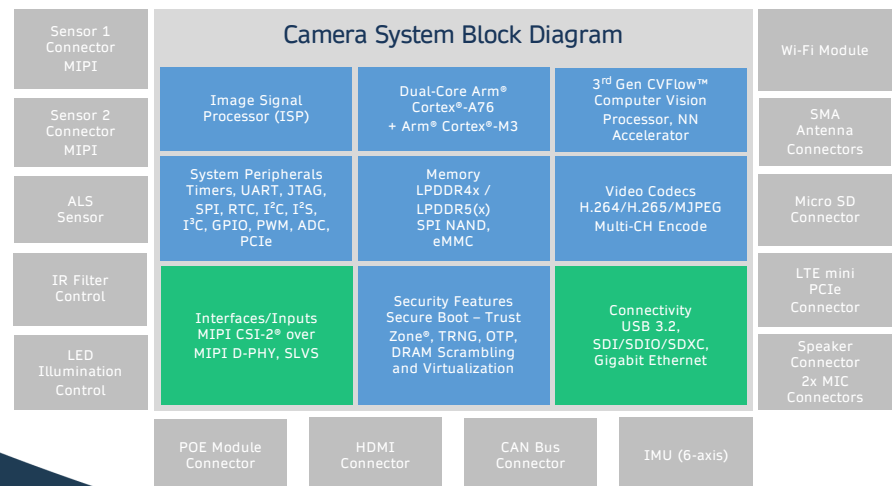
iVS-CV72

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.

Key features:

- Ambarella™ CV72 SoC based
- Dual-core Arm® Cortex®-A76 up to 1.6 GHz
- Arm® Cortex®-M3 up to 576 MHz
- 4Kp60+ maximum encoding performance
- 3rd Generation Computer Vision Engine featuring CVflow®
- CNN / DNN inference acceleration for detection, classification, and more
- Accelerators for conventional computer vision (CV) operations
- Accelerators for nonlinear functions and transformer neural networks
- 3 Billion parameter LLM / VLM support
- PCIe Interface
- 360° fisheye lens distortion correction
- H.265/HVEC, H.264, MJPEG encoding
- Support for 32-bit LPDDR4x / LPDDR5(x)
- Secure boot with TrustZone® and secure memory
- Broad image sensor support
- Based on 5nm low-power CMOS process



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



HARDWARE SPECIFICATIONS - iVS-CV72

Featuring Ambarella CV72 Vision AI SoC

Processor	- Dual-core Arm® Cortex®-A76 up to 1.6 GHz - Arm® Cortex®-M3 up to 576 MHz 5 nm low-power CMOS
Sensor I/O	2 physical sensor inputs - MIPI CSI-2®, SLVS - Supports up to 12MP CMOS image sensor
Advanced Image Signal Processing	- 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 / AVC, MJPEG 4KP60+ encoding performance - Dynamic region of interest (ROI) encoding per frame - Multiple CBR and VBR rate control modules
AI Power Intelligence Video Analytics	- CVFlow® 3.0 vision processor for CNN/DNN edge analytics - Support for latest transformer neural networks - Pre-integrated AI Detectors or provide your own - Can utilize models trained with industry-standard tools such as Caffe, ONNX, TensorFlow or PyTorch
Networking & Connectivity	- Wi-Fi 802.11ax 2.4/5GHz, 2x2 MU-MIMO - Ethernet PoE module (optional) - LTE (optional)
Audio	- Audio Codec - Line In and Line Out
Memory	32-bit Bus width - Up to 32Gb LPDDR4x/LPDDR5(x) DRAM 4Gb SPI NAND Flash option 128Gb eMMC
Other Features	- HDMI - IMU (6-axis) - USB 3.2 (Device / Host configurable) - Micro SD - LED flash control - IR filter control - Support for zoom/varifocal lenses - CAN bus support optional
Security	- AES / SHA1 / SHA2-256 crypto acceleration - Secure boot with TrustZone® and secure memory, TRNG, OTP, DRAM scrambling and virtualization
Power In	- USB-C – 5VDC 3A - PoE+ (802.3at type) with PoE module option
Physical	- Board size - 80 x 80 (mm) / 3.1 x 3.1 (inch) - Custom board size available
Environmental	- Operating temperature: -20°C to 50°C / -4°F to 122°F - Operating humidity: 5% to 90%
OS	Linux support (Yocto)
Camera Modules	- Image sensor modules up to 12MP - Thermal sensor module options - Multiple fixed lens options - Varifocal / zoom lens options - IR or white LED illumination options - IR Filter for night vision options



SURVEILLANCE



CONSTRUCTION



INDUSTRIAL / ROBOTICS



UAV's



SPORTS ANALYTICS



Additional information:

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



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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