



VISION



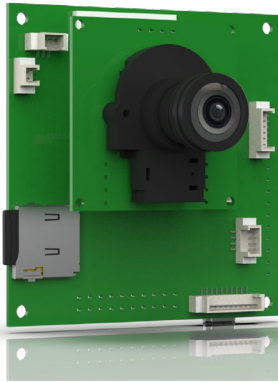
AI



CLOUD



SECURITY



Embedded Vision Camera Platform

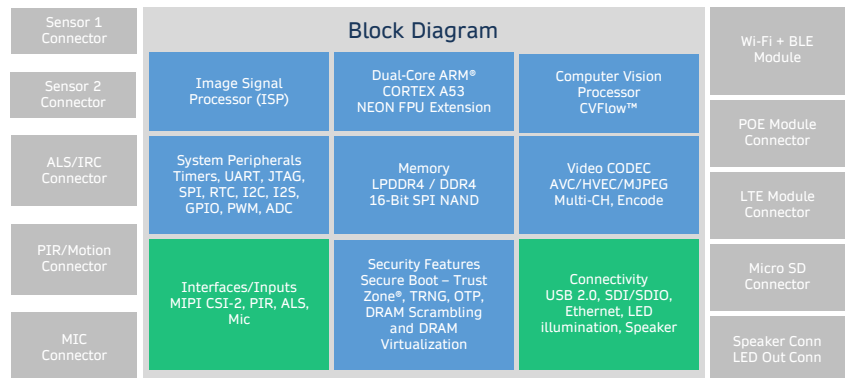
iVS-CV28P

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:

- 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 and 3-axis image stabilization
- 180° fisheye lens distortion correction
- Single or dual sensor input with independent ISP configuration
- 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



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-CV28P

Ambarella CV28 Based Vision SoC

Processor	<ul style="list-style-type: none"> Dual-core Arm® Cortex®-A53 up to 1 GHz NEON™ SIMD and FPU acceleration 10 nm low-power CMOS
Sensor I/O	<ul style="list-style-type: none"> MIPI CSI-2, sLVDS, SLVS 2 sensor inputs Supports up to 8MP CMOS image sensor
Advanced Image Signal Processing	<ul style="list-style-type: none"> Up to 320 Mpixel/s maximum pixel rate Lens shading correction Multi-exposure HDR 3D motion compensated noise reduction (MCTF) 3-Axis Electronic Image Stabilization (EIS) Digital PTZ and Virtual Cameras OSD engine, overlays, privacy mask Crop, mirror, flip, rotation On-chip stitching Geometric lens distortion correction Gamma compensation and color enhancement WDR with local tone mapping
Video Processing	<ul style="list-style-type: none"> H.265 / HEVC, H.264, MJPEG Up to 4KP30 encoding performance Dynamic region of interest (ROI) Multiple CBR and VBR rate control modules
AI Power Intelligence Video Analytics	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Wi-Fi 802.11 (optional) BT / BLE (optional) LTE Module (optional) Ethernet PoE Module (optional)
Audio	<ul style="list-style-type: none"> Audio Codec Line In and Line Out
Memory	<ul style="list-style-type: none"> Up to 8Gb LPDDR4 DRAM 4Gb SLC NAND Flash Optional eMMC
Interfaces	<ul style="list-style-type: none"> USB 2.0 (Device / Host) Micro SD SPI, I2C, JTAG, UART, GPIO, PWM, ADC LED Flash Control Expansion I/O Port: MIPI-DSI, HDMI, GPIO
Security	<ul style="list-style-type: none"> AES / SHA1 / SHA2-256 crypto acceleration Secure boot with TrustZone® and secure memory, TRNG, OTP, DRAM scrambling and virtualization Optional SOC monitoring
Power In	<ul style="list-style-type: none"> 12 VDC
Physical	<ul style="list-style-type: none"> Standard Board size - 2.5 x 2.5 (inch) Custom board size available
Environmental	<ul style="list-style-type: none"> Operating temperature: -20°C to 70°C Operating humidity: 5% to 90%
OS	<ul style="list-style-type: none"> Linux
Camera Modules	<ul style="list-style-type: none"> Sensor Modules up to 8MP/4K Multiple lens options IR or white LED illumination options IR Filter for night vision options



SECURITY



PRECISION FARMING



HOME AUTOMATION



SMART APPLIANCES



IoT



Additional information:

• Compatible sensor modules (iSM):
[iENSO.com/iism](https://www.ienso.com/iism)

• Custom module versions available upon request

Contact [iENSO.com](https://www.ienso.com) to discuss your specific needs



www.ienso.com



Established in 2003, iENSO provides embedded vision data systems that help global brands turn their products into vision data devices. iENSO provides fully secure end-to-end solutions that capture vision data and process it at the Edge and in the Cloud, giving product companies the opportunity to unlock the business benefits of recurring revenue and data monetization.

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