



VISION



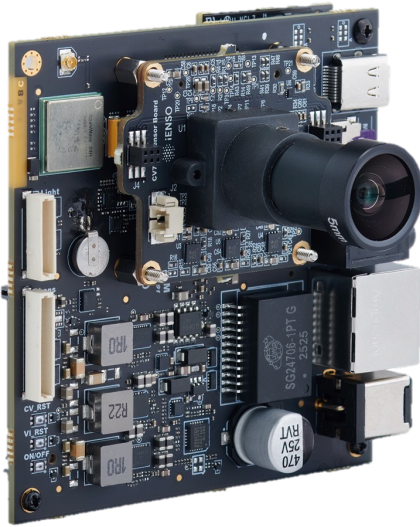
AI



CLOUD



SECURITY



# Embedded Vision Camera Platform

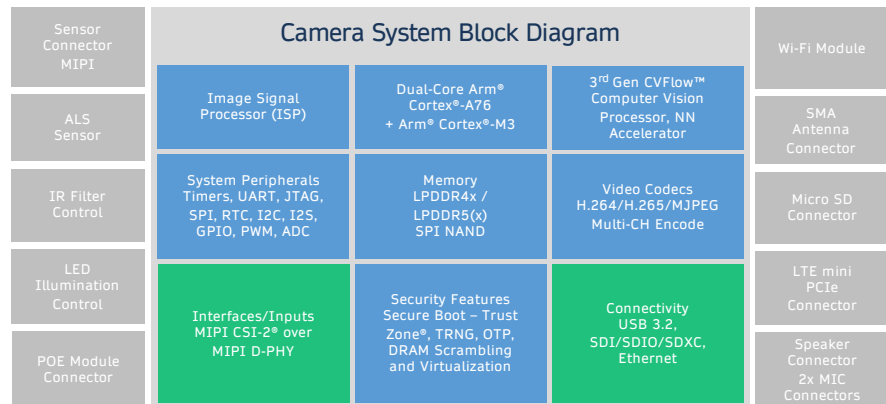
## iVS-CV75m

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™ CV75m SoC based
- Dual-core Arm® Cortex®-A76 up to 1.6 GHz
- Arm® Cortex®-M3 up to 576 MHz
- 4Kp30+ maximum encoding performance
- 3<sup>rd</sup> 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
- Multi exposure HDR
- 360° fisheye lens distortion correction
- MIPI sensor with LED illumination and IR filter control
- H.265/HVEC, H.264, MJPEG encoding
- Support for 16-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-CV75m

Featuring Ambarella CV75m Vision AI SoC

<b>Processor</b>	<ul style="list-style-type: none"> <li>Dual-core Arm® Cortex®-A76 up to 1.6 GHz</li> <li>Arm® Cortex®-M3 up to 576 MHz</li> <li>5 nm low-power CMOS</li> </ul>
<b>Sensor I/O</b>	<ul style="list-style-type: none"> <li>MIPI CSI-2®</li> <li>Supports up to 8MP CMOS image sensor</li> </ul>
<b>Advanced Image Signal Processing</b>	<ul style="list-style-type: none"> <li>Lens shading correction</li> <li>Multi-exposure HDR</li> <li>3D motion compensated temporal filtering (MCTF)</li> <li>Digital PTZ</li> <li>OSD engine, overlays, privacy mask</li> <li>Crop, mirror, flip, rotation</li> <li>Geometric lens distortion correction</li> <li>Gamma compensation and color enhancement</li> </ul>
<b>Video Processing</b>	<ul style="list-style-type: none"> <li>H.265 / HEVC, H.264 / AVC, MJPEG</li> <li>4KP30+ encoding performance</li> <li>Dynamic region of interest (ROI) encoding per frame</li> <li>Multiple CBR and VBR rate control modules</li> </ul>
<b>AI Power Intelligence Video Analytics</b>	<ul style="list-style-type: none"> <li>CVFlow® 3.0 vision processor for CNN/DNN edge analytics</li> <li>Support for latest transformer neural networks</li> <li>Pre-integrated AI Detectors or provide your own</li> <li>Can utilize models trained with industry-standard tools such as Caffe, ONNX, TensorFlow or PyTorch</li> </ul>
<b>Networking &amp; Connectivity</b>	<ul style="list-style-type: none"> <li>Wi-Fi 802.11ac 2.4/5GHz</li> <li>Ethernet PoE Module (optional)</li> <li>LTE (optional)</li> </ul>
<b>Audio</b>	<ul style="list-style-type: none"> <li>Audio Codec</li> <li>Line In and Line Out</li> </ul>
<b>Memory</b>	<ul style="list-style-type: none"> <li>16-bit Bus width</li> <li>16Gb LPDDR4x DRAM (LPDDR5(x) supported)</li> <li>4Gb SPI NAND Flash</li> </ul>
<b>Other Features</b>	<ul style="list-style-type: none"> <li>USB 3.2 (Device / Host configurable)</li> <li>Micro SD</li> <li>LED flash control</li> <li>IR filter control</li> <li>Support for zoom/varifocal lenses</li> </ul>
<b>Security</b>	<ul style="list-style-type: none"> <li>AES / SHA1 / SHA2-256 crypto acceleration</li> <li>Secure boot with TrustZone® and secure memory, TRNG, OTP, DRAM scrambling and virtualization</li> </ul>
<b>Power In</b>	<ul style="list-style-type: none"> <li>6~12 VDC - 10% / +20%</li> <li>USB-C – 5VDC 3A</li> <li>PoE+ (802.3at type) with PoE module option</li> </ul>
<b>Physical</b>	<ul style="list-style-type: none"> <li>Board size - 77 x 77mm / 3.0 x 3.0inch (H x W)</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>Operating temperature: -20°C to 50°C / -4°F to 122°F</li> <li>Operating humidity: 5% to 90%</li> </ul>
<b>OS</b>	<ul style="list-style-type: none"> <li>Linux support (Yocto)</li> </ul>
<b>Customization Options</b>	<ul style="list-style-type: none"> <li>Image sensor modules up to 8MP/4K</li> <li>Thermal sensor modules</li> <li>Optics (fixed focus / varifocal / zoom lenses)</li> <li>Illumination (IR / White LED)</li> <li>IR Filters</li> <li>Board size/shape</li> </ul>



**SECURITY / ACCESS CONTROL**



**AGRICULTURE AUTOMATION**



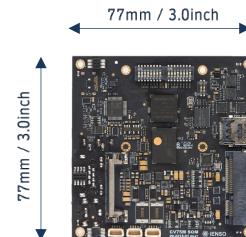
**INDUSTRIAL / ROBOTICS**



**UAV's**



**IoT**



### Additional information:

For compatible image sensor modules (iSM's) contact us at [vision@ienseo.com](mailto:vision@ienseo.com)



[www.ienseo.com](http://www.ienseo.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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