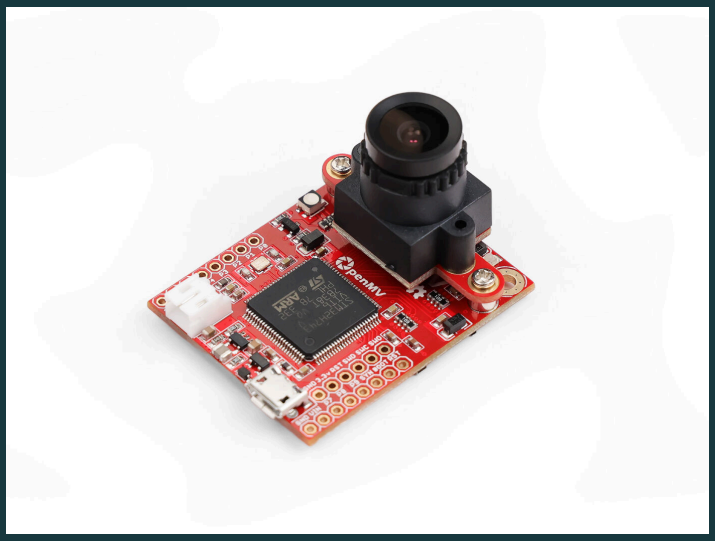
seeed studio

INDUSTRIAL PRODUCT DATASHEET

OpenMV Cam H7

OpenMV Cam H7 is a small, low power, microcontroller board which allows you to easily implement applications using machine vision in the real world.

SKU	UPDATED	PRICE
102991322	2026-11-18 01:04:11	$75.00(Excl. VAT)



Overview



OpenMV Cam H7 is a small, low power, microcontroller board which allows you to easily implement applications using machine vision in the real world.

Key Features

01 The STM32H743VI ARM Cortex M7 processor running at 480 MHz with 1MB of RAM and 2 MB of flash. All I/O pins output 3.3V and are 5V tolerant. The processor has the following I/O interfaces

02 A full-speed USB (12Mbs) interface to your computer. Your OpenMV Cam will appear as a Virtual COM Port and a USB Flash Drive when plugged in.

03 A µSD Card socket capable of 100Mbs reads/writes which allows your OpenMV Cam to record video and easy pull machine vision assets off of the µSD card.

04 An SPI bus that can run up to 100Mbs allowing you to easily stream image data of the system to either the LCD Shield, the WiFi Shield, or another microcontroller.

05 An I2C Bus, CAN Bus, and an Asynchronous Serial Bus (TX/RX) for interfacing with other microcontrollers and sensors.

06 A 12-bit ADC and a 12-bit DAC.

07 Three I/O pins for servo control.

08 Interrupts and PWM on all I/O pins (there are 10 I/O pins on the board).

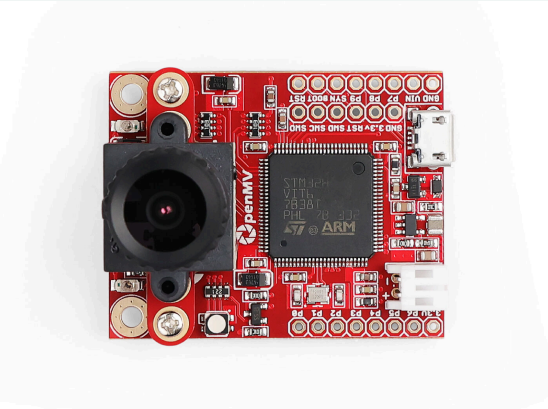
09 And, an RGB LED and two high power 850nm IR LEDs.

10 A removable camera module system allowing the OpenMV Cam H7 to interface with different sensors

11 The OpenMV Cam H7 comes with an OV7725 image sensor is capable of taking 640x480 8-bit grayscale images or 640x480 16-bit RGB565 images at 60 FPS when the resolution is above 320x240 and 120 FPS when it is below. Most simple algorithms will run at above 60 FPS. Your image sensor comes with a 2.8mm lens on a standard M12 lens mount. If you want to use more specialized lenses with your image sensor you can easily buy and attach them yourself.

12 **A LiPo battery connector is compatible with 3.7V LiPo batteries commonly sold online for hobbyist robotics applications.**

Product Gallery

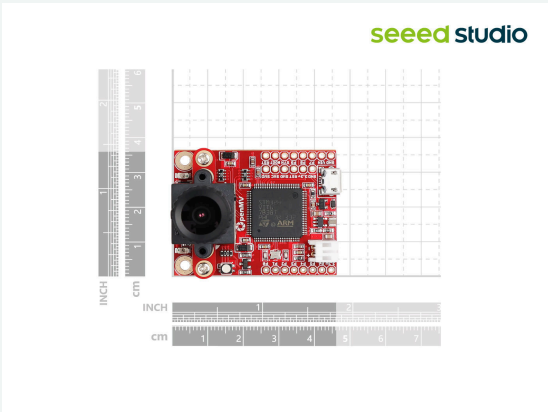












Applications

- **The OpenMV Cam can be used for the following things currently (more in the future):**
- **Frame Differencing:** You can use Frame Differencing on your OpenMV Cam to detect motion in a scene by looking at what's changed. Frame Differencing allows you to use your OpenMV Cam for security applications. Check out the video of the feature here.
- **Color Tracking:** You can use your OpenMV Cam to detect up to 16 colors at a time in an image (realistically you'd never want to find more than 4) and each color can have any number of distinct blobs. Your OpenMV Cam will then tell you the position, size, centroid, and orientation of each blob. Using color tracking your OpenMV Cam can be programmed to do things like tracking the sun, line-following, target tracking, and much, much, more. Video demo here.
- **Marker Tracking:** You can use your OpenMV Cam to detect groups of colors instead of independent colors. This allows you to create color makers (2 or more color tags) which can be put on objects allowing your OpenMV Cam to understand what the tagged objects are. Video demo here.
- **Face Detection:** You can detect Faces with your OpenMV Cam (or any generic object). Your OpenMV Cam can process Haar Cascades to do generic object detection and comes with a built-in Frontal Face Cascade and Eye Haar Cascade to detect faces and eyes.Video demo here.
- **Eye Tracking:** You can use Eye Tracking with your OpenMV Cam to detect someone's gaze. You can then, for example, use that to control a robot. Eye Tracking detects where the pupil is looking versus detecting if there's an eye in the image.
- **Person Detection:** You can detect if there's a person in the field of view using our built-in person detector TensorFlow Lite model. Video demo here.
- **Optical Flow:** You can use Optical Flow to detect translation of what your OpenMV Cam is looking at. For example, you can use Optical Flow on a quad-copter to determine how stable it is in the air. See the video of the feature here.
- **QR Code Detection/Decoding:** You can use the OpenMV Cam to read QR Codes in its field of view. With QR Code Detection/Decoding you can make smart robots that can read labels in the environment. You can see our video on this feature here.
- **Data Matrix Detection/Decoding:** The OpenMV Cam H7 can also detect and decode data matrix 2D barcodes too. You can see our video on this feature here.
- **Linear Barcode Decoding:** The OpenMV Cam H7 can also decode 1D linear bar codes. In particular, it can decode EAN2, EAN5, EAN8, UPCE, ISBN10, UPCA, EAN13, ISBN13, I25, DATABAR, DARABAR_EXP, CODABAR, CODE39, CODE93, and CODE128 barcodes. You can see our video on this feature here.
- **AprilTag Tracking:** Even better than QR Codes above, the OpenMV Cam H7 can also track AprilTags at 160x120 at up to about 12 FPS. AprilTags are rotation, scale, shear, and lighting invariant state-of-the-art fiducial markers. We have a video on this feature here.

Resource Links

- https://www.seeedstudio.com/OpenMV4-H7-p-4382.html
- OpenMV Cam H7 Datasheet (.pdf)
- OpenMV Cam Base Schematic (.pdf)
- Processor Datasheet: STM32H743VI (.pdf)
- Camera Datasheet: OV7725 (.pdf)
- Software Application Note (.pdf)
- Regulator Datasheet: PAM2305AAB330 (.pdf)
- Camera Regulator Datasheet: TPS731 (.pdf)
- More documents

Seeed Technology Co.,Ltd.
9F, Building G3, International E City,
Zhongshanyuan Road, Nanshan, Shenzhen, China

Tel: +86 0755-80695676
Web: www.seeed.cc
Shop: www.seeedstudio.com