Chipsmall

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We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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OpenMV Cam M7 – A Machine Vision Camera

SKU:DFR0517
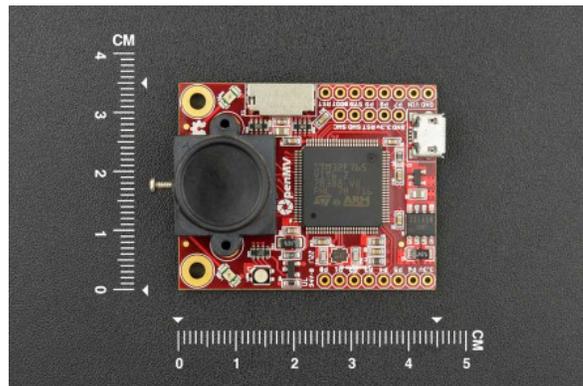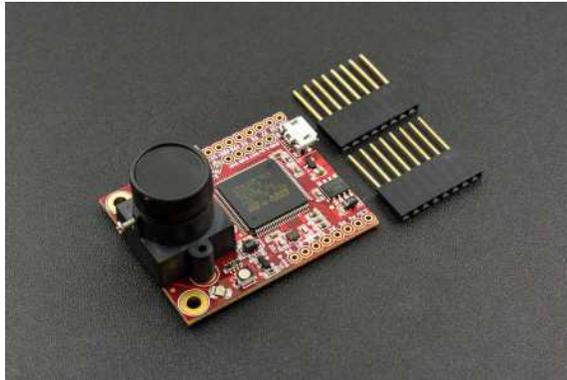
INTRODUCTION

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

You program the OpenMV Cam in high level Python scripts (courtesy of the MicroPython Operating System) instead of C/C++. This makes it easier to deal with the complex outputs of machine vision algorithms and working with high level data structures. But, you still have total control over your OpenMV Cam and its I/O pins in Python.

You can easily trigger taking pictures and video on external events or execute machine vision algorithms to figure out how to control your I/O pins.

FEATURES

The STM32F765VI ARM Cortex M7 processor running at 216 MHz with 512KB 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:

- 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.

- 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.

- A SPI bus that can run up to 54Mbs allowing you to easily stream image data off the system to either the LCD Shield, the WiFi Shield, or another microcontroller.

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

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

- Three I/O pins for servo control.

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

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

The 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 30 FPS. Your OpenMV Cam comes with a 2.8mm lens on a standard M12 lens mount. If you want to use more specialized lenses with your OpenMV Cam you can easily buy and attach them yourself.

APPLICATIONS

The OpenMV Cam can be used for the following things currently (more in the future):

- Frame Differencing

- Color Tracking

- Marker Tracking

- Face Detection

- Eye Tracking

- Optical Flow

- QR Code Detection/Decoding

- Data Matrix Detection/Decoding

- Linear Barcode Decoding

- AprilTag Tracking

- Line Detection

- Circle Detection

- Rectangle Detection

- Template Matching

- Image Capture

- Video Recording

SPECIFICATION

Processor	ARM® 32-bit Cortex®-M7 CPU w/ Double Precision FPU 216 MHz (462 DMIPS) Core Mark Score: 1082 (compare w/ Raspberry Pi Zero: 2060)
RAM Layout	128KB .DATA/.BSS/Heap/Stack 384KB Frame Buffer/Stack (512KB Total)
Flash Layout	32KB Bootloader 96KB Embedded Flash Drive 1920KB Firmware (2MB Total)
Supported Image Formats	Grayscale RGB565

	JPEG (and BAYER)
Maximum Supported Resolutions	Grayscale: 640x480 and under RGB565: 320x240 and under Grayscale JPEG: 640x480 and under RGB565 JPEG: 640x480 and under
Lens Info	Focal Length: 2.8mm Aperture: F2.0 Format: 1/3" Angle (Field-of-View): 115° Mount: M12*0.5 IR Cut Filter: 650nm (removable)
Electrical Info	All pins are 5V tolerant with 3.3V output. All pins can sink or source up to 25mA. P6 is not 5V tolerant in ADC or DAC mode. Up to 120mA may be sinked or sourced in total between all pins. VIN may be between 3.6V and 5V. Do not draw more than 250mA from your OpenMV Cam's 3.3V rail.
Weight	16g
Length	45mm
Width	36mm
Height	30mm

SHIPPING LIST

- OpenMV Cam M7 x1

- Pin Header x2