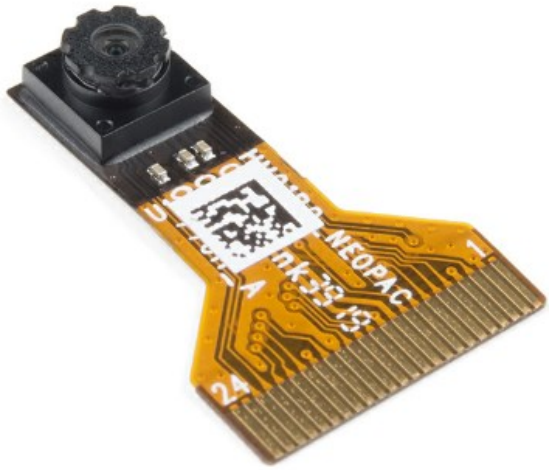





Himax CMOS Imaging Camera - HM01B0

SEN-15570

DESCRIPTION FEATURES DOCUMENTS

Image Sensor

- Ultra Low Power Image Sensor (ULPIS) designed for Always On vision devices and applications
- High sensitivity 3.6µ BrightSense™ pixel technology
- 320 x 320 active pixel resolution with support for QVGA window, vertical flip and horizontal mirror readout
- Programmable black level calibration target, frame size, frame rate, exposure, analog gain (up to 8x) and digital gain (up to 4x)
- Automatic exposure and gain control loop with support for 50 / 60Hz flicker avoidance
- Flexible 1bit, 4bit and 8bit video data interface with video frame and line sync
- Motion Detection circuit with programmable ROI and detection threshold with digital output to serve as an interrupt
- On-chip self oscillator
- I2C 2-wire serial interface for register access
- High CRA for low profile module design

Sensor Parameters

- Active Pixel Array 320 x 320
- Pixel Size 3.6 µm x 3.6 µm
- Full Image Area 1152 µm x 1152 µm
- Diagonal (Optical Format) 1.63 mm (1/11″)
- Color Filter Array Monochrome and Bayer
- Scan Mode: Progressive
- Shutter Type: Electronic Rolling Shutter
- Frame Rate MAX 51 fps @ 320 x 320, 60 fps @ 320 x 240 (QVGA)
- CRA (maximum) 30°

Sensor Specifications

- Supply Voltage: Analog - 2.8 V, Digital - 1.5V (Internal LDO: 1.5V – 2.8V), I/O - 1.5 – 2.8V
- Input Reference Clock: 3 – 50 MHz
- Serial Interface (I2C): 2-wire, 400 KHz max.
- Video Data Interface: 1b, 4b, 8b with frame / line SYNC
- Output Clock Rate MAX: 50 MHz for 1bit, 12.5 MHz for 4bit, 6.25 MHz for 8bit
- Est. Power Consumption (include IO with 5pF load):
  - QVGA 60FPS (Typical) <4 mW
  - QVGA 30FPS (Typical) <2 mW

Tags

CAMERA HIMAX IMAGING MACHINE LEARNING MACHINE VISION SENSOR

Himax CMOS Imaging Camera - HM01B0 Product Help and Resources

TUTORIALS

Programming the SparkFun Edge with Arduino

DECEMBER 9, 2019

Running low-power machine learning examples on the SparkFun Edge can now be done using the familiar Arduino IDE. In this follow-up to the initial Edge tutorial, we'll look at how to get three examples up and running without the need to learn an entirely new SDK.

SparkFun Edge Hookup Guide

SEPTEMBER 26, 2019

Get to know your Edge board, including both the hardware features for you to utilize as well as how to get talking to it.

COMMENTS 7 | REVIEWS 0

Comments

Looking for answers to technical questions?

We welcome your comments and suggestions below. However, if you are looking for solutions to technical questions please see our **Technical Assistance** page.

Log in or register to post comments.

Member #824414 / about 2 months ago * / ★ 1

Is this camera black and white only, or does it have an RGB bayer filter? It doesn't say anywhere in the product description.

I mean, I know it says "Color Filter Array Monochrome and Bayer" under "Sensor Parameters", but that doesn't seem very clear to me. It should be either one or the other.

> Santa Claus Impersonator / about a month ago / ★ 1
>
> That parameter was pulled directly from the manufacturer website; you may need to reach out to the manufacturer for further clarification on the color filter array. (*I've only seen it working in grey-scale (B/W), but that is probably because we just started testing with the Artemis.*)

Member #103145 / about 5 months ago / ★ 1

Would this product be suitable for automated visual inspection? Nothing fancy, just need to recognize fiducials on a PCB.

> Santa Claus Impersonator / about 4 months ago * / ★ 1
>
> I'm not an expert in AOI (*automated optical inspection*), but I don't think that is something we could easily quantify or answer anyways.

ProfBarry / about 5 months ago / ★ 1

For use with other development boards, what is the pitch of the ribbon cable and is it single sided or double sided?

The Sparkfun Edge Dev Board specs the connector as an 'OV7670 camera connector' and on the schematic (https://cdn.sparkfun.com/assets/2/b/7/4/d/SparkFun_Edge_Schematic.pdf) calls out 21 pins (though the OV7670 seems to have just 16 pins), but the HM01B0 ribbon cable is labeled 1-24 pins. Can you provide a pinout for the HM01B

What is the field of view for the lens?

Santa Claus Impersonator / about 4 months ago / ★ 1

The chief ray angle (CRA) has a maximum of 30°.

ProfBarry / about 4 months ago / ★ 1

Just got my camera, the connector is 0.5mm 24 pitch.