

CAMERA MODULE

Professional OEM/ODM

1. 7 Days sample delivery
2. 10/100 levels dust free workshop
3. 0.3–108MP pixel could customized



Home > Products > FPC Camera Module > Dvp Camera Module > Details



Camera Module OV2640 2mp

SF-AOV2640-JE01-H110 model is hot sale camera module ov2640 2mp in the current market and can be used on the board ESP32, OV2640 sensor is the low voltage CMOS device that provides the full functionality of a signal 1632*1232 camera and image processor, it is CSP sensor with resolution 1632*1232, the frame rate can be reached to 15fps. This OV2640 sensor is in shortage and relatively old currently, but SINCERE FIRST have enough OV2640 sensor resource and all of our camera module ov2640 2mp are use 100% original sensor.



Send Inquiry



Product Introduction



Guangzhou Sincere Information Technology Ltd. is one of the most professional camera module ov2640 2mp manufacturers and suppliers in China. Welcome to wholesale discount products for sale here from our factory. Customized orders are welcome.

As a manufacturer based in China, we are proud to offer an exceptional product that is one of our absolute best-sellers: the Camera Module OV2640 2MP. This high-quality camera module is a must-have for all merchants who are looking to invest in innovative and advanced technology that will not only help to enhance their products but also to stay ahead of the competition.

The OV2640 2MP camera module is not only affordable but incredibly versatile, making it the perfect choice for a wide range of applications. With its high resolution 2-megapixel sensor, it produces exceptional image quality that is perfect for use in a variety of applications such as video surveillance, mobile phones, robots, and other smart devices. There are many reasons why this product should be a top consideration for any merchant looking to add cutting-edge technology to their lineup, here are just a few:

Advanced Image Quality:



The OV2640 2MP Camera Module offers exceptional image quality thanks to its advanced 2-megapixel sensor. The module delivers clear and crisp images every time, making it ideal for a wide range of applications including surveillance cameras, drones, and robotics. 

Easy Integration:

One of the great things about the OV2640 2MP Camera Module is how easy it is to integrate into your products. Apart from the standard I2C interface, the camera module also features a DVP interface which makes it very easy to interface with other microcontrollers, even if you don't have an embedded video processing unit on your system.

Size and Space Efficiency:

The OV2640 2MP Camera Module is incredibly small and also lightweight, making it perfect for use in a wide range of products where space and weight are critical considerations. Its compact size means that it can fit into almost any design or product, no matter how small or tight.

Low Power Consumption:

Another advantage of our Camera Module OV2640 is that it operates on low power, making it ideal for battery-operated devices. Its low power consumption ensures that the battery life of a device is not quickly drained, especially important for surveillance cameras.

Cost-Effective:

One of the reasons why this camera module has been so popular among our clients is that it provides advanced features at an affordable price. It offers high-quality features and a small compact design that is one of a kind for its price range.

In conclusion, the OV2640 2MP camera module is a high-quality solution for anyone who is looking to add innovative technology to their products, whether its mobile phones, drones, or robotics. Its exceptional image quality, easy integration, low power consumption and affordable price make it a great choice for merchants looking to standout. Contact us today to learn more about this product, or any other of our high-quality, China-made offerings.

ODM/OEM CUSTOMIZED DESIGN IS WELCOME!

FEATURE 01

Best Quality Assurance

FEATURE 02

1 year Replacement!

FEATURE 03

10 years warranty!

We only provide the original new items, **100%** make sure the best quality!
All products have been checked and packaged in good condition before dispatch!



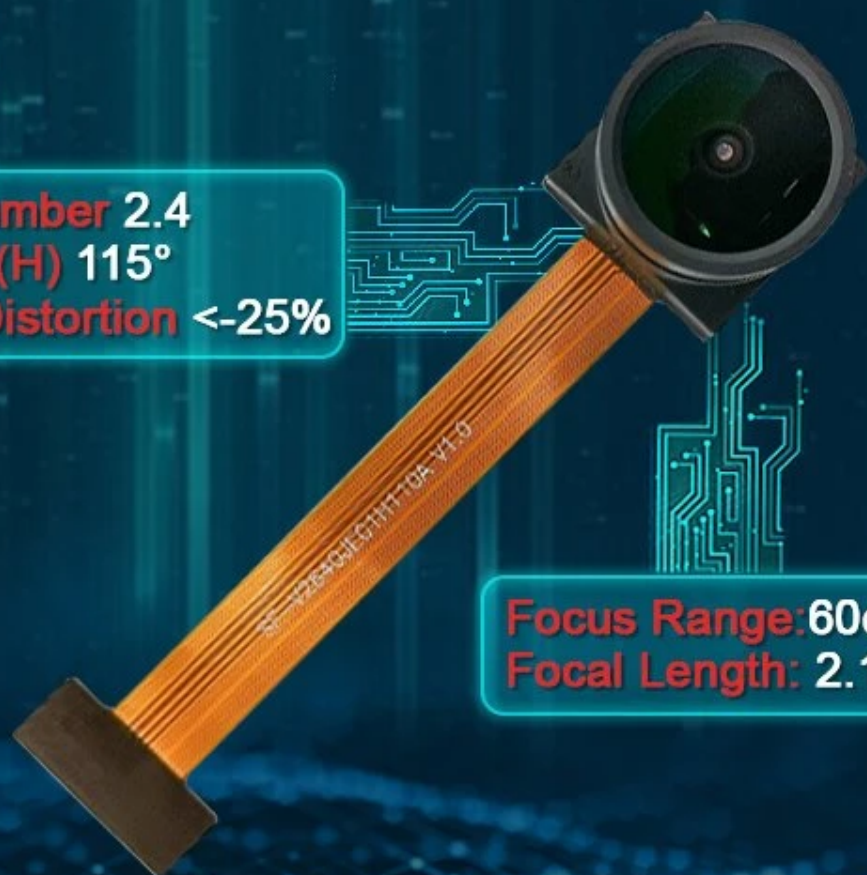


MIPI

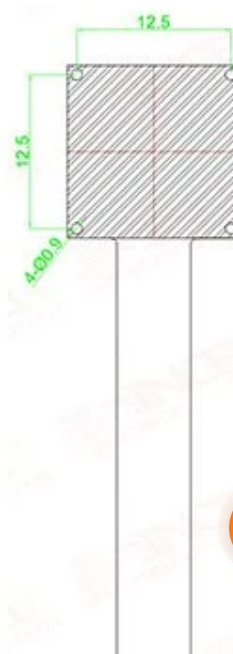
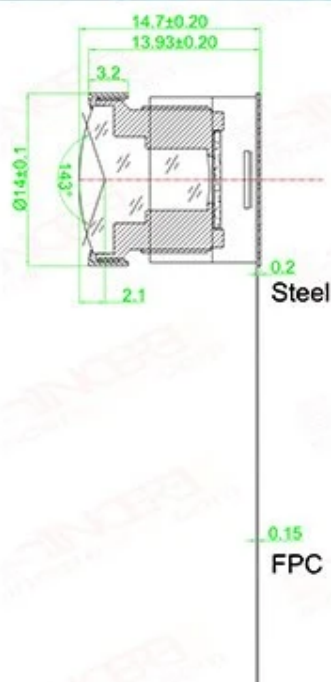
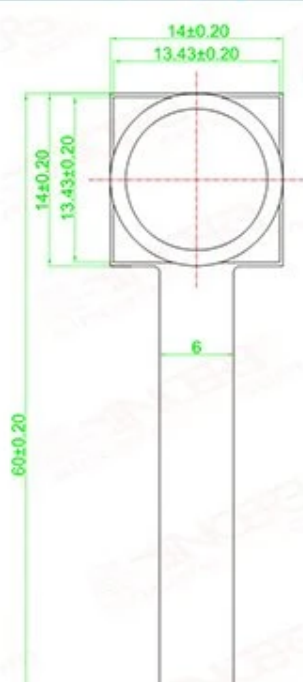
CAMERA MODULE

OV2640

F Number 2.4
FOV(H) 115°
TV Distortion <-25%



Focus Range: 60cm~∞
Focal Length: 2.15mm





Camera Module ov2640 2mp: SF-AOV2640-JE01-H110

SF-AOV2640-JE01-H110 model is hot sale camera module ov2640 2mp in the current market and can be used on the board ESP32, OV2640 sensor is the low voltage CMOS device that provides the full functionality of a signal 1632*1232 camera and image processor, it is CSP sensor with resolution 1632*1232, the frame rate can be reached to 15fps. This OV2640 sensor is in shortage and relatively old currently, but SINCERE FIRST have enough OV2640 sensor resource and all of our camera module ov2640 2mp are use 100% original sensor.

Camera module ov2640 2mp SF-AOV2640-JE01-H110 is with M12 wide lens angle horizontal angle 110 degrees,F.Number.2.4, the lens can be changed with different design, the standard distortion is < -25% , the focusing range of read made SF-AOV2640-JE01-H110 camera module is 60cm to infinity, which can be changed per different requirement. The lens can be with glue and be without glue as well, without glue,then the lens and focusing range can be changed or adjust by consumers, so it will be convenient.

The head size of camera module ov2640 2mp SF-AOV2640-JE01-H110 is around 14mm*14mm*14.8mm, FPC length is around is around 41mm, the length of the whole camera module is around 60mm. SINCERE FIRST can customized head size, FPC length to be different size per consumer requirement. The interface of SF-AOV2640-JE01-H110 camera module is DVP interface and is with golden finger connector, the mating connector part no.is FH12-24S-0.5SH. SINCERE FIRST can support OEM service on the connector, pinout, interface ect, there is no MOQ. 10 years warranty, one year replace.

Introduction:

This is a 2MP DVP camear module with OV2640 sensor from Omnivision,the OV2640 is a low voltage CMOS image sensor that provides the full functionality of a single-chip UXGA(1632x1232) camera and image processor in a small footprint package.The OV2640 provides full -frame sub-sampled,scaled or windowed 8-bit/10-bit images in a wide range of formats,controlled through the Serial Camera Control Bus(SCCB) interface. The OV2640 has an image array capable of operating at up to 15 frames per second in UXGA resolution with complete user control over image quality,formatting and output data transfer.All required image processing functions, including exposure control,gamma,white balance,color saturation ,hue control,white pixel cancelling,noise canceling and more,are also programmable through the SCCB interface.The OV2640 also includes a compression engine for increased processing power.

In addition, Omnivision CAMRACHIPS use proprietary sensor technology to improve image quality by reducing or eliminating common lighting/electrical sources of image contamination, such as fixed pattern noise, smearing, etc., to produce a clean, fully stable color image.

Features

- High sensitivity for low-light operation
- Low operating voltage for embedded portable apps
- StandardS CCB interface
- Output support for Raw RGB, RGB(RGB 565/555) ,GRB 422, YUV(422/420) and YCbCr(4:2:2) formats
- Supports image sizes:UXGA, SXGA, SVGA, and any size scaling down from SXGAto40x 30
- Vario Pixel method for sub-sampling

- Automatic image control functions including Automatic Exposure Control(AEC) , Automatic Gain Control(AGC) , Automatic WhiteBalance(AWB) , Automatic Band Filter(ABF) , and Automatic Black-Level Calibration(A BLC)
- Image quality controls in du ding color saturation, gamma, sharpness(edge enhancement) , lens correction, white pixel canceling, noise ca , and 50/60Hz luminance detection





- Line opt cal black level output capability
- Video or snapshot operation
- Zooming, panning, and windowing functions
- Internal/external frame synchronization
- Variable framerate control
- Supports LED and flash strobe mode
- Supports scaling
- Supports compression
- Embedded microcontroller

Application of Camera Module:

- Video Doorbell
- Video Conference
- Intelligent Home
- Face Recognition
- Raspberry Pi Camera
- IOT Products



Product Details:

Sensor	OV2640
Pixel	2 Mega Pixel



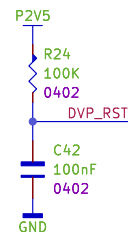
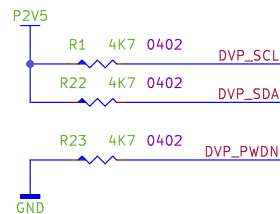
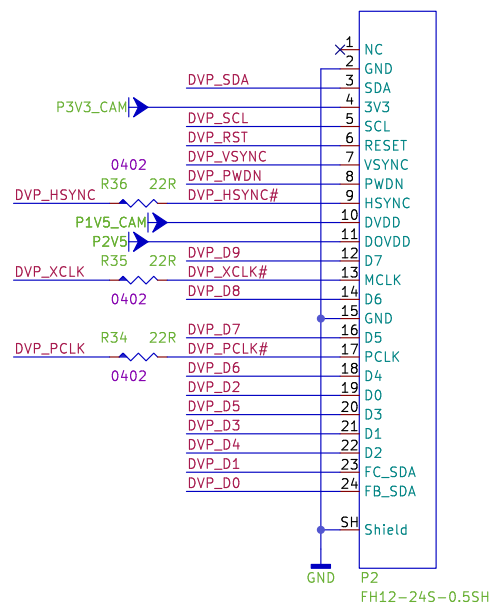
Most Effective Pixels	1632 (H) x 1232 (V)	
Focus Type	Fixed Focus	
Focusing Range	60cm~Infinity	
Focal Length	2.15mm	
F.NO	2.4	
FOV(H)	115°	
TV Distortion	< -25%	
Test Connector	FH12-24S-0.5SH	
Pinout	24pin	
Output Format	YUV output	



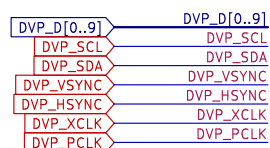
SINCEREFIRST camera module manufacturing enterprise integrates design, development, manufacturing and sales. We can supply ready made 0.3mp to 108mp FPC & USB camera module and diameter 0.9mm~8.0mm endoscope camera module. Our products are widely used in various fields, such as AIoT equipment, smart home, smart medical, intelligent transportation, automatic driving, intelligent security, Intelligent warehousing, scanning, robot, UAV, medical endoscope, industrial endoscope, computer, intelligent terminals etc.

If you are looking for camera module or camera sensor manufacturers and suppliers, please feel free to contact us for camera module price and more detailed introduction. SINCEREFIRST is a leading high-tech company specializing in integrated optical device manufacturers and optical imaging system solution providers. There are different types of camera modules and camera sensors for sale, and they also support customization to meet all your needs and solve your problems.





<https://hshop.vn/products/sipeed-lichee-dvp-camera-ov2640-2mp>
FH12-24S-0.5SH(55)



OneKiwi Technology Co., Ltd

Connect The Future

<https://onekiwi.com.vn>

ONEKIWI

Drawing Title: **Kiwi Nano 4K**

Page Title: **Camera**

Size: A4

Date: 2024-11-28

Drawn by: Thanh Duong

Rev: **v1.2**

File: camera.kicad_sch

Page: 7/8

Table Of Contents

- OV2640 Specs
- OV2640 Datasheet
- Get OV2640 camera solutions from Arducam
 - Off-the-shelf products
 - OV2640 Camera Modules
 - OV2640 ESP32 CAM
- Why OV2640 is an excellent sensor
- What make it even more popular
 - OV2640 on Arduino
 - OV2640 on ESP32
 - OV2640 CCM Compact Camera Modules
- OV2640 Alternative
 - 1. 720p sensor
 - 2. 2MP MT9D111
 - 3. 3MP
 - 4. 5MP
- Additional Resources
- Arducam Mega SPI Series

OV2640 Specs

Attribute	Values
Array Size	1600 x 1200 (UXGA)
Power Supply	Core: 1.3V DC $\pm$ 5% Analog: 2.5~3.0V DC I/O: 1.7V to 3.3V
Power Consumption	YUV mode full res & framerate: 125mW Compressed mode full Res & framerate: 140mW Standby: 600 μ A



Attribute	Values
Maximum Image Transfer Rate	1600×1200@15fps, SVGA@30fps, CIF@60fps
Sensitivity	0.6V/Lux-sec
S/N ratio	40dB
Dynamic Range	50dB
Pixel Size	2.2 x 2.2 μm
Dark Current	15mV/s at 60°C
Well Capacity	1.2Ke
Fixed Patter Noise	<1% of VPEAK-TO-PEAK
Image Area	3590 x 2684 μm
Package Dimensions	5725 x 6285 μm
Resolution	UXGA SVGA and below
Output Format	YUV/RGB/Raw RGB Data
Shutter Type	Rolling Shutter
Color Filter Array	RGB Bayer Array
ISP Functions	AE, AWB, Sharpness, Noise Reduction, Defect Reduction, Gamma, Color Saturation, Special Effects

Release in 2005, it was the world's first fully-integrated Type 1/4-inch 2 MP Image sensor.

In its product brief back in 2006, we can see the full specs of this camera module.



applications

- cell and camera phones
- toys
- PC multimedia
- digital still cameras

OV2640

ordering information

- OV02640-VL9A (color, CSP2-38)

product features

- high sensitivity for low-light operation
- embedded compression engine supporting most common compression formats
- output support for Raw RGB, RGB (RGB565/555), GRB422, YUV (422/420) and YCbCr (4:2:2) formats
- supports image sizes: UXGA, SXGA, SVGA, and any size scaling down from SXGA to 40x30
- VarioPixel* for increased sensitivity when sub-sampling
- automatic image control functions including automatic exposure control (AEC), automatic gain control (AGC), automatic white balance (AWB), automatic band filter (ABF), and automatic black-level calibration (ABLC)
- image quality controls including color saturation, gamma, sharpness (edge enhancement), lens correction, white pixel canceling, noise canceling, 50/60 Hz luminance detection and variable frame rate control

product specifications

- array size: 1600 x 1200 (UXGA)
- power supply: core: 1.3VDC ± 5%, analog: 2.5 ~ 3.0VDC, I/O: 1.7V to 3.3V
- power consumption: active (full resolution) 125 mW (for 15 fps, YUV mode), 140 mW (for 15 fps, compressed mode), standby: 600µA
- lens size: 1/4"
- maximum image transfer rate: UXGA/SXGA: 15 fps, SVGA: 30 fps, CIF: 60 fps
- sensitivity: 0.6 V/Lux-sec
- S/N ratio: 40 dB
- dynamic range: 50 dB
- pixel size: 2.2 µm x 2.2 µm
- dark current: 15 mV/s at 60°C
- well capacity: 12 Ke
- fixed pattern noise: <1% of $V_{read-to-read}$
- image area: 3590 µm x 2684 µm
- package dimensions: 5725 µm x 6285 µm

The Product Brief of OV2640 back in 2006

OV2640 Datasheet

Here you can download the [OV2640 datasheet](#).



Advanced Information Preliminary Datasheet

OV2640 Color CMOS UXGA (2.0 MegaPixel) CAMERACHIP™ Sensor with OmniPixel2™ Technology

General Description

The OV2640 CAMERACHIP™ image sensor is a low voltage CMOS device that provides the full functionality of a single-chip UXGA (1632x1232) camera and image processor in a small footprint package. The OV2640 provides full-frame, sub-sampled, scaled or windowed 8-bit/10-bit images in a wide range of formats, controlled through the Serial Camera Control Bus (SCCB) interface.

This product has an image array capable of operating at up to 15 frames per second (fps) in UXGA resolution with complete user control over image quality, formatting and output data transfer. All required image processing functions, including exposure control, gamma, white balance, color saturation, hue control, white pixel canceling, noise canceling, and more, are also programmable through the SCCB interface. The OV2640 also includes a compression engine for increased processing power. In addition, OmniVision CAMERACHIP sensors use proprietary sensor technology to improve image quality by reducing or eliminating common lighting/electrical sources of image contamination, such as fixed pattern noise, smearing, etc., to produce a clean, fully stable color image.

Applications

- Cellular and Camera Phones
- Toys
- PC Multimedia
- Digital Still Cameras

Key Specifications

Power Supply	Array Size	UXGA	1600 x 1200
	Core		1.3VDC ± 5%
	Analog		2.5 ~ 3.0VDC
Power Requirements	I/O		1.7V to 3.3V
	Active		125 mW (for 15 fps, UXGA YUV mode)
	Standby		140 mW (for 15 fps, UXGA compressed mode)
Temperature Range	Stable Image		900 µA
			0°C to 50°C
Output Formats (8-bit)		- YUV(422/420)/YCbCr422 - RGB565/555 8-bit compressed data 8/10-bit Raw RGB data	

Get OV2640 camera solutions from Arducam

Arducam offers OV2640 Compact Camera Modules (CCM), ESP32 Cams, OV2640 Camera Breakout Boards, [SPI cameras](#).

As well as **alternative image sensors and solutions to the OV2640**.

Off-the-shelf products

Subscribe for more techs on embedded cameras, sensors, and systems



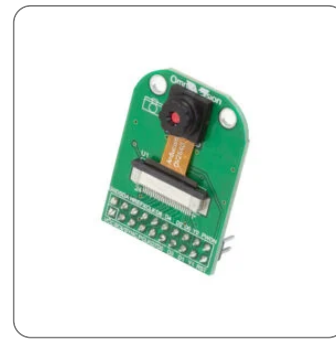


Arducam 2MP OV2640 Color 1/4" Camera Module with LS-4011 M12 Mount lens



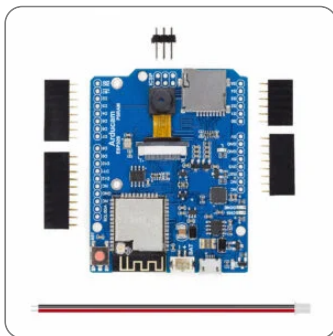
Arducam Mini 2MP Plus – OV2640 SPI Camera Module for Arduino UNO Mega2560 Board & Raspberry Pi Pico

\$ 25.99



[Discontinued] Arducam 2MP OV2640 1/4" CMOS Sensor Camera Module Adapter Board JPEG Out

OV2640 ESP32 CAM



[Discontinued] Arducam IoTai ESP32 CAM WiFi Bluetooth PSRAM Development Board with Camera Module OV2640

Why OV2640 is an excellent sensor

Compared to the latest Huawei or iPhone camera, OV2640 is not fancy at all in terms of the sensor format, the resolution, the image quality.

But it doesn't bother make the OV2640 to be an excellent image sensor.

The OV2640 is a SOC sensor that has an on-chip ISP which can do auto-exposure, auto-white balance in such a small sensor package to represent a nice image.

The sensor interface is DVP which standards for digital video port, a kind of parallel source synchronization camera interface with 8bit data, horizontal/vertical synchronization signal, and an associated pixel clock.

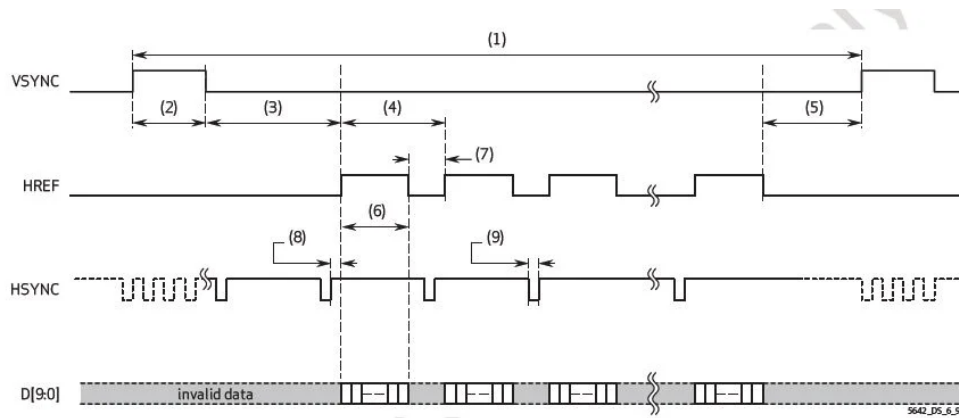


table 6-8 DVP timing specifications (sheet 1 of 2)

Example: DVP timing specifications of [OV5642](#)

It is very friendly to most of the low-end ARM and RISC microcontrollers like STM32, ESP32, compared to the MIPI interface, only high-end processors support such camera interface.

The most important feature of OV2640 is the hardware JPEG encoder, it off-loads the processing power and reduces memory footprint usage from the microcontrollers.

A typical 1600×1200 RGB565/YUV format image occupies 3.66MB RAM space, while a JPEG format same decent image only occupies 150KB, almost x25 compression ratio.

With lower image resolution or higher compression ratio, the output JPEG image size will be even smaller, that can be easily stored and processed in microcontrollers internal RAM memory. It is huge!

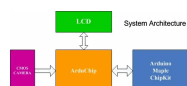
In conclusion, a friendly camera interface, nice image quality, powerful on-chip ISP with JPEG encoding, makes the OV2640 image sensor unique and popular for IoT camera applications at all times.

What make it even more popular OV2640 on Arduino

In 2012, the Arducam team firstly introduced the OV2640 sensor into the Arduino platform with our SPI camera solution and made the camera driver opensource. (After that the OV2640 is ported to STM32 and ESP32 platforms and so on.)

This Arduino-compatible camera was a huge success. It was impossible for a microcontroller like Arduino to handle image sensor with a resolution as high as 2MP or above.

Here is the original blog of release the Arduino camera solution back in 2012.



ArduCAM – An Arduino Camera Shield

Posted: September 18, 2012

This camera shield is replaced by newer Rev.C+ shield and ArduCAM-Mini board ArduCAM is Arduino based open source camera platform which is well mated to Arduino boards. It now supports Arduino UNO board and we will add support Mega1280/2560 and new released Leonardo, Maple and Chipkit are also in planning.

OV2640 on ESP32

The ESP32 could not support a camera in the first place. At around the end of 2018, it is updated to support a parallel camera. As the newer ESP32 boards with a camera interface comes with PSRAM, the camera application is easier on this microcontroller for IoT applications, or even simple AI application.

Arducam's also offered an ESP32-based board in Arduino UNO form factor that supports parallel cameras:



Introducing Arducam IoTai – The Ultimate IoT (Internet of Things) Board with Camera Support, Based on ESP32 and in the Shape of Arduino UNO

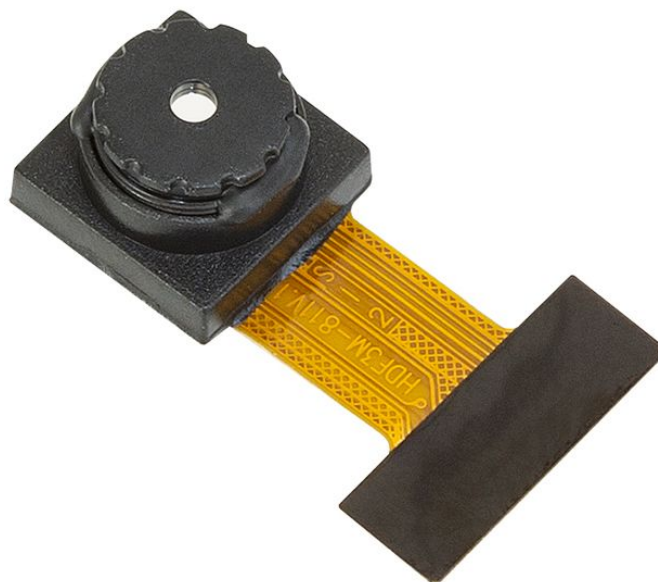
Posted: August 9, 2019

IoT Platform with ESP32 If you are interested in maker boards and IoT projects, you must have heard of ESP platforms such as the ESP-32 series. Considering the Wifi and Bluetooth features integrated, it is really an extremely cheap and cool gadget. Cost-effective IoT Solution with Arduino Arduino, on the other hand, is another widely [...]

[1 comment](#)

OV2640 CCM Compact Camera Modules

We offer various kinds of OV2640 CCM camera modules with a different lens and cable length. [Let us know](#) if you have specific needs for the module.



OV2640 Alternative

The OV2640 is so nice, but it has been EOL for more than 10 years. You might be curious why there are still so many camera modules available on the market?

This sensor was targeted to the mobile phone industry, the production volume is quite large, there is a lot of stock out there. You still need to be aware of the supply issue when using this camera into your own product and find some alternatives.

Arducam carries a list of camera modules that features on-chip ISP, DVP camera interface and JPEG compression engine, and can be an alternative to the current OV2640 camera.

1. 720p sensor

NT99141 is from Novatek which is 1/4" 1280×720 image sensor with 8bit parallel camera interface with build-in ISP processing of following features:

- 1) Pixel Size: 3.0um x 3.0um
- 2) Shutter: electronic rolling shutter
- 3) Frame rate: 640×360@60fps, 1280×800@30fps
- 4) Color Filter Arrays: RGB Bayer pattern
- 5) Power consumption: 215mw@HD JPG, standby < 10uA
- 6) Output format: YCbCr 4:2:2, RGB565, RGB555, RGB444, Raw, CCIR656, JPEG encoding
- 7) On-chip scaling from 1280×720
- 8) Auto exposure (AE), Auto-White Balance (AWB) control functions
- 9) Support Sharpness, noise reduction, defect correction, gamma, color saturation adjustment.
- 10) Sepcical effects

2. 2MP MT9D111

MT9D111 is original from Micron, later Aptina and now ONSemi. Like the OV2640, the MT9D111 sensor is built at the same age but it is still in production. The MT9D111 is 1/3.2" 1600×1200 image sensor with 8bit parallel camera interface with build-in ISP processing of following features. Note that the MT9D111 JPEG encoder doesn't include a JPEG header in the video stream, user need to append the JPEG header to create a viewable image. This is the main encoder difference from the OV2640.

- 1) Pixel Size: 2.8um x 2.8um
- 2) Shutter: electronic rolling shutter
- 3) Frame rate: 800×6000@30fps for preview, 1600×1200@15fps for still
- 4) Color Filter Arrays: RGB Bayer pattern
- 5) Power consumption: 348mw@2MP
- 6) Output format: YCbCr 4:2:2, RGB565, RGB555, RGB444, Raw, JPEG encoding
- 7) Auto exposure (AE), Auto-White Balance (AWB), Auto-Focus (AF) control functions

3. 3MP

OV3640, OV3660 are 3MP 2048 x 1536 (QXGA) SoC image sensors from Omnivision. They are



Sensor	OV3640	OV3660
Optical size	1/4"	1/5"
Pixel Size	1.75um x 1.75um	1.4um x 1.4um
Active Resolution	2048×1536	2048×1536
Color Filter	RGB Bayer Pattern	RGB Bayer Pattern
Shutter Type	Electronics Rolling Shutter	Electronics Rolling Shutter
Frame Rate	2048×1536@15fps 1024×768@30fps	2048×1536@15fps 1080p@20fps 720p@45fps VGA@60fps QVGA@120fps
Output Format	YUV422/420, YCbCr422, RGB565/555/444, RAW, JPEG	YCbCr422, RGB565/555/444, RAW, JPEG
Interface	DVP	DVP
AWB, AE	☑	☑
Noise Reduction	☑	☑
Lens Shading Correction	☑	☑
Gamma Correction	☑	☑
Windowing and Cropping	☑	☑
Flip/Mirror	☑	☑

4. 5MP

OV5640, OV5642, MT9P111, S5K4ECGX, they are 5MP 1/4" SoC image sensors with on-chip ISP and JPEG compression.

OV5640 and OV5642 are from Omnivision. OV5642 is used on Arducam Mini 5MP Plus SPI camera and OV5640 is big brother of OV5642. MT9P111 is from ONSemi, and S5K4ECGX is



Sensor Spec	OV5640	OV5642	MT9P111	S5K4ECGX
Optical size	1/4"	1/4"	1/4"	1/4"
Pixel Size	1.4um x 1.4um	1.4um x 1.4um	1.4um x 1.4um	1.4um x 1.4um
Active Resolution	2592×1944	2592×1944	2592×1944	2592×1944
Color Filter	RGB Bayer Pattern	RGB Bayer Pattern	RGB Bayer Pattern	RGB Bayer Pattern
Shutter Type	Electronics Rolling Shutter	Electronics Rolling Shutter	Electronics Rolling Shutter	Electronics Rolling Shutter
Frame Rate	5MP@15fps 1080p@30fps 720p@60fps VGA@90fps QVGA@120fps	5MP@15fps 1080p@30fps 720p@60fps VGA@90fps QVGA@120fps	5MP@15fps 1080p@30fps 720p@60fps	5MP@15fps 1080p@30fps 720p@60fps QVGA@120fps
Output Format	YUV422/420, YCbCr422, RGB565/555/444, RAW, JPEG	YUV422/420, YCbCr422, RGB565/555/444, RAW, JPEG	YCbCr422, RGB565/555/444, RAW, JPEG	YUV422, RGB565, RGB888, RAW, JPEG
Interface	DVP and MIPI	DVP and MIPI	DVP and MIPI	DVP and MIPI
AWB, AE, AF	☑	☑	☑	☑
Noise Reduction	☑	☑	☑	☑
Lens Shading Correction	☑	☑	☑	☑
Gamma Correction	☑	☑	☑	☑
Windowing and	☑	☑	☑	☑

