Arduino OV7670 VGA Camera Module

The OV7670 image sensor is a small size, low operating voltage, yet it provides all the features of a single-chip VGA camera and image processor has to offer. Through the SCCB bus control, it can output the entire frame / sub-sampled. VGA image of the product is up to 30 frames / sec. Users can have full control of the image quality, data format and transmission mode. The image processing functions includes gamma curves, white balance, saturation, chroma, and also can be programmed through the SCCB interface.
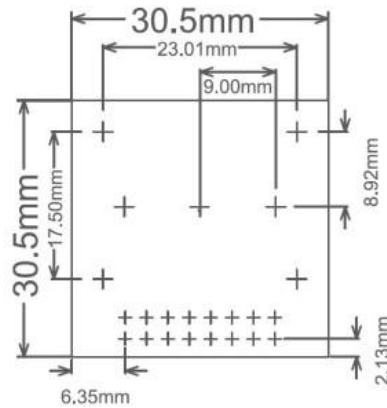
Features:

- High sensitivity for low-light applications
- Low voltage suitable for embedded applications
- Standard SCCB interface compatible with I2C interface
- RawRGB to RGB (GRB4: 2:2, RGB565/555/444), YUV (4:2:2) and YCbCr (4:2:2)output format
- Support VGA, CIF, and from CIF to 40x30 the size
- VarioPixel subsampling way
- Eliminate light stripes, automatic black level calibration image quality control including color saturation, hue, gamma, sharpness
- Anti-bloom
- ISP has eliminate noise and dead pixel compensation function
- Support image scaling
- The lens is the loss of light compensation
- 50/60Hz detection
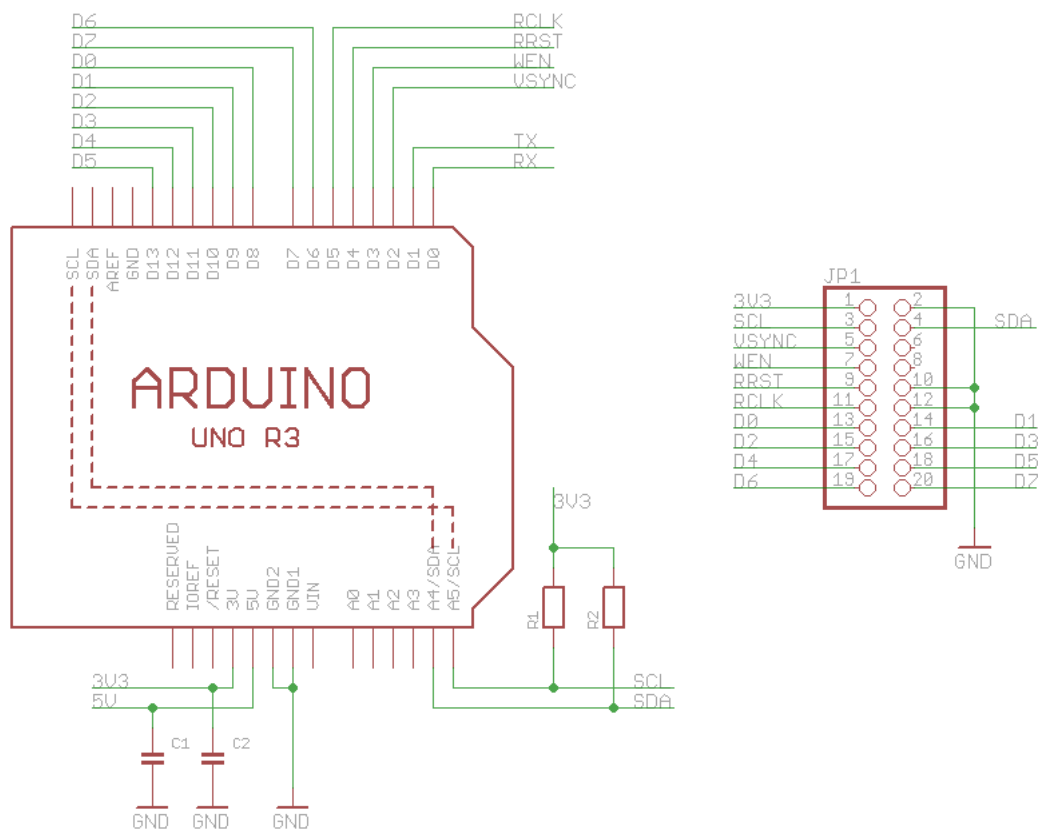- Automatic adjustments: saturation, edge enhancement, noise reduction

Application:

- Cellular phones
- PDAs
- Toys
- Other battery-powered products
- Can be used in Arduino, Maple, ChipKit, STM32, ARM, DSP, FPGA platforms
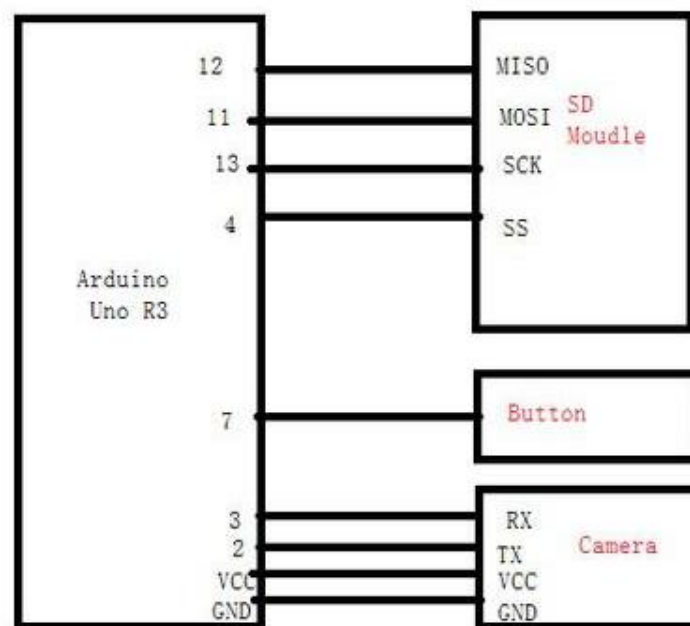
Dimension:

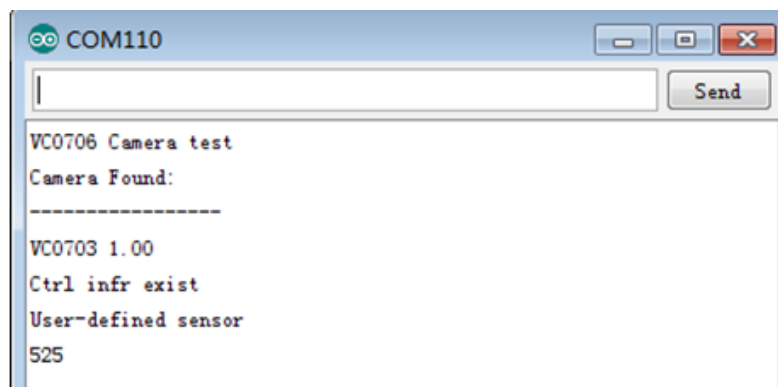**Schematic:**

Example on How to Use OV7670 Camera Module

Components needed:

1. SD Module
2. Digital key module
3. Arduino UNO
4. Jumper wire
5. USB cable
6. OV7670 camera module

The circuit must be connected as shown below:

Then upload the sketch, when serial monitor displayed as below, press the digital key to take picture.

If the image is successfully captured; the serial monitor will show an output like below:

```
COM110

[                                    ]  Send

VC0706 Camera test
Camera Found:
-----------------
VC0703 1.00
Ctrl infr exist
User-defined sensor
525
-----------------
Image size: 640x480
Get ready !
Picture taken!
47948 byte image
Writing image to IMAGE02.JPG




Autoscroll        No line ending ▼   9600 baud ▼
```