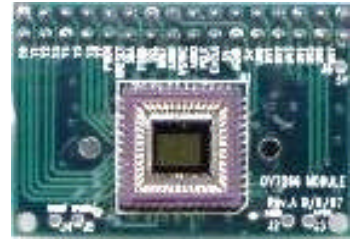


# C3188A

## 1/3" Color Camera Module With Digital Output

### General Description

The C3188A is a 1/3" color camera module with digital output. It uses OmniVision's CMOS image sensor OV7620. Combining CMOS technology together with an easy to use digital interface makes C3188A a low cost solution for higher quality video image application.



The digital video port supplies a continuous 8/16 bit-wide image data stream. All camera functions, such as exposure, gamma, gain, white balance, color matrix, windowing, are programmable through I<sup>2</sup>C interface.

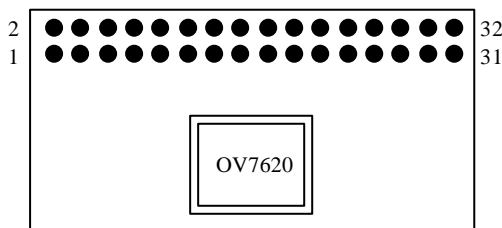
In combine with OV511+, USB controller chip, it will be easily form a USB camera for PC application.

### Features:

- 326,688 pixels, VGA / CIF format
- Small size : 40 x 28 mm
- Lens: f=6mm (Optional)
- 8/16 bit video data : CCIR601, CCIR656, ZV port
- Read out - progressive / interlace
- Data format - YCrCb 4:2:2, GRB 4:2:2, RGB
- I<sup>2</sup>C interface
- Built in 10bit 2 ch A/D converter
- Electronic exposure / Gain / White balance control
- Image enhancement - brightness, contrast, gamma, saturation, sharpness, window, etc
- Internal / external synchronization scheme
- Frame exposure / line exposure option
- Wide dynamic range, anti blooming, zero smearing
- Single 5V operation
- Low power consumption (<120mW)
- Monochrome composite video signal output (60Hz)

### Specification

|                      |                               |
|----------------------|-------------------------------|
| Imager               | OV7620, CMOS image sensor     |
| Array Size           | 664x492 pixels                |
| Pixel size           | 7.6 x 7.6 μm                  |
| Scanning             | Progressive / interlace       |
| Effective image area | 4.86mm x 3.64mm               |
| Electronic Exposure  | 500:1                         |
| Gamma Correction     | 128 curve settings            |
| S/N Ratio            | >48dB                         |
| Min Illumination     | 2.5lux @F1.4                  |
| Operation Voltage    | 5 VDC                         |
| Operation Current    | 120mW Active<br>10 μW Standby |
| Lens (Optional)      | f6mm, F1.6                    |



PCB Layout (Top view)

### Pin Description

|       |         |   |
|-------|---------|---|
| 1~8   | Y0~Y7   | Digital output Y Bus.                         |
| 9     | PWDN    | Power down mode                               |
| 10    | RST     | Reset   |
| 11    | SDA     | I <sup>2</sup> C Serial data                  |
| 12    | FODD    | Odd Field flag                                |
| 13    | SCL     | I <sup>2</sup> C Serial clock input           |
| 14    | HREF    | Horizontal window reference output            |
| 15    | AGND    | Analog Ground                                 |
| 16    | VSYN    | Vertical Sync output                          |
| 17    | AGND    | Analog Ground                                 |
| 18    | PCLK    | Pixel clock output                            |
| 19    | EXCLK   | External clock input (need to remove crystal) |
| 20    | VCC     | Power Supply 5VDC                             |
| 21    | AGND    | Analog Ground                                 |
| 22    | VCC     | Power Supply 5VDC                             |
| 23~30 | UV0-UV7 | Digital output UV bus.                        |
| 31    | GND     | Common ground                                 |
| 32    | VTO     | Video Analog Output (75Ω monochrome)          |

### Application Example

- Video Conferencing
- PC Multimedia
- Video Phone
- Video Mail
- Still Image
- Machine Vision
- Process control

Note: Evaluation Board is available for C3188A