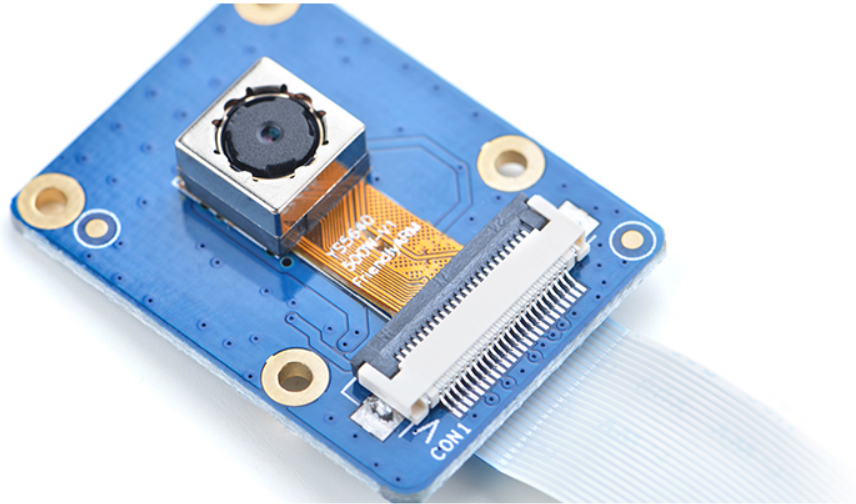
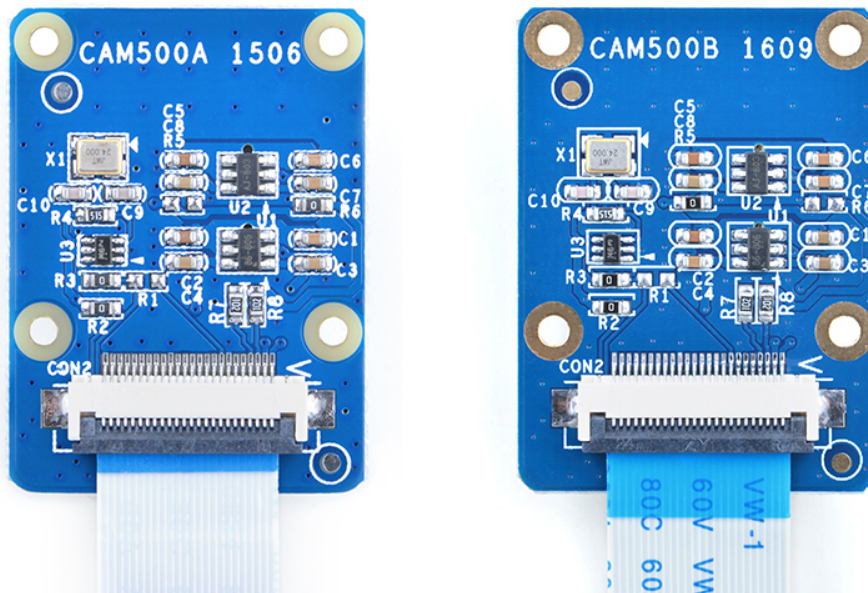


5MP 1080P Camera Module with OV5640 Chip



The CAM500B is a camera module using Omni Vision's 1/4" QSXGA CMOS OV5640 chipset. It has a DVP parallel interface. It supports up to 5M-pixel (2592 x 1944) image sizes and 720P@30fps video recording. It supports various auto functions like AFC, AWB, AEC and etc.

The CAM500B camera's focal length is 2.7mm. Its F number is 2.8. Its view angle is 66°. The module's dimension is 33.7 x 25 mm. It has four $\Phi 2.00$ mm mounting holes. It is powered by 3.3V. It can be connected to a master device via a 24pin FPC cable. These features make it popular in various applications such as surveillance systems, smart vehicles, drones and etc.



CAM500A vs CAM500B

Basically you can convert CAM500A to CAM500B by removing R6 and soldering a 0 Ohm resistor at R5. CAM500A works with 4412 based boards. CAM500B works with 4418,6818 and H3 based boards.

CAM500B Features

Array Size	2592 x 1944
Power Supply	3.3V (only this module)
Power Requirements	Active : TBD Standby : TBD
Temperature Range	Operating : -30°to 70° Stable Image : 0°to 50°
Output Format	8-/10 bit RGB RAW output
Lens Size	1/4"
Input Clock Frequency	6~27 Mhz
Max Image Transfer Rate	<ul style="list-style-type: none"> • QXGA(2596 x 1944):15fps • 1080p:30fps • 1280 x 960: 45fps • 720p: 60fps • VGA(640 x 480): 90fps • QVGA(320 x 240): 120fps
Supported Output Formats	<ul style="list-style-type: none"> • RAW RGB • RGB565/555/444 • CCIR656, • YUV422/420 • YCbCr422 • and compression
Sensitivity	TBD
Shutter	Rolling shutter / frame exposure
Maximum Exposure Interval	1964 x tROW
Pixel Size	1.4 μm x 1.4 μm
Dark Current	TBD
Well Capacity	TBD
Fixed Pattern Noise (FPN)	TBD
Image Area	3673.6 μm x 2738.4 μm
Package Dimension	5985 μm x 5835 μm

Note 1: the following data is quoted from the OV5640's datasheet.

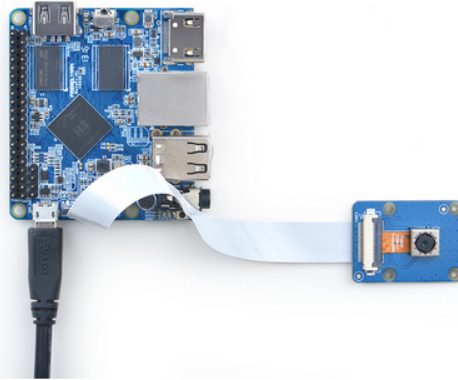
Note 2: due to limited performance of the PCB boards we presented in the following cases the module's performance data listed above may not be met in real applications. The following features and performance data may only apply to FriendlyElec developed boards. The OV5640 module may have other features we didn't cover here.

FPC Connector 24Pin Description

- You can connect CAM500B to a 2.0 mm pitch double row interface with our CON2025 connector.
- Or You can connect CAM500B to a 2.54 mm pitch double row interface with our CON2045 connector.

Connect CAM500B to NanoPi M1

The CAM500B camera module is a 5M-pixel camera with DVP interface. For more tech details about it you can refer to [Matrix - CAM500B](#).



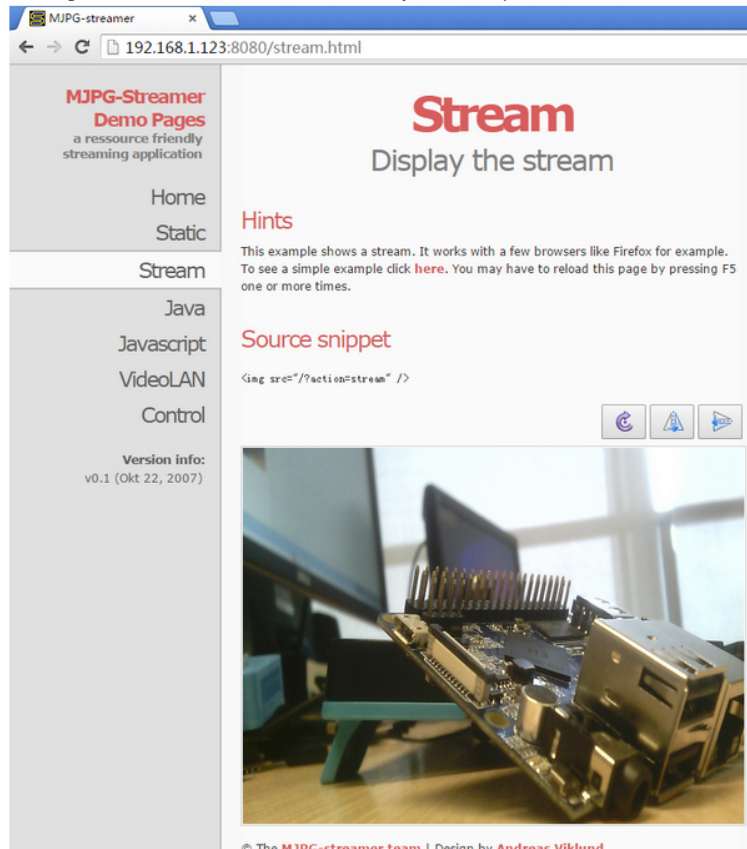
Boot Debian, connect your M1 to a network, log into the board as root and run "mjpg-streamer":

```
cd /root/mjpg-streamer
make
./start.sh
```

The mjpg-streamer application is an open source video stream server. After it is successfully started the following messages will be popped up:

```
i: Using V4L2 device.: /dev/video0
i: Desired Resolution: 1280 x 720
i: Frames Per Second.: 30
i: Format.....: YUV
i: JPEG Quality.....: 90
o: www-folder-path....: ./www/
o: HTTP TCP port.....: 8080
o: username:password.: disabled
o: commands.....: enabled
```

In our case the M1's IP address was 192.168.1.230. We typed 192.168.1.230:8080 in a browser and were able to view the images taken from the camera's. Here is what you would expect to observe:



© The MJPG-streamer team | Design by Andreas Viklund

The mjpg-streamer software encodes data with libjpeg and you can hard-encode its data with ffmpeg which will greatly

Connect CAM500B to NanoPC-T3

For more details about the CAM500B camera refer to [\[2\]](#)

- If your NanoPC-T3 runs Android5.1 and it is connected to our LCD or an HDMI monitor after Android is fully loaded click on the "Camera" icon and the application will be started. You can take pictures or record videos



- Under Debian/Ubuntu a camera utility "nanocams" is available for previewing 40 frames and picture taking. You can try it by following the commands below

```
sudo nanocams -p 1 -n 40 -c 4 -o IMG001.jpg
```

For more details about the usage of the nanocams run "nanocams -h". You can get its source code from our git hub:

```
git clone https://github.com/friendlyarm/nexell_linux_platform.git
```

Item List:

- 1 x CAM500B
- 1 x 24pin FPC cable
- 1 x 2.0mm spacing connector
- 1 x 2.54mm spacing connector

