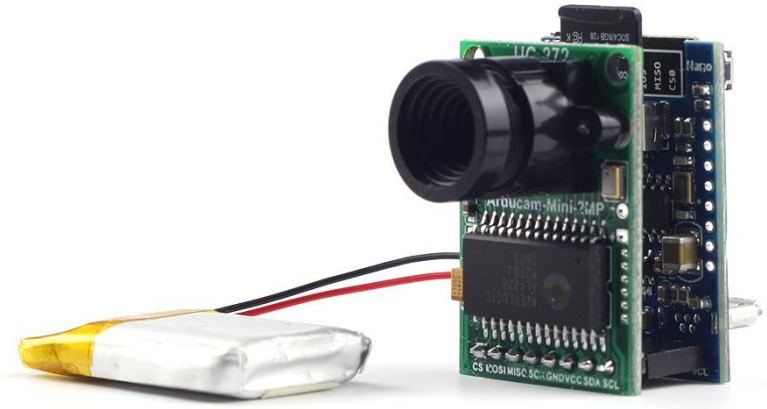
ArduCAM-M-2MP ESP8266 Nano V2 Evaluation Kit

User Guide

Rev 2.0, Nov 2017



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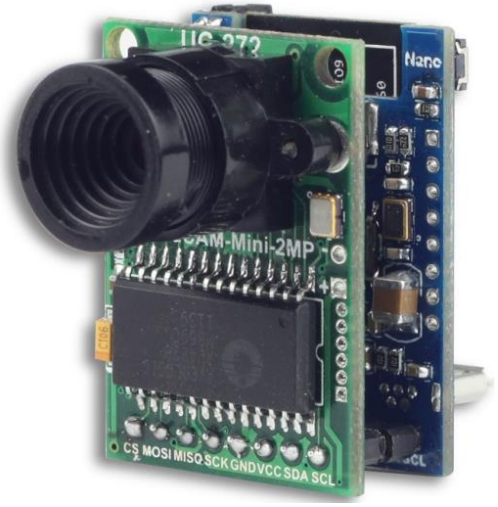
1. Introduction

The evaluation kit is designed for low cost WIFI IoT camera based on ArduCAM-Mini-2MP and ArduCAM-ESP8266-Nano-V2 modules. Users can implement a 2MP WIFI camera using HTTP or Websocket protocol on ESP8266, and the camera can act as an AP and mobile phone/PC can be connected to the camera directly or act as a Station which connected to the home router. The kit can take 2MP full resolution JPEG still image, but streaming low resolution low frame rate video due to the limitation of ESP8266. The kit can be USB powered or battery powered with build in charging circuits. The kit can also be used separately, it is identical to an ArduCAM-Mini-2MP camera and a ESP8266 Nano V2 module. The highlight of Version2 is that the ESP8266 can be put into deep sleep mode in order to be used in battery powered applications.



2. Kit Contents

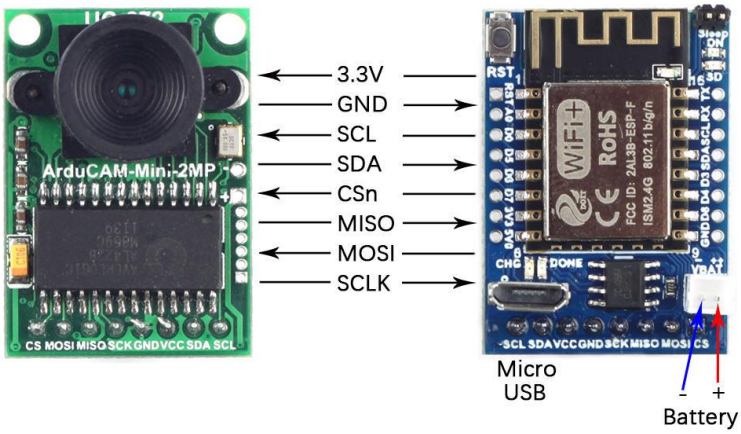
- ArduCAM-Mini-2MP x1
- ArduCAM-ESP8266-Nano-V2 x1
- Battery power cable x1

Note: No battery is included, need to buy from local.

3. Features

- 2MP image sensor OV2640, support JPEG
- M12 mount or CS mount lens holder with changeable lens options
- I2C interface for the sensor configuration
- SPI interface for camera commands and data stream
- Build in Lithium battery recharging 3.7V/500mA max
- Build in SD/TF card socket
- Build in micro USB-Serial (CH340g) convertor
- Compatible with Arduino IDE
- Deep sleep mode
- Small form of factor

4. Wiring Diagram

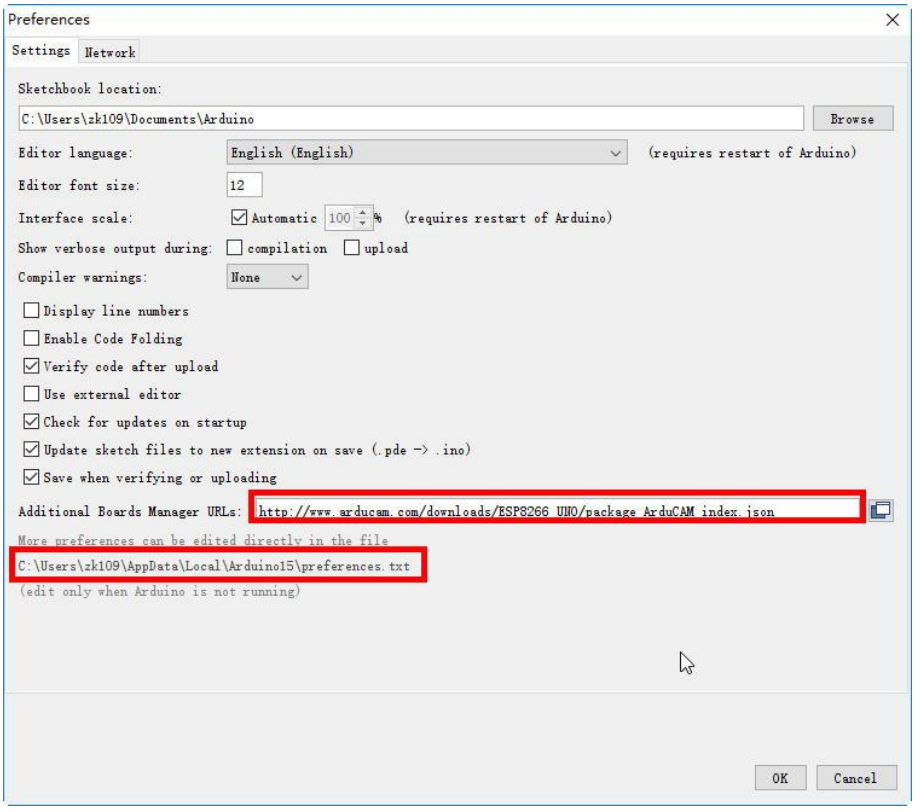


5. Getting Started ESP8266 with Arduino IDE

5.1 Installing with Boards Manager

Install Arduino 1.6.8 from the Arduino website. Starting Arduino and open Preferences window and entering the following link into Additional Board Manager URLs field. You can add multiple URLs, separating them with commas:

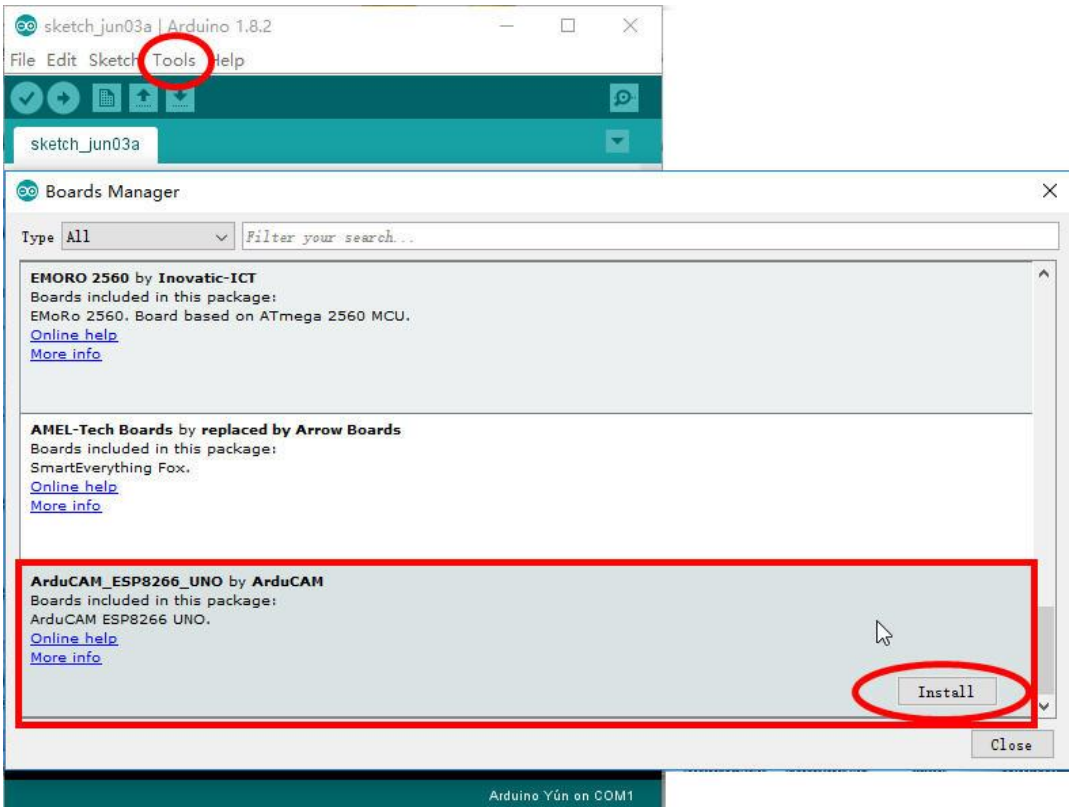
http://www.arducam.com/downloads/ESP8266_UNO/package_ArduCAM_index.json



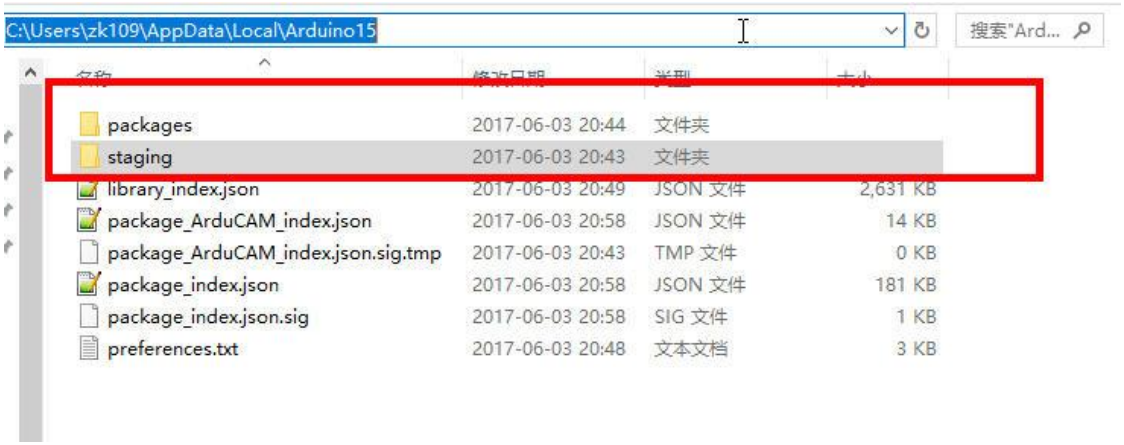
Note that the installed package source file is located in the C:\Users\Your computer name\AppData\Local\Arduino15\ folder.

Open Boards Manager from Tools ->Board menu and install ArduCAM_ESP8266_UNO add-on

package.



Note if you download failed, you need to delete the C:\Users\Your computer name\AppData\Local\Arduino15\ folder, and then restart the Arduino IDE, repeat the above operation.

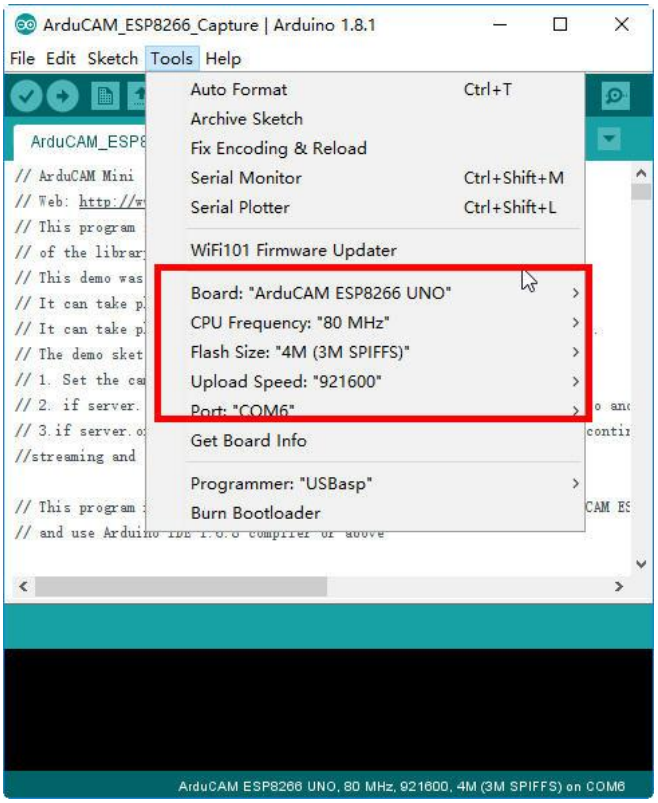


5.2 Using Arduino IDE

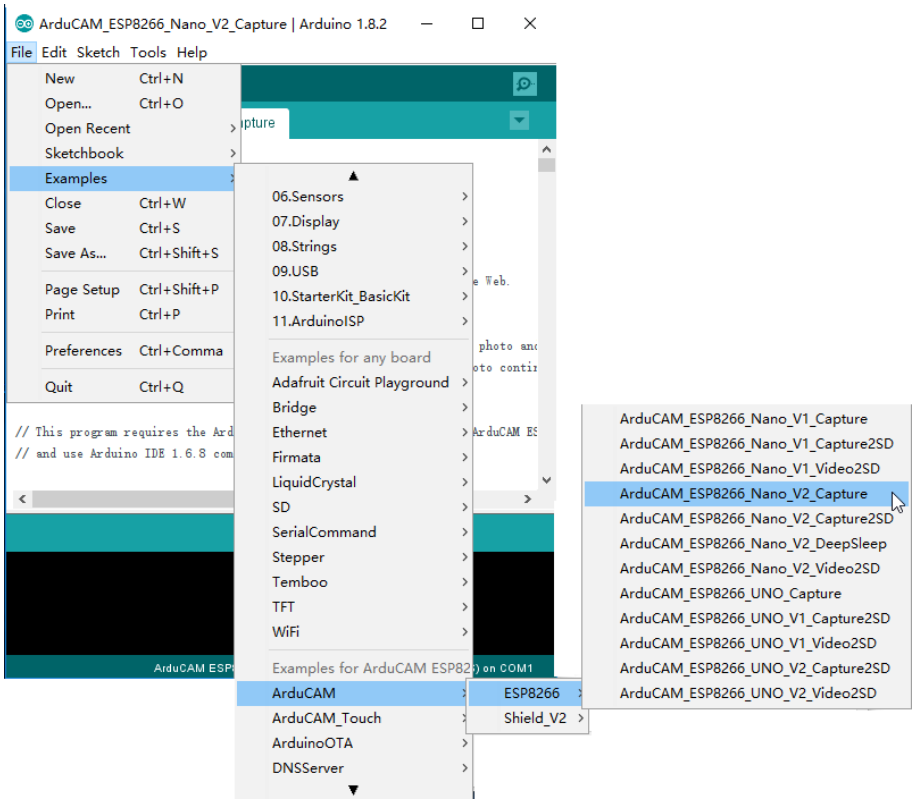
After installation of ArduCAM ESP8266 UNO board add-on package, you can select this board from the Tool->Board menu.

And there several ready to use examples from the File->Examples->ArduCAM. You can use these examples directly or as a starting point to develop your own code.

Select ArduCAM_ESP8266_UNO board from Tools->Board menu.

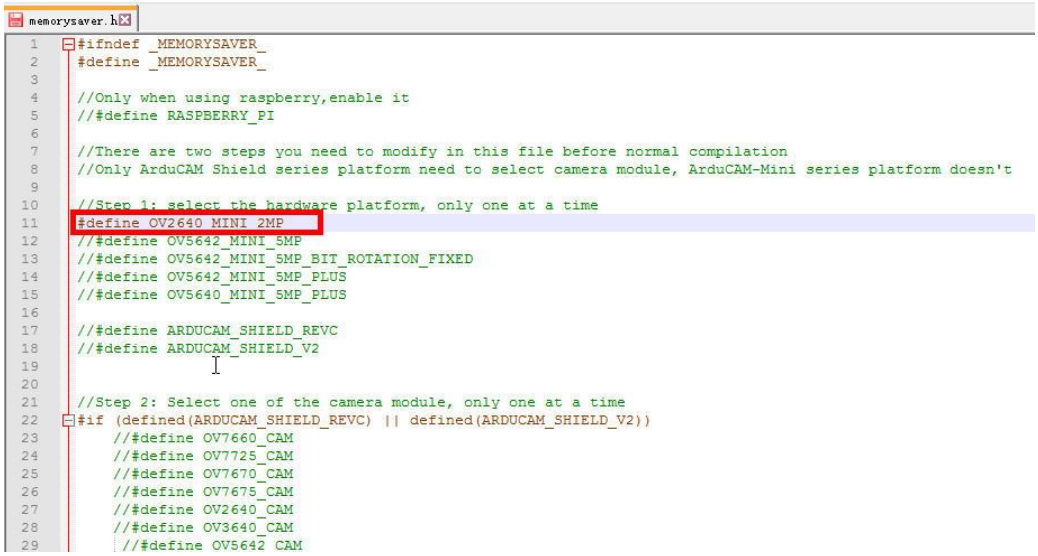


Select the example from File->Examples->ArduCAM->ESP8266->ArduCAM_ESP8266_Nano_V2_Capture



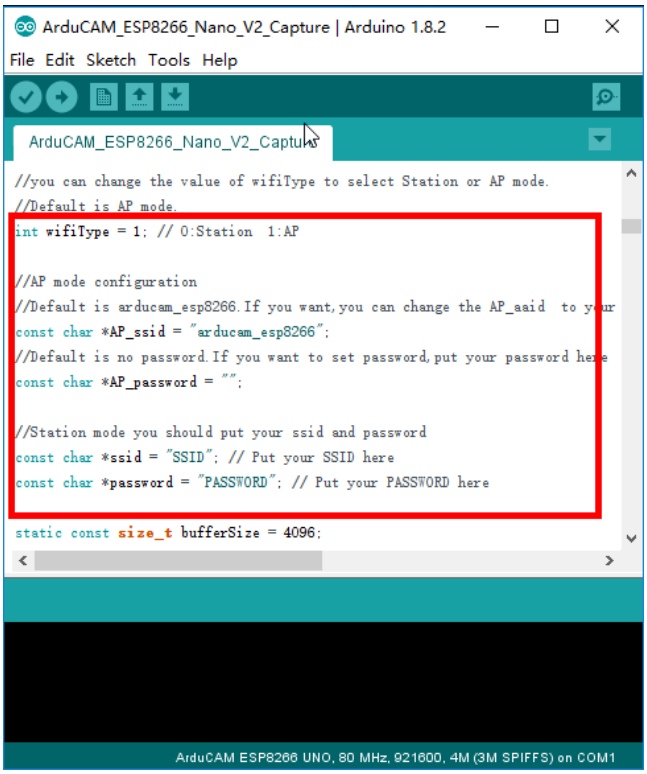
Configure the camera setting. You need to modify the memorysaver.h file in order to enable OV2640_MINI_2MP or OV5642_MINI_5MP_PLUS or OV5640_MINI_5MP_PLUS camera modules.

Only one camera can be enabled at a time. The memorysaver.h file is located at C:\Users\Your computer name\AppData\Local\Arduino15\packages\ ArduCAM_ESP8266_UNO\hardware\ ArduCAM_ESP8266_UNO\2.2.3\libraries\ArduCAM.



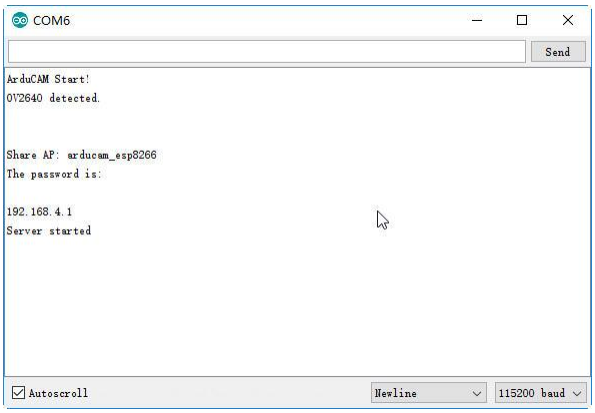
5.3 There are 12 examples for both ArduCAM Mini 2MP and ArduCAM Mini 5MP camera modules. (ArduCAM ESP8266 UNO V1 and ArduCAM_ESP8266_Nano_V1 have been discontinued).

ArduCAM_ESP8266_Nano_V2_Capture: this example uses HTTP protocol to capture still or video over home wifi network from ArduCAM Mini 2MP/5MP and display on the web browser. You can change the value of wifiType to select Station or AP mode. If you use Station mode the ssid and password should be modified before uploading.



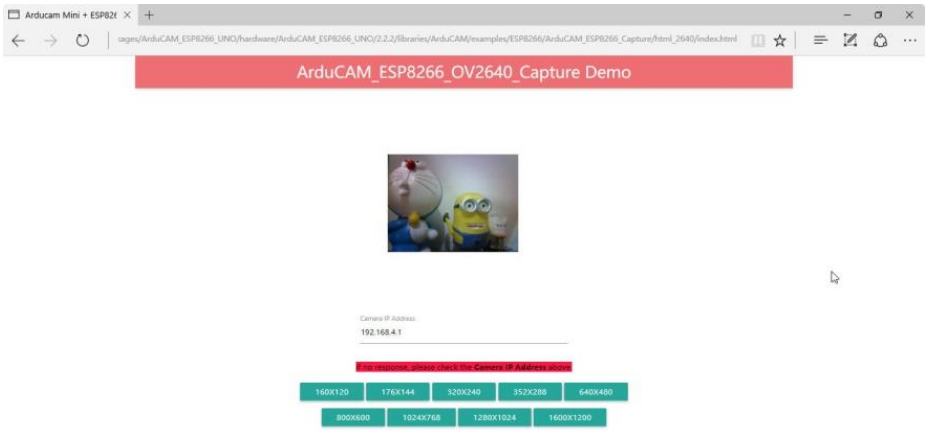
AP mode:

After uploading, the board IP address is 192.168.4.1. You can figure out the IP address through the serial monitor. The default serial monitor baudrate setting is 115200bps.

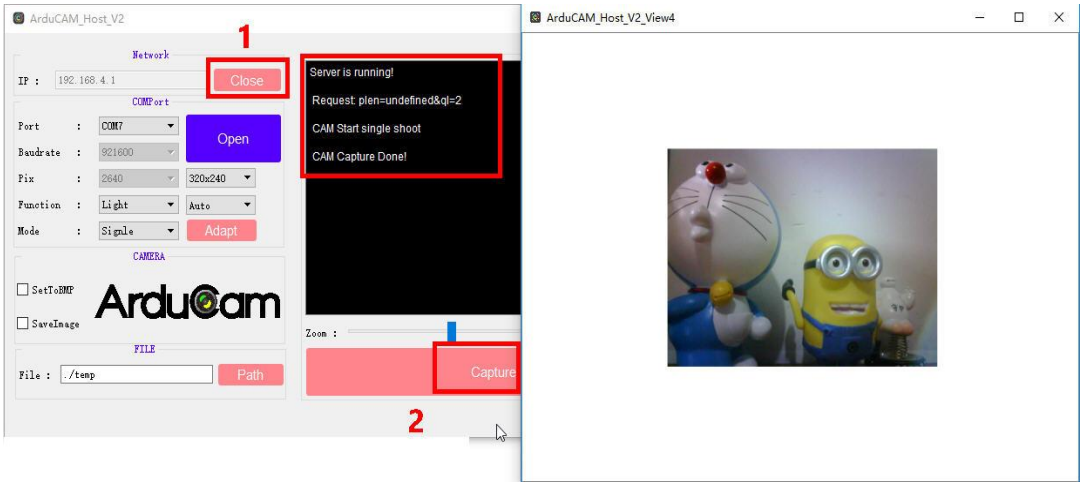


From your PC, go to the WiFi setting page. You should see an Access Point (AP) which the SSID name “arducam_esp8266” on the AP scan result list. Choose the “arducam_esp8266” AP to connect to it. This AP’s password is “”.

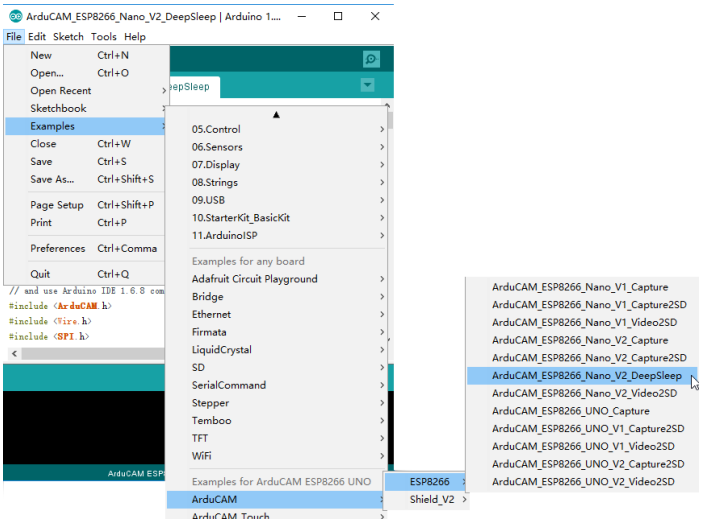
Finally, open the index.html or video.html, input the IP address obtained from the serial monitor then take pictures or videos. The html files are located at C:\Users\Your computer name\ AppData\Local\Arduino15\packages\ArduCAM_ESP8266_UNO\hardware\ArduCAM_ESP8266_UN\ 2.2.3\libraries\ArduCAM\examples\ESP8266\ArduCAM_ESP8266_Capture\html_2640



Also you can use ArduCAM_Host_V2.0_Windows Host app. You can download it on: https://github.com/ArduCAM/Arduino/tree/master/ArduCAM/examples/host_app.



5.4 To reduce power consumption, calling the interface function immediately goes into the Deep – sleep mode. In this mode, the chip will disconnect all wi-fi connections and data connections and enter the sleep mode. Only the RTC module will still work and be responsible for the timing of the chip. This demo is suitable for battery power.



After uploading ArduCAM_ESP8266_Nano_V2_DeepSleep.Please note that the jumper marked in red box should be closed. (The jumper should be open when you upload sketches.)

ArduCAM_ESP8266_Nano_V1_Capture2SD (or ArduCAM_ESP8266_Nano_V2_Capture2SD): this example takes time elapse still photos using ArduCAM Mini 2MP/5MP and then stored on the TF/SD card. The LED indicates when the TF/SD card is writing.

ArduCAM_ESP8266_Nano_V1_Video2SD (or ArduCAM_ESP8266_Nano_V2_Video2SD): this example takes motion JPEG video clips using ArduCAM Mini 2MP/5MP and then stored on the TF/SD card as AVI format, about 4 minutes to complete.

If any problems or suggestions for the tutorial or the camera kit, please feel free to contact us by following ways:

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