

Change ESP32-CAM OV2640 Camera Settings: Brightness, Resolution, Quality, Contrast, and More

This guide shows how to change the [ESP32-CAM OV2640](#) camera settings such as contrast, brightness, resolution, quality, saturation and more using Arduino IDE.

Set ESP32-CAM Settings

- Contrast
- Brightness
- Resolution
- Quality
- Saturation
- Special Effects
- White Balance
- Mirror and Flip
- Exposure
- Etc...

The instructions in this tutorial work for any ESP32 camera development board as long as it comes with the OV2640 camera.

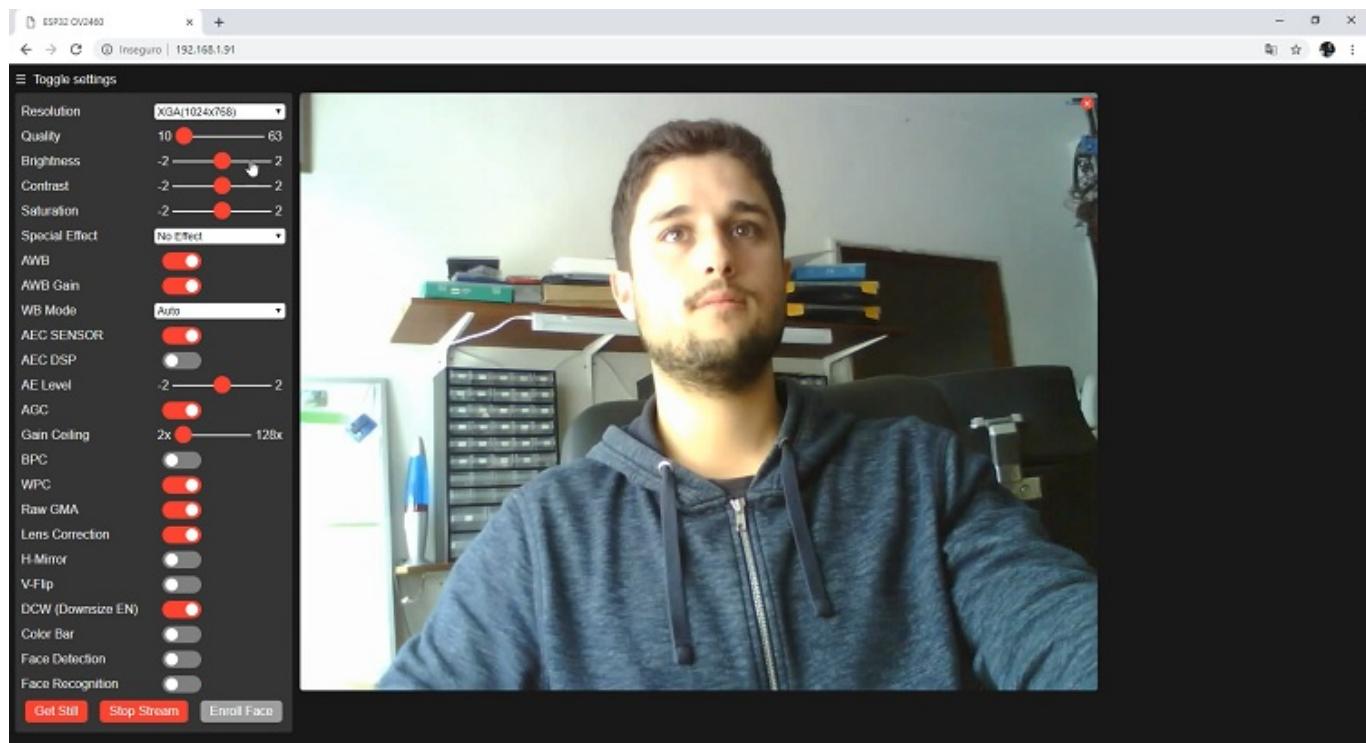
You may like reading: [Best ESP32 Camera Development Board](#)

Installing the ESP32 add-on

We'll program the ESP32 board using Arduino IDE. So, you need the Arduino IDE installed as well as the ESP32 add-on:

OV2640 Camera Settings

In the [ESP32 Camera Web Server project](#), the web server provided a lot of options to change the image settings. Take a look at the following screenshot – there are sliders that you can move to change the image settings.



In this tutorial we'll show you how to implement those changes on your code regardless of the project you're building: taking photos or streaming video.

We recommend that you follow the [Camera Web Server project](#) first and play with the image settings to see what each setting does:

- [ESP32-CAM Video Streaming and Face Recognition with Arduino IDE](#)

Depending on where your camera is located, you may want to change some settings to get a better picture. Playing with that web server gives you an idea of what you need to change and what values you need to set to get a better picture. Once you know the best settings for your camera, you may want to apply them in your other projects.

Changing ESP32-CAM Camera Settings Arduino Sketch

To change the image settings, after initializing the camera, use the following lines:

```
sensor_t * s = esp_camera_sensor_get()

s->set_brightness(s, 0);      // -2 to 2
s->set_contrast(s, 0);       // -2 to 2
s->set_saturation(s, 0);     // -2 to 2
s->set_special_effect(s, 0); // 0 to 6 (0 - No Effect, 1 - Negative
s->set_whitebal(s, 1);       // 0 = disable , 1 = enable
s->set_awb_gain(s, 1);       // 0 = disable , 1 = enable
s->set_wb_mode(s, 0);        // 0 to 4 - if awb_gain enabled (0 - A
s->set_exposure_ctrl(s, 1);  // 0 = disable , 1 = enable
s->set_aec2(s, 0);           // 0 = disable , 1 = enable
s->set_ae_level(s, 0);       // -2 to 2
s->set_aec_value(s, 300);    // 0 to 1200
s->set_gain_ctrl(s, 1);     // 0 = disable , 1 = enable
s->set_agc_gain(s, 0);       // 0 to 30
s->set_gainceiling(s, (gainceiling_t)0); // 0 to 6
s->set_bpc(s, 0);           // 0 = disable , 1 = enable
s->set_wpc(s, 1);           // 0 = disable , 1 = enable
s->set_raw_gma(s, 1);        // 0 = disable , 1 = enable
s->set_lenc(s, 1);           // 0 = disable , 1 = enable
s->set_hmirror(s, 0);        // 0 = disable , 1 = enable
s->set_vflip(s, 0);          // 0 = disable , 1 = enable
s->set_dcw(s, 1);            // 0 = disable , 1 = enable
s->set_colorbar(s, 0);        // 0 = disable , 1 = enable
```

The following table shows each function and the values accepted:

<code>set_brightness()</code>	Set brightness	-2 to 2
<code>set_contrast()</code>	Set contrast	-2 to 2
<code>set_saturation()</code>	Set saturation	-2 to 2
<code>set_special_effect()</code>	Set a special effect	0 – No Effect 1 – Negative 2 – Grayscale 3 – Red Tint 4 – Green Tint 5 – Blue Tint 6 – Sepia
<code>set_whitebal()</code>	Set white balance	0 – disable 1 – enable
<code>set_awb_gain()</code>	Set white balance gain	0 – disable 1 – enable
<code>set_wb_mode()</code>	Set white balance mode	0 – Auto 1 – Sunny 2 – Cloudy 3 – Office 4 – Home
<code>set_exposure_ctrl()</code>	Set exposure control	0 – disable 1 – enable
<code>set_aec2()</code>		0 – disable 1 – enable
<code>set_ae_level()</code>		-2 to 2
<code>set_aec_value()</code>		0 to 1200
<code>set_gain_ctrl()</code>		0 – disable 1 – enable

set_gainceiling()		0 to 6
set_bpc()		0 – disable 1 – enable
set_wpc()		0 – disable 1 – enable
set_raw_gma()		0 – disable 1 – enable
set_lenc()	Set lens correction	0 – disable 1 – enable
set_hmirror()	Horizontal mirror	0 – disable 1 – enable
set_vflip()	Vertical flip	0 – disable 1 – enable
set_dcw()		0 – disable 1 – enable
set_colorbar()	Set a colorbar	0 – disable 1 – enable

As you can see, changing the camera settings is pretty straightforward. You just need to use those lines of code after initializing the camera. After that, you can use the usual functions and code to control the camera. To better understand how to use them, you can follow the next example.

The functions in the table appear in the same order as in the [Camera Web Server example](#) so that it is easier to identify which functions and values you should use to get a better image in your scenario.

Chandina ESP32-CAM Camera Settings Example

To show you how to apply the image settings in your code, we've built a simple example. The following code takes a photo every 10 seconds and saves it in the microSD card. There's a section in the code that allows you to change the camera settings.

```
config.frame_size = FRAME_SIZE_SVGA,  
config.jpeg_quality = 12;  
config.fb_count = 1;  
}  
  
// Initialize the Camera  
esp_err_t err = esp_camera_init(&config);  
if (err != ESP_OK) {  
    Serial.printf("Camera init failed with error 0x%x", err);  
    return;  
}  
  
sensor_t * s = esp_camera_sensor_get();  
s->set_brightness(s, 0); // -2 to 2  
s->set_contrast(s, 0); // -2 to 2  
s->set_saturation(s, 0); // -2 to 2  
s->set_special_effect(s, 0); // 0 to 6 (0 - No Effect, 1 - Negate)  
s->set_whitebal(s, 1); // 0 = disable , 1 = enable  
s->set_awb_gain(s, 1); // 0 = disable , 1 = enable  
s->set_wb_mode(s, 0); // 0 to 4 - if awb_gain enabled (0 = off)  
s->set_exposure_ctrl(s, 1); // 0 = disable , 1 = enable  
s->set_aec2(s, 0); // 0 = disable , 1 = enable  
s->set_ae_level(s, 0); // -2 to 2  
s->set_aec_value(s, 300); // 0 to 1200  
s->set_gain_ctrl(s, 1); // 0 = disable , 1 = enable  
s->set_agc_gain(s, 0); // 0 to 30  
s->set_gainceiling(s, (gainceiling_t)0); // 0 to 6  
s->set_hnc(s, 0); // 0 = disable 1 = enable
```

View raw code

To make things simpler, we've created a function called `configInitCamera()` that contains all the commands to initialize the camera.

Assigning OV2640 GPIOs

First, it starts by assigning the GPIOs.

```
config.ledc_channel = LEDC_CHANNEL_0;
config.ledc_timer = LEDC_TIMER_0;
config.pin_d0 = Y2_GPIO_NUM;
config.pin_d1 = Y3_GPIO_NUM;
config.pin_d2 = Y4_GPIO_NUM;
config.pin_d3 = Y5_GPIO_NUM;
config.pin_d4 = Y6_GPIO_NUM;
config.pin_d5 = Y7_GPIO_NUM;
config.pin_d6 = Y8_GPIO_NUM;
config.pin_d7 = Y9_GPIO_NUM;
config.pin_xclk = XCLK_GPIO_NUM;
config.pin_pclk = PCLK_GPIO_NUM;
config.pin_vsync = VSYNC_GPIO_NUM;
config.pin_href = HREF_GPIO_NUM;
config.pin_sscb_sda = SIOD_GPIO_NUM;
config.pin_sscb_scl = SIOC_GPIO_NUM;
config.pin_pwdn = PWDN_GPIO_NUM;
config.pin_reset = RESET_GPIO_NUM;
```

The camera frequency:

```
config.xclk_freq_hz = 20000000;
```

OV2640 image format, quality, and frame size

The image format:

```
config.pixel_format = PIXFORMAT_JPEG; //YUV422,GRAYSCALE,RGB565,JPE
```

The image format can be one of the following options:

- PIXFORMAT_YUV422
- PIXFORMAT_GRAYSCALE
- PIXFORMAT_RGB565
- PIXFORMAT_JPEG

Then, set the frame size, jpeg quality and framebuffer count. We select different settings depending if you're using a camera with PSRAM or without PSRAM.

```
// Select lower framesize if the camera doesn't support PSRAM
if(psramFound()){
    config.frame_size = FRAMESIZE_UXGA; // FRAMESIZE_ + QVGA|CIF|VGA|
    config.jpeg_quality = 10; //10-63 lower number means higher qual
    config.fb_count = 2;
} else {
    config.frame_size = FRAMESIZE_SVGA;
    config.jpeg_quality = 12;
    config.fb_count = 1;
}
```

The frame size can be set to one of these options:

- FRAMESIZE_UXGA (1600 x 1200)
- FRAMESIZE_QVGA (320 x 240)
- FRAMESIZE_CIF (352 x 288)
- FRAMESIZE_VGA (640 x 480)
- FRAMESIZE_SVGA (800 x 600)
- FRAMESIZE_XGA (1024 x 768)

The image quality (`jpeg_quality`) can be a number between 0 and 63. A lower number means a higher quality. However, very low numbers for image quality, specially at higher resolution can make the ESP32-CAM to crash or it may not be able to take the photos properly.

So, if you notice that the images taken with the ESP32-CAM are cut in half, or with strange colors, that's probably a sign that you need to lower the quality (select a higher number).

Initialize OV2640 camera

The following lines initialize the camera:

```
// Initialize the Camera
esp_err_t err = esp_camera_init(&config);
if (err != ESP_OK) {
    Serial.printf("Camera init failed with error 0x%x", err);
    return;
}
```

After this, you can add the lines of code we've shown you previously to change the image settings.

OV2640 settings: brightness, contrast, saturation, white balance, exposure, and more

The values set on the following lines are the default values, you can change them to change the image settings.

```
sensor_t * s = esp_camera_sensor_get();
s->set_brightness(s, 0);      // -2 to 2
s->set_contrast(s, 0);       // -2 to 2
s->set_saturation(s, 0);     // -2 to 2
```

```
s->set_awb_gain(s, 1);           // 0 = disable , 1 = enable
s->set_wb_mode(s, 0);           // 0 to 4 - if awb_gain enabled (0 - A
s->set_exposure_ctrl(s, 1);    // 0 = disable , 1 = enable
s->set_aec2(s, 0);             // 0 = disable , 1 = enable
s->set_ae_level(s, 0);         // -2 to 2
s->set_aec_value(s, 300);      // 0 to 1200
s->set_gain_ctrl(s, 1);        // 0 = disable , 1 = enable
s->set_agc_gain(s, 0);         // 0 to 30
s->set_gainceiling(s, (gainceiling_t)0); // 0 to 6
s->set_bpc(s, 0);              // 0 = disable , 1 = enable
s->set_wpc(s, 1);              // 0 = disable , 1 = enable
s->set_raw_gma(s, 1);          // 0 = disable , 1 = enable
s->set_lenc(s, 1);             // 0 = disable , 1 = enable
s->set_hmirror(s, 0);          // 0 = disable , 1 = enable

s->set_vflip(s, 0);            // 0 = disable , 1 = enable
s->set_dcw(s, 1);              // 0 = disable , 1 = enable
s->set_colorbar(s, 0);          // 0 = disable , 1 = enable
```

Demonstration

Change the camera settings in the code to adjust the image. Then, [upload the code to your ESP32-CAM](#).

Press the ESP32-CAM RST button, and it will start taking photos. Then, grab the microSD card to see the photos.

Below you can see several images taken with different settings.



ESP32-CAM Photo with Grayscale effect
enabled



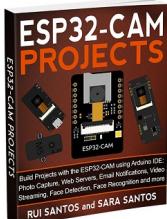
ESP32-CAM with Contrast set to 2 and
Saturation to -2

ESP32-CAM Photo with Brightness set to 2



ESP32-CAM Photo with Default Settings

In my opinion, in these conditions, the best settings for a better picture are: contrast set to 2 and saturation set to -2.



[eBook] Build ESP32-CAM Projects using Arduino IDE

Learn how to program and build 17 projects with the ESP32-CAM using Arduino IDE
[DOWNLOAD »](#)

Wrapping Up

In this tutorial, you've learned how to change the camera settings to adjust the image you get with the OV2640 camera.

This can be useful because depending on where you place your camera you may need to change the settings to get a better image.

You can use the functions we've shown you here in any of your projects with the ESP32-CAM to adjust the settings. We have several projects with the ESP32-CAM

- Video Streaming, Face Detection and Face Recognition
- ESP32 IP CAM – Video Streaming (Home Assistant and Node-RED)
- Take Photo and Save to MicroSD Card
- PIR Motion Detector with Photo Capture
- Take Photo, Save to SPIFFS and Display in Web Server
- **Build ESP32-CAM Projects (eBook)**
- **Read all our ESP32-CAM Projects, Tutorials and Guides**

Thanks for reading.

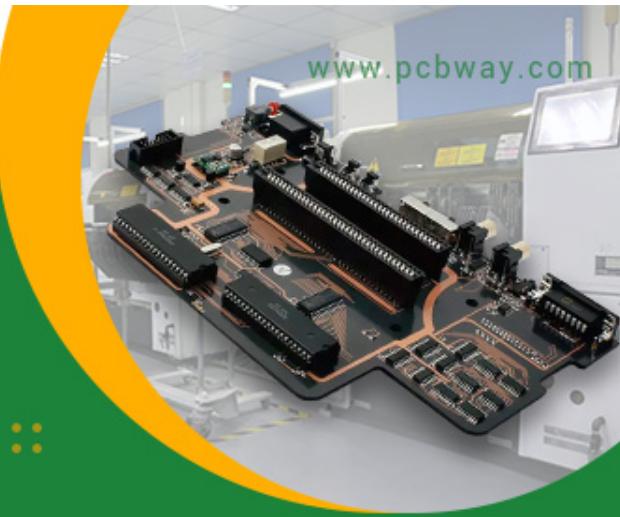
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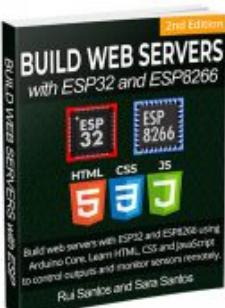
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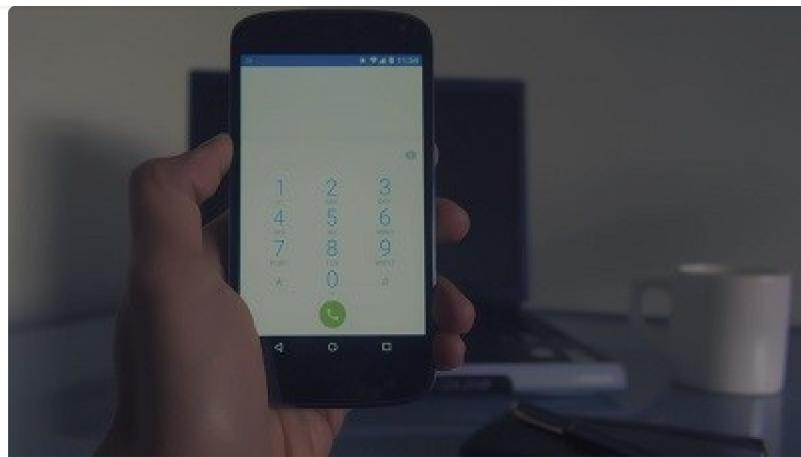
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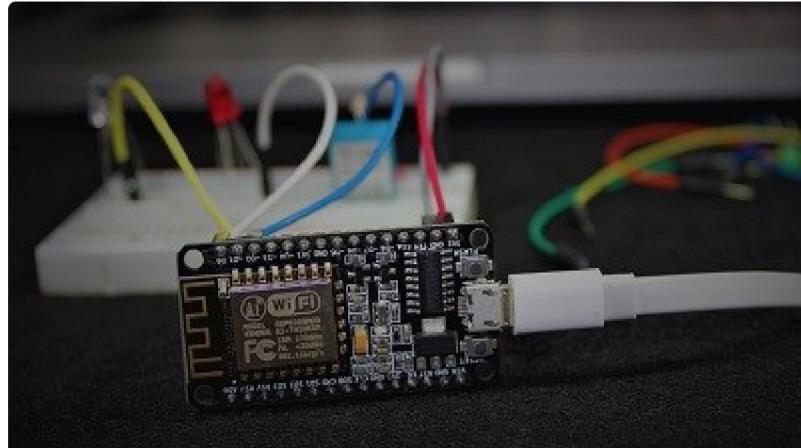


Build Web Server projects with the ESP32 and ESP8266 boards to control outputs and monitor sensors remotely. Learn HTML, CSS, JavaScript and client-server communication protocols [DOWNLOAD »](#)

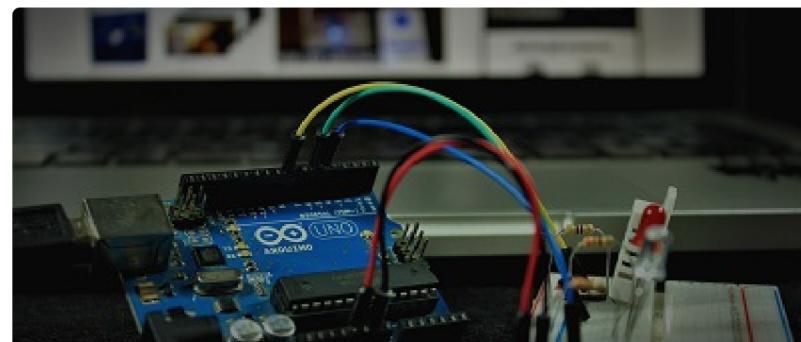
Recommended Resources



[**Build a Home Automation System from Scratch »**](#) With Raspberry Pi, ESP8266, Arduino, and Node-RED.



[**Home Automation using ESP8266 eBook and video course »**](#) Build IoT and home automation projects.



[Arduino Step-by-Step Projects »](#) Build 25 Arduino projects with our course, even with no prior experience!

What to Read Next...

[Get Epoch/Unix Time with the ESP8266 NodeMCU \(Arduino\)](#)

[EXTREME POWER SAVING \(0.1A\) with Microcontroller External Wake Up](#)

[ESP32/ESP8266: Firebase Data Logging Web App \(Gauges, Charts, and Table\)](#)

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36 thoughts on “Change ESP32-CAM OV2640 Camera Settings: Brightness, Resolution, Quality, Contrast, and More”



JoeBar

March 9, 2020 at 8:48 pm

FRAMESIZE_UXGA (1600 x 1200)

FRAMESIZE_UXGA (1920 x 1200)

There is a typo, this cannot have 2 values 😅

[Reply](#)



Sara Santos

March 10, 2020 at 11:27 am

Hi.

I'm sorry for the typo.

The right one is

FRAMESIZE_UXGA (1600 x 1200)

Thanks for letting us know.

It is fixed now.

Regards,

Sara

[Reply](#)



Eduardo Alvim

March 10, 2020 at 2:07 pm

Nice post.

In case of building an asynchronous webserver to receive the new

When I tested the project here, I started some drafts thinking in how I could accomplish this...

So far I didn't build a good one. Maybe another time.

Suggestions are welcome!

[Reply](#)



chiprobot

April 17, 2020 at 1:59 pm

Hi Random Nerd,

Thanks for posting, however adjusting the parameters has no effect on the camera.

It takes a picture and saves to SDcard ok , however the set commands do not appear to work.

i.e. if I change the>>> s->set_special_effect(s, 1); // 0 to 6 (0 – No Effect, 1 – Negative, 2 – Grayscale, 3 – Red Tint, 4 – Green Tint, 5 – Blue Tint, 6 – Sepia)

the picture does not give negative effect.

Any ideas chiprobot

[Reply](#)



chiprobot

April 17, 2020 at 2:53 pm

I have dug deeper...

Menu



I had more success by commenting out the parameters not needed.
Extra care has to be taken when any of the Auto controls are used, as
subsequent parameters are ignored.
....chiprobot..

[Reply](#)



Sara Santos

April 18, 2020 at 10:21 am

That's right.

[Reply](#)



Glen Calhoun

February 27, 2021 at 11:18 am

I started playing the ESP32Cam several months ago. I managed to get it working by using the Random Nerd Tutorials. I am now trying to change settings and fine tune things. I am especially interested in windowing (ROI). I found the set_window function in the ov2640.c file, but i cannot access it. Do you have and example of setting a ROI on the camera? Thank you in advance for your help and for the great tutorials.

[Reply](#)



Sara Santos

February 27, 2021 at 11:38 am

Hi.

Unfortunately, we don't have any tutorials about that subject.

Thanks for your interest in our projects.

Regards,

Sara



GG

June 23, 2020 at 3:42 pm

Hello I use the ESP32-CAM as an access point on an Android smartphone or tablet. Is it possible to increase the definition of the camera above UXGA (1600X1200)? The goal is to make an acceptable quality zoom, the camera is about 5 meters from what I want to film. Thank you

[Reply](#)



Eduardo Alvim

June 23, 2020 at 3:52 pm

I have a question. Does the ESP32-CAM detects IR light?

What I want to do is use some IR LEDs to make it possible to take pictures in the dark.

Is it possible?

[Reply](#)



WilliamR

February 21, 2021 at 9:01 am

You can scrape out the IR filter from the module. In addition, it might now be possible to buy the OV2640 module without an IR filter

Reply



Dimitrios

August 16, 2020 at 11:34 am

hello nice video, only some items to ask::

a) how to cam always on , with hit enable,

b) how to record a video using e.g. NEtcam studio or other software, it tries to enter the ip address but cannot connect it.

sorry for my Q, if anyone can help will be great,

Reply



Chris

September 28, 2020 at 9:48 pm

Hi Sara, right now I have just followed your tutorials on how to program the

stream(which works) and toggle the Face detection feature, nothing happens, it streams the video normally but no green box appears on the video feed.

[Reply](#)



Sara Santos

September 29, 2020 at 11:12 am

Hi.

Make sure you have good light so that the ESP32 is able to detect the face. Additionally, you need to have the camera steady.

If the video streaming is very slow, it might have a hard time finding the face.

Regards,

Sara

[Reply](#)



Bernard Barrois

October 26, 2020 at 4:05 pm

HI,

is it possible to save a photo in a Format other than JPG?

What is the file extension for a PIXFORMAT_GRAYSCALE?

[Reply](#)



Saku

November 13, 2020 at 3:22 pm

Hi!

I'm looking for re-config code.

I config camera first to GRayscale/QVGA and take a picture. Calculate pixel average to see if it is day or night.

If it is day I want to take "real" picture JPG/SVGA for sending.

Day/night detection works but if I do camera configuration again after it it results error:

[E][camera.c:1249] esp_camera_init(): Camera probe failed with error 0x103
Camera init failed with error 0x103Guru Meditation Error: Core 1 panic'ed
(LoadProhibited). Exception was unhandled.

Core 1 register dump:

...etc...

How can I change image resolution and pixel format to other after used first QVGA/GRAYSCALE ?

[Reply](#)



Saku

November 13, 2020 at 5:08 pm

OK!

Found this from esp_camera.h :

Currently this function can only be called once and there is

```
esp_err_t esp_camera_init(const camera_config_t* config);
```

There is deinit routine, but useless then...

```
esp_err_t esp_camera_deinit();
```

I have to make workaround using RTC_DATA_ATTR variable to remember day or night and do a small deep sleep after day/night detect and in wake up to see the variable state (0= needs day/night detect 1=is night 2=is day) and do camera init again based to that information.

Works! [SOLVED]

[Reply](#)



Bent Kirkegaard Nilesen

December 10, 2020 at 5:29 pm

Hi

My ESP32-CAM picture quality is ugly, what can I do ? I think its a problem with the Lens (i have removed the 'protection' film 😊)

[Reply](#)



Robert

March 15, 2021 at 2:26 am

Hi Sara,

example program. The device runs fine with the blink example but there seems to be a problem with the camera. The error message I get in the serial monitor after the code is loaded is:

camera_init(): Failed to set frame size

esp_camera_init(): Camera init failed with error 0x20002

So I tried swapping out the camera with the good board camera and I still got the same message.

I made sure that when I run the program it has a rock solid +5V power supply connected. Any help is appreciated.

[Reply](#)



Sara Santos

March 15, 2021 at 12:24 pm

Hi.

Take a look at the troubleshooting guide and see if it helps:

<https://randomnerdtutorials.com/esp32-cam-troubleshooting-guide/>

Regards,

Sara

[Reply](#)



Robert

March 16, 2021 at 4:53 am

Hi Sara,

I got the problem fixed by purchasing a new camera!

But now I have a new problem. When I run camera Web Server example it

resolutions and nothing seems to work right. Any thoughts on this issue?

Robert

[Reply](#)



Sara Santos

March 16, 2021 at 10:53 am

Hi.

That is usually related with a weak wi-fi signal.

Does your board have an external antenna?

Regards,

sara

[Reply](#)



Robert

March 17, 2021 at 3:22 pm

Hi,

I added an antenna and wow! This was definitely my problem.

Thank you!

Robert



Robert

March 17, 2021 at 7:29 pm

Hello again,

Sorry to be a pest... I have a new Problem running a camera Blynk app. I keep getting a "Failed to get the frame on time" message. Is it the ESP32 CAM or the blynk app? When I first start the app everything works fine. But after about 4 pictures I get the error message and it will not go away.

Robert



Djihfhoe Wang

April 1, 2021 at 5:29 pm

Hello Sara,

Is it possible to turn the view 90 dgr.

[Reply](#)



Collin

May 27, 2021 at 7:40 am

Thanks for the info on setting the parameters in code. Once I've done that, I don't need the webserver to show the settings...at least not necessary at startup. Is there a way to start with the settings hidden without having to click on the hamburger button to hide them? Or is there a way to only display the video stream?



Sara Santos

May 28, 2021 at 5:32 pm

Hi Collin.

To only display video stream, you can check this example:

<https://randomnerdtutorials.com/esp32-cam-video-streaming-web-server-camera-home-assistant/> (ignore the Home Assistant section).

Regards,

Sara

[Reply](#)



Iris

May 27, 2021 at 6:33 pm

Will s->set_vflip(s, 1); flip the livestream video?

I tried to use this piece of code, but my livestream is still shown up-side-down

Any idea what I'm doing wrong?

[Reply](#)



Barakatullah Azizi

May 28, 2021 at 8:44 am

Hi,

I have bought four ESP32-CAM and using to do my experiment to collect data. during data collection I faced with some problems, Some cut off pictures, some high brightness pictures and some black pictures during the night time even I used the lights and the main problem is three camera stopped working after taking 4 to 5 picture but with same code my two camera still capturing photos I couldn't find the problem can you please tell me what should I do?

[Reply](#)



DannyZee

November 17, 2021 at 7:44 am

An excellent tutorial, as always!
I cannot seem to make the frame size work.

I used

```
if(psramFound())
{
    config.frame_size = FRAMESIZE_XGA; // 1024x768
    config.jpeg_quality = 10;
    config.fb_count = 2;
}
else
{
    config.frame_size = FRAMESIZE_XGA;
    config.jpeg_quality = 10;
    ...
}
```

so, I should get XGA no matter if PSRam is available or not, but, my settings always start with UXGA enabled. Does this setting only work for stills? (I am streaming video)

Again, excellent source of information, Keep up the good work!!

[Reply](#)



Bob

December 22, 2021 at 1:04 am

wondering if its possible to add a button to start and stop the stream in addition to the web button.

Not sure where the stream web button is in the code and would like to add an IO pin in that section of code

great tutorials, really enjoy them.

Thanks, Bob

[Reply](#)



Ihor Udovitski

December 24, 2021 at 10:35 am

Hello, Could you please advise viewer for the specific grayscale image format of ESP32CAM. I tried some popular viewers, they do not recognize these images.

```
config.pixel_format = PIXFORMAT_GRAYSCALE;  
config.frame_size = FRAMESIZE_SXGA;  
config.jpeg_quality = 10;  
config.fb_count = 1;
```

[Reply](#)



Johan Wolbink

December 31, 2021 at 7:24 pm

Hello, If I change the settings is it possible to see them in Home Assistant. Because I want to change the horizon 180 degrees but it don't show up in HA. What I am doing wrong ?

[Reply](#)



liao

March 3, 2022 at 2:00 am

Hi,
I used

```
if (psramFound())  
{  
    config.frame_size = FRAMESIZE_SVGA; //+  
    QVGA|CIF|VGA|SVGA|XGA|SXGA|UXGA  
    config.jpeg_quality = 10; //0-63 lower number means higher quality
```

```
else
{
    config.frame_size = FRAMESIZE_CIF;
    config.jpeg_quality = 10; //0-63 lower number means higher quality
    config.fb_count = 2;
}
```

but my esp32cam can not find psram, so it only run else(CIF picture),what should i do.

please give me some help,thanks.

Again, excellent source of information, Keep up the good work!!

[Reply](#)



Sara Santos

March 3, 2022 at 12:18 pm

Hi.

What's the board that you havE?

Regards,

Sara

[Reply](#)



Liao

March 4, 2022 at 1:58 am

first,thanks for your reply.

problem has been solved.

I configured in the platformio.ini , input code to open PSRAM.

build_flags = -DCORE_DEBUG_LEVEL=5

-DBOARD_HAS_PSRAM

-mfix-esp32-psram-cache-issue

Thereby, I can get the UXGA picture(1600×1200).

Thank you again for your website and tutorial, which gave me a lot of help.

[Reply](#)

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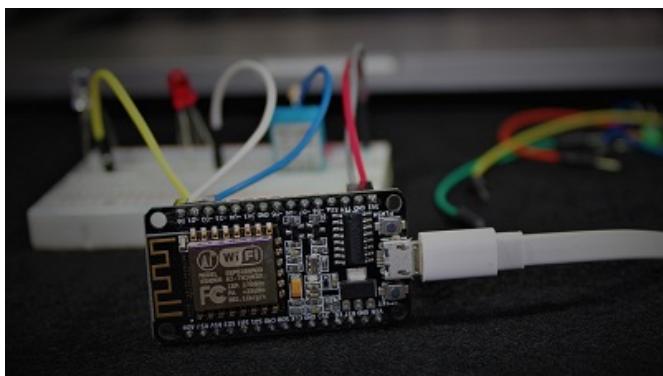
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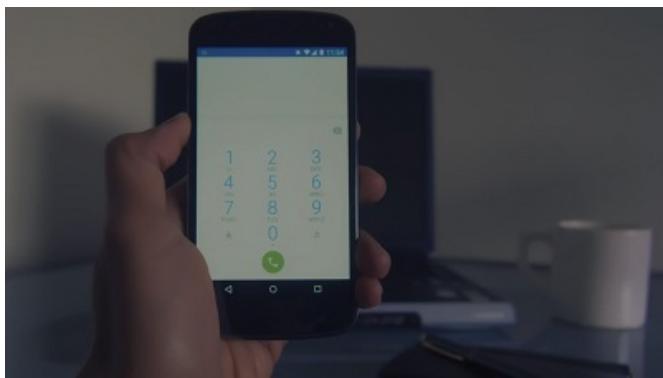




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