



Ender 3 Bed Handle with ESP32 Camera Mount



Jonathan Gahan

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Summary

A Remix of LarnOm's Ender 3 Bed Handle to add a mount for bkgoodman's and Jemx's ESP32 Camera Cases

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Behold a bed handle for an Ender 3/Pro/V2/Neo with a mount for an ESP32 Camera!

The ESP32 Camera module is a ridiculously cheap maker-friendly, WiFi enabled, USB powered camera module that can be programmed with Arduino. With this mount, and some initial setup (see below) you can end up with a webcam to remotely monitor your Ender 3 printer, for just a few dollars.

I remixed LarnOm's Ender 3 Bed Handle from Thingiverse to add a mount for an ESP32 Camera in a case by bkgoodman or Jemx. The camera case will simply snap into place in the mount. The hole below the mount gives clearance for the Micro USB cable to connect to the camera module without bending excessively. Mounted in this manner, the camera will move with the bed, maintaining a constant position, relative to the model being printed. Either of these cases can be used as-is, without modification.

You will need to obtain an ESP32 CAM module, ideally with a Micro USB shield. The USB shield makes uploading code into the module straightforward, and also powers the module from a Micro USB cable, once you have it on your printer.

Print it laying flat, right-side up. You will need supports (I used tree supports in Cura) and did 4 outer perimeters, 4 top and bottom layers, at 0.2mm resolution, with 50% cubic in-fill.

Last Minute Engineers has great write-ups for this module, explaining how to connect to it via Arduino. There is actually a “Camera Web Server” among the sample programs included in the Arduino package for this module, which is what I use to remotely monitor my prints.

How to install the ESP32 board into Arduino (so you can upload code to it): <https://lastminuteengineers.com/esp32-arduino-ide-tutorial/>

Getting started with the ESP32 Camera: <https://lastminuteengineers.com/getting-started-with-esp32-cam/>

The ESP32 camera modules are readily sourced from Amazon:

<https://www.amazon.com/gp/product/B0948ZFTQZ/>

<https://www.amazon.com/HiLetgo-ESP32-CAM-Development-Bluetooth-Raspberry/dp/B07RXPBYNM/>

They are also sold via eBay and AliExpress. Even Wish and Temu sell them.

You likely have a Micro USB cable and a USB charger already. I got mine from the Dollar Tree:

<https://www.dollartree.com/usb-wall-taps/251242>

<https://www.dollartree.com/e-circuit-flatwire-tangle-free-micro-usb-cables/259562>

This remix is based on



ESP32-CAM Case

by bkgoodman



ESP32 Cam Case (SD Card Support)

by Jemx



ENDER-3 BED HANDLE

by LarnOm

Model files



ender-3-bed-handle-camera-mount-v21.3mf



ce3e3_ender-3-bed-handle-camera-mount-v21.stl

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