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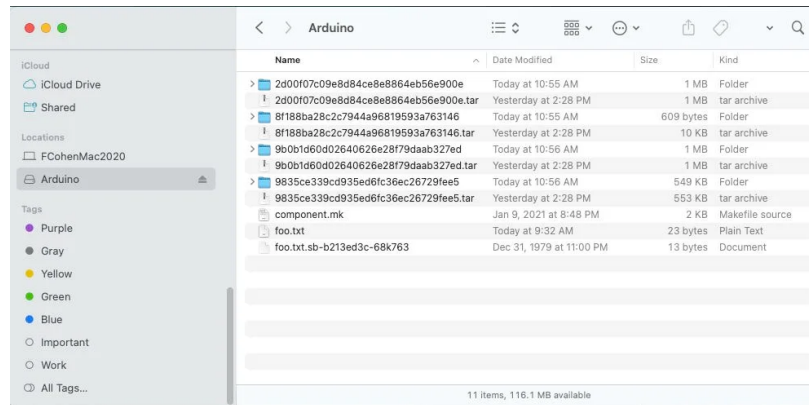**Posts** | Wiki

Posted by u/frankcohen 5 minutes ago

1

ESB32-S3 + NAND SD Storage + USB MSC = Arduino that shows up like a disk drive

This sketch turns the Reflections main board (an ESP32 with NAND SD storage) into a USB PCMCIA flash mass storage device. Connect the board to the USB port of your Mac or other laptop and the NAND SD card contents appear as a disk drive. Drag-and-drop files into the device from your desktop. Edit files on your Arduino directly from your laptop. Copy over movies, images, fonts, and data.

ESP32 appears as a disk drive

This is something Limor Fried (@LadyAda) and Phillip Torrone (@pt) first demonstrated in 2019 on https://www.youtube.com/watch?v=0bWba0PU4-g Unfortunately, Adafruit_TinyUSB does not compile under the ESP32-S3.

This sketch makes their idea work on an ESP32-S3-Mini-1 with a NAND storage device and USB port connected directly to the ESP32. NAND is a surface mount version of an SD mass storage card. NAND gives gigabytes of storage to your Arduino. ESP32 uses the SPI bus to communicate with the NAND. This sketch uses the TinyUSB library support included in the ESP32 libraries. I distribute this code under a freeGPL v3 Open Source license.

Download the Arduino IDE sketch at
https://github.com/frankcohen/ReflectionsOS/tree/main/Devices/Hoober/Software/USB-MSC

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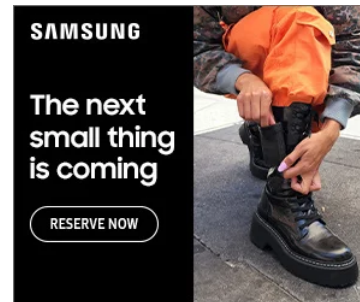
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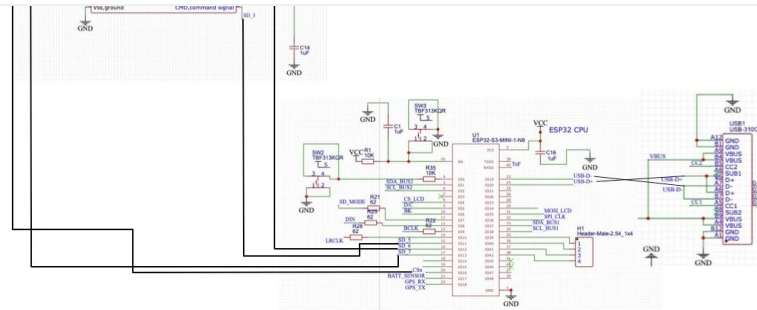USER FLAIR PREVIEW

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Wiring guide to connect an ESP32, NAND storage to USB

See the Reflections Wiring Guide for details at:

https://github.com/frankcohen/ReflectionsOS/blob/main/Devices/Hoober/Software/USB-MSC/USB-MSC-Wiring-Guide.jpg

When uploading this in Arduino IDE these need selection in the Tools drop-down menu:

- USB Mode: USB-OTG
- USB CDC On Boot: Enabled
- USB Firmware MSC On Boot: Disabled
- USB DFU On Boot: Disabled

Depends on:

- SdFat https://github.com/adafruit/SdFat
- ESP32 TinyUSB implementation (USBMSC, USB) part of the Arduino IDE hardware library

Built from examples:

https://github.com/adafruit/Adafruit_TinyUSB_Arduino/blob/master/examples/MassStorage/msc_external_flash_sdcard/msc_external_flash_sdcard.ino

About Reflections:

What started as a project to wear videos of my children as they grew up on my arm as a wristwatch, grew to be a platform for making entertaining experiences. This is one of the software components. It runs on an ESP32-based platform with TFT OLED display, audio player, flash memory, GPS, gesture sensor, and accelerometer/compass

Repository is at https://github.com/frankcohen/ReflectionsOS

Includes board wiring directions, server side components, examples, support

-Frank

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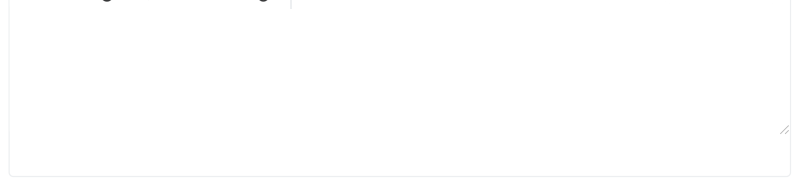71,926 members   Join

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u/shanekeith_ I plug things into things

u/Zouden tinkerer

u/Machiela tinkering and drinkering

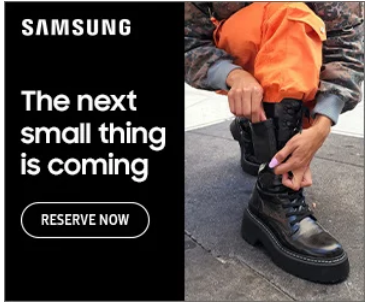u/ripred3 my other dev board is a Porsche 😎

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