

Testing Stuff

Some things I am working with...

ESP32

Board: ESP32-DEVKIT1

Got this board to play around with...

[esp32_devkit1.txt](#)

```
-----  
ESP32-DEVKITV1  
-----  
  
- clone of DOIT's ESP32 DEVKIT V1?  
- ESP-WROOM-32 (ESP32-D0WDQ6)  
  = ESP32-D0WD-based modules with integrated flash  
- DECISION20200822:  
  = toolchain and build environment is simply not worth it!  
  = WILL USE micropython instead!  
  
-----  
micropython  
-----  
  
- get some tools  
  > pip install esptool rshell  
- download binary from https://micropython.org/download/esp32/  
  = selected esp32-idf3-20191220-v1.12.bin  
  = idf4 seems to be missing LAN? stick with idf3 for now...  
- erase flash  
  > esptool.py --chip esp32 --port /dev/ttyUSB0 erase_flash  
- flash micropython  
  > esptool.py --chip esp32 --port /dev/ttyUSB0 --baud 460800  
write_flash -z 0x1000 <bin>  
- use rshell to manage code (vfs)  
  > rshell --port /dev/ttyUSB0 --buffer-size=32  
- download file in rshell  
  > cp <file> /pyboard[/<more_path>]  
  
-----
```

```
board info
-----

esp32 doit devkit v1
vid = 0x10c4
pid = 0xea60
sn = 0001

esp32 doit devkit v1 (aliexpress - usb type c)
vid = 0x1a86
pid = 0x7523
sn = (null)
```

Decided to use [micropython](#). Pinouts shown below (*Disclaimer: Image copied from [RandomNerdTutorials](#)*).



(Disclaimer: Sorry, I can't remember where I got the following two from...).



Below is a simple python script to test SSD1306 OLED display which makes use of [this](#) micropython library code.

[test.py](#)

```
from machine import Pin, I2C
from ssd1306 import SSD1306_I2C
from time import sleep

def run_this():
    i2c = I2C(-1, scl=Pin(22), sda=Pin(21))
    oled_width = 128
    oled_height = 64
    oled = SSD1306_I2C(oled_width, oled_height, i2c)

    oled.text('Hello, World 1!', 0, 0)
    oled.text('Hello, World 2!', 0, 10)
    oled.text('Hello, World 3!', 0, 20)
    oled.show()
```

Using Arduino IDE:

- select Preferences>Additional Board Manager URLs
- enter https://raw.githubusercontent.com/espressif/arduino-esp32/gh-pages/package_esp32_index.json.

- open Boards Manager and install esp32 (search for it)
- when selecting board for upload, select D0IT ESP32 DEVKIT V1

Note: esp32 flash tool requires python serial module (e.g. `pip install pyserial`)

Board: ESP01S

[esp01s_info.txt](#)

Upgraded ESP-01S ESP8266 Serial WIFI Wireless Module Wireless Transceiver

- ESP01S ESP8266-01S (stronger antenna signal compared to esp01)
- 1MB flash (from 512M)
- Integrated WEP, TKIP, AES, and WAPI engines. 802.11 b/g/n
- Wake up and transmit packets in 2ms
- standby power consumption of 1.0mW (DTIM3)

Feature:

- Power down leakage current <10uA
- Integrated low power 32-bit CPU could be used as application processor

```
-----  
|ANT.|  
|    |  
|    |  
|8765|  
|1234|  
-----
```

```
1|tx|  
2|ch_pd|1-enable  
3|rst|0-reset  
4|vcc|3.3v  
5|rx|  
6|gpio0|0-flash mode (def), 1-uart mode (prog)  
7|gpio2|gpio  
8|gnd|
```

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