

*****Draft*****

pico_w with bluetooth support

Built pico-examples on pi4-27 and rsync'ed to pi4-50, pi4-60, and pi4-20.

sm_pairing_central

between

sm_pairing_peripheral

adding example of a pico_w with temperature sensor

02/11/23

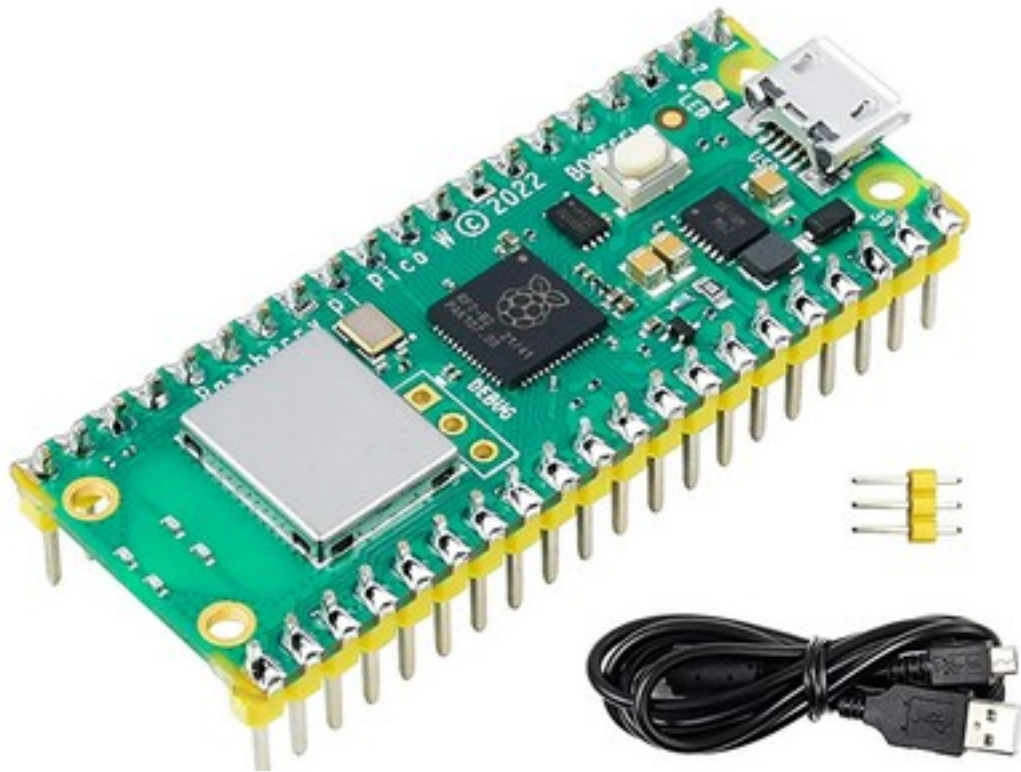
*****Draft*****

<https://www.cnx-software.com/2023/02/11/raspberry-pi-pico-w-bluetooth-le-support/>

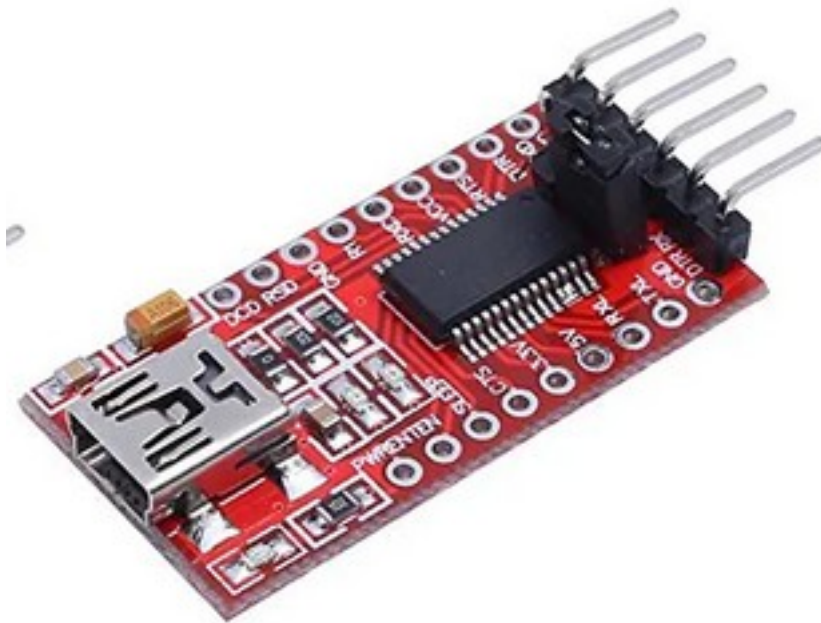
2 Raspberry Pi 4



2 pico_w



2 USB



Updated pico-sdk from Jun 29 22 SDK 1.4.0 release to Feb 10 23 release SDK 1.5.0

cd sdk/

git clone <https://github.com/develone/pico-sdk.git>

```
cd pico-sdk
```

```
git submodule update --init
```

```
release SDK 1.5.0
```

```
cd ~/
```

```
git clone https://github.com/develone/pico-examples.git
```

```
cd pico-examples
```

```
mkdir build
```

Need to modify the following files with

```
#include "pw_ssid.h"
```

```
if (cyw43_arch_wifi_connect_timeout_ms("your wifi ssid", WIFI_PASSWORD,  
CYW43_AUTH_W
```

```
    modified: pico_w/bt/standalone/server_with_wifi.c
```

```
    modified: pico_w/wifi/freertos/iperf/picow_freertos_iperf.c
```

```
    modified: pico_w/wifi/freertos/ping/picow_freertos_ping.c
```

```
    modified: pico_w/wifi/iperf/picow_iperf.c
```

```
    modified: pico_w/wifi/ntp_client/picow_ntp_client.c
```

```
    modified: pico_w/wifi/tcp_client/picow_tcp_client.c
```

```
    modified: pico_w/wifi/tcp_server/CMakeLists.txt
```

```
    modified: pico_w/wifi/tcp_server/picow_tcp_server.c
```

```
    modified: pico_w/wifi/tls_client/picow_tls_client.c
```

```
    modified: pico_w/wifi/udp_beacon/picow_udp_beacon.c
```

Need to add a files pw_ssid.h

```
#ifndef _SSID_H
```

```
#define _SSID_H
```

```
char WIFI_PASSWORD[] = "your wifi password";
```

```
#endif
```

```
    pico_w/wifi/freertos/ping/pw_ssid.h
```

```
    pico_w/wifi/iperf/pw_ssid.h
```

```
    pico_w/wifi/ntp_client/pw_ssid.h
```

```
    pico_w/wifi/tcp_client/pw_ssid.h
```

```
    pico_w/wifi/tcp_server/pw_ssid.h
```

```
    pico_w/wifi/tls_client/pw_ssid.h
```

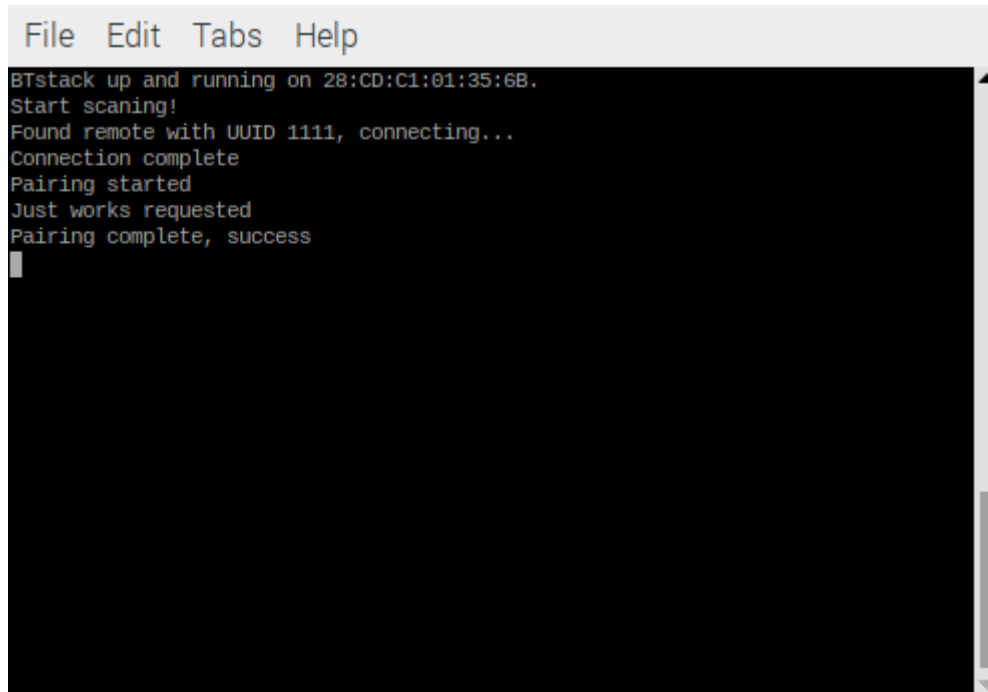
```
    pico_w/wifi/udp_beacon/pw_ssid.h
```

```
cmake -DPICO_BOARD=pico_w -DTEST_TCP_SERVER_IP="xx.xx.xx.xx" -  
DWIFI_SSID="your ssid" -DWIFI_PASSWORD="your ssid password" -  
DFREERTOS_KERNEL_PATH:PATH=/home/devel/FreeRTOS-Kernel ..
```

make

pi4-20

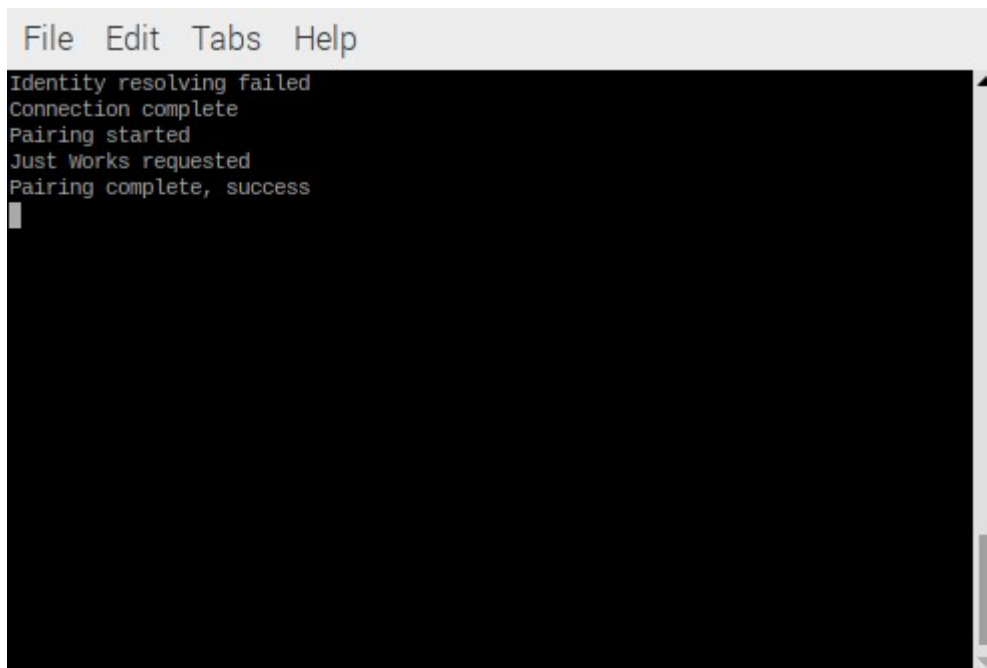
```
openocd -f interface/raspberrypi-swd.cfg -f target/rp2040.cfg -c "program  
pico_w/bt/sm_pairing_central/picow_bt_example_sm_pairing_central_background.elf reset exit"
```

A screenshot of a terminal window with a menu bar containing 'File', 'Edit', 'Tabs', and 'Help'. The terminal output shows the following text:

```
BTstack up and running on 28:CD:C1:01:35:6B.  
Start scanning!  
Found remote with UUID 1111, connecting...  
Connection complete  
Pairing started  
Just works requested  
Pairing complete, success
```

pi4-60

```
openocd -f interface/raspberrypi-swd.cfg -f target/rp2040.cfg -c "program  
pico_w/bt/sm_pairing_peripheral/picow_bt_example_sm_pairing_peripheral_background.elf verify  
reset exit"
```

A screenshot of a terminal window with a light gray title bar containing the menu items 'File', 'Edit', 'Tabs', and 'Help'. The terminal area has a black background with white text. The text shows a sequence of Bluetooth pairing events: 'Identity resolving failed', 'Connection complete', 'Pairing started', 'Just Works requested', and 'Pairing complete, success'. A white cursor is visible on the line following the final message. A vertical scrollbar is on the right side of the terminal window.

```
File Edit Tabs Help
Identity resolving failed
Connection complete
Pairing started
Just Works requested
Pairing complete, success
█
```

Just tested 2 pico_w

```
openocd -f interface/raspberrypi-swd.cfg -f target/rp2040.cfg -c "program
pico_w/bt/standalone/picow_ble_temp_sensor.elf verify reset exit"
```

BTstack up and running on 28:CD:C1:01:35:6B.

Write temp 25.64 degc

```
openocd -f interface/raspberrypi-swd.cfg -f target/rp2040.cfg -c "program
pico_w/bt/standalone/picow_ble_temp_reader.elf verify reset exit"
```

BTstack up and running on 28:CD:C1:08:17:20.

Connecting to device with addr 28:CD:C1:01:35:6B.

read temp 25.63 degc