

Raspberry Pi Debug Probe

- CMSIS-DAP
- UART (U) and I2C connector (D)
- Does not provide power, target board needs to be powered but mind it needs shared ground

Pinout

- **Orange** - TX/SC (Output from Probe)
- **Black** - GND
- **Yellow** - RX/SD (Input to Probe or I/O)

Pico connection

- The Debug Probe "D" port to Pico H SWD JST-SH connector
- The Debug Probe "U" port, with the three-pin JST-SH connector to 0.1-inch header (male):
 - Debug Probe RX connected to Pico H TX pin
 - Debug Probe TX connected to Pico H RX pin
 - Debug Probe GND connected to Pico H GND pin

Debugging

```
openocd -f interface/cmsis-dap.cfg -f target/rp2040.cfg -c "adapter speed 5000"  
  
# on another terminal  
telnet localhost 4444  
reg
```

Flashing and debugging

probe-rs

- [Project template for rp2040-hal](#)

Using runner command: `sudo probe-rs run --chip RP2040 --protocol swd`

Cargo configuration:

.cargo/config.toml

```
[target.'cfg(all(target_arch = "arm", target_os = "none"))']
# Choose a default "cargo run" tool (see README for more info)
# - `probe-rs` provides flashing and defmt via a hardware debugger, and stack unwind on
panic
# - elf2uf2-rs loads firmware over USB when the rp2040 is in boot mode
runner = "sudo probe-rs run --chip RP2040 --protocol swd"
# runner = "elf2uf2-rs -d"

rustflags = [
  "-C", "linker=flip-link",
  "-C", "link-arg=--nmagic",
  "-C", "link-arg=-Tlink.x",
  "-C", "link-arg=-Tdefmt.x",

  # Code-size optimizations.
  # trap unreachable can save a lot of space, but requires nightly compiler.
  # uncomment the next line if you wish to enable it
  # "-Z", "trap-unreachable=no",
  "-C", "no-vectorize-loops",
]

[build]
target = "thumbv6m-none-eabi"

[env]
DEFMT_LOG = "debug"
```

Updated 2025-11-24 21:06:06 GMT by hxd