EE 193: Advanced Embedded Systems

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Debugging with PlatformIO

Easy way: built-in USB-JTAG bridge

GPIO 18: D- (white)
GPIO 19: D+ (green)
GND: USB GND (black)
Leave 5V disconnected

Hard way: external JTAG debugger (ESP-PROG)

GPIO 4: TMS
GPIO 5: TDI
GPIO 6: TCK
GPIO 7: TDO

Feedforward

Think about what you want debugging functionality you want to provide access to for iteration 2!

Hints for debugging I2C / SPI

A typical process:

    1) Read datasheet

    2) Write some code

    3) The code reads zero

    4) Now what??

Where could the problem be?

Some possible strategies

Is data coming out of the ESP32? Does it look right?

Is data coming out of the sensor? Does it look right?

Read something that you know should work (e.g., an ID field)

Try putting a test device in place of one of the devices

     Digital Discovery can drive outputs

     For SPI/UART, loopback can sometimes be effective