

Interactive Desktop Decoration (IDD) Controller Board: Soldering and Check Connections

Dr. Clifford Choy

School of Design

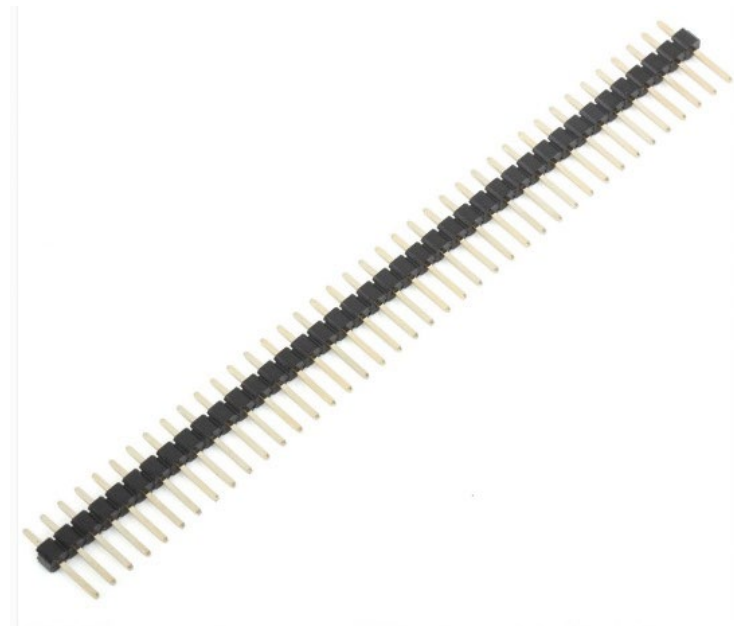
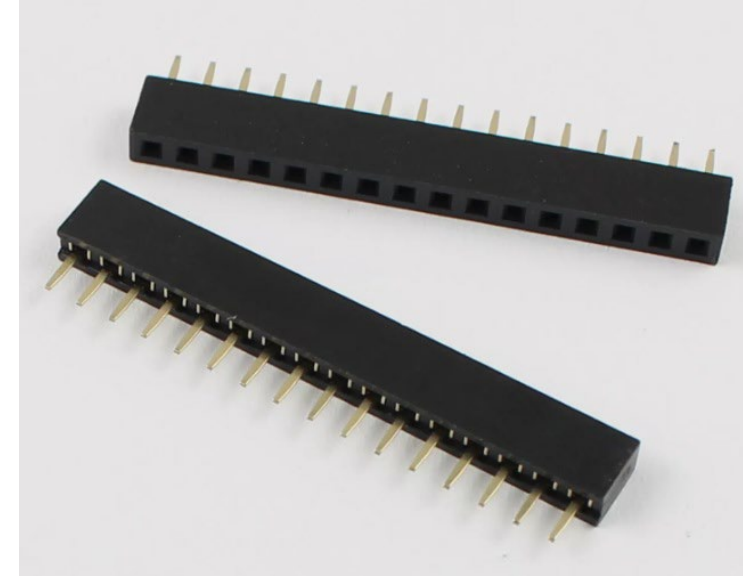
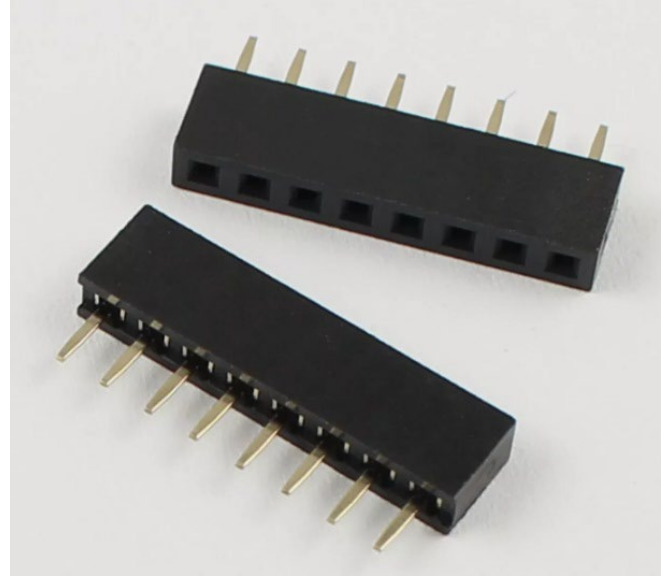
mccliff@polyu.edu.hk

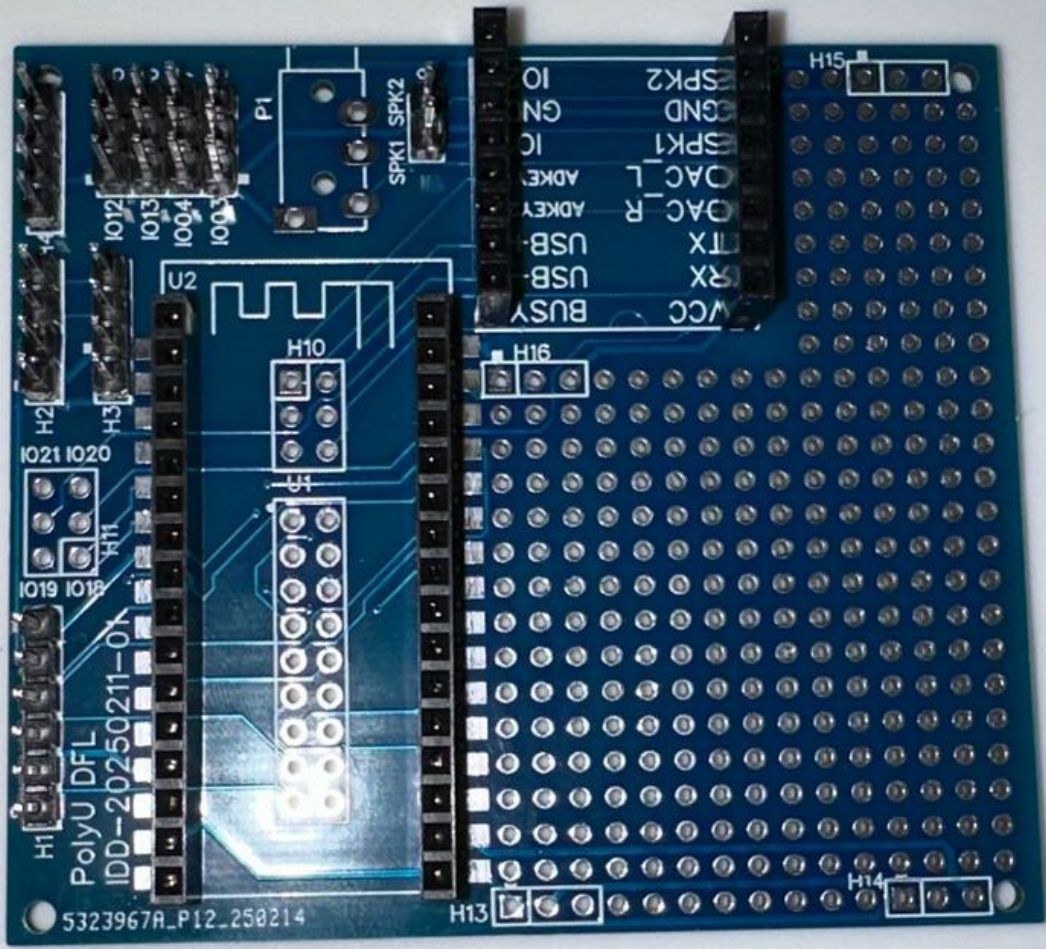
4 Mar 2025

Soldering of Headers

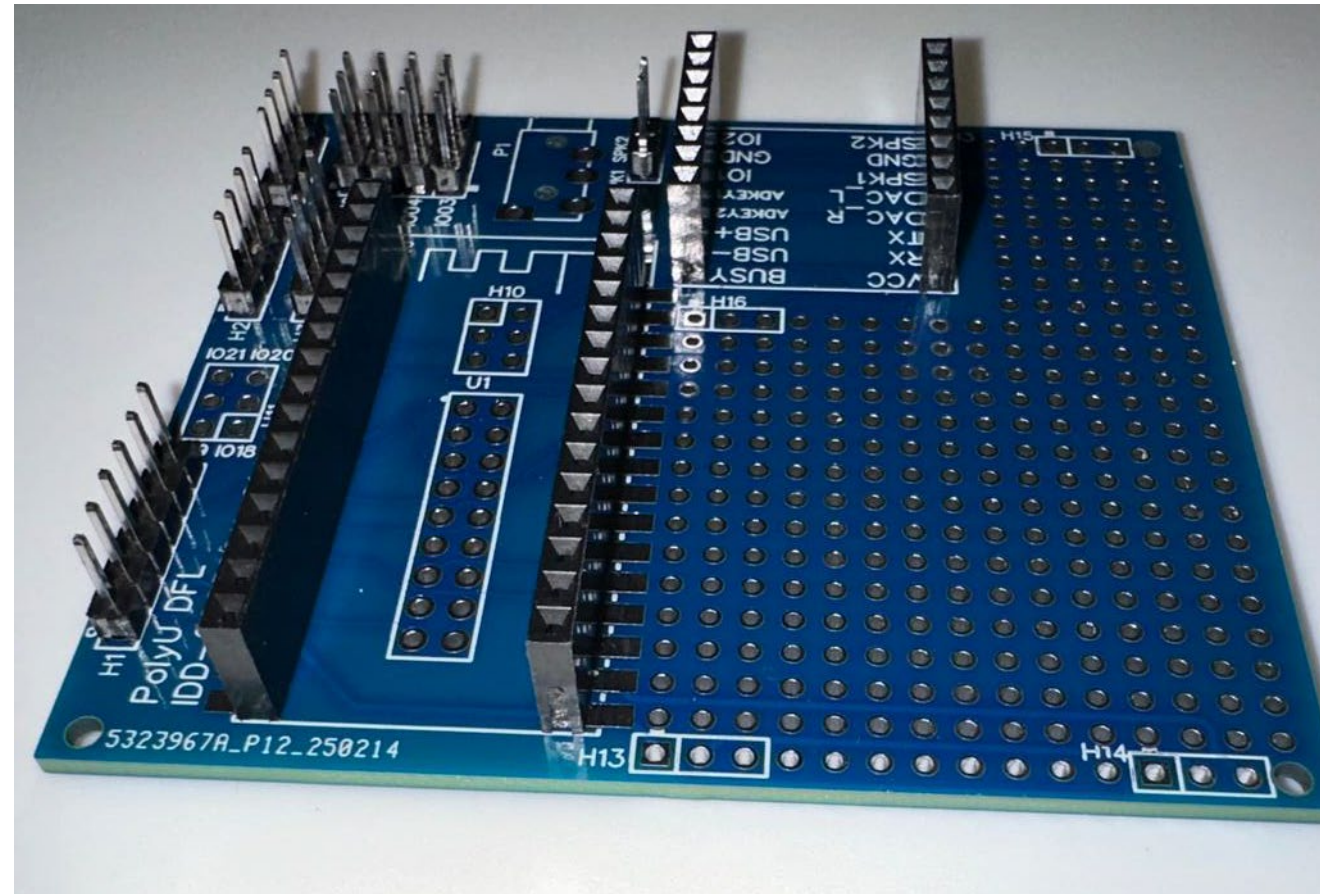
Headers

- Female headers
 - ESP32C3
 - DFPlayer Mini (MP3 Player)
- Pin headers
 - Servo Motor
 - MPR121 (touch sensor)
 - Neo Pixel
 - OLED display



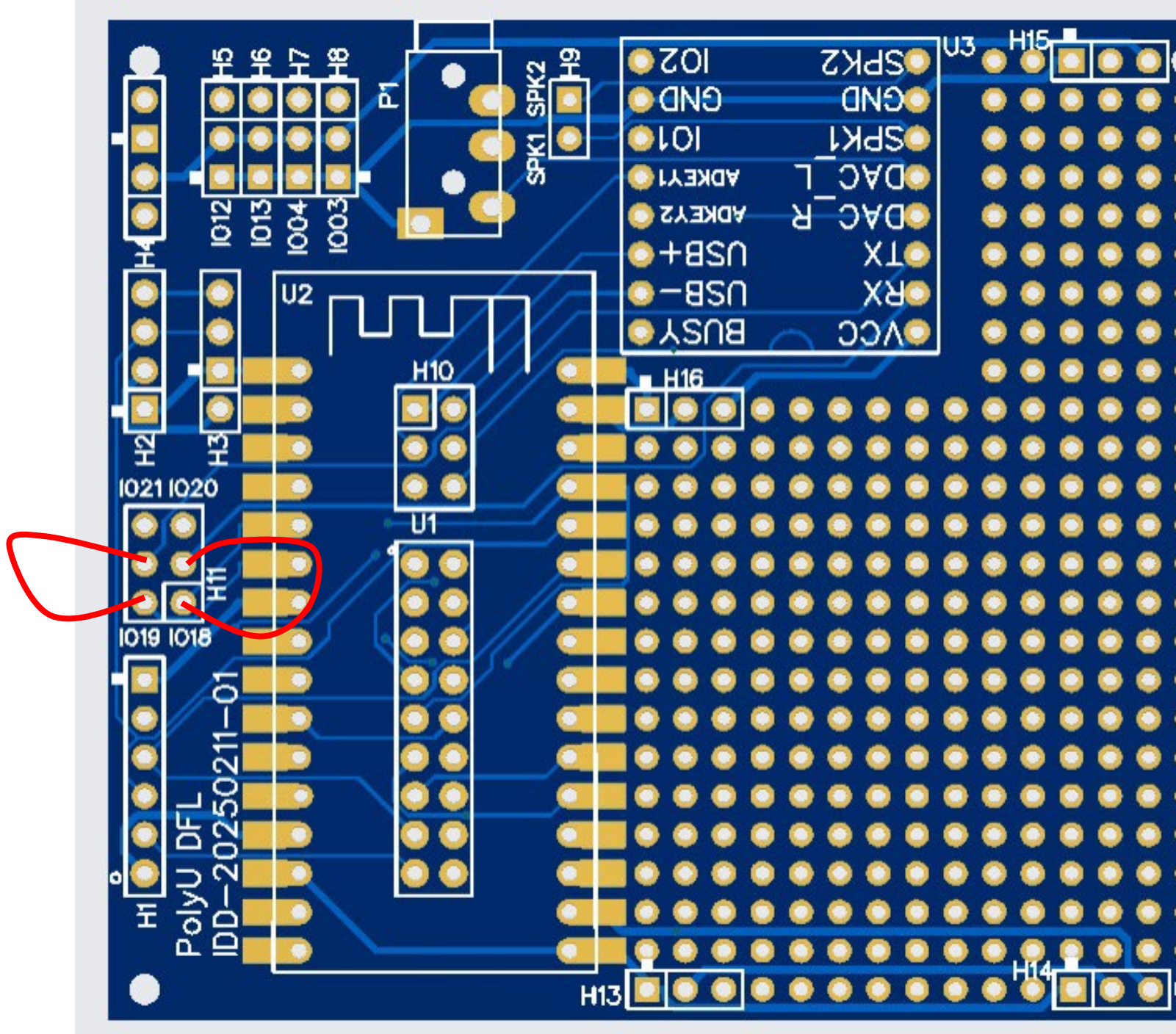


Make sure all headers are upright, and all pins soldered to the PCB

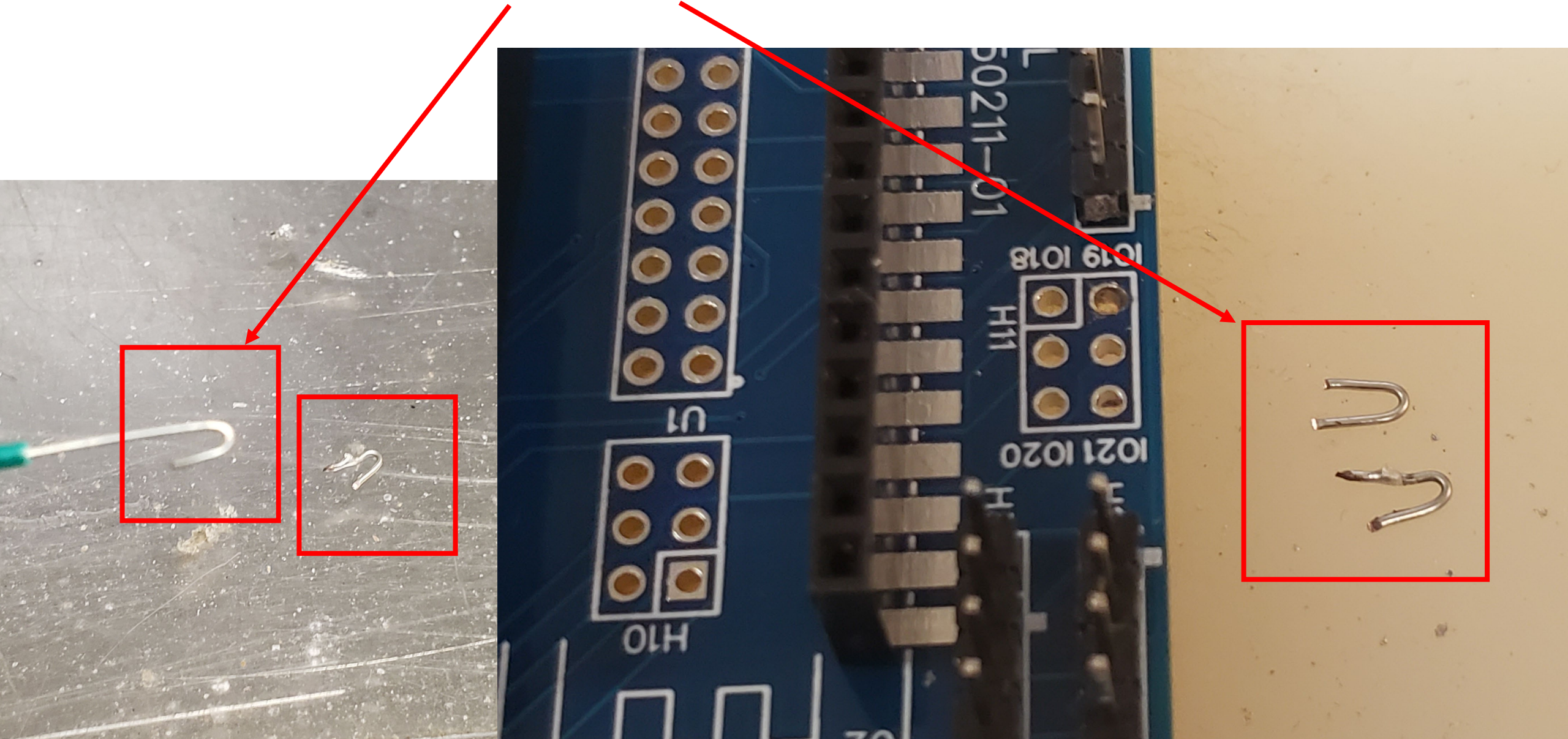


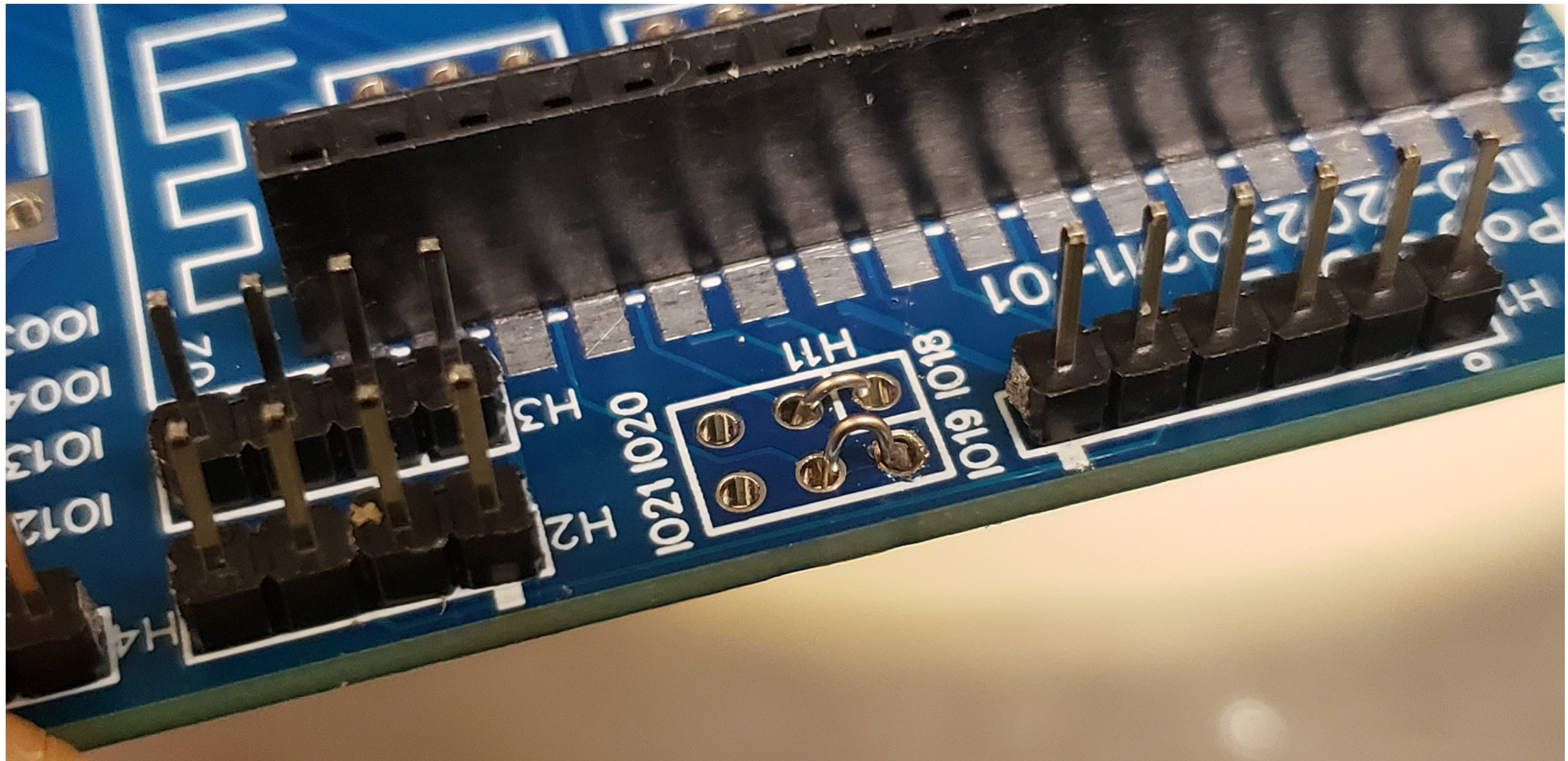
Soldering of H1 1

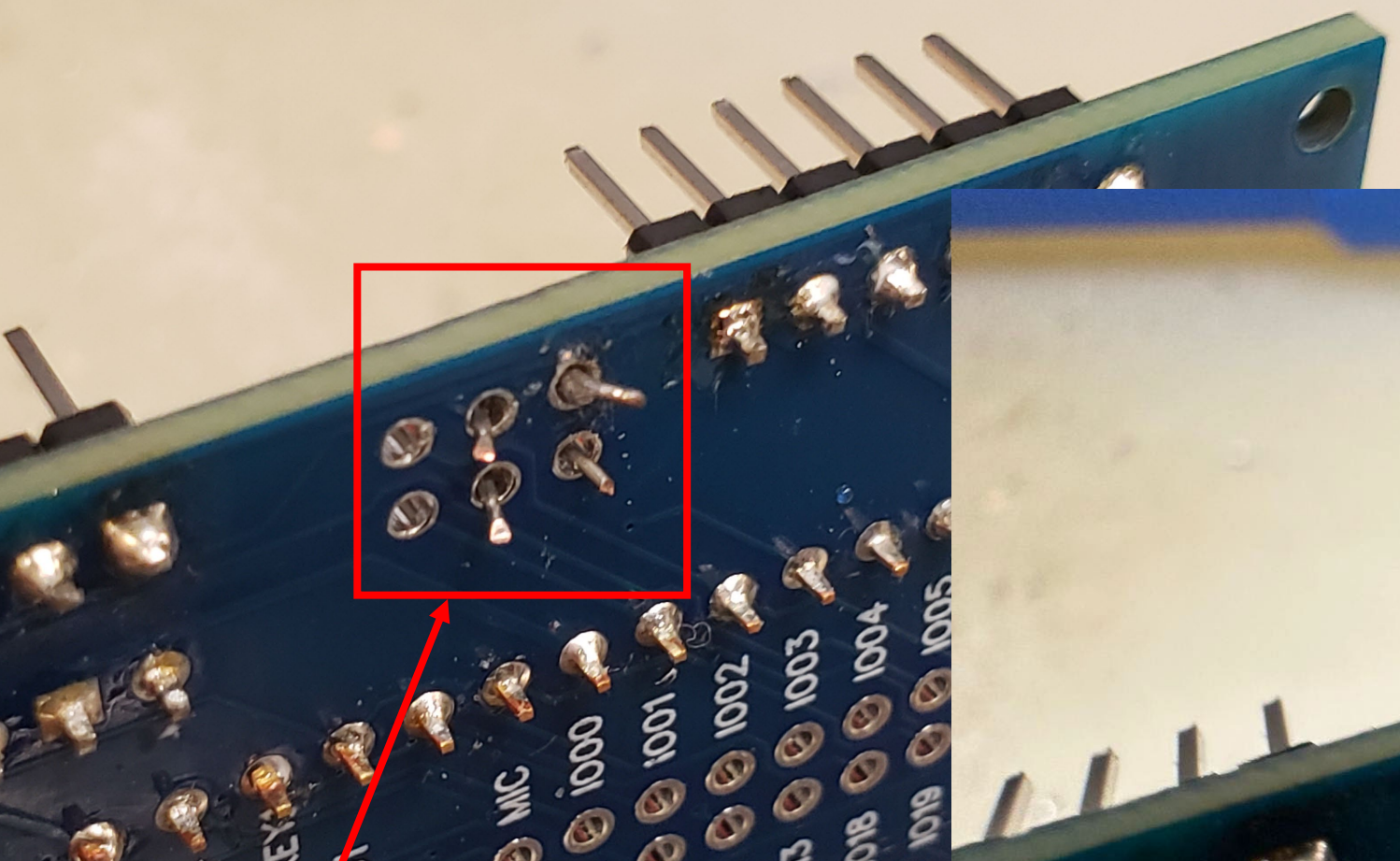
- For determining which pins to connect to TX and RX of DFPlayer Mini (in U3)



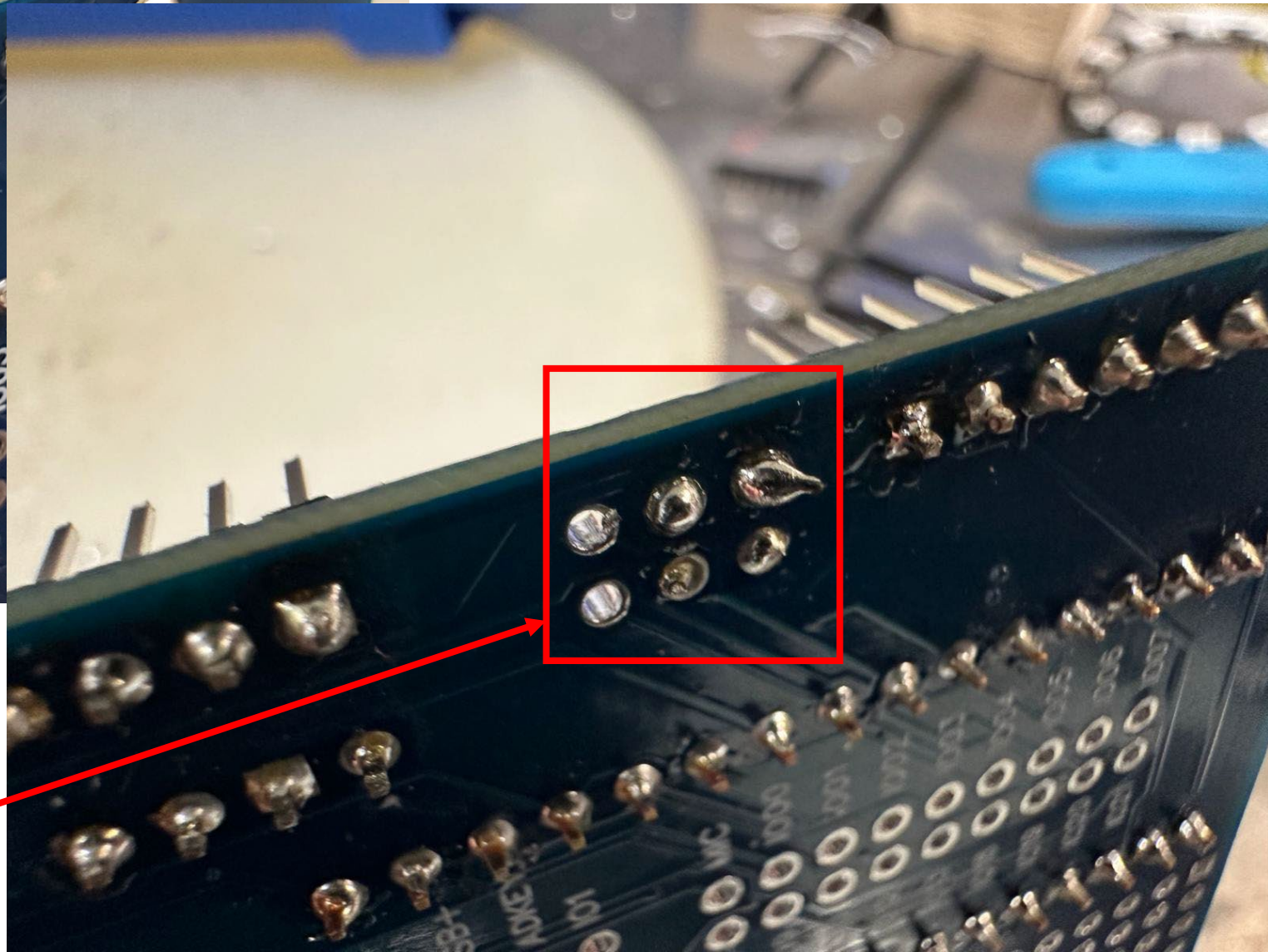
Strip a wire, bend it and cut into two U-shaped wires







Before soldering



After soldering

Check Connections

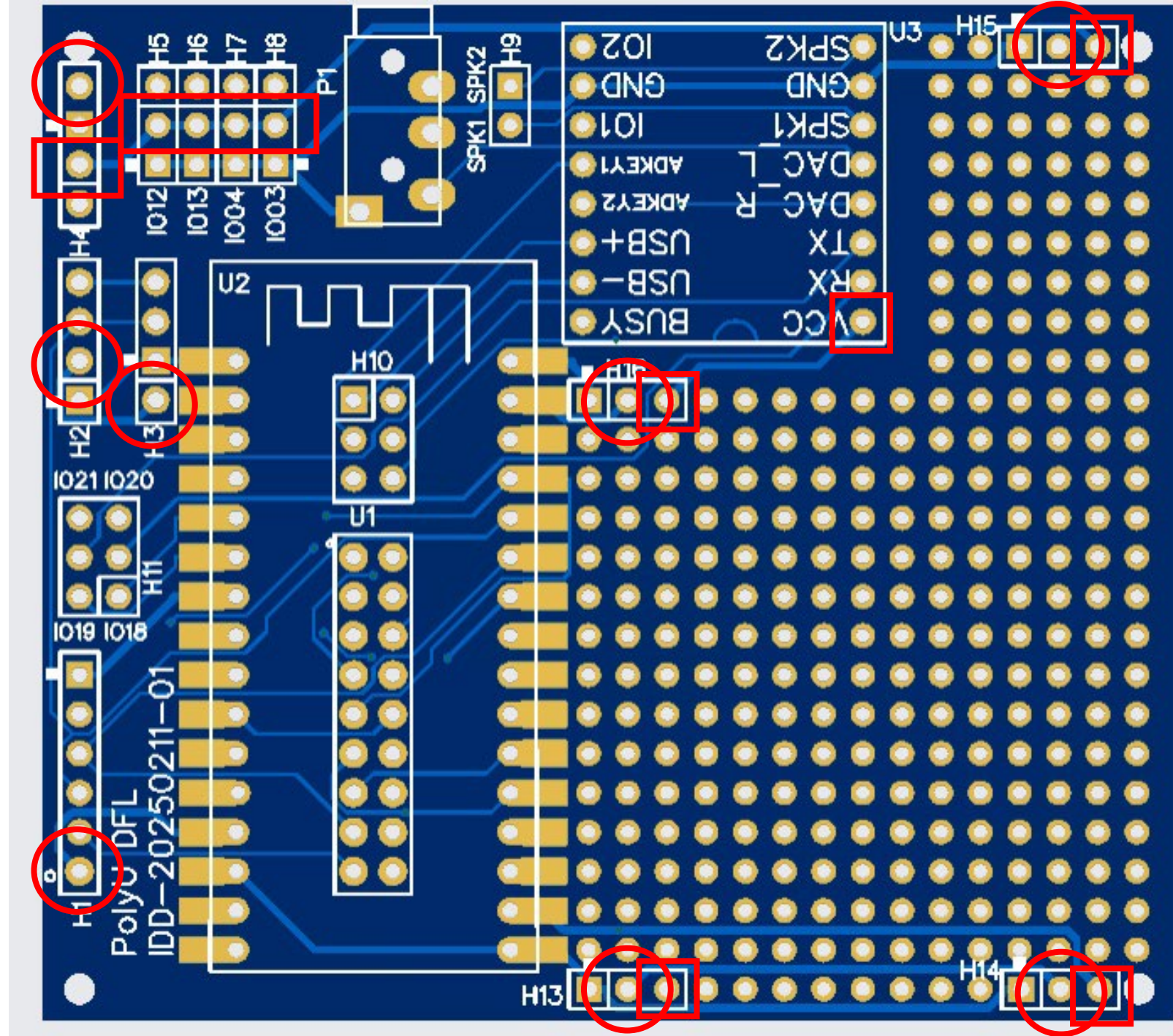
01	GND	GND	17
02	IO00	3.3V	18
03	IO01	IO02	19
04	IO12	IO03	20
05	IO18	IO10	21
06	IO19	IO06	22
07	GND	IO07	23
08	IO20_RX0	PB_11	24
09	IO21_TX0	GND	25
10	IO13	3.3V	26
11	NC	IO05	27
12	RESET	IO04	28
13	3.3V	IO08	29
14	GND	BOOT	30
15	PWB	5V	31
16	5V	GND	32

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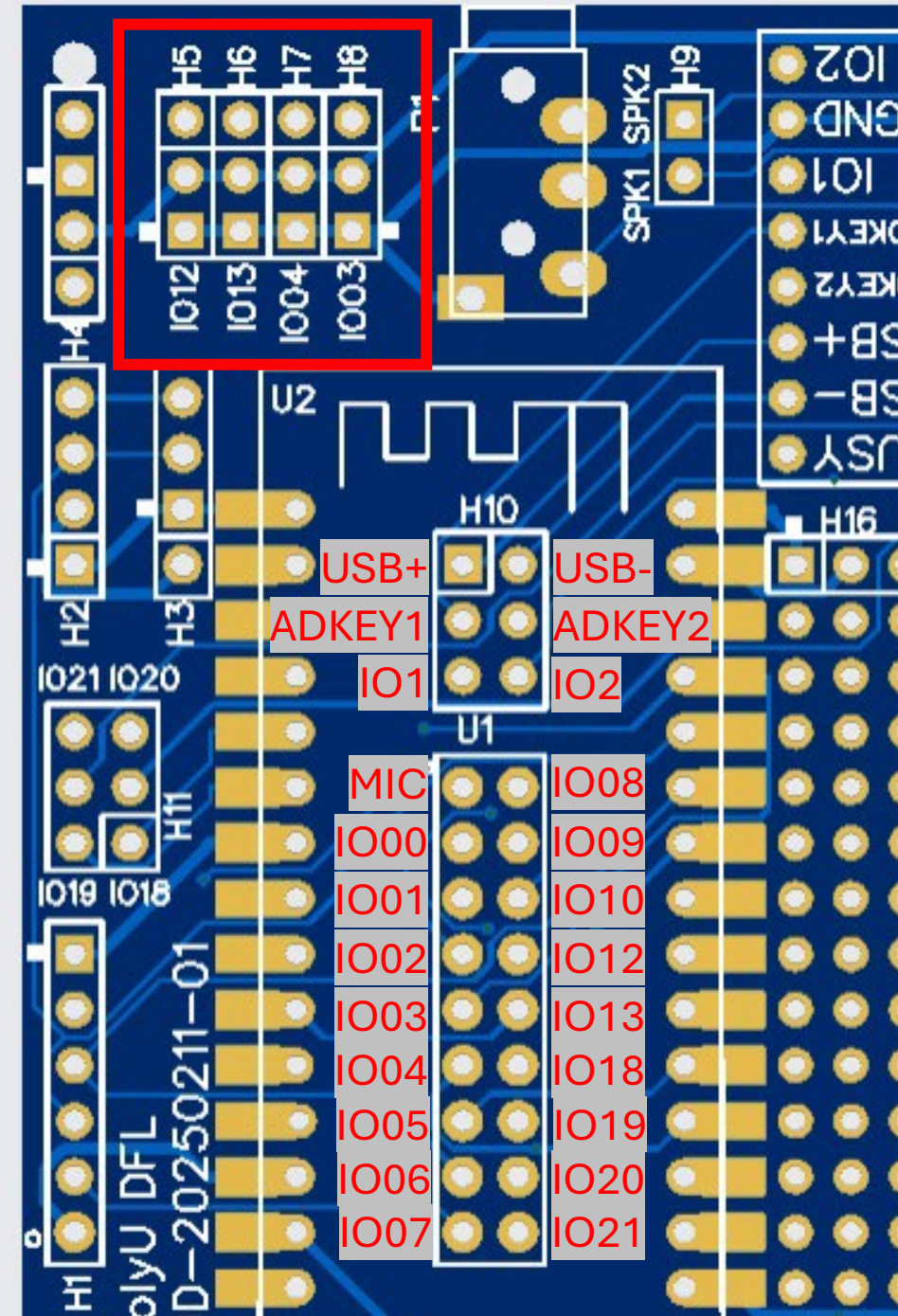
GND, 3V3 and 5V

- GND – marked with a small square
- 5V – red square
- 3V3 – red circle



Headers for Servo Motors

- Solder 1x3 pin headers to H5 to H8
- For each 1x3 pin header
 - “Square dot” – GND
 - Middle – 5V
 - The other pin – PWM
- PWM pin should connect to respective pin in U1
 - E.g. IO12



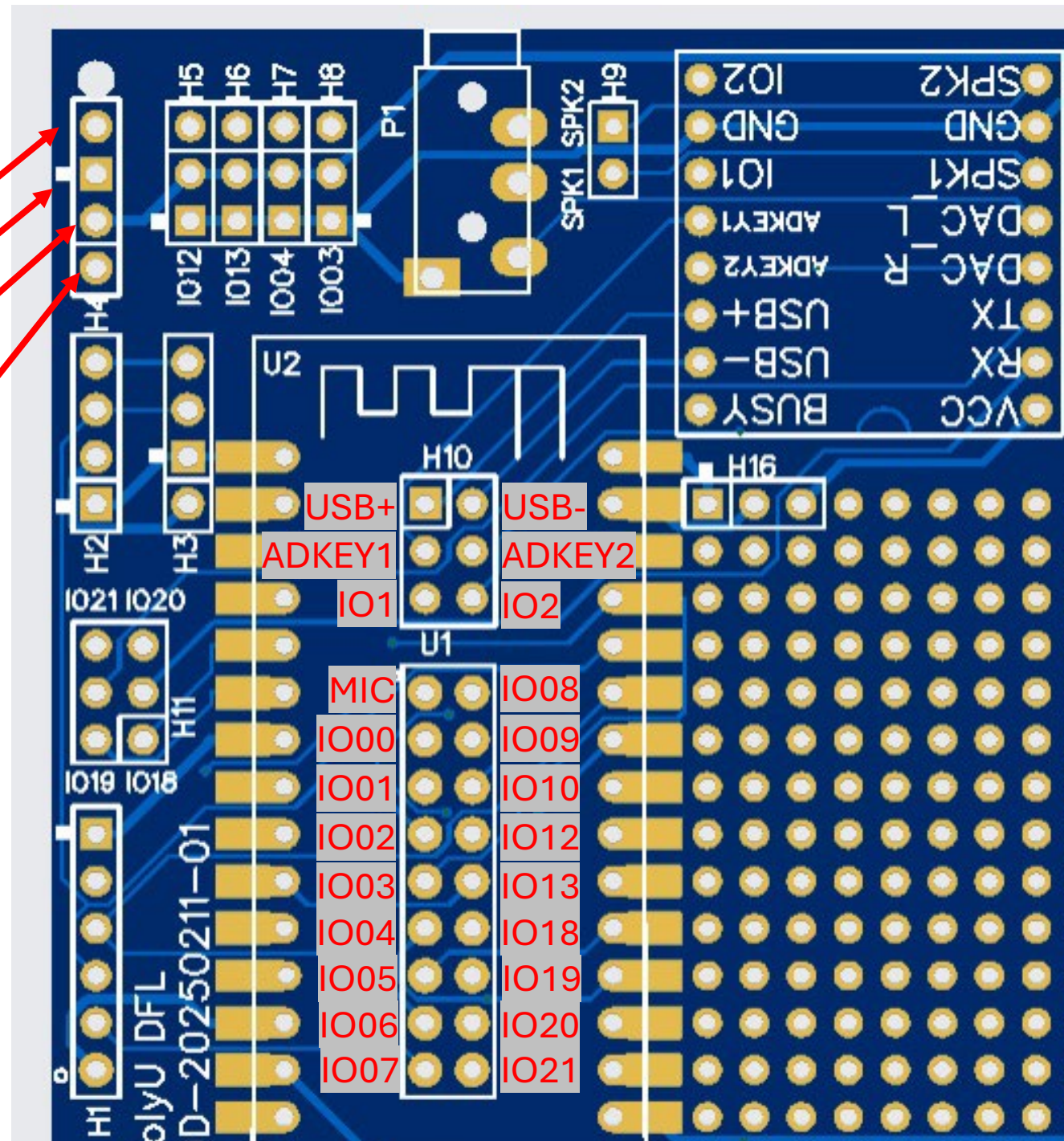
Neo Pixel (WS2812)

3V3

GND

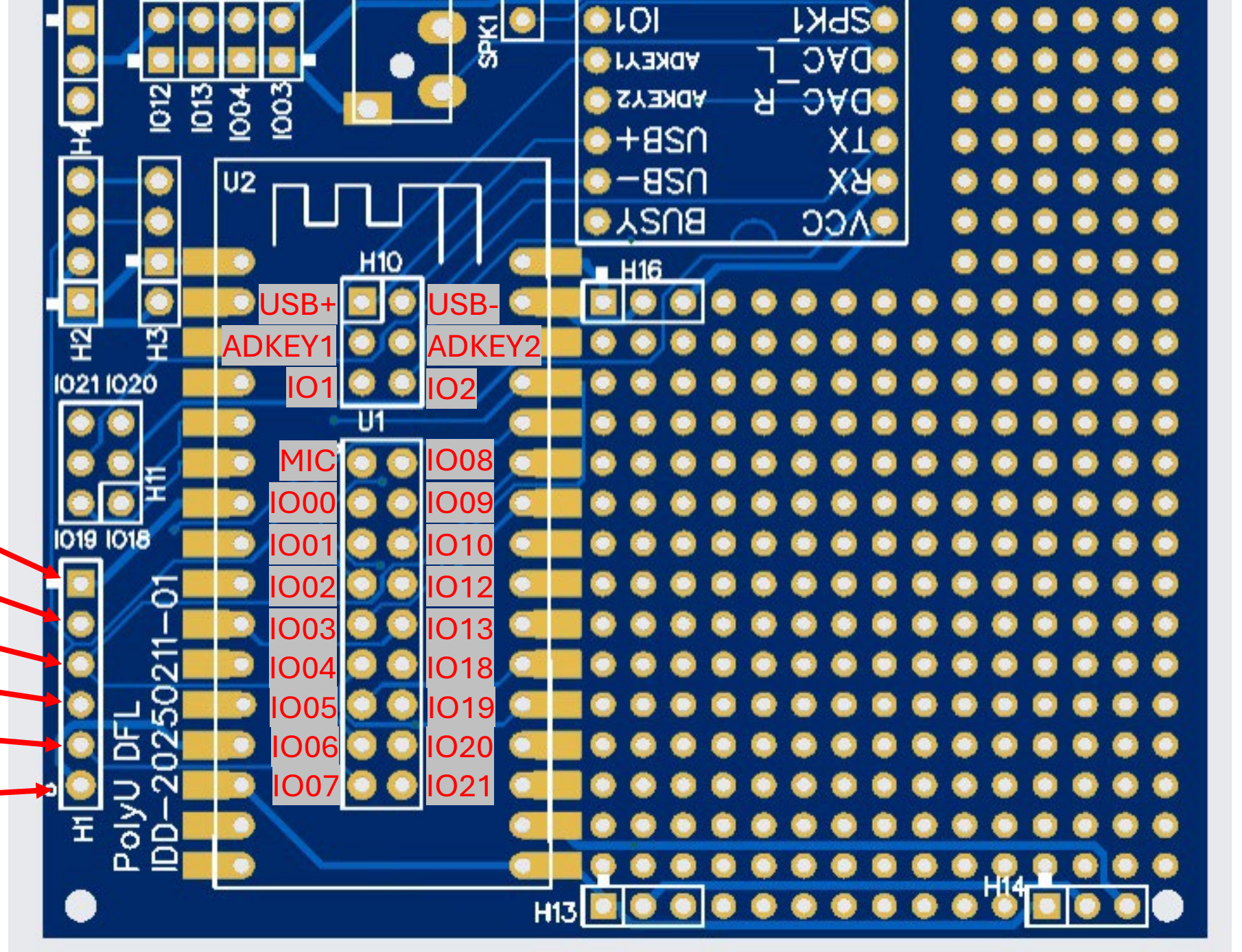
5V

DIN/IO05



MPR121

- GND
- ADD (NC)
- SDA (IO06)
- SCL (IO10)
- IRQ (IO07)
- 3.3V



DFPlayer Mini

- TX – IO19 or IO21
- RX – IO18 or IO20
- BUSY – IO08
- SPK1 – SPK1 in H9
- SPK2 – SPK2 in H9
- Other pins in H10

