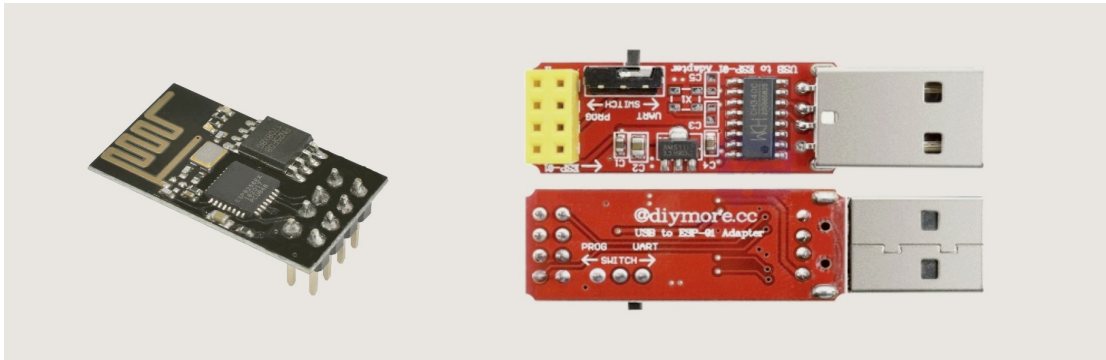# Build a USB Wi-Fi Header for OCM and related

This guide explains how to easily build a USB Wi-Fi Header for 1chipMSX, Zemmix Neo, SX-1 and related machines.
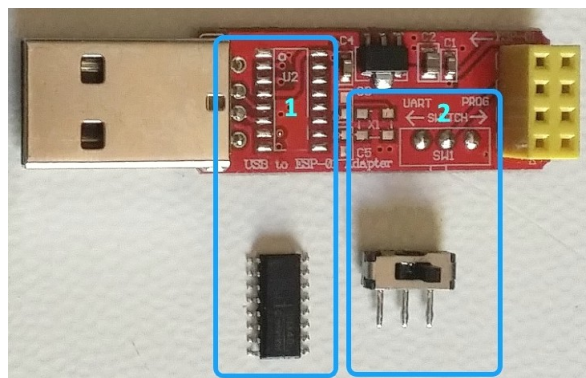
Hardware required

- ESP-01 Wi-Fi module by 1024kB (black version)
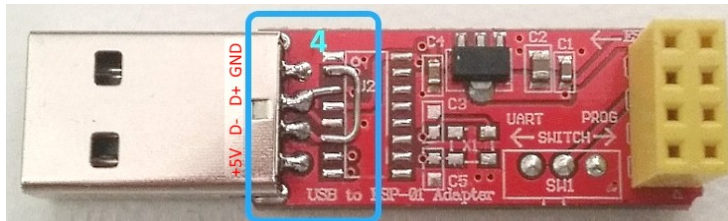- @diymore.cc USB to ESP-01 Adapter (red version)

HOW-TO

1. Get a red "USB to ESP8266 ESP-01 Adapter".

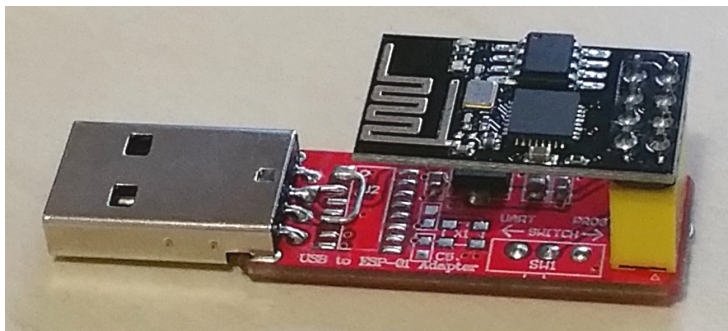2. Desolder the U2 chip (CH340G) and the SW1 switch.

3. Under the yellow header connect pin 4 to pin 8.

4. From the U2 pcb contacts connect pin 2 to USB D- and pin 3 to USB D+.

5. Insert an ESP-01 pre-installed with custom firmware into the yellow header.

6. USB Wi-Fi Header is now ready to use, connect it to the USB port-1 to go.
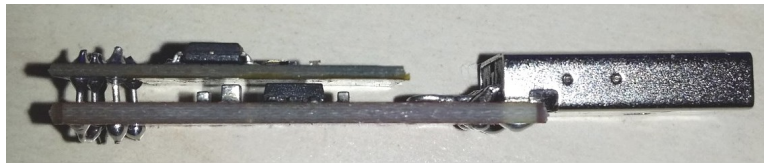
Build a USB Wi-Fi Dongle for OCM and related

The build of a USB Wi-Fi Dongle consists in soldering an ESP-01 directly to the red adapter pcb making it flat like a pendrive.

HOW-TO

1. So once we have build a USB Wi-Fi Header, let's proceed with desoldering the yellow header and the ESP-01 plug.

2. Then we direct solder pins 1, 2, 4, 7, 8 to the red pcb, remembering to also leave the bridge between pin 4 to pin 8.

3. To complete the dongle, we can finally enclose everything in a USB Plastic Junction Box (size 45*19*10mm or larger).

4. USB Wi-Fi Dongle is now ready to use, connect it to the USB port-1 to go.

ESP-01 to USB Wiring Diagram

This wiring diagram is only supported by 1st gen machines updated with OCM-PLD v3.9 or later (KdL Index! @ https://gnogni.altervista.org).