Arduino + ESP32 Bench

Parts inventory and what the toolchain can already do

Project: Arduino + ESP32 Bench (arduino-esp32)
Recorded: 14 November 2026
Every measurement in this document came from a real compile on the 3050.

Parts inventory — what is actually on the shelf

Status: first pass complete, 2026-11-14. Six parts recorded, straight from Mike. Nothing here was guessed: every board was either named by Mike or verified against the installed toolchain. Add to it as more turns up.

How to add a part: no photographs, no counting pins. Read what is printed on it and give one line — `<what it says on it> | <roughly how many> | <anything else visible>`. A vague line is fine; "a blue board with a silver square chip" still narrows it down.

Boards — plug in and flash from the 3050

What it says on it	Qty	Compile target	Notes
ESP32 DevKit V1	?	`esp32:esp32:esp32doit-devkit-v1`	Mike, 2026-11-14. Target verified present in the installed 3.3.12 core. To confirm: 30-pin or 36-pin.
Elegoo Uno R3	?	`arduino:avr:uno`	Mike, 2026-11-14. Uno R3 clone (ATmega328P), no extra core needed. Likely a **CH340** USB chip rather than the genuine ATmega16U2, so expect it on `/dev/ttyUSB0` (not `ttyACM0`).
Arduino Mega 2560	?	`arduino:avr:mega`	Mike, 2026-11-14 ("a uno mega"). Compile-verified: a blink builds at 1,536 bytes / 0% of 253,952, with 8,192 bytes of RAM. **Brand not recorded and not needed** — Mike cannot get to the board, and brand would only indicate the USB chip, which does not matter: CH340, CP2102, FTDI and CDC-ACM drivers are all already on the 3050 (checked 2026-11-14). Do not ask again.

Chips and modules — bare parts, NOT plug-in boards

What it says on it	Qty	Notes
ESP32-WROOM-32	?	Mike, 2026-11-14 (marking confirmed). The bare SMD module — i.e. the thing soldered onto the DevKit V1 above. See the warning below.

> **Bare modules are a different job (recorded 2026-11-14).** An **ESP32-WROOM-32** or an **ESP-12E/F** has no USB socket, no voltage regulator, no reset button, and pins on a **2 mm pitch** — so it will not even sit in a 0.1" breadboard. Flashing one needs a **3.3 V USB-to-serial adapter**, GPIO0 held low at power-up, EN held high, and a supply good for ~300 mA peaks. That means a carrier/adapter board or deliberate wiring. It is **not** a plug-into-the-3050 part and must never be presented as one.

Sensors, shields and add-on cards

Deliberately NOT inventoried. Mike's instruction, 2026-11-14, in his words: *"there are a bunch of add-on cards but those I guess we should do as I need them."*

So there is a pile of them, unsorted, and we identify them **one at a time, when a build actually needs one** — never as an up-front audit. Ask about a specific part only when a sketch or a wiring answer genuinely depends on

it, and record just that one here when it is identified. This is a standing preference, not an oversight.

Linux computers — NOT part of this assistant

These are single-board *computers* that run Linux, not microcontrollers. **Nothing here is compiled or flashed** by this project's toolchain, and they must not be listed alongside the boards as though they were Arduino- or ESP-programmable.

What it says on it	Notes
Raspberry Pi Zero W	Mike, 2026-11-14. His answer to the shape question identified the long thin board with a single row of pins — **Pi Zero W**, not a Pico W. He answered in chat after cancelling the form, so treat this as an inference and confirm before relying on it. Either way it is a Linux computer.
Libre Computer Renegade	Mike, 2026-11-14. Rockchip RK3328 (4× ARM Cortex-A53), DDR4, Gigabit Ethernet, USB 3.0, HDMI. **Uses the Raspberry Pi 40-pin header layout**, so it can drive the same sensors — but from Linux/Python, not from a sketch.

If Mike wants help with these two, that is a **separate project**, not this one.

Known already (from other projects)

- The **follow-me-robot** project mentions ESP32s and a boxed R-net / brushed controller

set. Those may or may not be the same parts as this shelf — confirm with Mike rather than assuming they are shared.

What the toolchain can already do for these parts

Verified on the 3050, 2026-11-14 — every figure below came from a real compile, not an estimate:

Family	Board used for the test	Blink size
Uno / Nano / Mega	`arduino:avr:uno`	924 bytes (2%)
Mega 2560	`arduino:avr:mega`	1,536 bytes (0% of 253,952)
ESP32	`esp32:esp32:esp32doit-devkit-v1`	271,440 bytes (20%)
ESP8266 (bare module)	`esp8266:esp8266:generic`	232,148 bytes (22%)

So **any sketch for any of these parts can be compile-checked here before it reaches the IDE.** What is still unproven is the **upload** — no board has yet been attached to the 3050.

Still unknown

- **What Mike wants to build first.** Everything above is inventory; nothing is a project yet.
- **The upload path** — unproven until a board is actually plugged into the 3050.
- Whether the shelf holds any genuine Arduino-brand boards, or all clones. Only matters for

the USB chip, and every driver needed is already installed, so this is a non-issue.