Rosmo Concept

A fully open-hardware [(OSHWA certified)](#) robot powered by [MicroRos](#).

A robot that can be assembled without soldering, with components availble worldwide.

A clear website with [links to buy](#) all the components, international shipping, a presence on Hackaday & ROS forums. Possibly a [Crowdsupply](#) project if needed.

V1 hardware proposed

- **[ESP32DevC](#)** open hardware dev board by [@Olimex](#)
- **[Compatability shield](#)** for dev board to [@M5Stack](#) system (to be developed)
- **[M5mouse](#)** STM32 robot base by [@meganetaaan](#)
- **[Cheaper motors](#)** than M5mouse

V1 Software

- FreeRTOS on ESP32
- MicroROS on ESP32 subscribed to Cmd/Vel, communicating with STM32 motor control board over I2C. Possibly based on work by [@Reinbert](#)
- Existing [M5mouse](#) motor control code on STM32, communicating over I2C.

V1 ROS2 software

- Cmd/Vel created by [teleop Android App](#)

V2 Ideas

- Support OpenM5 [Servo](#) by [@tomorrow56](#)
- Support OpenM5 [motor](#) by [@tomorrow56](#)
- [AAA battery case](#) by Macsbug, adapted for [LiFePO4](#) cells
- More complex ROS2 stuff
- Support official M5 stack LoRa, Canbus & Stepper modules
- Add screen
- Add [FreeRTOS Blockly](#) GUI?
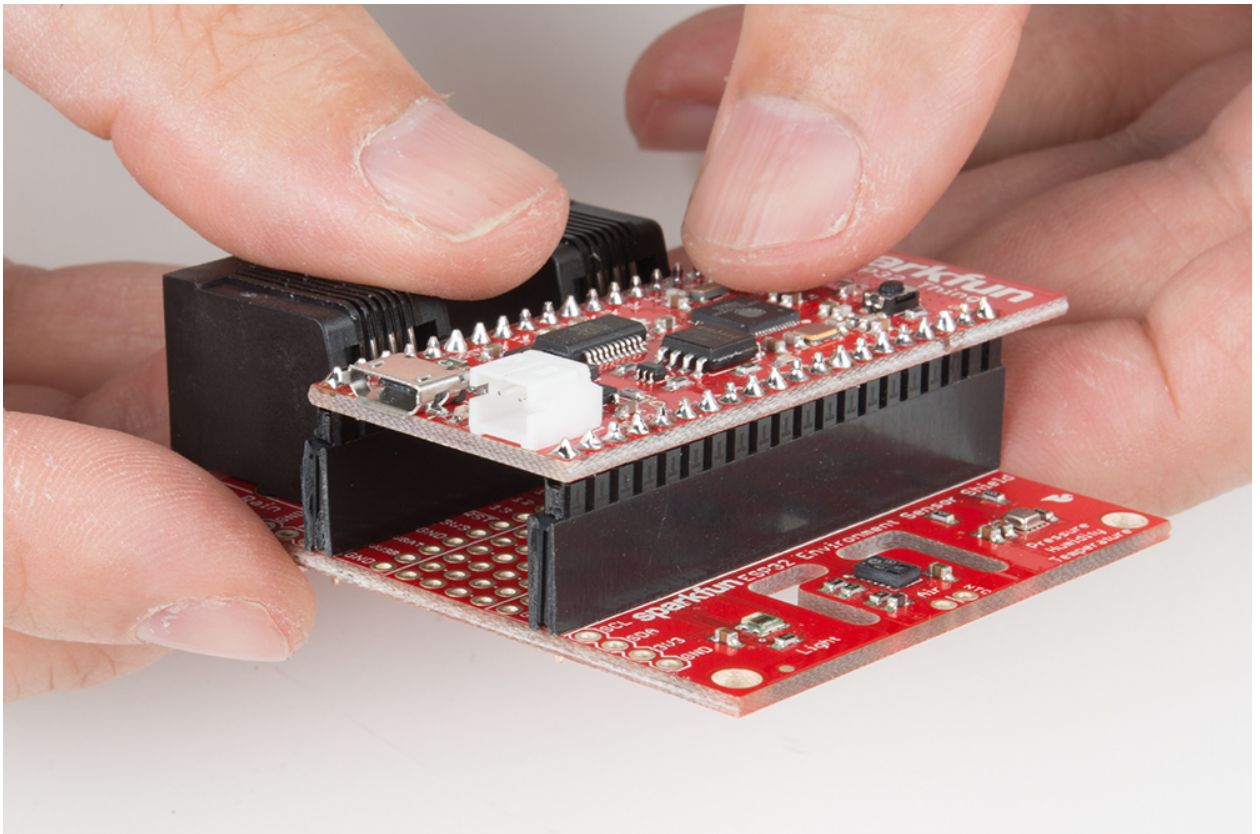- Outreach to existing STEM robotics projects.

References

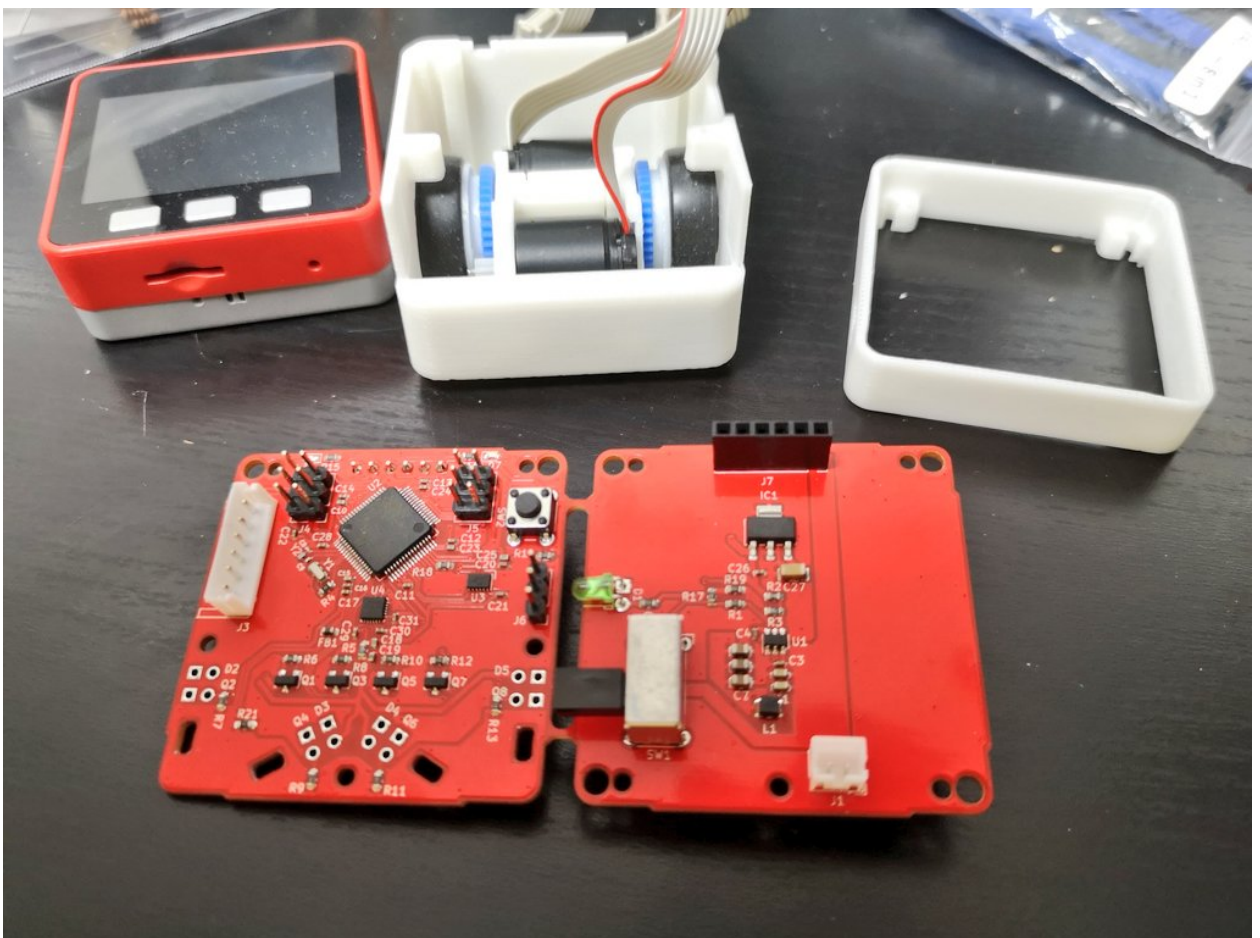[micro-ROS enabled robot and kinematics](#)

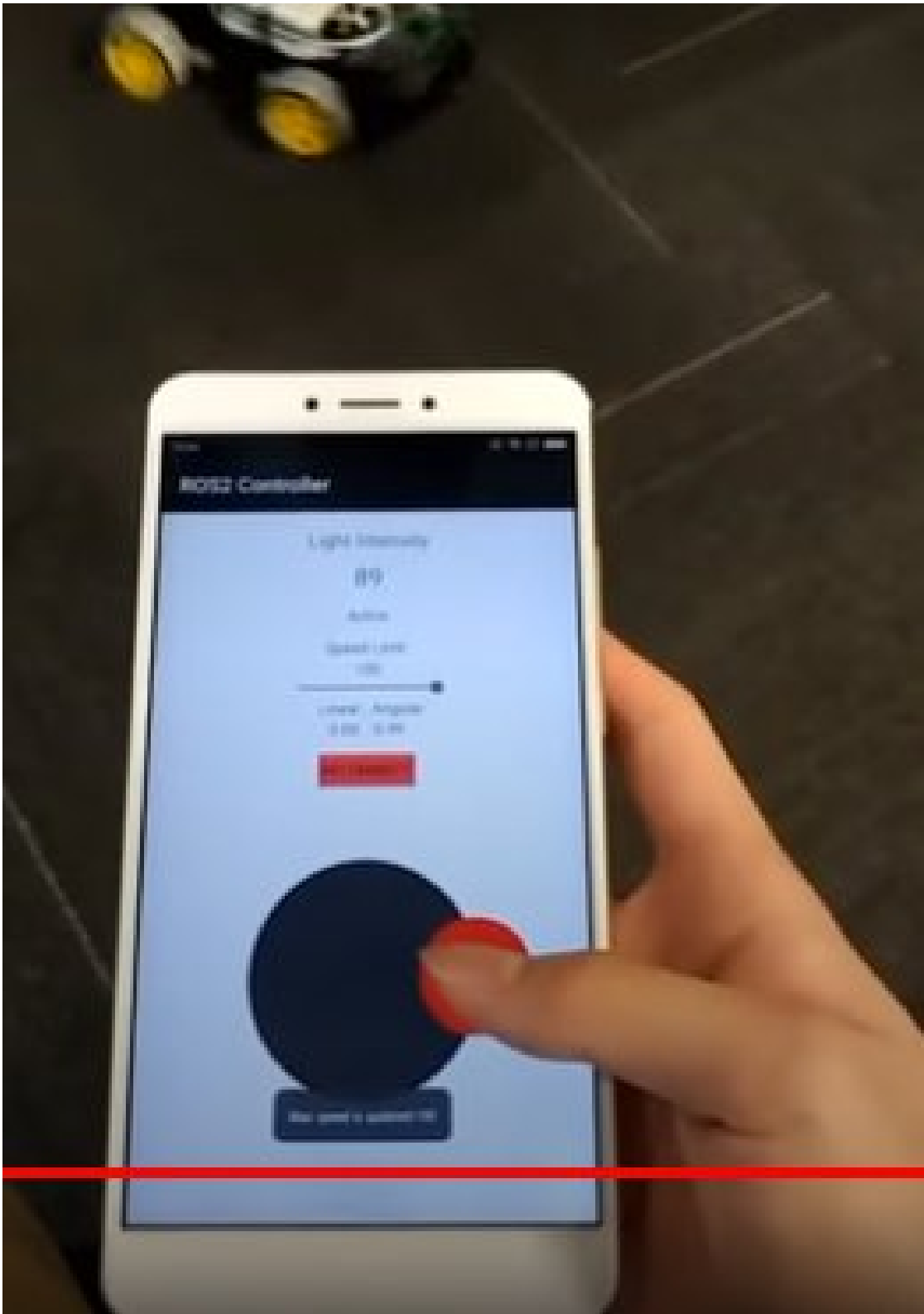Looking something like this, but with ESP32 Dev board instead of M5 core

Simple? board for M5 compatability needs to be designed

The STM32/ Motor driver board has already been developed by @meganetaaan

Three [LiFePO4 AAA](#) cells will fit in the case designed by [Macsbug](#)

Teleop [Android App](#)