



Node Robot Platform - SMARS inspired using ESP8266



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Summary

Node Robot Platform using ESP8266 for robotic development

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Tags: [platform](#) [esp8266](#) [fpv](#) [smars](#) [esp32](#) [drone](#) [robot](#)

Node Robot Platform using ESP8266 for robotic development. This project is inspired by the SMARS robot but use ESP8266 as it heart for out of the box remote control.

Hardware

Needed hardware (all the link is for reference):

- 1x **ESP8266 NodeMCU** ([link](#))
- 1x **NodeMCU Motor Board** ([link](#))
- 4x **N20 motor (9-10mm shaft)** ([link](#))
- 1x **MH-CD42** ([link](#))
- 1x **LiPO battery** , maximum dimentions: 35x55x15mm
- 1x **USB-C Female header** ([link](#))
- 10x **M3 Brass Heatset Inserts** - Short M3x5x4

- 10x **M3x6 Screws**
- 4x **6x3 Magnet** (for main platform handle)

Hardware for Camera Arm (Optional):

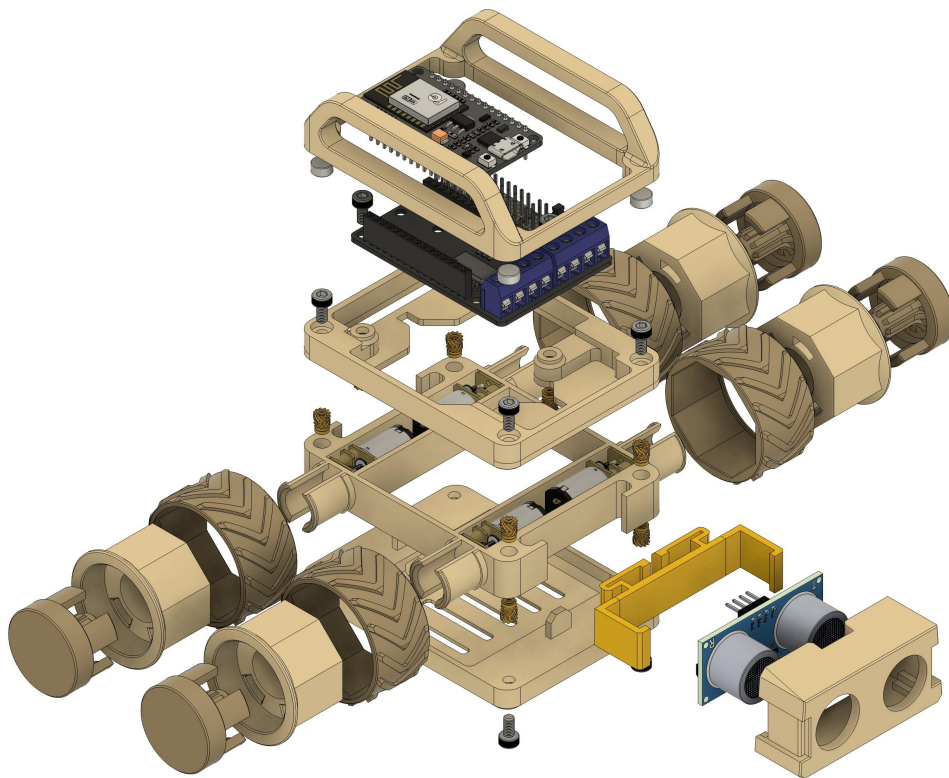
- 1x **ESP32 Cam** ([link](#))
- 2x **MG90S servo** ([link](#))
- 2x **M2.5 Brass Heatset Inserts** - Short M2.5x3x4
- 4x **M2.5x6 Screws**

Hardware for Sona (Optional):

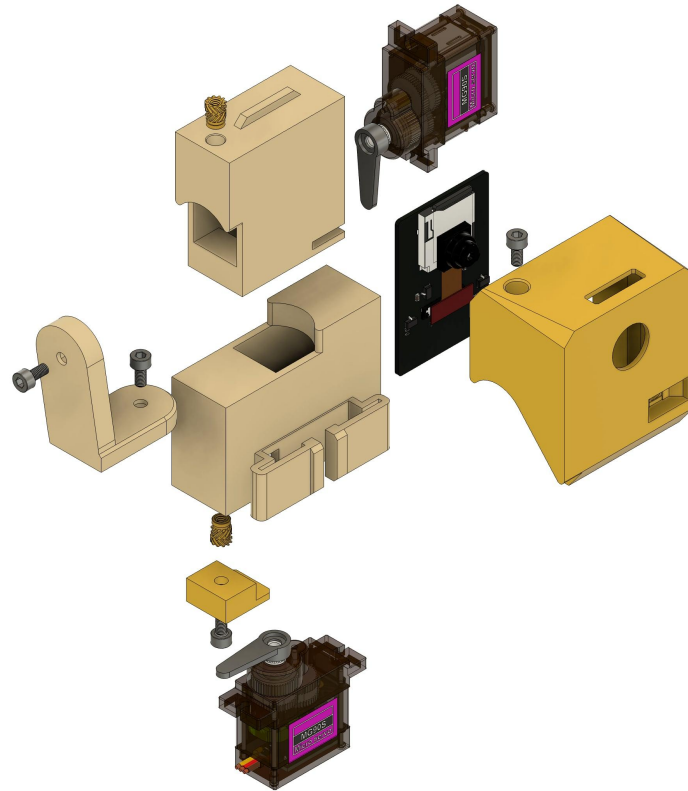
- 1x **Ultrasonic hc-sr04** ([link](#))

Assemble

Overview Main Platform:



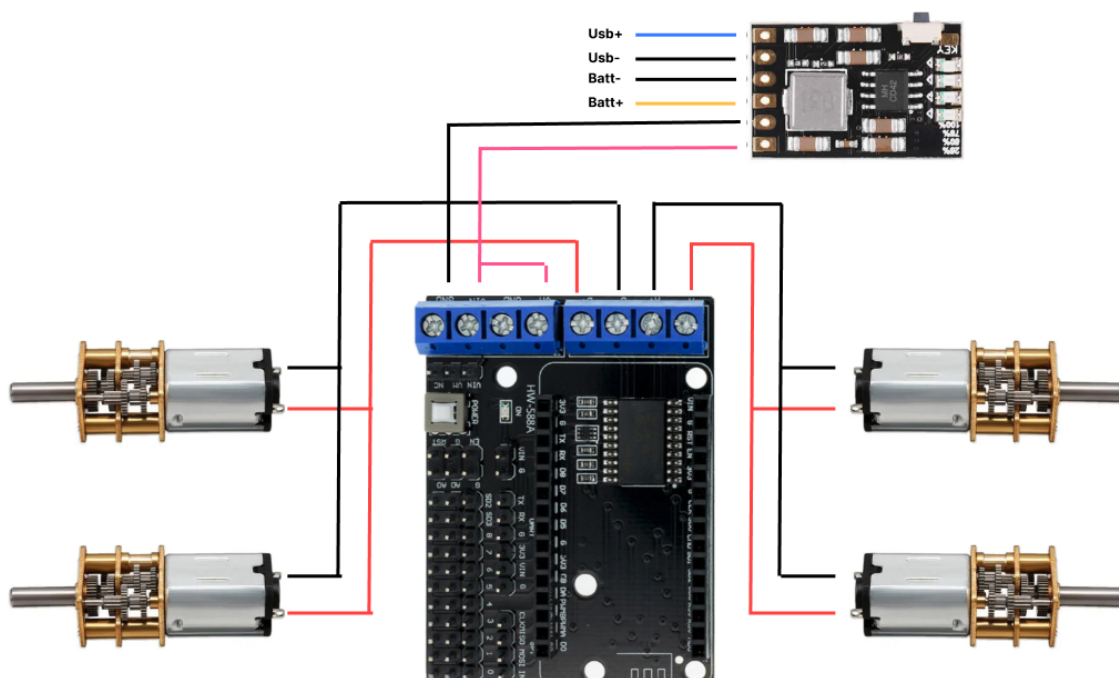
Overview Camera Arm:



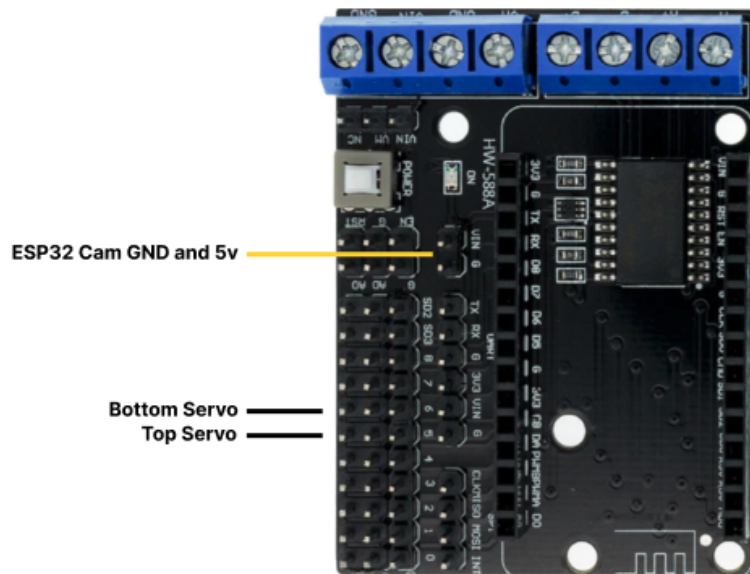
Note: remove ESP32 Cam header before installation.

Electric Schema

Electric Schema (Main Platform):



Electric Schema (Camera Arm):



Source code

Source Code for ESP8266:

<https://github.com/RyanDam/NodeRover.git>

Source Code for Camera (live stream and face detection):

<https://github.com/RyanDam/NodeRoverSmartFPVModule.git>

Note: after flashing code using PlatformIO, you need to connect to ESP8266 (or ESP32) wifi to setup wifi. After that go to the IP of the device in your browser to control the robot.

Model files

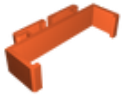


Sona Expansion

2 files



sonicheadcap.3mf



extenderclip.3mf



Wheel

3 files



outer.3mf



tire.3mf

☐ Print with TPU



inner.3mf



Robot Body

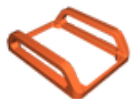
4 files



mid_pcb_frame.3mf



mainframe.3mf



top_lid_handle.3mf



bottom_lid_large.3mf

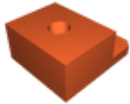


Camera Arm

5 files



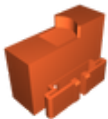
join.3mf



basecover.3mf



cover.3mf



base.3mf



upper.3mf

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