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EBO V2

Electrical schematic

POWER SUPPLY

The Power Supply section (A) includes a 24V input source, a 5A fuse (F1), a switch (S1), and an INA226 current sensor module (A1). The INA226 module provides analog signals (V+, A+, A-, V-) for monitoring current. A 24V battery (G1) is connected to the 24V rail. A 24V to 5V buck converter (U1) and a 24V to 9V buck converter (U2) provide lower voltage levels for the system.

MOTOR DRIVE

The Motor Drive section (E) features two L298N driver ICs (U3) connected to two DC motors (M1, M2). The L298N ICs receive control signals via pins 12V, GND, 5V, ENA, IN1, IN2, IN3, IN4, and ENB.

LED STRIP

The LED Strip section (F) uses WS2812B ICs (A3) to drive an RGB LED strip. The WS2812B ICs require +5V, DIN, and GND power. They receive control signals via pins 3-C0, 3-C1, 3-C2, 3-E12, 3-C0, 3-E15, 3-E13, 2-F6, 2-B6, and 2-F9.

CONTROLLER

The Controller section (A2) is based on a Jetson Xavier NX module. It includes a Network port, multiple USB ports, a HDMI port, and a DP port. The module is connected to a circular display panel and two cameras (Camera 1 and Camera 2). The display panel is labeled with various pins: 3-C0, 3-C1, 3-C2, 3-E12, 3-C0, 3-E15, 3-E13, 2-F6, 3-B2, 3-B4, 3-B7, 3-B9, 3-B12, 2-G1, 2-G2, 2-G2, 2-G2, 3-E2, 3-E4, 3-E7, 3-E9, 2-G2, 2-G2, 3-B14, and Borne 1. The display panel also features a circular logo with segments labeled 18(LD12), 24(LD13), 23(LD10), 25(LD9), 8(U(D8)), 7(U(D7)), 10(LD1), 9(LD2), 11(LD3), 12(LD4), 5(LD5), 6(LD6), 13(ENA), 19(N1), 26(N2), 20(N4), and 21(LD6).



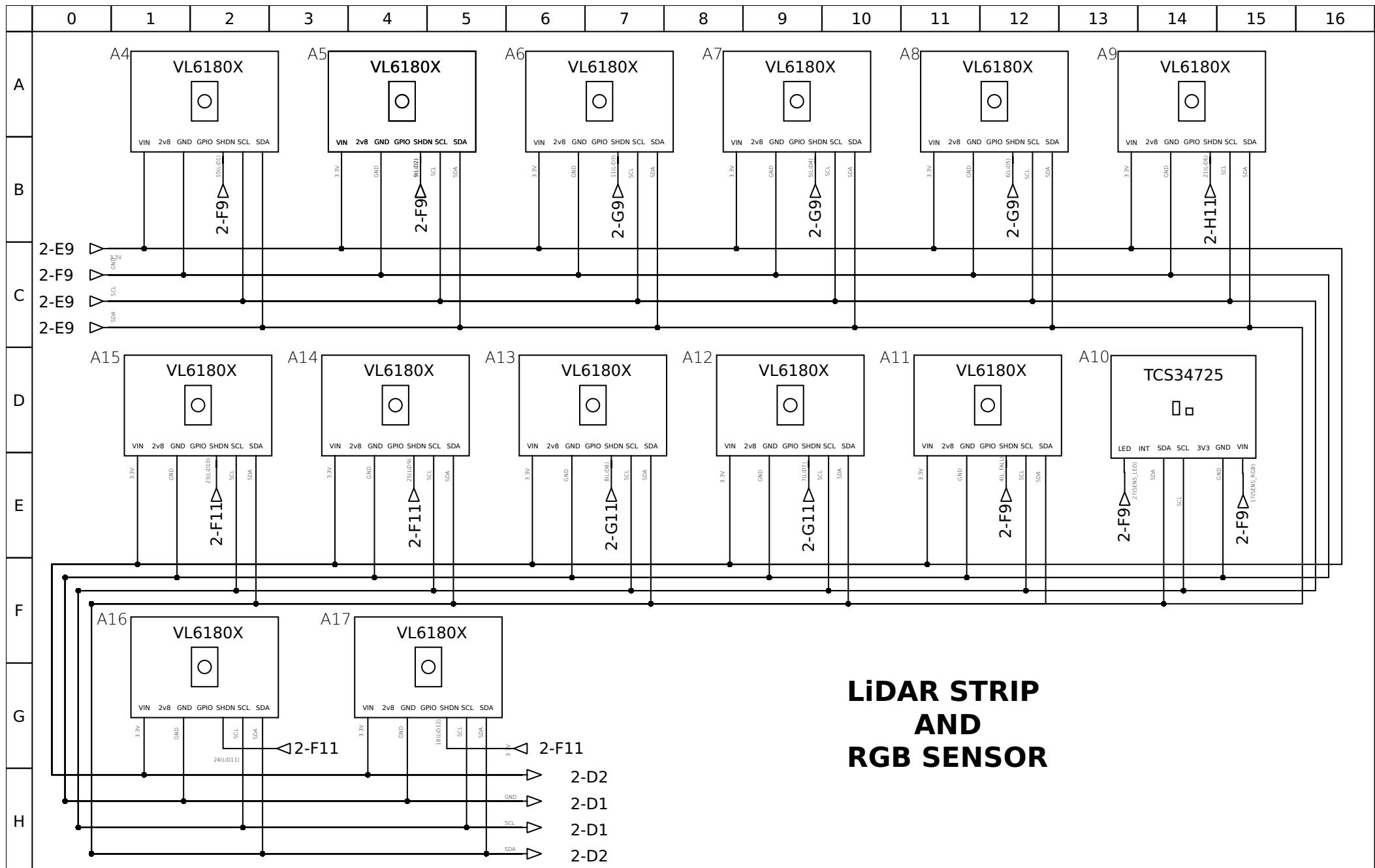
Autor: Alejandro Torrejón Harto

Fecha: 22/8/24

Power supply, actuators and controller

Archivo: EBO Electrical schematic

Folio: 2/6



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