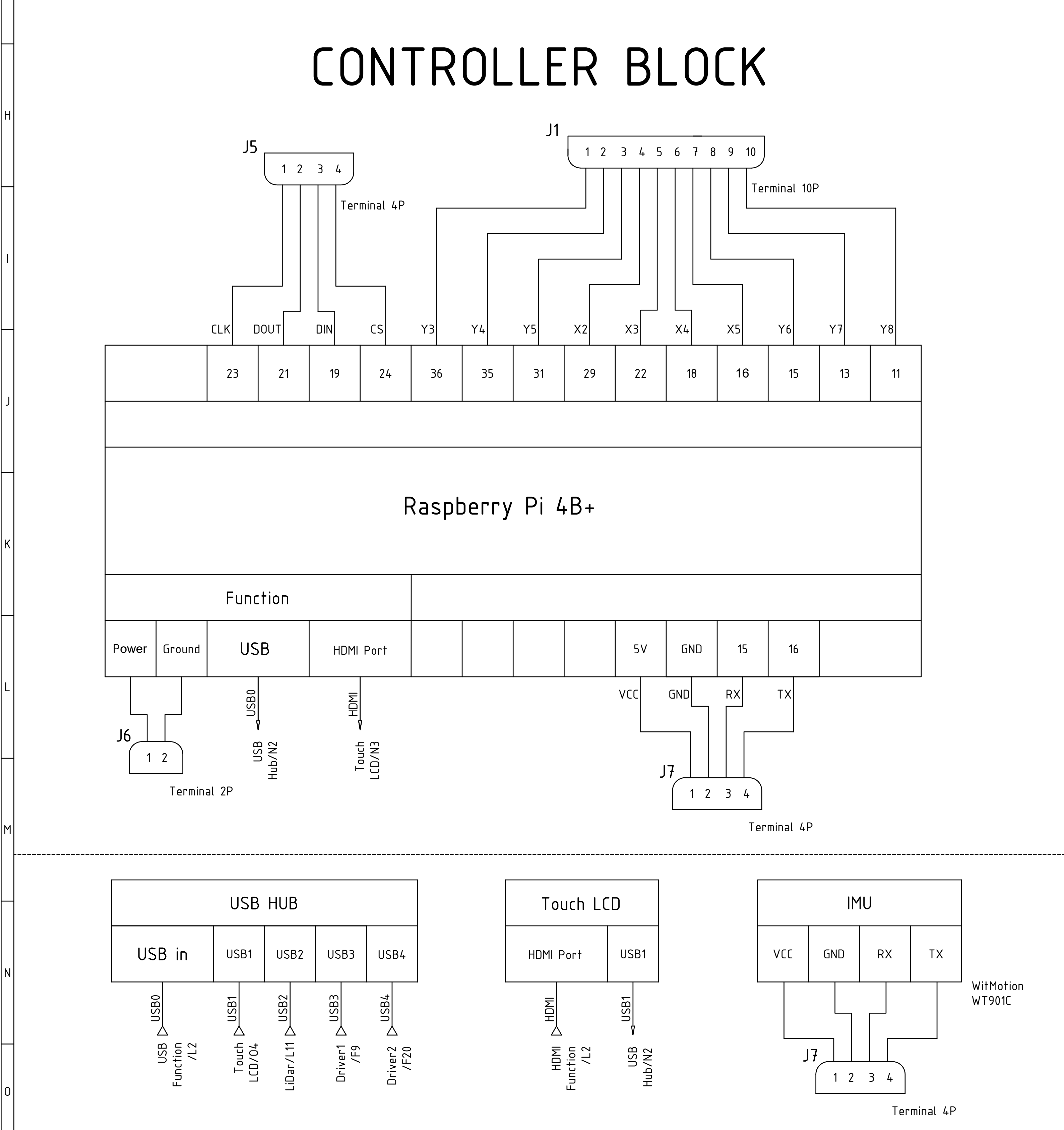


# POWER SUPPLY CIRCUIT



# BLDC MOTOR BLOCK

The diagram illustrates the wiring for a BLDC motor block, showing two identical motor and driver assemblies connected to a common terminal block.

**Motor Assembly (Left):**

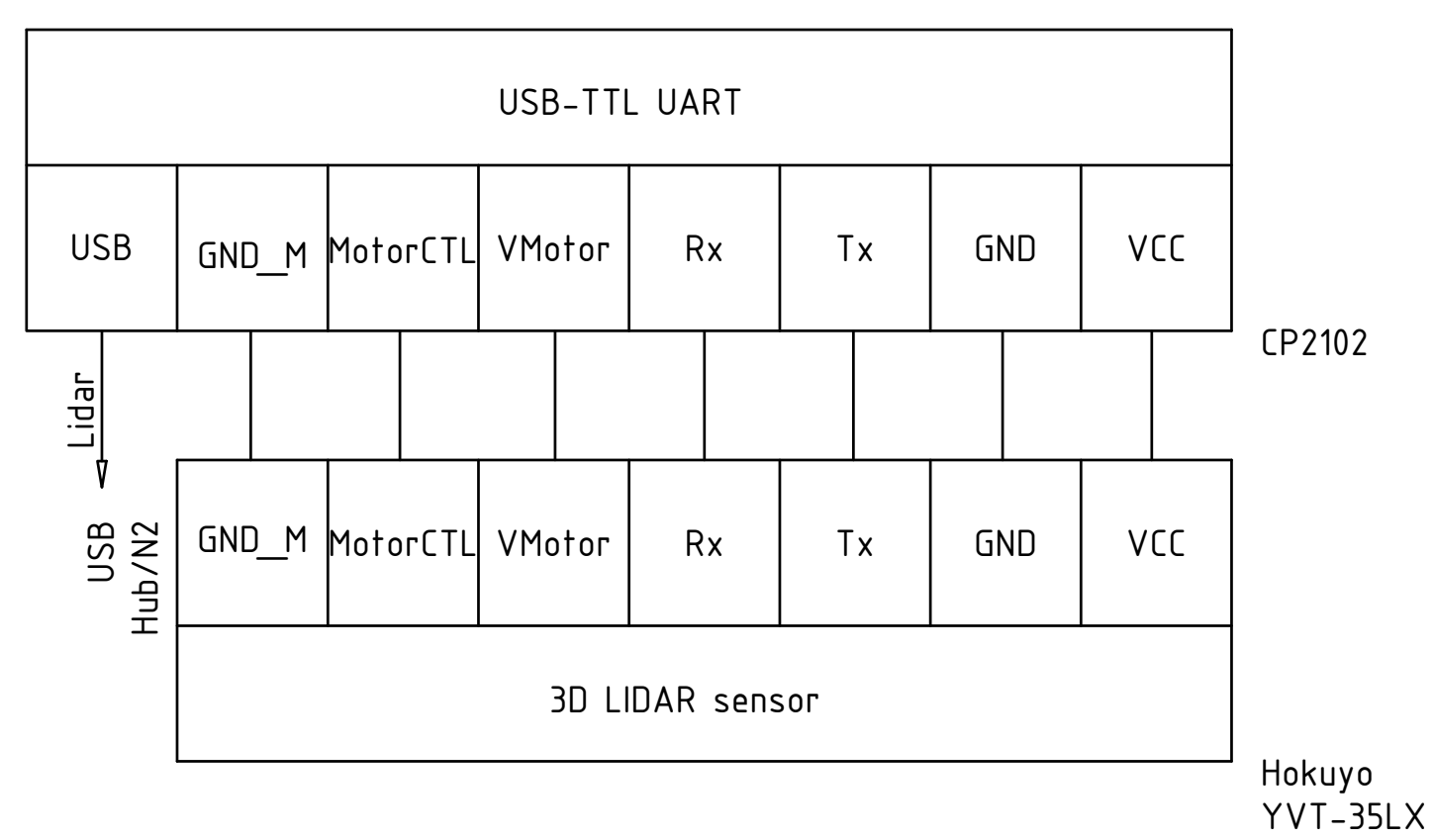
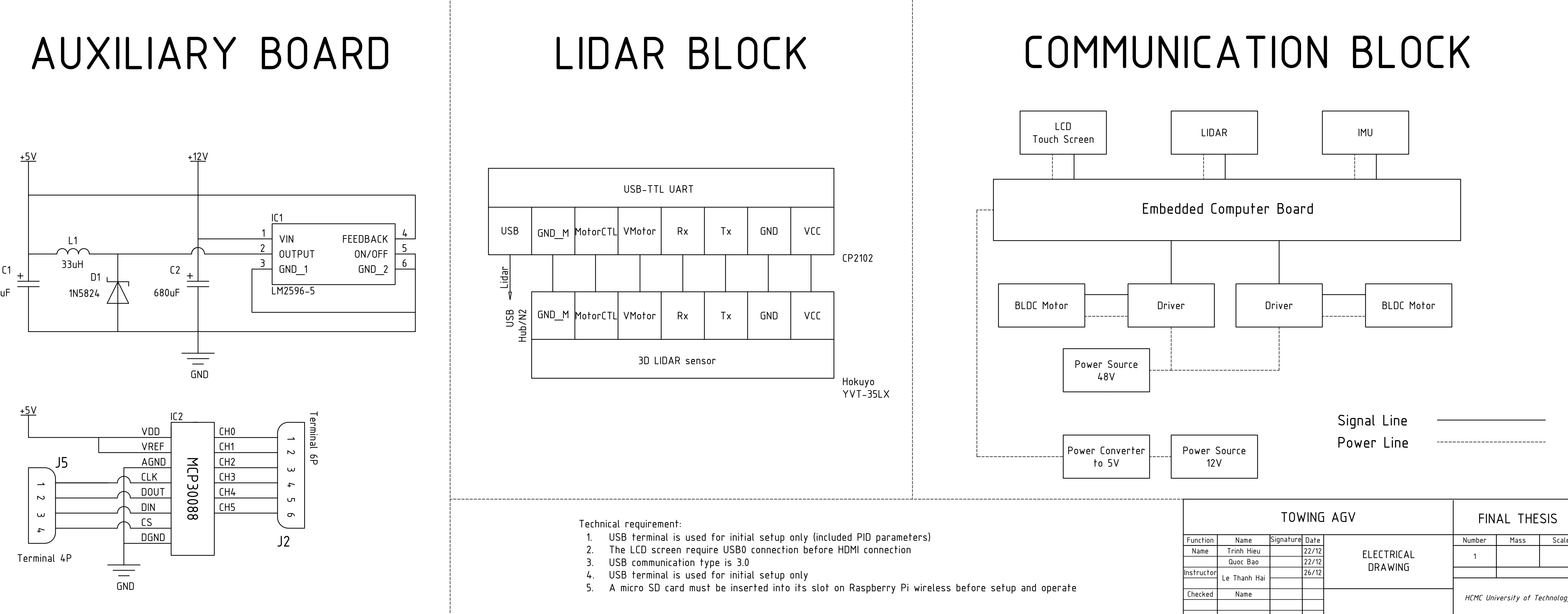
- Motor (M1):** Connected to the driver via terminals COM1, B1+, B1-, VCC1, GND1, S11, S21, S31, U1, V1, and W1.
- Driver (CPP-A24V48A-SA-USB BLDC driver):** Features terminals J1, J3, J2, J6, J5, and J4.
- Terminal J1:** 2P terminal block with pins 1 and 2.
- Terminal J3:** 10P terminal block with pins 1 through 10.
- Terminal J2:** 6P terminal block with pins 1 through 6.
- Terminal J6:** USB Hub/A2.
- Terminal J5:** 10P terminal block with pins 1 through 10.
- Terminal J4:** 6P terminal block with pins 1 through 6.

**Motor Assembly (Right):**

- Motor (M1):** Connected to the driver via terminals COM3, B2+, B2-, VCC2, GND2, S12, S22, S32, U2, V2, and W2.
- Driver (CPP-A24V48A-SA-USB BLDC driver):** Features terminals J1, J3, J2, J6, J5, and J4.
- Terminal J1:** 2P terminal block with pins 1 and 2.
- Terminal J3:** 10P terminal block with pins 1 through 10.
- Terminal J2:** 6P terminal block with pins 1 through 6.
- Terminal J6:** USB Hub/A2.
- Terminal J5:** 10P terminal block with pins 1 through 10.
- Terminal J4:** 6P terminal block with pins 1 through 6.

**Common Terminal Block:**

- Terminal 10P:** 10P terminal block with pins 1 through 10.
- Terminal 6P:** 6P terminal block with pins 1 through 6.

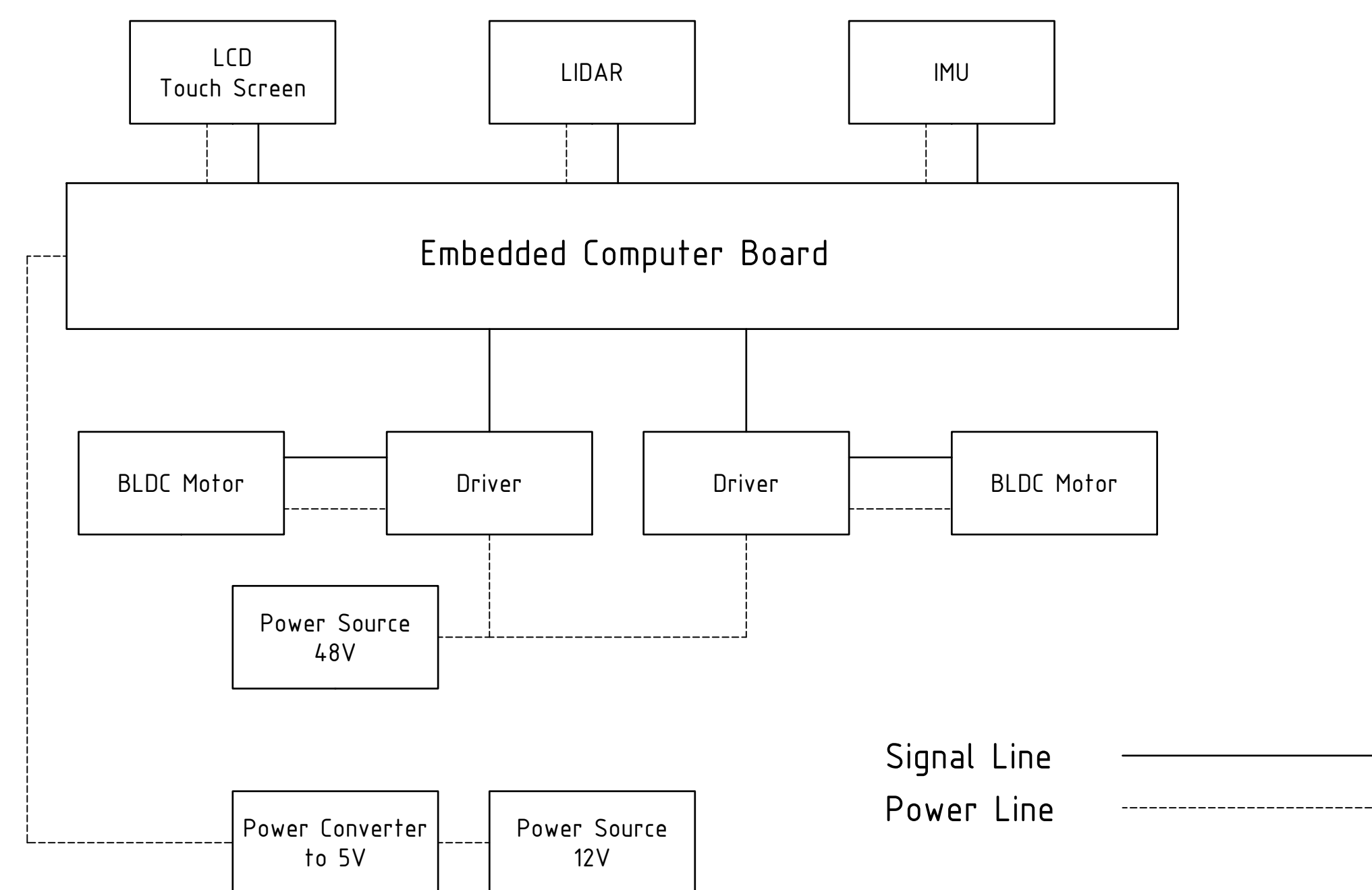


The diagram illustrates the system architecture of a robot. At the center is the **Embedded Computer Board**. It is connected to several components:

- Input/Output Devices:** LCD Touch Screen, LIDAR, and IMU are connected to the top of the board via signal lines.
- Actuators:** Two BLDC Motors are connected to the bottom of the board via signal lines. Each motor is also connected to a **Driver**, which is connected to the board via a signal line and to the motor via a power line.
- Power System:** A **Power Source 48V** is connected to the board via a power line. A **Power Converter to 5V** is connected to the board via a power line. A **Power Source 12V** is connected to the board via a power line.

**Legend:**

- Signal Line:** Solid line
- Power Line:** Dashed line



Technical requirement:

1. USB terminal is used for initial setup only (included PID parameters)
2. The LCD screen require USB connection before HDMI connection
3. USB communication type is 3.0
4. USB terminal is used for initial setup only
5. A micro SD card must be inserted into its slot on Raspberry Pi wireless before setup and operate

TOWING AGV				FINAL THESIS			
Function	Name	Signature	Date	ELECTRICAL DRAWING	Number	Mass	Scale
Name	Trinh Hieu		22/12		1		
	Quoc Bao		22/12				
Instructor	Le Thanh Hai		26/12				
Checked	Name						
					HCMC University of Technology		