Interface Definitions for Sumo Project

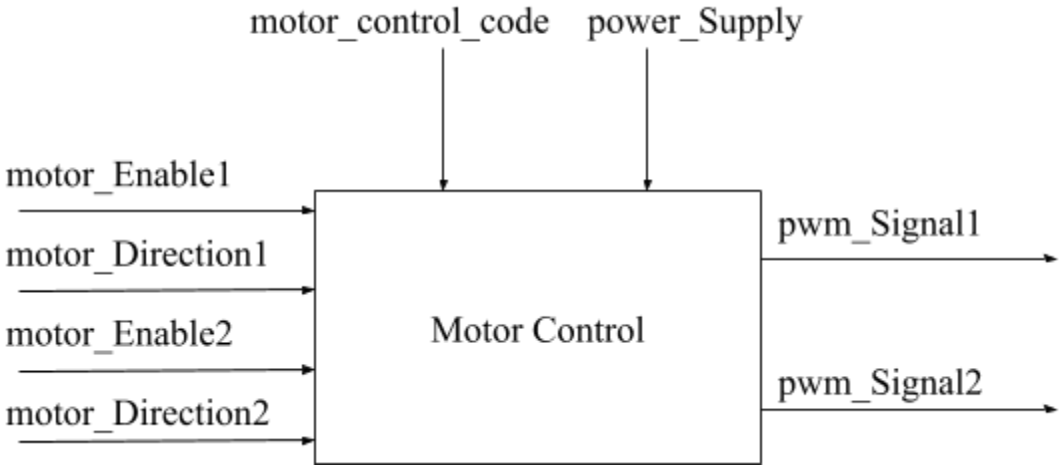

Fig 1. Motor Control Block

Table 1. Motor Block Interface Definitions

Interface Name	Interface Type	Specifics
motor_Enable1/ 2	Digital Signal	- 0 or 5 volt input
motor_Direction1/ 2	Digital Signal	- Two 0 or 5 volt input
motor_control_code	Code	- C/C++ Language - Configures digital pins - Controls direction/speed of motors based on sensor values
power_Supply	DC Power	- USB Power/ 9V Battery
pwm_Signal1 / 2	Digital Signal	- Varying duty cycle, 0-100%

Fig 3. Power Source

Table 3. Power Source

Interface Name	Interface Type	Specifics
Power_supply	Power	- Power supply will power the robot to work for 15 mins - AA Battery clip specifications: - Peak Output Current: 2000 mAh to 3000 mAh - Peak Output Voltage: 4.8V ∓ 1V to 6V ∓ 1V

Interface Definitions (Ultrasonic Sensor and LCD)

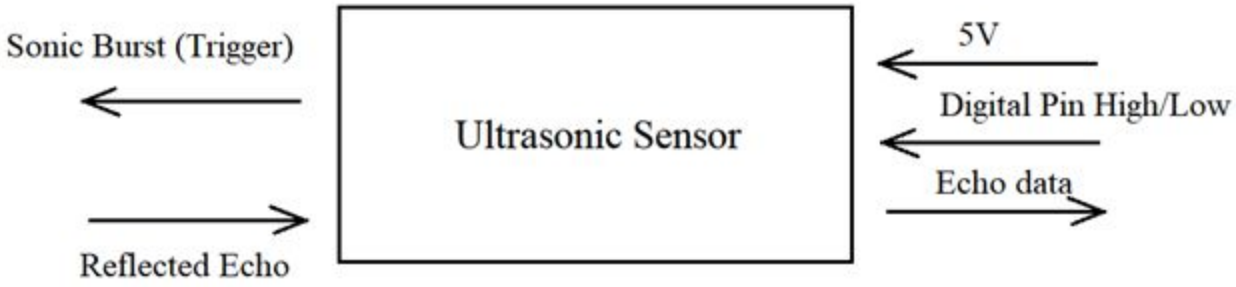

Fig 6. Ultrasonic Sensor Block

Table 6. Interface definitions for Ultrasonic Sensor Block

Interface Names	Interface Types	Specifications

Sonic Burst	High Frequency Sound wave	8 cycle Ultrasound at 40 Hz
Reflected Echo	High Frequency Sound wave	Ultrasound at 40 Hz
5V	Power	4.5V – 5.5 V 15 mA
Digital Pin High/Low	Digital Signal	High/Low
Echo Data	Time	Microseconds

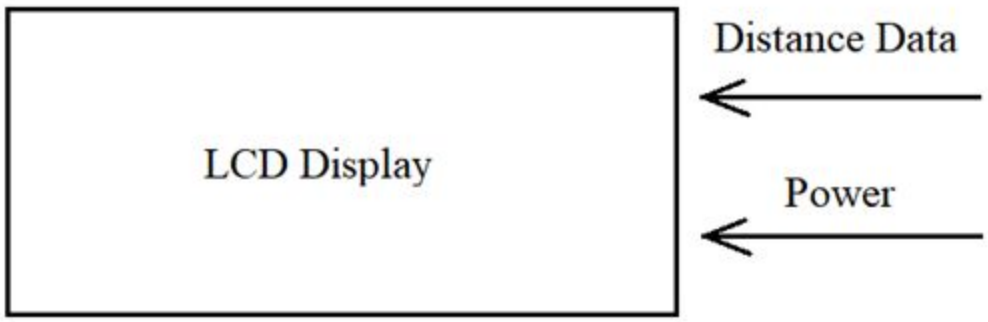

Fig 7. LCD Display Block

Table 7. Interface definitions for LCD Display

Interface Names	Interface Types	Specifications
Power	Power	2.7V – 5.5V 150 μA – 300 μA
Distance Data	Data	Distance calculated from the Echo data

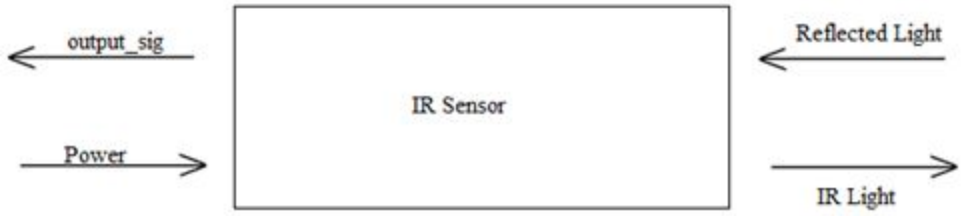

Fig 8. LCD Display Block

Interface Names	Interface Types	Specifications
Power	Power	3.5V – 5.5V .5 mA - 2.1 mA
output_sig	digital	High/Low Signal
IR Light	Analog	Wavelength (700 nm)
Reflected Light	Analog	Wavelength (>700 nm; up to 0)

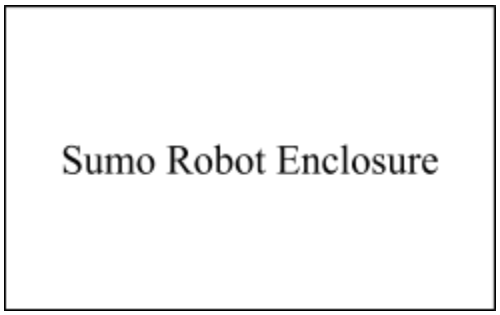

Fig 9. Enclosure Block

- Constraints: height unlimited, width/length 10cm, weight 500g