

Physical Construction

MPU6050
Accelerometer/Gyro
scope (GY-521)



This side faces
the front of robot

HC-05
Bluetooth
Module

11.1V 3S
LiPo
Battery

dsPIC33EP256MU806
Board

Right
Wheel

2x RepRap
StepStick
Stepper Motor
Drivers (A4988)

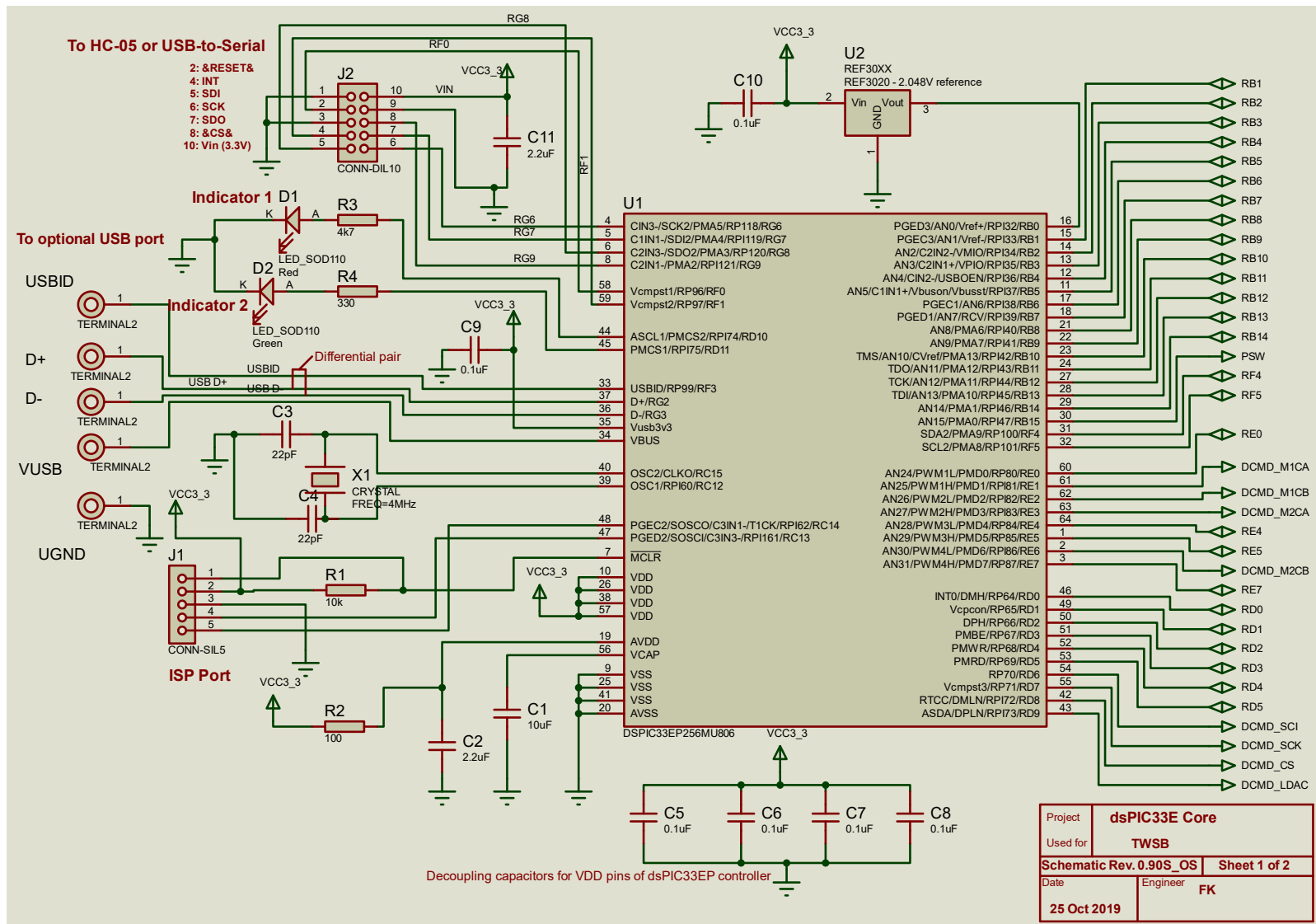
Left
Wheel

2x NEMA 17
Stepper Motor

FRONT VIEW

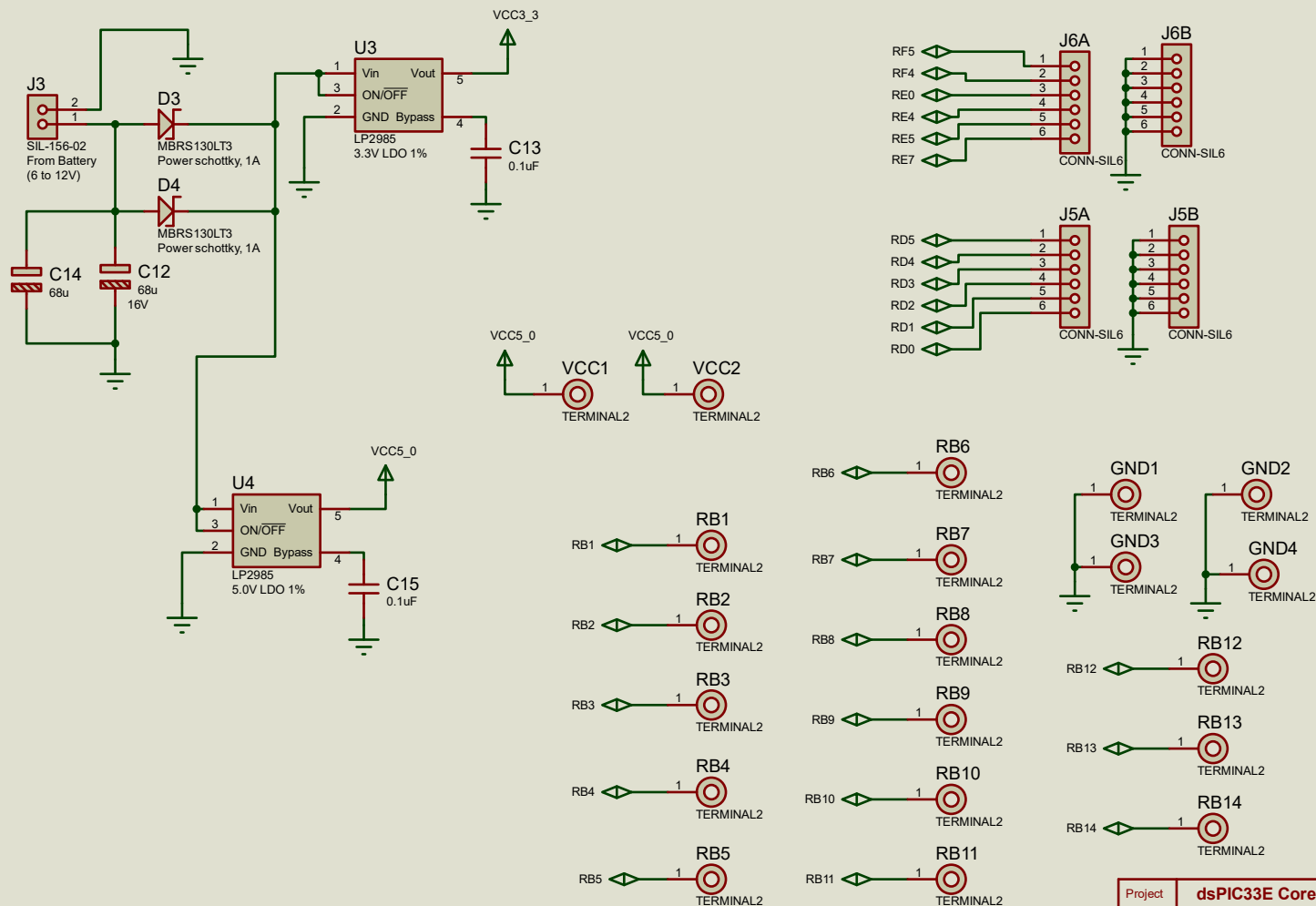
BACK VIEW

dsPIC33EP256MU806 Board (1)

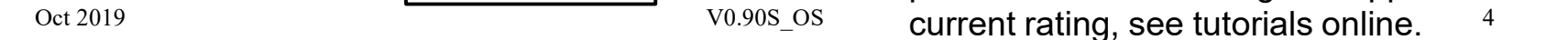


Project	dsPIC33E Core	
Used for	TWSB	
Schematic Rev.	0.90S_OS	Sheet 1 of 2
Date	25 Oct 2019	Engineer FK

dsPIC33EP256MU806 Board (2)



Project	dsPIC33E Core		
Used for	TWSB		
Schematic Rev. 0.90S_OS		Sheet 2 of 2	
Date	25 Oct 2019	Engineer	FK



Building the Firmware with MPLAB-X IDE

The screenshot displays the MPLAB-X IDE v5.10 interface. The project explorer on the left shows a project named 'TWSB_V2_StepperMotor' with various files including 'dsPIC33E_BoardSupport.h', 'RobotTasks.h', 'dsPIC33E_BoardSupport.c', 'Main.c', and 'Robot.c'. The source code editor in the center shows the 'Robot.c' file with C code for a stepper motor controller. The output window at the bottom shows several warnings related to file paths. A yellow text box with a red arrow points to the 'Robot.c' file in the project explorer.

1. Download the free MPLAB-X IDE and MPLAB-X XC16 C-Compiler from www.microchip.com

2. Install, create a project.

3. Add the files to the project as shown on the top left corner.