

Introduction to the PIC32™ Based Open-Robot

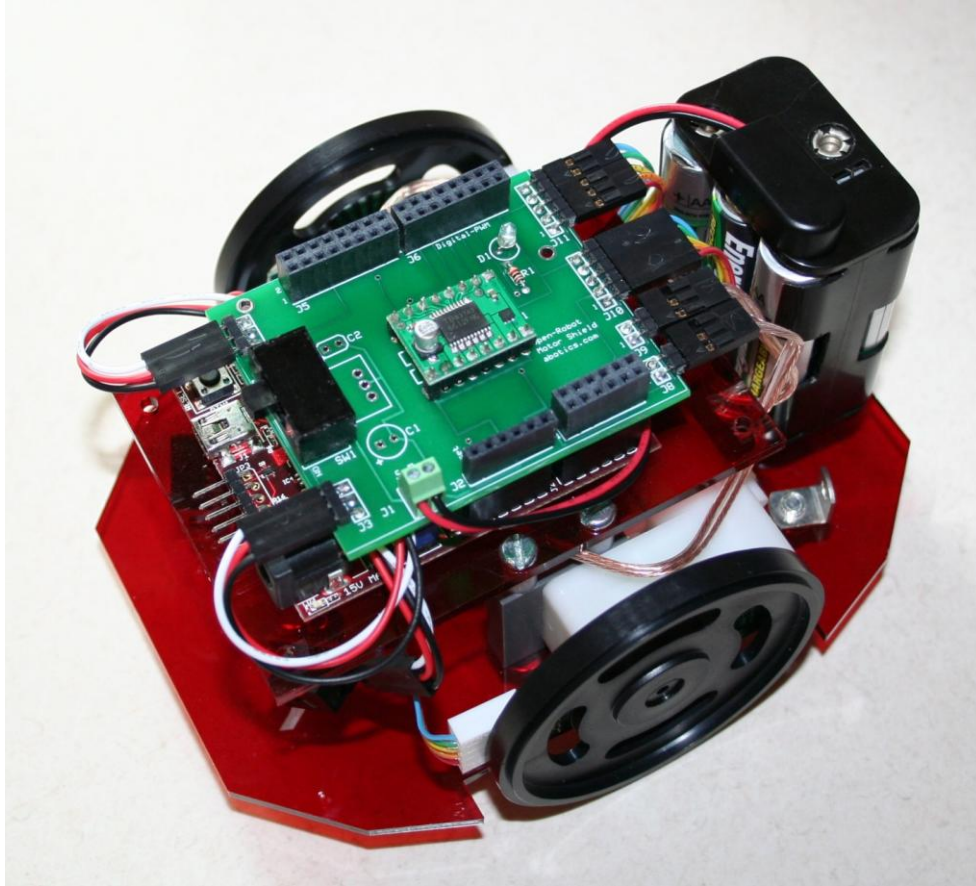


FIG 1. UNO32™ Based Open-Robot.

The PIC32™ based Open-Robot leverages the new open-source, chipKit UNO32™ Arduino™ compatible prototyping platform and opens up a whole new world of programming possibilities. A specially designed stackable circuit board provides motor control and the ability to read the state of (2) connected Sharp GP2Y0D810Z0F sensors. This board also accepts the new WW11 Wheel Encoders from Nubotics (purchase separately) so that advanced motion control can be achieved.

Future stackable, add-on boards will be developed and currently we are working on a WiFi add-on module that will leverage the newly released XBee™ WiFi module.

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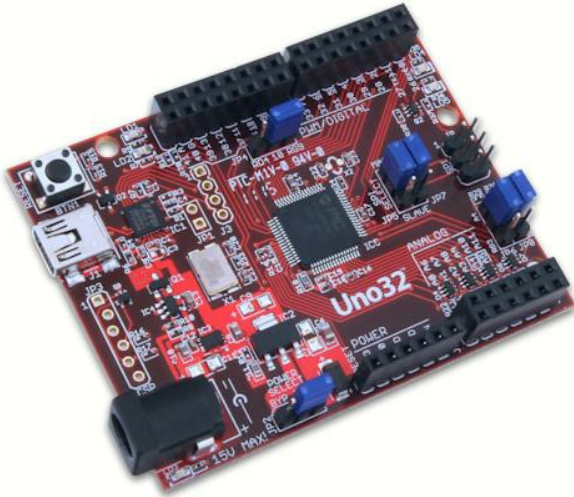
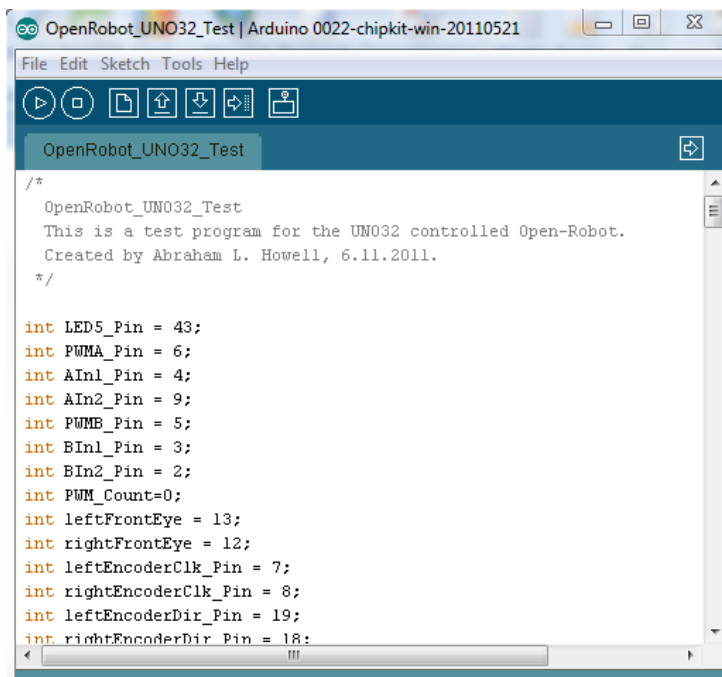


FIG 2. chipKit UNO32™ Prototyping Platform.

Download the Arduino™ Multi-Platform IDE (MPIDE) and you will be able to create, compile and download new programs to your Open-Robot using a simple USB cable. No expensive in-circuit programmers to purchase unless you need to perform advanced level debugging.

A screenshot of the MPIDE software interface. The window title is 'OpenRobot_UNO32_Test | Arduino 0022-chipkit-win-20110521'. The menu bar includes 'File', 'Edit', 'Sketch', 'Tools', and 'Help'. Below the menu bar is a toolbar with icons for running, stopping, saving, and other functions. The main text area shows a C++ program with the following code:

```
/*
  OpenRobot_UNO32_Test
  This is a test program for the UNO32 controlled Open-Robot.
  Created by Abraham L. Howell, 6.11.2011.
  */

int LED5_Pin = 43;
int PWMA_Pin = 6;
int AIn1_Pin = 4;
int AIn2_Pin = 9;
int PWMB_Pin = 5;
int BIn1_Pin = 3;
int BIn2_Pin = 2;
int PWM_Count=0;
int leftFrontEye = 13;
int rightFrontEye = 12;
int leftEncoderClk_Pin = 7;
int rightEncoderClk_Pin = 8;
int leftEncoderDir_Pin = 19;
int rightEncoderDir_Pin = 18;
```

FIG 3. MPIDE Screen Shot.

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Please contact Abe Howell's Robotics (support@abotics.com) if you are interested in learning more about the new PIC32™ based Open-Robot.

WEB REFERENCES

1. <http://www.digilentinc.com/Products/Detail.cfm?NavPath=2,892,893&Prod=CHIPKIT-UNO32>
2. <https://github.com/chipKIT32/chipKIT32-MAX/downloads>
3. <http://arduino.cc/en/>
4. <http://www.chipkit.org/forum/index.php>
5. http://www.microchip.com/en_US/family/32bit/