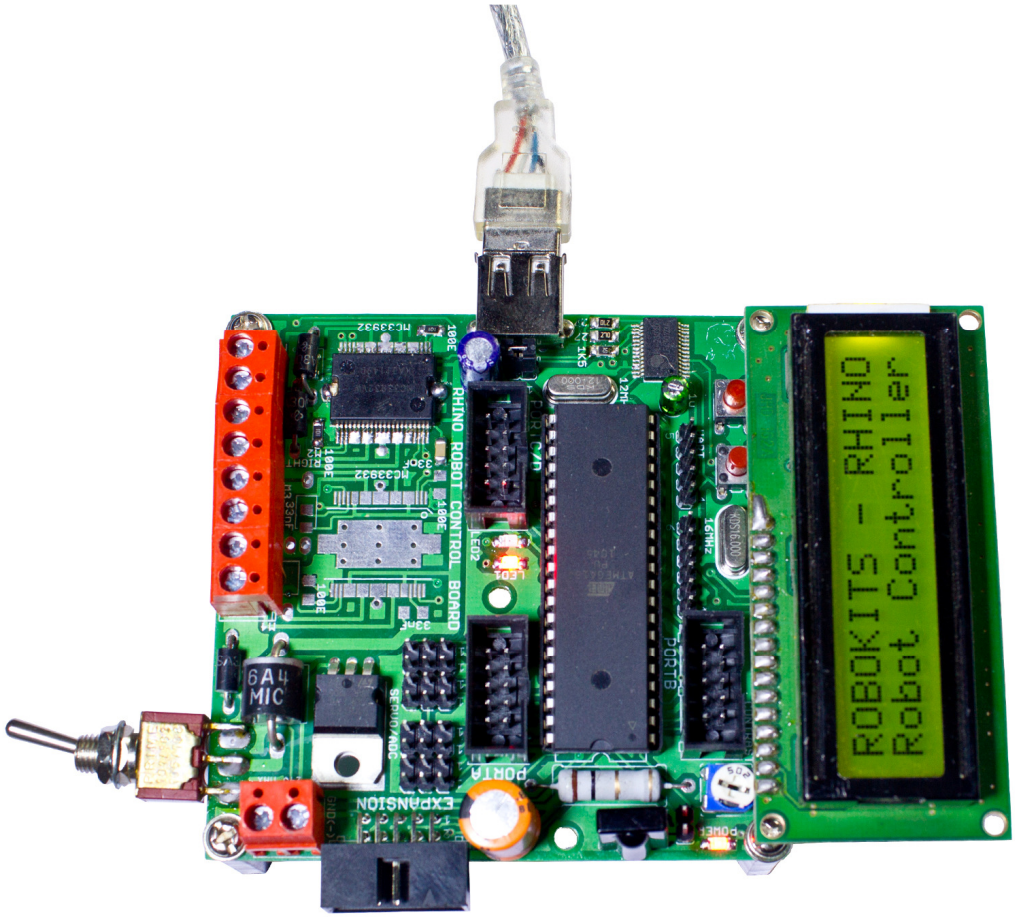
WWW.ROBOKITS.CO.IN
EASY TO USE, VERSATILE ROBOTICS KITS

Rhino Robot Control Board

Application notes, Tutorials and Demos



02 : Manual Contol Robot

Robokits India

http://www.robokits.co.in

info@robokits.co.in

Rhino Robot Control Board is our most powerful, versatile and most easy to use robot control board. In this first part of tutorials and application notes series you will learn about basic elements of Rhino Board and Quick C – IDE software which is a specially developed software for this board.

We also hereby assume that you have gone through Rhino Board Manual, Quick C IDE user manual and Quick C IDE library reference. Its not necessary for you to understand everything written in those documents but you should have an overview so that you can use them as reference for some part in this document.

This tutorial covers

- **Making a Robot with Manual Wired Remote Control**

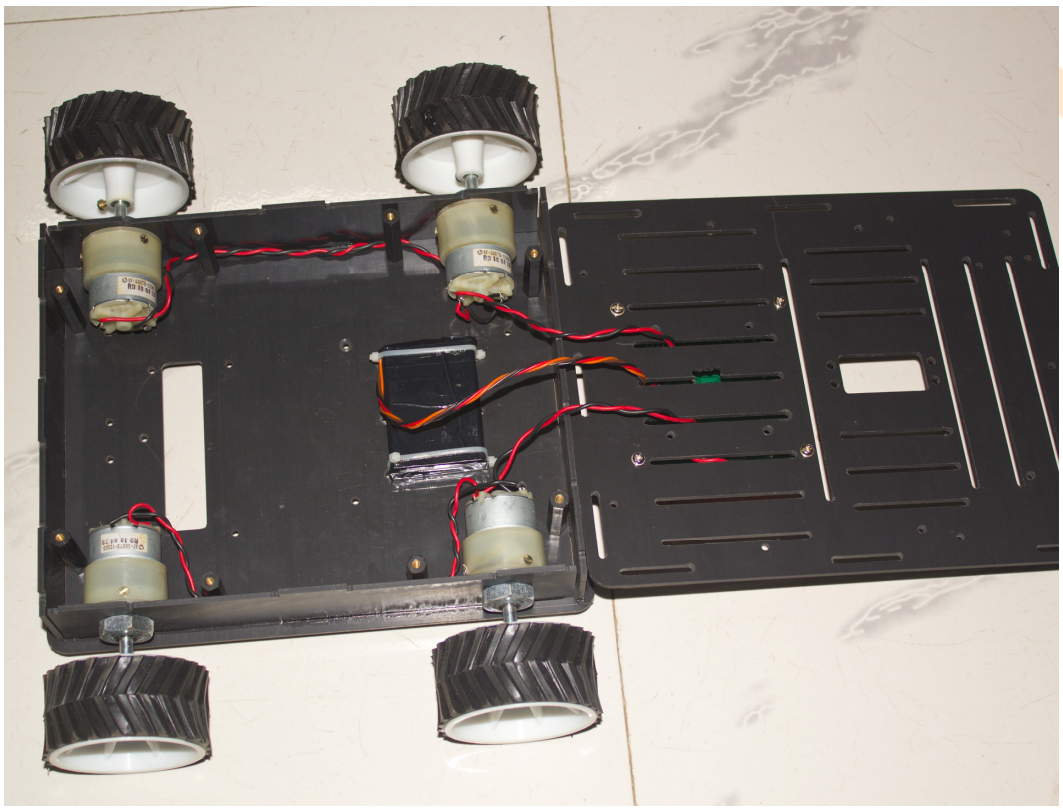
Required Items

REQUIRED ITEM	SUGGESTED ITEM/USED IN THIS TUTORIAL
Rhino Board	http://robokits.co.in/shop/index.php?main_page=product_info&products_id=312
Robot Chassis	http://robokits.co.in/shop/index.php?main_page=product_info&products_id=378
Motors	http://robokits.co.in/shop/index.php?main_page=product_info&products_id=50
Battery	http://robokits.co.in/shop/index.php?main_page=product_info&products_id=69
Wheels	http://robokits.co.in/shop/index.php?main_page=product_info&products_id=297
FRC 10 pin cable – around 1 to 1.5 meters long	Custom made, for testing you can use 6" one here http://robokits.co.in/shop/index.php?main_page=product_info&products_id=197
8 switch board	http://robokits.co.in/shop/index.php?main_page=product_info&products_id=190

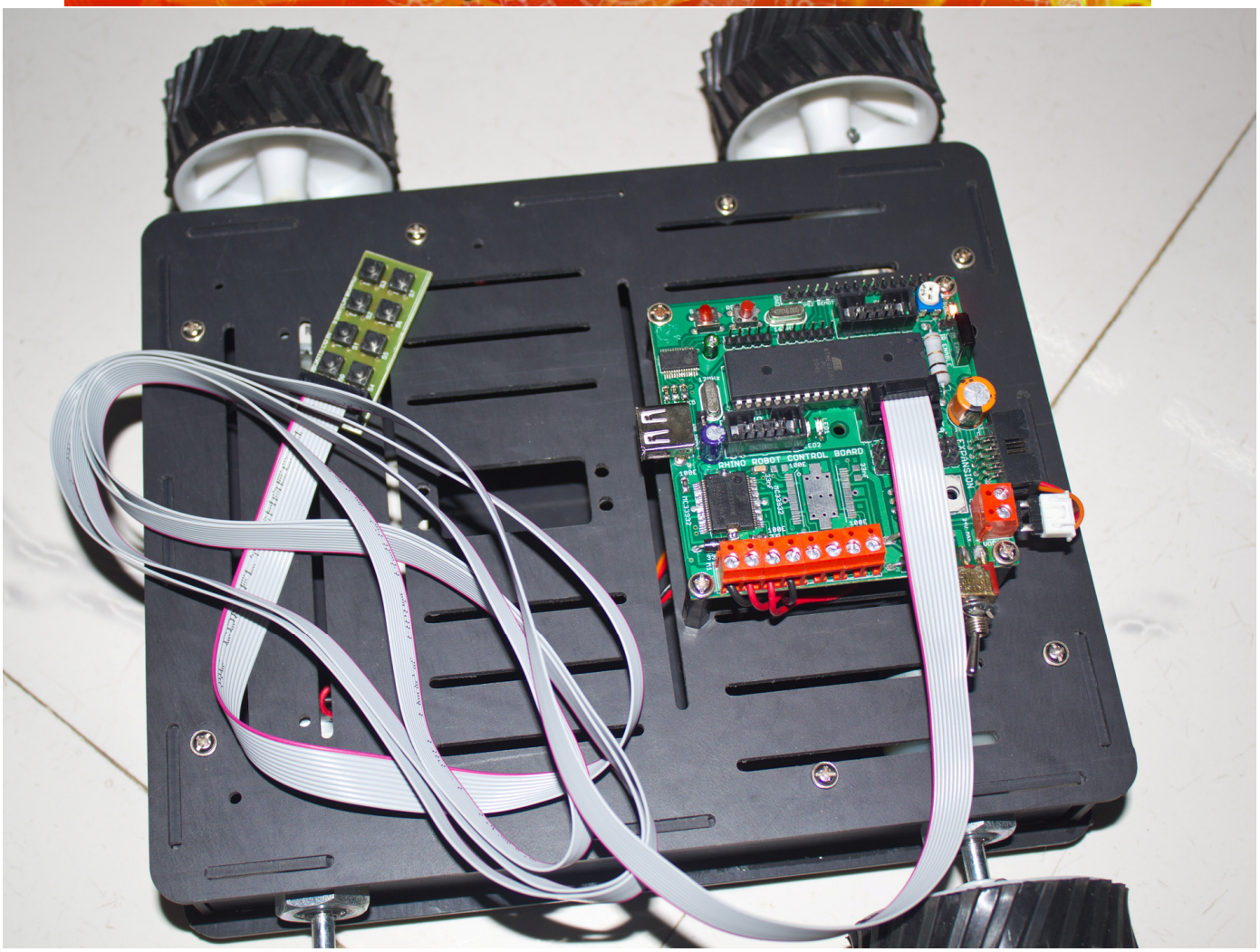
*** Its not necessary to use the same items, you can use any similar items. However some coding may need to be changes as per hardware if it's different this listed above.**

Items used for in this tutorial

General purpose robot chassis with 4 300 RPM motors and 4 cm width wheels



Insied view



With Keypad

We have chosen a general purpose chassis with 4 motors. A battery is mounted inside. Rhino Board is mounted on top and Battery and motor connections are made to the board. An eight switch keypad is connected to board with 1.5 meter long FRC 10 pin female-female cable.

Code

Code is very simple if you have followed switch and motor driver section in our previous tutorial. If you haven't, still it is very easy to understand. An 8 Switch keypad is connected on PORTA FRC header through a long FRC cable.

SW0, SW1, SW2 and SW3 relates to PIN 0, 1, 2 & 3. All these pins are set as input through PINMODE function. Next they are pulled high and then a if-else if-else statements are used to process key presses.

If 2 keys are pressed simultaneously preference goes to first key in order.

If other accessories like grippers or blowers are attached to Rhino Board more switches can be used to control extra actuators or other switches can also programmed to performed preprogrammed moves.

You can open 012 - Manual Robot code in sample codes folder.

Library used in this code : Delay, IO Notations, Motor – Motor 1 & 2 Active with PWM