TA0139

USER MANUAL

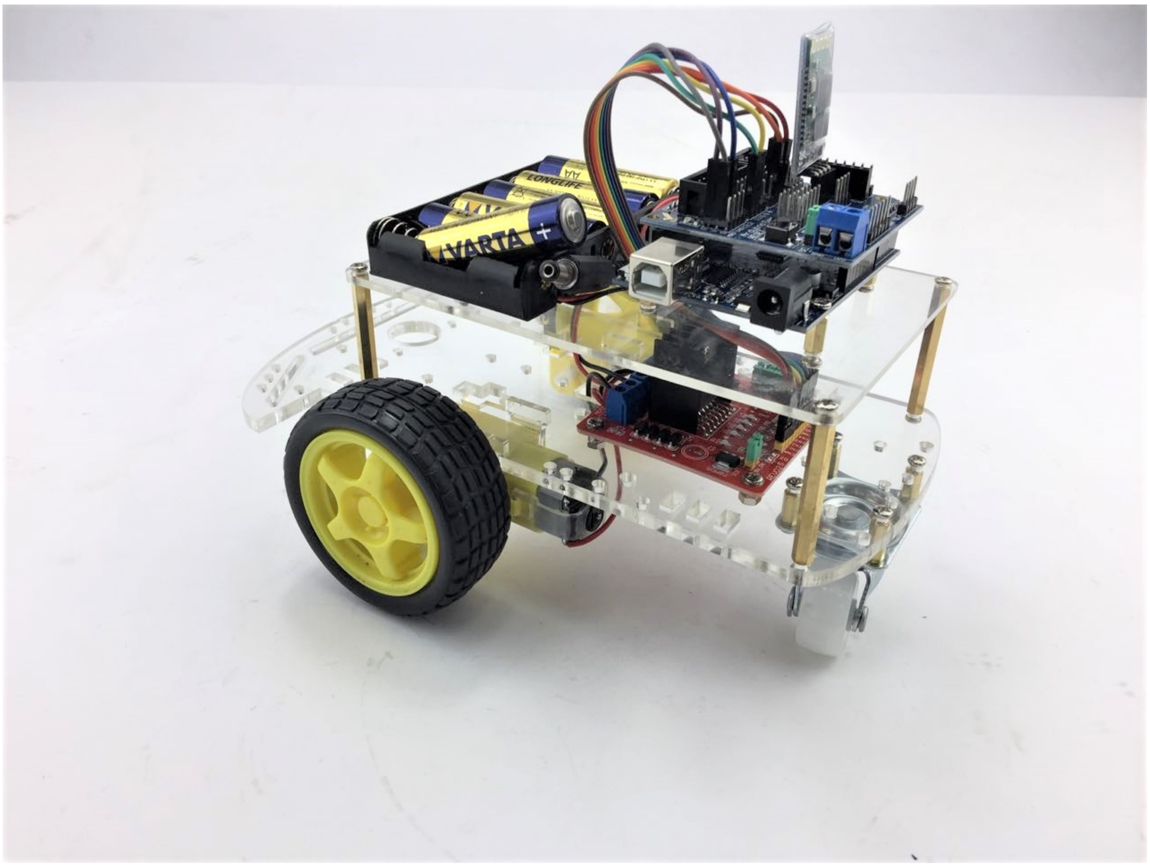
ARDUINO 2 WHEEL DRIVE WIRELESS BLUETOOTH ROBOT KIT

AUS
ELECTRONICS
DIRECT COM.AU

Contents

Chapter 1. Overview – TA0139

In this instruction, we will introduce you through the fun project of the Arduino 2 Wheel Drive Wireless Bluetooth Robot Kit. This DIY Arduino robot kit is based on Arduino Uno development board with full control using Bluetooth application. Moreover, you are able to upgrade and add more fun and inexpensive functionalities, such as, remote control, ultrasonic obstacle avoidance, track line ability. Let’s get started!



Chapter 2. Getting started: Arduino 2 Wheel Drive Wireless Bluetooth Robot Kit using Arduino UNO

2.1. What is Arduino?

Arduino is an open-source electronics platform based on easy-to-use hardware and software. Arduino boards can read inputs - light on a sensor, a finger on a button, or a Twitter message - and turn it into an output - activating a motor, turning on an LED, publishing something online. You can tell your board what to do by sending a set of instructions to the microcontroller on the board. To do so you use the Arduino programming language (based on Wiring), and the Arduino Software (IDE), based on Processing.

2.2. What is IDUINO UNO?

The iDuino Uno is on the ATmega328. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analogue inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, an ICSP header, and a reset button.

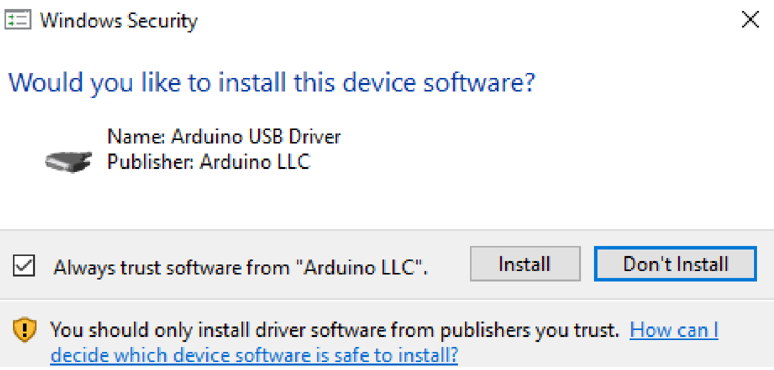
It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started.

Chapter 3. Software installation

In this section, we will introduce you the development platform where you translate creative mind into codes and let it fly.

3.1. Arduino Software/IDE

Download from here. Open Windows-based app by double clicking it and follow the instruction to complete(Remember to install everything driver for Arduino). Easy!



Would you like to install this device software?

Name: Arduino USB Driver
Publisher: Arduino LLC

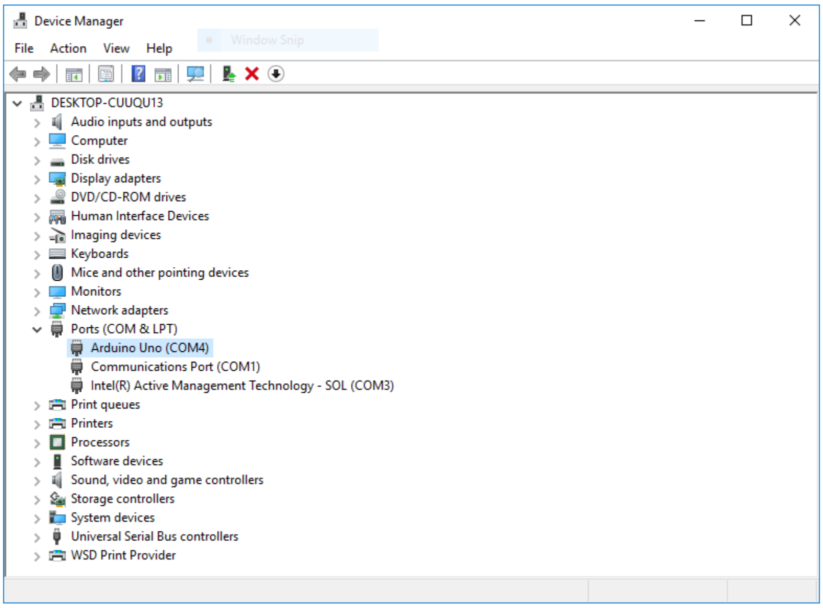
☑ Always trust software from "Arduino LLC".

You should only install driver software from publishers you trust. How can I decide which device software is safe to install?

Figure 1 Installation of drivers

Connecting your UNO board with your computer

Connecting UNO and your PC by a blue USB cable, and if connected correctly you will see the green power LED light up and another orange LED is blinking.



- DESKTOP-CUUQU13
  - Audio inputs and outputs
  - Computer
  - Disk drives
  - Display adapters
  - DVD/CD-ROM drives
  - Human Interface Devices
  - Imaging devices
  - Keyboards
  - Mice and other pointing devices
  - Monitors
  - Network adapters
  - Ports (COM & LPT)
    - Arduino Uno (COM4)
    - Communications Port (COM1)
    - Intel(R) Active Management Technology - SOL (COM3)
  - Print queues
  - Printers
  - Processors
  - Software devices
  - Sound, video and game controllers
  - Storage controllers
  - System devices
  - Universal Serial Bus controllers
  - WSD Print Provider

Find your Serial COM number and note it down.

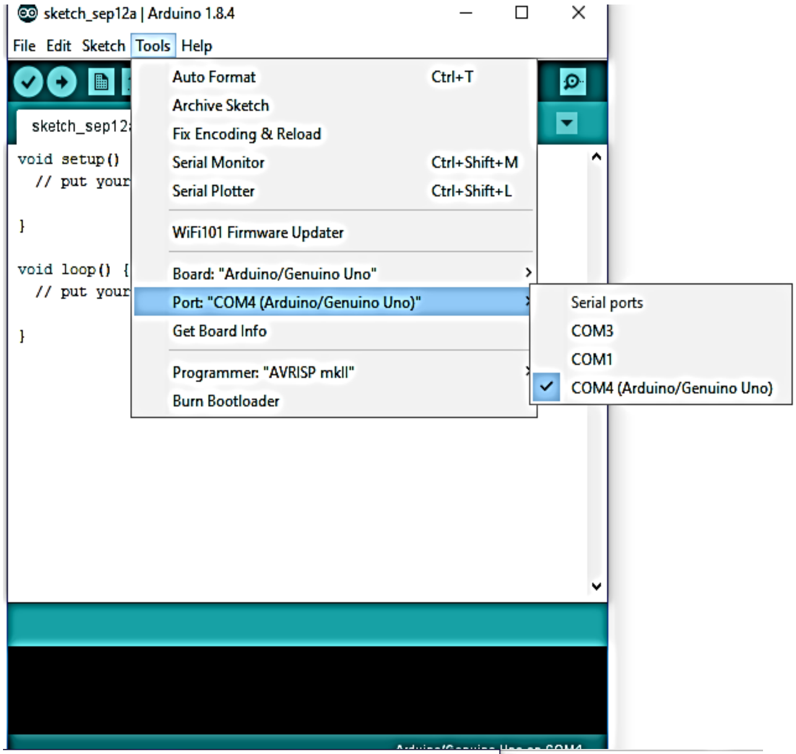
Figure 2 Check Your special COM and note it down the number

We need to figure out which channel COM is currently communicating between PC and UNO. Following the path: Control panel | Hardware and Sound | Devices and Printers | Device Manager | Ports (COM & LPT) | Arduino UNO (COMx)

Note down the COM number as we require this later. As the COM port may vary from time to time, this step is vital. In this case for demonstration purpose, we are using the COM 4.

3.2. Play with your first “Hello World” LED example

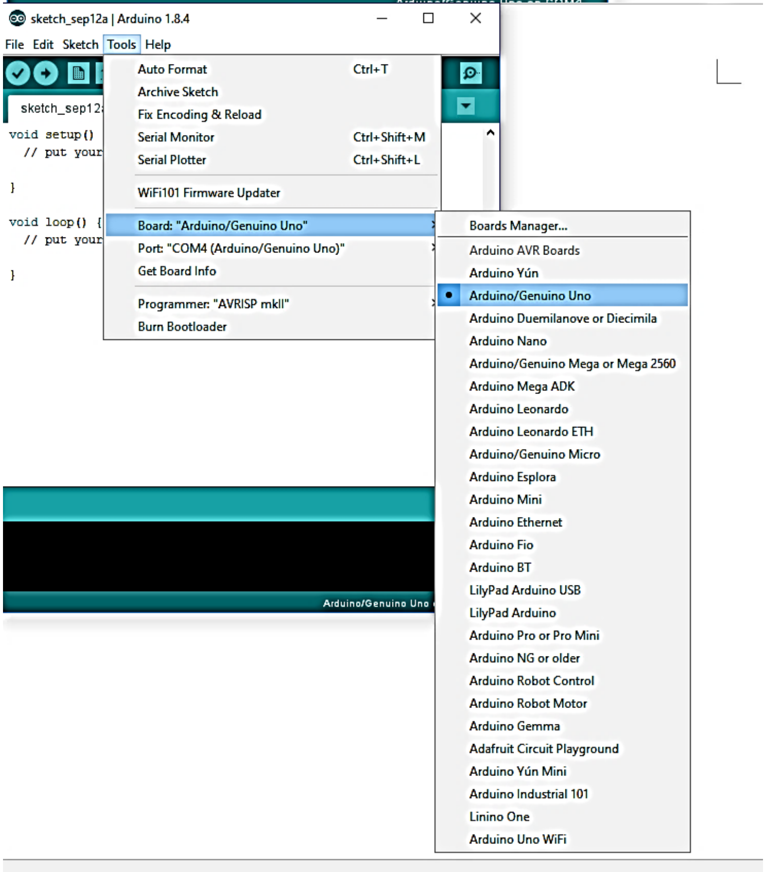
Firstly, let’s tell IDE where to find our Arduino port and which board you are currently using: The following instruction (Figure 3 and 4) shows the details:



sketch_sep12a | Arduino 1.8.4
File
Edit
Sketch
Tools
Help
sketch_sep12
Auto Format Ctrl+T
Archive Sketch
Fix Encoding & Reload
Serial Monitor Ctrl+Shift+M
Serial Plotter Ctrl+Shift+L
WiFi101 Firmware Updater
Board: "Arduino/Genuino Uno"
Port: "COM4 (Arduino/Genuino Uno)"
Get Board Info
Programmer: "AVRISP mkII"
Burn Bootloader
Serial ports
COM3
COM1
✓ COM4 (Arduino/Genuino Uno)

```
void setup()
  // put your

}

void loop() {
  // put your

}
```

Configuration of Ports



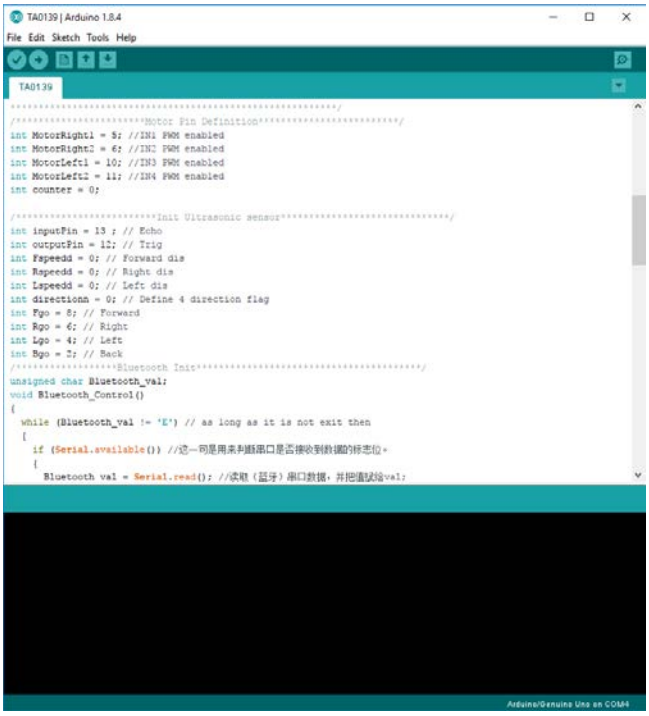
```
void setup()
  // put your

}

void loop() {
  // put your

}
```

Configuration of the Board

Software installation

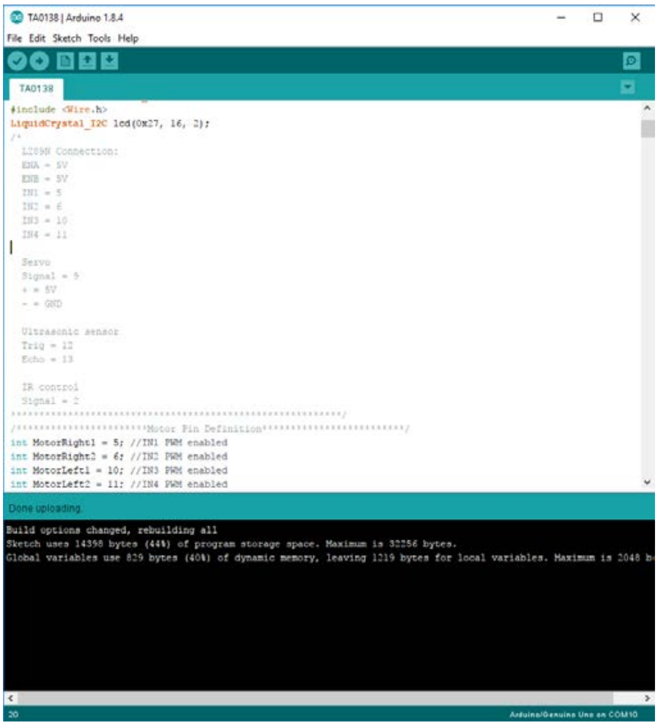
It’s time to play with you first simple example. Following the path by File | Examples | 01. Basics | Blink. A new code window would pop up, press the arrow symbol to upload. You will notice the orange LED is blinking almost every second.

3.3. Run your Arduino 2 Wheel Drive code



```
*************************************************************/
/***********************Motor Pin Definition************************/
int MotorRight1 = 5; //IN1 PWM enabled
int MotorRight2 = 6; //IN2 PWM enabled
int MotorLeft1 = 10; //IN3 PWM enabled
int MotorLeft2 = 11; //IN4 PWM enabled
int counter = 0;

/*************************Init Ultrasonic sensor****************************/
int inputPin = 13 ; // Echo
int outputPin = 12; // Trig
int Fspeedd = 0; // Forward dis
int Rspeedd = 0; // Right dis
int Lspeedd = 0; // Left dis
int directionn = 0; // Define 4 direction flag
int Fgo = 8; // Forward
int Rgo = 6; // Right
int Lgo = 4; // Left
int Bgo = 2; // Back
/******************Bluetooth Init**************************************/
unsigned char Bluetooth_val;
void Bluetooth_Control()
{
  while (Bluetooth_val != 'E') // as long as it is not exit then
  {
    if (Serial.available()) //这一句是用来判断串口是否接收到数据的标志位。
    {
      Bluetooth_val = Serial.read(); //读取（蓝牙）串口数据，并把值赋给val;
```

Upload to UNO



```
#include <Wire.h>
LiquidCrystal_I2C lcd(0x27, 16, 2);
/*
  L298N Connection:
  ENA = 5V
  ENB = 5V
  IN1 = 5
  IN2 = 6
  IN3 = 10
  IN4 = 11

  Servo
  Signal = 9
  + = 5V
  - = GND

  Ultrasonic sensor
  Trig = 12
  Echo = 13

  IR control
  Signal = 2
*************************************************************/
/***********************Motor Pin Definition************************/
int MotorRight1 = 5; //IN1 PWM enabled
int MotorRight2 = 6; //IN2 PWM enabled
int MotorLeft1 = 10; //IN3 PWM enabled
int MotorLeft2 = 11; //IN4 PWM enabled
```

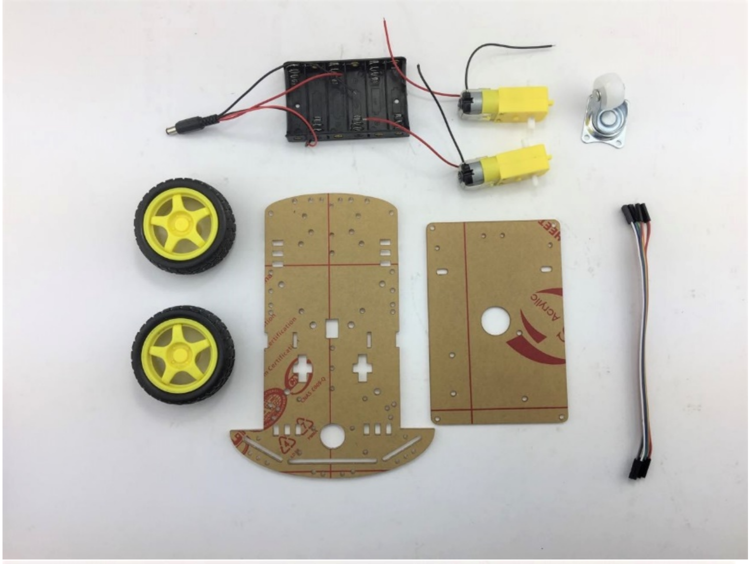
Done uploading.

```
Build options changed, rebuilding all
Sketch uses 14398 bytes (44%) of program storage space. Maximum is 32256 bytes.
Global variables use 829 bytes (40%) of dynamic memory, leaving 1219 bytes for local variables. Maximum is 2048 b
```

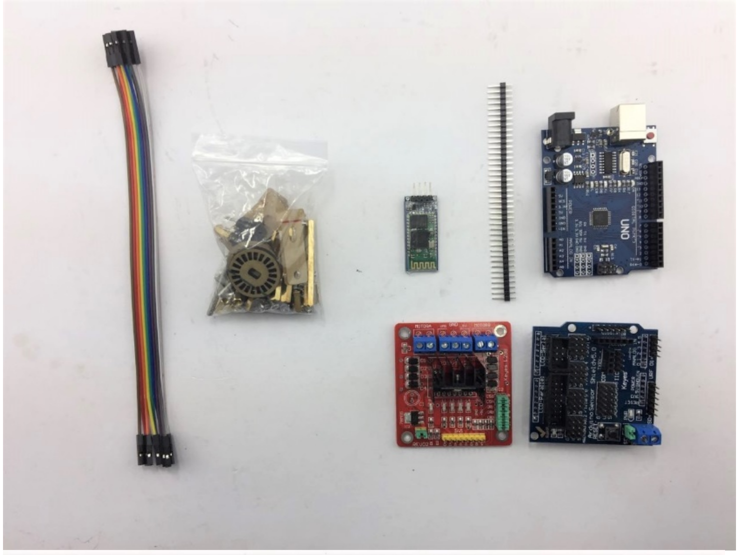
Done uploading!

Chapter 4. Hardware installation

4.1. Unboxing and Component list



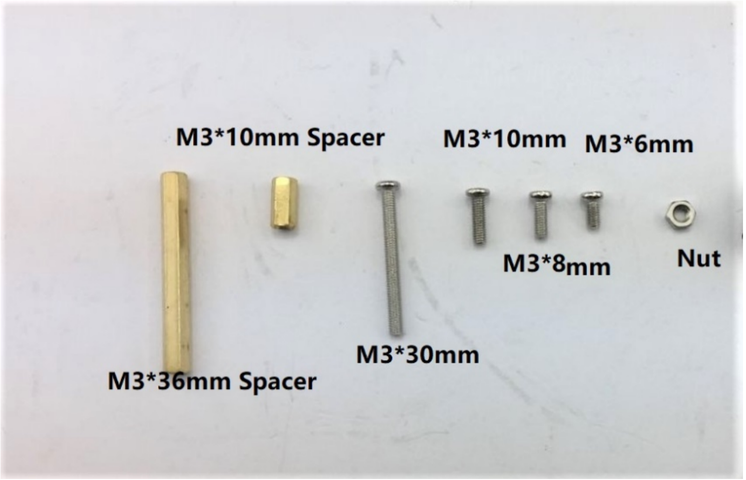
1. Acrylic Chassis with Protection Cover
2. Two DC Motors
3. Two Rubber wheels
4. Jumper cables x 8
5. 6 x AA Battery Box
6. One universal wheel



1. Chassis Screw package
2. Arduino UNO Development Board
3. Arduino Sensor shield V5.0
4. L289N Motor Driver Board
5. Bluetooth Module
6. Pins (Not Used)

Although these two encoders included in the kit is not used, they are useful to modulate and control the speed of two motors.

Hardware installation



Fastener package:

1. 4 x M3 * 36mm Spacer
2. 8 x M3 * 10mm Spacer
3. 4 x M3 * 30mm Screw
4. 4 x M3 * 10mm Screw
5. 4 x M3 * 8mm Screw
6. 4 x M3 * 6mm Screw
7. 10 x Nuts

4.2. Module Experiments

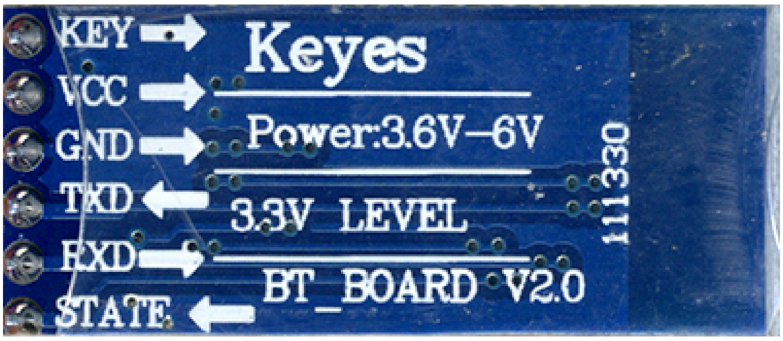
In this section, we are pre-testing and experimenting sensor modules separately to make sure that they function smoothly which are required to put together in the final Combination Module test. Be patient and have fun with each module.

4.2.1 Bluetooth Module

This inexpensive HC06 Bluetooth module is used to control the robot by sending data between an Arduino or compatible board and a Bluetooth-equipped device such as an Android smartphone or tablet.

Here we will guide you through the communication between Arduino and Bluetooth device running serial terminal software, in this case, an Android pad. Please note that this control process is not compatible with IOS devices.

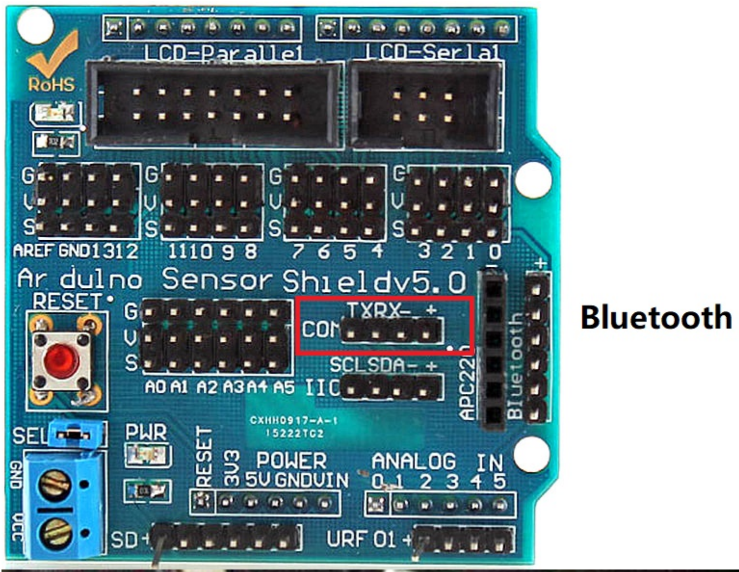
So, let’s get started! Our end goal for this Bluetooth module is to send data from your android devices and display information on LCD1602 previous you just built.



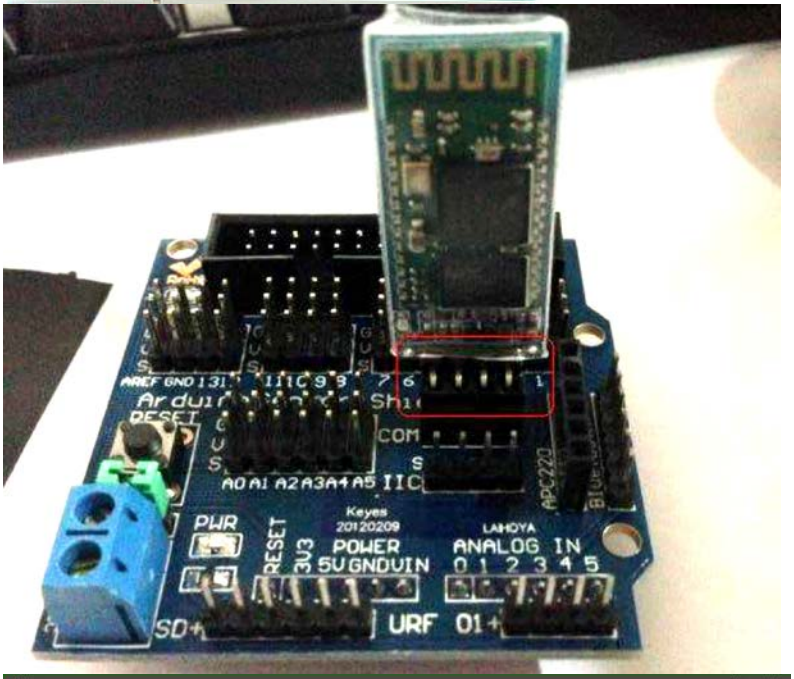
Pins configuration:

- GND: System / Arduino Ground
- VCC
- STATE: Tells if connected or not
- KEY: If brought HIGH before power is applied, forces AT Command Setup Mode. LED blinks slowly (2 seconds)
- TXD: Transmit Serial Data from HC-05 to Arduino Serial Receive. NOTE: 3.3V HIGH level: OK for Arduino
- RXD: Receive Serial Data from Arduino Serial Transmit

Hardware installation

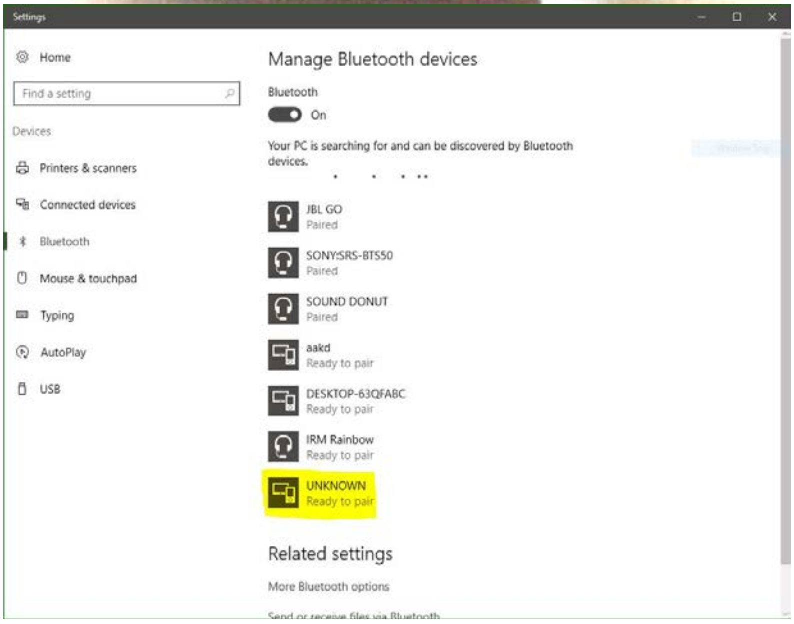


Plug the HC06 module in the corresponding COM slot



Once the Bluetooth module has been connected and power applied, the LED will blink rapidly. This means that it has not been "paired" with another Bluetooth device. The LED stays on continuously when paired.

Use USB cable to connect your Arduino UNO board and your PC, in this case, we are using Windows 10



Manage Bluetooth devices

Bluetooth

On

Your PC is searching for and can be discovered by Bluetooth devices.

JBL GO
Paired

SONY:SRS-BTS50
Paired

SOUND DONUT
Paired

aakd
Ready to pair

DESKTOP-63QFABC
Ready to pair

IRM Rainbow
Ready to pair

UNKNOWN
Ready to pair

Related settings

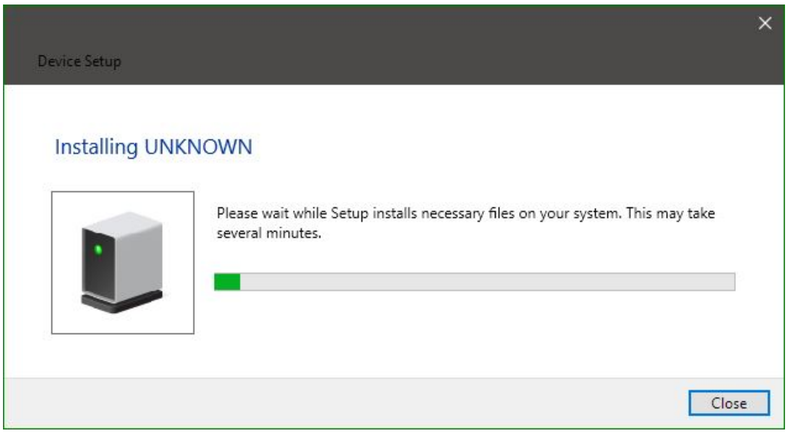
More Bluetooth options

Send or receive files via Bluetooth

Open the Settings | Devices | Bluetooth

Then you will notice there is new Unknown device

Hardware installation


Device Setup

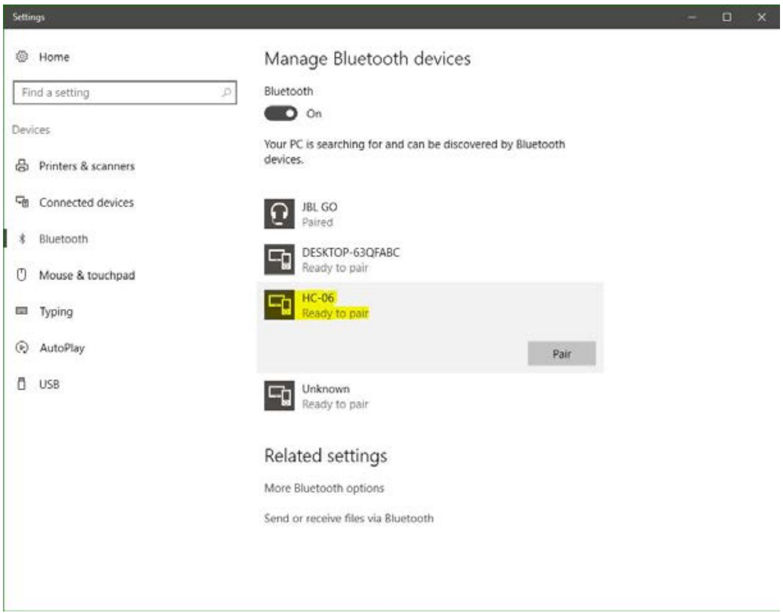
Installing UNKNOWN

Please wait while Setup installs necessary files on your system. This may take several minutes.

PC will automatically install the driver for HC-06 Bluetooth module

Wait for a second to download and install driver

If no response, then disconnect this module and re-insert in the COM slot



Manage Bluetooth devices

Bluetooth: On

Your PC is searching for and can be discovered by Bluetooth devices.

JBL GO – Paired

DESKTOP-63QFABC – Ready to pair

HC-06 – Ready to pair

Unknown – Ready to pair

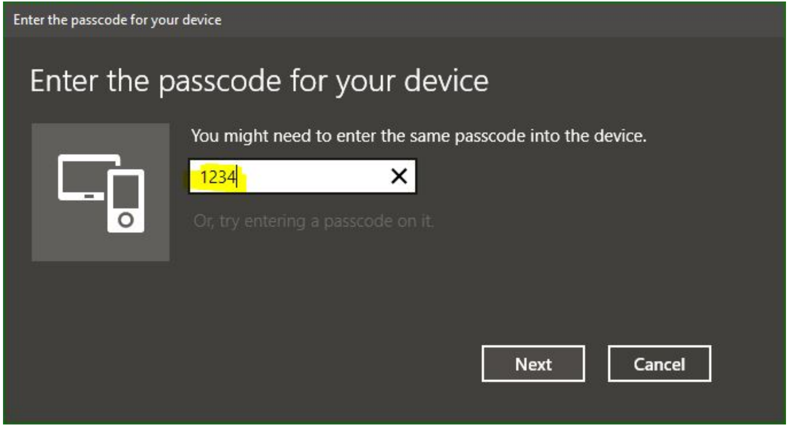
Related settings

More Bluetooth options

Send or receive files via Bluetooth

The HC-06 icon is shown and ready to pair.

Press pair to communicate with HC-06


Enter the passcode for your device

Enter the passcode for your device

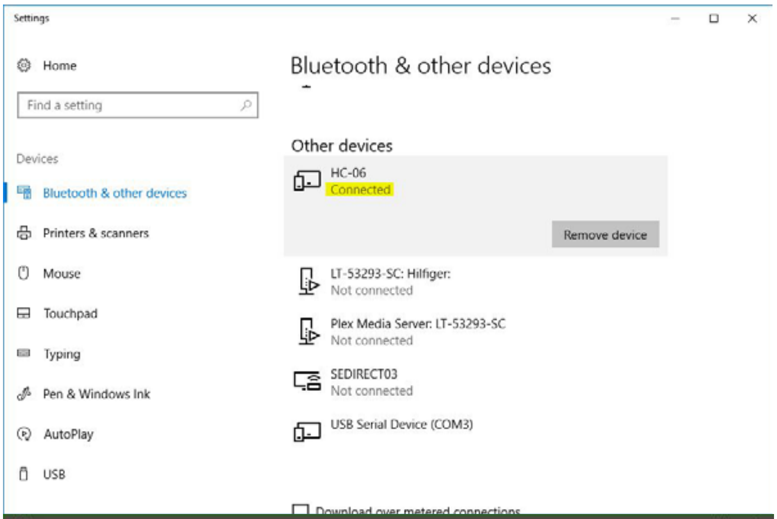
You might need to enter the same passcode into the device.

1234

Or, try entering a passcode on it.

The default passcode is 1234. Then hit the Next Button

Hardware installation



Settings

Home

Find a setting

Devices

Bluetooth & other devices

Printers & scanners

Mouse

Touchpad

Typing

Pen & Windows Ink

AutoPlay

USB

Bluetooth & other devices

Other devices

HC-06
Connected

Remove device

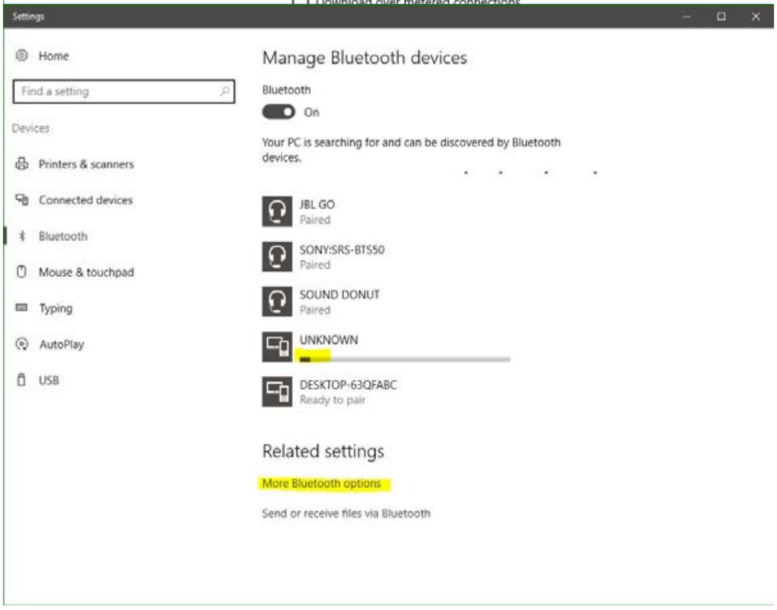
LT-53293-SC: Hilfiger:
Not connected

Plex Media Server: LT-53293-SC
Not connected

SEDIRECT03
Not connected

USB Serial Device (COM3)

□ Download over metered connections



Settings

Home

Find a setting

Devices

Printers & scanners

Connected devices

Bluetooth

Mouse & touchpad

Typing

AutoPlay

USB

Manage Bluetooth devices

Bluetooth

On

Your PC is searching for and can be discovered by Bluetooth devices.

JBL GO
Paired

SONY:SRS-BTS50
Paired

SOUND DONUT
Paired

UNKNOWN

DESKTOP-63QFABC
Ready to pair

Related settings

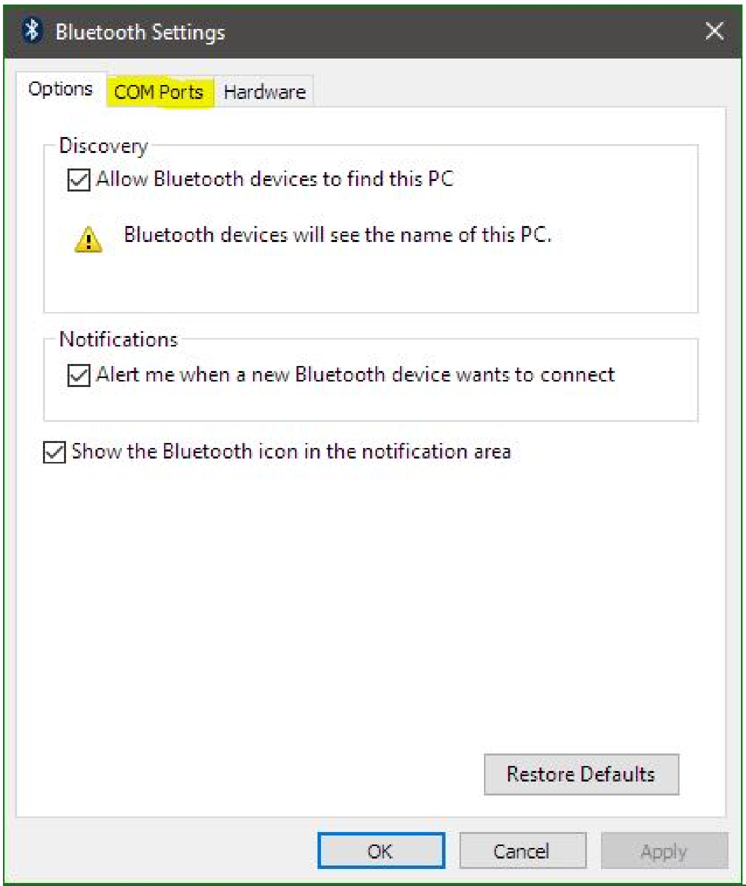
More Bluetooth options

Send or receive files via Bluetooth

Successfully connected. Now you will notice the red LED on the module is on continuously.

Click the More Bluetooth Options.

Hardware installation



Discovery

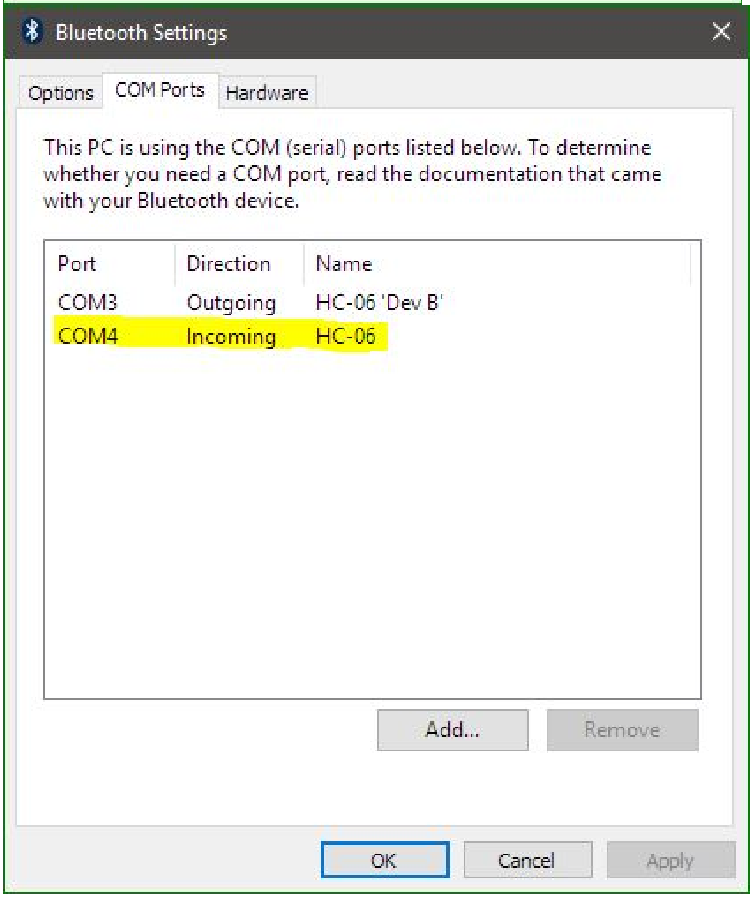
☑ Allow Bluetooth devices to find this PC

⚠ Bluetooth devices will see the name of this PC.

Notifications

☑ Alert me when a new Bluetooth device wants to connect

☑ Show the Bluetooth icon in the notification area



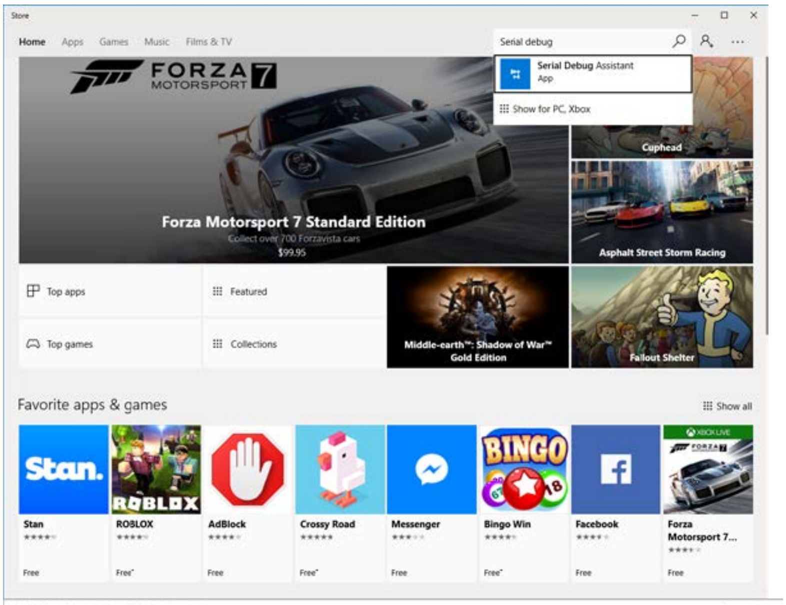
This PC is using the COM (serial) ports listed below. To determine whether you need a COM port, read the documentation that came with your Bluetooth device.

Port	Direction	Name
COM3	Outgoing	HC-06 'Dev B'
COM4	Incoming	HC-06

New dialog window pops up and choose the COM ports.

Note down the incoming Port number, in this case, it is shown as COM4, as required to configurate in the next step

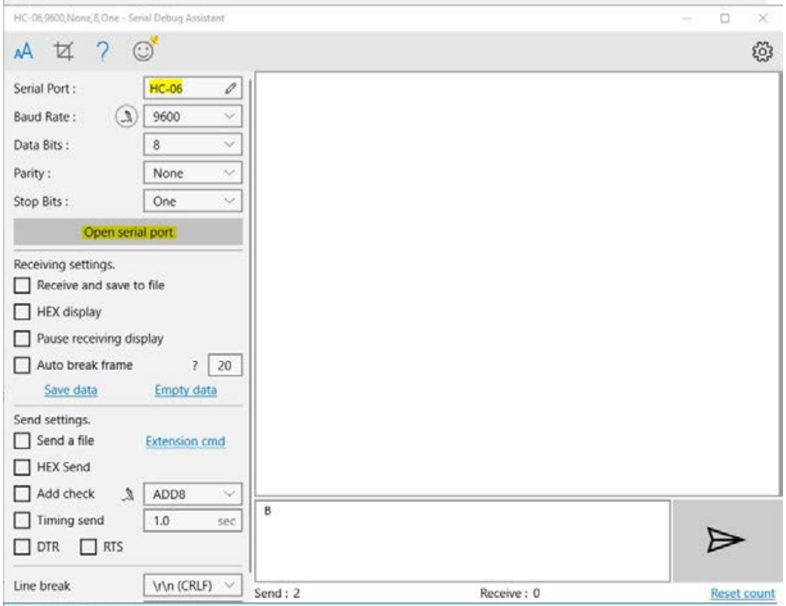
Hardware installation



Download the Serial Debug Assistant from Windows store.

Search the “Serial Debug Assistant” in the right corner search bar and install it

Open the software


HC-06,9600,None,8,One - Serial Debug Assistant

Serial Port : HC-06
Baud Rate : 9600
Data Bits : 8
Parity : None
Stop Bits : One

Receiving settings.
□ Receive and save to file
□ HEX display
□ Pause receiving display
□ Auto break frame ? 20

Send settings.
□ Send a file
□ HEX Send
□ Add check ADD8
□ Timing send 1.0 sec
□ DTR □ RTS

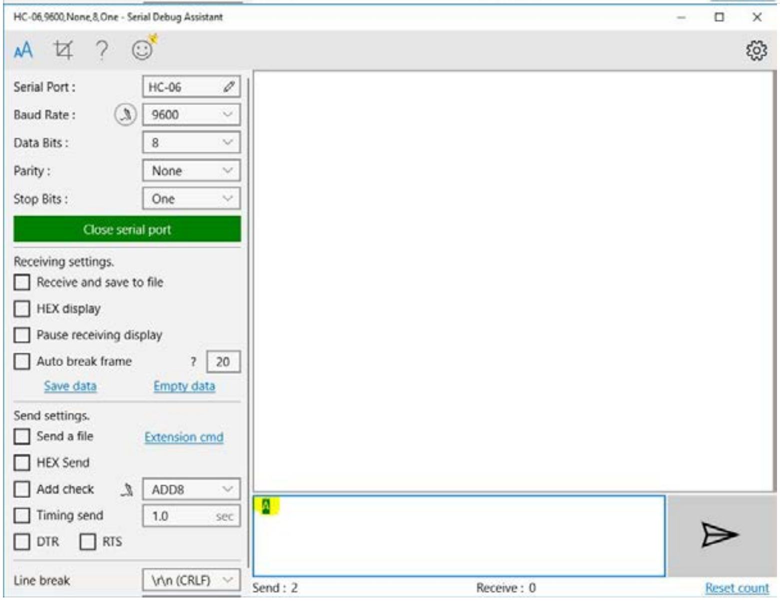
Line break \r\n (CRLF)

Send : 2 Receive : 0

Choose the HC-06 device I the serial port (COM4 in this instance) and keep other settings default as shown on the left.

Baud Rate: 9600 bps
Data: 8 bits
Stop Bits: 1 bit
Parity: None
Handshake: None

Open the serial port


HC-06,9600,None,8,One - Serial Debug Assistant

Serial Port : HC-06
Baud Rate : 9600
Data Bits : 8
Parity : None
Stop Bits : One

Receiving settings.
□ Receive and save to file
□ HEX display
□ Pause receiving display
□ Auto break frame ? 20

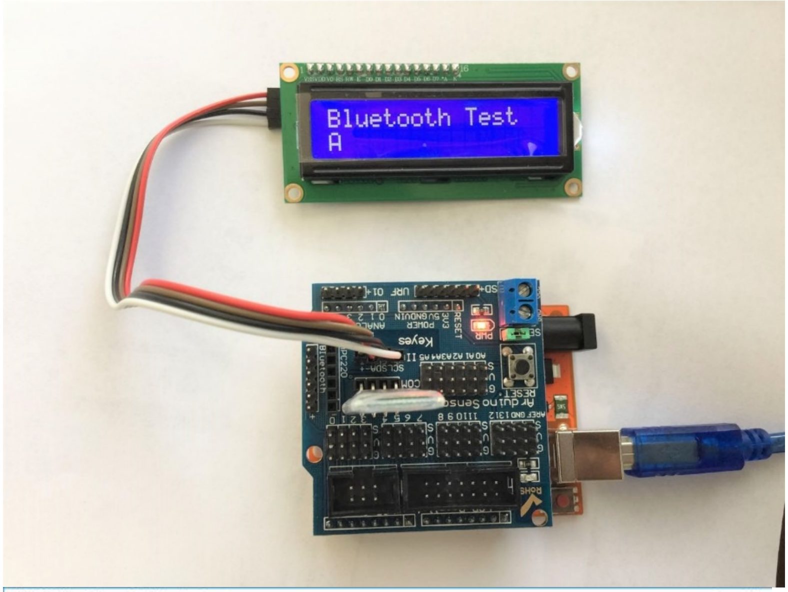
Send settings.
□ Send a file
□ HEX Send
□ Add check ADD8
□ Timing send 1.0 sec
□ DTR □ RTS

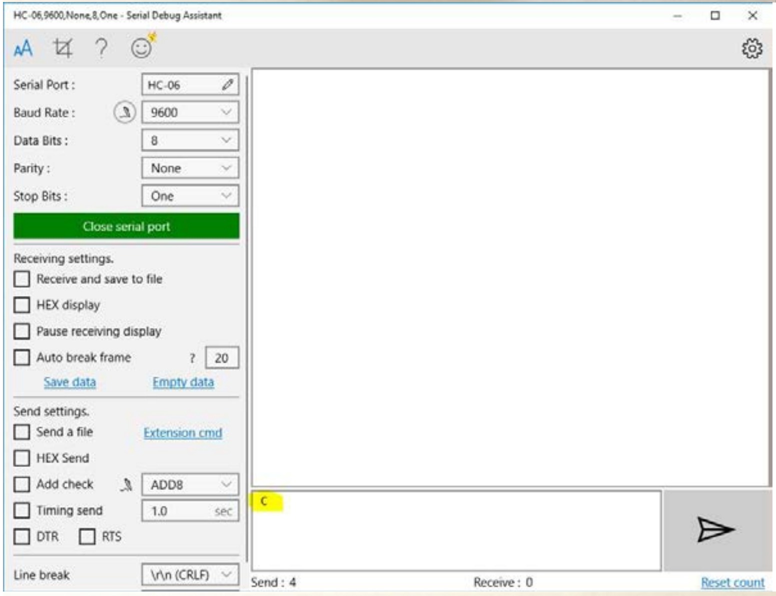
Line break \r\n (CRLF)

Send : 2 Receive : 0

Type in character “A” and you will see it on the LCD1602

Hardware installation




HC-06,9600,None,8,One - Serial Debug Assistant

Serial Port : HC-06

Baud Rate : 9600

Data Bits : 8

Parity : None

Stop Bits : One

Close serial port

Receiving settings.

□ Receive and save to file

□ HEX display

□ Pause receiving display

□ Auto break frame ? 20

Save data Empty data

Send settings.

□ Send a file Extension cmd

□ HEX Send

□ Add check ADD8

□ Timing send 1.0 sec

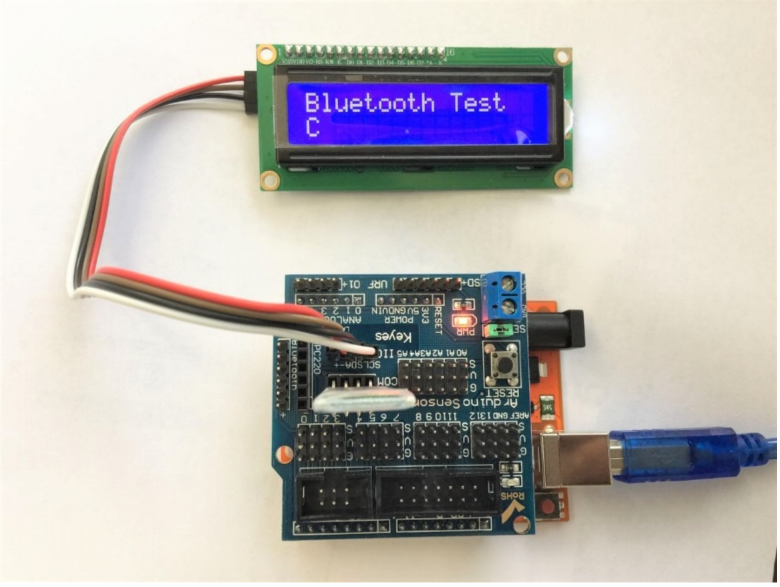
□ DTR □ RTS

Line break \r\n (CRLF)

C

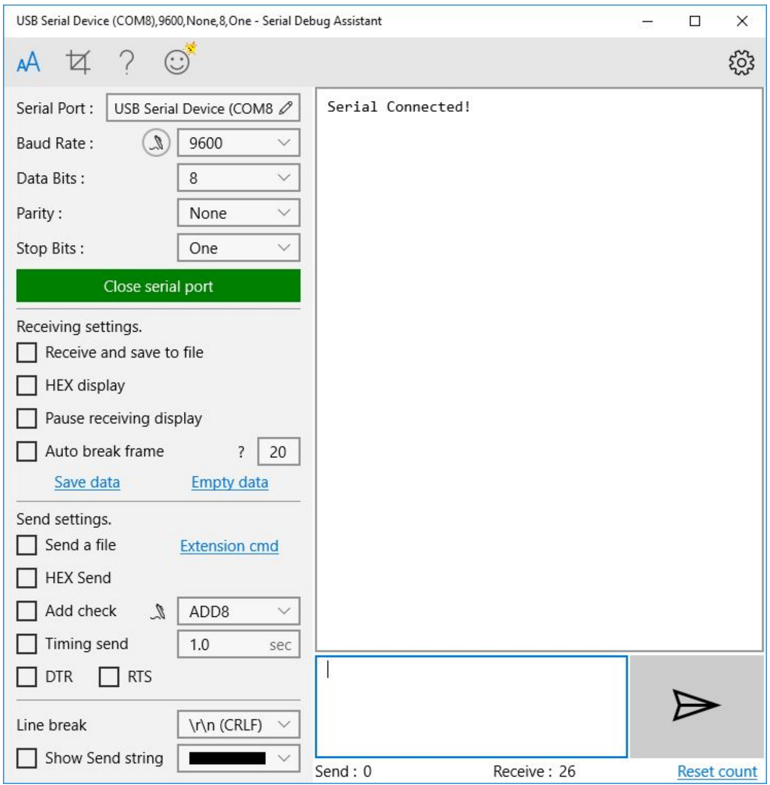
Send : 4 Receive : 0 Reset count

Try other character like a “C”



Now you have finished the Bluetooth test

Hardware installation



USB Serial Device (COM8),9600,None,8,One - Serial Debug Assistant

Serial Port : USB Serial Device (COM8
Baud Rate : 9600
Data Bits : 8
Parity : None
Stop Bits : One

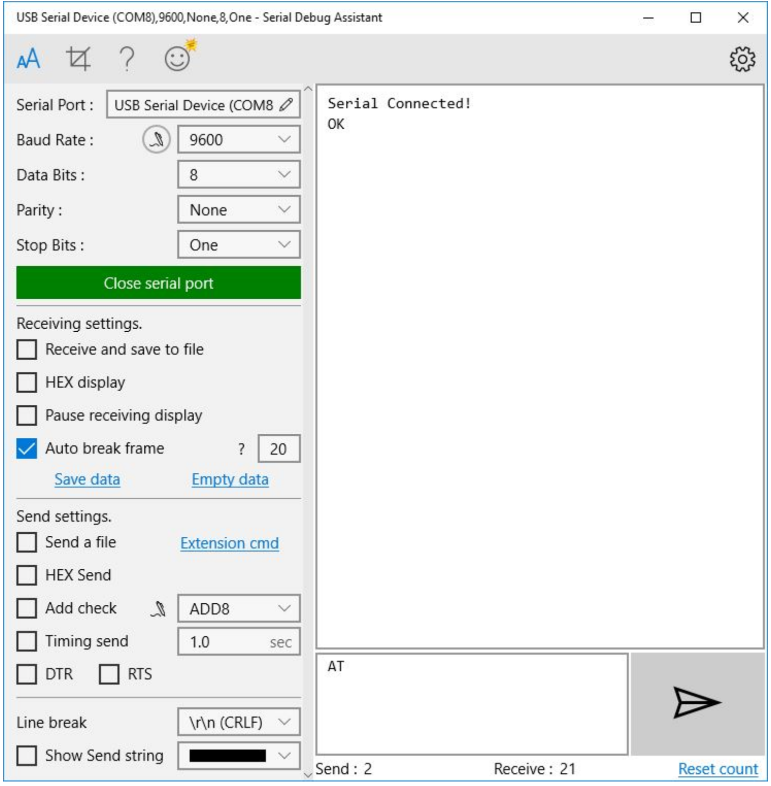
Receiving settings.
□ Receive and save to file
□ HEX display
□ Pause receiving display
□ Auto break frame ? 20

Send settings.
□ Send a file
□ HEX Send
□ Add check ADD8
□ Timing send 1.0 sec
□ DTR □ RTS
Line break \r\n (CRLF)
□ Show Send string

```
Serial Connected!
```

Send : 0 Receive : 26

The module has two modes of operation, Command Mode where we can send AT commands to it and Data Mode where it transmits and receives data to another Bluetooth module. You can also change the name or password of your unique Bluetooth module.



USB Serial Device (COM8),9600,None,8,One - Serial Debug Assistant

Serial Port : USB Serial Device (COM8
Baud Rate : 9600
Data Bits : 8
Parity : None
Stop Bits : One

Receiving settings.
□ Receive and save to file
□ HEX display
□ Pause receiving display
☑ Auto break frame ? 20

Send settings.
□ Send a file
□ HEX Send
□ Add check ADD8
□ Timing send 1.0 sec
□ DTR □ RTS
Line break \r\n (CRLF)
□ Show Send string

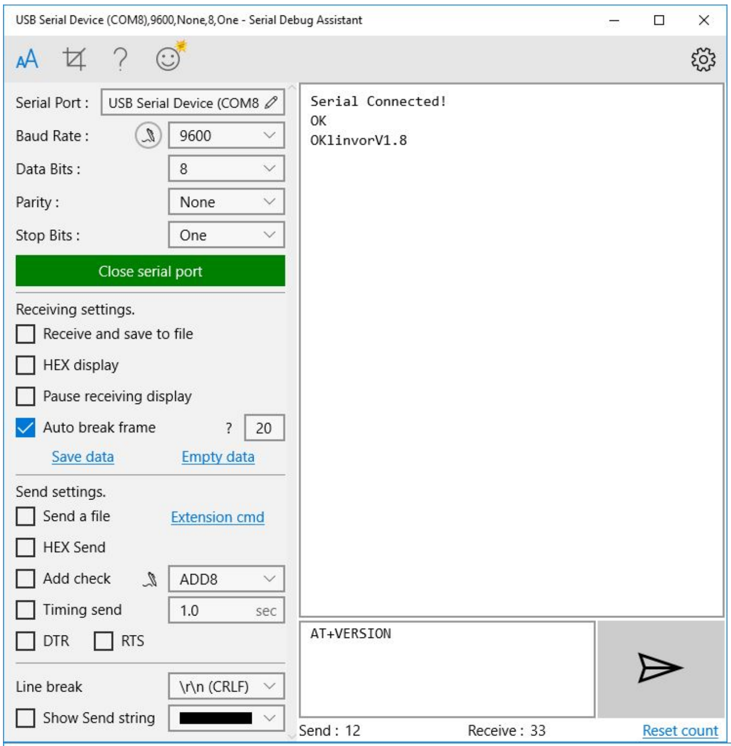
```
Serial Connected!
OK
```

```
AT
```

Send : 2 Receive : 21

Command Mode Commands:
The format of commands is:
Always starts with "AT"
Then "+" followed by <ParameterName>
Then either:
? (returns current value of parameter)
= (New Value of parameter)

A few examples:
AT (AT Test command. Should respond with OK)
AT+VERSION? (show the firmware version)
AT+UART=9600,0,0 (Set baud rate to 9600, 1 stop bit, no parity)



USB Serial Device (COM8),9600,None,8,One - Serial Debug Assistant

Serial Port : USB Serial Device (COM8
Baud Rate : 9600
Data Bits : 8
Parity : None
Stop Bits : One

Receiving settings.
□ Receive and save to file
□ HEX display
□ Pause receiving display
☑ Auto break frame ? 20

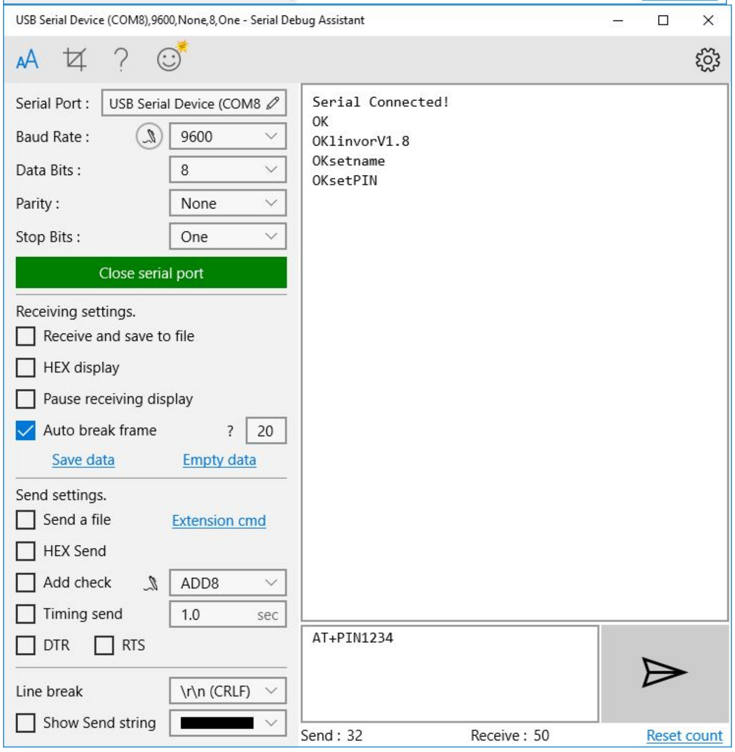
Send settings.
□ Send a file
□ HEX Send
□ Add check ADD8
□ Timing send 1.0 sec
□ DTR □ RTS

Line break \r\n (CRLF)
□ Show Send string

```
Serial Connected!
OK
OKlinvorV1.8
```

```
AT+VERSION
```

Send : 12 Receive : 33



USB Serial Device (COM8),9600,None,8,One - Serial Debug Assistant

Serial Port : USB Serial Device (COM8
Baud Rate : 9600
Data Bits : 8
Parity : None
Stop Bits : One

Receiving settings.
□ Receive and save to file
□ HEX display
□ Pause receiving display
☑ Auto break frame ? 20

Send settings.
□ Send a file
□ HEX Send
□ Add check ADD8
□ Timing send 1.0 sec
□ DTR □ RTS

Line break \r\n (CRLF)
□ Show Send string

```
Serial Connected!
OK
OKlinvorV1.8
OKsetname
OKsetPIN
```

```
AT+PIN1234
```

Send : 32 Receive : 50

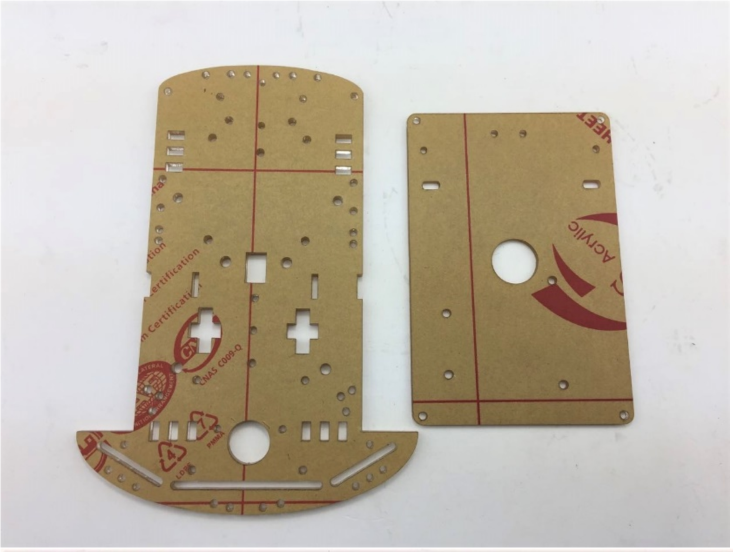
This step is optional:

Renaming your Bluetooth device:

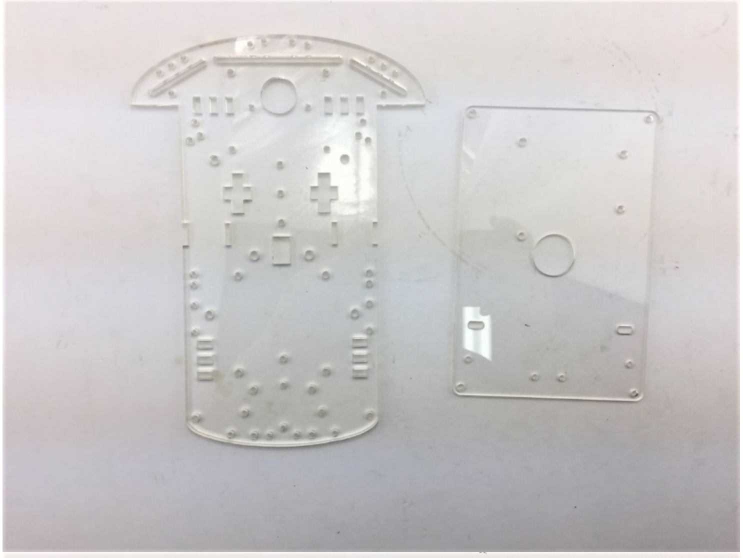
- Check firmware version.
- Change name
- Change PIN

4.3. 2-wheel Drive installation

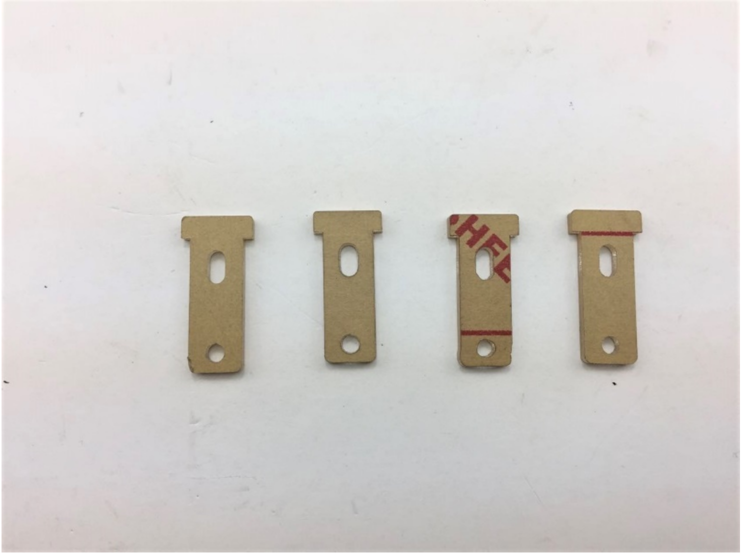
As each separate module works well, now we assembly them together.



Firstly, remove the protection cover from the top chassis as well as bottom chassis.

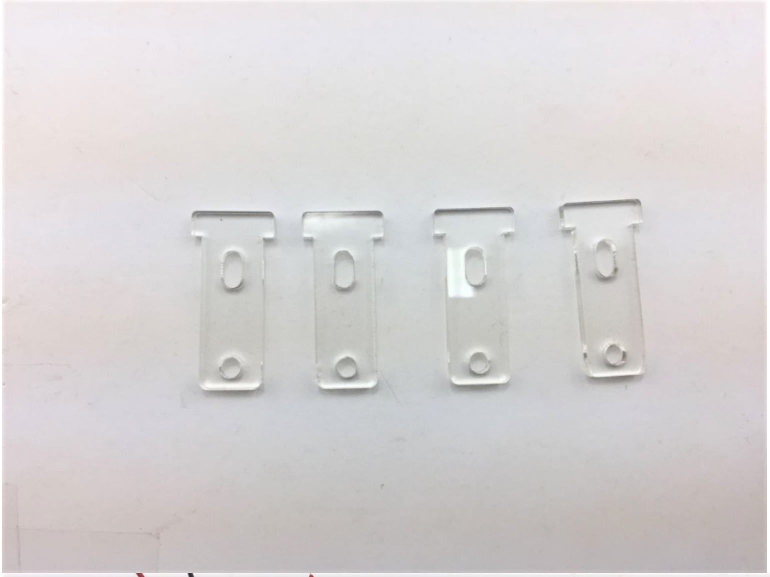


It should look like this

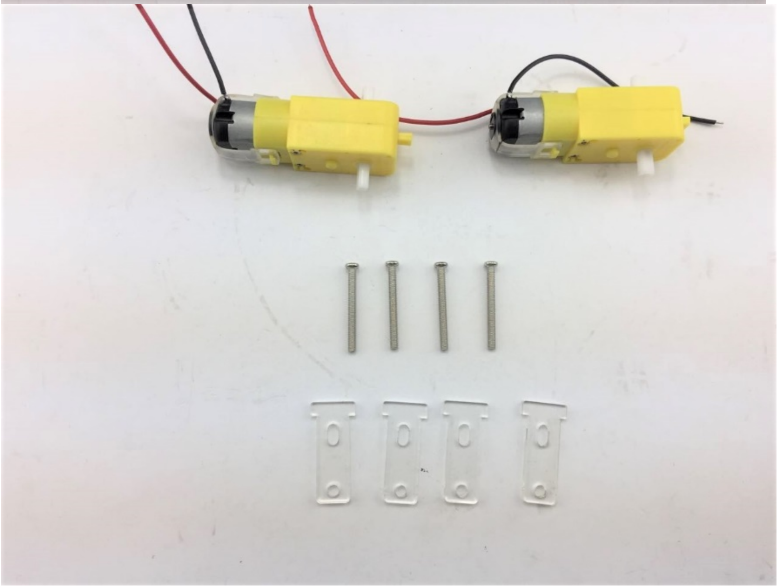


Prepare the four acrylic fasteners, remove the protection cover.

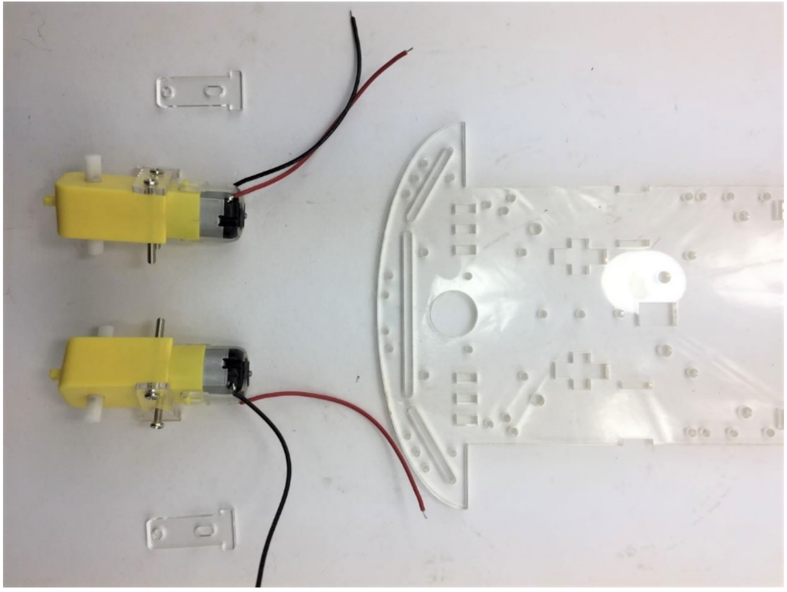
Hardware installation



The fasteners are used to secure the motors on the Bottom chassis.

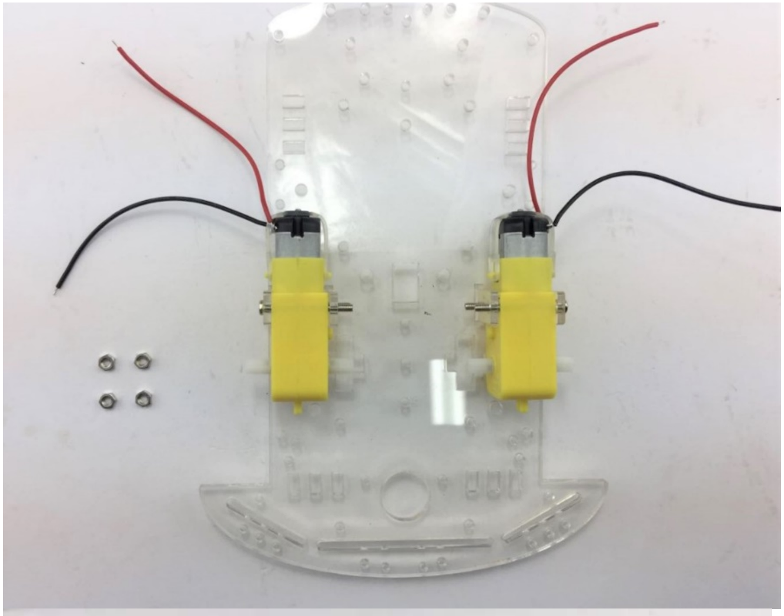


With two M3*30mm screws on each side, motors are fixed.

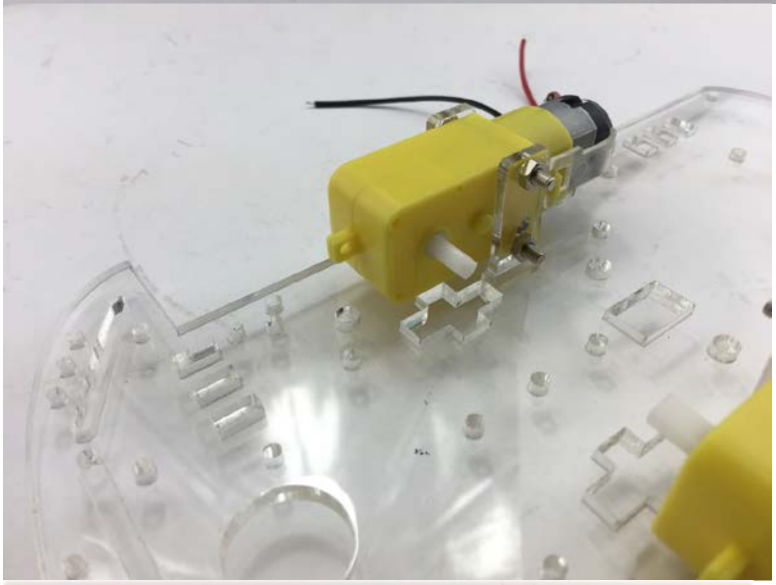


Place the Motors and fasteners in order as shown on the left

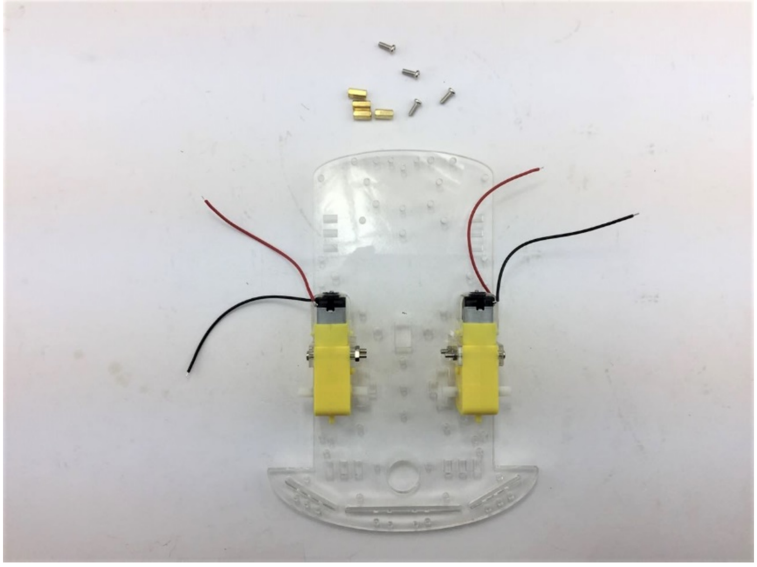
Hardware installation



Secure the free ends of the screws with two nuts on each side

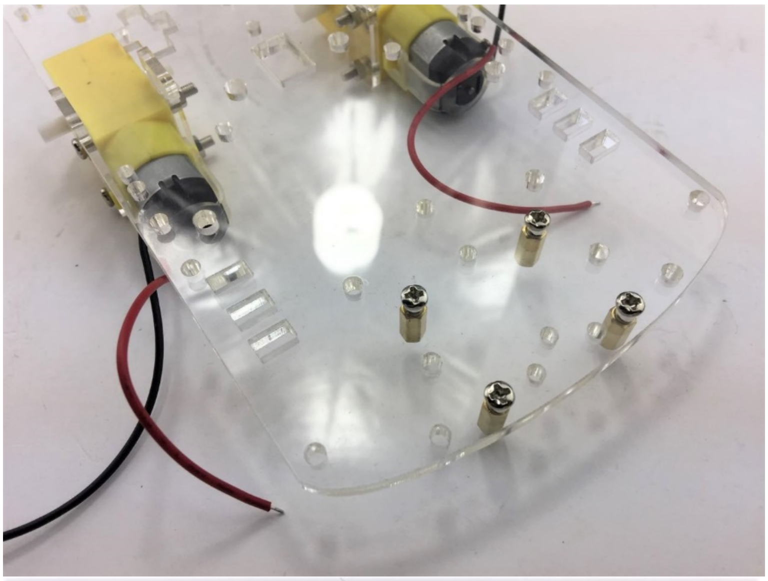


It looks like this

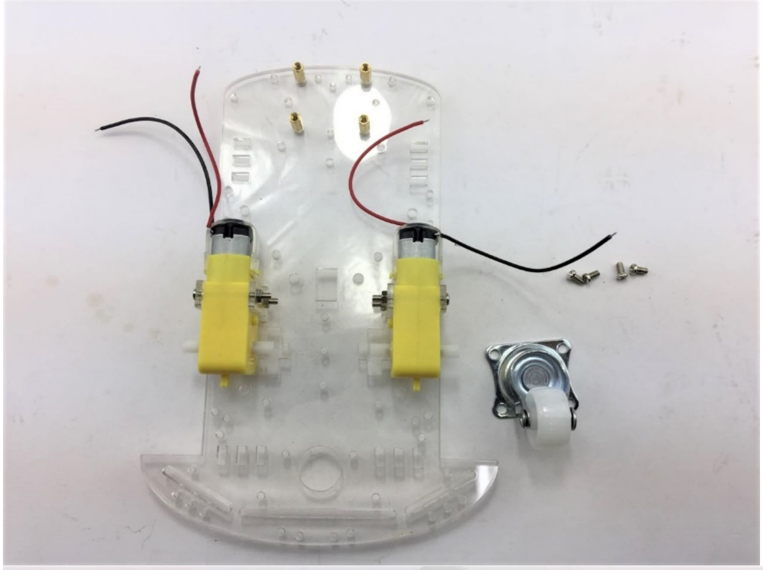


- 4 x M3 * 10mm Spacers
- 4 x M3 * 8mm Screws

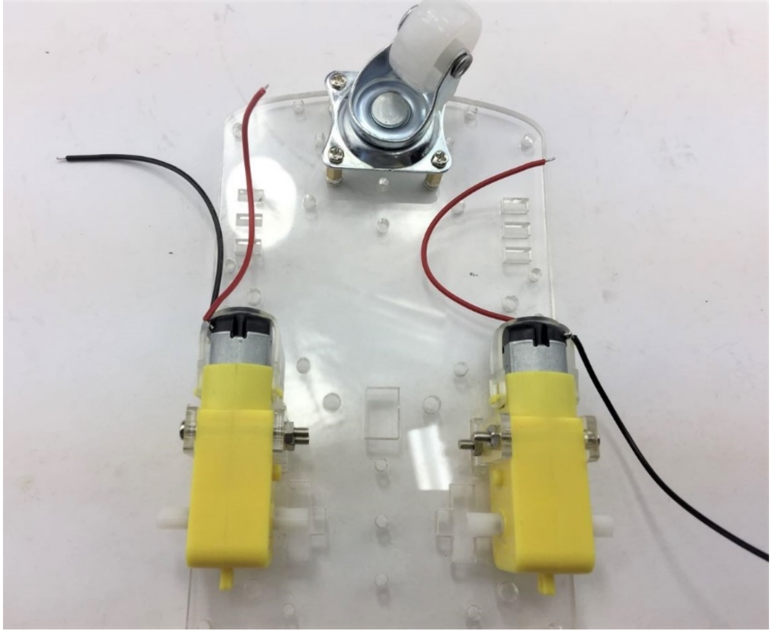
Hardware installation



Secure the four spacers on the front of the bottom chassis

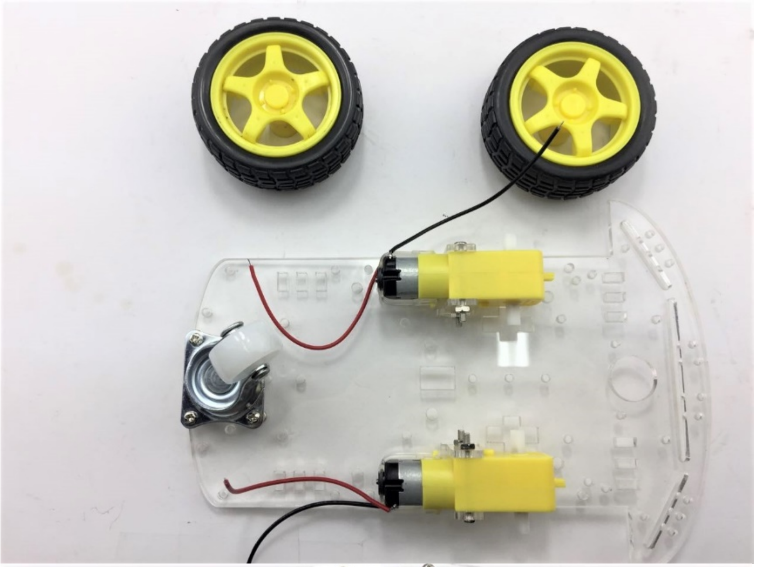


Prepare another four M3*6mm screws to fix the universal wheel on

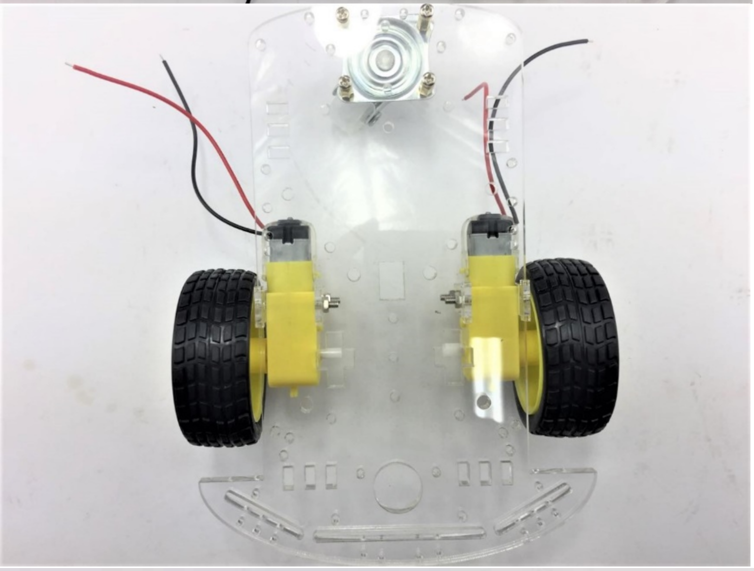


It should look like this

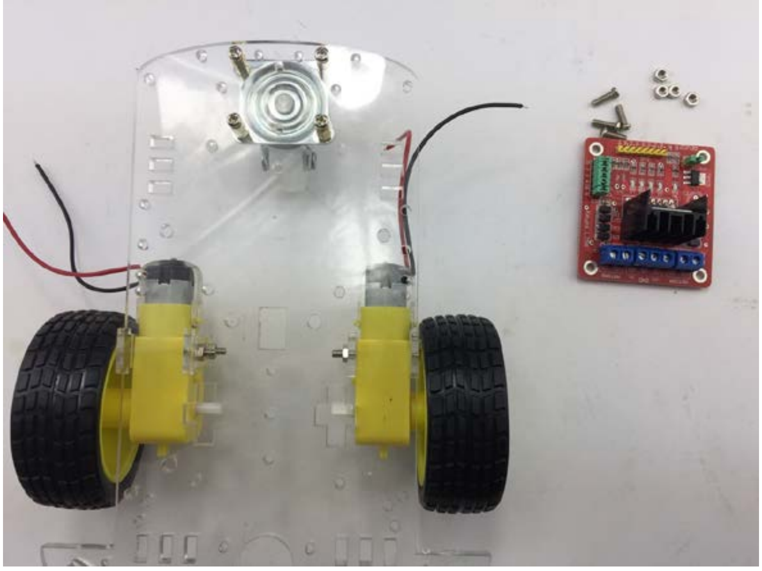
Hardware installation



Secure two rubber wheels on

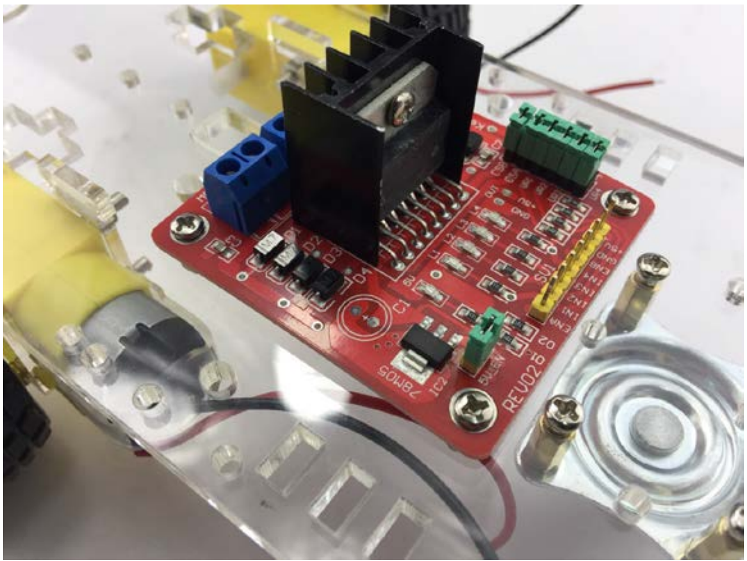


It should look like this

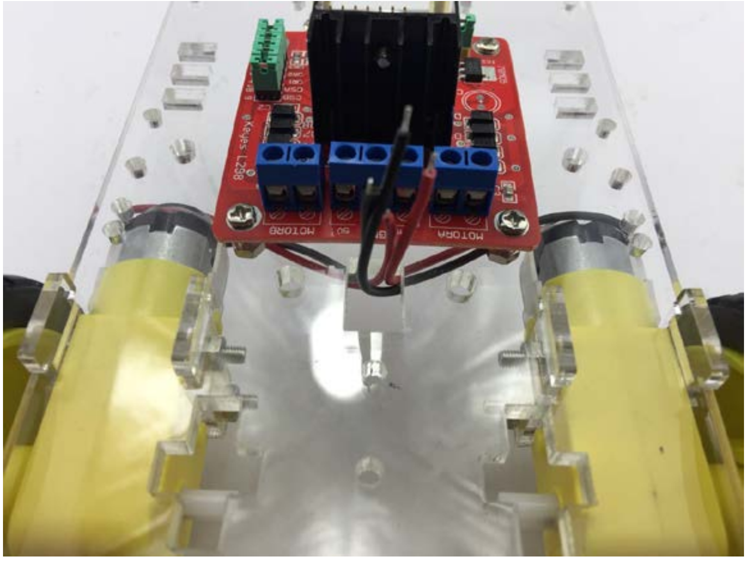


Now prepare four M3 *10mm screws and L289N Motor Driver Board

Hardware installation

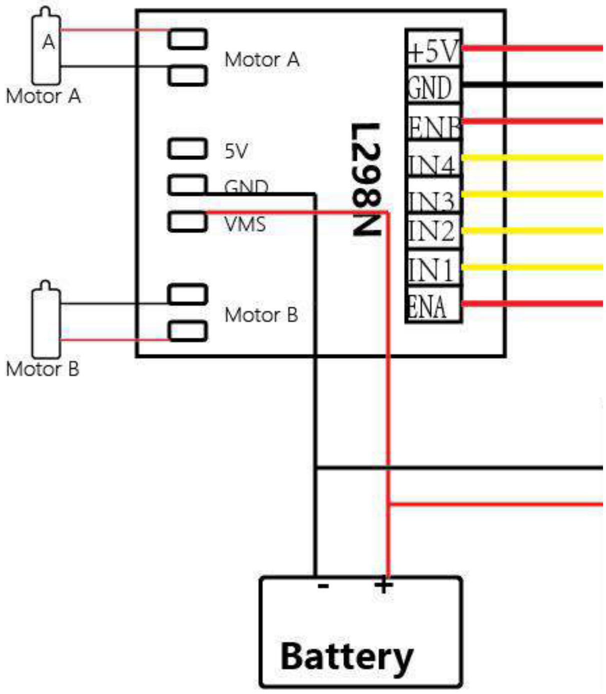


Secure the L289N Motor Driver Board as shown on the left



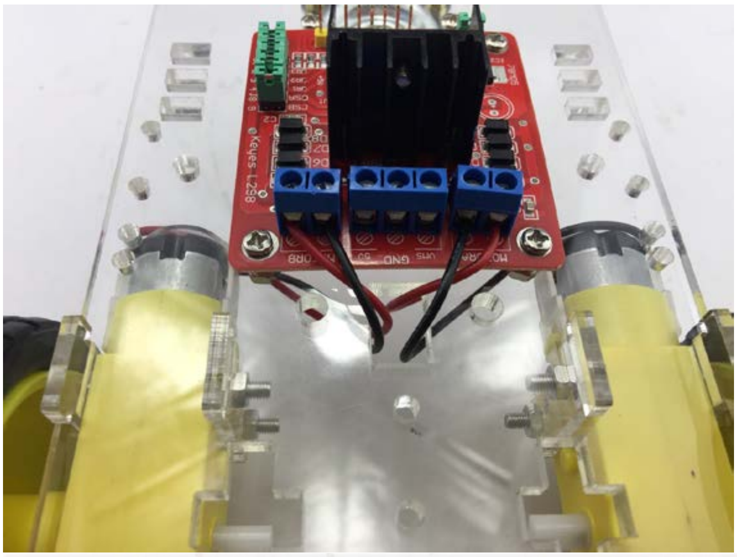
Pull the positive and negative cable of two motors through the hole of bottom chassis and connect them to L289N Motor socket.

Left Motor connects to left side motor socket on the L289N.

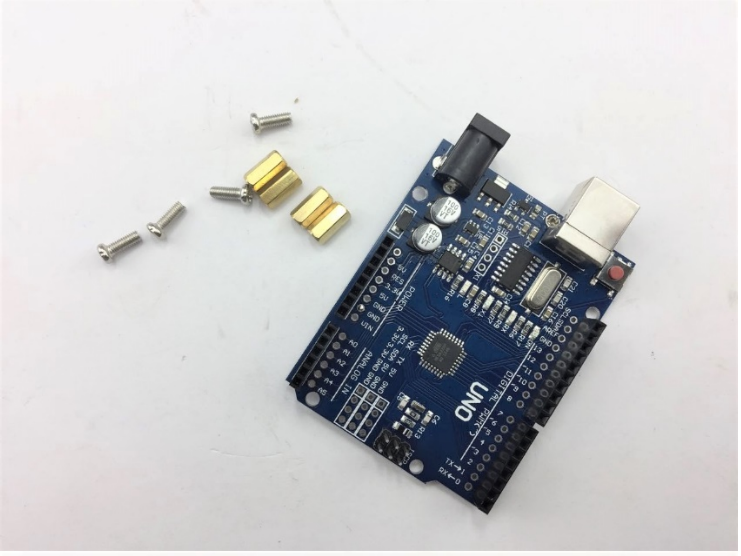


Left Motor A and Right motor B connection

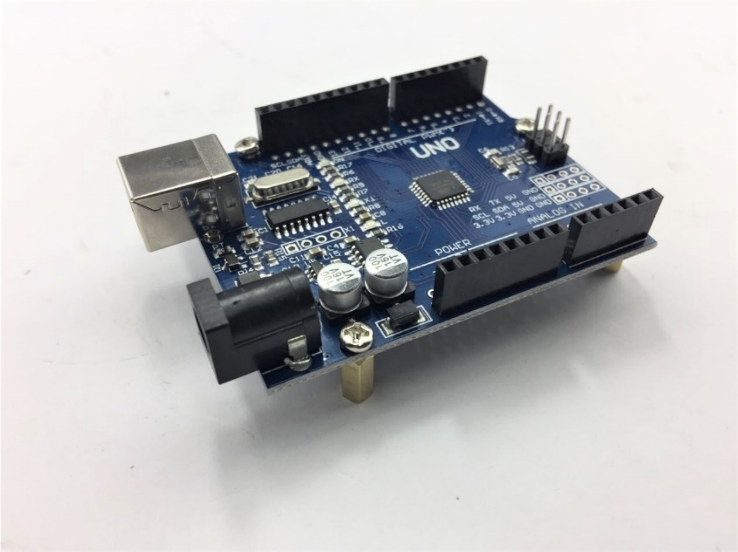
Hardware installation



It should look like this

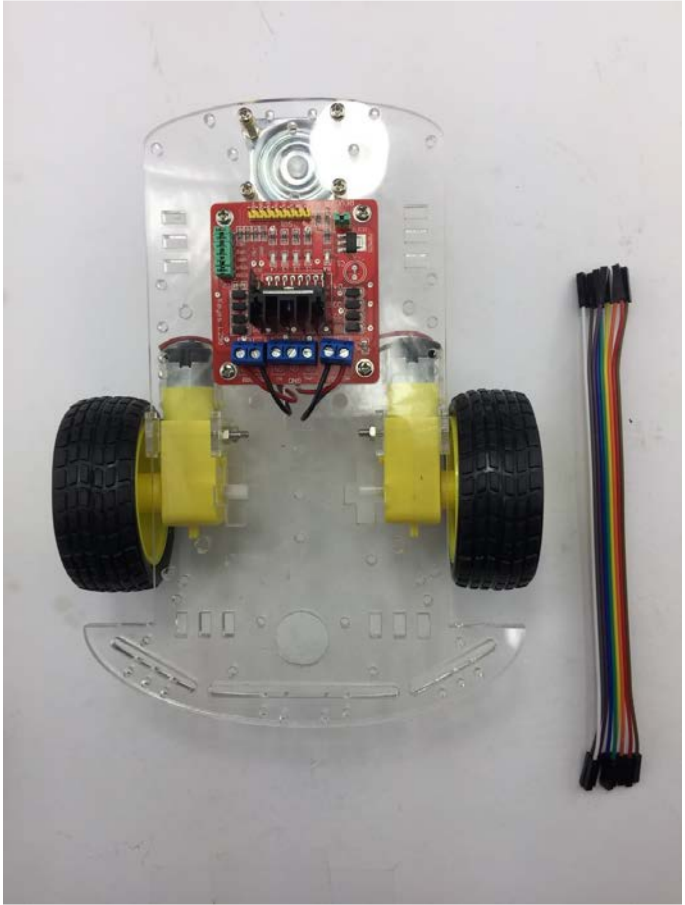


Prepare the four M3*10mm Spacers and four M3*10mm Screws

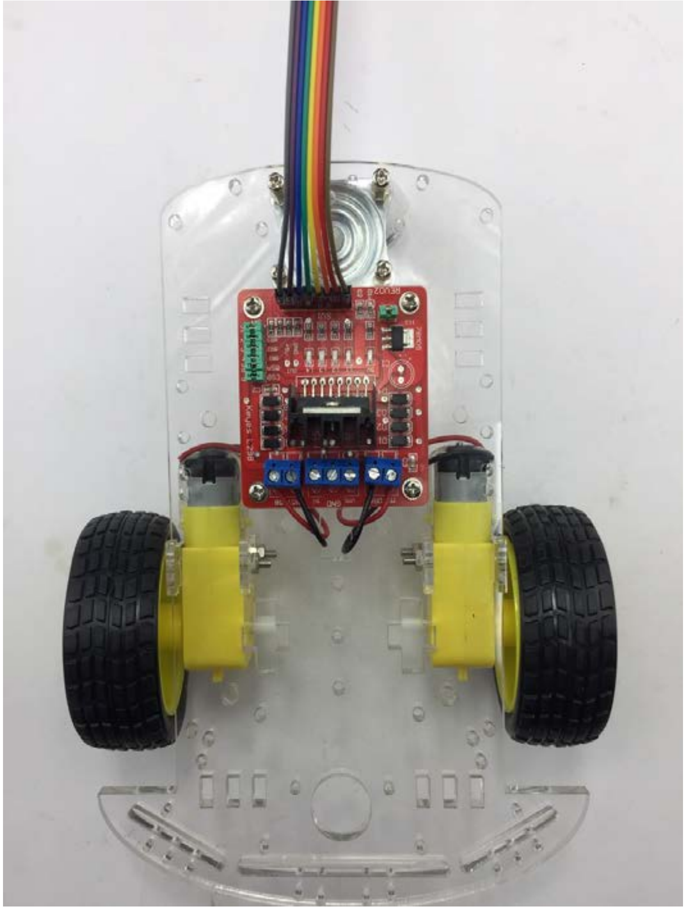


It should look like this

Hardware installation

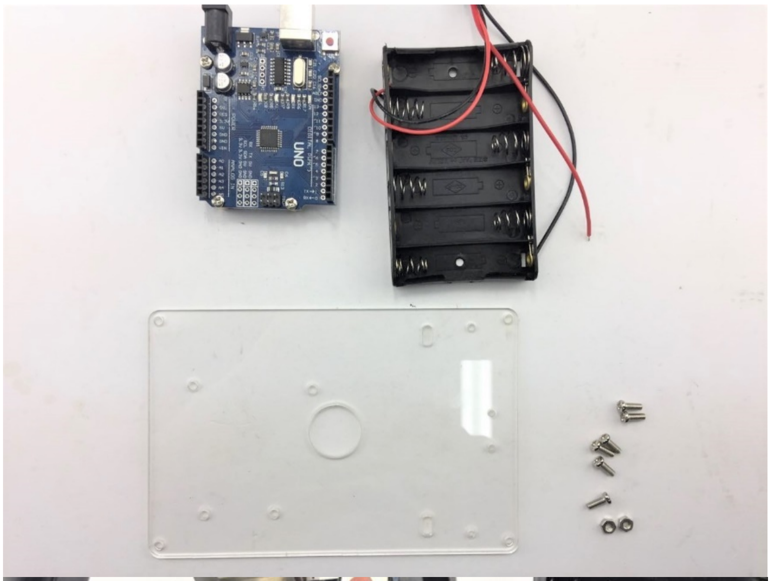


Use eight Jumper cables to extend the pins on the L289N



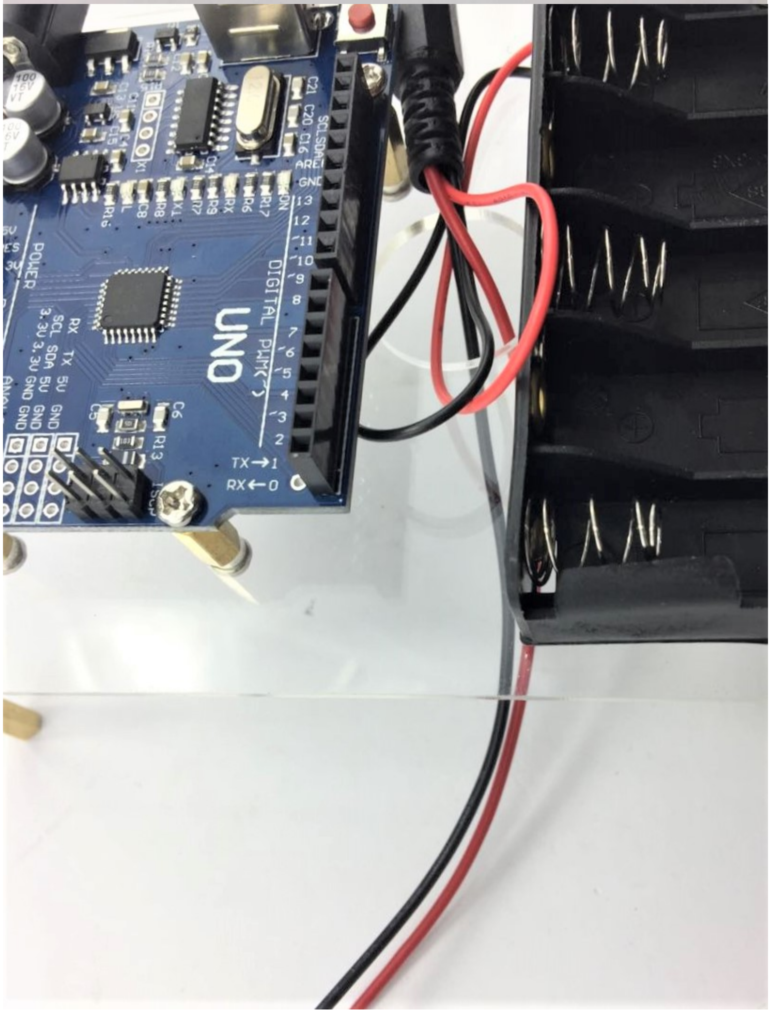
It should look like this

Hardware installation



Prepare the Top chassis and Battery Box and Arduino development Board.

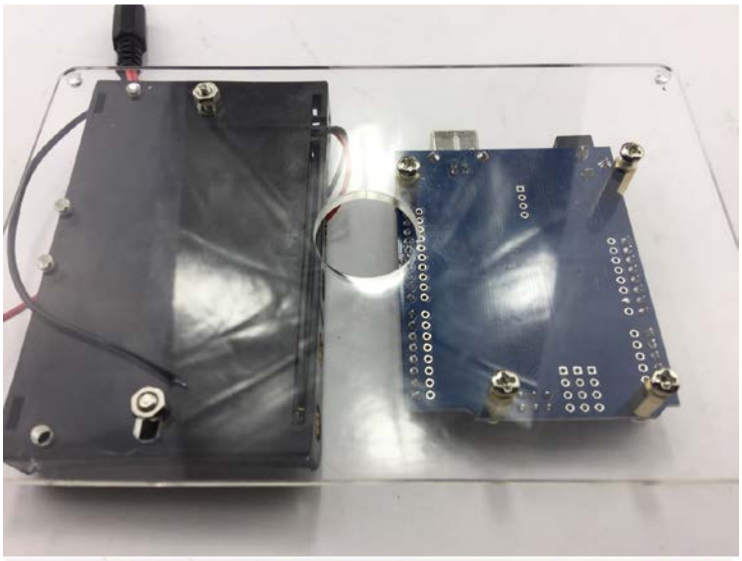
- Two M3*8 mm Screws
- Four M3*6mm Screws
- Two Nuts



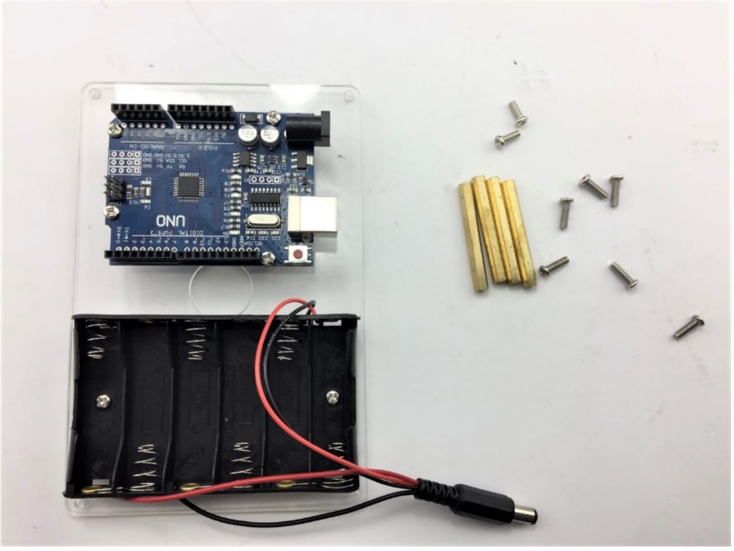
Firstly, secure the UNO development board with four M3 * 6mm screws.

Pull the positive and negative cables of the battery box through the hole of the top chassis.

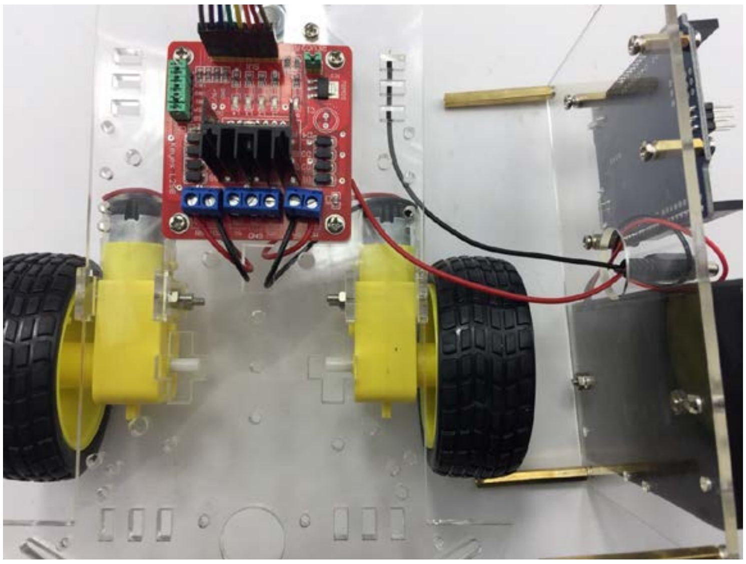
Hardware installation



The back should look like this

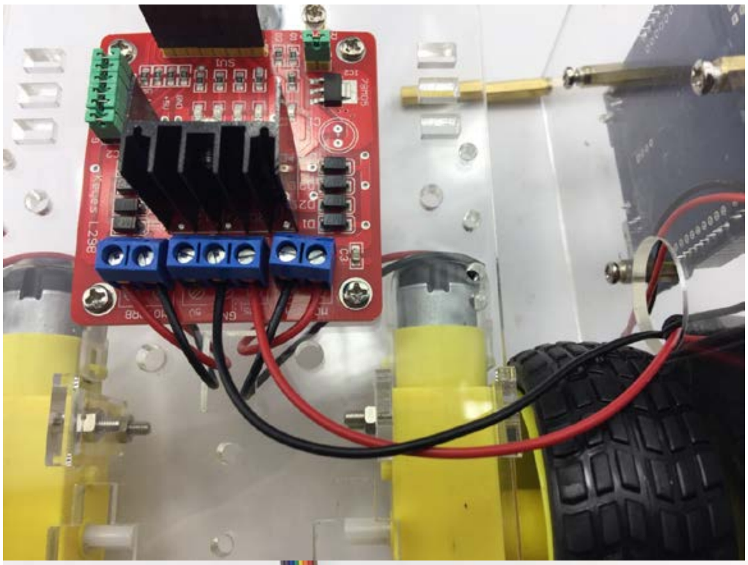


- Four M3*36mm Spacers
- 8 x M3 *8mm Screws

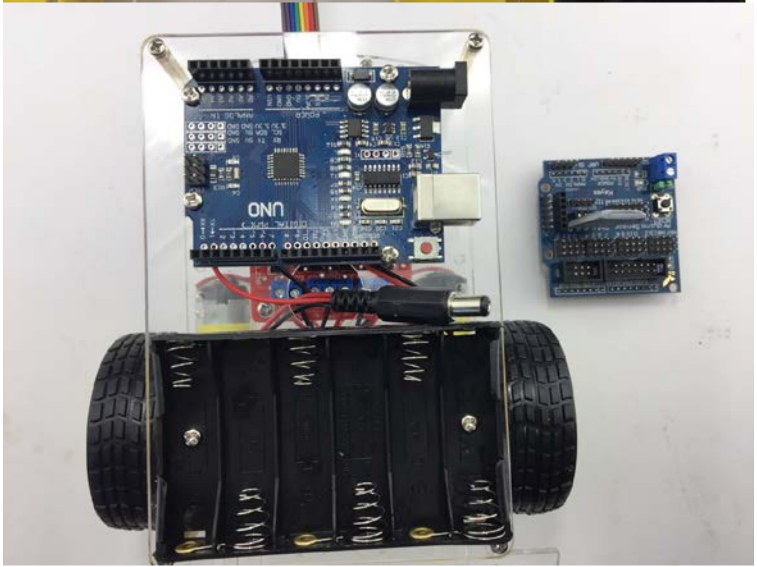


Then connect power wires to the L289N power socket. Black for GND and red for VMS. Please see detailed wire connection at Chapter 5 wire connection.

Hardware installation

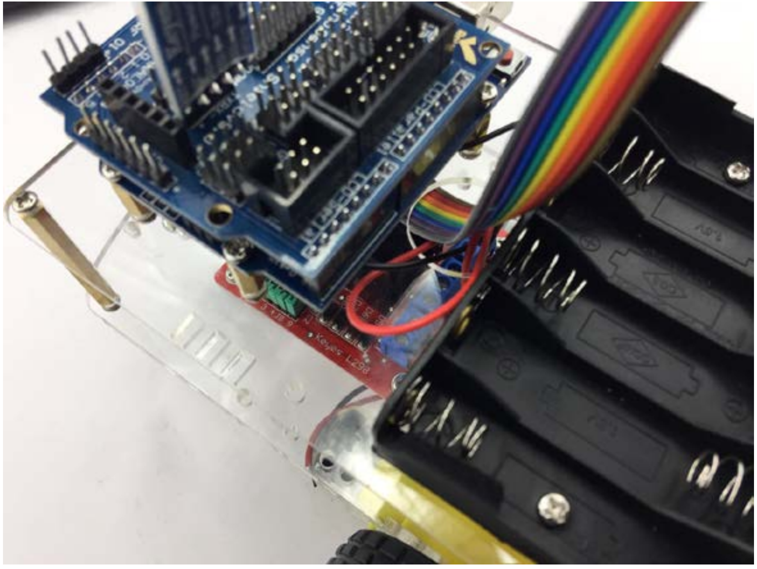


It should look like this



Use four M3 *8mm Screws to secure the top chassis on bottom chassis.

Then place the Arduino Sensor Board V5.0 on the Arduino UNO board

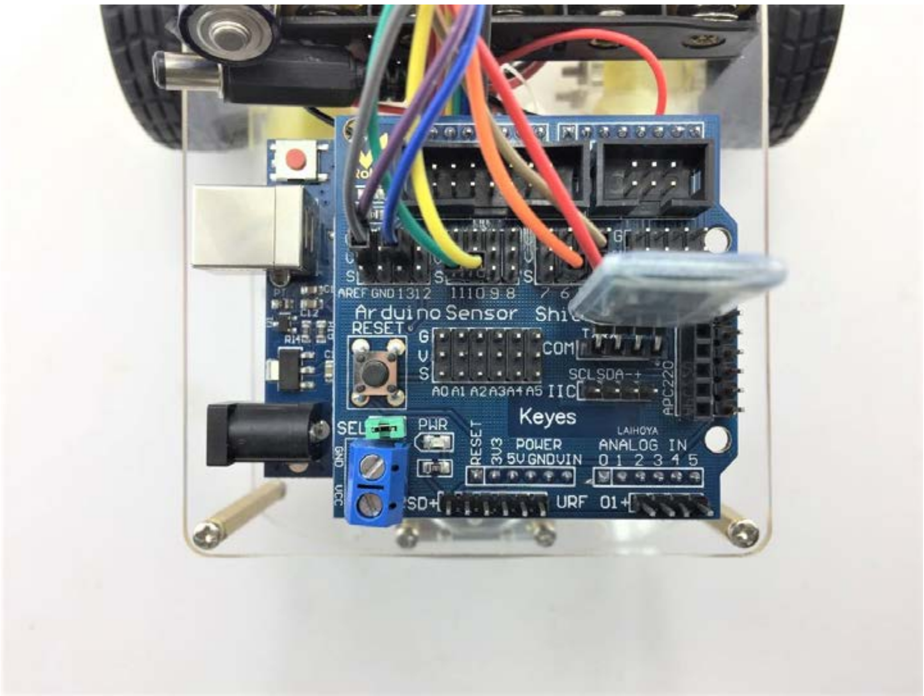


Then pull the eight jumper cables through the hole of top chassis.

4.4. Wire Connection

You are almost there. Final step is to wire the cables to power supply (i.e. Battery Box), UNO board, ultrasonic sensor and Servo. The following diagram shows the connection map. Don't panic if this is your first project, you can also follow the connection table 1. Take your time and be patient with the wiring.

Caution: Any incorrect wire connection will lead to problems including device malfunction, device failure, damage to the device or damage to other property.



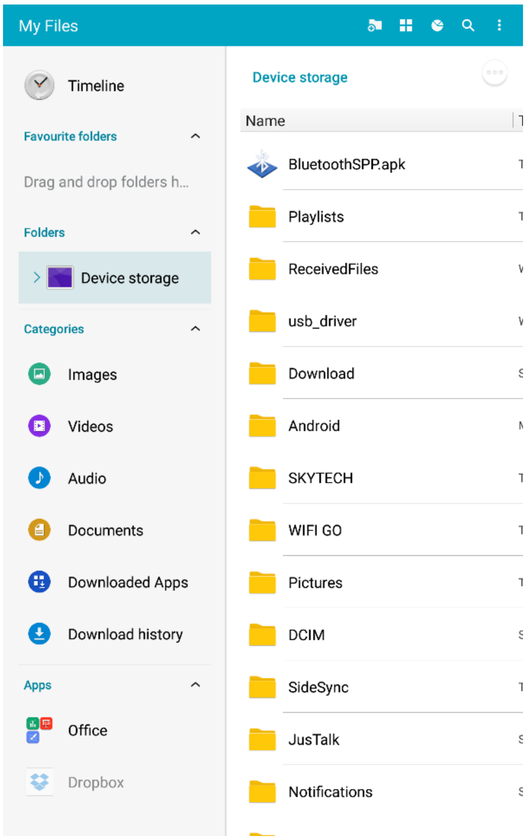
Finish!

Table 1 Connection table

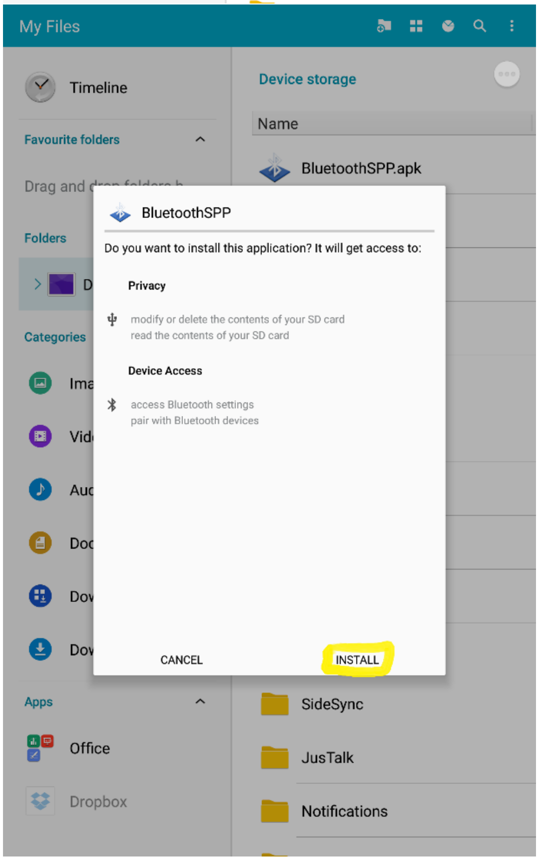
UNO board Sensor Shield	L289N	Battery Box	Motor left	Motor Right	Bluetooth
	GND	**GND**			
	VMS	**VMS**			
	+(Left)		+(red)		
	-(Left)		-(black)		
	+(Right)			+(red)	
	-(Right)			-(black)	
V	ENA				
5	IN1				
6	IN2				
10	IN3				
11	IN4				
V	ENB				
G	**GND**				
V	5V+				
RX					TX
TX					RX

Chapter 5. Bluetooth Mobile Control

In this chapter, get your Android Device to control 4-wheel drive.



Copy the Bluetooth control application: “BluetoothSPP.apk” to your android device, in this instance, we are using Samsung Pad.



Do you want to install this application? It will get access to:

Privacy

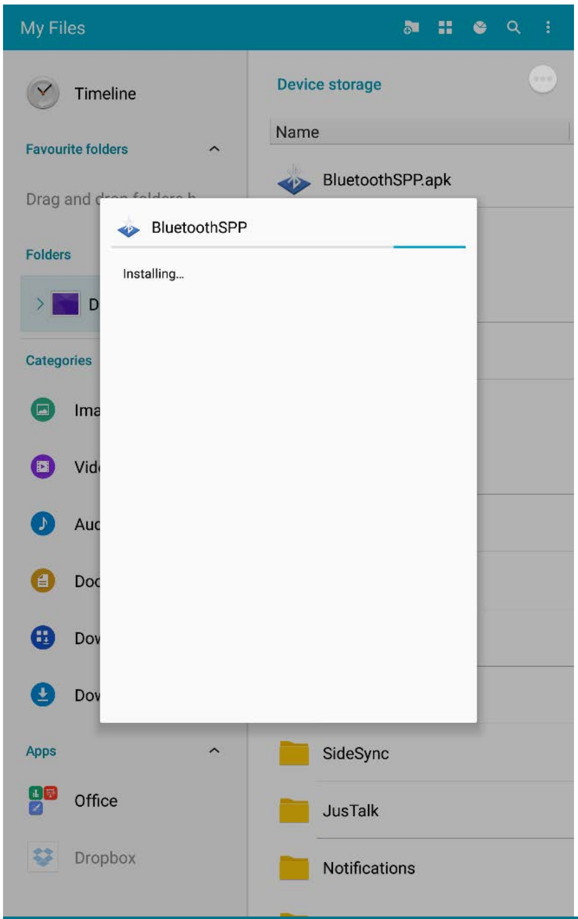
modify or delete the contents of your SD card
read the contents of your SD card

Device Access

access Bluetooth settings
pair with Bluetooth devices

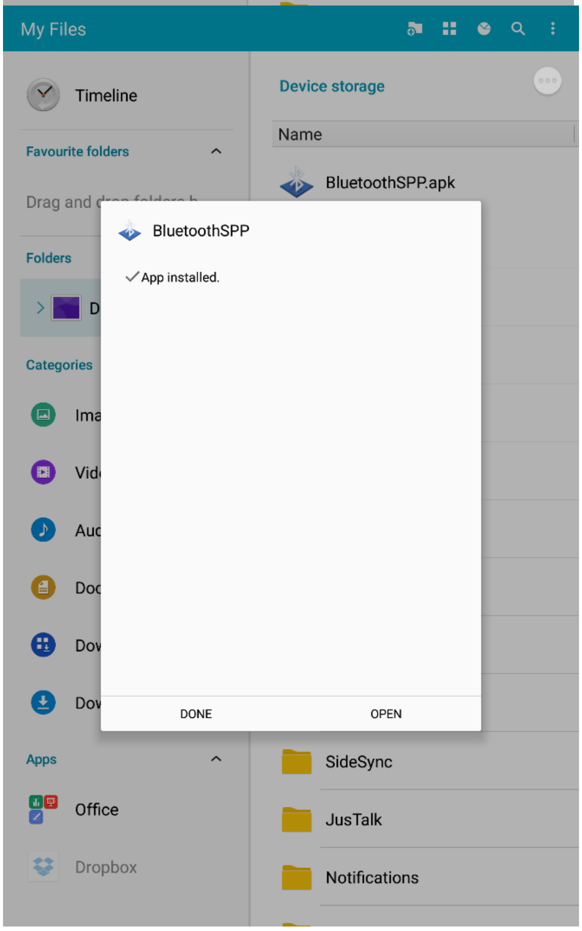
Install the app from the device file manager.

Bluetooth Mobile Control



BluetoothSPP

Installing...

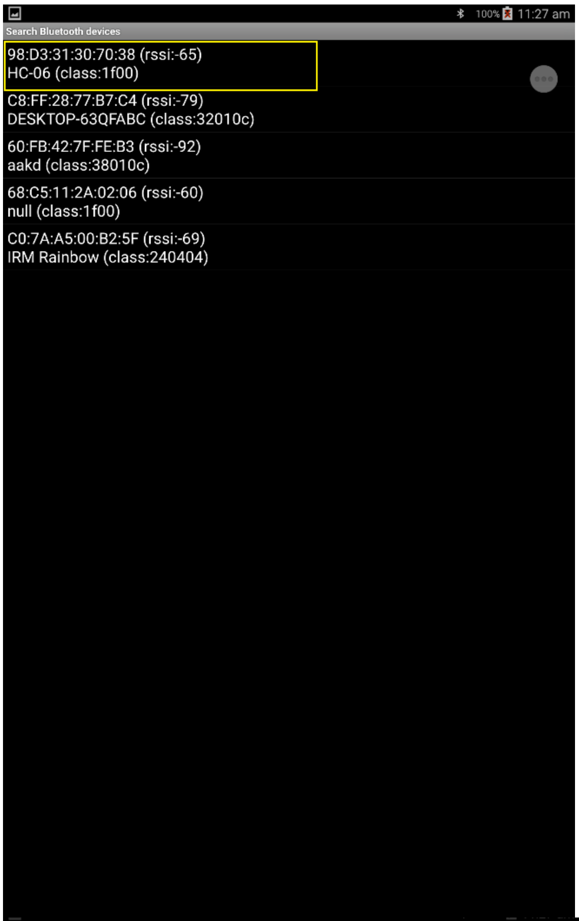


BluetoothSPP

✓ App installed.

Application installed!

Bluetooth Mobile Control



98:D3:31:30:70:38 (rssi:-65)
HC-06 (class:1f00)

C8:FF:28:77:B7:C4 (rssi:-79)
DESKTOP-63QFABC (class:32010c)

60:FB:42:7F:FE:B3 (rssi:-92)
aakd (class:38010c)

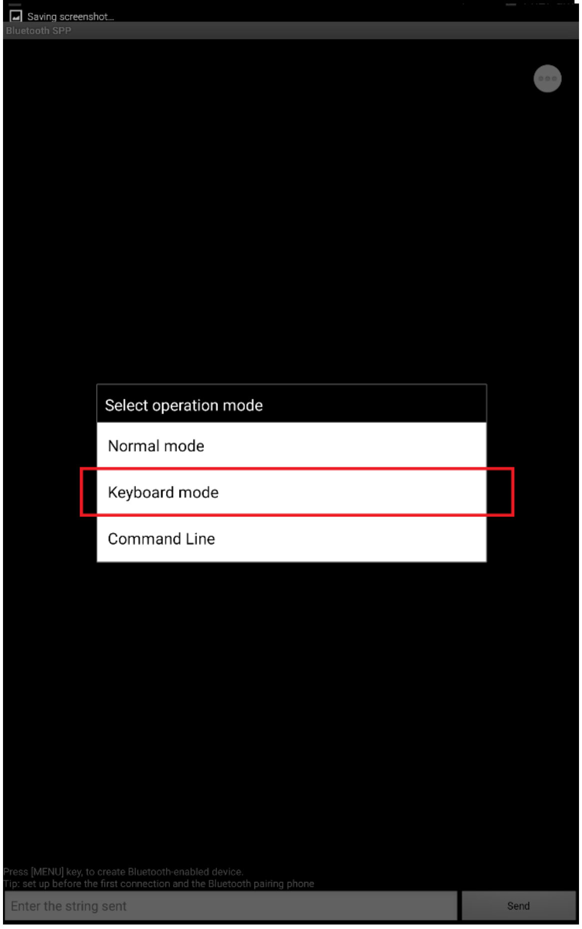
68:C5:11:2A:02:06 (rssi:-60)
null (class:1f00)

C0:7A:A5:00:B2:5F (rssi:-69)
IRM Rainbow (class:240404)

Open the app and it will initialize with searching for Bluetooth devices nearby.

The name of Bluetooth device of your Robot 4-wheel drive may not be the “HC06” shown on the left. This name is the default name for HC-06. It may vary as you have changed in the previous firmware AT command settings, see Chapter 4.2.6 for changed name and Pin.

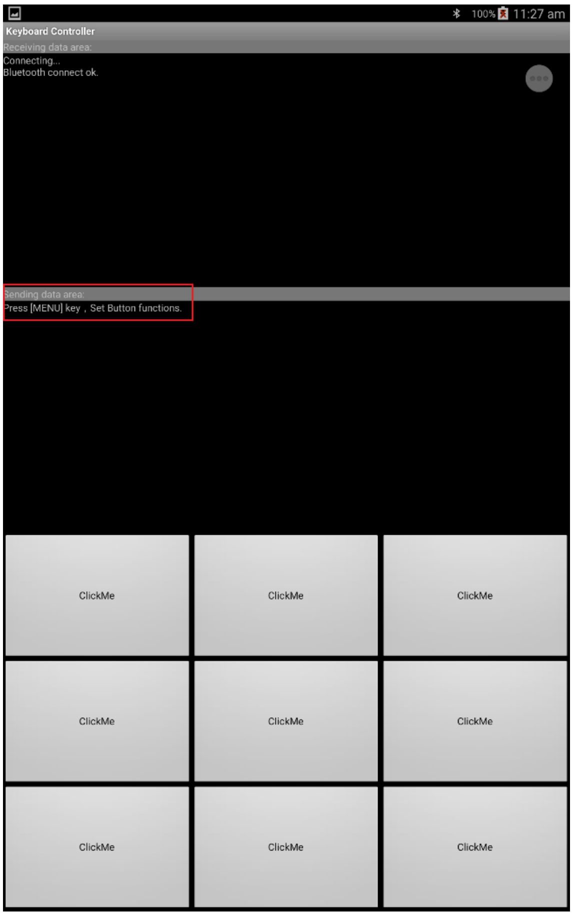
Please note enable the Bluetooth function on the Android device and turn on the Robot 4-wheel drive to ensure HC-06 is powered on.



Press [MENU] key, to create Bluetooth-enabled device.
Tip: set up before the first connection and the Bluetooth pairing phone

Click the HC-06 device which is the one on the Robot 4-wheel drive and then choose the Keyboard Mode as we are controlling via the Keyboard Touch screen.

Bluetooth Mobile Control



100% 11:27 am

Keyboard Controller

Receiving data area:

Connecting...

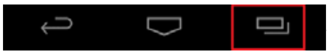
Bluetooth connect ok.

Sending data area:

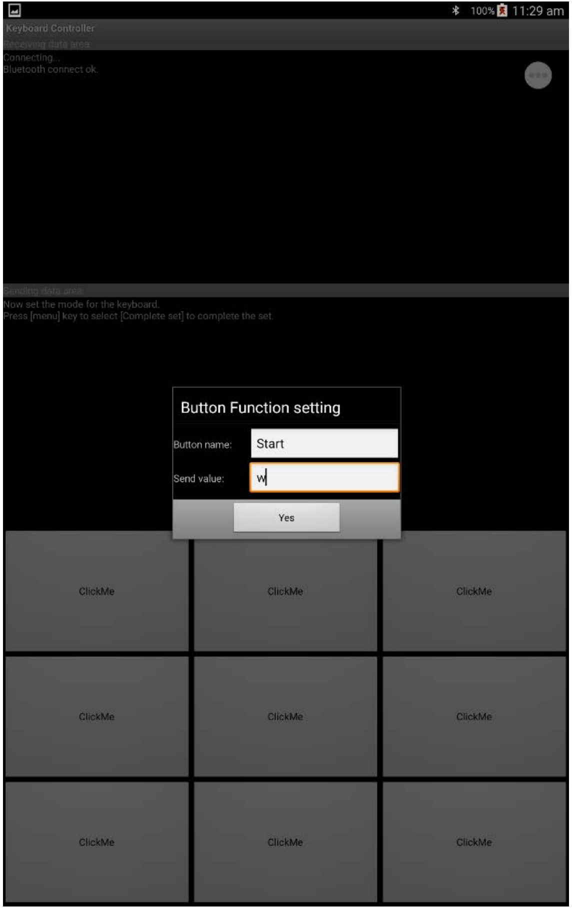
Press [MENU] key , Set Button functions.

On the top left dialog, the app shows successfully connecting with your HC-06 on the Robot 3-wheel Drive. Now the red LED indicator on the Bluetooth Module should stop blinking and is on continuously, which means they paired successfully.

Define the Keyboard button by pressing the MENU button on your Android device (if there is no MENU button on your Android, please hold this button for seconds)



Then a dialog window will pop up and choose the “Set Button function”.



100% 11:29 am

Keyboard Controller

Receiving data area:

Connecting...

Bluetooth connect ok.

Sending data area:

Now set the mode for the keyboard.

Press [menu] key to select [Complete set] to complete the set.

Button Function setting

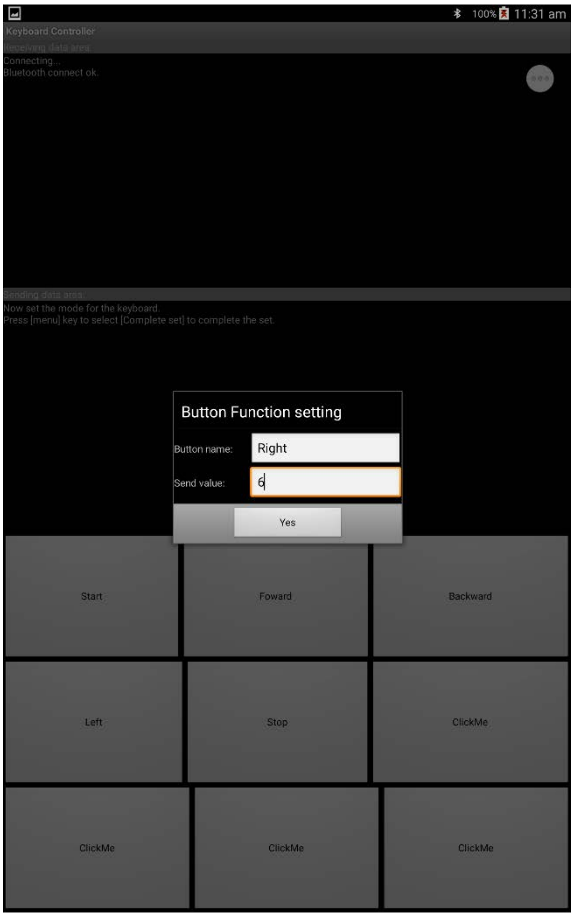
Button name: Start

Send value: w

Define the name and Serial Value.

Start: w

Bluetooth Mobile Control



Keyboard Controller

Receiving data area

Connecting...
Bluetooth connect ok.

Sending data area

Now set the mode for the keyboard.
Press [menu] key to select [Complete set] to complete the set.

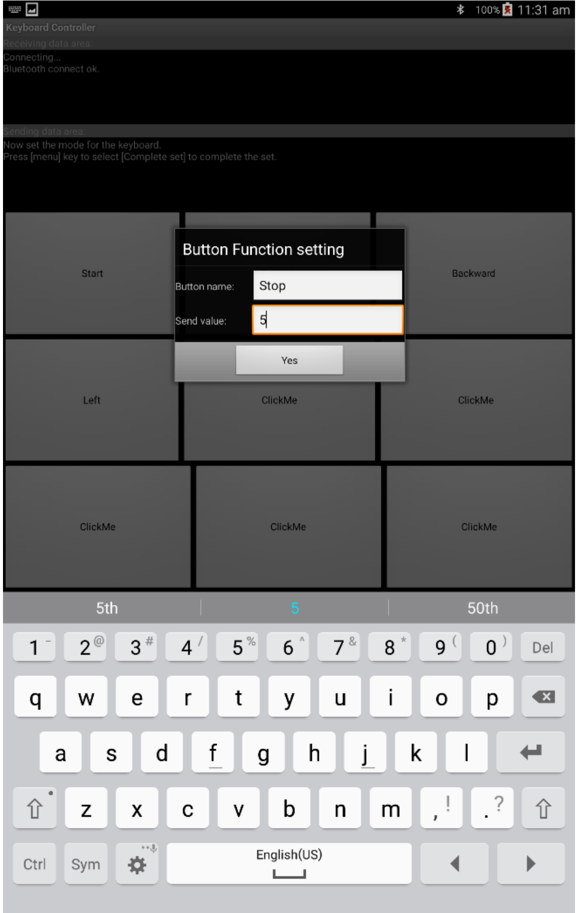
Button Function setting

Button name: Right

Send value: 6

Define the name and Serial Value.

Right: 6



Keyboard Controller

Receiving data area

Connecting...
Bluetooth connect ok.

Sending data area

Now set the mode for the keyboard.
Press [menu] key to select [Complete set] to complete the set.

Button Function setting

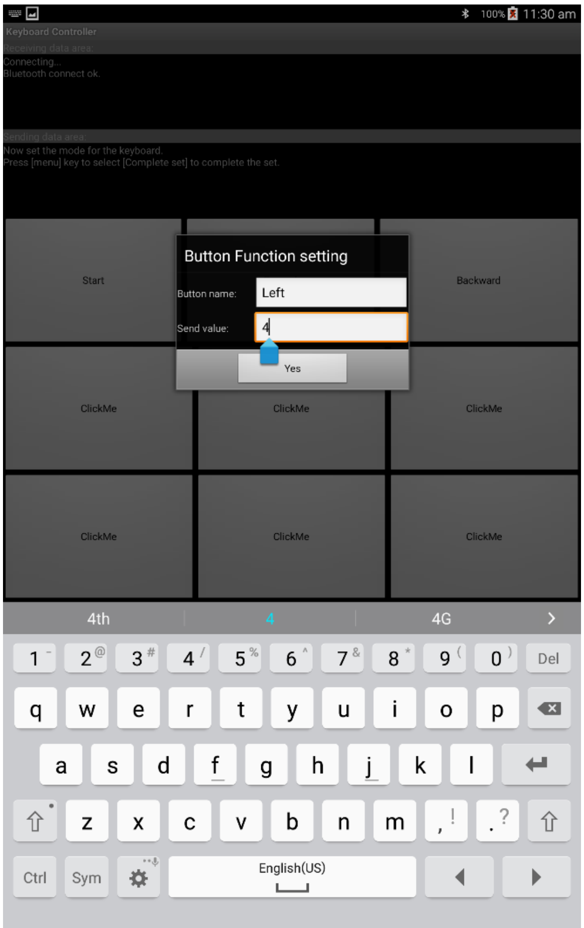
Button name: Stop

Send value: 5

Define the name and Serial Value.

Stop: 5

Bluetooth Mobile Control


Keyboard Controller

Receiving data area

Connecting...
Bluetooth connect ok.

Sending data area

Now set the mode for the keyboard.
Press [menu] key to select [Complete set] to complete the set.

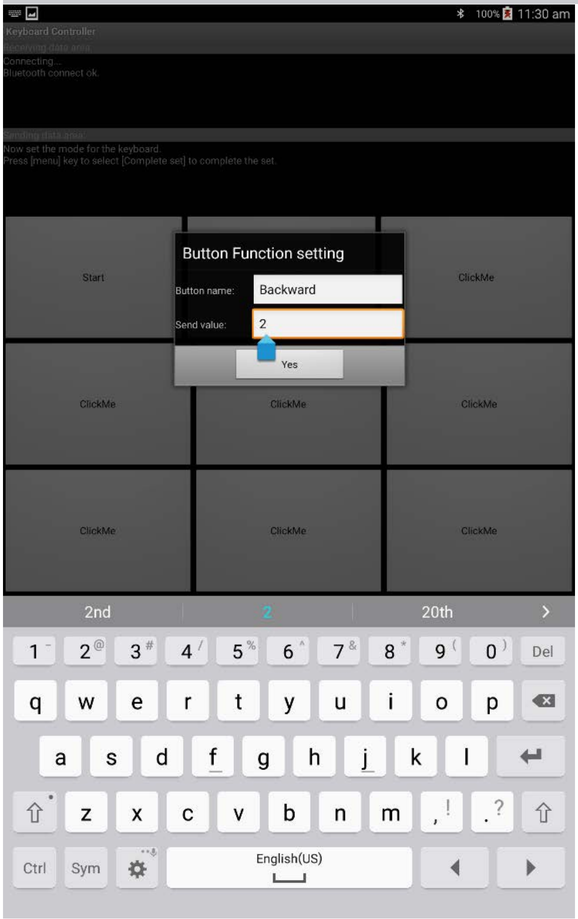
Button Function setting

Button name: Left

Send value: 4

Define the name and Serial Value.

Left: 4


Keyboard Controller

Receiving data area

Connecting...
Bluetooth connect ok.

Sending data area

Now set the mode for the keyboard.
Press [menu] key to select [Complete set] to complete the set.

Button Function setting

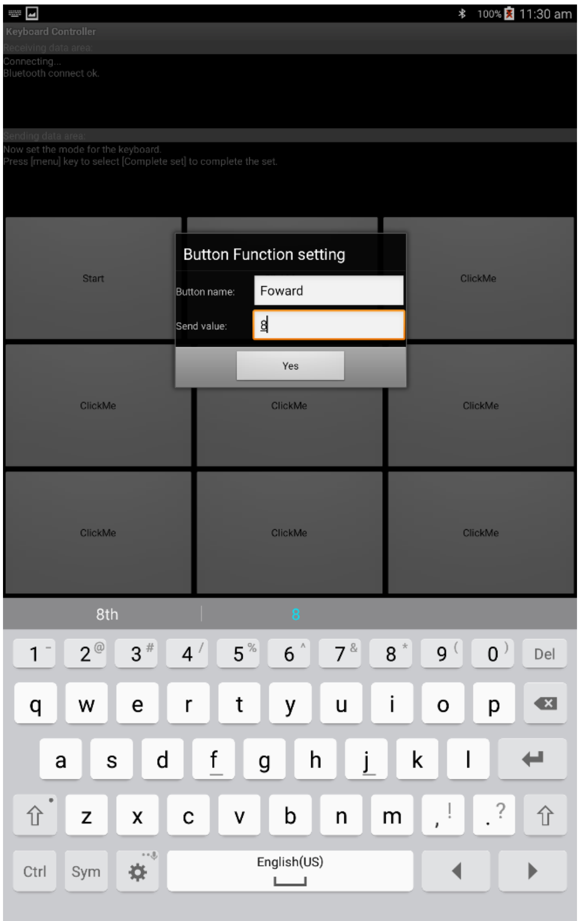
Button name: Backward

Send value: 2

Define the name and Serial Value.

Backward: 2

Bluetooth Mobile Control



Keyboard Controller

Receiving data area:

Connecting...
Bluetooth connect ok.

Sending data area:

Now set the mode for the keyboard.
Press [menu] key to select [Complete set] to complete the set.

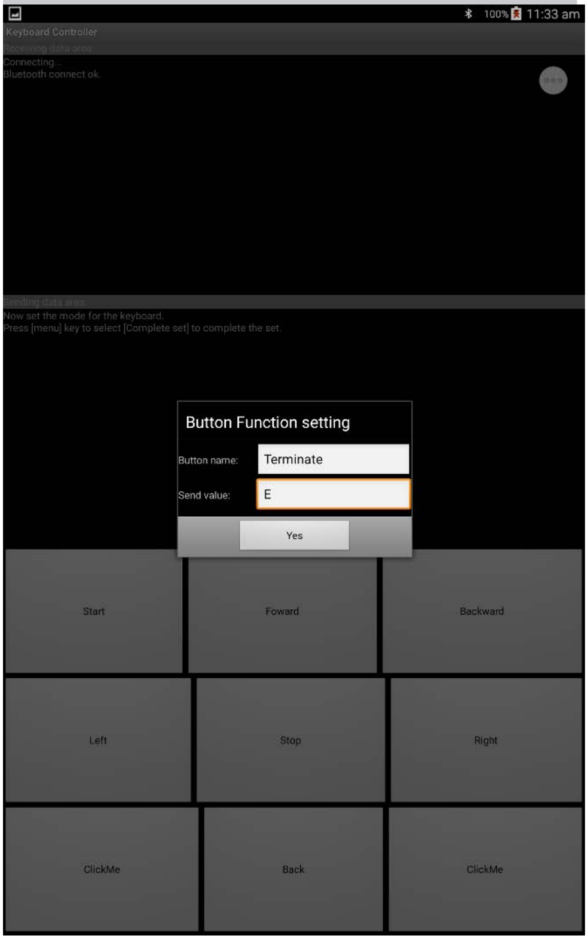
Button Function setting

Button name: Foward

Send value: 8

Define the name and Serial Value.

Forward: 8



Keyboard Controller

Receiving data area:

Connecting...
Bluetooth connect ok.

Sending data area:

Now set the mode for the keyboard.
Press [menu] key to select [Complete set] to complete the set.

Button Function setting

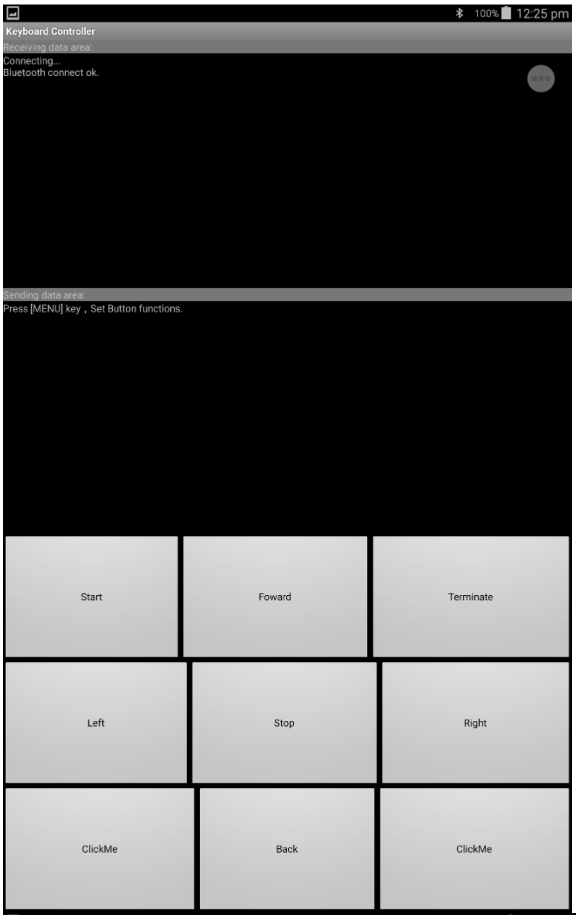
Button name: Terminate

Send value: E

Define the name and Serial Value.

Terminate: E

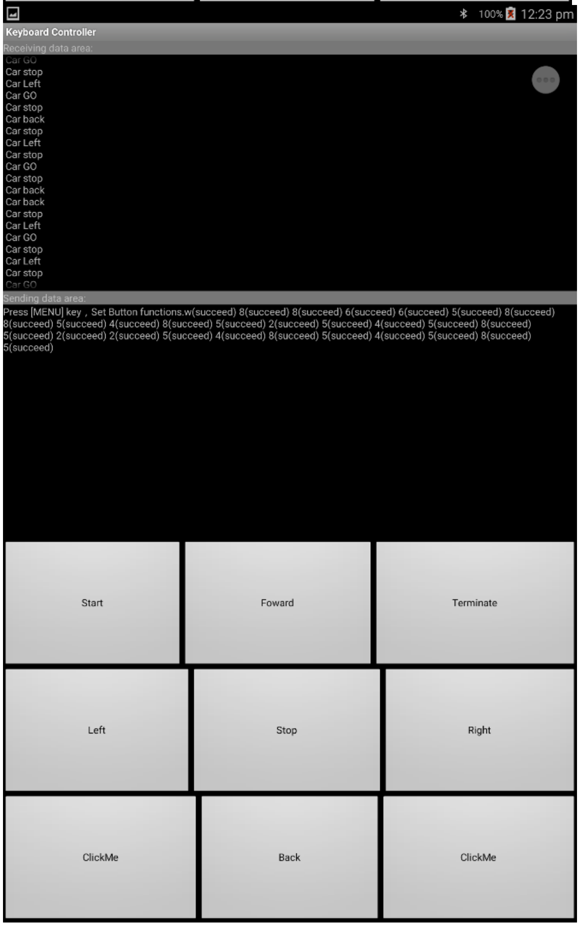
Bluetooth Mobile Control



```
Connecting...
Bluetooth connect ok.
```

```
Press [MENU] key , Set Button functions.
```

Keyboard definition is done!



```
Car GO
Car stop
Car Left
Car GO
Car stop
Car back
Car stop
Car Left
Car stop
Car GO
Car stop
Car back
Car back
Car stop
Car Left
Car GO
Car stop
Car Left
Car stop
Car GO
```

```
Press [MENU] key , Set Button functions.w(succeed) 8(succeed) 8(succeed) 6(succeed) 6(succeed) 5(succeed) 8(succeed)
8(succeed) 5(succeed) 4(succeed) 8(succeed) 5(succeed) 2(succeed) 5(succeed) 4(succeed) 5(succeed) 8(succeed)
5(succeed) 2(succeed) 2(succeed) 5(succeed) 4(succeed) 8(succeed) 5(succeed) 4(succeed) 5(succeed) 8(succeed)
5(succeed)
```

Now have fun with your Robot 4-Wheel drive!

Chapter 6. Have fun

Now it's time to have fun! Turn the power on, and see how your DIY Arduino Robot car goes! After final assembly and activation, the Robot car may require adjustments and debugging. The Robot will perform on how it is programmed. Figuring out what the code is doing is part of the learning process. Reopen your Arduino IDE and we assure you will learn a lot once you gain a deep understanding of the code.

Please unplug the Sensor board from the Arduino UNO board and disconnect 6 x AA power box supply to modify your code. Otherwise, it may cause irreparable harm to your Robot and PC as it may drive a large current through your USB port.

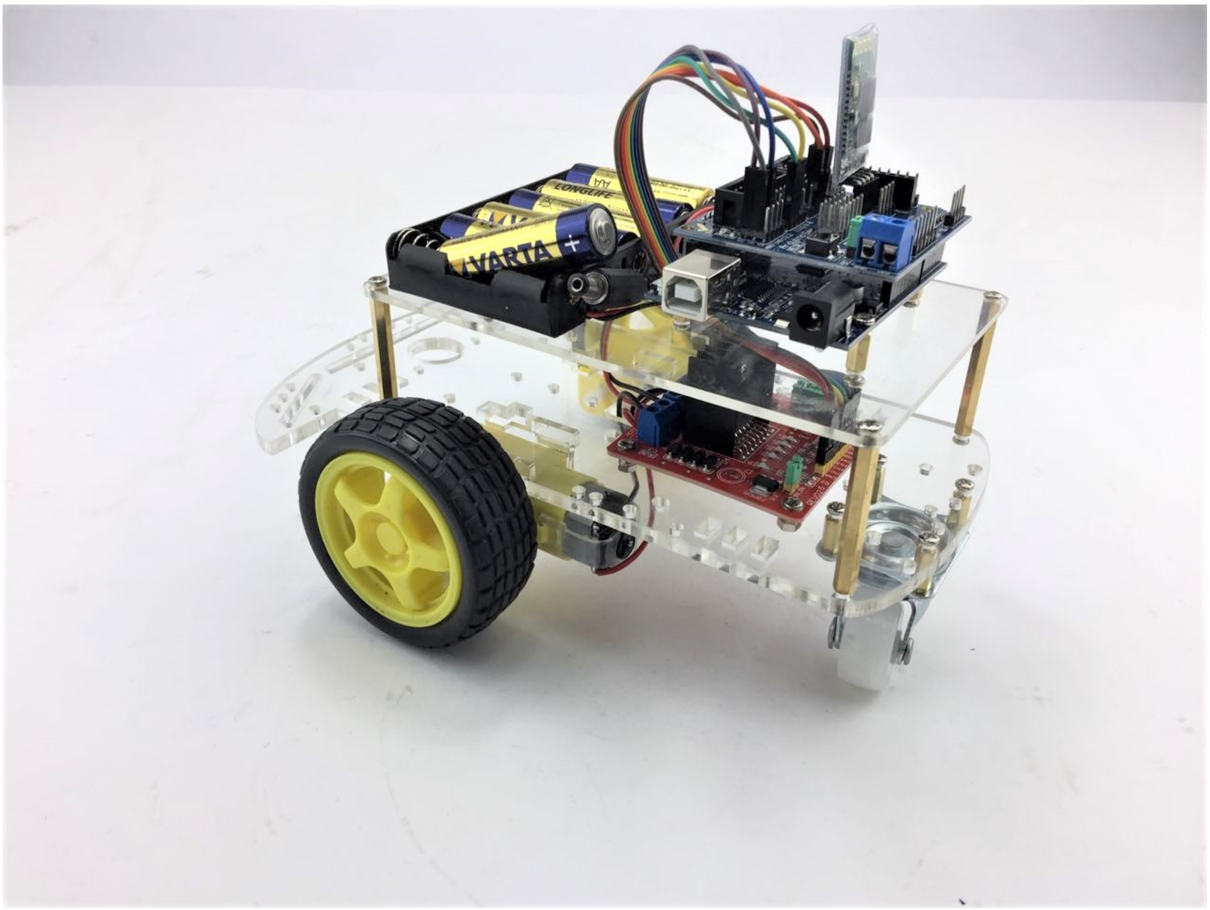


Figure 3 Overall flow chart

This kit is just a starting point and can be expanded to incorporate other sensors and modules. You are limited by your imagination.

Check our website for more at [Here. (https://www.auselectronicsdirect.com.au/arduino/arduino-starter-kit/)](https://www.auselectronicsdirect.com.au/arduino/arduino-starter-kit/)