Communicating using Bluetooth HC-06

The HC-06 serial port bluetooth module provides a wireless communication link between your arduino and any bluetooth capable device. HC-06 is in practice a bluetooth to serial adapter. It is an ideal replacement to your wired serial connection.

Required Hardware

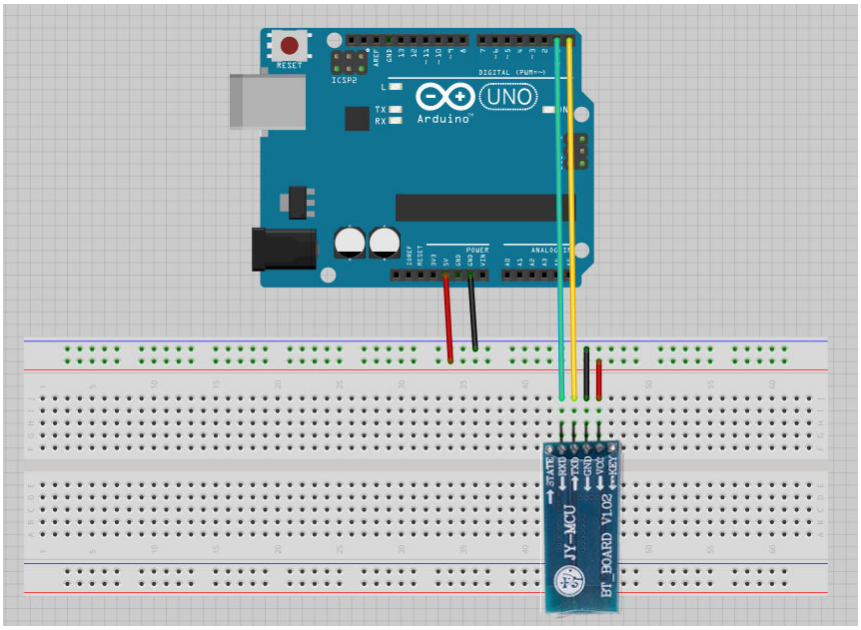
- Arduino Board
- Bluetooth HC-06 Module
- Breadboard
- Jumper Cables

Wiring

- HC-06 VCC –> Arduino +5V
- HC-06 GND –> Arduino GND
- HC-06 TXD –> Arduino Pin 0 (RX)
- HC-06 RXD –> Arduino Pin 1 (TX)

Software

- BlueSoleil bluetooth manager
- PuTTY terminal emulator/console



Instructions and Code

1. Connect your arduino board to your PC and open Arduino software to upload the following code.The code should successfully be verified and uploaded.

```
/* every one second send a message with the current count */

int counter = 0;

void setup() {
    Serial.begin(9600);
}

void loop() {
    Serial.print("Arduino + GRobotronics = ");
    Serial.print(++counter);
    Serial.println(" times awesome");
    delay(1000);
}
```

hc-06_counter.ino hosted with ❤ by **GitHub** **view raw**

1. Setup the breadboard circuit with the HC-06 and arduino as shown in the above image. Power the arduino board. The HC-06 bluetooth module should start flashing a red light.
2. Install and run the BlueSoleil bluetooth manager. On the tray area of your desktop (bottom right – next to the clock) there should be a bluetooth icon, indicating the state of the bluetooth dongle that is connected to your PC. Right-click the icon and select “Display Classic View”. On the window that opened, right-click the yellowish circle in the center and select “Search Devices”. Once searching is complete, HC-06 should be shown as a newly found device. Right-click on the “HC-06″ icon and select “Search

Feedback

Services". One service should be found. Right-click on the "HC-06" icon again and a new option should be listed, writing "Connect Bluetooth Serial Port (COM13)". Go ahead and select it. Once the link is complete the red flashing light on the HC-06 module should stop blinking and stay red. You should note down the port that the HC-06 module connected to, as we're going to need to connect to it to read back the data coming from the arduino board.**NOTE:** COM13 is the serial port where the HC-06 module will send data. It is not necessary for the port to be COM13, it could happen to be any other COM port.

3. Now install PuTTY and run it. We will use PuTTY as a serial console; a replacement for Windows® HyperTerminal, which is not available in latest versions of Windows.On the PuTTY window select "Serial" as a 'Connection Type', set 'Serial line' to the port where HC-06 is sending data ("COM13" for our example) and set 'Speed' to "9600". Click open and a black/white terminal/console window should open showing you the data that is received.

```
...
Arduino + GRobotronics = 2102 times awesome
Arduino + GRobotronics = 2103 times awesome
Arduino + GRobotronics = 2104 times awesome
Arduino + GRobotronics = 2105 times awesome
Arduino + GRobotronics = 2106 times awesome
...
```

‹ Sending Data to Database using Arduino Ethernet Interfacing with a DS1307 I2C RTC ›

Tagged with: arduino, bluetooth, communication, hc-06, wireless

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7 comments on "Communicating using Bluetooth HC-06"

Daniel says:
19/01/2014 at 3:58 am

Thanks for the great tutorial. But I am a little confused as to the voltage of the tx and rx lines. Does the hc-06 on the daughter board have a logic level converter or voltage divider built on to the daughter board that it is attached to? Or do I need to add one. I see on the wiring breadboard image above that it doesn't have on added

on the breadboard. So I thought I would ask. Thanks again.

Reply

GRobotronics Learning Dep says:
20/01/2014 at 1:52 pm

Hi Daniel,
The level conversion is done onboard, you don't need to add anything else.

Reply

Daniel says:
23/01/2014 at 8:53 am

That's good news and nice to have confirmed. Less wiring and components to add. Thanks for the reply to my comment and once again to the great tutorial.

Reply

Paul says:
28/02/2014 at 11:26 pm

In case you need a code for pairing the bluetooth module with your computer, the default pairing code is 1234.

Reply

George Tsafos says:
30/06/2014 at 1:27 am

With all respect and if got your statement right….what you say is inaccurate.
Once connected with my phone I was able to send simple characters.
The fact that Rx, Tx lines between HC-06+MCU are cross-connected “gives away” a bidirectional communication channel. Here’s how I send data over my phone. If you have any problems just “play” with the baudrate.

I hope I helped

```
//————————————————————
void setup()
{
Serial.begin(9600);
Serial.begin(9600);
}

void loop()
{
if(Serial.available())
{
byte a=Serial.read();
Serial.write(a);
}
}
```

Reply

Richard says:
29/07/2014 at 10:39 pm

What do you mean it can only send serial information? It has Rx pin, right? It is used for Transmission as well.. am I missing something?

Reply

Richard says:
29/07/2014 at 10:40 pm

edit: I mean it can receive serial information as well.

Reply

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