AN-0009 use PK7 to implement communication between PC and UNO.

1 Introduction

PK7 is a very high performance cost ratio kit for Arduino UNO, user can use this kit easy to implement wireless communication between PC and UNO.

2 Hardware request

In this application , you need below hardware:

- 1 x PC
- 1 x PK7

The hardware connection as below.

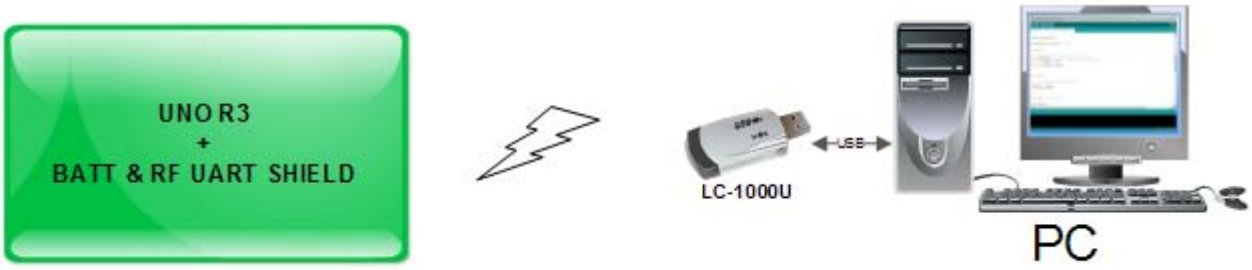
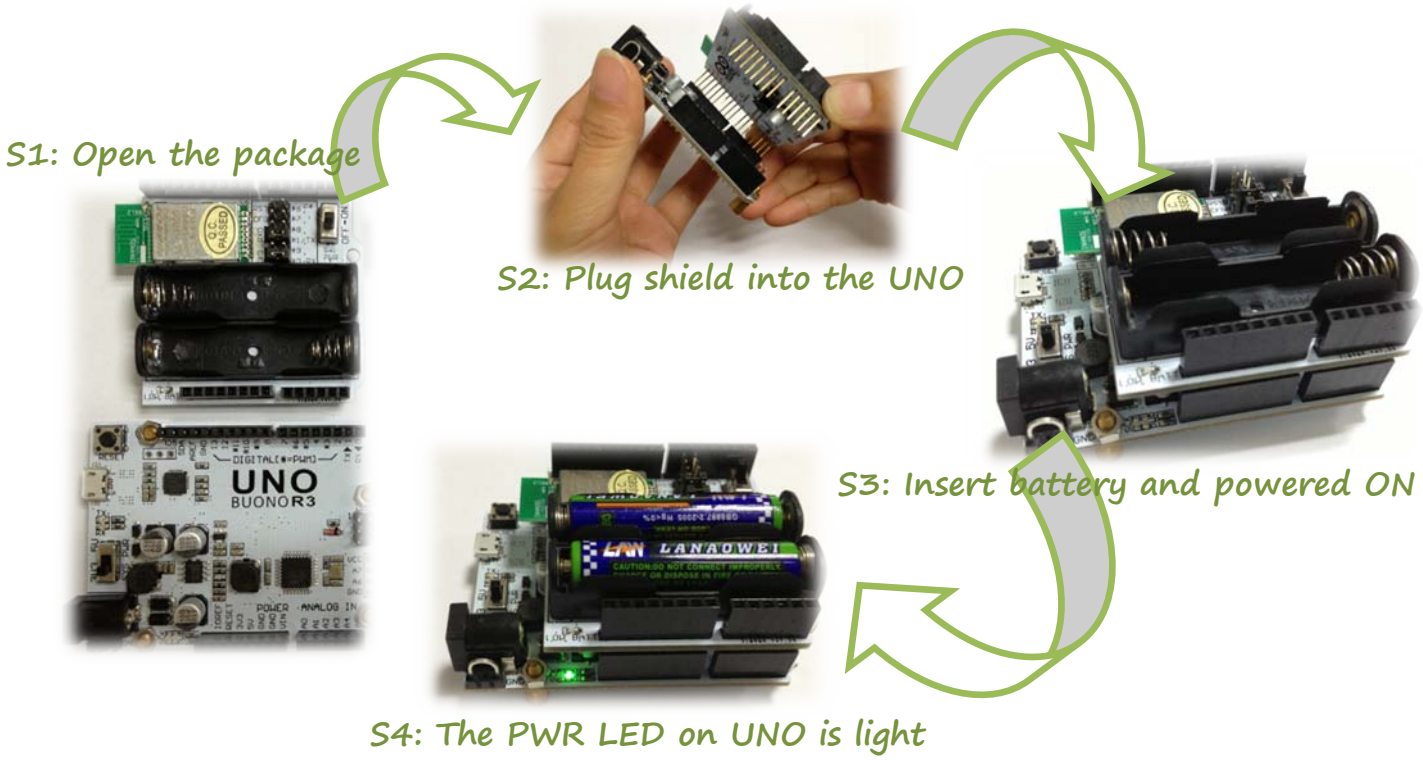


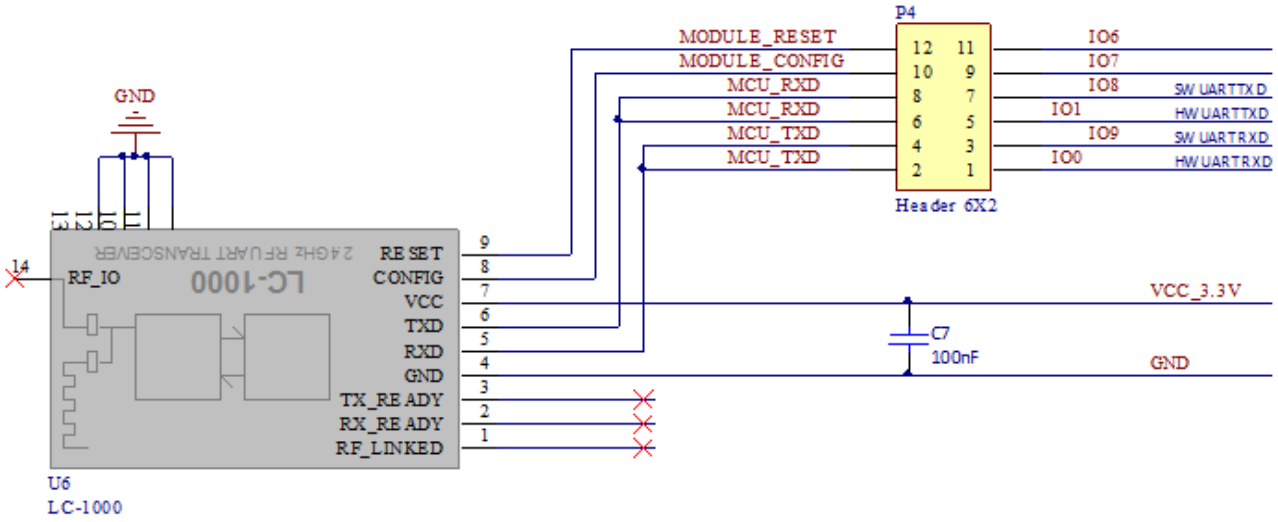
Figure 1: Hardware connection

After you got the item , the UNO main board and Shield board was packaged separately, you need to plug the shield into the UNO board.



Since most Arduino UNO have USB to Serial bridge onboard, the data line will be appropriation by the USB chip, so we need set to softserial. The shield provide a jumper for hardware uart and soft uart configuration, the component number is P4 and location is right side of the RF module.

The below schematic show the configuration part :



For this application , the P4 setting as below:

No.	Pin Left	Pin Right	Function Left	Function Right	Connection
1	12	11	Module RESET	IO 6	OPEN
2	10	9	Module CONFIG	IO 7	OPEN
3	8	7	MCU_RXD	IO 8	**CONNECTED**
4	6	5	MCU_RXD	IO 1	OPEN
5	4	3	MCU_TXD	IO 9	**CONNECTED**
6	2	1	MCU_TXD	IO 0	OPEN

The default baud rate is 9600,n,8,1 , if you set module to another baudrate setting and forgot it , you can use “Module RESET” to reset the baudrate setting to 9600bps.

MCU_CONFIG used for advanced usage, we will release another sample for complex application.

IO 8 and IO 9 should be connected MCU_RXD and MCU_TXD, in code the setting is:

```
28
29 #include <SoftwareSerial.h>
30
31 SoftwareSerial mySerial(8,9); // RX, TX
```

3 Software request

In order to using this module , you need to prepare below software:

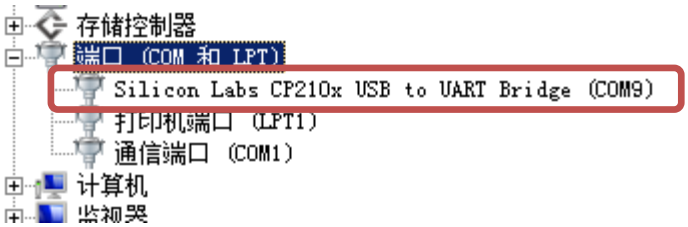
--- Arduino 1.5.2

--- sscom32E.exe V3.2 Serial tool for Windows

--- LC-1000U Driver: http://www.inhaos.com/downcount.php?download_id=90

All the software can be download at www.inhaos.com

After install LC-1000U driver , system will be assign a COMx port number to LC-1000U , remember this port number and it will be used for testing.



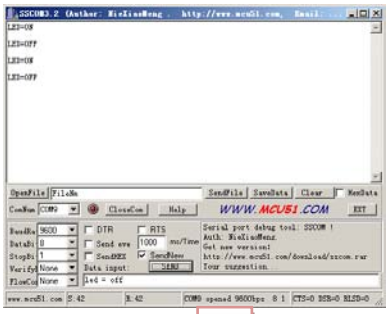
4 Arduino Code

The Arduino code was tested with Arduino 1.5.2 , the function as below:
PC sent command “LED = ON” to UNO , the LED will be light, and return “LED=ON” to PC.
PC sent command “LED = OFF” to UNO , the LED will be OFF. and return “LED=OFF” to PC.

The command are not case-sensitive. The ”=” symbol can be add space to more clear for reading.

5 Test

Connect UNO to PC via USB cable , and uploading sketch to UNO.



Important note:

Do not click the “DTR” 

checkbox , check DTR will let LC-1000U entry config mode , if you click this box with carelessness, please uncheck the “DTR” box , then close the software , plug out LC-1000U and re-plug in, it will reset to normal mode.
Plug difference USB port maybe assigned different COM port number.

Figure 3: LED = ON

Figure 2: LED = OFF