

AN-16001

AN-16001-LC-2000(PA)-P2P-Remote-Sketch-Upload-Demo

1. Summary

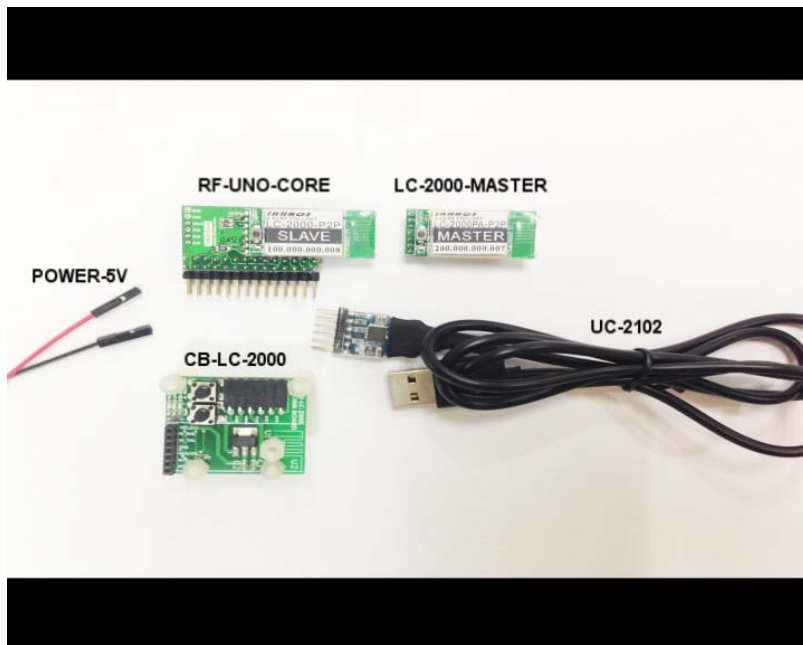
This document gives an example of how to use LC-2000(PA)-P2P to finish Wireless Upload. The LC-2000-P2P serial module is working under per to per mode, a Pairs of LC-2000-P2P has contained two units, one is MASTER and another one is SLAVE, it can remote upload sketch for Arduino UNO, with wireless transparent transmission mode.

For more detail about LC-2000(PA)-P2P, please see the datasheet: [LC-2000\(PA\)-P2P 2.4G RF UART Datasheet](#)

View this video , please click: <https://www.youtube.com/watch?v=FsXFoekISp4>

2. System structure

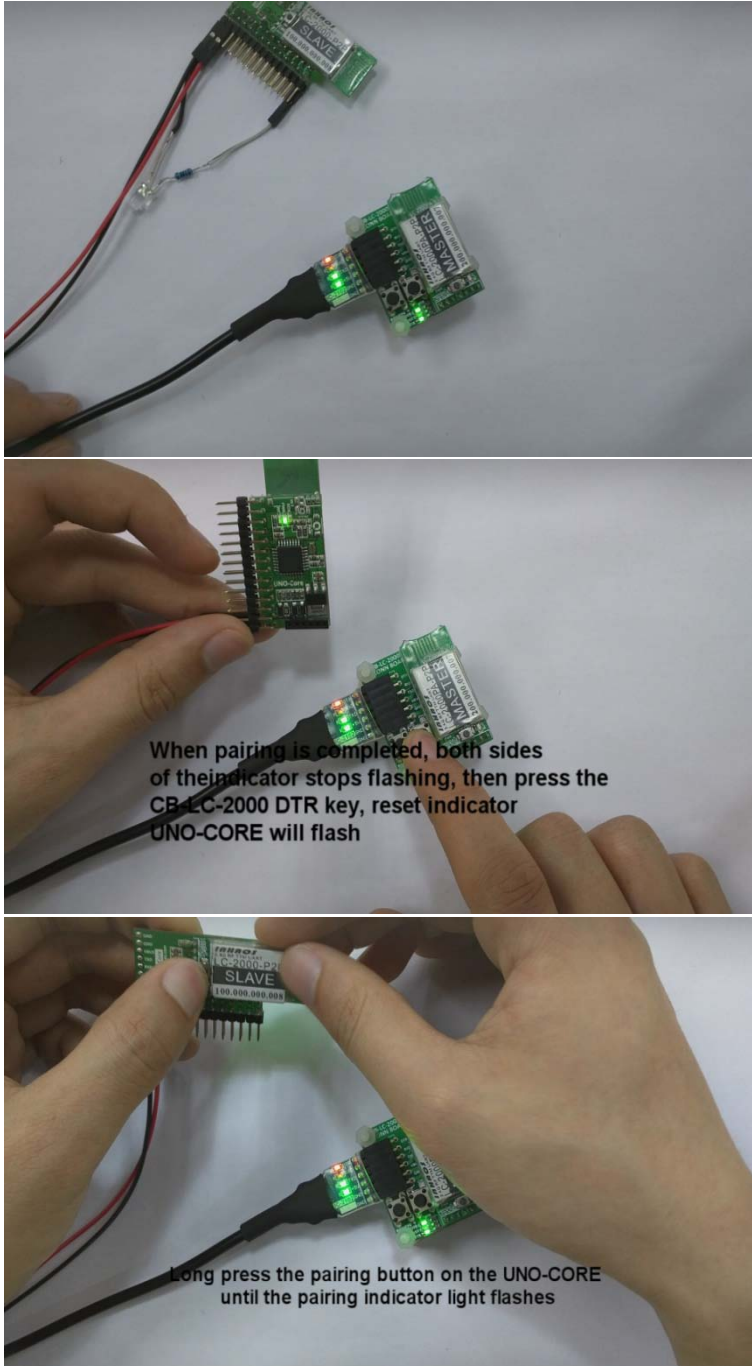
- There are the members:
- RF-UNO-CORE;
- LC-2000-MASTER;
- CB-LC-2000;
- UC-2102;



RF-UNO-CORE is a small volume of the UNO, but it integrates a 2.4GHz wireless module, more powerful than the UNO;
CB-LC-2000 is a adapter plate which is in order to use the MASTER module more easier
UC-2102 is a cable to connect the CB-LC-2000 and PC

3. Hardware connection

The LC-2000-MASTER connection with the CB-2102 together, and the UC-2102 and CB-2102 are connected together, Power connection, + 5V connect to VCC-IN, GND connect to GND.



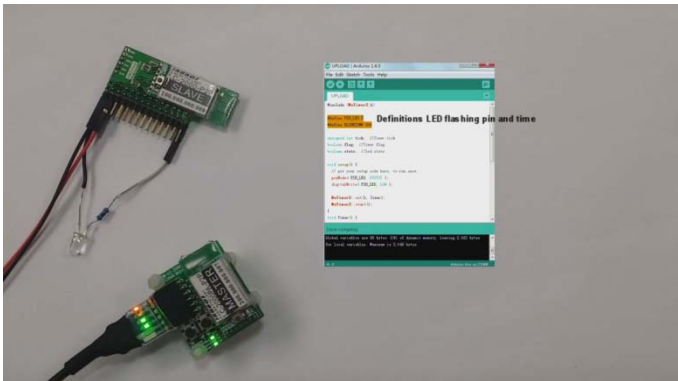
4. Experiment procedure

Now, the hardware connection is complete, and then, we can begin to upload demo. First, we analysis following code, I will share the code at the end of the document.

1. The timer library, we only have to load the library functions in order to use the timer.



2. Define the LED pin and timer's overflow value.



3. Define the variables we used in the code.



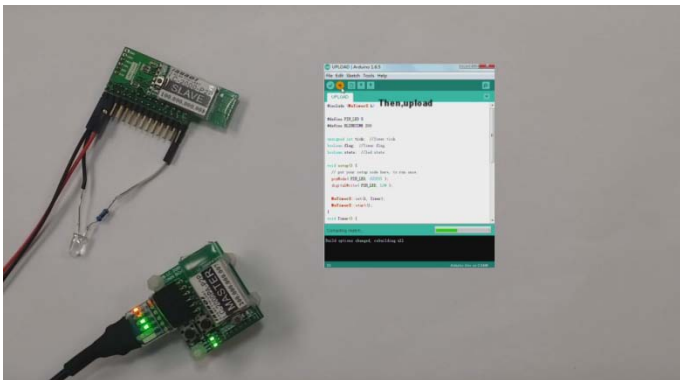
4. Timer function, when tick is added to BLINKTIME, we turn the LED state, and Clears tick value.



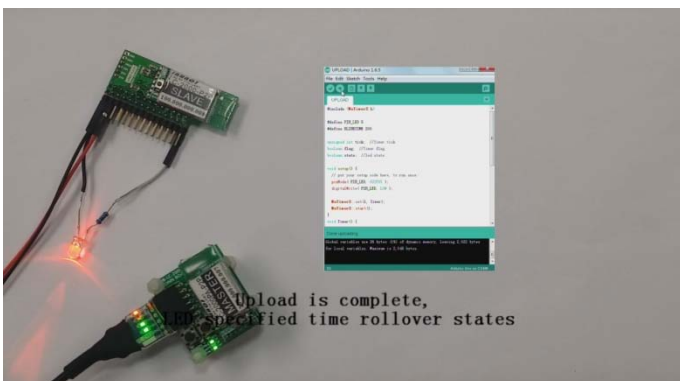
5. The loop function, it's very simple, when The timer count full, we change the pin state of the LED pin.



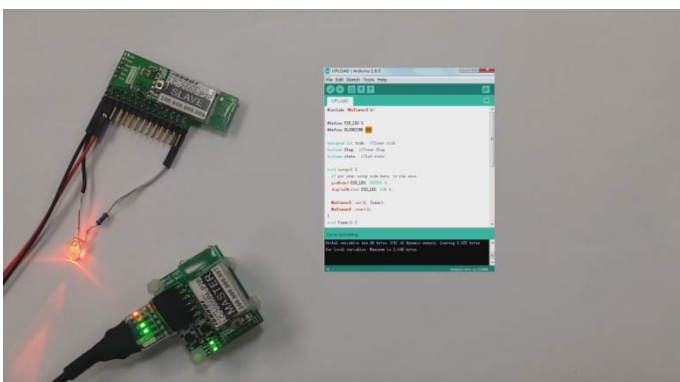
6. Then, we upload and see what will happen, maybe the process of compilation slowly, so please be patient.



7. Upload is completed, and we can see the LED starts flashing



8. We can change this value "BLINKTIME" to change the LED's flashing time, so change it and you will find how amazing it is.



Thanks for reading, hope you can light up your LED lights as soon as possible, by wireless means

5. Code

In the end, I will share my code with you, if you have some good demo, I also want to see your share.

```
1#include <MsTimer2.h>
2
3#define PIN_LED 5
4#define BLINKTIME 200
5
6unsigned int tick; //Timer tick
7boolean flag; //Timer flag
8boolean state; //led state
9
10void setup() {
11 // put your setup code here, to run once:
12 pinMode( PIN_LED, OUTPUT );
13 digitalWrite( PIN_LED, LOW );
14
15 MsTimer2::set(1, Timer);
16 MsTimer2::start();
17}
18void Timer() {
19 if ( ++tick >= BLINKTIME) {
20     tick = 0;
21     flag = true;
22 }
23}
24void loop() {
25 // put your main code here, to run repeatedly:
26 if (flag) {
27     flag = false;
28     state = !state;
29     if (state) {
30         digitalWrite( PIN_LED, HIGH );
31     }
32     else {
33         digitalWrite( PIN_LED, LOW );
34     }
35 }
36}
```

By the way, you can download the Timer library by web searching.