IRduino

Quickstart Guide

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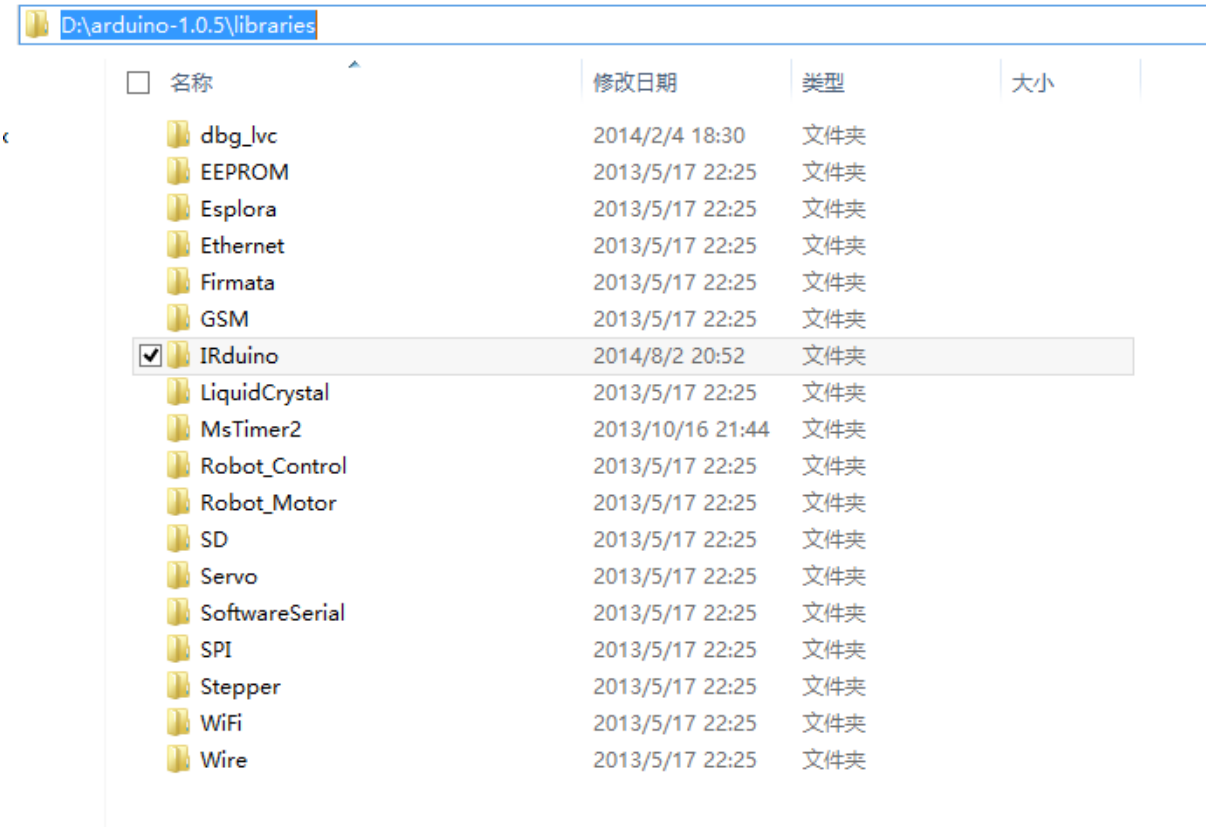
Document Revision History

Revision	Date	Author	Description
0.1	Aug 2, 2014	Llama	Creat file

Here we will take an example to show you how to use IRduino. I've got a TV remote by hand, and I want to control my PC via this remote. I notice there's UP, DOWN, LEFT, RIGHT as well as an OK button on the remote, it's very coincidentally that there're such arrow key on the key board, so this examples is to tell your PC press those key via IRduino and the TV remote, and the ok button will control the SPACE key.

1. Download the Code

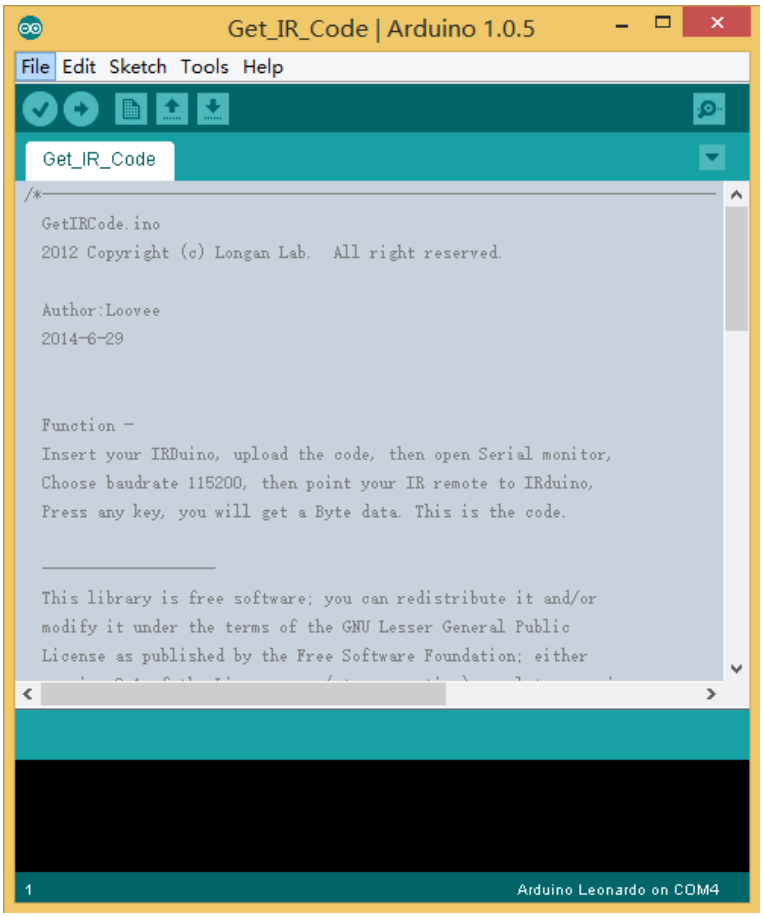
You can download the code here, it's an Arduino Library. After download the code, extract it to the libraries folder of your Adruino. If there's "-master" in the folder name, just remove it, otherwise it may cause some compile error.



2. Read Key Value of a Remote

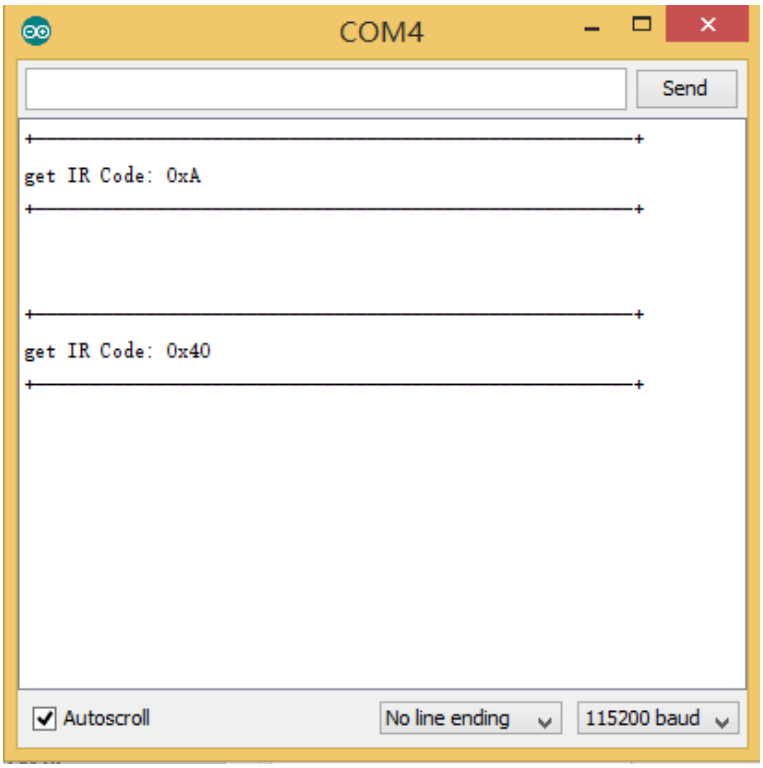
IRduino can support almost all the IR remote on the market, include RV remote, Air conditioning remote and even your DVD remote.

Open Get_IR_Code example on the examples folder of IRduino library.



Tool -> booards choose Arduino Leonardo, then choose the right COM. Then upload the code to your IRduino.

Open Serial Monitor, press a remote key, then you can get something on the monitor:



We can find that Serial Monitor had printed a Char type data, which is from 0x00 to 0xff. I had press two button, so there's 2 key value on the above image, which is 0x0A and 0x40. Then in this way we can the values of the four button:

UP	0xEE
DOWN	0xAE
LEFT	0xCE
RIGHT	0x8E
OK	0x5E

Remember this value, which is important in the next step.

3. Write The Code

Don’t worry about the code, it’s easy just like you use an Arduino.

Actually I had finish this example, now we learn about it. Open Task_Mode_Arrow example.

Now here we goto the code. We notice the remote key value is used here:

```
// IR CODE DEFINE
#define IR_CODE_UP          0xEE
#define IR_CODE_DOWN        0xAE
#define IR_CODE_LEFT        0xCE
#define IR_CODE_RIGHT       0x8E
#define IR_CODE_SPACE       0x5E
```

Then the setup:

```
    // add task item
    IRduino.addItem(IR_CODE_UP, task_up);
    IRduino.addItem(IR_CODE_DOWN, task_down);
    IRduino.addItem(IR_CODE_LEFT, task_left);
    IRduino.addItem(IR_CODE_RIGHT, task_right);
```

Here we add 5 tasks via the IRduino.addItem function. This function need two parameter, remote key value and a function pointer. Don’t know funciton pointer? Just forget it, actually it’s just the function name.

As we had add four task, so we need 4 function, as following:

```
// add task

void task_up()
{
    iRduino.keyPressRelease(KEY_UP_ARROW);
}

void task_down()
{
    iRduino.keyPressRelease(KEY_DOWN_ARROW);
}

void task_left()
{
    iRduino.keyPressRelease(KEY_LEFT_ARROW);
}
```

```
void task_right()
{
    iRduino.keyPressRelease(KEY_RIGHT_ARROW);
}

void task_space()
{
    iRduino.keyPressRelease(KEY_SPACE);
}
```

I guess you have had ideas about these four function. Yes, they just press and release some key on your PC.

Then let's have a summary, to add a task, we need 3 steps:

1.) Write down the remote key value
2.) Write a task function, which will have some certain use, like press some key on PC
3.) Use addItem funciton to add the task, then your press the key on remote, IRduino will run the task function once.

4. How to Write a Task Function

Firstly we take a look at a task function above

```
void task_right()
{
    IRduino.keyPressRelease(KEY_RIGHT_ARROW);
}
```

Just one thing: IRduino.keyPressRelease(KEY_RIGHT_ARROW). About this function:

```
// press a key, then release it
void IRduino::keyPressRelease(unsigned char keyNum)
```

The function keyPressPelease will press a certain key, then release it after 10ms. About the other key name, you can refer to Appendix A: Key Value.

There are some others function for used:

- Press a Key

```
void press(unsigned char keyNum);
```

- Release All Key

```
void releaseAll();
```

- Input a String

```
void printf(char *str);
```

If you had ever used Microsoft Windows, you will know Ctrl+Alt+Del. To help you to know write a task function, let's write it.

```
void task_logout()
{
    IRduino.press(KEY_LEFT_CTRL);              // press ctrl
    IRduino.press(KEY_LEFT_ALT);               // press alt
    delay(10);
    IRduino.press(KEY_DELETE);                 // press Del
    delay(10);
    IRduino.releaseAll();                      // release All
}
```

Appendix A: Key Value

```
#define KEY_LEFT_CTRL           0x80
#define KEY_LEFT_SHIFT          0x81
#define KEY_LEFT_ALT            0x82
#define KEY_LEFT_GUI            0x83
#define KEY_RIGHT_CTRL          0x84
#define KEY_RIGHT_SHIFT         0x85
#define KEY_RIGHT_ALT           0x86
#define KEY_RIGHT_GUI           0x87

#define KEY_UP_ARROW            0xDA
#define KEY_DOWN_ARROW          0xD9
#define KEY_LEFT_ARROW          0xD8
#define KEY_RIGHT_ARROW         0xD7
#define KEY_BACKSPACE           0xB2
#define KEY_TAB                 0xB3
#define KEY_RETURN              0xB0
#define KEY_ESC                 0xB1
#define KEY_INSERT              0xD1
#define KEY_DELETE              0xD4
#define KEY_PAGE_UP             0xD3
#define KEY_PAGE_DOWN           0xD6
#define KEY_HOME                0xD2
#define KEY_END                 0xD5
#define KEY_CAPS_LOCK           0xC1
#define KEY_F1                  0xC2
#define KEY_F2                  0xC3
#define KEY_F3                  0xC4
#define KEY_F4                  0xC5
#define KEY_F5                  0xC6
#define KEY_F6                  0xC7
#define KEY_F7                  0xC8
#define KEY_F8                  0xC9
#define KEY_F9                  0xCA
#define KEY_F10                 0xCB
#define KEY_F11                 0xCC
#define KEY_F12                 0xCD
```