

## PREFACE

This manual is based on the Arduino UNO suite system and a tutorial to operate each module, the aim is to make user can quickly the grasp Arduino and familiar with the principle of each module and how to use it. This document does not give a specific application sample, we hope the guest to learn and be familiar with each module in the tutorial, and flexibly apply to your creative products. Of course, Keywish also use arduino modules to design particularly creative products, these will target different products and provide corresponding suite, detailed tutorials.

## Introduction of Arduino UNO

### What is arduino ?

Arudino is originally created by Italian teacher Massimo Banzi for the convenience of the electronic major students presenting their ideas through hardware. About in the winter of 2005, he united Spain chip engineer David Cuartielles, discussed the idea, so they two decided to design their own circuit boards, and recruited Banzi student David Mellis to write programming language for circuit board. It was named after the name of the Italian king Arduin. He named the Arduino and start to create Arduino. Subsequently, Banzi, Cuartielles and Mellis put the design online. Due to everyone only knew the open-source software, there was no heard of source hardware, and then they thought of the well-known Linux open-source software, so they hope the Arduino to open source like Linux.

The emergence of the Arduino required original microcontroller programmer to possess relevant electronic or software background, become normal amateurs and soon learned how to use the Arduino. His design concept attracted many professional or non-professional people right after being introduced worldwide.

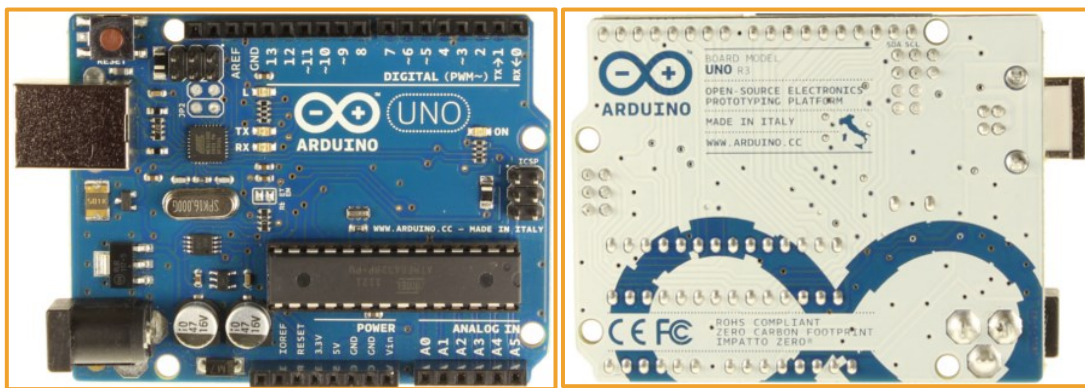
### What is arduino uno Kit ?

Arduino uno is arduino USB series reference standard template. UNO processor core is Atmel company produces Atmega328, at the same time, with 14 digital input/output port ( of which six can be used as a pwm output ), 6 analog input, a 16 MHz crystal oscillator, a USB port, and a power socket, a ICSP header and a reset button. UNO has been released to the third edition.

- ◆ The processor ATmega328
- ◆ Working voltage 5v
- ◆ Input voltage (recommended) 7-12v

- ◆ Input voltage (range) 6-20v
- ◆ Digital IO pin 14 (of which six as a PWM output)
- ◆ Analog input pin 6
- ◆ IO pin DC 40 mA
- ◆ 3.3V pin DC 50 mA
- ◆ Flash Memory 32 KB (ATmega328, in which 0.5 KB for bootloader)
- ◆ SRAM 2 KB (ATmega328)
- ◆ EEPROM 1 KB (ATmega328)
- ◆ Clock 16 MHz

Picture of real products are as follows:



## Development Environment Building

### Development Software

Download link: <https://www.arduino.cc/en/Main/Software>

Windows, Linux, Mac are all available for downloading.

### Download the Arduino Software



**ARDUINO 1.6.6**

The open-source Arduino Software (IDE) makes it easy to write code and upload it to the board. It runs on Windows, Mac OS X, and Linux. The environment is written in Java and based on Processing and other open-source software.

This software can be used with any Arduino board. Refer to the [Getting Started](#) page for Installation Instructions.

**Windows** Installer  
**Windows** ZIP file for non admin install

**Mac OS X** 10.7 Lion or newer

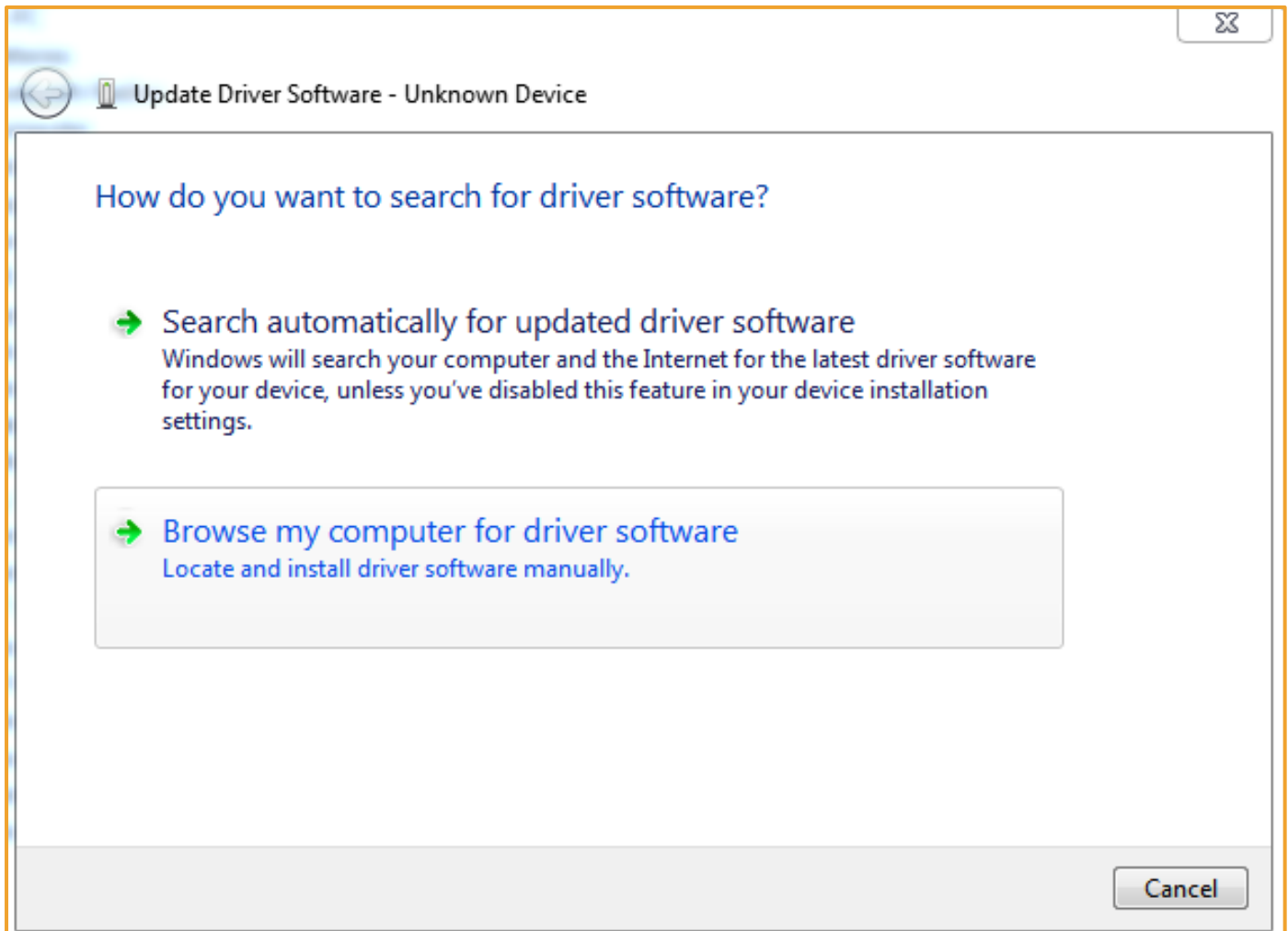
**Linux** 32 bits  
**Linux** 64 bits

[Release Notes](#)  
[Source Code](#)  
[Checksums](#)

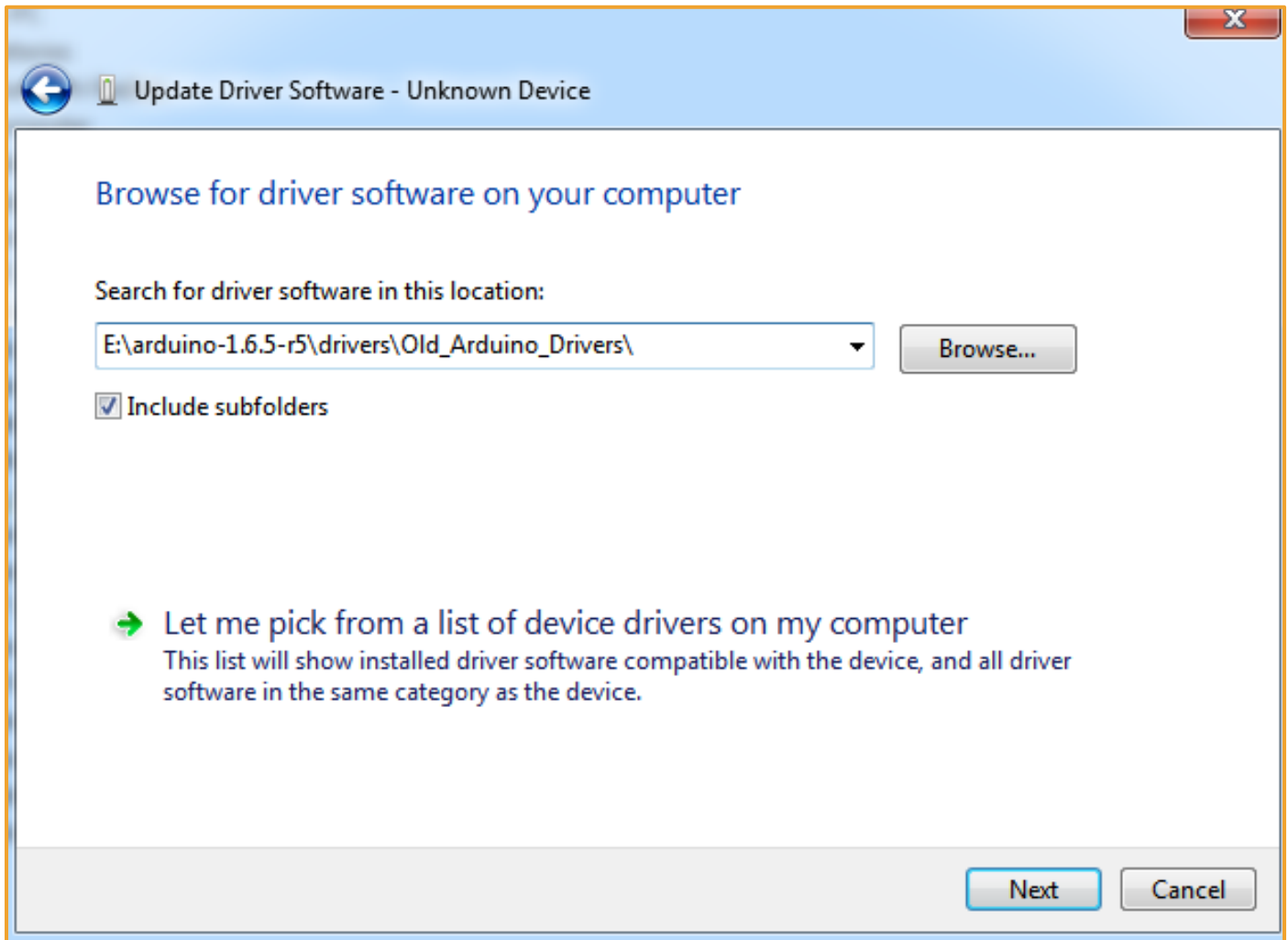
The interface of Arduino IDE is simple and the operation is rather convenient. If you want get more please click <https://www.arduino.cc/en/Guide/Environment>

## Install usb to serial port driver

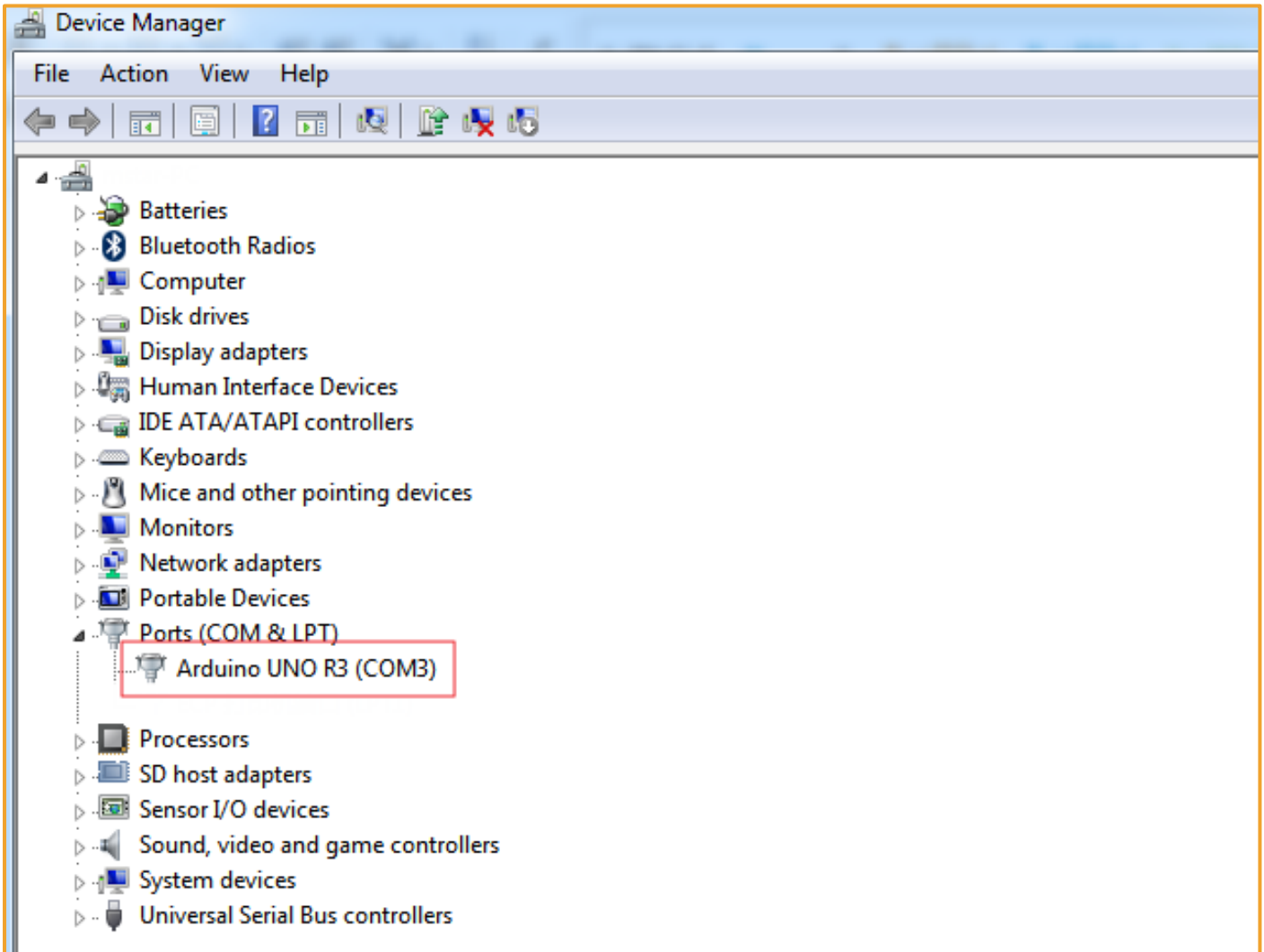
Inserting USB cable will prompt as follows, choosing the specified location to install.



Selecting download Arduino ide file “E:\arduino-1.6.5-r5\drivers\Old\_Arduino\_Drivers\”  
Checking the type of USB serial chip on the board, if it is Atmel, then choose the following path; if it is FTDI, you should choose the arduino\drivers\FTDI USB Drivers path.



Clicking on the next step, you will be prompted with a successful installation message. Now you can change to equipment management to see Arduino UNO R3



## Linux Installation Environment Building

Download the Arduino Software select Linux 64bit and save.

```
Shell:# tar -vxf arduino-1.6.7-linux64.tar.xz
```

```
Shell:# cd arduino-1.67
```

```
Shell:# ./arduino
```

## Mac Arduino Development Environment Building

Download the Arduino Software for Mac OS.

You can get all source codes from <https://github.com/keywish/arduino-uno-kit>