

AN-16003

AN-16003-Massduino-introduction

1. Summary

This document introduce massduino , I will also do a video uploaded to the Internet, welcome Click to watch.

For more detail about massduino, please click: <http://www.inhaos.com/products.php?cPath=136>

View the video, please click: <https://www.youtube.com/watch?v=DCaB-a8fWOI>

2. System structure

Massduino is a new product line, which combines the Arduino platform peripheral -rich, convenient and quick development, low-cost and easy to manufacture large-scale production advantages. Almost all of the Arduino code can be applied to MassDuino without modification (or very small modification), users do not need to learn any new knowledge, you can immediately begin using MassDuino to commercial product development.

MassDuino use a special custom MCU MD-8088 and MD-328D, those chips has a very unique and new design, ensuring high operating efficiency while providing a low cost of applications.

INHAOS upcoming a series of application modules which is based MassDuino. The application modules can be developed in the Arduino environment, and then direct used to commercial products, creative implementation and production time reduced to a minimum.

3. THE PRODUCTS

There are now three different versions of Massduino, they have their own characteristics, Massduino-UNO-LC is USB interface,

Massduino-UNO-LC-lite is to serial, Massduino-UNO-core is a quarter of the volume of Arduino-UNO, and it's to serial too.



4. MD-328D

- Hi performance, Low power consumption 8bit RISC MCU
- 32K bytes of in-system programmable FLASH
- 2K bytes SRAM on-chip
- 1K bytes of data FLASH, support byte read (simulate E2PROM)
- Can be edited in the Arduino environment, concise and easy to use
- Programmable synchronous / asynchronous USART
- Can work in master / slave mode SPI Serial Interface
- Up to 30 programmable I / O
- High-performance, low -power and low-cost
- I2C -compatible two-wire serial communication interface protocols , supporting master and slave device mode
- 8-CH 10bit 250Ksps ADC
- 1.8 to 5.5V

5. THE FEATURES



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◉ More accuracy analog modules

- ◉ 8-channel 12bit Analog to Digital Converter (ADC)
- ◉ Internal independent power monitor channel (VCC/4)
- ◉ Internal High resolution **1.25V/2.56V ±1% voltage reference**
- ◉ 2x Analog comparator with 2x 8bit DAC for internal reference
- ◉ 2x Fixed-gain, dual direction OPA frontend for ADC/AC
- ◉ 2-channel 8bit DAC output

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◉ More other improvements

- ◉ High resolution internal **16MHz ±1% RC oscillator**
- ◉ Low power 32KHz RC oscillator
- ◉ Low power POR and 3-level Low voltage detector
- ◉ More efficiency active and sleep power control

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◉ Digital Peripherals

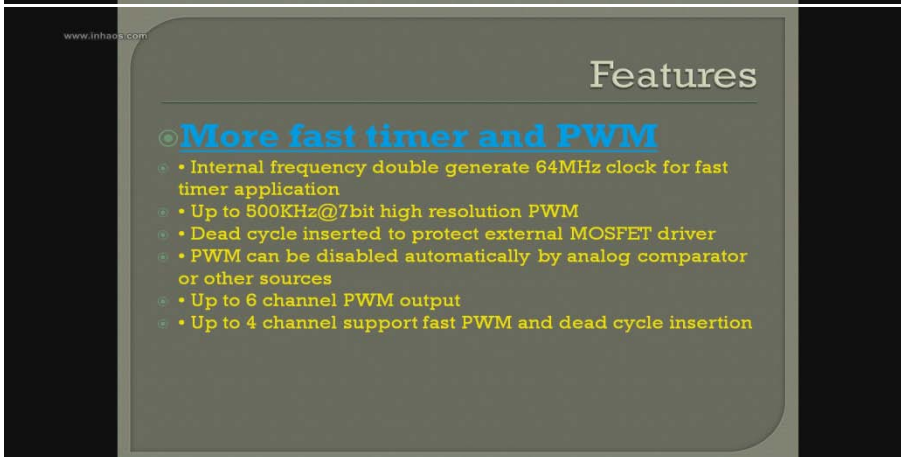
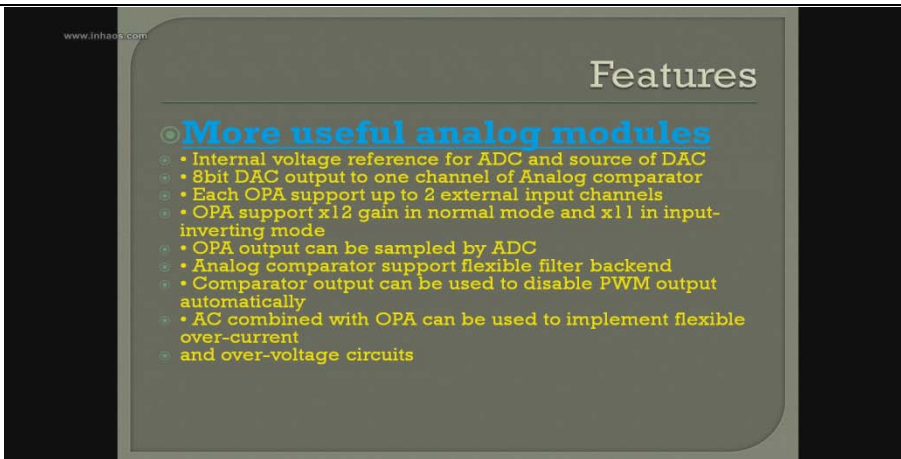
- ◉ SWD Two-wire On Chip Debug & Programming Interface
- ◉ Programmable Watch dog timer
- ◉ Async/Sync Universal Receiver/Transmitter (USART)
- ◉ Master/Slave SPI Interface
- ◉ Master/Slave Two-wire Interface (TWI), compatible with I2C

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◉ More Robust Working Environment

- ◉ 0-20MHz @ 1.8V - 6.3V
- ◉ -40C ~ +85C
- ◉ 400V RSM ESD



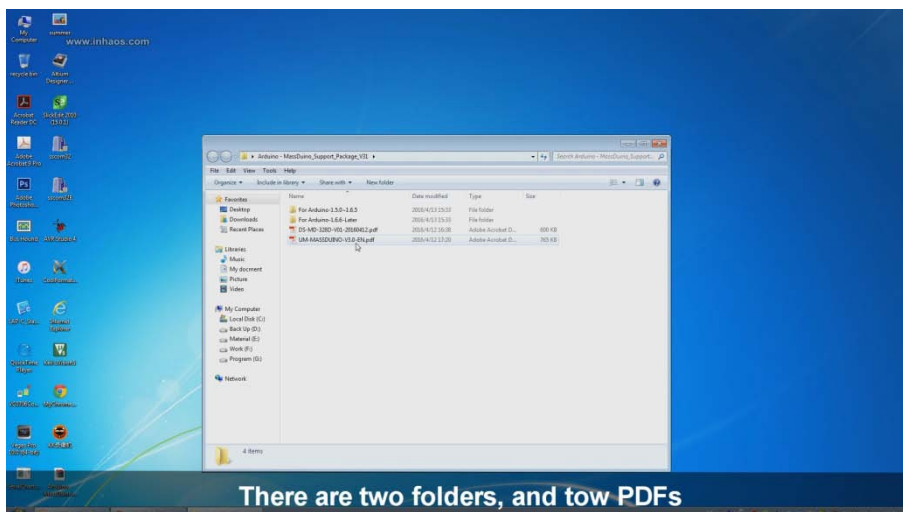
More information please click:

<http://www.inhaos.com/uploadfile/otherpic/DOC-MASSDUINO-UNO-CORE-V01-20160416.pdf>

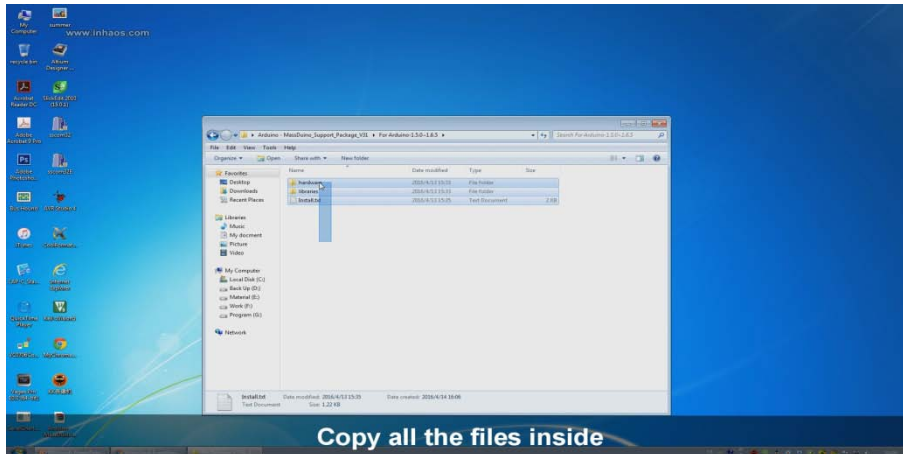
6. HOW TO USE

You can enter www.inhaos.com to download” **Arduino - MassDuino_Support_Package V31** ”.

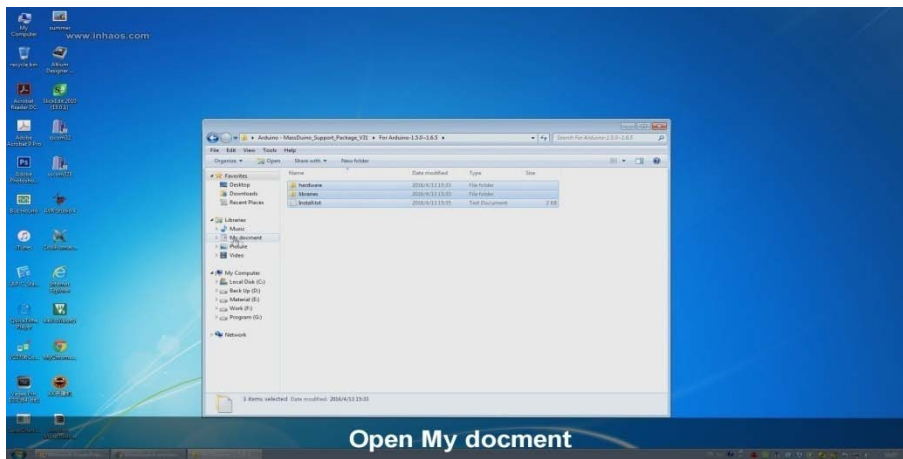
There are two PDF files and two folders. Two PDF introduced Massduino detailed parameters and methods of use, two folders are used to load the relevant documents of massduino.



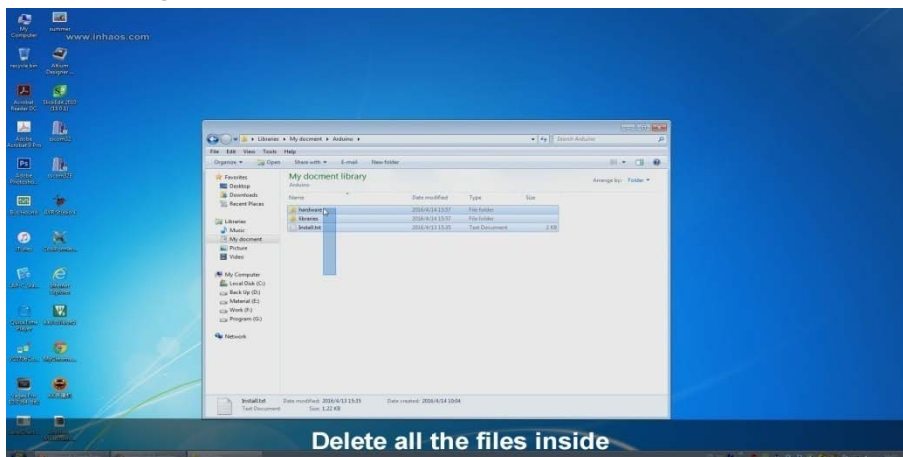
Then look at your version of the Arduino ide, If your ide version is 1.5.0 to 1.6.5 , You can load the above folder, If your ide version greater than 1.6.6, You can load the following folder. Open the corresponding folder, copy all the files inside.



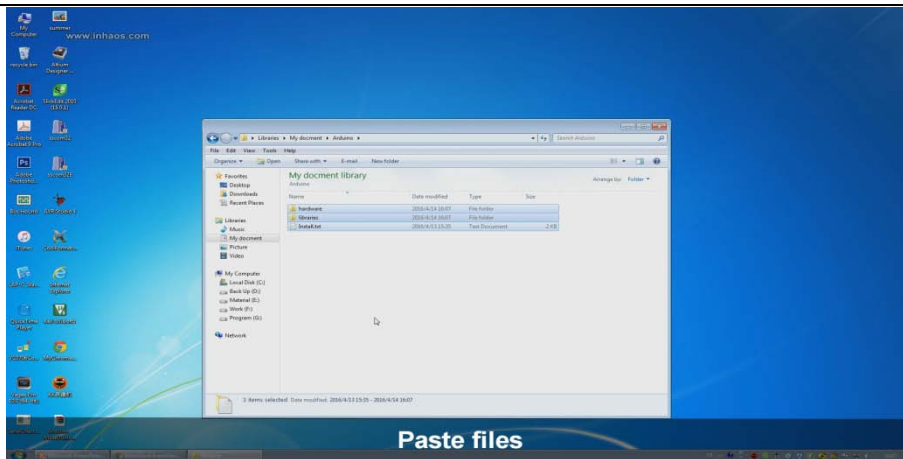
Open Mydocument, find the folder Arduino.



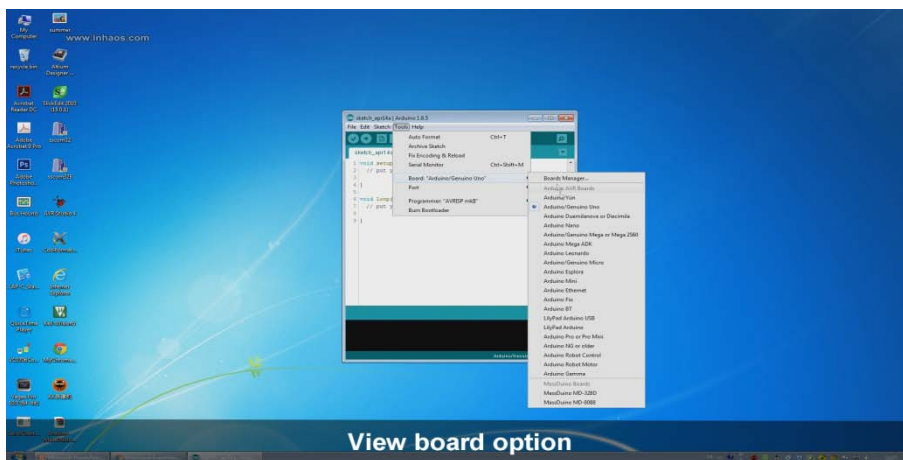
Delete the original files inside.



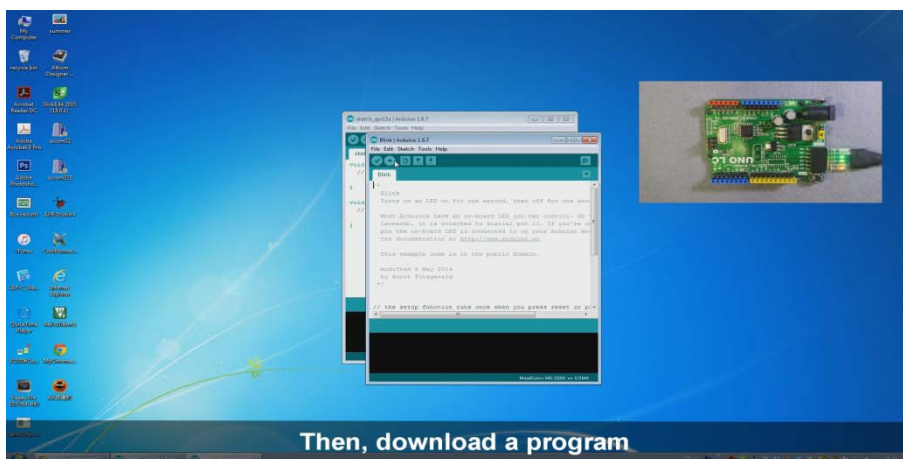
Stickthe files into it

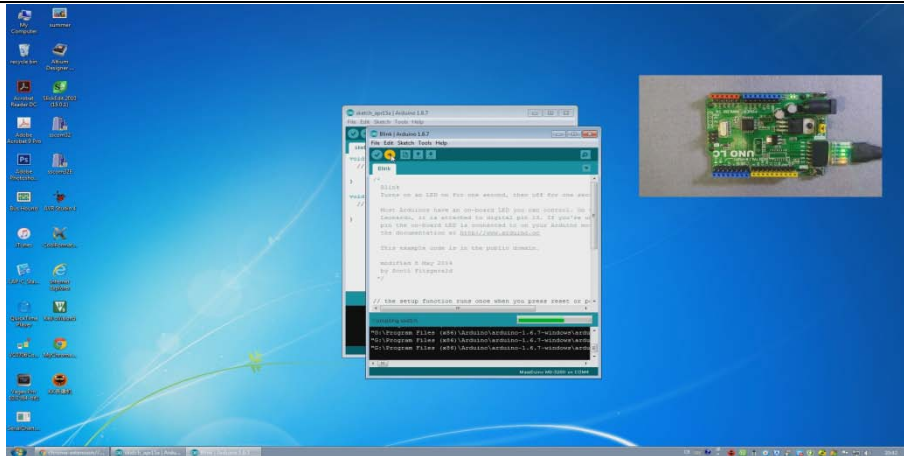


Open the Arduino IDE, check the board, and you will find the Massduino board are here now. Choose the board and you can use Massduino.



Download a small program to see the use of Massduino, select the blink program, check the equipment, and then download.





The LED of SCK start blinking,the download is success,the same use way with the BUONO UNO,besides,Massduino fully compatible with the UNO's program.

