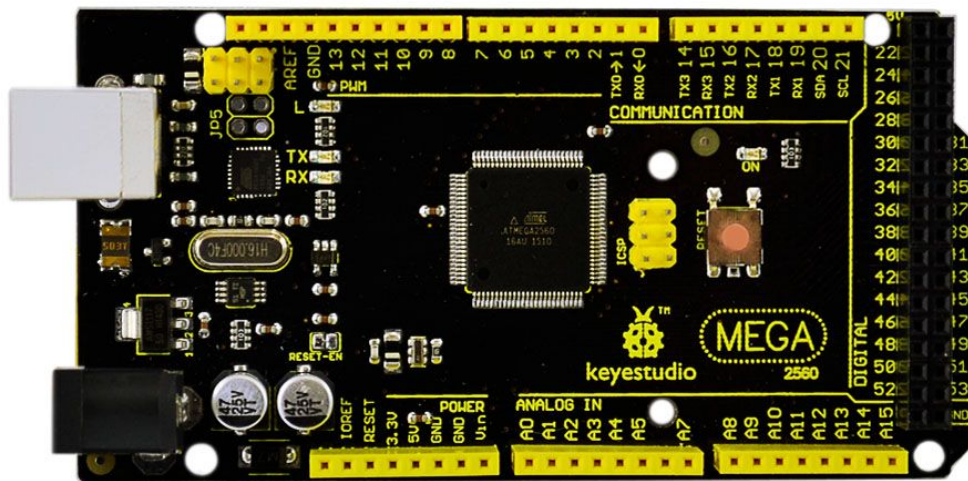# keyestudio

Keyestudio Mega 2560 R3 Development Board

Introduction

Keyestudio Mega (core to ATmega2560) is a development board (used with16MHz crystal oscillator) of microcontroller. There are 54 I/O (input/output) digital interfaces (of which 14 are PWM outputs), 16 analog inputs and 4 UART (hardwareserial ports). With its bootloader, program can be downloaded directly with USB and you don't need to use other external programmer. It can be driven directly by USB, or AC-to-DC adapter and battery.

Open source code and using C language development status in Java concept (cross platform) enable a rapid growth of Arduino peripheral module and application. The main reason attracting Artist to use Arduino is that they can quickly use all kinds of software communication such as Arduino language and Flash or Processing and so on to make multimedia interactive works. Development interface of Arduino IDE is based on the open source code, which you can

download freely. You can use them in thematic making, school teaching, television controlling, interactive projects and so on.

Design of Power Supply :

There are two choices (direct power supply trough USB or external power supply) for the power supply system of Arduino Mega, and they can be Automatic switched. External power supply can be AC-to-DC adapter or battery. Voltage input of this control board is 6V~12V, but if the supplied voltage is greater than 12V, the voltage stabilizing device will be likely to be overheated and damaging Arduino MEGA. So we suggest the power supply should be 6.5~12V in operation and recommended supply is 7.5 or 9V.

Specification

Microcontroller:ATmega2560

Operating Voltage:5V

Input Voltage (recommended):7-12V

Input Voltage (limits):6-20V

Digital I/O Pins:54 (of which 15 provide PWM output)

Analog Input Pins:16

DC Current per I/O Pin:40 mA

DC Current for 3.3V Pin:50 mA

Flash Memory:256 KB of which 8 KB used by bootloader

SRAM:8 KB

EEPROM:4 KB

Clock Speed:16 MHz

Procedure for Installing Arduino Driver:

To download the Arduino developing software on the web address: http:/arduino.cc/en/Main/Software. The downloaded file is arduino-1.0.zip, a compressed folder, to decompress it to the hard disk.

When 2560R3 Developing Board is connected to the Windows through the USB line, Windows will prompt a new USB device is found, then it will lead us into the "found new hardware wizard" window.

The next step is to install 2560R3 driver required, selecting the option of "install from a list or specific location (Senior)" and click "next" button:

To put the driver into the driver directory of Arduino 1.0 installation directory, and we need to specify this directory to be the searched directory when installing the driver.

Click "next" button, Windows begins to find and install Arduino driving procedure.

If all goes well, we will see the success interface as follows:

After the installation of Arduino driver is successful, we can find the corresponding Arduino serial port in the Windows device manager:

Well, the next is to test driver installation.

Testing code:

```
void setup() {
 // initialize digital pin 13 as an output.
 pinMode(13, OUTPUT);
}

// the loop function runs over and over again forever
void loop() {
 digitalWrite(13, HIGH);   // turn the LED on (HIGH is the voltage level)
 delay(1000);              // wait for a second
 digitalWrite(13, LOW);    // turn the LED off by making the voltage LOW
 delay(1000);              // wait for a second
}
```

Copy the code above to Arduino status , select the model 2560 and port, and then click the icon( ). To wait a moment and the results came out, then you will see the LED flashing at D13 of your 2560r3 board and the time interval is 1s, and then we know that is ok.